The State of New Hampshire
Department of Environmental Services

Robert R. Scott, Commissioner

November 17, 2020

William Kempskie
Saint-Gobain Performance Plastics
701 Daniel Webster Highway
Merrimack, NH 03054-1137

RE: Revised On-Site Full Compliance Evaluation Report

Dear Mr. Kempskie:

The New Hampshire Department of Environmental Services, Air Resources Division has completed a compliance evaluation of Saint-Gobain Performance Plastics, Merrimack, NH facility. The compliance evaluation included an on-site visual emission observation completed August 28, 2020 and a records review conducted on September 14, 2020. This is a copy of the evaluation report for your review and records.

Please note that this Full Compliance Evaluation pertains only to N.H. Code Admin. Rules, Env-A 100 *et seq*. as they relate to your air permit. Any compliance determination made with respect to the air rules does not in any way imply compliance with any other applicable environmental rules or laws.

NHDES found deficiencies during this compliance evaluation as detailed in this report.

If you have any questions, please do not hesitate to give me a call at (603) 271-0650 or by email at Thomas.guertin@des.nh.gov.

Sincerely,

Thomas Guertin
Compliance Assessment Section Supervisor
Air Resources Division

cc: Town Administrator, Town of Merrimack, 6 Baboosic Lake Road, Merrimack, NH 03054

Abbreviations and Acronyms

AAL	Ambient Air Limit
acf	actual cubic foot
ags	above ground surface
ASTM	American Society of Testing and Materials
Btu	British thermal units
CAS	Chemical Abstracts Service
CI	Compression Ignition
cfm	cubic feet per minute
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CPMS	Continuous Parameter Monitoring System
DER	Discrete Emission Reduction
Env-A	New Hampshire Code of Administrative Rules – Air Resources Division
ERC	Emission Reduction Credit
ft	foot or feet
ft^3	cubic feet
gal	gallon
HAP	Hazardous Air Pollutant
hp	horsepower
hr	hour
kW	kilowatt
lb	pound
LPG	Liquefied Petroleum Gas
MACT	Maximum Achievable Control Technology
MSDS	Material Safety Data Sheet
Mg	One metric ton or 2,205 lbs
MM	million
MW	megawatt
NAAQS	National Ambient Air Quality Standard
NG	Natural Gas
NHDES	New Hampshire Department of Environmental Services
NMVOC	Non-methane Volatile Organic Compound
NOx	Oxides of Nitrogen
NSCR	Non-Selective Catalytic Reduction
NSPS	New Source Performance Standard
PM_{10}	Particulate Matter < 10 microns
ppm	parts per million
psi	pounds per square inch
RACT	Reasonably Available Control Technology
RICE	Reciprocating Internal Combustion Engine
RSA	Revised Statutes Annotated
RTAP	Regulated Toxic Air Pollutant
scf	standard cubic foot
SDS	Safety Data Sheet
SO_2	Sulfur Dioxide
TSP	Total Suspended Particulate
tpy	tons per consecutive 12-month period

ULSD	Ultra Low Sulfur Diesel
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

I. Facility Description

The New Hampshire Department of Environmental Services, Air Resources Division (NHDES) conducted an Off-Site Compliance Evaluation of Saint Gobain Performance Plastics Corporation (SG) of the Merrimack, NH facility. SG manufactures polytetrafluoroethylene (PTFE) coated fiberglass and PTFE films and uses a portion of the manufactured materials to fabricate products for end users. The fabrics are manufactured for a variety of chemical and weather resistant applications and the films for cooking surfaces and fabric laminating applications. SG requested limits on theoretical potential emissions of VOCs and HAPs, as defined in Section 112 of the 1990 Clean Air Act Amendments, to below the major source thresholds and therefore, requires a permit.

Facility Name and Address	Saint-Gobain Performance Plastics 701 Daniel Webster Highway Merrimack, NH 03054-1137
County	Hillsborough
Telephone	603-420-1486
AFS#	3301100165
Source Type	Synthetic Minor
Inspection Date / Time	Visual Emissions - August 28, 2020, Records review - September 14, 2020
Inspection Type	Off-Site Partial Compliance Evaluation and an On-Site Partial Compliance Evaluation
Inspection Period	2016 – September 14, 2020;
Weather	Partly cloudy, 85 degrees and light winds.
Inspected by	Site Visit (Visible Emissions) - David Smith, Sr. Air Pollution Control Engineer Records Review & Report - Thomas Guertin, Compliance Assessment Section Supervisor
Source Contact(s)	William Kempskie, EHS Manager via Teleconference
Last Inspection	April 1, 2016

1. Maintain operating logs for each emergency engine to demonstrate compliance with the maintenance and annual 100 hour operating limit for non-emergency use.
2. Submit VOC Emission Statement Reports including SIC and NAICS codes, as well as the information required by Table 5, Item 2 of the permit.
3. SG stated that it used coating formulations from time to time that exceeded the 2.9 lb/gal VOC RACT limit in their permit. The facility needs to account for excess emissions if they used non-compliant coatings from January 1, 2013 through May 1, 2015 when the "Bubbling" approach was initiated. It is suggested that SG use a bubbling method of compliance determination for those prior years of operation as is being used currently. If it uses a bubble method and still does not meet the RACT requirements, it would need to need to set up account for purchasing DERs. An affected facility acquires authority to purchase credits either from a RACT order or an enforcement action.
4. SG must submit its RACT calculations for the VOC containing coatings as well as SDS for all VOC containing materials for the period 2013 through May 1, 2015 within 30 days of the date of this report.
5. Conduct an RTAP evaluation for the fabrication facility using either the in-stack or the modeling approaches to demonstrate compliance. The *de minimis* that was used is not valid for horizontal emission points. The evaluation should be submitted within 30 days from the date of this letter.

6. Conduct an RTAP evaluation for the period when the dilution fan was not operating to demonstrate that the facility was in compliance. The evaluation should be submitted within 30 days of the date of this letter.

   These deficiencies were addressed as requested.

The table below lists the permitting timeline and the effective periods of each permit / application covering the evaluation period. The requirements presented in the Tables that follow are taken from the permits in effect during the inspection period and are collectively referred to as "the permit".

Due to current COVID-19 physical distancing guidelines and best practices being taken by NHDES, an indoor, on-site inspection was not conducted. Visual emissions were observed on-site from the facility grounds. Materials provided by Saint-Gobain at the time of the evaluation that are deemed confidential are stored in locked cabinets at NHDES.

Permitting / Application Timeline			
Permit	TP-0256	Issued:	February 11, 2020
		Expires:	August 31, 2021
Application	18-0227	New Construction	September 26, 2018
Permit	SP-0072	Issued:	April 16, 2015
		Minor Amendment:	October 16, 2015
		Expired:	April 30, 2020
		Application Shield Afforded	
Application	14-0379	Submitted: (Timely)	September 11, 2014

II. Emission Unit Identification

Table 1 & 2, below taken from State Permit to Operate, TP-0256 lists the permitted emission unit for the facility.

Table 1 - Emission Unit Identification

Emission Unit ID	Device Name	Installation Date	Process Parameters		
			Maximum Product Width (in)	# of Stages	Maximum Production (sq. ft/hr)
EU01	MA Tower	1994	60	1	6,000
EU02	MB Tower	1998	175	1	17,500
EU03	MC Tower	1998	92	1	9,200
EU04	MR Tower	2002	92	1	9,200
EU05	MD Tower	1999	92	2	9,200
EU06	QX Tower	1989	60	5	6,000
EU07	20" SBC	1986	20	6	500

Table 1 - Emission Unit Identification					
Emission Unit ID	Device Name	Installation Date	Process Parameters		
			Maximum Product Width (in)	# of Stages	Maximum Production (sq. ft/hr)
EU08	20" Coater	1986	20	1	500
EU12	MG Tower	2002	175	1	4,375
EU13	MP Tower	2002	175	1	4,375
EU15	MQ Tower	2002	44	1	1,100
EU16	MS Tower	2002	92	1	2,300
EU17	Antenna Cover Fabrication Area	1993	N/A	N/A	N/A
EU22	R & D Coater	N/A	26	1	2,600
EU23	Chemsil Coater	N/A	38	1	3,800
EU24	MTM	N/A	50	1	5,000
EU25	Step Press/ Laminator	N/A	48	1	4,800
EU26	Heat Clean	N/A	N/A	1	N/A

Table 2 – Emission Unit Identification: Additional Fuel Burning Equipment			
Emission Unit ID	Emission Unit Description	Installation Date	Maximum Design Capacity & Permitted Fuel Types
EU20	Clarke fire pump - Model JU4H-UFAD58 John Deere engine - Model 4045 Serial #PE4045L273937	2015	1.20 MMBtu/hr (110 bhp; 82 kW) ULSD – equivalent to 8.7 gal/hr
EU21	Kohler emergency generator set - Model 40REOZJC John Deere engine - Model 4024HF285B Serial #SGM32DG5J	2015	0.47 MMBtu/hr (80 bhp; 60 kW) ULSD – equivalent to 3.4 gal/hr

SG reported that no changes were made to the equipment presented above, nor has it added any devices requiring a permit or permit modification.

The table below lists the facility-wide reported emissions for the review period.

