NORTH CAROLINA DIVISION OF AIR QUALITY

Application Review

Issue Date:

Region: Asheville Regional Office
County: Caldwell
NC Facility ID: 1400139
Inspector's Name: Christopher Scott
Date of Last Inspection: 07/20/2023
Compliance Code: W / Violation - procedures

Facility Data

Applicant (Facility's Name): Pregis Innovative Packaging Inc.

Facility Address:
Pregis Innovative Packaging Inc.
3825 North Main Street
Granite Falls, NC 28630

SIC: 3086 / Plastics Foam Products
NAICS: 32615 / Urethane and Other Foam Product (except Polystyrene) Manufacturing

Facility Classification: Before: Title V **After:** Title V
Fee Classification: Before: Title V **After:** Title V

Permit Applicability (this application only)

SIP: 15A NCAC 02Q .0504 (02Q .0501(b)(2) Part II).
NSPS: NA
NESHAP: NA
PSD: NA
PSD Avoidance: NA
NC Toxics: NA
112(r): NA
Other: NA

Contact Data

Facility Contact	Authorized Contact	Technical Contact
Willis Vance Maintenance Manager (828) 523-4425 3825 North Main Street Granite Falls, NC 28630	David Brooks Plant Manager (828) 523-4402 3825 North Main Street Granite Falls, NC 28630	David Brooks Plant Manager (828) 523-4402 3825 North Main Street Granite Falls, NC 28630

Application Data

Application Number: 1400139.20A
Date Received: 12/07/2020
Application Type: Modification
Application Schedule: TV-Significant

Existing Permit Data
Existing Permit Number: 06552/T11
Existing Permit Issue Date: 09/29/2021
Existing Permit Expiration Date: 06/30/2024

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2022	---	1.65	154.27	0.9800	0.1800	0.0023	0.0022 [Hexane, n-]
2021	---	1.39	239.87	0.8100	0.1700	0.0010	0.0010 [Hexane, n-]
2020	---	1.61	102.51	0.9700	0.1800	0.0030	0.0029 [Hexane, n-]
2019	0.0100	3.56	208.35	2.60	0.0100	0.0386	0.0370 [Hexane, n-]
2018	0.0100	3.28	200.95	2.37	0.0200	0.0345	0.0331 [Hexane, n-]

Review Engineer: Ed Martin

Review Engineer's Signature: **Date:**

DRAFT

Comments / Recommendations:
Issue 06552/T12
Permit Issue Date:
Permit Expiration Date:

1. Purpose of Application

Pregis has submitted this application as Part II of a Significant Modification to replace two natural gas-fired direct flame oxidizers (Control Device ID Nos. CD-1 and CD-2) with one natural gas-fired dual chamber regenerative thermal oxidizer (Control Device ID No. CD- RTO). Pregis received authorization to construct and operate CD-RTO fulfilling Part I of the two-step Title V Significant Modification process in Permit No. 06552T09 (application 1400139.19A), issued March 15, 2019. The current application (1400139.20A) was received on December 7, 2020, within twelve (12) months of commencing operation of CD-RTO as required to complete the second step of the two-step permitting process outlined in 15A NCAC 02Q .0501(b)(2) to modify the construction and operation permit to meet the Title V requirements. Pregis currently operates under Permit No. 06552T11, issued on September 29, 2021.

Subsequent to issuance of the Part I permit, an initial stack test was conducted on CD-RTO on January 7, 2020, to establish the destruction efficiency for CD- RTO and the combined capture efficiency of the enclosures. This stack test was approved by the Division of Air Quality (DAQ) on August 11, 2020. Also, on November 2, 2021, air emissions stack testing was conducted at Pregis to validate a minimum average operating temperature for CD-RTO. On June 2, 2022, the stack test approval letter was sent to Pregis from DAQ. On June 21, 2022, Judy Lee at DAQ sent Pregis a letter requesting them to amend the application to incorporate the latest test results and the requested operating scenarios approved by the Asheville Regional Office (ARO) via email on June 13, 2022 (see Section 6). In response, Pregis submitted a revised application received December 29, 2022.

Under the current Air Quality Permit No. 06552T11, Pregis is permitted to operate under the following operating scenarios:

- Primary Operating Scenario (POS) with emissions from the two extrusion lines controlled by two natural-gas fired direct flame oxidizers (Control Device ID Nos. CD-1 and CD-2).

- Alternative Operating Scenario (AOS#1) with emissions from the two extrusion lines controlled by a single natural gas-fired dual chamber RTO (Control Device ID. CD-RTO).

- Alternative Operating Scenario (AOS#2) was added in Permit No. 06552T11 as an interim scenario until a minimum average operating temperature could be established. Now that the minimum average operating temperature has been established during the November 2, 2021 testing for CD-RTO, AOS #2 is no longer applicable and can be removed from the permit.

Pregis states that the two direct flame oxidizers (CD-1 and CD-2) have been dismantled and removed from the site. As such, Pregis is requesting that these control devices be removed from the permit along with their POS. Therefore, since there is only one operating scenario, no alternate operating scenarios are needed.

To incorporate the results from the stack tests on January 7, 2020, and November 2, 2021, for CD-RTO into the permit, in accordance with the June 13, 2022 email from DAQ (see Section 6), Pregis concurs that the destruction efficiency is 98.6% and the minimum operating temperature of the RTO set at 1,549°F (50°F less than the most recent stack tested temperature). Pregis will assume 0% destruction efficiency if the RTO chamber temperature falls below the minimum permitted temperature. Pregis also concurs with a combined capture efficiency of the enclosures of 64.5% when one extrusion line (ES-1 or ES-2) is running and 95.1% when both lines are running (ES-1 and ES-2).

This permit change is a significant Title V permit modification pursuant to rule 15A NCAC 02Q .0501(b)(2) Part II. A 30-day public notice and 45-day EPA review of the draft permit is required.

The technical review for the Part I application (1400139.19A) is attached to this document beginning on page 10 of this review.

2. Facility Description

Pregis operates a polyethylene foam packaging manufacturing facility in Granite Falls, North Carolina. The foam is made using two extrusion lines (ID Nos. ES-1 and ES-2). Pregis produces low density polyethylene foam using isobutane (non-HAP/VOC) as the blowing agent. The facility produces foam and film packaging products (for protective packaging and furniture packaging), flooring underlayment and foam bags. They currently operate two polyethylene sheet foam extrusion lines. Polyethylene foam sheets are produced by feeding virgin and reclaimed pellets, color pellets, nucleating agent pellets, and blowing agent to the extruders. Polyethylene pellets are blended, extruded, and then blown with a non-HAP/VOC to create the foam. Formed sheets are allowed to de-gas and then are wound on a roll. VOC emissions are the primary source of air pollution from the facility. Also, permitted sources include a finished goods warehouse (ID No. ES- FGW) and several insignificant activities.

During the most recent inspection, the facility reported operating 24 hours a day, 7 days a week, employing approximately 65-70 people.

