

AIR EMISSION PERMIT NO. 13700063- 003

IS ISSUED TO

USX CORPORATION - US STEEL GROUP INC.

US Steel - Keewatin Taconite Operations
1 Mine Road
Keewatin, Itasca County, MN 55753

The emission units, control equipment and emission stacks at the stationary source authorized in this permit are as described in the following permit application(s):

Permit Type	Application Date
Total Facility Operating Permit (Reissuance)	02/05/2002
Administrative Amendment (Ownership Change)	07/21/2003
Major Permit Amendment (Fuel Diversification, etc.)	08/03/2004
Administrative Amendment (Monitoring Upgrade)	08/20/2004

This permit authorizes the permittee to operate the stationary source at the address listed above unless otherwise noted in Table A. The permittee must comply with all the conditions of the permit. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit are as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

Permit Type: Federal; Pt 70/Major for NSR

Issue Date: February 22, 2005

Expiration: February 22, 2010
All Title I Conditions do not expire.

Richard J. Sandberg, Manager
Air Quality Permit Section
Industrial Division

for Sheryl A. Corrigan
Commissioner
Minnesota Pollution Control Agency

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NOTICE TO THE PERMITTEE:

Your stationary source may be subject to the requirements of the Minnesota Pollution Control Agency's (MPCA) solid waste, hazardous waste, and water quality programs. If you wish to obtain information on these programs, including information on obtaining any required permits, please contact the MPCA general information number at:

Metro Area	(651) 296-6300
Outside Metro Area	1-800-657-3864
TTY	(651) 282-5332

The rules governing these programs are contained in Minn. R. chs. 7000-7105. Written questions may be sent to: Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, Minnesota 55155-4194.

Questions about this air emission permit or about air quality requirements can also be directed to the telephone numbers and address listed above.

PERMIT SHIELD:

Subject to the limitations in Minn. R. 7007.1800, compliance with the conditions of this permit shall be deemed compliance with the specific provision of the applicable requirement identified in the permit as the basis of each condition. Subject to the limitations of Minn. R. 7007.1800 and 7017.0100, subp. 2, notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.

FACILITY DESCRIPTION:

The Permittee operates a taconite (iron ore) mine and processing plant in Keewatin, Minnesota. The facility produces taconite pellets for use as a primary raw ingredient at iron and steel mills. Major activity areas at the facility include: mines and crushers, concentrating, pelletizing, pellet storage and loadout, additive receiving and handling, concentrate storage, loadout and receiving, and support activities.

PERMIT ACTION 003 DESCRIPTION:

Four permit applications (*application dates are provided on the cover page of this permit*) are processed in this permit action.

1. Part 70 Permit Reissuance
A plan for Compliance Assurance Monitoring (CAM) was submitted on April 6, 2004, which supplemented the Part 70 permit reissuance application submittal of February 5, 2002.
2. Administrative Amendment for Ownership Change
A temporary measure was taken by making a new cover page for Permit No. 13700063-002 to reflect facility ownership change. Permit action 003 will make the facility name change in Tables A and B, in addition to the cover page change.
3. Major Permit Amendment for Fuel Diversification and Other Projects
This permit application includes the following three projects.

The first project, pollution control equipment upgrade, in itself, does not require a major permit amendment, as per Minn. R. 7007.1150, Item C(1). Phase II induration waste gas stream at the outlets of the two existing multiclones (CE 030 and CE 031) will be connected to two new wet scrubbers (CE 110 and CE 111, respectively) for venting through one new, combined waste gas stack (SV 051). Permittee undertakes this project to meet the requirements of Subpart RRRRR of National Emission Standards for Hazardous Air Pollutants: Taconite Iron Ore Processing (NESHAP; 40 CFR § 63.9580 to 63.9652). Permittee broke ground to begin construction of this project, on September 27, 2004.

Fuel diversification, the second project, will enable the Phase II indurating kiln to burn coal and petroleum coke in addition to natural gas and distillate fuel oil. Coal handling equipment (GP 003), which is subject to Subpart Y of New Source Performance Standards (NSPS; 40 CFR § 60.250 to 60.254), is expected to start up initial operation on September 30, 2005.

