

**COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Valley Regional Office**

STATEMENT OF LEGAL AND FACTUAL BASIS

James Madison University
Harrisonburg, Virginia
Permit No. VRO80117

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, James Madison University has applied for a Title V Operating Permit for its Harrisonburg, Virginia campus. The Department has reviewed the application and has prepared a Title V Operating Permit.

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FACILITY INFORMATION

Permittee

James Madison University
Harrisonburg, Virginia

Facility

James Madison University
181 Patterson Street MSC 0501
Harrisonburg, VA 22807

County-Plant Identification Number: 51-660-0005

SOURCE DESCRIPTION

SIC Code	Manufacturing Description
8200	Educational Services

James Madison University (JMU) is a state-owned university located in the City of Harrisonburg, Virginia. JMU is an extensive campus with facilities including classrooms, dormitories, laboratories, athletic complexes, research facilities, and various support facilities. Emissions sources at JMU consist of a main Power plant, a North Campus facility, other fuel burning equipment (boilers, hot water heaters, etc.), and electrical generators. JMU currently has one state operating permit, dated 3/03/03, as amended 4/7/10, 1/31/11 and 4/15/11.

As a result of JMU's initial application, DEQ notified JMU in a letter dated June 12, 2009 that the "support facility" relationship between the City of Harrisonburg's Resource Recovery Facility (RRF) and JMU would need to be reviewed. The RRF is currently permitted under Registration No. 81016 (SIC 4953) to operate two municipal solid waste (MSW) combustors which also produce steam to provide heat and steam for JMU's College of Integrated Science and Technology (CISAT) facilities; these facilities are located on the east side of Interstate-81.

The RRF is located adjacent to the JMU campus on property owned by the City of Harrisonburg. According to the City, the primary purpose of the RRF facility is to reduce the amount of waste disposed of in the County landfill. In addition to the MSW combustors, the RRF operates two other natural gas/distillate-fired boilers (43.2 MMBtu/hr each), which assist in providing steam and chilled water for the JMU campus. These two boilers, three steam chillers, and the supporting equipment were purchased in 1996 with a bond that is being paid for by JMU. Per the contractual agreement between the RRF and JMU, if the two boilers are used to generate steam, JMU also pays for the actual cost of the fuel used in the boilers and the annual Title V permitting fees related to the boiler emissions. The RRF is a Title V major source of criteria pollutants and hazardous air pollutants (HAP) and is subject to 40 CFR 60, Subpart AAAA, Standards of Performance for Small Municipal Waste Combustion Units.

Prior to the submission of the April 23, 2009 air permit application, the DEQ had considered JMU and RRF to be separate sources for Title V and New Source Review (NSR) applicability purposes. In 1999, DEQ reviewed the support facility issue during the initial Title V permitting applicability review phase for both facilities. The DEQ concluded that the facilities were separate sources because, at that time, RRF had three customers for their steam – JMU, Harrisonburg Electric Commission (HEC), and Rockingham Memorial Hospital (RMH); no single customer used more than 50% of the steam produced.

However, based on the DEQ's 2009 reevaluation of the support facility relationship, it appeared that the relationship between JMU and RRF had changed considerably since 1999: additional buildings and dorms have been built on the CISAT side of campus expanding the steam demand by JMU to the point where HEC and RMH are no longer RRF customers. A twenty-year contractual agreement was renegotiated on July 1, 2004 and requires the City to generate and sell to JMU a minimum of 336,384,000 pounds per year of steam produced by the MSW combustors. This represents approximately 70% of the maximum demonstrated unit load of the MSW combustors. The RMH facility has also been sold to JMU. Based on current data, JMU appears to be the RRF's only customer. Over the last 3 fiscal years, RRF has provided 85% or more of JMU's total steam consumption.

JMU and RRF sent DEQ a letter in which both facilities refuted DEQ's "single source" finding for the two facilities. In a letter dated August 26, 2009, DEQ requested a formal determination from the United States Environmental Protection Agency Region III (EPA) regarding whether the RRF serves as a "support facility" for JMU. On October 26, 2009, DEQ received the formal determination from EPA in a letter dated October 22, 2009. The letter stated that based on both the definition of a "stationary source" and on the information provided, EPA believes that JMU and RRF constitute one stationary source for New Source Review and Title V applicability purposes. Correspondence regarding this issue can be found in Attachment A.

James Madison University has a support relationship with the Harrisonburg Resource Recovery Facility (RRF), VRO81016. JMU is considered to be part of a single source in conjunction with the RRF for purposes of determining applicability of prevention of significant deterioration (PSD) requirements and Title V operating permits. Future modification of the two facilities that make up the single source must be addressed together to calculate net emission increases for comparison with PSD significance levels. The combined facility is a Title V major source of nitrogen oxides (NO_x), carbon monoxide (CO), and HCl (hydrogen chloride). This source is located in an attainment area for all pollutants, and is a PSD major source for NO_x.

JMU is currently permitted under a State Operating Permit issued on March 3, 2003, as amended April 7, 2010, January 31, 2011, and April 15, 2011. Separately, the RRF has an existing Title V permit, which is set to expire on **January 14, 2014**.

Powerplant

The JMU Powerplant currently consists of three boilers, two of the same size, and one of a

different size, to produce steam for heat and related university operations.

- Natural gas, distillate oil-fired (including B-5 biodiesel and B-20 biodiesel) Water Tube Boiler, with a maximum rated heat capacity of 97.1 MMBtu/hr while burning natural gas and 92.6 MMBtu/hr when burning distillate oil (B1)
- Natural gas, distillate oil-fired (including B-5 biodiesel and B-20 biodiesel) Water Tube Boiler, with a maximum rated heat capacity of 97.1 MMBtu/hr while burning natural gas and 92.6 MMBtu/hr when burning distillate oil (B2)
- English boiler, fired with natural gas, distillate oil, B-5 biodiesel and B-20 biodiesel boiler with a maximum rated heat input capacity of 50 MMBtu/hr (B5)

Other Fuel Burning Equipment

Because of the size of the JMU academic campus, it is infeasible for the Powerplant to provide heat and steam to all of the contiguous buildings. Therefore, some facilities maintain separate furnaces and small boilers for the purposes of providing building heat and hot water. These smaller units burn distillate oil, natural gas, or liquefied petroleum gas (LPG).

Emergency Generators

JMU maintains emergency electrical generators across campus. The generators are fueled with distillate oil, natural gas, or LPG. The generators range in size up to 750 kilowatts (kW). Operation of each electrical emergency generator is limited to no more than 250 hours each year.

COMPLIANCE STATUS

A full compliance evaluation of this facility, including a site visit, was last conducted on June 2, 2011. The associated Title V permit is the initial permit for this facility.

All reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or general applicable requirements at this time. The facility is inspected at least once every two years.

COMPLIANCE ASSURANCE MONITORING (CAM) PLAN APPLICABILITY

A “large” pollutant specific emission unit (PSEU) is defined as a unit that has potential post-control emissions greater than the major source threshold on a unit-by-unit and pollutant-by-pollutant basis.

Boilers B1, B2, and B5 are distillate oil, biodiesel and natural gas-fired boilers. The pre-controlled emissions of criteria pollutants from each of the three boilers in the Main Heating Plant (the Power Plant) are greater than major source thresholds of 100 tons per year (tpy). Boilers B1 and B2 exceed the pre-controlled major source threshold for nitrogen oxides (NO_x), and for sulfur dioxide (SO₂). The pre-controlled emissions from Boiler B5 exceed the pre-controlled major source threshold for SO₂. Each of the boilers B1 and B2 use control devices to control emissions of NO_x. NO_x emissions from Boilers B1 and B2 are controlled by flue gas recirculation (FGR) and low NO_x burners.

Boiler B5 is not subject to Compliance Assurance Monitoring (CAM) because it does not use a control device. Boilers B1 and B2 satisfy the five requirements of the CAM applicability requirements listed in EPA’s Table 1-1 CAM guidance. Boilers B1 and B2 are therefore subject to Compliance Assurance Monitoring (CAM) for NO_x. However, because JMU’s post-controlled emissions are less than major source thresholds, the facility does not have to submit a CAM plan until its renewal application. CAM is not applicable to any other emission units or pollutants at the facility because the potential emissions are below the major source thresholds on a unit-by-unit basis.

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emissions units at this facility consist of the following:

Table I. Significant Emission Units

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
Main Heating Plant							
B1	S-1	Water Tube boiler, natural gas-fired, English (2011)	97.1 Million Btu/hr	Flue-gas recirculation (FGR) system, Low NO _x Burner	B1_PCD	NO _x	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
		Water Tube boiler, distillate oil, B-5 and B-20 biodiesel-fired English (2011)	92.6 Million Btu/hr				
B2	S-1	Water Tube boiler, natural gas-fired, English (2011)	97.1 Million Btu/hr	Flue-gas recirculation (FGR) system, Low NO _x Burner	B2_PCD	NO _x	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
		Water Tube boiler, distillate oil, B-5 and B-20 biodiesel-fired, English (2011)	92.6 Million Btu/hr				
B5	S-1	English Boiler, natural gas, distillate oil, B-5 and B-20 biodiesel-fired (1991)	50 Million Btu/hr	-	-	-	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
North Campus Facility							
B6	S-2	Dunham Bush Boilers, Model 301-H-400, natural gas, distillate oil, B-5 and B-20 biodiesel-fired (1967)	16.8 Million Btu/hr	-	-	-	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
B7	S-2	Dunham Bush Boilers, Model 301-H-400, natural gas, distillate oil, B-5 and B-20 biodiesel-fired (1967)	16.8 Million Btu/hr	-	-	-	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
B8	S-2	Dunham Bush Boilers, Model 301-H-400, natural gas, distillate oil, B-5 and B-20 biodiesel-fired (1967)	16.8 Million Btu/hr	-	-	-	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
Other Fuel Burning Equipment							
<u>FB1: distillate oil-fired units</u>							
FB1-43	FB1-43-1	Beckett, #2 Fuel Oil,	0.13 MMBtu/hr	-	-	-	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB1-91	FB1-91-1	Warm Air, #2 Fuel Oil, boiler/hot water heater	0.10 MMBtu/hr	-	-	-	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB1-92	FB1-91-1	Warm Air, #2 Fuel Oil, boiler/hot water heater	0.10 MMBtu/hr	-	-	-	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB1-93	FB1-93-1	Armstrong 0.85 GPM, #2 Fuel Oil boiler/hot water heater	0.11 MMBtu/hr	-	-	-	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB1-94	FB1-93-1	Armstrong 0.85 GPM, #2 Fuel Oil, boiler/hot water heater	0.11 MMBtu/hr	-	-	-	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB1-95	FB1-95-1	Thermo Products, #2 Fuel Oil, boiler/hot water heater	0.12 MMBtu/hr	-	-	-	3/3/03, as amended 4/7/10, 1/31/11 and