3. Application Chronology

March 15, 2019	Pregis was issued Permit No. 06552T09 (1400139.19A) to replace two natural gas-fired direct flame oxidizers (Control Device ID Nos. CD-1 and CD-2) with one natural gas-fired dual chamber regenerative thermal oxidizer (Control Device ID No. CD- RTO), fulfilling Part I of the two-step Title V Significant Modification process for the current Significant Modification Part II under review. Pregis elected to permit this project using the two-step permitting process outlined in 15A NAC 02Q .0501(b)(2) and submitted an application for a Title V Minor Modification Prior to Permit Revision.
July 8, 2019	Permit No. 06552T10 was issued for permit renewal including changes for the minor modification.
December 7, 2019	**T**he dual chamber regenerative thermal oxidizer (CD-RTO) began operation.
January 7, 2020	VOC control efficiency testing of foam extrusion Lines ES-1 and ES-2 was conducted (see testing in Section 6 below).
June 25, 2020	Memo from Shannon Vogel to Brendon Davey with the results of the January 7, 2020 VOC control efficiency testing of foam extrusion lines ES- 1 and ES-2. The results are acceptable (see testing in Section 6 below).
August 11, 2020	A stack test report letter was sent to Mr. Brooks, Responsible Official, at Pregis, from Chris Scott/Richard Morris at the with the June 25, 2020 report memo (above) attached stating the test results from the January 7, 2020 EPA Method 25A VOC emissions testing are acceptable to establish the destruction efficiency of the thermal oxidizer and combined capture efficiency of the enclosures and that these tests satisfy the testing requirements as stated in the subject permit.
December 7, 2020	The initial application 1400139.20A for a Title V Significant Modification Part II was received and complete for processing.
September 29, 2021	Pregis was issued an updated Title V Air Quality Permit No. 06552T11 (1400139.21A) as a Title V Minor Modification to update the RTO temperature permit limits to better reflect the range of operations at the facility.
November 2, 2021	Air emissions stack testing was conducted at Pregis to validate a minimum average operating temperature for the RTO (see testing in Section 6 below).

May 20, 2022	Memo sent to Brendon Davey from Shannon Vogel for VOC efficiency testing of the natural gas thermal oxidizer CD-RTO performed November 2, 2021with only foam extrusion Line ES-2 operating (see testing in Section 6 below).
June 2, 2022	A stack test report letter was sent to Mr. Brooks at Pregis from Lisa Whitaker at DAQ with the May 20, 2020 memo from Shannon Vogel (above) attached for the November 2, 2021 air emissions stack testing.
June 13, 2022	An email sent to Mr. Brooks at Pregis from Brendan Davey at the ARO discusses the latest test results and the requested operating scenarios.
June 21, 2022	DAQ sent a letter to Mr. David Brooks from Judy Lee requesting that Pregis amend application 1400139.20A, submitted on December 7, 2020, to incorporate the latest test results and the requested operating scenarios approved by the ARO via email on June 13, 2022.
December 29, 2022	A revised application was received.
June 22, 2023	Responsibility for application transferred to Ed Martin.
December 29, 2023	Sent the draft permit for supervisor's review.
January 4, 2024	Sent the draft permit to the Stationary Source Compliance Branch, Applicant, and the Asheville Regional Office for review.
January 10, 2024	Received Applicant's comments on the draft permit.
xx	Sent the draft permit to 30-day public notice and 45-day EPA review.
xx	Public notice period ended.
xx	EPA's comment period ended.
xx	Air permit No. 06552T12 was issued.

4. Emissions

Pollutants emitted from the facility include nitrogen oxides (NOx); carbon monoxide (CO); volatile organic compounds (VOCs); sulfur dioxide (SO_2); particulate matter (PM); PM less than 10 microns in diameter (PM_{10}); PM less than 2.5 microns in diameter ($PM_{2.5}$); hazardous air pollutants (HAPs); and toxic air pollutants (TAPs).

The majority of air pollutants emitted from this facility will be VOC emitted from the extrusion process related to ES-1, ES-2, and ES-FGW. Potential VOC emissions from these emission sources were estimated using the mass balance formula specified in the facility' s permit using maximum throughput rates and conservative VOC retention estimates based on data for worst-case foam products. Detailed emission calculations are included in Appendix B of the application. Controlled VOC emissions estimates include a 98.6% destruction efficiency for CD-RTO based on the stack test conducted on November 2, 2021.

PM and HAP potential emission rates from the extrusion lines, blown film line, converting operations, and reclaim operations were based on stack test data from a similar facility, assuming maximum throughput rates and 8,760 hours per year of operation.

Potential emissions from natural gas combustion associated with the RTO were calculated based on the maximum firing rate of the RTO and emission factors from the DAQ Natural Gas Combustion Spreadsheet and EPA' s AP-42, Fifth Edition, Volume 1, Section 1.4 Natural Gas Combustion for

boilers with ratings less than 100 MMBtu/hr. The potential emissions calculations assume emission factors based on an average natural gas high heating value of 1,020 Btu/scf in accordance with AP- 42 Section 1.4 Natural Gas Combustion.

Potential annual emissions assume 8,760 hours of operation. The permit has a PSD avoidance condition to limit facility-wide VOC emissions to less than 250 tons per 12-month period. Pregis is not requesting an update to this limit. A locking mechanism prevents the extrusion line emission sources from operating without the RTO, ensuring emissions will remain below 250 tons per year. Monthly emissions will continue to be calculated and reported to ensure compliance with this limit. A summary of facility-wide potential emissions is included in Table 1.

Table 1. Facility- Wide Potential Emissions

Pollutant	Potential Emissions[1] (tpy)
NOx	1.37
CO	1.15
VOC[2]	250
PM_{10}	1.31
$PM_{2.5}$	0.95
SO_2	0.01
Total HAP	0.15
CO2e	1,640

[1] Includes permitted sources, CD- RTO, and insignificant sources.
[2] VOC emissions from ES-1, ES-2, and ES-FGW are limited to less than 250 tons per year (Permit Condition 2.1 A.5.a) to avoid PSD applicability. Pregis is not requesting an update to this limit or permit condition.

5. Permit Changes

The following table describes the modifications to the current permit. This summary is not meant to be an exact accounting of each change but a summary of those changes.

Page No(s).	Section	Description of Changes
Cover	Throughout	Added new cover letter with new format. Amended permit numbers and dates.
4	1	Removed page numbers as they are no longer needed. Removed footnote ** for the 02Q .0515 minor modification.
4	1, table	Removed Primary Operating Scenario (POS). Removed control devices CD-1 and CD-2.
	2.1 A	Removed natural gas-fired direct flame oxidizers (ID Nos. CD-1 and CD-2) and reference to POS and AOS.
5	2.1 A, table	Removed 15A NCAC 02Q .0508(j) alternative operating scenarios.
6-8**	2.1 A.5.c through h**	Removed Primary Operating Scenario (POS).
8-10**	2.1 A.5.i through n**	Moved requirements from Alternative Operating Scenario (AOS) #1 to Section 2.1 A.5.c through h without an operating scenario.
10-12**	2.1 A.5.o through w**	Removed Alternative Operating Scenario #2.
12**	2.1 A.6**	Removed 15A NCAC 02Q .0508(j) alternative operating scenarios.
10	3	Created this new section for insignificant activities.
11-18	4	Created this new section and moved General Conditions to this section. Updated General Conditions to version 7.0, dated 08/21/2023.

**Current permit page number or section.

6. Testing

Testing was performed on the following two dates for which the results are used in the permit calculations in Section 2.1 A.5.e of the permit:

- January 7, 2020. This is from a June 25, 2020 memo from Shannon Vogel to Brendon Davey. VOC control efficiency testing of foam extrusion lines ES-1 and ES-2 was performed using EPA Method 25A at the ES-1 and ES-2 line outlets to determine the inlet VOC mass rates and at the CD-RTO stack for outlet VOC emissions. The VOC test results were acceptable at that time to establish the CD-RTO destruction efficiency and combined capture efficiency of the enclosures. The capture efficiency was 95.1% and the destruction efficiency was 99.2% (this was later superseded by the destruction efficiency of 98.6%determined in the November 2, 2021 testing below and as discussed in Brenda Davey's June 13, 2022 email below).

