

**PROCEDURES
FOR
CALCULATING**

AIR PERMIT FEES

CALENDAR YEAR 2010

January 31, 2011

**GEORGIA DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION**

AIR PROTECTION BRANCH

**4244 INTERNATIONAL PARKWAY, SUITE 120
ATLANTA, GEORGIA 30354
PHONE: 404/363-7000
FAX: 404/363-7100**



TABLE OF CONTENTS

1.0 INTRODUCTION TO FEE SYSTEM.....	1
1.1 DEFINITION OF STATIONARY SOURCE	2
1.2 DUE DATES.....	2
1.3 OTHER INFORMATION.....	3
2.0 FEE FOR NSPS SOURCES, SYNTHETIC MINOR SOURCES, AND PART 70 SOURCES	4
2.1 FEE FOR NSPS SOURCES.....	4
2.2 FEE FOR SYNTHETIC MINOR SOURCES.....	5
2.3 FEE FOR PART 70 SOURCES.....	6
2.4 ADMINISTRATIVE FEE	8
3.0 CALCULATION OF PART 70 MAJOR SOURCE FEES	9
3.1 GENERAL INSTRUCTIONS	9
3.11 Amending Permit Limits.....	10
3.12 Significant Figures	11
3.13 Excessive Emissions	11
3.14 Permit Fee Calculation Records	11
3.15 Obligations of Owner and/or Operator.....	13
3.16 Threshold Levels	13
3.17 Exemptions.....	13
3.18 Correcting a Submitted Air Emissions Fee Reporting Form.....	15
3.2 METHODS OF CALCULATION.....	16
3.21 4000 Tons or Greater	16
3.22a Annual Limit.....	<u>1716</u>
3.22b Weekly, Monthly, or Daily Limit.....	<u>1817</u>
3.22c Hourly Limit.....	<u>1817</u>
3.22d Concentration Limit.....	<u>1817</u>
3.22e Non-(Mass per Unit Time) Limit.....	<u>1918</u>
3.22f Formula Limit.....	<u>2019</u>
3.22g Sulfur-in-Fuel Limit.....	<u>2524</u>
3.23 Emission Reduction Requirement.....	<u>2625</u>
3.24 [Reserved].....	<u>2625</u>
3.25 No Emission Limit	<u>2625</u>
3.3 EMISSION FACTORS SPECIFIED BY THE DIVISION	<u>2726</u>
3.31 Kraft Pulp Mills	<u>2726</u>
3.32 Fossil-Fuel Fired Boilers - Nitrogen Oxides Emissions	<u>2928</u>
3.33 Wood and Bark Combustion in Boilers	<u>3029</u>

3.34	<i>Stationary Gas Turbines for Electrical Generation - Nitrogen Oxides Emissions</i>	<u>3130</u>
3.35	<i>Stationary Diesel Engines - Nitrogen Oxides Emissions</i>	<u>3130</u>
3.36	<i>Fiberglass Molding - VOC Emissions</i>	<u>3130</u>
4.0	FILLING OUT THE GEORGIA AIR EMISSIONS FEE FORMS	<u>3332</u>
4.1	REPORTING FORM	<u>3332</u>
4.2	AMENDMENT FORM.....	<u>3736</u>
5.0	WHERE TO GET HELP	<u>4039</u>
	APPENDIX A – EXAMPLES (DELETED)	<u>4140</u>
	APPENDIX B – EXCERPT FROM DIVISION’S PROCEDURES FOR TESTING AND MONITORING SOURCES OF AIR POLLUTION	<u>4241</u>
	APPENDIX C – USE OF CONTINUOUS EMISSIONS MONITORING SYSTEMS OR CONTINUOUS EMISSION RATE MONITORING SYSTEMS FOR CALCULATING EMISSIONS	<u>4342</u>

1.0 INTRODUCTION TO FEE SYSTEM

This document has been prepared to specify the methods used to calculate the permit fees required under Georgia Air Quality Control Rule 391-3-1-.03(9), "Permit Fees." These procedures are to be used for calculating fees due for the calendar year ending December 31, ~~2009~~2010. For calculating fees due for the calendar years 1991 through ~~2008~~2009 refer to "Procedures for Calculating Air Permit Fees" for the appropriate year. For an electronic copy of the "Procedure for Calculating Air Permit Fees" from 2002 to the most recent year, please go to the following web address: <http://www.georgiaair.org/airpermit/html/aqrules/fee.htm>. To obtain a copy of the Permit fee manual for 1991 through 2001, contact the Air Protection Branch at the number listed in Section 5.0 "Where to Get Help." Only those matters relating to the calculation of Air Permit Fees (fees) required under 391-3-1-.03(9) are contained within, as the text is not intended to be a restatement or interpretation of emission standards or regulations.

These procedures are to be used for the calculation of air permit fees in accordance with the requirements of The Georgia Air Quality Act.

Section 2.0 of these procedures is used to determine what type of permit fee is due for the calendar year in question. The owner or operator of any stationary source should use Section 2.0 to determine if the source is subject to an NSPS Fee; whether the source is subject to Synthetic Minor or Part 70 Fees; and whether permit fee calculations must be conducted.

Section 3.0 of these procedures is to be used to calculate emissions of criteria pollutants. For the purpose of the Air Permit Fee system, "criteria pollutants" are defined as volatile organic compounds, sulfur dioxide, particulate matter, and nitrogen oxides from a stationary source. Volatile organic compounds (VOCs) are any organic compounds emitted to the atmosphere except those compounds specifically exempted by Georgia Air Quality Control Rule 391-3-1-.01(III). Particulate matter (PM) emissions is as defined by Georgia Air Quality Control Rule 391-3-1-.01(yy). The total emissions of each of these four pollutants are then to be reported on the Georgia Air Emissions Fee Reporting Form (fee form) and are used to determine the "total calculated fee." **SECTION 3.0 CALCULATIONS ARE ONLY REQUIRED FOR SOURCES THAT ARE CONSIDERED MAJOR UNDER PART 70 REGULATIONS.**

1.1 Definition of Stationary Source

For the purposes of the Air Permit Fee system “stationary source” is determined as follows:

- 1) The owner or operator should consider all of the pollutant-emitting activities which are located on one or more contiguous properties and are under control of the same person (or persons under common control) except the activities of any vessel. If the potential emissions of Hazardous Air Pollutants (HAPs) equal or exceed ten tons per year for any single HAP or 25 tons per year for total HAPs, then all the pollutant activities are considered to be one “stationary source.”
- 2) If the potential emissions of HAPs do not equal or exceed ten tons per year for any single HAP or 25 tons per year for total HAPs, then a “stationary source” is defined as: 1) all of the pollutant-emitting activities which belong to the same industrial grouping; 2) located on one or more contiguous or adjacent properties; and 3) under the control of the same person (or persons under common control) except the activities of any vessel. Pollutant-emitting activities shall be considered as part of the same industrial grouping if they belong to the same “Major Group” (i.e., which have the same first two-digit code) as described in the 1987 Standard Industrial Classification Manual published by the U. S. Government Printing Office.

There are instances where a stationary source, as defined by the Air Permit Fee system, has been treated as more than one stationary source under the Air Protection Branch permitting system (i.e., the stationary source has been issued more than one AIRS number and holds more than one valid permit). In such cases permit fee shall be calculated, reported, and paid for the each separate permitted facility assigned a separate AIRS number.

If the Environmental Protection Division (the Division) has issued a permit to construct a stationary source in accordance with Georgia Air Quality Control Rule 391-3-1-.03, “Permits. Amended”, that facility shall be considered a stationary source for the purposes of the Air Permit Fee system even if that facility has not been constructed or begun operation.

1.2 Due Dates

The owner or operator of each stationary source subject to the requirements of the Permit Fee rule shall submit the calendar year ~~2009~~2010 fee form and any fees due on or before September 1, ~~2010~~2011. Stationary sources with an annual fee due of \$10,000 or greater may elect to make four equal quarterly payments. (Any administrative fees required in accordance with Section 2.4 of this manual do not count toward this \$10,000 threshold.) The quarterly payments shall be submitted on or before the dates listed in the following schedule or a later date(s) as may be specified by the Director:

Quarterly Payment	Due Date
1st Quarterly Payment	September 1, 2010 <u>2011</u>
2nd Quarterly Payment	October 13 , 2010 <u>2011</u>
3rd Quarterly Payment	January 43 , 2011 <u>2012</u>
4th Quarterly Payment	April 12 , 2011 <u>2012</u>

(See Section 4.0 for instructions on submitting the initial fee form and annual and quarterly payments.)

1.3 Other Information

The owner or operator of a stationary source on the date annual fees are due shall be responsible for payment of fees for the entire preceding calendar year.

Unless otherwise specified by the Director, all payments, along with accompanying payment coupons, should be submitted to:

Air Quality Fees
Post Office Box 101713
Atlanta, Georgia 30392

All checks for payment of fees should be made out to “Georgia Department of Natural Resources.”

The owner or operator of any stationary source subject to the provisions of the Georgia Air Quality Rule 391-3-1-.03 “Permits. Amended.” shall also be subject to process evaluations and/or audits to determine the accuracy of methods and calculations used to determine the emission fee. The rate, frequency, and content of said audits shall be at the discretion of the ~~Environmental Protection Division~~ (the Division).

Failure to report, late payment of fees, and not calculating fees in accordance with this manual may result in enforcement action including monetary penalties up to \$25,000 per day. The Division will determine if a stationary source has failed to calculate fees in accordance with this fee manual through audit procedures.

If you receive a Fee Reporting Notification, a fee form must be completed and submitted even if no fee is due.

2.0 FEE FOR NSPS SOURCES, SYNTHETIC MINOR SOURCES, AND PART 70 SOURCES

2.1 Fee for NSPS Sources

The permit fee for the following category is \$1500.

