

Air Permit Review

Permit Issue Date: **April 13, 2009**

Region: Winston-Salem Regional Office
County: Randolph
NC Facility ID: 7600311
Inspector's Name: Robert Barker
Date of Last Inspection: 01/07/2008
Compliance Code: C/In Comp. with Proc. Reqr

Facility Data			Permit Applicability		
Applicant (Facility's Name): Braxton Culler, Incorporated 7310 US 311 South Sophia, NC 27350			SIP: 2D .0512, .0515, .0516, .0521 and .0958 NSPS: Not Applicable NESHAP: 40 CFR Part 63, Subpart ZZZZ PSD: Not Applicable PSD Avoid: Not Applicable NC Toxics: 2Q .0711 112(r): Not Applicable Other: 2D .1806 and 2Q .0317		
SIC: 2512 / Upholstered Household Furniture NAICS: 337121 / Upholstered Household Furniture Manufacturing					
Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V					
Contact Data					
Facility Contact		Authorized Contact		Technical Contact	
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Review Engineer: David Putney Review Engineer's Signature: _____ Date: _____			Application Data Application Number: 7600311.08A Date Received: 09/25/2008 Application Type: Renewal Application Schedule: TV-Renewal Existing Permit Data Existing Permit Number: 06253/T09 Existing Permit Issue Date: 11/05/2004 Existing Permit Expiration Date: 07/31/2009		
			Comments / Recommendations:		
			Issue 06253/T10 Permit Issue Date: April 13, 2009 Permit Expiration Date: March 31, 2014		

I Reason for Application:

Facility Description: Braxton Culler, Inc. currently operates a wicker furniture finishing operation at its Sophia, North Carolina facility under Permit No. 06253T09. The Permittee applies paints, stains, and/or glazes to wicker furniture received, completely assembled, at this facility from overseas facilities. No woodworking operations are conducted by Braxton Culler, Inc. at this facility.

Permit Modification: The Permittee submitted application 7600311.08A to renew (without any modifications) Permit No. 06253T09.

II Regulatory review for rules that apply to emissions from individual source categories:

A. One natural gas-fired bake oven (4.5 million Btu per hour maximum heat input rate; ID No. NGFBO-1):

The bake oven is used to shorten the time required to dry the paints, stains, and/or glazes applied to the imported wicker furniture.

i. 2D .0515 "Particulates from Miscellaneous Industrial Processes"

This rule applies to the bake oven (ID No. NGFBO-1) and limits the allowable PM emissions (E) from this source to those described in the following equation:

$$E \leq 4.10(P)^{0.67} \quad \text{If } P \leq 30 \text{ (ton/hr)}$$

Where: P = process weight rate (ton/hr), and
E = allowable emissions (lb PM/hr)

According to the review associated with Permit No. 06253T08 (the initial Title V permit for this facility), the process weight of the furniture going through the bake oven is 1,600 pounds per hour. Therefore, the calculated allowable emissions are 3.53 pounds per hour.

Negligible particulate matter emissions are expected from the drying paints, stains, and/or glazes. Table 1.4-2 of Supplement D to the 5th edition of the AP-42 document predicts total PM emissions of 7.6 (lb/10⁶ ft³) from natural gas combustion. If we assume a natural gas heat value of 1,020 (Btu/ft³) then we can calculate PM emissions as follows:

$$PM = \left[7.6 \left(\frac{lb \text{ PM}}{10^6 \text{ ft}^3} \right) \right] \left[4.5 \left(\frac{10^6 \text{ Btu}}{\text{hour}} \right) \right] \div \left[1,020 \left(\frac{\text{Btu}}{\text{ft}^3} \right) \right] = 0.034 \left(\frac{lb}{\text{hour}} \right)$$

Current Permit No. 06253T09 requires the Permittee to maintain production records which specify types of materials and finishes processed but does not include any reporting requirements for 2D .0515. Since, as noted above, natural gas combustion is inherently compliant with this rule and negligible particulate matter emissions are expected from the drying paints, stains, and/or glazes, Permit No. 06253T10 will not include any monitoring, recordkeeping, or reporting (MRR) requirements for this source pursuant to 2D .0515.

ii. 2D .0516 “Sulfur Dioxide Emissions from Combustion Sources”

This rule applies to the bake oven (ID No. NGFBO-1) and limits the SO₂ emissions from this combustion source to 2.3 (lb/10⁶ Btu).

