

**Iowa EASY Air**  
**TITLE V OPERATING PERMIT**  
**ELECTRONIC APPLICATION INSTRUCTIONS**  
(Revised June 2026)



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Environmental Services Division  
Air Quality Bureau  
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# Introduction

Created as part of the federal Clean Air Act Amendments in 1990, the Title V program ensures larger industries comply with air quality requirements—protecting health, safety and economic opportunities for Iowans. Air quality regulations placed upon industry through state and federal rule requirements are varied and can be quite complex. A Title V permit compiles these regulations for a facility into a single document. Part of this permitting process includes deciding if existing monitoring requirements are enough to ensure ongoing compliance with the appropriate requirements. Once completed, a Title V permit helps the facility comply, and the DNR inspect and review compliance. Consistent compliance and comprehensive inspections lead to improved air quality.

## Title V Operating Permit Application Contents

The Title V Operating Permit Application is divided into two sections. The first section includes eight forms that ask for equipment information such as stack characteristics and location, emission unit descriptions, potential-to-emit information, control equipment, and monitoring equipment.

The second part, the “General Facility Requirements” and required attachments, require the identification of all applicable requirements for each emission unit at the facility and requires plans for demonstrating compliance on an ongoing basis. For those sources at the facility that are not in compliance, schedules for coming into compliance must be included. A Title V permit cannot be issued unless the facility complying with all requirements or is complying with an enforceable compliance schedule.

### Title V Applicability

Facilities are subject to the Title V Operating Permit Program if, considering enforceable permit restrictions, potential emissions<sup>1</sup> exceed any of the following:

| MAJOR SOURCE THRESHOLDS   |                   |
|---|-------------------|
| Pollutant   | Threshold         |
| Particulate Matter (PM <sub>2.5</sub> ) (Aerometric Diameter < 2.5 Microns) | 100 tons per year |
| Particulate Matter (PM <sub>10</sub> ) (Aerometric Diameter < 10 Microns)   | 100 tons per year |
| Sulfur Dioxide (SO <sub>2</sub> )   | 100 tons per year |
| Nitrogen Oxides (NO <sub>x</sub> )  | 100 tons per year |
| Volatile Organic Compounds (VOCs)   | 100 tons per year |
| Carbon Monoxide (CO)  | 100 tons per year |
| Lead  | 100 tons per year |
| Any Single Hazardous Air Pollutant (HAP)                                    | 10 tons per year  |
| All HAPs combined   | 25 tons per year  |

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<sup>1</sup> Potential to emit for criteria pollutants (PM<sub>2.5</sub>, PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub>, VOC, CO and Pb) may include fugitives for some source categories. Refer to 567 IAC 24.101 and 24.100 definitions of "major source" and "stationary source categories."

The full definition of Title V applicability, which includes facilities that are subject to New Source Performance Standards (NSPS), National Emission Standards for Hazardous Air Pollutants (NESHAP) and Acid Rain program, is found in [567 IAC 24.101](#).

### **Potential to Emit**

Potential to emit is calculated assuming the equipment is running at maximum capacity while operating at the maximum hours of operation under its physical and operational design. Usually, maximum hours of operation are 8760 hours per year unless enforceable limitations on hours of operation have been incorporated within the construction permit or an enforcement order for that equipment. Bottle-necks in a production line do not constitute an enforceable limitation on production unless those bottle-necks are included as an operating condition in a federally enforceable permit. Therefore, in most cases bottle-necks cannot be used as a basis for limiting an emission unit's capacity below the manufacturer's rated capacity. Only enforceable limitations on raw materials, fuels, capacity or hours of operation can be used to limit potential emissions.

Fugitive emissions of criteria pollutants must be included when calculating potential emissions to determine Title V applicability if the facility is one of the 27 "Stationary Source Categories" listed in [567 IAC 24.100](#). If the facility is not one of the 27 "Stationary Source Categories", fugitive emissions of criteria pollutants are not included for determining applicability. Please note that fugitive emissions of HAPs must be included when calculating potential HAP emissions to determine Title V applicability regardless of whether the facility is one of 27 "Stationary source Categories".

## **Title V Fees**

### **Annual Emissions Fee**

The Clean Air Act Amendments of 1990 established an annual emissions fee based on actual emissions. Emission fees are based on actual emissions reported in the emissions inventory for the previous calendar year. The annual emissions fees are due July 1. The DNR and the Iowa Environmental Protection Commission (EPC) review the [Fee Schedule](#) on an annual basis and adjust the fee as necessary to cover all reasonable costs required to develop and administer the programs required by the Act.

### **Application Fee**

The EPC adopted rules and a Fee Schedule in 2015. This includes a fee for renewal and initial Title V applications. By submitting an initial or renewal application or requesting a pre-application meeting / assistance, the applicant agrees to pay for all fees incurred for activities related to the application according to the current [Fee Schedule](#). Title V facilities will be billed quarterly while the permit is under review.

## **Title V Operating Permit Application Due Dates**

Unless otherwise specified, the due date for new Title V sources is within 12 months of becoming subject to Title V program. A renewal application must be submitted at least 6 months, but not more than 18 months, prior to the date of expiration of the current Title V Permit.

## **Title V Application Submission Requirements**

The owner or operator of an air pollution source subject to the Title V Operating Permit Program is required to submit one copy of the Title V application to the DNR through [Iowa Environmental Application System \(EASY Air\)](#). As of January 1, 2023, paper applications are no longer accepted. There is no need to send a hard copy to EPA, Linn, and/or Polk counties as they can access them electronically through Iowa EASY Air. The Iowa EASY Air log in page, access help, instructions, and training materials are available on the DNR's [eAirServices](#) site.

The application must include all emission points, emission units, air pollution control equipment, and monitoring devices at the facility. All emissions generating activities, including fugitive emissions, must be included. The permit application must be supplemented prior to permit issuance if, due to construction, modification, or new regulatory requirement, the originally submitted application no longer accurately describes the operation or regulatory requirements of the facility.

## **Title V Permit Modifications**

A Title V source must apply for a Title V permit modification to implement changes to their facility. There are generally three types of modifications (See [567 IAC 24.111, 112, and 113](#) for complete information):

### **A. Administrative Amendment:**

- An administrative amendment corrects typographical errors, updates to facility contact information or ownership and includes permit revisions that require more frequent monitoring or reporting.
- The following are needed for an administrative amendment: Updated Form 1.0.
- Changes may be implemented immediately upon submittal of the amendment request.

### **B. Minor Modification:**

- A minor modification includes changes that do not violate any applicable requirements; do not involve significant changes to existing monitoring, reporting or record-keeping requirements in the Title V permit; do not require or change a case-by-case determination of an emission limit or other standard; and do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed in order to avoid an applicable requirement to which the source would otherwise be subject.
- A minor modification is generally used for changes that are more than administrative, but that are not required to be processed as a significant modification. Examples are the corrections of stack characteristics, minor operational limit changes in a non-PSD construction permit, a newly permitted emission point that is not subject to any NSPS or NESHAP standards.
- The following are required: Updated Form 1.0 and only the forms involving the changes are needed.
- Changes may be implemented immediately upon submittal of the minor modification

application.

C. Significant Modification:

- A significant modification includes, but is not limited to, all significant changes in monitoring permit terms, every relaxation of reporting or record-keeping permit terms, and any change in the method of measuring compliance with existing requirements.
- The following are required: All forms that are related to the changes in the modification.
- A significant permit modification must be submitted no later than three months after commencing operation of the changed source.

## Definitions

The following sections of [Iowa Administrative Code \(IAC\)](#) contain definitions related to the Title V program.

- Title V definitions are found in [567 IAC 24.100](#).
- General air program definitions are found in [567 IAC 21.1](#).
- Acid Rain definitions are found in [567 IAC 24.120](#).
- Nonattainment area definitions are found in [567 IAC 31.3\(1\)](#).

## Types of Iowa EASY Air Submittals

When creating a new submittal in Iowa EASY Air, there are two submittal types:

A. Title V Pre-Application

- Used if the facility wishes to request a Pre-Application Meeting with the Operating Permits Section of the Department or provide the department with specific information prior to the formal Title V application
- Consists of a Form 1.0 and a section to upload documents to the Department

B. Title V Application

- Used for a facility's formal Title V application submission
- Utilized for initial permits, renewal permits, and permit modifications
- Consists of Form 1.0, Form 2.0, Form CE-01 (if applicable), Form ME-01 (if applicable), Form 3.0, Form 1.3, Form 1.4, Form 1.5, General Facility Requirements, and a section to upload attachments (Emission Point Specific Applicable Requirements, Compliance Assurance Monitoring Worksheet/Plans, Process Flow Diagrams, Engine Information, Boiler/Process Heater Information, CA-01 Calculation Forms, Potential Emission Spreadsheet, Proposed Limits, Cover Letter, other documents)

Steps for the two different types of applications will be discussed in the following pages.

# Title V Pre-Application

## Form 1.0 Facility Identification and Application Certification

Form 1.0 asks for basic information regarding facility ownership, permit contact, billing contact, responsible official, number of employees, and processes and products.

*(Fields marked with an "\*" are required fields.)*

1. **Application Description:** Provide a brief description of the application and any applicable details regarding the information contained in the application.
  
2. **Facility Information:** Using the drop-down box, select the correct Company/Facility Name. The Responsible Official's name will be in parentheses behind the Company/Facility Name.
  - A. **Facility Address:** Iowa EASY Air will auto-fill the facility address associated with the Company/Facility Name.
  
  - B. **Facility Number:** Iowa EASY Air will auto-fill the correct facility number.
  
  - C. **EIQ Number\*:** Iowa EASY Air will auto-fill the correct EIQ number.
  
3. **Permit Contact Information\*:** The permit contact is the person familiar with the operations of the plant and who should answer any questions regarding the permit application submitted for this particular facility.  
Enter the permit contact's First Name, Last Name, Prefix, Title, Mailing Address, City, State, ZIP Code, Phone Number, and Email.
  
4. **Billing & Invoice Remittance Information\*** (if different than permit contact information above):  
The billing contact is the person that will be processing the application fee invoice for the facility. Also enter the First Name, Last Name, Title, Mailing Address, City, State, ZIP Code, Phone Number, and Email of the billing contact.
  
5. **Parent Company Information:** Complete this block if the facility is owned by a parent company or an owner either wholly or in part.  
Enter the Parent Company name, Contact/Agent name, the contact/agent's Title, Mailing Address, City, State, ZIP Code, Phone Number, and Email.
  
6. **Number of Employees\*:** Facility Total is the number of full time and equivalent number of part time individuals employed at the facility. Two part-time workers that are employed 20 hours per week are equivalent to one full time worker. Company Total is the total number of full-time employees that the company employs throughout Iowa.
  
7. **Designation of Responsible Official\*:** The Responsible Official is the person who under [567 IAC](#)

[24.100](#) has the authority to make legally binding decisions. This person will take responsibility for the truth, accuracy, and completeness of the Title V Permit Application on the Submittal page of the application.

- 8. Principal Activity\*:** Provide the Standard Industrial Classification (SIC) code and the North American Industrial Classification System (NAICS) code and the activity descriptions for the facility. These codes are a compilation by the federal government of businesses by type of activity. SIC codes are intended to cover the entire field of economic activity while NAISC codes are specific to the activity performed at the facility.

**Standard Industrial Classification (SIC):** Enter the SIC code number that most appropriately describes the type of activity occurring at this facility and a corresponding written description of the activity. 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 and Kindred Products" that have 43 as the last two digits of their SIC code are classified "Cereal Breakfast Foods manufacturing (SIC code 2043)".

There are times when a source has different major activities and SIC codes. In that case, use the SIC code that is the main one as a Principal Activity and the other SIC code as a Secondary Activity for the facilities operations. For example: a facility manufactures and prints on cardboard boxes. The primary SIC code is 2653, Corrugated and Solid Fiber Boxes. Since the company also prints on the boxes, the secondary SIC code is 2754, Commercial Printing, Gravure.

**North American Industrial Classification System (NAICS):** Enter the NAICS code number that most appropriately describes the type of activity occurring at this facility and a corresponding written description of the activity. NAICS is a two- through six-digit hierarchical classification system, offering five levels of detail. Each digit in the code is part of a series of progressively narrower categories. The first two digits designate the economic sector, the third digit designates the subsector, the fourth digit designates the industry group, the fifth digit designates the NAICS industry, and the sixth digit designates the national industry.

- 9. Secondary Activities:** If the facility has more than one major activity, provide the additional information here. Enter the SIC and NAICS codes and written descriptions of any secondary activities that may be occurring at the facility (see discussion of activities in #8 above).

## Attachments

This section allows you to upload any documents relevant to the Title V Pre-Application Request. Select "Online" and then "Upload". Please upload one file at a time. Repeat the upload process if you have multiple files. The maximum file size allowed is 50MB.

## **Validation & Submission**

This page will conduct a final check to make sure that all forms have been completed. You will be able to view each form and attachment from here.

Once Iowa EASY Air has determined that all forms have been completed, you will be able to click "next" and proceed to the submittal page. On that page, the Responsible Official will be asked to certify compliance, truth, accuracy, and completeness by agreeing to the following terms:

As required by [567 IAC 24.107\(4\)](#), this certification of truth, accuracy, and completeness must be signed by the responsible official as defined in [567 IAC 24.100](#):

"I hereby certify:

- a. Under penalty of law that based on the information and belief formed after reasonable inquiry, the statements and information contained in electronic submissions for which I am the signatory are true, accurate, and complete.
- b. That making false statement, representation, or certification of electronic submissions for which I am the signatory may result in civil or criminal penalties.

Further,

- a. I agree to pay all application fees for this submittal based on the current Fee Schedule.
- b. I agree to pay all fees incurred for the review of the submittal."

# Title V Application

## Form 1.0 Facility Identification and Application Certification

Form 1.0 asks for basic information regarding facility ownership, permit contact, billing contact, responsible official, number of employees, and processes and products.

*(Fields marked with an “\*” are required fields.)*

### **Permit Application Type\*:**

Mark the checkbox that corresponds to the type of application being submitted.

Initial checkbox will only be checked if this is the first Title V Permit Application submittal. Do not check this box if submitting additional information or if renewing a Title V permit. (\*There is an application fee for processing an initial or renewal application or a pre-application meeting / assistance request. See [Application Fee](#) in the Application Introduction for more information.)

Renewal checkbox will only be checked if this is a renewal application to renew an existing Title V permit. Do not check this box if submitting additional information. (\*There is an application fee for processing an initial or renewal application or a pre-application meeting / assistance request. See [Application Fee](#) in the Application Introduction for more information.)

Modification applications are submitted when facilities undergo changes to equipment or operations between renewals. Modifications can be classified as Administrative (as defined in [567 IAC 24.111](#)), Minor (as defined in [567 IAC 24.112](#)), or Significant (as defined in [567 IAC 24.113](#)).

- 1. Application Description:** Provide a brief description of the application and any applicable details regarding the information contained in the application.
  
- 2. Facility Information:** Using the drop-down box, select the correct Company/Facility Name. The Responsible Official’s name will be in parentheses behind the Company/Facility Name.
  - A. **Facility Address:** Iowa EASY Air will auto-fill the facility address associated with the Company/Facility Name.
  
  - B. **Facility Number:** Iowa EASY Air will auto-fill the correct facility number.
  
  - C. **EIQ Number\*:** Iowa EASY Air will auto-fill the correct EIQ number.
  
- 3. Permit Contact Information\*:** The permit contact is the person familiar with the operations of the plant and who should answer any questions regarding the permit application submitted for this particular facility.

Enter the permit contact's First Name, Last Name, Prefix, Title, Mailing Address, City, State, ZIP Code, Phone Number, and Email.

4. **Billing & Invoice Remittance Information\*** (if different than permit contact information above):  
The billing contact is the person that will be processing the application fee invoice for the facility. Also enter the First Name, Last Name, Title, Mailing Address, City, State, ZIP Code, Phone Number, and Email of the billing contact.
5. **Parent Company Information:** Complete this block if the facility is owned by a parent company or an owner either wholly or in part.  
Enter the Parent Company name, Contact/Agent name, the contact/agent's Title, Mailing Address, City, State, ZIP Code, Phone Number, and Email.
6. **Number of Employees\*:** Facility Total is the number of full time and equivalent number of part time individuals employed at the facility. Two part-time workers that are employed 20 hours per week are equivalent to one full time worker. Company Total is the total number of full-time employees that the company employs throughout Iowa.
7. **Designation of Responsible Official\*:** The Responsible Official is the person who under [567 IAC 24.100](#) has the authority to make legally binding decisions. This person will take responsibility for the truth, accuracy, and completeness of the Title V Permit Application on the Submittal page of the application.
8. **Principal Activity\*:** Provide the Standard Industrial Classification (SIC) code and the North American Industrial Classification System (NAICS) code and the activity descriptions for the facility. These codes are a compilation by the federal government of businesses by type of activity. SIC codes are intended to cover the entire field of economic activity while NAISC codes are specific to the activity performed at the facility.

**Standard Industrial Classification (SIC):** Enter the SIC code number that most appropriately describes the type of activity occurring at this facility and a corresponding written description of the activity. 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 and Kindred Products" that have 43 as the last two digits of their SIC code are classified "Cereal Breakfast Foods manufacturing (SIC code 2043)".

There are times when a source has different major activities and SIC codes. In that case, use the SIC code that is the main one as a Principal Activity and the other SIC code as a Secondary Activity for the facilities operations. For example: a facility manufactures and prints on cardboard boxes. The primary SIC code is 2653, Corrugated and Solid Fiber Boxes. Since the company also prints on the boxes, the secondary SIC code is 2754, Commercial Printing, Gravure.

**North American Industrial Classification System (NAICS):** Enter the NAICS code number that most appropriately describes the type of activity occurring at this facility and a corresponding written description of the activity. NAICS is a two- through six-digit hierarchical classification

system, offering five levels of detail. Each digit in the code is part of a series of progressively narrower categories. The first two digits designate the economic sector, the third digit designates the subsector, the fourth digit designates the industry group, the fifth digit designates the NAICS industry, and the sixth digit designates the national industry.

- 9. Secondary Activities:** If the facility has more than one major activity, provide the additional information here. Enter the SIC and NAICS codes and written descriptions of any secondary activities that may be occurring at the facility (see discussion of activities in #8 above).

## Form 2.0 Emission Point Information

Form 2.0 Emission point information identifies the physical characteristics and location of each emission point and the associations among emission points, emission units, control equipment, and monitoring equipment. *(Fields marked with an asterisk\* are required fields.)*

The Form 2.0 Iowa EASY Air page shows a master list of all emission release points at the facility (see picture below). The View/Edit tab allows the user to review and change previously stored information regarding an emission point. We recommend not deleting an emission point even if it becomes inactive, as this can be a valuable way to store information of previous equipment. Instead, we suggest that the user toggle the "Include in Submittal" checkbox to indicate whether or not to include an emission point in a specific submittal. **The "Reset Table" function will remove all Release Point Information entered in the table.**

### Release Point Information

Select All  Select Page All  Show only items included in submittal  
 1 - 16 of 16 displayed, total item(s)

|                          | View/Edit | Delete | Include in Submittal                | Emission Point ID | Emission Point Description |
|--------------------------|-----------|--------|-------------------------------------|-------------------|----------------------------|
| <input type="checkbox"/> |           |        | <input type="checkbox"/>            | EP-01             | Boiler Stack               |
| <input type="checkbox"/> |           |        | <input type="checkbox"/>            | EP-2              | Test                       |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | EP-2-new          | Test                       |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | New EP            | New EP                     |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | EP 0607           | New EP                     |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | EP 0608           | New EP                     |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | 400               | Cooling Tower              |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | 401               | Cooling Tower              |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | EP 0609           | Test                       |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | 402               | Cooling Tower              |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | EP 0614           | EP 0609                    |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | 403               | Cooling Tower              |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | 404               | Cooling Tower              |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | 405               | Cooling Tower              |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | EP 0610           | New EP                     |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | EP 0922           | EP 0922                    |

**Add New Emission Point** **Batch Delete** **Reset Table**

**Exit** **Save** **Previous** **Next**

To add a new emission point, select the "Add New Emission Point" yellow button at the bottom of the table. You will then be prompted to enter the relevant physical characteristics of the Emission Point.

Click "Save" and then close the dialogue box.

Emission Point Information

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**Emission Point Detail Information**

---

\* Emission Point (EP) ID:  \* Emission Point Description:

\* Is this stack/vent used as a Bypass Stack?  Yes  No

\* Discharge Style:  Vertical  
 Vertical With Rain Cap  
 Downward (e.g. gooseneck)  
 Horizontal  
 Indoor Vented  
 Fugitive

\* Stack Shape and Dimensions: (interior dimensions at exit point):  Circular Diameter (ft)  Rectangular Dimensions: (ft.\* ft.)  Other Dimensions (ft)

\* Stack Height Above Ground:  ft

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**Exhaust Stream Information**

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\* Flow Rate:  \* Unit of Measure:  ACFM  SCFM

\* Is the stack temperature ambient?  Yes  No

1. **Emission Point ID\***: Enter the identification number of the emission point. An emission point must be identified consistently on all Title V forms. An emission point is where emissions vent to the atmosphere. Emission points can include stacks, horizontal vents, building ventilation vents, and fugitive sources such as material storage piles (coal, aggregate, etc.) and volatile liquid storage tanks.
2. **Emission Point Description\***: Provide a brief description of the mission point, i.e. boiler #1 & 2 stack, paint booth #7 wall vent, etc.
3. **Emergency Bypass Stack? \***: Check the appropriate box. Check Yes if this emission point is used as an emergency stack for other emission points and identify the emission points that use this stack as an emergency stack.
4. **Bypass Stacks Associated with this Emission Point\***: If there is an emergency bypass stack through which air contaminants from this emission point may be emitted, enter the bypass stack emission point number and description.
5. **Discharge Style\***: Check the button that best describes the emission point.

6. **Stack Shape and Dimensions\***: Provide interior dimensions at the exit point for this emission point.
7. **Stack Height Above Ground\***: Enter the height above the ground of the stack's exit point.
8. **Exhaust Stream Information\***: Enter the flow rate and temperature of the exhaust stream. Please indicate the units of the flow rate by checking the acfm (actual cubic feet per minute) or scfm (standard cubic feet per minute) boxes.
9. **Is the stack temperature ambient? \***: If the exhaust temperature is an ambient temperature, check Yes. If it is not, check No, then enter the correct temperature.

**\*Remember to save the table after each new Emission Point is entered\***



## Form CE-01 Pollution Control Equipment Data Sheet

This form is required for each piece of air pollution control equipment at Title V facilities and provides detailed characteristics and capabilities of the control equipment. *(Fields marked with an asterisk\* are required fields.)*

The Form CE-01 EASY Air page shows a master list of all pollutant control equipment at the facility (see picture below). The View/Edit tab allows the user to review and change previously stored information regarding a piece of equipment. We recommend not deleting a piece of control equipment even if it becomes inactive, as this can be a valuable way to store information of previous equipment. Instead, we suggest that the user toggle the "Include in Submittal" checkbox to indicate whether or not to include a piece of control equipment in a specific submittal. **The "Reset Table" function will remove all Pollution Control Equipment entered in the table.**

|                          | View/Edit | Delete | Include in Submittal                | Equipment Type                      | Control Equipment ID | Manufacturer | Model | Serial Number | Date of Installation |
|--------------------------|-----------|--------|-------------------------------------|-------------------------------------|----------------------|--------------|-------|---------------|----------------------|
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | Selective Catalytic Reduction (SCR) | CE                   |              |       |               | 05/31/2022           |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | Mist Eliminator                     | 400                  |              |       |               | 01/01/1900           |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | Mist Eliminator                     | 401                  |              |       |               | 01/01/1900           |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | Selective Catalytic Reduction (SCR) | 12                   |              |       |               | 05/31/2022           |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | Mist Eliminator                     | 402                  |              |       |               | 01/01/1900           |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | Mist Eliminator                     | 403                  |              |       |               | 01/01/1900           |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | Mist Eliminator                     | 404                  |              |       |               | 01/01/1900           |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | Mist Eliminator                     | 405                  |              |       |               | 01/01/1900           |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | Incinerator                         | 1234                 |              |       |               | 09/01/2022           |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | Recuperative Thermal Oxidizer       | TEST                 |              |       |               | 10/18/2022           |

Add New Control Equipment
Batch Update Pollutants
Batch Delete
Reset Table

To add a new piece of Pollution Control Equipment, select the "Add New Control Equipment" yellow tab at the bottom of the table as shown on the next page. You will then be prompted to enter the relevant physical characteristics of the Emission Point. Click "Save" and then close the dialogue box.

1. **Type of Control Equipment\***: Describe the type of pollution control equipment being represented on this form. For example, pulse jet baghouse, venturi scrubber, etc.
2. **Control Equipment ID\***: Enter the identification number for each pollution control equipment. A pollution control equipment number must be identified consistently on all Title V forms.
3. **Manufacturer**: List the name of the manufacturer of the pollution control equipment.
4. **Model**: List the model of the pollution control equipment.
5. **Serial Number**: Enter the Serial Number of the pollution control equipment.
6. **Date of Installation\***: Enter the date the pollution control equipment was installed at the facility.
7. **Does this equipment exhaust to the atmosphere? \***: Mark an appropriate box. Examples of sources that do not vent to the atmosphere are those that vent back into a building or to other processes or control devices.
8. **Emissions Data\***: Check the box that describes the basis upon which the device's emission control efficiency was determined. If "Other" is selected, please specify. Stack tests may be used to quantify emissions in the application. Please include the test date and the test method used. If stack test data are used submit a copy of the report summary. Do not submit the entire stack test report.

9. **Controlled Pollutant List\***: Specify the different air pollutants being controlled by this piece of pollution control equipment. Search by pollutant code or name.

*% Capture Efficiency\**: Enter the percent emission capture efficiency of this control device. For example, although a baghouse may be 99% efficient in controlling particulate emissions, the pickup hood at the process may be only 40% successful in capturing all of the air contaminants emitted by the process. Estimates of capture efficiency are acceptable if actual capture efficiency is unknown. Be aware that capture efficiencies may be different for different pollutants, i.e. PM<sub>10</sub> vs. PM. If a hood is not used and the system is a closed system, the capture efficiency can be assumed to be 100%.

