

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 2305-AOP-R7 AFIN: 47-00991

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Big River Steel LLC  
2027 E. State Hwy 198  
Osceola, Arkansas 72370

3. PERMIT WRITER:

Jesse Smith

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Iron and Steel Mills and Ferroalloy Manufacturing  
NAICS Code: 33111

5. ALL SUBMITTALS:

The following is a list of ALL permit applications included in this permit revision.

Date of Application	Type of Application (New, Renewal, Modification, Deminimis/Minor Mod, or Administrative Amendment)	Short Description of Any Changes That Would Be Considered New or Modified Emissions
7/23/2020	Modification	Updated heat input on multiple sources, inclusion of two additional batch annealing furnaces (BAFs). Addition of new coil coating line Five new emergency generators New hydrogen plant

6. REVIEWER'S NOTES:

Big River Steel, LLC owns and operates a steel mill located at 2027 E. State Hwy 198 in Osceola, AR. This permitting modification makes the following changes to the existing permit:

- Updated the heat input on SN-29
- Revised heat input of SN-39 to include two additional Batch Annealing Furnaces (BAFs) total heat input increases from 85.15 MMBtu/hr to 117.9 MMBtu/hr
- Revised the flow rates for SN-35 and SN-37.
- Revised the heat input of SN-51 and SN-53. An inline skin pass mill also added to enhance the Annealing and Coating Line process.
- Revised PM, PM<sub>10</sub>, and PM<sub>2.5</sub> emission factors for natural gas fired combustion sources to be consistent with previous changes to the permit, resulting in updated BACT for some sources.
- Added a new coil coating line, including a pre-treatment section, prime and finish coating, natural gas fired combustion devices, a cooling tower, and a truck washing operation.
- Incorporation of five new diesel fired generators rated at 2700 kW each. Each of these generators are limited to operating no more than 100 hours per year for readiness testing and emergency backup purposes only.
- Installation of a 500-gallon gasoline storage tank to support the slag handling operation.
- Installation of a new hydrogen plant.
- Updated insignificant activities, adding two new welding activities.

As a result of these changes to emissions, the facility is now classified as a major source of HAPs. Relevant conditions have been added from NESHAP Subparts CCC, SSSS, DDDDD, and EEEEE. The facility is no longer subject to NESHAP Subparts CCCCC and YYYYY as the facility is now a major source of HAPs and those conditions have been removed. The permitted emission changes as a result of this modification are as follows: an increase of 8.6 tpy PM, an increase of 14.2 tpy PM<sub>10</sub>, an increase of 14.2 tpy PM<sub>2.5</sub>, an increase of 1 tpy SO<sub>2</sub>, an increase of 155.7 tpy VOC, an increase of 99.1 tpy CO due to this project and 13 tpy CO due to previous projects, totaling in an increase of 112.1tpy CO, an increase of 83.7 tpy NO<sub>x</sub>, an increase of 73,168 tpy CO<sub>2e</sub>, an increase of 0.4 tpy H<sub>2</sub>SO<sub>4</sub>, and an increase of 68.8 total HAPs related to the Coil Coating line.

The PSD regulations mandate that a case-by-case Best Available Control Technology (BACT) analysis be performed on all new or modified affected sources at which a net emissions increase will occur. The following table is a summary of the BACT determinations made in this permit.

BACT Analysis Summary				
Source	Description	Pollutant	Control Technology	BACT Limit
SN-29	Galvanizing Line #2 Furnace	PM	Combustion of Natural gas and Good Combustion Practice	0.0012 lb/MMBTU
		PM <sub>10</sub>		0.0012 lb/MMBTU
		PM <sub>2.5</sub>		0.0012 lb/MMBTU
		Opacity		5%
		SO <sub>2</sub>		0.000588 lb/MMBTU
		VOC		0.0054 lb/MMBTU
		CO		0.0824 lb/MMBTU