Any source subject to Federal Standards of Performance for New Stationary Sources (NSPS) (40CFR part 60) except for the following¹:

- Subpart AAA - New Residential Wood Heaters;
- Steam-generating units that are subject to Subpart Dc and meet either of the following criteria: a) permitted to combust only fuels other than coal, coal refuse, oil, or wood, or b) has a heat input capacity of less than 30 MMBtu/hr and is permitted to combust wood or mixtures of wood with other fuels (except coal, coal refuse, or oil);
- Metal furniture surface coating operations which are permitted to use less than 1000 gallons of coating (as applied) per year and are subject to Subpart EE;
- Pressure sensitive tape and label surface coating operations which are permitted to input less than 50,000 gallons of VOCs per year to the coating process and are subject to Subpart RR;
- Magnetic tape coating operations that are permitted to use less than 10,000 gallons of solvent which are subject to Subpart SSS;
- Coating operations and onsite coating mix preparation equipment for polymeric coating of supporting substrates which are permitted to use less than 95 megagrams per 12-month period of VOCs per year and are subject to Subpart VVV;
- Municipal solid waste landfills with a design capacity of less than 2.5 million megagrams by mass of 2.5 million cubic meters by volume and are subject to Subpart WWW;
- Stationary Compression Ignition Internal Combustion Engines which are subject to Subpart IIII; and
- Stationary Spark Ignition Internal Combustion Engines which are subject to Subpart JJJJ.

It is the responsibility of the owner or operator of an individual stationary source to verify if they are subject to an NSPS regulation.

If the Division has already determined that the source is subject to any NSPS regulations, it will be so indicated with a check mark in the block labeled “NSPS” on the fee form for

¹ In previous years, the following was also exempt from the NSPS fee “Volatile Organic Liquid Storage Vessels with a design capacity of less than 40 m³ (10,557 gallons) **or** less than 75 m³ (19,813 gallons) and storing a liquid with a maximum true vapor pressure less than 15.0 kPa (2.175 psia) **or** less than 151 m³ and storing a liquid with a maximum true vapor pressure less than 3.5 kPa (0.5075 psia) which are subject to Subpart Kb.” However, NSPS Subpart Kb has been amended so that these sources are no longer even subject to the standard. Thus the NSPS fee is still not required for such tanks.

that facility.

If the equipment subject to the NSPS standard(s) did not operate during the calendar year for which the fees are based, the NSPS fee does not apply.

If a stationary source ceases operation and requests that the operating permit for that facility be revoked and the Division revokes the operating permit for the facility during or prior to the calendar year in which the fees are based, the NSPS fee does not apply.

THE NSPS FEE IS DUE IN ADDITION TO ANY OF THE OTHER FEES (SYNTHETIC MINOR OR PART 70 FEE).

2.2 Fee for Synthetic Minor Sources

The permit fee for the following category is ~~\$1500~~1700.

A “synthetic minor” permit is one that restricts operations at or emissions from a source in order to keep that facility from being a Part 70 (Title V) major source. If a Part 70 major source has received a valid synthetic minor permit prior to or during the calendar year for which the fees are based, the owner or operator of the source is required to pay a Synthetic Minor Fee. If a source holds a valid synthetic minor permit and the facility is modified or the synthetic minor limits are removed, resulting in the source becoming a Part 70 major source for any period during the year, then the source owner or operator must pay a Part 70 fee for that calendar year and subsequent years. Any facility which obtains synthetic minor status for Part 70 by means of a “Permit-by-Rule” by submitting a Permit-by-Rule application in accordance with Georgia Air Quality Control Rule 391-3-1-.03(11) and has received a Permit-by-Rule Certification letter from the Division is not required to pay a synthetic minor permit fee. Any ready mix concrete batch plant that is subject to Generic Air Quality Permit 3273-GEN-0011-S-01-0 is not required to pay a synthetic minor permit fee. Any asphalt plant that is subject to Generic Air Quality Permit 2951-GEN-0008-S-01-0 is required to pay a synthetic minor fee.

If the Division has determined the source has received a valid synthetic minor permit, it will be so indicated with an “SM” in the CLASS block of the online Fee Form. If the Division has determined that the source has obtained synthetic minor status by means of a Permit-by-Rule, it will be so indicated with a “PR” in the CLASS block of the online Fee Form. It is the responsibility of the owner or operator of an individual stationary source to verify whether or not the stationary source has received a synthetic minor permit or is subject to a Permit-by-Rule.

If the source is both a synthetic minor source and a Part 70 source, it is required to pay the Part 70 Fee and is not required to pay the synthetic minor fee.

If a stationary source with a synthetic minor permit permanently ceases operation and requests that the synthetic minor operating permit for that facility be revoked and the Division revokes the synthetic minor operating permit for the facility during or prior to

the calendar year in which the fees are based, the synthetic minor permit fee does not apply.

NOTE THAT THE NSPS FEES DISCUSSED IN SECTION 2.1 OF THIS PROCEDURES MANUAL ARE DUE IN ADDITION TO ANY SYNTHETIC MINOR FEE THAT MAY BE DUE.

2.3 Fee for Part 70 Sources

Any source for which a Part 70 (Title V) permit application is or will be required to be submitted for the purpose of obtaining a Part 70 permit is required to pay Part 70 Fees once a construction (SIP) permit required under 391-3-1-.03(1) has been issued for the construction of a new Part 70 source or the modification of an existing source which results in the source becoming a Part 70 source. If a Part 70 permit application is required for a facility for the purpose of obtaining a Part 70 permit, and that source subsequently receives a permit which contains limits that render the source a non-major facility (i.e., a synthetic minor permit), and that source is no longer required to obtain a Part 70 permit for some other reason, Part 70 Fees are not required for the calendar year in which the “synthetic minor” permit limit was issued or any other subsequent year so as long as the source remains a non-major source (the Synthetic Minor Fee specified in section 2.2 is required instead). Sources which are required to obtain a Part 70 permit, regardless of whether the source is major or not, are still required to pay the Part 70 Fees.

If the Division has determined the source has or is required to submit a Part 70 application, it will be so indicated with a check mark in the “Part 70 Fee” box of the online Fee Form. It is the responsibility of the owner or operator of an individual stationary source to verify whether or not the stationary source is a Part 70 source.

If a facility is required to pay Part 70 Fees, **and** the source is classified as a Major Part 70 source, the owner or operator of that facility should first calculate the Part 70 Major Source Fees using the procedures contained in Section 3.0 of these procedures. If the Division has determined the source is classified as a Major Part 70 source, it will be so indicated with an “A” in the CLASS block in the online Fee Form. **The dollar-per-ton (\$/ton) rate for calendar year 20092010 is \$35.84 for stationary sources that contain a coal-fired EGU and \$34.00/ton for all other sources.** If the total calculated fee determined in accordance with Section 3.0 is less than \$38004100, then the owner or operator must pay a Part 70 Fee of \$38004100.

If the facility is required to submit Part 70 Fees **but** the source is **not** classified as a Major Part 70 source (i.e., the PART 70 block is checked and something other than an “A” is shown in the CLASS block), the owner or operator must pay a Part 70 fee of \$38004100. However, the facility does **not** need to calculate emissions per Section 3.0 of these procedures.

If a stationary source with a Part 70 permit permanently ceases operation ~~prior to the calendar year in which the fees are based~~ and requests that the Part 70 permit for that

facility be revoked and the Division revokes the Part 70 permit for the facility during or prior to the calendar year in which the fees are based, the Part 70 fee does not apply. The expiration of a Part 70 permit five years after the effective date of that permit (ten years for some stationary sources) does not relieve that source from the requirement to report and pay Part 70 fees.

NOTE THAT THE NSPS FEES DISCUSSED IN SECTION 2.1 OF THESE PROCEDURES ARE DUE IN ADDITION TO ANY PART 70 FEE THAT MAY BE DUE.

2.4 Administrative Fee

In addition to the fees specified in sections 2.1 through 2.3 of this manual, the owner or operator of a source may be subject to an administrative fee. The administrative fee shall be required for the owner or operator of any stationary source that is required to submit a permit fee form. The administrative fee shall be 0.05% of the total fee due for each calendar day following October 1, ~~2010~~2011, on which the permit fee form is submitted to the Division. Owners or operators who submit the required permit fee form on or before October 1, ~~2010~~2011, are not required to pay the administrative fee.

The Georgia Environmental Connections Online (GECO) application air emissions fee reporting form must be used for reporting Calendar Year ~~2009~~2010 fees. The date that is used to determine when the permit fee form is submitted, and thus used to determine if an administrative fee is owed and how much such fee is, shall be the date in which the owner or operator completes a final submittal (i.e., clicks the “final submit” button) on the online reporting form.

3.0 CALCULATION OF PART 70 MAJOR SOURCE FEES

3.1 General Instructions

The calculations contained in Section 3.0 are only required for stationary sources which were classified as a Part 70 major source for any part of the year for which the fees are based. A Major Source under Part 70 is defined in 40 CFR 70.2. If the Division has determined the source is classified as a Part 70 major source, it will be so indicated with an “A” in the CLASS block on the pre-filled fee form for that source. It is the responsibility of the owner or operator of an individual stationary source to verify whether or not the stationary source is a Part 70 major source.

The owner or operator of each stationary source that was classified as a Part 70 Major Source is responsible for calculating the fee due for each of the four criteria pollutants covered under the fee system (specifically: volatile organic compounds, sulfur dioxide, particulate matter, and nitrogen oxides). The following steps should be used for calculating fees:

1. Identify all pollutant-emitting activities at the stationary source which emit volatile organic compounds (VOC), sulfur dioxide (SO₂), particulate matter (PM), or nitrogen oxides (NO_x).
2. Check the exemptions listed in Section 3.17, Exemptions. Calculations are not required for the criteria pollutants specified for the operations and emission units listed in Section 3.17.

For Part 70 major sources which initially began operation during or prior to the calendar year in which the fees are based, use Steps 3 and 4 to calculate emissions from each operation not exempted under Step 2. For Part 70 major sources which have received a construction permit issued in accordance with Georgia Air Quality Rule 391-3-1-.03(1) but had not yet begun operation as of the calendar year in which the fees are based, the owner or operator should use fifty percent (50%) of the facility’s annual “potential to emit” as defined in Georgia Air Quality Rule 391-3-1-.01(ddd). A Part 70 major source which received a construction permit, did not begin operation, and whose construction permit expired prior to the calendar year in which the fees are based is not required to pay Part 70 fees.

