

**COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Northern Virginia Regional Office**

STATEMENT OF LEGAL AND FACTUAL BASIS

U.S. Army Garrison, Fort Belvoir
Fairfax County, Virginia
Permit No. NVRO70550

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, U.S. Army Garrison, Fort Belvoir has applied for a Title V Operating Permit for its military base operations located in Fairfax County. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Engineer/Permit Contact: _____ Date: _____

Air Permit Manager: _____ Date: _____

FACILITY INFORMATION

Permittee

U.S. Army Garrison, Fort Belvoir
9820 Flagler Road, STE230
Fort Belvoir, Virginia 22060-5928

Facility

U.S. Army Garrison, Fort Belvoir,
DIS-ELE-E, 9430 Jackson Loop, STE107
Fort Belvoir, Virginia 22060-5130

AIRS ID No. 51-059-00018

SOURCE DESCRIPTION

SIC Code: [9711] - [National Security]

U.S. Army Garrison Fort Belvoir is a 9237-acre military post located in Fairfax County. It houses about 100 tenants, operating many emission units subject to the Virginia air regulations. There are large boiler plants, emergency and training generator plants, two incinerators, firefighter training equipment, cold solvent cleaners, fuel storage tanks and gasoline service stations. There are also numerous small boilers and generators, some of which are considered insignificant along with other minor activities, such as painting, woodworking, closed landfills and various other storage tanks not subject to permitting.

The facility is a Title V major source for oxides of nitrogen (as NO₂). This source is located in a serious ozone non-attainment area for which NO₂ and volatile organic compounds (VOC) are precursor pollutants. The area is in attainment for other criteria pollutants. The facility was previously permitted under the Minor NSR Permit for the new boilers at the heating and refrigeration plant on September 21, 1998 and a summer boiler on November 4, 1998, both amended on January 24, 2001. The fire training equipment permit issued on September 29, 1997, was superseded by permit of January 24, 2001. The Defense CEETA incinerator was permitted on February 8, 1989, and their emergency generators were originally permitted on July 2, 1997 but superseded by permit of July 1, 2002. The Prime Power School permitted on August 3, 2001, was issued a revised permit on May 31, 2002. The veterinary incinerator was permitted on April 16, 1990, as amended on November 4, 1998. Also, state operating permit for reasonably available control technology (RACT) was issued on June 5, 2000.

COMPLIANCE STATUS

The Post is inspected at least once a year. An inspection was conducted on August 22, 2002. It was determined to be in compliance with the state and federal air regulations.

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emissions units at this facility consist of the following:

Emission Unit ID	Stack ID	Bldg. No.	Emission Unit Description	Size/Rated Capacity	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
Fuel Burning Equipment – Building 1422 – Central Heating Plant								
B-1a, B-2a, B-3a	BS-1a, BS-2a, BS-3a	1422	Replacement boilers, gas/No. 2 oil, at Central Heating Plant, Cleaver Brooks CB-LE-200	25.0 mil.Btu/hr, each	Low NOx emissions control technology	N/A (built-in)	NOx	9/21/98, as amended 1/24/01
Fuel Burning Equipment – Building 332 – R&D Heating Plant								
B-4, B-5	BS-4, BS-5	332	Erie City Iron Works HSB No.2 oil/gas	32.2 mil.Btu/hr, each	-	-	-	-
B-107	BS107	332	Cleaver Brooks CB400 No. 2/gas-fired boilers	16.75 mil.Btu/hr	-	-	-	11/4/98, as amended 1/24/01
Fuel Burning Equipment – Other small No. 2 Oil or No. 2 Oil/Gas-Fired Boilers								
B-6, B-7	BS-6, BS-7	2117	Trane PBAL 3F-5 No. 2/gas-fired boilers	11 mil.Btu/hr, each	-	-	-	-
B-55	BS-55	773	Weil McLain BL 786 SF	1.7 mil.Btu/hr	-	-	-	-
B-56	BS-56	805	Weil McLain 588, gas/No. 2 oil	1.36 mil. Btu/hr	-	-	-	-
B-59	BS-59	1114	Weil McLain 688	1.57 mil.Btu/hr	-	-	-	-
B-65	BS-65	3233	Cleaver Brooks, gas/No. 2 oil	2.9 mil.Btu/hr	-	-	-	-
B-66	BS-66	3233	Cleaver Brooks, gas/No. 2 oil	2.9 mil.Btu/hr	-	-	-	-
B-67	BS-67	3138	Cl. Brooks CBW, gas/No. 2 oil	6.28 mil.Btu/hr	-	-	-	-
B-68	BS-68	3138	Cl. Brooks CBW, gas/No. 2 oil	6.28 mil.Btu/hr	-	-	-	-
B-71	BS-71	2470	Iron Fireman R10.9	2.41 mil.Btu/hr	-	-	-	-
B-84	BS-84	1810	Weil McLain 1188	3.39 mil.Btu/hr	-	-	-	-
B-88	BS-88	1950	Weil McLain	1.08 mil.Btu/hr	-	-	-	-
B-95	BS-95	2857	Bryan CL	1.8 mil.Btu/hr	-	-	-	-
B-96	BS-96	2800	Cleaver Brooks M4S-4500	4.5 mil.Btu/hr	-	-	-	-
B-97	BS-97	2800	Cleaver Brooks M4S-4500	4.5 mil.Btu/hr	-	-	-	-
B-98	BS-98	2800	Cleaver Brooks M4W-1500	1.5 mil.Btu/hr	-	-	-	-
B-99	BS-99	2800	PBI Industries	1.6 mil.Btu/hr	-	-	-	-
B-100	BS-100	2802	Cleaver Brooks 6000	6 mil.Btu/hr	-	-	-	-
B-101	BS-101	2802	Cleaver Brooks 6000	6 mil.Btu/hr	-	-	-	-
B-103	BS-103	2592	Cl. Brooks FLE, gas/No. 2 oil	4 mil.Btu/hr	-	-	-	-

B-104	BS-104	2592	Cl. Brooks FLE, gas/No. 2 oil	4 mil.Btu/hr	-	-	-	-
B-105	BS-105	2593	Cleaver Brooks CB-600-125	5.23 mil.Btu/hr	-	-	-	-
B-108	BS-108	2580	Cl.Brooks CB500, gas/No.2 oil	4.18 mil.Btu/hr	-	-	-	-
B-109	BS-109	2582	Weil McLain P688W, gas/No.2	1.7 mil.Btu/hr	-	-	-	-
B-111	BS-111	2593	Cl. Brooks CB800, gas/No.2	1.68 mil.Btu/hr	-	-	-	-
B-112	BS-112	2594	Peerless 0-707-FBA-WUP	1.07 mil.Btu/hr	-	-	-	-
B-135	BS-135	2444	Cleaver Brooks CB-M4W	2.5 mil.Btu/hr	-	-	-	-
B-136	BS-136	2444	Cleaver Brooks CB-M4W	2.5 mil.Btu/hr	-	-	-	-
Process A – Generators								
EG-13, EG-14, EG-15, EG-16, EG-17, EG-18, EG-19, EG-20, EG-21, EG-22	EGS-13, EGS-14, EGS-15, EGS-16, EGS-17, EGS-18, EGS-19, EGS-20, EGS-21, EGS-22	2857	Caterpillar 3516 diesel-fired emergency generators at Defense CEETA	1500 kilowatts (KW), each or 2168 brake horsepower (bhp), each	-	-	-	7/1/02
EG-29	EGS-29	193	Diesel generator,Cummins VT	500 KW	-	-	-	-
EG-38, EG-39, EG-40	EGS-38, EGS-39, EGS-40	2310	Diesel generators	1000 KW, each	-	-	-	-
EG-41	EGS-41	2444	Diesel generator, Cat. SR-4	1500 KW	-	-	-	-
EG-42 EG-43	EGS-42 EGS-43	2444	No. 2 fuel oil generators KTA50-GS/GC1	750 KW, each	-	-	-	-
EG-66 EG-67 EG-68 EG-69	EGS66 EGS67 EGS68 EGS69	2462	Diesel generators, Caterpillar SR-4 Emergency diesel generators	800 KW, each	-	-	-	7/1/02
EG-70 EG-71 EG-72 EG-73	EGS70 EGS71 EGS72 EGS73	2857	Caterpillar model 3516B (or equivalent) emergency diesel generators	1640 KW, each or 2377 bhp, each	-	-	-	-
EG-107	EGS107	2454	Diesel Generator, All-Power	About 600 KW	-	-	-	-
G-51, G-52, G-53, G-54	GS-51, GS-52, GS-53, GS-54	1132	Four EMD MP-36A Diesel generators for training	1500 KW, each or 2170 bhp, each	-	-	-	5/31/02

G-55, G-56, G-57	GS-55, GS-56, GS-57	1132	Diesel generators for training, Two Cummins MEP-208A and One Cummins MEP-012A	750 KW, each or 1085 bhp, each	-	-	-	
G-61	GS-61	1132	EMD model 12567E diesel gen.	750 KW	-	-	-	
G-62 G-63 G-64	GS-62 GS-63 GS-64	1132	Three Caterpillar 3456 Diesel generators for training	920 KW, each or 1338 bhp, each	-	-	-	5/31/02
Process B – Firefighting Training Equipment								
FT-1		3240	Symtron Systems, Inc. Fixed Structural fire fighting trainer	36 mil.Btu/hr (propane-fired)	-	-	-	1/24/01
FT-2		3240	Symtron Systems, Inc. Mobile aircraft fire rescue trainer	11.7 mil. Btu/hr (propane-fired)	-	-	-	1/24/01
Process C – Incinerators								
I-2	IS-2	610	Shenandoah P25-2GT Veterinary clinic incinerator	120 lbs/hour	-	-	-	4/16/90, amended 11/4/98
I-4	IS-4	2856	Consumat C-325-ATC Classified waste incinerator	1050 lbs/hour	-	-	-	2/8/89
Process D – Cold Cleaning (Degreasers)								
DG			(41) cold cleaning degreasers		-	-	-	-
Process E – Storage Tanks								
T-03162A T-03612B		3162	Underground storage tanks	13,000 gallons, each	-	-	-	-
T-01133E		1133	Underground storage tank	25,000 gallons	-	-	-	5/31/02
T-02856B		2685	Underground storage tank	15,000 gallons	-	-	-	7/1/02
T-00332H T-00332I T-00332J		332	Underground storage tanks	25,000 gallons, each	-	-	-	-
T-01422J T-01422K T-01422L T-01422M T-01422N		1422	Underground storage tanks (residual No. 6 fuel oil)	25,000 gallons, each	-	-	-	-
T-01422P T-01422Q T-01422R T-01422S T-01422T		1422	Underground storage tanks (distillate No. 2 fuel oil)	25,000 gallons, each	-	-	-	-
T-03138H T-03138I		3138	Underground storage tanks	30,000 gallons, each	-	-	-	-

T-02117C		2117	Underground storage tank	25,000 gallons	-	-	-	-
T-02800A		2800	Underground storage tank	15,000 gallons	-	-	-	-
T-02310A		2310	Underground storage tank	25,000 gallons	-	-	-	-
T-02444C		2444	Underground storage tank	25,000 gallons	-	-	-	-
T-02462A		2462	Underground storage tank	25,000 gallons	-	-	-	-
T-02803A		2803	Underground storage tank	25,000 gallons	-	-	-	-
T-02117C		2117	Underground storage tank	25,000 gallons	-	-	-	-
T-02800A		2800	Underground storage tank	15,000 gallons	-	-	-	-
T-01124C		1124	Underground storage tanks	12,000 gallons	-	-	-	-
Process F – Building 1124 - Gasoline Service Station								
T-9, T-10		1124	Stage I and Stage II vapor recovery from gasoline station		-	-	-	-

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

EMISSIONS INVENTORY

A copy of the 2001 annual emission update is attached as Attachment A. Emissions are summarized in the following tables.

