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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	G10-D103G
Plant ID No.:	045-00131
Applicant:	Greenbrier Minerals, LLC
Facility Name:	Saunders Preparation Plant
Location:	Saunders, Logan County, WV
SIC Code:	1221 (Bituminous Coal & Lignite - Surface) 1222 (Bituminous Coal & Lignite - Underground)
NAICS Code:	212111 (Bituminous Coal and Lignite Surface Mining) 212112 (Bituminous Coal Underground Mining)
Application Type:	Modification
Received Date:	January 31, 2017
Engineer Assigned:	Dan Roberts
Fee Amount:	$1,500
Date Received:	January 31, 2017
Applicant's Ad Date:	February 2, 2017, revised ad March 1, 2017
Newspaper:	*Logan Banner*
Complete Date:	March 24, 2017
UTM Coordinates:	Easting: 441.28294 km Northing: 4183.53679 km Zone: 17
Lat/Lon Coordinates:	Latitude 37.797317 Longitude -81.666944 NAD83
Description:	Modification to add two new belt conveyors BC-32 and BC-33 from a deep mine to new open storage pile OS-11 and unpaved haulroad traffic to the wet wash preparation plant.

BACKGROUND

Greenbrier Minerals, LLC is the owner and operator of the Saunders Preparation Plant, which is currently operating under general permit registration G10-D103F approved on January 6, 2015.

This facility was previously owned and operated by Cliffs Logan County Coal, LLC. As of January 1, 2015, the ownership of the Saunders Preparation Plant was transferred to Greenbrier

Minerals, LLC.

File research indicated that Greenbrier Minerals, LLC's Lower War Eagle Facility (109-00198, G10-D131B) feeds an underground conveying system which emerges and feeds Greenbrier Minerals, LLC's Saunders Preparation Plant (045-00131, G10-D103G). Greenbrier Minerals, LLC's wet wash coal preparation plant (Saunders Preparation Plant: 045-00131, G10-D103F) and coal handling facility (Lower War Eagle Facility: 109-00198, G10-D131B) meet the definition of "Building, Structure, Facility, or Installation" in 45CSR14.2.10 and "Major Source" in 45CSR30.2.26 and shall be considered as one facility for determining applicability to 45CSR14 (PSD) and 45CSR30 (Title V). Therefore, Greenbrier Minerals, LLC's proposed modifications and their existing operations shall be combined when determining applicability and share the common facility ID Number of 045-00131.

As discussed with and recommended by Bev McKeone, NSR Program Manager, on September 21, 2015, the facility ID No. for the Lower War Eagle Facility was changed from 109-00198 to 045-00131 even though the facility actually lies just past the Logan County line inside of Wyoming County. The Lower War Eagle facility has approximately 1 mile of underground belt conveyors and then they merge onto the Powellton Deep Mine conveyors through a flop gate. The Powellton Deep Mine conveyors extend for approximately 4-5 miles and are fed by underground mining operations that produce coal during the week days and transfer it to the Saunders Preparation Plant. On the weekends, the flop gate is shifted and the from the Lower War Eagle Facility is transferred to the Saunders Preparation Plant. The flop gate prevents coal from being transferred from the Lower War Eagle Facility and the Powellton deep mine at the same time.

DESCRIPTION OF PROCESS (taken from the application)

The Saunders Preparation Plant is located in a remote area of Buffalo Creek, Logan County, WV. The facility is clean and very well maintained.

This modification (2017) addresses the installation and operation of two deep mine raw coal belt conveyors and associated stockpile to be located above the loadout facility and connected to the facility by haulroad.

Raw coal will be carried from the deep mine to stockpile OS-11(SW-WS) via belt conveyors BC-32(PE) and BC-33(PE) at TP-75(TC-FE) through TP-78(LO-MDH). This raw coal material will be part of coal received through the raw coal truck dump BS-01 located at the plant.

Raw coal is transferred from a local deep mine to the raw coal stockpile area via belt conveyors BC-01(PE), BC-02(PE), BC-03, and BC-04 @ TP-01(TC-FE) thru TP-07(TC-PE). Raw coal delivered by truck is dumped at the partially-enclosed w/water three-sided roofed bin BS-01(PW) @ TP-08(UD-PW); transfers to belt BC-05(PE) @ TP-09(TC-FE); transfers and processed by an MMD crusher CR-01(FW) @ TP-10(TC-FE); then to the raw coal stockpile area via belt conveyor BC-06(PE) @ TP-11(TC-FW) and TP-12(TC-PE). Raw coal stockpiles OS-01(SW-WS), OS-02(SW-WS) and OS-03(SW-WS) discharge underpile @ TP-13(LO-UC), TP-14(LO-UC), TP-15(LO-UC) to raw coal reclaim belt BC-07(FE) for transfer to a Grizzly screen SS-01(FW) @ TP-