- November 2, 2021. The following is from a May 20, 2022 memo from Shannon Vogel to Brendon Davey for VOC efficiency testing of the natural gas thermal oxidizer CD-RTO performed with only foam extrusion line ES-2 operating.

  ESS performed EPA Method 25A simultaneously at the line ES-2 outlet [inlet VOC mass rate] and at the CD-RTO stack [outlet VOC] as follows:

Capture Efficiency 64.5%
Destruction Efficiency 98.6%
RTO Temperature 1,599F

VOC testing was conducted to demonstrate compliance (with CE and DE) and to determine the minimum average operating temperature of the control device. In order to achieve the lowest possible combustion chamber temperature, only one extrusion line (ES-2) was operated during the stack test. The test results were acceptable except for the following.

In the December 27, 2021, cover letter for the test report, Ramboll reported "an average operating temperature of 1,599°F." Please note that Ramboll referenced testing from January 7, 2020) and an overall capture efficiency for that testing of 99.2%. This reference is incorrect. The overall capture efficiency from the January 7, 2020 testing was 95.1% as discussed in my memo dated June 25, 2020. The referenced individual CE values for ES-1 and ES-2 are not acceptable.

A June 13, 2022 email was sent to the Responsible Official, Mr. David Brooks, from Brendan Davey at the ARO, summarizing the latest test results and the requested operating scenarios as follows:

This Office forwarded you a stack test approval letter on June 2, 2022 regarding air emissions stack testing conducted at Pregis Innovative Packaging, Inc. on November 2, 2021. In addition, the stack test report cover letter submitted by Pregis on December 27, 2021 requested approval for certain items related to the stack testing and air emissions calculations. This email serves to supplement the June 2 DAQ letter and grant certain approvals as requested.

In the December 27, 2021 letter Pregis indicated:

In accordance with Sections 2.1 A.5.d and 2.1 A.5.e.i, Pregis requests approval of the November 2, 2021 stack test report as demonstration of a destruction efficiency of 98.6% at the minimum operating temperature of the RTO. Per Section 2.1 A.5.d, the RTO shall be maintained at an operating temperature no less than 50°F below the most recent stack tested temperature, and Pregis shall assume no emissions control for any period during which the minimum combustion temperature is not met. Therefore, when conducting monthly VOC emissions calculations, Pregis requests approval to conservatively assume 98.6% control efficiency at all times the minimum permit temperature is met (at or above 1,549°F) and 0% control efficiency if the RTO chamber temperature falls below the minimum permit temperature.

This office is in agreement with this request.

Pregis also indicated:

Therefore, Pregis requests that the November 2, 2021 stack tested capture efficiency only be approved for the scenario when only ES-2 is operating. In order to accurately reflect monthly VOC emissions and annual emissions submitted with each annual emissions inventory, Pregis requests that a capture efficiency of 64.5% be assumed when only one line is operating and a capture efficiency of 99.2% be assumed when both lines are operating.

This Office is in agreement with the 64.5% capture efficiency claimed when one line is running. You may have a typo for the two lines running capture efficiency claimed above. This Office agrees the capture efficiency from the January 7, 2020 test may be used for two lines running, which is 95.1% in our records and not 99.2%.

The permit will be revised to incorporate the above test results and the requested operating scenarios.

7. Public Notice

Pursuant to 15A NCAC 02Q .0521, a notice of the draft Title V Operating Permit will be published on the DAQ website to provide for a 30-day comment period with an opportunity for a public hearing. Copies of the draft (proposed) permit, review and public notice will be sent to EPA for their 45-day review, to persons on the Title V mailing list, to the Asheville Regional Office, and to the Permittee.

8. Other Requirements

PE Seal
NA. No controls are being added.

Zoning
There is no expansion of the facility, therefore zoning consistency is not needed.

Fee Classification
The facility fee classification before and after this modification will remain as "Title V".

Removing the emergency affirmative defense provisions in operating permits
EPA has promulgated a rule (88 FR 47029, July 21, 2023), with an effective date of August 21, 2023, removing the emergency affirmative defense provisions in operating permits programs, codified in both 40 CFR 70.6(g) and 71.6(g). EPA has concluded that these provisions are inconsistent with the EPA's current interpretation of the enforcement structure of the CAA, in light of prior court decisions[1]. Moreover, per EPA, the removal of these provisions is also consistent with other recent EPA actions involving affirmative defenses[2] and will harmonize the EPA's treatment of affirmative defenses across different CAA programs.

As a consequence of this EPA action to remove these provisions from 40 CFR 70.6(g), it will be necessary for states and local agencies that have adopted similar affirmative defense provisions in their Part 70 operating permit programs to revise their Part 70 programs (regulations) to remove these provisions. In addition, individual operating permits that contain Title V affirmative defenses based on 40 CFR 70.6(g) or similar state regulations will need to be revised.

Regarding NCDAQ, it has not adopted these discretionary affirmative defense provisions in its Title V regulations (15A NCAC 02Q .0500). Instead, DAQ has chosen to include them directly in individual Title V permits as General Condition (GC) J.

Per EPA, DAQ is required to promptly remove such impermissible provisions, as stated above, from individual Title V permits, after August 21, 2023, through normal course of permit issuance.

Facility Review of 1-Bromopropane
The EPA has added a new HAP (1-bromopropane) to the CAA §112(b) list and started regulating its emissions effective February 4, 2022.

[1] NRDC v. EPA, 749 F.3d 1055 (D.C. Cir. 2014).
[2] In newly issued and revised New Source Performance Standards (NSPS), emission guidelines for existing sources, and NESHAP regulations, the EPA has either omitted new affirmative defense provisions or removed existing affirmative defense provisions. See, e.g., National Emission Standards for Hazardous Air Pollutants for the Portland Cement Manufacturing Industry and Standards of Performance for Portland Cement Plants; Final Rule, 80 FR 44771 (July 27, 2015); National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters; Final Rule, 80 FR 72789 (November 20, 2015); Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Commercial and Industrial Solid Waste Incineration Units; Final Rule, 81 FR 40956 (June 23, 2016).

Pregis was asked on December 22, 2023, that the Title V application be updated for any emissions of this pollutant, both on an equipment-specific basis and facility-wide total basis for both actual and PTE emissions.

In an email from Pregis dated January 10, 2024, David Brooks responded that they have checked all their processes and do not expect any emissions related to HAP (1-bromopropane).

9. Comments on the Draft Permit

The draft permit was sent to the Applicant, Samir Parekh in Stationary Source Compliance Branch, and Christopher Scott at the Asheville Regional Office on January 4, 2024, for review.

Pregis Comments (email to Ed Martin from David Brooks dated January 10, 2024)
In a marked-up permit, Pregis had only one minor comment regarding the permit statement on the cover page where the date had not yet been filled in for when the renewal application is to be submitted. Prigis noted: "A renewal application was submitted to NCDEQ on December 5, 2023."

Response
Josie Bates (consultant) who made the comment, was notified the date would be added before the permit is issued.

SSCB Comments (email to Ed Martin from Samir Parekh dated January 16, 2024)
SSCB had no comments.

No comments were received from Christopher Scott at ARO.

10. Recommendations

TBD

NORTH CAROLINA DIVISION OF AIR QUALITY

Attachment – PART I Application Review

Issue Date: March 15, 2019

Region: Asheville Regional Office
County: Caldwell
NC Facility ID: 1400139
Inspector's Name: Christopher Scott
Date of Last Inspection: 09/25/2018
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): Pregis Innovative Packaging Inc.

