

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Application Review

Issue Date:

Region: Raleigh Regional Office
County: Wake
NC Facility ID: 9200782
Inspector's Name: Dawn Reddix
Date of Last Inspection: 11/12/2021
Compliance Code: 3 / Compliance - inspection

<p style="text-align: center;">Facility Data</p> <p>Applicant (Facility's Name): DSI Columns - Fuquay-Varina Plant</p> <p>Facility Address: DSI Columns - Fuquay-Varina Plant 8013 Purfoy Road Fuquay-Varina, NC 27526</p> <p>SIC: 3089 / Plastics Products, Nec NAICS: 326199 / All Other Plastics Product Manufacturing</p> <p>Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V</p>	<p style="text-align: center;">Permit Applicability (this application only)</p> <p>SIP: 15A NCAC 02D .0515, 02D .0521, 02D .1111, 02D .1806; 02Q .0317 of 02D .0531 and 02D .1111 (Subpart PPPP) NSPS: NA NESHAP: 40 CFR Part 63, Subpart WWWW and Subpart PPPP PSD: NA PSD Avoidance: Yes, VOC emissions NC Toxics: NA 112(r): NA Other: Wake County was previously a moderate nonattainment (2D .0531) county for the 1997 ozone standard in 2004, 2005 and 2006.</p>
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Contact Data			Application Data
Facility Contact	Authorized Contact	Technical Contact	<p>Application Number: 9200782.20A Date Received: 07/27/2020 Application Type: Renewal Application Schedule: TV-Renewal</p> <p style="text-align: center;">Existing Permit Data</p> <p>Existing Permit Number: 09594/T04 Existing Permit Issue Date: 07/26/2018 Existing Permit Expiration Date: 02/28/2021</p>
Jim Cole Plant Manager (919) 255-1533 8013 Purfoy Road Fuquay-Varina, NC 27526	David Szilezy General Manager (919) 255-1533 8013 Purfoy Road Fuquay-Varina, NC 27526	Sarah Cuthbertson Administrative Assistant (919) 255-1533 8013 Purfoy Road Fuquay-Varina, NC 27526	

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2020	---	---	10.13	---	---	11.07	9.95 [Styrene]
2019	---	---	11.18	---	---	12.15	10.96 [Styrene]
2018	---	---	7.42	---	---	7.30	6.56 [Styrene]
2017	---	---	9.20	---	---	10.07	9.06 [Styrene]
2016	---	---	8.98	---	---	9.82	8.83 [Styrene]

<p>Review Engineer: Alice Wessner</p> <p>Review Engineer's Signature: _____ Date: _____</p>	<p style="text-align: center;">Comments / Recommendations:</p> <p>Issue: 09594T05 Permit Issue Date: _____ Permit Expiration Date: _____</p>
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1. Purpose of Application

The DSI Columns – Fuquay-Varina Plant (DSI Columns) currently holds Title V Permit No. 09594T04 with an expiration date of February 28, 2021, that manufactures fiberglass columns and posts for houses and buildings. This permit application is for a permit renewal without modification. The renewal application was received on July 27, 2020, or at least six months prior to the expiration date as required by Condition K in the General Conditions of their most recent permit. Therefore, the existing permit shall not expire until the renewal permit has been issued or denied. All terms and conditions of the existing permit shall remain in effect until the renewal permit has been issued or denied.

2. Facility Description

The facility, DSI Columns – Fuquay Varina (DSI Columns) manufactures fiberglass columns and posts for houses and buildings. The products are made by filling forms with a polyester resin, a catalyst, marble powder, and a reinforcement such as fiberglass. Resin is pumped from a liquid storage tank into one of the seven mixing tanks. The resin is mixed with a catalyst and any other additives needed to achieve the desired properties. The resin is then dispersed into molds of various shapes and sizes. There are numerous molds used and one mixing tank can service several molds. The molds are then spun to throw the material to the outside of the mold by way of centrifugal force. The spinning process continues until the products are fully cured. The finished products are then pulled from the mold. The facility is operated by 61 employees on one shift per day from 7:00am to 3:30pm.

The facility is a Title V facility because the potential emissions of hazardous air pollutants (HAPs) exceed 10 tons per year of any one HAP or 25 tons per year of all HAPs combined. In this situation, DSI Columns is specifically Title V because potential emissions of styrene exceed 10 tons per year.