2001 Actual Emissions

Emission Unit	Criteria Pollutant Emission in Tons/Year				
	VOC	CO	SO ₂	PM ₁₀	NO _x
1-3a*1422 Cleaver Brooks boilers- central heating plt)	1.294	5.6328	6.033	1.097	4.584
4* 332A Erie City Boiler	0.08	1.221	2.225	0.341	1.892
5* 332B Erie City Boiler	0.08	1.221	2.225	0.341	1.892
6* 332 Summer Boiler	0.097	1.475	0.149	0.148	1.783
7* Misc. boilers – gas	0.856	13.066	0.093	1.182	15.555
9* Misc. boilers – No.2 oil	0.074	1.082	15.368	1.693	4.329
11* Degreasing	0.42	0	0	0	0
12*Gasoline station losses	8.925	0	0	0	0
21* Printing	1.719	0	0	0	0
23* CEETA Incinerator	0.222	0.74	0.185	0.3478	0.222
24* Veterinary Incinerator	0.002	0.008	0.002	0.004	0.002
25* CEETA generators	0.081	0.0685	0.163	0.046	2.568
41* Fixed Firefight Trainer	0.006	0.004	0.000	0.013	0.001
42*Mobile Firefight Trainer	0.011	0.008	0.000	0.023	0.001
42*Mobile Firefight Trainer	0.174	1.836	0.560	0.599	8.521
Total	14.041	26.3623	27.003	5.8348	41.35

2001 Facility Hazardous Air Pollutant Emissions

Pollutant	Hazardous Air Pollutant Emission in Tons/Year
Hydrogen Chloride (HCl) emissions from Defense CEETA incinerator	0.074

EMISSION UNIT APPLICABLE REQUIREMENTS - [emission unit(s)]

Fuel Burning Equipment Requirements--(emission units ID#B-1 to B-3) Building 1422 – Central Heating Plant

The conditions for the new boilers at the Central Heating Plant have been taken from the New Source Performance Standards (NSPS), Subpart Dc, permit issued on September 21, 1998, as amended on January 24, 2001. The three gas/No. 2 oil-fired Cleaver Brooks boilers replaced the three old No. 6 oil-fired boilers previously operated at the site. A copy of the amended permit is enclosed as attachment B.

Limitations

Conditions 1, 2 and 3 state the emissions control requirements. For NO₂, application of low NO_x technology must meet the standard of 0.05 lbs/million Btu when burning gas and 0.14 lbs/million Btu when burning distillate fuel oil. With natural gas as boiler fuel, NO₂ emissions limit is half the amount obtained by using the EPA's Compilation of Air Pollutant Emission Factors (AP-42). However, with No. 2 fuel oil, NO₂ emissions are only slightly lower than the standard uncontrolled emission factors. For the other pollutants, the emission factors provided are about the same or higher than found in AP-42, as shown in tables in the next section. The emissions are minimized also by the use of cleaner fuels, gas and distillate fuel oil, proper boiler operation and maintenance.

Conditions 4, 5 and 6 limit the fuel type, sulfur content and annual throughput.

Conditions 7 and 8 specify the emission limits in lbs/million Btu, lbs/hour and tons/year, as well as the standard visible emission limit of 20% opacity. Condition 7 further requires records of DEQ-approved factors, equations and fuel throughput data be kept to allow calculation of actual annual emissions for each consecutive 12 month period.

Monitoring and Recordkeeping

The recordkeeping requirements include fuel supplier certifications, daily and monthly records on fuel consumption as required by the federal NSPS, subpart Dc standard for small boilers, with DEQ-approved factors and equations used to calculate emissions. Also, records must be kept on any required training, written operating procedures and maintenance schedules based on manufacturer recommendations. Actual emissions from the operation of the boilers (B-1a to B-3a) will be calculated for the emissions inventory using the annual throughput of natural gas and distillate fuel oil, based on

monthly records, and factors given by the manufacturer. The factors used in the permit were generally larger than those given in AP-42. The nitrogen oxide factor is lower since it is controlled by low NOx technology (burners and flue gas recirculation). The following tables provide the factors given by the manufacturer and AP-42 for the boilers.

Pollutant	Natural Gas Emission Factor AP-42 (lbs/million cubic feet)	No. 2 Oil Emission Factor AP-42 (lbs/thousand gallons)
Nitrogen Dioxide (NO ₂)	100	20
Sulfur Dioxide (SO ₂)	0.6	71, 142S with sulfur=0.5%
Carbon Monoxide (CO)	84	5
Volatile Organic Compounds	5.5	0.2
Particulate Matter (PM-10)	7.6	1

Pollutant	Natural Gas Emission Factor Used in new source permit		No. 2 Oil Emission Factor Used in new source permit	
	lbs/10 ⁶ Btu*	lbs/10 ⁶ cubic ft	Lbs/10 ⁶ Btu* *	lbs/1000 gal.
Nitrogen Dioxide (NO ₂)	0.05	50	0.14	19.3
Sulfur Dioxide (SO ₂)	0.001	1	0.515	71.1
Carbon Monoxide (CO)	0.0814	81.4	0.098	13.5
Volatile Organic Compounds	0.016	16	0.03	4.1
Particulate Matter (PM-10)	0.01	10	0.024	3.3

* Conversion based on heating value of natural gas at 1000 Btu/cubic feet.

** Conversion based on heating value of No. 2 fuel oil at 138,000 Btu/gal.

Actual emissions are calculated by multiplying the appropriate emission factor from the permit and the fuel throughput in proper units. Therefore, the following are the sample calculated annual emissions for the boiler plant using maximum permit limit of 501 million cubic feet of natural gas and 941,230 gallons of distillate fuel oil per year:

Natural Gas

NOx = (501 million cf/yr) x (50 lbs/million cf) ÷ 2000 lbs/ton = 12.5 tons/yr

SO₂ = (501 million cf/yr) x (1 lbs/million cf) ÷ 2000 lbs/ton = 0.3 tons/yr

CO = (501 million cf/yr) x (81.4 lbs/million cf) ÷ 2000 lbs/ton = 20.4 tons/yr

$$\text{VOC} = (501 \text{ million cf/yr}) \times (16 \text{ lbs/million cf}) \div 2000 \text{ lbs/ton} = 4.0 \text{ tons/yr}$$
$$\text{PM-10} = (501 \text{ million cf/yr}) \times (10 \text{ lbs/million cf}) \div 2000 \text{ lbs/ton} = 2.5 \text{ tons/yr}$$

No. 2 Oil

$$\text{NOx} = (941.23 \times 1000 \text{ gal/yr}) \times (20 \text{ lbs/1000 gal}) \div 2000 \text{ lbs/ton} = 9.4 \text{ tons/yr}$$
$$\text{SO}_2 = (941.23 \times 1000 \text{ gal/yr}) \times (71.1 \text{ lbs/1000 gal}) \div 2000 \text{ lbs/ton} = 33.5 \text{ tons/yr}$$
$$\text{CO} = (941.23 \times 1000 \text{ gal/yr}) \times (10 \text{ lbs/1000 gal}) \div 2000 \text{ lbs/ton} = 4.7 \text{ tons/yr}$$
$$\text{VOC} = (941.23 \times 1000 \text{ gal/yr}) \times (4.2 \text{ lbs/1000 gal}) \div 2000 \text{ lbs/ton} = 2.0 \text{ tons/yr}$$
$$\text{PM-10} = (941.23 \times 1000 \text{ gal/yr}) \times (3.3 \text{ lbs/1000 gal}) \div 2000 \text{ lbs/ton} = 1.6 \text{ tons/yr}$$

Initial compliance tests were performed to confirm that NO₂ emissions and opacity limits are met. Separate testing was conducted for both natural gas and No. 2 fuel oil. No other emission testing is required since the other emissions are not controlled and are based on factors similar to or greater than that of AP-42. The emissions of SO₂ from fuel oil combustion depend on the fuel sulfur content. Since the NO_x control equipment is part of the burner design and combustion process, records on scheduled maintenance of the boilers shall be used as means of ensuring continuing compliance with the NO_x and CO emission limits as well as the other smaller criteria pollutants.

The standard visible emissions limit of 20% opacity will also be used as an indicator of boiler problems. Properly operating equipment shall produce little visible emissions, especially when fired on gas. For periodic monitoring purposes, the permittee is being required to observe the stack exhaust during each week of operation and record whether visible emissions appear normal which would indicate proper boiler operation. If excess visible emissions are observed, corrective action shall be taken to achieve proper boiler operation and minimize visible emissions. If observed problems persist, then a visible emission evaluation (VEE) shall be conducted by certified personnel and the results documented. If exceedance of opacity limit is confirmed, the boiler shall be serviced, repaired or adjusted as necessary and another VEE test conducted to demonstrate compliance before regular boiler operation is resumed. DEQ staff shall be kept informed about non-routine problems or malfunctions. Records of observation, VEE tests, boiler repairs and other corrective actions shall be kept on site for review upon request.

The permittee shall follow the manufacturer recommendations for proper operation and maintenance procedures and provide for operator training to minimize malfunctions and excess emissions. A record of repairs and maintenance on the boilers shall also be kept.

Testing

Initial compliance stack testing was completed successfully on June 26, 2001, for the nitrogen oxides (as NO₂) emissions from the boiler when operating with natural gas and No. 2 (distillate) fuel oil. Concurrent visible emission testing was also conducted. The results showed compliance with the permit limits. For natural gas combustion, NO₂ emissions of 0.026 lbs/million Btu were obtained, which is about half of the NO₂ limit of 0.05 lbs/million Btu. For the case of distillate fuel oil combustion, NO₂ emissions of 0.104 lbs/million Btu was reported, which is in compliance with the NO₂ limit of 0.14 lbs/million Btu. Further testing is not required since the Department does not anticipate problems from the equipment as long as it is operated and maintained properly and in accordance with manufacturer recommendations. However, a table of test methods has been included in the permit if later testing is performed. The Department and the EPA have the authority to require testing not included in this permit if necessary to determine compliance with an emissions limit or standard.

Reporting

Semi-annual fuel quality reports shall be submitted on any distillate fuel oil received from fuel suppliers, in accordance with the NSPS Subpart Dc requirement. The permit issued on 9/21/98 was amended on 1/24/2001, since EPA has changed their original quarterly fuel reporting requirements rule to semi-annual.

Streamlined Requirements

There were no streamlined requirements for the boilers, except that general conditions included in new source permits (such as right of entry, annual reporting requirements, transfer of permits, etc.) are not restated here.

Fuel Burning Equipment Requirements – (emission units ID# B-4, B-5) - Building 332 – R&D Heating Plant – (Existing Larger Boilers)

Limitations

Condition 1 and 2 limits the emissions of total suspended particulates (which includes PM-10), sulfur dioxide (SO₂) and visible emissions based on the existing source rule for fuel burning equipment (Rule 4-8).

Condition 3 is a statement of the existing source rule on general processes (Rule 4-4), which for major sources of nitrogen oxides (as NO₂) in a non-attainment area, requires application of reasonably available control technology (RACT) to the equipment.

Monitoring and Recordkeeping

The facility was issued a state operating permit on June 5, 2000 (Attachment C) that stated the RACT requirements, including the two existing Erie City Iron Works gas/No. 2 oil-fired boilers in Building 332. The applicable conditions are restated in the Title V permit. They require semi-annual evaluation and adjustment of the boilers to minimize NO₂ emissions. Proper operation and maintenance of the boilers are also expected. The monitoring and recordkeeping requirements in Condition 3 has been slightly modified to include sulfur content of the fuel which would verify compliance with the existing source rule SO₂ emission standard. The standard is more stringent in the Northern Virginia region but can be met by using fuel oil of 1% sulfur content or less.

Actual emissions from the operation of the gas/No. 2 oil-fired boilers (B-4, B-5) will be calculated for the emissions inventory using the annual fuel throughput and factors given in EPA's Compilation of Air Pollutant Emission Factors (AP-42). The following table provides the AP-42 factors and the Virginia air regulation limits.

