



# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF ENVIRONMENTAL QUALITY TIDEWATER REGIONAL OFFICE

5636 Southern Boulevard, Virginia Beach, Virginia 23462  
(757) 518-2000 Fax (757) 518-2009  
www.deq.virginia.gov

David K. Paylor  
Director

Maria R. Nold  
Regional Director

Doug Domenech  
Secretary of Natural Resources

### COMMONWEALTH OF VIRGINIA Department of Environmental Quality Tidewater Regional Office

#### STATEMENT OF LEGAL AND FACTUAL BASIS

Tyson Foods, Inc.  
Accomack County, Temperanceville, Virginia  
Permit No. TRO-40333

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, Tyson Foods, Inc. has applied for a Title V Operating Permit for its Temperanceville, Virginia facility. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Permit Writer: \_\_\_\_\_ Date: **November 27, 2013**  
Yen T. Bao  
(757) 518-2195

Regional Air Permits Manager: \_\_\_\_\_ Date: **November 27, 2013**  
Troy D. Breathwaite

Regional Director: \_\_\_\_\_ Date: \_\_\_\_\_  
Maria R. Nold

## **FACILITY INFORMATION**

### Permittee

Tyson Foods, Inc.  
PO Box 2020  
Springdale, Arkansas 72765-2020

### Facility

Tyson Farms, Inc.  
11224 Lankford Highway  
Temperanceville, Virginia 23442

County-Plant Identification Number: 51-001-00002

## **SOURCE DESCRIPTION**

NAICS 311615 - Poultry Processing  
NAICS 311613 - Rendering and Meat Byproduct Processing  
NAICS 11234 - Poultry Hatchery

The manufacturing operations consist of processing live chickens into marketable commodities. This is accomplished through slaughtering, de-feathering, evisceration, chilling, and final packaging and shipping.

The protein conversion operations consist of rendering inedible poultry offal, parts, blood, and feather into useable products, which include poultry meat meal, poultry fat, and feather meal.

Main emissions are from boilers and the rendering processes. The facility is permitted under a minor NSR permit that was last amended on 9/17/13. The rendering processes have updated air pollution control equipment that was installed and operated as permitted in the preceding minor NSR amendment dated 9/17/10. The facility is Title V major for NO<sub>x</sub> and SO<sub>2</sub>, and PSD size for SO<sub>2</sub>.

## **COMPLIANCE STATUS**

A full compliance evaluation of this facility, including a site visit, has been conducted. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time.

### EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emission units at this facility consist of the following:

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device ID	Applicable Permit Date
<b>Fuel Burning Equipment</b>					
PB1	PB1V	No. 6 Fuel Oil Boiler, Cleaver Brooks, installed 1971, MACT Subpart JJJJJJ	14.7 million Btu/hr	NA	9/17/13 NSR
PB2	PB2V	No. 6 Fuel Oil Boiler, Cleaver Brooks, installed 1967, MACT Subpart JJJJJJ	6.3 million Btu/hr	NA	9/17/13 NSR
PB3	PB3V	No. 6 Fuel Oil Boiler, Cleaver Brooks, installed 1969, MACT Subpart JJJJJJ	14.7 million Btu/hr	NA	9/17/13 NSR
RB1	RB1V	No. 6 Fuel Oil Boiler, Cleaver Brooks, installed 1977, MACT Subpart JJJJJJ	29.3 million Btu/hr	NA	9/17/13 NSR
RB2	RB2V	No. 6 Fuel Oil Boiler, Cleaver Brooks, installed 1972, MACT Subpart JJJJJJ	29.3 million Btu/hr	NA	9/17/13 NSR
RB3	RB3V	No. 6 Fuel Oil Boiler, Cleaver Brooks, installed 1977, MACT Subpart JJJJJJ	29.3 million Btu/hr	NA	9/17/13 NSR
RB4	RB4V	No. 6 Fuel Oil Boiler, Cleaver Brooks, installed 1993, NSPS Subpart Dc, and MACT Subpart JJJJJJ	29.3 million Btu/hr	NA	9/17/13 NSR
PH1	PH1V	Two Propane Quikwater Hot Water Heaters, installed 1999, NSPS Subpart Dc (recordkeeping only)	12.5 million Btu/hr each	NA	9/17/13 NSR (4/15/1999 NSR Exemption letter)