Adding a scrubber-equipped secondary annular cooler to the Phase II grate-kiln-cooler system (commonly referred to as grate-kiln system), the third project, will enable Permittee to make approximately 6.0 million long tons of taconite concentrate pellets per year, a 10 percent increase from the current level. The new, secondary cooler is expected to start up initial operation on May 31, 2007, after the actual startup of the first project and the compliance date of NESHAP, subp. RRRRR, October 30, 2006. It is subject to both NESHAP, subp. RRRRR, and NSPS, subp. LL.

Permittee has shown through netting that, with the proposed annual emission limits for Phase II waste gas stack on PM, PM₁₀, NO_x, SO₂, CO, and VOC, calculated as their respective 12-month rolling sums, the three projects combined will be a minor modification under Prevention of Significant Deterioration (PSD; 40 CFR § 52.21) regulations. A major permit amendment is required for the last two projects, as per Minn. R. 7007.1500, subp. 1. Permittee has proposed wet scrubber monitoring conditions to meet the requirements of NESHAP, subp. RRRRR.

4. Administrative Amendment for Control Equipment Monitoring

In a permit application dated August 20, 2004, in order to meet the requirements of NESHAP, subp. RRRRR, Permittee proposed to phase in, by October 30, 2006, new continuous parametric monitoring systems (CPMS) at designated, existing control devices (*which are not associated with the projects for the Major Permit Amendment described above*), which include wet scrubbers (CE 002, CE 004 - CE 016, CE 020, CE 022, CE 024, CE 032, and CE 034) and centrifugal collectors (CE 001 and CE 003). The O & M plan will be updated with the CPMS.

It should be noted that the six groups of units are revised to exclude idled Phase I equipment. GP 003 is now for solid fuel (coal & petroleum coke) handling equipment; GP 004 for Phase II grate feed and discharge; GP 006 for additive blending (actually fluxstone processing) with more units added. Other groups remain unchanged from previous permit actions. Table A requirements are now set at facility (FC), group (GP), and emission unit (EU) levels.

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/28/05

Facility Name: US Steel - Keewatin Taconite Operations

Permit Number: 13700063 - 003

Table A contains limits and other requirements with which your facility must comply. The limits are located in the first column of the table (What To do). The limits can be emission limits or operational limits. This column also contains the actions that you must take and the records you must keep to show that you are complying with the limits. The second column of Table A (Why to do it) lists the regulatory basis for these limits. Appendices included as conditions of your permit are listed in Table A under total facility requirements.

