STATE OF INDIANA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
PUBLIC NOTICE NO: 20251229 – IN0001155 – D
DATE OF NOTICE: December 29, 2025
DATE RESPONSE DUE: January 28, 2026

The IDEM Office of Water Quality proposes the following DRAFT RENEWAL of NPDES PERMIT and 316(a) THERMAL VARIANCE:

MAJOR – RENEWAL:

Warrick Newco LLC, NPDES Permit No. IN0001155, WARRICK COUNTY, 4400 West State Road 66, Newburgh, IN - Warrick County. The Warrick Newco LLC facility consists of an integrated aluminum manufacturing plant owned and operated by Warrick Newco LLC and an adjacent coal-fired stream electric power plant which is owned and operated by Alcoa Power Generating Inc. Both companies are subsidiaries of Alcoa Corporation. Alcoa Power Generating Inc. owns and operates the wastewater treatment facilities associated with the power plant. Warrick Newco LLC and Alcoa Power Generating Inc. are managed as one facility, Alcoa Warrick Operations.

The majority of the source water for the facility is the Ohio River. This facility has five external outfalls which are designated for process and non-process discharges. Outfalls 001, 004, and 005 discharge intermittently when wastewater overflows from the power plant sumps. Outfall 001 has a maximum monthly average discharge of 1.4 MGD, Outfall 004 has a maximum monthly average discharge of 3.0 MGD, and Outfall 005 has a maximum monthly average discharge of 0.4 MGD. Outfall 002 discharges non-contact cooling water on a continuous basis; this outfall has a monthly average discharge of 487 MGD. Outfall 003 continuously discharges the combined treated wastestreams from internal Outfall 103 and 303; this outfall has a maximum monthly average discharge of 10.4 MGD.

Each of these outfalls discharge to the Ohio River. The location of these outfalls is listed in the following table:

Outfall 001	Latitude: 37º 54’ 46”, Longitude: -87º 19’ 56”
Outfall 002	Latitude: 37º 54’ 50”, Longitude: -87º 20’ 10”
Outfall 003	Latitude: 37º 55’ 05”, Longitude: -87º 20’ 36”
Outfall 004	Latitude: 37º 54’ 52”, Longitude: -87º 20’ 07”
Outfall 005	Latitude: 37° 54’ 53’’, Longitude: -87° 20’ 09’

Warrick Newco LLC has submitted a renewal application for its NPDES permit which includes a request to renew its 316(a) thermal variance. The following describes the 316(a) variance request:

Thermal Effluent Limitations

1. The thermal component of the discharge through Outfall 002 is subject to effluent limitations under Section 301 of the Clean Water Act. In the absence of a 316(a) thermal variance, in addition to the narrative requirements under 327 IAC 2-1-6(b)(4), the following maximum limits shall not be exceeded outside the mixing zone more than one percent (1%) of the hours in the twelve (12) month period ending with any month. At no time shall the water temperature at such locations exceed the maximum limits in the following table by more than three (3) degrees Fahrenheit (one and seven-tenths (1.7) degrees Celsius).

Water Quality Based Effluent Limitations Table

	Ohio River Main Stem ◦F(◦C)
January	50 (10.0)
February	50 (10.0)
March	60 (15.6)
April	70 (21.1)
May	80 (26.7)
June	87 (30.6)
July	89 (31.7)
August	89 (31.7)
September	87 (30.7)
October	78 (25.6)
November	70 (21.1)
December	57 (14.0)

Further, the temperature criteria from Chapter 3.2.C. of the Ohio River Valley Water Sanitation Commission or ORSANCO, “Pollution Control Standards for Discharges to the Ohio River”, 2019 Revision would also be applicable.

2. The permittee has requested that the alternate thermal limitations developed pursuant to Section 316(a) of the Clean Water Act for the discharge from Outfall 002 be extended in the reissued permit instead of thermal limitations applicable under Section 301 of the Clean Water Act, Indiana Water Quality Standards, and ORSANCO criteria. The following is a summary of the alternative, less stringent, effluent limitations which were included in the request and the alternative effluent limitations that IDEM is proposing to include in this reissued permit:

   a. The permittee’s power generating station has a generating capacity of approximately 823 MW. The generating capacity may not be expanded or increased unless prior approval is obtained from IDEM.

   b. The permittee shall have a maximum ΔT of 5°F. In the renewal application, the permittee requested that the alternative temperature limit from the 2018 permit (ΔT of 7°F) be retained. However, a more stringent alternative thermal limit (ΔT of 5°F) has been implemented based on the most recent 316(a) Variance Demonstration Study and a review of the most recent (2012 – 2023) temperature data which demonstrate the permittee’s ability to comply with the new limit.

      The ΔT shall be determined by subtracting the upstream (intake) temperature from the mixed river temperature using the following mixed river equation:

$$T_{mr} = T_U \frac{Q_e(T_e - T_u)}{0.5 * (Q_{7,10} - Q_I) + Q_e}$$

Where:

T_{mr} = mixed river temperature (°F)
T_u = upstream (intake) river temperature (°F)
T_e = effluent temperature as determined at the Outfall 002 (°F)
Q_e = Effluent flow (MGD) at Outfall 002
$Q_I = intake\ flow\ (MGD)$
$Q_{7,10} = 7{,}110\ (MGD)$

The current Ohio River Q7,10 flow at the facility is 11,000 cfs (7,110 MGD). Given the above, $\Delta T = T_U - T_{mr}$, which shall be reported daily as required by Part I.A.2. of the permit.

c. The following requirements are applicable to the determination of the temperatures used in the above equation, the calculation of the mixed river temperature and the reporting of all values. The permittee shall:

1. Collect the inlet temperature data from a series of thermocouples once per hour and record the average inlet (upstream) temperature reading for each hour.

2. Collect the outlet (effluent) temperature data from a series of thermocouples once per hour and record the average outlet temperature reading for each hour for each unit. Use flow-weighted averages of each unit to determine the average outlet (effluent) temperature for the discharge each hour.

3. Calculate the mixed river temperature for each hour using the average inlet and outlet temperatures for that hour and the above mixed river temperature formula.

4. Determine the maximum hourly inlet (upstream) temperature, the maximum hour outlet temperature, and the maximum hourly mixed river temperature for the calendar day and report this data on the MMR form as the daily max for the corresponding day.

5. The highest single daily max value for each parameter [inlet (upstream) temperature, outlet (effluent) temperature, mixed river temperature] for the month is reported on the monthly DMR form as the maximum value for the month.

Permit Manager: Matt Warrener, 317-233-0798, mwarrene@idem.in.gov. Posted online at https://www.in.gov/idem/public-notices/.

PROCEDURES TO FILE A RESPONSE

You are hereby notified of the availability of a 30-day public comment period regarding the referenced draft permit, in accordance with 327 IAC 5-3-9. The application and draft permit documents are available for inspection at IDEM, Office of Water Quality, Indiana Government Center North, 100 N. Senate Ave, Indianapolis, IN 46204 from 9:00 a.m. until 4:00 p.m., Monday thru Friday, (copies 10¢ per page). The Draft Permit is posted online attached to the public notice document on the above-referenced IDEM public notice web page. A courtesy copy has also been sent via email to the local County Health Department. Please tell others whom you think would be interested in this matter. For more information about public participation including your rights & responsibilities, please see https://www.in.gov/idem/public-notices/. You may want to consult our online Citizens' Guide to IDEM: https://www.in.gov/idem/resources/citizens-guide-to-idem/.

Comments: The proposed decision to issue a permit is tentative. Interested persons are invited to submit written comments on the draft permit. All comments must be delivered to IDEM or postmarked no later than the Response Due Date noted above to be considered in the decision to issue a final permit. Deliver or mail all requests or comments to the attention of the Permit Manager at the above address.

To Request a Public Hearing: Any person may request a public hearing. A written request must be submitted to the above address on or before the Response Due Date. The written request shall include: the name and address of the person making the request, the interest of the person making the request, persons represented by the person making the request, the reason for the request and the issues proposed for consideration at the hearing. The Department will determine whether to hold a public hearing based upon the comments and therationale for the request. Public Notice of such a hearing will be published in accordance with the NPDES rules which will include, at a minimum, the posting of the public notice on IDEM's website at least 30 days prior to the hearing. Notice will also be provided to those persons submitting comments and/or on the mailing list.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • Fax (317) 233-6647 • www.idem.IN.gov

Mike Braun
Governor

Clint Woods
Commissioner

December 29, 2025

VIA ELECTRONIC MAIL

Louis-Pierre Clement, Operations Manager
Warrick Newco LLC
4400 W State Road 66
Newburgh, IN 47630

Dear Louis-Pierre Clement:

Re: NPDES Permit No. IN0001155
Draft Permit
Warrick Newco LLC
Newburgh, IN – Warrick County

Your application and supporting documents have been reviewed and processed in accordance with rules adopted under 327 IAC 5. Enclosed is a copy of the draft NPDES Permit.

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.

Please review this draft permit and associated documents carefully to become familiar with the proposed terms and conditions. Comments concerning the draft permit should be submitted in accordance with the procedure outlined in the enclosed public notice form. We suggest that you meet with us to discuss major concerns or objections you may have with the draft permit.

Questions concerning this draft permit may be addressed to Matt Warrener of my staff, at 317/233-0798 or MWarrene@idem.in.gov.

Sincerely,

Richard Hamblin, Chief
Industrial NPDES Permits Section
Office of Water Quality

Enclosures
cc: Warrick County Health Department
Brandie Rucker, Alcoa
Natalie Roth, Alcoa
Anna Bogan, Kaiser Aluminum
Chief, Permits Section, U.S. EPA, Region 5
Stacey Cochran, ORSANCO

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 IC 13-15,

WARRICK NEWCO LLC

is authorized to discharge from an aluminum processing plant and steam generating facility that is located at 4000 West State Road 66, Newburgh, Indiana to receiving waters identified as the Ohio River and unnamed tributaries to Cypress Creek in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I and 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:________________________________

Expiration Date:_______________________________

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 __________________________________ for the Indiana Department of Environmental Management.

Jerry Dittmer, Chief
Permits Branch
Office of Water Quality

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. 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 001**, located at Latitude 37˚ 54’ 46”, Longitude -87˚ 19’ 56”. This outfall is a lift station sump overflow discharge point. Discharge from this outfall shall only occur during heavy precipitation events which exceed the system’s pumping capacity, or during electrical/mechanical pump failure.

   The discharge is limited to a combination of contact and non-contact cooling water from the steam electric power plant operations; de minimis amounts of non-contact condenser cooling water; evaporator blowdown; non-contact once-through cooling water from the coal handling area which includes once-through non-contact cooling water used for the pumps and seals; on-line chlorine analyzer discharge; wastewater associated with the maintenance washdown activities within the potable water plant and deep water wells (may contain insignificant amount of potassium permanganate (KmNO4)); relatively small volume of high temperature water; steam condensate from the 310 steam plant; runoff water and wastewater from the Fire Brigade training activities; non-contact water used as deicer; non-contact HVAC condensate; miscellaneous compatible wastewaters from associated shops and support services; vehicle wash water (which may contain insignificant amounts of biodegradable, phosphate-free, detergents); and stormwater runoff from the smelting area and power plant operations.

   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 Ohio River. Such discharge shall be limited and monitored by the permittee as specified below:

Outfall 001
DISCHARGE LIMITATIONS [1][2][3][4]
Table 1

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
Parameter	**Monthly Average**	**Daily Maximum**	**Units**	**Monthly Average**	**Daily Maximum**	**Units**	**Measurement Frequency**	**Sample Type**
Flow [5]	Report	Report	MGD	----	----	----	Daily	24 Hr. Total
Oil and Grease [7]	----	----	-----	Report	Report	mg/l	3 X Quarterly [8]	Grab
Total Suspended Solids	----	----	-----	Report	Report	mg/l	3 X Quarterly [8]	Grab
Bromide	Report	Report	lbs/day	Report	Report	mg/l	3 X Quarterly [8]	Grab
Copper [10]	Report	Report	lbs/day	0.036	0.057	mg/l	3 X Quarterly [8]	Grab
Iron [10]	Report	Report	lbs/day	3.8	5.5	mg/l	3 X Quarterly [8]	Grab
Mercury [7][10][11]	Report	Report	lbs/day	12	20	ng/l	2 X Quarterly [8]	Grab
Zinc [10]	Report	Report	lbs/day	0.61	0.96	mg/l	3 X Quarterly [8]	Grab

Table 2

					Monitoring Requirements	
Parameter	**Monthly Total**	**Units**	**Daily Total**	**Units**	**Measurement Frequency**	**Sample Type**
Discharge Duration [6]	Report	Hours/month	Report	Minutes/day	Daily	24-Hr Total

Table 3

	Quality or Concentration				Monitoring Requirements	
Parameter	**Daily Minimum**	**Monthly Average**	**Daily Maximum**	**Units**	**Measurement Frequency**	**Sample Type**
pH [9]	6.0	----	9.0	s.u.	3 X Quarterly [8]	Grab

[1] See Part I.B. of the permit for the minimum narrative limitations.

[2] In the event that a new water treatment additive is to be used that will contribute to Outfall 001, 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/.

[3] The permittee shall post a permanent marker on the stream bank at each outfall discharging directly to the Ohio River. The marker shall consist at a minimum, the name of the permittee, the permit number, and the outfall number. The information shall be printed in letters not less than two inches in height. The marker shall be a minimum of 2 feet by 2 feet and shall be a minimum of 3 feet above the ground.

[4] The Storm Water Monitoring and Non-Numeric Effluent Limits and the Storm Water Pollution Prevention Plan (SWPPP) requirements can be found in Part I.D. and I.E. of this permit.

[5] Flow is to be measured when the outfall is discharging.

[6] On the MMR, the permittee must report the number of minutes the outfall has discharged each day and the total number of hours the outfall discharged during the month. On the DMR, the permittee must report the total number of hours the outfall discharged during the month. In addition, the permittee must specify the reason(s) that the discharge occurred (such as X inches of precipitation in Y hours or pump failure).

[7] The permittee may use an automatic sampler to collect the oil and grease and

mercury grab samples.

[8] Samples shall be taken three times (twice for mercury) at any time during each of the four annual quarters:

(A) January-February-March;
(B) April-May-June;
(C) July-August-September; and
(D) October-November-December.

For the three times quarterly monitoring, in the first quarter for example, the permittee may conduct sampling within the month of January, February or March. The result from this reporting timeframe shall be reported on the March DMR, regardless of which of the months within the quarter the sample was taken.

If the outfall discharges less than three times during the quarter, then the permittee is only required to take samples when a discharge occurs. Thus, if the outfall only discharges twice during a quarter, the permittee is only required to take samples twice during the quarter and report “no discharge” in place of the third sample. Since the discharges which occur at this outfall may be too short in duration to collect sufficient samples to analyze for all of the listed parameters, the permittee shall prioritize its sample collection in the following order: mercury, copper, zinc, iron, TSS, oil and grease, and bromide. If insufficient sample is collected to analyze for one or more of the parameters, the permittee shall use a code of F (insufficient flow) for each such parameter. The use of this code is limited to Outfalls 001, 004 and 005 and it is expected that the use of this code will be infrequent. In addition, this code cannot be used if the failure to fill all of the bottles is due to a sampling equipment malfunction or human error.

[9] If the permittee collects more than one grab sample during a discharge event 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.

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

[11] 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

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 **Outfall 002**, located at Latitude 37° 54’ 50”, Longitude -87° 20’ 10”.

   The discharge is limited to non-contact once-through condenser cooling water, uncontaminated stormwater from secondary containment areas and the intake platform, HVAC condensate, and potable water from miscellaneous maintenance activities at the intake structure.

   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 Ohio River. Such discharge shall be limited and monitored by the permittee as specified below:

Outfall 002
DISCHARGE LIMITATIONS [1][2][3][4][5]
Table 1

	Quantity or Loading			**Quality or Concentration**			**Monitoring Requirements**	
Parameter	**Monthly Average**	**Daily Maximum**	**Units**	**Monthly Average**	**Daily Maximum**	**Units**	**Measurement Frequency**	**Sample Type**
Flow [6]	Report	Report	MGD	----	----	----	Continuous	24 Hr. Total
Oil and Grease [14]	----	----	----	----	Report	mg/l	1 X Monthly	Grab
Total Residual Chlorine								
Continuous [8]	----	----	----	0.016	0.038	mg/l	Daily	Grab
Intermittent [9]	----	----	----	----	0.2	mg/l	Daily	Grab
Chlorination								
Frequency [10]	----	4	Times/day	----	----	----	Daily	Report
Dose Duration [10]	----	40	Min/Dose	----	----	----	Daily	Report
Temperature [11]								
Intake	----	----	----	----	Report	◦F	Continuous [12]	Grab
Effluent	----	----	----	----	Report	◦F	Continuous [12]	Grab
Mixed River Temperature [11][13]	----	----	----	----	Report	◦F	Daily	Calculated
Delta T (ΔT) [11][13]	----	----	----	----	5	◦F	Daily	Calculated
Plant Capacity Factor (% of Total Capacity)	----	----	----	----	Report	%	1 X Monthly	Report
ORSANCO								
Interim	----	----	----	----	Report	◦F	Daily	Grab
Final	----	----	----	----	110	◦F	Daily	Grab

Table 2

	Quality or Concentration				**Monitoring Requirements**	
Parameter	**Daily Minimum**	**Monthly Average**	**Daily Maximum**	**Units**	**Measurement Frequency**	**Sample Type**
pH [7]	6.0	----	9.0	s.u.	3 X Weekly	Grab

[1] See Part I.B. of the permit for the minimum narrative limitations.

[2] In the event that a new water treatment additive is to be used that will contribute to Outfall 002, 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/.

[3] The permittee shall post a permanent marker on the stream bank at each outfall discharging directly to the Ohio River. The marker shall consist at a minimum, the name of the permittee, the permit number, and the outfall number. The information shall be printed in letters not less than two inches in height. The marker shall be a minimum of 2 feet by 2 feet and shall be a minimum of 3 feet above the ground.

[4] The Storm Water Monitoring and Non-Numeric Effluent Limits and the Storm Water Pollution Prevention Plan (SWPPP) requirements can be found in Part I.D. and I.E. of this permit.

[5] See Part III of this permit for additional thermal requirements.

[6] The flow can be calculated based upon engineering calculations.

[7] 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.

[8] Continuous chlorination is considered as all occurrences that do not meet the definition of intermittent chlorination, as described in 327 IAC 2-1-6 Table 1, Footnote [a]. These water quality based effluent limits (WQBELs) are applicable any time that the discharge of chlorine does not meet this intermittent definition.

The WQBELs for total residual chlorine are less than the limit of quantitation (LOQ) as specified below. Compliance with this permit will be demonstrated if the effluent concentrations measured are less than the LOQ.

If the measured concentration of total residual chlorine is greater than the water quality based effluent limitations and above the respective limit of detection (LOD) specified in the table below in any three (3) consecutive analyses, or any five (5) out of nine (9) analyses, then the discharger shall:
(1) Re-examine the chlorination and dechlorination procedures, and
(2) The sampling and analysis for total residual chlorine (TRC) shall be increased to 2 X Daily and remain at this increased sampling frequency until:
  (a) The increased sampling frequency for TRC has been in place for at least two weeks;
  (b) At least nine (9) samples have been taken under this increased sampling frequency; and
  (c) The measured concentration of TRC is less than the LOD specified in the table below in at least seven (7) out of the nine (9) most recent analyses.
(3) The following EPA test methods and/or Standard 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.

Parameter	**Test Method**	**LOD**	**LOQ**
Chlorine	4500-Cl-D-2000,E-2000 or G-2000	0.02 mg/l	0.06 mg/l

Case-Specific LOD/LOQ: The permittee may determine a case-specific LOD or LOQ using the analytical method specified above, or any other test method which is approved by the Commissioner prior to use. The LOD shall be derived by the procedure specified for method detection limits contained in 40 CFR Part 136, Appendix B, and the LOQ shall be set equal to 3.18 times the LOD. Other methods may be used if first approved by the Commissioner.

[9] This daily maximum limit for total residual chlorine is only applicable if the discharge of chlorine is intermittent. As required by 327 IAC 2-1-6 Table 1, Footnote [a], to be considered an intermittent discharge, total residual chlorine shall not be detected in the discharge for a period of more than forty (40) minutes in duration, and such periods shall be separated by at least five (5) hours. Simultaneous multi-unit chlorination is permitted.

[10] The limits and monitoring requirements for “chlorination frequency” and “chlorination dose duration” apply only when the facility is chlorinating intermittently, as defined in Footnote [9]. Simultaneous multi-unit chlorination is permitted.

[11] The permittee shall submit an annual summary of the individual data points for the influent temperature, the effluent temperature, the effluent flow and the calculated mixed river temperature. The annual summary shall be sent no later than January 31st of the succeeding year to the Industrial NPDES Permit Section of the Office of Water

Quality, IGCN. Senate Ave., Indianapolis, IN 46204-2251. The annual summary shall be submitted via email to: OWQWWPER@idem.in.gov.

[12] Temperature measurements shall be recorded in one-hour intervals. The permittee shall: Collect the inlet temperature data from the series of thermocouples currently in place once per hour and record the average inlet temperature reading for each hour; and collect the outlet temperature data from the series of thermocouples currently in place once per hour and record the average outlet temperature reading for each hour for each unit and calculate flow weighted averages of the outlet temperature data from each unit to be used to determine the average outlet temperature for the discharge for each hour. The highest single temperature inlet and outlet value shall be reported on the state monthly monitoring report (MMR) for each day. The highest single daily value for each month shall be reported on the federal discharge monitoring report (DMR) as the maximum daily temperature for that month.

[13] See Part III.A. of the permit for the method to calculate the mixed river temperature and the ΔT. The highest single value calculated as the mixed river temperature for each day shall be reported on the state monthly monitoring report (MMR) for each day. The highest single daily value calculated as the mixed river temperature for each month shall be reported on the federal discharge monitoring report (DMR) as the maximum daily mixed river temperature for that month.

[14] If oil and grease is measured in the effluent in significant quantities (quantities in excess of 5 mg/l), the source of such discharge is to be investigated and eliminated by the permittee. These investigation reports must be completed and submitted with the monthly reports submitted pursuant to Part I.C.2. of the permit within sixty (60) days of finding oil and grease present in significant quantities.

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 **Outfall 003**, located at Latitude 37° 55' 5", Longitude -87° 20' 36".

The discharge is limited to the discharges from internal Outfalls 103 and 303 and nonindustrial stormwater runoff. Because of the proximity of this outfall to the Ohio River, a permanent sampling station has not been installed at this outfall. With the exception of mercury and whole effluent toxicity, the values reported for this outfall are based on a flow-weighted calculation using the values measured at internal Outfalls 103 and 303.

Samples for mercury and whole effluent toxicity are taken directly from Outfall 003. 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 Ohio River. Such discharge shall be limited and monitored by the permittee as specified below:

Outfall 003
DISCHARGE LIMITATIONS [1][2][3][4]
Table 1

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
Parameter	**Monthly Average**	**Daily Maximum**	**Units**	**Monthly Average**	**Daily Maximum**	**Units**	**Measurement Frequency**	**Sample Type**
Flow [5]	Report	Report	MGD	----	----	----	Continuous	24 Hr. Total
Aluminum [5][6]	----	----	-----	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Bromide [5]	----	----	-----	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Chlorine, Total Residual [7]	----	----	-----	0.016	0.038	mg/l	3 X Weekly	Grab
Copper [5][6]	----	----	-----	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Fluoride [5]	----	----	-----	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Manganese [5][6]	120	240	lbs/day	1.5	3.0	mg/l	2 X Monthly	24-Hr. Comp.
Mercury [6][8][9][10]	0.00094	0.0016	lbs/day	12	20	ng/l	6 X Yearly	Grab
Whole Effluent Toxicity	See Part I.F. of the Permit							

[1] See Part I.B. of the permit for the minimum narrative limitations.

[2] In the event that changes are to be made in the use of water treatment additives, including dosage, or a new water treatment additive is to be used that will contribute to Outfall 003, 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: http://www.in.gov/idem/5157.htm.

[3] The permittee shall post a permanent marker on the stream bank at each outfall discharging directly to the Ohio River. The marker shall consist at a minimum, the name of the permittee, the permit number, and the outfall number. The information

shall be printed in letters not less than two inches in height. The marker shall be a minimum of 2 feet by 2 feet and shall be a minimum of 3 feet above the ground.

[4] The Storm Water Monitoring and Non-Numeric Effluent Limits and the Storm Water Pollution Prevention Plan (SWPPP) requirements can be found in Part I.D. and I.E. of this permit.

[5] For the annotated parameters; flow, aluminum, bromide, copper, fluoride, and manganese; the permittee shall sample for the parameters at internal Outfalls 103 and 303 and use the results from that sampling and the following equations to calculate the values to be reported at this outfall (in the below equations, F is flow, C is concentration and M is mass):

$$F_{003} = F_{103} + F_{303}$$

$$C_{003} = \frac{C103 * F103 + C303 * F303}{F003}$$

$$M_{003} = C_{003} * F_{003} * 8.345$$

[6] The permittee shall measure and report the identified metal as <u>total recoverable</u> metal.

[7] For total residual chlorine, the permittee shall sample for the parameter at internal Outfalls 103 and 303 and use the results from that sampling and the following procedures and equation to calculate the concentration values to be reported at this outfall. The flow
values determined in Footnote [5], above shall be used in the below equation.

(1) Measured values at internal Outfalls 103 or 303 that are less than the LOQ of 0.06 mg/l shall be assigned a concentration value of 0 for use in the below equation.

(2) Measured values at internal Outfall 103 or 303 that are equal to or greater than the LOQ of 0.06 shall be used as the concentration value for use in the below equation.

$$C_{003} = \frac{C103 * F103 + C303 * F303}{F003}$$

(3) The calculated concentration value (C_{003}) must comply with the daily maximum water quality-based limitation.

[8] Mercury monitoring shall be conducted six times per year in the months of February, April, June, August, October, and December using EPA Test Method 1631, Revision E.

[9] 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

[10] Samples for mercury shall be taken directly at Outfall 003. However, if flooding prevents the direct monitoring and sampling for mercury at Outfall 003 for any of the required samples, then the values reported for mercury at Outfall 003 shall be calculated using the flows and sampling data from internal Outfalls 103 and 303 and the equations included under footnote [5], above.

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 internal **Outfall 103**, located at Latitude 37˚ 55’ 11”, Longitude -87˚ 20’ 27”.

   This discharge is limited to the wastestreams included in the descriptions of Outfall 001, 004 and 005; the discharge from internal Outfall 503; ash sluice water; non-contact cooling water from the coal handling area; wastewater from maintenance washdowns from the coal handling area; water and wastewater from the coal handling drains; wastewater from the regeneration of the resin beds for the deionized water production system; wastewater drainage from the removal of dredged material from the wastewater conveyance ditches and other coal combustion byproduct drainage including fly ash from unit outages, cenospheres, sand blast, etc.; wastewaters from vacuum trucks used to transfer compatible wastewater streams for treatment within the ash pond system; non-contact HVAC condensate; miscellaneous compatible wastewaters from associated shops and support services; vehicle wash water (which may contain insignificant amounts biodegradable, phosphate-free, detergents); contaminated and uncontaminated stormwater from the power plant operations, including the coal pile.

   Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to mixing with other wastewater streams contributing to Outfall 003. Such discharge shall be limited and monitored by the permittee as specified below:

Internal Outfall 103
DISCHARGE LIMITATIONS [1][2][8]
Table 1

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
Parameter	**Monthly Average**	**Daily Maximum**	**Units**	**Monthly Average**	**Daily Maximum**	**Units**	**Measurement Frequency**	**Sample Type**
Flow [7]	Report	Report	MGD	----	----	----	Continuous	24 Hr. Total
Oil and Grease [3]	----	----	----	10	15	mg/l	2 X Weekly	Grab
Oil and Grease Dredging [3]	----	----	----	Report	Report	mg/l	2 X Weekly	Grab
Total Suspended Solids [3]	----	----	----	28	94	mg/l	2 X Weekly	24-Hr. Comp.
TSS-Dredging [3]	----	----	----	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Aluminum [5][7]	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Bromide [7]	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Total Residual Chlorine [6]	----	----	----	Report	Report	mg/l	3 X Weekly	Grab
Copper [5][7]	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Fluoride [7]	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Manganese [5][7]	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.

Table 2

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
Parameter	**Monthly Average**	**Daily Maximum**	**Units**	**Monthly Average**	**Daily Maximum**	**Units**	**Measurement Frequency**	**Sample Type**
Antimony [5]	----	----	-----	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Arsenic [5]	----	----	-----	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Barium [5]	----	----	-----	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Beryllium [5]	----	----	-----	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Boron [5]	----	----	-----	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Calcium	----	----	-----	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Cadmium [5]	----	----	-----	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Chloride	----	----	-----	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Chromium (VI)	----	----	-----	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Chromium, Total [5]	----	----	-----	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Cobalt [5]	----	----	-----	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Lead [5]	----	----	-----	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Lithium [5]	----	----	-----	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Molybdenum [5]	----	----	-----	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Radium 226 & 228 combined	----	----	-----	Report	Report	pCi/L	1 X Monthly	24-Hr. Comp.
Selenium	----	----	-----	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Sulfate	----	----	-----	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Thallium [5]	----	----	-----	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Total Dissolved Solids (TDS)	----	----	-----	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.

Table 3

	Quality or Concentration				Monitoring Requirements	
Parameter	**Daily Minimum**	**Monthly Average**	**Daily Maximum**	**Units**	**Measurement Frequency**	**Sample Type**
pH [4]	6.0	----	9.0	s.u.	2 X Weekly	Grab

[1] In the event that changes are to be made in the use of water treatment additives, including dosage, or a new water treatment additive is to be used that will contribute to internal Outfall 103, 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: http://www.in.gov/idem/5157.htm.

[2] The Storm Water Monitoring and Non-Numeric Effluent Limits and the Storm Water Pollution Prevention Plan (SWPPP) requirements can be found in Part I.D. and I.E. of this permit.

[3] For total suspended solids and oil and grease, during maintenance dredging activities of the ash pond system the permittee is required to continue to follow the sampling requirement for the parameters; however, the sampling data should not be used in

calculating the monthly average and daily maximum values applicable for TSS and oil and grease when dredging is not occurring (normal operations). Instead, the data for these parameters collected during dredging should be reported separately as total suspended solids-dredging and oil and grease-dredging. The dredging operation associated with internal Outfall 103 is considered an operation and maintenance activity that is necessary for achieving compliance with the terms and conditions of the permit. The permittee must provide written notification to the NPDES Industrial Permit Section at least thirty (30) day prior to the start of the maintenance dredging operations, and written notification upon conclusion of the dredging project. The prior notification should include a general explanation of the work to be performed the pond or area that is being dredged and the length of time the dredging will occur. If relocation of a sampling point is required the permittee must first receive written approval from the NPDES Industrial Permit Section. These notifications shall be submitted to IDEMOWQ at OWQWWPER@idem.in.gov.

[4] 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.

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

[6] The data collected for total residual chlorine at this outfall (along with the data collected at internal Outfall 303) are used in the calculations used to determine compliance with requirements at Outfall 003. The water quality-based effluent limitations for total residual chlorine at Outfall 003 are less than the limit of quantitation (LOQ) as specified below. If the measured concentration of total residual chlorine at this outfall is greater than the respective limit of detection (LOD) specified in the table below in any three (3) consecutive analyses, or any five (5) out of nine (9) analyses, then the discharger shall:

(1) Determine the source of the parameter through an evaluation of sampling techniques, analytical/laboratory procedures, and waste streams (including internal waste streams).

(2) The sampling and analysis for total residual chlorine (TRC) at both internal Outfalls 103 and 303 (and reporting at Outfall 003) shall be increased to 4 X Weekly and remain at this increased sampling frequency until:
  (a) The increased sampling frequency for TRC has been in place for at least two weeks;
  (b) At least nine (9) samples have been taken under this increased sampling frequency; and
  (c) The measured concentration of TRC is less than the LOD specified in the table below in at least seven (7) out of the nine (9) most recent analyses.

(3) The following EPA test methods and/or Standard 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.

Parameter	Test Method	LOD	LOQ
Chlorine	4500-Cl-D-2000,E-2000 or G-2000	0.02 mg/l	0.06 mg/l

Case-Specific LOD/LOQ: The permittee may determine a case-specific LOD or LOQ using the analytical method specified above, or any other test method which is approved by the Commissioner prior to use. The LOD shall be derived by the procedure specified for method detection limits contained in 40 CFR Part 136, Appendix B, and the LOQ shall be set equal to 3.18 times the LOD. Other methods may be used if first approved by the Commissioner.

[7] The data collected for these parameters (along with the data collected at internal Outfall 303) are used in the calculations used to determine compliance with requirements at Outfall 003.

[8] The permittee must continue to submit annual ash pond seep inspection reports as required by the Office of Land Quality (OLQ). These reports are to be made available to the Office of Water Quality (OWQ) upon request. The permittee must notify this Office of any changes related to the status of new or existing seeps and describe any action(s) being taken to address them.

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 internal **Outfall 203**, located at Latitude 37˚ 55’ 21”, Longitude -87˚ 20’ 9”.

   This discharge is limited to sanitary wastewater from restroom toilets, showers, sinks, and drains, kitchens, drinking fountains, laboratory sinks and drains, eye wash stations, and emergency shower stations; air conditioner condensate; once-through non-contact cooling water for air conditioning systems; minimal discharges associated with the Building 820 organic vapor scrubber and any associated maintenance activities; contaminated groundwater (only if the pollutants present are compatible with the wastewater treated at the treatment plant and/or routinely monitored at internal Outfalls 203 or 303); groundwater from excavation, maintenance, and remediation projects containing biodegradable organic materials and wastewaters; wastewaters and overflow from the rinse tank associated with the Litho Line; wastewater from the electrostatic precipitator associated with Building 870; wastewater from the floor drains originating from the Operations Services Building 863; and incidental amounts of cooling tower water due to spills, leaks, sprays, or equipment malfunction. In addition, a significant quantity of infiltration contributes to this outfall.

   Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to mixing with other wastewater streams contributing to internal Outfall 303. Such discharge shall be limited and monitored by the permittee as specified below:

Internal Outfall 203
DISCHARGE LIMITATIONS [1]
Table 1

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
Parameter	**Monthly Average**	**Daily Maximum**	**Units**	**Monthly Average**	**Daily Maximum**	**Units**	**Measurement Frequency**	**Sample Type**
Flow	Report	Report	MGD	----	----	----	Continuous	24 Hr. Total
$CBOD_5$	----	----	----	25	40	mg/l	2 X Weekly	24-Hr. Comp.
Total Suspended Solids	----	----	----	30	45	mg/l	2 X Weekly	24-Hr. Comp.
Total Residual Chlorine [2][3]	----	----	----	Report	Report	mg/l	2 X Weekly	Grab
E. coli [4][5][6]	----	----	----	125	235	count/100ml	1 X Weekly	Grab
Fecal Coliform [7]	----	----	----	2,000	----	count/100ml	1 X Weekly	Grab

Table 2

	Quality or Concentration				Monitoring Requirements	
Parameter	**Daily Minimum**	**Monthly Average**	**Daily Maximum**	**Units**	**Measurement Frequency**	**Sample Type**
pH [8]	6.0	----	9.0	s.u.	2 X Weekly	Grab

[1] In the event that changes are to be made in the use of water treatment additives, including dosage, or a new water treatment additive is to be used that will contribute to internal Outfall 203, 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: http://www.in.gov/idem/5157.htm.

[2] The effluent shall be disinfected on a continuous basis such that violations of the applicable bacteriological limitations (*E. coli* and fecal coliform) do not occur.

[3] The following EPA test methods and/or Standard 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.

Parameter	**Test Method**	**LOD**	**LOQ**
Total Residual Chlorine	4500-Cl-D-2000, E-2000 or G-2000	0.02 mg/l	0.06 mg/l

[4] The *Escherichia coli (E. coli)* limitations and monitoring requirements apply from April 1 through October 31 annually. IDEM has specified the following methods as allowable for the detection and enumeration of *E. coli*:

1. Coliscan MF® Method
2. EPA Method 1603 Modified m-TEC agar
3. mColi Blue-24®.
4. Colilert® MPN Method or Colilert-18® MPN Method

[5] The monthly average *E. coli* value shall be calculated as a geometric mean. Per 327 IAC 5-10-6, the concentration of *E. coli* shall not exceed one hundred twenty-five (125) cfu or mpn per 100 milliliters as a geometric mean of the effluent samples taken in a calendar month. No samples may be excluded when calculating the monthly geometric mean.

[6] If less than ten samples are taken and analyzed for *E. coli* in a calendar month, no samples may exceed two hundred thirty-five (235) cfu or mpn as a daily maximum. However, when ten (10) or more samples are taken and analyzed for *E. coli* in a calendar month, not more than ten percent (10%) of those samples may exceed two

hundred thirty-five (235) cfu or mpn as a daily maximum. When calculating ten percent, the result must not be rounded up. In reporting for compliance purposes on the discharge monitoring report (DMR) form, the permittee shall record the highest non-excluded value for the daily maximum.

[7] To comply with ORSANCO requirements, in accordance with 327 IAC 5-10-6(b)(1), the fecal coliform limitations and monitoring requirements apply from November 1 through March 31. The monthly average fecal coliform value shall be calculated as a geometric mean.

[8] 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.

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 internal **Outfall 303**, located at Latitude 37˚ 55’ 22”, Longitude -87˚ 20’ 12”.

   The discharge is limited to a combination of wastewater and stormwater from the Smelting Plant, Ingot Plant, Rolling Plant, Fabrication Plant, and support areas; discharge from the Bldg. 816 Finishing rotoclones, blowdown and incidental leaks of steam or high temperature water from the Bldg. 316 Boiler House, treated wastewater from the Finishing Wastewater Treatment Facility (Bldg. 879) Spent Acid Treatment; treated wastewater from the Finishing Wastewater Treatment Facility (Bldg. 879) Spent Wash and Water-Based Coating Solution Treatment; treated wastewater from the Rolling Wastewater Treatment Facility (Bldg. 871E Oily Wastewater Treatment); incidental amounts of untreated or partially treated Bldg. 879 wash wastewater from various maintenance activities or foaming conditions; untreated or partially treated oily wastewater from the 871E oily wastewater treatment plant from various maintenance activities; wastewaters from vacuum trucks used to transfer compatible wastewater streams for treatment within the various wastewater treatment facilities; evaporator blowdown from the Bldg. 310 steam plant; water softener backwash; emergency cooling water for air compressor Bldg. 311; contact cooling water from the fan houses at the rectifiers; blowdown from the ingot casting cooling water system; water from the vaporizers at the chlorine house; deionized water system backwash; cooling water from the Ingot preheat furnaces; cooling water from the scalper; DI quench water at the coil coating lines; wastewater from the cleaning of work rolls within the Finishing Department; coatings (only if the contaminants associated with these insignificant discharges are monitored at internal Outfall 303 and/or Outfall 003); material testing rinse water; water and wastewater from the steam and high temperature water systems; other miscellaneous contact and noncontact cooling water; cooling tower blowdown and emergency overflows; wash water consisting of potable water used to wash down cooling tower screens; HVAC condensate; stormwater runoff; stormwater from secondary containment systems (either uncontaminated or treated); uncontaminated water from building foundation drainage; treated contaminated groundwater (treated in the Finishing wastewater treatment (bldg. 879) spent acid treatment system) from an onsite remediation project; treated contaminated groundwater from excavation and remediation projects, and various maintenance activities containing biodegradable organic materials and wastewaters; wastewater from associated shops and support services; vehicle wash water (which may contain insignificant amounts of biodegradable, phosphate-free[10], detergents); and discharges from internal Outfall 203 and stormwater runoff from the contractor laydown area.

   Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to mixing with other wastewater streams contributing to Outfall 003. Such discharge shall be limited and monitored by the permittee as specified below:

Internal Outfall 303
<u>DISCHARGE LIMITATIONS</u> [1][2][3]
Table 1

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
Parameter	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	Report	MGD	----	----	----	Continuous	24 Hr. Total
Oil & Grease [4][5]	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	Grab
Total Suspended Solids [4][5]	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Aluminum [4][5][6][8]	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Antimony [4][5][8]	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Bromide [6]	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Total Residual Chlorine [10]	----	----	----	Report	Report	mg/l	3 X Weekly	Grab
Total Chromium [4][5][8]	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Copper [6][8]	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Total Cyanide [4][5][9]	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Fluoride [4][5][6]	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Nickel [4][5][8]	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Manganese [6][8]	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Zinc [4][5][8]	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Oil & Grease Dredging [4]	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	Grab
TSS Dredging [4]	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Aluminum Dredging [4][6][8]	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Antimony Dredging [4][8]	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Total Chromium Dredging [4][8]	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Total Cyanide Dredging [4][9]	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Fluoride Dredging [4][6]	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Nickel Dredging [4][8]	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Zinc Dredging [4][8]	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.

Table 2

	Quality or Concentration				Monitoring Requirements	
Parameter	Daily Minimum	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
pH [7][11]	6.0	----	9.0	s.u.	2 X Weekly	Grab

[1] The permittee should take all reasonable measures to take samples when the wastewater discharge does not contain contributions from storm events.

[2] In the event that changes are to be made in the use of water treatment additives, including dosage, or a new water treatment additive is to be used that will contribute to internal Outfall 303, 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: http://www.in.gov/idem/5157.htm.

[3] The Storm Water Monitoring and Non-Numeric Effluent Limits and the Storm Water Pollution Prevention Plan (SWPPP) requirements can be found in Part I.D. and I.E. of this permit.

[4] For the annotated parameters, while dredging the Discharge Pool, the permittee is required to follow the sampling schedule, but the data for the annotated parameters should not be used in calculating the monthly average and daily maximum values applicable for these parameters when dredging is not occurring (normal operations). Also, the data should not be used in the calculations used to determine compliance at internal Outfall 603. However, the data collected during dredging shall be used in the calculations used for compliance with requirements at Outfall 003. The dredging operations associated with internal Outfall 303 are considered an operation and maintenance activity that is necessary for achieving compliance with the terms and conditions of the permit.

The permittee must provide written notification to the NPDES Industrial Permit Section at least thirty (30) days prior to the start of the maintenance dredging operations, and written notification upon conclusion of the dredging project. The prior notification should include a general explanation of the work to be performed, the pond or area that is being dredged and the length of time the dredging will occur. If relocation of a sampling point is required the permittee must first receive written approval from the NPDES Industrial Permit Section. These notifications shall be submitted to IDEM's OWQ at OWQWWPER@idem.in.gov.

[5] The data collected for these parameters (along with the data collected at internal Outfall 403) are used in the calculations used to determine compliance with requirements at internal Outfall 603.

[6] The data collected for these parameters (along with the data collected at internal Outfall 103) are used in the calculations used to determine compliance with requirements at Outfall 003.

[7] 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.

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

[9] The maximum holding time for cyanide (CN) is twenty-four (24) hours when sulfide is present and fourteen (14) days when sulfide is absent, according to 40 CFR 136.3, Table IB. Therefore, CN is to be monitored by collecting a representative grab sample and analyzing it within 24 hours. Alternatively, if the permittee can demonstrate the wastewater contains no sulfide, the permittee may collect a composite and analyze it within fourteen (14) days.

[10] The data collected for total residual chlorine at this outfall (along with the data collected at internal Outfall 103) are used in the calculations used to determine compliance with requirements at Outfall 003. The water quality-based effluent limitations for total residual chlorine at Outfall 003 are less than the limit of quantitation (LOQ) as specified below. If the measured concentration of total residual chlorine at this outfall is greater than the respective limit of detection (LOD) specified in the table below in any three (3) consecutive analyses, or any five (5) out of nine (9) analyses, then the discharger shall:

(1) Determine the source of the parameter through an evaluation of sampling techniques, analytical/laboratory procedures, and waste streams (including internal waste streams).
(2) The sampling and analysis for total residual chlorine (TRC) at both internal Outfalls 103 and 303 (and reporting at Outfall 003) shall be increased to 4 X Weekly and remain at this increased sampling frequency until:
   (a) The increased sampling frequency for TRC has been in place for at least two weeks;
   (b) At least nine (9) samples have been taken under this increased sampling frequency; and
   (c) The measured concentration of TRC is less than the LOD specified in the table below in at least seven (7) out of the nine (9) most recent analyses.
(3) The following EPA test methods and/or Standard 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.

Parameter	**Test Method**	**LOD**	**LOQ**
Total Residual Chlorine	4500-Cl-D-2000, E-2000 or G-2000	0.02 mg/l	0.06 mg/l

Case-Specific LOD/LOQ: The permittee may determine a case-specific LOD or LOQ using the analytical method specified above, or any other test method which is approved by the Commissioner prior to use. The LOD shall be derived by the procedure specified for method detection limits contained in 40 CFR Part 136, Appendix B, and the LOQ shall be set equal to 3.18 times the LOD. Other methods may be used if first approved by the Commissioner.

[11] Compliance with the pH limits at this Outfall is demonstrated by monitoring at the following upstream source:

- Ingot casting cooling water system blowdown

Samples taken must be representative of the process wastewater discharge from the source prior to comingling with any other wastewater streams contributing to internal Outfall 303.

7. 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 internal **Outfall 403**, located at Latitude 37˚ 55’ 10”, Longitude -87˚ 20’ 7”.

   The discharge is limited to a combination of wastewater and stormwater from the Smelting Plant, Ingot Plant, Rolling Plant, Fabrication Plant, and support areas; discharge from the Bldg. 816 Finishing rotoclones, blowdown and incidental leaks of steam or high temperature water from the Bldg. 316 Boiler House, treated wastewater from the Finishing Wastewater Treatment Facility (Bldg. 879) Spent Acid Treatment; treated wastewater from the Finishing Wastewater Treatment Facility (Bldg. 879) Spent Wash and Water-Based Coating Solution Treatment; treated wastewater from the Rolling Wastewater Treatment Facility (Bldg. 871E Oily Wastewater Treatment; incidental amounts of untreated or partially treated Bldg. 879 wash wastewater from various maintenance activities or foaming conditions; untreated or partially treated oily wastewater from the 871E oily wastewater treatment plant from various maintenance activities; wastewaters from vacuum trucks used to transfer compatible wastewater streams for treatment within the various wastewater treatment facilities; evaporator blowdown from the Bldg. 310 steam plant; water softener backwash; emergency cooling water for air compressor Bldg. 311; contact cooling water from the fan houses at the rectifiers; blowdown from the ingot casting cooling water system; water from the vaporizers at the chlorine house; deionized water system backwash; cooling water from the Ingot preheat furnaces; cooling water from the scalper; DI quench water at the coil coating lines; wastewater from the cleaning of work rolls within the Finishing Department; coatings (only if the contaminants associated with these insignificant discharges are monitored at internal Outfall 303 and/or Outfall 003); material testing rinse water; water and wastewater from the steam and high temperature water systems; other miscellaneous contact and noncontact cooling water; cooling tower blowdown and emergency overflows; wash water consisting of potable water used to wash down cooling tower screens; HVAC condensate; stormwater runoff; stormwater from secondary containment systems (either uncontaminated or treated); uncontaminated water from building foundation drainage; treated contaminated groundwater (treated in the Finishing wastewater treatment (bldg. 879) spent acid treatment system) from an onsite remediation project; treated contaminated groundwater from excavation and remediation projects, and various maintenance activities containing biodegradable organic materials and wastewaters; vehicle wash water (which may contain insignificant amounts of biodegradable, phosphate-free[6], detergents); and wastewater from associated shops and support services.

   Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge (sampled at intake to the flue gas desulfurization scrubber from the stormwater pond). Such discharge shall be limited and monitored by the permittee as below:

Internal Outfall 403
DISCHARGE LIMITATIONS [1][2][3]
Table 1

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
Parameter	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	Report	MGD	----	----	----	Continuous	24 Hr. Total
Oil & Grease	Report	Report	lbs/day	----	----	----	2 X Weekly	Grab
Total Suspended Solids	Report	Report	lbs/day	----	----	----	2 X Weekly	24-Hr. Comp.
Aluminum [4]	Report	Report	lbs/day	----	----	----	2 X Weekly	24-Hr. Comp.
Antimony [4]	Report	Report	lbs/day	----	----	----	2 X Weekly	24-Hr. Comp.
Total Chromium [4]	Report	Report	lbs/day	----	----	----	2 X Weekly	24-Hr. Comp.
Total Cyanide [5]	Report	Report	lbs/day	----	----	----	2 X Weekly	24-Hr. Comp.
Fluoride	Report	Report	lbs/day	----	----	----	2 X Weekly	24-Hr. Comp.
Nickel [4]	Report	Report	lbs/day	----	----	----	2 X Weekly	24-Hr. Comp.
Zinc [4]	Report	Report	lbs/day	----	----	----	2 X Weekly	24-Hr. Comp.

Table 2

	Quality or Concentration				Monitoring Requirements	
Parameter	Daily Minimum	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
pH [6][7]	7.0	----	10.0	s.u.	2 X Weekly	Grab

[1] The permittee should take all reasonable measures to take samples when the wastewater discharge does not contain contributions from storm events.

The data collected at this outfall (along with the data collected at internal Outfall 303) are used in the calculations used to determine compliance with requirements at internal Outfall 603.

[2] In the event that changes are to be made in the use of water treatment additives, including dosage, or a new water treatment additive is to be used that will contribute to internal Outfall 403, 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: http://www.in.gov/idem/5157.htm.

[3] The Storm Water Monitoring and Non-Numeric Effluent Limits and the Storm Water Pollution Prevention Plan (SWPPP) requirements can be found in Part I.D. and I.E. of this permit.

[4] The permittee shall measure and report identified metals as total recoverable metals.

[5] The maximum holding time for cyanide (CN) is twenty-four (24) hours when sulfide is present and fourteen (14) days when sulfide is absent, according to 40 CFR 136.3, Table IB. Therefore, CN is to be monitored by collecting a representative grab sample and analyzing it within 24 hours. Alternatively, if the permittee can demonstrate the wastewater contains no sulfide, the permittee may collect a composite and analyze it within fourteen (14) days.

[6] 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.

[7] Compliance with the pH limits at this Outfall is demonstrated by monitoring at the upstream sources and meeting the pH limits at each of these upstream sources:

- Building 871 E Wastewater Treatment Facility Effluent

- Building 879 Combined Spent Wash Treatment Facility Effluent and Water-Based Coating Solution Treatment Facility Effluent

At each of these sources, the samples taken must be representative of the process wastewater discharge from the source prior to comingling with any other wastewater streams contributing to internal Outfall 403.

On the DMR, the permittee must report the high and low pH values and exceedances for each of the two above upstream source locations. On the MMR, the permittee must report the pH results for each of the two above upstream source locations.

8. 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 internal **Outfall 503**, located at Latitude 37˚ 55’ 0”, Longitude -87˚ 20’ 6”.

   The discharge is limited to flue gas desulfurization (FGD) wastewaters, consisting primarily of scrubber blowdown. The discharge also consists of a small volume of wastewater associated with the dry fly ash silo load out dust prevention system. Sulfur dioxide is removed from the combustion exhaust gas (flue gas) using wet scrubbing. The resulting wastestream discharged is referred to as flue gas desulfurization wastewater.

   Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to mixing with any other wastestreams and entering the ash pond system. Such discharge shall be limited and monitored by the permittee as specified below:

Internal Outfall 503
DISCHARGE LIMITATIONS [2]
Table 1

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
Parameter	**Monthly Average**	**Daily Maximum**	**Units**	**Monthly Average**	**Daily Maximum**	**Units**	**Measurement Frequency**	**Sample Type**
Flow	Report	Report	MGD	----	----	----	Continuous	24 Hr. Total
Oil & Grease	----	----	----	Report	Report	mg/l	2 X Monthly	Grab
Total Suspended Solids	----	----	----	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Total Dissolved Solids	----	----	----	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Arsenic [1][3]	----	----	----	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Cadmium [1]	----	----	----	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Total Chromium [1]	----	----	----	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Copper [1]	----	----	----	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Lead [1]	----	----	----	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Mercury [1][3][4]	Report	Report	lbs/day	Report	Report	mg/l	6 X Yearly	Grab
Nickel [1]	----	----	----	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Nitrate/nitrite	----	----	----	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Selenium [1][3]	----	----	----	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Zinc [1]	----	----	----	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.

Table 2

	Quality or Concentration				Monitoring Requirements	
Parameter	**Daily Minimum**	**Monthly Average**	**Daily Maximum**	**Units**	**Measurement Frequency**	**Sample Type**
pH [5]	6.0	----	9.0	s.u.	2 X Monthly	Grab

[1] The permittee shall measure and report identified metals as total recoverable metals.

[2] In the event that changes are to be made in the use of water treatment additives, including dosage, or a new water treatment additive is to be used that will contribute to internal Outfall 403, 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: http://www.in.gov/idem/5157.htm.

[3] The following EPA test methods and/or Standard Methods and the 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.

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
Arsenic	3113 B-2004	1 µg/l	3.2 µg/l
Arsenic	200.9, Rev. 2.2 (1994)	0.5 µg/l	1.6 µg/l
Arsenic	200.8, Rev. 5.4 (1994)	0.4 µg/l	1.3 µg/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

[4] Mercury monitoring shall be conducted six times per year in the months of February, April, June, August, October, and December using EPA Test Method 1631, Revision E.

[5] 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.

9. The permittee shall comply with the limitations at internal **Outfall 603** below in accordance with the terms and conditions of this permit. This is an administratively created outfall which does not physically exist. Compliance with the limitations below shall be demonstrated by using the results of the sampling at internal Outfalls 303 and 403 and a flow weighted calculation to determine the values to be reported at this outfall. Such discharge shall be limited and monitored by the permittee as specified below:

Internal Outfall 603 (Administratively Created)
DISCHARGE LIMITATIONS [1][4]
Table 1

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
Parameter	**Monthly Average**	**Daily Maximum**	**Units**	**Monthly Average**	**Daily Maximum**	**Units**	**Measurement Frequency**	**Sample Type**
Flow	Report	Report	MGD	----	----	----	Continuous	24 Hr. Total
Total Suspended Solids	4,500	9,100	lbs/day	----	----	----	2 X Weekly	24-Hr. Comp.
Oil & Grease	450	750	lbs/day	----	----	----	2 X Weekly	Grab
Aluminum [2]	24	51	lbs/day	----	----	----	2 X Weekly	24-Hr. Comp.
Antimony [2]	2.9	6.5	lbs/day	----	----	----	2 X Weekly	24-Hr. Comp.
Total Chromium [2]	0.86	2.1	lbs/day	----	----	----	2 X Weekly	24-Hr. Comp.
Total Cyanide [3]	0.58	1.4	lbs/day	----	----	----	2 X Weekly	24-Hr. Comp.
Fluoride	89	200	lbs/day	----	----	----	2 X Weekly	24-Hr. Comp.
Nickel [2]	1.2	1.9	lbs/day	----	----	----	2 X Weekly	24-Hr. Comp.
Zinc [2]	2.9	6.9	lbs/day	----	----	----	2 X Weekly	24-Hr. Comp.

[1] For all of the parameters at this outfall, the permittee shall sample for the parameters at internal Outfalls 303 and 403 on the same day and use the results from that sampling and the following equations to calculate the values to be reported at this outfall (in the below equations, F is flow and M is mass):

$F_{603} = F_{303} + F_{403}$

$M_{603} = M_{303} + M_{403}$

[2] The permittee shall measure and report identified metals as total recoverable metals.

[3] The maximum holding time for cyanide (CN) is twenty-four (24) hours when sulfide is present and fourteen (14) days when sulfide is absent, according to 40 CFR 136.3, Table IB. Therefore, CN is to be monitored by collecting a representative grab sample and analyzing it within 24 hours. Alternatively, if the permittee can demonstrate the wastewater contains no sulfide, the permittee may collect a composite and analyze it within fourteen (14) days.

[4] If the permittee is able to document that the discharge from either internal Outfall 303 or 403 is not representative of a process water discharge caused by events beyond the

permittee's control, such as periods of river flooding, data from the outfall that is non-representative does not have to be used in the calculation in Footnote [1], above. However, such data shall still be reported on the MMRs for Internal Outfalls 303 and 403. The permittee should document and explain the reason for the occurrence on the monthly DMR/MMR. It is anticipated that these events will be rare in occurrence.

10. 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 internal **Outfall 703**, located along the drainage system for Outfall 004 at Latitude 37˚ 54’ 57”, Longitude -87˚ 20’ 04” [4].

The discharge is limited to non-chemical metal cleaning wash water from the cleaning of the ash system which includes (but is not limited to) the precipitators, fireside boiler tubes, and air heaters. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to mixing with other wastewater streams contributing to Outfall 004 and internal Outfall 103.

Such discharge shall be limited and monitored by the permittee as specified below:

Internal Outfall 703 (Non-Chemical Metal Cleaning Wastes)
DISCHARGE LIMITATIONS [1]
Table 1

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
Parameter	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	Report	MGD	----	----	----	Daily	24 Hr. Total
Oil & Grease	----	----	----	15	20	mg/l	Daily	Grab
Total Suspended Solids	----	----	----	30	100	mg/l	Daily	24-Hr. Comp.
Copper [2]	----	----	----	1.0	1.0	mg/l	Daily	24-Hr. Comp.
Iron [2]	----	----	----	1.0	1.0	mg/l	Daily	24-Hr. Comp.

Table 2

	Quality or Concentration				Monitoring Requirements	
Parameter	Daily Minimum	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
pH [3]	6.0	----	9.0	s.u.	Daily	Grab

[1] These limitations and monitoring requirements are only applicable when non-chemical metal cleaning wastes are being discharged. There shall be no discharge of chemical metal cleaning wastewater from any of the outfalls at the facility.

[2] The permittee shall measure and report identified metals as total recoverable metals.

[3] 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.

[4] In addition to the primary outfall location listed above, the permittee may also discharge from the following points which lie along the drainage system for Outfall 004:

Latitude 37˚ 54’ 55”, Longitude -87˚ 20’ 02”
Latitude 37˚ 54’ 53”, Longitude -87˚ 20’ 00”
Latitude 37˚ 54’ 54”, Longitude -87˚ 19’ 58”
Latitude 37˚ 54’ 54”, Longitude -87˚ 19’ 56”
Latitude 37˚ 54’ 53”, Longitude -87˚ 19’ 55”
Latitude 37˚ 54’ 52”, Longitude -87˚ 19’ 53”

For each discharge event, the permittee must specify on the MMR/DMR the point(s) used to discharge non-chemical metal cleaning wash water.

11. 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 004**, located at Latitude 37˚ 54’ 52”, Longitude -87˚ 20’ 7”.

The discharge is limited to a combination of contact and non-contact cooling water from the steam electric power plant operations; oily water decant pit discharge; wastewater from ash trench drains; the discharge from internal Outfall 703; boiler blowdown; wastewater from equipment associated with the selective catalytic reductant (SCR) and selective noncatalytic reductant (SNCR) systems, mainly comprised of potable water and insignificant ammonia and/or urea; insignificant quantities of gypsum and limestone from the offloading, processing, and removal of these materials from the FGD scrubber or ancillary equipment; compatible wastewaters from maintenance activities of the FGD scrubber system; wastewaters and blowdown from the scrubber and dry fly ash handling system including the silo and pug mill; emergency overflow of the scrubber system; wastewater from the coal handling area; wastewater from the regeneration of the resin beds in the demineralizing water system; potable water plant filter backwash; wastewater associated with the maintenance washdown activities within the potable water plant and deep water wells (may contain insignificant amount of potassium permanganate (KmNO4)); wastewater from the steam and high temperature water systems; non-contact HVAC condensate; vehicle wash water (which may contain insignificant amounts of biodegradable, phosphate-free, detergents); miscellaneous compatible wastewaters from associated shops and support services; and stormwater runoff from the power plant operations.

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 Ohio River. Such discharge shall be limited and monitored by the permittee as specified below:

Outfall 004
DISCHARGE LIMITATIONS [1][2][3][4]
Table 1

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
Parameter	**Monthly Average**	**Daily Maximum**	**Units**	**Monthly Average**	**Daily Maximum**	**Units**	**Measurement Frequency**	**Sample Type**
Flow [5]	Report	Report	MGD	----	----	----	Daily	24 Hr. Total
Oil & Grease [7]	----	----	----	Report	Report	mg/l	2 X Quarterly [8]	Grab
Total Suspended Solids	----	----	----	Report	Report	mg/l	2 X Quarterly [8]	Grab
Bromide	Report	Report	lbs/day	Report	Report	mg/l	2 X Quarterly [8]	Grab
Copper [10]	Report	Report	lbs/day	0.036	0.057	mg/l	2 X Quarterly [8]	Grab
Free Cyanide [11][12]	Report	Report	lbs/day	0.030	0.044	mg/l	2 X Quarterly [8]	Grab
Iron [10]	Report	Report	lbs/day	3.8	5.5	mg/l	2 X Quarterly [8]	Grab
Mercury [7][10][11]	Report	Report	lbs/day	12	20	ng/l	2 X Quarterly [8]	Grab
Zinc [10]	Report	Report	lbs/day	0.61	0.96	mg/l	2 X Quarterly [8]	Grab

Table 2

					Monitoring Requirements	
Parameter	**Monthly Total**	**Units**	**Daily Total**	**Units**	**Measurement Frequency**	**Sample Type**
Discharge Duration [6]	Report	Hours/month	Report	Minutes/day	Daily	24-Hr Total

Table 3

	Quality or Concentration				Monitoring Requirements	
Parameter	**Daily Minimum**	**Monthly Average**	**Daily Maximum**	**Units**	**Measurement Frequency**	**Sample Type**
pH [9]	6.0	----	9.0	s.u.	2 X Quarterly [8]	Grab

[1] See Part I.B. of the permit for the Narrative Water Quality Limitations.

[2] In the event that changes are to be made in the use of water treatment additives, including dosage, or a new water treatment additive is to be used that will contribute to Outfall 004, 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: http://www.in.gov/idem/5157.htm.

[3] The permittee shall post a permanent marker on the stream bank at each outfall discharging directly to the Ohio River. The marker shall consist at a minimum, the name of the permittee, the permit number, and the outfall number. The information shall be printed in letters not less than two inches in height. The marker shall be a minimum of 2 feet by 2 feet and shall be a minimum of 3 feet above the ground.

[4] The Storm Water Monitoring and Non-Numeric Effluent Limits and the Storm Water Pollution Prevention Plan (SWPPP) requirements can be found in Part I.D. and I.E. of this permit.

[5] Measure flow when outfall is discharging.

[6] On the MMR, the permittee must report the number of minutes the outfall has discharged each day and the total number of hours the outfall discharged during the month. On the DMR, the permittee must report the total number of hours the outfall discharged during the month. In addition, the permittee must specify the reason(s) that the discharge occurred (such as X inches of precipitation in Y hours or pump failure).

[7] The permittee may use an automatic sampler to collect the oil and grease and mercury grab samples.

[8] Samples shall be taken two times at any time during each of the four annual quarters:

(A) January-February-March;
(B) April-May-June;
(C) July-August-September; and
(D) October-November-December.

For the two times quarterly monitoring, in the first quarter for example, the permittee may take these two samples on any two days within the months of January, February and/or March. The result from this reporting timeframe shall be reported on the March DMR, regardless of which of the months within the quarter the samples were taken. The samples must be reported on the MMR in the month in which each sample is taken.

If the outfall discharges less than two times during the quarter, then the permittee is only required to take samples when a discharge occurs. Thus, if the outfall only discharges once during a quarter, the permittee is only required to take samples once during the quarter and report "no discharge" in place of the second sample.

Since the discharges which occur at this outfall may be too short in duration to collect sufficient samples to analyze for all of the listed parameters, the permittee shall prioritize its sample collection in the following order: mercury, copper, zinc, iron, free cyanide, TSS, oil and grease, and bromide. If insufficient sample is collected to analyze for one or more of the parameters, the permittee shall use a code of F (insufficient flow) for each such parameter. The use of this code is limited to Outfalls 001, 004 and 005 and it is expected that the use of this code will be infrequent. In addition, this code cannot be used if the failure to fill all of the bottles is due to a sampling equipment malfunction or human error.

[9] 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.

[10] The permittee shall measure and report identified metals as total recoverable metals.

[11] 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
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	1.6 µg/l
Cyanide, Available**	Kelada-01 (available)	0.5 µg/l	1.6 µg/l

[12] Sample preservation procedures and maximum allowable holding times for total cyanide, or available (free) cyanide, are prescribed in Table II of 40 CFR Part 136. Note the footnotes specific to cyanide. Preservation and holding time information in Table II takes precedence over information in specific methods or elsewhere.

12. 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 005**, located at Latitude 37˚ 54’ 53”, Longitude -87˚ 20’ 9”.

The discharge is limited to a combination of contact and non-contact cooling water from the steam electric power plant operations; insignificant quantities of gypsum and limestone from the off-loading, processing, and removal of these materials from the FGD scrubber or ancillary equipment; wastewaters and blowdown from the scrubber and dry fly ash handling system including the silo and pug mill; non-contact cooling water from the coal handling area; wastewater from maintenance washdowns from the coal handling area and coal truck unloading area; minor volume of wastewater from the alumina ore unloading area, consisting mostly of compressor condensate and water from maintenance washdowns; cooling water from the fan houses at the rectifiers; emergency cooling water for the Bldg 311 air compressor station; incidental amounts of cooling tower water due to spills, leaks, sprays, or equipment malfunction; wastewater from the steam and high temperature water systems; non-contact HVAC condensate; miscellaneous compatible wastewaters from associated shops and support services; vehicle wash water (which may contain insignificant amounts of biodegradable, phosphate-free, detergents); stormwater runoff from the smelting area and power plant operations, including coal handling, the alumina ore unloading area, and the coal pile; and uncontaminated and contaminated (only if the contaminants are monitored routinely at the outfall) storm water from secondary containment systems.

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 Ohio River. Such discharge shall be limited and monitored by the permittee as specified below:

Outfall 005
DISCHARGE LIMITATIONS [1][2][3][4]
Table 1

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
Parameter	**Monthly Average**	**Daily Maximum**	**Units**	**Monthly Average**	**Daily Maximum**	**Units**	**Measurement Frequency**	**Sample Type**
Flow [5]	Report	Report	MGD	----	----	----	Daily	24 Hr. Total
Oil & Grease [7]	----	----	----	Report	Report	mg/l	2 X Quarterly [8]	Grab
Total Suspended Solids	----	----	----	Report	Report	mg/l	2 X Quarterly [8]	Grab
Aluminum [10]	Report	Report	lbs/day	Report	Report	mg/l	2 X Quarterly [8]	Grab
Bromide	Report	Report	lbs/day	Report	Report	mg/l	2 X Quarterly [8]	Grab
Copper [10]	Report	Report	lbs/day	0.036	0.057	mg/l	2 X Quarterly [8]	Grab
Fluoride	Report	Report	lbs/day	Report	Report	mg/l	2 X Quarterly [8]	Grab
Mercury [7][10][11]	Report	Report	lbs/day	12	20	ng/l	2 X Quarterly [8]	Grab
Zinc [10]	Report	Report	lbs/day	0.61	0.96	mg/l	2 X Quarterly [8]	Grab

Table 2

Parameter	Monthly Total	Units	Daily Total	Units	Monitoring Requirements: Measurement Frequency	Sample Type
Discharge Duration [6]	Report	Hours/month	Report	Minutes/day	Daily	24-Hr Total

Table 3

	Quality or Concentration				Monitoring Requirements	
Parameter	**Daily Minimum**	**Monthly Average**	**Daily Maximum**	**Units**	**Measurement Frequency**	**Sample Type**
pH [9]	6.0	----	9.0	s.u.	2 X Quarterly [8]	Grab

[1] See Part I.B. of the permit for the Narrative Water Quality Limitations.

[2] In the event that changes are to be made in the use of water treatment additives, including dosage, or a new water treatment additive is to be used that will contribute to Outfall 005, 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: http://www.in.gov/idem/5157.htm.

[3] The permittee shall post a permanent marker on the stream bank at each outfall discharging directly to the Ohio River. The marker shall consist at a minimum, the name of the permittee, the permit number, and the outfall number. The information shall be printed in letters not less than two inches in height. The marker shall be a minimum of 2 feet by 2 feet and shall be a minimum of 3 feet above the ground.

[4] The Storm Water Monitoring and Non-Numeric Effluent Limits and the Storm Water Pollution Prevention Plan (SWPPP) requirements can be found in Part I.D. and I.E. of this permit.

[5] Measure flow when outfall is discharging.

[6] On the MMR, the permittee must report the number of minutes the outfall has discharged each day and the total number of hours the outfall discharged during the month. On the DMR, the permittee must report the total number of hours the outfall discharged during the month. In addition, the permittee must specify the reason(s) that the discharge occurred (such as X inches of precipitation in Y hours or pump failure).

[7] The permittee may use an automatic sampler to collect the oil and grease and

mercury grab samples.

[8] Samples shall be taken two times at any time during each of the four annual quarters:

(A) January-February-March;
(B) April-May-June;
(C) July-August-September; and
(D) October-November-December.

For the two times quarterly monitoring, in the first quarter for example, the permittee may take these two samples on any two days within the months of January, February and/or March. The result from this reporting timeframe shall be reported on the March DMR, regardless of which of the months within the quarter the samples were taken. The samples must be reported on the MMR in the month in which each sample is taken.

If the outfall discharges less than two times during the quarter, then the permittee is only required to take samples when a discharge occurs. Thus, if the outfall only discharges once during a quarter, the permittee is only required to take samples once during the quarter and report "no discharge" in place of the second sample.
Since the discharges which occur at this outfall may be too short in duration to collect sufficient samples to analyze for all of the listed parameters, the permittee shall prioritize its sample collection in the following order: mercury, copper, zinc, iron, free cyanide, TSS, oil and grease, and bromide. If insufficient sample is collected to analyze for one or more of the parameters, the permittee shall use a code of F (insufficient flow) for each such parameter. The use of this code is limited to Outfalls 001, 004 and 005 and it is expected that the use of this code will be infrequent. In addition, this code cannot be used if the failure to fill all of the bottles is due to a sampling equipment malfunction or human error.

[9] 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.

[10] The permittee shall measure and report identified metals as <u>total recoverable</u> metals.

[11] 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

13. The permittee is authorized to discharge from **Outfall 001S**, located at Latitude 37°54' 46", Longitude 87°19' 56" in accordance with the terms and conditions of this permit. This outfall is located in the same physical location as Outfall 001 and is intended to be representative of the portion of flow not captured by the Outfall 001 lift station sump. During non-stormwater conditions, this outfall does not discharge and water is pumped to a series of sump pumps and ultimately to the ash pond system which discharges from internal Outfall 103. During light rain events, discharge at this outfall is limited to raw potable water from the potable water treatment plant, partially-treated water from the potable water treatment plant (groundwater that has been treated with potassium permanganate), and stormwater runoff from the power plant operations. 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 Ohio River. Such discharge shall be limited and monitored by the permittee as specified below:

Outfall 001S

DISCHARGE LIMITATIONS [1][2][3][4][5]

			Monitoring Requirements	
Parameter	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow [8]	Report	MGD	1 X Quarterly [6]	Estimate Total
pH [7]	Report	s.u.	1 X Annually	Grab
Oil & Grease	Report	mg/l	1 X Annually	Grab
Total Suspended Solids	Report	mg/l	1 X Quarterly [6]	Grab
$CBOD_5$	Report	mg/l	1 X Annually	Grab
COD	Report	mg/l	1 X Annually	Grab
Aluminum [9]	Report	mg/l	1 X Quarterly [6]	Grab
Iron [9]	Report	mg/l	1 X Quarterly [6]	Grab
Total Kjeidahl Nitrogen	Report	mg/l	1 X Annually	Grab
Nitrate/nitrite (as N)	Report	mg/l	1 X Annually	Grab
Total Phosphorous	Report	mg/l	1 X Annually	Grab

[1] See Part I.B. of the permit for the Narrative Water Quality Limitations.

[2] In the event that changes are to be made in the use of water treatment additives, including dosage, or a new water treatment additive is to be used that will contribute to Outfall 001S, 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 http://www.in.gov/idem/5157.htm.

[3] The permittee shall post a permanent marker on the stream bank at each outfall discharging directly to the Ohio River. The marker shall consist at a minimum, the name of the permittee, the permit number, and the outfall number. The information shall be printed in letters not less than two inches in height. The marker shall be a

minimum of 2 feet by 2 feet and shall be a minimum of 3 feet above the ground.

[4] The Storm Water Monitoring and Non-Numeric Effluent Limits and the Storm Water Pollution Prevention Plan (SWPPP) requirements can be found in Part I.D. and I.E. of this permit.

[5] All samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches and at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. There shall be a minimum of three (3) months between reported sampling events for the parameters that are reported on an annual basis.

For each sample taken, the permittee shall record the duration and total rainfall of the storm event, the number of hours between beginning of the storm measured and the end of the previous measurable rain event, and the outside temperature at the time of sampling.

A grab sample shall be taken during the first thirty (30) minutes of the discharge (or as soon thereafter as practicable).

[6] Samples shall be taken once at any time during each of the four annual quarters:

(A) January-February-March;
(B) April-May-June;
(C) July-August-September; and
(D) October-November-December.

For quarterly monitoring, in the first quarter for example, the permittee may conduct sampling within the month of January, February or March. The result from this reporting timeframe shall be reported on the March DMR, regardless of which of the months within the quarter the sample was taken.

[7] 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.

[8] During periods of flooding of the Ohio River, flow is unable to be estimated and is therefore not required to be reported. The permittee shall use a code of 9 (conditional monitoring – not required this period) for each such instance. The use of this code is limited to Outfall 001S, and it is expected that the use of this code will be infrequent.

[9] The permittee shall measure and report identified metals as <u>total recoverable</u> metals.

14. The permittee is authorized to discharge stormwater from the outfall listed below in accordance with the terms and conditions of this permit. The permittee is authorized to discharge from **Outfall 006S**, located at Latitude 37° 55’ 31”, Longitude 87° 19’ 23”.

Outfall 006S represents the discharge from Outfall 006S only. The discharge is limited to a combination of stormwater runoff from the cold rolling operations area and uncontaminated storm water from secondary containments in the cold rolling operations area. Discharge may also include wash water consisting of potable water used to wash down cooling tower screens (low flow, intermittent occurrence).

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 unnamed tributary to Cypress Creek. Such discharge shall be limited and monitored by the permittee as specified below:

Outfall 006S
DISCHARGE LIMITATIONS [1][2][3][4]

				Monitoring Requirements	
Parameter	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	----	Report	MGD	1 X Quarterly [5]	Estimate Total
pH [6]	----	Report	s.u.	1 X Annually	Grab
Oil & Grease	----	Report	mg/l	1 X Quarterly [5]	Grab
Total Suspended Solids	----	Report	mg/l	1 X Quarterly [5]	Grab
$CBOD_5$	----	Report	mg/l	1 X Annually	Grab
COD	----	Report	mg/l	1 X Annually	Grab
Aluminum [7]	----	Report	mg/l	1 X Quarterly [5]	Grab
Total Residual Chlorine [8][9]	0.016	0.038	mg/l	2 X Monthly	Grab
Total Kjeidahl Nitrogen	----	Report	mg/l	1 X Annually	Grab
Nitrate/nitrite (as N)	----	Report	mg/l	1 X Annually	Grab
Total Phosphorous	----	Report	mg/l	1 X Annually	Grab

[1] See Part I.B. of the permit for the Narrative Water Quality Limitations.

[2] In the event that changes are to be made in the use of water treatment additives, including dosage, or a new water treatment additive is to be used that will contribute to Outfall 006S, 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: http://www.in.gov/idem/5157.htm.

[3] The Storm Water Monitoring and Non-Numeric Effluent Limits and the Storm Water Pollution Prevention Plan (SWPPP) requirements can be found in Part I.D. and I.E. of this permit.

[4] All samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches and at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. There shall be a minimum of three (3) months between reported sampling events for the parameters that are reported on an annual basis.

For each sample taken, the permittee shall record the duration and total rainfall of the storm event, the number of hours between beginning of the storm measured and the end of the previous measurable rain event, and the outside temperature at the time of sampling.

A grab sample shall be taken during the first thirty (30) minutes of the discharge (or as soon thereafter as practicable).

[5] Samples shall be taken once at any time during each of the four annual quarters:

(A) January-February-March;
(B) April-May-June;
(C) July-August-September; and
(D) October-November-December.

For quarterly monitoring, in the first quarter for example, the permittee may conduct sampling within the month of January, February or March. The result from this reporting timeframe shall be reported on the March DMR, regardless of which of the months within the quarter the sample was taken.

[6] 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.

[7] The permittee shall measure and report identified metals as <u>total recoverable</u> metals.

[8] The water quality based effluent limit (WQBEL) for TRC is less than the limit of quantitation (LOQ) as specified in footnote [9]. Compliance with this permit will be demonstrated if the effluent concentrations measured are less than the LOQ.

If the measured concentration of TRC is greater than the water quality based effluent limitations and above the respective LOD specified in footnote [9] in any three (3) consecutive analyses, or any five (5) out of nine (9) analyses, then the discharger shall:

(1) Determine the source of the parameter through an evaluation of sampling techniques, analytical/laboratory procedures, and waste streams (including internal waste streams); and re-examine the chlorination /dechlorination procedures.

(2) The sampling and analysis for TRC shall be increased to the sampling frequency should be increased by one step (2 X Monthly to 1 X Weekly), and remain at this increased sampling frequency until:

(a) The increased sampling frequency for TRC has been in place for at least nine (9) weeks;

(b) At least nine (9) samples have been taken under this increased sampling frequency; and

(c) The measured concentration of TRC is less than the LOD specified in footnote [9] in at least seven (7) out of the nine (9) most recent analyses.

[9] 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
Chlorine, Total residual	4500-Cl D-2000, E-2000 or G-2000	0.02 mg/l	0.06 mg/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).

15. The permittee is authorized to discharge stormwater from the outfall listed below in accordance with the terms and conditions of this permit. The permittee is authorized to discharge from **Outfall 008S**, located at Latitude 37° 55’ 15”, Longitude 87° 19’ 28”.

Outfall 008S represents the discharge from Outfall 008S only. The discharge is limited to stormwater runoff from a combination of grassy areas, roadways, and parking lots, and may include once through noncontact air conditioner chiller water from Building 01 during the summer or incidental leaks of steam or high temperature water from the Bldg. 316 Boiler House.

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 unnamed tributary to Cypress Creek. Such discharge shall be limited and monitored by the permittee as specified below:

Outfall 008S
DISCHARGE LIMITATIONS [1][2][3][4]

Parameter	Monthly Average	Daily Maximum	Units	Monitoring Requirements: Measurement Frequency	Monitoring Requirements: Sample Type
Flow	----	Report	MGD	1 X Quarterly [5]	Estimate Total
pH [6]	----	Report	s.u.	1 X Annually	Grab
Oil & Grease	----	Report	mg/l	1 X Annually	Grab
Total Suspended Solids	----	Report	mg/l	1 X Quarterly [5]	Grab
$CBOD_5$	----	Report	mg/l	1 X Annually	Grab
COD	----	Report	mg/l	1 X Annually	Grab
Total Residual Chlorine [7][8]	0.016	0.038	mg/l	2 X Monthly	Grab
Fluoride	----	Report	mg/l	1 X Quarterly [5]	Grab
Total Kjeidahl Nitrogen	----	Report	mg/l	1 X Annually	Grab
Nitrate/nitrite (as N)	----	Report	mg/l	1 X Annually	Grab
Total Phosphorous	----	Report	mg/l	1 X Annually	Grab
Temperature [10][11][12]	----	Report	mg/l	Daily	Grab

[1] See Part I.B. of the permit for the Narrative Water Quality Limitations.

[2] In the event that changes are to be made in the use of water treatment additives, including dosage, or a new water treatment additive is to be used that will contribute to Outfall 008S, 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: http://www.in.gov/idem/5157.htm.

[3] The Storm Water Monitoring and Non-Numeric Effluent Limits and the Storm Water Pollution Prevention Plan (SWPPP) requirements can be found in Part I.D. and I.E. of this permit.

[4] All samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches and at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. There shall be a minimum of three (3) months between reported sampling events for the parameters that are reported on an annual basis.

For each sample taken, the permittee shall record the duration and total rainfall of the storm event, the number of hours between beginning of the storm measured and the end of the previous measurable rain event, and the outside temperature at the time of sampling.

A grab sample shall be taken during the first thirty (30) minutes of the discharge (or as soon thereafter as practicable).

[5] Samples shall be taken once at any time during each of the four annual quarters:

(A) January-February-March;
(B) April-May-June;
(C) July-August-September; and
(D) October-November-December.

For quarterly monitoring, in the first quarter for example, the permittee may conduct sampling within the month of January, February or March. The result from this reporting timeframe shall be reported on the March DMR, regardless of which of the months within the quarter the sample was taken.

[6] 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.

[7] The water quality based effluent limit (WQBEL) for TRC is less than the limit of quantitation (LOQ) as specified in footnote [8]. Compliance with this permit will be demonstrated if the effluent concentrations measured are less than the LOQ.