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device ID	Applicable Permit Date
PG1	PG1V	Diesel-fired engine generator set, Katolight Model D1000FPZ4, 2001, MACT Subpart ZZZZ, emergency use and enrolled in PJM Emergency Load Response Program	1,100 KW	NA	9/17/13 NSR, (3/22/10 NSR Exemption letter)
PG2	PG2V	Diesel-fueled emergency generator, Katolight Model SD125FJ4, 8/2005, MACT Subpart ZZZZ	125 kW	NA	9/17/13 NSR, (7/11/05 NSR Exemption letter)
PG3	PG3V	Diesel-fueled emergency generator, Perkins Model PDFP L4YN, 1/1999, MACT Subpart ZZZZ	67 hp	NA	9/17/13 NSR, (7/11/05 NSR Exemption letter)
<b>Rendering Process- Poultry Meat and Fat Rendering</b>					
RE-01 and RE-02	EP-TP-CE-03	Cooker feed bins (2), conveyors, 2004	60,000 lbs/hr	CE-03	9/17/13 NSR
RE-03	EP-TP-CE-03	Metal Detector, 2010	60,000 lbs/hr	CE-03	9/17/13 NSR
RE-04	EP-TP-CE-03	Steam Preheater, Haarslev RCD 1533, 1996	60,000 lbs/hr	CE-01/CE-02/ CE-03	9/17/13 NSR
RE-05	EP-TP-CE-03	Rotor Drum, LYCO, 48'x72" single drum, 2004	60,000 lbs/hr	CE-03	9/17/13 NSR
RE-06	EP-TP-CE-03	Twin Screw Press Haarslev MS-64FK, 2004	60,000 lbs/hr	CE-01/CE-02/ CE-03	9/17/13 NSR
RE-07	EP-TP-CE-03	Pet Food Cooker, Haarslev TST100, 1992	60,000 lbs/hr	CE-01/CE-02/ CE-03 via cyclone RE-07A and condenser RE-7B	9/17/13 NSR
RE-07A	EP-TP-CE-03	Meat Cooker Cyclone, Haarslev, 1992	35,000 lb/hr	CE-01/CE-02/ CE-03 via condenser RE-07B	9/17/13 NSR

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device ID	Applicable Permit Date
RE-07B	EP-TP-CE-03	Meat Cooker Condenser, CA Technologies, 2007	35,000 lb/hr	CE-01/CE-02/ CE-03	9/17/13 NSR
RE-08	EP-TP-CE-03	Perculator, Haarslev, 1992	60,000 lbs/hr	CE-01/CE-02/ CE-03	9/17/13 NSR
RE-09 and RE-10	EP-TP-CE-03	Expeller Presses (2), Haarslev SBH Expeller 300, 1992	12,000 lbs/hr each	CE-01/CE-02/ CE-03	9/17/13 NSR
RE-11	EP-TP-CE-03	Hammermill, BLISS IER-3820, 2002	12,000 lbs/hr each	CE-01/CE-02/ CE-03	9/17/13 NSR
RE-12 A-C	EP-TP-CE-03	Rotex Screens (3) (vents to aspirator RE-12D), ROTEX 321A, 1992	12,000 lbs/hr each	CE-01/CE-02/ CE-03 via Aspirator RE-12D	9/17/13 NSR
RE-12D	EP-TP-CE-03	Aspirator	NA	CE-01/CE-02/ CE-03	9/17/13 NSR
RE-16-18	NA	Meat Meal Silos (3), HARVESTOR, #1-3:1970, #4-5:2009, #6:1994 (vent to atmosphere)	12,000 lbs/hr each	NA	9/17/13 NSR
RE-19	EP-TP-CE-03	Fat Sweco Screen, Sweco 60", 1996	10,000 lbs/hr	CE-03	9/17/13 NSR
RE-20	EP-TP-CE-03	Fat Centrifuge Feed Tank, 500 gallon, 1992	10,000 lbs/hr	CE-01/CE-02/ CE-03	9/17/13 NSR
RE-21	EP-TP-CE-03	Fat Centrifuge, Bird 34x38, 1992	10,000 lbs/hr	CE-01/CE-02/ CE-03	9/17/13 NSR
RE-22	EP-TP-CE-03	Inside Fat Storage Tank, 500 gallon, 1992	10,000 lbs/hr	CE-01/CE-02/ CE-03	9/17/13 NSR
RE-23-26	NA	Outside Fat Storage Tanks (vent to atmosphere)	NA	NA	9/17/13 NSR
RE-27	EP-TP-CE-03	Waste heat evaporator, Haarslev 25K, 1992	NA	CE-01/CE-02/ CE-03 via condenser RE-07B	9/17/13 NSR
RE-28	NA	Meat Meal Truck Load-out, Conveyors, 1992 (vent to atmosphere)	40,000 lbs/hr	NA	9/17/13 NSR