*% Control Equipment Efficiency\**: Pollution control efficiencies may be obtained from the manufacturer's design control efficiency. Other sources of pollution control equipment efficiency are the AP-42 control factors, or by calculating the efficiency from the tested inlet and outlet concentrations. If two or more control equipment are used to remove the same pollutant, refer to the instructions for Form 4.0 above to calculate the efficiency of the multiple control device system. For a list of acceptable control efficiencies, please refer to the [Control Efficiency Table](#).

*% Combined Control Efficiency\**: The Combined Control Efficiency is the product of Capture Efficiency and Control Equipment Efficiency. The resulted combined control efficiency, with consideration given to capture efficiency, should be used in calculating the potential emissions. *Example: If the capture efficiency is 75% and control equipment efficiency is 90%, the combined control efficiency would be  $0.75 \times 0.90 = 0.675$  or 67.5%.*

10. **Associated Emission Points\***: Select the emission point numbers for all emission points associated with this pollution control equipment.



**\*Remember to save the table after each new Control Equipment is entered\***



## Form ME-01 Continuous Monitoring Systems (CMS)

This form is required only if the facility has continuous emission monitors or operational parameter monitoring for compliance demonstration purposes. Continuous Monitoring Systems (CMS) can be used to demonstrate compliance with some emission limits and requirements. If compliance is demonstrated with a CMS for any emission unit or stack/vent, this form must be completed for each CMS at the facility. For example, a facility with a CMS that monitors both NO<sub>x</sub> and SO<sub>2</sub> only needs to fill one form for the monitor.

The Form ME-01 EASY Air page shows a master list of all pollutant continuous monitoring systems at the facility (see picture below). The View/Edit tab allows the user to review and change previously stored information regarding continuous monitoring systems. We recommend not deleting continuous monitoring systems even if they become inactive, as this can be a valuable way to store information of previous equipment. Instead, we suggest that the user toggle the "Include in Submittal" checkbox to indicate whether or not to include a continuous monitoring system in a specific submittal.

|                              | View/Edit   | Delete  | Include in Submittal                | Monitoring Equipment ID | Manufacturer | Model | Date of Installation |
|------------------------------|---|---|-------------------------------------|-------------------------|--------------|-------|----------------------|
| <input type="checkbox"/>     |  |  | <input checked="" type="checkbox"/> | 47                      |              |       | 10/05/2022           |
| Add New Monitoring Equipment |   |   | Batch Delete                        |                         |              |       |                      |

To add a new Continuous Monitoring System, select the "Add New Monitoring Equipment" yellow tab at the bottom of the table as shown on the next page. You will then be prompted to enter the relevant physical characteristics of the Emission Point. Click "Save" and then close the dialogue box.

- 1. Monitoring Equipment ID\*:** Enter the identification number for each monitoring equipment. A monitoring equipment number must be identified consistently on all Title V forms.
- 2. Name of Manufacturer:** List the manufacturer of this continuous emissions monitor.
- 3. Date of Installation\*:** Enter the date the continuous monitoring system was installed at the facility.
- 4. Model Number-Model Name-Model Year:** Enter the Model name, number and year.
- 5. Data Acquisition System (DAS) information\*:** This section provides information about the information system used to collect the data.
- 6. Monitored Pollutant List:** Check all the boxes that apply to this monitor regarding the pollutants or operational parameters monitored by this CMS.
- 7. Emission Point List\*:** Select the emission point number for the emission point associated with this continuous monitoring system. In other words, identify where the emissions are vented after they are monitored by this CMS.

**Monitoring Equipment Detail Information**

**General Information**

\* Monitoring Equipment ID:  Name of Manufacturer:  \* Date of Installation:   
Model Number:  Model Name:  Model Year:

**Data Acquisition System (DAS) information**

\* Type of system:  Computer  Other

Manufacturer:

\* How often does the Data Acquisition System record sample values?

Comments:

**Monitored Pollutant List**

**Associate Monitored Pollutant**

**Emission Point List**

**Associate Emission Point**

**Save** **Close**

**\*Remember to save the table after each new Monitoring Equipment is entered\***



## Form 3.0 Emission Unit Description - Potential Emissions

Form 3.0 is used to calculate potential emissions for each emission unit. A separate Form 3.0 must be completed for each emission unit at the facility. An emission unit is the specific process that generates the air pollution emissions.

Potential emissions must be calculated based upon the maximum design rate of the emission unit and 8760 hours of operation per year unless the unit is limited in either process rate or hours of operation by a federally enforceable permit or order.

The Form 3.0 EASY Air page shows a master list of all emission units at the facility (see picture below). The View/Edit tab allows the user to review and change previously stored information regarding emission units. We recommend not deleting emission units even if they become inactive, as this can be a valuable way to store information of previous equipment. Instead, we suggest that the user toggle the "Include in Submittal" checkbox to indicate whether or not to include an emission unit in a specific submittal. **The "Reset Table" function will remove all Emission Source Information entered in the table.**

|                          | View/Edit | Delete | Include in Submittal                | Emission Unit ID | Installation Date | Description    |
|--------------------------|-----------|--------|-------------------------------------|------------------|-------------------|----------------|
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | EU-01            |                   | Heating Boiler |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | EU-01-new        |                   | Heating Boiler |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | EU-0608          | 06/06/2022        | Heating Boiler |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | 400              |                   | Cooling Tower  |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | 401              |                   | Cooling Tower  |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | EU-0610          | 09/16/2022        | Heating Boiler |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | EU-0613          |                   | Heating Boiler |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | EU-0613-2        |                   | Heating Boiler |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | 402              |                   | Cooling Tower  |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | EU-0614          |                   | Heating Boiler |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | EU-0614-2        |                   | Heating Boiler |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | 403              |                   | Cooling Tower  |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | EU-0614-3        |                   | Heating Boiler |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | 404              |                   | Cooling Tower  |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | 405              |                   | Cooling Tower  |
| <input type="checkbox"/> |           |        | <input checked="" type="checkbox"/> | EU-2             |                   | Test           |

To add a new Emission Unit, select the "Add New Emission Unit" yellow tab at the bottom of the table. You will then be prompted to enter the relevant characteristics of the Emission Unit. Click "Save" and then close the dialogue box.

The screenshot shows a web-based form titled "Emission Unit". At the top, there are "Save" and "Close" buttons. Below this is a section header "Emission Unit Detail Information". The form contains the following fields:

- \* Emission Unit ID: (text input)
- \* Emission Unit Type: (dropdown menu)
- \* Emission Unit Description: (text area)
- Name of Manufacturer: (text input)
- Model Number: (text input)
- Model Name: (text input)
- Serial No.: (text input)
- \* Date of Construction: (text input)
- Date of Installation: (text input)
- Date of Modification: (text input)

At the bottom of the form, there are another "Save" and "Close" buttons.

*(Fields marked with an asterisk\* are required fields.)*

- 1. Emission Unit ID\*:** Enter the identification number for each emission unit. An emission unit number must be identified consistently on all Title V forms. An emission unit is a piece of equipment where emissions are generated. The emission unit ID should be consistent with the emission unit ID used in your emissions inventory in SLEIS.
- 2. Emission Unit Type\*:** Enter an emission unit type from the drop-down menu that best describes the emission unit. If no closely related unit type can be found in the table, use "Unclassified" as the unit type.
- 3. Emissions Unit Description\*:** Provide a brief description of the emission unit, i.e. boiler #1, paint booth #7, etc.
- 4. Name of Manufacturer:** List the name of the manufacturer of the equipment.
- 5. Model Number - Model Name - Serial Number:** Enter the model name, number and serial number of this emission unit.
- 6. Date of Construction\*:** Enter the date on which construction was commenced for this emission unit. For the purposes of this question commenced construction means the date that an owner or operator has undertaken a continuous program of construction or modification or that the owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or modification. For the grandfathered

units that were built prior to 1970 and the exact date is not unknown, it is acceptable to enter 01/01/1970.

7. **Date of Installation:** Enter the date of the actual installation of the emission unit equipment. In many cases this will be the same date as the date of construction.
8. **Date of Modification:** If this emission unit has been modified or reconstructed since it was originally installed, please enter the date of the last modification/reconstruction. A modification is a physical or operational change that can increase the emissions of a regulated air pollutant. A reconstruction is the replacement of components on an existing unit to such an extent that the cost of the replacement components exceeds 50% of the fixed capital cost of a new unit. See 40 CFR 60.14, 60.15 and 63.2 for complete definitions. A qualified modification or reconstruction may affect applicability determination of NSPS/NEASHP rules.
9. **SCC Number\*:** Enter the Source Classification Code (SCC) that identifies the type of process or activity occurring at this emission unit. The SCC number corresponds to the Description of Process (Box 8) and specific "emission factor units" (lb/ton, lb/gal, etc.). For a list of valid point-source SCC numbers, please refer to the [Source Classification Code \(SCC\) List](#). If multiple processes occur in this emission unit, you may add multiple SCC numbers for this unit. However, you will only be able to list one maximum design rate.
10. **Raw Material\*:** Enter the raw material used in this emission unit (process). For combustion sources, enter the fuel used. If multiple raw materials or fuels are used in this emission unit, you may add multiple raw materials for this unit. However, you will only be able to list one maximum design rate.
11. **Federally Enforceable Operating Limit:** If this emission unit is subject to any operating limitation, such as limitations on hours of operation, raw materials, or amount of fuel combusted, etc., enter this limitation here. Enforceable limitations are usually established in the construction/operating permit or in an enforcement order.
12. **Permit or Rule Establishing Operating Limit:** Enter the source of the operating limitation specified above. The source may be a construction permit, an operating permit, a rule, or an administrative or court order. If more space is needed, describe in separate attachment.
13. **Maximum Design Rate\*:** Enter the maximum design rate for this emission unit. Enter a unit for the maximum design rate from the drop-down menu. If no closely related unit can be found in the table, use "other" as the unit. If multiple processes or raw materials are used in this unit, you will need to choose one maximum design rate to include.
14. **Associated Control Equipment List Number:** List control equipment numbers for all air pollution control equipment associated with this emission unit.

**15. Monitoring Equipment:** List monitoring equipment numbers for all continuous emission monitoring equipment associated with this emission unit.

**16. Emission Point List\*:** Select the emission point number for the emission point associated with this emission unit.

**17. Potential Emissions:** Enter the potential emissions for pollutants PM<sub>2.5</sub>, PM<sub>10</sub>, Total PM, SO<sub>2</sub>, NO<sub>x</sub>, VOC, CO, Lead, Ozone, and Ammonia under the Criteria Pollutants Section. Enter the potential emissions for Hazardous Air Pollutants (HAP's) and additional regulated air pollutants (ex. fluorides, etc.) in the appropriate section. Please indicate the identity of the pollutant by searching by the CAS number or name of the pollutant. Entries are only needed for the criteria pollutants that the emission unit actually emits.

- A. Ash or Sulfur %: For combustion sources only, enter ash content (%) in the fuel in the PM<sub>2.5</sub>, PM<sub>10</sub>, and PM (total particulate matter) rows; enter sulfur content (%) in the fuel in the SO<sub>2</sub> row.
- B. Emission Factor: Enter the numerical emission factor (in pounds per unit) being used to calculate the potential emissions from this unit. As noted at the bottom of the form, the most recent emission factors can be obtained for some processes from EPA documents or calculated from the most recent and approved stack test data, worksheets, or continuous emission monitoring data. See the instructions for Form CA-01 for additional discussion of supporting documents and the use of stack test results.
- C. Emission Factor Units: Enter the emission factor units that correspond to the numerical emission factor utilized. Typical emission factor units are expressed in pounds of pollutant emitted per unit of production or unit of fuel combusted. Examples are pounds/ton, pounds/gallon, pounds/million cubic feet, etc. Use the allowable limit to calculate potential emissions when applicable.
- D. Source of Emission Factor: Indicate the source of the emission factor used.
- E. Potential Hourly Uncontrolled Emissions (Lbs/Hr): Calculate the potential uncontrolled emissions on an hourly basis and enter the value in pounds per hour. To calculate potential uncontrolled emissions, multiply the Maximum Design Rate by the Emission Factor. In order for this calculation to work correctly the emission factor units must correspond to the units.

Example: A spreader stoker boiler burning 3 tons per hour of subbituminous coal times the emission factor of 60 pounds of PM per ton of coal burned equals 180 pounds per hour of PM emitted uncontrolled.

- F. % Combined Control Efficiency: The combined control efficiency is the product of the

control efficiency multiplied by the capture efficiency. See the instructions for Form CE-01 for additional information on calculating the combined control efficiency. If only one emission control device is used enter the percent control efficiency. Be sure to enter the control efficiency in the box corresponding to the air pollutant for which that efficiency is appropriate. For example, a device may be 90% efficient in removing PM from the air stream but only 70% efficient in removing PM<sub>10</sub>.

When two devices are used to remove a pollutant from the same emission point the control efficiencies must be combined and the combined control efficiency is calculated using the following formula:

$$\text{Control Efficiency} = CE1 + CE2 - [(CE1 \times CE2) / 100] \text{ where}$$

*CE1 = Control Efficiency for First Device*

*CE2 = Control Efficiency for Second Device*

Example: If one device has a control efficiency of 50% for PM<sub>10</sub> and a second device has a control efficiency of 80% for PM<sub>10</sub>, the calculation of combined control efficiency is as follows:

$$\text{Control Efficiency} = 50 + 80 - [(50 \times 80) / 100] = 90\%$$

Thus, the combined control efficiency for PM<sub>10</sub> at this emission point would be 90%. This formula only works for combining two control efficiencies. When combining more than two control efficiencies use the following formula:

$$\text{Control Efficiency} = 1 - (1 - CE1) \times (1 - CE2) \times \dots \times (1 - CE_n)$$

*Where CE1, CE2, ..., CE<sub>n</sub>, are the control efficiencies in decimal and n is the total number of control equipment.*

Note that the control efficiency of a secondary piece of emission control equipment is dependent upon particle size, grain loading to the device, air flows, etc. Therefore, caution should be used when assigning control efficiency to multiple control devices.

- G. Potential Hourly Controlled Emissions (Lb/Hr): Once the Potential Hourly Uncontrolled Emissions and the Combined Control Efficiency fields are filled, EASY Air will auto calculate the Potential Hourly Controlled Emissions and the Potential Annual Controlled Emissions.
- H. Potential Annual Controlled Emissions (Tons/Yr): Once the Potential Hourly Uncontrolled Emissions and the Combined Control Efficiency fields are filled, EASY Air will auto calculate the Potential Hourly Controlled Emissions and the Potential Annual Controlled Emissions.

***Note for emission units with multiple raw materials and/or SCC numbers:***

Iowa EASY Air will allow you to enter multiple raw materials and SCC numbers, but limits you to one maximum design rate. When calculating potential emissions, choose one maximum design rate to list for the emission unit. Then you may:

1. calculate potential emissions using either a combined emission factor, or
2. calculate emissions using the appropriate emission factor for the chosen maximum design rate, then manually enter the tons/yr total based on both raw materials and maximum design rates.

Whichever method you choose, please attach calculation pages to document the method used.

**\*Remember to save the table after each new Emission Unit is entered\***



## Form 1.3 Insignificant Activities - Potential Emissions

Please review the rules relating to Insignificant Activities before completing this form. Activities listed in [567 IAC 24.103](#) are considered to be insignificant activities unless they are needed to determine the applicability of or impose any regulatory requirements. An emission unit that is only subject to the general emission limitations in [567 IAC 23.3](#) can still qualify as an insignificant activity if it meets the criteria in 567 IAC 24.103.

- Insignificant activities listed in 567 IAC 24.103(1) do not need to be listed in the Title V Operating Permit application.
- Insignificant activities listed in 567 IAC 24.103(2) must be included in the application, but are considered to be insignificant based on the emission potentials and the categories of emission units.
- In general, a unit subject to a NSPS or NESHAP standard or permitted by a construction permit cannot be considered an insignificant unit.
- Engines subject to NESHAP subpart ZZZZ and/or NSPS subparts IIII and/or JJJJ. These units must be considered significant emission points, and all forms (including Part 2 Engine/Boiler forms) must be submitted for these engines and boilers.
- Boilers subject to NESHAP subparts DDDDD or JJJJJ are not qualified to be insignificant units. These units must be considered significant emission points, and all forms, including Boiler & Process Heater Information and Engine Information, must be submitted for these engines and boilers.

The Form 1.3 Iowa EASY Air page shows a master list of all insignificant emission units at the facility (see picture below). To add a new Insignificant Emission Unit, select the "Add New Emission Unit" yellow tab at the bottom of the table. You will then be prompted to enter the relevant characteristics of the Emission Unit. Click "Save" and then close the dialogue box.

**Insignificant Activities - Potential Emissions**

| Emission Unit No.<br>                | Emission Unit Description<br> | CO       | NOx      | SO2      | Total PM |
|--------------------------------------|-------------------------------|----------|----------|----------|----------|
| <b>Facility Total (Pounds/Year):</b> |                               | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> |
| <b>Facility Total (Tons/Year):</b>   |                               | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> |

Note: Engines and boilers subject to a NSPS/NESHAP rule are not qualified to be insignit

Add New Record
Calculate Total

*(Fields marked with an “\*” are required fields.)*

- 1. Emission Unit Number\*:** Enter the identification number for each insignificant emission unit. An emission unit must be identified consistently on all Title V forms. An emission unit is a piece of equipment where emissions are generated. The emission unit ID should be consistent with the emission unit ID used in your emissions inventory in SLEIS.
- 2. Emission Unit Description\*:** Provide a written description of the insignificant emission unit (process) for which the facility is claiming designation as an insignificant activity.
- 3. Pollutants\*:** For each emission unit listed, enter in the appropriate box the potential emissions in pounds per year of each air contaminant emitted. Remember that potential emissions are calculated based upon the emission unit operating at design capacity 8760 hours per year.
- 4. Calculate Total:** Facility totals will be calculated by Iowa EASY Air when the “Calculate Total” button is clicked.

**\*Remember to save the table after each new Emission Unit is entered\***



## Form 1.4 Potential Toxic Emissions - Significant Activities

Form 1.4 (see picture below) is used to report facility-wide potential emissions of hazardous air pollutants (toxics) and additional air pollutants that are not reported on Form 1.5 Potential Emissions for Criteria Pollutants. Form 1.4 summarizes the individual entries in the Form 3.0 Emission Unit Description-Potential Emissions included in the submittal. The relevant toxic pollutants entered in the Form 3.0 portion will already be loaded in to this section. This form will automatically calculate from the data entered into the Form 3.0's when the "Calculate Emissions" button is selected. The "Reload Emission from Emission Unit" button is only used if the user has already selected "Calculate Emissions" and has since gone back and changed any emission information in the Form 3.0 section. This function will re-calculate the Potential Toxic Emissions with the updated data.

The "Potential Emissions (tons/yr)" column can be used to enter an additional facility-wide limit such as a Bubble Limit.

"Additional Regulated Air Pollutants" are pollutants that are neither criterial pollutants nor hazardous air pollutants but are federally required to be reported. Additional regulated air pollutants include, but are not limited to, fluorides, reduced sulfur compounds, sulfur acid mists, and hydrogen sulfide.

### POTENTIAL TOXIC EMISSIONS - SIGNIFICANT ACTIVITIES

| Pollutant Name                 | CAS No. | Potential Emissions (tons/yr) | Potential Emissions (System Calculated) (tons/yr) |
|--------------------------------|---------|-------------------------------|---|
| Formaldehyde                   | 50000   | <input type="text"/>          | 0.4818  |
| Hexane                         | 110543  | <input type="text"/>          | 11.5369   |
| Total Hazardous Air Pollutants | THAP    | <input type="text"/>          | 109.5   |
| <b>Total:</b>                  |         | <b>0</b>                      | <b>121.5187</b>                                   |

**Reload Emissions from Emission Unit**

**Calculate Emissions**

Facility Totals – Potential Emissions (Toxics Only) in Tons/Year :

*(Fields marked with an "\*" are required fields.)*

- Pollutant Name:** The hazardous air pollutants of concern under the Title V permitting program are the 187 chemicals or chemical families listed in the rules and the Clean Air Act Amendments of 1990.
- Potential Emissions (Tons/Year):** Summary of the plant-wide Potential Emissions in tons per year of each Hazardous Air Pollutant and additional regulated pollutants identified.
- Totals this Page (Toxics Only):** The total Hazardous Air Pollutant potential emissions for this page.
- Facility Totals - Potential Emissions (Toxics Only):** Facility totals will be automatically by Iowa EASY Air.

## Form 1.5 Potential Emissions - Significant Activities

Form 1.5 is used to report facility-wide potential emissions of Criteria Pollutants in tons/year. This form summarizes the individual form 3.0's Emission Unit Description-Potential Emissions. This form will automatically calculate from the data entered into the Form 3.0s when the "Calculate Emissions" button is selected. The "Potential Emissions (tons/yr)" column can be used to enter an additional facility-wide limit such as a Bubble Limit.

### Potential Emissions - Significant Activities

| Pollutant Name             | Potential Emissions (tons/yr) | Potential Emissions (tons/yr) System Calculated |
|----------------------------|-------------------------------|---|
| PM2.5                      | <input type="text"/>          | <input type="text" value="48.7144"/>            |
| PM10                       | <input type="text"/>          | <input type="text" value="48.7144"/>            |
| Total PM                   | <input type="text"/>          | <input type="text" value="4461.5644"/>          |
| Sulfur Dioxide             | <input type="text"/>          | <input type="text" value="3.8456"/>             |
| Volatile Organic Compounds | <input type="text"/>          | <input type="text" value="35.2546"/>            |
| Nitrogen Oxides            | <input type="text"/>          | <input type="text" value="71.7889"/>            |
| Carbon Monoxide            | <input type="text"/>          | <input type="text" value="269.2079"/>           |
| Lead                       | <input type="text"/>          | <input type="text" value="0"/>                  |
| Ozone                      | <input type="text"/>          | <input type="text" value="0"/>                  |
| Ammonia                    | <input type="text"/>          | <input type="text" value="0"/>                  |

**Calculate Emissions**

*(Fields marked with an "\*" are required fields.)*

1. **Potential Emissions – Significant Activities** – This form auto-calculates emissions for the criteria pollutants that determine Title V applicability. Please note that Total PM and Ammonia are not used in determining applicability. This form only uses the emission points that were included in the submittal on Form 3.0.
2. **Indicate which conditions subject this facility to obtaining an Iowa Title V Operating Permit:** Check the reason(s) that the facility is required to submit this Title V Operating Permit Application. See 567 IAC 24.101 "Applicability of Title V operating permit requirements" for additional information on requirements to apply.

# General Facility Requirements and Attachments

These two sections of the application are designed to assist in identifying applicable air quality requirements and the compliance status of a Title V facility.

- When filling in forms, identify each applicable requirement and specify how each requirement is monitored, reported, or measured.
- After identifying each requirement, indicate whether the facility is in compliance with each requirement, and how the sources compliance status was determined.
- For a source that is not in compliance with a requirement, the source will propose a plan for coming into compliance and a schedule for measuring progress toward that goal.

Although the Air Quality Bureau has provided an outline of the major air quality requirements that a facility may be subject to, each facility is ultimately responsible for being aware of, and providing information to the DNR on all existing and new regulations, both state and federal, that must be incorporated into the Title V permit.

References to [U.S. Code of Federal Regulations \(CFR\)](#) and [Iowa Administrative Code \(IAC\)](#) rules and regulations that may apply to a Title V facility are incorporated into The General Facility Requirements. Below are some helpful links the most recent regulations:

- **New Clean Air Act Regulations** are published in the **Federal Register**. Because regulations published in the Federal Register may become effective before being published in the CFR, the Air Quality Bureau recommends that facilities utilize the EPA Website at [www.epa.gov](http://www.epa.gov) and the electronic CFR at [www.ecfr.gov](http://www.ecfr.gov) to keep apprised of any new regulations.
- **Iowa Statutes regarding Air Quality** are published in the [Code of Iowa](#).
- **Iowa Administrative Rules** are available in the [Iowa Administrative Code](#). New administrative rules are published in the [Iowa Administrative Bulletin](#). Regulations are incorporated into the Iowa Administrative Code periodically.

## Attachments

The following [attachments](#) are required to be submitted in order to be considered a complete Title V application.

- **Process Flow Diagrams**
- **CAM Calculations:** this spreadsheet is required even if CAM is not applicable.
- **Part 2 Emission Point Applicable Requirements:** One completed form is required per each emission point

The following additional information may be required to be attached and submitted based on your answers to the General Facility Requirements questions above.

- Phase II Acid Rain Permit Application Requirements
- Report Summary of Stack Testing Results
- Proposed Limits or Alternative Operating Scenarios
- Engine Certificate of Conformity
- Compliance Assurance Monitoring Plans
- Compliance Plans
- Calculations
- Engine Certificate of Conformity

# Emission Point Applicable Requirements Attachment

This [attachment](#) provides an outline of the applicable requirements for each emission point present at the facility. A separate form shall be created for each emission point located at the facility. If the current Title V permit for the facility grouped similar/identical emission points into a tabular format, the applicant may choose to use the same format in this form. The form as downloaded from the website is restricted for editing in Microsoft Word. In order to allow to more flexibility in completing the form, please go to the Review tab in the ribbon and click on the Restrict Editing selection. You can then click the Stop protection button in the lower right hand corner and save the document.

The information requested in this form can be found in the DNR issued construction permits, PSD permits (DNR or EPA issued), Iowa Administrative Code, federal requirements (NSPS, NESHAP, etc.), current Title V permit, etc.

## Section I: Emission Point Information

Complete the emission point information for each emission point located at the facility.

**Field 1** - Enter the identification information for the emission point.

**Field 2** - Enter the identification information for the emission unit(s) associated with the emission point.

**Field 3** - Enter the description of the emission unit(s) associated with the emission point.

**Field 4** - Enter the identification information for the piece(s) of control equipment associated with the emission point, if applicable.

**Field 5** - Enter the description of the piece(s) of control equipment associated with the emission point, if applicable.

**Field 6** - Enter the raw material used in this emission unit (process). For combustion sources enter the fuel used. If multiple materials are processed through the emission unit(s), then list all application materials or fuels.

**Field 7** - Enter the maximum hourly production rate for this emission unit. For combustion units this is the maximum heat input capacity (in MMBtu/hr) for the equipment.

## Section II: Emission Limits

List all applicable emission limits for all applicable pollutants for the emission point. These limits can be found under "Emission Limits" in current DNR issued construction permits. If there are no applicable emission limits for an individual emission point, state "N/A" in this section.

