



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204

(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Brian C. Rockensuess
Commissioner

December 29, 2023

VIA ELECTRONIC MAIL - Anthony.pacilio@clevelandcliffs.com

Anthony Pacilio, General Manager
Cleveland-Cliffs LLC (Indiana Harbor East)
3210 Watling Street
East Chicago, IN 46312

Dear Anthony Pacilio:

Re: NPDES Permit No. IN0000094
Final Permit
Indiana Harbor East
East Chicago, IN – Lake County

Your application for a National Pollutant Discharge Elimination System (NPDES) permit for authorization to discharge into the waters of the State of Indiana has been processed in accordance with Section 402 and 405 of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251, et seq.), and IC 13-15, IDEM's permitting authority. All discharges from this facility shall be consistent with the terms and conditions of this permit.

One condition of your permit requires periodic reporting of several effluent parameters. You are required to submit both federal discharge monitoring reports (DMRs) and state Monthly Monitoring Reports (MMRs) on a routine basis. The MMR form is available on the internet at the following web site: <https://www.in.gov/idem/cleanwater/wastewater-compliance/wastewater-reporting-forms-notice-and-instructions/>. Once you are on this page, select the "IDEM Forms" page and locate the "Monthly Monitoring Report (MMR) for Industrial Discharge Permits-30530" under the Wastewater Facilities heading. We recommend selecting the "XLS" version because it will complete all of the calculations when you enter the data.

All NPDES permit holders are required to submit their monitoring data to IDEM using NetDMR. Please contact Rose McDaniel at (317) 233-2653 or Helen Demmings at (317) 232-8815 if you would like more information on NetDMR. Information is also available on our website at <https://www.in.gov/idem/cleanwater/resources/netdmr/>.

Another condition, which needs to be clearly understood, concerns violation of the effluent limitations in the permit. Exceeding the limitations constitutes a violation of the permit and may subject the permittee to criminal or civil penalties. (See Part II A.2.) It is therefore urged that your office and treatment operator understand this part of the permit.



A State that Works

The draft NPDES permit for Cleveland-Cliffs Steel LLC - Indiana Harbor East was made available for public comment from September 30, 2023, through November 16, 2023, as part of Public Notice No. 2023 – 0930 – IN000094 PH/RD on IDEM's website at <https://www.in.gov/idem/public-notice/public-notice-all-regions/>. Responses to comments pertaining to the draft NPDES permit received before the end of the public comment period are contained in the Post Public Notice Addendum. The Post Public Notice Addendum is located at the end of the Fact Sheet.

It should also be noted that any appeal must be filed under procedures outlined in IC 13-15-6, IC 4-21.5, and the enclosed Public Notice. The appeal must be initiated by filing a petition for administrative review with the Office of Environmental Adjudication (OEA) within fifteen (15) days of the emailing of an electronic copy of this letter or within eighteen (18) days of the mailing of this letter by filing at the following addresses:

Director
Office of Environmental Adjudication
Indiana Government Center North
Room N103
100 North Senate Avenue
Indianapolis, Indiana 46204

Commissioner
Indiana Department of Environmental Management
Indiana Government Center North
Room 1301
100 North Senate Avenue
Indianapolis, Indiana 46204

If you have any questions concerning the permit, please contact Nikki Gardner at 317/232-8707 or ngardner@idem.in.gov. More information on the appeal review process is available at the website for the Office of Environmental Adjudication at <http://www.in.gov/oea/>.

Sincerely,



Jerry Dittmer, Chief
Permits Branch
Office of Water Quality

Enclosures

cc: Chief, Permits Section, U.S. EPA, Region 5
Lake County Health Department
Mariya Trenkinshu, Cleveland Cliffs
Tom Barnett, Cleveland Cliffs
Nick Ream, IDEM
Miya Spratt, IDEM
All commenters

STATE OF INDIANA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act, as amended, (33 U.S.C. 1251 et seq., the "Clean Water Act" or "CWA"), and IDEM's authority under IC13-15,

CLEVELAND-CLIFFS STEEL LLC – INDIANA HARBOR EAST

is authorized to discharge from an integrated steel mill that is located at 3210 Watling Street, East Chicago, Indiana, to receiving waters identified as the Indiana Harbor Turning Basin in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II, III, and IV hereof. This permit may be revoked for the nonpayment of applicable fees in accordance with IC 13-18-20.

Effective Date: February 1, 2024

Expiration Date: January 31, 2029

In order to receive authorization to discharge beyond the date of expiration, the permittee shall submit such information and forms as are required by the Indiana Department of Environmental Management no later than 180 days prior to the date of expiration.

Issued on December 29, 2023 for the Indiana Department of Environmental Management.

A handwritten signature in black ink, appearing to read "Jerry Dittmer", is positioned above the printed name and title.

Jerry Dittmer, Chief
Permits Branch
Office of Water Quality

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

- The permittee is authorized to discharge from the outfall listed below in accordance with the terms and conditions of this permit. The permittee is authorized to discharge from Outfall 011, located at Latitude 41° 39' 56", Longitude -87° 26' 23". The discharge is limited to sinter plant noncontact cooling water, stormwater, and groundwater. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into the Indiana Harbor Turning Basin. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1][2][3][4]

Outfall 011

Table 1

Parameter	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow [5]	Report	Report	MGD	----	----	----	1 X Daily	24 Hr. Total
O&G	----	Report	lbs/day	----	Report	mg/l	1 X Week	Grab
Mercury[6][7]	Report	Report	lbs/day	Report	Report	ng/l	6 X Annually[8]	Grab
Temperature[9]								
Effluent	----	----	----	Report	Report	°F	2 X Week	Grab
Influent	----	----	----	Report	Report	°F	2 X Week	Grab
TRC[7][11][12]	0.058	0.14[13]	lbs/day	14[14]	33[15]	ug/l	5 X Week	Grab

Table 2

Parameter	Quality or Concentration				Monitoring Requirements	
	Daily Minimum	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
pH [10]	6.0	----	9.0	s.u.	1 X Week	Grab

- There shall be no discharge of process wastewater.
- See Part I.B. of the permit for the minimum narrative limitations.
- In the event that a new water treatment additive is to be used that will contribute to this Outfall, or changes are to be made in the use of water treatment additives, including dosage, the permittee must apply for and receive approval from IDEM prior to such discharge. Discharges of any such additives must meet Indiana water quality standards. The permittee must apply for permission to use water treatment additives by completing and submitting State Form 50000 (Application for Approval to Use Water Treatment Additives) currently available at:
<https://www.in.gov/idem/forms/idem-agency-forms/>

- [4] The Stormwater Monitoring and Non-Numeric Effluent Limits and the Stormwater Pollution Prevention Plan (SWPPP) requirements can be found in Part I.D. and I.E. of this permit.
- [5] Flow may be determined based on engineering estimates of dry weather and wet weather discharges to the outfall.
- [6] The permittee shall measure and report the identified metal as total recoverable metal.
- [7] The following EPA approved test methods and associated LODs and LOQs are to be used in the analysis of the effluent samples. Alternative methods may be used if first approved by IDEM and EPA, if applicable.

<u>Parameter</u>	<u>Test Method</u>	<u>LOD</u>	<u>LOQ</u>
Mercury	1631E	0.2 ng/l	0.5 ng/l
Chlorine, Total residual	4500-Cl D-2000, E-2000 or G-2000	20 ug/l	60 ug/l

Case-Specific LOD/LOQ

The permittee may determine and use a case-specific LOD or LOQ using the analytical method specified above, or any other analytical method which is approved by the Commissioner, and EPA if applicable, prior to use. The LOD and LOQ shall be determined as established in 327 IAC 5-2-11.6(h)(2)(B).

- [8] Effluent mercury monitoring shall be conducted 6 X annually, monitoring in the months of February, April, June, August, October and December of each year for the term of the permit.
- [9] On days when temperature is sampled at the outfall, temperature shall also be sampled at the intake supplying the most significant source of water to the outfall. As an alternative to direct grab measurements during this time period the facility may install a more permanent temperature measuring device that will retain the highest temperature value during any given 24-hour period.
- [10] If the permittee collects more than one grab sample on a given day for pH, the values shall not be averaged for reporting daily maximums or daily minimums. The permittee must report the individual minimum and the individual maximum pH value of any sample during the month on the Monthly Monitoring Report form.
- [11] See Part I.L. of the permit for the Zebra and Quagga Mussel Control Requirements.
- [12] The permittee is required to develop and conduct a pollutant minimization program (PMP) for each pollutant with a WQBEL below the LOQ as specified in footnote [7]. See Part I.H. of the permit for the Pollutant Minimization Program (PMP) requirements.

- [13] Compliance with the daily maximum mass value will be demonstrated if the calculated mass value is less than 0.25 lbs/day.
- [14] The monthly average water quality based effluent limit (WQBEL) for TRC is less than the limit of quantitation (LOQ) as specified in footnote [7]. Compliance with the calculated monthly average limit will be demonstrated if the monthly average effluent level is less than or equal to the monthly average WQBEL. When calculating the monthly average effluent level, daily effluent values that are less than the LOQ, used to determine the monthly average effluent levels less than the LOQ, may be assigned a value of zero (0), unless, after considering the number of monitoring results that are greater than the limit of detection (LOD), and applying appropriate statistical techniques, a value other than zero (0) is warranted.
- [15] The daily maximum WQBEL for TRC is greater than or equal to the LOD but less than the LOQ as specified in footnote [7]. Compliance with the daily maximum limit will be demonstrated if the observed effluent concentrations are less than the LOQ.

2. The permittee is authorized to discharge from the outfall listed below in accordance with the terms and conditions of this permit. The permittee is authorized to discharge from Outfalls 013 and 014, located at Latitude 41° 39' 55", Longitude -87° 26' 13" and Latitude 41° 40' 02", Longitude -87° 26' 22", respectively. The discharge from Outfall 013 is limited to emergency discharge from the Terminal Treatment Plant – West. The discharge from Outfall 014 is limited blowdown from the Main Recycle System and stormwater. The Main Recycle System consists of process and cooling water from hot forming operations (80" hot strip mill); pickling operations (No. 5 pickle line, continuous anneal line); cold rolling mills (80" tandem mills; Nos. 28 and 29 temper mills); alkaline cleaning; No. 5 hot dip galvanizing line; treated sanitary wastewaters from the No. 1, No. 2, and No. 3 sewage treatment plants, groundwater, and Plant 2 former coke plant remediation system discharge[19]. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into the Indiana Harbor Turning Basin. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1][2][3][4][5][20][21][22]
Outfalls 014/013A

Table 1

[illegible]

Table 2

Parameter	Quality or Concentration				Monitoring Requirements	
	Daily Minimum	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
pH [18]	6.0	----	9.0	s.u.	2 X Week	Grab

- [1] Effluent limitations and monitoring requirements for Outfall 014/013A are effective when the No. 28 Temper Line is operating.
- [2] See Part I.B. of the permit for the minimum narrative limitations.
- [3] In the event that a new water treatment additive is to be used that will contribute to this Outfall, or changes are to be made in the use of water treatment additives, including dosage, the permittee must apply for and receive approval from IDEM prior to such discharge. Discharges of any such additives must meet Indiana water quality standards. The permittee must apply for permission to use water treatment additives by completing and submitting State Form 50000 (Application for Approval to Use Water Treatment Additives) currently available at:
<https://www.in.gov/idem/forms/idem-agency-forms/>
- [4] The Stormwater Monitoring and Non-Numeric Effluent Limits and the Stormwater Pollution Prevention Plan (SWPPP) requirements can be found in Part I.D. and I.E. of this permit.
- [5] The plant shall not use cyanide plating solutions in any metal finishing operations, unless expressly authorized by a modification of the permit.
- [6] The 24-Hour Oil and Grease values shall be based on an average of not less than two grab samples obtained not less than 6 hours apart. Each sample shall be analyzed individually, and the arithmetic mean of the concentrations shall be reported as the value for the twenty-four (24) hour period. That value shall be used to assess compliance with the daily maximum effluent limitation, and the arithmetic average of all daily values determined each month shall be used to assess compliance with the monthly average effluent limit.
- [7] The flow must be measured and recorded using valid flow measurement devices, not estimated.

- [8] The following EPA approved test methods and associated LODs and LOQs are to be used in the analysis of the effluent samples. Alternative methods may be used if first approved by IDEM and EPA, if applicable.

Parameter	Test Method	LOD	LOQ
Mercury	1631E	0.2 ng/l	0.5 ng/l
Selenium	3113 B-2004 or 3114 B-2009	2 µg/l	6.4 µg/l
Selenium	200.8, Rev. 5.4 (1994)	2.1 µg/l	6.7 µg/l
Selenium	200.9, Rev. 2.2 (1994)	0.6 µg/l	1.9 µg/l
Cyanide, Total	335.4, Rev. 1.0 (1993) or 4500-CN- E-1999	5 µg/l	16 µg/l
Cyanide, Total	Kelada-01	0.5 µg/l	1.6 µg/l
Cyanide, Available**	4500-CN-G-1999	5 µg/l	16 µg/l
Cyanide, Available**	OIA-1677-09 (available)	0.5 µg/l	2.0 µg/l
Cyanide, Available**	Kelada-01 (available)	0.5 µg/l	1.6 µg/l
Oxidants, Total Residual (Bromine + TRC)	4500-Cl D-2000, E-2000 or G-2000	20 ug/l	60 ug/l
**Free cyanide shall be reported as free cyanide but measured using one of the EPA approved test methods above for available cyanide.			

Case-Specific LOD/LOQ

The permittee may determine and use a case-specific LOD or LOQ using the analytical method specified above, or any other analytical method which is approved by the Commissioner, and EPA if applicable, prior to use. The LOD and LOQ shall be determined as established in 327 IAC 5-2-11.6(h)(2)(B).

- [9] The permittee shall measure and report the identified metal as total recoverable metal.
- [10] A monitoring waiver per 40 CFR 122.44 has been granted for this parameter for the term of this permit. IDEM shall be notified if any changes occur at this facility that would require the condition upon which this waiver was granted to be reviewed. Based upon process changes, sampling or other information, if the Permittee has any reason to believe that Naphthalene and Tetrachlorethylene is present, then the Permittee shall notify IDEM and sample for that pollutant at the frequency of one time monthly and will notify the IDEM Compliance Data Section so that these changes can be added to the DMR form.
- [11] Mercury monitoring shall be conducted 6 X annually in the months of February, April, June, August, October, and December of each year for the term of the permit using EPA Test Method 1631, Revision E.
- [12] On days when temperature is sampled at the outfall, temperature shall also be sampled at the intake supplying the most significant source of water to the outfall. As an alternative to direct grab measurements during this time period the facility

may install a more permanent temperature measuring device that will retain the highest temperature value during any given 24-hour period.

- [13] See Part I.L. of the permit for the Zebra and Quagga Mussel Control Requirements.
- [14] The permittee is required to develop and conduct a pollutant minimization program (PMP) for each pollutant with a WQBEL below the LOQ as specified in footnote [8]. See Part I.H. of the permit for the Pollutant Minimization Program (PMP) requirements.
- [15] Compliance with the daily maximum mass value will be demonstrated if the calculated mass value is less than 4.8 lbs/day.
- [16] The monthly average water quality-based effluent limits (WQBEL) for Total Residual Oxidants (Bromine + TRC) are less than the limits of quantitation (LOQ) as specified in footnote [8]. Compliance with the calculated monthly average limits will be demonstrated if the monthly average effluent levels are less than or equal to the monthly average WQBEL. When calculating the monthly average effluent levels, daily effluent values that are less than the LOQ, used to determine the monthly average effluent levels less than the LOQ, may be assigned a value of zero (0), unless, after considering the number of monitoring results that are greater than the limit of detection (LOD), and applying appropriate statistical techniques, a value other than zero (0) is warranted.
- [17] See Part I.F. of the permit for Biomonitoring requirements.
- [18] If the permittee collects more than one grab sample on a given day for pH, the values shall not be averaged for reporting daily maximums or daily minimums. The permittee must report the individual minimum and the individual maximum pH value of any sample during the month on the Monthly Monitoring Report form.
- [19] Effluent from the groundwater remediation system will be sampled for VOC/SVOC quarterly. Results of the quarterly sampling must be reported annually to the Industrial NPDES Permit Section, as well as the Compliance Branch. The report may be submitted by email to the Industrial NPDES Permit Section at OWQWWPER@idem.in.gov and to the Compliance Branch at wwReports@idem.in.gov. Annual reports are due no later than the anniversary of the effective date of the permit.
- [20] During Outfall 518 treatment system maintenance periods, process wastewater may be transported to the Master Recycle System on an intermittent basis and subject to the following requirements:
 - a. Such events shall not exceed ten (10) events per year,
 - b. The maximum volume of process wastewater transported shall not exceed 25,000 gallons per event,
 - c. For each event, the permittee shall report the following as an attachment to the respective MMR:
 - i. Volume of wastewater transported.

- ii. Quality of wastewater transported, both loading and concentration. Wastewater samples shall be collected using the grab sample method and analyzed for TSS, ammonia (as N), total cyanide, phenols (4AAP), lead, zinc, oil & grease, TRC, and selenium.
- iii. Dates and time periods during which transport occurred.
- iv. Location in the Master Recycle System where the transported water was deposited.

- [21] During Outfall 618 treatment system maintenance periods, process wastewater may be transported to the Master Recycle System on an intermittent basis and subject to the following requirements:
- a. Such events shall not exceed ten (10) events per year,
 - b. The maximum volume of process wastewater transported shall not exceed 25,000 gallons per event,
 - c. For each event, the permittee shall report the following as an attachment to the respective MMR:
 - i. Volume of wastewater transported.
 - ii. Quality of wastewater transported, both loading and concentration. Wastewater samples shall be collected using the grab sample method and analyzed for TSS, lead, zinc, and oil & grease.
 - iii. Dates and time periods during which transport occurred.
 - iv. Location in the Master Recycle System where the transported water was deposited.
- [22] The discharge of process wastewater from these operations through any other outfall or non-point source is prohibited.
- [23] The daily maximum WQBEL for Total Residual Oxidants (Bromine + TRC) is less than the LOD as specified in footnote [8]. Compliance with the daily maximum limit will be demonstrated if the observed effluent concentrations are less than the LOD. Effluent levels greater than or equal to the LOD but less than the LOQ are in compliance with the daily maximum WQBEL, except when confirmed by a sufficient number of analyses of multiple samples and use of appropriate statistical techniques.
- [24] Monitoring for ammonia-N, total cyanide, free cyanide, phenols (4AAP), and selenium is required only when wastewater from the No. 7 blast furnace treatment and recycle system may be present. Analysis of samples for free cyanide is not required when the corresponding sample analytical result for total cyanide is not detected at <0.005 mg/l.

3. The permittee is authorized to discharge from the outfall listed below in accordance with the terms and conditions of this permit. The permittee is authorized to discharge from Outfalls 013 and 014, located at Latitude 41° 39' 55", Longitude -87° 26' 13" and Latitude 41° 40' 02", Longitude -87° 26' 22", respectively. The discharge from Outfall 013 is limited to emergency discharge from the Terminal Treatment Plant – West. The discharge from Outfall 014 is limited blowdown from the Main Recycle System and stormwater. The Main Recycle System consists of process and cooling water from hot forming operations (80" hot strip mill); pickling operations (No. 5 pickle line, continuous anneal line); cold rolling mills (80" tandem mills; Nos. 28 and 29 temper mills); alkaline cleaning; No. 5 hot dip galvanizing line; treated sanitary wastewaters from the No. 1, No. 2, and No. 3 sewage treatment plants, groundwater, and Plant 2 former coke plant remediation system discharge[19]. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into the Indiana Harbor Turning Basin. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1][2][3][4][5][20][21][22]

Outfalls 014/013B

Table 1

[illegible]

Table 2

Parameter	Quality or Concentration				Monitoring Requirements	
	Daily Minimum	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
pH [18]	6.0	----	9.0	s.u.	2 X Week	Grab

- [1] Effluent limitations and monitoring requirements for Outfall 014/013A are effective when the No. 28 Temper Line is idle.
- [2] See Part I.B. of the permit for the minimum narrative limitations.
- [3] In the event that a new water treatment additive is to be used that will contribute to this Outfall, or changes are to be made in the use of water treatment additives, including dosage, the permittee must apply for and receive approval from IDEM prior to such discharge. Discharges of any such additives must meet Indiana water quality standards. The permittee must apply for permission to use water treatment additives by completing and submitting State Form 50000 (Application for Approval to Use Water Treatment Additives) currently available at:
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- [5] The plant shall not use cyanide plating solutions in any metal finishing operations, unless expressly authorized by a modification of the permit.
- [6] The 24-Hour Oil and Grease values shall be based on an average of not less than two grab samples obtained not less than 6 hours apart. Each sample shall be analyzed individually, and the arithmetic mean of the concentrations shall be reported as the value for the twenty-four (24) hour period. That value shall be used to assess compliance with the daily maximum effluent limitation, and the arithmetic average of all daily values determined each month shall be used to assess compliance with the monthly average effluent limit.
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Cyanide, Total	335.4, Rev. 1.0 (1993) or 4500-CN- E-1999	5 µg/l	16 µg/l
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**Free cyanide shall be reported as free cyanide but measured using one of the EPA approved test methods above for available cyanide.			

Case-Specific LOD/LOQ

The permittee may determine and use a case-specific LOD or LOQ using the analytical method specified above, or any other analytical method which is approved by the Commissioner, and EPA if applicable, prior to use. The LOD and LOQ shall be determined as established in 327 IAC 5-2-11.6(h)(2)(B).

- [9] The permittee shall measure and report the identified metal as total recoverable metal.
- [10] A monitoring waiver per 40 CFR 122.44 has been granted for this parameter for the term of this permit. IDEM shall be notified if any changes occur at this facility that would require the condition upon which this waiver was granted to be reviewed. Based upon process changes, sampling or other information, if the Permittee has any reason to believe that Naphthalene and Tetrachlorethylene is present, then the Permittee shall notify IDEM and sample for that pollutant at the frequency of one time monthly and will notify the IDEM Compliance Data Section so that these changes can be added to the DMR form.
- [11] Mercury monitoring shall be conducted 6 X annually in the months of February, April, June, August, October, and December of each year for the term of the permit using EPA Test Method 1631, Revision E.
- [12] On days when temperature is sampled at the outfall, temperature shall also be sampled at the intake supplying the most significant source of water to the outfall. As an alternative to direct grab measurements during this time period the facility may install a more permanent temperature measuring device that will retain the highest temperature value during any given 24-hour period.
- [13] See Part I.L. of the permit for the Zebra and Quagga Mussel Control Requirements.
- [14] The permittee is required to develop and conduct a pollutant minimization program (PMP) for each pollutant with a WQBEL below the LOQ as specified in footnote [8]. See Part I.H. of the permit for the Pollutant Minimization Program (PMP) requirements.

- [15] Compliance with the daily maximum mass value will be demonstrated if the calculated mass value is less than 4.8 lbs/day.
- [16] The monthly average water quality-based effluent limits (WQBEL) for Total Residual Oxidants (Bromine + TRC) are less than the limits of quantitation (LOQ) as specified in footnote [8]. Compliance with the calculated monthly average limits will be demonstrated if the monthly average effluent levels are less than or equal to the monthly average WQBEL. When calculating the monthly average effluent levels, daily effluent values that are less than the LOQ, used to determine the monthly average effluent levels less than the LOQ, may be assigned a value of zero (0), unless, after considering the number of monitoring results that are greater than the limit of detection (LOD), and applying appropriate statistical techniques, a value other than zero (0) is warranted.
- [17] See Part I.F. of the permit for Biomonitoring requirements.
- [18] If the permittee collects more than one grab sample on a given day for pH, the values shall not be averaged for reporting daily maximums or daily minimums. The permittee must report the individual minimum and the individual maximum pH value of any sample during the month on the Monthly Monitoring Report form.
- [19] Effluent from the groundwater remediation system will be sampled for VOC/SVOC quarterly. Results of the quarterly sampling must be reported annually to the Industrial NPDES Permit Section, as well as the Compliance Branch. The report may be submitted by email to the Industrial NPDES Permit Section at OWQWWPER@idem.in.gov and to the Compliance Branch at wwReports@idem.in.gov. Annual reports are due no later than the anniversary of the effective date of the permit.
- [20] During Outfall 518 treatment system maintenance periods, process wastewater may be transported to the Master Recycle System on an intermittent basis and subject to the following requirements:
- a. Such events shall not exceed ten (10) events per year,
 - b. The maximum volume of process wastewater transported shall not exceed 25,000 gallons per event,
 - c. For each event, the permittee shall report the following as an attachment to the respective MMR:
 - i. Volume of wastewater transported.
 - ii. Quality of wastewater transported, both loading and concentration. Wastewater samples shall be collected using the grab sample method and analyzed for TSS, ammonia (as N), total cyanide, phenols (4AAP), lead, zinc, oil & grease, TRC, and selenium.
 - iii. Dates and time periods during which transport occurred.
 - iv. Location in the Master Recycle System where the transported water was deposited.

- [21] During Outfall 618 treatment system maintenance periods, process wastewater may be transported to the Master Recycle System on an intermittent basis and subject to the following requirements:
- a. Such events shall not exceed ten (10) events per year,
 - b. The maximum volume of process wastewater transported shall not exceed 25,000 gallons per event,
 - c. For each event, the permittee shall report the following as an attachment to the respective MMR:
 - i. Volume of wastewater transported.
 - ii. Quality of wastewater transported, both loading and concentration. Wastewater samples shall be collected using the grab sample method and analyzed for TSS, lead, zinc, and oil & grease.
 - iii. Dates and time periods during which transport occurred.
 - iv. Location in the Master Recycle System where the transported water was deposited.
- [22] The discharge of process wastewater from these operations through any other outfall or non-point source is prohibited.
- [23] The daily maximum WQBEL for Total Residual Oxidants (Bromine + TRC) is less than the LOD as specified in footnote [8]. Compliance with the daily maximum limit will be demonstrated if the observed effluent concentrations are less than the LOD. Effluent levels greater than or equal to the LOD but less than the LOQ are in compliance with the daily maximum WQBEL, except when confirmed by a sufficient number of analyses of multiple samples and use of appropriate statistical techniques.
- [24] Monitoring for ammonia-N, total cyanide, free cyanide, phenols (4AAP), and selenium is required only when wastewater from the No. 7 blast furnace treatment and recycle system may be present. Analysis of samples for free cyanide is not required when the corresponding sample analytical result for total cyanide is not detected at <0.005 mg/l.

4. The permittee is authorized to discharge from the outfall listed below in accordance with the terms and conditions of this permit. The permittee is authorized to discharge from Outfall 018, located at Latitude 41° 40' 29", Longitude -87° 26' 08". The discharge is limited to noncontact cooling water; treated effluents from the No. 4 Steel Plant (BOF), Vacuum Degasser (RHOB), and No. 1 Continuous Caster (internal Outfall 618); treated effluents from the No. 7 Blast Furnace gas scrubber system (internal Outfall 518); cooling tower blowdown and discharges from the No. 5 Boiler House; service water directed through the former No. 4 AC Power Station, groundwater, cooling tower blowdown from CokEnergy co-generating facility, stormwater run-off, and noncontact cooling water and storm water runoff from the Indiana Harbor Coke Company. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into the Indiana Harbor Turning Basin. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1][2][3][4][18][19][20]

Outfall 018

Table 1

[illegible]

Table 2

Parameter	Quality or Concentration				Monitoring Requirements	
	Daily Minimum	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
pH [21]	6.0	----	9.0	s.u.	Daily	Continuous

- [1] Accept in accordance with Part I.A.2., the discharge of process wastewater from these operations through any other outfall or non-point source is prohibited.
- [2] See Part I.B. of the permit for the minimum narrative limitations.
- [3] In the event that a new water treatment additive is to be used that will contribute to this Outfall, or changes are to be made in the use of water treatment additives, including dosage, the permittee must apply for and receive approval from IDEM prior to such discharge. Discharges of any such additives must meet Indiana water quality standards. The permittee must apply for permission to use water treatment additives by completing and submitting State Form 50000 (Application for Approval to Use Water Treatment Additives) currently available at:
<https://www.in.gov/idem/forms/idem-agency-forms/>
- [4] The Stormwater Monitoring and Non-Numeric Effluent Limits and the Stormwater Pollution Prevention Plan (SWPPP) requirements can be found in Part I.D. and I.E. of this permit.
- [5] The flow must be measured and recorded using valid flow measurement devices, not estimated.
- [6] The following EPA approved test methods and associated LODs and LOQs are to be used in the analysis of the effluent samples. Alternative methods may be used if first approved by IDEM and EPA, if applicable.

Parameter	Test Method	LOD	LOQ
Mercury	1631E	0.2 ng/l	0.5 ng/l
Selenium	3113 B-2004 or 3114 B-2009	2 µg/l	6.4 µg/l
Selenium	200.8, Rev. 5.4 (1994)	2.1 µg/l	6.7 µg/l
Selenium	200.9, Rev. 2.2 (1994)	0.6 µg/l	1.9 µg/l
Cyanide, Total	335.4, Rev. 1.0 (1993) or 4500-CN E-1999	5 µg/l	16 µg/l
Cyanide, Total	Kelada-01	0.5 µg/l	1.6 µg/l
Cyanide, Available**	4500-CN-G-1999	5 µg/l	16 µg/l
Cyanide, Available**	OIA-1677-09 (available)	0.5 µg/l	2.0 µg/l
Cyanide, Available**	Kelada-01 (available)	0.5 µg/l	1.6 µg/l
Oxidants, Total Residual (Bromine+TRC)	4500-Cl D-2000, E-2000 or G-2000	20 µg/l	60 µg/l

****Free cyanide shall be reported as free cyanide but measured using one of the EPA approved test methods above for available cyanide.**

Case-Specific LOD/LOQ

The permittee may determine and use a case-specific LOD or LOQ using the analytical method specified above, or any other analytical method which is approved by the Commissioner, and EPA if applicable, prior to use. The LOD and LOQ shall be determined as established in 327 IAC 5-2-11.6(h)(2)(B).

- [7] The permittee shall measure and report the identified metal as total recoverable metal.
- [8] Mercury monitoring shall be conducted 6 X annually in the months of February, April, June, August, October, and December of each year for the term of the permit using EPA Test Method 1631, Revision E.
- [9] The permittee applied for, and received, a variance from the water quality criterion used to establish the referenced mercury WQBEL under 327 IAC 5-3.5. For the term of this permit, the permittee is subject to the interim discharge limit developed in accordance with 327 IAC 5-3.5-8.

The permittee shall report both a daily maximum concentration and an annual average concentration for total mercury. The annual average value shall be calculated as the average of the measured effluent daily values from the most recent twelve-month period. Calculating and reporting of the annual average value for mercury is only required for the months when samples are taken for mercury.

- [10] The interim discharge limit is the annual average. Compliance with the interim discharge limit will be achieved when the annual average measured over the most recent (rolling) twelve-month period is less than the interim discharge limit.

Compliance with the interim discharge limit will demonstrate compliance with mercury discharge limitations of this permit for this outfall.

- [11] See Part IV of the permit for the Streamlined Mercury Variance (SMV) Pollutant Minimization Program Plan (PMPP) requirements.
- [12] On days when temperature is sampled at the outfall, temperature shall also be sampled at the intake supplying the most significant source of water to the outfall. As an alternative to direct grab measurements during this time period the facility may install a more permanent temperature measuring device that will retain the highest temperature value during any given 24-hour period.
- [13] See Part I.L. of the permit for the Zebra and Quagga Mussel Control Requirements.

- [14] The permittee is required to develop and conduct a pollutant minimization program (PMP) for each pollutant with a WQBEL below the LOQ as specified in footnote [6]. See Part I.H. of the permit for the Pollutant Minimization Program (PMP) requirements.
- [15] Compliance with the daily maximum mass value will be demonstrated if the calculated mass value is less than 10 lbs/day.
- [16] The monthly average water quality-based effluent limits (WQBEL) for Total Residual Oxidants (Bromine + TRC) are less than the limits of quantitation (LOQ) as specified in footnote [6]. Compliance with the calculated monthly average limits will be demonstrated if the monthly average effluent levels are less than or equal to the monthly average WQBEL. When calculating the monthly average effluent levels, daily effluent values that are less than the LOQ, used to determine the monthly average effluent levels less than the LOQ, may be assigned a value of zero (0), unless, after considering the number of monitoring results that are greater than the limit of detection (LOD), and applying appropriate statistical techniques, a value other than zero (0) is warranted.
- [17] See Part I.F. of the permit for Biomonitoring requirements.
- [18] There shall be no discharge of cooling tower basin cleaning wastes.
- [19] Internal outfall 518, 618 and Outfall 018 shall be sampled on the same day.
- [20] See Part I.K. for No 7 Blast Furnace requirements.
- [21] In accordance with 40 CFR 401.17, where a permittee continuously measures pH of wastewater, the permittee shall maintain the pH of such wastewater within the range set forth in the applicable effluent limitation guidelines, except when an excursion from the range are permitted subject to the following limitations:
 - a) the total time during which the pH values are outside the required range of pH the total time during which the pH values are outside the range required of pH values shall not exceed the 7 hours and 26 minutes in any calendar month; and
 - b) no individual excursion from the range of pH values shall exceed 60 minutes in duration or 0.5 s.u. in magnitude. An excursion is an unintentional and temporary incident in which the pH value of discharge wastewaters exceed the range set forth in the applicable effluent limitations.
- [22] The daily maximum WQBEL for Total Residual Oxidants (Bromine + TRC) is less than the LOD as specified in footnote [6]. Compliance with the daily maximum limit will be demonstrated if the observed effluent concentrations are less than the LOD. Effluent levels greater than or equal to the LOD but less than the LOQ are in compliance with the daily maximum WQBEL, except when confirmed by a sufficient

number of analyses of multiple samples and use of appropriate statistical techniques.

- [23] The permittee has a 48-month schedule of compliance as outlined in Part I.S in which to meet the final effluent limitations for free cyanide.

5. The permittee is authorized to discharge from the outfall listed below in accordance with the terms and conditions of this permit. The permittee is authorized to discharge from Outfall 518, located at Latitude 41° 40' 50", Longitude -87° 25' 30". The discharge is limited to blowdown from the No. 7 Blast Furnace gas scrubbing system. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to commingling with other wastestreams. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1][2][3]

Outfall 518

Parameter	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	Report	MGD	----	----	----	Daily	Continuous
TSS	110	293	lbs/day	Report	Report	mg/l	2 X Week	24 Hr. Comp.
O&G	----	73.0	lbs/day	----	Report	mg/l	2 X Week	Grab
Ammonia (as N)	73.0	219	lbs/day	Report	Report	mg/l	2 X Week	24 Hr. Comp.
Total Cyanide[4]	7.30	14.6	lbs/day	Report	Report	mg/l	2 X Week	Grab
Phenols	0.73	1.46	lbs/day	Report	Report	mg/l	2 X Week	Grab
Lead[5]	2.19	6.58	lbs/day	Report	Report	ug/l	2 X Week	24 Hr. Comp.
Zinc[5]	3.28	9.85	lbs/day	Report	Report	ug/l	2 X Week	24 Hr. Comp.
TRC[4]	----	3.65	lbs/day	----	Report	ug/l	2 X Week	Grab
Selenium[4][5]	Report	Report	lbs/day	Report	Report	mg/l	2 X Month	24-Hr. Comp.

- [1] Accept in accordance with Part I.A.2., the discharge of process wastewater from these operations through any other outfall or non-point source is prohibited.
- [2] Internal outfall 518, 618 and Outfall 018 shall be sampled on the same day.
- [3] See Part I.K. for No 7 Blast Furnace requirements.
- [4] The following EPA approved test methods and associated LODs and LOQs are to be used in the analysis of the effluent samples. Alternative methods may be used if first approved by IDEM and EPA, if applicable.

Parameter	Test Method	LOD	LOQ
Selenium	3113 B-2004 or 3114 B-2009	2 µg/l	6.4 µg/l
Selenium	200.8, Rev. 5.4 (1994)	2.1 µg/l	6.7 µg/l
Selenium	200.9, Rev. 2.2 (1994)	0.6 µg/l	1.9 µg/l
Chlorine, Total residual	4500-Cl D-2000, E-2000 or G-2000	0.02 mg/l	0.06 mg/l
Cyanide, Total	335.4, Rev. 1.0 (1993) or 4500-CN E-1999	5 µg/l	16 µg/l
Cyanide, Total	Kelada-01	0.5 µg/l	1.6 µg/l

Case-Specific LOD/LOQ

The permittee may determine and use a case-specific LOD or LOQ using the analytical method specified above, or any other analytical method which is approved by the Commissioner, and EPA if applicable, prior to use. The LOD and LOQ shall be determined as established in 327 IAC 5-2-11.6(h)(2)(B).

- [5] The permittee shall measure and report the identified metal as total recoverable metal.

6. The permittee is authorized to discharge from the outfall listed below in accordance with the terms and conditions of this permit. The permittee is authorized to discharge from Outfall 618, located at Latitude 41° 40' 32", Longitude -87° 25' 52". The discharge is limited to wastewater from the No. 4 Steel Plant (the basic oxygen furnace or BOF), the Vacuum Degasser (RHOB), and the No. 1 Continuous Caster process water systems. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to commingling with other wastestreams. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1][2][5]

Outfall 618

Parameter	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	Report	MGD	----	----	----	2 X Week	24 Hr. Total
TSS	886	2652	lbs/day	Report	Report	mg/l	2 X Week	24 Hr. Comp.
O&G	136	408	lbs/day	Report	Report	mg/l	2 X Week	2 Grab/ 24 Hr.[3]
Lead[4]	3.36	10.06	lbs/day	Report	Report	ug/l	2 X Week	24 Hr. Comp.
Zinc[4]	5.04	15.1	lbs/day	Report	Report	ug/l	2 X Week	24 Hr. Comp.

- [1] Accept in accordance with Part I.A.2., the discharge of process wastewater from these operations through any other outfall or non-point source is prohibited.
- [2] Internal outfall 518, 618 and Outfall 018 shall be sampled on the same day.
- [3] The 24-Hour Oil and Grease values shall be based on an average of not less than two grab samples obtained not less than 6 hours apart. Each sample shall be analyzed individually, and the arithmetic mean of the concentrations shall be reported as the value for the twenty-four (24) hour period. That value shall be used to assess compliance with the daily maximum effluent limitation, and the arithmetic average of all daily values determined each month shall be used to assess compliance with the monthly average effluent limit.
- [4] The permittee shall measure and report the identified metal as total recoverable metal.
- [5] The discharge of process wastewater from No. 4 BOF, the vacuum degasser, and No. 1 continuous caster through any other outfall or non-point source is prohibited.

7. The permittee shall comply with the limitations at Outfall 000 below in accordance with the terms and conditions of this permit. This is an outfall created to report cooling water intake data.

Parameter	Monthly Average	Daily Maximum	Hourly Maximum	Units	Measurement Frequency
No. 2 Pump House Intake					
Intake Flow [2][3]	-----	Report	Report	MGD	Daily
Velocity [4]	-----	-----	0.5	Feet/second	Daily
Water Depth, Screens	-----	Report	-----	Feet	Daily
Open Area, Screens	-----	Report	-----	Square feet	Daily
No. 7 Pump House Intake					
Intake Flow [1]	-----	Report	Report	MGD	Daily

- [1] The permittee must monitor the intake flow at the No. 7 Pump House intake at a minimum frequency of daily. The intake flow may be estimated. The permittee shall submit an annual report containing this daily intake flow data. If the intake flow rate is estimated, the annual report must include the data and calculations used to estimate the intake flow. As part of the annual report, the permittee shall also provide a spreadsheet containing the data and calculations.
- [2] The permittee must install continuous intake flow measurement devices for the No. 2 Pump House intake no later than nine months after the effective date of this permit. The hourly maximum flow rate for each day must be reported on the MMR with the monthly results summarized on the DMRs that are submitted every month. (The hourly maximum flow is the maximum hourly average flow measured over the calendar day of any twenty-four period that reasonably represents the calendar day for the purpose of sampling. There will be 24 hourly average flows determined over the course of the day, the maximum of these 24 values is the hourly maximum flow). Until these flow monitoring devices are installed, the permittee may estimate the hourly maximum and daily maximum intake flow.
- [3] The permittee must submit an annual report of the intake flows and include in the report both the hourly maximum intake flow and the daily maximum intake flow for each day. For all estimated intake flows, the permittee must provide the data and calculations used to estimate each estimated intake flow in this annual report. In addition, if the permittee uses the estimated flow to determine the velocities, the input values and calculations for each day must be included in this annual report. As part of the annual report, the permittee shall also provide a spreadsheet containing the data and calculations.
- [4] The permittee must calculate the velocity at the screens at the No. 2 Pump House. The permittee shall calculate the through-screen velocity using the water flow rate (hourly maximum intake flow rate), water depth (the minimum ambient Lake Michigan level or actual water level at the screens if a method of measuring the

actual water depth is installed), and the screen open area. These daily calculations including the hourly maximum intake flow must be reported on the MMR with the monthly results summarized on the DMRs that are submitted every month and included in the annual report required under Part III.B. and Footnote [3], above.

B. MINIMUM NARRATIVE LIMITATIONS

At all times the discharge from any and all point sources specified within this permit shall not cause receiving waters:

1. including waters within the mixing zone, to contain substances, materials, floating debris, oil, scum attributable to municipal, industrial, agricultural, and other land use practices, or other discharges that do any of the following:
 - a. will settle to form putrescent or otherwise objectionable deposits;
 - b. are in amounts sufficient to be unsightly or deleterious;
 - c. produce color, visible oil sheen, odor, or other conditions in such degree as to create a nuisance;
 - d. are in amounts sufficient to be acutely toxic to , or to otherwise severely injure or kill aquatic life, other animals, plants, or humans;
 - e. are in concentrations or combinations that will cause or contribute to the growth of aquatic plants or algae to such a degree as to create a nuisance, be unsightly, or otherwise impair the designated uses.
2. outside the mixing zone, to contain substances in concentrations that on the basis of available scientific data are believed to be sufficient to injure, be chronically toxic to, or be carcinogenic, mutagenic, or teratogenic to humans, animals, aquatic life, or plants.

C. MONITORING AND REPORTING

1. Representative Sampling

Samples and measurements taken as required herein shall be representative of the volume and nature of the discharge flow and shall be taken at times which reflect the full range and concentration of effluent parameters normally expected to be present. Samples shall not be taken at times to avoid showing elevated levels of any parameter.

2. Monthly Reporting

The permittee shall submit federal and state discharge monitoring reports to the Indiana Department of Environmental Management (IDEM) containing results obtained during the previous month and shall be submitted no later than the 28th day of the month following each completed monitoring period. The first report shall be submitted by the 28th day of the month following the month in which the permit becomes effective. These reports shall include, but not necessarily be limited to, the Discharge Monitoring Report (DMR) and the Monthly Monitoring Report (MMR).

All reports shall be submitted electronically by using the NetDMR application, upon registration, receipt of the NetDMR Subscriber Agreement, and IDEM approval of the proposed NetDMR Signatory. Access the NetDMR website (for initial registration and DMR/MMR submittal) via CDX at: <https://cdx.epa.gov/>. The Regional Administrator may request the permittee to submit monitoring reports to the Environmental Protection Agency if it is deemed necessary to assure compliance with the permit. See Part II.C.10 of this permit for Future Electronic Reporting Requirements.

- a. For parameters with monthly average water quality based effluent limitations (WQBELs) below the LOQ, daily effluent values that are less than the limit of quantitation (LOQ) may be assigned a value of zero (0), unless, after considering the number of monitoring results that are greater than the limit of detection (LOD), and applying appropriate statistical techniques, a value other than zero (0) is warranted.
- b. For all other parameters for which the monthly average WQBEL is equal to or greater than the LOQ, calculations that require averaging of measurements of daily values (both concentration and mass) shall use an arithmetic mean, except the monthly average for *E. coli* shall be calculated as a geometric mean. Daily effluent values that are less than the LOQ, that are used to determine the monthly average effluent level shall be accommodated in calculation of the average using statistical methods that have been approved by the Commissioner.
- c. Effluent concentrations less than the LOD shall be reported on the Discharge Monitoring Report (DMR) forms as < (less than) the value of the LOD. For example, if a substance is not detected at a concentration of 0.1 µg/l, report the value as <0.1 µg/l.
- d. Effluent concentrations greater than or equal to the LOD and less than the LOQ that are reported on a DMR shall be reported as the actual value and annotated on the DMR to indicate that the value is not quantifiable.
- e. Mass discharge values which are calculated from concentrations reported as less than the value of the limit of detection shall be reported as less than the corresponding mass discharge value.
- f. Mass discharge values that are calculated from effluent concentrations greater than the limit of detection shall be reported as the calculated value.

3. Definitions

- a. "Monthly Average" means the total mass or flow-weighted concentration of all daily discharges during a calendar month on which daily discharges are sampled or measured, divided by the number of daily discharges sampled and/or measured during such calendar month.

The monthly average discharge limitation is the highest allowable average monthly discharge for any calendar month.

- b. "Daily Discharge" means the total mass of a pollutant discharged during the calendar day or, in the case of a pollutant limited in terms other than mass pursuant to 327 IAC 5-2-11(e), the average concentration or other measurement of the pollutant specified over the calendar day or any twenty-four hour period that reasonably represents the calendar day for the purposes of sampling.
- c. "Daily Maximum" means the maximum allowable daily discharge for any calendar day.
- d. A "24-hour composite sample" means a sample consisting of at least 3 individual flow-proportioned samples of wastewater, taken by the grab sample method or by an automatic sampler, which are taken at approximately equally spaced time intervals for the duration of the discharge within a 24-hour period and which are combined prior to analysis. A flow-proportioned composite sample may be obtained by:
- (1) recording the discharge flow rate at the time each individual sample is taken,
 - (2) adding together the discharge flow rates recorded from each individuals sampling time to formulate the "total flow" value,
 - (3) the discharge flow rate of each individual sampling time is divided by the total flow value to determine its percentage of the total flow value,
 - (4) then multiply the volume of the total composite sample by each individual sample's percentage to determine the volume of that individual sample which will be included in the total composite sample.
- e. "Concentration" means the weight of any given material present in a unit volume of liquid. Unless otherwise indicated in this permit, concentration values shall be expressed in milligrams per liter (mg/l).

- f. The “Regional Administrator” is defined as the Region 5 Administrator, U.S. EPA, located at 77 West Jackson Boulevard, Chicago, Illinois 60604.
- g. The “Commissioner” is defined as the Commissioner of the Indiana Department of Environmental Management, which is located at the following address: 100 North Senate Avenue, Indianapolis, Indiana 46204.
- h. “Limit of Detection” or “LOD” means the minimum concentration of a substance that can be measured and reported with ninety-nine percent (99%) confidence that the analyte concentration is greater than zero (0) for a particular analytical method and sample matrix.
- i. “Limit of Quantitation” or “LOQ” means a measurement of the concentration of a contaminant obtained by using a specified laboratory procedure calibrated at a specified concentration above the method detection level. It is considered the lowest concentration at which a particular contaminant can be quantitatively measured using a specified laboratory procedure for monitoring of the contaminant. This term is also sometimes called limit quantification or quantification level.
- j. “Method Detection Level” or “MDL” means the minimum concentration of an analyte (substance) that can be measured and reported with a ninety-nine percent (99%) confidence that the analyte concentration is greater than zero (0) as determined by procedure set forth in 40 CFR 136, Appendix B. The method detection level or MDL is equivalent to the LOD.
- k. “Grab Sample” means a sample which is taken from a wastestream on a one-time basis without consideration of the flow rate of the wastestream and without considerations of time.

4. Test Procedures

The analytical and sampling methods used shall conform to the version of 40 CFR 136 incorporated by reference in 327 IAC 5. Different but equivalent methods are allowable if they receive the prior written approval of the Commissioner and the U.S. Environmental Protection Agency. When more than one test procedure is approved for the purposes of the NPDES program under 40 CFR 136 for the analysis of a pollutant or pollutant parameter, the test procedure must be sufficiently sensitive as defined at 40 CFR 122.21(e)(3) and 122.44(i)(1)(iv).

5. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall maintain records of all monitoring information and monitoring activities, including:

- a. The date, exact place and time of sampling or measurement;
- b. The person(s) who performed the sampling or measurements;
- c. The date(s) analyses were performed;
- d. The person(s) who performed the analyses;
- e. The analytical techniques or methods used; and
- f. The results of such measurements and analyses.

6. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of this monitoring shall be included in the calculation and reporting of the values required in the monthly Discharge Monitoring Report (DMR) and Monthly Monitoring Report (MMR). Such increased frequency shall also be indicated. Other monitoring data not specifically required in this permit (such as internal process or internal waste stream data) which is collected by or for the permittee need not be submitted unless requested by the Commissioner.

7. Records Retention

All records and information resulting from the monitoring activities required by this permit, including all records of analyses performed and calibration and maintenance of instrumentation and recording from continuous monitoring instrumentation, shall be retained for a minimum of three (3) years. In cases where the original records are kept at another location, a copy of all such records shall be kept at the permitted facility. The three years shall be extended:

- a. automatically during the course of any unresolved litigation regarding the discharge of pollutants by the permittee or regarding promulgated effluent guidelines applicable to the permittee; or
- b. as requested by the Regional Administrator or the Indiana Department of Environmental Management.

D. STORMWATER MONITORING AND NON-NUMERIC EFFLUENT LIMITS

The permittee shall implement the non-numeric permit conditions in this Section of the permit for the entire site as it relates to stormwater associated with industrial activity regardless which outfall the stormwater is discharged from.

1. Control Measures and Effluent Limits

In the technology-based limits included in Part D.2-4., the term “minimize” means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practice.

2. Control Measures

Select, design, install, and implement control measures (including best management practices) to address the selection and design considerations in Part D.3 to meet the non-numeric effluent limits in Part D.4. The selection, design, installation, and implementation of these control measures must be in accordance with good engineering practices and manufacturer’s specifications. Any deviation from the manufacturer’s specifications shall be documented. If the control measures are not achieving their intended effect in minimizing pollutant discharges, the control measures must be modified as expeditiously as practicable. Regulated stormwater discharges from the facility include stormwater run-on that commingles with stormwater discharges associated with industrial activity at the facility.

3. Control Measure Selection and Design Considerations

When selecting and designing control measures consider the following:

- a. preventing stormwater from coming into contact with polluting materials is generally more effective, and cost-effective, than trying to remove pollutants from stormwater;
- b. use of control measures in combination is more effective than use of control measures in isolation for minimizing pollutants in stormwater discharge;
- c. assessing the type and quantity of pollutants, including their potential to impact receiving water quality, is critical to designing effective control measures that will achieve the limits in this permit;
- d. minimizing impervious areas at your facility and infiltrating runoff onsite (including bioretention cells, green roofs, and pervious pavement, among other approaches), can reduce runoff and improve

groundwater recharge and stream base flows in local streams, although care must be taken to avoid groundwater contamination;

- e. flow can be attenuated by use of open vegetated swales and natural depressions;
- f. conservation and/or restoration of riparian buffers will help protect streams from stormwater runoff and improve water quality; and
- g. use of treatment interceptors (e.g. swirl separators and sand filters) may be appropriate in some instances to minimize the discharge of pollutants.

4. Technology-Based Effluent Limits (BPT/BAT/BCT)

Non-Numeric Effluent Limits:

a. Minimize Exposure

Minimize the exposure of raw, final, or waste materials to rain, snow, snowmelt, and runoff. To the extent technologically available and economically practicable and achievable, either locate industrial materials and activities inside or protect them with storm resistant coverings in order to minimize exposure to rain, snow, snowmelt, and runoff (although significant enlargement of impervious surface area is not recommended). In minimizing exposure, pay particular attention to the following areas:

Loading and unloading areas: locate in roofed or covered areas where feasible; use grading, berming, or curbing around the loading area to divert run-on; locate the loading and unloading equipment and vehicles so that leaks are contained in existing containment and flow diversion systems.

Material storage areas: locate indoors, or in roofed or covered areas where feasible; install berms/dikes around these areas; use dry cleanup methods.

Note: Industrial materials do not need to be enclosed or covered if stormwater runoff from affected areas will not be discharged to receiving waters.

b. Good Housekeeping

Keep clean all exposed areas that are potential sources of pollutants, using such measures as sweeping at regular intervals, keeping materials orderly and labeled, and stowing materials in appropriate containers.

As part of the developed good housekeeping program, include a cleaning and maintenance program for all impervious areas of the facility where particulate matter, dust, or debris may accumulate, especially areas where material loading and unloading, storage, handling, and processing occur; and where practicable, the paving of areas where vehicle traffic or material storage occur but where vegetative or other stabilization methods are not practicable (institute a sweeping program in these areas too). For unstabilized areas where sweeping is not practicable, consider using stormwater management devices such as sediment traps, vegetative buffer strips, filter fabric fence, sediment filtering boom, gravel outlet protection, or other equivalent measures that effectively trap or remove sediment.

c. Maintenance

Maintain all control measures which are used to achieve the effluent limits required by this permit in effective operating condition. Nonstructural control measures must also be diligently maintained (e.g., spill response supplies available, personnel appropriately trained). If control measures need to be replaced or repaired, make the necessary repairs or modifications as expeditiously as practicable.

d. Spill Prevention and Response Procedures

You must minimize the potential for leaks, spills and other releases that may be exposed to stormwater and develop plans for effective response to such spills if or when they occur. At a minimum, you must implement:

- (1) Procedures for plainly labeling containers (e.g., "Used Oil", "Spent Solvents", "Fertilizers and Pesticides", etc.) that could be susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if spills or leaks occur;
- (2) Preventive measures such as barriers between material storage and traffic areas, secondary containment provisions, and procedures for material storage and handling;
- (3) Procedures for expeditiously stopping, containing, and cleaning up leaks, spills, and other releases. Employees who may cause, detect or respond to a spill or leak must be trained in these procedures and have necessary spill response equipment available. If possible, one of these individuals should be a member of your stormwater pollution prevention team;
- (4) Procedures for notification of appropriate facility personnel, emergency response agencies, and regulatory agencies. State

or local requirements may necessitate reporting spills or discharges to local emergency response, public health, or drinking water supply agencies. Contact information must be in locations that are readily accessible and available;

(5) Procedures for documenting where potential spills and leaks could occur that could contribute pollutants to stormwater discharges, and the corresponding outfalls that would be affected by such spills and leaks; and

(6) A procedure for documenting all significant spills and leaks of oil or toxic or hazardous pollutants that actually occurred at exposed areas, or that drained to a stormwater conveyance.

e. Erosion and Sediment Controls

Through the use of structural and/or non-structural control measures stabilize, and contain runoff from, exposed areas to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants. Among other actions to meet this limit, place flow velocity dissipation devices at discharge locations and within outfall channels where necessary to reduce erosion and/or settle out pollutants. In selecting, designing, installing, and implementing appropriate control measures, you are encouraged to check out information from both the State and EPA websites. The following two websites are given as information sources:

<https://www.in.gov/idem/stormwater/resources/indiana-storm-water-quality-manual/>

and

<https://www.epa.gov/npdes/stormwater-discharges-industrial-activities>

f. Management of Runoff

Divert, infiltrate, reuse, contain or otherwise reduce stormwater runoff, to minimize pollutants in the discharge.

g. Salt Storage Piles or Piles Containing Salt

Enclose or cover storage piles of salt, or piles containing salt, used for deicing or other commercial or industrial purposes, including maintenance of paved surfaces. You must implement appropriate measures (e.g., good housekeeping, diversions, containment) to minimize exposure resulting from adding to or removing materials from the pile. Piles do not need to be enclosed or covered if stormwater runoff from the piles is not discharged.

h. Waste, Garbage, and Floatable Debris

Ensure that waste, garbage, and floatable debris are not discharged to receiving waters by keeping exposed areas free of such materials or by intercepting them before they are discharged.

i. Employee Training

Train all employees who work in areas where industrial material or activities are exposed to stormwater, or who are responsible for implementing activities necessary to meet the conditions of this permit (e.g., inspectors, maintenance personnel), including all members of your Pollution Prevention Team. Training must cover the specific control measures used to achieve the effluent limits in this part, and monitoring, inspection, planning, reporting, and documentation requirements in other parts of this permit.

j. Non-Stormwater Discharges

You must determine if any non-stormwater discharges not authorized by an NPDES permit exist. Any non-stormwater discharges discovered must either be eliminated or modified into this permit. The following non-stormwater discharges are authorized and must be documented in the Stormwater Pollution Prevention Plan:

- Discharges from fire-fighting activities;
- Fire Hydrant flushings;
- Potable water, including water line flushings;
- Uncontaminated condensate from air conditioners, coolers, and other compressors and from the outside storage of refrigerated gases or liquids;
- Irrigation drainage;
- Landscape watering provided all pesticides, herbicides, and fertilizer have been applied in accordance with the approved labeling;
- Pavement wash water where no detergents are used and no spills or leaks of toxic or hazardous material have occurred (unless all spilled material has been removed);
- Routine external building washdown that does not use detergents;
- Uncontaminated groundwater or spring water;
- Foundation or footing drains where flows are not contaminated with process materials;
- Incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of the facility, but not intentional discharges from cooling towers (e.g., "piped cooling tower blowdown or drains);

- Vehicle wash- waters where uncontaminated water without detergents or solvents is utilized; and
- Runoff from the use of dust suppressants approved for use by IDEM.

k. Dust Generation and Vehicle Tracking of Industrial Materials

You must minimize generation of dust and off-site tracking of raw, final, or waste materials.

5. Annual Review

At least once every twelve (12) months, you must review the selection, design, installation, and implementation of your control measures to determine if modifications are necessary to meet the effluent limitations in this permit. You must document the results of your review in a report that shall be retained within the SWPPP. You must also submit the report to the Industrial NPDES Permit Section, as well as the Compliance Branch, on an annual basis. The report may be submitted by email to the Industrial NPDES Permit Section at OWQWWPER@idem.in.gov and to the Compliance Branch at wwReports@idem.in.gov. The email subject line should include the NPDES Permit # and the type of report being submitted (Annual Stormwater Report). The permittee's first annual review report will be due twelve (12) months from the effective date of the permit. All subsequent annual review reports will be due no later than the anniversary of the effective date of the permit.

6. Corrective Actions – Conditions Requiring Review

- a. If any of the following conditions occur, you must review and revise the selection, design, installation, and implementation of your control measures to ensure that the condition is eliminated and will not be repeated:
- (1) an unauthorized release or discharge (e.g., spill, leak, or discharge of non-stormwater not authorized by this NPDES permit) occurs at this facility;
 - (2) it is determined that your control measures are not stringent enough for the discharge to meet applicable water quality standards;
 - (3) it is determined in your routine facility inspection, an inspection by EPA or IDEM, comprehensive site evaluation, or the Annual Review required in Part D.5 that modifications to the control measures are necessary to meet the effluent limits in this

permit or that your control measures are not being properly operated and maintained; or

- (4) Upon written notice by the Commissioner that the control measures prove to be ineffective in controlling pollutants in stormwater discharges exposed to industrial activity.

- b. If construction or a change in design, operation, or maintenance at your facility significantly changes the nature of pollutants discharged in stormwater from your facility, or significantly increases the quantity of pollutants discharged, you must review and revise the selection, design, installation, and implementation of your control measures to determine if modifications are necessary to meet the effluent limits in this permit:

7. Corrective Action Deadlines

You must document your discovery of any of the conditions listed in Part I.D.6 within thirty (30) days of making such discovery. Subsequently, within one-hundred and twenty (120) days of such discovery, you must document any corrective action(s) to be taken to eliminate or further investigate the deficiency or if no corrective action is needed, the basis for that determination. Specific documentation required within 30 and 120 days is detailed below. If you determine that changes to your control measures are necessary following your review, any modifications to your control measures must be made before the next storm event if possible, or as soon as practicable following that storm event. These time intervals are not grace periods, but schedules considered reasonable for the documenting of your findings and for making repairs and improvements. They are included in this permit to ensure that the conditions prompting the need for these repairs and improvements are not allowed to persist indefinitely.

8. Corrective Action Report

- a. Within 30 days of a discovery of any condition listed in Part I.D.6, you must document the following information:
 - (1) Brief description of the condition triggering corrective action;
 - (2) Date condition identified; and
 - (3) How deficiency identified.
- b. Within 120 days of discovery of any condition listed in Part I.D.6, you must document the following information:
 - (1) Summary of corrective action taken or to be taken (or, for triggering events identified in Part I.D.6.b.(1), where you

determine that corrective action is not necessary, the basis for this determination)

- (2) Notice of whether SWPPP modifications are required as a result of this discovery or corrective action;
- (3) Date corrective action initiated; and
- (4) Date corrective action completed or expected to be completed.

9. Inspections

The inspections in this part must be conducted at this facility when the facility is operating. Any corrective action required as a result of an inspection or evaluation conducted under Part I.D.9. must be performed consistent with Part I.D.6 of this permit.

a. Quarterly Inspections

At a minimum, quarterly inspections of the stormwater management measures and stormwater run-off conveyances. The quarterly inspections must be performed by qualified personnel with at least one member of your stormwater pollution prevention team. Inspections must be documented and either contained in, or have the on-site record keeping location referenced in, the SWPPP.

As part of the quarterly inspections, address all potential sources of pollutants, including (if applicable) air pollution control equipment (e.g., baghouses, electrostatic precipitator, scrubbers, and cyclones), for any signs of degradation (e.g., leaks, corrosion, or improper operation) that could limit their efficiency and lead to excessive emissions. Consider monitoring air flow at inlets and outlets (or use equivalent measures) to check for leaks (e.g., particulate deposition) or blockage in ducts. Also inspect all process and material handling equipment (e.g., conveyors, cranes, and vehicles) for leaks, drips, or the potential loss of material; and material storage areas (e.g., piles, bins, or hoppers for storing coke, coal, scrap, or slag, as well as chemicals stored in tanks and drums) for signs of material loss due to wind or stormwater runoff.

Based on the results of the evaluation, the description of potential pollutant sources identified in the plan in accordance with Part I.E.2.b of this permit and pollution prevention measures and controls identified in the plan in accordance with Part I.D.4. of this permit shall be revised as appropriate within the timeframes contained in Part I.D.7 of this permit.

b. Annual Routine Facility Inspection

At least once during the calendar year, a routine facility inspection must be conducted while a discharge is occurring. You must document the findings of each routine facility inspection performed and maintain this documentation with your SWPPP or have the on-site record keeping location referenced in the SWPPP. At a minimum, your documentation must include:

- (1) The inspection date and time;
- (2) The name(s) and signature(s) of the inspectors;
- (3) Weather information and a description of any discharges occurring at the time of the inspection;
- (4) Any previously unidentified discharges of pollutants from the site;
- (5) Any control measures needing maintenance or repairs;
- (6) Any failed control measures that need replacement;
- (7) Any incidents of noncompliance observed; and
- (8) Any additional control measures needed to comply with the permit requirements.

c. Annual Comprehensive Site Compliance Evaluation

Qualified personnel and at least one member of your Pollution Prevention Team shall conduct a comprehensive site compliance evaluation, at least once per year, to confirm the accuracy of the description of potential pollution sources contained in the plan, determine the effectiveness of the plan, and assess compliance with the permit. Such evaluations shall provide:

- (1) Areas contributing to a stormwater discharge associated with industrial activity shall be visually inspected for evidence of, or the potential for, pollutants entering the drainage system. Measures to reduce pollutant loadings shall be evaluated to determine whether they are adequate and properly implemented in accordance with the terms of the permit or whether additional control measures are needed. Structural stormwater management measures, sediment and erosion control measures, and other structural pollution prevention measures identified in the plan shall be observed to ensure that they are operating correctly. A visual inspection of equipment

needed to implement the plan, such as spill response equipment, shall be made.

- (2) A report summarizing the scope of the evaluation, personnel making the evaluation, the date(s) of the evaluation, major observations relating to the implementation of the stormwater pollution prevention plan, and actions taken in accordance with the above paragraph must be documented and either contained in, or have on-site record keeping location referenced in, the SWPPP at least 3 years after the date of the evaluation. The report shall identify any incidents of noncompliance. Where a report does not identify any incidents of noncompliance, the report shall contain a certification that the facility is in compliance with the stormwater pollution prevention plan and this permit. The report shall be signed in accordance with the signatory requirements of Part II.C.6 of this permit.
- (3) Where compliance evaluation schedules overlap the inspections required under this part, the compliance evaluation may be conducted in place of one such inspection.

E. STORMWATER POLLUTION PREVENTION PLAN

1. Development of Plan

Within 12 months from the effective date of this permit, the permittee is required to revise and update the current Stormwater Pollution Prevention Plan (SWPPP) for the permitted facility. The plan shall at a minimum include the following:

- a. Identify potential sources of pollution, which may reasonably be expected to affect the quality of stormwater discharges associated with industrial activity from the facility. Stormwater associated with industrial activity (defined in 40 CFR 122.26(b)(14)) includes, but is not limited to, the discharge from any conveyance which is used for collecting and conveying stormwater and which is directly related to manufacturing, processing or materials storage areas at an industrial plant;
- b. Describe practices and measure to be used in reducing the potential for pollutants to be exposed to stormwater; and
- c. Assure compliance with the terms and conditions of this permit.

2. Contents

The plan shall include, at a minimum, the following items:

- a. Pollution Prevention Team -The plan shall list, by position title, the member or members of the facility organization as members of a Stormwater Pollution Prevention Team who are responsible for developing the stormwater pollution prevention plan (SWPPP) and assisting the facility or plant manager in its implementation, maintenance, and revision. The plan shall clearly identify the responsibilities of each stormwater pollution prevention team member. Each member of the stormwater pollution prevention team must have ready access to either an electronic or paper copy of applicable portions of this permit and your SWPPP.
- b. Description of Potential Pollutant Sources – The plan shall provide a description of areas at the site exposed to industrial activity and have a reasonable potential for stormwater to be exposed to pollutants. The plan shall identify all activities and significant materials (defined in 40 CFR 122.26(b)), which may potentially be significant pollutant sources. As a minimum, the plan shall contain the following:
 - (1) A soils map indicating the types of soils found on the facility property and showing the boundaries of the facility property.
 - (2) A graphical representation, such as an aerial photograph or site layout maps, drawn to an appropriate scale, which contains a legend and compass coordinates, indicating, at a minimum, the following:
 - (A) All on-site stormwater drainage and discharge conveyances, which may include pipes, ditches, swales, and erosion channels, related to a stormwater discharge.
 - (B) Known adjacent property drainage and discharge conveyances, if directly associated with run-off from the facility.
 - (C) All on-site and known adjacent property water bodies, including wetlands and springs.
 - (D) An outline of the drainage area for each outfall.
 - (E) An outline of the facility property, indicating directional flows, via arrows, of surface drainage patterns.
 - (F) An outline of impervious surfaces, which includes pavement and buildings, and an estimate of the impervious and pervious surface square footage for each drainage area placed in a map legend.
 - (G) On-site injection wells, as applicable.

- (H) On-site wells used as potable water sources, as applicable.
- (I) All existing major structural control measures to reduce pollutants in stormwater run-off.
- (J) All existing and historical underground or aboveground storage tank locations, as applicable.
- (K) All permanently designated plowed or dumped snow storage locations.
- (L) All loading and unloading areas for solid and liquid bulk materials.
- (M) All existing and historical outdoor storage areas for raw materials, intermediary products, final products, and waste materials. Include materials handled at the site that potentially may be exposed to precipitation or runoff, areas where deposition of particulate matter from process air emissions or losses during material-handling activities.
- (N) All existing or historical outdoor storage areas for fuels, processing equipment, and other containerized materials, for example, in drums and totes.
- (O) Outdoor processing areas.
- (P) Dust or particulate generating process areas.
- (Q) Outdoor assigned waste storage or disposal areas.
- (R) Pesticide or herbicide application areas.
- (S) Vehicular access roads.
- (T) Identify any storage or disposal of wastes such as spent solvents and baths, sand, slag and dross; liquid storage tanks and drums; processing areas including pollution control equipment (e.g., baghouses); and storage areas of raw material such as coal, coke, scrap, sand, fluxes, refractories, or metal in any form. In addition, indicate where an accumulation of significant amounts of particulate matter could occur from such sources as furnace or oven emissions, losses from coal and coke handling operation, etc., and could result in a discharge of pollutants.

- (U) The mapping of historical locations is only required if the historical locations have a reasonable potential for stormwater exposure to historical pollutants.

(3) An area site map that indicates:

- (A) The topographic relief or similar elevations to determine surface drainage patterns;
- (B) The facility boundaries;
- (C) All receiving waters;
- (D) All known drinking water wells; and

Includes at a minimum, the features in clauses (A), (C), and (D) within a one-fourth (1/4) mile radius beyond the property boundaries of the facility. This map must be to scale and include a legend and compass coordinates.

(4) A narrative description of areas that generate stormwater discharges exposed to industrial activity including descriptions for any existing or historical areas listed in subdivision 2.b.(2)(J) through (T) of this Part, and any other areas thought to generate stormwater discharges exposed to industrial activity. The narrative descriptions for each identified area must include the following:

- (A) Type and typical quantity of materials present in the area.
- (B) Methods of storage, including presence of any secondary containment measures.
- (C) Any remedial actions undertaken in the area to eliminate pollutant sources or exposure of stormwater to those sources. If a corrective action plan was developed, the type of remedial action and plan date shall be referenced.
- (D) Any significant release or spill history dating back a period of three (3) years from the effective date of this permit, in the identified area, for materials spilled outside of secondary containment structures and impervious surfaces in excess of their reportable quantity, including the following:

- i. The date and type of material released or spilled.
- ii. The estimated volume released or spilled.
- iii. A description of the remedial actions undertaken, including disposal or treatment.

Depending on the adequacy or completeness of the remedial actions, the spill history shall be used to determine additional pollutant sources that may be exposed to stormwater. In subsequent permit terms, the history shall date back for a period of five (5) years from the date of the permit renewal application.

- (E) Where the chemicals or materials have the potential to be exposed to stormwater discharges, the descriptions for each identified area must include a risk identification analysis of chemicals or materials stored or used within the area. The analysis must include the following:

- i. Toxicity data of chemicals or materials used within the area, referencing appropriate material safety data sheet information locations.
- ii. The frequency and typical quantity of listed chemicals or materials to be stored within the area.
- iii. Potential ways in which stormwater discharges may be exposed to listed chemicals and materials.
- iv. The likelihood of the listed chemicals and materials to come into contact with water.

- (5) A narrative description of existing and planned management practices and measures to improve the quality of stormwater run-off entering a water of the state. Descriptions must be created for existing or historical areas listed in subdivision 2.b.(2)(J) through (T) and any other areas thought to generate stormwater discharges exposed to industrial activity. The description must include the following:

- (A) Any existing or planned structural and nonstructural control practices and measures.
- (B) Any treatment the stormwater receives prior to leaving the facility property or entering a water of the state.

- (C) The ultimate disposal of any solid or fluid wastes collected in structural control measures other than by discharge.
 - (D) Describe areas that due to topography, activities, or other factors have a high potential for significant soil erosion.
 - (E) Document the location of any storage piles containing salt used for deicing.
 - (F) Information or other documentation required under Part I.E.2(d) of this permit.
- (6) The results of stormwater monitoring. The monitoring data must include completed field data sheets, chain-of-custody forms, and laboratory results. If the monitoring data are not placed into the facility's SWPPP, the on-site location for storage of the information must be reference in the SWPPP.
- c. Non-Stormwater Discharges – You must document that you have evaluated for the presence of non-stormwater discharges not authorized by an NPDES permit. Any non-stormwater discharges have either been eliminated or incorporated into this permit. Documentation of non-stormwater discharges shall include:
- (1) A written non-stormwater assessment, including the following:
 - (A) A certification letter stating that stormwater discharges entering a water of the state have been evaluated for the presence of illicit discharges and non-stormwater contributions.
 - (B) Detergent or solvent-based washing of equipment or vehicles that would allow washwater additives to enter any stormwater only drainage system shall not be allowed at this facility unless appropriately permitted under this NPDES permit.
 - (C) All interior maintenance area floor drains with the potential for maintenance fluids or other materials to enter stormwater only storm sewers must be either sealed, connected to a sanitary sewer with prior authorization, or appropriately permitted under this NPDES permit. The sealing, sanitary sewer connecting, or permitting of drains under this item must be documented in the written non-stormwater assessment program.

- (D) The certification shall include a description of the method used, the date of any testing, and the on-site drainage points that were directly observed during the test.

d. General Requirements – The SWPPP must meet the following general requirements:

- (1) The plan shall be certified by a qualified professional. The term qualified professional means an individual who is trained and experienced in water treatment techniques and related fields as may be demonstrated by state registration, professional certification, or completion of course work that enable the individual to make sound, professional judgments regarding stormwater control/treatment and monitoring, pollutant fate and transport, and drainage planning.
- (2) The plan shall be retained at the facility and be available for review by a representative of the Commissioner upon request. IDEM may provide access to portions of your SWPPP to the public.
- (3) The plan must be revised and updated as required. Revised and updated versions of the plan must be implemented on or before three hundred sixty-five (365) days from the effective date of this permit. The Commissioner may grant an extension of this time frame based on a request by the person showing reasonable cause.
- (4) If the permittee has other written plans, required under applicable federal or state law, such as operation and maintenance, spill prevention control and countermeasures (SPCC), or risk contingency plans, which fulfill certain requirements of an SWPPP, these plans may be referenced, at the permittee's discretion, in the appropriate sections of the SWPPP to meet those section requirements.
- (5) The permittee may combine the requirements of the SWPPP with another written plan if:
 - (A) The plan is retained at the facility and available for review;
 - (B) All the requirements of the SWPPP are contained within the plan; and
 - (C) A separate, labeled section is utilized in the plan for the SWPPP requirements.

F. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

To adequately assess the effects of the effluent on aquatic life, the permittee is required by this section of the permit to conduct chronic whole effluent toxicity (WET) testing. Part I.F.1. of this permit describes the testing procedures and Part I.F.2. describes the toxicity reduction evaluation (TRE) which is only required if the effluent demonstrates toxicity in two (2) consecutive toxicity tests as described in Part I.F.1.f.

1. Whole Effluent Toxicity (WET) Tests

The permittee must conduct the series of aquatic toxicity tests specified in Part I.F.1.d. to monitor the acute and chronic toxicity of the effluent discharged from Outfalls 014 and 018.

If toxicity is demonstrated in two (2) consecutive toxicity tests, as described in Part I.F.1.f., with any test species during the term of the permit, the permittee is required to conduct a TRE under Part I.F.2.

a. Toxicity Test Procedures and Data Analysis

- (1) All test organisms, test procedures and quality assurance criteria used must be in accordance with the Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, Fourth Edition, Section 11, Fathead Minnow (*Pimephales promelas*) Larval Survival and Growth Test Method 1000.0, and Section 13, Daphnid (*Ceriodaphnia dubia*) Survival and Reproduction Test Method 1002.0, EPA 821-R-02-013, October 2002 (hereinafter "Chronic Toxicity Test Method"), or most recent update that conforms to the version of 40 CFR 136 incorporated by reference in 327 IAC 5. [References to specific portions of the Chronic Toxicity Test Method contained in this Part I.F. are provided for informational purposes. If the Chronic Toxicity Test Method is updated, the corresponding provisions of that updated method would be applicable.]
- (2) Any circumstances not covered by the above methods, or that require deviation from the specified methods must first be approved by the IDEM Permits Branch.
- (3) The determination of acute and chronic endpoints of toxicity (LC₅₀, NOEC and IC₂₅ values) must be made in accordance with the procedures in Section 9, "Chronic Toxicity Test Endpoints and Data Analysis" and the Data Analysis procedures as outlined in Section 11 for fathead minnow (Test Method 1000.0; see flowcharts in Figures 5, 6 and 9) and Section 13 for *Ceriodaphnia dubia* (Test Method 1002.0; see

flowcharts in Figures 4 and 6) of the Chronic Toxicity Test Method. The IC₂₅ value together with 95% confidence intervals calculated by the Linear Interpolation and Bootstrap Methods in Appendix M of the Chronic Toxicity Test Method must be determined in addition to the NOEC value.

b. Types of Whole Effluent Toxicity Tests

- (1) Tests may include a 3-brood (7-day) definitive static-renewal daphnid (*Ceriodaphnia dubia*) survival and reproduction toxicity test and a 7-day definitive static-renewal fathead minnow (*Pimephales promelas*) larval survival and growth toxicity test.
- (2) All tests must be conducted using 24-hour composite samples of final effluent. Three effluent samples are to be collected on alternate days (e.g., collected on days one, three and five). The first effluent sample will be used for test initiation and for test solution renewal on day 2. The second effluent sample will be used for test solution renewal on days 3 and 4. The third effluent sample will be used for test solution renewal on days 5, 6 and 7. If shipping problems are encountered with renewal samples after a test has been initiated, the most recently used sample may continue to be used for test renewal, if first approved by the IDEM Permits Branch, but for no longer than 72 hours after first use.
- (3) The whole effluent dilution series for the definitive test must include a control and at least five effluent concentrations with a minimum dilution factor of 0.5. The effluent concentrations selected must include and, if practicable, bracket the effluent concentrations associated with the determinations of acute and chronic toxicity provided in Part I.F.1.f. Guidance on selecting effluent test concentrations is included in Section 8.10 of the Chronic Toxicity Test Method. The use of an alternate procedure for selecting test concentrations must first be approved by the IDEM Permits Branch.
- (4) If, in any control, more than 10% of the test organisms die in the first 48 hours with a daphnid species or the first 96 hours with fathead minnow, or more than 20% of the test organisms die in 7 days, that test is considered invalid and the toxicity test must be repeated. In addition, if in the *Ceriodaphnia dubia* survival and reproduction test, the average number of young produced per surviving female in the control group is less than 15, or if 60% of surviving control females have less than three broods; and in the fathead minnow (*Pimephales promelas*) survival and growth test, if the mean dry weight of surviving fish in the control group is less than 0.25 mg, that test is considered

invalid and must also be repeated. All other test conditions and test acceptability criteria for the fathead minnow (*Pimephales promelas*) and *Ceriodaphnia dubia* chronic toxicity tests must be in accordance with the test requirements in Section 11 (Test Method 1000.0), Table 1 and Section 13 (Test Method 1002.0), Table 3, respectively, of the Chronic Toxicity Test Method.

c. Effluent Sample Collection and Chemical Analysis

- (1) Whole effluent samples taken for the purposes of toxicity testing must be 24-hour composite samples collected at a point that is representative of the final effluent, but prior to discharge. Effluent sampling for the toxicity testing may be coordinated with other permit sampling requirements as appropriate to avoid duplication. First use of the whole effluent toxicity testing samples must not exceed 36 hours after termination of the 24-hour composite sample collection and must not be used for longer than 72 hours after first use. For discharges of less than 24 hours in duration, composite samples must be collected for the duration of the discharge within a 24-hour period (see "24-hour composite sample" definition in Part I.C.3. of this permit).
- (2) Chemical analysis must accompany each effluent sample taken for toxicity testing, including each sample taken for the repeat testing as outlined in Part I.F.1.f.(3). The chemical analysis detailed in Part I.A.2. and Part I.A.4. must be conducted for the effluent sample in accordance with Part I.C.4. of this permit.

d. Toxicity Testing Species, Frequency and Duration

Chronic toxicity testing for *Ceriodaphnia dubia* must be conducted once every six (6) months, as calculated from the effective date of the permit, for the duration of the permit. Under the previous permit, this facility conducted whole effluent toxicity testing using the most sensitive species. Based on the permittee's record of compliance with whole effluent toxicity testing, the number of species tested may continue to include only the one most sensitive to the toxicity in the effluent.

