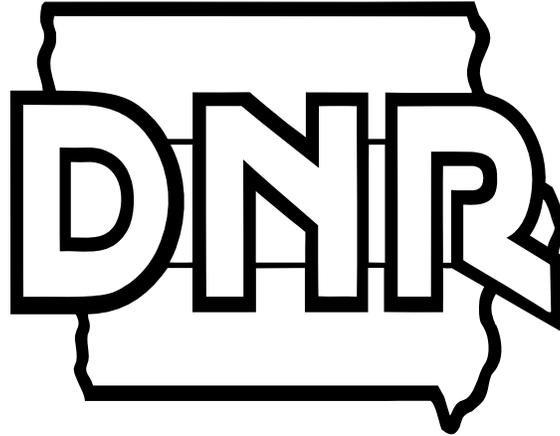


Minor Source Emission Inventory (MSEI) Instructions

(Revised January 2020)



Iowa DNR - Air Quality Bureau

<http://www.iowacleanair.gov>

Return the MSEI with relevant Safety Data Sheets and supporting documentation by May 15 to:

**Emissions Inventory
Air Quality Bureau, DNR
Wallace Building, 2nd Floor
502 E 9th St
Des Moines IA 50319**

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DNR Air Quality Contacts

Emission Inventory Questions

[Nick Page](#) 515-725-9544

[Krysti Mostert](#) 515-725-9567

[Seth Anderson](#) 515-725-9559

Greenhouse Gas Questions

[Marnie Stein](#) 515-725-9555

Iowa Waste Reduction Center

[Iowa Air Emissions Assistance Program](#) (IAEAP)

University of Northern Iowa

1-800-422-3109 or

319-273-8905, Fax: 319-273-6582

Air Bureau Records Center

515-725-9553

Air Bureau Numbers

515-725-8200 (phone)

515-725-9501 (fax)

Asbestos Program

[Tom Wuehr](#) 515-725-9576

[Construction Permit Section](#)

1-877-AIR-IOWA (1-877-247-4692)

Compliance Section

[Mark Fields](#) 515-725-9526

Hazardous Air Pollutants, MACTs

[Casey Laskowski](#) 515-725-9514

[SLEIS Helpdesk](#)

[SLEIS electronic resources](#)

Stack Test Information

[Mark Fields](#) 515-725-9526

Title V Operating Permits

[Chris Kjellmark](#) 515-725-9537

[Weston Li](#) 515-725-9580

[Polk County Air Quality](#)

515-286-3705 (phone)

515-286-3437 (fax)

[Linn County Air Quality](#)

319-892-6000 (phone)

319-892-6099 (fax)

Online Resources

DNR Air Quality Bureau

[Air Quality Bureau Homepage](#)

Minor Source Emissions Inventory Forms

[DNR MSEI Forms](#)

eAirServices

Access [eAirServices](#) - a secure portal for online business services. It is the entry point for the regulated community and consultants to electronically complete and file air emissions inventories and permit applications.

[EPA Emission Factors](#)

Latitude and Longitude

[Google Maps](#)

[iTouchMap](#)

[Google Earth](#)

[GPS Visualizer](#)

Facility Classification Systems

[SIC Codes](#)

[NAICS Association](#)

SCC Codes

For a list of SCC codes visit the [Emissions Inventory Tools webpage](#). Scroll down to "Classification Lists and Conversions." Click on "[Updated Source Classification Codes 10/11/19.](#)" Ethanol and Biodiesel plants should click on "[Ethanol and Biodiesel Source Classification Code \(SCC\) List.](#)"

Calculation Spreadsheet and Tools

To access calculation spreadsheets for painting operations, haul roads, and asphalt, concrete and limestone processes visit the [Emissions Inventory Tools webpage](#). Scroll down to "Emissions Inventory Worksheets" then click on the spreadsheet of interest.

