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**west virginia** department of environmental protection

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Earl Ray Tomblin, Governor  
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**ENGINEERING EVALUATION / FACT SHEET**

BACKGROUND INFORMATION

Application No.: R13-0119B  
Plant ID No.: 001-00005  
Applicant: Wolf Run Mining Company  
Facility Name: Sentinel Preparation Plant  
Location: Philippi, Barbour County  
SIC Code: 1213  
Application Type: Modification  
Received Date: April 20, 2011  
Engineer Assigned: Thornton E. Martin Jr.  
Fee Amount: \$2,000.00  
Date Received: April 25, 2011 and May 09, 2011 (NSPS fees)  
Complete Date: June 06, 2011  
Applicant Ad Date: February 23, 2011 (Re-published on May 25, 2011)  
Newspaper: *The Barbour Democrat*  
UTM's: Easting: 581.2 km      Northing: 4339.2 km      Zone: 17  
Description: Applicant proposes to increase throughput of raw coal from 1,500,000 TPY to 3,200,000 TPY, clean coal throughput from 1,500,000 TPY to 3,200,000 TPY and refuse throughput from 825,000 TPY to 1,760,000 TPY.

DESCRIPTION OF PROCESS

Raw coal exits the mine by a 54" belt conveyor (BC-01). The raw coal travels on BC-01 to a double roll crusher (DR-1) and then to a double deck screen (DD-1). The coal is then transferred to a 54" belt conveyor (BC-02) and carried to a double deck screen (DD-2) and then to another double deck screen (DD-3).

Sized coal leaving DD-3 is transferred to a 48" belt conveyor (BC-03). BC-03 carries the sized coal to a stacking tube, which then transfers the coal to an open stockpile (OS-1). A dozer will transfer the sized coal from OS-1 to an underground feeder. The sized coal will exit the underground feeder to a 30" belt conveyor (BC-04) and on to the preparation plant.

Coal will exit the preparation plant onto a 36" belt conveyor (BC-05). The coal will then be

transferred to another 36" belt conveyor (BC-06). The coal will be carried by BC-06 to a stacking tube and then to an open stockpile (OS-2). A dozer will transfer coal from OS-2 to an underground feeder. The coal will exit the underground feeder via a 60" belt conveyor (BC-07) to a storage bin (Bin1). Coal is then transferred to railroad cars for delivery.

Refuse will exit DD-3 onto a 42" belt conveyor (BC-09). BC-09 carries the refuse to a 36" belt conveyor (BC-08). Refuse exiting the preparation plant will also enter onto BC-08. BC-08 will carry all refuse to a storage bin (Bin2). Refuse will exit Bin2 via two separate transfer points.

Approximately 300,000 tons per year will exit Bin2 onto a 24" belt conveyor (BC-10). The refuse will be transferred from BC-10 to a 24" belt conveyor (BC-11) and then to another 24" belt conveyor (BC-12). The refuse is then transferred to another 24" belt conveyor (BC-13), which is attached to a radial stacker. Refuse will then enter an open stockpile (OS-3) and will be removed from OS-3 via a loader onto load trucks. The trucks will exit the site using unpaved and paved access roads.

The remainder of the Bin2 refuse will exit on a 36" belt conveyor (BC-14). BC-14 will carry this refuse to a storage bin (Bin3). Refuse will exit Bin3 to a pan and will then be spread to the refuse pile.

Upon making the proposed changes via application 13-0119B, Wolf Run Mining Company's Sentinel facility will consist of one (1) double roll crusher, one (1) double deck screen, two (2) double deck vibrating screens, 14 belt conveyors, three (3) open stockpiles, one (1) clean coal bin, and two (2) refuse bins. See the following table for description, installation year, maximum throughput, control equipment, and maximum storage for all permitted equipment at the facility:

Table 1: Equipment Summary:

Equipment ID No.	Description	Year Installed	Maximum Capacity		Control Equipment
			TPH	TPY	
DR-1	Double roll crusher	1991*	1,350	3,200,000	FE
DD-1	Double deck screen	1991*	1,350	3,200,000	FE
DD-2	Double deck vibrating screen	1991*	1,350	3,200,000	FE
DD-3	Double deck vibrating screen	1991*	1,350	3,200,000	FE
<b>Belts</b>					
BC-01	Belt conveyor – raw coal	1991*	1,350	3,200,000	PE
BC-02	Belt conveyor – raw coal	1991*	1,350	3,200,000	PE
BC-03	Belt conveyor – raw coal	1991*	1,350	3,200,000	PE
BC-04	Belt conveyor – raw coal	1991*	550	3,200,000	PE
BC-05	Belt conveyor – clean coal	1991*	800	3,200,000	PE
BC-06	Belt conveyor – clean coal	1991*	800	3,200,000	PE
BC-07	Belt conveyor – clean coal	1991*	2,500	3,200,000	PE
BC-08	Belt conveyor – refuse	1991*	400	1,760,000	PE
BC-09	Belt conveyor – refuse	2009	244	300,000	PE
BC-10	Belt conveyor – refuse	2009	244	300,000	PE
BC-11	Belt conveyor – refuse	2009	244	300,000	PE
BC-12	Belt conveyor – refuse	2009	244	300,000	PE
BC-13	Belt conveyor – refuse	2009	244	300,000	PE
BC-14	Belt conveyor – refuse	1991*	400	1,760,000	PE

Equipment ID No.	Description	Year Installed	Maximum Capacity		Control Equipment
			TPH	TPY	
Storage	Description	Max. Base Area (sq. ft.)	Max. Capacity lb/hr	Max. Capacity TPY	Control Equipment
OS-01	Open stockpile – sized coal	31,416	13,350	3,200,000	WS
OS-02	Open stockpile – clean coal	31,416	13,350	3,200,000	WS
OS-03	Open stockpile – refuse	10,000	4,250	300,000	WS
Bin1	Storage bin – clean coal		300	3,200,000	FE
Bin2	Storage bin – refuse		300	1,760,000	FE
Bin3	Storage bin – refuse		300	1,760,000	FE

\*Permit acquired by Wolf Run Mining Company in 1991.

Table 2: Transfer Points:

Transfer Point ID No.	Description	Maximum Capacity		Control Device ID Number	Control Efficiency %
		TPH	TPY		
TP01	BC-01 to DR-1	1,350	3,200,000	FE-1	80
TP02	DR-1 to DD-1	1,350	3,200,000	FE-1	80
TP03	DD-1 to BC-02	1,350	3,200,000	FE-1	80
TP04	BC-02 to DD-2	1,350	3,200,000	FE-2	80
TP04A	DD-2 to DD-3	1,350	3,200,000	FE-2	80
TP05	DD-3 to BC-03	1,350	3,200,000	FE-2	80
TP06	BC-03 to OS-1	1,350	3,200,000	FE-3	80
TP07	OS-1 to Feeder	550	3,200,000	SL-TC1	75
TP08	Feeder to BC-04	550	3,200,000	FE-4	80
TP09	BC-04 to Prep Plant	550	3,200,000	FE-5	80
TP10	Prep Plant to BC-05	800	3,200,000	FE-5	80
TP11	BC-05 to BC-06	800	3,200,000	FE-6	80
TP12	BC-06 to OS-2	800	3,200,000	FE-7	80
TP13	OS-2 to Feeder	2,500	3,200,000	SL-TC2	75
TP14	Feeder to BC-07	2,500	3,200,000	FE-8	80
TP15	BC-07 to Bin1	2,500	3,200,000	FE-9	80
TP16	Bin1 to Rail	2,500	3,200,000	PE-8	50
TP17	Prep Plant to BC-08	400	1,760,000	FE-5	80
TP18	BC-08 to Bin2	400	1,760,000	FE-10	80
TP19	DD-3 to BC-09	244	300,000	FE-2	80
TP20	BC-09 to BC-08	244	300,000	PE-11	50
TP21	Bin2 to BC-10	244	300,000	FE-10	80
TP22	BC-10 to BC-11	244	300,000	PE-13	50
TP23	BC-11 to BC-12	244	300,000	PE-14	50
TP24	BC-12 to BC-13	244	300,000	PE-16	50
TP25	BC-13 to OS-3	244	300,000	PE-18	50
TP26	OS-3 to Loader	244	300,000	SW-WS1	75
TP27	Loader to Truck	244	300,000	SW-WS1	75
TP28	Bin2 to BC-14	400	1,760,000	FE-10	80
TP29	BC-14 to Bin3	400	1,760,000	FE-11	80
TP30	Bin3 to Pan	400	1,760,000	PE-19	50
TP31	Pan to Refuse Pile	400	1,760,000	SW-WS2	75

## SITE INSPECTION

This facility is inspected on a regular basis by our compliance and enforcement section from our North Central Regional Office. Mr. Brian Tephabock performed a pre-construction site inspection on August 14, 2008. The facility was found to be in compliance. During the site visit, it was determined in discussions that some throughput limits shown in the 13-0119A application needed to be increased. The changes necessary led to the application re-submittal. The re-submitted application was received by WVDAQ on October 16, 2008.

