Permit Number: AR0052582
AFIN: 47-00991

AUTHORIZATION TO DISCHARGE WASTEWATER UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM AND THE ARKANSAS WATER AND AIR POLLUTION CONTROL ACT

In accordance with the provisions of the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. 8-4-101 et seq.), and the Clean Water Act (33 U.S.C. § 1251 et seq.),

Big River Steel LLC

is authorized to discharge treated process wastewater, stormwater, and dust suppression/quenching water runoff from slag yard from a facility located as follows: 2027 East State Highway 198, Osceola, AR 72370, in Mississippi County. From Osceola, travel south on U.S. Highway 61 and turn left onto State Highway 198. Travel two miles east on Highway 198 and the front gate of facility is located on the right side of the road. The wastewater treatment plant is located on the east side of the Cold Rolling Mill.

Facility Coordinates: Latitude: 35° 39’ 14.43” N; Longitude: 89° 57’ 15.78” W

Discharge from Outfalls 001 and 002 is to receiving waters named:

the Mississippi River in Segment 6C of the Mississippi River Basin.

The outfalls are located at the following coordinates:

Outfall 001:	Latitude: 35° 39’ 05.0” N;	Longitude: 89° 54’ 47.0” W
Outfall 002:	Latitude: 35° 39’ 05.0” N;	Longitude: 89° 54’ 47.1” W

Discharge shall be in accordance with effluent limitations, monitoring requirements, and other conditions set forth in this permit. Per Part III.D.10, the permittee must re-apply 180 days prior to the expiration date below for permit coverage to continue beyond the expiration date.

Effective Date: December 1, 2021
Expiration Date: November 30, 2026

Alan J. York
Associate Director, Office of Water Quality
Arkansas Department of Energy and Environment
Division of Environmental Quality

11/01/2021
Issue Date

PART I
PERMIT REQUIREMENTS

SECTION A1. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 001 - treated process wastewater from the following sources: RH degasser unit, continuous casting line, hot rolling mill, alkaline cleaning operations, chromate reactor, galvanizing line, pickling line, skin pass mill, tandem cold mill, vehicle wash pad, contact cooling water systems, and non-contact cooling water systems.

During the period beginning on the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Outfall 001. Such discharges shall be limited and monitored by the permittee as specified below as well as Parts II and III. See Part IV for all definitions.

Tier I – permit limits when the average daily production for a calendar month is equal to or less than 11,000,000 lbs/day of liquid steel.*

Effluent Characteristics	**Discharge Limitations**				**Monitoring Requirements**	
	Mass (lbs/day, unless otherwise specified)		Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.		
Flow	N/A	N/A	Report, MGD	Report, MGD	once/day	totalizing meter
Total Suspended Solids (TSS)	235.3	610.9	Report	Report	once/week	composite
Oil and Grease (O&G)	78.6	143.9	10	15	once/week	grab
Chromium (VI)[1]	0.02	0.06	Report[2]	Report[2]	once/week	composite
Chromium, Total Recoverable[1]	0.1	0.3	Report[2]	Report[2]	once/week	composite
Lead, Total Recoverable[1]	0.5	1.6	Report[2]	Report[2]	once/week	composite
Nickel, Total Recoverable[1]	0.08	0.2	Report[2]	Report[2]	once/week	composite
Zinc, Total Recoverable[1]	0.8	2.3	Report[2]	Report[2]	once/week	composite
Naphthalene[1]	0.01	0.03	Report[2]	Report[2]	once/week	grab
Tetrachloroethylene[1]	0.02	0.04	Report[2]	Report[2]	once/week	grab
pH	N/A	N/A	Minimum 6.0 s.u.	Maximum 9.0 s.u.	once/week	grab
Acute WET Testing[3,4]			Value			
***Pimephales promelas* (Acute)[3]**	N/A		Value			
Pass/Fail Lethality (48-Hr NOEC) TEM6C			Report (Pass=0/Fail=1)		once/quarter	composite
Survival (48-Hr NOEC) TOM6C			Report %		once/quarter	composite
Coefficient of Variation (48-Hr NOEC) TQM6C			Report %		once/quarter	composite
Pass/Fail Retest 1 (48-Hr NOEC) 22418			Report (Pass=0/Fail=1)		once/month[4]	composite
Pass/Fail Retest 2 (48-Hr NOEC) 22419			Report (Pass=0/Fail=1)		once/month[4]	composite
Pass/Fail Retest 3 (48-Hr NOEC) 51444			Report (Pass=0/Fail=1)		once/month[4]	composite
***Daphnia pulex* (Acute)[3]**			Value			
Pass/Fail Lethality (48-Hr NOEC) TEM3D			Report (Pass=0/Fail=1)		once/quarter	composite
Survival (48-Hr NOEC) TOM3D			Report %		once/quarter	composite
Coefficient of Variation (48-Hr NOEC) TQM3D			Report %		once/quarter	composite
Pass/Fail Retest 1 (48-Hr NOEC) 22415			Report (Pass=0/Fail=1)		once/month[4]	composite
Pass/Fail Retest 2 (48-Hr NOEC) 22416			Report (Pass=0/Fail=1)		once/month[4]	composite
Pass/Fail Retest 3 (48-Hr NOEC) 51443			Report (Pass=0/Fail=1)		once/month[4]	composite

* See Transition Condition in Part II.10 of this permit.

1. See Part II.8 (Metals and Other Toxic Compounds Requirements).
2. Samples for metals and other toxic compounds shall be reported in units of micrograms per liter (µg/l).
3. See Part II.9 (WET Testing Requirements).
4. CONDITIONAL REPORTING: Use only if conducting retests due to a test failure (demonstration of significant toxic effects at or below the critical dilution). If testing on a quarterly basis, the permittee may substitute one of the retests in lieu of one routine toxicity test. If

retests are not required, Report NODI=9 (Conditional Monitoring - Not Required This Period) under retest parameters (reported on a quarterly DMR). This condition applies to *P. promelas* and *D. pulex*.

Oil, grease, or petrochemical substances shall not be present in receiving waters to the extent that they produce globules or other residue or any visible, colored film on the surface or coat the banks and/or bottoms of the waterbody or adversely affect any of the associated biota. There shall be no visible sheen as defined in Part IV of this permit.

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples shall be taken after sand filtration and prior to the pipeline to Outfall 001.

SECTION A2. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 001 - treated process wastewater from the following sources: RH degasser unit, continuous casting line, hot rolling mill, tube mill, alkaline cleaning operations, chromate reactor, galvanizing lines, pickling lines, skin pass mills, tandem cold mill, reversing cold mills, coating operations, vehicle wash pad, contact cooling water systems, and non-contact cooling water systems.

During the period beginning on the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Outfall 001. Such discharges shall be limited and monitored by the permittee as specified below as well as Parts II and III. See Part IV for all definitions.

Tier II – permit limits when the average daily production for a calendar month is greater than 11,000,000 lbs/day of liquid steel.*

Effluent Characteristics	**Discharge Limitations**				**Monitoring Requirements**	
	Mass (lbs/day, unless otherwise specified)		Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.		
Flow	N/A	N/A	Report, MGD	Report, MGD	once/day	totalizing meter
Total Suspended Solids (TSS)	766.6	1,938.4	Report	Report	once/week	composite
Oil and Grease (O&G)	104.3	156.4	10	15	once/week	grab
Chromium (VI)[1]	0.2	0.5	Report[2]	Report[2]	once/week	composite
Chromium, Total Recoverable[1]	0.4	0.9	Report[2]	Report[2]	once/week	composite
Lead, Total Recoverable[1]	2.3	7.0	Report[2]	Report[2]	once/week	composite
Nickel, Total Recoverable[1]	0.3	0.8	Report[2]	Report[2]	once/week	composite
Zinc, Total Recoverable[1]	3.2	9.8	Report[2]	Report[2]	once/week	composite
Naphthalene[1]	0.05	0.09	Report[2]	Report[2]	once/week	grab
Tetrachloroethylene[1]	0.07	0.1	Report[2]	Report[2]	once/week	grab
pH	N/A	N/A	Minimum 6.0 s.u.	Maximum 9.0 s.u.	once/week	grab
Acute WET Testing[3,4]			Value			
***Pimephales promelas* (Acute)[3]**	N/A		Value			
Pass/Fail Lethality (48-Hr NOEC) TEM6C			Report (Pass=0/Fail=1)		once/quarter	composite
Survival (48-Hr NOEC) TOM6C			Report %		once/quarter	composite
Coefficient of Variation (48-Hr NOEC) TQM6C			Report %		once/quarter	composite
Pass/Fail Retest 1 (48-Hr NOEC) 22418			Report (Pass=0/Fail=1)		once/month[4]	composite
Pass/Fail Retest 2 (48-Hr NOEC) 22419			Report (Pass=0/Fail=1)		once/month[4]	composite
Pass/Fail Retest 3 (48-Hr NOEC) 51444			Report (Pass=0/Fail=1)		once/month[4]	composite
***Daphnia pulex* (Acute)[3]**			Value			
Pass/Fail Lethality (48-Hr NOEC) TEM3D			Report (Pass=0/Fail=1)		once/quarter	composite
Survival (48-Hr NOEC) TOM3D			Report %		once/quarter	composite
Coefficient of Variation (48-Hr NOEC) TQM3D			Report %		once/quarter	composite
Pass/Fail Retest 1 (48-Hr NOEC) 22415			Report (Pass=0/Fail=1)		once/month[4]	composite
Pass/Fail Retest 2 (48-Hr NOEC) 22416			Report (Pass=0/Fail=1)		once/month[4]	composite
Pass/Fail Retest 3 (48-Hr NOEC) 51443			Report (Pass=0/Fail=1)		once/month[4]	composite

* See Transition Condition in Part II.9 of this permit.

1. See Part II.8 (Metals and Other Toxic Compounds Requirements).
2. Samples for metals and other toxic compounds shall be reported in units of micrograms per liter (µg/l).
3. See Part II.9 (WET Testing Requirements).
4. CONDITIONAL REPORTING: Use only if conducting retests due to a test failure (demonstration of significant toxic effects at or below the critical dilution). If testing on a quarterly basis, the permittee may substitute one of the retests in lieu of one routine toxicity test. If retests are not required, Report NODI=9 (Conditional Monitoring - Not Required This Period) under retest parameters (reported on a quarterly DMR). This condition applies to *P. promelas* and *D. pulex*.

Oil, grease, or petrochemical substances shall not be present in receiving waters to the extent that they produce globules or other residue or any visible, colored film on the surface or coat the banks and/or bottoms of the waterbody or adversely affect any of the associated biota. There shall be no visible sheen as defined in Part IV of this permit.

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples shall be taken after sand filtration and prior to the pipeline to Outfall 001.

SECTION A3. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 002 - stormwater and dust suppression/quenching water runoff from slag yard.

During the period beginning on the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Outfall 002. Such discharges shall be limited and monitored by the permittee as specified below as well as Parts II and III. See Part IV for all definitions.

Effluent Characteristics	**Discharge Limitations**				**Monitoring Requirements**	
	Mass (lbs/day, unless otherwise specified)		Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.		
Flow	N/A	N/A	Report, MGD	Report, MGD	two/week	calculated or totalizing meter[1]
Total Suspended Solids (TSS)	N/A	N/A	100	150	once/quarter	grab
Oil and Grease (O&G)	N/A	N/A	10	15	once/quarter	grab
pH	N/A	N/A	Minimum 6.0 s.u.	Maximum 9.0 s.u.	once/month	grab

1. Flow is to be calculated based upon pump run times and the pump rating curve, until such time when a flow meter is installed and operational.
2. The permittee may install a flow meter with totalizer to measure the effluent flow. The permittee must notify the DEQ within 30 days of when the flow meter is installed and operational.

Oil, grease, or petrochemical substances shall not be present in receiving waters to the extent that they produce globules or other residue or any visible, colored film on the surface or coat the banks and/or bottoms of the waterbody or adversely affect any of the associated biota. There shall be no visible sheen as defined in Part IV of this permit.

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples shall be taken after the sedimentation pond and prior to the pipeline to Outfall 002.

SECTION B. PERMIT COMPLIANCE SCHEDULE

None

PART II
OTHER CONDITIONS

1. The operator of this wastewater treatment facility shall hold an Advanced Industrial license from the State of Arkansas in accordance with APC&EC Rule 3.

2. In accordance with 40 CFR Parts 122.62(a)(2) and 124.5, this permit may be reopened for modification or revocation and/or reissuance to require additional monitoring and/or effluent limitations when new information is received that actual or potential exceedance of State water quality criteria and/or narrative criteria are determined to be the result of the permittee's discharge(s) to a relevant water body or a Total Maximum Daily Load (TMDL) is established or revised for the water body that was not available at the time of the permit issuance that would have justified the application of different permit conditions at the time of permit issuance.

3. Other Specified Monitoring Requirements

   The permittee may use alternative appropriate monitoring methods and analytical instruments other than as specified in Part I Section A of the permit without a major permit modification under the following conditions:

   - The monitoring and analytical instruments are consistent with accepted scientific practices.
   - The requests shall be submitted in writing to the Permits Branch of the Office of Water Quality of the DEQ for use of the alternate method or instrument.
   - The method and/or instrument is in compliance with 40 CFR Part 136 or approved in accordance with 40 CFR Part 136.5.
   - All associated devices are installed, calibrated, and maintained to ensure the accuracy of the measurements and are consistent with the accepted capability of that type of device. The calibration and maintenance shall be performed as part of the permittee's laboratory Quality Assurance/Quality Control (QA/QC) program.

   Upon written approval of the alternative monitoring method and/or analytical instruments, these methods or instruments must be consistently utilized throughout the monitoring period. DEQ must be notified in writing and the permittee must receive written approval from DEQ if the permittee decides to return to the original permit monitoring requirements.

4. Best Management Practices (BMPs), as defined in Part IV.7, must be implemented for the facility to prevent or reduce the pollution of waters of the State from stormwater runoff, spills or leaks, and/or waste disposal. The permittee must amend the BMPs whenever there is a change in the facility or a change in the operation of the facility.

   For the vehicle wash pad, the facility should use only biodegradable, low-phosphate and low surfactant content, water-based cleaners. Whenever possible, avoid the use of halogenated compounds, aromatic hydrocarbons, chlorinated hydrocarbons, petroleum-based cleaners or phenolics. Cleaning agents containing solvents and emulsifiers should be discouraged because they allow oil and grease to flow through the oil/water separator instead of being

separated from the effluent. Spills of fluids other than those associated with normal washing activities shall be cleaned up expeditiously and not allowed to enter the waste treatment system or Waters of the State.

5. Monitoring Frequency Reduction

   With the exception of whole effluent toxicity testing (WET) requirements, the permittee may request a one-time monitoring frequency reduction for pollutants listed in Part I, Section A, *Effluent Limitations and Monitoring Requirements*. Any request for a monitoring frequency reduction must be submitted in writing to DEQ, and signed by the Responsible Official, in accordance with Part III.D.11.A of the permit.

   The following requirements must be met before a review of the monitoring frequency reduction request will be performed:

   A. Compliance with the permit limits for at least the last two (2) years for the pollutants for which a request has been made for a monitoring frequency reduction;

   B. No operational or design changes have been made to the facility for at least the last two (2) years (or during period of review, if greater than two (2) years), and are not anticipated for the remaining term of this permit.

   If the above conditions are met, a detailed review of the DMR data will be performed for the pollutants for which a monitoring frequency reduction has been requested. Compliance with the limits does not guarantee a monitoring frequency reduction will be granted. Data must show that the average concentration of the pollutants in the discharge are less than 75% of the permit limits for a monitoring frequency reduction to be granted.

   If a monitoring frequency reduction is granted, the frequency can be reduced by no more than half the rate of the corresponding frequency listed in Part I, Section A, *Effluent Limitations and Monitoring Frequencies*. For example, a monitoring frequency of 4 per month will not be reduced to less than 2 per month. Additionally, the frequency will be no less frequent than monthly.

