

**NORTH CAROLINA DIVISION OF  
AIR QUALITY**

**Air Permit Review**

**Permit Issue Date: July XX, 2008**

**Region:** Mooresville Regional Office  
**County:** Gaston  
**NC Facility ID:** 3600026  
**Inspector's Name:** Jennifer Manning  
**Date of Last Inspection:** 07/11/2007  
**Compliance Code:** C/In Compliance With  
 Procedural Reqr

<b>Facility Data</b>			<b>Permit Applicability (this application only)</b>		
<p><b>Applicant (Facility's Name):</b> Carolina By-Products Gastonia Division</p> <p><b>Facility Address:</b>                  Carolina By-Products Gastonia Division                  5533 South York Road                  Gastonia, NC 28052</p> <p><b>SIC:</b> 2077 / Animal And Marine Fats And Oil  <b>NAICS:</b> 311613 / Rendering and Meat Byproduct Processing</p> <p><b>Facility Classification: Before:</b> Title V <b>After:</b> Title V  <b>Fee Classification: Before:</b> Title V <b>After:</b> Title V</p>			<p><b>SIP:</b> 2D .0503, .0516, .0539, .1400 (Existing Source RACT), 2Q .0203 (NAA Added Fee), .0317 for RACT boiler w &lt; 50mmBtu/hr</p> <p><b>NSPS:</b>  <b>NESHAP:</b>  <b>PSD:</b>  <b>PSD Avoidance:</b>  <b>NC Toxics:</b>  <b>112(r):</b>  <b>Other:</b></p>		
<b>Contact Data</b>			<b>Application Data</b>		
<b>Facility Contact</b>	<b>Authorized Contact</b>	<b>Technical Contact</b>	<p><b>Application Number:</b> 3600026.08A  <b>Date Received:</b> 01/28/2008  <b>Application Type:</b> Modification  <b>Application Schedule:</b> TV-Significant  <b>Existing Permit Data</b>  <b>Existing Permit Number:</b> 03590/T27  <b>Existing Permit Issue Date:</b> 09/17/2007  <b>Existing Permit Expiration Date:</b> 06/30/2009</p>		
Paul Humphries General Manager (704) 864-9941 5533 S York Road Gastonia NC, 28052	Paul Humphries General Manager (704) 864-9941 5533 S York Road Gastonia NC, 28052	Van Jones Environmental Manager (704) 864-9941 5533 South York Road Gastonia NC, 28052 VJones@valleyprotein.com			
<p><b>Review Engineer:</b> Charles F. Yirka</p> <p><b>Review Engineer's Signature:</b> _____ <b>Date:</b> June XX, 2008</p>			<p style="text-align: center;"><b>Comments / Recommendations:</b></p> <p><b>Issue</b> 03590/T28  <b>Permit Issue Date:</b> July XX, 2008  <b>Permit Expiration Date:</b> June 30, 2009</p>		

**1. Facility Description.**

Carolina By-Products – Gastonia Division is a rendering plant that mostly processes chicken blood, inedible parts of animals such as chicken or turkey, and feathers as raw material for animal feed (chicken feed, cattle feed, etc.).

**2. Purpose of Application**

The area in which this facility is located (Metrolina) was designated as a non-attainment area for the 8-hour ozone standard. A compliance demonstration was required by March 1, 2007. As such existing sources of NOx and VOC may be subject to the RACT rules including case-by-case RACT. (As per 2D .1401 Definitions - RACT means the lowest emission limitation of NOx that a particular source can meet by the application of control technology that is reasonably available considering technological and economic feasibility). These rules apply specifically to major facilities with the PTE to emit greater than 100 tons of NOx (and/or VOC) emissions as these pollutants are considered to be precursors to ozone formation.