Pollutant	AP-42 factor for Natural Gas		AP-42 factor for No. 2 Oil		Virginia Rule 4-8 lbs/10 ⁶ Btu
	lbs/10 ⁶ cubic ft.	lbs/10 ⁶ Btu*	lbs/1000 gal.	lbs/10 ⁶ Btu**	
NO ₂	100	0.1	20	0.145	
SO ₂	0.6	0.0006	142 x S	1.03 x S	1.06
CO	84	0.084	5	0.036	
VOC	5.5	0.0055	0.2	0.0015	
PM-10	7.6	0.0076	1	0.0073	0.3

* Conversion based on heating value of natural gas at 1000 Btu/cubic feet

** Conversion based on heating value of No. 2 fuel oil at 138,000 Btu/gallon

Actual emissions are calculated by multiplying the appropriate emission factor and the fuel throughput in proper units. Therefore, the following are the sample calculated annual emissions for each boiler using 50.7 million cubic feet of gas and 124,900 gallons per year of No. 2 fuel oil, as reported for 2001 inventory year,

Natural Gas

NO_x = (38.4272 million cf/yr) x (100 lbs/million cf) ÷ 2000 lbs/ton = 1.9 tons/yr

SO₂ = (38.4272 million cf/yr) x (0.6 lbs/million cf) ÷ 2000 lbs/ton = 0.01 tons/yr

CO = (38.4272 million cf/yr) x (84 lbs/million cf) ÷ 2000 lbs/ton = 1.6 tons/yr
VOC = (38.4272 million cf/yr) x (5.5 lbs/million cf) ÷ 2000 lbs/ton = 0.1 tons/yr
PM-10 = (38.4272 million cf/yr) x (7.6 lbs/million cf) ÷ 2000 lbs/ton = 0.2 tons/yr

No. 2 Oil

NO₂ = (5.653x1000 gal/yr) x (20 lbs/1000 gal) ÷ 2000 lbs/ton = 0.1 tons/yr
SO₂ = (5.653x1000 gal/yr) x (142x0.5 lbs/1000 gal) ÷ 2000 lbs/ton = 0.2 tons/yr
CO = (5.653x1000 gal/yr) x (5 lbs/1000 gal) ÷ 2000 lbs/ton = 0.01 tons/yr
VOC = (5.653x1000 gal/yr) x (0.2 lbs/1000 gal) ÷ 2000 lbs/ton = 0.0 tons/yr
PM-10 = (5.653x1000 gal/yr) x (1 lbs/1000 gal) ÷ 2000 lbs/ton = 0.0 tons/yr

Visible emissions will be used as an indicator of boiler problems. The standard limit of 20% opacity should not be exceeded with use of cleaner fuels, natural gas and distillate No. 2 fuel oil. For periodic monitoring purposes, the permittee is being required to observe the stack exhaust during each week of operation and record whether visible emissions appear normal which would indicate proper boiler operation. If excess visible emissions are observed, corrective action shall be taken to achieve proper boiler operation and minimize visible emissions. If observed problems persist, then a visible emission evaluation (VEE) shall be conducted by certified personnel and the results documented. If exceedance of opacity limit is confirmed, the boiler shall be serviced, repaired or adjusted as necessary and another VEE test conducted to demonstrate compliance before regular boiler operation is resumed. DEQ staff shall be kept informed about non-routine problems or malfunctions. Records of observation, VEE tests, boiler repairs and other corrective actions shall be kept on site for review upon request.

Boiler inspection reports by DEQ compliance staff have revealed no past violations of the opacity limitations contained in this permit. The permittee shall continue to follow the manufacturer recommendations for proper operation and maintenance procedures and provide for operator training to minimize malfunctions and excess emissions.

Testing

The permit does not require source tests. A table of test methods has been included in the permit if testing is performed. The Department and the EPA have the authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

No specific reporting requirement has been included in the permit, except that annual reporting to agency for emission inventory update and certified emission statement is required.

Streamlined Requirements

There were no streamlined requirements for the boilers.

Fuel Burning Equipment Requirements – (emission unit ID# B-107) - Building 332 – R&D Heating Plant – (Summer Boiler)

The conditions for the summer boiler in Building 332 (R&D Heating Plant), Cleaver Brooks CB200-400-150 gas/No.2 oil-fired boiler, have been taken from the NSPS, Subpart Dc, permit issued on November 4, 1998, as amended on January 24, 2001. A copy of the amended permit is enclosed as attachment D.

Limitations

Conditions 1, 2, 3 and 7 state the method of emissions control through the use of natural gas and No. 2 (distillate) fuel oil, with proper boiler operation and maintenance.

Conditions 4, 5 and 6 state the fuel throughputs and emissions limits, including opacity. Annual fuel throughput shall be calculated monthly for the most recent 12 month period. DEQ-approved emission factors and equations shall be maintained to allow calculation of actual annual emissions as well.

Monitoring and Recordkeeping

The recordkeeping requirements include fuel supplier certifications, daily and monthly records on fuel consumption as required by the federal NSPS standard for small boilers. Also, records must be kept on any required training, written operating procedures and maintenance schedules based on manufacturer recommendations.

Actual emissions from the operation of the gas/No. 2 oil-fired boiler (B-107) will be calculated for the emissions inventory using the annual throughput of natural gas and distillate fuel oil, based on monthly records, and factors from the EPA's Compilation of Air Pollutant Emission Factors (AP-42), Sections 1.3 and 1.4. The following table provides the factors for natural gas and No. 2 fuel oil combustion.

Pollutant	Natural Gas Emission Factor AP-42 (lbs/million cubic feet)	No. 2 Oil Emission Factor AP-42 (lbs/thousand gallons)
Nitrogen Dioxide (NO ₂)	100	20
Sulfur Dioxide (SO ₂)	0.6	71, 142S with sulfur=0.5%
Carbon Monoxide (CO)	84	5
Volatile Organic Compounds	5.5	0.2
Particulate Matter (PM-10)	7.6	1

The emissions are calculated by multiplying the appropriate emission factor from the permit and the fuel throughput in proper units. Therefore, the following are the sample calculated annual emissions for the boiler plant using maximum permit limit of 56.7 million cubic feet of natural gas and 106,592 gallons of distillate fuel oil per year:

Natural Gas

$$\text{NOx} = (56.7 \text{ million cf/yr}) \times (100 \text{ lbs/million cf}) \div 2000 \text{ lbs/ton} = 2.8 \text{ tons/yr}$$

$$\text{SO}_2 = (56.7 \text{ million cf/yr}) \times (0.6 \text{ lbs/million cf}) \div 2000 \text{ lbs/ton} = 0.02 \text{ tons/yr}$$

$$\text{CO} = (56.7 \text{ million cf/yr}) \times (84 \text{ lbs/million cf}) \div 2000 \text{ lbs/ton} = 2.4 \text{ tons/yr}$$

$$\text{VOC} = (56.7 \text{ million cf/yr}) \times (5.5 \text{ lbs/million cf}) \div 2000 \text{ lbs/ton} = 0.2 \text{ tons/yr}$$

$$\text{PM-10} = (56.7 \text{ million cf/yr}) \times (7.6 \text{ lbs/million cf}) \div 2000 \text{ lbs/ton} = 0.2 \text{ tons/yr}$$

No. 2 Oil

$$\text{NOx} = (106.592 \times 1000 \text{ gal/yr}) \times (20 \text{ lbs/1000 gal}) \div 2000 \text{ lbs/ton} = 1.1 \text{ tons/yr}$$

$$\text{SO}_2 = (106.592 \times 1000 \text{ gal/yr}) \times (71 \text{ lbs/1000 gal}) \div 2000 \text{ lbs/ton} = 3.8 \text{ tons/yr}$$

$$\text{CO} = (106.592 \times 1000 \text{ gal/yr}) \times (5 \text{ lbs/1000 gal}) \div 2000 \text{ lbs/ton} = 0.3 \text{ tons/yr}$$

$$\text{VOC} = (106.592 \times 1000 \text{ gal/yr}) \times (0.2 \text{ lbs/1000 gal}) \div 2000 \text{ lbs/ton} = 0.01 \text{ tons/yr}$$

$$\text{PM-10} = (106.592 \times 1000 \text{ gal/yr}) \times (1 \text{ lbs/1000 gal}) \div 2000 \text{ lbs/ton} = 0.1 \text{ tons/yr}$$

No stack testing is required under the federal NSPS standard for small boilers given in 40 CFR Part 60, Subpart Dc. The emissions of SO₂ from fuel oil combustion depend on the fuel sulfur content. Proper operation of boilers by trained personnel along with records on the service and maintenance of the boiler shall be used as means of ensuring compliance with the NOx and CO emission limits as well as the other smaller criteria pollutants.

The standard visible emissions limit of 20% opacity will also be used as an indicator of boiler problems. Properly operating equipment shall produce little visible emissions,

especially when fired on gas. Boiler inspection reports by DEQ compliance staff have revealed no past violations of the opacity limitations contained in this permit. For periodic monitoring purposes, the permittee is being required to observe the stack exhaust during each week of operation and record whether visible emissions appear normal which would indicate proper boiler operation. If excess visible emissions are observed, corrective action shall be taken to achieve proper boiler operation and minimize visible emissions. If observed problems persist, then a visible emission evaluation (VEE) shall be conducted by certified personnel and the results documented. If exceedance of opacity limit is confirmed, the boiler shall be serviced, repaired or adjusted as necessary and another VEE test conducted to demonstrate compliance before regular boiler operation is resumed. DEQ staff shall be kept informed about non-routine problems or malfunctions. Records of observation, VEE tests, boiler repairs and other corrective actions shall be kept on site for review upon request.

Testing

The permit does not require source tests. A table of test methods has been included in the permit if testing is performed. The Department and the EPA have the authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

Semi-annual fuel quality reports shall be submitted on any distillate fuel oil received from fuel suppliers, in accordance with the NSPS Subpart Dc requirement. The permit issued 9/21/98 was amended on 1/24/2001 since EPA changed their original NSPS reporting requirement from quarterly to semi-annual basis.

Streamlined Requirements

There were no streamlined requirements for the boiler, except that general conditions included in new source permits (such as right of entry, annual reporting requirements, transfer of permits, etc.) are not restated here.

Fuel Burning Equipment Requirements – (All other small No. 2 oil-fired or No. 2 oil/gas-fired boilers)

Limitations

Condition 1 and 2 limits the emissions of total suspended particulates (which includes PM-10), sulfur dioxide (SO₂) and visible emissions based on the existing source rule for fuel burning equipment (Rule 4-8).

Condition 3 is a statement of the existing source rule on general processes (Rule 4-4), which for major sources of nitrogen oxides (as NO₂) in a non-attainment area, requires application of reasonably available control technology (RACT) to the equipment.

Condition 4 is a statement that routine replacement or addition of small boilers would be allowed if it is not subject to the new source permitting, but rather documented and reported to the DEQ as a registration update.

Monitoring and Recordkeeping

The facility was issued a state operating permit on June 5, 2000 (Attachment C) that stated the RACT requirements, including about 40 small existing boilers capable of using No. 2 fuel oil. The applicable conditions are restated in the Title V permit. RACT requirement for the small boilers consists of proper operation and maintenance in accordance with manufacturer recommendations to minimize air pollution emissions. Written operating procedures and maintenance schedule along with records of fuel supplier shipments shall be used to demonstrate compliance with the permit limits. The particulate matter limit is met by the use of cleaner fuels and following good combustion and air pollution control practices.

The monitoring and recordkeeping requirements in Condition 3 has been slightly modified to include sulfur content of the fuel which would verify compliance with the existing source rule SO₂ emission standard. The standard is more stringent in the Northern Virginia region but can be met by using fuel oil of 1% sulfur content or less.

The emissions from the operation of the various boilers which use No. 2 oil or gas/No. 2 oil is calculated for the emissions inventory using the annual fuel throughputs and factors given in EPA's Compilation of Air Pollutant Emission Factors (AP-42). The following table provides the AP-42 factors and the Virginia air regulation limits.

