

Commonwealth of Kentucky
Division for Air Quality
STATEMENT OF BASIS / SUMMARY

Conditional Major, Operating

Permit: F-24-033

B & W Resources, Inc.

Pioneer Preparation Plant

KY 1088

Sassafras, KY 41659

6/21/2024

Yelena Goldin, Reviewer

SOURCE ID: 21-119-00018

AGENCY INTEREST: 2516

ACTIVITY: APE20240003

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SECTION 1 – SOURCE DESCRIPTION

SIC Code and description: 1222, Bituminous Coal Underground Mining

Single Source Det. ☐ Yes ☒ No If Yes, Affiliated Source AI:

Source-wide Limit ☒ Yes ☐ No If Yes, See Section 4, Table A

28 Source Category ☐ Yes ☒ No If Yes, Category:

County: Knott

Nonattainment Area ☒ N/A ☐ PM₁₀ ☐ PM_{2.5} ☐ CO ☐ NO_x ☐ SO₂ ☐ Ozone ☐ Lead

If yes, list Classification:

PTE* greater than 100 tpy for any criteria air pollutant ☒ Yes ☐ No

If yes, for what pollutant(s)?

☒ PM₁₀ ☐ PM_{2.5} ☐ CO ☐ NO_x ☐ SO₂ ☐ VOC

PTE* greater than 250 tpy for any criteria air pollutant ☒ Yes ☐ No

If yes, for what pollutant(s)?

☒ PM₁₀ ☐ PM_{2.5} ☐ CO ☐ NO_x ☐ SO₂ ☐ VOC

PTE* greater than 10 tpy for any single hazardous air pollutant (HAP) ☐ Yes ☒ No

If yes, list which pollutant(s):

PTE* greater than 25 tpy for combined HAP ☐ Yes ☒ No

*PTE does not include self-imposed emission limitations.

Description of Facility:

The Pioneer Preparation Plant owned by B & W Resources, Inc. is a coal preparation plant located in Knott County, Kentucky.

SECTION 2 – CURRENT APPLICATION AND EMISSION SUMMARY FORM

Permit Number: F-24-033

Activity: APE20240003

Application Received: 6/11/2024

Application Complete Date(s): 6/18/2024

Permit Action: ☒ Initial ☐ Renewal ☐ Significant Rev ☐ Minor Rev ☐ Administrative

Construction/Modification Requested? ☐ Yes ☒ No

Previous 502(b)(10) or Off-Permit Changes incorporated with this permit action ☐ Yes ☒ No

Description of Action:

The source submitted an application for a conditional major permit due to source-wide potential to emit (PTE) of a regulated air pollutant exceeding 100 tpy. It requested federally enforceable limits of less than 90 tpy for PM₁₀. In the review process, the Division made the following changes:

- Permit language was updated to be consistent and clear.
- The calculations of several fugitive emission points were revised to count towards Title V PTE.
- PM emissions increased artificially due to updated calculations pertaining to fugitive emissions.
- Existing EP 0102 previously missing from the permit (but not from EIS) was added.
- The existing equipment – EP 0102, EP 0122, EP 0126, EP 0128, EP 0130, EP 0132, EP 0135 and EP 0138 were added to the permit.
- All emission points with enclosure were updated to be subject to 401 KAR 59:010.

Pollutant	2023 Actual (tpy)	PTE F-24-033 (tpy)
PT	10.73	378.9
PM ₁₀	3.936	377.6
PM _{2.5}	1.61	67.03