If the measured concentration of TRC is greater than the water quality based effluent limitations and above the respective LOD specified in footnote [8] in any three (3) consecutive analyses, or any five (5) out of nine (9) analyses, then the discharger shall:

(1) Determine the source of the parameter through an evaluation of sampling techniques, analytical/laboratory procedures, and waste streams (including internal waste streams); and re-examine the chlorination /dechlorination procedures.

(2) The sampling and analysis for TRC shall be increased to the sampling frequency should be increased by one step (2 X Monthly to 1 X Weekly), and remain at this increased sampling frequency until:

(a) The increased sampling frequency for TRC has been in place for at least nine (9) weeks;

(b) At least nine (9) samples have been taken under this increased sampling frequency; and

(c) The measured concentration of TRC is less than the LOD specified in footnote [8] in at least seven (7) out of the nine (9) most recent analyses.

[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
Chlorine, Total residual	4500-Cl D-2000, E-2000 or G-2000	0.02 mg/l	0.06 mg/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).

[10] Temperature is to be monitored daily for the duration of incidental discharge events from the Building 316 Boiler House which reach Outfall 008S.

[11] The following conditions apply for Temperature outside the mixing zone:

(1) There shall be no abnormal temperature changes that may adversely affect aquatic life unless caused by natural conditions.
(2) The normal daily and seasonal temperature fluctuations that existed before the addition of heat due to other than natural causes shall be maintained.
(3) The maximum temperature rise at any time or place above natural shall not exceed five (5) degrees Fahrenheit (two and eight-tenths (2.8) degrees Celsius) in streams.

[12] The discharge from Outfall 008S, shall not exceed the maximum limits in the following table by more than three degrees Fahrenheit (3ºF) (one and seven-tenths degrees Celsius (1.7ºC)).

Table 1

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ºF	50	50	60	70	70	70	70	70	70	70	70	57
ºC	10	10	15.6	21.1	26.7	32.2	32.2	32.2	32.2	25.5	21.1	14

16. The permittee is authorized to discharge stormwater from the outfall listed below in accordance with the terms and conditions of this permit. The permittee is authorized to discharge from **Outfall 009S**, located at Latitude 37˚ 55' 38", Longitude 87˚ 19' 23".

Outfall 009S represents the discharge from Outfalls 009S, 013S, 036S, and 039S. The discharge from Outfall 009S is limited to stormwater runoff from industrial activity.

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 unnamed tributary to Cypress Creek. Such discharge shall be limited and monitored by the permittee as specified below:

Outfall 009S
DISCHARGE LIMITATIONS [1][2][3][4]

Parameter	Daily Maximum	Units	Monitoring Requirements Measurement Frequency	Monitoring Requirements Sample Type
Flow	Report	MGD	1 X Quarterly [5]	Estimate Total
pH [6]	Report	s.u.	1 X Annually	Grab
Oil & Grease	Report	mg/l	1 X Annually	Grab
Total Suspended Solids	Report	mg/l	1 X Quarterly [5]	Grab
$CBOD_5$	Report	mg/l	1 X Annually	Grab
COD	Report	mg/l	1 X Annually	Grab
Aluminum [7]	Report	mg/l	1 X Quarterly [5]	Grab
Iron [7]	Report	mg/l	1 X Annually	Grab
Total Kjeidahl Nitrogen	Report	mg/l	1 X Annually	Grab
Nitrate/nitrite (as N)	Report	mg/l	1 X Annually	Grab
Total Phosphorous	Report	mg/l	1 X Annually	Grab

[1] See Part I.B. of the permit for the Narrative Water Quality Limitations.

[2] In the event that changes are to be made in the use of water treatment additives, including dosage, or a new water treatment additive is to be used that will contribute to Outfall 009S, 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: http://www.in.gov/idem/5157.htm.

[3] The Storm Water Monitoring and Non-Numeric Effluent Limits and the Storm Water Pollution Prevention Plan (SWPPP) requirements can be found in Part I.D. and I.E. of this permit.

[4] All samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches and at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. There shall be a minimum of three (3) months

between reported sampling events for the parameters that are reported on an annual basis.

For each sample taken, the permittee shall record the duration and total rainfall of the storm event, the number of hours between beginning of the storm measured and the end of the previous measurable rain event, and the outside temperature at the time of sampling.

A grab sample shall be taken during the first thirty (30) minutes of the discharge (or as soon thereafter as practicable).

[5] Samples shall be taken once at any time during each of the four annual quarters:

(A) January-February-March;
(B) April-May-June;
(C) July-August-September; and
(D) October-November-December.

For quarterly monitoring, in the first quarter for example, the permittee may conduct sampling within the month of January, February or March. The result from this reporting timeframe shall be reported on the March DMR, regardless of which of the months within the quarter the sample was taken.

[6] 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.

[7] The permittee shall measure and report identified metals as <u>total recoverable</u> metals.

17. The permittee is authorized to discharge stormwater from the outfall listed below in accordance with the terms and conditions of this permit. The permittee is authorized to discharge from **Outfall 010S**, located at Latitude 37° 55’ 48”, Longitude 87° 19’ 32”.

Outfall 010S represents the discharge from Outfalls 010S only. The discharge is limited to a combination of stormwater runoff from light industrial-use areas, air conditioner condensate, potential water from the 820 cooling tower, cooling water, and incidental amounts of fire foam from the fire suppression system.

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 unnamed tributary to Cypress Creek. Such discharge shall be limited and monitored by the permittee as specified below:

Outfall 010S
DISCHARGE LIMITATIONS [1][2][3][4]

				Monitoring Requirements	
Parameter	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	----	Report	MGD	1 X Quarterly [5]	Estimate Total
pH [6]	----	Report	s.u.	1 X Annually	Grab
Oil & Grease	----	Report	mg/l	1 X Annually	Grab
Total Suspended Solids	----	Report	mg/l	1 X Quarterly [5]	Grab
$CBOD_5$	----	Report	mg/l	1 X Annually	Grab
COD	----	Report	mg/l	1 X Annually	Grab
Aluminum [7]	----	Report	mg/l	1 X Quarterly [5]	Grab
Total Residual Chlorine [8][9]	0.016	0.038	mg/l	2 X Monthly	Grab
Fluoride	----	Report	mg/l	1 X Quarterly [5]	Grab
Iron [7]	----	Report	mg/l	1 X Quarterly [5]	Grab
Total Kjeidahl Nitrogen	----	Report	mg/l	1 X Annually	Grab
Nitrate/nitrite (as N)	----	Report	mg/l	1 X Annually	Grab
Total Phosphorous	----	Report	mg/l	1 X Annually	Grab

[1] See Part I.B. of the permit for the Narrative Water Quality Limitations.

[2] In the event that changes are to be made in the use of water treatment additives, including dosage, or a new water treatment additive is to be used that will contribute to Outfall 010S, 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: http://www.in.gov/idem/5157.htm.

[3] The Storm Water Monitoring and Non-Numeric Effluent Limits and the Storm Water Pollution Prevention Plan (SWPPP) requirements can be found in Part I.D. and I.E. of

this permit.

[4] All samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches and at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. There shall be a minimum of three (3) months between reported sampling events for the parameters that are reported on an annual basis.

For each sample taken, the permittee shall record the duration and total rainfall of the storm event, the number of hours between beginning of the storm measured and the end of the previous measurable rain event, and the outside temperature at the time of sampling.

A grab sample shall be taken during the first thirty (30) minutes of the discharge (or as soon thereafter as practicable).

[5] Samples shall be taken once at any time during each of the four annual quarters:

(A) January-February-March;
(B) April-May-June;
(C) July-August-September; and
(D) October-November-December.

For quarterly monitoring, in the first quarter for example, the permittee may conduct sampling within the month of January, February or March. The result from this reporting timeframe shall be reported on the March DMR, regardless of which of the months within the quarter the sample was taken.

[6] 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.

[7] The permittee shall measure and report identified metals as <u>total recoverable</u> metals.

[8] The water quality based effluent limit (WQBEL) for TRC is less than the limit of quantitation (LOQ) as specified in footnote [9]. Compliance with this permit will be demonstrated if the effluent concentrations measured are less than the LOQ.

If the measured concentration of TRC is greater than the water quality based effluent limitations and above the respective LOD specified in footnote [9] in any three (3) consecutive analyses, or any five (5) out of nine (9) analyses, then the discharger shall:

(1) Determine the source of the parameter through an evaluation of

sampling techniques, analytical/laboratory procedures, and waste streams (including internal waste streams); and re-examine the chlorination /dechlorination procedures.

(2) The sampling and analysis for TRC shall be increased to the sampling frequency should be increased by one step (2 X Monthly to 1 X Weekly), and remain at this increased sampling frequency until:

(a) The increased sampling frequency for TRC has been in place for at least nine (9) weeks;

(b) At least nine (9) samples have been taken under this increased sampling frequency; and

(c) The measured concentration of TRC is less than the LOD specified in footnote [9] in at least seven (7) out of the nine (9) most recent analyses.

[9] 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
Chlorine, Total residual	4500-Cl D-2000, E-2000 or G-2000	0.02 mg/l	0.06 mg/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).

18. The permittee is authorized to discharge stormwater from the outfall listed below in accordance with the terms and conditions of this permit. The permittee is authorized to discharge from **Outfall 011S**, located at Latitude 37° 55’ 43”, Longitude 87° 19’ 22”.

Outfall 011S represents the discharge from Outfalls 011S, 014S, 015S, 019S, 021S, 035S, 062S and 063S. The discharge from this group of outfalls is limited to uncontaminated groundwater from monitoring wells at the landfills (011S, 014S, and 019S only), runoff from the on-site clean fill (014S and 015S only), runoff from capped ash ponds (063S only) and regular stormwater runoff from grassy areas, roadways, railways, and the on-site closed landfills (grassy cover).

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 unnamed tributary to Cypress Creek. Such discharge shall be limited and monitored by the permittee as specified below:

Outfall 011S
DISCHARGE LIMITATIONS [1][2][3][4]

Parameter	Daily Maximum	Units	Monitoring Requirements Measurement Frequency	Monitoring Requirements Sample Type
Flow	Report	MGD	1 X Quarterly [5]	Estimate Total
pH [6]	Report	s.u.	1 X Annually	Grab
Oil & Grease	Report	mg/l	1 X Annually	Grab
Total Suspended Solids	Report	mg/l	1 X Quarterly [5]	Grab
$CBOD_5$	Report	mg/l	1 X Annually	Grab
COD	Report	mg/l	1 X Annually	Grab
Aluminum [7]	Report	mg/l	1 X Quarterly [5]	Grab
Fluoride	Report	mg/l	1 X Quarterly [5]	Grab
Iron [7]	Report	mg/l	1 X Quarterly [5]	Grab
Total Kjeidahl Nitrogen	Report	mg/l	1 X Annually	Grab
Nitrate/nitrite (as N)	Report	mg/l	1 X Annually	Grab
Total Phosphorous	Report	mg/l	1 X Annually	Grab

[1] See Part I.B. of the permit for the Narrative Water Quality Limitations.

[2] In the event that changes are to be made in the use of water treatment additives, including dosage, or a new water treatment additive is to be used that will contribute to Outfall 011S, 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: http://www.in.gov/idem/5157.htm.

[3] The Storm Water Monitoring and Non-Numeric Effluent Limits and the Storm Water

Pollution Prevention Plan (SWPPP) requirements can be found in Part I.D. and I.E. of this permit.

[4] All samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches and at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. There shall be a minimum of three (3) months between reported sampling events for the parameters that are reported on an annual basis.

For each sample taken, the permittee shall record the duration and total rainfall of the storm event, the number of hours between beginning of the storm measured and the end of the previous measurable rain event, and the outside temperature at the time of sampling.

A grab sample shall be taken during the first thirty (30) minutes of the discharge (or as soon thereafter as practicable).

[5] Samples shall be taken once at any time during each of the four annual quarters:

(A) January-February-March;
(B) April-May-June;
(C) July-August-September; and
(D) October-November-December.

For quarterly monitoring, in the first quarter for example, the permittee may conduct sampling within the month of January, February or March. The result from this reporting timeframe shall be reported on the March DMR, regardless of which of the months within the quarter the sample was taken.

[6] 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.

[7] The permittee shall measure and report identified metals as <u>total recoverable</u> metals.

19. The permittee is authorized to discharge stormwater from the outfall listed below in accordance with the terms and conditions of this permit. The permittee is authorized to discharge from **Outfall 012S**, located at Latitude 37˚ 55' 43", Longitude 87˚ 19' 23".

Outfall 012S represents the discharge from Outfalls 012S and 029S. The discharge from this group of outfalls is limited to stormwater runoff from industrial activity.

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 unnamed tributary to Cypress Creek. Such discharge shall be limited and monitored by the permittee as specified below:

Outfall 012S
DISCHARGE LIMITATIONS [1][2][3][4]

			Monitoring Requirements	
Parameter	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	MGD	1 X Quarterly [5]	Estimate Total
pH [6]	Report	s.u.	1 X Annually	Grab
Oil & Grease	Report	mg/l	1 X Annually	Grab
Total Suspended Solids	Report	mg/l	1 X Quarterly [5]	Grab
$CBOD_5$	Report	mg/l	1 X Annually	Grab
COD	Report	mg/l	1 X Annually	Grab
Aluminum [7]	Report	mg/l	1 X Quarterly [5]	Grab
Fluoride	Report	mg/l	1 X Quarterly [5]	Grab
Iron [7]	Report	mg/l	1 X Quarterly [5]	Grab
Total Kjeidahl Nitrogen	Report	mg/l	1 X Annually	Grab
Nitrate/nitrite (as N)	Report	mg/l	1 X Annually	Grab
Total Phosphorous	Report	mg/l	1 X Annually	Grab

[1] See Part I.B. of the permit for the Narrative Water Quality Limitations.

[2] In the event that changes are to be made in the use of water treatment additives, including dosage, or a new water treatment additive is to be used that will contribute to Outfall 012S, 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: http://www.in.gov/idem/5157.htm.

[3] The Storm Water Monitoring and Non-Numeric Effluent Limits and the Storm Water Pollution Prevention Plan (SWPPP) requirements can be found in Part I.D. and I.E. of this permit.

[4] All samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches and at least 72 hours from the previously measurable (greater

than 0.1 inch rainfall) storm event. There shall be a minimum of three (3) months between reported sampling events for the parameters that are reported on an annual basis.

For each sample taken, the permittee shall record the duration and total rainfall of the storm event, the number of hours between beginning of the storm measured and the end of the previous measurable rain event, and the outside temperature at the time of sampling.

A grab sample shall be taken during the first thirty (30) minutes of the discharge (or as soon thereafter as practicable).

[5] Samples shall be taken once at any time during each of the four annual quarters:

(A) January-February-March;
(B) April-May-June;
(C) July-August-September; and
(D) October-November-December.

For quarterly monitoring, in the first quarter for example, the permittee may conduct sampling within the month of January, February or March. The result from this reporting timeframe shall be reported on the March DMR, regardless of which of the months within the quarter the sample was taken.

[6] 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.

[7] The permittee shall measure and report identified metals as <u>total recoverable</u> metals.

20. The permittee is authorized to discharge stormwater from the outfall listed below in accordance with the terms and conditions of this permit. The permittee is authorized to discharge from **Outfall 020S**, located at Latitude 37˚ 55’ 22”, Longitude 87˚ 19’ 25”.

Outfall 020S represents the discharge from Outfalls 020S, 022S, 033S, and 034S. The discharge from this group of outfalls is limited to stormwater runoff associated with industrial activity.

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 unnamed tributary to Cypress Creek. Such discharge shall be limited and monitored by the permittee as specified below:

Outfall 020S

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

			Monitoring Requirements	
Parameter	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	MGD	1 X Quarterly [5]	Estimate Total
pH [6]	Report	s.u.	1 X Annually	Grab
Oil & Grease	Report	mg/l	1 X Annually	Grab
Total Suspended Solids	Report	mg/l	1 X Quarterly [5]	Grab
$CBOD_5$	Report	mg/l	1 X Annually	Grab
COD	Report	mg/l	1 X Annually	Grab
Aluminum [7]	Report	mg/l	1 X Quarterly [5]	Grab
Fluoride	Report	mg/l	1 X Quarterly [5]	Grab
Iron [7]	Report	mg/l	1 X Quarterly [5]	Grab
Total Kjeidahl Nitrogen	Report	mg/l	1 X Annually	Grab
Nitrate/nitrite (as N)	Report	mg/l	1 X Annually	Grab
Total Phosphorous	Report	mg/l	1 X Annually	Grab

[1] See Part I.B. of the permit for the Narrative Water Quality Limitations.

[2] In the event that changes are to be made in the use of water treatment additives, including dosage, or a new water treatment additive is to be used that will contribute to Outfall 020S, 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: http://www.in.gov/idem/5157.htm.

[3] The Storm Water Monitoring and Non-Numeric Effluent Limits and the Storm Water Pollution Prevention Plan (SWPPP) requirements can be found in Part I.D. and I.E. of this permit.

[4] All samples shall be collected from the discharge resulting from a storm event that is

greater than 0.1 inches and at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. There shall be a minimum of three (3) months between reported sampling events for the parameters that are reported on an annual basis.

For each sample taken, the permittee shall record the duration and total rainfall of the storm event, the number of hours between beginning of the storm measured and the end of the previous measurable rain event, and the outside temperature at the time of sampling.

A grab sample shall be taken during the first thirty (30) minutes of the discharge (or as soon thereafter as practicable).

[5] Samples shall be taken once at any time during each of the four annual quarters:

(A) January-February-March;
(B) April-May-June;
(C) July-August-September; and
(D) October-November-December.

For quarterly monitoring, in the first quarter for example, the permittee may conduct sampling within the month of January, February or March. The result from this reporting timeframe shall be reported on the March DMR, regardless of which of the months within the quarter the sample was taken.

[6] 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.

[7] The permittee shall measure and report identified metals as <u>total recoverable</u> metals.

21. The permittee is authorized to discharge stormwater from the outfall listed below in accordance with the terms and conditions of this permit. The permittee is authorized to discharge from **Outfall 023S**, located at Latitude 37° 54’ 51”, Longitude 87° 20’ 13”.

Outfall 023S represents the discharge from Outfalls 023S, 030S, and 040S through 060S. The discharge from this group of outfalls is limited to stormwater runoff associated with industrial activity.

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 Ohio River. Such discharge shall be limited and monitored by the permittee as specified below:

Outfall 023S

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

Parameter	Daily Maximum	Units	Monitoring Requirements Measurement Frequency	Sample Type
Flow	Report	MGD	1 X Quarterly [5]	Estimate Total
pH [6]	Report	s.u.	1 X Annually	Grab
Oil & Grease	Report	mg/l	1 X Annually	Grab
Total Suspended Solids	Report	mg/l	1 X Quarterly [5]	Grab
$CBOD_5$	Report	mg/l	1 X Annually	Grab
COD	Report	mg/l	1 X Annually	Grab
Aluminum [7]	Report	mg/l	1 X Quarterly [5]	Grab
Fluoride	Report	mg/l	1 X Quarterly [5]	Grab
Iron [7]	Report	mg/l	1 X Quarterly [5]	Grab
Total Kjeidahl Nitrogen	Report	mg/l	1 X Annually	Grab
Nitrate/nitrite (as N)	Report	mg/l	1 X Annually	Grab
Total Phosphorous	Report	mg/l	1 X Annually	Grab

[1] See Part I.B. of the permit for the Narrative Water Quality Limitations.

[2] In the event that changes are to be made in the use of water treatment additives, including dosage, or a new water treatment additive is to be used that will contribute to Outfall 023S, 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: http://www.in.gov/idem/5157.htm.

[3] The Storm Water Monitoring and Non-Numeric Effluent Limits and the Storm Water Pollution Prevention Plan (SWPPP) requirements can be found in Part I.D. and I.E. of this permit.

[4] All samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches and at least 72 hours from the previously measurable (greater

than 0.1 inch rainfall) storm event. There shall be a minimum of three (3) months between reported sampling events for the parameters that are reported on an annual basis.

For each sample taken, the permittee shall record the duration and total rainfall of the storm event, the number of hours between beginning of the storm measured and the end of the previous measurable rain event, and the outside temperature at the time of sampling.

A grab sample shall be taken during the first thirty (30) minutes of the discharge (or as soon thereafter as practicable).

[5] Samples shall be taken once at any time during each of the four annual quarters:

(A) January-February-March;
(B) April-May-June;
(C) July-August-September; and
(D) October-November-December.

For quarterly monitoring, in the first quarter for example, the permittee may conduct sampling within the month of January, February or March. The result from this reporting timeframe shall be reported on the March DMR, regardless of which of the months within the quarter the sample was taken.

[6] 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.

[7] The permittee shall measure and report identified metals as total recoverable metals.

22. The permittee is authorized to discharge stormwater from the outfall listed below in accordance with the terms and conditions of this permit. The permittee is authorized to discharge from **Outfall 025S**, located at Latitude 37° 55' 16", Longitude 87° 19' 28".

Outfall 025S represents the discharge from Outfalls 025S, 026S, 027S, 028S, 031S, and 032S. The discharge from this group of outfalls is limited to stormwater runoff associated with industrial activity.

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 unnamed tributary to Cypress Creek. Such discharge shall be limited and monitored by the permittee as specified below:

Outfall 025S
DISCHARGE LIMITATIONS [1][2][3][4]

Parameter	Daily Maximum	Units	Monitoring Requirements Measurement Frequency	Monitoring Requirements Sample Type
Flow	Report	MGD	1 X Quarterly [5]	Estimate Total
pH [6]	Report	s.u.	1 X Annually	Grab
Oil & Grease	Report	mg/l	1 X Annually	Grab
Total Suspended Solids	Report	mg/l	1 X Quarterly [5]	Grab
$CBOD_5$	Report	mg/l	1 X Annually	Grab
COD	Report	mg/l	1 X Annually	Grab
Aluminum [7]	Report	mg/l	1 X Quarterly [5]	Grab
Fluoride	Report	mg/l	1 X Quarterly [5]	Grab
Iron [7]	Report	mg/l	1 X Quarterly [5]	Grab
Total Kjeidahl Nitrogen	Report	mg/l	1 X Annually	Grab
Nitrate/nitrite (as N)	Report	mg/l	1 X Annually	Grab
Total Phosphorous	Report	mg/l	1 X Annually	Grab

[1] See Part I.B. of the permit for the Narrative Water Quality Limitations.

[2] In the event that changes are to be made in the use of water treatment additives, including dosage, or a new water treatment additive is to be used that will contribute to Outfall 025S, 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: http://www.in.gov/idem/5157.htm.

[3] The Storm Water Monitoring and Non-Numeric Effluent Limits and the Storm Water Pollution Prevention Plan (SWPPP) requirements can be found in Part I.D. and I.E. of this permit.

[4] All samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches and at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. There shall be a minimum of three (3) months between reported sampling events for the parameters that are reported on an annual basis.

For each sample taken, the permittee shall record the duration and total rainfall of the storm event, the number of hours between beginning of the storm measured and the end of the previous measurable rain event, and the outside temperature at the time of sampling.

A grab sample shall be taken during the first thirty (30) minutes of the discharge (or as soon thereafter as practicable).

[5] Samples shall be taken once at any time during each of the four annual quarters:

(A) January-February-March;
(B) April-May-June;
(C) July-August-September; and
(D) October-November-December.

For quarterly monitoring, in the first quarter for example, the permittee may conduct sampling within the month of January, February or March. The result from this reporting timeframe shall be reported on the March DMR, regardless of which of the months within the quarter the sample was taken.

[6] 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.

[7] The permittee shall measure and report identified metals as <u>total recoverable</u> metals.

23. The permittee is authorized to discharge stormwater from the outfall listed below in accordance with the terms and conditions of this permit. The permittee is authorized to discharge from **Outfall 037S**, located at Latitude 37° 55' 33", Longitude 87° 19' 22".

Outfall 037S represents the discharge from Outfalls 037S and 038S. The discharge from this group of outfalls is limited to stormwater runoff associated with industrial activity.

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 unnamed tributary to Cypress Creek. Such discharge shall be limited and monitored by the permittee as specified below:

Outfall 037S
DISCHARGE LIMITATIONS [1][2][3][4]

Parameter	Daily Maximum	Units	Monitoring Requirements Measurement Frequency	Sample Type
Flow	Report	MGD	1 X Quarterly [5]	Estimate Total
pH [6]	Report	s.u.	1 X Annually	Grab
Oil & Grease	Report	mg/l	1 X Annually	Grab
Total Suspended Solids	Report	mg/l	1 X Quarterly [5]	Grab
$CBOD_5$	Report	mg/l	1 X Annually	Grab
COD	Report	mg/l	1 X Annually	Grab
Aluminum [7]	Report	mg/l	1 X Quarterly [5]	Grab
Fluoride	Report	mg/l	1 X Quarterly [5]	Grab
Iron [7]	Report	mg/l	1 X Quarterly [5]	Grab
Total Kjeidahl Nitrogen	Report	mg/l	1 X Annually	Grab
Nitrate/nitrite (as N)	Report	mg/l	1 X Annually	Grab
Total Phosphorous	Report	mg/l	1 X Annually	Grab

[1] See Part I.B. of the permit for the Narrative Water Quality Limitations.

[2] In the event that changes are to be made in the use of water treatment additives, including dosage, or a new water treatment additive is to be used that will contribute to Outfall 037S, 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: http://www.in.gov/idem/5157.htm.

[3] The Storm Water Monitoring and Non-Numeric Effluent Limits and the Storm Water Pollution Prevention Plan (SWPPP) requirements can be found in Part I.D. and I.E. of this permit.

[4] All samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches and at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. There shall be a minimum of three (3) months between reported sampling events for the parameters that are reported on an annual basis.

For each sample taken, the permittee shall record the duration and total rainfall of the storm event, the number of hours between beginning of the storm measured and the end of the previous measurable rain event, and the outside temperature at the time of sampling.

A grab sample shall be taken during the first thirty (30) minutes of the discharge (or as soon thereafter as practicable).

[5] Samples shall be taken once at any time during each of the four annual quarters:

(A) January-February-March;
(B) April-May-June;
(C) July-August-September; and
(D) October-November-December.

For quarterly monitoring, in the first quarter for example, the permittee may conduct sampling within the month of January, February or March. The result from this reporting timeframe shall be reported on the March DMR, regardless of which of the months within the quarter the sample was taken.

[6] 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.

[7] The permittee shall measure and report identified metals as <u>total recoverable</u> metals.

24. The permittee is authorized to discharge stormwater from the outfall listed below in accordance with the terms and conditions of this permit. The permittee is authorized to discharge from **Outfall 064S**, located at Latitude 37° 55' 6", Longitude 87° 19' 15".

Outfall 064S represents the discharge from Outfalls 064S, 007S, 016S, 017S, and 018S. The discharge from this group of outfalls is limited to stormwater runoff associated with industrial activity.

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 unnamed tributary to Cypress Creek. Such discharge shall be limited and monitored by the permittee as specified below:

Outfall 064S
DISCHARGE LIMITATIONS [1][2][3][4]

			Monitoring Requirements	
Parameter	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	MGD	1 X Quarterly [5]	Estimate Total
pH [6]	Report	s.u.	1 X Annually	Grab
Oil & Grease	Report	mg/l	1 X Annually	Grab
Total Suspended Solids	Report	mg/l	1 X Quarterly [5]	Grab
$CBOD_5$	Report	mg/l	1 X Annually	Grab
COD	Report	mg/l	1 X Annually	Grab
Aluminum [7]	Report	mg/l	1 X Quarterly [5]	Grab
Fluoride	Report	mg/l	1 X Quarterly [5]	Grab
Iron [7]	Report	mg/l	1 X Quarterly [5]	Grab
Total Kjeidahl Nitrogen	Report	mg/l	1 X Annually	Grab
Nitrate/nitrite (as N)	Report	mg/l	1 X Annually	Grab
Total Phosphorous	Report	mg/l	1 X Annually	Grab

[1] See Part I.B. of the permit for the Narrative Water Quality Limitations.

[2] In the event that changes are to be made in the use of water treatment additives, including dosage, or a new water treatment additive is to be used that will contribute to Outfall 064S, 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: http://www.in.gov/idem/5157.htm.

[3] The Storm Water Monitoring and Non-Numeric Effluent Limits and the Storm Water Pollution Prevention Plan (SWPPP) requirements can be found in Part I.D. and I.E. of this permit.

[4] All samples shall be collected from the discharge resulting from a storm event that is

greater than 0.1 inches and at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. There shall be a minimum of three (3) months between reported sampling events for the parameters that are reported on an annual basis.

For each sample taken, the permittee shall record the duration and total rainfall of the storm event, the number of hours between beginning of the storm measured and the end of the previous measurable rain event, and the outside temperature at the time of sampling.

A grab sample shall be taken during the first thirty (30) minutes of the discharge (or as soon thereafter as practicable).

[5] Samples shall be taken once at any time during each of the four annual quarters:

(A) January-February-March;
(B) April-May-June;
(C) July-August-September; and
(D) October-November-December.

For quarterly monitoring, in the first quarter for example, the permittee may conduct sampling within the month of January, February or March. The result from this reporting timeframe shall be reported on the March DMR, regardless of which of the months within the quarter the sample was taken.

[6] 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.

[7] The permittee shall measure and report identified metals as <u>total recoverable</u> metals.

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. <u>Representative Sampling</u>

   Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored 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 parameters.

2. <u>Monthly Reporting</u>

   The permittee shall submit 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. Calculations that require averaging of measurements of daily values (both concentrations and mass) shall use an arithmetic mean, except the monthly average for *E. coli* shall be calculated as a geometric mean.

b. Daily effluent values (both mass and concentration) 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 of 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-storm water 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.

l. Fugitive Dust Emission.

Minimize fugitive dust emissions from coal handling areas. To minimize the tracking of coal dust offsite, consider procedures such as installing specially designed tires or washing vehicles in a designated area before they leave the site and controlling the wash water.

m. <u>Delivery Vehicles</u>

Minimize contamination of stormwater runoff from delivery vehicles arriving at the plant site. Consider procedures to inspect delivery vehicles arriving at the plant site and ensure overall integrity of the body or container and procedures to deal with leakage or spillage from vehicles or containers.

n. <u>Fuel Oil Unloading Areas</u>

Minimize contamination of precipitation or surface runoff from fuel oil unloading areas. Consider using containment curbs in unloading areas, having personnel familiar with spill prevention and response procedures present during deliveries to ensure that any leaks or spills are immediately contained and cleaned up, and using spill and overflow protection devices (e.g., drip pans, drip diapers, or other containment devices placed beneath fuel oil connectors to contain potential spillage during deliveries or from leaks at the connectors).

o. <u>Chemical Loading and Unloading</u>

Minimize contamination of precipitation or surface runoff from chemical loading and unloading areas. Consider using containment curbs at chemical loading and unloading areas to contain spills, having personnel familiar with spill prevention and response procedures present during deliveries to ensure that any leaks or spills are immediately contained and cleaned up, and loading and unloading in covered areas and storing chemicals indoors.

p. <u>Miscellaneous Loading and Unloading Areas</u>

Minimize contamination of precipitation or surface runoff from loading and unloading areas. Consider covering the loading area; grading, berming, or curbing around the loading area to divert run-on; locating the loading and unloading equipment and vehicles so that leaks are contained in existing containment and flow diversion systems; or equivalent procedures.

q. Liquid Storage Tanks

Minimize contamination of surface runoff from aboveground liquid storage tanks. Consider protective guards around tanks, containment curbs, spill and overflow protection, dry cleanup methods, or equivalent measures.

r. Large Bulk Fuel Storage Tanks

Minimize contamination of surface runoff from large bulk fuel storage tanks. Consider containment berms (or their equivalent). You must also comply with applicable State and Federal laws, including Spill Prevention, Control and Countermeasure (SPCC) Plan requirements.

s. Spill Reduction Measures

Minimize the potential for an oil or chemical spill, or reference the appropriate part of your SPCC plan. Visually inspect as part of your routine facility inspection the structural integrity of all aboveground tanks, pipelines, pumps, and related equipment that may be exposed to stormwater, and make any necessary repairs immediately.

t. Oil-Bearing Equipment in Switchyards

Minimize contamination of surface runoff from oil-bearing equipment in switchyard areas. Consider using level grades and gravel surfaces to retard flows and limit the spread of spills, or collecting runoff in perimeter ditches.

u. Residue-Hauling Vehicles

Inspect all residue-hauling vehicles for proper covering over the load, adequate gate sealing, and overall integrity of the container body. Repair vehicles without load covering or adequate gate sealing, or with leaking containers or beds.

v. Ash Loading Areas

Reduce or control the tracking of ash and residue from ash loading areas. Clear the ash building floor and immediately adjacent roadways of spillage, debris, and excess water before departure of each loaded vehicle.

w. Areas Adjacent to Disposal Ponds or Landfills

Minimize contamination of surface runoff from areas adjacent to disposal ponds or landfills. Reduce ash residue that may be tracked on to access roads traveled by residue handling vehicles, and reduce ash residue on exit roads leading into and out of residue handling areas.

x. Landfills, Scrap yards, Surface Impoundments, Open Dumps, General Refuse Sites

Minimize the potential for contamination of runoff from these areas.

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. At least once during the calendar year, the routine facility inspection in Part 9.b of this subsection must be done when a discharge is occurring. 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.

a1. Monthly Site Compliance Inspection of the Power Plant

The following areas shall be inspected monthly: coal handling areas, loading or unloading areas, switchyards, fueling areas, bulk storage areas, ash handling areas, areas adjacent to disposal ponds and landfills, maintenance areas, liquid storage tanks, and long term and short term material storage areas.

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.

a2. Quarterly Site Compliance Inspection of the Integrated Aluminum Facility

At a minimum, quarterly inspections of the stormwater management measures and stormwater run-off conveyances. The routine 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 routine 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.

As part of your inspection, inspect the following areas quarterly: coal handling areas, loading or unloading areas, switchyards, fueling areas, bulk storage areas, ash handling areas, areas adjacent to disposal ponds and landfills, maintenance areas, liquid storage tanks, and long term and short term material storage areas.

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.

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. <u>Routine Facility Inspections (Once per Calendar Quarter)</u>

(1) Routine Facility Inspection - At a minimum, quarterly routine inspections of the storm water management measures and storm water run-off conveyances. The routine inspections must be performed by qualified personnel with at least one member of your storm water pollution prevention team.

(2) Routine Facility Inspection Documentation – You must document the findings of each routine facility inspection performed and maintain this

documentation within your SWPPP or have the on-site record keeping location referenced in the SWPPP. At a minimum, your documentation must include:

a) The inspection date and time;

b) The name(s) and signature(s) of the inspectors;

c) Weather information and a description of any discharges occurring at the time of the inspection;

d) Any previously unidentified discharges of pollutants from the site;

e) Any control measures needing maintenance or repairs;

f) Any failed control measures that need replacement;

g) Any incidents of noncompliance observed; and

h) Any additional control measures needed to comply with the permit requirements.

Any corrective action required as a result of a routine facility inspection must be performed consistent with Part I.D.6 of this permit.

c. <u>Annual Comprehensive Site Compliance Evaluation</u>

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) Based on the results of the inspection, the description of potential pollutant sources identified in the SWPPP in accordance with Part I.E.2.b of this permit and pollution prevention measures and controls identified in the SWPPP in accordance with Part I.D.4. of this permit shall be revised as appropriate within the timeframes contained in Part I.D.6 of this permit.

(3) 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.

(4) Where compliance evaluation schedules overlap the inspections required under this part, the compliance evaluation may be conducted in place of one such inspection.

(5) Any corrective action required as a result of a routine facility inspection must be performed consistent with Part I.D.6 of this permit.

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.

(7) Drainage Area Site Map. Document in your SWPPP the locations of any of the following activities or sources that may be exposed to precipitation or surface runoff: storage tanks, scrap yards, and general refuse areas; short- and long-term storage of general materials (including but not limited to supplies, construction materials, paint equipment, oils, fuels, used and unused solvents, cleaning materials, paint, water treatment chemicals, fertilizer, and pesticides); landfills and construction sites; and stock pile areas (e.g., coal or limestone piles).

(8) Documentation of Good Housekeeping Measures. You must document in your SWPPP the good housekeeping measures implemented to meet the effluent limits in Part I.D.4 of this NPDES permit.

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 acute 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.g.

1. Whole Effluent Toxicity (WET) Tests

The permittee must conduct the series of aquatic toxicity tests specified in Part I.F.1.d. using freshwater aquatic organisms as the test species to monitor the acute toxicity of the effluent discharged from Outfall(s) 003.

If toxicity is demonstrated in two (2) consecutive toxicity tests, as described in Part I.F.1.g., 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 Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, EPA-821-R-02-012, October 2002 (hereinafter “Acute 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 Acute Toxicity Test Method contained in this Part I.F. are provided for informational purposes. If the Acute 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 Office of Water Quality, Industrial NPDES Permits Section.

(3) The determination of acute endpoints of toxicity (LC_{50} values) must be made in accordance with the procedures in Section 11, "Acute Toxicity Data Analysis" for multi-effluent-concentration acute toxicity tests (see flowchart in Figure 6) of the Acute Toxicity Test Method.

b. Types of Whole Effluent Toxicity Tests

(1) Fathead Minnow Acute Toxicity Test: This test is a 96-hour definitive static-renewal LC_{50} toxicity test using Fathead Minnow (*Pimephales promelas*) as the test organism. The test must be conducted on a 24-hour composite sample of the final effluent. All test solutions must be renewed daily. Two effluent samples are to be collected on consecutive days. The first effluent sample will be used for test solution renewal on day 2. The second effluent sample will be used for test solution renewal on days 3 and 4. All other test conditions and test acceptability criteria for the Fathead Minnow acute toxicity test must be in accordance with the test requirements in Section 9, “Acute Toxicity Test Procedures”, Table 14, (Test Method 2000.0), of the Acute Toxicity Test Method.

(2) Daphnid - *Ceriodaphnia dubia*, *Daphnia pulex* and *Daphnia magna* Acute Toxicity Tests: These tests are 48-hour definitive static-renewal LC_{50} toxicity tests conducted using one or more daphnids (*Ceriodaphnia dubia, Daphnia pulex or Daphnia magna*) as the test organisms. The tests must be conducted on a 24-hour composite sample of final effluent. All test solutions must be renewed on day 2. All other test conditions and test acceptability criteria for the daphnid acute toxicity tests must be in accordance with the test requirements in Section 9, “Acute Toxicity Test Procedures”, Table 12 (Test Method 2002.0; *Ceriodaphnia dubia*) and Table 13 (Test Method 2021.0; *Daphnia pulex* and *Daphnia magna*), of the Acute Toxicity Test Method.

(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 concentration associated with the determination of acute toxicity provided in Part I.F.1.f.(1). Guidance on selecting effluent test concentrations is included in Section 9.3 of the Acute Toxicity Test Method. The use of an alternate procedure for selecting test concentrations must first be approved by the IDEM Office of Water Quality, Industrial NPDES Permits Section.

(4) If, in any control group, more than 10% of the test organisms die in either the 96-hour Fathead Minnow or 48-hour daphnid species acute toxicity tests, respectively, that test is considered invalid and the respective toxicity test must be repeated.

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. 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).

(3) Chemical analysis must coincide with, and if test methods allow, be conducted on each effluent sample taken for toxicity testing, including each sample taken for the repeat testing as outlined in Part I.F.1.f.(2). The chemical analysis detailed in Part I.A.3. must be conducted for the effluent sample in accordance with Part I.C.4. of this permit. The results from these chemical analyses must be included with the full whole effluent toxicity (WET) test laboratory report submitted pursuant to Part I.F.1.e.(3).

d. Toxicity Testing Species, Frequency and Duration

Acute toxicity testing for Fathead Minnow (*Pimephales promelas*), *Ceriodaphnia dubia and Daphnia pulex or Daphnia magna* 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 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.g. must be submitted in writing to the IDEM Office of Water Quality, Compliance Data Section.

(2) Results of all toxicity tests, including invalid tests, must be reported to IDEM according to the general format and content recommended in the Acute Toxicity Test Method, Section 12, "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 28^{th} day of the month following the end of the testing period established in Part I.F.1.d.

(3) The full whole effluent toxicity (WET) test laboratory report must be submitted electronically as an attachment to an e-mail to the IDEM Office of Water Quality, 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 for acute toxicity. This will consist of endpoints of acute toxicity (LC_{50} values) 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., the Graphical Method, the Spearman-Karber Method, the Trimmed Spearman-Karber Method and the Probit Method), including 95% confidence intervals used to evaluate acute endpoints of toxicity, 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), for evaluation under Part I.F.1.f. and reporting on the discharge monitoring report (DMR).

Test Organism [1]	Test Type	Endpoint	Units	Result	Compliance Limit [4]	Pass/ Fail [5]	Reporting
Ceriodaphnia dubia	48-hour Definitive Static-Renewal	48-hr. LC_{50}	%	Report			Laboratory Report
			TU_a	Report			
		Toxicity (acute) [2]	TU_a	Report [3]	1.0	Report	Laboratory Report **and NetDMR** (Parameter Code 61425)
Pimephales promelas	96-hour Definitive Static-Renewal	96-hr. LC_{50}	%	Report			Laboratory Report
			TU_a	Report			
		Toxicity (acute) [2]	TU_a	Report [3]	1.0	Report	Laboratory Report **and NetDMR** (Parameter Code 61427)
Daphnia magna	48-hour Definitive Static-Renewal	48-hr. LC_{50}	%	Report			Laboratory Report
			TU_a	Report			
		Toxicity (acute) [2]	TU_a	Report [3]	1.0	Report	Laboratory Report **and NetDMR** (Parameter Code TSA3C)
Daphnia pulex	48-hour Definitive Static-Renewal	48-hr. LC_{50}	%	Report			Laboratory Report
			TU_a	Report			
		Toxicity (acute) [2]	TU_a	Report [3]	1.0	Report	Laboratory report **and NetDMR** (Parameter Code TSA3D)

[1] For the whole effluent toxicity (WET) test laboratory report, eliminate from the table any species that was not tested.
[2] The toxicity (acute) endpoint for *Ceriodaphnia dubia*, *Daphnia magna* and *Daphnia pulex* is the 48-hr. LC_{50} result reported in acute toxic units (TU_a). The toxicity (acute) endpoint for *Pimephales promelas* is the 96-hr. LC_{50} result reported in acute toxic units (TU_a).
[3] Report the LC_{50} value determined in [2] for the corresponding species. These values are the ones that need to be reported on the discharge monitoring report (DMR).
[4] An exceedance of any of these values results in a demonstration of toxicity that requires the permittee to take the actions set forth in either Part I.F.1.f. or Part I.G.1.g., as applicable.
[5] 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) Toxicity (acute) will be demonstrated if the effluent is observed to have exceeded 1.0 TU_a (acute toxic units) in 48 hours for *Ceriodaphnia dubia,* 48 hours for *Daphnia pulex,* 48 hours for *Daphnia magna*, or 96 hours for *Pimephales promelas*. For the purpose of selecting test concentrations under Part I.F.1.b.(3), the effluent concentration associated with acute toxicity is 100%.

(2) If toxicity (acute) is demonstrated in any of the tests specified above, a repeat acute toxicity test using the procedures in Part I.[*].1. of this permit and the same test species must be initiated within two (2) weeks of acute toxicity test failure, or as soon thereafter as practicable. 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.

g. Requirement to Conduct a Toxicity Reduction Evaluation

If any two (2) consecutive acute toxicity tests, including any and all repeat tests, demonstrate acute toxicity for the same or the other test species under Part I.F.1.f., the permittee must notify the IDEM Office of Water Quality, 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 schedule.

h. Definitions

"Acute toxic unit" or "TUa" 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. <u>Toxicity Reduction Evaluation (TRE) Schedule</u>

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.g. The post-TRE toxicity testing requirements in Part I.F.2.c. must also be completed as part of the TRE 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 (i.e., the date of termination of the second test).
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 (i.e., the date of termination of the second test).
Post-TRE Toxicity Testing Requirements	Immediately upon completion of the TRE, conduct three (3) consecutive months of toxicity tests with all three (3) test species; if no acute toxicity is shown with any test species, reduce toxicity tests to once 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 (i.e., the date of termination of the second test).

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 IDEM Office of Water Quality, Compliance Data Section. The TRE plan must include appropriate measures to 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, including toxicity identification evaluations (TIEs) to characterize and identify the causative toxicants, if necessary, 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) Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (TREs) (EPA/600/2-88/070), April 1989.

(3) 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 three (3) test species *Ceriodaphnia dubia*, *Daphnia pulex* and Fathead Minnow (*Pimephales promelas*) for a period of three (3) consecutive months. *Daphnia magna* may be substituted for *Daphnia pule*x.

(2) If the three (3) monthly tests demonstrate no toxicity with any test species as described in Part I.F.1.f.(1), 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 <u>the acute toxicity tests required in Part I.F.1</u>. The permittee may request in the final TRE report under Part I.F.2.d.(2) a reduction in the number of species tested to only include the species demonstrated to be most sensitive to the toxicity in the effluent. IDEM will then make a determination on species sensitivity to effluent toxicity and notify the permittee of its decision as part of the TRE approval. 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 IDEM Office of Water Quality, Compliance Data Section beginning six (6) months from the date of two (2) consecutive failed toxicity tests (i.e., the date of termination of the second test). 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 IDEM Office of Water Quality, 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.
(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.g.

G. 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 the biomonitoring 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. to comply with any applicable standards, regulations and requirements issued or approved under section 316(b) of the Clean Water Act.

6. to incorporate a requirement that the permittee develop and implement a Fresh Water Mussel Augmentation Plan consistent with the U.S. Fish and Wildlife Service (USFWS) Recommendations under Section 6.4.6.C.2 and Section 6.4.6.C.3., if: (1) the permittee does not make their contribution to the Project as required by Permit Condition Part IV.B.11.; or (2) if IDEM does not receive sufficient funds for the group within six months of this permit issuance. If the permit is modified to require an individual project after the permittee has submitted its original allocated share, any funds submitted by the permittee will be refunded without interest on or after the date the permit modification is effective.

   If the permittee is required to develop and implement a freshwater mussel augmentation project, it would include, at a minimum, the following components: Administrative and Permitting, Brood Stock Acquisition, Propagation effort, Quantitative Processing (tagging), Release Site Reconnaissance Habitat Assessment, and Monitoring augmentation site(s). Each step should be well documented and the documentation available to the public at the appropriate point. More specifically, these components would include the following:

   Administrative and Permitting
   There will be planning, permitting, coordination with Indiana biologists, federal agency biologists, and also hatchery propagation specialists.

   Brood Stock Acquisition
   Brood stock acquisition is a necessary step in the augmentation process. This can be accomplished in various ways, but the key is coordination with Indiana biologists, federal agency biologists, and also hatchery propagation specialists. Networking within this growing community of practice will be key to accomplishing this task.

Propagation
Propagation in a laboratory / hatchery should be done by experienced qualified facilities that have routinely worked with rare mussels. A suitable grow out period of likely 3 plus years is expected. They have to be of a sufficient size in order to be tagged. This also gives them a greater chance of living to reproductive maturity.

Quantitative Processing
After a sufficient period of growing out juvenile mussels, an effort to tag mussels so that they can be monitored is important. This involves using adhesives and pit tags and the acquisition of the equipment needed to detect pit tags.

Release Site Reconnaissance Habitat Assessment
Some reconnaissance and habitat assessment should be undertaken in the planning phase of this project so that returning grown out, pit tagged Sheepnose to the Ohio River environs can be optimized for success.

Monitoring Augmentation Sites
Monitoring mussel augmentation sites should take place a year after and two years after mussels have been placed in the Ohio River environs. As previously mentioned, these monitoring efforts should be well documented to allow the U.S. Fish and Wildlife Service to evaluate the success of augmentation of sheepnose mussels as a measure to minimize take associated with the permittee's facility on the Ohio River.

7. to incorporate IDEM approved alternative thermal effluent limitations (ATELs) supported by the 316(a) Demonstration submitted by the permittee in December 2017 and/or to comply with any applicable standards, regulations and requirements issued or approved under section 316(a) of the Clean Water Act, if the standards, regulations and requirements so issued or approved contains different conditions than those in the permit.

8. to incorporate changes to the BTA determination for impingement based on the updated Impingement Technology Optimization Study which is currently scheduled to take place in 2026 – 2027.

9. to incorporate additional requirements governing ash pond seeps at the facility based on the information required by Footnote [8] of Part I.A.4 of the Permit (Outfall 103).

10. to modify the production-based effluent limitations at Outfall 603 if the level of production increases or decreases more than twenty percent from the production levels used to determine the production-based effluent limitations at Outfall 603.

11. to include verifiable and enforceable permit conditions that ensure the technology will perform as demonstrated consistent with 40 CFR 125.94(c)(5)

based on the results of the optimization study required by Part IV.B.2.10. of the permit.

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. <u>Proper Operation and Maintenance</u>

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. <u>Bypass of Treatment Facilities</u>

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 “Monthly Reporting”, 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; or

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 or hazardous substances: <u>antimony, chlorine, chromium, copper, cyanide, mercury, nickel, and zinc</u>.

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. <u>Other Compliance/Noncompliance Reporting</u>

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.

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 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. <u>Availability of Reports</u>

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
Other Requirements

A. Thermal Effluent Requirements

The permittee shall comply with the thermal requirements established in this provision.

1. The permittee's power generating station has a generating capacity of approximately 823 MW. The generating capacity may not be expanded or increased unless prior approval is obtained from the Indiana Department of Environmental Management.

2. The permittee shall have a maximum ΔT of 5°F for the discharge at Outfall 002. The ΔT shall be determined by subtracting the upstream (intake) temperature from the mixed river temperature using the following mixed river formula:

$$T_{mr} = T_u + \frac{Qe(Te-Tu)}{0.5*(Q_{7,10}-Q_i)+Q_E}$$

Where:
T_{mr} =mixed river temperature (°F)
T_u = upstream (intake) river temperature (°F)
T_e = effluent temperature as determined at the Outfall 002 (°F)
Q_e =Effluent flow (MGD) at Outfall 002
Q_i = Influent flow (MGD)

Given the above, $\Delta T = T_u - T_{mr}$, which shall be reported daily as required by Part I.A.2. of the permit.

3. The following requirements are applicable to the determination of the temperatures used in the above equation, the calculation of the mixed river temperature and the reporting of all values. The permittee shall:

a. Collect the inlet temperature data from a series of thermocouples once per hour and record the average inlet (upstream) temperature reading for each hour.

b. Collect the outlet (effluent) temperature data from a series of thermocouples once per hour and record the average outlet temperature reading for each hour for each unit. Use flow-weighted averages of each unit to determine the average outlet (effluent) temperature for the discharge for each hour.

c. Calculate the mixed river temperature for each hour using the average inlet and outlet temperatures for that hour and the above mixed river temperature formula.

e. Determine the maximum hourly inlet (upstream) temperature, the maximum hour outlet temperature, and the maximum hourly mixed river temperature for the calendar day and report this data on the MMR form as the daily max for the corresponding day.

f. The highest single daily max value for each parameter [inlet (upstream) temperature, outlet (effluent) temperature, mixed river temperature] for the month is reported on the monthly DMR form as the maximum value for the month.

B. Polychlorinated Biphenyl

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.

Parameter	Test Method	LOD	LOQ
*Total PCBs	608	0.1 ug/l	0.3 ug/l

*Total PCBs is the sum of the following aroclors: PCB-1016, PCB-1221, PCB-1232, PCB-1242, PCB-1248, PCB-1254, and PCB-1260.

C. Additional Information to be Submitted with NPDES Renewal Application

1. Updated Version of Line Drawing(s) and Water Balance
The permittee shall develop an updated version of their line drawing(s) of the water flow through the facility with a water balance, showing operations contributing wastewater to the effluent and treatment units. Similar processes, operations, or production areas may be indicated as a single unit, labeled to correspond to the more detailed identification. The water balance must show approximate average flows at intake and discharge points and between units, including treatment units. This updated version of their line drawing(s) and water balance information shall be submitted with the NPDES renewal application.

2.. Discharges of Contaminated Groundwater
Certain outfalls (Outfalls 203, 303, and 403) allow for the discharge of broad categories of contaminated groundwater. During this permit term, the permittee shall keep records of these discharges, including the date, source/location of contaminated groundwater, estimated volume of contaminated groundwater, pollutants or types of pollutants known or expected to be present in the contaminated groundwater, expected source of pollutants, and any treatment provided. The permittee shall make this data available to IDEM upon request and it shall be submitted with the NPDES renewal application.

Part IV
Cooling Water Intake Structures

A. Best Technology Available (BTA) Determination

In accordance with 40 CFR 401.14, the location, design, construction and capacity of cooling water intake structures of any point source for which a standard is established pursuant to section 301 or 306 of the Act shall reflect the best technology available 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 CWIS's outer structure or screens as water is withdrawn from a water body. 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 the 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)).

The facility's design intake flow rate is 576 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 mortality and entrainment, including any measures to protect Federally-listed threatened and endangered species and designated critical habitat established under 40 CFR 125.94(g).

Warrick Newco LLC did not submit an updated Section 316(b) Report as required by the 2018 permit and 40 CFR 122.21(r) because, when the renewal application was submitted, the new modified travelling screens and fish return system were still being completed. Therefore, for this renewal, much of the information contained in the 2018 report was retained and supplemented with more recent information/updates obtained from the permittee. The 2018 316(b) report was submitted to the Bloomington Field Office of the U.S. Fish & Wildlife Service in 2018 and was re-submitted along with more recent information/updates in 2025. Comments were received from Mr. Daniel W. Sparks, Senior Fish and Wildlife Biologist of the U.S. Fish and Wildlife Service by email on June 1, 2018 and on January 31, 2025. In his most recent (2025) comments, Mr. Sparks stated that the USFWS comments which were made during the previous (2018) renewal remain unchanged.

Based on available information, IDEM has determined that a Best Technology Available (BTA) determination for impingement after IDEM has received/approved the results of the Impingement Technology Performance Optimization Study which is expected to be completed in 2026. For entrainment, IDEM has determined that the current cooling water intake with modified travelling screens qualifies as BTA. This determination will be reassessed at the next permit reissuance to ensure that the CWISs continue to meet the requirements of Section 316(b) of the federal Clean Water Act (33 U.S.C. section 1326).

1. <u>Impingement Mortality BTA</u>

EPA's cooling water intake structure regulations require a facility to choose from one of the following seven best available technology options:

1. Operate a closed-cycle recirculating system as defined by the Final Rule (at §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 an 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 determines meets the of the rule (at §125.92(s)) and that the Director determines is BTA for impingement reduction;
6. Operate any other combination of technologies, management practices, and operational measures that the Director determines is BTA for impingement reduction; or
7. Achieve the specified IM performance standard of less than 24 percent.

The permittee has selected impingement mortality option 5, **modified travelling screens**, for compliance with the impingement mortality standard.

During the previous (2018) permit period, the permittee began construction of new modified travelling screens (with modified buckets and low-pressure spray) and a fish return system to replace the existing travelling screens and fish return system. The new modified traveling screens and fish return system were completed on December 31, 2023. However, as stated in Section 6.4.2.B. of the Fact Sheet, the permittee is in the process of completing further improvements on the fish return system to correct performance deficiencies. The latest (2026 – 2027) Impingement Technology Optimization Study will be completed after the fish return system issues have been addressed.

As stated above, a final determination on impingement BTA will be made after IDEM has received/approved the results of the Impingement Technology Performance Optimization Study Plan. This determination will be reassessed at the next permit reissuance to ensure that the CWISs continue to meet the requirements of Section 316(b) of the federal Clean Water Act (33 U.S.C. section 1326).

2. <u>Entrainment Mortality BTA</u>

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 (BTA) 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 or organisms entrained, changes in air emissions, land availability, and remaining useful plant life. 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 (*Id*. § 125.98(f)(3)).

In the (2018) permit, the permittee was required to install modified traveling screens to comply with the impingement mortality best technology available (BTA) and install 0.5 mm fine mesh screens to comply with the entrainment mortality BTA. In 2019 and 2020, the permittee submitted supplemental cooling water intake structure reports and a draft construction schedule, which included:

1) A report titled "Social Costs and Benefits of Fine Mesh Screens at the Alcoa Warrick Power Plant" (dated June 28, 2019)
2) The preliminary draft construction schedule for the installation of wedgewire screens (dated September 18, 2019); and
3) A report titled "Cylindrical Wedgewire Screens Constructability Study" (dated March 6, 2020)

The first report ("Social Costs and Benefits of Fine Mesh Screens at the Alcoa Warrick Power Plant") was submitted to satisfy Part IV.B.1.a. of the 2018 permit and evaluate the social benefits and costs for different sized fine mesh screens and different-sized cylindrical wedgewire screens, as well as other technologies. The second report ("Cylindrical Wedgewire Screens Constructability Study" dated March 6, 2020) was submitted to satisfy questions that IDEM raised based on its review of the first report and further evaluated the feasibility and associated social benefits and costs for the installation of different-sized cylindrical wedgewire screens. Based on its review of both reports, IDEM determined that the installation of new modified travelling screens *without* 0.5 mm fine mesh was most appropriate for meeting entrainment BTA. Therefore, a permit modification was issued on November 5, 2021 which removed the 0.5 mm fine mesh requirement for the new modified travelling screens.

Of the technology alternatives evaluated, IDEM believes that the new cooling water intake structure with the new modified traveling screens qualifies as BTA for entrainment due to a combination of net social benefits & costs as described in Section 6.4.7.B. of the Fact Sheet, and the ability to reduce impacts to fish species, including those which host glochidia for threatened and endangered mussels.

The above BTA determinations for impingement and entrainment will be reassessed at the next permit reissuance to ensure that the CWISs continue to meet the requirements of Section 316(b) of the federal Clean Water Act (33 U.S.C. section 1326).

B. Permit Requirements

The permittee shall comply with the requirements below:

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 CWIS 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. 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 shall 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.

6. 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)(13) 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.

7. The permittee shall submit and maintain all the information required by the applicable provisions of 40 CFR 125.97.

8. 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.

9. 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.

10. The permittee shall submit to IDEM the completed report for the Impingement Technology Optimization Study Plan which was originally approved on December 14, 2023 and later amended on February 13, 2024. The study is currently scheduled to be completed in 2025-2026. The report must contain the information required by the impingement technology optimization study required by 40 CFR 125.94(c)(5) and 40 CFR 122.21(r)(6)(i). The report must be able to demonstrate that the technology is or will be optimized to minimize impingement mortality of all non-fragile species. The permittee shall submit the preliminary results of the first year of their optimization study with 60 days of completion of the first year of sampling. The permittee shall submit the

final technology optimization study report, covering both year 1 and year 2 (2026 and 2027) of sampling within ninety (90) days of completing the second year of sampling. The permit may be modified to include verifiable and enforceable permit conditions that ensure the technology will perform as demonstrated.

11. The permittee shall contribute $75,000 (permittee's original allocated share) to the Indiana Freshwater Mussel Augmentation Plan project (the Project), within six months of the effective date of the permit. If necessary, the permittee shall contribute an additional sum to the Project, as calculated by the U.S. Fish and Wildlife Service, not to exceed $18,750, within six months of receiving written notice of the requirement for the additional contribution. This will be determined after implementation of the Project and if additional work is needed to meet the Project's success criteria. The permittee shall submit annual reports to IDEM by January 31 of each year detailing the payment(s) made to the Project in the preceding year.

National Pollutant Discharge Elimination System
Fact Sheet for
Warrick Newco LLC
Draft: December 2025
Final: TBD

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:	Warrick Newco LLC PO Box 10 Newburgh, Indiana 47629
Existing Permit Information:	Permit Number: IN0001155 Expiration Date: December 31, 2023
Facility Contact:	Ms. Denise Shreve, Certified Operator 812-853-1418 | denise.shreve@alcoa.com
Facility Location:	4400 West State Road 66 Newburgh, Indiana Warrick County
Receiving Stream(s):	The Ohio River and unnamed tributaries to Cypress Creek
GLI/Non-GLI:	Non-GLI
Proposed Permit Action:	Renew
Date Application Received:	July 5, 2023
Source Category:	NPDES Major– Industrial
Permit Writer:	Matt Warrener 317-233-0798 | mwarrene@idem.in.gov

Table of Contents

1.0 INTRODUCTION

The Indiana Department of Environmental Management (IDEM) received a National Pollutant Discharge Elimination System (NPDES) Permit application from permittee on July 5, 2023.

In accordance with 327 IAC 5-2-6(a), the current five-year permit was issued with an effective date of January 1, 2019. The permit was subsequently modified on November 5, 2021 and October 13, 2023. 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

Warrick Newco LLC and its associated power generation facility (Alcoa Power Generating Inc.) are classified under the Standard Industrial Classification (SIC) and North American Industry Classification System (NAICS) Codes in the table below:

Applicable SIC/NAICS Codes	
SIC 3334 Primary Aluminum Production	NAICS 331313 Alumina Refining & Primary Aluminum Production
SIC 3353 Aluminum Sheet, Plate, and Foil	NAICS 331315 Aluminum Sheet, Plate, and Foil Manufacturing
SIC 4911 Electric Services	NAICS 221112 Electric power generation, fossil fuel

The Alcoa Warrick facility includes an integrated aluminum manufacturing plant owned and operated by Warrick Newco LLC and an adjacent coal-fired stream electric power plant which is owned and operated by Alcoa Power Generating Inc. Both companies are subsidiaries of Alcoa Corporation. Alcoa Power Generating Inc. owns and operates the wastewater treatment facilities associated with the power plant. Warrick Newco LLC and Alcoa Power Generating Inc. are managed as one facility, Alcoa Warrick Operations.

Warrick Newco LLC operates a primary aluminum manufacturing and processing facility. Warrick Newco LLC leases land to Kaiser Aluminum to own and operate a global packaging division that produces aluminum sheet for beverage and food can ends, tabs, and other flat-rolled aluminum products, including lithographic sheet.

During the fourth quarter of 2023, the permittee began restart of 54,000 metric tons per year (mtpy) of capacity which had been curtailed in July 2022 due to operational challenges associated with regional labor shortages. The permittee also approved permanent closure of 54,000 mtpy of previously curtailed capacity which had not operated since 2016 in preparation for future capital investments. The permittee operates three potlines which provide approximately 152,000 mtpy of capacity, and has a total of five potlines which provide approximately 216,000 mtpy of capacity. (Alcoa Corporation (2024) Form 10-K Annual Report 2023, retrieved from http://investors.alcoa.com/sec-filings).

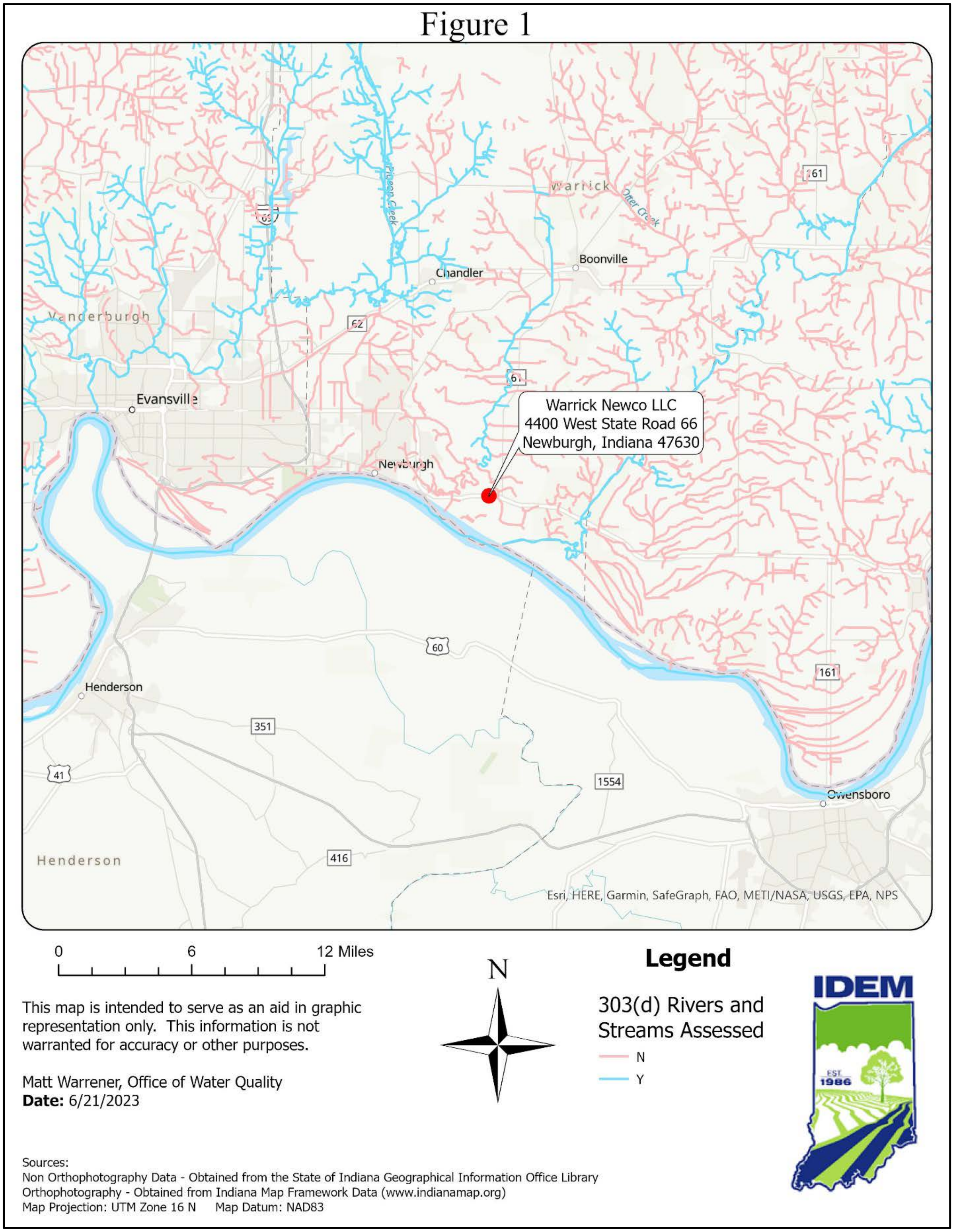
At the Warrick Newco aluminum smelter, alumina is converted to aluminum through the process of electrolytic reduction within the smelting pots. Kaiser Aluminum melts aluminum in furnaces where it is cast into 40 foot long ingots. Once the ingot is cast, it is “hot rolled” and then “cold rolled” in the rolling mills to final gauge thickness and rolled into coils. These coils are then cleaned and prepped and may have a coating applied depending on customer needs. Finished coils from the finishing area are then shipped to the customer.

The adjacent coal fired generating facility owned and operated by Alcoa Power Generating Inc. (AGPI) generates all of the power used at the Warrick Newco LLC smelter. The power plant is composed of four (4) pulverized coal fired units. APGI wholly owns each of the four generating stations, which were placed into service in the early 1960s. Previously, Unit 4 (the largest unit), was jointly owned by APGI and Southern Indiana Gas and Electronic Company (SIGECO) d/b/a Vectren Energy Delivery of Indiana, Inc., a utility company. However, in 2024, SIGECO divested from the facility and sold complete ownership back to AGPI. The total capacity of the power plant is 822.8 MW.

The Alcoa Warrick facility includes more than 120 acres of buildings and 9,000 acres of neighboring lands. The source water for the facility consists of six on-site groundwater wells and the Ohio River.

Four aerial maps have been provided below which illustrate the facility location (Figure 1), site layout (Figure 2), outfall locations (Figure 3), stormwater flow (Figure 4), and stormwater drainage areas (Figure 5).

Figure 1: Facility Location



4400 State Road 66
Newburgh, IN – Warrick County

Figure 2: Site Layout

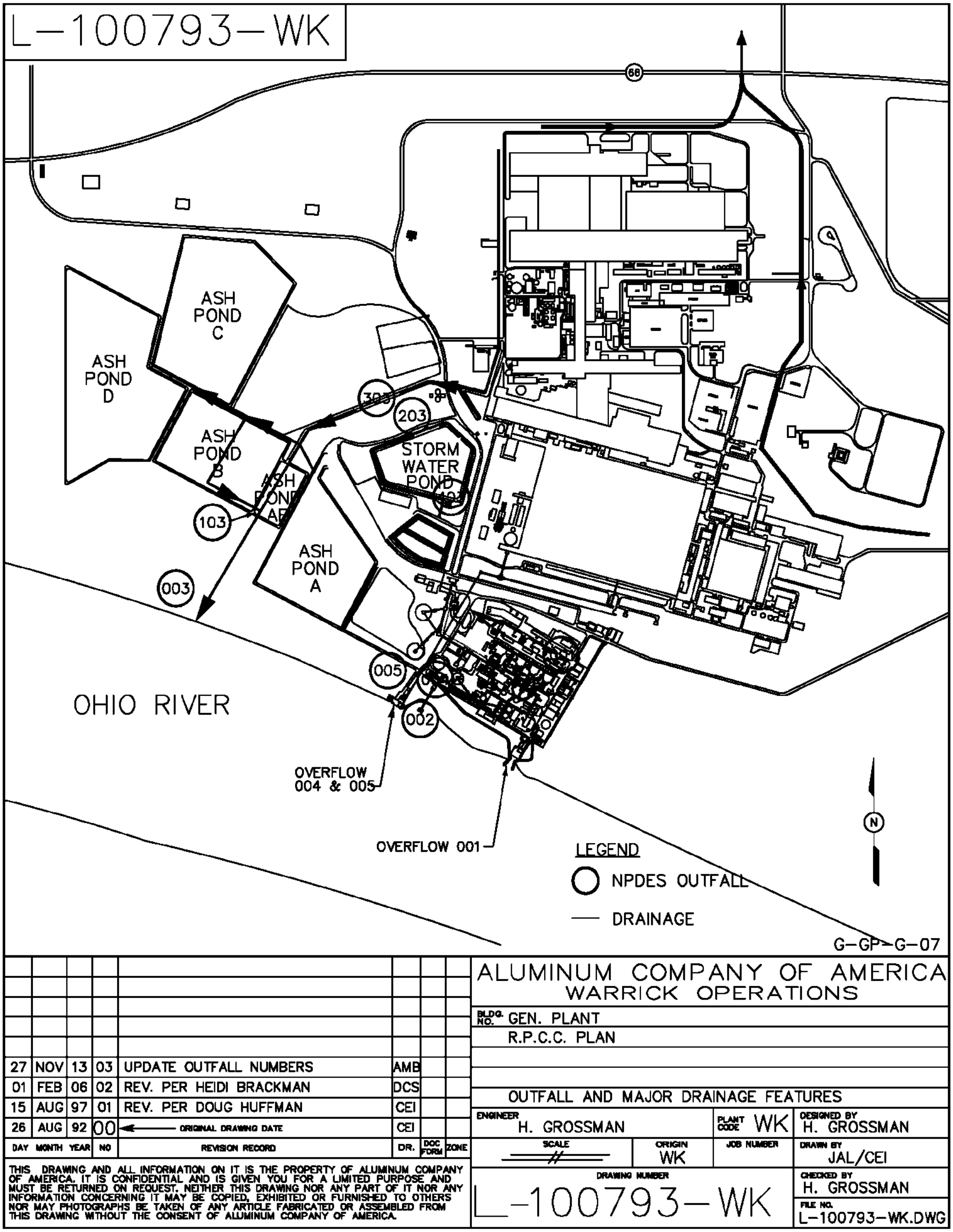


Figure 3: Facility Outfall Map

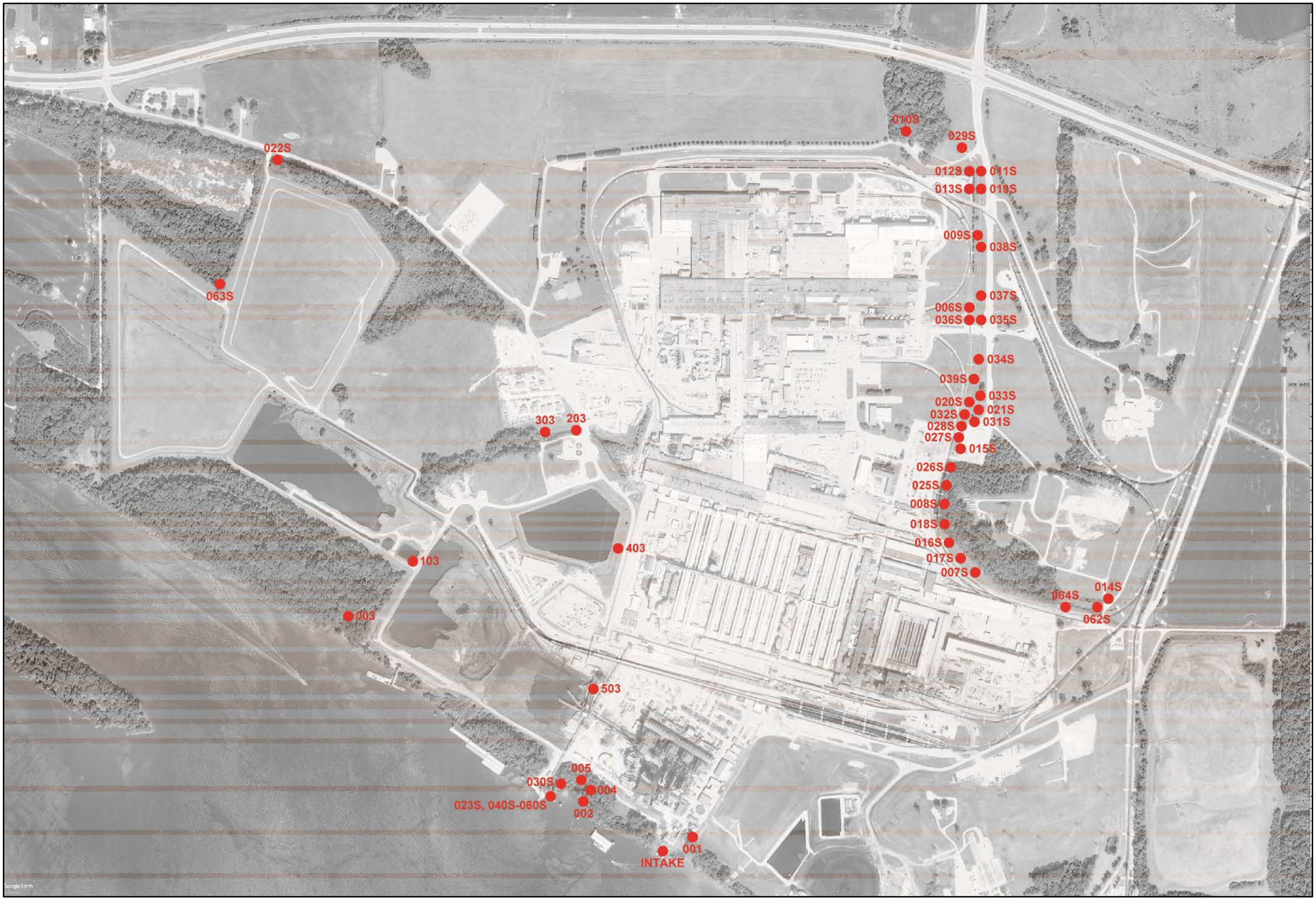


Figure 4: Stormwater Flow Map

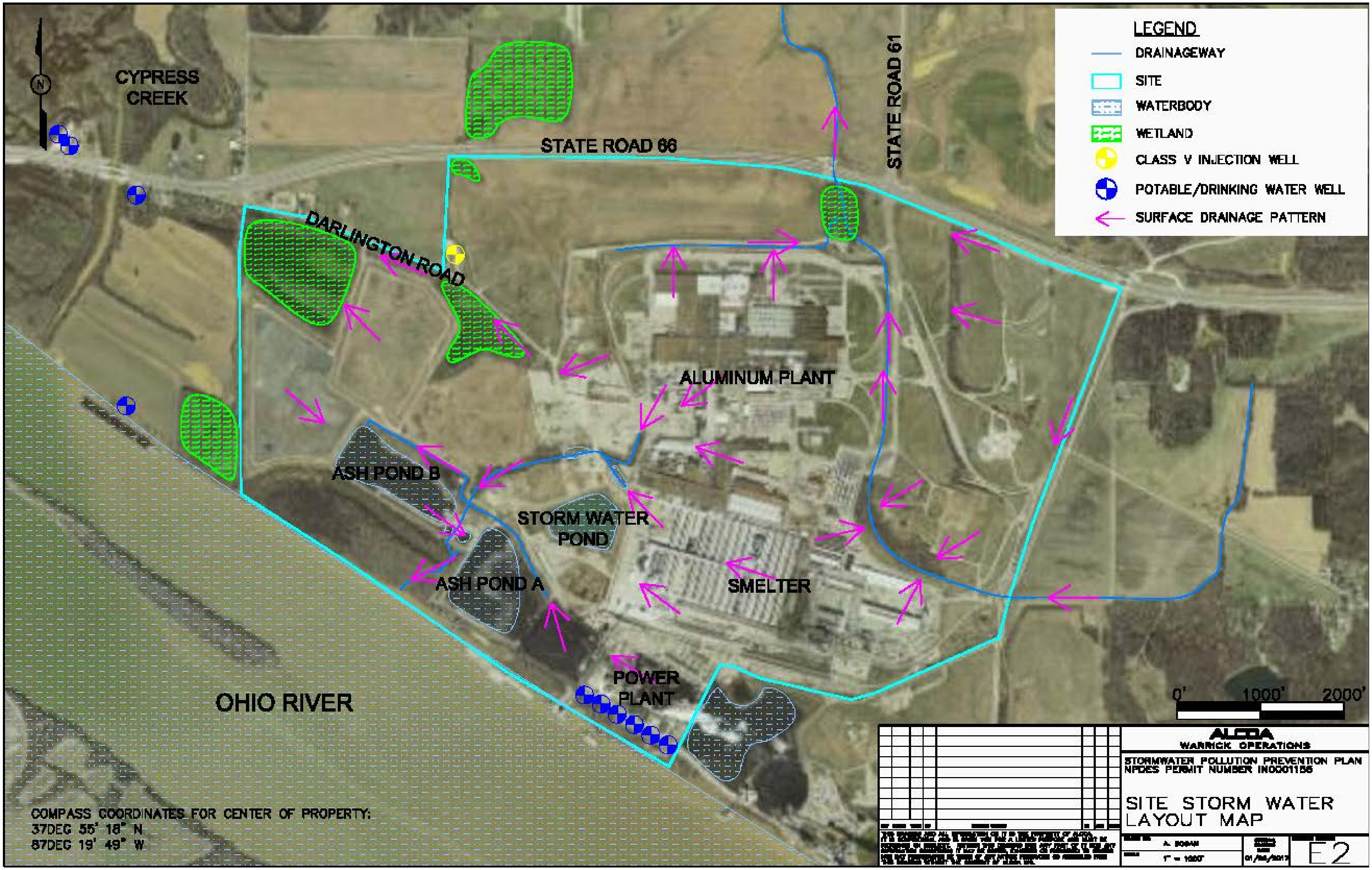


Figure 5: Facility Stormwater Drainage Areas

TOTAL PLANT
STORM WATER OUTFALL
LOCATIONS, CHARACTERISTICS & GROUPINGS PLAN
SCALE: NONE

LEGEND:

- PROCESS OUTFALL DRAINAGE BASIN (103, 303, 403)
- POWER PLANT OVERFLOW SUMPS OF MIXED PROCESS AND STORM WATER
- DRAINAGE BASIN 006S - STORM WATER AND EMERGENCY OVERFLOW OF 816A COOLING TOWER
- DRAINAGE BASIN 008S - STORM WATER AND NON-CONTACT AIR CONDITIONER CHILLER WATER
- DRAINAGE BASIN 009S - STORM WATER ONLY
- DRAINAGE BASIN 010S - STORM WATER AND EMERGENCY OVERFLOW OF 820 COOLING TOWER
- DRAINAGE BASIN 011S - STORM WATER ONLY
- DRAINAGE BASIN 012S - STORM WATER ONLY
- DRAINAGE BASIN 020S - STORM WATER ONLY
- DRAINAGE BASIN 023S - STORM WATER ONLY
- DRAINAGE BASIN 025S - STORM WATER ONLY
- DRAINAGE BASIN 037S - STORM WATER ONLY
- DRAINAGE BASIN 064S - STORM WATER ONLY
- SITE BORDER

Alcoa
WARRICK OPERATIONS
GEN. PLT. UTILITIES
STORM WATER POLLUTION PREVENTION PLAN
NPDES PERMIT NUMBER IN0001155
STORM WATER OUTFALL
LOCATIONS, CHARACTERISTICS AND GROUPINGS PLAN

05 FEB 225 00 ← ORIGINAL DRAWING DATE

ENGINEER: NATALIE HOETMER
SCALE: AS NOTED
DESIGNED BY: NATALIE HOETMER
DRAWN BY: CURRENT ENG.
CHECKED BY: NATALIE HOETMER
APPROVED BY: NATALIE HOETMER
DRAWING NUMBER: A-329568-WK

AutoCAD rel 2025

2.2 Outfall Locations

Outfall	Latitude	Longitude	Decimal Degrees	Receiving Water
001	37°54'45.7"	-87°19'56.3"	37.91269,-87.33231	Ohio River
002	37°54'50.3"	-87°20'09.7"	37.91397,-87.33603	Ohio River
003	37°55'05.1"	-87°20'35.9"	37.91808,-87.34331	Ohio River
103	37°55'10.9"	-87°20'26.6"	37.91969,-87.34072	Combines with Outfall 303 and discharges through Outfall 003
203	37°55'21.4"	-87°20'08.6"	37.92261,-87.33572	Discharges through Outfall 303
303	37°55'21.7"	-87°20'12.1"	37.92269,-87.33669	Combines with Outfall 103 and discharges through Outfall 003
403	37°55'09.9"	-87°20'06.7"	37.91942,-87.33519	Used in flue gas desulfurization scrubbers, discharges through Outfall 503, then 103 and ultimately through Outfall 003
503	37°55'00.4"	-87°20'05.9"	37.91678,-87.33497	Discharges through Outfall 103 and ultimately through Outfall 003
603	NA	NA	NA	Administrative Outfall-Not a physical outfall
703	37°54'57"	-87°20'04"	37.9158,-87.3344	Discharges through Outfall 103 and ultimately through Outfall 003
004	37°54'51.8"	-87°20'07.4"	37.91439,-87.33539	Ohio River
005	37°54'52.6"	-87°20'08.9"	37.91461,-87.33581	Ohio River
001S	37°54'45.7"	-87°19'56.3"	37.91269,-87.33231	Ohio River
006S	37°55'31.4"	-87°19'22.8"	37.92539,-87.323	Unnamed tributary of Cypress Creek
007S	37°55'08.8"	-87°19'21.7"	37.91911,-87.32269	Unnamed tributary of Cypress Creek
008S	37°55'14.5"	-87°19'28.2"	37.92069,-87.3245	Unnamed tributary of Cypress Creek
009S	37°55'37.6"	-87°19'22.8"	37.92711,-87.323	Unnamed tributary of Cypress Creek
010S	37°55'47.6"	-87°19'31.8"	37.92989,-87.3255	Unnamed tributary of Cypress Creek
011S	37°55'43.3"	-87°19'22.4"	37.92869,-87.32289	Unnamed tributary of Cypress Creek
012S	37°55'43.3"	-87°19'22.8"	37.92869,-87.323	Unnamed tributary of Cypress Creek
013S	37°55'41.5"	-87°19'22.8"	37.92819,-87.323	Unnamed tributary of Cypress Creek
014S	37°55'05.2"	-87°19'08.8"	37.91811,-87.31911	Unnamed tributary of Cypress Creek
015S	37°55'19.6"	-87°19'26.4"	37.92211,-87.324	Unnamed tributary of Cypress Creek
016S	37°55'10.9"	-87°19'24.6"	37.91969,-87.3235	Unnamed tributary of Cypress Creek
017S	37°55'09.8"	-87°19'22.8"	37.91939,-87.323	Unnamed tributary of Cypress Creek
018S	37°55'13.4"	-87°19'27.8"	37.92039,-87.32439	Unnamed tributary of Cypress Creek
019S	37°55'41.9"	-87°19'22.4"	37.92831,-87.32289	Unnamed tributary of Cypress Creek
020S	37°55'22.4"	-87°19'25.0"	37.92289,-87.32361	Unnamed tributary of Cypress Creek
021S	37°55'21.7"	-87°19'25.3"	37.92269,-87.32369	Unnamed tributary of Cypress Creek
022S	37°55'46.2"	-87°20'42.0"	37.9295,-87.345	Wetlands which are tributary to Cypress Creek
023S	37°54'50.9"	-87°20'12.8"	37.91414,-87.33689	Ohio River
025S	37°55'16.0"	-87°19'27.8"	37.92111,-87.32439	Unnamed tributary of Cypress Creek
026S	37°55'17.8"	-87°19'27.1"	37.92161,-87.32419	Unnamed tributary of Cypress Creek
027S	37°55'19.6"	-87°19'26.8"	37.92211,-87.32411	Unnamed tributary of Cypress Creek
028S	37°55'20.3"	-87°19'26.0"	37.92231,-87.32389	Unnamed tributary of Cypress Creek
029S	37°55'46.2"	-87°19'23.9"	37.9295,-87.32331	Unnamed tributary of Cypress Creek
030S	37°54'51.8"	-87°20'11.0"	37.91439,-87.33639	Ohio River
031S	37°55'21.4"	-87°19'25.7"	37.92261,-87.32381	Unnamed tributary of Cypress Creek
032S	37°55'21.7"	-87°19'25.7"	37.92269,-87.32381	Unnamed tributary of Cypress Creek
033S	37°55'22.8"	-87°19'25.0"	37.923,-87.32361	Unnamed tributary of Cypress Creek

Outfall	Latitude	Longitude	Decimal Degrees	Receiving Water
034S	37°55'26.8"	-87°19'22.8"	37.92411,-87.323	Unnamed tributary of Cypress Creek
035S	37°55'30.4"	-87°19'22.8"	37.92511,-87.323	Unnamed tributary of Cypress Creek
036S	37°55'30.4"	-87°19'23.2"	37.92511,-87.32311	Unnamed tributary of Cypress Creek
037S	37°55'32.5"	-87°19'22.4"	37.92569,-87.32289	Unnamed tributary of Cypress Creek
038S	37°55'36.8"	-87°19'22.4"	37.92689,-87.32289	Unnamed tributary of Cypress Creek
039S	37°55'25.3"	-87°19'23.9"	37.92369,-87.32331	Unnamed tributary of Cypress Creek
040S	37°54'52.6"	-87°20'12.1"	37.91461,-87.33669	Ohio River
041S	37°54'52.2"	-87°20'12.5"	37.9145,-87.33681	Ohio River
042S	37°54'51.9"	-87°20'12.8"	37.91442,-87.33689	Ohio River
043S	37°54'51.8"	-87°20'13.0"	37.91439,-87.33694	Ohio River
044S	37°54'51.8"	-87°20'13.2"	37.91439,-87.337	Ohio River
045S	37°54'51.8"	-87°20'13.5"	37.91439,-87.33708	Ohio River
046S	37°54'51.3"	-87°20'13.5"	37.91425,-87.33708	Ohio River
047S	37°54'51.3"	-87°20'13.3"	37.91425,-87.33703	Ohio River
048S	37°54'51.2"	-87°20'13.2"	37.91422,-87.337	Ohio River
049S	37°54'51.1"	-87°20'13.1"	37.91419,-87.33697	Ohio River
050S	37°54'51.0"	-87°20'12.9"	37.91417,-87.33692	Ohio River
051S	37°54'50.8"	-87°20'12.7"	37.91411,-87.33686	Ohio River
052S	37°54'50.8"	-87°20'12.6"	37.91411,-87.33683	Ohio River
053S	37°54'50.7"	-87°20'12.4"	37.91408,-87.33678	Ohio River
054S	37°54'50.6"	-87°20'12.3"	37.91406,-87.33675	Ohio River
055S	37°54'50.6"	-87°20'12.0"	37.91406,-87.33667	Ohio River
056S	37°54'50.8"	-87°20'11.8"	37.91411,-87.33661	Ohio River
057S	37°54'50.9"	-87°20'11.7"	37.91414,-87.33658	Ohio River
058S	37°54'51.0"	-87°20'11.8"	37.91417,-87.33661	Ohio River
059S	37°54'51.3"	-87°20'11.8"	37.91425,-87.33661	Ohio River
060S	37°54'52.7"	-87°20'10.7"	37.91464,-87.33631	Ohio River
062S	37°55'05.2"	-87°19'09.1"	37.91811,-87.31919	Unnamed tributary of Cypress Creek
063S	37°55'35.0"	-87°20'47.4"	37.92639,-87.3465	Wetlands which are tributary to Cypress Creek
064S	37°55'06.2"	-87°19'14.5"	37.91839,-87.32069	Unnamed tributary of Cypress Creek

2.3 Outfall Descriptions and Wastewater Treatment

This section provides a description of the wastewater sources and treatment for all internal and external outfalls which are associated with manufacturing operations. All stormwater outfall descriptions are discussed in Section 2.5 of this Fact Sheet. The monitoring requirements and effluent limitations for all Outfalls are discussed in Section 5.3 of this Fact Sheet. A list of approved water treatment additives (WTAs) for each outfall is included in Section 5.8 of this Fact Sheet.