1. Complete one set of Fields 8, 9 and 10 in this section for one applicable pollutant for the emission point, for example:

Pollutant: PM<sub>10</sub>

Emission Limit: 1.25 lb/hr

Authority for Requirement: DNR Construction Permit xx-A-xxx

2. Repeat one set of Fields 8, 9 and 10 for each additional applicable pollutant.
3. Complete each field as defined below:

**Field 8** - Identify the pollutants, in the following order, for the emission point:

- Opacity
- PM<sub>2.5</sub>
- PM<sub>10</sub>
- Particulate Matter (PM)
- Sulfur Dioxide (SO<sub>2</sub>)
- Nitrogen Oxides (NO<sub>x</sub>)
- Volatile Organic Compounds (VOC)
- Carbon Monoxide (CO)
- Lead (Pb)
- Hazardous Air Pollutants (HAP's) - Including limits for specific HAPs (i.e. Mercury, Formaldehyde, Hexane, etc.)
- Other - i.e. Fluorides, NMOC, GHG, CO<sub>2</sub>e, etc.

**Field 9** - Specify the applicable emission limit(s) for the pollutant listed in Field 8. Multiple emission limits for the same pollutant shall be listed in the following order: lb/hr, tons/yr, concentration (gr/dscf), and other (lb/gallon, etc.)

**Field 10** - Specify the source or authority of the emission limit(s) listed in Field 9.

- Examples of authority for requirement include DNR construction permits, Iowa Administrative Code, NSPS, NESHAP, etc.
- If multiple "Authority for Requirement" exists for the emission limit(s), list all of the applicable sources or authorities.

### **Section III: Operational Limits & Reporting/Recordkeeping Requirements**

**Field 11** - List all applicable operational limitations placed on the emission point. In recent DNR issued construction permits, these limits are found in "Operating Requirements and Associated Recordkeeping". Examples of these limitations include but are not limited to:

- Process throughput limitations
- Hours of operation limitations
- Control equipment monitoring requirements
- Raw material limitations

**Field 12** - List all applicable reporting and recordkeeping requirements associated with the applicable emission limit(s) or operation limit(s) for the emission point. In recent DNR issued construction permits, these requirements can be found in "Operating Requirements and Associated Recordkeeping".

**Field 13** - List the source(s) or authority for the listed requirements in Fields 11 and 12.

### **Section IV: NSPS/NESHAP**

List each New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP) that has been evaluated for applicability for the emission point.

The applicant shall list each relevant NSPS subpart evaluated for applicability for the emission point and the applicability of that subpart to the emission point. Please refer to Appendix H: NSPS Reference List for a list of current NSPS subparts. In cases where an emission point is not subject to a NSPS that was evaluated, the applicant may choose to explain why that subpart does not apply.

The applicant shall list each relevant NESHAP subpart evaluated for applicability for the emission point and the applicability of that subpart to the emission point. Please refer to Appendix I: Part 63 NESHAP Reference List for a list of current NESHAP subparts. In cases where an emission point is not subject to a NESHAP that was evaluated, the applicant may choose to explain why that subpart does not apply.

### **Section V: Monitoring Requirements**

Complete the CAM Calculations form (spreadsheet) to determine the level of monitoring required for each emission point at the facility. CAM Calculations form (spreadsheet) shall be submitted with the Part 2 application. Along with this form, the facility shall submit background documentation for how the pre-control emission potential was calculated on a Part 1 CA-01 form or similar calculation sheet for each emission unit. Please refer to Appendix J: Compliance Assurance Monitoring for information that should be contained in these calculation sheets.

Compliance Assurance Monitoring (CAM) Plan Required?

- Check Yes or No based on evaluated CAM requirements from the CAM Calculations form.
  - If Yes, list each control equipment identification and applicable pollutant as evaluated by the CAM Calculations form.
  - Submit a CAM plan for each piece of control equipment subject to CAM requirements.

Continuous Emissions Monitoring Required?

- Check Yes or No based on required continuous emissions monitor(s) for each emission point
  - If Yes, list each monitoring equipment identification and the applicable pollutant(s) and monitoring requirements.

### **Section VI: Compliance Plan, Schedule & Certification**

Specify the compliance status of the emission point.

- Check the appropriate box for each statement
  - If "Not in compliance" is checked for either statement indicating the existence of non-compliance issues, the applicant shall complete a compliance plan for the emission point/unit. The compliance plan shall contain the following information:
    - **Term, condition, or applicable requirement** with which the facility is currently out of compliance,
    - **Date** non-compliance with the permit requirement began,
    - **Description** of the non-compliance,
    - **Cause** of non-compliance,
    - **Corrective actions** taken to bring the facility back into compliance,
    - **Schedule**, with specific dates, for submitting progress reports, and
    - **Date** by which the facility will be back in compliance with the requirement.

## **Boiler and Process Heater Information (if needed)**

After completing question (8)(a) on the General Facility Requirements form, if it is determined that the facility operates any boilers and process heaters, including those qualified as insignificant units, Boiler and Process Heater Information forms must be completed. The form is used to determine if those boilers and process heaters are subject to 40 CFR 63 subpart DDDDD or 40 CFR 63 subpart JJJJJ. Follow the instructions and guidance on the form while completing Boiler and Process Heater Information form.

## **Engine Information (if needed)**

After completing question (9)(a) on the General Facility Requirements form, if it is determined that the facility operates any engines, including those qualified as insignificant units, Engine Information forms must be completed. The form is used to determine if those engines are subject to 40 CFR 63 subpart ZZZZ, 40 CFR 60 subparts IIII and JJJJ. Follow the instructions and guidance on the form while completing Engine Information form.

## **Validation & Submission**

This page will conduct a final check to make sure that all forms have been completed. You will be able to view each form and attachment from here.

Once Iowa EASY Air has determined that all forms have been completed, you will be able to click "next" and proceed to the submittal page. On that page, the Responsible Official will be asked to certify compliance, truth, accuracy, and completeness by agreeing to the following terms:

As required by 567 IAC 24.107(4), this certification of truth, accuracy, and completeness must be signed by the responsible official as defined in 567 IAC 24.100:

"I hereby certify:

- a. Under penalty of law that based on the information and belief formed after reasonable inquiry, the statements and information contained in electronic submissions for which I am the signatory are true, accurate, and complete.
- b. That making false statement, representation, or certification of electronic submissions for which I am the signatory may result in civil or criminal penalties."

Further,

- a. I agree to pay all application fees for this submittal based on the current Fee Schedule.
- b. I agree to pay all fees incurred for the review of the submittal.

# Appendix A: Hazardous Air Pollutants

Table A-1

## Hazardous Air Pollutants - by alpha

| CAS Number | Chemical Name                        | VOC/PM              | CAS Number | Chemical Name   | VOC/PM           |
|------------|--------------------------------------|---------------------|------------|---|------------------|
| 75-07-0    | Acetaldehyde                         | VOC                 | 94-75-7    | 2,4-D (2,4-Dichlorophenoxyacetic Acid) (including salts and esters)   | VOC <sup>1</sup> |
| 60-35-5    | Acetamide                            | VOC                 | 72-55-9    | DDE (1,1-dichloro-2,2-bis(p-chlorophenyl) ethylene)   | VOC <sup>1</sup> |
| 75-05-8    | Acetonitrile                         | VOC                 | 117-81-7   | Di(2-ethylhexyl) phthalate (DEHP)   | VOC <sup>1</sup> |
| 98-86-2    | Acetophenone                         | VOC                 | 334-88-3   | Diazomethane  | VOC              |
| 53-96-3    | 2-Acetylaminofluorene                | VOC <sup>1</sup>    | 132-64-9   | Dibenzofuran  | VOC <sup>1</sup> |
| 107-02-8   | Acrolein                             | VOC                 | 96-12-8    | 1,2-Dibromo-3-chloropropane   | VOC              |
| 79-06-1    | Acrylamide                           | VOC                 | 84-74-2    | Dibutyl phthalate   | VOC <sup>1</sup> |
| 79-10-7    | Acrylic acid                         | VOC                 | 106-46-7   | 1,4-Dichlorobenzene   | VOC              |
| 107-13-1   | Acrylonitrile                        | VOC                 | 91-94-1    | 3,3'-Dichlorobenzidine  | VOC <sup>1</sup> |
| 107-05-1   | Allyl chloride                       | VOC                 | 111-44-4   | Dichloroethyl ether (Bis(2-chloroethyl) ether)  | VOC              |
| 92-67-1    | 4-Aminobiphenyl                      | VOC <sup>1</sup>    | 542-75-6   | 1,3-Dichloropropene   | VOC              |
| 62-53-3    | Aniline                              | VOC                 | 62-73-7    | Dichlorvos  | VOC              |
| 90-04-0    | o-Anisidine                          | VOC                 | 111-42-2   | Diethanolamine  | VOC              |
| 0          | Antimony Compounds                   | PM                  | 64-67-5    | Diethyl sulfate   | VOC              |
| 0          | Arsenic Compounds                    | PM <sup>2</sup>     | 119-90-4   | 3,3'-Dimethoxybenzidine   | VOC <sup>1</sup> |
| 1332-21-4  | Asbestos (friable)                   | PM                  | 60-11-7    | 4-Dimethylaminoazobenzene   | VOC <sup>1</sup> |
| 71-43-2    | Benzene                              | VOC                 | 121-69-7   | N,N-Dimethylaniline   | VOC              |
| 92-87-5    | Benzidine                            | VOC <sup>1</sup>    | 119-93-7   | 3,3'-Dimethylbenzidine  | VOC <sup>1</sup> |
| 98-07-7    | Benzotrithloride                     | VOC                 | 79-44-7    | Dimethylcarbamoyl chloride  | VOC              |
| 100-44-7   | Benzyl chloride                      | VOC                 | 68-12-2    | Dimethylformamide   | VOC              |
| 0          | Beryllium Compounds                  | PM                  | 57-14-7    | 1,1-Dimethylhydrazine   | VOC              |
| 92-52-4    | Biphenyl                             | VOC                 | 131-11-3   | Dimethyl phthalate  | VOC              |
| 542-88-1   | Bis(chloromethyl) ether              | VOC                 | 77-78-1    | Dimethyl sulfate  | VOC              |
| 75-25-2    | Bromoform                            | VOC                 | 534-52-1   | 4,6-Dinitro-o-cresol (including salts)  | VOC <sup>1</sup> |
| 106-94-5   | 1-Bromopropane                       | VOC                 | 51-28-5    | 2,4-Dinitrophenol   | VOC <sup>1</sup> |
| 106-99-0   | 1,3-Butadiene                        | VOC                 | 121-14-2   | 2,4-Dinitrotoluene  | VOC              |
| 0          | Cadmium Compounds                    | PM                  | 123-91-1   | 1,4-Dioxane (1,4-Diethylene oxide)  | VOC              |
| 156-62-7   | Calcium cyanamide                    | PM                  | 122-66-7   | 1,2-Diphenylhydrazine   | VOC              |
| 133-06-2   | Captan                               | VOC <sup>1</sup>    | 106-89-8   | Epichlorohydrin (1-Chloro-2,3-epoxypropane)   | VOC              |
| 63-25-2    | Carbaryl                             | VOC <sup>1</sup>    | 106-88-7   | 1,2-Epoxybutane (1,2-Butylene oxide)  | VOC              |
| 75-15-0    | Carbon disulfide                     | VOC                 | 140-88-5   | Ethyl acrylate  | VOC              |
| 56-23-5    | Carbon tetrachloride                 | VOC                 | 100-41-4   | Ethylbenzene  | VOC              |
| 463-58-1   | Carbonyl sulfide                     | VOC                 | 75-00-3    | Ethyl chloride (Chloroethane)   | VOC              |
| 120-80-9   | Catechol                             | VOC                 | 106-93-4   | Ethylene dibromide (Dibromoethane)  | VOC              |
| 133-90-4   | Chloramben                           | VOC <sup>1</sup>    | 107-06-2   | Ethylene dichloride (1,2-Dichloroethane)  | VOC              |
| 57-74-9    | Chlordane                            | VOC <sup>1</sup>    | 107-21-1   | Ethylene glycol   | VOC              |
| 7782-50-5  | Chlorine                             | VOC                 | 151-56-4   | Ethyleneimine (Aziridine)   | VOC              |
| 79-11-8    | Chloroacetic acid                    | VOC                 | 75-21-8    | Ethylene oxide  | VOC              |
| 532-27-4   | 2-Chloroacetophenone                 | VOC                 | 96-45-7    | Ethylene thiourea   | VOC              |
| 108-90-7   | Chlorobenzene                        | VOC                 | 75-34-3    | Ethylidene dichloride (1,1-Dichloroethane)  | VOC              |
| 510-15-6   | Chlorobenzilate                      | VOC <sup>1</sup>    | 0          | Fine Mineral Fibers   | PM               |
| 67-66-3    | Chloroform                           | VOC                 | 50-00-0    | Formaldehyde  | VOC              |
| 107-30-2   | Chloromethyl methyl ether            | VOC                 | 0          | Glycol Ethers, except CAS #111- 76-2, ethylene glycol mono-butyl ether, also known as EGBE or 2-Butoxyethanol | VOC              |
| 126-99-8   | Chloroprene (2-chloro-1,3-butadiene) | VOC                 | 76-44-8    | Heptachlor  | VOC              |
| 0          | Chromium Compounds                   | PM                  |            |   |                  |
| 0          | Cobalt Compounds                     | PM                  |            |   |                  |
| 0          | Coke Oven Emissions                  | VOC/PM <sub>3</sub> |            |   |                  |
| 1319-77-3  | Cresol/Cresylic acid (mixed isomers) | VOC                 |            |   |                  |
| 108-39-4   | m-Cresol                             | VOC                 |            |   |                  |
| 95-48-7    | o-Cresol                             | VOC                 |            |   |                  |
| 106-44-5   | p-Cresol                             | VOC                 |            |   |                  |
| 98-82-8    | Cumene                               | VOC                 |            |   |                  |
| 0          | Cyanide Compounds                    | PM <sup>2</sup>     |            |   |                  |

| CAS Number | Chemical Name                               | VOC/PM           |
|------------|---|------------------|
| 118-74-1   | Hexachlorobenzene                           | VOC              |
| 87-68-3    | Hexachloro-1,3-butadiene                    | VOC              |
| 77-47-4    | Hexachlorocyclopentadiene                   | VOC              |
| 67-72-1    | Hexachloroethane                            | VOC              |
| 822-06-0   | Hexamethylene-1,6-diisocyanate              | VOC              |
| 680-31-9   | Hexamethylphosphoramide                     | VOC              |
| 110-54-3   | Hexane                                      | VOC              |
| 302-01-2   | Hydrazine                                   | VOC              |
| 7647-01-0  | Hydrochloric acid (HCl)                     | PM <sup>5</sup>  |
| 7664-39-3  | Hydrogen fluoride (HF)                      | PM <sup>5</sup>  |
| 123-31-9   | Hydroquinone                                | VOC <sup>1</sup> |
| 78-59-1    | Isophorone                                  | VOC              |
| 0          | Lead Compounds                              | PM               |
| 58-89-9    | Lindane (1,2,3,4,5,6-Hexachlorocyclohexane) | VOC <sup>1</sup> |
| 108-31-6   | Maleic anhydride                            | VOC <sup>1</sup> |
| 0          | Manganese Compounds                         | PM               |
| 0          | Mercury Compounds                           | PM <sup>2</sup>  |
| 67-56-1    | Methanol                                    | VOC              |
| 72-43-5    | Methoxychlor                                | VOC <sup>1</sup> |
| 74-83-9    | Methyl bromide (Bromomethane)               | VOC              |
| 74-87-3    | Methyl chloride (Chloromethane)             | VOC              |
| 71-55-6    | Methyl chloroform (1,1,1-Trichloroethane)   | NR <sup>4</sup>  |
| 60-34-4    | Methylhydrazine                             | VOC              |
| 74-88-4    | Methyl iodide (Iodomethane)                 | VOC              |
| 108-10-1   | Methyl isobutyl ketone (MIBK) (Hexone)      | VOC              |
| 624-83-9   | Methyl isocyanate                           | VOC              |
| 80-62-6    | Methyl methacrylate                         | VOC              |
| 1634-04-4  | Methyl tert-butyl ether (MTBE)              | VOC              |
| 101-14-4   | 4,4'-Methylenebis(2-chloroaniline)          | VOC <sup>1</sup> |
| 75-09-2    | Methylene chloride (Dichloromethane)        | NR <sup>4</sup>  |
| 101-77-9   | 4,4'-Methylenedianiline                     | VOC <sup>1</sup> |
| 101-68-8   | 4,4'-Methylenediphenyl diisocyanate (MDI)   | VOC              |
| 91-20-3    | Naphthalene                                 | VOC              |
| 0          | Nickel Compounds                            | PM               |
| 98-95-3    | Nitrobenzene                                | VOC              |
| 92-93-3    | 4-Nitrobiphenyl                             | VOC <sup>1</sup> |
| 100-02-7   | 4-Nitrophenol                               | VOC <sup>1</sup> |
| 79-46-9    | 2-Nitropropane                              | VOC              |
| 62-75-9    | N-Nitrosodimethylamine                      | VOC              |
| 684-93-5   | N-Nitroso-N-methylurea                      | VOC              |
| 59-89-2    | N-Nitrosomorpholine                         | VOC              |
| 56-38-2    | Parathion                                   | VOC <sup>1</sup> |
| 82-68-8    | Pentachloronitrobenzene (Quintobenzene)     | VOC              |
| 87-86-5    | Pentachlorophenol                           | VOC <sup>1</sup> |
| 108-95-2   | Phenol                                      | VOC              |
| 106-50-3   | p-Phenylenediamine                          | VOC <sup>1</sup> |
| 75-44-5    | Phosgene                                    | VOC              |

| CAS Number | Chemical Name                               | VOC/PM           |
|------------|---|------------------|
| 7803-51-2  | Phosphine                                   |                  |
| 7723-14-0  | Phosphorus (yellow or white)                | PM <sup>2</sup>  |
| 85-44-9    | Phthalic anhydride                          | VOC <sup>1</sup> |
| 1336-36-3  | Polychlorinated biphenyls (PCBs) (Aroclors) | VOC <sup>1</sup> |
| 0          | Polycyclic Organic Matter                   | VOC <sup>1</sup> |
| 1120-71-4  | 1,3-Propane sultone                         | VOC              |
| 57-57-8    | beta-Propiolactone                          | VOC              |
| 123-38-6   | Propionaldehyde                             | VOC              |
| 114-26-1   | Propoxur (Baygon)                           | VOC <sup>1</sup> |
| 78-87-5    | Propylene dichloride (1,2-Dichloropropane)  | VOC              |
| 75-56-9    | Propylene oxide                             | VOC              |
| 75-55-8    | 1,2-Propylenimine (2-Methylaziridine)       | VOC              |
| 91-22-5    | Quinoline                                   | VOC              |
| 106-51-4   | Quinone (p-Benzoquinone)                    | VOC              |
| 0          | Radionuclides (including radon)             | PM <sup>2</sup>  |
| 0          | Selenium Compounds                          | PM               |
| 100-42-5   | Styrene                                     | VOC              |
| 96-09-3    | Styrene oxide                               | VOC              |
| 1746-01-6  | 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)  | VOC <sup>1</sup> |
| 79-34-5    | 1,1,2,2-Tetrachloroethane                   | VOC              |
| 127-18-4   | Tetrachloroethylene (Perchloroethylene)     | NR <sup>4</sup>  |
| 7550-45-0  | Titanium tetrachloride                      |                  |
| 108-88-3   | Toluene                                     | VOC              |
| 95-80-7    | 2,4-Toluenediamine (2,4-Diaminotoluene)     | VOC <sup>1</sup> |
| 584-84-9   | 2,4-Toluene diisocyanate                    | VOC              |
| 95-53-4    | o-Toluidine                                 | VOC              |
| 8001-35-2  | Toxaphene (chlorinated camphene)            | VOC <sup>1</sup> |
| 120-82-1   | 1,2,4-Trichlorobenzene                      | VOC              |
| 79-00-5    | 1,1,2-Trichloroethane                       | VOC              |
| 79-01-6    | Trichloroethylene                           | VOC              |
| 95-95-4    | 2,4,5-Trichlorophenol                       | VOC              |
| 88-06-2    | 2,4,6-Trichlorophenol                       | VOC              |
| 121-44-8   | Triethylamine                               | VOC              |
| 1582-09-8  | Trifluralin                                 | VOC <sup>1</sup> |
| 540-84-1   | 2,2,4-Trimethylpentane                      | VOC              |
| 51-79-6    | Urethane (Ethyl carbamate)                  | VOC              |
| 108-05-4   | Vinyl acetate                               | VOC              |
| 593-60-2   | Vinyl bromide (Bromoethene)                 | VOC              |
| 75-01-4    | Vinyl chloride (Chloroethene)               | VOC              |
| 75-35-4    | Vinylidene chloride (1,1-dichloroethylene)  | VOC              |
| 1330-20-7  | Xylenes (mixed isomers)                     | VOC              |
| 108-38-3   | m-Xylene                                    | VOC              |
| 95-47-6    | o-Xylene                                    | VOC              |
| 106-42-3   | p-Xylene                                    | VOC              |

Notes:

- 1 This compound is defined as a VOC (40 CFR 51.100), but has a low vapor pressure. Emissions may be measured as either VOC or PM, depending on the process generating the emissions, and the test method used to measure the emissions.
- 2 Compounds in this class may be emitted as PM or as inorganic vapors.
- 3 Compounds in this class may be emitted as PM or as VOC.
- 4 Not Reactive-these compounds have been determined to have negligible photochemical reactivity, and are not defined as VOC(40 CFR 51.100)
- 5 DNR determined in May, 2016 that HCl and HF be considered as PM for Title V emissions fee purposes.

**Table A-2**  
**Hazardous Air Pollutants - by CAS Number**

| CAS Number | Chemical Name   | VOC/PM              | CAS Number | Chemical Name   | VOC/PM           |
|------------|---|---------------------|------------|---|------------------|
| 0          | Antimony Compounds  | PM                  | 75-25-2    | Bromoform   | VOC              |
| 0          | Arsenic Compounds   | PM <sup>2</sup>     | 75-34-3    | Ethylidene dichloride (1,1-Dichloroethane)                          | VOC              |
| 0          | Beryllium Compounds   | PM                  | 75-35-4    | Vinylidene chloride (1,1-dichloroethylene)                          | VOC              |
| 0          | Cadmium Compounds   | PM                  | 75-44-5    | Phosgene  | VOC              |
| 0          | Chromium Compounds  | PM                  | 75-55-8    | 1,2-Propylenimine (2-Methylaziridine)                               | VOC              |
| 0          | Cobalt Compounds  | PM                  | 75-56-9    | Propylene oxide   | VOC              |
| 0          | Coke Oven Emissions   | VOC/PM <sub>3</sub> | 76-44-8    | Heptachlor  | VOC              |
| 0          | Cyanide Compounds   | PM <sup>2</sup>     | 77-47-4    | Hexachlorocyclopentadiene   | VOC              |
| 0          | Fine Mineral Fibers   | PM                  | 77-78-1    | Dimethyl sulfate  | VOC              |
| 0          | Glycol Ethers, except CAS #111- 76-2, ethylene glycol mono-butyl ether, also known as EGBE or 2-Butoxyethanol | VOC                 | 78-59-1    | Isophorone  | VOC              |
| 0          | Lead Compounds  | PM                  | 78-87-5    | Propylene dichloride (1,2-Dichloropropane)                          | VOC              |
| 0          | Manganese Compounds   | PM                  | 79-00-5    | 1,1,2-Trichloroethane   | VOC              |
| 0          | Mercury Compounds   | PM <sup>2</sup>     | 79-01-6    | Trichloroethylene   | VOC              |
| 0          | Nickel Compounds  | PM                  | 79-06-1    | Acrylamide  | VOC              |
| 0          | Polycyclic Organic Matter   | VOC <sup>1</sup>    | 79-10-7    | Acrylic acid  | VOC              |
| 0          | Radionuclides (including radon)   | PM <sup>2</sup>     | 79-11-8    | Chloroacetic acid   | VOC              |
| 0          | Selenium Compounds  | PM                  | 79-34-5    | 1,1,2,2-Tetrachloroethane   | VOC              |
| 50-00-0    | Formaldehyde  | VOC                 | 79-44-7    | Dimethylcarbonyl chloride   | VOC              |
| 51-28-5    | 2,4-Dinitrophenol   | VOC <sup>1</sup>    | 79-46-9    | 2-Nitropropane  | VOC              |
| 51-79-6    | Urethane (Ethyl carbamate)  | VOC                 | 80-62-6    | Methyl methacrylate   | VOC              |
| 53-96-3    | 2-Acetylaminofluorene   | VOC <sup>1</sup>    | 82-68-8    | Pentachloronitrobenzene (Quintobenzene)                             | VOC              |
| 56-23-5    | Carbon tetrachloride  | VOC                 | 84-74-2    | Dibutyl phthalate   | VOC <sup>1</sup> |
| 56-38-2    | Parathion   | VOC <sup>1</sup>    | 85-44-9    | Phthalic anhydride  | VOC <sup>1</sup> |
| 57-14-7    | 1,1-Dimethylhydrazine   | VOC                 | 87-68-3    | Hexachloro-1,3-butadiene  | VOC              |
| 57-57-8    | beta-Propiolactone  | VOC                 | 87-86-5    | Pentachlorophenol   | VOC <sup>1</sup> |
| 57-74-9    | Chlordane   | VOC <sup>1</sup>    | 88-06-2    | 2,4,6-Trichlorophenol   | VOC              |
| 58-89-9    | Lindane (1,2,3,4,5,6-Hexachlorocyclohexane)   | VOC <sup>1</sup>    | 90-04-0    | o-Anisidine   | VOC              |
| 59-89-2    | N-Nitrosomorpholine   | VOC                 | 91-20-3    | Naphthalene   | VOC              |
| 60-11-7    | 4-Dimethylaminoazobenzene   | VOC <sup>1</sup>    | 91-22-5    | Quinoline   | VOC              |
| 60-34-4    | Methylhydrazine   | VOC                 | 91-94-1    | 3,3'-Dichlorobenzidine  | VOC <sup>1</sup> |
| 60-35-5    | Acetamide   | VOC                 | 92-52-4    | Biphenyl  | VOC              |
| 62-53-3    | Aniline   | VOC                 | 92-67-1    | 4-Aminobiphenyl   | VOC <sup>1</sup> |
| 62-73-7    | Dichlorvos  | VOC                 | 92-87-5    | Benzidine   | VOC <sup>1</sup> |
| 62-75-9    | N-Nitrosodimethylamine  | VOC                 | 92-93-3    | 4-Nitrobiphenyl   | VOC <sup>1</sup> |
| 63-25-2    | Carbaryl  | VOC <sup>1</sup>    | 94-75-7    | 2,4-D (2,4-Dichlorophenoxyacetic Acid) (including salts and esters) | VOC <sup>1</sup> |
| 64-67-5    | Diethyl sulfate   | VOC                 | 95-47-6    | o-Xylene  | VOC              |
| 67-56-1    | Methanol  | VOC                 | 95-48-7    | o-Cresol  | VOC              |
| 67-66-3    | Chloroform  | VOC                 | 95-53-4    | o-Toluidine   | VOC              |
| 67-72-1    | Hexachloroethane  | VOC                 | 95-80-7    | 2,4-Toluenediamine (2,4-Diaminotoluene)                             | VOC <sup>1</sup> |
| 68-12-2    | Dimethylformamide   | VOC                 | 95-95-4    | 2,4,5-Trichlorophenol   | VOC              |
| 71-43-2    | Benzene   | VOC                 | 96-09-3    | Styrene oxide   | VOC              |
| 71-55-6    | Methyl chloroform (1,1,1-Trichloroethane)   | NR <sup>4</sup>     | 96-12-8    | 1,2-Dibromo-3-chloropropane   | VOC              |
| 72-43-5    | Methoxychlor  | VOC <sup>1</sup>    | 96-45-7    | Ethylene thiourea   | VOC              |
| 72-55-9    | DDE (1,1-dichloro-2,2-bis(p-chlorophenyl) ethylene)   | VOC <sup>1</sup>    | 98-07-7    | Benzotrithloride  | VOC              |
| 74-83-9    | Methyl bromide (Bromomethane)   | VOC                 | 98-82-8    | Cumene  | VOC              |
| 74-87-3    | Methyl chloride (Chloromethane)   | VOC                 | 98-86-2    | Acetophenone  | VOC              |
| 74-88-4    | Methyl iodide (Iodomethane)   | VOC                 | 98-95-3    | Nitrobenzene  | VOC              |
| 75-00-3    | Ethyl chloride (Chloroethane)   | VOC                 | 100-02-7   | 4-Nitrophenol   | VOC <sup>1</sup> |
| 75-01-4    | Vinyl chloride (Chloroethene)   | VOC                 | 100-41-4   | Ethylbenzene  | VOC              |
| 75-05-8    | Acetonitrile  | VOC                 | 100-42-5   | Styrene   | VOC              |
| 75-07-0    | Acetaldehyde  | VOC                 | 100-44-7   | Benzyl chloride   | VOC              |
| 75-09-2    | Methylene chloride (Dichloromethane)  | NR <sup>4</sup>     | 101-14-4   | 4,4'-Methylenebis(2-chloroaniline)                                  | VOC <sup>1</sup> |
| 75-15-0    | Carbon disulfide  | VOC                 | 101-68-8   | 4,4'-Methylenediphenyl diisocyanate (MDI)                           | VOC              |
| 75-21-8    | Ethylene oxide  | VOC                 | 101-77-9   | 4,4'-Methylenedianiline   | VOC <sup>1</sup> |