3. Use the appropriate method contained in Sections 3.21 through 3.23 to calculate the emissions for any operation subject to a numerical emissions limit contained in either an air quality permit or Georgia or Federal air quality rule. Then use Method 3.25 to calculate the actual emissions from that operation for any of the remaining four criteria pollutants emitted in significant quantities (greater than one ton per year) that are not covered by a permit or rule limit.
4. Use Method 3.25 to calculate the actual emissions of each of the four criteria pollutants emitted in significant quantities (greater than one ton per year) from

any operations not subject to a permit or rule limit and not exempted under Section 3.17.

5. Add up the calculated emissions from Steps 3 and 4 for each of the four criteria pollutants. Individual calculations and the final total should be conducted as specified in Section 3.12.
6. A fee is due for each pollutant for which the total calculated emissions for that pollutant at the stationary source that is above the threshold for that pollutant (see Section 3.16 for threshold levels). For each pollutant whose total calculated emissions is above the threshold, multiply the total emissions by the dollar per ton (\$/ton) rate for the calendar year in question. See Section 2.3 of this manual to obtain the appropriate \$/ton. That is the calculated fee for that criteria pollutant.
7. Add the calculated fees for each criteria pollutant. This is the total calculated fee. This figure is used to determine the "Part 70 Fee." Go to Section 2.3 of this manual to determine the Part 70 Fee.

The information obtained to calculate fees using the methods or procedures herein is subject to review and approval by the Division.

3.11 Amending Permit Limits

If the permitted emission limit of a criteria pollutant was changed by permit amendment or effective rule change during a calendar year, the old and new emission limit shall be prorated (based on the date of the amendment or rule change) for that year.

An owner or operator may wish to change an emission limit for the purpose of reducing fees. Application for a permit amendment of this type which will reduce fees for calendar year 1994 and beyond must be received by August 31 of the preceding year in order for the reduced limit to be in effect for the entire year. This deadline is necessary to give the Division adequate time to process the applications.

3.12 Significant Figures

Individual calculations should be carried out retaining at least four significant figures. Total emissions for each criteria pollutant should be rounded to the nearest ton.

For example, emissions from a fictitious stationary source are shown in the following table. The emissions for each process are calculated to four significant figures. The emissions for each pollutant are then totaled and then rounded off to the nearest ton.

Process	Particulate Matter	Sulfur Dioxide	Nitrogen Oxides	Volatile Organic Compounds
A	48.22	17.36	3.258	0.5785
B	22.25	83.06	17.25	3.267
C	30.03	-	-	365.3
Total for each pollutant	100.5	100.4	20.51	369.1
Round off to nearest ton	101	100	21	369

3.13 Excessive Emissions

In Methods 3.21 through 3.23, the permitted or regulatory emission rates are to be used to calculate emissions. There may be instances where actual emissions are in excess of allowable emission limits. In those instances, the owner or operator should still use the allowable emission rates. The excessive emissions would be handled through the enforcement activities of EPD and not through the permit fee process.

3.14 Permit Fee Calculation Records

The owner or operator shall maintain copies of the calculations for a minimum of five years following submittal of the Georgia Emissions Fee Reporting Form. These calculations shall include the following as a minimum for each criteria pollutant emitted from each individual process and/or fuel-burning equipment.

- (a) State which method (numbers 3.21 – 3.25) was used in the calculation.
- (b) If an exemption (Section 3.17) is used for any processes or pollutant, state the number of the applicable exemption [3.17(a) - 3.17(j)].
- (c) If the calculation uses a permitted emission limit, state the permit number, date of permit issuance, date of any applicable permit amendments, and the condition number of the permitted emission limit. (Not required for Method 3.21)

- (d) If the calculation uses data from a permit application for which a permit or amendment has been issued, state the date of the application and application number (if known), permit number, and date of issuance of permit or amendment. (Required only if special Georgia Rule (e)/Rule (p) option of Method 3.22f is used.)
- (e) If the calculation uses an emission limit set by a State or Federal regulation, state the specific regulation. (Not required for Method 3.21)
- (f) State the actual calculation of emissions. (Not required for Method 3.21)
- (g) Provide an explanation of why a facility is subject to or exempt from an NSPS fee.
- (h) Provide any records necessary to confirm data used in the calculations. (Not required for Method 3.21)
- (i) Provide records of fee payments.

3.15 Obligations of Owner and/or Operator

Timely submission of the fee form based on best available data at the time of submittal and calculation of fees in accordance with this fee manual fulfills the permit fee reporting obligations for the reporting year. If you receive a Fee Reporting Notification, a Fee Reporting Form must be submitted, even if no fee is owed.

Beginning with Calendar Year 2009 fees, when the ownership of any stationary source is transferred to a new owner or operator, the new owner or operator of the stationary source shall be responsible for paying any past due fees.

3.16 Threshold Levels

Fees for Section 3.0 are not required if the total calculated emissions of each criteria pollutant are less than or equal to the levels listed in the following table.

Pollutant	1-hour Ozone Maintenance area counties*	All other counties
Particulate Matter	100 tons/yr	100 tons/yr
Sulfur Dioxide	100 tons/yr	100 tons/yr
Volatile Organic Compounds	25 tons/yr	100 tons/yr
Nitrogen Oxides	25 tons/yr	100 tons/yr

* 1-Hour Ozone Maintenance counties are: Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale.

3.17 Exemptions

The following categories of sources or pollutants shall not be included when calculating emissions for the purpose of determining permit fees. The Division has determined that the fees that would be generated from these items would be minimal and would not justify the additional administrative costs to collect them. These exemptions apply both when determining if emissions of a pollutant are over the levels listed in Section 3.16 and when determining the amount of fees due for that pollutant. These exemptions apply only to those pollutants listed.

- (a) All criteria pollutants from any emissions sources or activities listed in the Insignificant Activities List contained in Georgia Rule 391-3-1-.03(10)(g) or in the Trivial List of Appendix A of the "State of Georgia Title V Major Source Operating Permit Application, Introduction and Instructions." When calculating fees for any particular calendar year, the owner or operator may use any final version of Rule 391-3-1-.03(10)(g) which was in existence during that calendar year;

- (b) Sulfur dioxide and VOC emissions resulting from the combustion of natural gas, methane, and liquefied petroleum gas;
- (c) Volatile organic compound (VOC) emissions resulting from the combustion of fossil fuels;
- (d) Fugitive particulate matter emissions;
- (e) Fugitive VOC, fugitive nitrogen oxides, and fugitive sulfur dioxide emissions unless the emissions of such are limited by an Air Quality Permit condition or Federal or State rule or regulation;
- (f) Particulate matter emissions resulting from the combustion of distillate oil (Number 2 or lighter), gaseous fuels, and liquefied petroleum gas;
- (g) Sulfur dioxide emissions resulting from the combustion of wood, bark, and other fuels with a sulfur content of equal to or less than 0.10% (dry basis);
- (h) Nitrogen oxides emissions resulting from thermal or catalytic fume incinerators used for the sole purpose of controlling air emissions;
- (i) Particulate matter emissions from any process whose only particulate matter emission limit is Georgia Rule 391-3-1-.02(2)(e) or 391-3-1-.02(2)(p), **and**
 - 1. is exclusively used for material handling and storage (i.e. bins, silos, hoppers, feeders, conveyors) [if emissions from another process or piece of fuel-burning equipment are vented through the material handling and storage equipment, this exemption (3.17(i)1.) is not applicable];
 - or,
 - 2. whose estimated actual particulate matter emissions are less than two tons per year.

(See Section 3.22f); and
- (j) Any emissions from a liquid storage tank with a capacity of less than 40,000 gallons or containing a liquid with a vapor pressure of less than or equal to 1.52 psia.
- (k) All criteria pollutants from any emissions sources or activities listed in the “Insignificant Activities based on Emissions Levels” or “Generic Emissions Groups” sections of a Title V Permit that was in effect during the year in which fees are due, were added as an “off-permit change” under 391-3-1-.03(10)(b)(6) during or prior to the year in which fees are due and were not included in a Title V permit as of the end of the calendar year in which fees are due, or (for sources

which had not been issued a Title V permit as of the end of the calendar year in which the fees are due) were included or eligible to be included in Sections D2, D3, or D6 of a Title V application.

For the purpose of the Air Permit Fee system, “fugitive” emissions are defined as those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening. Note: The Division does not consider emissions from storage tanks to be fugitive.

3.18 Correcting a Submitted Air Emissions Fee Reporting Form

If the owner or operator of a stationary source discovers that a part or all of the information submitted in a Georgia Air Emissions Fee Reporting form is incorrect, a “Georgia Air Emissions Fee Amendment Form” (amendment form) should be submitted. Instructions for completing and filing an amendment form are listed in Section 45.1.

If a stationary source is chosen for process evaluations and/or audits as described in Section 1.0, no amendment forms should be submitted until the audit is complete and all issues are resolved.

3.2 Methods of Calculation

The owner or operator shall use the method listed below which most closely matches the limit for each criteria pollutant from a stationary source, individual process, or piece of fuel-burning equipment. The methods are arranged in order of priority. If more than one limit applies, the highest priority (lowest number) method shall be used. When emissions are not limited in a permit or by a regulatory emission limit, Method 3.25 shall be used.

3.21a 4000 Tons or Greater

For any criteria pollutant, the owner or operator may elect to estimate the total annual emissions from the entire stationary source as **4000 tons or greater**. In this case, 4000 tons shall be used for calculating fees. If this method is chosen for a criteria pollutant, no other calculations are necessary for that pollutant for the entire stationary source.

3.21b Coal-Fired EGUs

For any stationary source that contains a coal-fired EGU, the owner or operator shall report the total annual emissions as follows:

<u>Total permitted heat input capacity for all coal-fired EGUs at the stationary source:</u>
<u>Below 2000 million Btu per hour:</u>
<u>sulfur dioxide – 3000 tons</u>
<u>nitrogen oxides – 2000 tons</u>
<u>particulate matter – 580 tons</u>
<u>Equal to or above 2000 million Btu per hour:</u>
<u>sulfur dioxide – 4000 tons</u>
<u>nitrogen oxides – 4000 tons</u>
<u>particulate matter – 4000 tons</u>

For the purposes of the Air Permit Fee system, a coal-fired EGU shall mean any boiler or combustion turbine serving a generator with a nameplate capacity more than 25 MWe that supplies more than one-third of its electric output to any utility power distribution system for sale and is permitted to burn coal.