Facility Address:
Pregis Innovative Packaging Inc.
3825 North Main Street
Granite Falls, NC 28630

SIC: 3086 / Plastics Foam Products
NAICS: 32615 / Urethane and Other Foam Product (except Polystyrene) Manufacturing

Facility Classification: Before: Title V **After:** Title V
Fee Classification: Before: Title V **After:** Title V

Permit Applicability (this application only)

SIP: 15A NCAC 02Q .0508(f), 02Q .0515
NSPS: N/A
NESHAP: N/A
PSD: N/A
PSD Avoidance: Add POS/AOS & changes in MRRR
NC Toxics: N/A
112(r): N/A
Other:

Contact Data

Facility Contact	Authorized Contact	Technical Contact
Willis Vance Maintenance Manager (828) 396-2373 3825 North Main Street Granite Falls, NC 28630	David Brooks Plant Manager (828) 396-2373 3825 North Main Street Granite Falls, NC 28630	George Allen Director of Technical Services (559) 651-0951 8201 West Elowin Court Visalia, CA 93291

Application Data

Application Number: 1400139.19A
Date Received: 12/31/2018
Application Type: Modification
Application Schedule: TV-Minor

Existing Permit Data
Existing Permit Number: 06552/T08
Existing Permit Issue Date: 08/18/2014
Existing Permit Expiration Date: 07/31/2019

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2017	0.0100	3.81	245.13	2.84	0.0200	0.0460	0.0441 [Hexane, n-]
2016	0.0100	2.74	146.16	2.76	0.1900	0.0375	0.0363 [Hexane, n-]
2015	0.0100	3.02	143.81	2.84	0.2800	0.0364	0.0349 [Hexane, n-]
2014	0.0100	3.11	160.14	2.91	0.2800	0.0371	0.0356 [Hexane, n-]
2013	0.0200	1.87	154.85	1.57	0.1500	0.0352	0.0337 [Hexane, n-]

Review Engineer: Judy Lee Review Engineer's Signature: Date: March 15, 2019	Comments / Recommendations: Issue: 06552/T09 Permit Issue Date: March 15, 2019 Permit Expiration Date: July 31, 2019

I. Purpose of Application

This permitting action is a minor modification of an existing Title V Permit pursuant to 02Q .0515. An application (Application ID No. 1400139.19A) was received on **December 31, 2018** in the Asheville Regional Office (ARO). The Division of Air Quality (the Division or DAQ) Raleigh Central Office (RCO) received the application on January 4, 2019; however, it was **incomplete** for processing based on the criteria for implementing "Title V (TV) Minor Modifications" under 15A NCAC 02Q .0515 detailed below:

Implementing "TV Minor Modifications" Prior to Permit Revision
In accordance with 15A NCAC 02Q .0515, Title V permittees may make changes to their facility prior to receiving a revised permit if the following four (4) conditions are met:

1) **The change is a "minor modification" under 15A NCAC 02Q .0515 and does not revise any state-enforceable only portion of the permit.**
2) **The Permittee submits a complete Title V permit application.**
3) **The Permittee has received an acknowledgment letter that the application is complete.**
4) **The Permittee follows the proposed interim permit terms and conditions and any other applicable requirements governing the change(s) until the DAQ takes final action on the application.**

The applicant, Pregis Innovative Packaging Inc. (Pregis), requests addition of a proposed natural gas-fired dual chamber regenerative thermal oxidizer (CD-RTO) with an alternative operating scenario (AOS). The planned RTO is fueled by natural gas (NG) with a flameless nitrogen oxide (NOx) free NG injection operation, capacity of 12,000 standard cubic feet per minute (scfm) with typical operating temperatures between 1,500 and 1,600 degrees Fahrenheit.

- Renewal of an existing Title V permit pursuant to 02Q .0513. The existing Title V permit **(06552T08)** was issued on **August 18, 2014**, and expired on **July 31, 2019**. The renewal application was received on **September 20, 2018** in the ARO, or at least nine months prior to the expiration date. Therefore, the existing permit shall not expire until the renewal permit has been issued or denied. All terms and conditions of the existing permit will remain in effect until the renewed permit has been issued or denied. The renewal application (Application ID No. 1400139.18A) will be processed separately from this minor application.

II. Facility Description

Pregis manufactures polyethylene foam packaging products. Pregis produces low density polyethylene foam using isobutane (non-HAP/VOC) as the blowing agent. The facility produces foam and film packaging products (for protective packaging and furniture packaging), flooring underlayment and foam bags. They currently operate two polyethylene sheet foam extrusion lines. Polyethylene foam sheets are produced by feeding virgin and reclaimed pellets, color pellets, nucleating agent pellets, and blowing agent to the extruders. Formed sheets are allowed to de-gas and then are wound on a roll. Extruder emissions are each routed to a separate thermal oxidizer for

Volatile Organic Compounds (VOCs) destruction. The facility previously reported operating 24 hours a day, 7 days a week; and employs approximately 65-70 people.

The proposed modification would allow an alternative operating scenario (AOS) in which the two extrusion lines would each be routed to their existing control devices OR the new proposed RTO.

III. Compliance History/Statement

A notice of violation was issued December 10, 2010 of permit condition 2.1 A.6.a of Air Permit No. 06552T07 for exceeding the 250 tons per year VOC limit for the 12-month periods ending February 2010 and Mach 2010.

During the most recent compliance inspection performed on September 25, 2018, Mr. Christopher Scott of the ARO indicated that the facility appears to be in compliance with all applicable air quality regulations and Air Quality Permit No. 06552T08.

In accordance with the provisions of 15A NCAC 2Q .0520 and .0515(b)(4) the Responsible Official, Mr. David Brooks, Plant Manager, has signed the required Title V Compliance Certification - Form E5 dated December 11, 2018.

IV. History/Background/Application Chronology

Please see the attached Comprehensive Application Report for 1400139.19A and email correspondence for more details.

August 18, 2014 – Renewed Title V Permit Number 06552T08 was issued to Pregis Innovative Packaging Inc.

September 21, 2016 – The Company conducted stack testing on lines ES-1 and ES-2 to fulfill the permit's PSD avoidance condition testing requirement to test on or by August 15, 2016 (extension granted on August 12, 2016 to November 30, 2016) for VOC emissions.

June 28, 2018 – Stack testing on lines ES-1 and ES-2 to fulfill the permit's PSD avoidance condition was approved per Memorandum from Shannon Vogel, Stationary Source Compliance Branch (SSCB) to Brendan Davey, P.E., Asheville Regional Office (ARO).

December 31, 2018 – Pregis renewal application was received in the ARO.

January 8, 2019 – An incomplete Title V Minor Acknowledgement letter was sent to Mr. David Brooks, Plant Manager, Pregis Innovative Packaging Inc. indicating that the application submittal was deemed incomplete for processing.

January 8, 2019 – An email from Mr. George Allen, Pregis, showing that a check (#30230955) in the amount of $947.00 was sent to NC DEQ, 2090 US 70 HWY, Swannanoa, NC on December 21, 2018 was received in RCO.

January 9, 2019 – An email from Mr. Patrick Ballard, ARO forwarding the zoning determination for the Pregis application (1400139.19A) from the Town of Granite Falls was received in RCO.

January 10, 2019 – The Zoning Consistency Determination from the Town of Granite Falls on behalf of Pregis was received in RCO.

February 7, 2019 – An email regarding the Zoning Consistency Determinations delivery tracking information to the Town of Granite Falls and Caldwell County on behalf of Pregis was received in RCO.