| CAS Number | Chemical Name                                  | VOC/PM           |
|------------|--|------------------|
| 106-42-3   | p-Xylene                                       | VOC              |
| 106-44-5   | p-Cresol                                       | VOC              |
| 106-46-7   | 1,4-Dichlorobenzene                            | VOC              |
| 106-50-3   | p-Phenylenediamine                             | VOC <sup>1</sup> |
| 106-51-4   | Quinone (p-Benzoquinone)                       | VOC              |
| 106-88-7   | 1,2-Epoxybutane (1,2-Butylene oxide)           | VOC              |
| 106-89-8   | Epichlorohydrin (1-Chloro-2,3-epoxypropane)    | VOC              |
| 106-93-4   | Ethylene dibromide (Dibromoethane)             | VOC              |
| 106-94-5   | 1-Bromopropane                                 | VOC              |
| 106-99-0   | 1,3-Butadiene                                  | VOC              |
| 107-02-8   | Acrolein                                       | VOC              |
| 107-05-1   | Allyl chloride                                 | VOC              |
| 107-06-2   | Ethylene dichloride (1,2-Dichloroethane)       | VOC              |
| 107-13-1   | Acrylonitrile                                  | VOC              |
| 107-21-1   | Ethylene glycol                                | VOC              |
| 107-30-2   | Chloromethyl methyl ether                      | VOC              |
| 108-05-4   | Vinyl acetate                                  | VOC              |
| 108-10-1   | Methyl isobutyl ketone (MIBK) (Hexone)         | VOC              |
| 108-31-6   | Maleic anhydride                               | VOC <sup>1</sup> |
| 108-38-3   | m-Xylene                                       | VOC              |
| 108-39-4   | m-Cresol                                       | VOC              |
| 108-88-3   | Toluene  | VOC              |
| 108-90-7   | Chlorobenzene                                  | VOC              |
| 108-95-2   | Phenol   | VOC              |
| 110-54-3   | Hexane   | VOC              |
| 111-42-2   | Diethanolamine                                 | VOC              |
| 111-44-4   | Dichloroethyl ether (Bis(2-chloroethyl) ether) | VOC              |
| 114-26-1   | Propoxur (Baygon)                              | VOC <sup>1</sup> |
| 117-81-7   | Di(2-ethylhexyl) phthalate (DEHP)              | VOC <sup>1</sup> |
| 118-74-1   | Hexachlorobenzene                              | VOC              |
| 119-90-4   | 3,3'-Dimethoxybenzidine                        | VOC <sup>1</sup> |
| 119-93-7   | 3,3'-Dimethylbenzidine                         | VOC <sup>1</sup> |
| 120-80-9   | Catechol                                       | VOC              |
| 120-82-1   | 1,2,4-Trichlorobenzene                         | VOC              |
| 121-14-2   | 2,4-Dinitrotoluene                             | VOC              |
| 121-44-8   | Triethylamine                                  | VOC              |
| 121-69-7   | N,N-Dimethylaniline                            | VOC              |
| 122-66-7   | 1,2-Diphenylhydrazine                          | VOC              |
| 123-31-9   | Hydroquinone                                   | VOC <sup>1</sup> |
| 123-38-6   | Propionaldehyde                                | VOC              |
| 123-91-1   | 1,4-Dioxane (1,4-Diethylene oxide)             | VOC              |

| CAS Number | Chemical Name                               | VOC/PM           |
|------------|---|------------------|
| 126-99-8   | Chloroprene (2-chloro-1,3-butadiene)        | VOC              |
| 127-18-4   | Tetrachloroethylene (Perchloroethylene)     | NR <sup>4</sup>  |
| 131-11-3   | Dimethyl phthalate                          | VOC              |
| 132-64-9   | Dibenzofuran                                | VOC <sup>1</sup> |
| 133-06-2   | Captan                                      | VOC <sup>1</sup> |
| 133-90-4   | Chloramben                                  | VOC <sup>1</sup> |
| 140-88-5   | Ethyl acrylate                              | VOC              |
| 151-56-4   | Ethyleneimine (Aziridine)                   | VOC              |
| 156-62-7   | Calcium cyanamide                           | PM               |
| 302-01-2   | Hydrazine                                   |                  |
| 334-88-3   | Diazomethane                                | VOC              |
| 463-58-1   | Carbonyl sulfide                            | VOC              |
| 510-15-6   | Chlorobenzilate                             | VOC <sup>1</sup> |
| 532-27-4   | 2-Chloroacetophenone                        | VOC              |
| 534-52-1   | 4,6-Dinitro-o-cresol (including salts)      | VOC <sup>1</sup> |
| 540-84-1   | 2,2,4-Trimethylpentane                      | VOC              |
| 542-75-6   | 1,3-Dichloropropene                         | VOC              |
| 542-88-1   | Bis(chloromethyl) ether                     | VOC              |
| 584-84-9   | 2,4-Toluene diisocyanate                    | VOC              |
| 593-60-2   | Vinyl bromide (Bromoethene)                 | VOC              |
| 624-83-9   | Methyl isocyanate                           | VOC              |
| 680-31-9   | Hexamethylphosphoramide                     | VOC              |
| 684-93-5   | N-Nitroso-N-methylurea                      | VOC              |
| 822-06-0   | Hexamethylene-1,6-diisocyanate              | VOC              |
| 1120-71-4  | 1,3-Propane sultone                         | VOC              |
| 1319-77-3  | Cresol/Cresylic acid (mixed isomers)        | VOC              |
| 1330-20-7  | Xylenes (mixed isomers)                     | VOC              |
| 1332-21-4  | Asbestos (friable)                          | PM               |
| 1336-36-3  | Polychlorinated biphenyls (PCBs) (Aroclors) | VOC <sup>1</sup> |
| 1582-09-8  | Trifluralin                                 | VOC <sup>1</sup> |
| 1634-04-4  | Methyl tert-butyl ether (MTBE)              | VOC              |
| 1746-01-6  | 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)  | VOC <sup>1</sup> |
| 7550-45-0  | Titanium tetrachloride                      |                  |
| 7647-01-0  | Hydrochloric acid (HCl)                     | PM <sup>5</sup>  |
| 7664-39-3  | Hydrogen fluoride (HF)                      | PM <sup>5</sup>  |
| 7723-14-0  | Phosphorus (yellow or white)                | PM <sup>2</sup>  |
| 7782-50-5  | Chlorine                                    |                  |
| 7803-51-2  | Phosphine                                   |                  |
| 8001-35-2  | Toxaphene (chlorinated camphene)            | VOC <sup>1</sup> |

Notes:

- 1 This compound is defined as a VOC (40 CFR 51.100), but has a low vapor pressure. Emissions may be measured as either VOC or PM, depending on the process generating the emissions, and the test method used to measure the emissions.
- 2 Compounds in this class may be emitted as PM or as inorganic vapors.
- 3 Compounds in this class may be emitted as PM or as VOC.
- 4 Not Reactive-these compounds have been determined to have negligible photochemical reactivity, and are not defined as VOC (40 CFR 51.100)
- 5 DNR determined in May 2016 that HCl and HF be considered as PM for Title V emissions fee purposes.

# Appendix B: Accidental Release Prevention

Table B-1

## LIST OF REGULATED TOXIC SUBSTANCES AND THRESHOLD QUANTITIES - by alpha

| CAS No.    | Chemical name  | Threshold quantity (lbs) | Basis for listing |
|------------|--|--------------------------|-------------------|
| 107-02-8   | Acrolein [2-Propenal]  | 5,000                    | b                 |
| 107-13-1   | Acrylonitrile [2-Propenenitrile]   | 20,000                   | b                 |
| 814-68-6   | Acrylyl chloride [2-Propenoyl chloride]  | 5,000                    | b                 |
| 107-18-6   | Allyl alcohol [2-Propen-1-ol]  | 15,000                   | b                 |
| 107-11-9   | Allylamine [2-Propen-1-amine]  | 10,000                   | b                 |
| 7664-41-7  | Ammonia (anhydrous)  | 10,000                   | a, b              |
| 7664-41-7  | Ammonia (conc 20% or greater)  | 20,000                   | a, b              |
| 7784-34-1  | Arsenous trichloride   | 15,000                   | b                 |
| 7784-42-1  | Arsine   | 1,000                    | b                 |
| 10294-34-5 | Boron trichloride [Borane, trichloro-]   | 5,000                    | b                 |
| 7637-07-2  | Boron trifluoride [Borane, trifluoro-]   | 5,000                    | b                 |
| 353-42-4   | Boron trifluoride compound with methyl ether (1:1) [Boron, trifluoro[oxybis[methane]]-, T-4- | 15,000                   | b                 |
| 7726-95-6  | Bromine  | 10,000                   | a, b              |
| 75-15-0    | Carbon disulfide   | 20,000                   | b                 |
| 7782-50-5  | Chlorine   | 2,500                    | a, b              |
| 10049-04-4 | Chlorine dioxide [Chlorine oxide (ClO <sub>2</sub> )]  | 1,000                    | c                 |
| 67-66-3    | Chloroform [Methane, trichloro-]   | 20,000                   | b                 |
| 542-88-1   | Chloromethyl ether [Methane, oxybis[chloro-]   | 1,000                    | b                 |
| 107-30-2   | Chloromethyl methyl ether [Methane, chloromethoxy-]  | 5,000                    | b                 |
| 4170-30-3  | Crotonaldehyde [2-Butenal]   | 20,000                   | b                 |
| 123-73-9   | Crotonaldehyde, (E)- [2-Butenal, (E)-]   | 20,000                   | b                 |
| 506-77-4   | Cyanogen chloride  | 10,000                   | c                 |
| 108-91-8   | Cyclohexylamine [Cyclohexanamine]  | 15,000                   | b                 |
| 19287-45-7 | Diborane   | 2,500                    | b                 |
| 75-78-5    | Dimethyldichlorosilane [Silane, dichlorodimethyl-]   | 5,000                    | b                 |
| 57-14-7    | 1,1-Dimethylhydrazine [Hydrazine, 1,1-dimethyl-]   | 15,000                   | b                 |
| 106-89-8   | Epichlorohydrin [Oxirane, (chloromethyl)-]   | 20,000                   | b                 |
| 75-21-8    | Ethylene oxide [Oxirane]   | 10,000                   | a, b              |
| 107-15-3   | Ethylenediamine [1,2-Ethanediamine]  | 20,000                   | b                 |
| 151-56-4   | Ethyleneimine [Aziridine]  | 10,000                   | b                 |
| 7782-41-4  | Fluorine   | 1,000                    | b                 |
| 50-00-0    | Formaldehyde (solution)  | 15,000                   | b                 |
| 110-00-9   | Furan  | 5,000                    | b                 |
| 302-01-2   | Hydrazine  | 15,000                   | b                 |
| 7647-01-0  | Hydrochloric acid (conc 37% or greater)  | 15,000                   | d                 |
| 74-90-8    | Hydrocyanic acid   | 2,500                    | a, b              |
| 7647-01-0  | Hydrogen chloride (anhydrous) [Hydrochloric acid]  | 5,000                    | a                 |
| 7664-39-3  | Hydrogen fluoride (conc 50% or greater) [Hydrofluoric acid]                                  | 1,000                    | a, b              |
| 7783-07-5  | Hydrogen selenide  | 500                      | b                 |
| 7783-06-4  | Hydrogen sulfide   | 10,000                   | a, b              |
| 13463-40-6 | Iron, pentacarbonyl- [Iron carbonyl (Fe(CO) <sub>5</sub> ), (TB-5-11)-]                      | 2,500                    | b                 |
| 78-82-0    | Isobutyronitrile [Propanenitrile, 2-methyl-]   | 20,000                   | b                 |

| CAS No.    | Chemical name  | Threshold quantity (lbs) | Basis for listing |
|------------|--|--------------------------|-------------------|
| 108-23-6   | Isopropyl chloroformate [Carbonochloridic acid, 1-methylethyl ester]                       | 15,000                   | b                 |
| 126-98-7   | Methacrylonitrile [2-Propenenitrile, 2-methyl-]  | 10,000                   | b                 |
| 74-87-3    | Methyl chloride [Methane, chloro-]   | 10,000                   | a                 |
| 79-22-1    | Methyl chloroformate [Carbonochloridic acid, methylester]                                  | 5,000                    | b                 |
| 60-34-4    | Methyl hydrazine [Hydrazine, methyl-]  | 15,000                   | b                 |
| 624-83-9   | Methyl isocyanate [Methane, isocyanato-]   | 10,000                   | a, b              |
| 74-93-1    | Methyl mercaptan [Methanethiol]  | 10,000                   | b                 |
| 556-64-9   | Methyl thiocyanate [Thiocyanic acid, methyl ester]   | 20,000                   | b                 |
| 75-79-6    | Methyltrichlorosilane [Silane, trichloromethyl-]   | 5,000                    | b                 |
| 13463-39-3 | Nickel carbonyl  | 1,000                    | b                 |
| 7697-37-2  | Nitric acid (conc 80% or greater)  | 15,000                   | b                 |
| 10102-43-9 | Nitric oxide [Nitrogen oxide (NO)]   | 10,000                   | b                 |
| 8014-95-7  | Oleum (Fuming Sulfuric acid) [Sulfuric acid, mixture with sulfur trioxide] <sup>1</sup>    | 10,000                   | e                 |
| 79-21-0    | Peracetic acid [Ethaneperoxoic acid]   | 10,000                   | b                 |
| 594-42-3   | Perchloromethylmercaptan [Methanesulfenyl chloride, trichloro-]                            | 10,000                   | b                 |
| 75-44-5    | Phosgene [Carbonic dichloride]   | 500                      | a, b              |
| 7803-51-2  | Phosphine  | 5,000                    | b                 |
| 10025-87-3 | Phosphorus oxychloride [Phosphoryl chloride]   | 5,000                    | b                 |
| 7719-12-2  | Phosphorus trichloride   | 15,000                   | b                 |
| 110-89-4   | Piperidine   | 15,000                   | b                 |
| 107-12-0   | Propionitrile [Propanenitrile]   | 10,000                   | b                 |
| 109-61-5   | Propyl chloroformate [Carbonochloridic acid, propylester]                                  | 15,000                   | b                 |
| 75-56-9    | Propylene oxide [Oxirane, methyl-]   | 10,000                   | b                 |
| 75-55-8    | Propyleneimine [Aziridine, 2-methyl-]  | 10,000                   | b                 |
| 7446-09-5  | Sulfur dioxide (anhydrous)   | 5,000                    | a, b              |
| 7783-60-0  | Sulfur tetrafluoride [Sulfur fluoride (SF <sub>4</sub> ), (T-4)-]                          | 2,500                    | b                 |
| 7446-11-9  | Sulfur trioxide  | 10,000                   | a, b              |
| 75-74-1    | Tetramethyllead [Plumbane, tetramethyl-]   | 10,000                   | b                 |
| 509-14-8   | Tetranitromethane [Methane, tetranitro-]   | 10,000                   | b                 |
| 7550-45-0  | Titanium tetrachloride [Titanium chloride (TiCl <sub>4</sub> ) (T-4)-]                     | 2,500                    | B                 |
| 584-84-9   | Toluene 2,4-diisocyanate [Benzene, 2,4-diisocyanato-1-methyl-] <sup>1</sup>                | 10,000                   | a                 |
| 91-08-7    | Toluene 2,6-diisocyanate [Benzene, 1,3-diisocyanato-2-methyl-] <sup>1</sup>                | 10,000                   | a                 |
| 26471-62-5 | Toluene diisocyanate (unspecified isomer) [Benzene,1,3-diisocyanatomethyl- 1] <sup>1</sup> | 10,000                   | a                 |
| 75-77-4    | Trimethylchlorosilane [Silane, chlorotrimethyl-]   | 10,000                   | b                 |
| 108-05-4   | Vinyl acetate monomer [Acetic acid ethenyl ester]  | 15,000                   | b                 |

<sup>1</sup> The mixture exemption in 40 CFR 68.115(b)(1) does not apply to the substance.

Note: Basis for Listing:

- a Mandated for listing by Congress.
- b On EHS list, vapor pressure 10 mmHg or greater. c Toxic gas.
- d Toxicity of hydrogen chloride, potential to release hydrogen chloride, and history of accidents.
- e Toxicity of sulfur trioxide and sulfuric acid, potential to release sulfur trioxide, and history of accidents.

Table B-2

## LIST OF REGULATED TOXIC SUBSTANCES AND THRESHOLD QUANTITIES - by CAS Number

| CAS No.  | Chemical name  | Threshold quantity (lbs) | Basis for listing |
|----------|--|--------------------------|-------------------|
| 50-00-0  | Formaldehyde (solution)  | 15,000                   | b                 |
| 57-14-7  | 1,1-Dimethylhydrazine [Hydrazine, 1,1-dimethyl-]   | 15,000                   | b                 |
| 60-34-4  | Methyl hydrazine [Hydrazine, methyl-]  | 15,000                   | b                 |
| 67-66-3  | Chloroform [Methane, trichloro-]   | 20,000                   | b                 |
| 74-87-3  | Methyl chloride [Methane, chloro-]   | 10,000                   | a                 |
| 74-90-8  | Hydrocyanic acid   | 2,500                    | a, b              |
| 74-93-1  | Methyl mercaptan [Methanethiol]  | 10,000                   | b                 |
| 75-15-0  | Carbon disulfide   | 20,000                   | b                 |
| 75-21-8  | Ethylene oxide [Oxirane]   | 10,000                   | a, b              |
| 75-44-5  | Phosgene [Carbonic dichloride]   | 500                      | a, b              |
| 75-55-8  | Propyleneimine [Aziridine, 2-methyl-]  | 10,000                   | b                 |
| 75-56-9  | Propylene oxide [Oxirane, methyl-]   | 10,000                   | b                 |
| 75-74-1  | Tetramethyllead [Plumbane, tetramethyl-]   | 10,000                   | b                 |
| 75-77-4  | Trimethylchlorosilane [Silane, chlorotrimethyl-]   | 10,000                   | b                 |
| 75-78-5  | Dimethyldichlorosilane [Silane, dichlorodimethyl-]   | 5,000                    | b                 |
| 75-79-6  | Methyltrichlorosilane [Silane, trichloromethyl-]   | 5,000                    | b                 |
| 78-82-0  | Isobutyronitrile [Propanenitrile, 2-methyl-]   | 20,000                   | b                 |
| 79-21-0  | Peracetic acid [Ethaneperoxoic acid]   | 10,000                   | b                 |
| 79-22-1  | Methyl chloroformate [Carbonochloridic acid, methylester]                                    | 5,000                    | b                 |
| 91-08-7  | Toluene 2,6-diisocyanate [Benzene, 1,3-diisocyanato-2-methyl-] <sup>1</sup>                  | 10,000                   | a                 |
| 106-89-8 | Epichlorohydrin [Oxirane, (chloromethyl)-]   | 20,000                   | b                 |
| 107-02-8 | Acrolein [2-Propenal]  | 5,000                    | b                 |
| 107-11-9 | Allylamine [2-Propen-1-amine]  | 10,000                   | b                 |
| 107-12-0 | Propionitrile [Propanenitrile]   | 10,000                   | b                 |
| 107-13-1 | Acrylonitrile [2-Propenenitrile]   | 20,000                   | b                 |
| 107-15-3 | Ethylenediamine [1,2-Ethanediamine]  | 20,000                   | b                 |
| 107-18-6 | Allyl alcohol [2-Propen-1-ol]  | 15,000                   | b                 |
| 107-30-2 | Chloromethyl methyl ether [Methane, chloromethoxy-]  | 5,000                    | b                 |
| 108-05-4 | Vinyl acetate monomer [Acetic acid ethenyl ester]  | 15,000                   | b                 |
| 108-23-6 | Isopropyl chloroformate [Carbonochloridic acid, 1-methylethyl ester]                         | 15,000                   | b                 |
| 108-91-8 | Cyclohexylamine [Cyclohexanamine]  | 15,000                   | b                 |
| 109-61-5 | Propyl chloroformate [Carbonochloridic acid, propylester]                                    | 15,000                   | b                 |
| 110-00-9 | Furan  | 5,000                    | b                 |
| 110-89-4 | Piperidine   | 15,000                   | b                 |
| 123-73-9 | Crotonaldehyde, (E)- [2-Butenal, (E)-]   | 20,000                   | b                 |
| 126-98-7 | Methacrylonitrile [2-Propenenitrile, 2-methyl-]  | 10,000                   | b                 |
| 151-56-4 | Ethyleneimine [Aziridine]  | 10,000                   | B                 |
| 302-01-2 | Hydrazine  | 15,000                   | b                 |
| 353-42-4 | Boron trifluoride compound with methyl ether (1:1) [Boron, trifluoro[oxybis[methane]]-, T-4- | 15,000                   | b                 |
| 506-77-4 | Cyanogen chloride  | 10,000                   | c                 |
| 509-14-8 | Tetranitromethane [Methane, tetranitro-]   | 10,000                   | b                 |
| 542-88-1 | Chloromethyl ether [Methane, oxybis[chloro-]   | 1,000                    | b                 |
| 556-64-9 | Methyl thiocyanate [Thiocyanic acid, methyl ester]   | 20,000                   | b                 |

| CAS No.    | Chemical name  | Threshold quantity (lbs) | Basis for listing |
|------------|--|--------------------------|-------------------|
| 584-84-9   | Toluene 2,4-diisocyanate [Benzene, 2,4-diisocyanato-1-methyl-] <sup>1</sup>                | 10,000                   | a                 |
| 594-42-3   | Perchloromethylmercaptan [Methanesulfenyl chloride, trichloro-]                            | 10,000                   | b                 |
| 624-83-9   | Methyl isocyanate [Methane, isocyanato-]   | 10,000                   | a, b              |
| 814-68-6   | Acrylyl chloride [2-Propenoyl chloride]  | 5,000                    | b                 |
| 4170-30-3  | Crotonaldehyde [2-Butenal]   | 20,000                   | b                 |
| 7446-09-5  | Sulfur dioxide (anhydrous)   | 5,000                    | a, b              |
| 7446-11-9  | Sulfur trioxide  | 10,000                   | a, b              |
| 7550-45-0  | Titanium tetrachloride [Titanium chloride (TiCl <sub>4</sub> ) (T-4)-]                     | 2,500                    | b                 |
| 7637-07-2  | Boron trifluoride [Borane, trifluoro-]   | 5,000                    | b                 |
| 7647-01-0  | Hydrochloric acid (conc 37% or greater)  | 15,000                   | d                 |
| 7647-01-0  | Hydrogen chloride (anhydrous) [Hydrochloric acid]  | 5,000                    | a                 |
| 7664-39-3  | Hydrogen fluoride (conc 50% or greater) [Hydrofluoric acid]                                | 1,000                    | a, b              |
| 7664-41-7  | Ammonia (anhydrous)  | 10,000                   | a, b              |
| 7664-41-7  | Ammonia (conc 20% or greater)  | 20,000                   | a, b              |
| 7697-37-2  | Nitric acid (conc 80% or greater)  | 15,000                   | b                 |
| 7719-12-2  | Phosphorus trichloride   | 15,000                   | b                 |
| 7726-95-6  | Bromine  | 10,000                   | a, b              |
| 7782-41-4  | Fluorine   | 1,000                    | b                 |
| 7782-50-5  | Chlorine   | 2,500                    | a, b              |
| 7783-06-4  | Hydrogen sulfide   | 10,000                   | a, b              |
| 7783-07-5  | Hydrogen selenide  | 500                      | b                 |
| 7783-60-0  | Sulfur tetrafluoride [Sulfur fluoride (SF <sub>4</sub> ), (T-4)-]                          | 2,500                    | b                 |
| 7784-34-1  | Arsenous trichloride   | 15,000                   | b                 |
| 7784-42-1  | Arsine   | 1,000                    | b                 |
| 7803-51-2  | Phosphine  | 5,000                    | b                 |
| 8014-95-7  | Oleum (Fuming Sulfuric acid) [Sulfuric acid, mixture with sulfur trioxide] <sup>1</sup>    | 10,000                   | e                 |
| 10025-87-3 | Phosphorus oxychloride [Phosphoryl chloride]   | 5,000                    | b                 |
| 10049-04-4 | Chlorine dioxide [Chlorine oxide (ClO <sub>2</sub> )]                                      | 1,000                    | c                 |
| 10102-43-9 | Nitric oxide [Nitrogen oxide (NO)]   | 10,000                   | b                 |
| 10294-34-5 | Boron trichloride [Borane, trichloro-]   | 5,000                    | b                 |
| 13463-39-3 | Nickel carbonyl  | 1,000                    | B                 |
| 13463-40-6 | Iron, pentacarbonyl- [Iron carbonyl (Fe(CO) <sub>5</sub> ), (TB-5-11)-]                    | 2,500                    | b                 |
| 19287-45-7 | Diborane   | 2,500                    | b                 |
| 26471-62-5 | Toluene diisocyanate (unspecified isomer) [Benzene,1,3-diisocyanatomethyl- 1] <sup>1</sup> | 10,000                   | a                 |

<sup>1</sup> The mixture exemption in 40 CFR 68.115(b)(1) does not apply to the substance.

