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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	G10-D160
Plant ID No.:	081-00084
Applicant:	Orchard Coal Company
Facility Name:	Crab Orchard Loadout
Location:	Crab Orchard, Raleigh County, WV
SIC Codes:	1221 (Bituminous Coal & Lignite - Surface)
NAICS Codes:	212111 (Bituminous Coal and Lignite Surface Mining)
Application Type:	Modification
Received Date:	July 14, 2015
Engineer Assigned:	Dan Roberts
Fee Amount:	$1,500
Date Received:	July 15, 2015
Applicant's Ad Date:	July 10, 2015
Newspaper:	*The Register-Herald*
UTM Coordinates:	Easting: 481.47375 km • Northing: 4177.24615 km • NAD83 Zone 17N
Lat/Lon Coordinates:	Latitude: 37.742318 • Longitude: -81.210278 • NAD83
Complete Date:	July 24, 2015
Description:	Modification to reconstruct a railcar loadout facility that has been shut down since 2002. New equipment at the facility will consist of one (1) truck dump bin, four (4) belt conveyors, two (2) open storage piles, one (1) surge bin and one (1) railcar loadout bin.

BACKGROUND

Orchard Coal Company owns the existing Crab Orchard Loadout. File research shows that the original facility submitted an Application for Operating a Coal Handling Operation Permit dated March 25, 1994 and received on March 28, 1994. The original facility started operation in 1973. In 1994 , the facility consisted of one (1) open stockpile, one (1) truck dump bin, one (1) crusher and

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one (1) belt conveyor that loaded coal directly to rail cars with maximum capacities of 300 TPH and 456,000 TPY. According to inspection reports, the facility has been shut down since 2002. However, it does not appear that the facility ever applied for or received a Rule 13 permit to construct or modify. The facility had an existing facility ID No. Of 081-00084, but there were no permit applications or permits listed in the database or found in the file room.

The new proposed facility will consist of one (1) truck dump bin, one (1) crusher, four (4) belt conveyors, two (2) open storage piles, one (1) surge bin and one (1) railcar loadout bin with maximum rated capacities of 500/4,000 TPH and 4,380,000 TPY. None of the original equipment will remain in use due to its age and state of disrepair.

DESCRIPTION OF PROCESS (taken directly from the application)

The Crab Orchard Coal Processing and Rail Loadout Facility is located in a remote area on Route 16/5 near Crab Orchard in Raleigh County, WV. According to company records available to this writer, the company currently holds an operating permit issued in 1994.

This modification addresses the conversion to the General Permit Program, the replacement of various belts, creation of two stockpile w/stacking tube areas, batch weigh loadout, and changes to controls as required by D10-G Permit.

Coal will be delivered by truck on a gravel haulroad to bin BS-01(PW) @ TP-01(UD-PW); discharge to Stamler feeder-breaker CR-01(FE) @ TP-02(TC-FE); and transfer to belt conveyor BC-01(PE) @ TP-03(TC-FE). Belt conveyor BC-01 will transfer coal to OS-01(SW-WS) @ TP-04(TC-PE) and to belt conveyor BC-02(PE) @ TP-05(TC-FE) which feeds stockpile OS-02(SW-WS) @ TP-06(TC-PE). Stockpiles OS-01 and OS-02 discharge under-pile to belt conveyor BC-03 @ TP-07(LO-UC) and TP-08(LO-UC) which transfers to belt conveyor BC-04(PE) @ TP-09(TC-FE). Belt conveyor BC-04 transfers to the batch weigh system surge bin BS-02(FE) @TC-FE); to weigh bin BS-03(FE) @ TP-11(TC-FE) and to railcar via telescopic chute @ TP-12(LR-TC).

There are no HAP's or VOC's associated with this facility.

The facility shall be modified and operated in accordance with the following equipment and control device information taken from registration application G10-D160 and any amendments thereto:

Equipment ID No.	Date of Construction, Reconstruction or Modification [1]	G10-D Applicable Sections [2]	Description	Maximum Capacity		Control Device [3]	Associated Transfer Points		
				TPH	TPY		Location: B -Before A -After	ID. No.	Control Device [3]
Clean Coal Circuit									
BS-01	C 2015	5 and 8	Clean Coal Dump Bin - 80 tons capacity - receives clean coal from trucks and feeds it into CR-01	500	4,380,000	PW	B A	TP-01 TP-02	UD-PW TC-FE