February 8, 2019 – Complete application forms (Forms B, D1 and E1) were submitted via email with the emissions data for the proposed RTO and facility-wide emissions information.

February 11, 2019 – An email regarding the Zoning Consistency Determination information from Caldwell County to the Town of Granite Falls on behalf of Pregis indicating that the facility's location falls to the Town of Granite Falls jurisdiction was received in RCO.

February 14, 2019 – A check in the amount of $947.00 was received from Pregis in RCO; thus, the minor application was deemed complete for processing.

February 15, 2019 – A complete Title V Minor Acknowledgement letter was sent to Mr. Brooks, Plant Manager, Pregis Innovative Packaging Inc. indicating that the application submittal was deemed complete for processing as of February 14, 2019.

February 19, 2019 – An email from Mrs. Velthuisen, Ramboll, providing the heat input capacity of the proposed RTO, PTE emissions and updated proposed MRRR.

February 26, 2019 – Draft permit and review to supervisor for review.

March 4, 2019 – Comments on draft permit and review from supervisor.

March 5, 2019 – Draft permit and review to applicant, ARO and Samir Parekh, SSCB.

March 7, 2019 – Comments on draft permit and review from Mr. Parekh, SSCB.

March 13, 2019 – Comments on draft permit from applicant.

March 15, 2019 – Comments on draft permit and review from Mr. Scott, ARO.

V. Permit Modifications/Changes and Title V Equipment Editor (TVEE) Discussion

The following table describes the modifications to the current permit 06552T08 as part of this minor modification:

Page No.	Section	Description of Changes
Cover Letter	N/A	• Updated cover letter with application number, permit numbers, dates, fee class, PSD class and new letterhead • Updated authorized contact information for the facility • Added minor modification language for CD-RTO • Added increment statement

Page No.	Section	Description of Changes
Attachment	Insignificant activity list	• Changed "battery changing station" to "battery charging station"; "blend operations" to "blending operations"
Attachment	Table of Changes	• Revised for changes made to permit for this modification
Permit Cover	N/A	• Inserted new issuance and complete application date, application number, facility information • Added minor modification language for CD-RTO
Page 3	Section 1	• Added Primary and Alternative Operating Scenarios (POS and AOS) to foam extrusion lines (ID Nos. ES-1 and ES-2) for addition of the proposed new thermal oxidizer (ID No. CD-RTO) • Added new natural gas-fired dual chamber thermal oxidizer (ID No. CD-RTO)
Permit – Globally	Section 2 and Section 3	• Updated regulation references from "2D" and "2Q" to "02D" and "02Q" to be consistent with regulation nomenclature
Pages 3 – 10	Section 2.1 A	• Added new dual chamber thermal oxidizer • Revised PSD Avoidance Condition to include new monitoring, recordkeeping and reporting requirements for RTO • Added AOS and PSD Avoidance Condition MRRR for new RTO (ID No. CD-RTO) • Removed "15A NCAC 02D .0958: **Volatile Organic Compounds"** • Added 15A NCAC 02Q .0508(j): ALTERNATIVE OPERATING SCENARIOS [15A NCAC 02Q .0508(j)]
Pages 11 – 20	Section 3	• Updated General Conditions (**Version 3.6 01/31/12 replaced with Version 5.3, 08/21/2018**)

Modifications to TVEE were required as a result of this permit modification.

TVEE changes were reviewed and approved on March 5, 2019. See Permit Modification Tracking slip for confirmation.

VI. Regulatory Review

The facility is currently subject to the following regulations:

15A NCAC 2D .0515, Particulates from Miscellaneous Industrial Processes
15A NCAC 2D .0516, Sulfur Dioxide Emissions from Combustion Sources
15A NCAC 2D .0521, Control of Visible Emissions
15A NCAC 2D .0958, Work Practices for Sources of Volatile Organic Compounds (Remove – no longer applicable in Caldwell County)
15A NCAC 2D .1806, Control and Prohibition of Odorous Emissions
15A NCAC 2Q .0317, Avoidance Conditions (for 15A NCAC 2D .0530, Prevention of Significant Deterioration)

A regulatory review for all above listed requirements will not be included in this document. The facility has shown a history of complying with these existing rules. Continued compliance is indicated. Only the rules affected by this minor permit application request will be discussed in detail below.

Per email correspondence from Ms. Velthuisen on February 19, 2019, the proposed Natural gas-fired dual chamber thermal oxidizer will have a maximum heat input capacity of 3.2 million Btu per hour.

- 15A NCAC 2Q .0317, Avoidance Conditions for 15A NCAC 2D .0530, Prevention of Significant Deterioration (PSD) (Refer to Section VII. 6 below for more details).

Pregis is currently subject to a less than 250 tons per year (tpy) PSD Avoidance Condition for Volatile Organic Compounds (VOCs). As part of this minor modification request, the existing less than 250 tpy PSD Avoidance Condition for VOCs will be modified to include the proposed new RTO and alternative operating scenario.

The facility provided adequate monitoring, recordkeeping and reporting requirements (MRRR) with the minor permit modification request, with the exception of testing within 180 days of beginning operation of the RTO. This is a standard requirement (Standard Title V shell language requires testing be completed and results submitted within 180 days of beginning operation/permit issuance unless an alternate date is approved by DAQ) when adding or modifying equipment under a PSD Avoidance condition. In addition, the facility has previously been required to test the existing thermal oxidizer within 2 years of permit issuance to demonstrate compliance with the PSD Avoidance limitation. Per the last permit renewal, the testing requirement was due on or by August 15, 2016; however, the facility was granted an extension to November 30, 2016. By the time this renewed permit is issued it will be past the normal 2 year testing schedule; thus, the existing RTO will be required to test within 180 days of permit issuance, unless an alternate date is approved by DAQ per standard guidance.

As part of this minor permit modification the following MRRR associated with the proposed additional dual chamber RTO (ID No. CD-RTO) equipment were proposed by Pregis and submitted via email on February 19, 2019. The requested proposed condition (inserted below) has been added to the revised permit with some modifications (i.e., capture efficiency updated per testing, testing requirement per Title V guidance, etc.):

- **Proposed Revised Monitoring, Recordkeeping, and Reporting Requirements for the facility in Granite Falls, NC**

6. 15A NCAC 2Q .0317: AVOIDANCE CONDITIONS for 15A NCAC 2D .0530: PREVENTION OF SIGNIFICANT DETERIORATION

a. In order to avoid applicability of 15A NCAC 2D .0530 as requested by the Permittee, the volatile organic compound (VOC) emissions from these sources (**ID No. ES-1 and ES-2**) and the finished goods warehouse (**ID. No. ES-FGW**) shall be less than 250 tons per consecutive twelve-month period combined.

Testing [15A NCAC 2D .2601]

b. If emissions testing is required, the Permittee shall perform such testing in accordance with 15A NCAC 2D .2601 and General Condition JJ. If the results of this test are

above the limit given in Section 2.1 A.6.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530.

c. Under the provisions of NCGS 1430215.108, the Permittee shall demonstrate compliance with the emission limit above by testing each of the control devices (**ID Nos. CD-1, CD-2, and CD-RTO**) for VOC destruction efficiency and capture efficiency in accordance with a testing protocol approved by DAQ. The Permittee shall test the control devices (**ID Nos. CD-1, CD-2, and CD-RTO**) within [**To be determined**] of the issuance of this permit on or by [**Date**]. The Permittee shall also determine the average operating temperatures of the control devices (**ID Nos. CD-1, CD-2, and CD-RTO**) during this test. Details of the emissions testing and requirements can be found in General Condition JJ.

