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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.: G10-D047F **After-the-Fact**
Plant ID No.: 005-00075
Applicant: Raven Crest Contracting, LLC
Facility Name: Bull Creek Preparation Plant Facility
Location: Ashford, Boone County, WV
SIC Codes: 1221 (Bituminous Coal & Lignite - Surface)
1222 (Bituminous Coal & Lignite - Underground)
NAICS Codes: 212111 (Bituminous Coal and Lignite Surface Mining)
212112 (Bituminous Coal Underground Mining)
Application Type: Modification
Received Date: November 21, 2013
Engineer Assigned: Dan Roberts
Fee Amount: \$1,500
Date Received: November 26, 2013
Applicant's Ad Date: December 11, 2013
Newspaper: *Coal Valley News*
Complete Date: January 26, 2014
UTM Coordinates: Easting: 438.83 km Northing: 4228.36 km Zone: 17
Lat/Lon Coordinates: Latitude: 38.201114 Longitude: -81.698628 NAD83
Description: **After-the-Fact** modification to do the following: reduce plant throughput from 600 TPH and 5,256,000 TPY to 300 TPH and 2,628,000 TPY; reconfigure equipment to show the new plant design; delete the equipment associated with the previously permitted stoker coal circuit; add a direct ship coal circuit; increase the clean/direct ship coal shipped from the facility by railcar from 3,000 TPH and 3,153,600 TPY to 3,500 TPH and 6,152,000 TPY; change controls; etc.

BACKGROUND

Raven Crest Contracting, LLC owns and/or operates the existing Bull Creek Preparation Plant Facility and leases the property from Penn Virginia. The facility is currently operating under registration G10-D047E which was approved on June 24, 2011.

Raven Crest Contracting, LLC also has existing registration G10-D134A approved on November 29, 2011 for a temporary coal screening, crushing and washing plant with maximum throughputs of 400 TPH and 3,504,000 TPY to be operated until the wet wash coal preparation plant permitted under G10-D047E is constructed and operational. The permittee plans to remove this temporary plant and surrender registration G10-D134A at that time.

According to information received on January 20, 2015 from the applicant's consultant Ms. Donna Toler, the portable wet wash plant permitted under G10-D134A was removed in December 2013 and the wet wash coal preparation plant permitted under G10-D047E was completed in February 2014.

DESCRIPTION OF PROCESS

The Bull Creek Preparation Plant Facility has been downsized from 600 TPH to a 300 TPH plant - this modification addresses the changes in rates, equipment, and controls.

Raw coal will be delivered by truck to open stockpile OS-01(SW-WS) @ TP-01(UL-MDH); transfer by front-end loader to bin BS-01(PW) @ TP-02(UD-PW); to belt BC-01(PE) @ TP-03(TC-FE); and to screen SS-01(FW) @ TP-04(TC-FW). Coal from screen SS-01 can discharge directly to belt BC-02(PE) @ TP-05(TC-FW) or transfer to crusher CR-01(FW) @ TP-06(TC-FW). Belt BC-02 @ TP-07(TC-FW) transfers material to the plant and thru raw coal screen SS-02(FW) @ TP-08(TC-FW) for the wet wash @ TP-09(TC-FW).

Plant clean coal will transfer from the plant @ TP-10(TC-FW) onto belt BC-03(PE) and to stockpile OS-02(SW-WS) @ TP-11(TC-MDH).

Direct ship clean coal will be delivered to a three-sided truck dump bin BS-02(PW) @ TP-12(UD-PW); go to belt BC-04(PE) @ TP-13(TC-FE); and to screen SS-03(FW) @ TP-14(TC-FW). Screened coal can either go directly to belt BC-05(PE) @ TP-15(TC-FW) or transfer to crusher CR-02(FW) @ TP-16(TC-FW); and then to belt BC-05 @ TP-17(TC-FW). Belt conveyors BC-05 and BC-06(PE) will transfer the material to open stockpile OS-02(SW-WS) @ TP-18(TC-FE) and TP-19(TC-MDH). Belt conveyor BC-07(PE) will reclaim clean coal from stockpile OS-02 @ TP-20(LO-UC); transfer to belt conveyor BC-08(PE) @ TP-21(TC-FE); go thru the rail surge bin BS-03(FE) and the loadout weigh bin BS-04(FE) to railcar @ TP-22(TC-FE), TP-23(TC-FE) and TP-24(LR-TC).