The Permittee has submitted a compliance demonstration. It appears that potential emissions of NO<sub>x</sub> would require the application of the RACT rules to the boilers ID Nos. ES-1, 2, 3, and 15. Boilers #1 and #2 appeared to be rated at over 50 million Btu per hour each. Therefore CBP would be required to consider combustion modifications necessary to meet the allowable emissions rate per 2D .1407(b)(2). Mid-South Steam and Boiler & Engineering were hired to perform a field test (12/05/07) of the maximum achievable firing for Boiler #1 (one of the two virtually identical boilers in design and capacity). After tuning Boiler #1 the rate was found to be 42.3 million Btu per hour. The two similar boilers had a maximum permitted heat input rates of 50.2 and 50.6 million Btu per hour but the actual rate was found to be 42.3 million Btu per hour. Additional information indicated that the boiler burner tips were replaced and have a name-plate rating of 49.6 mmBtu/hr. Additional documentation was required by DAQ. This allowed DAQ Permits Section to change the permitted heat input rates to 49.6 mmBtu/hr. Finally, because all four boilers were found to be rated at less than 50 million Btu per hour they are subject only the annual tune up requirements of 2D .1407(b)(1). The boiler ratings of Boilers #1 and #2 have been changed in the permit. If testing for the heat input is required or the heat input is determined to be greater than 50 million Btu/hour the CBP will be required to comply with the emissions limits, etc. required by 2D .1407(b)(2).

The two previous permit modifications were reviewed to determine if "new source RACT" should have applied. The two reviews indicated:

1. The last modification 03590T27 was for the introduction of new fuel (No. 2 oil) to two of the boilers; the permit was issued September 7, 2007. The facility is in Metrolina and is considered a 100 ton per year major source. The worst-case fuel is No. 6 oil with higher NO<sub>x</sub> emissions so the fuel switch was considered a minor NSR modification and not considered as triggering new source RACT as new sources will not be constructed nor were NSR/NAA synthetic minor limits for NO<sub>x</sub> required.
2. The previous modification 03590T26 with permit issuance of April 12, 2006 appeared to involve only the state-only odor rule and the construction of odor controls and would not require RACT or NSR/NAA review.

The 502(b)(10) notification requirements were removed from the permit including explanatory footnotes and Part II of the permit associated with 03590T27; stipulations for 2D .0503, .0516 and .0539 were modified as described below. Finally, the non-attainment area added fee was determined to apply to CBP. (The permit and review will be subject to public notice and EPA review).

### **III. Regulatory Review (this application only)**

#### **15A NCAC 2D .0503– PARTICULATES FROM FUEL BURNING INDIRECT HEAT EXCHANGERS**

This rule applies to all the boilers. The monitoring for Boiler #2 and #15 (ES-1 and 15) had required the Permittee keep records of the ash content (%) to demonstrate compliance with this rule. This should not be required as the particulate emissions from firing the allowed fuels (natural gas, fuel oils Nos. 2,4,5 and residual oil No. 6, saleable fat and approved waste oil) will always be less than the allowable. Therefore the ash provisions have been removed from this condition. The ash content of waste oil is already required by the state air toxics requirements 2D 1100 where the Permittee is required to demonstrate the waste-oil is an approved oil.

#### **15A NCAC 2D .0516– BOILERS AND INDIRECT PROCESS HEATERS**

This rule applies to all the boilers. The monitoring for Boiler #2 and #15 (ES-1 and 15) appropriately requires the Permittee keep records of the sulfur content (%) to demonstrate compliance with this rule. The monitoring also prescribed the sulfur content as a function of the fuels fired. The Permittee could demonstrate compliance with the limit 2.1 lb/mmBtu at higher sulfur contents than prescribed. The sulfur limits are prescribed by the waste oil requirements and therefore the sulfur provisions have been removed from this condition. The sulfur content of waste oil is already required by the state air toxics requirements 2D .1100 where the Permittee is required to demonstrate the waste-oil is an approved oil.

#### **15A NCAC 2D .0539- ODOR CONTROL OF FEED INGREDIENT MANUFACTURING PLANTS**

As per the request of the applicant and with the regional office MRO's concurrence, the handling transport and storage requirements were revised by reducing the reporting frequency from quarterly to semi-annual. See specific changes in the reporting condition which follows:

**STATE ONLY REQUIREMENT:**

**1. 15A NCAC 2D .0539- ODOR CONTROL OF FEED INGREDIENT MANUFACTURING PLANTS**

Any device, machine, equipment, or other contrivance used to process material for the production of feed-grade proteins or feed-grade animal fats and oils, except for any portions that are engaged exclusively in the process of food for human consumption, shall be operated in compliance with the requirements therein including:

- h. **Recordkeeping**: The Permittee shall record the time that reasonable precautions were taken for each raw material load relative to the maximum 24 hour storage time without taking those precautions. Each exceedence of the 24-hour storage time limit and the associated calendar date shall be recorded in a logbook that shall be made available for review by the Regional Office inspection.
- i. **Reporting**: The Permittee shall submit reports semi-annually by January 30 and July 30 of each calendar year relative to the storage of raw material. Each semi-annual report shall include:
  - i. Calendar dates covered in that period; and
  - ii. Exceedences of the 24-hour storage time limit.

