

**NORTH CAROLINA DIVISION OF  
AIR QUALITY**

**Air Permit Review**

**Permit Issue Date:**

**Region:** Raleigh Regional Office  
**County:** Wilson  
**NC Facility ID:** 9800155  
**Inspector's Name:** Will Wike  
**Date of Last Inspection:** 06/11/2009  
**Compliance Code:** 3 / Compliance - inspection

Facility Data			Permit Applicability (this application only)
<b>Applicant (Facility's Name):</b> Saint-Gobain Containers  <b>Facility Address:</b> Saint-Gobain Containers 2201 Firestone Parkway Wilson, NC 27893  <b>SIC:</b> 3221 / Glass Containers <b>NAICS:</b> 327213 / Glass Container Manufacturing  <b>Facility Classification: Before:</b> Title V <b>After:</b> Title V <b>Fee Classification: Before:</b> Title V <b>After:</b> Title V			<b>SIP:</b> <b>NSPS:</b> Subpart CC <b>NESHAP:</b> <b>PSD:</b> <b>PSD Avoidance:</b> 2D 0530(u) <b>NC Toxics:</b> <b>112(r):</b> <b>Other:</b>
Contact Data			Application Data
Facility Contact	Authorized Contact	Technical Contact	<b>Application Number:</b> 9800155.09C <b>Date Received:</b> 12/02/2009 <b>Application Type:</b> Modification <b>Application Schedule:</b> TV-Significant <b>Existing Permit Data</b> <b>Existing Permit Number:</b> 03713/T22 <b>Existing Permit Issue Date:</b> 03/05/2009 <b>Existing Permit Expiration Date:</b> 05/31/2012
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<b>Review Engineer:</b> Joseph Voelker  <b>Review Engineer's Signature:</b> _____ <b>Date:</b> _____		<b>Comments / Recommendations:</b> <b>Issue</b> 03713/T23 <b>Permit Issue Date:</b> <b>Permit Expiration Date:</b> 05/31/2012	

## I. Introduction and Purpose of Application

Saint-Gobain Containers, Inc. (S-G) owns and operates a glass container production facility located in Wilson, North Carolina.

On May 19, 2008 SG submitted a permit application (assigned application no. 9800155.08B) to modify the Glass Furnace 2 (ID No. GF-2). The application was processed as a "Part I" application and Permit T21 was subsequently issued pursuant to 15A NCAC 2Q .0501(c)(2) and .0504. Permit no. T21 contained the following requirement:

*The Permittee shall file a Title V Air Quality Permit Application pursuant to 15A NCAC 2Q .0504 for the air emission source (ID No(s). ES-GF-2) on or before 12 months after commencing operation.*

This application (application no .09C) was submitted to satisfy this requirement.

## II. Chronology

(Only critical path related events are presented)

Date	Description
January 30, 2009	Permit T21 issued with a requirement for: The Permittee shall file a Title V Air Quality Permit Application pursuant to 15A NCAC 2Q .0504 for the air emission source (ID No(s). ES-GF-2) on or before 12 months after commencing operation.
February 20, 2009	Email from Mike Pjetraj SSCB supervisor describing how in Permit T18 conditions 2.1A.3. f and i. were inconsistent. See Section III below.[*Henderson]
February 24, 2009	Revised NSPS language sent to Valerie Krulic [*Henderson]
March 5, 2009	Email from Valerie Krulic received stating that “Saint-Gobain does not object to the language listed below.”. The language “below” was the language sent 2/24/2009[*Henderson]
December 1, 2009	A modification application was received in the RCO for the furnace GF-1 and assigned application no <b>.09B</b> .
December 2, 2009	A modification application was received in the RCO for the WILSON permit and assigned application no <b>.09C</b> for furnace GF-2 to be processed pursuant to 15A NCAC 2Q .0504.
March 5, 2009	Permit T22 issued in response to permit application no. <b>09B</b> .
<del>TBD</del>	<del>Draft sent to Permittee for comment</del>
<del>TBD</del>	<del>Concurrent public and EPA public comment period begins. Public Notice was published in the XYZ.</del>
<del>TBD</del>	<del>Public Comment Period ended. No comments received.</del>

\*Henderson – This correspondence was related to the Henderson facility specifically. However, Wilson and Henderson are essentially identical from an NSPS Subpart CC and 15A NCAC 2D .0521 perspective.

## III. Modification Description

The only discussion provided here are for items not addressed in or revised since the review for permit no. T21. The T21 review is included as Attachment A to this review document.

### Changes since the issuance of permit no T21

#### **A. PSD Avoidance Analysis, Limit Revisions and the request to utilize 15A NCAC 2D 0530(u) for furnace GF-2**

Three items need to be addressed regarding the original PSD Avoidance analysis included in review **T21**:

1. the correction of the analysis calculations for sulfuric acid.
2. the revision of the PM/PM10/PM2.5 PSD analysis calculations with a reasonable estimate for the condensable fraction of PM.
3. The analysis included in the review for permit **T21** supports the use of recordkeeping per 2Q.0530(u) for most pollutants instead of the PSD avoidance condition (per 2Q .0317) that was included in permit **T21**. This was discovered during the review process for a similar modification application for Furnace GF-1 which recently resulted in the issuance of permit **T22** (beyond the scope of this review).

Given that these changes have implications only with respect to PSD avoidance, discussion of these items will be presented in Section IV below. Any other regulatory implications are minor and do not affect the original regulatory analysis presented in the review for permit no. T21.

#### **B. Insignificant Activity Update**

SG would like to add the following activities to the insignificant activities list as they each emit less than 5tpy of criteria pollutants and less than 1000 pounds per year of HAP per 15A NCAC 2Q .0503(8).

These activities are:

Emission Source ID No.	Emission Source Description
IS-V-1	Propane-fired vaporizer (0.91 million Btu per hour maximum heat input)
IS-V-2	Propane-fired vaporizer (0.91 million Btu per hour maximum heat input)
IS-MCB	Mold coating booth

A full discussion is presented in the permit application. No additional discussion is necessary.

### C. Changes as a result of permit application no. 9800155.09B

Permit T22, issued on March 5, 2010 was the result of permit application no. 9800155.09B. Pursuant to 15 A NCAC 2Q. 0504, the Permittee is required to submit a Title V application within 12 months of commencing operation after those modifications. Thus, those changes are beyond the scope of this review and will be considered at that time. Note that Section V. of this review and the Table of Changes attachment to the cover letter of the permit also include a table that reflects the changes to Permit No. T21 for completeness.

Additionally, per current DAQ policy PSD avoidance conditions that have been in effect for over 5 years may be removed from the air permit. The DAQs position is that if a facility complies with a PSD avoidance condition for 5 years, it is clear that the modification that triggered the avoidance condition was not going to lead to a significant increase in emissions. Therefore, permit condition 2.1.A.4. which has been in effect well over 5 years, will be removed from the revised permit.

### D. NSPS Subpart CC changes

Saint Gobain has questioned how to determine a valid three-hour block average in the absence of three hours of opacity data with respect to the Henderson facility permit. Since the permit conditions are essentially identical and this permit for WILSON is currently open for modification, it will be addressed at this time.

Additionally, it was discovered upon review that additional changes to the permit were necessary. These changes will be discussed in detail below.

Note that the Wilson facility has two NSPS Subpart CC affected furnaces. For review purposes only, Furnace No. 1 (ID No. GF-1) will be discussed. However, the same changes will be made to the GF-2 NSPS Subpart CC condition as well.

#### 1. Clarify the three-hour block average calculation

Condition 2.1.3.e. reads

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

- e. *The Permittee shall use a continuous opacity monitor system (COMS) to monitor and record opacity. The COMS shall be calibrated, maintained, tested, and operated in accordance with 40 CFR Part 60 Appendix B "Performance Specifications", 40 CFR 60.13 and 15A NCAC 2D .0613.*

*The Permittee shall be deemed in noncompliance with condition b. above if any three-hour block average opacity value, excluding periods of flue raking (not to exceed 144 hours per year), startup, shut down, malfunction from the glass melting furnace (melter only, ID No. GF-1) exceeds:*

- i. **19.8 percent opacity** while firing No. 2/No. 4 fuel oil; or
- ii. **37.7 percent opacity** when firing natural gas/propane.

*The three-hour block average opacity limit above was established by using the three 1-hour average opacity values from the compliance stack test and determining the 99% Upper Confidence Limit (UCL) of the three 1-hour averages. The resultant three-hour opacity UCL value was then pro-rated to the NSPS particulate limit (1.0 pounds of PM per ton of glass pulled), by using the average PM emission value determined during the compliance stack test.*

*The Permittee may at anytime, reestablish, through administratively amending this permit consistent with 15A NCAC 2Q .0500, the UCL value contained in condition 3.e. above.*

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The permittee raised the issue regarding data availability and what is a valid three-hour period.

The 3-hour block average was intended to be calculated as the block average of three hours worth of the opacity data already required in NSPS; in other words, the arithmetic average of thirty 6-minute averages. The existing CEM system calculates 6-minute block averages and does so beginning on the hour. Thus, each day the six-minute averages are recorded at the same time. This is effectively specified in 40 CFR 60.13. Given that the 3-hour block average is manipulation of this existing data, the three-hour block averages will begin on the hour, every three hours starting at 12:00 am each day.

Given that the three-hour block average opacity value is not addressed in NSPS, the DAQ and Saint-Gobain engaged in some discussion regarding how to define a valid three-hour block average. Per email correspondence received on May 5, 2009, Saint Gobain agreed to the following language to be added to the permit for clarification.

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A three-hour block average opacity value shall be calculated as the arithmetic average of any and all valid six-minute averages within the three-hour period. A three-hour period means a 180- minute period commencing at 12am, 3am, 6am, 9am, 12pm, 3pm, 6pm, and 9pm each day. Valid six-minute averages are calculated per 40 CFR 60.13.