Annual Facility Emissions						
Year	**Nitrogen Oxides (tpy)**	**Sulfur Dioxide (tpy)**	**Carbon Monoxide (tpy)**	**Particulate Matter (tpy)**	**NMVOCs (tpy)**	**Total Emissions (tpy)**
Limit	---	---	---	---	**50**	---
2019	3.79	0.02	3.17	0.07	9.30	16.35
2018	4.04	0.03	3.39	0.08	11.03	18.57
2017	4.08	0.02	3.42	0.08	9.40	17.00
2016	4.80	0.03	4.00	0.09	32.17	41.10

Reported facility emissions for the fuel burning device were calculated using the recommended emissions factor from the NHDES website. Emissions for VOCs, HAPs and RTAPs are based on factors which assume all of the component of interest from the SDS is emitted as an uncontrolled emission. The approach and factors used are consistent with those used in the application process and the permits issued.

III. Pollution Control Equipment Identification

Table 3, below taken from temporary the permit TP-0256 lists the pollution control equipment for the facility.

Table 3 - Pollution Control Equipment Identification			
Pollution Control Equipment ID	**Description**	**Purpose**	**Emission Units Controlled**
PCE01	Regenerative Thermal Oxidizer as described in Table 5, Item 5.	Control of PFCs and precursors Control of VOCs	EU01-EU08, EU12, EU13, EU15, EU16 and EU22-EU26
Findings: SG has not yet installed the pollution control equipment listed above.			

IV. Stack Criteria

Exhaust stacks that emit RTAPs and that use either the *de minimis* or adjusted in-stack concentration methods to show compliance, shall discharge vertically and without obstruction. Emissions from the fabric coating and film processes vent through vertical and unobstructed dilution stacks. Emissions from the application of adhesives in the fabrication area are released through horizontal wall vents. Therefore, only the use of the in-stack concentration or the modeling approach can be used for demonstrating compliance for the fabrication facility.

Table 4 - Stack Criteria				
Stack Number	**Emission Unit or Pollution Control Equipment ID**	**Stack Configuration**	**Minimum Height (feet above ground surface)**	**Maximum Exit Diameter (feet)**
1	PCE01	Vertical	60	6
2	EU17	Horizontal – 3 identical exhaust points	2	6.25 ft^2 (30"x30")

V. Compliance with Operating and Emission Limits

Table 5, below taken from the permit lists the Operating and Emission Limitations for the facility and any deficiencies noted during the evaluation.

Table 5 - Operating and Emission Limitations				
Item #	**Requirement**	**Applicable Emission Unit**	**Regulatory Basis**	**Compliant**
1	*Facility-Wide Emission Limitations* a.) Facility-wide emissions of VOCs shall be limited to less than 50 tpy; and b.) Facility-wide emissions of HAPs shall be limited to less than 10 tpy for any individual HAP and 25 tpy for all HAPs combined.	Facility Wide	Env-A 604.02(a)(1)	Yes
2	*24-hour and Annual Ambient Air Limit* The emissions of any RTAP shall not cause an exceedance of its associated 24-hour or annual AAL as set forth in Env-A 1450.01, *Table of All Regulated Toxic Air Pollutants*.	Facility Wide	Env-A 1400 (State-only Enforceable Limit)	Yes
Finding: SG submitted the most recent RTAP evaluation as part of application number 18-0227. SG used modeling to show compliance with emissions from the fabrication facility which emits horizontally through wall mounted fans.				
3	*Revisions of the List of RTAPs* In accordance with RSA 125-I:5 IV, if the department revises the list of RTAPs or their respective AALs or classifications under RSA 125-I:4, II and III, and as a result of such revision the owner or operator is required to obtain or modify the permit under the provisions of RSA 125-I or RSA 125-C, the owner or operator shall have 90 days following publication of notice of such final revision in the New Hampshire Rulemaking Register to file a complete application for such permit or permit modification.	Facility Wide	Env-A 1404.02 (State-only Enforceable Limit)	Noted

Table 5 - Operating and Emission Limitations				
Item #	**Requirement**	**Applicable Emission Unit**	**Regulatory Basis**	**Compliant**
Findings: In response to a determination made by NHDES pursuant to NH Statute Chapter 125-C:10-e, Requirements for Air Emissions of Perfluorinated Compounds Impacting Soil and Water, SG submitted temporary permit application 18-0227 to install a regenerative thermal oxidizer (RTO) to control emissions of per-fluorinated compounds (PFCs).				
4	*NSPS General Provisions* a.) 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 whether acceptable operating and maintenance procedures are being used will be based on available information which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source; b.) For the purpose of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any standard in this part, nothing in this part shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.	EU01-EU08, EU12, EU13, EU15 & EU16	40 CFR 60.11(d) &40 CFR 60.11(g)	Noted

Table 5 - Operating and Emission Limitations				
Item #	**Requirement**	**Applicable Emission Unit**	**Regulatory Basis**	**Compliant**
5	*Application of RSA 125-C:10-e Requirements for Air Emissions of Perfluorinated Compounds Impacting Soil and Water and Installation of Regenerative Thermal Oxidizer* a.) Within 12 months of permit issuance, the owner or operator of the Facility shall complete construction and installation of a three-chamber RTO (PCE01) or equivalent to minimize untreated process gases during RTO operation for the control of PFCs and precursors from EU01-EU08, EU12, EU13, EU15, EU16 and EU22-EU26. b.) Once the RTO is operational, PCE01 shall operate at all times the coating towers or auxiliary equipment are operating to meet the requirements of Table 5, Item 5. and in accordance with the start-up and shutdown conditions outlined in the Air Pollution Control Equipment Monitoring Plan submitted with the application and outlined in Table 6, Item 13. c.) The active combustion chamber of the RTO shall be maintained at a minimum temperature of 1832°F (1000°C), based on an hourly block average as required in Table 6, Item 11; d.) The combustion chambers of the RTO shall be designed with a minimum gas residence time of 1 second each. e.) The inlet flow rate to the RTO shall not exceed 70,000 scfm. f.) For the purpose of ensuring that the application of BACT will not cause or contribute to an exceedance of an AGQS or SWQS, the maximum annual controlled PFC emission limits shall be less than or equal to 0.45 lbs/yr PFOA and 0.57 lbs/yr PFOS. g.) The RTO operation and maintenance shall be in accordance with the Air Pollution Control Equipment Monitoring Plan submitted with Application #18-0227, as updated in accordance with Table 8, Items 10 and 11.	PCE01	RSA 125-C:10-e	Not Yet Applicable

Table 5 - Operating and Emission Limitations

Item #	Requirement	Applicable Emission Unit	Regulatory Basis	Compliant
6	*Work Practice Standards for Cleaning Materials Used in Coating of Paper, Fabric, Film and Foil Substrates* A paper, fabric, film, or foil coating operation that uses VOC-containing cleaning material shall control VOC emissions from the cleaning materials using the following work practices: a) Storing VOC-containing cleaning materials in closed containers; b) Keeping mixing and storage containers closed at all times except when depositing or removing VOC-containing materials; c) Minimizing spills of VOC-containing cleaning materials; d) Conveying VOC-containing cleaning materials from one location to another in closed containers or pipes; and e) Minimizing VOC emissions from the cleaning of storage, mixing, and conveying equipment.	EU01 – EU08, EU12, EU13 & EU15 – EU17	Env-A 1207.02	Yes
Findings: Appendix A contains photographs of the VOC-containing cleaning material storage.				
7	*Emission Rate Limits for Coating of Paper, Fabric, Film and Foil Substrates* a) A paper, fabric, film, or foil coating operation that has TPE of VOCs equal to or greater than 25 tons per consecutive 12-month period, as applied, shall be limited at all times to either the control efficiency or emission rates as applied, as follows: **Paper, Film and Foil Surface Coating** (not including pressure sensitive tape and label coating) a. **Overall Control Efficiency [OC]** 90% b. **kg VOC/kg solids [E_R]** 0.40; **(lb VOC/lb solids)** (0.40) c. **kg VOC/kg coating [E_R]** 0.08; **(lb VOC/lb coating)** (0.08)	EU01 – EU08, EU12, EU13 & EU15 – EU17	Env-A 1207.03(c)	Noted