BACT Analysis Summary				
Source	Description	Pollutant	Control Technology	BACT Limit
		NO <sub>x</sub>	SCR, Low NO <sub>x</sub> burners Combustion of clean fuel Good Combustion Practices	0.035 lb/MMBTU
		GHG	Good operating practices	CO <sub>2</sub> 117 lb/MMBTU CH <sub>4</sub> 0.0022 lb/MMBTU N <sub>2</sub> O 0.0002 lb/MMBTU
SN-35 and SN-37	Galvanizing Line Caustic Cleaning and Post Treatment	PM	Mist Eliminator	0.003 gr/dscf
		PM <sub>10</sub>		
		PM <sub>2.5</sub>		
		Opacity		
SN-38a SN-38b	SN-38a Skin Pass Mill #1	PM	Mist Eliminator	0.0025 gr/dscf
		PM <sub>10</sub>		0.0066 gr/dscf
	PM <sub>2.5</sub>	0.0066 gr/dscf		
	Opacity	5%		
SN-39	Annealing Furnaces	PM	Combustion of Natural gas and Good Combustion Practice	0.0075 lb/MMBTU
		PM <sub>10</sub>		0.0075 lb/MMBTU
		PM <sub>2.5</sub>		0.0075 lb/MMBTU
		Opacity		5%
		SO <sub>2</sub>		0.000588 lb/MMBTU
		VOC		0.0054 lb/MMBTU
		CO		0.0824 lb/MMBTU
	NO <sub>x</sub>	Low NO <sub>x</sub> burners Combustion of clean fuel Good Combustion Practices	0.1 lb/MMBTU	
	GHG	Good operating practices	CO <sub>2</sub> 117 lb/MMBTU CH <sub>4</sub> 0.0022 lb/MMBTU N <sub>2</sub> O 0.0002 lb/MMBTU	
	SN-40, SN-42	Decarburizing Line Furnace Section	PM	Combustion of Natural gas and Good Combustion Practice
PM <sub>10</sub>			0.013 lb/MMBTU	
PM <sub>2.5</sub>			0.013 lb/MMBTU	
Opacity			5%	
SO <sub>2</sub>			0.000588 lb/MMBTU	
VOC			0.0054 lb/MMBTU	
CO			0.0824 lb/MMBTU	

BACT Analysis Summary				
Source	Description	Pollutant	Control Technology	BACT Limit
		NO <sub>x</sub>	Low NO <sub>x</sub> burners SCR Combustion of clean fuel Good Combustion Practices	0.1 lb/MMBTU
SN-47	Annealing Pickling Line Furnace Section	PM	Combustion of Natural gas and Good Combustion Practice	0.013 lb/MMBTU
		PM <sub>10</sub>		0.013 lb/MMBTU
		PM <sub>2.5</sub>		0.013 lb/MMBTU
		Opacity		5%
		SO <sub>2</sub>		0.000588 lb/MMBTU
		VOC		0.0054 lb/MMBTU
		CO		0.0824 lb/MMBTU
		NO <sub>x</sub>	Low NO <sub>x</sub> burners SCR Combustion of clean fuel Good Combustion Practices	0.1 lb/MMBTU
		GHG	Good operating practices	CO <sub>2</sub> 117 lb/MMBTU CH <sub>4</sub> 0.0022 lb/MMBTU N <sub>2</sub> O 0.0002 lb/MMBTU
SN-51	Annealing and Coating Line Furnace Section	PM	Combustion of Natural gas and Good Combustion Practice	0.013 lb/MMBTU
		PM <sub>10</sub>		0.013 lb/MMBTU
		PM <sub>2.5</sub>		0.013 lb/MMBTU
		Opacity		5%
		SO <sub>2</sub>		0.000588 lb/MMBTU
		VOC		0.0054 lb/MMBTU
		CO		0.0824 lb/MMBTU
		NO <sub>x</sub>	Low NO <sub>x</sub> burners SCR Combustion of clean fuel Good Combustion Practices	0.1 lb/MMBTU
		GHG	Good operating practices	CO <sub>2</sub> 117 lb/MMBTU CH <sub>4</sub> 0.0022 lb/MMBTU N <sub>2</sub> O 0.0002 lb/MMBTU
SN-53	Annealing and Coating Line	PM	Combustion of Natural gas and	0.016 lb/MMBTU
		PM <sub>10</sub>		0.016 lb/MMBTU