If a TRE is initiated during the term of the permit, after receiving notification under Part I.F.1.e, the Compliance Data Section will suspend the toxicity testing requirements above for the term of the TRE compliance schedule described in Part I.F.2. After successful completion of the TRE, the toxicity tests established under Part I.F.2.c.(4) must be conducted once every six (6) months, as calculated from the first day of the first month following successful completion of the post-TRE toxicity tests (see Part I.F.2.c.(4)), for the remainder of the permit term.

e. Reporting

- (1) Notifications of the failure of two (2) consecutive toxicity tests and the intent to begin the implementation of a toxicity reduction evaluation (TRE) under Part I.F.1.f.(4) must be submitted in writing to the Compliance Data Section of IDEM's Office of Water Quality.
- (2) Results of all toxicity tests, including invalid tests, must be reported to IDEM according to the general format and content recommended in the Chronic Toxicity Test Method, Section 10, "Report Preparation and Test Review". However, only the results of valid toxicity tests are to be reported on the discharge monitoring report (DMR). The results of the toxicity tests and laboratory report are due by the earlier of 60 days after completion of the test or the 28th day of the month following the end of the period established in Part I.F.1.d.
- (3) The full whole effluent toxicity (WET) test laboratory report must be submitted to IDEM electronically as an attachment to an e-mail to the Compliance Data Section at wwreports@idem.IN.gov. The results must also be submitted via NetDMR.
- (4) For quality control and ongoing laboratory performance, the laboratory report must include results from appropriate standard reference toxicant tests. This will consist of acute (LC₅₀ values), if available, and chronic (NOEC, LOEC and IC₂₅ values) endpoints of toxicity obtained from reference toxicant tests conducted within 30 days of the most current effluent toxicity tests and from similarly obtained historical reference toxicant data with mean values and appropriate ranges for each species tested for at least three months to one year. Toxicity test laboratory reports must also include copies of chain-of-custody records and laboratory raw data sheets.
- (5) Statistical procedures used to analyze and interpret toxicity data (e.g., Fisher's Exact Test and Steel's Many-one Rank Test for 7-day survival of test organisms; tests of normality (e.g., Shapiro-Wilk's Test) and homogeneity of variance (e.g., Bartlett's Test); appropriate parametric (e.g., Dunnett's Test) and non-parametric (e.g., Steel's Many-one Rank Test) significance tests and point estimates (IC₂₅) of effluent toxicity, etc.; together with graphical presentation of survival, growth and reproduction of test organisms), including critical values, levels of significance and 95% confidence intervals, must be described and included as part of the toxicity test laboratory report.

- (6) For valid toxicity tests, the whole effluent toxicity (WET) test laboratory report must include a summary table of the results for each species tested as shown in the table presented below. This table will provide toxicity test results, reported in acute toxic units (TU_a) and chronic toxic units (TU_c), for evaluation under Part I.F.1.f. and reporting on the discharge monitoring report (DMR).

Test Organism [1]	Test Type	Endpoint [2]	Units	Result	Compliance Limit [6]	Pass/Fail [7]	Reporting
<i>Ceriodaphnia dubia</i>	3-brood (7-day) Definitive Static-Renewal Survival and Reproduction	48-hr. LC ₅₀	%	Report			Laboratory Report
			TU _a	Report			
		NOEC Survival	%	Report			
			TU _c	Report			
		NOEC Reproduction	%	Report			
			TU _c	Report			
		IC ₂₅ Reproduction	%	Report			
			TU _c	Report			
<i>Pimephales promelas</i>	7-day Definitive Static-Renewal Larval Survival and Growth	Toxicity (acute) [3]	TU _a	Report [5]	1.0 Outfall 014 1.0 Outfall 018	Report	Laboratory Report and NetDMR (Parameter Code 61425)
			TU _c	Report [5]	9.8 Outfall 014 5.4 Outfall 018	Report	Laboratory Report and NetDMR (Parameter Code 61426)
		96-hr. LC ₅₀	%	Report			Laboratory Report
			TU _a	Report			
		NOEC Survival	%	Report			
			TU _c	Report			
		NOEC Growth	%	Report			
			TU _c	Report			
		IC ₂₅ Growth	%	Report			
			TU _c	Report			
		Toxicity (acute) [3]	TU _a	Report [5]	1.0 Outfall 014 1.0 Outfall 018	Report	Laboratory Report and NetDMR (Parameter Code 61427)
			TU _c	Report [5]	9.8 Outfall 014 5.4 Outfall 018	Report	Laboratory Report and NetDMR (Parameter Code 61428)

[1] For the whole effluent toxicity (WET) test laboratory report, eliminate from the table any species that was not tested.

[2] A separate acute test is not required. The endpoint of acute toxicity must be extrapolated from the chronic toxicity test.

[3] The toxicity (acute) endpoint for *Ceriodaphnia dubia* is the 48-hr. LC₅₀ result reported in acute toxic units (TU_a). The toxicity (acute) endpoint for *Pimephales promelas* is the 96-hr. LC₅₀ result reported in acute toxic units (TU_a).

[4] The toxicity (chronic) endpoint for *Ceriodaphnia dubia* is the higher of the NOEC Survival, NOEC Reproduction and IC₂₅ Reproduction values reported in chronic toxic units (TU_c). The toxicity (chronic) endpoint for *Pimephales promelas* is the higher of the NOEC Survival, NOEC Growth and IC₂₅ Growth values reported in chronic toxic units (TU_c).

[5] Report the values for acute and chronic endpoints of toxicity determined in [3] and [4] for the corresponding species. These values are the ones that need to be reported on the discharge monitoring report (DMR).

[6] These values do not represent effluent limitations, but rather exceedance of these values results in a demonstration of toxicity that triggers additional action and reporting by the permittee.

[7] If the toxicity result (in TUs) is less than or equal to the compliance limit, report "Pass". If the toxicity result (in TUs) exceeds the compliance limit, report "Fail".

f. Demonstration of Toxicity

(1) Outfalls 014 and 018:

Toxicity (acute) will be demonstrated if the effluent is observed to have exceeded 1.0 TU_a (acute toxic units) for *Ceriodaphnia dubia* in 48 hours or in 96 hours for *Pimephales promelas*. For this purpose, a separate acute toxicity test is not required. The results for the acute toxicity demonstration must be extrapolated from the chronic toxicity test. For the purpose of selecting test concentrations under Part I.F.1.b.(3), the effluent concentration associated with acute toxicity is 100%.

(2) Outfall 014:

Toxicity (chronic) will be demonstrated if the effluent is observed to have exceeded 9.8 TU_c (chronic toxic units) for *Ceriodaphnia dubia* or *Pimephales promelas* from the chronic toxicity test. For the purpose of selecting test concentrations under Part I.F.1.b.(3), the effluent concentration associated with chronic toxicity is 10.2%.

Outfall 018:

Toxicity (chronic) will be demonstrated if the effluent is observed to have exceeded 5.4 TU_c (chronic toxic units) for *Ceriodaphnia dubia* or *Pimephales promelas* from the chronic toxicity test. For the purpose of selecting test concentrations under Part I.F.1.b.(3), the effluent concentration associated with chronic toxicity is 18.5%.

(3) If toxicity (acute) or toxicity (chronic) is demonstrated in any of the chronic toxicity tests specified above, a repeat chronic toxicity test using the procedures in Part I.F.1. of this permit and the same test species must be initiated within two (2) weeks of test failure. During the sampling for any repeat tests, the permittee must also collect and preserve sufficient effluent samples for use in any toxicity identification evaluation (TIE) and/or toxicity reduction evaluation (TRE), if necessary.

- (4) If any two (2) consecutive chronic toxicity tests, including any and all repeat tests, demonstrate acute or chronic toxicity, the permittee must notify the Compliance Data Section under Part I.F.1.e. within 30 days of the date of termination of the second test, and begin the implementation of a toxicity reduction evaluation (TRE) as described in Part I.F.2. After receiving notification from the permittee, the Compliance Data Section will suspend the whole effluent toxicity testing requirements in Part I.F.1. for the term of the TRE compliance schedule.

g. Definitions

- (1) "Acute toxic unit" or "TU_a" is defined as $100/LC_{50}$ where the LC_{50} is expressed as a percent effluent in the test medium of an acute whole effluent toxicity (WET) test that is statistically or graphically estimated to be lethal to fifty percent (50%) of the test organisms.
- (2) "Chronic toxic unit" or "TU_c" is defined as $100/NOEC$ or $100/IC_{25}$, where the $NOEC$ or IC_{25} are expressed as a percent effluent in the test medium.
- (3) "Inhibition concentration 25" or "IC₂₅" means the toxicant (effluent) concentration that would cause a twenty-five percent (25%) reduction in a nonquantal biological measurement for the test population. For example, the IC_{25} is the concentration of toxicant (effluent) that would cause a twenty-five percent (25%) reduction in mean young per female or in growth for the test population.
- (4) "No observed effect concentration" or "NOEC" is the highest concentration of toxicant (effluent) to which organisms are exposed in a full life cycle or partial life cycle (short term) test, that causes no observable adverse effects on the test organisms, that is, the highest concentration of toxicant (effluent) in which the values for the observed responses are not statistically significantly different from the controls.

2. Toxicity Reduction Evaluation (TRE) Schedule of Compliance

The development and implementation of a TRE is only required if toxicity is demonstrated in two (2) consecutive tests as described in Part I.F.1.f.(4). The post-TRE toxicity testing requirements in Part I.F.2.c. must also be completed as part of the TRE compliance schedule.

Milestone Dates: See a. through e. below for more detail on the TRE milestone dates.

Requirement	Deadline
Development and Submittal of a TRE Plan	Within 90 days of the date of two (2) consecutive failed toxicity tests.
Initiate a TRE Study	Within 30 days of TRE Plan submittal.
Submit TRE Progress Reports	Every 90 days beginning six (6) months from the date of two (2) consecutive failed toxicity tests.
Post-TRE Toxicity Testing Requirements	Immediately upon completion of the TRE, conduct three (3) consecutive months of toxicity tests with both test species; if no acute or chronic toxicity is shown with any test species, reduce toxicity tests to every six (6) months for the remainder of the permit term. If post-TRE toxicity testing demonstrates toxicity, continue the TRE study.
Submit Final TRE Report	Within 90 days of successfully completing the TRE (including the post-TRE toxicity testing requirements), not to exceed three (3) years from the date that toxicity is initially demonstrated in two (2) consecutive toxicity tests.

a. Development of TRE Plan

Within 90 days of the date of two (2) consecutive failed toxicity tests (i.e. the date of termination of the second test), the permittee must submit plans for an effluent TRE to the Compliance Data Section. The TRE plan must include appropriate measures to characterize the causative toxicants and reduce toxicity in the effluent discharge to levels that demonstrate no toxicity with any test species as described in Part I.F.1.f. Guidance on conducting effluent toxicity reduction evaluations is available from EPA and from the EPA publications listed below:

(1) Methods for Aquatic Toxicity Identification Evaluations:

Phase I Toxicity Characterization Procedures, Second Edition (EPA/600/6-91/003), February 1991.

Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity (EPA/600/R-92/080), September 1993.

Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity (EPA/600/R-92/081), September 1993.

(2) Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I (EPA/600/6-91/005F), May 1992.

- (3) Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (TREs) (EPA/600/2-88/070), April 1989.
- (4) Clarifications Regarding Toxicity Reduction and Identification Evaluations in the National Pollutant Discharge Elimination System Program, U.S. EPA, March 27, 2001.

b. Conduct the TRE

Within 30 days after submittal of the TRE plan to the Compliance Data Section, the permittee must initiate the TRE consistent with the TRE plan.

c. Post-TRE Toxicity Testing Requirements

- (1) After completing the TRE, the permittee must conduct monthly post-TRE toxicity tests with the two (2) test species *Ceriodaphnia dubia* and fathead minnow (*Pimephales promelas*) for a period of three (3) consecutive months.
- (2) If the three (3) monthly tests demonstrate no toxicity with any test species as described in Part I.F.1.f., the TRE will be considered successful. Otherwise, the TRE study must be continued.
- (3) The post-TRE toxicity tests must be conducted in accordance with the procedures in Part I.F.1. The results of these tests must be submitted as part of the final TRE Report required under Part I.F.2.d.
- (4) After successful completion of the TRE, the permittee must resume the chronic toxicity tests required in Part I.F.1. The permittee may reduce the number of species tested to only include the species demonstrated to be most sensitive to the toxicity in the effluent. The established starting date for the frequency in Part I.F.1.d. is the first day of the first month following successful completion of the post-TRE toxicity tests.

d. Reporting

- (1) Progress reports must be submitted every 90 days to the Compliance Data Section beginning six (6) months from the date of two (2) consecutive failed toxicity tests. Each TRE progress report must include a listing of proposed activities for the next quarter and a schedule to reduce toxicity in the effluent discharge to acceptable levels through control of the toxicant source or treatment of whole effluent.

- (2) Within 90 days of successfully completing the TRE, including the three (3) consecutive monthly tests required as part of the post-TRE toxicity testing requirements in Part I.F.2.c., the permittee must submit to the Compliance Data Section a final TRE Report that includes the following:
 - (A) A discussion of the TRE results;
 - (B) The starting date established under Part I.F.2.c.(4) for the continuation of the toxicity testing required in Part I.F.1.; and
 - (C) If applicable, the intent to reduce the number of species tested to the one most sensitive to the toxicity in the effluent under Part I.F.2.c.(4).

e. Compliance Date

The permittee must complete items a., b., c. and d. from Part I.F.2. and reduce toxicity in the effluent discharge to acceptable levels as soon as possible, but no later than three (3) years from the date that toxicity is initially demonstrated in two (2) consecutive toxicity tests (i.e. the date of termination of the second test) as described in Part I.F.1.f.(4).

G. Reserved

H. POLLUTANT MINIMIZATION PROGRAM

The permittee is required to develop and conduct a pollutant minimization program (PMP) for each pollutant with a WQBEL below the LOQ. This permit contains a WQBEL below the LOQ for TRC at Outfall 011 and Total Residual Oxidants (Bromine + TRC) at Outfalls 014 and 018.

During the previous permit term, the permittee demonstrated that the discharge of TRC is reasonably expected to comply with the WQBEL at the point of discharge into the receiving water. Given that the test method, LOD, and LOQ are the same for TRC and TRO, it has been determined that the discharge of TRO is also reasonably expected to comply with the WQBEL at the point of discharge into the receiving water. Therefore, an updated pollutant minimization program for these parameters is not required. If something changes at the site that would require this information to be updated, the permittee shall update the pollutant minimization program requirements and submit to IDEM for review.

I. REPORTING REQUIREMENTS FOR SOLVENTS, DEGREASING AGENTS, ROLLING OILS, WATER TREATMENT CHEMICALS AND BIOCIDES

The permittee will maintain the following information on site, and report to IDEM if requested; the total quantity (lbs/year) of each solvent, degreasing agent, rolling oil, water treatment chemical, and biocide that was purchased for that year and which

can be present in any outfall regulated by this permit. This requirement includes all surfactants, anionic, cationic, and non-ionic, which may be used in part or wholly as a constituent in these compounds.

The permittee will maintain these files for a period of ten years. Files will include the Material Safety Data Sheet, FIFRA label for each biocide, and chemical name and CAS number for each compound used. If these compounds contain proprietary or confidential business information, the permittee may maintain this information in a separate file that can be accessed by the U.S. EPA or IDEM personnel with appropriate authority.

J. GROUNDWATER REMEDIATION PROJECT

IDEM will retain approval of the Plant 3 former coke plant groundwater remediation project for the next permit cycle. The permittee shall continue testing the discharge quarterly and will submit the results to IDEM annually, by December 31 of the calendar year during which testing occurs.

The permittee shall notify IDEM prior to the date it seeks to introduce new compatible or pretreated groundwaters from any groundwater remediation project to wastewater treatment facilities at Cleveland-Cliffs LLC - Indiana Harbor East. "Compatible Treated Wastewater from Groundwater Remediation Project" for purposes of this permit means groundwaters that are contaminated with pollutants that are limited at the respective wastewater treatment facilities. Other groundwaters shall be pretreated prior to introduction to the respective wastewater treatment facilities to remove or treat those pollutants that are not limited or that cannot be effectively removed or treated at the respective wastewater treatment facilities.

Such notification shall include, at a minimum, the volume of groundwater to be treated and discharged; a description of any groundwater pretreatment facilities; the identity of the receiving wastewater treatment facility and permitted outfall; identification, concentrations and mass loadings of contaminants in the untreated groundwater; identification, and expected concentrations and mass loadings of contaminants in the pretreated groundwater prior to introduction of groundwater to the wastewater treatment facilities; and, identification and expected concentrations and mass loadings of groundwater contaminants to be discharged from the wastewater treatment facilities.

IDEM shall evaluate the information submitted to determine if a permit modification is required under 327 IAC 5-2-16. Discharge of a new wastestream shall not commence until the permittee has received written approval from IDEM or a modified permit has been issued.

K. NO. 7 BLAST FURNACE

The permittee is prohibited from discharging process wastewater from the No. 7 Blast Furnace from any point source except as follows:

1. Treated No. 7 Blast Furnace Recycle Blowdown may be discharged from Internal Outfall 518 through Final Outfall 018; and,
2. No. 7 Blast Furnace Recycle Blowdown may be discharged on an intermittent basis to the Master Recycle System that discharges through Outfall 014 and, under emergency circumstances only, through Outfall 013.

L. ZEBRA AND QUAGGA MUSSEL CONTROL

As a means of controlling Zebra and Quagga Mussel colonization within the facility, the permittee chlorinates intake water on a continuous basis during a portion of each year. Wastewater shall be dechlorinated prior to discharge from all external Outfalls 011, 014, and 018. The discharge from each external Outfall shall have limitations and monitoring requirements for Total Residual Chlorine (TRC) or Total Residual Oxidants (TRO). The wastewater discharged through Outfalls 014 and 018 is chlorinated year-round and shall be dechlorinated prior to discharge. The applicable monthly average limitations and daily maximum limitations are found in Parts I.A.1, I.A.2, I.A.3, and I.A.4 of this permit.

M. DREDGING PROJECT EFFLUENT

For the purposes of this permit, the term "Dredging Project Effluent" means wastewater generated during the dewatering of sediments or other material dredged from the Indiana Harbor or the Indiana Harbor Turning Basin. Dredging water effluents that are contaminated with pollutants that are not limited or cannot be removed or treated at the respective wastewater treatment facility, must be pretreated for the removal of those pollutants prior to introduction into the wastewater treatment facility.

The permittee shall notify IDEM at least 120 days prior to the introduction of untreated or pretreated dredging project effluents to wastewater treatment facilities at Cleveland-Cliffs LLC- Indiana Harbor East. Such notification shall include, at a minimum, an estimate of the volume of dredging project effluent to be treated and discharged; a description of any pretreatment facilities; the identity of the receiving wastewater treatment facility and permitted outfall; identification and concentration of contaminants in the untreated dredging project effluent; identification and expected concentrations and mass loadings of contaminants in the pretreated dredging project effluent prior to introduction into the wastewater treatment facility; and, identification and expected concentrations and mass loadings of dredging project contaminants to be discharged from the wastewater treatment facility.

IDEM shall evaluate the information submitted to determine if a permit modification is required under 327 IAC 5-2-16. Discharge of this wastestream shall not

commence until the permittee has received written approval from IDEM or a modified permit has been issued.

N. NO. 6 DOCK

From March through November of each year, the permittee shall conduct monthly inspections and repair programs at the No. 6 Dock for the purpose of sealing leaks of groundwater to the Indiana Harbor Turning Basin above the water line. The inspections and repairs programs shall continue until a groundwater remediation program is implemented at the No. 6 Dock in accordance with U.S. EPA Consent Decree (H90-0328, March 1993).

The permittee shall report a summary of the leak detection and repair program not later than December 31st of each year of the program for that year. The report shall include the dates of inspection, the findings from each inspection, a description of the repairs undertaken, the approximate location of each repair with respect to a permanent reference location, and the dates the repairs were completed. The permittee shall also maintain a log of inspections and repairs at the facility and shall make such log available to representatives of IDEM and the U.S. EPA upon request. The provisions of this paragraph shall terminate automatically upon termination or conclusion of U.S. EPA Consent Decree H90-032, March 1993.

O. DISCHARGES TO THE LAKE MICHIGAN IMPOUNDMENT

The permittee shall not discharge process wastewater or fly ash lagoon leachate to the Lake Michigan Impoundment. Discharges to the Lake Michigan Impoundment shall be limited to storm water from the north portion of the facility, precipitation, groundwater from the facility, and inflows from Lake Michigan. The permittee shall use only service water (Lake Michigan intake water) for blast furnace slag quench near the Lake Michigan Impoundment. For purposes of this permit, the water contained in the Lake Michigan Impoundment constructed by Inland Steel, now Cleveland-Cliffs, shall be considered to be part of Lake Michigan.

P. POLYCHLORINATED BIPHENYL (PCB)

There shall be no discharge of polychlorinated biphenyl (PCBs) compounds such as those commonly used for transformer fluid. Therefore, in order to determine compliance with the PCB prohibition, the permittee shall provide the following PCB* data with the next permit renewal application from at least one sample taken from each final outfall. The corresponding facility water intakes shall be monitored at the same time as the final outfalls.

Parameter	Test Method	LOD (µg/l)	LOQ (µg/l)
PCBs*	608	0.1	0.3

*PCB-1242, PCB-1254, PCB-1221, PCB-1232, PCB-1248, PCB-1260, and PCB-1016

Q. LINE DRAWINGS WITH WATER BALANCE

Updated line drawings with water balance must be provided with the next permit renewal application (see 40 CFR 122.21(g)(2)). Line drawings of the water flow through the facility with water balance, showing operations contributing wastewater to the effluent and treatment units must be provided. Similar processes, operations, or production areas may be indicated as a single unit, labeled to correspond to the more detailed identification under 40 CFR 122.21(g)(3). The water balance must show approximate average flows at intake and discharge points and between units, including treatment units.

R. BIOCIDES

The use of biocides containing tributyl tin oxide in any closed or open cooling system is prohibited.

S. SCHEDULE OF COMPLIANCE: Outfall 018

The permittee shall achieve compliance with the effluent limitations specified for free cyanide at Outfall 018 in accordance with the following schedule:

- a. The new effluent limits for free cyanide are deferred for the term of this compliance schedule unless the new effluent limits can be met at an earlier date. The permittee shall notify the Compliance Data Section of OWQ as soon as the newly imposed effluent limits for free cyanide can be met. Upon receipt of such notification by OWQ, the final limits for free cyanide will become effective, but no later than forty-eight (48) months from the effective date of this permit. Monitoring and reporting of the effluent for these parameters is required during the interim period.
- c. The permittee shall identify possible options for free cyanide reduction measures for Outfall 018 for evaluation and submit a written progress report to the Compliance Data Section of the Office of Water Quality (OWQ) twelve (12) months from the effective date of this permit.
- c. The permittee shall complete a preliminary engineering study to determine the feasibility of the identified free cyanide reduction measures and notify IDEM of the selected option for achieving compliance with the Outfall 018 free cyanide effluent limits no later than twenty-four (24) months from the effective date of this permit.
- d. The permittee shall complete detailed engineering for selected option for achieving compliance with the Outfall 018 free cyanide effluent limits, initiate construction of any modifications necessary to achieve compliance with the selected option and submit a written progress report to IDEM no later than thirty-six (36) months from the effective date of this permit.

- e. Within thirty (30) days of completion of construction, the permittee shall file with the Industrial NPDES Permits Section of OWQ a notice of installation for the additional pollutant control equipment and a design summary of any modifications.
 - f. The permittee shall comply with the final effluent limitations for free cyanide no later than forty-eight (48) months from the effective date of this permit.
2. If the permittee fails to comply with any deadline contained in the foregoing schedule, the permittee shall, within fourteen (14) days following the missed deadline, submit a written notice of noncompliance to the Compliance Data Section of the OWQ stating the cause of noncompliance, any remedial action taken or planned, and the probability of meeting the date fixed for compliance with final effluent limitations.

T. SCHEDULE OF COMPLIANCE: Cooling Water Intake Structures

The permittee shall achieve compliance with the 316(b)-impingement mortality BTA at the Main Intake Flap Gate Intake in accordance with the following schedule:

- (a) As soon as practicable but no later than twelve (12) months after the effective date of this permit, the permittee must notify IDEM which of the following impingement mortality BTA options it has selected for this intake to comply with the cooling water intake structure requirements and provide detailed descriptions, preliminary engineering study results, calculations, and the steps that will be taken to implement the selected impingement mortality BTA:
 - (i) Closure of the flap gates and eliminate any water withdrawal through this intake.
 - (ii) Install 3/8" or smaller sized screen for the Main Intake that maintains a through screen velocity under 0.5 fps to comply with the impingement mortality BTA under either 40 CFR 125.94(c)(2) or (c)(3) [The permittee shall include the calculations and inputs (accompanied by a spreadsheet containing these calculations and inputs) showing that one of these requirements will be met]. The screen must be located immediately downstream or upstream of the current bar racks. If the flap gates are not closed, the additional requirements specified at T.(c)(i) will also be applicable.
 - (iii) An alternate impingement mortality BTA under 40 CFR 125.94(c)(1), (c)(3), (c)(4), (c)(5), or (c)(6). If the flap gates are not closed, the additional requirements specified at T.(c)(i) will also be applicable.

If the permittee selects an alternative other than T.(a)(i), above, the permittee shall request and receive approval from IDEM for the alternative prior to proceeding. If IDEM does not approve the selected alternative, the permittee

must proceed with closure of the flap gates under T.(a)(i), above and T.(b), below.

- (b) If the permittee has selected the impingement mortality option to close the flap gates and cease the withdrawal of water at this intake ((a)(i), above) or IDEM has not approved of a selected alternative, the permittee shall complete any construction necessary to achieve compliance with this option and cease withdrawal of water at this intake within twenty-four (24) months of the effective date of the permit.
- (c) If the permittee has selected installation of 3/8" or smaller sized screen (T.(a)(ii), above) or an alternate impingement mortality BTA (T.(a)(iii), above) and has received IDEM approval for the alternative, the following compliance schedule is applicable:
 - (i) As soon as practicable but no later than twenty (20) months after the effective date of the permit complete detailed engineering. In addition, the permittee shall submit the following for IDEM review and approval and no later than twenty (20) months after the effective date of the permit:
 - (AA) Plans and operating procedures for the maintenance and operation of the flap gates so they will close properly (e.g. mussels will not interfere with closure).
 - (BB) Plans for the elimination of any leaks in the bulkheads and seals.
 - (CC) Plans and operating procedures for the maintenance and operation of the tide gates so they can close properly (e.g. mussels will not interfere with closure) if the downstream water levels were to rise above Lake Michigan water level.
 - (DD) Plans and operating procedures for installing and operating level measurement equipment and recording those results and the Lake Michigan water level. After the necessary equipment has been installed, the permittee shall begin recording the results and an annual report containing the results shall be submitted within thirty days after the end of each calendar year.
 - (EE) Plans for the conduct of a one-time dye study at all operable gate locations to determine the direction of flow under normal operating conditions. The results of this sampling shall be reported to IDEM with 60 days after completion of the dye study.
 - (FF) A plan for the conduct of ongoing monitoring at the second set of flap gates to assure backflow from MRS is not flowing into the intake. The permittee shall propose parameters to be monitored, monitoring

frequency, and the monitoring locations. The parameters should be ones that are present at high levels in the recycle system and low levels in Lake Michigan and are not heavier than water. After this sampling program has been initiated, results of any sampling shall be submitted with the monthly monitoring reports and an annual report shall be submitted within thirty days after the end of each calendar year.

- (ii) As soon as practicable but no later than twenty-four (24) months after the effective date of the permit, initiate construction of any modifications necessary to achieve compliance with the selected alternative.
- (iii) As soon as practicable but no later than thirty (30) months after the effective date of the permit, the permittee shall initiate the plans and operating procedures under T.(c)(i)(AA), (CC), (EE), and (FF).
- (iv) As soon as practicable but no later than thirty-six (36) months after the effective date of the permit, complete construction of any modifications necessary to achieve compliance with the selected option. This shall include the elimination of any leaks in the bulkheads and seals and the installation of any equipment needed for continuous level measurements. the permittee shall initiate the monitoring specified pursuant T.(c)(i)(DD).
- (d) Within thirty (30) days of completion, the permittee shall file with the Industrial NPDES Permits Section of Office of Water Quality (OWQ) a notice describing all modifications and actions taken to install the selected alternative and a design summary of any modifications.
- (e) The permittee shall submit a written progress report to the Compliance Data Section of the OWQ six (6) months from the effective date of this permit and every six (6) months thereafter until the requirements in the compliance schedule outlined above have been achieved. The progress reports shall include detailed information related to steps the permittee has taken to meet the requirements in the compliance schedule and whether the permittee is meeting the dates in the compliance schedule.
- (f) If the permittee fails to comply with any deadline contained in the foregoing schedule, the permittee shall, within fourteen (14) days following the missed deadline, submit a written notice of noncompliance to the Compliance Data Section of the OWQ stating the cause of noncompliance, any remedial action taken or planned, and the probability of meeting the date fixed for compliance.

U. REOPENING CLAUSES

This permit may be modified, or alternately, revoked and reissued, after public notice and opportunity for hearing:

1. to comply with any applicable effluent limitation or standard issued or approved under 301(b)(2)(C),(D) and (E), 304 (b)(2), and 307(a)(2) of the Clean Water Act, if the effluent limitation or standard so issued or approved:
 - a. contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
 - b. controls any pollutant not limited in the permit.
2. for any of the causes listed under 327 IAC 5-2-16.
3. to include whole effluent toxicity limitations or to include limitations for specific toxicants if the results of a long-term instream biomonitoring program, and/or the whole effluent toxicity testing program, and or the TRE study indicate that such limitations are necessary to meet Indiana Water Quality Standards.
4. to include a case-specific Limit of Detection (LOD) and/or Limit of Quantitation (LOQ). The permittee must demonstrate that such action is warranted in accordance with the procedures specified under Appendix B, 40 CFR Part 136, using the most sensitive analytical methods approved by EPA under 40 CFR Part 136, or approved by the Commissioner.
5. this permit may be modified or revoked and reissued after public notice and opportunity for hearing to revise or remove the requirements of the pollutant minimization program, if supported by information generated as a result of the program.
6. to specify the use of a different analytical method if a more sensitive analytical method has been specified in or approved under 40 CFR 136 or approved by the Commissioner to monitor for the presence and amount in the effluent of the pollutant for which the WQBEL is established. The permit shall specify, in accordance with 327 IAC 5-2-11.6(h)(2)(B), the LOD and LOQ that can be achieved by use of the specified analytical method.
7. to include revised Streamlined Mercury Variance (SMV) and/or Pollutant Minimization Program Plan (PMPP) requirements.
8. to comply with any applicable standards, regulations and requirements issued or approved under section 316(b) of the Clean Water Act. This includes but is not limited to any revisions needed to reflect a change in the selected impingement or entrainment mortality BTA, including any changes to the impingement mortality BTA at the No. 2 Pump House Intake or No. 7 Pump House Intake based on the results of the velocity monitoring study required under Part III.B.8 or the entrainment mortality BTA at the No. 2 Pump House Intake or No. 7 Pump House Intake based on the results of the entrainment study required under Part III.B.12.

9. to require initiation of a long term in-stream biomonitoring program in the Indiana Harbor Turning Basin and the Indiana Harbor upon completion of the Indiana Harbor and Indiana Harbor Turning Basin sediment remediation program described in the March 1993 consent decree H90-0328 between Inland Steel Corporation and the U.S. EPA, and completion of the U.S. Army Corps of Engineering dredging.
10. to require the permittee to undertake a sediment monitoring program upon completion of the Indiana Harbor Turning Basin and the Indiana Harbor sediment remediation program described in the March 1993 Consent Decree H90-0328 between Inland Steel Corporation and the U.S. EPA, and completion of the U.S. Army Corps of Engineering dredging.
11. to require investigation and documentation of the source of contamination and establish discharge limits or monitoring requirements, if necessary, after reviewing sediment monitoring data.

PART II

STANDARD CONDITIONS FOR NPDES PERMITS

A. GENERAL CONDITIONS

1. Duty to Comply

The permittee shall comply with all terms and conditions of this permit in accordance with 327 IAC 5-2-8(1) and all other requirements of 327 IAC 5-2-8. Any permit noncompliance constitutes a violation of the Clean Water Act and IC 13 and is grounds for enforcement action or permit termination, revocation and reissuance, modification, or denial of a permit renewal application.

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.

2. Duty to Mitigate

In accordance with 327 IAC 5-2-8(3), the permittee shall take all reasonable steps to minimize or correct any adverse impact to the environment resulting from noncompliance with this permit. During periods of noncompliance, the permittee shall conduct such accelerated or additional monitoring for the affected parameters, as appropriate or as requested by IDEM, to determine the nature and impact of the noncompliance.

3. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must obtain and submit an application for renewal of this permit in accordance with 327 IAC 5-2-8(2). It is the permittee's responsibility to obtain and submit the application. In accordance with 327 IAC 5-2-3(c), the owner of the facility or operation from which a discharge of pollutants occurs is responsible for applying for and obtaining the NPDES permit, except where the facility or operation is operated by a person other than an employee of the owner in which case it is the operator's responsibility to apply for and obtain the permit. Pursuant to 327 IAC 5-3-2(a)(2), the application must be submitted at least 180 days before the expiration date of this permit. This deadline may be extended if all of the following occur:

- a. permission is requested in writing before such deadline;
- b. IDEM grants permission to submit the application after the deadline; and
- c. the application is received no later than the permit expiration date.

4. Permit Transfers

In accordance with 327 IAC 5-2-8(4)(D), this permit is nontransferable to any person except in accordance with 327 IAC 5-2-6(c). This permit may be transferred to another person by the permittee, without modification or revocation and reissuance being required under 327 IAC 5-2-16(c)(1) or 16(e)(4), if the following occurs:

- a. the current permittee notified the Commissioner at least thirty (30) days in advance of the proposed transfer date;
- b. a written agreement containing a specific date of transfer of permit responsibility and coverage between the current permittee and the transferee (including acknowledgment that the existing permittee is liable for violations up to that date, and the transferee is liable for violations from that date on) is submitted to the Commissioner;
- c. the transferee certifies in writing to the Commissioner their intent to operate the facility without making such material and substantial alterations or additions to the facility as would significantly change the nature or quantities of pollutants discharged and thus constitute cause for permit modification under 327 IAC 5-2-16(d). However, the Commissioner may allow a temporary transfer of the permit without permit modification for good cause, e.g., to enable the transferee to purge and empty the facility's treatment system prior to making alterations, despite the transferee's intent to make such material and substantial alterations or additions to the facility; and
- d. the Commissioner, within thirty (30) days, does not notify the current permittee and the transferee of the intent to modify, revoke and reissue, or terminate the permit and to require that a new application be filed rather than agreeing to the transfer of the permit.

The Commissioner may require modification or revocation and reissuance of the permit to identify the new permittee and incorporate such other requirements as may be necessary under the Clean Water Act or state law.

5. Permit Actions

- a. In accordance with 327 IAC 5-2-16(b) and 327 IAC 5-2-8(4), this permit may be modified, revoked and reissued, or terminated for cause, including, but not limited to, the following:
 1. Violation of any terms or conditions of this permit;
 2. Failure of the permittee to disclose fully all relevant facts or misrepresentation of any relevant facts in the application, or during the permit issuance process; or

3. A change in any condition that requires either a temporary or a permanent reduction or elimination of any discharge controlled by the permit, e.g., plant closure, termination of discharge by connection to a POTW, a change in state law that requires the reduction or elimination of the discharge, or information indicating that the permitted discharge poses a substantial threat to human health or welfare.
- b. Filing of either of the following items does not stay or suspend any permit condition: (1) a request by the permittee for a permit modification, revocation and reissuance, or termination, or (2) submittal of information specified in Part II.A.3 of the permit including planned changes or anticipated noncompliance.

The permittee shall submit any information that the permittee knows or has reason to believe would constitute cause for modification or revocation and reissuance of the permit at the earliest time such information becomes available, such as plans for physical alterations or additions to the permitted facility that:

1. could significantly change the nature of, or increase the quantity of pollutants discharged; or
 2. the commissioner may request to evaluate whether such cause exists.
- c. In accordance with 327 IAC 5-1-3(a)(5), the permittee must also provide any information reasonably requested by the Commissioner.

6. Property Rights

Pursuant to 327 IAC 5-2-8(6) and 327 IAC 5-2-5(b), the issuance of this permit does not convey any property rights of any sort or any exclusive privileges, nor does it authorize any injury to persons or private property or invasion of other private rights, any infringement of federal, state, or local laws or regulations. The issuance of the permit also does not preempt any duty to obtain any other state, or local assent required by law for the discharge or for the construction or operation of the facility from which a discharge is made.

7. Severability

In accordance with 327 IAC 1-1-3, the provisions of this permit are severable and, if any provision of this permit or the application of any provision of this permit to any person or circumstance is held invalid, the invalidity shall not affect any other provisions or applications of the permit which can be given effect without the invalid provision or application.

8. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under Section 311 of the Clean Water Act.

9. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by Section 510 of the Clean Water Act or state law.

10. Penalties for Violation of Permit Conditions

Pursuant to IC 13-30-4, a person who violates any provision of this permit, the water pollution control laws; environmental management laws; or a rule or standard adopted by the Environmental Rules Board is liable for a civil penalty not to exceed twenty-five thousand dollars (\$25,000) per day of any violation.

Pursuant to IC 13-30-5, a person who obstructs, delays, resists, prevents, or interferes with (1) the department; or (2) the department's personnel or designated agent in the performance of an inspection or investigation performed under IC 13-14-2-2 commits a class C infraction.

Pursuant to IC 13-30-10-1.5(e), a person who willfully or negligently violates any NPDES permit condition or filing requirement, or any applicable standards or limitations of IC 13-18-3-2.4, IC 13-18-4-5, IC 13-18-12, IC 13-18-14, IC 13-18-15, or IC 13-18-16, commits a Class A misdemeanor.

Pursuant to IC 13-30-10-1.5(i), an offense under IC 13-30-10-1.5(e) is a Level 4 felony if the person knowingly commits the offense and knows that the commission of the offense places another person in imminent danger of death or serious bodily injury. The offense becomes a Level 3 felony if it results in serious bodily injury to any person, and a Level 2 felony if it results in death to any person.

Pursuant to IC 13-30-10-1.5(g), a person who willfully or recklessly violates any applicable standards or limitations of IC 13-18-8 commits a Class B misdemeanor.

Pursuant to IC 13-30-10-1.5(h), a person who willfully or recklessly violates any applicable standards or limitations of IC 13-18-9, IC 13-18-10, or IC 13-18-10.5 commits a Class C misdemeanor.

Pursuant to IC 13-30-10-1, a person who knowingly or intentionally makes any false material statement, representation, or certification in any NPDES form, notice, or report commits a Class B misdemeanor.

11. Penalties for Tampering or Falsification

In accordance with 327 IAC 5-2-8(10), the permittee shall comply with monitoring, recording, and reporting requirements of this permit. The Clean Water Act, as well as IC 13-30-10-1, provides that any person who knowingly or intentionally (a) destroys, alters, conceals, or falsely certifies a record, (b) tampers with, falsifies, or renders inaccurate or inoperative a recording or monitoring device or method, including the data gathered from the device or method, or (c) makes a false material statement or representation in any label, manifest, record, report, or other document; all required to be maintained under the terms of a permit issued by the department commits a Class B misdemeanor.

12. Toxic Pollutants

If any applicable effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Clean Water Act for a toxic pollutant injurious to human health, and that standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition in accordance with 327 IAC 5-2-8(5). Effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants injurious to human health are effective and must be complied with, if applicable to the permittee, within the time provided in the implementing regulations, even absent permit modification.

13. Wastewater treatment plant and certified operators

The permittee shall have the wastewater treatment facilities under the responsible charge of an operator certified by the Commissioner in a classification corresponding to the classification of the wastewater treatment plant as required by IC 13-18-11-11 and 327 IAC 5-22. In order to operate a wastewater treatment plant the operator shall have qualifications as established in 327 IAC 5-22-7.

327 IAC 5-22-10.5(a) provides that a certified operator may be designated as being in responsible charge of more than one (1) wastewater treatment plant, if it can be shown that he will give adequate supervision to all units involved. Adequate supervision means that sufficient time is spent at the plant on a regular basis to assure that the certified operator is knowledgeable of the actual operations and that test reports and results are representative of the actual operations conditions. In accordance with 327 IAC 5-22-3(11), "responsible charge operator" means the person responsible for the overall daily operation, supervision, or management of a wastewater facility.

Pursuant to 327 IAC 5-22-10(4), the permittee shall notify IDEM when there is a change of the person serving as the certified operator in responsible charge of the wastewater treatment facility. The notification shall be made no later than thirty (30) days after a change in the operator.

14. Construction Permit

In accordance with IC 13-14-8-11.6, a discharger is not required to obtain a state permit for the modification or construction of a water pollution treatment or control facility if the discharger has an effective NPDES permit.

If the discharger modifies their existing water pollution treatment or control facility or constructs a new water pollution treatment or control facility for the treatment or control of any new influent pollutant or increased levels of any existing pollutant, then, within thirty (30) days after commencement of operation, the discharger shall file with the Department of Environment Management a notice of installation for the additional pollutant control equipment and a design summary of any modifications.

The notice and design summary shall be sent to the Office of Water Quality, Industrial NPDES Permits Section, 100 North Senate Avenue, Indianapolis, IN 46204-2251.

15. Inspection and Entry

In accordance with 327 IAC 5-2-8(8), the permittee shall allow the Commissioner, or an authorized representative, (including an authorized contractor acting as a representative of the Commissioner) upon the presentation of credentials and other documents as may be required by law, to:

- a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept pursuant to the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the terms and conditions of this permit;
- c. Inspect at reasonable times any facilities, equipment or methods (including monitoring and control equipment), practices, or operations regulated or required pursuant to this permit; and
- d. Sample or monitor at reasonable times, any discharge of pollutants or internal wastestreams for the purposes of evaluating compliance with the permit or as otherwise authorized.

16. New or Increased Discharge of Pollutants

This permit prohibits the permittee from undertaking any action that would result in a new or increased discharge of a bioaccumulative chemical of concern (BCC) or a new or increased permit limit for a regulated pollutant that is not a BCC unless one of the following is completed prior to the commencement of the action:

- a. Information is submitted to the Commissioner demonstrating that the proposed new or increased discharges will not cause a significant

lowering of water quality as defined under 327 IAC 2-1.3-2(50). Upon review of this information, the Commissioner may request additional information or may determine that the proposed increase is a significant lowering of water quality and require the submittal of an antidegradation demonstration.

- b. An antidegradation demonstration is submitted to and approved by the Commissioner in accordance with 327 IAC 2-1.3-5 and 327 IAC 2-1.3-6.

B. MANAGEMENT REQUIREMENTS

1. Proper Operation and Maintenance

The permittee shall at all times maintain in good working order and efficiently operate all facilities and systems (and related appurtenances) for the collection and treatment which are installed or used by the permittee and which are necessary for achieving compliance with the terms and conditions of this permit in accordance with 327 IAC 5-2-8(9).

Neither 327 IAC 5-2-8(9), nor this provision, shall be construed to require the operation of installed treatment facilities that are unnecessary for achieving compliance with the terms and conditions of the permit.

2. Bypass of Treatment Facilities

Pursuant to 327 IAC 5-2-8(12), the following are requirements for bypass:

- a. The following definitions:
 - (1) "Bypass" means the intentional diversion of a waste stream from any portion of a treatment facility.
 - (2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
- b. The permittee may allow a bypass to occur that does not cause a violation of the effluent limitations contained in this permit, but only if it is also for essential maintenance to assure efficient operation. These bypasses are not subject to Part II.B.2.c. and d.
- c. The permittee must provide the Commissioner with the following notice:

- (1) If the permittee knows or should have known in advance of the need for a bypass (anticipated bypass), it shall submit prior written notice. If possible, such notice shall be provided at least ten (10) days before the date of the bypass for approval by the Commissioner.
- (2) As required by 327 IAC 5-2-8(11)(C), the permittee shall orally report an unanticipated bypass that exceeds any effluent limitations in the permit within twenty-four (24) hours from the time the permittee becomes aware of such noncompliance. A written submission shall also be provided within five (5) days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; and if the cause of noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate and prevent recurrence of the noncompliance. If a complete report is submitted by e-mail within 24 hours of the noncompliance, then that e-mail report will satisfy both the oral and written reporting requirement. E-mails should be sent to wwreports@idem.in.gov.

d. The following provisions are applicable to bypasses:

- (1) Except as provided by Part II.B.2.b., bypass is prohibited, and the Commissioner may take enforcement action against a permittee for bypass, unless the following occur:
 - (A) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage.
 - (B) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment down time. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance.
 - (C) The permittee submitted notices as required under Part II.B.2.c.
- (2) The Commissioner may approve an anticipated bypass, after considering its adverse effects, if the Commissioner determines that it will meet the conditions listed above in Part II.B.2.d.(1).

The Commissioner may impose any conditions determined to be necessary to minimize any adverse effects.

- e. Bypasses that result in death or acute injury or illness to animals or humans must be reported in accordance with the "Spill Response and Reporting Requirements" in 327 IAC 2-6.1, including calling 888/233-7745 as soon as possible, but within two (2) hours of discovery. However, under 327 IAC 2-6.1-3(1), when the constituents of the bypass are regulated by this permit, and death or acute injury or illness to animals or humans does not occur, the reporting requirements of 327 IAC 2-6.1 do not apply.

3. Upset Conditions

Pursuant to 327 IAC 5-2-8(13):

- a. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
- b. An upset shall constitute an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Paragraph c of this section, are met.
- c. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence, that:
 - (1) An upset occurred and the permittee has identified the specific cause(s) of the upset;
 - (2) The permitted facility was at the time being properly operated;
 - (3) The permittee complied with any remedial measures required under Part II.A.2; and
 - (4) The permittee submitted notice of the upset as required in the "Twenty-Four Hour Reporting Requirements," Part II.C.3, or 327 IAC 2-6.1, whichever is applicable. However, under 327 IAC 2-6.1-3(1), when the constituents of the discharge are regulated by this permit, and death or acute injury or illness to animals or humans does not occur, the reporting requirements of 327 IAC 2-6.1 do not apply.

- d. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof pursuant to 40 CFR 122.41(n)(4).

4. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed from or resulting from treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering waters of the State and to be in compliance with all Indiana statutes and regulations relative to liquid and/or solid waste disposal. The discharge of pollutants in treated wastewater is allowed in compliance with the applicable effluent limitations in Part I. of this permit.

C. REPORTING REQUIREMENTS

1. Planned Changes in Facility or Discharge

Pursuant to 327 IAC 5-2-8(11)(F), the permittee shall give notice to the Commissioner as soon as possible of any planned physical alterations or additions to the permitted facility. In this context, permitted facility refers to a point source discharge, not a wastewater treatment facility. Notice is required only when either of the following applies:

- a. The alteration or addition may meet one of the criteria for determining whether the facility is a new source as defined in 327 IAC 5-1.5.
- b. The alteration or addition could significantly change the nature of, or increase the quantity of, pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in Part I.A. nor to notification requirements in Part II.C.9. of this permit.

Following such notice, the permit may be modified to revise existing pollutant limitations and/or to specify and limit any pollutants not previously limited.

2. Monitoring Reports

Pursuant to 327 IAC 5-2-8(10) and 327 IAC 5-2-13 through 15, monitoring results shall be reported at the intervals and in the form specified in "Discharge Monitoring Reports", Part I.C.2.

3. Twenty-Four Hour Reporting Requirements

Pursuant to 327 IAC 5-2-8(11)(C), the permittee shall orally report to the Commissioner information on the following types of noncompliance within 24 hours from the time permittee becomes aware of such noncompliance. If the noncompliance meets the requirements of item b (Part II.C.3.b) or 327 IAC 2-6.1, then the report shall be made within those prescribed time frames.

However, under 327 IAC 2-6.1-3(1), when the constituents of the discharge that is in noncompliance are regulated by this permit, and death or acute injury or illness to animals or humans does not occur, the reporting requirements of 327 IAC 2-6.1 do not apply.

- a. Any unanticipated bypass which exceeds any effluent limitation in the permit;
- b. Any noncompliance which may pose a significant danger to human health or the environment. Reports under this item shall be made as soon as the permittee becomes aware of the noncomplying circumstances;
- c. Any upset (as defined in Part II.B.3 above) that causes an exceedance of any effluent limitation in the permit; or
- d. Violation of a maximum daily discharge limitation for any of the following toxic pollutants: mercury, lead, zinc, naphthalene, tetrachloroethylene, total cyanide, free cyanide, ammonia, or phenols

The permittee can make the oral reports by calling (317)232-8670 during regular business hours and asking for the Compliance Data Section or by calling (317) 233-7745 ((888)233-7745 toll free in Indiana) during non-business hours. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and, if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce and eliminate the noncompliance and prevent its recurrence. The Commissioner may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

Alternatively, the permittee may submit a "Bypass/Overflow Report" (State Form 48373) or a "Noncompliance 24-Hour Notification Report" (State Form 52415), whichever is appropriate, to IDEM at (317) 232-8637 or wwreports@idem.in.gov. If a complete e-mail submittal is sent within 24 hours of the time that the permittee became aware of the occurrence, then the email report will satisfy both the oral and written reporting requirements.

4. Other Compliance/Noncompliance Reporting

Pursuant to 327 IAC 5-2-8(11)(D), the permittee shall report any instance of noncompliance not reported under the "Twenty-Four Hour Reporting Requirements" in Part II.C.3, or any compliance schedules at the time the pertinent Discharge Monitoring Report is submitted. The report shall contain the information specified in Part II.C.3;

The permittee shall also give advance notice to the Commissioner of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements; and

All reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

5. Other Information

Pursuant to 327 IAC 5-2-8(11)(E), where the permittee becomes aware of a failure to submit any relevant facts or submitted incorrect information in a permit application or in any report, the permittee shall promptly submit such facts or corrected information to the Commissioner.

6. Signatory Requirements

Pursuant to 327 IAC 5-2-22 and 327 IAC 5-2-8(15):

a. All reports required by the permit and other information requested by the Commissioner shall be signed and certified by a person described below or by a duly authorized representative of that person:

(1) For a corporation: by a responsible corporate officer. A "responsible corporate officer" means either of the following:

- a. A president, secretary, treasurer, any vice president of the corporation in charge of a principal business function, or any other person who performs similar policymaking or decision making functions for the corporation; or
- b. The manager of one (1) or more manufacturing, production, or operating facilities provided the manager is authorized to make management decisions that govern the operation of the regulated facility including having the explicit or implicit duty to make major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

- (2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or
 - (3) For a Federal, State, or local governmental body or any agency or political subdivision thereof: by either a principal executive officer or ranking elected official.
 - (4) Under the proposed Federal E-Reporting Rule, a method will be developed for submittal of all affected reports and documents using electronic signatures that is compliant with the Cross-Media Electronic Reporting Regulation (CROMERR). Enrollment and use of NetDMR currently provides for CROMERR-compliant report submittal.
- b. A person is a duly authorized representative only if:
- (1) The authorization is made in writing by a person described above.
 - (2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or a position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and
 - (3) The authorization is submitted to the Commissioner.
- c. Electronic Signatures. If documents described in this section are submitted electronically by or on behalf of the NPDES-regulated facility, any person providing the electronic signature for such documents shall meet all relevant requirements of this section, and shall ensure that all of the relevant requirements of 40 CFR part 3 (including, in all cases, subpart D to part 3) (Cross-Media Electronic Reporting) and 40 CFR part 127 (NPDES Electronic Reporting Requirements) are met for that submission.
- d. Certification. Any person signing a document identified under Part II.C.6. shall make the following certification:
- "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

7. Availability of Reports

Except for data determined to be confidential under 327 IAC 12.1, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Indiana Department of Environmental Management and the Regional Administrator. As required by the Clean Water Act, permit applications, permits, and effluent data shall not be considered confidential.

8. Penalties for Falsification of Reports

IC 13-30 and 327 IAC 5-2-8(15) provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance, shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 180 days per violation, or by both.

9. Changes in Discharge of Toxic Substances

Pursuant to 327 IAC 5-2-9, the permittee shall notify the Commissioner as soon as it knows or has reason to know:

- a. That any activity has occurred or will occur which would result in the discharge of any toxic pollutant that is not limited in the permit if that discharge will exceed the highest of the following notification levels.
 - (1) One hundred micrograms per liter (100 µg/l);
 - (2) Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/l) for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;
 - (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or
 - (4) A notification level established by the Commissioner on a case-by-case basis, either at the Commissioner's own initiative or upon a petition by the permittee. This notification level may exceed the level specified in subdivisions (1), (2), or (3) but may not exceed the level which can be achieved by the technology-based treatment requirements applicable to the permittee under the CWA (see 327 IAC 5-5-2).

- b. That it has begun or expects to begin to use or manufacture, as an intermediate or final product or byproduct, any toxic pollutant that was not reported in the permit application under 40 CFR 122.21(g)(9). However, this subsection b. does not apply to the permittee's use or manufacture of a toxic pollutant solely under research or laboratory conditions.

10. Future Electronic Reporting Requirements

IDEM is currently developing the technology and infrastructure necessary to allow compliance with the EPA Phase 2 e-reporting requirements per 40 CFR 127.16 and to allow electronic reporting of applications, notices, plans, reports, and other information not covered by the federal e-reporting regulations.

IDEM will notify the permittee when IDEM's e-reporting system is ready for use for one or more applications, notices, plans, reports, or other information. This IDEM notice will identify the specific applications, notices, plans, reports, or other information that are to be submitted electronically and the permittee will be required to use the IDEM electronic reporting system to submit the identified application(s), notice(s), plan(s), report(s), or other information.

See Part I.C.2. of this permit for the current electronic reporting requirements for the submittal of monthly monitoring reports such as the Discharge Monitoring Report (DMR) and the Monthly Monitoring Report (MMR).

PART III Cooling Water Intake Structures

A. Best Technology Available (BTA) Determination

Section 316(b) of the Clean Water Act requires that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available (BTA) for minimizing adverse environmental impact.

The EPA promulgated a CWA section 316(b) regulation on August 15, 2014, which became effective on October 14, 2014. 79 Fed. Reg. 48300-439 (August 15, 2014). This regulation established application requirements and standards for cooling water intake structures. The regulation is applicable to point sources with a cumulative design intake flow (DIF) greater than 2 MGD where 25% or more of the water withdrawn (using the actual intake flow (AIF)) is used exclusively for cooling purposes. All existing facilities subject to these regulations must submit the information required by 40 CFR 122.21(r)(2)–(r)(8) and facilities with an actual intake flow of greater than 125 MGD must also submit the information required by 40 CFR 122.21(r)(9)–(r)(13). The regulation establishes best technology available standards to reduce impingement and entrainment of aquatic organisms at existing power generation and manufacturing facilities.

Based on available information, IDEM has made best technology available (BTA) impingement and entrainment determination for the permittee's intakes. These determinations will be reassessed at the next permit reissuance to ensure that the cooling water intake structures continue to meet the requirements of Section 316(b) of the federal Clean Water Act (33 U.S.C. section 1326).

1. Impingement Mortality BTA

a. Main Intake/No. 2 Pump House

IDEM has determined that the impingement mortality BTA under 40 CFR 125.94(c)(3) is the BTA for this intake. This BTA requires the permittee to operate a cooling water intake structure that has a maximum through-screen actual intake velocity of 0.5 feet per second. The permittee will be required to install a flow monitoring device at this intake and this permit establishes a not-to-exceed velocity limit of 0.5 fps to ensure compliance with this requirement.

The 0.5 fps maximum velocity is a not-to-exceed requirement, except that IDEM can allow this velocity to be exceeded "for brief periods for the purpose of maintaining the cooling water intake system, such as backwashing the screen face." Ensuring compliance with this 0.5 fps alternative requires an accurate determination of the intake flow and by extension, the through screen actual intake velocity. This permit is proposing to require the use of a maximum hourly average flow to determine compliance with this 0.5 fps maximum velocity. The permittee would calculate the hourly average flow 24 times each day and use the maximum hourly average flow each day to calculate and report the maximum velocity for its monthly reports.

In addition, the permittee is required to conduct a velocity monitoring study at this intake to compare to calculated velocities.

b. No. 6 Pump House/Flap Gates Intake

The permittee's current intake does not comply with any of the impingement mortality BTA alternatives. IDEM's preference is that these flap gates be permanently closed. Closure of the flap gates would eliminate this intake and as such would serve as the impingement and entrainment mortality BTA for this intake and would also eliminate the potential backflow of process water. If closure of the flap gates is determined not to be feasible as an impingement mortality BTA, the permittee will either install a 3/8 inch screen with a maximum actual or design intake velocity of less than 0.5 fps immediately downstream or upstream of the current bar rack at the Main Intake or propose an alternate impingement mortality BTA for this intake.

A compliance schedule is proposed in this permit to allow the permittee time to evaluate and install one of these BTA options.

IDEM has determined that permanent closure of the flap gates is an acceptable impingement mortality BTA, since it will eliminate the intake.

If it is not feasible to close the flap gates, detailed information must be submitted to IDEM for review and approval prior to proceeding with either of the other options. Based on that information, IDEM will determine whether they meet one of the impingement mortality BTA alternatives.

c. No. 7 Pump House Intake

IDEM has determined that the impingement mortality BTA under 40 CFR 125.94(c)(2) is the BTA for this intake. This BTA requires the permittee to operate a cooling water intake structure that has a maximum design through-screen intake velocity as water passes through the structural components of a screen measured perpendicular to the screen mesh of 0.5 feet per second. This maximum velocity must be achieved under all conditions, including during minimum ambient source water surface elevations (based on BPJ using hydrological data) and during periods of maximum head loss across the screens or other devices during normal operation of the intake structure.

In addition to these inspection requirements, the permittee must inspect the screens at this intake and replace any screens as needed to ensure they are in good operating condition. Further, the permittee must conduct weekly inspections of the screens at this intake to ensure that they are maintained and operated to function as designed and must clean each of these screens at least quarterly or when the blockage on a screen is 20% or greater.

In addition, the permittee is required to conduct a velocity monitoring study at this intake to compare to calculated velocities.

2. Entrainment Mortality BTA:

After considering all the factors that must and may be considered by the federal rules (see discussion above), IDEM finds that the existing facility meets the best technology available (BTA) for entrainment mortality both for the entire facility and each intake. This is primarily based on the following factors:

- a. The small number of organisms projected to be entrained by the facility based on available information; and
- b. The flow reduction/water reuse optimization efforts already implemented at the facility.

B. 316(b) Permit Requirements

The permittee must comply with the following cooling water intake structure requirements:

1. In accordance with 40 CFR 125.98(b)(1), nothing in this permit authorizes take for the purposes of a facility's compliance with the Endangered Species Act.
2. The permittee must at all times properly operate and maintain the cooling water intake structure and associated intake equipment.
3. The permittee must inform IDEM of any proposed changes to the cooling water intake structure or proposed changes to operations at the facility that affect the information taken into account in the current BTA evaluation.
4. Any discharge of intake screen backwash must meet the Minimum Narrative Limitations contained in Part I.B of the permit. There must be no discharge of debris from intake screen washing which will settle to form objectionable deposits which are in amounts sufficient to be unsightly or deleterious, or which will produce colors or odors constituting a nuisance.
5. No. 2 Pump House Intake Flow Monitoring: The permittee must continuously monitor the intake flow at the No. 2 Pump House. The permittee must install intake flow measurement device that continuously measures the intake flow at the No. 2 Pump House Intake no later than nine (9) months after the effective date of the permit. Until the flow measurement device is installed, the permittee may estimate the flow at this intake. The maximum hourly average intake flow for each day must be reported on the MMR with the monthly results summarized on the DMRs that are submitted every month. The permittee must calculate the hourly average flow 24 times each day to determine the maximum hourly average flow. Further, the permittee must submit an annual report of the actual intake flows and include in the report both the maximum hourly average intake flow and the daily maximum intake flow for each day. For all estimated intake flows, the permittee must provide the data and calculations used to estimate each estimated intake flow in this annual report. In addition, if the permittee uses the estimated flow to determine the velocities required under Part III.B.7., below, the input values and calculations for each day must be included in this annual report. As part of the

annual report, the permittee shall also provide a spreadsheet containing the data and calculations.

6. No. 7 Pump House Intake Flow Monitoring: The permittee must measure or estimate the intake flow at the No. 7 Pump House Intake. These data must be reported on the DMRs and MMRs. Further, the permittee must submit an annual report containing this daily intake flow data. If the intake flow rate is estimated, the annual report must include the data and calculations used to estimate the intake flow. As part of the annual report, the permittee shall also provide a spreadsheet containing the data and calculations.
7. At a minimum frequency of daily, the permittee must calculate the velocity at the screens at the No. 2 Pump House. The permittee must calculate the through-screen velocity using the water flow rate (maximum hourly average intake flow rate), water depth (the minimum ambient Lake Michigan level or actual water level at the screens if a method of measuring the actual water depth is installed), and the screen open area. The results of these daily calculations including the maximum hourly average intake flow and maximum calculated intake velocity must be reported on the MMR with the monthly results summarized on the DMRs that are submitted every month and included in the annual report required under Part III.B.5., above. As part of the annual report, the permittee shall also provide a spreadsheet containing the data and calculations.
8. Velocity Monitoring Study Requirements: The permittee is required to verify the actual through screen intake velocity at No. 2 Pump House intake and the No 7 Pump House Intake through actual measurements. The velocity measurements must be conducted for a range of flows. At a minimum, the velocity study must measure through screen velocity at design flow as well as when additional pumps at the intake(s) are operating and allow for estimating through screen velocity when operating at maximum actual flows above the design intake flow. A study plan for this monitoring must be submitted to IDEM within 6 months of the effective date of this permit for review and approval prior to conducting the required study. The permittee must submit a report to IDEM containing the results of these velocity measurements no later than 24 months from the effective date of this permit. The through-screen velocity monitoring must, at a minimum, be conducted at a point where intake velocities are the greatest for each intake and the results must be compared to the velocities calculated by the permittee.
9. Pump Operation Requirements:
 - (a) At the No. 2 Pump House Intake only one pump, rated 10,000 gpm or less, may be operated at any time except that two pumps may be operated when pumps are switched in and out of operation, which is a period of minutes. In addition, two pumps may be operated under emergency conditions. Any use of more than one pump for emergency conditions must be reported with the monthly reports and must include, dates of operation, hours of operation and reason for use.
 - (b) At the No. 7 Pump House Intake, only one pump, rated 30,000 gpm or less, may be operated at any time except that two pumps may be operated when pumps

are switched in and out of operation, which is a period of minutes. In addition, two pumps may be operated under emergency conditions. Any use of more than one pump for emergency conditions must be reported with the monthly reports and must include, dates of operation, hours of operation and reason for use.

- (c) The permittee is prohibited from operating any of the eight low-lift pumps located adjacent to the Main Intake tide gates.
 - (d) The permittee must maintain pump operating records for all of the pumps at each intake (including date of operation and hours of operation on each day) and make these records available to IDEM upon request.
10. The gates located upstream of the bar racks in the Main Intake must remain closed and sealed.
11. The permittee must either conduct visual inspections or employ remote monitoring devices during the period each cooling water intake structure is in operation as required by 40 CFR 125.96(e). The permittee must conduct such inspections at least weekly to ensure that any technologies operated to comply with 40 CFR 125.94 are maintained and operated to function as designed including those installed to protect Federally-listed threatened or endangered species or designated critical habitat. IDEM may establish alternative procedures if this requirement is not feasible (e.g., an offshore intake, velocity cap, or during periods of inclement weather).
- In addition to these inspection requirements, the permittee must inspect the screens at No. 7 Pump House Intake and replace any screens as needed to ensure they are in good operating condition. Further, the permittee must conduct weekly inspections of the screens at No. 7 Pump House Intake to ensure that they are maintained and operated to function as designed and must clean each of these screens at least quarterly or when the blockage on a screen is 20% or greater.
12. Conduct two years of entrainment sampling at both the No. 2. Pump House Intake and the No. 7 Pump House Intake. No later than 90 days after the effective date of the permit, the permittee must submit to IDEM for review and approval a study plan including a schedule for the conduct of two years of entrainment sampling at both intakes, beginning on or before March 1 and lasting at a minimum through November 30 of each sampling year. The entrainment study plan must conform to the entrainment characterization study requirements specified in 40 CFR 122.21(r)(9). After approval by IDEM, not later than 60 days prior to March 1 of the first study year, the permittee must conduct the approved entrainment sampling study. The entrainment sampling must be completed, and results submitted to IDEM within 90 days of completion of the two-year study. .
13. In accordance with 40 CFR 125.97(c), by January 31 of each year, the permittee must submit to the Industrial NPDES Permit Section IDEM-OWQ an annual certification statement for the preceding calendar year signed by the responsible corporate officer as defined in 40 CFR 122.22 (see 327 IAC 5-2-22) subject to the following:

- a. If the information contained in the previous year's annual certification is still pertinent, you may simply state as such in a letter to IDEM and the letter, along with any applicable data submission requirements specified in this section must constitute the annual certification.
 - b. If you have substantially modified operation of any unit at your facility that impacts cooling water withdrawals or operation of your cooling water intake structures, you must provide a summary of those changes in the report. In addition, you must submit revisions to the information required at 40 CFR 122.21(r) in your next permit application.
14. Best technology available (BTA) determinations for entrainment mortality and impingement mortality at cooling water intake structures will be made in each permit reissuance in accordance with 40 CFR 125.90-98. The permittee must submit all the information required by the applicable provisions of 40 CFR 122.21(r)(2) through (r)(8) with the next renewal application. Since the permittee has submitted the studies required by 40 CFR 122.21(r), the permittee may, in subsequent renewal applications pursuant to 40 CFR 125.95(c), request to reduce the information required if conditions at the facility and in the waterbody remain substantially unchanged since the previous application so long as the relevant previously submitted information remains representative of the current source water, intake structure, cooling water system, and operating conditions. Any habitat designated as critical or species listed as threatened or endangered after issuance of the current permit whose range of habitat or designated critical habitat includes waters where a facility intake is located constitutes potential for a substantial change that must be addressed by the owner/operator in subsequent permit applications, unless the facility received an exemption pursuant to 16 U.S.C. 1536(o) or a permit pursuant to 16 U.S.C. 1539(a) or there is no reasonable expectation of take. The permittee must submit the request for reduced cooling water intake structure and waterbody application information at least **two years and six months** prior to the expiration of the NPDES permit. The request must identify each element in this subsection that it determines has not substantially changed since the previous permit application and the basis for the determination. IDEM has the discretion to accept or reject any part of the request.
15. The permittee must submit and maintain all the information required by the applicable provisions of 40 CFR 125.97.
16. The permittee must keep records of all submissions that are part of its permit application until the subsequent permit issued to document compliance with 40 CFR 125.95. If IDEM approves a request for reduced permit application studies under 40 CFR 125.95(a) or (c) or 40 CFR 125.98(g), the permittee must keep records of all submissions that are part of the previous permit application until the subsequent permit is issued.
17. All required reports must be submitted to the IDEM, Office of Water Quality, NPDES Permits Branch, Industrial NPDES Permit Section at OWQWWPER@idem.in.gov and the Compliance Branch at wwReports@idem.in.gov.

Part IV Streamlined Mercury Variance (SMV)

Introduction

The permittee submitted an application for three (3) streamlined mercury variances (SMVs) on April 28, 2022, for Outfalls 011, 014 and 018, in accordance with the provisions of 327 IAC 5-3.5. A SMV establishes a streamlined process for obtaining a variance from a water quality criterion used to establish a WQBEL for mercury in an NPDES permit. Based on a review of the SMV application, IDEM has determined the application to be complete as outlined in 327 IAC 5-3.5-4(e). IDEM determined that mercury at Outfalls 011 and 014 do not require water quality-based effluent limits, therefore, SMVs are not required. The SMV for **Outfall 018** is approved and is being incorporated into the NPDES permit in accordance with 327 IAC 5-3.5-6.

Term of SMVs

The SMV at Outfall 018 and the corresponding interim discharge limit included in Permit Part I.A.4., Discharge Limitations Table, will remain in effect until the NPDES permit expires under IC 13-14-8-9 (amended under SEA 620, May 2005). Pursuant to IC 13-14-8-9(e), when the NPDES permit is extended under IC 13-15-3-6 (administratively extended), the SMV will remain in effect as long as the NPDES permit requirements affected by the SMV are in effect.

Annual Reports

The annual report is a condition of the Pollutant Minimization Program Plan (PMPP) requirements of 327 IAC 5-3.5-9(a)(8). The annual report must describe the permittee's progress toward fulfilling each PMPP requirement, the results of all mercury monitoring within the previous year, and the steps taken to implement the planned activities outlined under the PMPP. The annual report may also include documentation of chemical and equipment replacements, staff education programs, and other initiatives regarding mercury awareness or reductions. The complete inventory and complete evaluation required by the PMPP may be submitted as part of the annual report. An annual report is required for Outfall 018.

The permittee will submit annual reports to IDEM on the anniversary of the effective date of this NPDES permit renewal, as indicated on Page 1 of this permit. Annual Reports should be submitted to the Office of Water Quality, Industrial NPDES Permit Section at OWQWWPER@idem.in.gov and the Compliance Branch at wwReports@idem.in.gov.

SMV Renewal

As authorized under 327 IAC 5-3.5-7(a)(1), the permittee may apply for the renewal of a SMV at any time within 180 days prior to the expiration of the NPDES permit. In accordance with 327 IAC 5-3.5-7(c), an application for renewal of the SMV must contain the following:

- All information required for an initial SMV application under 327 IAC 5-3.5-4, including revisions to the PMPP, if applicable.
- A report on implementation of each provision of the PMPP.
- An analysis of the mercury concentrations determined through sampling at the facility's locations that have mercury monitoring requirements in the NPDES permit for the two (2) year period prior to the SMV renewal application.
- A proposed alternative mercury discharge limit, if appropriate, to be evaluated by the department according to 327 IAC 5-3.5-8(b) based on the most recent two (2) years of representative sampling information from the facility.

Renewal of a SMV is subject to a demonstration showing that PMPP implementation has achieved progress toward the goal of reducing mercury from the discharge.

Pollutant Minimization Program Plan (PMPP)

The PMPP is a requirement of the SMV application and is defined in 327 IAC 5-3.5-3(4) as the plan for development and implementation of Pollutant Minimization Program (PMP). The PMP is defined in 327 IAC 5-3.5-3(3) as the program developed by an SMV applicant to identify and minimize the discharge of mercury into the environment. PMPP requirements (including the enforceable parts of the PMPP) are outlined in 327 IAC 5-3.5-9. In accordance with 327 IAC 5-3.5-6, the permittee's PMPP is hereby incorporated within this permit:

Planned Activity	Goal	Measure of Performance	Schedule for Action	Current Status
Complete Inventory/Identification	Update complete inventory/identification of chemicals, materials, equipment and storage areas containing mercury	Submittal of complete inventory/identification to IDEM	<p>6 months: Review of SDS and other documentation for existing chemicals, materials, equipment and storage areas. Update of inventory for all primary Operations.</p> <p>April 1, 2018: Update of inventory for all Finishing operations</p> <p>May 1, 2018: Update of inventory for all Utilities operations</p> <p>June 1, 2018: Update of inventory for all remaining operations.</p>	Mercury inventory was completed. See "IH Mercury Inventory" attached.
Review Policies and Procedures for chemical, material, and equipment purchasing	<p>Review MSDS and other documentation from vendors or manufacturers</p> <p>Minimize the purchase of chemicals, materials and equipment containing mercury</p>	Ensure current policies and procedures are adequate to identify and minimize purchase of chemicals, materials and equipment containing mercury	Currently implemented	Our current policy is to minimize the purchase of mercury containing chemicals, materials, and equipment. See "ENV-P-020".
Employee Training	Education and increased awareness	<p>Evaluation of current employee Environmental and Health and Safety program</p> <p>If necessary, revise current training program to include relevant mercury identification, handling, recycling and disposal information</p>	<p>Complete evaluation by March 1, 2018</p> <p>Implement revised program by April 1, 2018</p>	According to the "IH Employee Training Matrix", all new employees receive "General Environmental Training" which includes spill response. Also, ISO 14001 Labor/Management (EMST) receive training on plant-wide procedures- this would include ENV-P-020 (Mercury Procedure) and ENV-P-019 (Universal Waste Procedure)
Facility-wide Mercury Disposal and Recycling Program	Ensure materials, chemicals and equipment containing mercury are properly stored and recycled or disposed offsite	Track and document estimated amount of mercury disposed per applicable mercury disposal and recycling regulations	Currently implemented	Mercury containing equipment such as universal waste bulbs are continued to be recycled by Veolia as necessary. Tracking is done through Hazardous Waste manifests.

Planned Activity	Goal	Measure of Performance	Schedule for Action	Current Status
Spill Containment Procedures	Minimize possibility of accidental spills and releases	Adequate training of employees on good housekeeping practices that reduce the possibility of accidental spills and releases (see "Staff Training" Activity)	Currently implemented	According to the "IH Employee Training Matrix", all new employees receive "General Environmental Training" which includes spill response. Also, ISO 14001 Labor/Management (EMST) receive training on plant-wide procedures- this would include EMS-PM-4.4.7 (Spill Response Procedure).
Maintenance and Cleaning Practices	Ensure proper and safe handling of mercury-containing materials, chemicals and equipment during maintenance and cleaning activities	Ensure procedures to minimize the release of mercury from chemicals, materials and equipment containing mercury are implemented during maintenance and cleaning activities	Currently implemented	We have a procedure for mercury reduction and waste management. See "ENV-P-020".
Characterization of Sources to Outfalls	Evaluate levels of mercury preset in intake water to plant	Data collected as part of the mercury QAPP activities required by the NPDES permit demonstrate the source of mercury in discharges is mercury present in intake water from the Indiana Harbor Ship Canal.	Complete. Data collected in 2012 and 2014 and reported in the Final Plan for Compliance Implementation Report submitted to IDEM in March 2015.	This was completed and submitted to IDEM in 2015.
	Evaluate levels of mercury preset in internal sampling locations and internal Outfalls	Conduct periodic monitoring of internal Outfalls for comparison to final Outfall data	Collect and analyze samples 2/year at Outfalls 518 and 618. Collect samples concurrent to (same day as) collection of samples at Outfall 018. Outfall 014 does not have internal outfalls, but to evaluate discharges within master recycle system, sampling will be conducted 2/year at: effluent of pickle line; DIW effluent; and No. 6 Pumphouse. Data will be included in annual reports.	Intend to conduct during upcoming NPDES permit term (i.e., under renewal NPDES permit expected to be issued in 2023).

Planned Activity	Goal	Measure of Performance	Schedule for Action	Current Status
Alternatives for Mercury Reduction	Evaluation of alternatives for mercury-bearing chemicals, materials and equipment	Investigate replacement and/or reduction options for in-service chemicals, materials and equipment containing mercury	See "Current Status"	As mercury containing equipment is being taken out of service, it is being replaced with non-mercury-containing alternatives.



**National Pollutant Discharge Elimination System
Fact Sheet for
Cleveland-Cliffs Steel LLC
Cleveland-Cliffs Steel LLC Indiana Harbor East
Draft: September 2023
Final: December 2023**

Indiana Department of Environmental Management

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

Permittee:	Cleveland-Cliffs Steel LLC 3210 Watling Street East Chicago, IN 46312
Existing Permit Information:	Permit Number: IN0000094 Expiration Date: August 31, 2022
Facility Contact:	Mariya Conlon, Environmental Engineer (219) 399-5473; mariya.conlon@clevelandcliffs.com
Facility Location:	Cleveland-Cliffs Steel LLC - Indiana Harbor East 3210 Watling Street East Chicago, IN 46312 Lake County
Receiving Water(s):	Indiana Harbor Turning Basin
GLI/Non-GLI:	GLI
Proposed Permit Action:	Renew
Date Application Received:	March 3, 2022
Source Category	NPDES Major – Industrial
Permit Writer:	Nikki Gardner, Technical Environmental Specialist (317) 232-8707; ngardner@idem.in.gov

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1.0 INTRODUCTION

The Indiana Department of Environmental Management (IDEM) received a National Pollutant Discharge Elimination System (NPDES) Permit application from the permittee on March 3, 2022.

In accordance with 327 IAC 5-2-6(a), the current five-year permit was issued with an effective date of September 1, 2017. The permit was subsequently modified on January 1, 2019, and June 1, 2021. A five-year permit is proposed in accordance with 327 IAC 5-2-6(a).

The Federal Water Pollution Control Act (more commonly known as the Clean Water Act), as amended, (Title 33 of the United States Code (U.S.C.) Section 1251 *et seq.*), requires an NPDES permit for the discharge of pollutants into surface waters. Furthermore, Indiana law requires a permit to control or limit the discharge of any contaminants into state waters or into a publicly owned treatment works. This proposed permit action by IDEM complies with and implements these federal and state requirements.

In accordance with Title 40 of the Code of Federal Regulations (CFR) Sections 124.8 and 124.56, as well as Title 327 of the Indiana Administrative Code (IAC) Article 5-3-8, a Fact Sheet is required for certain NPDES permits. This document fulfills the requirements established in these regulations. This Fact Sheet was prepared in order to document the factors considered in the development of NPDES Permit effluent limitations. The technical basis for the Fact Sheet may consist of evaluations of promulgated effluent guidelines, existing effluent quality, receiving water conditions, Indiana water quality standards-based wasteload allocations, and other information available to IDEM. Decisions to award variances to Water Quality Standards or promulgated effluent guidelines are justified in the Fact Sheet where necessary.

2.0 FACILITY DESCRIPTION

2.1 General

Cleveland-Cliffs Steel LLC – Indiana Harbor East is classified under Standard Industrial Classification (SIC) Code 3312 – Steel Works, Blast Furnaces, and Rolling Mills. The facility is an integrated steel mill with operations including blast furnace ironmaking, sintering, basic oxygen furnace (BOF) steelmaking, vacuum degassing, continuous casting, hot forming and steel finishing operations.

The source water for the facility is Lake Michigan.

A map showing the location of the facility has been included as Figure 1.