3. History/Background/Application Chronology

History/Background

March 19, 2016	Air Permit No. 09594T03 was issued on March 19, 2016 with an expiration date of February 28, 2021.
July 26, 2018	Air Permit No. 06848T04 was issued for an ownership/name change with an expiration date of February 28, 2021. The facility was previously named Column & Post, Inc. and the name was changed to DSI Columns – Fuquay-Varina Plant. The General Conditions were also updated to specify that a permit application for TV renewal is due no later than six months before permit expiration date.
November 12, 2021	The most recent facility inspection was performed by Dawn Reddix of the Raleigh Regional Office.

Application Chronology

July 27, 2020	Received permit application 9200782.20A for renewal with no modifications.
August 6, 2020	Sent acknowledgment letter indicating that the application for permit renewal was complete.
February 28, 2022	Draft permit and review forwarded for comments.
March 7, 2022	Comments received from Booker Pullen, Permitting Supervisor
March 9, 2022	Dawn Reddix from the Raleigh Regional Office (RRO) of the DAQ provided minor edits via email for draft permit and review.
March 14, 2022	Recieved comments on draft and review from Samir Parekh, DAQ Compliance.

March 15, 2022 David Szilezy from Digger Specialties, Inc. indicated via e-mail that he had no comments on the draft permit, however, he did request an explanation as to why 15A NCAC 02D .0958 was removed from the permit. An email explanation was provided to Mr. Szilezy.

March 25, 2022 Dena Pittman from the Raleigh Regional Office (RRO) of the DAQ provided minor edits via phone call for draft permit and review.

March XX, 2022 Draft permit and permit review forwarded to public notice.

XXXX XX, 2022 Public comment period ends. comments received.

XXXX XX, 2022 EPA comment period ends. comments received.

XXXX XX, 2022 Permit issued.

4. Permit Modifications/Changes and TVEE Discussion

This permit renewal is without modification, and no changes to the Title V Equipment Editor other than minor edits are needed.

The following changes were made to Air Permit No. 09594T04:*

Page No.	Section	Description of Changes
Cover letter	N/A	- Modified letter to reflect current dates, permit number, new Section Chief name, issuance, and effective dates
Cover letter	Notice regarding the right to contest....	- Added the "NOTICE REGARDING THE RIGHT TO CONTEST A DIVISION OF AIR QUALITY PERMIT DECISION"
-----	Attachment 2 Insignificant Activities List	- Moved to Section 2.3 of permit (Page 12)
Cover letter	Table of Contents	- Added Section 2.3 "Insignificant Activities"
-----	Body of Permit	- Updated Permit Revision number in header - Made minor corrections in capitalization and wording throughout Permit - Updated language throughout permit to be consistent with Permit Shell
4	Table 2.1 A	- Removed reference to 15A NCAC 02D .0958 and renumbered Section references in table
4	2.1 A.1	- Removed 15A NCAC 02D .0958 and renumbered following sections
6	Table 2.1 B	- Removed reference to 15A NCAC 02D .0958 and renumbered Section references in table
6-10	2.1 B.1	- Updated MACT WWW language and added non-compliance statements
11	Table 2.2 A	- Removed reference to 15A NCAC 02D .0958
11-12	2.2 A.1	- Removed 15A NCAC 02D .0958 and renumbered following sections
14-22	3	- Updated to most recent General Conditions Version 6.0
23	Attachment List of Acronyms	- Moved to Page 3 in the body of the renewed permit

* This list is not intended to be a detailed record of every change made to the permit but a summary of those changes.

5. Regulatory Review

DSI Columns is subject to the following regulations. The facility's equipment and operations have not changed since the last renewal in 2016. The permit was updated to reflect the most current stipulations for all applicable regulations, where necessary.

- 15A NCAC 02D .0515, Particulates from Miscellaneous Industrial Processes – DSI Columns is subject to this regulation because it has two spray booths; one located in the main building and the other in the Mold shop building. The emissions of particulate matter (PM) from the spray booths (ID Nos. P1 and P2) shall not exceed an allowable emission rate as calculated by the equation: $E = 4.10 \times P^{0.67}$ where E equals the allowable emission rate in pounds per hour; and P equals the process weight in tons per hour. PM emissions from the spray booths shall be controlled by the dry filters which are considered inherent to the process. To ensure compliance, the Permittee shall perform inspections and maintenance. As a minimum, the inspection and maintenance program shall include a monthly visual inspection of the spray booths' dry filters noting their condition. Continued compliance is anticipated.
- 15A NCAC 02D .0521, Control of Visible Emissions – The two dry filter-type spray booths (ID Nos. P1 and P2) are subject to this regulation because these sources were manufactured after July 1, 1971. Visible emissions shall not be more than 20 percent opacity when averaged over a six-minute period. Six-minute averaging periods may exceed 20 percent opacity if: (1) no six-minute period exceeds 87 percent opacity; (2) no more than one six-minute period exceeds 20 percent opacity in any hour; and (3) no more than four six-minute periods exceed 20 percent opacity in any 24-hour period.