6. This facility must maintain stormwater permit coverage under the NPDES Industrial Stormwater General Permit ARR000000 in accordance with 40 CFR 122.26(a)(1)(ii) and 40 CFR 122.26(b)(14)(i).

7. There shall be no discharge of process wastewater pollutants resulting from the electric arc furnace steelmaking process to waters of the State, in accordance with 40 CFR 420.44(a).

8. The permittee may use any EPA approved method based on 40 CFR Part 136 provided the minimum quantification level (MQL) for the chosen method is equal to or less than what has been specified in the chart below:

Pollutant	MQL (µg/l)
Chromium (VI)[1]	10
Chromium, Total Recoverable	10
Lead, Total Recoverable	0.5
Nickel, Total Recoverable	0.5
Zinc, Total Recoverable	20
Naphthalene	10
Tetrachloroethylene	10

[1] Chromium (VI) shall be expressed in the dissolved form, in accordance with 40 CFR 122.45(c)(3).

The permittee may develop a matrix specific method detection limit (MDL) in accordance with Appendix B of 40 CFR Part 136. For any pollutant for which the permittee determines a site specific MDL, the permittee shall send to DEQ, NPDES Permits Branch, a report containing QA/QC documentation, analytical results, and calculations necessary to demonstrate that a site specific MDL was correctly calculated. A site specific MQL shall be determined in accordance with the following calculation:

$$MQL = 3.3 \times MDL$$

Upon written approval by Permits Branch, the site specific MQL may be utilized by the permittee for all future Discharge Monitoring Report (DMR) calculations and reporting requirements.

9. WHOLE EFFLUENT TOXICITY TESTING (48-HOUR ACUTE NOEC FRESHWATER)

A. SCOPE AND METHODOLOGY

i. The permittee shall test the effluent for toxicity in accordance with the provisions in this section.

APPLICABLE TO FINAL OUTFALL(S): 001
Tier 1: design flow = 1.15 MGD
Tier 2: design flow = 1.25 MGD

REPORTED ON DMR AS FINAL OUTFALL: 001

CRITICAL DILUTION (%): Tier 1: 0.06
Tier 2: 0.07

EFFLUENT DILUTION SERIES (%): Tier 1: 0.02, 0.03, 0.04, 0.06, 0.08
Tier 2: 0.03, 0.04, 0.05, 0.07, 0.09

TESTING FREQUENCY: once/quarter

COMPOSITE SAMPLE TYPE: Defined in paragraph C.iv.a

TEST SPECIES/METHODS: 40 C.F.R. §136

Daphnia pulex acute static renewal 48-hour definitive toxicity test using EPA-821-R-02-012, or the latest update thereof. A minimum of five (5) replicates with eight (8) organisms per replicate must be used in the control and in each effluent dilution of this test.

Pimephales promelas (Fathead minnow) acute static renewal 48-hour definitive toxicity test using EPA-821-R-02-012, or the latest update thereof. A minimum of five (5) replicates with eight (8) organisms per replicate must be used in the control and in each effluent dilution of this test.

ii. The NOEC (No Observed Effect Concentration) is defined as the greatest effluent dilution at and below which toxicity that is statistically different from the control (0% effluent) at the 95% confidence level does not occur. Acute test failure is defined as a demonstration of a statistically significant lethal effect at test completion to a test species at or below the critical dilution.

iii. This permit may be reopened to require whole effluent toxicity limits, chemical specific effluent limits, additional testing, and/or other appropriate actions to address toxicity.

B. PERSISTENT LETHALITY

The requirements of this subsection apply only when a toxicity test demonstrates significant lethal effects at or below the critical dilution. Significant lethal effects are herein defined as a statistically significant difference at the 95% confidence level between the survival of the appropriate test organism in a specified effluent dilution and the control (0% effluent). The purpose of retests is to determine the duration of a toxic event. A test that meets all test acceptability criteria and demonstrates significant toxic effects does not need additional confirmation.

Such testing cannot confirm or disprove a previous test result.

If a frequency reduction, as specified in Item F, has been granted and any subsequent valid test demonstrates significant lethal effects to a test species at or below the critical dilution, the frequency of testing for this species is automatically increased to once per quarter for the life of the permit.

i. Part I Testing Frequency Other Than Monthly

a. The permittee shall conduct a total of three (3) retests for any species that demonstrates significant lethal effects at or below the critical dilution. The retests shall be conducted monthly during the next three consecutive months. If testing on a quarterly basis, the permittee may substitute one of the retests in lieu of one

Scheduled toxicity test. A full report shall be prepared for each test required by this section in accordance with procedures outlined in Item D of this section and submitted with the period discharge monitoring report (DMR) to the permitting authority for review.

b. If any of the retests demonstrates significant lethal effects at or below the critical dilution, the permittee shall initiate Toxicity Reduction Evaluation (TRE) requirements as specified in Item E of this section. The permittee shall notify DEQ in writing within 5 days of the failure of any retest, and the TRE initiation date will be the test completion date of the first failed retest. A TRE may also be required due to a demonstration of intermittent lethal effects at or below the critical dilution, or for failure to perform the required retests.

c. The provisions of Item B.i are suspended upon submittal of the TRE Action Plan.

C. REQUIRED TOXICITY TESTING CONDITIONS

i. Test Acceptance

The permittee shall repeat a test, including the control and all effluent dilutions, if the procedures and quality assurance requirements defined in the test methods or in this permit are not satisfied, including the following additional criteria:

a. Each toxicity test control (0% effluent) must have a survival equal to or greater than 90%.

b. The percent coefficient of variation between replicates shall be 40% or less in the control (0% effluent) for: *Daphnia pulex* survival test; and Fathead minnow survival test.

c. The percent coefficient of variation between replicates shall be 40% or less in the critical dilution, unless significant lethal effects are exhibited for*: Daphnia pulex* survival test; and Fathead minnow survival test.

d. If a test passes, yet the percent coefficient of variation between replicates is greater than 40% in the control (0% effluent) and/or in the critical dilution for: the survival in the Daphnia pulex survival test or the survival endpoint of the Fathead minnow test, the test is determined to be invalid. A repeat test shall be conducted within the required reporting period of any test determined to be invalid.

e. If a test fails, test failure may not be construed or reported as invalid due to a coefficient of variation value of greater than 40%.

ii. Statistical Interpretation

For the *Daphnia pulex* survival test and the Fathead minnow survival test, the statistical analyses used to determine if there is a statistically significant difference

between the control and the critical dilution shall be in accordance with the methods for determining the No Observed Effect Concentration (NOEC) as described in EPA-821-R-02-012 or the most recent update thereof.

If the conditions of Test Acceptability are met in Item C.i above and the percent survival of the test organism is equal to or greater than 90% in the critical dilution concentration and all lower dilution concentrations, the test shall be considered to be a passing test, and the permittee shall report an NOEC of not less than the critical dilution for the DMR reporting requirements found in Item D below.

iii. Dilution Water

a. Dilution water used in the toxicity tests will be receiving water collected as close to the point of discharge as possible but unaffected by the discharge. The permittee shall substitute synthetic dilution water of similar pH, hardness, and alkalinity to the closest downstream perennial water for:

(1) toxicity tests conducted on effluent discharges to receiving water classified as intermittent streams; and

(2) toxicity tests conducted on effluent discharges where no receiving water is available due to zero flow conditions.

b. If the receiving water is unsatisfactory as a result of instream toxicity (fails to fulfill the test acceptance criteria of Item C.i), the permittee may substitute synthetic dilution water for the receiving water in all subsequent tests provided the unacceptable receiving water test met the following stipulations:

(1) a synthetic dilution water control which fulfills the test acceptance requirements of Item C.i was run concurrently with the receiving water control;

(2) the test indicating receiving water toxicity has been carried out to completion (i.e., 48 hours);

(3) the permittee includes all test results indicating receiving water toxicity with the full report and information required by Item D below; and

(4) the synthetic dilution water shall have a pH, hardness, and alkalinity similar to that of the receiving water or closest downstream perennial water not adversely affected by the discharge, provided the magnitude of these parameters will not cause toxicity in the synthetic dilution water.

iv. Samples and Composites

a. The permittee shall collect two flow-weighted composite samples from the outfall(s) listed at Item A.i above. Unless otherwise stated in this section, a

composite sample for WET shall consist of a minimum of 12 subsamples gathered at equal time intervals during a 24-hour period.

b. The permittee shall collect a second composite sample for use during the 24-hour renewal of each dilution concentration for both tests. The permittee must collect the composite samples so that the maximum holding time for any effluent sample shall not exceed 36 hours. The permittee must have initiated the toxicity test within 36 hours after the collection of the last portion of the first composite sample. Samples shall be chilled to between 0 and 6 degrees Centigrade during collection, shipping, and/or storage.

c. The permittee must collect both flow-weighted composite samples within the monitoring period. The second composite sample shall not be collected into the next monitoring period; such tests will be determined to be invalid. Monitoring period definitions are listed in Part IV.

d. The permittee must collect the composite samples such that the effluent samples are representative of any periodic episode of chlorination, biocide usage or other potentially toxic substance discharged on a regular or intermittent basis.

e. If the flow from the outfall(s) being tested ceases during the collection of effluent samples, the requirements for the minimum number of effluent samples, the minimum number of effluent portions and the sample holding time are waived during that sampling period. However, the permittee must have collected an effluent composite sample volume during the period of discharge that is sufficient to complete the required toxicity tests with daily renewal of effluent. The effluent composite sample collection duration and the static renewal protocol associated with the abbreviated sample collection must be documented in the full report required in Item D of this section.

D. <u>REPORTING</u>

i. The permittee shall prepare a full report of the results of all tests conducted pursuant to this Part in accordance with the Report Preparation Section of EPA-821-R-02-012, for every valid or invalid toxicity test initiated, whether carried to completion or not. The permittee shall retain each full report pursuant to the provisions of PART III.C.7 of this permit. The permittee shall submit full reports. For any test or retest which fails, is considered invalid or which is terminated early for any reason, the full report must be submitted for agency review.

ii. A valid test for each species must be reported on the DMR during each reporting period specified in PART I of this permit. The full report for all valid tests, invalid tests, repeat tests (for invalid tests), and retests (for tests previously failed) performed during the reporting period must be attached to the DMR for Agency review.

iii. The permittee shall report the following results of each valid toxicity test and retest on the subsequent DMR for that reporting period in accordance with PART III.D.4 of this permit. Only results of valid tests are to be reported on the DMR.

a. *Pimephales promelas* (Fathead minnow)

(1) If the No Observed Effect Concentration (NOEC) for survival is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TEM6C.

(2) Report the NOEC value for survival, Parameter No. TOM6C.

(3) Report the highest (critical dilution or control) Coefficient of Variation, Parameter No. TQM6C.

(4) If conducting retests due to a test failure (demonstration of significant toxic effects at or below the critical dilution):

(A) Consecutive Monthly Retest 1: If the NOEC for P. promelas is less than the critical dilution, enter a "1"; otherwise, enter a "0" under Parameter No. 22418 (reported on quarterly DMR);

(B) Consecutive Monthly Retest 2: If the NOEC for P. promelas is less than the critical dilution, enter a "1"; otherwise, enter a "0" under Parameter No. 22419 (reported on quarterly DMR);

(C) Consecutive Monthly Retest 3: If the NOEC for P. promelas is less than the critical dilution, enter a "1"; otherwise, enter a "0" under Parameter No. 51444 (reported on quarterly DMR);

(D) If testing on a quarterly basis, the permittee may substitute one of the retests in lieu of one routine toxicity test;

(E) If retests are not required, Report NODI=9 (Conditional Monitoring - Not Required This Period) under Parameter Nos. 22418, 22419, 51444 (reported on quarterly DMR)

b. Daphnia pulex

(1) If the NOEC for survival is less than the critical dilution, enter a "1"; otherwise, enter a "0" for Parameter No. TEM3D

(2) Report the NOEC value for survival, Parameter No. TOM3D.

(3) Report the highest (critical dilution or control) Coefficient of Variation, Parameter No. TQM3D.

(4) If conducting retests due to a test failure (demonstration of significant toxic effects at or below the critical dilution):

(A) Consecutive Monthly Retest 1: If the NOEC for D. pulex is less than the critical dilution, enter a "1"; otherwise, enter a "0" under Parameter No. 22415 (reported on quarterly DMR);

(B) Consecutive Monthly Retest 2: If the NOEC for D. pulex is less than the critical dilution, enter a "1"; otherwise, enter a "0" under Parameter No. 22416 (reported on quarterly DMR);

(C) Consecutive Monthly Retest 3: If the NOEC for D. pulex is less than the critical dilution, enter a "1"; otherwise, enter a "0" under Parameter No. 51443 (reported on quarterly DMR);

(D) If testing on a quarterly basis, the permittee may substitute one of the retests in lieu of one routine toxicity test;

(E) If retests are not required, Report NODI=9 (Conditional Monitoring - Not Required This Period) under Parameter Nos. 22415, 22416, and 51443 (reported on quarterly DMR)

E. TOXICITY REDUCTION EVALUATION (TRE)

i. Within ninety (90) days of confirming lethality in the retests, the permittee shall submit a Toxicity Reduction Evaluation (TRE) Action Plan and Schedule for conducting a TRE. The TRE Action Plan shall specify the approach and methodology to be used in performing the TRE. A Toxicity Reduction Evaluation is an investigation intended to determine those actions necessary to achieve compliance with water quality-based effluent limits by reducing an effluent's toxicity to an acceptable level. A TRE is defined as a step-wise process which combines toxicity testing and analyses of the physical and chemical characteristics of a toxic effluent to identify the constituents causing effluent toxicity and/or treatment methods which will reduce the effluent toxicity. The TRE Action Plan shall lead to the successful elimination of effluent toxicity at the critical dilution and include the following:

a. Specific Activities. The plan shall detail the specific approach the permittee intends to utilize in conducting the TRE. The approach may include toxicity characterizations, identifications and confirmation activities, source evaluation, treatability studies, or alternative approaches. When the permittee conducts Toxicity Characterization Procedures the permittee shall perform multiple characterizations and follow the procedures specified in the documents "Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures" (EPA-600/6-91/003) or alternate procedures. When the permittee conducts Toxicity Identification Evaluations and Confirmations, the permittee shall perform multiple identifications and follow the methods specified in the documents "Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification

Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081), as appropriate.

The documents referenced above may be obtained through the National Technical Information Service (NTIS) by phone at (703) 487-4650, or by writing:

U.S. Department of Commerce
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161

b. Sampling Plan (e.g., locations, methods, holding times, chain of custody, preservation, etc.). The effluent sample volume collected for all tests shall be adequate to perform the toxicity test, toxicity characterization, identification and confirmation procedures, and conduct chemical specific analyses when a probable toxicant has been identified;

c. Where the permittee has identified or suspects specific pollutant(s) and/or source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical specific analyses for the identified and/or suspected pollutant(s) and/or source(s) of effluent toxicity. Where lethality was demonstrated within 24 hours of test initiation, each composite sample shall be analyzed independently. Otherwise the permittee may substitute a composite sample, comprised of equal portions of the individual composite samples, for the chemical specific analysis;

d. Quality Assurance Plan (e.g., QA/QC implementation, corrective actions, etc.); and

e. Project Organization (e.g., project staff, project manager, consulting services, etc.).

ii. The permittee shall initiate the TRE Action Plan within thirty (30) days of plan and schedule submittal. The permittee shall assume all risks for failure to achieve the required toxicity reduction.

iii. The permittee shall submit a quarterly TRE Activities Report, with the Discharge Monitoring Report in the months of January, April, July and October, containing information on toxicity reduction evaluation activities including:

a. any data and/or substantiating documentation which identifies the pollutant(s) and/or source(s) of effluent toxicity;

b. any studies/evaluations and results on the treatability of the facility's effluent toxicity; and

c. any data which identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to meet no significant lethality at the critical dilution.

iv. The permittee shall submit a Final Report on Toxicity Reduction Evaluation Activities no later than twenty-eight (28) months from confirming lethality in the retests, which provides information pertaining to the specific control mechanism selected that will, when implemented, result in reduction of effluent toxicity to no significant lethality at the critical dilution. The report will also provide a specific corrective action schedule for implementing the selected control mechanism.

v. Quarterly testing during the TRE is a minimum monitoring requirement. EPA recommends that permittees required to perform a TRE not rely on quarterly testing alone to ensure success in the TRE, and that additional screening tests be performed to capture toxic samples for identification of toxicants. Failure to identify the specific chemical compound causing toxicity test failure will normally result in a permit limit for whole effluent toxicity limits per federal regulations at 40 C.F.R. §122.44(d)(1)(v).