Iowa Air Emissions Assistance Program (IAEAP)

<http://iwrc.uni.edu/iaeap>

Iowa Administrative Code (IAC)

<https://www.legis.iowa.gov/law/administrativeRules/agencies> See section 567, Chapters 20-32

General Instructions/Purpose

Introduction

This packet contains forms, instructions, and information needed to complete a **minor source emissions inventory**. Submitting a complete inventory is required by 21.1(3) of the Iowa Administrative Code. Some companies may be unfamiliar with air quality terms, therefore a glossary is included in Appendix A. Terms included in the glossary are bolded and italicized. In addition, general air program definitions are found in 567 Iowa Administrative Code (IAC) 20.2. The IAC is available on the internet at <https://www.legis.iowa.gov/law/administrativeRules/agencies>.

The deadline for submitting a completed Minor Source Emissions Inventory is May 15. If you need assistance completing the inventory please contact the DNR or the [Iowa Air Emissions Assistance Program](#).

Getting Help Completing Your Inventory

The DNR assists small businesses by funding the Iowa Air Emissions Assistance Program (IAEAP) at the University of Northern Iowa. The IAEAP has developed a support webpage that contains emissions calculators, on-line tutorials, helpful links, answers to frequently asked questions and contact information. IAEAP also offers one on one assistance as requested by facilities as time permits. If you would like to utilize this free assistance, please contact IAEAP staff by calling 1-800-422-3109 or visiting the Iowa Air Emissions Assistance Program [website](#).

The DNR will provide assistance to facilities upon request or as time permits. If your facility would like assistance, please contact one of the emission inventory staff on the air quality contacts list on page 1 of this booklet or visit the [Minor Source Emissions Inventory webpage](#) for helpful tools, links, resources, and answers to frequently asked questions.

Please contact the DNR or IAEAP with any questions before submitting the MSEI. If the MSEI is incomplete or incorrect calculations were used, the DNR will require additional submittals until the MSEI is complete and correct.

Emissions Reporting

All regulated air pollutants including the seven **Criteria Pollutants (including PM_{2.5})**, 187 **Hazardous Air Pollutants (HAPs)**, and **Ammonia** are required to be reported in the MSEI. The definition of volatile organic compounds (VOC) can be found in Appendix A and a listing of all HAPs can be found in Appendix B. Please consult this list if you are unsure if a pollutant needs to be reported.

Emission estimates should be evaluated for all emission sources at your facility including **fugitive emissions**. However, it may not be necessary to report all of the sources or pollutants in the MSEI. Please refer to page 4 for a list of sources that are considered exempt from the minor source emissions inventory.

Actual emissions need to be reported for each emission unit. **Emissions units** may be grouped for reporting actual emissions *only* if the emission units and their processes are identical, have identical control equipment, and they exhaust to the same release point. If an emission unit has multiple processes, each process should be reported on a separate form.

Actual Emissions

Actual emissions are the actual rate of pollutant emissions from an emission unit. Actual emissions are calculated using the emission unit's actual operating hours, production rates, and quantities of materials processed, stored, or combusted for the calendar year.

Exemptions

The DNR considers the following items exempt from MSEI reporting at this time:

