

Air Permit Review

Permit Issue Date:

Region: Mooresville Regional Office
County: Union
NC Facility ID: 9000169
Inspector's Name: Carlotta Adams
Date of Last Inspection: 04/29/2011
Compliance Code: 3 / Compliance - inspection

Facility Data			Permit Applicability (this application only)
Applicant (Facility's Name): Bakery Feeds Facility Address: Bakery Feeds 5805 Highway 74 East Marshville, NC 28103 SIC: 2048 / Prepared Feeds Nec NAICS: 311119 / Other Animal Food Manufacturing Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V			SIP: NSPS: Subpart Dc NESHAP: Boiler GACT 6J PSD: PSD Avoidance: NAA NSR Avoidance NC Toxics: 2D .1100 112(r): Other: RACT, 2D .1404
Contact Data			Application Data
Facility Contact	Authorized Contact	Technical Contact	Application Number: 9000169.10B Date Received: 10/25/2010 Application Type: Modification Application Schedule: TV-Significant Existing Permit Data Existing Permit Number: 08194/T10 Existing Permit Issue Date: 08/05/2010 Existing Permit Expiration Date: 07/31/2013
Frank Panzanella General Manager (704) 624-9140 5805 Highway 74 East Marshville, NC 28103	Frank Panzanella General Manager (704) 624-9140 5805 Highway 74 East Marshville, NC 28103	Frank Panzanella General Manager (704) 624-9140 5805 Highway 74 East Marshville, NC 28103	
Review Engineer: Jenny Kelvington Review Engineer's Signature: _____ Date: _____		Comments / Recommendations: Issue 08194/T11 Permit Issue Date: Permit Expiration Date:	

1. Purpose of Application

Bakery Feeds has submitted an application to modify their current air permit to add two boilers (33.5 million Btu per hour maximum heat input each) as replacements for their existing boiler (8.37 million Btu per hour maximum heat input). The application contains the processing fee of \$867, zoning consistency determination, source reduction form, and signature of authorized official. It is deemed complete for processing as of May 31, 2011.

2. Facility Description

Bakery Feeds operates a recycle facility located in Marshville, Union County North Carolina. This facility specializes in collection of inedible bakery waste products, such as bread, dough, crackers, sweet goods, and snack chips from various commercial bakeries and snack food manufacturers. The recycled waste is mixed together, ground, dried, and wheat middlings are added to this mixture in order to form animal feed ingredients referred to by the company as cookie meal. The cookie meal is then shipped to various feed mills to be used in poultry and hog feed.

3. Statement of Compliance

The facility was inspected on April 29, 2011 by Ms. Carlotta Adams (MRO) and appeared to be operating in compliance with applicable air quality regulations. No air quality violations have occurred at this facility during the past five years.

4. List of Permit Changes

Page(s)	Section	Description of Change(s)
1	Permit Cover Page	Amended permit revision numbers and issuance/effective dates.
3	Emission Source Table	Removed existing boiler ES-7 (8.37 million Btu per hour maximum heat input); and Added two natural gas/propane/No. 2 fuel oil-fired boilers (33.48 million Btu per hour maximum heat input).
4	2.1.A. Table	Added 2D .1100 Toxic Air Pollutant Requirements
7	2.1.A.4	Moved 2D .0317 Avoidance Condition for Sources in NAA from 2.2.A.2 to 2.1.A.4
8-13	2.1.B	Removed permit requirements for boiler ES-7; and Added permit requirements for boilers ES-8 and ES-9 including: 1) 2D .0503 limiting particulates to 0.366 lbs/MMBtu 2) 2D .0516 limiting SO ₂ to 2.3 lbs/MMBtu 3) 2D .0521 limiting VE to 20% opacity 4) 2D .0524 limiting VE to 20% opacity and sulfur content of the oil to 0.5% by weight 5) 2Q .0317 avoidance condition for 2D .0531 limiting NOx from ES-8 and ES-9 combined to less than 40 tons/year 6) 2D .1407 requiring annual boiler tune-ups 7) 2D .1111 requiring boiler tune-ups and a one-time energy assessment
14	2.2.A	Combined multiple source requirements under 2.2.A "Facility-wide Emission Sources"
14-15	2.2.A.3	Added "State-Only" emission limitations for 10 toxic air pollutants and operational restrictions to ensure compliance with this limits.
17-25	3.0	Updated General Conditions to the latest version 3.5.