F. MONITORING FREQUENCY REDUCTION

i. The permittee may apply for a testing frequency reduction upon the successful completion of the first four consecutive quarters or first twelve consecutive months (in accordance with Item A.i.) of the current permit term of testing for one or both test species, with no lethal effects demonstrated at or below the critical dilution. If granted, the monitoring frequency for that test species may be reduced to not less than once per year for the less sensitive species (usually the Fathead minnow) and not less than twice per year for the more sensitive test species (usually the *Daphnia pulex*).

ii. CERTIFICATION - The permittee must certify in writing that no test failures have occurred and that all tests meet all test acceptability criteria in item C.i. above. In addition the permittee must provide a list with each test performed including test initiation date, species, NOECs for lethal effects and the maximum coefficient of variation for the controls. Upon review and acceptance of this information the agency will issue a letter of confirmation of the monitoring frequency reduction. A copy of the letter will be forwarded to the agency's Permit Compliance System section to update the permit reporting requirements.

iii. SURVIVAL FAILURES - If any test fails the survival endpoint at any time during the life of this permit, three consecutive monthly retests are required and the monitoring frequency for the affected test species may be increased to once per quarter until the permit is re-issued. Monthly retesting is not required if the permittee is performing a TRE.

iv. Any monitoring frequency reduction granted applies only until the expiration date of this permit, at which time the monitoring frequency for both test species reverts to once per quarter until the permit is re-issued.

10. Transition Period

The permittee is planning construction for improvements to the existing wastewater treatment system to accommodate increased production capacity of the facility (Phase 2). The design flow at Outfall 001 will be increasing from 1.15 MGD to 1.25 MGD when the new system is installed and operating.

a. Beginning on the effective date of the renewal permit, the permittee must submit a Discharge Monitoring Report (DMR) for each permitted production tier on a monthly basis (i.e., Tier I - the average daily production for a calendar month is equal to or less than 11,000,000 lbs/day of liquid steel; and Tier II - the average daily production for a calendar month is greater than 11,000,000 lbs/day of liquid steel). The DMR for Tier II can be marked and submitted as "Conditional Monitoring – Not Required This Period" until such time as the new treatment system is operational. The permittee must continue to submit two (2) monthly DMRs until the report required in Item b of this condition is received.

b. The permittee must notify the DEQ within 30 days of when the new wastewater treatment system has been completely installed and is operating. Once the Phase 2 mill is in production, the permittee shall continue to follow the appropriate Tier I and Tier II requirements, and continue to submit two (2) monthly DMRs, after notification until the end of the permit term.

PART III
STANDARD CONDITIONS

SECTION A – GENERAL CONDITIONS

1. **Duty to Comply**

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the federal Clean Water Act and the Arkansas Water and Air Pollution Control Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; and/or for denial of a permit renewal application. **Any values reported in the required Discharge Monitoring Report (DMR) which are in excess of an effluent limitation specified in Part I shall constitute evidence of violation of such effluent limitation and of this permit.**

2. **Penalties for Violations of Permit Conditions**

The Arkansas Water and Air Pollution Control Act provides that any person who violates any provisions of a permit issued under the Act shall be guilty of a misdemeanor and upon conviction thereof shall be subject to imprisonment for not more than one (1) year, or a fine of not more than twenty-five thousand dollars ($25,000) or by both such fine and imprisonment for each day of such violation. Any person who violates any provision of a permit issued under the Act may also be subject to civil penalty in such amount as the court shall find appropriate, not to exceed ten thousand dollars ($10,000) for each day of such violation. The fact that any such violation may constitute a misdemeanor shall not be a bar to the maintenance of such civil action.

3. **Permit Actions**

This permit may be modified, revoked and reissued, or terminated for cause including, but not limited to the following:

A. Violation of any terms or conditions of this permit.
B. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts.
C. A change in any conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge.
D. A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination.
E. Failure of the permittee to comply with the provisions of APC&EC Rule 9 (Permit fees) as required by Part III.A.11 herein.

The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

4. **Toxic Pollutants**

Notwithstanding Part III.A.3, if any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under APC&EC Rule 2, as amended, or Section 307(a) of the Clean Water Act for a toxic pollutant which is present in the discharge and that standard or prohibition is more stringent than any limitations on the pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standards or prohibition and the permittee so notified.

The permittee shall comply with effluent standards, narrative criteria, or prohibitions established under APC&EC Rule 2, as amended, or Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

5. **Civil and Criminal Liability**

Except as provided in permit conditions for "Bypass of Treatment Facilities" (Part III.B.4), and "Upset" (Part III.B.5), nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance. Any false or materially misleading representation or concealment of information required to be reported by the provisions of this permit or applicable state and federal statues or regulations which defeats the regulatory purposes of the permit may subject the permittee to criminal enforcement pursuant to the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 et seq.).

6. **Oil and Hazardous Substance Liability**

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 to which the permittee is or may be subject to under Section 311 of the Clean Water Act.

7. **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.

8. **Property Rights**

The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State, or local laws or regulations.

9. **Severability**

The provisions of this permit are severable, and if any provision of this permit, or the application of any provisions of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

10. **Applicable Federal, State or Local Requirements**

Permittees are responsible for compliance with all applicable terms and conditions of this permit. Receipt of this permit does not relieve any operator of the responsibility to comply with any other applicable federal requirements such as endangered species, state or local statute, ordinance or regulation.

11. **Permit Fees**

The permittee shall comply with all applicable permit fee requirements (i.e., including annual permit fees following the initial permit fee that will be invoiced every year the permit is active) for wastewater discharge permits as described in APC&EC Rule 9 (Rule for the Fee System for Environmental Permits). Failure to promptly remit all required fees shall be grounds for the Director to initiate action to terminate this permit under the provisions of 40 CFR Parts 122.64 and 124.5(d), as adopted in APC&EC Rule 6 and the provisions of APC&EC Rule 8.

SECTION B – OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. **Proper Operation and Maintenance**

A. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

B. The permittee shall provide an adequate operating staff which is duly qualified to carryout operation, maintenance, and testing functions required to ensure compliance with the conditions of this permit.

2. **Need to Halt or Reduce not a Defense**

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 this permit. Upon reduction, loss, or failure of the treatment facility, the permittee shall, to the extent necessary to maintain compliance with its permit, control

production or discharges or both until the facility is restored or an alternative method of treatment is provided. This requirement applies, for example, when the primary source of power for the treatment facility is reduced, is lost, or alternate power supply fails.

3. **Duty to Mitigate**

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment or the water receiving the discharge.

4. **Bypass of Treatment Facilities**

"Bypass" means the intentional diversion of waste streams from any portion of a treatment facility, as defined at 40 CFR 122.41(m)(1)(i).

A. Bypass not exceeding limitation

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Parts III.B.4.B and 4.C.

B. Notice

1. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.
2. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Part III.D.6 (24-hour notice).

C. Prohibition of bypass

1. Bypass is prohibited and the Director may take enforcement action against a permittee for bypass, unless:

(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 downtime. This condition is not satisfied if the permittee could have installed adequate backup equipment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
(c) The permittee submitted notices as required by Part III.B.4.B.

2. The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in Part III.B.4.C(1).

5. **Upset Conditions**

A. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Part III.B.5.B of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

B. Conditions necessary for demonstration of upset. 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 that the permittee can identify the specific cause(s) of the upset.
2. The permitted facility was at the time being properly operated.
3. The permittee submitted notice of the upset as required by Part III.D.6.
4. The permittee complied with any remedial measures required by Part III.B.3.

C. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

6. **Removed Substances**

A. Solids, sludges, filter backwash, or other pollutants removed in the course of 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. The Permittee must comply with all applicable state and Federal regulations governing the disposal of sludge, including but not limited to 40 CFR Part 503, 40 CFR Part 257, and 40 CFR Part 258.

B. Any changes to the permittee's disposal practices described in the Fact Sheet, as derived from the permit application, will require at least 180 days prior notice to the Director to allow time for additional permitting. Please note that the 180 day notification requirement may be waived if additional permitting is not required for the change.

7. **Power Failure**

The permittee is responsible for maintaining adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failure either by means of alternate power sources, standby generators, or retention of inadequately treated effluent.

SECTION C – MONITORING AND RECORDS

1. **Representative Sampling**

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. All samples shall be taken at the monitoring points specified in this permit and, unless otherwise specified,

before the effluent joins or is diluted by any other waste stream, body of water, or substance. Monitoring points shall not be changed without notification to and the approval of the Director. Intermittent discharge shall be monitored.

2. **Flow Measurement**

Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated, and maintained to ensure the accuracy of the measurements are consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than +/- 10% from true discharge rates throughout the range of expected discharge volumes and shall be installed at the monitoring point of the discharge.

Calculated Flow Measurement

For calculated flow measurements that are performed in accordance with either the permit requirements or a Division approved method (i.e., as allowed in the *Other Specified Monitoring Requirements* condition under Part II), the +/- 10% accuracy requirement described above is waived. This waiver is only applicable when the method used for calculation of the flow has been reviewed and approved by the Division.

3. **Monitoring Procedures**

Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit. The permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals frequent enough to ensure accuracy of measurements and shall ensure that both calibration and maintenance activities will be conducted. An adequate analytical quality control program, including the analysis of sufficient standards, spikes, and duplicate samples to ensure the accuracy of all required analytical results shall be maintained by the permittee or designated commercial laboratory. At a minimum, spikes and duplicate samples are to be analyzed on 10% of the samples.

4. **Penalties for Tampering**

The Arkansas Water and Air Pollution Control Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under the Act shall be guilty of a misdemeanor and upon conviction thereof shall be subject to imprisonment for not more than one (1) year or a fine of not more than ten thousand dollars ($10,000) or by both such fine and imprisonment.

5. **Reporting of Monitoring Results**

40 CFR 127.11(a)(1) and 40 CFR 127.16(a) require that monitoring reports must be reported on a Discharge Monitoring Reports (DMR) and filed electronically. Signatory Authorities

must initially request access for a NetDMR account. Once a NetDMR account is established, access to electronic filing should use the following link https://cdx.epa.gov. Permittees who are unable to file electronically may request a waiver from the Director in accordance with 40 CFR 127.15. Monitoring results obtained during the previous monitoring period shall be summarized and reported on a DMR dated and submitted no later than the 25th day of the month, following the completed reporting period beginning on the effective date of the permit.

6. **Additional Monitoring by the Permittee**

If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 CFR Part 136 or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR. Such increased frequency shall also be indicated on the DMR.

7. **Retention of Records**

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of the Director at any time.

8. **Record Contents**

Records and monitoring information shall include:

A. The date, exact place, time and methods of sampling or measurements, and preservatives used, if any.
B. The individual(s) who performed the sampling or measurements.
C. The date(s) and time analyses were performed.
D. The individual(s) who performed the analyses.
E. The analytical techniques or methods used.
F. The measurements and results of such analyses.

9. **Inspection and Entry**

The permittee shall allow the Director, or an authorized representative, 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 under the conditions of this permit.
B. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit.

C. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit.
D. Sample, inspect, or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

SECTION D – REPORTING REQUIREMENTS

1. **Planned Changes**

The Permittee shall give notice to the Director as soon as possible but no later than 180 days prior to any planned physical alterations or additions to the permitted facility [40 CFR 122.41(l)]. Notice is required only when:

A. The alteration or addition to a permitted facility may meet one of the criteria for new sources at 40 CFR 122.29(b).
B. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants subject to effluent limitations in the permit, or to the notification requirements under 40 CFR 122.42(b).

2. **Anticipated Noncompliance**

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

3. **Transfers**

The permit is nontransferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Act.

4. **Monitoring Reports**

Monitoring results shall be reported at the intervals and in the form specified in Part III.C.5. **Discharge Monitoring Reports must be submitted even when no discharge occurs during the reporting period.**

5. **Compliance Schedule**

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. Any reports of noncompliance shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

6. **Twenty-four Hour Report**

Please be aware that the notifications can be sent by email to water-enforcement-report@adeq.state.ar.us or at 501-682-0624 for immediate reporting:

A. The permittee shall report any noncompliance which may endanger health or the environment within 24 hours from the time the permittee becomes aware of the circumstances to the Enforcement Branch of the Office of Water Quality of DEQ. 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 the following information:

1. A description of the noncompliance and its cause.
2. 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.
3. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

B. The following must be reported within 24 hours:

1. Any unanticipated bypass which exceeds any effluent limitation in the permit.
2. Any upset which exceeds any effluent limitation in the permit.
3. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in Part I of the permit.

C. The Director may waive the written report on a case-by-case basis if the notification has been received within 24 hours to the Enforcement Branch of the Office of Water Quality of the DEQ.

7. **Other Noncompliance**

The permittee shall report all instances of noncompliance not reported under Parts III.D.4, 5, and 6, at the time monitoring reports are submitted. The reports shall contain the information listed at Part III.D.6.

8. **Changes in Discharge of Toxic Substances for Industrial Dischargers including Existing Manufacturing, Commercial, Mining, and Silvicultural Dischargers**

The Director shall be notified as soon as the permittee knows or has reason to believe:

A. That any activity has occurred or will occur which would result in the discharge on a routine or frequent basis of any toxic pollutant including those listed in 40 CFR 401.15 which is not limited in the permit, if that discharge will exceed the highest of the "notification levels" described in 40 CFR Part 122.42(a)(1).

B. That any activity has occurred or will occur which would result in any discharge on a non-routine or infrequent basis of a toxic pollutant including those listed in 40 CFR 401.15 which is not limited in the permit, if that discharge will exceed the highest of the "notification levels" described in 40 CFR Part 122.42(a)(2).

9. **Duty to Provide Information**

The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit. Information shall be submitted in the form, manner and time frame requested by the Director.

10. **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 apply for and obtain a new permit. The complete application shall be submitted at least 180 days before the expiration date of this permit. The Director may grant permission to submit an application less than 180 days in advance but no later than the permit expiration date. Continuation of expiring permits shall be implemented through procedures outlined by APC&EC Rule 6.

11. **Signatory Requirements**

All applications, reports, or information submitted to the Director shall be signed and certified as follows:

A. All **permit applications** shall be signed as follows:

1. For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

(a) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation.
(b) The manager of one or more manufacturing, production, or operation facilities, provided: the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making 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 proprietor, respectively.

3. For a municipality, State, Federal, or other public agency, by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

   (a) The chief executive officer of the agency.
   (b) A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

B. All **reports** required by the permit and **other information** requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above.
2. The authorization specified 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).
3. The written authorization is submitted to the Director.

C. Certification. Any person signing a document under this section 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."

12. **Availability of Reports**

Except for data determined to be confidential under 40 CFR Part 2 and APC&EC Rule 6, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Division of Environmental Quality. As required by the Rules, the name and address of any permit applicant or permittee, permit applications, permits, and effluent data shall not be considered confidential.