Ms. Lou Ann Lee performed a partial on-site inspection on January 13, 2010. No visual emissions were observed, only steam coming from the ground entrance. No loading was observed at the time of inspection. The facility was given a Status Code 30 - Facility in Compliance. A copy of the application will be forwarded to our North Central Regional Office and remain on file.

Directions as given in application: 200 yards north of State Route 76 at its intersection with State Route 119.

## DESCRIPTION OF FUGITIVE EMISSIONS

Potential sources of fugitive particulate emissions for this facility include emissions that are not captured by pollution control equipment, emissions from open stockpiles and vehicular traffic on paved and unpaved haulroads and work areas. The haulroads, stockpiles and work areas will be controlled by water sprays and by water truck. The water truck will be operated on a regular basis, depending on weather conditions and the operating schedule for the facility.

All belt conveyors are partially enclosed and equipment transfer points are partially enclosed. Water sprays are located at various transfer points throughout the facility to be used on an as needed basis.

An additive to prevent freezing will be utilized in the winter months when freezing conditions are present, but in keeping with MSHA Safety Standards.

## ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Fugitive emission calculations for continuous and batch drop operations, transfer points, crushing and screening, storage piles, and paved and unpaved haulroads are based on AP-42 "Compilation of Air Pollution Emission Factors." Control efficiencies were applied based on "Calculation of Particulate Matter Emission - Coal Preparation Plants and Material Handling Operations." The emission factor for crushing/breaking operations was obtained from Air Pollution Engineering Manual - Air & Waste Management Association - June 1992. The estimated emission calculations were performed by the applicant's consultant and were checked for accuracy and completeness by the writer.

Wolf Run Mining Company's proposed modification of a wet wash coal preparation plant will result in the estimated increase in potential to discharge of 10.36 pounds per hour and 134.21 tons per year of PM (particulate matter), of which 3.06 pounds per hour and 49.90 tons per year will be PM<sub>10</sub> (particulate matter less than 10 microns in diameter).

Refer to the following table for a summary of the facility's proposed emissions:

<i>Emissions Summary - Wolf Run Mining Company Philippi Facility</i>	Controlled PM Emissions		Controlled PM <sub>10</sub> Emissions		Change in PM Emissions		Change in PM <sub>10</sub> Emissions	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
<b>Fugitive Emissions</b>								
Stockpile Emissions	0.12	0.52	0.06	0.24	0.00	0.00	0.00	0.00
Unpaved Haulroad Emissions	58.60	121.99	17.3	36.01	10.37	67.24	3.06	19.85
Paved Haulroad Emissions	5.85	5.85	1.14	1.14	0.00	5.24	0.00	1.02
<b>Fugitive Emissions Total</b>	<i>64.57</i>	<i>128.36</i>	<i>18.49</i>	<i>37.39</i>	<i>10.36</i>	<i>72.48</i>	<i>3.06</i>	<i>20.87</i>
<b>Point Source Emissions</b>								
Equipment Emissions	55.40	102.40	26.04	48.13	0.00	57.40	0.00	26.98
Transfer Point Emissions	7.67	8.68	3.63	4.11	0.00	4.33	0.00	2.05
<b>Point Source Emissions Total</b>	<i>63.07</i>	<i>111.08</i>	<i>29.67</i>	<i>52.24</i>	<i>0.00</i>	<i>61.73</i>	<i>0.00</i>	<i>29.03</i>
<b>FACILITY EMISSIONS TOTAL</b>								
	<b>127.64</b>	<b>239.44</b>	<b>48.16</b>	<b>89.63</b>	<b>10.36</b>	<b>134.21</b>	<b>3.06</b>	<b>49.90</b>

## REGULATORY APPLICABILITY

NESHAPS and PSD have no applicability to the proposed facility. The proposed modification of a coal processing plant will be subject to the following state and federal rules:

*45CSR5 To Prevent and Control Air Pollution from the Operation of Coal Preparation Plants and Coal Handling Operations*

The facility is subject to the requirements of 45CSR5 because it meets the definition of "Wet wash coal preparation plant" found in subsection 45CSR5.2.4. The facility should be in compliance with Section 3 (less than 20% opacity) and Section 6 (fugitive dust control system and dust control of the premises and access roads) when the particulate matter control methods and devices proposed within application R13-0119B and any amendments thereto are in operation.

