Appendix A
Point Source Inventory Documentation

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1.0 INTRODUCTION AND SCOPE

The point source inventory consists of emissions from individual facilities. Primarily, these are larger industrial or commercial facilities that must have Title V permits issued by the South Carolina Department of Health and Environmental Control (SCDHEC) Bureau of Air Quality (BAQ).

Although the SCDHEC BAQ inventories all the criteria pollutants and a large number of toxic pollutants, only the nitrogen oxides (NO_x) and volatile organic compounds (VOC) are reported here since they are important for ozone formation. The emissions in this report represent 2010 (the base year) and are projected to the future years 2013, 2016, 2019, and 2022.

The point source inventories detailed in this section have been developed for York County as well as the Rock Hill Fort Mill Area Transportation Study (RFATS) Metropolitan Planning Organization (MPO) portion of York County (also referred to as the York NA area), South Carolina within the Charlotte-Gastonia-Rock Hill, NC-SC nonattainment area for the 1997 8-hour ozone NAAQS Redesignation Demonstration and Maintenance Plan. All emissions are calculated on a ton per summer day basis.

2.0 OVERALL METHODOLOGY

All large permitted sources defined as Inventory Type A sources under the United States Environmental Protection Agency (EPA) Air Emissions Reporting Rule (AERR) are required to report emissions annually and other Title V sources are required to report every three years to SCDHEC BAQ. Additionally, the EPA requires the SCDHEC BAQ to submit this data to the EPA Emissions Inventory System (EIS) on the same schedule. The latest year available for the Inventory Type A point source inventory submitted to the EPA is 2010. For the smaller sources that report emissions every three years, the most recent emissions inventory available (2008) was used as representative of 2010 emissions. These data were then projected to future years of 2013, 2016, 2019, 2022. The emissions data upon which this document is based were from files maintained by the SCDHEC BAQ.

2.1 SOURCE IDENTIFICATION

All facilities required to have Title V permits to operate sources of air pollution are known and are required to submit emission inventories.

2.2 EMISSION ESTIMATION APPROACH

The emissions inventory information reported to SCDHEC BAQ was transferred to a state emissions inventory program that helps ensure required data elements are not omitted. The system also performs some calculations, thereby minimizing the occurrence of errors. Depending on the particular process and facility, emissions may be calculated

by various means. In many cases, emissions are estimated using emission factors published in the EPA's AP-42, Compilation of Air Pollutant Emission Factors. In a relatively few cases, locally produced emission factors may be used. Sometimes, a mass balance calculation can be employed. In some cases, there are stacks tests or direct continuous monitoring of emissions that are reported.

Emissions reported to and maintained by SCDHEC BAQ are annual emissions. There is also data for operating hours per day and per year, days per week, and the percent of emissions occurring in the summer quarter.

2.3 EMISSION PROJECTION

The most recently submitted emissions data was used as the baseline for the projected emissions in this report. The emissions inventory was projected to future years by utilizing EPA's Economic Growth Analysis System (E-GAS) version 5 software. There are two major data sources that are used as growth indicators in EGAS 5.0: the Department of Energy's (DOE) Annual Energy Outlook and version 6.0 of state-level economic models from Regional Economic Models, Inc. (REMI). In general, DOE data are expected to be used as growth indicators for fuel combustion/production categories, while REMI data will be used for all other source categories.

2.4 FUTURE EMISSION REDUCTIONS

The Maximum Achievable Control Technology (MACT) regulations are intended to reduce emissions of hazardous air pollutants (HAPs), some of which are VOCs. In some cases, reduction of HAPs that are VOCs is accomplished by switching to VOCs that are not HAPs, resulting in no reductions of VOC emissions. In other cases, compliance with a MACT regulation can be expected to reduce VOC emissions. It is likely there will be some additional VOC emission reductions due to new MACT rules in the Metrolina nonattainment area, although the MACT regulations do not always make a clear statement of how much VOC emission reductions will result from the HAPs emission reductions. Sometimes it is not possible to say until a particular affected source considers possible control options. Therefore, no emission reductions, as a result of MACT regulations, will be taken in this plan.

No additional emission reductions are expected for the facilities located within the York NA area.