5. New Sources and Emission Changes

Two natural gas-fired boilers (33.5 million Btu per hour maximum heat input; ID Nos. ES-8 and ES-9)

The proposed sources are two natural gas/propane/No. 2 fuel oil/processed fats-fired firetube boilers, each with a maximum heat input of 33.48 million Btu per hour (800 hp) and used to provide heat for the vacuum assisted evaporation unit. They will replace existing boiler ES-7, which has a rated capacity at 8.37 million Btu per hour. The ES-8 boiler is Cleaver Brooks Model No. CB-400-800, manufactured in 1973 and the ES-9 boiler is Cleaver Brooks Model No. 4WI, manufactured in 2009. Bakery Feeds has requested that the firing of No. 2 fuel oil be limited to 2,500 hours per year for the two boilers combined.

Potential Emissions:

Boiler ES-8; Cleaver Brooks CB-400-800

Pollutant	Natural Gas (lbs/MMBtu)		Propane (lb/MMBtu) AP-42 Factor	No. 2 Fuel Oil (lbs/MMBtu)		Processed Fats (lb/MMBtu) ³
	Manufacturer's Data ¹	AP-42 Factor		Manufacturer's Data ^{1,2}	AP-42 Factor	
CO	0.15	0.08	0.08	0.07	0.04	0.02
NO _x	0.12	0.10	0.14	0.25	0.17	0.16
SO ₂	0.001	0.0006	0.0003	0.52	0.51	0.0003
HC/VOCs	0.016	0.005	0.011	0.025⁴	0.0015	-0-
PM	0.01	0.008	0.008	0.025	0.024	0.006

1. Cleaver Brooks Emission Data for Model CB Boiler (See attached data.)
2. Based upon fuel oil constituent levels of 0.05% by wt fuel bound nitrogen, 0.5% by wt sulfur content, and 0.01% by wt ash content.
3. From stack testing in 2/01 on a 50 million Btu/hr boiler at a different facility.
4. The manufacturer's factors for VOC emissions when natural gas and No. 2 oil are fired in the CB boiler are significantly higher than AP-42 factors and unlike AP-42 factors, higher for No. 2 fuel oil than natural gas combustion. Because the manufacturer's VOC data for No. 2 oil combustion appears abnormally high, the factor for natural gas is assumed to be worst case emissions.

Boiler ES-8; Cleaver Brooks CB-400-800

Pollutant	Fuel Oil lbs/hr	NG/P/PF lbs/hr	Unlimited Potential Emissions (tons/yr)	Potential Emissions at 2500 hr/yr Fuel Oil Limit (tons/yr)
CO	2.3	5.0	22.0	22.0
NO _x	8.4	4.7	36.7	25.2
SO ₂	17.4	0.03	76.3	21.9
HC/VOCs	0.54	0.54	2.7	2.7
PM	0.84	0.33	3.7	2.1

Boiler ES-9; Cleaver Brooks 4WI

Pollutant	Natural Gas (lbs/MMBtu)		Propane (lb/MMBtu) AP-42 Factor	No. 2 Fuel Oil (lbs/MMBtu)		Processed Fats (lb/MMBtu) ³
	Manufacturer's Data ¹	AP-42 Factor		Manufacturer's Data ^{1,2}	AP-42 Factor	
CO	0.11	0.08	0.08	0.04	0.04	0.02
NO _x	0.07	0.10	0.14	0.186	0.17	0.16
SO ₂	0.001	0.0006	0.0003	0.52	0.51	0.0003
HC/VOCs	0.004	0.005	0.011	0.002	0.0015	-0-
PM	0.01	0.008	0.008	0.025	0.024	0.006

1. Cleaver Brooks Emission Data for Model 4WI Boiler (See attached data.)
2. Based upon fuel oil constituent levels of 0.05% by wt fuel bound nitrogen, 0.5% by wt sulfur content, and 0.01% by wt ash content.
3. From stack testing in 2/01 on a 50 million Btu/hr boiler at a different facility.