Particulate matter emissions from these sources (**ID Nos. P1 and P2**) shall be controlled by inherent dry filters. To ensure compliance, the Permittee shall perform inspections and maintenance. As a minimum, the inspection and maintenance program shall include a monthly visual inspection of the spray booths' dry filters noting their condition. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515 if the dry filters are not inspected and maintained. There have been no violations of this regulation reported. Continued compliance is anticipated.

- 15A NCAC 02D .0958, Work Practices for Sources of Volatile Organic Compounds - On November 1, 2016, amendments to 15A NCAC 02D .0902 were finalized to narrow applicability of work practice standards in 15A NCAC 02D .0958 from statewide to the maintenance area for the 1997 8-hour ozone standard. This change is being made primarily because the abundance of biogenic VOC emissions in North Carolina results in ozone formation being limited by the amount of available nitrogen oxides (NOx) emissions. Provisions of the Clean Air Act require VOC requirements previously implemented in an ozone nonattainment area prior to redesignation to remain in place. However, facilities outside the maintenance area counties for the 1997 8-hour ozone standard would no longer be required to comply with the work practice standards in 15A NCAC 02D .0958. Wake County was never in nonattainment for ozone and therefore 15A NCAC 02D .0958 is no longer applicable to facilities, including DSI Columns, within Wake County. Therefore, the permit condition for 15A NCAC 02D .0958 will be removed under this permit renewal.
- 15A NCAC 02D .1806, Control and Prohibition of Odorous Emissions – This “State Enforceable” only regulation, requires the Permittee to not operate the facility without implementing management practices or installing and operating odor control equipment sufficient to prevent odorous emissions from the facility from causing or contributing to objectionable odors beyond the facility’s boundaries. Continued compliance is anticipated.

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

NSPS

The facility is not currently subject to any New Source Performance Standards. This permit renewal does not change the facility’s NSPS status.

NESHAP/MACT

- DSI Columns is subject to National Emission Standards for Hazardous Air Pollutants for Reinforced Plastic Composites Production, 40 CFR Part 63 Subpart WWWW “Reinforced Plastic Composites Production” (40 CFR 63, Subpart WWWW) because they own or operate a reinforced plastic composites production facility that is located at a major source of HAP emissions. Reinforced plastic composites production is limited to operations in which reinforced and/or nonreinforced plastic composites or plastic molding compounds are manufactured using thermoset resins and/or gel coats that contain styrene to produce plastic composites. The resins and gel coats may also contain materials designed to enhance the chemical, physical, and/or thermal properties of the

product. Reinforced plastic composites production also includes cleaning, mixing, HAP-containing materials storage, and repair operations associated with the production of plastic composites. The requirements of this subpart are applicable to the facility's seven mixing tanks (ID Nos. MT1, MT3, MT5, MT9, MT11, MT13 and MT15), molding area (ID No. MO1), and two bulk polystyrene resin storage tanks (ID Nos. BT1 and BT2). Specific emission limits include a requirement to emit less than 87 pounds of organic HAP per ton of resin used on a 12-month rolling average and less than 100 tons of organic HAP per calendar year. The permit condition allows the Permittee to choose between two compliance options.

- Emission Limits [40 CFR 63.5799, 63.5805(c), 63.5810(a) or (c), Table 1 and Table 3]
 - Monitoring [40 CFR 63.5797, 63.5799(c), 63.5810(a) and (c), Table 1 and Table 3]
 - Work Practice Standards [40 CFR 63.5805(c), 63.5835(a) and Table 4]
 - Recordkeeping [40 CFR 63.5895(c) and (d), 63.5915(c) and (d), 63.5920]
 - Reporting [40 CFR 63.5805(e), 63.5895(d), 63.5900(b), 63.5910, 63.5920 and Table 14]
- DSI Columns was also evaluated for 40 CFR Subpart PPPP "Surface Coating of Plastic Parts and Products. This subpart establishes National Emission Standards for Hazardous Air Pollutants (NESHAP) for plastic parts and products surface coating facilities. However, in accordance with 40 CFR 63.4481(b) "Am I Subject to This Subpart", a facility is only subject if they own or operate a new, reconstructed, or existing affected source, that uses 378 liters (100 gallons (gal)) per year, or more, of coatings that contain hazardous air pollutants (HAP) in the surface coating of plastic parts and products defined in §63.4481(a) of this section; and that is a major source, is located at a major source, or is part of a major source of emissions of HAP.