Plant refuse will exit the plant on belt conveyor BC-09(PE) @ TP-25(TC-FW); to refuse bin BS-05(FE) @ TP-26(TC-FE); to truck @ TP-27(LO-MDH); and to the disposal area @

TP-28(UL-MDH).

There are no VOC's or HAP'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 applications G10-D047F, G10-D047E, G10-C047D, G10-C047C, G10C-047B, G10-B047A and G10-B047 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
Raw Coal Circuit									
OS-01	C 2013	5 and 8	Raw Coal Stockpile - maximum 100,000 tons capacity, 188,869 ft ² base area and 75' height - receives raw coal from trucks, stores it and then a front-end loader transfers it to BS-01	300	2,628,000	SW-WS	B A	TP-01 TP-02	UL-MDH UD-PW
BS-01	C 2013	5 and 8	Raw Coal Bin - 80 tons capacity - receives raw coal from OS-01 via a front-end loader and then feeds it onto BC-01	300	2,628,000	PW	B A	TP-02 TP-03	UD-PW TC-FE
BC-01	C 2013	5 and 8	42" Belt Conveyor - receives raw coal from BS-01 and transfers it to SS-01	300	2,628,000	PE	B A	TP-03 TP-04	TC-FE TC-FW
SS-01	C 2013	5 and 8	Raw Coal Double Deck Screen - receives raw coal from BC-01, sizes it and then the oversize raw coal drops into CR-01 while the sized raw coal drops onto BC-02	300	2,628,000	FW	B A A	TP-04 TP-06 TP-05	TC-FW TC-FW TC-FW
CR-01	C 2013	5 and 8	Hammermill Double Roll Crusher - receives oversize raw coal from SS-01, crushes it and then drops it onto BC-02	300	2,628,000	FW	B A	TP-06 TP-07	TC-FW TC-FW
BC-02	C 2013	5 and 8	Belt Conveyor - receives sized raw coal from SS-01 and CR-01 and transfers it to SS-02	300	2,628,000	PE	B B A	TP-05 TP-07 TP-08	TC-FW TC-FW TC-FW
SS-02	C 2013	5 and 8	8x16 Double Deck Screen - receives sized raw coal from BC-02, sizes it and then transfers it to the wet wash system	300	2,628,000	FW	B A	TP-08 TP-09	TC-FW TC-FW
Direct Ship Coal Circuit									
BS-02	M 2013 C 2003	5 and 8	Direct Ship Coal Truck Dump Bin - 150 tons capacity - receives direct ship coal from trucks and then feeds it onto BC-04	500	4,380,000	PW	B A	TP-12 TP-13	UD-PW TC-FW
BC-04	M 2013 C 2003	5 and 8	36" Belt Conveyor - receives direct ship coal from BS-02 and transfers it to SS-03	500	4,380,000	PE	B A	TP-13 TP-14	TC-FW TC-FW
SS-03	M 2013 C 2003	5 and 8	Direct Ship Coal Double Deck Screen - receives direct ship coal from BC-04, sizes it and then the oversize direct ship coal drops into CR-02 while the sized direct ship coal drops onto BC-05	500	4,380,000	FW	B A A	TP-14 TP-16 TP-15	TC-FW TC-FW TC-FW
CR-02	M 2013 M 2011 C 2005	5 and 8	Hammermill Double Roll Crusher - receives oversize direct ship coal from SS-03, crushes it and then drops it onto BC-05	500	4,380,000	FW	B A	TP-16 TP-17	TC-FW TC-FW
BC-05	M 2013 C 2003	5 and 8	42" Belt Conveyor - receives sized direct ship coal from SS-03 and CR-02 and transfers it to BC-06	500	4,380,000	PE	B A	TP-17 TP-18	TC-FW TC-FE
BC-06	M 2013 C 2003	5 and 8	42" Belt Conveyor - receives sized direct ship coal from BC-05 and transfers it to OS-02 (see Clean/Direct Ship Coal Loadout Circuit below)	500	4,380,000	PE	B A	TP-18 TP-19	TC-FE TC-MDH
Clean/Stoker Coal Loadout Circuit									
BC-03	C 2013	5 and 8	36" Plant Clean Coal Conveyor - receives clean coal from the wet wash system and transfers it to OS-02	200	1,752,000	PE	B A	TP-10 TP-11	TC-FW TC-MDH
OS-02	M 2013 M 2011 C 2003	5 and 8	Clean Coal Stockpile - maximum 100,000 tons capacity, 188,869 ft ² base area and 75' height - receives clean coal from BC-03 and direct ship coal from BC-06 (see Direct Ship Coal Circuit above), stores it and then it is reclaimed by underground feeders onto BC-07	---	6,132,000	SW-WS	B B A	TP-11 TP-19 TP-20	TC-MDH TC-MDH LO-UC