Boiler ES-9; Cleaver Brooks 4WI Boiler

Pollutant	Fuel Oil lbs/hr	NG/P/PF lbs/hr	Unlimited Potential Emissions (tons/yr)	Potential Emissions at 2500 hr/yr Fuel Oil Limit (tons/yr)
CO	1.34	3.7	16.1	16.1
NO _x	6.23	4.7	27.3	22.5
SO ₂	17.4	0.03	76.3	21.9
HC/VOCs	0.07	0.37	1.6	1.6
PM	0.84	0.33	3.7	2.1

Maximum Facility Wide Emissions with Permit Restrictions

Pollutant	ES-2/ES-4 (tons/yr)	ES-8/ES-9 (tons/yr)	Facility-Wide (tons/yr)
CO	86.5	22.0	109
NO _x	70.9	25.2	96.1
SO ₂	3.5	21.9	25.4
HC/VOCs	194.5	2.7	197.2
PM	66.9	2.1	69

Emission estimates are based upon the following:

1. 2010 Emissions Inventory average hourly emission rates,
2. 6,754 annual hours of operation for each rotary dryer;
3. 2,500 hours total of annual fuel oil combustion in the two proposed boilers; and
4. Only boiler in operation at any given time.
5. These estimates do not include insignificant activities.

6. Regulatory Review –Specific Emission Source Limitations

The new boilers will be subject to the following air quality regulations:

Regulated Pollutant	Limits/Standards	Applicable Regulation
Particulate matter	0.355 pounds per million Btu heat input	15A NCAC 2D .0503
Sulfur dioxide	2.3 pounds per million Btu heat input	15A NCAC 2D .0516
Visible emissions	20 percent opacity	15A NCAC 2D .0521
Sulfur dioxide, Visible emissions	NSPS, Subpart Dc for ES-9 Only	15A NCAC 2D .0524
Nitrogen oxides	Less than 40 tons per year	15A NCAC 2Q .0317 Avoidance of 15A NCAC 2D .0531
Nitrogen oxides	Annual tune-up	15A NCAC 2D .1414
Toxic air pollutants	2,500 hours per consecutive 12-month period per boiler firing No. 2 fuel oil	15A NCAC 2D .1100
Hazardous air pollutants	Work practices	15A NCAC 2D .1111 40 CFR 63, Subpart JJJJ

- A. 15A NCAC 2D .0503 – “PARTICULATES FROM FUEL BURNING INDIRECT HEAT EXCHANGERS”
This regulation applies to particulate matter emissions from the combustion of a fuel that are discharged from any stack. This regulation sets an emission standard based on the maximum rated heat input as follows:

$$E = 1.090 * Q^{-0.2594}$$

where, E = allowable emissions (lb/million Btu) = **0.366 lbs/MMBtu**

Q = maximum heat input (million Btu/hr) = [33.5 + 33.5] = **67.0 MMBtu/hr**

Based on AP-42 factors and the manufacturer’s data, the highest rate of particulate emissions from the boilers occurs when the boilers are firing No. 2 fuel oil. The maximum particulate emissions are **0.025 lb/MMBtu** and well below the 2D .0503 limit. Therefore, compliance is clearly indicated. No monitoring or recordkeeping is required to demonstrate compliance since particulate emissions from firing natural gas, propane, No. 2 fuel oil, and processed fats are inherently low.