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
							4/15/11
FB1-96	FB1-95-1	Warm Air, #2 Fuel Oil, boiler/hot water heater	0.15 MMBtu/hr	-	-	-	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB1-97	FB1-95-1	Warm Air, #2 Fuel Oil, boiler/hot water heater	0.10 MMBtu/hr	-	-	-	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB1-124	FB1-124-1	Whirlpool 1.12 GPH #2 Fuel Oil, boiler/hot water heater	0.15 MMBtu/hr	-	-	-	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
<u>FB2: LPG-fired units</u>							
FB2-89	FB2-89-1	Payne PG9MAA, LPG boiler/hot water heater	0.10 MMBtu/hr	-	-	-	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB2-90	FB2-90-1	Payne PG9MAA, LPG boiler/hot water heater	0.10 MMBtu/hr	-	-	-	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB2-123	FB2-123-1	Omega Radiant Heater, LPG	0.35 MMBtu/hr	-	-	-	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB2-A123	FB2-123-1	Omega Radiant Heater, LPG	0.35 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB2-125	FB2-125-1	Dayton LPG boiler/hot water heater	0.12 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
<u>FB3: Natural gas-fired units</u>							
FB3-3	FB3-3-1	Kewanee, Natural Gas	1.75 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-4	FB3-3-1	Kewanee, Natural gas	1.75 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-6	FB3-6-1	Burnham 4FW-92-40LB Natural gas	0.90 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-7	FB3-6-1	Burnham 4FW-92-40LB Natural gas	0.90 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-8	FB3-6-1	PVI 1710N175A-UTP Natural gas	1.24 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-149	FB3-149-1	Patterson-Kelley, Natural gas	1.0 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-150	FB3-149-1	Patterson-Kelley, Natural gas	1.0 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-13	FB3-13-1	Superior 500A-V-5-0, Natural gas	2.50 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-14	FB3-13-1	Superior 500A-V-5-0, Natural gas	2.50 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
							4/15/11
FB3-16	FB3-16-1	Patterson-Kelley N-1900 Natural gas	1.90 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-17	FB3-16-1	Cleaver-Brooks CB200-60 Natural gas	2.50 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-224	FB3-224-1	Patterson-Kelley Boiler/hot water heater	2.00 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-225	FB3-225-1	Patterson-Kelley Boiler/hot water heater	2.00 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-226	FB3-226-1	Patterson-Kelley Boiler/hot water heater	2.00 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-232	FB3-232-1	Patterson-Kelley Boiler/hot water heater	2.00 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-233	FB3-233-1	Precision hot water heater	1.54 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-234	FB3-234-1	Precision hot water heater	1.54 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-235	FB3-235-1	Various kitchen equipment	2.36 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
							4/15/11
FB3-23	FB3-23-1	Patterson-Kelley N-1900 boiler / hot water heater	1.90 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-24	FB3-23-1	Patterson-Kelley N-1900 boiler / hot water heater	1.90 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-26	FB3-26-1	Bailey Kiln 5H-2B-5-1 Oven / kiln	0.35 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-27	FB3-27-1	Marvin kiln	0.20 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-28	FB3-28-1	Weil-McLain BGL139 WF boiler / hot water heaters	3.46 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-29	FB3-28-1	Weil-McLain BGL139 WF boiler / hot water heaters	3.46 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-31	FB3-31-1	(4) Modine 160,000 BTU boiler / hot water heaters	0.64 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-32	FB3-32-1	Patterson-Kelley N-1900 boiler / hot water heater	1.90 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-33	FB3-32-1	Patterson-Kelley N-1900 boiler / hot water heater	1.90 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
							4/15/11
FB3-36	FB3-36-1	(10) Hastings GF-1505	1.60 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-37	FB3-37-1	Patterson-Kelley N-1900 boiler/ hot water heater	1.90 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-38	FB3-37-1	Patterson-Kelley N-1900 boiler / hot water heater	1.90 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-44	FB3-44-1	Cleaver-Brooks CB200-60 boiler / hot water heater	2.50 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-45	FB3-44-1	Patterson-Kelley N-1900 boiler / hot water heater	1.90 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-50	FB3-50-1	WELL-McLain PFG-6-PIN boiler / hot water heater	0.30 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-51	FB3-51-1	Burnham 4FW-180-50LB boiler/hot water heater	1.50 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-52	FB3-51-1	Burnham 4FW-180-50LB boiler / hot water heater	1.50 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-53	FB3-53-1	Patterson-Kelley N-1900 boiler / hot water heater	1.90 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
							4/15/11
FB3-56	FB3-56-1	Patterson-Kelley N-1900 boiler / hot water heater	1.90 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-236	FB3-56-1	Patterson-Kelley N-1900 boiler / hot water heater	2.00 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-59	FB3-59-1	Cleaver-Brooks CB200-60 boiler / hot water heater	2.09 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-60	FB3-59-1	Cleaver-Brooks CB200-60 boiler / hot water heater	2.09 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-62	FB3-62-1	Cleaver-Brooks CB200-60 boiler / hot water heater	2.50 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-63	FB3-62-1	Cleaver-Brooks CB200-60 boiler/ hot water heater	2.50 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-64	FB3-64-1	Burnham 4FW12750LB boiler /hot water heater	1/06 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-65	FB3-64-1	Burnham 4FW12750LB boiler / hot water heater	1.06 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-243	FB3-64-1	Patterson-Kelley N-1500 boiler / hot water heater	1.50 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
							4/15/11
FB3-69	FB3-69-1	Burnham 4FW-127-40LB	1.33 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-70	FB3-69-1	Burnham 4FW-180-50LB boiler / hot water heater	1.33 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-71	FB3-69-1	Patterson-Kelly N-1900 boiler / hot water heater	1.90 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-A19	FB3-A19-1	Kewanee L3S-100-GO boiler / hot water heater	3.34 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-A20	FB3-A19-1	Kewanee L3S-100-GO boiler / hot water heater	3.34 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-A21	FB3-A19-1	Kewanee L3S-100-GO boiler / hot water heater	3.34 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-A22	FB3-A22-1	Kewanee L3S-100-GO boiler / hot water heater	4.18 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-A23	FB3-A22-1	Patterson-Kelley N1500-MFD boiler / hot water heater	1.50 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-A24	FB3-A22-1	Patterson-Kelley 531-5 boiler / hot water heater	0.65 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
							4/15/11
FB3-219	FB3-219-1	Patterson-Kelley N2000-MFD boiler / hot water heater	2.00 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-220	FB3-219-1	Patterson-Kelley N2000-MFD boiler / hot water heater	2.00 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-221	FB3-219-1	Patterson-Kelley N2000-MFD boiler / hot water heater	2.00 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-229	FB3-229-1	AO Smith Model BTF-80 boiler / hot water heater	0.08 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-230	FB3-229-1	AO Smith Model BTF-80 boiler / hot water heater	0.08 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-114	FB3-114-1	Weil-McClain BGL1292WN boiler / hot water heater	3.46 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-115	FB3-114-1	Weil-McClain BGL1292WN boiler / hot water heater	3.46 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-239	FB3-239-1	Lochinvar Knight KBN-285 boiler / hot water heater	0.20 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-240	FB3-239-1	Lochinvar Knight KBN-285 boiler / hot water heater	0.20 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
							4/15/11
FB3-132	FB3-132-1	Bryan Boiler AB-150-W-FDGO boiler / hot water heater	1.20 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-133	FB3-132-1	Bryan Boiler AB-150-W-FDGO boiler / hot water heater	1.20 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-134	FB3-134-1	AO Smith boiler / hot water heater	0.20 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-135	FB3-134-1	AO Smith boiler / hot water heater	0.20 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-138	FB3-138-1	Cleaver-Brooks CB200-60 boiler/ hot water heater	2.09 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-139	FB3-138-1	Cleaver-Brooks CB200-60 boiler / hot water heater	2.09 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-141	FB3-141-1	Cleaver-Brooks CBH-100-50A boiler / hot water heater	2.09 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-142	FB3-141-1	Cleaver-Brooks CBH-100-50A boiler / hot water heater	2.09 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-146	FB3-146-1	Cleaver-Brooks CBH-200-80 boiler / hot water heater	3.30 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
							4/15/11
FB3-147	FB3-146-1	Patterson-Kelley N-1900 boiler / hot water heater	1.90 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-A28	FB3-A28-1	Burnham boiler / hot water heater	2.03 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-A29	FB3-A29-1	Burnham boiler / hot water heater	0.66 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
FB3-A30	FB3-A30-1	Lochinvar RWN135PM boiler / hot water heater	0.13 MMBtu/hr	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
Emergency (Electrical) Generators							
<u>EG1: Distillate Oil-fired Units</u>							
EG1-2	EG1-2-1	Olympian 97A0	80 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-1	EG1-1-1	Kohler GENSET 2ROZJ	20 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-A01	EG1-A01-1	GENERAC GENSET 3420810100	50kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
EG1-151	EG1-151-1	KOHLER GENSET 40REOZJB	40 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-241	EG1-241-1	Cummins Generator DFEG	350 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-A02	EG1-A02-1	Caterpillar 291-0361	125 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-11	EG1-11-1	ONAN GENSET 1256DGEA	125 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-19	EG1-19-1	OLYMPIAN GENSET D200P4	200 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-A03	EG1-A03-1	KOHLER GENSET 275RE0ZJ	275 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-A04	EG1-A04-1	Caterpillar C15	500 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
EG1-20	EG1-20-1	KOHLER GENSET 100ROZJ	100 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-21	EG1-21-1	KOHLER GENSET 20ROZJ81	20 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-22	EG1-22-1	ONAN GENSET 50DGCA	50 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-30	EG1-30-1	ONAN GENSET 125DGEA	125 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-223	EG1-223-1	Caterpillar D150-8	200 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-35	EG1-35-1	CATERPILLAR GENSET 3306	250 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-A05	EG1-A05-1	OLYMPIAN GENSET D90P1	90 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
EG1-152	EG1-152-1	KOHLER GENSET 30REOZJ	30 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-A06	EG1-A06-1	KOHLER GENSET 80REOZJ	80 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-49	EG1-49-1	CATERPILLAR GENSET SR4B	400				3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-54	EG1-54-1	ONAN GENSET 3000DA/15R/25663D	30 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-242	EG1-242-1	KOHLER GENSET 30REOZJB	30 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-61	EG1-61-1	CATERPILLAR GENSET 450ROZD71	450 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-A07	EG1-A07-1	ONAN GENSET DNAF 5708892	30 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
EG1-A08	EG1-A08-1	KOHLER GENSET 30REOZB	30 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-A09	EG1-A09-1	KOHLER GENSET 230REOZJB	230 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-227	EG1-227-1	CATERPILLAR ENGINE C15	350 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-A10	EG1-A10-1	ONAN GENSET	350 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-A11	EG1-A11-1	ONAN GENSET	750 kW	--	--	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-231	EG1-231-1	Caterpillar Engine D80-6	80 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-A12	EG1-A12-1	ONAN GENSET DQDAA-5788716	250 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
EG1-98	EG1-98-1	ONAN GENSET 100-130471A	100 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-100	EG1-100-1	KOHLER 50ZJ GENERATOR	50 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-A13	EG1-A13-1	ONAN GENSET 125DGDK	125 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-222	EG1-222-1	Kohler Power 250REOZJD	250 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-A14	EG1-A14-1	KATO LIGHT GENSET	125 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-102	EG1-102-1	Olympian GENSET D200P4	200 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-EG1	--	<i>Awaiting Construction</i>	300 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
EG1-108	EG1-108-1	KOHLER GENSET 250A0ZD71	250 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-228	EG1-228-1	Cummins Generator DSHAC	200 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-A15	EG1-A15-1	KOHLER GENSET 30RE0ZJ	30 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-A16	EG1-A16-1	OLYMPIAN GENSET D30P3	30 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-128	EG1-128-1	KOHLER GENSET 20R0ZJ71	20 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-131	EG1-131-1	GENERAC GENSET 96A-01251-S	125 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-136	EG1-136-1	KOHLER GENSET 20R0ZJ71	60 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
EG1-A17	EG1-A17-1	KOHLER GENSET 20R0ZJ71	30 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-143	EG1-143-1	KOHLER GENSET 125ROZJ81	125 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-144	EG1-144-1	ONAN GENSET 35DGBB	35 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-A18	EG1-A18-1	ONAN GENSET	25 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-145	EG1-145-1	ONAN GENSET	275 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-A31	EG1-A31-1	ONAN 750DFJA	750 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG1-A32	EG1-A32-1	ONAN 350DFCC	350 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
EG2: LPG-fired Units							
EG2-12	EG2-12-1	KOHLER GENSET 33RZ282	33 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG2-15	EG2-15-1	KOHLER GENSET 20RZ	20 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG2-110	EG2-110-1	ONAN GENSET 5CCK/3CR/8747V	5 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG3: Natural Gas-fired Units							
EG3-18	EG3-18-1	ONAN GENSET 15JCL	15 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG3-25	EG3-25-1	ONAN GENSET 15JCL	15 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
EG3-34	EG3-34-1	ONAN GENSET 15JCL	15 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG3-39	EG3-39-1	KOHLER GENSET 10RZ82	10 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG3-66	EG3-66-1	ONAN GENSET 45EML	45 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG3-46	EG3-46-1	KOHLER GENSET 15JCL	10 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG3-55	EG3-55-1	KOHLER GENSET 10RZ82	10 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG3-58	EG3-58-1	KOHLER GENSET 10RZ82	10 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG3-113	EG3-113-1	KOHLER 328602	20 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
EG3-137	EG3-137-1	KOHLER GENSET 189401-81	10 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11
EG3-140	EG3-140-1	KOHLER GENSET 10RZ82	10 kW	--	-	--	3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11