13. **Penalties for Falsification of Reports**

The Arkansas Air and Water Pollution Control Act provides that any person who knowingly makes any false statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained under this permit shall be subject to civil penalties specified in Part III.A.2 and/or criminal penalties under the authority of the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 et seq.).

14. **Other Information**

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

PART IV
DEFINITIONS

All definitions contained in Section 502 of the Clean Water Act and 40 CFR 122.2 shall apply to this permit and are incorporated herein by reference. Additional definitions of words or phrases used in this permit are as follows:

1. **"7-Day Average"** also known as "average weekly," means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week. The 7-Day Average for Fecal Coliform Bacteria (FCB) or *E. coli* is the geometric mean of the "daily discharges" of all effluent samples collected during a calendar week in colonies per 100 ml.
2. **"Act"** means the Clean Water Act, Public Law 95-217 (33.U.S.C. 1251 et seq.) as amended.
3. **"Administrator"** means the Administrator of the U.S. Environmental Protection Agency.
4. **"APC&EC"** means the Arkansas Pollution Control and Ecology Commission.
5. **"Applicable effluent standards and limitations"** means all State and Federal effluent standards and limitations to which a discharge is subject under the Act, including, but not limited to, effluent limitations, standards of performance, toxic effluent standards and prohibitions, and pretreatment standards.
6. **"Applicable water quality standards"** means all water quality standards to which a discharge is subject under the federal Clean Water Act and which has been (a) approved or permitted to remain in effect by the Administrator following submission to the Administrator pursuant to Section 303(a) of the Act, or (b) promulgated by the Director pursuant to Section 303(b) or 303(c) of the Act, and standards promulgated under (APC&EC) Rule 2, as amended.
7. **"Best Management Practices (BMPs)"** are activities, practices, maintenance procedures, and other management practices designed to prevent or reduce the pollution of waters of the State. BMPs also include treatment technologies, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw sewage. BMPs may include structural devices or nonstructural practices.
8. **"Bypass"** means the intentional diversion of waste streams from any portion of a treatment facility, as defined at 40 CFR 122.41(m)(1)(i).
9. **"Composite sample"** is a mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing a minimum of 4 effluent portions collected at equal time intervals (but not closer than one hour apart) during operational hours, within the 24-hour period, and combined proportional to flow or a sample collected at more frequent intervals proportional to flow over the 24-hour period.
10. **"CV"** means coefficient of variation.
11. **"Daily Discharge"** means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling.
    A. **Mass Calculations:** For pollutants with limitations expressed in terms of mass, the "daily discharge" is calculated as the total mass of pollutant discharged over the sampling day.
    B. **Concentration Calculations:** For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

12. **"Daily Maximum"** discharge limitation means the highest allowable "daily discharge" during the calendar month.
13. **"Director"** means the Director of the Division of Environmental Quality.
14. **"Dissolved oxygen limit"** shall be defined as follows:
    A. When limited in the permit as a minimum monthly average, shall mean the lowest acceptable monthly average value, determined by averaging all samples taken during the calendar month.
    B. When limited in the permit as an instantaneous minimum value, shall mean that no value measured during the reporting period may fall below the stated value.
15. **"Division"** means the Division of Environmental Quality (**DEQ**).
16. **"*E. coli*"** a sample consists of one effluent grab portion collected during a 24-hour period at peak loads. For *E. coli*, report the Daily Maximum as the highest "daily discharge" during the calendar month and the Monthly Average as the geometric mean of all "daily discharges" within a calendar month, in colonies per 100 ml.
17. **"Fecal Coliform Bacteria (FCB)"** a sample consists of one effluent grab portion collected during a 24-hour period at peak loads. For FCB, report the Daily Maximum as the highest "daily discharge" during the calendar month and the Monthly Average as the geometric mean of all "daily discharges" within a calendar month, in colonies per 100 ml.
18. **"Grab sample"** means an individual sample collected in less than 15 minutes in conjunction with an instantaneous flow measurement.
19. **"Industrial User"** means a nondomestic discharger, as identified in 40 CFR Part 403, introducing pollutants to a publicly owned treatment works (POTW).
20. **"Instantaneous flow measurement"** means the flow measured during the minimum time required for the flow-measuring device or method to produce a result in that instance. To the extent practical, instantaneous flow measurements coincide with the collection of any grab samples required for the same sampling period so that together the samples and flow are representative of the discharge during that sampling period.
21. **"Instantaneous Maximum"** when limited in the permit as an instantaneous maximum value, shall mean that no value measured during the reporting period may fall above the stated value.
22. **"Instantaneous Minimum"** an instantaneous minimum value, shall mean that no value measured during the reporting period may fall below the stated value.
23. **"Monitoring and Reporting"**
    When a permit becomes effective, monitoring requirements are of the immediate period of the permit effective date. Where the monitoring requirement for an effluent characteristic is monthly or more frequently, the Discharge Monitoring Report (DMR) shall be submitted by the 25th of the month following the sampling. Where the monitoring requirement for an effluent characteristic is Quarterly, Semi-Annual, Annual, or Yearly, the DMR shall be submitted by the 25th of the month following the monitoring period end date.
    A. **MONTHLY:**
    is defined as a calendar month or any portion of a calendar month for monitoring requirement frequency of once/month or more frequently.
    B. **BI-MONTHLY:**
    is defined as two (2) calendar months or any portion of 2 calendar months for monitoring requirement frequency of once/2 months or more frequently.

C. **QUARTERLY:**
   1. is defined as a **fixed calendar quarter** or any part of the fixed calendar quarter for a non-seasonal effluent characteristic with a measurement frequency of once/quarter. Fixed calendar quarters are: January through March, April through June, July through September, and October through December.
   2. is defined as a **fixed three month period** (or any part of the fixed three month period) of or dependent upon the seasons specified in the permit for a seasonal effluent characteristic with a monitoring requirement frequency of once/quarter that does not coincide with the fixed calendar quarter. Seasonal calendar quarters are: May through July, August through October, November through January, and February through April.

D. **SEMI-ANNUAL:**
   is defined as the fixed time periods January through June, and July through December (or any portion thereof) for an effluent characteristic with a measurement frequency of once/6 months or twice/year.

E. **ANNUAL or YEARLY:**
   is defined as a fixed calendar year or any portion of the fixed calendar year for an effluent characteristic or parameter with a measurement frequency of once/year. A calendar year is January through December, or any portion thereof.

24. **"Monthly Average"** means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month. For Fecal Coliform Bacteria (FCB) or *E. coli*, report the Monthly Average as the geometric mean of all "daily discharges" within a calendar month.
25. **"National Pollutant Discharge Elimination System"** means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements under Sections 307, 402, 318, and 405 of the Clean Water Act.
26. "**NOEC**" means No Observed Effect Concentration.
27. **"PMSD"** means Percent Minimum Significant Difference.
28. **"POTW"** means Publicly Owned Treatment Works;
29. **"Reduction of $CBOD_5$/BOD_5 and TSS in mg/l Formula"**
    [(Influent – Effluent) / Influent] × 100
30. **"Severe property damage"** means substantial physical damage to property, damage to the treatment facilities which causes 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 products.
31. **"Sewage sludge"** means the solids, residues, and precipitate separated from or created in sewage by the unit processes at a POTW. Sewage as used in this definition means any wastes, including wastes from humans, households, commercial establishments, industries, and stormwater runoff that are discharged to or otherwise enter a POTW.
32. **"Treatment works"** means any devices and systems used in storage, treatment, recycling, and reclamation of municipal sewage and industrial wastes, of a liquid nature to implement section 201 of the Act, or necessary to recycle reuse water at the most economic cost over the estimated life of the works, including intercepting sewers, sewage collection systems, pumping, power and other equipment, and alterations thereof; elements essential to provide a

reliable recycled supply such as standby treatment units and clear well facilities, and any works, including site acquisition of the land that will be an integral part of the treatment process or is used for ultimate disposal of residues resulting from such treatment.

33. **Units of Measure:**
    "MGD" shall mean million gallons per day.
    "mg/l" shall mean milligrams per liter or parts per million (ppm).
    "µg/l" shall mean micrograms per liter or parts per billion (ppb).
    "cfs" shall mean cubic feet per second.
    "ppm" shall mean parts per million.
    "s.u." shall mean standard units.
34. **"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. Any upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventive maintenance, or careless or improper operations.
35. **"Visible sheen"** means the presence of a film or sheen upon or a discoloration of the surface of the discharge. A sheen can also be from a thin glistening layer of oil on the surface of the discharge.
36. **"Weekday"** means Monday – Friday.

Final Fact Sheet

This Fact Sheet is for information and justification of the permit requirements only. Please note that it is not enforceable. This permitting decision is for the renewal of discharge Permit Number AR0052582 with Arkansas Department of Energy and Environment – Division of Environmental Quality (DEQ) Arkansas Facility Identification Number (AFIN) 47-00991 to discharge to Waters of the State.

1. PERMITTING AUTHORITY

The issuing office is:

Division of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

2. APPLICANT

The applicant's mailing address is:

Big River Steel LLC
P.O. Box 707
Osceola, AR 72370

The facility address is:

Big River Steel LLC
2027 East State Highway 198
Osceola, AR 72370

3. PREPARED BY

The permit was prepared by:

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4. PERMIT ACTIVITY

Previous Permit Effective Date:	July 1, 2016
Previous Permit Minor Modification Date:	October 14, 2016
Previous Permit Major Modification Date:	September 1, 2020
Previous Permit Expiration Date:	June 30, 2021

The permittee submitted a permit renewal application on November 30, 2020, with additional information received on March 25, 2021. The current discharge permit is being reissued for a 5-year term in accordance with regulations promulgated at 40 CFR Part 122.46(a).

The permittee submitted requests to change the permit in the renewal application. The requests and the Division's responses are as follows:

Request #1 New Production Units

BRS plans to construct additional steel manufacturing units as part of an additional, upcoming expansion of the Facility. The "Phase 2B" project will include installation of a second Skin Pass Mill, a Nickel Coating Line, a Continuous Coating Line, and a Tube Mill. The additional wastewater streams to be generated in these new units will be treated in the expanded Phase 2 wastewater treatment system. The current technology-based mass effluent limits for Outfall 001 will be revised to incorporate the contributions from the Phase 2B production units. BRS will also make several changes to the production capacities for the previously permitted Phase 2 units. See Section G of the application for more information.

Response: The effluent limitations of Tier II at Outfall 001 for the mass loadings of TSS, O&G, Chromium (VI), Total Recoverable Chromium, Total Recoverable Lead, Total Recoverable Nickel, Total Recoverable Zinc, Naphthalene, and Tetrachloroethylene are being revised to accommodate addition of the proposed steel manufacturing units.

Request #2 Change in Effluent Flow Rate

The current NPDES permit is based on a design flow rate of 2.853 million gallons per day (MGD) of process wastewater at Outfall 001. That flow rate does not reflect the actual level of wastewater to be generated upon completion of the Facility expansion (existing Phase 1 production units plus new Phase 2 and Phase 2B units). BRS respectfully requests that the DEQ reduce the permitted flow rate at Outfall 001 to 1.250 MGD to reflect the actual manufacturing operations and level of wastewater generation. BRS will be able to increase the production capacity of the Facility while concurrently controlling the level of wastewater generation by implementing a variety of water reuse and recovery projects as part of the Phase 2 expansion. Furthermore, BRS will also be able to reduce the overall Phase 2 flow rate based on the historical operating data for Phase 1, which demonstrate that the actual flow rate was over 40% less than the Phase 1 design flow rate. Refer to Section H of the application for details on the engineered design of the overall Phase 2 water system for the Facility.

Response: In the renewal application, the permittee indicated that the monthly average flow rate at Outfall 001 during the most recent 24-month period (September 2018 through August 2020) was 0.506 MGD; that value is 44% of the original design projection of 1.150 MGD. The average daily flow rate at Outfall 001 during the cited period ranged from 0.441 MGD to 0.549 MGD.

The facility has implemented a variety of water reuse and recovery projects as part of the Phase 2 mill expansion to reduce wastewater generation. A breakdown of the water balance is provided below. The values are reported in cubic meters per hour (m^3/hr) and MGD.

Parameter	Flow Rate (m^3/hr)	Flow Rate (MGD)
Total Make-Up Water	668.42	4.238
Evaporation (from Cooling Towers)	498.90	3.163
Total Flow to Wastewater Treatment Plant (Process Wastewater, Contact Cooling Water, and Non-Contact Cooling Water)	169.52	1.075
Discharge at Outfall 001	169.52	1.075

That proposed flow value, 1.250 MGD, would utilize the design flow rate shown on the water balance, 1.075 MGD, and add a safety factor of approximately 15% to account for variability in the effluent flow (1.075 MGD × 1.15 ≈ 1.250 MGD). The permittee believes that an appropriate level for the permitted flow rate at Outfall 001 is 1.250 MGD. Based on the provided information, it is determined that the design flow of 1.250 MGD will be used for overall production upon completion of the facility expansion.

Request #3 Unit of Measure for Production Capacity

In accordance with the current NPDES permit, the renewal application includes a one-time report on the equivalency of the two units of measure for production capacity: (1) pounds of liquid steel and (2) pounds of hot rolled steel coils. This information is presented in Section I. Table I-1 of Section I contains annual production data which BRS has determined to be proprietary information that is subject to Arkansas and federal laws governing the protection of confidential business information or trade secrets. In accordance with Arkansas law and the DEQ's procedures, this information was redacted from the public filing, and is being held separately by DEQ on a confidential basis. An executed Affidavit supporting BRS's request for confidentiality was enclosed in the renewal application. BRS requested that the DEQ maintain the confidentiality of the information being provided with the exception that this information may be provided to the U.S. Environmental Protection Agency under the same business or trade secret protections.

Response: In the renewal application, the permittee indicated that two units of measure, tons of liquid steel (LS) and tons of hot rolled steel coils (HRSC), are approximately equivalent. The following calculation was used:

$$\% \text{ Difference} = [(\text{tons LS} - \text{tons HRSC})/(\text{tons LS})] \times 100$$

The difference between the two units of measure of production output represents the amount of liquid steel lost as waste or reprocessed as rework material during the manufacturing process. Based on the provided production data, the use of pounds per day of liquid steel has been validated for the production rates in the renewal permit.

Request #4 Installation of New Vehicle Wash Pad

BRS plans to install a new vehicle wash pad at the steel mill in late 2021. It will be located at the Crane Maintenance Building. Mobile mill equipment will be washed outdoors using potable water and an industrial pressure washer. BRS estimates that two to four mill trucks plus one or two large hauling vehicles will be washed per day. Approximately 10 gallons per minute (gpm) of wash water will be generated. The daily flow rate is conservatively estimated to be 0.0072 MGD [10 gpm * 60 minutes/hour * 12 hours per day of operation].

The vehicle wash pad will consist of a curbed concrete slab. The dimensions will be approximately 100 feet long by 50 feet wide. The pad will not be equipped with a roof. A small collection sump will be located at the down-gradient end of the slab. The sump will have a capacity of approximately 350 gallons. (The pad dimensions and sump capacity are tentative and subject to change.)

The wash water from the Vehicle Wash Pad will be pumped from the collection sump to the on-site wastewater treatment plant and be treated. The sludge that accumulates in the sump will be periodically removed for off-site disposal in accordance with federal, state and local requirements.

Response: Based on the provided information, it is indicated that the new design flow rate of 1.25 MGD will not change due to addition of the new vehicle wash water stream. The contribution of the new wash water stream to the total flow to the wastewater treatment system, and subsequent discharge at Outfall 001, will be insignificant. The description of this new wastewater stream will be incorporated into the permit.