The total permitted heat input capacity shall be as reported in section D7 of the stationary source's Title V permit application for all coal-fired EGUs permitted to operate at any time during the calendar year in which the fee is based. If the stationary source has not yet submitted a Part 70 permit application, the source shall use the total design capacity as reported in section 2.01 of the stationary source's SIP Air Permit Application for all coal-fired EGUs permitted to operate at any time during the calendar year in which the fee is based.

3.22 Methods 3.22a through 3.22g have equal priority. If more than one is applicable, the owner or operator may select any one of these methods.

3.22a Annual Limit

If a stationary source or individual process and/or fuel-burning equipment has a specific **annual or 12-month rolling total emission limit** for a criteria pollutant as a condition of a Georgia Air Quality Permit (permit) or set by a Federal or State rule or regulation, that emission limit (in tons per year) shall be used as a basis for calculating fees. If a stationary source or individual process and/or fuel-burning equipment commences initial operation and/or permanently ceases operation during the calendar year, the owner or operator shall use the greater of the actual emissions during the calendar year or the annual allowable limit prorated in months for the portion of the year since operation commenced and/or prior to permanent cessation of operations. If a stationary source or individual process and/or fuel-burning equipment has a specific annual or 12-month rolling total emission limit but did not operate at all during the calendar year, emissions are defined to be zero (0). Operation of a source is defined as the operation of the pollutant-emitting equipment or process at a stationary source for its intended purpose.

For stationary sources that have obtained sulfur dioxide and/or nitrogen oxides emissions using continuous emissions rate monitoring systems (CERMS), that data may be used in lieu of the emission limit to calculate permit fees. Methods for using CERMS data are contained in Appendix C.

3.22b Weekly, Monthly, or Daily Limit

If a stationary source or individual process and/or fuel-burning equipment has a specific **monthly, weekly, or daily (or any other period of time greater than an hour but less than a year) emission limit** for a criteria pollutant as a condition of a permit or set by a Federal or State rule or regulation, that limit shall be multiplied by the actual number of months, weeks or days (or other applicable period) for which the source was in operation. For the purpose of this method, operation of a source for any period of time during a month/week/day/(other period) shall be treated as a full month/week/day/(other period) of operation. (This is consistent with regulatory procedures.)

For stationary sources which have obtained sulfur dioxide and/or nitrogen oxides emissions using continuous emissions rate monitoring systems (CERMS), that data may be used in lieu of the emission limit to calculate permit fees. Methods for using CERMS data are contained in Appendix C.

3.22c Hourly Limit

If a stationary source or individual process and/or fuel-burning equipment has a specific **hourly (or less) emission limit** for a criteria pollutant as a condition of a permit or set by a Federal or State rule or regulation, that limit shall be multiplied by the actual time of operation for the source. Partial hours of operation may be summed when calculating actual annual hours of operation.

For stationary sources which have obtained sulfur dioxide and/or nitrogen oxides emissions using continuous emissions rate monitoring systems (CERMS), that data may be used in lieu of the emission limit to calculate permit fees. Methods for using CERMS data are contained in Appendix C.

3.22d Concentration Limit

If a stationary source or individual process and/or fuel-burning equipment has a specific **concentration emission limit (grain/dscf, ppm, etc.)** for a criteria pollutant as a condition of a permit or set by a Federal or State rule or regulation, the concentration limit shall be converted to a mass per unit time basis (lb/hr, etc.) using the average gas flow rate under normal operation. If the limit is corrected to a specific diluent concentration and/or moisture concentration, the gas flow rate should be corrected to the same basis as the limit. That mass-per-unit time limit shall then be multiplied by the actual time of operation for the stationary source, fuel-burning, or process equipment for which the emission limit applies. Partial hours of operation may be summed when calculating actual annual hours of operation.

For stationary sources which have obtained sulfur dioxide and/or nitrogen oxide concentrations using continuous emissions monitoring systems (CEMS), that data may be used in lieu of the emission limit to calculate permit fees. Methods for using CEMS data are contained in Appendix C.

The following formula should be used to calculate a conversion factor for converting ppm emission limits or rates to units of lb/dscf which can then be used to convert to a lb/hr basis:

$$(2.59 \times 10^{-9} \times M) \text{ lb/dscf} = 1 \text{ ppm} \quad (\text{Equation 2d})$$

Where: M = pollutant molecular weight
 = 64.07 for SO₂
 = 46.01 for NO_x

3.22e Non-(Mass per Unit Time) Limit

If a stationary source or individual process and/or fuel-burning equipment has a **fixed emission limit in units other than mass per unit time** for a criteria pollutant as a condition of a permit or set by a Federal or State rule or regulation (lb/MMBtu, lb/unit of production, lb VOC/gallon of coating solids, etc.) the owner or operator shall use the following formula for calculating the emission rate which is then used for calculating fees.

$$ER = \left(\frac{EL \times AOL}{2000} \right) \quad (\text{Equation 2e})$$

Where: ER = mass Emission Rate to be used for calculating permit fees (tons/year)

EL = allowable Emissions Limit for the pollutant (lb/MMBtu, lb/unit of production, lb VOC/gallon of coating solids delivered to applicator, etc.)

AOL = Annual Operating Level during the calendar year (MMBtu/yr, units of production/yr, gallons/yr of coating solids delivered to applicator, etc.)

If a stationary source uses any non-compliance coatings, emission limits in terms of lb (pound) VOC/gallon of coating must be converted to pound VOC/gallon of coating solids using methods specified in Section 1.8(b)(2) of the Division's Procedures for Testing and Monitoring Sources of Air Pollution. (See Appendix B of this manual.) If only compliance coatings were used, emissions may be calculated using the lb VOC/gallon of coating limit and the total gallons of coating used or applied (as applicable) during the year.

For stationary sources which have obtained sulfur dioxide and/or nitrogen oxide concentrations using continuous emissions monitoring systems (CEMS), that data may be used in lieu of the emission limit to calculate permit fees. Methods for using CEMS data are contained in Appendix C.

3.22f Formula Limit

If a stationary source or individual process and/or fuel-burning equipment has an **emission limit as either a condition of a permit or set by a Federal or State rule or regulation which is defined by formula and is dependent upon the operating level**, the average operating level during normal operation shall be used to calculate the emission limit (EL). This emission rate (ER) is calculated by multiplying this emission limit (EL) by the actual operating level (OL) and by actual hours of operation during the calendar year (HR/YR).

$$ER = \left(\frac{EL \times OL \times HR / YR}{2000} \right) \quad \text{(Equation 2f1)}$$

Where: ER = Emission Rate in tons per year to be used for calculating permit fees

EL = calculated allowable Emissions Limit specified in the rule or regulation for the pollutant (lb/MMBtu, lb/unit of production, etc.). This number is calculated using the average operating level during normal operations.

OL = average hourly Operating Level during the calendar year (MMBtu/hr, units of production/hr, etc.) for periods when the individual process and/or fuel-burning equipment is in operation.

HR/YR = actual hours of operation during the calendar year.

Or, in the case when the calculated emission limit is in pounds per hour, the emission rate (ER) is calculated by multiplying the emission limit in pounds per hour (LB/HR) times the actual hours of operation during the calendar year and converting the result to tons per year.

$$ER = \left(\frac{LB / HR \times HR / YR}{2000} \right) \quad \text{(Equation 2f2)}$$

For stationary sources which have obtained sulfur dioxide and/or nitrogen oxide concentrations using continuous emissions monitoring systems (CEMS) or continuous emission rate monitoring systems (CERMS), that data may be used in lieu of the emission limit to calculate permit fees. Methods for using CEMS and CERMS data are contained in Appendix C.

Some of the Georgia Air Quality Control Rules to which this method applies are:

Rule 391-3-1-.02(2)(d)1.(ii) and 2.(ii), Fuel-burning Equipment [Rule (d)]

391-3-1-.02(2)(d)1.(ii) [Rule (d)1] (pre-1972)

$$P = 0.7 \left(\frac{10}{R} \right)^{0.202}$$

or

391-3-1-.02(2)(d)2.(ii) [Rule (d)2]

$$P = 0.5 \left(\frac{10}{R} \right)^{0.5}$$

Where: R = heat input of fuel-burning equipment in million BTU per hour

P = particulate matter emission limit in lb/MMBtu

The owner or operator of a piece of fuel-burning equipment subject to Rule (d) would calculate R using the following formula:

$$R = \frac{a}{b} \quad \text{(Equation 2f3)}$$

Where: a = total heat input to fuel-burning equipment during the calendar year

b = total hours of operation of the fuel-burning equipment during the calendar year

The value of “a” may be obtained by multiplying the quantity of fuel combusted by the heat content (gross calorific value) of the fuel. Where fuel moisture content or fuel mass rate determination is extremely variable or difficult to obtain, “a” may be calculated using the fuel “F” factor and appropriate flow rate and excess air data subject to the approval of the Division.

The value of R calculated using equation 2f3 is used in Rule (d) to calculate the particulate matter emission limit. EL is the calculated particulate matter emission limit (lb/MMBtu) from Rule (d). Also, use the value of R (MMBtu/hr) calculated from equation 2f3 as OL, and use the value of “b” from equation 2f3 as HR/YR. The emission rate (ER) in tons per year can then be derived from Equation 2f1.

If more than one fuel was combusted during the year, the following formula shall be used for calculating the value of “a” in Equation 2f3, the total heat input to the fuel-burning equipment during the year.

$$a = \sum_{i=1}^n Q_i H_i \quad \text{(Equation 2f4)}$$

Where: Q_i = quantity of each type of fuel burned
 H_i = heat content of each type of fuel burned

The specific values of individual fuel heat content listed in the following table may be used for the fuels listed or the owner or operator may use a different content (gross calorific value) for a specific fuel provided that the procedures specified in Appendix A, Method 19 of the Division’s Procedures for Testing and Monitoring Sources of Air Pollutants, or other approved procedures where the procedures in Method 19 are determined by the Director not to be applicable, were used to determine that heat content.