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device ID	Applicable Permit Date
<b>Rendering Process- Feather and Blood Rendering</b>					
RE-29	EP-TP-CE-04	Raw feather dump to floor, 1992	NA	CE-04	9/17/13 NSR
RE-30-32	EP-TP-CE-03 and EP-TP-CE-04	Cookers (3), Anco 5x16, 1992	10,000 lbs/batch each	CE-04 for room air low intensity odor; and CE-01/CE-02/ CE-03 for cooker high intensity odor via hydrolyser cyclone RE-47 and feather condenser RE- 49	9/17/13 NSR
RE-50 and RE-51	EP-TP-CE-03 and EP-TP-CE-04	Cookers (2), Anco 1700, to be installed to replace three (3) existing cookers RE-33-35	5,714 lbs/hr each		
RE-36	EP-TP-CE-04	Feather Dump Pan, Conveyor, 2009	30,000 lbs/hr	CE-04	9/17/13 NSR
RE-37	EP-TP-CE-04	Rotex Screen, 48", 2012	20,000 lbs/hr	CE-04	9/17/13 NSR (1/22/13 NSR Exemption letter)
RE-38 and RE-39	EP-TP-CE-03	Feather Dryers A/B, Haarslev, 1996	12,500 lbs/hr each	CE-01/CE-02/ CE-03 via feather cyclones RE- 38A and RE-39B, and feather condenser RE- 49	9/17/13 NSR
RE-40	EP-TP-CE-04	Feather Hammermill, Bliss 3820, 2004	20,000 lbs/hr	CE-04	9/17/13 NSR
RE-41	EP-TP-CE-04	Feather Rotex Screen, 2004	12,000 lbs/hr	CE-04	9/17/13 NSR
RE-42	NA	Feather Silo, Harvester 60', 2004 (vent to atmosphere)	12,000 lbs/hr	NA	9/17/13 NSR
RE-43	NA	Feather Meal Truck Loadout, Conveyors, 2004 (vent to atmosphere)	50,000 lbs/hr	NA	9/17/13 NSR
RE-44	EP-TP-CE-04	Blood Receiving Tank, 6,000 gallon, 2004	8,000 lbs/hr	CE-04	9/17/13 NSR

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device ID	Applicable Permit Date
RE-45	EP-TP-CE-03 and EP-TP-CE-04	Blood Coagulator, Sparge Tube, 2004	8,000 lbs/hr	CE-04 for room air low intensity odor; CE-01/CE-02/ CE-03 for high intensity odor via feather condenser RE-49	9/17/13 NSR
RE-46	EP-TP-CE-03 and EP-TP-CE-04	Blood Centrifuge, Bird 18x42, 2009	8,000 lbs/hr	CE-04 for room air low intensity odor; CE-01/CE-02/ CE-03 for high intensity odor via feather condenser RE-49	9/17/13 NSR
RE-47	EP-TP-CE-03	Hydrolyser Cyclone, CA Technologies, 2007	20,000 lb/hr	CE-01/CE-02/ CE-03 via feather condenser RE-49	9/17/13 NSR
RE-38A and 39B	EP-TP-CE-03	Feather Dryer Cyclones A/B (2), CA Technologies 2007	20,000 lb/hr	CE-01/CE-02/ CE-03 via feather condenser RE-49	9/17/13 NSR
RE-49	EP-TP-CE-03	Feather Condenser, Millpoint 1992	30,000 lb/hr	CE-01/CE-02/ CE-03	9/17/13 NSR

Pollution Control Device (PCD) ID No.	PCD Description*	Pollutant Controlled	Applicable Permit Date
CE-01	IES venturi, 20,000 cfm, using water, 95% control efficiency, 2011	Odor, PM	9/17/13 NSR
CE-02	IES packed bed scrubber, 30,000 cfm, 95% control efficiency, using water and ClO2, or an DEQ-approved equivalent solution, 2011	Odor, PM	9/17/13 NSR
CE-03	IES packed bed scrubber, 100,000 cfm, 95% control efficiency, using water and ClO2, or an DEQ-approved equivalent solution, 2011	Odor, PM	9/17/13 NSR

CE-04	IES packed bed scrubber, 100,000 cfm, 95% control efficiency, using water and ClO <sub>2</sub> , or an DEQ-approved equivalent solution, 2011	Odor, PM	9/17/13 NSR
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\*The Size/Rated capacity and PCD efficiency are provided for informational purposes only, and is not an applicable requirement.

**EMISSIONS INVENTORY**

A copy of the 2012 annual emission update is attached. Emissions are summarized in the following table.

2012 Actual Emissions

	2012 Criteria Pollutant Emissions in Tons/Year					
	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	NO <sub>x</sub>	Pb
Total	0.3	4.5	244.2	12.7	49.5	0.001

There were no Hazardous Air Pollutant Emissions.

