

FIRST-TIME TITLE V AIR PERMIT REVIEW

APPLICANT: Kimberly-Clark Corporation	SITE LOCATION: Lexington	COUNTY: Davidson	
TECHNICAL CONTACT: William Motsinger	PHONE: (336) 248-7332	RESPONSIBLE OFFICIAL: Thomas Wager	TITLE: Mill Manager
REVIEW ENGINEER: Mark Cuilla	SIGNATURE:	DATE:	
REGIONAL CONTACT: Jalal Adouli	REGIONAL OFFICE: WSRO	SIC/NAICS CODE: 2297/313230	
APPLICATION NUMBER: 2900257.03A	EXISTING PERMIT NUMBER: 05635R08	NEW PERMIT NUMBER: 05635T09	

I Introduction/Purpose of Application

This first time Title V Air Permit Application Review intends to convey all pertinent emissions data, rules, policies, and engineering assumptions used to construct the DRAFT Title V operating permit. The primary source of information used to construct the DRAFT permit is the above referenced air permit application.

II History and Permit Application Background Information

March 1, 2000 – Permit **05635R06** issued as a permit renewal.

September 18, 2002 – Permit **05635R07** issued for the installation of one non-woven machine (ID No. LX4) with associated production equipment (ID Nos. WT4, HAK4, IR-4, and D1), one natural gas burnout oven (ID No. BO1), and one natural gas-fired boiler (ID No. LB4). Permit included a permit condition requiring that within one year of startup of the new equipment, the Permittee shall submit a complete title V application.

April 16, 2003 – Permit **05635R08** issued for the removal of equipment, removal of inspection and maintenance requirements associated with removed equipment, and the removal of NSPS requirements for three non-woven manufacturing machines. This modification also established a final date in which the title V permit application should be submitted.

November 3, 2003 – Permit application for first time title V permit received in response to condition A.12.

December 4, 2003 – DRAFT permit sent to facility and regional office for review (see Section XIV for a discussion).

December 8, 2003 – DRAFT permit sent to title V coordinator for review.

February 3, 2004 – 30 day public notice period begins on DRAFT permit.

March 4, 2004 – Comments received from Appalachian Voices at the end of the 30-day public comment period. See Section XIII of this document for a discussion.

III. Facility Description

Kimberly-Clark Corporation makes non-woven fabric for use in disposable diaper liners and in medical gowns. The facility operates four non-woven lines, one burnout oven, and one boiler as permitted sources.

IV. Statement of Compliance

On his latest inspection of the facility on June 25, 2003, Mr. Steve Moser of the Winston-Salem Regional Office indicated that based on the inspection and data reviewed, the facility appeared to be in compliance with all applicable air regulations.

V. Summary of Emission Sources and Control Devices

The following table reflects the current permitted sources and control devices at the facility.

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
LX1 WT1 ES-1-SD ES-1-HAK	<u>One non-woven material manufacturing line consisting of:</u> -one Spunbond machine (6,900 pounds per hour maximum process rate) -one web treatment machine -one natural gas-fired sheet dryer heater (2.7 million Btu per hour maximum heat input) -one natural gas-fired hot air knife furnace (4.2 million Btu per hour maximum heat input)	NA	NA
LX2 WT2 ES-2-PH	<u>One non-woven material manufacturing line consisting of:</u> -one Spunbond/Meltblown machine (6,600 pounds per hour maximum process rate based on 4,600 pounds per hour for Spunbond and 2,000 pounds per hour for Meltblown) -one web treatment machine -two natural gas-fired process heaters (10 million Btu per hour total heat input)	L2DF1 L2DF2 L2DF3 L2DF4	Four drum filters (160.2 square feet of filter area, each)
LX3 WT3 ES-3-SD ES-3-HAK	<u>One non-woven material manufacturing line consisting of:</u> -one Spunbond machine (6,000 pounds per hour maximum process rate) -one web treatment machine -one natural gas-fired sheet dryer heater (2.7 million Btu per hour maximum heat input) -one natural gas-fired hot air knife furnace (4.2 million Btu per hour maximum heat input)	NA	NA