Table 1.4-2 of Supplement D to the 5th edition of the AP-42 document predicts SO₂ emissions of 0.6 (lb SO₂/10⁶ ft³) from the combustion of natural gas. Assuming a heat value of 1,020 (Btu/ft³) for natural gas we can calculate SO₂ emissions as follows:

$$[0.6 \text{ (lb SO}_2\text{/10}^6 \text{ ft}^3\text{)}] / [1,020 \text{ (Btu/ft}^3\text{)}] = 0.00059 \text{ (lb SO}_2\text{/MMBtu)}$$

Permit No. 06253T10 will include the standard language for the emission limits and testing for 2D .0516 but (since natural gas is an inherently compliant fuel) will not require any additional testing or MRR requirements to demonstrate compliance for this boiler.

iii. 2D .0521 “Control of Visible Emissions”

This rule requires that the Permittee “prevent, abate and control emissions generated from fuel burning operations and industrial processes where an emission can reasonably be expected to occur...” The bake oven (ID No. NGFBO-1) is currently permitted but has not been installed yet. Therefore, except for visible emissions (VEs) occurring during startup, shutdown and malfunctions that are regulated under 2D .0535, paragraph (d) of this rule requires that 6-minute average VEs from this source be less than or equal to 20% opacity with the following exceptions:

- One six-minute average VE per hour may exceed 20% opacity as long as it does not also exceed 87% opacity; and
- Up to four six-minute average VEs per 24-hour period may exceed 20% opacity as long as they do not also exceed 87% opacity.

Permit No. 06253T10 will include the standard language for the emission limits and testing for 2D .0521 but (since noncompliance is considered unlikely) will not require any additional testing or MRR requirements to demonstrate compliance with this rule.

iv. 2D .0958 “Work Practices for Sources of Volatile Organic Compounds”

See discussion in Section III A.i of this document, below.

v. 2D .1806 “Control and Prohibition of Odorous Emissions”

See discussion in Section III A.ii of this document, below.

**vi. 2Q .0317 “Avoidance Conditions” to avoid
2D .1111 “Maximum Achievable Control Technology”**

See discussion in Section III A.iii of this document, below.

vii. 2Q .0711 “Emission Rates Requiring a Permit”

See discussion in Section III A.iv of this document, below.

B. Eight dry filter-type spray booths (ID Nos. ES-1 through ES-8):

The Permittee utilizes these spray booths to apply paints, stains, and/or glazes to the imported wicker furniture.

i. 2D .0512 “Particulates from Wood Products Finishing Plants”

This rule applies to the spray booths and requires that the Permittee “shall not cause, allow, or permit particulate matter caused by the working, sanding, or finishing of wood to be discharged ... into the environment without providing ... adequate ductwork and properly designed collectors ...” NC DAQ anticipates compliance with this rule due to the presence of dry filters installed on the spray booths.

Permit No. 06253T10 will include the standard language for the control requirements of 2D .0512 but will not require any testing to demonstrate compliance for these sources.

Permit No. 06253T10 will require weekly dry filter/annual ductwork monitoring (with the associated recordkeeping) and semiannual reporting associated with rule 2D .0512 for the eight spray booths.

ii. 2D .0521 “Control of Visible Emissions”

This rule requires that the Permittee “prevent, abate and control emissions generated from fuel burning operations and industrial processes where an emission can reasonably be expected to occur...” These spray booths were installed after 07/01/71, therefore, except for visible emissions (VEs) occurring during startup, shutdown and malfunctions that are regulated under 2D .0535, paragraph (d) of this rule requires that 6-minute average VEs from the spray booths be less than or equal to 20% opacity with the following exceptions:

- One six-minute average VE per hour may exceed 20% opacity as long as it does not also exceed 87% opacity; and
- Up to four six-minute average VEs per 24-hour period may exceed 20% opacity as long as they do not also exceed 87% opacity.

Permit No. 06253T10 will include the standard language for the emission limits and testing for 2D .0521 but will not require any additional testing for the spray booths unless the Permittee notes VEs that are above “normal” when conducting the required monitoring for these sources.