**FUEL BURNING EQUIPMENT REQUIREMENTS USING FUEL OIL OR PROPANE –  
(EMISSION UNITS PB1, PB2, PB3, RB1, RB2, RB3, RB4, PH1, PG1, PG2, AND PG3)**

The fuel burning equipment requirements are covered in three separate sections. Beside this section that addresses permit conditions applicable to units burning fuel oil or propane, the next section does that for those burning poultry fat only, and a third section for permit conditions applicable to the burning of either fuel oil or poultry fat. The third section is created to avoid repeating the same requirements in the preceding two sections, especially from the non-delegated MACT Subpart JJJJJJ that is applicable to boilers burning either fuel oil or poultry fat. These separations go further than in the minor NSR permit dated 9/17/13 which divided only the requirements on boilers using fuel oil from those on boilers burning poultry fat. This was satisfactory there because the minor NSR does not address non-delegated federal regulations.

**Limitations**

Boilers and hot water heaters:

There are seven boilers at the facility (poultry processing boilers PB1 through PB3, and rendering boilers RB1 through RB4) but only boiler RB4, installed in 1999, is subject to NSPS Subpart Dc. Therefore, the allowed sulfur content for the residual oil fuel is 0.5% for RB4 and 2% for the others (Condition 1). The combined residual oil throughput limits for the boilers have been developed over time (Condition 2). The combined emission limits were estimated accordingly (Condition 4).

The two propane hot water heaters PH1 (12.5 MMBtu/hr each) were exempt from minor NSR permitting on 4/15/1999 due to its fuel and size. The exemption letter also stated that they are subject to NSPS Subpart Dc. The reason was that they are larger than 10 MMBtu/hr each, and propane meets the definition of natural gas in the subpart. The only applicable requirement is monthly propane fuel usage record keeping (40 CFR 60.48c(g)) (Condition 8).

Visible emission limits are as seen in Condition 5 through 7. The limits for RB4 are as required by NSPS Subpart Dc, i.e. 20% opacity except for one six-minute period in any one hour in which opacity shall not exceed 27%. The limits for boilers RB1 through RB3 are 20% and 30% opacity, respectively, in accordance with 9 VAC 5-50-80 applicable to "new" (generally post-1972) units. Note that PB1 was given the same opacity limits even though its construction date was 1971 due to the fact that BACT was cited when the opacity limit was first formalized in the 8/25/2000 minor NSR permit. At the same time, the limits for PB2 and PB3 which were constructed in 1967 and 1969, respectively, are 20% and 60% opacity, respectively, without exception for startup, shutdown and malfunction, in accordance with 9 VAC 5-40-80 applicable to "existing" (pre-1972) units.

#### Emergency generators:

Emergency generator PG1 is limited to 500 hrs of total use by the 9/17/13 minor NSR (see Condition 10). However, it and the other two emergency generators, PG2 and PG3, are also subject to MACT Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, as existing emergency RICE at area sources (constructed before June 12, 2006). Applicable limitations in operation and maintenance practice are shown in Conditions 11 and 12. Note that NSPS Subpart IIII does not apply because the units were constructed prior to July 11, 2005 and manufactured prior to April 1, 2006.

#### **Monitoring**

A non-resettable hour meter is required for each emergency generator (PG1, PG2, and PG3) as required by MACT Subpart ZZZZ (Condition 13).

#### **Reporting**

Boiler RB4 is subject to semi-annual fuel quality reporting as required by NSPS Subpart Dc (Condition 9).

#### **FUEL BURNING EQUIPMENT REQUIREMENTS USING POULTRY FAT – (EMISSION UNITS PB1, PB2, PB3, RB1, RB2, RB3, AND RB4)**

#### **Limitations**

The facility has been permitted to use poultry fat generated on site as fuel for its boilers since 8/14/2001 (a superseded minor NSR). This fuel is known to have variable heat content and low but variable sulfur content. Therefore, monthly fuel sampling and analysis for the two variables are required (Condition 18). Emission limits (Conditions 19 and 20) were mostly based on emission factors provided by the facility. Visible emission limits are 10 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 20 percent opacity (Condition 21). These limits are BACT requirements, more stringent than NSPS Subpart Dc standards in 40 CFR 60.43c(c) applicable to petroleum-based oil combustion. Note that the above NSPS section does not address biofuels such as poultry fat.

## Testing

Stack tests for PM, CO and NO<sub>x</sub> are also required for initial compliance determination (Condition 22). However, as up to date, no such testing or sampling and analysis of the fuel have been carried out yet because the facility has never used poultry fat as fuel.

## **FUEL BURNING EQUIPMENT REQUIREMENTS USING EITHER FUEL OIL OR POULTRY FAT – (EMISSION UNITS PB1, PB2, PB3, RB1, RB2, RB3, and RB4)**

### Limitations

The permitted annual throughput for either fuel oil or poultry fat is the maximum amount that the facility needs if it burns one fuel exclusively for the whole year. In reality, the facility may burn either fuel part of the time. Therefore, the worst case emissions with either one of the fuels are set as the overall limits (Condition 23). NO<sub>x</sub> and SO<sub>2</sub> limits are important because their amounts are above major source levels.