DOCUMENT ABBREVIATIONS

In the document that follows, various abbreviations are used. They are as follows:

APC&EC - Arkansas Pollution Control and Ecology Commission
BAT - best available technology economically achievable
BCT - best conventional pollutant control technology
BMP - best management practice
BOD_5 - five-day biochemical oxygen demand
BPJ - best professional judgment
BPT - best practicable control technology currently available
$CBOD_5$ - carbonaceous biochemical oxygen demand
CD - critical dilution
CFR - Code of Federal Regulations

cfs - cubic feet per second
COD - chemical oxygen demand
COE - United States Corp of Engineers
CPP - continuing planning process
CWA - Clean Water Act
DMR - discharge monitoring report
DO - dissolved oxygen
ELG - effluent limitation guidelines
EPA - United States Environmental Protection Agency
ESA - Endangered Species Act
FCB - fecal coliform bacteria
gpm - gallons per minute
MGD - million gallons per day
MQL - minimum quantification level
NAICS - North American Industry Classification System
NH_3-N - ammonia nitrogen
NO_3 + NO_2-N - nitrate + nitrite nitrogen
NPDES - National Pollutant Discharge Elimination System
O&G - oil and grease
Rule 2 - APC&EC Rule 2
Rule 6 - APC&EC Rule 6
Rule 8 - APC&EC Rule 8
Rule 9 - APC&EC Rule 9
RP - reasonable potential
SIC - standard industrial classification
TDS - total dissolved solids
TMDL - total maximum daily load
TP - total phosphorus
TRC - total residual chlorine
TSS - total suspended solids
UAA - use attainability analysis
USF&WS - United States Fish and Wildlife Service
USGS - United States Geological Survey
WET - whole effluent toxicity
WQMP - water quality management plan
WQS - Water Quality standards
WWTP - wastewater treatment plant

Compliance and Enforcement History:

The compliance and enforcement history for this facility can be reviewed by using the following web link:

https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0052582_Compliance%20Review_20201216.pdf

5. SIGNIFICANT CHANGES FROM THE PREVIOUSLY ISSUED PERMIT

The permittee is responsible for carefully reading the permit in detail and becoming familiar with all of the changes therein:

1. The mailing address was removed from the cover page.
2. The description of treated process wastewater was updated based on the renewal application.
3. Mass loading limitations and monitoring requirements in Part I.A2 for Outfall 001 were updated for Tier II due to the addition of production units. See Section 11.D of this Fact Sheet for more details.
4. The BMPs condition was revised in Part II.4 of the permit.
5. The monitoring frequency reduction condition was included in Part II.5.
6. The critical dilution and effluent dilution series of WET testing for Tier II were revised due to the change of design flow from 2.853 MGD to 1.25 MGD in Part II.9.
7. The requirement to report production data in Part II.10 of the previous permit was removed since it was provided in the renewal application.
8. The sludge disposal condition was revised in Part III.B.6 of the permit.
9. Part III.C.5 of the permit now requires that DMRs be submitted electronically via NetDMR.
10. The discharge of toxic substances condition was revised in Part III.D.8.

6. RECEIVING STREAM SEGMENT AND DISCHARGE LOCATION

The outfalls are located at the following coordinates based on the renewal application and confirmed with Google Earth using WGS84:

Outfall 001:	Latitude: 35° 39’ 05.0” N;	Longitude: 89° 54’ 47.0” W
Outfall 002:	Latitude: 35° 39’ 05.0” N;	Longitude: 89° 54’ 47.1” W

The receiving waters named:

Outfalls 001 and 002: the Mississippi River in Segment 6C of the Mississippi River Basin. The receiving stream with USGS Hydrologic Unit Code (H.U.C.) of 08010100 and reach #010 is a Water of the State classified for primary and secondary contact recreation, raw water source for domestic (public and private), industrial, and agricultural water supplies; propagation of desirable species of fish and other aquatic life; and other compatible uses.

7. 303(d) LIST, TOTAL MAXIMUM DAILY LOADS, ENDANGERED SPECIES, AND ANTI-DEGRADATION CONSIDERATIONS

A. 303(d) List

The receiving stream is not listed on Arkansas’s 2018 List of Impaired Waterbodies (303(d) List). Therefore, no permit action is necessary.

B. **Applicable Total Maximum Daily Load (TMDL) Reports**

There are no applicable TMDL reports issued for the receiving stream.

C. **Endangered Species**

No comments on the application were received from the USF&WS. The draft permit and Fact Sheet were sent to the USF&WS for their review.

The Arkansas Natural Heritage Commission stated that the following species of conservation concern are known to occur in the Mississippi River at or within five miles downstream of the outfall:

Notropis wickliffi, channel shiner-state concern
Scaphirhynchus albus, pallid sturgeon-federal concern (endangered)
Sternula antillarum athalassos, Interior Least Tern-federal concern (endangered)

The limits in the permit are designed to protect all beneficial uses of the receiving waters, including propagation of desirable species of fish and other aquatic life, which may affect the above species of conservation concern. Therefore, the DEQ has determined that the final permit limitations will serve to help protect the species of conservation concern identified above.

D. **Anti-Degradation**

The limitations and requirements set forth in this permit for discharge into waters of the State are consistent with the Anti-degradation Policy and all other applicable water quality standards found in APC&EC Rule 2.

8. **OUTFALL, TREATMENT PROCESS DESCRIPTION, AND FACILITY CONSTRUCTION**

The following is a description of the facility described in the application:

A. Design Flow:

<u>Outfall 001</u>
Current design flow: 1.15 MGD
New Design Flow: 1.25 MGD

<u>Outfall 002</u>
Flow = variable

B. Type of Treatment:

<u>Outfall 001</u>

Current Treatment includes:

Pretreatment:
- (oily wastewater) collection basin and dissolved air flotation (DAF) unit for oil and water separation using pH adjustment, and oil skimmer
- (chromate-contaminated wastewater) chromium reactor tank using pH adjustment and redox reaction where applicable

Primary Treatment (all process wastewater, which includes pretreated wastewater):
- equalization basin
- pH adjustment and precipitation
- coagulation-flocculation and sedimentation using thickener to separate solids
- aeration basin and sand filtration for removal of remaining suspended solids
- dewatering separated solids using press plate filter

New Treatment will include:
Pretreatment:
- (oily wastewater) various tanks utilized for oil and water separation using pH adjustment, chemical treatment, and/or decanting
- (chromate-contaminated wastewater) chromium reactor tank using pH adjustment and redox reaction where applicable

Primary Treatment (all process wastewater, which includes pretreated wastewater, contact water blowdown, and sand filter backwash):
- all wastewater streams will be processed using pH adjustment, chemical treatment, precipitation of metals, dissolved air flotation, and decanting
- coagulation-flocculation and sedimentation using thickener to separate solids
- aeration basin and sand filtration for removal of remaining suspended solids
- sludge is separated and dewatered in filter press and/or thickened prior to recycling and/or disposal
- dewatering separated solids using press plate filter

Outfall 002
sedimentation pond

C. Discharge Description:

Outfall 001
current treated process wastewater from the following sources: RH degasser unit, continuous casting line, hot rolling mill, alkaline cleaning operations, chromate reactor, galvanizing line, pickling line, skin pass mill, tandem cold mill, contact cooling water systems, and non-contact cooling water systems

new treated process wastewater from the following sources: RH degasser unit, continuous casting line, hot rolling mill, tube mill, alkaline cleaning operations, chromate reactor, galvanizing lines, pickling lines, skin pass mills, tandem cold mill, reversing cold mills, coating operations, vehicle wash pad, contact cooling water systems, and non-contact cooling water systems

Outfall 002
stormwater runoff from slag yard and dust suppression/quenching water runoff from slag yard

D. Facility Status: This facility was evaluated using the NPDES Permit Rating Worksheet (MRAT) to determine the correct permitting status. Since the facility's MRAT score of 85 is greater than 80, this facility is classified as a major industrial.

E. Facility Construction: This permit does not authorize or approve the construction or modification of any part of the treatment system or facilities. Approval for such construction must be by permit issued under Rule 6.202.

9. **ACTIVITY**

Under the Standard Industrial Classification (SIC) code of 3312 or North American Industry Classification System (NAICS) code of 331110, the applicant's activities are the operation of steel mill.

10. **SOLIDS PRACTICES**

It should be noted that no sanitary wastewater will be treated at this facility. All sanitary wastewater will be sent to the nearby publicly owned treatment works.

Solids generated by the process wastewater treatment system will be dewatered through the press plate filter or by air drying in the sludge processing area, and disposed of at a nearby landfill. Solids that accumulates in the sump from the vehicle wash pad will be periodically removed for off-site disposal in accordance with federal, state, and local requirements. Solids generated by the stormwater/slag quenching water runoff treatment system will remain in the sedimentation pond. Solids disposal, if any, will require prior authorization from this Division and shall be conducted in accordance with the conditions in Part III Section B.6 of the permit.

11. **DEVELOPMENT AND BASIS FOR PERMIT CONDITIONS**

The Division of Environmental Quality has determined to issue a permit for the discharge described in the application. Permit requirements are based on federal regulations (40 CFR Parts 122, 124, and Subchapter N), and regulations promulgated pursuant to the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. 8-4-101 et seq.). All of the information contained in the application, including all of the submitted effluent testing data, was reviewed to determine the need for effluent limits and other permit requirements.

The following is an explanation of the derivation of the conditions of the permit and the reasons for them or, in the case of notices of intent to deny or terminate, reasons suggesting the decisions as required under 40 CFR Part 124.7.

Technology-Based Versus Water Quality-Based Effluent Limitations and Conditions

Following regulations promulgated at 40 CFR Part 122.44, the permit limits are based on either technology-based effluent limits pursuant to 40 CFR Part 122.44(a) or on State water quality standards and requirements pursuant to 40 CFR Part 122.44(d), whichever are more stringent as follows:

Parameter	Water Quality-Based		Technology-Based		Previous Permit		Final Permit	
	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.
Outfall 001 (Tier I)								
TSS	N/A	N/A	235.3 lb/day	610.9 lb/day	Report* mg/l 235.3 lb/day	Report* mg/l 610.9 lb/day	Report* mg/l 235.3 lb/day	Report* mg/l 610.9 lb/day
O&G	10 mg/l 95.9 lb/day	15 mg/l 143.9 lb/day	78.6 lb/day	183.7 lb/day	10 mg/l 78.6 lb/day	15 mg/l 143.9 lb/day	10 mg/l 78.6 lb/day	15 mg/l 143.9 lb/day
Chromium (VI)	535 lb/day	1,074 lb/day	0.02 lb/day	0.06 lb/day	Report* mg/l 0.02 lb/day	Report* mg/l 0.06 lb/day	Report* mg/l 0.02 lb/day	Report* mg/l 0.06 lb/day
Chromium, Total	N/A	N/A	0.1 lb/day	0.3 lb/day	Report* mg/l 0.1 lb/day	Report* mg/l 0.3 lb/day	Report* mg/l 0.1 lb/day	Report* mg/l 0.3 lb/day
Lead, Total	1,879 lb/day	3,770 lb/day	0.5 lb/day	1.6 lb/day	Report* mg/l 0.5 lb/day	Report* mg/l 1.6 lb/day	Report* mg/l 0.5 lb/day	Report* mg/l 1.6 lb/day
Nickel, Total	51,819 lb/day	103,972 lb/day	0.08 lb/day	0.2 lb/day	Report* mg/l 0.08 lb/day	Report* mg/l 0.2 lb/day	Report* mg/l 0.08 lb/day	Report* mg/l 0.2 lb/day
Zinc, Total	10,867 lb/day	21,803 lb/day	0.8 lb/day	2.3 lb/day	Report* mg/l 0.8 lb/day	Report* mg/l 2.3 lb/day	Report* mg/l 0.8 lb/day	Report* mg/l 2.3 lb/day
Naphthalene	78,339 lb/day	157,183 lb/day	0.01 lb/day	0.03 lb/day	Report* mg/l 0.01 lb/day	Report* mg/l 0.03 lb/day	Report* mg/l 0.01 lb/day	Report* mg/l 0.03 lb/day

Parameter	Water Quality-Based		Technology-Based		Previous Permit		Final Permit	
	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.
Tetrachloroethylene	150,555 lb/day	302,080 lb/day	0.02 lb/day	0.04 lb/day	Report* mg/l	Report* mg/l	Report* mg/l	Report* mg/l
					0.02 lb/day	0.04 lb/day	0.02 lb/day	0.04 lb/day
pH	6.0-9.0 s.u.		6.0-9.0 s.u.		6.0-9.0 s.u.		6.0-9.0 s.u.	
Acute WET Testing	Report	Report	N/A	N/A	Report	Report	Report	Report
Outfall 001 (Tier II)								
TSS	N/A	N/A	766.6 lb/day	1938.4 lb/day	Report* mg/l	Report* mg/l	Report* mg/l	Report* mg/l
					585.3 lb/day	1515.0 lb/day	766.6 lb/day	1938.4 lb/day
O&G	10 mg/l	15 mg/l	252.8 lb/day	631.6 lb/day	10 mg/l	15 mg/l	10 mg/l	15 mg/l
	104.3 lb/day	156.4 lb/day			195.5 lb/day	356.9 lb/day	104.3 lb/day	156.4 lb/day
Chromium (VI)	534 lb/day	1,072 lb/day	0.2 lb/day	0.5 lb/day	Report* mg/l	Report* mg/l	Report* mg/l	Report* mg/l
					0.07 lb/day	0.20 lb/day	0.2 lb/day	0.5 lb/day
Chromium, Total	N/A	N/A	0.4 lb/day	0.9 lb/day	Report* mg/l	Report* mg/l	Report* mg/l	Report* mg/l
					0.2 lb/day	0.6 lb/day	0.4 lb/day	0.9 lb/day
Lead, Total	1,876 lb/day	3,765 lb/day	2.3 lb/day	7.0 lb/day	Report* mg/l	Report* mg/l	Report* mg/l	Report* mg/l
					1.4 lb/day	4.2 lb/day	2.3 lb/day	7.0 lb/day
Nickel, Total	51,745 lb/day	103,823 lb/day	0.3 lb/day	0.8 lb/day	Report* mg/l	Report* mg/l	Report* mg/l	Report* mg/l
					0.18 lb/day	0.53 lb/day	0.3 lb/day	0.8 lb/day
Zinc, Total	10,851 lb/day	21,773 lb/day	3.2 lb/day	9.8 lb/day	Report* mg/l	Report* mg/l	Report* mg/l	Report* mg/l
					2.0 lb/day	6.0 lb/day	3.2 lb/day	9.8 lb/day
Naphthalene	78,228 lb/day	156,961 lb/day	0.05 lb/day	0.09 lb/day	Report* mg/l	Report* mg/l	Report* mg/l	Report* mg/l
					0.03 lb/day	0.06 lb/day	0.05 lb/day	0.09 lb/day

Parameter	Water Quality-Based		Technology-Based		Previous Permit		Final Permit	
	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.
Tetrachloroethylene	150,339 lb/day	301,647 lb/day	0.07 lb/day	0.1 lb/day	Report* mg/l	Report* mg/l	Report* mg/l	Report* mg/l
					0.04 lb/day	0.09 lb/day	0.07 lb/day	0.1 lb/day
pH	6.0-9.0 s.u.		6.0-9.0 s.u.		6.0-9.0 s.u.		6.0-9.0 s.u.	
Acute WET Testing	Report	Report	N/A	N/A	Report	Report	Report	Report
Outfall 002								
TSS	N/A	N/A	100 mg/l	150 mg/l	100 mg/l	150 mg/l	100 mg/l	150 mg/l
O&G	10 mg/l	15 mg/l	N/A	N/A	10 mg/l	15 mg/l	10 mg/l	15 mg/l
pH	6.0-9.0 s.u.		6.0-9.0 s.u.		6.0-9.0 s.u.		6.0-9.0 s.u.	

* Monitor and report requirements only for concentration are included in the permit. See Section 11.D.5, paragraph two of this Fact Sheet for explanation.

