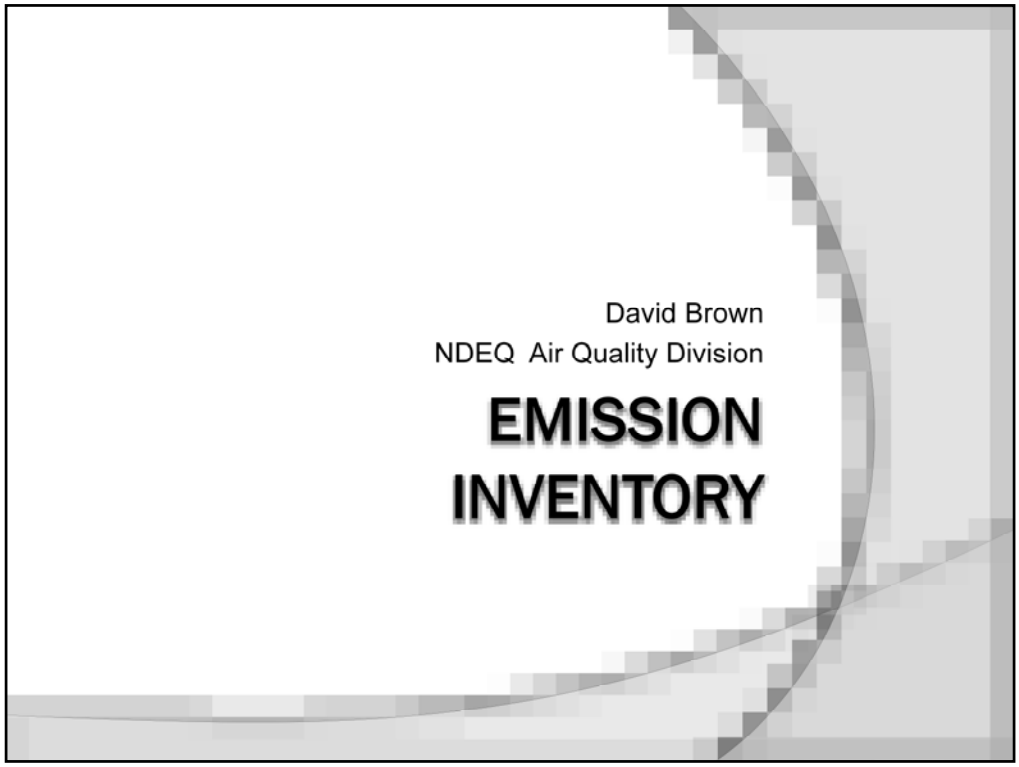
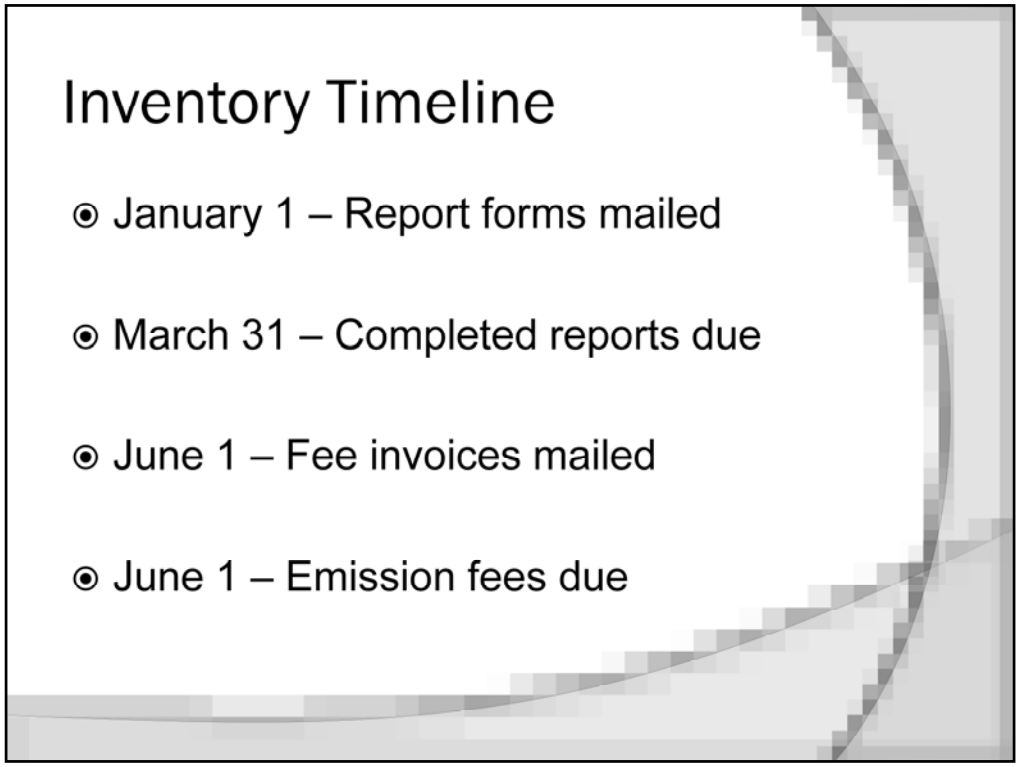



❖Data collected is not only used within our state but also increasingly used in national studies.