### Monitoring

Visible emission observations from each boiler shall be made once per calendar month (Condition 27). As the boilers have excellent compliance history to the visible emission limits, this requirement is deemed to meet Part 70 periodic monitoring requirement to ensure proper operation of the boilers.

### **Applicability of MACT JJJJJJ - National Emission Standards for Hazardous air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources:**

All above listed boilers are subject to this MACT whether they burn fuel oil or poultry fat. The latter meets the definition of liquid fuel under the “oil subcategory” in the MACT. They are all considered existing sources as they were installed prior to 6/04/10. Note that PH1 is exempt from MACT Subpart JJJJJJ because it uses gaseous fuels (40 CFR 63.11195(e)).

Compliance demonstration for boilers includes initial tune-up, one-time energy assessment by a qualified energy assessor, and biennial tune-ups (Conditions 28-30). Initial compliance demonstrations should be conducted by March 21, 2014. Note that the one-time energy assessment (Condition 29) does not apply to boiler PB2 because it is smaller than 10 MMBtu/hr. Initial notification which is due by January 20, 2014 (Condition 31) has been completed by the facility on 03/12/12. However, this condition is kept in the permit as the record has to be kept (recordkeeping Condition 33). Notification of Compliance Status is also required no later than 120 days after the compliance date of March 21, 2014 (Condition 32).

### Testing

Other than the stack tests for poultry fat combustion and visible emission monitoring, additional testing may be required when deemed necessary (Conditions 25 and 26).

## **Recordkeeping**

Condition 33 consolidates all recordkeeping requirements for all fuel burning equipment. For boilers, records include all fuel oil throughputs and certifications, poultry fat throughput, sampling and analysis results, stack test results and estimated emission factors for poultry combustion, visible emission monitoring, calculations of actual annual sulfur dioxide emissions and nitrogen oxide emissions, maintenance and operator training. Records to demonstrate compliance with NSPS Subpart Dc (including the semi-annual fuel quality report) and MACT Subpart JJJJJ are also included. For emergency generators, records include annual hours of operation, and operation and maintenance records as required by MACT Subpart ZZZZ.

## **Streamlined Requirements**

Conditions 25 and 34 of the 9/17/13 NSR permit address boiler maintenance and operator training for fuel oil combustion and poultry fat combustion, respectively. Since the wording is the same, the condition is placed once in the section for fuel burning equipment requirements using either fuel oil or poultry fat (Condition 24).

## **RENDERING PROCESS EQUIPMENT REQUIREMENTS – (ALL EMISSION UNITS OTHER THAN FUEL BURNING EQUIPMENT)**

### **Limitations**

There are two main processes in the rendering operation: poultry meat and fat rendering process that produces meat meal and fat, and feather and blood rendering process that produces feather meal. There are two pollution control device systems for PM and odor control, one is a venturi scrubber CE-01 connected to two packed bed scrubbers CE-02 and 03 in series (CE-01/CE-02/CE-03), and the other is a single packed bed scrubber (CE-04). The routing of emissions from emission units from each process is dictated by the intensity of the odor generated by the unit. Low intensity odor from room air from the poultry meat and fat rendering process is controlled by the packed bed scrubber CE-03 while the high intensity odor from the process is controlled by the CE-01/CE-02/CE-03 system (see Conditions 36 and 37). At the same time, low intensity odor from room air from the feather and blood rendering process is controlled by packed bed scrubber CE-04 while the high intensity odor from the process is controlled by the CE-01/CE-02/CE-03 system (see Conditions 38 and 39). Certain equipment vents to intermediate equipment such as cyclones or condensers prior to the scrubbers. For example, pet food cooker RE-07 vents to cyclone RE-07A and condenser RE-07B prior to the CE-01/CE-02/CE-03 control system, and feather dryers RE-38 and 39 vent to feather cyclones RE-38 A and 39 B and feather condenser RE-49. Those intermediate units are considered process equipment but their additional roles are shown in permit Conditions 37 and 39.

The facility is PSD-size for SO<sub>2</sub>. Throughput of raw materials and production limits on poultry meat meal and feather meal (see Conditions 41-43) were needed in the minor NSR permit to ensure that the estimated PM/PM-10/PM-2.5 emission changes do not exceed PSD significant

levels and trigger PSD permitting. Emission factors used to estimate emission limits (Conditions 44-46) were from various sources: AP-42 for similar processes, stack tests at similar sources, and manufacturer's estimates. A control efficiency of 95% was assumed for particulate control by the scrubbers.