Fuel	Heat Content (gross calorific value)
natural gas	1000 Btu/cubic ft
liquified petroleum gas (LPG)	94,000 Btu/gallon
#1 fuel oil (kerosene)	137,000 Btu/gallon
#2 fuel oil (distillate)	141,000 Btu/gallon
#4 fuel oil (very light residual)	146,000 Btu/gal
#5 fuel oil (light residual)	148,000 Btu/gal
#6 fuel oil (residual)	150,000 Btu/gal
bituminous coal	13,000 Btu/lb
wood - pine and pine bark (0% moisture)	9250 Btu/lb
wood - mixed hardwoods (0% moisture)	8400 Btu/lb
municipal waste (dry basis)	8600 Btu/lb
refuse derived fuel (RDF)	8100 Btu/lb
tire derived fuel (TDF)	15,500 Btu/lb
petroleum coke	14,900 Btu/lb

Rule 391-3-1-.02(2)(e), Particulate Emissions from Manufacturing Processes [Rule (e)], and Rule 391-3-1-.02(2)(p), Particulate Emissions from Kaolin and Fuller's Earth Processes [Rule (p)]

For new equipment (as defined by Rule (e)):

$$E = 4.1 P^{0.67}; \text{ (for } P \leq 30 \text{ tons/hr)}$$

$$E = 55 P^{0.11} - 40; \text{ (for } P > 30 \text{ tons/hr)}$$

For existing equipment (as defined by Rule (e)):

$$E = 4.1 P^{0.67}$$

For new equipment (as defined by Rule (p)):

$$E = 3.59 P^{0.62}; \text{ (for } P \leq 30 \text{ tons/hr)}$$

$$E = 17.31 P^{0.16}; \text{ (for } P > 30 \text{ tons/hr)}$$

For existing equipment (as defined by Rule (p))

$$E = 4.1 P^{0.67}; \text{ (for } P \leq 30 \text{ tons/hr)}$$

$$E = 55 P^{0.11} - 40; \text{ (for } P > 30 \text{ tons/hr)}$$

Where: E = particulate matter emissions limit (pounds per hour)

P = process input weight rate (tons per hour)

The owner or operator of a piece of manufacturing equipment subject to Rule (e) or from Kaolin or Fuller's earth process equipment subject to Rule (p) would calculate P using the following formula:

$$P = \frac{c}{d} \quad \text{(Equation 2f5)}$$

Where: c = total weight of material input to the process during the calendar year in tons
d = total hours of operation of process equipment during the calendar year

This value of P calculated using Equation 2f5 is used in the appropriate equation of Rule (e) or Rule (p) to calculate E. Equation 2f2 is then used to calculate the emissions rate (ER) in tons per year for calculating fees. EL is the value of E (lb/hr) from the appropriate equation from Rule (e) or Rule (p) and HR/YR is the value of d as used in Equation 2f5.

For the purpose of this fee calculation method a “process” is defined as a unit operation or combination of unit operations which cannot be operated independently of each other or which have been specified by the Division to be considered one process subject to the rule. In most instances there will be some type of raw material, intermediate, or product storage or accumulation between “processes” in order to allow for the processes to operate independently. Unless otherwise specified by the Division, this definition shall be used when determining the process input weight rate to be used with Rule (e) or Rule (p). However, a combination of unit operations which are defined as a single process according to this paragraph but have been previously considered by EPD as separate processes for the purpose of determining compliance with Rule (e) or Rule (p) shall continue to be considered separate processes for the purpose of fee calculation.

For a process whose **only** particulate matter emission limit is Rule (e) or Rule (p), the following apply:

- a. The owner or operator may use the maximum pound-per-hour emission rate listed in an appropriate air quality permit application for which a permit or amendment has been issued (and is still valid) for that process when calculating fees in lieu of the pound-per-hour limit calculated using Rule (e) or Rule (p). This option is not applicable if it has been determined that the actual emissions from the process exceed the maximum pound-per-hour emission rate listed in the application. The Division reserves the right to reissue or modify air quality permits based upon emissions data used to calculate fees according to this paragraph.
- b. Equipment used exclusively for material handling and storage (i.e. bins, silos, hoppers, feeders, conveyors) are exempt from the permit fee system. If emissions from another process or piece of fuel-burning equipment are vented through the material handling and storage equipment, the exemption under this paragraph (b) is not allowed.
- c. Processes whose estimated actual emissions are less than two tons per year are exempt from the fee system.

[Note that provisions b. and c. above are the same as exemptions 3.17(i).]

3.22g Sulfur-in-Fuel Limit

If a stationary source or individual process and/or fuel-burning equipment has a specific **sulfur-in-fuel emission limit** as either a permit condition or Federal or State rule or regulation, the owner or operator shall use the following formulas for calculating the sulfur dioxide emission rate which is then used for calculating fees.

Coal (equation 2g1)

$$ER(\text{tons } SO_2/\text{yr}) = \frac{(38S) \times (\text{tons of coal burned during year})}{2000}$$

Residual Oil (equation 2g2)

$$ER (\text{tons } SO_2/\text{yr}) = \frac{(157S) \times (\text{gallons of residual oil burned during year})}{2 \times 10^6}$$

Distillate Oil (equation 2g3)

$$ER (\text{tons } SO_2/\text{yr}) = \frac{(142S) \times (\text{gals. of distillate oil burned during year})}{2 \times 10^6}$$

Note: For fee calculation purposes, the regulatory sulfur-in-fuel limit for distillate oil (No. 2 fuel oil or lighter) may be assumed to be 0.5%.

Other Fuels (equation 2g4)

$$ER (\text{tons } SO_2/\text{yr}) = \frac{(2S) \times (\text{pounds of fuel burned during year})}{200,000}$$

Where: ER = Emission Rate of sulfur dioxide in tons per year to be used for calculating permit fees

S = sulfur-in-fuel limit expressed as a decimal (i.e. for 2.5% sulfur limit, S = 2.5)

If a combination of fuels is combusted, the emission rates shall be calculated for each fuel. The emission rates for each fuel shall be summed to obtain the total emission rate for the stationary source or individual process and/or fuel-burning equipment.

3.23 Emission Reduction Requirement

If a stationary source or individual process and/or fuel-burning equipment has an **emission reduction requirement (i.e. control efficiency or required capture and control efficiency) as either a condition of a permit or set by a Federal or State rule or regulation**, the emission rate is the sum of the required emissions reduction applied to the captured emissions plus the un-captured emissions. If capture efficiency is not included as part of the limit, 80% capture efficiency shall be assumed for process equipment unless demonstrated otherwise and 100% capture efficiency shall be assumed for fuel-burning equipment unless demonstrated otherwise.

3.24 [Reserved]

3.25 No Emission Limit

For any “criteria pollutant” emitted from a stationary source whose emissions are **not limited by any permit condition, rule, or regulation** and are not exempted under Section 3.17, the owner or operator shall calculate the estimated actual emission rate for the calendar year. Methods for estimating actual emissions are listed below in order of priority. When more than one source of data can be used to calculate the actual emissions, the method with the highest priority should be used.

- (a) Material balance for VOC emissions except where over 50% of the VOC used is carried out in a product or byproduct (i.e. includes printing, coating, etc. does not include paint mixing, etc.).
- (b) Representative emissions test data, continuous emissions monitor data, or continuous emissions rate monitoring data (i.e. SO₂ or NO_x monitoring systems) during the calendar year for which fees are based. (If more than one emissions test is conducted during the year, all tests conducted shall be used.)
- (c) Representative emissions test data performed during a calendar year other than the calendar year for which fees are based.
- (d) Representative test data from similar processes.
- (e) Emission factors specified by the Division in Section 3.3 of this manual or approved by the Division prior to submittal of the Georgia Air Emissions Fee Reporting form.
- (f) Other emission factors - The owner or operator shall obtain emission factors from the following publications, listed in order of priority. When the emission factor or control efficiency is given as a range of values, the average of the range shall be used.

1. U.S. EPA document AP-42, "Compilation of Air Pollutant Emission Factors," as revised.
2. Emission factors developed by industry or trade associations or government regulatory agencies (may be subject to approval by the Division).
3. Any other published emission factors (may be subject to approval by the Division).

- (g) Material balance.
- (h) Design calculations.
- (i) Best available estimate.

3.3 Emission Factors Specified by the Division

The following emission factors shall be used when calculating emissions using Method 3.25(e). Supplemental emission factors not listed here may also be provided or approved by the Division.

3.31 Kraft Pulp Mills

- (a) Recovery Boilers
 - i. NO_x (indirect contact evaporator) = 1.50 lb/ton of black liquor solids
 NO_x (direct contact evaporator) = 1.13 lb/ton of black liquor solids
(reference – 8)
 - ii. VOC (indirect contact evaporator) = 0.16 lb/ton of black liquor solids
VOC (direct contact evaporator) = 0.41 lb/ton of black liquor solids
(reference – 8)
 - iii. SO_2 (indirect contact evaporator) = 1.2 lb/ton of black liquor solids
 SO_2 (direct contact evaporator) = 2.3 lb/ton of black liquor solids
(reference – 9)
- (b) Smelt Dissolving Tanks
 - i. NO_x = 0.03 lb/ton black liquor solids
(reference – 8)
 - ii. SO_2 = 0.03 lb/ton black liquor solids
(reference – 8)

- iii. VOC = 0.063 lb/ton black liquor solids
(reference – 9)
- (c) Lime Kilns and Fluid Bed Calciners
 - i. $\text{NO}_x = 2.0$ lb/ton CaO
(reference – 8)
 - ii. $\text{SO}_2 = 0.22$ lb/ton CaO
(reference – 8)
 - iii. VOC = 0.052 lb/ton CaO
(reference – 9)
- (d) Brown Stock Washers

VOC (vacuum drum type) = 0.29 lb/ton air dried unbleached pulp
VOC (all other types) = 0.18 lb/ton air dried unbleached pulp
(reference – 9)
- (e) Foul Condensate Strippers

VOC = 14.1 lb/ton air dried unbleached pulp
(if these gases are incinerated, VOC = 0)
(references – 6,7)
- (f) Black Liquor Oxidation Towers

VOC = 0.12 lb/ton black liquor solids
(reference – 9)
- (g) Bleach Plant Vents

VOC = 0.092 lb/ton air dried pulp
(reference – 9)
- (h) Oxygen Delignification Reactors