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS

Emission Points 0101 – 0102, 0117, 0601				
Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
PM	Opacity < 20%	40 CFR 60.254(a)	See Comments	US. EPA Reference Method 9 Testing and Daily Qualitative Visual Observations
Process Description:				
EP	Name	Capacity (tons/hr)	Construction Date	Control Device
0101	Truck Dump (Raw Coal) (TP-01)	1000	6/1/1992	Wet Suppression
0102	Loadout (End-Loader from Stockpile OS-8 to Receiving Hopper BS-01)	1000		
0117	Preparation Plant	1000		
0601	Loadout (TP-72)	1000	8/1/2004	Min Drop Height
Applicable Regulation:				
<p>401 KAR 60:005 Section 2(2)(gg), 40 C.F.R. 60.250 through 60.258 (Subpart Y), Standards of Performance for Coal Preparation and Processing Plants. This regulation is applicable to affected facilities in coal preparation and processing plants that process more than 181 megagrams (Mg) (200 tons) of coal per day constructed after October 27, 1974.</p>				
Comments:				
<p>Emission factors for the emission points above came from DAQ Minerals Emission Factors Worksheet as the following: PT = 0.0004 lb/ton (Truck Dump: EP 0101) PT = 0.0003 lb/ton (Loadouts: EP 0102, EP 0601)</p>				
<p>The affected facilities constructed after October 27, 1974 but on or before April 28, 2008 that operate in association with any coal processing and conveying equipment, coal storage system, or coal transfer and loading system processing coal shall not exhibit gases greater than or equal to 20% opacity. Emission Points 0101, 0102, 0117 and 0601 are considered fugitive emissions since they are not enclosed in buildings; hence the requirements from 401 KAR 59:010 do not apply.</p>				

Emission Points 0103 – 0106, 0110 – 0116, 0121 – 0151, 0153 – 0155, 0158 – 0163, 0201 – 0205, 0602				
Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
PM	< 20% Opacity	40 CFR 60.254(a)	N/A	U.S. EPA Reference Method 9 Testing Daily Qualitative Visual Observations
	E = 2.34 for P ≤ 0.5 ton/hr E = 3.59P ^{0.62} for P from 0.5 ton/hr to 30 ton/hr E = 17.31P ^{0.16} for P > 30 ton/hr	401 KAR 59:010, Section 3(2)	See Comments	Operating and Properly Maintaining the Control Device
	< 20% Opacity	401 KAR 59:010, Section 3(1)	N/A	Assumed when complying with 40 CFR 60.254(a)
Process Description:				
EP	Name	Capacity (tons/hr)	Construction Date	Control Device
0103	Receiving Hopper (Raw Coal Truck Dump) (BS-01)	1000	6/1/1992	Enclosed (Metal Building-Like Structure)
0104	Screen (Single-Deck Scalping) (SS-01)	1000	8/1/2004	
0105	Primary Crusher (CR-01)	1000	6/1/1992	
0106	Conveyor and Transfer Points (Raw Coal) (BC-01)	1000		
0110	Truck Loadout (Raw Coal) (TP-73)	1000	8/1/2004	
0111	Receiving Hopper (Raw Coal) (BS-13)	1000		
0112	Primary Crusher (CR-05)	1000		
0113	Conveyor and Transfer Points (Raw Coal) (BC-28)	1000		
0114	Conveyor and Transfer Points (Radial Stacker, Raw Coal) (BC-29)	1000		
0115	Receiving Hopper (Truck Dump Stoker Coal) (BS-14)	1000		
0116	Conveyor and Transfer Points (Plant Feed, Raw Coal) (BC-02)	1000	6/1/1992	
0121	Conveyor and Transfer Points (Refuse Belt) (BC-26)	450		
0122	Storage Bin (Refuse) (BS-11)	450		
0123	Truck Loadout (Refuse) (TP-69)	450		
0124	Conveyor and Transfer Points (Fines Belt) (BC-03)	1000		Enclosed (Metal

