



NORTH CAROLINA *Environmental Quality*



General Information for Emission Inventories

The Basics of Estimating Air Emissions

Concise document discussing in very general terms how emissions are estimated.

Download (.pdf) (<https://www.deq.nc.gov/waste-management/dwm/bf/website/inventory/basics-estimating-emissions/download>)

Emission Estimation for Air Permits & Emission Inventories

It is often necessary to estimate emissions emitted into the air from various facilities, for various pollutants (criteria, hazardous and/or toxic).

Such estimates are needed to:

- To determine permit classification,
- Establish or confirm compliance status,

- Update emissions for the North Carolina Division of Air Quality point source emission inventory requirements and
- Other general and site-specific reasons.

Emission inventory data are used to:

- Calculate permit fees,
- Perform toxic air pollutant modeling evaluations,
- Conduct modeling for federally required criteria pollutant attainment and maintenance plans,
- Provide appropriate data to the public,
- Monitor progress and trends and
- Many other purposes.

Individual facilities are responsible for providing proper and accurate estimates of their emissions. NC DAQ is responsible for reviewing and accepting or rejecting such estimates. The DAQ offers the following insights on how these estimates are reviewed. Usually, results from continuous emission monitoring data are the preferred way to establish emissions. However, this is not often possible or practical, except for larger facilities such as electric utilities. Use of site-specific stack tests under a single or a range of representative conditions is usually the next preferable method. Material balances can also be very accurate for some limited classes of industry, such as those that use solvents that are fully evaporated, while the same concept is near meaningless in other applications. Most frequently, however, facility management and engineers use emission factors, which have varying degrees of uncertainty but at least are consistent. The US Environmental Protection Agency (EPA) publishes (in paper copy and electronically), A Compilation of Air Pollutant Emission Factors (AP-42), and maintains an emission factor repository, retrieval and development tool, WebFire, which is constantly being updated and improved. Users are directed to the [EPA's CHIEF - AP-42](http://www.epa.gov/ttn/chief/ap42/index.html) (<http://www.epa.gov/ttn/chief/ap42/index.html>), [WebFIRE](http://cfpub.epa.gov/webfire/) (<http://cfpub.epa.gov/webfire/>) and related web pages for further information and to download or print sections and factors for their appropriate industry.

Not all industries are addressed (either at all or adequately) in AP-42. This section on the DAQ

web page is provided to provide any additional insight and consistency in cases where judgment and interpretation of data may be appropriate for facilities (point sources only) in North Carolina or for an interim situation where AP-42 or FIRE emission factors are under development, but not yet published as final. This information will be revised as the data improve and/or additional information is available. Users are encouraged to periodically check other sources of information to assure that they are using the "best available information" at the time.

Emission Inventory Tools (<https://www.deq.nc.gov/about/divisions/air-quality/outreach-education-engagement/air-quality-science-and-data/emission-inventories/tools-emission-inventories-forms-pollutant-list-etc>)

Use the link above, to access helpful tools used for completing an emission inventory.

Uniform Policy and Documentation Standards

The documentation of emission estimates used for emission inventories is a very important aspect of the inventory. The documentation is used as a basis for quality assurance and verification of the validity of information submitted on the forms or via the data system.

Download (.pdf)

This document is provided as a guide on how to minimize the bulky, expensive and repetitive documentation, but still provide information necessary to allow DAQ engineers and other staff to complete their jobs.

State Statutes

Partial Compilation of North Carolina [Statutes](http://www.ncga.state.nc.us/homePage.pl) (<http://www.ncga.state.nc.us/homePage.pl>)
Providing Authority for Collection of Air Emissions Data

- [§143-215.3\(a\)\(2\) - Additional Powers \(General Authorities\)](https://www.deq.nc.gov/energy-mineral-and-land-resources/oil-and-gas-)
(<https://www.deq.nc.gov/energy-mineral-and-land-resources/oil-and-gas->

[program/forms/2003/eminv-powers/download](#))

- [§143-215.3C - Confidential information protected](#) (<https://www.deq.nc.gov/energy-mineral-and-land-resources/oil-and-gas-program/forms/2003/eminv-confidential/download>)
- [§143-215.65 - Reports required](#) (<https://www.deq.nc.gov/energy-mineral-and-land-resources/oil-and-gas-program/forms/2003/eminv-reports/download>)
- [§143-215.107\(a\)\(4\) - Air quality standards and classifications; Duty to Adopt...; To collect information...](#) (<https://www.deq.nc.gov/energy-mineral-and-land-resources/oil-and-gas-program/forms/2003/eminv-standards/download>)
- [§143-215.114B\(a\)\(i\) - Enforcement procedures: criminal penalties](#) (<https://www.deq.nc.gov/energy-mineral-and-land-resources/oil-and-gas-program/forms/2003/eminv-penalties/download>)

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[Emission Inventories Contacts \(/about/divisions/air-quality/outreach-education-engagement/air-quality-science-and-data/emission-inventories/emission-inventory-contacts\)](#)

[Emission Inventories Frequently Asked Questions \(/about/divisions/air-quality/outreach-education-engagement/air-quality-science-and-data/emission-inventories/emission-inventories-frequently-asked-questions\)](#)

[Reported and Assumed Emission Inventories \(/about/divisions/air-quality/outreach-education-engagement/air-quality-science-and-data/emission-inventories/reported-and-assumed-emission-inventories\)](#)

[Point Source Emissions \(/about/divisions/air-quality/outreach-education-engagement/air-quality-science-and-data/emission-inventories/point-source-emissions\)](/about/divisions/air-quality/outreach-education-engagement/air-quality-science-and-data/emission-inventories/point-source-emissions)

[Asphalt, Hot Mix Guidance \(/about/divisions/air-quality/air-quality-data/asphalt-hot-mix-guidance\)](/about/divisions/air-quality/air-quality-data/asphalt-hot-mix-guidance)

[Rendering Guidance \(/about/divisions/air-quality/air-quality-science-and-data/emission-inventories/rendering-guidance\)](/about/divisions/air-quality/air-quality-science-and-data/emission-inventories/rendering-guidance)

[Wood, Generation and Combustion of "Waste" \(/about/divisions/air-quality/outreach-education-engagement/air-quality-science-and-data/emission-inventories/wood-generation-and-combustion-waste\)](/about/divisions/air-quality/outreach-education-engagement/air-quality-science-and-data/emission-inventories/wood-generation-and-combustion-waste)

[North Carolina's Clean Air Interstate Rule \(CAIR\) \(/about/divisions/air-quality/air-quality-outreach-education/air-quality-science-and-data/emission-inventories/north-carolinas-clean-air-interstate-rule-cair\)](/about/divisions/air-quality/air-quality-outreach-education/air-quality-science-and-data/emission-inventories/north-carolinas-clean-air-interstate-rule-cair)

[North Carolina's NOx Budget Program \(/about/divisions/air-quality/air-quality-science-and-data/emission-inventories/north-carolinas-nox-budget-program\)](/about/divisions/air-quality/air-quality-science-and-data/emission-inventories/north-carolinas-nox-budget-program)

[Instructions \(/about/divisions/air-quality/outreach-education-engagement/air-quality-science-and-data/emission-inventories/emission-inventory-instructions\)](/about/divisions/air-quality/outreach-education-engagement/air-quality-science-and-data/emission-inventories/emission-inventory-instructions)