Equipment ID No.	Date of Construction, Reconstruction or Modification [1]	G10-D Applicable Sections [2]	Description	Maximum Capacity		Control Device [3]	Associated Transfer Points		
				TPH	TPY		Location: B -Before A -After	ID. No.	Control Device [3]
CR-01	C 2015	5 and 8	Single Roll Crusher - receives clean coal from BS-01, crushes it from 6" to 2" and then drops it onto BC-01	500	4,380,000	FE	B A	TP-02 TP-03	TC-FE TC-FE
BC-01	C 2015	5 and 8	Belt Conveyor - receives crushed clean coal from CR-01 and transfers it to OS-01 or BC-02	500	4,380,000	PE	B A A	TP-03 TP-04 TP-05	TC-FE TC-PE TC-FE
OS-01	C 2015	5 and 8	Clean Coal Stockpile with a Stacking Tube - maximum 25,000 tons capacity, 38,869 ft^2 base area and 65' height - receives crushed clean coal from BC-01, stores it and then it is reclaimed by underground feeders onto BC-03	500	4,380,000	WS	B A	TP-04 TP-07	TC-FE LO-UC
BC-02	C 2015	5 and 8	Belt Conveyor - receives crushed clean coal from BC-01 and transfers it to OS-02	500	4,380,000	PE	B A	TP-05 TP-06	TC-FE TC-PE
OS-02	C 2015	5 and 8	Clean Coal Stockpile with a Stacking Tube - maximum 25,000 tons capacity, 38,869 ft^2 base area and 65' height - receives crushed clean coal from BC-02, stores it and then it is reclaimed by underground feeders onto BC-03	500	4,380,000	WS	B A	TP-06 TP-08	TC-PE LO-UC
BC-03	C 2015	5 and 8	Belt Conveyor - receives crushed clean coal from OS-01 and OS-02 and transfers it to BC-04	4,000	4,380,000	PE	B B A	TP-07 TP-08 TP-09	LO-UC LO-UC TC-FE
BC-04	C 2015	5 and 8	Belt Conveyor - receives crushed clean coal from BC-03 and transfers it to BS-02	4,000	4,380,000	PE	B A	TP-09 TP-10	TC-FE TC-FE
BS-02	C 2015	5 and 8	Surge Bin - 150 tons capacity - receives crushed clean coal from BC-04 and then feeds it into BS-03	4,000	4,380,000	FE	B A	TP-10 TP-11	TC-FE TC-FE
BS-03	C 2015	5 and 8	Weigh Bin - 150 tons capacity - receives crushed clean coal from BS-02 and loads it into railcars through a telescopic chute for shipment	4,000	4,380,000	FE	B A	TP-11 TP-12	TC-FE LR-TC

1 In accordance with 40 CFR 60 Subpart Y, coal processing and conveying equipment, coal storage systems, and coal transfer and loading systems constructed, reconstructed, or modified after April 28, 2008 shall not discharge gases which exhibit 10 percent opacity or greater. For open storage piles constructed, reconstructed, or modified after May 27, 2009, the permittee shall prepare and operate in accordance with a fugitive coal dust emissions control plan that is appropriate for site conditions.

2 All registered affected facilities under Class II General Permit G10-D are subject to Sections 1.0, 1.1, 2.0, 3.0 and 4.0.

3 Control Device Abbreviations: FE - Full Enclosure; FW - Full Enclosure with Water Sprays; PE - Partial Enclosure; PW - Partial Enclosure with Water Sprays; WS - Water Sprays; TC - Telescopic Chute; and N - No Control.

DESCRIPTION OF FUGITIVE EMISSIONS (taken directly from the application)

Potential sources of fugitive particulate emissions for this facility include emissions, which are not captured by pollution control equipment and emissions from open stockpiles and vehicular traffic on paved haulroads and work areas. The haulroads and work areas will be controlled by water truck in accordance with section E.6.c.i. of the General Permit.

The water truck is equipped with pumps sufficient to maintain haulroads and work areas. The water truck will be operated three times daily, and more as needed in dry periods.

An additive to prevent freezing will be utilized in the winter months when freezing conditions are present.

SITE INSPECTION

On January 28, 2003, Fred Teel of the DAQ's Compliance and Enforcement Section performed a scheduled full on-site targeted inspection. Mr. Otey's notes from the inspection were as follows: "possible long term shutdown." At the time of the inspection, the facility was found to be shut down and was given a status code of 41 - Temporarily Shut Down.