Table 5 - Operating and Emission Limitations				
Item #	**Requirement**	**Applicable Emission Unit**	**Regulatory Basis**	**Compliant**
8	*Determination of Emissions* a.) For a coating source that uses add-on control equipment to achieve compliance, the overall control efficiency (OC) shall be determined on a daily basis using the procedures specified in Table 6, Items 9 and 10. b.) For a coating source that uses a bubble to achieve compliance, the emission rate (E_R) shall be determined on a daily basis using the procedures specified in Table 6, Items 5 through 8.	EU01 – EU08, EU12, EU13 & EU15 – EU17	Env-A 1205	Noted
Findings: SG stated that all of its coatings currently in use comply with the standards set forth in Item 7 above. SG continues to perform a daily bubble calculation as a precaution to ensure compliance.				
9	*Visible Emission Standards* The average opacity shall not exceed 20 percent for any continuous 6-minute period.	Prior to installation of PCE01: EU01-EU08, EU12, EU13, EU15 – EU17 After installation of PCE01: EU17 & PCE01	Env-A 2103.02	No
		EU20 & EU21	Env-A 2002.02	
Findings: SG exceeded the 20% opacity limit on one occasion in 2016, and six occasions in 2018.				
10	*Particulate Emission Standards for Fuel Burning Devices Installed on or After January 1, 1985* The particulate matter emissions from fuel burning devices installed on or after January 1, 1985 shall not exceed 0.30 lb/MMBtu.	EU20, EU21 & PCE01	Env-A 2003.03	Yes
Findings: Particulate matter emission rates can only be determined by stack testing which has not been required for EU20 and EU21 to date. However, at the time the permit was issued, NHDES had sufficient information to determine that under normal operating conditions, these devices were capable of meeting this limit. SG has not yet installed the pollution control device (PCE01).				
11	*Maximum Sulfur Content Allowable in Liquid Fuels* The sulfur content of diesel fuel burned in the emergency engines (EU20 & EU21) shall not exceed 15 ppm (0.0015 percent sulfur by weight).	EU20 & EU21	40 CFR 60.4207 (Subpart IIII)	Yes

Table 5 - Operating and Emission Limitations				
Item #	**Requirement**	**Applicable Emission Unit**	**Regulatory Basis**	**Compliant**
12	*Emergency Engine Operating Requirements* The owner or operator of the emergency engine shall: a.) Purchase a certified emergency engine in accordance with the requirements listed in 40 CFR Part 60, Subpart IIII; b.) Install, configure, operate and maintain the engine according to the manufacturer's emission-related written instructions or change only the emission-related settings in a way that is permitted by the manufacturer; and c.) Operate and maintain the engine to meet the emission standards over the entire life of the engine.	EU20 & EU21	40 CFR 60.4206 40 CFR 60.4211(a) & 40 CFR 60.4211(c) (Subpart IIII)	Yes
13	*Emergency Generator Operating Hours Limitation* Each emergency engine shall be limited to 500 hours of total operation per any consecutive 12-month period and only under the operating scenarios listed in Table 5, Item 14.	EU20 & EU21	Env-A 606.02(c)(1)	Yes
Findings: SG reported that the emergency generator (EU21) cycles automatically and runs for approximately 40 hours per year. SG reported that it ran for a total of 43 hours in 2018 and 39.5 in 2019. The 2019 maintenance report indicates a total of 157 hours on the unit since the installation in 2015. SG reported that the fire pump ran for 13.7 hours in 2018 and 6.1 hours in 2019. Total hours on the fire pump (EU20) is 26.7 as indicated on the maintenance report for 2019.				
14	*Emergency Engines* Each emergency engine shall only operate: a.) As a mechanical or electrical power source during an emergency which is defined in Env-A 1302.17 as an unforeseeable condition that is beyond the control of the owner or operator that; 1. Results in an interruption of electrical power from the electricity supplier to the premises; 2. Requires an interruption of electrical power from the electricity supplier to the premises in order to enable the owner or operator to repair damage from fire, flood, or any other catastrophic event, natural or man-made; 3. Requires operation of an emergency engine to minimize damage from fire, flood, or any other catastrophic event, natural or man-made; or b.) During scheduled maintenance checks and readiness testing, as recommended by federal, state or local government, the manufacturer, the vendor or the insurance company associated with the engine, for a maximum of 100 hours per calendar year.	EU20 & EU21	Env-A 101.671, Env-A 1302.17& 40 CFR 60.4211(f) (Subpart IIII)	Yes

VI. Compliance with Monitoring and Testing Requirements

Table 6, below taken from the permit lists the Monitoring and Testing Requirements for the facility and any deficiencies noted during the evaluation.

Table 6 - Monitoring and Testing Requirements

Item #	Parameter	Method of Compliance	Frequency	Applicable Unit	Regulatory Basis	Compliant
1.	To Be Determined	When conditions warrant, the department may require the owner or operator to conduct stack testing in accordance with USEPA or other department approved methods.	Upon request by the department	Facility Wide	RSA 125-C:6, XI	Noted
Findings: SG conducted additional stack testing on several occasions during the inspection period as presented in Table 13 below. SG performed tests to establish compliance with various RTAP limits for compounds contained in coatings which contain PTFE and to obtain PFAS emissions levels from specific towers. The results indicated SG emitted these RTAPs in amounts that were below established limits.						
2.	Sulfur Content of Liquid Fuels	Conduct testing in accordance with appropriate ASTM test methods or retain documentation in accordance with Table 7, Item 4 in order to demonstrate compliance with the sulfur content limitation provisions specified in this permit for liquid fuels.	For each delivery of fuel oil/diesel to the facility	Facility Wide	Env-A 806.02 & Env-A 806.05	Yes
Findings: SG retains fuel oil delivery slips and relies on the vendor certification to demonstrate compliance with the liquid fuel sulfur limits.						
3.	Opacity	Until PCE01 is installed and operational, the owner or operator shall perform daily observations of EU01-EU08, EU12, EU13, EU15-EU17 in accordance with the *Corrective Action Plan for Achieving Compliance with Opacity Limits* submitted August 18, 2016 and updated November 8, 2016 to evaluate the presence of visible emissions, and take appropriate action to mitigate opacity in excess of the standard listed in Table 5, Item 9.	Daily when the associated processes are operating	EU01-EU08, EU12, EU13, EU15 – EU17	Env-A 604.02 & Env-A 810.02	Yes

Table 13 – Historical Stack Testing Events

Stack Test #	Test Date	Device(s)	Test Description
16-0038	May 4, 2016	MA Tower	PFOA Testing
16-0075	August 10-11 and October 5, 2016	MA Tower	PFOA Method MM5
18-0040 18-0041 18-0042	April 26 – May 2, 2018	MA, MS and QX Towers	PFOA Method MM5 MA Tower PFOA Method MM5 MS Tower PFOA Method MM5 QX Tower

Table 6 - Monitoring and Testing Requirements						
Item #	**Parameter**	**Method of Compliance**	**Frequency**	**Applicable Unit**	**Regulatory Basis**	**Compliant**
Findings: SG performs daily observations of stack emissions and corrective actions taken, as required. SG records the results of observations and corrective actions in a log established for this purpose. SG submitted samples of its Visible Emissions log to NHDES as part of this compliance evaluation.						
4.	VOC Content of Coatings	*VOC Content of a Coating* a) VOC coating information based upon supplier or stationary source formulation data shall be prima facie evidence of the actual VOC content of the coating. Record all information in accordance with Table 7, Item 6. b) One of the following methods, as applicable, may be used to determine VOC content for coatings: 1. Use Method 24 as described in 40 CFR 60, Appendix A, using the 60-minute bake time procedure for test ASTM D 2360-01; or 2. Use Method 24A as described in 40 CFR 60, Appendix A.	Maintain on a continuous basis	EU01 – EU08, EU12, EU13 & EU15 – EU17	Env-A 804.03 & Env-A 804.04	Yes
Findings: SG uses 0.016 lb VOC/lb of coating when reporting VOC emissions. SG determined this value through analysis using EPA Method 24, conducted prior to 2016. See Section X Other findings for more details.						
5.	VOC Content of Coatings VOC Content of Coatings	*Calculation of VOC Content of a Coating Formulation* For a coating that contains more than one VOC component, calculate the VOC content of the coating using the following formula, provided no chemical reaction occurs during the formulation process: $$P = \frac{\sum_{i=1}^{n}\left(V_i \times C_i\right)}{V_t}$$ Where: *P* = The VOC content of the coating formulation, as applied, used on a coating line or operation in units of lb VOC/gal coating, minus water and exempt VOC compounds; *n* = The number of different coatings or diluents, as applied, used in the coating formulation; *i* = The subscript denoting an individual coating or diluent; V_i = The volume of the coating or diluent, *i*, as applied, used in the coating formulation	Maintain up-to-date data Maintain up-to-date data	EU01 – EU08, EU12, EU13 & EU15 – EU17 EU01 – EU08, EU12, EU13 & EU15 – EU17	Env-A 804.05	Yes

Table 6 - Monitoring and Testing Requirements						
Item #	**Parameter**	**Method of Compliance**	**Frequency**	**Applicable Unit**	**Regulatory Basis**	**Compliant**
		in units of gallons, minus water and exempt VOC compounds; C_i = The VOC content of the coating or diluent, *i,* as applied, used in the coating formulation in units of lb VOC/gal coating less water and exempt VOC compounds, as determined from the Method 24 or 24A analysis and the calculation procedures in Section 2.2 of EPA-304/1-86-016, *A Guideline for Surface Coating Calculations*, July, 1986; and V_t = The total volume of the coating formulation, as applied, in units of gallons minus water and exempt VOC compounds.				
Findings: SG stated that it uses this formula when calculating daily VOC content of coatings. SG maintains a spreadsheet that shows the lb VOC per lb of coating for each coating used at the facility, in order to demonstrate compliance with the 0.08 lb VOC/lb coating limit in Table 5, Item 7.						
6.	VOC Content of Coatings	<u>*Calculation of Daily-weighted Average for a Coating Line Using Multiple Coatings*</u> Calculate the daily-weighted average VOC content of each coating line or operation using the following formula: $$P_w = \frac{\sum_{i=1}^{n}(V_i \times C_i)}{V_t}$$ Where: P_w = The daily-weighted average VOC content of the coatings, as applied, used on a coating line or operation in units of lb VOC/gal coating, minus water and exempt VOC compounds; n = The number of different coatings or diluents, as applied, used each day on the coating line or operation; i = The subscript denoting an individual coating or diluent; V_i = The volume of the coating or diluent, *i*, as applied, used each day on a coating line or operation in units of gallons, minus water and exempt VOC compounds; C_i = The VOC content of the coating or diluent, *i,* as applied, used each day on a coating line or operation in units of lb VOC/gal coating less water and	Maintain up-to-date data Maintain up-to-date data	EU01 – EU08, EU12, EU13 & EU15 – EU17 EU01 – EU08, EU12, EU13 & EU15 – EU17	Env-A 804.06	Yes

