

1a) AQ Facility ID number: 12300088 **1b)** Agency Interest ID number: 3518

2) Facility name: Northern Iron LLC

Form GI-05F Emission source association must also be completed and submitted whenever this form is required.

3a) Control equip ID no.	3b) CE type code	3c) Description	3d) Manufacturer	3e) Model number	3f) Installation date (mm/dd/yyyy)	3g) Removal date (mm/dd/yyyy)	3h) Pollutants controlled	3i) Capture efficiency	3j) Destruct/ collect efficiency	3k) Afterburner/ Oxidizer combustion parameters
TREA45	018	Fabric Filter - Low Temp, T<180 deg F	Torit	Filter No. 8PP-21586-00	1/1/2005		PM	80%	99.97%	
							PM10	80%	99.97%	
							PM2.5	80%	99.97%	
							Lead	80%	99.97%	

Describe changes to existing control devices and/or operations:

Instructions for Form GI-05A

Complete the table on this form for all air pollution control devices or operations, and pollution prevention control practices at your facility. If you are completing this form as part of an application for a change or modification at your facility, clearly show any changes to existing control devices or operations along with proposed new control devices or operations. For devices or operations that will be removed, enter all information for the device or operation and then (except for the removal date) strike out the entered data. If the device or operation is not being removed but parameters are changed, enter the current parameters in one row, strike out the parameters that will be changed, and enter the revised parameters in the row immediately below. Describe all changes in the table bottom row.

1a) AQ Facility ID No. -- Fill in your Air Quality (AQ) Facility Identification Number (ID) Number (No.). This is the first eight digits of the permit number for all permits issued under the operating permit program. If your facility has never been issued a permit under this program, leave this line blank.

1b) Agency Interest ID No. -- Fill in your Agency Interest ID No. This is an ID number assigned to your facility through the Tempo database. If you don't know this number, leave this line blank.

2) Facility name -- Enter your facility name.

3a) Control equipment (CE) ID no. -- Assign a control equipment ID number to each piece of pollution control equipment (e.g., fabric filter or afterburner), control approach, or pollution control practice (e.g., dust suppression by water spray). Number the pollution control equipment/practices at your facility sequentially (001, 002, 003, etc.). The assigned number will be used in other forms to identify control equipment that is described in this form. This ID number is unique to this piece of equipment and must be used consistently throughout the application. If a control device or emission source employs more than one control approach (e.g., Selective Catalytic Reduction [SCR] and catalytic oxidation), each control approach should be identified with a unique control equipment ID number.

If you are adding new pollution control equipment to your permit or replacing existing pollution control equipment, it is important not to reuse previously used CE numbers. The new or replacement control equipment should be numbered consecutively beginning with the next number after the last one used. Numbers used for removed control equipment cannot be reused for new or replacement control equipment.

3b) CE type code -- Fill in the appropriate CE type code from Table GI-05A.1 at the end of these instructions. For control equipment or pollution control practices that are not listed in Table GI-05A.1, enter the CE type Code 099 for "other" and describe the equipment or practice. **The type-code for the control equipment must be entered correctly, since this will be the primary means of recording and identifying the type of air pollution control equipment at this facility.**

3c) Description -- Fill in the appropriate control equipment or control practice description. This description **must** correspond with the control equipment type code in the second column (Item 3b). For control equipment assigned control equipment type code 099, please provide a detailed description of the control equipment or pollution control practice; use additional pages if necessary.

3d) Manufacturer -- Fill in the name of the pollution control equipment manufacturer. Pollution control practices such as dust suppression by water spray or chemical oxidation may not use control equipment. In these cases, fill N/A for items 3d and 3e.

3e) Model number -- Fill in the manufacturer's model number for the pollution control equipment. If no control equipment is used, fill in NA.

3f) Installation date -- Provide the date the control equipment was installed. If unknown, provide your best estimate.

3g) Removal date -- Provide the date the control equipment was removed. Leave blank if control equipment has not been removed.