On September 23, 2003, Bob Otey of the DAQ's Compliance and Enforcement Section performed a scheduled full on-site targeted inspection. Mr. Otey's notes from the inspection were as follows: "This facility has been shut down since early 2002, per Dale Wright, Vice President of Bluestone; P O Box 1085 Beckley, WV 25801." At the time of the inspection, the facility was found to be shut down and was given a status code of 91 - Permanently Shut Down.

On March 26, 2014, John Moneypenny of the DAQ's Compliance and Enforcement Section performed a scheduled part of site targeted inspection. Mr. Moneypenny's notes from the inspection were as follows: "Spoke with Bob Cochran of Justice Coal Co. 304-252-1074. They are planning to construct a new loadout at this site, in order to process coal from a new preparation plant located in Tams, WV. He said Potesta will handle permitting issues...and that no construction has taken place. A future inspection will be conducted." At the time of the inspection, the facility was found to be shut down and was given a status code of 41 - Temporarily Shut Down.

On June 16, 2014, John Moneypenny of the DAQ's Compliance and Enforcement Section performed a scheduled full on-site targeted inspection. Mr. Moneypenny's notes from the inspection were as follows: "The main gate to the entrance was locked, no sign of recent activity at the site." At the time of the inspection, the facility was found to be shut down and was given a status code of 41 - Temporarily Shut Down.

Directions from Charleston, WV are to take I-64 East/I-77 South towards Beckley and travel 56.9 miles, take Exit 42 and merge onto WV-16 South/Robert C Byrd Drive towards WV-97/Sophia/Mullens and travel 2.2 miles, turn left onto County Route 16/5 and travel approximately 0.5 miles to the site.

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 Fifth Edition "Compilation of Air Pollution Emission Factors", Volume 1. Control efficiencies were applied based on "Calculation of Particulate Matter Emission - Coal Preparation Plants and Material Handling Operations." The emission factors for crushing/breaking and screening operations were obtained from the Air Pollution Engineering Manual - Air & Waste Management Association - June 1992. The facility-wide emissions calculations were performed by the applicant's consultant using the DAQ's G10-C Excel Emission Calculation Spreadsheet and were checked for accuracy and completeness by the writer.

The proposed modification will result in a new potential to discharge controlled particulate matter emissions of 54.00 PPH and 217.03 TPY of particulate matter (PM), of which 17.09 PPH and 65.66 TPY will be particulate matter less than 10 microns in diameter (PM_{10}). Refer to the following table for a complete summary of the facility's proposed potential to discharge:

- New Emissions Total - **Orchard Coal Company Crab Orchard Loadout - G10-D160**	**Controlled PM Emissions**		**Controlled PM_{10} Emissions**	
	lb/hour	TPY	lb/hour	TPY
		Fugitive Emissions		
Open Storage Pile Emissions	0.12	0.54	0.06	0.26
Unpaved Haulroad Emissions	45.87	200.94	13.26	58.07
Paved Haulroad Emissions	0.00	0.00	0.00	0.00
Fugitive Emissions Total	*46.00*	*201.48*	*13.32*	*58.33*
		Point Source Emissions		
Equipment Emissions	2.00	8.76	0.94	4.12
Transfer Point Emissions	6.00	6.79	2.84	3.21
Point Source Emissions Total (PTE)	*8.00*	*15.55*	*3.78*	*7.33*
FACILITY EMISSIONS TOTAL	**54.00**	**217.03**	**17.09**	**65.66**

REGULATORY APPLICABILITY

NESHAPS and PSD have no applicability to the modified facility. The proposed modification of Orchard Coal Company's existing coal preparation plant and railcar loadout facility is subject to the following state and federal rules:

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

The facility is subject to the requirements of 45CSR5 because it meets the definition of "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 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 involve the construction of one (1) truck dump bin, one (1) crusher, four (4) belt conveyors, one (1) surge bin and one (1) railcar loadout bin, which are defined as affected facilities in 40 CFR

60 Subpart Y. The applicant has submitted an application for a registration to modify. The applicant published a Class I legal advertisement in *The Register-Herald* on July 10, 2015 and submitted the $500 application fee and $1,000 application fee.

45CSR16 *Standards of Performance for New Stationary Sources*
40 CFR 60 *Subpart Y: Standards of Performance for Coal Preparation and Processing Plants*

This facility is subject to 40 CFR 60 Subpart Y because it was modified after October 24, 1974 and processes more than 200 tons of coal per day. The proposed modification includes the construction of one (1) truck dump bin, one (1) crusher, four (4) belt conveyors, one (1) surge bin and one (1) railcar loadout bin, which are defined as affected facilities in 40 CFR 60 Subpart Y. Therefore, the proposed modification is subject to 45CSR16, which incorporates by reference 40 CFR 60 Subpart Y - Standards of Performance for Coal Preparation Plants. 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 which was constructed, re-constructed or modified after April 28, 2008) when the particulate matter control methods and devices proposed are in operation.