Operating Scenario 1: two natural-gas flame oxidizers, CD-1 controlling emissions from ES-1 and CD-2 controlling emissions from CD-2

Monitoring/Recordkeeping [NCAC 2Q .0508(f)]

d. The Permittee shall monitor and record the 3-hour average combustion chamber temperature for each thermal oxidizer **(ID No. CD-1 and CD-2)** using continuous temperature reading and recording instruments. The operating temperature shall be measured at the same location used to establish the average operating temperatures during the oxidizer control device VOC destruction efficiency tests required in Section 2.1 A.6.c above. The charts from these instruments shall be kept on-site for a period of five years after the date on which the record was made. These records shall be made available to DAQ personnel upon request. The thermal oxidizers (**ID Nos. CD-1 and CD-2)** shall be maintained at an operating temperature no less than 50 degrees Fahrenheit below the average temperature (as recorded during the most recent test of the control device for VOC destruction efficiency. The Permittee shall assume no emissions control for any period during which the minimum combustion temperature is not met.

e. The Permittee shall calculate the VOC emissions on a monthly basis to ensure compliance with Section 2.1 A.6.a above. VOC emissions shall be calculated by multiplying the total amount of each type of VOC-containing material consumed during the month by the VOC content of the material (i.e., VOC usage), and accounting for capture and control efficiency where applicable. VOC emissions emitted from the oxidizers **(ID Nos. CD-1 and CD-2)** shall be calculated on a monthly basis as follows using the following methodology:

Granite Falls Mass Balance Line 1	**Symbol/Formula**	
Total Solids Processed (w/out lam)	Ml	lbs
VOC used in foaming process	m2	lbs
Laminate used	m3	lbs
Product SGO solids	m4	lbs
Capture efficiency for ext. die to winder	Ce	% tested = **90.3**
RTO destruction efficiency	De	% tested = **99.6**
VOC retention at winder	Wl	% in foam

Granite Falls Mass Balance Line 1	**Symbol/Formula**	
Solids content of product SGO	m5=m4	lbs
Solids content of scrap	m6 =ml +m3 -m5	lbs
Amount of VOC at the winder	m7 = wl/(l -wl)*(m l+ m3)	lbs
VOC available for capture	m8 =m2-m7	lbs
VOC destroyed	m9 = m8 x ce x de	lbs
Process emissions	El = m8 - m9	lbs
voc in scrap	E2 = m6 x (wl /(1 - wl))	lbs
VOC retention after 14 days	w2	% tested
VOC released during product storage	E3 = (wl / (l-wl)-w2 / (1-w2)) x m5	lbs
Total emissions Line 1	E =El+ E2 + E3	lbs
Granite Falls Mass Balance Line2	**Symbol/Formula**	
Total Solids Processed (w/out lam)	Ml	lbs
VOC used in foaming process	m2	lbs
Laminate used	m3	lbs
Product SGO solids	m4	lbs
Capture efficiency for ext. die to winder	Ce	% tested= **80.3**
RTO destruction efficiency	De	% tested = **99.6**
VOC retention at winder	Wl	% in foam
Solids content of product SGO	m5=m4	lbs
Solids content of scrap	m6 = ml + m3 - m5	lbs
Amount of VOC at the winder	m7 = wl/(l-wl)*(ml+m3)	lbs
VOC available for capture	m8 =m2-m7	lbs
VOC destroyed	m9 = m8 x ce x de	lbs
Process emissions	El =m8-m9	lbs
voc in scrap	E2 = m6 x (wl /(1 -wl))	lbs
VOC retention after 14 days	w2	% tested
VOC released during product storage	E3 = (wl / (1-wl)-w2 / (l-w2)) x m5	lbs
Total emissions Line 1	E =El+ E2+ E3	lbs
Monthly Tons of Emissions	Sum=E(Line 1) + E(Line2)	tons

i. Substitution of capture and control efficiencies established by a DAQ approved protocol and stack test shall be required when the stack test is deemed a valid test by the DAQ. In such cases a permit modification shall not be required.

ii. The Permittee shall assume that the **control efficiency** is **0%** by weight for any period during which the control device is operating under start-up, shutdown or malfunction conditions. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530 of the amounts of VOC containing materials are not monitored and recorded or if emissions exceed the limit in Section 2.1 A.6.a above.

In addition, the Permittee must make available to officials of the DAQ, upon request, copies of the monthly emissions log.

f. To comply with the provisions of this permit and ensure that emissions do not exceed the regulatory limits, the Permittee shall perform periodic inspection and maintenance on the thermal oxidizers **(ID Nos. CD-1 and CD-2)** as recommended by the manufacturer. As a minimum, the inspection and maintenance requirement shall include the following:
   i. a monthly visual inspection of the system ductwork and capture system for leaks;
   ii. a semi-annual inspection of the enclosures to ensure structural integrity and smoke tube verification of inward flow; and
   iii. an annual (for each 12-month period following the initial inspection) internal inspection of each of the primary heat exchangers and associated inlet/outlet valves to ensure structural integrity of the systems.
   The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530 if the control systems are not inspected and maintained.

g. The results of all inspections and any variance from manufacturer's recommendations or from those given in the permit (when applicable) shall be investigated with corrections made and dates of actions recorded in a logbook. Records of all maintenance and monitoring activities shall be recorded in the logbook. The logbook (in written or electronic format) shall be kept on-site and made available to DAQ personnel upon request. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530 if these records are not maintained.

Operating Scenario 2: One natural-gas fired RTO (CD-RTO) controlling emissions from ES-1 and ES-2

Monitoring/Recordkeeping [NCAC 2Q .0508(f)]

h. The Permittee shall monitor and record the 3-hour average combustion chamber temperature for the RTO **(ID No. CD-RTO)** using continuous temperature reading and recording instruments. The operating temperature shall be measured at the same location used to establish the average operating temperatures during the oxidizer control device VOC destruction efficiency tests required in Section 2.1 A.6.c. The charts from these instruments shall be kept on-site for a period of five years after the date on which the record was made. These records shall be made available to DAQ personnel upon request. The RTO **(ID No. CD-RTO)** shall be maintained at an operating temperature no less than 50 degrees Fahrenheit below the average temperature (as recorded during the most recent test of the control device for VOC destruction efficiency). The Permittee shall assume no emissions control for any period during which the minimum combustion temperature is not met.

i. The Permittee shall calculate the VOC emissions on a monthly basis to ensure compliance with Section 2.1 A.6.a above. VOC emissions shall be calculated by multiplying the total amount of each type of VOC-containing material consumed during the month by the VOC content of the material (i.e., VOC usage), and accounting for capture and control efficiency where applicable. VOC emissions emitted from the RTO **(ID No. CD-RTO)** shall be calculated on a monthly basis as follows using the following methodology:

Granite Falls Mass Balance Line 1	**Symbol/Formula**	
Total Solids Processed (w/out lam)	Ml	lbs
VOC used in foaming process	m2	lbs