0125	Conveyor and Transfer Points (Stoker Coal) (BC-04)	1000		Cover)
0126	Storage Bin (Fines) (BS-02)	1000		Enclosed (Metal Building- Like Structure)
0127	Truck Loadout (Fines) (TP-13)	1000		
0128	Storage Bin (Fines) (BS-03)	1000		
0129	Truck Loadout (Fines) (TP-13)	1000		
0130	Storage Bin (Surge) (BS-04)	1000		
0131	Truck Loadout (TP-13)	1000		
0132	Storage Bin (Surge) (BS-05)	1000		
0133	Truck Loadout (TP-13)	1000		
0134	Conveyor and Transfer Points (Stocker) (BC-05)	1000		Enclosed (Metal Cover)
0135	Storage Bin (Stocker) (BS-06)	1000	6/1/1992	Enclosed (Metal Building- Like Structure)
0136	Truck Loadout (Stocker) (TP-18)	1000		Enclosed (Metal Cover)
0137	Conveyor and Transfer Points (Clean Coal) (BC-06)	1000		Enclosed (Metal Building- Like Structure)
0138	Weigh Bin (BS-07)	1000		Enclosed (Metal Cover)
0139	Conveyor and Transfer Points (Clean Coal) (BC-07)	1000		
0140	Conveyor and Transfer Points (Clean Coal) (BC-08)	1000		
0141	Conveyor and Transfer Points (Stockpile Feed) (BC-09)	1550		
0142	Truck Loadout (Stocker Coal) (TP-37)	1000		8/1/2004
0143	Receiving Hopper (Stocker Coal Truck Dump) (BS-08)	1000	6/1/1992	Enclosed (Metal Cover)
0144	Conveyor and Transfer Points (Clean Coal Screen Feed) (BC-15)	1000		Enclosed (Metal Building- Like Structure)
0145	Screen (Grizzly) (SS-02)	1000		
0146	Screen (Triple-Deck) (SS-03)	1000		
0147	Screen (Double-Deck) (SS-04)	1000		
0148	Primary Crusher (CR-02)	1000		

0149	Primary Crusher (CR-03)	1000		Enclosed (Metal Cover)
0150	Conveyor and Transfer Points (Clean Coal) (BC-16)	1000		
0151	Conveyor and Transfer Points (Stockpile Feed) (BC-17)	1000		
0153	Conveyor and Transfer Points (Stockpile Feed) (BC-18)	1000		
0154	Conveyor and Transfer Points (Stockpile Feed) (BC-11)	1550		
0155	Conveyor and Transfer Points (Stockpile Feed) (BC-13)	1550		
0158	Conveyor and Transfer Points (Tunnel Belt) (BC-19)	4800		
0159	Conveyor and Transfer Points (Clean Coal) (BC-20)	4800		
0160	Conveyor and Transfer Points (Tunnel Belt) (BC-21)	4800		
0161	Conveyor and Transfer Points (Loadout Feed) (BC-22)	4800		
0162	Railcar Loadout Bin #1 (TP-57)	4800		Enclosed (Metal Building- Like Structure)
0163	Railcar Loadout #1 (TP-58)	4800	6/1/1992	Enclosed (Metal Cover)
0201	Raw Coal Stacking Tube Silo (ST-1)	1550	6/1/1992	Enclosed (Standpipe)
0202	Clean Coal Stacking Tube Silo (ST-2)	1550		
0203	Clean Coal Stacking Tube Silo (ST-3)	1550		
0204	Clean Coal Stacking Tube Silo (ST-4)	1550		
0205	Clean Coal Stacking Tube Silo (ST-5)	1550		
0602	Receiving Hopper (Raw Coal Truck Dump) (BS-15)	1000	8/1/2004	Enclosed (Metal Building- Like Structure)

Applicable Regulation:

401 KAR 59:010, New process operations. This regulation is applicable to each affected facility, associated with a process operation, which is not subject to another emission standard with respect to particulates, commenced on or after July 2, 1975.

401 KAR 60:005 Section 2(2)(gg), 40 C.F.R. 60.250 through 60.258 (Subpart Y), Standards of Performance for Coal Preparation and Processing Plants. This regulation is applicable to affected facilities in coal preparation and processing plants that process more than 181 megagrams (Mg) (200

tons) of coal per day constructed after October 27, 1974.