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In the end, this is the simplest and most conservative approach.

## **2. Correct the permit conditions describing compliance for acceptable operation and maintenance (Good O&M) for all times and for during normal operation only**

The NSPS Subpart CC condition was substantially revised in the issuance of T21 to address the correct use of the 6-minute opacity data defined as “excess emissions” per 40 CFR60.293(c)(5) (See permit review document for T21). During the T21 review it was determined that:

1. the language in the Preamble to NSPS Subpart CC suggests “excess emissions” during normal operation can be used in the determination of acceptable operation and maintenance **during normal operation**; and
2. Since 40CFR60.11(d) addresses acceptable operation and maintenance **at all times, including periods of startup, shutdown, and malfunction**, and states that

“Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source”

“excess emissions” **alone** is not to be used in the determination acceptable operation and maintenance at all times, including periods of startup, shutdown, and malfunction.

Thus, the original intent of the good O&M conditions in T21 was to:

1. Explicitly provide a way to determine Good O&M during normal operation ONLY in the permit, provide a permit shield and hence certify (or not certify) compliance; and
2. Address that Good O&M at all times, including periods of startup, shutdown, and malfunction, is required but not provide an explicit way to certify (or not certify) compliance

The current relevant conditions in T21 read as follows:

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### **Acceptable Operation and Maintenance** [15A NCAC 2D .0524, 40CFR 60.11(d)]

- f. *At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with*

good air pollution control practice for minimizing emissions. Determination of acceptable operating and maintenance procedures will be as provided below.

- g. For the purposes of 40 CFR 60.293(c)(5) and 60.7, Excess Emissions are defined as all of the 6-minute periods during which the average opacity of the emissions from the glass melting furnace (melter only, ID No. GF-1) exceed the 99% UCL values determined from a compliance stack test as provided in 40 CFR 60.293(e) as presented below:
  - i. **12.7 percent opacity** while firing No. 2/No. 4 fuel oil; or
  - ii. **17.5 percent opacity** when firing natural gas/propane.

The Permittee may at anytime, consistent with the provisions of 40 CFR 60.293(e), reestablish, through administratively amending this permit consistent with 15A NCAC 2Q .0500, the UCL value contained in condition 3.g above.

Parsing the language in the current condition has revealed that the conditions as written do not serve the intent of these two points. Current EPA (and DAQ) policy is not to explicitly address 60.11(d) compliance in TV permits. To remedy this situation the following language will be placed into the permit. It addresses acceptable operating and maintenance **during normal operation only**.

**Acceptable Operation and Maintenance** [15A NCAC 2D .0524, 40CFR 60.293(c)(5)]

- f. For the purposes of 40 CFR 60.293(c)(5) and 60.7, Excess Emissions are defined as all of the 6-minute periods during which the average opacity of the emissions from the glass melting furnace (melter only, ID No. GF-1) exceed the 99% UCL values determined from a compliance stack test as provided in 40 CFR 60.293(e) as presented below:
  - i. **12.7 percent opacity** while firing No. 2/No. 4 fuel oil; or
  - ii. **17.5 percent opacity** when firing natural gas/propane.

The Permittee may at anytime, consistent with the provisions of 40 CFR 60.293(e), reestablish, through administratively amending this permit consistent with 15A NCAC 2Q .0500, the UCL values contained in condition 3.f. above.

**3. Correct the permit conditions describing the Percent Excess Emissions calculation**

Condition i. in the current permit (T21) includes the calculation of Percent Excess Emissions (%EE) as follows:

Percent Excess Emissions (%EE):

$$\% EE = \frac{\text{Duration of Excess Emissions} - \text{Duration of StartUp / ShutDown / Malfunction}}{\text{Furnace Operating Time}} * 100\%$$

Where:

- Excess emissions = Defined in paragraph g.
- Duration of excess emissions = Summation of the excess emissions in hours during the given calendar six-month period
- Furnace Operating Time\* = Summation of the operation time of the source in hours during the given calendar six-month period
- COMs downtime\*\* = Summation of time in hours during which the COMs is not operational and concurrent with the Furnace Operating Time during the given calendar six-month period

The intent of Condition i. was to calculate the quantity “percent excess emissions **during normal operation**”. As written, it subtracts the “duration of startup, shut down and malfunction”. This makes no sense because it would be possible to calculate a percent excess emissions less than zero. This calculation should subtract “the duration of excess emissions during startup/shut down and malfunction.”

Additionally, the denominator includes furnace operating time. Since we are concerned with the calculation during normal operation only the denominator should also only reflect normal operation only.

The following corrections will be made to the revised air permit.

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Percent Excess Emissions (%EE):

$$\% EE = \frac{\text{Duration of Excess Emissions} - \text{Duration of Excess Emissions During StartUp / ShutDown / Malfunction}}{\text{Furnace Operating Time} - \text{Duration of StartUp / ShutDown / Malfunction}} * 100\%$$

Where:

<i>Excess Emissions</i>	=	<i>Defined in paragraph f.</i>
<i>Duration of Excess Emissions</i>	=	<i>Summation of the excess emissions in hours during the given calendar six-month period</i>
<i>Duration of Excess Emissions During StartUp/ ShutDown/ Malfunction</i>	=	<i>Summation of the excess emissions in hours occurring during all periods of startup/shutdown/malfunction during the given calendar six-month period</i>
<i>Furnace Operating Time*</i>	=	<i>Summation of the operation time of the source in hours during the given calendar six-month period</i>
<i>Duration of StartUp/ ShutDown/ Malfunction</i>	=	<i>Summation of the operation time of the source in hours occurring during all periods of startup/shutdown/malfunction during the given calendar six-month period</i>
<i>COMs downtime**</i>	=	<i>Summation of time in hours during which the COMs is not operational and concurrent with the Furnace Operating Time during the given calendar six-month period</i>

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#### **4. Revise the recordkeeping and reporting conditions**

NSPS has specific recordkeeping and reporting requirements. The Permittee could be determined to be in non-compliance with NSPS (2D.0524) if those requirements are not met, even when no emission standards were violated. As such, a clarification of the recordkeeping and reporting requirements is necessary.

##### **Recordkeeping**

The current permit condition as written is as follows:

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

- j. *In addition to any other recordkeeping required by 40 CFR 60.7 or recordkeeping requirements of the EPA, the Permittee shall record and maintain records of:*
- i. *Opacity readings from the COMS;*
  - ii. *COMS downtime;*
  - iii. *Furnace operating time;*
  - iv. *Date, time and duration of the performance of flue raking operations; and*
  - v. *Three-hour block average opacity values.*

*The Permittee shall be deemed in non-compliance with 15A NCAC 2D .0524 if these records are not retained.*

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This condition provides some specific items of primary concern in the context of “in addition to any other recordkeeping”, requiring the Permittee (and ultimately DAQ compliance personnel) to determine what is the other recordkeeping. Since the permit was already open, it was decided to revise the recordkeeping condition to better reflect the intent and clarify the content of the NSPS recordkeeping requirements.

The recordkeeping conditions will be included in the revised permit as follows:

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

- i. Pursuant to 40 CFR 60.7(b), the Permittee shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.
- j. Pursuant to 40 CFR 60.7(f), the Permittee shall maintain records of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by 40 CFR 60 Subpart A and Subpart CC recorded in a permanent form suitable for inspection. The records shall be retained for at least two years following the date of such measurements, maintenance, reports, and records.
- k. In addition to any other recordkeeping required by 40 CFR 60.7, the Permittee shall record and maintain records of:
  - i. Furnace operating time;
  - ii. Date, time and duration of the performance of flue raking operations; and
  - iii. Three-hour block average opacity values.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0524 if the recordkeeping requirements in conditions i. through k. are not met.

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Note that conditions i. and j. contain specific language from 40 CFR 60.7. Condition k. highlights items needed for compliance with the monitoring requirements not included in the 60.7 language explicitly.

**Reporting**

Using the same arguments for the recordkeeping conditions revisions, it was decided to revise the reporting conditions. In addition, the DAQ issued a memo on July 2, 2009 entitled, **Legal Authority For Requiring Quarterly Excess Emission Reporting For CEM Affected Facilities Under NSPS Subpart A**. Saint Gobain is one of the facilities affected by the decision. In short the DAQ is requiring all sources with COMs and CEMS to submit quarterly reports under 40CFR60.7.

The current permit condition as written is as follows:

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

- k. For the purposes of 40 CFR 60.7, the Permittee shall report excess emissions for all of the 6-minute periods during which the average opacity, as measured by the continuous opacity monitoring system, exceeds an opacity value calculated in accordance with condition g. by January 30 of each calendar year for the preceding six-month period between July and December and by July 30 of each calendar year for the preceding six-month period between January and June. If there are no excess emissions, the Permittee shall submit a statement indicating that no excess emissions occurred during the reporting period.
  - l. In addition to the reporting requirements of condition k., the Permittee shall report:
    - i. Percent Excess Emissions; and
    - ii. Percent COMs Downtime.
  - m. The Permittee shall increase the reporting frequency to quarterly if the total duration of excess emissions as defined in 40 CFR 60.7 exceeds 1.0 percent and/or if the amount of COMS downtime exceeds 5.0 percent for the reporting period. If required, the Permittee shall submit quarterly reports by April 30 of each calendar year for the preceding three-month period between January and March, by July 30 of each calendar year for the preceding three-month period between April and June, by October 30 of each calendar year for the preceding three-month period between July and September, and by January 30 of each calendar year for the preceding three-month period between October and December.
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The reporting conditions to be included in the revised permit were proposed as follows:

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

- i. On a semi-annual basis, the Permittee shall:
- i. Submit a report containing Percent Excess Emissions, Percent COMs Downtime, and Furnace Operating Time, as defined in condition h. above and the date, time and duration of the performance of flue raking operations.