1. Any pollutant with actual emissions of less than 0.005 tons per year. When reporting emissions, pollutants only need to be rounded to the nearest one hundredth of a ton;
2. If all pollutants for an emission unit have actual emissions of less than 0.005 tons per year (rounded down to 0.00 tons), then the emission unit can be excluded from the inventory;
3. Fuel-burning equipment for indirect heating and reheating furnaces with a capacity of less than 10 million BTU per hour input per combustion unit when burning natural gas or liquefied petroleum gas;
4. Fuel-burning equipment for indirect heating with a capacity of less than 1 million BTU per hour input per combustion unit when burning untreated wood or fuel oil;
5. Fuel-burning equipment for indirect heating constructed after 10/23/13 with a capacity of less than 265,600 Btu/hr when burning untreated wood, untreated seeds or pellets, or untreated vegetative materials or burning less than 378,000 pounds/yr of the same materials;
6. Fuel-burning equipment for indirect heating constructed after 10/23/13 with a capacity of less than 50,000 Btu/hr when burning on-spec used oil or burning less than 3,600 gallons/yr of on-spec used oil;
7. Direct-fired equipment burning natural gas, propane, or liquefied propane with a capacity of less than 10 million BTU per hour input, and direct-fired equipment burning fuel oil with a capacity of less than 1 million BTU per hour input, with emissions that are attributable only to the products of combustion;
8. An internal combustion engine with a brake horsepower rating of less than 400;
9. Any generator or engine that operated less than 100 hours during the emissions year;
10. Storage tanks with a capacity of less than 19,812 gallons AND an annual throughput of less than 200,000 gallons;
11. Any container, storage tank, or vessel that contains a fluid having a *maximum true vapor pressure* of less than 0.75 psia;
12. Non-production maintenance activities, which may include brazing, soldering, or welding equipment, and surface coating operations using only hand-held aerosol spray cans;
13. *Manually operated equipment* (see definition in Appendix A on page 51) used for buffing, polishing, carving, cutting, drilling, machining, routing, sanding, sawing, scarfing, surface grinding, or turning;
14. Indoor-vented powder coating operations with filters or powder recovery systems;
15. Parking lots and employee roads used to get to and from work. However, unpaved and paved roads used to haul material and/or product on a regular basis must be included.

NOTE: Indoor-vented sources MUST be included in the inventory if they do not qualify for any other exemption. If ALL emission units at the facility meet an exemption, the facility should submit a cover letter to the DNR explaining why the emission units are exempt and why the inventory will not be submitted.

Small Unit Exemptions

Emission units that have a small unit exemption justification document required by 567 IAC 22.1(2)“w” *do not* have to be included in the minor source emissions inventory but the exemption justification document must be attached. Such exemption justification documents shall include the following:

1. A narrative description of how the emissions from the emission unit were determined and maintained at or below the annual small unit exemption levels.
2. If applicable, a description of air pollution control equipment associated with the emission unit and a statement that the emission unit will not be operated without the control equipment operating.
3. If control equipment is used, the applicant shall maintain a copy of any report of manufacturer’s testing results of any emissions test, if available. The Iowa DNR may require a test if it believes that a test is necessary for the exemption claim.
4. A description of all production limits required for the emission unit to comply with the exemption levels.
5. Detailed calculations of emissions reflecting the use of any air pollution control devices or production or throughput limitations, or both, for the applicable emission unit.
6. Records of actual operation that demonstrate that the annual emissions from the emission unit were maintained below the exemption levels.
7. Facilities designated as major sources with respect to rules 22.4(455B) and 22.101(455B), or subject to any applicable federal requirements, shall retain all records demonstrating compliance with the exemption justification document for five years. The record retention requirements supersede any retention conditions of an individual exemption.
8. A certification from the responsible official that the emission unit has complied with the exemption levels specified in 22.1(2)“w”(1).

Emissions Estimation Methods

Emissions must be based on the best possible method. Do not use a less preferable method if a more preferable one is available. Using a less preferable method or unacceptable methods could result in your inventory being returned for revisions.

Regardless of the method used to calculate emissions, supporting documentation must be included with the MSEI submittal. This documentation must be sufficient in order to allow DNR to evaluate the emissions calculations.

Methods of Calculating Emissions (*in order of preference*):