## Monitoring

### CAM applicability:

The CE-01/CE-02/CE-03 and CE-04 scrubber systems control particulate emissions as well as odor (with the aid of ClO<sub>2</sub> or equivalent added to the water feed) from the rendering process. Since odor is not a regulated pollutant for Title V purpose, particulate emissions are the only regulated pollutants from the rendering process that are subject to a control device. Compliance Assurance Monitoring (CAM) regulations (40 CFR 64) apply if pre-controlled emissions are above the major source level. Pre-controlled emissions are estimated from the controlled emission limits (Conditions 44 and 45) using a control efficiency of 95% as shown below:

Control Device	Controlled PM (tons/yr)	Pre-controlled PM (tons/yr)	Controlled PM-10 (tons/yr)	Pre-controlled PM-10 (tons/yr)	Controlled PM-2.5 (tons/yr)	Pre-controlled PM-2.5 (tons/yr)	Controlled VOC (tons/yr)	Pre-controlled VOC (tons/yr)
CE-01/ CE-02/ CE-03	7.2	144.4	4.2	84.0	1.5	30.0	10.6	10.6
CE-04	3.1	62.0	2.3	46.0	1.1	22.0	-	-

Pre-controlled emissions = Controlled emissions/[(100-%control efficiency)/100]

Note that the facility also estimated VOC emissions. While VOC emissions may contain certain constituents, especially the odorous ones, which may be controlled by the scrubbing liquid, their portions are deemed insignificant by the facility based on their test results on similar facilities. Therefore pre-controlled VOC emissions are estimated to be the same as controlled emissions which are below the major source level.

The results indicated that only PM pre-controlled emissions for the CE-01/CE-02/CE-03 system are larger than 100 tons/year. While an EPA OAQPS memorandum dated 10/16/1995 from Lydia N. Wegman had determined that PM-10, not PM, is a Title V regulated pollutant, DEQ has taken a conservative approach to include PM as a Title V regulated pollutant in this case (6/25/13 e-mail from Stan Faggert of Central Office). Therefore, a CAM plan is required for scrubbers CE-01, CE-02, and CE-03 which was then submitted by the facility upon request by DEQ.

The recently amended minor NSR permit dated 9/17/13 contains requirements on monitoring devices and monitoring devices observations for scrubbers (Conditions 48-51) which are consistent with CAM requirements. The scrubbing liquid flow rate and the differential pressure across the scrubber are the two parameters chosen for continuous monitoring. Additionally, a continuous recorder system and high/low level alarms for liquid flow rate are required for all scrubbers except for CE-04 as the latter is not subject to CAM. CE-04 will have flow rate

manually recorded at least once per shift. As the continuous recording and high/low alarm are newly required for CE-01, CE-02 and CE-03 to meet CAM, the 9/17/13 permit allows them to be installed and in operation by 3/01/2014. In the interim, the once-per-shift manual recording will be in effect. As for the differential pressure parameter, the once-per-shift observations and manual record are deemed sufficient.

#### CAM plans for CE-01, CE-02 and CE-03:

The choice of the recycle liquid flow rate through each scrubber and pressure drop across each scrubber to monitor as performance indicators are deemed appropriate because they are related to the liquid/gas ratio and plugging of lines, respectively, which strongly affect scrubber performance.

The facility shall install a continuous monitor and recorder with a data collection system for the recycle liquid flow rate. The latest implementation date is 3/01/14 (Condition 49). Indicator range is established for each scrubber and a sound alarm will trigger when the 5-minute rolling average flow rate is  $\pm 30\%$  out of range. An inspection and corrective action are then required. Excursions are defined as when the 3-hour block average flow rate is  $\pm 50\%$  out of range which will trigger alarm, require inspection, corrective action, and reporting. Other performance criteria are also established (Conditions 52-54).

The pressure drop will be measured continuously and recorded manually each shift. This frequency is acceptable because this parameter does not change quickly. Indicator range is also established for each scrubber. Corrective action will be taken when a reading is outside the range. Excursions are defined as when daily average is  $\pm 50\%$  out of range, triggering inspection, corrective action and reporting. Other boilerplate monitoring conditions for CAM requirements are included in Conditions 55-61.

#### **Recordkeeping**

Condition 62 contains all record keeping requirements for rendering process equipment while Condition 63 concentrates on CAM requirements including Quality Improvement Plan (QIP).

#### **Reporting**

CAM reporting requirements are in Condition 64.

#### **Streamlined Requirements**

There are no streamlined requirements.

## **FACILITY-WIDE CONDITIONS**

The condition on Testing/Monitoring Ports Requirements is placed in this section (Condition 66) as deemed appropriate. The condition on testing in case there is any additional testing requirement is also placed here (Condition 67).