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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
BC-07	M 2013 C 2007	5 and 8	72" Belt Conveyor - receives clean/direct ship coal from OS-02 via underground feeders and transfers it to BC-08	3,500	6,132,000	PE	B A	TP-20 TP-21	LO-UC TC-FE
BC-08	M 2013 C 2007	5 and 8	72" Belt Conveyor - receives clean/direct ship coal from BC-07 and transfers it to BS-03	3,500	6,132,000	PE	B A	TP-21 TP-22	TC-FE TC-FE
BS-03	M 2013 M 2011 C 2007	5 and 8	Surge Bin - 240 tons capacity - receives clean/direct ship coal from BC-08 and then feeds it into BS-04	3,500	6,132,000	FE	B A	TP-22 TP-23	TC-FE TC-FE
BS-04	M 2013 M 2011 C 2007	5 and 8	Loadout Bin - 120 tons capacity - receives clean/direct ship coal from BS-03 and loads it into railcars through a telescopic chute	3,500	6,132,000	FE	B A	TP-23 TP-24	TC-FE LR-TC
Refuse Circuit									
BC-09	C 2013	5 and 8	36" Belt Conveyor - receives refuse from the wet wash system and transfers it to BS-05	200	1,752,000	PE	B A	TP-25 TP-26	TC-FW TC-FE
BS-05	C 2013	5 and 8	Refuse Bin - 200 tons capacity - receives refuse from BC-09 and then loads it into trucks through a fixed chute for delivery to the disposal area	200	1,752,000	FE	B A A	TP-26 TP-27 TP-28	TC-FE LO-MDH UL-MDH

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; WW - wet wash circuit; TC - Telescopic Chute; UC - Under-pile Conveyor (full enclosure); MDH - Minimize Drop Height; 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 unpaved 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

Fred Teel of the DAQ's Compliance and Enforcement Section performed a scheduled full on-site targeted inspection on June 4, 2013. Mr. Teel's notes from the inspection were as follows: "According to the Mining Engineer for Raven Crest, the projected startup date for the new wash plant is December 2013." The facility was given a status code of 41 - Under Construction.

Directions from Charleston, WV are to take US Route 119 South, turn onto State Route 3 and

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proceed toward Foster; about 2 miles east of Foster turn onto County Route 1 and travel approximately 7 miles toward Ashford; cross Big Coal River, turn left onto County Route 1/1 and travel approximately 2 miles, turn right onto Bull Creek Road and travel approximately 1.5 miles and the facility will be on the right.

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 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 writer subtracted the current permitted emissions totals from the proposed emission totals to get the increase in emissions.

