west virginia department of environmental protection

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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	G40-C075-P1
Plant ID No.:	777-00138
Applicant:	Premium Energy, LLC
Facility Name:	Pax
Location:	Raleigh County
SIC Code:	1422 (Crushed and Broken Limestone)
Application Type:	Relocation
Received Date:	March 30, 2016
Engineer Assigned:	Thornton E. Martin Jr.
Fee Amount:	$1,500
Date Received:	March 31, 2016
Complete Date:	April 29, 2016
Applicant Ad Date:	March 30, 2016
Newspaper:	*The Register-Herald*
UTM's:	Easting: 474.01198 km Northing: 4,193.55911 km Zone: 17
Description:	Relocation and operation of a portable 400 TPH aggregate crusher to be used for the upkeep and maintenance of the mine site. This unit will be relocated from the Camp Branch Surface Mine to the Pax Surface Mine. In addition, Premium Energy proposes to add an external power screen system for the operation.

PROCESS DESCRIPTION

Rock from adjacent overburden areas will be transferred to BS-01(PW) by front end loader @ TP-01(UD-PW); go to belt conveyor BC-01(NC) @ TP-02(TC-PE); transfer to screen SS-01(PW) @ TP-03(TC-PW). The screen will discharge material by size to two separate stockpiles OS-01(SW-WS) and OS-02(SW-WS) via belt conveyors BC-02(NC) and BC-03(NC) @ TP-04(TC-FE) thru TP-08(TC-MDH). The screen will transfer to belt conveyor BC-04(NC) @ TP-10(TC-FE) and feed bin BS-02(PW) @ TP-11(TC-PW). From BS-02, material will transfer to BC-05(NC) @ TP-12(TC-PE) to the crusher CR-01(FE) @ TP-13(TC-FE). The material will be crushed and discharged to stockpiles OS-03(SW-WS), OS-04(SW-WS), OS-05(SW-WS) according to size via belt conveyors BC-06(NC), BC-07(NC) and BC-08(NC) @ TP-14(TC-FE) thru TP-21(LO-MDH). Material will be loaded to truck for distribution on mine site at TP-06(LO-MDH), TP-09(LO-MDH), TP-16(LO-MDH), TP-189LO-MDH) and TP-22(LO-MDH).

Applicant agrees to install a portable water spray system to control fugitive emissions.

The portable crushing unit is a Powerscreen XR400S. This unit has a Scania DC09, diesel engine (275 HP/202 kW@ 1800 RPM), (E-1), manufacture date of 2011, to operate the systems for both movement around the site and aggregate processing. An existing 1,000 gallon diesel fuel tank (T1) with a throughput estimated at 8,000 gallons/yr. will be on site. The external power screen unit is a Chieftain 2100S and will operate from on-site utility power.

The facility shall be constructed and operated in accordance with the following equipment and control device information taken from registration application G40-C075-P1:

Equipment ID No.	Date of Manufacture	Description	Maximum Capacity		Control Equipment [1]
			TPH	TPY	
Portable Crushing and Power Screen Unit					
BS-01	2011	10 Ton Feed Bin - receives rock from the endloader and feeds onto belt conveyor BC-01	----	3,504,000	PW
BC-01	2011	Belt Conveyor receives rock from feed bin BS-01 and transfers to power screen SS-01	400	3,504,000	N
SS-01	2011	Double Deck Screen - receives rock from BC-01, sizes it and drops to BC-02, BC-03 or BC-04	400	3,504,000	PW
BC-02	2011	Belt Conveyor receives screened rock from SS-01 and transfers to open stockpile OS-01	400	3,504,000	N
OS-01	2016	5,000 ton Open Stockpile - receives sized rock from BC-02 and a front end loader transfers to trucks	----	3,504,000	SW-WS
BC-03	2011	Belt Conveyor receives screened rock from SS-01 and transfers to open stockpile OS-02	400	3,504,000	N
OS-02	2016	5,000 ton Open Stockpile - receives sized rock from BC-03 and a front end loader transfers to trucks	----	3,504,000	SW-WS
BC-04	2011	Belt Conveyor receives screened rock from SS-01 and transfers to feed bin BS-02	400	3,504,000	N
BS-02	2011	10 Ton Feed Bin - receives rock from belt conveyor BC-04 and feeds onto belt conveyor BC-05	400	3,504,000	PW
BC-05	2011	Belt Conveyor receives screened rock from BC-04 and transfers to crusher CR-01	400	3,504,000	N
CR-01	2011	Double Roll Crusher - receives rock from BC-05, crushing and transfers to conveyors BC-06, BC-07 or BC-08 based on size	400	3,504,000	PW
BC-06	2011	Belt Conveyor receives sized rock from CR-01 and transfers to open stockpile OS-03	400	3,504,000	N
OS-03	2016	5,000 ton Open Stockpile - receives sized rock from BC-06 and a front end loader transfers to trucks	----	3,504,000	SW-WS
BC-07	2011	Belt Conveyor receives sized rock from CR-01 and transfers to open stockpile OS-04	400	3,504,000	N
OS-04	2016	5,000 ton Open Stockpile - receives sized rock from BC-07 and a front end loader transfers to trucks	----	3,504,000	SW-WS
BC-08	2011	Belt Conveyor receives sized rock from CR-01 and transfers to open stockpile OS-05	400	3,504,000	N
OS-05	2016	5,000 ton Open Stockpile - receives sized rock from BC-08 and a front end loader transfers to trucks	----	3,504,000	SW-WS
Engine			**Operating Parameters**		
E-1	2011	Scania DC09, 275 hp/202 kW, Tier 4i Cert.	13.9 GPH	1040 hrs/yr	SCR
Storage			**Annual Throughput**		
T1	N/A	1,000 Gallon Diesel Fuel Tank	8,000 gal/yr		N