Therefore, in order to avoid the applicability of MACT Subpart PPPP, the Permittee requested that Permit No. 09594T01 (issued in 4/28/2008) include an avoidance condition that limits the facility-wide application of HAP-containing coatings to plastic parts or products to less than 100 gallons per year. The most recent compliance inspection (11/21/2021) states that "The facility maintains records of the amounts of HAP containing coating materials applied to their products. A review of the records for the period of February 2020 thru July 2021, indicated the facility's highest consecutive 12-month period usage was 97 gallons, which is less than the permitted limit of 100 gallons per consecutive 12-month period." Continued compliance with the regulation is expected.

PSD

This facility is not subject to PSD because the potential emissions of the largest pollutant (VOC) emitted at the facility has an enforceable permit limit of less than 100 tons per year under the 02D .0531 regulation that keeps the VOC emission rate well below the PSD threshold limit (250 tons per year).

Nonattainment

The Permittee operates under a Nonattainment avoidance condition limiting facility-wide volatile organic compound emissions to less than 100 tons per year. This permit condition was placed into the permit (09594R00) because the facility is located in Wake County which was previously a moderate nonattainment county for the 1997 ozone standard in 2004, 2005 and 2006. Wake County has since attained the ozone standard (2007), however this permit requirement will be retained in the permit. In accordance with 15A NCAC 02D .0902(g) "If any county or part of a county to which this Section applies is later designated in 40 CFR 81.334 as attainment and becomes a maintenance area for the 1997 8-hour ambient air quality standard for ozone, all sources in that county or part of county subject to 15A NCAC 02D .0902(f) Rule that achieved compliance in accordance with 15A NCAC 02D .0909 shall continue to comply with this Section."

The permit condition includes monthly calculation and recordkeeping of VOC emissions and semiannual reporting requirements. This permit renewal does not affect this status.

1. In order to avoid applicability of 15A NCAC 02D .0531 for major sources and major modifications, facility-wide emissions of volatile organic compounds (VOCs) into the atmosphere shall be less than 100 tons per consecutive 12-month period.

Testing [15A NCAC 02Q .0508(f)]

2. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ of the permit. If the results of this test are above the limit given above in this Section, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0531.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

3. The Permittee shall determine the facility-wide VOC emissions using the following calculations:
- a. Within 30 days of the end of each calendar month, the Permittee shall calculate the VOC emissions from the molding operations for the previous calendar month utilizing the following equation:

$$E_M = \sum_{j=1}^n (EF_j \times R_j) \div 2,000$$

Where: E_M = Total VOC emissions from molding operations during the calendar month, in units of tons

R_j = Total usage of resin "j" in molding operations during the calendar month, in units of tons

n = Total number of resins utilized in molding operations during the calendar month

EF_j = VOC emission factor for resin "j" in units of pounds per ton of resin. If resin "j" contains greater than or equal to 33% organic hazardous air pollutants (HAP), by weight, then:

$$EF_j = ([0.286 \times \%HAP] - 0.0529) \times 2000 \times 0.5$$

If resin "j" contains less than 33% organic HAP, by weight, then:

$$EF_j = 0.126 \times \%HAP \times 2000 \times 0.5$$

Where: %HAP = Organic HAP weight percent of resin (e.g. if the resin contains 31.5% organic HAP by weight, then %HAP = 0.315)

- b. Within 30 days of the end of each calendar month, the Permittee shall calculate the facility-wide VOC emissions from all sources other than the molding operations (i.e. the non-molding operations) for the previous calendar month utilizing the following equation:

$$E_{NM} = \sum_{k=1}^m (VOC_k \times R_k) \div 2,000$$

Where: E_{NM} = Total emissions of VOC from all non-molding operations during the calendar month, in units of tons

VOC_k = VOC content of material "k" in weight percent (e.g. if a coating material contains 7.5% VOC by weight, then $VOC_k = 0.075$)

R_k = Total usage of material "k" in non-molding operations during the calendar month, in units of pounds

m = Total number of VOC-containing materials utilized in non-molding operations during the calendar month

- c. Within 30 days of the end of each calendar month, the Permittee shall calculate the facility-wide VOC emissions from all sources for the consecutive 12-month period that ended with the previous calendar month by summing the monthly VOC emissions from molding and non-molding operations, as calculated above, over that consecutive 12-month period.
- d. Calculations shall be made and recorded monthly in a logbook (written or electronic format) maintained on-site and made available to an authorized representative upon request. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0531 if the molding and non-molding VOC emissions are not monitored and recorded or if the calculated VOC emissions exceed the 100 ton per consecutive 12-month limit.