❖Inventory data we collect serves as a fundamental tool for most all of the work we do.

❖Essential to collect accurate data.




❖Mailing includes report form, instructions, HAP list, cover letter noting any important changes.
❖Lancaster County & City of Omaha conduct their own inventory programs.
❖Class I & II report annually, lower emitting sources report every 3 years.
❖Report forms tailored to each industry in terms of specific pages received. Sources should notify us if their mailing is not right for their facility.
❖Due date is the postmarked date for both reports and fees.
❖Only class I major sources pay fees.
❖30 days given for fee payments, occasionally the due date is extended slightly if invoices are mailed late.
❖Late fees – 20% initially, additional 10% of original fee due for each 30 day period it is late.

## Report Forms

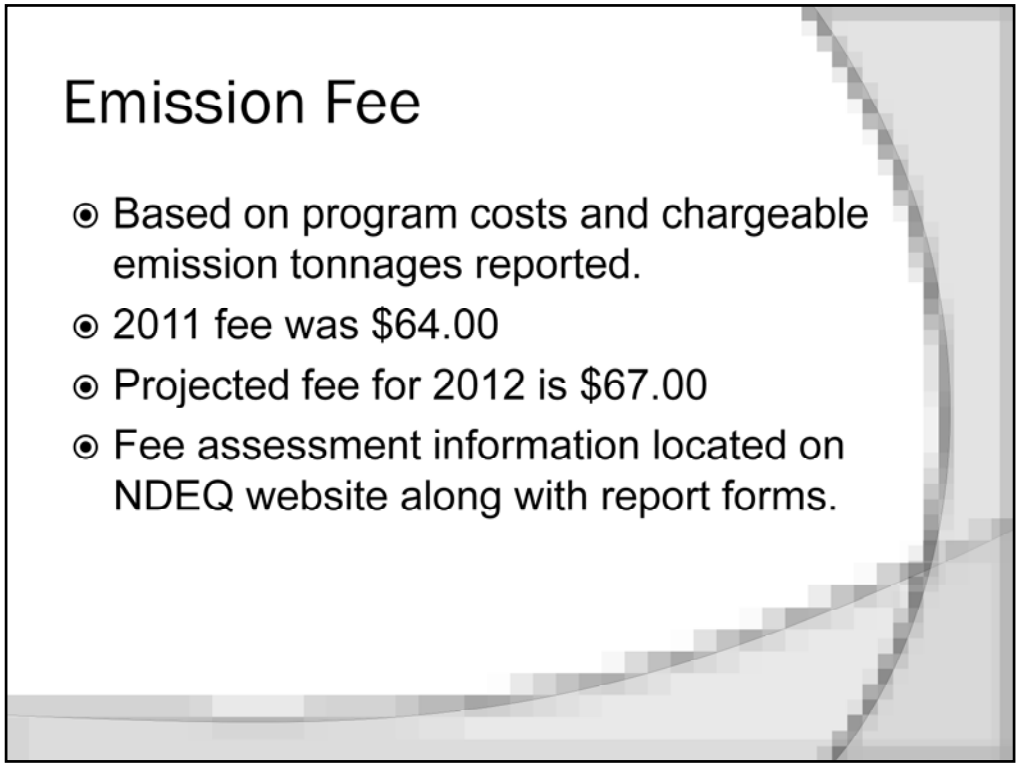
- NDEQ website www.deq.state.ne.us
- Select links for "Publications & Forms" and "Air Quality"
- Link for "2011 Air Emissions Inventory Report Forms" under "Applications and Forms" section.

❖On our website you will find the report form, instructions, and cover letter.

❖No electronic inventory submittals.

❖A listing of all facilities from which the NDEQ is requesting a report can also be found along with the forms.

❖Facility list is updated at the time the inventory reports are mailed.




❖Fees are used to fund the air quality Class I permit program.

❖2011 fees fund state fiscal year 2013 which began July 1, 2012.

❖Fee last year was $66 and projection for this year was $68.

❖Fee invoices note "amount subject to change". This allows for changes when errors are discovered requiring a refund or additional payment. This is a much improved method over estimating the fee rate before the reports were submitted.