- B. 15A NCAC 2D .0516 – “SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES”
This regulation applies to sulfur dioxide emissions from any source of combustion that is discharged from any stack. The allowable sulfur dioxide emission rate is **2.3 lb/million Btu**. Based on AP-42 factors and the manufacturer’s emission data, the SO₂ emission rate from the combustion of No. 2 fuel oil with a maximum sulfur content of 0.5% by weight in each of the boilers is **0.52 lb/million Btu**. Therefore, compliance is clearly indicated. No monitoring or recordkeeping is required to demonstrate compliance with this regulation since SO₂ emissions from firing natural gas, propane, No. 2 fuel oil, and processed fats are inherently low.

- C. 15A NCAC 2D .0521 – “CONTROL OF VISIBLE EMISSIONS”
This regulation applies to boiler ES-8 and sets a **20% opacity** limit on visible emissions. Visible emissions from the combustion of natural gas, propane, No. 2 fuel oil, and processed fats are inherently low and thus, compliance is expected. No monitoring or recordkeeping is required to demonstrate compliance with this regulation.

- D. 15A NCAC 2D .0524 – 40 CFR 60, Subpart Dc, NSPS for Small Industrial-Commercial-Institutional Steam Generating Units
40 CFR Part 60, Subpart Dc applies to boilers that are constructed, modified, or reconstructed after June 9, 1989 and have a maximum design heat input capacity ≥ 10 MMBtu/hr and < 100 MMBtu/hr. Boiler ES-8 was manufactured in 1973 and thus is not subject to NSPS. Boiler ES-9 is subject to NSPS as it has been constructed after 1989 and has a maximum design heat input capacity greater than 10 MMBtu per hour. NSPS-affected boilers are subject to the following standards and requirements, in addition to the SIP requirements described above:

- Sulfur Dioxide. The maximum sulfur content of any fuel oil received and fired in the Subpart Dc-affected boiler shall not exceed **0.5 percent** by weight. To demonstrate compliance with this standard, the Permittee is required to retain copies of each fuel supplier certification, including the sulfur content of the oil (in percent by weight). The Permittee is also required to submit a semiannual report summarizing the monitoring activities (January 30th and July 30th).
- Visible Emissions. For any Subpart Dc-affected boiler with a maximum heat input capacity of greater than or equal to 30 mmBtu/hr, visible emissions shall not be more than **20 percent opacity** when averaged over a six-minute period, except for one six-minute period per hour of not more than 27 percent opacity. To demonstrate compliance with this standard, the Permittee is required to

conduct a Method 9 test (6-minute average of 24 observations) to determine the opacity of stack emissions within 60 days of installing boiler ES-9.

In addition, pursuant to 40 CFR 60.7(a)(3) the Permittee is required to submit a written notification of the actual date of initial startup of boiler ES-9 within 15 days of such date. This notification shall be submitted to the NC DAQ Regional Supervisor.

E. 15A NCAC 2D .0524 – 40 CFR 60, Subpart CCCC, “NSPS for Commercial and Institutional Solid Waste Incineration (CISWI) Units” *Not Applicable*

The N.C. Division of Waste Management (DWM) has made a determination that saleable fats are not considered “solid waste.” This determination is based on a request submitted by the DAQ on behalf of Valley Protein’s Carolina By-Products Fayetteville plant on February 23, 2010. The request addressed each of the ten factors listed in DAQ’s CISWI guidance memorandum dated September 28, 2009. DWM concluded; “*As long as the management of this material is consistent with the description in this document, [DWM] agree[s] that the material is not a waste.*” The processed-fats fuel for Bakery Feeds is consistent with description of saleable fats in the determination and therefore, not considered a waste at this time.