Table 6 - Monitoring and Testing Requirements						
Item #	**Parameter**	**Method of Compliance**	**Frequency**	**Applicable Unit**	**Regulatory Basis**	**Compliant**
		exempt VOC compounds, as determined from the Method 24 or 24A analysis and the calculation procedures in Section 2.2 of EPA-304/1-86-016, *A Guideline for Surface Coating Calculations*, July, 1986. For multiple component coatings, $C_i = P$ as calculated in Table 6, Item 5; and V_t = The total volume of all coatings, as applied, used each day on a coating line or operation in units of gallons minus water and exempt VOC compounds.				
Findings: SG uses this formula when calculating daily VOC content of coatings, to determine the lb of VOC per lb of coating for each coating used at the facility, in order to demonstrate compliance with the 0.08 lb VOC/lb coating limit.						
7.	Daily-weighted Average Coating Density (ρ_w)	<u>*Calculation of Daily-weighted Average Coating Density (ρ_w) for a Coating Line Using Multiple Coatings*</u> Calculate the daily-weighted average coating density of each coating line or operation using the following formula: $$\rho_w = \frac{\sum_i^n (V_i \ x \ \rho_i)}{V_t}$$ Where: ρ_w = The daily-weighted average density of the coatings, as applied, used on a coating line or operation in units of lb/gal coating; n = The number of different coatings or diluents, as applied, used each day on the coating line or operation; i = The subscript denoting an individual coating or diluent; V_i = The volume of the coating or diluent, i, as applied, used each day on a coating line or operation in units of gallons; ρ_i = The density of the coating or diluent, i, as applied, used each day on a coating line or operation in units of lb/gal coating; and Vt = The total volume of all coatings, as applied, used each day on a coating line or operation in units of gallons minus water and exempt VOC compounds.	Maintain up-to-date data	EU01 – EU08, EU12, EU13 & EU15 – EU17	Env-A 804.06	Noted

Table 6 - Monitoring and Testing Requirements						
Item #	**Parameter**	**Method of Compliance**	**Frequency**	**Applicable Unit**	**Regulatory Basis**	**Compliant**
8.	Daily-weighted average emission rate (E_R)	*Calculation of Daily-weighted Average Emission Rate (E_R) for a Coating Line Using Multiple Coatings without Add-on Control* The owner or operator may choose to demonstrate compliance with the emission limitations specified in Table 5, Item 7.c. by calculating the daily weighted average E_R as follows: $$E_R = \frac{P_w}{\rho_w}$$ Where: E_R = The daily-weighted average VOC emission rate, as applied, used on a coating line or operation in units of lb VOC/lb coating; P_w = The daily-weighted average VOC content of the coatings, as applied, used on a coating line or operation in units of lb VOC/gal coating, minus water and exempt VOC compounds as calculated in Table 6, Item 6; and ρ_w = The daily-weighted average density of the coatings, as applied, used on a coating line or operation in units of lb/gal coating as calculated in Table 6, Item 7.	Maintain up-to-date data	EU01 – EU08, EU12, EU13 & EU15 – EU17	Env-A 804.06	Noted
Findings: SG did not choose to use this formula to demonstrate compliance.						
9.	Coating Towers VOC Controlled Emission Rate	*Calculation of Controlled VOC Emission Rate for Coating Towers (E_{tc})* The owner or operator shall calculate the controlled VOC emission rate from the coating towers using the following calculation: $$E_{tc} = E_{tu}(1 - CE\ x\ RE)$$ Where: E_{tc} = The controlled VOC emission rate from the towers; E_{tu} = The uncontrolled VOC emission rate from the towers that are exhausted through the RTO; CE = Capture efficiency as determined during testing pursuant to Table 6, Item 16.c.; and RE = Removal efficiency as determined during testing pursuant to Table 6, Item 14.d.	Maintain up-to-date data	EU01 – EU08, EU12, EU13 & EU15 – EU16	Env-A 804	Not Yet Applicable

Table 6 - Monitoring and Testing Requirements						
Item #	**Parameter**	**Method of Compliance**	**Frequency**	**Applicable Unit**	**Regulatory Basis**	**Compliant**
Findings: SG has not yet installed the RTO.						
10.	Overall Control Efficiency for VOC RACT	*Calculation of Overall Control Efficiency (OC)* The owner or operator may choose to demonstrate compliance with the overall control efficiency specified in Table 5, Item 7.a. by using the following calculation: $$OC = \frac{(E_{tu} + E_a) - (E_{tc} + E_a)}{(E_{tu} + E_a)} \; x \; 100$$ Where: OC = The overall control efficiency in %; E_{tu} = The uncontrolled VOC emission rate from the towers that are exhausted through the RTO; E_a = The VOC emission rate from the antenna cover fabrication area (EU17); and E_{tc} = The controlled VOC emission rate from the towers calculated pursuant to Table 6, Item 9.	Maintain up-to-date data	EU01 – EU08, EU12, EU13 & EU15 – EU17	Env-A 804 & Env-A 1203.64	Not Yet Applicable
Findings: SG has not yet installed the RTO.						
11.	Thermal Oxidizer Operating Parameters	a.) Monitor the thermal oxidizer combustion chamber temperature at least once every 15 minutes and record the hourly average temperature.	At all times the associated process is operating	PCE01	RSA 125-C:6, XI Env-A 906 & Env-A 911.03(b)	Not Yet Applicable
		b.) If the average hourly temperature reading is less than the minimum specified in Table 5, Item 5.c, then the owner or operator shall investigate and take corrective action immediately upon discovery of the permit deviation to restore the air pollution control equipment (PCE01) to within allowable permit conditions. c.) If the average hourly temperature cannot be brought back up within 48 hours of the excursion, then maintain records of the excursion pursuant to Table 7, Item 15.	As noted			

Table 6 - Monitoring and Testing Requirements						
Item #	**Parameter**	**Method of Compliance**	**Frequency**	**Applicable Unit**	**Regulatory Basis**	**Compliant**
		d.) Monitor the gas flow to the thermal oxidizer at least once every 15 minutes and record the hourly average flowrate.	Monitor every 15 minutes when the associated process is operating			
Findings: SG has not yet installed the RTO.						
12.	Annual Thermal Oxidizer Inspection Annual Thermal Oxidizer Inspection	a.) Conduct an annual (or more frequently if conditions indicate an inspection is warranted) visual external integrity inspection of the thermal oxidizer and the ductwork from each source leading to the RTO. The inspection shall include an evaluation of whether all emissions are being vented through the dedicated stack exit. Checklist? b.) Monitor parameters to ensure total enclosure of applicable emission units in a manner and a frequency as outlined in the Air Pollution Control Equipment Monitoring Plan required in Table 8, Item 10; c.) Confirm that collection headers that are routed to the RTO are operating under negative pressure on an annual basis and in accordance with the Air Pollution Control Equipment Monitoring Plan in Table 8, Item 10.; d.) The inspections and monitoring shall be conducted by plant personnel familiar with the operation of the oxidizer and associated equipment.	As noted	PCE01	RSA 125-C:6, XI	Not Yet Applicable
Findings: SG has not yet installed the RTO.						
13.	Air Pollution Control Equipment Monitoring Plan	*Start-up and Shutdown Requirements* a.) The owner or operator shall not initiate process operations with perfluorinated compounds prior to the RTO (PCE01) reaching the established operational temperature required in Table 5, Item 5c. b.) During any shutdown condition, process operations will proceed to a safe stopping point to minimize potential emissions.	Continuous	PCE01	RSA 125-C:10-e Env-A 810.01 & Env-A 910.01	Not Yet Applicable