A. **Justification for Limitations and Conditions of the Final Permit**

Parameter	Water Quality or Technology	Justification
Outfall 001		
TSS	Technology	NSPS 40 CFR 420 Subparts D, E, F, G, I, J, K, and L, 40 CFR 122.44(l), and previous permit
O&G		
Tier I Monthly Avg.	Technology	NSPS 40 CFR 420 Subparts F, G, I, J, K, and L, 40 CFR 122.44(l), and previous permit
Tier I Daily Max.	Water Quality	Rule 2.510, CWA § 402(o), and previous permit
Tier II	Water Quality	Rule 2.510, CWA § 402(o), and previous permit
Chromium (VI)	Technology	NSPS 40 CFR 420 Subpart L, 40 CFR 122.44(l), and previous permit
Chromium, Total	Technology	NSPS 40 CFR 420 Subpart J, 40 CFR 122.44(l), and previous permit
Lead, Total	Technology	NSPS 40 CFR 420 Subparts D, E, F, I, J, and L, 40 CFR 122.44(l), and previous permit
Nickel, Total	Technology	NSPS 40 CFR 420 Subpart J, 40 CFR 122.44(l), and previous permit
Zinc, Total	Technology	NSPS 40 CFR 420 Subparts D, E, F, I, J, and L, 40 CFR 122.44(l), and previous permit
Naphthalene	Technology	NSPS 40 CFR 420 Subpart J, 40 CFR 122.44(l), and previous permit

Parameter	Water Quality or Technology	Justification
Tetrachloroethylene	Technology	NSPS 40 CFR 420 Subpart J, 40 CFR 122.44(l), and previous permit
pH	Water Quality	NSPS 40 CFR 420 Subparts D, E, F, G, I, J, K, and L, Rule 2.504 , CWA § 402(o), and previous permit
Acute WET Testing	Water Quality	2000 CPP: Appendix D Part V.C – Implementation Procedures for Toxic Substances, CWA § 402(o), and previous permit
Outfall 002		
TSS	Technology	Generally accepted scientific knowledge and engineering practice, Industrial Stormwater General Permit ARR000000, 40 CFR 122.44(l), and previous permit
O&G	Water Quality	Rule 2.510, CWA § 402(o), and previous permit
pH	Water Quality	Rule 2.504, CWA § 402(o), and previous permit

Tetrachloroethylene

Tetrachloroethylene (PCE) is limited by this permit in accordance with requirements of applicable Effluent Limitation Guidelines (ELGs). For comparison the technology limit provided by the ELG was compared to the water quality based effluent limitation calculated using the ambient water quality criteria published by the EPA, "Quality Criteria for Water 1986," and the more stringent effluent limitation was selected. Please see Items D (5-7) below for further information.

As discussed in Section 11.B below, the mass limitations for TSS, Chromium (VI), Total Chromium, Total Lead, Total Nickel, Total Zinc, Naphthalene, and Tetrachloroethylene for Tier II at Outfall 001 have been revised due to the addition of production units.

The mass limitations for O&G under Tier II at Outfall 001 have been revised due to the decreased design flow, which is projected in the renewal application. The Arkansas DEQ Continuous Planning Process (CPP) provides guidance in the description of effluent flow, "The design flow for municipalities and the highest monthly average flow for the last two years for industrial dischargers is used as a default. However in cases where information exists to indicate that increased production is planned and/or projected and will ultimately require increased effluent discharge, the alternative projected increased flow may be used to calculate permit parameters." (CPP p. D-31)

B. **Anti-backsliding**

The permit is consistent with the requirements to meet Anti-backsliding provisions of the Clean Water Act (CWA), Section 402(o) [40 CFR 122.44(l)]. The final effluent limitations for reissuance permits must be as stringent as those in the previous permit, unless the less stringent limitations can be justified using exceptions listed in CWA 402(o)(2), CWA 303(d)(4), or 40 CFR 122.44(l)(2)(i).

The permit maintains the requirements of the current permit with the exception of revised

mass limitations of TSS, Chromium (VI), Total Chromium, Total Lead, Total Nickel, Total Zinc, Naphthalene, and Tetrachloroethylene for Tier II at Outfall 001.

The revisions to the mass limitations are allowed in accordance with the 40 CFR 122.44 (l)(2)(i)(A), which states, "A permit…may be renewed, reissued, or modified to contain a less stringent effluent limitation applicable to a pollutant, if material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation." As stated in Section 4 of this Fact Sheet, the permittee will construct additional steel manufacturing units as part of expansion. This increase in production justifies the increase of allowable mass loadings of TSS, Chromium (VI), Total Chromium, Total Lead, Total Nickel, Total Zinc, Naphthalene, and Tetrachloroethylene for Tier II at Outfall 001.

C. **Limits Calculations**

1. Mass Limits:

In accordance with 40 CFR 122.45(f)(1), all pollutants limited in permits shall have limitations expressed in terms of mass if feasible. 40 CFR 122.45(f)(2) allows for pollutants which are limited in terms of mass to also be limited in terms of other units of measurement.

Outfall 001

Calculations of mass limits are explained in Section 11.D of this Fact Sheet.

Outfall 002

Mass limits are not feasible for this outfall because the runoff through the system depends more on meteorological conditions than on the operations of the steel mill.

2. Daily Maximum Limits:

Outfall 001

The daily maximum concentration limit for O&G is based on Rule 2.510.

Concentration limits are not included for other parameters at this outfall since the receiving stream to effluent dilution factor is greater than 100:1 [EPA Technical Support Document for Water Quality-based Toxics Control, Section 5.7.1, March 1991].

Outfall 002

The daily maximum limit for TSS is based on Section 5.4.2 of the Technical Support Document for Water Quality-based Toxics Control using the following equation:

Daily Maximum limits = Monthly Average limits × 1.5

The daily maximum concentration limit for O&G is based on Rule 2.510.

D. **Applicable Effluent Limitations Guidelines**

Discharges from facilities of this type are covered by Federal effluent limitations guidelines (ELGs) promulgated under 40 CFR Part 420 – Iron and Steel Manufacturing Point Source Category. The operations consuming water and generating wastewater at this facility are covered under the following subcategories of 40 CFR Part 420: Subpart D – Steelmaking Subcategory, Subpart E – Vacuum Degassing Subcategory, Subpart F – Continuous Casting Subcategory, Subpart G – Hot Forming Subcategory, Subpart I – Acid Pickling Subcategory, Subpart J – Cold Forming Subcategory, Subpart K – Alkaline Cleaning Subcategory, and Subpart L – Hot Coating Subcategory.

The highest monthly average production reported in the permit renewal application occurred in November 2018 (10,379,974 lbs/day). This actual reported production rate is within 20% of the anticipated production rates (9,315,000 lbs/day) used in the previous permit for effluent limits calculations. Therefore, the technology-based limits for Tier I production remain unchanged.

For Tier II, the production data submitted with the application is based on projections for the first three (3) years of operation and the projected capacity of the new process units. The technology-based effluent limitations and monitoring requirements are included based on the estimated production data and 40 CFR Part 420. These limits are derived from the applicable New Source Performance Standards (NSPSs) specified in the aforementioned subcategories. The calculations of these limits are presented as follows:

(1) **Production Data**

Applicable New Source Performance Standard (NSPS)	Production Quantity (1,000 lb/day as liquid steel)	
	Tier I	Tier II
Subpart D – Steelmaking 40 CFR §420.44(a), Basic oxygen furnace steelmaking—semi-wet; and electric arc furnace steelmaking—semi-wet	9,315	22,466
Subpart E – Vacuum Degassing 40 CFR §420.54	1,864	8,220
Subpart F – Continuous Casting 40 CFR §420.64	9,315	22,466
Subpart G – Hot Forming 40 CFR §420.74(c)(1), Flat mills—Hot strip and sheet mills, carbon and specialty	9,315	22,466
Subpart I – Acid Pickling 40 CFR §420.94(b)(4), Hydrochloric acid	one (1) fume scrubber	two (2) fume scrubbers

Applicable New Source Performance Standard (NSPS)	Production Quantity (1,000 lb/day as liquid steel)	
	Tier I	Tier II
pickling (spent acid solutions and rinse waters)—Fume scrubbers		
Subpart J – Cold Forming 40 CFR §420.104(a)(2), Cold rolling mills—Recirculation-multiple stands	6,174	22,466
Subpart K – Alkaline Cleaning 40 CFR §420.114(a), Batch and continuous	1,644	3,288
Subpart L – Hot Coating 40 CFR §420.124(a)(1), Galvanizing, terne coating and other coatings—Strip, sheet, and miscellaneous products	1,644	13,874

(2) **Federal Effluent Limitations**

40 CFR §420.44(a), Subpart D—Steelmaking – New Source Performance Standards

It was noted in Air Permit No. 2305-AOP-R5 for Big River Steel LLC that baghouses are used as the primary emissions control devices for the electric arc furnaces. As with other steel mills, this type of control device is defined as semi-wet, according to 40 CFR 420.41(e). Therefore, 40 CFR 420.44(a) applies in this situation and requires no discharge of process wastewater pollutants to navigable waters.

40 CFR §420.54, Subpart E—Vacuum Degassing – New Source Performance Standards

Production-based Effluent Limit Factors		
Parameter	New Source Performance Standards	
	Monthly Average (lb/1,000 lb of product)	Daily Maximum (lb/1,000 lb of product)
TSS	0.00261	0.00730
Lead	0.0000313	0.0000939
Zinc	0.0000469	0.000141
pH	6.0-9.0 s.u.	6.0-9.0 s.u.

40 CFR §420.64, Subpart F—Continuous Casting – New Source Performance Standards

Production-based Effluent Limit Factors		
Parameter	New Source Performance Standards	
	Monthly Average (lb/1,000 lb of product)	Daily Maximum (lb/1,000 lb of product)
TSS	0.00261	0.00730
O&G	0.00104	0.00313
Lead	0.0000313	0.0000939

Production-based Effluent Limit Factors		
Parameter	New Source Performance Standards	
	Monthly Average (lb/1,000 lb of product)	Daily Maximum (lb/1,000 lb of product)
Zinc	0.0000469	0.000141
pH	6.0-9.0 s.u.	6.0-9.0 s.u.

40 CFR §420.74(c)(1), Subpart G—Hot Forming – New Source Performance Standards

Production-based Effluent Limit Factors		
Parameter	New Source Performance Standards	
	Monthly Average (lb/1,000 lb of product)	Daily Maximum (lb/1,000 lb of product)
TSS	0.0163	0.0435
O&G	0.00545[1]	0.0109
pH	6.0-9.0 s.u.	6.0-9.0 s.u.

[1] A production-based effluent limit factor for the monthly average for O&G was determined by the permit writer for calculation of final effluent limits. The factor was calculated by dividing the daily maximum factor of 0.0109 lb/1,000 lb by two (2), resulting in a monthly average factor of 0.00545 lb/1,000 lb. This determination is based on Section 5.4.2 of the Technical Support Document for Water Quality-Based Toxics Control, which states that in the absence of other information, the daily maximum limit is divided by 2.0 in order to derive a monthly average limit.

40 CFR §420.94(b)(4), Subpart I—Acid Pickling – New Source Performance Standards

Production-based Effluent Limit Factors		
Parameter	New Source Performance Standards	
	Monthly Average[2] (lb/day)[3]	Daily Maximum[2] (lb/day)[3]
TSS	5.40	12.61
O&G[1]	1.81	5.40
Lead	0.0271	0.0811
Zinc	0.0362	0.108
pH	6.0-9.0 s.u.	6.0-9.0 s.u.

[1] The limitations for O&G shall be applicable when acid pickling wastewaters are treated with cold rolling wastewaters.
[2] The above limitations shall be applicable to each fume scrubber associated with acid pickling operations.
[3] It should be noted that the above limitations, except pH, are expressed in the federal regulation in units of kg/day, but have been converted to lb/day for simplification.

40 CFR §420.104(a)(2), Subpart J—Cold Forming – New Source Performance Standards

Production-based Effluent Limit Factors		
Parameter	New Source Performance Standards	
	Monthly Average (lb/1,000 lb of product)	Daily Maximum (lb/1,000 lb of product)
TSS	0.00125	0.00250

Production-based Effluent Limit Factors		
Parameter	New Source Performance Standards	
	Monthly Average (lb/1,000 lb of product)	Daily Maximum (lb/1,000 lb of product)
O&G	0.000417	0.00104
Chromium[1]	0.0000167	0.0000418
Lead	N/A[1]	N/A[1]
Nickel[1]	0.0000125	0.0000376
Zinc	N/A[1]	N/A[1]
Naphthalene	0.0000021 [2]	0.0000042
Tetrachloroethylene	0.00000315 [2]	0.0000063
pH	6.0-9.0 s.u.	6.0-9.0 s.u.

[1] The limitations for chromium and nickel shall be applicable in lieu of those for lead and zinc when cold rolling wastewaters are treated with descaling or combination acid pickling wastewaters. Therefore, the loadings calculated for lead and zinc, according to Subpart J, were not included in the building block approach for those parameters.

[2] Production-based effluent limit factors for the monthly averages of naphthalene and tetrachloroethylene were determined by the permit writer for calculations of final effluent limits. The factor for naphthalene was calculated by dividing the daily maximum factor of 0.0000042 lb/1,000 lb by two (2), resulting in a monthly average factor of 0.0000021 lb/1,000 lb. The factor for tetrachloroethylene was calculated by dividing the daily maximum factor of 0.0000063 lb/1,000 lb by two (2), resulting in a monthly average factor of 0.00000315 lb/1,000 lb. These determinations are based on Section 5.4.2 of the Technical Support Document for Water Quality-Based Toxics Control, which states that in the absence of other information, the daily maximum limit is divided by 2.0 in order to derive a monthly average limit.

40 CFR §420.114(a), Subpart K—Alkaline Cleaning – New Source Performance Standards

Production-based Effluent Limit Factors		
Parameter	New Source Performance Standards	
	Monthly Average (lb/1,000 lb of product)	Daily Maximum (lb/1,000 lb of product)
TSS	0.00626	0.0146
O&G	0.00209	0.00626
pH	6.0-9.0 s.u.	6.0-9.0 s.u.

40 CFR §420.124(a)(1), Subpart L—Hot Coating – New Source Performance Standards

Production-based Effluent Limit Factors		
Parameter	New Source Performance Standards	
	Monthly Average (lb/1,000 lb of product)	Daily Maximum (lb/1,000 lb of product)
TSS	0.0188	0.0438
O&G	0.00626	0.0188
Lead	0.0000939	0.000282
Zinc	0.000125	0.000376
Chromium (VI)[1]	0.0000125	0.0000376

Production-based Effluent Limit Factors		
Parameter	New Source Performance Standards	
	Monthly Average (lb/1,000 lb of product)	Daily Maximum (lb/1,000 lb of product)
pH	6.0-9.0 s.u.	6.0-9.0 s.u.

[1] The limitations for chromium (VI) shall be applicable only to galvanizing operations, which discharge wastewaters from the chromate rinse step.

(3) **Calculations**

Limit (lb/day) = Production Quantity (1,000 lb/day) × ELG Factor (lb/1,000 lb product)

The following sample calculation shows how the technology-based TSS limits were calculated. In accordance with the NPDES Permit Writers' Manual, the building block approach was used since this facility is subject to multiple subparts of 40 CFR 420. Technology-based limits for O&G, Chromium (VI), Chromium, Lead, Nickel, Zinc, Naphthalene, and Tetrachloroethylene are calculated using the same procedure shown below, with the applicable production-based effluent limit factors from 40 CFR 420 listed in the previous tables. It should be noted that the effluent limit factor for Subpart I is based on the number of fume scrubbers used rather than production.