The permittee has described several scenarios under which spills or leaks may infrequently occur and the residual left after cleanup of the spill or leak may end up in one or more of the outfalls. NPDES permits do not authorize the discharge of spills/leaks by inclusion in outfall descriptions. These incidents are regulated by the rules cited in Section 6.8 of the Fact Sheet.

For each outfall, the receiving water, sources of wastewater discharged, treatment provided and discharge flow information are presented below. Flow diagrams which depict the described wastestreams and manufacturing processes have been included as Figures 6 through 14 at the end of this section.

Outfall 001 to Ohio River

This outfall discharges intermittently when wastewater overflows from the power plant sumps. The wastewater is collected in an intercept sump and typically pumped to the ash pond system prior to discharging through internal Outfall 103 which discharges to Outfall 003. However, during some precipitation events, hydraulic loading events in excess of the systems pumping capacity, or during periods of pump failure, the water in the sump overflows the weir and discharges via Outfall 001.

The lift station sump and the lift station pumps were designed to handle process flows and normal stormwater flow volumes. During normal conditions, this outfall requires the use of only one pump. However, it is equipped with three pumps for use with unusually high inflows of process water, significant rainfall events and pump failures. This outfall receives stormwater from approximately 40 acres; therefore, even a very small rainfall event sends a significant volume of water to the outfall. During a site visit conducted during the previous permit period, the permittee demonstrated that the overflow weir in the sump has been raised by several feet, therefore increasing the hydraulic surge capacity of the sump, which is expected to delay and/or prevent the onset of overflows and reduce the overflow discharge volume.

During the permit drafting process, the permittee submitted a letter requesting permission to relocate the sampling line and pH probe for Outfall 001 from the overflow pipe to the main pump intercept. IDEM has reviewed and agreed to these proposed changes.

Wastestreams and Flow:
The discharge is limited to a combination of contact and non-contact cooling water from the steam electric power plant operations; de minimis amounts of non-contact condenser cooling water; evaporator blowdown; non-contact once-through cooling water from the coal handling area which includes once-through non-contact cooling water used for the pumps and seals; on-line chlorine analyzer discharge; wastewater associated with the maintenance washdown activities within the potable water plant and deep water wells (may contain insignificant amount of potassium permanganate ($KmNO_4$)); relatively small volume of high temperature water; steam condensate from the 310 steam plant; runoff water and wastewater from the Fire Brigade training activities; non-contact water used as deicer; non-contact HVAC condensate; miscellaneous compatible wastewaters from associated shops and support services; vehicle wash water (which may contain insignificant amounts of biodegradable, phosphate-free, detergents); and stormwater runoff from the smelting area and power plant operations.

Based on the DMR/MMR data collected between October 2018 and October 2023, this outfall had a maximum monthly average flow of 1.4 MGD and a maximum daily discharge flow of 4.4 MGD.

Treatment Description:
Treatment consists of flotation and sedimentation within the sump prior to discharge. The sump is designed for solids retention with an underflow baffle to prevent discharge of residual oil.

Outfall 002 to Ohio River

Wastestreams and Flow:
This discharge is limited to non-contact once-through condenser cooling water, uncontaminated stormwater from secondary containment areas and the intake platform, HVAC condensate, and potable water from miscellaneous maintenance activities at the intake structure.

Part III.C. of the previous (2018) permit included a requirement for the permittee to conduct an assessment of the stormwater discharge at the power plant intake platform. The permittee submitted the results of this assessment on December 19, 2019. Outfall 002 was identified as a discharge point for one (1) of the seven (7) drainage points identified at the intake platform. Therefore, the wastewater description for this outfall has been updated to include stormwater runoff from the intake platform.

Based on the submitted Form 2-C application, the discharge flow from this outfall has averaged 487 MGD with a maximum daily discharge flow of 576 MGD.

Treatment Description:
Treatment consists of intermittent chlorination and dechlorination.

Outfall 003 to Ohio River

Wastestreams and Flow:
The discharge is limited to the discharges from internal Outfalls 103 and 303 and nonindustrial stormwater runoff. Because of the proximity of this outfall to the Ohio River, a permanent sampling station has not been installed at this outfall. With the exception of mercury and whole effluent toxicity, the values reported for this outfall are based on a flow-weighted calculation using the values measured at internal Outfall 103 and 303. Samples for mercury and whole effluent toxicity are taken directly from Outfall 003.

Based on the DMR/MMR data collected between October 2018 and October 2023, this outfall had a maximum monthly average flow of 10.4 MGD and a maximum daily discharge flow of 33.8 MGD.

Treatment Description:
No direct treatment is provided for this discharge. Instead, treatment is provided to the internal wastestreams (internal Outfall 103 and 303) which contribute to this outfall.

Internal Outfall 103 [Discharges to Outfall 003]

Wastestreams and Flow:
This discharge is limited to the wastestreams included in the descriptions of Outfall 001, 004 and 005; the discharge from internal Outfall 503; ash sluice water; non-contact cooling water from the coal handling area; wastewater from maintenance washdowns from the coal handling area; water and wastewater from the coal handling drains; wastewater from the regeneration of the resin beds for the deionized water production system; wastewater drainage from the removal of dredged material from the wastewater conveyance ditches

and other coal combustion byproduct drainage including fly ash from unit outages, cenospheres, sand blast, etc.; wastewaters from vacuum trucks used to transfer compatible wastewater streams for treatment within the ash pond system; non-contact HVAC condensate; miscellaneous compatible wastewaters from associated shops and support services; vehicle wash water (which may contain insignificant amounts biodegradable, phosphate-free, detergents); contaminated and uncontaminated stormwater from the power plant operations, including the coal pile. Samples are collected at a point representative of the internal Outfall 103 discharge prior to mixing with other wastewater streams contributing to Outfall 003.

Based on the DMR/MMR data collected between October 2018 and August 2018, this outfall had a maximum monthly average flow of 9.7 MGD and a maximum daily discharge flow of 16.9 MGD.

Treatment Description:
Treatment includes solids settling with the aid of a polymer/coagulant in a series of ponds (Ash Pond A, Ash Pond B and Ash Pond D) with a total area of approximately 65 acres, and pH adjustment with acid or caustic prior to discharge. Settled solids are composed primarily of bottom ash, gypsum slurry, and fly ash and are periodically dredged from Ash Pond A to (dry) Ash Pond D for dewatering approximately every three (3) years. Residual oils and cenospheres produced from coal combustion are collected behind floating booms and baffle curtains and skimmed off by vacuum truck. Skimmed oil is taken to the Bldg. 871E Oily Wastewater Treatment Facility for treatment. Cenospheres and other floating debris (primarily biological in nature) are skimmed from the surface by a floating skimmer and/or by vacuum truck and are placed in (dry) Ash Pond D for dewatering.

The ash ponds are unlined. It is common for water from basins such as these to flow through the porous features within the structures ("seepage") and carry contaminants from the ponds to the groundwater and/or neighboring waterbodies. The permittee collects some seepage from these ash ponds and pumps it back into the ash ponds. The ash ponds operated by the permittee are not subject to the requirements established in the April 2015 U.S. EPA Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities (the "CCR Rule"). The IDEM Office of Land Quality is responsible for implementing these federal coal combustion residuals (CCR) regulations.

Internal Outfall 203 [Discharges to Outfall 003]

Wastestreams and Flow:
This discharge is limited to sanitary wastewater from restroom toilets, showers, sinks, and drains, kitchens, drinking fountains, laboratory sinks and drains, eye wash stations, and emergency shower stations; air conditioner condensate; once-through non-contact cooling water for air conditioning systems; minimal discharges associated with the Building 820 organic vapor scrubber and any associated maintenance activities; contaminated groundwater (only if the pollutants present are compatible with the wastewater treated at the treatment plant and/or routinely monitored at internal Outfalls 203 or 303); groundwater from excavation, maintenance, and remediation projects containing biodegradable organic materials and wastewaters; wastewaters and overflow from the rinse tank associated with the Litho Line; wastewater from the electrostatic precipitator associated with Building 870; wastewater from the floor drains originating from the Operations Services Building 863; and incidental amounts of cooling tower

water due to spills, leaks, sprays, or equipment malfunction. In addition, a significant quantity of infiltration contributes to this outfall.

Based on the DMR/MMR data collected between October 2018 and October 2023, this outfall had a maximum monthly average flow of 0.09 MGD and a maximum daily discharge flow of 0.67 MGD.

Treatment Description:
Treatment consists of an activated sludge wastewater treatment plant with two (2) parallel extended aeration diffused air treatment units with clarifiers. Sodium hypochlorite is used for disinfection. Clarifier sludge is transported off-site for final treatment and disposal to a publicly-owned treatment works (POTW).

Internal Outfall 303 [Discharges to Outfall 003]

Wastestreams and Flow:
The discharge is limited to a combination of wastewater and stormwater streams from the Smelting Plant, Ingot Plant, Rolling Plant, Fabrication Plant, and support areas; treated wastewater from the Finishing Wastewater Treatment Facility (Bldg. 879) Spent Acid Treatment; treated wastewater from the Finishing Wastewater Treatment Facility (Bldg. 879) Spent Wash and Water-Based Coating Solution Treatment; treated wastewater from the Rolling Wastewater Treatment Facility (Bldg. 871E Oily Wastewater Treatment); incidental amounts of untreated or partially treated Bldg. 879 wash wastewater from various maintenance activities or foaming conditions; untreated or partially treated oily wastewater from the 871E Oily Wastewater Treatment Plant from various maintenance activities; wastewaters from vacuum trucks used to transfer compatible wastewater streams for treatment within the various wastewater treatment facilities; evaporator blowdown from the Bldg. 310 Steam Plant; water softener backwash; emergency cooling water for Air Compressor Bldg. 311; contact cooling water from the fan houses at the rectifiers; blowdown from the ingot casting cooling water system; water from the vaporizers at the chlorine house; deionized water system backwash; cooling water from the Ingot preheat furnaces; cooling water from the scalper; DI quench water at the coil coating lines; wastewater from the cleaning of work rolls within the Finishing Department; coatings (only if the contaminants associated with these insignificant discharges are monitored at internal Outfall 303 and/or Outfall 003); material testing rinse water; water and wastewater from the steam and high temperature water systems; other miscellaneous contact and non-contact cooling water; cooling tower blowdown and emergency overflows; wash water consisting of potable water used to wash down cooling tower screens; HVAC condensate; stormwater runoff; stormwater from secondary containment systems (either uncontaminated or treated); uncontaminated water from building foundation drainage; treated contaminated groundwater (treated in the finishing wastewater treatment (Bldg. 879) spent acid treatment system) from an onsite remediation project; treated contaminated groundwater from excavation and remediation projects, and various maintenance activities containing biodegradable organic materials and wastewaters; wastewater from associated shops and support services; vehicle wash water (which may contain insignificant amounts of biodegradable, phosphate-free, detergents); and discharges from internal Outfall 203 and stormwater runoff from the contractor laydown area. The sanitary sewer effluent (internal Outfall 203) mixes with the other treatment plant effluents after they have already discharged from the storm pond, just upstream of internal Outfall 303.

Based on the DMR/MMR data collected between October 2018 and August 2023, this outfall had a maximum monthly average flow of 2.4 MGD and a maximum daily discharge flow of 17.4 MGD

Treatment Description:
Internal Outfall 303 and 403 have the same treatment system. See treatment description below under internal Outfall 403.

Internal Outfall 403 [Discharges to Outfall 003]

Wastestreams and Flow:
The discharge is limited to a combination of wastewater and stormwater streams from the Smelting Plant, Ingot Plant, Rolling Plant, Fabrication Plant, and support areas; treated wastewater from the Finishing Wastewater Treatment Facility (Bldg. 879) Spent Acid Treatment; treated wastewater from the Finishing Wastewater Treatment Facility (Bldg. 879) Spent Wash and Water-Based Coating Solution Treatment; treated wastewater from the Rolling Wastewater Treatment Facility (Bldg. 871E Oily Wastewater Treatment); incidental amounts of untreated or partially treated Bldg. 879 wash wastewater from various maintenance activities or foaming conditions; untreated or partially treated oily wastewater from the 871E oily wastewater treatment plant from various maintenance activities; wastewaters from vacuum trucks used to transfer compatible wastewater streams for treatment within the various wastewater treatment facilities; evaporator blowdown from the Bldg. 310 steam plant; water softener backwash; emergency cooling water for air compressor Bldg. 311; contact cooling water from the fan houses at the rectifiers; blowdown from the ingot casting cooling water system; water from the vaporizers at the chlorine house; deionized water system backwash; cooling water from the Ingot preheat furnaces; cooling water from the scalper; DI quench water at the coil coating lines; wastewater from the cleaning of work rolls within the Finishing Department; coatings (only if the contaminants associated with these insignificant discharges are monitored at internal Outfall 303 and/or Outfall 003); material testing rinse water; water and wastewater from the steam and high temperature water systems; other miscellaneous contact and non-contact cooling water; cooling tower blowdown and emergency overflows; wash water consisting of potable water used to wash down cooling tower screens; HVAC condensate; stormwater runoff; stormwater from secondary containment systems (either uncontaminated or treated); uncontaminated water from building foundation drainage; treated contaminated groundwater (treated in the finishing wastewater treatment (Bldg. 879) spent acid treatment system) from an onsite remediation project; treated contaminated groundwater from excavation and remediation projects, and various maintenance activities containing biodegradable organic materials and wastewaters; vehicle wash water (which may contain insignificant amounts of biodegradable, phosphate-free, detergents); and wastewater from associated shops and support services.

Samples are taken for this outfall at the intake to the flue gas desulfurization (FGD) scrubber from the stormwater pond.

This wastestream is used as intake water for the FGD scrubber system (a significant portion of this wastestream would evaporate in the FGD process), then discharges through internal Outfall 503 into the ash pond treatment system, before discharging through internal Outfall 103 and then through Outfall 003 to the Ohio River.

Based on the DMR/MMR data collected between October 2018 and August 2023, this outfall had a maximum monthly average flow of 2.6 MGD and a maximum daily discharge flow of 7.8 MGD.

Treatment Description:
Internal Outfall 303 and 403 receive discharge from the same treatment systems described below. Wastewater from these treatment systems can be redirected to either outfall depending on flow conditions.

Oily Wastewater Treatment (Bldg. 871E): Batch treatment (approximately 1 shift per day) of Hot Mill and Cold Mill rolling solutions and miscellaneous wastewaters. Treatment includes emulsion breaking followed by oil/water separation through a dissolved air flotation (DAF) device, pH adjustment, and clarification in a solids contact clarifier. Maximum design flow rate is 325 gpm (0.468 MGD). The “oily sludge” and “clarifier sludge” generated by this facility are classified as Special Wastes. Oily sludge receives additional treatment with emulsion breakers and is then transported off-site in liquid form for additional processing prior to disposal. Clarifier sludge is transported off-site in liquid form for additional processing prior to disposal.

Finishing Wastewater Treatment (Bldg. 879) Spent Acid Treatment: Treatment of spent acid solution from conversion coating of aluminum sheet in coil prep and coil coating operations. Treatment includes reduction of hexavalent chromium to trivalent chromium followed by two-stage pH adjustment with lime, flocculation, and clarification in two solids contact clarifiers (in series) for removal of dissolved chromium, aluminum, and fluoride. Maximum design flow rate is 75 gpm (0.108 MGD). Sludge is de-watered in a filter press and managed and landfilled as a delisted waste. Small amounts of chromium contaminated groundwater are pumped to this facility from the Bldg. 826 intercept sump via Coil Coating Line #3 waste acid sump along with other acidic materials including spent lab acids, etc.

Finishing Wastewater Treatment (Bldg. 879) Spent Wash Solution Treatment: Treatment of spent wash solution from cleaning of aluminum sheet in coil prep operations prior to conversion coating. Treatment includes pH neutralization followed by a combination of biological activated sludge and powdered activated carbon (PAC) treatment process to remove surfactants, residual rolling and lubricating oils, and dissolved aluminum. Maximum design flow rate is 100 gpm (0.144 MGD) with a 7-day hydraulic retention. Sludge is processed through an aerobic digester, de-watered in a filter press, and sent to a non-municipal landfill as an industrial special waste.

Stormwater Retention Pond: All wastewater and stormwater from Smelting, Ingot, Rolling, Finishing, administrative buildings, parking lots, shops, and support service areas is diverted to a stormwater retention pond with a capacity of approximately 8.34 acre-feet for gravity settling of suspended solids. This facility also receives blowdown from the ingot casting cooling water system. Additionally, the stormwater retention pond can be used as an emergency collection device in the event of a spill or leak. Periodic dredging of sediment is expected to produce a non-hazardous sludge which will be dewatered (typically via filter press) and sent to an approved landfill as a special industrial waste.

Internal Outfall 503 [Discharges to Outfall 003]

This internal outfall was established in the 2013 permit to monitor for the flue gas desulfurization (FGD) pollutants of concern in this wastestream prior to it combining with the other wastestreams from the power plant.

Wastestreams and Flow:
The discharge is limited to FGD wastewaters, consisting primarily of scrubber blowdown. The discharge also consists of a small volume of wastewater associated with the dry fly ash silo load out dust prevention system. Sulfur dioxide is removed from the combustion exhaust gas (flue gas) using wet scrubbing. The resulting wastestream discharged is referred to as FGD wastewater.

Based on the DMR/MMR data collected between October 2018 and August 2023, this outfall had a maximum monthly average flow of 0.40 MGD and a maximum daily discharge flow of 0.48 MGD.

Treatment Description:
Currently, there is no treatment provided to this wastestream prior to discharge into the Ash Pond treatment system.

In the previous (2018) permit, the permittee was required to conduct an evaluation of control techniques which could significantly reduce pollutants in the FGD wastestream. In December of 2021, the permittee submitted a report titled, *Alcoa Warrick Power Plant Wet Flue Gas Desulfurization Wastewater Best Practicable Technology Evaluation*. A summary of this report is included in Section 5.3.9 of this Briefing Memo, and the complete report can be found in Appendix D of this Fact Sheet.

Internal Outfall 603 [Administrative outfall for the application of effluent limitation guidelines]

This is an administrative outfall that does not physically exist. It is used to apply the EPA effluent limitations guidelines applicable to the aluminum smelting and aluminum forming processes.

Operations contributing to this outfall are the same as described for internal Outfalls 303 and 403. The values reported for internal Outfall 603 are a flow-weighted calculation of the values measured at internal Outfalls 303 and 403.

Based on the DMR/MMR data collected between October 2018 and August 2023, this outfall had a maximum monthly average flow of 3.0 MGD and a maximum daily discharge flow of 18.3 MGD.

Internal Outfall 703 [Administrative outfall for the application of effluent limitation guidelines]

This discharge is limited to non-chemical metal cleaning wastewater and is expected to discharge infrequently, likely three (3) or less times per year. This wastestream discharges to the Outfall 004 sump and then discharges to the ash pond treatment system (unless Outfall 004 is discharging directly to the Ohio River) followed by a discharge through internal Outfall 103 which discharges to Outfall 003.

Wastestreams, Flow and Treatment Description:
The non-chemical metal cleaning wastewater discharges very infrequently from this outfall. Metal cleaning wastewater is only generated when a large outage occurs and Alcoa washes down the boilers. During the 2013 permit cycle, Alcoa completed a capital project that closed up the bottom of all of the boiler equipment so that all water sprayed into the boilers during outages would be channelized and not flow freely in the trench drains to the 004 sump. When an outage occurs in which washing will take place, temporary treatment equipment is brought on-site and set up in a designated area west of Unit 4. A contractor provides and operates a series of frac tanks. Wash water is piped to the treatment process, filtered on the front end of treatment, and then flows through the tanks which contain a series of weirs for solids and flow control. Caustic (sodium hydroxide) is added for pH neutralization. An approved coagulant is added to the settling tanks to assist with clarification. To reduce the total volume of water to a manageable level, water is treated relatively quickly and sent back to the washing process for re-use. Water is recirculated through the wash-treatment cycle several times depending on the length of the washing period. Once final washing is complete, water is held in the tanks for final clarification and pH adjustment as necessary. Process control samples are collected in each settling tank, and discharge is not approved until all samples meet discharge requirements. Final discharge occurs directly from the tanks into a designated storm drain. Total discharge volume is typically 0.1 MGD or less with a discharge duration of less than 8 hours. If sludge is dewatered onsite in dewatering boxes, a second smaller discharge (approx. 0.005 MGD) could occur a week or so after the initial discharge. During discharge to the storm drain, grab samples are collected at regular intervals over the course of the discharge to create a composite sample. The discharge rate is fairly consistent throughout the discharge period (i.e. samples are both time and flow-proportional).

Based on the DMR/MMR data collected between October 2020 and August 2023, this outfall had a maximum monthly average flow of 0.07 MGD.

Treatment Description:
Aside from contracted wastewater treatment which may occur (as described above), there is no treatment provided to this wastestream prior to discharge.

Outfall 004 to Ohio River

This outfall discharges intermittently when wastewater overflows from the power plant sumps. The wastewater from the below sources is collected in an intercept sump and typically pumped to the ash pond system prior to discharging through internal Outfall 103 which discharges to Outfall 003. However, during some precipitation events, hydraulic loading events in excess of the systems pumping capacity, or during periods of pump failure, the water in the sump is discharged through this outfall. All samples (with the exception of pH, which is collected with an online probe) are collected using an automatic sampler that is set up to sample from the sump's overflow pipe prior to discharging to the Ohio River.

During a site visit conducted during the previous permit period, the permittee demonstrated that the overflow weir in the sump has been raised by several feet, therefore increasing the hydraulic surge capacity of the sump, which is expected to delay and/or prevent the onset of overflows and reduce the overflow discharge volume. The permittee also relayed plans to eliminate discharges from Outfall 004 and redirect this wastestream to the ash ponds. After this step has been completed, the permittee will request removal of Outfall 004 from the permit.

Wastestreams and Flow:
The discharge is limited to a combination of contact and non-contact cooling water from the steam electric power plant operations; oily water decant pit discharge; wastewater from ash trench drains; discharge from internal Outfall 703; boiler blowdown; wastewater from equipment associated with the selective catalytic reductant (SCR) and selective noncatalytic reductant (SNCR) systems, mainly comprised of potable water and insignificant ammonia and/or urea; insignificant quantities of gypsum and limestone from the offloading, processing, and removal of these materials from the FGD scrubber or ancillary equipment; compatible wastewaters from maintenance activities of the FGD scrubber system; wastewaters and blowdown from the scrubber and dry fly ash handling system including the silo and pug mill; emergency overflow of the scrubber system; wastewater from the coal handling area; wastewater from the regeneration of the resin beds in the demineralizing water system; potable water plant filter backwash; wastewater associated with the maintenance washdown activities within the potable water plant and deep water wells (may contain insignificant amount of potassium permanganate ($KmNO4$)); wastewater from the steam and high temperature water systems; non-contact HVAC condensate; vehicle wash water (which may contain insignificant amounts of biodegradable, phosphate-free, detergents); miscellaneous compatible wastewaters from associated shops and support services; and stormwater runoff from the power plant operations.

Based on the DMR/MMR data collected between October 2018 and August 2023, this outfall had a maximum monthly average flow of 3.0 MGD and a maximum daily discharge flow of 18.3 MGD.

Treatment Description:
Treatment consists of flotation and sedimentation within the sump prior to discharge. The sump is designed for solids retention with an underflow baffle to prevent discharge of residual oil.

<u>Outfall 005 to Ohio River</u>

This outfall discharges intermittently when wastewater overflows from the power plant sumps. The wastewater is collected in an intercept sump and typically pumped to the ash pond system prior to discharging through internal Outfall 103 which ultimately discharges to Outfall 003. However, during some precipitation events, hydraulic loading events in excess of the systems pumping capacity, or during periods of pump failure, the water in the sump is discharged through this outfall. All samples (with the exception of pH, which is collected with an online probe) are collected using an automatic sampler that is set up to sample from the sump’s overflow pipe prior to discharging to the Ohio River.

During a site visit conducted during the previous permit period, the permittee demonstrated that the overflow weir in the sump has been raised by several feet, therefore increasing the hydraulic surge capacity of the sump, which is expected to delay and/or prevent the onset of overflows and reduce the overflow discharge volume. The permittee also relayed plans to eliminate discharges from Outfall 005 and redirect this wastestream to the ash ponds. After this step has been completed, the permittee will request removal of Outfall 005 from the permit.

Wastestreams and Flow:
The discharge is limited to a combination of contact and non-contact cooling water from the steam electric power plant operations; insignificant quantities of gypsum and limestone from the off-loading, processing, and removal of these materials from the FGD scrubber or ancillary equipment; wastewaters and blowdown from the scrubber and dry fly ash handling system including the silo and pug mill; non-contact cooling water from the coal handling area; wastewater from maintenance washdowns from the coal handling area and coal truck unloading area; minor volume of wastewater from the alumina ore unloading area, consisting mostly of compressor condensate and water from maintenance washdowns; cooling water from the fan houses at the rectifiers; emergency cooling water for the Bldg 311 air compressor station; incidental amounts of cooling tower water due to spills, leaks, sprays, or equipment malfunction; wastewater from the steam and high temperature water systems; non-contact HVAC condensate; miscellaneous compatible wastewaters from associated shops and support services; vehicle wash water (which may contain insignificant amounts of biodegradable, phosphate-free, detergents); stormwater runoff from the smelting area and power plant operations, including coal handling, the alumina ore unloading area, and the coal pile; and uncontaminated and contaminated (only if the contaminants are monitored routinely at the outfall) storm water from secondary containment systems.

Based on the DMR/MMR data collected between October 2018 and August 2023, this outfall had a maximum monthly average/maximum daily discharge flow of 0.39 MGD.

Treatment Description:
Treatment consists of flotation and sedimentation within the sump prior to discharge. The sump is designed for solids retention with an underflow baffle to prevent discharge of residual oil.

Figure 6: Flow Diagram – Plant Overview

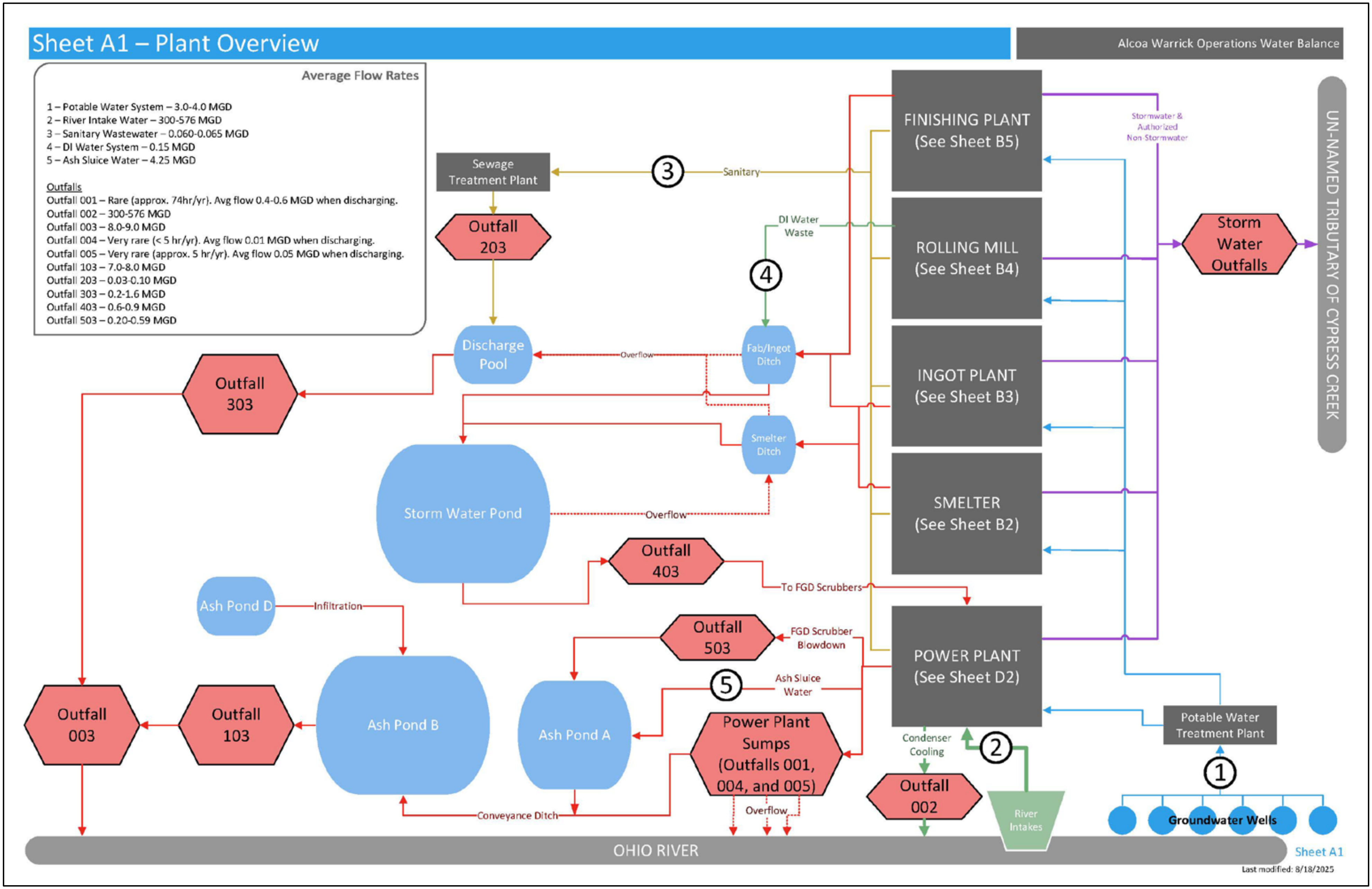


Figure 7: Flow Diagram – Discharge to Smelter & Fab/Ingot Ditches

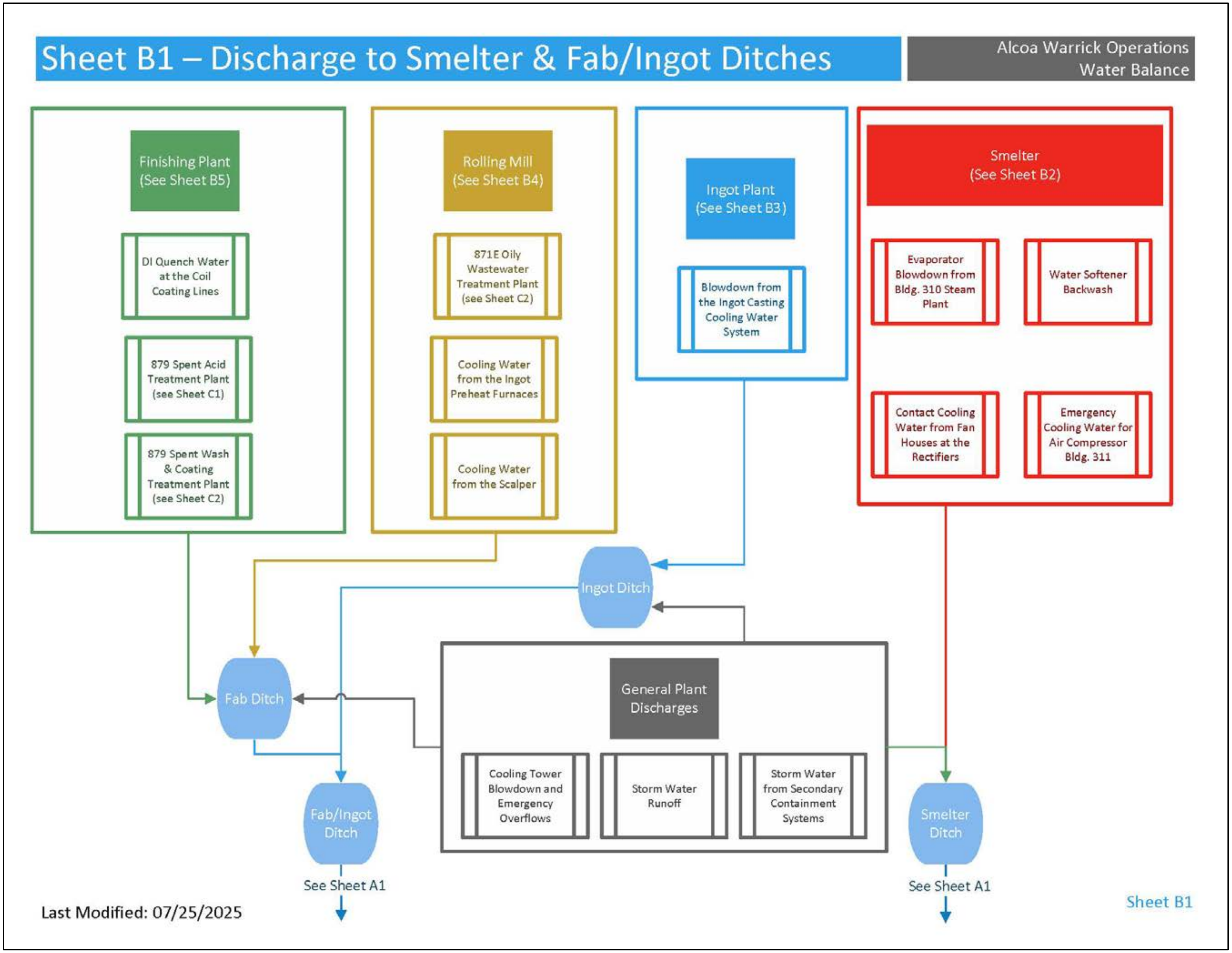


Figure 8: Flow Diagram – Smelter

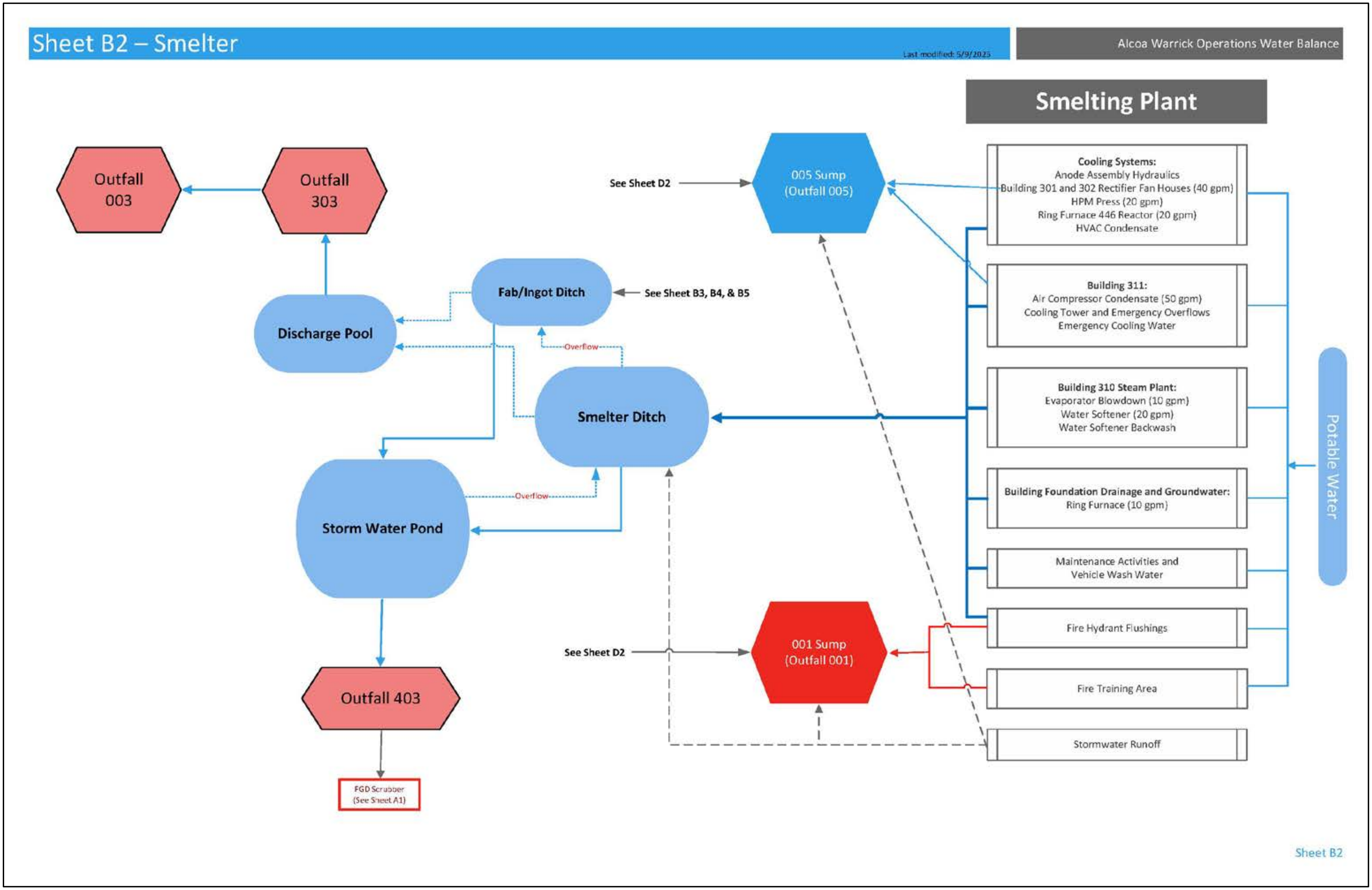


Figure 9: Flow Diagram – Ingot Plant

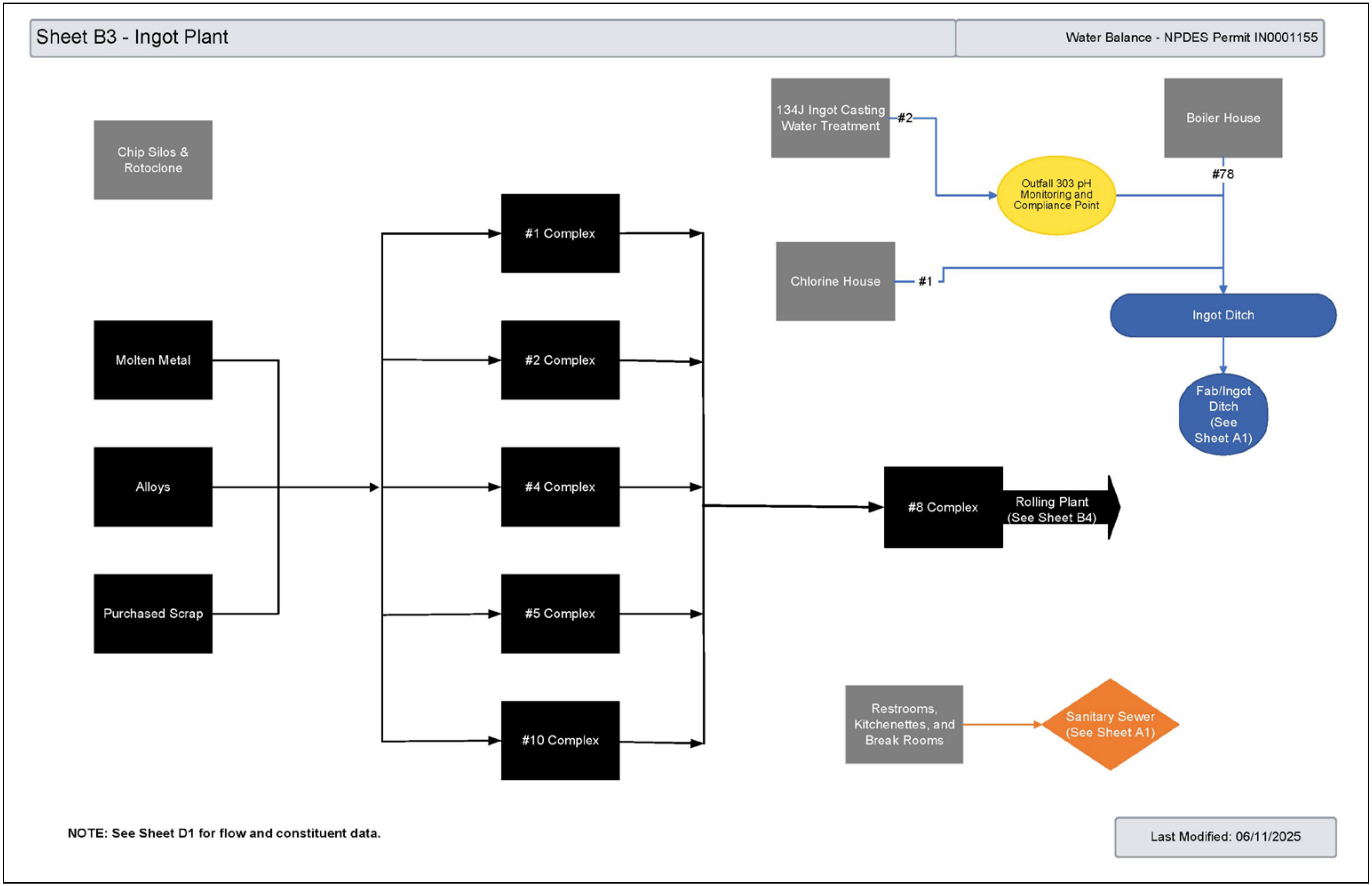


Figure 10: Flow Diagram – Rolling Plant

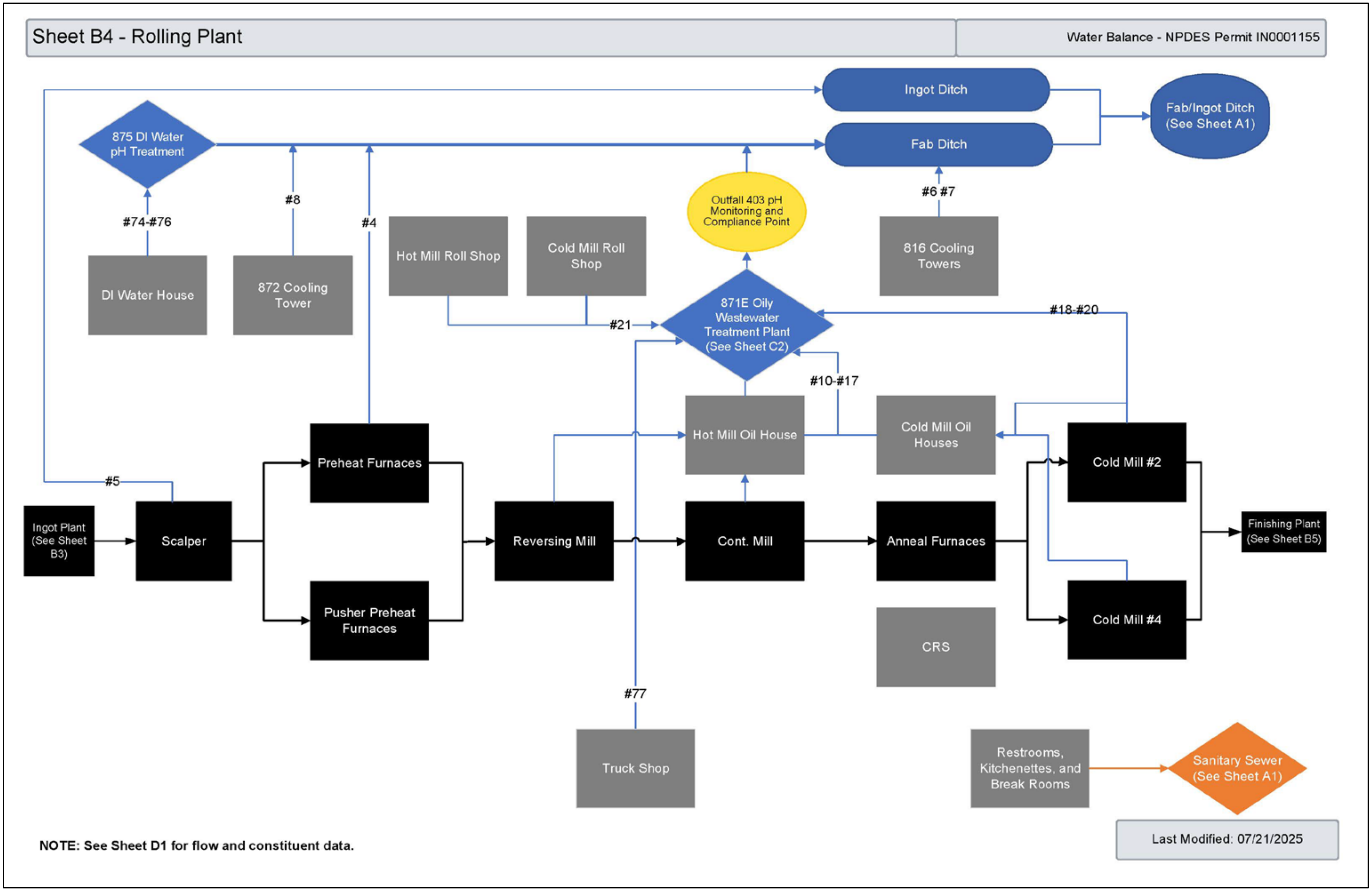


Figure 11: Flow Diagram – Finishing Plant

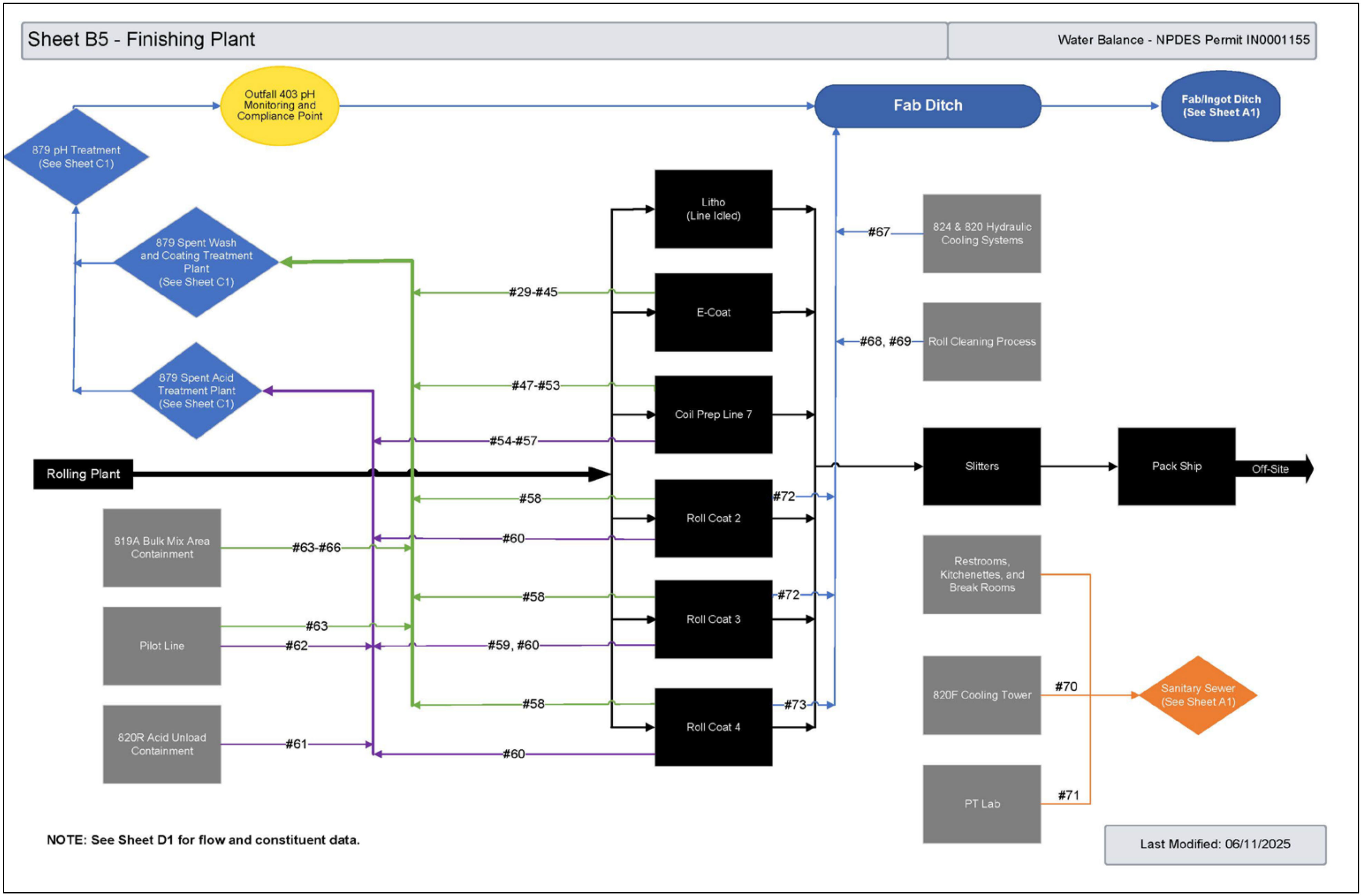


Figure 12: Flow Diagram – Building 879 Wastewater Treatment Facility

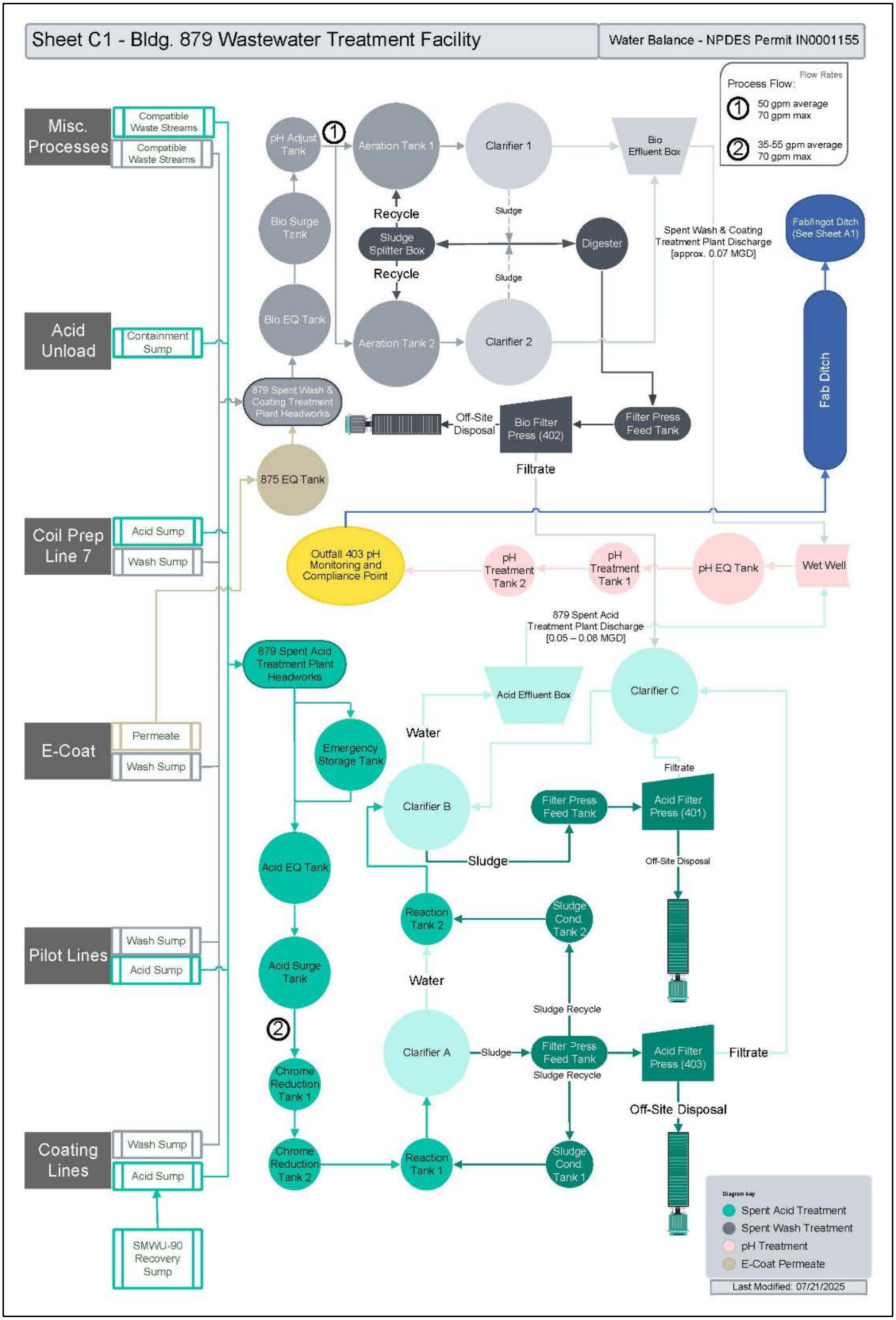


Figure 13: Flow Diagram – Building 871E Oily Wastewater Treatment Plant

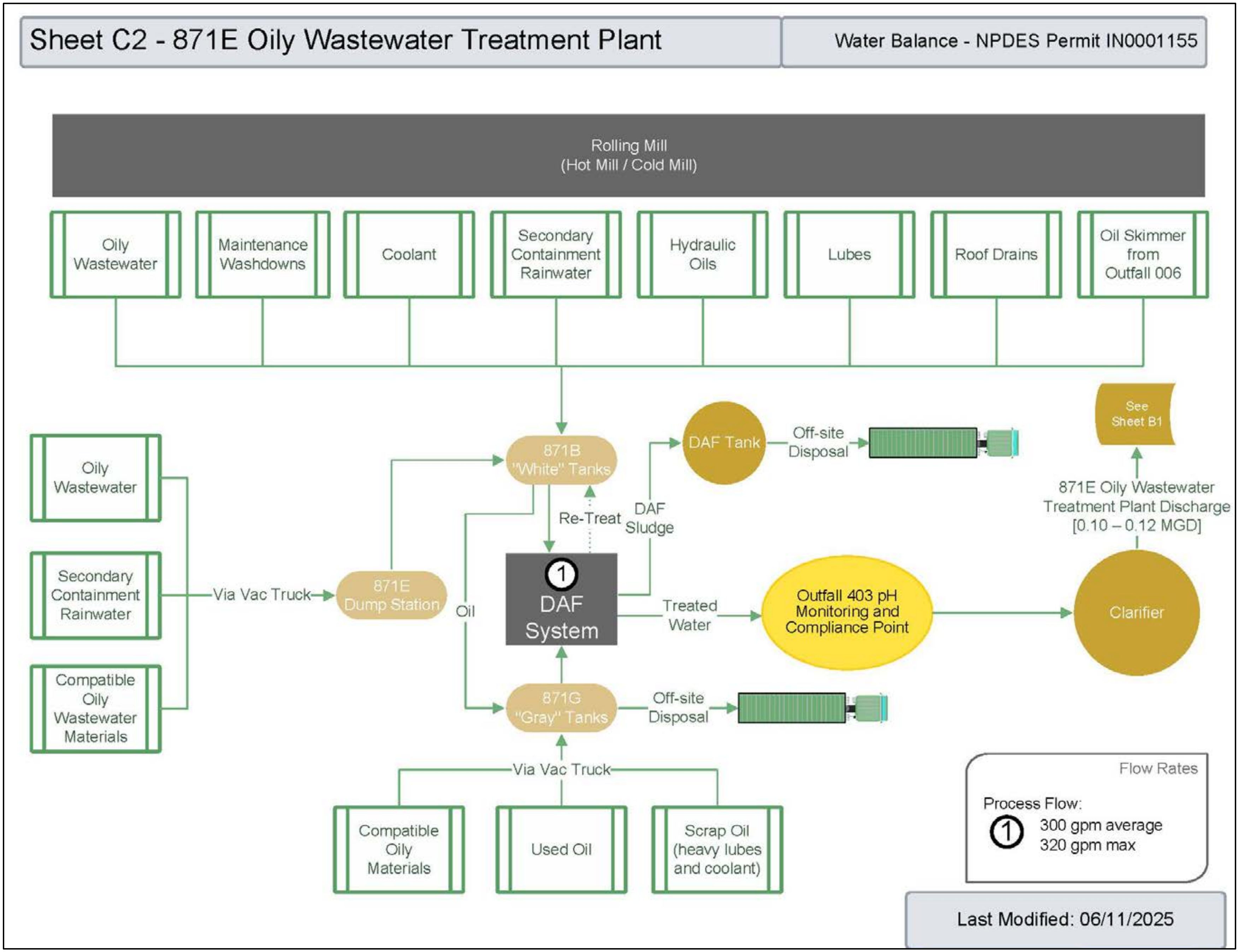
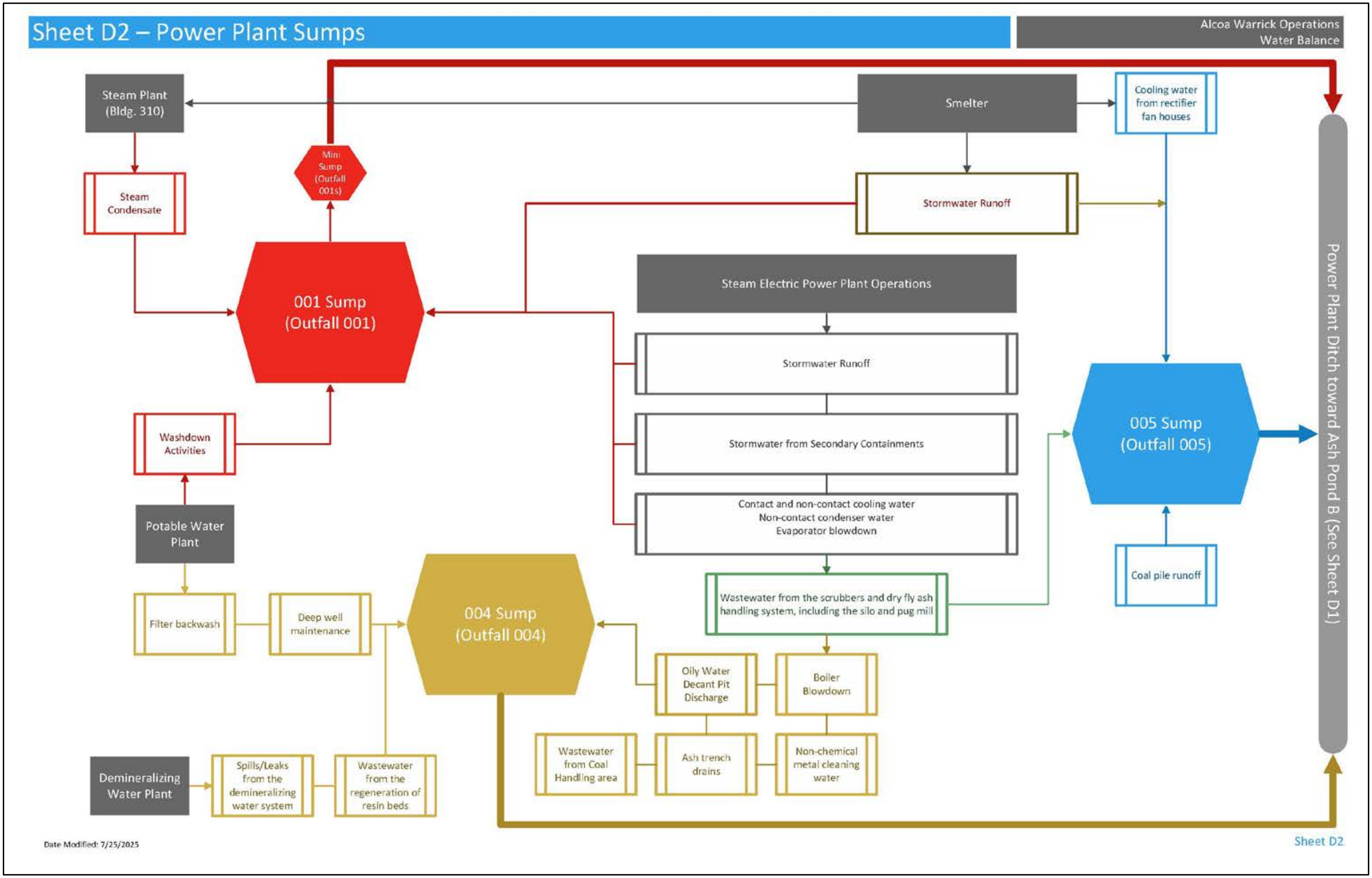


Figure 14: Flow Diagram – Power Plant Sumps



For the purpose of determining the Water Quality-based Effluent Limitations (WQBELs), the following maximum flows were used for Outfalls 001, 003, 004, and 005; these values were derived from MMR/DMR reports which were submitted to the IDEM between October 2018 and August 2023.

Outfall	Maximum Monthly Average Flow October 2018 – August 2023
001	1.1 MGD
003	10.37 MGD
004	0.21 MGD
005	0.39 MGD

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 given the permittee a Class D industrial wastewater treatment plant classification under 327 IAC 5-22-5(a)(5).

2.4 Changes in Operation

Two permit modifications were completed since the previous permit renewal. The first modification was issued on November 5, 2021, and the second modification was issued on October 13, 2023. The changes associated with these modifications are outlined below.

2.4.1 Permit Modification - November 5, 2021

A permit modification was issued which addressed four (4) changes at the facility after the permittee requested a stay of effectiveness of certain provisions/conditions in the permit and IDEM and the permittee entered into an Agreed Order.

1) Address Outfall 001 Bypass: The permittee determined that groundwater, stormwater, and potable water had been bypassing the collection sump used to monitor discharges from Outfall 001. In order to correct this problem, the permittee installed a new sump which collects discharges from the area which was bypassing the collection sump.

   Modification #1: IDEM created a new outfall (Outfall 001S) for monitoring the discharges specified above; the new outfall and limits were incorporated into the permit.

2) Monitoring Locations and pH limits for internal Outfalls 303 and 403: The pH limits included in the 2018 permit renewal were the most stringent pH limits derived from two combined Effluent Limitations Guidelines (ELGs) categories. The permittee was unable to meet these combined pH limits (7.0 – 9.0) and requested a permit modification to reinstate the pH limits from individual ELG categories at both outfalls. Following discussions with the IDEM, the permittee opted to install new pH monitoring

equipment and relocate the pH sampling point for both outfalls so that updated limits could be implemented.

Modification #2: IDEM modified the permit to include pH limits from individual ELG categories at both outfalls. However, due to the time needed to complete necessary equipment upgrades, the permit modification included the current pH limits and the updated pH limits which would be applied after new equipment was installed. The permittee completed installation of the new equipment on December 12, 2024. Therefore, the updated pH limits have been incorporated into this permit renewal.

3) Modification of 316(b) requirements for Cooling Water Intake Structure upgrades: The permittee submitted information which demonstrated that the installation of modified traveling screens without fine mesh screens is adequate for meeting BTA for impingement and entrainment mortality. The original permit renewal had required the installation of fine mesh screens.

   Modification #3: IDEM revised 316(b) language in the permit to allow the installation of modified traveling screens to meet impingement and entrainment BTA.

4) New Total Residual Chlorine Limits at Outfalls 006S, 008S, and 010S: The permittee conducted supplementary sampling of Total Residual Chlorine (TRC) at these outfalls which demonstrated the facility does show reasonable potential to exceed (RPE).

   Modification #4: IDEM modified the permit to include TRC limits at Outfalls 006S, 008S, and 010S.

2.4.2 Permit Modification - October 13, 2023

A permit modification was issued after the permittee requested permit changes to reflect anticipated equipment upgrades. These upgrades will be completed after the issuance of this permit renewal and are explained below.

1) Chip Baler Installation: The permittee plans to install two (2) new chip balers which will compact aluminum chips into bales that are easier to manage, transport and process. In order to meet air emission limitations, each chip baler will be equipped with a Finishing rotoclone device to control particulate matter. The operation and maintenance of the Finishing rotoclone devices are anticipated to generate wastestreams which necessitate changes to the NPDES permit for internal Outfall 303 and 403.

   Modification #1: The language “discharge from the Bldg. 316 Finishing rotoclones” has been added to the internal Outfall 303 and Outfall 403 narrative descriptions in Part I.A.6 and Part I.A.7 of the NPDES permit to account for the new wastestreams associated with operation and maintenance of the new Finishing rotoclones.

2) New Boiler House: A new building to house four (4) new high temperature water boilers and two (2) new steam boilers is planned for construction at the Building 316 Boiler House. The permittee currently anticipates that blowdown from the boiler house

will consist of approximately 24,000 gpd of potable water containing water treatment additives (WTA). Water from this activity will drain into the storm sewer system that feeds into the Ingot ditch, and discharge via internal Outfall 303 or 403.

There is also potential for incidental leaks of steam or high temperature water from the boiler house piping onto the ground. The new Building 316 Boiler House will be located within the stormwater drainage area for Outfall 008S. The wastestream may impact Outfall 008S or internal Outfall 303 and 403. The flow of this wastestream would likely be less than 1 gpm (1,440 gpd) but could be higher under rare circumstances. The primary pollutant of concern in this discharge is total residual chlorine (TRC), which is monitored at Outfall 008S.

Modification #2a: The language “blowdown and incidental leaks of steam or high temperature water from the Bldg. 316 Boiler House” has been added to the internal Outfall 303 and internal Outfall 403 narrative descriptions in Part I.A.6 and Part I.A.7 of the NPDES permit to account for boiler blowdown and potential incidental discharges from the Building 316 Boiler House.

Modification #2b: The language “incidental leaks of steam or high temperature water from the Building 316 Boiler House” has been added to the Outfall 008S narrative description in Part I.A.15 of the NPDES permit to account for potential incidental discharges from the Building 316 Boiler House. Conditional temperature monitoring requirements and footnotes were also added to Outfall 008S.

2.5 Facility Stormwater

Alcoa Warrick LLC submitted Form 2-F applications for all stormwater outfalls listed below. Form 2-E applications were submitted for Outfalls 002, 006S, 010S, and 203 which also receive non-stormwater contributions. Any outfall that is not listed below is not permitted. The discharge from the outfalls below is limited to stormwater only, unless otherwise specified in the permit.

The Storm Water Monitoring requirements and Non-Numeric Effluent Limits and the storm water pollution prevention plan (SWPPP) requirements can be found in Parts I.D. and I.E. of the permit.

The permittee has fifty-eight (58) designated stormwater outfalls. These outfalls have been grouped to align drainage areas with similar drainage area characteristics so that representative sampling can be conducted at one outfall which is representative of each group. These outfall groupings were modified in the previous (2018) permit and were carried forward for this renewal. An updated stormwater outfall map which reflects these updated groupings has been included in Figure 2. Sampling is proposed at twelve (12) of these fifty-eight (58) outfalls.

2.5.1 Outfall 001 to Ohio River

Outfall 001 represents the discharge from Outfall 001 only. Outfall 001 is permitted to discharge process and non-process wastestreams in addition to stormwater.

The stormwater discharge from this outfall consists of runoff from the smelting area, power plant operations, fire training area, heavy rail, alumina transfer, spent anode storage, bag house waste material storage, material storage, maintenance operations, carbon storage, coolants, general maintenance activities. This outfall may also be impacted by loading and unloading operations for the smelter area and for chemical operations for the transformer building, loading of spent anode material, carbon material, bath material, pitch material, fueling, maintenance operations, and removal of spent materials.

Outfall 001 discharges intermittently, and this outfall discharged 4% of minutes over the previous three (3) years. Wastewater is typically discharged to the ash pond prior to discharge via internal Outfall 103. However, during some precipitation events or during pump failure, hydraulic overloading may occur, causing the sump to overflow and discharge through this outfall.

This outfall drains 50 acres, 35 of which consist of impervious surface. Control measures include a solids catchment basin, rip-rap, and oil skim booms. Controls are inspected monthly, and cleaning work orders are generated on an as-needed basis. Solids and fluids removed during operations and maintenance of control equipment are classified and disposed of based on the applicable solid waste regulations.

Based on the submitted Form 2-C application, the discharge flow from this outfall has averaged 0.355 MGD with a maximum daily discharge flow of 4.44 MGD.

2.5.2 Internal Outfall 103 [Discharges to Outfall 003] to Ohio River

Internal Outfall 103 represents the discharge from internal Outfall 103 only. Internal Outfall 103 is permitted to discharge treated process wastewater in addition to stormwater.

The discharges from this outfall consist of treated process wastewater but may include stormwater runoff from limestone-handling operations, power plant operations, coal-handling operations, material storage (including coal, ash, and equipment), chemical storage including the sulfuric acid/sodium hydroxide pH adjustment system, ethylene glycol, contractor laydown, and activities associated with Outfalls 001, 004, 005, 503, and 703.

This outfall drains 250 acres, 65 of which consists of impervious surface. Stormwater controls consist of a coagulant feed system and acid/caustic for solids and pH control, settling in the ash pond system, and curtain booms to capture floating solids (cenospheres) and/or oil. Controls are inspected quarterly. Maintenance or cleaning work orders are generated on an as-needed basis. Solids and fluids removed during operations and maintenance of control equipment are classified and disposed of based on the applicable solid waste regulations.

Based on the information provided in the Form 2-C renewal application, between 2020 and 2022 the average flow for this outfall was 7.89 MGD. Because discharge from this outfall primarily consists of treated process wastewater, calculation of individual stormwater flows is not feasible.

2.5.3 Internal Outfall 303 [Discharges to Outfall 003] to Ohio River

Internal Outfall 303 represents the discharge from Internal Outfall 303 only. Internal Outfall 303 is permitted to discharge treated process wastewater in addition to stormwater.

The discharges from this outfall consist of treated process wastewater but may include stormwater runoff from the Smelting Plant, Ingot Plant, Rolling Plant, Fabrication Plant, and support areas, secondary containment systems, contractor laydown area, chemical storage, dust from the Rotary Furnace, satellite accumulation areas, hazardous waste storage at/in Buildings 871H and 136, raw/intermediate/finished and off-spec material storage in the form of aluminum ingot, material transfer equipment storage, above-ground storage tanks (ASTs) cooling towers, chlorine cylinder tank, oil storage, concrete truck washout area, pumper truck washout area, vehicle parking, herbicide mixing, wastewater treatment facilities, maintenance activities, transformers, fueling locations, loading and unloading operations consisting of chemical delivery to wastewater treatment facilities, Ingot 134J Water House, 871 DI Water House, 874 Oil House, and cooling towers, and oil transfer operations at 816, 871E, and 873, alumina transfer operations, and fueling operations.

This outfall drains 245 acres, 195 of which consists of impervious surface. Stormwater controls consist of a settling pond, oil booms, hard curtains, half-moon dams, “filter cones”, oil absorbents, covered areas. Controls are inspected quarterly. Maintenance or cleaning work orders are generated on an as-needed basis. Solids and fluids removed during operations and maintenance of control equipment are classified and disposed of based on the applicable solid waste regulations.

Based on the information provided in the Form 2-C renewal application, between 2020 and 2022 the average flow for this outfall was 0.985 MGD. Because discharge from this outfall primarily consists of treated process wastewater, calculation of individual stormwater flows is not feasible.

2.5.4 Internal Outfall 403 [Discharges to Internal Outfall 102 to Outfall 003] to Ohio River

Internal Outfall 403 represents the discharge from Internal Outfall 403 only. Internal Outfall 403 is permitted to discharge treated process wastewater in addition to stormwater.

The discharges from this outfall consist of treated process wastewater but may include stormwater runoff from Smelting Plant, Ingot Plant, Rolling Plant, Fabrication Plant, and support areas, secondary containment systems, chemical storage, dust from the Rotary Furnace, satellite accumulation areas, hazardous waste storage at/in Buildings 871H and 136, raw/intermediate/finished/Off-spec material storage in the form of aluminum ingot, material transfer equipment storage, above-ground storage tanks (ASTs) cooling towers, chlorine cylinder tank, oil storage, concrete truck washout area, pumper truck washout area, vehicle parking, herbicide mixing, wastewater treatment facilities, maintenance activities, transformers, fueling locations, loading and unloading operations consisting of chemical delivery to wastewater treatment facilities, Ingot 134J Water House, 871 DI Water House, 874 Oil House, and cooling towers, and oil transfer operations at 816, 871E, and 873, alumina transfer operations, and fueling operations.

This outfall drains 225 acres, 185 of which consists of impervious surface. Stormwater controls consist of filter-cones, oil absorbents, and covered loading/unloading areas. Controls are inspected quarterly. Maintenance or cleaning work orders are generated on an as-needed basis. Solids and fluids removed during operations and maintenance of control equipment are classified and disposed of based on the applicable solid waste regulations.

Based on the information provided in the Form 2-C application, between 2020 and 2022 the average flow for this outfall was 0.825 MGD. Because discharge from this outfall primarily consists of treated process wastewater, calculation of individual stormwater flows is not feasible.

2.5.5 Outfall 004 to Ohio River

Outfall 004 represents the discharge from Outfall 004 only.