16(TC-FW), then to a double roll crusher CR-02(FW) @ TP-17(TC-FW), to belt BC-08(PE) @ TP-18(TC-FW), into the wet wash preparation plant building and onto the raw coal screen SS-02(FW) @ TP-19(TC- FW) and to the wet wash system @ TP-69(TC-FW). In addition, throughput for crusher CR-02 has been adjusted to show a portion of the trucked coal being processed twice, even though the total throughput for the source is still 7,884,000 TPY. According to the plant manager, only 10% of the truck delivered coal is crushed twice because it produces too many fines which are expelled as waste product.

Clean coal transfers to the clean coal stockpile area via a series of partially-enclosed belt conveyors BC-09(PE) thru BC-17(PE) @ TP-20(TC-FW) thru TP-32(TC-PE). Direct ship clean coal is delivered by truck and dumped at a three-sided roofed w/water bin BS-02(PW) @ TP-33(UD-PW). This material is transferred to a crusher feed conveyor BC-18(PE) @ TP-34(TC-FE) and transfers @ TP-35(TC-FE) to a double roll crusher CR-03(FW). Direct ship coal is then sent to the clean/direct ship coal stockpile OS-07(SW-WS) via belt conveyor BC-19(PE) @ TP-36(TC-FW) and TP-37(TC-MDH) and on to belt conveyor BC-21(PE) @ TP-38(LO-UC). Clean coal stockpiles OS-04(SW-WS), OS-05(SW-WS), OS-06(SW-WS) discharge underpile to reclaim conveyor BC-20(FE) @ TP-39(LO-UC), TP-40(LO-UC), and TP-41(LO-UC). This reclaimed material is transferred from BC-20 and BC-21 @ TP-42(TC-FE) and TP-43(TC-FE) to the loadout via belt conveyor BC-22(PE); to the loadout bin BS-03(FE) @ TP-44(TC-FE); into the surge bin BS-04(FE) @ TP-45(TC-FE); and to railcar for delivery @ TP-46(LR-TC).

Clean stoker coal would transfer inside the plant to belt conveyor BC-26(PE) @ TP-58(TC-FW); to stockpile OS-08(SW-WS) @ TP-59(TC-WS) and to truck @ TP-60(LO-MDH).

Oversized clean coal from the wet wash system goes to double roll crusher CR-04 @ TP-56(TC-FW), with a maximum rating of 373 TPH, located inside the plant and transfers inside the plant to belt conveyor BC-09 @ TP-57(TC-FW).

The modification of April 2014 addressed the addition of one excess raw coal stockpile OS-09 and one excess clean coal stockpile OS-10. Raw coal will be delivered by truck to the excess raw coal stockpile OS-09(SW-WS) @ TP-69(UL-MDH) and then transferred out to existing raw coal truck dump bin BS-01 @ TP-70(LO-MDH) and TP-71(UD-PW). Clean direct ship coal will be delivered by truck to new excess clean coal stockpile OS-10 (SW-WS) @ TP-72 (UL-MDH) and then transferred out to existing direct ship coal truck dump bin BS-02 (PW) @ TP-74 (UD-PW). No other changes to the throughput for bins BS-01 or BS-02 are proposed.

The refuse system extension was completed in the spring of 2013 and currently no refuse material is being trucked from refuse bins BS-05 and BS-06. The extension consisted of a series of five partially enclosed belts BC-27 thru BC-31 @ TP-61(TC-FE) thru TP-65(TC-FE). Material from belt BC-31 will transfer to a partially-enclosed (open top) refuse bin BS-07(PE) @ TP-66(TC-FE) and then to truck for delivery to the disposal area @ TP-67(LO-MDH) for approximately 500 feet.

Worst Case Scenario Only - Refuse transfers from the plant to belt BC-23(PE) @ TP-47(TC-FW) and into the filter cake bin BS-05(FE) @ TP-48(TC-FE), where the material is pressed and transferred to truck @ TP-49(LO-MDH) for delivery to the disposal area @ TP-50(UL-MDH). Coarse refuse transfers from the plant to a collecting belt BC-24(PE) @ TP-51(TC-FW) for delivery

to the refuse bin BS-06(FE) via belt BC-25(PE) @ TP-52(TC-FE) and TP-53(TC-FE). The refuse material is transferred from the bin to truck @ TP-54(LO-MDH) for delivery to the disposal area @ TP-55(UL-MDH).