Sample Calculation of TSS Technology-based Limits

Subpart E of Tier I: Limit = 1,864 (1,000 lb/day) × 0.00261 lb/1,000 lb = 4.9 lb/day

Tier I – the average daily production for a calendar month is equal to or less than 11,000,000 lbs/day

Monthly Average Limit

ELG-NSPS	Production Quantity (1,000 lb/day)	ELG Factor (lb/1,000 lb)	Monthly Avg. Mass Limit (lb/day)
Subpart D	9,315	No discharge	0.0
Subpart E	1,864	0.00261	4.9
Subpart F	9,315	0.00261	24.3
Subpart G	9,315	0.0163	151.8
Subpart I	1 fume scrubber	5.40 lb/day	5.4
Subpart J	2,192 [Skin Mill]	0.00125	2.7
	3,982 [Tan. Mill]	0.00125	5.0
Subpart K	1,644	0.00626	10.3
Subpart L	1,644	0.0188	30.9
Total	-	-	**235.3**

Daily Maximum Limit

ELG-NSPS	Production Quantity (1,000 lb/day)	ELG Factor (lb/1,000 lb)	Daily Max. Mass Limit (lb/day)
Subpart D	9,315	No discharge	0.0
Subpart E	1,864	0.0073	13.6
Subpart F	9,315	0.0073	68.0
Subpart G	9,315	0.0435	405.2
Subpart I	1 fume scrubber	12.61 lb/day	12.6
Subpart J	2,192 [Skin Mill]	0.0025	5.5
	3,982 [Tan. Mill]	0.0025	10.0
Subpart K	1,644	0.0146	24.0
Subpart L	1,644	0.0438	72.0
Total	-	-	**610.9**

Tier II – the average daily production for a calendar month is greater than 11,000,000 lbs/day

Monthly Average Limit

ELG-NSPS	Production Quantity (1,000 lb/day)	ELG Factor (lb/1,000 lb)	Monthly Avg. Mass Limit (lb/day)
Subpart D	22,466	No discharge	0.0
Subpart E	8,220	0.00261	21.5
Subpart F	22,466	0.00261	58.6
Subpart G	22,466	0.0163	366.2
Subpart I	2 fume scrubbers	5.40 lb/day	10.8
Subpart J	22,466	0.00125	28.1
Subpart K	3,288	0.00626	20.6
Subpart L	13,874	0.0188	260.8
Total	-	-	**766.6**

Daily Maximum Limit

ELG-NSPS	Production Quantity (1,000 lb/day)	ELG Factor (lb/1,000 lb)	Daily Max. Mass Limit (lb/day)
Subpart D	22,466	No discharge	0.0
Subpart E	8,220	0.0073	60.0

Subpart F	22,466	0.0073	164.0
Subpart G	22,466	0.0435	977.3
Subpart I	2 fume scrubbers	12.61 lb/day	25.2
Subpart J	22,466	0.0025	56.2
Subpart K	3,288	0.0146	48.0
Subpart L	13,874	0.0438	607.7
Total	-	-	**1938.4**

(4) **Technology-based Limits**

Parameter	Monthly Average Limit (lb/day)		Daily Maximum Limit (lb/day)	
	Tier - I	Tier - II	Tier - I	Tier - II
TSS	235.3	766.6	610.9	1938.4
O&G	78.6	252.8	183.7	631.6
Chromium (VI)	0.02	0.2	0.06	0.5
Chromium, Total	0.1	0.4	0.3	0.9
Lead, Total	0.5	2.3	1.6	7.0
Nickel, Total	0.08	0.3	0.2	0.8
Zinc, Total	0.8	3.2	2.3	9.8
Naphthalene	0.01	0.05	0.03	0.09
Tetrachloroethylene	0.02	0.07	0.04	0.1
pH	6.0-9.0 s.u.	6.0-9.0 s.u.	6.0-9.0 s.u.	6.0-9.0 s.u.

The calculations of technology-based limits can be reviewed at the following web links:

Tier I

https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0052582_ELG%20Production-based%20Limits_20151218.pdf

Tier II

https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0052582_ELG%20Production-based%20Limits_20210114.pdf

(5) **Water Quality-based Limits vs. Technology-based Limits**

The water quality-based limit for pH contained in APC&EC Rule 2.504 is equivalent to the technology-based limits specified in the ELGs of the select subparts of 40 CFR 420. Therefore, no comparison is necessary for pH limits.

Concentration limits have not been calculated for limitation purposes because this outfall discharges directly to the Mississippi River, which has a 7Q10 of 119,000 cfs. Instead, water quality-based mass limits, derived from the water quality standards contained in APC&EC Rule 2.508, were calculated for comparison with the aforementioned

technology-based limits. The water quality-based masses for Chromium (VI), Lead, Nickel, Zinc, Naphthalene, and Tetrachloroethylene were calculated using the procedures derived in a manner consistent with the Technical Support Document for Water Quality-based Toxics Control (EPA, March 1991), the 2000 CPP, and 40 CFR 122.45(c).

Parameter	Value	Source
Tier I Design Flow	1.15 MGD = 1.78 cfs	Permit renewal application
Tier II Design Flow	1.25 MGD = 1.93 cfs	Permit renewal application
7Q10	119,000 cfs	Arkansas Geological Commission Map dated 1983, for U.S.G.S. Station ID: 07032000
TSS	8 mg/l	Specified in CPP for Delta Ecoregion
Hardness as $CaCO_3$	81 mg/l	Specified in CPP for Delta Ecoregion
pH	7.0 s.u.	Neutral pH used since no known upstream data was found.

(6) **Calculated Water Quality-based Masses**

Parameter	Monthly Average Limit (lb/day)		Daily Maximum Limit (lb/day)	
	Tier - I	Tier - II	Tier - I	Tier - II
O&G	95.9	104.3	143.9	156.4
Chromium (VI)	535	534	1,074	1,072
Lead, Total	1,879	1,876	3,770	3,765
Nickel, Total	51,819	51,745	103,972	103,823
Zinc, Total	10,867	10,851	21,803	21,773
Naphthalene	78,339	78,228	157,183	156,961
Tetrachloroethylene	150,555	150,339	302,080	301,647

The calculations of water quality-based masses can be reviewed at the following web links:

Tier I

https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0052582_PPS%20WQ-based%20Limits_20151020.pdf

Tier II

https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/AR0052582_PPS%20for%20Outfall%20001_20210114.pdf

(7) **Comparison of Technology-based Masses to Water Quality-based Masses**

Tier I

Parameter	Technology-based Masses		Water Quality-based Masses	
	Monthly Average Limit (lb/day)	Daily Maximum Limit (lb/day)	Monthly Average Limit (lb/day)	Daily Maximum Limit (lb/day)
O&G	**78.6**	183.7	95.9	**143.9**
Chromium (VI)	**0.02**	**0.06**	535	1,074
Lead, Total	**0.5**	**1.6**	1,879	3,770
Nickel, Total	**0.08**	**0.2**	51,819	103,972
Zinc, Total	**0.8**	**2.3**	10,867	21,803
Naphthalene	**0.01**	**0.03**	78,339	157,183
Tetrachloroethylene	**0.02**	**0.04**	150,555	302,080

Tier II

Parameter	Technology-based Masses		Water Quality-based Masses	
	Monthly Average Limit (lb/day)	Daily Maximum Limit (lb/day)	Monthly Average Limit (lb/day)	Daily Maximum Limit (lb/day)
O&G	252.8	631.6	**104.3**	**156.4**
Chromium (VI)	**0.2**	**0.5**	534	1,072
Lead, Total	**2.3**	**7.0**	1,876	3,765
Nickel, Total	**0.3**	**0.8**	51,745	103,823
Zinc, Total	**3.2**	**9.8**	10,851	21,773
Naphthalene	**0.05**	**0.09**	78,228	156,961
Tetrachloroethylene	**0.07**	**0.1**	150,339	301,647

Using the above comparison table, the water quality-based mass for the monthly average and the daily maximum of O&G is more stringent than the technology-based mass. For the rest of the parameters in this table, the technology-based masses are much more stringent than the water quality-based masses. Therefore, for parameters other than O&G, the technology-based mass limits are used in the permit instead of the water quality-based mass limits. The concentration limits for O&G are water quality-based in accordance with Rule 2.510. As stated above in Section 11.D.5, equivalent technology-based concentrations for other pollutants discharging through Outfall 001 are not included in the permit since the receiving stream to effluent dilution factor is greater than 100:1 [EPA Technical Support Document for Water Quality Based Toxics Control, Section 5.7.1, March 1991].

(8) **Mass Permit Limits Included for Outfall 001**

Tier I

Parameter	Monthly Average Limit (lb/day)	Daily Maximum Limit (lb/day)
TSS	235.3	610.9
O&G	78.6	143.9
Chromium (VI)	0.02	0.06
Chromium, Total	0.1	0.3
Lead, Total	0.5	1.6
Nickel, Total	0.08	0.2
Zinc, Total	0.8	2.3
Naphthalene	0.01	0.03
Tetrachloroethylene	0.02	0.04
pH[1]	Minimum 6.0 s.u.	Maximum 9.0 s.u.

[1] There are no mass limits for pH.

Tier II

Parameter	Monthly Average Limit (lb/day)	Daily Maximum Limit (lb/day)
TSS	766.6	1938.4
O&G	104.3	156.4
Chromium (VI)	0.2	0.5
Chromium, Total	0.4	0.9
Lead, Total	2.3	7.0
Nickel, Total	0.3	0.8
Zinc, Total	3.2	9.8
Naphthalene	0.05	0.09
Tetrachloroethylene	0.07	0.1
pH[1]	Minimum 6.0 s.u.	Maximum 9.0 s.u.

[1] There are no mass limits for pH.

12. WHOLE EFFLUENT TOXICITY

Section 101(a)(3) of the Clean Water Act states that "...it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited." In addition, DEQ is required under 40 C.F.R. §122.44(d)(1), adopted by reference in Rule 6, to include conditions as necessary to achieve water quality standards as established under Section 303 of the Clean Water Act. Arkansas has established a narrative criteria which states "toxic materials shall not be present in receiving waters in such quantities as to be toxic to human, animal, plant or aquatic life or to interfere with the normal propagation, growth and survival of aquatic biota."

Whole effluent toxicity (WET) testing is the most direct measure of potential toxicity which incorporates the effects of synergism of effluent components and receiving stream water quality characteristics. It is the national policy of EPA to use bioassays as a measure of toxicity to allow evaluation of the effects of a discharge upon a receiving water (49 Federal Register 9016-9019, March 9, 1984). EPA Region 6 and the State of Arkansas are now implementing the Post Third Round Policy and Strategy established on September 9, 1992.

Whole effluent toxicity testing of the effluent is thereby required as a condition of this permit to assess potential toxicity. The whole effluent toxicity testing procedures stipulated as a condition of this permit are as follows:

TOXICITY TESTS	FREQUENCY
48 hour Acute WET	Once/quarter

Requirements for measurement frequency are based on the CPP.

Since the 7Q10 is greater than 100 cfs (ft^3/sec) and the dilution ratio (DR) is greater than 100:1, acute WET testing requirements will be included in the permit.

The calculations for dilution used for the acute WET testing are as follows:

Critical Dilution (CD) = $(Q_d / (Q_d + Q_b)) \times 100$

<u>Tier 1 – Design Flow = 1.15 MGD</u>

Q_d = Design Flow = 1.15 MGD = 1.78 cfs
7Q10 = 119,000 cfs
Q_b = Background flow = $0.1 \times (0.25) \times 7Q10$ = 2,975 cfs
CD = $(1.78 / (1.78 + 2{,}975)) \times 100 = 0.06\%$

<u>Tier 2 – Design Flow = 1.25 MGD</u>

Q_d = Design Flow = 1.25 MGD = 1.93 cfs
7Q10 = 119,000 cfs
Q_b = Background flow = $0.1 \times (0.25) \times 7Q10$ = 2,975 cfs
CD = $(1.93 / (1.93 + 2{,}975)) \times 100 = 0.07\%$

DR = $(7Q10 + Q_d) / Q_d$ = 61,659 >100

Toxicity tests shall be performed in accordance with protocols described in "Methods for Measuring the Acute Toxicity of Effluent to Freshwater and Marine Organisms", EPA/600/4-90/027. A minimum of five effluent dilutions in addition to an appropriate control (0%) are to be used in the toxicity tests. These additional effluent concentrations are **0.02%, 0.03%, 0.04%, 0.06%,** and **0.08%** for **Tier 1**, and **0.03%, 0.04%, 0.05%, 0.07%,**

and **0.09%** for **Tier 2** (See the CPP). The low-flow effluent concentration (critical dilution) is defined as **0.06%** effluent for **Tier 1**, and **0.07%** effluent for **Tier 2**. The requirement for acute WET tests is based on the magnitude of the facility's discharge with respect to receiving stream flow. The stipulated test species *Daphnia pulex* and the Fathead minnow (*Pimephales promelas*) are representative of organisms indigenous to the geographic area of the facility; the use of these is consistent with the requirements of the State water quality standards. The WET testing frequency has been established to provide data representative of the toxic potential of the facility's discharge, in accordance with the regulations promulgated at 40 C.F.R. §122.48.

Results of all dilutions as well as the associated chemical monitoring of pH, temperature, hardness, dissolved oxygen, conductivity, and alkalinity shall be reported according to EPA-821-R-02-012, October 2002 and shall be submitted as an attachment to the Discharge Monitoring Report (DMR).

This permit may be reopened to require further WET testing studies, Toxicity Reduction Evaluation (TRE) and/or effluent limits if WET testing data submitted to the Division shows toxicity in the permittee's discharge. Modification or revocation of this permit is subject to the provisions of 40 C.F.R. §122.62, as adopted by reference in APC&EC Rule 6. Increased or intensified toxicity testing may also be required in accordance with Section 308 of the Clean Water Act and Section 8-4-201 of the Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended).

Administrative Records

The following information summarizes toxicity tests submitted by the permittee during the term of the current permit at Outfall **001:**

Permit Number:	AR0052582	AFIN:	47-00991	Outfall Number:	001
Date of Review:	6/18/2021	Reviewer:	T. Cochran/M. Barnett		
Facility Name:	Big River Steel, LLC				
Previous Dilution series:	0.02, 0.03, 0.04, 0.06, 0.08	Proposed Dilution Series:	0.03, 0.04, 0.05, 0.07, 0.09		
Previous Critical Dilution:	0.06	Proposed Critical Dilution:	0.07		
Previous TRE activities:	None				

Frequency recommendation by species	
Pimephales promelas (Fathead minnow):	once/quarter
Daphnia pulex (water flea):	once/quarter

TEST DATA SUMMARY

	Vertebrate (*Pimephales promelas*)		Invertebrate (*Daphnia pulex*)	
TEST DATE	Lethal		Lethal	
	NOEC		NOEC	
3/31/2021	0.08		0.08	
12/31/2020	0.08		0.08	
9/30/2020	0.08		0.08	
6/30/2020	0.08		0.08	
3/31/2020	0.08		0.08	
12/31/2019	0.08		0.08	
9/30/2019	0.08		0.08	
6/30/2019	0.06		0.08	
3/31/2019	0.08		0.08	
12/31/2018	0.08		0.08	
9/30/2018	0.08		0.08	
6/30/2018	0.06		0.08	
3/31/2018			0.08	
12/31/2017	0.08		0.08	
9/30/2017	0.08		0.08	
6/30/2017	0.08		0.08	
3/31/2017	0.08		0.08	

Failures are noted in BOLD

REASONABLE POTENTIAL CALCULATIONS

	Vertebrate Lethal		**Invertebrate Lethal**	
Min NOEC Observed	0.06		0.08	
TU at Min Observed	1666.67		1250.00	
Count	14		15	
Failure Count	0		0	
Mean	1309.524		1250.000	
Std. Dev.	151.307		0.000	
CV	0.1		0	
RPMF	1.1		0	
Reasonable Potential	1.283		0.000	
100/Critical dilution	1428.571		1428.571	
Does Reasonable Potential Exist	No		No	

PERMIT ACTION

P. promelas acute - Monitor
D. pulex acute- Monitor

13. **STORMWATER REQUIREMENTS**

The federal regulations at 40 CFR 122.26(b)(14) require certain industrial sectors to have

NPDES permit coverage for stormwater discharges from the facility. These requirements include the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) to control the quality of stormwater discharges from the facility. This facility was issued stormwater permit coverage under NPDES Tracking number ARR001578.