3.0 QUALITY ASSURANCE

The emission inventory has undergone a number of quality assurance checks so that it meets the standards for submitting the annual inventory to the EPA. The state emissions inventory database program helps insure that important data elements are present. Where the program performs calculations, it helps avoid math errors. In addition, the State

works closely with all Title V sources to ensure that all tons-per-year emissions reported are accurate.

4.0 TOTAL POINT SOURCES EMISSIONS

In the following sections the emissions for the York NA area are totaled, as well as, the estimated facility emissions within the county in the nonattainment area are identified for the base year (2010) and the future maintenance years (2013, 2016, 2019 and 2022). Only the emissions for the sources actually located within the nonattainment area are presented.

4.1 YORK NA AREA SUMMARY

Table 4.1-1 Total NO_x Emissions in Tons per Day

	2010	2013	2016	2019	2022
York *	4.54	4.64	4.91	5.19	5.48

Table 4.1-2 Total VOC Emissions in Tons per Day

	2010	2013	2016	2019	2022
York *	2.07	2.06	2.2	2.34	2.49

* Only the sources inside the York NA area are included.

4.2 SUMMARY OF EMISSIONS

Table 4.2-1 Summary of 2010 Point Source Emissions

PLANT	SIC #	VOC (tons / day)	NO_x (tons / day)
ABITIBIBOWATER, INC.	2621	1.94	4.34
CYTEC	3624	0.13	0.20
Total County Emissions		2.07	4.54

Table 4.2-2 Summary of 2013 Point Source Emissions

PLANT	SIC #	VOC (tons / day)	NO_x (tons / day)
ABITIBIBOWATER, INC.	2621	1.92	4.42
CYTEC	3624	0.14	0.22
Total County Emissions		2.06	4.64

Table 4.2-3 Summary of 2016 Point Source Emissions

PLANT	SIC #	VOC (tons / day)	NO_x (tons / day)
ABITIBIBOWATER, INC.	2621	2.05	4.68
CYTEC	3624	0.15	0.23
Total County Emissions		2.20	4.91

Table 4.2-4 Summary of 2019 Point Source Emissions

PLANT	SIC #	VOC (tons / day)	NO_x (tons / day)
ABITIBIBOWATER, INC.	2621	2.18	4.94
CYTEC	3624	0.17	0.25
Total County Emissions		2.34	5.19

Table 4.2-5 Summary of 2022 Point Source Emissions

PLANT	SIC #	VOC (tons / day)	NO_x (tons / day)
ABITIBIBOWATER, INC.	2621	2.31	5.21
CYTEC	3624	0.18	0.27
Total County Emissions		2.49	5.48

5.0 DISCUSSION OF POINT SOURCE CATEGORIES

Industrial processes in the inventory are identified with 8-digit numbers known as the Source Classification Codes (SCC). These are grouped numerically into a number of categories for convenience. The following is the 2010 inventory reported by SCC. In general, the first three digits of the SCC code describe the process and the last five digits give more detail as to the fuel used, size of source, etc. The sections that follow are grouped by the first three digits of the SCC code.

It should be remembered that the SCC in any particular instance was selected by an individual entering inventory data into a computer maintained record. It may be that in some cases, other individuals would have selected other codes. In some cases, there are two or three parallel codes that describe the same sort of equipment, the difference being size. In other cases, one is able to select a general code for an overall process or use

several more specific codes that together would be covered by the more general one. If, upon consideration, it appears that a more appropriate code could have been selected, that does not mean that the reported emissions are inaccurate.

A listing of SCC with descriptions may be found in WebFIRE Source Classification Codes And Emission Factor Listing For Criteria Air Pollutants. Occasionally, new SCCs are defined so it may be useful to search the EPA's website for new entries.

5.1 EXTERNAL COMBUSTION BOILERS

Tables 5.1-1 through 5.1-4 tabulate the emissions from the external combustion sources. These are primarily of interest due to NO_x emissions.

Table 5.1-1 Summary of SCC 1-02-xxx-xx NO2 Emissions (ton per ozone day) for AbitibiBowater, Inc.