1. Continuous emissions monitoring
 2. Valid stack sampling which represents maximum operating conditions
 3. Material balance
 4. EPA-approved emission factors
 5. Vendor supplied emission factors
 6. Engineering estimates based on best available process operating data
- **Continuous Emissions Monitoring** systems measure pollutant concentrations in the exhaust stack 24 hours per day. There is no better method for determining emissions, however, these systems are very expensive and most facilities do not use them.
 - A **Stack Test** measures the concentration of pollutants in the exhaust stack during the test period. Test periods can vary from a couple of hours to an entire day. Stack test data that are representative of current conditions can provide an accurate emission rate for many different processes and pollutants.
 - **Material Balance** can only be used on specific types of emission units. It is most commonly used for surface coating operations (paint booths, dip tanks, etc.). Information must first be gathered on process rates, materials used, and material properties (usually from **safety data sheets** (SDS)). By combining this information with the knowledge of the process, an estimation of actual emissions can be made.
 - **EPA-Approved Emission Factors** are the basis for many calculations. These factors represent industry-wide averages and show the relationship between emissions and a measure of production. You will need to access EPA's emission factors. The DNR will not provide you with the entire volume of emission factors directly; however, if you encounter problems finding emission factors for a source you may contact DNR for assistance. When using EPA or other emission factors, you must use the most recently approved version. Sources of emission factors are listed on page 7.
 - **Vendor Supplied Factors** may be used if a more preferred method is not available. Many manufacturers of industrial equipment provide emission information for their products. This data may be used to calculate emissions only if the manufacturer's data is based on approved stack testing and no significant changes have been made to the emission unit. Supporting documentation must be included in the submittal if vendor supplied factors are used to calculate emissions.
 - **Engineering Estimation** is allowed if a more preferred method is not available. The DNR realizes some processes exist that have no published guidance regarding the estimation of emissions. In these cases, the estimation must be the best possible assessment given the amount of data available. Supporting documentation must be submitted to show how the estimation was made.

More details on these emission estimation methods may be found [on this EPA website](#).

Sources of Emission Factors

WebFIRE is the internet version of FIRE and it has replaced the software application, FIRE version 6.25, and the Microsoft Access version of the database. An internet version of FIRE allows more frequent updates and easier access. Log on to <https://cfpub.epa.gov/webfire/> to access WebFIRE.

AP-42 COMPILATION OF AIR POLLUTANT EMISSION FACTORS is the recommended source of air pollutant emission factors, with descriptions of activities emitting criteria and hazardous air pollutants.

TANKS The Tanks 4.09D software estimates VOCs and hazardous air pollutants from vertical and horizontal fixed-roof tanks, internal and external floating-roof tanks, domed external floating roof tanks and underground storage tanks. It is based on the emissions estimation procedures presented in Section 7.1 of AP-42, 5th Edition.

Tips to Avoid Common Mistakes when filling out your MSEI:

1. Use the most current reporting forms and instructions.
2. Do not use outdated or old emission factors. The most up-to-date emission factors must be used for accurate emissions calculations. If you are referencing a previous inventory, double-check all emission factors as they may have changed since the last emissions inventory submittal.
3. Form INV-6 is intended for facilities to fill out their facility-wide actual emissions for each individual air pollutant. If you are submitting using paper forms, please complete only one INV-6 form by totaling the actual emissions reported on the INV-4 Forms and entering them on INV-6. If you're reporting using the State and Local Emissions Inventory System (SLEIS), the sum of the pollutants will be totaled for you.
4. Many HAPs are also Volatile Organic Compounds (VOCs). List such pollutants as both a HAP and a VOC on Forms INV-4, and INV-6.
5. Only one Form INV-1 is required for a facility's MSEI submittal.
6. Remember to submit Forms INV-2 for all points, and submit Forms INV-4 for all processes.
7. Use DNR's INV-5 Form or other tools to show all your calculations. Please include all supporting documentation which was used to estimate emissions. Supporting documentation includes but is not limited to SDS, stack test summaries and reports, AP-42 citation, mass balance calculations, and any correspondence with DNR or other air pollution control agencies.
8. If higher control efficiencies are reported than what is given in the Control Efficiency Guidance Document (Appendix C), these control efficiencies must be verified by test data from an EPA-approved method. Please include supporting documentation of the test data, which confirms the reported control efficiency.
9. Make sure PM_{2.5} and Ammonia emissions are included where applicable on each Form INV-4. If PM₁₀ emissions are being reported, remember to also include emissions estimates for PM_{2.5}.
10. Use correct units of measure for emission factors and annual throughput. Units of measure need to correspond between emission factors and the annual throughput.
11. Remember to fill out the operating schedule on Form INV-4.
12. Do not report total particulate matter (PM), also commonly referred to as total suspended particulate (TSP). Report only total PM₁₀ (particulate matter 10 microns or less in diameter) and total PM_{2.5} (particulate matter 2.5 microns or less in diameter). Total PM₁₀ and PM_{2.5} emissions are commonly referred to as primary PM₁₀ and PM_{2.5}.
13. Remember to include the small unit exemption justification document for all emission units which meet 567 IAC 22.1(2)"w." An INV-2 and INV-4 form **does not** need to be filled out for emission units that meet small unit exemption status. Please see page 5 for a complete list of what needs to be included in a small unit exemption justification document.