Table 6 - Monitoring and Testing Requirements						
Item #	**Parameter**	**Method of Compliance**	**Frequency**	**Applicable Unit**	**Regulatory Basis**	**Compliant**
Findings: SG has not yet installed the RTO.						
14.	Initial RTO Stack Testing Requirements	*Initial Regenerative Thermal Oxidizer Stack Testing Requirements* The owner or operator shall conduct initial emissions testing in accordance with Table 6, Items 15 and 16 to evaluate the following parameters: a.) Post-RTO emissions of PFAS compounds in order to determine compliance with the maximum allowable annual controlled PFC emission limitations listed in Table 5, Item 5.g.; b.) Post-RTO emissions of hydrogen fluoride (CAS #7664-39-3), perfluoroisobutene (CAS #382-21-8), tetrafluoroethylene (CAS #116-14-3), hexafluoropropylene (CAS #116-15-4), carbonyl fluoride (CAS #353-50-4), and ammonium perfluorooctanoate (CAS #3825-26-1) to determine compliance with Env-A 1400 as outlined in Table 5, Item 2; Table 7, Item 10 and Table 8, Item 5.; c.) Pre- and post-RTO emissions of VOC to determine removal efficiency (RE); d.) Capture efficiency for VOC and PFC emissions from the controlled devices into the main header to the RTO; and e.) The owner or operator shall be subject to fees for any testing and monitoring which department personnel undertake or audit in accordance with this permit.	Within 60 days of startup of the control device	PCE01	RSA 125-C:10-e Env-A 802 Env-A 804 & Env-A 704.02	Noted

Table 6 - Monitoring and Testing Requirements						
Item #	**Parameter**	**Method of Compliance**	**Frequency**	**Applicable Unit**	**Regulatory Basis**	**Compliant**
15.	Performance Test Notifications	Compliance testing shall be planned and carried out in accordance with the following: a.) The facility must notify the department at least 30 days prior to conducting a performance test; b.) A pre-test protocol meeting the requirements of Env-A 802.04 shall be submitted to the department at least 30 days prior to the commencement of testing; c.) The owner or operator and any contractor retained by the owner or operator to conduct the test shall meet with a department representative at least 15 days prior to the test date to finalize the details of the testing as outlined in Env-A 802.05; d.) A pre-test meeting may be held less than 15 days prior to the test so long as the department staff are available and implementation of any testing or operation changes resulting from the meeting can be carried out prior to scheduled test date and scheduled test integrity is not jeopardized; e.) Notify the department as soon as possible, but no later than 7 days, and obtain approval from the department prior to any proposed changes in the testing schedule for a compliance stack test; f.) The owner or operator shall obtain prior approval from the department, which shall be based on staff availability, of any new date for a compliance stack test; g.) A test report shall be submitted to the department within 60 days after the completion of testing.	30 days prior to performance testing or as specified	PCE01	RSA 125-C:10-e Env-A 802 Env-A 804.12 & Env-A 804.13	Noted
16.	Performance Test	a.) Each performance test shall conform to the following: 1. The general requirements of 40 CFR §60.8; and 2. The test methods contained in 40 CFR 60, Appendix A, 40 CFR 51, Appendix M, or any other stack test method promulgated by the USEPA, or any alternative, conditional or other test method approved by the	For each performance test	PCE01	RSA 125-C:10-e Env-A 802 & Env-A 804.14	Noted

Table 6 - Monitoring and Testing Requirements						
Item #	**Parameter**	**Method of Compliance**	**Frequency**	**Applicable Unit**	**Regulatory Basis**	**Compliant**
		USEPA, or any alternative method approved by the department in accordance with Env-A 809. b.) The department shall approve deviations from the agreed-upon test method or pre-test protocol only if the following criteria are met: 1. The owner or operator informs department personnel assigned to the stack test of the following: i. The deviation from the testing method or planned operational mode of the source; ii. The reason(s) for the deviation; and iii. The implications of such a deviation; 2. The Owner or Operator provides technical justification showing that allowance of such deviation will not affect the accuracy of the compliance stack emissions test; c.) The following test methods, or department approved alternatives, shall be used, as applicable: 1. For PFAS testing required in Condition VI. Table 6, Item 14, the testing shall consist of six separate sampling runs of sufficient duration to ensure reporting levels sufficient to demonstrate compliance with the limitations in Table 5, Item 5.g. Samples of three of the sampling runs, consistent with the stack testing conducted in 2018, will be provided to NHDES so that NHDES can have the samples analyzed by a separate laboratory. For PFAS testing required in Condition VI Table 6, Item 17, the testing shall consist of three separate sampling runs of sufficient duration to ensure reporting levels sufficient to demonstrate compliance with the limitations in Table 5, Item 5.g. 2. For HF, the testing shall consist of three separate one-hour sampling runs post-RTO.	For each performance test			Noted

Table 6 - Monitoring and Testing Requirements						
Item #	**Parameter**	**Method of Compliance**	**Frequency**	**Applicable Unit**	**Regulatory Basis**	**Compliant**
	Performance Test	3. For VOCs, the testing shall consist of three separate one-hour sampling runs with concurrent sampling pre- and post-RTO. 4. Collect combustion zone temperature readings as agreed upon in the pre-test protocol required in Table 6, Item 15; 5. Collect process information as agreed upon in the pre-test protocol required in Table 6, Item 15; 6. USEPA Methods 1-4 for exit flow rate, percentage of carbon dioxide, oxygen and moisture; 7. Modified Method 5 as per M0010 in SW-846 for PFAS emissions or an EPA-approved method; 8. USEPA Method 25 or 25A for total gaseous organic emissions; 9. USEPA Method 26A for hydrogen fluoride emissions; 10. USEPA Method 204 to determine capture efficiency of the towers into the main header to the RTO; and 11. USEPA Method 18 for methane. d.) Dip pan samples of formulated dispersions shall be taken during each stack test run and analyzed.	For each performance test			Noted
17.	Periodic RTO Stack Testing Requirement	*Periodic Regenerative Thermal Oxidizer Stack Testing Requirements* The owner or operator shall conduct periodic emissions testing in accordance with Table 6, Items 15 and 16 to evaluate the following parameters: a.) Post-RTO emissions of PFAS compounds in order to determine compliance with the maximum allowable annual controlled PFC emission limitations listed in Table 5, Item 5.g.; and b.) Capture efficiency for PFC emissions from the controlled devices into the main header to the RTO.	Annually no more than 13 months after previous test or to establish new operating limits	PCE01	RSA 125-C:10-e Env-A 802 & Env-A 804.13	Not Yet Applicable
		c.) Pre- and post-RTO emissions of VOC to determine compliance with the VOC control efficiency requirement in Table 5, Item 7a.; and d.) Capture efficiency for VOC emissions	Every 5 years within the same calendar quarter of			Not Yet Applicable

Table 6 - Monitoring and Testing Requirements						
Item #	**Parameter**	**Method of Compliance**	**Frequency**	**Applicable Unit**	**Regulatory Basis**	**Compliant**
		from the controlled devices into the main header to the RTO.	the date of the anniversary of the most recent stack test			
		e.) Pursuant to RSA 125-C:10-e, should the owner or operator wish to demonstrate to the department that the devices subject to RSA 125-C:10-e no longer contribute to an exceedance of an AGQS or SWQS, the owner or operator shall submit a written demonstration and conduct emission testing to establish an appropriate minimum combustion chamber temperature for the RTO (PCE01) as required in Condition V. Table 5, Item 5(c).	As specified	EU01-EU08, EU12, EU13, EU15, EU16 and EU22-EU26	RSA 125-C:10-e	Noted
18.	Hours of Operation	Each emergency engine shall be equipped with a non-resettable hour meter.	Continuous	EU20 & EU21	40 CFR 60.4209 (Subpart IIII)	Yes

VII. Compliance with Recordkeeping Requirements

Table 7, below taken from the permit lists the required recordkeeping for the facility and any deficiencies noted during the evaluation.

Table 7 - Recordkeeping Requirements					
Item #	**Requirement**	**Duration/ Frequency**	**Applicable Unit**	**Regulatory Basis**	**Compliant**
1.	*Record Retention and Availability* Keep the required records on file. These records shall be available for review by the department upon request.	Retain for a minimum of 5 years	Facility Wide	Env-A 902.01	Yes
2.	*General Recordkeeping Requirements for Process Operations* Maintain the following records for process operations: a.) Total quantity of all materials used or produced in each process that are necessary to calculate emissions;	Monthly	EU01 – EU08, EU12, EU13, EU15 – EU17, EU22 – EU26	Env-A 903.02	Yes

Table 7 - Recordkeeping Requirements					
Item #	**Requirement**	**Duration/ Frequency**	**Applicable Unit**	**Regulatory Basis**	**Compliant**
	b.) Hours of operation of each process;				
	c.) Safety Data Sheets (SDSs) or other documentation containing the concentration of total VOCs, each HAP and RTAP in each raw material used; and	As specified			Yes
	d.) Results of dip pan samples of formulated dispersions taken in accordance with Table 6, Item 16(d) containing the concentration of PFAS.	As specified			Not Yet Applicable
Findings: SG has not yet installed the RTO. Since Dip Pan samples are tested as part of an RTO performance test, these requirements are not yet applicable.					
3.	*General Recordkeeping Requirements for Combustion Devices* Maintain the following records of fuel characteristics and utilization for the fuel used in the combustion devices: a.) Type (e.g. diesel fuel, natural gas) and amount of fuel burned in each device; or b.) Type and amount of fuel burned in multiple devices and hours of operation of each device to be used to apportion fuel use between the multiple devices. c.) Hours of operation for the emergency engines.	Monthly	EU01 – EU06, EU12, EU13, EU15, EU16, EU20 – EU22, EU24 & EU26	Env-A 903.03	Yes
4.	*Liquid Fuel Oil Recordkeeping Requirements* In lieu of sulfur testing pursuant to Table 6, Item 2, the owner or operator may maintain fuel delivery tickets that contain the following information: A written statement from the fuel supplier that the sulfur content of the fuel as delivered does not exceed state or federal standards for that fuel.	Whenever there is a change in fuel supplier but at least annually	EU20 & EU21	Env-A 806.05	Yes
5.	*VOC Emission Statements Recordkeeping Requirements* If the actual annual VOC emissions from all permitted devices located at the Facility are greater than or equal to 10 tpy, then record the following information: a.) Identification of each VOC-emitting process or device; b.) The operating schedule during the high ozone season (June 1 through August 31) for each VOC-emitting process or device identified in Table 7, Item 5.a. above, including:	Maintain Data for Annual Report	EU01-EU08, EU12, EU13, EU15 – EU17 & EU20 – EU22	Env-A 904	Yes