BACT Analysis Summary				
Source	Description	Pollutant	Control Technology	BACT Limit
	Drying Furnace	PM <sub>2.5</sub>	Good Combustion Practice	0.016 lb/MMBTU
		Opacity		5%
		SO <sub>2</sub>		0.000588 lb/MMBTU
		CO		0.45 lb/MMBTU
		VOC Natural gas Combustion	RTO	0.0054 lb/MMBTU
		NO <sub>x</sub>	Low NOx burners Combustion of clean fuel Good Combustion Practices	0.25 lb/MMBTU
		GHG	Good operating practices	CO <sub>2</sub> 117 lb/MMBTU CH <sub>4</sub> 0.0022 lb/MMBTU N <sub>2</sub> O 0.0002 lb/MMBTU
SN-54, SN-56	MgO Coating Lines Drying Sections	PM	Combustion of Natural gas and Good Combustion Practice	0.013 lb/MMBTU
		PM <sub>10</sub>		0.013 lb/MMBTU
		PM <sub>2.5</sub>		0.013 lb/MMBTU
		Opacity		5%
		SO <sub>2</sub>		0.000588 lb/MMBTU
		VOC		0.0054 lb/MMBTU
		CO		0.0824 lb/MMBTU
		NO <sub>x</sub>	Low NOx burners Combustion of clean fuel Good Combustion Practices	0.1 lb/MMBTU
GHG	Good operating practices	CO <sub>2</sub> 117 lb/MMBTU CH <sub>4</sub> 0.0022 lb/MMBTU N <sub>2</sub> O 0.0002 lb/MMBTU		
SN-58, SN-60	Flattening Coating Lines Furnace Sections	PM	Combustion of Natural gas and Good Combustion Practice	0.013 lb/MMBTU
		PM <sub>10</sub>		0.013 lb/MMBTU
		PM <sub>2.5</sub>		0.013 lb/MMBTU
		Opacity		5%
		SO <sub>2</sub>		0.000588 lb/MMBTU
		VOC		0.0054 lb/MMBTU
		CO		0.0824 lb/MMBTU

BACT Analysis Summary				
Source	Description	Pollutant	Control Technology	BACT Limit
		NO <sub>x</sub>	Low NO <sub>x</sub> burners SCR Combustion of clean fuel Good Combustion Practices	0.1 lb/MMBTU
		GHG	Good operating practices	CO <sub>2</sub> 117 lb/MMBTU CH <sub>4</sub> 0.0022 lb/MMBTU N <sub>2</sub> O 0.0002 lb/MMBTU
SN-105, SN-106	Coil Coating Line – Pre-Cleaning and Cleaning Sections	PM	Mist eliminator	0.003 gr/dscf
		PM <sub>10</sub>	Good operating practices	0.003 gr/dscf
		PM <sub>2.5</sub>		0.003 gr/dscf
		Opacity		5%
SN-107	Coil Coating Line – Prime/Finish Coating	VOC	Enclosed painting system Thermal oxidation Good work practices	152.6 tpy 99% Destruction
SN-108AA, SN-108B, SN-108C	Coil Coating Line – Chemical Dryer, Primer Oven, and Finish Oven	PM	Good combustion practices	0.0075 lb/MMBTU
		PM <sub>10</sub>		0.0075 lb/MMBTU
		PM <sub>2.5</sub>	Energy efficient burners	0.0075 lb/MMBTU
		Opacity		5%
		VOC	Combustion of natural gas	0.0054 lb/MMBTU
		NO <sub>x</sub>		0.05 lb/MMBTU
SN-108D	Coil Coating Line – Finish Oven	PM	Good combustion practices	0.009 lb/MMBTU
		PM <sub>10</sub>		0.009 lb/MMBTU
		PM <sub>2.5</sub>	Energy efficient burners	0.009 lb/MMBTU
		Opacity		5%
		VOC	Combustion of natural gas	0.0054 lb/MMBTU
		NO <sub>x</sub>		0.25 lb/MMBTU
SN-110a, SN-110b, SN-110c, SN-110d, SN-110e	Emergency Generators 12 through 16	PM	Good Operating Practices, limited hours of operation, Compliance with NSPS Subpart III	0.2 g/kW-Hr
		PM <sub>10</sub>		0.2 g/kW-Hr
		PM <sub>2.5</sub>		0.2 g/kW-Hr
		Opacity		20%
		SO <sub>2</sub>	<0.0015% sulfur in fuel	
		VOC	1.55 g/kW-Hr	
		CO	3.5 g/kW-Hr	
		NO <sub>x</sub>	4.86 g/kW-Hr	