❖Projected rate may be adjusted up or down based on budget or program changes, surplus availability, and total chargeable emissions reported.

## National Emissions Inventory

- www.epa.gov/ttn/chief
- Stationary and Mobile source emissions
- Tracks trends
- Air dispersion modeling
- Toxics risk assessment

❖NDEQ reviews the inventory reports and enters the information into our own database. Control equipment, math, emission points, emission factors are all checked and compared with previous year submittals.

❖Annually NDEQ submits the inventory information relating to all our largest sources to a National Emissions Inventory (NEI).

❖Every 3 years a comprehensive NEI is compiled to include all lower emitting sources as well.

❖NEI data reviewed and QA checked many times over. This at times requires additional follow-up with facilities to clarify information reported on their inventories.

❖Inventory data in the NEI available to the public (excluding confidential material).

State of Nebraska
Department of Environmental Quality

2011 AIR EMISSIONS INVENTORY

FORM 1.0 GENERAL INFORMATION

| Facility Name | | Facility ID # | NAICS Code |
|---|---|---|---|
| Facility Location (Address Or Directions) | | City Or Nearest Community | Zip Code |
| Facility Mailing Address (if different from above) | | City, State | Zip Code |
| County Name | Classification | Facility Phone Number | Facility Contact |
| | | Facility Fax Number | Email Address |

Fill out the information below after completing all applicable forms.

EMISSIONS STATEMENT

Total Plant Emissions (Tons Per Year)

| CO | NH3 | NOx | Lead | PM10 | PM2.5 | SOx | VOC | Greatest Single HAP | Other HAPs |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

Total Plant Greenhouse Gas Emissions (Tons Per Year)

| CO2 | N2O | CH4 | PFCs | HFCs | SF6 |
|---|---|---|---|---|---|
| | | | | | |

Chargeable Emissions (Tons)

| NOx | Lead | PM10 | SOx | VOC | Greatest Single HAP | Other HAPs |
|---|---|---|---|---|---|---|
| | | | | | | |

CERTIFICATION OF TRUTH, ACCURACY, AND COMPLETENESS

Note: This certification must be signed by a responsible official as defined in Title 129. Unsigned inventories will be considered incomplete and may be subject to penalties.

I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the statements and information contained in this inventory are true, accurate, and complete.

| Signature of Responsible Official | Name & Title (printed) | Date |
|---|---|---|
| | | |

❖North American Industry Classification System (NAICS) code has replaced Standard Industrial Classification (SIC) code. Classifies businesses for use in analyzing statistical data. More than one NAICS code may be applicable to a facility.

❖Facility contact should be the person at the plant that can answer questions about the EI report. This does not need to be the responsible official.

❖Facility totals have changed a bit this past year with the addition of greenhouse gas amounts.

❖Total plant emissions should include all VOC, chargeable emissions would avoid double counting by subtracting out the VOC's that are already being included in the HAP totals.

❖No fees for greenhouse gas emissions as well as CO, ammonia, and PM2.5.

❖Sign and complete reports in permanent markers.

FORM 1.1 PROCESS FLOW DIAGRAM

| Facility Name | Facility ID# | Year of Inventory<br>2011 |
|---|---|---|
| Please use this page or a separate sheet to provide a process flow diagram. Do not forget to include all processes used in your facility which produce air emissions. Make sure to label each process. Identify all emission points (including fugitive, if required) and air pollution control equipment. Be sure to provide an identification number for each emission point. Use the same identification number(s) throughout the entire inventory form. | | |

❖Flow Diagram should show the overall flow of production at your facility.
❖If a flow diagram isn't necessarily applicable, then use a picture or written statement that describes the processes.
❖Make sure to be consistent with process ID's on equipment and units noted on the flow diagram with the rest of the report. A person should be able to refer back to this diagram and find all processes and units when reviewing emission calculations from each.
❖The ID's used in this report are user defined, just be consistent. We prefer that you use the same ID's you may have used in permits, applications and previous EI reports.
❖Provide a flow diagram every year even if nothing has changed. The inventory document needs to stand alone and be self contained. A person should not have to reference other inventory submittals in years past.