VOC = 0.47 lb/ton air dried pulp
(reference – 9)
- (i) Tall Oil Reactors

VOC = 12.0 lb/ton tall oil
(reference – 9)

3.32 Fossil-Fuel Fired Boilers - Nitrogen Oxides Emissions

(Reference – 3)

(a) Bituminous and Sub-Bituminous Coal Combustion

Pulverized Coal Fired

Dry Bottom, Wall Fired, Bituminous

Pre-NSPS = 22 lb/ton of coal fired

Pre-NSPS with low-NO_x Burner(s) = 11 lb/ton of coal fired

Dry Bottom, Wall Fired, Sub-Bituminous

Pre-NSPS = 12 lb/ton of coal fired

Dry Bottom, Cell Burner Fired

Bituminous = 31 lb/ton of coal fired

Sub-Bituminous = 14 lb/ton of coal fired

Dry Bottom, Tangentially Fired, Bituminous

Pre-NSPS = 15 lb/ton of coal fired

Pre-NSPS with low-NO_x Burner(s) = 9.7 lb/ton of coal fired

Dry Bottom, Tangentially Fired, Sub-Bituminous

Pre-NSPS = 8.4 lb/ton of coal fired

Wet Bottom, Wall Fired

Bituminous, Pre-NSPS = 31 lb/ton of coal fired

Sub-Bituminous = 24 lb/ton of coal fired

Wet Bottom, Tangentially Fired, Bituminous = 14 lb/ton of coal fired

Cyclone Furnace

Bituminous = 33 lb/ton of coal fired

Sub-Bituminous = 17 lb/ton of coal fired

Spreader Stoker

Bituminous = 11 lb/ton of coal fired

Sub-Bituminous = 8.8 lb/ton of coal fired

Overfeed Stoker = 7.5 lb/ton of coal fired

Underfeed Stoker = 9.5 lb/ton of coal fired

Fluidized Bed Combustion

Circulating Bed = 5.0 lb/ton of coal fired

Bubbling Bed = 15.2 lb/ton of coal fired

(b) Residual Fuel Oil Combustion

Rated Heat Input > 100 MMBtu/hr

No. 6 Oil

Normal Firing = 47 lb/1000 gallon oil fired

Normal Firing, Low-NO_x Burner(s) = 40 lb/gallon oil fired

Tangential Firing = 32 lb/1000 gallon oil fired

Tangential Firing, Low-NO_x Burner(s) = 26 lb/1000 gallon oil fired

No. 5 and/or No. 4 Oil

Normal Firing = 47 lb/1000 gallon fired

Tangential Firing = 32 lb/1000 gallon fired

Rated Heat Input < 100 MMBtu/hr

No. 5 and/or No. 6 Oil Fired = 55 lb/1000 gallons oil fired

No. 4 Oil Fired = 20 lb/1000 gallons fired

(c) Distillate Fuel Oil Combustion

Rated Heat Input > 100 MMBtu/hr

Uncontrolled = 24 lb/1000 gallon oil fired

Low-NO_x Burners and Flue Gas Recirculation = 10 lb/1000 gallon oil fired

Rated Heat Input < 100 MMBtu/hr = 20 lb/1000 gallon oil fired

d) Natural Gas Combustion

Rated Heat Input > 100 MMBtu/hr

Wall Fired

Uncontrolled, Pre-NSPS = 280 lb/10⁶ scf fired

Low-NO_x Burners = 140 lb/10⁶ scf fired

Flue Gas Recirculation = 100 lb/10⁶ scf fired

Tangential Fired

Uncontrolled = 170 lb/10⁶ scf fired

Flue Gas Recirculation = 76 lb/10⁶ scf fired

Rated Heat Input < 100 MMBtu/hr

Uncontrolled = 100 lb/10⁶ scf fired

Low-NO_x Burners = 50 lb/10⁶ scf fired

Low-NO_x Burners and Flue Gas Recirculation = 32 lb/10⁶ scf fired

(e) Liquefied Petroleum Gas Combustion

Butane

Rated Heat Input > 10 MMBtu/hr = 21 lb/1000 gallons fired

Rated Heat Input < 10 MMBtu/hr = 15 lb/1000 gallons fired

Propane

Rated Heat Input > 10 MMBtu/hr = 19 lb/1000 gallons fired

Rated Heat Input < 10 MMBtu/hr = 14 lb/1000 gallons fired

3.33 Wood and Bark Combustion in Boilers

(reference – 8)

(a) NO_x

Spreader Stoker = 1.76 lb/ton of wet wood residue fuel fired

Fuel Cells/Dutch Ovens = 1.43 lb/ton of wet wood residue fuel fired

Fluidized Bed = 1.42 lb/ton of wet wood residue fuel fired

(b) VOC

Spreader Stokers that use pulp mill condensates in scrubber = 0.12 lb/MMBtu

Spreader Stoker (all others) = 0.034 lb/MMBtu

Fuel Cells/Dutch Ovens = 0.016 lb/MMBtu

Fluidized Bed = 0.001 lb/MMBtu

3.34 Stationary Gas Turbines for Electrical Generation - Nitrogen Oxides Emissions

(reference - 3)

(a) Natural Gas

Uncontrolled = 0.44 lb/MMBtu

Water Injection = 0.14 lb/MMBtu

Steam Injection = 0.12 lb/MMBtu

(b) Distillate Fuel Oil

Uncontrolled = 0.70 lb/MMBtu

Water Injection = 0.29 lb/MMBtu

3.35 Stationary Diesel Engines - Nitrogen Oxides Emissions

(reference - 3)

(a) >600 hp

Uncontrolled = 3.2 lb/MMBtu

Controlled with Ignition Timing Retard = 1.9 lb/MMBtu

(b) ≤ 600 hp = 4.41 lb/MMBtu

3.36 Fiberglass Molding - VOC Emissions

VOC emissions from fiberglass molding operations shall be calculated in accordance with Appendix H of the most current version of Division's Procedures for Testing and Monitoring Sources of Air Pollutants. The Procedures for Testing and Monitoring Sources of Air Pollutants can be viewed and/or downloaded at the Air Protection Branch's website at: www.air.dnr.state.ga.us/airpermit/, click on "Source Monitoring," then click on "Testing & Monitoring Procedures."

References for Section 3.3

- 3 U.S. EPA Document AP42.
- 6 National Council of the Paper Industry for Air and Stream Improvement, Inc. (NCASI) technical bulletin, May 1988.
- 7 U.S. EPA Document EPA-450/2-78-003b.
- 8 NCASI Special Report No. 02-06, Research Triangle Park, N.C.
- 9 NCASI 2003. *Compilation of “air toxic” and total hydrocarbon emissions data for sources at kraft, sulfite and non-chemical pulp mills – an update.* Technical Bulletin No. 858. Research Triangle Park, N.C.

4.0 FILLING OUT THE GEORGIA AIR EMISSIONS FEE FORMS

4.1 Reporting Form

The Georgia Environmental Connections Online (GECO) application air emissions fee reporting form must be used for reporting the Air Permit Fees due the previous calendar year and for submitting quarterly payments. The GECO fee form can be accessed at <http://airpermit.dnr.state.ga.us>. To get to the GECO facility fee form, log in using a username and password and then select the appropriate facility AIRS number from the user home. Once selected, the application navigates to the specific facility home where the Emission Fees application can be accessed. After selecting the Emission Fees button, the fee application loads, and an option is given to select a specific fee year. To begin working on the ~~2009~~2010 calendar year fees, select ~~2009~~2010.

The GECO Emission Fees application is structured as follows:

The AIRS Number of the facility and some additional information about the facility will be listed in the header of the form. Just below the header is a Menu bar with the following options:

- “Welcome” tab – Additional information about the annual fee submission
- “Fee Contact” tab – Updates the fee contact for a facility and is the address where the annual fee letter is mailed. This can be updated at any time.
- “Fee Calculations” tab* – Assists in collecting the emission and fee data for the specified calendar year.
- “Sign & Pay” tab* - Completes the submission of a fee year.
- “Supporting Documents” tab – Provides access to the fee manual, calculation worksheets, and amendment forms.
- “Print Reports” tab
- “Print Invoice” button – Available only for fee years with submitted information. Displays the fee invoice for the selected year.

* Available only when fees have not been submitted for the calendar year.

This menu bar can be used as a navigation tool to go to various sections of the GECO Emission Fees application.

You can click on any of the items in the menu to fill in the information for that section. At the bottom of each section is a button “Save and Continue.” When this button is clicked, the information entered for that section ONLY would be validated and stored, if complete. Clicking on any other links will not validate or store the information.

The following are item-by-item instructions for completing the online form. These instructions and the on-line Fee Forms are subject to revision by the Director.

Facility Information Section

- The Air Branch has determined if the facility is subject to NSPS, the Class of the facility, and whether or not the facility is located in the 1-Hour Ozone Maintenance Area. This information is pre-filled at the top. If the facility believes that this information is incorrect, changes can be made in the available blanks.

The information for the following items in the facility information section should be pre-filled and will correspond to the stationary source. If this information is not filled in or if any of this information is incorrect, enter the correct information in the boxes.

Complete only if the pre-filled information is incorrect or missing

- Fee Contact Person - The Company must designate a person to whom all inquiries and correspondence regarding permit fees be directed. This does not have to be the same as the person listed in the “Sign and Submit” section, nor do they have to be an employee of the facility. This is a required field.
- Title - Enter the title of the contact person (i.e. company attorney, consultant, corporate accountant, plant manager, environmental supervisor, plant engineer). This is a required field.
- Area Code & Phone Number – Enter the area code and phone number of the contact person. This is a required field.
- Email Address - Enter the email address of the contact person. This is a required field.
- Mailing Address Name – Enter the company or corporate name that corresponds to the mailing address for contact person listed above. This is a required field.
- Facility Name and Location (street & city) – This is already pre-filled. If you believe that this information is incorrect, please fill in the correct information at the bottom of the form.

Fee Calculations Section

This section should be completed when reporting the Permit Fee due for the previous calendar year. Do not complete this section when submitting quarterly payments due in October, January, or April (or other due dates as may be specified by the Director).