Note: Basis for Listing:

a Mandated for listing by Congress.

b On EHS list, vapor pressure 10 mmHg or greater. c Toxic gas.

d Toxicity of hydrogen chloride, potential to release hydrogen chloride, and history of accidents.

e Toxicity of sulfur trioxide and sulfuric acid, potential to release sulfur trioxide, and history of accidents.

**Table B-3**

**LIST OF REGULATED FLAMMABLE<sup>1</sup> SUBSTANCES AND THRESHOLD QUANTITIES - by alpha**

| CAS No.    | Chemical name                                   | Threshold quantity (lbs) | Basis for listing |
|------------|---|--------------------------|-------------------|
| 75-07-0    | Acetaldehyde                                    | 10,000                   | g                 |
| 74-86-2    | Acetylene [Ethyne]                              | 10,000                   | f                 |
| 598-73-2   | Bromotrifluorethylene [Ethene, bromotrifluoro-] | 10,000                   | f                 |
| 106-99-0   | 1,3-Butadiene                                   | 10,000                   | f                 |
| 106-97-8   | Butane  | 10,000                   | f                 |
| 25167-67-3 | Butene  | 10,000                   | f                 |
| 106-98-9   | 1-Butene  | 10,000                   | f                 |
| 107-01-7   | 2-Butene  | 10,000                   | f                 |
| 590-18-1   | 2-Butene-cis                                    | 10,000                   | f                 |
| 624-64-6   | 2-Butene-trans [2-Butene, (E)]                  | 10,000                   | f                 |
| 463-58-1   | Carbon oxysulfide [Carbon oxide sulfide (COS)]  | 10,000                   | f                 |
| 7791-21-1  | Chlorine monoxide [Chlorine oxide]              | 10,000                   | f                 |
| 590-21-6   | 1-Chloropropylene [1-Propene, 1-chloro-]        | 10,000                   | g                 |
| 557-98-2   | 2-Chloropropylene [1-Propene, 2-chloro-]        | 10,000                   | g                 |
| 460-19-5   | Cyanogen [Ethanedinitrile]                      | 10,000                   | f                 |
| 75-19-4    | Cyclopropane                                    | 10,000                   | f                 |
| 4109-96-0  | Dichlorosilane [Silane, dichloro-]              | 10,000                   | f                 |
| 75-37-6    | Difluoroethane [Ethane, 1,1-difluoro-]          | 10,000                   | f                 |
| 124-40-3   | Dimethylamine [Methanamine, N-methyl-]          | 10,000                   | f                 |
| 463-82-1   | 2,2-Dimethylpropane [Propane, 2,2-dimethyl-]    | 10,000                   | f                 |
| 74-84-0    | Ethane  | 10,000                   | f                 |
| 107-00-6   | Ethyl acetylene [1-Butyne]                      | 10,000                   | f                 |
| 75-00-3    | Ethyl chloride [Ethane, chloro-]                | 10,000                   | f                 |
| 60-29-7    | Ethyl ether [Ethane, 1,1 <sup>1</sup> -oxybis-] | 10,000                   | g                 |
| 75-08-1    | Ethyl mercaptan [Ethanethiol]                   | 10,000                   | g                 |
| 109-95-5   | Ethyl nitrite [Nitrous acid, ethyl ester]       | 10,000                   | f                 |
| 75-04-7    | Ethylamine [Ethanamine]                         | 10,000                   | f                 |
| 74-85-1    | Ethylene [Ethene]                               | 10,000                   | f                 |
| 1333-74-0  | Hydrogen  | 10,000                   | f                 |
| 75-28-5    | Isobutane [Propane, 2-methyl-]                  | 10,000                   | f                 |
| 78-78-4    | Isopentane [Butane, 2-methyl-]                  | 10,000                   | g                 |
| 78-79-5    | Isoprene [1,3,-Butadiene, 2-methyl-]            | 10,000                   | g                 |
| 75-29-6    | Isopropyl chloride [Propane, 2-chloro-]         | 10,000                   | g                 |
| 75-31-0    | Isopropylamine [2-Propanamine]                  | 10,000                   | g                 |
| 74-82-8    | Methane   | 10,000                   | f                 |
| 74-89-5    | Methylamine [Methanamine]                       | 10,000                   | f                 |
| 563-46-2   | 2-Methyl-1-butene                               | 10,000                   | g                 |
| 563-45-1   | 3-Methyl-1-butene                               | 10,000                   | f                 |
| 115-10-6   | Methyl ether [Methane, oxybis-]                 | 10,000                   | f                 |
| 107-31-3   | Methyl formate [Formic acid, methyl ester]      | 10,000                   | g                 |
| 115-11-7   | 2-Methylpropene [1-Propene, 2-methyl-]          | 10,000                   | f                 |
| 504-60-9   | 1,3-Pentadiene                                  | 10,000                   | f                 |
| 109-66-0   | Pentane   | 10,000                   | g                 |
| 109-67-1   | 1-Pentene                                       | 10,000                   | g                 |

| CAS No.    | Chemical name                                      | Threshold quantity (lbs) | Basis for listing |
|------------|--|--------------------------|-------------------|
| 646-04-8   | 2-Pentene, (E)-                                    | 10,000                   | g                 |
| 627-20-3   | 2-Pentene, (Z)-                                    | 10,000                   | g                 |
| 463-49-0   | Propadiene [1,2-Propadiene]                        | 10,000                   | f                 |
| 74-98-6    | Propane  | 10,000                   | f                 |
| 115-07-1   | Propylene [1-Propene]                              | 10,000                   | f                 |
| 74-99-7    | Propyne [1-Propyne]                                | 10,000                   | f                 |
| 7803-62-5  | Silane   | 10,000                   | f                 |
| 116-14-3   | Tetrafluoroethylene [Ethene, tetrafluoro-]         | 10,000                   | f                 |
| 75-76-3    | Tetramethylsilane [Silane, tetramethyl-]           | 10,000                   | g                 |
| 10025-78-2 | Trichlorosilane [Silane, trichloro-]               | 10,000                   | g                 |
| 79-38-9    | Trifluorochloroethylene [Ethene, chlorotrifluoro-] | 10,000                   | f                 |
| 75-50-3    | Trimethylamine [Methanamine, N,N-dimethyl-]        | 10,000                   | f                 |
| 689-97-4   | Vinyl acetylene [1-Buten-3-yne]                    | 10,000                   | f                 |
| 75-01-4    | Vinyl chloride [Ethene, chloro-]                   | 10,000                   | a,f               |
| 109-92-2   | Vinyl ethyl ether [Ethene, ethoxy-]                | 10,000                   | g                 |
| 75-02-5    | Vinyl fluoride [Ethene, fluoro-]                   | 10,000                   | f                 |
| 107-25-5   | Vinyl methyl ether [Ethene, methoxy-]              | 10,000                   | f                 |
| 75-35-4    | Vinylidene chloride [Ethene, 1,1-dichloro-]        | 10,000                   | g                 |
| 75-38-7    | Vinylidene fluoride [Ethene, 1,1-difluoro-]        | 10,000                   | f                 |

1 A flammable substance when used as a fuel or held for sale as a fuel at a retail facility is excluded from all provisions of this part (see 40 CFR 68.126).

Note: Basis for Listing:

- a Mandated for listing by Congress. f  
Flammable gas.
- g Volatile flammable liquid.

**Table B-4**

**LIST OF REGULATED FLAMMABLE<sup>1</sup> SUBSTANCES AND THRESHOLD QUANTITIES - by CAS Number**

| CAS No.  | Chemical name                                      | Threshold quantity (lbs) | Basis for listing |
|----------|--|--------------------------|-------------------|
| 60-29-7  | Ethyl ether [Ethane, 1,1 <sup>1</sup> -oxybis-]    | 10,000                   | g                 |
| 74-82-8  | Methane  | 10,000                   | f                 |
| 74-84-0  | Ethane   | 10,000                   | f                 |
| 74-85-1  | Ethylene [Ethene]                                  | 10,000                   | f                 |
| 74-86-2  | Acetylene [Ethyne]                                 | 10,000                   | f                 |
| 74-89-5  | Methylamine [Methanamine]                          | 10,000                   | f                 |
| 74-98-6  | Propane  | 10,000                   | f                 |
| 74-99-7  | Propyne [1-Propyne]                                | 10,000                   | f                 |
| 75-00-3  | Ethyl chloride [Ethane, chloro-]                   | 10,000                   | f                 |
| 75-01-4  | Vinyl chloride [Ethene, chloro-]                   | 10,000                   | a,f               |
| 75-02-5  | Vinyl fluoride [Ethene, fluoro-]                   | 10,000                   | f                 |
| 75-04-7  | Ethylamine [Ethanamine]                            | 10,000                   | f                 |
| 75-07-0  | Acetaldehyde                                       | 10,000                   | g                 |
| 75-08-1  | Ethyl mercaptan [Ethanethiol]                      | 10,000                   | g                 |
| 75-19-4  | Cyclopropane                                       | 10,000                   | f                 |
| 75-28-5  | Isobutane [Propane, 2-methyl-]                     | 10,000                   | f                 |
| 75-29-6  | Isopropyl chloride [Propane, 2-chloro-]            | 10,000                   | g                 |
| 75-31-0  | Isopropylamine [2-Propanamine]                     | 10,000                   | g                 |
| 75-35-4  | Vinylidene chloride [Ethene, 1,1-dichloro-]        | 10,000                   | g                 |
| 75-37-6  | Difluoroethane [Ethane, 1,1-difluoro-]             | 10,000                   | f                 |
| 75-38-7  | Vinylidene fluoride [Ethene, 1,1-difluoro-]        | 10,000                   | f                 |
| 75-50-3  | Trimethylamine [Methanamine, N,N-dimethyl-]        | 10,000                   | f                 |
| 75-76-3  | Tetramethylsilane [Silane, tetramethyl-]           | 10,000                   | g                 |
| 78-78-4  | Isopentane [Butane, 2-methyl-]                     | 10,000                   | g                 |
| 78-79-5  | Isoprene [1,3,-Butadiene, 2-methyl-]               | 10,000                   | g                 |
| 79-38-9  | Trifluorochloroethylene [Ethene, chlorotrifluoro-] | 10,000                   | f                 |
| 106-97-8 | Butane   | 10,000                   | f                 |
| 106-98-9 | 1-Butene   | 10,000                   | f                 |
| 106-99-0 | 1,3-Butadiene                                      | 10,000                   | f                 |
| 107-00-6 | Ethyl acetylene [1-Butyne]                         | 10,000                   | f                 |
| 107-01-7 | 2-Butene   | 10,000                   | f                 |
| 107-25-5 | Vinyl methyl ether [Ethene, methoxy-]              | 10,000                   | f                 |
| 107-31-3 | Methyl formate [Formic acid, methyl ester]         | 10,000                   | g                 |
| 109-66-0 | Pentane  | 10,000                   | g                 |
| 109-67-1 | 1-Pentene  | 10,000                   | g                 |
| 109-92-2 | Vinyl ethyl ether [Ethene, ethoxy-]                | 10,000                   | g                 |
| 109-95-5 | Ethyl nitrite [Nitrous acid, ethyl ester]          | 10,000                   | f                 |
| 115-07-1 | Propylene [1-Propene]                              | 10,000                   | f                 |
| 115-10-6 | Methyl ether [Methane, oxybis-]                    | 10,000                   | f                 |
| 115-11-7 | 2-Methylpropene [1-Propene, 2-methyl-]             | 10,000                   | f                 |
| 116-14-3 | Tetrafluoroethylene [Ethene, tetrafluoro-]         | 10,000                   | f                 |
| 124-40-3 | Dimethylamine [Methanamine, N-methyl-]             | 10,000                   | f                 |
| 460-19-5 | Cyanogen [Ethanedinitrile]                         | 10,000                   | f                 |
| 463-49-0 | Propadiene [1,2-Propadiene]                        | 10,000                   | f                 |

| CAS No.    | Chemical name                                   | Threshold quantity (lbs) | Basis for listing |
|------------|---|--------------------------|-------------------|
| 463-58-1   | Carbon oxysulfide [Carbon oxide sulfide (COS)]  | 10,000                   | f                 |
| 463-82-1   | 2,2-Dimethylpropane [Propane, 2,2-dimethyl-]    | 10,000                   | f                 |
| 504-60-9   | 1,3-Pentadiene                                  | 10,000                   | f                 |
| 557-98-2   | 2-Chloropropylene [1-Propene, 2-chloro-]        | 10,000                   | g                 |
| 563-45-1   | 3-Methyl-1-butene                               | 10,000                   | f                 |
| 563-46-2   | 2-Methyl-1-butene                               | 10,000                   | g                 |
| 590-18-1   | 2-Butene-cis                                    | 10,000                   | f                 |
| 590-21-6   | 1-Chloropropylene [1-Propene, 1-chloro-]        | 10,000                   | g                 |
| 598-73-2   | Bromotrifluorethylene [Ethene, bromotrifluoro-] | 10,000                   | f                 |
| 624-64-6   | 2-Butene-trans [2-Butene, (E)]                  | 10,000                   | f                 |
| 627-20-3   | 2-Pentene, (Z)-                                 | 10,000                   | g                 |
| 646-04-8   | 2-Pentene, (E)-                                 | 10,000                   | g                 |
| 689-97-4   | Vinyl acetylene [1-Buten-3-yne]                 | 10,000                   | f                 |
| 1333-74-0  | Hydrogen  | 10,000                   | f                 |
| 4109-96-0  | Dichlorosilane [Silane, dichloro-]              | 10,000                   | f                 |
| 7791-21-1  | Chlorine monoxide [Chlorine oxide]              | 10,000                   | f                 |
| 7803-62-5  | Silane  | 10,000                   | f                 |
| 10025-78-2 | Trichlorosilane [Silane, trichloro-]            | 10,000                   | g                 |
| 25167-67-3 | Butene  | 10,000                   | f                 |

1 A flammable substance when used as a fuel or held for sale as a fuel at a retail facility is excluded from all provisions of this part (see 40 CFR 68.126).

Note: Basis for Listing:

- a Mandated for listing by Congress. f  
Flammable gas.
- g Volatile flammable liquid.

## Appendix C: Part 61 NESHAP Reference List

| Pollutant                                | Facility or Emission Unit type  | Iowa Rules<br>567 IAC   | 40 CFR 61<br>Subpart |
|--|---|-------------------------|----------------------|
| RADON                                    | Underground Uranium Mines; Department of Energy Facilities; Phosphorus Fertilizer Plants; and Facilities processing or disposing of Uranium ore and tailings                              | Federal Only            | B, Q, R, T, W        |
| BERYLLIUM                                | Beryllium Extraction Plants; Ceramic Plants, Foundries, Incinerators, Propellant Plants, and Machine Shops that process Beryllium containing material; and Rocket Motor Firing Test Sites | 23.1(3)"b" and "c"      | C, D                 |
| MERCURY                                  | Mercury Ore Processing; Manufacturing Processes using Mercury Chlor-alkali Cells; Sludge Incinerators; and Sludge Drying Plants   | 23.1(3)"d"              | E                    |
| VINYL CHLORIDE                           | Ethylene Dichloride Manufacturing via Oxygen, HCl and Ethylene; Vinyl Chloride Manufacturing; and Polyvinyl Chloride Manufacturing  | 23.1(3)"e"              | F                    |
| RADIO-NUCLIDES                           | Department of Energy; Nuclear Regulatory Commission Licensed Facilities; Other Federal Facilities; and Elemental Phosphorus Plants  | Federal Only            | H, I, K              |
| BENZENE                                  | Fugitive Process, Storage, and Transfer Equipment Leaks; Coke By-Product Recovery Plants; Benzene Storage Vessels; Benzene Transfer Operations; and Benzene Waste Operations              | 23.1(3)"f" and "k-n"    | J, L, Y, BB, FF      |
| ASBESTOS                                 | Asbestos Mills; Roadway Surfacing with Asbestos Tailings; Manufacture of products containing Asbestos; Demolition; Renovation; and Spraying and Disposal of Asbestos Waste                | 23.1(3)"a"              | M                    |
| INORGANIC ARSENIC                        | Glass manufacturer; Primary Copper Smelter; Arsenic Trioxide and Metallic Arsenic Production Facilities   | 23.1(3)"h", "i" and "j" | P, N, O              |
| VOLATILE HAZARDOUS AIR POLLUTANTS (VHAP) | Pumps, Compressors, Pressure Relief Devices, Connections, Valves, Lines, Flanges, Product Accumulator Vessels, etc. in VHAP Service   | 23.1(3)"g"              | V                    |

# Appendix D: Stratospheric Ozone Depleting Chemicals

## A. Class I

| 1. Group I           | Chemical   | CAS Number        |
|----------------------|--|-------------------|
|                      | CFCl <sub>3</sub> -Trichlorofluoromethane (CFC-11)                                       |                   |
|                      | CF <sub>2</sub> Cl <sub>2</sub> -Dichlorodifluoromethane (CFC-12)                        | 75-43-4           |
|                      | C <sub>2</sub> F <sub>3</sub> Cl <sub>3</sub> -Trichlorotrifluoroethane (CF-113)         | 76-13-1           |
|                      | C <sub>2</sub> F <sub>4</sub> Cl <sub>2</sub> -Dichlorotetrafluoroethane (CFC-114)       | 76-14-2           |
|                      | C <sub>2</sub> F <sub>5</sub> Cl-Monochloropentafluoroethane(CFC-115)                    |                   |
|                      | All isomers of the above chemicals   |                   |
| <b>2. Group II:</b>  | <b>Chemical</b>  | <b>CAS Number</b> |
|                      | CF <sub>2</sub> ClBr-Bromochlorodifluoromethane (Halon-1211)                             | 353-59-3          |
|                      | CF <sub>3</sub> Br-Bromotrifluoroethane (Halon - 1301)                                   | 598-73-2          |
|                      | C <sub>2</sub> F <sub>4</sub> Br <sub>2</sub> -Dibromotetrafluoroethane (Halon-2402)     | 124-73-2          |
|                      | All isomers of the above chemicals   |                   |
| <b>3. Group III</b>  | <b>Chemical</b>  | <b>CAS Number</b> |
|                      | CF <sub>3</sub> Cl-Chlorotrifluoromethane (CFC-13)                                       | 75-72-9           |
|                      | C <sub>2</sub> FCl <sub>5</sub> -(CFC-111)   |                   |
|                      | C <sub>2</sub> F <sub>2</sub> Cl <sub>4</sub> -(CFC-112)                                 |                   |
|                      | C <sub>3</sub> FCl <sub>7</sub> -(CFC-211)   |                   |
|                      | C <sub>3</sub> F <sub>2</sub> Cl <sub>6</sub> -(CFC-212)                                 |                   |
|                      | C <sub>3</sub> F <sub>3</sub> Cl <sub>5</sub> -(CFC-213)                                 |                   |
|                      | C <sub>3</sub> F <sub>4</sub> Cl <sub>4</sub> -(CFC-214)                                 |                   |
|                      | C <sub>3</sub> F <sub>5</sub> Cl <sub>3</sub> -(CFC-215)                                 |                   |
|                      | C <sub>3</sub> F <sub>6</sub> Cl <sub>2</sub> -(CFC-216)                                 |                   |
|                      | C <sub>3</sub> F <sub>7</sub> Cl-(CFC-217)   |                   |
|                      | All isomers of the above chemicals   |                   |
| <b>4. Group IV:</b>  | <b>Chemical</b>  | <b>CAS Number</b> |
|                      | CCl <sub>4</sub> -Carbon tetrachloride   | 56-23-5           |
| <b>5. Group V:</b>   | <b>Chemical</b>  | <b>CAS Number</b> |
|                      | C <sub>2</sub> H <sub>3</sub> Cl <sub>3</sub> -1,1,1 trichloroethane (Methyl chloroform) | 71-55-6           |
|                      | All isomers of the above chemical except<br>1,1,2 trichloroethane                        |                   |
| <b>6. Group VI.</b>  | <b>Chemical</b>  | <b>CAS Number</b> |
|                      | CH <sub>3</sub> Br-Bromomethane (Methyl Bromide)   | 74-83-9           |
| <b>7. Group VII.</b> | <b>Chemical</b>  |                   |
|                      | CHFBr <sub>2</sub>   |                   |
|                      | CHF <sub>2</sub> Br (HBFC-22B1)  |                   |
|                      | CH <sub>2</sub> FBr  |                   |
|                      | C <sub>2</sub> HFBr <sub>4</sub>   |                   |
|                      | C <sub>2</sub> HF <sub>2</sub> Br <sub>3</sub>   |                   |
|                      | C <sub>2</sub> HF <sub>3</sub> Br <sub>2</sub>   |                   |
|                      | C <sub>2</sub> HF <sub>4</sub> Br  |                   |

C<sub>2</sub>H<sub>2</sub>FBr<sub>3</sub>  
C<sub>2</sub>H<sub>2</sub>F<sub>2</sub>Br<sub>2</sub>  
C<sub>2</sub>H<sub>2</sub>F<sub>3</sub>Br  
C<sub>2</sub>H<sub>3</sub>FBr<sub>2</sub>  
C<sub>2</sub>H<sub>3</sub>F<sub>2</sub>Br  
C<sub>2</sub>H<sub>4</sub>FBr  
C<sub>3</sub>HFBr<sub>6</sub>  
C<sub>3</sub>HF<sub>2</sub>Br<sub>5</sub>  
C<sub>3</sub>HF<sub>3</sub>Br<sub>4</sub>  
C<sub>3</sub>HF<sub>4</sub>Br<sub>3</sub>  
C<sub>3</sub>HF<sub>5</sub>Br<sub>2</sub>  
C<sub>3</sub>HF<sub>6</sub>Br  
C<sub>3</sub>H<sub>2</sub>FBr<sub>5</sub>  
C<sub>3</sub>H<sub>2</sub>F<sub>3</sub>Br<sub>4</sub>  
C<sub>3</sub>H<sub>2</sub>F<sub>3</sub>Br<sub>3</sub>  
C<sub>3</sub>H<sub>2</sub>F<sub>4</sub>Br<sub>2</sub>  
C<sub>3</sub>H<sub>2</sub>F<sub>5</sub>Br  
C<sub>3</sub>H<sub>3</sub>FBr<sub>4</sub>  
C<sub>3</sub>H<sub>3</sub>F<sub>2</sub>Br<sub>3</sub>  
C<sub>3</sub>H<sub>3</sub>F<sub>3</sub>Br<sub>2</sub>  
C<sub>3</sub>H<sub>3</sub>F<sub>4</sub>Br  
C<sub>3</sub>H<sub>4</sub>FBr<sub>3</sub>  
C<sub>3</sub>H<sub>4</sub>F<sub>2</sub>Br<sub>2</sub>  
C<sub>3</sub>H<sub>4</sub>F<sub>3</sub>Br  
C<sub>3</sub>H<sub>5</sub>FBr<sub>2</sub>  
C<sub>3</sub>H<sub>5</sub>F<sub>2</sub>Br  
C<sub>3</sub>H<sub>6</sub>FBr

**8. Group VIII.**

**Chemical**

CH<sub>2</sub>BrCl (Chlorobromomethane)

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## A. Class II

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| Chemical   | CAS Number  |
|--|-------------|
| CH <sub>2</sub> Cl <sub>2</sub> -Dichlorofluoromethane (HCFC-21)                                 | 75-43-4     |
| CHF <sub>2</sub> Cl-Chlorodifluoromethane (HCFC-22)  | 75-45-6     |
| C <sub>2</sub> HFC1-Chlorofluoromethane (HCFC-31)  |             |
| C <sub>2</sub> HFCl <sub>4</sub> -(HCFC-121)   |             |
| C <sub>2</sub> HF <sub>2</sub> Cl <sub>3</sub> -(HCFC-122)                                       |             |
| C <sub>2</sub> HF <sub>3</sub> Cl <sub>2</sub> -2, 2-Dichloro-1, 1, 1-trifluoroethane (HCFC-123) | 306-83-2    |
| C <sub>2</sub> HF <sub>4</sub> Cl-1-Chloro-1, 1, 1, 2-tetrafluoroethane (HCFC-124)               | 2873-89-0   |
| C <sub>2</sub> H <sub>2</sub> FC1 <sub>3</sub> -(HCFC-131)                                       |             |
| C <sub>2</sub> H <sub>2</sub> F <sub>2</sub> Cl <sub>2</sub> -(HCFC-132)                         |             |
| C <sub>2</sub> H <sub>2</sub> F <sub>3</sub> Cl-(HCFC-133)                                       |             |
| C <sub>2</sub> H <sub>3</sub> FC1 <sub>2</sub> -1, 1-Dichloro-1-fluoroethane (HCFC-141b)         | 1717-00-6   |
| C <sub>2</sub> H <sub>3</sub> F <sub>2</sub> Cl-1-Chloro-1, 1-difluoroethane (HCFC-142b)         | 75-68-3     |
| C <sub>2</sub> H <sub>4</sub> FCl-Chlorofluoroethane (HCFC-151)                                  | 110587-14-9 |
| C <sub>3</sub> HFCl <sub>4</sub> -(HCFC-221)   |             |
| C <sub>3</sub> HF <sub>2</sub> Cl <sub>5</sub> -(HCFC-222)                                       |             |
| C <sub>3</sub> HF <sub>3</sub> Cl <sub>4</sub> -(HCFC-223)                                       |             |
| C <sub>3</sub> HF <sub>4</sub> Cl <sub>3</sub> -(HCFC-224)                                       |             |
| C <sub>3</sub> HF <sub>5</sub> Cl <sub>2</sub> -(HCFC-225ca)                                     |             |
| C <sub>3</sub> HF <sub>5</sub> Cl <sub>2</sub> - (HCFC-225cb)                                    |             |
| C <sub>3</sub> HF <sub>6</sub> Cl-(HCFC-226)   |             |
| C <sub>3</sub> H <sub>2</sub> FC1 <sub>5</sub> -(HCFC-231)                                       |             |
| C <sub>3</sub> H <sub>2</sub> F <sub>2</sub> Cl <sub>4</sub> -(HCFC-232)                         |             |
| C <sub>3</sub> H <sub>2</sub> F <sub>3</sub> Cl <sub>3</sub> -(HCFC-233)                         |             |
| C <sub>3</sub> H <sub>2</sub> F <sub>4</sub> Cl <sub>2</sub> -(HCFC-234)                         |             |
| C <sub>3</sub> H <sub>2</sub> F <sub>5</sub> Cl-(HCFC-235)                                       |             |
| C <sub>3</sub> H <sub>3</sub> FC1 <sub>4</sub> -(HCFC-241)                                       |             |
| C <sub>3</sub> H <sub>3</sub> F <sub>2</sub> Cl <sub>3</sub> -(HCFC-242)                         |             |
| C <sub>3</sub> H <sub>3</sub> F <sub>3</sub> Cl <sub>2</sub> -(HCFC-243)                         |             |
| C <sub>3</sub> H <sub>3</sub> F <sub>4</sub> Cl-(HCFC-244)                                       |             |
| C <sub>3</sub> H <sub>4</sub> FCl <sub>3</sub> -(HCFC-251)                                       |             |
| C <sub>3</sub> H <sub>4</sub> F <sub>2</sub> Cl <sub>2</sub> -(HCFC-252)                         |             |
| C <sub>3</sub> H <sub>4</sub> F <sub>3</sub> Cl-(HCFC-253)                                       |             |
| C <sub>3</sub> H <sub>5</sub> FCl <sub>2</sub> -(HCFC-261)                                       |             |
| C <sub>3</sub> H <sub>5</sub> F <sub>2</sub> Cl-(HCFC-262)                                       |             |
| C <sub>3</sub> H <sub>6</sub> FCl-(HCFC-271)   |             |

All isomers of the above chemicals

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## Appendix E: Acid Rain and CSAPR

### Acid Rain Program under Title IV

([567 IAC 24.120 - 24.148](#) *Acid Rain*; 1990 Clean Air Act Sections 401-416)

Utilities and other facilities which combust fossil fuel and generate electricity for wholesale or retail sale may be subject to Acid Rain program requirements, including the requirement to hold an **Acid Rain permit under 40 CFR 72 and [567 IAC 24.122](#)**.