[1] PW - Partial Enclosure w/Water Spray; SW-WS - Water Spray; N - No Controls; SCR - Selective Catalytic Reduction; N/A - Not Available

DESCRIPTION OF FUGITIVE EMISSIONS

The potential sources of fugitive 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. 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. New course gravel base material will be added to unpaved haulroads as needed.

SITE INSPECTION

This source will be relocated on site at the Pax Surface Mine to process aggregate for the upkeep and maintenance of the mine site. The writer deemed that a site inspection was not necessary at this time due to the type and scope of the relocation proposed.

Directions: Take I-64 South (Turnpike) to the Pax Exit 54. Upon exiting the interstate, take a right onto CR 23/2 (Coal River Mountain Road) and travel 2.5 miles to the top of the ridge. There will be a Heavy Equipment Crossing sign at an intersection on top of the ridge. Turn left at the intersection and travel 3 miles on this haulroad to the crusher location.

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 haul roads are based on AP-42 "Compilation of Air Pollution Emission Factors." Control efficiencies were applied based on the Reference Document for General Permit G40-C. The estimated emission calculations were performed by the applicant using the General Permit G40-C Excel emission calculation spreadsheet and were checked for accuracy and completeness by the writer.

The proposed relocation and configuration will result in the estimated potential to discharge controlled emissions (not including fugitive emissions) of 2.62 pounds per hour and 11.48 TPY of PM (particulate matter), of which 1.25 pounds per hour and 5.47 TPY are PM_{10} (particulate matter less than 10 microns in diameter). The potential to emit criteria pollutants from the engine is estimated to be: NO_x - 4.433 TPY; CO - 0.955 TPY; VOC - 0.353; SO_2 - 0.293 TPY and PM_{10} - 0.315 TPY. The potential to emit hazardous pollutants from the engine is estimated to be: Benzene - 0.00091 TPY; Toluene - 0.000399 TPY; Xylene - 0.000278 TPY; Acetaldehyde - 0.000748 TPY and Formaldehyde - 0.001151 TPY. Refer to the following tables for a complete summary of the proposed facility's emissions:

Table 1: Emissions Summary *(less Engine)*

Emissions Summary - *Premium Energy, LLC* *Portable Crush and Screening System* ***G40-C075-P1***	Controlled PM Emissions		Controlled PM_{10} Emissions	
	lb/hr	TPY	lb/hr	TPY
Fugitive Emissions				
Stockpile Emissions	0.14	0.62	0.07	0.29
Unpaved Haulroad Emissions	57.51	251.88	12.10	52.99
Paved Haulroad Emissions	0.00	0.00	0.00	0.00
Fugitive Emissions Total	*57.65*	*252.50*	*12.17*	*53.28*
Point Source Emissions				
Equipment Emissions	2.58	11.28	1.23	5.37
Transfer Point Emissions	0.04	0.20	0.02	0.10
Point Source Emissions Total	*2.62*	*11.48*	*1.25*	*5.47*
FACILITY EMISSIONS TOTAL	**60.27**	**253.98**	**13.42**	**58.75**

Table 1a: Engine Emissions

Source	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (tons/yr)
E-1	Carbon Monoxide	1.837	0.955
	Nitrogen Oxides	8.525	4.433
	Sulfur Dioxide	0.564	0.293
	PM_{10}	0.61	0.32
	Volatile Organic Compounds	0.679	0.353
	Formaldehyde	0.002	0.001

REGULATORY APPLICABILITY

The proposed relocation of an aggregate processing facility is subject to the following state and federal rules:

45CSR7 *To Prevent and Control Particulate Matter Air Pollution From Manufacturing Processes and Associated Operations*

The facility is subject to the requirements of 45CSR7 because it meets the definition of "Manufacturing Process" found in subsection 45CSR7.2.20. The facility should be in compliance with Subsection 3.1 (no greater than 20% opacity), Subsection 3.7 (no visible emissions from any storage structure pursuant to subsection 5.1 which is required to have a full enclosure and be equipped with a control device), Subsection 4.1 (PM emissions shall not exceed those allowed under Table 45-7A), Subsection 5.1 (manufacturing process and storage structures must be equipped with a system to minimize emissions), Subsection 5.2 (minimize PM emissions from haulroads and plant premises) when the particulate matter control methods and devices proposed within application G40-C075-P1 are in operation.