3h) Pollutants controlled -- Fill in the pollutants controlled. **If multiple pollutants are controlled, enter the criteria pollutants first in alphabetical order, followed by Hazardous Air Pollutants (HAPs) in alphabetical order.** List each pollutant controlled, using a new box for each pollutant. For example, if a wet scrubber is used to control both sulfur dioxide and particulate matter emissions from an emissions unit at your facility, list Particulate Matter (PM) in the first row, and Sulfur Dioxide (SO₂), and Particulate Matter less than 10 um in size (PM₁₀) in the second and third rows. It is not necessary to repeat the other information in the other columns (i.e., equipment manufacturer's name, equipment model number, etc.).

3i) Capture efficiency -- Fill in the capture efficiency of the emission capture device. The capture efficiency is the portion of the pollutants emitted that are routed via ducting to the control equipment (e.g., a fabric filter). For emission units in which all of the pollutants emitted are routed via ducting to a fabric filter the capture efficiency is 100 percent. These devices are called total enclosures. Total enclosure is defined in Minnesota Rules as "an enclosure that completely surrounds emissions from an emissions unit such that all emissions are captured and discharged through ductwork to control equipment".

Hoods and other devices that do not completely surround the emissions from an emission unit do not capture all of the pollutants emitted and therefore have a capture efficiency that is less than 100 percent. An example of a hood is a three-sided spray booth because the enclosure does not completely surround the emissions.

If you are applying for an operating permit, if the capture efficiency has been determined by performance testing in accordance with Minn. R. 7017.2001 to 7017.2060, and the test report has been reviewed and approved by the Minnesota Pollution Control Agency (MPCA), the determined efficiency must be used.

If you are applying for an operating permit and the capture efficiency has not been determined by a performance test, but the capture device is a hood that has been evaluated and conforms with the requirements of "Industrial Ventilation- A Manual of Recommended Practices", 21st ed., fill in 80 percent. Hood evaluations must be conducted by qualified personnel and a responsible official must sign the certification below. If the capture device is a total enclosure, fill in 100 percent. The certification must be submitted with the application.

Note for Fugitive Emissions: When the control is being applied to a fugitive emissions (for example, control of road dust using water spray), the capture efficiency will not be 100 percent. Using the example of applying water spray to a road, the collection efficiency (item 3h) will be 100 percent, assuming water is sprayed over the entire road. The capture efficiency (item 3g) is that portion of dust that is not wetted and therefore not held to the ground by the water, and will be something less than 100 percent.

Note for Pollution Prevention Control Practices: For pollution control practices that prevent formation of a pollutant (such as low NO_x burners, staged combustion, overfire air, etc. that prevent NO_x formation), enter 100% for the capture efficiency.

Hoods that have not been evaluated or do not conform to the recommended design and operating practices in "Industrial Ventilation - A Manual of Recommended Practices", 21st ed., must be either evaluated and brought into conformity with those design and operating practices or tested in accordance with Minn. R. 7017.2001 to 7017.2060, and the test report reviewed and approved and approved by the Agency, to determine a capture efficiency. You may propose an alternative capture efficiency based on engineering calculations approved by the Commissioner.

If you are applying for a modification to an existing emission unit with a hood to collect emissions, for the purpose of determining if the proposed change is a Title I modification, you may not assume a capture efficiency for the hood unless the use of the hood is part of an enforceable permit (For the definition of Title I modification, refer to Minn. R. 7007.0100, subp. 26.). You may assume a capture efficiency of 80 percent for a hood included in an enforceable permit if the hood has been evaluated and conforms with the design and operating practices recommended in "Industrial Ventilation - A Manual of Recommended Practices, 21st ed., American Conference of Governmental Industrial Hygienists". A responsible official shall sign the following hood certification to be submitted with the application.

Hood certification

I certify under penalty of law that the aforementioned hood(s) has (have) been evaluated under my direction or supervision by qualified personnel and that, to the best of my knowledge and belief, the (each) hood conforms to the design and operating practices recommended in "Industrial Ventilation - A Manual of Recommended Practices, 21st ed., American Conference of Governmental Industrial Hygienists."