The format for the report will be provided by the DAQ.

The semiannual reports, acceptable to the Regional Air Quality Supervisor, shall be postmarked on or before January 30 of each calendar year from 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.

- m. On a quarterly basis, the Permittee shall
- i. pursuant to 40 CFR 60.293(c)(5) and 40 CFR 60.7(c), submit an excess emissions and monitoring system performance summary report. The report shall contain the information required per 40 CFR 60.7(c) and (d).
  - ii. submit a report of the three-hour block average opacity values, as defined in condition e., that exceed:
    - a. **19.8 percent opacity** while firing No. 2/No. 4 fuel oil; or
    - b. **37.7 percent opacity** when firing natural gas/propane.

The format for the report will be provided by the DAQ.

The quarterly reports, acceptable to the Regional Air Quality Supervisor, shall be postmarked on or before January 30 of each calendar year for the preceding three-month period between October and December, April 30 of each calendar year for the preceding three-month period between January and March, July 30 of each calendar year for the preceding three-month period between April and June, and October 30 for the calendar year for the preceding three-month period between July and September.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0524 if the reporting requirements in conditions l. and m. are not met.

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Upon review, the Permittee requested that the “condition be revised to require quarterly rather than semi-annual reporting. Submitting this report quarterly consistent with the report required under Conditions 2.1.A.3.m and 2.1.B.3.m will simplify the reporting requirements for the facility.”

This is a reasonable request. The reporting language will be revised to read as follows:

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

- i. On a quarterly basis, the Permittee shall:
- i. Submit a report containing Percent Excess Emissions, Percent COMs Downtime, and Furnace Operating Time, as defined in condition h. above and the date, time and duration of the performance of flue raking operations.
  - ii. pursuant to 40 CFR 60.293(c)(5) and 40 CFR 60.7(c), submit an excess emissions and monitoring system performance summary report. The report shall contain the information required per 40 CFR 60.7(c) and (d).
  - iii. submit a report of the three-hour block average opacity values, as defined in condition e., that exceed:
    - a. **19.8 percent opacity** while firing No. 2/No. 4 fuel oil; or
    - b. **37.7 percent opacity** when firing natural gas/propane.

The format for the report will be provided by the DAQ.

The quarterly reports, acceptable to the Regional Air Quality Supervisor, shall be postmarked on or before January 30 of each calendar year for the preceding three-month period between October and December, April 30 of each calendar year for the preceding three-month period between January and March, July 30 of each calendar year for the preceding three-month period between April and June, and October 30 for the calendar year for the preceding three-month period between July and September.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0524 if the reporting requirements in condition 1. are not met.

## IV. Regulatory Review

### **Furnace GF-2 modification application no. 9800155.08B**

The following regulations apply or potentially apply to these modifications:

15A NCAC 2D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

15A NCAC 2D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES

15A NCAC 2D .0524: NSPS 40 CFR PART 60 SUBPART CC

15A NCAC 2D .0521: CONTROL OF VISIBLE EMISSIONS

15A NCAC 2D .1806: CONTROL AND PROHIBITION OF ODOROUS EMISSIONS

15A NCAC 2D .1100, CONTROL OF TOXIC AIR POLLUTANTS

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

The review for permit T21, included as Attachment A to this review, contains most of the necessary regulatory analysis and discussion. The discussion below is limited to the implications of the condensable PM on the PSD avoidance analysis as discussed in Section III.A. above.

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

The following PSD avoidance analysis calculation table for furnace GF-2 is from the Review for T21:

**Table 1**  
**TABLE as it appeared in REVIEW for T21**

daily pull rate (avg), tpd		326.8	383	417	500	56.2					
annual pull rate, tpy		119281.5	139795	152205	182500	20513.5					
Pollutant	Emission Factors	Past Actuals, Based on 1998/1999 Data	Maximum Historical Production Rate	Max. Tested Production Rate (379.1 tpd+ 10%)	Current Permit Limits	Projected Demand Growth Increase	Emissions Increase Assoc. w/ Modification	Ancillary Emissions Increases	Total Emissions Increases	Significance Level	Ratio of emissions increase to significance levels
	lb/ton	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	
PM	0.62	37.0	43.3	47.2	56.6	6.4	3.85	1	4.8	25	0.19
PM10	0.59	35.2	41.2	44.9	53.8	6.1	3.66	0.9	4.6	15	0.30
PM2.5	0.56	33.4	39.1	42.6	51.1	5.7	3.47	0.9	4.4	15	0.29
SO2	1.98	118.1	138.4	150.7	180.7	20.3	12.29	0.1	12.4	40	0.31
NOx	1.23	73.4	86.0	93.6	112.2	12.6	7.63	2.4	10.0	40	0.25
VOC	0.2	11.9	14.0	15.2	18.3	2.1	1.24	0.2	1.4	40	0.04
CO	0.2	11.9	14.0	15.2	18.3	2.1	1.24	1.2	2.4	100	0.02
<b>H2SO4</b>	<b>0.268</b>	16.0	18.7	20.4	24.5	2.7	1.66	0	1.7	7	0.24
Fluoride	0.015	0.89	1.05	1.14	1.37	0.15	0.093	0	0.093	3	0.03
Lead	0.00158	0.09	0.11	0.12	0.14	0.02	0.0098	1.1e-7	0.0098	0.6	0.02

The following is the table showing the calculation of the PSD avoidance limits in permit no. T21.

**Table 2****TABLE as it appeared in REVIEW for T21**

Pollutant	Past Actuals, Based on 1998/1999 Data	Demand Growth increase	Significance Level	New PSD Avoidance Limits
	tpy	tpy	tpy	tpy
PM	36.98	6.36	25	68.3
PM10	35.19	6.05	15	56.2
PM2.5*	33.40	5.74	15	54.1
SO2	118.09	20.31	40	178.4
NOx	73.36	12.62	40	126.0
VOC	11.93	2.05	40	54.0
CO	11.93	2.05	100	114.0
<b>H2SO4</b>	<b>21.47</b>	<b>3.69</b>	<b>7</b>	<b>32.2</b>
Fluoride	0.89	0.15	3	4.0
Lead	0.09	0.02	0.60	0.7

\* a PM2.5 limit was not included in permit no T21, consistent with the PM2.5 policy at that time.

### Sulfuric Acid Changes

In the review for T21 the sulfuric acid analysis as presented was inconsistent. The original analysis for sulfuric acid was based on an emission factor of 0.268 lb/ton as shown in Table 1 above. However, SG revised this emission factor when it submitted an analysis for fluoride and lead in an addendum dated January 20, 2009 to 0.36 lb/ton. This revised factor was deemed acceptable at the time and Table 2, which calculates the PSD avoidance limit was based on 0.36 lb/ton and is therefore correct. For consistency, the analysis as presented in Table 1 was revised based on 0.36 lb/ton and is shown below:

**Table 3**  
**Revised Sulfuric Acid Analysis**

daily pull rate (avg), tpd		326.8	383	417	500	56.2					
annual pull rate, tpy		119281.5	139795	152205	182500	20513.5					
Pollutant	Emission Factors	Past Actuals, Based on 1998/1999 Data	Maximum Historical Production Rate	Max. Tested Production Rate (379.1 tpd+ 10%)	Current Permit Limits	Projected Demand Growth Increase	Emissions Increase Assoc. w/ Modification	Ancillary Emissions Increases	Total Emissions Increases	Significance Level	Ratio of emissions increase to significance levels
	lb/ton	tpy	tpy	tpy	tpy	Tpy	tpy	tpy	tpy	tpy	
<b>H2SO4</b>	<b>0.36</b>	<b>21.5</b>	<b>25.2</b>	<b>27.4</b>	<b>32.9</b>	<b>3.7</b>	<b>2.23</b>	<b>0</b>	<b>2.2</b>	<b>7</b>	<b>0.32</b>

No changes would need to be made to the permit (i.e., PSD avoidance limit) based on this calculation error. A discussion on this PSD avoidance condition will be presented elsewhere in this review.

### PM/PM10/PM2.5 Changes

In the original PSD avoidance analysis in the T21 review, the following emission factors were used:

$$PM = 0.62$$

$$PM10=0.59$$

$$PM2.5=0.56$$

These numbers are filterable only. They do not include the condensable fraction. Only the PM value of 0.62 is based on a source test. The PM10 value is 95% of the PM value and PM2.5 is 91% of the PM value (per-AP-42 guidance).

The PSD avoidance limits based on these factors were determined and included in permit no. T21 as:

Pollutant	Emissions Limitations, tons per consecutive 12-month period
Particulate Matter	68.3
Particulate Matter <10µm	56.2

Thus, these avoidance limits, although not explicitly expressed as such in the permit T21, are based on filterable PM data. The Permittee would like to revise these limits to account for the condensable PM, which was confirmed to be a significant fraction of PM emissions from the furnace based on the 2009 tests required by the same PSD avoidance condition in T21 (see below). Given that it is a safe assumption that condensable PM was being emitted before the modifications discussed in this application and that the original analysis was therefore biased low, it is reasonable to revise the PSD avoidance limits. The reliance on the AP-42 guidance for the fraction of PM that could be PM10 and PM will not be readdressed here.

Until the testing required for PSD avoidance as implemented in permit T21, SG had only been required to do filterable PM testing (NSPS subpart CC).

In 2009, SG tested GF-2 as a requirement of the PSD avoidance condition and obtained the following results. These results were approved in a MEMO issued by the SSCB on February 10, 2010.

2009 test data	lb/ton	fraction	Ratio condensable/filter
PM filterable	0.49	0.80	-
PM condensable	0.12	0.20	0.25
PM total	0.61	1.00	-

Thus, it appears that the condensable fraction is 20% of the total PM emissions. It is also reasonable to assume it is going to be 100% PM10 and PM2.5 as well. Also note that the ratio of condensable PM to filterable PM is 0.25.