SCC	Unit ID	Process ID	2010	2013	2016	2019	2022
10200401	8	3	0.0219	0.0232	0.0240	0.0244	0.0250
10200401	8	8	0.0312	0.0331	0.0342	0.0347	0.0357
10200402	7	3	0.0190	0.0202	0.0208	0.0212	0.0217
10200402	7	5	0.0198	0.0211	0.0217	0.0221	0.0227
10200405	8	1	0.0558	0.0593	0.0611	0.0621	0.0638
10200601	7	7	0.0008	0.0008	0.0008	0.0009	0.0009
10200601	8	4	0.0204	0.0208	0.0214	0.0225	0.0233
10200601	8	9	0.0332	0.0339	0.0348	0.0366	0.0379
10200603	6	5	0.0043	0.0044	0.0045	0.0047	0.0049
10200603	6	7	0.0986	0.1006	0.1035	0.1088	0.1128
10200604	8	2	0.0023	0.0024	0.0024	0.0025	0.0026
10200901	8	5	0.6625	0.7078	0.7444	0.7795	0.8120
10200901	8	10	0.9438	1.0083	1.0605	1.1105	1.1569
10201001	6	6	0.0000	0.0000	0.0000	0.0000	0.0000
10201001	6	8	0.0000	0.0000	0.0000	0.0000	0.0000
10201301	6	9	0.0004	0.0005	0.0005	0.0005	0.0005

Table 5.1-2 Summary of SCC 1-02-xxx-xx VOC Emissions (ton per ozone day) for AbitibiBowater, Inc.

SCC	Unit ID	Process ID	2010	2013	2016	2019	2022
10200401	8	3	0.0004	0.0004	0.0004	0.0004	0.0004
10200401	8	8	0.0005	0.0005	0.0006	0.0006	0.0006
10200402	7	3	0.0001	0.0001	0.0001	0.0001	0.0001
10200402	7	5	0.0001	0.0001	0.0001	0.0001	0.0001
10200405	8	1	0.0011	0.0012	0.0012	0.0012	0.0013
10200601	7	7	0.0000	0.0000	0.0000	0.0000	0.0000
10200601	8	4	0.0004	0.0004	0.0004	0.0004	0.0005
10200601	8	9	0.0007	0.0007	0.0007	0.0007	0.0007

10200603	6	5	0.0002	0.0002	0.0002	0.0003	0.0003
10200603	6	7	0.0054	0.0055	0.0057	0.0060	0.0062
10200604	8	2	0.0001	0.0001	0.0001	0.0001	0.0001
10200901	8	5	0.0512	0.0547	0.0575	0.0602	0.0627
10200901	8	10	0.0729	0.0779	0.0819	0.0858	0.0894
10201001	6	6	0.0000	0.0000	0.0000	0.0000	0.0000
10201001	6	8	0.0000	0.0000	0.0000	0.0000	0.0000
10201301	6	9	0.0000	0.0000	0.0000	0.0000	0.0000

Table 5.1-3 Summary of SCC 1-05-xxx-xx NO2 Emissions (ton per ozone day) for Cytec

SCC	Unit ID	Process ID	2010	2013	2016	2019	2022
10500106	IAS	2	0.0000	0.0000	0.0000	0.0000	0.0000
10500106	IAS	5	0.0000	0.0000	0.0000	0.0000	0.0000

Table 5.1-4 Summary of SCC 1-05-xxx-xx VOC Emissions (ton per ozone day) for Cytec

SCC	Unit ID	Process ID	2010	2013	2016	2019	2022
10500106	IAS	2	0.0000	0.0000	0.0000	0.0000	0.0000
10500106	IAS	5	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 INTERNAL COMBUSTION ENGINES

Stationary internal combustion (IC) engines can be used on a daily basis or used only for backup power. Fuels can be gasoline, oil or various combustible gases depending on the engine design. Engines may be either turbines or reciprocating. No point source emissions of this type are located within the nonattainment area.