Haulroad emissions have been adjusted to show that raw coal and clean coal are received on paved haulroads 0.29 miles in length and the unpaved refuse haulroad has been extended to 3.4 miles in length in the event that the plant refuse belt system becomes disabled (worst case scenario). The paved haulroad "road surface silt loading" was adjusted to depict emissions more in line with paved surfaces. The factors used in the calculations section are modeled after facilities located in the western United States and are not indicative of the local haulroad criteria.

The facility shall be modified and operated in accordance with the following equipment and control device information taken from registration application G10-D103G and any amendments thereto:

Equip-ment ID No.	Date of Construction, Reconstruction or Modification [1]	G10-D Applicable Sections [2]	Emission Unit Description	Maximum Permitted Throughput		Control Device [3]	Associated Transfer Points		
				TPH	TPY		Location: B -Before A -After	ID No.	Control Device [3]
Deep Mine Raw Coal Circuit									
BC-01	C 2008 [4]	5 and 7	Belt Conveyor - transfers raw coal from the deep mine to BC-02	1,500	13,140,000	PE	B A	TP-01 TP-02	TC-FE TC-FE
BC-02	C 2008 [4]	5 and 7	Belt Conveyor - transfers raw coal from BC-01 to BC-03 or Open Stockpile OS-01	1,500	13,140,000	PE	B A A	TP-02 TP-03 TP-04	TC-FE TC-PE TC-FE
OS-01	C 2008 [4]	5 and 7	Raw Coal Stockpile with a Stacking Tube - maximum 25,000 ton capacity, 38,869 ft^2 base area and 75' height - receives deep mine raw coal from BC-01 and underpile reclaim feeders drop to BC-07	1,500 in 1,200 out	13,140,000	WS	B A	TP-03 TP-13	TC-PE LO-UC
BC-03	C 2008 [4]	5 and 7	Belt Conveyor - transfers deep mine raw coal from BC-02 to OS-02 or BC-04	1,500	13,140,000	PE	B A A	TP-04 TP-05 TP-06	TC-FE TC-PE TC-FE
OS-02	C 2008 [4]	5 and 7	Raw Coal Stockpile with a Stacking Tube - maximum 25,000 ton capacity, 38,869 ft^2 base area and 75' height - receives deep mine raw coal from BC-03 and underpile reclaim feeders drop to BC-07	1,500 in 1,200 out	13,140,000	WS	B A	TP-05 TP-14	TC-PE LO-UC
BC-04	C 2008 [4]	5 and 7	Belt Conveyor - transfers deep mine raw coal from BC-03 to OS-03	1,500	13,140,000	PE	B A	TP-06 TP-07	TC-FE TC-PE
OS-03	C 2008 [4]	5 and 7	Raw Coal Stockpile with a Stacking Tube - maximum 25,000 ton capacity, 38,869 ft^2 base area and 75' height - receives deep mine raw coal from BC-04 and trucked direct ship coal from BC-06 (see Trucked Raw Coal Circuit) and underpile reclaim feeders drop to BC-07	800 in 1,200 out	13,140,000	WS	B B A	TP-07 TP-12 TP-15	TC-PE TC-PE LO-UC
BC-07	C 2008 [4]	5 and 7	Belt Conveyor - transfers deep mine raw coal from OS-01 and OS-02 and trucked raw coal from OS-03 (see Trucked Raw Coal Circuit) to grizzly screen SS-01 (Modified in 2013 to decrease the throughputs from 1,500 TPH and 13,140,000 TPY to 900 TPH and 7,884,000 TPY)	900	7,884,000	FE	B B B A	TP-13 TP-14 TP-15 TP-16	LO-UC LO-UC LO-UC TC-FE