Figure 1: Facility Location



3210 Watling Street, East Chicago, IN 46312 - Lake County

2.2 Outfall Locations

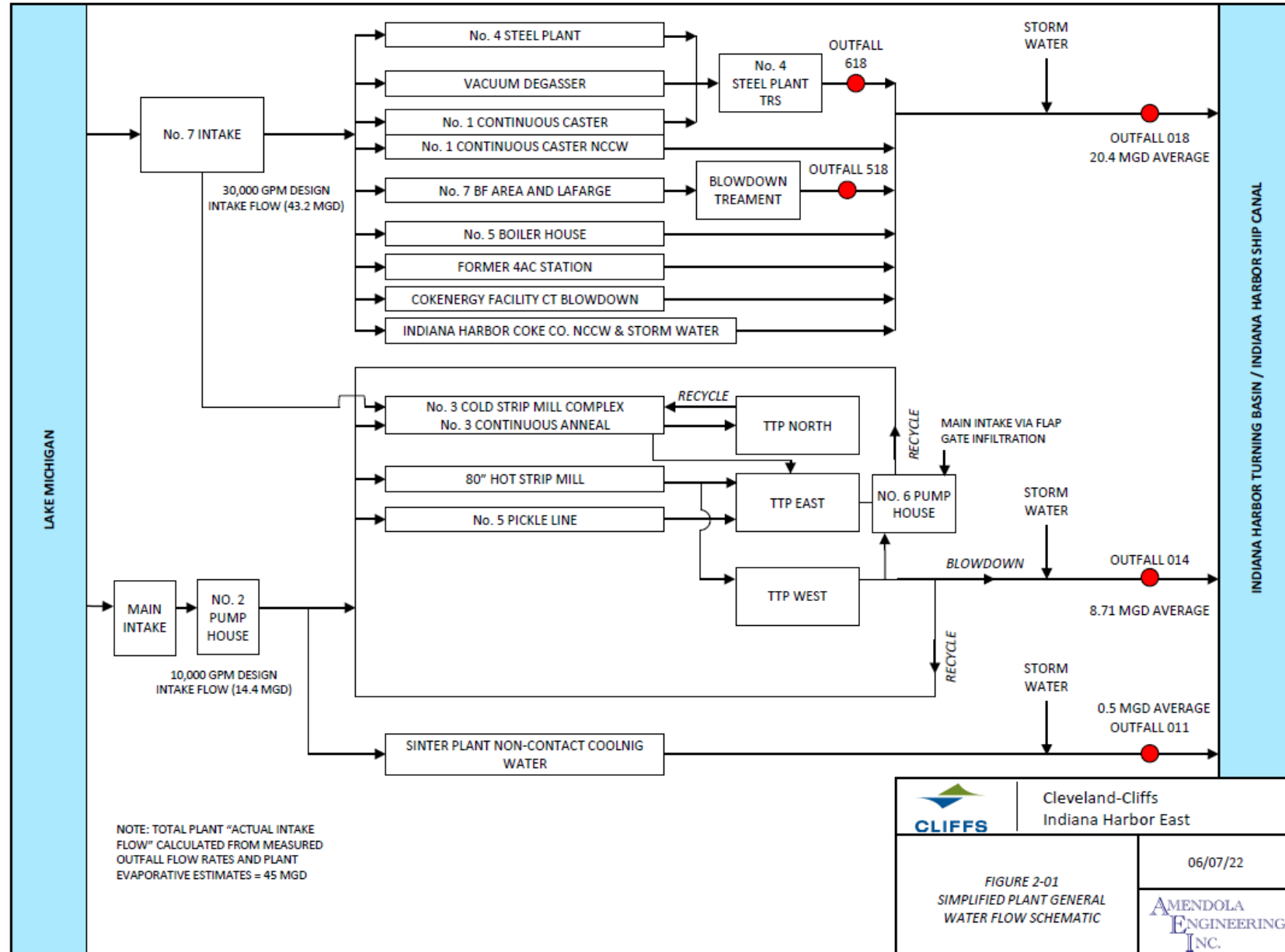
Table 1

Outfall	Latitude	Longitude	Waterbody	Average flow (MGD)	Operations/sources of wastewater	Source water
011	41° 39' 56"	-87° 26' 23"	Indiana Harbor Turning Basin	0.5	noncontact cooling water, stormwater, groundwater	Main Intake (Lake Michigan)
013	41° 39' 55"	-87° 26' 13"	Indiana Harbor Turning Basin	Unknown	Emergency discharge of blowdown from master recycle system, groundwater, stormwater (Outfall 014)	Main Intake (Lake Michigan)
014	41° 40' 02"	-87° 26' 22"	Indiana Harbor Turning Basin	9.6	Blowdown from master recycle system, groundwater, stormwater	Main Intake & No. 7 Pump House (Lake Michigan)
018	41° 40' 29"	-87° 26' 08"	Indiana Harbor Turning Basin	19.9	Noncontact cooling water; Outfall 518, Outfall 618, cooling tower blowdown, service water, boiler house discharges, , groundwater, stormwater	No. 7 Pump House (Lake Michigan)
518	41° 40' 50"	-87° 25' 30"	Indiana Harbor Turning Basin via Outfall 018	0.115	No. 7 Blast Furnace scrubber system	No. 7 Pump House (Lake Michigan)
618	41° 40' 32"	-87° 25' 52"	Indiana Harbor Turning Basin via Outfall 018	0.361	No. 4 Steel Plant treatment and recycle system	No. 7 Pump House (Lake Michigan)

2.3 Outfall Descriptions and Wastewater Treatment

The facility has an average discharge of approximately 30 MGD. Line diagrams have been included as Figures 2-01 through 2-16. Updated line drawings with water balance diagrams (see 40 CFR 122.21(g)(2)) must be provided with the next permit renewal application. See Part I.Q. of the Permit.

Figure 2-01: Simplified Plant General Water Flow Schematic



OUTFALL 011

The discharge from Outfall 011 is comprised of noncontact cooling water (low volume sources, including sinter plant), groundwater, and storm water run-off. The outfall formerly received noncontact cooling water from the No. 2 AC Power Station and boiler blowdown prior to shut down of the No. 2 AC Power Station. There is no wastewater treatment associated with Outfall 011. Outfall 011 discharges to the Indiana Harbor Turning Basin. The non-contact cooling water is chlorinated for zebra mussel control, then dechlorinated prior to discharge. See Figures 2-01 and 2-02.

For the purpose of determining the Water Quality-based Effluent Limitations (WQBELs), a flow of 0.5 MGD was used. This flow is the long-term average flow calculated using data from the period January 2020 through December 2021 to be consistent with the period used for the Cleveland-Cliffs West outfalls.

OUTFALL 013

Outfall 013 is emergency discharge from the Terminal Treatment Plant – West. This Outfall will discharge only if there is a major failure with the level indicators of the low lift pumps at terminal treatment plant west or if there is a major power outage which would prevent low lift pumps from working. The same limits and monitoring requirements apply here as those required at Outfall 014. Only one discharge event from this outfall occurred in the past eight years. See Figure 2-03.

OUTFALL 014

Outfall 014 is the main discharge from the Terminal Treatment Plant – West. The discharge from Outfall 014 is comprised of the blowdown from the Master Recycle System. The system includes process and cooling water from hot forming operations (80" hot strip mill); pickling operations (No. 5 pickle line, continuous anneal line); cold rolling mills (80" tandem mills; Nos. 28 and 29 temper mills); alkaline cleaning; No. 5 hot dip galvanizing line; treated sanitary wastewaters (No. 1, No. 2, and No. 3 sewage treatment plants); groundwater, and storm water. The No. 28 Temper Line has been idle since 2013 and the No. 5 Galvanizing Line is shut down. The noncontact cooling water is chlorinated for zebra mussel control, then dechlorinated prior to discharge. Outfall 014 discharges to the Indiana Harbor Turning Basin. See Figures 2-01, 2-02, 2-03, and 2-06.

For the purpose of determining the Water Quality-based Effluent Limitations (WQBELs), a flow of 9.6 MGD was used. This flow is the long-term average flow calculated using data from the period January 2020 through December 2021 to be consistent with the period used for the Cleveland-Cliffs West outfalls.

Terminal Treatment Plant - West (TTPW)

See Figures 2-03 and 2-06. TTPW consists of two scalping tanks and two settling basins and a cooling tower. Most of the effluent from the TTPW is discharged to the No. 6 Pump House and is then recycled back to the mills as process and cooling water. The remaining water is the only blowdown from the Main Plant Recycle System and constitutes the discharge from Outfall 014.

No. 1 Sewage Treatment Plant (STP)

The No. 1 STP treats sanitary wastewater from the sinter plant , 2AC, blast furnace blowdown building, the No. 2 steel shop, Quality and IT buildings, south end of the 80" Hot Strip mill, Fire Department, 5 substation, and the UDC building and Utilities huts. Treatment consists of an influent chamber, an Imhoff tank, a trickling filter, a secondary treatment tank, and disinfection in a contact chamber prior to discharge to the Main Pant Recycle System. The No. 1 STP can treat up to 2.6 MGD, but historical flows have been lower. The No. 1 STP is shown on Figure 2-03.

No. 3 Sewage Treatment Plant (STP)

The No. 3 STP treats sanitary wastewater from the Pugh Ladle Repair, the rail office area, Phoenix services (slag handling) area, the Lime Plant, and the No. 4 Steel Plant and Caster. Treatment consists of an influent chamber, a primary treatment tank, a trickling filter, and a secondary clarifier. Disinfection occurs at the TTPW deepwell structure where the No. 3 STP discharge meets the Main Pant Recycle System. The No. 3 STP can treat up to 2.2 MGD, but historical flows have been lower. The No. 3 STP is shown on Figure 2-03.

Figure 2-Summary: Water Line Diagram

This diagram illustrates the water management system for Outfalls 011 and 014 at the Cleveland-Cliffs Indiana Harbor East facility. The system shows the flow of water from Lake Michigan through various processing units, including mills, pumps, and treatment plants, before being discharged into the Indiana Harbor Turning Basin.

Key Components and Flow:

- Main Intake:** Water enters from Lake Michigan, passing through a Main Intake and a 0.5 MGD average flow pump (No. 2 Pump House).
- Processing Units:**
 - No. 2 Pump House:** 14.4 MGD design flow.
 - No. 3 Cold Strip Mill Complex:** Includes No. 28 Temper Mill (Idle), No. 29 Temper Mill (Idle), No. 3 Continuous Anneal Line (Idle), and No. 5 Galvanizing Line (Idle). It receives 3.6 MGD from No. 7 Pump House Intake.
 - No. 5 Pickle Line:** 280 GPM process water.
 - No. 6 Pump House:** 130,000 GPM master recycled system.
 - No. 3 Cold Strip Mill Slump:** Receives 80" tandem mill process water, No. 28 and 29 Temper Mill process water, No. 3 Continuous Anneal process water, No. 5 Galvanizing process water, and No. 3 Cold Strip Mill Slump.
- Terminal Treatment Plants:**
 - Terminal Treatment Plant West:** Includes North and South Scalping Tanks, North and South Settling Basins, and a Cooling Tower (0 - 70,000 GPM).
 - Terminal Treatment Plant East:** Includes Scalping Tanks, Cooling Tower, and Settling Basins.
 - Terminal Treatment Plant North:** Includes Scalping Tanks and a Cooling Tower.
- Outfalls:**
 - Outfall 011:** 0.5 MGD average flow.
 - Outfall 014:** 8.71 MGD average flow.

Legend:

- Process Water:** Indicated by solid lines.
- Storm Water:** Indicated by dashed lines.
- Recycled Water:** Indicated by dotted lines.
- Evaporation:** Indicated by arrows pointing up.
- Injection:** Indicated by arrows pointing down.

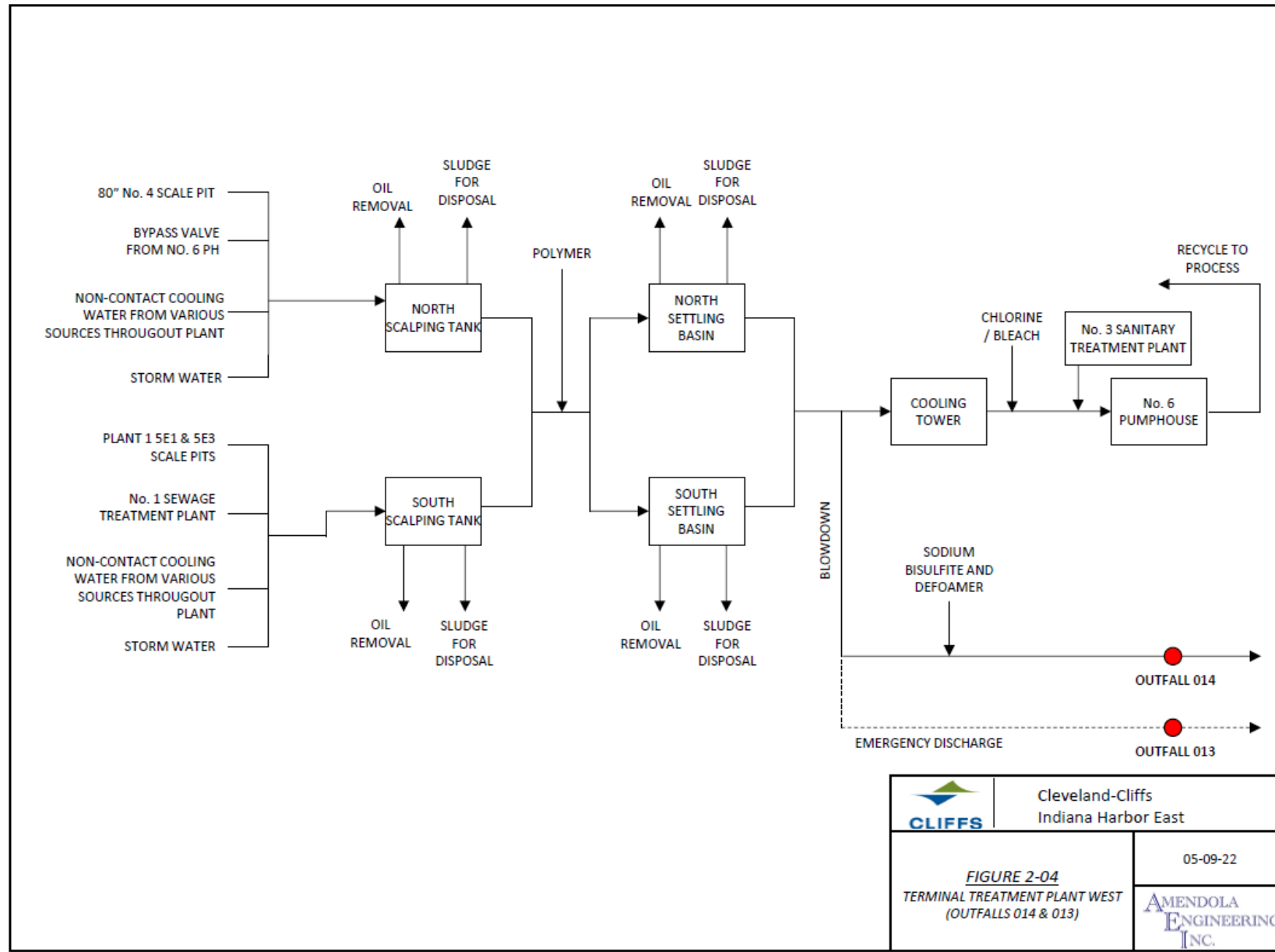
Table 1: Facility Information

Facility	Location	Equipment	Design
CLEVELAND-CLIFFS INDIANA HARBOR EAST	INDIANA HARBOR EAST	OUTFALLS 011, 014 SUMMARY WATER LINE DIAGRAM	FIGURE 2-SUMMARY
DATE: NA	PREPARED BY: MAA	DATE: 10/10/2022	
	DESIGNED BY: AMENDOLA ENGINEERING		

Table 2: Equipment Information

Equipment	Location	Design
OUTFALLS 011, 014 SUMMARY WATER LINE DIAGRAM	INDIANA HARBOR EAST	FIGURE 2-SUMMARY
DATE: NA	PREPARED BY: MAA	DATE: 10/10/2022
	DESIGNED BY: AMENDOLA ENGINEERING	

Figure 2-03: Terminal Treatment Plant West (Outfalls 014 and 013)



Terminal Treatment Plant - North (TTPN)

See Figures 2-04, 2-06, 2-09, and 2-10. TTPN is comprised of settling basins (scalping tanks) and a cooling tower located at the north end of the cold strip mill. The discharge from TTPN is recycled directly back to the mill as process and cooling water. TTPN receives process and cooling water from the finishing end of the No. 3 Cold Strip Mill Complex (80" Tandem Mill, No. 29 Tandem Mill, No. 5 Galvanizing). Overflow from TTPN is directed to a storm water retention basin, from which there is no discharge to surface waters.

No. 2 Sewage Treatment Plant (STP)

The No. 2 STP treats sanitary wastewater from the No. 3 Cold Strip Mill, the north end of the 80" Hot Strip mill, the MEU building and old electric shop, the garage/locomotive shop, and the Cleaning Services shop. Treatment consists of an influent chamber, a primary treatment tank, a trickling filter, two secondary clarifiers, and disinfection in a contact chamber prior to discharge to the Terminal Treatment Plant North settling basins. The No. 2 STP can treat up to 1.6 MGD, but historical flows have been lower. The No. 2 STP is shown on Figure 2-04.

Figure 2-04: Terminal Treatment Plant North Water Flow Schematic

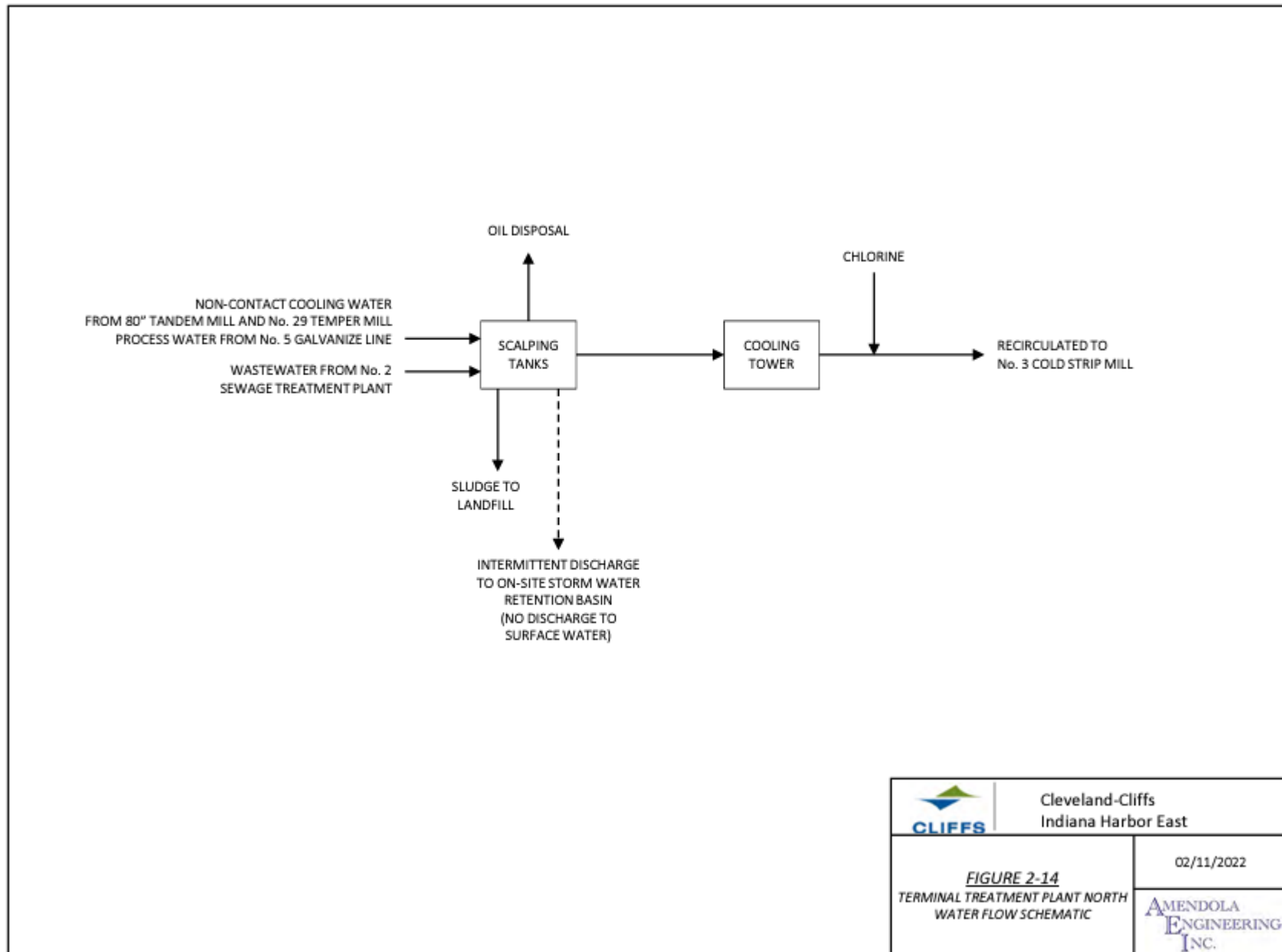
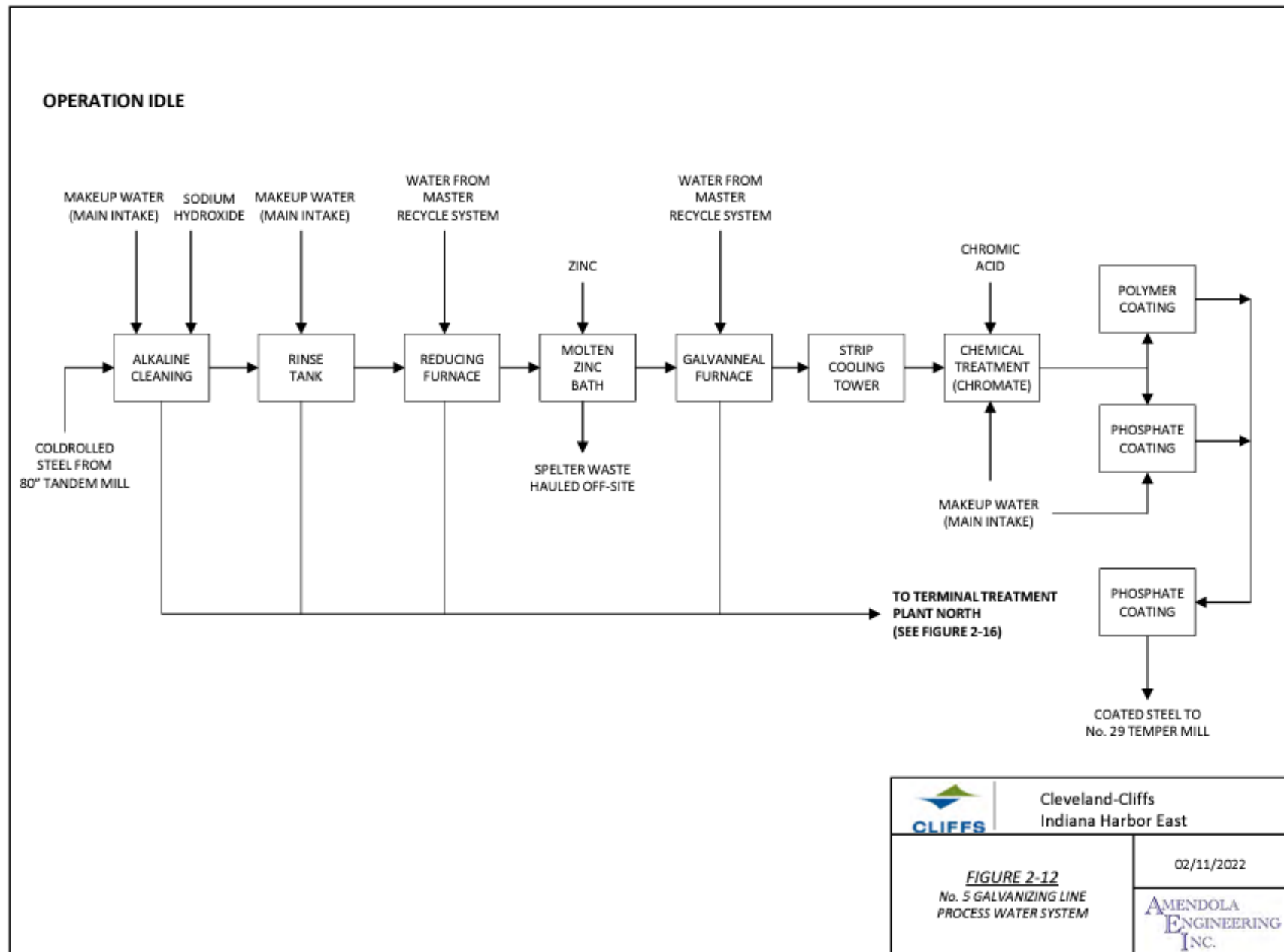


Figure 2-05: No. 5 Galvanizing Line Process Water System (IDLE) – discharges to TTPN



Terminal Treatment Plant - East (TTPE)

See Figures 2-05, 2-06, 2-07, 2-08, and 2-09. TTPE consists of two scalping tanks and three settling basins and a cooling tower. All of the effluent from TTPE is discharged to the No. 6 Pump house and is then recycled back to the mills as process and cooling water. The following operations discharge to TTPE:

- The 80" hot strip mill is equipped with four scalping tanks and four large diameter clarifiers for preliminary removal of heavy solids and oil prior to discharge to the TTPE scale pits.
- No. 3 Cold Strip Mill process wastewaters (cold rolling, alkaline cleaning and hot coating line) are treated in a clarifier and a dissolved air floatation unit to remove emulsified oils and then are combined with 80" hot strip mill wastewater for additional treatment in large diameter clarifiers prior to discharge to the TTPE scalping tanks.
- Pickling rinse water from the No. 5 Pickle Line is neutralized with caustic at the No. 3 Cold Strip Mill neutralization facility prior to discharge to the TTPE scalping tanks. Rinse water from the CAL line discharges directly to the TTPE scalping tanks.

Solids from the scale pits and settling basins are removed by either drag outs or clam shell buckets for disposal.

Figure 2-06: Terminal Treatment Plant East Water Flow Schematic

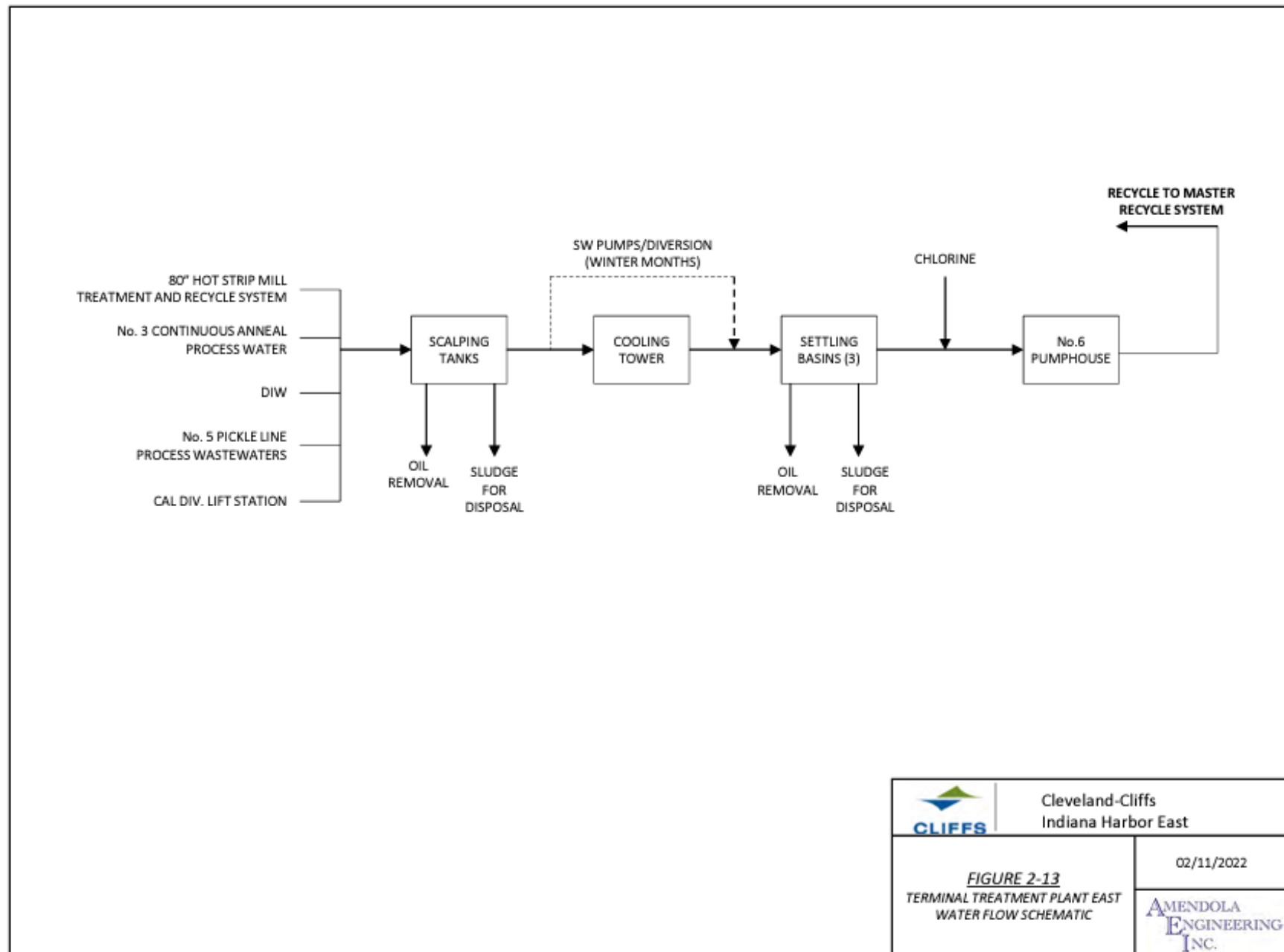
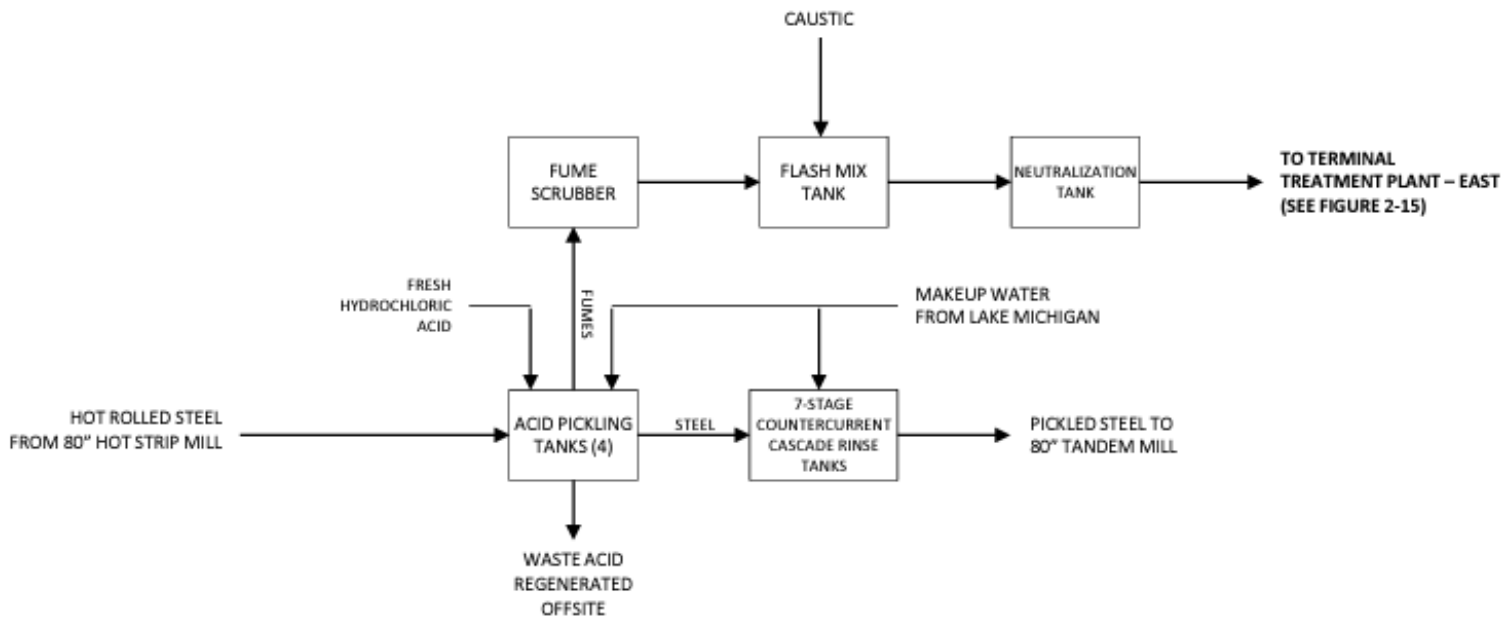


Figure 2-07: No. 5 Pickle Line Process Wastewater Treatment System – discharges to TTPE





	Cleveland-Cliffs Indiana Harbor East	
FIGURE 2-09 No. 5 PICKLE LINE PROCESS WASTEWATER TREATMENT SYSTEM		02/11/2022 

Figure 2-08: No. 3 Cold Strip Mill Recirculation System – discharges to TTPE

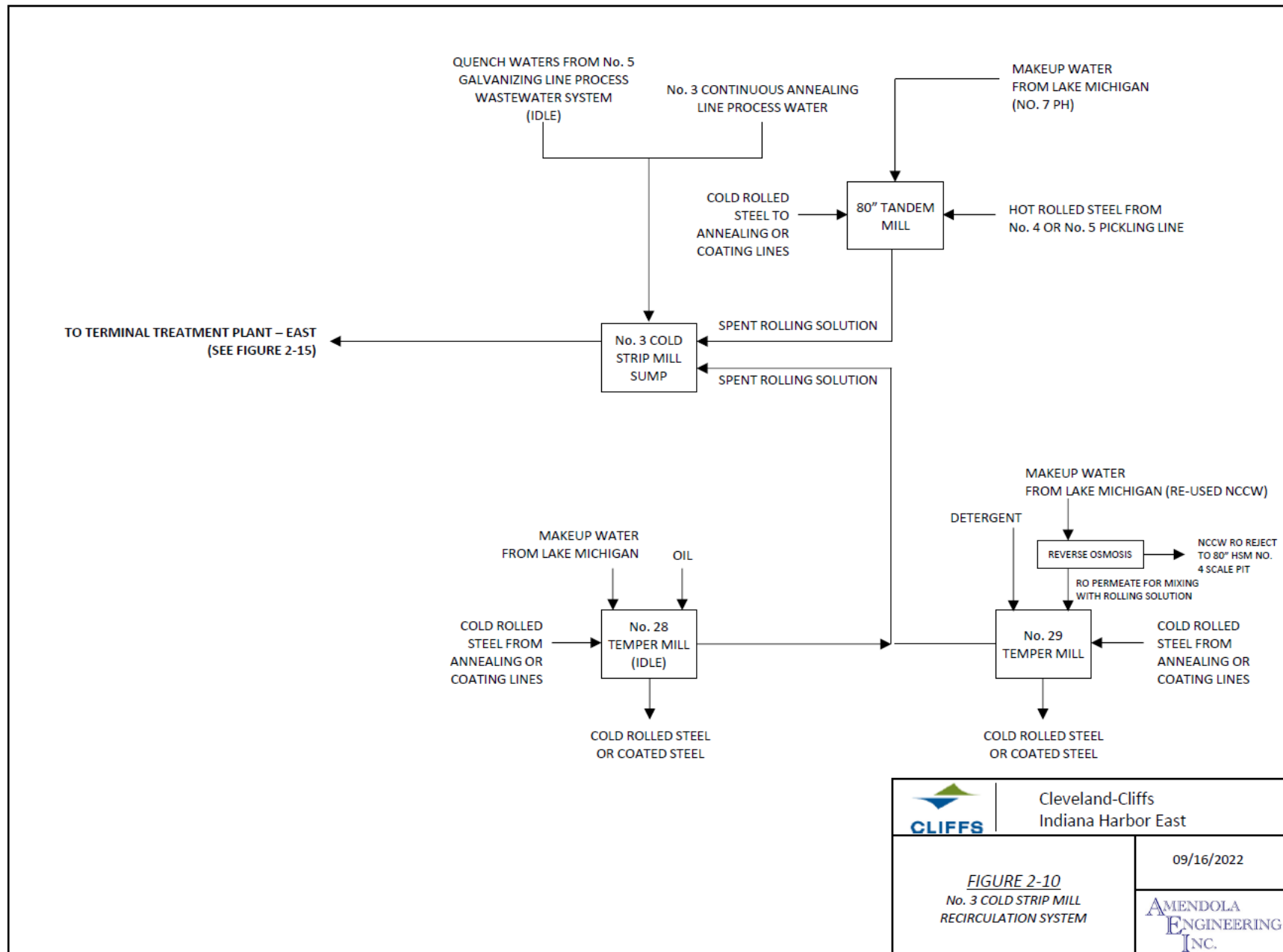


Figure 2-09: No. 3 Continuous Anneal Line Process Water System – discharges to TTPN and TTPE

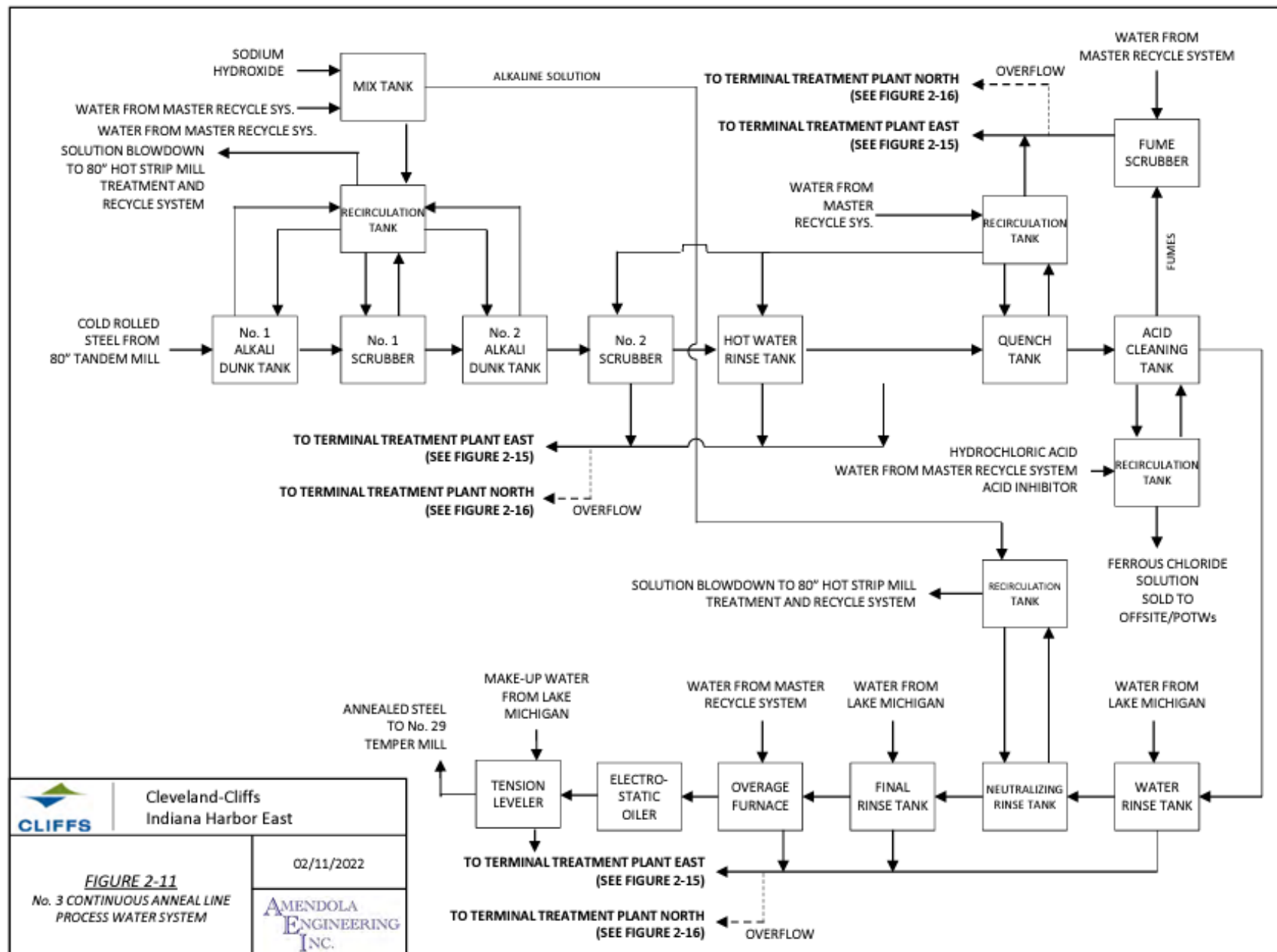
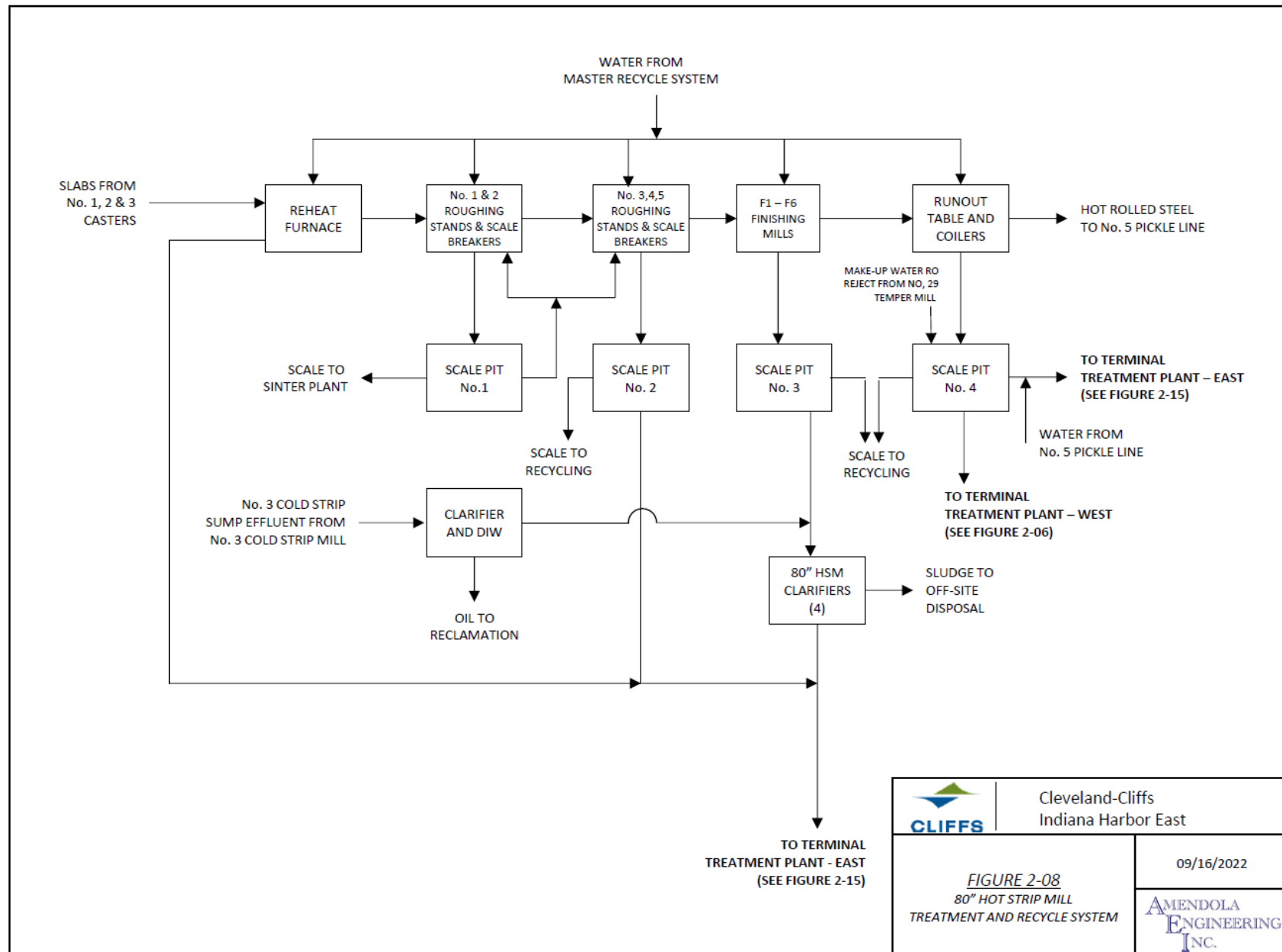


Figure 2-10: 80” Hot Strip Mill Treatment and Recycle System – discharges to TTPN, TTPE, & TTPW



OUTFALL 018

The discharge from Outfall 018 is comprised of noncontact cooling water; treated effluents from the No. 4 Steel Plant (BOF), Vacuum Degasser (RHOB), and No. 1 Continuous Caster (internal Outfall 618); treated effluents from the No. 7 Blast Furnace gas scrubber system (internal Outfall 518); cooling tower blowdown and discharges from the No. 5 Boiler House; service water directed through the former No. 4 AC Power Station, cooling tower blowdown from CokEnergy co-generating facility, stormwater run-off, groundwater, and noncontact cooling water and storm water runoff from the Indiana Harbor Coke Company. The noncontact cooling water is chlorinated for zebra mussel control, then dechlorinated prior to discharge. Outfall 018 discharges to the Indiana Harbor Turning Basin. See Figures 2-01, 2-11, 2-12, 2-13, 2-14, 2-15, and 2-16. Process water and blowdown treatment for the No. 4 Steel Plant (BOF), the Vacuum Degasser (RHOB) and No. 1 Continuous Caster are described under Outfall 618. Process water and blowdown treatment for the No. 7 Blast Furnace is described under Outfall 518.

For the purpose of determining the Water Quality-based Effluent Limitations (WQBELs), a flow of 19.9 MGD was used. This flow is the long-term average flow calculated using data from the period January 2020 through December 2021 to be consistent with the period used for the Cleveland-Cliffs West outfalls.

[illegible]

OUTFALLS 518

Outfall 518 is the internal outfall for the No. 7 Blast Furnace gas scrubbing system. Treated wastewaters are limited and monitored prior to mixing with noncontact cooling water and stormwater for discharge through Outfall 018. See Figures 2-01, 2-12, and 2-13.

The gas cleaning system for the No. 7 Blast Furnace is a high-rate process water recycle system that supplies water to clean the blast furnace off-gas through a high energy wet scrubber. Dirty water from the Bischoff gas scrubber is treated through two large diameter thickeners and a cooling tower and then recycled back to the scrubber. Blowdown from the scrubber system is sent to the No. 7 Blast Furnace Lafarge slag granulation system. The thickener underflow is dewatered in a recessed chamber filter press. Filtrate is returned to the thickeners and dry cake is sent off site for disposal.

Excess water from the No. 7 Lafarge slag granulation system is sent to the No. 7 blast furnace blowdown treatment plant, which consists of pH adjustment, cyanide precipitation and alkaline chlorination. A new larger cyanide reaction tank is being added in series to the existing reaction tank which will increase the facility's treatment ability by increasing the reaction time of the process water with ferrous chloride. The existing tank is 5,800 gallons and the new tank is 22,000 gallons which will result in a total capacity of 27,800 gallons of cyanide reaction volume. The discharge from the No. 7 Blast Furnace blowdown treatment system constitutes Outfall 518.

Flows provided in the renewal application are: Long term average flow of 0.115 MGD (September 2017-November 2021) and maximum monthly average flow of 0.250 MGD (September 2017-November 2021).

Figure 2-12: No. 7 Blast Furnace Gas Scrubber System (Outfall 518)

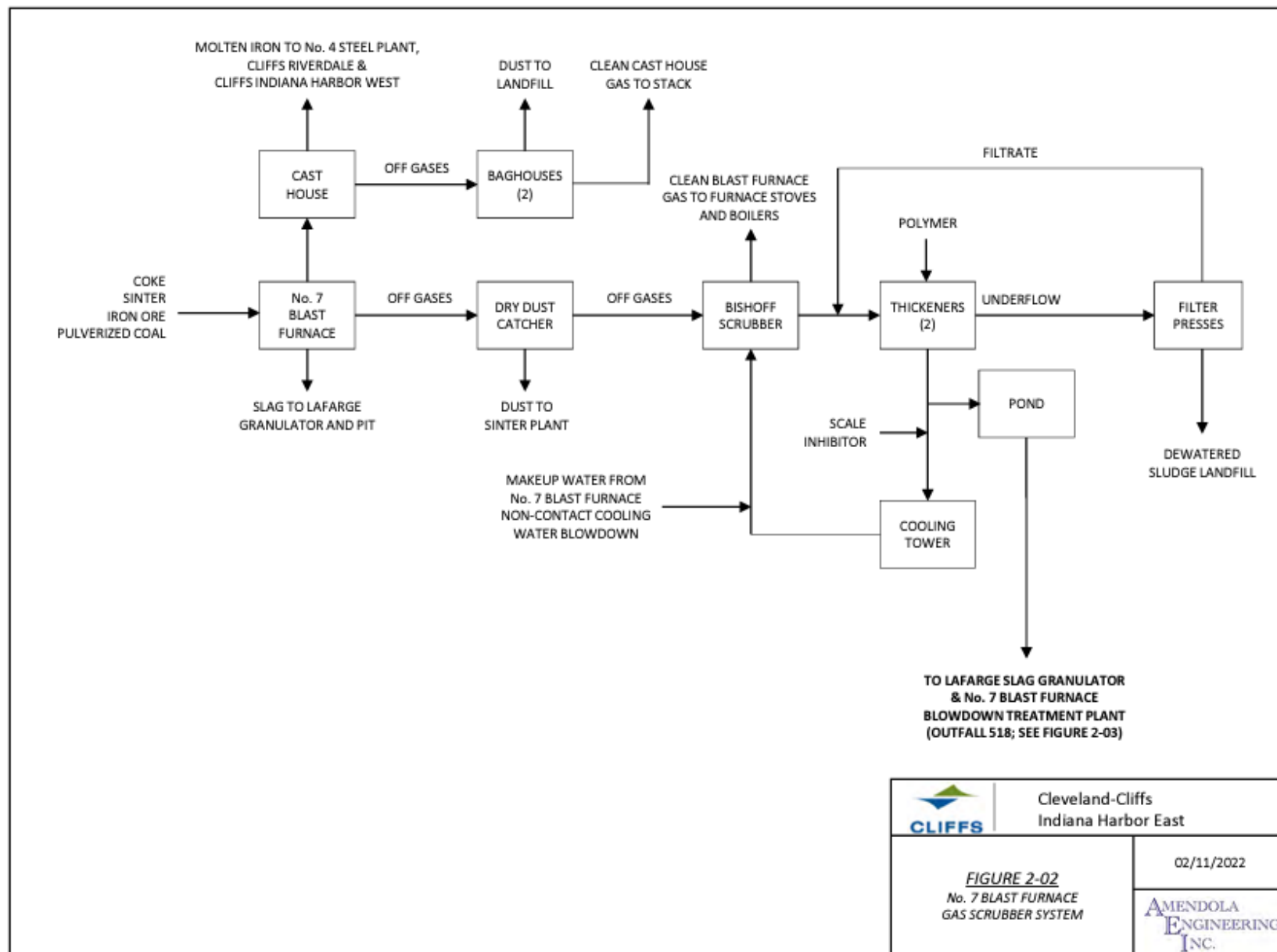
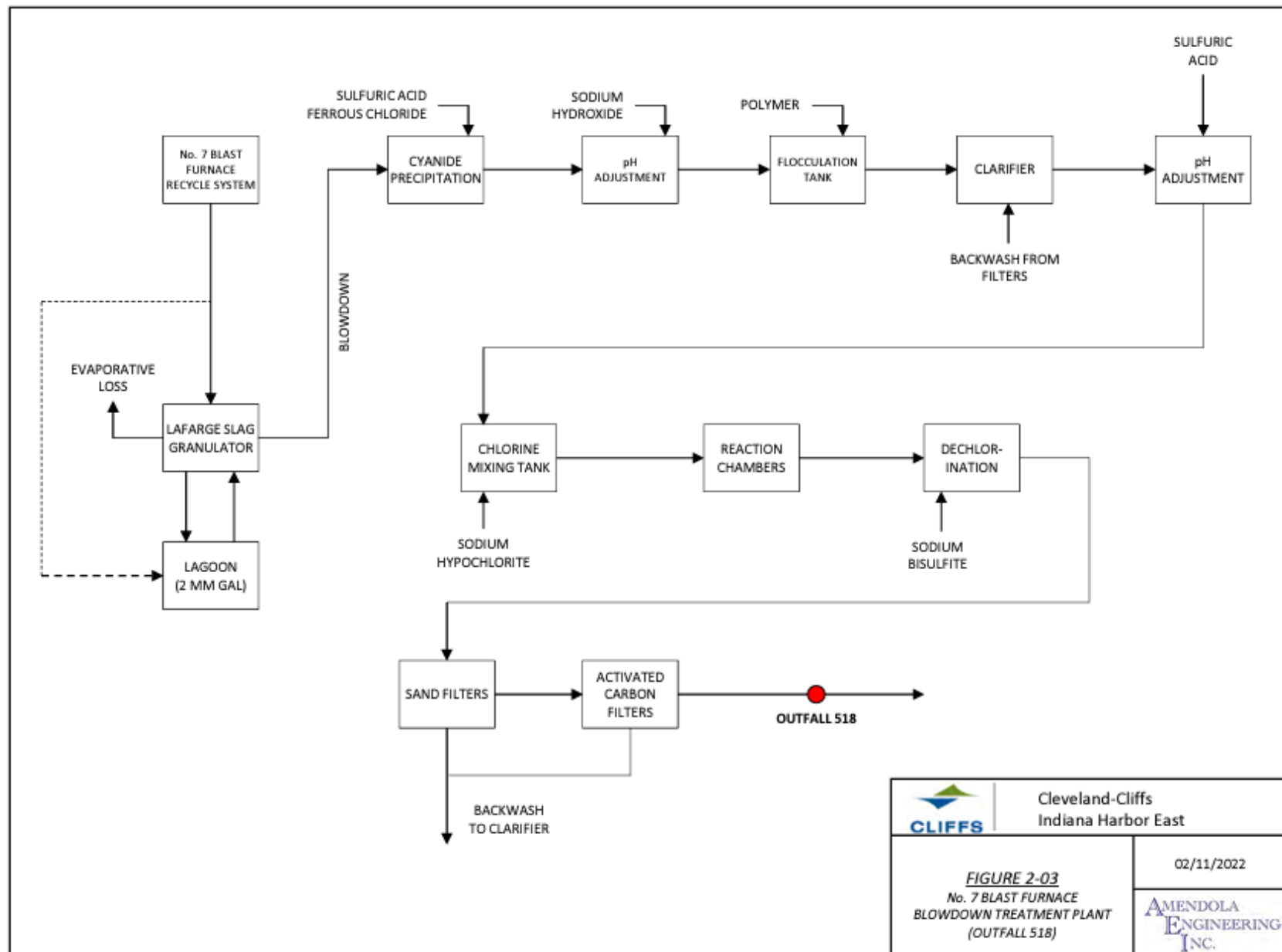


Figure 2-13: No. 7 Blast Furnace Blowdown Treatment Plant (Outfall 518)



OUTFALL 618

Outfall 618 is the internal outfall for the No. 4 Steel Plant (the basic oxygen furnace or BOF), the Vacuum Degasser (RHOB) and the No. 1 Continuous Caster process water systems. RHOB stands for Ruhrstahl Heraeus Oxygen Blowing. Treated wastewaters are limited and monitored prior to mixing with noncontact cooling water and discharge through Outfall 018. See Figures 2-01, 2-14, 2-15, and 2-16.

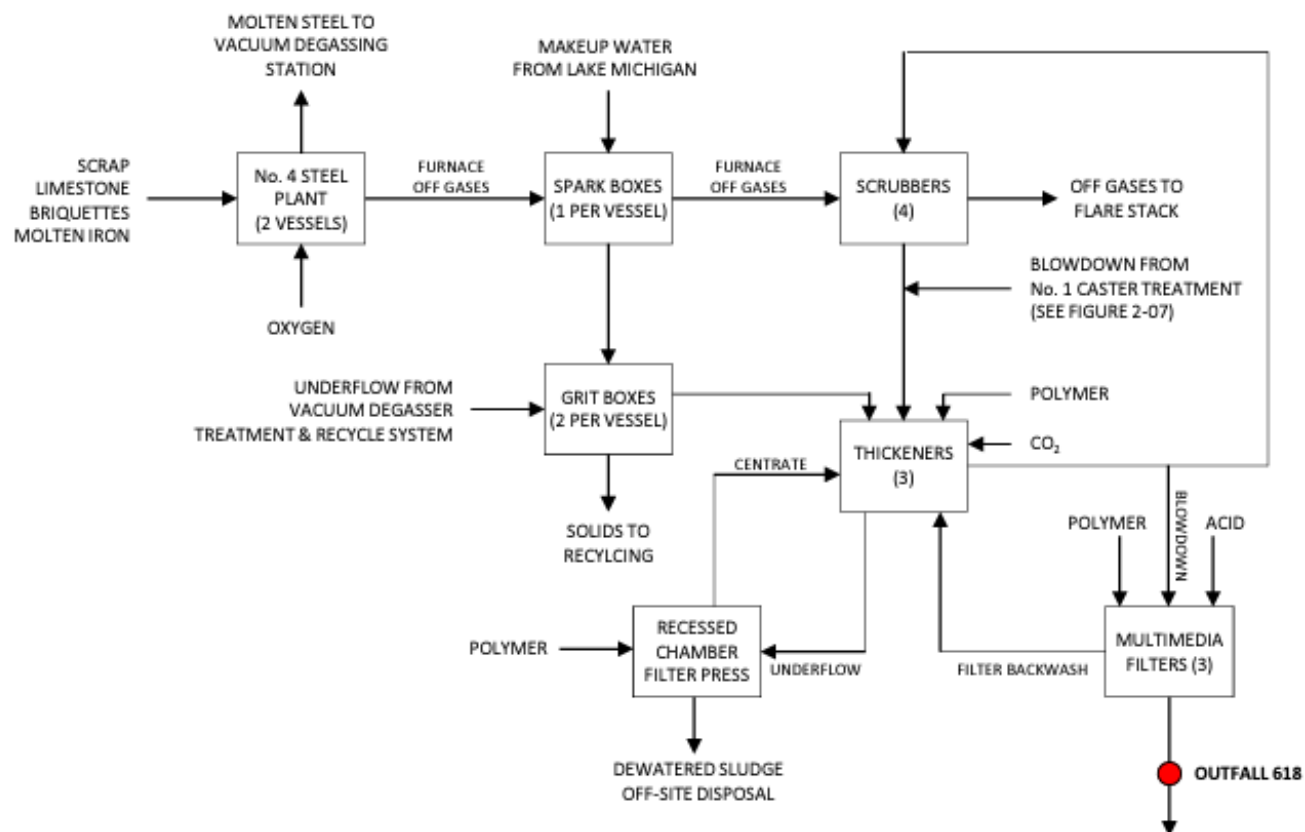
The gas cleaning system for No. 4 Steel Plant (BOF) is a high-rate process water recycle system that supplies water to clean BOF off-gas through four venturi scrubbers. Gas cleaning water is treated in large diameter thickeners for solids removal and most of the water is returned directly back to the venturi scrubbers. The remainder of the water is blown down to the No. 4 Steel Plant blowdown filtration facility for treatment prior to discharge to Outfall 618. The thickener underflow is dewatered in a recessed chamber filter press. Filtrate is returned to the thickeners and dry cake is returned to the steel making process via the briquetting plant or disposed of off-site.

The RHOB water system is a high-rate process water recycle system that supplies contact cooling water to the (vacuum degasser) barometric condensers. Discharge from the condensers returns to a cooling tower and is then recycled back to the condensers. A side stream of water is treated through two inclined plate separators (Lamella clarifiers) for solids removal and then returned to the system. The underflow from the separators is discharge to the No. 4 Steel Plant Grit Boxes (thickeners). This discharge is the only blowdown from the RHOB water treatment system.

The No. 1 Continuous Caster water system is a high rate recycle system that supplies water to the No. 1 Slab Caster and scarfer for machine cooling sprays, roll cooling, scale breaking and flume flushing. A separate system for machine and mold cooling consisting of non-contact cooling tower and heat exchangers blows down to the caster system. Treatment consists of a scale pit with oil and scale recovery, a cooling tower, and high-rate multi-media filtration. A small amount of water is blown down from the caster system to the No. 4 Steel Plant Treatment and Recycle System. The No. 4 Steel Plant Treatment and Recycle System treats the combined blowdown from the No. 4 Steel Plant (BOF), the No. 1 Continuous Caster and RHOB through high-rate multi-media filters prior to discharge at Outfall 618. Blowdown the filtration facility is from the overflow of the No. 4 Steel Plant thickeners.

Flows provided in the renewal application are: Long term average flow of 0.361 MGD (September 2017-November 2021) and maximum monthly average flow of 0.717 MGD (September 2017-November 2021).

Figure 2-14: No. 4 Steel Plant Treatment and Recycle System (Outfall 618)





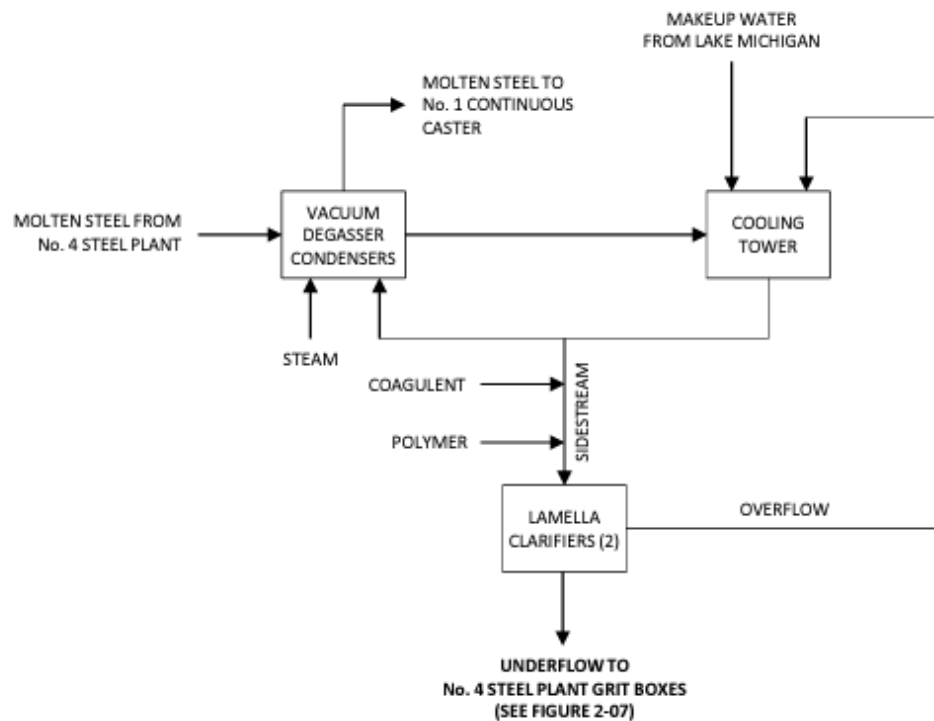
	Cleveland-Cliffs Indiana Harbor East	
FIGURE 2-05 No. 4 STEEL PLANT TREATMENT AND RECYCLE SYSTEM (OUTFALL 618)		02/11/2022
		

Figure 2-15: Vacuum Degassing Treatment and Recycle System (Outfall 618)





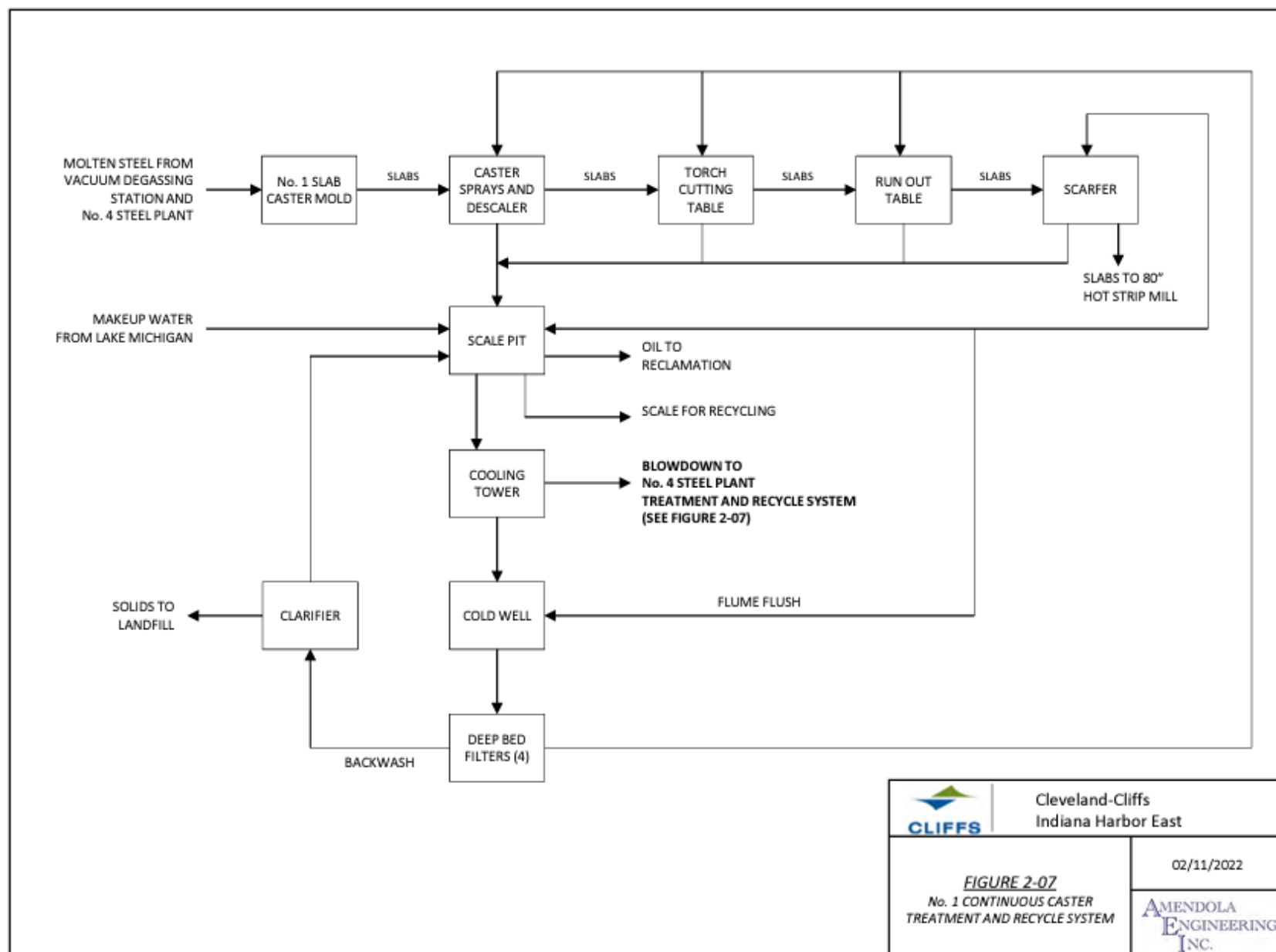
	Cleveland-Cliffs Indiana Harbor East	
FIGURE 2-06 VACUUM DEGASSING TREATMENT AND RECYCLE SYSTEM	02/11/2022	
		

Figure 2-16: No. 1 Continuous Caster Treatment and Recycle System (Outfall 618)



The permittee shall have the wastewater treatment facilities under the responsible charge of an operator certified by the Commissioner in a classification corresponding to the classification of the wastewater treatment plant as required by IC 13-18-11-11 and 327 IAC 5-22-5. In order to operate a wastewater treatment plant, the operator shall have qualifications as established in 327 IAC 5-22-7. IDEM has retained the permittee's Class D industrial wastewater treatment plant classification based on volume flow rates and the types of treatment utilized.

2.4 Changes in Operation

1. Based on a statement in the permittee's renewal application, Cleveland-Cliffs will be idling the Indiana Harbor West No. 4 Blast Furnace. As a result, production at the Indiana Harbor East No. 7 Blast Furnace is planned to increase to "full production" of approximately 12,500 tons/day. The permittee provided an idle date of March 15, 2022, for the Indiana Harbor West No. 4 Blast Furnace.
2. This permit was modified in 2021 to incorporate a name change and to reflect the addition of a parallel treatment system to the treatment system associated with Internal Outfall 518 that treats the No. 7 Blast Furnace gas scrubber system. This resulted in two new internal outfalls, 519 (physical) and 520 (administrative). As part of the 2023 permit renewal, the permittee notified IDEM that the parallel treatment plant project has been abandoned. Outfall 519 is not active and will not be in the foreseeable future. The permittee doesn't request to have outfall 519 and 520 in the renewal permit.
3. As part of the 2023 permit renewal, the permittee requests that Outfall 013 (emergency outfall) be included in the renewal NPDES permit. Supporting information has been provided in the outfall discussion below.
4. A low volume noncontact cooling water stream (~25 gpm) previously part of the master recycle system tributary to Outfall 014, will now be processed through a reverse osmosis (RO) unit for reuse as make-up to the rolling solution for the No. 29 Temper Mill. The reject from the RO unit will be directed to the master recycle system via the No. 4 Scale Pit at the 80" Hot Strip Mill. See water line diagrams Figures 2-08 and 2-10.

2.5 Facility Stormwater

See section 5.7 for stormwater requirements.

3.0 PERMIT HISTORY

3.1 Compliance History

3.1.1 Permit Limitation Violations

A review of this facility's discharge monitoring data for the most recent two (2) year period (calculated from receipt of permit renewal application) was conducted for compliance verification.

Table 2

Monitoring Period Date	Outfall	Parameter Description	Limit Type	Mass or Concentration
5/31/2020	014	pH	Daily Mx	s.u.
12/31/2020	014	Chlorine, total residual	Mo Avg	concentration
12/31/2020	014	Chlorine, total residual	Daily Mx	concentration
12/31/2020	014	Chlorine, total residual	Mo Avg	mass
12/31/2020	014	Chlorine, total residual	Daily Mx	mass
1/31/2021	518	Cyanide, total (as CN)	Daily Mx	mass
3/31/2021	014	Chlorine, total residual	Daily Mx	concentration
4/30/2021	014	Oil and grease, hexane extr. method	Daily Mx	concentration
8/31/2021	018	Toxicity, Ceriodaphnia chronic	Maximum	tox chronic
9/30/2021	014	Chlorine, total residual	Daily Mx	concentration
1/31/2022	520	Nitrogen, ammonia total (as N)	Daily Mx	mass

3.1.2 Inspection/Incident Summary

Table 3

Date	Type of Inspection/Incident	Results
January 13, 2020	Reconnaissance	Satisfactory
August 7, 2020	Outfall 018 chlorine issue	Sampling initiated; increased frequency
August 20, 2020	Outfall 018 red water incident	Incident investigated
September 14, 2020	Compliance Evaluation	Violations observed; Enforcement Ref.
January 27, 2021	Reconnaissance	Violations observed; Enforcement Ref.
November 12, 2021	Outfall 018 water discoloration	Incident investigated
June 28, 2022	Reconnaissance	Satisfactory
August 24 and 31, 2022	Compliance Evaluation	Violations were observed
February 1, 2023	Reconnaissance	Violations were observed
March 20, 2023	Reconnaissance	Satisfactory
June 15, 2023	Reconnaissance	Satisfactory

3.1.3 Enforcement

An Agreed Order (AO) in Case No. 2021-27623-W was approved and adopted by IDEM on September 14, 2021. The permittee's Compliance Plan was approved and incorporated into the Agreed Order December 17, 2021. At the time of this permit renewal, the AO remains open and the compliance plan is ongoing. Please reference the following IDEM website for more information on the Agreed Order: <https://www.in.gov/idem/resources/lake-michigan-sites-of-interest/cleveland-cliffs-indiana-harbor-long-carbon/>

4.0 LOCATION OF DISCHARGE/RECEIVING WATER USE CLASSIFICATION

The Indiana Harbor Canal and Indiana Harbor are designated for full-body contact recreation and shall be capable of supporting a well-balanced, warm water aquatic community. The Indiana Harbor is designated as an industrial water supply. The Indiana portion of the open waters of Lake Michigan is designated for full-body contact recreation; shall be capable of supporting a well-balanced, warm water aquatic community; is designated as salmonid waters and shall be capable of supporting a salmonid fishery; is designated as a public water supply; is designated as an industrial water supply; and, is classified as an outstanding state resource water. These waterbodies are identified as waters of the state within the Great Lakes system. As such, they are subject to the water quality standards and associated implementation procedures specific to Great Lakes system dischargers as found in 327 IAC 2-1.5, 327 IAC 5-1.5, and 327 IAC 5-2, and the 2006 revised GLI MOA with U.S. EPA. In addition, these waterbodies are subject to the statewide antidegradation policy and implementation procedures as found in 2-1.3.

Section 303(d) of the Clean Water Act requires states to identify waters, through their Section 305(b) water quality assessments, that do not or are not expected to meet applicable water quality standards with federal technology-based standards alone. States are also required to develop a priority ranking for these waters taking into account the severity of the pollution and the designated uses of the waters. Once this listing and ranking of impaired waters is completed, the states are required to develop Total Maximum Daily Loads (TMDLs) for these waters in order to achieve compliance with the water quality standards. Indiana's 2022 303(d) List of Impaired Waters was developed in accordance with Indiana's Water Quality Assessment and 303(d) Listing Methodology for Waterbody Impairments and Total Maximum Daily Load Development for the 2022 Cycle. The impairments listed for waters to which the permittee discharges are included in Table 4. A Site Map has been included as Figure 3.

Table 4

Assessment Unit	Waterbody	Impairments	Cleveland-Cliffs Indiana Harbor East Outfalls
INC0163_T1001	Indiana Harbor Canal	Biological Integrity, Oil and Grease, E. coli and PCBs in Fish Tissue	None
INC0163G_G1078	Lake Michigan Shoreline (includes Indiana Harbor)	Free Cyanide, Mercury in Fish Tissue and PCBs in Fish Tissue	011, 014, and 018
INM00G1000_00	Lake Michigan (beyond the shoreline)	Mercury in Fish Tissue and PCBs in Fish Tissue	None

[illegible]

5.0 PERMIT LIMITATIONS

5.1 Technology-Based Effluent Limits (TBEL)

EPA develops effluent limitations guidelines (ELGs) for industrial and commercial activities as required by the Clean Water Act (CWA). ELGs are technology-based effluent limits (TBELs). TBELs established pursuant to sections 301(b), 304, and 306 of the CWA represent the minimum level of treatment for industrial point sources that must be included in an NPDES permit (327 IAC 5-5-2(a)). The federal effluent guidelines and standards are located at 40 CFR 403 through 471, inclusive, and are incorporated into Indiana law at 327 IAC 5-2-1.5. In Indiana, NPDES permits are required to ensure compliance with these federal ELGs under 327 IAC 5-2-10(a)(1), 327 IAC 5-2-10(a)(2), and 327 IAC 5-5-2.

In the absence of ELGs for a particular process or parameter, TBELs can also be established on a case-by-case basis for a particular process or parameter using best professional judgment (BPJ) in accordance with 327 IAC 5-5-2 and 5-2-10 (see also 40 CFR 122.44 and 125.3, and Section 402(a)(1) of the CWA).

Tiered limits are proposed at Outfall 014 for this permit renewal to reflect the operational status of the No. 28 Temper Line. Tiered TBELs are permissible pursuant to 40 CFR 122.45(b)(2)(ii)(A)(1) and can be based on increases/decreases of production or flow. For compliance monitoring purposes, IDEM is proposing to redesignate Outfall 014 into Outfalls 014A and 014B. The permittee will monitor and report under 014A when the No. 28 Temper Line is operating (Tier 1) and 014B when the No. 28 Temper Line is idled (Tier 2).

Iron and Steel Effluent Limitations Guidelines (Outfalls 518, 618, 013, and 014):

The applicable technology-based standards for the Cleveland-Cliffs Indiana Harbor East facility are contained in 40 CFR 420 – Iron and Steel Manufacturing Point Source Category. The EPA established mass-based limitations expressed in terms of allowable pollutant discharge per unit of production or some other measure of production (i.e., production normalized). Table 5 below provides a description of applicable subpart(s), process(es), and average daily production as included in the permit application.

The facility provided updated production data on February 16, 2023.

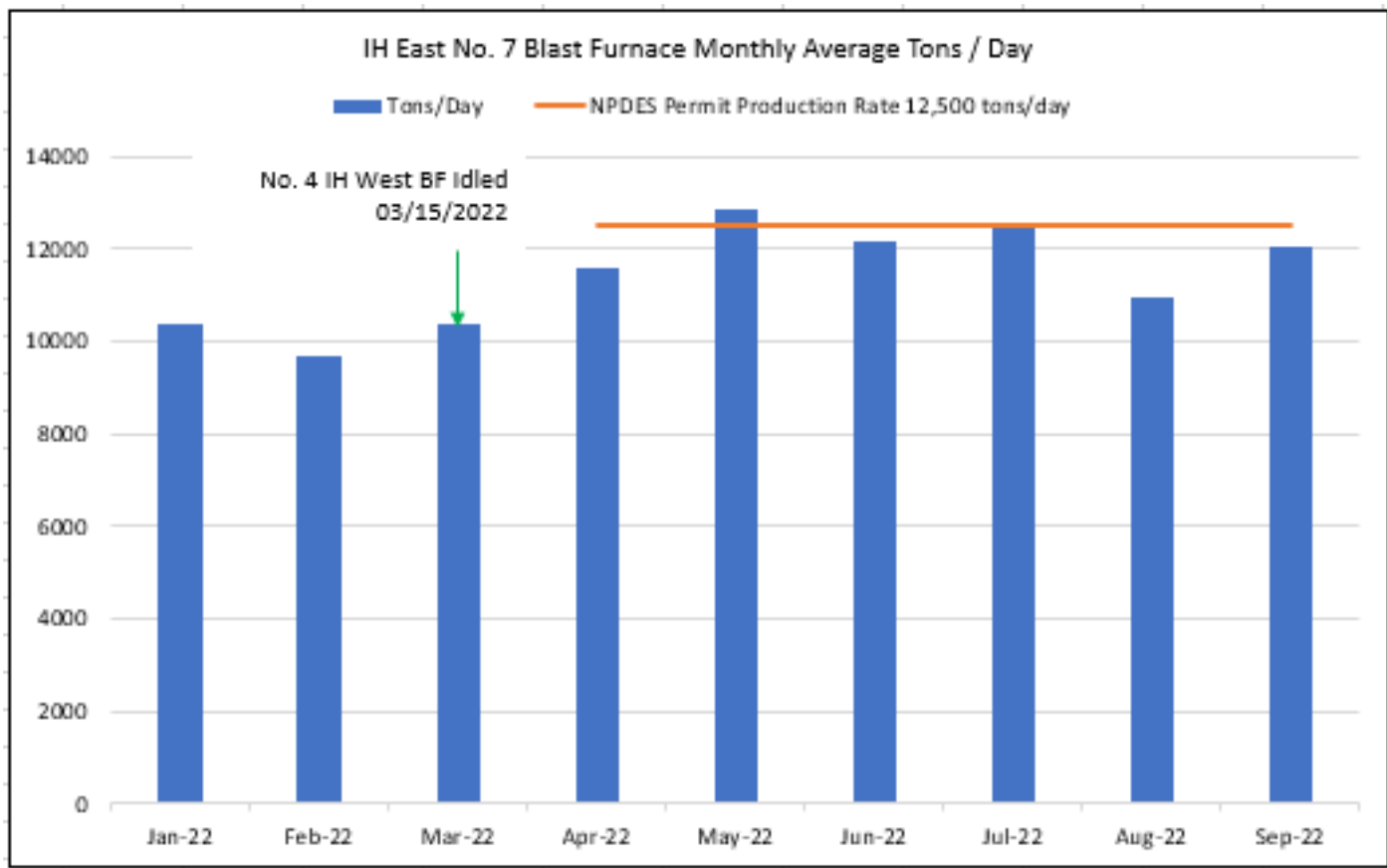
Table 5

Outfall	Operation	Subcategory	Applicable ELG	Production (tons/day)
518	No. 7 Blast Furnace	Ironmaking	420.34(a)	12,500
618	BOF Steelmaking	Steelmaking	420.42/43(c)	8,716
618	No. 1 Continuous Caster	Continuous Casting	420.62/63	8,716
618	RHOB Vacuum Degassing	Vacuum Degassing	420.54	6,508
013,014	80" Hot Strip Mill	Hot Forming	420.72/77(c)(1)	14,194
013,014	No. 5 Pickle Line	Acid Pickling	420.92/93(b)(2)	8,343
			420.92/93(b)(4)	1 Fume Scrubber
013,014	80" Tandem Mill	Cold Forming	420.102/103(a)(2)	7,014
013,014	No. 29 Tandem Mill	Cold Forming	420.102/103(a)(4)	1883
013,014	No. 28 Temper Mill*	Cold Forming	420.102/103(a)(5)	4752 – active 0 – idle
013,014	No. 5 Galvanizing Line**	Hot Coating	420.122/123(a)(1)	0
013,014	No. 3 Continuous Anneal Line	Alkaline Cleaning	420.112(b)	871

*Operation currently idled

**Operation shut down

Figure 4: No. 7 Blast Furnace Production



5.2 Water Quality-Based Effluent Limits

The water quality-based effluent limitations (WQBELs) included in the 2017 permit and documented in the Fact Sheet were developed as part of a wasteload allocation analysis for the Indiana Harbor Canal presented in the report “Supplemental Information for the Wasteload Allocation Analysis for the ArcelorMittal Indiana Harbor 2017 Permits” dated June 23, 2017. The wasteload allocation included a multi-discharger model that was limited to the Indiana Harbor Canal/Lake George Canal/Indiana Harbor subwatershed. Pollutants selected for the multi-discharger model were based on water quality concerns and the application of technology-based effluent limitations at multiple outfalls. For Cleveland-Cliffs (Indiana Harbor East), hereinafter, Cleveland-Cliffs East, WQBELs for ammonia (as N), lead, zinc and total residual chlorine were developed for Outfalls 014 and 018 as part of the multi-discharger model. The 2017 wasteload allocation (WLA) also included WQBELs for specific pollutants calculated on an individual outfall basis.

