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**west virginia department of environmental protection**

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Earl Ray Tomblin, Governor  
Randy C. Huffman, Cabinet Secretary  
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**GENERAL PERMIT REGISTRATION APPLICATION  
ENGINEERING EVALUATION / FACT SHEET**

**BACKGROUND INFORMATION**

Registration No.: G60-C073  
Plant ID No.: 063-00019  
Applicant: Town of Alderson  
Facility Name: Waste Water Treatment Plant  
Location: Alderson, Monroe County  
SIC Code: 4952  
Application Type: Construction  
Received Date: March 09, 2015  
Engineer Assigned: Thornton E. Martin Jr.  
Fee Amount: \$1,500.00  
Date Received: March 13, 2015 (\$1,000); April 01, 2015 (\$500)  
Complete Date: May 12, 2015  
Applicant Ad Date: April 01, 2015  
Newspaper: *The West Virginia Daily News*  
UTM's: Easting: 530.1145 km      Northing: 4175.6267 km      Zone: 17  
Description: The Town of Alderson has applied for a General Permit (G60-C) for two (2) emergency generators whereas one has been installed and operational as of March 1, 2010 and the other is to be ordered. The emergency generators will be operated no more than 500 hours per year for the purpose of providing back-up electrical power during outages. Two (2) Fuel storage tanks are included in the application, one for each generator.

**PROCESS DESCRIPTION**

The Town of Aldersons' wastewater treatment plant (WWTP) utilizes two separate electrical services. One electrical service has an existing backup power source EG-1 (Existing Generator). The town currently anticipates installation of a new generator to provide backup power to the other electrical equipment on site, EG-2 (Proposed Generator), along with the proposed equipment that will be installed in the same project.

Upon arrival at the WWTP, the wastewater passes through an electrically powered flow

meter. It then enters the primary treatment process which will consist of the following: mechanical bar screen, screening's washing compactor, grit airlift compressor, grit drive mechanism and grit classifier. The sewage will then flow through areas that will receive backup power from EG-1 (oxidation ditches and secondary clarifiers). After leaving the secondary clarifiers, the wastewater enters the tertiary treatment process. The primary treatment process and tertiary treatment process will utilize EG-2 (Proposed Generator) as a backup power source. In addition, EG-2 will also supply electrical power to the existing control building and adjacent garage in the event of power failure.

EG-1 (Existing Generator) is a Cummins Model GGHE, 97.7 BHP/60 kW @ 1,800 RPM, spark ignited engine using liquid propane gas (LPG) as fuel. Fuel consumption is rated at 345 SCFH or 9.5 gal/hr. The engine has a manufacture date of January 21, 2010 and is certified to Table 1 to Subpart JJJJ of Part 60 which states that for Emergency type engines (25<HP<130) manufactured after January 01, 2009 must meet emission standards of 10 grams/hp•hr for NOx+HC and 387 grams/hp•hr for CO. This generator unit was installed on March 01, 2010 at the WWTP.

EG-2 (Proposed Generator) will be a Cummins QSL9-G7, 464 BHP/346 kW @ 1,800 RPM, compression ignited engine using diesel (#2FO) as fuel. Fuel consumption is rated at 23.1 gal/hr. The engine will have a manufacture date of December 09, 2014 and is EPA Tier 3 certified (Certificate Number: FCEXL0540AAB-030). This generator unit is anticipated to be installed by October 15, 2015 at the WWTP upon completion of the tertiary treatment process equipment installation.

## SITE INSPECTION

This application is for an existing generator unit (2010) and the installation and operation of a future (2015) generator unit for back-up power supply to critical functions. A site inspection was deemed unnecessary by the writer at this time, however, the facilities will be placed on the emergency generator list of sources from this permitting action.

Directions: Starting at the split of Route 12 and Route 3 (Route 3 crosses the Greenbrier River and Route 12 continues along the Northern bank of the Greenbrier River), travel southbound across the bridge on Route 3, turn right onto Railroad Ave. (County Rd. 3/17) and travel on it for approximately 0.2 miles. Take a slight left onto Prison Road (County Rd. 3/17) and travel on it for approximately 0.3 miles. Turn right onto Prison Road/Railroad Ave. (County Rd. 3/17), stay on this road for approximately 0.1 miles (you should traverse a railroad crossing and the WWTP will be visible to your left across the tracks). Turn left into the WWTP parking area.

## ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emission estimates for PM, NOx, CO, SO<sub>2</sub> and HC was determined using emissions data provided by the engine manufacturer. G60-C limits the facility to 500 hours per year of operation. Emission calculations were submitted by the Applicants' consultant and checked for accuracy and completeness by the writer.