Table 7 - Recordkeeping Requirements					
Item #	**Requirement**	**Duration/ Frequency**	**Applicable Unit**	**Regulatory Basis**	**Compliant**
	1. Typical hours of operation per day; and 2. Typical days of operation per calendar month. c.) The following VOC emission data from each VOC-emitting processes or devices identified in Table 7, Item 5.a. above, including: 1. Actual monthly VOC emissions, in tons; 2. Typical high ozone season day VOC emissions, in pounds per day; and 3. The emission factors and the origin of the emission factors used to calculate the VOC emissions.				
6.	*VOC Recordkeeping for Surface Coating and Printing Operations* Record the following information for each coating operation subject to Env-A 1200: a.) Coating formulation and analytical data, as follows: 1. Supplier; 2. Name and color; 3. Type; 4. Identification number; 5. Density described as lb/gal; 6. Total volatile content described as weight percent; 7. Water content described as weight percent; 8. Exempt solvent content described as weight percent; 9. VOC content described as volume percent; 10. Solids content described as volume percent; 11. Diluent name and identification number; 12. Diluent solvent density described in lb/gal; 13. Diluent VOC content described as weight percent; 14. Diluent exempt solvent content described as weight percent; 15. Volume of diluent VOC described as gal; and 16. Diluent/solvent ratio described as gal diluent solvent per gal coating. b.) The number of gallons of each coating, including solvents and diluents, utilized during a typical high ozone season day; and c.) Process information for a typical high ozone season day, including: 1. Method of application; 2. Number of coats;	Maintain Current Data Maintain Current Data	EU01 – EU08, EU12, EU13 & EU15 – EU17 EU01 – EU08, EU12, EU13 & EU15 – EU17	Env-A 904.03	Yes

Table 7 - Recordkeeping Requirements					
Item #	**Requirement**	**Duration/ Frequency**	**Applicable Unit**	**Regulatory Basis**	**Compliant**
	3. Drying method; and 4. Substrate type and form.				
7.	*Recordkeeping for VOC RACT Compliance* Maintain the following records in order to show compliance with the VOC RACT limits stated in Table 5, Item 7: a.) If all compliant coatings are used on a given day, then records of VOC coating content shall be maintained pursuant to Table 6, Items 4 and 5, and Table 7, Item 6. These records shall be used to show compliance with the coating limits in Table 5, Item 7.b. or c. b.) If a bubble is used to average coating VOC contents, then maintain records of the calculations conducted pursuant to Table 6, Items 6, 7, and 8. The result of the bubble calculation shall be less than the limit contained in Table 5, Item 7.c. c.) If the owner or operator is showing compliance with the overall control efficiency limit contained in Table 5, Item 7.a. then maintain records of the calculations conducted pursuant to Table 6, Items 9 and 10.	Daily	EU01 – EU08, EU12, EU13 & EU15 – EU17	Env-A 906	Yes
Findings: Although SG states that all of the coatings used are in compliance with the limits stated in Table 5, Item 7 of the permit, SG uses a daily bubble calculation as a precautionary measure to ensure compliance with VOC RACT requirements.					
8.	*Recordkeeping for Sources or Devices with Add-on VOC Air Pollution Control Equipment* Record the following information for the RTO: a.) The air pollution control device identification number, type, model number, and manufacturer; b.) Installation date; c.) Process or devices controlled; d.) The type and location of the capture system, capture efficiency percentage, and method of determining capture efficiency; e.) Records of startup and shutdown of the PCE01 in conjunction with appropriate operational information of the process operations to demonstrate compliance with Table 6, Item 13; and	Maintain Current Data Maintain Current Data	PCE01 PCE01	Env-A 904.08 & RSA 125-C:10-e	Not Yet Applicable

Table 7 - Recordkeeping Requirements					
Item #	**Requirement**	**Duration/ Frequency**	**Applicable Unit**	**Regulatory Basis**	**Compliant**
	f.) The destruction or removal efficiency of the RTO, including: 1. Destruction or removal efficiency, in percent; 2. Date tested; and 3. The emission test results, including: i. The inlet concentration of VOC; ii. The outlet concentration of VOC and each PFC for which an AGQS or SWQS has been established; and iii. The method of determination of the above concentrations. g.) The hourly average combustion chamber temperature in degrees F and hourly average inlet gas flowrate in scfm.				
9.	*General NOx Recordkeeping Requirements* If the actual annual NOx emissions from all permitted devices located at the Facility are greater than or equal to 10 tpy, then record the following information: a.) Identification of each fuel burning device; b.) Operating schedule during the high ozone season (June 1 through August 31) for each fuel burning device identified in Table 7, Item 9.a, above, including: 1. Typical hours of operation per day; 2. Typical days of operation per calendar month; 3. Type and amount of each fuel burned; 4. Design heat input rate in MMBtu/hr; and 5. The following NOx emission data: i. Actual NOx emissions per month; ii. Typical high ozone season day NOx emissions, in pounds per day; and iii. Emission factors and the origin of the emission factors used to calculate the NOx emissions.	Maintain Data for Annual Report	EU01 – EU06, EU12, EU13, EU15, EU16, EU20 – EU22, EU24 & EU26	Env-A 905.02	Not Applicable
Findings: According to the Annual Emission Statements reviewed by NHDES, SG did not emit NOx in amounts that exceeded the 10 tpy threshold in any year during the inspection period.					

Table 7 - Recordkeeping Requirements					
Item #	**Requirement**	**Duration/ Frequency**	**Applicable Unit**	**Regulatory Basis**	**Compliant**
10.	*Regulated Toxic Air Pollutants* Maintain records documenting compliance with Env-A 1400. Compliance was demonstrated at the time of permit issuance as described in the department's Permit Application Review Summary for Application #18-0227. The source must update the compliance demonstration using one of the methods provided in Env-A 1405 if: a.) There is a revision to the list of RTAPs lowering the AAL or *de minimis* value for any RTAP emitted from the Facility; b.) The amount of any RTAP emitted is greater than the amount that was evaluated in the Application Review Summary (e.g., use of a coating will increase); c.) An RTAP that was not evaluated in the Application Review Summary will be emitted (e.g., a new coating will be used); or d.) Stack conditions (e.g. air flow rate) change.	Update prior to process changes and within 90 days of each revision of Env-A 1400	Facility Wide	Env-A 902.01 (State-only Requirement)	Yes
Finding: SG submitted its most recent RTAP evaluation as part of application number 18-0227. SG used modeling to show compliance with emissions from the fabrication facility which emits horizontally through wall mounted fans.					
11.	*Additional Recordkeeping Requirements: Facility-wide emission limitations* Maintain a 12-month running total of facility-wide emissions, calculated pursuant to Env-A 705.03, of VOC and HAPs, for the purpose of demonstrating that the total emissions of these pollutants are below the major source thresholds as limited in Table 5, Item 1.	Monthly	EU01 – EU08, EU12, EU13, EU15 – EU17, EU20 – EU26 & PCE01	Env-A 906 & Env-A 604.02(a)(3)	Yes
12.	*40 CFR 60 Subpart VVV – Polymeric Coating of Supporting Substrates Recordkeeping Requirements* Maintain records of estimates of the projected annual amount of VOC to be used for the manufacture of polymeric coated substrates over the year and actual 12-month VOC use.	Semiannual	EU01 – EU08, EU12, EU13, EU15 & EU16	40 CFR 60.744(b) &40 CFR 60.747(c) (Subpart VVV)	Yes

Table 7 - Recordkeeping Requirements					
Item #	**Requirement**	**Duration/ Frequency**	**Applicable Unit**	**Regulatory Basis**	**Compliant**
13.	*Additional Recordkeeping Requirements: Pollution control equipment* Maintain records of all air pollution control equipment activities required in Tables 5 and 6, including: a.) Stack test results required pursuant to Table 6, Items 14 and 17; b.) The information recorded in Table 6, Item 3 for visible stack emission checks including any Method 9 observations; c.) Hourly averaged combustion chamber temperature readings pursuant to Table 6, Item 11.a.; d.) Date, time, duration and probable cause of pollution control equipment monitoring parameter excursions; e.) Air pollution control equipment maintenance activities, including preventative maintenance and annual visual inspections. Records shall include the date and duration of any outages; and f.) Corrective actions and preventative measures taken.	As specified in Table 6	PCE01	Env-A 906	Not Yet Applicable
14.	*40 CFR 60 Subpart IIII – Stationary Compression Ignition Internal Combustion Engines Recordkeeping Requirements* The owner or operator shall maintain the following records: a.) Documentation from the engine manufacturer certifying that the engine complies with the applicable emission standards stated in 40 CFR Part 60, Subpart IIII; b.) A copy of the manufacturer's emission-related written instructions (O&M manual) for the engine and its associated control devices; c.) The maintenance conducted on the engine in order to demonstrate that the device was operated and maintained according to the O&M manual; d.) The operation of the engine in emergency (i.e. loss of power) and non-emergency situations (i.e. maintenance and testing) that are recorded through the non-resettable hour meter. The owner or operator must record the time of	Maintain Up-to-date Data Maintain Up-to-date Data	EU20 & EU21	40 CFR 60.4211 (Subpart IIII)	Yes