Permit No. 06253T10 will require monthly monitoring and recordkeeping of VEs and semiannual reporting associated with 2D .0521 for the spray booths.

iii. 2D .0958 “Work Practices for Sources of Volatile Organic Compounds”

See discussion in Section III A.i of this document, below.

iv. 2D .1806 “Control and Prohibition of Odorous Emissions”

See discussion in Section III A.ii of this document, below.

**v. 2Q .0317 “Avoidance Conditions” to avoid
2D .1111 “Maximum Achievable Control Technology”**

See discussion in Section III A.iii of this document, below.

vi. 2Q .0711 “Emission Rates Requiring a Permit”

See discussion in Section III A.iv of this document, below.

C. One diesel-fired emergency water pump (140 horsepower maximum rated power output; ID No. DFWP-1):

The Permittee utilizes this emergency water pump (manufactured in 1999 by Clark) for the fire suppression system (i.e. the sprinkler system).

i. 2D .0516 “Sulfur Dioxide Emissions from Combustion Sources”

This rule applies to the diesel fuel-fired emergency water pump (ID No. DFWP-1) and limits the associated SO₂ emissions to 2.3 (lb/10⁶ Btu).

Table 3.3-1 of the 5th edition of the AP-42 document predicts SO_x emissions from diesel fuel combustion in small industrial engines (i.e. < 600 hp) of 0.29 (lb/10⁶ Btu).

Permit No. 06253T10 will include the standard language for the emission limits of, and the methods of testing (if/when required by DAQ) for compliance with, this rule. However, since the permitted fuel (i.e. diesel fuel) is inherently compliant with the emission limit, Permit No. 06253T10 will not include any MRR requirements associated with 2D .0516 for this source.

ii. 2D .0521 “Control of Visible Emissions”

This rule requires that the Permittee “prevent, abate and control emissions generated from fuel burning operations and industrial processes where an emission can reasonably be expected to occur...” Except for those visible emissions (VEs) occurring during startup, shutdown and malfunctions that are regulated under Rule 2D .0535, paragraph (d) of this rule requires that the 6-minute average VEs from the emergency water pump be less than or equal to 20% opacity with the following exceptions:

- One six-minute average VE per hour may exceed 20% opacity as long as that VE does not also exceed 87%; and
- Up to four six-minute average VEs per 24-hour period may exceed 20% opacity as long as those VEs do not also exceed 87% opacity.

Since operation of the diesel fuel-fired emergency water pump is infrequent and largely unpredictable, and since noncompliance with this rule is considered unlikely for this source, Permit No. 06253T10 will include only the standard language for the emission limits of, and the methods of testing for compliance (if/when required by DAQ) with, this rule. That is, Permit No. 06253T10 will not include any 2D .0521 MRR requirements for the diesel fuel-fired emergency water pump.

iii. 2D .0524 “New Source Performance Standards”

The new source performance standards (NSPS) for the stationary compression ignition internal combustion engines (CI ICE) source category found in 40 CFR Part 60, Subpart IIII apply to owners and operators of stationary CI ICE that: [§60.4200(a)]

- Commence construction after 07/11/05 where the stationary CI ICE are:
 - Manufactured after 04/01/06 and are not fire pump engines; or
 - Manufactured as a certified NFPA fire pump engine after 07/01/06.
- Modify or reconstruct their stationary CI ICE after 07/11/05.

The diesel fuel-fired emergency water pump (ID No. DFWP-1) does qualify as a CI ICE. However, the Permittee indicated that this source pre-dates Subpart IIII (refer to the Permittee's letter dated 02/02/09). Therefore, this source **is not subject** to the NSPS requirements of Subpart IIII.

iv. 2D .1111 “Maximum Achievable Control Technology”

The diesel fuel-fired emergency water pump (ID No. DFWP-1) is subject to 2D .1111 due to the applicability of 40 CFR Part 63, Subpart ZZZZ (i.e. the MACT for reciprocating internal combustion engines - RICE). Note that the avoidance condition requested by the Permittee pursuant to 2Q .0317 (see discussion in Section III A.iii of this document, below) to avoid classification as a major source of HAP does not affect the applicability of this MACT since 40 CFR Part 63, Subpart ZZZZ applies to major and area sources of HAP [see §63.6585].