The stormwater discharge from this outfall consists of runoff from power plant operations, above-ground storage tanks (ASTs) for water treatment, coolants, oils, and fuels, maintenance activities, coal operations including storage and transfer, and equipment storage. Normal process wastewater flows are also included at this outfall. This outfall may also be impacted by loading and unloading operations for coal, limestone, water treatment chemicals, coolants, fuels, and byproducts of the scrubber system like gypsum, and maintenance supplies.

The outfall drains 15 acres which consist entirely of impervious surface. Control measures include secondary containments for ASTs and the installation of booms in the sump area for Outfall 004 to skim residual oils. Controls are inspected monthly. Maintenance or cleaning work orders are generated on an as-needed basis. Solids and fluids removed during operations and maintenance of control equipment are classified and disposed of based on the applicable solid waste regulations.

Based on the submitted Form 2-C application, the discharge flow from this outfall has averaged 0.015 MGD with a maximum daily discharge flow of 0.209 MGD.

2.5.6 Outfall 005 to Ohio River

Outfall 005 represents the discharge from Outfall 005 only.

The stormwater discharge from this outfall consists of runoff from material storage including coal, above-ground storage tanks (ASTs) for the selective catalytic reduction (SCR) scrubber, the dry fly ash handling system, and maintenance activities. Normal process wastewater flows are included in this outfall. This outfall may also be impacted by loading and unloading operations for coal, alumina, ammonia (SCR), and coolants.

This outfall drains 20 acres which consist entirely of impervious surface. Control measures include secondary containment for ASTs and the installation of booms to skim residual oils. Controls are inspected monthly. Maintenance or cleaning work orders are generated on an as-needed basis. Solids and fluids removed during operations and maintenance of control equipment are classified and disposed of based on the applicable solids waste regulations.

Based on the submitted Form 2-C application, the discharge flow from this outfall has averaged 0.88 MGD with a maximum daily discharge flow of 0.42 MGD.

2.5.7 Outfall 001S to Ohio River

Outfall 001S represents the discharge from Outfall 001S only.

The discharge from this outfall consists of potential stormwater runoff from the chlorine building, equipment storage, pulverize balls, valves etc., above-ground storage tanks (AST's) for the selective non-catalytic reduction (SNCR) scrubber, and potable water building. This outfall may also be impacted by loading and unloading operations for chemical operations at the power plant for fuels, water treatment additives, urea (SNCR), coolants, and for general maintenance activities.

This outfall drains 50 acres which consist entirely of impervious surface. Control measures include plugs in building drains, good housekeeping practices, and bleach tank containments. Controls are inspected monthly. Maintenance or cleaning work orders are generated on an as-needed basis. Solids and fluids removed during operations and maintenance of control equipment are classified and disposed of based on the applicable solid waste regulations.

Discharge volume information is not available for this outfall because discharge measurement is not required due to the outfall being submerged in the Ohio River. Samples are collected at a manhole prior to the final outfall.

2.5.8 Outfall 006S to Unnamed Tributary of Cypress Creek

Outfall 006S represents the discharge from Outfall 006S only.

The discharge from this outfall consists of potential stormwater runoff from the cold rolling operations area and uncontaminated stormwater from secondary containments in the cold rolling operations area. Discharge may also include incidental amounts of water from the 816C2 and 816C3 cooling towers due to spills, leaks, or equipment malfunction (low flow, infrequent occurrence) and washwater consisting of potable water used to wash down cooling tower screens (low flow, intermittent occurrence).

This outfall drains 10 acres which consist entirely of impervious surface. Stormwater controls consist of an oil-water separator, an underflow plate, and an oil-absorbent boom prior to discharge. Controls are inspected quarterly. Maintenance or cleaning work orders are generated on an as-needed basis. Solids and fluids removed during operations and maintenance of control equipment are classified and disposed of based on the applicable solid waste regulations.

Based on the information provided in the Form 2-F renewal application, during the storm event which took place on December 12, 2022, the reported average flow was 0.216 MGD.

2.5.9 Outfall 008S to Unnamed Tributary to Cypress Creek

Outfall 008S represents the discharge from Outfall 008S only.

The discharge from Outfall 008S consists of stormwater runoff from a combination of grassy areas, roadways, and parking lots. Discharge may also include once through non-contact air conditioner chiller water from Building 01 (20 gpm) during the summer or incidental leaks of steam or high temperature water from the Bldg. 316 Boiler House.

This outfall drains 10 acres which consists entirely of impervious surface. Stormwater controls consist of a grassed buffer zone and grass swale prior to discharge. Controls are inspected quarterly. Maintenance or cleaning work orders are generated on an as-needed basis. Solids and fluids removed during operations and maintenance of control equipment are classified and disposed of based on the applicable solid waste regulations.

Based on the information provided in the Form 2-F renewal application, during the storm event which took place on October 25, 2022, the reported average flow was 0.086 MGD.

2.5.10 Outfall 009S to Unnamed Tributary to Cypress Creek

Outfall 009S represents the discharge from Outfalls 009S, 013S, 036S, and 039S.

The discharge from this group of outfalls consists of potential stormwater runoff from industrial activity including material transfer, material and equipment storage including railroad ties, operation area parking lots, maintenance activities, heavy rail, and loading/unloading activities.

This outfall drains 42 acres, 20 of which consists of impervious surface. Stormwater controls consist of a grassed buffer zone and a grass swale prior to the final outfall. Controls are inspected quarterly. Maintenance or cleaning work orders are generated on an as-needed basis. Solids and fluids removed during operations and maintenance of control equipment are classified and disposed of based on the applicable solid waste regulations.

Based on the information provided in the Form 2-F renewal application, during the storm event which took place on February 2, 2022, the reported average flow was 0.083 MGD.

2.5.11 Outfall 010S to Unnamed Tributary to Cypress Creek

Outfall 010S represents the discharge from Outfall 010S only.

The discharge from Outfall 010S consists of potential stormwater runoff from light industrial-use areas, air conditioner condensate, potential water from the 820 cooling tower, cooling water, and incidental amounts of fire foam from the fire suppression system.

This outfall drains 45 acres, 20 of which consists of impervious surface. Stormwater controls consist of a covered and secondarily contained storage/unloading area at 849 and 820, inside storage of materials and above ground storage tanks (ASTs), grassed buffer zones, and pocket wetlands prior to discharge. Controls are inspected quarterly. Maintenance or cleaning work orders are generated on an as-needed basis. Solids and fluids removed during operations and maintenance of control equipment are classified and disposed of based on the applicable solid waste regulations.

Based on the information provided in the Form 2-F application, during the storm event which took place on July 7, 2022, the reported average flow was 0.648 MGD

2.5.12 Outfall 011S to Unnamed Tributary to Cypress Creek

Outfall 011S represents the discharge from Outfalls 011S, 014S, 015S, 019S, 021S, 035S, 062S, and 063S.

The discharge from this outfall consists of potential stormwater runoff from access roads for material transfer of clean fill material, gravel parking area, a fire training station, and an on-site clean fill area.

This outfall drains 210 acres, 23 of which consists of impervious surface. Stormwater controls consist of a grassed buffer zones and grass swales prior to the final outfall. Controls are inspected quarterly. Maintenance or cleaning work orders are generated on an as-needed basis. Solids and fluids removed during operations and maintenance of control equipment are classified and disposed of based on the applicable solid waste regulations.

Based on the information provided in the Form 2-F renewal application, during the storm event which took place on September 2, 2020, the reported average flow was 0.432 MGD

2.5.13 Outfall 012S to Unnamed Tributary to Cypress Creek

Outfall 012S represents the discharge from Outfalls 012S and 029S.

The discharge from this outfall consists of potential runoff from railroad maintenance material and storage (ties, pins, dirt, and gravel etc.), maintenance yard, and heavy rail.

This outfall drains 4 acres, 0.5 of which consists of impervious surface. Stormwater controls consist of roofing over storage areas, rip-rap for Outfall 29S, and a grassy buffer zone with a grassy swale prior to discharge. Controls are inspected quarterly. Maintenance or cleaning work orders are generated on an as-needed basis. Solids and fluids removed during operations and maintenance of control equipment are classified and disposed of based on the applicable solid waste regulations.

Based on the information provided in the Form 2-F renewal application, during the storm event which took place on April 5, 2022, the reported average flow was 0.002 MGD.

2.5.14 Outfall 020S to Unnamed Tributary to Cypress Creek

Outfall 020S represents the discharge from Outfalls 020S, 022S, 033S, and 034S.

The discharges from this group of outfalls consist of potential stormwater runoff from storage of aluminum ingot, aluminum scrap, a closed landfill, equipment storage, miscellaneous equipment and materials storage (appliances, materials that may contain refrigerants, vehicles, miscellaneous construction debris, etc.), and the Household Hazardous Waste staging area.

Hazardous materials are not stored in this area but hazardous materials (paint, oil, antifreeze) are packaged, loaded, and sent off-site during Household Hazardous Waste day activities. Stormwater discharge from these drainage areas consist of stormwater runoff from heavy and light industrial use areas, and runoff from grassy areas, roadways and parking lots.

This outfall drains 113.5 acres, 11.1 of which consists of impervious surface. Stormwater controls consist of a forested area, rip-rap, and a grassy swale prior to discharge. Controls are inspected quarterly. Maintenance or cleaning work orders are generated on an as-needed basis. Solids and fluids removed during operations and maintenance of control equipment are classified and disposed of based on the applicable solid waste regulations.

Based on the information provided in the Form 2-F renewal application, during the storm event which took place on February 2, 2022, the reported average flow was 0.043 MGD

2.5.15 Outfall 023S to Ohio River

Outfall 023S represents the discharge from Outfalls 023S, 030S, and 040S through 060S.

The discharge from this group of outfalls consists of stormwater runoff from the alumina ore unloading dock and intake platform. Additional areas include propane AST, secondarily contained transformer, storage and use of a bulldozer, and maintenance activities.

Part III.C. of the previous (2018) permit included a requirement for the permittee to conduct an assessment of the stormwater discharge at the power plant intake platform. The permittee submitted the results of this assessment on December 19, 2019. Outfall 023S was identified as a discharge point for five (5) of the seven (7) drainage points identified at the intake platform. Therefore, the wastewater description for this outfall has been updated to include stormwater runoff from the intake platform.

This outfall drains 1.6 acres. Stormwater controls consist of rip-rap and an oil skim weir. Controls are inspected quarterly. Maintenance or cleaning work orders are generated on an as-needed basis. Solids and fluids removed during operations and maintenance of control equipment are classified and disposed of based on the applicable solid waste regulations. Based on the information provided in the Form 2-F renewal application, during the storm event which took place on February 4, 2021, the reported average flow was 0.006 MGD.

2.5.16 Outfall 025S to Unnamed Tributary to Cypress Creek

Outfall 025S represents the discharge from Outfalls 025S, 026S, 027S, 028S, 031S, and 032S.

The discharges from this group of outfalls consist of potential stormwater runoff from material transfer, emergency response equipment, fork truck activity, and truck parking/traffic.

This outfall drains 10 acres, 3 of which consists of impervious surface. Stormwater controls were not provided for this outfall. Controls are inspected quarterly. Maintenance or cleaning work orders are generated on an as-needed basis. Solids and fluids removed during operations and maintenance of control equipment are classified and disposed of based on the applicable solid waste regulations.

Based on the information provided in the Form 2-F renewal application, during the storm event which took place on October 25, 2022, the reported average flow was 0.029 MGD

2.5.17 Outfall 037S to Unnamed Tributary to Cypress Creek

Outfall 037S represents the discharge from Outfalls 037S and 038S.

The discharges from this group of outfalls consist of potential stormwater runoff from an adjacent access road and industrial activities including a truck turn-around and weigh-scale operations.

This outfall drains 10 acres, 4 of which consists of impervious surface. Stormwater controls consist of a grassed buffer zone and a grass swale prior to discharge. Controls are inspected quarterly. Maintenance or cleaning work orders are generated on an as-needed basis. Solids and fluids removed during operations and maintenance of control equipment are classified and disposed of based on the applicable solid waste regulations.

Based on the information provided in the Form 2-F renewal application, during the storm event which took place on April 28, 2021, the reported average flow was 0.432 MGD.

2.5.18 Outfall 064S to Unnamed Tributary to Cypress Creek

Outfall 064S represents the discharge from Outfalls 064S, 007S, 016S, 017S, and 018S.

The discharges from this group of outfalls consist of potential stormwater runoff from equipment storage, general maintenance, loading/unloading areas for operations, and heavy rail.

This outfall drains 31.5 acres, 21.6 of which consists of impervious surface. Stormwater controls were not provided for this outfall. Controls are inspected quarterly. Maintenance or cleaning work orders are generated on an as-needed basis. Solids and fluids removed during operations and maintenance of control equipment are classified and disposed of based on the applicable solid waste regulations.

Based on the information provided in the Form 2-F renewal application, during the storm event which took place on April 28, 2021, the reported average flow was 0.058 MGD.

2.6 Effluent Characterization

Comprehensive discharge data for Outfalls 001, 003, 004, and 005 and internal Outfalls 103, 303, 403, 503, 603, 703 has been included in Form 2C of the renewal application which is attached to this Fact Sheet. This data was used to review/evaluate parameters which are currently limited/monitored in the permit as well as parameters which are only monitored upon submission of the permit renewal application.

3.0 PERMIT HISTORY

3.1 Compliance History

3.1.1 Permit Limit Exceedances

A review of this facility's discharge monitoring data was conducted for compliance verification at all internal, final, and stormwater outfalls. The tables below list all outfalls with reported permit limitation exceedances between September 2020 and September 2025.

Outfall 001			
Monitoring Period	**Parameter Description**	**Limit Type**	**Concentration/Mass Loading**
September 2020	pH	Daily Maximum	Concentration
December 2020	pH	Daily Minimum	Concentration
September 2021	pH	Daily Minimum	Concentration
June 2022	pH	Daily Minimum	Concentration
September 2022	pH	Daily Minimum	Concentration
June 2023	Zinc	Monthly Average	Concentration
June 2023	Zinc	Daily Maximum	Concentration
June 2023	Copper	Monthly Average	Concentration
June 2023	Copper	Daily Maximum	Concentration
September 2023	Copper	Monthly Average	Concentration
September 2023	Copper	Daily Maximum	Concentration
December 2023	pH	Daily Minimum	Concentration
March 2024	pH	Daily Minimum	Concentration
June 2025	pH	Daily Maximum	Concentration

Outfall 002			
Monitoring Period	**Parameter Description**	**Limit Type**	**Concentration/Mass Loading**
May 2022	Total Residual Chlorine	Daily Maximum	Concentration

Outfall 003			
Monitoring Period	**Parameter Description**	**Limit Type**	**Concentration/Mass Loading**
February 2022	Mercury	Monthly Average	Mass
February 2022	Mercury	Monthly Average	Concentration
December 2022	Mercury	Daily Maximum	Concentration
December 2022	Mercury	Monthly Average	Concentration
December 2022	Mercury	Monthly Average	Mass
January 2023	Total Residual Chlorine	Daily Maximum	Concentration
June 2023	Mercury	Monthly Average	Concentration
June 2023	Mercury	Monthly Average	Mass
October 2023	Mercury	Monthly Average	Concentration
October 2023	Mercury	Monthly Average	Mass
February 2024	Mercury	Monthly Average	Concentration
February 2024	Mercury	Daily Maximum	Concentration
February 2024	Mercury	Monthly Average	Mass
February 2024	Mercury	Daily Maximum	Mass
April 2024	Mercury	Monthly Average	Concentration
April 2024	Mercury	Daily Maximum	Concentration
April 2024	Mercury	Monthly Average	Mass
April 2024	Mercury	Daily Maximum	Mass
June 2024	Mercury	Monthly Average	Concentration
June 2024	Mercury	Monthly Average	Mass
August 2024	Mercury	Monthly Average	Concentration
February 2025	Mercury	Monthly Average	Concentration
February 2025	Mercury	Monthly Average	Mass
April 2025	Total Residual Chlorine	Daily Maximum	Concentration
April 2025	Mercury	Monthly Average	Concentration
June 2025	Mercury	Monthly Average	Concentration
June 2025	Mercury	Daily Maximum	Concentration
June 2025	Mercury	Monthly Average	Mass
June 2025	Mercury	Daily Maximum	Mass

Outfall 004			
Monitoring Period	**Parameter Description**	**Limit Type**	**Concentration/Mass Loading**
June 2021	pH	Daily Maximum	Concentration
December 2022	Mercury	Daily Maximum	Concentration
December 2022	Mercury	Monthly Average	Concentration
June 2023	Copper	Daily Maximum	Concentration
June 2023	Copper	Monthly Average	Concentration
June 2023	Mercury	Monthly Average	Concentration
June 2023	Zinc	Daily Maximum	Concentration
June 2023	Zinc	Monthly Average	Concentration
September 2023	Copper	Monthly Average	Concentration
September 2023	Copper	Daily Maximum	Concentration
September 2023	Zinc	Daily Maximum	Concentration
September 2023	Zinc	Monthly Average	Concentration

Outfall 005			
Monitoring Period	**Parameter Description**	**Limit Type**	**Concentration/Mass Loading**
June 2022	Zinc	Monthly Average	Concentration
September 2022	Zinc	Monthly Average	Concentration
September 2023	Zinc	Monthly Average	Concentration
March 2024	Zinc	Monthly Average	Concnetration
June 2025	Zinc	Monthly Average	Concentration
June 2025	Zinc	Daily Maximum	Concentration

Outfall 006S			
Monitoring Period	**Parameter Description**	**Limit Type**	**Concentration/Mass Loading**
August 2022	Total Residual Chlorine	Daily Maximum	Concentration
August 2022	Total Residual Chlorine	Monthly Average	Concentration
September 2022	Total Residual Chlorine	Daily Maximum	Concentration
September 2022	Total Residual Chlorine	Monthly Average	Concentration
October 2022	Total Residual Chlorine	Daily Maximum	Concentration

Outfall 008S			
Monitoring Period	**Parameter Description**	**Limit Type**	**Concentration/Mass Loading**
December 2022	Total Residual Chlorine	Daily Maximum	Concentration

Outfall 010S			
Monitoring Period	**Parameter Description**	**Limit Type**	**Concentration/Mass Loading**
August 2023	Total Residual Chlorine	Daily Maximum	Concentration

Internal Outfall 603 (Administrative Outfall for Internal Outfall 303 and 403)			
Monitoring Period	**Parameter Description**	**Limit Type**	**Concentration/Mass Loading**
September 2020	Aluminum	Daily Maximum	Mass
February 2021	Aluminum	Monthly Average	Mass
March 2022	Aluminum	Daily Max	Mass
April 2022	Aluminum	Daily Maximum	Mass
April 2022	Aluminum	Monthly Average	Mass
April 2022	Fluoride	Monthly Average	Mass
April 2022	Fluoride	Daily Maximum	Mass
June 2022	Aluminum	Monthly Average	Mass
June 2022	Aluminum	Daily Maximum	Mass
June 2022	Fluoride	Daily Maximum	Mass
July 2022	Nickel	Daily Maximum	Mass
July 2022	Aluminum	Daily Maximum	Mass
July 2022	Aluminum	Monthly Average	Mass
August 2022	Aluminum	Daily Maximum	Mass
August 2022	Aluminum	Monthly Average	Mass
July 2022	Fluoride	Daily Maximum	Mass
July 2022	Fluoride	Monthly Average	Mass
August 2022	Fluoride	Daily Maximum	Mass
August 2022	Fluoride	Monthly Average	Mass
September 2022	Aluminum	Daily Maximum	Mass
September 2022	Fluoride	Daily Maximum	Mass
May 2023	Fluoride	Daily Maximum	Mass
May 2023	Fluoride	Monthly Average	Mass
May 2023	Nickel	Daily Maximum	Mass
May 2023	Total Suspended Solids	Daily Maximum	Mass
May 2023	Zinc	Daily Maximum	Mass
May 2023	Aluminum	Daily Maximum	Mass
May 2023	Aluminum	Monthly Average	Mass
June 2023	Aluminum	Monthly Average	Mass
June 2023	Aluminum	Daily Maximum	Mass
January 2024	Fluoride	Monthly Average	Mass
January 2024	Fluoride	Daily Maximum	Mass
May 2024	Aluminum	Daily Maximum	Mass

The permittee entered an Agreed Order (No. 2020-27093-W) with this Office on March 18, 2021 to address permit violations reported between October 2019 and January 2020 along with other violations of the NPDES permit. The permittee submitted a Compliance Plan on June 30, 2021, and an updated Compliance Plan on January 12, 2024. The permittee submitted a follow-up letter confirming the execution of the Compliance Plan on December 12, 2024.

4.0 LOCATION OF DISCHARGE/RECEIVING WATER USE DESIGNATION

The receiving streams for the outfalls are the Ohio River and unnamed tributaries to Cypress Creek. The $Q_{7,10}$ low flow value of the Ohio River near the Alcoa Warrick facility is 11,000 cfs (7,110 MGD). The Q7,10 low flow value of the unnamed tributary to Cypress Creek is 0.0 cfs. The unnamed tributary of Cypress Creek is designated for full body contact recreation and shall be capable of supporting a well-balanced, warm water aquatic community and full body contact recreation in accordance with 327 IAC 2-1-3.

The permittee discharges to the Ohio River, a water of the state that is not within the Great Lakes system. Therefore it is subject to NPDES requirements specific to dischargers not discharging to waters within the Great Lakes system under 327 IAC 2-1 and 327 IAC 5-2-11.1. These rules contain applicable water quality standards and the procedures to calculate and incorporate water quality-based effluent limitations. The discharge is also subject to the Pollution Control Standards for Discharges to the Ohio River as established by the Ohio River Valley Water Sanitation Commission (ORSANCO).

Discharges to the Ohio River are subject to the water quality standards, including the use designations, established by the ORSANCO or Section 2.2 of ORSANCO *Pollution Control Standards for Discharges to the Ohio River*, 2019 Revision as well as the water quality standards including the use designations, established by Indiana.

ORSANCO Use Designations:

- Available for use as a public and industrial water supply after reasonable treatment
- Suitable for recreational usage
- Capable of maintaining fish and other aquatic life
- Adaptable to such other uses as may be legitimate

Indiana Use Designations:

- Full body contact recreation
- Capable of supporting a well-balanced warm water aquatic community
- Suitable as a public or industrial water supply

The applicable 12-digit hydrologic unit codes for the receiving waters are HUC-12 051402011204 for the Ohio River and HUC-12 051402011203 for the unnamed tributary to Cypress Creek.

4.1 Total Maximum Daily Loads (TMDLs)

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 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 unnamed tributary to Cypress Creek (Assessment-Unit INE01B3_T1001 and INE01B3_T1002) is not on the 2022 303(d) list for impairments. The Ohio River (Assessment-Unit INH6_10) is on the 2022 303(d) list for *E. coli*, Dioxin, PCBs, Mercury, and Mercury in Fish Tissue. A Total Maximum Daily Load (TMDL) report for the unnamed tributary to Cypress Creek is not currently planned or underway. The US EPA and ORSANCO are in the process of completing a TMDL for the Ohio River to address *E. coli* impairments. A summary of the pending TMDL and milestone updates can be found at the following web address: https://www.orsanco.org/programs/bacteria-tmdl/.

5.0 PERMIT LIMITATIONS

5.1 Technology-Based Effluent Limits (TBELs)

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).

5.1.1 Internal Outfall 603 (303 and 403 Combined) – Production-Based TBELs:

The below ELGs are applied at internal Outfall 603, which is an administrative outfall which does not physically exist. Instead, the permit requires that these pollutants be monitored at internal Outfalls 303 and 403 and that a flow weighted mass balance calculation be used to represent the discharge from internal Outfall 603 for the purpose of determining compliance with these ELGs. The following applicable technology-based standards for Warrick Newco LLC have been applied at internal Outfall 603:

40 CFR 421 – Nonferrous Metals Manufacturing Point Source Category, Subpart B - Primary Aluminum Smelting Subcategory

40 CFR 467 – Aluminum Forming Point Source Category, Subpart B – Rolling with Emulsions Subcategory

Within these categories and subcategories, the permittee has the following operations:

Point Source Category	Subcategory	Associated Manufacturing Process/Operation
40 CFR 421, Subpart B	40 CFR 421.22 (BPT) and 40 CFR 421.23(q) (BAT)	> Direct Chill Casting Contact Cooling
40 CFR 467, Subpart B	40 CFR 467.22 (BPT) and 40 CFR 467.23 (BAT)	> Hot and cold rolling with emulsions (part of the Core operations) > Cleaning or Etching Bath > Cleaning or Etching Rinse

Under both of these effluent limitation guidelines, EPA has established both BPT (best practicable control technology currently available) and BAT (best available technology economically achievable) limitations. BPT is the first level of technology-based effluent controls and it applies to all types of pollutants (conventional, nonconventional and toxic). BAT applies to toxic and nonconventional pollutants.

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).

These effluent limitation guidelines are expressed in terms of allowable mass of pollutant discharged per mass of product removed from an operation at the end of a process cycle for transfer to a different machine or process. (*i.e*. for the Cleaning or Etching Bath portion of the Aluminum Forming Point Source Category, it is pounds [of pollutant discharged] per million off-pounds of aluminum cleaned or etched).

A reasonable measure of the permittee's actual long term daily production should be used to determine the technology-based effluent limits. The objective in determining the production for a facility is to develop a single estimate of the long-term average daily production that can reasonably be expected to prevail during the next term of the permit and this production rate should be established using the past 3 to 5 years of facility data (see EPA NPDES Permit Writers' Manual, September 2012, page 7-7).

If production rates are expected to change significantly during the life of the permit, tiered (alternate) technology-based effluent limitations (TBELs) as allowed by 327 IAC 5-2-11(c)(1) [see also 40 CFR 122.45(b)(2)(ii)(A)(i)] should be used. These tiered TBELs would become effective when production (or some other measure of production) exceeded a threshold value. Generally, up to a 20 percent fluctuation in production is considered to be within the range of normal variability, while changes in production higher than 20 percent could warrant consideration of tiered limitations. (See EPA NPDES Permit Writers' Manual, September 2012, page 7-7).

The facility's production estimates, applicable ELG limitations (taken from 421.22 / 421.23 and 467.22 / 467.23), and the production-based limit calculations are attached as **Appendix A.1.** of this Fact Sheet.

5.1.2 TBELs Applied at internal Outfall 103 and Outfall 002:

The following applicable technology-based standards for Warrick Newco LLC have been applied at internal Outfall 103 and Outfall 002:

40 CFR 423 – Steam Electric Power Generating Point Source Category

The following subcategories have been applied to each of the associated wastestreams:

Point Source Category	Subcategories	Associated Wastestream
40 CFR 423	40 CFR 423.12(b)(3) 40 CFR 423.12(b)(4) 40 CFR 423.12(b)(5) 40 CFR 423.13	> Low-volume waste sources > Fly ash and bottom ash transport water > Non-chemical metal cleaning wastes > All associated wastestreams

The aluminum smelting and forming operations are powered by a coal fired steam electric power generating plant owned and operated by Alcoa Power Generating Inc. EPA has promulgated effluent limitations guidelines (ELGs) for steam electric power plants at 40 CFR 423, the Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Source Category. However, these ELGs are not applicable to this Alcoa steam electric power plant. Under 40 CFR 423.10, EPA established the applicability of these ELGs as follows:

> *The provisions of this part apply to discharges resulting from the operation of a generating unit by an establishment <u>whose generation of electricity is the predominant source of revenue or principal reason for operation</u>, and whose generation of electricity results primarily from a process utilizing fossil-type fuel (coal, oil, or gas), fuel derived from fossil fuel (e.g., petroleum coke, synthesis gas), or nuclear fuel in conjunction with a thermal cycle employing the steam water system as the thermodynamic medium. This part applies to discharges associated with both the combustion turbine and steam turbine portions of a combined cycle generating unit.*

Since the generation of electricity is not the predominant source of revenue nor the principal reason for operation of Alcoa's power generating unit, the steam electric power generating source category ELGs are not applicable to this facility. Pursuant to 327 IAC 5-2-10 and 5-5 (which implement 40 CFR 122.44, 125.3, and Section 402(a)(1) of the Clean Water Act (CWA)), in the absence of effluent limitations guidelines, technology-based effluent limits can be determined on a case-by-case basis using BPJ.

In the previous (2018) permit as well as earlier permits, some of the limitations from the steam electric power generating source category ELGs have been applied at this facility. The limits are Total Suspended Solids and Oil and Grease at internal Outfall 103 and total residual chlorine at Outfall 002. Since the ELGs are not directly applicable, these limitations would be considered to be case-by-case technology-based limitations established using best professional judgment (BPJ).

The applicable ELG limitations (taken from 40 CFR 423.12 and 423.13) are attached as **Appendix A.2.** and **Appendix A.3.** of this Fact Sheet.

The case-by-case technology-based effluent limits established using best professional judgment are discussed in more detail below in Section 5.3.3 and Section 5.3.5.

5.1.3 Monitoring Requirements at internal Outfall 503:

FGD wastestreams are common wastestreams at coal fired steam electric power generating facilities. It is generated when a wet scrubbing system is used to scrub pollutants, such as sulfur dioxide and mercury, from power plant air emissions. Flue gas desulfurization wastewater is often treated in a dedicated wastewater facility rather than through an existing wastewater treatment system. EPA has established effluent limitations guidelines (ELGs) applicable to FGD wastestreams under 40 CFR 423 - Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Source Category. However, as explained in Section 5.1.2, these ELGs are not directly applicable to the permittee. IDEM issued a letter on January 10, 2017 letter which stated it does not intend to use best professional judgment (BPJ) to apply the Steam Electric Power ELGs to the FGD wastestream.

IDEM does have an obligation under both the Clean Water Act and Indiana rules to evaluate the need for technology-based effluent limitations. Even though IDEM is not going to apply the Steam Electric Power ELGs to this FGD wastestream, it may be appropriate to require technology-based effluent limitations at this wastestream. The levels of toxic pollutants contained in the permittee’s FGD wastestream are outlined in the table below:

	Internal Outfall 503	
	Average Concentration	**Maximum Concentration**
Parameter	(mg/l unless noted)	
Arsenic	0.7	1.3
Cadmium	0.2	0.4
Chromium	3.4	4.9
Copper	1.5	14.7
Lead	0.9	1.7
Mercury (ng/l)	162,000	525,444
Nickel	2.0	3.6
Selenium	1.7	11
Zinc	10.7	17.3

*The above values were included with the monitoring data with the most recent renewal application.

The basins in the ash pond system are unlined, thus the pollutants in the FGD wastestream could potentially seep into the groundwater. The levels of mercury currently being discharged through Outfall 003 exceed water quality criteria for mercury. The flow of the FGD wastestream (internal Outfall 503) averages 0.32 MGD, while the flow of internal Outfall 103 averages 7.9 MGD. Based on a review of mercury concentrations throughout the facility, the FGD wastestream (Outfall 503) appears to be the largest contributor of mercury to Outfall 003. It is easier to effectively and efficiently treat a pollutant when it is more concentrated. The ash pond system currently used for treatment does provide a considerable amount of treatment, and the more dilute wastestreams discharging to the ash pond system also provide dilution for the FGD wastestream.

Pursuant to 327 IAC 5-2-10 and 5-5 (which implement 40 CFR 122.44, 125.3, and Section 402(a)(1) of the Clean Water Act (CWA)), in the absence of effluent limitations guidelines, technology-based effluent limits can be determined on a case-by-case basis using best professional judgment (BPJ).

Under 327 IAC 5-2-10(a)(6), when a permit is issued before EPA promulgates effluent limitations guidelines, it shall contain such limitations and other conditions that IDEM determines to be necessary to carry out those provisions of the Clean Water Act under 327 IAC 5-5-2(b) and Section 402(a)(1) of the Clean Water Act.

Under 327 IAC 5-5-2(b)(2), technology-based limits may be applied on a case-by-case basis under Section 402(a)(1) of the Clean Water Act if EPA promulgated effluent limitations are not available. In developing such case-by-case effluent limitations IDEM shall consider the appropriate technology of the category or class of point sources of which the applicant is member, based on all available information (including EPA draft or proposed development documents or guidance). In addition, the factors under 327 IAC 5-5-2(h)(1) must be considered. These factors are as follows:

(1) The following are requirements for BPT:

(A) The total cost of application of technology in relation to the effluent reduction benefits to be achieved from such application.

(B) The age of equipment and facilities involved.

(C) The process employed.

(D) The engineering aspects of the application of various types of control techniques.

(E) Process changes.

(F) Nonwater quality environmental impact, including energy requirements.

(2) The following are requirements for BCT:

(A) The reasonableness of the relationship between the costs of attaining a reduction in effluent and the effluent reduction benefits derived.

(B) The comparison of the cost and level of reduction of such pollutants from the discharge from publicly owned treatment works to the cost and level of reduction of such pollutants from a class or category of industrial sources.

(C) The age of equipment and facilities involved.

(D) The process employed.

(E) The engineering aspects of the application of various types of control techniques.

(F) Process changes.

(G) Nonwater quality environmental impact, including energy requirements.

(3) The following are requirements for BAT:

(A) The age of equipment and facilities involved.

(B) The process employed.

(C) The engineering aspects of the application of various types of control techniques.

(D) Process changes.

(E) The cost of achieving such effluent reduction.

(F) Nonwater quality environmental impact, including energy requirements~~.~~

The previous (2018) permit required the permittee to conduct an evaluation of the FGD wastestream and evaluate control techniques (such as chemical precipitation treatment) which are available to significantly reduce the pollutants present in the FGD wastestream. The permittee submitted the evaluation, titled *Wet Flue Gas Desulfurization Wastewater Best Practicable Technology Evaluation*, on December 21, 2021. Two treatment options were considered/reviewed in the evaluation and are described below.

Simplified Chemical Addition Option
The first option considered was a simplified chemical precipitation-based treatment. This approach involves using the existing WFGD Scrubber Waste Tank as a mixing point for dosing a coagulant into the FGD wastestream. The discharge pipe between the WFGD Scrubber Waste Tank would allow the additive to initiate reaction in the wastestream before it is discharged into Ash Pond A. The settling of targeted metals and suspended solids would occur in Ash Pond A. This approach relies on the additive contact time provided by existing collection and transfer equipment and the settling time provided by Ash Pond A. Precipitated metals and settled solids would be removed during periodic removal of ash during regularly scheduled maintenance.

New Wastewater Treatment Facility Option
The second option considered was the installation of a new wastewater treatment plant with two parallel treatment trains to provide redundancy when unit maintenance is required. Each treatment train was given a design flow of 350 gpm (0.5 MGD). The proposed WWTP would be installed adjacent to Ash Pond A, and would treat the FGD wastestream prior to discharging into Ash Pond A.

FGD Report Conclusions
The report concluded that the two treatment options could both reduce the quantity of metals and Total Suspended Solids (TSS) in the raw WFGD WW stream. The jar testing showed that the *simplified chemical addition option* could remove 25% more of the dissolved metals resulting in near 90% of Total Metals removal. This option is expected to have both lower total installation costs and operating costs with less chemicals and energy usage required than the *new wastewater treatment facility option*.

The *new wastewater treatment facility option* would further reduce the quantity of Total Metals and TSS and is estimated to remove up to 95% of both parameters. However, this option was estimated to cost significantly more compared to the *simplified chemical addition option,* and was therefore identified as the less desirable option.

At this time, the permittee has not installed any new treatment technologies in association with the FGD wastestream discharge. Therefore, monitoring requirements have been retained at internal Outfall 503 in order to provide data which will be used to further evaluate the FGD wastestream. A description of the parameters monitored at internal Outfall 503 is included in Section 5.3.9 below.

5.1.4 TBELs Applied at internal Outfall 703

As described above, although EPA's steam electric power generating source category effluent limitations guidelines (ELGs) are not applicable to this facility, the current and previous permits have used these ELGs to establish limitations in the permit. Since the ELGs are not applicable to the facility, these limitations would be considered to be case-by-case technology-based limitations established using best professional judgment (BPJ).

The effluent limitations guidelines which were applied at this outfall using BPJ are located at 40 CFR 423. Under 40 CFR 423.11(d), metal cleaning wastes is defined to mean "any wastewater resulting from cleaning [with or without chemical cleaning compounds] any metal process equipment including, but not limited to, boiler tube cleaning, boiler fireside cleaning, and air preheater cleaning." Limitations applicable to metal cleaning wastes are established in 40 CFR 423.12, subpart (b)(5) metal cleaning wastes and 40 CFR 423.13, subpart (e) chemical metal cleaning wastes. However, the permittee only discharges non-chemical metal cleaning wastes at this facility; therefore, the limitations found in 40 CFR 423.12, subpart (b)(5) metal cleaning wastes were applied.

The applicable ELG limitations (taken from 40 CFR 423.12) are attached as **Appendix A.4.** of this Fact Sheet.

A description of the parameters monitored at internal Outfall 703 is included in Section 5.3.11 below.

5.2 Water Quality-Based Effluent Limits (WQBELs)

WQBELs are designed to be protective of the beneficial uses of the receiving water and are independent of the available treatment technology. The WQBELs for this facility are based on the most stringent of the following for each pollutant:

a) Water quality criteria in 327 IAC 2-1-6 or developed under the procedures described in 327 IAC 2-1-8.2 through 8.7 and 327 IAC 2-1-8.9, and implementation procedures in 327 IAC 5; or
b) Water quality criteria established by the Ohio River Valley Water Sanitation Commission or ORSANCO, (ORSANCO "Pollution Control Standards for Discharges to the Ohio River", 2019 Revision), including the water quality criteria under Chapter 3 of these standards or developed under the procedures described in the Appendix of these standards and implementation procedures in these standards and 327 IAC 5.

Limitations are required for any parameter which has the reasonable potential to exceed a water quality criterion as determined using the procedures under 327 IAC 5-2-11.1(h).

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 TBELs based on federal effluent limitations guidelines or developed on a case-by-case basis using 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

A. Narrative Water Quality Based Limits

The narrative water quality criteria contained under 327 IAC 2-1-6(a)(1) and (2) have been included in this permit as narrative limits at all of the external outfalls to ensure that these narrative water quality criteria are met.

B. Posting of Outfall Marker

Under Chapter 5 of the ORSANCO "Pollution Control Standards for Discharges to the Ohio River", 2019 Revision, a marker must be posted on the stream bank at each outfall discharging directly to the Ohio River. The marker shall include the name of the permittee, the permit number, and the outfall number printed in letters not less than 2 inches in height and this marker shall be a minimum of 2 feet by 2 feet and shall be a minimum of 3 feet about ground level.

5.3.2 Outfall 001

Flow

The effluent flow is to be monitored in accordance with 327 IAC 5-2-13(a)(2).

Total Suspended Solids and Oil & Grease

Total Suspended Solids and Oil & Grease monitoring has been retained in this permit.

Bromide

Bromide monitoring has been retained in this permit due to the source and nature of the wastewater.

Copper

Based on the effluent data for this outfall, copper does demonstrate a reasonable potential to exceed (see 2025 WLA Report WLA002805, attached as Appendix B). However, the Monthly Average limit calculated in the 2025 WLA Report is less-stringent than the limit calculated in the previous (2018) WLA Report; therefore, the same Monthly Average limit that appears in the previous permit has been retained for this renewal:

Parameter	Monthly Average (mg/l)	Daily Maximum (mg/l)
Copper	0.036	0.057

Iron

In the previous (2018) permit, monitoring-only requirements were included for Iron. However, the 2025 WLA Report does demonstrate a reasonable potential to exceed for Iron. Therefore, the following WQBELs have been included in this permit:

Parameter	**Monthly Average (mg/l)**	**Daily Maximum (mg/l)**
Iron	3.8	5.5

Mercury

Based on the effluent data for this outfall, mercury does demonstrate a reasonable potential to exceed (see 2025 WLA Report WLA002805, attached as Appendix B). Therefore, the following WQBELs have been included in this permit:

Parameter	**Monthly Average (ng/l)**	**Daily Maximum (ng/l)**
Mercury	12	20

Zinc

Based on the effluent data for this outfall, Zinc does not demonstrate a reasonable potential to exceed (see the 2025 WLA Report WLA002805, attached as Appendix B). However, due to the source and nature of the discharge, the following WQBELs have been included in this permit. The Monthly Average limit calculated in the 2025 WLA Report is less-stringent than the limit calculated in the previous (2018) WLA Report; therefore, the same Monthly Average limit that appears in the previous permit has been retained for this renewal:

Parameter	**Monthly Average (mg/l)**	**Daily Maximum (mg/l)**
Zinc	0.61	0.96

Discharge Duration

The current permit requires the number of minutes and total number of hours the outfall has discharged during the month to be reported, since this outfall is an intermittent outfall which also discharges untreated process wastewater. IDEM is proposing to retain this requirement and also require that the reason for each discharge also be reported (such as precipitation or pump failure).

pH

Discharges to waters of the state are limited to the range of 6.0-9.0 s.u., in accordance with 327 IAC 2-1-6(b)(2).

5.3.3 Outfall 002

Flow

The effluent flow is to be monitored in accordance with 327 IAC 5-2-13(a)(2).

Oil & Grease

Oil & grease monitoring has been retained in this permit. To ensure no significant quantities of oil and grease are discharged, a footnote has been included in the permit stating that if oil and grease is detected in significant quantities (> 5 mg/L), the source of the oil and grease is to be investigated and eliminated. The 5 mg/l concentration level established in the footnote is not an effluent limitation; instead, it is considered an action level, established at the level of quantitation for the parameter. Since the outfall is almost exclusively non-contact cooling water, no oil and grease is anticipated to be present in the discharge.

Total Residual Chlorine

The permittee currently uses chlorine-based water treatment additives as a biocide to control biofouling on the condenser tubes.

The permit includes two sets of total residual chlorine limits (continuous and intermittent), which are summarized below:

<u>Continuous</u>

If the chlorine discharge does not meet the definition of “intermittent” established under 327 IAC 2-1-6(a)(3) Table 6-1, then water quality-based effluent limits for total residual chlorine of 0.016 mg/l monthly average and 0.038 mg/l daily maximum would be applicable. These limits are the same as the “continuous” total residual chlorine limits that were in the previous (2018) permit.

<u>Intermittent</u>

Indiana has established a water quality criterion for intermittent total residual chlorine of 0.2 mg/l as a 4-day average aquatic life criterion under 327 IAC 2-1-6(a)(3) Table 6-1. To be considered an intermittent discharge for the criterion, total residual chlorine shall not be detected in the discharge for a period of more than 40 minutes in duration and such periods shall be separated by at least 5 hours. If the discharge of chlorine does meet the definition of “intermittent” established under 327 IAC 2-1-6(a)(3) Table 6-1; then, to ensure compliance with both the technology-based and the water quality-based requirements, the permit will establish a maximum limit of 0.2 mg/l which will be applicable during intermittent usage of total residual chlorine.

Pursuant to 327 IAC 5-2-11.1(f)(1), the permittee will be required to use an approved analytical methodology for total residual chlorine and the permit is required to contain certain conditions specified under this subsection of the rule. To ensure compliance with the intermittent total residual chlorine requirement, the permit will continue to place limits on the chlorination frequency (4 times/day) and chlorination dose duration (40 minutes per dose) which will be applicable when the permittee is chlorinating intermittently.

The above TRC limits, along with limits pertaining to the frequency and dose for chlorine applications, have been retained in the permit renewal.

Temperature/Thermal Requirements

This permit contains alternate thermal limitations and other requirements. The permittee submitted a Section 316(a) Variance Demonstration Study on December 20, 2017. During the previous (2018) renewal, IDEM was still in the process of reviewing the demonstration; therefore, IDEM carried forward the same thermal requirements that were in the 2013 permit. For this renewal, new alternative thermal limits have been implemented based on the Section 316(a) Variance Demonstration Study and a review of temperature data submitted by the permittee. If any additional revisions to the existing alternate thermal limitations are determined to be necessary, the permit will be modified or revoked and reissued to make these revisions. See Section 6.3.1 of this Fact Sheet for a detailed discussion of the thermal requirements applicable to this outfall.

IDEM has retained the requirement to report the plant capacity factor (% of total capacity) which has been a permit requirement since at least 1985. This information may be used to evaluate effluent and downstream temperature data.

A new interim and final Daily Maximum limit have been established for the temperature of the discharge in order to adhere to ORSANCO water quality standards.

pH

Discharges to waters of the state are limited to the range of 6.0-9.0 s.u., in accordance with 327 IAC 2-1-6(b)(2).

5.3.4 Outfall 003

Because of the proximity of the Ohio River, the permittee has not been able to install a permanent monitoring station at this outfall. Instead, except for mercury and whole effluent toxicity, the permit requires the values reported at this outfall to be based on a flow weighted calculation using the monitoring data obtained at internal Outfall 103 and 303. The samples for mercury and whole effluent toxicity are taken directly from Outfall 003.

Flow

The effluent flow is to be monitored in accordance with 327 IAC 5-2-13(a)(2).

Aluminum

Aluminum monitoring has been retained in this permit.
IDEM is in the process of adopting aquatic life criteria for aluminum under 327 IAC 2-1-6 (see second notice LSA document #14-58, Nov. 15, 2017 and EPA's December 2018 proposal:

https://www.epa.gov/wqc/aquatic-life-criteria-aluminum). Therefore, limits may be applied for aluminum in a future modification/renewal to reflect the updated criteria. The data reported associated with this outfall will be necessary to determine if a limitation will be necessary.

Bromide

Bromide monitoring has been retained in this permit due to the source and nature of the wastewater.

Total Residual Chlorine

The facility uses chlorinated water treatment additives which may be present in the discharge from Outfall 003 year-round; therefore, the following WQBELs were calculated in the most recent WLA Report WLA002805 and have been included in this permit at Outfall 003:

Parameter	**Quality or Concentration**	
	Monthly Average (mg/l)	**Daily Maximum (mg/l)**
Total Residual Chlorine	0.016	0.038

However, the calculated water quality-based effluent limitations for total residual chlorine are below the limit of quantitation (LOQ) and monitoring for the parameter takes place at internal Outfalls 103 and 303, not at this outfall. When a limit is less than the limit of quantitation, Indiana rules provide a mechanism for determining compliance with such limitations under 327 IAC 5-2-11.1(f). Under this rule, a measured effluent concentration less than the LOQ is in compliance with effluent limits that are less than the LOQ. However, in this case, concentrations of the pollutant are being measured separately at internal Outfalls 103 and 303. In this circumstance, the permittee could sample the effluent at internal Outfall 103 and find that it is above the LOQ, but when averaged with the discharge from internal Outfall 303, the calculated value reported at Outfall 003 could be less than the LOQ. Therefore, while the WQBELs appear at Outfall 003, but compliance will be evaluated at internal Outfalls 103 and 303, individually.

Copper

Based on the effluent data for this outfall, copper does not demonstrate a reasonable potential to exceed water quality-based effluent limitations (see the 2025 WLA Report WLA002805, attached as Appendix B). Due to the source and nature of the wastewater, copper monitoring has been retained in this permit and is consistent with the monitoring required at internal Outfalls 103 and 303.

Fluoride

Based on the effluent data for this outfall, fluoride does not demonstrate a reasonable potential to exceed water quality-based effluent limitations (see the 2025 WLA Report WLA002805, attached as Appendix B). Due to the source and nature of the wastewater, fluoride monitoring has been retained in this permit and is consistent with the monitoring required at internal Outfalls 103 and 303.

Manganese

Based on the effluent data for this outfall, manganese does not demonstrate a reasonable potential to exceed water quality-based effluent limitations (see WLA Report WLA002341, attached as Appendix B). However, due to the source and nature of the discharge, the following WQBELs have been retained in this permit:

Parameter	Quantity or Loading		Quality or Concentration	
	Monthly Average (lbs/day)	Daily Maximum (lbs/day)	Monthly Average (mg/l)	Daily Maximum (mg/l)
Manganese	120	240	1.5	3.0

Mercury

Based on the effluent data for this outfall, mercury does demonstrate a reasonable potential to exceed water quality-based effluent limitations (see WLA Report WLA002805, attached as Appendix B). Therefore, the following WQBELs have been included in this permit:

Parameter	Quantity or Loading		Quality or Concentration	
	Monthly Average (lbs/day)	Daily Maximum (lbs/day)	Monthly Average (ng/l)	Daily Maximum (ng/l)
Mercury	0.00094	0.0016	12	20

Whole Effluent Toxicity (WET)

Monitoring for whole effluent toxicity will be retained in this permit. See Section 5.4 below for more information about this requirement.

pH

pH will not be monitored or limited at Outfall 003. Since monitoring for pH occurs at internal Outfalls 103 and 303, and not at Outfall 003, the water quality-based effluent limitations or technology-based effluent limitations (whichever is more stringent) for pH will be imposed at internal Outfalls 103 and 303.

5.3.5 Internal Outfall 103

This is an internal outfall that discharges to Outfall 003. The primary wastestreams contributing to this outfall are from Alcoa's coal fired steam electric power plant.

The samples taken at this outfall are used (along with the samples taken at internal Outfall 303) to calculate the values to be reported at Outfall 003. Therefore, all parameters, except for mercury and whole effluent toxicity, which are reported at Outfall 003 must be monitored at this outfall.

Flow

The effluent flow is to be monitored in accordance with 327 IAC 5-2-13(a)(2). In addition, flow monitoring is required in order to calculate the values to be reported at Outfall 003.

Oil and Grease

In the 2013 permit, the TBEL limitations for O&G were revised to account for dilution of the regulated wastestream by other secondary wastestreams. The same limits were applied in the previous (2018) permit and have been retained in this permit.

Total Suspended Solids (TSS)

In the 2013 permit, the TBEL limitations for TSS were revised to account for dilution on the regulated wastestream by other secondary wastestreams. The same limits were applied in the previous (2018) permit and have been retained in this permit.

Oil and Grease and Total Suspended Solids (TSS) – Requirements when Dredging

In the previous permits, while the permittee is dredging the ash pond system that is part of the treatment system for the internal Outfall 103 wastestreams, the permit provided that the technology-based limitations for O&G and TSS at this outfall would not be applicable. This permit requires the permittee to notify IDEM in advance of any such dredging. This permit is retaining these provisions related to maintenance dredging of the ash pond system.

Aluminum

Aluminum monitoring has been retained in this permit. Monitoring is required at this outfall because these data are also used to calculate the values which are reported at Outfall 003.

Bromide

Bromide monitoring has been retained in this permit. Monitoring is required at this outfall because these data are also used to calculate the values which are reported at Outfall 003.

Total Residual Chlorine

The facility uses chlorinated water treatment additives which may be present in the discharge year-round, therefore, the discharge shall have limitations for TRC. Since the values at internal Outfalls 103 and 303 are combined to demonstrate compliance at Outfall 003, monitoring and reporting requirements have been applied at this outfall, and the WQBELs have been applied at Outfall 003.

The water quality-based effluent limitations for total residual chlorine at Outfall 003 are less than the limit of quantitation (LOQ) of 0.06 mg/l. If the measured concentration of total residual chlorine at this outfall is greater than the limit of detection (LOD) of 0.02 mg/l in any three (3) consecutive analyses, or any five (5) out of nine (9) analyses, then the discharger shall:

(1) Determine the source of the parameter through an evaluation of sampling techniques, analytical/laboratory procedures, and waste streams (including internal waste streams).

(2) The sampling and analysis for total residual chlorine (TRC) at both internal Outfalls 103 and 303 (and reporting at Outfall 003) shall be increased to 4 X Weekly and remain at this increased sampling frequency until:

(a) The increased sampling frequency for TRC has been in place for at least three weeks;
(b) At least nine (9) samples have been taken under this increased sampling frequency; and
(c) The measured concentration of TRC is less than the LOD specified in the table below in at least seven (7) out of the nine (9) most recent analyses.

(3) The following EPA test methods and/or Standard 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.

Parameter	Test Method	LOD	LOQ
Chlorine	4500-Cl-D-2000,E-2000 or G-2000	0.02 mg/l	0.06 mg/l

The permittee may determine a case-specific LOD or LOQ using the analytical method specified above, or any other test method which is approved by the Commissioner prior to use. The LOD shall be derived by the procedure specified for method detection limits contained in 40 CFR Part 136, Appendix B, and the LOQ shall be set equal to 3.18 times the LOD. Other methods may be used if first approved by the Commissioner.

Copper

Copper monitoring has been retained in this permit. Monitoring is required at this outfall because these data are also used to calculate the values which are reported at Outfall 003.

Fluoride

Fluoride monitoring has been retained in this permit. Monitoring is required at this outfall because these data are also used to calculate the values which are reported at Outfall 003.

Manganese

Manganese monitoring has been retained in this permit. Monitoring is required at this outfall because these data are also used to calculate the values which are reported at Outfall 003.

Antimony, Arsenic, Barium, Beryllium, Boron Calcium, Cadmium, Chloride, Chromium (VI), Chromium (Total), Cobalt, Lead, Lithium, Molybdenum, Radium 226 and 228 combined, Selenium, Sulfate, Thallium, and Total Dissolved Solids (TDS),

New monitoring requirements for these parameters has been included in this permit.

In accordance with similar facilities which discharge coal combustion residuals (CCRs), Boron, Calcium, Chloride, Sulfate, and Total Dissolved Solids (TDS) were selected for monitoring based on the list of constituents for detection monitoring of CCR contaminants found in 40 CFR 257 Appendix III. Fluoride and pH are also on this list but were not added since Fluoride and pH monitoring requirements/limits are already present at this outfall.

Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium (Total), Cobalt, Lead, Lithium, Molybdenum, Radium 226 and 228 combined, Selenium, and Thallium, were selected for monitoring based on the list of constituents for assessment monitoring of CCR contaminants found in 40 CFR 257 Appendix IV. Fluoride and Mercury are also on this list but were not added since monitoring requirements for both parameters are already present at this outfall. Chromium (VI) was selected for monitoring based on 329 IAC 10 under the discretion of the IDEM Office of Land Quality.

pH

The effluent pH is limited to between 6.0 and 9.0 s.u. These water quality-based effluent limits (WQBELs) limits are the same as those in the current permit and are considered sufficient to ensure compliance with 327 IAC 2-1-6(b)(2).

Ash Pond Seeps

The permittee has made IDEM aware that it does collect some seepage from Ash Pond A which is then pumped back into the ash ponds. Part I.A.4., Footnote [7] of the previous (2018) permit required the permittee to submit the results of a comprehensive survey which identifies any seeps.

The permittee submitted the results of the study on December 19, 2019. The study reviewed site conditions for Ash Pond A, Ash Pond B, Ash Pond C, Ash Pond D, and the Squaw Creek Impoundment. The report concluded that overall, all ash pond embankments are in good condition.

Ash Ponds B, C, and D did not show any signs of seepage, and the Squaw Creek Impoundment did not show any signs of distress, sloughing, or bulging. Ash Pond A had one small seep in the southwest corner (37° 55’ 4” N, 87° 20’ 31” W) which had been noted in previous inspections. The basin embankment and a 6-inch drainpipe with runs parallel to the southwestern portion of the basin are believed to be the source of the seepage. The seep was observed to be draining to an adjacent sump, where the wastewater was being pumped back into Ash Pond A. It was not believed that any of the seepage was draining directly to the Ohio River or any waters of the United States. The complete report can be found in Attachment E.

For this permit renewal, Footnote [8] has been included to ensure that inspection of the ash ponds continues as required by the Office of Land Quality (OLQ).

5.3.6 Internal Outfall 203

This is an internal outfall that discharges to internal Outfall 303 which discharges to Outfall 003. This outfall discharges treated effluent from a biological sanitary-type treatment plant. This sanitary treatment facility is not subject to the small sanitary discharge requirements under 327 IAC 5-10-5 since the discharge from the treatment plant is significantly larger than the maximum design flow of 0.05 MGD established in that rule. This facility is subject to the disinfection requirements established under 327 IAC 5-10-6.

Flow

The effluent flow is to be monitored in accordance with 327 IAC 5-2-13(a)(2).

pH, 5-day Carbonaceous Biochemical Oxygen Demand ($CBOD_5$) and Total Suspended Solids (TSS)

The following effluent limitations for pH, $CBOD_5$ and TSS have been retained from the previous permit. These limitations are case-by-case, technology-based effluent limitations established using best professional judgment pursuant to 327 IAC 5-2-10 and 5-5 (which implement 40 CFR 122.44, 125.3, and Section 402(a)(1) of the Clean Water Act (CWA)). Under both EPA regulations and Indiana rules, all sanitary discharges are required to meet secondary treatment requirements, which are the minimum level of effluent quality attainable by secondary treatment in terms of the parameters BOD_5, TSS and pH. IDEM has applied these secondary treatment requirements to other sanitary discharges from industrial facilities.

In addition, Chapter 5.4 of the Ohio River Valley Water Sanitation Commission or ORSANCO, “Pollution Control Standards for Discharges to the Ohio River”, 2019 Revision, establishes a minimum level of treatment for sewage. This provision establishes limits for $CBOD_5$, TSS, and pH which are the same as the secondary treatment requirements as well as bacteria (see below). The following proposed limits are the same as contained in the previous permit:

Parameter	Quality or Concentration	
	Monthly Average (mg/l)	Daily Maximum (mg/l)
$CBOD_5$	25	40
TSS	30	45
pH	Between 6.0 and 9.0 s.u.	

Disinfection and Total Residual Chlorine

Disinfection requirements applicable to sanitary dischargers are found in 327 IAC 5-10-6. This rule requires that sanitary wastewater discharges be disinfected from April 1 through October 31. The fecal coliform limitation required by ORSANCO's standards require year-round disinfection at this outfall. This disinfection rule does require dechlorination when chlorine is used as the disinfectant (chlorine is used at the disinfectant at this outfall). However, since the discharge volume of this sanitary wastestream is very small relative to the other wastestreams contributing to Outfall 003, requiring dechlorination at this outfall to meet WQBELs for total residual chlorine is not needed. However, total residual chlorine monitoring has been retained in this permit to ensure appropriate discharge concentrations are maintained.

E. coli bacteria and Fecal Coliform

Chapter 5.4.A.4. of the Ohio River Valley Water Sanitation Commission or ORSANCO, (ORSANCO "Pollution Control Standards for Discharges to the Ohio River", 2019 Revision), establishes a minimum level of treatment for sewage. This provision establishes limits for fecal coliform and *E. coli* bacteria.

In addition, the disinfection requirements applicable to sanitary discharges established under 327 IAC 5-10-6 is applicable to this discharge. Under Subsection (e) of this rule, limitations are established for *E. coli* bacteria. The requirements for *E. coli* under 327 IAC 5-10-6(e) are the same as the requirements established under 327 IAC 2-1-6(d)(5).

Source	Bacteria Limitations/Requirements
Chapter 5.4.A.4.i.; ORSANCO	The geometric mean of the fecal coliform bacteria content of effluent samples collected in a month shall not exceed 2,000/100 mL
Chapter 5.4.A.4.ii.; ORSANCO	During the months of April through October, the geometric mean of the E. coli bacteria content of effluent samples collected in a 90-day period shall not exceed 130/100 mL, and no more than 25 percent of the values shall exceed 240/100 mL.
327 IAC 2-1-6(d)(5); and 327 IAC 5-10-6(e)	During the months of April through October, sanitary wastewater dischargers shall ensure the following: (1) The concentration of E. coli in the undiluted discharge does not exceed one hundred twenty-five (125) cfu or MPN per one hundred (100) milliliters as a geometric mean of the effluent samples taken in a calendar month. (2) Not more than ten percent (10%) of all samples when not less than ten (10) samples are taken and analyzed for E. coli in a calendar month exceed two hundred thirty-five (235) cfu or MPN per one hundred (100) milliliters as a daily maximum. Under this subdivision, the calculation of ten percent (10%) of the samples taken shall be limited to the lowest whole number result.

The *E. coli* requirements established in the Indiana rules are more stringent than the ORSANCO *E. coli* requirements; therefore, they will be included in the permit. The fecal coliform limit contained in the ORSANCO standards is included in the permit; however, since the *E. coli* requirements will be in effect from April through October, the fecal coliform requirements will only be applied from November through March. These *E. coli* and fecal coliform limits have been retained from the previous permit.

pH

The effluent pH is limited to between 6.0 and 9.0 s.u. These water quality-based effluent limits (WQBELs) limits are the same as those in the current permit and are considered sufficient to ensure compliance with 327 IAC 2-1-6(b)(2).

5.3.7 Internal Outfall 303

Flow

The effluent flow is to be monitored in accordance with 327 IAC 5-2-13(a)(2). Also, flow monitoring is required in order to calculate the values to be reported at Outfall 003 and internal Outfall 603.

Aluminum, Bromide, Copper, Fluoride, Manganese, Mercury

Monitoring and reporting for these parameters is required because these data are also used to calculate the values reported at Outfall 003. Aluminum is also reported at Outfall 603.

Oil & Grease, Total Suspended Solids, Antimony, Total Chromium, Total Cyanide, Fluoride, Nickel, Zinc

Monitoring and reporting for these parameters are required at this outfall because these data are also used to calculate the values to be reported at internal Outfall 603.

Dredging Requirements: Oil & Grease, Total Suspended Solids, Aluminum, Antimony, Total Chromium, Total Cyanide, Fluoride, Nickel, Zinc

In the previous (2018) permit, while dredging is ongoing, the data collected at this outfall for the parameters being monitored to determine compliance with the production-based limits at internal Outfall 603, were not used to determine compliance at internal Outfall 603. The permit required the parameters to be monitored at the same frequency whether or not dredging is occurring, but the data collected during dredging is reported separately. The permit required the permittee to notify IDEM in advance of any such dredging. This renewal permit proposes to retain these provisions related to maintenance dredging.

Total Residual Chlorine

The facility uses chlorinated water treatment additives which may be present in the discharge from Outfall 003 year-round, therefore, the discharge shall have limitations for TRC. Since the values at internal Outfalls 103 and 303 are combined to demonstrate compliance at Outfall 003, monitoring and reporting requirements have been applied at this outfall, and the WQBELs have been applied at Outfall 003.

The water quality-based effluent limitations for total residual chlorine at Outfall 003 are less than the limit of quantitation (LOQ) of 0.06 mg/l. If the measured concentration of total residual chlorine at this outfall is greater than the limit of detection (LOD) of 0.02 mg/l in any three (3) consecutive analyses, or any five (5) out of nine (9) analyses, then the discharger shall:

(1) Determine the source of the parameter through an evaluation of sampling techniques, analytical/laboratory procedures, and waste streams (including internal waste streams).

(2) The sampling and analysis for total residual chlorine (TRC) at both internal Outfalls 103 and 303 (and reporting at Outfall 003) shall be increased to 4 X Weekly and remain at this increased sampling frequency until:

(a) The increased sampling frequency for TRC has been in place for at least three weeks;
(b) At least nine (9) samples have been taken under this increased sampling frequency; and
(c) The measured concentration of TRC is less than the LOD specified in the table below in at least seven (7) out of the nine (9) most recent analyses.

(3) The following EPA test methods and/or Standard 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.

Parameter	Test Method	LOD	LOQ
Chlorine	4500-Cl-D-2000,E-2000 or G-2000	0.02 mg/l	0.06 mg/l

The permittee may determine a case-specific LOD or LOQ using the analytical method specified above, or any other test method which is approved by the Commissioner prior to use. The LOD shall be derived by the procedure specified for method detection limits contained in 40 CFR Part 136, Appendix B, and the LOQ shall be set equal to 3.18 times the LOD. Other methods may be used if first approved by the Commissioner.

pH

The pH limits included at this outfall are reflective of the permit modification issued by this Office on November 5, 2021. Based on correspondence received from the permittee on December 12, 2024, the pH sampling point used to demonstrate compliance has been relocated upstream of internal Outfall 303 immediately after the discharge point for the ingot casting cooling water system blowdown.

Therefore, updated pH limits of 6.0 and 9.0 (in accordance with 40 CFR 421.22) have been applied at internal Outfall 303, and compliance with these limits is demonstrated at the upstream sampling point.

5.3.8 Internal Outfall 403

This is an internal outfall that discharges to internal Outfall 103 (after being used in the flue gas desulfurization scrubbers and discharged through internal Outfall 503) and ultimately to Outfall 003. The samples taken at this outfall (along with the samples taken at internal Outfall 303) are used to calculate the values to be reported at internal Outfall 603. Therefore, all parameters required to be reported at internal Outfall 603 are required to be monitored at his outfall.

Flow

The effluent flow is to be monitored as required by 327 IAC 5-2-13(a)(2). Also, flow monitoring is required in order to calculate the values to be reported at internal Outfall 603.

Oil & Grease, Total Suspended Solids, Aluminum, Antimony, Total Chromium, Total Cyanide, Fluoride, Nickel, Zinc

Monitoring for these parameters are required at this outfall because these data are used to calculate the values to be reported at internal Outfall 603.

pH

The pH limits included at this outfall are reflective of the permit modification issued by this Office on November 5, 2021. Based on correspondence received from the permittee on December 12, 2024, the pH sampling point used to demonstrate compliance has been relocated upstream of internal Outfall 403 immediately after the discharge point for the following process wastestreams:

- Building 871E Wastewater Treatment Facility effluent

- Building 879 Combined Spent Wash Treatment Facility and Building 879 Water-Based Coating Solution Treatment Facility effluent

Therefore, updated pH limits of 7.0 and 10.0 (in accordance with 40 CFR 467.22) have been applied at internal Outfall 403, and compliance with these limits is demonstrated at the upstream sampling points.

5.3.9 Internal Outfall 503

This is an internal outfall consisting primarily of flue gas desulfurization (FGD) wastewater that discharges to the ash pond system for treatment with the other wastestreams generated by the power plant, to internal Outfall 103 and ultimately to Outfall 003.

Flow

The effluent flow is to be monitored as required by 327 IAC 5-2-13(a)(2).

Oil and Grease and Total Suspended Solids

Oil and grease and total suspended solids are valuable indicators of process efficiency; therefore, monitoring requirements were included in the previous (2018) permit. These monitoring requirements have been retained in the renewal.

Arsenic, Cadmium, Total Chromium, Copper, Lead, Mercury, Nickel, Nitrate/Nitrite, Selenium, Total Dissolved Solids, Zinc

The previous (2018) permit included these eleven (11) pollutants of concern which are common in coal combustion wastewater and which were identified in previous permits. A review of the most recent monitoring data for these pollutants confirms they are present. Due to the source and nature of the wastewater, monitoring requirements have been retained in the renewal.

pH

The previous (2018) permit included permit limitations that required the discharge to be between 6.0 and 9.0 s.u. at all times. This requirement has been retained in the renewal.

5.3.10 Internal Outfall 603 – Administrative Outfall

This is an administrative outfall that does not physically exist. The permit requires the values reported at this outfall to be based on a flow-weighted calculation using the monitoring data obtained at internal Outfalls 303 and 403. The limitations at this outfall are established to implement the technology-based effluent limitations established in two EPA-promulgated effluent limitations guidelines (ELGs) applicable to this facility:

40 CFR 421, Nonferrous Metals Manufacturing Point Source Category, Subpart B - Primary Aluminum Smelting and;

40 CFR 467 Aluminum Forming Point Source Category, Subpart B - Rolling with Emulsions Subcategory.

Flow

The effluent flow is to be monitored as required by 327 IAC 5-2-13(a)(2). The effluent flow reported at this outfall is the sum of the effluent flows measured at Internal Outfalls 303 and 403. The permittee shall sample for Flow at Internal Outfalls 303 and 403 on the same day and calculate the Flow value to be reported at this outfall by using the following equation (F is flow):

$$F_{603} = F_{303} + F_{403}$$

Oil & Grease, Total Suspended Solids, Aluminum, Antimony, Total Chromium, Total Cyanide, Fluoride, Nickel, Zinc

IDEM has applied the below technology-based limits for each of the parameters at this outfall. The ELG limits and production-based calculations can be found in **Appendix A.1.**

Calculated Technology-based Effluent Limits		
Parameter	***Monthly Average (lbs/day)***	***Daily Maximum (lbs/day)***
Total Suspended Solids	4,500	9,100
Oil and Grease	450	750
Aluminum	24	51
Antimony	2.9	6.5
Total Chromium	0.86	2.1
Total Cyanide	0.58	1.4
Fluoride	89	200
Nickel	1.2	1.9
Zinc	2.9	6.9

For the above parameters, the permittee shall sample for the parameters at Internal Outfalls 303 and 403 on the same day and calculate the values to be reported at this outfall by using the following equation (M is mass):

$$M_{603} = M_{303} + M_{403}$$

5.3.11 Internal Outfall 703 – Administrative Outfall

This outfall was created during the previous (2018) permit renewal, and consists of non-chemical metal cleaning wastewater.

Flow

The effluent flow is to be monitored as required by 327 IAC 5-2-13(a)(2).

Oil and Grease, Total Suspended Solids, Copper, and Iron

The limits for the above parameters apply to metal cleaning wastes (40 CFR 423.12) and were included using BPJ. These limitations are retained from the previous permit.

5.3.12 Outfall 004

Flow

The effluent flow is to be monitored as required by 327 IAC 5-2-13(a)(2).

Oil & Grease and Total Suspended Solids

Monitoring and reporting requirements have been retained for these pollutants based on the source and nature of the wastewater.

Bromide

Bromide monitoring has been retained in this permit due to the source and nature of the wastewater.

Copper

Based on the effluent data for this outfall, Copper does demonstrate a reasonable potential to exceed (see the 2025 WLA Report WLA002805, attached as Appendix B). However, the Monthly Average limit calculated in the 2025 WLA Report is less-stringent than the limit calculated in the previous (2018) WLA Report; therefore, the same Monthly Average limit that appears in the previous permit has been retained for this renewal:

Parameter	**Quality or Concentration**	
	Monthly Average (mg/l)	**Daily Maximum (mg/l)**
Copper	0.036	0.057

Free Cyanide

In the previous (2018) permit, monitoring-only requirements were included for Free Cyanide. Based on the effluent data for this outfall, Free Cyanide does demonstrate a reasonable potential to exceed (see the 2025 WLA Report WLA002805, attached as Appendix B); therefore, the following limits have been included in this permit:

Parameter	**Monthly Average (mg/l)**	**Daily Maximum (mg/l)**
Free Cyanide	0.030	0.044

Iron

In the previous (2018) permit, monitoring-only requirements were included for Iron. Based on the effluent data for this outfall, Iron does demonstrate a reasonable potential to exceed (see the 2025 WLA Report WLA002805, attached as Appendix B); therefore, the following limits have been included in this permit:

Parameter	**Monthly Average (mg/l)**	**Daily Maximum (mg/l)**
Iron	3.8	5.5

Mercury

In the previous (2018) permit, monitoring-only requirements were included for Mercury. Based on the effluent data for this outfall, Mercury does demonstrate a reasonable potential to exceed (see the 2025 WLA Report WLA002805, attached as Appendix B); therefore, the following limits have been included in this permit:

Parameter	**Quality or Concentration**	
	Monthly Average (ng/l)	**Daily Maximum (ng/l)**
Mercury	12	20

Zinc

Monitoring for zinc is required by the current permit. Based on the effluent data for this outfall, Zinc does demonstrate a reasonable potential to exceed (see the 2025 WLA Report WLA002805, attached as Appendix B). However, the Monthly Average limit calculated in the 2025 WLA Report is less-stringent than the limit calculated in the previous (2018) WLA Report; therefore, the same Monthly Average limit that appears in the previous permit has been retained for this renewal:

Parameter	**Quality or Concentration**	
	Monthly Average (mg/l)	**Daily Maximum (mg/l)**
Zinc	0.61	1.0

Discharge Duration

The current permit requires the number of minutes and total number of hours the outfall has discharged during the month to be reported, since this outfall is an intermittent outfall which also discharges untreated process wastewater. IDEM is retaining this requirement and is also requiring that the reason for each discharge also be reported (i.e. precipitation or pump failure).

pH

The effluent pH is limited to between 6.0 and 9.0 s.u. to ensure compliance with 327 IAC 2-1-6(b)(2).

5.3.13 Outfall 005

Flow

The effluent flow is to be monitored as required by 327 IAC 5-2-13(a)(2).

Oil & Grease and Total Suspended Solids

Monitoring and reporting requirements have been retained for these pollutants based on the source and nature of the wastewater.

Aluminum

In the previous (2018) permit, monitoring-only requirements were included for Aluminum. In the 2025 WLA Report, Aluminum does not demonstrate a reasonable potential to exceed water quality-based effluent limitations for Aluminum. Due to the source and nature of the wastewater, aluminum monitoring has been retained in this permit.

Bromide

Bromide monitoring has been retained in this permit due to the source and nature of the wastewater.

Copper

Monitoring for copper is required by the current permit. Based on the effluent data for this outfall, Copper does demonstrate a reasonable potential to exceed water quality-based effluent limitations (see the 2025 WLA Report WLA002805, attached as Appendix B). However, the limits calculated in the 2025 WLA Report are less-stringent than those calculated in the previous (2018) WLA Report; therefore, the same limits that appear in the 2018 permit have been retained for this renewal. See below:

Parameter	**Quality or Concentration**	
	Monthly Average (mg/l)	**Daily Maximum (mg/l)**
Copper	0.036	0.062

Fluoride

In the previous (2018) permit, monitoring-only requirements were included for Fluoride. In the 2025 WLA Report, Fluoride does not demonstrate a reasonable potential to exceed water quality-based effluent limitations for Fluoride. Due to the source and nature of the wastewater, aluminum monitoring has been retained in this permit.

Mercury

Monitoring for mercury is required by the current permit.

Based on the effluent data for this outfall, Mercury does demonstrate a reasonable potential to exceed water quality-based effluent limitations (see the 2025 WLA Report WLA002805, attached as Appendix B); therefore, the following limits have been retained for this renewal. See below:

Parameter	**Quality or Concentration**	
	Monthly Average (ng/l)	**Daily Maximum (ng/l)**
Mercury	12	20

Zinc

Monitoring for zinc is required by the current permit. Based on the effluent data for this outfall, Zinc does demonstrate a reasonable potential to exceed water quality-based effluent limitations (see the 2025 WLA Report WLA002805, attached as Appendix B). However, the Monthly Average limit calculated in the 2025 WLA Report is less-stringent than the limit calculated in the previous (2018) WLA Report; therefore, the same Monthly Average limit that appears in the previous permit has been retained for this renewal:

Parameter	**Quality or Concentration**	
	Monthly Average (mg/l)	**Daily Maximum (mg/l)**
Zinc	0.61	1.0

Discharge Duration

The current permit requires the number of minutes and total number of hours the outfall has discharged during the month to be reported, since this outfall is an intermittent outfall which also discharges untreated process wastewater. IDEM is proposing to retain this requirement and also require that the reason for each discharge also be reported (such as precipitation or pump failure).

pH

The effluent pH is limited to between 6.0 and 9.0 s.u. to ensure compliance with 327 IAC 2-1-6(b)(2).

5.3.14 Outfall 001S

Outfall 001S is located in the same physical location as Outfall 001 and is intended to be representative of the portion of flow not captured by the Outfall 001 lift station sump. During non-stormwater conditions, Outfall 001S does not discharge and water is pumped to a series of sump pumps and ultimately to the ash pond system which discharges from internal Outfall 103. During light rain events, this discharge is limited to raw potable water from the potable water treatment plant, partially-treated water from the potable water treatment plant (groundwater that has been treated with potassium permanganate), and stormwater runoff from the power plant operations.

Flow

The effluent flow is to be monitored as required by 327 IAC 5-2-13(a)(2).

Oil and Grease, $CBOD_5$, COD, Total Suspended Solids, pH, Aluminum, Total Kjeldahl Nitrogen, Nitrate + Nitrite (as N), and Total Phosphorus

The November 5, 2021 permit modification incorporated 001S as a new stormwater outfall, and required monitoring for oil and grease (O&G), carbonaceous biochemical oxygen demand ($CBOD_5$), chemical oxygen demand (COD), total suspended solids (TSS), pH, aluminum, total kjeldahl nitrogen, nitrate + nitrite (as N) and total phosphorus. Monitoring for these parameters has been retained.

5.3.14 Outfall 006S

The discharge is limited to a combination of stormwater runoff from the cold rolling operations area and uncontaminated storm water from secondary containments in the cold rolling operations area. Discharge may also include wash water consisting of potable water used to wash down cooling tower screens (low flow, intermittent occurrence).

Flow

The effluent flow is to be monitored as required by 327 IAC 5-2-13(a)(2).

Oil and Grease, CBOD$_5$, COD, Total Suspended Solids, pH, Aluminum, Total Kjeldahl Nitrogen, Nitrate + Nitrite (as N), and Total Phosphorus

The 2018 permit required monitoring for oil and grease (O&G), carbonaceous biochemical oxygen demand (CBOD$_5$), chemical oxygen demand (COD), total suspended solids (TSS), pH, aluminum, total kjeldahl nitrogen, nitrate + nitrite (as N) and total phosphorus. This permit will continue the monitoring for these parameters.

Total Residual Chorine

On November 5, 2021, a permit modification was issued and new TRC limits were added at this outfall based on an investigation which demonstrated reasonable potential to exceed (RPE) water quality-based limits (WQBELs). These limits are 0.016 mg/l Monthly Average and 0.038 mg/l Daily Maximum and have been retained for the permit renewal.

5.3.15 Outfall 008S

The discharge is limited to stormwater runoff from a combination of grassy areas, roadways, and parking lots, and may include once through noncontact air conditioner chiller water from Building 01 (20 gpm) during the summer.

Flow

The effluent flow is to be monitored as required by 327 IAC 5-2-13(a)(2).

Oil and Grease, CBOD$_5$, COD, Total Suspended Solids, pH, Fluoride, Total Kjeldahl Nitrogen, Nitrate + Nitrite (as N), and Total Phosphorus

The current permit requires monitoring for oil and grease, carbonaceous biochemical oxygen demand (CBOD$_5$), chemical oxygen demand (COD), total suspended solids (TSS), pH, fluoride, total kjeldahl nitrogen, nitrate + nitrite (as N) and total phosphorus. This permit will continue the monitoring for these parameters.

Total Residual Chorine

On November 5, 2021, a permit modification was issued and new TRC limits were added at this outfall based on an investigation which demonstrated reasonable potential to exceed (RPE) water quality-based limits (WQBELs). These limits are 0.016 mg/l Monthly Average and 0.038 mg/l Daily Maximum and have been retained for the permit renewal.

5.3.16 Outfall 009S

Outfall 009S represents the discharge from Outfalls 009S, 013S, 036S, and 039S, each of which are limited to stormwater runoff from industrial activity.

Flow

The effluent flow is to be monitored as required by 327 IAC 5-2-13(a)(2).

Oil and Grease, $CBOD_5$, COD, Total Suspended Solids, pH, Aluminum, Iron, Total Kjeldahl Nitrogen, Nitrate + Nitrite (as N), and Total Phosphorus

The current permit requires monitoring for oil and grease, carbonaceous biochemical oxygen demand ($CBOD_5$), chemical oxygen demand (COD), total suspended solids (TSS), pH, aluminum, iron, total kjeldahl nitrogen, nitrate + nitrite (as N) and total phosphorus. This permit will continue the monitoring for these parameters.

5.3.17 Outfall 010S

The discharge is limited to a combination of stormwater runoff from light industrial-use areas, air conditioner condensate, potential water from the 820 cooling tower, cooling water, and incidental amounts of fire foam from the fire suppression system.

Flow

The effluent flow is to be monitored as required by 327 IAC 5-2-13(a)(2).

Oil and Grease, $CBOD_5$, COD, Total Suspended Solids, pH, Aluminum, Fluoride, Iron, Total Kjeldahl Nitrogen, Nitrate + Nitrite (as N), and Total Phosphorus

The current permit requires monitoring for oil and grease, carbonaceous biochemical oxygen demand ($CBOD_5$), chemical oxygen demand (COD), total suspended solids (TSS), pH, aluminum, fluoride, iron, total kjeldahl nitrogen, nitrate + nitrite (as N) and total phosphorus. This permit will continue the monitoring for these parameters.

Total Residual Chorine

On November 5, 2021, a permit modification was issued and new TRC limits were added at this outfall based on an investigation which demonstrated reasonable potential to exceed (RPE) water quality-based limits (WQBELs). These limits are 0.016 mg/l Monthly Average and 0.038 mg/l Daily Maximum, and have been retained for the permit renewal.

5.3.18 Outfall 011S

Outfall 011S represents the discharge from Outfalls 011S, 014S, 015S, 019S, 021S, 035S, 062S and 063S.

The discharge from 011S is limited to uncontaminated groundwater from monitoring wells at the landfills (011S, 014S, and 019S only), runoff from the on-site clean fill (014S and 015S only), and regular stormwater runoff from grassy areas, roadways, railways, and the on-site closed landfills (grassy cover).

Flow

The effluent flow is to be monitored as required by 327 IAC 5-2-13(a)(2).

Oil and Grease, $CBOD_5$, COD, Total Suspended Solids, pH, Aluminum, Fluoride, Iron, Total Kjeldahl Nitrogen, Nitrate + Nitrite (as N), and Total Phosphorus

The current permit requires monitoring for oil and grease, carbonaceous biochemical oxygen demand ($CBOD_5$), chemical oxygen demand (COD), total suspended solids (TSS), pH, aluminum, iron, fluoride, total kjeldahl nitrogen, nitrate + nitrite (as N) and total phosphorus. This permit will continue the monitoring for these parameters.