BACT Analysis Summary				
Source	Description	Pollutant	Control Technology	BACT Limit
		GHG	Good Combustion Practices	CO <sub>2</sub> 163 lbs/MMBTU CH <sub>4</sub> 0.0061 lbs/MMBTU N <sub>2</sub> O 0.0013 lbs/MMBTU
SN-109	Contact Cooling Towers	PM	Drift Eliminators Low TDS	0.001 percent drift loss
		PM <sub>10</sub>		
		PM <sub>2.5</sub>		
		Opacity		5%
SN-111	Hydrogen Plant #2 Reformer Furnace (PHG830)	PM	Combustion of Natural gas and Good Combustion Practice	0.0075 lb/MMBTU
		PM <sub>10</sub>		0.0075 lb/MMBTU
		PM <sub>2.5</sub>		0.0075 lb/MMBTU
		Opacity		5%
		VOC		0.0054 lb/MMBTU
		NO <sub>x</sub>	Low NO <sub>x</sub> burners Combustion of clean fuel Good Combustion Practices	0.1 lb/MMBTU

7. COMPLIANCE STATUS:

The following summarizes the current compliance of the facility including active/pending enforcement actions and recent compliance activities and issues.

The facility was last inspected on May 14, 2019. There were no areas of concern noted at this time.

8. PSD/GHG APPLICABILITY:

a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? Y  
If yes, were GHG emission increases significant? N

b) Is the facility categorized as a major source for PSD? Y

- *Single pollutant ≥ 100 tpy and on the list of 28 or single pollutant ≥ 250 tpy and not on list*

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
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Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
01 and 02	Particulate	NSPS AAa
01 and 02	HAPs	NESHAP EEEEE
01 and 02	HAPs	MACT YYYYY
All Boilers	None	NSPS Dc
All Boilers	HAPs	NESHAP DDDDD
SN 53 and SN-105 through SN-108D	VOC	NSPS TT
All	NO <sub>x</sub> , CO, PM, PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , VOC, lead, and greenhouse gasses.	PSD
Generators	Criteria and HAPs	NSPS IIII, and NESHAP ZZZZ
100 and 100a	HAP	NESHAP CCCCC
SN-105 through SN-108D	HAP	NESHAP SSSS
SN-24, SN-24A, SN-50, SN- 59, and SN-61	HAP	NESHAP CCC

10. UNCONSTRUCTED SOURCES:

Unconstructed Source	Permit Approval Date	Extension Requested Date	Extension Approval Date	If Greater than 18 Months without Approval, List Reason for Continued Inclusion in Permit
N/A				

11. PERMIT SHIELD – TITLE V PERMITS ONLY:

Did the facility request a permit shield in this application? N

(Note - permit shields are not allowed to be added, but existing ones can remain, for minor modification applications or any Regulation 18 requirement.)

12. COMPLIANCE ASSURANCE MONITORING (CAM) – TITLE V PERMITS ONLY:

List sources potentially subject to CAM because they use a control device to achieve compliance and have pre-control emissions of at least 100 percent of the major source level. List the pollutant of concern and a brief summary of the CAM plan (temperature monitoring, CEMs, opacity monitoring, etc.) and frequency requirements of § 64.

Source	Pollutant Controlled	Cite Exemption or CAM Plan Monitoring and Frequency
N/A		

13. EMISSION CHANGES AND FEE CALCULATION:



See emission change and fee calculation spreadsheet in Appendix A.