Comments:

The affected facilities constructed after October 27, 1974 but on or before April 28, 2008 that operate in association with any coal processing and conveying equipment, coal storage system, or coal transfer and loading system processing coal shall not exhibit gases greater than or equal to 20% opacity.

Emission factors for the emission points above came from DAQ Minerals Emission Factors Worksheet as the following:

PT = 0.0004 lb/ton (Receiving Hoppers: EP 0103, EP 0111, EP 0115, EP 0143, EP 0602)

PT = 0.0003 lb/ton (Loadouts: EP 0110, EP 0123, EP 0127, EP 0129, EP 0131, EP 0133, EP 0136, EP 0142)

PT = 0.0002 lb/ton (Crushers: EP 0105, EP 0112, EP 0148, EP 0149)

PT = 0.02 lb/ton (Stacking Tubes: EP 0201, EP 0202, EP 0203, EP 0204, EP 0205)

PT = 0.0003 lb/ton (Conveyors: EP 0106, EP 0113, EP 0114, EP 0116, EP 0121, EP 0124, EP 0125, EP 0134, EP 0137, EP 0139, EP 0140, EP 0141, EP 0144, EP 0150, EP 0151, EP 0153, EP 0154, EP 0155, EP 0158, EP 0159, EP 0160, EP 0161)

PT = 0.0003 lb/ton (Screens: EP 0104, EP 0145, EP 0146, EP 0147)

PT = 0.02 lb/ton (Bins: EP 0122, EP 0126, EP 0128, EP 0130)

For the equation to determine PM Emission limit in 401 KAR 59:010, Section 3:

E = rate of emission in lb/hr and P = process weight rate in tons/hour

Hourly emission rate can be calculated (if needed) using the following equation:

Hourly Emission Rate = [Monthly processing rate x Emission Factor as determined from AP-42 / (Hours of operation per month)] x (1 – control efficiency).

Emission Points 0206 – 0209, 0701, 0501

Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
PM	No Visible Emissions Beyond Property Line	401 KAR 63:010	See Comments	See Comments

Process Description:

EP	Name	Capacity (tons/hr)	Construction Date
0206	Stockpile (Open) (Clean Coal) (OS-6)	1550	8/1/2004
0207	Stockpile (Open) (Raw Coal) (OS-8)		
0208	Stockpile (Open) (Raw Coal) (OS-9)	1000	
0209	Stockpile (Open) (Raw Coal) (OS-10)		
0701	Stockpile (Open) (Clean Coal) (OS-11)	560	
0501	Haul Road (Unpaved - 1.25 miles)	1000	6/1/1992

Emission Points 0206 – 0209, 0701, 0501**Applicable Regulation:**

401 KAR 63:010, Fugitive emissions. This regulation is applicable to each affected facility which emits or may emit fugitive emissions provided that the fugitive emissions from such facility are not elsewhere subject to an opacity standard within the administrative regulations of the Division for Air Quality.

Comments:

Emission factors for EP 0501 came from AP-42 Chapter 13.2.2 Eqns 1a and 2 as calculated to be the following:

PT = 0.02905

PM10 = 0.00341

PM2.5 = 0.000341

Emission factors for the remaining points above came from DAQ Minerals Emission Factors Worksheet as the following:

PT = 0.0343 lb/ton (Stockpiles)

If fugitive dust emissions beyond the lot line of the property are observed, the permittee shall conduct Reference Method 22 (visual determination of fugitive emissions) observations per Appendix A of 40 C.F.R. Part 60. In lieu of conducting U.S. EPA Reference Method 22, the permittee shall immediately perform a corrective action which results in no visible fugitive dust emissions beyond the lot line of the property.