Pollutant	AP-42 factor for Natural Gas		AP-42 factor for No. 2 Oil		Virginia Rule 4-8 lbs/10 ⁶ Btu
	lbs/10 ⁶ cubic ft.	lbs/10 ⁶ Btu*	lbs/1000 gal.	lbs/10 ⁶ Btu**	
NO ₂	100	0.1	20	0.145	
SO ₂	0.6	0.0006	142 x S	1.03 x S	1.06
CO	84	0.084	5	0.036	
VOC	5.5	0.0055	0.34	0.0025	
PM-10	7.6	0.0076	1	0.0073	0.3

* Conversion based on heating value of natural gas at 1000 Btu/cubic feet

** Conversion based on heating value of No. 2 fuel oil at 138,000 Btu/gallon

Actual emissions are calculated by multiplying the appropriate emission factor and the fuel throughput in proper units. Therefore, the following are the sample calculated annual combined emissions from the various small boilers using 311.1 million cubic feet of gas and 432,993 gallons of No. 2 oil per year as reported for 2001 inventory year,

Natural Gas

NO_x = (311.1 million cf/yr) x (100 lbs/million cf) ÷ 2000 lbs/ton = 15.2 tons/yr
 SO₂ = (311.1 million cf/yr) x (0.6 lbs/million cf) ÷ 2000 lbs/ton = 0.1 tons/yr
 CO = (311.1 million cf/yr) x (84 lbs/million cf) ÷ 2000 lbs/ton = 12.8 tons/yr
 VOC = (311.1 million cf/yr) x (5.5 lbs/million cf) ÷ 2000 lbs/ton = 0.8 tons/yr
 PM-10 = (311.1 million cf/yr) x (7.6 lbs/million cf) ÷ 2000 lbs/ton = 1.2 tons/yr

No. 2 Oil

NO₂ = (432.993x1000 gal/yr) x (20 lbs/1000 gal) ÷ 2000 lbs/ton = 5.8 tons/yr
 SO₂ = (432.993x1000 gal/yr) x (142x0.5 lbs/1000 gal) ÷ 2000 lbs/ton = 5.9 tons/yr
 CO = (432.993x1000 gal/yr) x (5 lbs/1000 gal) ÷ 2000 lbs/ton = 1.4 tons/yr
 VOC = (432.993x1000 gal/yr) x (0.34 lbs/1000 gal) ÷ 2000 lbs/ton = 0.1 tons/yr
 PM-10 = (432.993x1000 gal/yr) x (1 lbs/1000 gal) ÷ 2000 lbs/ton = 0.3 tons/yr

Visible emissions will be used as an indicator of boiler problems. The standard limit of 20% opacity should not be exceeded with use of cleaner fuels, natural gas and distillate No. 2 fuel oil. For periodic monitoring purposes and for boilers over 10 million Btu/hr heat input, (B-6 and B-7), the permittee is being required to observe the stack exhausts during each week of operation and record whether visible emissions appear normal which would indicate proper boiler operation. If excess visible emissions are observed, corrective action shall be taken to achieve proper boiler operation and minimize visible emissions. If observed problems persist, then a visible emission evaluation (VEE) shall be conducted by certified personnel and the results documented. If exceedance of opacity limit is confirmed, the boiler shall be serviced, repaired or adjusted as

necessary and another VEE test conducted to demonstrate compliance before regular boiler operation is resumed. DEQ staff shall be kept informed about non-routine problems or malfunctions. Records of observation, VEE tests, boiler repairs and other corrective actions shall be kept on site for review upon request.

Boiler inspection reports by DEQ compliance staff have revealed no past violations of the opacity limitations contained in this permit. The permittee shall continue to follow the manufacturer recommendations for proper operation and maintenance procedures and provide for operator training to minimize malfunctions and excess emissions.

Testing

The permit does not require source tests. A table of test methods has been included in the permit if testing is performed. The Department and the EPA have the authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

No specific reporting requirement has been included in the permit, except that annual reporting to agency for emission inventory update and certified emission statement is required.

Streamlined Requirements

There were no streamlined requirements for the boilers.

Process Equipment Requirements – (emission units ID#EG13-EG22, and EG70-EG73) – Defense CEETA Generators

The permit conditions for the Defense CEETA generators (EG-13 to EG-22 and EG70-EG73) located in Building 2857, have been taken from the new source permit issued on July 1, 2002 which supersedes the earlier permit dated July 2, 1997. A copy of the permit is enclosed as attachment E.

Limitations

Condition 1 limits use of generators for emergency and periodic testing purposes only.

Condition 2 requires nitrogen oxides (as NO₂) to be reduced for the older generators (EG13-EG20 and EG64-EG65) by fuel injection set at 4 degrees retarded timing.

Condition 3 limits the total operating hours for all Defense CEETA generators to 1400 hours per year, calculated monthly as the sum of each consecutive 12 month period.

Conditions 6, 7 and 8 provide the annual emission limits for the existing and new generators based on manufacturer guaranteed data. Condition 8 further requires DEQ-approved factors and equations be maintained along with monthly fuel throughput data needed to calculate the annual emissions over any consecutive 12 month period.

Condition 9 is the standard visible emission limits for new and modified sources. Again, the statement of opacity exemption during startup, shutdown or malfunction was left out since federal requirements do not allow for such an exemption.

Condition 10 is a general requirement for proper equipment operation, maintenance and training of operators.

Monitoring and Recordkeeping

Fuel supplier certification shall be kept for each oil shipment. Recordkeeping on the hours of operation as well as calculated emissions for the generators has been extended to require that monthly records be kept to calculate the annual total. Maintenance and operator training records shall also be kept for review on site.

Actual emissions for the Defense CEETA generators are based on manufacturer guaranteed emission rates, except for sulfur oxide emissions which are from AP-42. The following tables show both the AP-42 factors as compared with manufacturer data.

AP-42 Diesel Generator Factors

Pollutant	lbs/hp-hr	lbs/10 ⁶ Btu	lbs/1000 gal*
NO ₂	0.024	3.2	442
SO ₂	0.00809 S	1.01S	140S
CO	0.0055	0.85	117
VOC	0.0007	0.09	12.4
PM-10	0.0007	0.1	14

* Conversion based on heating value of No. 2 fuel oil at 138,000 Btu/gallon

Defense CEETA Generator Factors Based on Manufacturer Guaranteed Data

Pollutant	Caterpillar model 3516			Caterpillar 3516B (or equivalent)		
	lbs/hp-hr	lbs/10 ⁶ Btu	lbs/1000gal*	lbs/hp-hr	lbs/10 ⁶ Btu	lbs/1000 gal*
NO ₂	0.0236	3.5	483	0.0144	2.08	287
SO ₂	Use AP-42	Use AP-42	Use AP-42	Use AP-42	Use AP-42	Use AP-42
CO	0.0057	0.845	116.6	0.0012	0.1731	23.9
VOC	0.00071	0.1053	14.5	0.00051	0.0735	10.1
PM-10	0.00077	0.1141	15.7	0.00033	0.0474	6.5

* Conversion based on heating value of No. 2 fuel oil at 138,000 Btu/gallon

The emissions are calculated by multiplying the appropriate emission factor from the permit and the fuel throughput or hours of operation in proper units. For the case of ten existing Caterpillar 3516 generators operating at Defense CEETA for 1000 hours/year, emissions calculations would be as following:

$$\begin{aligned} \text{NO}_x &= 2168 \text{ hp} \times (0.0236 \text{ lbs/hp-hr}) \times 1000 \text{ hrs/yr} \div 2000 \text{ lbs/ton} = 25.6 \text{ tons/yr} \\ \text{SO}_2 &= 2168 \text{ hp} \times (0.00809 \times 0.5 \text{ lbs/hp-hr}) \times 1000 \text{ hrs/yr} \div 2000 \text{ lbs/ton} = 4.4 \text{ tons/yr} \\ \text{CO} &= 2168 \text{ hp} \times (0.0057 \text{ lbs/hp-hr}) \times 1000 \text{ hrs/yr} \div 2000 \text{ lbs/ton} = 6.2 \text{ tons/yr} \\ \text{VOC} &= 2168 \text{ hp} \times (0.00071 \text{ lbs/hp-hr}) \times 1000 \text{ hrs/yr} \div 2000 \text{ lbs/ton} = 0.8 \text{ tons/yr} \\ \text{PM-10} &= 2168 \text{ hp} \times (0.00077 \text{ lbs/hp-hr}) \times 1000 \text{ hrs/yr} \div 2000 \text{ lbs/ton} = 0.8 \text{ tons/yr} \end{aligned}$$

For the case of four new Caterpillar 3516B (or equivalent) low emissions generators operating for total 400 hours/year, emissions calculations would be as following:

$$\begin{aligned} \text{NO}_x &= 2377 \text{ hp} \times (0.0144 \text{ lbs/hp-hr}) \times 1000 \text{ hrs/yr} \div 2000 \text{ lbs/ton} = 6.8 \text{ tons/yr} \\ \text{SO}_2 &= 2377 \text{ hp} \times (0.00809 \times 0.5 \text{ lbs/hp-hr}) \times 1000 \text{ hrs/yr} \div 2000 \text{ lbs/ton} = 1.9 \text{ tons/yr} \\ \text{CO} &= 2377 \text{ hp} \times (0.0012 \text{ lbs/hp-hr}) \times 1000 \text{ hrs/yr} \div 2000 \text{ lbs/ton} = 0.6 \text{ tons/yr} \\ \text{VOC} &= 2377 \text{ hp} \times (0.00051 \text{ lbs/hp-hr}) \times 1000 \text{ hrs/yr} \div 2000 \text{ lbs/ton} = 0.2 \text{ tons/yr} \\ \text{PM-10} &= 2377 \text{ hp} \times (0.00033 \text{ lbs/hp-hr}) \times 1000 \text{ hrs/yr} \div 2000 \text{ lbs/ton} = 0.2 \text{ tons/yr} \end{aligned}$$

No stack testing was required for the generators with the limited hours of operation. Visible emissions will be used as an indicator of generator problems. For the new Caterpillar 3516B (or equivalent) generators, an initial visible emission evaluation is required on two of the four units after startup. The standard limit of 20% opacity should not be exceeded with the use of diesel fuel and with proper operation and maintenance. Although, the new source permit exempts periods of startup, shutdown or malfunctions

for opacity purposes, based on 9 VAC 5-50-20 A.4., that statement was left out since federal requirements do not allow for such exemption. In addition, for periodic monitoring purposes, the permittee is being required to observe the stack exhaust during the scheduled maintenance/test runs of the generators and record whether any visible emissions appear normal which would indicate proper engine operation. If excess visible emissions are observed, corrective action shall be taken to achieve proper diesel engine operation and minimize visible emissions. If observed problems persist, then a visible emission evaluation (VEE) shall be conducted by certified personnel and the results documented. If exceedance of opacity limit is confirmed, the diesel engine-driven generator shall be serviced, repaired or adjusted as necessary and another VEE test conducted to demonstrate compliance before regular generator operation is resumed. DEQ staff shall be kept informed about non-routine problems or malfunctions. Records of observation, VEE tests, engine repairs and other corrective actions shall be kept on site for review upon request.

Generator inspection reports by DEQ compliance staff have revealed no past violations of the opacity limitations contained in this permit. The permittee shall continue to follow the manufacturer recommendations for proper operation and maintenance procedures and provide for operator training to minimize malfunctions and excess emissions.

Testing

Visible emission evaluation (VEE) is required to be conducted on two of the four proposed generators, Caterpillar model 3516B or equivalent (EG70-73), within 180 days of startup. The testing shall be done in accordance with EPA Reference Method 9 after equipment startup. However, the new and existing generators are subject to periodic monitoring with observations of stack emissions required during scheduled maintenance/test runs for each unit. The permit does not require other stack tests for the generators used for combined total of 1400 hours per year. A table of test methods has been included in the permit if later source testing is performed. The Department and the EPA have the authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

No specific reporting requirement has been included in the permit, except that annual reporting to agency for emission inventory update and certified emission statement is required.