Granite Falls Mass Balance Line 1	**Symbol/Formula**	
Laminate used	m3	lbs
Product SGO solids	m4	lbs
Capture efficiency for ext. die to winder	Ce	% tested = **90.3**
RTO destruction efficiency	De	% manufacturer-provided = **98**
VOC retention at winder	Wl	% in foam
Solids content of product SGO	m5=m4	lbs
Solids content of scrap	m6 =ml +m3 -m5	lbs
Amount of VOC at the winder	m7 = wl/(l -wl)*(m l+ m3)	lbs
VOC available for capture	m8 =m2-m7	lbs
VOC destroyed	m9 = m8 x ce x de	lbs
Process emissions	El = m8 - m9	lbs
voc in scrap	E2 = m6 x (wl /(1 - wl))	lbs
VOC retention after 14 days	w2	% tested
VOC released during product storage	E3 = (wl / (l-wl)-w2 / (1-w2)) x m5	lbs
Total emissions Line 1	E =El+ E2 + E3	lbs
Granite Falls Mass Balance Line 2	**Symbol/Formula**	
Total Solids Processed (w/out lam)	Ml	lbs
VOC used in foaming process	m2	lbs
Laminate used	m3	lbs
Product SGO solids	m4	lbs
Capture efficiency for ext. die to winder	Ce	% tested= **80.3**
RTO destruction efficiency	De	% manufacturer-provided = **98**
VOC retention at winder	Wl	% in foam
Solids content of product SGO	m5=m4	lbs
Solids content of scrap	m6 = ml + m3 - m5	lbs
Amount of VOC at the winder	m7 = wl/(l-wl)*(ml+m3)	lbs
VOC available for capture	m8 =m2-m7	lbs
VOC destroyed	m9 = m8 x ce x de	lbs
Process emissions	El =m8-m9	lbs
voc in scrap	E2 = m6 x (wl /(1 -wl))	lbs
VOC retention after 14 days	w2	% tested
VOC released during product storage	E3 = (wl / (1-wl)-w2 / (l-w2)) x m5	lbs
Total emissions Line 2	E =El+ E2+ E3	lbs

Granite Falls Mass Balance Line 1	Symbol/Formula	
Monthly Tons of Emissions	Sum=E(Line 1) + E(Line2)	tons

i. Substitution of capture and control efficiencies established by a DAQ approved protocol and stack test shall be required when the stack test is deemed a valid test by the DAQ. In such cases a permit modification shall not be required.
ii. The Permittee shall assume that the **control efficiency** is **0%** by weight for any period during which the control device is operating under start-up, shutdown or malfunction conditions. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530 of the amounts of VOC containing materials are not monitored and recorded or if emissions exceed the limit in Section 2.1 A.6.a above. In addition, the Permittee must make available to officials of the DAQ, upon request, copies of the monthly emissions log.

j. To comply with the provisions of this permit and ensure that emissions do not exceed the regulatory limits, the Permittee shall perform periodic inspection and maintenance on the RTO **(ID No. CD-RTO)** as recommended by the manufacturer. As a minimum, the inspection and maintenance requirement shall include the following:
   i. a monthly visual inspection of the system ductwork and capture system for leaks;
   ii. a semi-annual inspection of the enclosures to ensure structural integrity and smoke tube verification of inward flow; and
   iii. an annual (for each 12-month period following the initial inspection) internal inspection of each of the primary heat exchangers and associated inlet/outlet valves to ensure structural integrity of the systems.

   The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530 if the control system is not inspected and maintained.
k. The results of all inspections and any variance from manufacturer's recommendations or from those given in the permit (when applicable) shall be investigated with corrections made and dates of actions recorded in a logbook. Records of all maintenance and monitoring activities shall be recorded in the logbook. The logbook (in written or electronic format) shall be kept on-site and made available to DAQ personnel upon request. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530 if these records are not maintained.

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

l. The Permittee shall submit a semi-annual summary report, acceptable to the Regional Air Quality Supervisor, of monitoring and recordkeeping activities 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. The report shall contain the following:
   i. the monthly VOC emissions for the previous 17 months. The emissions must be calculated for each of the 12-month periods over the previous 17 months; and

ii. a description of any deviations from the monitoring and recordkeeping requirements in condition 2.1 A.6. d through A.6. g above and any corrective actions taken as a result of the deviation.

As outlined above and under the timeline in Section IV, the latest testing performed on September 21, 2016 was approved on June 28, 2018 for Pregis Innovative Packaging, Granite Falls, Caldwell County, North Carolina, Facility ID 1400139, Permit No. 06552T08, VOC Destruction Efficiency and Capture Efficiency Testing, Performed September 21, 2016 by Environmental Source Samplers, Inc., Tracking No. 2016-074st. See excerpt below:

"The results tabulated below are approved to establish destruction and capture efficiency as required by the permit:

Pollutant/Parameter	ES-1	ES-2	Total
VOC Feed, lb/hr	94.0	90.0	184.0
VOC Content Foam, lb/hr	---	---	20.7
Total VOC Input[1], lb/hr	---	---	163.33
VOC Oxidizer Inlet, lb/hr	82.69	54.58	137.27
VOC CD-1/CD-2 Outlet	---	---	10.86
Capture Efficiency[2]	---	---	**84.0%**
Destruction Efficiency[2]	**---**	**---**	**92.1%**

1. VOC Input = The VOC feed to the system as reported by Pregis minus the VOC remaining in the foam product.
2. Pregis originally reported DE=92.45% and an average 114.34% capture efficiency.

The results are acceptable to establish the capture efficiency and destruction efficiency for VOC monthly emissions calculations."

- 15A NCAC 2D .0958, WORK PRACTICES FOR SOURCES OF VOLATILE ORGANIC COMPOUNDS

  Effective November 1, 2016 – 15A NCAC 02D .0958 is applicable only to following counties/areas in NC:

  - Cabarrus County;
  - Gaston County;
  - Lincoln County;
  - Mecklenburg County;
  - Rowan County;
  - Union County; and
  - Davidson Township and Coddle Creek Township in Iredell County

  Thus, this rule is no longer applicable and will be removed as part of this minor modification.

VII. NSPS, NESHAPS/MACT, PSD, 112(r), CAM

NSPS – The facility is not currently subject to a New Source Performance Standard (NSPS). This permit modification does not affect this status.

NESHAPS/MACT – The facility is not currently subject to any Maximum Achievable Control Technology (MACT) Standards. The facility is classified as a Title III natural minor facility with no 112 (d) avoidance conditions required. This permit modification does not affect this status.

PSD – The facility remains a Prevention of Significant Deterioration (PSD) minor source. The facility is currently subject to a less than 250 tons per year (tpy) PSD Avoidance Condition.

During the renewal for issued permit number 06552T07, the PSD Avoidance Condition was added to Pregis' permit due to potential uncontrolled emissions of 870.30 tpy of VOC. Expected actual VOC emissions from the facility were at 148.81 tpy and potential controlled VOC emissions at 171.94 tpy.

As part of this minor modification request, the existing 250 tpy VOC PSD avoidance condition monitoring, recordkeeping and reporting requirements (MRRR) were revised by inserting the additional air emissions calculation methodology as provided with the application submittal into the permit for the proposed additional equipment and alternative operating scenario (AOS)

Please refer to Section VI above for details.

112(r) – This facility is subject to the requirements of the 112(r) "Prevention of Accidental Releases" program for storage of the blowing agent and did have a Risk Management Plan (RMP) on site updated 3/29/2010. Chris Scott conducted a full 112(r) inspection during the June 2007 site visit. The Permittee is subject to these requirements because listed chemicals (non-HAP/VOC blowing agents) are stored in amounts greater than the applicability threshold. The subject tanks are the two blowing agent storage tanks (**ID Nos. I-BA Tank 1 and I-BA Tank 2**). The Permittee first submitted a Risk Assessment Plan to EPA pursuant to 40 CFR 68.150 prior to the June 21, 1999 deadline.