14. SAMPLE TYPE AND FREQUENCY

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity [40 CFR Part 122.48(b)] and to ensure compliance with permit limitations [40 CFR Part 122.44(i)(l)].

Requirements for sample type and sampling frequency have been based on the previous discharge permit.

Parameter	Previous Permit		Final Permit	
	Frequency of Sample	Sample Type	Frequency of Sample	Sample Type
Outfall 001				
Flow	once/day	totalizing meter	once/day	totalizing meter
TSS	once/week	composite	once/week	composite
O&G	once/week	grab	once/week	grab
Chromium (VI)	once/week	composite	once/week	composite
Chromium, Total	once/week	composite	once/week	composite
Lead, Total	once/week	composite	once/week	composite
Nickel, Total	once/week	composite	once/week	composite
Zinc, Total	once/week	composite	once/week	composite
Naphthalene	once/week	grab	once/week	grab
Tetrachloroethylene	once/week	grab	once/week	grab
pH	once/week	grab	once/week	grab
Acute WET Testing	once/quarter	24-hr composite	once/quarter	composite
Outfall 002				
Flow	two/week	calculated	two/week	calculated
TSS	once/quarter	grab	once/quarter	grab
O&G	once/quarter	grab	once/quarter	grab
pH	once/month	grab	once/month	grab

15. PERMIT COMPLIANCE SCHEDULE

A Schedule of Compliance has not been included in this permit.

16. MONITORING AND REPORTING

The applicant is at all times required to monitor the discharge on a regular basis and report the results monthly. The monitoring results will be available to the public.

17. SOURCES

The following sources were used to draft the permit:

A. Application No. AR0052582 received November 30, 2020, with additional information received on March 25, 2021.
B. Arkansas Water Quality Management Plan (WQMP).
C. APC&EC Rule 2.
D. APC&EC Rule 3.
E. APC&EC Rule 6, which incorporates by reference certain federal regulations included in Title 40 of the Code of Federal Regulations at Rule 6.104.
F. 40 CFR Parts 122 and 125.
G. 40 CFR Part(s) 420 - Subparts: D, E, F, G, I, J, K, and L.
H. Discharge permit file AR0052582.
I. Discharge Monitoring Reports (DMRs).
J. "2018 Integrated Water Quality Monitoring and Assessment Report," DEQ.
K. "2018 List of Impaired Waterbodies (303(d) List)," DEQ, May 2020.
L. USGS StreamStats Web-based Program.
M. Continuing Planning Process (CPP).
N. Technical Support Document for Water Quality-based Toxic Control.
O. Inspection Report dated July 18, 2017.
P. Compliance Review Memo from Myrl Lawrence to Terry Liu dated December 16, 2020.
Q. Planning Review Memo dated January 19, 2021.
R. NPDES Permit Rating Spreadsheet (MRAT) dated January 14, 2021.
S. EPA Comments to Preliminary Draft Permit Letter, dated July 22, 2021, from Maria L. Martinez of EPA to Bryan Leamons of DEQ.
T. ANHC Comment to Preliminary Draft Permit Letter, dated September 3, 2021, from Katie Shannon of ANHC to Terry Liu of DEQ.
U. Public Comments to Preliminary Draft Permit dated September 21, 2021.

18. PUBLIC NOTICE

The public notice of the draft permit was published for public comment on August 22, 2021. The last day of the comment period was thirty (30) days after the publication date. A summary of the comments received by the DEQ during the public comment period and response to the comments are included with this permit decision. The response to comments also includes a discussion of any substantial changes from the draft permit.

A copy of the permit and public notice were sent via email to the State of Tennessee, the Corps of Engineers, the Regional Director of the U.S. Fish and Wildlife Service, the Department of Parks, Heritage, and Tourism, the EPA, and the Arkansas Department of Health.

19. **PERMIT FEE**

In accordance with Rule 9.403(A)(2), the annual fee for the permit is $11,000.

20. **POINT OF CONTACT**

For additional information, contact:

Terry Liu, P.E.
Permits Branch, Office of Water Quality
Division of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317
Telephone: (501) 682-0653

RESPONSE TO COMMENTS
FINAL PERMITTING DECISION

Permit No.: AR0052582

Applicant: Big River Steel LLC

Prepared by: Terry Liu, P.E.

The following are responses to comments received by the Arkansas Department of Energy and Environment – Division of Environmental Quality (DEQ) regarding the draft permit number referenced above and are developed in accordance with regulations promulgated at 40 C.F.R. §124.17, Arkansas Pollution Control & Ecology Commission (APC&EC) Rule No. 8 (Administrative Procedures), and Arkansas Code Annotated (A.C.A.) §8-4-203(e)(2).

Introduction

The above permit was submitted for public comment on August 22, 2021. The public comment period ended on September 21, 2021.

This document contains a summary of the comments that the DEQ received during the public comment period. A summary of the changes to the NPDES Permit can be found on the last page of this document.

The following people or organizations sent comments to the DEQ during the public notice. A total of four (4) comments were raised by two (2) separate commenters.

	Commenter	Number of Comments Raised
1.	Katie Shannon, Arkansas Natural Heritage Commission	1
2.	David Carstens and Andrew Rike, Harbor Environmental, Inc.	3

Comment 1 The Arkansas Natural Heritage Commission stated that the following species of conservation concern are known to occur in the Mississippi River at or within five miles downstream of the outfall:

Notropis wickliffi, channel shiner-state concern
Scaphirhynchus albus, pallid sturgeon-federal concern (endangered)
Sternula antillarum athalassos, Interior Least Tern-federal concern (endangered)

Response: The above information will be included in Section 7.C of the Fact Sheet of the permit, which addresses endangered species in the receiving streams. The limits in the permit are designed to protect all beneficial uses of the receiving waters, including propagation of desirable species of fish and other aquatic life, which may affect the above species of conservation concern. Therefore, the DEQ has determined that the final permit limitations will serve to help protect the species of conservation concern identified above.

Comment 2 Option to Install Rotary Sludge Thickener

Sludge is generated in the wastewater treatment system. The sludge from the emulsion tanks and the dissolved air floatation units is transferred to a sludge processing area for dewatering. This area consists of a covered concrete slab with containment curbing. The sludge is allowed to air dry. Wood pellets (or another suitable absorbent) may be added to solidify the material if necessary. The dewatered sludge is then deposited in roll-off boxes pending shipment off-site for disposal. The sludge is managed in accordance with federal, state, and local regulatory requirements. (The sludge generated in the two clarifiers is dewatered using press plate filters.)

BRS is considering installing a rotary sludge thickener in the sludge processing area. This equipment would improve solidification, decrease the sludge volume, and reduce the operating costs. The rotary sludge thickener may be installed sometime during the five-year term of the renewal permit. An appropriately sized and designed thickener would be installed and operated.

BRS wants the renewal NPDES permit to include the operational flexibility to install the rotary sludge thickener in the sludge processing area if they decide to proceed with the project. We propose to revise the language in the Fact Sheet for this purpose. The suggested changes are shown below in redline-strikeout format. No other changes to the draft NPDES permit or Fact Sheet should be required.

- Description of Wastewater Treatment Equipment (Fact Sheet, Section 8.B, page 8):

  "Outfall 001
  New Treatment will include:...

  Primary Treatment (all process wastewater, which includes pretreated wastewater, contact
  water blowdown, and sand filter backwash):
  - all wastewater streams will be processed using pH adjustment, chemical treatment, precipitation of metals, dissolved air flotation, and decanting
  - coagulation-flocculation and sedimentation using thickener to separate solids
  - aeration basin and sand filtration for removal of remaining suspended solids
  - sludge is separated and dewatered in filter press and/or thickened in rotary sludge thickener prior to recycling and/or disposal
  - dewatering separated solids using press plate filter"

- Description of Solids Management Practices (Fact Sheet, Section 10, page 9):

  "Solids generated by the process wastewater treatment system will be dewatered through the press plate filter, or by rotating filtration or air drying in the sludge processing area, and disposed of at a nearby landfill."

An NPDES permit modification should not be required to install the rotary sludge thickener since the project will not affect the Outfall 001 permit limits, discharge calculations, or method of sludge disposal. A construction permit should also not be required for the same reasons.

Per the DEQ's instructions, BRS will provide detailed information on the rotary sludge thickener prior to installation of the equipment. In particular, the technical specifications for the thickener will be submitted for the DEQ's review.

Response: In accordance with Section B.6.B of Part III of the permit, the Division will review the request and determine if a state construction permit is required or if the NPDES permit must be modified when new information for the rotary sludge thickener is received. Therefore, the Fact Sheet will not be revised to include the rotary sludge thickener. It is reminded that page 1 of the Fact Sheet states: *This Fact Sheet is for information and justification of the permit requirements only. Please note that it is not enforceable.* If additions to the facility are approved and installed which do not affect the terms or conditions of the NPDES permit, DEQ may choose to update the facility information in the Fact Sheet during a subsequent NPDES permitting action

Comment 3 Option to Install Flow Meter for Outfall 002

Stormwater runoff and quench water runoff from the slag yard are accumulated in the slag yard pond. The water is periodically discharged to the Mississippi River at Outfall 002. At this time, the effluent transfer line is not equipped with a flow meter. Instead, the volume of water discharged is estimated using the hours of operation of the transfer pumps and the pump rating curve.

BRS is considering installing a flow meter on the Outfall 002 effluent pipeline to provide more accurate flow measurements. The flow meter may be installed sometime during the five-year term of the renewal permit. An appropriately sized and designed flow meter with a totalizer would be installed and operated.

BRS wants the renewal NPDES permit to include the operational flexibility to install a flow meter for Outfall 002 if they decide to proceed with the project. We propose to revise the permit limits table for Outfall 002 (Part IA, Section A3 of the permit) for this purpose. The suggested changes are shown below in redline-strikeout format. No other changes to the draft NPDES permit should be required. Installation of the flow meter will not affect the permit limits, discharge calculations, or method of treatment for Outfall 002.

Part IA, Section A3: Effluent Limitations and Monitoring Requirements: Outfall 002 - stormwater and dust suppression/quenching water runoff from slag pile.

During the period beginning on the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Outfall 002. Such discharges shall be limited and monitored by the permittee as specified below as well as Parts II and III. See Part IV for all definitions.

Effluent Characteristics	**Discharge Limitations**				**Monitoring Requirements**	
	Mass (lbs/day, unless otherwise specified)		Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.		
Flow	N/A	N/A	Report, MGD	Report, MGD	two/week	calculated or totalizing meter[1, 2]
Total Suspended Solids (TSS)	N/A	N/A	100	150	once/quarter	grab
Oil and Grease (O&G)	N/A	N/A	10	15	once/quarter	grab
pH	N/A	N/A	Minimum 6.0 s.u.	Maximum 9.0 s.u.	once/month	grab

1. Flow is to be calculated based upon pump run times and the pump rating curve, until such time when a flow meter is installed and operational.
2. Permittee may install a flow meter with totalizer. Permittee will notify DEQ of installation of meter. Permittee will monitor effluent flow using the flow meter once installed and operational.

Oil, grease, or petrochemical substances shall not be present in receiving waters to the extent that they produce globules or other residue or any visible, colored film on the surface or coat the banks and/or bottoms of the waterbody or adversely affect any of the associated biota. There shall be no visible sheen as defined in Part IV of this permit.

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples shall be taken after the sedimentation pond and prior to the pipeline to Outfall 002.

Response: The permit language will be updated as requested to allow the installation of a flow meter for Outfall 002. The permittee must notify the DEQ within 30 days of when the new flow meter is installed and operating.

Comment 4 Administrative Changes to Permit

The draft NPDES permit contains some minor typographic errors that should be corrected for the sake of future reference. BRS requests that the following items be revised:

(a). References to Slag Yard: The permit contains several references to the "slag pile". This term should be replaced by the term "slag yard" to be more accurate. The following sections of the text should be revised:

- Cover Page (description of discharge): BRS "is authorized to discharge treated process wastewater, stormwater, and dust suppression/quenching water runoff from slag ~~pile~~ yard from a facility..."

- Part IA, Section A3: "Outfall 002 – stormwater and dust suppression/quenching water runoff from slag ~~pile~~ yard."

- Fact Sheet (Paragraph 8.C, page 8): "Outfall 002: stormwater runoff from slag ~~pile~~ yard and dust suppression/quenching water runoff from slag ~~pile~~ yard"

(b). Table Format: The column widths for the Tier 2 permit limits table for Outfall 001 (Part IA, Section A2) should be adjusted to correct the header for the monthly average mass limitations.

(c). Reference to Permit Modification: The language in Other Condition 10 (Part II, page 12) contains as reference to a "permit modification" rather than a "permit renewal." The text should be revised as follows: 10(a). "Beginning on the effective date of the renewal permit ~~modification~~, the permittee must submit a Discharge Monitoring Report (DMR) for each permitted production tier on a monthly basis..."

(d). Order of Definitions: The order of the definitions (Part IV, page 2) for "E. coli" (#15) and "Division" (#16) should be reversed to be in alphabetical order.

(e). Discussion of New Manufacturing Units: In the Fact Sheet (Section 4, page 2), the discussion of the new production units contains a typographic error. The text should be revised as follows: "Response: The effluent limitations of Tier II at Outfall 001 ... are being revised to accommodate ~~for~~ addition of the proposed steel manufacturing units."

(f). Use of Abbreviation: In the Fact Sheet (Section 4, page 4), the discussion of the vehicle wash pad contains a typographic error. The term "MGD" has already been defined. The text should be revised as follows: "The daily flow rate is conservatively estimated to be 0.0072 ~~million gallons per day (~~MGD~~)~~ [10 gpm * 60 minutes/hour * 12 hours per day of operation]."

(g). Descriptions of Slag Yard Pond: The language in the Fact Sheet refers to "ponds" in two paragraphs. There is only one pond at the slag yard. The text should be revised as follows:

- Fact Sheet, Section 8.B (page 8): "Outfall 002: sedimentation pond~~s~~"
- Fact Sheet, Section 10 (page 9): "Solids generated by the stormwater/slag quenching water runoff treatment system will remain in the sedimentation pond~~s~~."

(h). Description of Solids Practices: In the Fact Sheet (Section 10, page 9), the discussion of the solids management practices contains a typographic error. The word "dry" should be changed to "drying." This paragraph should also be updated to include mention of the proposed rotary sludge thickener. The text should be revised as follows: "Solids generated by the process wastewater treatment system will be dewatered through the press plate filter, or by rotating filtration or air dry**ing** in the sludge processing area, and disposed of at a nearby landfill."

(i). Description of Calculations: In the Fact Sheet (Section 11.C, page 14), the discussion of the method used to calculate the permit limits contains a typographic error. The text should be revised as follows: "Outfall 002: Mass limits are not feasible for this outfall because the runoff through the system depends more on meteorological conditions~~, rather~~ than on the operations of the steel mill."

Response: The permit language will be updated as requested with the exception of (h).

Summary of Changes to the permit			
Part	Draft Permit	Final Permit	Comment #
Permit Cover Page Part IA Section A3	slag pile	slag yard	4
Part IA Section A3	1. Flow is to be calculated based upon pump run times and the pump rating curve	Update the table and footnotes to allow the installation of flow meter	3
Part II Section 10	permit modification	renewal permit	4