Streamlined Requirements

There were no streamlined requirements for the diesel engine-driven generators, except that general conditions included in new source permits (such as right of entry, annual reporting requirements, transfer of permits, etc.) are not restated here.

Process Equipment Requirements – (emission units ID#G51-G57, G61, and G62-G64) – Prime Power School Generators

The conditions for the Prime Power School diesel engine-driven generators (G51-G57, G61, and G62-G64), located at Building 1132, have been taken from the permit dated May 31, 2002. The new permit superseded the earlier permit issued August 3, 2001. The new permit is enclosed as attachment F.

Limitations

Conditions 1 and 2 limit the annual hours of operation of the new and previously permitted generators to be calculated on monthly basis.

Conditions 3 and 4 limit the fuel type to diesel fuel with maximum 0.5% sulfur content.

Conditions 5 and 6 set the emission limits for previously permitted generators using AP-42 emission factors. Conditions 7 and 8 set the emissions limits for the new Caterpillar 3456 generators, based on manufacturer guaranteed data. Condition 8 further requires DEQ-approved factors and equations be maintained along with monthly fuel throughput data needed to calculate annual emissions over any consecutive 12 month period.

Condition 9 is the standard visible emission limits for new and modified sources. Again, the statement of opacity exemption during startup, shutdown or malfunction was left out since federal requirements do not allow for such an exemption.

Condition 10 is a general requirement for proper equipment operation, maintenance and training of operators.

Monitoring and Recordkeeping

Fuel supplier certification shall be kept for each oil shipment. Recordkeeping on the hours of operation as well as calculated emissions for the generators has been

extended to require that monthly records be kept to calculate the annual total. Maintenance and operator training records shall also be kept for review on site.

Actual emissions for the existing Cummins MED generators will be based on AP-42 emission factors since manufacturer data was not available. For the new Caterpillar 3456 generator engines, emissions will be based on manufacturer guaranteed emission data, except for sulfur oxide emissions which are from AP-42. The following tables show both the AP-42 factors and manufacturer data used to calculate emissions.

Prime Power School Generator Emission Factors

Pollutant	AP-42 Emission Factors Used for Cummins MEP Generators			Manufacturer-Based Emissions Data For Caterpillar 3456 Generators		
	lbs/hp-hr	lbs/10 ⁶ Btu	lbs/1000gal*	lbs/hp-hr	lbs/10 ⁶ Btu	lbs/1000 gal*
NO ₂	0.024	3.2	442	0.0125	2.02	278.5
SO ₂	3.67S	1.01S	140S	Use AP-42	Use AP-42	Use AP-42
CO	0.0055	0.46	117	0.0008	0.129	17.8
VOC	0.0007	0.09	12.4	0.0002	0.033	4.5
PM-10	0.0007	0.1	14	0.00012	0.019	2.7

* Conversion based on heating value of No. 2 fuel oil at 138,000 Btu/gallon

The emissions are calculated by multiplying the appropriate emission factor from the permit and the fuel throughput or hours of operation in proper units. For the case of the Cummins MEP generators, sample calculation based on AP-42 factors and maximum 525 hours/year of operation would be as following:

$$\begin{aligned}
 \text{NO}_x &= 1085 \text{ hp} \times (0.024 \text{ lbs/hp-hr}) \times 525 \text{ hrs/yr} \div 2000 \text{ lbs/ton} = 6.8 \text{ tons/yr} \\
 \text{SO}_2 &= 1085 \text{ hp} \times (0.00809 \times 0.5 \text{ lbs/hp-hr}) \times 525 \text{ hrs/yr} \div 2000 \text{ lbs/ton} = 1.2 \text{ tons/yr} \\
 \text{CO} &= 1085 \text{ hp} \times (0.0055 \text{ lbs/hp-hr}) \times 525 \text{ hrs/yr} \div 2000 \text{ lbs/ton} = 1.6 \text{ tons/yr} \\
 \text{VOC} &= 1085 \text{ hp} \times (0.00064 \text{ lbs/hp-hr}) \times 525 \text{ hrs/yr} \div 2000 \text{ lbs/ton} = 0.2 \text{ tons/yr} \\
 \text{PM-10} &= 1085 \text{ hp} \times (0.0007 \text{ lbs/hp-hr}) \times 525 \text{ hrs/yr} \div 2000 \text{ lbs/ton} = 0.2 \text{ tons/yr}
 \end{aligned}$$

For the case of four new Caterpillar 3456 generators operating for total 720 hours/year and using manufacturer data, emissions calculations would be as following:

NO_x = 1338 hp x (0.01249 lbs/hp-hr) x 720 hrs/yr ÷ 2000 lbs/ton = 6.0 tons/yr
SO₂ = 1338 hp x (0.00809x0.5 lbs/hp-hr) x 720 hrs/yr ÷ 2000 lbs/ton = 2.0 tons/yr
CO = 1338 hp x (0.0008 lbs/hp-hr) x 720 hrs/yr ÷ 2000 lbs/ton = 0.4 tons/yr
VOC = 1338 hp x (0.0002 lbs/hp-hr) x 720 hrs/yr ÷ 2000 lbs/ton = 0.1 tons/yr
PM-10= 1338 hp x (0.00012 lbs/hp-hr) x 720 hrs/yr ÷ 2000 lbs/ton = 0.1 tons/yr

No stack testing was required for the generators with the limited hours of operation. Visible emissions will be used as an indicator of generator problems. The standard limit of 20% opacity should not be exceeded with the use of diesel fuel and with proper operation and maintenance. Although, the new source permit exempts periods of startup, shutdown or malfunctions for opacity purposes, based on 9 VAC 5-50-20 A.4., that statement was left out since federal requirements do not allow for such exemption. For the new Caterpillar 3456 generators, an initial visible emission evaluation was successfully completed on one of the three units. In addition, for periodic monitoring purposes, the permittee is being required to observe the stack exhaust during the scheduled maintenance/test runs of the generators and record whether visible emissions appear normal which would indicate proper engine operation. If excess visible emissions are observed, corrective action shall be taken to achieve proper engine operation and minimize visible emissions. If observed problems persist, then a visible emission evaluation (VEE) shall be conducted by certified personnel and the results documented. If exceedance of opacity limit is confirmed, the diesel engine-driven generator shall be serviced, repaired or adjusted as necessary and another VEE test conducted to demonstrate compliance before regular generator operation is resumed. DEQ staff shall be kept informed about non-routine problems or malfunctions. Records of observation, VEE tests, engine repairs and other corrective actions shall be kept on site for review upon request.

Generator inspection reports by DEQ compliance staff have revealed no past violations of the opacity limitations contained in this permit. The permittee shall continue to follow the manufacturer recommendations for proper operation and maintenance procedures and provide for operator training to minimize malfunctions and excess emissions.

Testing

The permit does not require stack tests for the generators used for combined total of 1,245 hours per year. A visible emission evaluation (VEE) was conducted on November 25, 2002, on one of the three new Caterpillar 3456 diesel-engine driven generators (G62-64), in accordance with EPA Reference Method 9. The results showed compliance with the permit opacity limits. The existing equipment does not require further testing. However, the new and existing generators are subject to periodic monitoring with observations of stack emissions required during scheduled

maintenance/test runs for each unit. A table of test methods has been included in the permit if later source testing is performed. The Department and the EPA have the authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

Specific notification requirements of the air permit for the new Caterpillar 3456 diesel engine-driven generators (G62-64) have been met already. No other specific reporting requirement has been included in the permit. However, information shall be provided to agency upon request, such as for the annual emission inventory update and certified emission statement.

Streamlined Requirements

There were no streamlined requirements for the diesel engine-driven generators, except that general conditions included in new source permits (such as right of entry, annual reporting requirements, transfer of permits, etc.) are not restated here.

Process Equipment Requirements – (emission unit ID#EG38-EG43, EG66-EG69, EG-29 and EG-107) – Other Large Emergency Generators

The other large emergency diesel engine-driven generators are only subject to Virginia Administrative Code for existing general processes.

Limitations

Condition 1 limits generator use for emergency power and periodic testing purposes.

Condition 2 limits the operation of each unit to maximum 500 hours per year, which is considered by the EPA and DEQ to be the maximum level of operation for an emergency generator and used to determine its potential emissions.

Condition 3 is the visible emission limit, which applies to any existing stationary source.

Monitoring and Recordkeeping

For the generators, not subject to permitting, a record of hours of operation or fuel usage is needed to calculate their emissions impact for emissions inventory purposes

Actual emissions will be calculated based on factors given in AP-42,

AP-42 Diesel Generator Factors

Pollutant	lbs/hp-hr	lbs/10 ⁶ Btu	lbs/1000 gal*
NO ₂	0.024	3.2	442
SO ₂	0.00809 S	1.01S	140S
CO	0.0055	0.85	117
VOC	0.0007	0.09	12.4
PM-10	0.0007	0.1	14

* Conversion based on heating value of No. 2 fuel oil at 138,000 Btu/gallon

No stack testing was required for the generators with the limited hours of operation. Visible emissions will be used as an indicator of generator problems. The standard limit of 20% opacity should not be exceeded with the use of diesel fuel and with proper operation and maintenance. For periodic monitoring purposes, the permittee is being required to observe the stack exhaust of diesel engine-driven generators over 645 horsepower (or about 500 kilowatts) during their scheduled maintenance/test runs. A record of each observation shall be made to state whether visible emissions appear normal which would indicate proper engine operation. If excess visible emissions are observed, corrective action shall be taken to achieve proper diesel engine operation and minimize visible emissions. If observed problems persist, then a visible emission evaluation (VEE) shall be conducted by certified personnel and the results documented. If exceedance of opacity limit is confirmed, the diesel engine-driven generator shall be serviced, repaired or adjusted as necessary and another VEE test conducted to demonstrate compliance before regular generator operation is resumed. DEQ staff shall be kept informed about non-routine problems or malfunctions. Records of observation, VEE tests, engine repairs and other corrective actions shall be kept on site for review upon request.

Generator inspection reports by DEQ compliance staff have revealed no past violations of the opacity limitations contained in this permit. The permittee shall continue to follow the manufacturer recommendations for proper operation and maintenance procedures and provide for operator training to minimize malfunctions and excess emissions.

Testing

The permit does not require source tests for such existing emergency generators.

Reporting

No specific reporting requirement has been included in the permit, except that annual reporting to agency for emission inventory update and certified emission statement is required.

Streamlined Requirements

There were no streamlined requirements for the diesel generators.

Process Equipment Requirements – (emission units ID#FT-1, FT-2) Firefighting Training Equipment at the Davison Army Airfield

The conditions for the fixed and mobile firefighting training equipment (FT-1 and FT-2) have been taken from the revised new source permit issued on January 24, 2001, which superseded the original permit of September 29, 1997. A copy of the revised permit is enclosed as attachment G.

Limitations

Condition 1 limits the fuel type to propane. Conditions 2 and 3 limit the annual throughputs for each of the fire fighting equipment. The annual throughput shall be calculated monthly for the most recent 12 month period.

Conditions 4 and 5 provide the emission limits calculated using manufacturer data. A record of DEQ-approved equations and emission factors for each fire fighting equipment shall be maintained. The information along with the fuel throughput data would enable calculation of annual emissions during any consecutive 12 month period.

Monitoring and Recordkeeping

Monthly recordkeeping is required on propane consumption, based on fuel meter readings for each firefighting equipment. They shall be used to calculate annual fuel throughputs and emissions using DEQ-approved factors and equations. Records of required training, written operating procedures and maintenance schedule shall be maintained. A record of completed service and maintenance for the emission units must also be kept on site.