The owner or operator of an open storage pile, which includes the equipment used in the loading, unloading, and conveying operations of the affected facility, constructed, reconstructed, or modified after May 27, 2009, must prepare and operate in accordance with a submitted fugitive coal dust emissions control plan that is appropriate for the site conditions. The fugitive coal dust emissions control plan must identify and describe the control measures the owner or operator will use to minimize fugitive coal dust emissions from each open storage pile. The plan must be submitted to the Director prior to startup of the new, reconstructed or modified open storage pile.

45CSR30 *Requirements for Operating Permits*

In accordance with 45CSR30 Major Source Determination, the facility is *not* listed in 45CSR30 subsection 2.26.b as one of the categories of stationary sources which must include fugitive emissions (open storage piles constructed or modified on or before May 27, 2009 and haulroads) when determining whether it is a major stationary source for the purposes of § 302(j) of the Clean Air Act. The facility's potential to emit will be 7.59 TPY for PM_{10} (open storage piles constructed or modified after May 27, 2009 and point sources combined), which is less than the 45CSR30 threshold of 100 TPY of a regulated air pollutant used to define a major stationary source. Therefore, the facility remains a nonmajor source subject to 45CSR30. The facility is not subject to the permitting requirements of 45CSR30 and is classified as a deferred source.

The proposed modification of Orchard Coal Company's existing coal preparation plant and railcar loadout facility is <u>not</u> 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 facility is *not* one of the 100 TPY stationary sources listed under the definition of "Major Stationary Source" in subsection 2.43.a. Therefore, it must have the potential to emit 250 TPY or more of any regulated pollutant to meet the definition of a major source in subsection 2.43.b. At the end of subsection 2.4.3, this facility is not listed in Table 1 - Source Categories Which Must Include Fugitive Emissions. So, fugitive emissions (from open storage piles constructed or modified on or before May 27, 2009 and haulroads) are not included when determining major stationary source applicability. The facility's potential to emit will be 16.09 TPY for PM (open storage piles constructed or modified after May 27, 2009 and point sources combined), which is less than the 45CSR14 threshold of 250 TPY for a regulated air pollutant used to define a major stationary source. 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 primary pollutants that will be emitted from this facility are PM (particulate matter) and PM_{10} (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 location of this facility and the extent of the proposed modification. This facility is located in Raleigh County, WV, which is currently in attainment for PM (particulate matter) and PM_{10} (particulate matter less than 10 microns in diameter). This modified facility will remain a minor source as defined by 45CSR14 and 45CSR19, therefore, an air quality impact analysis is not required.

GENERAL PERMIT ELIGIBILITY

The proposed modification of this facility meets the applicability criteria (Section 2.3), siting criteria (Section 3.1) and limitations and standards (Section 5.1) as specified in General Permit G10-D.

All registered facilities under Class II General Permit G10-D are subject to Sections 1.0, 1.1, 2.0, 3.0 and 4.0.

MONITORING OF OPERATIONS

The coal processing and conveying equipment and storage areas should be observed to make sure that the facility is meeting the applicable visible emission standards of 40 CFR 60, Subpart Y. Visible emissions from any 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 shall not exceed 10 percent (10%) opacity as stated in 40 CFR 60.254(b). Equipment used in the loading, unloading, and conveying operations of open storage piles are not subject to the maximum 10% opacity limitation.

The owner or operator of an open storage pile, which includes the equipment used in the loading, unloading, and conveying operations of the affected facility, constructed, reconstructed, or modified after May 27, 2009, must prepare and operate in accordance with a submitted fugitive coal dust emissions control plan that is appropriate for the site conditions. The fugitive coal dust emissions control plan must identify and describe the control measures the owner or operator will use to minimize fugitive coal dust emissions from each open storage pile. The plan must be submitted to the Director prior to startup of the new, reconstructed or modified open storage pile.

RECOMMENDATION TO DIRECTOR

The information contained in this modification 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 comments were received during the comment period. Therefore, the granting of a General Permit G10-D registration to Orchard Coal Company for the modification of their existing coal preparation plant and railcar loadout facility located near Crab Orchard, Raleigh County, WV is hereby recommended.

Daniel P. Roberts, Engineer Trainee
NSR Permitting Section

July 24, 2015
Date