The 2017 WLA was developed using Indiana water quality regulations for discharges to waters within the Great Lakes system that include water quality criteria and methodologies for developing water quality criteria (327 IAC 2-1.5), procedures for calculating WLAs (327 IAC 5-2-11.4), making reasonable potential to exceed determinations (5-2-11.5) and developing WQBELs (5-2-11.6). These regulations are applicable to individual pollutants and to whole effluent toxicity (WET). These regulations are still applicable and were used in the current WLA analysis for the Indiana Harbor Canal presented in the report “Supplemental Information for the Wasteload Allocation Analysis for the Cleveland-Cliffs Indiana Harbor 2023 Permits” dated May 22, 2023. The application of WET requirements to Cleveland-Cliffs is included in a later section.

The current subwatershed model for the Indiana Harbor Canal/Lake George Canal/Indiana Harbor included the Cleveland-Cliffs East facility which has three active outfalls to the Indiana Harbor. The other major dischargers included in the subwatershed model are as follows in relation to the Cleveland-Cliffs East facility: Cleveland-Cliffs (Indiana Harbor Central Treatment Plant) (IN0063711), hereinafter, Cleveland-Cliffs CTP, has one active outfall upstream to the Indiana Harbor Canal; and, Cleveland-Cliffs (Indiana Harbor West) (IN0000205), hereinafter, Cleveland-Cliffs West, has three active outfalls upstream to the Indiana Harbor Canal, one active outfall downstream to the Indiana Harbor, and one water intake in the Indiana Harbor near the mouth of the Indiana Harbor Canal. The discharges from these two facilities were taken into consideration in determining the need for and establishing WQBELs for the discharges from the Cleveland-Cliffs East outfalls.

A review of the 2022 303(d) list shows that there is only one pollutant on the list that has the potential to impact wasteload allocation analyses conducted for the renewal of NPDES permits for dischargers in the Indiana Harbor Canal/Lake George Canal/Indiana Harbor subwatershed. The Indiana Harbor was first listed for free cyanide on the 2010 303(d) list. The listing was based on free cyanide data collected during the years 2000 and 2001 at IDEM fixed station IHC-0 in the Indiana Harbor. This station is located just upstream of Cleveland-Cliffs West Outfall 011 and, due to the potential for reverse flows in the Indiana Harbor, could be impacted by the outfall. It is also located downstream of Cleveland-Cliffs East Outfalls 011, 014 and 018. The aquatic life criteria for cyanide were changed from total cyanide to free cyanide in the 1997 Great Lakes rulemaking. It is IDEM current practice to monitor for total cyanide at fixed stations

and analyze samples for free cyanide only when total cyanide data show a reportable concentration (≥ 5 ug/l). After 2001, data collected at fixed station IHC-0 no longer showed any reportable values for total cyanide so free cyanide data have not been collected. Cleveland-Cliffs West has also installed additional treatment and redirected cyanide containing process wastewater away from Outfall 011.

The Indiana Harbor Canal has not been included on the 303(d) list for free cyanide due to the two IDEM fixed stations in the Indiana Harbor Canal (located upstream of fixed station IHC-0 at Columbus Avenue (IHC-3S) and Dickey Road (IHC-2)) not showing impairment for free cyanide. Only one value (6 ug/l in October 2022) for total cyanide above 5 ug/l has been reported at IHC-3S since February 2007 and at IHC-2 since January 2005. Prior to the 2011 permit renewal, total cyanide had been reported at many of the Cleveland-Cliffs outfalls due to technology-based limits for this parameter, but little data for free cyanide was available. Therefore, in the 2011 permit renewal, monitoring was required for free cyanide at all Cleveland-Cliffs outfalls for use conducting a multi-discharger WLA and assessment of reasonable potential at the next permit renewal. The analysis is documented in the 2017 report cited above and resulted in limits for free cyanide at Cleveland-Cliffs CTP Outfall 001 and monitoring at Cleveland-Cliffs East Outfalls 014 and 018.

A TMDL is not currently planned for the subwatershed, and, based on current IDEM monitoring data, may not be required. Therefore, as was done in the 2017 WLA, the procedures for calculating WLAs under 5-2-11.4 were used to develop preliminary WLAs and WLAs in the absence of a TMDL. Wasteload allocations in the absence of TMDLs are developed to establish water quality-based effluent limitations under 5-2-11.6 and preliminary wasteload allocations are developed to make reasonable potential determinations under 5-2-11.5. The reasonable potential procedures under 5-2-11.5 include provisions for making reasonable potential determinations using best professional judgment (5-2-11.5(a)) and using a statistical procedure (5-2-11.5(b)). The statistical procedure is a screening process in which a projected effluent quality (PEQ) based on effluent data is calculated and compared to a preliminary effluent limitation (PEL) based on the preliminary wasteload allocation. Both the best professional judgment and statistical procedures were used to establish the need for WQBELs to protect the designated uses of the Indiana Harbor Canal, Indiana Harbor, and Lake Michigan.

To develop WLAs and conduct reasonable potential to exceed analyses, IDEM utilized the following effluent data collected and submitted by Cleveland-Cliffs for the East facility: data collected during the period January 2019 through February 2022 in accordance with the current permit and reported on monthly monitoring reports (MMRs); and, data for mercury collected during the term of the current permit. To develop WLAs, IDEM utilized the following sources of water quality data for the Indiana Harbor Canal and Indiana Harbor: IDEM fixed water quality monitoring station IHC-3S at Columbus Drive (Indiana Harbor Canal upstream of Lake George Canal and all Cleveland-Cliffs outfalls); IDEM fixed station IHC-2 at Dickey Road (Indiana Harbor Canal); and, IDEM fixed station IHC-0 at the mouth of the Indiana Harbor. To develop WLAs, IDEM utilized the following sources of data for Lake Michigan: IDEM fixed station LM-H at the public water supply intake for the City of Hammond and IDEM fixed station LM-DSP at Dunes State Park. After a review of effluent and in-stream data, it was decided to conduct a multi-discharger WLA for ammonia (as N), lead, zinc and total residual chlorine. Other pollutants of concern, including mercury, were considered on an outfall-by-outfall basis.

In the 2017 multi-discharger model, the Indiana Harbor Canal was divided into sixteen complete mix segments and the Indiana Harbor into five complete mix segments. The Lake George Canal was incorporated as an input to the Indiana Harbor Canal. The intrusion of lake water was accounted for in the model by adding a portion of the total lake intrusion flow to the surface layer of each of nine affected segments in the Indiana Harbor and Indiana Harbor Canal. A total lake intrusion flow of 138 cfs was used based on a measurement made by the USGS in October 2002 during a normal lake level condition. The procedures in 5-2-11.4 require the more stringent of the FAV or the acute WLA calculated using up to a one-to-one dilution to be applied to individual outfalls. They also limit the dilution available for each outfall (the mixing zone) to twenty-five percent (25%) of the stream design flow. Because of the potential for overlapping mixing zones within a segment, the combined discharges in a segment were also limited collectively to twenty-five percent (25%) of the stream design flow. This was done in accordance with 5-2-11.4(b)(3)(D) which requires the combined effect of overlapping mixing zones to be evaluated to ensure that applicable criteria and values are met in the area where the mixing zones overlap.

Based on the reasonable potential statistical procedure at 5-2-11.5(b)(1)(iii) and (iv), the procedures under 5-2-11.4(c) are used as the basis for determining preliminary WLAs and the preliminary WLAs are then used to develop monthly and daily PELs in accordance with the procedure for converting WLAs into WQBELs under 5-2-11.6. Three critical inputs to the procedure under 5-2-11.4(c) include the background concentration, the effluent flow and the stream flow. The background concentration is determined under 5-2-11.4(a)(8). Under this rule, background concentrations can be determined using actual in-stream data or in-stream concentrations estimated using actual or projected pollutant loading data. In the multi-discharger WLA, in-stream data were used to establish the background concentration for the first segment of the model and then either actual or projected pollutant loading data were used. For pollutants not included in the multi-discharger WLA, in-stream data were used.

The flow assigned to Cleveland-Cliffs CTP Outfall 001 and Cleveland-Cliffs West Outfall 002 was the long-term average flow calculated using data from the period December 2017 through November 2019. This period represents production prior to the idling in November 2019 of the U.S. Steel ECTO operations. The flow assigned to Cleveland-Cliffs West Outfalls 009, 010 and 011 was the long-term average flow calculated using data from the period January 2020 through December 2021. This period represents production prior to the idling in April 2022 of the No. 4 blast furnace. The flow assigned to Cleveland-Cliffs East Outfalls 011, 014 and 018 was the long-term average flow calculated using data also from the period January 2020 through December 2021 to be consistent with the period used for the Cleveland-Cliffs West outfalls.

The stream design flow used to develop wasteload allocations is determined under 5-2-11.4(b)(3). For the pollutants considered in this analysis, the aquatic life criteria are limiting and the stream design flow for chronic aquatic life criteria is the Q7,10. As was done in the 2017 WLA, the Q7,10 was used as the stream design flow for the first segment of the multi-discharger model and then the long-term average flow of each discharger was added to become the stream design flow for downstream dischargers. The lake intrusion flow was added to the stream design flow at the end of each applicable segment. The Q7,10 was calculated using data from USGS gauging station 04092750 which is located in the Indiana Harbor Canal at Canal Street. The data used in the calculation consisted of continuous daily mean flow data approved by the

USGS for the period 10-1-1994 through 3-31-2012. The Q7,10 based on the climatic year (April 1 through March 31) is 358 cfs.

At each applicable outfall, PELs were calculated for each pollutant of concern using an outfall specific spreadsheet that calculates PELs using the procedures under 5-2-11.4(c) to calculate WLAs and the procedures under 5-2-11.6 to convert WLAs into PELs. The spreadsheet considers all water quality criteria (acute and chronic aquatic life, human health and wildlife) and associated stream design flows and mixing zones. The stream design flow for each water quality criterion was set equal to the same value in the outfall specific spreadsheet. This value was the Q7,10 flow plus the accumulation of long-term average effluent flow and any lake intrusion flow, minus any intake flow. For mercury, which is a bioaccumulative chemical of concern (BCC), a mixing zone was not allowed in the development of PELs for any outfall in accordance with 5-2-11.4(b)(1). For those pollutants included in a multi-discharger WLA, the multi-discharger model was used to ensure that the most stringent water quality criterion is met at the edge of the mixing zone for each segment. This was the 4-day average chronic criterion. The multi-discharger model was also used to ensure that Lake Michigan criteria are met at the end of the last segment in the Indiana Harbor. The preliminary WLA was included as an input in the multi-discharger model and PELs were calculated from the preliminary WLA.

In the multi-discharger model, preliminary WLAs for each outfall were established, if possible, so that the monthly and daily PEQs did not exceed the PELs calculated from the preliminary WLAs. If TBELs were included for the parameter at a final outfall or an internal outfall, then the preliminary WLA was increased to the extent possible to allow the mass-based PELs to exceed the TBELs. The preliminary WLAs were adjusted as necessary so that the calculated PELs did not exceed the PELs calculated using the outfall specific spreadsheets and so that the water quality criterion was not exceeded at the edge of the mixing zone for each segment as determined using the multi-discharger model. For some outfalls, the discharge of one or more pollutants for which a multi-discharger WLA was conducted was not considered significant, so a preliminary WLA was established based on the reported effluent concentration, or if sufficient data were available, reported effluent loading data, but PELs were not calculated as allowed under 5-2-11.5(b)(1).

After assigning a preliminary WLA to each outfall in a segment and entering the WLA into the multi-discharger model, the model calculates the PELs for each outfall, the concentration at the edge of the mixing zone for the segment and the concentration at the end of each segment after complete mixing. The concentration after complete mixing then becomes the background concentration for the next segment. To calculate PELs using the outfall specific spreadsheets, the background concentration for each outfall was calculated assuming complete mixing between outfalls. This was done by entering the WLAs for each outfall into a separate spreadsheet that calculated the background concentration upstream of each outfall. By conducting a multi-discharger WLA in this manner, the background concentration for each outfall was based on the accumulated WLAs for the prior outfalls. Since the WLAs were based in some cases on projected effluent quality, the background concentrations were based on projected loading data. This provided a conservative means of determining the cumulative impact of the outfalls. For those pollutants not included in a multi-discharger WLA, the background concentration for each outfall was based on in-stream data.

The results of the reasonable potential statistical procedure are included in Appendix B Tables B-1 and B-2. The results show that the discharge from Cleveland-Cliffs Indiana Harbor East Outfall 018 has a reasonable potential to exceed a water quality criterion for free-cyanide.

In addition to establishing WQBELs based on the reasonable potential statistical procedure, IDEM is also required to establish WQBELs under 5-2-11.5(a) "If the commissioner determines that a pollutant or pollutant parameter (either conventional, nonconventional, a toxic substance, or whole effluent toxicity (WET)) is or may be discharged into the Great Lakes system at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above any applicable narrative criterion or numeric water quality criterion or value under 327 IAC 2-1.5". Chlorine is added to the intake water for zebra and quagga mussel control at concentrations exceeding water quality criteria. Therefore, chlorine may be discharged from Outfalls 011, 014, and 018 at a level that will cause an excursion above the numeric water quality criterion for total residual chlorine under 2-1.5 and WQBELs for total residual chlorine are required at Outfalls 011, 014, and 018. In addition, bromine-based water treatment additives may be used at plant processes contributing to Outfalls 014 and 018, so WQBELs for bromine are required at these outfalls.

For each pollutant receiving TBELs at an internal outfall, and for which water quality criteria or values exist or can be developed, concentration and corresponding mass-based WQBELs were calculated at the final outfall. However, this was not done for those pollutants for which a monitoring waiver is being granted pursuant to 40 CFR 122.44(a)(2). The WQBELs were set equal to the applicable PELs from the multi-discharger model or the outfall specific spreadsheet. This was done for Cleveland-Cliffs East Outfall 014 (lead and zinc at the final outfall; a monitoring waiver is being granted for naphthalene and tetrachloroethylene), and Outfall 018 (lead and zinc at internal Outfalls 518 and 618 and ammonia (as N) at internal Outfall 518). The mass-based WQBELs at the final outfall were compared to the mass-based TBELs. Since the facility is authorized to discharge up to the mass-based TBELs, if the mass-based TBELs exceed the mass-based WQBELs at the final outfall, the pollutant may be discharged at a level that will cause an excursion above a numeric water quality criterion or value under 2-1.5 and WQBELs are required for the pollutant at the final outfall. This was the case for lead at Outfall 014 and Outfall 018. Therefore, WQBELs are required for these pollutants regardless of the results of the reasonable potential statistical procedure. However, the results of the reasonable potential statistical procedure were used to help establish the monitoring frequency.

Once a determination is made using the reasonable potential provisions under 5-2-11.5 that WQBELs must be included in the permit, the WQBELs are calculated in accordance with 5-2-11.5(d). Under this provision, in the absence of an EPA-approved TMDL, WLAs are calculated for the protection of acute and chronic aquatic life, wildlife, and human health in accordance with the WLA provisions under 5-2-11.4. The WLAs are then converted into WQBELs in accordance with the WQBEL provisions under 5-2-11.6. In accordance with 5-2-11.5(e), IDEM may still include monitoring requirements for a pollutant in the permit if the reasonable potential analysis does not show the need for WQBELs for the pollutant. The WQBELs are included in Appendix B Table B-3 and were set equal to the PELs calculated for each pollutant.

5.3 Effluent Limitations and Monitoring Requirements by Outfall

Under 327 IAC 5-2-10(a) (see also 40 CFR 122.44), NPDES permit requirements are technology-based effluent limitations and standards (including technology-based effluent limitations (TBELs) based on federal effluent limitations guidelines or developed on a case-by-case basis using best professional judgment (BPJ), where applicable), water quality standards-based, or based on other more stringent requirements. The decision to limit or monitor the parameters contained in this permit is based on information contained in the permittee's NPDES application and other available information relating to the facility and the receiving waterbody as well as the applicable federal effluent limitations guidelines. In addition, when renewing a permit, the existing permit limits, the antibacksliding requirements under 327 IAC 5-2-10(a)(11), and the antidegradation requirements under 327 IAC 2-1.3 must be considered.

5.3.1 All External Outfalls (011, 014/013, and 018)

Narrative Water Quality Based Limits

The narrative water quality criteria contained under 327 IAC 2-1.5-8(b)(1) and (2) have been included in this permit to ensure that these minimum water quality conditions are met.

Flow

The permittee's flow is to be monitored in accordance with 327 IAC 5-2-13(a)(2). Monitoring at all final outfalls is to be conducted 1 X week and reported as a 24-Hr. Total.

pH

Limitations for pH in the proposed permit are based on the criteria established in 327 IAC 2-1.5-8(c)(2) and/or 40 CFR 420. Monitoring is to be conducted 1 X week by grab sampling at Outfall 011, 2 x week by grab sampling at Outfall 014, and 1 x daily by continuous sampling at Outfall 018.

5.3.2 Outfall 011

Oil and Grease (O&G)

O & G must be monitored for compliance with narrative water quality criteria in 327 IAC 2-1.5-8(b)(1)(C) which prohibits oil or other substances in amounts sufficient to produce color, visible sheen, odor, or other conditions in such a degree to create a nuisance. Monitoring is to be conducted 1 X week by grab sampling.

Mercury

For this permit renewal, mercury was evaluated in accordance with the provision for discharges of once-through noncontact cooling water in accordance with 327 IAC 5-2-11.5(g). This provision may be used if the intake and outfall points for the noncontact cooling water are located on the same body of water. The cooling water intake source for Outfall 011 is Lake Michigan. In accordance with 327 IAC 5-2-11.5(b)(4)(B)(iv), an intake pollutant shall be considered to be from the same body of water as the discharge if the intake point is located on Lake Michigan and the outfall point is located on a tributary of Lake Michigan and the following conditions are met:

- (A) The representative background concentration of the pollutant in the receiving water, as determined under 327 IAC 5-2-11.4(a)(8) (excluding any amount of the pollutant in the facility's discharge) is similar to or greater than that in the intake water.
- (B) Any difference in a water quality characteristic (such as temperature, pH, and hardness) between the intake and receiving waters does not result in an adverse impact on the receiving water.

The permit renewal application included mercury data for the Main Intake which is the cooling water intake source. The permit renewal application for Cleveland-Cliffs (Indiana Harbor West) included intake data for their No. 1 intake located in Indiana Harbor at the mouth of the Indiana Harbor Canal. A review of the data showed that the concentration of mercury in the Indiana Harbor is greater than the concentration in Lake Michigan. Any differences in a water quality characteristic are not significant enough to cause adverse impacts. Therefore, the same body of water provision is applicable.

Per 327 IAC 5-2-11.5(g)(1), only in situations where the intake and outfall points are located on the same body of water, the commissioner shall not impose WQBELs for a discharge consisting solely of once-through noncontact cooling water, except that the commissioner may require a WQBEL for a substance when information is available indicating that such a limit is necessary to protect aquatic life unless the discharger is able to demonstrate that the presence of the substance is due solely to its presence in the intake water.

Per 327 5-2-11.5(g)(6), if a wastestream consisting solely of noncontact cooling water combines with one or more wastestreams not consisting solely of noncontact cooling water, this provision may still be applied to the wastestream consisting solely of

noncontact cooling water if, for the wastestreams that do not consist solely of noncontact cooling water, the following requirements are imposed:

- (A) For each wastestream composed entirely of stormwater, permit conditions that the commissioner determines to be necessary to protect the water quality of the receiving waterbody shall be imposed. The requirements imposed shall be as if the stormwater wastestream discharged directly into the receiving waterbody and shall be consistent with requirements imposed on other similar stormwater discharges to the waterbody.
- (B) For each wastestream not composed entirely of stormwater, each wastestream shall be evaluated to determine if there is reasonable potential using the procedures in 5-2-11.5. For purposes of determining reasonable potential and developing WQBELs for these wastestreams, the WLAs shall be determined as if these wastestreams discharged directly into the receiving waterbody without combining with the wastestreams consisting solely of noncontact cooling water.

Available data supports that the presence of mercury in the discharge from Outfall 011 is due solely to its presence in the intake water. The stormwater discharges to Outfall 011 will receive non-numeric limits consistent with stormwater discharges to the other Cleveland Cliffs outfalls. Groundwater is not considered a significant source of mercury to Outfall 011. Therefore, based on the provision in 5-2-11.5(g), a WQBEL is not required for mercury at this outfall. However, monitoring requirements will be retained. Monitoring is to be conducted 6 X annually by grab sampling.

Temperature

Based on source and nature of the discharge, temperature monitoring requirements will be retained from the previous permit. On days when temperature is sampled at the outfall, temperature shall also be sampled at the intake supplying the most significant source of water to the outfall. As an alternative to direct grab measurements during this time period the facility may install a more permanent temperature measuring device that will retain the highest temperature value during any given 24-hour period. Monitoring is to be conducted 2 X week by grab sampling.

Total Residual Chlorine (TRC)

As a means of controlling Zebra and Quagga Mussel colonization within the facility, the permittee chlorinates intake water on a continuous basis during a portion of each year. Wastewater shall be dechlorinated prior to discharge from Outfall 011. The discharge shall have limitations and monitoring requirements for TRC. In response to a sampling error in 2020, the facility began sampling for TRC on a year-round basis, not just when chlorine is being used to control mussels at the intake. IDEM proposes to retain the year-round sampling requirement in this permit renewal. Monitoring is to be conducted 5 X week by grab sampling.

Water quality-based effluent limitations (WQBELs) for total residual chlorine were calculated, see Appendix B Table B-3. The TRC limits are 0.058 lbs/day (14 ug/l) monthly average and 0.14 lbs/day (33 ug/l) daily maximum. The monthly average and daily

maximum WQBELs for TRC are less than the LOQ. Compliance with the daily maximum concentration limits will be demonstrated if the observed effluent concentrations are less than the LOQ (60 ug/l). Compliance with the daily maximum mass value will be demonstrated if the calculated mass value is less than 0.25 lbs/day. This is calculated by multiplying the LOQ by the discharge flow in MGD and by a conversion factor of 8.345.

Ammonia (as N)

The Permit issued in 2017 required ammonia (as N) monitoring at Outfall 011. As part of the Permit modification in 2018, IDEM revised the monitoring frequency from 1 X Quarter to 1 X Month for six months and required submittal of the data with the next permit renewal application. The data were submitted with the renewal application and evaluated for reasonable potential to exceed (RPE) a water quality criterion. There is no RPE and there doesn't appear to be a source of ammonia to this outfall. Therefore, monitoring requirements for ammonia (as N) will be removed from the permit.

5.3.3 Outfall 014/013

Tiered limits are proposed at Outfall 014/013 for this permit renewal to reflect the operational status of the No. 28 Temper Line. Tiered TBELs are permissible pursuant to 40 CFR 122.45(b)(2)(ii)(A)(1) and can be based on increases/decreases of production or flow. For compliance monitoring purposes, IDEM is proposing to redesignate Outfall 014 into Outfalls 014/013A and 014/013B. The permittee will monitor and report under 014/013A when the No. 28 Temper Line is operating (**Tier 1**) and 014/013B when the No. 28 Temper Line is idled (**Tier 2**).

Total Suspended Solids (TSS)

TSS is subject to the technology-based standards contained in 40 CFR 420 – Iron and Steel Manufacturing Point Source Category. The building block approach was used to calculate TBELs, taking all processes contributing to this outfall into account. See Appendix A Tables A-3 and A-4 for the TBEL calculations.

Process	ELG
80" Hot Strip Mill	Hot Forming 420.72/77(c)(1)
No. 5 Pickle Line	Acid Pickling 420.92/93(b)(2)
No. 5 Pickle Line	Acid Pickling 420.92/93(b)(4) – Fume Scrubber
80" Tandem Mill	Cold Forming 420.102/103(a)(2)
No. 29 Tandem Mill	Cold Forming 420.102/103(a)(4)
No. 28 Tandem Mill*	Cold Forming 420.102/103(a)(5)
No. 5 Galvanizing Line**	Hot Coating 420.122/123(a)(1)
Alkaline Cleaning	Continuous 420.112(b)

*The No. 28 Temper Line has been idled since 2013, but the permittee has not indicated that the idle is permanent. Therefore, tiered limits have been calculated to represent two different operating conditions. Tier 1 limits will apply when the No. 28 Temper Line is operating. Tier 2 limits will apply when the No. 28 Temper Line is idled.

**The No. 5 Galvanizing Line is shut down. Therefore, production from No. 5 Galvanizing Line has not been included in the TSS limit calculation.

Parameter	Source of Limit	Monthly Average (lbs/day)	Daily Maximum (lbs/day)
TSS	2017 Permit TBEL	6620	17092
	2023 Proposed Permit – Tier 1	5770	14800
	2023 Proposed Permit – Tier 2	5294	13849

Proposed limits are in **bold** in the table above. Monitoring is to be conducted 3 X week by 24-hr. composite sampling.

O&G

O&G is subject to the technology-based standards contained in 40 CFR 420 – Iron and Steel Manufacturing Point Source Category. The building block approach was used to calculate TBELs, taking all processes contributing to this outfall into account. See Appendix A Tables A-3 and A-4 for the TBEL calculations.

Process	ELG
80" Hot Strip Mill*	Hot Forming 420.72/77(c)(1)
No. 5 Pickle Line	Acid Pickling 420.92/93(b)(2)
No. 5 Pickle Line	Acid Pickling 420.92/93(b)(4) – Fume Scrubber
80" Tandem Mill	Cold Forming 420.102/103(a)(2)
No. 29 Tandem Mill	Cold Forming 420.102/103(a)(4)**
No. 28 Tandem Mill**	Cold Forming 420.102/103(a)(5)*
No. 5 Galvanizing Line***	Hot Coating 420.122/123(a)(1)*
Alkaline Cleaning	Continuous 420.112(b)

*420.72/77(c)(1) doesn't have monthly average O&G limits. Previously, IDEM used BPJ to establish a monthly average O&G limit for the 80" HSM. IDEM proposes to continue this practice and include a monthly average allowance calculated as 1/3 the daily maximum allowance.

**The No. 28 Temper Line has been idled since 2013, but the permittee has not indicated that the idle is permanent. Therefore, tiered limits have been calculated to represent two different operating conditions. Tier 1 limits will apply when the No. 28 Temper Line is operating. Tier 2 limits will apply when the No. 28 Temper Line is idled.

***The No. 5 Galvanizing Line is shut down. Therefore, production from No. 5 Galvanizing Line has not been included in the TSS limit calculation.

In addition to the TBELs (mass limits), IDEM also applied limits to be protective of water quality. O&G limitations of 15 mg/l daily maximum and 10 mg/l monthly average have been retained from the previous permit. O & G must be monitored for compliance with narrative water quality criteria in 327 IAC 2-1.5-8(b)(1)(C) which prohibits oil or other substances in amounts sufficient to produce color, visible sheen, odor, or other conditions in such a degree to create a nuisance.

Parameter	Source of Limit	Monthly Average (lbs/day)	Daily Maximum (lbs/day)	Monthly Average (mg/l)	Daily Maximum (mg/l)
O & G	2017 Permit TBEL	1553	4568	10	15
	2023 Proposed Permit – Tier 1	1421	4172	10	15
	2023 Proposed Permit – Tier 2	1263	3775	10	15

Proposed limits are in **bold** in the table above. Monitoring is to be conducted 3 X week using no fewer than two grab samples obtained not less than 6 hours apart during a 24-hr period.

Ammonia (as N), Free Cyanide, Total Cyanide, Phenols, Selenium

As part of this permit renewal, a Wasteload Allocation (WLA) report was completed, and ammonia (as N) and free cyanide were evaluated for reasonable potential to exceed (RPE) a water quality criterion. The results of the RPE analysis show that neither ammonia (as N) nor free cyanide have reasonable potential to exceed a water quality criterion, therefore, water quality-based effluent limitations are not required. See Appendix B Tables B-1 and B-3.

However, No. 7 Blast Furnace Recycle Blowdown may be discharged on an intermittent basis to the Master Recycle System that discharges through Outfall 014 and, intermittently, through Outfall 013. Ammonia, cyanide, phenols, and selenium are pollutants of concern in Blast Furnace wastewater.

Monitoring requirements will be retained when Blast Furnace wastewater could be present. Ammonia (as N) and selenium monitoring are to be conducted 3 X week by 24-hr. composite sampling. Total cyanide, free cyanide and phenols monitoring is to be conducted 3 X week by grab sampling.

Lead and Zinc

Lead and zinc are subject to the technology-based standards contained in 40 CFR 420 – Iron and Steel Manufacturing Point Source Category. The building block approach was used to calculate TBELs, taking all processes contributing to this outfall into account. See Appendix A Tables A-3 and A-4 for the TBEL calculations.

Process	ELG
80" Hot Strip Mill	Hot Forming 420.72/77(c)(1)
No. 5 Pickle Line	Acid Pickling 420.92/93(b)(2)
No. 5 Pickle Line	Acid Pickling 420.92/93(b)(4) – Fume Scrubber
80" Tandem Mill	Cold Forming 420.102/103(a)(2)
No. 29 Tandem Mill	Cold Forming 420.102/103(a)(4)
No. 28 Tandem Mill*	Cold Forming 420.102/103(a)(5)
No. 5 Galvanizing Line**	Hot Coating 420.122/123(a)(1)
Alkaline Cleaning	Continuous 420.112(b)

*The No. 28 Temper Line has been idled since 2013, but the permittee has not indicated that the idle is permanent. Therefore, tiered limits have been calculated to represent two different operating conditions. Tier 1 limits will apply when the No. 28 Temper Line is operating. Tier 2 limits will apply when the No. 28 Temper Line is idled.

**The No. 5 Galvanizing Line is shut down. Therefore, production from No. 5 Galvanizing Line has not been included in the TSS limit calculation.

Water quality-based effluent limitations (WQBELs) were also evaluated. For each pollutant receiving TBELs at an internal outfall, and for which water quality criteria or values exist or can be developed, concentration and corresponding mass-based

WQBELs were calculated at the final outfall. The WQBELs were set equal to the applicable PELs from the multi-discharger model or the outfall specific spreadsheet. This was done for Outfall 014 (lead and zinc at the final outfall). The mass-based WQBELs at the final outfall were compared to the mass-based TBELs. Since the facility is authorized to discharge up to the mass-based TBELs, if the mass-based TBELs exceed the mass-based WQBELs at the final outfall, the pollutant may be discharged at a level that will cause an excursion above a numeric water quality criterion or value under 2-1.5 and WQBELs are required for the pollutant at the final outfall. This was the case for lead at Outfall 014. Therefore, WQBELs are required for these pollutants regardless of the results of the reasonable potential statistical procedure. However, the results of the reasonable potential statistical procedure were used to help establish the monitoring frequency. In accordance with 327 IAC 5-2-11.6(g)(1), mass limits and a mass-based compliance value for lead and zinc are included in the permit, based on a flow volume of 9.6 MGD. This volume was the long-term average flow calculated using data from the period January 2020 through December 2021 to be consistent with the period used for the Cleveland-Cliffs West outfalls and is used in accordance with 327 IAC 5-2-11.4(a)(9)(C), as required by 327 IAC 5-2-11.6(g)(2). See Appendix B Tables B-1 and B-3.

Parameter	Source of Limit	Monthly Average (lbs/day)	Daily Maximum (lbs/day)	Monthly Average (ug/l)	Daily Maximum (ug/l)
Lead	2017 Permit WQBEL	3.1	6.2	48	96
	2023 Proposed Permit – Tier 1	8.8	26.5	----	----
	2023 Proposed Permit – Tier 2	6.4	19.4	----	----
	2023 Proposed Permit WQBEL	1.1	2.2	14	27
Zinc	2017 Permit WQBEL	11	22	170	340
	2023 Proposed Permit – Tier 1	10.4	31.3	----	----
	2023 Proposed Permit - Tier 2	8.86	26.5	----	----
	2023 Proposed Permit WQBEL	13	26	160	320

Lead

The newly calculated monthly average and daily maximum WQBELs are more stringent than both the 2017 permit limits and the 2023 TBELs (both Tiers), therefore, the new WQBELs are the applicable limits. Because the WQBELs apply regardless of which configuration of lines are operating, the Tiered approach will not be applied in the Permit.

Zinc

The newly calculated monthly average TBELs for both Tiers are more stringent than the 2017 permit limit and the 2023 WQBEL, therefore, the TBELs are the applicable limits.

The newly calculated daily maximum WQBEL (26 lbs/day) is more stringent than the 2023 TBELs (both Tiers) and is slightly less stringent than the current permit's daily maximum WQBEL (22 lbs/day). IDEM proposes to retain the daily maximum WQBEL from the previous permit.

IDEM determined that there is no RPE using the 2023 WQBELs, therefore, there is no RPE when the more stringent limits are applied. In the absence of RPE, removal of concentration limits is proposed.

Proposed limits are in bold in the table above. Lead and zinc monitoring is to be conducted 3 X week by 24-hr. composite sampling.

Naphthalene and Tetrachloroethylene

Naphthalene and tetrachloroethylene are subject to the technology-based standards contained in 40 CFR 420 – Iron and Steel Manufacturing Point Source Category. The building block approach was used to calculate TBELs, taking all processes contributing to this outfall into account. See Appendix A Tables A-3 and A-4 for the TBEL calculations.

Process	ELG
80" Tandem Mill	Cold Forming 420.102/103(a)(2)
No. 29 Tandem Mill	Cold Forming 420.102/103(a)(4)
No. 28 Tandem Mill*	Cold Forming 420.102/103(a)(5)

*The No. 28 Temper Line has been idled since 2013, but the permittee has not indicated that the idle is permanent. Therefore, tiered limits have been calculated to represent two different operating conditions. Tier 1 limits will apply when the No. 28 Temper Line is operating. Tier 2 limits will apply when the No. 28 Temper Line is idled.

Parameter	Source of Limit	Daily Maximum (lbs/day)
Naphthalene	2017 Permit TBEL	1.80
	2023 Proposed Permit – Tier 1	1.87
	2023 Proposed Permit – Tier 2	0.29
Tetrachloroethylene	2017 Permit TBEL	2.69
	2023 Proposed Permit – Tier 1	2.81
	2023 Proposed Permit - Tier 2	0.43

Naphthalene and tetrachloroethylene limits were calculated in accordance with 40 CFR 420.102/103 and are more stringent than the WQBELs. The Tier 1 daily maximum limits for both parameters are less stringent than the current permit limits. IDEM proposes to retain the previous permit limits of 1.80 lbs/day daily maximum naphthalene and 2.69 lbs/day daily maximum tetrachloroethylene for Tier 1 limits. In accordance with 40 CFR 122.44(a)(2), the facility requested and has been granted a monitoring waiver of these pollutants as described below. IDEM is proposing to retain the 2017 limits for the Tier 1 discharge scenario. In the absence of a waiver, the limits in **bold** in the table above would be applied.

In accordance with 40 CFR 122.44(a)(2), a discharger subject to technology-based effluent limitation guidelines and standards in a NPDES permit may be authorized to forego sampling of a pollutant found in 40 CFR Subchapter N if the discharger has demonstrated through sampling and other technical factors that the pollutant is not

present in the discharge or present only at the background level from the intake water and without any increase in the pollutant due to activities of the discharger. This waiver is good only for the term of the permit. Any request must demonstrate through sampling or other technical information, including information generated during an earlier permit term that the pollutant is not present in the discharge or is present only at background levels from intake water and without any increase in the pollutant due to activities of the discharger. The monitoring waiver must be included in the permit as an express permit condition and the reason supporting the waiver must be documented in the permit's fact sheet or statement of basis. This provision does not supersede certification processes and requirements already established in existing effluent limitation guidelines and standards. The permittee has requested to continue the monitoring waiver for naphthalene and tetrachloroethylene. Based on the sampling data submitted with the permit renewal application, the waiver has been approved.

Mercury

As part of this permit renewal, a Wasteload Allocation (WLA) report was completed, and mercury was evaluated for reasonable potential to exceed (RPE) a water quality criterion. The results of the RPE analysis show that mercury does not have reasonable potential to exceed a water quality criterion, therefore, water quality-based effluent limitations are not required. Limitations have been removed from the permit and only monitoring requirements have been retained. See Appendix B Tables B-1 and B-3. Monitoring is to be conducted 6 X annually by grab sampling.

Temperature

Based on source and nature of the discharge, temperature monitoring requirements will be retained from the previous permit. On days when temperature is sampled at the outfall, temperature shall also be sampled at the intake supplying the most significant source of water to the outfall. As an alternative to direct grab measurements during this time period the facility may install a more permanent temperature measuring device that will retain the highest temperature value during any given 24-hour period. Monitoring is to be conducted 2 X week by grab sampling.

Total Residual Oxidants (TRO – Bromine + TRC)

Monitoring requirements for Total Residual Oxidants (TRO) (bromine + chlorine) are proposed based on the potential for both bleach (sodium hypochlorite) and Stabrex ST70 to be present in the discharge. Sodium hypochlorite is a chlorine-based water treatment additive used as a biocide, and Stabrex ST70 is a bromine-based water treatment additive used as a biocide. Indiana derived water quality criteria for bromine in 2023, which is applicable to state waters within the Great Lakes System. The derived criteria have been used to calculate water quality-based effluent limits for bromine for this permit renewal.

The TRC limits were calculated in the Wasteload Allocation (WLA) conducted on May 22, 2023, and are 1.1 lbs/day (14 ug/l) for monthly average and 2.6 lbs/day (33 ug/l) for the daily maximum. The bromine limits were calculated in the WLA and is 0.14 lbs/day (1.8

ug/L) monthly average and 0.34 lbs/day (4.2 ug/L) daily maximum. See Appendix B-3. See Appendix B, Table 5. Total residual chlorine and bromine are both measured using the same laboratory method and the method used can't distinguish between chlorine and bromine. Since the limits for bromine are more stringent than the limits for total residual chlorine, the bromine limits are included as the water quality-based limit for total residual oxidants (bromine and chlorine).

The water quality-based limits for total residual oxidants (bromine and chlorine) are less than both the level of detection (LOD) and level of quantitation (LOQ) using the most sensitive approved analytical methods. Therefore, compliance with the daily maximum limit for total residual oxidants will be demonstrated if the observed effluent concentration is less than the LOQ (0.06 mg/l). Compliance with the daily maximum mass limit will be demonstrated if the calculated mass value is less than 4.8 lbs/day. This is calculated by multiplying the LOQ by the discharge flow in MGD and by a conversion factor of 8.345. Monitoring is to be conducted 5 X weekly by grab sampling.

Wastewater Transported from Other Outfalls

On January 15, 2015, IDEM issued an enforcement discretion letter addressing two scenarios where wastewater from Outfalls 518 and 618 may be transported to the Master Recycle System for treatment and discharge via Outfall 014. Those requirements have been included directly in the permit for this cycle. No variation in these requirements has been proposed by IDEM.

Outfall 518

During Outfall 518 treatment system maintenance periods, process wastewater may be transported to the Master Recycle System on an intermittent basis and subject to the following requirements:

- a. Such events shall not exceed ten (10) events per year,
- b. The maximum volume or process wastewater transported shall not exceed 25,000 gallons per event,
- c. For each event, the permittee shall report the following as an attachment to the respective MMR:
 - i. Volume of wastewater transported.
 - ii. Quality of wastewater transported, both loading and concentration. Wastewater samples shall be collected using the grab sample method and analyzed for TSS, ammonia (as N), total cyanide, phenols (4AAP), lead, zinc, oil & grease, TRC, and selenium.
 - iii. Dates and time periods during which transport occurred.
 - iv. Location in the Master Recycle System where the transported water was deposited.

Outfall 618

During Outfall 618 treatment system maintenance periods, process wastewater may be transported to the Master Recycle System on an intermittent basis and subject to the following requirements:

- a. Such events shall not exceed ten (10) events per year,
- b. The maximum volume of process wastewater transported shall not exceed 25,000 gallons per event,
- c. For each event, the permittee shall report the following as an attachment to the respective MMR:
 - i. Volume of wastewater transported.
 - ii. Quality of wastewater transported, both loading and concentration. Wastewater samples shall be collected using the grab sample method and analyzed for TSS, lead, zinc, and oil & grease.
 - iii. Dates and time periods during which transport occurred.
 - iv. Location in the Master Recycle System where the transported water was deposited.

5.3.5 Outfall 018

Internal Outfalls 518, 618, and 018 shall be sampled on the same day.

TSS

TSS is a regulated conventional pollutant and monitoring will be required in the NPDES permit to ensure adequate wastewater treatment is provided and the narrative water quality criteria will be protected. TSS is a parameter used to protect the existing and designated uses by preventing the discharge from having putrescent, or otherwise objectionable deposits, unsightly or deleterious deposits, color or other conditions in such a degree as to create a nuisance. Technology based effluent limits for TSS limits are applied at the internal outfalls which discharge via Outfall 018; Outfalls 518 and 618. TSS monitoring at Outfall 018 at a frequency of 2 X week by 24-hr composite sampling is proposed.

O&G

O&G must be monitored for compliance with narrative water quality criteria in 327 IAC 2-1.5-8(b)(1)(C) which prohibits oil or other substances in amounts sufficient to produce color, visible sheen, odor, or other conditions in such a degree to create a nuisance. Technology based effluent limits for O&G limits are applied at the internal outfalls which discharge via Outfall 018; Outfalls 518 and 618. Monitoring is to be conducted 1 X week by grab sampling.

Free Cyanide

As part of this permit renewal, a Wasteload Allocation (WLA) report was completed and free cyanide was evaluated for reasonable potential to exceed (RPE) a water quality criterion. The results of the RPE analysis show that free cyanide has reasonable potential to exceed a water quality criterion, therefore, water quality-based effluent limitations are required and have been included in the permit. Monitoring is to be conducted 2 X month by grab sampling.

The free cyanide limits are 3.7 lbs/day (22 ug/l) monthly average and 7.3 lbs/day (44 ug/l) daily maximum. See Appendix B Tables B-2 and B-3. The facility requested and was granted a Schedule of Compliance to meet the new free cyanide limits. See Section 6.2 of this Fact Sheet for more information.

Ammonia (as N)

As part of this permit renewal, a Wasteload Allocation (WLA) report was completed, and ammonia (as N) was evaluated for reasonable potential to exceed (RPE) a water quality criterion. The results of the RPE analysis show that ammonia (as N) does not have reasonable potential to exceed a water quality criterion, therefore, water quality-based effluent limitations are not required. See Appendix B Tables B-2 and B-3. Treated No. 7 Blast Furnace Recycle Blowdown may be discharged from internal Outfall 518 through final Outfall 018. Ammonia is a pollutant of concern in Blast Furnace wastewater;

therefore, ammonia monitoring will be retained. Monitoring is to be conducted 2 X week by 24-hr. composite sampling.

Phenols

Phenols monitoring is required at Outfall 018 because it is the outfall that contains process wastewater from the No. 7 Blast Furnace Recycle Blowdown (Outfall 518). Monitoring is to be conducted 2 X week by grab sampling.

Lead

Water quality-based effluent limitations (WQBELs) were evaluated. For each pollutant receiving TBELs at an internal outfall, and for which water quality criteria or values exist or can be developed, concentration and corresponding mass based WQBELs were calculated at the final outfall. The WQBELs were set equal to the applicable PELs from the multi-discharger model or the outfall specific spreadsheet. This was done for Outfall 018 (lead and zinc at internal Outfalls 518 and 618 and ammonia (as N) at internal Outfall 518). The mass-based WQBELs at the final outfall were compared to the mass-based TBELs. Since the facility is authorized to discharge up to the mass-based TBELs, if the mass-based TBELs exceed the mass-based WQBELs at the final outfall, the pollutant may be discharged at a level that will cause an excursion above a numeric water quality criterion or value under 2-1.5 and WQBELs are required for the pollutant at the final outfall. This was the case for lead at Outfall 018. Therefore, WQBELs are required for these pollutants regardless of the results of the reasonable potential statistical procedure. However, the results of the reasonable potential statistical procedure were used to help establish the monitoring frequency. In accordance with 327 IAC 5-2-11.6(g)(1), mass limits and a mass-based compliance value for lead are included in the permit, based on a flow volume of 19.9 MGD. This volume was the long-term average flow calculated using data from the period January 2020 through December 2021 to be consistent with the period used for the Cleveland-Cliffs West outfalls and is used in accordance with 327 IAC 5-2-11.4(a)(9)(C), as required by 327 IAC 5-2-11.6(g)(2). See Appendix B Tables B-2 and B-3.

Parameter	Source of Limit	Monthly Average (lbs/day)	Daily Maximum (lbs/day)	Monthly Average (ug/l)	Daily Maximum (ug/l)
Lead	2017 Permit WQBEL	3.1	6.3	23	46
	2023 WQBEL	2.3	4.5	14	27

Proposed limits are in **bold** in the table above. Monitoring is to be conducted 2 X week by 24-hr. composite sampling.

Zinc

As part of this permit renewal, a Wasteload Allocation (WLA) report was completed, and zinc was evaluated for reasonable potential to exceed (RPE) a water quality criterion. The results of the RPE analysis show that zinc does not have reasonable potential to exceed a water quality criterion, therefore, water quality-based effluent limitations are not required, see Appendix B Tables B2 and B3. Given that zinc is a parameter of concern

and is limited at two internal outfalls which discharge to Outfall 018, zinc monitoring requirements will be retained. Monitoring is to be conducted 2 X week by 24-hr. composite sampling.

Mercury

The permittee applied to renew the Outfall 018 Streamlined Mercury Variance (SMV) on March 2, 2022. See section 6.5.1 of this Fact Sheet for more information on the SMV.

Temperature

Based on source and nature of the discharge, temperature monitoring requirements will be retained from the previous permit. On days when temperature is sampled at the outfall, temperature shall also be sampled at the intake supplying the most significant source of water to the outfall. As an alternative to direct grab measurements during this time period the facility may install a more permanent temperature measuring device that will retain the highest temperature value during any given 24-hour period. Monitoring is to be conducted 2 X week by grab sampling.

Selenium

During previous permit terms, monitoring for selenium was required at Outfall 018 based on data reported for this pollutant at internal Outfall 518 and the potential for flow from internal Outfall 518 to increase. As part of this permit renewal, a Wasteload Allocation (WLA) report was completed, and selenium was evaluated for reasonable potential to exceed (RPE) a water quality criterion. The results of the RPE analysis show that selenium does not have reasonable potential to exceed a water quality criterion, therefore, water quality-based effluent limitations are not required, see Appendix B Table B-2. IDEM proposes to retain monitoring requirements as Outfall 518 is a source of selenium and still discharges to Outfall 018. Monitoring is to be conducted 2 X month by 24-hr. composite sampling.

Total Residual Oxidants (TRO – Bromine + TRC)

Monitoring requirements for Total Residual Oxidants (TRO) (bromine + chlorine) are proposed based on the potential for both bleach (sodium hypochlorite) and Stabrex ST70 to be present in the discharge. Sodium hypochlorite is a chlorine-based water treatment additive used as a biocide, and Stabrex ST70 is a bromine-based water treatment additive used as a biocide. Indiana derived water quality criteria for bromine in 2023, which is applicable to state waters within the Great Lakes System. The derived criteria have been used to calculate water quality-based effluent limits for bromine for this permit renewal.

The TRC limits were calculated in the Wasteload Allocation (WLA) conducted on May 22, 2023, and are 2.3 lbs/day (14 ug/l) for monthly average and 5.3 lbs/day (32 ug/l) for the daily maximum. The bromine limits were calculated in the WLA and are 0.16 lbs/day (0.98 ug/L) monthly average and 0.38 lbs/day (2.3 ug/L) daily maximum. See Appendix Table B-3. Total residual chlorine and bromine are both measured using the same laboratory method and the method used can't distinguish between chlorine and bromine.

Since the limits for bromine are more stringent than the limits for total residual chlorine, the bromine limits are included as the water quality-based limit for total residual oxidants (bromine and chlorine).

The water quality-based limits for total residual oxidants (bromine and chlorine) are less than both the level of detection (LOD) and level of quantitation (LOQ) using the most sensitive approved analytical methods. Therefore, compliance with the daily maximum limit for total residual oxidants will be demonstrated if the observed effluent concentration is less than the LOQ (0.06 mg/l). Compliance with the daily maximum mass limit will be demonstrated if the calculated mass value is less than 10 lbs/day. This is calculated by multiplying the LOQ by the discharge flow in MGD and by a conversion factor of 8.345. Monitoring is to be conducted 5 X weekly by grab sampling.

5.3.6 Outfall 518 (Internal)

Internal Outfalls 518, 618, and 018 shall be sampled on the same day.

Flow

The permittee's flow is to be monitored in accordance with 327 IAC 5-2-13(a)(2). Monitoring is to be reported daily and the sample type is continuous.

Selenium

During previous permit terms, the process discharging via Outfall 518 was identified as containing selenium. As a result, selenium monitoring was required at Outfalls 518 and 018. Selenium continues to be detected in the discharge; therefore, monitoring requirements have been retained. Monitoring is to be conducted 2 X month by 24-hr. composite sampling.

TSS, O&G, Lead, Zinc, TRC, Ammonia as N, Total Cyanide, and Phenols

Limitations for these pollutants are calculated in accordance with 40 CFR 420.34(a) – Ironmaking. See Appendix A Table A-1 for the TBEL calculations.

Process	ELG
Iron blast furnace	Ironmaking 420.34(a)

Pollutant	2017 Permit		2023 Proposed Permit	
	Monthly Average (lbs/day)	Daily Maximum (lbs/day)	Monthly Average (lbs/day)	Daily Maximum (lbs/day)
TSS	105	281	110	293
O&G	----	70.1	----	73.0
Ammonia (as N)	70.1	210	73.0	219
T. Cyanide	7.01	14.0	7.30	14.6
Phenols (4AAP)	0.70	1.40	0.73	1.46
Lead	2.10	6.31	2.19	6.58
Zinc	3.14	9.46	3.28	9.85
TRC	----	3.50	----	3.65

Proposed limits are in **bold** in the table above. Monitoring is to be conducted 2 X week for all parameters in the table. Grab sampling will be used for O&G, total cyanide, phenols, and TRC; 24-hr. composite sampling will be used for TSS, ammonia (as N), lead, and zinc.

5.3.7 Outfall 618 (Internal)

Internal Outfalls 518, 618, and 018 shall be sampled on the same day.

Flow

The permittee's flow is to be monitored in accordance with 327 IAC 5-2-13(a)(2). Monitoring is to be conducted 2 X week and reported as a 24-Hr. Total.

TSS, O&G, Lead, and Zinc

TSS, O&G, lead, and zinc are subject to the technology-based standards contained in 40 CFR 420 – Iron and Steel Manufacturing Point Source Category. The building block approach was used to calculate TBELs, taking all processes contributing to this outfall into account. See Appendix A Table A-2 for the TBEL calculations.

Process	ELG
BOF Steelmaking	Steelmaking 420.42/43(c)
No. 1 Continuous Caster	Continuous Casting 420.62/63
RHOB Vacuum Degassing	Vacuum Degassing 420.54

Parameter	2017 Permit		2023 Permit	
	Monthly Average (lbs/day)	Daily Maximum (lbs/day)	Monthly Average (lbs/day)	Daily Maximum (lbs/day)
TSS	360	720	886	2652
O&G	102	216	136	408
Lead	2.16	6.48	3.36	10.06
Zinc	3.50	10.5	5.04	15.1

Proposed limits are in **bold** in the table above. O&G monitoring is to be conducted 2 X week using no fewer than two grab samples obtained not less than 6 hours apart during a 24-hr period. Monitoring for TSS, lead, and zinc is to be conducted 2 X week by 24-hr. composite sampling.

5.4 Whole Effluent Toxicity (WET) Testing

The 1997 Indiana Great Lakes regulations included narrative criteria with numeric interpretations for acute (2-1.5-8(b)(1)(E)(ii)) and chronic (2-1.5-8(b)(2)(A)(iv)) whole effluent toxicity (WET) and a procedure for conducting reasonable potential for WET (5-2-11.5(c)(1)). U.S. EPA did not approve the reasonable potential procedure for WET, so Indiana is now required by 40 CFR Part 132.6(c) to use the reasonable potential procedure in Paragraphs C.1 and D of Procedure 6 in Appendix F of 40 CFR Part 132. IDEM used this procedure in conducting the reasonable potential analysis for WET except that the equation was rearranged so that it is similar to the equation that IDEM uses for other pollutants and pollutant parameters.

The renewal permit effective September 1, 2017 required Cleveland-Cliffs East to conduct annual chronic toxicity testing at Outfalls 014 and 018 for *Ceriodaphnia dubia*. Data collected from August 2019 through August 2022 were used in the analysis. The results of the reasonable potential analysis are shown in Appendix B Table B-4. The results show that the discharges from Outfalls 014 and 018 do not have a reasonable potential to exceed the numeric interpretation of the narrative criterion for acute or chronic WET.

The permittee will be required to conduct chronic whole effluent toxicity testing of its effluent discharge from Outfalls 014 and 018 using *Ceriodaphnia dubia*. Acute toxicity is to be derived from chronic toxicity tests and toxicity is to be reported in terms of acute and chronic toxic units and compared to calculated TRE triggers. The TRE triggers are set equal to the acute and chronic WLAs for WET in accordance with 327 IAC 5-2-11.6(d). If either an acute or chronic TRE trigger is exceeded, another chronic WET test must be conducted within two weeks. If the results of any two consecutive tests exceed the applicable TRE trigger, Cleveland-Cliffs must conduct a TRE. The TRE triggers are shown in Appendix B Table B-3.

The permittee is required to continue conducting WET tests to determine the toxicity of the final effluent. **Given the complex nature of the discharges, IDEM proposes to increase the frequency of WET Tests from annually to 2 X annually.** This does not negate the requirement to submit a water treatment additive (WTA) application and/or worksheet for replacement or new additives/chemicals proposed for use at the site. The facility is not currently conducting a TIE/TRE.

Table 6A-Outfall 014

Month/Year	Outfall	Result	Notes
November 2017	014	Fail - Ceriodaphnia dubia for reproduction	Re-take not completed within 2 weeks of failed test
April 2018	014	Pass	
August 2019	014	Pass	
October 2020	014	Pass	
September 2021	014	Pass	
August 2022	014	Pass	

Table 6B-Outfall 018

Month/Year	Outfall	Result	Notes
November 2017	018	Pass	
April 2018	018	Pass	
August 2019	018	Pass	
October 2020	018	Pass	
September 2021	018	Fail - Ceriodaphnia dubia for reproduction	
November 2021	018	Pass	
August 2022	018	Pass	

5.5 Antibacksliding

Pursuant to 327 IAC 5-2-10(a)(11), unless an exception applies, a permit may not be renewed, reissued or modified to contain effluent limitations that are less stringent than the comparable effluent limitations in the previous permit.

The limitations for TSS, O&G, ammonia (as N), total cyanide, phenols, lead, zinc, and TRC at internal Outfall 518 and the limitations for TSS, O&G, lead, and zinc at internal Outfall 618 are less stringent than the comparable limitations for those parameters in the previous permit. Indiana's prohibitions on backsliding are only applicable to BPJ case-by-case technology-based limits and limits developed/based on water quality standards; therefore, the antibacksliding provisions under 327 IAC 5-2-10(a)(11) are not applicable when limits based on EPA effluent limitations guidelines are increased. Under 40 CFR 122.44(l)(1), less stringent effluent limitations are not prohibited when the permit is renewed or reissued if "[t]he circumstances on which the previous permit was based has materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under 40 CFR 122.62." Furthermore, under 40 CFR 122.62(a)(1), a cause for modification exists when "[t]here are material and substantial alterations or additions to the permitted facility or activity which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit." Per 327 IAC 5-2-16(d)(1), production changes would constitute "[m]aterial and substantial alterations or additions to the discharger's operation which were not covered by the effective permit." Therefore, increases in technology-based effluent limitations (TBELs) applicable at internal Outfalls 518 and 618 are not prohibited by either Indiana's or EPA's antibacksliding rules. All technology-based effluent limitations (TBELs) were calculated pursuant to the applicable federal effluent limitation guidelines as a result of changes in production which have occurred since the previous permit was issued.

5.6 Antidegradation

Indiana's Antidegradation Standards and Implementation procedures are outlined in 327 IAC 2-1.3. The antidegradation standards established by 327 IAC 2-1.3-3 apply to all surface waters of the state. The permittee is prohibited from undertaking any deliberate action that would result in a new or increased discharge of a bioaccumulative chemical of concern (BCC) or a new or increased permit limit for a regulated pollutant that is not a BCC unless information is submitted to the commissioner demonstrating that the proposed new or increased discharge will not cause a significant lowering of water quality, or an antidegradation demonstration is submitted and approved in accordance 327 IAC 2-1.3-5 and 2-1.3-6.

This permit includes increased loadings of TSS, O&G, ammonia (as N), total cyanide, phenols, lead, zinc, and TRC at internal Outfall 518 and increased loadings of TSS, O&G, lead, and zinc at internal Outfall 618. Of these pollutants, ammonia (as N), total cyanide, lead, zinc and TRC have applicable water quality criteria for which a Tier 2 antidegradation significant lowering analysis can be made. For lead and TRC, more stringent limitations apply at final Outfall 018, so antidegradation is not applicable at the internal outfalls. For ammonia (as N), total cyanide and zinc which are not limited at the final outfall, the increased loadings are de minimis increases and do not result in a significant lowering of water quality as defined in 327 IAC 2-1.3-2(50). Therefore, antidegradation is satisfied.

This permit includes new loading limitations for Total Residual Oxidants (Bromine) at Outfalls 014 and 018. The new permit limitations for Total Residual Oxidants (Bromine) are not subject to the Antidegradation Implementation Procedures in 327 IAC 2-1.3-5 and 2-1.3-6 as the new permit limitations are not the result of a deliberate activity taken by the permittee. Rather, bromine water quality criteria were only recently developed. Therefore, antidegradation is satisfied.

This permit includes new permit limitations for free cyanide at Outfall 018. In accordance with 327 IAC 2-1.3-1(b), the new permit limitations are not subject to the Antidegradation Implementation Procedures in 327 IAC 2-1.3-5 and 2-1.3-6 as the new or increased permit limitations are not the result of a deliberate activity taken by the permittee. The new permit limitations are the result of the RPE analysis. Therefore, antidegradation is satisfied. See section 5.3.5 of this Fact Sheet as well as Appendix B Tables B-2 and B-3.

5.7 Stormwater

Under 327 IAC 5-4-6(d), if an individual permit is required under 327 IAC 5-4-6(a) for discharges consisting entirely of stormwater, or if an individual permit is required under 327 IAC 5-2-2 that includes discharge of commingled stormwater associated with industrial activity, IDEM may consider the following in determining the requirements to be contained in the permit:

- (1) The nature of the discharges and activities occurring at the site or facility.
- (2) Information relevant to the potential impact on water quality.
- (3) The requirements found in the following: (A) 327 IAC 5-2, (B) 327 IAC 5-5, (C) 327 IAC 5-9, and (D) 327 IAC 15-6.
- (4) "Interim Permitting Approach for Water Quality-Based Effluent Limitations in Stormwater Permits", EPA 833-D-96-001, September 1, 1996, available from U.S. EPA, National Service Center for Environmental Publications at <https://www.epa.gov/nscep> or from IDEM.

In accordance with 327 IAC 15-2-2(a), the commissioner may regulate stormwater discharges associated with industrial activity, as defined in 40 CFR 122.26(b)(14), consistent with the EPA 2008 NPDES Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity, as modified, effective May 27, 2009, under an NPDES general permit. Therefore, using Best Professional Judgment to develop case-by-case technology-based limits as authorized by 327 IAC 5-2-10, 327 IAC 5-5, and 327 IAC 5-9 (see also 40 CFR 122.44, 125.3, and Section 402(a)(1) of the Clean Water Act (CWA)), IDEM has developed stormwater requirements for individual permits that are consistent with the EPA 2008 NPDES Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity. The 2008 Multi-Sector General Permit and Fact Sheet is available from: <https://www.epa.gov/npdes/previous-versions-epas-msgp-documents>.

According to 40 CFR 122.26(b)(14) and 327 IAC 15-6-2 facilities classified under Standard Industrial Classification (SIC) Code 3312 are considered to be engaging in "industrial activity" for purposes of 40 CFR 122.26(b). Therefore, the permittee is required to have all stormwater discharges associated with industrial activity permitted. Treatment for stormwater discharges associated with industrial activities is required to meet, at a minimum, best available technology economically achievable/best conventional pollutant control technology (BAT/BCT) requirements. EPA has determined that non-numeric technology-based effluent limits have been determined to be equal to the best practicable technology (BPT) or BAT/BCT for stormwater associated with industrial activity.

Stormwater associated with industrial activity must also be assessed to ensure compliance with all water quality standards. Effective implementation of the non-numeric technology-based requirements should, in most cases, control discharges as necessary to meet applicable water quality standards. Violation of any of these effluent limitations constitutes a violation of the permit.

Additionally, IDEM has determined that with the appropriate implementation of the required control measures and Best Management Practices (BMPs) found in Part I.D. of the permit, the discharge of stormwater associated with industrial activity from this facility will meet applicable water quality standards and will not cause a significant lowering of water quality. Therefore, the stormwater discharge is in compliance with the antidegradation standards found in 327 IAC 2-1.3-3, and pursuant to 327 IAC 2-1.3-4(a)(5), an antidegradation demonstration is not required.

The technology-based effluent limits (TBELs) require the permittee to minimize exposure of raw, final, or waste materials to rain, snow, snowmelt, and runoff. In doing so, the permittee is required, to the extent technologically available and economically achievable, to either locate industrial materials and activities inside or to protect them with storm resistant coverings. In addition, the permittee is required to: (1) use good housekeeping practices to keep exposed areas clean, (2) regularly inspect, test, maintain and repair all industrial equipment and systems to avoid situations that may result in leaks, spills, and other releases of pollutants in stormwater discharges, (3) minimize the potential for leaks, spills and other releases that may be exposed to stormwater and develop plans for effective response to such spills if or when they occur, (4) stabilize exposed area and contain runoff using structural and/or non-structural control measures to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants, (5) divert, infiltrate, reuse, contain or otherwise reduce stormwater runoff, to minimize pollutants in the permitted facility discharges, (6) enclose or cover storage piles of salt or piles containing salt used for deicing or other commercial or industrial purposes, including maintenance of paved surfaces, (7) train all employees who work in areas where industrial materials or activities are exposed to stormwater, or who are responsible for implementing activities necessary to meet the conditions of this permit (e.g., inspectors, maintenance personnel), including all members of your Pollution Prevention Team, (8) ensure that waste, garbage and floatable debris are not discharged to receiving waters by keeping exposed areas free of such materials or by intercepting them before they are discharged, and (9) minimize generation of dust and off-site tracking of raw, final or waste materials.

To meet the non-numeric effluent limitations in Part I.D.4, the permit requires the facility to select control measures (including BMPs) to address the selection and design considerations in Part I.D.3.

The permittee must control its discharge as necessary to meet applicable water quality standards. It is expected that compliance with the non-numeric technology-based requirements should ensure compliance with applicable water quality standards. However, if at any time the permittee, or IDEM, determines that the discharge causes or contributes to an exceedance of applicable water quality standards, the permittee must take corrective actions, and conduct follow-up monitoring and IDEM may impose additional water quality-based limitations.

“Terms and Conditions” to Provide Information in a Stormwater Pollution Prevention Plan (SWPPP)

Distinct from the effluent limitation provisions in the permit, the permit requires the discharger to prepare a SWPPP for the permitted facility. The SWPPP is intended to document the selection, design, installation, and implementation (including inspection, maintenance, monitoring, and corrective action) of control measures being used to comply with the effluent limits set forth in Part I.D. of the permit. In general, the SWPPP must be kept up-to-date, and modified when

necessary, to reflect any changes in control measures that were found to be necessary to meet the effluent limitations in the permit.

The requirement to prepare a SWPPP is not an effluent limitation. Rather, it documents what practices the discharger is implementing to meet the effluent limitations in Part I.D. of the permit. The SWPPP is not an effluent limitation because it does not restrict quantities, rates, and concentrations of constituents which are discharged. Instead, the requirement to develop a SWPPP is a permit “term or condition” authorized under sections 402(a)(2) and 308 of the Act. Section 402(a)(2) states, “[t]he Administrator shall prescribe conditions for [NPDES] permits to assure compliance with the requirements of paragraph (1) of this subsection, including conditions on data and information collection, reporting, and such other requirements as he deems appropriate.” The SWPPP requirements set forth in this permit are terms or conditions under the CWA because the discharger is documenting information on how it intends to comply with the effluent limitations (and inspection and evaluation requirements) contained elsewhere in the permit. Thus, the requirement to develop a SWPPP and keep it up-to-date is no different than other information collection conditions, as authorized by 327 IAC 5-1-3 (see also CWA section 402(a)(2)).

It should be noted that EPA has developed a guidance document, “Developing your Stormwater Pollution Prevention Plan – A guide for Industrial Operators (EPA 833-B09-002), February 2009, to assist facilities in developing a SWPPP. The guidance contains worksheets, checklists, and model forms that should assist a facility in developing a SWPPP.

Public availability of documents

Part I.E.2.d(2) of the permit requires that the permittee retain a copy of the current SWPPP at the facility and make it immediately available, at the time of an onsite inspection or upon request, to IDEM. When submitting the SWPPP to IDEM, if any information in the SWPPP is considered to be confidential, that information shall be submitted in accordance with 327 IAC 12.1. Interested persons can request a copy of the SWPPP through IDEM. Any information that is confidential pursuant to Indiana law will not be released to the public.

Site Specific Storm Water

Stormwater is not sampled separately at any outfalls. There is no suitable stormwater sampling location available that allows for the collection of samples representative of stormwater only. In the permit renewal application, the permittee identified Storm Water Areas 1 through 14 and Plant 1 Drainage Area. Storm water from these areas does not discharge directly to a surface water, run-off from these areas is directed to the Indiana Harbor East plant water systems and/or is commingled and discharged via one of the final outfalls. Accordingly, the proposed permit will not retain a separate storm water monitoring table.

5.8 Water Treatment Additives

In the event that changes are to be made in the use of water treatment additives that could significantly change the nature of, or increase the discharge concentration of any of the additives contributing to an outfall governed under the permit, the permittee must apply for and obtain approval from IDEM prior to such discharge. Discharges of any such additives must meet Indiana water quality standards. The permittee must apply for permission to use water treatment additives by completing and submitting State Form 50000 (Application for Approval to Use Water Treatment Additives) available at: <https://www.in.gov/ide/forms/ide-agency-forms/> and submitting any needed supplemental information. In the review and approval process, IDEM determines, based on the information submitted with the application, whether the use of any new or changed water treatment additives/chemicals or dosage rates could potentially cause the discharge from any permitted outfall to cause chronic or acute toxicity in the receiving water.

The authority for this requirement can be found under one or more of the following: 327 IAC 5-2-8(11)(B), which generally requires advance notice of any planned changes in the permitted facility, any activity, or other circumstances that the permittee has reason to believe may result in noncompliance with permit requirements; 327 IAC 5-2-8(11)(F)(ii), which generally requires notice as soon as possible of any planned physical alterations or additions to the permitted facility if the alteration or addition could significantly change the nature of, or increase the quantity of, pollutants discharged; and 327 IAC 5-2-9(2) which generally requires notice as soon as the discharger knows or has reason to know that the discharger has begun or expects to begin to use or manufacture, as an intermediate or final product or byproduct, any toxic pollutant that was not reported in the permit application. The list of water treatment additives currently approved for use at the facility is included as Table 7.

Table 7

PLANT SYSTEM	Chemical Product (Nalco)	Additive Concentration in System (mg/l)	Feed Rate, gal/day (1)	Purpose	Duration of use (hrs/day; days/year)	System blowdown flow rate if known (mgd)	Calculated Concentration at Outfall (mg/L)	Notes
OUTFALL 018								
4 BOF Gas Cleaning	1392	2	4	Scale Inhibitor	as needed	0.864	0.085	
No. 1 Caster	1393	1.4	1	Scale Inhibitor	as needed	0.288	0.020	
No. 5 Boiler House	1393	0.06	2.5	Scale Inhibitor	as needed	0.648	0.002	
Total 1393							0.022	
7 Blast Furnace Primary closed loop	7320	5	1	Biocide	as needed	0.014	0.003	Outfall dechlorinated
4 BOF Gas Cleaning	7385	0.5	1	Scale Inhibitor	as needed	0.864	0.021	
4 BOF Gas Cleaning	7385	1	2	Scale Inhibitor	as needed	0.864	0.042	
4 BOF Gas Cleaning	7385	5	10	Scale Inhibitor	as needed	0.864	0.212	
7 Blast Furnace	7385	1.2	7	Scale Inhibitor	as needed	0.115	0.01	
Total 7385							0.28	
No. 1 Caster	7396	1.75	1	Corrosion Inhibitor	as needed	0.288	0.025	
7 Blast Furnace	7768	1.5	10	Flocculant	as needed	0.115	0	NA product removed across treatment
4 BOF Gas Cleaning	8187	1.7	3	Coagulant	as needed	0.864	0	NA product removed across treatment
RHOB (Vac Degassing)	8187	3	0.5	Coagulant	as needed	0.288	0	NA product removed across treatment
7 Blast Furnace	8187	9	50	Coagulant	as needed	0.115	0	NA product removed across treatment
Total 8187							0	NA product removed across treatment
No. 5 Boiler House	22305	15	10	Nextguard	as needed	0.864	0.635	

No. 1 Caster	3DT120	5.5	5	Scale inhibitor/Dispersant	as needed	0.288	0.078	
No. 5 Boiler House	3DT134	0.2	10	Scale inhibitor/Dispersant	as needed	0.648	0.006	
No. 1 Caster	3DT185	1.5	1	Corrosion Inhibitor	as needed	0.288	0.021	
No. 5 Boiler House	3DT199	0.02	1	Corrosion Inhibitor	as needed	0.648	0.001	
7 Blast Furnace Secondary	3DT487	0.2	5	Scale inhibitor/Dispersant	as needed	0.115	0.001	
7 Blast Furnace	7193+	1	5	Coagulant	as needed	0.115	0	NA product removed across treatment
No. 1 Caster	71D5+	3	0.5	Anti-Foam	as needed	0.15	0.022	
4 BOF Gas Cleaning	7607+	1	2	Coagulant	as needed	0.864	0	NA product removed across treatment
4 BOF Gas Cleaning	7766+	6.5	15	Flocculant	as needed	0.864	0	NA product removed across treatment
RHOB (Vac Degassing)	7766+	2	0.5	Flocculant	as needed	0.288	0	NA product removed across treatment
7 Blast Furnace	7766+	35	10	Flocculant	as needed	0.115	0	NA product removed across treatment
Total 7766+							0	NA product removed across treatment
No. 1 Caster	8103+	2	2	Filter aid	as needed	0.288	0	NA product removed across treatment
No. 5 Boiler House	ELIMIN-OX	15	10	Oxygen Scavenger	as needed	0.864	0.635	
No. 1 Caster, closed loop spot treatment	Stabrex ST70	17	2	Biocide	as needed	0.15	0.125	Outfall dechlorinated
No. 1 Caster, closed loop machine	Stabrex ST70	17	2	Biocide	as needed	0.15	0.125	Outfall dechlorinated
No. 1 Caster, closed loop mold	Stabrex ST70	9	1	Biocide	as needed	0.15	0.066	Outfall dechlorinated

RHOB (Vac Degassing)	Stabrex ST70	20	4	Biocide	as needed	0.288	0.28	Outfall dechlorinated
Total Stabrex ST70							0.60	Outfall dechlorinated
No. 1 Caster, "closed loop"	Trac109	357	40	Corrosion Inhibitor	as needed	0.15	2.625	
4 BOF Hood	Trac109	354	38	Corrosion Inhibitor	as needed	0.288	5.00	
7 Blast Furnace Primary closed loop	Trac109	55	10	Corrosion Inhibitor	as needed	0.014	0.04	
Total Trac109							7.66	
No. 5 Boiler House	Tri-ACT 1800	20	15	Corrosion Inhibitor	as needed	0.864	0.847	
OUTFALL 014								
DIW	2490	3.5	2.5	Coagulant	as needed	0.6	0	NA product removed across treatment
Master Recycle TTN	7308	0.1	1.5	Dispersant	as needed	1.4	0.02	
Master Recycle No. 6 PH	7308	0.005	1	Dispersant	as needed	8.7	0.005	
Total 7308							0.021	
Outfall 014	7465	0.1	1	Anti-Foam	as needed	8.7	0.1	
Master Recycle 80" clarifiers	7768	0.001	0.25	Flocculant	as needed	8.7	0	NA product removed across treatment
DIW	8187	110	50	Coagulant	as needed	0.6	0	NA product removed across treatment
Master Recycle Scale Pit	8187	0.01	2	Coagulant	as needed	8.7	0	NA product removed across treatment
Total 8187							0	NA product removed across treatment
80" Furnace Cooling	3DT487	11	2	Corrosion & Scale Inhibitor/Dispersant	as needed	0.014	0.02	
DIW	7766+	5	3	Coagulant	as needed	0.6	0	NA product removed across treatment
Master Recycle TTW	8103+	0.1	2	Coagulant	as needed	8.7	0	NA product removed across treatment

Master Recycle TTE	8103+	0.01	2	Coagulant	as needed	8.7	0	NA product removed across treatment
Total 8103+							0	NA product removed across treatment
Plant 1 lift pump room	Stabrex ST70	2	5	Biocide	as needed	3	0.69	Outfall dechlorinated
80" Furnace Cooling	Trac109	94	7	Corrosion Inhibitor	as needed	0.014	0.15	

Sodium Hypochlorite / Chlorine Addition Locations	
Location / System	Ultimate System Outfall
No. 1 Sewage Treatment Plant (STP)	014
Slag granulation	018
No. 7 Intake Pump House	018 and 014
Main Intake	014 and 011
Terminal Treatment Plant North / No. 2 STP	014
No. 5 Boiler House Cooling Tower	018
No. 17 Generator Cooling Tower	018
Primary Energy Cooling Tower (No. 18 CT)	018
No. 7 Blast Furnce NCCW Cooling Tower	018
No. 1 Caster Treatment	018
Terminal Treat.Plant West (planned addition)	014
Terminal Treat. Plant East (planned addition)	014

6.0 PERMIT DRAFT DISCUSSION

6.1 Discharge Limitations, Monitoring Conditions and Rationale

The proposed final effluent limitations are based on the more stringent of the Indiana water quality-based effluent limitations (WQBELs), technology-based effluent limitations (TBELs), or approved total maximum daily loads (TMDLs) and NPDES regulations as appropriate for each regulated outfall. Section 5.3 of this document explains the rationale for the effluent limitations at each Outfall.

Analytical and sampling methods used shall conform to the version of 40 CFR 136 as referenced in 327 IAC 5-2-13(d)(1) and 327 IAC 5-2-1.5. Any changes to the monitoring conditions are explained in Section 5.3 of this Fact Sheet.

Outfall 011:

Table 1

Parameter	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	Report	MGD	----	----	----	1 X Daily	24 Hr. Total
O&G	----	Report	lbs/day	----	Report	mg/l	1 X Week	Grab
Mercury	Report	Report	lbs/day	Report	Report	ng/l	6 X Annually	Grab
Temperature								
Effluent	----	----	----	Report	Report	°F	2 X Week	Grab
Influent	----	----	----	Report	Report	°F	2 X Week	Grab
TRC	0.058	0.14	lbs/day	14	33	ug/l	5 X Week	Grab

Table 2

Parameter	Quality or Concentration				Monitoring Requirements	
	Daily Minimum	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
pH	6.0	----	9.0	s.u.	1 X Week	Grab

Outfall 014/013A: - Tier 1 Conditions (No. 28 Temper Mill in operation)

Table 1

Parameter	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	Report	MGD	----	----	----	1 X Daily	24 Hr. Total
TSS	5770	14800	lbs/day	Report	Report	mg/l	3 X Week	24 Hr. Comp.
O&G	1421	4172	lbs/day	10	15	mg/l	3 X Week	2 Grabs/24 Hr.
Ammonia (as N)	Report	Report	lbs/day	Report	Report	mg/l	3 X Week	24 Hr. Comp.
Total Cyanide	Report	Report	lbs/day	Report	Report	mg/l	3 X Week	Grab
Free Cyanide	Report	Report	lbs/day	Report	Report	mg/l	3 X Week	Grab
Phenols	Report	Report	lbs/day	Report	Report	mg/l	3 X Week	Grab
Lead	1.1	2.2	lbs/day	14	27	ug/l	3 X Week	24 Hr. Comp.
Zinc	10.4	22	lbs/day	Report	Report	ug/l	3 X Week	24 Hr. Comp.
Naphthalene	----	1.80	lbs/day	----	Report	mg/l	[1]	Grab
Tetrachloroethylene	----	2.69	lbs/day	----	Report	mg/l	[1]	Grab
Mercury	Report	Report	lbs/day	Report	Report	ng/l	6 X Annually	Grab
Temperature								
Effluent	----	----	----	Report	Report	°F	2 X Week	Grab
Influent	----	----	----	Report	Report	°F	2 X Week	Grab
Selenium	Report	Report	lbs/day	Report	Report	ug/l	3 X Week	24-Hr. Comp.
Total Residual Oxidants (Bromine)	0.14	0.34	lbs/day	1.8	4.2	ug/l	5 X Week	Grab
Whole Effluent Toxicity Testing	See Part I.F of the Permit							

[1] waiver granted.

Table 2

Parameter	Quality or Concentration				Monitoring Requirements	
	Daily Minimum	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
pH	6.0	----	9.0	s.u.	2 X Week	Grab

Outfall 014/013B: Tier 2 Conditions (No. 28 Temper Mill idled)

Table 1

Parameter	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	Report	MGD	----	----	----	1 X Daily	24 Hr. Total
TSS	5294	13849	lbs/day	Report	Report	mg/l	3 X Week	24 Hr. Comp.
O&G	1263	3775	lbs/day	10	15	mg/l	3 X Week	2 Grabs/24 Hr.
Ammonia (as N)	Report	Report	lbs/day	Report	Report	mg/l	3 X Week	24 Hr. Comp.
Total Cyanide	Report	Report	lbs/day	Report	Report	mg/l	3 X Week	Grab
Free Cyanide	Report	Report	lbs/day	Report	Report	mg/l	3 X Week	Grab
Phenols	Report	Report	lbs/day	Report	Report	mg/l	3 X Week	Grab
Lead	1.1	2.2	lbs/day	14	27	ug/l	3 X Week	24 Hr. Comp.
Zinc	8.86	22	lbs/day	Report	Report	ug/l	3 X Week	24 Hr. Comp.
Naphthalene	----	0.29	lbs/day	----	Report	mg/l	[1]	Grab
Tetrachloroethylene	----	0.43	lbs/day	----	Report	mg/l	[1]	Grab
Mercury	Report	Report	lbs/day	Report	Report	ng/l	6 X Annually	Grab
Temperature								
Effluent	----	----	----	Report	Report	°F	2 X Week	Grab
Influent	----	----	----	Report	Report	°F	2 X Week	Grab
Selenium	Report	Report	lbs/day	Report	Report	ug/l	3 X Week	24-Hr. Comp.
Total Residual Oxidants (Bromine)	0.14	0.34	lbs/day	1.8	4.2	ug/l	5 X Week	Grab
Whole Effluent Toxicity Testing	See Part I.F of the Permit							

[1] waiver granted.