The actual annual propane fuel throughput from the operation of the Symtron fixed firefighting training equipment (FT-1) and the Symtron mobile unit (FT-2) shall be calculated monthly as the sum of each consecutive 12 month period. Actual emissions from the operation of the equipment is calculated for the emissions inventory using the annual throughput of propane with the emission factors provided by the manufacturer and approved by DEQ. The emission factors are provided in the following table:

Pollutant	Manufacturer-supplied Emission Factor (lbs/gallon)
Nitrogen Dioxide (NO ₂)	0.0062
Sulfur Dioxide (SO ₂)	Negligible
Carbon Monoxide (CO)	0.0339
Volatile Organic Compounds	0.0462
Particulate Matter (PM-10)	0.1016

Actual emissions are calculated by multiplying the appropriate emission factor from the permit and the fuel throughput in proper units. Therefore, the following are the sample calculated annual emissions for the fixed firefighting training equipment using maximum 330,970 gallons per year of propane and the mobile firefighting training equipment using maximum 107,580 gallons per year of propane:

Fixed Firefighting Equipment

NOx = (330970 gal/yr) x (0.0062 lbs/gal) ÷ 2000 lbs/ton = 1.0 tons/yr
SO2 = negligible
CO = (330970 gal/yr) x (0.0339 lbs/gal) ÷ 2000 lbs/ton = 5.6 tons/yr
VOC = (330970 gal/yr) x (0.0462 lbs/gal) ÷ 2000 lbs/ton = 7.6 tons/yr
PM-10= (330970 gal/yr) x (0.1016 lbs/gal) ÷ 2000 lbs/ton = 16.8 tons/yr

Mobile Firefighting Equipment

NOx = (107580 gal/yr) x (0.0062 lbs/gal) ÷ 2000 lbs/ton = 0.3 tons/yr
SO2 = negligible
CO = (107580 gal/yr) x (0.0339 lbs/gal) ÷ 2000 lbs/ton = 1.8 tons/yr
VOC = (107580 gal/yr) x (0.0462 lbs/gal) ÷ 2000 lbs/ton = 2.5 tons/yr
PM-10= (107580 gal/yr) x (0.1016 lbs/gal) ÷ 2000 lbs/ton = 5.5 tons/yr

No stack testing or monitoring was required for the training equipment. The standard visible emissions limit of 20% opacity applies to all emissions sources. However, since the equipment will be used to train emergency personnel in fighting real fires, some visible emissions are expected. Therefore, proper operation and maintenance of the equipment will be the main method of demonstrating compliance with the emission limits. A record of repairs and maintenance on the emission units shall also be kept. Although not specifically stated in the new source permit, Virginia Administrative Code 9 VAC 5-50-20E requires proper operation and maintenance of equipment to minimize excess emissions. That is a facility-wide requirement, as stated in Condition XIX.A.2.

Testing

The permit does not require source tests for the training equipment. A table of test methods has been included in the permit if testing is performed. The Department and the EPA have the authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

No specific reporting requirement has been included in the permit, except that annual reporting to agency for emission inventory update and certified emission statement is required.

Streamlined Requirements

There were no streamlined requirements for the permitted firefighting equipment. However, the general permit conditions (such as right of entry, annual reporting requirements, transfer of permits, etc.) are not restated here. For reference, a copy of the original permit is enclosed as Attachment G.

Process Equipment Requirements – (emission unit ID#I-2) Veterinary Clinic Incinerator

The conditions for the veterinary incinerator (I-2) located in Building 610, have been taken from the new source permit originally issued on April 16, 1990 which was later amended on November 4, 1998. A copy of the permit is enclosed as attachment H.

Limitations

Condition 1 states that particulate and visible emissions are controlled by the incinerator secondary chamber (afterburner).

Conditions 2, 3 and 4 limit the type of auxiliary fuel, waste and throughput of waste for the incinerator along with minimum temperatures to be maintained in each chamber.

Conditions 5 and 6 state the particulate emission limit given as 0.08 grains per dry standard cubic feet corrected to 12% CO₂ (as required by Fairfax County) and also a stringent visible emissions limit of 5% opacity.

Condition 7 is a general requirement that the emissions also be controlled by the proper operation and maintenance of the incinerator.

Monitoring and Recordkeeping

Recordkeeping is required on the waste throughput, to include weight, date and time of incineration. In addition, written operating procedures and maintenance schedule are required for the equipment. A record of completed service and maintenance for the incinerator must also be maintained on site.

Actual emissions from the operation of the veterinary incinerator is calculated using the amount of waste throughput and the emission factors given in EPA's Compilation of Air Pollutant Emission Factors (AP-42). The following table provides the factors from AP-42 section 2.3 on medical waste incinerators.

Pollutant	AP-42 Emission Factor (lbs/ton waste burned)
Nitrogen Dioxide (NO ₂)	3.56
Sulfur Dioxide (SO ₂)	2.17
Carbon Monoxide (CO)	2.95
Volatile Organic Compounds	0.297
Particulate Matter (PM-10)	4.67 (Stack test data = 2.07)

Actual emissions are calculated by multiplying the appropriate emission factor from the permit and the fuel throughput in proper units. In the case of particulate matter the factor obtained based on the July 1991 stack testing is used. Therefore, the following are the sample calculated hourly emissions for the incinerator based on the rated capacity of 120 pounds of waste per hour:

$$\begin{aligned} \text{NO}_x &= (120 \text{ lbs/hr} \div 2000 \text{ lbs/ton}) \times 3.56 \text{ lbs/ton} = 0.21 \text{ lbs/hour} \\ \text{SO}_2 &= (120 \text{ lbs/hr} \div 2000 \text{ lbs/ton}) \times 2.17 \text{ lbs/ton} = 0.13 \text{ lbs/hour} \\ \text{CO} &= (120 \text{ lbs/hr} \div 2000 \text{ lbs/ton}) \times 2.95 \text{ lbs/ton} = 0.18 \text{ lbs/hour} \\ \text{VOC} &= (120 \text{ lbs/hr} \div 2000 \text{ lbs/ton}) \times 0.297 \text{ lbs/ton} = 0.02 \text{ lbs/hour} \\ \text{PM-10} &= (120 \text{ lbs/hr} \div 2000 \text{ lbs/ton}) \times 2.07 \text{ lbs/ton} = 0.12 \text{ lbs/hour} \end{aligned}$$

Initial stack testing was successfully conducted on the incinerator in July 1991. The stringent visible emissions limit of 5% opacity was also tested and found to be in compliance. The opacity limit along with records showing proper operation and maintenance of the equipment will be used to demonstrate continuing compliance with the permit limit. For periodic monitoring purposes, the permittee is being required to observe the stack exhaust during each week of operation and record whether visible emissions appear normal which would indicate proper incinerator operation. If excess visible emissions are observed, corrective action shall be taken to achieve proper incinerator operation and minimize visible emissions. If observed problems persist, then a visible emission evaluation (VEE) shall be conducted by certified personnel and the results documented. If exceedance of opacity limit is confirmed, the incinerator shall be serviced, repaired or adjusted as necessary and another VEE test conducted to demonstrate compliance before regular incinerator operation is resumed. DEQ staff

shall be kept informed about non-routine problems or malfunctions. Records of observation, VEE tests, incinerator repairs and other corrective actions shall be kept on site for review upon request.

Testing

Initial compliance stack testing for particulate matter was conducted on July 15-18, 1991 which demonstrated compliance with the permit limit of 0.08 grains per dry standard cubic feet corrected to 12% CO₂. Visible emissions evaluation also showed compliance with the 5% opacity limit. Further testing is not required since the Department does not anticipate problems from the equipment as long as it is operated and maintained properly and in accordance with manufacturer recommendations. Although, the permit does not require further testing, a table of test methods has been included in the permit if later testing is performed. The Department and the EPA have the authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

There is a special reporting requirement in case of malfunctioning of the incinerator. It requires that animal waste feed be stopped, the incinerator properly shutdown, and the Department notified. The unit shall not be restarted until the repairs have been made and the Department is notified of the schedule to restart the waste feed.

Streamlined Requirements

There were no streamlined requirements for the incinerator. However, permit conditions which are no longer relevant (such as initial stack testing) or are considered general conditions (such as right of entry, annual reporting requirements, transfer of permits, etc.) are not restated here. For reference, a copy of the original permit is enclosed as Attachment H.

Process Equipment Requirements – (emission unit ID#I-4) Defense CEETA Classified Waste Incinerator

The conditions for the Defense CEETA classified waste incinerator (I-4), located in Building 2856, have been taken from the new source permit originally issued on February 8, 1989. A copy of the permit is enclosed as attachment I.

Limitations

Condition 1, which limits the annual hours of incinerator operation, is expanded to require monthly calculation as the sum of each consecutive 12 month period.

Conditions 2, 3 and limit the waste type and throughput, as well as the type of auxiliary fuel to natural gas and No. 2 fuel oil.

Conditions 4 and 6 set the particulate matter emission limit to 0.08 grains per dry standard cubic feet corrected to 12% CO₂ (as required by Fairfax County), and also a stringent visible emissions limit of 5% opacity.

Condition 7 is a general requirement that the emissions also be controlled by the proper operation and maintenance of the incinerator.

Monitoring and Recordkeeping

Recordkeeping is required on the waste throughput, to include weight, date and time of incineration, which was not previously stated in their permit but needed to establish compliance with permit limits on hours of operation and waste throughput. In addition, written operating procedures and maintenance schedule are required for the equipment. A record of completed service and maintenance for the incinerator must also be maintained on site.

Actual emissions from the operation of the Defense CEETA classified waste incinerator is calculated using the amount of waste throughput and the emission factors given in EPA's Compilation of Air Pollutant Emission Factors (AP-42). The following table provides the factors from AP-42 section 2.1, Refuse Combustion, Table 2.1-12:

Pollutant	AP-42 Emission Factor (lbs/ton waste burned)
Nitrogen Dioxide (NO ₂)	3
Sulfur Dioxide (SO ₂)	2.5
Carbon Monoxide (CO)	10
Volatile Organic Compounds	3
Particulate Matter (PM-10)	7

Actual emissions are calculated by multiplying the appropriate emission factor from the permit and the fuel throughput in proper units. The following are the sample calculated hourly emissions for the incinerator based on the rated capacity of 1050 pounds of waste per hour:

$$\begin{aligned}\text{NOx} &= (1050 \text{ lbs/hr} \div 2000 \text{ lbs/ton}) \times 3 \text{ lbs/ton} = 1.6 \text{ lbs/hour} \\ \text{SO}_2 &= (1050 \text{ lbs/hr} \div 2000 \text{ lbs/ton}) \times 2.5 \text{ lbs/ton} = 1.3 \text{ lbs/hour} \\ \text{CO} &= (1050 \text{ lbs/hr} \div 2000 \text{ lbs/ton}) \times 10 \text{ lbs/ton} = 5.3 \text{ lbs/hour} \\ \text{VOC} &= (1050 \text{ lbs/hr} \div 2000 \text{ lbs/ton}) \times 3 \text{ lbs/ton} = 1.6 \text{ lbs/hour} \\ \text{PM-10} &= (1050 \text{ lbs/hr} \div 2000 \text{ lbs/ton}) \times 7 \text{ lbs/ton} = 3.7 \text{ lbs/hour}\end{aligned}$$

Initial stack testing was successfully conducted on the incinerator in November 1991. The stringent visible emissions limit of 5% opacity was also tested and found to be in compliance. The visible emissions along with records showing proper operation and maintenance of the equipment will be used to demonstrate continuing compliance with the permit limit. For periodic monitoring purposes, the permittee is being required to observe the stack exhaust during each week of operation and record whether visible emissions appear normal which would indicate proper incinerator operation. If excess visible emissions are observed, corrective action shall be taken to achieve proper incinerator operation and minimize visible emissions. If observed problems persist, then a visible emission evaluation (VEE) shall be conducted by certified personnel and the results documented. If exceedance of opacity limit is confirmed, the incinerator shall be serviced, repaired or adjusted as necessary and another VEE test conducted to demonstrate compliance before regular incinerator operation is resumed. DEQ staff shall be kept informed about non-routine problems or malfunctions. Records of observation, VEE tests, incinerator repairs and other corrective actions shall be kept on site for review upon request.