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
LX4 WT4 and WT5 ES-4-PH ES-4-HAK ES-4-IR ES-4-D	<u>One non-woven material manufacturing line consisting of:</u> -two Spunbond banks and four Meltblown banks (12,000 pounds per hour maximum process rate) -two web treatment machines -one natural gas-fired process air heater (9 million Btu per hour total maximum heat input) -one natural gas-fired hot air knife furnace (1 million Btu per hour maximum heat input) -one natural gas-fired infrared dryer (30.80 million Btu per hour maximum heat input) -one stand alone natural gas-fired dryer (3.5 million Btu per hour maximum heat input)	NA	NA
BO1	One natural gas-fired burnout oven (0.95 million Btu per hour maximum heat input)	NA	NA
LB4 NSPS, Subpart Dc	One natural gas-fired boiler (12.8 million Btu per hour maximum heat input)	NA	NA

VI. Emission Source Evaluation

A. One natural gas-fired boiler (12.8 million Btu per hour maximum heat input; ID No. LB4)

The boiler is subject to the particulate matter emission limits described in 15A NCAC 2D .0503, the sulfur dioxide emission limits described in 15A NCAC 2D .0516, the 20 percent opacity standard described in 15A NCAC 2D .0521, and the recordkeeping requirements of Subpart Dc (New Source Performance Standards) described in 15A NCAC 2D .0524.

15A NCAC 2D .0503 limits particulate matter emissions from fuel combusting indirect heat exchangers. The 12.8 million Btu per hour boiler has a calculated emission limit of 0.56 pounds per hour from the combustion of natural gas. A comparison with the DAQ spreadsheets indicate a potential particulate matter level of 0.10 pounds per hour; therefore continued compliance with the allowable emission limit is expected. The Permittee is not required to complete monitoring, recordkeeping, or reporting for this source because of the combustion of relatively clean burning natural gas.

15A NCAC 2D .0516 limits sulfur dioxide matter emissions from combustion sources to 2.3 pounds per million Btu. The 12.8 million Btu per hour boiler has a calculated allowable of 29.44 pounds per hour. A comparison with the DAQ spreadsheets indicate a potential sulfur dioxide level of 0.01 pounds per hour; therefore continued compliance with the allowable emission limit is expected. The Permittee is not required to complete monitoring, recordkeeping, or reporting for this source because of the combustion of relatively clean burning natural gas.

15A NCAC 2D .0521 limits visible emissions from the combustion of natural gas in this source to 20 percent opacity. The Permittee has not had a history of exceedances of this standard; therefore continued compliance is expected. The Permittee is not required to complete monitoring, recordkeeping, or reporting for this source because of the combustion of relatively clean burning natural gas.

15A NCAC 2D .0524, Subpart Dc, is applicable to the boiler. Since it only combusts natural gas the Permittee is only required to keep monthly records of fuel usage. Therefore, continued compliance is expected. No additional monitoring, recordkeeping, or reporting is required.

B. One non-woven material manufacturing line consisting of:

- one Spunbond machine (6,900 pounds per hour maximum process rate; ID No. LX1),
- one web treatment machine (ID No. WT1),
- one natural gas-fired sheet dryer heater (2.7 million Btu per hour maximum heat input; ID No. ES-1-SD), and
- one natural gas-fired hot air knife furnace (4.2 million Btu per hour maximum heat input; ID No. ES-1-HAK)

One non-woven material manufacturing line consisting of:

- one Spunbond/Meltblown machine (6,600 pounds per hour maximum process rate based on 4,600 pounds per hour for Spunbond and 2,000 pounds per hour for Meltblown; ID No. LX2),
- one web treatment machine (ID No. WT2), and
- two natural gas-fired process heaters (10 million Btu per hour total heat input; ID No. ES-2-PH),

controlled by four drum filters (160.2 square feet of filter area, each; ID Nos. L2DF1, L2DF2, L2DF3, and L2DF4)

One non-woven material manufacturing line consisting of:

- one Spunbond machine (6,000 pounds per hour maximum process rate; ID No. LX3),
- one web treatment machine (ID No. WT3),
- one natural gas-fired sheet dryer heater (2.7 million Btu per hour maximum heat input; ID No. ES-3-SD), and
- one natural gas-fired hot air knife furnace (4.2 million Btu per hour maximum heat input; ID No. ES-3-HAK)

One non-woven material manufacturing line consisting of:

- two Spunbond banks and four Meltblown banks (12,000 pounds per hour maximum process rate; ID No. LX4),
- two web treatment machines (ID Nos. WT4 and WT5),
- one natural gas-fired process air heater (9.0 million Btu per hour maximum heat input; ID No. ES-4-PH),
- one natural gas-fired hot air knife furnace (1.0 million Btu per hour maximum heat input; ID No. ES-4-HAK),
- one natural gas-fired infrared dryer (30.80 million Btu per hour maximum heat input; ID No. ES-4-IR), and
- one stand alone natural gas-fired dryer (3.5 million Btu per hour maximum heat input; ID No. ES-4-D)

These sources are subject to the particulate emission limit described in 15A NCAC 2D .0515, the sulfur dioxide emission limit described in 15A NCAC 2D .0516, the 20 percent opacity standard described in 15A NCAC 2D .0521, and state-enforceable only toxic air pollutant emission limits per 15A NCAC 2D .1100.

15A NCAC 2D .0515 limits particulate matter from these sources based on a calculated allowable emission rate using the following equation:

$E = 4.10 \times P^{0.67}$ where E = allowable emission rate in pounds per hour and P = process weight in tons per hour. The following table indicates compliance with this emission limit for all sources.

Source ID	Process rate (lbs/hour)	Process rate (tph)	Allowable emission limit (lbs/hour)	Potential emissions (lbs/hour)	Compliance indicated
LX1	6,900	3.45	9.4	0.98	Yes
LX2	6,600	3.3	9.12	0.96	Yes
LX3	6,000	3.0	8.56	0.86	Yes
LX4	12,000	6.0	13.62	2.02	Yes

The Permittee is required to monitor these sources by maintaining production records specifying the amounts and types of materials and finishes processed. In addition, LX2 is controlled by four drum filters (ID Nos. L2DF1 through L2DF4). The Permittee is required to conduct monthly visual inspections and an annual internal inspection of the drum filters. The results of all monitoring activities are required to be maintained in a logbook and summary reports are required semi-annually. Continued compliance with these requirements is expected.

15A NCAC 2D .0516 limits sulfur dioxide matter emissions from combustion sources to 2.3 pounds per million Btu. The sheet dryer heaters, hot air knife furnaces, process heaters, and dryers are all subject to this standard. The following table indicates compliance with the emission limit for all sources.

Source ID	Heat input rate (mmBtu/hr)	Allowable emission rate (lbs/hr)	Potential emissions rate (lbs/hr)	Compliance indicated
ES-1-SD	2.7	6.21	0.002	Yes
ES-1-HAK	4.2	9.66	0.002	Yes
ES-2-PH	10	23	0.006	Yes
ES-3-SD	2.7	6.21	0.002	Yes
ES-3-HAK	4.2	9.66	0.002	Yes
ES-4-PH	9	20.7	0.005	Yes
ES-4-HAK	1	2.3	0.0007	Yes
ES-4-IR	30.80	70.84	0.02	Yes
ES-4-D	3.5	8.05	0.002	Yes

No monitoring, recordkeeping, or reporting is required for sulfur dioxide because of the combustion of natural gas in these sources. As shown above, potential sulfur dioxide emissions from these sources is insignificant compared to the calculated allowable. Continued compliance is expected.

15A NCAC 2D .0521 limits visible emissions from the combustion of natural gas in the combustion sources and from the non-woven material manufacturing machines to 20 percent opacity. The Permittee has not had a history of exceedances of this standard; therefore continued compliance is expected. The Permittee is required to complete monitoring, recordkeeping, or reporting for these sources, except for the combustion of natural gas.

15A NCAC 2D .1100 limits emissions of the following toxic air pollutants based on an approved modeling demonstration: arsenic, benzene, cadmium, chromium VI, di(2-ethylhexyl)phthalate, methylene chloride, and n-hexane. See Section X.B. of this document for a discussion. Continued compliance is expected.