Equip-ment ID No.	Date of Construction, Reconstruction or Modification [1]	G10-D Applicable Sections [2]	Emission Unit Description	Maximum Permitted Throughput		Control Device [3]	Associated Transfer Points		
				TPH	TPY		Location: B -Before A -After	ID No.	Control Device [3]
SS-01	C 2008 [4]	5 and 7	Single Deck Screen - raw coal from BC-07 is screened and then sent to crusher CR-02 (Modified in 2013 to decrease the throughputs from 1,200 TPH and 10,512,000 TPY to 900 TPH and 7,884,000 TPY)	900	7,884,000	FW	B A	TP-16 TP-17	TC-FE TC-FW
CR-02	C 2008 [4]	5 and 7	Double Roll Crusher - receives raw coal from SS-01, crushes it from 4"x0 to 2"x0, and then drops to BC-08 (Modified in 2013 to decrease the throughputs from 1,200 TPH and 10,512,000 TPY to 900 TPH and 7,884,000 TPY)	900	7,884,000	FW	B A	TP-17 TP-18	TC-FW TC-FW
BC-08	C 2008 [4]	5 and 7	Belt Conveyor - transfers raw coal from CR-02 into the prep plant building to SS-02 (Modified in 2013 to decrease the throughputs from 1,200 TPH and 10,512,000 TPY to 900 TPH and 7,884,000 TPY)	900	7,884,000	PE	B A	TP-18 TP-19	TC-FW TC-FW
SS-02	C 2013	5 and 8	Double Deck Deslime Screen - raw coal from BC-08 is washed with water and screened and then sent to the wet wash circuit	900	7,884,000	FW	B A	TP-19 TP-69	TC-FW TC-FW
Trucked Deep Mine Raw Coal Circuit									
BC-32	C 2017	5 and 8	Belt Conveyor - transfers raw coal from the deep mine to BC-33	1,200	4,380,000	PE	B A	TP-75 TP-76	TC-FE TC-FE
BC-33	C 2017	5 and 8	Belt Conveyor - transfers raw coal from BC-33 to OS-11	1,200	4,380,000	PE	B A	TP-76 TP-77	TC-FE TC-MDH
OS-11	C 2017	5 and 8	Raw Coal Stockpile with a Stacking Tube - maximum 20,000 ton capacity, 38,869 ft^2 base area and 40' height - receives deep mine raw coal from BC-33 and a front-end loader loads it into trucks for transport to BS-01	1,200	4,380,000	WS	B A	TP-77 TP-78	TC-MDH LO-UC
Trucked Raw Coal Circuit									
OS-09	C 2014	5 and 8	Raw Coal Open Storage Pile - maximum 20,000 ton capacity, 38,869 ft^2 base area and 40' height - receives raw coal from trucks, stores it and then a front-end loader transfers it back to trucks for transport to BS-01	114	500,000	WS	B A A	TP-69 TP-70 TP-71	UL-MDH LO-MDH UD-PW
BS-01	C 2008 [4]	5 and 7	100 ton Truck Dump Bin - receives raw coal from trucks and drops to BC-05	800	7,008,000	PW	B B A	TP-08 TP-71 TP-09	UD-PW UD-PW TC-FE
BC-05	C 2008 [4]	5 and 7	Belt Conveyor - transfers trucked raw coal from BS-01 to CR-01	800	7,008,000	PE	B A	TP-09 TP-10	TC-FE TC-FE
CR-01	C 2008 [4]	5 and 7	MMD Crusher - receives trucked raw coal from BC-05, crushes it from 6"x0 to 2"x0 and then drops to BC-06	800	7,008,000	FW	B A	TP-10 TP-11	TC-FE TC-FW
BC-06	C 2008 [4]	5 and 7	Belt Conveyor - transfers trucked raw coal from CR-01 to OS-03	800	7,008,000	PE	B A	TP-11 TP-12	TC-FW TC-PE
Direct Ship Coal Circuit									
OS-10	C 2014	5 and 8	Direct Ship/Clean Coal Open Storage Pile - maximum 20,000 ton capacity, 38,869 ft^2 base area and 40' height - receives raw coal from trucks, stores it and then a front-end loader transfers it back to trucks for transport to BS-02	114	500,000	WS	B A A	TP-72 TP-73 TP-74	UL-MDH LO-MDH UD-PW