5.3 INDUSTRIAL PROCESES

There are large numbers of SCC under the heading of industrial processes. Many of these are of most significance for VOC but some do emit NO_x. Codes 3-01-xxx-xx are chemical manufacturing. Codes 3-02-xxx-xx are for processes particular to food and agriculture. Codes 3-04-xxx-xx pertain to secondary metal production. Mineral products processes are in SCC 3-05xxx-xx and pulp and paper and wood products are in 3-07-xxx-xx. Codes 3-08-xxx-xx pertain to rubber and miscellaneous plastics products. Fabricated metal products are 3-09-xxx-xx. 3-12xxx-xx is miscellaneous machinery. Electrical equipment manufacturing falls under code 3-13xxx-xx. Transportation equipment is under 3-14-xxx-xx. Processes for textile products are found under 3-30-xxx-xx. In-process fuel use can result in significant NO_x emissions and is in category 3-90-xxx-xx. Miscellaneous manufacturing industries are in group 3-99-xxx-xx.

Table 5.3-1 Summary of SCC 3-07-xxx-xx NO2 Emissions (ton per ozone day) for AbitibiBowater, Inc.

SCC	Unit ID	Process ID	2010	2013	2016	2019	2022
30700103	7	1	0.0000	0.0000	0.0000	0.0000	0.0000
30700105	7	8	0.0115	0.0113	0.0120	0.0128	0.0137
30700105	7	9	0.0206	0.0203	0.0216	0.0230	0.0245
30700106	7	10	0.4837	0.4763	0.5081	0.5410	0.5760
30700110	7	4	0.8462	0.8332	0.8889	0.9464	1.0077
30700110	7	6	1.0604	1.0442	1.1139	1.1860	1.2627
30700121	9	1	0.0000	0.0000	0.0000	0.0000	0.0000
30700122	7	11	0.0000	0.0000	0.0000	0.0000	0.0000
30700199	7	2	0.0000	0.0000	0.0000	0.0000	0.0000
30700199	9	2	0.0000	0.0000	0.0000	0.0000	0.0000

Table 5.3-2 Summary of SCC 3-07-xxx-xx VOC Emissions (ton per ozone day) for AbitibiBowater, Inc.

SCC	Unit ID	Process ID	2010	2013	2016	2019	2022
30700103	7	1	0.0091	0.0090	0.0096	0.0102	0.0109
30700105	7	8	0.0143	0.0141	0.0151	0.0160	0.0171
30700105	7	9	0.0257	0.0253	0.0270	0.0288	0.0306
30700106	7	10	0.0114	0.0112	0.0119	0.0127	0.0135
30700110	7	4	0.0803	0.0790	0.0843	0.0898	0.0956
30700110	7	6	0.1426	0.1404	0.1498	0.1595	0.1698
30700121	9	1	1.4473	1.4251	1.5204	1.6187	1.7234
30700122	7	11	0.0688	0.0677	0.0723	0.0770	0.0819
30700199	7	2	0.0064	0.0063	0.0067	0.0071	0.0076
30700199	9	2	0.0006	0.0006	0.0006	0.0006	0.0007

Table 5.3-3 Summary of SCC 3-01-xxx-xx NO2 Emissions (ton per ozone day) for Cytec

SCC	Unit ID	Process ID	2010	2013	2016	2019	2022
30102432	IAS	3	0.0000	0.0000	0.0000	0.0000	0.0000
30102499	1	3	0.0465	0.0494	0.0535	0.0576	0.0622
30102499	1	5	0.0465	0.0494	0.0535	0.0576	0.0622
30102499	1	7	0.0465	0.0494	0.0535	0.0576	0.0622
30102499	1	9	0.0152	0.0161	0.0174	0.0188	0.0203
30102499	1	10	0.0152	0.0161	0.0174	0.0188	0.0203
30102499	1	11	0.0152	0.0161	0.0174	0.0188	0.0203
30102499	1	13	0.0000	0.0000	0.0000	0.0000	0.0000
30102499	IAS	1	0.0000	0.0000	0.0000	0.0000	0.0000

Table 5.3-4 Summary of SCC 3-01-xxx-xx VOC Emissions (ton per ozone day) for Cytec