FORM 2.0 PROCESS INFORMATION

| Facility Name | Facility ID# | Year of Inventory |
|---|---|---|
| | | 2011 |

Facility Operating Schedule

| Hours of Operation/Day | Days of Operation/Week | Weeks of Operation/Year | Hours of Operation/Year |
|---|---|---|---|
| | | | |
| Normal Business Hours: | | | |

Operating Rate Data

| Process Number | Type of Material | Design Capacity | Nameplate Capacity | Raw Material Hourly Throughput | Raw Material Actual Annual Throughput | Product Description | Final Product Actual Annual Throughput |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |

Air Pollution Control Equipment Information

| Process Number | Date Installed | Description of Control Device | Pollutant(s) Removed | Control Efficiency |
|---|---|---|---|---|
| | | | | |
| | | | | |

Stack Parameters

| Process Number | Stack Description (including lining type) | Latitude | Longitude | Height (ft) | Inside Diameter (ft) | Exit Gas Temperature (Deg F) | Exit Gas Velocity (ft/sec) | Exit Gas Flow Rate (Cu ft/min) |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| | | | | | | | | |

❖"Nameplate capacity" is a term that originated with physical nameplates on generators. However, today it is used in a wide variety of industries and refers to many different products.

❖Nameplate capacity is specified by the manufacturer noting the maximum output of the unit. In other words, when the unit is run under optimal conditions.

❖Design capacity on the other hand is the maximum obtainable output of the unit that is actually achieved when in operation.

❖For stack parameters there is a growing need to have good information here with so many modeling efforts going on. This is frequently an item that needs follow-up.

FORM 2.1 EMISSION POINT INFORMATION

| Facility Name | Facility ID# | Year of Inventory |
|---|---|---|
| | | 2011 |

Point Identification

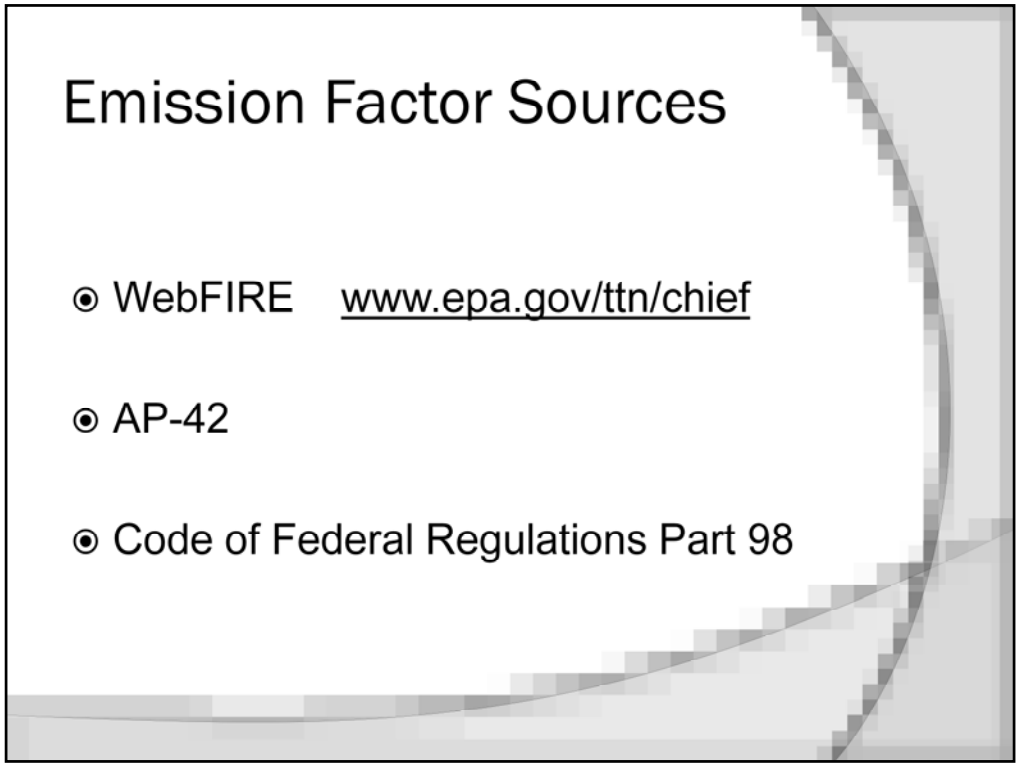
| Point No. | Process Number | Point Description |
|---|---|---|
| | | |

| Source Classification Code (SCC) | SCC Description |
|---|---|
| | |

Emissions Calculations

| Air Pollutant | Annual Throughput (A) | Emission Factor (lb/unit) (B) | Emission Factor Source | Emission Control (C) (1.0 - Control Efficiency) | Actual Emissions (tons/yr)* [A x B x C/2000] |
|---|---|---|---|---|---|
| CO | | | | | |
| NH3 | | | | | |
| NOx | | | | | |
| Lead | | | | | |
| PM10 | | | | | |
| PM2.5 | | | | | |
| SOx | | | | | |
| VOC | | | | | |

❖Duplicate this page for each emission unit
❖Pay attention to the units specified for the emission factors.
❖With SCC (Source Classification Codes) , one should make every attempt to get these right. QA checkers are becoming increasingly more sensitive to these codes. Specifically, some SCC codes that historically have referred to emission factors in a more general sense are now being refined further and are now rejected in the QA process.
❖SCC code tables can be found on the EPA Chief website.
❖NDEQ is currently upgrading our data handling system to be more compatible with the Federal system.
❖An emission factor source hierarchy is being proposed to change our regulations on emissions reporting. This will remove any ambiguity as to what emission estimation methods one should use when multiple methods are available.