F. 15A NCAC 2Q .0317 – Avoidance Conditions for 15A NCAC 2D .0531; Non-Attainment Area New Source Review (NAA NRS)

This facility is located in Union County, which is in non-attainment for ozone NAAQS (VOC and NO_x are precursors for ozone). The major source threshold for Union County, which is classified as “moderate” for severity of non-attainment, is 100 tons each for VOC and NO_x. This facility is a major source for VOC and operates under two separate NAA NSR avoidance limits of 100 tons VOC each. Potential annual emissions of nitrogen oxides from the two boilers operating without any restrictions exceed the NSR significant emissions rate of 40 tons per year. To avoid new source review, Bakery Feeds has requested that only one boiler may be operated at any given time. This limits potential NO_x emissions from the boilers to a maximum of 36.7 tons per year. As a NAA NSR avoidance condition, Bakery Feeds will be required to maintain records demonstrating the combined operation of the two boilers does not exceed 8,760 hours in any consecutive 12 month period. Compliance is anticipated.

G. 15A NCAC 2D .0902 – Reasonably available control technology" (RACT) *Not Applicable*

RACT applies to facilities with the potential to emit 100 tons or more volatile organic compounds (VOCs) per year in Union County. Bakery Feeds has the potential to emit up to 203 tpy of VOCs. Sources are exempt from RACT if their VOC emissions are less than 15 pounds per day. [15A NCAC 2D .0902(B) 1] Maximum VOC emissions from boilers (ID Nos. ES-8 and ES-9) are 13.0 and 8.9 pounds per day, respectively. Therefore, this rule does not apply to the two boilers.

H. 15A NCAC 2D ..1404, 1407, and .1414 – “BOILERS AND INDIRECT PROCESS HEATERS”

These regulations apply to boilers located at facilities in ozone non-attainment areas with potential facility-wide NO_x emissions equal to or greater than 100 tons per year or 560 pounds per day from May 1 through September 30 of each year. Bakery Feeds is located in Union County which is in non-attainment for ozone NAAQS and, with the addition of the two boilers, has facility wide potential NO_x emissions are greater than 100 tons annually and greater than 560 pounds per day. Bakery Feeds has requested that the combustion of No. 2 fuel oil in the boilers to be limited to a combined total of 2,500 hours per year, which limits annual facility wide NO_x emissions to 96 tons. However, the boilers are still subject to RACT because the existing rotary dryers and the proposed boilers have the potential to emit up to 706 pounds of NO_x per day. The facility has elected to be subject to annual boiler tune-ups than to daily operational limits. The following RACT requirements will be added to the permit:

TUNE-UP REQUIREMENTS

The Permittee shall perform a tune-up of each boiler at least annually, on or by December 31 of each calendar year, according to the manufacturer's recommendations and a unit specific protocol approved by the Director. As a minimum, during each tune-up, the Permittee shall:

- i. inspect each burner and clean or replace any component of the burner as required;*
- ii. inspect the flame pattern and make any adjustments to the burner, or burners, necessary to optimize the flame pattern to minimize total emissions of NOx and carbon monoxide;*
- iii. inspect the combustion control system to ensure proper operation and correct calibration of components that control the air to fuel ratio and adjust components to meet the manufacturer's established operating parameters; and*
- iv. inspect any other component of the boilers and make adjustments or repairs as necessary to improve combustion efficiency.*

RECORDKEEPING REQUIREMENTS

The owner or operator shall maintain the following records of tune-ups performed:

- i. identification of the source;*
- ii. the date and time the tune-up started and ended;*
- iii. the person responsible for performing the tune-up; and*
- iv. the checklist for inspection of the burner, flame pattern, combustion control system, and all other components of the boiler identified in the protocol, noting any repairs or replacements made;*
- v. any stack gas analyses performed after the completion of all adjustments to show that the operating parameters of the boiler, have been optimized with respect to fuel consumption and output; at a minimum these parameters shall be within the range established by the equipment manufacturer to ensure that the emission limitation for nitrogen oxides has not been exceeded; and*
- vi. any other information requested by the Director (or designee) to show that the boiler is being operated and maintained in a manner to minimize the emissions of nitrogen oxides.*

Compliance is anticipated.