5.3.19 Outfall 012S

Outfall 012S represents the discharge from Outfalls 012S and 029S, each of which are limited to stormwater runoff from industrial activity.

Flow

The effluent flow is to be monitored as required by 327 IAC 5-2-13(a)(2).

Oil and Grease, $CBOD_5$, COD, Total Suspended Solids, pH, Aluminum, Fluoride, Iron, Total Kjeldahl Nitrogen, Nitrate + Nitrite (as N), and Total Phosphorus

The current permit requires monitoring for oil and grease, carbonaceous biochemical oxygen demand ($CBOD_5$), chemical oxygen demand (COD), total suspended solids (TSS), pH, aluminum, fluoride, iron, total kjeldahl nitrogen, nitrate + nitrite (as N) and total phosphorus. This permit will continue the monitoring for these parameters.

5.3.20 Outfall 020S

Outfall 020S represents the discharge from Outfalls 020S, 022S, 033S, and 034S, each of which are limited to stormwater runoff associated with industrial activity.

Flow

The effluent flow is to be monitored as required by 327 IAC 5-2-13(a)(2).

Oil and Grease, CBOD5, COD, Total Suspended Solids, pH, Aluminum, Fluoride, Iron, Total Kjeldahl Nitrogen, Nitrate + Nitrite (as N), and Total Phosphorus

The proposed permit will require monitoring for oil and grease, carbonaceous biochemical oxygen demand (CBOD5), chemical oxygen demand (COD), total suspended solids (TSS), pH, aluminum, fluoride, iron, total kjeldahl nitrogen, nitrate + nitrite (as N) and total phosphorus. These were the same parameters required at Outfall 022S, which is now part of this group of stormwater outfalls.

5.3.21 Outfall 023S

Outfall 023S represents the discharge from Outfalls 023S, 030S, and 040S through 060S, each of which are limited to stormwater associated with industrial activity.

Flow

The effluent flow is to be monitored as required by 327 IAC 5-2-13(a)(2).

Oil and Grease, $CBOD_5$, COD, Total Suspended Solids, pH, Aluminum, Fluoride, Iron, Total Kjeldahl Nitrogen, Nitrate + Nitrite (as N), and Total Phosphorus

The current permit requires monitoring for oil and grease, carbonaceous biochemical oxygen demand ($CBOD_5$), chemical oxygen demand (COD), total suspended solids (TSS), pH, aluminum, fluoride, iron, total kjeldahl nitrogen, nitrate + nitrite (as N) and total phosphorus. This permit will continue the monitoring for these parameters.

5.3.22 Outfall 025S

Outfall 025S represents the discharge from Outfalls 025S, 026S, 027S, 028S, 031S, and 032S, each of which are limited to stormwater associated with industrial activity.

Flow

The effluent flow is to be monitored as required by 327 IAC 5-2-13(a)(2).

Oil and Grease, $CBOD_5$, COD, Total Suspended Solids, pH, Aluminum, Fluoride, Iron, Total Kjeldahl Nitrogen, Nitrate + Nitrite (as N), and Total Phosphorus

The current permit requires monitoring for oil and grease, carbonaceous biochemical oxygen demand ($CBOD_5$), chemical oxygen demand (COD), total suspended solids (TSS), pH, aluminum, fluoride, iron, total kjeldahl nitrogen, nitrate + nitrite (as N) and total phosphorus. This permit will continue the monitoring for these parameters.

5.3.23 Outfall 037S

Outfall 037S represents the discharge from Outfalls 037S and 038S, each of which is limited to stormwater associated with industrial activity.

Flow

The effluent flow is to be monitored as required by 327 IAC 5-2-13(a)(2).

Oil and Grease, $CBOD_5$, COD, Total Suspended Solids, pH, Aluminum, Fluoride, Iron, Total Kjeldahl Nitrogen, Nitrate + Nitrite (as N), and Total Phosphorus

The current permit requires monitoring for oil and grease, carbonaceous biochemical oxygen demand ($CBOD_5$), chemical oxygen demand (COD), total suspended solids (TSS), pH, aluminum, fluoride, iron, total kjeldahl nitrogen, nitrate + nitrite (as N) and total phosphorus. This permit will continue the monitoring for these parameters.

5.3.24 Outfall 064S

Outfall 064S represents the discharge from Outfalls 064S, 007S, 016S, 017S, and 018S, each of which is limited to stormwater associated with industrial activity.

Flow

The effluent flow is to be monitored as required by 327 IAC 5-2-13(a)(2).

Oil and Grease, $CBOD_5$, COD, Total Suspended Solids, pH, Aluminum, Fluoride, Iron, Total Kjeldahl Nitrogen, Nitrate + Nitrite (as N), and Total Phosphorus

The current permit requires monitoring for oil and grease, carbonaceous biochemical oxygen demand ($CBOD_5$), chemical oxygen demand (COD), total suspended solids (TSS), pH, aluminum, fluoride, iron, total kjeldahl nitrogen, nitrate + nitrite (as N) and total phosphorus. This permit will continue the monitoring for these parameters.

5.4 Whole Effluent Toxicity (WET) Testing

Whole effluent toxicity (WET) test requirements are included in the NPDES permit at Outfall 003 to monitor compliance with the narrative water quality criteria under 327 IAC 2-1-6(a)(1)(E) and (a)(2). 327 IAC 2-1-6(a)(1)(E) requires all surface waters at all times and all places, including the mixing zone, to be free from substances, materials, etc. which are in amounts sufficient to be acutely toxic to or to otherwise severely injure or kill aquatic life, other animals, plants, or humans. 327 IAC 2-1-6(2) requires that all waters outside the mixing zone be free of 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. In addition, under 327 IAC 5-2-11.1(h), IDEM is required to determine whether the discharge causes, or has the reasonable potential to cause or contribute to a violation of these narrative water quality criteria.

WET testing requirements at Outfall 003 have been retained in the permit renewal. The permittee is required to conduct WET tests to determine the toxicity of the final effluent. The presence of WET testing at these outfalls 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 permittee is currently in compliance with WET testing requirements at Outfall 003 and does not have an open TRE at this time.

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 Monthly Average limits for copper and zinc at Outfall 001, 004, and 005 calculated as part of this permit renewal are less stringent than the comparable effluent limitations in the previous permit. Furthermore, none of the exceptions in 327 IAC 5-2-10(a)(11) that allow these less stringent limitations are applicable. Therefore, the limits for Monthly Average limits for copper and zinc at Outfall 001, 004, and 005 shall be retained from the previous permit.

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 submitted and approved in accordance 327 IAC 2-1.3-5 and 2-1.3-6.

This permit includes new or increased permit limitations for iron at 001; temperature at 002; and Free CN and iron at 004. In accordance with 327 IAC 2-1.3-1(b), the new or increased 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.

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) Codes 3334, 3353, and 4911 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.

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/idem/forms/idem-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 following is a list of water treatment additives currently approved for use at the facility:

Outfall 002			
System Feed Point	**Primary Product**	**Description of General Purpose**	**Date IDEM Approved**
Once Through Condenser Cooling Water	12 % Bleach	Bio control	----
Once Through Condenser Cooling Water	40% Sodium Bisulfite	Dechlorination	----

Internal Outfall 103			
System Feed Point	**Primary Product**	**Description of General Purpose**	**Date IDEM Approved**
Ash Pond Conveyance Ditch	Nalco 8136	Coagulate TSS	3/23/2017
Boiler Feed Water	Tri-ACT 1800	Corrosion Inhibitor	3/23/2017
Boiler Feed Water	Sur Gard 1700	Oxygen scavenger	3/23/2017
Boiler Feed Water	Nalco BT-3000	Boiler Water Treatment	3/23/2017
Boiler Feed Water (Units 1-3 only)	Anodamine	Corrosion Inhibitor	11/16/2022
Scrubber closed loop cooling system	Nalco 8338	Corrosion Inhibitor	----
Scrubber closed loop cooling system	Tri-ACT 1800	Corrosion Inhibitor	3/23/2017
Scrubber closed loop cooling system	Nalco BT-3000	Boiler water treatment	3/23/2017
Unit 1, 2, 3, & 4 pre-heater systems	Nalco 8338	Corrosion Inhibitor	----
Unit 1, 2, 3, & 4 pre-heater systems	Tri-ACT 1800	Corrosion Inhibitor	3/23/2017
Unit 1, 2, 3, & 4 pre-heater systems	Nalco BT-3000	Boiler water treatment	3/23/2017
High Temp Water Closed Loop	Potassium nitrite 25%	Corrosion Inhibitor	3/23/2017
Metal Cleaning WWT System	4%-50% NaOH	pH control	9/30/2016
Metal Cleaning WWT System	KLAIRAID PC1190	Coagulate Iron	9/30/2016
Metal Cleaning WWT System	NOVUS CE2680	Flocculant	10/14/2016
Metal Cleaning WWT System	POLYFLOC AE1125	Flocculant	10/14/2016
Metal Cleaning WWT System	KLARAID CDP1348	Coagulant	12/1/2016
703 Frac Tanks	Sodium Hypochlorite 12.5%		12/3/2021
Frac Tanks for Air Heat Wastewater Treatment, prior to internal Outfall 703 and 103	Sulfuric Acid		12/3/2021
Temporary Frac Tanks prior to discharge through internal Outfall 703	ChemTreat P813E		12/3/2021
Temporary Frac Tanks prior to discharge through internal Outfall 703 and ultimately Outfall 003	ChemTreat P890L	12/3/2021 Approved for Temp Frac Tanks Requesting ongoing use	
For tracing studies at the power plant potable water building and 001 sump	Fluorescein, disodium salt dehydrate	2/24/2022 Approved for Temp Study Requesting ongoing use	
The scrubber waste tank prior to Outfall 503	MetClear MR2435		3/30/2022
Power Plant Unit 4 Absorber	Redox-5545		4/20/2019
Deep well cleaning	Sodium Hypochlorite 12.5%	Approved for Temp use Requesting ongoing use	
Deep well cleaning	Sodium tripolyphosphate	Approved for Temp use Requesting ongoing use	
Deep well cleaning	Sulfamic acid	Approved for Temp use Requesting ongoing use	
Ash Pond Conveyance Ditch	Lime (calcium hydroxide)	pH adjustment	Approved,
Ash Pond Conveyance Ditch	NaOH (4% - 50%)	pH adjustment	Approved,
Ash Pond Conveyance Ditch	Sulfuric Acid	pH adjustment	Approved,
De-Mineralization Process System	Sulfuric Acid	Resin cleanser/conditioner	Approved
De-Mineralization Process System	Sodium Hydroxide	Resin cleanser/conditioner	Approved,

Internal Outfall 303			
System Feed Point	**Primary Product**	**Description of General Purpose**	**Date IDEM Approved**
134J Ingot Cooling Tower	3D Trasar 3DT179	Corrosion Inhibitor	3/23/2017
134J Ingot Cooling Tower	3D Trasar 3DT120	Cooling water treatment	3/23/2017
134J Ingot Cooling Tower	3D Trasar 3DT190	Cooling water treatment	3/23/2017
134J Ingot Cooling Tower	3D Trasar 3DT397	Casting water treatment	----
134J Ingot Cooling Tower	3D Trasar 3DT198	Cooling water treatment	3/23/2017
134J Ingot Cooling Tower	Nalco 1393	Scale Inhibitor	3/23/2017
134J Ingot Cooling Tower	Nalco 7348	Dispersant	3/23/2017
134J Ingot Cooling Tower	Nalco 7357	Corrosion Inhibitor	3/23/2017
134J Ingot Cooling Tower	Nalco 7396	Water stabilization	3/23/2017
134J Ingot Cooling Tower	CB-70	Cooling water treatment	3/23/2017
134J Ingot Cooling Tower	Bleach (Sodium Hypochlorite 12.5%)	Oxidative Biocide	8/22/2003
134J Ingot Cooling Tower	H550	Biocide for platen oil system, closed loop	8/22/2003
134J Ingot Cooling Tower	Nalco Permatreat PC-191T	Corrosion Inhibitor	5/28/2019
134J Ingot Cooling Tower	Nalco Permacare PC-7408 (sodium bisulfite)	Dechlorination	5/28/2019
134J Ingot Cooling Tower	Nalco 3DT397		
134J Ingot Clarifier	Nalco 8136	Coagulant	3/23/2017
Cooler Tower -311C, 816C2, 816C, 820F, 872, 872A	3D Trasar 3DT184	Corrosion Inhibitor	3/23/2017
Cooler Tower -311C, 816C2, 816C, 820F, 872, 872A	3D Trasar 3DT191	Cooling water treatment	3/23/2017
Cooler Tower -311C, 816C2, 816C, 820F, 872, 872A	3D Trasar 3DT265	Corrosion/Scale inhibitor	3/23/2017
Cooler Tower -311C, 816C2, 816C, 820F, 872, 872A	3D Trasar 3DT260	Multifunctional cooling water treatment	3/23/2017
Cooler Tower -311C, 816C2, 816C, 820F, 872, 872A	Nalco 73550	Dispersant	3/23/2017
Cooler Tower -311C, 816C2, 816C, 820F, 872, 872A	ControlBrom CB70	Cooling water treatment	3/23/2017
Cooler Tower -311C, 816C2, 816C, 820F, 872, 872A	Nalco 7346 Tab	Biocide	3/23/2017
Cooler Tower -311C, 816C2, 816C, 820F, 872, 872A	Bleach (Sodium Hypochlorite 12.5%)	Oxidative Biocide	8/22/2003
Cooler Tower -311C, 816C2, 816C, 820F, 872, 872A	Nalsperse 7348	Dispersant	3/23/2017
871 DI Process DI System	Nalco 7408	Chlorine Scavenger	3/23/2017
871 DI Process DI System	Sulfuric Acid	Resin cleanser/conditioner	1/1/2019
871 DI Process DI System	Sodium Hydroxide	Resin cleanser/conditioner	1/1/2019
871 E Oily Waste	RPA 723	Emulsion Beaker	5/29/2002
871 E Oily Waste	RPA 722	Emulsion Beaker	11/13/2002
871 E Oily Waste	RPA 430	Anionic Polymer	5/29/2002
871E Oily Waste	Nalco 71700	Dewatering aid	3/23/2017
871E Oily Waste	Ultrion 8157	Clarification aid	3/23/2017
871E Oily Waste	Nalclear 7766 plus	Flocculant	3/23/2017
871E Oily Waste	Nalclear 7768	Flocculant	3/23/2017
871E Oily Waste	Nalco 1404	Flocculant	3/23/2017
871E Oily Waste	H550	Biocide	8/22/2003
871E Oily Waste	Ferric Chloride	Coagulant	1/1/2019
871E Oily Waste	Sodium Hydroxide	pH adjustment	1/1/2019

Internal Outfall 303			
System Feed Point	Primary Product	Description of General Purpose	Date IDEM Approved
879A Acid / Chrome System	Nalclear 8182	Flocculant, sludge conditioner	3/23/2017
879A Acid / Chrome System	Nalclear 7763	Anionic Polymer	3/23/2017
879A Acid / Chrome System	Nalclear 7766 plus	Flocculant	3/23/2017
879A Acid / Chrome System	Nalclear 7767	Flocculant	3/23/2017
879A Acid / Chrome System	Nalclear 7768	Flocculant	3/23/2017
879A Acid / Chrome System	Nalclear 7769	Flocculant	9/6/2018
879A Acid / Chrome System	Bleach (Sodium Hypochlorite 12.5%)	Algae control during summer months	8/21/2003
879A Acid / Chrome System	Core Shell 71325	Flocculant	6/20/2018
879A Acid / Chrome System	Sodium Bisulfite	Chrome reducing agent	1/1/2019
879A Acid / Chrome System	Sulfuric Acid	pH adjustment	1/1/2019
879A Acid / Chrome System	Phosphoric Acid	pH adjustment	1/1/2019
879A Acid / Chrome System	Sulfamic Acid	Descaling agent	1/1/2019
879A Acid / Chrome System	Sodium Hydroxide	pH adjustment	1/1/2019
879A Acid / Chrome System	AE1123	Anionic Polymer	----
879A Acid / Chrome System	AE1702	Anionic Polymer	3/22/2023
879A Acid / Chrome System	Nalclear 7764	Anionic Polymer	----
879A Acid / Chrome System	Zalta MF3010	Anionic Polymer	6/19/2023
879W & 875 Bio Treat	Optimer 7139 Plus	Flocculant	3/23/2019
879W & 875 Bio Treat	Nalco 7465	Antifoam	3/23/2017
879W & 875 Bio Treat	Nalco 7468	Antifoam	6/20/2018
879W & 875 Bio Treat	Nalclear 7763	Cationic Polymer	3/23/2017
879W & 875 Bio Treat	Nalclear 7767	Flocculant	3/23/2017
879W & 875 Bio Treat	Sodium Hydroxide	pH adjustment	1/1/2019
879W & 875 Bio Treat	Nalco 1404	Flocculant	9/6/2018
879W & 875 Bio Treat	Sulfuric Acid	pH adjustment	1/1/2019
879W & 875 Bio Treat	Phosphoric Acid	Nutrients	1/1/2019
879W & 875 Bio Treat	Lime (calcium hydroxide)	pH adjustment	1/1/2019
879W & 875 Bio Treat	Urea	Nutrients	1/1/2019
879W & 875 Bio Treat	Carbon (Powdered Activated Carbon)	Adsorption	1/1/2019
879W & 875 Bio Treat	Ferric Chloride	Sludge Conditioner	1/1/2019
Closed Loop Cooling – All	Nalco 7320	Microorganism control	3/23/2017
Closed Loop Cooling – All	Nalco 7330	Biocide	3/23/2017
Closed Loop Cooling – All	Nalco 8338	Corrosion Inhibitor	3/23/2017
Closed Loop Cooling – All	Nalco TRAC104	Closed loop treatment	3/23/2017
Closed Loop Cooling - All	Nalco TRAC109	Closed loop treatment	3/23/2017
Evaporators	Nalco 1720	Oxygen Scavenger	3/23/2017
Evaporators	Tri-ACT 1820	Corrosion Inhibitor	3/23/2017
Evaporators	Tri-ACT 1800	Corrosion Inhibitor	3/23/2017
Evaporators	NexGuard 22310	Boiler water treatment	3/23/2017
Evaporators	NexGuard 22300	Boiler water treatment	3/23/2017
Evaporators	Sur Gard 1700	Oxygen Scavenger	3/23/2017
Stormwater Pond	Cutrine Plus	Algae control during summer months	3/29/2016
134J: Ingot Cooling Water System	Nalco Permacare PC-7408	Nalco Permacare PC-7408	5/28/2019
In the contact basin at the sewage treatment plant, immediately downstream of Outfall 203, prior to discharge into the discharge pool at Outfall 303	Enviro-C Dechlorination Tablets	Enviro-C Dechlorination Tablets, norweco	5/20/2022
Ingot East and West platen hydraulic lube system	H-550	Biocide	9/11/2024
Annual Fire Hydrant Testing	Enviro-C	Dechlorination	4/15/2024

Internal Outfall 303			
System Feed Point	**Primary Product**	**Description of General Purpose**	**Date IDEM Approved**
Evaporators	NexGuard 22300	Boiler water treatment	3/23/2017
Evaporators	Sur Gard 1700	Oxygen Scavenger	3/23/2017
Stormwater Pond	Cutrine Plus	Algae control during summer months	3/29/2016
134J: Ingot Cooling Water System	Nalco Permacare PC-7408	Nalco Permacare PC-7408	5/28/2019
In the contact basin at the sewage treatment plant, immediately downstream of Outfall 203, prior to discharge into the discharge pool at Outfall 303	Enviro-C Dechlorination Tablets	Enviro-C Dechlorination Tablets, norweco	5/20/2022
Ingot East and West platen hydraulic lube system	H-550	Biocide	9/11/2024
Annual Fire Hydrant Testing	Enviro-C	Dechlorination	4/15/2024

Internal Outfall 403			
Ingot East and West platen hydraulic lube system	H-550	Biocide	9/11/2024
Annual Fire Hydrant Testing	Enviro-C	Dechlorination	4/15/2024

Outfall 003			
System Feed Point	**Primary Product**	**Description of General Purpose**	**Date IDEM Approved**
Bldg. 879 Biological WWTP	Veolia FOAMTROL AF3566	Defoamer	12/5/2023
Bldg. 879 Chromic Acid WWTP	Nalco Nalclear 7764	Flocculant	12/6/2023
Ingot Casting Water	Nalco 3D Trasar 3DT398	Corrosion Inhibitor	1/3/2024
Bldg. 879 Chromic Acid WWTP	Solenis Zalta MF3010	Flocculant	6/19/2023
Boiler House Closed-Loop System	Nalco NexGuard 22300	Boiler Internal Treatment	9/11/2024
Boiler House Closed-Loop System	Nalco SUR-GARD 1700	Oxygen Scavenger	9/11/2024
Boiler House Closed-Loop System	Nalco Tri-ACT 1800	Corrosion Inhibitor	9/11/2024
Boiler House Closed-Loop System	Nalco 8338	Corrosion Inhibitor	9/11/2024
Boiler House Closed-Loop System	Nalco is 3D Trasar 3DT401	Corrosion Inhibitor	10/17/2024
Boiler House Closed-Loop System	Potassium Nitrite	Corrosion Inhibitor	10/10/2024

Outfall 004			
System Feed Point	**Primary Product**	**Description of General Purpose**	**Date IDEM Approved**
004 Sump Pit	Veolia Klaraid IC1172		2/16/2024
004 Sump Pit	Veolia Metclear MR2435		2/16/2024

Outfall 005			
System Feed Point	**Primary Product**	**Description of General Purpose**	**Date IDEM Approved**
005 Sump Pit	Veolia Klaraid IC1172		2/16/2024
005 Sump Pit	Veolia Metclear MR2435		2/16/2024

Internal Outfall 006S			
Annual Fire Hydrant Testing	Enviro-C	Dechlorination	4/15/2024

Internal Outfall 007S			
Annual Fire Hydrant Testing	Enviro-C	Dechlorination	4/15/2024

Internal Outfall 008S			
Annual Fire Hydrant Testing	Enviro-C	Dechlorination	4/15/2024

Internal Outfall 009S			
Annual Fire Hydrant Testing	Enviro-C	Dechlorination	4/15/2024

Internal Outfall 010S			
Annual Fire Hydrant Testing	Enviro-C	Dechlorination	4/15/2024

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), current ORSANCO requirements, 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.

The monitoring frequency proposed is comparable to the monitoring frequencies included in permits regulating similar types of discharges.

Outfall 001:

Parameter	Monthly Average	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow	Report	Report	MGD	Daily	24 Hr. Total
Oil and Grease	Report	Report	mg/l	3 X Quarterly	Grab
Total Suspended Solids	Report	Report	mg/l	3 X Quarterly	Grab
Bromide	Report Report	Report Report	mg/l lbs/day	3 X Quarterly	Grab
Copper	0.036 Report	0.057 Report	mg/l lbs/day	3 X Quarterly	Grab
Iron	3.8 Report	5.5 Report	mg/l lbs/day	3 X Quarterly	Grab
Mercury	12 Report	20 Report	ng/l lbs/day	2 x Quarterly	Grab
Zinc	0.61 Report	0.96 Report	mg/l lbs/day	3 X Quarterly	Grab

					Monitoring Requirements	
Parameter	Monthly Total	Units	Daily Total	Units	Measurement Frequency	Sample Type
Discharge Duration	Report	Hours/month	Report	Minutes/day	Daily	24-Hr Total

Parameter	Daily Minimum	Daily Maximum	Units	Minimum Frequency	Sample Type
pH	6.0	9.0	Std Units	3 X Quarterly	Grab

Outfall 002:

Parameter	Monthly Average	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow	Report	Report	MGD	Continuous	24 Hr. Total
Oil and Grease	----	Report	mg/l	1 X Monthly	Grab
Total Residual Chlorine					
Continuous	0.016	0.038	mg/l	Daily	Grab
Intermittent	----	0.2	mg/l	Daily	Grab
Chlorination					
Frequency	----	4	Times/ day	Daily	Report
Dose Duration	----	40	Min/ Dose	Daily	Report
Temperature					
Intake	----	Report	◦F	Continuous	Grab
Effluent	----	Report	◦F	Continuous	Grab
Mixed River Temperature	----	Report	◦F	Daily	Calculated
Delta T (ΔT)	----	5	◦F	Daily	Calculated
Plant Capacity Factor (% Total Capacity)	----	Report	%	1 X Monthly	Report
ORSANCO					
Interim	----	Report	◦F	Daily	Grab
Final	----	110	◦F	Daily	Grab

Parameter	Daily Minimum	Daily Maximum	Units	Minimum Frequency	Sample Type
pH	6.0	9.0	Std Units	3 X Weekly	Grab

Outfall 003:

Parameter	Monthly Average	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow	Report	Report	MGD	Continuous	24 Hr. Total
Aluminum	Report	Report	mg/l	2 x Monthly	24-Hr. Comp.
Bromide	Report	Report	mg/l	2 x Monthly	24-Hr. Comp.
Total Residual Chlorine	0.016	0.038	mg/l	3 X Weekly	Grab
Copper	Report	Report	mg/l	2 x Monthly	24-Hr. Comp.
Fluoride	Report	Report	mg/l	2 x Monthly	24-Hr. Comp.
Manganese	1.5 120	3.0 240	mg/l lbs/day	2 x Monthly	24-Hr. Comp.
Mercury	12 0.00094	20 0.0016	ng/l lbs/day	6 X Yearly	Grab
Whole Effluent Toxicity	See Part I.F. of the Permit				

Internal Outfall 103:

Parameter	Monthly Average	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow	Report	Report	MGD	Continuous	24 Hr. Total
Oil and Grease	10	15	mg/l	2 X Weekly	Grab
Oil & Grease Dredging	Report	Report	mg/l	2 X Weekly	Grab
Total Suspended Solids	28	94	mg/l	2 X Weekly	24-Hr. Comp.
TSS-Dredging	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Aluminum	Report Report	Report Report	mg/l lbs/day	2 X Monthly	24-Hr. Comp.
Bromide	Report Report	Report Report	mg/l lbs/day	2 X Monthly	24-Hr. Comp.
Total Residual Chlorine	Report	Report	mg/l	3 X Weekly	Grab
Copper	Report Report	Report Report	mg/l lbs/day	2 X Monthly	24-Hr. Comp.
Fluoride	Report Report	Report Report	mg/l lbs/day	2 X Monthly	24-Hr. Comp.
Manganese	Report Report	Report Report	mg/l lbs/day	2 X Monthly	24-Hr. Comp.

Parameter	Monthly Average	Daily Maximum	Units	Minimum Frequency	Sample Type
Antimony	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Arsenic	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Barium	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Beryllium	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Boron	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Calcium	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Cadmium	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Chloride	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Chromium (VI)	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Chromium, Total	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Cobalt	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Lead	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Lithium	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Molybdenum	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Radium 226 & 228 combined	Report	Report	pCi/L	1 X Monthly	24-Hr. Comp.
Selenium	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Sulfate	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Thallium	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.
Total Dissolved Solids (TDS)	Report	Report	mg/l	1 X Monthly	24-Hr. Comp.

Parameter	Daily Minimum	Daily Maximum	Units	Minimum Frequency	Sample Type
pH	6.0	9.0	Std Units	2 X Weekly	Grab

Internal Outfall 203:

Parameter	Monthly Average	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow	Report	Report	MGD	Continuous	24-Hr. Total
$CBOD_5$	25	40	mg/l	2 X Weekly	24-Hr. Comp.
Total Suspended Solids	30	45	mg/l	2 X Weekly	24-Hr. Comp.
Total Residual Chlorine	Report	Report	mg/l	2 X Weekly	Grab
E. coli	125	235	count/100ml	1 X Weekly	Grab
Fecal Coliform	2,000	----	count/100ml	1 X Weekly	Grab

Parameter	Daily Minimum	Daily Maximum	Units	Minimum Frequency	Sample Type
pH	6.0	9.0	Std Units	2 X Weekly	Grab

Internal Outfall 303:

Parameter	Monthly Average	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow	Report	Report	MGD	Continuous	24 Hr. Total
Oil and Grease	Report Report	Report Report	mg/l lbs/day	2 X Weekly	Grab
Total Suspended Solids	Report Report	Report Report	mg/l lbs/day	2 X Weekly	24-Hr. Comp.
Aluminum	Report Report	Report Report	mg/l lbs/day	2 X Weekly	24-Hr. Comp.
Antimony	Report Report	Report Report	mg/l lbs/day	2 X Weekly	24-Hr. Comp.
Bromide	Report Report	Report Report	mg/l lbs/day	2 X Monthly	24-Hr. Comp.
Total Residual Chlorine	Report	Report	mg/l	3 X Weekly	Grab
Total Chromium	Report Report	Report Report	mg/l lbs/day	2 X Weekly	24-Hr. Comp.
Copper	Report Report	Report Report	mg/l lbs/day	2 X Monthly	24-Hr. Comp.
Total Cyanide	Report Report	Report Report	mg/l lbs/day	2 X Weekly	24-Hr. Comp.
Fluoride	Report Report	Report Report	mg/l lbs/day	2 X Weekly	24-Hr. Comp.
Nickel	Report Report	Report Report	mg/l lbs/day	2 X Weekly	24-Hr. Comp.
Manganese	Report Report	Report Report	mg/l lbs/day	2 X Monthly	24-Hr. Comp.
Zinc	Report Report	Report Report	mg/l lbs/day	2 X Weekly	24-Hr. Comp.
Oil and Grease Dredging	Report Report	Report Report	mg/l lbs/day	2 X Weekly	Grab
TSS Dredging	Report Report	Report Report	mg/l lbs/day	2 X Weekly	24-Hr. Comp.
Aluminum Dredging	Report Report	Report Report	mg/l lbs/day	2 X Weekly	24-Hr. Comp.
Antimony Dredging	Report Report	Report Report	mg/l lbs/day	2 X Weekly	24-Hr. Comp.
Total Chromium Dredging	Report Report	Report Report	mg/l lbs/day	2 X Weekly	24-Hr. Comp.
Total Cyanide Dredging	Report Report	Report Report	mg/l lbs/day	2 X Weekly	24-Hr. Comp.
Fluoride Dredging	Report Report	Report Report	mg/l lbs/day	2 X Weekly	24-Hr. Comp.
Nickel Dredging	Report Report	Report Report	mg/l lbs/day	2 X Weekly	24-Hr. Comp.
Zinc Dredging	Report Report	Report Report	mg/l lbs/day	2 X Weekly	24-Hr. Comp.

Parameter	Daily Minimum	Daily Maximum	Units	Minimum Frequency	Sample Type
pH	6.0	9.0	Std Units	2 X Weekly	Grab

Internal Outfall 403:

Parameter	Monthly Average	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow	Report	Report	MGD	Continuous	24 Hr. Total
Oil and Grease	Report	Report	lbs/day	2 X Weekly	Grab
Total Suspended Solids	Report	Report	lbs/day	2 X Weekly	24-Hr. Comp.
Aluminum	Report	Report	lbs/day	2 X Weekly	24-Hr. Comp.
Antimony	Report	Report	lbs/day	2 X Weekly	24-Hr. Comp.
Total Chromium	Report	Report	lbs/day	2 X Weekly	24-Hr. Comp.
Total Cyanide	Report	Report	lbs/day	2 X Weekly	24-Hr. Comp.
Fluoride	Report	Report	lbs/day	2 X Weekly	24-Hr. Comp.
Nickel	Report	Report	lbs/day	2 X Weekly	24-Hr. Comp.
Zinc	Report	Report	lbs/day	2 X Weekly	24-Hr. Comp.

Parameter	Daily Minimum	Daily Maximum	Units	Minimum Frequency	Sample Type
pH	7.0	10.0	Std Units	2 X Weekly	Grab

Internal Outfall 503:

Parameter	Monthly Average	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow	Report	Report	MGD	Continuous	24-Hour Total
Oil and Grease	Report	Report	mg/l	2 X Monthly	Grab
Total Suspended Solids	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Total Dissolved Solids	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Arsenic	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Cadmium	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Total Chromium	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Copper	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Lead	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Mercury	Report Report	Report Report	mg/l lbs/day	6 X Yearly	Grab
Nickel	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Nitrate/nitrite	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Selenium	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.
Zinc	Report	Report	mg/l	2 X Monthly	24-Hr. Comp.

Parameter	Daily Minimum	Daily Maximum	Units	Minimum Frequency	Sample Type
pH	6.0	9.0	Std Units	2 X Monthly	Grab

Internal Outfall 603:

Parameter	Monthly Average	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow	Report	Report	MGD	Continuous	24 Hr. Total
Total Suspended Solids	4,500	9,100	lbs/day	2 X Weekly	24-Hr. Comp.
Oil and Grease	450	750	lbs/day	2 X Weekly	Grab
Aluminum	24	51	lbs/day	2 X Weekly	24-Hr. Comp.
Antimony	2.9	6.5	lbs/day	2 X Weekly	24-Hr. Comp.
Total Chromium	0.86	2.1	lbs/day	2 X Weekly	24-Hr. Comp.
Total Cyanide	0.58	1.4	lbs/day	2 X Weekly	24-Hr. Comp.
Fluoride	89	200	lbs/day	2 X Weekly	24-Hr. Comp.
Nickel	1.2	1.9	lbs/day	2 X Weekly	24-Hr. Comp.
Zinc	2.9	6.9	lbs/day	2 X Weekly	24-Hr. Comp.

Internal Outfall 703:

Parameter	Monthly Average	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow	Report	Report	MGD	Daily	24 Hr. Total
Oil and Grease	15	20	mg/l	Daily	Grab
Total Suspended Solids	30	100	mg/l	Daily	24-Hr. Comp.
Copper	1.0	1.0	mg/l	Daily	24-Hr. Comp.
Iron	1.0	1.0	mg/l	Daily	24-Hr. Comp.

Parameter	Daily Minimum	Daily Maximum	Units	Minimum Frequency	Sample Type
pH	6.0	9.0	Std Units	Daily	Grab

Outfall 004:

Parameter	Monthly Average	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow	Report	Report	MGD	Daily	24 Hr. Total
Oil and Grease	Report	Report	mg/l	2 X Quarterly	Grab
Total Suspended Solids	Report	Report	mg/l	2 X Quarterly	Grab
Bromide	Report Report	Report Report	mg/l lbs/day	2 X Quarterly	Grab
Copper	0.036 Report	0.057 Report	mg/l lbs/day	2 X Quarterly	Grab
Free Cyanide	0.030 Report	0.044 Report	mg/l lbs/day	2 X Quarterly	Grab
Iron	3.8 Report	5.5 Report	mg/l lbs/day	2 X Quarterly	Grab
Mercury	12 Report	20 Report	ng/l lbs/day	2 X Quarterly	Grab
Zinc	0.61 Report	0.96 Report	mg/l lbs/day	2 X Quarterly	Grab

					Monitoring Requirements	
Parameter	Monthly Total	Units	Daily Total	Units	Measurement Frequency	Sample Type
Discharge Duration	Report	Hours/month	Report	Minutes/day	Daily	24-Hr Total

Parameter	Daily Minimum	Daily Maximum	Units	Minimum Frequency	Sample Type
pH	6.0	9.0	Std Units	2 X Quarterly	Grab

Outfall 005:

Parameter	Monthly Average	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow	Report	Report	MGD	Continuous	24 Hr. Total
Oil and Grease	Report	Report	mg/l	2 X Quarterly	Grab
Total Suspended Solids	Report	Report	mg/l	2 X Quarterly	Grab
Aluminum	Report Report	Report Report	mg/l lbs/day	2 X Quarterly	Grab
Bromide	Report Report	Report Report	mg/l lbs/day	2 X Quarterly	Grab
Copper	0.036 Report	0.057 Report	mg/l lbs/day	2 X Quarterly	Grab
Fluoride	Report Report	Report Report	mg/l lbs/day	2 X Quarterly	Grab
Mercury	12 Report	20 Report	ng/l lbs/day	2 X Quarterly	Grab
Zinc	0.61 Report	0.96 Report	mg/l lbs/day	2 X Quarterly	Grab

					Monitoring Requirements	
Parameter	Monthly Total	Units	Daily Total	Units	Measurement Frequency	Sample Type
Discharge Duration	Report	Hours/month	Report	Minutes/day	Daily	24-Hr Total

Parameter	Daily Minimum	Daily Maximum	Units	Minimum Frequency	Sample Type
pH	6.0	9.0	Std Units	2 X Quarterly	Grab

Outfall 001S [representative of Outfall 001S only]:

Parameter	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow	Report	MGD	1 X Quarterly	Estimate Total
pH	Report	s.u.	1 X Annually	Grab
Oil and Grease	Report	mg/l	1 X Annually	Grab
Total Suspended Solids	Report	mg/l	1 X Quarterly	Grab
$CBOD_5$	Report	mg/l	1 X Annually	Grab
COD	Report	mg/l	1 X Annually	Grab
Aluminum	Report	mg/l	1 X Quarterly	Grab
Iron	Report	mg/l	1 X Quarterly	Grab
Total Kjeidahl Nitrogen	Report	mg/l	1 X Annually	Grab
Nitrate/nitrite	Report	mg/l	1 X Annually	Grab
Total Phosphorous	Report	mg/l	1 X Annually	Grab

Outfall 006S [representative of Outfall 006S only]:

Parameter	Monthly Average	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow	----	Report	MGD	1 X Quarterly	Estimate Total
pH	----	Report	s.u.	1 X Annually	Grab
Oil and Grease	----	Report	mg/l	1 X Quarterly	Grab
Total Suspended Solids	----	Report	mg/l	1 X Quarterly	Grab
$CBOD_5$	----	Report	mg/l	1 X Annually	Grab
COD	----	Report	mg/l	1 X Annually	Grab
Aluminum	----	Report	mg/l	1 X Quarterly	Grab
Total Residual Chlorine	0.016	0.038	mg/l	2 X Monthly	Grab
Total Kjeidahl Nitrogen	----	Report	mg/l	1 X Annually	Grab
Nitrate/nitrite	----	Report	mg/l	1 X Annually	Grab
Total Phosphorous	----	Report	mg/l	1 X Annually	Grab

Outfall 008S [representative of Outfall 008S only]:

Parameter	Monthly Average	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow	----	Report	MGD	1 X Quarterly	Estimate Total
pH	----	Report	s.u	1 X Annually	Grab
Oil and Grease	----	Report	mg/l	1 X Annually	Grab
Total Suspended Solids	----	Report	mg/l	1 X Quarterly	Grab
$CBOD_5$	----	Report	mg/l	1 X Annually	Grab
COD	----	Report	mg/l	1 X Annually	Grab
Total Residual Chlorine	0.016	0.038	mg/l	2 X Monthly	Grab
Fluoride	----	Report	mg/l	1 X Quarterly	Grab
Total Kjeidahl Nitrogen	----	Report	mg/l	1 X Annually	Grab
Nitrate/nitrite	----	Report	mg/l	1 X Annually	Grab
Total Phosphorous	----	Report	mg/l	1 X Annually	Grab
Temperature	----	Report	mg/l	Daily	Grab

Outfall 009S [representative of Outfalls 009S, 013S, 036S, and 039S]:

Parameter	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow	Report	MGD	1 X Quarterly	Estimate Total
pH	Report	s.u.	1 X Annually	Grab
Oil and Grease	Report	mg/l	1 X Annually	Grab
Total Suspended Solids	Report	mg/l	1 X Quarterly	Grab
$CBOD_5$	Report	mg/l	1 X Annually	Grab
COD	Report	mg/l	1 X Annually	Grab
Aluminum	Report	mg/l	1 X Quarterly	Grab
Iron	Report	mg/l	1 X Annually	Grab
Total Kjeidahl Nitrogen	Report	mg/l	1 X Annually	Grab
Nitrate/nitrite	Report	mg/l	1 X Annually	Grab
Total Phosphorous	Report	mg/l	1 X Annually	Grab

Outfall 010S [representative of Outfall 010S only]:

Parameter	Monthly Average	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow	----	Report	MGD	1 X Quarterly	Estimate Total
pH	----	Report	s.u.	1 X Annually	Grab
Oil and Grease	----	Report	mg/l	1 X Annually	Grab
Total Suspended Solids	----	Report	mg/l	1 X Quarterly	Grab
$CBOD_5$	----	Report	mg/l	1 X Annually	Grab
COD	----	Report	mg/l	1 X Annually	Grab
Aluminum	----	Report	mg/l	1 X Quarterly	Grab
Total Residual Chlorine	0.016	0.038	mg/l	2 X Monthly	Grab
Fluoride	----	Report	mg/l	1 X Quarterly	Grab
Iron	----	Report	mg/l	1 X Quarterly	Grab
Total Kjeidahl Nitrogen	----	Report	mg/l	1 X Annually	Grab
Nitrate/nitrite	----	Report	mg/l	1 X Annually	Grab
Total Phosphorous	----	Report	mg/l	1 X Annually	Grab

Outfall 011S [representative of Outfalls 011S, 014S, 015S, 019S, 021S, 035S, 062S, & 063S]:

Parameter	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow	Report	MGD	1 X Quarterly	Estimate Total
pH	Report	s.u.	1 X Annually	Grab
Oil and Grease	Report	mg/l	1 X Annually	Grab
Total Suspended Solids	Report	mg/l	1 X Quarterly	Grab
$CBOD_5$	Report	mg/l	1 X Annually	Grab
COD	Report	mg/l	1 X Annually	Grab
Aluminum	Report	mg/l	1 X Quarterly	Grab
Fluoride	Report	mg/l	1 X Quarterly	Grab
Iron	Report	mg/l	1 X Quarterly	Grab
Total Kjeidahl Nitrogen	Report	mg/l	1 X Annually	Grab
Nitrate/nitrite	Report	mg/l	1 X Annually	Grab

Total Phosphorous	Report	mg/l	1 X Annually	Grab

Outfall 012S [representative of Outfalls 012S and 029S]:

Parameter	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow	Report	MGD	1 X Quarterly	Estimate Total
pH	Report	s.u.	1 X Annually	Grab
Oil and Grease	Report	mg/l	1 X Annually	Grab
Total Suspended Solids	Report	mg/l	1 X Quarterly	Grab
$CBOD_5$	Report	mg/l	1 X Annually	Grab
COD	Report	mg/l	1 X Annually	Grab
Aluminum	Report	mg/l	1 X Quarterly	Grab
Fluoride	Report	mg/l	1 X Quarterly	Grab
Iron	Report	mg/l	1 X Quarterly	Grab
Total Kjeidahl Nitrogen	Report	mg/l	1 X Annually	Grab
Nitrate/nitrite	Report	mg/l	1 X Annually	Grab
Total Phosphorous	Report	mg/l	1 X Annually	Grab

Outfall 020S [representative of Outfalls 020S, 022S, 033S, and 034S]:

Parameter	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow	Report	MGD	1 X Quarterly	Estimate Total
pH	Report	s.u.	1 X Annually	Grab
Oil and Grease	Report	mg/l	1 X Annually	Grab
Total Suspended Solids	Report	mg/l	1 X Quarterly	Grab
$CBOD_5$	Report	mg/l	1 X Annually	Grab
COD	Report	mg/l	1 X Annually	Grab
Aluminum	Report	mg/l	1 X Quarterly	Grab
Fluoride	Report	mg/l	1 X Quarterly	Grab
Iron	Report	mg/l	1 X Quarterly	Grab
Total Kjeidahl Nitrogen	Report	mg/l	1 X Annually	Grab
Nitrate/nitrite	Report	mg/l	1 X Annually	Grab
Total Phosphorous	Report	mg/l	1 X Annually	Grab

Outfall 023S [representative of Outfalls 023S, 030S, and 040S through 060S]:

Parameter	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow	Report	MGD	1 X Quarterly	Estimate Total
pH	Report	s.u.	1 X Annually	Grab
Oil and Grease	Report	mg/l	1 X Annually	Grab
Total Suspended Solids	Report	mg/l	1 X Quarterly	Grab
$CBOD_5$	Report	mg/l	1 X Annually	Grab
COD	Report	mg/l	1 X Annually	Grab
Aluminum	Report	mg/l	1 X Quarterly	Grab
Fluoride	Report	mg/l	1 X Quarterly	Grab
Iron	Report	mg/l	1 X Quarterly	Grab

Total Kjeidahl Nitrogen	Report	mg/l	1 X Annually	Grab
Nitrate/nitrite	Report	mg/l	1 X Annually	Grab
Total Phosphorous	Report	mg/l	1 X Annually	Grab

Outfall 025S [representative of Outfalls 025S, 026S, 027S, 028S, 031S, and 032S]:

Parameter	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow	Report	MGD	1 X Quarterly	Estimate Total
pH	Report	s.u.	1 X Annually	Grab
Oil and Grease	Report	mg/l	1 X Annually	Grab
Total Suspended Solids	Report	mg/l	1 X Quarterly	Grab
$CBOD_5$	Report	mg/l	1 X Annually	Grab
COD	Report	mg/l	1 X Annually	Grab
Aluminum	Report	mg/l	1 X Quarterly	Grab
Fluoride	Report	mg/l	1 X Quarterly	Grab
Iron	Report	mg/l	1 X Quarterly	Grab
Total Kjeidahl Nitrogen	Report	mg/l	1 X Annually	Grab
Nitrate/nitrite	Report	mg/l	1 X Annually	Grab
Total Phosphorous	Report	mg/l	1 X Annually	Grab

Outfall 037S [representative of Outfalls 037S and 038S]:

Parameter	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow	Report	MGD	1 X Quarterly	Estimate Total
pH	Report	s.u.	1 X Annually	Grab
Oil and Grease	Report	mg/l	1 X Annually	Grab
Total Suspended Solids	Report	mg/l	1 X Quarterly	Grab
$CBOD_5$	Report	mg/l	1 X Annually	Grab
COD	Report	mg/l	1 X Annually	Grab
Aluminum	Report	mg/l	1 X Quarterly	Grab
Fluoride	Report	mg/l	1 X Quarterly	Grab
Iron	Report	mg/l	1 X Quarterly	Grab
Total Kjeidahl Nitrogen	Report	mg/l	1 X Annually	Grab
Nitrate/nitrite	Report	mg/l	1 X Annually	Grab
Total Phosphorous	Report	mg/l	1 X Annually	Grab

Outfall 064S [representative of Outfalls 064S, 007S, 016S, 017S, and 018S]:

Parameter	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow	Report	MGD	1 X Quarterly	Estimate Total
pH	Report	s.u.	1 X Annually	Grab
Oil and Grease	Report	mg/l	1 X Annually	Grab
Total Suspended Solids	Report	mg/l	1 X Quarterly	Grab
$CBOD_5$	Report	mg/l	1 X Annually	Grab
COD	Report	mg/l	1 X Annually	Grab
Aluminum	Report	mg/l	1 X Quarterly	Grab

Fluoride	Report	mg/l	1 X Quarterly	Grab
Iron	Report	mg/l	1 X Quarterly	Grab
Total Kjeidahl Nitrogen	Report	mg/l	1 X Annually	Grab
Nitrate/nitrite	Report	mg/l	1 X Annually	Grab
Total Phosphorous	Report	mg/l	1 X Annually	Grab

6.2 Schedule of Compliance

The circumstances in this NPDES permit do not qualify for a schedule of compliance.

6.3 Special Conditions and Other Permit Requirements

6.3.1 Clean Water Act (CWA) Section 316(a) Alternative Thermal Effluent Limitations

A. <u>Applicability, Purpose and Scope</u>

The information in this section is taken in large part from an October 28, 2008 memorandum from James A. Hanlon to Region 1-10 Water Division Directors regarding the implementation of Clean Water Act (CWA) Section 316(a) Thermal Variances in NPDES Permits. Section 316(a) of the CWA is applicable to point sources with thermal discharges. It authorizes the NPDES permitting authority to impose alternate effluent limitations for the control of the thermal component of a discharge in lieu of the effluent limitations that would otherwise be required.

Federal regulations implementing section 316(a) are codified at 40 CFR Part 125, subpart H; while Indiana has established rules implementing section 316(a) of the CWA at 327 IAC 5-7. These rules and regulations identify the criteria and processes for determining whether an alternate effluent limitation (i.e. a thermal variance from the otherwise applicable limits) may be included in a permit, and, if so, what that limit should be. This means that before a thermal variance can be granted, 327 IAC 5-7-3 and 4 (see also 40 CFR 125.72 and 125.73) require the permittee to demonstrate that the otherwise applicable thermal discharge effluent limit is more stringent than necessary to assure the protection and propagation of the waterbody's balanced indigenous community of shellfish, fish and wildlife.

The burden of proof is on the permittee to demonstrate that it is eligible to receive an alternative effluent limit under 316(a). In support of any proposed alternative thermal limit, the discharger must demonstrate that the alternative limit will assure protection of the waterbody's balanced indigenous population, considering the impacts of its thermal discharge together with all other significant impacts on the species affected. (see 327 IAC 5-7-4(a) and 40 CFR 125.73(a)) When applying for an alternative thermal limit, an applicant must submit the supporting information and demonstrations identified and described in 327 IAC 5-7-3 and 4 (see also 40 CFR 125.72 and 73). Among other things, the applicant must identify and describe (1) the requested alternative effluent limitation, (2) methodology used to support the limitation, (3) the organisms comprising the balanced indigenous community along with supporting data and information, and (4) the types of data, studies, experiments and other information the applicant intends to use to demonstrate that the alternative thermal limit assures the protection and propagation of the balanced indigenous community. 327 IAC 5-7-3(a) and (b) (see also 40 CFR 125.72(a) and (b)).

IDEM has developed a draft 316(a) guidance document, Guidance for Conducting a Demonstration as a Requirement of a 316(a) Alternative Thermal Effluent Limitation Request, March 2015; available at: https://www.in.gov/idem/cleanwater/resources/thermal-effluent-limitations/. For demonstrations conducted after the date of this guidance, dischargers shall take this guidance into consideration when preparing 316(a) study plans and conducting 316(a) demonstrations.

B. <u>Criteria and standards for the determination of ATELs</u>

Thermal discharge effluent limitations or standards established in permits may be less stringent than those required by applicable standards and limitations if the discharger demonstrates to the satisfaction of the IDEM that such effluent limitations are more stringent than necessary to assure the protection and propagation of a balanced, indigenous community of shellfish, fish and wildlife in and on the body of water into which the discharge is made. This demonstration must show that the alternative effluent limitation desired by the discharger, considering the cumulative impact of its thermal discharge together with all other significant impacts on the species affected, will ensure the protection and propagation of a balanced indigenous community of shellfish, fish and wildlife in and on the body of water into which the discharge is to be made.

Existing dischargers may base their demonstration upon the absence of prior appreciable harm in lieu of predictive studies in accordance with 327 IAC 5-7-5(c)(1). Any such demonstrations shall show: (i) That no appreciable harm has resulted from the normal component of the discharge (taking into account the interaction of such thermal component with other pollutants and the additive effect of other thermal sources to a balanced, indigenous community of shellfish, fish and wildlife in and on the body of water into which the discharge has been made; or (ii) That despite the occurrence of such previous harm, the desired alternative effluent limitations (or appropriate modifications thereof) will nevertheless ensure the protection and propagation of a balanced, indigenous community of shellfish, fish and wildlife in and on the body of water into which the discharge is made. In determining whether or not prior appreciable harm has occurred, the IDEM shall consider the length of time in which the applicant has been discharging and the nature of the discharge.

C. <u>The 316(a) Alternate Thermal Effluent Limitations Renewal Process</u>

A 316(a) variance is a permit condition. It expires along with the permit. A permittee may request renewal of its 316(a) variance prior to the expiration of the permit. Therefore, when the permittee submits its next NPDES permit renewal application, if the permittee still wants the 316(a) variance, it must also request renewal of its 316(a) variance. In accordance with the IDEM draft 316(a) guidance document, Guidance for Conducting a Demonstration as a Requirement of a 316(a) Alternative Thermal Effluent Limitation Request, March 2015; existing dischargers are required to conduct a new Type I Demonstration if they have not completed a Type I Demonstration within the past 10 years. At the time this permit is due for renewal, 10 years will have passed since the previous demonstration was completed. Therefore, IDEM will require a new demonstration to be completed and submitted prior to the next permit renewal.

D. Historical summary of Alternative Thermal Effluent Limitations for Warrick Newco LLC

In the previous (2018) permit, the permittee was assigned alternate thermal effluent limitations at Outfall 002. This section provides a summary of the history of these existing alternate thermal limitations as well as the legal authority for and requirements pertaining to such limits.

The 2013 permit required the permittee to submit a new 316(a) demonstration and the permittee submitted this demonstration in a letter dated December 20, 2017. The 2018 permit carried forward the same alternative thermal limits and included a requirement for the permittee to submit an updated version of the demonstration. During the 2018 permit period, the permittee did not submit any updates to the demonstration. The 2023 renewal application also did not include any updates to the demonstration, but instead requested that the December 20, 2017 demonstration be carried forward and that the same alternate thermal effluent limitations be applied to the renewal. At the request of IDEM, the permittee submitted an updated temperature dataset on April 29, 2024 which included temperature data for 2012 – 2023. Based on a review of the demonstration dated December 20, 2017 and the temperature data provided by the permittee, new alternative thermal effluent limitations are being included in this permit.

IDEM has proposed to institute new alternative thermal effluent limitations based on a new mixed river equation to calculate limits. If revisions to these alternate thermal limitations are determined to be necessary during the term of this permit, the permit will be modified or revoked and reissued to make such revisions.

Based on a review of the previous NPDES permits for Alcoa (1985, 2004, 2007, 2013 and 2018), the 2013 permit was the first permit to impose thermal effluent limitations. Earlier permits did require monitoring for temperature. In the mid-1970s Alcoa was granted permission to perform thermal plume studies to support a waiver from thermal requirements. The field work was performed on June 12, 1975, and again on August 27, 1975. The completed “Thermal Discharge Study” was submitted to U.S. EPA, Region V on or about December 29, 1975.

In a letter dated February 13, 2009 Alcoa informed IDEM of their recently completed “boiler optimization” project to supply the needed additional energy for the wet flue gas desulfurization scrubbers. The 2013 NPDES permit imposed an interim thermal limitation which required a maximum delta T (ΔT) of 5°F. The ΔT was to be determined by subtracting the upstream temperature from a calculated mixed river temperature. On May 28, 2015, the 2013 permit was modified to change this maximum ΔT from 5°F to 7°F until the new 316(a) demonstration study was completed. As stated above, the permittee submitted an updated demonstration in a letter dated December 20, 2017. However, a review of this demonstration was not completed during the 2018 permit renewal. Therefore, the limit of 7°F was carried forward from 2013 permit and applied to the 2018 permit. For this renewal, a new alternative thermal effluent limitation of a maximum ΔT of 5°F was established based on the latest 316(a) demonstration, updated mixed river calculations, and new temperature data submitted by the permittee on April 29, 2024.

E. Summary and Evaluation of December 20, 2017 316(a) Demonstration for Warrick Newco LLC

In the most recent permit renewal application, the permittee referenced the December 20, 2017 316(a) demonstration which was submitted prior to the 2018 permit renewal and asked that this demonstration be carried forward and used to support the continuation of the same alternate thermal effluent limitations. At the request of IDEM, the permittee also submitted ten years (2012 – 2023) of new temperature data on April 29, 2024. Based on a review of this data, IDEM has proposed to institute new alternative thermal effluent limitations based on a new mixed river equation.

F. <u>Thermal Limitations which would be Applicable in the Absence of a 316(a) Variance</u>

In absence of a 316(a) thermal variance, the following temperature limitations from 327 IAC 2-1-6(b)(4) would apply for direct discharge from Outfall 002 to the Ohio River:

(A) There shall be no abnormal temperature changes that may adversely affect aquatic life unless caused by natural conditions.
(B) The normal daily and seasonal temperature fluctuations that existed before the addition of heat due to other than natural causes must be maintained.
(C) The maximum temperature rise at any time or place above natural temperatures must not exceed:
(i) five (5) degrees Fahrenheit (two and eight-tenths (2.8) degrees Celsius) in streams; and
(ii) three (3) degrees Fahrenheit (one and seven-tenths (1.7) degrees Celsius) in lakes and reservoirs.
(D) Water temperatures must not exceed the maximum limits in the following table: (i) during more than one percent (1%) of the hours in the twelve (12) month period ending with any month; and (ii) by more than three (3) degrees Fahrenheit (one and seven-tenths (1.7) degrees Celsius):

Water Quality Based Effluent Limitations Table

	Ohio River Main Stem ◦F(◦C)
January	50 (10.0)
February	50 (10.0)
March	60 (15.6)
April	70 (21.1)
May	80 (26.7)
June	87 (30.6)
July	89 (31.7)
August	89 (31.7)
September	87 (30.7)
October	78 (25.6)
November	70 (21.1)
December	57 (14.0)

Further, the following temperature criteria from Chapter 3.2.C. of the Ohio River Valley Water Sanitation Commission or ORSANCO, “Pollution Control Standards for Discharges to the Ohio River”, 2019 Revision would also be applicable:

1. Human Health Protection: The maximum temperature at any location where public access is possible, whether inside or outside a mixing zone, shall not exceed 110 degrees F to protect human health caused by exposure resulting from water contact.

2. Aquatic Life Protection: To protect aquatic life, the following criteria shall be met outside the mixing zone:

Julian Day	Allowable Daily Maximum Stream Temperatures (◦F) (MP 606.9 to MP 981)
1 - 49	50.1 – 0.047 * Julian Day
50 - 166	34.8 + 0.269 * Julian Day
167 - 181	87
182 - 243	89
244 - 258	87
259 - 366	164.5 – 0.308 * Julian

Monthly averages of the daily maximum allowable stream temperatures (calculated using above criteria) may be used as permitting endpoints in place of daily criteria and are shown in the following table:

Allowable Monthly Average Stream Temperatures (MP 606.9 to MP 981)	
Month	**◦F(◦C)**
January	49.3 (9.6)
February	48.6 (9.2)
March	55.0 (12.8)
April	63.2 (17.3)
May	71.4 (21.9)
June 1-15	77.6 (25.3)
June 16-30	87.0 (30.6)
July	89.0 (31.7)
August	89.0 (31.7)
September 1-15	87.0 (30.6)
September 16-30	82.6 (28.1)
October	75.5 (24.2)
November	66.1 (19.0)
December	56.7 (13.7)

G. Proposed Thermal Limitations

In the previous (2018) renewal, IDEM noted that the permittee's updated 316(a) demonstration which was submitted in a letter dated December 20, 2017 was still under review. As such, the alternative thermal limitations which appeared in the 2018 permit were the same as the limitations in the 2013 permit. For this renewal, IDEM has proposed to establish updated alternative thermal limitations using a new mixed river equation. For the calculation of new alternative thermal limitations, the permittee submitted hourly temperature data collected between 2012 and 2023. See below:

1. The permittee’s power generating station has a generating capacity of approximately 823 MW. The generating capacity may not be expanded or increased unless prior approval is obtained from IDEM.

2. The permittee shall have a maximum ΔT of 5°F. In the renewal application, the permittee requested that the alternative temperature limit from the 2018 permit (ΔT of 7°F) be retained. However, a more stringent alternative thermal limit (ΔT of 5°F) has been implemented based on the most recent 316(a) Variance Demonstration Study and a review of the most recent (2012 – 2023) temperature data which demonstrate the permittee’s ability to comply with the new limit.

The ΔT shall be determined by subtracting the upstream (intake) temperature from the mixed river temperature using the following mixed river equation:

$$T_{mr} = T_U \frac{Q_e(T_e - T_u)}{0.5 * (Q_{7,10} - Q_I) + Q_e}$$

Where:

T_{mr} = mixed river temperature (°F)
T_u = upstream (intake) river temperature (°F)
T_e = effluent temperature as determined at the Outfall 002 (°F)
Q_e = Effluent flow (MGD) at Outfall 002
$Q_I = intake\ flow\ (MGD)$
$Q_{7,10} = 7{,}110\ (MGD)$

The current Ohio River Q7,10 flow at the facility is 11,000 cfs (7,110 MGD). Given the above, $\Delta T = T_U - T_{mr}$, which shall be reported daily as required by Part I.A.2. of the permit.

3. The following requirements are applicable to the determination of the temperatures used in the above equation, the calculation of the mixed river temperature and the reporting of all values. The permittee shall:

a. Collect the inlet temperature data from a series of thermocouples once per hour and record the average inlet (upstream) temperature reading for each hour.
b. Collect the outlet (effluent) temperature data from a series of thermocouples once per hour and record the average outlet temperature reading for each hour for each unit. Use flow-weighted averages of each unit to determine the average outlet (effluent) temperature for the discharge each hour.
c. Calculate the mixed river temperature for each hour using the average inlet and outlet temperatures for that hour and the above mixed river temperature formula.
d. Determine the maximum hourly inlet (upstream) temperature, the maximum hour outlet temperature, and the maximum hourly mixed river temperature for the calendar day and report this data on the MMR form as the daily max for the corresponding day.
e. The highest single daily max value for each parameter [inlet (upstream) temperature, outlet (effluent) temperature, mixed river temperature] for the month is reported on the monthly DMR form as the maximum value for the month.

H. Future Demonstration Requirements

A new CWA section 316(a) demonstration in accordance with 327 IAC 5-7 and Subpart H of 40 CFR 125 shall be submitted to IDEM no later than **one year** prior to the expiration date of this permit. The new 316(a) demonstration is necessary to support alternate thermal effluent limitations that might be requested as part of the next permit renewal.

1. Within 180 days of the effective date of this permit, the permittee applying for ATEL must submit a proposed 316(a) Type I, II, or III demonstration study plan to IDEM for review. The demonstration study plan must include a list of the proposed representative important species (RIS).

2. This proposed 316(a) demonstration study plan (and the completed demonstration) must conform to 327 IAC 5-7 and Subpart H of 40 CFR 125 and to the IDEM draft *Guidance for Conducting a Demonstration as a Requirement of a 316(a) Alternative Thermal Effluent Limitation Request*, March 2015. In addition, EPA has issued a draft CWA 316(a) guidance entitled "*Interagency 316(a) Technical Guidance Manual And Guide for Thermal Effects Sections of Nuclear Facilities Environmental Impact Statements*," 1977. Both of these guidance documents provide valuable information on conducting 316(a) demonstrations.

3. IDEM will review the proposed study plan, and may, based on its review, request additional information from the discharger to make the demonstration study plan complete. IDEM will also provide the discharger with the accepted RIS. When the study plan is complete and satisfies the requirements of the regulations and guidance, IDEM will inform the discharger in writing that the demonstration study plan is complete so that the discharger may begin the study.

4. The discharger must initiate the demonstration study within two (2) years of receiving notification from IDEM that the demonstration study plan is complete.

5. The discharger must submit the completed Type I, II, or III demonstration and application for alternate thermal effluent limits (ATEL) to IDEM for review at least one year prior to the expiration date of this permit. The application must be signed and certified by a responsible official in compliance with 327 IAC 5-2-22(a) and (d). The demonstration and application for ATEL will be reviewed by IDEM for completeness. A complete demonstration must include the following:

    a. A quantitative description and rationale for the proposed ATEL.

    b. The absence of prior appreciable harm assessment and RIS assessment supporting the proposed ATEL.

    c. All of the thermal and biological data collected during the demonstration and/or used to support the demonstration, provided in a format amenable for electronic data interfacing into the Office of Water Quality's External Data Framework of the Assessment Information Management System (AIMS). Summarized data and data compilations alone will NOT be accepted.

d. Executive summary of study findings.

e. Request for Thermal Mixing Zone. The thermal mixing zone request must specify the temperatures within and at the edge of the mixing zone and the proposed sizes of the mixing zones as applicable.

f. Any other information deemed necessary and developed by the discharger for the demonstration.

g. A delineation/model of the thermal plume under representative flow conditions based on in-stream temperature monitoring data, and with the proposed point of compliance for the proposed thermal limits.

h. Any additional studies conducted since the last demonstration was completed and an analysis of any changes from the previous assessments and conclusions.

6. Once a technical, regulatory and completeness review has been completed, IDEM will make a tentative decision to approve the ATEL, deny the ATEL, or approve a modified ATEL. The tentative decision will be included in a draft NPDES permit that is placed on public notice for a 30-day public comment period. The public notice will provide the proposed ATEL and the limitations that would have been required otherwise. A public hearing may be requested during the 30-day comment period.

7. IDEM will respond to all comments received during the 30-day comment period and from a public hearing, if applicable, and make a final decision regarding the ATEL. The final decision regarding the ATEL will be included in the final NPDES permit with the opportunity to appeal the final decision during the 18-day appeal period after the final permit is issued.

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

6.4.1 Introduction

In accordance with 40 CFR 401.14, the location, design, construction and capacity of cooling water intake structures of any point source for which a standard is established pursuant to section 301 or 306 of the Act shall reflect the best technology available 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 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)).

The Design Intake Flow (DIF) for Warrick Newco LLC is 576 MGD; this value has not changed from the previous permit.

The 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 permittee did not provide actual intake flow for the facility over this period. Based on historical actual intake flow data and recent effluent flow data, the AIF is greater than 125 MGD. According to the facility's 2018 316(b) permit, approximately 91% of the intake water is used for cooling purposes.

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 greater than 125 MGD, the permittee was required to submit the application information required by 40 CFR 122.21(r)(2) through (r)(13). The permittee submitted a permit renewal application on July 5, 2023, but it did not include an updated 316(b) application. Rather, the permittee requested that the previous (2018) 316(b) submission that included the information required by 40 CFR 122.21(r)(2) through (r)(13) be carried forward. The permittee stated that the information in the previous (2018) application should be carried forward since the new modified traveling screens were still being constructed when the 2023 application was submitted.

Pursuant to 40 CFR 125.95(c), the permittee may 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.

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.

No such request was received by IDEM. In the interest of proceeding with renewal of the permit, IDEM has requested and received updated information from the permittee during the renewal process to review alongside the previous (2018) 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.

For the previous (2018) 316(b) review and the 316(b) review for this renewal, a copy of the 316(b) application was sent to the Bloomington Field Office of the U.S. Fish and Wildlife. Mr. Daniel W. Sparks of U.S. Fish and Wildlife reviewed and commented on each of these applications (June 1, 2018 and January 31, 2025, respectively). These comments are discussed in the sections below.

Much of the factual and narrative information presented below was taken, sometimes directly, from the permittee's 2018 and 2023 316(b) applications.

6.4.2 Facility and Cooling Water Intake Structure (CWIS) Description

A. Detailed Description

The coal-fired steam electric generating facility (the Alcoa Warrick power plant or AWPP), which generates almost all of the power used at the Alcoa Warrick LLC smelter and rolling mill, is owned and operated by Alcoa Power Generating Inc. (referred to as "APGI" in this document). AWPP is a four-unit, 823-megawatt (MW), coal-fired power plant. The facility uses once-through (open-cycle) condenser cooling with the Ohio River as the source and receiver of cooling water. APGI wholly owns each of the four generating stations, which were placed into service in the early 1960s. Previously, Unit 4 (the largest unit), was jointly owned by APGI and Southern Indiana Gas and Electronic Company (SIGECO) d/b/a Vectren Energy Delivery of Indiana, Inc., a utility company. However, in 2024, SIGECO divested from the facility and sold complete ownership back to AGPI.

AWPP is a base-load industrial boiler station that generates continuous electricity throughout the year to supply power to the Warrick Newco manufacturing facility. In addition to electrical power, the power plant also provides potable water, steam, and high temperature water across the plant. These services are critical to the various production processes throughout the manufacturing facility. During 2023, approximately 37% of the capacity from the AWPP was sold into the market.

The AWPP is immediately upstream (approximately 2 river miles) of the Newburgh Lock and Dam on the Ohio River.

In the previous (2018) permit renewal, the permittee selected impingement mortality option 5 (*operate modified traveling screens*) at its preferred BTA approach for impingement. Under this option 5, a facility must operate a modified traveling screen that the Director determines meets the definition at §125.92(s) and that, after review of the information required in the *impingement technology performance optimization study* at 40 CFR 122.21(r)(6)(i), the Director determines is the best technology available for impingement reduction at the site.

During the previous (2018) permit period, the permittee submitted a Study Plan for the required *impingement technology performance optimization study.* IDEM approved the original Study Plan on January 5, 2024, and approved a revised Study Plan on February 16, 2024. The permittee during the 2018 permit period also began construction of new modified traveling screens and a fish return system to replace the existing traveling screens and fish return system. The new modified traveling screens and fish return system were completed on December 31, 2023. The sections below describe the intake system before and after installation of the new modified traveling screens and fish return system.

Cooling Water Intake Structure Layout/Location

The cooling water intake structure is located parallel with the shoreline of the Ohio River, and consists of an intake inlet channel, six (6) intake bays, six (6) flow-through intake screens, and eight (8) circulating water pumps. The intake inlet channel, consisting of nine (9) concrete caissons on each side, is approximately 120 feet long by 40 feet wide at the entrance. A floating, grated trash boom is employed at the entrance of the intake canal to physically exclude large debris from damaging the intake screens.

Intake Screens (replaced during the 2018 permit period)

The previous water intake structure utilized 10-foot-wide traveling water screens with 0.25-inch, woven-wire mesh with a fish and debris collection and return system. Organisms and debris which collected on the traveling screens were washed to a rectangular open sluice to an open channel that discharges to the Ohio River 350 feet downstream of the CWIS intake. The minimum effective submergence depth of the intake canal was estimated to be approximately 32 feet, based on the flat pool and the crest height of the Newburgh Lock and Dam (this estimate remains the same for current operations). Based on the design intake rate of 576 MGD and the minimum submergence depth, the maximum velocity in the intake channel was calculated at 0.70 feet per second (fps) and the maximum design through screen velocity was calculated to be 0.74 feet per second (fps).

As mentioned above, the permittee selected impingement mortality option 5 (*operate modified traveling screens*) in 2018 as its preferred BTA approach for impingement. It was determined that new modified traveling screens would need to be installed since the existing screens were not suited for retrofitting with collection buckets. During the design-selection phase, it was originally determined that the new modified traveling screens should feature 0.5 mm fine mesh in order to comply with entrainment mortality BTA. Due to concerns raised about the installation of 0.5 mm fine mesh screens, the 2018 permit required the permittee to submit a report evaluating different sized fine mesh modified traveling screens. The permittee submitted this report, titled *Social Costs and Benefits of Fine Mesh Screens at the Alcoa Warrick Power Plant*, dated June 28, 2019. A second report titled *Cylindrical Wedgewire Screens Constructability Study* dated March 6, 2020, was submitted by the permittee to address questions IDEM raised following a review of the first report. Based on its review of both reports, IDEM determined that the installation of new modified traveling screens (without fine mesh) was adequate for meeting BTA. Therefore, a permit modification was issued on November 5, 2021 which amended the BTA requirements and removed the 0.5 mm fine mesh requirement for the new modified traveling screens.

New Modified Traveling Screens, Fish Return System, and Fish Sampling System

The location, intake inlet channel, six (6) intake bays, and eight (8) circulating water pumps at the intake all remain the same. The installation of new modified traveling screens, fish return system, and fish sampling system were completed on December 31, 2023, and are described below.

The six (6) modified traveling screens consist of a smooth top wire mesh screen deck with a fish bucket attached to the screen face. Each of the screens can rotate intermittently or continuously while the intake is running. As the screens/buckets are lifted out of the water, aquatic life and impinged material are gently transferred into the buckets by gravity and with low-pressure sprays (approximately 5-20 pounds per square inch gauge [psig]). The screen and bucket system are engineered for the capture and retention of aquatic life while maintaining consistent flow and hydraulic conditions at the intake. The smooth-top, slotted open mesh design of the screens maximizes open area, thus reducing through-screen velocity and discouraging debris stapling (i.e. vegetation hooked on the inside and outside of the screen mesh).

Intake water which has collected in the fish bucket washes organisms/debris into a trough which flows to the Ohio River downstream of the intake. The new fish return trough is constructed of 16-inch and 24-inch HDPE half-pipe. The beginning of the trough features a 16-inch diameter half-pipe which is suspended from the intake building. The trough is designed to maintain a minimum water depth (approximately 4 inches) to ensure consistent transport of fish and aquatic organisms.

The trough has three 180 degree turns and four internal drops (<4 feet). The four internal drops were necessary to resolve the elevation from deck to existing grade while maintaining an in-pipe water velocity below 12 fps. The fourth internal drop connects to a 24-inch HDPE open half-pipe which travels for 40 ft before discharging to the Ohio River. Above-ground portions of the trough are equipped with covers to prevent the removal of aquatic life by predators such as birds. Splash guards have also been installed on the corners of the trough to ensure organisms and water remain within the channel.

The new fish sampling system is described below and was constructed for the purpose of carrying out impingement studies at the intake for the *impingement technology performance optimization study(IOTS).* See Section 6.4.5 below for a description of the IOTS study.

The fish sampling system consists of a series of diversions, troughs, piping, valving, and tanks which are installed in a small building adjacent to the intake system. The fish return trough which leads from the intake screens has a swing gate that can be opened to divert water and impinged material from the fish return trough to the sampling trough and sampling building. When sampling is not being conducted, the swing gate remains closed so that fish are transported directly to the Ohio River via the main fish return trough.

The sampling building contains a collection tank and a series of holding tanks. The collection tank (approximately 2 ft x 4 ft x 4 ft) has a wedgewire screen weir which reduces water velocity and prevents debris and organisms from reaching the tank drain. Debris and organisms are captured in a 3 ft x 3 ft framed nylon net which rests inside the collection tank. Live fish will be removed using handheld nylon dip nets and transferred to one of the 110-gallon polyethylene holding tanks. Each holding tank is equipped with a spray valve for adding water to the tank, an aeration system which provides dissolved oxygen, and a central overflow pipe which empties into the main fish return trough.