C. One natural gas-fired burnout oven (0.95 million Btu per hour maximum heat input; ID No. BO1)

The burnout oven is subject to the sulfur dioxide emission limits described in 15A NCAC 2D .0516 and the 20 percent opacity standard described in 15A NCAC 2D .0521.

15A NCAC 2D .0516 limits sulfur dioxide matter emissions from combustion sources to 2.3 pounds per million Btu. The 0.95 million Btu per hour boiler has a calculated allowable of 2.185 pounds per hour. A comparison with the DAQ spreadsheets indicate a potential sulfur dioxide level less than the calculated allowable; therefore continued compliance with the allowable emission limit is expected. The Permittee is not required to complete monitoring, recordkeeping, or reporting for this source because of the combustion of relatively clean burning natural gas.

15A NCAC 2D .0521 limits visible emissions from the combustion of natural gas in this source to 20 percent opacity. The Permittee has not had a history of exceedances of this standard; therefore continued compliance is expected. The Permittee is required to complete monthly monitoring, recordkeeping, or reporting for this source because of the possibility of particulate from burnout.

VII. Multiple Emission Source Limits

The facility is subject to the federally-enforceable work practice standards for sources of volatile organic compounds per 15A NCAC 2D .0958 and the state-enforceable only standards for odor and toxic air pollutants per 15A NCAC 2D .1806 and 2Q .0711, respectively.

15A NCAC 2D .0958 is applicable to the facility to all sources of volatile organic compounds. The permit condition as it applies requires that the Permittee perform work practice standards for the storage, clean up, transfer, and mixing of volatile organic compound materials. The permit condition also requires that the Permittee monitor these activities monthly and record the results of the inspections in a logbook. The Permittee is also required to submit summary reports on a semi-annual basis. At the latest inspection it was noted that no open containers of solvents or rags were observed, indicating compliance with 2D .0958. Continued compliance is expected.

15A NCAC 2D .1806 is applicable facility wide as a State-enforceable only requirement. The permit condition states “the Permittee shall 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 boundary.” At the latest inspection it was noted that no odors were noticed outside the facility and no odor complaints have been received indicating compliance with 2D .1806. Continued compliance is expected.

15A NCAC 2Q .0711 is applicable facility wide as a State-enforceable only requirement. The permit condition limits emissions for the following toxic air pollutants to below the toxic pollutant emission rate (TPER).

Pollutant	Limit
Carbon disulfide (75-15-0)	3.9 pounds per day
Carbon tetrachloride (56-23-5)	460 pounds per year
Chlorobenzene (108-90-7)	46 pounds per day
Chloroform (67-66-3)	290 pounds per year
Ethylene dichloride (107-06-2)	260 pounds per year
Formaldehyde (50-00-0)	0.04 pounds per hour
Methyl chloroform (71-55-6)	250 pounds pr day
	64 pounds per hour
Methyl ethyl ketone (78-93-3)	78 pounds per day
	22.4 pounds per hour

Pollutant	Limit
Phenol (108-95-2)	0.24 pounds per hour
Styrene (100-42-5)	2.7 pounds per hour
Toluene (108-88-3)	98 pounds per day
	14.4 pounds per hour
Xylene (1330-20-7)	57 pounds per day
	16.4 pounds per hour

A comparison of these limits with the actual emissions presented in the facility's 2002 emissions inventory indicate compliance with the standard. Continued compliance is expected.

VIII. MACT Applicability and Requirements

The facility is not currently subject to any maximum achievable control technology standards (MACTs).

IX. Permit Shield (including non-applicable requirements)

In accordance with 2Q .0512 the permit will contain a provision stating that compliance with the terms, conditions, and limitations of the Title V permit shall be deemed in compliance with applicable requirements specifically identified in the permit, as of the date of permit issuance. If the permit does not expressly state that a permit shield exists then it shall be presumed not to provide such a shield.

X. Other Applicable Requirements

A. PSD

The facility is not classified as a major source for PSD purposes since its potential emissions for each regulated pollutant does not exceed the 250 tons per year threshold value. There are no increases associated with this permitting activity; therefore, tracking of particulate emissions will not be required.