Table 2

Parameter	Quality or Concentration				Monitoring Requirements	
	Daily Minimum	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
pH	6.0	----	9.0	s.u.	2 X Week	Grab

Outfall 018:

Table 1

Parameter	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	Report	MGD	----	----	----	1 X Daily	24 Hr. Total
TSS	Report	Report	lbs/day	----	----	----	2 X Week	24 Hr. Comp.
O&G	----	----	----	----	Report	mg/l	1 X Week	Grab
Free Cyanide	Report 3.7	Report 7.3	lbs/day	Report 22	Report 44	ug/l	2 X Month	Grab
Interim Final			lbs/day			ug/l	2 X Month	Grab
Ammonia (as N)	Report	Report	lbs/day	Report	Report	mg/l	2 X Week	24 Hr. Comp.
Phenols(4AAP)	Report	Report	lbs/day	Report	Report	mg/l	2 X Week	Grab
Lead	2.3	4.5	lbs/day	14	27	ug/l	2 X Week	24 Hr. Comp.
Zinc	Report	Report	lbs/day	Report	Report	ug/l	2 X Week	24 Hr. Comp.
Mercury	0.00022	0.00053	lbs/day	1.3	3.2	ng/l	6 X Annually	Grab
WQBEL Interim (SMV)			lbs/day			ng/l	6 X Annually	Grab
Temperature	----	----	----	Report	Report	°F	2 X Week	Grab
Effluent Influent						°F	2 X Week	Grab
Selenium	Report	Report	lbs/day	Report	Report	ug/l	2 X Month	24-Hr. Comp.
Total Residual Oxidants (Bromine)	0.16	0.38	lbs/day	0.98	2.3	ug/l	5 X Week	Grab
Whole Effluent Toxicity Testing	See Part I.F of the Permit							

Table 2

Parameter	Quality or Concentration				Monitoring Requirements	
	Daily Minimum	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
pH	6.0	----	9.0	s.u.	Daily	Continuous

Internal Outfall 518:

Parameter	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	Report	MGD	----	----	----	Daily	Continuous
TSS	110	293	lbs/day	Report	Report	mg/l	2 X Week	24 Hr. Comp.
O&G	----	73.0	lbs/day	----	Report	mg/l	2 X Week	Grab
Ammonia (as N)	73.0	219	lbs/day	Report	Report	mg/l	2 X Week	24 Hr. Comp.
Total Cyanide	7.30	14.6	lbs/day	Report	Report	mg/l	2 X Week	Grab
Phenols	0.73	1.46	lbs/day	Report	Report	mg/l	2 X Week	Grab
Lead	2.19	6.58	lbs/day	Report	Report	ug/l	2 X Week	24 Hr. Comp.
Zinc	3.28	9.85	lbs/day	Report	Report	ug/l	2 X Week	24 Hr. Comp.
TRC	----	3.65	lbs/day	----	Report	ug/l	2 X Week	Grab
Selenium	Report	Report	lbs/day	Report	Report	mg/l	2 X Month	24-Hr. Comp.

Internal Outfall 618:

Parameter	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	Report	MGD	----	----	----	2 X Week	24 Hr. Total
TSS	886	2652	lbs/day	Report	Report	mg/l	2 X Week	24 Hr. Comp.
O&G	136	408	lbs/day	Report	Report	mg/l	2 X Week	2 Grab/ 24 Hr.
Lead	3.36	10.06	lbs/day	Report	Report	ug/l	2 X Week	24 Hr. Comp.
Zinc	5.04	15.1	lbs/day	Report	Report	ug/l	2 X Week	24 Hr. Comp.

Outfall 000: New outfall created to report cooling water intake data.

Parameter	Monthly Average	Daily Maximum	Instantaneous Maximum	Units	Measurement Frequency
No. 2 Pump House Intake					
Intake Flow	-----	Report	Report	MGD	Daily
Velocity	-----	-----	0.5	Feet/second	Daily
Water Depth, Screens	-----	Report	-----	Feet	Daily
Open Area, Screens	-----	Report	-----	Square feet	Daily
No. 7 Intake Flow					
Intake Flow	-----	Report	Report	MGD	Daily

6.2 Schedules of Compliance (SOC)

- A. The draft permit contains a compliance schedule pursuant to 327 IAC 5-2-12, allowing the permittee time to comply with the 316(b)-impingement mortality BTA. See Section 6.4.8.B. of this Fact Sheet.
- B. In addition, the draft permit contains new water quality-based effluent limits for free cyanide at Outfall 018. In accordance with 327 IAC 5-2-12.1 (see also 40 CFR 122.47(a)), a schedule of compliance is allowed in an NPDES permit when requested and justified by the permittee, but only when appropriate and when the schedule of compliance requires achievement of compliance “as soon as possible” and meets other specified conditions. Before a schedule of compliance can be included in a permit, the permittee must submit a request for the schedule to IDEM and demonstrate that they meet the requirements for such a schedule pursuant to 327 IAC 5-2-12.1.

The facility submitted the following request for a SOC.

- Cleveland Cliffs has invested substantial resources in upgrading the Outfall 518 wastewater treatment system. Substantial improvements were completed by early 2022, and effluent quality has improved since that time with regard to free cyanide. Please see the attached graphs. Cleveland-Cliffs is currently in the process of installing a larger cyanide reaction tank, which is expected to further improve cyanide effluent quality.
- Cleveland-Cliffs’ proposed compliance schedule for free cyanide at Outfall 018 is attached. The schedule includes the following:
 - The opportunity to remove the free cyanide effluent limits at any point in the compliance schedule if after treatment system improvements or other changes, effluent data show no *reasonable potential*.
 - The opportunity to collect free cyanide effluent data at an alternate location that is representative of water quality discharged to “waters of the state”.
- Time will be needed to assess effluent quality after the current wastewater treatment system upgrade is completed. If effluent data still exhibits *reasonable potential* after the completion of the wastewater treatment system upgrade, Cleveland-Cliffs will likely need to implement significant changes to our facility in order to comply with the new limits. These changes could entail substantial projects with environmental benefit, including modifications to the existing discharge points and possible elimination of Outfall 018. Because of the complexity of this project, Cleveland-Cliffs believes that the time afforded under the applicable Indiana regulations (5 years) is an appropriate schedule.

Task	Completion
Identify possible options for free cyanide reduction measures for Outfall 018 for evaluation	9 months after the effective date of the permit
Complete a preliminary engineering study to determine the feasibility of the identified free cyanide reduction measures	21 months after the effective date of the permit
Notify IDEM of selected option for achieving compliance with the Outfall 018 Free Cyanide effluent limits.	30 months after the effective date of the permit
Complete detailed engineering for selected option.	42 months after the effective date of the permit
Initiate construction of any modifications necessary to achieve compliance with the selected option.	48 months after the effective date of the permit
Complete construction of any modifications necessary to achieve compliance with the selected option.	59 months after the effective date of the permit
At any time during this compliance schedule the permittee may request removal of the free cyanide effluent limits based on facility changes and an associated updated reasonable potential assessment.	
The permittee may evaluate an alternate free cyanide sampling location(s) that is representative water quality discharge to waters of the state. Any updated reasonable potential assessments proposed by the permittee based on these data must include a map of the sampling location and an associated narrative description and assessments.	

IDEM reviewed the SOC request and agrees that a SOC is needed, however, 59 months has not been justified. An adjusted schedule of 48 months is proposed in the permit.

The permittee proposed language to address 1) potential removal of the free cyanide effluent limits based on facility changes and updated reasonable potential assessment and 2) identification of an alternate sampling location for free cyanide.

Any decision with respect to RPE would need to be reevaluated; however, because the facility has a treatment system specifically for cyanide, it is unlikely that the cyanide limits would be removed.

The permittee should submit a work plan for conducting an alternate sampling location study to IDEM for review and approval prior to conducting the study.

6.3 Special Conditions

6.3.1 Reporting Requirements for Solvents, Degreasing Agents, Rolling Oils, Water Treatment Chemical, and Biocides

The permittee will maintain the following information on site, and report to IDEM if requested; the total quantity (lbs/year) of each solvent, degreasing agent, rolling oil, water treatment chemical, and biocide that was purchased for that year and which can be present in any outfall regulated by this permit. This requirement includes all surfactants, anionic, cationic, and non-ionic, which may be used in part or wholly as a constituent in these compounds.

The permittee will maintain these files for a period of ten years. Files will include the Material Safety Data Sheet, FIFRA label for each biocide, and chemical name and CAS number for each compound used. If these compounds contain proprietary or confidential business information, the permittee may maintain this information in a separate file that can be accessed by the U.S. EPA or IDEM personnel with appropriate authority.

6.3.2 Groundwater Remediation Project

In a letter dated July 6, 1998, the previous owners of the facility (Ispat Inland) submitted a groundwater remediation and wastewater treatment system proposal which would be located at the Plant No. 3 Coke By-products area as part of a RCRA Corrective Action Program. IDEM responded in a letter dated December 22, 1998, determining that a permit modification wasn't required but that additional studies were requested. The results of those studies were submitted to IDEM on October 27, 2000.

Today, the plant 3 former coke plant groundwater remediation system discharges to the Master Recycle System and Outfall 014 after treatment in carbon filters. Groundwater remediation system is designed to operate continuously unless it is down for repairs. The facility voluntarily tests the discharge quarterly for VOCs and SVOCs to ensure that all discharges from the carbon filters are non-detect.

IDEM will retain approval of the Plant 3 former coke plant groundwater remediation project for the next permit cycle. The permittee shall continue testing the discharge quarterly and will submit the results to IDEM annually, by December 31 of the calendar year during which testing occurs.

The permittee shall notify IDEM prior to the date it seeks to introduce new compatible or pretreated groundwaters from any groundwater remediation project to wastewater treatment facilities at Cleveland-Cliffs LLC - Indiana Harbor East. "Compatible Treated Wastewater from Groundwater Remediation Project" for purposes of this permit means groundwaters that are contaminated with pollutants that are limited at the respective wastewater treatment facilities. Other groundwaters shall be pretreated prior to introduction to the respective wastewater treatment facilities to remove or treat those pollutants that are not limited or that cannot be effectively removed or treated at the respective wastewater treatment facilities.

Such notification shall include, at a minimum, the volume of groundwater to be treated and discharged; a description of any groundwater pretreatment facilities; the identity of the receiving wastewater treatment facility and permitted outfall; identification, concentrations and mass loadings of containments in the untreated groundwater; identification, and expected concentrations and mass loadings of containments in the pretreated groundwater prior to introduction of groundwater to the wastewater treatment facilities; and, identification and expected concentrations and mass loadings of groundwater contaminants to be discharged from the wastewater treatment facilities.

IDEM shall evaluate the information submitted to determine if a permit modification is required under 327 IAC 5-2-16. Discharge of a new wastestream shall not commence until the permittee has received written approval from IDEM or a modified permit has been issued.

6.3.3 Pollutant Minimization Program

This permit contains water quality-based effluent limits for Total Residual Chlorine at Outfalls 011, 014, and 018 and Total Residual Oxidants (Bromine) at Outfalls 014 and 018. The permittee is required to develop and conduct a pollutant minimization program (PMP) for each pollutant with a WQBEL below the LOQ. This condition has been retained from the previous permit.

6.3.4 Biocides Concentration

The previous permit included a requirement for the permittee to receive written permission from the IDEM if they wanted to use any biocide or molluscicide other than chlorine in once through cooling water. The use of any biocide containing tributyl tin oxide in any closed or open cooling system was prohibited. As part of this permit renewal, IDEM determined this requirement to be somewhat redundant with Section 5.8 of this Fact Sheet, Water Treatment Additives. Therefore, only the prohibition on use of any biocide containing tributyl tin oxide in any closed or open cooling system will be retained.

6.3.5 No. 7 Blast Furnace

The permittee is prohibited from discharging process wastewater from the No. 7 Blast Furnace from any point source except as follows:

- A. Treated No. 7 Blast Furnace Recycle Blowdown may be discharged from Internal Outfall 518 through Final Outfall 018; and,
- B. No. 7 Blast Furnace Recycle Blowdown may be discharged on an intermittent basis to the Master Recycle System that discharges through Outfall 014 and, under emergency circumstances only, through Outfall 013.

6.3.6 Zebra and Quagga Mussel Control

As a means of controlling Zebra and Quagga Mussel colonization within the facility, the permittee chlorinates intake water on a continuous basis during a portion of each year. Wastewater shall be dechlorinated prior to discharge from all external Outfalls 011, 014, and 018. The discharge from each Outfall listed above shall have limitations and monitoring requirements for Total Residual Chlorine (TRC) or Total Residual Oxidants (Bromine) to meet compliance with the TRC or TRO requirements. The wastewater discharged through Outfalls 014 and 018 is chlorinated year-round and shall be dechlorinated prior to discharge.

6.3.7 Dredging Project Effluent

For the purposes of this permit, the term "Dredging Project Effluent" means wastewater generated during the dewatering of sediments or other material dredged from the Indiana Harbor or the Indiana Harbor Turning Basin. Dredging water effluents that are contaminated with pollutants that are not limited or cannot be removed or treated at the respective wastewater treatment facility, must be pretreated for the removal of those pollutants prior to introduction into the wastewater treatment facility.

The permittee shall notify IDEM at least 120 days prior to the introduction of untreated or pretreated dredging project effluents to wastewater treatment facilities at Cleveland-Cliffs LLC- Indiana Harbor East. Such notification shall include, at a minimum, an estimate of the volume of dredging project effluent to be treated and discharged; a description of any pretreatment facilities; the identity of the receiving wastewater treatment facility and permitted outfall; identification and concentration of contaminants in the untreated dredging project effluent; identification and expected concentrations and mass loadings of contaminants in the pretreated dredging project effluent prior to introduction into the wastewater treatment facility; and, identification and expected concentrations and mass loadings of dredging project contaminants to be discharged from the wastewater treatment facility.

IDEM shall evaluate the information submitted to determine if a permit modification is required under 327 IAC 5-2-16. Discharge of this wastestream shall not commence until the permittee has received written approval from IDEM or a modified permit has been issued.

6.3.8 No. 6 Dock

From March through November of each year, the permittee shall conduct monthly inspections and repair programs at the No. 6 Dock for the purpose of sealing leaks of groundwater to the Indiana Harbor Turning Basin above the water line. The inspection and repair programs shall continue until a groundwater remediation program is implemented at the No. 6 Dock in accordance with U.S. EPA Consent Decree (H90-0328, March 1993).

The permittee shall report a summary of the leak detection and repair program not later than December 31st of each year of the program for that year. The report shall include the dates of inspection, the findings from each inspection, a description of the repairs undertaken, the approximate location of each repair with respect to a permanent reference location, and the dates the repairs were completed. The permittee shall also maintain a log of inspections and repairs at the facility and shall make such log available to representatives of IDEM and the U.S. EPA upon request. The provisions of this paragraph shall terminate automatically upon termination or conclusion of U.S. EPA Consent Decree H90-032, March 1993.

6.3.9 Discharges to the Lake Michigan Impoundment

The permittee shall not discharge process wastewater or fly ash lagoon leachate to the Lake Michigan Impoundment. Discharges to the Lake Michigan Impoundment shall be limited to storm water from the north portion of the facility, precipitation, groundwater from the facility, and inflows from Lake Michigan. The permittee shall use only service water (Lake Michigan intake water) for blast furnace slag quench near the Lake Michigan Impoundment. For purposes of this permit, the water contained in the Lake Michigan Impoundment constructed by Inland Steel, now Cleveland-Cliffs, shall be considered to be part of Lake Michigan.

6.4 Clean Water Act Section 316(b) Cooling Water Intake Structure(s) (CWIS)

6.4.1 Introduction

Section 316(b) of the Clean Water Act requires that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available (BTA) for minimizing adverse environmental impact.

The EPA promulgated a CWA section 316(b) regulation on August 15, 2014, which became effective on October 14, 2014. 79 Fed. Reg. 48300-439 (August 15, 2014). This regulation established application requirements and standards for cooling water intake structures. The regulation is applicable to point sources with a cumulative design intake flow (DIF) greater than 2 MGD where 25% or more of the water withdrawn (using the actual intake flow (AIF)) is used exclusively for cooling purposes. All existing facilities subject to these regulations must submit the information required by 40 CFR 122.21(r)(2)–(r)(8) and facilities with an actual intake flow of greater than 125 MGD must also submit the information required by 40 CFR 122.21(r)(9)–(r)(13). The regulation establishes best technology available standards to reduce impingement and entrainment of aquatic organisms at existing power generation and manufacturing facilities.

Impingement is the process by which fish and other aquatic organisms are trapped and often killed or injured when they are pulled against the cooling water intake structures (CWIS's) outer structure or screens as water is withdrawn from a waterbody. Entrainment is the process by which fish larvae and eggs and other aquatic organisms in the intake flow enter and pass through a CWIS and into a cooling water system, including a condenser or heat exchanger, which often results in the injury or the death of the organisms (see definitions at 40 CFR 125.92(h) and (n)).

In addition to the federal requirements, under 327 IAC 2-1.5-8(c)(4)(D)(vi), water intakes must be designed and located to minimize entrainment and damage to desirable organisms. Requirements may vary depending upon local conditions, but, in general, intakes must:

- (1) have minimum water velocity; and
- (2) not be located in spawning or nursery areas of important fishes.

Water velocity at screens and other exclusion devices must be at a minimum.

Indiana Harbor East operates three cooling water intake structures: the Main Intake / No. 2 Pump House, the No. 7 Intake, and the water flowing through flap gates at the No. 6 intake. The source water body for these intakes is Lake Michigan. See Figure R2-1: Indiana Harbor East Source Water Body shown below. More detailed information in these intakes is provided in Section 6.4.2, below.

The design intake flows (DIF) for each intake are provided in the table below. Based on the DIF for each intake, the DIF for the facility is estimated at 57.6 MGD not including the design intake flow at the No. 6 Pump House flap gates intake. In an e-mail submitted on September 1, 2023, the permittee provided a revised design intake flow value of 32,000 gpm (46.08 mgd) for the No. 7 intake and based on information submitted on August 18, 2023 indicated that at the No. 2 Intake, a single pump could have an intake flow greater than the rated pump capacity of 10,000

gpm (14.4 mgd) but the permittee was certain that it would be below the maximum reported flow of 27,500 gpm (39.6 mgd).

Intake	Design Intake Flow (mgd)
Main Intake/No. 2 Pump House	14.4*
No. 7 Intake	46.08
No 6. Intake flap gates	Unknown**
Total for Indiana Harbor East:	60.48
*The design intake flow is likely higher than 14.4 mgd. **The permittee has estimated that the flow through the flap gates is 500 gpm (0.72 mgd) under typical conditions	

The daily intake flow data spreadsheet provided by the permittee included flows at these intakes that exceeded these design flows.

The actual intake flow (AIF), as defined under 40 CFR 125.92(a), is the average volume of water withdrawn on an annual basis by the cooling water intake structures over the past five years. The “actual intake flow” provided by the permittee in its 316(b) application (and supplemental information submitted on October 13, 2021) was based on known discharge flow rates and estimates of evaporation across the facility for the period from January 2017 through December 2021, was calculated to be 51.8 MGD as summarized in the table below. Approximately 50% of the actual intake flow is currently used for cooling water.

Year	Calculated Average Withdrawal, mgd
2017	72.9
2018	51.8
2019	45.6
2020	47.5
2021	41.2
Average	51.8

The permittee does report its intake flow to the Indiana Department of Natural Resources (IDNR) under the Significant Water Withdrawal Facility program. Based on the data that the permittee submitted to IDNR, its AIF over this period was 69.5 MGD.

Therefore, since the facility has a DIF greater than 2 MGD, and because the percentage of flow used at the facility exclusively for cooling is greater than 25%, the facility is required to meet the BTA standards for impingement and entrainment mortality, including any measures to protect Federally-listed threatened and endangered species and designated critical habitat established under 40 CFR 125.94(g).

As an existing facility with a DIF greater than 2 MGD and because the AIF is less than or equal to 125 MGD, the permittee was required to submit the application information required by 40 CFR 122.21(r)(2) through (r)(8). The permittee submitted a complete 316(b) application with the permit renewal application as Appendix A of the renewal application. Additional information to

supplement the application was submitted June 17, 2022, July 26, 2022, October 13, 2022, January 12, 2023, February 8, 2023, June 2, 2023, July 7, 2023, August 18, 2023, and September 1, 2023. The additional information submitted June 17, 2022, included additional detail on the design and operation of both intakes as well as updates to Figures and Attachments in the 316(b) application.

The regulation also established requirements that build on existing CWA requirements to coordinate with the U.S. Fish and Wildlife Service prior to issuing NPDES permits. Pursuant to 40 CFR 125.98(h), upon receipt of an NPDES permit 316(b) application for an existing facility subject to the rule, the Director (IDEM) must forward a copy of the permit application to the appropriate Field Office of the U.S. Fish and Wildlife Service for a 60-day review. A copy of this permit application was sent to the Bloomington Field Office of the U.S. Fish and Wildlife Service March 15, 2022. On May 17, 2022, USFWS stated that since “there are no federally threatened or endangered species in [Lake Michigan] that would be in the action area,” they will not be submitting official comments.

Much of the factual and narrative information presented below was taken, sometimes directly, from the permittee’s 316(b) application and updates.

See below aerial photos and diagrams.

Figure 2.01 Simplified Water Flow Schematic from supplemental 316(b) information submitted on June 17, 2022

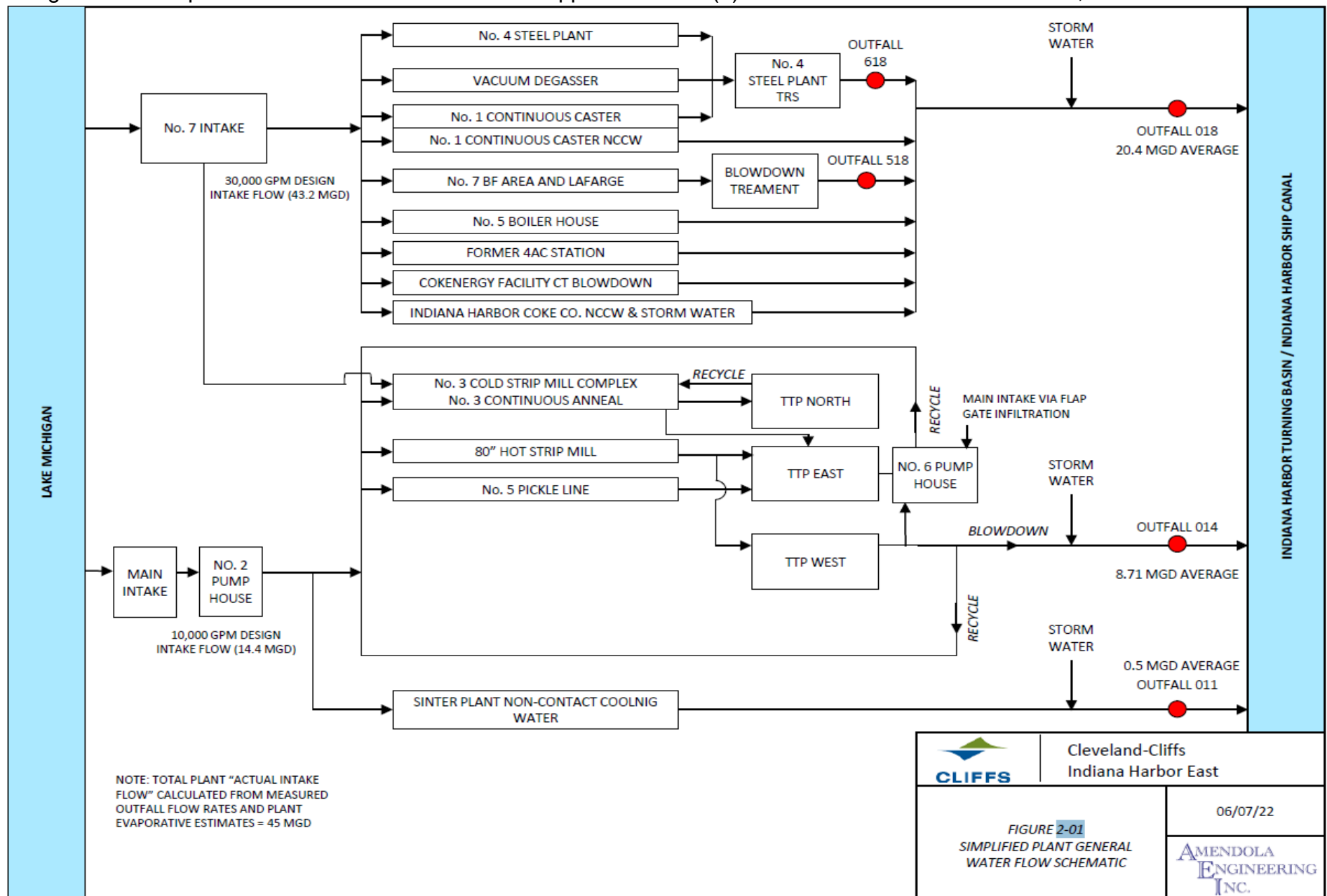


Figure R2-1 from 316(b) application



Modified Figure 2-1b from 316(b) application



ATTACHMENT R3-1
MAIN INTAKE,
UPDATE 06-07-22



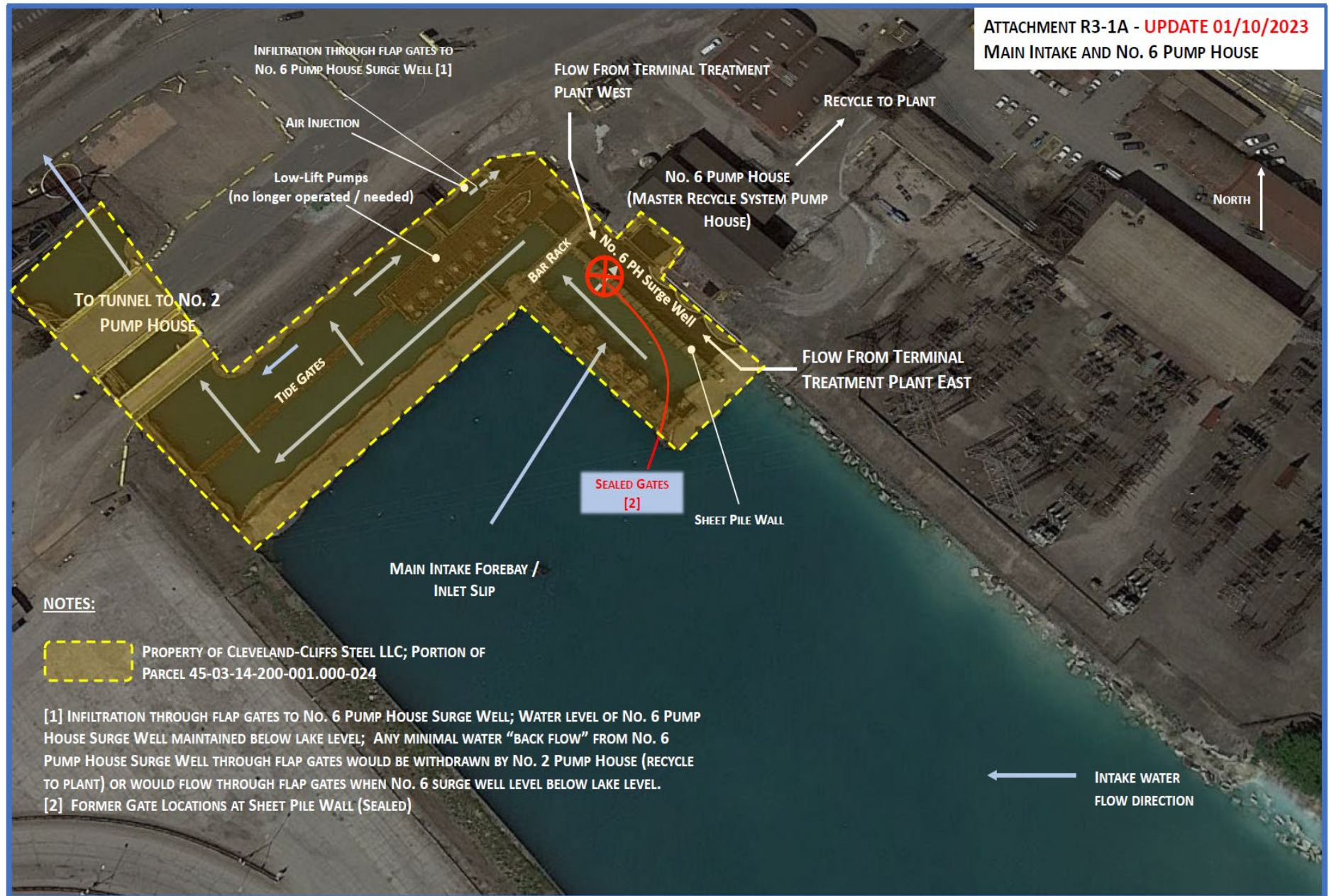
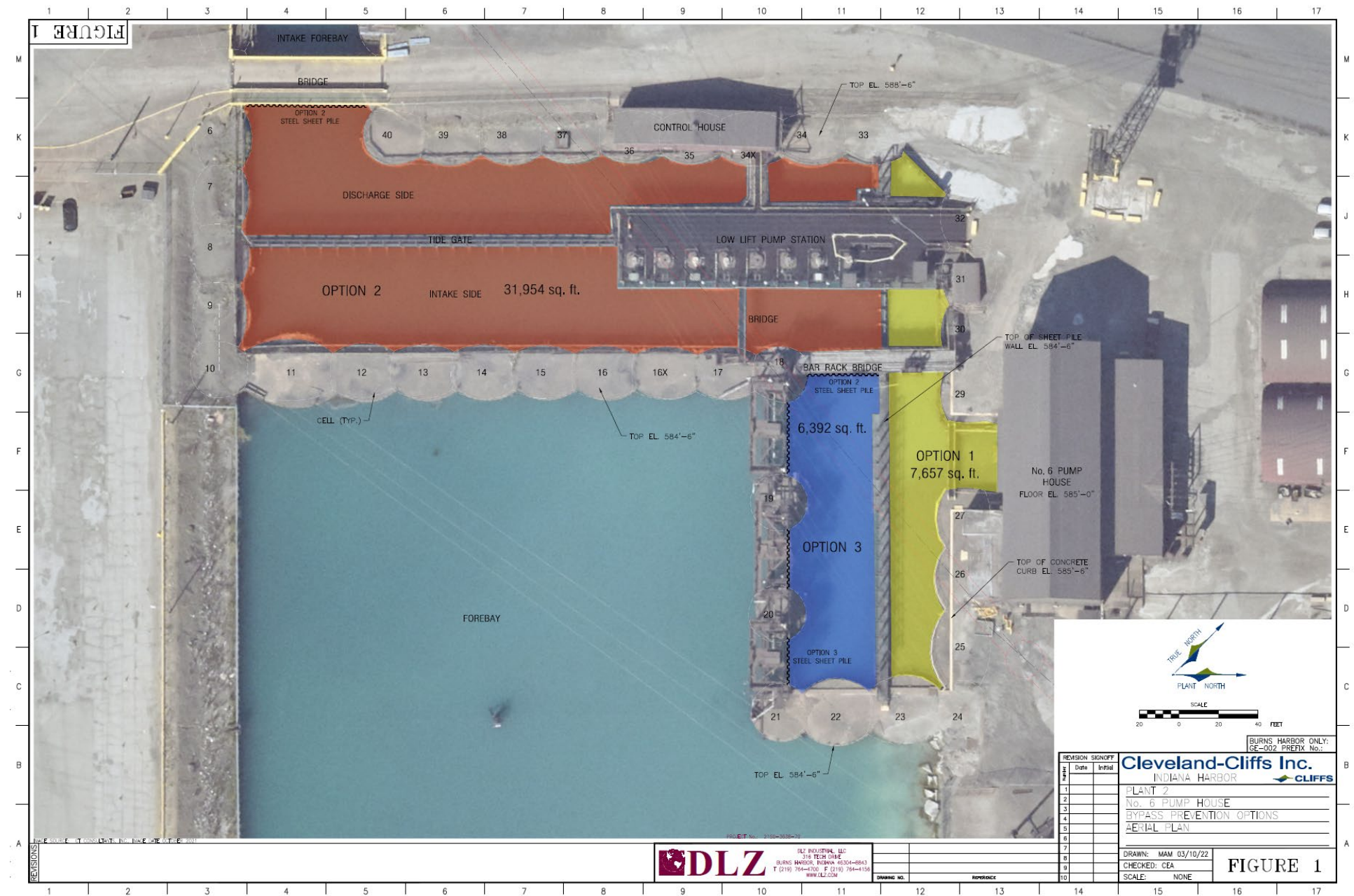


Figure 1 from March 31, 2022 Compliance Plan (Agreed Order Case No. 2021-27623-W)



6.4.2 Facility and Cooling Water Intake Structure (CWIS) Description

A. Detailed Description; Intake Flows; and Velocity of Intake Flows Through Intake Openings

Indiana Harbor East operates three intakes (Main Intake / No. 2 Pump House, the No. 7 Intake and the No. 6 Pump House flap gates intake). All intakes withdraw water from Lake Michigan.

Figure R2-1; Source Water Body and a modified version of Figure 2-1b, were included in the permittee's original 316(b) application. Figure 2-01, Simplified Plant General Water Flow Schematic; Attachment R3-1, Main Intake Drawing; Attachment R3-1A, Main Intake and No.6 Pump House were submitted to IDEM on June 17, 2022. Figure 1 was submitted to IDEM on March 31, 2022, as part of its Compliance Plan for Agreed Order: Case No. 2021-27623-W. These Attachments and Figures are included above.

In addition to the Figures and Attachments shown above, as part of the June 17, 2022 submittal the permittee included new information on the No.6 Pump House and inflow from the Main Intake to the No.6 Pump House Master Recycle System.

1. Main Intake and No. 2 Pump House

The Main Intake is located at the end of an "inlet slip" from Lake Michigan on the facility's east side. The "inlet slip" is approximately 1,200 feet long and 350 feet wide. At the western end of the slip, water passes through bar racks and tide gates.

Attachments R3-1 and R3-1A above depict the Main Intake configuration as well as the connection to No.6 Pump House.

The No. 2 Pump House is equipped with two service water pumps rated at 10,000 gpm each. One service water pump is operated, and one is maintained as an in-line spare. In a July 7, 2023 email, the permittee stated that the only time during which two pumps is operated is when the pumps are switched in and out of operation, which is a period of minutes. This occurs approximately twice per year. It is possible that the permittee may need to operate both pumps during an emergency situation.

Seven circulating water pumps also remain at the No. 2 Pump Station which were installed to support facilities at Indiana Harbor East that are no longer in operation. Three circulating water pumps are steam driven (one of which is blank flanged), two (2) are electric pumps with motors that are connected, and two (2) are electric with no motors present. All circulating water pumps are no longer maintained, cannot operate and are out of service. The permittee further clarified in a July 7, 2023 email that these circulating water pumps were last operated on September 13, 2018 when the 2AC Power Station was operational. The 2AC Power Station is in the process of being demolished. These circulating water pumps have been physically disconnected from their power source.

A series of eight low-lift pumps are located adjacent to the 22 Main Intake tide gates. These pumps were formerly used to supply water behind the tide gate structure to ensure adequate water supply to the No. 2 Pump House under low lake level conditions when the No. 2 Pump

House was operated at high withdrawal rates. These low-lift pumps are not in good working condition and likely cannot operate. IH East does not intend to operate these pumps in the foreseeable future.

As stated above, according to the permittee, the design intake flow for the No. 2 Pump House is 10,000 gpm (one operating service water pump and one spare service water pump). That is, 10,000 gpm is the intake design flow for support of existing IH East operations. However, for the period from January 1, 2019 through August 31, 2022, the maximum calculated daily intake flow provided by the permittee at this intake was 27,655 gpm (or 39.8 MGD) on October 3, 2020. In addition, based just on the 2022 intake flow data the permittee provided in June 2023, the reported, estimated, intake flow at this intake exceeded the “design” intake flow of 10,000 gpm on 14 days in 2022, ranging from 10,171 gpm to 22,195 gpm.

In addition, in information submitted August 18, 2023, the permittee indicated that at the No. 2 Intake, a single pump could have an intake flow greater than the rated pump capacity of 10,000 gpm (14.4 mgd) but the permittee was certain that it would be below the maximum reported flow of 27,500 gpm (39.6 mgd).

Water is generally withdrawn from the No. 2 Pump House on a 24 hour per day / 7 days per week basis, without major seasonal changes in water withdrawal.

The bar rack section prevents larger debris from entering the plant water system and is detailed below. The bar racks are typically removed in the winter months to address ice formation.

- 5/8” bars; 3 3/8” openings between bars
- Approx. 26.2 feet total width
- 15.93 ft calculated depth at low water based on observed water mark of removed screen (presumed avg water elevation) and low water elevation of Lake Michigan
- Calculated velocity through the bar rack: 0.07 ft/s based on No. 2 Pump House 10,000 gpm design intake flow

From the bar rack section, water passes through 22 tide gates that allow water to pass to a subterranean tunnel approximately 2,800 feet long that connects to the No. 2 Pump House on the facility’s west side. The permittee is unable to locate drawings of the tunnel.

The No. 2 Pump House is equipped with 5 screens. Two of these are operating rotating screens and the other three are static. The screen dimensions are provided below based on field measurements. The permittee has not been able locate drawings of the No. 2 Pump House intake screens.

- Number screens: 5
- Depth at low water: 10.42 feet or 125.04 inches, field measurements and calculation
- Panel Height: 24 inches, field measurement
- Number of panels below water: 5.2 panels, calculated (125.04/24)
- Panel screen height: 20.75 inches, field measurement

- Panel bracket height: 3.25 inches, calculated (24-20.75)
- Panel screen width: 89.5 inches, field measurement
- Screen opening size: 0.375 inches (3/8 inch), field measurement
- Screen wire size: 0.063 inches, field measurement
- Opening plus wire size: 0.438 inches, calculated (0.375+0.063)
- Opening: 0.141 sq. inch, calculated (0.375 X 0.375)
- Vertical openings per panel: 47, calculated (20.75/0.438)
- Horizontal openings per panel: 205, calculated (89.5/0.438)
- Openings per panel: 9703, calculated (47X205)
- Open area per panel: 1364 sq. inch, calculated (0.141X9703)
- Total open area at low water level/screen: 7109 sq. inch, calculated (5.2X1354)
- Total open area at low water level/screen: 49.4 sq. feet, calculated (7109/144)
- Total open area at low water level: 246.8 sq. feet, calculated (5X49.4)

Design Intake Velocity Calculation

- Design intake flow: 10,000 gpm, one operating pump, one maintained for backup
- Design intake flow: 14.4 mgd, calculated (10,000*1440/100000)
- Design intake flow: 22.28 cfs, calculated (10,000/448.83)
- Design intake velocity: 0.09 ft/sec., calculated (22.28/246.8)
- Design intake velocity with assumed 50% blockage: 0.18 ft/sec., calculated (22.28/(246.8X(1-0.5)))

Maximum Actual Intake Velocity Calculation

- Maximum actual flow: 27,655 gpm
- Maximum actual flow: 39.8 mgd calculated (27,655*1440/100000)
- Maximum actual flow: 61.62 cfs, calculated (27,655/448.83)
- Maximum actual intake velocity: 0.25 ft/sec., calculated (61.62/246.8).
- Maximum actual intake velocity with assumed 50% blockage: 0.50 ft/sec., calculated (61.62/(246.8X(1-0.5)))

2. No. 6 Pump House

The Indiana Harbor East No. 6 Pump House is the recirculation pump house for the combined process and cooling water Indiana Harbor East Master Recycle System (MRS).

The primary purpose of this pump house is not as a cooling water intake structure; however, the permittee found that lake water enters into the No. 6 Pump House surge well (wet well) through two flap gates located at the northern corner of the of the Main Intake area. There are also two sealed gates located on the northeastern side of the Main Intake inlet slip / forebay. See the updated Attachment R3-1A, dated January 10, 2023, above.

The inflow of lake water into the No. 6 Pump House surge bay is consequently serving as a make-up water source to the No. 6 Pump House / Master Recycle System.

Air is introduced at the two flap gates at the northern corner of the Main Intake inlet slip to retard fish from entering the No. 6 Pump House surge well. See Attachment R3-1A. There are no other barriers or screens that prevent fish from entering the No. 6 Pump House surge (wet) well.

The water level in the No. 6 Pump House surge well (wet well) is reportedly maintained below the Lake Michigan water level to ensure that water cannot flow out to the Main Intake forebay / inlet slip. Despite this, it is likely there is some backflow of the master recycle system water, likely minimal in volume, back through the flap gates under typical conditions. In addition, if a flap gate were to malfunction or clog open under non-typical conditions, the volume of backflow into Lake Michigan and into the No. 2 Pump House intake could be substantial.

Based on information submitted by the permittee on February 8, 2023, for these two flap gates the west frame is ~50" high x 62" wide and the east frame is ~51" high x 68" wide. The flap gates are mounted on bulkhead walls that are approximately 173" high and ~7' wide.

In addition, in this February 8, 2023, submittal, the permittee provided information from an inspection conducted by divers on January 23 and 24, 2023. On 1/23/2023, the divers evaluated the No. 6 Pump House surge well wall from the plant east end of the surge well to the west of the bar rack area. On 1/24/23, the divers inspected the flap gates, bulkhead, and wall located on the west end of the surge well, including areas to the east of the flap gates that were not checked on the 23rd. The entire surge well wall was checked over the two days. This evaluation was done entirely on the lake side for better clarity. Trace amounts of dye were used to check for leaks at seams, gates, and the bulkhead areas. The findings were as follows:

- Divers confirmed that blueprints are correct in that there is a continuous vertical sheet pile wall on the surge well (recycle water) side of the well. The top of this wall is 584.5' above sea level per the blueprints. On the lake side, there is a second sheet pile wall 36" away from the surge well wall. The top of this wall is approximately 6'3" under the top of the surge well wall. The 36" space is filled with concrete. The lake water depth on 1/23/23 next to the wall varied from 11' to 14'. The sheet wall is completely covered with multiple layers of zebra mussels.
- There are four sets of gates built into the surge well wall. These gates are approximately 16.5' high and 6' wide and sit on a concrete shelf 36" thick. This shelf is around 2 feet high from natural bottom. The plant south exterior of the shelf consists of a sheet pile wall. All gates have been secured in the past with screw dogs. There are 8 screw dogs on each gate. Divers found all gates to be tight using dye, with no leaks detected. The lake water depth on 1/23/23 next to the gates was 12'.
- The channel depth near the bar rack area was 24' on 1/23/23.
- There are two flap gates on the west end of the surge well. The lake water depth in this area was 21' on 1/24/23. Each flap gate is installed on a bulkhead. The bottom of the flap gates to water surface was approximately 5'. The bulkheads were found to have small leaks at their lower seals, and the flap gates were passing water as designed. There is around 30% coverage of zebra mussels on the gates.

The No. 6 Pump House is the pump station for the plant's Master Recycle System. Effluents from the Terminal Treatment Plant East and Terminal Treatment Plant West combine in the

No. 6 Pump House surge bay (~150,000 gpm with 5 of the 7 pumps operating and (~60,000 with 2 of the 7 pumps operation [Hot Strip Mill down]). Water in the surge bay then passes through a series of four traveling screens and is pumped (recycled) to plant operations from which treated water returns to No. 6 Pump House via Terminal Treatment Plant East and Terminal Treatment Plant West.

Seven pumps are located in the No. 6 Pump House each rated at 30,000 gpm. Five pumps are normally operated, with two serving as spares (5 x 30,000 gpm = 150,000 gpm).

The blowdown from the Master Recycle System is from Terminal Treatment Plant West via Outfall 014. The long-term average (Jan 2017-April 2022) Master Recycle System blowdown flow rate (i.e. Outfall 014 discharge) is 8.71 mgd (6,050 gpm).

The volume of water entering the Master Recycle System (MRS) is not directly measured. Water is supplied to the MRS from the No.2 Pump House, the No 7 Pump House and from water that infiltrates through the flap gates at the Main Intake. The rate of infiltration through the flap gates varies with lake level (at high lake level there is more infiltration than at low lake level).

To estimate the volume of water infiltrating through the flap gates the permittee estimated the average volume of water lost (consumed) by the MRS (evaporation and discharge from Outfall 014) and compared it to the volume of water estimated to be supplied by No. 2 and No. 7 Pump Houses. The difference would be supplied by infiltration through the flap gates.

The permittee has estimated that the make-up rate through the flap gate is likely 500 gpm (0.72 mgd) or less under typical conditions. This estimate was based on the estimated 11.7 mgd of water used by the MRS compared to the 12.1 mgd estimated supply from the No.2 and No.7 Pump Houses. The following information quoted from a July 26, 2022, e-mail from Mariya Trenkinshu to Paul Novak provides more detail:

Cleveland-Cliffs does not have a direct measurement or calculation of the volume of water that infiltrates through the flap gates into the No. 6 Pump House. The rate of infiltration varies with lake level (at high lake level there is more infiltration than at low lake level). However, credible estimates of the other make-up sources to the recycle systems associated with Outfall 014 account for the long-term average system blowdown flow (Outfall 014 flow rate) plus estimated evaporation. So, we know that on average the make-up rate through the flap gates is relatively low. See below:

- 8.71 mgd measured long term average Outfall 014 flow rate (2017 – April 2022, includes 2019 and 2020 high lake level years) + 3.0 mgd estimated evaporation from system cooling towers and hot strip mill = 11.7 mgd estimated total make-up to system.
- 7,000 gpm (10.1 mgd) make-up from No. 2 Pump House + 1,400 gpm (2.0 mgd) makeup from No. 7 Pump House (12" line at 4 ft/sec) = 12.1 mgd make-up to system.
- No apparent remaining make-up flow directly to No. 6 Pump House:
 - 12.1 mgd calculated from other make-up source estimates vs. 11.7 mgd total make-up calculated from measured outfall flow and estimated evaporation.
- The plant estimates based on professional judgement that the make-up rate through the flap gates is likely 500 gpm or less under typical conditions.

3. No. 7 Intake

The No. 7 Intake is located on the facility's east side. A concrete culvert approximately 50 feet wide by 200 feet long in the shoreline is open to an inlet bay at Lake Michigan. Water passes through the culvert to bar racks at the No. 7 Pump House, which are detailed below:

The No.7 Pump House is equipped with four service water pumps rated at 30,000 gpm each. One service water pump is operated and at least two are maintained as in-line spares. The permittee operates two pumps for a short period of time when switching between pumps and may operate two pumps for an emergency situation.

The No. 7 Pump House was also equipped with three circulating water pumps which supported operations at the facility that are no longer in operation. Those circulating water pumps have all recently been removed.

The permittee originally indicated that the design intake flow for the No. 7 Pump House was 30,000 gpm (one operating service water pump and two to three service water pumps maintained as spares). However, in an e-mail submitted on September 1, 2023, the permittee provided a revised design intake flow value of 32,000 gpm (46.08 mgd).

For the period from January 1, 2019 through August 31, 2022, the maximum calculated daily intake flow provided by the permittee at this intake was 36,064 gpm (or 51.9 MGD) on March 7, 2019. Based on the 2022 intake flow data the permittee provided in June 2023, the actual intake flow at this intake exceeded the "design" intake flow of 30,000 gpm on 2 days in 2022, 31,793 gpm on October 19 and 33,337 gpm on December 24, 2022.

Water is generally withdrawn from the No. 7 intake on a 24 hour per day / 7 days per week basis, without major seasonal changes in water withdrawal.

- Number of back rack sections: 7
- Total width of back racks: 80.5 feet (11.5 ft each)
- 0.5" bars spaced 2.5" inches apart
- 15.42 feet submerged bar rack depth at low water level;
- 0.075 ft/sec velocity through bar racks at No. 7 Pump House design intake flow of 32,000 gpm.

From the bar racks, water passes into the No. 7 Pump House and to the screen house. There are 7 total screen bays, but only 6 of the screen bays are open. Three of these screens are operating traveling screens, the other three are fixed. The original velocity calculations provided by the permittee used all 7 screens bays, but revised calculations using only the 6 open screens bays was later submitted. The permittee submitted new velocity calculation on February 8, 2023 using only the three operating traveling screens in case the other three screen bays closed or are not maintained. In subsequent conversations the permittee indicated that it would maintain and keep open all 6 of the screen bays. Therefore, the below calculations are based on all 6 screens. The information on these screens and velocity is as follows:

- Number screens: 6
- Depth at low water: 14.13 feet or 169.56 inches, design drawing and calculation
- Panel Height: 23.75 inches, field measurement
- Number of panels below water: 7.1 panels, calculated ($169.56/23.75$)
- Panel screen height: 18.25 inches, field measurement
- Panel bracket height: 5.5 inches, calculated ($23.75-18.25$)
- Panel screen width: 82.25 inches, field measurement
- Screen opening size: 0.375 inches (3/8 inch), field measurement
- Screen wire size: 0.063 inches, field measurement
- Opening plus wire size: 0.438 inches, calculated ($0.375+0.063$)
- Opening: 0.141 sq. inch, calculated (0.375×0.375)
- Vertical openings per panel: 42, calculated ($18.25/0.438$)
- Horizontal openings per panel: 188, calculated ($82.25/0.438$)
- Openings per panel: 7842, calculated (42×188)
- Open area per panel: 1103 sq. inch, calculated (0.141×7842)
- Total open area at low water level/screen: 7873 sq. inch, calculated (7.1×1103)
- Total open area at low water level/screen: 54.7 sq. feet, calculated ($7873/144$)
- Total open area at low water level: 328.1 sq. feet, calculated (6×54.7)

Design Intake Velocity Calculation

- Design intake flow: 32,000 gpm, one operating pump, at least 2 of remaining 3 pumps maintained as backup
- Design intake flow 46.1 mgd, calculated ($32,000 \times 1440/1000000$)
- Design intake flow: 71.30 cfs, calculated ($32,000/448.83$)
- Design intake velocity (no screen blockage): 0.22 ft/sec., calculated ($71.30/328.1$)

Design intake velocity (screen blockage-calculated separately for traveling screens and static screens since they have different levels of screen blockage. Assume 50% of the flow goes through traveling screens and 50% through static screens):

- Design intake velocity through traveling screens with assumed 15% blockage for the 3 traveling screens: 0.26 ft/sec., calculated ($35.65/(164.0(1-0.15)))$)
- Design intake velocity through static screens with assumed 50% blockage for the 3 static screens: 0.43 ft/sec., calculated ($35.65/(164.0(1-0.50)))$)

Maximum Actual Intake Velocity Calculation

- Maximum actual flow: 36,064 gpm
- Maximum actual flow: 51.9 mgd, calculated ($36,064 \times 1440/1000000$)
- Maximum actual flow: 80.35 cfs, calculated ($36,064/448.83$)
- Maximum actual intake velocity: 0.24 ft/sec., calculated ($80.35/328.1$).

Maximum actual intake velocity (screen blockage-calculated separately for traveling screens and static screens since they have different levels of screen blockage. Assume 50% of the flow goes through traveling screens and 50% through static screens):

- Maximum actual intake velocity through traveling screens with assumed 15% blockage: 0.29 ft/sec., calculated ($40.18/(164.0 \times (1-0.15)))$)
- Maximum actual intake velocity through static screens with assumed 50% blockage for the 3 static screens: 0.49 ft/sec., calculated ($40.18/(164.0(1-0.50)))$)

B. Best Technology Available Discussion

Impingement studies have shown that organisms can usually swim away from intake screens at velocities less than 0.5 fps. While low intake velocities will reduce levels of impingement, they do not generally affect entrainment rates of smaller non-motile organisms such as eggs and larvae.

Under the regulations, there are two BTA standards for impingement mortality that use the velocity of 0.5 fps. The through-screen design intake velocity and the through-screen actual intake velocity impingement mortality BTA alternatives.

As explained in the Technical Support Document (TSD) for EPA's 2014 rulemaking, the velocity requirements have been well-developed since EPA's Phase I 316(b) rule which was promulgated in 2002. The data compiled as part of that rulemaking found a maximum velocity of 0.5 fps to protect 96% of tested fish and a velocity of 1.0 fps would protect 78% of tested fish. EPA further stated in the TSD that since the promulgation of the Phase I rule, many existing facilities have designed and operate their modified traveling screens or wedgewire screens so as not to exceed a through-screen velocity of 0.5 fps. For the 2014 316(b) rule, EPA selected 0.5 fps as the maximum intake velocity to protect 96% of studied fish.

The through-screen design intake velocity is the maximum design intake velocity as water passes through the structural components of a screen measured perpendicular to the screen mesh. The maximum velocity must be achieved under all conditions, including during minimum ambient source water surface elevations (based on best professional judgement (BPJ) using hydrological data) and during periods of maximum head loss across the screens or other devices during normal operation of the intake structure.

The through screen actual intake velocity is the maximum through-screen intake velocity at actual flows as water passes through the structural components of a screen measured perpendicular to the screen mesh. The maximum velocity must be achieved under all conditions, including during minimum ambient source water surface elevations (based on best professional judgment using hydrological data) and during periods of maximum head loss across the screens or other devices during normal operation of the intake structure.

In addition to intake velocities less than 0.5 fps, permittees can meet the impingement (and entrainment) mortality BTA through other alternatives including by significantly reducing intake flow volumes by operating a closed cycle recirculating system as defined at 40 CFR §125.92.

A summary description of each intake including intake flows, intake velocities and impingement impacts/BTA are summarized below.

1. Main Intake and No. 2 Pump House

As described above, water at the Main Intake flows from Lake Michigan at the southeast side of the facility to the No. 2 Pump House on the north side of the facility. At the main intake channel, water flows through a set of coarse bar screens, then through twenty-two (22) flap gates prior to entering the subterranean tunnel that leads to the No. 2 Pump House. At the

No. 2 Pump House, water flows through 5 screens to the intake pumps. Two of these are operating rotated screens and three are static screens.

The intake pumps at the No. 2 pump house reportedly operate continuously at the intake flow of 10,000 gpm (14.4 MGD), i.e. 24 hours/day, 7 days/week. However, as mentioned above, the calculated actual daily flows provided by the permittee for this intake frequently exceed this flow rate. In recent years, a flow rate of 27,655 gpm (or 39.8 MGD) was reported.

In information submitted August 18, 2023, the permittee indicated that at the No. 2 Intake, a single pump could have an intake flow greater than the rated pump capacity of 10,000 gpm (14.4 mgd) but the permittee was certain that it would be below the maximum reported flow of 27,500 gpm (39.6 mgd).

Calculations on the velocity of water through the five (5) screens were submitted to IDEM as part of June 17, 2022 submittal. Revised calculations were submitted on February 8, 2023. These calculations, based on a design intake flow of 10,000 gpm, show a through screen velocity of 0.09 fps. At a presumed 50% debris blockage of the screen face, the velocity would be 0.18 fps.

At the maximum estimated daily flow of 27,655 gpm, the through screen velocity would be 0.25 fps and at a presumed 50% debris blockage of the screen face, the velocity would be 0.499 fps.

Under both flow conditions, even if the screen open area was reduced by 50%, the through screen velocity is below 0.5 ft/sec. However, if the through-screen actual intake velocity impingement mortality BTA is selected as the applicable alternative, additional requirements would be applicable that would not be applicable if the through-screen design intake velocity is the applicable impingement mortality BTA alternative.

Given the design of the CWIS at the Main Intake/No. 2 Pump Station it is likely that any fish that pass through the tide gates become entrapped and are unlikely to be able to exit the CWIS once they pass through the tide gates.

2. No. 6 Pump House

Lake water flows into the surge bay (wet well) through two flap gates downstream of the tide gates at the Main Intake. See Attachment R3-1A (The flap gates located upstream of the Bar Rack are sealed).

The infiltration into the No. 6 Pump House surge bay is serving as a make-up water source to the No. 6 Pump House / Master Recycle System. The volume of infiltration into the No.6 Pump House is unknown but is estimated by the permittee at under 500 gpm (0.72 mgd) under typical conditions.

Air is introduced at the two flap gates at the northwest corner of the Main Intake inlet slip to retard fish from entering the No. 6 Pump House surge well at this location. There are no

other barriers or screens that prevent fish from entering the No. 6 Pump House surge (wet) well.

Given typical operating conditions any fish or aquatic organisms that pass through the flap gates into the MRS are entrapped and will not survive. The only system currently used to retard fish from entering the MRS is the air feed at the two flap gates at the northwest corner of the Main Intake inlet slip.

No estimates or studies have been conducted on numbers of fish or organisms that are entrapped by flow through the flap gates into the MRS.

One of the alternatives allowed under the federal rules as best technology available for impingement (as well as entrainment) is the use of a closed cycle recirculating system as defined at 40 CFR §125.92. Such a system means a system designed and properly operated to use minimized makeup flows to support contact or non-contact cooling uses within a facility.

For the intake to No 6 Pump House, the permittee proposed to meet BTA for impingement (and entrainment) through use of a closed cycle recirculating system as defined at 40 CFR §125.92. IDEM has determined, based on the information provided by the permittee, that closed cycle recirculating system is not a viable alternative for this intake.

As presented in Section 122.21(r)(5) of the permittee's 316(b) application, the permittee claims that water withdrawal reductions attributable to plant recycle systems are calculated as approximately 523 mgd, which represents 95% reduction in cooling and process water withdrawal. All cooling water at Indiana Harbor East is recycled and used multiple times. An additional 18.7 mgd used to maintain operational pressure is not recycled. If the 523 mgd value is correct, the permittee recycles less than 92% of the water used at the facility.

The permittee submitted revised information for the Master Recycle System in a February 8, 2023 submittal and estimated that the Master Recycle System reduced their water withdrawal by 93% for the Master Recycle System processes. In this submittal, the permittee also stated that "[t]he BTA determination is made on the basis of the large intake flow reduction through operation of the existing MRS. In addition, Cleveland-Cliffs understands that intake flow measurement will likely be required under the renewal permit, and therefore the measured intake and discharge flows could eventually be used to satisfy the monitoring requirement at 40 CFR 125.94(c)(1) with a calculated or estimated flow for the flap gate infiltration." However, since the submittal of this document, the permittee has informed IDEM that it would be very difficult to install an intake flow measurement device at the No. 7 intake. In addition, it likely is not possible to install a flow measurement device that could measure the flow being withdrawn through the No. 6 Pump House flap gates.

Under the 316(b) rules, a closed-cycle recirculating system (CCRS) means a system designed and properly operated using minimized make-up and blowdown flows withdrawn from a water of the United States to support contact or non-contact cooling uses within a facility. A closed-cycle recirculating system passes cooling water through the condenser and other components of the cooling system and reuses the water for cooling multiple times. properly operated and maintained closed-cycle recirculating system withdraws new source

water (make-up water) only to replenish losses that have occurred due to blowdown, drift, and evaporation.

If waters of the United States are withdrawn for purposes of replenishing losses to a closed-cycle recirculating system other than those due to blowdown, drift, and evaporation from the cooling system, the Director (IDEM) may determine a cooling system is a closed-cycle recirculating system if the facility demonstrates to the satisfaction of the Director that make-up water withdrawals attributed specifically to the cooling portion of the cooling system have been minimized.

The EPA Technical Development Document (TDD) and Essay 17A: Closed-Cycle Recirculating Cooling (EPA Response to Public Comment: National Pollutant Discharge Elimination System Final Regulations to Establish Requirements for Cooling Water Intake Structures at Existing Facilities and Amend Requirements at Phase I Facilities (40 CFR Parts 122 and 125) Docket # EPA-HQ-OW-2008-0667) provide additional discussion on what constitutes a closed cycle recirculating system (CCRS) under the rule. The TDD developed by USEPA provides record support for the rule and describes the methods used by EPA to analyze various options in the rule. Essay 17A was developed by USEPA to address public comments about the definition of a CCRS under the rule.

Generally, two operating parameters are used to evaluate proper operation of a closed cycle cooling system, cycles of concentration (COC) and reduction in flow (RIF). The RIF is the percent reduction in water use versus water use at a facility with once through cooling. COCs can be measured as the ratio of chloride levels in the recirculated water or blowdown relative to the chloride levels in the source water, or makeup water. Cycles of concentration represents the accumulation of dissolved minerals in the recirculated cooling water.

While EPA has determined that a COC of 3.0 and a RIF approximately equivalent to a percent reduction in flow of 97.5% is indicative of a well-operated cooling system (i.e., one that truly minimizes makeup withdrawals), EPA decided not to include a minimum COC (or RIF) requirement as part of the definition for closed-cycle systems. Instead, the definition at 40 CFR 125.92 requires makeup flows be minimized. The flow reductions of 97.5% and COC of 3.0 serve as indicators of minimized makeup flows, and thus may be used by IDEM when assessing performance of a particular CCRS.

Regardless of whether facilities achieve either these levels of COC or reductions in flow, IDEM is responsible for determining whether such facilities in fact are operating as a close-cycle recirculating cooling system. IDEM would review the information provided by the facility and determine if the facility's configuration and operation are otherwise consistent with the definition of a closed-cycle cooling system in the final rule.

Outside the issue of impingement and entrainment BTA, IDEM is concerned about possible backflow of the MRS water into Lake Michigan and into the No. 2 Pump House intake. As stated previously, it is likely that there is some backflow of the MRS water, likely minimal in volume, back through the flap gates under typical conditions. In addition, if a flap gate were to malfunction or clog open under non-typical conditions, the volume of process water backflow into Lake Michigan and into the No. 2 Pump House intake could be substantial.

IDEM's preference is that these flap gates be permanently closed. Closure of the flap gates would eliminate this intake and as such would serve as the impingement and entrainment mortality BTA for this intake and would also eliminate the potential backflow of process water. However, the permittee has requested time to determine whether closure of the flap gates is feasible. If closure of the flap gates is determined not to be feasible, as an impingement mortality BTA, the permittee will either install a 3/8 inch screen (with a maximum actual or design intake velocity of less than 0.5 fps) immediately downstream or upstream of the current bar rack at the Main Intake or propose an alternate impingement mortality BTA for this intake.

The permittee also requested that they be provided time to determine if an alternate impingement BTA would be feasible if both closure of the flap gates and installation of the 3/8" screen (Item (6), above) was not feasible. A compliance schedule is proposed to be included in the permit allowing the permittee time to make these feasibility determinations and to install an impingement mortality BTA alternative.

If the flap gates are not closed, the permittee will be required to implement several activities listed below to minimize the flow of process water through the flap gates and conduct monitoring to determine the extent of backflow of process water through these flap gates.

- (1) The two operating flap gates would be maintained and operated such they can close properly (e.g. mussels do not interfere with closure) if the MRS water level were to rise above Lake Michigan water level. Also, any leaks in the seals etc. would be eliminated.
- (2) The Tide Gates are maintained and operated such that they can close properly (e.g. mussels do not interfere with closure) if the downstream water level were to rise above Lake Michigan water level. Level measurements should be taken and recorded.
- (3) Conduct a one-time dye study at all operable gate locations, to determine direction of flow under normal operating conditions.
- (4) Conduct ongoing monitoring as part of the NPDES permit at the second set of flap gates to assure backflow from MRS is not flowing into the intake. The parameters to be monitored and the monitoring locations would need to be determined. The parameters should be ones that are present at high levels in the recycle system and low levels in Lake Michigan.

3. No. 7 Intake

As described above, the No. 7 Intake is located on the facility's north and east side. A concrete culvert approximately 50 feet wide by 200 feet long in the shoreline is open to an inlet bay at Lake Michigan. Water passes through the culvert to bar racks at the No. 7 Pump House.

From the bar racks, water passes into the No. 7 Pump House and to six traveling screens. All six screens are open. Three of the screens are rotated and three are not rotated (maintained in a static position).

The No.7 Pump House is equipped with four service water pumps rated at 30,000 gpm each. One service water pump is operated and at least two are maintained as in-line spares.

The design intake flow (DIF) for the No. 7 Pump House is reportedly 32,000 gpm, based on information submitted by the permittee on September 1, 2023 (one operating service water pump and two to three service water pumps maintained as spares). However, as mentioned above, the calculated actual daily flows provided by the permittee for this intake frequently exceed this flow rate. In recent years, 36,064 gpm (or 51.9 MGD) was reported.

Water is generally withdrawn from the No. 7 intake on a 24 hour per day / 7 days per week basis, without major seasonal changes in water withdrawal.

Calculations on the velocity of water through seven (7) screens were submitted to IDEM as part of June 17, 2022 submittal. However, on February 8, 2023, the permittee submitted revised information and revised calculations which indicated that while there are seven screen bays, only six of them are open. The calculations provided by the permittee on February 8, 2023 calculated the velocity using only the three operating traveling screens in case the other three screen bays closed or are not maintained. These calculations, based on a DIF of 30,000 gpm (43.2 MGD), show a through screen velocity of 0.41 ft/sec. At an assumed 15% debris blockage of the screen face, the velocity would be 0.48 ft/sec.

At the maximum calculated daily flow of 36,064 gpm, the through screen velocity would be 0.49 ft/sec and at the assumed 15% debris blockage of the screen face, the velocity would be 0.58 ft/sec.

However, the permittee provided additional information in August 2023, including a revised design intake flow of 32,000 gpm, and in discussions with the permittee after the submittal; the permittee indicated that it would take the necessary steps to clean and maintain the three static screens. Therefore, the revised velocity calculations using 3 traveling and 3 static screens result in:

- a maximum design intake velocity of 0.22 ft/sec without considering blockage and 0.43 ft/sec (assuming 15% blockage of the traveling screens and 50% blockage of the static screens).
- A maximum actual through screen velocity of 0.24 ft/sec without considering blockage and 0.49 ft/sec (assuming 15% blockage of the traveling screens and 50% blockage of the static screens)

See Section 6.4.2.A., above for the detailed calculations.

Based on the information provided by the permittee, only the four 30,000 gpm pumps are present at this intake and the design intake flow with one pump operating is 32,000 gpm. If only one of these pumps is used, then the maximum design velocity at the screens would be 0.43 ft/sec. (with the blockage percentages assumed by the permittee), which would comply with the velocity requirements under the federal regulations. Therefore, the permit will require that only one of these pumps be used at a time, except for the short period of time when the permittee transitions from one pump to another when two pumps may be operating and except in emergency conditions. The permittee has indicated that such emergency conditions occur very infrequently, a couple of times in the past 5-10 years. Any emergency use of more than one pump will be required to be reported with the monthly reports.

Impingement studies done at No. 7 Intake resulted in smaller numbers of impinged fish than at No. 2 Pump House. See Section 6.4.4, below.

6.4.3 Source Water Biological Characterization

The area of Lake Michigan within the border of Indiana takes up approximately 1% of the lake (43 miles of shoreline [224 square miles]) (Palla 2010)—the smallest area of all bordering states. Although primarily characterized as highly developed and industrialized, the Indiana shoreline includes Dunes National Lakeshore and the Indiana Dunes State Park (Palla 2010). The portion of Lake Michigan in Indiana provides nursery habitat for many species and migration routes for a variety of migratory fish species including lake sturgeon and non-indigenous salmonid species.

The Indiana portion of Lake Michigan offers recreational opportunities for anglers (Indiana DNR 2015). The Indiana Department of Natural Resources (IDNR) has stocked salmon and trout from Michigan City to Whiting, Indiana, including the St. Joseph River, Trail Creek, and portions of the Little Calumet River (Indiana DNR 2015). Creel surveys in 2009 determined that the premier recreational fish species were Coho salmon, Chinook salmon, lake trout, yellow perch, smallmouth bass, and steelhead trout. Yellow perch dominated the recreational catch, comprising 74% of the 534,735 fish caught (Palla 2010). Additional sport species in the Lake and adjoining tributaries also include (in addition to the species listed above): Brown Trout, catfish, Freshwater Drum, Lake Whitefish, Walleye and various sunfish species.

Although the recreational fishery still exists, the commercial fishery has diminished significantly since the 1990s. The primary commercial species in the area was yellow perch. Commercial harvest of yellow perch peaked at 1,595,447 pounds in 1992 (USGS 2013a). However, the population drastically declined and a ban on commercial fishing of yellow perch was implemented in December 1996. Studies in the Indiana waters of Lake Michigan have shown that the intense harvest of large yellow perch during the 1980s and 1990s reduced recruitment by lowering the quality and quantity of yellow perch eggs spawned by the population (Lauer et al. 2005).

Two good year-classes (2003 and 2005) supported the yellow perch fishery throughout the 2000s, but those fish have reached the end of their lifespan. A period of inconsistent recruitment lasted 10 years, until 2015. The 2015 year-class was the biggest ever recorded, and the 2016 year-class was also better than many in recent history. These two year-classes have started to provide much improved recreational perch fishing in more recent years. The most recent USGS Lake Michigan bottom trawling efforts in 2020 found the first age-0 Yellow Perch caught since 2016 (Tingley, et al 2021). Commercial fishing for Yellow Perch remains closed in all Great Lakes states (with minor exceptions). The 2020 USGS study also found low recruitment levels for all major prey fish, including Alewife, Bloater, Rainbow Smelt, Deepwater Sculpin, Slimy Sculpin, Round Goby, and Ninespine Stickleback, indicating that prey fish densities continue to remain well below historical values (Tingley, et al. 2021).

Lake Michigan historically has experienced wide fluctuations in populations of fish predators and prey, due largely to fishing exploitation, changes in habitat quality, and invasive species. While Indiana has only 45 miles of Lake Michigan coastline, the state has stocked nearly 600,000 trout and salmon into the lake in 2021, according to Indiana DNR (IDNR). Among the fish stocked were 90,280 Brown Trout fingerlings, 77,166 Coho Salmon yearlings,

225,776 Skamania steelhead yearlings, and 195,915 Chinook Salmon fingerlings. Indiana's spring stockings into Lake Michigan's public waters and tributaries included: East Chicago Marina, East Branch Little Calumet River, Salt Creek, Trail Creek, and the St. Joseph River.

6.4.4 Impingement and Entrainment– Aquatic Life Studies

A two-year impingement and entrainment study as well as a gill netting study was conducted by TetraTech, Inc of Chicago, IL from June 2013 to May 2015 at the Indiana Harbor East No. 7 Intake and No. 2 Pump House.

In summary, over the two-year study period, a total of 290 fish were collected at both intakes from impingement sampling, 34 of which were likely dead prior to impingement, and a total of four (4) organisms were collected from entrainment sampling.

Thirty-two (32) 24-hour sampling events were conducted from June 2013 to May 2015 at the No. 7 Intake and the No. 2 Pump House. The entrainment sample volumes per event were reported to range from 100 to 150 cubic meters.

A. Impingement

The two-year Indiana Harbor East impingement study (CWISs 2E and 7E combined) yielded a total of 290 fish representing seven identified species. The collection was dominated by Yellow Perch (73.4%), the invasive Round Goby (11.4%), Gizzard Shad (5.9%) (a fragile species), unidentified Salmonidae (4.5%), and Spottail Shiner (1.4%). Four of the five dominant species in the IHE impingement study were the same as those found in the IHW study, with slightly differing relative abundance numbers (TetraTech 2016a and 2016b). In terms of biomass, the IHE impingement collection was dominated by Yellow Perch (67.8%), Round Goby (17.5%), unidentified Salmonidae (4.3%), a single Green Sunfish (4.1%), and Gizzard Shad (2.8%). The remaining four species (plus unidentified specimens) composed only 3.5% of the total combined biomass. For IHE, sport fish (Yellow Perch, Walleye, Green Sunfish, and unidentified Salmonidae) composed 78.5% of the impingement collection and 76.5% of the biomass. However, it should be noted that 11 out of the 13 Salmonidae specimens (84.6%) were assumed to have been dead before entering the CWIS, due to their condition (TetraTech 2016b), so the overall impact of impingement on this taxon should be considered negligible. Discounting the unidentified Salmonidae, sport fish composed 74% of the impingement collection and 72.2% of the biomass.

By comparison, a total of 95 fish were collected during the entire IHW 2013-2015 impingement study, representing 10 identified species. The most abundant species were Alewife (38.9% by number / 39% by biomass), Gizzard Shad (23.2% by number / 14.3% by biomass), Spottail Shiner (17.9% by number / 1.9% by biomass), and Yellow Perch (4.2% by number / 0.6% by biomass). These four species accounted for 84.2% of the total fish collected, as well as 55.8% of the total biomass. Recognized "fragile species" (Alewife and Gizzard Shad) accounted for a combined 62.1% of the fish impinged. With the exception of one large Common Carp representing 37.2% of the total biomass, the remaining impinged fish species (including unidentified specimens) accounted for only 7% of the total biomass. Sport fish species (Yellow Perch and Smallmouth Bass) accounted for only 5.3% of the total impingement collection, and only 1% of the total biomass (TetraTech 2016a).

A graphic summary of fish numbers impinged at each intake during the study is presented below.

ATTACHMENT R7-A; IH EAST ENTRAINMENT AND IMPINGEMENT STUDY

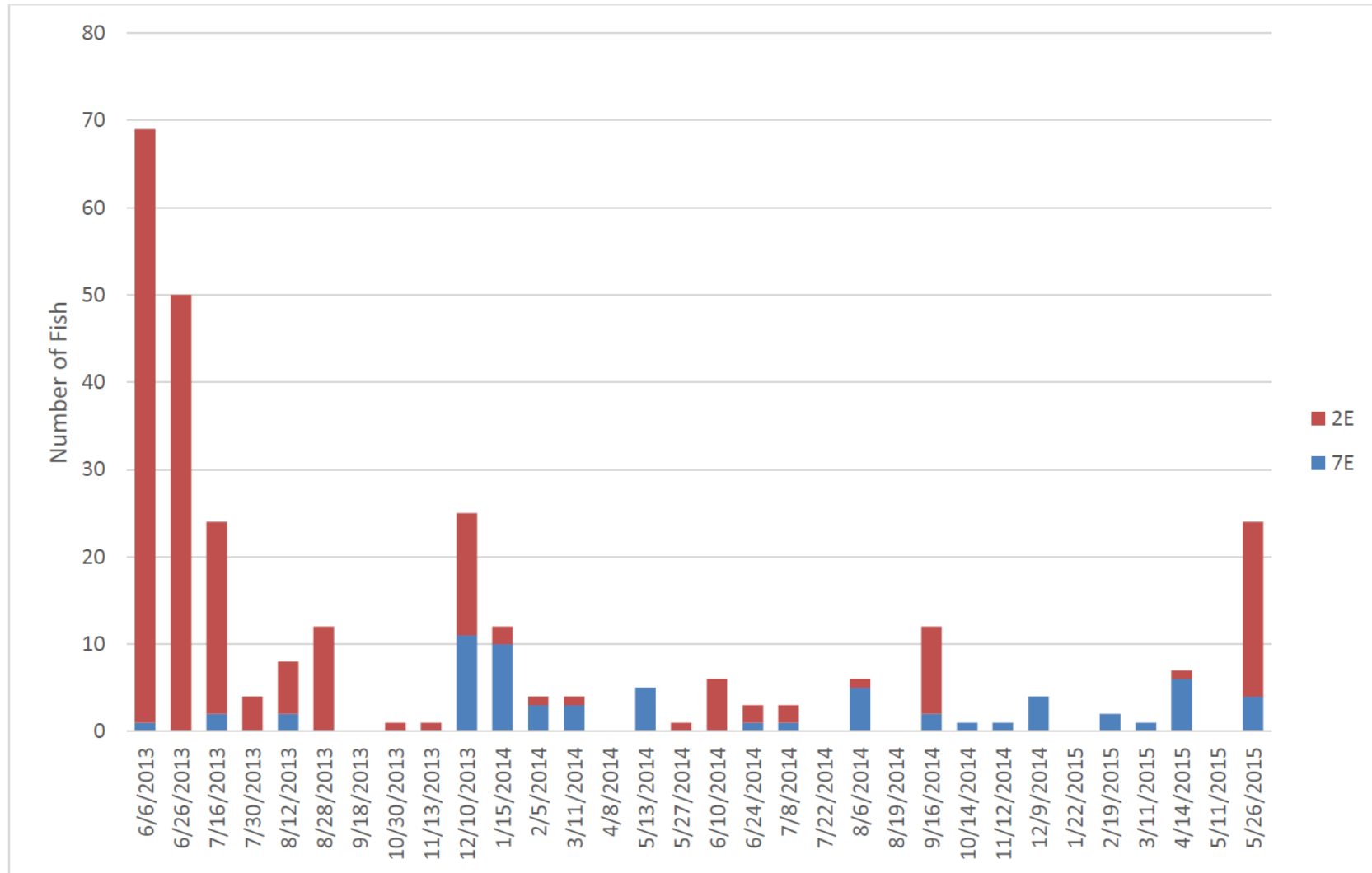


Figure 3: Total Number of Fish Impinged per Sampling Event, June 2013-May 2015¹

U.S. Steel Gary Works facility and Cleveland-Cliffs Burns Harbor withdraws water from the same general area in Lake Michigan as Indiana Harbor East and West. Impingement and entrainment studies from USS Gary and Burns Harbor are used to supplement the information gathered in the impingement and entrainment studies conducted at Indiana Harbor West and East.

USS Gary Impingement Studies

U.S. Steel conducted monitoring for impingement and entrainment for the years 2011-2015. Three pump stations were monitored. No. 1 Pump Station and No. 2 Pump Stations are located in the ore loading slip and Gary Harbor, respectively. These areas are regularly disturbed by shipping traffic and dredging activities, so they do not provide critical/significant habitat for species present in southern Lake Michigan. The No. 1 Pump Station had a DIF of 424 mgd and No. 2 had a DIF of 372 mgd. The three most abundant species encountered during the impingement study at No. 1 and No. 2 Pump Stations were gizzard shad, yellow perch, and alewife. The Lakeside Pump Station had a designed intake flow of 266 mgd and the intake is located 3,000 ft offshore and 28 ft deep. This area has a sandy bottom and is also not known for any critical habitat. The three most abundant species encountered at the Lakeside Pump Station were yellow perch, round goby, and alewife, respectively. It should be noted that the intake velocities at No. 1 and No. 2 Pump Stations were greater than 0.5 fps, resulting in significant numbers of yellow perch impinged during the study (U.S. Steel Corporation. May 2020. CWA 316(b) Requirements for CWIS. NPDES Permit No. IN0000128. Prepared by Ramboll US Corporation).

Burns Harbor Impingement Study

Impingement studies were conducted at the Cleveland-Cliffs (previously ArcelorMittal) Burns Harbor facility (BH) from June 2012 through May 2014. For BH, withdrawal is via two pump stations that withdraw water from Lake Michigan via two intake cribs located approximately 3,600 feet offshore in about 40 feet of water. The DIF for both pump stations are 748.8 mgd.

During the sampling period at the BH pump stations, there were 11 different species impinged including alewife, round goby, yellow perch, smallmouth bass, bluegill, emerald shiner, spottail shiner, gizzard shad, rainbow smelt, burbot, and unidentifiable. No species of special concern were impinged at the BH pump stations; however, there was one sport fish species impinged (i.e., yellow perch). Yellow perch, round goby, alewife, and spottail shiner were the most frequently impinged fish species at the BH pump stations, accounting for 39.8%, 31.3%, 18.9%, and 6.7% of the total impinged fish sample respectively (ArcelorMittal USA. 2015. 316(b) Cooling Water Intake Structures 2012-2014 Impingement and Entrainment Study Results NPDES Permit IN0000175. Prepared by ENVIRON International Corporation).

Gill Netting and Species Present

Gill netting was conducted directly outside of the IHE facility Main CWIS during the same time period in 2013-2015 as the IHW and IHE impingement and entrainment studies (TetraTech 2016b). Since this IHE is immediately adjacent to IHW, this monitoring data can provide additional information regarding the fisheries assemblage in Lake Michigan near both facilities.

Gill net samples were collected during August 2013, October 2013, May 2014, July 2014, November 2014, and May 2015 in accordance with the IHE sampling plan submitted to IDEM in November 2012 (TetraTech 2012b). A total of 12 seasonal experimental gill net samples were taken over the course of the two-year sampling period, with each set covering a continuous two day period. Because net sampling Lake Michigan is impractical during the winter months, due to hazardous lake conditions caused by shore ice buildup, cold water/air, and wind, no winter samples were obtained.

A total of 84 fish comprised of 12 species were collected during the two-year IHE gill net monitoring period at the IHE Main CWIS. Smallmouth Bass (22.6%), Lake Chub (15.5%), Freshwater Drum (11.9%), Chinook Salmon (14.3%), and Rock Bass (9.5%) accounted for 73.8% of the total collection (TetraTech 2016b).

Only four of the 12 identified species that were collected by gill netting in front of the IHE Main CWIS were present in the 2E and 7E IHE impingement collections: Gizzard Shad, Round Goby, Spottail Shiner, and Yellow Perch. Species present in the gill net collections, but not in IHE impingement were Chinook Salmon, Common Carp, Freshwater Drum, Lake Chub, Lake Trout, Rock Bass, Smallmouth Bass, and Northern Pike.

Seven of the 12 identified species that were collected by gill netting at the IHE Main CWIS were also present in the IHW impingement collections: Gizzard Shad, Spottail Shiner, Yellow Perch, Smallmouth Bass, Lake Chub, Common Carp, and Round Goby. Species present in the IHE gill net collections, but not in IHW impingement were: Freshwater Drum, Chinook Salmon, Rock Bass, Lake Trout, and Northern Pike. These results are not unexpected, as most are larger species that would not be subject to impingement due to life history characteristics and swimming ability unless they were otherwise compromised. Conversely, species present in the IHW impingement collections, but not the gillnetting samples were Alewife, Bluntnose Minnow, and Bigeye Shiner. These are smaller schooling species that may attain larger numbers in an impingement collection, especially when the through-screen velocity is higher. A summary of the IHE impingement data, compared with the IHE gillnetting results, as well as the IHW impingement data, is presented in Table 3-1, below.