Table 1 - Engine Emissions for Existing Generator		
Engine	Cummins, Model GGHE (EG-1)	
Manufacturer's Rated (bhp/rpm)	97.7/1,800, 2010 MY, LB4S	
Fuel Type	LPG	
Pollutant*	lb/hr	TPY
PM/PM <sub>10</sub> /PM <sub>2.5</sub>	-	-
Nitrogen Oxide	1.08	0.27
Carbon Monoxide	14.91	3.73
Hydrocarbons (VOCs)	0.20	0.05

\* Manufacturer data did not include values for PM, SO<sub>2</sub>, VOC, Benzene, Ethylbenzene, Toluene, Xylene or Formaldehyde.

Table 2 - Engine Emissions for Proposed Generator		
Engine	Cummins, Model QSL9-G7 (EG-2)	
Manufacturer's Rated (bhp/rpm)	464/1,800, Tier 3, 2014 MY	
Fuel Type	#2FO	
Pollutant**	lb/hr	TPY
PM/PM <sub>10</sub> /PM <sub>2.5</sub>	0.03	0.01
Nitrogen Oxide	4.98	1.25
Carbon Monoxide	0.28	0.07
Sulfur Dioxide	0.1	0.03
Hydrocarbons (VOCs)	0.04	0.01

\*\* Manufacturer data did not include values for VOC, Benzene, Ethylbenzene, Toluene, Xylene or Formaldehyde.

## GENERAL PERMIT ELIGIBILITY

All emergency generators installed for the purpose of allowing key systems to continue to operate without interruption during times of utility power outages, including emergency generators installed at Title V(major) facilities and other facilities having additional point sources of emissions, are eligible for Class II General Permit registration except for:

1. Any emergency generator which is a major source as defined in 45CSR14, 45CSR19 or 45CSR30;
2. Any emergency generator subject to the requirements of 45CSR14, 45CSR15, 45CSR19, 45CSR25, 45CSR27, 45CSR30, 45CSR34;
3. Any emergency generator whose estimated hours of operation exceeds 500 hours per year;
4. Any emergency generator located in or which may significantly impact an area which has been determined to be a nonattainment area. Unless otherwise approved by the Secretary.

5. Any emergency generator which will require an individual air quality permit review process and/or individual permit provisions to address the emission of a regulated pollutant or to incorporate regulatory requirements other than those established by General Permit G60-C.

#### Generators:

In consideration of requirements for compliance under the reciprocating internal combustion engines (RICE) National Emissions Standards for Hazardous Air Pollutants, 40 CFR Part 63 Subpart ZZZZ: the RICE NESHAP Summary of Requirements for new Emergency engines greater than 500 hp and less than or equal to 500 hp located at an area source of HAP, constructed on or after June 12, 2006, the new (proposed) engine will be subject to 40 CFR 60, subpart IIII, as applicable.

#### Storage Tanks:

The proposed construction and operation of this facility meets the limitations and standards (Section 6.1) as specified in the General Permit G60-C. Petroleum liquid storage tank volume shall not exceed 39,889 gallons capacity and maximum true vapor pressure shall not exceed 2.17 psia for petroleum liquid storage tanks greater than 19,812 gallon capacity. The tank volume provided for the two (existing and proposed) tanks provided within this application are 500 (LPG) and 500 (#2FO) gallons each, respectively.

#### TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

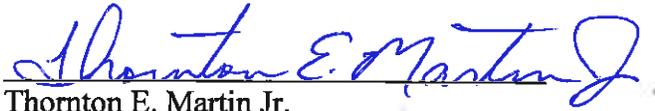
Small amounts of non-criteria regulated hazardous or toxic air pollutants such as benzene, ethylbenzene, toluene, xylenes and formaldehyde may be emitted. Total non-criteria regulated hazardous/toxic air pollutant emissions are tabulated for each registered emergency generator in the Class II General Permit Registration Application. A toxicity analysis will be performed when the Director finds existing circumstances and/or submitted data provide cause for an assessment to be made concerning whether a specific emergency generator may interfere with attainment or maintenance of an applicable ambient air quality standard or cause or contribute to degradation of public health and welfare. Any emergency generator granted Class II General Permit registration by the Director shall not have a potential to emit of 10 tons per year of any hazardous/toxic pollutant or 25 tons per year of any combination of hazardous/toxic pollutants.

#### CHANGES TO G60-C073

G60-C073 is a new General Permit Registration, and therefore, does not affect any 45CSR13 permits.

RECOMMENDATION TO DIRECTOR

The Town of Aldersons' request to install and operate two (2) emergency generators at the Waste Water Treatment Plant, Monroe County, WV site meets the requirements of General Permit G60-C and all applicable rules and therefore should be granted a General Permit Registration to construct and operate the said facility.



Thornton E. Martin Jr.  
Permit Engineer

May 12, 2015

Date