Equip-ment ID No.	Date of Construction, Reconstruction or Modification [1]	G10-D Applicable Sections [2]	Emission Unit Description	Maximum Permitted Throughput		Control Device [3]	Associated Transfer Points		
				TPH	TPY		Location: B -Before A -After	ID No.	Control Device [3]
BS-02	C 2008 [4]	5 and 7	100 ton Truck Dump Bin - receives direct ship coal from trucks and drops to BC-18	800	7,008,000	PW	B B A	TP-33 TP-74 TP-34	UD-PW UD-PW LR-TC
BC-18	C 2008 [4]	5 and 7	Belt Conveyor - transfers trucked direct ship coal from BS-02 to CR-03	800	7,008,000	PE	B A	TP-34 TP-35	LR-TC TC-FE
CR-03	C 2008 [4]	5 and 7	Double Roll Crusher - receives trucked direct ship coal from BC-18, crushes it from 6"x0 to 2"x0 and then drops to BC-19	800	7,008,000	FW	B A	TP-35 TP-36	TC-FE TC-FW
BC-19	C 2008 [4]	5 and 7	Belt Conveyor - transfers trucked direct ship coal from CR-03 to OS-07	800	7,008,000	PE	B A	TP-36 TP-37	TC-FW TC-MDH
OS-07	M 2013 C 2008 [4]	5 and 8	Direct Ship Coal Stockpile with a Stacking Tube - maximum 25,000 ton capacity, 38,869 ft^2 base area and 75' height - receives trucked direct ship coal from BC-19 or clean coal from BC-17 (see Clean Coal Circuit below) and underpile reclaim feeders drop to BC-21	1,550 in 3,500 out	7,008,000	WS	B B A	TP-37 TP-32 TP-38	TC-MDH TC-PE LO-UC
BC-21	M 2013 C 2008 [4]	5 and 8	Belt Conveyor - transfers clean and direct ship coal from OS-07 to BC-22 (see Clean Coal Circuit below)	3,500	7,008,000	PE	B A	TP-38 TP-43	LO-UC TC-FE
Clean Coal Circuit									
CR-04	M 2013 C 2008 [4]	5 and 8	Double Roll Crusher - receives oversized clean coal from the wet circuit, crushes it to 2"x0 then transfers to belt conveyor BC-09 (Constructed in 2008, but not permitted until 2010; Modified in 2013 to increase the throughputs from 300 TPH and 2,628,000 TPY to 373 TPH and 3,267,000 TPY)	373	3,267,000	FW	B A	TP-56 TP-57	TC-FW TC-FW
BC-09	C 2008 [4]	5 and 7	Belt Conveyor - transfers clean coal from the prep plant wet wash circuit and CR-04 to BC-10 (Constructed in 2008, but not permitted until 2010)	750	6,570,000	PE	B B A	TP-20 TP-57 TP-21	TC-FW TC-FW TC-FE
BC-10	C 2008 [4]	5 and 7	Belt Conveyor - transfers clean coal from BC-09 to BC-11	750	6,570,000	PE	B A	TP-21 TP-22	TC-FE TC-FE
BC-11	C 2008 [4]	5 and 7	Belt Conveyor - transfers clean coal from BC-10 to BC-12	750	6,570,000	PE	B A	TP-22 TP-23	TC-FE TC-FE
BC-12	C 2008 [4]	5 and 7	Belt Conveyor - transfers clean coal from BC-11 to BC-13	750	6,570,000	PE	B A	TP-23 TP-24	TC-FE TC-FE
BC-13	C 2008 [4]	5 and 7	Belt Conveyor - transfers clean coal from BC-12 to BC-14	750	6,570,000	PE	B A	TP-24 TP-25	TC-FE TC-FE
BC-14	C 2008 [4]	5 and 7	Belt Conveyor - transfers clean coal from BC-13 to OS-04 or BC-15	750	6,570,000	PE	B A A	TP-25 TP-26 TP-27	TC-FE TC-PE TC-FE
OS-04	C 2008 [4]	5 and 7	Clean Coal Stockpile With Stacking Tube - maximum 25,000 ton capacity, 38,869 ft^2 base area and 75' height - receives clean coal from BC-14 and underpile reclaim feeders drop to BC-20	750 in 3,500 out	6,570,000	WS	B A	TP-26 TP-39	TC-PE LO-UC
BC-15	C 2008 [4]	5 and 7	Belt Conveyor - transfers clean coal from BC-14 to OS-05 or BC-16	1,500	6,570,000	PE	B A A	TP-27 TP-28 TP-29	TC-FE TC-PE TC-FE