According to Table 45-7B, for a type 'a' source with a maximum process weight rate of 800,000 lb/hour, the maximum allowable emission rate is 50 lb/hour of particulate matter. The maximum

emission rate is 2.62 lb/hour of particulate matter according to estimated emissions in fact sheet G40-C075-P1.

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 relocation for the portable aggregate processing is subject to the requirements of 45CSR13, Subsection 11. The applicant has submitted the proper application fee of $1,500 and published a Class I legal advertisement in *The Register-Herald* on March 30, 2016.

45CSR16 *Standards of Performance for New Stationary Sources*
40 CFR 60 *Subpart OOO: Standards of Performance for Nonmetallic Mineral Processing Plants*

The proposed relocation is subject to 40 CFR 60 Subpart OOO because it will occur after April 22, 2008 and the portable plant processes more than 150 tons of aggregate per hour. The proposed relocation will include two (2) feed bin, one (1) crusher, (1) screen and eight (8) belt conveyors, which are defined as affected facilities in 40 CFR 60 Subpart OOO. Therefore, the proposed relocation is subject to 45CSR16, which incorporates by reference 40 CFR 60 Subpart OOO - Standards of Performance for Nonmetallic Mineral Processing Plants. The facility should be in compliance with 60.672 (b) no greater than 7% opacity from any transfer point on belt conveyors or from any other affected facility (as defined in 60.670 and 60.671) and no greater than 12% opacity from any crusher when the particulate matter control methods and devices proposed within application G40-C075-P1 are in operation.

45CSR30 *Requirements for Operating Permits*

In accordance with 45CSR30 Major Source Determination, the aggregate processing plant will be a non-major source which is subject to NSPS Subpart OOO. The facility's potential to emit will be 5.47 TPY of a regulated air pollutant (PM_{10}), not including fugitive emissions, which is less than the 45CSR30 threshold of 100 TPY. Therefore, the facility will be subject to 45CSR30 and classified as a Title V deferred non-major source.

45CFR60 *Subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*

Premium Energy, LLC is subject to this subpart because the engine was manufactured after April 1, 2006. The portable unit utilizes a Scania DC09, diesel engine (275 HP/202 kW@ 1800 RPM, Mfg. Date: 2011), (Equipment ID No. : E-1), to operate the systems for both movement around the site and aggregate processing. The engine emissions for (E-1) is designated as EPA Tier 4i certified, however, the Manufacturer for the portable crusher was unable to provide the Applicant a Certificate of Conformity for the engine.

40CFR63 *Subpart ZZZZ—National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*

Premium Energy, LLC is subject to 40CFR63 Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, because E-1 is considered a new area source of HAPs since the facility was constructed on or after June 12, 2006, however, the only requirements that apply are those required under 45CFR60 Subpart IIII.

The proposed relocation of Premium Energy, LLC's portable aggregate processing facility 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 proposed aggregate processing facility is not listed in Table 1. The facility will have a potential to emit 11.48 TPY of a regulated air pollutant (PM), not including fugitive emissions, 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 relocation 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 primarily PM (particulate matter) and PM_{10} (particulate matter less than 10 microns in diameter).

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 Raleigh County, WV, which are currently in attainment for PM (particulate matter), PM_{10} (particulate matter less than 10 microns in diameter) and $PM_{2.5}$ (particulate matter less than 2.5 microns in diameter).

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 G40-C.

MONITORING OF OPERATIONS

G40-C registrants will be required to perform the following monitoring and recordkeeping:

1. Monitor and record daily and monthly records of the amount of nonmetallic minerals processed.
2. Monitor and record calendar monthly and calendar annual quantity of fuel consumed and hours of operation for all engines and combustion sources.
3. Monitor and record calendar annual quantity of organic liquid throughput in all registered storage tanks.
4. Conduct visual observations of all points listed in the registration that are subject to opacity limits.
5. Conduct annual preventative maintenance/inspection, and all routine maintenance service and repairs as required, to facilitate proper control device performance, for the control devices listed in the registration.
6. Perform are applicable required monitoring, recordkeeping, reporting and testing that is required under 40CFR60 Subparts OOO, IIII, and JJJJ.

7. These records shall be maintained on-site for a minimum of five (5) years from the date of record creation 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 relocation application indicates that compliance with all applicable regulations should be achieved when all 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. Therefore, the granting of a General Permit to Relocate to Premium Energy, LLC for the operation of their portable aggregate processing plant to be located near Pax, Raleigh County, WV is hereby recommended.

Thornton E. Martin Jr.
Permit Engineer

April 29, 2016
Date