The permittee proposes to add the condensable fraction as determined in the 2009 test with a 33% “safety factor” to the existing filterable PM values. Thus  $1.33 * 0.12 = 0.16$  lb/ton.

However, consider the following. If one assumes the ratio of condensable to filterable material is fairly constant for a given process we could assume then that if condensable PM testing occurred before the modification it would also likely be on the order of  $0.25 * 0.62 = 0.15$  lb/ton. This is fairly close to the permittee’s choice of 0.16 lb/ton but the rationale is simpler and does not rely on artificially inflating a measured value with an arbitrary safety factor. For this reason, the 0.15 lb/ton of condensable PM will be used for the revised PSD analysis.

Therefore the following factors will be utilized in the revised PSD analysis:

PM/PM10/PM2.5 (condensable) = 0.15 lb ton

PM = 0.62 + 0.15 = 0.77 lb/ton

PM10=0.59 + 0.15 = 0.74 lb/ton

PM2.5=0.56 + 0.15 = 0.71lb/ton

### **PM2.5 changes**

In permit T21 a PM2.5 PSD avoidance condition was not placed into the permit, consistent with the PM2.5 policy at that time (PM10 was the surrogate). In 2008, the EPA issued its final NSR Implementation Rule which requires fully approved programs to revise their existing programs as necessary to conform to the minimum acceptable program elements at 40 CFR 51.166. North Carolina has started this rulemaking process but in the interim the NCDAQ has established a transition policy as of December 10, 2009 which, in this case, primarily affects PM 2.5. The significance level for PM2.5 is 10 tons per year.

As can be seen in the revised PSD avoidance analysis tables below (which includes the revised H2S04 analysis discussed above), PM2.5 increases are below the significance level, **if the actual to actual comparison is used.**

### **Request to utilize 15A NCAC 2D 0530(u)**

During the review process for a similar modification application for the other furnace on site (Furnace GF-1) which recently resulted in the issuance of permit **T22** (beyond the scope of this review) it was discovered that for a number of pollutants an “actual-to-potential” comparison would result in the increase in emissions estimate for some of the pollutants that were below the PSD significance levels. For the other pollutants, it was also determined that PSD avoidance per 2Q.0317 was unnecessary. Rather, 2D.0530(u) could be applied which allows:

*(u) If the owner or operator of a source is using projected actual emissions to avoid applicability of prevention of significant deterioration requirements, the owner or operator shall notify the Director of the modification before beginning actual construction. The notification shall include.....*

*..... If a permit revision is not required pursuant to this rule, the owner or operator shall maintain records of annual emissions in tons per year, on a calendar year basis related to the modifications for 10 years following resumption of regular operations after the change if the project involves increasing the emissions unit's design capacity or its potential to emit the regulated NSR pollutant; otherwise these records shall be maintained for five years following resumption of regular operations after the change.....*

The Permittee has requested that this change be pursued. In addition, it was discovered that the original calculations of projected actual emissions under 2D.0530 were not done properly. Thus, the emissions estimate analysis will be revisited.

**Revised PSD Applicability Calculations**

In the PSD applicability calculations shown in “Attachment A Permit Review for Permit T21,” and reproduced above as Table 1, the permittee addressed the furnace’s existing ability to accommodate **as the difference** between emissions calculated as a function of the furnaces maximum capacity (417 tpd, as explained in the T21 review) and the emissions calculated based on the historical maximum production (383tpd). These emissions are shown in Table 1 as “Projected Demand Growth Increase.” (The Permittee uses this heading to also encompass the furnace’s existing ability to accommodate). In other words, the emissions associated with existing ability to accommodate/demand growth increase (EAC) are, in effect, calculated as a function of 417-383 or 34 tpd.

However, per the version of the 40CFR 51.166 incorporated into the 2D .0530 Rule (which is the CFR as of June 13, 2007 except those provisions noticed as stayed in 69 FR 40274), the calculation of projected actual emissions, per 40CFR51.166(b)(40)(ii)(c):

Shall exclude, in calculating any increase in emissions that results from the particular project, that portion of the unit’s emissions following the project that an existing unit could have accommodated during the consecutive 24-month period used to establish the baseline actual emissions under paragraph (b)(47) of this section and that are also unrelated to the particular project, including any increased utilization due to product demand growth;

Per the NCDAQs interpretation in this situation, the EAC should be calculated based on 383 tpd, not 417-383 or 34 tpd. As such the emissions calculations are revised and presented below in Table 4.

**Table 4**  
**Revised PSD Applicability Analysis for Furnace GF-2 as modified per application no. 9800155.08B**

	daily pull rate (avg), tpd	327	383	417			
	annual pull rate, tpy	119,282	139,795	152,205			
Column		A	B	C	(C-A)	(C-B)-A	
Pollutant	Emission Factors	Past Actuals, Based on 1998/1999 Data	Maximum Historical Production Rate (existing ability to	Max. Tested Production Rate (379.1 tpd+ 10%) (new	Potential - Past Actuals	Projected Actual-Past Actuals	Significance Level

			accommodate)	potential)			
	lb/ton	tpy	tpy	tpy	tpy	tpy	tpy
PM	0.77	45.92	53.82	58.60	12.68	-41.146	25
PM10	0.74	44.13	51.72	56.32	12.18	-39.542	15
<b>PM2.5</b>	<b>0.71</b>	<b>42.34</b>	<b>49.63</b>	<b>54.03</b>	<b>11.69</b>	<b>-37.939</b>	<b>10</b>
SO2	1.980	118.09	138.40	150.68	32.59	-105.803	40
NOx	1.230	73.36	85.97	93.61	20.25	-65.726	40
VOC	0.200	11.93	13.98	15.22	3.29	-10.687	40
CO	0.200	11.93	13.98	15.22	3.29	-10.687	100
H2SO4	0.360	21.47	25.16	27.40	5.93	-19.237	7
Fluoride	0.015	0.89	1.05	1.14	0.25	-0.802	3
Lead	0.00158	0.09	0.11	0.12	0.03	-0.084	1

Note that for all pollutants with the exception of PM<sub>2.5</sub>, the actual to potential applicability test (column C-A) shows the modification results in increases for each pollutant less than its significance level. As a result for these pollutants no PSD avoidance condition, nor a 2D.0530(u) recordkeeping requirement, is necessary. The PSD avoidance requirements for these pollutants as they appear in permit T22 (and first introduced in permit no. T21) will be removed.

However, for PM<sub>2.5</sub> an actual to actual applicability test was necessary to show the modification results in increases for PM<sub>2.5</sub> are less than its significance level. As a result, a 2D.0530(u) recordkeeping requirement will be necessary and will be placed into the permit.

### SO2 and NOX

Permit T20, contained a PSD avoidance condition for SO<sub>2</sub> and NO<sub>x</sub> and contained a production limitation of 182,500 tpy (500 tpd\*365) and emission limitations of 250 tpy for each pollutant.

Examining the revised PSD applicability analysis in Table 4 above, it can be seen that this modification results in increases for each pollutant (SO<sub>2</sub> and NO<sub>x</sub>) less than its respective significance level using the actual to potential applicability test. Therefore, no modification should have been made to the PSD avoidance condition as it appeared in permit no. T20.

However, per current DAQ policy, PSD avoidance conditions that have been in effect for over 5 years may be removed from the air permit. The DAQs position is that if a facility complies with a PSD avoidance condition for 5 years, it is clear that the modification that triggered the avoidance condition was not going to lead to a significant increase in emissions.

### Summary

In summary, as a result of this modification (as presented in the original application 9800155.08B), the only new requirements with respect to PSD will be the 2D.0530(u) requirement for PM<sub>2.5</sub>. The PSD avoidance condition for SO<sub>2</sub> and NO<sub>x</sub> as it existed prior to this modification will not be reinstated into the revised air permit.

## **V. Changes to the existing permit no. T22**

Existing Condition No.	New Condition No.	Changes
Cover Letter	Cover Letter	<ul style="list-style-type: none"> <li>Used current shell language, updated permit numbers, dates, etc.</li> <li>Removed application requirement for GF-2</li> </ul>
Insignificant activities list	Insignificant activities list	Added sources IS-V-1, IS-V-2 and IS-MCB at the Permittee's request
Permit cover	Permit cover	Revised dates, permit numbers, etc using current shell standards
Equipment list	Equipment list	Removed footnote for application requirement for GF-2
2.1.A.3		Revised the NSPS Subpart CC condition for GF-1 as follows:
e.	e.	Added a definition for a valid 3-hour block average opacity value

Existing Condition No.	New Condition No.	Changes
f.	NA	Removed existing paragraph f addressing O&M at all times per DAQ policy
g.	f.	Renumbered this condition and remaining conditions
i.	h.	Clarified definition for Percent Excess Emissions
j.	i., j. and k.	Revised recordkeeping requirements to make it more clear and consistent with NSPS recordkeeping requirements
k., l. and m.	l.	Revised reporting requirements to make it more clear and consistent with NSPS reporting requirements as well as a recently issued DAQ policy regarding facilities with COMS and NSPS affected facilities
2.1.A.4	NA	The PSD avoidance condition was removed as the facility has demonstrated compliance with it for greater than 5 years (current DAQ policy)
2.1.A.5.e.	2.1.A.4.e.	Revised the reporting requirement to account for the renumbering in condition 2.1.A.3.
2.1.A.6.	2.1.A.5.	Revised numbering to account for removed 2.1.A.4
2.1.A.7.	2.1.A.6.	Revised numbering to account for removed 2.1.A.4
2.1.B.3		Revised the NSPS Subpart CC condition for GF-2 as follows:
e.	e.	Added a definition for a valid 3-hour block average opacity value
f.	NA	Removed existing paragraph f addressing O&M at all times per DAQ policy
g.	f.	Renumbered this condition and remaining conditions
i.	h.	Clarified definition for Percent Excess Emissions
j.	i., j. and k.	Revised recordkeeping requirements to make it more clear and consistent with NSPS recordkeeping requirements
k., l. and m.	l.	Revised reporting requirements to make it more clear and consistent with NSPS reporting requirements as well as a recently issued DAQ policy regarding facilities with COMS and NSPS affected facilities
2.1.B.4	NA	<ul style="list-style-type: none"> <li>The PSD avoidance condition for GF-2 was removed based on the corrected application of actual to projected actual or potential test for PSD applicability.</li> <li>The existing components of PSD avoidance (as included prior to permit no. T21) will not be reinstated as the facility has demonstrated compliance with it for greater than 5 years (current DAQ policy)</li> </ul>
NA	2.1.B.5	<ul style="list-style-type: none"> <li>A 2D.0530(u) condition for PM2.5 was placed into the permit.</li> </ul>
2.1.B.5.e.	2.1.B.4.e.	Revised the reporting requirement to account for the renumbering in condition 2.1.B.3.
2.1.B.6.	NA	The startup notification for GF-2 was removed as it is no longer necessary.
2.1.G	NA	Removed the bottle labeling operations at the request of the Permittee as they have been removed from the facility.