Equip-ment ID No.	Date of Construction, Reconstruction or Modification [1]	G10-D Applicable Sections [2]	Emission Unit Description	Maximum Permitted Throughput		Control Device [3]	Associated Transfer Points		
				TPH	TPY		Location: B -Before A -After	ID No.	Control Device [3]
OS-05	C 2008 [4]	5 and 7	Clean Coal Stockpile with Stacking Tube - maximum 25,000 ton capacity, 38,869 ft^2 base area and 75' height - receives clean coal from BC-15 and underpile reclaim feeders drop to BC-20	1,500	6,570,000	WS	B A	TP-28 TP-40	TC-PE LO-WC
BC-16	C 2008 [4]	5 and 7	Belt Conveyor - transfers clean coal from BC-15 to OS-06 or BC-17	750	6,570,000	PE	B B A	TP-29 TP-30 TP-31	TC-FE TC-PE TC-FE
OS-06	C 2008 [4]	5 and 7	Clean Coal Stockpile with Stacking Tube - maximum 25,000 ton capacity, 38,869 ft^2 base area and 75' height - receives clean coal from BC-16 and underpile reclaim feeders drop to BC-20	750 in 3,500 out	6,570,000	WS	B A	TP-30 TP-41	TC-PE LO-UC
BC-17	C 2008 [4]	5 and 7	Belt Conveyor - transfers clean coal from BC-16 to OS-07 (see Direct Ship Coal Circuit above)	750	6,570,000	PE	B A	TP-31 TP-32	TC-FE TC-PE
BC-20	C 2008 [4]	5 and 7	Belt Conveyor - transfers clean coal from OS-04, OS-05, and OS-06 to BC-22	3,500	6,570,000	FE	B B B A	TP-39 TP-40 TP-41 TP-42	LO-UC LO-UC LO-UC TC-FE
BC-22	C 2008 [4]	5 and 7	Belt Conveyor - transfers clean and direct ship coal from BC-20 and BC-21 (see Direct Ship Coal Circuit above) to BS-03	3,500	13,578,000	PE	B B A	TP-42 TP-43 TP-44	TC-FE TC-FE TC-FE
BS-03	C 2008 [4]	5 and 7	400 ton Railcar Loadout Bin - receives clean and direct ship coal from BC-22 and drops to BS-04	3,500	13,578,000	FE	B A	TP-44 TP-45	TC-FE TC-FE
BS-04	C 2008 [4]	5 and 7	220 ton Railcar Surge Bin - receives clean and direct ship coal from BS-03 and loads to rail cars through a telescopic chute	3,500	13,578,000	FE	B A	TP-45 TP-46	TC-FE LR-TC
Stoker Coal Circuit									
BC-26	M 2013 C 2008 [4]	5 and 8	Belt Conveyor - transfers clean coal from wet circuit to open clean coal stoker stockpile OS-08 (Constructed in 2008, but not permitted until 2010; Modified in 2013 to increase the throughputs from 100 TPH and 876,000 TPY to 230 TPH and 2,014,000 TPY)	230	2,014,000	PE	B A	TP-58 TP-59	TC-FW TC-WS
OS-08	M 2013 C 2008 [4]	5 and 8	Clean Coal Stoker Stockpile - maximum 1,000 ton capacity, 3,869 ft^2 base area and 20' height - receives clean stoker coal from belt conveyor BC-26. Stoker coal is loaded out to truck. (Constructed in 2008, but not permitted until 2010; Modified in 2013 to increase the throughputs from 100 TPH and 876,000 TPY to 230 TPH and 2,014,000 TPY)	230	2,014,000	WS	B A	TP-59 TP-60	TC-WS LO-MDH
Refuse Circuit									
BC-23	C 2008 [4]	5 and 7	Belt Conveyor - transfers filter cake refuse from the prep plant to BS-05	200	1,752,000	PE	B A	TP-47 TP-48	TC-FW TC-FE
BS-05	C 2008 [4]	5 and 7	80 ton Filter Cake Refuse Truck Loadout Bin - receives filter cake refuse from BC-23 and loads to trucks for delivery to the disposal area	200	1,752,000	FE	B A	TP-48 TP-49	TC-FE LO-MDH

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				TPH	TPY		Location: B -Before A -After	ID No.	Control Device [3]
BC-24	C 2008 [4]	5 and 7	Belt Conveyor - transfers coarse refuse from the prep plant to BC-25	600	5,256,000	PE	B A	TP-51 TP-52	TC-FW TC-FE
BC-25	C 2008 [4]	5 and 7	Belt Conveyor - transfers coarse refuse from BC-24 to BS-06	600	5,256,000	PE	B A	TP-52 TP-53	TC-FE TC-FE
BS-06	C 2008 [4]	5 and 7	200 ton Refuse Truck Loadout Bin - receives refuse from BC-19 and loads to trucks for delivery to the disposal area or transfers to BC-27	600	5,256,000	FE	B A A	TP-53 TP-54 TP-61	TC-FE LO-MDH TC-FE
BC-27	C 2012	5 and 8	Belt Conveyor - transfers refuse from bin BS-06 and transfers to belt BC-28	1,050	5,256,000	PE	B A	TP-61 TP-62	TC-FE TC-FE
BC-28	C 2012	5 and 8	Belt Conveyor - transfers refuse from belt BC-27 and transfers to belt BC-29	1,050	5,256,000	PE	B A	TP-62 TP-63	TC-FE TC-FE
BC-29	C 2012	5 and 8	Belt Conveyor - transfers refuse from belt BC-28 and transfers to belt BC-30	1,050	5,256,000	PE	B A	TP-63 TP-64	TC-FE TC-FE
BC-30	C 2012	5 and 8	Belt Conveyor - transfers refuse from belt BC-29 and transfers to belt BC-31	1,050	5,256,000	PE	B A	TP-64 TP-65	TC-FE TC-FE
BC-31	C 2012	5 and 8	Belt Conveyor - transfers refuse from belt BC-30 and transfers to refuse bin BS-07	1,050	5,256,000	PE	B A	TP-65 TP-66	TC-FE TC-FE
BS-07	C 2012	5 and 8	200 ton Refuse Truck Loadout Bin - receives refuse from BC-31 and loads to trucks for delivery to the disposal area	1,050	5,256,000	PE	B A	TP-66 TP-67	TC-FE LO-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; FE, WS - Full Enclosure with Water Sprays; PE - Partial Enclosure; PE, WS - Partial Enclosure with Water Sprays; WS - Water Sprays; TC - Telescopic Chute; UC - Under-pile Reclaim; MDH - Minimize Drop Height; and NC - No Control.