Table 7 - Recordkeeping Requirements					
Item #	**Requirement**	**Duration/ Frequency**	**Applicable Unit**	**Regulatory Basis**	**Compliant**
	operation of the engine and the reason the engine was in operation during that time; and e.) Documentation of the federal, state or local standard(s) that require the owner or operator to conduct maintenance and testing for more than 100 hours per calendar year if the owner or operator is exercising the option listed in Footnote 7.				
15.	*Permit Deviation Recordkeeping* Maintain records of each permit deviation which result in excess emissions or monitoring parameter excursions lasting 48 hours or more. The content of the records is specified in Condition IX.B.2.(e through n).	As specified	EU01-EU08, EU12, EU13, EU15 – EU17, EU20 – EU26 & PCE01	Env-A 911.03(b)	Yes

VIII. Compliance with Reporting Requirements

Table 8, below taken from the permit lists the recordkeeping requirements for the facility and any deficiencies noted during the evaluation.

Table 8 - Reporting Requirements					
Item #	**Requirement**	**Frequency**	**Applicable Emission Unit**	**Regulatory Basis**	**Compliant**
1.	*General Reporting Requirements* a.) Each report shall be separately and clearly labeled with: 1. The name, mailing address and physical address of the source covered by the report; 2. The operating period covered by the report; 3. The permit number and condition or item number that requires the report submittal; 4. The type of report, using the name of the report as specified in the reporting condition in the permit, that is being submitted; and 5. The date the report was prepared; b.) An owner or operator who submits a report that is a revision to a previously-submitted report shall clearly identify the revised report with the information specified in Table 7, Item 1a. above, and indicate which portions of the report have been revised; c.) The owner or operator may submit more than one report with a single cover, provided the owner or operator clearly identifies each report being submitted using the information required in Table 7, Items 1a. and 1b. above, if applicable, for each report; and d.) The owner or operator shall submit reports as paper documents or by electronic means.	For each report submitted to the Dept.	Facility Wide	Env-A 907.01	Yes

Table 8 - Reporting Requirements					
Item #	**Requirement**	**Frequency**	**Applicable Emission Unit**	**Regulatory Basis**	**Compliant**
2.	*Annual Emissions Report* Submit an annual emissions report which shall include the following information: a.) Actual calendar year emissions from each coating tower (EU01-EU08, EU12, EU13, EU15 – EU17, EU22 – EU26) of: 1. Total VOCs; 2. Each HAP and RTAP, reported by CAS number; and 3. Each PFAS as measured by the most recent stack test conducted in accordance with Table 6, Items 14 or 17. b.) Actual calendar year emissions from the process heaters associated with the coating towers (EU01 – EU06, EU12, EU13, EU15, EU16, EU22, EU24 and EU26) and the engines (EU20 and EU21) of: 1. NOx; 2. Total VOCs; 3. Filterable PM; 4. CO; and 5. SO_2. c.) The methods used in calculating such emissions in accordance with Env-A 705.03, *Determination of Actual Emissions for Use in Calculating Emission-Based Fee*; d.) The emission factors and the origin of the emission factors; and e.) All information recorded in accordance with Table 7, Items 2 and 3.	Annually (received by the department no later than April 15th of the following year) Hrs. of Op fuel burning devices? Engines?	EU01-EU08, EU12, EU13, EU15 – EU17 & EU20 – EU26 Table 7 Item 2. C. and d.	Env-A 907.02 & RSA 125-C:10-e	No
Findings: SG did not report actual calendar year combustion emissions from each emergency engine in its Annual Emissions Statements. It reported combustion emissions from all the emergency engines combined. In addition, SG failed to report hours of operation of the emergency engines for each device. Although SG maintains the required records, it failed to include them in its Annual Emissions Statements. Similarly, SG did not include in its Annual Emissions Statements, actual calendar year VOC, HAP and RTAP emissions (by CAS number) from each emission unit. It reported total combined VOC, HAP and RTAP emissions from the tower processes. SG maintains the required records, however, it failed to include them in its Annual Emissions Statements. SG supplied the records upon request of NHDES prior to the issuance of this report.					

Table 8 - Reporting Requirements					
Item #	**Requirement**	**Frequency**	**Applicable Emission Unit**	**Regulatory Basis**	**Compliant**
3.	*VOC Emission Statements Reporting Requirements* If the actual annual VOC emissions from all permitted devices located at the Facility are greater than or equal to 10 tpy, then include all the data recorded in accordance with Table 7, Item 5 with the annual emission report.	Annually (received by the department no later than April 15th of the following year)	EU01-EU08, EU12, EU13, EU15 – EU17 & EU20 – EU22	Env-A 908	Yes
4.	*NOx Emission Statements Reporting Requirements* If the actual annual NOx emissions from all permitted devices located at the Facility are greater than or equal to 10 tpy, then include all data recorded in accordance with Table 7, Item 9 with the annual emission report.	Annually (received by the department no later than April 15th of the following year)	EU01 – EU06, EU12, EU13, EU15, EU16, EU20 – EU22, EU24 & EU26	Env-A 909	Not Applicable
Findings: According to the Annual emissions Statements reviewed by NHDES, SG did not emit NOx in amounts that exceeded 10 tpy in any year during the inspection period.					

Table 8 - Reporting Requirements					
Item #	**Requirement**	**Frequency**	**Applicable Emission Unit**	**Regulatory Basis**	**Compliant**
	Compliance Demonstration for Env-A 1400, Regulated Toxic Air Pollutant Regulation and RSA 125-C:10-e, Requirements for Air Emissions of Perfluorinated Compounds Impacting Soil and Water a.) The owner or operator shall update and submit an Env-A 1400 compliance demonstration in accordance with Table 7, Item 10 and an updated air deposition modeling analysis of post-controlled PFC emissions based on final as-built RTO emission parameters and the results of the stack testing conducted pursuant to Table 6, Item 14 for RTAPs and PFCs, respectively. b.) The Env-A 1400 compliance demonstration required in Table 8, Item 5(a) above, shall include the submission of the air dispersion model for RTAP emissions, an evaluation of compliance with the limitations in Env-A 1400, a determination if the RTO requires a permit pursuant to Env-A 607.01(t) and Env-A 1403, *Permit Requirements* and if so, a compliance plan and schedule as outlined in Table 8, Item 5(c), below. c.) The compliance plan and schedule shall include the following: 1. A narrative description of how the source shall achieve compliance with Env-A 1400 in both the long-term (i.e. proposed permit conditions or addition of air pollution control equipment) and short-term (i.e. operating limitations to mitigate the emissions until a permit is issued); 2. A schedule of remedial measures, including an enforceable sequence of actions with milestones leading to compliance with any applicable requirements for which the source identified in Item 5(b) above; and 3. A schedule for submission of certified progress reports no less frequently than every month. d.) The updated deposition model required in Table 8, Item 5(a) above, shall include the submission of an evaluation of compliance with the limitations in Condition V. Table 5, Item 5(g), a determination if the facility requires a permit limiting its potential to emit pursuant to Env-A 607.01(n) and proposed operating limitations, if necessary, to ensure compliance with the annual PFC emission limits in Condition V. Table 5, Item 5(g).	Received by the department within 30 business days of the submittal of the stack testing report required in Table 6, Item 15	PCE01	RSA 125-C:10-e Env-A 1400 & Env-A 910.01	Not Yet Applicable

Table 8 - Reporting Requirements					
Item #	**Requirement**	**Frequency**	**Applicable Emission Unit**	**Regulatory Basis**	**Compliant**
6.	*Update to Air Pollution Dispersion and Deposition Modeling Impact Analysis* If an update to the facility's air pollution dispersion or deposition modeling impact analysis is required pursuant to Env-A 606.02 (e.g. stack parameters including exhaust flow rate and temperature for PCE01 differ from stack parameters as modeled in Application #18-0227), submit the information required pursuant to Env-A 606.04: a.) With the permit application submitted for the change which triggered the analysis; or b.) Within 15-days of completion of the change which triggered the analysis, if a permit application is not required.	As specified	EU01-EU08, EU12, EU13, EU15 – EU17, EU22 – EU26 & PCE01	RSA 125-C:10-e & Env-A 910.01	Noted
7.	*Permit Deviation Reporting Requirements* Report permit deviations that cause excess emissions, or monitoring parameter excursions lasting 48 hours or more, in accordance with Condition IX.B.	As specified	EU01-EU08, EU12, EU13, EU15 – EU17, EU20 – EU26 & PCE01	Env-A 911.04(a) & Env-A 911.04(d)	Yes
Findings: SG reported excess visible emissions as required on six separate occasions in 2018 and one in 2016. None of these occurrences were to the degree that warranted a referral to Enforcement.					
8.	*Annual Emission Fee* Pay annual emission fee in accordance with Condition XII.	Annually (received by department no later than May 15th of the following year)	EU01-EU08, EU12, EU13, EU15 – EU17, EU20 – EU26 & PCE01	Env-A 705	Yes
9.	*Startup Notification* Submit a notification to the department stating the date of initial startup of PCE01.	Actual date of initial startup of the device, received by the dept. within 10 business days after such date	PCE01	Env-A 910.01	Not Yet Applicable