❖WebFIRE is EPA's recommended database for emission factors (criteria & HAP's). Specific search criteria such as SCC code can be used or something much more general such as a description of a process can be used when searching the WebFIRE database.
❖AP-42 is incorporated within WebFIRE, however, AP-42 does provide better descriptions of the processes.
❖One can also use CFR Part 98 as a source of greenhouse gas emission factors along with WebFIRE.

## CHIEF Listserv

- Clearinghouse for inventories & emission factors
- New emission factor information
- Updates to software tools

- To join the CHIEF listserv send email to: Join-chief@lists.epa.gov

❖The CHIEF listserv is maintained by the Emission Inventory and Analysis Group and the Measurement Policy Group at EPA.

❖E-mail notices sent when new information or updates occur.

## Emission Source Hierarchy

- Continuous Emission Monitor
- Stack Tests
- Mass Balance or Manufacturer's Guarantee
- Manufacturer/Engineering Estimate
- Emission Factors (WebFIRE)

❖Hierarchy being proposed to make a change to our state regulations.
❖Emissions reported on the inventories need to be as accurate as possible.
❖There may be a number of ways to calculate emissions from a specific unit with some of them being more accurate than others. This hierarchy clarifies which methods are more accurate.
❖Methods listed are in order of decreasing accuracy and should be selected accordingly.
❖The regulations will also allow for other emission calculation methods provided a justification is submitted and the Director approves. We want the most accurate data and so do not want to eliminate any possible other methodologies.
❖For example, the most current stack test may have been conducted under conditions not found during normal operation.

FORM 2.2 CONTROL MALFUNCTION EMISSIONS

| Facility Name | Facility ID# | Year of Inventory |
|---|---|---|
| | | 2011 |

EVENT INFORMATION

| Point No. | Process Number | Point Description |
|---|---|---|
| Event Period | | |

EMISSION CALCULATIONS

| Air Pollutant | Annual Throughput (A) | Emission Factor (lb/unit) (B) | Emission Factor Source | Actual Emissions (tons/yr) [A x B/2000] |
|---|---|---|---|---|
| CO | | | | |
| NH3 | | | | |
| NOx | | | | |
| Lead | | | | |
| PM10 | | | | |
| PM2.5 | | | | |
| SOx | | | | |
| VOC | | | | |

❖Report actual air emissions that result from quantifiable equipment malfunctions.
❖Specifically, record excess emissions which result from control equipment malfunctions.
❖The event period can reflect a specific event or an aggregate period of time including separate malfunctions if the control equipment and conditions are the same.
❖If the emissions are reported over a period of time, then include with the inventory report a separate listing showing the individual dates and times of the malfunction events. Individual emissions for each of these events do not need to be noted for these cases.
❖Control malfunctions that produce greenhouse gas emissions should be reported on Form 2.3 and be identified with a point description noting the excess nature of these emissions.

FORM 2.3 GREENHOUSE GAS EMISSIONS

| Facility Name | Facility ID# | Year of Inventory |
|---|---|---|
| | | 2011 |

Point Identification

| Point No. | Process Number | Point Description |
|---|---|---|
| | | |

| Source Classification Code (SCC) | SCC Description |
|---|---|
| | |

Emissions Calculations

| Air Pollutant | Annual Throughput (A) | Emission Factor (lb/unit) (B) | Emission Factor Source | Emission Control (C) (1.0 – Control Efficiency) | Actual Emissions (tons/yr)* {A x B x C/2000} |
|---|---|---|---|---|---|
| CO2 | | | | | |
| N2O | | | | | |
| CH4 | | | | | |
| PFCs | | | | | |
| HFCs | | | | | |
| SF6 | | | | | |

- The greenhouse gas form is new this year.
- Report the emissions on a point by point basis or as a facility total.
- No fees due for greenhouse gas emissions.
- CO2 – carbon dioxide
- N2O – nitrous oxide
- CH4 – methane
- PFC's – perfluorocarbons
- HFC's – hydrofluorocarbons
- SF6 – sulfur hexafluoride
- Roughly half(54%)of the greenhouse gasses across US result from point type sources [electricity production (34%), industry (20%)]. The rest comes from transportation and residential areas. Emissions result largely from burning fossil fuels.
- Nebraska's point source inventory will be supplemented with EPA estimates for transportation/residential areas in the NEI.
- Greenhouse gas emissions are now being required to be reported on the emissions inventory as a result of permit requirement changes.
- Reporting greenhouse gas emissions to the Department does not replace the federal EPA reporting requirement of these same emissions.