**15A NCAC 2D .1407– BOILERS AND INDIRECT PROCESS HEATERS**

This regulation is applicable to boilers and requires facilities with affected units to conduct annual tune-ups and install combustion modifications if required to meet the allowable emissions rates. However, boilers rated at less than 50 million Btu per hour are only required to conduct annual tune-ups. All four boilers were demonstrated to be less than 50 million Btu per hour therefore only tune-ups are required. The following new language, customized for the boilers, includes monitoring, recordkeeping and reporting, and thereby conforms to DAQ's Part 70 title V program:

**15A NCAC 2D.1407- BOILERS AND INDIRECT PROCESS HEATERS**

- a. Facilities with boilers with maximum heat input rate of less than or equal to 50 million Btu per hour shall comply with the annual tune-up requirements of 2D .1414. The Permittee shall maintain records of all tune-ups performed for each source according to 2D .1404 [15A NCAC 2D .1407]
  - i. Final compliance shall be achieved no later than **April 1, 2009** [15A NCAC 2D .1403(c)(2)(F)]

**Testing** [15A NCAC 2D.2601]

- b. If emission testing is required, the testing shall be performed in accordance with 15A NCAC 2D .2601 and General Condition JJ.

**Monitoring** [15A NCAC 2Q .0508(f)]

- c. To assure compliance the Permittee shall conduct tune-ups on the boilers at least annually and according to the manufacturer's recommendations:
  - 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. The Permittee shall perform the tune-up according to a unit specific protocol approved by the Director. The Director (or designee) shall approve the protocol if it meets the requirements of this Rule. The protocol shall be submitted to the Regional Office for approval.If tune-ups and inspections are not conducted as per c.i. through iv. above, the Permittee shall be deemed to be in noncompliance with 15A NCAC 2D .1407.

**Recordkeeping** [15A NCAC 2Q .0508(f)]

- d. The owner or operator shall maintain records of tune-ups performed to comply with according to Rule .1404. The following information shall be included for each source:
  - 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. for boilers 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.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1407 if these records are not maintained.

- e. The results of the monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
  - i. the date and time of each recorded action;
  - ii. the results of each annual tune-up and inspection along with any corrective actions taken; and
  - iii. the results of any corrective actions performed.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1407 if these records are not maintained.

**Reporting** [15A NCAC 2Q .0508(f)]

- f. The Permittee shall submit a summary report postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified.

**15A NCAC 2Q .0203 PERMIT AND APPLICATION FEES**

Because CBP is subject to "existing source RACT" and additional monitoring recordkeeping and reporting is required CBP will be subject to the NAA Added Fee at the title V anniversary date following April 1, 2009 (the compliance date for RACT). The Regional Office and the Business Office shall be notified within 15 days of the compliance date. See table with "bold" below:

ANNUAL PERMIT FEES			
Facility Category	Tonnage Factor	Basic Permit Fee	Nonattainment Area Added Fee
Current 2007-Before Rule is Effective			
Title V	\$18.10	\$6,311	<b>\$3,297</b>
Later-After Rule is Effective			
Title V	\$22.50 upon Rule effective date; \$25.00 on 01/01/2009; \$27.50 on 01/01/2010; \$30.00 on 01/01/2011 and thereafter.	\$6,500	<b>\$3,500</b>

**NAA/NSR**

This permit modification will not change the facility's status in regards to NAA/NSR. Gaston County as part of Metrolina is designated non-attainment area and classified as a Moderate NAA for ozone. The facility is classified as a major source of NOx with 100 tons per year or more of potential NOx emissions. Future modifications with NOx increases must be evaluated to determine if there is a major modification as the major source threshold is 100 tons per year. PSD avoidance conditions for sulfur dioxide and carbon monoxide remain unaffected.

**NSPS**

Does not apply.

**MACT/NESHAP**

Does not apply as the facility is well below the 10/25 TPY thresholds for Federal HAPs and does not appear to be subject to any MACTs or NESHAPs.