Figure 15: Aerial Schematic of the New CWIS and Fish Return/Sampling System

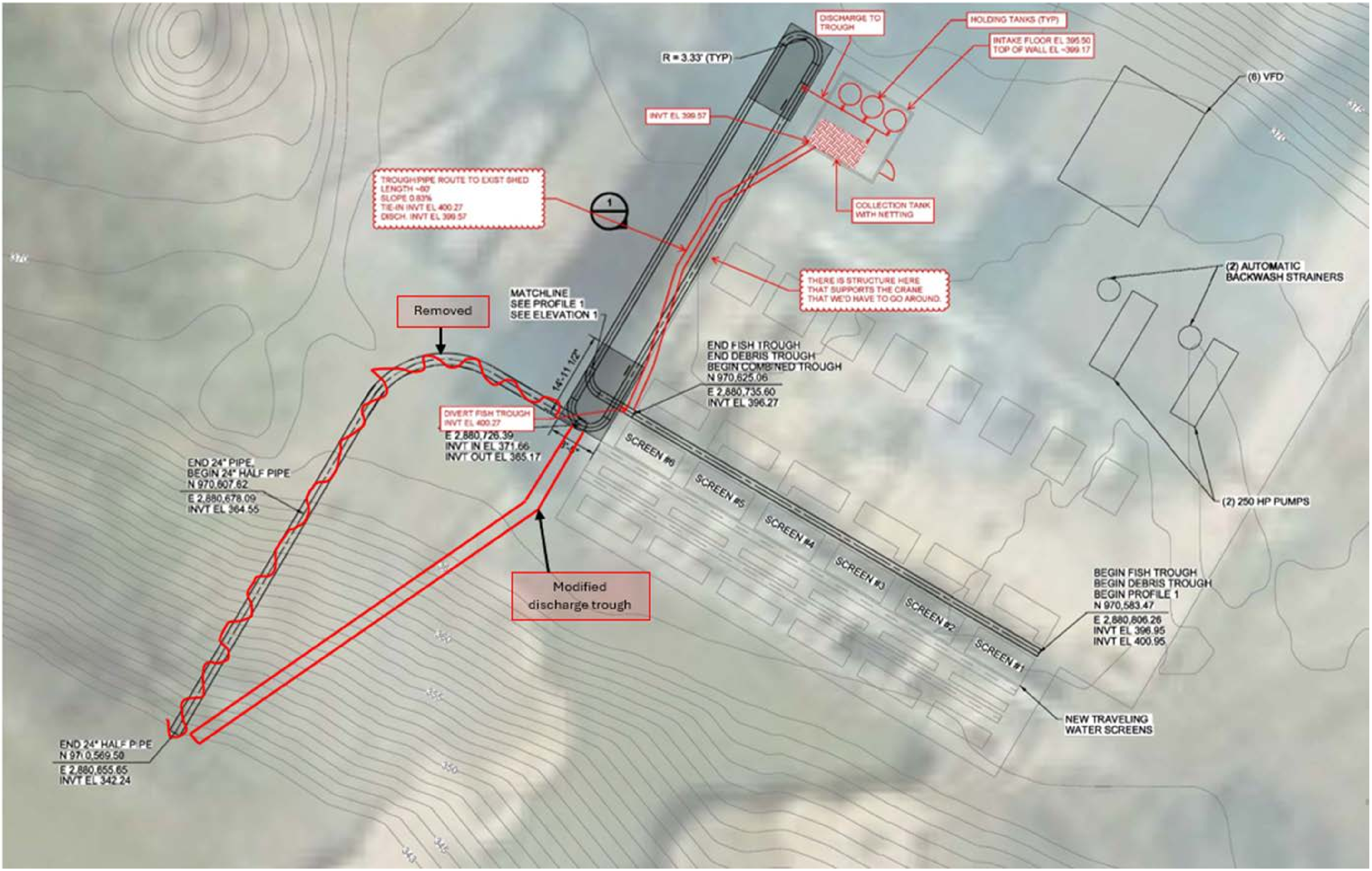


Figure 16a: Aerial Schematic of Updated Fish Return/Sampling System

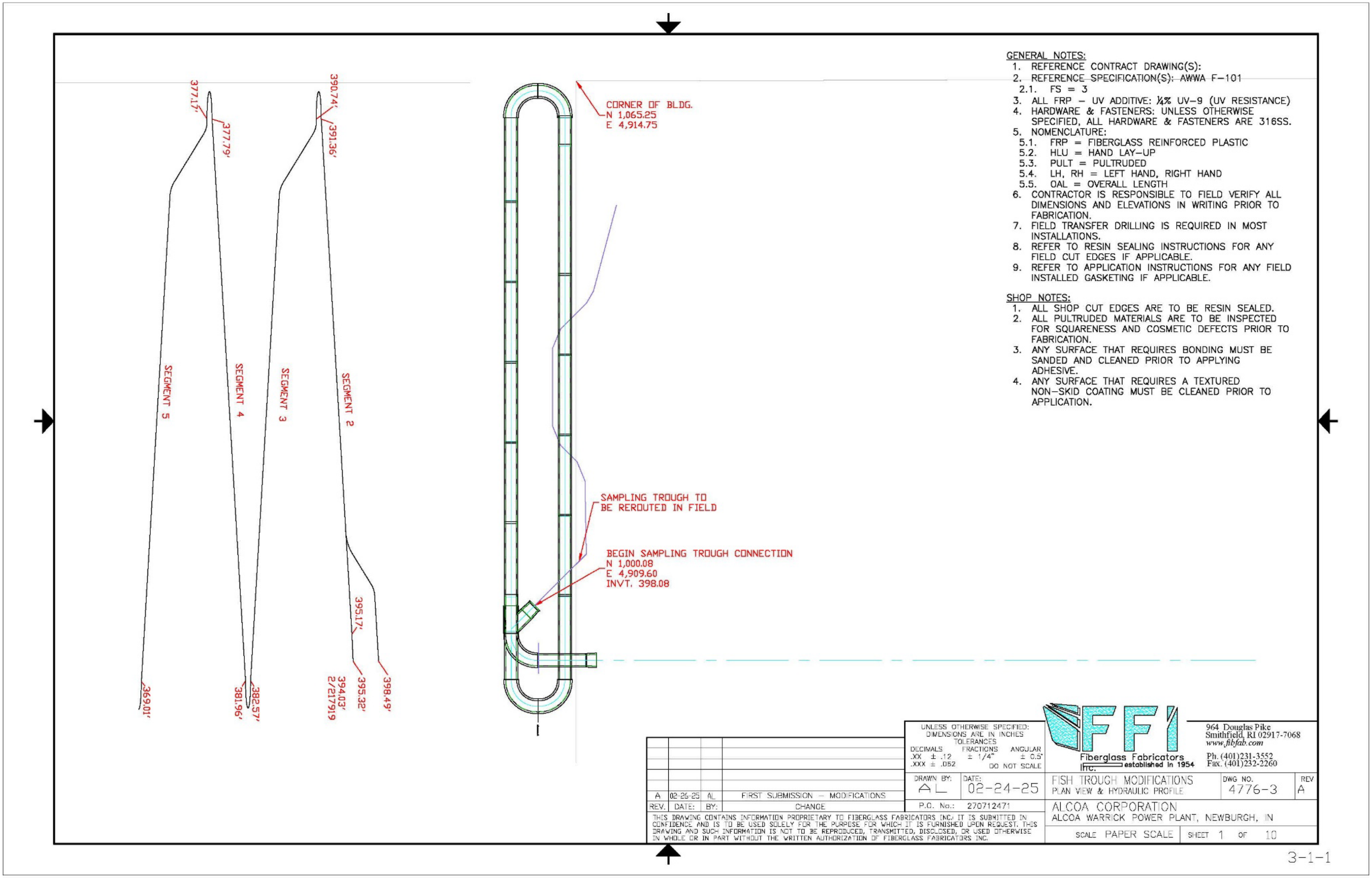


Figure 15b: Aerial Schematic of Updated Fish Return/Sampling System

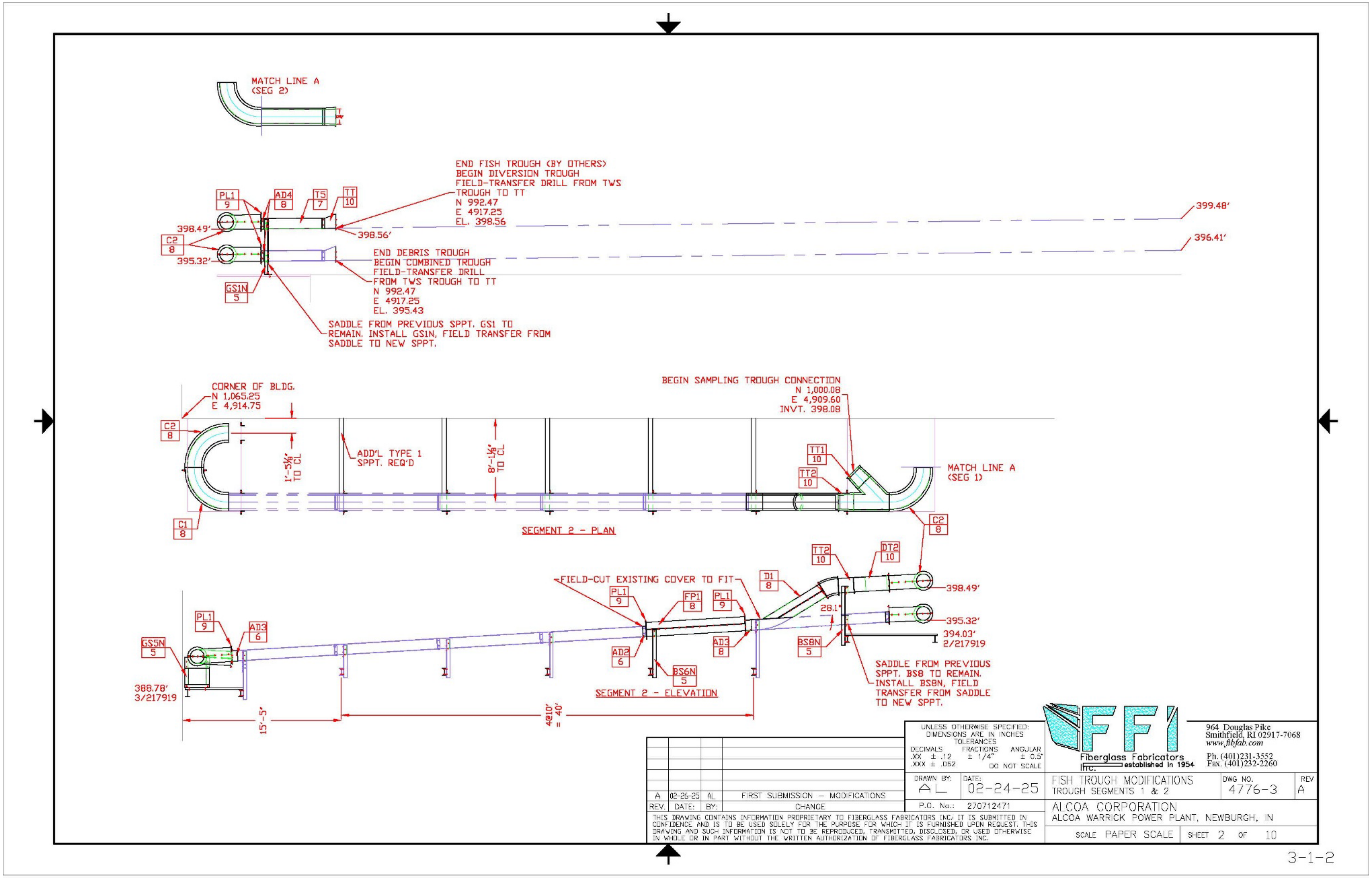


Figure 15c: Aerial Schematic of Updated Fish Return/Sampling System

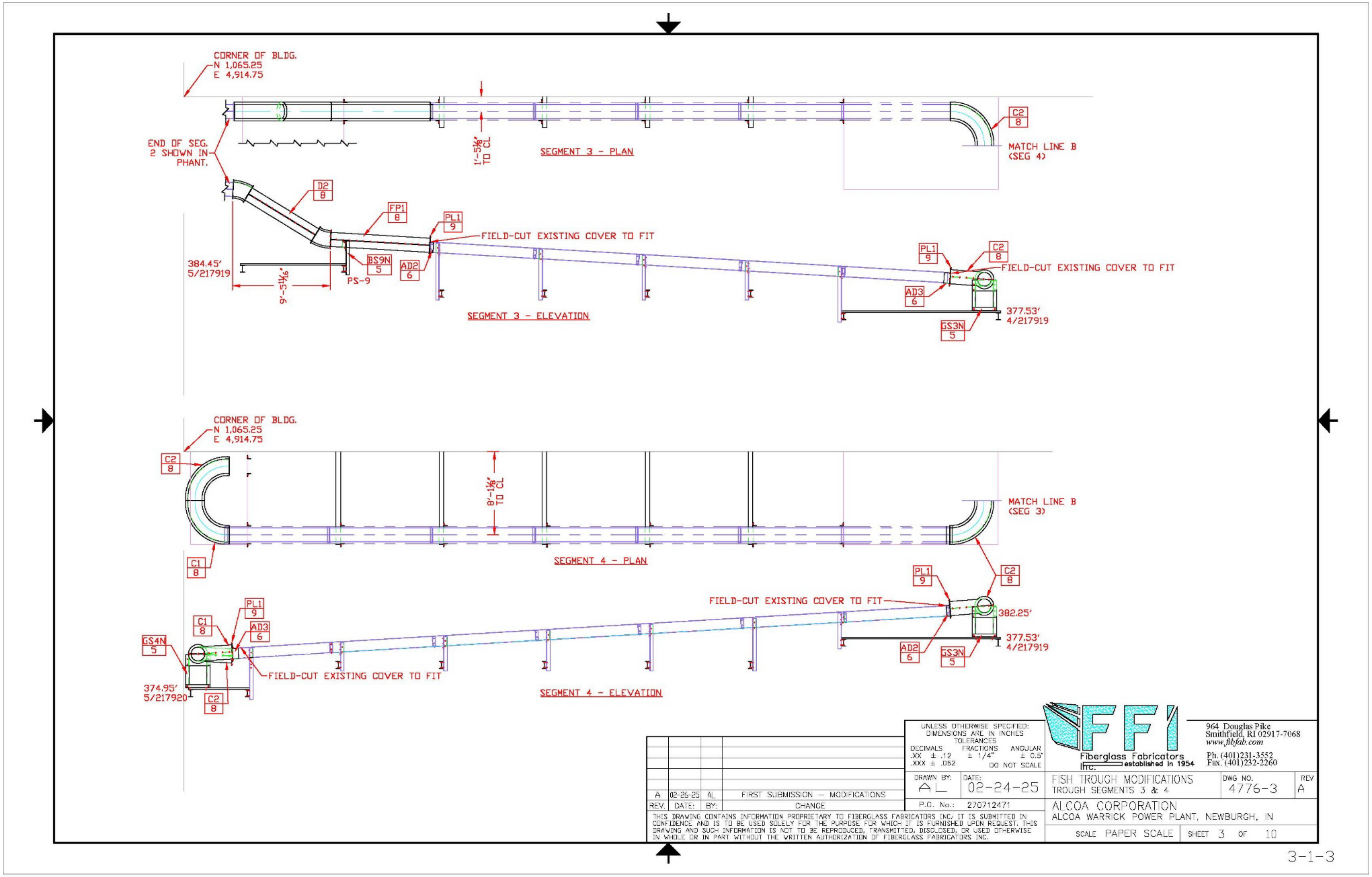
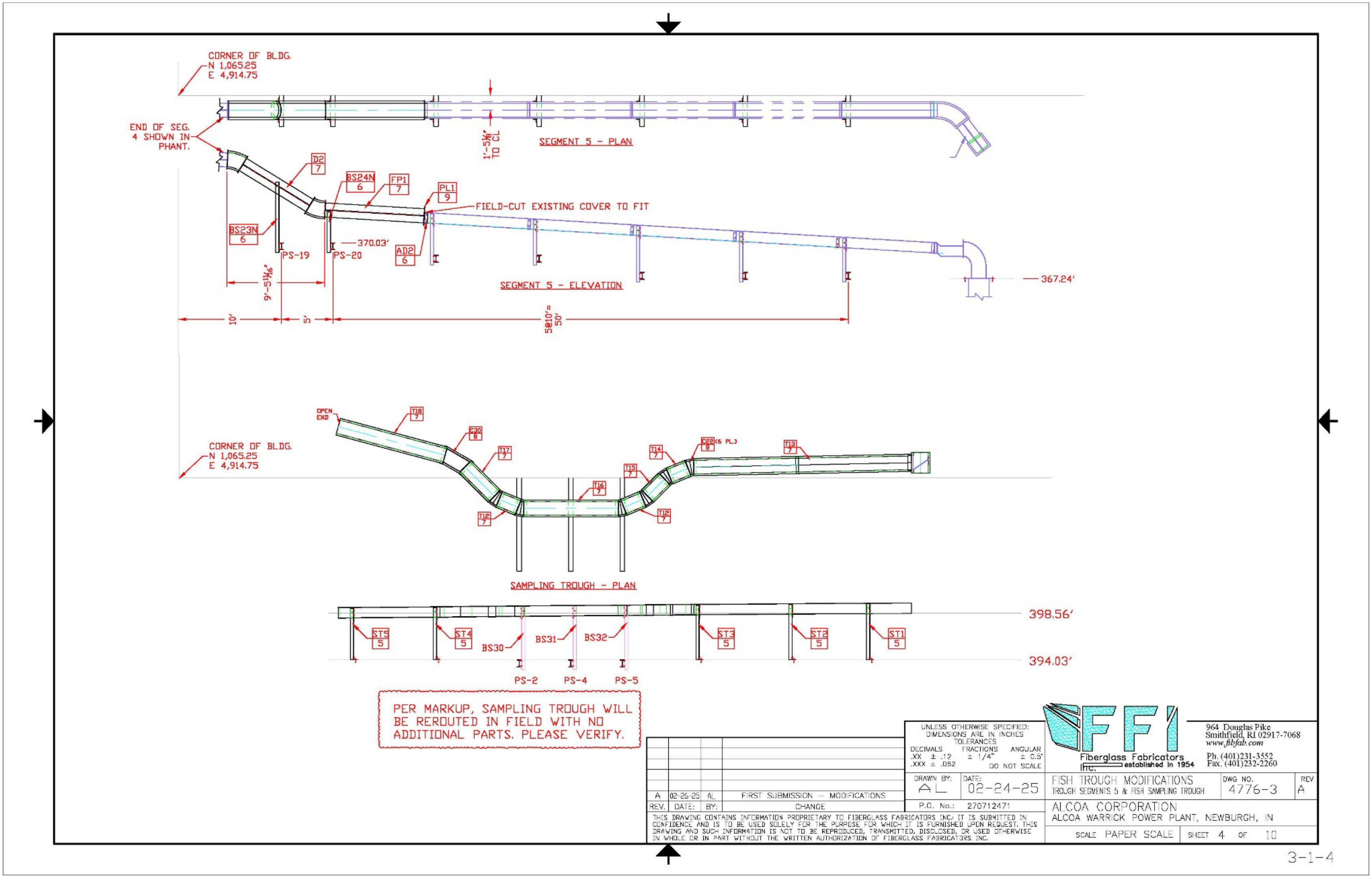


Figure 15d: Aerial Schematic of Updated Fish Return/Sampling System



B. Intake Flows and Impingement Technology Performance Optimization Study (IOTS)

Intake Flows

Actual intake flows for the once-through cooling system were not provided by the permittee. The actual intake flow (AIF) at AWPP is expected to be greater than 125 MGD based on historical intake flow data and recent effluent flow data.

The DIF for the facility is 576 MGD based on the capacity of eight (8) pumps at the facility; two (2) pumps which are nominally rated at 86,000 gpm (124 MGD) each, and six (6) pumps which are nominally rated at 42,000 gpm (61 MGD). When head loss from operating all eight pumps at once is accounted for, the DIF is 400,000 gpm (576 MGD).

Impingement Technology Performance Optimization Study at AWPP (2026-2027)

The permittee submitted an Impingement Technology Performance Optimization Study Plan to IDEM for review on April 13, 2023. IDEM issued an approval letter for the plan on January 5, 2024, and a revised approval letter for the plan on February 16, 2024.

The purpose of the proposed study plan is to demonstrate that the new modified traveling screens and fish return/sampling system have been optimized and minimize mortality of non-fragile species. As such, a portion of the study includes impingement mortality studies to be conducted once per month for a two-year period (originally scheduled to take place between January 2024 and December 2025). However, an inspection conducted by this Office in July of 2024 revealed that the study was not started in 2024 because the fish return/sampling system were not functioning optimally. As such, the permittee has completed the following updates to the system in 2025:

1. Splash guards were installed on the existing fish return trough, specifically around turns
2. The fish return trough design was modified (i.e. slope reduced) to reduce flow velocity
3. The sampling trough was modified to address tank overflow issues

At the time of this renewal, the permittee continues to operate the new modified traveling screens and fish return system “as-is”, with the intention of completing the two-year fish study in 2026-2027 after the above updates to the intake and fish return system have been made. Aside from the start and end dates for the study, all other aspects of the study remain the same. Therefore, the original tables which summarize the study design have been retained below.

Table 4-1: Summary of the Optimization Study Design

Sample Type	Sample Parameter	Description
Impingement and Mortality	Sampling duration	Year 1: January 2024 through December 2024[a] Year 2: January 2025 through December 2025[a] *Sample years updated to 2025 - 2026
	Sampling location	On the CWIS deck. A diversion of the permanent fish return handling system to a temporary trough to the collection tank in the enclosed sampling area.
	Number of sampling events per year	Year 1: 12 Year 2: 12
	Sampling frequency	Once per month[b]
		Two samples per event (daytime and nighttime)
	Sampling method	A 3-foot by 3-foot PVC framed nylon mesh net in a collection tank
	Sampling duration	Impingement sampling will occur for up to 2-hours per subsample (day/night). Latent mortality will be monitored over a minimum of 24-hours.
	Total number of samples	48 (12 events x 2 samples x 2 years)
Ancillary data	Number and duration of pumps operating	Obtained from AWPP
	Cooling water volume	Obtained from AWPP
	Differential level	Obtained from AWPP
	Debris spray pressure	Obtained from AWPP
	Fish spray pressure	Obtained from AWPP
	Aux pressure	Obtained from AWPP
	Screens operated	Obtained from AWPP
	Ohio River elevation data	Obtained from AWPP
	Temperature, dissolved oxygen, discharge, and gage height	Obtained from USGS river gaging stations #03304300 at Newburgh Lock and Dam, IN, and #03303280 at Cannelton Dam, IN. ORSANCO Ohio River Data for the Newburgh Pool.

(a) Study periods may be adjusted as described in Section 4.1.2.
(b) The Final Rule requires one sample per month.

The 2026-2027 impingement study will evaluate three modified traveling screen operational modes (below), which were selected based on their potential impact to fish survival. Two settings for each mode will be evaluated.

- Screen rotational speed (2.5 feet/minute [min] to 10 feet/min)[2]
- Fish survival spray wash pressure (5 to 20 psi)[4]
- Fish trough flow (500 to 1,000 gpm)[4]

Table 4-2 below summarizes each operational mode and the theoretical planned settings for the Optimization Study. Table 4-3 on the following page illustrates the experimental design for the impingement study which allows for the evaluation of impingement, and initial and latent mortality differences by season, month, and diel period and across the six treatments.

Table 4-2: Operational Modes and Theoretical Planned Settings for the Optimization Study

Evaluated Operational Mode	Operational Level and Controls	Screen Speed (fpm)[a,b]	Fish Survival Spray Wash Pressure (psi)[a,b]	Trough Flow (gpm)[a,b]
Screen Rotation Speed	High	**10**	10	750
	Low	**2.5**	10	750
Fish Survival Spray Wash Pressure	High	5	**20**	750
	Low	5	**5**	750
Fish Trough Flow	High	5	10	**1,000**
	Low	5	10	**500**

(a) fpm = feet per minute; psi = pounds per square inch; gpm = gallons per minute.
(b) To be determined based on as-builts, manufacturer's settings, and operational constraints and may be adjusted during sampling.
(c) Bolded values are the range of the three operational modes (or six treatments).

Table 4-3: Theoretical Experimental Design for the Optimization Study

Representative Season	Month	Year	Sampling Event Number[a]	Diel Period(s)	Operational Mode (Treatment)[b]					
					Screen Rotation Speed		Fish Survival Spray Wash Pressure		Fish Trough Flow	
					Low	High	Low	High	Low	High
Winter	January	1	1	Day/Night	X					
		2	1	Day/Night		X				
	February	1	2	Day/Night			X			
		2	2	Day/Night				X		
Spring	March	1	3	Day/Night	X					
		2	3	Day/Night		X				
	April	1	4	Day/Night			X			
		2	4	Day/Night				X		
	May	1	5	Day/Night					X	
		2	5	Day/Night						X
Summer	June	1	6	Day/Night	X					
		2	6	Day/Night		X				
	July	1	7	Day/Night			X			
		2	7	Day/Night				X		
	August	1	8	Day/Night					X	
		2	8	Day/Night						X
Fall	September	1	9	Day/Night	X					
		2	9	Day/Night		X				
	October	1	10	Day/Night			X			
		2	10	Day/Night				X		
	November	1	11	Day/Night					X	
		2	11	Day/Night						X
Winter	December	1	12	Day/Night					X	
		2	12	Day/Night						X

(a) Sample Event Number is representative and to be adjusted to reflect start of Optimization Study.

6.4.3 Source Water Biological Characterization

Numerous water quality and biological studies have been conducted by ORSANCO as well as the facility for the Newburgh Pool of the Ohio River where the facility is located. The Ohio River in the vicinity of the permittee's intakes is approximately 3,400 ft wide and flows in a northwesterly direction.

A more detailed discussion of the biological reports are available in the 2018 and 2023 316(b) application submitted by Alcoa. A complete copy of Alcoa's 316(b) application will be provided upon request.

The Newburgh Pool stretches 55.4 miles from the Newburgh Locks and Dam (RM 776.1) upstream to Cannelton Locks and Dam (RM 720.7). The pool has a gradient drop of 0.3 feet per mile (ft/mi.) and averages 2,477 feet wide and 28 feet deep (ORSANCO 2012). Three major tributaries flow into the Newburgh Pool (ORSANCO 2012). The Anderson River has a drainage area of 276 square miles and joins the Ohio River at RM 731.5, 43 miles upstream of Warrick Newco LLC. Blackford Creek (~RM 742.2), with a drainage area of 124 square miles, joins the Ohio River 32.3 miles upstream of Warrick Newco LLC. The third major tributary, Little Pigeon Creek, is the largest tributary entering the Newburgh Pool with a drainage area of 415 square miles. This river flows into the Ohio River approximately 1.0 mile upstream of Warrick Newco LLC.

Each year ORSANCO collects environmental data from various sections of the Ohio River and uses the data to determine the relative condition of Ohio River fish and macroinvertebrate communities. The last time ORSANCO sampled the Newburgh Pool was in 2017 and the pool was assessed to be in Good condition. This is a lower condition rating than the previous two assessment cycles which resulted in a Very Good rating. However, the 2017 rating was based solely on fish assessment and did not take into account macroinvertebrate sampling due to high discharge rates which displaced organisms and led to decreased sampling efficiency. The most notable drop between the two testing periods was in the category of Species Score, with 44 fish species observed in 2012 and 22 fish species observed in 2017. In 2017, a total of 45 species were collected, Sauger represented 3% of the fish collected from the pool and minnow species made up 43% of the catch. Historical collections of macroinvertebrates in the Newburgh Pool have been severely depressed. In 2017, macroinvertebrates results were unassessed due to high water velocities, discharge, and scouring events, which all impact sampling efficiency.

6.4.4 Species Abundance Near CWIS

Data were retrieved from ORSANCO from 2010 to 2023 to characterize the fish community in the Ohio River and at the Newburgh Lock and Dam (ORSANCO, 2023). A total of 51,518 fish representing 135 fish species were collected in the Ohio River at the 20 sampling locations from 2010 to 2023. At the Newburgh Lock and Dam, located approximately 2 river miles downstream from AWPP, 2,757 fish representing 56 fish species were collected. The most abundant species collected at Newburgh Lock and Dam were gizzard shad (*Dorosoma cepedianum*), freshwater drum (*Aplodinotus grunniens*), channel catfish (*Ictalurus punctatus*), river carpsucker (*Carpiodes carpio*), temperate bass species, spotted bass (Micropterus punctulatus), emerald shiner (Notropis atherinoides), channel shiner (Notropis wickliffi), and sauger (*Sander canadensis*).

Sampling of the Ohio River fish community was also conducted in the vicinity of AWPP during June, August, and October 2005 as part of the impingement study at AWPP (EA, 2007). The following results have been carried forward from the 2018 permit:

Electrofishing and seining yielded a total of 49 taxa and 4,733 individuals. Electrofishing and seining combined was numerically dominated by emerald shiner (*Notropis atherinoides*) (58 percent), gizzard shad (8 percent), freshwater drum, quillback (*Carpiodes cyprinus*), and *Carpoides* species (each 4 percent); and sauger and river carpsucker (each 3 percent). The combined catch was dominated in terms of biomass by small mouth buffalo (37 percent), river carpsucker (10 percent), common carp (*Cyprinus carpio*), and flathead catfish (*Pylodictis olivaris*) (each 8 percent), bigmouth buffalo (*Ictiobus cyprinellus*) (7 percent), black buffalo (*Ictiobus niger*) (6 percent), channel catfish (4 percent), and quillback, freshwater drum and gizzard shad (each 3 percent). Electrofishing was dominated by gizzard shad (24 percent) and quillback (14 percent). Other common species included freshwater drum and river carpsucker (each 8 percent), emerald shiner (7 percent), white bass (*Morone chrysops*) (6 percent), and smallmouth buffalo (5 percent). Seining was dominated numerically by emerald shiner, accounting for 81 percent of the total catch. No state or federally listed species were collected.

6.4.5 Impingement and Entrainment – Aquatic Life Studies

A. Impingement

Three factors tend to influence the probability of individuals of a particular fish species to be impinged on water intake screens.

(a) Fish species or life stages of species that exhibit schooling behavior and generally reside in the water column are the more likely to be impinged than species or life stages that congregate on or near the bottom, or near shoals and reefs.

(b) Fish species that are relatively abundant, in addition to residing in the water column, have a higher likelihood of being impinged.

(c) Fish species that prefer habitat similar to the habitat in which a cooling water intake structure is built will likely have higher impingement rates than those that do not. Species of the Clupeidae family (gizzard shad), some shiner and minnow species, young-of-year channel catfish, and freshwater drum are examples of species that exhibit one or more of these behaviors or habitat preferences for part or all of their lifecycle.

Gizzard shad and freshwater drum are typically the most frequently impinged fish species in the Ohio River.

Two impingement studies (dated 1976 – 1977 and 2005 – 2006) have been completed at AWPP and a collaborative impingement characterization study was conducted at fifteen power plants located along the Ohio River. These studies identify the species and life stages most susceptible to impingement.

Results of the two impingement studies at AWPP (dated 1976 – 1977 and 2005 – 2006), and information about a third (upcoming) impingement study at the facility are summarized below. The result summaries from the completed impingement studies are the same as those which were included in the previous (2018) permit.

Impingement of Species at AWPP (1976-1977)

Impingement sampling was conducted weekly at AWPP from November 30, 1976, to December 30, 1977.

A total of 36,246 fish were collected during the study period. Three species accounted for greater than 97 percent of the total impingement: gizzard shad, freshwater drum, and skipjack herring (*Alosa chrysochloris*). Gizzard shad was the most dominant, comprising 69.0 percent of the fish impinged, followed by freshwater drum (20.8 percent) and skipjack herring (7.5 percent). The majority of fish collected were small; of the impinged fish, 98.8 percent were under 16 cm in length. The estimated number of fish impinged during the study period was 435,806 individuals. The estimated number of impinged fish for 1 year was 401,690 individuals.

Impingement of Species at AWPP (2005-2006)

Impingement sampling was also completed weekly at AWPP for 52 consecutive weeks from June 2005 through June 2006 (EA, 2007). Table 1 below presents the results of that study.

The impingement sampling in 2005 through 2006 yielded 11,860 fish and shellfish representing 25 taxa and 19 species of fish. Impingement (by number) was dominated by clupeids (gizzard shad, threadfin shad and Unidentified Dorosoma sp.)(79.7 percent) and freshwater drum (17.8 percent), collectively accounting for 97.5 percent of the impinged fish (Table 4-4). Gizzard shad alone accounted for 77.9 percent of the total impingement by number and 80.7 percent of the biomass. Freshwater drum was the second most commonly impinged species and comprised 17.8 percent of the total impingement. Recreationally important species such as catfish (blue, channel and flathead), bass (white and striped), bluegill, and sauger were rare to uncommon. Unionid mussels and crayfish accounted for 0.3 percent and 0.2 percent of the catch, respectively. No State- or federally listed species were impinged during the study.

The majority of fish collected were young-of-the-year (YOY) and age 1. A total of 48 percent of the impinged fish were classified as YOY, while only 0.5 percent of the fish were greater than 160 millimeters (mm). More than 90 percent of the Ictiobinae (suckers and buffaloes), skipjack herring, unidentifiable shad and unidentifiable Morone spp. were YOY, and 76 percent of the freshwater drum were YOY. Forty percent of the gizzard shad collected were YOY, while most of the gizzard shad between YOY and those greater than 160 mm were probably Age 1 fish.

Table 1: 2005 – 2006 Impingement Study Results at Alcoa Warrick Power Plant

Species	Number of Individuals		Mass (grams)	
	Number	Percent	Kilograms	Percent
Blue catfish	1	0.01	0.009	0.01
Bluegill	17	0.14	0.237	0.27
Channel catfish	16	0.13	0.365	0.42
Crayfish	28	0.24	--	--
Emerald shiner	5	0.04	0.005	0.01
Flathead catfish	4	0.03	0.12	0.14
Freshwater drum	2115	17.83	11.739	13.59
Gizzard shad	9241	77.92	69.708	80.73
Largemouth bass	1	0.01	0.215	0.25
Longear sunfish	2	0.02	0.003	0
Northern madtom	1	0.01	0.004	0
River carpsucker	2	0.02	0.043	0.05
Sauger	6	0.05	0.116	0.13
Silver chub	1	0.01	0.017	0.02
Skipjack herring	73	0.62	0.729	0.84
Striped bass	7	0.06	0.468	0.54
Threadfin shad	13	0.11	0.095	0.11
Unid carpiodes	3	0.03	0.074	0.09
Unid dorosoma	123	1.04	0.074	0.09
Unid ictiobinae	17	0.14	0.013	0.02
Unid morone	121	1.02	0.149	0.17
Unionoid mussel	42	0.35	--	--
White bass	17	0.14	2.126	2.46
White perch	3	0.03	0.032	0.04
Yellow bass	1	0.01	0.007	0.01
Total Impingement	**11,860**	**100**	**86.35**	**100**
Total Fish Species	**19**			

Source: EA, 2007

B. Entrainment

Entrainment of Species at AWPP (2015-2017)

No new entrainment data have been collected since the previous permit renewal; therefore, the 2015 – 2017 entrainment summary below was retained from the previous (2018) permit. During the next renewal, this section will be updated to reflect any relevant data from the (2026–2027) fish study and 316(b) application.

The susceptibility of fish eggs and larvae to entrainment was qualitatively assessed into three categories (high, moderate, low) based on the physical attributes of the Ohio River in the vicinity of the AWPP CWIS; egg, larvae, and juvenile sizes; reproductive strategy; and other key early life history characteristics.

Table 2 below provides a summary of the desktop analysis and key life history characteristics of the eight most dominant species. The desktop assessment indicates that bluegill and channel catfish were considered to have low susceptibility. Bluegills are lithophils, spawning on rock or gravel in nests that are guarded by the male parent, which keeps the early life stages confined to a relatively small area. Channel catfish are speleophils, spawning in holes or crevices that are guarded by the male parent, which keeps the early life stages confined to a relatively small area.

River carpsucker, sauger, and smallmouth buffalo were considered to have moderate susceptibility because they are lithopelagophils, open substratum spawners with no parental care and pelagic larvae. These species have a preferred spawning substratum of clean sand, rock, or gravel.

Gizzard shad, freshwater drum, and emerald shiner were considered most susceptible to entrainment because they are pelagophils and relatively indiscriminate broadcast spawners. These species are considered the most susceptible to entrainment because these species spawn in open-water, and the planktonic eggs and larvae have no characteristics that would deter them from being pulled into the CWIS along with the water in which they reside.

Fish reproduction in the Ohio River is expected to occur from March through September. Peak abundance and reproduction generally occurs during the spring and summer. Egg recruitment (the process of getting from an egg to YOY) peaks in the early spring for most species, while larval recruitment occurs between late spring and early summer.

Based on the ichthyoplankton entrainment data collected from March 22 to August 2, 1979, at AWPP, peak periods of larval recruitment and abundance occurred in May and June, with the highest abundance of carpsuckers or buffaloes (*Carpiodes* spp. Or*Ictiobus* spp.) in May and the highest abundance of shad and herring (*Dorosoma* spp. or *Alosa* spp.) species in June.

Table 2: Early Life History Information of Most Abundant Species and Susceptibility to Entrainment

Common Name	Spawning Period	Eggs			Average Size (total length in mm)		Reproductive Guild and Key Early Life History Information	Susceptibility to Entrainment
		Size (mm)	Demersal	Adhesive	Larval	Juvenile		
Bluegill	Late May to early August (peaking in June) at water temperatures between 20 and 26 °C	1.2–1.4	X	X	2.0–6.0	13 to 75-100	Litho-Psammophil. Males build and guard nests in 2- to 3-foot deep water near shores over sand and gravel.	Low
Channel catfish	Late spring or early summer at temperatures between 16 and 24 °C	3.5–4	X	X	15 to 250–405	9.8-15	Speleophil. Males build nests under banks or logs, or on open bottoms, which can be in water ranging from several inches to several feet deep. The female lays a gelatinous mass in the nest containing between 8,000 and 15,000 eggs. Males guard and fan water over nest during incubation and stay with young after hatching.	Low
Emerald shiner	May to July at water temperatures between 20 to 23 ºC	3–3.3	X		4.0–6.0	15-30	Pelagophil. Pelagic, broadcast spawner. Spawns from May to mid-August at 2 to 6 meter depths. Eggs hatch on the bottom in 24 to 36 hours. No parental care is given by the adults.	High
Freshwater drum	June and July when water temperatures reach 18 ºC	1.2–1.7			3.2–4.4	15 to 250–300	Pelagophil. Pelagic, broadcast spawner. Eggs drift on the surface of the water until they hatch, approximately 2 weeks later. No parental care is given by the adults.	High
Gizzard shad	April to June with a range from mid-March to late August	0.8–1.1	X	X	3.0–8.0	25 to 179–279	Pelagophil. Pelagic, broadcast spawner. High fecundity and spawns multiple times per season. Eggs sink slowly towards the bottom or drift with the current, adhering to any surface encountered. Eggs hatch within 3-4 days. No parental care is given by the adults.	High
River carpsucker	April and late May at water temperatures between 21 and 24 °C	1.7–2.1	X	X	5.0–6.1	23 to 218–263	Lithopelagophil. Spawn in large groups in flowing water. Eggs are pelagic, broadcasted on the bottom over silt or sand substrate. No parental care is given by the adults.	Moderate
Sauger	March to May	1.0–1.8	X	X	4.6–9.6	18 to 130–223	Lithopelagophil. Strongly adhesive eggs are broadcast over coarse substrates in mainstem river channels and tailwaters below dams. Females lay between 15,000 and 40,000 eggs when water temperatures are near10 °C. Eggs hatch after approximately 10 days. No parental care is given by the adults. Larvae are transported downstream by current flow.	Moderate
Smallmouth buffalo	April and May at water temperatures between 13.9 to 21.1 °C.	1.6–2.4	X	X	5.0–9.0	30 to 400–450	Lithopelagophil. Spawning takes in areas of moderate flow in shallow water. Eggs are scattered over weeds and gravel bottoms and hatch in 1 to 2 weeks. No parental care is given by the adults.	Moderate

Sources: Balon, 1981; Becker 1983; Boschung and Mayden, 2004; Bozek et al., 2011; MDC, 2015; ODNR, 2015 (a, b, c); Pflieger, 1997; Ross, 2001; Simon, 1999; Smith 2002.

Entrainment Characterization Study (2015-2017)

As required under the 316(b) rule, entrainment sampling was conducted during the previous (2013) permit term. Sampling was conducted biweekly (twice per month) during the biologically productive period (March to October) over a 2- year period from June 2015 to June 2017. The first year of sampling (Year 1) started in June 2015 with sampling occurring from June through October 2015 and then March to May 2016. The second year of sampling (Year 2) started in June 2016 with sampling occurring from June through October 2016 and then March to May 2017. Each sample collection event was conducted over a 24-hour period with samples collected every six (6) hours for a total of four (4) samples per event. The estimated annual entrainment ranged from 335,444,966 to 331,449,276 for Year 1 and Year 2, respectively.

Post yolk sac larvae was the most dominant life stage for both years, accounting for 83.6 percent of the total in Year 1, and 77.1 percent of the total in Year 2. A total of 20 fish taxa were collected over the 2-year study. Freshwater drum was the most dominant taxa for both years, accounting for 53 percent of the total in Year 1, and 47.8 percent of the total in Year 2. Other dominant taxa in Year 1 included carpsucker/buffalo (15.5 percent), herrings (Clupeidae) (13.6 percent), and gizzard shad (5.0 percent). Other dominant taxa in Year 2 included Asian carp (38.8 percent), Cypriniformes (5.5 percent), paddlefish (1.8 percent), and herrings (1.6 percent). If the invasive Asian carp larvae are removed from the annual entrainment estimates, the adjusted annual entrainment is estimated to be 332,909,308 and 202,973,042 for Year 1 and 2, respectively.

Peak abundances occurred during both years in May and June. These two months accounted for 87 percent of the entrainment in Year 1 and 71 percent of the entrainment in Year 2. All life stages were collected during each of the diel periods (morning, afternoon, evening and night). A higher abundance of eggs, yolk sac larvae, and juveniles were collected at night for both years. Only yolk sac/post yolk sac larvae in Year 2 had higher abundances in the evening, with the majority of these being Asian carp larvae.

Eggs in Year 1 of the entrainment characterization study were not identified to a particular taxon. However, in Year 2, eggs were either unidentifiable or identified as freshwater drum. Eggs identified as freshwater drum were collected in June in relatively high abundance. The majority of unidentifiable eggs collected during this 2-year study are likely those of freshwater drum because it is a pelagophil, a species that broadcasts eggs at the water surface with no parental care.

The most dominant larval and juvenile species entrained during the 2-year study (in order of dominance) were: freshwater drum, Asian carp, carpsucker/buffalo, herring (Clupeidae), and carp/minnows (Cyprinidae). Asian carp was the second most collected taxa in the 2-year entrainment study. Asian carp were collected in higher abundances in Year 2 when compared to Year 1 and accounted for 65.7 percent of the yolk sac larvae, 68.3 percent of the yolk sac/post yolk sac larvae, and 32.9 percent of the post yolk sac larvae in Year 2. Based on entrainment, impingement, and electrofishing data at AWPP, the most common carpsucker/buffalo species are river carpsucker and smallmouth buffalo; the most common herring species are gizzard shad and skipjack herring; and the most common cyprinids are emerald shiner and common carp. Their susceptibility to entrainment is primarily due to their reproductive strategy. All of these species are either pelagophils or litho/phytopelagophils, species that provide no parental care, and either broadcast eggs at the water surface or over vegetative or coarse substrates.

The annual entrainment results of this study are similar in abundance and species composition to the entrainment study conducted in 1979. Although Year 1 and 2 annual entrainment estimates of this study (335,444,966 and 331,449,276 individuals, respectively) are higher than the 1979 study (214,871,013 individuals), the overall sampling period per year for this study (March-October) was longer than in 1979 study (March 22 to August 2), which would likely explain the higher estimated annual entrainment.

6.4.6 Protected Species Susceptible to Impingement and Entrainment

A. Endangered and Threatened Species, Regulatory Background

EPA's 316(b) regulations do not authorize take, as defined by the Endangered Species Act, 16 U.S.C. 1532(19). The U.S. Fish and Wildlife Service (USFWS) has determined that any impingement (including entrapment) or entrainment of Federally-listed species constitutes take. See Note to 40 CFR 125.90 and 40 CFR 125.98(j).

Pursuant to 40 CFR 125.94(a)(1); "the owner or operator of an existing facility with a cumulative design intake flow (DIF) greater than 2 mgd is subject to the BTA (best technology available) standards for impingement mortality under [40 CFR 125.94(c)], and entrainment under [40 CFR 125.94(d)] including any measures to protect Federally-listed threatened and endangered species and designated critical habitat established under [40 CFR 125.94(g)]."

Pursuant to 40 CFR 125.94(g); IDEM may establish in the permit additional control measures, monitoring requirements, and reporting requirements that are designed to minimize incidental take, reduce or remove more than minor detrimental effects to Federally-listed species and designated critical habitat, or avoid jeopardizing Federally-listed species or destroying or adversely modifying designated critical habitat (e.g., prey base). Such control measures, monitoring requirements, and reporting requirements may include measures or requirements identified by an appropriate Field Office of the U.S. Fish and Wildlife Service during the 60-day review period pursuant to §125.98(h) or the public notice and comment period pursuant to 40 CFR 124.10. Where established in the permit by IDEM, the owner or operator must implement any such requirements.

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. In part, the expectation is that the Services will respond within 60 days and provide to the Director (1) any corrections to the list of Federally-listed threatened and endangered species and critical habitat included in the permit application, (2) any measures that the Services recommend (including monitoring and reporting) for the protection of listed species, including any measures that would minimize any incidental take of listed species, and/or avoid likely jeopardy to a listed species or destruction or adverse modification of critical habitat, and/or (3) notify the State that the Services have no corrections to the list of species and critical habitat and/or that the Services do not recommend any control measures.

Under both 40 CFR 125.96(g) and 125.97(g), when IDEM requires additional measures to protect Federally-listed threatened or endangered species or designated critical habitat pursuant to 40 CFR 125.94(g), IDEM must require monitoring associated with those measures.

Pursuant to 40 CFR 125.98(d), IDEM may require additional study and monitoring if a threatened or endangered species has been identified in the vicinity of the intake.

In response to USFWS comments, this permit requires the permittee to contribute to an Indiana Freshwater Mussel Augmentation Plan project or develop and implement a Fresh Water Mussel Augmentation Plan of their own, subject to the monitoring and reporting required under 40 CFR 125.97(g) and 40 CFR 125.98(k). Please refer to Section 6.4.6.C below for additional information.

B. Permittee's Endangered and Threatened Species Review from 316(b) Application

The Final Rule requires that facilities identify all federally listed threatened and endangered species and designated critical habitat that are present in the "action area." The "action area," as defined by the USFWS and National Marine Fisheries Service (NMFS) under Section 7, includes all areas that may be directly or indirectly affected by the operation of a facility's CWIS and not merely the immediate area involved in the action; this is because the USFWS and NMFS consider that the effects of CWIS can extend well beyond the footprint of the CWIS.

As mentioned above, the permittee did not submit updated 316(b) application data. Therefore, the information which was included in the previous (2018) application has been carried forward and applied to this renewal.

<u>2018 Permit 316(b) Application – Endangered and Threatened Species Review</u>

In the (2018) permit application, Federally and state listed endangered and threatened species were identified using the following online resources:

- USFWS Information for Planning and Conservation (IPaC) system (2015a)
- USFWS Threatened and Endangered Species System (TESS) (2015b)
- Indiana Department of Natural Resources (IDNR) (2015)

In their application, the permittee stated that the majority of the identified protected species within the state of Indiana were terrestrial bird, reptile, mammal, and vascular plant species that occur in habitats that are not in the vicinity of the AWPP CWIS. None of their respective life stages would be subject to impingement or entrainment at AWPP; nor does the AWPP CWIS have an impact on their critical habitat. Therefore, the permittee did not consider these protected species further evaluation.

One federally listed and one State-listed species were identified in the (2018) 316(b) application as having the potential to be found in the vicinity of the AWPP CWIS (see Table 4-8 below). Sheepnose mussel (*Plethobasus cyphyus*) is the only federally listed endangered species and was identified as potentially occurring in Warrick County, Indiana. Spottail darter (*Etheostoma squamiceps*) was the only State species of concern identified as potentially occurring in Warrick County, Indiana. The Indiana Natural Heritage Data Center lists the spottail darter as a classification S2/S3 (imperiled in state/rare or uncommon in state). See the table below from the (2018 permit) 316(b) application.

Table 3: Protected Species in Warrick County, Indiana, Potentially Susceptible to Impingement and Entrainment

Common Name	Scientific Name	Status[(a)]	Potential to Occur in the Vicinity of the CWIS	Susceptibility	
				Impingement	Entrainment
Spottail darter	*Etheostoma squamiceps*	S2/S3	Unlikely - Inhabits small to medium size streams of low to moderate gradient. Demersal spawner with males defending nests. Spawning occurs in March and April beneath flat rocks in pools or riffles with slow current. Not collected in ambient, impingement or entrainment studies at AWPP.	No	No
Sheepnose mussel	*Plethobasus cyphyus*	FE	Unlikely – Inhabits shallow, sandy or gravelly areas of medium to large sized rivers with moderate to strong current.	Low; Glochidia attached to fish host	No

Source: Bandoli et al., 1991; Kuehne and Barbour, 1983; Page, 1974; Page, 1985; Sietman, 2003; USFWS, 2012
(a) S2/S3 = imperiled in state/rare or uncommon in Indiana; FE = Federally Endangered

Current Permit 316(b) Application – Endangered and Threatened Species Review

As stated above, the most recent permit application did not include updated information for endangered and threatened species. However, during the permit renewal process, this Office conducted a review using the USFWS IPaC system (2025). A 12 mi^2 region along the Ohio River which lies adjacent to the CWIS was reviewed to identify any new endangered and/or threatened aquatic species which were not included in the previous renewal. This search was limited to aquatic species which may occur at or near the CWIS. The results have been included below:

Table 4: Threatened & Endangered Aquatic Species Adjacent to the Facility Intake (2025)

Common Name	Scientific Name	Status
Clubshell	Pleurobema clava	Endangered
Fanshell	Cyprogenia stegaria	Endangered
Fat Pocketbook	Potamilus capax	Endangered
Longsolid	Fusconaia subrotunda	Threatened
Orangefoot Pimpleback (Pearlymussel)	Plethobasus cooperianus	Endangered
Pink Mucket	Lampsilis abrupta	Endangered
Rabbitsfoot	Quadrula cylindrica cylindrica	Threatened
Ring Pink	Obovaria retusa	Endangered
Rough Pigtoe	Pleurobema plenum	Endangered
Sheepnose Mussel	Plethobasus cyphyus	Endangered
Snufflebox Mussel	Epioblasma triquetra	Endangered

U.S. Fish and Wildlife Service Comments

Comments were received from Mr. Daniel W. Sparks of the U.S. Fish and Wildlife Service by email on June 1, 2018 and on January 31, 2025. During the most recent (January 31, 2025) review, Mr. Sparks stated that the USFWS comments which were made during the previous (2018) permit renewal remain unchanged. Therefore, the comments from June 1, 2018 have been carried forward, and are summarized below.

At the time of the previous (2018) permit renewal, Mr. Sparks commented that there are three (3) species of federally listed freshwater mussels known to occur within a few miles of the AWPP CWIS.

Many freshwater mussels have a very unique life cycle that includes female mussels releasing glochidia, very early lifestage mussels, into the water column or directly onto fish so that they might attach to the adult fish's gills, fins, and/or scales. The glochidia are attached for typically 10 days to a month or so depending on the species of mussel. Mr. Sparks raised concerns about impacts to fish populations that host glochidia for threatened and endangered mussel species.

Specifically, Mr. Sparks raised concerns about the fat pocketbook (Potamilus capax) mussel whose host fish is the freshwater drum, the sheepnose (Plethobasus cyphus) mussel whose only confirmed host fish is the sauger and the rabbitsfoot (Theliderma cylindrical) mussel whose host fish are several species of shiners.

C. U.S. Fish and Wildlife Service Endangered Species Review

A copy of the complete 316(b) report and permit renewal application was sent to the Bloomington Field Office of the U.S. Fish and Wildlife Service on June 1, 2018 during the previous permit renewal and on January 8, 2025 for the current renewal. On January 31, 2025, Mr. Sparks stated that the USFWS comments which were made during the previous (2018) permit renewal remain unchanged; therefore, the 2018 comments were carried forward and applied to this renewal.

Additionally, this Fact Sheet has been updated to include the USFWS endangered species 316(b) review which was conducted for eight facilities (including Warrick Newco LLC) with intakes on the Ohio River. A summary of this review and recommendations as well as IDEM's conclusions are included below.

1. U.S. Fish and Wildlife Service Endangered Species Review

Mussel Life Cycle and Injury Overview

Freshwater mussels are sessile, filter feeding, long-lived bivalve mollusks, found in river bottoms and lake beds. They have a life cycle that is complex and dependent on the existence and survival of host fish to complete it. Once fertilized, freshwater mussels begin their life as parasitic microscopic larvae called glochidia. Glochidia, which are about the size of a grain of salt, are released by the female mussels and attach themselves to the gills, fins, and scales of their host fish. Post attachment, if they survive, they are encapsulated by fish tissue, relying on the host fish for transportation as they transform into juvenile mussels. Once they metamorphosize into juvenile mussels, they detach from the host, settle into the sediments, and begin their lives as free living mussels.

It should be noted that some freshwater mussels are generalists while a few species rely on specific host species to help carry out that life cycle, therefore, a mussel species' distribution is directly related to its host fish distribution. Several species of threatened and endangered mussels are found in the Ohio River, although distribution and numbers are reduced (Table 1).

Table 1. Federally Threatened and Endangered mussels found in the Ohio River.

Pink mucket (pearlymussel) *Lampsilis abrupta*
Snuffbox mussel *Epioblasma triquetra*
Sheepnose Mussel *Plethobasus cyphyus*
Rabbitsfoot *Quadrula cylindrica*
Fanshell (pearlymussel) *Cyprogenia stegaria*
Fat pocketbook *Potamilus capax*
Rayed Bean *Villosa fabalis*
Round hickorynut *Obovaria subrotunda* proposed
Longsolid *Fusconaia subrotunda* proposed

USFWS developed its biological opinion (BO) May 19, 2014 entitled Endangered Species Act Section 7 Consultation Programmatic Biological Opinion on the U.S. Environmental Protection Agency's Issuance and Implementation of the Final Regulations Section 316(b) of the Clean Water Act for this consultation. The ESA consultation allows USFWS to make recommendations to IDEM as IDEM administers the permitting of CWA § 316(b) facilities throughout Indiana. To minimize direct and indirect effects to federally-listed species, IDEM can place additional requirements into its permits.

The injured natural resources relative to the Ohio River 316(b) facilities are sheepnose (Plethobasus cyphyus), fat pocketbook (Potamilus capax) and Rabbitsfoot (Quadrula cylindrica cylindrica) which occur within the "action area" (as defined in the ESA Consultation, May 19, 2014).

- Through entrainment and or impingement, each of these facilities have ongoing impacts to host fish.
- While some facilities have documented impacts to host fish at various life stages, others have described potential impacts to glochidia narratively. And yet, all of these facilities impact millions of aquatic organisms each year.
- Many facilities deny impacts to endangered mussels, but that is largely because they fail to consider the reproductive life cycle of freshwater mussels.
- We estimate that between 1 and 3 host fish containing sheepnose glochidia are currently being taken by each of these facilities each year.

The U.S. Fish and Wildlife Service also summarized the Endangered Species Act (ESA) and stated:

Incidental take of endangered species (and threatened species, as applicable, under 16 U.S.C. 1533(d)) is prohibited under the ESA (16 U.S.C. 1538), unless it is permitted (16 U.S.C. 1539(a)) or exempted (16 U.S.C. 1536(o)) by the Services. Absent such exemption or permit, any facility operating under the authority of this Rule must not take federally threatened or endangered species.

More specifically, for the permittee, the U.S. Fish and Wildlife Service determined the following for the Warrick Newco LLC facility:

Facts and Assumptions	**Warrick Newco LLC**
Based on best information available, we assume sheepnose mussels are in the "action area" as defined by the EPA / FWS ESA consultation. The action area includes where the mussels are found and where the host fish can roam	Riverbank (550 MGD)
Mussel present / likely to be present	Yes
Habitat for host fish (cyprinid minnows) near intakes	Good
Presence of some host fish species near intakes confirmed (# species present)	Yes (17)
We assume some host fish are "infected" with sheepnose glochidia in the “action area”.	Yes
Direct impacts that could reduce successful sheepnose reproduction:	
Intakes can interrupt mussel gamete dispersal (% per year)	10%
Intakes can entrain conglutinates (% per year)	3%
Intakes can entrain "infected" host fish (# per year)	3
Indirect impacts that could reduce successful sheepnose reproduction:	
Intakes reduce host fish populations via reduced recruitment	Yes
Thermal discharge can adversely impact timing of reproductive maturation among males and females	NQ

2. U.S. Fish and Wildlife Service Recommendations to Minimize Take

To minimize the take of mussels, the U.S. Fish and Wildlife Service requested that IDEM require the permittee to implement or otherwise support a freshwater mussel augmentation project. Freshwater mussel augmentation efforts must be designed and completed in close coordination with knowledgeable experts and appropriate agency contacts. Mussel restoration through the freshwater mussel augmentation project will minimize take of the Ohio River freshwater mussel population and will address the natural resource injury to Federally-listed species under requirements of the Clean Water Act § 316(b).

3. U.S. Fish and Wildlife Service Sheepnose Mussel Augmentation Plan

The freshwater mussel augmentation plan can be implemented by the permittee, or in this case, the permittee may contribute funds to a project undertaken by Indiana’s state and federal Natural Resource Trustees because the trustees have particular expertise in these matters. The project will encompass freshwater mussel propagation efforts to increase numbers of freshwater mussels and locate them in a manner that benefits the species and minimizes the significance of additional impacts from 316(b) facilities.

D. IDEM Evaluation and Implementation of the U.S. Fish and Wildlife Service Recommendations

IDEM has evaluated the comments provided by the U.S. Fish and Wildlife Service in accordance with 40 CFR 125.94(g) and agrees that a freshwater mussel augmentation project is an appropriate mechanism to minimize the take of endangered Sheepnose mussels.

To implement the U.S. Fish and Wildlife Service recommendations, IDEM is proposing a two-pronged approach. First, IDEM will offer each of these permittees an opportunity to contribute to a project to implement an Indiana Freshwater Mussel Augmentation Plan project (the Project) that will be undertaken by the State and Federal Natural Resource Trustees. Alternatively, the permittee will be required to individually develop and implement a freshwater mussel augmentation project.

The Project will establish a framework for the propagation, augmentation, and establishment of freshwater mussels and will be undertaken by the State and Federal Natural Resource Trustees after the permittee has paid an allocation to address this impact. **The permittee's allocation for the implementation of this Project is $75,000 plus a 25% potential contingency ($18,750).** If after implementation of the Project, the U.S. Fish and Wildlife Service determines that additional augmentation efforts are needed to meet the Project's success criteria, the U.S. Fish and Wildlife Service may determine an additional contingency payment is needed from the permittee. This additional amount will be no more than 25% ($18,750) of the permittee's original allocation share as noted above.

If the permittee develops and implements a freshwater mussel augmentation project, it would likely consist of the following components: Administrative and Permitting, Brood Stock Acquisition, Propagation effort, Quantitative Processing (tagging), Release Site Reconnaissance Habitat Assessment, and Monitoring augmentation site(s). Each step should be well documented and the documentation available to the public at the appropriate point. More specifically, these components would include the following:

Administrative and Permitting
There will be planning, permitting, coordination with Indiana biologists, federal agency biologists, and also hatchery propagation specialists.

Brood Stock Acquisition
Brood stock acquisition is a necessary step in the augmentation process. This can be accomplished in various ways, but the key is coordination with Indiana biologists, federal agency biologists, and also hatchery propagation specialists. Networking within this growing community of practice will be key to accomplishing this task.

Propagation
Propagation in a laboratory / hatchery should be done by experienced qualified facilities that have routinely worked with rare mussels. A suitable grow out period of likely 3 plus years is expected. They have to be of a sufficient size in order to be tagged. This also gives them a greater chance of living to reproductive maturity.

Quantitative Processing
After a sufficient period of growing out juvenile mussels, an effort to tag mussels so that they can be monitored is important. This involves using adhesives and pit tags and the acquisition of the equipment needed to detect pit tags.

Release Site Reconnaissance Habitat Assessment
Some reconnaissance and habitat assessment should be undertaken in the planning phase of this project so that returning grown out, pit tagged Sheepnose to the Ohio River environs can be optimized for success.

Monitoring Augmentation Sites
Monitoring mussel augmentation sites should take place a year after and two years after mussels have been placed in the Ohio River environs. As previously mentioned, these monitoring efforts should be well documented to allow the U.S. Fish and Wildlife Service to evaluate the success of augmentation of sheepnose mussels as a measure to minimize take associated with the permittee's facility on the Ohio River.

IDEM has included a reopening clause in the permit that will allow IDEM to modify the permit, after public notice and opportunity for hearing, to incorporate a requirement that the permittee develop and implement a Freshwater Mussel Augmentation Plan consistent with the U.S. Fish and Wildlife Service Recommendations under Section 6.4.6.C. of this Fact Sheet if the permittee does not contribute its allocated share to the Project within six (6) months of the effective date of the permit or if, after implementation of the Project, the permittee does not contribute an additional sum within six months after the date that the amount is calculated by the U.S. Fish and Wildlife Service and provided to the permittee, if additional work is needed to meet the Project's success criteria (the additional sum shall be no more than 25% of the permittee's original allocated share), or if IDEM does not receive sufficient funds for the group Project within six months of the effective date of the permit.

6.4.7 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 permittee has proposed to comply with alternative 5, above. Under this alternative, the permittee must operate a modified traveling screen that IDEM determines meets the definition at 40 CFR 125.92(s) and that, after review of the information required in the *impingement technology performance optimization study* at 40 CFR 122.21(r)(6)(i), IDEM determines is the best technology available for impingement reduction at the site. As the basis for IDEM's determination, the permittee must demonstrate the technology is or will be optimized to minimize impingement mortality of all non-fragile species. IDEM must include verifiable and enforceable permit conditions that ensure the technology will perform as demonstrated.

During the previous permit period, the permittee began construction of new modified traveling screens and a fish return system to replace the existing traveling screens and fish return system. The new modified traveling screen and fish return system were completed on December 31, 2023.

The AWPP uses a fish and debris collection and return system at its CWIS. The organisms and debris are washed down from the traveling screens to a rectangular open sluice to an open channel that discharges to the Ohio River 350 feet downstream of the CWIS intake.

The modified traveling screens will be continually rotated while the plant is in operation, which represents a change in the historical operation of this equipment.

The permittee submitted an Impingement Technology Performance Optimization Study Plan to IDEM for review on April 13, 2023. IDEM issued an approval letter for the plan on December 14, 2023, and a revised approval letter for the plan on February 13, 2024.

The purpose of the proposed study plan is to demonstrate that the new modified traveling screens and fish return/sampling system have been optimized and minimize mortality of non-fragile species. As such, a portion of the study includes impingement mortality studies to be conducted once per month for a two-year period (originally scheduled to take place between January 2024 and December 2025). At the time of this renewal, the permittee continues to operate the new modified traveling screens and fish return system "as-is", with the intention of completing the two-year fish study in 2026-2027.

A final BTA determination for impingement will be made after IDEM has received/approved the results of the Impingement Technology Performance Optimization Study Plan described above and concurred that the modified traveling screen operation minimizes impingement mortality.

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 <u>must</u> 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)).

As noted above, the permittee did not submit an updated 316(b) application. As such, the information provided in 122.21(r)(9) though r(12) of the 2018 permit renewal 316(b) application was carried forward and used to address the 'may' and 'must' factors in detail.

Table 4: Evaluation of Must and May Factors for the Entrainment Mortality Reduction Technologies is presented below this section and is taken from the executive summary submitted with the 2018 permit renewal application. Table 4 summarizes the pertinent information IDEM used in evaluating the 'must' and 'may' factors with the exception of numbers and types of organisms which is discussed below.

Number and type of organisms affected, including the numbers of federally-listed species and designated critical habitat to the lowest taxonomic classification possible:

Based on the entrainment characterization study conducted from June 2015 to June 2017 (report (r)(9)), the estimated annual entrainment range was 335.5 million and 331.4 million for Year 1 and 2, respectively. Freshwater drum dominated the taxa for both years, accounting for 53 and 48%, respectively. Other dominant taxa included carpsucker/buffalo (Carpiodes spp./Ictiobus spp.) (15.5% in year 1); Clupeidae herrings (13.6% and 1.6%); Gizzard Shad (5% in year 1); asian carp (39% in year 2); Cypriniformes (6% in year 2).

These estimated annual numbers and species of organisms entrained at AWPP are consistent with the predicted entrainment susceptibility of species presented in the tables above.

As discussed previously, many freshwater mussels have a very unique life cycle that includes female mussels releasing glochidia, very early lifestage mussels, into the water column or directly onto fish so that they might attach to the adult fish's gills, fins, and/or scales. The glochidia are attached for typically 10 days to a month or so depending on the species of mussel.

USFWS, Mr. Sparks has raised concerns about three species of endangered mussels known to be in the vicinity of the CWIS. Specifically, the fat pocketbook (Potamilus capax) mussel whose host fish is the freshwater drum, the sheepnose (Plethobasus cyphus) mussel whose only confirmed host fish is the sauger and the rabbitsfoot (Theliderma cylindrical) mussel whose host fish are several species of shiners.

All three of these host species have a moderate (sauger) to high (freshwater drum and emerald shiners) susceptibility to entrainment. All three of these species are also susceptible to impingement at AWPP.

Mr. Sparks also raised concerns about impacts to fish populations that host glochidia for the aforementioned threatened and endangered mussel species. Measures that minimize impacts to the populations of these host fish species would also minimize impacts to these threatened and endangered mussel species.

The previous (2018) permit required the permittee to conduct a study prior to final design to evaluate different size mesh screens (i.e. fine mesh modified traveling screens, fine mesh cylindrical wedgewire screens) as well as any other technologies/approaches (i.e. mechanical draft cooling towers, alternative sources of cooling water) that could minimize population impacts from both impingement and entrainment. The permittee submitted a reported dated June 28, 2019 titled, *Social Costs and Benefits of Fine Mesh Screens at the Alcoa Warrick Power Plant*, that evaluated three different size fine mesh screens – 0.5 mm, 1.0 mm and 2.0 mm as well as the existing 0.25 – inch diameter screen size. Of the screen sizes evaluated, a 0.5 mm screen size was found to have the greatest impact on reducing entrainment. The permittee submitted a second report titled *Cylindrical Wedgewire Screens Constructability Study* dated March 6, 2020, to address questions IDEM raised following a review of the first report. Based on its review of comments on the original draft permit and the above reports, IDEM agreed with the permittee that the existing cooling water intake with **modified traveling screens** (without fine mesh), would qualify as BTA for entrainment mortality. Therefore, a permit modification was issued on November 5, 2021 which amended the BTA requirements and removed the 0.5 mm fine mesh requirement for the new modified traveling screens. The new modified traveling screens and fish return/sampling system was completed on December 31, 2023.

Based on the information summarized above, IDEM concurs that the existing cooling water intake with modified traveling screens qualifies as BTA for entrainment mortality based on the net social benefits and costs, and the ability to reduce impingement impacts to fish species, most importantly, to those fish species that host glochidia for threatened and endangered mussels.

Table 4: Evaluation of Must and May Factors for the Entrainment Mortality Reduction Technologies

Technology Description	Estimated Entrainment Reduction	Impact of Changes in Particulate Emissions or Other Pollutants	Land Availability	Remaining Useful Plant Life	Quantified and Qualitative Social Benefits and Costs	Thermal Discharge Impacts	Impacts on Reliability	Impacts on Water Consumption	Availability of Water for Reuse as Cooling Water
Mechanical Draft Cooling Towers	Approximately 95% (based on a cycle of concentration of 3.0).	• Increase of 6.67 tons per year of PM emissions. • Increases in CO_2, SO_2 and NO_x of 52,400, 5.4 and 21.1 tons in a typical year, respectively	Sufficient space onsite makes this option technically feasible. However, significant challenges exist, including management of placing the cooling towers on an old landfill site.	Not a critical factor implementing this technology at AWPP at the time of this submittal.	• Social cost of \$167M to \$273M. • Social benefits of \$0.6M to \$2.7M. • Estimation of all of non-water quality social costs (PM emissions, fogging/ icing, safety, etc.) would only increase the social costs.	Discharge temperature and volume will be greatly reduced. However, benefits are not anticipated because the results §316(a) variance study demonstrates that the thermal discharge has not caused prior appreciable harm and does not prevent the protection and propagation of a balanced indigenous community.	• Full facility shutdown of 6-weeks during construction • Operational challenges during construction. • Plant output losses of 14.1 MW during the summer and 9.7 MW during the winter.	Increased water consumption of 567 gallons/MWh but not a significant impact to the Ohio River.	• Groundwater identified as most promising potential alternate water source for makeup water. New collector well with redundant supply pumps (if aquifer pump testing confirms feasibility) was included in the preliminary design. • The use of wastewater from the aluminum manufacturing plant and WWTPs were considered infeasible.

Table 4 Continued: Evaluation of Must and May Factors for the Entrainment Mortality Reduction Technologies

Technology Description	Estimated Entrainment Reduction	Impact of Changes in Particulate Emissions or Other Pollutants	Land Availability	Remaining Useful Plant Life	Quantified and Qualitative Social Benefits and Costs	Thermal Discharge Impacts	Impacts on Reliability	Impacts on Water Consumption	Availability of Water for Reuse as Cooling Water
Fine Mesh, Modified Traveling Screens	Based on site-specific data and survival from laboratory studies: • 0.5-mm mesh: 50% • 1.0-mm mesh: 25% • 2.0-mm mesh: 20% The actual mesh size used would need to be evaluated further if this technology is selected.	Not applicable.	Sufficient space onsite makes this option technically feasible.	Not a critical factor implementing this technology at AWPP at the time of this submittal.	• No significant difference in screen equipment pricing for the varying fine mesh sizes (≤2.0-mm). • Social cost of installing a modified traveling screen with a fish handling and return system (regardless of mesh size) is estimated to cost \$6.2M to \$9.7M. The incremental difference between 3/8-inch and fine mesh is approximately \$100,000. If existing condition is considered the baseline, then the social benefits range from \$0.02M to \$0.8M.	Not applicable. No change from existing condition.	Minor change from existing condition. Net additional parasitic load is 0.18 MW.	Not applicable. No change from existing condition.	• Infeasible. • No alternative water sources available with the capacity to supply the quantity of water necessary to meet the once-through system water demand • Significant water treatment would be required.

Table 4 Continued: Evaluation of Must and May Factors for the Entrainment Mortality Reduction Technologies

Technology Description	Estimated Entrainment Reduction	Impact of Changes in Particulate Emissions or Other Pollutants	Land Availability	Remaining Useful Plant Life	Quantified and Qualitative Social Benefits and Costs	Thermal Discharge Impacts	Impacts on Reliability	Impacts on Water Consumption	Availability of Water for Reuse as Cooling Water
Fine Mesh, Submerged Cylindrical, Wedgewire Screens	Based on site-specific data and laboratory studies: • 2.0-mm: 65%	Not applicable	• Land availability is not an issue. • Space in the Ohio River is limited because of the proximity to the navigation channel • 0.5-, and 1.0-mesh was considered technically infeasible.	Not a critical factor implementing this technology at AWPP at the time of this submittal.	• 0.5-mm mesh: Social cost of $17.4M to $27.4M. Social benefits of $0.6M to $2.9M. • 1.0-mm mesh: Social cost of $8.9M to $18.9M. Social benefits of $0.5M to $2.6M. • 2.0-mm mesh: Social cost of $8.7M to $13.7. Social benefits of $0.4M to $2.5M.	Not applicable. No change from existing condition.	• Uncertain. • Plant shutdown could occur in the winter from frazil ice. • Screen damage from commercial vessels could occur, impacting the ability to obtain sufficient cooling water. • Net additional parasitic load is 0.11 MW.	Not applicable. No change from existing condition.	• Infeasible. • No alternative water sources available with the capacity to supply the quantity of water necessary to meet the once-through system water demand • Significant water treatment would be required.

Table 4 Continued: Evaluation of Must and May Factors for the Entrainment Mortality Reduction Technologies

Technology Description	Estimated Entrainment Reduction	Impact of Changes in Particulate Emissions or Other Pollutants	Land Availability	Remaining Useful Plant Life	Quantified and Qualitative Social Benefits and Costs	Thermal Discharge Impacts	Impacts on Reliability	Impacts on Water Consumption	Availability of Water for Reuse as Cooling Water
Alternative Sources of Cooling Water	Entrainment reductions would be proportional to the reduction in intake flow. For cooling towers, the estimated reduction is 35 percent of the makeup water using the Newburgh WWTP. For screening systems, the estimated reduction is 0.8 percent of the DIF using the Newburgh WWTP.	Not applicable	Space would be required for long-distance supply pipelines from the alternate source water location to the power station. Space appears to be sufficient to run the supply and return lines, but the dense underground utilities may be problematic.	Not a critical factor implementing this technology at AWPP at the time of this submittal.	Water reuse and the use of wastewater for cooling tower makeup and the screening systems were determined to be infeasible. As such, social costs and social benefits were not prepared for water reuse and alternate sources for cooling water. Groundwater was identified as a potential alternate water source for makeup water to the cooling tower and included in the design basis.	Discharge temperature and volume will be greatly reduced. However, benefits are not anticipated because the results §316(a) variance study demonstrates that the thermal discharge has not caused prior appreciable harm and does not prevent the protection and propagation of a balanced indigenous community.	None anticipated.	Not applicable as water reuse and the use of wastewater for cooling tower makeup and the screening systems were determined to be infeasible.	Infeasible because there are no alternative water sources available that have the capacity to supply the quantity of water necessary to meet the once-through system water demand

6.4.8 Best Technology Available (BTA) Impingement and Entrainment Determination Summary

As noted in the sections above, the new modified traveling screens and fish return system were completed on December 31, 2023, and the permittee will submit the results of its Impingement Technology Performance Optimization Study following its completion in 2026.

A final BTA determination for impingement will be made after IDEM has received/approved the results of the Impingement Technology Performance Optimization Study and concurred that the modified traveling screen operation minimize impingement. Part IV.B.10. of the permit summarizes the Impingement Technology Performance Optimization Study Plan report requirement.

Based its review of the reports submitted by the permittee, titled *Social Costs and Benefits of Fine Mesh Screens at the Alcoa Warrick Power Plant* and *Cylindrical Wedgewire Screens Constructability Study*, and the subsequent issuance of an associated permit modification dated November 5, 2021, IDEM concurs that the existing cooling water intake structure with modified traveling screens qualifies as BTA for entrainment in accordance with Section 316(b) of the federal Clean Water Act (33 U.S.C. section 1326). Part IV.B.11. of the permit summarizes the Freshwater Mussel Augmentation Program Plan requirement.

6.4.9 Permit Conditions

The permittee shall comply with the requirements below:

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 CWIS 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. 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 shall 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.

6. 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)(13) 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.

7. The permittee shall submit and maintain all the information required by the applicable provisions of 40 CFR 125.97.

8. 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.

9. 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.

10. The permittee shall submit to IDEM the completed report for the Impingement Technology Optimization Study Plan which was originally approved on December 14, 2023 and later amended on February 13, 2024. The study is currently scheduled to be completed in 2025-

2026. The report must contain the information required by the impingement technology optimization study required by 40 CFR 125.94(c)(5) and 40 CFR 122.21(r)(6)(i). The report must be able to demonstrate that the technology is or will be optimized to minimize impingement mortality of all non-fragile species. The permittee shall submit the preliminary results of the first year of their optimization study with 60 days of completion of the first year of sampling. The permittee shall submit the final technology optimization study report, covering both year 1 and year 2 (2026 and 2027) of sampling within ninety (90) days of completing the second year of sampling. The permit may be modified to include verifiable and enforceable permit conditions that ensure the technology will perform as demonstrated.

11. The permittee shall contribute $75,000 (permittee's original allocated share) to the Indiana Freshwater Mussel Augmentation Plan project (the Project), within six months of the effective date of the permit. If necessary, the permittee shall contribute an additional sum to the Project, as calculated by the U.S. Fish and Wildlife Service, not to exceed $18,750, within six months of receiving written notice of the requirement for the additional contribution. This will be determined after implementation of the Project and if additional work is needed to meet the Project's success criteria. The permittee shall submit annual reports to IDEM by January 31 of each year detailing the payment(s) made to the Project in the preceding year.

6.5 Additional Information to be submitted with NPDES Renewal Application

1. Updated Version of Line Drawing(s) and Water Balance

   The permittee shall develop an updated version of the line drawing(s) of the water flow through the facility with a water balance, showing operations contributing wastewater to the effluent and treatment units. Similar processes, operations, or production areas may be indicated as a single unit, labeled to correspond to the more detailed identification. The water balance must show approximate average flows at intake and discharge points and between units, including treatment units. This updated version of their line drawing(s) and water balance information shall be submitted with the NPDES renewal application.

2. Discharges of Contaminated Groundwater

   Certain outfalls (Outfalls 203, 303, and 403) allow for the discharge of broad categories of contaminated groundwater. During this permit term, the permittee shall keep records of these discharges, including the date, source/location of contaminated groundwater, estimated volume of contaminated groundwater, pollutants or types of pollutants known or expected to be present in the contaminated groundwater, expected source of pollutants, and any treatment provided. The permittee shall make this data available to IDEM upon request and it shall be submitted with the NPDES renewal application.

6.6 Polychlorinated Biphenyl (PCB)

Many electrical transformers manufactured prior to 1978 contained PCBs. Therefore, in order to determine compliance with the PCB prohibition, the permittee shall provide the following PCB* data for Outfalls 001, 002, 003, and all representative stormwater Outfalls (006S, 008S, 009S, 010S, 011S, 012S, 020S, 023S, 025S, 037S, and 064S) within twelve (12) months of the effective date of the permit. 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.

Pollutant	Test Method	LOD	LOQ
PCBs*	EPA 608	0.1 ug/L	0.3 ug/L

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

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. 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 Warrick County.

Appendix A.1.
Technology-Based Effluent Limitations
for Internal Outfall 603 (303 and 403 combined)

A. Facility Production Data (Taken from Tab 2 of the permit renewal application)

Outfalls	Subpart	Description	2018 Permit Average Daily Production (lbs/day)	Current Permit Average Daily Production (lbs/day)
603 (303 and 403)	Ingot EMC Casting; 40 CFR 421.22 / 421.23 Subpart B, Primary Aluminum Smelting Category	This subpart applies to discharges resulting from the production of aluminum from alumina in the Hall-Heroult process.	2,656,548	2,529,994
603 (303 and 403)	Hot Rolling; 40 CFR 467.22 / 467.23 Subpart B	This subpart applies to discharges from the core and the ancillary operations of the rolling with emulsions subcategory.	4,569,589 Hot Rolling= 2,407,644 Cold Rolling= 2,161,945	4,853,946 Hot Rolling= 2,502,932 Cold Rolling= 2,351,014
603 (303 and 403)	Cold Rolling; 40 CFR 467.22 / 467.23 Subpart B	This subpart applies to discharges from the core and the ancillary operations of the rolling with emulsions subcategory.		
603 (303 and 403)	Finishing (Cleaning and Etching); 40 CFR 467.22 / 467.23 Subpart B	This subpart applies to discharges from the core and the ancillary operations of the rolling with emulsions subcategory.	2,738,016	2,625,917

B. Effluent Limitations Guidelines – Production-Based

40 CFR 421 Nonferrous Metals Manufacturing Point Source Category – Subpart B – Primary Aluminum Smelting

§ 421.22 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology (BPT) currently available.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—kg/kkg of product	
	English units—lbs/thousand lbs of product	
Fluoride	2.0	1.0
Total Suspended solids	3.0	1.5
pH	([1])	([1])

[1] Within the range of 6 to 9 at all times.

§ 421.23 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology (BAT) economically achievable.

(q) Subpart B—Direct Chill Casting Contact Cooling.
BAT Effluent Limitations

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	mg/kg (pound per million pounds) of aluminum product from direct chill casting	
Benzo(a)pyrene	([1])	([1])
Antimony	2.565	1.143
Nickel	.731	.492
Aluminum	8.120	3.602
Fluoride	79.080	35.090

[1] There shall be no discharge allowance for this pollutant.

§ 467.22 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology (BPT) currently available.

Core

Pollutant or pollutant property	BPT effluent limitations	
	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (lb/million off-lbs) of aluminum rolled with emulsions	
Chromium	0.057	0.024
Cyanide	0.038	0.016
Zinc	0.19	0.079
Aluminum	0.84	0.416
Oil and grease	2.60	1.56
Suspended solids	5.33	2.53
pH	([1])	([1])

[1] Within the range of 7.0 to 10.0 at all times.

Cleaning or Etching Bath

Pollutant or pollutant property	BPT effluent limitations	
	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (lb/million off-lbs) of aluminum cleaned or etched	
Chromium	0.079	0.032
Cyanide	0.052	0.022
Zinc	0.262	0.109
Aluminum	1.15	0.573
Oil and grease	3.58	2.15
Suspended solids	7.34	3.49
pH	([1])	([1])

[1] Within the range of 7.0 to 10.0 at all times.

Cleaning or Etching Rinse

Pollutant or pollutant property	BPT effluent limitations	
	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (lb/million off-lbs) of aluminum cleaned or etched	
Chromium	6.12	2.51
Cyanide	4.04	1.67
Zinc	20.31	8.49
Aluminum	89.46	44.52
Oil and grease	278.24	166.95
Suspended solids	570.39	271.29
pH	([1])	([1])

[1] Within the range of 7.0 to 10.0 at all times.

§ 467.23 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology (BAT) economically achievable.

Core

Pollutant or pollutant property	BAT effluent limitations	
	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (lb/million off-lbs) of aluminum rolled with emulsions	
Chromium	0.057	0.024
Cyanide	0.038	0.016
Zinc	0.19	0.079
Aluminum	0.84	0.42

Cleaning or Etching Bath

Pollutant or pollutant property	BAT effluent limitations	
	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (lb/million off-lbs) of aluminum cleaned or etched	
Chromium	0.079	0.032
Cyanide	0.052	0.022
Zinc	0.26	0.109
Aluminum	1.15	0.573

Cleaning or Etching Rinse

Pollutant or pollutant property	BAT effluent limitations	
	Maximum for any 1 day	Maximum for monthly average
	mg/off-kg (lb/million off-lbs) of aluminum cleaned or etched	
Chromium	0.61	0.25
Cyanide	0.41	0.17
Zinc	2.03	0.85
Aluminum	8.95	4.45

C. Calculation of Effluent Limitations Guidelines – Production - Based Limits

Administrative Internal Outfall 603 (303 and 403) – Technology-based Effluent Limitations						
Total Suspended Solids						
Operation	**40 CFR**	**Production (1,000,000 lbs/day)**	**ELG Limits**		**Calculated Permit Limits**	
			Monthly Average	**Daily Maximum**	**Monthly Average**	**Daily Maximum**
			lbs pollutant /1,000,000 lbs of production		**lbs/day**	
Primary Aluminum Smelting Direct Chill Casting	421.22	2.53	1,500	3,000	3790	7590
Rolling with Emulsions Subcategory, Core	467.22	4.85	2.53	5.33	12.30	25.9
Rolling with Emulsions Subcategory, Cleaning or Etching Bath	467.22	2.63	3.49	7.34	9.18	19.3
Rolling with Emulsions Subcategory, Cleaning or Etching Rinse	467.22	2.63	271.29	570.39	712	1500
			Total (2 Significant figures)		4,500 lbs/day	9,100 lbs/day
				Previous Limits	4,700 lbs/day	9,600 lbs/day

Administrative Internal Outfall 603 (303 and 403) – Technology-based Effluent Limitations						
Oil and Grease						
Operation	**40 CFR**	**Production (1,000,000 lbs/day)**	**ELG Limits**		**Calculated Permit Limits**	
			Monthly Average	**Daily Maximum**	**Monthly Average**	**Daily Maximum**
			lbs pollutant /1,000,000 lbs of production		**lbs/day**	
Primary Aluminum Smelting Direct Chill Casting	421.22	2.53			----	----
Rolling with Emulsions Subcategory, Core	467.22	4.85	1.56	2.6	7.57	12.60
Rolling with Emulsions Subcategory, Cleaning or Etching Bath	467.22	2.63	2.15	3.58	5.65	9.42
Rolling with Emulsions Subcategory, Cleaning or Etching Rinse	467.22	2.63	166.95	278.24	438	731
			Total (2 Significant figures)		450 lbs/day	750 lbs/day
				Previous Limits	470 lbs/day	780 lbs/day

Administrative Internal Outfall 603 (303 and 403) – Technology-based Effluent Limitations						
Aluminum						
Operation	**40 CFR**	**Production (1,000,000 lbs/day)**	**ELG Limits**		**Calculated Permit Limits**	
			Monthly Average	**Daily Maximum**	**Monthly Average**	**Daily Maximum**
			lbs pollutant /1,000,000 lbs of production		**lbs/day**	
Primary Aluminum Smelting Direct Chill Casting	421.23(q)	2.53	3.602	8.120	9.11	20.5
Rolling with Emulsions Subcategory, Core	467.23	4.85	0.42	0.84	2.04	4.07
Rolling with Emulsions Subcategory, Cleaning or Etching Bath	467.23	2.63	0.573	1.15	1.51	3.02
Rolling with Emulsions Subcategory, Cleaning or Etching Rinse	467.23	2.63	4.45	8.95	11.7	23.5
			Total (2 Significant figures)		24 lbs/day	51 lbs/day
				Previous Limits	25 lbs/day	53 lbs/day

Administrative Internal Outfall 603 (303 and 403) – Technology-based Effluent Limitations						
Antimony						
			ELG Limits		**Calculated Permit Limits**	
Operation	**40 CFR**	**Production (1,000,000 lbs/day)**	**Monthly Average**	**Daily Maximum**	**Monthly Average**	**Daily Maximum**
			lbs pollutant /1,000,000 lbs of production		**lbs/day**	
Primary Aluminum Smelting Direct Chill Casting	421.23(q)	2.53	1.143	2.565	2.89	6.49
Rolling with Emulsions Subcategory, Core	467.23	4.85			----	----
Rolling with Emulsions Subcategory, Cleaning or Etching Bath	467.23	2.63			----	----
Rolling with Emulsions Subcategory, Cleaning or Etching Rinse	467.23	2.63			----	----
			Total (2 Significant figures)		2.9 lbs/day	6.5 lbs/day
			Previous Limits		3.0 lbs/day	6.8 lbs/day

Administrative Internal Outfall 603 (303 and 403) – Technology-based Effluent Limitations						
Chromium						
			ELG Limits		**Calculated Permit Limits**	
Operation	**40 CFR**	**Production (1,000,000 lbs/day)**	**Monthly Average**	**Daily Maximum**	**Monthly Average**	**Daily Maximum**
			lbs pollutant /1,000,000 lbs of production		**lbs/day**	
Primary Aluminum Smelting Direct Chill Casting	421.23(q)	2.53			----	----
Rolling with Emulsions Subcategory, Core	467.23	4.85	0.024	0.057	0.116	0.276
Rolling with Emulsions Subcategory, Cleaning or Etching Bath	467.23	2.63	0.032	0.079	0.084	0.208
Rolling with Emulsions Subcategory, Cleaning or Etching Rinse	467.23	2.63	0.25	0.61	0.656	1.60
			Total (2 Significant figures)		0.86 lbs/day	2.1 lbs/day
				Previous Limits	0.88 lbs/day	2.1 lbs/day

Administrative Internal Outfall 603 (303 and 403) – Technology-based Effluent Limitations						
Cyanide						
			ELG Limits		**Calculated Permit Limits**	
Operation	**40 CFR**	**Production (1,000,000 lbs/day)**	**Monthly Average**	**Daily Maximum**	**Monthly Average**	**Daily Maximum**
			lbs pollutant /1,000,000 lbs of production		**lbs/day**	
Primary Aluminum Smelting Direct Chill Casting	421.23(q)	2.53			----	----
Rolling with Emulsions Subcategory, Core	467.23	4.85	0.016	0.038	0.078	0.184
Rolling with Emulsions Subcategory, Cleaning or Etching Bath	467.23	2.63	0.022	0.052	0.058	0.137
Rolling with Emulsions Subcategory, Cleaning or Etching Rinse	467.23	2.63	0.17	0.41	0.446	1.080
			Total (2 Significant figures)		0.58 lbs/day	1.4 lbs/day
				Previous Limits	0.60 lbs/day	1.4 lbs/day

Administrative Internal Outfall 603 (303 and 403) – Technology-based Effluent Limitations						
Fluoride						
			ELG Limits		**Calculated Permit Limits**	
Operation	**40 CFR**	**Production (1,000,000 lbs/day)**	**Monthly Average**	**Daily Maximum**	**Monthly Average**	**Daily Maximum**
			lbs pollutant /1,000,000 lbs of production		**lbs/day**	
Primary Aluminum Smelting Direct Chill Casting	421.23(q)	2.53	35.090	79.080	88.8	200
Rolling with Emulsions Subcategory, Core	467.23	4.85			----	----
Rolling with Emulsions Subcategory, Cleaning or Etching Bath	467.23	2.63			----	----
Rolling with Emulsions Subcategory, Cleaning or Etching Rinse	467.23	2.63			----	----
			Total (2 Significant figures)		89 lbs/day	200 lbs/day
			Previous Limits		93 lbs/day	210 lbs/day

Administrative Internal Outfall 603 (303 and 403) – Technology-based Effluent Limitations						
Nickel						
			ELG Limits		**Calculated Permit Limits**	
Operation	**40 CFR**	**Production (1,000,000 lbs/day)**	**Monthly Average**	**Daily Maximum**	**Monthly Average**	**Daily Maximum**
			lbs pollutant /1,000,000 lbs of production		**lbs/day**	
Primary Aluminum Smelting Direct Chill Casting	421.23(q)	2.53	0.492	0.731	1.24	1.85
Rolling with Emulsions Subcategory, Core	467.23	4.85			----	----
Rolling with Emulsions Subcategory, Cleaning or Etching Bath	467.23	2.63			----	----
Rolling with Emulsions Subcategory, Cleaning or Etching Rinse	467.23	2.63			----	----
			Total (2 Significant figures)		1.2 lbs/day	1.9 lbs/day
				Previous Limits	1.3 lbs/day	1.9 lbs/day

Administrative Internal Outfall 603 (303 and 403) – Technology-based Effluent Limitations						
Zinc						
			ELG Limits		**Calculated Permit Limits**	
Operation	**40 CFR**	**Production (1,000,000 lbs/day)**	**Monthly Average**	**Daily Maximum**	**Monthly Average**	**Daily Maximum**
			lbs pollutant /1,000,000 lbs of production		**lbs/day**	
Primary Aluminum Smelting Direct Chill Casting	421.23(q)	2.53			----	----
Rolling with Emulsions Subcategory, Core	467.23	4.85	0.079	0.190	0.383	0.922
Rolling with Emulsions Subcategory, Cleaning or Etching Bath	467.23	2.63	0.109	0.260	0.287	0.684
Rolling with Emulsions Subcategory, Cleaning or Etching Rinse	467.23	2.63	0.85	2.03	2.23	5.33
			Total (2 Significant figures)		2.9 lbs/day	6.9 lbs/day
				Previous Limits	3.0 lbs/day	7.1 lbs/day

Internal Outfall 603--Technology-based Effluent Limitations
Benzo(a)pyrene
In the Primary Aluminum Smelting Direct Chill Casting effluent limitation guidelines, 40 CFR 421.23(q), it specifies for benzo(a)pyrene that "[t]here shall be no discharge allowance for this pollutant." In the July 1, 1987 amendments of 40 CFR 421, 52 FR 25552-25560; EPA revised the discharge requirements for benzo(a)pyrene. In these amendments, EPA explained that a limitations allowance for the discharge of benzo(a)pyrene would apply only to those processes that generated it. EPA determined that the primary aluminum smelting, direct chill casting category process did not generate benzo(a)pyrene; therefore, no allowance for benzo(a)pyrene was provided for this subcategory. EPA further explained that the regulation did not require permit writers or the control authority to impose monitoring for benzo(a)pyrene at these processes. See discussion of this topic in the preamble for these amendments at 52 FR 25553. Benzo(a)pyrene is not regulated under the Aluminum Forming Point Source Category. Therefore, neither limitations nor monitoring for benzo(a)pyrene is required in the permit by these effluent limitations guidelines. The permittee did not include analytical results for benzo(a)pyrene at internal Outfall 603 in its 2-C application form; benzo(a)pyrene was marked as "Believed Absent". However, a summary of ten (10) analytical results for benzo(a)pyrene were included for internal Outfall 303 and 403 in the 2-C application form. At both outfalls, the average concentration was 9.34 ug/l and the maximum daily concentration was <9.4 ug/l.