FORM 3.0 FUEL COMBUSTION WORKSHEET

| Facility Name | Facility ID# | Year of Inventory |
|---|---|---|
| | | 2011 |

| Unit I.D. No. | Equipment Description | Combustion Equipment Category (turbine, reciprocating, boiler, pulverized coal, hand fired, large bore, etc.) | Year Installed | Maximum Design Rate (Million BTU/hr) | Fuel Type (No. 2 fuel oil, natural gas, propane, anthracite coal, etc.) Primary / Secondary Fuel |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Annual Throughput Information

| Unit I.D. No. | Annual Throughput (Units/yr) | SCC Code | Heat Content of Fuel (BTU/Fuel Unit) | % Sulfur by Weight (coal and fuel oil only) | % Ash by Weight (coal and fuel oil only) |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

❖Report general information on this page for fuel combustion units.

❖Make sure unit ID's are consistent with the flow diagram designations.

**FORM 4.0 HAZARDOUS AIR POLLUTANTS WORKSHEET**

| Facility Name | Facility ID# | Year of Inventory |
|---|---|---|
| | | 2011 |

List any chemicals manufactured or used which appear on the enclosed list of 188 hazardous air pollutants covered by the Clean Air Act Amendment.

The reporting levels of hazardous air pollutants for emissions inventory purposes can be found on the enclosed list. This inventory report should include any single regulated hazardous air pollutant in a quantity greater than the reporting level noted. Also, any combination of hazardous air pollutants in a quantity greater than 2.5 tons must be reported as well.

| HAP Chemical | Process Number | CAS No. | Amount Used (lbs/yr) | Amount Emitted (lbs/yr) |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
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| | | | | |
| | | | | |

Using the information above, indicate below the single HAP which was emitted in the greatest quantity (Greatest Single HAP):

| HAP Chemical/CAS No. | Lbs/year | *Tons/year {(lb/year)/2000} |
|---|---|---|
| | | |

Total all other HAPs. In order to avoid double counting emissions, DO NOT include the Greatest Single HAP in the totals below. The totals below will be referred to as the Other HAPs.

| | |
|---|---|
| Total lbs of other HAPs emitted = | lbs/yr |
| Total tons of other HAPs emitted {total lbs/2000} = | *tons/yr |

❖A list of all the regulated HAP's is mailed along with the report forms, this same list can be found on the NDEQ website in an appendix of Title 129.

❖Note that HAP's need to be reported based on two criteria. Report all single HAP's that are greater than the listed minimum reporting levels AND any combination of HAP's totaling more than 2.5 tons.

**HAZARDOUS AIR POLLUTANTS**

| CAS Number | Chemical Name | VOC | Reporting Level (Lbs/Year) |
|---|---|---|---|
| 75070 | Acetaldehyde | Yes | 2,000 |
| 60355 | Acetamide | Yes | 1,000 |
| 75058 | Acetonitrile | Yes | 1,000 |
| 98862 | Acetophenone | Yes | 1,000 |
| 53963 | 2- Acetylaminofluorine [8] | Yes | 10 |
| 107028 | Acrolein | Yes | 40 |
| 79061 | Acrylamide | Yes | 20 |
| 79107 | Acrylic acid | Yes | 600 |
| 107131 | Acrylonitrile | Yes | 300 |
| 107051 | Allyl chloride | Yes | 1,000 |
| 92671 | 4- Aminobiphenyl [8] | Yes | 1,000 |
| 62533 | Aniline | Yes | 1,000 |
| 90040 | o- Anisidine | Yes | 1,000 |
| 7440360 | Antimony compounds (except those specifically listed) [5] [8] | No | 2,000 |
| 7783702 | Antimony pentafluoride [8] | No | 100 |
| 28300745 | Antimony potassium tartrate [8] | No | 1,000 |
| 1309644 | Antimony trioxide [8] | No | 1,000 |
| 1345046 | Antimony trisulfide [8] | No | 100 |
| 7440382 | Arsenic and inorganic arsenic compounds [8] | No | 10 |
| 7784421 | Arsine [8] | No | 10 |
| 1332214 | Asbestos | No | 0 |
| 56553 | Benz(a)anthracene | Yes | 20 |
| 225514 | Benz(c)aridine | Yes | 20 |
| 71432 | Benzene | Yes | 1,000 |
| 92875 | Benzidine [8] | Yes | 0.6 |
| 50328 | Benzo(a)pyrene | Yes | 20 |
| 205992 | Benzo(b)fluoranthene | Yes | 20 |
| 98077 | Benzotrichloride | Yes | 12 |
| 100447 | Benzyl chloride | Yes | 100 |
| 7440417 | Beryllium compounds (except Beryllium salts) [5] [8] | No | 16 |
| - | Beryllium salts [8] | No | 0.04 |
| 92524 | Biphenyl [8] | Yes | 2,000 |
| 117817 | Bis(2-ethylhexyl)phthalate(DEHP) | Yes | 2,000 |
| 542881 | Bis(chloromethyl)ether | Yes | 0.6 |
| 75252 | Bromoform | Yes | 2,000 |
| 106990 | 1,3- Butadiene | Yes | 70 |
| 7440439 | Cadmium compounds (except those specifically listed) [5] [8] | No | 20 |
| 130618 | Cadmium oxide [8] | No | 20 |
| 156627 | Calcium cyanamide | No | 2,000 |
| 133062 | Captan | No | 2,000 |
| 63252 | Carbaryl [8] | No | 2,000 |
| 75150 | Carbon disulfide | Yes | 1,000 |
| 56235 | Carbon tetrachloride | Yes | 1,000 |
| 463581 | Carbonyl sulfide | Yes | 2,000 |
| 120809 | Catechol | Yes | 2,000 |