### Table of Changes To Permit No. 03713T21

Condition No.	Changes
Cover Letter	<ul style="list-style-type: none"> <li>Used current shell language, updated permit numbers, dates, etc.</li> <li>Included the language requiring a "Title V Air Quality Permit Application on or before 12 months after commencing operation"</li> </ul>
Insignificant Activities list	<ul style="list-style-type: none"> <li>Per current DAQ guidance changed: ATTACHMENT to Permit No. 03713T22 to ATTACHMENT to cover letter to Air Quality Permit Number 03713T22</li> <li>Revised IS-AI-3 to 4 million Btu per hour at the Permittees request</li> </ul>
Permit cover	Revised dates, permit numbers, governor, secretary, etc using current shell standards
Permit page 3	The first two introductory paragraphs were removed as they have been deemed redundant and unnecessary
Equipment list	<ul style="list-style-type: none"> <li>Added the 2Q .0501(c) 2 modification footnote for GF-1. Reference for GF-2 was left in for reference purposes.</li> <li>Revised the heat input value for the forehearths for GF-1 to 13.3.</li> </ul>
2.1.A.6	Added a 2D0530(u) condition to address the use of projected actual emissions of PM10/PM2.5 to avoid PSD. Typical recordkeeping and reporting pursuant to the rule is required. A testing requirement is required for all PSD pollutants to verify the assumed emission factors in the analysis.
2.1.A.7	Added a start-up notification for the modified furnace GF-1

Condition No.	Changes
General Conditions	Revised to current revision 3.1.

## **VI. NSPS, NESHAP, PSD and CAM Applicability**

See the review for permit no T21 included as Attachment A.

## **VII. Public Notice**

TBD

## **VIII. Comments and Conclusions**

TBD

## **IX. Recommendations**

TBD

**Attachment A**  
**Permit Review for Permit No. T21**

**NORTH CAROLINA DIVISION OF  
AIR QUALITY**

**Air Permit Review**

**Permit Issue Date: January 30, 2009**

**Region:** Raleigh Regional Office  
**County:** Wilson  
**NC Facility ID:** 9800155  
**Inspector's Name:** Will Wike  
**Date of Last Inspection:** 09/16/2008  
**Compliance Code:** 3 / In Compliance – Inspection

<b>Facility Data</b>	<b>Permit Applicability (this application only)</b>
<p><b>Applicant (Facility's Name):</b> Saint-Gobain Containers</p> <p><b>Facility Address:</b>            Saint-Gobain Containers            2200 Firestone Parkway            Wilson, NC 27893</p> <p><b>SIC:</b> 3221 / Glass Containers  <b>NAICS:</b> 327213 / Glass Container Manufacturing</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.0521, .0524  <b>NSPS:</b> Supart CC conditions substantially revised  <b>NESHAP:</b>  <b>PSD:</b>  <b>PSD Avoidance:</b> Yes, condition for GF-2 significantly modified  <b>NC Toxics:</b> not triggered  <b>112@:</b>  <b>Other:</b></p>

Contact Data			Application Data
<b>Facility Contact</b>	<b>Authorized Contact</b>	<b>Technical Contact</b>	
Howard Huepfel Plant Engineering Manager (252) 234-5212 P O Box 1757 Wilson NC, 27894	Ross Houser Plant Manger (252) 234-5225 P O Box 1757 Wilson NC, 27894	Valerie Krulic Director, Environmental (765) 741-7117 P O Box 4200 Muncie IN, 47307+4200	<p><b>Application Number:</b> 9800155.08B  <b>Date Received:</b> 05/19/2008  <b>Application Type:</b> Modification  <b>Application Schedule:</b> TV-Sign-501(c)(2)  <b>Existing Permit Data</b>  <b>Existing Permit Number:</b> 03713/T20  <b>Existing Permit Issue Date:</b> 06/21/2007  <b>Existing Permit Expiration Date:</b> 05/31/2012</p>

<p><b>Review Engineer:</b> Joseph Voelker</p> <p><b>Review Engineer's Signature:</b> _____ <b>Date:</b> _____</p>	<p style="text-align: center;"><b>Comments / Recommendations:</b></p> <p><b>Issue</b> 03713/T21  <b>Permit Issue Date:</b> January 30, 2009  <b>Permit Expiration Date:</b> May 31, 2012</p>
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**I. Introduction and Purpose of Application**

Saint-Gobain Containers, Inc. (Saint Gobain, S-G) owns and operates a glass container production facility located in Wilson, North Carolina.

Application .08B was submitted to perform some modifications to furnace GF-2. Application .08A was initiated by the DAQ through the "reopen for cause" procedures. Application .08A was eventually consolidated into application 08B. See the chronology for further details regarding their processing timelines.

Application .08B was submitted to address the following as excerpted from the application cover letter:

Saint-Gobain is submitting this permit application for proposed rebricking, maintenance, and improvements to Glass Melting Furnace #2 (Source ID No. GF-2 or Wilson #29 furnace), to be completed in March 2009. The nature and extent of work includes some equipment replacement and design improvements to the furnace. The repairs proposed in this permit do not contravene or conflict with any existing conditions in the facility's Title V permit. Therefore, Saint-Gobain is seeking a construction and operating permit for the proposed GF-2 repairs in accordance with procedures in Title 15A of North Carolina Administrative Code (15A NCAC) Chapter

2Q.0501(c)(2) and 2Q.0504. All information required to issue a construction and operating permit for the proposed GF-2 change is contained in this permit application. Saint-Gobain will submit an application containing the information required to modify the Title V permit as specified in 15A NCAC 2Q .0505 – Application Submittal Content within 12 months of commencement of operation of the furnace.

These changes will be discussed in detail (as necessary) in Section 3. All changes to the permit are listed in Section IV. It will be shown that the modification will result in increases in emissions that are less than the PSD Significant Emission Rates (SERs). It will also be shown that 2D .1100 applicability was not triggered for this modification.

Throughout this review document, language from the permit application is excerpted for expediency. In ALL cases the language used was reviewed by this engineer and was determined to be correct and consistent with this engineer’s interpretation of facts, albeit the process or the regulatory applicability.

## II. Chronology

*(Only critical path related events are presented)*

Date	Description
February 21, 2008	A permit reopening letter was sent to S-G to address the WILSON permit condition for Subpart CC because of the discovery during the modification of the S-G HENDERSON permit that the NSPS Subpart CC permit conditions for both the HENDERSON and WILSON permits were not correct or adequate to ensure compliance.
February 29, 2008	The HENDERSON Permit T17 was issued with revised NSPS Subpart CC language
April 2, 2008	Letter received on behalf of Saint-Gobain for a petition for a contested case hearing. The primary reason was to address how the DAQ addressed compliance with NSPS Subpart CC in the revised HENDERSON permit. Thus, the HENDERSON permit no. T17 was adjudicated.
April 17, 2008	WILSON Permit No. T20 was “reopened for cause” as described above. This action was assigned application .08A.
May 19, 2008	A modification application was received in the RCO for the WILSON permit and assigned application no .08B. Since the current permit was reopened for cause as described above, the permit could not be modified and reissued to address .08B until the permit condition addressing Subpart CC could be resolved. From this point forward ongoing discussions between S-G and the DAQ focused on the revision of the Subpart CC language in the adjudicated HENDERSON permit. The WILSON permit applications .08A and .08B were effectively on HOLD from this point in time.
November 10, 2008	S-G revised application no. 08B with additional modifications.
December 8, 2008	Given that the DAQ and S-G were close to an agreement on the Subpart CC language for the HENDERSON permit, review of the WILSON application .08B was initiated. At this point in time it was still assumed that if S-G objected to the language in the HENDERSON permit, than it would disagree with the same language being used in the to-be-revised WILSON permit.
December 12, 2008	A discussion with Valerie Krulic occurred in which she stated that although S-G has some reservations given the language of the 2D .0521 condition (which was also added as a result of the NSPS Subpart CC condition revisions) for the HENDERSON permit, S-G was OK with language similar to the proposed Subpart CC and 2D .0521 language for the HENDERSON permit being placed into the WILSON permit. Thus, application .08A (reopen for cause) and 08B (actual modification) could proceed independently of the HENDERSON application
December 15, 2008	Application .08A was consolidated into .08B
December 16, 2008	Bob Metzger sent an email requesting a modification of the insignificant activity list.
December 22, 2008	Joe Voelker sent S-G an email asking for an explanation why that sulfuric acid emissions were included in the PSD avoidance calculations but have never actually been reported for emissions inventory purposes. Subsequent conversations with Bob Metzger (S-G) and Nicole Battiste (Trinity) did not yield a solid answer. The region has been notified to determine if any compliance issues are present. For this permit application purpose, the analysis was accepted. The analysis was also expanded to include other suspected emissions including Fluorides and lead. See Section IV for discussion.

