STATEMENT OF BASIS

For the issuance of Draft Air Permit # 2305-AOP-R0 AFIN: 47-00991

1. PERMITTING AUTHORITY:

   Arkansas Department 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 72307

3. PERMIT WRITER:

   Shawn Hutchings

4. PROCESS DESCRIPTION AND NAICS CODE:

   NAICS Description: Iron and Steel Mills and Ferroalloy Manufacturing
   NAICS Code: 331110

5. SUBMITTALS:

   1/29/2013

6. REVIEWER'S NOTES:

Big River Steel, LLC is proposing to construct and operate a steel mill located at 2027 E. State Hwy 198 in Osceola, AR. This permit is the initial permit for a new steel mill and will include all the sources at the facility. The facility required prevention of significant deterioration review to ensure the new source will not cause a significant deterioration of the local ambient air quality. PSD review is required for NO_X, CO, PM, PM_{10}, $PM_{2.5}$, SO_2, VOC, lead, and greenhouse gasses.

7. COMPLIANCE STATUS:

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

   There are no enforcement issues with the facility. The facility is not yet constructed.

8. PSD APPLICABILITY:

a. Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? Y

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, or*
- *CO_2e potential to emit ≥ 100,000 tpy and ≥100 tpy/≥250tpy of combined GHGs?*

If yes, explain why this permit modification is not PSD.

9. GHG MAJOR SOURCE (TITLE V):

Indicate one:
☒ Facility is classified as a major source for GHG and the permit includes this designation
☐ Facility does not have the physical potential to be a major GHG source
☐ Facility has restrictions on GHG or throughput rates that limit facility to a minor GHG source. Describe these restrictions: _____

10. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
01 and 02	Particulate	NSPS AAa
01 and 02	HAPs	MACT YYYYY
All Boilers	None	NSPS Dc
SN 53	VOC	NSPS TT
All	NO_X, CO, PM, PM_{10}, $PM_{2.5}$, SO_2, VOC, lead, and greenhouse gasses.	PSD
Generators	Criteria and HAPs	NSPS IIII, and MACT ZZZZ

11. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

12. MODELING:

Criteria Pollutants

The facility was required to do PSD modeling for all criteria pollutants. Refer to the permit for the results of that modeling.

Non-Criteria Pollutants:

1st 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^3), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV (mg/m^3)	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

2nd 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 ($\mu g/m^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu g/m^3$)	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

13. 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		

14. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
01 and 02	PM, PM_{10}, $PM_{2.5}$,	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_x, SO_2, CO, CO_2, VOC	7E, 6C, 3A, 10, 25A	Semi annually	To verify compliance with BACT emission rates
01 and 032	Lead	12	Annually	To verify BACT limits
04, 22, 26, 27	$PM_{2.5}$, CO, NO_x	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_2	Material analysis	Semi Annually	To show compliance with BACT limits
05-09 10-11 12-13 16-19 20-21 28-29	$PM_{2.5}$ and PM_{10}	202, 10, and 7E	Initial	To show compliance with BACT limits

SN	Pollutants	Test Method	Test Interval	Justification
39 51, 58, 60 53 54-56				
52	VOC	25A	Initial	NSPS TT Requirement
Cooling Towers	TDS	TDS testing	6 months	Verification of BACT limits
Pickling Line Scrubbers	HCl	26	Initial	Verification of permit limits and ensure facility is not a Major Source of HAPs

15. 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	NO_x, SO_2, CO, CO_2, VOC	CEM (optional in lieu of semi annual testing)	Continuous	Y
01 and 02	AAa required monitoring	Fan amps, damper positions, etc…	Vary according to reading	Y
52	RTO temperature	Thermocouple	Continuous (3hr averages)	Y

16. 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	Steel Throughput	3.4 or 6.8 million	Monthly	Y
01 and 02	AAa Records	None	Vary	Y
01 and 02	YYYYY Records	None	Vary	Y
03	Degasser steel throughput	1,500,000 tons per 12 months	Monthly	Y

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
52	Subpart TT Records	None	Vary	Y
25, 38, 44, 45, 46	Hours of operation	6080	monthly	Y
Emergency Engines	Hours of operation	100	Monthly	Y
Cooling Towers	TDS readings	Vary per tower	Semi annually	Y
82, 84, 86, 88, 90	Materials received	175,830 49,210 175,830 680,000 680,000	Monthly	Y

17. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
01 and 02	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

18. DELETED CONDITIONS:

Former SC	Justification for removal
Initial Permit no deleted conditions	

19. GROUP A INSIGNIFICANT ACTIVITIES

The application contained many references to activities which it states are insignificant. The applicant was asked multiple times to provide forms and calculations to include activities. No forms were provided and no activities were added to the permit.

20. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

List all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
N/A

21. CONCURRENCE BY:

The following supervisor concurs with the permitting decision.

Phillip Murphy, P.E.

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 08-20-12

Big River Steel LLC
Permit #: 2305-AOP-R0
AFIN: 47-00991

$/ton factor	22.97	Annual Chargeable Emissions (tpy)	2068.7
Permit Type	Modification	Permit Fee $	47518.039

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)	2068.7
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 condensible 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	☐	0	238.1	238.1		
PM_{10}	☐	0	0	0		
SO_2	☑	0	350.3	350.3	350.3	350.3
VOC	☑	0	194.1	194.1	194.1	194.1
CO	☐	0	3949.7	3949.7		
NO_X	☑	0	1198.9	1198.9	1198.9	1198.9
Lead	☐	0	0.963618	0.963618		
GHG	☐	0	930462	930462		
Arsenic	☐	0	0.013379	0.013379		
Cadmium	☐	0	0.017576	0.017576		
Formaldehyde	☐	0	0.4323	0.4323		
HCl	☑	0	3.5	3.5	3.5	3.5
H_2SO_4	☑	0	0.6	0.6	0.6	0.6
Manganese	☐	0	0.602625	0.602625		
Mercury	☐	0	0.201782	0.201782		
PM10	☑	0	321.3	321.3	321.3	321.3
PM2.5	☐	0	315.9	315.9		