Subject Item: Total Facility	
What to do	Why to do it
A. OPERATIONAL REQUIREMENTS	hdr
<p>Permittee shall comply with Subpart RRRRR - National Emission Standards for Hazardous Air Pollutants: Taconite Iron Ore Processing:</p> <p>(a) for an existing affected source, comply with each emission limitation, work practice standard, and operation and maintenance requirement that applies to the source no later than October 30, 2006;</p> <p>(b) for new affected source and its initial startup date is on or before October 30, 2003, comply with each emission limitation, work practice standard, and operation and maintenance requirement that applies to the source by October 30, 2003;</p> <p>(c) for a new affected source and its initial startup date is after October 30, 2003, comply with each emission limitation, work practice standard, and operation and maintenance requirement that applies to the source upon initial startup.</p> <p>Permittee shall comply with all applicable requirements 40 CFR 63 General Provisions, in addition to the specific requirements of 40 CFR 63, Subpart RRRRR.</p>	40 CFR 63.9580 to 63.9652; Tables to Subpart RRRRR of 40 CFR 63; 40 CFR 63, subp. A
Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150.	Minn. R. 7011.0150
Fugitive Control Plan: Comply with the fugitive control plan. Follow the actions and recordkeeping specified in the fugitive control plan. The plan may be amended with the Commissioners approval. If the Commissioner determines the Permittee is out of compliance with Minn. R. 7011.0150, or fugitive control plan, then the Permittee may be required to amend the fugitive control plan.	Minn. R. 7011.0150
Comply with the O & M Plan: Follow the actions and recordkeeping specified in the O & M plan. The plan may be amended with Commissioners written approval.	Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)
Visible Emissions Training: The Permittee shall (1) ensure that one plant employee obtain an initial EPA Method 9 certification and be recertified every three years or (2) employ a similarly certified contractor. This person will train other plant employees to perform the daily visible emissions check as detailed in the Fugitive Control Plan and the O & M Plan.	Minn. R. 7007.0800, subp. 4(D) and Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)
Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not federally enforceable.	Minn. R. 7030.0010 - 7030.0080
Air Pollution Control Equipment: Operate all air pollution control equipment whenever the corresponding process equipment and emission units are operated, unless otherwise noted in Table A.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Material Usage: less than or equal to 1.5 percent by weight of the pellet weight shall be the limit for fluxstone (limestone, dolomite, or similar additives) usage in pellet production on a calendar month average.	Minn. R. 7007.0800, subp. 2
B. PERFORMANCE TESTING REQUIREMENTS	hdr
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A, B and/or C.	Minn. R. ch. 7017
Performance Tests: Performance testing for EU001-018, 020, 022, 024, 026, 030-032, 037-038, and 050-061 and their associated control equipment and stacks shall be tested at greater than or equal to 90% of the emission units current capacity. If a performance test is conducted at less than the applicable minimum rate given above the Permittee shall be given the opportunity to retest within 90 days of the subject test before process limits can be applied as specified in Minn. R. 7017.2025, subpart 3. Once a process limit has been applied the Permittee may at any time conduct a voluntary performance test at or above the applicable minimum rate in order to remove the process limit.	Minn. R. 7017.2025
C. MONITORING REQUIREMENTS	hdr
Operation of Monitoring Equipment: Unless otherwise noted in Table A, B, and/or C, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, such as for system breakdowns, repairs, calibration checks, and zero and span adjustments (as applicable). Monitoring records should reflect any such periods of process shutdown.	Minn. R. 7007.0800, subp. 4(D)

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/28/05

Facility Name: US Steel - Keewatin Taconite Operations

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Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment (any requirements applying to continuous emission monitors are listed separately in this permit).	Minn. R. 7007.0800, subp. 4(D)
Install, operate and maintain Continuous Parameter Monitoring Systems (CPMS) for air pollution control devices (CEs) to monitor air stream pressure drop and, if appropriate, scrubber water flow rate, no later than October 30, 2006. Replace pressure sensors with flow meters on scrubber water line. Install, operate and maintain the CPMS per the requirements of the O & M plan. Measurements at least once every 15 minutes must be taken and daily averages must be calculated, as per NESHAP (40 CFR 63.9580 to 63.9652).	40 CFR 63.9580 to 63.9652; 40 CFR 64; Minn. R. 7007.0800, subp. 4(D)
Update the O & M plan as necessary to include: 1) a description of the device; 2) test results which demonstrate compliance; 3) appropriate operating parameters demonstrating compliance; 4) procedures for demonstrating initial and continuous compliance with the corresponding operating limits.	
Update the O & M plan to add SV 049, SV 051 - SV 056 to the Visible Emission Checklists.	
Update the Fugitive Control Plan to add FS 040, FS 041, and FS 042, to the Visible Emission Checklists.	Minn. R. 7007.0800, subp. 4(D) and Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)
Fugitive Dust Observations: The Permittee shall observe the fugitive dust sources identified in the Fugitive Control Plan once daily during daylight hours. The Permittee shall use the fugitive sources visible emissions checklist(s) in the Fugitive Control Plan as a means to indicate when appropriate corrective actions in the Fugitive Control Plan are taken.	Minn. R. 7007.0800, subp. 4(D) and Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)
D. RECORD KEEPING REQUIREMENTS	hdr
Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007.1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350, subp. 2), including records of the emissions resulting from those changes.	Minn. R. 7007.0800, subp. 5(B)
Recordkeeping: Retain all records at the stationary source for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).	Minn. R. 7007.0800, subp. 5(C)
Maintain monthly fluxstone purchase and pellet production records: calculate the percentage of fluxstone usage and maintain these records on site within fifteen (15) days after the end of the month; include these records and the 1.5% fluxstone usage limit when reporting deviation.	Minn. R. 7007.0800, subp. 2
Contractors: The Permittee shall retain records on site of all contractors that are allowed on site that include any crushers, screens and conveyors. The Permittee shall also retain records on site of all contractors whose operations would require an Air Emissions Permit from the MPCA. The records shall include the contractors company name, MPCA air emissions permit number, short description of activities undertaken by the contractor, estimate of emissions or materials handled and the dates the contractor was on site. The record shall be updated at least monthly.	Minn. R. 7007.0800, subp. 2
The Permittee shall evaluate if the activities of any contractor required NSR permitting prior to the contractor performing such activities. If a contractor has its own permit, but it is determined that the contractor is under the common control of the taconite plant then the contractor's permit does not shield the taconite plant or the contractor from the NSR & Part 70 modification regulations or enforcement actions.	
E. REPORTING REQUIREMENTS	hdr
Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.	Minn. R. 7019.1000, subp. 1
Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description: 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.	Minn. R. 7019.1000, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/28/05