In accordance with §63.6590(a)(1)(iii) and §63.6590(b)(3) emergency water pump (ID No. DFWP-1) is considered an existing source with no applicable requirements under Subparts ZZZZ or A (no initial notification is required).

Permit No. 06253T10 will indicate the applicability of Subpart ZZZZ to emergency water pump (ID No. DFWP-1) and that there are **no associated applicable requirements**.

III Regulatory review for rules that apply to aggregate emissions from multiple source categories:

A. Facility-Wide Emission Sources:

i. 2D .0958 “Work Practices for Sources of Volatile Organic Compounds”

This rule applies to the operations in this facility that use VOCs as solvents, carriers, material processing media, etc. and requires the Permittee to follow certain procedures when using or storing the VOC-containing materials or cleaning or draining the equipment used to apply these materials. Permit No. 06253T10 will include the standard language for work practice standards and MRR associated with this rule for the facility-wide affected sources.

ii. 2D .1806 “Control and Prohibition of Odorous Emissions”

This rule applies to all sources at the facility and requires the Permittee to prevent odorous emissions from the facility from causing or contributing to objectionable odors beyond the facility's boundary. The Permittee does not have a documented history of problems complying with this rule. Therefore, Permit No. 06253T10 will include the standard language associated with this rule for the facility-wide affected sources.

**iii. 2Q .0317 “Avoidance Conditions” to avoid
2D .1111 “Maximum Achievable Control Technology”**

The Permittee has elected to avoid major source classification for purposes of Title III (i.e. NESHAP) via application of an avoidance condition under 2Q .0317 requested under a previous application. The avoidance condition in Permit No. 06253T09 requires:

- (1) Monthly recordkeeping of facility-wide HAP-containing material usage (single largest HAP and combined totals) and calculations of the resulting HAP emissions; and

(2) Semiannual reporting of this information to DAQ.

These requirements are carried over into Permit No. 06253T10 with three changes: including the contributions from combustion; correcting the rule citation to 2D .1111; and specifying the method of HAP emissions calculations.

iv. 2Q .0711 “Emission Rates Requiring a Permit”

The Permittee triggered, via a previous application, a toxics review. As a result of that toxics review Permit No. 06253T09 includes the standard 2Q .0711 language and list of toxic permitting emission rates (TPERs) for methyl ethyl ketone, toluene, xylene, ethyl acetate, manganese (and compounds), and methyl isobutyl ketone. The current application does not affect emissions of these pollutants and, therefore, the associated conditions are carried over, unchanged into Permit No. 06253T10.

IV NSPS/NESHAP/PSD/Toxics/112(r)/CAM/RACT Applicability:

NSPS: None of the New Source Performance Standards (NSPS) of 40 CFR Part 60 apply to the sources operated in the Braxton Culler, Inc. facility in Sophia, North Carolina. The Permittee has indicated (refer to the 02/02/09 letter from the Permittee) that this facility does utilize one compression ignition internal combustion engine (CI ICE) but that the subject CI ICE (i.e. emergency water pump DFWP-1) pre-dates the relevant standard (i.e. NSPS Subpart IIII) and is therefore not subject to the requirements therein (see discussion of 2D .0524 in Section II C.iii of this document, above).

NESHAP: The Permittee avoided the applicability of 40 CFR Part 63, Subpart JJ (i.e. the MACT for Wood Furniture Manufacturing Operations) via an avoidance condition (through a previous application) pursuant to 2Q .0317 (see the discussion in Section III.A.iii, above). Subpart JJ only apply to facilities that are major for purposes of Title III [refer to §63.800(a)].

Further, the Permittee has indicated (refer to the 02/10/09 letter from the Permittee) that Subpart OOOOOO (i.e. the MACT for Flexible Polyurethane Foam Production and Fabrication Area Sources) does not apply to this facility because the Permittee does not conduct the subject operations as listed in §63.11414.