Submitting the MSEI to the DNR

Submittal Deadline: May 15

A completed Minor Source Emission Inventory should be returned to the DNR as a paper copy or electronically by using the State and Local Emissions Inventory System (SLEIS). If the facility is not required to submit the emissions inventory because they are exempt, an exemption letter should be returned to the DNR indicating the reasons they are exempt from the requirement.

Keep a Copy – Keep a copy of your completed MSEI. Upon review of the emissions inventory, DNR staff frequently have questions. A copy will also be useful to you when completing future MSEIs. Only mail one copy.

The emission inventory data must be submitted electronically using SLEIS or by using forms provided by DNR.

Paper Copy

The forms can be obtained on the [Emissions Inventory Forms website](#). If you do not have web access, you may contact the DNR to obtain paper forms. All information must be typed due to the volume of MSEIs the DNR receives. Other formats are not accepted.

SLEIS

The DNR offers an online emissions inventory reporting tool called the State & Local Emissions Inventory System (SLEIS). This web-based system has been populated with emissions data and facility equipment information that will allow for simpler and streamlined reporting. In addition, SLEIS offers the option of importing emissions data via a spreadsheet template, significantly reducing data entry for facilities with a large number of emission processes. For more information about accessing your facility's data in SLEIS and e-reporting, please visit [the Iowa DNR's eAirServices website](#) or contact us at sleis@dnr.iowa.gov.

SLEIS training sessions will be announced on the Air Quality Bureau's home page on the eAirServices website under the "What Kind of Training Is Available" heading, and through the DNR's Air Quality listserv. DNR's air quality technical listserv is targeted to the regulated public and consultants to deliver timely regulatory news, program updates, and technical guidance to your e-mail account. To subscribe, go to www.iowaCleanAir.gov and click on Sign up for Air Quality Technical Updates. For more information, please contact DNR's Wendy Walker at 515-725-9570 or wendy.walker@dnr.iowa.gov.

Confidentiality

The DNR recognizes the need to keep certain information about facility operation confidential. If you have any questions about keeping submitted information confidential, contact Kelli Book, DNR legal staff at 515-725-9572 or at kelli.book@dnr.iowa.gov.

SDS

If using mass balance to estimate emissions, then copies of all safety data sheets (SDS) for materials used at each emission unit during the previous calendar year must be included with the MSEI submittal. Also, include the amount of each material used for each product. SDS are needed for a complete review of the submitted MSEI. Facilities may submit a [paint spreadsheet](#) in lieu of the SDS.