14. AMBIENT AIR EVALUATIONS:

The following are results for ambient air evaluations or modeling.

a) NAAQS

The facility performed modeling against the SIL for PM<sub>2.5</sub> and NO<sub>x</sub> as shown below.

Pollutant	Averaging Period	AERMOD Predicted Concentration (ug/m <sup>3</sup> )	SILs (ug/m <sup>3</sup> )	Predicted Concentration Exceed SILs?
PM2.5	24-hour	0.83	1.2	No
	Annual	0.14	0.2	No
NO <sub>x</sub>	1-hour	12.4	7.52	Yes
	Annual	0.63	1.0	Yes

Only the one hour NO<sub>x</sub> was above the SIL and the results of dispersion modeling for the one hour NO<sub>x</sub> standard are summarized below.

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m <sup>3</sup> )	Averaging Time	Highest Concentration (µg/m <sup>3</sup> )	% of NAAQS
NO <sub>x</sub>	637.2	188	1-hour	178.6	95%

a) Non-Criteria Pollutants:

Non-Criteria Pollutant evaluation is based on permit 2305-AOP-R0 results as all HAP emission rates have either remained the same or not increased to a level that would significantly impact previous modelling results except for those of Isophorone added in 2305-AOP-R7.

1<sup>st</sup> Tier Screening (PAER)

Estimated hourly emissions from the following sources were compared to the Presumptively Acceptable Emission Rate (PAER) for each compound. The Department has deemed the PAER to be the product, in lb/hr, of 0.11 and the Threshold Limit Value

(mg/m<sup>3</sup>), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV (mg/m <sup>3</sup> )	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Formaldehyde	15	1.65	0.1236	Yes
Arsenic	0.01	0.0011	0.0043	No
Cadmium	0.01	0.0011	0.00583	No
HCl	3	0.33	1.0	No
Manganese	0.2	0.022	0.161	No
Mercury	0.01	0.0011	0.061	No
Isophorone	28	3.08	7.0	No

2<sup>nd</sup> Tier Screening (PAIL)

AERMOD air dispersion modeling was performed on the estimated hourly emissions from the following sources, in order to predict ambient concentrations beyond the property boundary. The Presumptively Acceptable Impact Level (PAIL) for each compound has been deemed by the Department to be one one-hundredth of the Threshold Limit Value as listed by the ACGIH.

Pollutant	PAIL (µg/m <sup>3</sup> ) = 1/100 of Threshold Limit Value	Modeled Concentration (µg/m <sup>3</sup> )	Pass?
Arsenic	0.1	0.049	Yes
Cadmium	0.1	0.0003	Yes
HCl	30	0.0007	Yes
Manganese	2	0.012	Yes
Mercury	0.1	0.0043	Yes
Isophorone	280	3.16	Yes

b) H<sub>2</sub>S Modeling:

A.C.A. §8-3-103 requires hydrogen sulfide emissions to meet specific ambient standards. Many sources are exempt from this regulation, refer to the Arkansas Code for details.

Is the facility exempt from the H<sub>2</sub>S Standards

Y

If exempt, explain: No H<sub>2</sub>S emissions

15. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
All	All criteria pollutants based on BACT limits				
01 and 02 HAPs	AP-42	Varied	Baghouse	99%+	
Natural Gas HAPs	AP-42	Varied	None		
Pickling Lines HCl	Manufacturer Estimates	Varied	Scrubbers		
100	TANKS 4.0 software				
105 and 106	Vendor Specification	Varied	Mist Eliminator	75%	
108a, 108b, 108c, and 111	AP-42 1.4	Lb/MMBtu: 0.0075 PM/PM <sub>10</sub> /PM <sub>2.5</sub> 0.000588 SO <sub>2</sub> 0.10 NO <sub>x</sub> 0.0054 VOC 0.0824 CO 4.90E-07 Lead			
108d	Modified AP-42 to account for natural gas and additional formation from RTO destruction	Lb/MMBtu: 0.009 PM/PM <sub>10</sub> /PM <sub>2.5</sub> 0.000588 SO <sub>2</sub> 0.25 NO <sub>x</sub> 0.0054 VOC 0.45 CO 4.90E-07 Lead			
SN-110a through SN-110e	AP-42 Table 3.4-1	Lb/hp-hr: 0.00023 PM/PM <sub>10</sub> /PM <sub>2.5</sub> 0.00001 SO <sub>2</sub> 0.0087 NO <sub>x</sub> 0.0003 VOC 0.0020 CO 0.000001 H <sub>2</sub> SO <sub>4</sub>			