*45CSR13 Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits, and Procedures for Evaluation*

The proposed modification is subject to the requirements of 45CSR13 because it will result in an increase in potential to discharge controlled emissions greater than six (6) pounds per hour and ten (10) tons per year, and 144 pounds per day of a regulated air pollutant (PM and PM<sub>10</sub>). The applicant submitted the proper \$1000 application fee and \$1000 NSPS fee and

published a Class I legal advertisement in the *The Barbour Democrat* on February 23, 2011. The applicant re-published their legal advertisement on May 25, 2011 to comply with application guidelines for public notification.

*45CSR16 Standards of Performance for New Stationary Sources*

*40 CFR 60 Subpart Y: Standards of Performance for Coal Preparation and Processing Plants*

This facility will be subject to 40 CFR 60 Subpart Y because it will have been constructed after October 24, 1974 and will process more than 200 tons of coal per day. The proposed modification of a wet wash coal preparation and processing plant will include one (1) double roll crusher, one (1) double deck screen, two (2) double deck vibrating screens, 14 belt conveyors, three (3) open stockpiles, one (1) clean coal bin, and two (2) refuse bins which include the equipment used in the loading, unloading and conveying operations of the affected facility, constructed, reconstructed or modified after May 27, 2009 in 40 CFR 60 Subpart Y. The facility should be in compliance with Section 254(b) (less than 10% opacity for coal processing and conveying equipment, coal storage system, or coal transfer and loading system processing coal constructed, re-constructed or modified after April 28, 2008) when the particulate matter control methods and devices proposed are in operation. Therefore, the proposed modification is subject to 45CSR16, which incorporates by reference 40 CFR 60 Subpart Y - Standards of Performance for Coal Preparation and Processing Plants. The facility must submit a fugitive coal dust emissions control plan as required by 40CFR§60.254(c)(2) after permit issuance.

*45CSR30 Requirements for Operating Permits*

The facility's potential to emit will be 52.48 TPY of a regulated air pollutant (PM<sub>10</sub>), not including fugitive emissions from haulroads, which is less than the 45CSR30 threshold of 100 TPY for a major source. However, the facility is subject to 40 CFR 60 Subpart Y. Therefore, the facility is still subject to 45CSR30 and classified as a Title V deferred non-major source.

The proposed modification of a coal preparation plant will not be subject to the following state and federal rules:

*45CSR14 Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration*

In accordance with 45CSR14 Major Source Determination, the proposed coal preparation plant and loadout facility is not listed in Table 1. The facility will have the potential to emit 111.60 TPY of a regulated air pollutant (PM), not including fugitive emissions from haulroads, which is less than the 45CSR14 threshold of 250 TPY. This facility is not listed in Table 2, and so fugitive emissions are not included when determining source applicability. Therefore, the proposed modification is not subject to the requirements set forth within 45CSR14.

## TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

A toxicity analysis was not performed because the pollutants being emitted from this facility are PM (particulate matter) and PM<sub>10</sub> (particulate matter less than 10 microns in diameter), which are non-toxic pollutants.

## AIR QUALITY IMPACT ANALYSIS

Air dispersion modeling was not performed due to the size and proposed location of this facility. This facility will be located in Barbour County, WV, which is currently in attainment for PM (particulate matter), PM<sub>10</sub> (particulate matter less than 10 microns in diameter) and PM<sub>2.5</sub> (particulate matter less than 2.5 microns in diameter).

## MONITORING OF OPERATIONS

For the purposes of determining compliance with maximum throughput limits, the applicant shall maintain certified daily and monthly records. An example form is included as Appendices A through C to Permit R13-0119B. Example forms for tracking the amount of water applied through fixed water sprays and the water truck are included as Appendices D and E to Permit R13-0119B. An example form for the Monthly Opacity Testing is included as Appendix F to Permit R13-0119B. The Certification Of Data Accuracy statement shall be completed within fifteen (15) days of the end of the reporting period. These records shall be maintained on site by the permittee for at least five (5) years and shall be made available to the Director of the Division of Air Quality or his or her duly authorized representative upon request.

## RECOMMENDATION TO DIRECTOR

The information contained in this modification permit application indicates that compliance with all applicable regulations should be achieved when all of the proposed particulate matter control methods are in operation. Due to the location, nature of the process, and control methods proposed, adverse impacts on the surrounding area should be minimized. No public comments were received. Therefore, the granting of a permit to Wolf Run Mining Company for the modification of their facility located in Philippi, Barbour County, WV is hereby recommended.

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Thornton E. Martin Jr.,  
Permit Engineer

June 06, 2011  
Date

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Fact Sheet R13-0119B  
Wolf Run Mining Company  
Sentinel Preparation Plant