Facility Name: US Steel - Keewatin Taconite Operations

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<p>Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2.</p> <p>At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.</p>	Minn. R. 7019.1000, subp. 2
<p>Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3.</p> <p>At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.</p>	Minn. R. 7019.1000, subp. 3
<p>Emissions Inventory Report: due 91 days after end of each calendar year following Permit Issuance (April 1). To be submitted on a form approved by the Commissioner.</p>	Minn. R. 7019.3000 through Minn. R. 7019.3010
<p>Emission Fees: due 60 days after receipt of an MPCA bill.</p>	Minn. R. 7002.0005 through Minn. R. 7002.0095
<p>F. DETERMINING IF A PROJECT/MODIFICATION IS SUBJECT TO NEW SOURCE REVIEW</p>	hdr
<p>These requirements apply where there is a reasonable possibility that a proposed project, analyzed using the actual-to-projected-actual (ATPA) test and found to not be part of a major modification, may result in a significant emissions increase. If the ATPA test is not used for a particular project, or if there is not a reasonable possibility that the proposed project could result in a significant emissions increase, then these requirements do not apply to that project.</p> <p>Even though a particular modification is not subject to New Source Review, a permit amendment, recordkeeping, or notification may still be required under Minn. R. 7007.1150 - 7007.1500.</p>	Title I Condition: 40 CFR Section 52.21(r)(6) and Minn. R. 7007.3000
<p>Preconstruction Documentation -- Before beginning actual construction on a project, the Permittee shall document the following information:</p> <ol style="list-style-type: none"> 1. A description of the project 2. Identification of the emission unit(s) whose emissions of an NSR pollutant could be affected 3. A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including the baseline actual emissions, the potential emissions, the projected actual emissions, the amount of emissions excluded due to increases not associated with the modification and that the unit(s) could have accommodated during the baseline period, an explanation of why the amounts were excluded, and any creditable contemporaneous increases and decreases that were considered in the determination. <p>The Permittee shall maintain records of this documentation.</p>	Title I Condition: 40 CFR Section 52.21(r)(6) and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4 & 5
<p>The Permittee shall monitor the actual emissions of any regulated NSR pollutant that could increase as a result of the project and that were analyzed using the ATPA test, and the potential emissions of any regulated NSR pollutant that could increase as a result of the project and that were analyzed using potential emissions. The Permittee shall calculate and maintain a record of the sum of the actual and potential (if used in the analysis) emissions of the regulated pollutant, in tons per year on a calendar year basis, for a period of 5 years following resumption of regular operations after the change, or for a period of 10 years following resumption of regular operations after the change if the project increases the design capacity of or potential to emit of any unit associated with the project.</p>	Title I Condition: 40 CFR Section 52.21(r)(6) and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4 & 5
<p>G. PHASE I REACTIVATION REQUIREMENTS</p>	hdr
<p>Resumption Performance Test: due 180 days after the resumption of operation of Phase I process equipment to determine emissions of PM and Opacity emissions at SV 019, SV 021, SV 023, SV 025, SV 027, SV 028, and SV 029.</p>	Minn. R. 7017.2020, subp. 1
<p>Monitoring Equipment: Install or make needed repairs to monitoring equipment within 30 days of resuming operation of any idled Phase I emission units and associated air pollution control equipment. The idled Phase I air pollution control equipment are CE019, CE021, CE023, CE027, CE028, CE029 and CE033.</p>	Minn. R. 7007.0800, subp. 4(D)