CAM – 15A NCAC 02D .0614 [40 CFR Part 64] COMPLIANCE ASSURANCE MONITORING (CAM) applicability was previously established under the renewal for issued permit T07.

40 CFR 64 requires that a continuous compliance assurance monitoring (CAM) plan be developed for all equipment located at a major facility, that have pre-controlled emissions above the major source threshold, and use a control device to meet an applicable standard. Only the two polyethylene sheet foam extrusion operations **(ID Nos. ES-1 and ES-2)** have emissions that are potentially subject to CAM due to the two natural gas-fired thermal oxidizers **(ID Nos. CD-1 and CD-2)** that are in place to ensure compliance with the 250 tons per year VOC emission limit. The revised PSD condition continues to require the Permittee to calculate VOC emissions, using a continuous compliance determination method (CCDM). VOC emissions are calculated using a mass balance approach and applying control and enclosure capture efficiencies. Specifically, the Permittee monitors the mass of VOC that is recovered, the VOC content and amount of VOC containing material used and the control and enclosure capture efficiencies to determine how much VOC was emitted. The control efficiencies and capture efficiencies were established by the most recent required stack tests. There are no short-term emission limits or control efficiency requirements for VOCs. The control and enclosure capture efficiencies now appear in the PSD condition.

Part 64 defines CCDM as "a method specified by the applicable standard or an applicable permit condition which is used to determine compliance with an emission limitation or standard on a continuous basis, consistent with the averaging period established for the emission limitation or standard and provides data either in units of the standard or correlated directly with the compliance limit."

The PSD avoidance condition requires that the Permittee calculate VOC emissions by multiplying the total amount of VOC-containing material consumed by the VOC content of the material. This is completed by the referenced mass balance determination method described above. DAQ agrees that this method is consistent with the CCDM described in Part 64; therefore, specific CAM requirements were not included as part of this facilities last renewal (Refer to review for issued permit T07).

As a result of adding the proposed additional RTO and the AOS for this minor modification, CAM applicability is not triggered at this time; however, it will be required as part of the renewal process.

Previously, the facility was exempted from CAM per 40 CFR 64.2(b)(1)(vi) under CCDM. However, based on Mr. Parekh's review of the draft permit received on March 7, 2019, the CCDM exemption does not apply in this case.

Excerpt from email:

"As per §64.2(b)(1)(vi), CAM exemption under CCDM does not apply in the above case.

§64.2(b)(1)(vi) states:
Emission limitations or standards for which a part 70 or 71 permit specifies a continuous compliance determination method, as defined in § 64.1. The exemption provided in this paragraph (b)(1)(vi) shall not apply if the applicable compliance method includes an assumed control device emission reduction factor that could be affected by the actual operation and maintenance of the control device (such as a surface coating line controlled by an incinerator for which continuous compliance is determined by calculating emissions on the basis of coating records and an assumed control device efficiency factor based on an initial performance test; in this example, this part (CAM) would apply to the control device and capture system, but not to the remaining elements of the coating line, such as raw material usage)."

However, since this facility currently has a 250 tpy VOC PSD Avoidance limit, they are exempt from CAM applicability per 40 CFR 64.2(b)(1)(v) "an emissions cap that meets the requirements specified in §70.4(b)(12) or §71.6(a)(13)(iii) of this chapter."

An email was sent to Mr. Parekh on March 8, 2019 indicating that this review engineer agreed with his evaluation that they were not exempt under a CCDM, but an emissions cap. Mr. Parekh concurred with this review engineers' assessment via email correspondence on March 11, 2019. This email correspondence was forwarded to the ARO.

During processing of Pregis' renewal application a more detailed CAM discussion will be provided.

VIII. Facility Wide Air Toxics

The facility is not currently subject to a facility wide toxics condition and has not triggered a toxics review. This permit modification does not affect this status.

IX. Facility Emissions Review

See table at beginning of this review for the facility's last five year's actual emissions inventory data.

Based Pregis' previous renewal (issued Permit No. 06552T09) the facilities emissions, which included Carbon Dioxide equivalent (CO_2e), were:

Pollutant(s)	2012 Actuals (tpy)
CO_2e	1,751.34
CO	1.42
SO_2	Not Reported
NO_x	1.69
PM_{10}	0.130000
VOC	163.34
Total HAP/TAP	63.34 (**lbs**)

The following table represents emissions information as provided in the application submittal and subsequent emails:

Pollutant(s)	Actuals (tpy)	Potential before controls/limitations (tpy)	Potential after controls/limitations (tpy)
Greenhouse Gases (GHG)	1640.01 short tons	1640.01 short tons	1640.01 short tons
CO	1.15	1.15	1.15
SO_2	0.01	0.01	0.01
NO_x	1.37	1.37	1.37
PM	1.82	1.82	1.82
PM_{10}	1.61	1.61	1.61
$PM_{2.5}$	1.37	1.37	1.37
VOC	<250	937.3	258.7
Total HAP/TAP*	*Application lists HAP/TAP on Form B for each extrusion line and a separate summary sheet of facility-wide PTE each below the TPER		279.1 lbs/yr HAP/TAP

The potential to emit (PTE) from the facility as summarized above is based on emissions from the new proposed RTO (ID No. CD-RTO) at 98% destruction efficiency (per manufacturer's proposal) and 84% VOC capture efficiency (based on most recent stack test results). The existing RTOs (ID Nos. CD-1 and CD-2) were tested and approved results of 92.1% destruction efficiency; thus, emissions from the new RTO are expected to be less.

Pregis did not submit actual emissions, only PTE based on the proposed RTO. Per the latest inspection report the facility operated 24 hours a day, 7 days a week. The only pollutant of concern with this modification due to existing emissions is VOC. As summarized at the beginning of this review, VOC emissions have historically been less than 250 tpy; thus, compliance with the less than 250 tpy VOC limit is expected.

X. Public Notice/EPA and Affected State(s) Review

A notice of the DRAFT Title V Permit is not required as part of this minor modification.

XI. Conclusions, Comments, and Recommendations

Professional Engineering Seal

A Professional Engineering Seal (PE Seal) was required for this minor modification pursuant to 15A NCAC 2Q .0112 "Application Requiring A Professional Engineering Seal." A PE Seal is required to

seal technical portions of air permit applications for new sources and modifications of existing sources as defined in Rule .0103 of this Section that involve:

(1) design;
(2) determination of applicability and appropriateness;
(3) or determination and interpretation of performance; of air pollution capture and control systems.

A professional engineer's seal (PE Seal) was required for this minor modification and was sealed by Russell Kemp, Professional Engineer on December 19, 2018 (Seal #19628).

Zoning Consistency Determination

A consistency determination was required for this minor modification pursuant to 15A NCAC 2Q .0507(d) due to addition of the proposed natural gas-fired dual chamber RTO, which is considered an expansion.

The application submittal did not contain determination requests for zoning. However, a zoning consistency determination request was received in RCO on January 10, 2019 signed by Mr. Greg Wilson, Town of Granite Falls, Town Planner on January 3, 2019 indicating that the proposed operation is consistent with applicable zoning ordinances and that a copy of the air permit application was received with the request.

On February 7, 2019, Ms. Velthuisen sent copies of delivery tracking for zoning requests to Caldwell County and the Town of Granite Falls. In addition, an email follow-up on February 11, 2019 from Caldwell County referring Pregis to the Town of Granite Falls for zoning due to parcel location.

ARO recommends issuance of the permit and was presented with a DRAFT permit prior to issuance.

RCO concurs with ARO's recommendation to issue this minor modification.

Issue Permit **06552T09**