B. North Carolina Air Toxics

In support of permit application for the modification of the facility to install non-woven machine No. 4, the facility submitted an air toxics modeling demonstration for pollutants emitted at the facility. As a result of the modeling, seven air toxics were found to be exceeding the TPER. These seven toxics; arsenic, benzene, cadmium, chromium VI, di(2-ethylhexyl)phtalate, methylene chloride, and n-hexane, are included in a permit condition limiting emissions from the four Spunbond/Meltblown machines (ID Nos. LX1 through LX4). In order to ensure compliance with the permitted limits, the Permittee must restrict each machine to a specific pounds per hour maximum process rate and submit quarterly reports of the highest hourly process rate for each machine. The remaining toxics emitted from the facility do not exceed the corresponding TPER limits (see Section VII of this document for a discussion). There are no increases associated with this permitting activity; therefore continued compliance is expected.

C. Maximum Achievable Control Technology

The facility is not subject to any Federal NESHAP requirements of 40 CFR Part 63. There are no modifications in equipment associated with this permitting activity; therefore, MACT is not required to be addressed.

D. NSPS

The facility currently operates under one NSPS permit condition for its boiler (ID No. LB4). This 12.8 million Btu per hour maximum heat input capacity natural gas-fired boiler is subject to Subpart Dc and is required to maintain records of the amounts of fuel fired during each month. Continued compliance is expected.

With the installation of web treater No. 4 and associated dryers, the facility became subject to NSPS Subpart VVV, as it relates to coating operations and any onsite coating mix preparation equipment. Because of the amounts of coatings used at the facility, the Permittee was only subject to select parts of the Subpart. However, as part of its permit modification, the facility argued that based on the applicability of the subpart and on its definitions of treatment material, that they were in fact not subject to the subpart as written. DAQ concurred with this assessment in its approval of the permit application and the issuance of permit 05635R08.

XI. General Conditions

The "General Conditions" section of the Title V Operating Permit lists additional applicable rule requirements that the Permittee must adhere to, as with any other permit condition. These requirements in general are common to all Title V facilities. The general conditions include provisions such as annual fee payment, permit renewal and expiration, transfer of ownership or operation, property rights, submission of documents, inspections and entry procedures, reopen for cause, severability, etc.

XII. Insignificant Activities

The insignificant activities listed in the application have been reviewed and verified. Although each insignificant activity is not listed in the Title V permit, a general condition is placed in the Title V permit stating that all insignificant activities shall comply with the applicable requirements. Those sources which qualify for exemption from permitting under regulation 2Q .0503(8) will be attached to the cover letter of the permit.

The following table represents all equipment listed as insignificant/exempt sources.

Emission Source	Insignificant Activity Regulation	Basis for Exemption
Emergency Diesel Power Generator (134 horsepower/1800 RPM)	15A NCAC 2Q .0503(8)	Less than 5 tons potential emissions
Diesel Fire Pump (290 horsepower/1760 RPM)	15A NCAC 2Q .0503(8)	Less than 5 tons potential emissions
Diesel and waste oil tanks	15A NCAC 2Q .0503(8)	Less than 5 tons potential emissions
Polymer pellet storage silos	15A NCAC 2Q .0503(8)	Less than 5 tons potential emissions

XIII. Public Notice

Pursuant to 15A NCAC 2Q. 0521, a notice of the draft Title V Operating Permit shall be placed in a newspaper of general circulation in the area where the facility is located. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA.

Comments Received on DRAFT Permit – Comments during public notice period were received from Appalachian Voices as follows:

Appalachian Voices provided 17 pages of comments on this DRAFT permit. Many of these comments are the same as submitted for the Dan River and Belews Creek draft permits (among other previously noticed draft permits) and were addressed in the Hearing Officer's Report and Recommendations of Duke Energy Dan River and Belews Creek (see memorandum to Keith Overcash from Thomas Allen dated April 22, 2003). The comments not previously addressed with DAQ's response are as follows. It should be noted that Appalachian Voices requested that this and all draft permits up for notice be taken to public hearing. DAQ has decided not to hold a hearing for this permit. A separate letter has been sent to Appalachian Voices explaining why this decision has been made.