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/28/05

Facility Name: US Steel - Keewatin Taconite Operations

Permit Number: 13700063 - 003

H. MISCELLANEOUS	hdr
Application for Permit Amendment: If you need a permit amendment, submit application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed.	Minn. R. 7007.1150 through Minn. R. 7007.1500
Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H).	Minn. R. 7007.1400, subp. 1(H)
Inspections: Upon presentation of credentials and other documents as may be required by law, allow the Agency, or its representative, to enter the Permittee's premises, to have access to and copy any records required by this permit, to inspect at reasonable times (which include any time the source is operating) any facilities, equipment, practices or operations, and to sample or monitor any substances or parameters at any location.	Minn. R. 7007.0800, subp. 9(A)
Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted.	Minn. R. 7011.0020
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/28/05

Facility Name: US Steel - Keewatin Taconite Operations

Permit Number: 13700063 - 003

Subject Item: GP 001 Six crude ore feed lines, conveyor transfer

Associated Items:

- CE 005 Wet Scrubber-High Efficiency w/o Lime
- CE 006 Wet Scrubber-High Efficiency w/o Lime
- CE 007 Wet Scrubber-High Efficiency w/o Lime
- CE 008 Wet Scrubber-High Efficiency w/o Lime
- CE 009 Wet Scrubber-High Efficiency w/o Lime
- CE 010 Wet Scrubber-High Efficiency w/o Lime
- EU 005 Conveyor Transfer-Crude Ore Feed
- EU 006 Conveyor Transfer-Crude Ore Feed
- EU 007 Conveyor Transfer-Crude Ore Feed
- EU 008 Conveyor Transfer-Crude Ore Feed
- EU 009 Conveyor Transfer-Crude Ore Feed
- EU 010 Conveyor Transfer-Crude Ore Feed
- SV 005
- SV 006
- SV 007
- SV 008
- SV 009
- SV 010

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0710, subp. 1(A)
Total Particulate Matter: greater than or equal to 85 percent collection efficiency or higher for the pollution control equipment, the entire emission facility is in compliance with NAAQS and MAAQS, and the emission facility is located not less than one-fourth mile from any residence or public roadway. (This is an Alternative demonstration of compliance to Total Particulate Matter Limit.)	Minn. R. 7011.0710, subp. 3
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0710, subp. 1(B)
B. CONTROL EQUIPMENT MONITORING	hdr
Air Pollution Control Equipment: Operate all air pollution control equipment whenever the corresponding process equipment and emission units are operated.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Gas Stream Pressure Drop: Monitor and record once every seven (7) days when in operation once the pressure gauge is installed. Complete pressure drop monitoring equipment debugging, troubleshooting, and establishment of parameter range within 180 days of installation. This requirement expires upon installation of the Continuous Parameter Monitoring System (CPMS) and corresponding update of the O & M Plan, or 10/30/2006 - whichever is sooner. At that time, the "Wet Scrubber monitoring" requirement will become effective.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Total Water Pressure: Monitor and record once every seven (7) days when in operation once the water total pressure gauge is installed. Complete water total pressure monitoring equipment debugging, troubleshooting, and establishment of parameter range within 180 days of installation. This requirement expires upon installation of the Continuous Parameter Monitoring System (CPMS) and corresponding update of the O & M Plan, or 10/30/2006 - whichever is sooner. At that time, the "Wet Scrubber monitoring" requirement will become effective.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/28/05