Table 3-1. Family, Common and Scientific Names of Fishes* Collected During §316(b) Sampling at Cleveland Cliffs Indiana Harbor West (IHW) and East (IHE)—June 2013-May 2015

Family Name	Common Name	Scientific Name	316(b) Study		
			IHW Impingement /Entrainment	IHE Impingement /Entrainment	IHE Gill Netting
Herrings	ALEWIFE	<i>Alosa pseudoharengus</i>	IM	--	--
	GIZZARD SHAD	<i>Dorosoma cepedianum</i>	IM	IM	X
Whitefish, Chubs, Trout, and Salmon	CHINOOK SALMON	<i>Oncorhynchus tshawytscha</i>	--	--	X
	LAKE TROUT	<i>Salvelinus namaycush</i>	--	--	X
	SALMON (unidentified)	<i>Salmonidae spp.</i>	--	IM	--
	LAKE CHUB	<i>Couesius plumbeus</i>	IM	--	X
Pikes and Mudminnows	NORTHERN PIKE	<i>Esox lucius</i>	--	--	X
Minnows	COMMON CARP	<i>Cyprinus carpio</i>	IM	--	X
	BIGEYE SHINER	<i>Notropis boops</i>	IM	--	--
	SPOTTAIL SHINER	<i>Notropis hudsonius</i>	IM	IM	X
	SHINER (unidentified)	<i>Notropis spp.</i>	IM	IM	--
	BLUNTNOSE MINNOW	<i>Pimephales notatus</i>	IM and E	--	--
	BULLHEAD MINNOW	<i>Pimephales vigilax</i>	--	IM	--
Cods	BURBOT	<i>Lota lota</i>	E Only	--	--
Sunfishes	ROCK BASS	<i>Ambloplites rupestris</i>	--	--	X
	GREEN SUNFISH	<i>Lepomis cyanellus</i>	--	IM	--
	SMALLMOUTH BASS	<i>Micropterus dolomieu</i>	IM	--	X
Perches	YELLOW PERCH	<i>Perca flavescens</i>	IM	IM	X
	WALLEYE	<i>Sander vitreus</i>	--	IM	--
Gobies	ROUND GOBY	<i>Neogobius melanostomus</i>	IM	IM	X
Drum	FRESHWATER DRUM	<i>Aplodinotus grunniens</i>	--	--	X
Sculpins	SLIMY SCULPIN	<i>Cottus cognatus</i>	--	E Only	--

(Source: TetraTech 2016a and 2016b)

Nomenclature follows Page et al. 2013.

*List does not include dreissenid mussels, which were the only shellfish found during the studies

IM = found in impingement collection

E = found in entrainment collection

Shaded rows indicate species most likely to be impinged and/or entrained, either due to being found in multiple collections or by total number collected at a given location (including both IHE and IHW).

Introduced/Invasive species indicated in bold font.

The results of the 2013-2015 §316(b) studies performed at IHW and IHE yielded a total of 20 identified fish species (Table 3-1). The above information provides an overview of the fish community expected to be present near both the IHW and IHE CWISs, which consists of a moderately diverse assemblage of native, introduced, stocked, and invasive species. On-going management of the recreational fishery of Lake Michigan, as well as the cyclic nature of the prey population, will continue to result in a dynamic and yet largely resilient system that supports a varied community of aquatic species adapted to the unique conditions that the southern Lake Michigan environment provides.

B. Entrainment

The permittee conducted entrainment sampling from June 2013 to May 2015. Entrainment samples were collected monthly or twice monthly in accordance with the sampling plan (TetraTech 2012b). In 32 separate sampling events, no fish / larvae or eggs were found in over 93% of the samples at both pump stations. Little insight can be gained on species composition and/or relative abundance based solely on the IHE entrainment study results from 2013-2015, as only four organisms were found during the entire two-year study period: postyolk sac Slimy Sculpin collected in June 2013 (7E--2), July 2013 (2E--1), and August 2014 (7E-1) (TetraTech 2016b).

Given the level of effort expended for the IHE entrainment study over the two-year period, which should have adequately covered the full range of expected spawning activity by various species found in southern Lake Michigan, it is evident that the site-specific location and/or configuration of the IHE CWISs limited overall entrainment. This is consistent with the findings from the IHW entrainment study, with only two organisms found (TetraTech 2016a), as well as other recently completed entrainment studies performed at nearby facilities on the southern Lake Michigan and summarized below. These studies were conducted using the same basic methodologies as used in the IHW and IHE studies:

From: 316(b) Cooling Water Intake Structures 2012-2014 Impingement and Entrainment Study Results NPDES Permit IN0000175 (Environ 2015) --- included in Source Water Baseline Biological Characterization ArcelorMittal Burns Harbor Submitted in Compliance with CWA Section 316(b) Rule 40 CFR 122.21(R)(7) (Ramboll 2020a).

“...this sampling and evaluation further demonstrates that entrainment of critical fish eggs, larvae, and other valued ichthyoplankton by the Burns Harbor Facility CWIS and equipment is negligible.” “With respect to the sampling at the Burns Harbor Facility, given the high percentage of samples with no ichthyoplankton, and the positive samples dominated by round goby larvae, the impact due to entrainment is considered negligible. In comparison to other facilities located in the Great Lakes Basin, the Burns Harbor facility demonstrates similar high variability of entrainment of fish larvae and eggs, but at much lower rates.”

From: 2019/2020 Entrainment Characterization Study, ArcelorMittal Burns Harbor Submitted in Compliance with CWA Section 316(b) Rule 40 CFR 122.21(R)(9) (Ramboll 2020b).

“Given the high percentage of samples with no entrained ichthyoplankton, and with only positive samples being comprised solely of demersal spawning Centrarchidae or Percidae eggs, the impact due to entrainment is negligible. Estimated ichthyoplankton entrainment of 7,555 larvae and/or eggs per day at PS1 and 5,375 larvae and/or eggs per day at PS2 are significantly less than those rates found at other facilities in the Great Lakes Basin.”

From: 2020 Entrainment Characterization Study Pursuant to CWA 316(b) Rule 40 CFR 122.21(r)(9), U.S. Steel Corp (Ramboll 2020c).

“Studies showed that entrainment of fish larvae and eggs was sporadic and relatively rare at Gary Works during the permit required monitoring beginning in mid-2011 through 2014. No. 1 Pump Station documented no entrainment in 85% of sample events (66 events total). Lakeside Pump Station documented no entrainment in 82% of sample events (66 events total). Additionally, when ichthyoplankton were present taxonomic classification indicated Neogobius melanostomus (Round Goby), a common invasive nuisance species present in Lake Michigan.”

The entrainment studies in southern Lake Michigan find very few organisms entrained compared the volume of water used by the facilities. Based on these studies, it appears that entrainment is sporadic and rare with few individuals recorded. This is likely due to a variety of factors which are shared among the industrial facilities along southern Lake Michigan that utilize cooling water. For example, the areas around the industrial facilities are highly modified and are unlikely to contain any critical spawning habitat or support resident fishes. The high number of entrainment samples with no entrained ichthyoplankton found at multiple facilities combined with the small number of positive samples that either had a single specimen, or were dominated by invasive species, all indicate that the impact of entrainment on the aquatic resources of southern Lake Michigan is negligible.

As noted above, the entrainment sampling conducted by the permittee from June 2013 to May 2015 did only result in a total of four entrained organisms. IDEM is requiring additional entrainment sampling in this permit to verify these results.

6.4.5 Protected Species Susceptible to Impingement and Entrainment

The U. S. Fish and Wildlife Service (USFWS) maintains a list of federally-listed threatened and endangered species by Indiana county, as well as a state-wide list. The 7 March 2019 list for Lake County, Indiana shows no listed fish species. There is a single listed mussel species: Sheepnose (*Plethobasus cyphus*), but there is no suitable habitat for this species near the Indiana Harbor East cooling water intake structures. The Sheepnose is a riverine species that prefers shallow areas with moderate to swift currents that flow over coarse sand and gravel. They have also been found in areas of mud, cobble and boulders, and in large rivers they may be found in deep runs.

The regulation also established requirements that build on existing CWA requirements to coordinate with the U.S. Fish and Wildlife Service prior to issuing NPDES permits. Pursuant to 40 CFR 125.98(h), upon receipt of an NPDES permit 316(b) application for an existing facility subject to the rule, the Director (IDEM) must forward a copy of the permit application to the appropriate Field Office of the U.S. Fish and Wildlife Service for a 60-day review. A copy of this permit application was sent to the Bloomington Field Office of the U.S. Fish and Wildlife Service March 15, 2022. On May 17, 2022, USFWS stated that since “there are no federally threatened or endangered species in [Lake Michigan] that would be in the action area,” they will not be submitting official comments.

The January 2020 Listing of Indiana County Endangered, Threatened, and Rare Species published by the IDNR includes the federally listed Sheepnose mussel discussed above for Lake County, and also includes the Ellipse (*Venusaconcha ellipsiformis*) as a critically imperiled species for Lake County, Indiana. Similar to the Sheepnose, there is no suitable habitat for the Ellipse near the IHE or IHW CWISs. The Ellipse also is a riverine species that prefers small to medium sized streams with good current, in shallow water, on sand or gravel bottoms. Three fish species are also included on the state list: Lake Sturgeon, Northern Brook Lamprey, and Longnose Dace. Further information on these species is included in Table 3-9. None of these species are expected to be affected by operation of the IHE CWISs.

Table 3-9. Fish Species Listed for Lake County, Indiana as Threatened or Endangered by the Indiana Department of Natural Resources—2020*

Common Name	Scientific Name	Status	Habitat Requirements
Lake Sturgeon	<i>Acipenser fulvescens</i>	SE	Adult Lake Sturgeon generally prefer relatively shallow (< 2-3 m) habitats with a moderate flow of water. Lake Sturgeon prefer sand or gravel habitat on the bottom of a riverbed or lake. They are opportunistic, benthic feeders preferring substrates of sand, gravel and detritus. Lake Sturgeon are seldom associated with aquatic vegetation at any life stage.
Northern Brook Lamprey	<i>Ichthyomyzon fossor</i>	SE	The Northern Brook Lamprey uses different microhabitats during different stages of its life history. Ammocoetes are found burrowed in fine sediment or organic debris, inside channels or other quiet water in areas with embedded woody debris. Adults are typically found over coarse substrate, sand, or gravel; in swifter waters, riffles, or runs where they spawn before dying. Spawning occurs in crevices beneath rocks and boulders. The species is most commonly found in clear streams averaging 19 m (62 ft.) wide and 0.7 m (2.3 ft.) deep and usually in moderately warm water.
Longnose Dace	<i>Rhinichthysis cataractae</i>	SSC	Longnose Dace commonly prefer streams with gravel, cobble or boulder bottoms, but they are also found in lakes and clear river pools. Young specimens of the fish can be seen in shallow areas, while older, more mature ones prefer waters with faster currents and more rock formations.

SE: State endangered

SSC: Species of Special Concern

*Note that there are no Federally listed fish species for Lake County, Indiana, based on the most recent (2019) U.S. Fish and Wildlife Service list: <https://www.fws.gov/midwest/endangered/lists/indiana-spp.html>

There are no federally-listed threatened or endangered aquatic fishes expected in this area of Lake Michigan, but it should be noted that the slimy sculpin and trout perch are listed by Indiana as a species of special concern. Slimy sculpin were found entrained at the IHE facility and trout-perch were identified in other 316(b) studies in the area. Special concern species are those with known or suspected issues with abundance due to limited habitat or a recent change in legal status. They are not legally protected.

Shellfish

There are no federally listed shellfish found or expected for Lake Michigan in Lake County near the IHE facility, most likely due to the lack of suitable habitat conditions. Moreover, adult and juvenile unionid mussels that may reside in the sediment have very limited mobility, so it can be reasonably concluded that they are not directly susceptible to impingement or entrainment. The 2013-2015 impingement study focused on fish and shellfish, as this term has traditionally been interpreted by resource and regulatory agencies. There were no native freshwater mussels encountered; invasive taxa such as *Dreissena* (e.g., zebra mussels) were noted, but excluded from further evaluation.

Larval unionid mussels, glochidia, require temporary attachment to a “host” (almost exclusively fish) to survive beyond the larval stage. Many mussels employ strategies to directly release glochidia into or onto the host where they typically attach to the gills. It is reasonable to assume that glochidia of such species would not be susceptible to entrainment. Other mussel species simply expel their glochidia along with water and waste products. Hosts either take in suspended glochidia and pass them over their gills, where they attach, or hosts contact glochidia on the substrate, where the glochidia attach to the fins or skin. Broadcasted glochidia may be susceptible to entrainment; however, it would be challenging, if not impossible to: 1) effectively and efficiently collect them; 2) identify them to species; and 3) determine whether they are viable or moribund. With the combined knowledge that there are few native mussel species present in Lake Michigan near IHE, and with only invasive, non-native zebra mussels found during the impingement and gill net surveys, it can be reasonably concluded that there are no shellfish entrainment risks associated with the operation of the IHE CWISs.

6.4.6 Best Technology Available (BTA) Determinations

A. Impingement BTA

Under 40 CFR 125.94(c) existing facilities subject to the rule must comply with one of the following seven BTA Standards for Impingement Mortality:

1. Operate a closed-cycle recirculating system as defined at 40 CFR §125.92;
2. Operate a CWIS that has a maximum design through-screen design intake velocity of 0.5 fps;
3. Operate a CWIS that has a maximum actual through-screen intake velocity of 0.5 fps;
4. Operate an offshore velocity cap that is a minimum of 800 feet offshore;
5. Operate a modified traveling screen that the Director (IDEM) determines meets the definition of the rule (at §125.92(s)) and that the Director (IDEM) determines is BTA for impingement reduction;

6. Operate any other combination of technologies, management practices, and operational measures that the Director (IDEM) determines is BTA for impingement reduction; or
7. Achieve the specified impingement mortality performance standard of less than 24 percent.

The following are the proposed impingement mortality BTA alternatives for the permittee's intakes:

Main Intake/No.2 Pump House

For the Main Intake/No. 2 Pump House, the permittee proposed to comply with alternative 2, above. Under this alternative, the permittee must operate a cooling water intake structure that has a maximum design through-screen intake velocity of 0.5 feet per second. The permittee must submit information to IDEM that demonstrates that the maximum design intake velocity as water passes through the structural components of a screen measured perpendicular to the screen mesh does not exceed 0.5 feet per second. The maximum velocity must be achieved under all conditions, including during minimum ambient source water surface elevations (based on BPJ using hydrological data) and during periods of maximum head loss across the screens or other devices during normal operation of the intake structure.

Based on the information provided by the permittee, compliance with this alternative would be determined at the screens located in the No. 2 Pump House. The maximum design through screen intake velocity at the screens in the No.2 Pump House using the design intake flow of 10,000 gpm is calculated as 0.09 feet/second with no blockage or 0.18 at a presumed 50% debris blockage.

However, the permittee has reported actual flows at this intake that are significantly higher than the design intake flow used to calculate the design intake velocity. Under the federal 316(b) regulations, the design intake flow is defined as "the value assigned during the cooling water intake structure design to the maximum instantaneous rate of flow of water the cooling water intake system is capable of withdrawing from a source waterbody." Based on the information provided by the permittee, the estimated maximum actual intake flow using recent intake flow data is 27,655 gpm, or 277% higher than the 10,000 gpm design intake flow value that was provided by the permittee.

In an August 18, 2023, submittal, the permittee indicated that at the No. 2 Intake, a single pump could have an intake flow greater than the rated pump capacity of 10,000 gpm (14.4 mgd) but the permittee was certain that it would be below the maximum reported flow of 27,500 gpm (39.6 mgd).

At the maximum estimated actual daily flow of 27,655 gpm, the through screen velocity would be 0.25 fps and at a presumed 50% debris blockage of the screen face, the velocity would be 0.499 fps. The maximum 0.5 fps velocity requirement is a not-to-exceed standard. If the daily flow did equal 27,655 gpm as estimated by the permittee, it is likely that the flow rate was higher than this during some portion of the day.

Therefore, this permit proposes to establish alternative 3, above (40 CFR 125.94(c)(3), as the impingement mortality BTA. Under this alternative, the permittee must operate a cooling water intake structure that has a maximum through-screen actual intake velocity of 0.5 feet per second. The owner or operator of the facility must submit information to IDEM that demonstrates that the maximum intake velocity as water passes through the structural components of a screen measured perpendicular to the screen mesh does not exceed 0.5 feet per second. The maximum velocity must be achieved under all conditions, including during minimum ambient source water surface elevations (based on best professional judgment using hydrological data) and during periods of maximum head loss across the screens or other devices during normal operation of the intake structure. The permittee must monitor the velocity at the screen at a minimum frequency of daily (IDEM may establish additional monitoring requirements pursuant to 40 CFR 125.96(a)).

Since the 0.5 fps maximum through screen velocity is a not-to exceed requirement (except that IDEM can allow this velocity to be exceeded “for brief periods for the purpose of maintaining the cooling water intake system, such as backwashing the screen face”), an annual or even daily maximum intake flow would not ensure that the 0.5 fps velocity is only being exceeded for brief periods. This permit is proposing to require the use of a maximum hourly average flow to determine compliance with this 0.5 fps maximum velocity. The permittee would calculate the hourly average flow 24 times each day and use the maximum hourly average flow each day to calculate and report the maximum velocity for its monthly reports.

Assuring compliance with this 0.5 fps maximum velocity alternative requires an accurate determination of the intake flow and by extension, the through screen actual intake velocity. The permit proposes to provide the permittee nine (9) months for the installation of the necessary flow monitoring device at this intake.

In addition, since the reported actual daily intake flow is substantially higher than the design intake flow and due to the inconsistent information that has been provided for other intakes, the permit proposes to require the permittee to conduct a velocity monitoring study at this intake to compare to calculated velocities.

No.7 Pump House

For the No. 7 Pump House, the permittee has proposed to comply with alternative 2, above; 40 CFR 125.94(c)(2). Under this alternative, the permittee must operate a cooling water intake structure that has a maximum design through-screen intake velocity of 0.5 feet per second. The permittee must submit information to IDEM that demonstrates that the maximum design intake velocity as water passes through the structural components of a screen measured perpendicular to the screen mesh does not exceed 0.5 feet per second. The maximum velocity must be achieved under all conditions, including during minimum ambient source water surface elevations (based on BPJ using hydrological data) and during periods of maximum head loss across the screens or other devices during normal operation of the intake structure.

Based on the information provided by the permittee, compliance with this alternative would be determined at the screens located in the No. 7 Pump House. The maximum design

through screen intake velocity at the screens (3 traveling screens and 3 static screens) in the No.7 Pump House using the design intake flow of 32,000 gpm is calculated as 0.26 fps with no blockage or 0.43 fps using the permittee's presumed blockage levels.

However, the permittee has reported actual flows at this intake that are higher than the design intake flow used to calculate the design intake velocity. At the maximum estimated actual daily flow of 36,064 gpm, the through screen velocity would be 0.29 fps and using the permittee's presumed blockage levels, the velocity would be 0.49 fps.

Based on the information provided by the permittee, the maximum through screen intake design velocity does not exceed 0.5 fps; therefore, IDEM has determined that the intake does comply with alternative 2, above; 40 CFR 125.94(c)(2).

Based on the information provided by the permittee, some of the screens, particularly the static screens, may not be in good operating condition and/or may have a significant amount of blockage. Therefore, this permit proposes to require the permittee to inspect the screens at this intake and replace any screens as needed to ensure they are in good operating condition. Further, in addition to the requirement under 40 CFR 125.96(e) that the permittee conduct weekly inspections of the cooling water intake structure to ensure that the BTA technologies are maintained and operated to function as designed, this permit proposes to specifically require that the permittee conduct weekly inspections of the screens at this intake to ensure that they are maintained and operated to function as designed, and to require that the permittee clean each of these screens at least quarterly or when the blockage on a screen is 20% or greater.

In addition, since the reported actual daily intake flow is significantly higher than the design intake flow and due to the inconsistent information that has been provided for other intakes, the permit proposes to require the permittee to conduct a velocity monitoring study at this intake to compare to calculated velocities.

Main Intake Flow to No. 6 Pump House (Flap Gates)

IDEM has determined that the permittee's current intake does not comply with any of the impingement mortality BTA alternatives. IDEM's preference is that these flap gates be permanently closed. Closure of the flap gates would eliminate this intake and as such would serve as the impingement and entrainment mortality BTA for this intake and would also eliminate the potential backflow of process water. If closure of the flap gates is determined not to be feasible as an impingement mortality BTA, the permittee will either install a 3/8 inch screen with a maximum actual or design intake velocity of less than 0.5 fps immediately downstream or upstream of the current bar rack at the Main Intake or propose an alternate impingement mortality BTA for this intake.

A compliance schedule is proposed in this permit for the permittee to evaluate and install one of these BTA options.

IDEM has determined that permanent closure of the flap gates is an acceptable impingement mortality BTA, since it will eliminate the intake.

If it is not feasible to close the flap gates, detailed information must be submitted to IDEM for review and approval prior to proceeding with either of the other options. Based on that information, IDEM will determine whether they meet one of the impingement mortality BTA alternatives.

B. Entrainment BTA

For existing facilities, EPA did not identify any single technology or group of technology controls as available and feasible for establishing national performance standards for entrainment. Instead, EPA's regulations require the permitting agency to make a site-specific determination of the best technology available standard for entrainment for each individual facility. See 40 CFR 125.94(d).

EPA's regulations put in place a framework for establishing entrainment requirements on a site-specific basis, including the factors that must be considered in the determination of the appropriate entrainment controls. These factors include the number of organisms entrained, emissions changes, land availability, and remaining useful plant life as well as social benefits and costs of available technologies when such information is of sufficient rigor to make a decision. These required factors are listed under 40 CFR 125.98(f)(2).

EPA's regulations also establish factors that may be considered when establishing site-specific entrainment BTA requirements, including: entrainment impacts on the waterbody, thermal discharge impacts, credit for flow reductions associated with unit retirements, impacts on reliability of energy delivery, impacts on water consumption, and availability of alternative sources of water. (40 CFR 125.98(f)(3))

Cleveland-Cliffs believes that the existing intake structures and related cooling systems constitute BTA for entrainment based on the following: Indiana Harbor East operates several contact and non-contact cooling water recirculation systems. As presented in Section 122.21(r)(5) of the permittee's 316(b) application, the permittee claims that water withdrawal reductions attributable to plant recycle systems are calculated as approximately 523 mgd, which represents 95% reduction in cooling and process water withdrawal. All cooling water at Indiana Harbor East is recycled and used multiple times. An additional 18.7 mgd used to maintain operational pressure is not recycled. If the 523 mgd value is correct, the permittee recycles less than 92% of the water used at the facility. The permittee submitted revised information for the Master Recycle System in a February 8, 2023 submittal and estimated that the Master Recycle System reduced their water withdrawal by 93% for the Master Recycle System processes.

The permittee submitted revised information for the Master Recycle System in a February 8, 2023 submittal and estimated that the Master Recycle System reduced their water withdrawal by 93% for the Master Recycle System processes. In this submittal, the permittee also stated that "[t]he BTA determination is made on the basis of the large intake flow reduction through operation of the existing MRS. In addition, Cleveland-Cliffs understands that intake flow measurement will likely be required under the renewal permit, and therefore the measured intake and discharge flows could eventually be used to satisfy the monitoring requirement at 40 CFR 125.94(c)(1) with a calculated or estimated flow for the flap gate infiltration." However, since the submittal of this document, the permittee has informed IDEM that it would be very difficult to install an intake flow measurement device at the No. 7 intake. In addition, it likely is

not possible to install a flow measurement device that could measure the flow being withdrawn through the No. 6 Pump House flap gates.

Under the 316(b) rules, a closed-cycle recirculating system (CCRS) means a system designed and properly operated using minimized make-up and blowdown flows withdrawn from a water of the United States to support contact or non-contact cooling uses within a facility. A closed-cycle recirculating system passes cooling water through the condenser and other components of the cooling system and reuses the water for cooling multiple times. properly operated and maintained closed-cycle recirculating system withdraws new source water (make-up water) only to replenish losses that have occurred due to blowdown, drift, and evaporation.

If waters of the United States are withdrawn for purposes of replenishing losses to a closed-cycle recirculating system other than those due to blowdown, drift, and evaporation from the cooling system, the Director (IDEM) may determine a cooling system is a closed-cycle recirculating system if the facility demonstrates to the satisfaction of the Director that make-up water withdrawals attributed specifically to the cooling portion of the cooling system have been minimized.

The EPA Technical Development Document (TDD) and Essay 17A: Closed-Cycle Recirculating Cooling (EPA Response to Public Comment: National Pollutant Discharge Elimination System Final Regulations to Establish Requirements for Cooling Water Intake Structures at Existing Facilities and Amend Requirements at Phase I Facilities (40 CFR Parts 122 and 125) Docket # EPA-HQ-OW-2008-0667) provide additional discussion on what constitutes a closed cycle recirculating system (CCRS) under the rule. The TDD developed by USEPA provides record support for the rule and describes the methods used by EPA to analyze various options in the rule. Essay 17A was developed by USEPA to address public comments about the definition of a CCRS under the rule.

Generally, two operating parameters are used to evaluate proper operation of a closed cycle cooling system, cycles of concentration (COC) and reduction in flow (RIF). The RIF is the percent reduction in water use versus water use at a facility with once through cooling. COCs can be measured as the ratio of chloride levels in the recirculated water or blowdown relative to the chloride levels in the source water, or makeup water. Cycles of concentration represents the accumulation of dissolved minerals in the recirculated cooling water.

While EPA has determined that a COC of 3.0 and a RIF approximately equivalent to a percent reduction in flow of 97.5% is indicative of a well-operated cooling system (i.e., one that truly minimizes makeup withdrawals), EPA decided not to include a minimum COC (or RIF) requirement as part of the definition for closed-cycle systems. Instead, the definition at 40 CFR 125.92 requires makeup flows be minimized. The flow reductions of 97.5% and COC of 3.0 serve as indicators of minimized makeup flows, and thus may be used by IDEM when assessing performance of a particular CCRS.

Regardless of whether facilities achieve either these levels of COC or reductions in flow, IDEM is responsible for determining whether such facilities in fact are operating as a close-cycle recirculating cooling system. IDEM would review the information provided by the facility and determine if the facility's configuration and operation are otherwise consistent with the definition of a closed-cycle cooling system in the final rule.

Based on the information submitted by the permittee, IDEM has determined that the cooling water intake structures at the facility do not qualify as a closed-cycle recirculating system for any of its intakes. However, IDEM recognizes the permittee does recycle a considerable amount of its cooling water which significantly reduces the number of organisms that would otherwise be entrained.

Regarding environmental impacts, the numbers of organisms entrained by the facility is negligible based on the results of 2-year entrainment study conducted in 2013—2015. Nearby industrial facilities with large volume intakes from lake Michigan also report low levels of entrainment. However, the permit proposes to require that a new entrainment study be conducted at both the No. 2. Pump House Intake and the No. 7 Intake to verify the current levels of entrainment at the facility.

Based on the negligible numbers of organisms expected to be entrained by the facility and the operation of water recycle systems which substantially reduces the volume of intake water, IDEM has determined that the cooling water intake structure is BTA for entrainment mortality. See also the following discussion.

Must and May Factor Discussion (40 CFR 125.98(f)(2) and (3))

1. MUST FACTORS (40 CFR 125.98(f)(2))

i. Numbers and types of organisms entrained, including, specifically, the numbers and species (or lowest taxonomic classification possible) of Federally-listed, threatened and endangered species, and designated critical habitat (e.g., prey base);

- The numbers of organisms entrained by the facility are negligible based on only four total organisms entrained during the 2-year, 32 sampling event study conducted in 2013-2015.
- No expected impacts on federally listed threatened and endangered species. This conclusion is supported by the May 17, 2022, USFWS email that they have no comments on the application regarding federally listed threatened and endangered species.

ii. Impact of changes in particulate emissions or other pollutants associated with entrainment technologies;

- Incremental changes in particulate emissions are not anticipated because recirculation systems have been installed and have been operated for more than 40 years.

iii. Land availability insofar as it relates to the feasibility of entrainment technology;

- Recycle systems have been installed and have been operated for more than 40 years. Consequently, land availability is not an issue.

iv. Remaining useful plant life; and

- Useful life has been considered in the design and operation of the IH East manufacturing units and the Master Recycle System. Remaining useful life for IH East manufacturing facilities is considered indefinite as they are upgraded, maintained and refurbished from time to time. Remaining useful life is not an issue for the IH East CWIS application.

v. Quantified and qualitative social benefits and costs of available entrainment technologies when such information on both benefits and costs is of sufficient rigor to make a decision.

- Indiana Harbor East operates several contact and non-contact cooling water recirculation systems. The permittee has claimed that the water withdrawal reductions attributable to plant recycle systems are calculated as approximately 523 mgd, which represents an approximately 95% reduction in cooling and process water withdrawal. All cooling water at Indiana Harbor East is recycled and used multiple times. An additional 18.7 mgd used to maintain operational pressure is not recycled. If the 523 mgd value is correct, the permittee recycles less than 92% of the water withdrawn. On February 8, 2023, the permittee submitted a revised estimate of 93% for the withdrawal reduction over once-through use.
- Entrainment levels are negligible based on the entrainment study done 2013 - 2015.
- Additional controls to further minimize entrainment are not warranted based on the low levels of entrainment and the existing plant water recycling systems.

2. MAY FACTORS (40 CFR 125.98(f)(3))

i. Entrainment impacts on the waterbody;

- The numbers of organisms entrained by the facility are negligible based on only four total organisms entrained during the 2-year, 32 sampling event study conducted in 2013-2015. Therefore, impacts on the surrounding water body are expected to be negligible.

ii. Thermal discharge impacts;

- Thermal discharges and thermal discharge impacts from IH East have been substantially minimized (~ 93% reduction) through installation and operation of the Master Recycle System.
- Current discharges are in compliance with temperature standards for Lake Michigan.

iii. Credit for reduction in flow

- An intake flow reduction at the No. 2 Pump House of approximately 30 mgd occurred in 2018 as a result of the permanent shut down of the No. 2 Steel Producing department.

iv. Impacts on the reliability of energy delivery within the immediate area:

- Given the long operating history of the IH East Master Recycle System, adverse impacts on reliability of energy delivery within the immediate area are not anticipated.

v. Impacts on water consumption; and

- The IH East facility withdraws an estimated average of 45 mgd from Lake Michigan, with a design intake flow of approximately 57.6 mgd. Current evaporative losses are estimated at ~ 14 to 15 mgd. Water consumption of this magnitude is not significant given the abundant water supply from Lake Michigan.

vi. Availability of process water, gray water, waste water, reclaimed water, or other waters of appropriate quantity; and, quality for reuse as cooling water

- IH East has installed cooling water and process water recirculating systems as part of the Master Recycle System. As such, a high degree of water used has been attained.

6.4.7 Best Technology Available (BTA) Impingement and Entrainment Determination Summary

A. Impingement Mortality BTA

1. Main Intake/No. 2 Pump House Intake

Based on the information provided by the permittee, IDEM has determined that the impingement mortality BTA under 40 CFR 125.94(c)(3) is the BTA for this intake. This BTA requires the permittee to operate a cooling water intake structure that has a maximum through-screen actual intake velocity of 0.5 feet per second. The permittee will be required to install a flow monitoring device at this intake and the permit will establish a not-to-exceed velocity limit of 0.5 fps to ensure compliance with this requirement.

The 0.5 fps maximum velocity is a not-to-exceed requirement, except that IDEM can allow this velocity to be exceeded “for brief periods for the purpose of maintaining the cooling water intake system, such as backwashing the screen face.” Ensuring compliance with this 0.5 fps alternative requires an accurate determination of the intake flow and by extension, the through screen actual intake velocity. This permit is proposing to require the use of a maximum hourly average flow to determine compliance with this 0.5 fps maximum velocity. The permittee would calculate the hourly average flow 24 times each day and use the

maximum hourly average flow each day to calculate and report the maximum velocity for its monthly reports.

In addition, since the reported actual daily intake flow is substantially higher than the design intake flow and due to the inconsistent information that has been provided for other intakes, the permit proposes to require the permittee to conduct a velocity monitoring study at this intake to compare to calculated velocities.

2. No. 6 Pump House/Flap Gates Intake

The permittee's current intake does not comply with any of the impingement mortality BTA alternatives. IDEM's preference is that these flap gates be permanently closed. Closure of the flap gates would eliminate this intake and as such would serve as the impingement and entrainment mortality BTA for this intake and would also eliminate the potential backflow of process water. If closure of the flap gates is determined not to be feasible as an impingement mortality BTA, the permittee will either install a 3/8 inch screen with a maximum actual or design intake velocity of less than 0.5 fps immediately downstream or upstream of the current bar rack at the Main Intake or propose an alternate impingement mortality BTA for this intake.

A compliance schedule is proposed in this permit to allow the permittee time to evaluate and install one of these BTA options.

IDEM has determined that permanent closure of the flap gates is an acceptable impingement mortality BTA, since it will eliminate the intake.

If it is not feasible to close the flap gates, detailed information must be submitted to IDEM for review and approval prior to proceeding with either of the other options. Based on that information, IDEM will determine whether they meet one of the impingement mortality BTA alternatives.

3. No. 7 Pump House Intake

IDEM has determined that the impingement mortality BTA under 40 CFR 125.94(c)(2) is the BTA for this intake. This BTA requires the permittee to operate a cooling water intake structure that has a maximum design through-screen intake velocity as water passes through the structural components of a screen measured perpendicular to the screen mesh of 0.5 feet per second. This maximum velocity must be achieved under all conditions, including during minimum ambient source water surface elevations (based on BPJ using hydrological data) and during periods of maximum head loss across the screens or other devices during normal operation of the intake structure.

Based on the information provided by the permittee, some of the screens, particularly the static screens, may not be in good operating condition and/or may have a significant amount of blockage. Therefore, this permit proposes to require the permittee to inspect the screens at this intake and replace any screens as needed to ensure they are in good operating condition. Further, in addition to the requirement under 40 CFR 125.96(e) that the permittee conduct weekly inspections of the cooling water intake structure to ensure that the BTA

technologies are maintained and operated to function as designed, this permit proposes to specifically require that the permittee conduct weekly inspections of the screens at this intake to ensure that they are maintained and operated to function as designed, and to require that the permittee clean each of these screens at least quarterly or when the blockage on a screen is 20% or greater.

In addition, since the reported actual daily intake flow is significantly higher than the reported design intake flow and due to the inconsistent information that has been provided for this and other intakes, the permit proposes to require the permittee to conduct a velocity monitoring study at this intake to compare to calculated velocities.

B. Entrainment Mortality BTA:

After considering all the factors that must and may be considered by the federal rules (see discussion above), IDEM finds that the existing facility meets the best technology available (BTA) for entrainment mortality both for the entire facility and each intake. This is primarily based on the following factors:

1. The small number of organisms projected to be entrained by the facility based on available information; and
2. The flow reduction/water reuse optimization efforts already implemented at the facility.

The permit proposes to require that a new entrainment study be conducted at the No. 2. Pump House Intake and the No. 7 Pump House Intake to verify the current levels of entrainment at the facility.

6.4.8 Permit Conditions

A. The permittee must comply with the following cooling water intake structure requirements:

1. In accordance with 40 CFR 125.98(b)(1), nothing in this permit authorizes take for the purposes of a facility's compliance with the Endangered Species Act.
2. The permittee must at all times properly operate and maintain the cooling water intake structure and associated intake equipment.
3. The permittee must inform IDEM of any proposed changes to the cooling water intake structure or proposed changes to operations at the facility that affect the information taken into account in the current BTA evaluation.
4. Any discharge of intake screen backwash must meet the Minimum Narrative Limitations contained in Part I.B of the permit. There must be no discharge of debris from intake screen washing which will settle to form objectionable deposits which are in amounts sufficient to be unsightly or deleterious, or which will produce colors or odors constituting a nuisance.
5. No. 2 Pump House Intake Flow Monitoring: The permittee must continuously monitor the intake flow at the No. 2 Pump House. The permittee must install an intake flow

measurement device that continuously measures the intake flow at the No. 2 Pump House Intake no later than nine (9) months after the effective date of the permit. Until the flow measurement device is installed, the permittee may estimate the flow at this intake. The maximum hourly average intake flow for each day must be reported on the MMR with the monthly results summarized on the DMRs that are submitted every month. The permittee must calculate the hourly average flow 24 times each day to determine the maximum hourly average flow. Further, the permittee must submit an annual report of the actual intake flows and include in the report both the maximum hourly average intake flow and the daily maximum intake flow for each day. For all estimated intake flows, the permittee must provide the data and calculations used to estimate each estimated intake flow in this annual report. In addition, if the permittee uses the estimated flow to determine the velocities required under Section 6.4.8.A.7., below, the input values and calculations for each day must be included in this annual report. As part of the annual report, the permittee shall also provide a spreadsheet containing the data and calculations.

6. No. 7 Pump House Intake Flow Monitoring: The permittee must measure or estimate the intake flow at the No. 7 Pump House Intake. These data must be reported on the DMRs and MMRs. Further, the permittee must submit an annual report containing this daily intake flow data. If the intake flow rate is estimated, the annual report must include the data and calculations used to estimate the intake flow. As part of the annual report, the permittee shall also provide a spreadsheet containing the data and calculations.
7. At a minimum frequency of daily, the permittee must calculate the velocity at the screens at the No. 2 Pump House Intake. The permittee must calculate the through-screen velocity using the water flow rate (maximum hourly average intake flow rate), water depth (the minimum ambient Lake Michigan level or actual water level at the screens if a method of measuring the actual water depth is installed), and the screen open area. The results of these daily calculations including the maximum hourly average intake flow and maximum calculated intake velocity must be reported on the MMR with the monthly results summarized on the DMRs that are submitted every month and included in the annual report required under Section 6.4.8.A.5, above. As part of the annual report, the permittee shall also provide a spreadsheet containing the data and calculations.
8. Velocity Monitoring Study Requirements: The permittee is required to verify the actual through screen intake velocity at No. 2 Pump House intake and the No 7 Intake through actual measurements. The velocity measurements must be conducted for a range of flows. At a minimum, the velocity study must measure through screen velocity at design flow as well as when additional pumps at the intake(s) are operating and allow for estimating through screen velocity when operating at maximum actual flows above the design intake flow. A study plan for this monitoring must be submitted to IDEM within 6 months of the effective date of this permit for review and approval prior to conducting the required study. The permittee must submit a report to IDEM containing the results of these velocity measurements no later than 24 months from the effective date of this permit. The through-screen velocity monitoring must, at a minimum, be conducted at a point where intake velocities are the greatest for each intake and the results must be compared to the velocities calculated by the permittee.

9. Pump Operation Requirements:
- (a) At the No. 2 Pump House intake only one pump, rated 10,000 gpm or less, may be operated at any time except that two pumps may be operated when pumps are switched in and out of operation, which is a period of minutes. In addition, two pumps may be operated under emergency conditions. Any use of more than one pump for emergency conditions must be reported with the monthly reports and must include, dates of operation, hours of operation and reason for use.
 - (b) At the No 7 Pump House Intake, only one pump, rated 30,000 gpm or less, may be operated at any time except that two pumps may be operated when pumps are switched in and out of operation, which is a period of minutes. In addition, two pumps may be operated under emergency conditions. Any use of more than one pump for emergency conditions must be reported with the monthly reports and must include, dates of operation, hours of operation and reason for use.
 - (c) The permittee is prohibited from operating any of the eight low-lift pumps located adjacent to the Main Intake tide gates.
 - (d) The permittee must maintain pump operating records for all of the pumps at each intake (including date of operation and hours of operation on each day) and make these records available to IDEM upon request.
10. The gates located upstream of the bar racks in the Main Intake must remain closed and sealed.
11. The permittee must either conduct visual inspections or employ remote monitoring devices during the period each cooling water intake structure is in operation as required by 40 CFR 125.96(e). The permittee must conduct such inspections at least weekly to ensure that any technologies operated to comply with 40 CFR 125.94 are maintained and operated to function as designed including those installed to protect Federally-listed threatened or endangered species or designated critical habitat. IDEM may establish alternative procedures if this requirement is not feasible (e.g., an offshore intake, velocity cap, or during periods of inclement weather).

In addition to these inspection requirements, the permittee must inspect the screens at No. 7 Pump House and replace any screens as needed to ensure they are in good operating condition. Further, the permittee must conduct weekly inspections of the screens at No. 7 Pump House to ensure that they are maintained and operated to function as designed and must clean each of these screens at least quarterly or when the blockage on a screen is 20% or greater.

12. Conduct two years of entrainment sampling at both the No. 2. Pump House Intake and the No. 7 Intake. No later than 90 days after the effective date of the permit, the permittee must submit to IDEM for review and approval a study plan including a schedule for the conduct of two years of entrainment sampling at both intakes, beginning on or before March 1 and lasting at a minimum through November 30 of each sampling year. The entrainment study plan must conform to the entrainment characterization study requirements specified in 40 CFR 122.21(r)(9). After approval by IDEM, not later than 60 days prior to March 1 of the first study year, the permittee must conduct the approved entrainment sampling study. The entrainment sampling must be completed, and results submitted to IDEM within 90 days of completion of the two-year study.

13. In accordance with 40 CFR 125.97(c), by January 31 of each year, the permittee must submit to the Industrial NPDES Permit Section IDEM-OWQ an annual certification statement for the preceding calendar year signed by the responsible corporate officer as defined in 40 CFR 122.22 (see 327 IAC 5-2-22) subject to the following:
- a. If the information contained in the previous year's annual certification is still pertinent, you may simply state as such in a letter to IDEM and the letter, along with any applicable data submission requirements specified in this section must constitute the annual certification.
 - b. If you have substantially modified operation of any unit at your facility that impacts cooling water withdrawals or operation of your cooling water intake structures, you must provide a summary of those changes in the report. In addition, you must submit revisions to the information required at 40 CFR 122.21(r) in your next permit application.
14. Best technology available (BTA) determinations for entrainment mortality and impingement mortality at cooling water intake structures will be made in each permit reissuance in accordance with 40 CFR 125.90-98. The permittee must submit all the information required by the applicable provisions of 40 CFR 122.21(r)(2) through (r)(8) with the next renewal application. Since the permittee has submitted the studies required by 40 CFR 122.21(r), the permittee may, in subsequent renewal applications pursuant to 40 CFR 125.95(c), request to reduce the information required if conditions at the facility and in the waterbody remain substantially unchanged since the previous application so long as the relevant previously submitted information remains representative of the current source water, intake structure, cooling water system, and operating conditions. Any habitat designated as critical or species listed as threatened or endangered after issuance of the current permit whose range of habitat or designated critical habitat includes waters where a facility intake is located constitutes potential for a substantial change that must be addressed by the owner/operator in subsequent permit applications, unless the facility received an exemption pursuant to 16 U.S.C. 1536(o) or a permit pursuant to 16 U.S.C. 1539(a) or there is no reasonable expectation of take. The permittee must submit the request for reduced cooling water intake structure and waterbody application information at least **two years and six months** prior to the expiration of the NPDES permit. The request must identify each element in this subsection that it determines has not substantially changed since the previous permit application and the basis for the determination. IDEM has the discretion to accept or reject any part of the request.
15. The permittee must submit and maintain all the information required by the applicable provisions of 40 CFR 125.97.
16. The permittee must keep records of all submissions that are part of its permit application until the subsequent permit issued to document compliance with 40 CFR 125.95. If IDEM approves a request for reduced permit application studies under 40 CFR 125.95(a) or (c) or 40 CFR 125.98(g), the permittee must keep records of all submissions that are part of the previous permit application until the subsequent permit is issued.

17. All required reports must be submitted to the IDEM, Office of Water Quality, NPDES Permits Branch, Industrial NPDES Permit Section at OWQWWPER@idem.in.gov and the Compliance Branch at wwReports@idem.in.gov.

B. Compliance Schedule. Main Intake Flap Gate Intake Compliance Schedule for Implementation of 316(b) Requirements:

(a) As soon as practicable but no later than twelve (12) months after the effective date of this permit, the permittee must notify IDEM which of the following impingement mortality BTA options it has selected for this intake to comply with the cooling water intake structure requirements and provide detailed descriptions, preliminary engineering study results, calculations, and the steps that will be taken to implement the selected impingement mortality BTA:

- (i) Closure of the flap gates and eliminate any water withdrawal through this intake.
- (ii) Install 3/8" or smaller sized screen for the Main Intake that maintains a through screen velocity under 0.5 fps to comply with the impingement mortality BTA under either 40 CFR 125.94(c)(2) or (c)(3) [The permittee shall include the calculations and inputs (accompanied by a spreadsheet containing these calculations and inputs) showing that one of these requirements will be met]. The screen must be located immediately downstream or upstream of the current bar racks. If the flap gates are not closed, the additional requirements specified at B.(c)(i) will also be applicable.
- (iii) An alternate impingement mortality BTA under 40 CFR 125.94(c)(1), (c)(3), (c)(4), (c)(5), or (c)(6). If the flap gates are not closed, the additional requirements specified at B.(c)(i) will also be applicable.

If the permittee selects an alternative other than B.(a)(i), above, the permittee shall request and receive approval from IDEM for the alternative prior to proceeding. If IDEM does not approve the selected alternative, the permittee must proceed with closure of the flap gates under B.(a)(i), above and B.(b), below.

(b) If the permittee has selected the impingement mortality option to close the flap gates and cease the withdrawal of water at this intake ((a)(i), above) or IDEM has not approved of a selected alternative, the permittee shall complete any construction necessary to achieve compliance with this option and cease withdrawal of water at this intake within twenty-four (24) months of the effective date of the permit.

(c) If the permittee has selected installation of 3/8" or smaller sized screen (B.(a)(ii), above) or an alternate impingement mortality BTA (B.(a)(iii), above) and has received IDEM approval for the alternative, the following compliance schedule is applicable:

- (i) As soon as practicable but no later than twenty (20) months after the effective date of the permit complete detailed engineering. In addition, the permittee shall submit the following for IDEM review and approval and no later than twenty (20) months after the effective date of the permit:
 - (AA) Plans and operating procedures for the maintenance and operation of the flap gates so they will close properly (e.g. mussels will not interfere with closure).
 - (BB) Plans for the elimination of any leaks in the bulkheads and seals.

- (CC) Plans and operating procedures for the maintenance and operation of the tide gates so they can close properly (e.g. mussels will not interfere with closure) if the downstream water levels were to rise above Lake Michigan water level.
 - (DD) Plans and operating procedures for installing and operating level measurement equipment and recording those results and the Lake Michigan water level. After the necessary equipment has been installed, the permittee shall begin recording the results and an annual report containing the results shall be submitted within thirty days after the end of each calendar year.
 - (EE) Plans for the conduct of a one-time dye study at all operable gate locations to determine the direction of flow under normal operating conditions. The results of this sampling shall be reported to IDEM with 60 days after completion of the dye study.
 - (FF) A plan for the conduct of ongoing monitoring at the second set of flap gates to assure backflow from MRS is not flowing into the intake. The permittee shall propose parameters to be monitored, monitoring frequency, and the monitoring locations. The parameters must be ones that are present at high levels in the recycle system and low levels in Lake Michigan and are not heavier than water. After this sampling program has been initiated, results of any sampling shall be submitted with the monthly monitoring reports and an annual report shall be submitted within thirty days after the end of each calendar year.
- (ii) As soon as practicable but no later than twenty-four (24) months after the effective date of the permit, initiate construction of any modifications necessary to achieve compliance with the selected alternative.
 - (iii) As soon as practicable but no later than thirty (30) months after the effective date of the permit, the permittee shall initiate the plans and operating procedures under B.(c)(i)(AA), (CC), (EE), and (FF).
 - (iv) As soon as practicable but no later than thirty-six (36) months after the effective date of the permit, complete construction of any modifications necessary to achieve compliance with the selected option. This shall include the elimination of any leaks in the bulkheads and seals and the installation of any equipment needed for continuous level measurements. the permittee shall initiate the monitoring specified pursuant B.(c)(i)(DD).
- (d) Within thirty (30) days of completion, the permittee shall file with the Industrial NPDES Permits Section of Office of Water Quality (OWQ) a notice describing all modifications and actions taken to install the selected alternative and a design summary of any modifications.
 - (e) The permittee shall submit a written progress report to the Compliance Data Section of the OWQ six (6) months from the effective date of this permit and every six (6) months thereafter until the requirements in the compliance schedule outlined above have been achieved. The progress reports shall include detailed information related to steps the permittee has taken to meet the requirements in the compliance schedule and whether the permittee is meeting the dates in the compliance schedule.

- (f) If the permittee fails to comply with any deadline contained in the foregoing schedule, the permittee shall, within fourteen (14) days following the missed deadline, submit a written notice of noncompliance to the Compliance Data Section of the OWQ stating the cause of noncompliance, any remedial action taken or planned, and the probability of meeting the date fixed for compliance.

6.5 Streamlined Mercury Variance (SMV)

Renewal of SMV at Outfall 018 and removal of SMV from Outfall 014

The permittee first applied for SMVs at Outfalls 014 and 018 in 2016. The SMV interim limits of 2.4 ng/l (Outfall 014) and 2.5 ng/l (Outfall 018) were incorporated into the NPDES Permit with a permit modification that became effective on September 1, 2016. The permittee applied for and was granted renewal of the SMVs as part of the next permit renewal, effective September 1, 2017. The 2017 SMV interim limits remained 2.4 ng/l and 2.5 ng/l, respectively.

As part of the current permit renewal action, the permittee applied for a new SMV at Outfall 011 and renewal of the SMV at Outfall 018 on March 3, 2022. At that time, the facility didn't believe the SMV needed to be renewed at Outfall 014 but provided the necessary information in the event IDEM determined the discharge showed RPE. IDEM has since determined that a mercury WQBEL is not required at Outfall 011, therefore, the SMV is not needed. Additionally, IDEM evaluated Outfall 014 data and determined that there is no longer reasonable potential to exceed a water quality criterion, therefore, neither water quality-based effluent limits nor a SMV are required.

The SMV renewal application was deemed complete on April 28, 2022. The SMV renewal for Outfall 018 has been incorporated into this permit renewal. A new interim limit of 1.5 ng/l is proposed for Outfall 018. Determination of the new more stringent limit is explained below.

The SMV establishes a streamlined process for obtaining a variance from a water quality criterion used to establish a WQBEL for mercury in an NPDES permit. The goal of the SMV is to reduce the effluent levels of mercury towards, and achieve as soon as practicable, compliance with the mercury WQBELs through implementation of a pollutant minimization program plan (PMPP). The SMV renewal will remain in effect until the permit expires under IC 13-14-8-9. Pursuant to IC 13-14-8-9(e), when the SMV renewal is incorporated into a permit extended under IC 13-15-3-6 (administratively extended), the renewal will remain in effect as long as the NPDES permit requirements affected by the SMV are in effect.

Mercury Interim Discharge Limit

The permit includes an interim discharge limit for mercury of 1.5 ng/l at Outfall 018. Compliance with the interim discharge limit will be achieved when the average of the measured effluent daily values over the rolling twelve-month period is less than the interim limit. Each reporting period, the permittee shall report both a daily maximum value and an annual average value for mercury.

The interim discharge limit was developed in accordance with 327 IAC 5-3.5-7 and with 327 IAC 5-3.5-8. Specifically, the interim discharge limit shall be based upon available, valid, and representative data of the effluent mercury levels collected and analyzed over the most recent

two (2) year period from the facility. After receipt of a complete application on April 28, 2022, an updated dataset was provided to IDEM. The updated dataset was used to calculate the interim limit (see Table 7 below) which represents the highest daily value for mercury during the period of review.

Table 7
Outfall 018 Data

Sample Date	Total Mercury Normal Sample (ng/L)	Total Mercury Duplicate Sample (ng/L)	Total Mercury Daily Average (ng/L)
2/2/2021	0.915	Not provided	0.915
4/7/2021	<0.5	Not provided	0.5
6/10/2021	0.862	0.929	0.896
8/29/2021	0.521	<0.5	0.521
9/2/2021	1.36	0.937	1.149
10/7/2021	0.331	Not provided	0.331
10/31/2021	1.25	1.05	1.15
11/2/2021	0.844	0.806	0.825
11/4/2021	0.885	0.862	0.874
12/22/2021	<0.2	Not provided	0.2
2/16/2022	0.795	Not provided	0.795
4/12/2022	0.867	Not provided	0.867
6/22/2022	1.11	Not provided	1.11
8/2/2022	1.11	Not provided	1.11
8/4/2022	0.408 J	Not provided	0.408
8/6/2022	1.45	Not provided	1.45
10/14/2022	1.28	Not provided	1.28
12/16/2022	0.67	Not provided	0.67
Number			18
Max			1.45
SMV Limit			1.5

Pollutant Minimization Program Plan (PMPP)

PMPP requirements are outlined in 327 IAC 5-3.5-9 and are included in Part IV of the NPDES permit in accordance with 327 IAC 5-3.5-6. The PMPP focuses on pollution prevention and source control measures to achieve mercury reduction in the effluent. The PMPP was public noticed prior to submittal to IDEM in accordance with 327 IAC 5-3.5-9(c). No comments were received during the public notice period. The goal of the PMPP is to reduce the effluent levels of mercury towards, and achieve as soon as practicable, compliance with the mercury WQBELs established for the permitted facility.

SMV Annual Reports

The permittee is required to submit annual reports to IDEM each year in which the SMV is in effect. The reports are due on the anniversary of the effective date of this NPDES permit renewal, as indicated on Page 1 of this permit. The annual report must describe the SMV applicant's progress toward fulfilling each PMPP requirement, the results of all mercury monitoring within the previous year, and the steps taken to implement the planned activities outlined under the PMPP.

6.6 Polychlorinated Biphenyl (PCB)

There shall be no discharge of polychlorinated biphenyl (PCB) compounds attributable to facility operations such as those historically used in transformer fluids. In order to determine compliance with the PCB discharge prohibition, the permittee shall provide the following PCB data with the next NPDES permit renewal application for at least one sample taken from each final outfall. The corresponding facility water intakes shall be monitored at the same time as the final outfalls. PCB = PCB 1242, 1254, 1221, 1232, 1248, 1260, 1016.

<u>Pollutant</u>	<u>Test Method</u>	<u>LOD</u>	<u>LOQ</u>
PCBs*	EPA 608	0.1 ug/L	0.3 ug/L

6.7 Spill Response and Reporting Requirement

Reporting requirements associated with the Spill Reporting, Containment, and Response requirements of 327 IAC 2-6.1 are included in Part II.B.2.(d), Part II.B.3.(c), and Part II.C.3. of the NPDES permit. Spills from the permitted facility meeting the definition of a spill under 327 IAC 2-6.1-4(15), the applicability requirements of 327 IAC 2-6.1-1, and the Reportable Spills requirements of 327 IAC 2-6.1-5 (other than those meeting an exclusion under 327 IAC 2-6.1-3 or the criteria outlined below) are subject to the Reporting Responsibilities of 327 IAC 2-6.1-7.

It should be noted that the reporting requirements of 327 IAC 2-6.1 do not apply to those discharges or exceedances that are under the jurisdiction of an applicable permit when the substance in question is covered by the permit and death or acute injury or illness to animals or humans does not occur. In order for a discharge or exceedance to be under the jurisdiction of this NPDES permit, the substance in question (a) must have been discharged in the normal course of operation from an outfall listed in this permit, and (b) must have been discharged from an outfall for which the permittee has authorization to discharge that substance.

6.8 Permit Processing/Public Comment

Pursuant to IC 13-15-5-1, IDEM will publish the draft permit document online at <https://www.in.gov/idem/public-notices/>. Additional information on public participation can be found in the "Citizens' Guide to IDEM", available at <https://www.in.gov/idem/resources/citizens-guide-to-idem/>. A 30-day comment period is available to solicit input from interested parties, including the public. A general notice will also be published in the newspaper with the largest general circulation within Lake County.

6.9 Post Public Notice Addendum

Cleveland-Cliffs Indiana Harbor East	NPDES Draft Permit and Public Hearing Public Notice (PDF)	09/29/2023 - 11/16/2023	Yes	Permit Number: IN0000094 Project Manager: Gardner, Nicole IDEM is proposing to renew the permit for this facility's discharge into the Indiana Harbor Turning Basin. IDEM has also decided to hold a public hearing regarding this draft NPDES permit renewal as well as two other NPDES permit renewals for Cleveland-Cliffs Steel facilities located in East Chicago. The hearing will be held on Wednesday, November 1, 2023, beginning at 2:00 p.m. CST / 3:00 p.m. EST. The hearing location will be at the Unity Center - 3723 Guthrie St. East Chicago, IN 46312 .
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The draft NPDES permit for Cleveland-Cliffs Steel LLC - Indiana Harbor East was made available for public comment from September 30, 2023, through November 16, 2023, as part of Public Notice No. 2023 – 0930 – IN000094 PH/RD on IDEM's website at <https://www.in.gov/idem/public-notices/public-notices-all-regions/>. During this comment period, comment letters were received. All comments, and this Office's corresponding responses, are summarized in Appendix C. Any changes to the permit and/or Fact Sheet are so noted in Appendix C.

Appendix A
Technology-Based Effluent Limitation Calculations

Outfall 518										
Production Unit	Production (tons/day)		TSS		O&G		Lead		Zinc	
			Monthly Avg	Daily Max	Monthly Avg	Daily Max	Monthly Avg	Daily Max	Monthly Avg	Daily Max
No. 7 Blast Furnace	12500	Standard (lbs per 1000 lbs product)	0.00438	0.0117	NA	0.00292	0.0000876	0.000263	0.000131	0.000394
Ironmaking 420.34(a) ²		Mass Limit (lbs/day)	110	293	NA	73.0	2.19	6.58	3.28	9.85
	Current Mass Limit (lbs/day)		105	281	NA	70.1	2.10	6.31	3.14	9.46

Outfall 518									
Production Unit	Production (tons/day)		TRC ¹	Ammonia as N		Total Cyanide		Phenols (4AAP)	
			Daily Max	Monthly Avg	Daily Max	Monthly Avg	Daily Max	Monthly Avg	Daily Max
No. 7 Blast Furnace	12500	Standard (lbs per 1000 lbs product)	0.000146	0.00292	0.00876	0.000292	0.000584	0.0000292	0.0000584
Ironmaking 420.34(a) ²		Mass Limit (lbs/day)	3.65	73.0	219	7.30	14.6	0.73	1.46
	Current Mass Limit (lbs/day)		3.50	70.1	210	7.01	14.0	0.70	1.40

¹ The standards for TRC shall be applicable only when chlorination of ironmaking wastewaters is practiced.

² pH within the range of 6.0 to 9.0.

Table A-2

Outfall 618										
Production Unit	Production (tons/day)		TSS		O&G		Lead		Zinc	
			Monthly Avg	Daily Max	Monthly Avg	Daily Max	Monthly Avg	Daily Max	Monthly Avg	Daily Max
BOF Steelmaking	8716	ELG (lbs per 1000 lbs product)	0.0229	0.0687			0.000138	0.000413	0.000207	0.00062
Steelmaking 420.42/43(c) ¹		Mass Limit (lbs/day)	399.19	1197.58			2.41	7.20	3.61	10.81

No. 1 Continuous Caster Continuous Casting 420.62/63 ¹	8716	ELG (lbs per 1000 lbs product)	0.026	0.078	0.0078	0.0234	0.0000313	0.0000939	0.0000469	0.000141
		Mass Limit (lbs/day)	453.23	1359.70	135.97	407.91	0.55	1.64	0.82	2.46
RHOB Vacuum Degassing Vacuum Degassing 420.54 ¹	6508	ELG (lbs per 1000 lbs product)	0.00261	0.0073			0.0000313	0.0000939	0.0000469	0.000141
		Mass Limit (lbs/day)	33.97	95.02			0.41	1.22	0.61	1.84
Outfall 618 Total		Mass Limit (lbs/day)	886	2652	136	408	3.36	10.06	5.04	15.10
	Current Mass Limit (lbs/day)		360	720	102	216	2.16	6.48	3.50	10.5

¹ pH within the range of 6.0 to 9.0.

Table A-3

Outfall 014 - TIER 1 (No. 28 TEMPER MILL IN PRODUCTION)												
Production Unit	Production (tons/day)		TSS		O&G		Lead		Zinc		Naphth- alene ³	Tetrachloro- ethylene ³
			Monthly Avg	Daily Max	Monthly Avg	Daily Max	Monthly Avg	Daily Max	Monthly Avg	Daily Max	Daily Max	Daily Max
80" Hot Strip Mill ^{1,2,4}	14194	ELG (lbs per 1000 lbs product)	0.16	0.427		0.107	0.000108	0.000325	0.000163	0.000488		
Hot Forming 420.72/77(c)(1)		Mass Limit (lbs/day)	4542.08	12121.68	1011.56	3037.52	3.07	9.23	4.63	13.85		
No. 5 Pickle Line	8343	ELG (lbs per 1000 lbs product)	0.035	0.0818	0.0117	0.035	0.000175	0.000526	0.000234	0.000701		
Acid Pickling 420.92/93(b)(2) ⁴		Mass Limit (lbs/day)	584.01	1364.91	195.23	584.01	2.92	8.78	3.90	11.70		
No. 5 Pickle Line Fume Scrubber	1	Kilograms/day	2.45	5.72	0.82	2.45	0.0123	0.0368	0.0164	0.0491		
Acid Pickling 420.92/93(b)(4) ⁴		Mass Limit (lbs/day)	5.40	12.61	1.81	5.40	0.03	0.08	0.04	0.11		
80" Tandem Mill	7014	ELG (lbs per 1000 lbs product)	0.00313	0.00626	0.00104	0.00261	0.0000156	0.0000469	0.0000104	0.0000313	0.0000104	0.0000156
Cold Forming 420.102/103(a)(2) ⁴		Mass Limit (lbs/day)	43.91	87.82	14.59	36.61	0.22	0.66	0.15	0.44	0.15	0.22
No. 29 Tandem Mill	1883	ELG (lbs per 1000 lbs product)	0.0113	0.0225	0.00376	0.00939	0.0000563	0.000169	0.0000376	0.000113	0.0000376	0.0000563
Cold Forming 420.102/103(a)(4) ⁴		Mass Limit (lbs/day)	42.56	84.74	14.16	35.36	0.21	0.64	0.14	0.43	0.14	0.21
No. 28 Temper Mill	4752	ELG (lbs per 1000 lbs product)	0.0501	0.1	0.0167	0.0417	0.00025	0.000751	0.000167	0.000501	0.000167	0.00025
Cold Forming 420.102/103(a)(5) ⁴		Mass Limit (lbs/day)	476.15	950.40	158.72	396.32	2.38	7.14	1.59	4.76	1.59	2.38
No. 5 Galvanizing Line ⁵	0	ELG (lbs per 1000 lbs product)	0.0751	0.175	0.025	0.0751	0.000376	0.00113	0.0005	0.0015		
Hot Coating 420.122/123(a)(1) ⁴		Mass Limit (lbs/day)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Alkaline Cleaning	871	ELG (lbs per 1000 lbs product)	0.04	0.10	0.01	0.04						
Continuous 420.112(b) ⁴		Mass Limit (lbs/day)	76.30	177.68	25.43	76.30						
Outfall 014 Total		Mass Limit (lbs/day)	5770	14800	1421	4172	8.82	26.52	10.44	31.28	1.87	2.81
		Current Mass Limit (lbs/day)	6620	17092	1553	4568	3.1 (WQBEL)	6.2 (WQBEL)	11 (WQBEL)	22 (WQBEL)	1.80	2.69

Table A-4

Outfall 014 - TIER 2 (No. 28 TEMPER MILL IDLE)									
Production Unit	Production		TSS	O&G	Lead	Zinc	Naphth-	Tetrachloro-	

	(tons/day)										alene ³	ethylene ³
			Daily Max	Monthly Avg	Daily Max	Monthly Avg	Daily Max	Monthly Avg	Daily Max	Monthly Avg	Daily Max	Daily Max
80" Hot Strip Mill ^{1,2,4}	14194	ELG (lbs per 1000 lbs product)	0.427	0.16	0.107		0.000325	0.000108	0.000488	0.000163		
Hot Forming 420.72/77(c)(1)		Mass Limit (lbs/day)	12121.68	4542.08	3037.52	1011.56	9.23	3.07	13.85	4.63		
No. 5 Pickle Line	8343	ELG (lbs per 1000 lbs product)	0.0818	0.035	0.035	0.0117	0.000526	0.000175	0.000701	0.000234		
Acid Pickling 420.92/93(b)(2) ⁴		Mass Limit (lbs/day)	1364.91	584.01	584.01	195.23	8.78	2.92	11.70	3.90		
No. 5 Pickle Line Fume Scrubber	1	Kilograms/day	5.72	2.45	2.45	0.82	0.0368	0.0123	0.0491	0.0164		
Acid Pickling 420.92/93(b)(4) ⁴		Mass Limit (lbs/day)	12.61	5.40	5.40	1.81	0.08	0.03	0.11	0.04		
80" Tandem Mill	7014	ELG (lbs per 1000 lbs product)	0.00626	0.00313	0.00261	0.00104	0.0000469	0.0000156	0.0000313	0.0000104	0.0000104	0.0000156
Cold Forming 420.102/103(a)(2) ⁴		Mass Limit (lbs/day)	87.82	43.91	36.61	14.59	0.66	0.22	0.44	0.15	0.15	0.22
No. 29 Tandem Mill	1883	ELG (lbs per 1000 lbs product)	0.0225	0.0113	0.00939	0.00376	0.000169	0.0000563	0.000113	0.0000376	0.0000376	0.0000563
Cold Forming 420.102/103(a)(4) ⁴		Mass Limit (lbs/day)	84.74	42.56	35.36	14.16	0.64	0.21	0.43	0.14	0.14	0.21
No. 28 Temper Mill	0	ELG (lbs per 1000 lbs product)	0.1	0.0501	0.0417	0.0167	0.000751	0.00025	0.000501	0.000167	0.000167	0.00025
Cold Forming 420.102/103(a)(5) ⁴		Mass Limit (lbs/day)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
No. 5 Galvanizing Line ⁵	0	ELG (lbs per 1000 lbs product)	0.175	0.0751	0.0751	0.025	0.00113	0.000376	0.0015	0.0005		
Hot Coating 420.122/123(a)(1) ⁴		Mass Limit (lbs/day)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Alkaline Cleaning	871	ELG (lbs per 1000 lbs product)	0.10	0.04	0.04	0.01						
Continuous 420.112(b) ⁴		Mass Limit (lbs/day)	177.68	76.30	76.30	25.43						
Outfall 014 Total		Mass Limit (lbs/day)	13849	5294	3775	1263	19.38	6.44	26.52	8.86	0.29	0.43
		Current Mass Limit (lbs/day)	17092	6620	4568	1553	6.2 (WQBEL)	3.1 (WQBEL)	22 (WQBEL)	11 (WQBEL)	1.80	2.69

1 Lead and zinc allowances for Hot Strip Mill wastewaters co-treated with cold rolling wastewaters (Source: Development Document for Effluent Limitations Guidelines and Standards for the Iron and Steel Point Source Category, Volume I, Table I-2 (EPA 440/1-82/024))

2 BPJ for monthly average oil and grease for the 80" HSM taken as 1/3 daily maximum allowance.

3 Monitoring waiver requested to be continued for naphthalene and tetrachloroethylene

- 4 pH within the range of 6.0 to 9.0.
- 5 If the No. 5 Galvanizing Line were to resume operation, the chromate rinse will not be discharged, and the effluent limits (TBELs based on ELGs) for hexavalent chromium would therefore not apply.
- 6 BPJ for lead and zinc (Source Development Document for Effluent Limitations Guidelines and Standards for the Iron and Steel Point Source Category, Volume IV, EPA 440/1-82/024)

Appendix B
Waste Load Allocation

TABLE B-1		REASONABLE POTENTIAL TO EXCEED					CLEVELAND-CLIFFS (INDIANA HARBOR EAST) OUTFALL 014 (9.6 mgd)							
PARAMETER	MONTHLY AVERAGE					DAILY MAXIMUM					PEL		PEQ > PEL	
	Maximum Effluent Value	Count	C.V.	M.F.	PEQ	Maximum Effluent Value	Count	C.V.	M.F.	PEQ	Monthly Average@	Daily Maximum	Monthly Average	Daily Maximum
Free Cyanide (ug/l) *	9.7	6	0.6	2.1	20	12	33	0.3	1.1	13	22	44	No	No
Lead (ug/l) *	3.3	38	0.2	1.0	3.3	4.5	505	0.3	0.9	4.1	14	27	No	No
Mercury (ng/l) **					0.93	0.846	32	0.4	1.1	0.93	1.3	3.2	No	No
Zinc (ug/l) *	33	38	0.4	1.1	36	120	505	0.7	0.9	110	160	320	No	No
Ammonia (as N) (mg/l) *	0.19	6	0.6	2.1	0.40	0.3	34	0.3	1.1	0.33	0.41	0.82	No	No
* Effluent data were obtained from MMRs for the period January 2019 through February 2022. The free cyanide sampled collected 4-10-2021 was removed from the dataset as an outlier. The factors considered in making this determination were the following: the source of the discharge is blowdown from a recycle system, the result was an order of magnitude higher than the result for total cyanide, the result for total cyanide was consistent with data collected during the preceding week.														
** Effluent data were obtained from MMRs for the period October 2017 through February 2022.														
@ Monthly average PELs were calculated based on the applicable sampling frequency in a month.														
														5/22/2023

TABLE B-2		REASONABLE POTENTIAL TO EXCEED					CLEVELAND-CLIFFS (INDIANA HARBOR EAST) OUTFALL 018 (19.9 mgd)							
PARAMETER	MONTHLY AVERAGE					DAILY MAXIMUM					PEL		PEQ > PEL	
	Maximum Effluent Value	Count	C.V.	M.F.	PEQ	Maximum Effluent Value	Count	C.V.	M.F.	PEQ	Monthly Average@	Daily Maximum	Monthly Average	Daily Maximum
Free Cyanide (ug/l) *	78	38	0.9	1.2	94	104	122	1.2	0.8	83	22	44	Yes	Yes
Lead (ug/l) *	5.4	38	0.5	1.1	5.9	13	382	0.8	0.8	10	14	27	No	No
Selenium (ug/l) *	7.5	38	0.3	1.1	8.3	7.5	132	0.2	1.0	7.5	14	35	No	No
Zinc (ug/l) *	60	38	0.6	1.1	66	140	382	1.0	0.8	110	160	310	No	No
Ammonia (as N) (mg/l) *	0.80	38	0.5	1.1	0.88	1.47	383	0.7	0.9	1.3	0.90	1.8	No	No
* Effluent data were obtained from MMRs for the period January 2019 through February 2022.														
@ Monthly average PELs were calculated based on the applicable sampling frequency in a month.														
														5/22/2023

TABLE B-3
WATER QUALITY-BASED EFFLUENT LIMITATIONS
CLEVELAND-CLIFFS (INDIANA HARBOR EAST)
(IN0000094)

Parameter	Quantity or Loading		Units	Quality or Concentration		Units
	Monthly Average	Daily Maximum		Monthly Average @	Daily Maximum	
Outfall 011 (0.5 mgd)						
Total Residual Chlorine	0.058	0.14	lbs/day	14	33	ug/l
Outfall 014 (9.6 mgd)						
Lead	1.1	2.2	lbs/day	14	27	ug/l
Zinc	13	26	lbs/day	160	320	ug/l
Bromine	0.14	0.34	lbs/day	1.8	4.2	ug/l
Total Residual Chlorine	1.1	2.6	lbs/day	14	33	ug/l
Whole Effluent Toxicity (WET)						
Acute #					1.0	TUa
Chronic &				9.8		TUc
Outfall 018 (19.9 mgd)						
Lead	2.3	4.5	lbs/day	14	27	ug/l
Mercury	0.00022	0.00053	lbs/day	1.3	3.2	ng/l
Zinc	27	51	lbs/day	160	310	ug/l
Ammonia (as N)	150	300	lbs/day	900	1,800	ug/l
Free Cyanide	3.7	7.3	lbs/day	22	44	ug/l
Bromine	0.16	0.38	lbs/day	0.98	2.3	ug/l
Total Residual Chlorine	2.3	5.3	lbs/day	14	32	ug/l
Whole Effluent Toxicity (WET)						
Acute #					1.0	TUa
Chronic &				5.4		TUc

@ Monthly average WQBELs were calculated based on the applicable sampling frequency in a month.

This value is the Toxicity Reduction Evaluation (TRE) trigger for acute WET testing.

& This value is the Toxicity Reduction Evaluation (TRE) trigger for chronic WET testing.

5/22/2023

TABLE B-4		REASONABLE POTENTIAL TO EXCEED FOR WHOLE EFFLUENT TOXICITY CLEVELAND-CLIFFS (INDIANA HARBOR EAST)							
Outfall 014*									
Parameter	Maximum Effluent Value	Count	C.V.	M.F.	PEQ	WLA	PEQ>WLA	WQBEL	
								Monthly Average	Daily Maximum
Acute WET (TUa)	<1.0	4	0.6	2.6	<2.6	1.0	NO	--	Not Required
Chronic WET (TUC)	2.7	4	0.6	2.6	7.0	9.8	NO	Not Required	--
Outfall 018*									
Parameter	Maximum Effluent Value	Count	C.V.	M.F.	PEQ	WLA	PEQ>WLA	WQBEL	
								Monthly Average	Daily Maximum
Acute WET (TUa)	<1.0	4	0.6	2.6	<2.6	1.0	NO	--	Not Required
Chronic WET (TUC)	1.0	4	0.6	2.6	<2.6	5.4	NO	Not Required	--
* The data used in the analysis were those collected from August 2019 through August 2022 for <i>Ceriodaphnia dubia</i> in accordance with the July 2017 permit renewal. The September 2021 test for Outfall 018 was considered inconclusive by the laboratory for compliance purposes and a retest was conducted. This data point was not considered valid for assessment of reasonable potential.									
									5/22/2023

Appendix C

Post Public Notice Addendum

The draft NPDES permit for Cleveland-Cliffs Steel LLC - Indiana Harbor East was made available for public comment from September 30, 2023, through November 16, 2023, as part of Public Notice No. 2023 – 0930 – IN000094 PH/RD on IDEM's website at <https://www.in.gov/idem/public-notice/public-notice-all-regions/>. During this comment period, comment letters were received. All comments, and this Office's corresponding responses, are summarized below. Any changes to the permit and/or Fact Sheet are so noted below.

Comments submitted by Michael Zoeller and Kerri Gefeke, Environmental Law and Policy Center, on October 30, 2023.

Comment 1: The Environmental Law & Policy Center ("ELPC"), on behalf of itself and its members, respectfully request an extension of the comment period for the draft renewal of the above referenced three NPDES permits. Each of these three permits are major industrial wastewater permits discharging to Indiana Harbor and Lake Michigan. Although the Indiana Department of Environmental Management ("IDEM") provided 45 days' notice before the comment deadline on November 16, that is only 15 days per permit. We respectfully request an additional 45 days (30 days for each permit) or such greater time as needed in order to schedule and conduct a public meeting.

In addition, we respectfully request that IDEM hold a public meeting for each of the three NPDES permits to inform the local communities about the current operations of the wastewater treatment plants, the proposed effluent limits, and the volume of effluent and pollutants being discharged from these three facilities. We would ask that personnel from Cleveland-Cliffs be invited to attend the public meeting to help answer questions and provide a description of the facilities' efforts to reduce pollutants entering Lake Michigan. We also ask that materials be translated and an interpreter be available due to the prevalence of Spanish-speaking residents of East Chicago

The Indiana Harbor steel works covers 2,600 acres of Lake Michigan shoreline and discharges an average of 193 million gallons each day through 9 outfalls into the waters around Indiana Harbor. Once every five years, IDEM has the opportunity through the renewal process to require facilities to utilize current technology to reduce pollutants. IDEM should actively engage the community in this process.

We will be unable to attend the public hearing scheduled for November 1, due to the limited time available to prepare for it and its timing on a weekday afternoon. We intend to submit written comments on each permit.

Please let us know if IDEM would be willing to extend the comment period and hold one or more public meetings on the draft NPDES permits.

Response 1: The agency provided an extended public comment period (45 days vs. 30 days) as well as an in-person public hearing on November 1, 2023, to provide expanded participation opportunities. A copy of the PowerPoint presentation from the public hearing was also posted online: <https://www.in.gov/idem/resources/lake-michigan-sites-of-interest/cleveland-cliffs-indiana-harbor-long-carbon/>. IDEM does not believe additional notice period or Public Meeting is warranted at this time.

Please note that IDEM has an Environmental Stakeholder Inclusion program to ensure that interested stakeholders are included and represented in agency actions. Within IDEM, an environmental stakeholder inclusion coordinator works with the agency's program areas to enhance environmental stakeholder involvement in the regulatory processes administered by the agency. The environmental stakeholder inclusion coordinator assists agency staff with fulfilling requests from external stakeholders for services such as translation and interpretation services. The Permits Branch communicated with the Environmental Stakeholder Program throughout the Public Hearing process. If you would like additional information on the program, or to request assistance, please visit this webpage: <https://www.in.gov/idem/health/environmental-stakeholder-inclusion/>.

To maximize time to review future public notices, IDEM recommends that concerned citizens sign up for IDEM's notification service to receive SMS and/or email messages whenever a permit action, such as a Public Notice, takes place. You may sign up using the following link: <https://www.in.gov/idem/subscribe-to-idem-updates/>.

IDEM believes the permit meets the NPDES requirements set forth in the Clean Water Act, federal regulations adopted pursuant thereto, and Indiana Administrative Code Title 327.

Comment submitted by Christine Glaser on October 31, 2023:

Comment 2: I am the Indiana policy coordinator for Faith in Place, a non-profit working with communities of faith to advance environmental justice. We work with Houses of Worship in Indiana (including NW Indiana), as well as in Illinois and Wisconsin. All three of these states border on Lake Michigan, and water quality issues are important to many of the faith communities associated with our organization.

I am writing to ask that you to schedule a public meeting (or possibly several) for the NPDES permit renewals regarding Cleveland Cliffs Steel - Indiana Harbor East, West and Central --- during which the public can learn about wastewater and pollutant discharges from these industries,

about technologies currently used to limit pollutants getting into Lake Michigan, about the levels of pollution in Lake Michigan, and about any plans for reductions of discharges/pollutants from the Cleveland Cliff plants that could provide greater protection to Lake Michigan and the communities surrounding it.

While you scheduled a hearing for Nov. 1, at 2:00 PM, the format of a hearing is for IDEM to receive comments from the public. But the members of the public need to first know what it is they are asked to comment on. That is why I am asking you to schedule a public meeting - with officials from Cleveland Cliffs present - to provide relevant information and give members of the public an opportunity to get their questions answered. And please set the dates/ times for the public meeting(s) so that working people can attend (not on Wednesday at 2:00 pm)! Furthermore, please extend the comment period (which currently is set to end on Nov. 16), so that the public meeting(s) can be scheduled with sufficient lead-time for people to attend and also give them enough time to provide comments on the three different permits after the meeting(s).

Please let me know whether IDEM is willing to schedule public meetings on the draft Cleveland Cliff Steel permits and to extend the comment period!

Response 2: Please refer to Response 1.

Comment provided by Catherine Perrin during Public Hearing on November 1, 2023.

Comment 3: I'm here as a concerned citizen. Thank you for holding this meeting. I only wish you were having it when people who are working would be able to come. I could only come because I'm retired. I would ask that you please extend the comment period past the November 16th deadline, so more concerned citizens would be able to comment. I know that there are many more people who care about protecting our environment than are in this room today. I appreciate all of the positive economic impact that the steel industry has provided to this area. My father worked at Inland Steel for as long as I can remember and retired in 2003. The steel industry has provided for me and my family. That being said, we cannot continue to deliberately or accidentally discharge heavy metals and contaminants into Lake Michigan, our source of drinking water. I would like you to know that Indiana does not have a good track record of protecting our natural environment, and we are depending on you to protect our air, land, and our water. Thank you.

Response 3: Please refer to Response 1.

Comment provided by Connie Wachala during Public Hearing on November 1, 2023.