[4] Constructed after April 28, 2008.

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 unpaved 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 15, 2017, Fred Teel of the DAQ's Compliance and Enforcement Section performed a scheduled full on-site targeted inspection. The were no problems noted at the time of the inspection and the facility was given a status code of 30 - In Compliance.

Directions from Charleston are to take U.S. Route 119 South, take State Route 73 toward State Route 10 and Logan, WV, travel 2.2 miles and turn left at the light and take State Route 10 South, travel 0.6 miles and turn left at the light to stay on State Route 10 South, travel 16 miles and turn left onto County Route 16 East (Buffalo Creek Road), travel 12.5 miles and stay right at the Y to stay on County Route 16 East (County Route 16/3 breaks to the left and is a gravel road), travel 0.5 miles and turn right onto Elk Lick Loop and the proposed site is to the left after crossing the railroad tracks.

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. A copy of the increase in emissions calculations were performed by the writer using the DAQ's G10-C Excel Emission Calculation Spreadsheet and a copy has been attached.

The proposed modification will result in an *increase* in the potential to discharge controlled particulate matter emissions of 74.60 pounds per hour (PPH) and 320.94 tons per year (TPY) of particulate matter (PM), of which 21.98 PPH and 93.54 TPY will be particulate matter less than 10 microns in diameter (PM_{10}). Refer to the following table for a summary of the proposed increase in emissions:

- Increase in Emissions - **Greenbrier Minerals, LLC Saunders Prep Plant - G10-D103G**	**Controlled PM Emissions**		**Controlled PM_{10} Emissions**	
	lb/hour	TPY	lb/hour	TPY
Fugitive Emissions				
Open Storage Pile Emissions	0.04	0.16	0.02	0.08
Unpaved Haulroad Emissions	72.29	316.63	20.89	91.51
Paved Haulroad Emissions	0.00	0.00	0.00	0.00
Fugitive Emissions Total	*72.33*	*316.80*	*20.91*	*91.59*
Point Source Emissions				
Equipment Emissions	0.00	0.00	0.00	0.00
Transfer Point Emissions	2.27	4.14	1.07	1.96
Point Source Emissions Total (PTE)	*2.27*	*4.14*	*1.07*	*1.96*
FACILITY EMISSIONS TOTAL	**74.60**	**320.94**	**21.98**	**93.54**

The proposed modification will result in a new estimated potential to discharge controlled emissions of particulate matter emissions of 385.99 lb/hr and 1,640.21 TPY of PM, of which 120.16 lb/hour and 502.51 TPY will be PM_{10}. Refer to the following table for a complete summary of the modified facility's new potential to discharge:

- New Facility-wide Emissions - **Greenbrier Minerals, LLC Saunders Prep Plant - G10-D103G**	**Controlled PM Emissions**		**Controlled PM_{10} Emissions**	
	lb/hour	TPY	lb/hour	TPY
Fugitive Emissions				
Open Storage Pile Emissions	0.48	2.09	0.22	0.98
Unpaved Haulroad Emissions	335.49	1,469.48	96.96	424.69
Paved Haulroad Emissions	2.11	9.23	0.40	1.76
Fugitive Emissions Total	*338.07*	*1,480.79*	*97.58*	*427.42*
Point Source Emissions				
Equipment Emissions	29.15	106.11	13.70	49.87
Transfer Point Emissions	18.77	53.31	8.88	25.21
Point Source Emissions Total (PTE)	*47.92*	*159.42*	*22.58*	*75.08*
FACILITY EMISSIONS TOTAL	**385.99**	**1,640.21**	**120.16**	**502.51**