SCC	Unit ID	Process ID	2010	2013	2016	2019	2022
30102432	IAS	3	0.0003	0.0003	0.0003	0.0003	0.0003
30102499	1	3	0.0441	0.0469	0.0507	0.0546	0.0590
30102499	1	5	0.0441	0.0469	0.0507	0.0546	0.0590
30102499	1	7	0.0441	0.0469	0.0507	0.0546	0.0590
30102499	1	9	0.0001	0.0001	0.0001	0.0001	0.0001
30102499	1	10	0.0001	0.0001	0.0001	0.0001	0.0001
30102499	1	11	0.0001	0.0001	0.0001	0.0001	0.0001
30102499	1	13	0.0007	0.0007	0.0008	0.0008	0.0009
30102499	IAS	1	0.0000	0.0000	0.0000	0.0000	0.0000

Table 5.3-5 Summary of SCC 3-90-xxx-xx NO2 Emissions (ton per ozone day) for Cytec

SCC	Unit ID	Process ID	2010	2013	2016	2019	2022
39000689*	1	1	0.0000	0.0000	0.0000	0.0000	0.0000
39000689*	1	2	0.0050	0.0054	0.0058	0.0062	0.0067
39000689*	1	4	0.0034	0.0034	0.0035	0.0042	0.0038
39000689*	1	6	0.0034	0.0034	0.0035	0.0037	0.0038
39000689*	1	8	0.0041	0.0042	0.0043	0.0045	0.0047
39000689*	1	12	0.0011	0.0011	0.0012	0.0012	0.0013
39000689*	N01	1	0.0028	0.0029	0.0029	0.0031	0.0032

* 39000689 is now 39000699 for compatibility with EPA's list of valid SCC codes.

Table 5.3-6 Summary of SCC 3-90-xxx-xx VOC Emissions (ton per ozone day) for Cytec

SCC	Unit ID	Process ID	2010	2013	2016	2019	2022
39000689*	1	1	0.0000	0.0000	0.0000	0.0000	0.0000
39000689*	1	2	0.0003	0.0003	0.0003	0.0003	0.0003
39000689*	1	4	0.0002	0.0002	0.0002	0.0002	0.0002
39000689*	1	6	0.0002	0.0002	0.0002	0.0002	0.0002
39000689*	1	8	0.0002	0.0002	0.0002	0.0002	0.0003
39000689*	1	12	0.0001	0.0001	0.0001	0.0001	0.0001
39000689*	N01	1	0.0000	0.0000	0.0000	0.0000	0.0000

* 39000689 is now 39000699 for compatibility with EPA's list of valid SCC codes.

5.4 PETROLEUM AND SOLVERT EVAPORATION

This group of sources emits VOC. SCC in the 4-01-xxx-xx group are for organic solvent evaporation. Surface coating operations are grouped under SCC 4-02-xxx-xx. Petroleum product storage is grouped under 4-03-xxx-xx. Non-refinery petroleum liquids storage falls under group 4-04-xxx-xx. Printing and publishing are in the 4-05-xxx-xx group of SCC. SCC group 4-07-xxx-xx covers organic chemical storage. SCC 4-08-xxx-xx pertains to organic chemical transportation. Organic solvent evaporation falls under 4-

90-xxx-xx. No sources from thee categories are located at the point sources within the York NA area.

5.5 WASTE DISPOSAL

Waste disposal includes government solid waste disposal, in group 5-01-xxx-xx. Commercial and institutional solid waste disposal processes are in the 5-02-xxx-xx SCC group. Industrial solid waste disposal falls into group 5-03-xxx-xx.

Table 5.5-1 Summary of SCC 5-03-xxx-xx NO2 Emissions (ton per ozone day) for AbitibiBowater, Inc.

SCC	Unit ID	Process ID	2010	2013	2016	2019	2022
50300107	8	6	0.0000	0.0000	0.0000	0.0000	0.0000
50300107	8	11	0.0000	0.0000	0.0000	0.0000	0.0000

Table 5.5-2 Summary of SCC 5-03-xxx-xx VOC Emissions (ton per ozone day) for AbitibiBowater, Inc.

SCC	Unit ID	Process ID	2010	2013	2016	2019	2022
50300107	8	6	0.0000	0.0000	0.0000	0.0000	0.0000
50300107	8	11	0.0000	0.0000	0.0000	0.0000	0.0000