Reporting [15A NCAC 02Q .0508(f)]

4. The Permittee shall submit a summary report of monitoring and recordkeeping activities given above postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. The report shall contain the following:
 - a. The monthly facility-wide VOC emissions for each of the previous 17 months; and
 - b. The facility-wide VOC emissions for each of the consecutive 12-month periods ending during the reporting period.

112(r)

DSI Columns is subject to the 112(r) program general duty clause, but does not maintain sufficient quantities of regulated chemicals onsite to require a risk management plan. No change with respect to 112(r) is anticipated under this permit renewal.

CAM

The CAM rule (40 CFR 64; 15A NCAC 02D .0614) applies to each pollutant specific emissions unit (PSEU) at major TV facilities that meets all three following criteria:

- the unit is subject to any (non-exempt: e.g. pre November 15, 1990, Section 111 or Section 112 standard) emission limitation or standard for the applicable regulated pollutant.
- the unit uses any control device to achieve compliance with any such emission limitation or standard.
- The unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source (i.e., 100 tons per year for criteria pollutants or 10/25 tons per year for HAPs).

DSI Columns currently has dry filters on their spray booths (ID Nos. P1 and P2). These filters are in place to meet the PM emission standard of 15A NCAC 02D .0515. Because the filters in these spray booths are considered inherent, the facility does not emit PM in quantities greater than the major source threshold. Therefore, CAM does not apply. This permit renewal does not change the facility's CAM status.

7. Facility Wide Air Toxics

All sources of toxic air pollutants (TAPs) from DSI Columns are subject to MACT Subpart VVVV. North Carolina G.S. 143-215.107(a) exempts emission sources subject to MACT standards from NC Air Toxics regulations provided their emissions do not "present an unacceptable risk to human health," in accordance with G.S. 143-215.107(b) as codified on May 1, 2014. As part of the previous permit renewal, the DAQ conducted a TAP evaluation and demonstrated emission sources of TAPs present no unacceptable risk to human health. The conditions referencing 15A NCAC 02D .1100 were removed from the permit under a prior TV permit renewal. The current permit renewal does not change the facility's status with respect to NC Air Toxics and no changes need to be made to the permit.

8. Facility Emissions Review

The facility-wide potential emissions do not change under this TV permit renewal. Actual emissions for criteria pollutants and HAPs for the years 2016 through 2020 are provided in the header of this permit review.

9. Compliance Status

DAQ has reviewed the compliance status of DSI Columns. During the most recent inspection, conducted on November 12, 2021, by Dawn Reddix of the Raleigh Regional Office, the facility appeared to be in compliance with all applicable requirements. The facility had one Notice of Violation (NOV) dated April 26, 2018, for late submittal of their 2017 Annual Compliance Certification (ACC). The issue was resolved July 10, 2018. Prior to that violation, on May 23, 2007, an NOV was issued for the late submittal of their 2007 first quarter report. The

facility's 2021 Annual Compliance Certification was received on February 8, 2022 and reviewed by the Raleigh Regional Office on February 25, 2022 and indicated compliance with all applicable requirements in 2021.

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

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Consistent with 15A NCAC 02Q .0525, the EPA will have a concurrent 45-day review period. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit shall be provided to EPA. Also pursuant to 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice provided to the public under 02Q .0521 above. No affected states or local agencies are within 50 miles of this facility.

11. Other Regulatory Considerations

- A P.E. seal is NOT required for this renewal application.
- A zoning consistency determination is NOT required for this renewal application.
- A permit fee is NOT required for this renewal application.

12. Recommendations

The permit renewal application for DSI Columns – Fuquay-Varina, located in Fuquay-Varina, Wake, North Carolina has been reviewed by DAQ to determine compliance with all procedures and requirements. DAQ has determined this facility is complying or will achieve compliance, as specified in the permit, with all requirements that are applicable to the affected sources. DAQ recommends the issuance of Air Permit No. 09594T05.