### **Streamlined Requirements**

All general conditions from the 9/17/13 NSR permit are streamlined because they have been addressed in the General Conditions section of the Title V permit. One exception is the condition on "Violation of Ambient Air Quality Standards" which is not represented in the Title V permit, hence it is placed in the Facility-Wide Conditions section (Condition 68).

## **GENERAL CONDITIONS**

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

### **Comments on General Conditions**

#### **General Conditions 72-77 - Permit Expiration**

These conditions refer to the Board taking action on a permit application. The Board is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by §2.2-604 and §10.1-1185 of the *Code of Virginia*, and the "Department of Environmental Quality Agency Policy Statement No. 2-09".

These conditions cite the Article that follows:

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

These general conditions cite the sections that follow:

9 VAC 5-80-80. Application

9 VAC 5-80-140. Permit Shield

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

#### **General Conditions 83-86 - Failure/Malfunction Reporting**

Section 9 VAC 5-20-180 requires malfunction and excess emission reporting within four hours of discovery. Section 9 VAC 5-80-250 of the Title V regulations also requires malfunction reporting; however, reporting is required within two days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to Section 9 VAC 5-20-180 including Title V facilities. Section 9 VAC 5-80-250 is from the Title V regulations. Title V facilities are subject

to both sections. A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-250. The report must be made within four daytime business hours of discovery of the malfunction.

In order for emission units to be relieved from the requirement to make a written report in 14 days the emission units must have continuous monitors meeting the requirements of 9 VAC 5-50-410 or 9 VAC 5-40-41.

These conditions cite the sections that follow:

9 VAC 5-40-41. Emissions Monitoring Procedures for Existing Sources  
9 VAC 5-40-50. Notification, Records and Reporting  
9 VAC 5-50-50. Notification, Records and Reporting

These conditions contain a citation from the Code of Federal Regulations as follows:  
40 CFR 60.13 (h). Monitoring Requirements.

#### **General Condition 90 - Permit Modification**

This general condition cites the sections that follow:

9 VAC 5-80-50. Applicability, Federal Operating Permit for Stationary Sources  
9 VAC 5-80-1100. Applicability, Permits for New and Modified Stationary Sources  
9 VAC 5-80-1605. Applicability, Permits for Major Stationary Sources and Modifications Located in Prevention of Significant Deterioration Areas  
9 VAC 5-80-2000. Applicability, Permits for Major Stationary Sources and Major Modifications Locating in Nonattainment Areas.

#### **General Conditions 104-107 - Malfunction as an Affirmative Defense**

The regulations contain two reporting requirements for malfunctions that coincide. The reporting requirements are listed in Sections 9 VAC 5-80-250 and 9 VAC 5-20-180. The malfunction requirements are listed in General Conditions 104-107 and General Conditions 83-86. For further explanation see the comments on general conditions 83-86.

These general conditions cite the sections that follow:

9 VAC 5-20-180. Facility and Control Equipment Maintenance or Malfunction  
9 VAC 5-80-110. Permit Content

#### **General Condition 111 - Asbestos Requirements**

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

This general condition contains a citation from the Code of Federal Regulations that follows:  
40 CFR 61.145, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to demolition and renovation.  
40 CFR 61.148, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to insulating materials.  
40 CFR 61.150, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to waste disposal.

**STATE-ONLY APPLICABLE REQUIREMENTS**

The following Virginia Administrative Codes have specific requirements only enforceable by the State and have been identified as applicable by the applicant:  
9 VAC 5-40-130 et seq. (Rule 4-2) Emission Standards for Odor, and  
9 VAC 5-50-130 et seq. (Rule 5-2) Standards of Performance for Odorous Emissions.

The 9/17/13 minor NSR permit has State-Only Enforceable Requirements concerning odor control that are transferred to the Title V permit (Conditions 114-128). Note that the scrubbing liquid for the packed bed scrubbers CE-02, CE-03 and CE-04 contains ClO<sub>2</sub> or an equivalent as approved by DEQ (see Conditions 36-39). The chemical is for the control of odor which is not a Title V regulated air pollutant. Therefore, monitoring requirements of the scrubbing liquid oxidation-reduction potential (ORP), an indicator of the chemical concentration, are state-only enforceable (Conditions 126-127).

**FUTURE APPLICABLE REQUIREMENTS**

There are no future applicable requirements anticipated at this time.

**INAPPLICABLE REQUIREMENTS**

The following requirements have been identified as being inapplicable:

Citation	Title of Citation	Description of Applicability
9 VAC 5-40-880 et seq., Part II, Article 8	Emissions Standards for Fuel Burning Equipment	Boilers PB1, PB2, and PB3 were installed prior to 1972. However, they are not subject to the PM and SO <sub>2</sub> emission standards of Article 8 because they are already subject to the more stringent requirements of the facility's NSR permits as they were developed over time, beginning with the 11/08/93 NSR.

