



west virginia department of environmental protection

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

BACKGROUND INFORMATION

Registration No.: G65-C550
Plant ID No.: 063-00020
Applicant: Town of Alderson
Location: Alderson, WV (Greenbrier County)
SIC Code: 4952
Application Type: Construction
Received Date: March 09, 2015
Engineer Assigned: Thornton E. Martin Jr.
Fee Amount: \$250.00
Date Received: April 01, 2015
Complete Date: April 22, 2015
Applicant Ad Date: NA
Newspaper: NA
UTM's: Easting: 531.0535 km Northing: 4,175.6234 km Zone: 17
Description: Installation of an emergency generator for use during power outages. Note that this Class I General Permit requires no public notice.

DESCRIPTION OF PROCESS

The emergency generator will combust propane (LPG) and provide power when purchase power is disrupted. The generator will supply power for the sewage Lift Station #1 near the Alderson Wastewater Treatment Plant. The engine will be a Cummins C20-N6, rated for 43.5 bhp @ 1,800 rpm.

Sewage will enter Lift Station #1 via gravity piping. The sewage will then be pumped by one of two submersible sewage pumps. The sewage will flow through a valve vault and then into existing forcemain piping from Lift Station #1 under the Greenbrier River; the sewage will ultimately make its way to the Alderson Wastewater Treatment Plant from this station.

The proposed emergency generator will be installed on a raised platform so that it will be above the 100-Year Flood Elevation. The proposed fuel storage tank will be installed on grade and anchored to prevent damage during a flood event.

During inflow/infiltration events, sewage may exit through a temporary sanitary sewer overflow

Promoting a healthy environment.

via a pipe connected to the lift station wet-well (area housing the submersible pumps). The sewage will pass through a manhole containing an area-velocity flow meter and a screen prior to discharging into the Greenbrier River.

The emergency generator will supply backup power to the submersible lift station pumps, area-velocity meter and auxiliary lighting.

All emission units covered by this permit are listed in Table 1:

Table 1: Emission Units

Source ID No.	Description	Engine							Control Equipment
		Manufacturer	Model	Mfg. Date	kW _e Rating	Speed	Tier	EPA Certificate	
Emergency Generator									
EG-1	50 Hz Spark Ignited Generator	Cummins	C20-N6	2013	32.4	1800 RPM	Tier III	ECEXB02.4AAA-001	A/F Ratio Control
Storage									
		Status	Content	Volume	Dia	Throughput	Orientation	Liquid Height	
T-01	Fuel Tank	New	LPG	500 gal.	N/A	52,550 scfh	HORZ	N/A	N/A

SITE INSPECTION

A site inspection was deemed unnecessary by the writer at this time. However, once the emergency generator is installed and operated, it will be placed on the regular inspection list of sources.

Directions (taken from Application): From the Wastewater Treatment Plant, head East toward the Greenbrier River Estates Road then turn right onto Greenbrier River Estates Road. Continue onto Railroad Avenue, turn left onto Prison Rd., merge back onto Railroad Ave., turn left onto WV-3 heading West then turn right at the first cross street onto W. Riverview Avenue (WV-12) and the Lift Station will be on your left.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Maximum controlled emissions from Aldersons' Lift Station #1, LPG fired emergency generator are summarized in the table below. G65-C limits the facility to 500 hours per year of operation. The following annual emissions estimate were derived based on 500 hours of use as allowed by the G65-C permit.

The emission factor for this emergency generator come from the engine manufacturer's data included with the application.

The emission factors from the engine manufacturer's data (Cummins) in g/bhp-hr are: 0.67, HC; 5.38, NO_x; and 34.13, CO.

Table 2: Estimated Emissions

Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (ton/year)
NO _x (Nitrogen Oxides)	0.479	0.12
CO (Carbon Monoxide)	3.038	0.76
HC (Total Unburned Hydrocarbons)*	0.06	0.01

* HC includes all NMHC, VOC, POC and ROC constituents (Non-Methane HC, Volatile Organic Compounds, Precursor Organic Compounds and Reactive Organic Compounds)

REGULATORY APPLICABILITY

45CSR4 *To Prevent an Control the Discharge of Air Pollutants into the Open Air which Causes or Contributes to the Objectionable Odor or Odors*

The Alderson Waste Treatment Plant shall not cause the discharge of air pollutants which cause or contribute to an objectionable odor at any location occupied by the public.

45CSR13 *Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, and Procedures for Evaluation*

45CSR13 applies to this source due to the fact that it has the ability to exceed the regulatory emission threshold for regulated air pollutants of 6 lb/hr and 10 ton/year (CO). Since this source required a Class I General Permit a \$250 application fee was paid.

45CSR16 *Standards of Performance for New Stationary Sources*

Since this facility is subject to 40CFR60 Subpart JJJJ, it is subject to this rule.

45CSR22 *Air Quality Management Fee Program*

Since this source is subject to 45CSR13 and not currently subject to 45CSR30 this source is subject to 45CSR22.

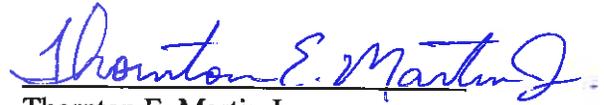
40CSR60 Subpart JJJJ *Standards of Performance for Stationary Spark Ignition Internal Combustion Engines*

The Alderson Waste Treatment Plant will have one emergency generator that the date of manufacturer is on or after January 1, 2009 and has a horsepower (43.5 hp) that equals or exceeds 25 hp and is therefore subject to Subpart JJJJ.

The emission standards for this engine in g/hp-hr are the following: NO_x+ HC, 10 ; and CO, 387.

RECOMMENDATION TO DIRECTOR

The Town of Aldersons' request to construct and operate an emergency generator at the Alderson, Greenbrier County, WV Lift Station #1 site meets the requirements of General Permit G65-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

April 22, 2015

Date