Date	Description
January 7, 2009	It was discovered the PSD avoidance calculations for PM were based on the 1998 emission factor even for the years for which a revised emission factor was available. Thus, the initial analysis is somewhat flawed. In the end however, the baseline year chosen data was correct in this regard. In the end, the facility will have to source test to develop emission factors for all relevant PSD pollutants. Thus, source testing will raise any potential issues with the submitted analysis.
January 23, 2009	Revised calculations for sulfuric acid, fluorides and lead emissions were submitted.
January 26, 2009	Email received from Nicole Battiste with comments on DRAFT permit. The major comments focused on testing and monitoring for PSD avoidance conditions.
January 27, 2009	Email received from Bob Metzger with comments on DRAFT permit. A phone conversation followed in which comments from January 26 and 27 were discussed. The major comments focused on testing and monitoring for PSD avoidance conditions.
January 29, 2009	Email received from S-G consultant (Tony Jabon) with additional comments. DAQ agreed to revise emission limits to include projected demand growth.

### III. Modification Description

The proposed modifications only affect the product line in which furnace GF-2 exists. The modification includes the following:

#### 1. - Furnace GF-2

This permit application is being submitted to update and rebuild portions of GF-2. As presented in the application, the following changes related to air quality permitting are anticipated as part of the furnace rebricking and maintenance project:

- Replacement of furnace burners;
- Redesign of existing doghouses;
- Installation of additional insulation;
- Replacement of existing distributor, alcoves, and forehearths; and
- Addition of one annealing Lehr (insignificant activity)

Each will be described briefly below.

#### Replacement of furnace burners

As excerpted from the application:

The current melter burners will be replaced with Prime-fires to reduce energy usage and NOx emissions. Since the current burner design is obsolete and burners identically sized to the existing burners are not available for this application, the only feasible option for Saint-Gobain is to install slightly larger burners. The total furnace rating (gas capacity) will increase from 65.84 million British thermal units per hour (MMBtu/hr) to 98.0 MMBtu/hr. However, since the melter area and the installed boost will not change, the furnace production capacity will remain the same.

#### Redesign of existing doghouses

As excerpted from the application:

The interior wall on each of the two doghouses will be flared, rather than straight, to promote better batch pattern. The buckstay (steel beam) must be moved to accommodate the doghouse changes.

#### Installation of additional insulation

As excerpted from the application:

The furnace insulation will be increased for the crown (net increase of 1.5 inches), as well as the frontwall, breastwalls, and backwall (net increase of 3 inches of insulation for each wall) to reduce energy loss

#### Replacement of existing distributor, alcoves, and forehearths

As excerpted from the application:

Emission Unit GF-2 encompasses associated emission units in the Title V permit. These units include the distributor and alcoves, three (3) forehearths, and exhaust flues. The existing distributor and alcoves will be replaced with new equipment, which will result in a capacity decrease from 11.0 MMBtu/hr to 9.1 MMBtu/hr. The three forehearths will also be replaced. The capacity of Forehearth No.1 will change from 1.87 MMBtu/hr to 1.9 MMBtu/hr, while the capacity of Forehearths Nos. 2 and 3 will change from 1.87 MMBtu/hr to 1.7 MMBtu/hr. Therefore, the combustion equipment associated with GF-2 will experience a net decrease in capacity from 16.6 MMBtu/hr to 14.4 MMBtu/hr. Therefore, fuel usage and associated emissions will not increase as a result of these changes.

#### **Addition of one annealing lehr (insignificant activity)**

As excerpted from the application:

**The proposed project will also involve the replacement of one (1) of the annealing lehrs, which are included in the list of insignificant activities in the Title V permit under IS-AL.** The existing #291 lehr (3.4 MMBtu/hr) will be removed from operation. The existing #292 lehr will be relocated to replace the removed #291 lehr. Finally, a new 6 MMBtu/hr lehr will be installed in the previous location of the #292 lehr. The replacement and relocation of the lehrs will not affect their designation as insignificant activities at the Wilson facility. Emissions from the new lehr will be lower than the 5 tpy insignificant activity threshold. Therefore, the new lehr will be included on the list of insignificant activities as part of IS-AL.

The revised permit will reflect each lehr individually with a unique ID number. The following list was provided by Bob Metzger via email and reflects the final arrangement of annealing lehrs after the proposed modification.

IS-AL-1 for Shop 281 Lehr (2.580 MMBtu/hour)  
IS-AL-2 for Shop 282 Lehr (3.456 MMBtu/hour)  
IS-AL-3 for Shop 283 Lehr (3.456 MMBtu/hour)  
IS-AL-4 for Shop 284 Lehr (4.400 MMBtu/hour)  
IS-AL-5 for Shop 291 Lehr (3.400 MMBtu/hour)  
IS-AL-6 for Shop 292 Lehr (2.448 MMBtu/hour)

## **2. Unpermitted Pusher**

As excerpted from the application:

Saint-Gobain is submitting this permit application addendum to request a replacement of three pushers on machines for the GF-2 (Furnace 29) furnace. Two of these pushers are located on the machines in GF-2 (Furnace 29) Shop 292 and one pusher is located on the machines in GF-2 (Furnace 29) Shop 291. The pushers on the machines in both shops are used to push the formed bottles from the machine conveyor to the annealing lehr entrance. The existing pushers will be replaced with new pushers to allow a production speed increase of 7 tons of glass bottles per day for Shop 292 (3.5 tons per pusher), and 1.2 tons of glass bottles per day for Shop 291, for a total increase of 8.2 tons per day for GF-2 (Furnace 29).

S-G maintains that the pusher replacement does not affect the glass furnace production capacity of 417 tons per day, which is established by the furnace melter area and boost. However, it will be shown that this modification does have implications in output of final product and hence overall production capacity of the furnace GF-2, hence the need for discussion of this unpermitted piece of equipment.

## **IV. Regulatory Review**

The following regulations apply or potentially apply to these modifications

- 15A NCAC 2D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES
- 15A NCAC 2D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES
- 15A NCAC 2D .0524: NSPS 40 CFR PART 60 SUBPART CC
- 15A NCAC 2D .0521: CONTROL OF VISIBLE EMISSIONS
- 15A NCAC 2D .1806: CONTROL AND PROHIBITION OF ODOROUS EMISSIONS
- 15A NCAC 2D .1100, CONTROL OF TOXIC AIR POLLUTANTS
- 15A NCAC 2Q. 0317: AVOIDANCE CONDITIONS for 15A NCAC 2D. 0530: PREVENTION OF SIGNIFICANT DETERIORATION

Each will be discussed individually below.

### **15A NCAC 2D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES**

After the modification the maximum throughput of material for GF-2 following the proposed changes will not exceed 417 tons per day (or ~35,000 pounds per hour). Equation E=4.10(P)0.67 applies to throughputs of less than 60,000 pound per hour. Therefore, equation E=4.10(P)0.67 applies to GF-2. The maximum allowable emission rate at 35,000 pounds per hour is equal approximately 28 lb/hr or approximately 1.6 lb/ton. NSPS Subpart CC imposes a more stringent 1 lb/ton PM emission limitation. However, 1 lb/ton only applies to filterable PM. However, based on the S-G Henderson facility, it is not expected that the condensable PM fraction to be as great as 60% of the total PM.

Compliance with this regulation is expected. No changes will be made to the existing condition.

#### **15A NCAC 2D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES**

Contrary to the opinion of the permittee in the application, this regulation does apply to all SO<sub>2</sub> emissions from this process, including the SO<sub>2</sub> formed from the oxidation of the sulfur in the batch materials. In any case the permittee has tested for SO<sub>2</sub> emissions for PSD avoidance purposes and the highest emission rate achieved is with No.4 fuel oil at 3.50 lb SO<sub>2</sub>/ton glass (as included in the current permit). At the future potential emission rate of 417 tpd glass pull rate (approx. 17.375 tph) this would be equivalent to 60.8 lb/hr. At a future maximum heat input emission rate of 112.4 mmBtu/hr the allowable emission rate of 2.3 lb/mmBtu is equivalent to 210.7 lb/hr of SO<sub>2</sub>.

Considering this modification only increases the heat input of the natural gas-fired burners, that it is unlikely the modification will result in an increase of SO<sub>2</sub> on a per ton glass pulled basis and that the facility has not had a violation of 2D .0516, it is unlikely any compliance issues will result from this modification.

Continued compliance with this regulation is expected. No changes will be made to the existing condition.

#### **15A NCAC 2D .0524: NSPS 40 CFR PART 60 SUBPART CC**

GF-2 (Furnace 29) is subject to NSPS Subpart CC – Standards of Performance for Glass Manufacturing Plants. As excerpted from the application:

Since GF-2 is currently subject to NSPS Subpart CC requirements for new sources, there will be no additional requirements as a result of the proposed project. Regardless of whether the rebuild project qualifies as a modification under NSPS Subpart CC, the furnace will continue to be subject to the applicable requirements in NSPS Subpart CC. The facility's current Title V permit contains all applicable NSPS Subpart CC emission limits, monitoring, recordkeeping, and reporting requirements for GF-2. Therefore, the Title V permit will not need to be amended to address NSPS Subpart CC requirements for GF-2.

This engineer concurs with this statement.

Note also that during this permit revision the Subpart CC permit condition is being SUBSTANTIALLY revised. It will also include annual PM testing. As a result, a specific requirement to perform source testing to determine the effects of this modification are unnecessary.