Utilities designated as "Phase I" or "Phase II" sources will need to apply for an Acid Rain permit. Other facilities that may be permitted include certain new units that began commercial operation on or after November 15, 1990, and existing units that increase electric generation from less than 25 megawatts to 25 megawatts or more.

**Table E-1: Facilities with Phase I or Phase II Units**

| Plants as Listed in 40 CFR 73.10 | DNR Title V Facility Name                               | Facility Number |
|----------------------------------|---|-----------------|
| Ames                             | City of Ames Steam Electric Plant                       | 85-01-006       |
| Burlington                       | IPL - Burlington Generating Station                     | 29-01-013       |
| Council Bluffs                   | MidAmerican Energy Co. - Walter Scott Jr. Energy Center | 78-01-026       |
| Des Moines                       | MidAmerican Energy Co. - Pleasant Hill CTs/GDEC         | 77-13-002       |
| Earl F Wisdom                    | Corn Belt Power Coop/Wisdom Generating Station          | 21-01-003       |
| George Neal North                | MidAmerican Energy Co. - George Neal North              | 97-04-010       |
| George Neal South                | MidAmerican Energy Co. - George Neal South              | 97-04-011       |
| Lansing                          | IPL - Lansing Generating Station                        | 03-03-001       |
| Lime Creek                       | IPL - Lime Creek Generating Station                     | 17-01-066       |
| Louisa                           | MidAmerican Energy Co. - Louisa Station                 | 58-07-001       |
| Muscatine                        | Muscatine Power & Water                                 | 70-01-011       |
| Ottumwa                          | IPL - Ottumwa Generating Station                        | 90-07-001       |
| Prairie Creek                    | IPL - Prairie Creek Generating Station                  | 57-01-042       |
| Riverside                        | MidAmerican Energy Co. - Riverside Station              | 82-02-006       |
| Streeter Station                 | Cedar Falls Municipal Electric Utility                  | 07-02-005       |
| Sutherland                       | IPL - Sutherland Generating Station                     | 64-01-012       |
| NA                               | IPL - Emery Generating Station                          | 17-02-016       |
| NA                               | Western Minnesota Municipal Power Agency - Exira        | 05-04-002       |

Nationally standardized forms are required for applying for Acid Rain permits or for the Acid Rain portions of the Title V permit application and compliance plans. The compliance plan content requirements (567 IAC 24.105(2)"h" - Standard application form and required information - compliance plan) for Title V operating permit applications apply and must be included in the acid rain portion of the compliance plan of Title IV affected sources (567 IAC 24.105(2)"j").

Certain cogeneration units, qualifying facilities, independent power facilities, and solid waste incinerators may need to apply for a permit. Requirements to apply for an Acid Rain permit are detailed in 567 IAC 24.128. Certain types of units will not be subject to the requirements of the Acid Rain program and are listed in 567 IAC 24.122(2). Other units may be exempted (see 567 IAC 24.123 *Acid Rain Exemptions*). Facilities may petition EPA for an acid rain applicability determination. Petitions must conform to EPA requirements and should be sent by the facility's certifying official to:

**Regular or certified mail address:**

US EPA  
Clean Air Markets Division  
1200 Pennsylvania Ave NW  
Mail Code 6204A  
Washington DC 20460

**Overnight mail address:** Package delivery /

Street Address: US EPA  
Clean Air Markets Division  
1201 Constitution Ave NW  
Room 4153C  
Washington DC 20004  
Tel: 202-564-0159

For further information about applying for an applicability determination, call EPA's Clean Air Market at (202) 343-9620.

Link: <https://www.epa.gov/airmarkets/acid-rain-permitting>

Acid Rain permits will be required in addition to Title V operating permits. Applicable requirements from the Acid Rain regulations must be included in the Title V operating permit application.

Following is a list of selected Acid Rain regulations that can be obtained by calling the EPA Clean Air Market at (202) 343-9620.

Acid Rain Program: General provisions and permits, allowance system, continuous emission monitoring, excess emissions, and administrative appeals.

- 40 CFR 72 as amended through March 28, 2011
- 40 CFR 73 and 74 as amended through April 28, 2006
- 40 CFR 78 as amended through August 8, 2011
- 40 CFR 75 as amended through August 30, 2016
- 40 CFR 76 as amended through October 15, 1999
- 40 CFR 77 as amended through May 12, 2005

Acid Rain Program: Nitrogen oxides emission reduction program.

- 40 CFR 76 as amended through October 15, 1999

Acid Rain Program: Permits and allowance system (opt-in).

- 40 CFR 74 as amended through April 28, 2006

Acid Rain Program: Permits and allowance system (substitution & compensating units).

- 40 CFR 72 as amended through March 28, 2011
- 40 CFR 73 as amended through April 28, 2006

### **Cross State Air Pollution Rule (CSAPR, aka Transport Rule)**

(567 IAC 24.120 - 24.123 Acid Rain; 1990 Clean Air Act Section 110; 40 CFR Part 97, 40 CFR 52.38)

Utilities and other facilities which combust fossil fuel and generate electricity for sale may be subject to CSAPR program requirements, including the requirement to incorporate CSAPR conditions into the Title V permit under 40 CFR 97 subparts AAAAA, EEEEE, and CCCCC.

#### Applicability:

Any stationary boiler or combustion turbine is a CSAPR affected unit if it burns fossil fuel, has served, on or after January 1, 2005, a generator of greater than 25 MW nameplate capacity that produces electricity for sale, except:

1. A qualifying cogeneration unit and not selling more than one-third of unit's potential electrical output, or 219,000 MWh, whichever is greater on an annual basis; or
2. A qualifying solid waste incineration unit
  - a. throughout the later of 2005 or the 12-month period starting on the date the unit first produces electricity and continuing to qualify as a solid waste incineration unit throughout each calendar year ending after the later of 2005 or such 12-month period; and
  - b. with an average annual fuel consumption of fossil fuel for the first 3 consecutive calendar years of operation starting no earlier than 2005 of less than 20 percent (on a Btu basis) and an average annual fuel consumption of fossil fuel for any 3 consecutive calendar years thereafter of less than

20 percent (on a Btu basis).

Please read 40 CFR 97 subparts AAAAA, EEEEE, and CCCCC for complete applicability information, including retired unit exemptions.

### **CSAPR Conditions**

As explained in the preamble of the CSAPR regulations promulgated on August 8, 2011, the requirements established in the CSAPR trading programs are "applicable requirements" that must be included in a source's Title V permit pursuant to 40 Code of Federal Regulations (CFR) parts 70.

For sources with existing Title V permits, permitting authorities should incorporate CSAPR applicable requirements in accordance with the procedures in the approved operating permit program, as applicable to the specific permit. Such procedures include the permit renewal provisions at 40 CFR § 70.7(c), the reopening for cause provisions at 40 CFR § 70.7(f), and the significant permit modification provisions at 40 CFR § 70.7(e)(4). For sources that become newly subject to Title V permitting, the initial permit issued pursuant to 40 CFR § 70.7(a) will need to include the CSAPR applicable requirements.

# **Appendix F: Prevention of Significant Deterioration (PSD) Information Worksheet**

(567 IAC 24.4 Special requirements for major stationary sources located in areas designated attainment or unclassified (PSD) and 567 IAC Chapter 33: Special Regulations and Construction Permit Requirements for Major Stationary Sources - Prevention of Significant Deterioration (PSD) of Air Quality; PSD 40 CFR 52.21)

The State of Iowa has committed to establishing and maintaining National Ambient Air Quality Standards (NAAQS). A plan is set forth (as described in 40 CFR 52 subparts A and Q) for the state to prevent the significant deterioration (PSD) of air quality in any portion of the State where the existing air quality is better than the NAAQS. Included in this plan, and reflected in state rule (567 IAC chapters 21-33), are requirements for air pollution sources to undergo review and obtain permits to construct and modify air pollution sources.

This worksheet will assist in determining whether a facility may be considered to be a “major stationary source” of air pollution and subject to PSD review as a part of Iowa's air quality permitting process.

Sources which are not considered to be major stationary sources may still be subject to air permitting review. The construction and modification of air contaminant sources in Iowa are regulated under Code of Iowa Chapter 455B and 567 Iowa Administrative Code chapters 21-33.

If, after completing this worksheet, it is determined that the facility is a major stationary source or it is unsure if the facility is subject to PSD - read and become familiar with the requirements of:

40 CFR 52.21 Subpart A (General Provisions) and,

40 CFR 52 Subpart Q (Iowa)

567 Iowa Administrative Code section 24.4 and chapter 33

- 1) Is the facility defined as one of the following source categories? (Some SIC codes applying to specific categories are given in parentheses).

| SOURCE CATEGORY |   | SIC          | SOURCE CATEGORY |   | SIC          |
|-----------------|---|--------------|-----------------|---|--------------|
| 1               | Fossil fuel-fired steam electric plants of more than 250 MMBtu/hr               |              | 15              | Phosphate rock processing plants  | (1475)       |
| 2               | Coal cleaning plants (with thermal dryers)                                      |              | 16              | Coke oven batteries   | (3312)       |
| 3               | Kraft pulp mills  | (2611, 2621) | 17              | Sulfur recovery plants  | (2819)       |
| 4               | Portland cement plants  | (3241)       | 18              | Carbon black plants (furnace process)   | (2895)       |
| 5               | Primary zinc smelters   | (3339)       | 19              | Primary lead smelters   | (3339)       |
| 6               | Iron and steel mills  | (332x)       | 20              | Fuel conversion plants  |              |
| 7               | Primary aluminum ore reduction plants   | (3334)       | 21              | Sintering plants  |              |
| 8               | Primary copper smelters   | (3331)       | 22              | Secondary metal production plants   | (334x)       |
| 9               | Municipal incinerators capable of charging more than 250 tons of refuse per day |              | 23              | Chemical process plants (*)   | (28xx)       |
| 10              | Hydrofluoric acid plants  | (2819, 2899) | 24              | Fossil-fuel boilers (or combination thereof) totaling more than 250 MMBtu/hr    |              |
| 11              | Sulfuric acid plants  | (2819)       | 25              | Petroleum storage & transfer units, total storage capacity over 300,000 barrels |              |
| 12              | Nitric acid plants  | (2873)       | 26              | Taconite ore processing plants  | (1011)       |
| 13              | Petroleum refineries  | (2911)       | 27              | Glass fiber processing plants   |              |
| 14              | Lime plants   | (3274)       | 28              | Charcoal production plants  | (2819, 2861) |

(\*)Excluding ethanol production facilities that produce ethanol by natural fermentation included in NAICS codes 325193 or 312140.

- NO, this facility is not classified as one of the 28 listed source categories. Go to question 2.
- YES, this facility is classified as one of the 28 listed source categories. An air emission source that is classified as one of the 28 sources listed above, and having a potential to emit of 100 tons per year or more of any single regulated pollutant is considered a "Major Stationary Source"

- 2) Facilities not defined by the 28 source categories listed above and located in attainment areas are considered to be a major stationary source if the source has a potential to emit more than 250 tpy of any single regulated pollutant. Review the current PTE of the entire facility for each regulated pollutant (information from Part 1 Form 1.5 Potential Emissions - Significant Activities).

Is the current PTE of the facility greater than or equal to the 100/250 tpy threshold for the facility, making the facility a major stationary source?

- NO, this facility is not a major stationary source and therefore is not presently subject to PSD requirements.
- YES, this facility is currently considered a major stationary source for PSD purpose.

# Appendix G: Proposed Limits and Alternative Operating Scenarios

## Proposed Limits

Proposals for establishing operating limits on emissions (e.g. hours of operation or product throughput) or on the mode of operation of an emission unit(s), and/or control equipment should be submitted with the information outlined below. Due to the complex nature of evaluating and setting alternative limits, additional information may be required upon review.

Any proposals for establishing or modifying limits on emissions or operations may not be a relaxation of any requirement in an existing permit, judicial consent decree, administrative order, or rule.

Proposed limitations may not be used as a basis for establishing the applicability of any requirement until AFTER the DNR has incorporated the limitation into a permit.

Proposals for emission limitations (e.g. pound per hour (lb/hr) or grains per standard cubic feet (gr/scf)) should be done through the construction permits section of the Air Quality Bureau. The construction permits section performs National Ambient Air Quality Standard (NAAQS) evaluations on this type of emission limits. This type of evaluation is beyond the scope of the reviews performed by the Title V operating permits section as mandated by 40 CFR 70.

Because the material submitted for the emission limitation proposal is just a proposal when the application is submitted it is not federally enforceable until it is incorporated into a permit. Therefore, the proposed limitations cannot be used to limit the emission potentials and affect program applicability determination when the application is submitted.

## Alternative Operating Scenarios

Proposals for reasonably anticipated operating scenarios may be included in the permit application. Two primary guidelines provided for alternative operating scenarios follow:

First, any proposals for establishing alternative operating scenarios may not be a relaxation of any requirement in an existing permit, judicial consent decree, administrative order, or rule.

Second, the proposal must also include a statement that the source shall, contemporaneously with making a change from one operating scenario to another, record in a log at the permitted facility a record of the scenario under which it is operating.

## Early Reduction

Facilities that do not already have a federally enforceable Hazardous Air Pollutant (HAP) early reduction commitment in place must follow the guidelines as set forth in 40 CFR 63, Subpart D, as amended through November 21, 1994.

The Clean Air Act Amendments of 1990 Section 112(i)(5) provides that an existing source may obtain a six-year extension to compliance requirements with an emission standard promulgated under Section 112(d) if the source has achieved and demonstrated a reduction of 90 percent (95% for particulate HAPs) or more in emissions of hazardous air pollutants prior to the proposal of an applicable 112(d) standard. Please read 40 CFR

63 subpart D for detailed qualifications for early reductions.

To ensure continued achievement of the emission reduction, a federally enforceable emission limitation, reflecting the reduction, can be established for the source in a Title V operating permit.

If the source is proposing an early reduction program, attach the information required in 40 CFR 63, Subpart D.

**Required Documentation**

For any Proposed Limits and/or Alternative Operations Scenarios, submit a written summary of the proposed limits. Include a table of contents for all materials submitted in support of the proposal.

## Appendix H: NSPS Reference List

### Standards of Performance for New Stationary Sources and Emissions Guidelines for Existing Sources

| Source Categories subject to NSPS  | 567 IAC<br>23.1(5) | Effective date of Construction,<br>Modification or<br>Reconstruction | 40 CFR 60<br>Subpart   |
|--|--------------------|--|------------------------|
| Municipal solid waste landfills - Emissions Guidelines & Compliance Times  | "a"                | Before: 05/30/91   | Cc                     |
| Municipal solid waste landfills - Emissions Guidelines & Compliance Times  |                    | On or Before 7/17/2014   | Cf                     |
| Commercial and Industrial Solid Waste Incineration Units - Emissions Guidelines and Compliance Times   | "c"                | On or Before 11/30/99  | Part 62<br>Subpart III |
| Federal Plan Requirements for Municipal Solid Waste Landfills That Commenced Construction on or Before July 17, 2014 and Have Not Been Modified or Reconstructed Since July 17, 2014 |                    | On or Before 7/17/2014   | Part 62<br>Subpart OOO |
| Commercial and Industrial Solid Waste Incineration Units - Emissions Guidelines and Compliance Times   |                    | See rule for details   | DDDD                   |
| Sewage Sludge Incineration Units - Emission Guidelines and Compliance Times  |                    | On or Before 10/14/2010  | MMMM                   |
| Emission Guidelines for Greenhouse Gas Emissions from Existing Electric Utility Generating Units   |                    | On or Before 1/8/2014  | UUUUa                  |

| Source Categories subject to NSPS   | 567 IAC<br>23.1(2) | Effective date of Construction,<br>Modification or<br>Reconstruction | 40 CFR 60<br>Subpart |
|---|--------------------|--|----------------------|
| Fossil fuel-fired steam generators >250 MMBtu/hr not covered under 40 CFR 60 subparts Da, or Db (after 06/19/86)  | "a"                | After: 08/17/71  | D                    |
| Electric utility steam generators >250 MMBtu/hr Combined cycle gas turbines > 250 MMBtu/hr not covered under 40 CFR 60 subpart KKKK                                     | "z"                | After: 09/18/78 (generators)<br>After: 02/28/05 (turbines)           | Da                   |
| Industrial-commercial-institutional steam generators > 100 MMBtu/hr not covered under 40 CFR 60 subparts Da, Ea, Eb, GG (heat recovery), AAAA, or KKKK (heat recovery)  | "ccc"              | After: 06/19/84  | Db                   |
| Industrial-commercial-institutional steam generators □10 MMBtu but □100 MMBtu/hr not covered under 40 CFR 60 subparts GG (heat recovery), AAAA, or KKKK (heat recovery) | "lll"              | After: 06/09/89  | Dc                   |
| Incinerators > 50 tons/day not covered under 40 CFR 60 subparts Cb, Eb, AAAA, or BBBB   | "b"                | After: 08/17/71  | E                    |
| Municipal waste combustors > 250 tons/day not covered by 40 CFR 60 subpart Eb   | "nnn"              | After: 12/20/89 and on or before 09/20/94                            | Ea                   |
| Large municipal waste combustors > 250 tons/day   | "sss"              | After: 09/20/94  | Eb                   |
| Portland cement plants  | "c"                | After: 08/17/71  | F                    |
| Nitric acid plants  | "d"                | After: 08/17/71 and on or before 10/14/11                            | G                    |
| Nitric acid plants  |                    | After 10/14/11   | Ga                   |
| Sulfuric acid plants  | "e"                | After: 08/17/71  | H                    |
| Asphalt concrete plants   | "f"                | After: 6/11/73   | I                    |
| Petroleum refineries  | "g"                | After: 6/11/73   | J                    |
| Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007   | "g"                | After: 05/14/07  | Ja                   |
| Petroleum storage vessels with capacity > 40,000 gallons  | "bb"               | After: 6/11/73 and prior to 5/19/78                                  | K                    |
| Petroleum storage vessels with capacity > 40,000 gallons  | "cc"               | After: 5/18/78 and prior to 7/23/84                                  | Ka                   |

| Source Categories subject to NSPS   | 567 IAC 23.1(2) | Effective date of Construction, Modification or Reconstruction | 40 CFR 60 Subpart |
|---|-----------------|--|-------------------|
| Volatile organic liquid storage vessels (including petroleum liquids)   | "ddd"           | After: 07/23/84  | Kb                |
| Secondary lead smelters   | "h"             | After: 06/11/73  | L                 |
| Secondary brass and bronze production plants  | "i"             | After: 06/11/73  | M                 |
| Oxygen process furnaces   | "j"             | After: 06/11/73  | N                 |
| Oxygen process steelmaking facilities   | "yy"            | After: 01/20/83  | Na                |
| Sewage treatment plants   | "k"             | After: 06/11/73  | O                 |
| Primary copper smelters   | "m"             | After: 10/16/74  | P                 |
| Primary zinc smelters   | "n"             | After: 10/16/74  | Q                 |
| Primary lead smelters   | "o"             | After: 10/16/74  | R                 |
| Primary aluminum reduction plants   | "p"             | After: 10/23/74  | S                 |
| Wet process phosphoric acid plants in the phosphate fertilizer industry   | "q"             | After: 10/22/74  | T                 |
| Superphosphoric acid plants in the phosphate fertilizer industry  | "r"             | After: 10/22/74  | U                 |
| Diammonium phosphate plants in the phosphate fertilizer industry  | "s"             | After: 10/22/74  | V                 |
| Triple superphosphate plants in the phosphate fertilizer industry   | "t"             | After: 10/22/74  | W                 |
| Granular triple superphosphate storage facilities in the phosphate fertilizer industry                                | "u"             | After: 10/22/74  | X                 |
| Coal preparation plants > 200 tons/day  | "v"             | After: 10/24/74  | Y                 |
| Ferroalloy production facilities  | "w"             | After: 10/21/74  | Z                 |
| Steel plants  | "l"             | After 10/21/74 and on or before 8/17/83                        | AA                |
| Electric arc furnaces and argon-oxygen decarburization vessels  | "ww"            | After: 08/17/83  | AAa               |
| Kraft pulp mills  | "x"             | After: 09/24/76  | BB                |
| Kraft Pulp Mill Affected Sources for Which Construction, Reconstruction, or Modification Commenced After May 23, 2013 | "x"             | After 05/23/13   | BBa               |
| Glass manufacturing plants  | "dd"            | After: 06/15/79  | CC                |
| Grain elevators   | "ooo"           | After: 08/03/78 and on or before 7/9/14                        | DD                |
| Surface coating metal furniture   | "gg"            | After: 11/28/80  | EE                |
| Stationary gas turbines $\geq$ 10 MMBtu/hr not covered under 40 CFR 60 subpart KKKK                                   | "aa"            | After: 10/03/77  | GG                |
| Lime manufacturing plants   | "y"             | After: 05/03/77  | HH                |
| Lead-acid battery manufacturing plants  | "hh"            | After: 01/14/80  | KK                |
| Metallic mineral processing plants  | "rr"            | After: 08/24/82  | LL                |
| Automobile and light-duty truck surface coating operations  | "ee"            | After: 10/05/79  | MM                |
| Phosphate rock plants > 4 tons/hr   | "ii"            | After: 09/21/79  | NN                |
| Ammonium sulfate manufacture  | "ff"            | After: 02/04/80  | PP                |
| Graphic arts industry: publication rotogravure printing   | "jj"            | After: 08/28/80  | QQ                |
| Pressure sensitive tape and label surface coating operations  | "qq"            | After: 12/30/80  | RR                |
| Industrial surface coating: large appliances  | "kk"            | After: 12/24/80  | SS                |
| Metal coil surface coating  | "ll"            | After: 01/05/81  | TT                |