Sources that are not classified as Part 70 Major Sources do not have the ability to enter in the total annual emissions for the stationary source. The Division’s classification of each source is shown in the box labeled “CLASS” at the top of the GECO Emission Fees application. A Part 70 Major Source will have the classification of “A.” Classifications for non-Major sources are “B” for minor

sources, “SM” for synthetic minor sources, and “PR” for permit-by-rule sources. If the value in the CLASS box is B, SM, or PR, the calculated emissions section is not displayed.

- Annual VOC/NO_x/PM/SO₂ Emissions in Tons - After the total annual emissions for each of the four pollutants (as specified in Section 3.0 of this manual) have been calculated, round that figure for each pollutant off to the nearest ton (i.e. 100.4 tons would be rounded down to 100 tons, 100.5 tons would be rounded up to 101 tons) and enter the results in the appropriate boxes. If the amount calculated for any pollutant is greater than 4000 tons, enter 4000 in the box for that pollutant. Note that even if the calculated emissions for a particular pollutant is less than the threshold level listed in Section 3.16, the emissions of that pollutant should still be reported in this block. If a particular pollutant is not emitted from a stationary source or if all emissions of a pollutant are exempt from fee calculations (as defined in Section 3.17 of this manual) enter 0 in the block for that pollutant.

Based on the annual emissions entered, Fees for VOC/NO_x/PM/SO₂ will be calculated and shown in the appropriate column.

- Total Part 70 Fee – This will be calculated automatically and displayed.

NSPS, Synthetic Minor, and Part 70 Fees

- Part 70/SM Fee - If the source is a Part 70 source check “Part 70 Fee.” If the source is a Synthetic Minor Source, check “Synthetic Minor Fee.” If the source is both a Part 70 Source and a Synthetic Minor Source, check both boxes (“Part 70 Fee” and “Synthetic Minor Fee”). The fee will be calculated automatically and displayed.
- If the stationary source is subject to a Federal New Source Performance Standard (NSPS) you must pay the NSPS Fee. **NOTE THAT THE NSPS FEE IS DUE EVEN IF THE SOURCE MUST PAY A PART 70 FEE OR SYNTHETIC MINOR FEE.** For each stationary source, the Division has already determined whether that stationary source is subject to NSPS if a check mark appears in the box marked “NSPS” near the top of the form. If your stationary source is subject to an NSPS, but all of the facility’s NSPS sources are exempted from the NSPS minimum fee as specified in Section 2.0 of the manual, check the box on the form indicating so. If the NSPS box is checked but it is believed that this stationary source is not subject to any NSPS standard, call the number listed in Section 5.0 of this manual. If the stationary source is subject to an NSPS standard and is not already shown as such, then check the NSPS box. See Section 2.1 of this manual for further explanation of the NSPS Fee. The NSPS fee will be calculated automatically and shown in the appropriate column displayed.

- Total Emissions Fee Due - This is the total fee due based on the input provided and selections. **If the amount in this box is \$0 (total fee due), the online fee form must still be completed and submitted.**
- Administrative Fee – This is the additional fee that is applied to the Total Emissions Fee Due, if the fee is submitted after October 1 following the fee submittal deadline. See Section 2.4 for additional information.

Payment Information Section

- Payment is for (check one) - If the facility is submitting payment for the entire fee due for the previous calendar year, check “Entire Annual Fee.” If the total fee due is \$10,000 or greater, it may be paid on a quarterly basis (four equal quarterly payments).
- Total Emissions Fees Due – Based on the total fee due and the payment type selection, the amount will be displayed.
- Administrative Fee - If the fee information is submitted through GECO after October 1 following the fee submittal deadline, this is the additional fee that is applied to the Total Emissions Fee Due. See Section 2.4 for additional information.
- Total Fee Due – This is the Total Emissions Fee Due plus the Administrative Fee that is due for the given Fee Year.

Sign and Submit Section

- The name and title of the person who assumes legal authority for information shall be entered here. This information is required before final submission.
- Final Submit - Makes a final submission and completes the annual fee submission. Once the Fee form is submitted, no further changes can be made to the online fee form. However, the submitted data and invoice can always be printed from the GECO Fee application.

4.2 **Amendment Form**

If the owner or operator of a stationary source wishes to amend a Georgia Air Emissions Fee Reporting Form (reporting form) which has been submitted, a “Georgia Air Emissions Fee Amendment Form” (amendment form) should be submitted. The fee amendment form can be found on the “Supporting Documents” tab of the GECO Emission Fees application. The following are item-by-item instructions for completing the amendment form. These instructions and the amendment form are subject to revision by the Director. Each item below corresponds to an identically-numbered box or item on the form.

Facility Information and Mailing Address

1. AIRS # - This is a unique number assigned to each stationary source which is used to track activity regarding that source. The AIRS # for each stationary source appears on the pre-filled fee form for that source. Enter the AIRS # for the stationary source for which the amendment form is being submitted in this space.
2. FEI # - Enter your **Federal Employer Identification Number** (same as Federal tax I.D.) This number is necessary in order to process a refund if your facility has overpaid its emissions fees.
- 3-13. This is the same information as on the reporting form. If any of the information in this section is different than the information that was most recently submitted on an emissions fee form, check the box at the bottom of this section.

Information to be Amended

In this section, you will enter information as it was reported on the original form which is being amended and then enter the corrected information.

14. In boxes 14.a. and 14.b., put the date which is on the reporting form which is being amended and the calendar year of the fees. The date in Box 14.a. should correspond to the date contained in the “signature” or “sign and submit” section of the fee reporting form which is being changed.
- 15-18. Previous VOC/NO_x/PM/SO₂ - These boxes should contain the annual emissions (in tons) of each of the four pollutants as they were reported on the original form.
- 19-22. Corrected VOC/NO_x/PM/SO₂ - In each of these four boxes, enter the corrected annual emissions (in tons) for each of the four pollutants. If the corrected emissions value is the same as originally reported (for example, you are correcting the emissions for one of the pollutants, but the other three are unchanged) the same value should be entered in the “Previous...” and “Corrected...” boxes.

- 23-26. Previous VOC/NO_x/PM/SO₂ Fee - Enter the “ANNUAL FEE” as reported on the original form.
27. Previous Calculated Fee/Part 70/SM Fee - Enter the amount from “Total Calculated Fee” (1993 through 1999 forms) or “Total Part 70/SM Fee” (2000 and beyond forms) as reported on the original form. The 1991 and 1992 forms did not contain this box. If you are amending a 1991 or 1992 form, put “n/a” in this box.
28. Previous Minimum Fee/NSPS Fee - Enter the amount reported in the box labeled “Minimum Fee” or “NSPS Fee” on the original form. Note that the number in this box should either be 0, \$1000, \$1250, \$1400, or \$1500. This item did not exist on the 1991 and 1992 forms. If you are amending a 1991 or 1992 form, put “n/a” in this box.
29. Previous Total Fee - Enter the amount from “Total Fee Due” as reported on the original form.
- 30-33. Corrected VOC/NO_x/PM/SO₂ Fee - Enter the corrected annual fee for each of the four pollutants. If the correct fee is the same as the “Previous Fee,” enter that number in the “Corrected Fee” box.
34. Corrected Calculated Fee/Part 70/SM Fee - If the source is a Part 70 Source, add boxes 30. through 33. and put the result in Box 34. For Calendar Year 2000 through 2001 fees, if the total of boxes 30. through 33. is less than \$2500, enter \$2500 in box 34 if the source is a Part 70 **Major** source. For Calendar Year 2002-2004 fees, if the total of Boxes 30. through 33. is less than \$2500, enter \$2500 in box 34 if the source is a Part 70 source (major or non-major). For Calendar Year 2005 ~~and beyond~~ through 2009, if the total of boxes 30. through 33. is less than \$3800, enter \$3800 in Box 34 if the source is a Part 70 Source. For Calendar Year 2010, if the total of boxes 30. through 33. is less than \$4100, enter \$4100 in Box 34 if the source is a Part 70 Source. For Calendar Year 2000 through 2004 fees, if the source is a Synthetic Minor Source, enter \$1000 in Box 34. For Calendar Year 2005 ~~and beyond~~ through 2009, if the source is a Synthetic Minor Source, enter \$1500 in Box 34. For Calendar Year 2010, if the source is a Synthetic Minor Source, enter \$1700 in Box 34.
35. Corrected Minimum Fee/NSPS Fee - If the source was subject to a “minimum fee” for NSPS, Title III, or Part 70 (see Section 2.0 of the fee manual for the appropriate year) enter the appropriate minimum fee in Box 35. Otherwise, enter “0.” Note that the NSPS minimum fee has been in place for Calendar Year 1993 fees and beyond and is \$1000 for Calendar Years 1993 through 1999, and \$1500 for Calendar Year 2000 and beyond, the Title III minimum fee was in place for Calendar Year 1993 through 1995 fees and was \$1000, and the Part 70 minimum fee is in place for calendar Year 1996 through 1999 fees and was \$1250

for Calendar Year 1996 fees and \$1400 for Calendar Year 1997 through 1999 fees.

36. Corrected Total Fee - For calendar years 1991 through 1999 fees, enter the greater of Boxes 34. and 35. For Calendar Year 2000 and beyond fees, enter the total of Boxes 34. And 35.

Payment Refund

37-38. If the amount in Box 29. "Previous Total Fee" is greater than the amount in box 36. "Corrected Total Fee," check the box on line 37 and enter the amount that should be refunded to you in Box 38. A refund will be sent to you following receipt and approval of your amendment.

39-40. If the amount in Box 29. "Previous Total Fee" is less than the amount in Box 36. "Corrected Total Fee", check the box on line 39 and enter the amount you owe in Box 40. A check for the amount shown in Box 40. should be made out to "Georgia Department of Natural Resources" and submitted along with the amendment form.

Signature

41-44. The name and title of the person who assumes legal authority for information contained in the form shall be entered here. That person should then sign and date the form. Any form submitted without this information and a signature will be considered incomplete.

Unless otherwise specified by the Director, amendment forms and payments should be submitted to the following address:

Air Quality Fees
Post Office Box 101713
Atlanta, Georgia 30392

This address is shown on the form. Checks should be made out to "Department of Natural Resources."