The language incorporated (with the exception for facility specifics) was developed as a result of the collaboration between S-G and the DAQ during the adjudication of permit no. T17 for the HENDERSON facility (See the CHRONOLOGY Section). The review for the HENDERSON T18 permit should be examined if any additional explanation is needed.

Continued compliance with this regulation as a result of this modification is expected. Regarding the revised language in general, the collaboration between S-G and the DAQ in the condition's development should minimize any compliance issues.

#### **15A NCAC 2D .0521: CONTROL OF VISIBLE EMISSIONS**

The applicability of this regulation will be new for this revised permit. As discussed in the CHRONOLOGY, the revision of the Subpart CC condition and the decision that Subpart CC did not contain an opacity standard meant that this standard applies.

This condition is essentially the same in content as the one incorporated into HENDERSON Permit no. T18. The review for the HENDERSON T18 permit should be examined if any additional explanation is needed.

Because the routine operation of this particular glass furnace involves flue cleaning, which, by the Permittees own admission, may cause compliance issues with the requirement that

For sources required to install, operate, and maintain continuous opacity monitoring systems (COMS), compliance with the 20 percent opacity limit shall be determined as follows:[15A NCAC 2D .0521(g)]

- i. No more than four six-minute periods shall exceed the opacity standard in any one day; ...

The Permittee expressed this concern with respect to the HENDERSON permit in a letter to Shelia Holman, Deputy Director on December 19, 2008. Therefore, it is expected that future compliance issues with regard to flue cleaning may arise.

#### **15A NCAC 2D .1806: CONTROL AND PROHIBITION OF ODOROUS EMISSIONS**

No compliance history with regard to this regulation exists.

Continued compliance with this regulation is expected. No changes will be made to the existing condition.

#### **15A NCAC 2D .1100 CONTROL OF TOXIC AIR POLLUTANTS**

Neither this source nor this facility has been triggered into toxics.

As eloquently stated in the permit application:

The proposed changes discussed in this application involve changes to equipment that emits toxic air pollutants (TAPs). Under 15A NCAC 2Q.0706 (b)(1)(A) and (B), the facility is only required to submit a permit application under 15A NCAC 2D.1100 if the modification results in:

*(A) a net increase in emissions of any toxic air pollutant that the facility was emitting before the modification; or  
(B) emissions of any toxic air pollutant that the facility was not emitting before the modification if such emissions exceed the levels contained in Rule .0711 of this Section.*

As discussed in Section 2.2 of this application, the proposed pusher replacement (and furnace changes) does not result in an increase in potential furnace throughput capacity, and does not allow the facility to produce new products that result in emissions of new TAPs. Therefore, the proposed pusher replacement does not meet the conditions provided in (A) and (B) above, and no permit application to comply with 2D.1100 is required.

#### **From 15A NCAC 02Q .0703 DEFINITIONS**

"Net increase in emissions" means for a modification the sum of any increases in permitted allowable and decreases in the actual rates of emissions from the proposed modification from the sources at the facility for which the air permit application is being filed.

This source is currently permitted to produce 500 tpd of glass (for PSD purposes and also indicated as such in the equipment descriptor) and after the modification will be 417 tpd. With respect to the non-exempt TAP emissions, the TAP emissions are assumed to be directly proportional to the production rate. Clearly then there is no net increase in emissions as defined in 2Q .0703.

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

The Wilson facility is considered a major source for PSD purposes. Furnace GF-2 currently has a PSD avoidance condition. Wilson County currently has an "in attainment" status for all PSD pollutants.

As described previously the modification of the facility is primarily furnace GF-2 but the proposed pusher replacement will also allow for a total increase of 8.2 tons per day for GF-2 (Furnace 29).

The facility has calculated actual projected emissions increases due to the proposed project from the GF-2 (Furnace 29) production line and compared them to the PSD significance levels.

A detailed methodology and emissions calculations are included in the application package. The salient points will be presented below in a discussion of the following table. Note that only the PM, NOx and SO2 data was actually obtained from source testing of the Wilson furnace. All other data is from the Henderson facility or AP-42. Thus, much of this analysis is simply based on the same emission factors before and after the modification. Thus the emissions are directly proportional to the pull rate in all cases. In reality the emissions profile changes based on fuel type, batch materials and the effect of this modification. Since testing will be required as a result of this modification, future analyses will be based on more representative data.

daily pull rate (avg), tpd		326.8	383	417	500	56.2					
annual pull rate, tpy		119281.5	139795	152205	182500	20513.5					
Pollutant	Emission Factors	Past Actuals, Based on 1998/1999 Data	Maximum Historical Production Rate	Max. Tested Production Rate (379.1 tpd+ 10%)	Current Permit Limits	Projected Demand Growth Increase	Emissions Increase Assoc. w/ Modification	Ancillary Emissions Increases	Total Emissions Increases	Significance Level	Ratio of emissions increase to significance levels
	lb/ton	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	
PM	0.62	37.0	43.3	47.2	56.6	6.4	3.85	1	4.8	25	0.19
PM10	0.59	35.2	41.2	44.9	53.8	6.1	3.66	0.9	4.6	15	0.30
PM2.5	0.56	33.4	39.1	42.6	51.1	5.7	3.47	0.9	4.4	15	0.29
SO2	1.98	118.1	138.4	150.7	180.7	20.3	12.29	0.1	12.4	40	0.31
NOx	1.23	73.4	86.0	93.6	112.2	12.6	7.63	2.4	10.0	40	0.25
VOC	0.2	11.9	14.0	15.2	18.3	2.1	1.24	0.2	1.4	40	0.04
CO	0.2	11.9	14.0	15.2	18.3	2.1	1.24	1.2	2.4	100	0.02
H2SO4	0.268	16.0	18.7	20.4	24.5	2.7	1.66	0	1.7	7	0.24
Fluoride	0.015	0.89	1.05	1.14	1.37	0.15	0.093	0	0.093	3	0.03
Lead	0.00158	0.09	0.11	0.12	0.14	0.02	0.0098	1.1e-7	0.0098	0.6	0.02

The table above, except where noted is based on the emissions from the melter only.

The baseline emissions for the ancillary equipment was calculated by this engineer, using the same emission factors to estimate ancillary emissions increases, to be

Pollutant	emission factor, lb/ton	tons per year
PM	0.16	9.54
PM10	0.15	8.95
PM2.5	0.15	8.95
SO2	0.02	1.19
NOX	0.39	23.26
VOC	0.04	2.39
CO	0.2	11.93

The ancillary emissions “increases” are assumed to be directly proportional to glass throughput. Note the WILSON does not report sulfuric acid emission in the emissions inventory but they did include it for the PSD analysis. This reporting discrepancy was reported to the regional office as this is primarily a compliance issue. Given that the additional analysis as shown above supports the notion of this modification resulting in emission increases less than significance levels, it has no bearing on this modification application.

Projected demand growth increase was assumed to be equal to the difference between the maximum historical production rate and the 1998/99 data. Thus, these values are relatively small. Since these values can be subtracted from the modification’s projected emissions increases this approach is considered conservative for PSD purposes.

Emissions increases associated with the modification assumed to be equal to the difference between the future potential (based on 417 tpd) and the maximum historical production rate (383 tpd). In essence this modification is to allow the facility to produce at a rate equal to their current maximum “permitted” operating capacity, which is determined by the source testing for PSD purposes, which when conducted was 383 tpy. DAQ policy allows a source to operate at a rate up to 10% over its production rate during testing, hence, in this case, would be 417 tpd.

As shown in the table above (based on Table 1 of the application addendum), emissions resulting from the GF-2 (Furnace 29) rebricking, maintenance, improvements, and pusher replacement do not exceed the PSD significant emission rates and therefore do not require PSD review.

The PSD avoidance condition in the permit will be revised by including allowable emission limitations equal to the sum of the baseline emissions plus demand growth increase, plus the significant emission levels for each PSD pollutant. In other words the limit will be equal to the emissions associated with the maximum production rate the facility has achieved as currently configured (383 tpd) plus significance levels. Associated record keeping and reporting will be included as well.

The new limits will be as follows:

Pollutant	Past Actuals, Based on 1998/1999 Data	Demand Growth increase	Significance Level	New PSD Avoidance Limits
	tpy	tpy	tpy	tpy
PM	36.98	6.36	25	68.3
PM10	35.19	6.05	15	56.2
PM2.5	33.40	5.74	15	54.1
SO2	118.09	20.31	40	178.4
NOx	73.36	12.62	40	126.0
VOC	11.93	2.05	40	54.0
CO	11.93	2.05	100	114.0
H2SO4	21.47	3.69	7	32.2
Fluoride	0.89	0.15	3	4.0
Lead	0.09	0.02	0.60	0.7

Since some of the pollutant formation is driven primarily by fuel combustion (e.g., NOx, CO) and some by the batch material composition (e.g. sulfuric acid and fluoride), the recordkeeping and reporting will have to include most of the pollutants to ensure the condition is practically enforceable.

PM2.5 limits will not be included. However, compliance with assumed precursors NOx and SO2 should assure compliance.

Note that “controlling” emissions (based on the supplied analysis) are PM10, NOx and SO2, which are on the order of 30% of their respective significance levels. Also, since these emissions estimates are not solely a function of production rate and the facility may or can source test for these pollutants (and have in the past notably for PM (PM10) and SO2) the ratios of emissions to production could change in the future. As a result no production limitation will imposed in the PSD avoidance condition as it could prove over constraining and unnecessary given the recordkeeping and reporting of the actual emissions.

The fuel sulfur content restriction will remain as the permittee did not request for this limitation to be addressed. This limitation also allows tracking changes of the sulfur content between source testing.