10.	*Air Pollution Control Equipment Monitoring Plan* An air pollution control equipment monitoring plan was submitted with Application #18-0227. However, because the proposed control device is in the preliminary design phase, not all information was provided in the plan. Therefore, the owner or operator shall submit a monthly update report which shall include the following: a.) *Manufacturer of Control Device:* Status update on selection of the manufacturer of the air pollution control device. b.) *Model and Serial Number of Control Device:* Submit information once model and serial numbers are known. c.) *Description of Control Device and How It Operates in the Process:* Submit documentation from the manufacturer of the air pollution control device including schematics, documentation of design and detailed description of the control device and how it will be designed to operate. d.) *The Capture Efficiency of the Device and Method of Determination:* Status update on tower improvements for maximizing capture efficiency conducted to date and going forward until construction is complete. Submit a Total Enclosure Monitoring and Capture Efficiency Verification Plan (for each device, as applicable) so that fugitive emissions are minimized or eliminated. e.) *The Control Efficiency of the Device and Method of Determination:* Submit documentation from the manufacturer of the air pollution control device regarding control efficiency guarantees and proposed methods of determination of the control efficiency of the device. f.) *Operational Parameters of the Device, and Normal Ranges, and Range During Start-up or Shutdown Conditions:* Submit updated operational parameters of the device and normal ranges from the manufacturer of the air pollution control device. g.) *Description of Data Recording or Recordkeeping, Parameter Set points and Alarms, and Operator Responses to Malfunctions of the Control Device to Prevent Uncontrolled Emissions:* Submit updated information pertaining to data recording or recordkeeping, parameter set-points and alarms, and operator responses to malfunctions from the manufacturer of the air pollution control device.	Monthly (Received by the department within 10 business days of the end of each month) until the Final Air Pollution Control Equipment Monitoring Plan required in Table 8, Item 10. k.) is approved by the department	PCE01	RSA 125-C:10-e Env-A 810.01& Env-A 910.01	Yes

Table 8 - Reporting Requirements					
Item #	**Requirement**	**Frequency**	**Applicable Emission Unit**	**Regulatory Basis**	**Compliant**
Findings: SG submitted monthly updates as required. NHDES issued Temporary Permit TP-0256 on February 11, 2020 making the first update due in March 2020. NHDES received the initial update on March 16, 2020 and subsequent updates on; April 14, 2020; May 14, 2020; June 11, 2020; July 15, 2020 and August 14, 2020.					
	h.) *Manufacturer's Recommended Procedures for Operation:* Submit documentation from manufacturer of the air pollution control device regarding recommended procedures for operation. i.) *Manufacturer's Recommended Schedule for Service, Maintenance and Calibration of the Device:* 1. Submit documentation from the manufacturer of the air pollution control device regarding recommended schedule for service, maintenance and calibration of the device; and 2. Submit additional information pertaining to the maintenance of the process vent emission streams that will be collected and tied into a header system. This information shall include methods for keeping the vents clear of char material, including but not limited to insulation, cleaning ports, cleaning frequency and methodology and any proposed operation and maintenance of auxiliary equipment necessary to ensure the process vent emission streams remain clear of char material. j.) *Other Operational Parameters Affecting the Ability of the Device to Control Emissions:* Submit documentation from manufacturer of the air pollution control device regarding any other operational parameters affecting the ability of the device to control emissions, as necessary.	Monthly (Received by the department within 10 business days of the end of each month) until the Final Air Pollution Control Equipment Monitoring Plan required in Table 8, Item 10. k.) is approved by the department	PCE01	RSA 125-C:10-e Env-A 810.01& Env-A 910.01	Yes
	k.) *Final Air Pollution Control Equipment Monitoring Plan:* The owner or operator shall submit a final approvable Air Pollution Control Equipment Monitoring Plan to the department.	Received by the department no later than 60 days after completion of construction and installation of PCE01			

Table 8 - Reporting Requirements					
Item #	**Requirement**	**Frequency**	**Applicable Emission Unit**	**Regulatory Basis**	**Compliant**
11.	*Air Pollution Control Equipment Monitoring Plan* If the owner or operator determines that the information and procedures documented in the air pollution control equipment monitoring plan submitted with Application #18-0227 and revised in accordance with Table 8, Item 10 need to be changed at any time to accurately represent the activities performed to maintain the control equipment, the owner or operator shall submit a revised monitoring or management plan, as applicable, to the department in writing.	Submit to the department within 30 days of any change to the plan	PCE01	Env-A 810.01(e)	Noted
12.	*NSPS Reporting Requirements* Submit to the department and U.S. EPA Region I, a report on the first semiannual estimate in which projected annual VOC use exceeds 95 Mg and report the first 12-month period in which the actual VOC use exceeds the applicable cutoff. The address for USEPA Region 1 is: Director, Enforcement and Compliance Assurance Division U.S. EPA Region I 5 Post Office Square Suite 100 (04–2) Boston, MA 02109–3912 Attn: Air Compliance Clerk The address for the department is: NH DES – Air Resources Division Attn: Compliance Measurement & Data Programs Manager PO Box 95 29 Hazen Drive Concord, NH 03301-0095	As required	EU01 – EU08 & EU11 – EU16	40 CFR 60.747(c) (Subpart VVV)	Not Applicable
Findings: SG's projections to date indicate that semi-annual VOC emissions will not exceed 95 Mg. SG projects semi-annual VOC emissions to be well below 20 Mg.					

IX. Permit Deviations

SG is aware of the permit deviation recordkeeping and reporting requirements. On one occasion in 2016, and six occasions in 2018, SG submitted permit deviation reports for exceeding the 20% visible emission limit. Notifications and reports were submitted within the required timeframes.

X. Other Findings

There were no other findings identified during this compliance evaluation.

XI. Enforcement History and Status

There have been no enforcement actions during the evaluation period.

XII. Compliance Assistance, Recommendations and Corrective Actions

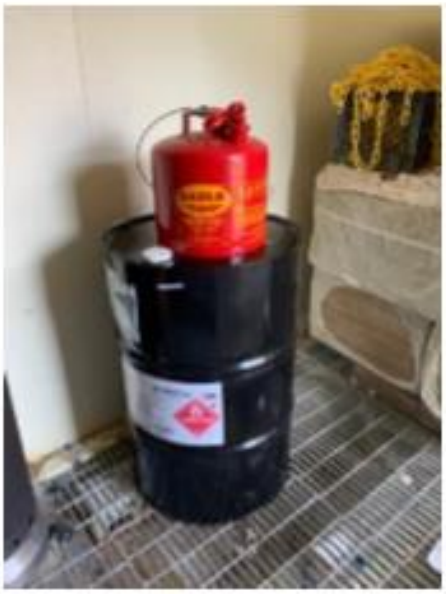
The following is recommended to bring the facility into compliance:

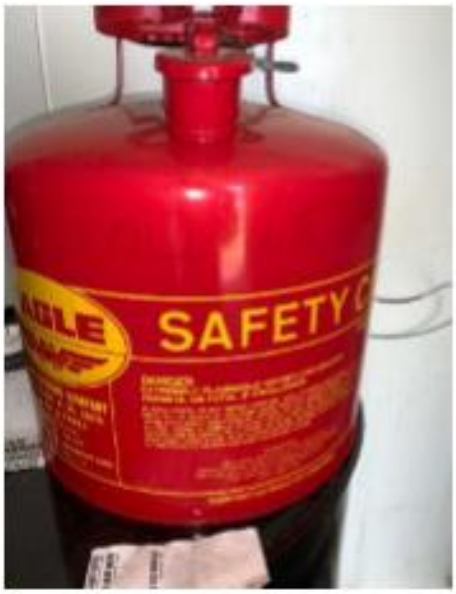
1. In future Annual Emission Statements, include actual calendar year emissions for each emission unit.
2. In future Annual Emission Statements, include hours of operation for each emergency engine.
3. In the event of future opacity excursions, submit notification to NHDES within 24 hours of the occurrence and submit a final report within 10 days of the occurrence.

Report Prepared By: Thomas V. Guertin
Title: Compliance Assessment Section Supervisor
Signed: Thomas V. Guertin

Appendix A: VOC Containing Materials Storage

Toluene is stored in a sealed 55-gal drum in the chemical storage shed. The chemical storage shed is locked at all times and has grating on the floor which acts as secondary containment. When chemical is needed from the drum it is transferred into a safety can to be brought into the building.





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