*The Size/Rated capacity is provided for informational purposes only, and is not an applicable requirement.

EMISSIONS INVENTORY

A copy of the 2011 annual emission update is included in Attachment B. Emissions are summarized in the following tables.

Table II. 2011 Actual Criteria Pollutant Emissions

	Criteria Pollutant Emissions (tons/yr)				
	VOC	CO	SO ₂	PM-10	NO _x
Total	3.32	9.10	2.81	2.95	41.94

Table III. 2011 Actual Hazardous Air Pollutant Emissions

Pollutant	Hazardous Air Pollutant Emissions (tons/yr)
Non-VOC/Non-PM HAPs	0.0 tons

EMISSION UNIT APPLICABLE REQUIREMENTS

Power Plant (B1, B2, B5, B6, B7 and B8)

Limitations

The following limitations are state BACT and NSPS Subpart Dc requirements from the SOP dated 3/3/03, as amended 4/10/10, 1/31/11, and 4/15/11. Please note that the condition numbers are from the SOP. A copy of this document is enclosed in Attachment C.

- Condition 2: Emissions from the Boilers B1 and B2 shall be controlled by low NO_x burners with flue gas recirculation and a NO_x performance of 30 ppmvd at three percent O₂ for natural gas. The low NO_x burners shall be installed and operated in accordance with manufacturer's specifications.
- Condition 3: The approved fuels for Boilers B1, B2, B5, B6, B7 and B8 are natural gas, distillate oil, B-5 biodiesel, and B-20 biodiesel.
- Condition 7: Specifies the fuel throughput for Boilers B1, B2, B5, B6, B7, and B8.
- Condition 12: Specifies the specifications for the fuel types used in Boilers B1, B2, B5, B6, B7, and B8.
- Condition 14: Specifies hourly emission limits for Boilers B1 and B2.
- Condition 15: Specifies hourly emission limits for Boiler B5.
- Condition 16: Specifies hourly emission limits for Boilers B6, B7, and B8.
- Condition 17: Specifies annual emission limits for Boilers B1, B2, B5, B6, B7, and B8.
- Condition 23: This condition establishes a visible emission limit for Boilers B1, B2 and B5.
- Condition 24: This condition establishes a visible emission limit for Boilers B6, B7 and B8.
- Condition 26: Except where the SOP and Title V permits are more restrictive, Boilers B1, B2 and B5 shall be operated in compliance with the requirements of 40 CFR 60, Subpart Dc.

The following Virginia Administrative Codes and Federal New Source Performance Standards have specific emission requirements that have been determined to be applicable:

9 VAC 5-50-400 and 9 VAC 5-50-410, Standards of Performance for New and Modified Stationary Sources

Boilers B1, B2, and B5 are subject to the New Source Performance Standards of 40 CFR 60, Subpart Dc. All applicable requirements from the subparts have been included in the SOP; the existing SOP contains limitations as stringent as, or more stringent than, the requirements listed above. Therefore, there are no additional specific emission requirements that are applicable under 9 VAC 5-50-400 or 9 VAC 5-50-410, Standards of Performance for New and Modified Stationary Sources.

In addition to the incorporation of the New Source Performance Standards required in 9 VAC 5-50-400 and 9 VAC 5-50-410, the following Virginia Administrative Codes have specific emission requirements that have been determined to be applicable:

- 9 VAC 5-40-80, Existing Source Standard for Visible Emissions
- 9 VAC 5-50-80, New Source Standard for Visible Emissions

The existing SOP contains limitations as stringent as, or more stringent than, the requirements listed above.

Boilers B1, B2, and B5 – Short-Term Emissions

Boilers B1, B2 and B5 are distillate oil, natural gas-fired, B-5 biodiesel, and B-20 biodiesel-fired boilers. Boilers B1 and B2 each use a flue-gas recirculation (FGR) system and a low NO_x burner to reduce NO_x emissions and meet the emission limits in the SOP, dated 3/3/03, as amended 4/10/10, 1/31/11, and 4/15/11.

Boilers B1, B2 and B5 are subject to visible emissions limitations. As a new source, boilers B1 and B2 are subject to the 9 VAC 5-50-80, Standard for Visible Emissions of 20 percent except for one six-minute period where visible emissions may not exceed 30 percent (20% / 30%). As an existing source, B5 is subject to the 9 VAC 5-40-80 (existing source visible emission limit of 20% / 60% opacity. The Subpart Dc standard of 20% / 27% opacity is exceeded by Condition 23 of the SOP dated 3/3/03, as amended 4/10/10, 1/31/11, and 4/15/11, with a 10% 20% requirement. This standard exceeds existing and new source visible emission standards, as well as Subpart Dc standards.

40 CFR 60, Subpart Dc, requires reporting of fuel sulfur content at the end of every semi-annual period for applicable units (Boilers B1, B2 and B5). The SOP dated 3/3/03, as amended 4/7/10, 1/31/11, and 4/15/11 requires semi-annual reports indicating that the fuel combusted meets the definition of distillate oil, as indicated in 40 CFR 60.41c. Further, the fuel sulfur content must meet the requirement in the governing SOP.