❖A listing of regulated HAP's showing reporting levels is provided with the report form mailing.

❖There are two lists, one alphabetically and one by CAS number.

FORM 5.0 VOLATILE ORGANIC COMPOUND (VOC) WORKSHEET

| Facility Name | Facility ID# | Year of Inventory |
|---|---|---|
| | | 2011 |

List any volatile organic chemicals manufactured or used.

| Material Name | Process Number | Amount Used (gal/yr) | VOC Content (lb/gal) | Total VOC (lb/yr) | Total VOC Emitted (lb/yr) |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
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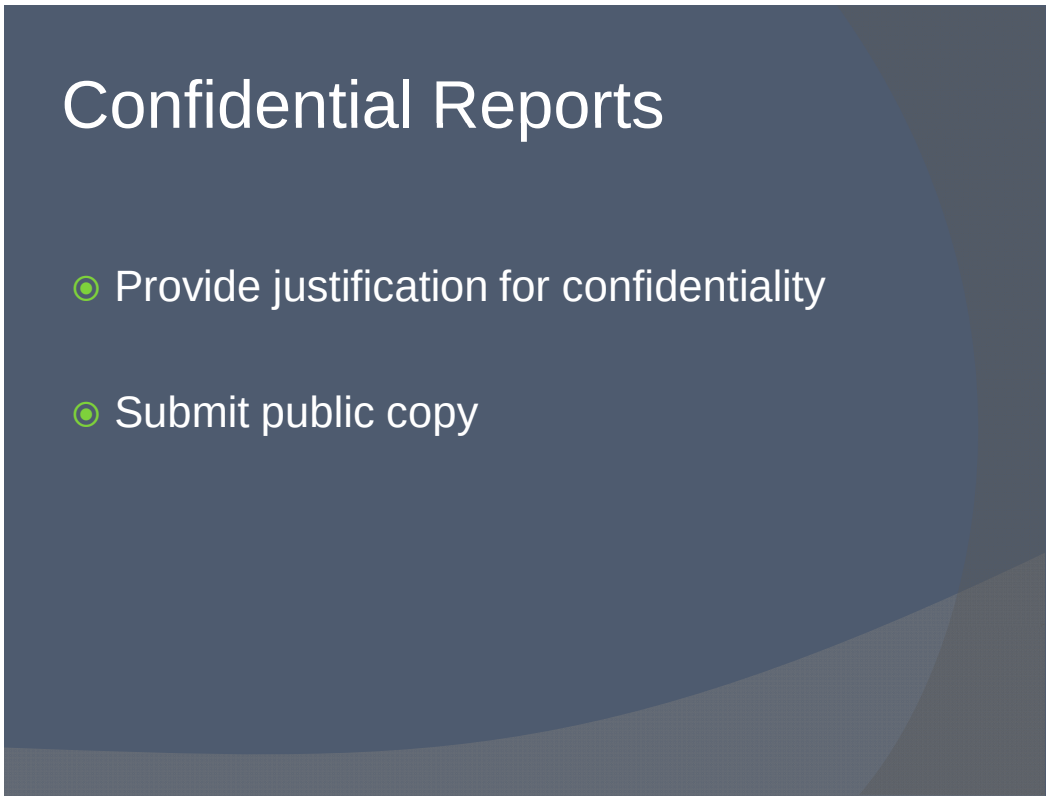
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | Total VOC Emitted = | | lb/yr |
| | | | Total Tons of VOC Emitted (lb/2000) = | | *tons/yr |

❖VOC information should reflect total VOC's . VOC's that are also HAP's should be subtracted out when figuring total chargeable emissions.