Testing

Initial compliance stack testing for particulate matter was conducted on November 26-27, 1991, which demonstrated compliance with the permit limit of 0.08 grains per dry standard cubic feet corrected to 12% CO₂. Visible emissions evaluation also showed compliance with the 5% opacity limit. Further testing is not required since the Department does not anticipate problems from the equipment as long as it is operated and maintained properly and in accordance with manufacturer recommendations. Although, the permit does not require further testing, a table of test methods has been included in the permit if later testing is performed. The Department and the EPA have the authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

There is a special reporting requirement in case of non-compliance with the emission limits. The permittee shall notify the Department in writing about the problem to include description, cause, and duration of the problem and steps taken to minimize excess emissions and prevent its recurrence.

Streamlined Requirements

There were no streamlined requirements for the classified waste incinerator. However, permit conditions, which are no longer relevant (such as initial notification and stack testing) or are considered general conditions (such as right of entry, annual reporting requirements, transfer of permits, etc.) are not restated here. For reference, a copy of the original permit is enclosed as Attachment I.

Process Equipment Requirements – (emission units ID#DG) Cold Solvent Cleaners (Degreasers)

The cold cleaning degreasers are subject to the air regulations for existing sources under Emission Standards For Solvent Metal Cleaning Operations Using Non-Halogenated Solvents (Rule 4-24).

Limitations

Conditions 1 through 7 require that volatile organic compound emissions (VOC) from the cold cleaning degreasers be controlled by at least 85% by weight of emissions. The requirement can be met by methods described in control technology guidelines of 9 VAC 5-40-3290 C and D.

Condition 8 is a statement that routine replacement or additions of similar small degreasing units are allowed since they are not subject to new source permitting. However, the permittee shall keep track of the changes and solvent throughput. The agency shall be kept informed of the changes through (annual) registration update.

Monitoring

Quarterly inspection of the condition of degreasers is also required to ensure proper operation and to correct problems that could result in fugitive emissions.

Recordkeeping

Conditions 1 and 2 are the general requirement that emissions related records be kept on site along with all inspections and servicing of the degreaser units.

Testing

No testing is required for non-permitted equipment from which minor emissions are expected.

Reporting

No specific reporting requirement has been included in the permit, except that annual reporting to agency for emission inventory update and certified emission statement is required.

Streamlined Requirements

There were no streamlined requirements.

Process Equipment Requirements – (emission units ID# T-03162A-B, T-01133E, T-02856B, T-00332H-J, T-01422J-T, T-03138H-I, T-02117C, T-02800A, T-02310A, T-02444C, T-02462A, T-02803A and T-01124C) Non-gasoline Storage Tanks)

Some fuel storage tanks with capacity greater than 10,569 gallons (40 m³) are subject to minor recordkeeping requirements of the New Source Performance Standards (NSPS), under 40 CFR Part 60 Subpart Kb, Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) For Which Construction, Reconstruction, or Modification Commenced After July 23, 1984. Federal NSPS requirements are incorporated into Virginia air regulations, in 9 VAC 5-50-410 (Rule 5-5). Several underground storage tanks at Fort Belvoir are subject to the rule. However, the large tanks located at the gasoline service stations are considered to be exempt by the NSPS Subpart Kb.

Limitations

The following storage tanks at Fort Belvoir are subject to the minor recordkeeping provisions of subpart Kb:

Tank No.	Building Number	Tank Capacity (gallons)	Tank Contents (material stored)	Comments
T-03162A T-03612B	3162	13,000 gallons, each	JP-8 jet fuel	near Davison Army Airfield
T-01133E	1133	25,000 gallons	Diesel	Permit 5/31/02
T-02856B	2856	15,000 gallons	Diesel	Permit 7/1/02
T-00332H T-00332I T-00332J	332	25,000 gallons, each	Distillate No. 2 fuel (heating oil)	R&D Heating Plant
T-01422J T-01422K T-01422L T-01422M T-01422N T-01422O	1422	25,000 gallons, each	Residual No. 6 fuel (heating oil)	Central Heating Plant (old boilers removed)
T-01422P T-01422Q T-01422R T-01422S T-01422T	1422	25,000 gallons, each	Distillate No. 2 fuel (heating oil)	Central Heating Plant (new boilers)
T-03138H T-03138I	3138	30,000 gallons, each	Distillate No. 2 fuel (heating oil)	near Davison Army Airfield
T-02117C	2117	25,000 gallons	Distillate No. 2 fuel	
T-02800A	2800	15,000 gallons	Distillate No. 2 fuel	
T-02310A	2310	25,000 gallons	Diesel	
T-02444C	2444	25,000 gallons	Diesel	
T-02462A	2462	25,000 gallons	Diesel	
T-02803A	2803	25,000 gallons	Diesel	
T-01124C	1124	12,000 gallons	Used Oil	

Recordkeeping

For the tanks used to store (low-volatile) fuel oils, the NSPS Subpart Kb only requires records be kept on their dimensions and capacity of the tanks over 10,569 gallons.

Testing

No testing is required for the storage tanks from which minor emissions are expected.

Reporting

No specific reporting requirements are state, except as requested for registration update, annual emissions inventory purposes or certified emissions statement.

Process Equipment Requirements – (emission units ID#T-9, T-10)

Limitations

The gasoline service station at building 1124 is the only one of the three gasoline service stations included in the permit for the base, since its use is restricted only to military base personnel and employees (and not including families and retirees). It also has limited throughput of less than 10,000 gallons per month which exempts it from Stage I and Stage II vapor recovery requirements. However, all the gasoline service stations at the base are already equipped with both Stage I and Stage II vapor recovery controls. For the gasoline service station at Building 1124, the requirements given in the Virginia Administrative Code for air regulations (existing source Rule 4-37- Emission Standards for Petroleum Liquid Storage and Transfer Operations) are restated in the permit in case the gasoline throughput increases above the exemption level.

Facility Wide Conditions

The general visible emissions limit is stated for equipment other than the previously listed boilers, generators, and incinerators that have their own specific opacity limits. Also, the general regulatory requirement for proper operation and maintenance of emission units and their air pollution control equipment is restated here as well.

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 permit 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, including those caused by upsets, within one business day.

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 ' ' 2.1-20.01:2 and ' ' 10.1-1185 of the *Code of Virginia*, and the "Department of Environmental Quality Agency Policy Statement NO. 3-2001".

[This general conditions cites the entire Article(s) that follow:

B.2. Article 1 (9 VAC 5-80-50 et seq.), Part II of 9 VAC 5 Chapter 80. Federal Permits for Stationary Sources

B.3. Article 1 (9 VAC 5-80-50 et seq.), Part II of 9 VAC 5 Chapter 80. Federal Permits for Stationary Sources]

[This general condition cites the sections that follow:

- B. 9 VAC 5-80-80. "Application"
- B.2. 9 VAC 5-80-150. "Action on Permit Applications"
- B.3. 9 VAC 5-80-80. "Application"
- B.4. 9 VAC 5-80-80. "Application"
- B.4. 9 VAC 5-80-140. "Permit Shield"
- B.5. 9 VAC 5-80-80. "Application"]

F. Failure/Malfunction Reporting

Section 9 VAC 5-20-180 requires malfunction and excesses emissions reporting within 4 hours. Section 9 VAC 5-80-250 also requires malfunction reporting; however, reporting is required within 2 days. Section 9 VAC 5-20-180 is from the general

regulations. All affected facilities are subject to this section including Title 5 facilities. Section 9 VAC 5-80-250 is from the Title 5 regulations. Title 5 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 4 day time business hours of the malfunction.

U. Failure/Malfunction Reporting

The regulations contain two reporting requirements for malfunctions that coincide. The reporting requirements are listed in section 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.

This general condition cites the sections that follow:

[U.2.d.9 VAC 5-80-110. Permit Content
U.2.d. 9 VAC 5-20-180. Facility and Control Equipment Maintenance or Malfunction]

STATE ONLY APPLICABLE REQUIREMENTS

There are no State Only Applicable Requirements. A state operating permit was issued on July 5, 2000 (Attachment B) for the application of reasonably available control technology (RACT) for the facility. However, the state operating permit conditions have been incorporated into the federal operating permit.

FUTURE APPLICABLE REQUIREMENTS

No future applicable requirements are listed since none were found. Besides the regulations referenced in the permit or excluded in the Inapplicable Requirements section, no other regulations or proposed standards are considered applicable to the facility. If later rules are proposed or the facility modified, then the appropriate standard would have to be incorporated as an amendment or a later revision of the permit.

INAPPLICABLE REQUIREMENTS

The Department has determined that the following requirements are not applicable:

New Source Performance Standards (NSPS), 40 CFR Part 60, Subpart E – Standards of Performance for Incinerators, with capacity greater than 50 tons per day. (The incinerators do not have such capacity.)

NSPS, 40 CFR Part 60, Subparts AAAA and BBBB - Standards of Performance for Small Municipal Waste Combustion Units, with capacity greater than 35 tons per day. (The incinerators do not have such capacity.)

NSPS, 40 CFR Part 60, Subparts CCCC and DDDD – Standards of Performance for Commercial and Industrial Solid Waste Incineration Units. (The incinerators at the military post are not used for commercial or industrial purposes).

NSPS, 40 CFR Part 60, Subpart XX - Standards of Performance for Bulk Gasoline Terminals, applies to facilities with gasoline loading racks at a bulk gasoline terminal having throughputs exceeding 20,000 gallons per day. (The facility is not considered a gasoline terminal.)

Maximum Achievable Control Technology (MACT) requirements of 40 CFR Part 63 Subpart T, Halogenated Solvent Cleaning.

In addition, NSPS Subpart Kb is applicable only to storage tanks with greater than 40 m³ (10,569 gallons) capacity and does not apply to gasoline service stations. Two of the gasoline service stations operated at U.S. Army Fort Belvoir are also used by private vehicles of retired military personnel as well as government vehicles. Therefore, they are considered commercial service stations and exempt from the subpart. Only one of the three gasoline service stations (at Building 1124) is restricted to base personnel and could be considered as part of the base functions. The other smaller storage vessels for petroleum products or used as oil-water separators are also considered exempt from the regulations.

The incinerators have capacities below the 50 ton per day level of New Source Performance Standards, subpart E. In addition, the NSPS subparts AAAA and BBBB for small new or existing municipal waste incinerators with capacity greater than 35 tons per day are not applicable, since the incinerators do not have such daily capacity.) NSPS subparts CCCC and DDDD apply to commercial or industrial incinerators rather than the units used at the government facility veterinary clinic or for burning classified (mostly paper) waste.

Also, the MACT standard for halogenated solvent cleaning in 40 CFR Part 63 Subpart T, and 9 VAC 5 Chapter 60, is not currently applicable. The facility does not use any halogenated cleaning solvents in its parts washers.

