

Basics of Emissions Inventories

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What is an Emissions Inventory?

- Compilation of all emissions and related parameters from all source sectors
- Includes Point Sources (facilities); non-point sources (smaller facilities; fires; backyard grills); on-road mobile sources (cars & trucks); non-road mobile sources (planes, trains, boats) and biogenic sources (trees)

Why Emissions Inventories?

- Permit Classification Verification
- Fees
- Regional Modeling and Planning
- Rule Making
- Required by EPA
- Answer Questions for Citizens
- Protecting Health and Environment

What is Difference Between Emissions Inventories and Reports for Title V Facilities or TRI?

- Inventory considers all sources at the facility
- Inventory looks at all pollutants
- Title V reports focus on specific processes and/or specific pollutants

Who Must Submit (SC)?

- Title V Facilities will submit their Emissions Inventory on a schedule based on the amount of pollutants emitted
- Type A Sources-every year
 - SO_x, NO_x, CO ≥ 2500 tons/yr,
 - VOC, PM₁₀, PM_{2.5}, NH₃ ≥ 250 ton/yr
- Type B Sources-every 3 years beginning in 2006 for 2005 data
 - SO_x, NO_x, VOC, PM₁₀, PM_{2.5}, NH₃ ≥ 100 ton/yr
 - CO ≥ 1000 ton/yr
 - Pb ≥ 5 ton/yr

Who Must Submit (SC)?

- HAP Sources - every 3 years beginning in 2006 for 2005 data
- HAPs and TAPs for Type A Sources will be required at the Process Unit level every three years on the Type B Source schedule
- Insignificant Activities will be required to be estimated once
- Rule Changing (AERR)

Who Must Submit (NC)?

- Title V facilities – every year by June 30
- Small and Synthetic Minor facilities – due upon permit renewal (every 5 years)
- IT currently working on enhancement to AERO to carry-over emissions data from emission sources listed as Insignificant Activities in permit.

What Pollutants Do I Report?

- Criteria Air Pollutants (CAP) and precursors
- Federal Hazardous Air Pollutants (HAP)
- State Toxic Air Pollutants (TAP)
 - Note: Each state has a different list of TAPs
- Greenhouse Gases
 - SC asks for CO₂ and methane
 - NC asks for all; currently voluntary

How Do I Report: Web-Steps

- Web-based data collection tool used for submitting emissions inventory data to SC
- Reporters must use tool unless otherwise directed.
- Last reviewed inventory is in tool so that facility just updates relevant information.
- Must electronically sign
- Must submit supplemental calculations and Facility General Page separately

How Do I Report: AERO!

- Data from previous EI loaded into AERO minus emissions, Login using Userid and PIN and enter data thru AERO or print forms
- Default values entered for some Operating Parameters, please change to reflect actual conditions.
- Dispute of Data
 - By phone or e-mail by submitter
 - Disputed in system by reviewer, notification to submitter through email

AERO! Continued

- Within 24 hours of submission, confirmation e-mail sent automatically. If no e-mail, check Closeout page in AERO for notation at the top of the page that the submission has been sent. If no notation, resubmit data.
- Send all calculations and supporting documentation to DAQ preferably by certified mail or other methods that can be documented. Electronic Documentation is saved in DAQ database.

AERO!...things to check

- Is the emission factor used the most appropriate and current factor available?
- Verify that emission factor used and annual throughput are reported in the same units
- “After-control” emission factors
 - If AERO calculation used, be sure to mark as After
 - If capture efficiency <100% and EF is used, be sure to verify proper use of emission factor
- Note all equipment that did not operate or is not required to report.
- Check current facility totals against previous facility totals and document significant changes.

Resources (NC)

- AERO
 - <http://xapps.enr.state.nc.us/aq/aero/>
- DAQ Spreadsheets
 - http://daq.state.nc.us/cgi-bin/permit_forms.cgi?type=sheets
- Instructions and lists
 - <http://daq.state.nc.us/monitor/eminv/forms/>

How Do I Calculate My Emissions?

- We use EPA approved methodology to review inventories – expect facilities to use same methodologies when calculating/entering emissions
- Use preferred methods over less preferred methods
- BAQ incorporates all EIIP Preferred Methods Documents into our operating procedures
- EIIP Documents, AP-42 and other EPA estimating tools may be accessed at: <http://www.epa.gov//ttn/chief>

How Do I Calculate My Emissions?

The order of preferred methods from best to least desirable are:

- Mass balance calculations
- Continuous Emissions Monitor data
- Bureau approved and reviewed source test emission factors
- AP-42 or FIRE Emission factors
- In-house stack test; Engineering judgment

How Do I Calculate My Emissions?

- AP-42, FIRE, and other EPA emission estimating tools can be downloaded from the CHIEF web page at <http://www.epa.gov/ttn/chief>
- Source Test Calculator Tools: http://www.scdhec.gov/environment/baq/Emissions_Inventory.aspx

Rule Effectiveness

- Correction factor, called Rule Effectiveness (RE), applied to the control device efficiency to represent downtime of device or less than optimum efficiency
- If not included, it causes problems because emissions control strategies for non-attainment areas depend on accurate emissions inventories.
 - If estimates are too high, modeling will indicate that more controls must be applied than are necessary to achieve attainment
 - If estimates are too low, then not enough controls will be required, resulting in continued non-attainment

Be Aware !!

- **Your emissions are your emissions.** If you report to various places, make sure your emissions are consistent. They may not always be exactly the same but explain differences.
 - Examples: TRI, Title V Reports, etc.
- **Make sure you include everything required.**