The results of the evaluation and a copy of the certification must be kept on site. The owner or operator must make this evaluation and certification available for examination and copying upon request of the Commissioner and must, upon request, submit these records to the Commissioner by the time specified in the request.

- 3j) **Destruct/Collect efficiency** -- Fill in the collection or destruction efficiency. The collection or destruction efficiency is the portion of the pollutants that are captured and routed to the control equipment that is either collected and retained in the control equipment or is destroyed by the control equipment. U.S. Environmental Protection Agency (EPA) publications and data bases are the preferred sources for destruction/collection efficiency factors.

If you conducted a performance test which was reviewed and accepted by the Agency, you may propose that efficiency. You must always attach a description of the basis/justification for any efficiency you propose.

Table GI-05A.1 lists most of the types of air pollution control equipment in use. For any destruction/collection efficiency you enter here, for either a criteria pollutant or a HAP, you must indicate in a compliance plan on Form CD-05 how you will demonstrate and maintain the efficiency. Attach additional sheets as needed to explain the basis for the proposed efficiency.

The efficiency you enter here is the efficiency of control you may assume for the purpose of calculating Controlled Emissions and Actual Emissions as required on the EC forms. Note that the efficiency on the EC Forms, pollution control efficiency, is the product of the capture efficiency and the destruction/collection efficiency. You must propose a compliance plan on Form CD-05 for each control device for which you assume an efficiency to comply with an applicable requirement, such as an emission limit, or to avoid an applicable requirement, such as a synthetic minor limit to obtain a State permit or to be exempt from New Source Review. Form GI-09C helps you decide whether to propose a synthetic minor limit to avoid New Source Review. If your compliance plan is acceptable, the control efficiency becomes enforceable when your permit is issued.

Minn. R. 7011.0070 contains a shorter list of control equipment including efficiencies for criteria pollutants which are enforceable and may be used in calculating your Potential-to-Emit to determine what type of permit to apply for, provided you comply with the compliance demonstration requirements in that Rule. If you use the control efficiencies in Minn. R. 7011.0070, you must include the compliance demonstration requirements in that Rule in your Compliance Plan on Form CD-05. Note that you cannot use the control efficiencies in Minn. R. 7011.0070 to calculate Potential-to-Emit to determine if you require a permit.

If you conducted a performance test which was reviewed and accepted by the MPCA, you may propose that efficiency.

Note for Fugitive Emissions: When the control is being applied to a fugitive emissions (for example, control of road dust using water spray), the collection efficiency (item 3h) will be 100 percent. Using the water spray example, this is assuming water is sprayed over the entire road. The capture efficiency (item 3g) is that portion of dust that is not wetted and therefore not held to the ground by the water, and will be something less than 100 percent.

Note for Pollution Prevention Control Practices: For pollution prevention control practices, the destruct/collect efficiency is the percent of pollutant not created by the process due to the use of the pollution prevention control practice, compared to the emissions that would be created without the use of pollution prevention control practice. For example, a low NO_x burner emits 60% of the NO_x emissions that a non-low NO_x burner emits resulting in 40% less NO_x emissions. The destruct/collection efficiency would be 40%.

- 3k) Afterburner/oxidizer combustion parameters --** Fill in the combustion parameters for **afterburners/oxidizers only**. The parameters of interest are the temperature and residence time of the unit. Please state the temperature in degrees Fahrenheit and the residence time in seconds. List the parameters in a column, filling in each square with only one parameter (i.e., minimum operating temperature and residence time). For example, list the unit's minimum operating temperature in the first row and the residence time in the second row. It is not necessary to repeat the other information in the other columns (i.e., equipment manufacturer's name, equipment model number, etc.). Recommended monitoring, recordkeeping, operation and maintenance guidelines for other types of control equipment are included in Tables CD-01.2 and CD-01.3 following in the instructions for completing Form CD-01. Also, include the afterburner/oxidizer as an emission unit on Form GI-05B.