Internal Outfall 303 and Internal Outfall 403 – Technology-based Effluent Limitations		
pH		
Operation	**40 CFR**	**ELG Limits**
Primary Aluminum Smelting Direct Chill Casting	421.22	Within the range of 6.0 to 9.0 at all times.
Rolling with Emulsions Subcategory, Core	467.22	Within the range of 7.0 to 10.0 at all times.
Rolling with Emulsions Subcategory, Cleaning or Etching Bath	467.22	Within the range of 7.0 to 10.0 at all times.
Rolling with Emulsions Subcategory, Cleaning or Etching Rinse	467.22	Within the range of 7.0 to 10.0 at all times.

Appendix A.2.
Technology-Based Effluent Limitations
for internal Outfall 103

D. Effluent Limitations Guidelines – Fixed (Non-Production-Based) Limits

40 CFR 423 Steam Electric Power Generating Point Source Category

§ 423.12 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology (BPT) currently available.

(b)(3) low volume sources

Pollutant or pollutant property	BPT effluent limitations	
	Maximum for any 1 day (mg/l)	Maximum for monthly average (mg/l)
TSS	100.0	30.0
Oil and Grease	20.0	15.0

(b)(4) fly ash and bottom ash transport water

Pollutant or pollutant property	BPT effluent limitations	
	Maximum for any 1 day (mg/l)	Maximum for monthly average (mg/l)
TSS	100.0	30.0
Oil and Grease	20.0	15.0

(b)(7)

Pollutant or pollutant property	BPT effluent limitations	
	Maximum for any 1 day (mg/l)	Maximum for monthly average (mg/l)
Free Available Chlorine	0.5	3

Appendix A.3.
Technology-Based Effluent Limitations
for Outfall 002

E. Effluent Limitations Guidelines – Fixed (Non-Production-Based) Limits

40 CFR 423 Steam Electric Power Generating Point Source Category

§ 423.13 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology (BAT) economically achievable.

(b)(1) once-through cooling water

Pollutant or pollutant property	BAT effluent limitations
	Maximum concentration (mg/l)
Total residual chlorine	0.20

Appendix A.4.
Technology-Based Effluent Limitations
for internal Outfall 703

F. Effluent Limitations Guidelines – Fixed (Non-Production-Based) Limits

40 CFR 423 Steam Electric Power Generating Point Source Category

§ 423.12 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology (BPT) currently available.

(b)(5) metal cleaning wastes

Pollutant or pollutant property	BPT effluent limitations	
	Maximum for any 1 day (mg/l)	Maximum for monthly average (mg/l)
TSS	100.0	30.0
Oil and Grease	20.0	15.0
Total Copper	1.0	1.0
Total Iron	1.0	1.0

(b)(1)
The pH of all discharges, except once through cooling water, shall be within the range of 6.0-9.0.

State Form 4336

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

INDIANAPOLIS

OFFICE MEMORANDUM

Date: September 23, 2025

To: Permit File

Thru: John Elliott JE
Permits Branch

From: Matt Warrener MPW
Industrial Permits Section

Subject: Wasteload Allocation Report for Warrick Newco LLC in Warrick County (IN0001155, WLA002805)

This wasteload allocation, including a reasonable potential analysis, is being conducted for the renewal of the NPDES permit for Warrick Newco LLC. This permittee operates a primary aluminum smelter and produces aluminum sheet. This facility is powered by an adjacent coal fired steam electric generating plant owned by Alcoa Power Generating, Inc.

Not including the stormwater outfalls, the current permit contains effluent limitations and/or monitoring requirements for five external outfalls (001, 002, 003, 004, and 005) and seven internal outfalls (103, 203, 303, 403, 503, 603, and 703). Internal Outfall 603 is considered an Administrative Outfall which does not physically exist; the values reported at internal Outfall 603 come from a combined (flow-weighted) calculation of the values reported at internal Outfalls 303 and 403.

This wasteload allocation analysis was conducted only for external outfalls. Outfall 001 (0.68 MGD), Outfall 004 (0.009 MGD), and Outfall 005 (0.18 MGD) discharge intermittently and consist primarily of process and nonprocess wastestreams from the electric generating plant which are combined with stormwater. Outfall 002 consists primarily of once-through cooling water from the electric generating plant and was excluded from this wasteload allocation report. Outfall 003 (10.4 MGD) consists of process and nonprocess wastewater from both the aluminum manufacturing operations and the electric power plant which are combined with stormwater. Information about internal Outfalls 103 and 303 has also been included in this report, when necessary, since the values reported at Outfall 003 are derived from the cumulative values reported at internal Outfalls 103 and 303. Information about internal Outfalls 603 and 703 has also been included in this report for the comparison of technology-based effluent limitations (TBELs) to potential water quality-based effluent limitations (WQBELs) at Outfall 003.

The external outfalls included in this report (001, 003, 004, and 005) discharge to the Ohio River. Discharges to the Ohio River are subject to the water quality standards established by the Ohio River Valley Water Sanitation Commission or ORSANCO, (ORSANCO "Pollution Control

Standards for Discharges to the Ohio River", 2019 Revision) as well as the water quality standards established by Indiana. The WQBELs developed in this wasteload allocation are the more stringent of Indiana or ORSANCO criteria and implementation procedures.

The Ohio River has a Q7,10 of 11,000 cfs (7,110 MGD) at the outfalls. The applicable ORSANCO and Indiana use designations under each standard are as follows.

> <u>ORSANCO Designations:</u> Available for safe and satisfactory use as public and industrial water supplies after reasonable treatment, suitable for recreational usage, capable of maintaining fish and other aquatic life, and adaptable to such other uses as may be legitimate.
>
> <u>Indiana Designations:</u> Fully body contact recreation, capable of supporting a well-balanced warm water aquatic community, public water supply and industrial water supply.

The external outfalls discharging to the Ohio River are in Assessment Unit INH6_10 French Islands, Nos 1 and 2 to Newburgh Locks, which is on the 2024 303(d) list for *E. coli*, Dioxin (water), PCBs (water), and Mercury (water). According to their website, ORSANCO plans to complete and public notice an updated draft TMDL for bacteria in the Ohio River when additional funding is available; a specific schedule/timeline for this TMDL is not currently available.

The pollutants included in this wasteload allocation analysis are listed below for each outfall:

Outfall	Parameter
001	Copper, Iron, Mercury, and Zinc
003	Antimony, Total Chromium, Copper, Iron, Manganese, Mercury, Nickel, Zinc, Total Residual Chlorine, Total Cyanide, and Fluoride
004	Copper, Iron, Mercury, Zinc, Free Cyanide
005	Copper, Mercury, Zinc, Fluoride

At Outfall 003, WQBELs were calculated for Antimony, Total Chromium, Nickel, Zinc, Total Cyanide, and Fluoride so that they could be compared to proposed TBELs at internal Outfall 603. Additionally, at Outfall 003, WQBELs were calculated for Copper and Iron so that they could be compared to proposed TBELs at internal Outfall 703. In this comparison, the TBELs which are applied at both internal Outfalls 603 and 703 are more stringent. Therefore, the inclusion of TBELs at internal Outfalls 603 and 703 does not authorize the discharge of pollutants at levels that exceed the WQBELs for these pollutants at Outfall 003. The projected effluent quality (PEQ) was calculated for all the parameters at Outfall 003, except Total Residual Chlorine, as well as the parameters at Outfalls 001, 004, and 005. The calculation of PEQs is included in Table 1 below.

Preliminary effluent limitations (PELs) were calculated using both Indiana and ORSANCO water quality criteria and implementation procedures with the more stringent PELs used in the reasonable potential analysis. The results of the analysis are included in Table 2.

The results show that at Outfall 001, a PEQ exceeds a PEL for Copper, Iron, Mercury, and Zinc. At Outfall 003, a PEQ exceeds a PEL for Mercury. At Outfall 004, a PEQ exceeds a PEL for Copper, Iron, Mercury, Zinc, and Free Cyanide. At Outfall 005, a PEQ exceeds a PEL for Copper, Mercury, and Zinc. Therefore, there is a reasonable potential to exceed (RPE) a water quality criterion for each of these pollutants at these outfalls.

WQBELs for Outfalls 001, 003, 004, and 005 are included in Table 3 for all of the pollutants that showed a reasonable potential to exceed a water quality criterion. In addition, WQBELs for Total Residual Chlorine at Outfall 003 are included in Table 3. The WQBELs in this table are the more stringent of the Indiana or ORSANCO criteria and implementation procedures. As specified in the table, ORSANCO water quality standards are the basis for the Copper WQBELs at Outfalls 001, 004, and 005. The documentation for the wasteload allocation analysis is included as an attachment.

TABLE 1
Calculation of Projected Effluent Quality
For Warrick Newco LLC in Warrick County
(IN0001155, WLA002805)

Parameter	Monthly Average PEQ					Daily Maximum PEQ				
	Maximum Monthly Average (mg/l)	Number of Monthly Averages	CV	Multiplying Factor	Monthly Average PEQ (mg/l)	Maximum Daily Sample (mg/l)	Number of Daily Samples	CV	Multiplying Factor	Daily Maximum PEQ (mg/l)
OUTFALL 001										
Copper	0.072	19	0.5	1.3	0.094	0.147	62	0.9	1.0	0.15
Iron	15.7	19	0.6	1.4	22	27.09	62	1.0	1.0	27
Mercury	0.00017	22	1.2	1.6	0.00027	0.000426	68	1.9	0.9	0.00038
Zinc	0.33	19	0.5	1.3	0.43	1.06	62	1.0	1.0	1.1
OUTFALL 003										
Antimony					0.051	0.032	12	0.6	1.6	0.051
Total Chromium					0.010	0.0063	12	0.6	1.6	0.010
Copper	0.020	60	0.5	1.0	0.020	0.027	124	0.5	0.9	0.024
Iron					1.6	0.864	8	0.6	1.9	1.6
Manganese	1.7	60	0.2	1.0	1.7	2.14	253	0.3	0.9	1.9
Mercury					0.000031	0.0000262	34	0.6	1.2	0.000031
Nickel					0.24	0.15	12	0.6	1.6	0.24
Zinc					0.44	0.276	12	0.6	1.6	0.44
Cyanide, Total					0.10	0.063	13	0.6	1.6	0.10
Fluoride	4.9	60	0.2	1.0	4.9	4.94	132	0.2	1.0	4.9
OUTFALL 004										
Copper	0.082	3	0.6	3	0.25	0.116	17	0.8	1.6	0.19
Iron	46	3	0.6	3	140	67.22	17	0.8	1.6	110
Mercury	0.000118	3	0.6	3	0.00035	0.000436	17	1.1	1.8	0.00078
Zinc	3.9	3	0.6	3	12	12.554	17	1.2	1.9	24
Cyanide, Free	0.0058	3	0.6	3	0.017	2.4	16	3.9	2.4	5.8
OUTFALL 005										
Copper					0.24	0.163	19	0.7	1.5	0.24
Mercury					0.00038	0.000226	17	1.0	1.7	0.00038
Zinc					1.3	0.895	19	0.7	1.5	1.3
Fluoride					12	9.63	20	0.4	1.2	12

TABLE 2
Results of Reasonable Potential Statistical Procedure
For Warrick Newco LLC in Warrick County
(IN0001155, WLA002805)

Parameter	Monthly Average Comparison			Daily Maximum Comparison			Reasonable Potential to Exceed?	Source of PEL (Indiana or ORSANCO)
	Monthly Average PEQ (mg/l)	Monthly Average PEL* (mg/l)	PEQ > PEL?	Daily Maximum PEQ (mg/l)	Daily Maximum PEL* (mg/l)	PEQ > PEL?		
OUTFALL 001								
Copper	0.094	0.039	Yes	0.15	0.057	Yes	Yes	ORSANCO
Iron	22	3.8	Yes	27	5.5	Yes	Yes	Indiana
Mercury	0.00027	0.000012	Yes	0.00038	0.000020	Yes	Yes	Indiana
Zinc	0.43	0.66	No	1.1	0.96	Yes	Yes	Indiana
*Based on an effluent flow of 0.68 mgd.								
OUTFALL 003								
Antimony	0.051	0.83	No	0.051	1.4	No	No	Indiana
Total Chromium	0.010	2.6	No	0.010	4.6	No	No	Indiana
Copper	0.020	0.033	No	0.024	0.057	No	No	ORSANCO
Iron	1.6	3.2	No	1.6	5.5	No	No	Indiana
Manganese	1.7	5.4	No	1.9	11	No	No	Indiana
Mercury	0.000031	0.000012	Yes	0.000031	0.000020	Yes	Yes	Indiana
Nickel	0.24	1.3	No	0.24	2.2	No	No	Indiana
Zinc	0.44	0.55	No	0.44	0.96	No	No	Indiana
Cyanide, Total	0.10	24	No	0.10	58	No	No	ORSANCO
Fluoride	4.9	14	No	4.9	24	No	No	ORSANCO
*Based on an effluent flow of 10.4 mgd.								
OUTFALL 004								
Copper	0.25	0.039	Yes	0.19	0.057	Yes	Yes	ORSANCO
Iron	140	3.8	Yes	110	5.5	Yes	Yes	Indiana
Mercury	0.00035	0.0000120	Yes	0.00078	0.000020	Yes	Yes	Indiana
Zinc	12	0.66	Yes	24	0.96	Yes	Yes	Indiana
Cyanide, Free	0.017	0.030	No	5.8	0.044	Yes	Yes	Indiana
*Based on an effluent flow of 0.009 mgd.								
OUTFALL 005								
Copper	0.24	0.039	Yes	0.24	0.057	Yes	Yes	ORSANCO
Mercury	0.00038	0.000012	Yes	0.00038	0.000020	Yes	Yes	Indiana
Zinc	1.3	0.66	Yes	1.3	0.96	Yes	Yes	Indiana
Fluoride	12	16	No	12	24	No	No	ORSANCO
*Based on an effluent flow of 0.18 mgd.								

TABLE 3
Water Quality-based Effluent Limitations
For Warrick Newco LLC in Warrick County
(IN0001155, WLA002805)

Parameter	Quality or Concentration*			Quantity or Loading*			Monthly Sampling Frequency	Source of WQBEL (Indiana or ORSANCO)
	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units		
OUTFALL 001								
Copper	0.039	0.057	mg/l	0.22	0.32	lbs/day	1	ORSANCO
Iron	3.8	5.5	mg/l	22	31	lbs/day	1	Indiana
Mercury	0.000012	0.000020	mg/l	0.000068	0.00011	lbs/day	1	Indiana
Zinc	0.66	0.96	mg/l	3.7	5.4	lbs/day	1	Indiana
*Based on an effluent flow of 0.68 mgd.								
OUTFALL 003								
Mercury	0.000012	0.000020	mg/l	0.001	0.0017	lbs/day	1	Indiana
Chlorine (total residual)	0.016	0.038	mg/l	1.4	3.3	lbs/day	12	Indiana
*Based on an effluent flow of 10.4 mgd.								
OUTFALL 004								
Copper	0.039	0.057	mg/l	0.0029	0.0043	lbs/day	1	ORSANCO
Iron	3.8	5.5	mg/l	0.29	0.41	lbs/day	1	Indiana
Mercury	0.000012	0.000020	mg/l	0.00000090	0.0000015	lbs/day	1	Indiana
Zinc	0.66	0.96	mg/l	0.050	0.072	lbs/day	1	Indiana
Cyanide, Free	0.030	0.044	mg/l	0.0023	0.0033	lbs/day	1	Indiana
*Based on an effluent flow of 0.009 mgd.								
OUTFALL 005								
Copper	0.039	0.057	mg/l	0.059	0.086	lbs/day	1	ORSANCO
Mercury	0.000012	0.000020	mg/l	0.000018	0.000030	lbs/day	1	Indiana
Zinc	0.66	0.96	mg/l	0.99	1.4	lbs/day	1	Indiana
*Based on an effluent flow of 0.18 mgd.								

Documentation of Wasteload Allocation Analysis
For Discharges in the Non-Great Lakes System

Analysis By: Matt Warrener
Date: September 23, 2025
Reviewed By: John Elliott
WLA Number: 002805

Facility Information

- **Name:** Warrick Newco LLC
- **NPDES Permit Number:** IN0001155
- **Permit Expiration Date:** 12/31/2023 (Administratively Extended)
- **County:** Warrick County
- **Purpose of Analysis:** Reasonable potential analysis and water quality-based effluent limitations (WQBELs) for permit renewal (prior wasteload allocations conducted for this facility are: WLA000408, 11/19/1998; WLA001028, 4/11/2003; WLA001112, 10/16/2003; WLA001904, 6/26/2012; WLA002024, 1/28/2014; and WLA002341, 8/10/2018)
- **Facility Operations:** Warrick Newco LLC operates a primary aluminum smelter and produces aluminum sheet. This facility is powered by a coal fired stream electric generating plant owned by Alcoa Power Generating Inc. See Attachment 1 and Attachment 2 for arial maps of the facility and outfalls.
- **Outfall Numbers and Types of Treatment:** Outfall 001, 003, 004, 005 and internal Outfalls 103, 303, 403, 603, and 703. A description of these outfalls and the types of treatment provided is listed below (This facility has other internal and external outfalls which were excluded because they were not included as part of this WLA).

Outfall	Description
Outfall 001	Outfall 001 discharges intermittently when wastewater overflows from the Power Plant sumps. Under normal flow conditions, wastewater is collected in an intercept sump and pumped to the ash pond system which discharges through Outfall 103. However, during some precipitation events, hydraulic loading events in excess of the systems pumping capacity, or during periods of pump failure, the water in the sump is discharged through this outfall. The discharge is limited to a combination of contact and non-contact cooling water from the steam electric power plant operations; de minimis amounts of non-contact condenser cooling water; evaporator blowdown; non-contact once-through cooling water from the coal handling area which includes once-through non-contact cooling water used for the pumps and seals; on-line chlorine analyzer discharge; wastewater associated with the maintenance washdown activities within the potable water plant and deep-water wells (may contain insignificant amount of potassium permanganate (KmNO4)); relatively small volume of high temperature water; steam condensate from the 310 steam plant; runoff water and wastewater from the Fire Brigade training activities; non-contact water used as deicer; non-contact HVAC condensate; miscellaneous compatible wastewaters from associated shops and support services; vehicle wash water (which may contain insignificant amounts of biodegradable, phosphate-free, detergents); and stormwater runoff from the smelting area and power plant operations. Treatment: flotation and sedimentation

Outfall 003	The discharge is limited to the discharges from internal Outfalls 103 and 303 and nonindustrial stormwater runoff. Because of the proximity of this outfall to the Ohio River, a permanent sampling station has not been installed at this outfall. With the exception of mercury and whole effluent toxicity, the values reported for this outfall are based on a flow-weighted calculation using the values measured at internal Outfall 103 and internal Outfall 303. Samples for mercury and whole effluent toxicity are taken directly from Outfall 003.
Internal Outfall 103	The discharge is limited to the wastestreams included in the descriptions of Outfall 001, 004 and 005 and the discharge from internal Outfall 503 (flue-gas desulfurization or FGD wastewater); ash sluice water; non-contact cooling water from the coal handling area; wastewater from maintenance washdowns from the coal handling area; water and wastewater from the coal handling drains; wastewater from the regeneration of the resin beds for the deionized water production system; wastewater drainage from the removal of dredged material from the wastewater conveyance ditches and other coal combustion byproduct drainage including fly ash from unit outages, cenospheres, sand blast, etc.; wastewaters from vacuum trucks used to transfer compatible wastewater streams for treatment within the ash pond system; non-contact HVAC condensate; miscellaneous compatible wastewaters from associated shops and support services; vehicle wash water (which may contain insignificant amounts biodegradable, phosphate-free, detergents); contaminated and uncontaminated stormwater from the power plant operations, including the coal pile. Discharges from internal Outfall 103 ultimately discharge through Outfall 003. Treatment: includes solids settling with the aid of a polymer/coagulant in a series of ash ponds with a total area of approximately 65 acres and pH adjustment with acid or caustic prior to discharge
Internal Outfall 303	The discharge is limited to a combination of wastewater and stormwater from the Smelting Plant, Ingot Plant, Rolling Plant, Fabrication Plant, and support areas; discharge from the Bldg. 816 Finishing rotoclones, blowdown and incidental leaks of steam or high temperature water from the Bldg. 316 Boiler House, treated wastewater from the Finishing Wastewater Treatment Facility (Bldg. 879) Spent Acid Treatment; treated wastewater from the Finishing Wastewater Treatment Facility (Bldg. 879) Spent Wash and Water-Based Coating Solution Treatment; treated wastewater from the Rolling Wastewater Treatment Facility (Bldg. 871E Oily Wastewater Treatment); incidental amounts of untreated or partially treated Bldg. 879 wash wastewater from various maintenance activities or foaming conditions; untreated or partially treated oily wastewater from the 871E oily wastewater treatment plant from various maintenance activities; wastewaters from vacuum trucks used to transfer compatible wastewater streams for treatment within the various wastewater treatment facilities; evaporator blowdown from the Bldg. 310 steam plant; water softener backwash; emergency cooling water for air compressor Bldg. 311; contact cooling water from the fan houses at the rectifiers; blowdown from the ingot casting cooling water system; wastewater discharged from the roll caster units; water from the vaporizers at the chlorine house; deionized water system backwash; cooling water from the Ingot preheat furnaces; cooling water from the scalper; DI quench water at the coil coating lines; wastewater from the cleaning of work rolls within the Finishing Department; coatings (only if the contaminants associated with these insignificant discharges are monitored at Outfall 303 and/or Outfall 003); material testing rinse water; water and wastewater from the steam and high temperature water systems; other miscellaneous contact and noncontact cooling water; cooling tower blowdown and emergency overflows; wash water consisting of potable water used to wash down cooling tower screens; HVAC condensate; stormwater runoff; stormwater from secondary containment systems (either uncontaminated or treated); uncontaminated water from building foundation drainage; treated contaminated groundwater (treated in the Finishing wastewater treatment (bldg. 879) spent acid treatment system) from an onsite remediation project; treated contaminated groundwater from excavation and remediation projects, and various maintenance activities containing biodegradable organic materials and wastewaters; wastewater from associated shops and support services; vehicle wash water (which may contain insignificant amounts of biodegradable, phosphate-free[10], detergents); and discharges from Internal Outfall 203 and stormwater runoff from the contractor laydown area. The sanitary sewer effluent (internal Outfall 203) mixes with the other treatment plant effluents after they have already discharged from the storm pond, just upstream of internal Outfall 303. Discharges from internal Outfall 303 ultimately discharge through Outfall 003.

	Treatment: the discharges from three separate treatment processes (spent acid treatment, spent wash and coating treatment and oily wastewater treatment) are combined in a final storm pond where sedimentation occurs; treatment for the sanitary wastewater consists of an activated sludge wastewater treatment plant with two (2) parallel extended aeration diffused air treatment units with clarifiers and disinfection with sodium hypochlorite
Internal Outfall 403	The discharge is limited to a combination of wastewater and stormwater from the Smelting Plant, Ingot Plant, Rolling Plant, Fabrication Plant, and support areas; discharge from the Bldg. 816 Finishing rotoclones, blowdown and incidental leaks of steam or high temperature water from the Bldg. 316 Boiler House, treated wastewater from the Finishing Wastewater Treatment Facility (Bldg. 879) Spent Acid Treatment; treated wastewater from the Finishing Wastewater Treatment Facility (Bldg. 879) Spent Wash and Water-Based Coating Solution Treatment; treated wastewater from the Rolling Wastewater Treatment Facility (Bldg. 871E Oily Wastewater Treatment); incidental amounts of untreated or partially treated Bldg. 879 wash wastewater from various maintenance activities or foaming conditions; untreated or partially treated oily wastewater from the 871E oily wastewater treatment plant from various maintenance activities; wastewaters from vacuum trucks used to transfer compatible wastewater streams for treatment within the various wastewater treatment facilities; evaporator blowdown from the Bldg. 310 steam plant; water softener backwash; emergency cooling water for air compressor Bldg. 311; contact cooling water from the fan houses at the rectifiers; blowdown from the ingot casting cooling water system; wastewater discharged from the roll caster units; water from the vaporizers at the chlorine house; deionized water system backwash; cooling water from the Ingot preheat furnaces; cooling water from the scalper; DI quench water at the coil coating lines; wastewater from the cleaning of work rolls within the Finishing Department; coatings (only if the contaminants associated with these insignificant discharges are monitored at Outfall 303 and/or Outfall 003); material testing rinse water; water and wastewater from the steam and high temperature water systems; other miscellaneous contact and noncontact cooling water; cooling tower blowdown and emergency overflows; wash water consisting of potable water used to wash down cooling tower screens; HVAC condensate; stormwater runoff; stormwater from secondary containment systems (either uncontaminated or treated); uncontaminated water from building foundation drainage; treated contaminated groundwater (treated in the Finishing wastewater treatment (bldg. 879) spent acid treatment system) from an onsite remediation project; treated contaminated groundwater from excavation and remediation projects, and various maintenance activities containing biodegradable organic materials and wastewaters; vehicle wash water (which may contain insignificant amounts of biodegradable, phosphate-free, detergents); and wastewater from associated shops and support services. Discharges from internal Outfall 403 are used as intake water for the flue gas desulfurization (FGD) scrubber system and the portion that is not evaporated is discharged through internal Outfall 503 into the ash pond treatment system which discharges through internal Outfall 103 then Outfall 003. Treatment: the discharges from three separate treatment processes (spent acid treatment, spent wash and coating treatment and oily wastewater treatment) are combined in a final storm pond where sedimentation occurs
Internal Outfall 503	The discharge is limited to flue gas desulfurization (FGD) wastewaters, consisting primarily of scrubber blowdown. The discharge also consists of a small volume of wastewater associated with the dry fly ash silo load out dust prevention system. Sulfur dioxide is removed from the combustion exhaust gas (flue gas) using wet scrubbing. The resulting wastestream discharged is referred to as flue gas desulfurization wastewater. Treatment: none
Internal Outfall 603	Internal Outfall 603 is an Administrative Outfall that is representative of the combined (flow-weighted) discharges from internal Outfall 303 and 403. Therefore, the discharge is limited to the wastestreams described in the above descriptions for internal Outfalls 303 and 403. Discharges from internal Outfall 603 ultimately discharge through Outfall 003.
Internal Outfall 703	Internal Outfall 703 is representative of the non-chemical metal cleaning wash water that discharges to internal Outfalls 103 and Outfall 004. This point is representative of the aforementioned wastestream before it mixes with other wastestreams contributing to these outfalls. The discharge is limited to non-chemical metal cleaning wash water from the cleaning of the ash system which includes (but is not

	limited to) the precipitators, fireside boiler tubes, and air heaters. Discharges from internal Outfall 703 ultimately discharge through Outfall 003 or Outfall 004. Treatment: none
Outfall 004	Outfall 004 discharges intermittently when wastewater overflows from the Power Plant sumps. Under normal flow conditions, the wastewater from the below sources is collected in an intercept sump and pumped to the ash pond system prior to discharging through internal Outfall 103. However, during some precipitation events, hydraulic loading events in excess of the systems pumping capacity, or during periods of pump failure, the water in the sump is discharged this outfall. The discharge is limited to a combination of contact and non-contact cooling water from the steam electric power plant operations; oily water decant pit discharge; wastewater from ash trench drains; the discharge from Outfall 703; boiler blowdown; wastewater from equipment associated with the selective catalytic reductant (SCR) and selective noncatalytic reductant (SNCR) systems, mainly comprised of potable water and insignificant ammonia and/or urea; insignificant quantities of gypsum and limestone from the offloading, processing, and removal of these materials from the FGD scrubber or ancillary equipment; compatible wastewaters from maintenance activities of the FGD scrubber system; wastewaters and blowdown from the scrubber and dry fly ash handling system including the silo and pug mill; emergency overflow of the scrubber system; wastewater from the coal handling area; wastewater from the regeneration of the resin beds in the demineralizing water system; potable water plant filter backwash; wastewater associated with the maintenance washdown activities within the potable water plant and deep water wells (may contain insignificant amount of potassium permanganate ($KmNO4$)); wastewater from the steam and high temperature water systems; non-contact HVAC condensate; vehicle wash water (which may contain insignificant amounts of biodegradable, phosphate-free, detergents); miscellaneous compatible wastewaters from associated shops and support services; and stormwater runoff from the power plant operations. Treatment: flotation and sedimentation
Outfall 005	Outfall 005 discharges intermittently when wastewater overflows from the Power Plant sumps. Under normal operation, this outfall does not discharge. Under normal flow conditions, wastewater collects in an intercept sump and is pumped to the ash pond system prior to discharging from internal Outfall 103. Discharge from Outfall 005 occurs during emergency overflow conditions caused by heavy precipitation or hydraulic loading events which exceed the system's pumping capacity, or during electrical or mechanical failure. The discharge is limited to a combination of contact and non-contact cooling water from the steam electric power plant operations; insignificant quantities of gypsum and limestone from the off-loading, processing, and removal of these materials from the FGD scrubber or ancillary equipment; wastewaters and blowdown from the scrubber and dry fly ash handling system including the silo and pug mill; non-contact cooling water from the coal handling area; wastewater from maintenance washdowns from the coal handling area and coal truck unloading area; minor volume of wastewater from the alumina ore unloading area, consisting mostly of compressor condensate and water from maintenance washdowns; cooling water from the fan houses at the rectifiers; emergency cooling water for the Bldg. 311 air compressor station; incidental amounts of cooling tower water due to spills, leaks, sprays, or equipment malfunction; wastewater from the steam and high temperature water systems; non-contact HVAC condensate; miscellaneous compatible wastewaters from associated shops and support services; vehicle wash water (which may contain insignificant amounts of biodegradable, phosphate-free, detergents); stormwater runoff from the smelting area and power plant operations, including coal handling, the alumina ore unloading area, and the coal pile; and uncontaminated and contaminated (only if the contaminants are monitored routinely at the outfall) storm water from secondary containment systems. Treatment: flotation and sedimentation

- **Applicable Effluent Guidelines:**

  40 CFR 421, **Nonferrous Metals Manufacturing Point Source Category, Subpart B - Primary Aluminum Smelting Subcategory** which regulates Benzo(a)pyrene, Antimony, Nickel, Aluminum, Fluoride, TSS, and pH. These limits (with the exception of pH) are applied at internal Outfall 603 (which reports the combined (flow-weighted) discharge concentrations at internal Outfalls 303 and 403). The pH limits are applied at internal Outfall 303.

  40 CFR 467, **Aluminum Forming Point Source Category, Subpart B - Rolling with Emulsions Subcategory** which regulates Chromium, Cyanide, Zinc, Aluminum, Oil and Grease, TSS, and pH. These limits (with the exception of pH) are applied at internal Outfall 603 (which reports the combined (flow-weighted) discharge concentrations at internal Outfalls 303 and 403). The pH limits are applied at internal Outfall 403.

  40 CFR 423, the Steam Electric Power Generating Point Source Category. These effluent limitation guidelines are not applicable to this facility, so these limits would be considered TBELs developed on a case-by-case basis using best professional judgement (BPJ). These limits regulate pH, Total Suspended Solids, Oil & Grease, as well as Copper and Iron when non-chemical metal cleaning wastes are being discharged. These limits are applied at internal Outfall 703.

- **Current Permitted Flow (2018 renewal):** The below-listed flows were used in WLA002341 dated 8/10/2018 and are the maximum monthly average flows at these outfalls for the period from March 2016 through February 2018.

Outfall	Flow
Outfall 001	1.2 MGD
Outfall 003	9.4 MGD
Outfall 004	0.31 MGD
Outfall 005	0.25 MGD

- **Effluent Flow for WLA Analysis:** The below-listed flows are the maximum monthly average flows at these outfalls for the period from November 2021 through October 2023 (The data used for these determinations is contained in Attachments 3A and 3B).

Outfall	Flow
Outfall 001	0.68 MGD
Outfall 003	10.4 MGD
Internal Outfall 103	9.7 MGD
Internal Outfall 303	1.9 MGD
Internal Outfall 403	1.1 MGD
Internal Outfall 503	0.40 MGD
Internal Outfall 703	0.068 MGD
Outfall 004	0.009 MGD
Outfall 005	0.18 MGD

- **Current Effluent Limits:** Below is a summary of the monitoring requirements and limits for select parameters at final Outfalls 001, 003, 004, and 005. The monitoring requirements and limits at internal Outfalls 103 and 303 are also included because they are used to calculate the final value reported at Outfall 003. The monitoring requirements at internal Outfalls 303 and 403 are also included because they are used to calculate the final value reported at internal Outfall 603 and internal Outfalls 503 and 703 are included because they are sources to internal Outfall 103.

Outfall 001					
Parameter	**Monthly Average**		**Daily Maximum**		**Measurement Frequency**
	(mg/l)	**(lbs/day)**	**(mg/l)**	**(lbs/day)**	
Copper	0.036	Report	0.062	Report	3 X Quarterly
Iron	Report	Report	Report	Report	3 X Quarterly
Mercury	0.000012	Report	0.000020	Report	3 X Quarterly
Zinc	0.61	Report	1.0	Report	3 X Quarterly

Outfall 003					
Parameter	**Monthly Average**		**Daily Maximum**		**Measurement Frequency**
	(mg/l)	**(lbs/day)**	**(mg/l)**	**(lbs/day)**	
Chlorine, Total Residual	0.016	----	0.038	----	3 X Weekly
Copper	Report	----	Report	----	2 X Monthly
Fluoride	Report	----	Report	----	2 X Monthly
Manganese	1.5	120	3.0	240	1 X Weekly
Mercury	0.000012	0.00094	0.000020	0.00160	6 X Yearly

Internal Outfall 103					
Parameter	**Monthly Average**		**Daily Maximum**		**Measurement Frequency**
	(mg/l)	**(lbs/day)**	**(mg/l)**	**(lbs/day)**	
Chlorine, Total Residual	Report	----	Report	----	3 X Weekly
Copper	Report	Report	Report	Report	2 X Monthly
Fluoride	Report	Report	Report	Report	2 X Monthly
Manganese	Report	Report	Report	Report	1 X Weekly

Internal Outfall 303					
Parameter	**Monthly Average**		**Daily Maximum**		**Measurement Frequency**
	(mg/l)	**(lbs/day)**	**(mg/l)**	**(lbs/day)**	
Antimony	Report	Report	Report	Report	2 X Weekly
Chlorine, Total residual	Report	----	Report	----	3 X Weekly
Chromium, Total	Report	Report	Report	Report	2 X Weekly
Copper	Report	Report	Report	Report	2 X Monthly
Cyanide, Total	Report	Report	Report	Report	2 X Weekly
Fluoride	Report	Report	Report	Report	2 X Weekly
Nickel	Report	Report	Report	Report	2 X Weekly
Manganese	Report	Report	Report	Report	1 X Weekly
Zinc	Report	Report	Report	Report	2 X Weekly

Internal Outfall 403					
Parameter	**Monthly Average**		**Daily Maximum**		**Measurement Frequency**
	(mg/l)	**(lbs/day)**	**(mg/l)**	**(lbs/day)**	
Antimony	----	Report	----	Report	2 X Weekly
Chromium, Total	----	Report	----	Report	2 X Weekly
Cyanide, Total	----	Report	----	Report	2 X Weekly
Fluoride	----	Report	----	Report	2 X Weekly
Nickel	----	Report	----	Report	2 X Weekly
Zinc	----	Report	----	Report	2 X Weekly

Internal Outfall 503					
Parameter	Monthly Average		Daily Maximum		Measurement Frequency
	(mg/l)	(lbs/day)	(mg/l)	(lbs/day)	
Arsenic	Report	----	Report	----	2 X Monthly
Cadmium	Report	----	Report	----	2 X Monthly
Chromium, Total	Report	----	Report	----	2 X Monthly
Copper	Report	----	Report	----	2 X Monthly
Lead	Report	----	Report	----	2 X Monthly
Mercury	Report	Report	Report	Report	6 X Yearly
Nickel	Report	----	Report	----	2 X Monthly
Selenium	Report	----	Report	----	2 X Monthly
Total Dissolved Solids	Report	----	Report	----	2 X Monthly
Zinc	Report	----	Report	----	2 X Monthly

Internal Outfall 603					
Parameter	Monthly Average		Daily Maximum		Measurement Frequency
	(mg/l)	(lbs/day)	(mg/l)	(lbs/day)	
Antimony	----	3.0	----	6.8	2 X Weekly
Chromium, Total	----	0.88	----	2.1	2 X Weekly
Fluoride	----	93	----	210	2 X Weekly
Nickel	----	1.3	----	1.9	2 X Weekly
Cyanide, Total	----	0.60	----	1.4	2 X Weekly
Zinc	----	3.0	----	7.1	2 X Weekly

Internal Outfall 703					
Parameter	Monthly Average		Daily Maximum		Measurement Frequency
	(mg/l)	(lbs/day)	(mg/l)	(lbs/day)	
Copper	1.0	----	1.0	----	Daily
Iron	1.0	----	1.0	----	Daily

Outfall 004					
Parameter	**Monthly Average**		**Daily Maximum**		**Measurement Frequency**
	(mg/l)	**(lbs/day)**	**(mg/l)**	**(lbs/day)**	
Copper	0.036	Report	0.062	Report	2 X Quarterly
Cyanide, Free	Report	Report	Report	Report	2 X Quarterly
Iron	Report	Report	Report	Report	2 X Quarterly
Mercury	0.000012	Report	0.000020	Report	2 X Quarterly
Zinc	0.61	Report	1.0	Report	2 X Quarterly

Outfall 005					
Parameter	**Monthly Average**		**Daily Maximum**		**Measurement Frequency**
	(mg/l)	**(lbs/day)**	**(mg/l)**	**(lbs/day)**	
Copper	0.036	Report	0.062	Report	2 X Quarterly
Fluoride	Report	Report	Report	Report	2 X Quarterly
Mercury	0.000012	Report	0.000020	Report	2 X Quarterly
Zinc	0.61	Report	1.0	Report	2 X Quarterly

Pollutants of Concern and Type of WLA Analysis

The below list of parameters of concern was determined based on the WQBELs which were evaluated in the previous (2018) WLA and parameters which have TBELs at internal Outfalls. The effluent data used for the analysis was provided in a spreadsheet by the permittee and Form 2C of the permit application.

Outfall	Parameter	Type of Analysis	Reason for Inclusion on Pollutants of Concern List
Outfall 001	Copper Mercury Zinc Iron	RPE RPE RPE RPE	Limited in current permit/screening Limited in current permit/screening Limited in current permit/screening Monitored in current permit/screening
Outfall 003	Antimony Total Chromium Copper Iron Manganese Mercury Nickel Zinc Total Residual Chlorine Total Cyanide Fluoride	RPE/WQBELs RPE/WQBELs RPE/WQBELs RPE/WQBELs RPE RPE RPE/WQBELs RPE/WQBELs WQBELs RPE/WQBELs RPE/WQBELs	Screening/Compare to TBELs at Outfall 603 Screening/Compare to TBELs at Outfall 603 Screening/Compare to TBELs at Outfall 703 Screening/Compare to TBELs at Outfall 703 Limited in current permit/screening Limited in current permit/screening Screening/Compare to TBELs at Outfall 603 Screening/Compare to TBELs at Outfall 603 Limited in current permit Screening/Compare to TBELs at Outfall 603 Screening/Compare to TBELs at Outfall 603
Outfall 004	Copper Free Cyanide Mercury Iron Zinc	RPE RPE RPE RPE RPE	Limited in current permit/screening Monitored in current permit/screening Limited in current permit/screening Monitored in current permit/screening Limited in current permit/screening
Outfall 005	Copper Fluoride Mercury Zinc	RPE RPE RPE RPE	Limited in current permit/screening Monitored in current permit/screening Limited in current permit/screening Limited in current permit/screening

Receiving Stream Information

- **Receiving Stream:** Ohio River at River Mile 774
- **Public Water System Intakes Downstream:** The Evansville public water system intake lies approximately 13.7 miles downstream, and the Mount Vernon public water system intake lies approximately 30.8 miles downstream of the Warrick Newco LLC facility.
- **Designated Stream Use:**

  ORSANCO Designations: Available for safe and satisfactory use as public and industrial water supplies after reasonable treatment, suitable for recreational usage, capable of maintaining fish and other aquatic life, and adaptable to such other uses as may be legitimate.

  Indiana Designations: Full body contact recreation, capable of supporting a well-balanced warm water aquatic community, public water supply and industrial water supply.
- **12 Digit HUC:** 051402011203 (Outfalls which discharge to the Ohio River, including 001, 002, 003, 004, and 005) and 051402011103 (stormwater outfalls which discharge to the unnamed tributary to Cypress Creek).
- **Assessment Unit:** Ohio River Discharges: Assessment Unit INH6_10 French Islands, Nos 1 and 2 Newburgh Locks and dam.

- **303(d) List (2024):** The Ohio River in this assessment unit is listed for the following pollutants in Category 5 of the 2024 303(d) list: *E. coli*, Dioxin (water), PCBs (water), and Mercury (water). Category 5 means that the available data and/or information indicate that at least one designated use is impaired or threatened and a TMDL is required.
- **TMDL Status:** IDEM has not completed and is not scheduled to complete a TMDL to address these impairments. The U.S. EPA and ORSANCO are in the process of completing a TMDL for the Ohio River to address *E. coli* impairments. A summary of the pending TMDL and milestone updates can be found at the following web address: https://www.orsanco.org/programs/bacteria-tmdl/.
- **Receiving Stream Critical Flows:**

Critical Flow	Flow Value	Source
Q1,10 (Outfall)	8,670 cfs	ORSANCO "Pollution Control Standards for Discharges to the Ohio River", 2019 Revision, Appendix C
Q7,10 (Outfall)	11,000 cfs	ORSANCO "Pollution Control Standards for Discharges to the Ohio River", 2019 Revision, Appendix C
Q1,10 (Public Water System Intake)	12,900 cfs	ORSANCO "Pollution Control Standards for Discharges to the Ohio River", 2019 Revision, Appendix C
Harmonic Mean (Outfall)	49,000 cfs	ORSANCO "Pollution Control Standards for Discharges to the Ohio River", 2019 Revision, Appendix C
Q50 (Outfall)	96,400 cfs	Calculated using data obtained from USGS gaging station 03303280 Ohio River at Cannelton Dam, Cannelton, IN for the period 1973 through 2014
Q50 (Public Water System Intake	96,400 cfs	Calculated using data obtained from USGS gaging station 03303280 Ohio River at Cannelton Dam, Cannelton, IN for the period 1973 through 2014

- **Nearby Dischargers:** SIGECO F.B. Culley Generating Station (IN0002259), discharges immediately upstream and the Town of Newburgh POTW (IN0023892) discharges immediately downstream of the permittee's outfalls. Because of the large size of the Ohio River relative to the size of these discharges, the discharges from these facilities are expected to have minimal impact on each other.

Calculation of Preliminary Effluent Limitations

Water quality data upstream of the outfalls was obtained from the ORSANCO Cannelton clean metals sample site (River Mile 720.7). The time period used for this data was from January 2019 through December 2023. The background concentration of a given pollutant was determined by calculating the geometric mean of the instream data for the pollutant. The determination of background concentrations is included in Attachment 4-1. Background data are not available for Chlorine, Free Cyanide, Total Cyanide, or Fluoride from the ORSANCO sampling. Considering the lack of instream data, the background concentrations for all of these parameters, except fluoride, were set equal to zero. For fluoride, data are available from Ohio River intake sampling included with Form 2C of the permit renewal application for AEP Rockport (IN0051845) submitted April 2, 2025. This facility is located upstream in Spencer County. One sample result for Fluoride of 0.17 mg/l was provided. This result is consistent with IDEM fixed station data for Fluoride collected at the final Wabash River station over the last year included in Attachment 4-2. The IDEM fixed station data were used to determine the background concentration of fluoride. Mercury is listed as a bioaccumulative chemical of concern (BCC) under 327 IAC 2-1-9(5). Under 327 IAC 5-2-11.1(b)(6), beginning January 1, 2004 mixing zones for all discharges of BCCs to waters not in the Great Lakes system were prohibited. Therefore, the background concentration was not required and the criteria for Mercury were applied to the undiluted discharge in accordance with this provision. There are no significant sources between the permittee's outfalls and the closest downstream public water system intake. Therefore, the background concentration at the intake was set equal to the background concentration at the outfall.

The 50th percentile downstream hardness was used to determine the criteria for those metals whose criteria are dependent on hardness. The 50th percentile downstream TSS concentration was used to determine applicable metals translators. Water quality data downstream of the outfall were obtained from the ORSANCO Newburgh bimonthly sample site (River Mile 776.1) using data collected during the period from January 2019 through December 2023. The 50th percentile hardness and TSS values at this station calculated using this data are 132 mg/l and 27 mg/l, respectively. The data are in Attachment 5.

A default coefficient of variation value of 0.6 was used to calculate monthly average and daily maximum preliminary effluent limitations (PELs). Based on the expected monitoring frequency, the number of samples per month used to calculate monthly average PELs was set equal to one for all of the parameters (Copper, Iron, Mercury, Zinc) at Outfall 001; twelve for Total Residual Chlorine, four for Manganese, one for Mercury, and two for all other parameters (Antimony, Total Chromium, Copper, Iron, Nickel, Zinc, Free Cyanide, Total Cyanide, and Fluoride) at Outfall 003; one for all of the parameters (Mercury, Copper, Iron, Zinc, and Free Cyanide) at Outfall 004; and one for all of the parameters (Copper, Mercury, Zinc, and Fluoride) at Outfall 005.

The spreadsheets used to calculate PELs are included in the following attachments:

Outfall	**Spreadsheet Name**	**Attachment #**
Outfall 001	Indiana criteria	Attachment 6A
Outfall 001	ORSANCO criteria	Attachment 6B
Outfall 003	Indiana criteria	Attachment 6C
Outfall 003	ORSANCO criteria	Attachment 6D
Outfall 004	Indiana criteria	Attachment 6E
Outfall 004	ORSANCO criteria	Attachment 6F
Outfall 005	Indiana criteria	Attachment 6G
Outfall 005	ORSANCO criteria	Attachment 6H
All Outfalls Comparison (001, 003, 004, 005)	More stringent of Indiana/ORSANCO	Attachment 6I

<u>Reasonable Potential Analysis</u>

Calculation of Projected Effluent Quality
The permittee provided a spreadsheet containing the effluent data for the parameters for which monitoring is required by the NPDES permit. The time period for the data is January 2019 through December 2023. However, some parameters did not have data for each month within this time period; therefore, there is some variation in the date range for the data used for each parameter (see table below). At Outfall 003, for parameters for which monitoring is not required

by the NPDES permit, daily maximum values were taken from Form 2C of the permit application. For these parameters, the number of samples listed on the Form 2C was used along with a default coefficient of variation (CV) of 0.6 to calculate a daily projected effluent quality (PEQ) because the individual data points were not provided. The effluent data include values reported as less than (<) the LOD. These values were set equal to the LOD. Monthly averages were calculated for those months for which at least two data points were available. Below is a summary of the source of data and time period for each parameter at each outfall. The daily maximum values taken from Form 2C are also listed below. All other data obtained from the permittee's effluent spreadsheet are contained in Attachments 7A through 7D. For all of the pollutants of concern, the reasonable potential to exceed (RPE) analysis was conducted using the procedures under 327 IAC 5-2-11.5 for discharges in the Great Lakes system using monthly PEQs where sufficient data were available and daily PEQs.

Outfall 001			
Parameter	**Source of Data**	**Time Period**	**Comment**
Copper	Applicant's spreadsheet	January 2019 through October 2023	Monthly average data were available and used.
Mercury	Applicant's spreadsheet	January 2019 through October 2023	Monthly average data were available and used.
Zinc	Applicant's spreadsheet	January 2019 through October 2023	Monthly average data were available and used.
Iron	Applicant's spreadsheet	January 2019 through October 2023	Monthly average data were available and used.

Outfall 003			
Parameter	**Source of Data**	**Time Period**	**Comment**
Antimony	Application Form 2C	January 2023 through May 2023	Twelve (12) samples were reported on Form 2C. A daily maximum value of 0.032 mg/l was reported.
Chromium, Total	Application Form 2C	January 2023 through May 2023	Twelve (12) samples were reported on Form 2C. A daily maximum value of 0.0063 mg/l was reported.
Copper	Applicant's spreadsheet	January 2019 through December 2023	Monthly average data were available and used.
Cyanide, Total	Application Form 2C	January 2023 through May 2023	Thirteen (13) samples were reported on Form 2C. A daily maximum value of 0.063 mg/l was reported.
Fluoride	Applicant's spreadsheet	January 2019 through December 2023	Monthly average data were available and used.
Iron	Application Form 2C	January 2023 through May 2023	Eight (8) samples were reported on Form 2C. A daily maximum value of 0.864 mg/l was reported.
Manganese	Applicant's spreadsheet	January 2019 through December 2023	Monthly average data were available and used.
Mercury	Applicant's spreadsheet	February 2019 through December 2023	Only two (2) monthly averages were available so only a daily PEQ was calculated.
Nickel	Application Form 2C	January 2023 through May 2023	Twelve (12) samples were reported on Form 2C. A daily maximum value of 0.150 mg/l was reported.
Zinc	Application Form 2C	January 2023 through May 2023	Twelve (12) samples were reported on Form 2C. A daily maximum value of 0.276 mg/l was reported.

Outfall 004			
Parameter	**Source of Data**	**Time Period**	**Comment**
Copper	Applicant's spreadsheet	June 2019 through October 2023	Monthly average data were available and used.
Cyanide, Free	Applicant's spreadsheet	June 2019 through October 2023	Monthly average data were available and used.
Iron	Applicant's spreadsheet	June 2019 through October 2023	Monthly average data were available and used.
Mercury	Applicant's spreadsheet	June 2019 through October 2023	Monthly average data were available and used.
Zinc	Applicant's spreadsheet	June 2019 through October 2023	Monthly average data were available and used.

Outfall 005			
Parameter	**Source of Data**	**Time Period**	**Comment**
Copper	Applicant's spreadsheet	October 2019 through August 2023	Only one (1) monthly average is available so only a daily PEQ was calculated.
Fluoride	Applicant's spreadsheet	October 2019 through August 2023	Only one (1) monthly average is available so only a daily PEQ was calculated.
Mercury	Applicant's spreadsheet	October 2019 through July 2023	Only one (1) monthly average is available so only a daily PEQ was calculated.
Zinc	Applicant's spreadsheet	October 2019 through August 2023	Only one (1) monthly average is available so only a daily PEQ was calculated.

Comparison of PEQs to PELs; Determination of Need for Water Quality-based Effluent Limitations

The results of the reasonable potential analysis for the following outfalls is shown in Attachment 8. Below is a summary of the results of this analysis:

Outfall 001: Based on the analysis, Copper, Iron, Mercury, and Zinc each show a reasonable potential to exceed an applicable water quality criterion; therefore, limits are required for these parameters in the permit for this outfall.

Outfall 003: Based on the analysis, Mercury shows a reasonable potential to exceed an applicable water quality criterion; therefore, limits are required for Mercury in the permit for this outfall.

Outfall 004: Based on the analysis, Copper, Iron, Mercury, Zinc, and Free Cyanide each show a reasonable potential to exceed an applicable water quality criterion; therefore, limits are required for these parameters in the permit for this outfall.

Outfall 005: Based on the analysis, Copper, Mercury, and Zinc each show a reasonable potential to exceed an applicable water quality criterion; therefore, limits are required for these parameters in the permit for this outfall.

<u>Calculation of Water Quality-based Effluent Limitations</u>

WQBELs are required if a pollutant in the effluent causes, has the reasonable potential to cause, or contributes to an exceedance of a water quality criterion. In addition, if technology-based effluent limitations (TBELs) for a pollutant could allow an exceedance of a WQBEL for that pollutant, then WQBELs for that pollutant are also required. For Total Residual Chlorine, a new reasonable potential analysis was not conducted for Outfall 003 for this permit renewal using monthly and daily PEQs calculated from effluent monitoring data. However, WQBELs for Total Residual Chlorine at Outfall 003 are contained in Attachment 6I and may be included in the NPDES permit as WQBELs.

Water Quality-Based Effluent Limits Required Due To the Reasonable Potential Evaluation

The PELs contained in Attachment 6I for the parameters named below are based on water quality criteria and should be included in the NPDES permit as WQBELs.

Outfall 001: As stated above, based on the reasonable potential analysis, WQBELs are required for Copper, Iron, Mercury, and Zinc at this outfall.

Outfall 003: As stated above, based on the reasonable potential analysis, WQBELs are required for Mercury.

Outfall 004: As stated above, based on the reasonable potential analysis, WQBELs are required for Copper, Iron, Mercury, Zinc, and Free Cyanide at this outfall.

Outfall 005: As stated above, based on the reasonable potential analysis, WQBELs are required for Copper, Mercury, and Zinc at this outfall.

Comparison of Water Quality-Based Effluent Limits to Technology-Based Effluent Limits

TBELs are in place at internal Outfalls 603 and 703. To ensure that the TBELs would not result in an exceedance of a potential WQBEL at Outfall 003, the TBELs at these outfalls were compared to potential WQBELs at Outfall 003. Both sets of limits were converted to mass-based limits for comparison.

Internal Outfall 603

For the pollutants with TBELs at internal Outfall 603 (Antimony, Total Chromium, Total Cyanide, Fluoride, Nickel, and Zinc), TBELs established at internal Outfall 603 are significantly less (more stringent) than the potential WQBELs at Outfall 003. Therefore, the inclusion of TBELs at internal Outfall 603 does not authorize the discharge of pollutants at levels that exceed the WQBELs for these pollutants at Outfall 003. See Attachment 9.

Internal Outfall 703

In the previous (2018) permit renewal, internal Outfall 703 was created to apply TBELs for

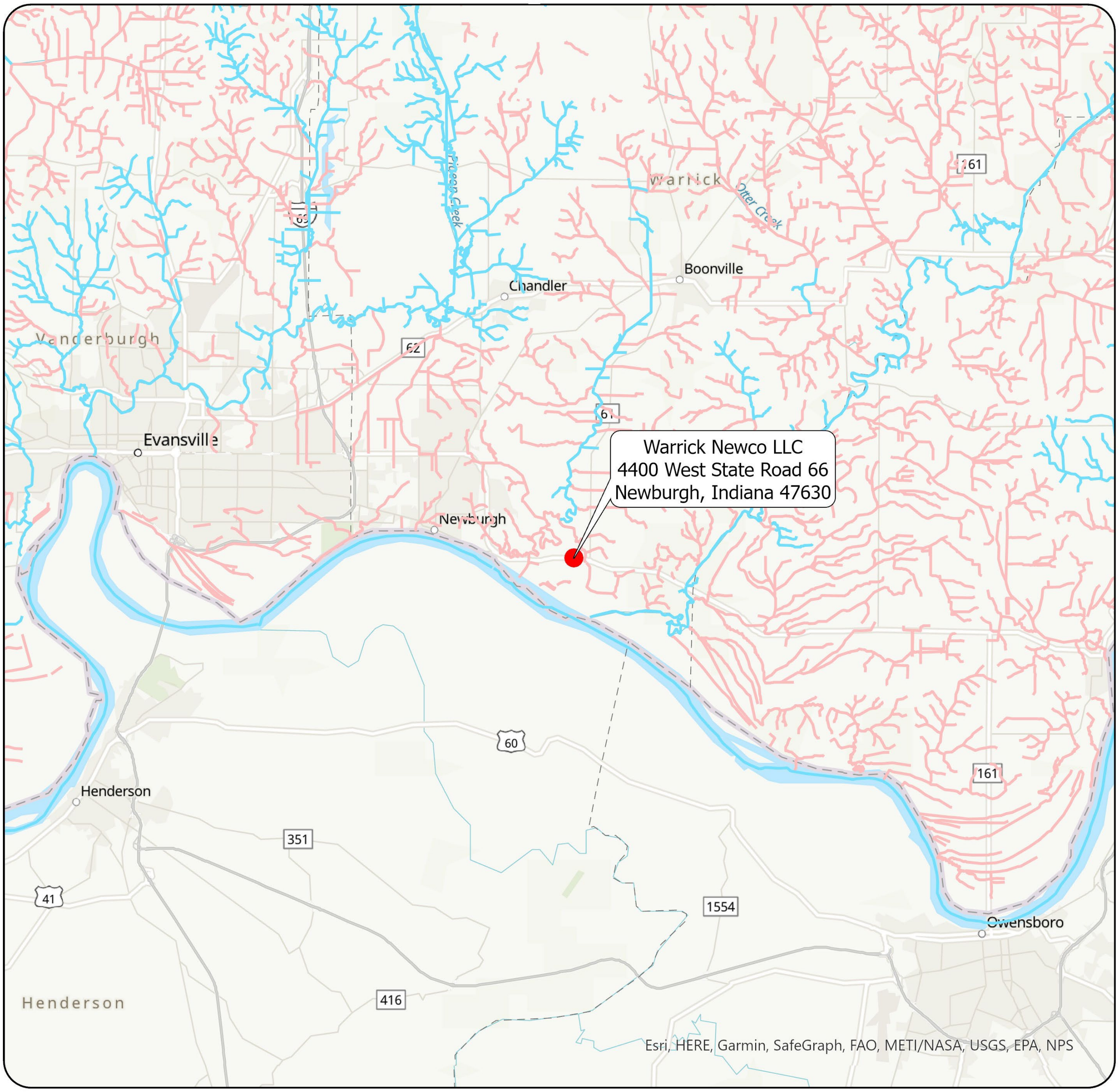
Copper and Iron from non-chemical metal cleaning wash water. These TBELs had previously been applied at internal Outfall 103, but it was decided that incorporating internal Outfall 703 would allow this wastestream to be monitored individually before being diluted by other wastestreams.

A reasonable potential analysis was conducted and WQBELs were calculated for Copper and Iron at Outfall 003. The analysis showed that Copper and Iron do not have a reasonable potential to exceed a water quality criterion based on the effluent monitoring data. Additionally, the TBELs established at internal Outfall 703 for Copper and Iron are less (more stringent) than the potential WQBELs for these parameters at Outfall 003. Therefore, the inclusion of TBELs for Copper and Iron at internal Outfall 703 does not authorize the discharge of pollutants at levels that exceed the WQBELs for these pollutants at Outfall 003. See Attachment 9.

List of Attachments

Attachments 1 and 2: Facility Maps
Attachments 3A and 3B: Effluent Flow Data Used for WLA Analysis
Attachment 4-1: Calculation of Background Concentrations
Attachment 4-2: Calculation of Background Concentrations
Attachment 5: Calculation of Downstream Water Quality Characteristics
Attachment 6A: Outfall 001-Calculation of Preliminary Effluent Limitations-Indiana Criteria
Attachment 6B: Outfall 001-Calculation of Preliminary Effluent Limitations-ORSANCO Criteria
Attachment 6C: Outfall 003-Calculation of Preliminary Effluent Limitations-Indiana Criteria
Attachment 6D: Outfall 003-Calculation of Preliminary Effluent Limitations-ORSANCO Criteria
Attachment 6E: Outfall 004-Calculation of Preliminary Effluent Limitations-Indiana Criteria
Attachment 6F: Outfall 004-Calculation of Preliminary Effluent Limitations-ORSANCO Criteria
Attachment 6G: Outfall 005-Calculation of Preliminary Effluent Limitations-Indiana Criteria
Attachment 6H: Outfall 005-Calculation of Preliminary Effluent Limitations-ORSANCO Criteria
Attachment 6I: Comparison of Indiana and ORSANCO Preliminary Effluent Limitations
Attachments 7A-1 and 7A-2: Outfall 001 Effluent Data
Attachment 7B-1 thru 7B-4: Outfall 003 Effluent Data
Attachment 7C-1 and 7C-2: Outfall 004 Effluent Data
Attachment 7D: Outfall 005 Effluent Data
Attachment 8: Reasonable Potential Statistical Procedure
Attachment 9: Comparison of Internal Outfall TBELs to Potential WQBELs at Outfall 003

Attachment 1



0 6 12 Miles

N

Legend

303(d) Rivers and Streams Assessed

N

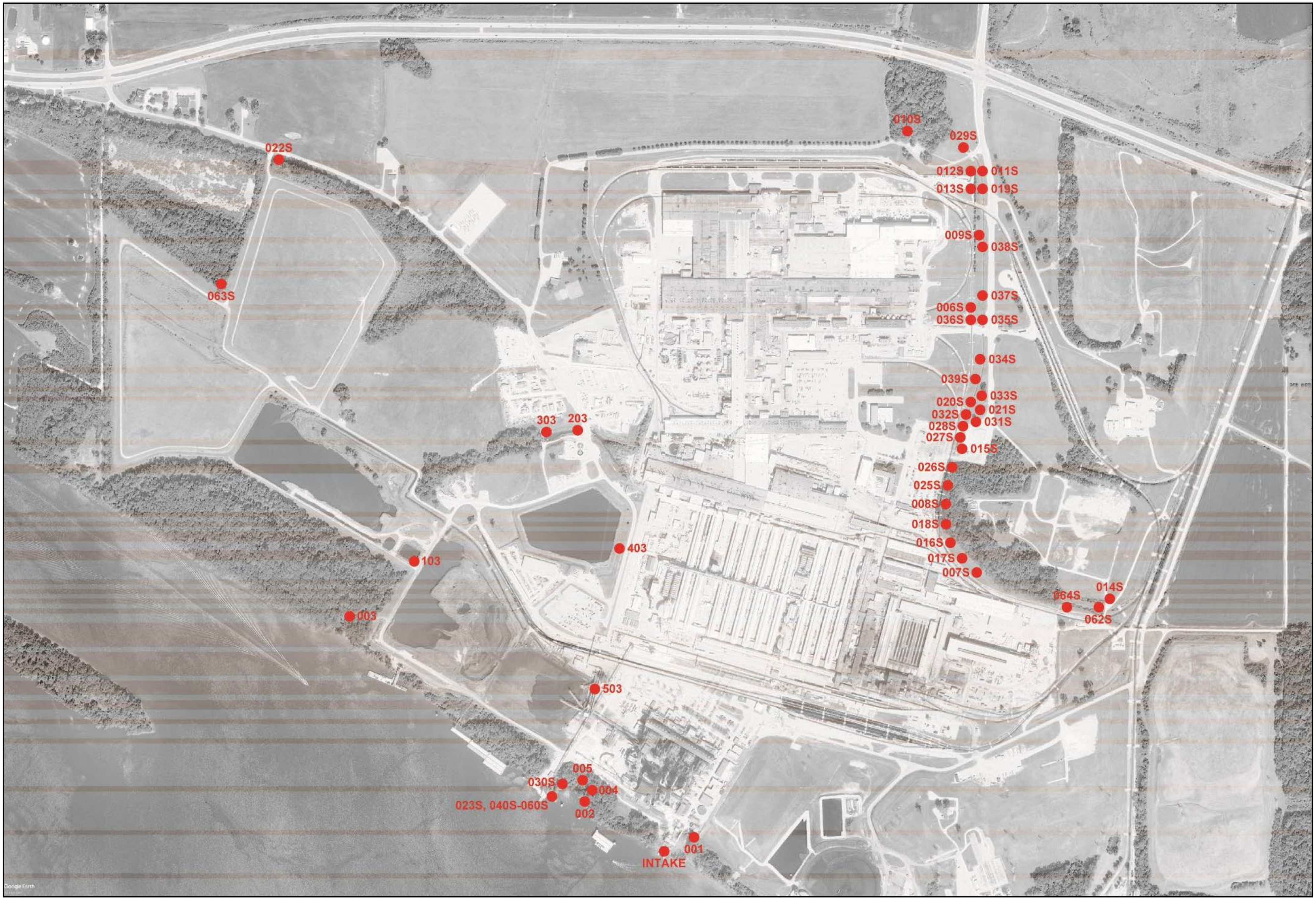
Y

This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.

Matt Warrener, Office of Water Quality
Date: 6/21/2023

Sources:
Non Orthophotography Data - Obtained from the State of Indiana Geographical Information Office Library
Orthophotography - Obtained from Indiana Map Framework Data (www.indianamap.org)
Map Projection: UTM Zone 16 N Map Datum: NAD83

Attachment 2



ATTACHMENT 3A

Effluent Flow Data Used for WLA Analysis

Outfall 001 Effluent Flow (MGD)		Outfall 003 Effluent Flow (MGD)		Outfall 004 Effluent Flow (MGD)		Outfall 005 Effluent Flow (MGD)	
Date	**Monthly Average**	**Date**	**Monthly Average**	**Date**	**Monthly Average**	**Date**	**Monthly Average**
11/30/2021	0.026	11/30/2021	8.1	11/30/2021	---	11/30/2021	---
12/31/2021	0.14	12/31/2021	8.7	12/31/2021	---	12/31/2021	---
1/31/2022	0.68	1/31/2022	10.2	1/31/2022	---	1/31/2022	---
2/28/2022	0.49	2/28/2022	10.1	2/28/2022	---	2/28/2022	0.010
3/31/2022	0.31	3/31/2022	10.4	3/31/2022	---	3/31/2022	0.011
4/30/2022	0.15	4/30/2022	8.5	4/30/2022	---	4/30/2022	---
5/31/2022	0.34	5/31/2022	7.6	5/31/2022	---	5/31/2022	---
6/30/2022	0.25	6/30/2022	7.7	6/30/2022	0.0029	6/30/2022	0.075
7/31/2022	0.21	7/31/2022	9.1	7/31/2022	---	7/31/2022	0.018
8/31/2022	0.24	8/31/2022	8.9	8/31/2022	---	8/31/2022	0.040
9/30/2022	0.13	9/30/2022	7.8	9/30/2022	---	9/30/2022	---
10/31/2022	---	10/31/2022	6.7	10/31/2022	0.0045	10/31/2022	---
11/30/2022	0.0058	11/30/2022	7.6	11/30/2022	---	11/30/2022	---
12/31/2022	0.32	12/31/2022	9.8	12/31/2022	---	12/31/2022	0.014
1/31/2023	0.61	1/31/2023	9.4	1/31/2023	---	1/31/2023	0.184
2/28/2023	0.064	2/28/2023	8.6	2/28/2023	---	2/28/2023	0.034
3/31/2023	0.073	3/31/2023	9.5	3/31/2023	---	3/31/2023	0.091
4/30/2023	---	4/30/2023	8.5	4/30/2023	---	4/30/2023	---
5/31/2023	---	5/31/2023	9.0	5/31/2023	---	5/31/2023	---
6/30/2023	0.27	6/30/2023	8.7	6/30/2023	0.000042	6/30/2023	0.087
7/31/2023	0.084	7/31/2023	8.6	7/31/2023	---	7/31/2023	---
8/31/2023	0.11	8/31/2023	9.3	8/31/2023	---	8/31/2023	---
9/30/2023	---	9/30/2023	8.1	9/30/2023	---	9/30/2023	---
10/31/2023	0.055	10/31/2023	9.0	10/31/2023	0.0090	10/31/2023	---
Maximum Monthly Average	**0.68**		**10.4**		**0.0090**		**0.18**

ATTACHMENT 3B
Effluent Flow Data Used for WLA Analysis

Internal Outfall 103 Effluent Flow (MGD)		Internal Outfall 303 Effluent Flow (MGD)		Internal Outfall 403 Effluent Flow (MGD)		Internal Outfall 503 Effluent Flow (MGD)		Internal Outfall 703 Effluent Flow (MGD)	
Date	**Monthly Average**	**Date**	**Monthly Average**	**Date**	**Monthly Average**	**Date**	**Monthly Average**	**Date**	**Monthly Average**
11/30/2021	7.5	11/30/2021	0.62	11/30/2021	0.75	11/30/2021	0.34	11/30/2021	
12/31/2021	7.8	12/31/2021	0.92	12/31/2021	0.84	12/31/2021	0.33	12/31/2021	0.0086
1/31/2022	9.7	1/31/2022	0.70	1/31/2022	0.78	1/31/2022	0.33	1/31/2022	
2/28/2022	9.0	2/28/2022	1.2	2/28/2022	0.94	2/28/2022	0.37	2/28/2022	
3/31/2022	9.0	3/31/2022	1.3	3/31/2022	0.86	3/31/2022	0.38	3/31/2022	
4/30/2022	7.2	4/30/2022	1.4	4/30/2022	0.73	4/30/2022	0.35	4/30/2022	
5/31/2022	6.6	5/31/2022	1.0	5/31/2022	1.1	5/31/2022	0.34	5/31/2022	0.068
6/30/2022	6.4	6/30/2022	1.3	6/30/2022	0.73	6/30/2022	0.32	6/30/2022	
7/31/2022	7.7	7/31/2022	1.4	7/31/2022	1.0	7/31/2022	0.40	7/31/2022	
8/31/2022	8.0	8/31/2022	0.90	8/31/2022	1.1	8/31/2022	0.36	8/31/2022	
9/30/2022	7.1	9/30/2022	0.71	9/30/2022	1.0	9/30/2022	0.36	9/30/2022	
10/31/2022	6.0	10/31/2022	0.71	10/31/2022	0.73	10/31/2022	0.29	10/31/2022	
11/30/2022	7.1	11/30/2022	0.46	11/30/2022	0.97	11/30/2022	0.34	11/30/2022	0.040
12/31/2022	8.6	12/31/2022	1.2	12/31/2022	0.92	12/31/2022	0.37	12/31/2022	
1/31/2023	7.5	1/31/2023	1.9	1/31/2023	0.72	1/31/2023	0.32	1/31/2023	
2/28/2023	7.7	2/28/2023	0.94	2/28/2023	0.96	2/28/2023	0.38	2/28/2023	
3/31/2023	7.6	3/31/2023	1.9	3/31/2023	0.86	3/31/2023	0.26	3/31/2023	
4/30/2023	6.9	4/30/2023	1.6	4/30/2023	0.72	4/30/2023	0.19	4/30/2023	0.050
5/31/2023	7.4	5/31/2023	1.6	5/31/2023	0.83	5/31/2023	0.29	5/31/2023	0.030
6/30/2023	6.9	6/30/2023	1.7	6/30/2023	0.67	6/30/2023	0.24	6/30/2023	
7/31/2023	7.2	7/31/2023	1.4	7/31/2023	0.86	7/31/2023	0.22	7/31/2023	
8/31/2023	7.8	8/31/2023	1.5	8/31/2023	0.87	8/31/2023	0.28	8/31/2023	
9/30/2023	7.5	9/30/2023	0.89	9/30/2023	0.81	9/30/2023	0.29	9/30/2023	
10/31/2023	8.0	10/31/2023	0.99	10/31/2023	1.1	10/31/2023	0.36	10/31/2023	
Maximum Monthly Average	**9.7**		**1.9**		**1.1**		**0.40**		**0.068**

ATTACHMENT 4-1
Calculation of Background Concentrations
Data from ORSANCO Clean Metals Station Cannelton - 720.7

Date	Total Antimony (ug/l)	Adjusted Total Antimony (ug/l)	Total Chromium (ug/l)	Adjusted Total Chromium (ug/l)	Total Copper (ug/l)	Total Iron (ug/l)	Total Manganese (ug/l)	Total Nickel (ug/l)	Total Zinc (ug/l)	Adjusted Total Zinc (ug/l)
01/07/19	<0.1	0.05	1.98	1.98	3.66	2530	124	4.60	12.4	12.4
03/13/19	0.10	0.10	4.27	4.27	5.50	5580	227	7.67	18.4	18.4
05/13/19	0.10	0.10	<1	0.50	2.14	740	30.7	2.00	4.39	4.39
07/09/19	0.13	0.13	<1	0.50	2.24	620	32	1.94	3.53	3.53
09/25/19	0.22	0.22	<1	0.50	2.00	276	24.6	1.94	2.37	2.37
11/12/19	0.15	0.15	<1	0.50	1.93	366	21.6	2.19	2.87	2.87
01/08/20	0.12	0.12	1.90	1.90	4.31	3180	156	5.50	14.8	14.8
03/04/20	<0.1	0.05	1.52	1.52	2.32	1580	85.9	3.01	8.58	8.58
05/14/20	0.10	0.10	<1	0.50	1.78	842	43.9	1.88	4.74	4.74
07/08/20	0.12	0.12	<1	0.50	1.41	412	16.3	1.26	1.74	1.74
09/23/20	0.17	0.17	<1	0.50	1.34	343	27	1.51	1.82	1.82
11/04/20	0.14	0.14	<1	0.50	1.65	609	26.5	1.90	3	3
01/12/21	0.10	0.10	1.68	1.68	2.89	2010	150	3.78	11.2	11.2
03/03/21	0.13	0.13	8.87	8.87	9.14	10900	543	13.10	50.4	50.4
05/25/21	0.12	0.12	<1	0.50	1.37	211	28.2	1.20	1.15	1.15
07/06/21	0.15	0.15	<1	0.50	1.82	660	26.9	1.78	2.61	2.61
09/08/21	0.16	0.16	<1	0.50	1.98	727	33.9	2.10	3.28	3.28
11/09/21	0.13	0.13	<1	0.50	1.86	542	31.5	1.91	2.74	2.74
01/11/22	0.24	0.24	7.61	7.61	7.91	8190	476	11.00	33.4	33.4
03/10/22	0.11	0.11	5.98	5.98	6.42	7560	361	9.04	27.2	27.2
05/12/22	0.13	0.13	5.07	5.07	6.69	6310	407	9.32	30.3	30.3
07/14/22	0.14	0.14	<1	0.50	1.29	171	17.5	1.22	1.61	1.61
09/20/22	0.18	0.18	<1	0.50	1.99	413	29.9	1.54	2.3	2.3
11/29/22	0.12	0.12	<1	0.50	1.54	373	19	1.50	3.45	3.45
01/11/23	0.17	0.17	4.81	4.81	4.32	3900	165	6.03	16	16
03/21/23	0.11	0.11	1.25	1.25	2.12	1380	61.9	2.58	6.7	6.7
05/10/23	0.12	0.12	1.37	1.37	2.32	1600	92.4	2.79	7.17	7.17
07/20/23	0.16	0.16	<1	0.50	1.29	212	25.7	1.36	1.63	1.63
10/03/23	0.19	0.19	<1	0.50	1.14	140	19	1.40	<1	0.5
11/16/23	0.16	0.16	<1	0.50	1.18	157	20.5	1.45	1.26	1.26
Geometric Mean		**0.13**		**1.0**	**2.4**	**931**	**57**	**2.7**		**4.9**

ATTACHMENT 4-2
Calculation of Background Concentrations
Data from IDEM Fixed Station WB-94, Wabash River
at SR 64, near Mount Carmel, Gibson County

Date	**Fluoride (mg/l)**
5/23/2024	0.2
6/19/2024	0.2
7/18/2024	0.2
8/20/2024	0.2
9/26/2024	0.19
10/24/2024	0.2
11/21/2024	0.2
12/18/2024	0.14
1/30/2025	0.17
2/20/2025	0.16
4/23/2025	0.13
Geometric Mean	**0.18**

ATTACHMENT 5

Calculation of Downstream Water Quality Characteristics

Data From ORSANCO Bimonthly Station Newburgh - 776.1

Date	**Hardness (mg/l)**	**TSS (mg/l)**	**Adjusted TSS (mg/l)**
1/7/2019	116	50	50
3/13/2019	142	122	122
5/13/2019	146	47.4	47.4
7/9/2019	138	29.4	29.4
9/25/2019	147	12.8	12.8
11/12/2019	148	18	18
1/8/2020	111	99.6	99.6
3/4/2020	126	65	65
5/13/2020	111	70.8	70.8
7/16/2020	126	5.2	5.2
9/24/2020	144	9.2	9.2
11/10/2020	140	21	21
1/28/2021	111	58	58
3/25/2021	152	84	84
5/19/2021	125	38	38
7/6/2021	137	17.8	17.8
9/8/2021	125	25.2	25.2
11/9/2021	152	6.2	6.2
1/11/2022	106	148	148
3/10/2022	116	47	47
5/12/2022	131	154	154
7/14/2022	130	<5	2.5
9/20/2022	128	7	7
11/29/2022	132	<5	2.5
1/10/2023	125	320	320
3/21/2023	141	20	20
5/10/2023	141	73.2	73.2
7/19/2023	126	10	10
10/3/2023	157	2.2	2.2
11/15/2023	148	3	3
50th %	**132**		**27**

ATTACHMENT 6A

Calculation of Preliminary Effluent Limitations for Discharges to the Ohio River (River Miles 630.0 - 848.0) using Indiana Water Quality Criteria

General Information	
Facility Name:	Warrick Newco LLC
County:	Warrick
NPDES Number:	IN0001155
WLA Number:	002805
WLA Report Date:	09/23/2025
Outfall:	001
Receiving Stream:	Ohio River

Receiving Stream Questions (Yes or No)	
Acute Mixing Zone Allowed?	No
Public Water System (PWS) Intake Downstream?	Yes
Industrial Water Supply (IWS) Intake Downstream?	No
Fish Early Life Stages Present?	Yes

Effluent Flow	=	0.68 mgd

Receiving Stream Design Flows		
Q1,10 (Outfall)	=	8670 cfs
Q7,10 (Outfall)	=	11000 cfs
Q7,10 (Public Water System Intake)	=	12900 cfs
Q7,10 (Industrial Water Supply Intake)	=	cfs
Q50 (Outfall)	=	96400 cfs
Q50 (Public Water System Intake)	=	96400 cfs

Ambient Downstream Water Quality Characteristics		
Hardness (50th percentile)	=	132 mg/l
Chloride (50th percentile)	=	mg/l
Sulfate (50th percentile)	=	mg/l
Total Suspended Solids (50th percentile)	=	27 mg/l
pH (50th percentile)	=	s.u.
Acute Ammonia-N		
Summer pH (75th percentile)	=	s.u.
Winter pH (75th percentile)	=	s.u.
Chronic Ammonia-N		
Summer Temperature (75th percentile)	=	C
Summer pH (75th percentile)	=	s.u.
Winter Temperature (75th percentile)	=	C
Winter pH (75th percentile)	=	s.u.