Greenbrier Minerals, LLC's wet wash coal preparation plant (Saunders Preparation Plant - G10-D103F) and coal handling facility (Lower War Eagle Facility - G10-D131C) meet the definition of "Building, Structure, Facility, or Installation" in 45CSR14.2.10 and "Major Source" in 45CSR30.2.26 and shall be considered as one facility for determining applicability to 45CSR14 (PSD) and 45CSR30 (Title V). Therefore, Greenbrier Minerals, LLC's proposed modifications and their existing operations shall be combined when determining applicability and share the common facility ID Number of 045-00131.

The operations will have a combined estimated potential to discharge controlled emissions of 1,891.31 TPY of PM, of which 576.56 TPY will be PM_{10}. The facilities will have a combined estimated potential to emit (point source emissions only) of 177.19 TPY of PM, of which 83.47 TPY will be PM_{10}. Refer to the following table for a complete summary of Greenbrier Minerals, LLC's wet wash coal preparation plant (G10-D103G) and coal handling facility (G10-D131C) combined potential to discharge:

- Combined Facility-wide Emissions - **Greenbrier Minerals, LLC Saunders Preparation Plant (G10-D103G) and Lower War Eagle Facility (G10-D131C)**	**Controlled PM Emissions**		**Controlled PM_{10} Emissions**	
	lb/hour	TPY	lb/hour	TPY
Fugitive Emissions				
G10-D103G - Wet Wash Preparation Plant	338.07	1,480.79	97.58	427.42
G10-D131C - Coal Handling Facility	53.25	233.33	14.99	65.67
Combined Fugitive Emissions Total	*391.32*	*1,714.12*	*112.57*	*493.09*
Point Source Emissions				
G10-D103G - Wet Wash Preparation Plant	47.92	159.42	22.58	75.08
G10-D131C - Coal Handling Facility	4.06	17.77	1.92	8.39
Combined Point Source Emissions Total	*51.98*	*177.19*	*24.50*	*83.47*
COMBINED FACILITY EMISSIONS	**443.30**	**1,891.31**	**137.07**	**576.56**

REGULATORY APPLICABILITY

NESHAPS and PSD have no applicability to the modified facility. The proposed modification of Greenbrier Minerals, 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 PM_{10}) and involve the construction of two (2) belt conveyors and one (1) open storage pile, which are defined as affected facilities in 40 CFR 60 Subpart Y. The applicant has submitted an application for a modification to a general permit registration. The applicant published a Class I legal advertisement in the *Logan Banner* on February 2, 2017 and submitted $500 for the General Permit application fee and $1,000 for the NSPS fee. The applicant published a revised Class I legal advertisement in the *Logan Banner* on March 1, 2017 because the Lat/Lon coordinates in the original ad were wrong.

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 two (2) belt conveyors and one (1) open storage pile, 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 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, Greenbrier Minerals, LLC's wet wash coal preparation plant (Saunders Preparation Plant - G10-D103F) and coal handling facility (Lower War Eagle Facility - G10-D131C) are 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 combined new potential to emit will be 83.84 TPY for PM_{10} (open storage piles constructed or modified after May 27, 2009 [OS-07 through OS-11] and point sources only), which is less than the 45CSR30 threshold of 100 TPY of a regulated air pollutant used to define a major stationary source. Therefore, the coal handling facility and wet wash coal preparation plant will be a nonmajor source subject to 45CSR30. The coal handling facility and wet wash coal preparation plant will not subject to the permitting

requirements of 45CSR30 and will be classified as a deferred source.

The proposed modification of Greenbrier Minerals, LLC's Lower War Eagle Facility 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, Greenbrier Minerals, LLC's coal handling facility (Lower War Eagle Facility - G10-D131C) and wet wash coal preparation plant (Saunders Preparation Plant - G10-D103F) are not one of the 100 TPY stationary sources listed under the definition of "Major Stationary Source" in subsection 2.43.a. Therefore, they must have a combined 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 combined potential to emit will be 177.97 TPY for PM (open storage piles constructed or modified after May 27, 2009 [OS-07 through OS-11] and point sources only), 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 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 Logan 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, 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.

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 application to modify a general permit registration 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 Greenbrier Minerals, LLC for the modification of their existing wet wash coal preparation plant located near Saunders, Logan County, WV is hereby recommended.

Daniel P. Roberts, Engineer Trainee
NSR Permitting Section

March 24, 2017
Date