The hourly emission limits established for Boilers B1 and B2 for all criteria pollutants are based on the rated capacities and rated hourly fuel consumption of each boiler, respectively. As such, if the boilers are operated at, or below, the rated capacity, the hourly emission limits will not be exceeded. The following equation and emissions factors will be used to determine actual

emissions from the operation of each of the Boilers B1 and B2:

$$E = F \times N$$

Where: E = emission rate (lb/unit time)
 F = pollutant specific emission factor, below listed tables
 N = fuel combusted (million ft³/unit time for natural gas and gallons/unit time for distillate oil, B-5 and B-20 biodiesels)

Table 1: Natural Gas Emission Factors – Boilers B1 and B2

Pollutant	Emission Factor	Source of DEQ Factor
PM (lbs/MMCF) ^a	7.6	AP-42 Table 1.4-2
PM10 (lbs/MMCF) ^a	7.6	AP-42 Table 1.4-2
SO ₂ (lbs/MMCF)	0.6	AP-42 Table 1.4-2
NO _x (lbs/MMCF)	36	BACT Determination; 30 ppm @ 3% O ₂
CO (lbs/MMCF)	84	AP-42 Table 1.4-1
Lead (lbs/MMCF)	5.E-04	AP-42 Table 1.4-2
VOC (lbs/MMCF)	5.5	AP-42 Table 1.4-2

^(a) PM/PM10 emission factors include total condensable and filterable particulate matter

Table 2: Distillate Oil, B-5, and B-20 Emission Factors – Boilers B1 and B2

Pollutant	Emission Factor	Source of DEQ Factor
PM (lbs/kgal) ^a	2	AP-42 Table 1.3-1
PM10 (lbs/kgal) ^a	1	AP-42 Table 1.3-7
SO ₂ (lbs/kgal) ^b	7.1	AP-42 (142 * S) at Max Sulfur (0.05%) Permitted (BACT)
NO _x (lbs/kgal)	20	AP-42 Table 1.3-1
CO (lbs/kgal)	5	AP-42 Table 1.3-1
Lead (lbs/kgal)	1.23E-06	AP-42 Table 1.3-10 at fuel heat content = 137E3 Btu/kgal
VOC (lbs/kgal)	0.2	AP-42 Table 1.3-3

^(a) PM/PM10 emission factors are for filterable particulate matter only.

^(b) SO₂ emission factor is based on maximum allowable sulfur content of oil burned.

When firing natural gas, the hourly emission limits for NO_x, PM, PM-10, SO₂, CO and VOC are based on AP-42, Chapter 1.4, *Natural Gas Combustion* (September 1998). The NO_x emission limits for each boiler when firing natural gas are calculated using a BACT determination value of 36 lb/MMCF, and a fuel heat content value of 1020 BTU/CF.

Hourly emissions of the criteria pollutants PM, PM-10, SO₂, CO and VOC, when firing distillate oil, B-5 biodiesel, and B-20 biodiesel, are based on the emission factors from AP-42, Chapter 1.3, *Fuel Oil Combustion* (September 1998). The SO₂ emission factor is determined using the limit of 0.05% (500 ppm) fuel sulfur content. Calculations showing the emission factors and emission calculations are available in Attachment D.

The following equation and emissions factors will be used to determine actual emissions

from the operation of the Boiler B5:

$$E = F \times N$$

Where: E = emission rate (lb/unit time)
 F = pollutant specific emission factor, below listed tables
 N = fuel combusted (million ft³/unit time for natural gas and gallons/unit time for distillate oil, B-5 and B-20 biodiesels)

Table 3: Natural Gas Emission Factors – Boiler B5

Pollutant	Emission Factor	Source of DEQ Factor
PM (lbs/MMCF) ^a	7.6	AP-42 Table 1.4-2
PM10 (lbs/MMCF) ^a	7.6	AP-42 Table 1.4-2
SO ₂ (lbs/MMCF)	0.6	AP-42 Table 1.4-2
NO _x (lbs/MMCF)	100	AP-42 Table 1.4-1
CO (lbs/MMCF)	84	AP-42 Table 1.4-1
Lead (lbs/MMCF)	5.E-04	AP-42 Table 1.4-2
VOC (lbs/MMCF)	5.5	AP-42 Table 1.4-2

^(a) PM/PM10 emission factors include total condensable and filterable particulate matter.

Table 4: Distillate Oil, B-5, and B-20 Biodiesel Emission Factors – Boiler B5

Pollutant	Emission Factor	Source of DEQ Factor
PM (lbs/kgal) ^a	2	AP-42 Table 1.3-1
PM10 (lbs/kgal) ^a	1	AP-42 Table 1.3-7
SO ₂ (lbs/kgal)	7.1	AP-42 Table 1.3-1 (142 * S) at Max Sulfur (0.05%) Permitted (BACT)
NO _x (lbs/kgal)	20	AP-42 Table 1.3-1
CO (lbs/kgal)	5	AP-42 Table 1.3-1
Lead (lbs/kgal)	1.23E-06	AP-42 Table 1.3-10 at fuel heat content = 137E3 Btu/kgal
VOC (lbs/kgal)	0.2	AP-42 Table 1.3-3

^(a) PM/PM10 emission factors include filterable particulate matter only.

^(b) SO₂ emission factor is based on maximum allowable sulfur content of oil burned.

When firing natural gas, the hourly emission limits for PM, PM-10, SO₂, CO, NO_x and VOC are based on AP-42, Chapter 1.4, *Natural Gas Combustion* (September 1998), for an uncontrolled process.

Hourly emissions of the criteria pollutants PM, PM-10, SO₂, CO, NO_x and VOC, when firing distillate oil, are based on the emission factors from AP-42, Chapter 1.3, *Fuel Oil Combustion* (September 1998). The SO₂ emission factor is determined using the SOP permitted limit of 0.05% (500 ppm) fuel sulfur content. Calculations showing the emission factors and emission calculations are available in Attachment D.

Boilers B6, B7, and B8 – Short-Term Emissions

Boilers B6, B7, and B8, are distillate oil, natural-gas fired, B-5 biodiesel and B-20 biodiesel-fired boilers. The hourly emission limits established for boilers B6, B7, and B8 for all criteria pollutants (particulate, SO₂, NO_x, CO and VOC) are based on the rated capacities and rated hourly fuel consumption of each boiler. Therefore, if the boilers are operated at capacity, or below, there should not be a violation of the hourly emission rates. The following emission factors, used to determine actual emissions from Boilers B6, B7, and B8 are AP-42 emission factors. The following equations are used to determine actual emissions:

$$E = F \times N$$

Where: E = emission rate (lb/time period)
 F = pollutant specific emission factor, provided below
 N = fuel consumed (million ft³/time period for natural gas and 1000 gal (kgal)/time period for distillate oil)

Table 5: Natural Gas Emission Factors – Boilers B6, B7, and B8

Pollutant	Emission Factor	Source of DEQ Factor
PM (lbs/MMCF) ^a	7.6	AP-42 Table 1.4-2
PM10 (lbs/MMCF) ^a	7.6	AP-42 Table 1.4-2
NO _x (lbs/MMCF)	100	AP-42 Table 1.4-1
CO (lbs/MMCF)	84	AP-42 Table 1.4-1
SO ₂ (lbs/MMCF)	0.6	AP-42 Table 1.4-2
Lead (lbs/MMCF)	5.E-04	AP-42 Table 1.4-2
VOC (lbs/MMCF)	5.5	AP-42 Table 1.4-2

(a) PM/PM10 emission factors include total condensable and filterable particulate matter.

Table 6: Distillate Oil, B-5 and B-20 Emission Factors – Boilers B6, B7, and B8

Pollutant	Emission Factor	Source of DEQ Factor
PM (lbs/kgal) ^a	2	AP-42 Table 1.3-1
PM10 (lbs/ kgal) ^a	1	AP-42 Table 1.3-7
SO ₂ (lbs/ kgal) ^b	7.1	AP-42 (142*S) at Max Allowable Sulfur content (0.05% S)
NO _x (lbs/ kgal)	20	AP-42 Table 1.3-1
CO (lbs/ kgal)	5	AP-42 Table 1.3-1
Lead (lbs/ kgal)	1.22E-03	AP-42 Table 1.3-10 converted from 9 lb/10 ¹² Btu using minimum heat content
VOC (lbs/ kgal)	0.2	AP-42 Table 1.3-3

(a) PM/PM10 emission factors include filterable particulate matter only.

(b) SO₂ emission factor is based on the maximum allowable sulfur content of oil burned.

When firing natural gas, hourly emissions for NO_x, particulate, SO₂, CO, and VOC are based on AP-42, Chapter 1.4, *Natural Gas Combustion* (September 1998). Hourly emissions of criteria

pollutants (NO_x, particulate, SO₂, NO_x, CO and VOC) when firing on distillate oil are based on the emission factors from AP-42, Chapter 1.3, *Fuel Oil Combustion* (September 1998). Short-term emission limits for SO₂ are based on the maximum allowable sulfur content. Calculations showing the emission factors and emission calculations are available in Attachment D.

Boilers B1, B2, B5, B6, B7 and B8 – Annual Emissions

Annual emissions for the boilers are calculated based on the combined maximum fuel throughput contained in the governing SOP, dated 3/3/03, as amended 4/7/10, 1/31/11, and 4/15/11. Condition 7 of the SOP, dated 3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11, limits the total combined fuel throughput for all boilers; the facility is limited to 900,000 gallons of distillate oil and biodiesel (combined) per year, and 628 x 10⁶ SCF of natural gas per year. Regarding these pollutants, the fuel throughput is the factor that determines annual emission rates. If James Madison University combusts all that is allowed in the permit, then the permit limits will not be violated. Calculations showing the emission factors and emission calculations are available in Attachment D.

Monitoring and Recordkeeping

Monitoring and recordkeeping Conditions have been established to determine compliance with the limitations established in Section III.A of the Title V Permit. As shown below, compliance is indicated in the SOP dated 3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11 Conditions 13, 23, 29, 31, and 32. Recordkeeping demonstrating compliance with the fuel throughput limit are used to demonstrate compliance with the criteria pollutant emission limits, thus satisfying the Part 70 periodic monitoring requirements.

Recordkeeping – General

The permittee is required to obtain certification from the fuel supplier with each shipment of distillate oil, B-5 biodiesel and / or B-20 biodiesel for the six boilers, as required in Condition 13 of the SOP, dated 3/3/03 as amended 4/7/10, 1/31/11 and 4/15/11.