| Source Categories subject to NSPS  | 567 IAC 23.1(2) | Effective date of Construction, Modification or Reconstruction             | 40 CFR 60 Subpart |
|--|-----------------|--|-------------------|
| Asphalt processing and asphalt roofing manufacture   | "mm"            | After: 11/18/80  | UU                |
| Equipment leaks of VOC in the synthetic organic chemicals manufacturing industry   | "nn"            | After: 01/05/81 and on or before 11/07/06                                  | VV                |
| Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry   |                 | After 11/07/06   | VVa               |
| Beverage can surface coating industry  | "oo"            | After: 11/26/80  | WW                |
| Bulk gasoline terminals  | "pp"            | After: 12/17/80  | XX                |
| New residential wood heaters   | federal only    | After: 07/01/88  | AAA               |
| Rubber tire manufacturing industry   | "eee"           | After: 01/20/83  | BBB               |
| VOC emissions from the polymer manufacturing industry  | "mmm"           | After: 09/30/87 or 01/10/89 (depend on processes, see rule for details)    | DDD               |
| Flexible vinyl and urethane coating and printing   | "uu"            | After: 01/18/83  | FFF               |
| Equipment leaks of VOC in petroleum refineries not covered under 40 CFR 60 subparts VV, VVa, or KKK  | "tt"            | After: 01/04/83 and on or before 11/07/06                                  | GGG               |
| Equipment leaks of VOC in petroleum refineries not covered under 40 CFR 60 subparts VV, VVa, GGG, or KKK                                   |                 | After 11/07/06   | GGGa              |
| Synthetic fiber production facilities > 551 tons/year  | "ss"            | Construction or reconstruction after: 11/23/82                             | HHH               |
| VOC emissions from synthetic organic chemical manufacturing industry air oxidation unit processes  | "jjj"           | After: 10/21/83  | III               |
| Petroleum dry cleaners (total dryer capacity > 84 pounds)  | "vv"            | After: 12/14/82  | JJJ               |
| Equipment leaks of VOC from on-shore natural gas processing plants not covered under 40 CFR 60 subparts VV or GGG                          | "zz"            | After: 01/20/84 and on or before 8/23/2011                                 | KKK               |
| On shore natural gas processing: SO <sub>2</sub> emissions   | "aaa"           | After: 01/20/84 and on or before 8/23/2011                                 | LLL               |
| VOC emissions from synthetic organic chemical manufacturing industry distillation operations   | "kkk"           | After: 12/30/83  | NNN               |
| Nonmetallic mineral processing plants (including sand and gravel processing) not covered under 40 CFR 60 subparts F or I                   | "bbb"           | After: 08/31/83  | OOO               |
| Wool fiberglass insulation manufacturing plants  | "xx"            | After: 02/07/84  | PPP               |
| VOC emissions from petroleum refinery wastewater systems   | "ggg"           | After: 05/04/87  | QQQ               |
| VOC emissions from the synthetic organic chemical manufacturing industry (SOCMI) reactor processes not covered under 40 CFR 60 subpart DDD | "qqq"           | After: 06/29/90  | RRR               |
| Magnetic tape coating facilities   | "hhh"           | After: 01/22/86  | SSS               |
| Industrial surface coating: Surface coating of plastic parts for business machines   | "fff"           | After: 01/08/86  | TTT               |
| Calciners and dryers in mineral industries not covered under 40 CFR 60 subpart LL  | "ppp"           | After: 04/23/86  | UUU               |
| Polymeric coating of supporting substrates facilities  | "iii"           | After: 04/30/87  | VVV               |
| Municipal solid waste landfills  |                 | On or After: 7/17/14   | XXX               |
| New small municipal waste combustion units ≥ 35 tons/day but ≤ 250 tons/day  | "uuu"           | Construction after 08/30/99, reconstruction or modification after 06/06/01 | AAAA              |

| Source Categories subject to NSPS   | 567 IAC 23.1(2) | Effective date of Construction, Modification or Reconstruction             | 40 CFR 60 Subpart |
|---|-----------------|--|-------------------|
| Commercial and industrial solid waste incineration units not covered under 40 CFR 60 subparts Cb, Ce, Ea, Eb, Ec, O, AAAA, BBBB, MMMM, LLLL, or 40 CFR 63 subpart EEE | "vvv"           | Construction after 06/04/10, reconstruction or modification after 08/07/13 | CCCC              |
| Other solid waste incineration units not covered under 40 CFR 60 subparts Cb, Ce, Ea, Eb, Ec, CCCC, DDDD, AAAA, BBBB, or 40 CFR 63 subparts EEE, or LLL               | "www"           | Construction after 12/09/04, reconstruction or modification after 06/16/06 | EEEE              |
| Stationary compression ignition internal combustion engines   | "yyy"           | After 07/11/05   | III               |
| Stationary spark ignition internal combustion engines   | "zzz"           | See Rule   | JJJ               |
| Stationary combustion turbines $\geq$ 10 MMBtu/hr   | "aaa"           | After 02/18/05   | KKKK              |
| New Sewage Sludge Incineration Units  |                 | Construction after 10/14/10, modification after 9/21/11                    | LLLL              |
| Crude Oil and Natural Gas Production, Transmission and Distribution   |                 | After 8/23/2011 and before 9/18/2015                                       | OOOO              |
| Crude Oil and Natural Gas Facilities  |                 | After 9/18/2015  | OOOOa             |
| Standards of Performance for Greenhouse Gas Emissions for Electric Utility Generating Units   |                 | After 1/8/2014   | TTTT              |

# Appendix I: Part 63 NESHAP Reference List

**Table I-1: Categories of Major Sources of Hazardous Air Pollutants Sorted by Industry Group**

| INDUSTRY GROUP - Source Category <sup>a</sup>   | 40 CFR 63<br>Subpart | Final Date | Compliance<br>Date <sup>b</sup> |
|---|----------------------|------------|---------------------------------|
| <u>FUEL COMBUSTION</u>  |                      |            |                                 |
| Engine Test Cells/Standards (Combined with Rocket Testing Facilities)                 | PPPPP                | 5/27/2003  | See Rule<br>4/16/2015           |
| Electric Utility Steam Generating Units (Coal- and Oil-fired)                         | UUUUU                | 2/15/2011  | (remanded<br>6/29/15)           |
| Industrial, Commercial & Institutional Boilers and Process Heaters                    | DDDDD                | 3/21/2011  | 3/21/2014                       |
| Reciprocating Internal Combustion Engines (RICE)                                      | ZZZZ                 | 6/15/2004  | See Rule                        |
| Stationary Combustion Turbines  | YYYY                 | 3/5/2004   | 3/5/2007                        |
| <u>NON-FERROUS METALS PROCESSING</u>  |                      |            |                                 |
| Primary Aluminum Reduction Plants   | LL                   | 10/07/1997 | 10/07/1999                      |
| Primary Copper Smelting   | QQQ                  | 6/12/2002  | 6/12/2005                       |
| Primary Lead Smelting   | TTT                  | 6/4/1999   | 5/4/2001                        |
| Primary Magnesium Refining  | TTTTT                | 10/10/2003 | 10/10/2004                      |
| Secondary Aluminum Production   | RRR                  | 3/23/2000  | 3/24/2003                       |
| Secondary Lead Smelting   | X                    | 6/23/1995  | 6/23/1997                       |
| <u>FERROUS METALS PROCESSING</u>  |                      |            |                                 |
| Coke Oven Batteries   | L                    | 10/27/93   | Variable                        |
| Coke Ovens: Pushing, Quenching, & Battery Stacks                                      | CCCCC                | 4/14/2003  | 4/14/2006                       |
| Ferroalloys Production: Ferromanganese & Silicomanganese                              | XXX                  | 5/20/1999  | 5/20/2001                       |
| Integrated Iron & Steel Manufacturing Facilities                                      | FFFFF                | 5/20/2003  | 5/20/2006                       |
| Iron & Steel Foundries  | EEEEE                | 4/22/2004  | 4/22/2007                       |
| Steel Pickling: HCL Process Facilities & Hydrochloric Acid Regeneration Plants        | CCC                  | 6/22/1999  | 6/22/2001                       |
| <u>MINERAL PRODUCTS PROCESSING</u>  |                      |            |                                 |
| Asphalt Processing & Asphalt Roofing Manufacturing                                    | LLLLL                | 4/29/2003  | 5/1/2006                        |
| Brick & Structural Clay Products Manufacturing  | JJJJ                 | 10/26/2015 | 12/26/2018                      |
| Clay Ceramics Manufacturing   | KKKKK                | 5/16/2003  | (vacated)                       |
| Lime Manufacturing Plants   | AAAAA                | 1/5/2004   | 1/5/2007                        |
| Mineral Wool Production   | DDD                  | 6/01/1999  | 6/01/2002                       |
| Portland Cement Manufacturing Industry  | LLL                  | 6/14/1999  | 6/10/2002                       |
| Refractory Products Manufacturing<br>(formerly Chromium Refractories)                 | SSSSS                | 4/16/2003  | 4/17/2006                       |
| Taconite Iron Ore Processing  | RRRRR                | 10/30/2003 | 10/30/2006                      |
| Wool Fiberglass Manufacturing   | NNN                  | 6/14/1999  | 6/14/2002                       |
| <u>PETROLEUM AND NATURAL GAS PRODUCTION AND REFINING</u>                              |                      |            |                                 |
| Natural Gas Transmission & Storage Facilities   | HHH                  | 06/17/99   | 06/17/02                        |
| Oil & Natural Gas Production Facilities   | HH                   | 06/17/99   | 06/17/02                        |
| Petroleum Refineries: Catalytic Cracking, Catalytic Reforming & Sulfur Recovery Units | UUU                  | 4/11/2002  | 4/11/2005                       |
| Petroleum Refineries (Other Sources Not Distinctly Listed)                            | CC                   | 08/18/95   | 08/18/98                        |
| <u>LIQUIDS DISTRIBUTION</u>   |                      |            |                                 |
| Gasoline Distribution (Stage 1)   | R                    | 12/14/1994 | 12/15/1997                      |
| Marine Vessel Loading Operations  | Y                    | 9/19/1995  | 9/19/1998                       |
| Organic Liquids Distribution (non-gasoline)   | EEEE                 | 2/3/2004   | 2/3/2007                        |
| <u>SURFACE COATING PROCESSES</u>  |                      |            |                                 |
| Aerospace Manufacturing and Rework Facilities   | GG                   | 9/1/1995   | 9/1/1998                        |
| Magnetic Tape Manufacturing Operations  | EE                   | 12/15/1994 | 12/15/1996                      |

| INDUSTRY GROUP - Source Category <sup>a</sup>   | 40 CFR 63 Subpart | Final Date | Compliance Date <sup>b</sup> |
|---|-------------------|------------|------------------------------|
| Paper and Other Web Coating   | JJJJ              | 12/4/2002  | 12/4/2005                    |
| Printing, Coating, and Dyeing of Fabrics and Other Textiles   | OOOO              | 5/29/2003  | 5/29/2006                    |
| Printing and Publishing Industry  | KK                | 5/30/1996  | 5/30/1999                    |
| Surface Coating of Automobiles and Light-Duty Trucks  | IIII              | 4/26/2004  | 4/26/2007                    |
| Surface Coating of Large Appliances   | NNNN              | 7/23/2002  | 7/23/2005                    |
| Surface Coating of Metal Cans   | KKKK              | 11/13/2003 | 11/13/2006                   |
| Surface Coating of Metal Coil   | SSSS              | 6/10/2002  | 6/10/2005                    |
| Surface Coating of Metal Furniture  | RRRR              | 5/23/2003  | 5/23/2006                    |
| Surface Coating of Miscellaneous Metal Parts and Products (includes Asphalt/Coal Tar Application-metal pipes)   | MMMM              | 1/2/2004   | 1/2/2007                     |
| Surface Coating of Plastic Parts and Products   | PPPP              | 4/19/2004  | 4/19/2007                    |
| Surface Coating of Wood Building Products (formerly Flat Wood Paneling Products)  | QQQQ              | 5/28/2003  | 5/28/2006                    |
| Shipbuilding & Ship Repair (Surface Coating)  | II                | 12/15/1995 | 12/16/1996                   |
| Wood Furniture Manufacturing Operations   | JJ                | 12/7/1995  | 11/21/1997                   |
| <u>WASTE TREATMENT AND DISPOSAL</u>   |                   |            |                              |
| Hazardous Waste Combustors  | EEE               | 9/30/1999  | 9/30/2003                    |
| Municipal Solid Waste Landfills   | AAAA              | 1/16/2003  | See rule                     |
| Off-Site Waste Recovery Operations  | DD                | 7/1/1996   | 2/1/2000                     |
| Publicly Owned Treatment Works (POTW)   | VVV               | 10/26/1999 | 10/26/2002                   |
| Site Remediation  | GGGGG             | 10/8/2003  | 10/8/2006                    |
| <u>AGRICULTURAL CHEMICALS PRODUCTION</u>  |                   |            |                              |
| Pesticide Active Ingredient Production  |                   |            |                              |
| <ul style="list-style-type: none"> <li>• 4-Chloro-2-Methylphenoxyacetic Acid</li> <li>• 2,4-D Salts &amp; Esters</li> <li>• 4,6-dinitro-o-cresol</li> <li>• Butadiene Furfural Cotrimer (R-11) <sup>c</sup></li> <li>• Captafol <sup>c</sup></li> <li>• Captan <sup>c</sup></li> <li>• Chloroneb</li> <li>• Chlorothalonil <sup>c</sup></li> <li>• Dacthal (tm) <sup>c</sup></li> <li>• Sodium Pentachlorophenate</li> <li>• Tordon (tm) Acid <sup>c</sup></li> </ul> | MMM               | 6/23/1999  | 12/23/2003                   |
| <u>FIBERS PRODUCTION PROCESSES</u>  |                   |            |                              |
| Cellulose Products Manufacturing  |                   |            |                              |
| <ul style="list-style-type: none"> <li>• Cellulose Food Casing</li> <li>• Rayon</li> <li>• Cellulosic Sponge</li> <li>• Cellophane</li> </ul>   | UUUU              | 6/11/2002  | 6/11/2005                    |
| Cellulose Ethers Production   |                   |            |                              |
| <ul style="list-style-type: none"> <li>• Caroxymethylcellulose</li> <li>• Methyl cellulose</li> <li>• Cellulose Ethers</li> </ul>   |                   |            |                              |
| <u>FOOD AND AGRICULTURE PROCESSES</u>   |                   |            |                              |
| Manufacturing of Nutritional Yeast (formerly Bakers Yeast)  | CCCC              | 5/21/2001  | 5/21/2004                    |
| Solvent Extraction for Vegetable Oil Production   | GGGG              | 4/12/2001  | 4/12/2004                    |
| <u>PHARMACEUTICAL PRODUCTION PROCESSES</u>  |                   |            |                              |
| Pharmaceuticals Production <sup>c</sup>   | GGG               | 9/21/1998  | 10/21/2002                   |
| <u>POLYMERS AND RESINS PRODUCTION</u>   |                   |            |                              |
| Flexible Polyurethane Foam Production   | III               | 10/7/1998  | 10/08/2001                   |
| Polyether Polyols Production  | PPP               | 6/1/1999   | 6/1/2002                     |
| Polymers & Resins I   | U                 | 9/5/1996   | 7/31/1997                    |
| <ul style="list-style-type: none"> <li>• Butyl Rubber</li> </ul>  |                   |            |                              |

| INDUSTRY GROUP - Source Category <sup>a</sup>  | 40 CFR 63 Subpart | Final Date | Compliance Date <sup>b</sup> |
|--|-------------------|------------|------------------------------|
| <ul style="list-style-type: none"> <li>• Epichlorohydrin Elastomer</li> <li>• Ethylene Propylene Rubber</li> <li>• Hypalon (tm) <sup>c</sup></li> <li>• Neoprene</li> <li>• Nitrile Butadiene Rubber</li> <li>• Polybutadiene Rubber <sup>c</sup></li> <li>• Polysulfide Rubber <sup>c</sup></li> <li>• Styrene Butadiene Rubber &amp; Latex <sup>c</sup></li> </ul>   |                   |            |                              |
| Polymers & Resins II <ul style="list-style-type: none"> <li>• Epoxy Resin</li> <li>• Non-Nylon Polyamides</li> </ul>   | W                 | 3/8/1995   | 3/3/1998                     |
| Polymers & Resins III <ul style="list-style-type: none"> <li>• Amino Resins</li> <li>• Phenolic Resins</li> </ul>  | OOO               | 1/20/2000  | 1/20/2003                    |
| Polymers & Resins IV <ul style="list-style-type: none"> <li>• Acrylonitrile Butadiene Styrene Resin</li> <li>• Methyl Methacrylate Acrylonitrile Butadiene Styrene Resin <sup>c</sup></li> <li>• Methyl Methacrylate Butadiene Styrene Resin <sup>c</sup></li> <li>• Polyethylene Terephthalate Resin</li> <li>• Polystyrene Resin</li> <li>• Styrene Acrylonitrile Resin</li> <li>• Nitrile Resin</li> </ul>                              | JJJ               | 9/12/1996  | 7/31/1997                    |
| Polyvinyl Chloride and Copolymers Production   | J                 | 7/10/2002  | 7/10/2005                    |
| <u>PRODUCTION OF INORGANIC CHEMICALS</u>   |                   |            |                              |
| Hydrochloric Acid Production (includes Fumed Silica)   | NNNNN             | 4/17/2003  | 4/17/2006                    |
| Mercury Cell Chlor-Alkali Plants   | IIIII             | 12/19/2003 | 12/19/2006                   |
| Phosphoric Acid/Phosphate Fertilizer   | AA/BB             | 6/10/1999  | 6/10/2002                    |
| <u>PRODUCTION OF INORGANIC &amp; ORGANIC CHEMICALS</u>   |                   |            |                              |
| Generic MACT   |                   |            |                              |
| <ul style="list-style-type: none"> <li>• Acetal Resins</li> <li>• Acrylic/Modacrylic Fibers</li> <li>• Hydrogen Fluoride</li> <li>• Polycarbonates Production <sup>c</sup></li> </ul>  | YY                | 6/29/1999  | 6/29/2002                    |
| Generic MACT +   |                   |            |                              |
| <ul style="list-style-type: none"> <li>• Carbon Black Production</li> <li>• Cyanide Chemicals Manufacturing</li> <li>• Ethylene Production</li> <li>• Spandex Production</li> </ul>  | YY                | 7/12/2002  | 7/12/2005                    |
| <u>PRODUCTION OF ORGANIC CHEMICALS</u>   |                   |            |                              |
| Hazardous Organic NESHAP (HON)   | F,G,H,I           | 4/22/1994  | 5/12/1998<br>(New Sources)   |
| <ul style="list-style-type: none"> <li>• Synthetic Organic Chemical Manufacturing Industry (SOCMI)</li> </ul>  | F                 |            | 5/14/2001                    |
| <ul style="list-style-type: none"> <li>• SOCMI-Process Vents, Storage Vessels, Transfer Operations, &amp; Wastewater</li> </ul>  | G                 |            | 5/14/2001                    |
| <ul style="list-style-type: none"> <li>• Equipment Leaks</li> </ul>  | H                 |            | 5/12/1999                    |
| <ul style="list-style-type: none"> <li>• Certain Processes Subject to the Negotiated Regulation for Equipment Leaks</li> </ul>   | I                 |            | Variable                     |
| <ul style="list-style-type: none"> <li>• Tetrahydrobenzaldehyde Manufacture (Formerly known as Butadiene Dimers Production)</li> </ul>   | F                 | 05/12/1998 | 05/12/2001                   |
| Miscellaneous Organic Chemical Production & Processes (MON)  |                   |            |                              |
| <ul style="list-style-type: none"> <li>• Alkyd Resins</li> <li>• Ammonium Sulfate</li> <li>• Benzyltrimethylammonium Chloride</li> <li>• Carbonyl Sulfide</li> <li>• Chelating Agents</li> <li>• Chlorinated Paraffins <sup>c</sup></li> <li>• Ethylidene Norbornene <sup>c</sup></li> <li>• Explosives</li> <li>• Hydrazine</li> <li>• Maleic Anhydride Copolymers</li> <li>• Manufacture of Paints, Coatings, &amp; Adhesives</li> </ul> | FFFF              | 11/10/2003 | 5/10/2008                    |

| INDUSTRY GROUP - Source Category <sup>a</sup>   | 40 CFR 63 Subpart | Final Date | Compliance Date <sup>b</sup>        |
|---|-------------------|------------|-------------------------------------|
| <ul style="list-style-type: none"> <li>• OBPA/1,3-diisocyanate <sup>c</sup></li> <li>• Photographic Chemicals</li> <li>• Phthalate Plasticizers</li> <li>• Polyester Resins</li> <li>• Polymerized Vinylidene Chloride</li> <li>• Polymethyl Methacrylate Resins</li> <li>• Polyvinyl Acetate Emulsions</li> <li>• Polyvinyl Alcohol</li> <li>• Polyvinyl Butyral</li> <li>• Quaternary Ammonium Compounds</li> <li>• Rubber Chemicals</li> <li>• Symmetrical Tetrachloropyridine <sup>c</sup></li> </ul> |                   |            |                                     |
| <u>MISCELLANEOUS PROCESSES</u>  |                   |            |                                     |
| Boat Manufacturing  | VVVV              | 8/22/2001  | 8/22/2004                           |
| Chromium Electroplating   |                   |            |                                     |
| <ul style="list-style-type: none"> <li>• Decorative Chromium Electroplating</li> <li>• Hard Chromium Electroplating</li> <li>• Chromic Acid Anodizing</li> </ul>  | N                 | 1/25/1995  | 1/25/1996<br>1/25/1997<br>1/25/1997 |
| Commercial Sterilizers  | O                 | 12/6/1994  | 12/6/1998                           |
| Degreasing Organic Cleaners (Halogenated Solvent Cleaning)  | T                 | 12/2/1994  | 12/2/1997                           |
| Dry Cleaning (Perchloroethylene)  |                   |            |                                     |
| <ul style="list-style-type: none"> <li>• Industrial Dry-to-dry Machines</li> <li>• Industrial Transfer Machines</li> <li>• Commercial Transfer Machines</li> </ul>  | M                 | 9/22/1993  | 9/23/1996                           |
| Flexible Polyurethane Foam Fabrication  | MMMMM             | 4/14/2003  | 4/14/2004                           |
| Friction Products Manufacturing   | QQQQQ             | 10/18/2002 | 10/18/2005                          |
| Industrial Process Cooling Towers   | Q                 | 9/8/1994   | 3/8/1995                            |
| Leather Tanning & Finishing Operations  | TTTT              | 2/27/2002  | 2/27/2005                           |
| Miscellaneous Coating Manufacturing   | HHHHH             | 12/11/2003 | 12/11/2006                          |
| Plywood and Composite Wood Products<br>(formerly Plywood and Particle Board Manufacturing)  | DDDD              | 7/30/2004  | 10/1/2007                           |
| Pulp & Paper (chemical) MACT I  | S                 | 4/15/1998  | 4/16/2001                           |
| Pulp & Paper (combustion) MACT II   | MM                | 1/12/2001  | See Rule                            |
| Pulp & Paper (mechanical) MACT III  | S                 | 4/15/1998  | 4/16/2001                           |
| Reinforced Plastics Composites Production   | WWWW              | 4/21/2003  | 4/21/2006                           |
| Rubber Tire Manufacturing   | XXXX              | 7/9/2002   | 7/11/2005                           |
| Semiconductor Production  | BBBBB             | 5/22/2003  | 5/22/2006                           |
| Wet Formed Fiberglass Mat Production  | HHHH              | 4/11/2002  | 4/11/2005                           |

Notes:

- a** Only major sources within any category shall be subject to emission standards under Section 112 unless a finding is made of a threat of adverse effects to human health or the environment for the area sources in a category. All listed categories are exclusive of any specific operations or processes included under other categories that are listed separately.
- b** The compliance dates listed above are primarily for existing sources. New sources normally have to be in compliance at startup. For more information on the compliance date for a specific source category, refer to the individual subpart. Part 63 NESHAP subparts can be viewed on EPA's Air Toxics web page (<https://www.epa.gov/stationary-sources-air-pollution/list-national-emission-standards-hazardous-air-pollutants-neshap>).
- c** Equipment handling specific chemicals for these categories or subsets of these categories are subject to a negotiated standard for equipment leaks contained in the HON, which was finalized on April 22, 1994. The specific processes affected within the categories are listed in 40 CFR 63 Subpart I.