5.0 WHERE TO GET HELP

Assistance related to Air Permit Fees can be obtained by calling the engineer within EPD's Air Protection Branch's Stationary Source Compliance Program who is assigned to your facility. If you do not know which engineer is assigned to your facility, call the Air Protection Branch at 404/363-7000 and ask for the compliance engineer assigned to your facility. For questions related to the Georgia Environmental Connections Online (GECO) system, please ask for a member of the Data Management Unit. Assistance is available from 8:30 AM to 4:00 PM, Monday through Friday, excluding holidays.

APPENDIX A – EXAMPLES (Deleted)

APPENDIX B – EXCERPT FROM DIVISION’S PROCEDURES FOR TESTING AND MONITORING SOURCES OF AIR POLLUTION

Procedure for converting emission limits in terms of lb VOC/gallon of coating to lb VOC/gallon of solids. The following is section 1.8(b)(2) as stated in the Division’s Procedures for Testing and Monitoring Sources of Air Pollution.

1.8(b)(2) Calculate the emission limitation on a solids basis according to the following equation:

$$S = \frac{C}{1\left(\frac{C}{d}\right)}$$

Where:

- S = the VOC emission limitation in terms of kg VOC/L of coating solids (lb. VOC/gal. coating solids);
- C = the VOC emission limitation in terms of kg VOC/L of coating (lbs./gal.), minus water and exempt compounds; and
- d = the density of VOC for converting emission limitation to a solids basis. The density equals 0.882 kg/L (7.36 lb./gal.), unless otherwise approved or specified in a specific case.

APPENDIX C – USE OF CONTINUOUS EMISSIONS MONITORING SYSTEMS OR CONTINUOUS EMISSION RATE MONITORING SYSTEMS FOR CALCULATING EMISSIONS

An owner or operator who chooses to determine pollutant mass emissions rates using continuous emissions monitoring systems shall comply with the following procedures and methods:

- I. Continuous emissions monitoring systems (CEMS) or continuous emission rate monitoring systems (CERMS) shall meet all applicable performance specifications contained in the Georgia Department of Natural Resources **Procedures for Testing and Monitoring Sources of Air Pollutants**.
- II. The quality assurance procedures of Appendix F contained in the Georgia Department of Natural Resources **Procedures for Testing and Monitoring Sources of Air Pollutants** shall be used to establish the validity of all CEMS data which are used to calculate mass emissions.
- III. The mass emissions for a stationary source, individual process or piece of fuel-burning equipment shall be calculated for each calendar month in the reporting period. A calendar month is defined as any of the 12 months of the calendar year. The total mass emissions for the reporting period shall be the sum of the mass emissions for each calendar month in the reporting period. Mass emissions for a calendar month shall be calculated using hourly average pollutant emission rates for each hour of operation. An hour of operation is defined as any of the 24 equal parts of the 24-hour period between 12:00 midnight and the following midnight during which a stationary source, individual process or piece of fuel-burning equipment is operated.
- IV. An owner or operator shall use the following procedures and methods for calculating mass emissions for a stationary source, individual process or piece of fuel-burning equipment using CEMS or CERMS data, or the Division may approve on a case-by-case basis other procedures or methods if the owner or operator can demonstrate that the alternate procedures and methods yield comparable results and comparable accuracy.

A. Fossil Fuel-Fired Equipment

- 1) The continuous emission monitoring system shall measure pollutant concentrations and either oxygen (O₂) or carbon dioxide (CO₂) concentrations. The pollutant emission rate expressed as pounds-per-million BTU heat input shall be calculated using the F-factor equations and values in Method 19 of the Division's **Procedures for Testing and Monitoring Sources of Air Pollutants** for each hour of operation. Each one-hour average pollutant emission rate (lbs./million BTU) must be based on more than 30 minutes of fuel-fired equipment operation and include at least two data points with each representing a 15-minute period, otherwise the data for that hour is considered to be invalid.

- 2) Hourly average pollutant emission rates (lbs./MM BTU) are calculated using appropriate F-factor equations of the form shown below. Method 19 shall be used to determine the specific equation for reducing the CEMS data to pounds per million BTU depending on the moisture basis of the measurements:

$$EH = FC \frac{20.9}{20.9 - \%O_2} \quad \text{(Equation 1)}$$

Where:

F = oxygen based F-factor

C = pollutant concentration

%O₂ = oxygen concentration

or,

$$EH = FC \frac{100}{\%CO_2} \quad \text{(Equation 2)}$$

Where:

F = carbon dioxide based F-factor

C = pollutant concentration

%CO₂ = carbon dioxide concentration

For equipment which combusts combinations of fuels, a composite F-factor shall be calculated using Equation 19-18 contained in Method 19.

- 3) The pollutant mass emissions rate for a calendar month shall be calculated by:

$$ER = [EH \times QM] + [EL \times QL] \quad \text{(Equation 3)}$$

Where:

ER = mass emission rate, pounds/month

EH = hourly average emission rate from CEMS data for the month calculated using the appropriate F-factor equation, lbs./MM BTU

QM = total heat input during periods of operation for which valid emissions data have been obtained for the month, MM BTU

- EL = allowable emissions limit specified in the permit, rule or regulation for the pollutant, lbs./MM BTU
- QL = total heat input during periods of operation for which valid pollutant emissions data have not been obtained for the month, MM BTU

Heat input (QM, QL) shall be calculated using the following equation:

$$QM, QL = \sum_{i=1}^N Q_i W_i \quad (\text{Equation 4})$$

Where:

- Q_i = heat content of fuel, BTU/lb., BTU/gal., BTU/CF
- W_i = quantity of fuel combusted during each period of operation, lbs., gals., CF

B. Recovery Furnaces

- 1) The continuous emissions monitoring system shall measure pollutant concentrations and oxygen concentrations. The pollutant emission rate shall be calculated using Equations 5 or 6 for each hour of operation. Each one-hour average pollutant emission rate expressed as pounds per pound of black liquor solids must be based on more than 30 minutes of Recovery Furnace operation and include at least two data points with each representing a 15-minute period.
- 2) Hourly average pollutant emission rates shall be calculated by:
 - a. Dry Basis

$$EH = C_d F_d \frac{20.9}{20.9 - \%O_{2d}} \quad (\text{Equation 5})$$

Where:

- C_d = pollutant concentration, lbs./dscf
- F_d = F factor - established by performance tests, dscf/lb.-black liquor solids

$\%O_{2d}$ = oxygen concentration, dry basis

or,

b. Wet Basis

$$EH = C_w F_w \frac{20.9}{20.9 - \%O_{2w}} \quad (\text{Equation 6})$$

Where:

C_w = pollutant concentration, lbs./actual standard cubic foot

F_w = F-factor - established by performance tests, actual standard cubic feet/lb.-black liquor solids

$\%O_{2w}$ = oxygen concentration, wet basis

3) The pollutant mass emissions rate for a calendar month shall be calculated by:

$$ER = [EH \times BS] + [EL \times H] \quad (\text{Equation 7})$$

Where:

ER = mass emission rate, pounds/month

EH = hourly average emission rate from CEMS data for the month, lbs./lb-black liquor solids

BS = total black liquor solids fired during periods of furnace operations for which valid emissions data have been obtained for the month, lbs.-black liquor solids

EL = allowable emissions limit, specified by permit, rule or regulation, lbs./hr.

H = number of hours of furnace operation for which valid emissions data have not been obtained for the month

C. **Determination of Pollutant Mass Emission Rates using Continuous Flow Monitors**

1) Continuous flow monitors which are used in a continuous emissions monitoring system for determining pollutant mass emission rates shall conform

to all installation and performance specifications published in 40CFR75, Appendix A.

- 2) The continuous emissions monitoring system shall include a monitor for measuring pollutant concentration. The pollutant emission rate shall be calculated using Equation 8. Each 1-hour average pollutant emission rate expressed as pounds per hour must be based on more than 30 minutes of process operation and include at least two data points with each representing a 15-minute period, otherwise the data for that hour is considered invalid.
- 3) Hourly average pollutant mass emission rates in terms of pounds per hour shall be calculated by:

$$ERH = Flow \times C_w \quad (\text{Equation 8})$$

Where:

Flow = flow monitor output, actual standard cubic feet per hour

C_w = pollutant concentration, pounds per actual standard cubic foot, wet basis

[Note: Pollutant concentrations measured on a dry basis must be corrected to a wet basis using a moisture correction factor approved by the Division.]

- 4) Total pollutant mass emissions for the reporting period shall be calculated by:

$$ER = \left(\sum ERH_i \right) + (EL \times H) \quad (\text{Equation 9})$$

Where:

ER = mass emissions rate, lbs./month

ERH = hourly average pollutant mass emissions from CEMS data, lbs./hr.

EL = allowable emissions limit, lbs/hr

H = hours of operation for which valid emission data have not been obtained during periods of process operations

D. **Determination of Pollutant Mass Emission Rates using a Continuous Emission Rate Monitoring System (CERMS) Not Subject to 40 CFR 75**

- 1) The CERMS shall include a CEMS monitor for measuring and recording pollutant concentration. The CEMS shall meet the performance specifications and quality assurance procedures of Appendix C, I and II, above. The CERMS shall also include a monitoring device for measuring and recording stack actual (or dry standard) cubic feet per minute volumetric flow rate. The CERMS shall meet the RATA requirements of Appendix F from II above. All continuous monitoring systems for measuring emissions shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period. The hourly pollutant emission rate shall be calculated using Equation 10. Each one-hour average pollutant emission rate must be based on more than 30 minutes of operation and include at least two data points each representing a 15-minute period, otherwise the data for that hour is considered to be invalid. Periods of monitor downtime shall be considered invalid during process operations.

- 2) Hourly average pollutant mass emission rates in terms of pounds per hour shall be calculated by:

$$ERH = \sum Flow \times C \quad \text{(Equation 10)}$$

Where:

Flow = flow monitor output, actual (or dry) standard cubic feet per minute

C = pollutant concentration, pounds per actual (or dry) standard cubic foot

- 3) Total pollutant mass emissions for the reporting period shall be calculated by:

$$ER = \left(\sum ERH_i \right) + (EL \times H) \quad \text{(Equation 11)}$$

Where:

ER = mass emissions rate, lbs./reporting period

ERH = hourly average pollutant mass emissions from CEMS data, lbs./hr.

EL = allowable emissions limit, lbs/hr

H = hours of operation for which valid emission data have not been obtained during periods of process operations