I. 15A NCAC 2D .1100 and 2Q .0711 "CONTROL OF TOXIC AIR POLLUTANTS"

As of July 10, 2010 any new or modified combustion source triggers toxics if there is a net emissions increase. If a new or modified toxics source triggers review, then the evaluation includes all existing combustion sources, along with all other sources that emit a common pollutant. Thus if an increase in the emissions of any toxic air pollutant occurs as a result of adding the two proposed boilers, the compliance determination shall also include toxic emissions from all other common toxic sources. This includes the two rotary dryers.

Ten toxic air pollutants (TAPs) associated with the two proposed boilers exceed the toxics emissions rate for which a permit evaluation is required. The TAPs include acrolein, formaldehyde, HCl, chlorine, fluoride, manganese, arsenic, benzene, beryllium, and cadmium. Bakery Feeds performed modeling using SCREEN3 for the two 22 MMBtu/hr rotary dryers and the two proposed 33.5 MMBtu/hr boilers. For this demonstration, emission rates were based on total boiler oil usage at 2,500 hours per year and the rotary dryers each limited to 6,754 hours per year of operation. The emissions rates for the proposed boilers were verified using NC DAQ emission calculations spreadsheets. According to Charles Butler, the DAQ Meteorologist II who reviewed the modeling, "The highest modeled impact was determined to be near the property boundary and in simple terrain. Cavity impacts did not exceed simple terrain impacts." Mr. Butler concluded, "This analysis shows on a source-by-source basis compliance with each pollutant's respective Acceptable Ambient Level(s)." Eight TAPs had maximum concentrations less than 1% of the AAL(s), while arsenic and benzene were modeled at 87% of the AAL and 12.5% of the AAL, respectively.

The permit will limit TAP emissions to the rates used in the compliance demonstration as follows:

Toxic Air Pollutant	Emission Limit(s) for <u>Each Rotary Dryer (ES-2 and ES-4)</u>	Emission Limit(s) for <u>Each Boiler (ES-8 and ES-9)</u>
Acrolein	0.088 lb/hr	0 lb/hr
Arsenic	3.27 lb/yr	0.374 lb/yr
Benzene	624 lb/yr	2.08 lb/yr
Beryllium	0.164 lb/yr	0.0025 lb/yr
Cadmium	0.609 lb/yr	0.481 lb/yr
Chlorine	0.000174 lb/hr 0.00418 lb/24-hr	0 lb/hr 0 lb/24-hr
Fluorides	0 lb/hr 0 lb/24-hr	0.00886 lb/hr 0.213 lb/24-hr
Formaldehyde	0.0968 lb/hr	0.0114 lb/hr
Hydrochloric Acid	0.418 lb/hr	0 lb/hr
Manganese	0.845 lb/24-hr	0.48 lb/24-hr

To assure compliance with the above emission limitations, the permit will also restrict the operation of the rotary dryers and boilers as follows:

- i. The fuel burned in the rotary dryers (**ID Nos. ES-2 and ES-4**) shall be limited to food grade products, which are generated on-site from the bakery products received for processing, sawdust, natural gas, and propane.;
- ii. The operation of rotary dryer (**ID No. ES-2**) shall be limited to 6,754 hours per consecutive 12-month period;
- iii. The operation of the rotary dryer (**ID No. ES-4**) shall be limited to 6,754 hours per consecutive 12-month period; and
- iv. Fuel oil combustion in the boilers (**ID Nos. ES-8 and ES-9**) combined shall be limited to 2,500 hours per consecutive 12-month period.

Compliance is anticipated.