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS (CONTINUED)

Testing Requirements/Results

Emission Points	Control Device	Parameter	Regulatory Basis	Frequency	Test Method	Permit Limit Opacity	Test Result	Operating Parameter(s) Established During Test	Activity Graybar	Date of last Compliance Testing
0103 – 0106, 0110 – 0116, 0121 – 0151, 0153 – 0155, 0158 – 0163, 0201 – 0205, 0602	Process Enclosed	Opacity	40 CFR 60.257(a)(1)	Initial	Method 9	< 20%	-*	-	TBD	TBD
0101 – 0102, 0117, 0601	Wet Suppression	Opacity	40 CFR 60.257(a)(1)	Initial	Method 9	< 20%	-*	-	TBD	TBD

Footnotes:

* No record of initial testing performed.

SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS

Table A - Group Requirements:

Emission and Operating Limit	Regulation	Emission Points
90 tpy of PM ₁₀ emissions	401 KAR 52:030, <i>Federally-enforceable permits for nonmajor sources</i>	Source-wide

Table B - Summary of Applicable Regulations:

Applicable Regulations	Emission Points
401 KAR 59:010, New process operations	0103 – 0106, 0110 – 0116, 0121 – 0151, 0153 – 0155, 0158 – 0163, 0201 – 0205, 0602
401 KAR 60:005 Section 2(2)(gg), 40 C.F.R. 60.250 through 60.258 (Subpart Y), Standards of Performance for Coal Preparation and Processing Plants	0101 – 0106, 0110 – 0117, 0121 – 0151, 0153 – 0155, 0158 – 0163, 0201 – 0205, 0601, 0602
401 KAR 63:010, Fugitive emissions	0206 – 0209, 0701, 0501

Table C - Summary of Precluded Regulations:

Not applicable

SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS (CONTINUED)

Table D - Summary of Non Applicable Regulations:

Not applicable

Air Toxic Analysis

Not applicable

Single Source Determination

Not applicable

SECTION 5 – PERMITTING HISTORY

Permit	Permit Type	Activity#	Complete Date	Issuance Date	Summary of Action	PSD/Syn Minor
C-93-180	Initial	C820	11/5/1993	12/13/1993	Addition of Coal Tipple, Conveyors and Storage Hoppers	N/A
S-96-289	Initial	E607	10/1/1996	11/25/1996	Addition of a Unit Train Loadout to be Included with the Prep Plant	N/A
S-04-040	Revision	APE20040001	6/23/2004	6/25/2004	Addition of Six Conveyors, Rail Loadout Bin, Rail Loadout, Four Receiving Hoppers, a Primary Crusher, and Four Stockpiles	N/A
S-07-011	Revision	APE20050001	1/8/2007	1/18/2007	Name/Ownership Change from Diamond May Coal Co. to Enterprise Mining Co., LLC	N/A
S-14-050	Revision	APE20140002	8/26/2014	9/19/2014	Name/Ownership Change from Enterprise Mining Co., LLC to B & W Resources, Inc.; Removal of Several Points	N/A

SECTION 6 – PERMIT APPLICATION HISTORY

Not applicable

APPENDIX A – ABBREVIATIONS AND ACRONYMS

AAQS	– Ambient Air Quality Standards
BACT	– Best Available Control Technology
Btu	– British thermal unit
CAM	– Compliance Assurance Monitoring
CO	– Carbon Monoxide
Division	– Kentucky Division for Air Quality
ESP	– Electrostatic Precipitator
GHG	– Greenhouse Gas
HAP	– Hazardous Air Pollutant
HF	– Hydrogen Fluoride (Gaseous)
MSDS	– Material Safety Data Sheets
mmHg	– Millimeter of mercury column height
NAAQS	– National Ambient Air Quality Standards
NESHAP	– National Emissions Standards for Hazardous Air Pollutants
NO _x	– Nitrogen Oxides
NSR	– New Source Review
PM	– Particulate Matter
PM ₁₀	– Particulate Matter equal to or smaller than 10 micrometers
PM _{2.5}	– Particulate Matter equal to or smaller than 2.5 micrometers
PSD	– Prevention of Significant Deterioration
PTE	– Potential to Emit
SO ₂	– Sulfur Dioxide
TF	– Total Fluoride (Particulate & Gaseous)
VOC	– Volatile Organic Compounds