Minor Source Emission Inventory Form Instructions

Form Instructions: Form INV-1

Only one Form INV-1 (Facility Identification) is required per facility

- 1. Emissions Inventory Type:** Check initial if this is your first submittal for the current emission year. Check supplemental if you are submitting additional information for an emissions inventory that was already submitted for the current emission year.
- 2. Facility Identifier:** The facility identifier is a unique number assigned to your plant. It can be found on the mailing you received regarding the emissions inventory reporting requirement. This number has the following format: ##-##-####.
- 3. Company/Facility Name:** Enter the official company name and/or plant designation for the facility submitting the MSEI. This official facility name must be entered the same on every form submitted.
- 4. Number of State-Wide Company Employees:** Check less than or equal to 100 if your company employs less than or equal to 100 people at all facilities combined in the state of Iowa. Check greater than 100 if your company employs more than 100 people at all facilities combined in Iowa.
- 5. Emission Year:** Enter the calendar year for which you are submitting an emissions inventory. Usually, this will be the previous year.
- 6. Facility Street Address, 7. Facility City, and 8. ZIP Code:** The street address is the physical location of the facility, not the address of a corporate office where the MSEI may have been filled out.
- 9. Emissions Contact Person:** The emissions contact is the person most familiar with the operations of the plant and who should answer any questions regarding the MSEI submitted for this particular facility.
- 10. Emissions Contact Phone Number and Emissions Contact E-mail Address:** The telephone number where the emissions contact person can be reached directly and the e-mail address where the emissions contact person can be reached directly.
- 11. Mailing Street/P.O. Box Address, 12. Mailing City, 13. Mailing State, and 14. ZIP Code:** The mailing address of the facility.
- 15. Parent Company/Owner Name:** Complete this block with the name of the parent company or owner if another company at a different location owns your company wholly or in part. If there is no parent company at a different location, please leave this block blank.
- 16. Parent Company/Owner Mailing Address:** Enter the mailing address of the parent company or owner if one is identified in Box 15.
- 17. City, 18. State, 19. Zip Code:** Enter the city, state, and zip code of the parent company or owner identified in Box 15.
- 20. Parent Company Contact/Agent:** Enter the name of a person to contact at the parent company or the registered agent for the company.
- 21. Parent Company Contact Phone Number:** Enter the telephone number of the contact, if any is identified in Box 20.
- 22. Name of Responsible Official, 23. Title of Responsible Official, 24. Signature of Responsible Official, and 25. Date of Signature:** Enter the contact information, signature, and date of signature of the company official that is certifying the truth, accuracy, and completeness of the emissions inventory submission.

26. Primary Standard Industrial Classification (SIC): Enter the SIC code number that best describes the type of activity occurring at this facility. The SIC is a four digit number used to identify industries. The first two digits are the “major group” of a facility. For example, major group 20 is “Food and Kindred Products.” The last two digits of the SIC code identify the specific type of facility. Food products that have 43 as the last two digits, for instance, make Cereal Breakfast Foods (SIC code 2043). The Standard Industrial Classification Manual contains all SIC codes and may be available at your local library. SIC codes can also be found on the [OSHA SIC website](#).

There are times when sources having different major SIC codes may be part of the same facility. *In that case, use the SIC code that is the main one for your operations.* For example, a facility that both makes and prints on cardboard boxes has two SIC codes. It’s primary SIC code is 2653, Corrugated and Solid Fiber Boxes. Since the company does some of its own printing on site, its secondary SIC code is 2754, Commercial Printing, Gravure. List 2653 as the primary SIC code and list 2754 in Box 28.

North American Industrial Classification (NAICS): Enter the NAICS code number that best describes the type of activity occurring at this facility. This is a six-digit number used to identify the type of industry and describe the activity occurring at the facility. This six-digit hierarchical structure allows greater coding flexibility than the four-digit structure of the SIC. The NAICS code may be found on the [NAICS.com search](#).

27. Activity Description: Enter a written description of the activity occurring at this facility.

28. Secondary Activities: Enter the SIC and NAICS codes and written descriptions of any secondary activities that may be occurring at the facility (see discussion of secondary activities in #26 above).

29. Plant Location: Enter the plant’s latitude/longitude in degrees to six decimal places. This information may be obtained from your property deed or county plat maps available at your local library or county recorder. If not available, please refer to the latitude and longitude reference websites on page 2 of this instruction booklet. For help converting degrees, minutes and seconds to a decimal, visit this [website for converting to degrees, minutes, and seconds](#). **Note: if you are using SLEIS and the latitude/longitude has already been pre-filled by DNR, please do not change the coordinates.**