Comment 4: I live in Highland, but I grew up here in East Chicago. I'd like to request that IDEM convene a public meeting rather than a public hearing, so that - and during the evening, when working people can come, and extend the November 16th deadline for comments. So, a public meeting that maybe is informing us about the water treatment and discharges at the mill, but also, you know, asking some of those officials from the mill to come and answer questions about the discharges. And a public meeting that we can ask you questions, and you can answer them about the actions that you intend to take on reducing the lake pollution. And at such a public meeting, I would ask that a Spanish interpreter be available, since there is a large Spanish-speaking population in this city. I think this is a really unique time to give an -- to give you an opportunity to really clean up the lake. There's a lot of federal money available for cleanup. And so, I'm asking you to take this matter very seriously, as you evidently are, but, you know, really rethinking how these permits are given, and, you know, thinking about how do we make those legal limits zero? How do we make those -- the industry do better? You know, as a mother of a son who had cancer, I am concerned. I know there are other people in this room who has -- have children with cancer. We need to really be cleaning up our water and our land and our air. So, as the regulatory body that gives the permits, please, please really take this opportunity that -- you know, we're in the 21st Century and the permits have been given for so long, and really under 19th -- under 20th Century thinking. In the 21st Century, can we do better? Thank you.

Response 4: Please refer to Response 1.

Comment provided by Carolyn McCrady during Public Hearing on November 1, 2023.

Comment 5: I'm a resident of Gary, retired schoolteacher. And now that I'm retired, I'm very concerned about everything that people have said so far in regard to the environment, our land, our water and our air. And I know we're here tonight to talk about the water, and I want to say that I agree with everything that Catherine and Connie have said tonight about calling for a public meeting at a time when people can actually attend, because it's obvious that there are more people than are in this room that would like to have a chance to say something. The other thing is that this is very technical stuff, and most people look at it and their eyes glaze over, and so, there has to be a way that people can understand what all of this means, other than being talked—being read to, you know, all of this stuff that you have here and in here, but there has to be time to digest that. So, I want to suggest that you put the permit--I'm sorry—put the time to hear each of these permits, give each of those times a 30-day time from now; in other words, 45 days from now, 45 days from now, so that people have a

chance to digest the information. And if people can't understand it on their own, be able to consult with people who can understand it, because there's something very dissociating about this whole process. You know, you all seem to be very nice people, but, you know, there's a disconnect between what you do and what the community knows. It's what we experience. It's a lived experience. We experience the asthma and the COPD and the cancer and everything else, the high levels that we have, particularly in Gary and East Chicago. We experience that, but we're not the experts on the technicalities. So, somehow that has to change, because you all are in charge of our lives, really, you know? And it's just amazing to me that the way IDEM operates, and even the EPA, back in the 20th Century. I mean--no. This is the 21st Century--1972. But how many times have the water criteria been changed? And if the water criteria had been changed to reflect the level of pollution, then why is there still a fish advisory for Lake Michigan? Why is that? And it has to do with mercury. So, people have been told, you know, "Don't--well, limit your consumption of fish that come out of Lake Michigan." Why is that? Because the lake is polluted. And yet IDEM keeps telling us, "Well, you know, we're within EPA and IDEM guidelines." Well, what does that mean when people are still getting sick? You know that Gary is the fourth most polluted city in the entire country, you know, and the polluters that are on our lake front lead the charge in the nation. Something is very, very wrong with the regulatory procedure, very wrong, that IDEM can—and I've been to many IDEM hearings—can sit at a table and say, "Everything is okay. We're within guidelines." I mean, you know, I'm reading this, the East Harbor Outfall, and it says that mercury limits have been removed. This is going to be a change at 014,013. No reasonable potential to exceed water quality criteria exists. What? How is that possible? How is that possible? It doesn't make any sense when people are being advised not to eat the fish because of mercury contamination. So, I'm just saying, and I agree with what everyone has said so far, you really—you are the gatekeepers for our health. It's not just a job. You know, you are responsible for what happens to our lives by what you permit and what you don't permit and what you make—where you make your changes. So, I would say, you know, I wouldn't ask you, I would demand that you see this as more—not just a job that you do, but as really the people who are responsible for what happens to our health and well-being in this area.

Response 5: Please refer to Response 1.

Additionally, with respect to mercury limits at Outfalls 014/013 in the Indiana Harbor East permit, the water quality-based effluent limits were removed because they are no longer required based on a review of the discharge data. The discharge from these outfall(s) complies with water quality standards for mercury. Compliance can be achieved in many ways, including but not limited to process improvements, updated treatment, or improved intake water quality. For additional information regarding how

mercury was evaluated at this facility, please visit sections 5.2, 5.3, and 6.5 of the Fact Sheet.

Indiana periodically evaluates and revises its water quality criteria. Most recently, Indiana promulgated revised aquatic life criteria for cadmium, lead, and selenium for waters within the Great lakes system and on February 1, 2022, the U.S. EPA determined that these revised water quality criteria were consistent with the relevant requirements of the CWA and 40 CFR parts 131 and 132 and approved them pursuant to Section 303(c) of the CWA and 40 CFR 131.21. Water quality criteria include, but are not limited to, criteria and values for the protection of aquatic life, human health, and wildlife.

Comment provided by Terry Steagall during Public Hearing on November 1, 2023.

Comment 6: I live in Highland, Indiana. I also retired from Cleveland Cliffs in January, 41 and a half years. I worked about a hundred feet from Indiana Harbor Ship Canal there, which is one of the most toxic bodies in the tributary to Lake Michigan. I grew up about two blocks from the Grand Calumet River, another one of those most toxic tributaries that, of our past sins, we managed to pollute to the point that both of these tributaries have 14 AOC's, and that's not Congresswomen; okay? So, the Grand Calumet, I think they've eliminated maybe about four of those and spent millions of dollars, hundreds of millions of dollars. They've spent hundreds of million dollars [sic] on the Indiana Harbor Ship Canal, with a containment facility to try and dredge the canal there so that the ships can go through the canal without dredging up the PCB's and everything else down there. So, we have major problems that we have to address in a constructive way to be sustainable in the future. You know, I want to see the steel industry survive and thrive, but we have to start doing more sensible things. Lake Michigan is one of the most valuable assets this area has, especially when you go speak to the people out in Arizona, you know, where the water's drying up. I mean they're going to be flocking here pretty soon. So, we have to do what we can to do the best to protect Lake Michigan, and this is where we've got to take a different paradigm of how we look at things, because in the past, we've looked at Northwest Indiana from Hammond to Michigan City as a sacrifice zone, to where we let this pollution go on to the point that, you know, we're killing ourselves. So, we've got to have a different paradigm on how we're going to look at this and address those issues. So, I guess what I'm saying is here is it's—you folks are going to have to take a different paradigm, too, because you've kind of been working within whatever rules you've been given, but those rules don't apply to today's needs, and it needs to have a different structure, because in this area, IDEM is looked at as a rubber stamp for industry. And that's not the way it should be, because we have to have a constructive approach to making things better; okay? And with the infrastructure money that comes through the state, with the IRA money, which comes through the state, okay, and also, we have a university here in Hammond called

Purdue Northwest. They do computer modeling for the steel industry on glass furnaces and things like this. So, part of that process should be to look at those outflows, so that we can better examine how we're going to do this and capture that, because also, we're creating another problem for the municipalities. Because we put pollution in the lake, it goes to the treatment facilities for the municipalities, and you've got to take the pollution out over there. Why don't we capture it at the outfall, process it there, and make water going back into the lake like drinking water? And we can stop the craziness that accumulates overtime. A good example, if you take BP. They discharge 18 million gallons a day of discharge in their outfall; okay? And then they have their legal limits. Well, you take those legal limits and you take 18 million gallons a day times seven times 52, over a year's time there's a lot of stuff going in to the lake. Now, we go for about 25 years, how much did we dump in the lake, you know? So, I mean these are things that we're not taking a more constructive approach at on fixing the problem where the source of the problem is. So, I guess what I would suggest, and I have suggested this at another hearing also, that you folks should be the facilitators with all of the stakeholders. In other words, the companies, the environmentalists, the community, the municipalities, where we need to come together and figure out how we can lower these limits to zero, if possible, and use that federal money that's available now and come up with a solution, so—because if we come up with a solution, we can fix this. And I can guarantee my pension then if they keep running, so that's an important part, too, you know, sustainability for the future, whether it be for the people working in the mill or the people retired. And that's the goal there is keep this all going in the right direction, so people have jobs and we have the sources we need for our economy. So, whatever you can do to kind of change your paradigm, and this is a big change for the organization, and I don't know whether it's possible or not, but it should be. And I'm hoping the young people will speak up within the organization and say, "Look, we've got to change. We've got to do things different. We've got to move this in a more positive direction, and not be looked at as the rubber-stamp organization for industry." And like I said, in Northwest Indiana, the people feel like we're the sacrifice zone, you don't care about us. We've got to change that perception. Perception is powerful, but if you guys—you know, you've got a big situation here where you can bring new light on this to where it can be a positive move for everybody. And we can get those—if we come up with a solution, we can apply for the grants, but if we don't have a solution, you know, then we're going to get—just keep rubber stamping the same old problem. So, what I would suggest is: The permits, they get approved on a temporary basis, until this organization can bring the stakeholders together, come up with a solution to the problem, and address it from there. That would put us in a position to move forward in the community here. So, whatever you can do to do that would be greatly appreciated.

Response 6: Please refer to Responses 1 and 5.

Additionally, to learn more about grant funding opportunities, please contact Lindsay Hylton Adams (lhylton.idem.in.gov | 317-308-3378) with the IDEM Watershed Assessment and Planning Branch. Additional funding information is located here <https://www.in.gov/idem/resources/funding/>.

Comment provided by Jorge Garcia during Public Hearing on November 1, 2023.

Comment 7: Me and my brother used to fish over here all of the time, you know. Now, we can't fish no more because of that mercury in there. I worked in the mills for 32 years there, you know, right here by U.S. Steel. I've been there, seen a lot of things, dumping, you know, in the water. And just like he says, you know, the water's very important to us. You know, we can't take things for granted here. You know, that water's very important to us and to our health. You have to see that. You're the guy—you guys are the ones that can stop them. You know, that's what you're here for, because—and if you don't stop them, they're just going to keep on doing it. You know, they're going to pollute that thing no matter what. Like they say, BP and all of them, you know, they've got the money and they've got the power. BP has that money and has that power to stop all of this, and they don't want to do it. They do not want to spend no money on it. They just want to keep on taking, let the EPA do it, let the EPA--okay. No, you can't do that. You can't let them do that. You've got to stop it. If they've got the money to make that oil, they've got the money to stop all of this, and they could do it. They've got the money, but they don't want to do it. They worry about their big money, checks and stuff, whatever. No, you can't do that. You've got to—you have to worry about these people here that live in Whiting, Highland, Merrillville, whatever, where all of this water—you know, this is water. This is important to us. You know, we drink it. People—you know, and then when it's polluted, we get sick. We can't get well. The doctors can't--they're not--they're not God. Only He can stop this. And when it's too late—like I said, in Arizona, you know, "It's getting dry over here." We've got the water, but it's being polluted. It's being polluted by them, the industries, them out there, you know, BP and all of them. I've been here 70 years. I can't--we can't even go fishing. Me and my brother used to fish out there all of the time. We can't fish out there no more. It's got that mercury in it. It's all polluted. We used to eat that stuff. When we were poor, we used to have to, you know, worry about catching—you go to the store, it cost a lot of money, so we went fishing, you know, save a little money there. But you guys can stop this. They've got the money. They have the money to stop all—doing all of this, but they don't want to do it. And if you guys don't stop it, they're going to keep on doing it.

Response 7: Please refer to Responses 1 and 5.

The commenters listed below submitted their comment letter between November 3, 2023, and November 16, 2023.

Alexis Kirkwood	Mary Peckinpaugh	Caryn Corriere
Andrea Drygas	Mary Boggs	Vicki Rubio
LaTanya Rodgers	Marilyn Rogers	Frank Hardwick
Allison Kramer	Jake Cseke	Paul Grajner
Ryan Barrett	Bruce Bailey	Fay Booker
Amber Laughner	Karen Hand	Sally Small
John Ploof	Nada O'Neal	John Gates
Rosemary Bell	Dr. Paul Yoder	Sarah Haas
Rev Amber Good	Mr. Jesse Kirkham	Mark Anderson
Ms. Sue Wildemann	Lisa Wodrich	Fred Lanahan
Mr. David Wildemann	Miss Andrea Phan	Jason Sofianos
Mr. John Glick	Christina Thanstrom	Marian Shaaban
Sr. Rosie Miller	Jennifer Mullin	John Kirchner
Mr. Ronald Kieper	Jayde McAloon	Joseph James Hoess
Mrs. Kathryn Lindsay	Mrs. Hannah Miller	John Mazeika
Ms. Pam Gabor	Catherine A O'Grady	Robert Boklund
Ms. Linda Evinger	Mr. Thomas Pennington	Barbara Hargrove
Mr. John Marquis	Mrs. Elizabeth Venstra	Susan Wilder
Ms. Helienne Houdek	Vicky Foltz	Sue Errington
Eileen Tintle	Mr. Michael McCartin	Susan Schechter
Mx. Kassia Groszewski	Rev Anna Lisa Gross	Heidi Schaefer
Mr. William Iltzsche	Sr. Claire Whalen	M. Mateja
Dr. Mary Mahern	Susan Thompson	Jorgena Evans-Watson
Mrs. Kathryn Lisinicchia	Nina Iglinski	Nannett Polk
Mrs. Jan Evrard	Laura Demchuck	Erika Bradley
Ben Inskeep	Cyn Roberts	Dustin Thibideau
Tyson and Jen Lagoni	Anna Cicirelli	Erin Moodie
Brittany Ray	Joyce Dagley	Todd Turina
Susan Thomas	Harriet Moore	Devin Breen
Patrick Bergerson	Barbara Wellnitz	Caryn Corriere
John Llewellyn	Olimpia Gutierrez	Vicki Rubio
Deborah Chubb	Nancy Walter	Elizabeth A. Solberg
Jalisa Mauldin	Nathan Pate	Jim Sweeney
Jessica Cresseveur	Dawn Nye	Geof Potter
Marilyn Olson	Jeff Osborne	Molly B. Moon
Junius Pressey Jr.	Em Racine	Stacey Burr
Michael Garcher	Mia Terek	Ms. Anne Byler
Lauren Urevig	Sr. Jean Ballard	Christine Glaser
Susan Howell Ulrich	Ms. Andrea Basile	Dr. Thomas Tweed
Cheryl Chapman	Mx. Cas Flores	Julie Niepokoj
Joanne Evers	Ms. Mary Blackburn	Mr. Eric Riddle
Toni Mitchell	Todd Turina	Thomas Gaertig
Jennifer Dimitroff	Devin Breen	Ms. Patricia Massa

Comment 8: I am writing as a concerned resident of Indiana to express my deep concerns regarding the permits for the Cleveland-Cliffs Steel Mills in Indiana Harbor. These permits have a significant impact on the environment and the well-being of our community.

The environmental implications of Cleveland-Cliffs' operations are hard to ignore. The facility discharges an average of 193 million gallons of wastewater daily into our waters, including Lake Michigan.

To mitigate the destructive nature of the wastewater from the Cleveland-Cliffs facility, IDEM should consider/KEY CONCERNS:

1. Environmental Justice: Within a 3-mile radius of these mills, 96% of residents are BIPOC, and 61% are low-income. It is deeply troubling that the draft permits do not even acknowledge these affected residents or consider the impact on their communities. The discharge of solids and oil and grease into Indiana Harbor and Lake Michigan exceeds 5 million pounds per year.

2. Outdated Technology & Requirements: EPA regulations for the steel industry date back to the 1980s, and they haven't seen significant updates. In contrast, water pollution control technology has made substantial advancements over the past 40 years. To protect our community and environment, IDEM should mandate modern treatment technology.

3. Mercury Variance: The draft permits allow for an excess of mercury discharge into Lake Michigan without full consideration of impacts on public health and the environment. Mercury, a highly toxic metal that accumulates in fish, impacting public health. This variance is concerning and should not be allowed.

I request that IDEM take these concerns seriously and reconsider the permits in light of the health, well-being, and environmental impact on our community. Stronger permits and regulations are needed to ensure that we are doing our best to protect our precious resources and vulnerable populations.

I urge you to revise these permits to address the concerns mentioned above. We must ensure that the permits are in line with modern environmental requirements and are sensitive to the unique needs of our community. Our future depends on responsible, sustainable practices that protect our environment and promote environmental justice.

Thank you for considering the voices of concerned residents like me. I

trust that IDEM will make the right decision for the health of our community, the environment, and Lake Michigan.

Response 8: IDEM believes the permit meets the NPDES requirements set forth in the Clean Water Act, federal regulations adopted pursuant thereto, and Indiana Administrative Code Title 327.

Similar comments were submitted by Lori G. Kier, Senior Attorney, Environmental Integrity Project, on behalf of the Environmental Integrity Project ("EIP"). Please refer to Responses 37 through 57.

Comments submitted by Terry Steagall on November 4, 2023, and November 6, 2023.

Comment 9: IDEM held a public hearing at 2 pm Central on Wednesday, Nov. 1 at Unity Center, 3723 Guthrie Street, East Chicago, IN – one for all three water pollution (NPDES) permits for the steel mills in Indiana Harbor East, West, and Central, currently owned by Cleveland-Cliffs Steel. Interested parties, please send in written comments to IDEM by November 16, 2023, comment deadline.

East
Nikki Gardner, Technical Environmental Specialist
(317) 232-8707; ngardner@idem.in.gov

West
Matt Warrener
(317) 233-0798 | mwarrene@idem.in.gov

Central
Jodi Glickert
(317) 447-4176 or jglicker@idem.in.gov

IDEM has an obligation and responsibility to represent the best interest of the people for public safety! Journey to zero pollution is the goal! We have the technology for discharge water to be drinking water quality! Environmental Justice "Sacrifice Zone" from Hammond to Michigan City! Stop Poisoning the Air, the Land, the Water and the People! We need solutions to pollution! What is IDEM doing to facilitate with all the stakeholders the best solutions to our environmental problems to apply for grants?

What is IDEM doing to coordinate a statewide water quality program? IDEM has an obligation and responsibility to represent the best interest of the people for public safety! Journey to zero pollution is the goal! Environmental Justice "Sacrifice Zone" from Hammond to Michigan City! Stop Poisoning the Air, the Land, the Water and the People! We need solutions to pollution! What is IDEM doing to facilitate with all the

stakeholders the best solutions to our environmental problems to apply for grants?

Response 9: Please refer to Responses 1, 5, and 6.

Additionally, Indiana has established water quality standards for all waters of the state of Indiana. Water quality standards applicable to all state waters except waters of the state within the Great Lakes system are found in 327 IAC 2-1. Water quality standards applicable to all state waters within the Great Lakes system are found in 327 IAC 2-1.5.

Comment submitted by Dorreen Carey on November 5, 2023:

Comment 10: I am writing as a resident of Gary and member of Gary Advocates for Responsible Development (GARD) to request an extension of the comment period for the draft renewal of the above referenced three NPDES permits.

Each of these three permits are major industrial wastewater permits discharging to Indiana Harbor and Lake Michigan. Although the Indiana Department of Environmental Management (“IDEM”) provided 45 days’ notice before the comment deadline on November 16, that is only 15 days per permit. I am requesting an additional 45 days (a total of 30 days for each permit) to give the public an opportunity to review these important permits impacting Lake Michigan, and further for the IDEM to schedule and conduct a public meeting where residents can ask and receive answers to their questions.

Therefore, I am requesting that IDEM hold a public meeting, in conjunction with personnel from Cleveland Cliffs, for each of the three NPDES permits in order to inform local communities about the current operations of the wastewater treatment plants, the proposed effluent limits, the volume of effluent and pollutants being discharged from these three facilities, and the facilities’ current and proposed efforts to reduce pollutants entering Lake Michigan. The previously held Public Hearing was not scheduled at a time of day that made it possible for residents to attend and did not allow for resident questions or responses from the IDEM or Cleveland Cliffs. The Public Meeting should be held after 5 pm, when working residents would have an opportunity to attend.

I am also requesting that informational materials and notifications associated with these permits be provided in Spanish and that an interpreter be available at the Public Meetings due to the prevalence of Spanish-speaking residents of East Chicago.

It is important that residents of this region understand the purpose for and impacts that these wastewater permits have on our community health and

the waters and habitats of Lake Michigan. For this reason, IDEM should actively engage the community in this process.

Please let me know if IDEM will extend the comment period and hold one or more public meetings on the draft NPDES permits.

Response 10: Please refer to Response 1.

Comment submitted by Carolyn McCrady on November 6, 2023:

Comment 11: We need an extension of time to review the documents and a public meeting at a time when the public can attend like in the evening!

Response 11: Please refer to Response 1.

Comment submitted by Justin Flores on November 8, 2023.

Comment 12: As long-time residents of East Chicago living in the Harbor and Northside, the Guerra family actively REFUSES the Indiana Department of Environmental Management's proposal to renew Cleveland Cliffs permits to continue discharging wastewater and other harmful pollutants into the Indiana Harbor Canal. Some of us are former employees of Inland Steel, LTV, and Bethlehem Steel and have endured directly the adverse health and environmental impacts these facilities have brought to our community. Enough is enough! Legacy pollutants already burden East Chicago, and for decades, city, state, and federal officials have done little to nothing to address the issue. We are an environmental justice community and continue to endure environmental racism through smog, air pollution, water pollution, food deserts, lack of space for recreation, and a long list of consequential health effects. We have cancer survivors in our family, alongside cases of asthma, upper respiratory issues, autoimmune diseases, mental health disorders, and diabetes, amongst others, all of which have been proven to be linked to air and water pollution. One hundred percent of the water we drink and cook with is bottled because of the lead levels in the water and sensitive immune systems in our family due to past and current facilities dumping toxic pollutants into our drinking water systems. Not only do we understand the impact of this permit renewal on our health, but we're also aware of the significant effects water pollution brings to ecosystems and how it contributes to climate change. We DEMAND that this permit NOT be renewed and will continue to push for equal rights to clean air and water like other wealthier and white communities in Indiana. East Chicago is not a dumping ground; this is our home and our legacy.

Response 12: Please refer to Response 9.

Comment submitted by Harshini Ratnayaka, Save The Dunes, on November 14, 2023:

Comment 13: Save the Dunes, on behalf of itself and its members, respectfully request an extension of the comment period for the draft renewal of the above referenced three NPDES permits. Each of these three permits are major industrial permits discharging to Indiana Harbor and Lake Michigan. Although the Indiana Department of Environmental Management (“IDEM”) provided 45 days’ notice before the comment deadline on November 16, with 3 permits up for renewal that leaves only 15 days per permit. We respectfully request an additional 30 to 45 days, as more time is required to ensure the public has the opportunity to provide community input.

We would like to express our concerns that many of our non-profit partners including ELPC and GARD have conveyed regarding the public meetings, specifically that there was only one in-person meeting in an Environmental Justice Community that took place on a weekday afternoon during work hours. The unfortunate timing of the meeting did not allow for adequate community input, and we humbly ask that these parameters be addressed and considered when scheduling future public meetings. Our organization is focused on educating and empowering our communities to participate in regulatory processes that directly impact their lives, including water permits that have direct ties to water quality in Lake Michigan. In order for community members to feel empowered to take action, they must be given the opportunity to do so that is equitable and accessible, and we feel this was not the case in this instance. In addition, we respectfully request that IDEM hold a public meeting for each individual NPDES permits to inform the local communities about the current operations of the wastewater treatment plants, the proposed effluent limits, and the volume of effluent and pollutants being discharged from these three facilities.

We understand that the timing of this letter may have come too close to the written comment deadline and thus cannot be changed or altered, however we still ask that you as the regulatory body take these comments into consideration for this and future NPDES permit comment periods. Thank you so much for your consideration. If you have any questions, please contact Advocacy Coordinator Harshini Ratnayaka at 219-879-3564 ext. 101 or harshini@savedunes.org.

Response 13: Please refer to Response 1.

Comments submitted by Tina Segura, Legal Associate, Surfrider Foundation, on November 16, 2023.

Comment 14: Cleveland Cliffs’ history of recent exceedances (chlorine) should result in increased monitoring frequency requirements. Proposed monitoring frequency seems concerningly low, especially for mercury which is just

four grab samples/year. We request the draft permit be modified to increase the monitoring frequency to monthly.

Response 14: No changes were made in response to this comment. IDEM believes the current sampling frequency is consistent and appropriate.

Comment 15: Part I (A) 1-7: Effluent Limitations and Monitoring Requirements

The pH limit allows for a very large range of 6 to 9; which is concerning as most aquatic wildlife are highly sensitive to pH changes. See Table 2 for Outfall 011 (p.2), Table 2 for Outfalls 014/013A (p.6), Table 2 for Outfalls 014/013B (p.11), Table 2 for Outfall 018 (p.17)

The discharge limitations on charts for the outfalls do not provide a measurable quantity for each of the pollutants listed, with some just saying “report” where others contain a number. For example, Table 1 for outfall 014/013A shows the quantity for Ammonia N as “report”, T. Cyanide is shown as “report” and Free Cyanide also shown as “report” with no specific quantity. Table 1 for outfall 014/013B lists Ammonia, T. Cyanide, and Free Cyanide as “report” and not as any numerical value. Table 1 for outfall 018, Ammonia is only listed as “report” and shows no numerical value. Numerical values are warranted to achieve compliance with discharge requirements.

Response 15: No changes were made in response to this comment. Effluent limitations have been established in accordance with state and federal NPDES regulations. Limitations for pH meet the more stringent of either the technology-based effluent limitations or water quality-based effluent limitations.

Reporting requirements may be included for pollutants that are known to be present in the discharge but in amounts that have not shown a reasonable potential to exceed (RPE) water quality criteria. Reporting requirements are included to monitor variations in the quantity and/or quality of pollutant(s) discharged and may be used to determine the need for future effluent limitations.

Comment 16: Part I(C)(2): monthly reporting

Part I(C)(2) of the draft permit (p.26-27) describing the monthly reporting requirements states that the permittee shall submit federal and state discharge monitoring reports to IDEM and that the Regional Administrator “may” request the permittee to submit monitoring reports to the EPA “If it is deemed necessary to assure compliance with the permit.” Given the history of exceedances by the permittee, we request that the language be modified to say the permittee “shall” submit these reports to the EPA. While Part II of the draft permit contains additional reporting requirements as standard conditions, we do not believe those to be sufficient for this permittee, as Cleveland Cliffs is also subject to a Consent Decree (“CD”), (USDC IN/ND Case No. 22-CV-26, approved in May 2022). Section H(27) of the CD requires public notification to various entities in the event of an

exceedance of the permit cyanide effluent limits. Thus, we request the federal and state discharge monitoring reports also be submitted to those same entities in the CD.

Response 16: No changes were made in response to this comment. All permit holders in the state of Indiana that are required by an NPDES or Industrial Wastewater Pretreatment (IWP) permit to submit monitoring results must submit the results using NetDMR. In addition, the Monthly Monitoring Report (MMR) must be electronically attached to the NetDMR submission. NetDMR is a U.S. EPA web-based application for submitting monitoring results for the National Pollutant Discharge Elimination System (NPDES) and Industrial Waste Pretreatment (IWP) permits issued by IDEM's Office of Water Quality. Access to NetDMR is now through EPA's Central Data Exchange (CDX). DMR and MMR data and reports are accessible to the public in Indiana's Virtual File Cabinet [IDEM Virtual File Cabinet](#) and the U.S. EPA's Enforcement and Compliance History Online (ECHO) database. [Enforcement and Compliance History Online](#)

The Cleveland-Cliffs Indiana Habor East facility (NPDES Permit IN0000094) is not subject to the referenced Consent Decree. USDC IN/ND Case No. 22-CV-26, approved in May 2022, involves the Cleveland-Cliffs Burns Habor facility (NPDES Permit IN0000175).

Comment 17: Part I(D)(4): technology based effluent limits, non -numeric effluent limits
Part 1(D)(4)(a) of the draft permit (p.32) states that the permittee shall minimize exposure of waste materials to rain, snow, snowmelt, and runoff. The language in this section requires minimizing the exposure of raw, final, or waste materials "[t]o the extent technologically available and economically practicable and achievable. . . ." This is vague and does not contain any guidance or enforceable standards.

Response 17: No changes were made in response to this comment. The requirements in Part I.D of the permit are, for the most part, general in nature, and require the permittee to design a site-specific program tailored to its facility.

Permit Part I.D. includes two guidance documents references and links: <https://www.in.gov/idem/stormwater/resources/indiana-storm-water-quality-manual/> and <https://www.epa.gov/npdes/stormwater-discharges-industrial-activities>. Section 5.7 of the Fact Sheet refers EPA guidance document, "Developing your Stormwater Pollution Prevention Plan – A guide for Industrial Operators (EPA 833-B09-002), February 2009, as well.

Actions taken by the facility to comply with Part I.D of the permit are documented in the Storm Water Pollution Prevention Plan (SWPPP) in accordance with Part I.E of the permit. Compliance with the requirements of Parts I.D and I.E of the permit is determined during on-site inspections by IDEM.

Comment 18: Part I(D)(4)(e) erosion and sediment controls:

The language (p.34) contains some required actions, but says: in selecting, designing, installing, and implementing appropriate control measures, you are “encouraged to check out information” from both the state and EPA websites and links to two websites for guidance. The language could be strengthened by requiring certain BMPs or standards. As written, it seems difficult to enforce.

Response 18: Please refer to Response 17.

Comment 19: Part I(D)(4)(f) management of runoff

The draft permit (p34) Merely states: “Divert, infiltrate, reuse, contain or otherwise reduce stormwater runoff, to minimize pollutants in the discharge.” This language is vague and if there are specific measures or BMPs that permittees are required to abide by, those should be included here.

Response 19: Please refer to Response 17.

Comment 20: Part I(D)(4)(k) Dust Generation and Vehicle Tracking of Industrial Materials The draft permit (p.36) states: You must minimize generation of dust and off-site tracking of raw, final, or waste materials. This is vague and contains no standards or guidance by which to abide If there are BMPs the permittee should adhere to, or other required standards, those should be referenced here.

Response 20: Please refer to Response 17.

Comment 21: Part I(D)(7): Corrective Action Deadlines

This section (p.37) states: “you must document your discovery of any of the [Corrective action conditions requiring review] listed in Part I.D.6 within 30 days of making such discovery.” And “within 120 days of such discovery, you must document corrective action(s) to be taken. . . .” We request that these timeframes be shortened to documenting such discovery within 24 hours of the discovery, and documenting corrective action within 60 days.

Response 21: No changes were made in response to this comment. IDEM believes the current timeframes are appropriate and is consistent with other similarly issued NPDES permits in Indiana.

Comment 22: Part I(D)(8) Corrective Action Report

This section (p. 37) states, “within 30 days of a discovery of any condition listed in Part I.D.6, you must document [certain] information.” One of the corrective action conditions listed in Part I.D.6(1) includes the unauthorized release or discharge (spill, leak, or discharge of non-stormwater not authorized by the NPDES permit). Occurrence of such

spill, leak, or discharge could be harmful to human health and it is important that such conditions be documented immediately and corrective action identified in a much quicker timeframe. As such, we request that the timeframe be shortened to require documentation within 24 hours. Further, there is no requirement that these reports be made available to the public, and dissemination of this information is critical to the health and safety of the public, thus we request that the Report documenting the discovery of any condition listed in Part I.D.6 be submitted to the agencies listed in Section (H)(27) of the CD No. 22-CV-26, May 2022, within 48 hours of documentation.

Response 22: No changes were made in response to this comment. The language contained in these sections are consistent with other similarly issued NPDES permits in Indiana. Furthermore, CD No. 22-CV-26, May 2022, does not involve this facility.

Comment 23: Part I(D)(9)(a) Quarterly Inspections

The draft permit (p.38) states, “consider monitoring air flow at inlets and outlets (or use equivalent measures) to check for leaks (e.g. particulate deposition) or blockage in ducts.” We are concerned with the use of the word “consider” and request that the word be removed to make this condition more enforceable by *requiring* monitoring of the air flow to check for leaks or blockage.

Response 23: Please refer to Response 17. Additionally, specific conditions related to air flow are beyond the scope of a NPDES permit.

Comment 24: Part I(E)(2)(d) Stormwater Pollution Prevention Plan (SWPPP)

The draft permit as written provides that the permittee is required to revise and update its SWPPP for the facility, and that the plan shall be retained at the facility and be available for review by a representative of the commissioner upon request (p.46). Further stating that IDEM *may* provide access to portions of your SWPPP to the public. We request that the SWPPP be required to be made available to the public, either by IDEM or by the permittee directly.

Response 24: Section 5.7 of the Fact Sheet provides additional information on the public availability of this the SWPPP:

“Part I.E.2.d(2) of the permit requires that the permittee retain a copy of the current SWPPP at the facility and make it immediately available, at the time of an onsite inspection or upon request, to IDEM. When submitting the SWPPP to IDEM, if any information in the SWPPP is considered to be confidential, that information shall be submitted in accordance with 327 IAC 12.1. Interested persons can request a copy of the SWPPP through IDEM. Any information that is confidential pursuant to Indiana law will not be released to the public.”

SWPPPs submitted to IDEM are made available to the public in Indiana's Virtual File Cabinet. [IDEM Virtual File Cabinet](https://www.in.gov/idev/virtual-file-cabinet/) Alternatively, a public records request may be submitted. Details on that process are found here: <https://www.in.gov/idev/legal/public-records/>.

Comment 25: Part I(F)(1)(e) Whole Effluent Toxicity Testing Requirements: Reporting Part I(F)(1)(e) The draft permit contains requirements for notifications of the failure of 2 consecutive tests and implementation of a toxicity reduction evaluation ("TRE"), and states that the notifications and intent to implement a TRE must be submitted in writing to IDEM (p.50). We also request the same notifications be sent to the agencies listed in the CD No. 22-CV-26, Section H(27), dated May 2022.

Response 25: No changes were made in response to this comment. The Cleveland-Cliffs Indiana Harbor East facility (NPDES Permit IN0000094) is not subject to USDC IN/ND Case No. 22-CV-26.

Comment 26: Part I(F)(2) Toxicity Reduction Evaluation (TRE) Schedule of Compliance: The draft permit states that progress reports must be submitted every 90 days beginning six months from the date of 2 consecutive failed toxicity tests (p.55). We request that the first progress report be submitted in a shorter timeframe - within 3 months (90 days) rather than within 6 months. This information is repeated in Part I(F)(2)(d), the Reporting requirements (p.57), and should be shortened to begin 3 months from the date of 2 consecutive failed toxicity tests here as well.

Response 26: No changes were made in response to this comment. The time frames contained in this section are consistent with other similarly issued NPDES permits in Indiana.

Comment 27: Part I(F)(2)(e) Compliance Date
The draft permit (p.57) further states the permittee must complete Part I(F)(2)(a)-(d) and reduce toxicity in the effluent discharge to acceptable levels as soon as possible, but no later than 3 years from the date that toxicity is initially demonstrated in 2 consecutive toxicity tests. We request that the three years' timeframe for compliance be reduced to 1 year.

Response 27: Please refer to Response 26.

Comment 28: Part I(I) Reporting Solvents, Degreasing Agents, Rolling Oils, Water Treatment Chemicals, and Biocides
The draft permit requires the permittee maintain information about the quantity of each solvent, degreasing agent, rolling oil, water treatment chemical, and biocide that was purchased for that year and which can be present in any outfall regulated by the permit and report to IDEM "if requested". We request that the permittee be required to provide this information to public agencies listed in the CD No. 22-CV-26, Section

H(27), dated May 2022. This is information that should be made available for public review at IDEM as well.

Response 28: No changes were made in response to this comment. The Cleveland-Cliffs Indiana Harbor East facility (NPDES Permit IN0000094) is not subject to USDC IN/ND Case No. 22-CV-26. Solvents, Degreasing Agents, Rolling Oils, Water Treatment Chemicals, and Biocides reports submitted to IDEM are available to the public in Indiana's Virtual File Cabinet. [IDEM Virtual File Cabinet](#) Alternatively, a public records request may be submitted. Details on that process are found here: <https://www.in.gov/idem/legal/public-records/>.

Comment 29: Part I(S)(2) Schedule of Compliance: Outfall 018

The draft permit states the permittee shall achieve compliance with the effluent limitations specified for free cyanide at Outfall 018 within a certain schedule. The draft permit states that if the permittee fails to comply with any deadline contained in the schedule, then the permittee shall submit a written notice of noncompliance to the Compliance Data Section of the OWQ stating the cause of noncompliance, remedial action taken/planned, and probability of meeting the date fixed for compliance with final effluent limitations (p.632). We request that the permittee be required to submit this written notice to the public agencies listed in the CD No. 22-CV-26, Section H(27), dated May 2022. This is information that should be made available for public review at IDEM as well.

Response 29: No changes were made in response to this comment. The Cleveland-Cliffs Indiana Harbor East facility (NPDES Permit IN0000094) is not subject to USDC IN/ND Case No. 22-CV-26. Reports submitted to IDEM are available to the public in Indiana's Virtual File Cabinet. [IDEM Virtual File Cabinet](#)

Comment 30: Part I(U) Reopening Clauses

The draft permit (p. 65) provides that the permit may be modified, or alternatively, revoked and reissued, after public notice and opportunity for hearing for 11 listed reasons. We request that IDEM modify the draft permit to also include a requirement of immediate modification of the facility's NPDES to be inclusive of/consistent w/any future consent decrees, court orders, or enforcement actions entered into by Cleveland Cliffs. The draft permit does not currently reflect that Cleveland Cliffs is subject to a consent decree, and should include a reopening clause for other future legal action including consent decrees.

Response 30: No changes were made in response to this comment. A reopener is not required for the permit to be modified in response to future consent decrees, court orders, or enforcement actions. This Cleveland Cliffs facility is not currently subject to a consent decree.

Comment 31: Since the following are listed as standard conditions, if these cannot be modified in the corresponding sections in Part II, we request that the information contained in the comments below be incorporated into the permit in the appropriate location in Part I of the draft permit.

Part II(C)(3) Reporting Requirements

This section (p. 77) requires the permittee to orally report noncompliance within 24 hours from the time permittee becomes aware of such noncompliance, listing several instances of noncompliance to be included. Part II(C)(3)(d) includes “violation of a maximum daily discharge limitation for any of the following toxic pollutants: Mercury, Free Cyanide, Total Cyanide, Hexavalent Chromium, Zinc, Nickel, and Copper. Ammonia is not included in this list, and we request that it be added here or that violations of maximum daily discharge limitations of ammonia be required to be reported within 24 hours elsewhere in this permit.

Part II(C)(3) also requires that a written submission shall be provided within 5 days of the time the permittee becomes aware of the circumstances, describing the noncompliance and its cause. We request that the permittee provide a written submission within 24 hours of noncompliance of any of the conditions listed in Part II(C)(3)(a)-(d).

Response 31: It appears that the commenter referenced a permit other than the Indiana Harbor East. Part II(C)(3)(d) of permit number IN0000094 states:

Violation of a maximum daily discharge limitation for any of the following toxic pollutants: mercury, lead, zinc, naphthalene, tetrachloroethylene, total cyanide, or phenols. However, IDEM will add Ammonia and Free Cyanide to this reporting requirement.

Written submission requirements comply with state and Federal requirements; therefore, no further changes will be made.

Comment 32: Part II(C)(5) Other Information

The draft permit (p. 78) states that where the permittee becomes aware of a failure to submit any relevant facts or submitted incorrect information in a permit application or in any report, the permittee shall “promptly submit” such facts or corrected information to the Commissioner. We request that the permittee be required to report any such facts or information within 24 hours of becoming aware of incorrectly submitted facts or information to the Commissioner.

Response 32: No changes were made in response to this comment. Permit Part II.C.5. complies with 327 IAC 5-2-8(11)(E).

Comment 33: Part II(7) Availability of Reports

The draft permit standard conditions (p.80) state that all reports prepared in accordance with the terms of this permit shall be available for public

inspection at the offices of IDEM and the Regional Administrator. We request that the applicant be required to make all reports prepared in accordance with the terms of the permit available for public inspection on a website. This would help make the information more readily available and accessible to the public beyond those local inhabitants who live nearby the IDEM and Regional Administrator's office.

Response 33: No changes were made in response to this comment. All non-confidential documents and reports are available to the public in Indiana's Virtual File Cabinet. [IDEM Virtual File Cabinet](https://www.in.gov/idev/virtual-file-cabinet/). Alternatively, a public records request may be submitted. Details on that process are found here: <https://www.in.gov/idev/legal/public-records/>.

Comments submitted by Christine Glaser on November 16, 2023.

Comment 34: I am writing to express my concerns about the NPDES permit renewals for Cleveland Cliffs steel plants at Indiana harbor.

- 1) It is my understanding that IDEM can mandate the use of more effective treatment technology for certain pollutants that these steel plants release because these technologies have continued to advance...and are available and affordable.

I urge you to make sure that these latest technologies are mandated as part of the permit renewal - to cut down on pollution as much as technically possible.

- 2) I miss an environmental justice analysis in the draft permit, including an EJ screen analysis, and urge you to conduct such an analysis as part of the permit renewal - to identify the effects of the permit renewal especially on vulnerable populations, and then to mandate Cleveland Cliffs to cut back on the discharges that undermine the health of the affected populations.

- 3) In the draft permits, I do not see an analysis of how local residents, many of them BIPOC, are impacted by the pollution that the steel mills release, especially in the light of all the other polluters that are present in the area.

Please conduct a cumulative analysis that includes not just the steel mills and devise a plan of how to reduce their cumulative burdens of pollution on impacted communities.

I have often marveled at the fact that after half a century of environmental laws that were passed in the 1970s, it is possible that we still have areas, like NW Indiana, that continue to be burdened

with heavy loads of pollution of air and soil and water, although, as a country overall, on average, there has been significant progress.

I therefore urge you to hold the permit renewals until a cumulative analysis has been conducted, and then mandate the necessary reductions in emissions so that the results are protective of the local population and the health of Lake Michigan.

- 4) I am especially disturbed by the fact that IDEM continues to allow the steel mills to release high levels of mercury into Indiana waters, based on a mercury variance, thereby contaminating fish and endangering the health of residents who fish in the area.

I urge IDEM to reveal what federal and state laws/regulations that govern the justification of such variances have been considered, and how IDEM came to the conclusion that the variances are justified.

- 5) I was disappointed that IDEM did not extend the comment periods for the three Cleveland Cliffs permits and did not hold public meetings, and also did not make an effort to translate the technical language (in the Nov. 1 slide presentation) into something that people can understand even if they are not lawyers, engineers or chemists or technical experts.

I urge IDEM to extend the comment period beyond Nov. 16, hold public in-person meetings (with access through zoom as well) and publicly address the important issues that groups with the necessary legal and technical expertise are bringing up in their comments (in language that can be commonly understood!)

Response 34: Please refer to Responses 1, 37, 41, and 52 - 55.

Comments submitted by Betsy Maher, Executive Director, Save the Dunes, on November 16, 2023.

Comment 35: Save the Dunes, on behalf of its members, would like to respectfully submit these comments pertaining to the draft renewal specifically for NPDES Permit Number: IN0000094.

Save the Dunes has long been an advocate for clean and healthy water in our region. Through our collaborative approach with other local non-profit partners, we have worked towards establishing a “culture of pollution prevention” in Northwest Indiana. We would like to express our concerns that many of our non-profit partners, including the Environmental Law and Policy Center and Gary Advocates for Responsible Development, have

conveyed regarding the public meetings, specifically that there was only one in-person meeting in an environmental justice community that took place on a weekday afternoon during work hours. We believe that the issue of these specific permits having been expired since August 2022, combined with the unfortunate timing of the meeting, led to a lack of adequate community input, and we ask that these parameters be addressed and considered when scheduling future public meetings.

Our organization is focused on educating and empowering our communities to participate in regulatory processes that directly impact their lives, including water permits that have direct ties to water quality in Lake Michigan. In order for community members to feel empowered to take action, they must be given the opportunity to do so that is equitable and accessible, and we feel this was not the case in this instance. In addition, we believe that IDEM should have held a public meeting for each individual NPDES permit to inform the local communities about the current operations of the wastewater treatment plants, the proposed effluent limits, and the volume of effluent and pollutants being discharged from these three facilities.

Response 35: Please refer to Response 1.

Comments submitted by Dorreen Carey on November 16, 2023.

Comment 36: I am writing as a resident of Gary and member of Gary Advocates for Responsible Development (GARD). Gary residents, along with millions of residents of the Lake Michigan watershed drink the water of Lake Michigan, a precious resource that should be protected at the highest level today and into the future. Many residents of NW Indiana, including me and other members of Gary Residents for Responsible Development (GARD), previously requested that the IDEM extend the comment period and hold a public meeting that residents could attend to ask questions about the draft NPDES permits and receive answers from the IDEM and Cleveland-Cliffs. We further requested that information in the public notice and future meetings be translated into Spanish to better inform Spanish speaking residents of our local communities. The IDEM denied these requests.

The previously held Public Hearing was not scheduled by the IDEM at a time of day that made it possible for residents to attend and did not allow for resident questions or responses from the IDEM or Cleveland Cliffs. The IDEM should schedule Public Meetings on all major permits issued in NW Indiana. The Public meetings should be held after 5 pm, when working residents would have an opportunity to attend.

It is important that residents of this region understand the purpose for and impacts that the current wastewater permits have on our community health and the waters and habitats of Lake Michigan. For this reason,

IDEM should have more actively and meaningfully engaged the community in this process.

For over one hundred years, the steel mills and other shoreline heavy industries have polluted the air, land, and water of Gary, and NW Indiana environmental justice communities. If residents and communities are to receive the protection of health and environment that should be guaranteed through the responsibility and authority of our government agencies, the IDEM must engage the community upfront in their decision-making process, assess the cumulative impact of legacy and current pollution, and continuously reduce the pollutants discharged by industry, through improved technology, work practices, and strong enforcement. Simply maintaining the status quo is not acceptable. We deserve better, IDEM must do better.

With that in mind, I am in support of the following summary of comments and recommendations prepared by the Environmental Integrity Project and the Environmental Law and Policy Center.

Recommendations

1. **Conduct environmental justice analysis** to include analysis of existing demographic and public health data and mitigation available to address adverse effects.
2. **Conduct cumulative impacts analysis** to protect the water quality of receiving streams and the public health of local communities due to the number of other local dischargers.
3. **Greater Public Engagement:** Hold a public meeting, together with Cleveland-Cliffs Steel, to answer questions from the local community. Provide Spanish translation.
4. **Improve treatment** that improves the removal of total suspended solids, including the use of chemical precipitation, that will also reduce the discharge of heavy metals. Improve treatment technology to remove oil and grease and ammonia that reflects the best treatment technology. Specifically, Indiana Harbor Central should install membrane filtration, ion exchange, and/or reverse osmosis to its current treatment system just prior to discharge to Lake Michigan. See Table in Attachment A for improved treatment proposals for specific discharges.
5. **Install oil/water separators** for all wastewater and stormwater discharges.
6. **Consider treatment of No. 2 Galvanizing Line effluent** by Indiana Harbor West, thereby eliminating the need for the Central Treatment Facility unless and until U.S. Steel's East Chicago Tubing Operations restart.
7. **Establish site-specific technology-based effluent limits** applying best professional judgment.

8. **Establish measurable and enforceable obligations** of any requirements designed to prevent exceedances of water quality standards.
9. **Add performance metrics** to stormwater portion of permit that are measurable and enforceable.
10. **Include wasteload allocation calculations** for total suspended solids in permit.
11. **Expand the analysis** of permittee's streamlined mercury variance to reflect all applicable federal and state requirements.
12. **Include in Renewal Permit** a copy of permittee's completed application for streamlined mercury variance.
13. **Add requirement to notify IDEM** within a specific time frame prior to restarting operations at U.S. Steel's East Chicago Tubing Operations.
14. **Add to the NPDES Permit** an express prohibition on the discharge of unpermitted pollutants.
15. **Monitor for PFAS contamination.** Specifically, add sampling and monitoring requirements for PFAS in all internal and external outfalls, investigate their source, and mitigate where to the extent feasible.
16. **Require submission of State Form 50000** (Application for Approval to Use Water Treatment Additives) within a prescribed number of days before any water treatment additive is used.

Response 36: The agency provided an extended public comment period (45 days vs. 30 days) as well as an in-person public hearing on November 1, 2023, to provide expanded participation opportunities. A copy of the PowerPoint presentation from the public hearing was also posted online: <https://www.in.gov/ideM/resources/lake-michigan-sites-of-interest/cleveland-cliffs-indiana-harbor-long-carbon/>. IDEM believes the permit meets the NPDES requirements set forth in the Clean Water Act, federal regulations adopted pursuant thereto, and Indiana Administrative Code Title 327.

Please note that IDEM has an Environmental Stakeholder Inclusion program to ensure that interested stakeholders are included and represented in agency actions. Within IDEM, an environmental stakeholder inclusion coordinator works with the agency's program areas to enhance environmental stakeholder involvement in the regulatory processes administered by the agency. The environmental stakeholder inclusion coordinator assists agency staff with fulfilling requests from external stakeholders for services such as translation and interpretation services. The Permits Branch communicated with the Environmental Stakeholder Program throughout the Public Hearing process. If you would like additional information on the program, or to request assistance, please visit this webpage: <https://www.in.gov/ideM/health/environmental-stakeholder-inclusion/>.

To maximize time to review future public notices, IDEM recommends that concerned citizens sign up for IDEM's notification service to receive SMS

and/or email messages whenever a permit action, such as a Public Notice, takes place. You may sign up using the following link:
<https://www.in.gov/idem/subscribe-to-idem-updates/>.

Recommendation Nos. 6 and 13 above do not apply to the Indiana Harbor East facility and will be addressed in the Post Public Notice Addendum for the appropriate permit(s).

Similar comments were submitted by Lori G. Kier, Senior Attorney, Environmental Integrity Project, on behalf of the Environmental Integrity Project (“EIP”). Please refer to Response 1 and Responses 37 through 57.

Comments submitted by Lori G. Kier, Senior Attorney, Environmental Integrity Project, on behalf of the Environmental Integrity Project (“EIP”), Environmental Law and Policy Center (“ELPC”), Surfrider Foundation (“Surfrider”), Conservation Law Center, Just Transition Northwest Indiana, National Parks Conservation Association, Northwestern University School of Law, Industrious Labs, and Gary Advocates for Responsible Development on November 16, 2023.

Comment 37: Introduction and Overview

The Environmental Integrity Project, Environmental Law and Policy Center, Surfrider Foundation, Conservation Law Center, Just Transition Northwest Indiana, National Parks Conservation Association, Northwestern University School of Law, Industrious Labs, and Gary Advocates for Responsible Development (collectively “Commenters”) respectfully submit the comments below to the Indiana Department of Environmental Management (“IDEM” or “the Department”) on its tentative determination to renew the NPDES Permit for Cleveland-Cliffs LLC Indiana Harbor East Treatment Plant (“the Facility”) (NPDES No. IN000094) (“Draft Permit”). Commenters appreciate the hard work that has gone into drafting the Permit, and have identified the following issues in particular that should be addressed before it is finalized:

- Need to consider environmental justice implications of permit renewal
- Need to develop site-specific technology-based effluent limits and modern water treatment technology specific to these operations
- Need to develop expanded record of review of application for Streamlined Mercury Variance

When the Clean Water Act was enacted in 1972, Congress declared that it was “the national goal that the discharge of pollutants into navigable waters be eliminated by 1985.” 33 U.S.C. § 1251(a)(1). This goal was to be reached, in part, by a nationwide permitting system — called the National Pollutant Discharge Elimination System (“NPDES”) — that would gradually lower the amount and concentration of pollutants that municipalities and industries discharged into public waters as the

technology improved. Much of the CWA, in fact, dealt with promoting and funding research into wastewater treatment technologies. In the 50 years since passage of the CWA, treatment technology has made significant improvements, but we have not come close to eliminating the discharge of pollutants into our public waters because we have not always use of the latest treatment technologies.

The renewal of NPDES permits provides IDEM the opportunity to evaluate whether a permitted facility is using the latest treatment technology to reduce its discharge of pollutants. Absent any requests for modification, this chance is presented to the Department only once every five years, so it is incumbent on IDEM — and the public it serves — to rigorously assess the current water quality of the public waters into which pollutants are discharged, the toxicity and amounts of those pollutants, and the treatment systems used to limit those discharges. Fortunately, IDEM has the technical expertise and the analytical tools to conduct this rigorous assessment. The Commenters document here how such a rigorous assessment, consistent with federal and state law, should be performed so that Cleveland-Cliffs is required to install modernized technology to meet lower limits that are justified by the existence of such technology along with the importance of Lake Michigan and the nearby communities.

To be clear, the Commenters do not categorically oppose the renewal of these permits, but ask that they be improved to reflect the real dangers posed by Cleveland-Cliffs' pollutants to the priceless national resource that is Lake Michigan and to the overburdened communities that rely on it for drinking water, food, recreation and enjoyment. Industry can no longer be allowed to despoil our public waters for personal gain when the present and potential future harm is so grave, nor should it be allowed to rely on outdated technology in controlling these pollutants when more advanced options are available.

Background: Receiving Waters and Neighboring Communities

To understand the impacts of Cleveland-Cliffs Steel's discharges on the environmental justice community, it is important to understand, initially, that this Facility (together with Cleveland-Cliffs Steel LLC — Indiana Harbor Central ("Central Facility") and Cleveland-Cliffs Steel LLC — Cleveland Cliffs West ("West Facility")) is within the Great Lakes Restoration Initiative's ("GLRI") Grand Calumet River Area of Concern. According to the U.S. Environmental Protection Agency ("EPA"):

The Grand Calumet River is in one of the most heavily industrialized areas in the United States, flowing mainly through northwestern Indiana. Beginning in the 20th century the area began experiencing an influx of steel mills, foundries, chemical plants, oil refineries, meat packing industries, and pharmaceutical industries. Prior to the 1972 Clean Water

Act, industries released industrial waste and some nearby cities discharged untreated sewage into the river. In addition, potential nonpoint sources of contaminants, such as industrial and urban runoff may have affected water quality in the river.¹

There are at least a dozen other active IDEM NPDES permits authorizing discharge to the Indiana Harbor Ship Canal (including the receiving waters of Indiana Harbor Canal, Lake George Canal (a part of the Indiana Harbor Canal), and Lake Michigan via Indiana Harbor Ship Canal), including the three Cleveland-Cliffs facilities currently undergoing permit renewals.² Despite being just one of many sources of water pollution in the region, the Cleveland-Cliffs East Facility's discharges are significant when taken together with the nearby Central and West Facilities. Table A below shows the Annual Maximum Environmental Load using daily maximum loads allowed by the Draft Permit, if discharged 365 days/year, for all three facilities.³ To visualize the size of the loading, the three sites are capable of discharging more than 5,000 tons/year of total suspended solids ("TSS") and oil and grease ("O&G") alone (the heavy metals in Table A will be in the solids). This is *more than 350 large dump truck loads each year into the Indiana Harbor Canal and to Lake Michigan*.⁴

Table A
Pollutants Discharged by Cleveland-Cliffs Indiana Harbor Facilities Per Year (in pounds)

Annual Maximum Environmental Load Cleveland Cliffs All	
<i>Lbs/yr</i>	<i>Pollutant</i>
0.97	Mercury
11,348	Lead
111,931	Zinc
7,787,385	TSS
2,258,510.5	O&G
62,050	Total Chrome

As of July 2022, Indiana ranked last among Midwest states in protecting vulnerable communities from pollution,⁵ and — if the Draft Permit is issued as proposed — it could become another manifestation of that fact. As currently written, the Draft Permit fails to adequately control contaminants that threaten the health and safety of vulnerable residents in the vicinity of the Facility and receiving waters, such that already overburdened communities would experience disproportionate impacts from this increased pollution.

While we are concerned about the volume and characteristics of pollution entering the water from this Facility, we acknowledge that industry can co-exist with residents — even in the most vulnerable populations — if steps are taken to prevent over-burdening nearby communities. The more industry there is in an area, however, the more precautions that are

needed to ensure that local residents are not shouldering a disproportionate burden to serve the needs of all. The East Facility primarily serves the steel industry, which is undeniably important to Lake County, Indiana, and the nation. That importance, however, does not justify its operation without regard to the surrounding communities, which is why environmental laws and regulations exist. Those provisions, designed to protect the environment and public health and welfare, must be rigorously enforced and environmental justice considerations in particular must be taken into account:

- **Environmental Justice Analysis.** IDEM should conduct an environmental justice analysis of appropriate scope to inform the permitting decision, for example by using an Environmental Justice Assessment (before reissuance of the Permit).⁶ This analysis should include an EJ Screen analysis,⁷ input from the affected community to identify their concerns, an evaluation of existing environmental data, and an evaluation of existing demographic and public health data about the community. The analysis should evaluate the effects that the Permit, as renewed, will have on the community, and the degree to which these effects will be disproportionately high and adverse. Furthermore, the analysis should discuss mitigations to be included in the permit that would be expected to address any identified adverse effects.
- **Cumulative Impact Analysis.** IDEM should conduct a cumulative impact analysis to determine the Facility's impact on the affected communities. A cumulative impact analysis could demonstrate that the permit will be protective of health and the environment in those communities. Due to the number of dischargers in the same receiving waters, a cumulative impact analysis is appropriate.
- **Mitigation.** IDEM should consider opportunities to address disproportionately high and adverse effects that extend beyond the scope of the NPDES permitting decision utilizing a whole-of-government approach by working with the permittee and local officials to reduce impacts on the surrounding neighborhood.
- **Greater Public Engagement.** IDEM has indicated publicly that it values environmental stakeholder inclusion.⁸ The Department should hold a public meeting in East Chicago – in addition to the November 1, 2023 public hearing which was held specifically on the Draft Permit – to hear and answer questions and comments from local residents regarding the Facility. It is important that the meeting for the public be held at a time and location to make it accessible to the surrounding community, most of whom have jobs during the work day that they cannot afford to miss. Additionally, the meeting announcement should be in both English and Spanish, and Spanish language interpreters

should be available at the meeting, since the community in the vicinity of the Facility is more than 50% Hispanic or Latino.⁹ Commenters further recommend that responsible officials from Cleveland-Cliffs attend. A public meeting could help dispel some concerns and raise understanding among local residents and apprise the company of its role and impact on the community.

Our remaining comments stand alone from, but are influenced by, our recommendations regarding environmental justice. The additional comments are not, however, exhaustive of the ways in which the Draft Permit could be amended to mitigate the impact to the environment and local residents. We encourage IDEM and Cleveland-Cliffs, based on their superior knowledge of the Facility's operations and emissions, to seek out and implement ways to reduce the Facility's adverse impacts. The comments are organized in numbered sections that correspond with the sections of the Facility's Draft Fact Sheet.

Response 37: No changes were made in response to this comment.

Environmental justice: IDEM believes the permit meets the NPDES requirements set forth in the Clean Water Act, federal regulations adopted pursuant thereto, and Indiana Administrative Code Title 327. Currently, applicable regulations do not require Environmental Justice analyses, nor do they include requirements for implementation in NPDES permits. Water quality standards are established for the entire state. Indiana adopted water quality standards, antidegradation policies, and implementation procedures for waters within the Great Lakes system consistent with U.S. EPA Great Lakes Water Quality Guidance on January 14, 1997. Indiana's water quality standards, antidegradation policies, and antidegradation implementation procedures applicable within the Great Lakes system are codified at 327 IAC 2-1.5 and 327 IAC 2-1.3, respectively. These standards, policies and procedures are applied to all dischargers and discharges within the Great Lakes system, including, the subject facilities.

Cumulative impacts analysis: IDEM believes the permit meets the NPDES requirements set forth in the Clean Water Act, federal regulations adopted pursuant thereto, and Indiana Administrative Code Title 327. IDEM recognizes that conducting a Cumulative Impact Analysis is an evolving science and a subject of current research by EPA. However, applicable regulations do not require a Cumulative Impact Analysis, nor do they include requirements for implementation in NPDES permits. Regardless, the multi-discharger wasteload allocation analysis completed for renewal of these NPDES permits calculated water quality-based effluent limitations which protect the water quality of the receiving stream. The water quality-based effluent limitations are designed to ensure water quality criteria

based on the protection of aquatic life, human health, and wildlife are met in the receiving waters. Pollutants contributed by all upstream facilities are considered in the development of water quality-based effluent limits, in the form of background concentrations. Background concentrations of pollutants help determine the assimilative capacity of the receiving water. Assimilative capacity is the amount of pollutant a waterbody may accommodate without causing the concentration of that pollutant to be greater than the water quality criteria for that pollutant.

Additionally, IDEM conducts routine water quality monitoring in the Indiana Harbor Canal, Indiana Harbor and in Lake Michigan at public water system intakes that measures the cumulative impacts from multiple sources. The data provide long-term water quality trends and can be used to assess these waters for compliance with water quality standards for chemical parameters.

Greater Public Engagement: In accordance with 327 IAC 5-3-9, the agency provided an extended public comment period (45 days vs. 30 days) as well as an in-person public hearing on November 1, 2023, to provide expanded participation opportunities. A copy of the PowerPoint presentation from the public hearing was also posted online: <https://www.in.gov/idem/resources/lake-michigan-sites-of-interest/cleveland-cliffs-indiana-harbor-long-carbon/>.

IDEM hired a Spanish-speaking interpreter who was present at the Public Hearing on November 1st. IDEM values the importance of offering communication and interpretation services whenever necessary and will continue to strive to meet public communication needs.

Please note that IDEM has an Environmental Stakeholder Inclusion program to ensure that interested stakeholders are included and represented in agency actions. Within IDEM, an environmental stakeholder inclusion coordinator works with the agency's program areas to enhance environmental stakeholder involvement in the regulatory processes administered by the agency. The environmental stakeholder inclusion coordinator assists agency staff with fulfilling requests from external stakeholders for services such as translation and interpretation services. The Permits Branch communicated with the Environmental Stakeholder Program throughout the Public Hearing process. If you would like additional information on the program, or to request assistance, please visit this webpage: <https://www.in.gov/idem/health/environmental-stakeholder-inclusion/>.

To maximize time to review future public notices, IDEM recommends that concerned citizens sign up for IDEM's notification service to receive SMS and/or email messages whenever a permit action, such as a Public

Notice, takes place. You may sign up using the following link:
<https://www.in.gov/idem/subscribe-to-idem-updates/>.

Comment 38: Outfall Descriptions and Wastewater Treatment - Current Treatment Systems and Authorized Pollutants

The Draft Permit authorizes the discharge of groundwater from the East facility through Outfall 011. Draft Permit at p. 2. During emergency situations, groundwater may be discharged through Outfall 013. *Id.* at p. 5. The Draft Permit also covers Outfall 014, but “is limited [to] blowdown from the Main Recycle System and stormwater. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into the Indiana Harbor Turning Basin. Such discharge shall be limited and monitored by the permittee as specified below:

The Main Recycle System consists of process and cooling water from hot forming operations (80” hot strip mill); pickling operations (No. 5 pickle line, continuous anneal line); cold rolling mills (80” tandem mills; Nos. 28 and 29 temper mills); alkaline cleaning; No. 5 hot dip galvanizing line; treated sanitary wastewaters from the No. 1, No. 2, and No. 3 sewage treatment plants, and Plant 2 former coke plant remediation system discharge.

Id. In other words, the list of covered discharges for Outfall 014 does not indicate that groundwater discharge is authorized, so it is not permitted through that outfall. (Please see discussion below under “Overall Recommendations for Improved Treatment Systems” and Section 5.0, Permit limitations, “Unpermitted Discharges Should be Expressly Prohibited” for additional authority for the lack of coverage for unpermitted discharges).

The Draft Permit implicitly recognizes the contribution of pollutants through its groundwater discharges: it includes continuation of a Groundwater Remediation Project, which involves treating groundwater from the Plant 3 former coke plant groundwater remediation system, which then discharges through granular activated carbon filtration. Draft Permit at p. 58; Draft Fact Sheet at Section 6.3.2 The fact that the Facility has chosen a carbon filtration process suggests at least a recognition of its contribution to contaminants discharged to Indiana Harbor and Lake Michigan. While the Facility voluntarily tests groundwater for volatile organic compounds (“VOCs”) and semi-volatile organic compounds (“SVOCs”) prior to discharge from Outfall 014, no information is available in the Draft Permit package to identify specific chemicals or data that supports the efficacy of the Facility’s carbon filtration system.

Response 38: “Groundwater” was unintentionally omitted in the discharge descriptions for Outfalls 014 and 018. The discharge descriptions have been corrected in the final Permit and Fact Sheet.

The “Discharge of Remediation Project Ground-Water 90-Day Chemical Background Study” is available in Indiana’s Virtual File Cabinet (VFC #83567447). The permittee also provided the last 5 years of flow and testing data, included below. This information will also be included as part of the complete permit application package to be uploaded to VFC. [IDEM Virtual File Cabinet](#)

Table C-2
C Battery Ground-Water Treatment System Results
SYSTEM INFLUENT (PRIOR TO CARBON TREATMENT)

Date	Sample Locn	Sample ID	CONSTITUENT CONCENTRATION IN UNTREATED GROUND WATER [Filter Inlet] (ug/L)																				
			BENZENE	ETHYL BENZENE	TOLUENE	XYLENES, TOTAL	1,2-DICHLOROETHANE	CARBON DISULFIDE	STYRENE	TRICHLOROETHYLENE	ACETONE***	BROMOMETHANE***	CHLOROMETHANE***	METHYLENE CHLORIDE***	NAPHTHALENE	ACENAPHTHYLENE	ACENAPHTHENE	ACETOPHENONE	ANTHRACENE	BENZYL ALCOHOL	BUTYL BENZYL PHTHALATE***	bis(2-ETHYLHEXYL) PHTHALATE***	DIBENZOFURAN
			Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
1/31/2018	S1	ISTW -03- 05482	8800	59	570	290	ND	UJ	ND	ND	UJ	ND	ND	75 JB	400	3.6 J	9.6 J	2.8 J	ND	ND	ND	ND	2 J
1/31/2018	S2	ISTW -03- 05483	7100	48	470	260	ND	UJ	ND	ND	UJ	ND	ND	51 JB	53	2.2 J	8.5 J	3 J	0.33 J	ND	ND	ND	1.7 J
7/12/2018	S1	ISTW -03- 05450	8300	55	560	270	UJ	ND	ND	ND	ND	ND	ND	UJ	ND	320	2.8 J	7.7 J	2.9 J	ND	ND	ND	1.6 J
7/12/2018	S2	ISTW -03- 05451	5600	41	390	210	UJ	ND	ND	ND	ND	ND	ND	UJ	ND	0.28 J	0.69 J	6.4 J	2.9 J	ND	9.6 J	ND	1.3 J
10/16/2018	S1	ISTW -03- 05683	9300	53	660	260	ND	UJ	5.1 J	ND	ND	ND	ND	UJ	ND	490	3 J	9.6 J	2.7 J	ND	UJ	ND	2.2 J
10/16/2018	S1	ISTW -03- 05684	8400	54	650	240	ND	UJ	5.3 J	ND	ND	ND	ND	ND	ND	450	3 J	9.6 J	2.8 J	0.45 J	UJ	ND	2.8 JB
10/16/2018	S2	ISTW -03- 05685	6300	39	430	200	ND	UJ	4.4 J	ND	ND	ND	ND	ND	ND	160	2.5 J	8.4 J	2.3 J	0.48 J	UJ	ND	3.8 JB
4/25/2019	S1	ISTW -03- 05791	7800	39 J+	580 J+	140 J+	ND	UJ	ND	ND	ND	ND	ND	ND	ND	270	2.5 J	10 J	2 J	0.7 J	ND	ND	2.2 J
4/25/2019	S2	ISTW -03- 05792	6100	37	390	140	ND	ND	ND	ND	ND	ND	ND	UJ	ND	14	1.6 J	9.6 J	1.7 J	0.44 J	6.1 J	J	1.9 J
7/16/2019	S1	ISTW -03- 05898	6300	51	300	200	ND	ND	ND	ND	ND	ND	ND	UJ	ND	230	2.3 J	9.7 J	1.6 J	ND	ND	ND	2 J
7/16/2019	S1	ISTW -03- 05899	5900	54	290	200	ND	ND	ND	ND	ND	ND	ND	UJ	ND	230	2.5 J	10	1.6 J	0.45 J	J	ND	2.1 J
7/16/2019	S2	ISTW -03- 05900	4200	32 J	190	140	ND	ND	ND	ND	ND	ND	ND	UJ	ND	0.35 J	0.43 J	8.5 J	1.6 J	0.48 J	J	ND	1.6 J
11/20/2019	S1	ISTW -03- 05996	6200	39 J	200	140	ND	ND	ND	ND	ND	ND	ND	UJ	ND	210	2.4 J	8.1 J	J	0.35 J	J	UJ	1.6 J
11/20/2019	S2	ISTW -03- 05997	3600	35 J	130	130	ND	ND	ND	ND	ND	ND	ND	UJ	ND	46	2 J	8.3 J	J	0.27 J	J	UJ	1.6 J
2/4/2020	S1	ISTW -03- 06113	6300	41	200	130	ND	ND	ND	ND	ND	ND	ND	ND	ND	280	2.5 J	10 J	J	ND	ND	ND	ND
2/4/2020	S2	ISTW -03- 06114	5300	36	170	120	ND	ND	ND	ND	ND	ND	ND	ND	ND	110	2 J	9.4 J	1.4 J	0.45 J	J	ND	2.1 J
5/19/2020	S1	ISTW -03- 06183	12000	51 J	780	210	ND	ND	16 J	ND	ND	ND	ND	ND	ND	150	2.8 J	5.4 J	1.4 J	0.26 J	J	ND	1.1 J
5/19/2020	S2	ISTW -03- 06184	9700	33 J	590	150	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.9 J	1.8 J	5.3 J	1.5 J	0.32 J	J	18	1.1 J
4/27/2021	S1	ISTW -03- 06455	3800	52	160	340	77	ND	ND	ND	ND	ND	ND	ND	ND	2.1 J	2.8 J	8.8 J	1.4 J	0.35 J	6.1 J	J	1.5 J
4/27/2021	S2	ISTW -03- 06456	3000	45	130	290	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.2 J	0.27 J	1.5 J	1.2 J	0.2 J	7.8 J	J	ND
4/27/2021	S2	ISTW -03- 06457	2900	46	130	290	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.37 J	5 J	1.3 J	0.25 J	9.8 J	J	ND
6/3/2021	S1	ISTW -03- 06525	6000	52 J	390	280	ND	ND	ND	ND	ND	ND	ND	UJ	ND	220	3.4 J	9.1 J	1.2 JB	0.4 J	J	UJ	1.7 J
6/3/2021	S2	ISTW -03- 06526	4800	41 J	320	250	ND	ND	ND	ND	ND	ND	ND	UJ	ND	0.4 JB	1.5 J	9 J	1.4 JB	0.34 J	J	20 J	1.6 J
7/28/2021	S1	ISTW -03- 06569	5200	57	280	230	ND	ND	ND	ND	ND	ND	ND	ND	ND	47	2.6 J	9.8	1.1 JB	0.35 J	J	ND	1.9 J
7/28/2021	S2	ISTW -03- 06570	5900 J+	51 J	230	210	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.61 J	6.8 J	1 JB	0.29 J	J	43	1.2 J
11/19/2021	S1	ISTW -03- 06705	5000	47	410	260	ND	ND	ND	ND	ND	ND	ND	ND	ND	430	3.9 J	11 J	J	0.42 J	J	ND	2.1 J
11/19/2021	S2	ISTW -03- 06706	3500	44	330	280	ND	ND	ND	ND	ND	ND	ND	ND	ND	220	3.6 J	11	1.7 JB	J	100 J	ND	2.1 J
2/9/2022	S1	ISTW -03- 06742	4100	42	260	210	ND	ND	6.1 J	ND	ND	ND	ND	ND	ND	180	2.3 J	8.2 J	J	ND	ND	ND	1.4 J
2/9/2022	S2	ISTW -03- 06743	3200	27	190	150	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.4 J	8.1 J	J	ND	ND	42	1.4 J
2/9/2022	S2	ISTW -03- 06744	3300	26	190	160	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.2 J	7.8 J	J	ND	ND	43	1.3 J
5/25/2022	S1	ISTW -03- 06816	1200	24	56	77	ND	ND	ND	ND	ND	ND	ND	ND	ND	26	2 J	9 J	J	0.23 J	J	ND	1.3 J
5/25/2022	S2	ISTW -03- 06817	1000	22 J	55	71	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.67 J	7 J	J	ND	ND	3.8 J	0.88 J

Notes:

Only analytes detected one or more times at the Former C Battery By-Products Recovery Area are tabulated above.

Sample Location ITW-03-S1 is inside treatment system building, before Influent Holding Tank.

Sample Location ITW-03-S2 is located after Influent Holding Tank and before bag filtration system. Some biological activity is believed to occur in the Influent Holding Tank.

JB = Parameter detected in associated Method Blank(s) and/or Trip Blank. Result is considered as a false positive / not expected to be present in sample.

J = Estimated result. All results less than associated detection limits (DLs), but greater than laboratory Method Detection Limits (MDLs) are qualified "J".

ND or U = Parameter not detected/undetected at listed detection limit; UJ denotes not detected, with potential for low bias

R = Data rejected in accordance with established data validation acceptance criteria.

*** Suspected laboratory contaminants, detected in both samples and associated blank(s) on multiple occasions: acetone, bromomethane, chloromethane, methylene chloride, bis(2-ethylhexyl) phthalate and other phthalates. These constituents not included in mass removal calculations/totals.

Table C-2
C Battery Ground-Water Treatment System Results
SYSTEM INFLUENT (PRIOR TO CARBON TREATMENT)

Date	Sample Locn	CONSTITUENT CONCENTRATION IN UNTREATED GROUND WATER [Filter Inlet] (ug/L)																				
		DIETHYL PHTHALATE***	DI-n-BUTYL PHTHALATE***	2,4-DIMETHYLPHENOL	FLUORANTHENE	FLUORENE	2-METHYLPHENOL	3- and 4-METHYLPHENOL	2-METHYLNAPHTHALENE	PHENANTHRENE	PHENOL	2-PICOLINE	BENZO(a) ANTHRACENE	BENZO(a) PYRENE	BENZO(b) FLUORANTHENE	BENZO(g,h,i) PERYLENE	BENZO(k) FLUORANTHENE	CHRYSENE	DIBENZ(a,h) ANTHRACENE	INDENO(1,2,3-c,d) PYRENE	PYRENE	PYRIDINE
		Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
1/31/2018	S1	33 JB	ND	ND	ND	1.5 J	ND	ND	1.9 J	0.79 J	43	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1/31/2018	S2	ND	1.2 J	3.5 J	0.32 J	1.2 J	13 J	17	0.8 J	0.73 J	140	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
7/12/2018	S1	ND	ND	ND	0.32 J	1.1 J	1.9 J	1.8 J	1.5 J	0.53 J	39 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
7/12/2018	S2	ND	ND	7.5 J	0.31 J	1.1 J	8.3 J	3.1 J	ND	0.55 J	48	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.26 J	ND
10/16/2018	S1	ND	ND	ND	0.56 J	1.7 J	ND	ND	2.2 J	1.20 J	44	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10/16/2018	S1	ND	ND	ND	0.54 J	1.7 J	2.3 J	4.6 J	2.1 J	1.20 J	61 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.45 J	ND
10/16/2018	S2	ND	ND	14	0.56 J	1.6 J	ND	ND	1.6 J	1.20 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.54 J	ND
4/25/2019	S1	ND	ND	ND	1 J	1.7 J	1.7 J	1.9 J	2 J	1.40 J	53	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.82 J	ND
4/25/2019	S2	ND	ND	3.4 J	0.59 J	1.5 J	21	13	0.62 J	0.83 J	98 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.41 J	ND
7/16/2019	S1	ND	ND	ND	0.94 J	1.6 J	1.1 J	1.5 J	1.6 J	1.50 J	43	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.72 J	ND
7/16/2019	S1	ND	ND	ND	0.96 J	1.7 J	1.1 J	1.4 J	1.8 J	1.50 J	45	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.76 J	ND
7/16/2019	S2	ND	ND	7.8 J	1.1 J	1.6 J	1.8 J	ND	ND	1.50 J	25	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.82 J	ND
11/20/2019	S1	ND	ND	ND	0.38 J	1.3 J	ND	ND	0.89 J	0.55 J	48	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.29 J	ND
11/20/2019	S2	ND	ND	10	0.4 J	1.3 J	ND	ND	0.66 J	0.45 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.36 J	ND
2/4/2020	S1	ND	ND	ND	1.4 J	1.6 J	ND	ND	1.8 J	1.60 J	48	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.2 J	ND
2/4/2020	S2	ND	ND	1.1 J	0.89 J	1.5 J	7 J	10	1.2 J	1.20 J	96	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.73 J	ND
5/19/2020	S1	ND	ND	ND	0.28 J	0.9 J	2.8 J	2.9 J	1.9 J	0.50 J	62	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
5/19/2020	S2	ND	ND	5 J	0.67 J	0.97 J	21	6.1 J	0.54 J	0.68 J	170	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.57 J	ND
4/27/2021	S1	ND	ND	1.9 J	0.44 J	1.1 J	2.7 J	1.6 J	0.49 J	0.48 J	52	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.31 J	ND
4/27/2021	S2	ND	ND	14	0.32 J	0.71 J	ND	ND	ND	0.21 J	19 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.31 J	ND
4/27/2021	S2	ND	ND	16	0.29 J	0.85 J	2.2 J	ND	ND	0.29 J	34 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.22 J	ND
6/3/2021	S1	ND	ND	ND	0.35 J	1.2 J	1.3 J	1 J	1.3 J	0.48 J	37	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.24 J	ND
6/3/2021	S2	ND	ND	14	0.38 J	1.3 J	13	1.6 J	ND	0.45 J	130	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.32 J	ND
7/28/2021	S1	ND	ND	ND	0.56 J	1.3 J	1.1 J	1 J	0.5 J	0.43 J	35	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.43 J	ND
7/28/2021	S2	ND	ND	8.4 J	0.5 J	1.1 J	2.3 J	ND	ND	0.32 J	6.6 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.34 J	1 J
11/19/2021	S1	ND	ND	ND	0.68 J	1.6 J	ND	ND	1.3 J	0.68 JB	33	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.54 J	ND
11/19/2021	S2	ND	ND	ND	0.54 J	1.5 J	120	6.4 J	0.98 J	0.61 JB	63 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.44 J	ND
2/9/2022	S1	ND	ND	ND	1.9 J	ND	ND	ND	0.68 J	ND	22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2/9/2022	S2	ND	ND	ND	1.9 J	ND	50	3.9 J	ND	ND	280	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2/9/2022	S2	ND	ND	ND	2 J	ND	29	ND	ND	ND	240	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
5/25/2022	S1	ND	ND	ND	0.25 J	0.84 J	ND	ND	ND	ND	6.7 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
5/25/2022	S2	ND	ND	6.9 J	ND	0.7 J	8.2 J	ND	ND	ND	54	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Table C-2
C Battery Ground-Water Treatment System Results
AFTER CARBON TREATMENT (LAG VESSEL EFFLUENT)

Date	Sample Locn	Sample ID	CONSTITUENT CONCENTRATION IN WATER EFFLUENT FROM LAG CARBON VESSEL (ug/L)																			
			BENZENE	ETHYLBENZENE	TOLUENE	XYLENES, TOTAL	1,2-DICHLOROETHANE	CARBON DISULFIDE **	STYRENE	TRICHLOROETHYLENE	ACETONE *	BROMOMETHANE *	CHLOROMETHANE *	METHYLENE CHLORIDE *	NAPHTHALENE	ACENAPHTHYLENE	ACENAPHTHENE	ACETOPHENONE	ANTHRACENE	BENZYL ALCOHOL *	BUTYL BENZYL PHTHALATE *	ISOC-ETHYLHEXYL PHTHALATE *
			Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
1/31/2018	85	ISTW -03- 05485	ND	ND	UJ	ND	UJ	UJ	ND	ND	UJ	ND	ND	ND	---	---	---	---	---	---	---	
7/12/2018	85	ISTW -03- 05561	0.44 JB (BDL)	ND	ND	ND	ND	UJ	ND	ND	ND	UJ	ND	UJ	ND	ND	ND	ND	ND	ND	ND	
10/16/2018	85	ISTW -03- 05689	ND	ND	ND	ND	ND	UJ	ND	ND	ND	ND	ND	ND	0.36 J (BDL)	ND	ND	ND	ND	UJ	ND	
12/11/2018	System outage Dec-Feb																					
4/25/2019	85	ISTW -03- 05794	ND	ND	ND	ND	ND	ND	ND	ND	5.7 JB (BDL)	ND	UJ	ND	ND	ND	ND	ND	ND	ND	ND	
7/16/2019	85	ISTW -03- 05904	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	UJ	ND	ND	ND	ND	ND	ND	ND	4.5 JB (BDL)	
11/20/2019	85	ISTW -03- 05999	ND	ND	ND	ND	UJ	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	UJ	ND	ND	
2/4/2020	85	ISTW -03- 06119	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.8 JB (BDL)	
5/19/2020	85	ISTW -03- 06186**	0.14 J (BDL)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
4/6/2021	System shut down after receipt of 5/19/20 data. Valve manifold for carbon system was replaced in March 2021. Carbon exchange followed 4/6/2021.																					
4/27/2021	85	ISTW -03- 06461	0.5 J (BDL)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
6/3/2021	85	ISTW -03- 06530 **	ND	ND	ND	ND	ND	ND	ND	ND	ND	UJ	ND	ND	ND	ND	ND	ND	ND	ND	ND	
7/28/2021	85	ISTW -03- 06572 **	0.85 J (BDL)	UJ	UJ	UJ	ND	ND	ND	UJ	ND	ND	ND	ND	1.4 J (BDL)	ND	ND	ND	ND	ND	ND	
10/21/2021	Carbon exchange (April 2021 carbon batch was discovered to have included a bad batch of carbon that did not meet the spec. Carbon exchange was completed early due to this and the early breakthrough of the lead carbon vessel.)																					
11/19/2021	85	ISTW -03- 06708	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2/9/2022	85	ISMW -03- 06748	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
5/25/2022	85	ISTW -03- 06820	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
7/19/2022	System outage through end of 2022																					

Sample Location ITW-03-85 is located after the second 10,000 pound carbon vessel.