**Table I-2: Categories of Area Sources of Hazardous Air Pollutants**

| Source Category <sup>a</sup>   | 40 CFR 63 Subpart | Final Date <sup>g</sup> | Compliance Date <sup>b</sup>        |
|--|-------------------|-------------------------|-------------------------------------|
| Acrylic and Modacrylic Fibers Production <sup>c</sup>  | LLLLLL            | 7/16/2007               | 1/16/2008                           |
| <ul style="list-style-type: none"> <li>Aluminum, Copper, and Other Nonferrous Foundries <sup>c</sup></li> <li>Aluminum Foundries</li> <li>Copper Foundries</li> </ul>  | ZZZZZZ            | 6/25/2009               | 6/27/2011                           |
| Other Nonferrous Foundries   |                   |                         |                                     |
| Asphalt Processing & Asphalt Roofing Manufacturing <sup>c,e</sup>  | AAAAAAA           | 12/2/2009               | 12/2/2010                           |
| Brick & Structural Clay  |                   | 12/16/2010              |                                     |
| Carbon Black Production <sup>d</sup>   | MMMMMM            | 7/16/2007               | 7/16/2007                           |
| Chemical Manufacturing <sup>f</sup>  | VVVVVV            | 10/29/2009              | 10/29/2012                          |
| <ul style="list-style-type: none"> <li>Agricultural Chemicals &amp; Pesticides Manufacturing</li> <li>Cyclic Crude &amp; Intermediate Production</li> <li>Industrial Inorganic Chemical Manufacturing</li> <li>Industrial Organic Chemical Manufacturing</li> <li>Inorganic Pigments Manufacturing</li> <li>Miscellaneous Organic Chemical Manufacturing (MON)</li> <li>Pharmaceutical Production</li> <li>Plastic Materials and Resins Manufacturing</li> <li>Synthetic Rubber Manufacturing</li> </ul> |                   |                         |                                     |
| Chemical Manufacturing: Chromium Compounds <sup>d</sup>  | NNNNNN            | 7/16/2007               | 1/16/2008                           |
| Chemical Preparations <sup>c,e</sup>   | BBBBBBB           | 12/30/09                | 12/30/2010                          |
| Chromium Electroplating and Anodizing Tanks <sup>c</sup>   | N                 | 1/25/1995               |                                     |
| <ul style="list-style-type: none"> <li>Chromic Acid Anodizing</li> <li>Hard Chromium Electroplating</li> <li>Decorative Chromium Electroplating</li> </ul>   |                   |                         | 1/25/1997<br>1/25/1997<br>1/25/1996 |
| Clay Ceramics Manufacturing <sup>c</sup>   | RRRRRR            | 12/26/2007              | 12/26/2007                          |
| Commercial Sterilizers <sup>c</sup>  | O                 | 12/6/1994               | 12/6/1998                           |
| Dry Cleaning Facilities <sup>c</sup>   | M                 | 9/22/1993               | 9/23/1996                           |
| Electric Arc Furnaces Steel Facilities <sup>d</sup>  | YYYYYY            | 12/28/2007              | 6/30/2008                           |
| Electric Utility Steam Generating Units (Coal- and Oil-fired)  | UUUUU             | 3/16/2011               |                                     |
| Ferroalloys Production Facilities <sup>c</sup>   | YYYYYY            | 12/23/2008              | 6/22/2009                           |
| Flexible Polyurethane Foam Production and Fabrication <sup>c</sup>   | OOOOOO            | 7/16/2007               | 7/16/2008                           |
| <ul style="list-style-type: none"> <li>Flexible Polyurethane Foam Production</li> <li>Flexible Polyurethane Foam Fabrication</li> </ul>  |                   |                         |                                     |
| Gasoline Distribution Stage I (Bulk Terminals, Bulk Plants, & Pipeline Facilities) <sup>c</sup>  | BBBBBB            | 1/10/2008               | 1/10/2011                           |
| Gasoline Distribution Stage I (Dispensing Facilities) <sup>c</sup>   | CCCCCC            | 1/10/2008               | 1/10/2011                           |
| Glass Manufacturing <sup>d</sup>   | SSSSSS            | 12/26/2007              | 12/28/2009                          |
| Gold Mine Ore Processing and Production <sup>d,e</sup>   | EEEEEEE           | 2/17/2011               | 2/17/2014                           |
| Halogenated Solvent Cleaners <sup>c</sup>  | T                 | 12/2/1994               | 12/2/1997                           |
| Hazardous Waste Incineration <sup>d</sup>  | EEE               | 9/30/1999               | 9/30/2002                           |
| Hospital Sterilizers <sup>c</sup>  | WWWWW             | 12/28/2007              | 12/29/2008                          |
| Industrial, Commercial, and Institutional Boilers <sup>c</sup>   | JJJJJ             | 3/21/2011               | See rule                            |
| Iron and Steel Foundries <sup>c</sup>  | ZZZZZ             | 1/2/2008                | See rule                            |
| <ul style="list-style-type: none"> <li>Iron Foundries</li> <li>Steel Foundries</li> </ul>  |                   |                         |                                     |
| Lead Acid Battery Manufacturing <sup>c</sup>   | PPPPP             | 7/16/2007               | 7/16/2008                           |

| Source Category <sup>a</sup>  | 40 CFR 63 Subpart                         | Final Date <sup>g</sup> | Compliance Date <sup>b</sup> |
|---|---|-------------------------|------------------------------|
| Medical Waste Incinerators  | (See 40 CFR 60 Subparts Ce and Ec)        |                         |                              |
| Metal Fabrication and Finishing <sup>c</sup>  | XXXXXX                                    | 7/23/2008               | 7/25/2011                    |
| <ul style="list-style-type: none"> <li>• Electrical and Electronic Equipment Finishing Operations</li> <li>• Fabricated Metal Products</li> <li>• Fabricated Plate Work (Boiler Shops)</li> <li>• Fabricated Structural Metal Manufacturing</li> <li>• Heating Equipment, Except Electric <ul style="list-style-type: none"> <li>• Industrial Machinery and Equipment Finishing Operations</li> </ul> </li> <li>• Iron and Steel Forging</li> <li>• Primary Metal Products Manufacturing</li> <li>• Valves and Pipe Fittings</li> </ul> |   |                         |                              |
| Mercury Cell Chlor-Alkali Plants <sup>d</sup>   | IIIII                                     | 12/19/2003              | 12/19/2006                   |
| Municipal Solid Waste Landfills   | AAAA                                      | 1/16/2003               | See rule                     |
| Municipal Waste Combustors  | (See 40 CFR 60 Subparts Ea, Eb, and AAAA) |                         |                              |
| Oil and Natural Gas Production <sup>c</sup>   | HH  | 1/3/2007                | See rule                     |
| Other Solid Waste Incineration  | (See 40 CFR 60 Subpart EEEE)              |                         |                              |
| Paint Stripping and Miscellaneous Surface Coating <sup>c</sup>  | HHHHHH                                    | 1/9/2008                | 1/10/2011                    |
| <ul style="list-style-type: none"> <li>• Motor Vehicle and Mobile Equipment Surface Coating</li> <li>• Paint Stripping</li> <li>• Miscellaneous Surface Coating</li> </ul>  |   |                         |                              |
| Paints & Allied Products Manufacturing <sup>c</sup>   | CCCCCC                                    | 12/3/2009               | 12/3/2012                    |
| Plating & Polishing <sup>c</sup>  | WWWWW<br>W                                | 7/1/2008                | 7/1/2010                     |
| Polyvinyl Chloride and Copolymers Production <sup>c,e</sup>   | DDDDDD                                    | 1/23/2007               | 1/23/2007                    |
| Portland Cement Manufacturing <sup>d</sup>  | LLL                                       | 6/14/1999               | 6/10/2002                    |
| Prepared Feeds Manufacturing <sup>c</sup>   | DDDDDDD                                   | 1/5/2010                | 1/5/2012                     |
| Primary Copper Smelting <sup>d,e</sup>  | EEEEEE                                    | 1/23/2007               | 1/23/2007                    |
| Primary Nonferrous Metals - Zinc, Cadmium, and Beryllium <sup>d,e</sup>   | GGGGGG                                    | 1/23/2007               | 1/23/2007                    |
| Publicly Owned Treatment Works <sup>c</sup>   | VVV                                       | 10/26/1999              | 10/26/2002                   |
| Reciprocating Internal Combustion Engines <sup>c</sup>  | ZZZZ                                      | 1/18/2008               | See rule                     |
| Secondary Aluminum Production <sup>c</sup>  | RRR                                       | 3/23/2000               | 3/24/2003                    |
| Secondary Copper Smelting <sup>d,e</sup>  | FFFFFF                                    | 1/23/2007               | 1/23/2007                    |
| Secondary Lead Smelting <sup>d</sup>  | X   | 6/23/1995               | 6/23/1997                    |
| Secondary Nonferrous Metals Processing <sup>c</sup>   | TTTTTT                                    | 12/26/2007              | 12/26/2007                   |
| Sewage Sludge Incineration  | (See 40 CFR 60 Subparts MMMM & LLLL)      |                         |                              |
| Wood Preserving <sup>c</sup>  | QQQQQQ                                    | 7/16/2007               | 7/16/2007                    |
| Wool Fiberglass Manufacturing   | NN  | 7/29/2015               | 7/31/2017                    |

Notes:

- a A finding of threat of adverse effects to human health or the environment was made for each category of area sources listed.
- b The compliance dates listed above are primarily for existing sources. New sources normally have to be in compliance at startup. For more information on the compliance date for a specific source category, refer to the individual subpart. Part 63 NESHAP subparts can be viewed on EPA's Air Toxics web page (<http://www.epa.gov/ttn/atw/area/compilation.html>).
- c Owners or operators of an area source subject to this subpart are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, unless otherwise required by law to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a). Notwithstanding the previous sentence, owners and operators must continue to comply with the provisions of this subpart.
- d Owners or operators of an area source subject to this subpart must obtain a permit under 40 CFR part 70 or 40 CFR part 71. e The DNR is not adopting this standard because Iowa does not have, and likely will not have, any affected facilities.
- f Any area source that installed a federally-enforceable control device on an affected CMFU is required to obtain a permit under 40 CFR part 70 or 40 CFR part 71 if the control device on the affected CMFU is necessary to maintain the source's emissions at area source levels. For new and existing sources subject to this rule on December 21, 2012 and subject to title V as a result of this rule, a complete title V permit application must be submitted no later than December 21, 2013. New and existing sources that become subject to this rule after

December 21, 2012 must submit a complete title V permit application no later than 12 months after becoming subject to this rule if the source is subject to title V as a result of this rule. Otherwise, owners and operators are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, unless otherwise required by law to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a).

Notwithstanding the previous sentence, owners and operators must continue to comply with the provisions of this subpart. g

Tentative dates have been italicized.

## Appendix J: Compliance Assurance Monitoring

This form will assist in identifying emission units that are subject to Compliance Assurance Monitoring (CAM) requirements. The regulations related to CAM are located in Title 40, Code of Federal Regulations, Part 64 (40 CFR 64), [567 IAC 24.108\(3\)"d"](#), and the 1990 Clean Air Act, as amended, Section 504. Facilities that operate emission control devices subject to federally enforceable regulations may be subject to CAM.

CAM Spreadsheet: <https://www.iowadnr.gov/portals/idnr/uploads/forms/5421045.xlsx>

The CAM rule aims to have owners and operators maintain control equipment at levels that assure compliance. It requires owners and operators to develop CAM plans that select representative parameters upon which compliance can be assured. CAM plans are required as part of the Title V operating permit application. The DNR is responsible for approving the CAM plans and incorporating the appropriate terms and conditions in the Title V permit as specified in 40 CFR 64.6(c) - (e). For sources with approved CAM plans, existing periodic monitoring requirements will be replaced by CAM requirements.

### 1) Applicability - 40 CFR 64.2

CAM applicability is determined on a **pollutant-by-pollutant basis for each emissions unit**. The CAM Applicability Flowchart at the end of this section will assist in determining CAM applicability. CAM applies to each pollutant-specific emissions unit (PSEU)<sup>2</sup> that meets ALL of the following criteria:

- Located at a major source required to obtain a Title V operating permit;
- Subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof) that is not exempt (see list of exemptions in section 2);
- A control device is used to achieve compliance with the emission limitation or standard;
- The potential uncontrolled emissions of the applicable regulated air pollutant are greater than or equal to the major source thresholds (ex. 100 tons per year of particulate matter (PM & PM<sub>10</sub>), nitrogen oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), volatile organic compounds (VOC), carbon monoxide (CO), or lead; 10 tons per year of any hazardous air pollutant (HAP); or 25 tons per year of any combination of HAPs); and
- The PSEU is not an exempt backup utility power emissions unit as defined in the exemptions in section 2.

### 2) CAM Exemptions - 40 CFR 64.2(b)

A. Emission limitations or standards from the following programs are not required to be considered for CAM applicability. Please note, that this does not mean that the pollutant or emission unit as a whole is exempted from CAM if other emissions standards apply.

- New Source Performance Standards (NSPS) or National Emission Standards for Hazardous Air Pollutants (NESHAP) proposed after November 15, 1990
- Stratospheric ozone protection requirements
- Acid Rain program requirements
- Emission limitations or standards that apply solely under an emissions trading program
- An emissions cap that meets the requirements specified in 40 CFR 70.4(b)(12)
- Emission limitations or standards for which a Title V operating permit specifies a continuous compliance determination method, as defined in 40 CFR 64.

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<sup>2</sup> *Pollutant-specific emissions unit* means an emissions unit considered separately with respect to each regulated air pollutant. (40 CFR 64.1)

B. Municipally-owned backup utility power emission units where:

- the unit is exempt from all acid rain program monitoring requirements,
- the unit operates for the sole purpose of providing electricity during periods of peak electrical demand or emergency situations (note: the facility must provide documentation of historical operating data and relevant contractual obligations to show that this criteria is satisfied), and
- actual emissions from the unit are less than 50 percent of the major source thresholds.

**2) Instructions for using the Part 2 - CAM Calculations spreadsheet to determine applicability**

*This spreadsheet is protected when downloaded from the website. If the column headings are incomplete when viewing a sheet, click the "Review" tab in the ribbon and select "Unprotect Sheet". This will allow the user to modify the row and column sizes in order to fully view the information with the cells. Be sure not to alter the formulas contained in the sheets or the form will not function properly.*

**A. Tab 1 - Emission Units**

1. Complete the requested facility information.
2. Answer the question "Is Your Facility a Major Source?" Do the potential emissions from this facility surpass the Title V major source thresholds? If yes, continue to #3. If no, CAM does not apply to this facility and no further information is needed.
3. Complete one row for each emission unit located at the facility. If the number of rows is insufficient for this facility, use the *Part 2 - CAM Calculations - Large Facility* spreadsheet.
4. In the case of emission unit(s) that is subject to an emission standard for a single HAP, list that HAP name in the Source Description for that unit.

**B. Tabs 2-8 - Pollutants**

Complete the required information for each pollutant emitted from each emission point. Once the point is reached at which the applicability (CAM Required?) column for a pollutant turns to "No", further calculation for that pollutant is not needed.

1. **Controlled Source for XX?** - Is a control device, as defined by 40 CFR 64.1, used to achieve compliance with an emission limitation or standard?
2. **Subject to XX Standards?** - Is the emission unit subject to an emission limit or standard as defined by 40 CFR 64.1?
3. **Post 90 NSPS NESHAP/Exemption?** - Does the emission limit or standard meet the requirements for the exemptions listed in section 2 of this appendix? Please note the exemptions listed in section 2 "A" only apply to the specific emission limit or standard from the applicable program. These exemptions do not universally apply to the emission unit or pollutant. If a unit is subject to multiple emission limits for a pollutant where one of the limits qualifies for a CAM exemption but other limits do not qualify for the exemption, answer "No" in this column.
4. **Pre-Control Emission Potential (Tons/yr)** - Potential emissions of the pollutant prior to passing through the control device. Submit background documentation for how the pre-control emission potential was calculated on a Form CA-01 or similar calculation sheet for each emission unit. Please refer below for the information that should be contained in these calculation sheets.

5. **>=Major?** - Are the pre-control potential emissions greater than major source thresholds? (Yes or No) (Auto Completed)
6. **Post-Control Emission Potential (Tons/yr)** - Potential emissions of the pollutant after passing through the control device. This would be equal to the potential emissions based on the applicable emission limitations or standards. If an emission unit has multiple emission limits for a pollutant, calculate the potential emissions using the most stringent, non-exempted limit.
7. **>=Major** - Are the post-control emission potential emissions greater than major source thresholds (Yes or No)? (Auto Completed)
8. **CAM Required?** - Is CAM required for the pollutant and when the CAM plan is due (Initial, Significant Modification, or Renewal)? (Auto Completed)

## 2) Example CAM Calculations

There are six basic approaches for calculating the potential pre-controlled emissions from any given emission unit. These methods are (in order of reliability):

1. Stack test measuring emissions prior to passing through the control device (including the 95% confidence interval).
2. Mass balance.
3. EPA approved pre-controlled emission factors.
4. Stack test measuring emissions after passing through the control device (including the 95% confidence interval).
5. Vendor supplied uncontrolled emission factors.
6. Engineering estimates based on best available process operating data.

Potential to emit is calculated assuming equipment is running at maximum capacity while operating at the maximum hours of operation under its physical and operational design. Usually, maximum hours of operation are 8,760 hours per year unless enforceable limitations on hours of operation have been incorporated within the construction permit or an enforcement order for that equipment. Calculation of potential emissions must be done with “worst-case” values for each pollutant. Only federally enforceable limitations on raw materials, fuels, capacity or hours of operation can be used to limit potential emissions. ‘Bottlenecks’ do not count unless federally enforceable

### Emission Calculations

- Alternative Sources:
  - If the source of an emission factor is not a widely available source (such as WebFIRE, AP-42, etc.), a copy of the document must be submitted with the application.
- Stack Test:
  - If the source of an emission factor is a stack test, please indicate the test date and the test method used

and include a copy of the Report Summary. Do not submit the entire stack test report. The most recent and approved stack test should be used.

- In case of a PM/PM<sub>10</sub>/PM<sub>2.5</sub> test with less than the minimum catch (or detection limit) of 2.54 mg, 1.44 mg, and 1.35 mg, respectively, the emissions calculation should be based on the minimum catch. Please note that a PM/PM<sub>10</sub>/PM<sub>2.5</sub> test should be designed to catch a minimum of 3 times the detection limits. Similarly, for the tests of other pollutants, the emissions calculation should be based on the minimum/detect level if the stack test reports less than the minimum/detect level of the applicable test method. Facilities have the option of testing for long enough to capture the minimum sample weight required by the test method if they wish to.
- Calculations using stack test data:  
When calculating potential emissions using the average results from a stack test, always include the 95% confidence interval in the emission factor used.

**Pre-Control Stack Test**

$$[(Average\ Test\ result\ lb/hr) + (95\%\ confidence\ Interval)] \times (8760\ hrs/yr) \times (1\ ton/2000\ lbs)$$

When calculating pre-controlled potentials based on a stack test that was completed post control, use the overall control efficiency listed on the Form CE-01.

**Post-Control Stack Test**

$$[(Average\ Test\ result\ lb/hr) + (95\%\ confidence\ Interval)] / (1-CE) \times (8760\ hrs/yr) \times (1\ ton/2000\ lbs)$$

- PM/PM<sub>10</sub>/PM<sub>2.5</sub> from a paint booth:  
PM, PM<sub>10</sub> and PM<sub>2.5</sub> are considered to be equal from surface coating operations. To calculate PM<sub>2.5</sub> and PM<sub>10</sub> emissions the spray transfer efficiency (TE) of the spray gun must be inserted in the formula used to calculate the VOC and HAP emissions. The transfer efficiency is the percentage of paint from the gun that actually adheres to the part being painted.

$$(Density\ lb/gal) \times (Max.\ annual\ paint\ usage\ gal/hr) \times (Max.\% \ solid) \times (1-TE) \times (1\ ton/2000\ lbs) \times 8760\ hrs/yr$$

- Mass balance:  
When calculating potential emissions using mass balance, if multiple raw materials or fuels are used in the emission unit use the product that yields the highest potential emissions for each applicable pollutant.

**Example**

|                        | Top Coat | Base Coat |
|------------------------|----------|-----------|
| Paint Weight (lbs/gal) | 8.75     | 7.21      |
| % VOC                  | 25       | 42        |
| % Solids               | 75       | 58        |
| % Xylene               | 8        | 2         |
| % Toluene              | 0        | 15        |



Calculate the yearly potential VOC emissions:

To calculate the maximum amount of VOC emitted from this spray booth in one year, the highest amounts of each constituent from the base or top coat must be used.

In this case the top coat VOC =  $0.25 \times 8.75 \text{ lbs/gal} = 2.19 \text{ lbs VOC/gal}$ .

The base coat VOC =  $0.42 \times 7.21 \text{ lbs/gal} = 3.03 \text{ lbs VOC/gal}$ , which is the higher VOC content.

First, multiply the greatest VOC density (base coat 3.03 lbs/gal) by the maximum paint used per hour (7 gallons). To convert it to tons per year divide the answer by 2,000 lbs/ton.

$$(Density \text{ lbs/gal}) \times (Max. \text{ rated capacity gal/yr}) \times (8760 \text{ hrs/yr}) \times (1 \text{ ton}/2,000 \text{ lb}) = 3.03 \text{ lbs/gal} \times 7 \text{ gal/hr} \times 8,760 \text{ hrs/yr} \times 1 \text{ ton}/2,000 \text{ lbs} = 92.90 \text{ tons/yr}$$

### 3) CAM Plan Guideline Worksheet

Use the following worksheet when developing CAM plans in order to be sure that all of the requirements for CAM plans are being met for the facility.

Identify the emissions unit, applicable emissions limit or standard, and description of the control technology.

Describe the indicators to be monitored.

- Indicators of performance may include, but are not limited to, direct (pressure drop, temperature, etc.) or predicted emissions (including visible emissions or opacity), process and control device parameters that affect control device (and capture system) efficiency or emission rates, or recorded findings of inspection and maintenance activities conducted by the owner or operator.
- The design of indicator ranges or designated conditions may be:
  - Based on a single maximum or minimum value if appropriate (e.g., maintaining condenser temperatures a certain number of degrees below the condensation temperature of the applicable compound(s) being processed) or at multiple levels that are relevant to distinctly different operating conditions (e.g., high versus low load levels).
  - Expressed as a function of process variables (e.g., an indicator range expressed as minimum to maximum pressure drop across a venturi throat in a particulate control scrubber).
  - Expressed as maintaining the applicable parameter in a particular operational status or designated condition (e.g., position of a damper controlling gas flow to the atmosphere through a by-pass duct).
  - Established as interdependent between more than one indicator.

Describe the indicator ranges, or the process by which indicators are to be established.

- The owner or operator shall establish an appropriate range(s) or designated condition(s) for the selected indicator(s) such that operation within the ranges provides a reasonable assurance of ongoing compliance with emission limitations or standards for the anticipated range of operating conditions. Such range(s) or condition(s) shall reflect the proper operation and maintenance of the control device (and associated capture system), in accordance with applicable design properties, for minimizing emissions over the anticipated range of operating conditions at least to the level required to achieve compliance with the applicable requirements.

Describe the performance criteria for monitoring, including:

- Specifications for obtaining representative data

- Verification procedures to confirm the monitoring equipment's operational status
- Quality assurance and control procedures
- Monitoring frequency
  - 4 times per hour (minimum) if **post-control** emissions are greater than or equal to the major source thresholds
  - 1 time per day (minimum) if **post-control** emissions are less than the major source thresholds
- Data averaging period

Provide detailed justification for the proposed monitoring parameters.

- The owner or operator also shall submit any data supporting the justification, and may refer to generally available sources of information used to support the justification (such as generally available air pollution engineering manuals, or EPA or permitting authority publications on appropriate monitoring for various types of control devices or capture systems). To justify the appropriateness of the monitoring elements proposed, the owner or operator may rely in part on existing applicable requirements that establish the monitoring for the applicable pollutant-specific emissions unit or a similar unit.

Provide any emissions test data to support the proposed monitoring parameters.

- The owner or operator shall submit control device (and process and capture system, if applicable) operating parameter data obtained during the conduct of the applicable compliance or performance test conducted under conditions specified by the applicable rule. If the applicable rule does not specify testing conditions or only partially specifies test conditions, the performance test generally shall be conducted under conditions representative of maximum emissions potential under anticipated operating conditions at the pollutant-specific emissions unit. Such data may be supplemented, if desired, by engineering assessments and manufacturer's recommendation to justify the indicator ranges (or, if applicable, the procedures for establishing such indicator ranges). Emission testing is not required to be conducted over the entire indicator range or range of potential emissions.
- If existing data from unit-specific compliance or performance testing are not available, the owner or operator:
  - Shall submit a test plan and schedule for obtaining such data; or
  - May submit indicator ranges (or procedures for establishing indicator ranges) that rely on engineering assessments and other data, provided that the owner or operator demonstrates that factors specific to the type of monitoring, control device, or pollutant-specific emissions unit make compliance or performance testing unnecessary to establish indicator ranges at levels that satisfy the criteria in 40 CFR 64.3(a).

An implementation plan for installing, testing, and operating the monitoring equipment (if required).

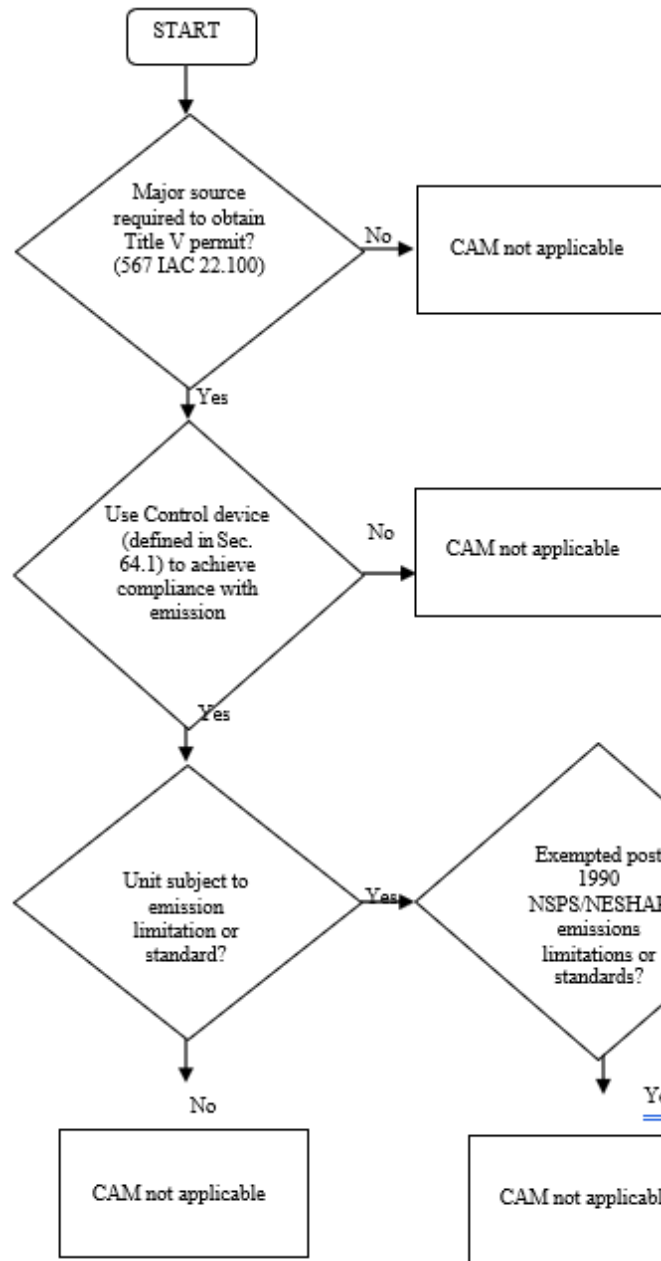
#### 4) **Deadlines for CAM Plans - 40 CFR 64.5**

CAM plans are due as part of an initial, significant modification, or renewal Title V permit application. The majority of CAM plans will be due with renewal applications. Refer to the flowchart on the following page to determine when facility CAM plan(s) are due.

#### 5) **Attachments**

Attach any required CAM plan(s) to each Emission Point Information form for which CAM is applicable.

# CAM Applicability Spreadsheet



| DEADLINES FOR CAM PLANS - 40 CFR 64.5                        |   |
|--|---|
| <b>Initial Application</b><br>(submitted after 4/20/98)      | <u>Only</u> for emission units with potential <b>post-control</b> emissions of an applicable regulated pollutant that are equal to or greater than major source thresholds. If the initial Title V application was submitted after April 20, 1998, the CAM plan is due as part of the initial application.  |
| <b>Significant Modification</b><br>(submitted after 4/20/98) | <u>Only</u> for emission units with potential <b>post-control</b> emissions of an applicable regulated pollutant that are equal to or greater than major source thresholds. After April 20, 1998, CAM plans are required as part of any application for a significant modification of a Title V permit, but only with respect to those emission units for which the proposed amendment is applicable. |
| <b>Renewal Application</b>                                   | For <u>all</u> emission units subject to CAM for which a CAM plan has not yet been submitted.   |