J. 15A NCAC 2D .1111, 40 CFR Part 63, Subpart JJJJJJ “National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers at Area Sources”

On March 21, 2011, the US Environmental Protection Agency issued the Industrial, Commercial, and Institutional Boilers Area Source Rule - Subpart JJJJJJ. The rule provides for the use of generally available control technologies ["GACT"] or management practices by area sources (less than 10/25 tons per year of hazardous air pollutant [HAP] emissions) to reduce HAP emissions. It covers boilers burning oil and other liquid and solid fuels to produce steam or hot water for energy or heat. It is commonly referred to as the **Boiler 6J GACT Rule**. The rule establishes emission limits for new boilers and boilers which have switched fuels after June 4, 2010 and work practices for existing boilers constructed or reconstructed prior to June 4, 2010. The two proposed boilers were constructed in 1973 and 1999 and have not switched fuels on or after June 4, 2010. The facility confirmed that the proposed units have been in service as fuel oil-fired boilers. Therefore, they will be subject to the tune-up and energy assessment requirements for existing affected sources.

The boilers will be permitted to burn gas, No. 2 fuel oil, and “processed fats.” NC DAQ has placed saleable fats from rendering plants in the same category as natural gas since HAP emissions are similar. Because the boilers fire No. 2 fuel oil they are considered liquid fuel boilers and will be subject to the

following permit requirements once they fire No. 2 fuel oil during periods other than times of gas curtailment, gas emergencies, or liquid fuel testing as defined by the GACT:

Compliance Date [40 CFR §63.1196]

- a. *No later than March 21, 2012 or within one week of firing oil as a routine fuel, the Permittee shall comply with the work practices in 40 CFR Part 63, Subpart JJJJJ for existing boilers (ID Nos. ES-B8 and ES-B9) located at an area source of hazardous air pollutant emissions.*

Work Practices [40 CFR §63.11223]

- b. *The Permittee shall tune-up the boilers (ID Nos. ES-B8 and ES-B9) by the compliance date in Condition a. above. Thereafter, the Permittee shall perform a biennial tune-up of each boiler no later than 25 months after the previous tune-up. If the boiler is not operating on the required date for a tune-up, the tune-up must be conducted within one week of startup.*
- c. *As a minimum, the Permittee shall conduct the following inspections, optimization, and measurements for each boiler during the tune-up:*
 - i. *Inspect the burner and clean or replace any components of the burner as necessary. The Permittee may delay the burner inspection until the next scheduled boiler shutdown but no later than 36 months after the previous inspection.*
 - ii. *Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available.*
 - iii. *Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly.*
 - iv. *Optimize total emissions of carbon monoxide. This optimization should be consistent with the manufacturer's specifications, if available.*
 - v. *Measure the concentrations in the effluent stream of carbon monoxide in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made).*

Energy Assessment [40 CFR §63.11196, 63.11214]

- d. *The Permittee shall complete a one-time energy assessment performed by a qualified assessor no later than March 21, 2014 or within 180 days of first firing oil as a routine fuel.*
- e. *As a minimum, the energy assessment shall include:*
 - i. *A visual inspection of the boiler system,*
 - ii. *An evaluation of operating characteristics of the facility, specifications of energy using systems, operating and maintenance procedures, and unusual operating constraints,*
 - iii. *Inventory of major systems consuming energy from affected boilers,*
 - iv. *A review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage,*
 - v. *A list of major energy conservation measures,*
 - vi. *A list of energy savings potential of the energy conservation measures identified, and*
 - vii. *A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments.*

Recordkeeping and Reporting [40 CFR §63.9, 63.11214, 63.11223, and 63.11225]

- f. *The Permittee shall prepare a Notification of Compliance Status report, signed by the responsible official, and submitted no later than July 19, 2012 indicating that the initial tune-up of each operating boiler is complete.*
- g. *The Permittee shall prepare a Notification of Compliance Status report, signed by the responsible official, and submitted no later than April 20, 2014 indicating that the energy assessment of each boiler and energy use systems is complete.*
- h. *The Permittee shall prepare biennially and submit upon request of the NC DAQ, a report containing the following information for each boiler:*
 - i. *The date of tune-up, the procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned.*
 - ii. *The concentrations of CO in the effluent stream in parts per million, by volume, and oxygen in volume percent, measured before and after the tune-up of the boiler,*