Table GI-05A.1

Code	Control device/Pollution control practice	Code	Control device/Pollution control practice
001	Wet scrubber, high eff.	057	Dynamic separator (wet)
002	Wet scrubber, med. Eff.	058	Mat or panel filter
003	Wet scrubber, low eff.	059	Metal fabric filter screen (cotton gins)
004	Gravity collector, high eff.	060	Process gas recovery
005	Gravity collector, med. eff.	061	Dust suppression by water spray, 10,000 gal/min
006	Gravity collector, low eff.	062	Dust suppression by chemical stabilizers or wetting agents, 350 gal/min
007	Centrifugal collector (cyclone), high eff.	063	Gravel bed filter
008	Centrifugal collector (cyclone), med. eff.	064	Annular ring filter
009	Centrifugal collector (cyclone), low eff.	065	Catalytic reduction
010	Electrostatic precipitator, high eff.	066	Molecular sieve
011	Electrostatic precipitator, med. eff.	067	Wet lime slurry scrubbing
012	Electrostatic precipitator, low eff.	068	Alkaline fly ash scrubbing
013	Gas scrubber (general)	069	Sodium carbonate scrubbing
014	Mist eliminator (v>250 ft/min), high vel.	070	Sodium-alkali scrubbing
015	Mist eliminator (v<250 ft/min), low vel.	071	Fluid bed dry scrubber
016	Fabric filter (T>250 °F), high temp.	072	Tube and shell condenser
017	Fabric filter (180 °F <T<250 °F), med. Temp.	073	Refrigerated condenser
018	Fabric filter (T<180 °F), low temp.	074	Barometric condenser
019	Catalytic afterburner, no heat exch.	075	Single cyclone
020	Catalytic afterburner, w/heat exch.	076	Multiple cyclone w/o fly ash reinjection
021	Direct flame afterburner, no heat exch.	077	Multiple cyclone w/fly ash reinjection
022	Direct flame afterburner, w/heat exch.	080	Chemical oxidation
023	Flaring	081	Chemical reduction
024	Modified furnace or burner design	082	Ozonation
025	Staged combustion	083	Chemical neutralization
026	Flue gas recirculation	084	Activated clay adsorption
027	Reduced combustion - air preheat	085	Wet cyclone separator
028	Steam or water injection	086	Water curtain
029	Low excess - air firing	099	Other control equipment or pollution control practices
030	Fuel w/low nitrogen content	101	High efficiency particulate air filter (HEPA)
031	Air injection	106	Dust suppression by physical stabilization
032	Ammonia injection	107	Selective noncatalytic reduction for Nitrogen Oxides (NO _x)

Code	Control device/Pollution control practice
033	Control of percent Oxygen (O ₂) in combustion Air
034	Wellman-Lord/sodium sulfite scrubbing
035	Magnesium oxide scrubbing
036	Dual alkali scrubbing
037	Citrate process scrubbing
038	Ammonia scrubbing
039	Cat. Oxidation - flue gas desulfurization
040	Alkalized alumina
041	Dry limestone injection
042	Wet limestone injection
043	Sulfuric acid plant- contact process
044	Sulfuric acid plant- double contact process
045	Sulfur plant
047	Vapor recovery system (Including condensers, hoods, other encl.)
048	Activated carbon adsorption
049	Liquid filtration system
050	Packed-gas absorption column
051	Tray-type gas absorption column
052	Spray tower
053	Venturi scrubber
055	Impingement plate scrubber
056	Dynamic separator (dry)

Code	Control device/Pollution control practice
109	Catalytic oxydizer
113	Rotoclone
131	Thermal oxydizer
139	Selective catalytic reduction (SCR)
146	Wet electrostatic precipitator
159	Electrified filter bed
203	Catalytic converter
204	Overfire air
205	Low NO _x burners
206	Dry sorbent injection
207	Carbon injection
312	Oxidation catalyst
901	Moisture content of material, 2-3 percent
902	Moisture content of material, 4 percent
903	Moisture content of material, 5 percent
904	Moisture content of material, 6 percent or more
905	Paper filter (not accordion)
906	Fiberglass filter (with cardboard frame)
907	Fiberglass filter (without cardboard frame)
908	Andre -- cardboard Binks filter (accordion)
909	Roll media -- fiberglass tack filter (tacky on one side)
910	Split paper + polyester paint arrestor