Condition 32 of the SOP (dated 3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11) requires the permittee to maintain records of all emissions data and operating parameters necessary to demonstrate compliance with the SOP. Compliance with the emission limits for Boilers B1, B2, B5, B6, B7 and B8 are shown through: monthly and annual throughput of fuel; fuel supplier certifications; and records of operator training, all listed in Condition 32 of the SOP dated 3/03/03 as amended 4/7/10, 1/31/11 and 4/15/11. The facility is required to keep the records on site, and available for inspection for the most recent five years.

Fuel certification requirements, listed in Condition 13, of the SOP, provide the basis to indicate compliance with the fuel oil sulfur limits of less than 0.5 weight percent sulfur (§60.42c(d)).

Testing

Equipment at the facility must be constructed to allow for emissions testing upon reasonable notice at any time. The facility is required to conduct an initial performance (stack) test, as provided in Condition 28 of the SOP, dated 3/3/03, as amended 4/7/10, 1/31/11, and 4/15/11, for the following boilers and pollutants, while using the specified fuels:

Emission Unit	Pollutant	Fuel
Boilers B1 or B2	NO _x	Natural Gas
Boilers B1 or B2	NO _x	B-20 Biodiesel

The performance test shall be conducted to determine compliance with the applicable emission controls and limits established in the SOP, Conditions 2 and 14. For the natural gas, the test shall be performed within 60 days after achieving the maximum production rate at which the boilers will be operated, but in no event later than 180 days after start-up of the boilers. For the B-20 biodiesel, the test shall be performed within 60 days after first use of the B-20 biodiesel.

JMU is not subject to the PM limit under Section 60.43 because it is a facility using distillate oil containing no greater than 0.50 weight percent sulfur or a mixture of 0.5 weight percent sulfur with other fuels not subject to a PM standard under 60.43(c), and not using a post-combustion technology to reduce PM or SO₂ emissions.

For opacity requirement compliance, an initial performance test for opacity (EPA Method 9) on boilers B1 and B2 will be conducted as required by Section 60.43c, and listed in Condition 29 of the SOP. This test will be conducted while burning distillate oil in the stated boilers. As required by Section 60.47c(a), the observation period will be three hours (30 - 6 minute averages) unless during the initial 60 minutes of observation all 6-minute averages are less than 10 percent and all individual 15-second observations are less than or equal to 20 percent. In such case, the observation period will be reduced to 60 minutes. The listed opacity requirement, as noted in Condition 23 of the SOP, is less than that required in Section 60.43 of the Subpart.

Because of the type of fuels combusted in the boilers B1, B2, B5, B6, B7 and B8 (natural gas and lower sulfur distillate oil with 500 ppm fuel sulfur content), there is a lessened chance of the facility exceeding the opacity limits contained within the permit. Maintenance of records demonstrating that the operators have been properly trained along with maintenance of operating procedures will ensure compliance with permitted opacity limitations and satisfy the periodic monitoring requirement for these boilers.

The Department has authority to require additional testing for visible emission evaluations and performance (stack) testing as necessary to determine compliance with emission limits contained within the permit.

Reporting

The permittee shall submit fuel quality reports to the DEQ, within 30 days after the end of each semi-annual period, ending **June 30** and **December 31**, in accordance with the NSPS, Subpart Dc, established for the large boilers, B1, B2 and B5, as noted in Condition 31 of the SOP. If no shipments of distillate oil were received during the semi-annual period, the semi-annual report shall consist of the dates included in the semi-annual period and a statement that no oil was received during the semi-annual period.

Compliance Assurance Monitoring (CAM)

The natural gas and distillate oil-fired boilers B1 and B2 are subject to CAM. The uncontrolled potential (pre-control) emissions of NO_x and SO₂ from Boilers 1 and 2 are greater than 100 tons/yr, for each boiler. Additionally, the post-controlled emissions of NO_x and SO₂ are less than the major source threshold of 100 tons per year for criteria pollutants. Since Boilers B1 and B2 have uncontrolled emissions greater than or equal to 100 tons per year, and because each boiler is subject to an emission limitation and relies on control devices to meet the limits, each of the boilers is subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for NO_x. Section 64.2 of the CAM rule (40 CFR 64) specifies the criteria for making a CAM applicability determination.

However, the boilers B1 and B2 are considered “other” pollutant specific emission units (PSEU) as described in the 1998 EPA Compliance Assurance Monitoring guide, because their post-controlled emissions are less than the major source threshold of 100 tpy. As such, the CAM plans for these units are not due until the Title V renewal application.

Boiler B5 has uncontrolled SO₂ emissions greater than or equal to 100 tons per year. The boiler is subject to an emission limitation, but does not rely on a control device to meet the limits. Therefore, Boiler B5 is not subject to CAM for SO₂.

Boilers B6, B7, and B8 do not meet the criteria for 40 CFR Part 64 Compliance Assurance Monitoring (CAM) applicability (40 CFR §64.2(a)(3)) because pre-control emissions for each criteria pollutant for these boilers are less than the Title V major threshold of 100 tons per year. Additionally, the pre-control individual HAP emissions are less than 10 tpy, and total HAP emissions are less than 25 tpy. CAM is not applicable to Boilers B6, B7, and B8.

Other Fuel Burning Equipment (FB1, FB2 and FB3)

In addition to the larger boilers B1, B2, B5, B6, B7 and B8, James Madison University has multiple other fuel burning units to maintain the daily operations of the campus.

Limitations

The following limitations are specific to the other fuel burning equipment, such as hot water heaters and boilers that are subcategorized in categories FB1, FB2 and FB3. The emergency generators are characterized by EG1, EG2, and EG3; they are discussed in another section. The

other fuel burning units are categorized by the type fuels they burn. The following limitations are enforceable requirements from the SOP issued on 3/03/03, as amended 4/7/10, 1/31/11, and 4/15/11. Please note that the condition numbers are from the SOP. A copy of the permit is enclosed in Attachment C.

Condition 4	Specifies fuel type (distillate oil) for FB1 and EG1 units.
Condition 5	Specifies fuel type (liquefied petroleum gas) for FB2 and EG2 units.
Condition 6	Specifies fuel type (natural gas) for FB3 and EG3 units.
Condition 7	Fuel throughput limits for B1, B2, B3, B5, B6, B7 and B8.
Conditions 8, 9 and 10	Fuel throughput limits for FB1, FB2 and FB3
Condition 12	The distillate oil used in FB1 shall meet the fuel sulfur specifications as noted in ASTM D396 for distillate oil, including the fuel sulfur content.

The following Virginia Administrative Code has specific emission requirements that have been determined to be applicable:

9 VAC 5-50-80, New Source Standard for Visible Emissions

The existing SOP contains limitations as stringent as the requirement listed above (Condition 25 of the SOP). The SOP requirement has been included in the Title V permit as follows:

Monitoring and Recordkeeping

Monitoring and recordkeeping Conditions have been established to determine compliance with the limitations established in Section III.C of the Title V Permit. Compliance will be indicated for the various boiler fuel groupings via with recordkeeping demonstrating compliance with the fuel throughput limit, fuel specifications, and fuel certification requirements. The aforementioned requirements are listed in Conditions 8, 9, 10, 12 and 13 of the SOP dated 3/3/03, as amended 4/7/10, 1/31/11 and 4/15/11. This recordkeeping will demonstrate compliance with the criteria pollutant emission limits, thus satisfying the Part 70 periodic monitoring requirements.

Table 7: Distillate Oil Emission Factors – FB1

Pollutant	Emission Factor	Source of DEQ Factor
PM (lbs/1000gal) ^a	2	AP-42 Table 1.3-1 (filterable)
PM10 (lbs/1000gal) ^a	1	AP-42 Table 1.3-7 (filterable)
SO ₂ (lbs/1000gal) ^b	7.1	AP-42 Table 1.3-1 at Max Sulfur Indicated in Permit
NO _x (lbs/1000gal)	20	AP-42 Table 1.3-1
CO (lbs/1000gal)	5	AP-42 Table 1.3-1
VOC (lbs/1000gal)	0.2	AP-42 Table 1.3-3

^(a) PM/PM10 emission factors include filterable particulate matter only.

^(b) SO₂ emission factor is based on maximum sulfur content of oil permitted.

Table 8: LPG Emission Factors – FB2

Pollutant	Emission Factor	Source of DEQ Factor
PM (lbs/1000gal)	0.6	AP-42 Table 1.5-1
PM10 (lbs/1000gal)	0.6	AP-42 Table 1.5-1
SO ₂ (lbs/1000gal) ^a	0.1 * S	AP-42 Table 1.5-1 at Max Sulfur Indicated (Propane)
NO _x (lbs/1000gal)	19	AP-42 Table 1.5-1
CO (lbs/1000gal)	3.2	AP-42 Table 1.5-1
VOC (lbs/1000gal)	0.5	AP-42 Table 1.5-1

^(a) SO₂ emission factor is based on maximum sulfur content of LPG burned.

Table 9: Natural Gas Emission Factors – FB3

Pollutant	Emission Factor	Source of DEQ Factor
PM (lbs/MMCF) ^a	7.6	AP-42 Table 1.4-2
PM10 (lbs/MMCF) ^a	7.6	AP-42 Table 1.4-2
NO _x (lbs/MMCF)	100	AP-42 Table 1.4-1
CO (lbs/MMCF)	84	AP-42 Table 1.4-1
SO ₂ (lbs/MMCF)	0.6	AP-42 Table 1.4-2
Lead (lbs/MMCF)	5.E-04	AP-42 Table 1.4-2

^(a) PM/PM10 emission factors include total condensable and filterable particulate matter

^(b) SO₂ emission factor is based on maximum sulfur content of NG burned.