Facility Name: US Steel - Keewatin Taconite Operations

Permit Number: 13700063 - 003

Wet Scrubber Monitoring: 1) maintain the daily average pressure drop and daily average scrubber water flow rate at or above the minimum levels established in the O & M plan; 2) operate and maintain each Continuous Parameter Monitoring System according to the O & M plan and record all information needed to document conformance with these requirements; 3) collect and reduce monitoring data for pressure drop and scrubber water flow rate according to the O & M plan and record all information needed to document conformance with these requirements. This requirement becomes effective upon installation of the Continuous Parameter Monitoring System (CPMS) and corresponding update of the O & M Plan, or 10/30/2006 - whichever is sooner. At that time, the "Gas Stream Pressure Drop" and "Total Water Pressure" requirements will expire.	40 CFR 63.9580 to 63.9652; 40 CFR 64; Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Process monitoring: the visual emissions observer in the facility staff shall check, unless the plume is limited by visible moisture, stack visible emissions (opacity) once daily when in operation using a checklist or checklists in the facility O & M plan, as a means to indicate when appropriate corrective actions in the O & M plan should be taken.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
C. PERFORMANCE TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 10/01/2002 to determine PM and Opacity emissions from one stack in this group. Note that the emission unit must be operated at 90% of current capacity or higher during the Performance Test, as detailed in Table A of this permit for Total Facility, "B. PERFORMANCE TESTING REQUIREMENTS," second condition.	Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before Performance Test.	Minn. R. 7017.2030, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/28/05

Facility Name: US Steel - Keewatin Taconite Operations

Permit Number: 13700063 - 003

Subject Item: GP 002 Four crude ore feed lines, conveyor trans.

Associated Items: CE 011 Wet Scrubber-High Efficiency w/o Lime
CE 012 Wet Scrubber-High Efficiency w/o Lime
CE 013 Wet Scrubber-High Efficiency w/o Lime
CE 014 Wet Scrubber-High Efficiency w/o Lime
EU 011 Conveyor Transfer-Crude Ore Feed
EU 012 Conveyor Transfer-Crude Ore Feed
EU 013 Conveyor Transfer-Crude Ore Feed
EU 014 Conveyor Transfer-Crude Ore Feed
SV 011
SV 012
SV 013
SV 014

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Total Particulate Matter: greater than or equal to 85 percent collection efficiency or higher for the pollution control equipment, the entire emission facility is in compliance with NAAQS and MAAQS, and the emission facility is located not less than one-fourth mile from any residence or public roadway. (This is an Alternative demonstration of compliance to Total Particulate Matter Limit.)	Minn. R. 7011.0715, subp. 3
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
B. CONTROL EQUIPMENT MONITORING	hdr
Air Pollution Control Equipment: Operate all air pollution control equipment whenever the corresponding process equipment and emission units are operated.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Gas Stream Pressure Drop: Monitor and record once every seven (7) days when in operation once the pressure gauge is installed. Complete pressure drop monitoring equipment debugging, troubleshooting, and establishment of parameter range within 180 days of installation. This requirement expires upon installation of the Continuous Parameter Monitoring System (CPMS) and corresponding update of the O & M Plan, or 10/30/2006 - whichever is sooner. At that time, the "Wet Scrubber monitoring" requirement will become effective.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Total Water Pressure: Monitor and record once every seven (7) days when in operation once the water total pressure gauge is installed. Complete water total pressure monitoring equipment debugging, troubleshooting, and establishment of parameter range within 180 days of installation. This requirement expires upon installation of the Continuous Parameter Monitoring System (CPMS) and corresponding update of the O & M Plan, or 10/30/2006 - whichever is sooner. At that time, the "Wet Scrubber monitoring" requirement will become effective.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Wet Scrubber Monitoring: 1) maintain the daily average pressure drop and daily average scrubber water flow rate at or above the minimum levels established in the O & M plan; 2) operate and maintain each Continuous Parameter Monitoring System according to the O & M plan and record all information needed to document conformance with these requirements; 3) collect and reduce monitoring data for pressure drop and scrubber water flow rate according to the O & M plan and record all information needed to document conformance with these requirements. This requirement becomes effective upon installation of the Continuous Parameter Monitoring System (CPMS) and corresponding update of the O & M Plan, or 10/30/2006 - whichever is sooner. At that time, the "Gas Stream Pressure Drop" and "Total Water Pressure" requirements will expire.	40 CFR 63.9580 to 63.9652; 40 CFR 64; Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Process monitoring: the visual emissions observer in the facility staff shall check, unless the plume is limited by visible moisture, stack visible emissions (opacity) once daily when in operation using a checklist or checklists in the facility O & M plan, as a means to indicate when appropriate corrective actions in the O & M plan should be taken.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
C. PERFORMANCE TESTING REQUIREMENTS	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/28/05