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:

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
WW-1	Woodworking Activities	9 VAC 5-80-720B	Particulate Matter	40,200 lbs wood/yr
PA-1	Pesticide Application Activities	9 VAC 5-80-720B	VOC (minor toxics)	2362.4 lbs (in 1999)
SP-1	Spray Painting Activities	9 VAC 5-80-720B	VOC (minor toxics)	About 700 gal/yr
PR-1	Printing Activities	9 VAC 5-80-720B	VOC (minor toxics)	0.687 tons ink(1999)
LF-1	Sanitary Landfills (closed)	9 VAC 5-80-720B	Non-methane organic compounds (NMOC)	942,615 total tons waste in place
R-1, R-2	Jet fuel loading rack	9 VAC 5-80-720B	VOC	6300 gal/hr, each
R-3	Gasoline loading rack	9 VAC 5-80-720B	VOC	9600 gal/hr gasoline
R-4	Diesel fuel loading rack	9 VAC 5-80-720B	VOC	9600 gal/hr diesel
R-5	Waste oil loading rack	9 VAC 5-80-720B	VOC	2400 gal/hr waste oil
R-6	Hazardous waste oil loading rack	9 VAC 5-80-720B	VOC	24 gal/hr hazardous waste oil
S-1	Misc. waste oil/inactive	9 VAC 5-80-720B	VOC	3000 gal/hr
S-2 to S-4	Mixed aviation fuel and hydraulic oil separators	9 VAC 5-80-720B	VOC	About 2000 gal/hr
S-5	Vehicle wash/grease rack stormwater	9 VAC 5-80-720B	VOC	600 gal/hr
S-6	Miscellaneous waste water	9 VAC 5-80-720B	VOC	-
S-7	Miscellaneous waste oils	9 VAC 5-80-720B	VOC	12000 gal/hr
S-8	Stormwater separator	9 VAC 5-80-720B	VOC	Inactive
S-9	Auto fuel/hydraulic oil	9 VAC 5-80-720B	VOC	-
S-10	Stormwater separators	9 VAC 5-80-720B	VOC	Inactive
B-8	Bldg. 20, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	2.52 mil. Btu/hr
B-9	Bldg. 20, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	3.1 mil. Btu/hr
B-10	Bldg. 182, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	2.4 mil. Btu/hr
B-11	Bldg. 182, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.36 mil. Btu/hr
B-12	Bldg. 187, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	2.88 mil. Btu/hr
B-13	Bldg. 202, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	2.52 mil. Btu/hr

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B-14	Bldg. 203, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	2.05 mil. Btu/hr
B-15	Bldg. 204, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.08 mil. Btu/hr
B-16	Bldg. 205, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.12 mil. Btu/hr
B-17	Bldg. 206, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.08 mil. Btu/hr
B-18	Bldg. 207, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.01 mil. Btu/hr
B-19	Bldg. 208, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.17 mil. Btu/hr
B-20	Bldg. 209, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.08 mil. Btu/hr
B-21	Bldg. 210, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.7 mil. Btu/hr
B-22	Bldg. 211, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.16 mil. Btu/hr
B-23	Bldg. 212, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.16 mil. Btu/hr
B-24	Bldg. 213, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.16 mil. Btu/hr
B-25	Bldg. 214, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	4.76 mil. Btu/hr
B-26	Bldg. 214, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	4.76 mil. Btu/hr
B-27	Bldg. 219, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	3.6 mil. Btu/hr
B-28	Bldg. 219, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	3.6 mil. Btu/hr
B-29	Bldg. 220, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	4 mil. Btu/hr
B-30	Bldg. 220, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	4 mil. Btu/hr
B-31	Bldg. 222, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.55 mil. Btu/hr
B-32	Bldg. 231, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	5.59 mil. Btu/hr
B-33	Bldg. 238, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	2.05 mil. Btu/hr
B-34	Bldg. 240, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.94 mil. Btu/hr
B-35	Bldg. 247, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	4.28 mil. Btu/hr
B-36	Bldg. 247, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	4.28 mil. Btu/hr
B-37	Bldg. 257, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.7 mil. Btu/hr
B-38	Bldg. 305, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	3.5 mil. Btu/hr
B-39	Bldg. 305, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	3.5 mil. Btu/hr
B-40	Bldg. 337, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.16 mil. Btu/hr
B-42	Bldg. 358, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.02 mil. Btu/hr
B-43	Bldg. 361, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.6 mil. Btu/hr
B-44	Bldg. 367, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.6 mil. Btu/hr
B-45	Bldg. 367, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.6 mil. Btu/hr
B-48	Bldg. 392, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.7 mil. Btu/hr
B-49	Bldg. 470, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	2.93 mil. Btu/hr
B-50	Bldg. 470, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	2.93 mil. Btu/hr
B-51	Bldg. 701, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.72 mil. Btu/hr
B-52	Bldg. 707, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	2.8 mil. Btu/hr
B-53	Bldg. 707, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	2.8 mil. Btu/hr
B-58	Bldg. 1101, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	0.77 mil. Btu/hr
B-59	Bldg. 1114, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	0.75 mil. Btu/hr
B-61	Bldg. 1116, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	2.63 mil. Btu/hr
B-62	Bldg. 1132, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	3.1 mil. Btu/hr
B-63	Bldg. 1146, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.28 mil. Btu/hr
B-64	Bldg. 1200, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	5.8 mil. Btu/hr
B-70	Bldg. 3121, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	2.05 mil. Btu/hr
B-72	Bldg. 1442, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.08 mil. Btu/hr
B-73	Bldg. 1462, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	2.69 mil. Btu/hr
B-74	Bldg. 1726, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	5.25 mil. Btu/hr
B-75	Bldg. 1726, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	5.25 mil. Btu/hr

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B-76	Bldg. 1726, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.7 mil. Btu/hr
B-77	Bldg. 1731, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	8.39 mil. Btu/hr
B-78	Bldg. 1731, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	8.39 mil. Btu/hr
B-79	Bldg. 1731, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	3.5 mil. Btu/hr
B-80	Bldg. 1736, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	3.78 mil. Btu/hr
B-81	Bldg. 1736, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	3.78 mil. Btu/hr
B-82	Bldg. 1736, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.9 mil. Btu/hr
B-83	Bldg. 1809, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.97 mil. Btu/hr
B-85	Bldg. 1812, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1 mil. Btu/hr
B-86	Bldg. 1822, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	7.20 mil. Btu/hr
B-87	Bldg. 1822, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	7.20 mil. Btu/hr
B-92	Bldg. 2302, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	3.24 mil. Btu/hr
B-106	Bldg. 4001, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.19 mil. Btu/hr
B-110	Bldg. 2591, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	0.64 mil. Btu/hr
B-114	Bldg. 2593, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	0.8 mil. Btu/hr
B-116	Bldg. 371, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.01 mil. Btu/hr
B-117	Bldg. 386, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.23 mil. Btu/hr
B-118	Bldg. 399, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.89 mil. Btu/hr
B-119	Bldg. 712, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.7 mil. Btu/hr
B-120	Bldg. 766, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.23 mil. Btu/hr
B-121	Bldg. 1468, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.38 mil. Btu/hr
B-122	Bldg. 399, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.75 mil. Btu/hr
B-123	Bldg. 1462, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	1.75 mil. Btu/hr
B-124 thru B-135	Bldgs. 505, 506, 191, 1471, 1809, 3123 gas	9 VAC 5-80-720C	NOx, VOC, CO, PM	3.55 mil. Btu/hr total
B-136	Bldg. 950, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	3 mil. Btu/hr
B-137	Bldg. 950, gas boiler	9 VAC 5-80-720C	NOx, VOC, CO, PM	3 mil. Btu/hr
EG-1	Bldg. 3065, diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	100 KW
EG-2	Bldg. 3065, diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	100 KW
EG-3	Bldg. 3065, diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	100 KW
EG-4	Bldg. 3065, diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	100 KW
EG-5	Bldg. T 1423, diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	100 KW
EG-11	Bldg. 1434, diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	150 KW
EG-12	Bldg. 1434, diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	150 KW
EG-23	Portable unit, diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	320 KW
EG-24	Portable unit, diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	275 KW
EG-25	Portable unit, diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	180 KW
EG-26	Portable unit, diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	100 KW
EG-27	Portable unit, diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	80 KW
EG-28	Bldg. 0097, diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	350 KW
EG-31	Bldg. 687, diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	150 KW
EG-32	Bldg. 808, diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	350 KW
EG-33	Bldg. 808, diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	350 KW
EG-34	Bldg. 1131, diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	125 KW
EG-35	Bldg. 1157, diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	100 KW
EG-36	Bldg. 2119, diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	150 KW
EG-37	Bldg. 2310, diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	100 KW
EG-45	Bldg. 2593, diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	400 KW

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EG-47	Bldg. 3136, diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	125 KW
EG-48	Bldg. 3165, diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	200 KW
EG-79	Bldg. 361, diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	200 KW
EG-80	Bldg. 361, diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	190 KW
EG-81 thru EG-106	Emergency diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	Less than 200 KW, each
EG-108 thru EG-112	Emergency diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	Less than 200 KW, each
EG-113	Bldg. 3165, diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	200 KW
EG-114 thru EG-116	Emergency diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	Less than 200 KW, each
EG-117	Bldg. 3239, diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	416 KW
EG-118 thru EG-120	Emergency diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	Less than 200 KW, each
EG-121	Bldg. 246, diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	250 KW
EG-122	Emergency diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	30 KW
EG-123	Portable unit, diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	200 KW
EG-124	Portable unit, diesel gen.	9 VAC 5-80-720C	NOx, VOC, CO, PM	135 KW
AST-1109-2	Gasoline tank	9 VAC 5-80-720B	VOC	500 gallons
AST-1134-2	Diesel fuel tank	9 VAC 5-80-720B	VOC	600 gallons
AST-1157-1	Diesel fuel tank	9 VAC 5-80-720B	VOC	275 gallons
AST-1493-1	Gasoline tank	9 VAC 5-80-720B	VOC	500 gallons
AST-1493-2	Gasoline tank	9 VAC 5-80-720B	VOC	275 gallons
AST-1493-3	Gasoline tank	9 VAC 5-80-720B	VOC	200 gallons
AST1822B-1	Diesel fuel tank	9 VAC 5-80-720B	VOC	275 gallons
AST-224-1	Varsol tank	9 VAC 5-80-720B	VOC	275 gallons
AST-2590-1	Diesel fuel tank	9 VAC 5-80-720B	VOC	475 gallons
AST-2906-1	Gasoline tank	9 VAC 5-80-720B	VOC	500 gallons
AST-2906-2	Gasoline tank	9 VAC 5-80-720B	VOC	500 gallons
AST-2909-1	Gasoline tank	9 VAC 5-80-720B	VOC	550 gallons
AST-2909-2	Gasoline tank	9 VAC 5-80-720B	VOC	400 gallons
AST-322-3	Jet fuel tank	9 VAC 5-80-720B	VOC	600 gallons
AST-324-1	Jet fuel tank	9 VAC 5-80-720B	VOC	600 gallons
AST-324-2	Jet fuel tank	9 VAC 5-80-720B	VOC	600 gallons
AST-324-3	Diesel fuel tank	9 VAC 5-80-720B	VOC	150 gallons
AST-324-4	Diesel fuel tank	9 VAC 5-80-720B	VOC	150 gallons
AST-324-5	Diesel fuel tank	9 VAC 5-80-720B	VOC	150 gallons
AST-324-6	Diesel fuel tank	9 VAC 5-80-720B	VOC	150 gallons
AST-326-1	Diesel fuel tank	9 VAC 5-80-720B	VOC	600 gallons
AST-3293-1	Diesel fuel tank	9 VAC 5-80-720B	VOC	500 gallons
AST-348-1	Jet fuel tank	9 VAC 5-80-720B	VOC	600 gallons
AST-394-1	Diesel fuel tank	9 VAC 5-80-720B	VOC	200 gallons
AST-400-1	Diesel fuel tank	9 VAC 5-80-720B	VOC	500 gallons

These emission units are presumed to be in compliance with all requirements of the federal 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.

PUBLIC PARTICIPATION

A public notice regarding the draft permit was placed in The Journal Newspapers on January 30, 2003. The proposed permit, application, statement of basis and other related document (is/was) available for review by the public at the DEQ regional office from January 30, 2003 to February 28, 2003. The EPA was sent a copy of the draft permit along with other documents, including a copy of the public notice, on January 29, 2003. The draft permit was submitted to the EPA also for concurrent review as a proposed permit. The affected states of Maryland and West Virginia were sent a copy of the public notice on January 30, 2003, as well as the City of Washington, D.C., the City of Alexandria and Fairfax County. All persons on the Title V mailing list were sent a copy of the public notice in letters dated January 31, 2003 or by E-mail.

Public comments were accepted from January 30, 2003 to February 28, 2003. No comments were received. Therefore, the permit is issued on March 21, 2003.