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west virginia department of environmental protection

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

### BACKGROUND INFORMATION

Application No.:	R13-3211
Plant ID No.:	083-00134
Applicant:	City of Elkins
Facility Name:	Elkins Wastewater Treatment Plant
Location:	Elkins
NAICS Code:	221320
Application Type:	Construction (After-the-Fact)
Received Date:	August 7, 2014
Engineer Assigned:	Edward S. Andrews, P.E.
Fee Amount:	\$3,500.00
Fee Deposit Date:	September 18, 2014
Complete Date:	October 10, 2014
Due Date:	January 8, 2014
Applicant Ad Date:	September 24, 2014
Newspaper:	<i>The Inter-Mountain</i>
UTM's:	Easting: 598.39 km      Northing: 4,308.56 km      Zone: 17
Description:	The application is for the installation of an emergency generator that was installed in 1986.

### Process Description

A Cummins Engine Model NTA855 is a compression-ignition, diesel fueled engine with a power output of 355 bhp at 1800 rpm, which is used to generate 215 kW of electricity on an emergency basis to support critical equipment at the Elkins Wastewater Treatment Plant. The engine for this generator set was manufactured in 1986 with the unit being installed at the treatment plant in 1986.

## SITE INSPECTION

This wastewater plant is routinely inspected by DEP's Environmental Enforcement Section for the primary activities at that plant, which is treating wastewater before being discharged into a surface stream. Therefore, no site visit was deemed necessary when reviewing this permit application.

## ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emissions from the engine for the generator set are indicated in the following table.

Table #1 – Emissions from Engine		
Pollutant\Sources	Potential Emissions	
	lb/hr	tpy
Oxides of Nitrogen (NO <sub>x</sub> )	11.01	2.75
Carbon Monoxide (CO)	2.37	0.59
Volatile Organic Compounds (VOCs)	0.88	0.22
Sulfur Dioxide (SO <sub>2</sub> )	0.004	0.001
Particulate Matter (PM)/ PM less than 10 microns (PM <sub>10</sub> )/ PM less than 2.5 microns (PM <sub>2.5</sub> )	0.78	0.20
Carbon Dioxide Equivalence (CO <sub>2</sub> e)	466.365	116.59
Total Hazardous Air Pollutants (HAPs)	1.20E-2	0.003

The emissions are based on gross engine output of 355 brake horsepower with an annual operating schedule of 500 hours per year.

## REGULATORY APPLICABILITY

The Elkins Wastewater Treatment Plant as configured at the time of submittal of this application is classified as a minor source under Rule 13 and is classified as an area source for Hazardous Air Pollutants (HAPs). The proposed generator set is classified as a construction of a minor stationary source and subject to the review process in 45 CSR13. As such, the applicant prepared and submitted a complete application, paid the required filing fees under 45 CSR 22, and published a legal ad in accordance with 45CSR 13.

## NESHAP

The wastewater treatment plant is classified as an area source of HAPs. The following will discuss the applicable portions of applicable regulation that apply to the engine for the generator set.

### *Subpart ZZZZ*

The internal combustion engine for the emergency generator set is classified as an affected source under the NESHAP for Stationary Reciprocating Internal Combustion Engines (Subpart ZZZZ). The proposed engine will have a power output rating of 355 bhp and be operated as a limited use engine.

The City of Elkins has elected to enter into an agreement to operate this engine as part of PJM Emergency Load Response Program, which meets the definition of Emergency Demand Response per the subpart. An emergency demand response is determined and declared by the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3 or other authorized entity as determined by the Reliability Coordinator, which would be PJM for the City of Elkins. Thus, the engine is subject to this subpart and the following are the applicable requirements for a limited use engine with an obligation to operate for more than 15 hours per year for emergency demand response:

- Operate and maintain the engine per manufacturer's instructions or develop and implement a maintenance plan.
- Limit non-emergency operation to 100 hours per calendar year, which included emergency demand response.
- Be fueled only with ultra-low sulfur diesel starting in 2015.
- Oil & oil filter changes every 500 hours of operation or at least annually
- Inspect & replace if necessary air filter, belts, and hoses every 1,000 hours of operation or at least annually.
- Must be equipped with a non-resettable hour meter.
- Report the demand response hours starting in 2015.

No other federal regulations or state rules are applicable to the engine. The facility is classified as an area-source of Hazardous Air Pollutants. Thus, the facility is classified as a minor source and is not subject to 45 CSR 30. Therefore, the facility is classified as a 9M source under 45 CSR 22.

## TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

The new emission units will not emit any pollutants that are not already being emitted by another emission source at the facility. Therefore, no information about the toxicity of the hazardous air pollutants (HAPs) is presented in this evaluation.

## AIR QUALITY IMPACT ANALYSIS

Based on the annual emission rates, the proposed construction is not classified as a major source as defined by 45CSR14, so air quality modeling was not required.

## MONITORING OF OPERATIONS

The RICE MACT sets specific monitoring and record keeping requirement for this limited use engine, which are mainly focused on documenting the purpose of operating the engine and performing regular routine maintenance. No additional monitoring is deemed necessary.

## RECOMMENDATION TO DIRECTOR

The information provided in the permit application indicates that the Elkins Wastewater Treatment Plant should meet applicable requirements of state rules and federal regulations. It is recommended that the City of Elkins be granted a 45CSR13 construction permit for their limited use generator set at the wastewater treatment plant.



Edward S. Andrews, P.E.  
Engineer

November 24, 2014  
Revised Date

Engineering Evaluation of R13-3211  
City of Elkins  
Elkins Wastewater Treatment Plant  
Non-confidential