Facility Name: US Steel - Keewatin Taconite Operations

Permit Number: 13700063 - 003

Performance Test: due before end of each 60 months starting 07/26/2000 to determine PM and Opacity emissions from one stack in this group. Note that the emission unit must be operated at 90% of current capacity or higher during the Performance Test, as detailed in Table A of this permit for Total Facility, "B. PERFORMANCE TESTING REQUIREMENTS," second condition.	Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before Performance Test.	Minn. R. 7017.2030, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/28/05

Facility Name: US Steel - Keewatin Taconite Operations

Permit Number: 13700063 - 003

Subject Item: GP 003 Solid fuel (coal & petroleum coke) handling equipment**Associated Items:** CE 112 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 113 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 114 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

EU 057 Coal Receiving Hopper

EU 058 Coal Crushing System

EU 059 Coal Pulverizing System

SV 052 Coal Receiving Hopper

SV 053 Coal Crushing System

SV 054 Coal Pulverizing System

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Opacity: less than or equal to 20 percent opacity for the equipment in this Group on and after the day Initial Performance is required.	40 CFR 60.252(c); Minn. R. 7011.1150
B. CONTROL EQUIPMENT MONITORING	hdr
Air Pollution Control Equipment: Operate all air pollution control equipment whenever the corresponding process equipment and emission units are operated.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Fabric Filter Gas Stream Pressure drop: Monitor and record once every seven (7) days when in operation once the pressure gauge is installed. Complete pressure drop monitoring equipment debugging, troubleshooting, and establishment of parameter range within 180 days of installation.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Process monitoring: the visual emissions observer in the facility staff shall check stack visible emissions (opacity) once daily when in operation using a checklist or checklists in the facility O & M plan, as a means to indicate when appropriate corrective actions in the O & M plan should be taken.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
C. PERFORMANCE TESTING REQUIREMENTS	hdr
Initial Performance Test: due 180 days after Initial Startup to determine Opacity emission and control equipment operating parameter ranges.	40 CFR 60.8; Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before Performance Test.	Minn. R. 7017.2030, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/28/05

Facility Name: US Steel - Keewatin Taconite Operations

Permit Number: 13700063 - 003

Subject Item: GP 004 Phase II grate feed & discharge**Associated Items:** CE 020 Wet Scrubber-High Efficiency w/o Lime