## 16. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
01 and 02	PM, PM <sub>10</sub> , PM <sub>2.5</sub> ,	5D and 201 or 201A	Initial and annual	NSPS and PSD limit verification
01 and 02	AAa required information (fan motor amps, etc.)	None specified	Initial and annual	NSPS requirement
01 and 02	NO <sub>x</sub> , SO <sub>2</sub> , CO, CO <sub>2</sub> , VOC	7E, 6C, 3A, 10, 25A	Semi annually	To verify compliance with BACT emission rates
01 and 02	Lead	12	Annually	To verify BACT limits
04, 22, 26, 27, 101	PM <sub>2.5</sub> , CO, NO <sub>x</sub>	202, 10, 7E	Initial and 5 years	Verification of BACT emission limits
03	Flare design	40 CFR 60.18(b) through (f)	Initial only	To verify flare is design is capable of achieving BACT limits
03	CO <sub>2</sub>	Material analysis	Semi Annually	To show compliance with BACT limits
39 51, 58, 60 53 54-56	PM <sub>2.5</sub> and PM <sub>10</sub>	5D and 201 or 201A	Initial	To show compliance with BACT limits
53 105 – 108D	VOC	25A	Initial	NSPS TT Requirement
Cooling Towers	TDS	TDS testing	6 months	Verification of BACT limits
Pickling Line Scrubbers	HCl	26	Initial	Demonstration of Compliance with Applicable provisions of NESHAP Subpart CCC

## 17. MONITORING OR CEMS:

The permittee must monitor the following parameters with CEMS or other monitoring equipment (temperature, pressure differential, etc.)

SN	Parameter or Pollutant to be Monitored	Method (CEM, Pressure Gauge, etc.)	Frequency	Report (Y/N)
01 and 02	AAa required monitoring	Fan amps, damper positions, etc.	Vary according to reading	Y
53 105-108D	RTO temperature	Thermocouple	Continuous (3hr averages)	Y

18. RECORDKEEPING REQUIREMENTS:

The following are items (such as throughput, fuel usage, VOC content, etc.) that must be tracked and recorded.

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
01 and 02	AAa Records	None	Vary	Y
01 and 02	EEEEEE Records	None	Vary	Y
03	Degasser steel throughput	1,500,000 tons per 12 months	Monthly	Y
53 105-108D	Subpart TT Records	None	Vary	Y
Emergency Engines	Hours of operation	100	Monthly	Y
Cooling Towers	TDS readings	Vary per tower	Semi annually	Y
82, 84, 86, 88, 90, 103	Materials received	175,830 79,204 175,830 680,000 680,000 210,240	Monthly	Y
Slag Handling	Tons of slag	650,000	Monthly	Y
100	Gasoline Throughput	Less than 10,000 gallons per month	Monthly	Y
105-108D	Subpart SSSS Records	None	Vary	Y
04, 22, 26, 27, and 101	Subpart DDDDD Records	None	Vary	Y

19. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
01 and 02 Exhaust Stacks	3%	NSPS/BACT	Daily observations
01 and 02 Meltshop	6%	NSPS/BACT	Daily observations
All natural gas burners	5%	BACT/Department Guidance	Combustion of natural gas only
91	5%	BACT/Department Guidance	Weekly Observation
Rolling Mill sources	5%	BACT/Department Guidance	Weekly Observation on building

20. DELETED CONDITIONS:

Former SC	Justification for removal
	N/A

21. GROUP A INSIGNIFICANT ACTIVITIES:

The following is a list of Insignificant Activities including revisions by this permit.