Finally, the Permittee has indicated (refer to the 02/02/09 letter from the Permittee) that this facility does utilize one (i.e. emergency water pump DFWP-1) reciprocating internal combustion engine (RICE) that is subject to the relevant standard (i.e. MACT Subpart ZZZZ). However, MACT ZZZZ does not include any applicable requirements for emergency water pump DFWP-1 (see discussion of 2D .1111 in Section II C.iv of this document, above).

PSD: This facility does not fall into one of the PSD categories listed at 40 CFR §51.166(b)(1)(i)(a) with a 100 tons per year threshold and does not qualify as a major stationary source for PSD purposes under 40 CFR §51.166(b)(1)(i)(b) since it does not have the potential to emit any regulated pollutant at rates in excess of 250 tons of per consecutive 12-month period. The current permit application (i.e. 7600311.08A) is a renewal without modification – therefore a PSD review is not triggered.

Toxics: Permit No. 06253T09 includes permit conditions associated with the NC Toxics Program (i.e. 2Q .0711 - see the discussion in Section III.A.iv, above). Application 7600311.08A (i.e. this renewal of Permit No. 06253T09) does not involve a modification. Therefore, a toxics review is not triggered at this time and those conditions are unchanged in Permit No. 06253T10.

112(r): According to Section A3 of application 7600311.08A, this facility does not use, handle, or store any regulated materials onsite in quantities in excess of the associated thresholds and is therefore not subject to the requirements of this regulation other than general duty.

CAM: There are no sources at this facility with any CAM requirements (see Attachment A to this document). No sources at this facility even utilize control devices (DAQ considers dry filters on spray booths to be an integral part of the source and not control devices).

RACT: This facility is not located in one of the areas listed in 2D .0902(e) or 2D .1402(d) and is therefore not subject to the existing source RACT requirements.

V Title V Permit History:

The following table provides a brief summary of Title V permit revisions for this facility:

Permit No.	Issuance Date	Description of Revision
06253T08	08/20/04	Issue initial Title V permit
06253T09	11/05/04	Add spray booth ES-8
06253T10	04/13/09	Renewal of the Title V permit

VI Permit Modifications/Changes:

The following table summarizes the changes made in Permit No. 06253T10 resulting from Permit Application No. 7600311.08A:

Old Page(s)	New Page(s)	Condition/Item	Description of Change(s)
Global	Global	N/A	<ul style="list-style-type: none"> Change permit revision number to T10; Change the issuance/effective dates of the permit; Amend the application number and complete date; Modify monitoring requirements from “per year” to “per 12-consecutive month period;” Remove the asterisk language concerning the construction permit for spray booth ES-8; and Modify to new permit shell (change testing citation to 2D .2601 and remove Part II)
3	4	2.1 A	Modify the limits/standards table to include 2D .0958, 2D .1806, 2Q .0317, and 2Q .0711
3	3	Equipment List	Modify equipment list to include existing emergency water pump (ID No. DFWP-1)
4	4	2.1 A.1.c (06253T09)	Remove the 2D .0515 monitoring and recordkeeping requirements for the bake oven (NGFBO-1)
5	5	2.1 B	Modify the limits/standards table to include 2D .0958, 2D .1806, 2Q .0317, and 2Q .0711
6	6	2.1 B.2.c	<ul style="list-style-type: none"> Remove the requirement to establish “normal” for VEs from the spray booths; and Add the stipulation that the monthly observations must be made for each month of the year
N/A	7	2.1 C	Add a permit subsection for the MRR requirements associated with existing DFWP-1

Old Page(s)	New Page(s)	Condition/Item	Description of Change(s)
N/A	7	2.1 C.1.a-c	Add the MRR requirements associated with 2D .0516 for existing DFWP-1
N/A	7	2.1 C.2.a-c	Add the MRR requirements associated with 2D .0521 for existing DFWP-1
N/A	7	2.1 C.3.a-b	Add the MRR requirements associated with 2D .1111 (MACT ZZZZ) for existing DFWP-1
6	8	2.2 A	Modify the limits/standards table to show that the limits of 2Q .0317 apply to HAPs, not TAPs
8 - 9	9 - 10	2.2 A.3	Modify this permit section to replace 2Q .0711 MRR language with 2Q .0317 MRR language
8	9	2.2 A.3.b-c	<ul style="list-style-type: none"> • Add requirement to include HAP contributions from DFWP-1; • Add text concerning the required HAP emissions calculations; and • Correct the regulatory citation to 2D .1111
8	10	2.2 A.3.d	Modify text to clarify that: <ul style="list-style-type: none"> • Only total HAP emissions and the individual HAP with greatest emissions must be reported; and • The required reporting is semiannual, not quarterly
9 - 17	11 - 18	Section 3	Update to current shell language

Note: Condition/Item numbers are those as they appear on Permit No. 06253T10, unless otherwise noted.