When firing natural gas, hourly emissions for particulates, SO₂, CO, NO_x and VOC are based on AP-42, Chapter 1.4, *Natural Gas Combustion* (September 1998). When firing LPG, hourly emissions for particulates, SO₂, CO, NO_x and VOC are based on AP-42, Chapter 1.5, *Liquefied Petroleum Gas* (July 1993). Hourly emissions of criteria pollutants, (particulate, SO₂, CO, NO_x and VOC), when firing on distillate oil are based on the emission factors from AP-42, Chapter 1.3, *Fuel Oil Combustion* (September 1999). Short-term emission limits for SO₂ from distillate oil are based on the maximum allowable sulfur content of 0.05 percent, as established in Condition 12 of the 3/3/03 SOP, as amended 4/7/10, 1/31/11 and 4/15/11. Calculations showing the emission factors and emission calculations are available in Attachment D.

Annual emissions for the boilers/hot water heaters (FB1, FB2 and FB3) are calculated based on the maximum fuel throughput for each fuel type category contained in the SOP. Condition 8 of the SOP, dated 3/3/03 as amended 4/7/10, 1/31/11 and 4/15/11, limits the total combined fuel throughput for all boilers/hot water heaters in FB1, burning distillate oil. Conditions 9 and 10 of the SOP, dated 3/3/03 as amended 4/7/10, 1/31/11 and 4/15/11, limits the total combined fuel throughput for all boilers/hot water heaters in FB2, burning LPG, and FB3, burning natural gas, respectively. The facility is limited to 50,000 gallons of distillate oil per year (FB1), 50,000 gallons of LPG per year (LPG), and 300×10^6 SCF of natural gas per year (FB3). Calculations showing the emission factors and emission calculations are available in Attachment D. Recordkeeping demonstrating compliance with the fuel throughput limits provides reasonable assurance of compliance with the annual criteria pollutant emission limits, satisfying the periodic monitoring requirement. The facility will also be required to keep records of the DEQ-approved, pollutant-specific emission factors and the equations for calculating emissions.

Compliance Assurance Monitoring

The fuel burning sources listed in this section do not meet the criteria for 40 CFR Part 64 Compliance Assurance Monitoring (CAM) applicability (40 CFR §64.2(a)(3)) because pre-control PTE for all regulated pollutants from each of the boilers are under the Title V major-source thresholds.

Streamlined Requirements

None identified. 9 VAC 5-50-80 (New Source Standard for Visible Emissions) is the state BACT floor, and is the standard by which opacity is measured in the SOP for “other fuel burning equipment”.

Emergency Generators (EG1, EG2 and EG3)

James Madison University has multiple emergency electrical generators; the following conditions have been established from the SOP dated 3/3/03 as amended 4/7/10, 1/31/11 and 4/15/11:

Limitations

- | | |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Condition 4 | Specifies fuel type (distillate oil) for FB1 and EG1 units. |
| Condition 5 | Specifies fuel type (liquefied petroleum gas) for FB2 and EG2 units. |
| Condition 6 | Specifies fuel type (natural gas) for FB3 and EG3 units. |
| Condition 11 | Each emergency generator categorized as either EG1, EG2, or EG3 shall operate no more than 250 hours per year, calculated monthly as the sum of each consecutive 12-month period. |

- Condition 12 The distillate oil used in EG1 shall meet the fuel sulfur specifications as noted in ASTM D975 for distillate oil, including the fuel sulfur content.
- Condition 25 Visible emissions from each fuel burning unit categorized under EG1, EG2, and EG3 shall not exceed 20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 30 percent opacity as determined by the EPA Method 9 (reference 40 CFR 60, Appendix A). This condition applies at all times except during startup, shutdown, and malfunction.

These limitations apply when the generators are not further limited by the requirements of the MACT subpart ZZZZ or the NSPS Subparts IIII.

Following are the emission factors used to calculate the emissions from the emergency generators contained in groups EG1, EG2, and EG3.

Table 10: Distillate Oil Emission Factors – EG1

Pollutant	Emission Factor	Source of DEQ Factor
PM (lbs/MMBtu)	0.31	None given; but assumed to equal PM-10-value as AP-42 (Table 3.3-1) assumes all PM-10 $\leq 1 \mu\text{m}$ in aerodynamic diameter
PM10 (lbs/MMBtu)	0.31	AP-42 Table 3.3-1
SO ₂ (lbs/MMBtu)	0.29	AP-42 Table 3.3-1
NO _x (lbs/MMBtu)	4.41	AP-42, Table 3.3-1
CO (lbs/MMBtu)	0.95	AP-42 Table 3.3-1
VOC (lbs/MMBtu)	0.35	AP-42 Table 3.3-1

^(a) PM/PM10 emission factors include total condensable and filterable particulate matter

Table 11: LPG Emission Factors – EG2

Pollutant	Emission Factor	Source of DEQ Factor
PM (lbs/1000 gal)	0.4	Supplied by JMU (source: AP-42, Chapter 3.1, Stationary Gas Turbines)
PM10 (lbs/1000 gal)	0.4	Supplied by JMU (source: AP-42, Chapter 3.1, Stationary Gas Turbines)
SO ₂ (lbs/1000 gal)	0.3	Supplied by JMU (source: AP-42, Chapter 3.1, Stationary Gas Turbines)
NO _x (lbs/1000 gal)	14	Supplied by JMU (source: AP-42, Chapter 3.1, Stationary Gas Turbines)
CO (lbs/1000 gal)	0.5	Supplied by JMU (source: AP-42, Chapter 3.1, Stationary Gas Turbines)
VOC (lbs/1000 gal)	1.9	Supplied by JMU (source: AP-42, Chapter 3.1, Stationary Gas Turbines)

^(a) SO₂ emission factor is based on sulfur content of LPG burned (15 gr/100 cf burned).

^(b) PM/PM10 emission factors include total condensable and filterable particulate matter

Table 12: NG Emission Factors – EG3

Pollutant	Emission Factor	Source of DEQ Factor
PM (lbs/MMBtu) ^a	0.0384	AP-42 Table 3.2.1 (7/00)
PM10 (lbs/MMBtu) ^a	0.0384	AP-42 Table 3.2.1 (7/00)
SO ₂ (lbs/MMBtu) ^b	0.000588	AP-42 Table 3.2.1 (7/00)
NO _x (lbs/MMBtu)	3.17	AP-42 Table 3.2.1 (7/00)
CO (lbs/MMBtu)	0.386	AP-42 Table 3.2.1 (7/00)
VOC (lbs/MMBtu)	0.12	AP-42 Table 3.2.1 (7/00)

^(a) PM/PM10 emission factors include total condensable and filterable particulate matter

^(b) SO₂ emission factor is AP-42 natural gas fuel S content of 2000 gr/10⁶ scf (2 gr/100 scf).

The emission factors used to calculate the emissions from LPG - fired generators (EG2) are those used in the original SOP emissions calculations for this group in 2003, as contributed by James Madison University. The AP-42 has no emission factors for LPG - fired generators.

MACT – 40 CFR 63, Subpart ZZZZ

The following emergency generators are subject to the requirements of 40 CFR 63, Subpart ZZZZ:

EG1-2, EG1-1, EG1-A01, EG1-151, EG1-241, EG1-A02, EG1-11, EG1-19, EG1-A03, EG1-A04, EG1-20, EG1-21, EG1-22, EG1-30, EG1-223, EG1-35, EG1-A05, EG1-152, EG1-A06, EG1-49, EG1-54, EG1-242, EG1-61, EG1-A07, EG1-A08, EG1-A09, EG1-227, EG1-A10, EG1-A11, EG1-231, EG1-A12, EG1-98, EG1-100, EG1-A13, EG1-222, EG1-A14, EG1-102, EG1-EG1, EG1-108, EG1-228, EG1-A15, EG1-A16, EG1-128, EG1-131, EG1-136, EG1-A17, EG1-143, EG1-144, EG1-A18, EG1-145, EG1-A31, EG1-A32, EG2-12, EG2-15, EG2-110, EG3-18, EG3-25, EG3-34, EG3-39, EG3-66, EG3-46, EG3-55, EG3-58, EG3-113, EG3-137, EG3-140

The MACT requirements are divided into several categories that are discussed in detail below.

The following emergency generators have engines greater than 500 HP. The generators are considered existing stationary RICE at a major source of HAP emissions. Because these generators are part of the EG1 fuel group, which emissions are collectively limited in the SOP, they are listed in the significant equipment list in the front portion of the Title V permit and Statement of Basis.

EG1-49, EG1-61, EG1-A11, EG1-A31, EG1-A10, EG1-A32

The generators listed under this category are referred to as **MACT Group 1** in the Title V permit.

Each of the emergency generators (MACT Group 1) do not have to meet the requirements of 40

CFR 63, Subpart ZZZZ, and Subpart A, in accordance with 40 CFR 63.6590(b)(3). No initial notification is required.

The following emergency generators have engine horsepower less than or equal to 500 HP, and are considered existing stationary RICE at a major source of HAP emissions:

EG1-2, EG1-1, EG1-A01, EG1-151, EG1-11, EG1-19, EG1-A03, EG1-20, EG1-21, EG1-22, EG1-30, EG1-35, EG1-A05, EG1-152, EG1-A06, EG1-54, EG1-242, EG1-A07, EG1-A08, EG1-A09, EG1-108, EG1-98, EG1-100, EG1-A13, EG1-A14, EG1-102, EG1-A15, EG1-A16, EG1-128, EG1-131, EG1-136, EG1-A17, EG1-143, EG1-144, EG1-A18, EG1-145

The generators listed above, under this category, are referred to as **MACT Group 2** in the Title V permit. In accordance with the MACT, 40 CFR 63 Subpart ZZZZ, the following conditions are applicable to the emergency generators listed above in MACT Group 2:

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| Condition V.A.8 | This condition establishes the short-term process limits for the emergency stationary RICE. |
| Condition V.A.11 | This condition establishes operating conditions for the emergency stationary RICE. |
| Condition V.A.12 | By May 3, 2013, the CI engines (MACT Group 2) shall meet the applicable work practice standards in 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary RICE). |
| Condition V.A.14 | In accordance with Table 2c of the MACT, Subpart ZZZZ, by May 3, 2013, during periods of startup the permittee must minimize the time spent at idle for the emergency engines (Ref. MACT Group 2) and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply. |

The MACT establishes maintenance requirements for MACT Group 2 as specified above. Condition V.A.14 of the Title V permit establishes a limitation on the amount of time the emergency engines in MACT Group 2 can spend at idle.