Annual testing will be imposed to develop emission factors for the calculation of emissions to demonstrate compliance with the emission limits imposed. Testing will be required between 11 and 13 months after the prior test. The Permittee will be required to use the most recent emission factor developed. Note that final approval by the DAQ SSCB often takes months. As a result the Permittee will use the data immediately following completion of the test with subsequent revision of data submitted as necessary.

The Permittee will be required to test for each fuel burned. The testing will be required upon initial use of the fuel after the modification per this application. Testing will only be required once the facility anticipates using the fuel for greater than 10% of the total operating time over a 12-month period. This should ease the testing burden on the facility for a fuel that is to be used a very short period of time. In general this furnace burns natural gas, so it may be some time before testing is conducted for fuels other than natural gas. Given that propane is similar to natural gas, no testing will be required for firing propane.

It is recognized the majority of the pollutants are emitted from the melter stack. However, the emissions of all sources affected by this modification must be included in the analysis to ensure this modification is below the significance levels. Thus, this includes the distributor and forehearth as well as the appurtenant insignificant activities.

In the submitted analysis the Permittee submitted baseline data for the furnaces, specifically for the melters ONLY. Given that the emissions from the distributor, forehearth and other appurtenant equipment (included in the determination of significance levels) are assumed to be directly proportional to the melter emissions, emission limits based on the melter baseline emissions only can be included in the permit. In this way, monitoring, recordkeeping and reporting will be required only on the melter.

Given that all estimates of the baseline with the exception of the PM, SO2 and NOx, are based on AP-42 or data obtained at other facilities, the Permittee will be required to submit a permit application to revise the emission limitations when more representative data is obtained in the initial source tests.

Also note that given the descriptor for the furnace will be revised to 417 tpd to reflect this application. This will allow for the DAQ to assess whether modifications have occurred to the process over time. It is recognized that this limit in the descriptor is based solely on the analysis submitted. It appears from the data the Permittee could have a larger throughput and still meet the less than PSD significant levels.

## V. Changes to the existing permit

Condition No.	Changes
ALL	Removed reference to PART I as TV permits will no longer contain a PART II.
Cover Letter	<ul style="list-style-type: none"> <li>Used current shell language, updated permit numbers, dates, etc.</li> <li>Included the language requiring a "Title V Air Quality Permit Application on or before 12 months after commencing operation"</li> </ul>
Insignificant Activities List	<ul style="list-style-type: none"> <li>Revised list layout to current DAQ standards</li> <li>Added the following source: IS-EFP for an emergency diesel-fueled fire pump</li> <li>Revised the following item (upon request from Permittee): IS-AL (annealing lehrs) to IS-AL-1 for Shop 281 Lehr (2.580 MMBtu/hour) IS-AL-2 for Shop 282 Lehr (3.456 MMBtu/hour) IS-AL-3 for Shop 283 Lehr (3.456 MMBtu/hour) IS-AL-4 for Shop 284 Lehr (4.400 MMBtu/hour) IS-AL-5 for Shop 291 Lehr (3.400 MMBtu/hour) IS-AL-6 for Shop 292 Lehr (2.448 MMBtu/hour)</li> </ul>
Permit cover	Revised dates, permit numbers, governor, secretary, etc using current shell standards
Equipment list	<ul style="list-style-type: none"> <li>Added the 2Q .0501(c) 2 modification footnote.</li> <li>Revised GF-2 maximum pull rate to 417 tons per day based on the submitted PSD avoidance analysis</li> <li>Revised the heat input values for the melter, distributor and forehearths for GF-2</li> </ul>
All Testing [15A NCAC 2D .0501 (c)(3), (4) and (8)] Conditions	For all Testing [15A NCAC 2D .0501 (c)] Conditions the regulatory citation was revised to 15A NCAC 2D .2601 to reflect recent rule changes
ALL 2D .0521 conditions	<p>For all 2D .0521 conditions the following condition</p> <p>ii. demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 2D .0501(c)(8) is below the limit given in Section (as applicable) above.</p> <p style="text-align: center;">was replaced with :</p> <p>ii. demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 02D .2601 (Method 9) for 12 minutes is below the limit given in Section(as applicable) above</p>
2.1.A	<ul style="list-style-type: none"> <li>In the applicable regulation table for 2D .0515 the phrase: (filterable from melter, distributor and forehearths combined) was changed to: (melter, distributor and forehearths combined)</li> </ul> <p>2D .0515 applies to both filterable and condensable PM fractions. No changes needed to the permit condition</p> <ul style="list-style-type: none"> <li>Revised table to reflect visible emissions being regulated under 2D .0521 instead of 2D .0524(NSPS)</li> </ul>
2.1.A.3	The NSPS Subpart CC condition was substantially revised. See the permit review for the changes.

Condition No.	Changes
2.1.A.5	A 2D.0521 condition was added since the conclusion was reached that the NSPS Subpart CC does not include an opacity standard; therefore 2D.0521 does apply. See the permit review for full discussion. This standard applies to all parts of the glass-melting furnace, including the melter distributor and forehearths. Note that COMs is required only on the melter because of the applicability of Subpart CC. No monitoring is applied to the distributor or forehearths since they are emitted indoors and do not have a dedicated exhaust point. . Language stating “No monitoring or recordkeeping requirements are required for the distributor and forehearths” was added to the permit at the request of the Permittee to clarify this intent.
2.1.B	<ul style="list-style-type: none"> <li>• In the applicable regulation table for 2D .0515 the phrase: (filterable from melter, distributor and forehearths combined) was changed to: (melter, distributor and forehearths combined) 2D .0515 applies to both filterable and condensable PM fractions. No changes needed to the permit condition</li> <li>• Revised table to reflect visible emissions being regulated under 2D .0521 instead of 2D .0524(NSPS)</li> </ul>
2.1.B.3	The NSPS Subpart CC condition was substantially revised. See the permit review for the changes.
2.1.B.4	<p>The PSD avoidance condition was substantially revised to accommodate the proposed modification. This includes:</p> <ul style="list-style-type: none"> <li>• Removing annual pull rate limitation. Permittee will use emissions data to demonstrate compliance with emissions limitations.</li> <li>• Revised limitations for NOx and SO2</li> <li>• New limitations for CO, PM, PM10, VOC, H2SO4, Fluorides and Lead. PM10 will serve as surrogate for PM2.5</li> <li>• Once per 12-month testing requirement for all pollutants</li> <li>• Recordkeeping and reporting for all monitoring requirements</li> </ul>
2.1.B.5	A 2D.0521 condition was added since the conclusion was reached that the NSPS Subpart CC does not include an opacity standard; therefore 2D.0521 does apply. See the permit review for full discussion. This standard applies to all parts of the glass-melting furnace, including the melter distributor and forehearths. Note that COMs is required only on the melter because of the applicability of Subpart CC. No monitoring is applied to the distributor or forehearths since they are emitted indoors and do not have a dedicated exhaust point. Language stating “No monitoring or recordkeeping requirements are required for the distributor and forehearths” was added to the permit at the request of the Permittee to clarify this intent.
2.1.B.6	Added a start-up notification for the modified furnace GF2.
General Conditions	<p>Updated to version v.2.22.1, which includes the new conditions:</p> <ul style="list-style-type: none"> <li>• MM, which is for 15A NCAC 2D .0540 "Particulates from Fugitive Dust Emission Sources", a state enforceable only condition and</li> <li>• NN, which addresses application guidance for modifications made pursuant to 15A NCAC 2Q .0501(c)(2), 15A NCAC 2Q .0501(d)(2), and 502(b)(10), in accordance with 15A NCAC 2Q .0523(a)(1)(C)</li> </ul>

## VI. NSPS, NESHAP, PSD and CAM Applicability

### NSPS and PSD

See Section IV for full discussion on Subpart CC and PSD implications.

### NESHAP

As excerpted from the application:

The Wilson facility is considered an area source of HAP, since potential emissions of each individual HAP are less than 10 tpy and potential emissions of total aggregate HAP are less than 25 tpy. Therefore, the Wilson facility is not subject to any major source NESHAPS at this time.

The Wilson facility is potentially subject to an Area Source NESHAP, 40 CFR 63, Subpart SSSSSS – NESHAPs for Glass Manufacturing. Facilities are subject to this Subpart if all of the following criteria are met:

- (a) *A glass manufacturing facility is a plant site that manufactures flat glass, glass containers, or pressed and blown glass by melting a mixture of raw materials, as defined in § 63.11459, to produce molten glass and form the molten glass into sheets, containers, or other shapes.*

- (b) *An area source of HAP emissions is any stationary source or group of stationary sources within a contiguous area under common control that does not have the potential to emit any single HAP at a rate of 9.07 megagrams per year (Mg/yr) (10 tons per year (tpy)) or more and any combination of HAP at a rate of 22.68 Mg/yr (25 tpy) or more.*
- (c) *Your glass manufacturing facility uses one or more continuous furnaces to produce glass that contains compounds of one or more glass manufacturing metal HAP, as defined in §63.11459, as raw materials in a glass manufacturing batch formulation.*

Although the first two applicability conditions are met, the third condition is not applicable to the Wilson facility. The Wilson facility does not use any glass manufacturing metal HAPs (arsenic, cadmium, chromium, lead, manganese, and nickel) listed in §63.11459 as raw materials in a glass manufacturing batch formulation. Therefore, the Wilson facility is not considered an affected source of NESHAP Subpart SSSSSS, and is not subject to any major or area source NESHAP requirements.

However, lead is also PSD (NSR) pollutant and the HENDERSON facility, which is similar to the WILSON facility, reports lead emissions from the furnace melter. Thus this claim will not affect the PSD avoidance condition.

### **CAM**

CAM does not apply to the furnace GF-2 as it does not utilize a control device.

## **VII. Recommendations**

It is recommended that permit revision T21 be issued.