VII Application Fee/Zoning Consistency:

No fee or zoning consistency determination is required for the renewal of a Title V permit without modification as requested via application 7600311.08A.

VIII Compliance Status:

The facility was most recently inspected on 01/07/08 by Robert Barker of WSRO and appeared to be operating in compliance with DAQ requirements during that inspection.

IX Miscellaneous:

Equipment List: The equipment list of Permit No. 06253T10 is modified to add diesel fuel-fired emergency water pump (ID No. DFWP-1)

Certification by Responsible Official: In accordance with 2Q .0520, Roy Braxton Culler, IV (i.e. the responsible official for this Braxton Culler, Inc. facility) provided the required certification on Form E5 of application 7600311.08A.

X Permit Review:

Draft Permit: A draft version of Permit No. 06253T10 and the associated review were sent to the Permittee and the WSRO for a review and comment period on 02/05/09. As a result of the comments provided by these agencies and the RCO internal review the following changes were made in Proposed Permit No. 06253T10:

- The predicted issue date of Permit No. 06253T10 was changed from 04/06/09 to 04/13/09 in both Proposed Permit No. 06253T10 and this document;

- The name of the Responsible Official for this facility was changed from Robert Braxton Culler, IV to Roy Braxton Culler, IV in this document (see Section IX above);
- The facility site location listed on page 1 of Proposed Permit No. 06253T10 was corrected from “7310 US Highway 211 South” to “7310 US Highway 311 South;”
- The NC DAQ letterhead utilized in the cover letter of Proposed Permit No. 06253T10 was switched to the recently modified version; and
- The discussion of the MRR requirements for the diesel-fired emergency water pump in Section II C.ii of this document, above, was corrected to show that current Permit No. 06253T09 does not include any MRR associated with 2D .0521.

Public Participation: In accordance with 2Q .0521, NC DAQ must provide the opportunity for public participation during the renewal of a Title V permits (such as that represented by application 7600311.08A). NC DAQ met this obligation with the public notice posted in **The Courier – Tribune** of Randolph County on **02/24/09**.

EPA & Affected States Review: In accordance with 2Q .0522, NC DAQ must provide EPA and Affected States [as defined at 2Q .0503(1)] staff the opportunity to review a proposed renewal of this Title V permit. NC DAQ met this obligation by sending those agencies a copy of Proposed Permit No. 06253T10 on **02/24/09**.

XI Recommendation:

The Title V Permit renewal application for the Braxton Culler, Inc. facility in Sophia, Randolph County, North Carolina has been reviewed by NC DAQ personnel to determine compliance with all applicable procedures and requirements. NC DAQ personnel have determined that this facility is complying with, or will achieve compliance with, all applicable requirements as specified in Permit No. 06253T10.

Issuance of Permit No. 06253T10 to Braxton Culler, Inc. is recommended.

Attachment A: CAM Applicability Summary Table

Emission Source(s)	Control Device(s)	Controlled TV Pollutant(s)	Pre-Control PTE of Controlled TV Pollutant(s) (tons per year)	CAM Disqualifications/Exemption(s)	CAM Applicable?
Natural gas-fired bake oven: ID No. NGFBO-1	N/A	N/A	N/A	Does not meet criteria of 15A NCAC 2D .0614(a) [No control device]	No
Diesel-fired water pump: ID No. DFWP-1	N/A	N/A	N/A	Does not meet criteria of 15A NCAC 2D .0614(a) [No control device]	No
Dry filter-type spray booths: ID Nos. ES1 – ES8	N/A	N/A	N/A	Does not meet criteria of 15A NCAC 2D .0614(a) [No control device]	No

Proposed