40 CFR 60, Subpart Kb, as amended.	NSPS for Volatile Organic Liquid Storage Vessels Constructed, Modified, or Reconstructed After July 23, 1984	Facility's tanks are either less than the threshold for Kb applicability (19,817 gallons) or store liquids that have maximum true vapor pressure less than 2.16 psi. Hence, they are not subject to NSPS Subpart Kb.
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The startup, shut down, and malfunction opacity exclusion listed in 9 VAC 5-40-20 A.4 cannot be included in any Title V permit. This portion of the regulation is not part of the federally approved state implementation plan. The opacity standard applies to existing sources at all times including startup, shutdown, and malfunction. Opacity exceedances during malfunction can be affirmatively defended provided all requirements of the affirmative defense section of this permit are met. Opacity exceedances during startup and shut down will be reviewed with enforcement discretion using the requirements of 9 VAC 5-40-20 E, which state that "At all times, including periods of startup, shutdown, soot blowing and malfunction, owners shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with air pollution control practices for minimizing emissions."

Greenhouse Gas (GHG) regulations:

The provisions of 40 CFR Part 98 requires owners and operators of general stationary fuel combustion sources that emit 25,000 metric tons CO<sub>2</sub>e or more per year in combined emissions from such units, to report greenhouse gas (GHG) emissions, annually. The definition of "applicable requirement" in 40 CFR 70.2 and 71.2 does not include requirements such as those included in Part 98, promulgated under Clean Air Act (CAA) section 114(a)(1) and 208. Therefore, the requirements of 40 CFR Part 98 are not applicable under the Title V permitting program. In any case, based on the 2012 annual emission inventory showing CO emissions of 4.5 tons/yr, and AP-42 emission factors of 5 lbs CO/1,000 gal fuel oil No. 6 (AP-42 Table 1.3.1, 5/10) relative to 25,000 lbs CO<sub>2</sub> /1,000 gal for low sulfur No. 6 oil (AP-42 Table 1.3.12, 5/10), CO<sub>2</sub> emissions can be estimated as:

$$4.5 \text{ tons/yr} \times 25,000/5 = 22,500 \text{ tons/yr which is } < 25,000 \text{ metric tons/yr}$$

As a result of several EPA actions regarding GHG under the CAA, emissions of GHG must be addressed for a Title V permit renewed after January 1, 2011. The current minor NSR permits for the facility contain no GHG-specific applicable requirements and there have been no modifications at the facility that increases their CO<sub>2</sub>e emissions by more than 75,000 tons/year. Therefore, there are no applicable requirements for the facility specific to GHG.

**COMPLIANCE PLAN**

There is no compliance plan associated with this facility.

**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 <sup>1</sup>	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
SC1	Used oil tank, 1,000 gallons	9 VAC 5-80-720 B	VOC, HAPs	
SC2	Unleaded gasoline tank, 275 gallons	9 VAC 5-80-720 B	VOC, HAPs	
SC3	Diesel fuel tank, 15,000 gallons	9 VAC 5-80-720 B	VOC, HAPs	
TP1	No. 6 fuel oil tank, 12,000 gallons	9 VAC 5-80-720 B	VOC, HAPs	
TP2	Unleaded gasoline tank, 500 gallons	9 VAC 5-80-720 B	VOC, HAPs	
FP1	Diesel fuel tank, 120 gallons	9 VAC 5-80-720 B	VOC, HAPs	
1RT	No. 6 fuel oil tank, 25,000 gallons	9 VAC 5-80-720 B	VOC, HAPs	
2RT	No. 6 fuel oil tank, 25,000 gallons	9 VAC 5-80-720 B	VOC, HAPs	
3RT	Poultry fat tank, 20,000 gallons	9 VAC 5-80-720 A		
4RT	Poultry fat tank, 20,000 gallons	9 VAC 5-80-720 A		
5RT	Poultry fat tank, 25,000 gallons	9 VAC 5-80-720 A		
6RT	Poultry fat tank <sup>1</sup> , 25,000 gallons	9 VAC 5-80-720 A		
HAT1	Diesel fuel, 10,000 gallons	9 VAC 5-80-720 B	VOC, HAPs	

<sup>1</sup>The citation criteria for insignificant activities are as follows:

9 VAC 5-80-720 A - Listed Insignificant Activity, not required to be included in permit application

9 VAC 5-80-720 B - Insignificant due to emission levels

9 VAC 5-80-720 C - Insignificant due to size or production rate

## **CONFIDENTIAL INFORMATION**

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

## **PUBLIC PARTICIPATION**

The proposed permit will be placed on public notice in the **Eastern Shore News** newspaper from **Saturday, October 12, 2013** to **Tuesday, November 12, 2013**.