Source Name	Group A Category	Emissions (tpy)							Lead
		PM/PM <sub>10</sub>	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	HAPs		
							Single	Total	
Water Bath Vaporizer	A-1	0.30	0.02	0.22	4.37	2.39	2.90 E-03	0.004	1.93 E-06
Tundish Dryer	A-1	0.30	0.02	0.21	1.46	3.19	2.90 E-03	0.004	1.93 E-05
Continuous Galvanizing Line Dryer	A-1	0.20	0.02	0.15	2.99	4.26	2.00 E-03	0.003	1.33 E-05
Reformer Furnace (PHG830)	A-1	0.34	0.01	0.25	0.14	0.38	0.003	0.003	-
Laboratory Test Furnace	A-1	6.7 E-04	5.2 E-05	4.8 E-04	0.008	0.009	1.60 E-04	1.60 E-04	-
Diesel Fuel Tanks	A-3	-	-	0.004	-	-	-	-	-
Engine Oil Tank	A-3	-	-	1.3 E-05	-	-	-	-	-
Steel	A-7	0.4	-	-	-	-	0.001	0.002	-

Cutting									
Railcar Cutting Operation	A-7	0.4	-	-	-	-	0.001	0.002	-
Tundish Cutting Tool	A-7	0.4	-	-	-	-	0.001	0.002	-
Induced Draft Mechanical Cooling Tower	A-13	0.56	-	-	-	-	-	-	-
HCL Storage Tanks	A-13	-	-	-	-	-	0.02	0.02	-
Air Products Cooling Towers #1 and #2	A-13	1.48	-	-	-	-	-	-	-

22. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

The following is a list of all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
2305-AOP-R6





## APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

## Fee Calculation for Major Source

Revised 03-11-16

Big River Steel LLC  
 Permit #: 2305-AOP-R7  
 AFIN: 47-00991

\$/ton factor	23.93	Annual Chargeable Emissions (tpy)	<u>2547.8813</u>
Permit Type	Modification	Permit Fee \$	<u>6102.1483</u>

Minor Modification Fee \$	500
Minimum Modification Fee \$	1000
Renewal with Minor Modification \$	500

Check if Facility Holds an Active Minor Source or Minor Source General Permit

If Hold Active Permit, Amt of Last Annual Air Permit Invoice \$ 0

Total Permit Fee Chargeable Emissions (tpy) 254.99993

Initial Title V Permit Fee Chargeable Emissions (tpy)

*HAPs not included in VOC or PM:*

*Chlorine, Hydrazine, HCl, HF, Methyl Chloroform, Methylene Chloride, Phosphine, Tetrachloroethylene, Titanium Tetrachloride*

*Air Contaminants:*

*All air contaminants are chargeable unless they are included in other totals (e.g., H2SO4 in condensable PM, H2S in TRS, etc.)*

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
PM		318.2	326.8	8.6		
PM <sub>10</sub>		421.2	435.4	14.2	14.2	435.4
PM <sub>2.5</sub>		414.8	429	14.2		
SO <sub>2</sub>		400.8	401.8	1	1	401.8
VOC		229.4	385.1	155.7	155.7	385.1
CO		4728.9	4841	112.1		
NO <sub>x</sub>		1234.8	1318.5	83.7	83.7	1318.5
Lead	<input checked="" type="checkbox"/>	1.1638574	1.1637074	-0.00015	-0.00015	1.1637074

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
Arsenic	<input checked="" type="checkbox"/>	0.015514	0.015514	0	0	0.015514
Cadmium	<input type="checkbox"/>	0.021156	0.050756	0.0296		
Formaldehyde	<input type="checkbox"/>	0.5323	0.5025	-0.0298		
HCl	<input checked="" type="checkbox"/>	3.5	3.5	0	0	3.5
Manganese	<input type="checkbox"/>	0.803095	0.803095	0		
Mercury	<input checked="" type="checkbox"/>	0.402033	0.402113	8E-05	8E-05	0.402113
H <sub>2</sub> SO <sub>4</sub>	<input checked="" type="checkbox"/>	1.6	2	0.4	0.4	2
Isophorone	<input type="checkbox"/>	0	30.6	30.6		
MIBK	<input type="checkbox"/>	0	11.8	11.8		
Toluene	<input type="checkbox"/>	0	11.8	11.8		