The following emergency generators have engines greater than 500 HP, and are considered to be new stationary RICE at a major source of HAP emissions.

EG1-A04, EG1-241, EG1-227

The generator listed above, under this category, is referred to as **MACT Group 3** in the Title V permit. Since these emergency generators are new emergency RICE, the units do not have to meet the requirements of 40 CFR 63 Subparts ZZZZ or A, except for the initial notification requirements of §63.6645(f), in accordance with 40 CFR 63.6590(b).

The following emergency generators have engines less than or equal to 500 HP, and are considered new stationary RICE at a major source of HAP emissions.

EG1-A02, EG1-223, EG1-231, EG1-A12, EG1-222, EG1-228, EG1-EG-1

The generators listed above, in this category, are referred to as **MACT Group 4** in the Title V permit. Each of these emergency generators must meet the requirements of 40 CFR 63, Subpart ZZZZ by meeting the requirements of 40 CFR 60, Subpart IIII, for compression ignition engines, under 40 CFR 63.6590(c). In addition to the NSPS, 40 CFR 60, Subpart IIII conditions, discussed below, the following condition was established pursuant to 40 CFR 63.6590(c):

Condition V.A.13 The emergency generators must meet the requirements of 40 CFR 63 Subpart ZZZZ by meeting the requirements of 40 CFR 60, Subpart IIII.

The following emergency generators have engines less than or equal to 500 HP, and are considered existing stationary spark-ignition (SI) RICE at a major source of HAP emissions.

EG2-12, EG2-15, EG2-110, EG3-18, EG3-25, EG3-34, EG3-39, EG3-66, EG3-46, EG3-55, EG3-58, EG3-113, EG3-137, EG3-140

The generators listed under this category are referred to as **MACT Group 5** in the Title V permit. In accordance with the MACT, 40 CFR 63 Subpart ZZZZ, the following conditions are applicable to the emergency generators listed above (Ref. MACT Group 5):

Condition V.A.13 By October 19, 2013, the SI engines (MACT Group 5) shall meet the applicable work practice standards specified in 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary RICE).

Condition V.A.14 In accordance with Table 2c of the MACT, Subpart ZZZZ, by October 19, 2013, during periods of startup the permittee must minimize the time spend at idle for the emergency engines (Ref. MACT Group 5) and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.

The MACT establishes maintenance requirements for MACT Group 5 as specified above. Additionally, the MACT establishes the operational conditions that define emergency operation for the emergency generators contained in MACT Group 5. Condition V.A.14 of the Title V permit establishes a limitation on the amount of time the emergency engines (Ref. MACT Group 2 and MACT Group 5) can spend at idle.

In addition to the specific requirements listed above for each of the MACT Groups, each of

the emergency generators subject to 40 CFR 63, Subpart ZZZZ must meet the following requirement:

Condition V.A.16: The emergency generators must be operated in accordance with MACT, Subpart ZZZZ, except where the Title V permit is more restrictive.

The requirements of the NSPS (Subpart IIII) are provided below.

NSPS SUBPART IIII

In addition the requirements under 40 CFR 63, Subpart ZZZZ, the following emergency generators are subject to the New Source Performance Standards (NSPS) 40 CFR 60, Subpart IIII requirements:

EG1-241, EG1-A02, EG1-A04, EG1-223, EG1-227, EG1-231, EG1-A12, EG1-222, EG1-228, EG1-EG1

The generators listed under this category are referred to as **NSPS Group** in the Title V permit. In accordance with the NSPS, 40 CFR 60 Subpart IIII, the following conditions are applicable to the emergency generators listed above:

Condition V.A.1: The condition sets the approved fuel for the emergency generators as distillate oil. The NSPS (40 CFR 60.4207) states that the approved fuel is diesel fuel. Diesel fuel is classified as a distillate oil.

Condition V.A.5: This condition establishes the allowable fuel sulfur content for the distillate oil in accordance with the NSPS (40 CFR 60.4207(b)).

Condition V.A. 8: The condition sets the process emission limits for the emergency generators (NSPS Group) in accordance with 40 CFR 60.4205(b) and 40 CFR 60.4211(b).

Condition V.A.10: The condition establishes that emergency generators may be operated for the purpose of maintenance check and readiness testing, in accordance with 40 CFR 60.4211(e).

Condition V.A.16: The permittee must maintain and operate the emergency generators according to the manufacturer's written instructions or procedures developed by the permittee that are approved by the manufacturer, over the entire life of the engine. In addition, the permittee may only change those settings that are approved by the manufacturer (40 CFR 60.4206 and 40 CFR 60.4211).

Condition V.A.17: The emergency generators must be operated in accordance with

NSPS, Subpart IIII, except where the Title V permit is more restrictive.

As listed above, the NSPS requires the use of diesel fuel, listed in the SOP as distillate oil, of which diesel fuel is a subset. It also specifies sulfur requirements for the diesel fuel. The MACT and NSPS both stipulate that each emergency generator is to be operated for emergency situations, or readiness testing. The NSPS also establishes performance standards for each generator subject to the requirements.

In addition to the SOP and the NSPS and MACT requirements listed above, the following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable to multiple units at the facility; applicable emission units are listed in the Title V permit with each condition:

9 VAC 5-50-80, New Source Standard for Visible Emissions

The visible emission limit for the emergency generators listed above is streamlined with the Condition 25 from the SOP dated 3/3/03 as amended 4/7/10, 1/31/11, and 4/15/11. The NSPS, Subpart IIII, and MACT, Subpart ZZZZ, provide more stringent requirements to ensure the Visible Emissions limitation, listed above, is met.

Monitoring and Recordkeeping

The following Monitoring and Recordkeeping requirements are from the SOP issued on 3/3/03 as amended 4/7/10, 1/31/11, and 4/15/11. A copy of the permit is enclosed in Attachment B. The monitoring requirements of NSPS Subpart IIII and MACT Subpart ZZZZ included in the permit satisfy 40 CFR Part 70 requirements.

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| Condition 8: | This condition requires the facility to retain fuel certifications from the fuel suppliers to show compliance with the fuel specifications and emission limits. |
| Condition 9: | The permittee shall maintain records of the required training including a statement of time, place and nature of training provided. The permittee shall have available good written operating procedures and a maintenance schedule for the generators. These procedures shall be based on the manufacturer's recommendations, at minimum. All records required by this condition shall be kept on site and made available for inspection by the DEQ. |
| Condition 32: | This condition establishes the requirement to maintain records of emission data and operating parameters to show compliance with the SOP. |

In addition to the monitoring and recordkeeping requirements from the SOP, outlined above,

the facility has multiple generators subject to NSPS and MACT requirements. The following monitoring and recordkeeping conditions were established to determine compliance with the NSPS and MACT limitations:

- Condition V.B.1 The permittee must install a non-resettable hour meter prior to start up in accordance with 40 CFR 60.4209 and 40 CFR 63.6590(c). The hour meter shall be provided with adequate access for inspection.
- Condition V.B.2 By May 3, 2013 for CI engines and October 19, 2013 for SI engines, the permittee must install non-resettable hour meters on the emergency RICE in accordance with 40 CFR 63.6625(f) for the engines in MACT Group 2. The hour meter shall be provided with adequate access for inspection.
- Condition V.B.3 In accordance with 40 CFR 63.6625(e), by May 3, 2013 for CI engines and October 19, 2013 for SI engines, the permittee shall develop a maintenance plan that provides to the extent practicable for the maintenance and operation of each engine in a manner consistent with good air pollution control practice for minimizing emissions, for the emergency generators in MACT Group 2.
- Condition V.B.4(a) The permittee is required to keep records of all fuel supplier certifications to show compliance with the fuel specifications in 40 CFR 60.4207, 40 CFR 60.4211, and 40 CFR 80.510. This condition has been streamlined with Condition 13 of the 3/3/03 permit as amended 4/7/10, 1/31/11, and 4/15/11.
- Condition V.B.4(g) The permittee is required to keep records of engine manufacturer data indicating compliance with the process emission limits in Conditions V.A.8. In addition to the manufacturer data, the permittee must also keep records of: the hours of operation; scheduled and unscheduled maintenance and operator training, as specified in the recordkeeping condition. By May 3, 2013 for CI engines and October 19, 2013 for SI engines, the permittee must keep records of all maintenance conducted on the listed emergency generators as well as hours of operation that are recorded on the hour meter.

The requirements for installation of non-resettable hour meters, provided in Conditions V.B.1 and V.B.2, establishes the means of determining compliance with the hour limitations specified in Conditions V.A.11. The facility is required to keep records of the hours of operation of each generator to ensure the limitations of Condition V.A.11 are met. The hour meter also provides reasonable assurance of compliance for the annual emission limits in Conditions V.A.6 – V.A.7.

The facility is required under Condition V.B.4 to maintain records of all fuel supplier certifications. The fuel certifications for the NSPS generators, as required in Condition V.B.4, provide assurance of compliance with the fuel requirements outlined in Conditions V.A.1 – V.A.3. This condition has been streamlined with the similar individual SOP conditions.

The required records of engine manufacturing data for the NSPS affected generators, required in Condition V.B.4(g), assures compliance with the engine standards outlined in 40 CFR 60.4205, and Conditions V.A.1, V.A.5, V.A.8, and V.A.10.

The required maintenance and operating plans assure compliance with NSPS and MACT requirements to maintain and operate the engine in accordance with the manufacturer's written instructions. The maintenance and operating plans, as well as records of all scheduled and unscheduled maintenance and operator training will also help to establish reasonable assurance of compliance with the emission limits and visible emission standards established in the permit. The facility is also required to maintain hours of operation for each of the emergency generators contained in the MACT and the NSPS Groups to ensure that each continues to meet the definition of emergency-use, as found in the Virginia Regulations, the MACT and NSPS.

Testing

None Indicated. The Department has authority to require testing if necessary to determine compliance with an emission limit within this permit.