--- Parameter not analyzed

JB = Parameter detected in associated Method Blank(s) and/or Trip Blank. Result is considered as a false positive / not expected to be present in sample.

J = Estimated result. All results less than associated detection limits (DLs), but greater than laboratory Method Detection Limits (MDLs) are qualified "J".

BDL = Below Detection Limit

ND or U = Parameter not detected/undetected at listed detection limit, UJ denotes not detected, with potential for low bias

R = Data rejected in accordance with established data validation acceptance criteria.

* Suspected laboratory contaminant, detected in Method Blanks and/or Trip Blanks. Analyte is not believed to be present in ground water at the Former C Battery By-Products Recovery Area.

** 2,000 pound carbon polish unit in service at this time, providing additional treatment of the effluent from the lag vessel.

*** Appears in effluent as a result of biological activity within the carbon filtration system.

--- denotes Not applicable/Not analyzed for this parameter (Winter 2018 bottles frozen)

Table C-2
C Battery Ground-Water Treatment System Results
AFTER CARBON TREATMENT (LAG VESSEL EFFLUENT)

Date	Sample Locn	Sample ID	CONSTITUENT CONCENTRATION IN WATER EFFLUENT FROM LAG CARBON VESSEL (ug/L)																						
			DIBENZOFURAN	DIBETHYL PHTHALATE *	DIS-4-BUTYL PHTHALATE *	2,4-DIMETHYLPHENOL	FLUORANTHENE	FLUORENE	2-METHYLPHENOL	3- and 4-METHYLPHENOL	2-METHYLNAPHTHALENE	PHENANTHRENE	PHENOL	2-PICOLINE	BENZO(a) ANTHRACENE	BENZO(a) PYRENE	BENZO(b) FLUORANTHENE	BENZO(g,h,i) PERYLENE	BENZO(k) FLUORANTHENE	CHRYSENE	DIBENZ(a,h) ANTHRACENE	INDENO(1,2,3-c,d) PYRENE	PYRENE	PYRIDINE	
1/31/2018	85	ISTW -03- 05485	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
7/12/2018	85	ISTW -03- 05561	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
10/16/2018	85	ISTW -03- 05689	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
12/11/2018	System outage Dec-Feb																								
4/25/2019	85	ISTW -03- 05794	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
7/16/2019	85	ISTW -03- 05904	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
11/20/2019	85	ISTW -03- 05999	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2/4/2020	85	ISTW -03- 06119	ND	4.2 JB (BDL)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
5/19/2020	85	ISTW -03- 06186**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
4/6/2021	System shut down after receipt o																								
4/27/2021	85	ISTW -03- 06461	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
6/3/2021	85	ISTW -03- 06530 **	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
7/28/2021	85	ISTW -03- 06572 **	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
10/21/2021	Carbon exchange (April 2021 co																								
11/19/2021	85	ISTW -03- 06708	ND	7.1 JB (BDL)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2/9/2022	85	BSRW -03- 06748	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
5/25/2022	85	ISTW -03- 06820	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
7/19/2022	System outage through end of 20																								

Comment 39: Outfall Descriptions and Wastewater Treatment - Total Suspended Solids, Oil & Grease, Lead, Zinc, Selenium, and Mercury

The Facility has historically had issues with inadequate Operation and Maintenance (O&M) and unapproved bypass management practices. These challenges continued to present concerns earlier this year, as they were identified during a February 1, 2023, Reconnaissance Inspection performed by IDEM. The Department subsequently inspected the Facility in March, June and September 2023 and found that all issues related to O&M and bypass had been addressed by the Facility.

However, regarding TSS and Oil & Grease (as discussed above under Global Concerns), the load and burden on the receiving waters from the significant quantity of solids and O&G discharged from the Facility continue to present a concern, and would only increase if the idled No. 28 Temper Mill process is brought back into service. As a result, we recommend that the Facility should be required to focus on improving the removal of TSS and O&G to reduce the load of those contaminants. The removal of these conventional pollutants will also address the removal of heavy metals. (See further discussion about removal of TSS and O&G below under “Overall Recommendations for Improved Treatment Systems”).

Response 39: No changes were made in response to this comment. All limitations meet the more stringent of either the technology-based effluent limitations or water quality-based effluent limitations. IDEM believes the permit meets the NPDES requirements set forth in the Clean Water Act, federal regulations adopted pursuant thereto, and Indiana Administrative Code Title 327.

EPA identifies the best available technology that is economically achievable for a particular industry and sets regulatory requirements based on the performance of that technology. The Effluent Guidelines do not require facilities to install the technology identified by EPA; however, the regulations do require facilities to achieve the regulatory standards which were developed based on a particular model technology. <https://www.epa.gov/eg/learn-about-effluent-guidelines>.

In addition, IDEM adhered to Indiana’s water quality standards, antidegradation policies, and antidegradation implementation procedures applicable within the Great Lakes system, pursuant to 327 IAC 2-1.5 and 327 IAC 2-1.3, respectively.

Comment 40: Outfall Descriptions and Wastewater Treatment - Chlorine and Biocide Treatment

The Facility has had issues with Chlorine in its effluent in the past. The IDEM multi- discharger model was used to assess the Water Quality-Based Effluent Limits (“WQBELs”) for chlorine and other COC in 2017 and for this draft permit. Monitoring requirements for Total Residual Oxidants (“TRO”) (bromine + chlorine) are also proposed based on the potential for both bleach (sodium hypochlorite) and Stabrex ST70 to be present in the discharge. Commenters are concerned that periodic treatments like these — because they are not normally metered into the system — are often excessive and can potentially cause significant problems for aquatic life in the receiving water. A case in point is a November 2021 violation where a reddish-brown discoloration was observed at Outfall 018. (See below under Section 3.1, “Compliance History”). The Facility’s preliminary investigation of the root cause of the discoloration was suspected excess addition of the water treatment chemical Ferric Chloride at the Blast Furnace blowdown treatment plant, which discharges through outfall 518 to outfall 018. No fish kill or other wildlife appeared to have been adversely affected because of this incident but the potential for adverse environmental impacts remains, and the Facility should put engineered controls in place to avoid future incidents.

We recommend that the Facility consider installing metered systems for additions of chlorine and biocides to reduce the potential for repeat violations. This is recommended in addition to the onsite lab testing that is already required.

Response 40: No changes were made in response to this comment. An Agreed Order (AO) in Case No. 2021-27623-W was approved and adopted by IDEM on September 14, 2021. (VFC #83224983) The permittee’s Compliance Plan was approved and incorporated into the Agreed Order December 17, 2021. The Compliance Plan includes measures taken to address. (VFC #83258151)

Comment 41: Outfall Descriptions and Wastewater Treatment - Overall Recommendations for Improved Treatment Systems

First, Commenters note generally that unpermitted discharges, such as groundwater from Outfall 014, are not authorized by NPDES permits unless explicitly identified and covered by the Draft Permit. The federal Clean Water Act plainly prohibits the “discharge of *any pollutant* by any person” “[e]xcept as in compliance with [the CWA].” Section 301 of the CWA, 33 U.S.C. § 1311 (emphasis added). The term “pollutant” means, *inter alia*, “industrial . . . waste discharged into water.” 40 C.F.R. § 122.2. Conversely, compliance with a permit issued pursuant to section 402 of the CWA, is deemed to be compliance with the CWA. 33 U.S.C. § 1342(k).

Thus, any substance discharged into water as part of the industrial waste process, including groundwater (except as expressly authorized with the CWA and its implementing regulations and requirements, such as an NPDES permit) is illegal.

Further, Commenters are concerned about the overall volume of wastewater discharged from the Facility (which we also discuss above in connection with TSS and O&G in particular). We recognize that the Facility performs various methods of wastewater pretreatment prior to discharging to the Indiana Harbor Ship Canal (which flows into Lake Michigan). However, based on the amount of TSS, Oil & Grease, heavy metal particulate, and other pollutants that continue to be discharged, and our expressed concerns in connection with Section 5.2 WQBELs of the Fact Sheet below, we are recommending improved and added treatment systems.

The table in Attachment A below summarizes pertinent information about the Facility's wastewater treatment systems, the pollutants of concern discharged to each outfall, and provides proposed treatment system improvements. We are generally recommending the addition of ion exchange, membrane filtration or reverse osmosis ("RO") of wastewater post-settling to help to reduce the large volume of TSS, Oil & Grease and heavy metals that are currently discharged through outfall 014. We also note that the addition of membrane filtration or RO of wastewater following the Continuous Caster and Ruhrstahl Heraeus ("RHOB") processes would help to reduce the large volume of TSS, Oil & grease and heavy metals that is currently discharged through Outfalls 618 and 018. The addition of RO would also be effective at outfalls where Per- and Polyfluoroalkyl Substances ("PFAS") is potentially discharged.¹⁰ RO has been demonstrated as effective treatment for PFAS in wastewater discharge.

Response 41: No changes were made in response to this comment. Neither EPA nor IDEM mandate the use of a specific treatment technology. EPA has established effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT) and effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT). The effluent limitations guidelines do not require facilities to install the technology used to develop the BPT and BAT requirements; however, the regulations do require facilities to achieve the limitations and other requirements which were developed based on a particular model technology. <https://www.epa.gov/eg/learn-about-effluent-guidelines>. A permittee can choose any treatment that results in compliance with the limitations. <https://www.epa.gov/eg/learn-about-effluent-guidelines>.

EPA promulgated the Iron and Steel Effluent Limitation Guidelines (ELG), 40 CFR 420, in 1974. The ELG was amended in 1976, 1982, 1984, 2002 and 2005. <https://www.epa.gov/eg/iron-and-steel-manufacturing-effluent-guidelines>.

EPA periodically reviews existing ELGs, and updates them, as appropriate. The Effluent Guidelines Program Plan, published every two years, identifies existing industries selected for regulatory revisions and new industries identified for regulation. The Plan provides a rulemaking schedule for any such activities. <https://www.epa.gov/eg/effluent-guidelines-plan>.

Comment 42: Permit History - Compliance History

The Fact Sheet for the Draft Permit includes a list of exceedances and inspections over the last two years “for compliance verification,” but does not explain what these mean or how they are considered in renewal of this permit. Commenters request that IDEM include in the Fact Sheet a complete history of noncompliance by the Indiana Harbor East steel mill, as well as IDEM’s efforts to address those violations (e.g., September 14, 2021 Administrative Penalty Order for bypassing, failure to manage plant adequately allowing a reddish discharge, failure to maintain records, and exceedances of permit limits), since its last renewal on July 21, 2017. Doing so can identify recurring compliance issues and the need for additional inspections, monitoring, and reporting. Based on the information reviewed by the Commenters in the Virtual File Cabinet, there has been a repeated exceedance of the chlorine limit during the past four years.

- 1/11/22 Ammonia discharge of 270 lbs from Outfall 518 in excess of daily maximum of 210 lbs (VFC #83275849)
- 11/12/21 Reddish-brown discoloration observed at Outfall 018 (VFC #83242321)
- 9/13/21 Chlorine average value of 0.297 mg/L, well in excess of daily concentration maximum limit of 31 µg/L from Outfall 014 (VFC #83218304)
- 7/14/21 Zinc discharge of 32.54 lbs from Outfall 518, in excess of 9.46 lbs/day limit. (VFC #83187012)
- 7/14/21 TSS discharge of 602 lbs from Outfall 518, in excess of 281 lbs/day limit. (VFC #83193544)
- 4/13/21 Oil and grease discharge of 19.35 mg/L from Outfall 014, in excess of maximum daily concentration of 15 mg/L. (VFC #83141590)
- 3/9/21 Total residual chlorine discharge of 4.51 lbs from Outfall 014, in excess of daily maximum limit of 1.0 lbs/day. (VFC #83132664)

- 1/25/21 Total cyanide discharge of 32.71 lbs from Outfall 518, in excess of daily maximum limit of 14.0 lbs/day. (VFC #83120403)
- 6/2/20 Failed to test for chlorine for two months. (VFC #83022465)
- 5/5/20 Grab sample at Outfall 014 shows pH level at 9.1, outside the permitted limit of 6-9 pH. (VFC #82967815)

There have also been several bypasses of the treatment facility since the last renewal:

- 1/29/23: An estimated 21,000 gallons of unchlorinated water was allowed to reach the Indiana Harbor Turning Basin from the Buffalo Box. (VFC #83443089)
- 5/20/21: An estimated 30,000 gallons of water discharged through the No. 6 pumphouse. (VFC #83170724)
- 5/16/21: An estimated 12,500 gallons of water discharged from the slurry Stillwell to the terminal lagoon. (VFC #83178302)
- 5/4/20: An estimated 36,000 gallons of water discharged from the pump house to the main intake over five days when lake levels exceeded the sheet pile at the No. 6 pump house. (VFC #82992669)
- 10/8/18: An estimated 3.6 million gallons overflowed the weir and discharged through Outfall 011 due to a plant-wide power outage. (VFC #83035005)

Commenters also request that the Fact Sheet compile a summary of IDEM inspections of the Indiana Harbor East wastewater treatment operations. The Commenters were able to locate the following ten reports of inspections by IDEM personnel since the last renewal, most of which found problems or violations of its NPDES permit. These inspections identify a number of recurring problems, particularly involving maintenance, operations, and bypasses.

- 9/13/23: Reconnaissance inspection focused on the No. 4 steel plant treatment system and all external outfalls. It found a layer of scum, presumably “biological in nature” within the soft booms at Outfall 018. It also recognized an EPA inspection that found vegetation growth within the final thickeners and a leak in the clear well pump. (VFC #83534853)
- 4/17/23: Reconnaissance inspection focused on all external outfalls, the No. 7 blast furnace blowdown treatment facility, and the No. 6 pump house. It found the blowdown treatment facility operating effectively in part due to more stable cyanide levels since the blast furnace was relined in 2021. (VFC #83491700)

- 3/20/23: Reconnaissance inspection following up on EPA's inspection from October 2022 with a focus on external outfalls 011, 014, and 018. Found limestone pulled back from the edge of the bank near Outfall 018 and leaks in the Terminal Treatment West Plant had been repaired. (VFC #83449401)
- 2/1/23: Reconnaissance inspection rated the bypass category unsatisfactory and maintenance as unsatisfactory due to the failure of the 12-inch ductile iron pipe that allowed water to flow into the Indiana Harbor Turning Basin. (VFC #83426000)
- 8/24/22: Compliance evaluation inspection conducted on August 24 and 31, 2022, observed violations. A brown foam/scum was observed near the sampling building for Outfall 018, lab bench sheets lacked the time for many analyses conducted on-site, reporting was rated as marginal, and effluent was rated as marginal due to exceedances of TSS, zinc and ammonia in July 2021. (VFC #83365248)
- 6/28/22: Reconnaissance inspection of outfalls found all clear and free of color at the time of the inspection. (VFC #83338873)
- 1/27/21: Reconnaissance inspection conducted in response to a cyanide exceedance reported on January 25. Operation was rated as unsatisfactory where the cyanide exceedance was the result of improper operations. (VFC #83120357)
- 9/14/20: Compliance evaluation inspection observed violations due to discolored effluent. The site was rated as marginal due to the inability to visually evaluate Outfall 518 and its operation were rated as unsatisfactory due to self-reported operational problems. (VFC #83049297)
- 1/13/20: Reconnaissance inspection found conditions satisfactory. (VFC #82900180)
- 9/23/19: Compliance evaluation inspection rated the facility's flow measurement program as marginal and referenced exceedances of pH and oil & grease limits. (VFC #82843397)

Addressing the violations at the Facility is especially critical given the environmental justice community that has experienced the adverse impacts from its pollution for decades.

Response 42: No changes were made in response to this comment. The Fact Sheet complies with the requirements of 327 IAC 5-3-8, 40 CFR 123.25, 40 CFR 124.8, and 40 CFR 124.56. Compliance related documents are readily available to the public in Indiana's Virtual File Cabinet. [IDEM Virtual File Cabinet.](#)

An Agreed Order (AO) in Case No. 2021-27623-W was approved and adopted by IDEM on September 14, 2021. (VFC #83224983) The

permittee's Compliance Plan was approved and incorporated into the Agreed Order December 17, 2021. The Compliance Plan includes measures taken to address violations. (VFC #83258151)

Comment 43: Total Maximum Daily Loads

NPDES permit limitations and conditions must be designed to ensure compliance with the narrative and numeric criteria in the WQS and the Total Maximum Daily Load ("TMDL") wasteload allocations ("WLAs") established in any applicable TMDL.¹¹ Permit writers must also consider whether the discharge contributes directly or indirectly to a waterbody that is included on the latest CWA section 303(d) list or designated by IDEM as impaired. According to the draft Fact Sheet, Indiana's List of Impaired Waters for the 2022 cycle included the following impairments for waters to which the permittee discharges, as shown in Table B below:

Table B

Impaired Waterways			
Assessment Unit	Waterbody	Impairments	Cleveland-Cliffs Indiana Harbor East Outfalls
INC0163_T1001	Indiana Harbor Canal	Biological Integrity, Oil and Grease, E. coli and PCBs in Fish Tissue	None
INC0163G_G1078	Lake Michigan Shoreline (includes Indiana Harbor)	Free Cyanide, Mercury in Fish Tissue and PCBs in Fish Tissue	011, 014, and 018
INM00G1000_00	Lake Michigan (beyond the shoreline)	Mercury in Fish Tissue and PCBs in Fish Tissue	None

As discussed above, this Facility is within the GLRI Grand Calumet River Area of Concern. The Calumet River was designated as an Area of Concern ("AOC") under the Great Lakes Water Quality Agreement of 1987, largely due to legacy pollutants. These pollutants remain in the environment for extended periods of time after they are introduced and were found in sediments at the bottom of the Grand River, Indiana Harbor and Ship Canal. These legacy pollutants include:

- Polychlorinated biphenyls ("PCBs")
- Polycyclic aromatic hydrocarbons ("PAHs")
- Heavy metals including but not limited to mercury, cadmium, chromium, and lead
- Oil and grease

In addition to the legacy pollutants listed above, monitoring revealed degradation in the form of biochemical oxygen demand.¹²

Despite the historically impaired status of the receiving waters, neither the Draft Permit nor Fact Sheet appear to include a record that WQS and TMDL wasteload allocations will be achieved. Instead, they simply identify

the list of impaired waters (and designations for the Indiana Harbor Canal and Lake Michigan Shoreline). The Fact Sheet makes the conclusory statement that “[t]he narrative water quality criteria contained under 327 IAC 2-1.5-8(b)(1) and (2) have been included in this permit to ensure that these minimum water quality conditions are met.” Fact Sheet at 5.3.1. That is insufficient.

Therefore, we urge IDEM to include more prescriptive requirements in the Permit based on known information about the permittee’s discharges, and to demonstrate in the Fact Sheet how those limits will ensure attainment of WQS. We acknowledge that the process of translating WLAs into NPDES permit limits that are consistent with the assumptions and requirements of TMDLs is not always straightforward, so we suggest that IDEM review EPA’s informative web page (including specific examples) on “Permit Limits – Permitting to Meet a Total Maximum Daily Load (TMDL)”¹³ as the Department attempts to develop a fulsome record connecting the TMDL WLAs for the Facility with the Permit’s effluent limitations and conditions.

Response 43: No changes were made in response to this comment. Please review section 5.2 of the Fact Sheet; Water Quality-Based Effluent Limitations. From the Fact Sheet:

A TMDL is not currently planned for the subwatershed, and, based on current IDEM monitoring data, may not be required. Therefore, as was done in the 2017 WLA, the procedures for calculating WLAs under 327 IAC 5-2-11.4 were used to develop preliminary WLAs and WLAs in the absence of a TMDL. Wasteload allocations in the absence of TMDLs are developed to establish water quality-based effluent limitations under 327 IAC 5-2-11.6 and preliminary wasteload allocations are developed to make reasonable potential determinations under 327 IAC 5-2-11.5. The reasonable potential procedures under 327 IAC 5-2-11.5 include provisions for making reasonable potential determinations using best professional judgment (327 IAC 5-2-11.5(a)) and using a statistical procedure (327 IAC 5-2-11.5(b)). The statistical procedure is a screening process in which a projected effluent quality (PEQ) based on effluent data is calculated and compared to a preliminary effluent limitation (PEL) based on the preliminary wasteload allocation. Both the best professional judgment and statistical procedures were used to establish the need for WQBELs to protect the designated uses of the Indiana Harbor Canal, Indiana Harbor, and Lake Michigan.

A TMDL has not been completed for the assessment units in the Indiana Harbor Canal or Indiana Harbor to which the three Cleveland-Cliffs steel mills discharge. Therefore, the permits are not required to comply with

any WLAs established in a TMDL. For the pollutants included on the 2022 CWA section 303(d) list with applicable water quality criteria, only free cyanide is a pollutant of concern for the Cleveland-Cliffs discharges, and as noted in the Fact Sheet, routine IDEM monitoring data for the Indiana Harbor Canal and Indiana Harbor indicate that it is no longer impaired. For oil and grease, the permits include either numeric limits or monitoring requirements at all final outfalls that are designed to ensure narrative water quality criteria are met. Since requirements consistent with the Water Quality Guidance for the Great Lakes System in 40 CFR 132 were first adopted into Indiana water quality standards and implementation procedures in 1997, IDEM has incorporated these requirements into the renewal permits for the three Cleveland-Cliffs Indiana Harbor steel mills issued in 2011, 2017 and the current permit renewal. IDEM utilizes facility monitoring data required in permits and Form 2C of the permit renewal application, along with IDEM's own stream monitoring network to identify pollutants of concern with respect to attaining applicable water quality standards. As noted above in Section 5.2 of the Fact Sheet, the result of the analysis required by the Indiana regulations was the establishment of WQBELs for the specific pollutants included in the permits.

Comment 44: Permit limitations - Unpermitted Discharges Should be Expressly Prohibited

The Clean Water Act prohibits the discharge of unpermitted pollutants. 33 U.S.C. § 1311 (prohibiting “discharge of *any pollutant* by any person” “[e]xcept as in compliance with [the CWA].”). Indiana law provides that “[a]ny discharge of pollutants into waters of the State as a point source discharge . . . is prohibited unless in conformity with a valid NPDES permit obtained prior to discharge.” 327 IAC 5-2-2. Despite these general propositions, a broad prohibition against unpermitted discharges does not appear in the Draft Permit. For example, the Draft Permit includes discharge limitations for Outfalls 001A, 001B, 101A, and 101B, but nowhere does the document include a generalized statement that discharges are prohibited other than through those outfalls. Commenters request that IDEM include a general prohibition against the unpermitted discharge of pollutants with a statement similar to the prohibition under Indiana law that any discharges of pollutants into waters of the State as a point source discharge is prohibited unless in compliance with a valid NPDES permit.

Response 44: No changes were made in response to this comment. The permit cited above is the Central Treatment Plant, not Indiana Harbor East. A specific prohibition is not necessary. Per 327 IAC 5-2-2, any discharge of pollutants into waters of the state as a point source discharge, except for exclusions in 327 IAC 5-2-1.8, is prohibited unless in conformity with a valid NPDES permit obtained prior to the discharge.

Comment 45: Technology-Based Effluent Limitations - Applicability of Effluent Limitation Guidelines

The technology-based effluent limitations (“TBELs”) in the proposed permit are insufficient to address water pollution discharged from the facility for several reasons: first, the Fact Sheet supporting the Proposed Permit indicates that TBELs are based on EPA’s effluent limitation guidelines (“ELGS”) for the iron and steel manufacturing point source category, 40 C.F.R. Part 420, and the metal finishing point source category, 40 C.F.R. Part 433. The ELGs for the iron and steel industry were established in 1982 (with certain individual provisions amended about 20 years after that).¹⁴ The ELGs for the metal finishing industry were established in 1983, with certain individual provisions amended in 1986 at the latest.¹⁵ So, the requirements of the ELGs relied on by the Draft Permit are at least 20 years old, and many are more than 40 years out-of-date. As such, the guidelines in no way represent current best available technology for treating water pollution from steel and metal finishing facilities, and reliance on them is inconsistent with EPA’s regulation on technology-based treatment requirements in permits, 40 C.F.R. § 125.3(a)(2) (providing that, for non-POTWs, effluent limitations must reflect best practicable technology (“BPT”) currently available). The requirement in Section 125.3 that BPT be applied should be read in harmony with existing ELGs such that the Permit should include the more stringent of BPT or ELG limitations to ensure that water quality is sufficiently protected.

Response 45: No changes were made in response to this comment. The metal finishing point source category, 40 C.F.R. Part 433, is not applicable to the Indiana Harbor East permit. The iron and steel manufacturing point source category, 40 C.F.R. Part 420, is applicable to the discharges from the Indiana Harbor East facility. IDEM believes the permit meets the requirements of 40 CFR 420. Please refer to Response 41.

Comment 46: Technology-Based Effluent Limitations - Need for Site-Specific TBELs

Second, to the extent that individual pollutants are discharged by the permittee but were not contemplated at the time that the outdated ELGs were promulgated, IDEM should establish site-specific TBELs for the Facility, applying best professional judgment (“BPJ”). Where EPA has not promulgated technology-based effluent guidelines for a particular class or category of industrial discharger, or where the technology-based effluent guidelines do not address all waste streams or pollutants discharged by the industrial discharger, the permit-issuing authority must establish

technology-based effluent limitations on a case-by-case basis in individual NPDES permits, based on its BPJ.¹⁶ 40 C.F.R. § 122.44.

Because Section 301 of the CWA requires technology-based effluent limitations as a minimum level of control, 33 U.S.C. § 1311(b), such case-by-case technology limitations are “necessary to carry out the provision of this chapter” prior to the development of an applicable effluent guidelines and therefore must be included in any NPDES permit issued under section 402(a), as provided in EPA’s implementing regulations. See 40 C.F.R. § 125.3(a) (“Technology-based treatment requirements under section 301(b) of the Act represent the minimum level of control that must be imposed in a permit issued under Section 402 of the Act”); see also 40 C.F.R. § 125.3(c) (describing methods of imposing technology-based treatment requirements in permits, including on a case-by-case basis “to the extent that EPA-promulgated effluent limitations are inapplicable.”); 40 C.F.R. § 125.3(d) (requiring that, in setting case-by-case limitations, the permit writer must consider factors including BPT, best control technology and best available technology).

Response 46: No changes were made in response to this comment. Indiana Administrative Code (IAC) Title 327 Article 5, Rule 5 (327 IAC 5-5) contains NPDES Criteria and Standards for Technology-Based Treatment Requirements. This rule establishes criteria and standards for the imposition of technology-based treatment requirements in permits under 327 IAC 5-2-10, including the application of EPA-promulgated effluent limitations and standards under sections 301(b) and 306 of the CWA, and case-by-case determinations of effluent limitations under section 402(a)(1) of the CWA. Per 327 IAC 5-5-2(b), technology-based treatment requirements may be imposed through one (1) of the following methods: application of EPA-promulgated effluent limitations developed under section 304 or 306 of the CWA to discharges by category or subcategory, on a case-by-case basis under section 402(a)(1) of the CWA, to the extent that EPA-promulgated effluent limitations are unavailable, or through a combination of these methods. While IDEM has the authority to develop case-by-case limits using best professional judgement if EPA-promulgated effluent limitations are not available, it is not required to do so unless it determines the action is necessary to fulfill the requirements of the CWA. Currently, IDEM has not determined that development of site-specific TBELs is required.

IDEM believes the permit meets the NPDES requirements set forth in the Clean Water Act, federal regulations adopted pursuant thereto, and Indiana Administrative Code Title 327.

Comment 47: Water Quality Based-Effluent Limits (WQBEL)

We have reviewed the available information for development of the Draft Permit's Water Quality-Based Effluent Limits ("WQBELs") and understand the data that was used, the methodologies that were employed, and the parameters that are included in the multi-discharge model used by IDEM to perform a wasteload allocation (WLA) analysis.¹⁷ "For each pollutant receiving TBELs at an internal outfall, and for which water quality criteria or values exist or can be developed, concentration and corresponding mass-based WQBELs were calculated [by IDEM] at the final outfall." Fact Sheet at Section 5.3.5. The WQBELs were set equal to the applicable PELs (preliminary effluent limitation) from the multi-discharger model or the outfall specific spreadsheet. Supplemental Information for WLA at p. 5. IDEM also limits the dilution available for each outfall (the mixing zone) to twenty-five percent (25%) of the stream design flow and accounts for the potential of overlapping mixing zones within a segment by also limited collectively to twenty-five percent (25%) of the stream design flow. *Id.*

While Commenters understand the above-described process followed by IDEM's Office of Water Quality and that it meets the state's regulatory guidelines, we do not agree with the final purpose and endpoints that have been determined. Instead, we believe that the Permit must be more protective of the aquatic and human environment than it would be as drafted. IDEM's proposed purpose and endpoints should protect and improve the quality of the receiving waterways and not simply achieve parity. To do that, IDEM must determine applicable limits that will assure ultimate healing of the receiving water bodies. That is, simply continuing to use the same model inputs (except to change flows or add or remove processes) and approving a permit that continues to follow the determinations made five years ago is insufficient for any receiving water, and particularly for such an important waterway as Lake Michigan. To achieve the desired improvements of the receiving water bodies, it is essential that IDEM calculate limits to achieve healing. People fish in these waterways, recreate and swim in these waterways, and drink water that is from these waterways,¹⁸ and they deserve an effort by industry and oversight agencies to make progressive improvements. Table B, above (taken from the Draft Fact Sheet at Section 4.0), illustrates the current impairments of receiving waters.

IDEM has performed a WLA analysis using the multi-discharge model for all outfalls from the Draft Permit. Pollutants selected for the multi-discharger model were reportedly based on water quality concerns and the application of technology-based effluent limitations at multiple outfalls. Our calculations indicate that the following annual maximum discharges of pollutants would likely continue if the Draft Permit for the East Facility is approved.

Annual Maximum Environmental Load Cleveland Cliffs East	
<i>Lbs/yr</i>	<i>Pollutant</i>
0.19	Mercury
803.0	Lead
18,615	Zinc
6,369,980	TSS
1,698,345	O&G

Additionally, our calculations indicate that the following annual maximum discharges of pollutants would continue if all three Cleveland Cliffs draft permits are approved.

Annual Maximum Environmental Load Cleveland Cliffs (East, West, Central)	
<i>Lbs/yr</i>	<i>Pollutant</i>
0.97	Mercury
11,348	Lead
111,931	Zinc
7,787,385	TSS
2,258,510.5	O&G
62,050	Total Chrome

Commenters are also concerned that IDEM did not include WLA calculations specifically for TSS in this Permit reissuance. This omission is especially glaring because IDEM's own information about Common Watershed Parameters demonstrates the harm that elevated TSS can cause:

Total Suspended Solids (TSS) includes all particles suspended in water that can be trapped by a filter. Although it's commonly collected to estimate the scale of sediment run-off from the watershed, TSS includes much more than just soil. TSS can include inorganic materials like industrial waste, and organic materials like dead plants and animal matter, live organisms and sewage. Large amounts of TSS can reduce water clarity, reduce light availability necessary for plant growth, and harm fish and other aquatic organisms. Sediment can clog fish gills and fill in spawning and other habitat areas. High TSS can also cause an increase in water temperature as the particles trap heat from the sun. Additionally, high TSS measurements can indicate high levels of nutrients, bacteria, metals and other chemicals since many of these pollutants attach to sediment. TSS even has an economic impact, since it has to be filtered out of surface water used as a drinking water source.¹⁹

Thus, IDEM should either include WLA calculations for TSS in this Permit reissuance (along with other conventional pollutants), or — to the extent that the Department is relying on prior WLA calculations — those should be explicitly incorporated into the Draft Permit/Fact Sheet.

Response 47: No changes were made in response to this comment. Indiana has not adopted into regulation or otherwise developed numeric water quality criteria for total suspended solids; therefore, Indiana cannot develop wasteload allocations to establish numeric water quality-based effluent limitations for total suspended solids. Indiana regulation only includes methodologies for development of water quality criteria for protection of aquatic life, human health and wildlife that are applicable to individual chemical pollutants (see 327 IAC 2-1.5-11 through 2-1.5-16). Therefore, the methodologies cannot be used to derive a criterion for TSS. In addition, U.S. EPA CWA section 304(a) recommended water quality criteria only include a narrative statement with regards to aquatic life criteria for TSS.

However, Indiana's water quality standards contain narrative water quality criteria that prohibit a discharge from containing substances materials, floating debris, oil, scum attributable to municipal, industrial, agricultural, and other land use practices, that will settle to form putrescent or otherwise objectionable deposits or that are in amounts sufficient to be unsightly or deleterious. These narrative water quality criteria were included as narrative permit limits in Part I.B. of the permit.

Additionally, the wasteload allocations for metals were done in terms of total recoverable metal, so TSS concentrations are required to be reduced to the extent that they do not preclude the attainment of WQBELs for metals.

IDEM believes the permit meets the requirements of NPDES requirements set forth in the Clean Water Act, federal regulations adopted pursuant thereto, and Indiana Administrative Code Title 327.

Comment 48: Antidegradation - Per-and Polyfluoroalkyl Substances ("PFAS")

We recommend adding language to the Fact Sheet reflecting the possibility that PFAS is or was discharged by the Facility and including a corresponding Permit requirement to monitor for PFAS at section I.A. of the Permit. PFAS are a class of synthetic chemicals used since the 1940s to make water-, heat-, adhesive-, and stain-resistant products such as cookware, carpets, clothing, furniture fabrics, paper packaging for food, other resistant materials, and aqueous film-forming foam (AFFF). These chemicals are bioaccumulative and persistent in the human body and throughout the environment. For example, EPA considers Perfluorooctane sulfonic acid ("PFOS") — one of many PFAS substances — to be a

hazardous substance that “may present a substantial danger to human health” due to its links to cancer and effects on reproductive, developmental, and cardiovascular health.²⁰ Other PFAS have also been linked to cancer, immune deficiencies, thyroid disease, and other health problems.²¹

Even though not yet regulated in Indiana, there is a significant potential for discharge of PFAS from the Facility because of its possible use of the substances in past and current systems, including the Facility Fire Department and fire training area plus Facility fixed and portable fire protection systems. Fixed fire protection systems are especially vulnerable to accidental discharge and release during testing and system maintenance.²² Because PFAS are considered “forever chemicals” and are difficult to remove and remediate, it is likely that residuals would remain in Facility process and discharge systems.

Regulatory agencies have recognized the significant potential dangers of PFAS in surface water, rivers and freshwater lakes. In December 2022, EPA Office of Water sent a memorandum to Regional Water Division Directors on how best to use Clean Water Act authorities to protect the public from the dangers of PFAS.²³ Guidelines included using state NPDES permits to reduce PFAS pollution allowed into waterways and using the most current sampling and analysis methods and pretreatment to identify PFAS sources. In November 2019, the Great Lakes Consortium for Fish Consumption Advisories published a fish advisory titled, “Best Practice for Perfluorooctane Sulfonate (PFOS) Guidelines.”²⁴ Of note, the Indiana Department of Health has posted a PFOS Advisory to its website.²⁵

The East Facility discharges to the Indiana Harbor Ship Canal and to Lake Michigan. PFAS has been found in fish tissue in Lake Michigan, indicating that monitoring requirements for the substance should be added to the Facility’s Permit requirements. Image 1 below, from EPA’s *How’s My Waterway* website,²⁶ depicts Michigan’s designation of the eastern half of Lake Michigan as impaired by PFOS in fish tissue. PFOS is one of two widely produced, commonly encountered, and most studied PFAS compounds, is known to be particularly harmful, and is the largest contributor to total PFAS levels found in freshwater fish samples.²⁷ The contribution and bioaccumulation of PFAS in fish is a nationwide problem and indigenous and tribal communities are particularly at risk due to their dependence on freshwater fish.²⁸ Especially notable is the fact that the designated PFOS-impaired area of Lake Michigan shown in Image 1 abruptly ends at the border of northwestern Indiana waters, which is highly unlikely. This obvious omission reflects the need for IDEM to require PFAS monitoring in permits so that information about the extent of PFAS contamination can be fully understood. Northwest Indiana communities, visiting public, and local tribal communities that choose to fish in these waters have a right to know all potential hazards that exist.

Image 1



As proposed, the Draft Permit does restrict new or increased discharges of bioaccumulative pollutants generally. Part II.A.16 of the Facility permit states: “This permit prohibits the permittee from undertaking any action that would result in a new or increased discharge of a bioaccumulative chemical of concern (BCC) or a new or increased permit limit for a regulated pollutant that is not a BCC unless one of the following is completed prior to the commencement of the action. . . .” Draft Permit at p. 72. Consistent with that prohibition, we recommend that the Permit be revised to add sampling and monitoring requirements for potential PFAS in the Permittee’s discharge at all internal and external outfalls where non-point stormwater might carry PFAS from fixed and portable fire protection system use and/or periodic maintenance and testing. This sampling is needed to determine whether PFAS is present and to have a baseline record available when EPA does impose specific requirements through its various rulemaking activities.²⁹ If PFAS is identified, we further recommend that the Facility should be required to investigate the source(s) and proactively mitigate the sources to the extent feasible

Response 48: No changes were made in response to this comment.

The EPA plans to restrict PFAS discharges from industrial sources through a multi-faceted Effluent Limitations Guidelines (ELG) program and is conducting a PFAS multi-industry study to inform the extent and nature of PFAS discharges. Additionally, the EPA is developing national recommended ambient water quality criteria for PFAS to protect aquatic life and human health.

IDEM’s current PFAS policies and activities are found here:
<https://www.in.gov/idem/resources/nonrule-policies/per-and-polyfluoroalkyl-substances-pfas/#activities>

Comment 49: Antidegradation - Mercury and PFAS Atmospheric Deposition

There is evidence that both mercury and PFAS have been found in surface water, groundwater, and drinking water systems from atmospheric deposition where it is manufactured or used. This is in addition to mercury and PFAS possibly being discharged in facility wastewaters. There is further evidence that the primary source of mercury from a steel mill is from blast furnaces emissions to air.³⁰ The Michigan TMDL for mercury in Lake Michigan indicates that the impairment is partly due to atmospheric deposition.³¹ This is also true of PFAS in states that have found it in surface water bodies and in fish tissue. As mentioned, PFAS has been found in residential drinking water as a result of atmospheric deposition.³² Two examples of PFAS in residential drinking water from industrial atmospheric deposition include emissions from the 3M facility in Cordova, IL³³ where PFAS products were manufactured and the St. Gobain facility in Merrimack, NH³⁴ where PFAS products were used. These situations are heartbreaking for the surrounding exposed communities and costly for the companies because of associated penalties and treatment or replacement of drinking water supplies.

Because of the proven potential for emissions from steel mill blast furnaces to deposit to surface water and the fact that there have been firefighting activities and the potential for AFFF in fire protection systems, Commenters strongly recommend that the Facility should be required to include this possibility in review of its overall potential impacts to the Indiana Harbor Canal and to Lake Michigan. If emissions to air are found to be a possible contributor, existing air emissions control devices should be improved, or new emission controls installed. Ultimately, the preferred action is to avoid the use of these harmful BCCs.

Response 49: No changes were made in response to this comment. Atmospheric deposition contributes to background concentrations in receiving streams, which is taken into consideration when establishing water quality-based effluent limitations.

Evaluation of air emissions and air emission control devices is beyond the scope of an NPDES permit.

Comment 50: Stormwater

The Draft Permit presents an opportunity to create clear, specific, measurable and enforceable requirements to reduce polluted industrial stormwater runoff from the Facility, which can be particularly toxic and hazardous to human health and aquatic biota, and that threatens the goal of promoting environmental justice in Indiana. As written, the Draft Permit requires the permittee to “implement the non-numeric permit conditions in this Section of the permit for the entire site as it relates to stormwater associated with industrial activity regardless which outfall the stormwater

is discharged from.” Draft Permit at Part I.D. In support of the lack of measurable standards for the required control measures, the Fact Sheet provides that:

The permittee must control its *discharge as necessary to meet applicable water quality standards*. It is expected that compliance with the non-numeric technology-based requirements should ensure compliance with applicable water quality standards. However, if at any time the permittee, or IDEM, determines that the discharge causes or contributes to an exceedance of applicable water quality standards, the permittee must take corrective actions, and conduct follow- up monitoring and IDEM may impose additional water quality-based limitations.

Proposed Fact Sheet at section 5.7 (emphasis added). Without numeric metrics, though, the Draft Permit includes requirements that are inherently unenforceable. Commenters recommend that the Department establish, and clearly identify, measurable and enforceable obligations in the Permit beyond the general prohibition against causing or contributing to an exceedance of WQS; otherwise, the Permit may be ineffective and unlawful to the extent that the permittee cannot be made to comply. Enforceability would be improved through clearer, more measurable standards and explicit statements of enforceable provisions, avoiding permittee self-regulation, increased monitoring requirements, strengthened corrective action provisions, and improved transparency and public accessibility of information.

For example, the Draft Permit requires the permittee to perform the following “Good Housekeeping” stormwater control measures: “Keep clean all exposed areas that are potential sources of pollutants, using such measures as sweeping *at regular intervals*, keeping materials orderly and labeled, and stowing materials in appropriate containers.” Draft Permit at Part I.D.4.b (emphasis added). The frequency of sweeping should be prescribed, including so that it ensures that all portions of the Facility regularly receive attention. By way of further example, the Draft Permit requires that the permittee “[e]nclose or cover storage piles of salt, or piles containing salt, used for deicing or other commercial or industrial purposes, including maintenance of paved surfaces.” *Id.* at 4.g. However, the Draft Permit does not contain a deadline for covering the salt piles or provide any specific requirements for doing so. Therefore, IDEM should review the entire “Stormwater” portion of the Draft Permit to add enforceable performance metrics.

Additionally with regard to stormwater, the Draft Permit requires the permittee to consider “use of treatment interceptors (e.g. swirl separators and sand filters) [which] may be appropriate in some instances to minimize the discharge of pollutants.” Draft Permit at Part I.D.3.g. As discussed above at Section 2.3 (Wastewater Treatment), Commenters

recommend installation of oil/water separators for wastewater. Similarly, we suggest using separators for purposes of stormwater as well.

Response 50: No changes were made in response to this comment. The stormwater requirements in the permit are, for the most part, general in nature, and require the permittee to design a site-specific program tailored to its facility, while meeting water quality standards. Neither EPA nor IDEM mandate the use of a specific treatment technology.

Comment 51: Water Treatment Additives

In the event that the permittee decides to use a new water treatment additive that will contribute to the Facility's outfalls (or in the case of certain other changes), the permittee is required to complete and submit State Form 50000 (Application for Approval to Use Water Treatment Additives) "prior to such discharge." Permit at Part I.A.1.n.1. The Fact Sheet cites several provisions of Indiana law which require advance notice of planned changes "as soon as possible," or "as soon as the discharger knows or has reason to know" that it has begun or expects to use such additives. Fact Sheet at Section 5.8. We submit that the Permit should require submission of State Form 50000 within a prescribed number of days before an additive begins usage, rather than "as soon as possible." Permit at Part I.A.1. If the permittee is unable to comply with the required number of days, IDEM could consider using enforcement discretion on a case-by-case basis to determine whether to address any such lateness.

Response 51: No changes were made in response to this comment. The current provision is appropriate and in accordance with other similarly issued NPDES permits in Indiana. If a new water treatment additive is to be used that will contribute to an Outfall, or changes are to be made in the use of water treatment additives, including dosage, the permittee must apply for and receive approval from IDEM prior to such discharge. Non-compliance with this requirement will be a violation of the permit.

Comment 52: Permit Draft Discussion - Streamlined Mercury Variance

The Draft Permit proposes to apply a variance to otherwise-applicable WQSs for mercury through a "Streamlined Mercury Variance" ("SMV"), simply because the discharger is unable to attain the WQS for that pollutant. The information in the Draft Permit and Fact Sheet is insufficient to show consistency with federal and Indiana law on variances, such that the SMV should be denied until and unless the permit applicant is able to provide necessary support for its request as explained below.

Indiana's streamlined mercury variance, 327 IAC 5-3.5, requires compliance with the federal variance regulation, 40 C.F.R. § 131.14. See 327 IAC 5-3.5-2(b); IC § 13-14-8-9(b)(1). The federal regulations require

that a discharger-specific WQS variance “represent the highest attainable condition of the water body or waterbody segment applicable throughout the term of the WQS variance.” 40 C.F.R. § 131.14(b)(1)(ii). When an impairment is human-caused, like mercury, the permittee must also demonstrate that “[h]uman caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place.” 40 C.F.R. § 131.14; 40 C.F.R. § 131.10(g).

Where a discharge is to occur within the Great Lakes System, like here, it must also meet the requirements of 40 C.F.R. Part 132. IC § 13-14-8-9(b)(2). The following conditions (among others) apply to WQS variances granted to Great Lakes dischargers:

1. A variance to a WQS shall not be granted that would likely jeopardize the continued existence of any endangered or threatened species listed under Section 4 of the Endangered Species Act . . . or result in the destruction or adverse modification of such species' critical habitat.
 2. A WQS variance shall not be granted if standards will be attained by implementing effluent limits required under sections 301(b) and 306 of the Clean Water Act (CWA) and by the permittee implementing cost-effective and reasonable best management practices for nonpoint source control.
- . . .
- A variance may be granted if:
1. The permittee demonstrates to the State that attaining the WQS is not feasible because:

. . .

 - c. Human-caused conditions or sources of pollution prevent the attainment of the WQS and cannot be remedied, or would cause more environmental damage to correct than to leave in place;

. . .

 2. In addition to the requirements of C.1, above, the permittee shall also:
 - a. Show that the variance requested conforms to the requirements of the State's or Tribe's antidegradation procedures; and
 - b. Characterize the extent of any increased risk to human health and the environment associated with granting the variance compared with compliance with WQS absent the variance, such that the State or Tribe is able to conclude that any such increased risk is consistent with the protection of the public health, safety and welfare.

40 C.F.R. Part 132, Appendix F, Procedure 2. To the extent that the federal criteria are more stringent than the state criteria, they must also be considered. 33 U.S.C. § 1311(b)(1)(C); 40 C.F.R. § 123.1(f); (i)(1).

Indiana regulations also contain criteria for variances from WQS. Among other requirements, the state requires that, in order for a variance to be granted, a permit applicant must “demonstrate[] that implementing a proposed methodology, which includes any production process(es), wastewater treatment technology, or combination thereof used to reduce pollutants discharged in the wastewater from a facility, as identified pursuant to 327 IAC 5-3-4.1(b)(2)(A), will cause an undue hardship or burden upon the applicant.” 327 IAC 2-1.5.

Further, in deciding a variance application, the Department “shall balance the increased risk to human health and the environment if the variance is granted against the hardship or burden upon the applicant if the variance is not granted so the commissioner is able to conclude that any increased risk is *consistent with the protection of the public health, safety and welfare*. In balancing these factors, the commissioner shall consider the following to determine if the hardship or burden upon the applicant is undue:

- (1) The cost and cost effectiveness of pollutant removal by implementing the methodologies proposed by the applicant and the methodology capable of attaining the WQBEL.
- (2) The reduction in concentrations and loadings of pollutants attainable by the methodologies proposed by the applicant as compared with the reduction attainable by use of the methodology capable of attaining the WQBEL.
- (3) The impact of the proposed methodologies and the methodology capable of attaining the WQBEL on the price of the goods or services provided by the applicant.
- (4) Information on the relative price of goods or services in the same market as the applicant.
- (5) The overall impact of attaining the WQBEL and implementing the proposed methodologies on employment at the facility.
- (6) Information on the type and magnitude of adverse or beneficial environmental impacts, including the net impact on the receiving water, resulting from the proposed methodologies that could be applied to the control of the substance for which a variance is applied.
- (7) Other relevant information requested by the commissioner or supplied by the applicant or the public.”

327 IAC 2-1.5-17(c) (emphasis added). As with the federal requirements, the Draft Permit does not include any discussion of how it considered each of the criteria for granting variances — particularly protection of the public

health, safety and welfare — so approval of the variance request is premature. If IDEM obtains the necessary information to grant the variance, the Fact Sheet should be revised to include such an explanation. Fortunately, IDEM has developed a form for industrial facilities to use when applying for the SMV, State Form 52111, so gathering the required information should not be burdensome. We also strongly recommend that the fully- completed form should be included in the permit renewal package if at some point the permit applicant has submitted sufficient information supporting its variance request.

As drafted, the Draft Fact Sheet does not yet demonstrate how any of the criteria in Appendix F apply to the proposed SMV for the Facility, in particular that the human-caused source of mercury would prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place. Commenters request that IDEM identify precisely in the Fact Sheet and Draft Permit which, if any, of the qualifying conditions set forth in 40 C.F.R. Appendix F to Part 132, Procedure 2, Section C.1 IDEM has concluded justifies issuance of the SMV. With respect to each such C.1 condition, the Fact Sheet or Permit should include or describe in detail “[a]ll relevant information demonstrating that attaining the applicable WQS is not feasible” as required by Appendix F at Section D.1. If IDEM is unable to comply with this request because the applicant has failed to submit information sufficient to make the required demonstration, then the requirements for the SMV have not been satisfied and the application should be rejected. It is essential that IDEM develop a record about all impacts of the variance, but especially the extent of any increased risk to human health and the environment associated with granting the variance compared with compliance with WQS absent the variance, given the vulnerable population surrounding the Facility. IDEM must be able to conclude, after a thorough review, that any such increased risk is consistent with the protection of the public health, safety and welfare. *Id.* at Subsection (C)(2)(b).

With regard to 40 C.F.R. Appendix F to Part 132, Procedure 2, Sections C.2(a) and C.2(b), Commenters request that IDEM indicate whether the applicant has complied with both demonstration and characterization requirements. If IDEM believes the applicant has complied with each of those requirements, we request that the Fact Sheet and Permit include “[a]ll of the relevant information demonstrating compliance with the conditions in section C.2 of this procedure,” as required by the regulation at Section D. 2. If IDEM is unable to comply with this request because the applicant has failed to submit information sufficient to make the required demonstration, then the requirements for the SMV have not been satisfied and the application should be rejected.

Response 52: No changes were made in response to this comment. The U.S. EPA approved Indiana's Streamlined Mercury Variance Rule, 327 IAC 5-3.5, on December 21, 2005.

https://www.in.gov/idem/cleanwater/files/wqs_epa_approval_smv_20051221.pdf Indiana submitted supporting documentation demonstrating the widespread social and economic impacts of compliance with mercury limits derived from Indiana's existing water quality criteria, as well as documentation showing compliance with the requirements of 40 CFR 132, Appendix F, Procedure 2.

The U.S. EPA determined that the rule and supporting documentation met the substantive requirements for a variance from water quality standards consistent with Section 303 of the Clean Water Act and Federal regulations at 40 CFR 131 and, for portions of Indiana within the Great Lakes Basin, 40 CFR 132. The U.S. EPA also determined that Indiana's rule complied with the procedural requirements of Federal regulations at 40 CFR 131.20 for a complete submission.

Comment 53: Permit Draft Discussion - Mercury Discharge Limits Under SMV

The Draft Permit indicates that the SMV is intended to establish a simplified process for "obtaining a variance from a water quality criterion used to establish a WQBEL for mercury in an NPDES permit." Draft Permit at p. 89. The interim effluent limitation for mercury proposed by the Draft Permit with the SMV at Outfall 018 is a monthly average of 1.5 ng/L; the Draft Permit also provides that "Compliance with the interim discharge limit will demonstrate compliance with mercury discharge limitations of this permit for this outfall." Draft Permit at p. 17, Table 1; p. 5, n. 10. As a basis for the SMV, the Draft Permit indicates that, "[b]ased on a review of the SMV application, IDEM has determined the application to be complete as outlined in 327 IAC 5- 3.5-4(e)." *Id.* As a technical basis for approving the SMV, the Fact Sheet explains that:

The interim discharge limit was developed in accordance with 327 IAC 5-3.5-7 and with 327 IAC 5-3.5-8. Specifically, the interim discharge limit shall be based upon available, valid, and representative data of the effluent mercury levels collected and analyzed over the most recent two (2) year period from the facility.

After receipt of a complete application on April 28, 2022, an updated dataset was provided to IDEM. The updated dataset was used to calculate the interim limit (see Table 7 below) which represents the highest daily value for mercury during the period of review.

Draft Fact Sheet at p. 134. In other words, *the limit is based on the highest daily value of mercury actually discharged over the prior two years*, consistent with 327 IAC 5-3.5-8. However, simply relying on that provision

— and ignoring the other federal and state requirements for approval of variances — is insufficient as a basis for approving the SMV. As such, we recommend that IDEM review the federal and state requirements identified above and expand its analysis of the SMV application to reflect that information.

Further, we recommend that IDEM include the entire SMV application in the permit renewal package to ensure transparency, given the environmental impacts of mercury. Currently, the package only includes the data set of highest mercury discharge concentrations from April 2020 – February 2022. Draft Fact Sheet, Appendix C.

Response 53: The interim mercury discharge limits were determined in accordance with 327 IAC 5-3.5. The entire permit renewal application package, including the SMV application, will be uploaded to Indiana's Virtual File Cabinet as part of the public record. [IDEM Virtual File Cabinet](#)

Comment 54: Permit Draft Discussion - Additional Challenges Presented By SMV Reliance on PMPP is Misplaced

In support of the proposed SMV, the Fact Sheet provides that “[t]he goal of the SMV is to reduce the effluent levels of mercury towards, and achieve as soon as practicable, compliance with the mercury WQBELs through implementation of a pollutant minimization program plan.” Draft Fact Sheet at section 6.5. However, the bulk of the requirements to be imposed on a permittee that has been granted an SMV is development of an annual Pollutant Minimization Program Plan (“PMPP”). Draft Permit at Part IV; 327 IAC 5-3.5-9.

However, Cleveland-Cliffs has not developed PMPPs annually, even though that has been a requirement of the existing permits. For example, at this Facility, the permittee was required to include a plan in its PMPP to monitor mercury at internal outfalls 518 and 618, which discharge to outfalls 011 and 014. However, the current status stated in the 2021 PMPP list, as shown in Attachment 1 to the September 30, 2021 PMPP, was “Not conducted. Outfall 011 and 014 mercury results from August 2019 to June 2020 have been below SMV limits. Source characterization/monitoring at internal outfalls is not warranted.” Yet, we submit that source characterization is precisely what the permittee must do or it will never ultimately reduce mercury discharges.

Response 54: Streamlined Mercury Variances focus on pollution prevention and source control to achieve mercury effluent reductions. The primary components of a SMV are interim limits and pollutant minimization program plan (PMPP) requirements. The goal of the mercury PMPP is to reduce concentrations of mercury in the effluent to levels that achieve compliance with the applicable water quality-based effluent limitations for mercury. SMVs have

been found to effectively reduce mercury concentrations in industrial facility discharges.

Under 327 IAC 5-3.5, permittees are not required to develop PMPPs annually. In accordance with 327 IAC 5-3.5-9(a)(8), annual reports are required by the PMPP. The annual report must describe the permittee's progress toward fulfilling each PMPP requirement, the results of all mercury monitoring within the previous year, and the steps taken to implement the planned activities outlined under the PMPP. Annual reports are public records uploaded to Indiana's Virtual File Cabinet. [IDEM Virtual File Cabinet](#)

For this Facility, internal outfalls 518 and 618 discharge to final Outfall 018, not outfalls 011 and 014. Outfalls 011 and 014 no longer exhibit reasonable potential to exceed water quality criteria for mercury, therefore, these outfalls are not eligible for a SMV and water quality-based effluent limits are not required. The discharge from Outfall 018 does have reasonable potential to exceed, therefore, water quality-based effluent limits are required. Additionally, based on the information provided by the facility, the discharge qualifies for a SMV. The SMV approval requires development of a PMPP for Outfall 018, which will include source characterization activities to be conducted at the affected internal and final outfalls.

Comment 55: Permit Draft Discussion - Receiving Waters Cannot Tolerate Higher Concentrations of Mercury

Finally with regard to the proposed SMV variance, allowing additional mercury discharges to the receiving waters of the Cleveland-Cliffs permits is not appropriate, given the current impaired status of Lake Michigan, Cleveland Cliff's contribution, and the need to heal the receiving waterbodies.

Response 55: The discharges from Outfalls 011 and 014 no longer exhibit reasonable potential to exceed water quality criteria; the quantity and quality of mercury in the discharge is less than water quality criteria. While the discharge from Outfall 018 still exhibits reasonable potential to exceed water quality criteria, and the SMV at this outfall is being renewed, the reduction in the interim discharge limit supports that the PMPP implemented by the facility is effectively reducing mercury in the discharge.

Previous interim limit:	2.5 ng/l annual rolling average
Proposed interim limit:	1.5 ng/l annual rolling average
WQBELs:	1.3 ng./l monthly average / 3.2 ng/l daily maximum

Comment 56: Permit Draft Discussion - Deposition of Mercury from Air Emissions
Unregulated

The Lake County Shoreline, including the East Chicago shoreline (Incorporated Area), is listed by IDEM as impaired by mercury in fish tissue. Michigan and Wisconsin have listed Lake Michigan as impaired by mercury. Consideration should be given to this fact in any assessment regarding a variance for higher mercury discharge criteria. Atmospheric deposition of mercury from Facility operations should also be considered and factored into any decision for a variance and for setting discharge criteria.

Response 56: At this time, IDEM does not have guidance on considering atmospheric deposition when establishing variances. When establishing effluent limitations based on water quality criteria, Indiana regulation does not allow mixing zones for mercury. Therefore, a WQBEL for mercury based on the most stringent water quality criterion is included in the permit along with the SMV interim limit.

Comment 57: Summary of Recommendations

Based on the foregoing discussion, Commenters recommend that the Permit and Fact Sheet be revised as follows:

1. **Conduct environmental justice analysis** to include analysis of existing demographic and public health data and mitigation available to address adverse effects.
2. **Conduct cumulative impacts analysis** to protect the water quality of receiving streams and the public health of local communities due to the number of other local dischargers.
3. **Greater Public Engagement:** Hold a public meeting, together with Cleveland-Cliffs Steel, to answer questions from the local community. Provide Spanish translation.
4. **Improve treatment** to increase the removal of total suspended solids and oil and grease and, as a result, the discharge of heavy metals. Improve treatment for ammonia that reflects the best treatment technology. Specifically, install membrane filtration, ion exchange, and/or reverse osmosis to its current treatment system just prior to discharge to Lake Michigan. See Table in Appendix A for treatment improvement proposals for specific discharges.
5. **Install oil/water separators** for all wastewater and stormwater discharges.
6. **Establish site-specific technology-based effluent limits** applying best professional judgment.

7. **Establish measurable and enforceable obligations** of any requirements designed to prevent exceedances of water quality standards.
8. **Add performance metrics** to stormwater portion of permit that are measurable and enforceable.
9. **Include wasteload allocation calculations** for total suspended solids in permit.
10. **Add to the NPDES Permit** an express prohibition on the discharge of unpermitted pollutants.
11. **Monitor for PFAS contamination.** Specifically, add sampling and monitoring requirements for PFAS in all internal and external outfalls, investigate their source, and mitigate where to the extent feasible.
12. **Require submission of Form 5000** within a prescribed number of days before any water treatment additive is used.
13. **Reject the Streamlined Mercury Variance** unless and until the applicant's publicly- available supporting documentation satisfies all applicable federal and state requirements. If IDEM determines that it has sufficient information to consider the SMV request, **include in the renewal permit package** a copy of permittee's completed application for streamlined mercury variance.

Response 57: Please refer to Responses 37-56.

Please refer to the comment letter to see footnotes included throughout the letter, as well as the commenters' "Attachment A".

Comments submitted by Tom Barnett, Manager, Environmental, Cleveland-Cliffs Steel LLC, on November 16, 2023.

Comment 58: Outfalls 014/013A and 014/013B Footnotes [21] and [22] Prohibition on discharge of process waters

The water transport language should be amended. Cliffs requests that the maximum volume of 25,000 gallons transported "per event" be replaced with 250,000 gallons transported per year. This would not increase the maximum allowable gallons to be transported per year. Limiting the amount transported per event could significantly damage infrastructure and cause significant health and safety incidents.

Response 58: No changes were made in response to this comment. The permittee has not provided any additional evidence which would justify this change.

Comment 59: Available Cyanide LOD and LOQs and low-level data reliability.

The LOQ listed in footnote [8] for Outfalls 014/013A and 014/013B and footnote [6] for Outfall 018 for OIA 1677-09 (available cyanide) may not always be achievable and the listed LOQ does not appear to be consistent with 327 IAC 5-2-11.6(h)(2)(B).

Under 327 IAC 5-2-11.6(h)(2)(B) the LOQ is to be established as the ML if an ML is available. Under the referenced footnotes, the LOQ is listed as 1.6 ug/L. However, under method OIA 1677-09, the ML is listed as “2 ug/L”. Accordingly, the footnotes should be revised to include “2 ug/L” as the LOQ for OIA 1677-09.

In a related comment, Cleveland-Cliffs predecessor commissioned a pioneering low-level performance testing evaluation for assessing variability of analytical determinations, including available cyanide (i.e., the RSCollaborative Services report). That report and the related conclusions have been previously provided to IDEM. Based on the findings from that report Cleveland-Cliffs concluded the following:

... the NPDES test methods evaluated ... (including) different forms of cyanide)... are not capable of discerning data within common acceptance criteria when the concentrations of interest are near and below typical laboratory reporting levels. Such findings raise concern when data that fall below reporting limits are utilized for diagnostic or compliance related evaluations. This is especially true when individual data points are evaluated.

The RSCollaborative report previously provided to IDEM is included as Attachment C.

Response 59: As requested, for OIA-1677-09, the LOQ was changed to 2.0 µg/l consistent with the detection and minimum levels established in the method.

Comment 60: Outfall 018 Free Cyanide Compliance Schedule

A statement should be added to the permit to recognize that Cleveland-Cliffs may submit a sampling and analysis plan for alternate sampling location and may submit an updated reasonable potential assessment.

Cliffs requests that a footnote be added to the Outfall 018 permit limit table regarding free cyanide reasonable potential and a possible alternate sampling location:

Footnote [25]: The permittee may submit to IDEM for review and approval a sampling and analysis plan to support an alternative sampling location for assessing reasonable potential and/or compliance with the Outfall 018 free cyanide effluent limits. If acceptable to IDEM, such a change in

sampling location could be implemented as a minor modification of the NPDES permit. The permittee may also submit a request to modify the NPDES permit if no reasonable potential to exceed ambient water quality standards for free cyanide can be demonstrated.

Response 60: No changes were made in response to this comment. Neither a statement nor footnote condition are necessary to allow the permittee to submit a sampling and analysis plan, additional information necessary for IDEM to complete an updated reasonable potential assessment, or a permit modification request.

Comment 61: Outfall 000. No. 2 Pump House flow and through screen velocity monitoring and reporting, Part III.A.1.a Impingement Mortality BTA at No. 2 Pump House

BTA for Impingement Mortality at the No. 2 Intake should be Design-Through Screen Velocity less than or equal to 0.5 ft/s, with a compliance schedule to confirm the design intake flow by flow measurement.

Part III. A. 1. a. of the draft permit identifies Impingement Mortality BTA for the No. 2 as actual through-screen velocity of 0.5 ft/s or less.

This intake is operated with one pump and other co-located pumps are maintained on standby status. The daily intake flow does not exceed the flow rate of the single operating pump (except for switching pumps or in case of emergency as recognized in the draft permit). Based on recent review of pump information, it may be possible that a single pump operation could have an intake flow greater than 10,000 gpm, yet certainly below an intake flow of 27,500 gpm, which would equate to a through-screen velocity of only 0.25 ft/s (only 50% of the BTA standard). See Attachment A which contains the through-screen velocity calculations provided to IDEM on August 18th.

To address this situation, Cliffs agrees to install intake flow measurement for the No. 2 Intake within 9 months and proposes a compliance schedule to provide confirmatory information to IDEM that the design through-screen velocity is 0.5 ft/s or less. In any case, "through-screen design velocity of 0.5 ft/s or less" as impingement mortality BTA must be achieved within three years under this proposed schedule. The outline of the proposed schedule is provided here, and Cliffs proposed permit language is provided in the attached "redline" version of the draft permit:

- 1) Prior to installation of the flow meter, estimated flows will be reported.
- 2) Following installation of the flow meter, measured flows will be reported. After the 12-month period of measured flows, these flow data along with other pertinent pump information will be used to establish the "design intake flow" and the information and data

will be provided to IDEM to demonstrate that the “design through-screen velocity” is 0.5 ft/s or less.

3) The additional time within the compliance schedule of up to 36 months would be used to make any necessary changes to achieve 0.5 ft/s on design through-screen basis but is not expected to be needed.

Response 61: No changes were made in response to this comment. The information provided by the permittee has not demonstrated that the maximum design intake velocity as water passes through the structural components of a screen measured perpendicular to the screen mesh does not exceed 0.5 feet per second. See Section 6.4 of the Fact Sheet.

Comment 62: Outfall 000 limitations

For any intake where actual through screen velocity is the impingement mortality BTA alternative, the calculated velocity should be “daily” instead of hourly, consistent with the regulation.

For the No. 2 Intake, should “actual through screen velocity” be the required method of compliance, the draft permit contains an “hourly maximum” limit of 0.5 ft/s, using the hourly daily maximum flow recorded throughout the day. Cliffs objects to the use of “hourly daily maximum” as the monitoring frequency and compliance determination because the regulation does not require “hourly” monitoring.

The CWIS regulation at 40 CFR 125.94(c)(3), for the “actual through screen velocity” BTA option is as follows (emphasis added):

...The maximum velocity must be achieved under all conditions, including during minimum ambient source water surface elevations (based on best professional judgment using hydrological data) and during periods of maximum head loss across the screens or other devices during normal operation of the intake structure. The Director may authorize the owner or operator of the facility to exceed the 0.5 fps velocity at an intake for brief periods for the purpose of maintaining the cooling water intake system, such as backwashing the screen face. In addition, you must monitor the velocity at the screen at a minimum frequency of daily. In lieu of velocity monitoring at the screen face, you may calculate the through-screen velocity using water flow, water depth, and the screen open areas.

Cliffs believes that a plain reading of the regulation regarding achieving the maximum velocity under “all conditions” coupled with the referenced monitoring frequency of “daily” means that the 0.5 ft/s velocity must be achieved on a daily basis, including days of low source water elevations, and that determination of “hourly velocity” is not required. The regulation itself acknowledges that there may be brief periods when the maximum

velocity of 0.5 ft/s is exceeded. Accordingly, a “daily” velocity limit and monitoring frequency is appropriate.

Cliffs has provided a “redline” version of the draft permit containing its proposed changes regarding this issue.

Response 62: No changes were made in response to this comment. The CWIS regulation at 40 CFR 125.94(c)(3), for the “actual through-screen velocity” requires that ‘velocity be met “under all conditions”. The 0.5 ft/s velocity is a not-to-exceed requirement. To assure that the velocity is met under all conditions, IDEM has determined that hourly velocity determinations are needed to capture potential fluctuations in intake flow which would otherwise be obscured by a daily average calculation. Calculating intake velocity on an hourly basis provides a more accurate picture of short-term fluctuations in velocity which will allow IDEM and facility operators to more adequately determine whether compliance with the 0.5 ft/s velocity limit is achieved. The regulation found in 40 CFR 125.94(c)(3) states that the velocity must be calculated at a minimum frequency of daily; this does not negate IDEM’s authority to apply more precise monitoring to reflect site-specific operating conditions at a facility (See 40 CFR 125.96(a)).

Comment 63: Part I.T Schedule of Compliance CWIS Main Intake Flap Gate Intake, Part III.A.1.b

Impingement Mortality BTA for the Flap Gates should be “closed cycle” cooling based on the existing Master Recycle System.

As described previously, the volume of Lake Michigan water withdrawn from the Main Intake flap gates near the No. 6 Pump House is exceedingly low on an absolute basis (perhaps 500 gpm) and more so when compared against the high volume of circulating water (~ > 300 mgd) in the Indiana Harbor East Master Recycle System (MRS) and water withdrawals at the No. 2 Pump House and the No. 7 Intake. [The No. 6 Pump House recirculates combined process water (contact cooling water) and non-contact cooling water within the MRS]. Consequently, the amount of entrainment and impingement mortality associated with the flap gates is inconsequential.

The PN permit would require that Cliffs comply with impingement mortality BTA for the Main Intake flap gates by closing (sealing) the flap gates installing 3/8” or smaller screens at the Main Intake along with a number of other conditions or implementing other impingement mortality BTA alternatives set out at 40 CFR §125.94(c). Notification of the selected approach would be required within 12 months of the permit effective date, and implementation would be required not later than 36 months after the permit effective date. The draft permit would also require submittal of six sets of plans for monitoring and operation of the flap gates within 20

months from the effective date of the permit if installation of 3/8" screens at the Main Intake is the selected method of compliance.

Our position is and has been that the Main Intake flap gates meet BTA for impingement mortality under 40 CFR §125.94(c)(1) by virtue of the Indiana Harbor East Master Recycle System (MRS). As set out in Attachment B, the MRS is a closed cycle recirculation system as defined at 40 CFR §125.92(c). (Attachment B was initially provided to IDEM on February 8, 2023 and is updated to include the No. 2 Intake flow rate of 14,000 gpm).

The MRS includes high rate recycle of process water (contact cooling water) in addition to high rate recycle of non-contact cooling water. US EPA did not consider contact cooling water when it considered closed cycle cooling water systems. Thus, the MRS goes beyond EPA's definition of closed cycle recirculation systems and should be considered in IDEM's assessment of impingement mortality BTA in this case. The preamble to the CWIS clearly shows IDEM has discretion in this regard (see 79 FR 48325, 26)

We again request the draft NPDES Permit and Fact Sheet recognize the MRS as a closed cycle recirculating system that constitutes BTA for impingement mortality for the Main Intake flap gates under 40 CFR 125.94(c)(1), in which case the compliance schedule for the Main NPDES permit.

Notwithstanding, the draft permit condition set out in the permit on page 63 after paragraph T.(a)(iii) is not acceptable. It would effectively mandate closure of the flap gates within 24 months if Cliffs does not select closure of the flap gates under paragraph T.(a)(i) and IDEM does not approve another impingement mortality BTA alternative proposed by Cliffs. We request this paragraph be removed from the draft permit.

Response 63: No changes were made in response to this comment. IDEM's evaluation of the No. 6 Pump House is found in section 6.4.2.B.2. of the Fact Sheet. If the permittee does close the flap gates, the intake will no longer be withdrawing water through the intake, which will mean the 316(b) regulations will no longer be applicable. If the flap gates are closed, no further evaluation or approval by IDEM is needed. However, if the permittee decides to pursue an alternate BTA option, such as specified in Part I.T.(a)(ii) or (iii) of the permit, IDEM must review these proposed alternatives to verify that they will comply with the 316(b) regulatory requirements. If the permittee does select an alternate BTA option as allowed by Part I.T.(a)(ii) or (iii) of the permit and demonstrates to IDEM that the selected alternative does comply with one of the required impingement BTA alternatives under EPA's regulations, IDEM will not unreasonably withhold its approval of that BTA alternative.

Comment 64: Part IV.B.7 velocity monitoring requirements (velocity studies at No. 2 and No. 7 Intakes)

Cleveland- Cliffs objects to the requirement to conduct intake velocity studies at the No. 2 and No. 7 Intakes and requests that such requirements be removed from the final permit.

Impingement mortality BTA at No. 7 intake is “0.5 ft/s Through Screen Design Velocity”. EPA expressly states in the CWIS regulation preamble that additional monitoring for this compliance alternative is not required:

“First, an intake with a maximum design intake velocity less than or equal to 0.5 fps is pre-approved BTA for impingement mortality and does not require further monitoring.” FR 08/15/2014, 48352

Regarding the No. 2 Intake, information will be submitted as part of the compliance schedule, that will detail how < 0.5 ft/sec will be achieved. Accordingly, an intake velocity study at the No. 2 Intake will likewise be unnecessary.

The probability of conducting a velocity study at low Lake Michigan levels and at design pumping capacity is exceedingly low and there are practical difficulties in measuring velocity (e.g., proper suspension and orientation of velocity meters at substantial water depths). In addition, actual through-screen velocity” cannot typically be measured, as acknowledged by EPA (see May 2014 TDD Sec. 6.6.2.), and therefore any study results would still rely on calculation of through-screen velocity.

Based on the considerations above, Cliffs believes that any such studies would not be a good use of resources for both Cliffs and IDEM. Therefore, Cliffs requests that velocity study requirements be removed from the draft permit.

IDEM proposes in the draft permit that the permit can be modified based on the results of these studies. Cleveland-Cliffs believes that the NPDES permit cannot be issued without the opportunity to review and comment on the specifics of how the velocity data will be interpreted by IDEM in relation to the 0.5 ft/s standard.

Notwithstanding, as explained above, Cleveland-Cliffs believes that the velocity study requirements should be removed from the permit.

Response 64: No changes were made in response to this comment. As explained in the Fact Sheet, these one-time velocity studies are being required at these intakes due to the reported actual daily intake flows being substantially higher than the design intake flows at some intakes as well as the inconsistent information that has been provided for the permittee’s intakes.

This information will be used by IDEM to validate the estimates provided by the permittee on pump flow rates and through screen velocity.

The estimated pump flows at these intakes are calculated based on pressure within the service water system, the known water uses for these intakes, and measured outfall flow rates. Uncertainty in estimated pump flows increases as the number of estimated parameters increases.

IDEM also believes that the velocity study will provide assurance on the accuracy of design criteria provided by the permittee to calculate through screen velocity. For example, open area of relevant intake screens. IDEM therefore concludes that the velocity study is warranted to address possible uncertainty in estimated pump flow rates and intake design parameters and that the study will remain in the permit.

Per 40 CFR 125.96(a), IDEM may establish monitoring requirements in addition to those specified at § 125.94(c), including, for example, biological monitoring, intake velocity and flow measurements. If IDEM establishes such monitoring, the specific protocols will be determined by IDEM.

STATE OF INDIANA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
PUBLIC NOTICE NO. 20231229 – IN0000094 - F
DATE OF NOTICE: DECEMBER 29, 2023

The Office of Water Quality has issued the following NPDES FINAL PERMIT:

MAJOR– RENEWAL

CLEVELAND-CLIFFS STEEL LLC – INDIANA HARBOR EAST, NPDES Permit No. IN0000094, 3210 Watling Street, East Chicago, IN, LAKE COUNTY. This industrial facility is an integrated steel mill that discharges to the Indiana Harbor Turning Basin via existing permitted outfalls. The discharges consist of process and non-process wastewaters from multiple operations and stormwater. The facility withdraws its water from Lake Michigan. As part of this NPDES permit renewal, IDEM has also approved the permittee's request for renewal of its streamlined mercury variance for Outfall 018 pursuant to 327 IAC 5-3.5. This variance will remain in effect until the NPDES permit expires pursuant to IC 13-14-8-9. These are the permitted outfall locations:

Outfall	Latitude	Longitude	Receiving Waterbody
011	41° 39' 56"	-87° 26' 23"	Indiana Harbor Turning Basin
013	41° 39' 55"	-87° 26' 13"	Indiana Harbor Turning Basin
014	41° 40' 02"	-87° 26' 22"	Indiana Harbor Turning Basin
018	41° 40' 29"	-87° 26' 08"	Indiana Harbor Turning Basin
518	41° 40' 50"	-87° 25' 30"	Indiana Harbor Turning Basin via Outfall 018
618	41° 40' 32"	-87° 25' 52"	Indiana Harbor Turning Basin via Outfall 018

Permit Manager: Nicole Gardner, IDEM Office of Water Quality, 100 N Senate Ave, Indianapolis, IN 46204-2251; 317/232-8707, ngardner@idem.in.gov. Posted online at <https://www.in.gov/idem/public-notice/>

Notice of Right to Administrative Review

If you wish to challenge this permit, you must file a Petition for Administrative Review with the Office of Environmental Adjudication (OEA) and serve a copy of the petition upon IDEM. The requirements for filing a Petition for Administrative Review are found in IC 4-21.5-3-7, IC 13-15-6-1 and 315 IAC 1-3-2. A summary of the requirements of these laws is provided below.

A Petition for Administrative Review must be filed with the Office of Environmental Adjudication (OEA) within fifteen (15) days of the issuance of this notice (eighteen (18) days if you received this notice by U.S. Mail), and a copy must be served upon IDEM. Addresses are:

Director
Office of Environmental Adjudication
Indiana Government Center North
Room N103
100 North Senate Avenue
Indianapolis, Indiana 46204

Commissioner
Indiana Department of Environmental Management
Indiana Government Center North
Room 1301
100 North Senate Avenue
Indianapolis, Indiana 46204

The petition must contain the following information:

1. The name, address and telephone number of each petitioner.

2. A description of each petitioner's interest in the permit.
3. A statement of facts demonstrating that each petitioner is:
 - a) a person to whom the order is directed;
 - b) aggrieved or adversely affected by the permit; or
 - c) entitled to administrative review under any law.
4. The reasons for the request for administrative review.
5. The particular legal issues proposed for review.
6. The alleged environmental concerns or technical deficiencies of the permit.
7. The permit terms and conditions that the petitioner believes would be appropriate and would comply with the law.
8. The identity of any persons represented by the petitioner.
9. The identity of the person against whom administrative review is sought.
10. A copy of the permit that is the basis of the petition.
11. A statement identifying petitioner's attorney or other representative, if any.

Failure to meet the requirements of the law with respect to a Petition for Administrative Review may result in a waiver of your right to seek administrative review of the permit. Examples are:

1. Failure to file a Petition by the applicable deadline;
2. Failure to serve a copy of the Petition upon IDEM when it is filed; or
3. Failure to include the information required by law.

If you seek to have a permit stayed during the administrative review, you may need to file a Petition for a Stay of Effectiveness. The specific requirements for such a Petition can be found in 315 IAC 1-3-2 and 315 IAC 1-3-2.1.

Pursuant to IC 4-21.5-3-17, OEA will provide all parties with notice of any pre-hearing conferences, preliminary hearings, hearings, stays, or orders disposing of the review of this action. If you are entitled to notice under IC 4-21.5-3-5(b) and would like to obtain notices of any pre-hearing conferences, preliminary hearings, hearings, stays, or orders disposing of the review of this action without intervening in the proceeding you must submit a written request to OEA at the address above.

If you have procedural or scheduling questions regarding your Petition for Administrative Review, please refer to OEA's website at <https://www.in.gov/oea/>.