- iii. A description of all corrective actions taken as a part of the tune-up of the boiler, and
- iv. The type and amount of fuel used over the 12 months prior to the biennial tune-up of the boiler.
- i. The Permittee shall prepare by March 1 an annual compliance certification report for the previous calendar year containing the following information:
 - i. A description of all deviations, the time periods during which the deviations occurred, and the corrective actions taken,
 - ii. The company name and address, and
 - iii. A statement signed by the responsible official certifying the truth, accuracy and completeness of the notification and stating whether the source has complied with all the relevant standards and other requirements of this subpart.
- j. The annual compliance certification report shall be submitted to the NC DAQ by March 15 if the facility deviated from any applicable requirement during the previous calendar year or upon request by the NC DAQ.
- k. The Permittee shall maintain all records for a period of five years during which time the records shall be kept onsite for at least the first two years.

Compliance is anticipated.

7. NSPS, NESHAPS, Attainment Status, PSD, 112(r), CAM

NSPS

New source performance standards, Subpart Dc apply to boiler ES-9. The facility is not subject to any other NSPS requirements.

NESHAPS

The facility wide potential HAP emissions are less than 10 tons per year. Hence, the facility is a minor source of HAP emissions. The facility is subject to the recently promulgated NESHAP requirements for industrial boilers at area sources of HAPs.

Attainment Status/PSD

Bakery Feeds is located in Union County. Union County is classified as being in non-attainment with the 8-hour ozone standard and is governed by NSR rules under 15A NCAC 2D .0531. NO_x and VOC are precursors to ozone. The facility is an existing major stationary sources because the current PTE for VOCs is in excess of 100 tpy (See current permit containing two distinct 100 tpy VOC limits). This project, defined as the installation of two boilers and the removal of an existing boiler does not result in an increase greater than the significant emission rates. The potential emission increase for VOC and NO_x is presented in the Table below:

Pollutant	Unlimited Potential Emissions (tons/year)
NO _x	36.7
VOCs	2.7

As noted in the table above, the facility requested a restriction limiting the operation of the boilers to only one boiler at any given time.

Union County is located in the Metrolina Moderate Non Attainment Area. Bakery Feeds is considered a major source with potential emissions of VOC and NO_x each exceeding 100 tpy. Future modifications must be evaluated considering NAA NSR and RACT.

112(r)

This facility is not subject to Section 112(r) of the Clean Air Act requirements.

CAM

Compliance assurance monitoring (CAM) applicability review is not required as the proposed emissions sources are not controlled.

8. Facility Emissions Review

The following is an emission summary for this facility. Actual emissions are for year 2010, as reported by the company to DAQ through submittal of annual emission inventory.

Pollutant	Actual Emissions Tons/Yr	Potential Emissions Prior to Modification Tons/Yr	Potential Emissions Increase Tons/Yr	Potential Emissions Tons/Yr
PM	50	69	1.2	70
PM10	12	18	1.2	19
PM2.5	3.0	5	1.2	6
CO	61	92	19	111
NO _x	50	79	19	98
SO ₂	2.5	19	3.2	22
VOC	135	195	2.7	<200
Single/Total HAP	0.45/0.66*	/		3.4/6.0

* Not all HAPs reported in 2010 Emissions Inventory.

9. Public Notice

A thirty-day public notice is required for this significant modification. The thirty day public notice period for this facility will run from October 18, 2011 through November 17, 2011.

The EPA 45 day comment period is scheduled from October 18, 2011 through December 2, 2011.

10. Conclusions, Comments, and Recommendations

A copy of this review, the draft permit, and other pertinent documents were sent via email to Ms. Carlotta Adams of the Mooresville Regional Office. Ms. Adams concurs with the issuance of this permit.

This modification for Bakery Feeds, located in Marshville, Union County, North Carolina, has been reviewed by the DAQ to determine compliance with all procedures and requirements. The DAQ has determined that this facility is complying or will achieve compliance as specified in the permit with all applicable requirements **Recommend issuance of Permit No. 08194T11**