Reporting

The permittee has submitted the initial notifications for emergency generators already constructed in MACT Group 3 that are subject to the MACT, 40 CFR 63 Subpart ZZZZ standards, contained in the Title V permit. The initial notification requirements from 40 CFR 63.6645(f) have been included in the Title V permit for the generators in MACT Group 3 that have not been constructed. The facility has 120 days after the emergency generators become subject to the standard to submit the initial notification to the EPA. There are no other reporting requirements for the remaining MACT Groups. MACT Groups 1, 2 and 5 are all exempt from notification requirements under 40 CFR 63.6645(a)(5); MACT Group 4 must meet the requirements of the MACT by meeting the requirements of 40 CFR Part 60 subpart IIII for compression ignition engines. No further requirements apply for such engines under this part.

Streamlined Requirements

The following Virginia Administrative Codes have been streamlined in the Title V permit:

9 VAC 5-50-80 (New Source Standard for Visible Emissions)

The NSPS, Subpart IIII and MACT, Subpart ZZZZ provide more stringent requirements to ensure the Visible Emissions limitation is met.

GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110 that apply to all Federal-operating permitted sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

Comments on General Conditions

B. Permit Expiration

This condition refers to the Board taking action on a permit application. The Board is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by §2.2-604 and §10.1-1185 of the *Code of Virginia*, and the “Department of Environmental Quality Agency Policy Statement No. 2-2003”.

This general condition cite(s) the Article(s) that follow(s):

Article 1 (9 VAC 5-80-50 et seq.), Part II of 9 VAC 5 Chapter 80. Federal Operating Permits for Stationary Sources

This general condition cites the sections that follow:

9 VAC 5-80-80. Application

9 VAC 5-80-140. Permit Shield

9 VAC 5-80-150. Action on Permit Applications

F. Failure/Malfunction Reporting

Section 9 VAC 5-20-180 requires malfunction and excess emission reporting within four hours of discovery. Section 9 VAC 5-80-250 of the Title V regulations also requires malfunction reporting; however, reporting is required within two days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to section 9 VAC 5-20-180 including Title V facilities. Section 9 VAC 5-80-250 is from the Title V regulations. Title V facilities are subject to both sections. A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-250. The report must be made within four daytime business hours of discovery of the malfunction.

J. Permit Modification

This general condition cites the sections that follow:

9 VAC 5-80-50. Applicability, Federal Operating Permit For Stationary Sources

9 VAC 5-80-1100. Applicability, Permits for New and Modified Stationary Sources

9 VAC 5-80-2000. Applicability, Permits for Major Stationary Sources and Major Modifications
Locating in Nonattainment Areas

U. Malfunction as an Affirmative Defense

The regulations contain two reporting requirements for malfunctions that coincide. The reporting requirements are listed in sections 9 VAC 5-80-250 and 9 VAC 5-20-180. The malfunction requirements are listed in General Condition U and General Condition F. For further explanation see the comments on General Condition F.

Y. Asbestos Requirements

The Virginia Department of Labor and Industry under Section 40.1-51.20 of the Code of Virginia also holds authority to enforce 40 CFR 61 Subpart M, National Emission Standards for Asbestos.

This general condition contains a citation from the Code of Federal Regulations that follows:

40 CFR 61.145, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to demolition and renovation.

40 CFR 61.148, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to insulating materials.

40 CFR 61.150, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to waste disposal.

STATE ONLY APPLICABLE REQUIREMENTS

There are no “state only” requirements that apply to this facility.

FUTURE APPLICABLE REQUIREMENTS

James Madison University is subject to the Major Source Boiler MACT. The Major Source Boiler MACT was to become effective on May 20, 2011. On May 18, 2011, however, the EPA published a notice in the Federal Register delaying the effective dates of the Major Source Boiler MACT. In the notice of delay, the EPA stated that it was in the process of developing a proposed reconsideration of certain aspects of the rule. The EPA proposed reconsideration of the rule in December 2011 and currently intends to finalize the reconsideration in the spring of 2012.

On January 9, 2012, the federal district court for the District of Columbia issued a decision vacating and remanding the May 18, 2011, Delay Notice. The vacatur, in conjunction with the proposed reconsideration of the Major Source Boiler MACT, has created uncertainty regarding requirements because the EPA has proposed revisions to the compliance dates (the date by which a unit must be in compliance with the requirements in the Boiler MACT rule) for all units and to the subcategories for some units. As of June 19, 2012, the Major Source Boiler MACT rule amendments were under review by the Office of Management and Budget. Since the EPA has not yet reached a final action on reconsideration of the Major Source Boiler MACT, it makes sense to wait to include all applicable requirements in the Title V permit until after the final rule is issued. Please note that, on February 7, 2012, EPA provided a no action assurance to all owners and/or operators of industrial boilers with respect to the notification deadlines.

INAPPLICABLE REQUIREMENTS

The provisions of 40 CFR Part 98 – Mandatory Greenhouse Gas Reporting require owners and operators of general stationary fuel combustion sources that emit 25,000 metric tons CO_{2e} or more per year in combined emissions from such units, to report greenhouse gas (GHG) emissions, annually. The definition of “applicable requirement” in 40 CFR 70.2 and 71.2 does not include requirements such as those included in Part 98, promulgated under Clean Air Act (CAA) section 114(a)(1) and 208. Therefore, the requirements of 40 CFR Part 98 are not applicable under the Title V permitting program.

As a result of several EPA actions regarding GHG under the CAA, emissions of GHG must be addressed for a Title V permit renewed after January 1, 2011. This Title V permit is James Madison University’s first Title V permit. As such, greenhouse gas emissions do not have to be addressed.

COMPLIANCE PLAN

James Madison University was last inspected on June 2, 2011 and was found to be in compliance with all applicable requirements. No compliance plan was included in the application or in the permit.

INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Insignificant emission units include the following:

Petroleum Storage Tanks

Emission Unit Number	Capacity in gallons	Tank Construction	Use	Fuel Stored	Citation	Pollutant Emitted (9 VAC 5-8—720 B)
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Free-Standing Aboveground Storage Tanks

43_A1	275	Steel	Emergency Power	#2 distillate, 0.05% S	9 VAC 5-80-720 B	VOC
43_A2	275	Steel	Emergency Power	#2 distillate, 0.05% S	9 VAC 5-80-720 B	VOC
A18	50	Steel	Emergency Power	#2 distillate, 0.0015% S	9 VAC 5-80-720 B	VOC
A10	500	Steel	Emergency Power	#2 distillate, 0.0015% S	9 VAC 5-80-720 B	VOC
A31_A	275	Steel	Emergency Power	#2 distillate, 0.0015% S	9 VAC 5-80-720 B	VOC
91, 92, 93, 94, 95, 96, 97	500	Steel	Emergency Power	#2 distillate, 0.05% S	9 VAC 5-80-720 B	VOC

Emission Unit Number	Capacity in gallons	Tank Construction	Use	Fuel Stored	Citation	Pollutant Emitted (9 VAC 5-8—720 B)
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Underground Storage Tanks

124	1000	Steel	Motor fuel	#2 distillate, 0.05% S	9 VAC 5-80-720 B	VOC
B1, B2 & B5_T1	50,000	Steel	Heating	#2 distillate, 0.05% S	9 VAC 5-80-720 B	VOC
B1, B2 & B5_T2	50,000	Steel	Heating	#2 distillate, 0.05% S	9 VAC 5-80-720 B	VOC
A11	8,000	Steel	Emergency	#2 distillate, 0.0015% S	9 VAC 5-80-720 B	VOC
A25, A26 & A27_10k	10,000	Steel	Heating / Steam Production	#2 distillate, 0.05% S	9 VAC 5-80-720 B	VOC
A25, A26 & A27_20k	20,000	Steel	Heating / Steam Production	#2 distillate, 0.05% S	9 VAC 5-80-720 B	VOC
A31_U	1,500	Steel	Generator	#2 distillate, 0.0015% S	9 VAC 5-80-720 B	VOC

Located Within Back-up (Emergency) Generators – Belly Tanks

241	500	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
61	550	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
1	100	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
11	100	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
19	150	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
20	100	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
21	100	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
22	100	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
30	100	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
35	500	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
49	150	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
54	50	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
98	75	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
102	250	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
228	200	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
128	120	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
131	250	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
108	325	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
136	200	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
143	250	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
144	50	Steel	Fire Pump	Diesel	9 VAC 5-80-720 B	VOC
100	150	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
152	100	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
A08	50	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
2	50	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
A16	112	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC

Emission Unit Number	Capacity in gallons	Tank Construction	Use	Fuel Stored	Citation	Pollutant Emitted (9 VAC 5-8—720 B)
A01	250	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
151	200	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
A03	300	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
A04	660	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
223	278	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
A05	194	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
A06	85	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
242	119	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
A17	140	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
227	595	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
A09	500	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
A07	65	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
A13	475	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
222	356	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
A114	250	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
A02	278	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
A15	140	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
A12	720	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
231	208	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
145	275	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC
A32	250	Steel	Generator	Diesel	9 VAC 5-80-720 B	VOC

The citation criteria for insignificant activities are as follows:

- 9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application
- 9 VAC 5-80-720 B - Insignificant due to emission levels
- 9 VAC 5-80-720 C - Insignificant due to size or production rate

CONFIDENTIAL INFORMATION

The permittee did not submit a request for confidentiality. Therefore, all portions of the Title V application are suitable for public review.

PUBLIC PARTICIPATION

A public notice regarding the draft permit was placed in the *Harrisonburg Daily News Record* on June 22, 2012. EPA was sent a copy of the draft permit and notified of the public notice on June 21, 2012. West Virginia, the only affected State, was sent a copy of the public notice in a letter dated June 22, 2012. All persons on the Title V mailing list were also sent a copy of the public notice in letters dated June 22, 2012. No comments were received.

ATTACHMENT A

JMU and RRF: EPA Determination of Support Relationship

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October 26, 2009

ATTACHMENT B

2011 Emission Statement

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James Madison University

ATTACHMENT C

State Operating Permit (SOP)

ATTACHMENT D

Emissions Calculations

ATTACHMENT E

Insignificant Emission Calculations

(TANKS)