**Air Toxics**

Does not apply as the current permit has a 2D .1100 , 2Q .0317 for 2Q.0700 stipulations for the use of equivalent waste-oil fuel. This modification will not affect these limits. The facility does not appear to be subject to any MACTs and, therefore, does not have to demonstrate compliance with air toxics under the “Last MACT” trigger as specified in 2Q .0705.

**IV. Permit Modifications/Changes**

The following changes incorporated in the permit revision (No. 03590T28) are summarized below:

<b>Page(s)</b>	<b>Section</b>	<b>Description of Change(s)</b>
Cover Letter	NA	Insert NAA Added Annual Fee Requirement Remove 502(B)10 notification requirement
3 & 6	Part I Sources table	Identified boilers subject to RACT and their adjusted ratings. Remove footnote re: 502(B)10
7	2.1 A.	Added RACT and Avoidance 2Q .0317 for the boiler ES-1
8	2.1 A. 3. c. ii.	Revised 2D .0521 monitoring
10	2.1 A. 5.	Added RACT for boiler annual tune-up requirements
11	2.1 A. 6.	Added 2Q .0317 for RACT avoidance (boilers < 50 mmBtu/hr)
11	2.1 B.	Added RACT and 2Q. 0317 for the boiler ES-2 and ES-15
12	2.1 B. 1. d. through g.	Remove monitoring and recordkeeping from .0503 as the requirements are already required by the toxics rule 2Q .0705 (firing waste oil)
12	2.1 B. 2. d. f. and g.	Remove monitoring and recordkeeping from .0516 as the requirements are already required by the toxics rule 2Q .0705 (firing waste oil)
13	2.1 B. 3. c. ii.	Revised 2D .0521 monitoring
14	2.1 B. 4.	Added RACT for boiler annual tune-up requirements
15	2.1 B. 5.	Added 2Q .0317 for RACT avoidance (boilers < 50 mmBtu/hr)
18	2.1 C. 2. c. ii.	Revised 2D .0521 monitoring
21	2.1 D. 2. c. ii.	Revised 2D .0521 monitoring
25	2.2 C. h.	Changed reporting to semi-annual 2Q .0539
35	General Conditions	Updated with new MM. condition for fugitive emissions

Page(s)	Section	Description of Change(s)
NA	Part II	Removed for added No. 2 fuel oil for boilers ES-2 and ES-15

## V. Application Chronology

January 28, 2008	Received application for significant modification 2Q .0501(c)(2) addressing RACT applicability and additional information indicating boilers ES-1 and 2 are less than 50 mmBtu hour rating
February 15, 2008	Application not complete additional information request required
March 3, 2008	Forwarded copy of draft permit to applicant and MRO for review
March 3, 2008	Received comments on draft permit from MRO
March 3,10,13, 2008	Received comments on draft permit from Van Jones, CBP
March 25, 2008	Draft to Supervisor
April XX, 2008	Forwarded final copy of Draft to applicant
April XX, 2008	Forwarded final copy of Draft to MRO
April XX, 2008	Received complete signed application (Form E5) regarding RACT
April XX, 2008	Received comments from applicant on final Draft
April XX, 2008	Received comments from MRO on final Draft
June XX, 2008	Public notice and EPA review
July XX, 2008	Notice and EPA review period over

## VI. Statement of Compliance:

The DAQ has reviewed the compliance status of this facility. In the most recent inspection at this facility conducted on July 11, 2007, by Ms. Jennifer Manning of the Mooresville Regional Office, the facility appeared to be in compliance with all applicable requirements.

## VII. Other Considerations (This application only)

- An application fee of \$834.00 is NOT required since it was for "existing source RACT" applied to this application.
- A zoning consistency determination is NOT required for this application.
- A Professional Engineers Seal is NOT required for this application.
- A thirty-day public notice period and 45 EPA review IS required for this application.
- Emissions Source Module update is not required at this time as a moratorium has been declared.

## VIII. Recommendations

This Title V Permit modification for the CBP-GD facility in Gastonia, Gaston County, North Carolina has been reviewed by the DAQ to determine compliance with all procedures and requirements. The permit and review shall be taken to public notice for a 30-day comment period. The EPA is concurrently allowed 45 days for their review. After this period the permit may be issued.

**It is recommended that Air Permit No. 03590T28 is issued after the pending the 45 day EPA review and the parallel 30 day public notice period is complete. Note: this permit does not include a Part II for construction.**