15A NCAC 2D .0503 – Comments were received on the testing, monitoring, recordkeeping, and reporting requirements as they are applied to the facility. The commenter states that emission testing should be required prior to the permit approval and semi-annually thereafter. In addition, the commenter states that some monitoring, recordkeeping, and reporting should be contained in the permit. *No change in the DRAFT permit is needed; particulate emissions are allowed by rule based on size of the boiler. Testing is not required unless DAQ establishes that a persistent problem exists in compliance. The facility is in compliance with this rule. Because of its inherently cleaner burning capacities, the combustion of natural gas is not required to be monitored or tracked by the facility.*

15A NCAC 2D .0515 – Comments were received on the testing, monitoring, recordkeeping, and reporting requirements as they are applied to the facility. The commenter states that emission testing should be required prior to the permit approval and semi-annually thereafter. In addition, the commenter states that monthly monitoring, recordkeeping, and reporting should be contained in the permit. *No change in the permit is needed; EPA has approved NC's title V program as written and included the language of this rule into the State Implementation Plan as written.*

15A NCAC 2D .0516 – Comments were received on the testing, monitoring, recordkeeping, and reporting requirements as they are applied to the facility. The commenter states that the permit condition fails to disclose the entire applicable requirement relative to sulfur dioxide, that emission testing must be required prior to permit approval and semi-annually thereafter, and that some monitoring, recordkeeping, and reporting should be contained in the permit. *No change in the permit is needed; EPA has approved NC's title V program as written and included the language of this rule into the State Implementation Plan as written.*

15A NCAC 2D .0521 – Comments were received on the testing, monitoring, and reporting requirements for all permitted equipment at the facility subject to the opacity standards. The commenter states that emissions testing must be required prior to permit approval, the visual inspections are insufficient to ensure compliance with the standard, and that all reporting should be monthly. *No change in the permit is needed; permit language, testing requirements, any reporting periods inserted in the permit have been approved as part of the federally approved title V program.*

XIV. Recommendations

The facility's first time Title V application has been reviewed by the DAQ to determine compliance with all procedures and requirements under 15A NCAC 2Q .0500 and 40 CFR Part 70. The DAQ has made a preliminary determination that the facility is complying or will achieve compliance as specified in the DRAFT permit with all applicable requirements. Therefore, the DAQ is proposing to issue the Title V Operating Permit upon completion of the public comment period and the EPA review.

Comments received on DRAFT permit prior to public notice and EPA review periods:

1. Mr. Eddie Motsinger of Kimberly Clark commented that the zip code for the facility's physical address was not correct. *Agree, change made.*

2. Mr. Eddie Motsinger requested that the reporting period for toxics emissions be changed from quarterly to semi-annually to align it with the other reporting requirements of the permit. *Agree, Section 2.1 B.4.b. has been modified as requested.*
3. Mr. Steve Moser of the Winston-Salem Regional Office (WSRO) commented that the word “meltdown” should be replaced with the more correct “meltblown” throughout the permit and review. *Agree, change has been made.*
4. Mr. Steve Moser of WSRO requested that the order of the permit conditions be re-established to move the exclusion of certain equipment from permitting requirements to the end of the section in which it appears. His reasoning is that this may avoid confusion as to the requirements of the facility if they misinterpret and do not read further in the paragraph. *Agree, the change has been made to 2.1 B.1.f., 2.1 B.3.e., and 2.1 B.3.g.*
5. Mr. Steve Moser of WSRO requested that 2.1 B.3.c. be amended to read “no monitoring is required for visible emissions from these natural gas-fired sources...” *Agree, change has been made.*
6. Mr. Steve Moser of WSRO requested that some visible emissions monitoring, recordkeeping, and reporting be included for the natural gas-fired burnout oven. He comments that although the oven burns only natural gas, it does incinerate web treatment residue from process equipment so such process equipment can be reused. Visible emissions can be a result of this burnout procedure and therefore a minimum monthly requirement should be included. *Agree, change made.*