## Facility Specific Forms

- Grain Elevators & Feed Manufacturing
- Alfalfa Dehydrators
- Crushed Stone Processing
- Asphalt Plants
- Concrete Batch Plants
- Aggregate Facilities
- Petroleum and Chemical Storage
- Incinerators

❖These worksheets include what are typical emission points for these types of facilities. If you have something a little different, you will need to cover that on form 2.1 separately. Don't feel that these are the only emission points we need you to report on.

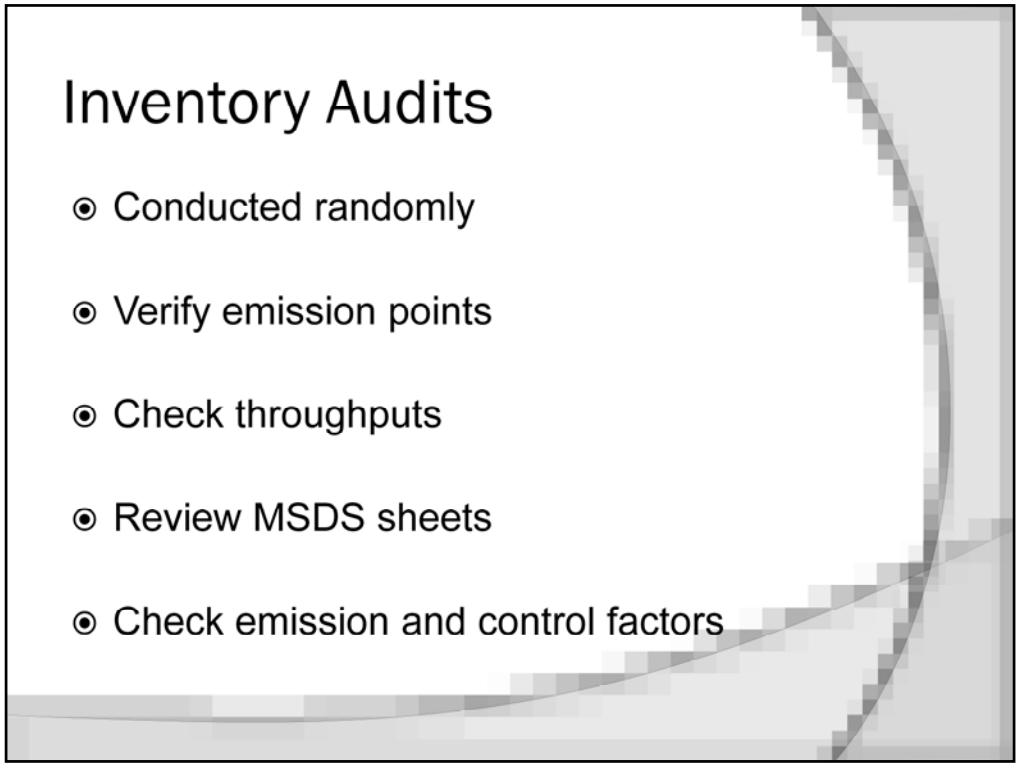



❖Justification for confidentiality needs to be provided with every submission.

❖One must justify how making the information public would put the business at a competitive disadvantage.

❖A public copy of the inventory report needs to be submitted along with the confidential one. Confidential information should be marked out or removed from the public copy since it will be available in the public file.

❖Inventory reports are public information and can be requested through the NDEQ Records Management section. Typically the information is provided on a CD ($3.00).




❖Audits are conducted randomly across the state and across all industry types, big and small.
❖The audits may or may not be in response to a complaint or problem. EPA requires us to conduct a certain number of these annually.
❖Emission points will be verified on a tour of the plant.
❖Throughputs will be checked against purchasing and production records.
❖Material Safety Data Sheets will be reviewed. So, keep these current like you would need to for any compliance inspection.
❖If a unique method is used to estimate emissions or control factors are used that are not typical, then justification for their use should be available for review.
❖Audit reports are generated noting all findings and follow-up if needed just like any compliance inspection.

## Contact Information

- Email dave.l.brown@nebraska.gov
- Phone (402) 471-3389
- Fax (402) 471-2909
- Department of Environmental Quality
  Grants, Planning & Outreach Unit
  PO Box 98922
  Lincoln, NE 68509-8922

❖Note “l” not “1” in email address.