The proposed modification will result in an increase in the facility's potential to discharge controlled particulate matter emissions of 17.08 pounds per hour (PPH) and 69.44 tons per year (TPY) of particulate matter (PM), of which 6.03 PPH and 23.87 TPY will be particulate matter less than 10 microns in diameter (PM₁₀). Refer to the following table for a complete summary of the proposed facility's potential to discharge:

- Proposed Increase in Emissions - Raven Crest Contracting, LLC Bull Creek Preparation Plant	Controlled PM Emissions		Controlled PM₁₀ Emissions	
	lb/hour	TPY	lb/hour	TPY
Fugitive Emissions				
Open Storage Pile Emissions	0.18	0.80	0.09	0.37
Unpaved Haulroad Emissions	11.05	48.44	3.20	14.00
Paved Haulroad Emissions	0.00	0.00	0.00	0.00
<i>Fugitive Emissions Total</i>	<i>11.23</i>	<i>49.24</i>	<i>3.28</i>	<i>14.37</i>
Point Source Emissions				
Equipment Emissions	4.68	20.50	2.20	9.64
Transfer Point Emissions	1.16	-0.29	0.54	-0.14
<i>Point Source Emissions Total (PTE)</i>	<i>5.84</i>	<i>20.20</i>	<i>2.75</i>	<i>9.49</i>
INCREASE IN EMISSIONS	17.08	69.44	6.03	23.87

The proposed modification will result in a new potential to discharge controlled particulate matter emissions of 106.22 PPH and 455.13 TPY of particulate matter (PM), of which 33.96 PPH and 143.97 TPY will be particulate matter less than 10 microns in diameter (PM₁₀). Refer to the following table for a complete summary of the facility's proposed potential to discharge:

- New Facility-wide Emissions - Raven Crest Contracting, LLC Bull Creek Preparation Plant	Controlled PM Emissions		Controlled PM ₁₀ Emissions	
	lb/hour	TPY	lb/hour	TPY
Fugitive Emissions				
Open Storage Pile Emissions	0.48	2.12	0.23	0.99
Unpaved Haulroad Emissions	88.26	386.63	25.51	111.74
Paved Haulroad Emissions	0.00	0.00	0.00	0.00
<i>Fugitive Emissions Total</i>	<i>88.74</i>	<i>388.75</i>	<i>25.74</i>	<i>112.73</i>
Point Source Emissions				
Equipment Emissions	12.60	55.19	5.92	25.94
Transfer Point Emissions	4.87	11.20	2.30	5.29
<i>Point Source Emissions Total (PTE)</i>	<i>17.47</i>	<i>66.38</i>	<i>8.23</i>	<i>31.23</i>
FACILITY EMISSIONS TOTAL				
	106.22	455.13	33.96	143.97

REGULATORY APPLICABILITY

NESHAPS and PSD have no applicability to the modified facility. The proposed modification of Raven Crest Contracting, LLC's existing wet wash coal preparation plant 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 result in an increase in emissions greater than six (6) pounds per hour and ten (10) tons per year of a regulated pollutant (PM and PM₁₀) and involve the construction of new equipment/stockpiles and modification of existing equipment/stockpiles, 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 *Coal Valley News* on December 11, 2013 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 constructed and modified after October 24, 1974 and processes more than 200 tons of coal per day. The proposed modification includes the construction of new equipment/stockpiles and modification of existing equipment/stockpiles, 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 (coal 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 32.22 TPY for PM₁₀ (coal 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 Raven Crest Contracting, LLC's wet wash coal preparation plant is not 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 coal 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 68.50 TPY for PM (coal 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 PM₁₀ (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 Boone County, WV, which is currently designated as being in attainment for PM (particulate matter) and PM₁₀ (particulate matter less than 10 microns in diameter). This modified facility will remain a minor source as defined by 45CSR14, 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 Raven Crest Contracting, LLC for the modification of their existing wet wash coal preparation plant located near Ashford, Boone County, WV is hereby recommended.



Daniel P. Roberts
Daniel P. Roberts, Engineer Trainee
NSR Permitting Section

January 29, 2015

Date