Mixing Zone Dilution				
Dilution Factor (for acute mixing zone)	=			
		Dilution Fraction	Flow	Location
Chronic Aquatic Life (Including Ammonia)	=	25%	Q7,10	Outfall
Chronic WET	=	25%	Q7,10	Outfall
Human Noncancer Drinking Water	=	25%	Q7,10	PWS Intake
Human Noncancer Nondrinking Water	=	25%	Q7,10	Outfall
Human Cancer Drinking Water	=	25%	Q50	PWS Intake
Human Cancer Nondrinking Water	=	25%	Q50	Outfall
Public Water Supply	=	25%	Q7,10	PWS Intake
Industrial Water Supply	=	25%	Q7,10	IWS Intake

Metals Translators (using Indiana translators, divide dissolved criterion by translator to get total recoverable)	Acute	Chronic
Arsenic	1.000	1.000
Cadmium	0.932	0.897
Chromium III	0.316	0.860
Copper[11]	0.617	0.617
Lead	0.751	0.751
Nickel[11]	0.536	0.536
Selenium	--	1.000
Silver	0.85	--
Zinc[11]	0.309	0.309

Source of Criteria [1]															Indiana Water Quality Criteria for the Ohio River (ug/l) [2]							Preliminary Effluent Limitations [3]					
															A	B	C	D	E	F	G						
															Aquatic Life Criteria		Human Health Noncancer Criteria		Human Health Cancer Criteria		Add. PWS Criteria	Concentration (ug/l)		Mass (lbs/day)			
A	B	C	D	E	F	G	Bckgrnd (Outfall) (ug/l)	Bckgrnd (Intake) (ug/l)	Remove Mixing Zone? (Yes or Blank)	Samples/ Month	CV	Facility Specific CV? (Yes or No)	CAS Number	Parameters	Acute (AAC)	Chronic (CAC)	Drinking (HNC-D)	Nondrinking (HNC-N)	Drinking (HCC-D)	Nondrinking (HCC-N)	(PWS)	Average	Maximum	Average	Maximum	Criteria Type [4]	Basis
1	1	1	8				2.4	2.4		1	0.6	No	7440508	Copper[5][7]	22.10	14.39	1300	56000				49	72	0.28	0.41	Tier I	AAC
7	7						931	931		1	0.6	No	7439896	Iron	2744	2495						3800	5500	22	31	SSC	AAC
1	1	1	1			8			Yes	1	0.6	No	7439976	Mercury[8]	2.4	0.012	0.14	0.15			2	0.012	0.02	0.000068	0.00011	Tier I	CAC[10]
1	1	1	1				4.9	4.9		1	0.6	No	7440666	Zinc[5][7]	148.26	149.47	7400	26000				660	960	3.7	5.4	Tier I	AAC

[1] Source of Criteria
1) Indiana numeric water quality criterion in 327 IAC 2-1-6(a)(3), Table 6-1, 2-1-6(a)(4), Table 6-1a, 2-1-6(a)(6), 2-1-6(a)(7), Table 6-4 or in 2-1-6(e).
2) "Must not exceed" (MNE) criterion in 327 IAC 2-1-6(a)(8), or 2-1-6(a)(9). This criterion is treated as a 4-day average criterion and is implemented in the same manner as the chronic aquatic life criterion.
3) Industrial water supply (IWS) criterion in 327 IAC 2-1-6(f). This criterion is treated as a 4-day average criterion and is implemented in the same manner as the chronic aquatic life criterion.
4) Acute (1-hour average) and chronic (30-day average) criteria for total ammonia nitrogen in "1999 Update of Ambient Water Quality Criteria for Ammonia," EPA-822-R-99-014, December 1999.
5) Tier I criterion derived using the methodology in 327 IAC 2-1-8.2 or 327 IAC 2-1-8.3 when the required data set is available, or using the methodology in 327 IAC 2-1-8.4, 327 IAC 2-1-8.5 or 327 IAC 2-1-8.6.
6) Tier II criterion derived using the methodology in 327 IAC 2-1-8.2 or 327 IAC 2-1-8.3 when the required data set is not available.
7) Site-specific water quality criterion (SSC) in 327 IAC 2-1-8.9, Table 8.9-1 or developed under 327 IAC 2-1-8.9.
8) Screening value (SV).
9) Numeric interpretation of narrative criterion for toxicity using U.S. EPA recommended water quality criteria for whole effluent toxicity (WET).
10) U.S. EPA national recommended water quality criterion under Section 304(a) of the Clean Water Act (CWA).

[2] Except as noted, aquatic life criteria and screening values for all metals are in the form of total recoverable metal.
Human health criteria and screening values and public water supply screening values for all metals are in the form of total recoverable metal.

[3] The preliminary effluent limitations (PELs) for metals are in the form of total recoverable metal (with the exception of Chromium (VI) which is in the form of dissolved metal).

[4] See the table "Indiana Water Quality Criteria for the Non-Great Lakes System" for information on the type and source of criteria.

[5] Aquatic life criteria and screening values for the above-noted metals are in the form of dissolved metal.

[6] The above-noted substances are probable or known human carcinogens.

[7] The above-noted substances have a criterion that is a function of an ambient downstream water quality characteristic. See the table "Indiana Water Quality Criteria for the Non-Great Lakes System" for information on the criterion equation.

[8] The above-noted substances are bioaccumulative chemicals of concern (BCCs). Beginning January 1, 2004, the water quality criteria for a BCC shall be applied directly to the undiluted discharge for all discharges of a BCC.
To apply the water quality criteria for a BCC directly to the undiluted discharge, enter "Yes" in the "Remove Mixing Zone?" column.

[9] Limits based on screening values (as indicated by SV) ARE NOT to be used as water quality-based effluent limitations. These are solely to be used as preliminary effluent limitations.

[10] The monthly average PEL was set equal to the most stringent WLA because the calculated monthly average PEL exceeded the most stringent WLA and a facility-specific CV was not determined.

[11] The above-noted substances have a metals translator that is a function of the ambient downstream total suspended solids concentration.

[12] The ambient downstream water quality characteristic must be entered for both chloride and sulfate and it cannot exceed the applicable chronic aquatic life or "must not exceed" criterion for the substance.
Preliminary effluent limitations (PELs) for chloride and sulfate shall not be used to establish water quality-based effluent limitations that do not ensure the water quality criteria for both substances are achieved in the receiving waterbody.

Last revised: January 28, 2022

ATTACHMENT 6B

Calculation of Preliminary Effluent Limitations for Discharges to the Middle Ohio River (River Miles 630.0 - 848.0) using ORSANCO Water Quality Criteria

General Information	
Facility Name:	Warrick Newco LLC
County:	Warrick
NPDES Number:	IN0001155
WLA Number:	002805
WLA Report Date:	9/23/2025
Outfall:	001
Receiving Stream:	Ohio River

Receiving Stream Questions (Yes or No)	
Acute Mixing Zone Allowed?	No

Effluent Flow	=	0.68 mgd

Receiving Stream Design Flows		
Q7,10 (Outfall)	=	11000 cfs
Harmonic Mean (Outfall)	=	49000 cfs

Ambient Downstream Water Quality Characteristics		
Hardness (50th percentile)	=	132 mg/l
Total Suspended Solids (50th percentile)	=	27 mg/l
pH (50th percentile)	=	s.u.
Acute Ammonia-N		
Summer Temperature (75th percentile)	=	C
Summer pH (75th percentile)	=	s.u.
Winter Temperature (75th percentile)	=	C
Winter pH (75th percentile)	=	s.u.
Chronic Ammonia-N		
Summer Temperature (75th percentile)	=	C
Summer pH (75th percentile)	=	s.u.
Winter Temperature (75th percentile)	=	C
Winter pH (75th percentile)	=	s.u.

Mixing Zone Dilution				
Dilution Factor (for acute mixing zone)	=			
		Dilution Fraction	Flow	Location
Chronic Aquatic Life (Including Ammonia)	=	25%	Q7,10	Outfall
Human Noncancer Drinking Water	=	25%	Q7,10	Outfall
Human Cancer Drinking Water	=	25%	Harmonic Mean	Outfall
General Human Health	=	25%	Q7,10	Outfall

Metals Translators (using ORSANCO translators, multiply dissolved criterion by translator to get total recoverable)		
	Acute	**Chronic**
Arsenic[11]	1.351	1.351
Cadmium	1.073	1.114
Chromium III	3.165	1.163
Chromium VI	1.018	1.040
Copper[11]	1.621	1.621
Lead	1.332	1.332
Mercury	1.176	1.176
Nickel[11]	1.864	1.864
Silver	1.176	--
Zinc[11]	3.241	3.241

												ORSANCO Water Quality Criteria (ug/l) [2]					Preliminary Effluent Limitations [3]					
												A	B	C	D	E						
					Background	Remove Mixing Zone?			Facility Specific CV?			Aquatic Life Criteria		Human Health Noncancer Criteria	Human Health Cancer Criteria	General Human Health Criteria						
Source of Criteria [1]					(Outfall)	(Yes or	Samples/		(Yes or	CAS		Acute	Chronic	Drinking	Drinking		Concentration (ug/l)		Mass (lbs/day)		Criteria	
A	B	C	D	E	(ug/l)	Blank)	Month	CV	No)	Number	Parameters	(AAC)	(CAC)	(HNC-D)	(HCC-D)	(HH-G)	Average	Maximum	Average	Maximum	Type [4]	Basis
1	1	1			2.4		1	0.6	No	7440508	Copper[5][7]	17.46	11.35	1300			39	57	0.22	0.32	Tier I	AAC
					931		1	0.6	No	7439896	Iron						#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1	1			1		Yes	1	0.6	No	7439976	Mercury[5][8]	1.445	0.774			0.012	0.012	0.029	0.000068	0.00016	Tier I	HH-G[10]
1	1	1			4.9		1	0.6	No	7440666	Zinc[5][7]	148.26	149.47	7400			660	960	3.7	5.4	Tier I	AAC

[1] Source of Criteria
1) Numeric water quality criterion in the ORSANCO Pollution Control Standards, 2019 Revision.
2) Tier I aquatic life criterion derived using the methodology in Appendix D of the ORSANCO Pollution Control Standards, 2019 Revision.
3) Tier II aquatic life value derived using the methodology in Appendix D of the ORSANCO Pollution Control Standards, 2019 Revision.
4) Site-specific water quality criterion (SSC) approved by ORSANCO under the ORSANCO Pollution Control Standards, 2019 Revision, Chapter 1.

[2] Except as noted, aquatic life criteria and values for all metals are in the form of total recoverable metal. The human health criteria for all metals are in the form of total recoverable metal.

[3] The preliminary effluent limitations (PELs) for the metals are in the form of total recoverable metal.

[4] See the table "ORSANCO Water Quality Criteria" for information on the type and source of criteria.

[5] Aquatic life criteria and and values for the above-noted metals are in the form of dissolved metal.

[6] The above-noted substances are probable or known human carcinogens.

[7] The above noted substances have a criterion that is a function of an ambient downstream water quality characteristic. See the table "ORSANCO Water Quality Criteria" for information on the criterion equation.

[8] The above-noted substances are bioaccumulative chemicals of concern (BCCs). Mixing zones for BCCs are prohibited for all discharges except those which were in existence on or before October 16, 2003. For these discharges, mixing zones shall be eliminated as soon as practicable. Please refer to the ORSANCO Pollution Control Standards, 2019 Revision, Chapter 4 for additional details. To apply the water quality criteria for a BCC directly to the undiluted discharge, enter "Yes" in the "Remove Mixing Zone?" column.

[9] The acute and chronic aquatic life criteria for ammonia are based on the presence of unionid mussels. The ORSANCO Pollution Control Standards, 2019 Revision, Chapter 3 contain ammonia criteria based on the absence of unionid mussels that may be applied in place of the criteria in this spreadsheet upon successful demonstration to IDEM and ORSANCO by the applicant.

[10] The monthly average PEL was set equal to the most stringent WLA because the calculated monthly average PEL exceeded the most stringent WLA and a facility-specific CV was not determined.

[11] The above-noted substances have a metals translator that is a function of the ambient downstream total suspended solids concentration.

Last revised: January 28, 2022

ATTACHMENT 6C

Calculation of Preliminary Effluent Limitations for Discharges to the Ohio River (River Miles 630.0 - 848.0) using Indiana Water Quality Criteria

General Information	
Facility Name:	Warrick Newco LLC
County:	Warrick
NPDES Number:	IN0001155
WLA Number:	002805
WLA Report Date:	9/23/2025
Outfall:	003
Receiving Stream:	Ohio River

Receiving Stream Questions (Yes or No)	
Acute Mixing Zone Allowed?	No
Public Water System (PWS) Intake Downstream?	Yes
Industrial Water Supply (IWS) Intake Downstream?	No
Fish Early Life Stages Present?	Yes

Effluent Flow	=	10.4 mgd

Receiving Stream Design Flows		
Q1,10 (Outfall)	=	8670 cfs
Q7,10 (Outfall)	=	11000 cfs
Q7,10 (Public Water System Intake)	=	12900 cfs
Q7,10 (Industrial Water Supply Intake)	=	cfs
Q50 (Outfall)	=	96400 cfs
Q50 (Public Water System Intake)	=	96400 cfs

Ambient Downstream Water Quality Characteristics		
Hardness (50th percentile)	=	132 mg/l
Chloride (50th percentile)	=	mg/l
Sulfate (50th percentile)	=	mg/l
Total Suspended Solids (50th percentile)	=	27 mg/l
pH (50th percentile)	=	s.u.
Acute Ammonia-N		
Summer pH (75th percentile)	=	s.u.
Winter pH (75th percentile)	=	s.u.
Chronic Ammonia-N		
Summer Temperature (75th percentile)	=	C
Summer pH (75th percentile)	=	s.u.
Winter Temperature (75th percentile)	=	C
Winter pH (75th percentile)	=	s.u.

Mixing Zone Dilution				
Dilution Factor (for acute mixing zone)	=			
		Dilution Fraction	**Flow**	**Location**
Chronic Aquatic Life (Including Ammonia)	=	25%	Q7,10	Outfall
Chronic WET	=	25%	Q7,10	Outfall
Human Noncancer Drinking Water	=	25%	Q7,10	PWS Intake
Human Noncancer Nondrinking Water	=	25%	Q7,10	Outfall
Human Cancer Drinking Water	=	25%	Q50	PWS Intake
Human Cancer Nondrinking Water	=	25%	Q50	Outfall
Public Water Supply	=	25%	Q7,10	PWS Intake
Industrial Water Supply	=	25%	Q7,10	IWS Intake

Metals Translators (using Indiana translators, divide dissolved criterion by translator to get total recoverable)		
	Acute	**Chronic**
Arsenic	1.000	1.000
Cadmium	0.932	0.897
Chromium III	0.316	0.860
Copper[11]	0.617	0.617
Lead	0.751	0.751
Nickel[11]	0.536	0.536
Selenium	--	1.000
Silver	0.85	--
Zinc[11]	0.309	0.309

Source of Criteria [1]							Bckgrnd (Outfall) (ug/l)	Bckgrnd (Intake) (ug/l)	Remove Mixing Zone? (Yes or Blank)	Samples/ Month	CV	Facility Specific CV? (Yes or No)	CAS Number	Parameters	Indiana Water Quality Criteria for the Ohio River (ug/l) [2]							Preliminary Effluent Limitations [3]					
															A	B	C	D	E	F	G						
															Aquatic Life Criteria		Human Health Noncancer Criteria		Human Health Cancer Criteria		Add. PWS Criteria	Concentration (ug/l)		Mass (lbs/day)		Criteria	
A	B	C	D	E	F	G									Acute (AAC)	Chronic (CAC)	Drinking (HNC-D)	Nondrinking (HNC-N)	Drinking (HCC-D)	Nondrinking (HCC-N)	(PWS)	Average	Maximum	Average	Maximum	Type [4]	Basis
6	6	1	1			8	0.13	0.13		2	0.6	No	7440360	Antimony	720	210	5.6	640			6	830	1400	72	120	Tier II	AAC
1	1	8	8			8	1	1		2	0.6	No	16065831	Chromium (III)[5][7]	715	93	140	14000			100	2612.84	4526.76	226.76	392.87	Tier I	AAC
1	1	8	8				0	0		2	0.6	No	18540299	Chromium (VI)[5]	15.71	10.58	230	25000				18.14	31.42	1.57	2.73	Tier I	AAC
										2		No	7440473	Total Chromium								2600	4600	230	400	Tier I	AAC
1	1	1	8				2.4	2.4		2	0.6	No	7440508	Copper[5][7]	22.10	14.39	1300	56000				41	72	3.6	6.2	Tier I	AAC
7	7						931	931		2	0.6	No	7439896	Iron	2744	2495						3200	5500	280	480	SSC	AAC
5	6	8	8				57	57		4	0.6	No	7439965	Manganese[7]	5413	2509	1300	59000				5400	11000	470	950	Tier I	AAC
1	1	1	1			8			Yes	1	0.6	No	7439976	Mercury[8]	2.4	0.012	0.14	0.15			2	0.012	0.02	0.001	0.0017	Tier I	CAC[10]
1	1	1	1				2.7	2.7		2	0.6	No	7440020	Nickel[5][7]	592.20	65.78	610	4600				1300	2200	110	190	Tier I	AAC
1	1	1	1				4.9	4.9		2	0.6	No	7440666	Zinc[5][7]	148.26	149.47	7400	26000				550	960	48	83	Tier I	AAC
1	1						0	0		12	0.6	No	7782505	Chlorine (total residual)	19	11						16	38	1.4	3.3	Tier I	AAC
		1	8				0	0		2	0.6	No	57125	Cyanide, Total			200	48000				40000	98000	3500	8500	Tier I	HNC-D[10]
8	2					8	180	180		2	0.6	No	16984488	Fluoride[7]	11838.955	1000					4000	14000	24000	1200	2100	SV[9]	AAC

ATTACHMENT 6D

Calculation of Preliminary Effluent Limitations for Discharges to the Middle Ohio River (River Miles 630.0 - 848.0) using ORSANCO Water Quality Criteria

General Information	
Facility Name:	Warrick Newco LLC
County:	Warrick
NPDES Number:	IN0001155
WLA Number:	002805
WLA Report Date:	9/23/2025
Outfall:	003
Receiving Stream:	Ohio River

Receiving Stream Questions (Yes or No)	
Acute Mixing Zone Allowed?	No

Effluent Flow	=	10.4 mgd

Receiving Stream Design Flows		
Q7,10 (Outfall)	=	11000 cfs
Harmonic Mean (Outfall)	=	49000 cfs

Ambient Downstream Water Quality Characteristics		
Hardness (50th percentile)	=	132 mg/l
Total Suspended Solids (50th percentile)	=	27 mg/l
pH (50th percentile)	=	s.u.
Acute Ammonia-N		
Summer Temperature (75th percentile)	=	C
Summer pH (75th percentile)	=	s.u.
Winter Temperature (75th percentile)	=	C
Winter pH (75th percentile)	=	s.u.
Chronic Ammonia-N		
Summer Temperature (75th percentile)	=	C
Summer pH (75th percentile)	=	s.u.
Winter Temperature (75th percentile)	=	C
Winter pH (75th percentile)	=	s.u.

Mixing Zone Dilution				
Dilution Factor (for acute mixing zone)	=			
		Dilution Fraction	Flow	Location
Chronic Aquatic Life (Including Ammonia)	=	25%	Q7,10	Outfall
Human Noncancer Drinking Water	=	25%	Q7,10	Outfall
Human Cancer Drinking Water	=	25%	Harmonic Mean	Outfall
General Human Health	=	25%	Q7,10	Outfall

Metals Translators (using ORSANCO translators, multiply dissolved criterion by translator to get total recoverable)	Acute	Chronic
Arsenic[11]	1.351	1.351
Cadmium	1.073	1.114
Chromium III	3.165	1.163
Chromium VI	1.018	1.040
Copper[11]	1.621	1.621
Lead	1.332	1.332
Mercury	1.176	1.176
Nickel[11]	1.864	1.864
Silver	1.176	--
Zinc[11]	3.241	3.241

Source of Criteria [1] A	B	C	D	E	Background (Outfall) (ug/l)	Remove Mixing Zone? (Yes or Blank)	Samples/ Month	CV	Facility Specific CV? (Yes or No)	CAS Number	Parameters	ORSANCO Water Quality Criteria (ug/l) [2] A: Aquatic Life Criteria Acute (AAC)	B: Aquatic Life Criteria Chronic (CAC)	C: Human Health Noncancer Criteria Drinking (HNC-D)	D: Human Health Cancer Criteria Drinking (HCC-D)	E: General Human Health Criteria (HH-G)	Preliminary Effluent Limitations [3] Concentration (ug/l) Average	Concentration (ug/l) Maximum	Mass (lbs/day) Average	Mass (lbs/day) Maximum	Criteria Type [4]	Basis
3	3	1			0.13		2	0.6	No	7440360	Antimony	720	80	5.6			830	1400	72	120	Tier II	AAC
1	1				1		2	0.6	No	16065831	Chromium (III)[5][7]	715.23	93.04				2612.84	4526.76	226.76	392.87	Tier I	AAC
1	1				0		2	0.6	No	18540299	Chromium (VI)[5]	15.71	10.58				18.47	32	1.6	2.78	Tier I	AAC
					1.2		2		No	7440473	Total Chromium						2600	4600	230	400	Tier I	AAC
1	1	1			2.4		2	0.6	No	7440508	Copper[5][7]	17.46	11.35	1300			33	57	2.9	4.9	Tier I	AAC
					931		2	0.6	No	7439896	Iron						#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
2	2				57		4	0.6	No	7439965	Manganese	5412.97	2508.78				5400	11000	470	950	Tier I	AAC
1	1			1		Yes	1	0.6	No	7439976	Mercury[5][8]	1.445	0.774			0.012	0.012	0.029	0.001	0.0025	Tier I	HH-G[10]
1	1	1			2.7		2	0.6	No	7440020	Nickel[5][7]	592.20	65.78	610			1300	2200	110	190	Tier I	AAC
1	1	1			4.9		2	0.6	No	7440666	Zinc[5][7]	148.26	149.47	7400			550	960	48	83	Tier I	AAC
					0		12	0.6	No	7782505	Chlorine (total residual)						#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
		1			0		2	0.6	No	57125	Cyanide, Total			140			24000	58000	2100	5000	Tier I	HNC-D[10]
2	2			1	180		2	0.6	No	16984488	Fluoride	11838.95	5729.88			1000	14000	24000	1200	2100	Tier I	AAC

ATTACHMENT 6E

Calculation of Preliminary Effluent Limitations for Discharges to the Ohio River (River Miles 630.0 - 848.0) using Indiana Water Quality Criteria

General Information	
Facility Name:	Warrick Newco LLC
County:	Warrick
NPDES Number:	IN0001155
WLA Number:	002805
WLA Report Date:	9/23/2025
Outfall:	004
Receiving Stream:	Ohio River

Receiving Stream Questions (Yes or No)	
Acute Mixing Zone Allowed?	No
Public Water System (PWS) Intake Downstream?	Yes
Industrial Water Supply (IWS) Intake Downstream?	No
Fish Early Life Stages Present?	Yes

Effluent Flow	=	0.009 mgd

Receiving Stream Design Flows		
Q1,10 (Outfall)	=	8670 cfs
Q7,10 (Outfall)	=	11000 cfs
Q7,10 (Public Water System Intake)	=	12900 cfs
Q7,10 (Industrial Water Supply Intake)	=	cfs
Q50 (Outfall)	=	96400 cfs
Q50 (Public Water System Intake)	=	96400 cfs

Ambient Downstream Water Quality Characteristics		
Hardness (50th percentile)	=	132 mg/l
Chloride (50th percentile)	=	mg/l
Sulfate (50th percentile)	=	mg/l
Total Suspended Solids (50th percentile)	=	27 mg/l
pH (50th percentile)	=	s.u.
Acute Ammonia-N		
Summer pH (75th percentile)	=	s.u.
Winter pH (75th percentile)	=	s.u.
Chronic Ammonia-N		
Summer Temperature (75th percentile)	=	C
Summer pH (75th percentile)	=	s.u.
Winter Temperature (75th percentile)	=	C
Winter pH (75th percentile)	=	s.u.

Mixing Zone Dilution				
Dilution Factor (for acute mixing zone)	=			
		Dilution Fraction	**Flow**	**Location**
Chronic Aquatic Life (Including Ammonia)	=	25%	Q7,10	Outfall
Chronic WET	=	25%	Q7,10	Outfall
Human Noncancer Drinking Water	=	25%	Q7,10	PWS Intake
Human Noncancer Nondrinking Water	=	25%	Q7,10	Outfall
Human Cancer Drinking Water	=	25%	Q50	PWS Intake
Human Cancer Nondrinking Water	=	25%	Q50	Outfall
Public Water Supply	=	25%	Q7,10	PWS Intake
Industrial Water Supply	=	25%	Q7,10	IWS Intake

Metals Translators (using Indiana translators, divide dissolved criterion by translator to get total recoverable)		
	Acute	**Chronic**
Arsenic	1.000	1.000
Cadmium	0.932	0.897
Chromium III	0.316	0.860
Copper[11]	0.617	0.617
Lead	0.751	0.751
Nickel[11]	0.536	0.536
Selenium	--	1.000
Silver	0.85	--
Zinc[11]	0.309	0.309

Source of Criteria [1] A	B	C	D	E	F	G	Bckgrnd (Outfall) (ug/l)	Bckgrnd (Intake) (ug/l)	Remove Mixing Zone? (Yes or Blank)	Samples/ Month	CV	Facility Specific CV? (Yes or No)	CAS Number	Parameters
1	1	1	8				2.4	2.4		1	0.6	No	7440508	Copper[5][7]
7	7						931	931		1	0.6	No	7439896	Iron
1	1	1	1			8			Yes	1	0.6	No	7439976	Mercury[8]
1	1	1	1				4.9	4.9		1	0.6	No	7440666	Zinc[5][7]
1	1					8	0	0		1	0.6	No	57125	Cyanide, Free

	Indiana Water Quality Criteria for the Ohio River (ug/l) [2]							Preliminary Effluent Limitations [3]					
	A	B	C	D	E	F	G						
	Aquatic Life Criteria		Human Health Noncancer Criteria		Human Health Cancer Criteria		Add. PWS Criteria						
	Acute	Chronic	Drinking	Nondrinking	Drinking	Nondrinking		Concentration (ug/l)		Mass (lbs/day)		Criteria	
Parameters	(AAC)	(CAC)	(HNC-D)	(HNC-N)	(HCC-D)	(HCC-N)	(PWS)	Average	Maximum	Average	Maximum	Type [4]	Basis
Copper[5][7]	22.10	14.39	1300	56000				49	72	0.0037	0.0054	Tier I	AAC
Iron	2744	2495						3800	5500	0.29	0.41	SSC	AAC
Mercury[8]	2.4	0.012	0.14	0.15			2	0.012	0.02	0.0000009	0.0000015	Tier I	CAC[10]
Zinc[5][7]	148.26	149.47	7400	26000				660	960	0.05	0.072	Tier I	AAC
Cyanide, Free	22	5.2					200	30	44	0.0023	0.0033	Tier I	AAC

ATTACHMENT 6F

Calculation of Preliminary Effluent Limitations for Discharges to the Middle Ohio River (River Miles 630.0 - 848.0) using ORSANCO Water Quality Criteria

General Information	
Facility Name:	Warrick Newco LLC
County:	Warrick
NPDES Number:	IN0001155
WLA Number:	002805
WLA Report Date:	9/23/2025
Outfall:	004
Receiving Stream:	Ohio River

Receiving Stream Questions (Yes or No)	
Acute Mixing Zone Allowed?	No

Effluent Flow	=	0.009 mgd

Receiving Stream Design Flows		
Q7,10 (Outfall)	=	11000 cfs
Harmonic Mean (Outfall)	=	49000 cfs

Ambient Downstream Water Quality Characteristics		
Hardness (50th percentile)	=	132 mg/l
Total Suspended Solids (50th percentile)	=	27 mg/l
pH (50th percentile)	=	s.u.
Acute Ammonia-N		
Summer Temperature (75th percentile)	=	C
Summer pH (75th percentile)	=	s.u.
Winter Temperature (75th percentile)	=	C
Winter pH (75th percentile)	=	s.u.
Chronic Ammonia-N		
Summer Temperature (75th percentile)	=	C
Summer pH (75th percentile)	=	s.u.
Winter Temperature (75th percentile)	=	C
Winter pH (75th percentile)	=	s.u.

Mixing Zone Dilution				
Dilution Factor (for acute mixing zone)	=			
		Dilution Fraction	**Flow**	**Location**
Chronic Aquatic Life (Including Ammonia)	=	25%	Q7,10	Outfall
Human Noncancer Drinking Water	=	25%	Q7,10	Outfall
Human Cancer Drinking Water	=	25%	Harmonic Mean	Outfall
General Human Health	=	25%	Q7,10	Outfall

Metals Translators (using ORSANCO translators, multiply dissolved criterion by translator to get total recoverable)	**Acute**	**Chronic**
Arsenic[11]	1.351	1.351
Cadmium	1.073	1.114
Chromium III	3.165	1.163
Chromium VI	1.018	1.040
Copper[11]	1.621	1.621
Lead	1.332	1.332
Mercury	1.176	1.176
Nickel[11]	1.864	1.864
Silver	1.176	--
Zinc[11]	3.241	3.241

Source of Criteria [1] A	B	C	D	E	Background (Outfall) (ug/l)	Remove Mixing Zone? (Yes or Blank)	Samples/ Month	CV	Facility Specific CV? (Yes or No)	CAS Number	Parameters	ORSANCO Water Quality Criteria (ug/l) [2] A: Aquatic Life Criteria Acute (AAC)	B: Aquatic Life Criteria Chronic (CAC)	C: Human Health Noncancer Criteria Drinking (HNC-D)	D: Human Health Cancer Criteria Drinking (HCC-D)	E: General Human Health Criteria (HH-G)	Preliminary Effluent Limitations [3] Concentration (ug/l) Average	Concentration (ug/l) Maximum	Mass (lbs/day) Average	Mass (lbs/day) Maximum	Criteria Type [4]	Basis
1	1	1			2.4		1	0.6	No	7440508	Copper[5][7]	17.46	11.35	1300			39	57	0.0029	0.0043	Tier I	AAC
					931		1	0.6	No	7439896	Iron						#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1	1			1		Yes	1	0.6	No	7439976	Mercury[5][8]	1.445	0.774			0.012	0.012	0.029	0.0000009	0.0000022	Tier I	HH-G[10]
1	1	1			4.9		1	0.6	No	7440666	Zinc[5][7]	148.26	149.47	7400			660	960	0.05	0.072	Tier I	AAC
1	1				0		1	0.6	No	57125	Cyanide, Free	22	5.2				30	44	0.0023	0.0033	Tier I	AAC

ATTACHMENT 6G

Calculation of Preliminary Effluent Limitations for Discharges to the Ohio River (River Miles 630.0 - 848.0) using Indiana Water Quality Criteria

General Information	
Facility Name:	Warrick Newco LLC
County:	Warrick
NPDES Number:	IN0001155
WLA Number:	002805
WLA Report Date:	9/23/2025
Outfall:	005
Receiving Stream:	Ohio River

Receiving Stream Questions (Yes or No)	
Acute Mixing Zone Allowed?	No
Public Water System (PWS) Intake Downstream?	Yes
Industrial Water Supply (IWS) Intake Downstream?	No
Fish Early Life Stages Present?	Yes

Effluent Flow	=	0.18 mgd

Receiving Stream Design Flows		
Q1,10 (Outfall)	=	8670 cfs
Q7,10 (Outfall)	=	11,000 cfs
Q7,10 (Public Water System Intake)	=	12,900 cfs
Q7,10 (Industrial Water Supply Intake)	=	cfs
Q50 (Outfall)	=	96400 cfs
Q50 (Public Water System Intake)	=	96400 cfs

Ambient Downstream Water Quality Characteristics		
Hardness (50th percentile)	=	132 mg/l
Chloride (50th percentile)	=	mg/l
Sulfate (50th percentile)	=	mg/l
Total Suspended Solids (50th percentile)	=	27 mg/l
pH (50th percentile)	=	s.u.
Acute Ammonia-N		
Summer pH (75th percentile)	=	s.u.
Winter pH (75th percentile)	=	s.u.
Chronic Ammonia-N		
Summer Temperature (75th percentile)	=	C
Summer pH (75th percentile)	=	s.u.
Winter Temperature (75th percentile)	=	C
Winter pH (75th percentile)	=	s.u.

Mixing Zone Dilution				
Dilution Factor (for acute mixing zone)	=			
		Dilution Fraction	**Flow**	**Location**
Chronic Aquatic Life (Including Ammonia)	=	25%	Q7,10	Outfall
Chronic WET	=	25%	Q7,10	Outfall
Human Noncancer Drinking Water	=	25%	Q7,10	PWS Intake
Human Noncancer Nondrinking Water	=	25%	Q7,10	Outfall
Human Cancer Drinking Water	=	25%	Q50	PWS Intake
Human Cancer Nondrinking Water	=	25%	Q50	Outfall
Public Water Supply	=	25%	Q7,10	PWS Intake
Industrial Water Supply	=	25%	Q7,10	IWS Intake

Metals Translators (using Indiana translators, divide dissolved criterion by translator to get total recoverable)		
	Acute	**Chronic**
Arsenic	1.000	1.000
Cadmium	0.932	0.897
Chromium III	0.316	0.860
Copper[11]	0.617	0.617
Lead	0.751	0.751
Nickel[11]	0.536	0.536
Selenium	--	1.000
Silver	0.85	--
Zinc[11]	0.309	0.309

Source of Criteria [1] A	B	C	D	E	F	G	Bckgrnd (Outfall) (ug/l)	Bckgrnd (Intake) (ug/l)	Remove Mixing Zone? (Yes or Blank)	Samples/ Month	CV	Facility Specific CV? (Yes or No)	CAS Number	Parameters	Indiana Water Quality Criteria for the Ohio River (ug/l) [2] A: Aquatic Life Criteria Acute (AAC)	B: Aquatic Life Criteria Chronic (CAC)	C: Human Health Noncancer Criteria Drinking (HNC-D)	D: Human Health Noncancer Criteria Nondrinking (HNC-N)	E: Human Health Cancer Criteria Drinking (HCC-D)	F: Human Health Cancer Criteria Nondrinking (HCC-N)	G: Add. PWS Criteria (PWS)	Preliminary Effluent Limitations [3] Concentration (ug/l) Average	Concentration (ug/l) Maximum	Mass (lbs/day) Average	Mass (lbs/day) Maximum	Criteria Type [4]	Basis
1	1	1	8				2.6	2.6		1	0.6	No	7440508	Copper[5][7]	22.10	14.39	1300	56000				49	72	0.074	0.11	Tier I	AAC
1	1	1	1			8	0	0	Yes	1	0.6	No	7439976	Mercury[8]	2.4	0.012	0.14	0.15			2	0.012	0.02	0.000018	0.00003	Tier I	CAC[10]
1	1	1	1				6.0	6.0		1	0.6	No	7440666	Zinc[5][7]	148.26	149.47	7400	26000				660	960	0.99	1.4	Tier I	AAC
8	2					8	0	0		1	0.6	No	16984488	Fluoride[7]	11838.955	1000					4000	16000	24000	24	36	SV[9]	AAC

ATTACHMENT 6H

Calculation of Preliminary Effluent Limitations for Discharges to the Middle Ohio River (River Miles 630.0 - 848.0) using ORSANCO Water Quality Criteria

General Information	
Facility Name:	Warrick Newco LLC
County:	Warrick
NPDES Number:	IN0001155
WLA Number:	002805
WLA Report Date:	9/23/2025
Outfall:	005
Receiving Stream:	Ohio River

Receiving Stream Questions (Yes or No)	
Acute Mixing Zone Allowed?	No

Effluent Flow	=	0.18 mgd

Receiving Stream Design Flows		
Q7,10 (Outfall)	=	11000 cfs
Harmonic Mean (Outfall)	=	49000 cfs

Ambient Downstream Water Quality Characteristics		
Hardness (50th percentile)	=	132 mg/l
Total Suspended Solids (50th percentile)	=	27 mg/l
pH (50th percentile)	=	s.u.
Acute Ammonia-N		
Summer Temperature (75th percentile)	=	C
Summer pH (75th percentile)	=	s.u.
Winter Temperature (75th percentile)	=	C
Winter pH (75th percentile)	=	s.u.
Chronic Ammonia-N		
Summer Temperature (75th percentile)	=	C
Summer pH (75th percentile)	=	s.u.
Winter Temperature (75th percentile)	=	C
Winter pH (75th percentile)	=	s.u.

Mixing Zone Dilution				
Dilution Factor (for acute mixing zone)	=			
		Dilution Fraction	Flow	Location
Chronic Aquatic Life (Including Ammonia)	=	25%	Q7,10	Outfall
Human Noncancer Drinking Water	=	25%	Q7,10	Outfall
Human Cancer Drinking Water	=	25%	Harmonic Mean	Outfall
General Human Health	=	25%	Q7,10	Outfall

Metals Translators (using ORSANCO translators, multiply dissolved criterion by translator to get total recoverable)	Acute	Chronic
Arsenic[11]	1.351	1.351
Cadmium	1.073	1.114
Chromium III	3.165	1.163
Chromium VI	1.018	1.040
Copper[11]	1.621	1.621
Lead	1.332	1.332
Mercury	1.176	1.176
Nickel[11]	1.864	1.864
Silver	1.176	--
Zinc[11]	3.241	3.241

Source of Criteria [1] A	B	C	D	E	Background (Outfall) (ug/l)	Remove Mixing Zone? (Yes or Blank)	Samples/ Month	CV	Facility Specific CV? (Yes or No)	CAS Number	Parameters	ORSANCO Water Quality Criteria (ug/l) [2] A: Aquatic Life Criteria Acute (AAC)	B: Aquatic Life Criteria Chronic (CAC)	C: Human Health Noncancer Criteria Drinking (HNC-D)	D: Human Health Cancer Criteria Drinking (HCC-D)	E: General Human Health Criteria (HH-G)	Preliminary Effluent Limitations [3] Concentration (ug/l) Average	Concentration (ug/l) Maximum	Mass (lbs/day) Average	Mass (lbs/day) Maximum	Criteria Type [4]	Basis
1	1	1			2.6		1	0.6	No	7440508	Copper[5][7]	17.46	11.35	1300			39	57	0.059	0.086	Tier I	AAC
1	1			1	0	Yes	1	0.6	No	7439976	Mercury[5][8]	1.445	0.774			0.012	0.012	0.029	0.000018	0.000044	Tier I	HH-G[10]
1	1	1			6.0		1	0.6	No	7440666	Zinc[5][7]	148.26	149.47	7400			660	960	0.99	1.4	Tier I	AAC
2	2			1	0		1	0.6	No	16984488	Fluoride	11838.95	5729.88			1000	16000	24000	24	36	Tier I	AAC

ATTACHMENT 6I
Comparison of Indiana and ORSANCO Preliminary Effluent Limitations

Parameters	Indiana PELs			ORSANCO PELs			Basis of More Stringent PELs	Basis of PELs for Reasonable Potential Analysis
	Monthly Average (ug/l)	Daily Maximum (ug/l)	Type of PEL	Monthly Average (ug/l)	Daily Maximum (ug/l)	Type of PEL		
OUTFALL 001								
Copper	49	72	Tier I	39	57	Tier I	ORSANCO	ORSANCO
Iron	3800	5500	SSC	No PEL	No PEL		Indiana	Indiana
Mercury	0.012	0.020	Tier I	0.012	0.029	Tier I	IN/OR	Indiana
Zinc	660	960	Tier I	660	960	Tier I	IN/OR	Indiana
OUTFALL 003								
Antimony	830	1400	Tier II	830	1400	Tier II	IN/OR	Indiana
Total Chromium	2600	4600	Tier I	2600	4600	Tier I	IN/OR	Indiana
Copper	41	72	Tier I	33	57	Tier I	ORSANCO	ORSANCO
Iron	3200	5500	SSC	No PEL	No PEL		Indiana	Indiana
Manganese	5400	11000	Tier I	5400	11000	Tier I	IN/OR	Indiana
Mercury	0.012	0.020	Tier I	0.012	0.029	Tier I	IN/OR	Indiana
Nickel	1300	2200	Tier I	1300	2200	Tier I	IN/OR	Indiana
Zinc	550	960	Tier I	550	960	Tier I	IN/OR	Indiana
Chlorine (total residual)	16	38	Tier I	No PEL	No PEL		Indiana	Indiana
Cyanide, Free	25	44	Tier I	25	44	Tier I	IN/OR	Indiana
Cyanide, Total	40000	98000	Tier I	24000	58000	Tier I	ORSANCO	ORSANCO
Fluoride	14000	24000	SV	14000	24000	Tier I	IN/OR	ORSANCO
OUTFALL 004								
Copper	49	72	Tier I	39	57	Tier I	ORSANCO	ORSANCO
Iron	3800	5500	SSC	No PEL	No PEL		Indiana	Indiana
Mercury	0.012	0.020	Tier I	0.012	0.029	Tier I	IN/OR	Indiana
Zinc	660	960	Tier I	660	960	Tier I	IN/OR	Indiana
Cyanide, Free	30	44	Tier I	30	44	Tier I	IN/OR	Indiana
OUTFALL 005								
Copper	49	72	Tier I	39	57	Tier I	ORSANCO	ORSANCO
Mercury	0.012	0.020	Tier I	0.012	0.029	Tier I	IN/OR	Indiana
Zinc	660	960	Tier I	660	960	Tier I	IN/OR	Indiana
Fluoride	16000	24000	SV	16000	24000	Tier I	IN/OR	ORSANCO

ATTACHMENT 7A-1
Effluent Data for Warrick Newco LLC (IN0001155) Outfall 001

Date		Copper (mg/l) Daily	Copper (mg/l) Monthly Average	Zinc (mg/l) Daily	Zinc (mg/l) Monthly Average	Iron (mg/l) Daily	Iron (mg/l) Monthly Average
1/19/2019		0.011		0.06		1.56	
2/5/2019		0.132		0.32		10.01	
2/7/2019		0.012		0.09		6.76	
2/19/2019		0.011	0.052	0.06	0.16	1.56	6.1
4/13/2019		0.022		0.16		4.08	
4/19/2019		0.016		0.04		2.51	
4/24/2019		0.013	0.017	0.03	0.077	2.38	3.0
7/15/2019		0.04		0.33		11.15	
7/16/2019		0.045		0.31		10.41	
7/21/2019		0.038	0.041	0.15	0.26	5.0	8.9
10/15/2019		0.028		0.27		6.13	
10/21/2019		0.043		0.28		0.95	
10/26/2019		0.008	0.026	0.1	0.22	0.91	2.7
1/3/2020		0.035		0.07		5.37	
1/10/2020		0.033		0.11		5.91	
1/11/2020		0.094	0.054	0.35	0.18	23.99	11.8
4/25/2020		0.095		0.52		27.09	
4/26/2020		0.014	0.055	0.07	0.30	4.39	15.7
5/4/2020		0.085		0.65		25.41	
6/20/2020		0.034		0.04		2.15	
7/12/2020		0.044		0.16		8.64	
7/30/2020		0.082		0.51		16.27	
7/31/2020		0.091	0.072	0.28	0.32	13.76	12.9
10/19/2020		0.026		0.15		7.6	
10/23/2020		0.026		0.09		8.02	
10/28/2020		0.019	0.024	0.05	0.097	3.17	6.3
1/25/2021		0.047		0.23		5.29	
1/30/2021		0.032	0.040	0.09	0.16	5.83	5.6
2/4/2021		0.011		0.05		3.82	
4/28/2021		0.089		0.296		13.1	
4/29/2021		0.018	0.054	0.067	0.18	2.1	7.6
5/4/2021		0.026		0.084		3.93	
7/1/2021		0.028		0.159		4.73	
7/11/2021		0.018	0.023	0.017	0.088	0.67	2.7
8/9/2021		0.062		0.438		8.77	
10/6/2021		0.018		0.01		0.75	
10/25/2021		0.013		0.02		0.65	
10/28/2021		0.046	0.026	0.176	0.069	5.32	2.2
2/2/2022		0.009		0.036		1.13	
2/3/2022		0.009		0.025		1.17	
2/13/2022		0.011		0.018		4.73	
2/17/2022		0.032	0.015	0.147	0.057	4.94	3.0
4/6/2022		0.015		0.162		3.22	
4/11/2022		0.017		0.166		2.81	
4/13/2022		0.035	0.022	0.317	0.22	7.74	4.6
5/25/2022		0.009		0.019		3.78	
7/28/2022		0.017		0.192		3.09	
7/31/2022		0.005	0.011	0.045	0.12	1.06	2.1
8/4/2022		0.021		0.221		5.84	
8/5/2022		0.027	0.024	0.23	0.23	5.81	5.8
11/30/2022		0.012		0.089		1.36	
12/13/2022		0.0426		0.178		3.58	
12/14/2022		0.0266	0.035	0.154	0.17	3.75	3.7
1/2/2023		0.046		0.442		10.78	
1/16/2023		0.013		0.058		7.75	
1/18/2023		0.02	0.026	0.144	0.21	4.99	7.8
6/29/2023		0.133		1.06		17.81	
7/29/2023		0.017		0.102		2.29	
8/3/2023		0.03		0.225		3.2	
8/14/2023		0.014		0.072		0.97	
8/26/2023		0.147	0.064	0.681	0.33	14.68	6.3
10/30/2023		0.009		0.058		0.46	
Outlier Analysis	**mean**	**0.0358**		**0.189**		**6.24**	
	std	**0.0326**		**0.191**		**5.95**	
	mean + 3std	**0.134**		**0.762**		**24.10**	
Reasonable Potential Analysis	**n**	**62**	**19**	**62**	**19**	**62**	**19**
	CV	**0.9**	**0.5**	**1.0**	**0.5**	**1.0**	**0.6**
	max	**0.147**	**0.072**	**1.06**	**0.33**	**27.09**	**15.7**

ATTACHMENT 7A-2
Effluent Data for Warrick Newco LLC (IN0001155) Outfall 001

	Mercury (ng/l)	
Date	**Daily**	**Monthly Average**
1/19/2019	5.61	
2/5/2019	59.2	
2/16/2019	4.86	32
4/13/2019	20	
4/19/2019	6.57	13
7/15/2019	44.8	
7/16/2019	127	86
10/21/2019	9.56	
10/26/2019	5.58	7.6
1/3/2020	20.1	
1/10/2020	31.1	
1/11/2020	55	35
4/25/2020	81.2	
4/26/2020	9.8	46
5/5/2020	25	
6/30/2020	17.4	
7/12/2020	31	
7/30/2020	426	
7/31/2020	42.5	167
8/13/2020	2.16	
8/14/2020	6.27	4.2
10/19/2020	10.1	
10/23/2020	16.6	
10/28/2020	8.23	
10/29/2020	3.32	9.6
1/25/2021	22.3	
2/4/2021	14	
2/10/2021	4.57	9.3
4/28/2021	35.7	
4/29/2021	15.7	25.7
5/4/2021	17.2	
6/2/2021	10.5	
6/3/2021	1.46	6.0
7/1/2021	3.39	
7/11/2021	1.31	2.4
10/6/2021	5.45	

		Mercury (ng/l)	
Date		**Daily**	**Monthly Average**
10/25/2021		2.91	
10/28/2021		23.6	5
2/2/2022		4.12	
2/3/2022		3.55	
2/13/2022		8.17	
2/17/2022		7.26	5.8
4/6/2022		11.1	
4/11/2022		6.06	
4/13/2022		35.4	17.5
5/25/2022		7.81	
7/7/2022		40.9	
7/8/2022		196	
7/9/2022		6.45	
7/28/2022		207	113
8/4/2022		15.8	
8/5/2022		33.9	
8/30/2022		33.6	28
9/3/2022		20.5	
9/19/2022		125	
9/29/2022		3.57	
9/30/2022		1.63	38
11/30/2022		12	
12/13/2022		25.45	
12/14/2022		17.2	21
1/2/2/2023		80.9	
1/16/2023		14.4	
1/18/2023		17.6	38
6/29/2023		14	
7/29/2023		10	
8/3/2023		56	
8/14/2023		12	34
10/30/2023		6.0	
Outlier Analysis	**mean**	**33.3**	
	std	**72.0**	
	mean + 3std	**249**	
Reasonable Potential Analysis	**n**	**36**	**13**
	CV	**2.2**	**1.4**
	max	**426**	**167**

ATTACHMENT 7B-1
Effluent Data for Warrick Newco LLC (IN0001155) Outfall 003

Copper (mg/l)			
Date	Daily	Adjusted Daily	Monthly Average
1/2/2019	0.001	0.001	
1/8/2019	0.002	0.002	0.0015
2/2/2019	<0.001	0.001	
2/5/2019	0.001	0.001	0.001
3/9/2019	0.015	0.015	
3/12/2019	0.006	0.006	0.011
4/2/2019	0.019	0.019	
4/9/2019	0.012	0.012	0.016
5/8/2019	0.009	0.009	
5/14/2019	0.009	0.009	0.0090
6/4/2019	0.009	0.009	
6/11/2019	0.005	0.005	0.0070
7/2/2019	0.007	0.007	
7/9/2019	0.013	0.013	0.010
8/6/2019	0.007	0.007	
8/15/2019	0.003	0.003	0.005
9/3/2019	0.017	0.017	
9/10/2019	0.008	0.008	0.013
10/1/2019	0.007	0.007	
10/8/2019	0.007	0.007	0.007
11/5/2019	0.01	0.01	
11/12/2019	0.01	0.01	0.01
12/3/2019	0.011	0.011	
12/10/2019	0.012	0.012	0.012
1/8/2020	0.009	0.009	
1/14/2020	0.007	0.007	0.008
2/4/2020	0.004	0.004	
2/12/2020	0.018	0.018	0.011
3/5/2020	0.018	0.018	
3/10/2020	0.013	0.013	0.016
4/7/2020	0.005	0.005	
4/14/2020	0.005	0.005	0.005
5/7/2020	<0.001	0.001	
5/12/2020	<0.002	0.002	0.0015
6/3/2020	0.009	0.009	
6/9/2020	0.008	0.008	0.0085
7/2/2020	0.011	0.011	
7/7/2020	0.004	0.004	0.0075
8/5/2020	0.003	0.003	
8/11/2020	0.004	0.004	0.0035
9/1/2020	0.008	0.008	
9/8/2020	0.008	0.008	0.008
10/6/2020	0.006	0.006	
10/13/2020	0.007	0.007	0.0065
11/3/2020	0.017	0.017	
11/10/2020	0.022	0.022	0.020
12/1/2020	<0.006	0.006	
12/8/2020	0.002	0.002	
12/22/2020	0.009	0.009	0.0057
1/5/2021	0.009	0.009	
1/12/2021	0.009	0.009	0.009
2/2/2021	0.007	0.007	
2/9/2021	0.008	0.008	0.0075
3/14/2021	0.009	0.009	
3/17/2021	0.015	0.015	0.012
4/6/2021	0.007	0.007	
4/13/2021	0.009	0.009	0.008
5/9/2021	0.011	0.011	
5/11/2021	<0.003	0.003	0.0070
6/1/2021	0.006	0.006	
6/8/2021	0.009	0.009	
6/15/2021	0.006	0.006	0.007
7/6/2021	0.004	0.004	
7/14/2021	0.004	0.004	0.004
8/3/2021	0.008	0.008	
8/12/2021	0.009	0.009	0.0085
9/7/2021	0.006	0.006	
9/14/2021	0.01	0.01	0.008
10/5/2021	0.004	0.004	
10/12/2021	0.01	0.01	0.007
11/2/2021	0.013	0.013	
11/10/2021	0.012	0.012	0.013
12/8/2021	0.015	0.015	
12/14/2021	0.019	0.019	0.017

Copper (mg/l)			
Date	Daily	Adjusted Daily	Monthly Average
1/4/2022	0.01	0.01	
1/12/2022	0.005	0.005	0.0075
2/1/2022	0.005	0.005	
2/8/2022	0.011	0.011	0.008
3/1/2022	--	--	
3/9/2022	0.007	0.007	
3/15/2022	0.007	0.007	
3/22/2022	--	--	0.007
4/5/2022	0.01	0.01	
4/16/2022	0.011	0.011	0.011
5/4/2022	0.007	0.007	
5/10/2022	0.008	0.008	0.0075
6/8/2022	0.005	0.005	
6/14/2022	0.003	0.003	0.004
7/5/2022	0.004	0.004	
7/12/2022	0.004	0.004	0.004
8/2/2022	0.007	0.007	
8/9/2022	0.006	0.006	
8/23/2022	--	--	
8/30/2022	--	--	0.0065
9/7/2022	0.009	0.009	
9/13/2022	0.009	0.009	0.009
10/4/2022	0.009	0.009	
10/11/2022	0.011	0.011	0.01
11/1/2022	0.007	0.007	
11/8/2022	0.009	0.009	0.008
12/6/2022	0.007	0.007	
12/13/2022	0.005	0.005	0.006
1/5/2023	0.009	0.009	
1/10/2023	0.011	0.011	0.01
2/7/2023	0.006	0.006	
2/14/2023	0.006	0.006	0.006
3/7/2023	0.009	0.009	
3/14/2023	0.007	0.007	0.008
4/4/2023	0.005	0.005	
4/11/2023	0.004	0.004	
4/25/2023	0.011	0.011	0.0067
5/2/2023	0.008	0.008	
5/10/2023	0.007	0.007	0.0075
6/6/2023	0.006	0.006	
6/13/2023	0.005	0.005	0.0055
7/4/2023	0.01	0.01	
7/11/2023	0.007	0.007	0.0085
8/3/2023	0.01	0.01	
8/7/2023	--	--	
8/8/2023	0.008	0.008	
8/10/2023	--	--	
8/15/2023	0.007	0.007	
8/17/2023	--	--	
8/18/2023	--	--	
8/21/2023	--	--	
8/22/2023	--	--	
8/28/2023	--	--	
8/29/2023	--	--	0.0083
9/5/2023	0.006	0.006	
9/12/2023	0.005	0.005	0.0055
10/3/2023	0.011	0.011	
10/10/2023	0.027	0.027	0.019
11/1/2023	0.006	0.006	
11/7/2023	0.007	0.007	
11/14/2023	--	--	0.0065
12/6/2023	0.004	0.004	
12/12/2023	0.005	0.005	0.0045
Outlier Analysis	**mean**	**0.0082**	
	std	**0.0043**	
	mean + 3std	**0.021**	
Reasonable Potential Analysis	**n**	**124**	**60**
	CV	**0.5**	**0.5**
	max	**0.027**	**0.020**

ATTACHMENT 7B-2
Effluent Data for Warrick Newco LLC (IN0001155) Outfall 003

Fluoride (mg/l)			Fluoride (mg/l)		
Date	Daily	Monthly Average	Date	Daily	Monthly Average
1/2/2019	3.06		1/4/2022	2.86	
1/8/2019	2.8	2.9	1/12/2022	1.83	2.3
2/2/2019	3.1		2/1/2022	1.61	
2/5/2019	2.64	2.9	2/8/2022	2.59	2.1
3/9/2019	4.46		3/1/2022	3.59	
3/12/2019	3.79	4.1	3/9/2022	2.84	
4/2/2019	2.66		3/15/2022	2.65	
4/9/2019	2.15	2.4	3/22/2022	2.99	3.0
5/8/2019	2.18		4/5/2022	3.24	
5/14/2019	2.57	2.4	4/16/2022	2.74	3.0
6/4/2019	2.88		5/4/2022	2.93	
6/11/2019	2.82	2.9	5/10/2022	2.85	2.9
7/2/2019	1.52		6/8/2022	3	
7/9/2019	1.8	1.7	6/14/2022	3.76	3.4
8/6/2019	3.1		7/5/2022	2.87	
8/15/2019	2.38	2.7	7/12/2022	3.52	3.2
9/3/2019	3.21		8/2/2022	2.52	
9/10/2019	2.89	3.1	8/9/2022	4.02	
10/1/2019	2.36		8/23/2022	2.45	
10/8/2019	2.42	2.4	8/30/2022	2.32	2.8
11/5/2019	2.86		9/7/2022	2.94	
11/12/2019	3.35	3.1	9/13/2022	3.71	3.3
12/3/2019	2		10/4/2022	3.6	
12/10/2019	1.51	1.8	10/11/2022	4	3.8
1/8/2020	2.8		11/1/2022	3.02	
1/14/2020	3.04	2.9	11/8/2022	2.96	3.0
2/4/2020	2.77		12/6/2022	3.74	
2/12/2020	3.03	2.9	12/13/2022	2.88	3.3
3/5/2020	2.73		1/5/2023	3.94	
3/10/2020	2.42	2.6	1/10/2023	3.18	3.6
4/7/2020	2.65		2/7/2023	3.82	
4/14/2020	2.78	2.7	2/14/2023	3.59	3.7
5/7/2020	3.24		3/7/2023	4.89	
5/12/2020	3.21	3.2	3/14/2023	4.92	4.9
6/3/2020	3.17		4/4/2023	3.61	
6/9/2020	2.84	3.0	4/11/2023	2.6	
7/2/2020	2.24		4/25/2023	--	3.1
7/7/2020	2.17	2.2	5/2/2023	2.52	
8/5/2020	3.15		5/10/2023	3.64	3.1
8/11/2020	2.95	3.1	6/6/2023	4.4	
9/1/2020	2.58		6/13/2023	3.57	4.0
9/8/2020	3.16	2.9	7/4/2023	4.6	
10/6/2020	4		7/11/2023	4.94	4.8
10/13/2020	3.26	3.6	8/3/2023	--	
11/3/2020	3.54		8/7/2023	4.57	
11/10/2020	3.89	3.7	8/8/2023	3.7	
12/1/2020	3.1		8/10/2023	3.29	
12/8/2020	2.67		8/15/2023	--	
12/22/2020	3	2.9	8/17/2023	4.2	
1/5/2021	2.99		8/18/2023	4.63	
1/12/2021	3.58	3.3	8/21/2023	3.43	
2/2/2021	3.45		8/22/2023	3.45	
2/9/2021	3.25	3.4	8/28/2023	3.93	
3/14/2021	3.85		8/29/2023	3.71	3.9
3/17/2021	3.16	3.5	9/5/2023	3.95	
4/6/2021	2.82		9/12/2023	3.81	3.9
4/13/2021	3.27	3.0	10/3/2023	3.44	
5/9/2021	2.51		10/10/2023	3.62	3.5
5/11/2021	2.99	2.8	11/1/2023	--	
6/1/2021	3.03		11/7/2023	4.63	
6/8/2021	2.71		11/14/2023	3.74	4.2
6/15/2021	--	2.9	12/6/2023	3.81	
7/6/2021	3		12/12/2023	4.41	4.1
7/14/2021	3.2	3.1	**mean**	**3.13**	
8/3/2021	3.4		**std**	**0.70**	
8/12/2021	3.06	3.2	**mean + 3std**	**5.25**	
9/7/2021	2.59		**n**	**132**	**60**
9/14/2021	2.74	2.7	**CV**	**0.2**	**0.2**
10/5/2021	2.16		**max**	**4.94**	**4.9**
10/12/2021	2.19	2.2			
11/2/2021	2.26				
11/10/2021	2.52	2.4			
12/8/2021	2.92				
12/14/2021	2.6	2.8			

ATTACHMENT 7B-3
Effluent Data for Warrick Newco LLC (IN0001155) Outfall 003

Manganese (mg/l)								
Date	Daily	Monthly Average	Date	Daily	Monthly Average	Date	Daily	Monthly Average
1/2/2019	0.960		9/29/2020	0.770	0.93	6/8/2022	0.727	
1/8/2019	0.880		10/6/2020	1.190		6/14/2022	1.078	
1/15/2019	1.300		10/13/2020	0.770		6/21/2022	1.149	
1/22/2019	1.770	1.2	10/21/2020	1.090		6/28/2022	0.886	0.96
2/2/2019	0.960		10/27/2020	1.190	1.1	7/5/2022	0.733	
2/5/2019	0.940	0.95	11/3/2020	0.940		7/12/2022	0.859	
3/9/2019	2.140		11/10/2020	0.960		7/20/2022	0.798	
3/12/2019	1.940		11/17/2020	0.920		7/31/2022	0.830	0.81
3/19/2019	1.440		11/24/2020	0.770	0.90	8/2/2022	0.948	
3/27/2019	1.220	1.7	12/1/2020	0.390		8/9/2022	0.888	
4/2/2019	1.360		12/8/2020	0.500		8/16/2022	0.984	
4/9/2019	0.870		12/15/2020	0.560		8/23/2022	0.975	
4/16/2019	0.950		12/22/2020	0.900		8/30/2022	0.694	0.90
4/24/2019	1.250	1.1	12/29/2020	1.090	0.69	9/7/2022	0.805	
5/8/2019	0.810		1/5/2021	1.130		9/13/2022	0.958	
5/14/2019	1.010		1/12/2021	1.470		9/22/2022	0.629	
5/21/2019	0.840		1/19/2021	1.430		9/27/2022	1.110	0.88
5/28/2019	0.660	0.83	1/27/2021	1.400	1.4	10/4/2022	1.004	
6/4/2019	0.690		2/2/2021	1.280		10/11/2022	1.155	
6/11/2019	0.590		2/9/2021	1.110		10/19/2022	1.082	
6/20/2019	0.710		2/18/2021	1.330		10/25/2022	0.851	1.0
6/28/2019	0.570	0.64	2/23/2021	0.910	1.2	11/1/2022	0.734	
7/2/2019	0.590		3/2/2021	0.960		11/8/2022	0.686	
7/9/2019	0.490		3/14/2021	1.210		11/15/2022	1.043	
7/19/2019	0.550		3/17/2021	1.190		11/22/2022	1.010	
7/25/2019	0.660		3/23/2021	1.200		11/29/2022	0.644	0.82
7/30/2019	0.530	0.56	3/30/2021	0.940	1.1	12/13/2022	0.715	
8/6/2019	0.770		4/6/2021	0.860		12/20/2022	0.842	
8/15/2019	0.570		4/13/2021	0.580		12/27/2022	1.150	0.90
8/20/2019	0.590		4/20/2021	0.890		1/5/2023	1.182	
8/28/2019	0.790	0.68	4/27/2021	0.780	0.78	1/10/2023	0.800	
9/3/2019	0.600		5/9/2021	0.630		1/18/2023	0.809	
9/10/2019	0.650		5/11/2021	0.760		1/24/2023	0.895	
9/17/2019	0.710		5/18/2021	0.860		1/31/2023	1.122	0.96
9/24/2019	0.810	0.69	5/25/2021	0.440	0.67	2/7/2023	0.877	
10/1/2019	0.870		6/1/2021	0.780		2/14/2023	0.704	
10/8/2019	0.910		6/8/2021	0.590		2/21/2023	0.788	
10/15/2019	1.700		6/15/2021	0.520		2/28/2023	1.146	0.88
10/23/2019	1.220		6/22/2021	0.630		3/7/2023	1.103	
10/29/2019	1.400	1.2	6/29/2021	0.630	0.63	3/14/2023	1.099	
11/5/2019	0.860		7/6/2021	0.720		3/21/2023	1.168	
11/12/2019	1.230		7/14/2021	0.880		3/28/2023	0.777	1.0
11/19/2019	1.030		7/20/2021	0.840		4/4/2023	0.671	
11/26/2019	0.800	0.98	7/27/2021	0.950	0.85	4/11/2023	0.655	
12/3/2019	0.670		8/3/2021	0.916		4/18/2023	0.841	
12/10/2019	0.500		8/12/2021	0.661		4/25/2023	1.124	0.82
12/18/2019	0.700		8/17/2021	0.828		5/2/2023	1.334	
12/25/2019	1.340		8/24/2021	0.607	0.75	5/10/2023	1.136	
12/31/2019	1.010	0.84	9/2/2021	0.810		5/16/2023	1.172	
1/8/2020	1.180		9/7/2021	0.730		5/23/2023	1.652	
1/14/2020	1.400		9/14/2021	0.640		5/30/2023	1.421	1.3
1/21/2020	1.620		9/21/2021	0.700		6/6/2023	1.434	
1/28/2020	1.190	1.3	9/28/2021	0.680	0.71	6/13/2023	1.084	
2/4/2020	1.270		10/5/2021	0.546		6/21/2023	0.780	
2/12/2020	1.250		10/12/2021	0.751		6/27/2023	1.179	1.1
2/23/2020	0.890		10/19/2021	0.848	0.72	7/4/2023	1.220	
2/26/2020	0.530	0.99	11/2/2021	0.670		7/11/2023	1.325	
3/5/2020	0.520		11/10/2021	0.680		7/20/2023	1.380	
3/10/2020	0.550		11/16/2021	0.670		7/25/2023	1.025	1.2
3/17/2020	0.750		11/23/2021	0.790		8/1/2023	1.181	
3/24/2020	0.810		11/30/2021	0.680	0.70	8/8/2023	1.027	
3/31/2020	0.460	0.62	12/8/2021	0.698		8/17/2023	1.067	
4/7/2020	0.700		12/14/2021	0.782		8/22/2023	1.180	
4/14/2020	1.020		12/21/2021	0.918		8/30/2023	0.280	0.95
4/21/2020	1.090		12/28/2021	0.749	0.79	9/5/2023	0.888	
4/28/2020	1.170	1.0	1/4/2022	0.932		9/12/2023	0.803	
5/7/2020	0.990		1/18/2022	0.564		9/19/2023	0.939	
5/12/2020	1.030		1/25/2022	0.508	0.67	9/26/2023	0.705	0.83
5/30/1010	1.080	1.0	2/1/2022	0.547		10/3/2023	0.757	
6/3/2020	1.560		2/8/2022	0.764		10/10/2023	0.935	
6/9/2020	1.350		2/15/2022	0.661		10/17/2023	1.192	
6/16/2020	1.170		2/22/2022	0.963	0.73	10/24/2023	1.326	1.1
6/24/2020	0.950	1.3	3/1/2022	0.989		11/1/2023	1.005	
7/2/2020	1.180		3/9/2022	1.025		11/7/2023	0.964	
7/7/2020	0.850		3/15/2022	0.944		11/14/2023	0.898	
7/14/2020	1.170		3/22/2022	0.963		11/23/2023	1.138	
7/21/2020	0.890		3/29/2022	1.100	1.0	11/28/2023	1.182	1.0
7/29/2020	1.190	1.1	4/5/2022	1.019		12/6/2023	0.750	
8/5/2020	1.540		4/16/2022	0.764		12/12/2023	1.046	
8/11/2020	1.290		4/20/2022	0.764		12/19/2023	0.788	
8/18/2020	1.060		4/28/2022	0.715	0.82	12/28/2023	0.820	0.85
8/25/2020	0.780	1.2	5/4/2022	0.692		**mean**	**0.93**	
91/2020	0.940		5/10/2022	0.873		**std**	**0.28**	
9/8/2020	0.860		5/17/2022	0.735		**mean + 3std**	**1.78**	
9/15/2020	0.970		5/24/2022	1.218		**n**	**253**	**60**
9/22/2020	0.940		5/31/2022	0.876	0.88	**CV**	**0.3**	**0.2**
						max	**2.14**	**1.7**

ATTACHMENT 7B-4
Effluent Data for Warrick Newco LLC (IN0001155) Outfall 003

Mercury (ng/l)		
Date		Daily
2/25/2019		9.1
3/19/2019		9.28
4/3/2019		11.2
6/4/2019		5.1
8/6/2019		18.1
10/23/2019		20
12/3/2019		7.4
2/26/2020		3.35
4/16/2020		3.94
6/3/2020		8.24
8/18/2020		6.6
10/6/2020		4.53
12/9/2020		1.7
12/15/2020		2.05
12/22/2020		3.36
2/23/2021		6.32
4/13/2021		4.77
6/8/2021		7.66
8/3/2021		5.13
10/5/2021		5.6
12/8/2021		6.905
2/1/2022		15.9
4/6/2022		7.825
6/8/2022		10.4
8/10/2022		10.6
10/6/2022		11.5
12/6/2022		26.2
12/16/2022		10.5
2/14/2023		7.94
4/18/2023		9.21
6/6/2023		20.2
8/6/2023		9.07
10/12/2023		18
12/6/2023		12
Outlier Analysis	**mean**	**9.40**
	std	**5.70**
	mean + 3std	**26.5**
Reasonable Potential Analysis	**n**	**34**
	CV	**0.6**
	max	**26.2**

ATTACHMENT 7C-1
Effluent Data for Warrick Newco LLC (IN0001155) Outfall 004

Date		Copper (mg/l)		Free Cyanide (mg/l)			Iron (mg/l)	
		Daily	Monthly Average	Daily	Adjusted Daily	Monthly Average	Daily	Monthly Average
6/21/2019		0.017		0.0096	0.0096		14.3	
6/23/2019		0.034	0.026	<0.0020	0.002	0.0058	18.02	16
8/13/2019		0.013		<0.0020	0.002		3.17	
8/21/2019		0.032	0.023	0.0023	0.0023	0.0022	16.73	10
10/21/2019		0.116		<0.0020	0.002		47.96	
1/11/2020		0.095		<0.0020	0.002		33.96	
3/2/2020		0.008		0.0062	0.0062		6.32	
5/5/2020		0.088		<0.0020	0.002		47.93	
5/16/2020		0.076	0.082	0.0026	0.0026	0.0023	44.81	46
7/30/2020		0.068		<0.0020	0.002		31.28	
8/13/2020		0.106		<0.0020	0.002		67.22	
4/20/2021		0.015		<0.0020	0.002		2.38	
5/28/2021		0.009		<0.0020	0.002		2.48	
10/18/2022		0.012		<0.0020	0.002		4.02	
6/29/2023		0.075		<0.010	0.01		42.81	
8/26/2023		0.074		--	--		39.63	
10/16/2023		0.009		2.4	2.4		3.34	
Outlier Analysis	**mean**	**0.050**			**0.1532**		**25.08**	
	std	**0.039**			**0.5992**		**20.71**	
	mean + 3std	**0.166**			**1.951**		**87.22**	
Reasonable Potential Analysis	**n**	**17**	**3**		**16**	**3**	**17**	**3**
	CV	**0.8**	**--**		**3.9**	**--**	**0.8**	**--**
	max	**0.116**	**0.082**		**2.4**	**0.0058**	**67.22**	**46**

ATTACHMENT 7C-2
Effluent Data for Warrick Newco LLC (IN0001155) Outfall 004

Date		Mercury (ng/l)		Zinc (mg/l)	
		Daily	Monthly Average	Daily	Monthly Average
6/21/2019		14		0.13	
6/23/2019		3.72	8.9	1.66	0.90
8/13/2019		35.4		1.05	
8/21/2019		196	116	0.74	0.90
10/21/2019		436		5.99	
1/11/2020		15.4		4.66	
3/2/2020		19.5		0.2	
5/5/2020		71		4.48	
5/16/2020		165	118	3.31	3.9
7/30/2020		153		3.6	
8/13/2020		45		4.6	
4/20/2021		5.2		0.034	
5/28/2021		2.03		0.02	
10/18/2022		213		0.07	
6/29/2023		257		12.554	
7/29/2023		435		--	
8/26/2023		--		8.432	
10/16/2023		307		0.068	
Outlier Analysis	**mean**	**140**		**3.0**	
	std	**148**		**3.5**	
	mean + 3std	**585**		**14**	
Reasonable Potential Analysis	**n**	**17**	**3**	**17**	**3**
	CV	**1.1**	**--**	**1.2**	**--**
	max	**436**	**118**	**12.554**	**3.9**

ATTACHMENT 7D
Effluent Data for Warrick Newco LLC (IN0001155) Outfall 005

	Copper (mg/l)		Fluoride (mg/l)	Mercury (ng/l)	Zinc (mg/l)	
Date	Daily	Adjusted Daily	Daily	Daily	Daily	Adjusted Daily
10/21/2019	0.15	0.15	3.48	43	0.11	0.11
1/11/2020	0.124	0.124	5.35	226	0.81	0.81
6/28/2020	0.037	0.037	3.36	--	0.22	0.22
7/30/2020	0.085	0.085	3.94	49.1	0.61	0.61
7/31/2020	0.115	0.115	4.56	24.4	0.72	0.72
8/13/2020	--	--	--	71.9	--	--
10/29/2020	0.031	0.031	3.5	68	0.21	0.21
3/11/2021	0.054	0.054	5.33	55.1	0.44	0.44
6/3/2021	0.025	0.025	4.1	9.56	0.03	0.03
2/17/2022	0.122	0.122	6.82	33.6	0.573	0.573
3/6/2022	0.053	0.053	9.63	174	0.425	0.425
6/1/2022	0.148	0.148	7.465	155	0.752	0.752
7/8/2022	0.145	0.145	7.6	43	0.857	0.857
8/5/2022	0.027	0.027	5.09	46.1	0.12	0.12
12/8/2022	<0.010	0.01	1.26	2.72	<0.020	0.02
1/2/2023	0.068	0.068	7.43	59.4	0.419	0.419
2/9/2023	0.008	0.008	2.6	3.03	0.008	0.008
3/3/2023	--	--	3.55	--	--	--
6/29/2023	0.044	0.044	4.62	--	0.208	0.208
7/29/2023	0.163	0.163	7.5	222	0.895	0.895
8/26/2023	0.122	0.122	6.21	--	0.836	0.836
Outlier Analysis	**mean**	**0.081**	**5.2**	**76**	**mean**	**0.43**
	std	**0.053**	**2.1**	**72**	**std**	**0.32**
	mean + 3std	**0.24**	**11.4**	**293**	**mean + 3std**	**1.38**
Reasonable Potential Analysis	**n**	**19**	**20**	**17**	**n**	**19**
	CV	**0.7**	**0.4**	**1.0**	**CV**	**0.7**
	max	**0.163**	**9.63**	**226**	**max**	**0.895**

ATTACHMENT 8
Reasonable Potential Statistical Procedure for Discharges to the Ohio River
Warrick Newco LLC (IN001155, WLA002805)

Parameters	Reasonable Potential to Exceed? (Yes or No)*	Monthly Average Determination							Daily Maximum Determination						
		Maximum Monthly Average (ug/l)	Number of Monthly Averages	CV	MF	PEQ (ug/l)	PEL (ug/l)	PEQ > PEL?	Maximum Daily Sample (ug/l)	Number of Daily Samples	CV	MF	PEQ (ug/l)	PEL (ug/l)	PEQ > PEL?
OUTFALL 001															
Copper	Yes (ORSANCO Tier I)	72	19	0.5	1.3	94	39	Yes	147	62	0.9	1.0	150	57	Yes
Iron	Yes (Indiana SSC)	15700	19	0.6	1.4	22000	3800	Yes	27090	62	1.0	1.0	27000	5500	Yes
Mercury	Yes (Indiana Tier I)	0.167	22	1.2	1.6	0.27	0.012	Yes	0.426	68	1.9	0.9	0.38	0.020	Yes
Zinc	Yes (Indiana Tier I)	330	19	0.5	1.3	430	660	No	1060	62	1.0	1.0	1100	960	Yes
OUTFALL 003															
Antimony	No					51	830	No	32	12	0.6	1.6	51	1400	No
Total Chromium	No					10	2600	No	6.3	12	0.6	1.6	10	4600	No
Copper	No	20	60	0.5	1.0	20	33	No	27	124	0.5	0.9	24	57	No
Iron	No					1600	3200	No	864	8	0.6	1.9	1600	5500	No
Manganese	No	1700	60	0.2	1.0	1700	5400	No	2140	253	0.3	0.9	1900	11000	No
Mercury	Yes (Indiana Tier I)					0.031	0.012	Yes	0.0262	34	0.6	1.2	0.031	0.020	Yes
Nickel	No					240	1300	No	150	12	0.6	1.6	240	2200	No
Zinc	No					440	550	No	276	12	0.6	1.6	440	960	No
Cyanide, Total	No					100	24000	No	63	13	0.6	1.6	100	58000	No
Fluoride	No	4900	60	0.2	1.0	4900	14000	No	4940	132	0.2	1.0	4900	24000	No
OUTFALL 004															
Copper	Yes (ORSANCO Tier I)	82	3	0.6	3.0	250	39	Yes	116	17	0.8	1.6	190	57	Yes
Iron	Yes (Indiana SSC)	46000	3	0.6	3.0	140000	3800	Yes	67220	17	0.8	1.6	110000	5500	Yes
Mercury	Yes (Indiana Tier I)	0.118	3	0.6	3.0	0.35	0.012	Yes	0.436	17	1.1	1.8	0.78	0.020	Yes
Zinc	Yes (Indiana Tier I)	3900	3	0.6	3.0	12000	660	Yes	12554	17	1.2	1.9	24000	960	Yes
Cyanide, Free	Yes (Indiana Tier I)	5.8	3	0.6	3.0	17	30	No	2400	16	3.9	2.4	5800	44	Yes
OUTFALL 005															
Copper	Yes (ORSANCO Tier I)					240	39	Yes	163	19	0.7	1.5	240	57	Yes
Mercury	Yes (Indiana Tier I)					0.38	0.012	Yes	0.226	17	1.0	1.7	0.38	0.020	Yes
Zinc	Yes (Indiana Tier I)					1300	660	Yes	895	19	0.7	1.5	1300	960	Yes
Fluoride	No					12000	16000	No	9630	20	0.4	1.2	12000	24000	No

* Reasonable Potential to Exceed:

1) "Yes (Indiana Tier I)" means that a projected effluent quality (PEQ) exceeded a preliminary effluent limitation (PEL) based on an Indiana Tier I criterion.
2) "Yes (Indiana SSC)" means that a PEQ exceeded a PEL based on an Indiana site-specific criterion.
3) "Yes (ORSANCO Tier I)" means that a PEQ exceeded a PEL based on an ORSANCO Tier I criterion.
4) "No" means that a PEQ did not exceed a PEL.

ATTACHMENT 9
Comparison of Internal Outfall TBELs to Potenial WQBELs at Outfall 003

Parameter	Internal Outfall 603		Internal Outfall 703[1]		Outfall 003	
	TECHNOLOGY-BASED EFFLUENT LIMITATIONS		TECHNOLOGY-BASED EFFLUENT LIMITATIONS		WATER QUALITY-BASED EFFLUENT LIMITATIONS	
	Loading (lbs/day)		Loading (lbs/day)		Loading (lbs/day)	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum
Antimony	2.9	6.5	--	--	72	120
Total Chromium	0.79	1.9	--	--	230	400
Copper	--	--	1.0	1.0	2.9	4.9
Iron	--	--	1.0	1.0	280	480
Nickel	1.2	1.9	--	--	110	190
Zinc	2.7	6.4	--	--	48	83
Cyanide, Total	0.54	1.3	--	--	2100	5000
Fluoride	89	200	--	--	1200	2100

[1] The above comparison demonstrates that the TBELs at internal Outfall 703 are less than the potential WQBELs at Outfall 003. Additionally, the discharge from internal Outfall 703 is further diluted by other wastestreams at interal Outfall 103, which combines with the discharge from internal Outfall 303 before discharging to Outfall 003.