CE 022 Wet Scrubber-High Efficiency w/o Lime

EU 020 Grate Feed, Phase II

EU 022 Grate Discharge, Phase II

SV 020

SV 022

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Total Particulate Matter: greater than or equal to 85 percent collection efficiency or higher for the pollution control equipment, the entire emission facility is in compliance with NAAQS and MAAQS, and the emission facility is located not less than one-fourth mile from any residence or public roadway. (This is an Alternative demonstration of compliance to Total Particulate Matter Limit.)	Minn. R. 7011.0715, subp. 3
Opacity: less than or equal to 20 percent opacity .	Minn. R. 7011.0715, subp. 1(B)
B. CONTROL EQUIPMENT MONITORING	hdr
Air Pollution Control Equipment: Operate all air pollution control equipment whenever the corresponding process equipment and emission units are operated.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Gas Stream Pressure Drop: Monitor and record once every seven (7) days when in operation once the pressure gauge is installed. Complete pressure drop monitoring equipment debugging, troubleshooting, and establishment of parameter range within 180 days of installation. This requirement expires upon installation of the Continuous Parameter Monitoring System (CPMS) and corresponding update of the O & M Plan, or 10/30/2006 - whichever is sooner. At that time, the "Wet Scrubber monitoring" requirement will become effective.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Total Water Pressure: Monitor and record once every seven (7) days when in operation once the water total pressure gauge is installed. Complete water total pressure monitoring equipment debugging, troubleshooting, and establishment of parameter range within 180 days of installation. This requirement expires upon installation of the Continuous Parameter Monitoring System (CPMS) and corresponding update of the O & M Plan, or 10/30/2006 - whichever is sooner. At that time, the "Wet Scrubber monitoring" requirement will become effective.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Wet Scrubber Monitoring: 1) maintain the daily average pressure drop and daily average scrubber water flow rate at or above the minimum levels established in the O & M plan; 2) operate and maintain each Continuous Parameter Monitoring System according to the O & M plan and record all information needed to document conformance with these requirements; 3) collect and reduce monitoring data for pressure drop and scrubber water flow rate according to the O & M plan and record all information needed to document conformance with these requirements. This requirement becomes effective upon installation of the Continuous Parameter Monitoring System (CPMS) and corresponding update of the O & M Plan, or 10/30/2006 - whichever is sooner. At that time, the "Gas Stream Pressure Drop" and "Total Water Pressure" requirements will expire.	40 CFR 63.9580 to 63.9652; 40 CFR 64; Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Process monitoring: the visual emissions observer in the facility staff shall check, unless the plume is limited by visible moisture, stack visible emissions (opacity) once daily when in operation using a checklist or checklists in the facility O & M plan, as a means to indicate when appropriate corrective actions in the O & M plan should be taken.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
C. PERFORMANCE TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 10/01/2002 to determine PM and Opacity emissions. Note that the emission unit must be operated at 90% of current capacity or higher during the Performance Test, as detailed in Table A of this permit for Total Facility, "B. PERFORMANCE TESTING REQUIREMENTS," second condition.	Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before Performance Test.	Minn. R. 7017.2030, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/28/05

Facility Name: US Steel - Keewatin Taconite Operations

Permit Number: 13700063 - 003

Subject Item: GP 005 Phase II pellet screening system emission pts**Associated Items:** CE 037 Wet Scrubber-High Efficiency w/o Lime

CE 038 Wet Scrubber-High Efficiency w/o Lime

EU 037 Pellet Screening System

EU 038 Conveyor Drop

SV 037 Ctrl eqp upgrade 5/5/03 letter

SV 038

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Total Particulate Matter: less than or equal to 0.05 grams/dry standard cubic meter (0.022 grains/dry standard cubic foot) of exhaust gas on and after the date on which the performance test required is completed.	40 CFR Section 60.385(a)(1); Minn. R. 7011.2700
Opacity: less than or equal to 10 percent opacity for any Process Fugitive Emissions.	40 CFR Section 60.385(b); Minn. R. 7011.2700
B. CONTROL EQUIPMENT MONITORING	hdr
Air Pollution Control Equipment: Operate all air pollution control equipment whenever the corresponding process equipment and emission units are operated.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Wet Scrubber Monitoring: 1) maintain the daily average pressure drop and daily average scrubber water flow rate at or above the minimum levels established in the O & M plan; 2) operate and maintain each Continuous Parameter Monitoring System according to the O & M plan and record all information needed to document conformance with these requirements; 3) collect and reduce monitoring data for pressure drop and scrubber water flow rate according to the O & M plan and record all information needed to document conformance with these requirements. The monitoring device must be certified by the manufacturer to be accurate within 250 Pascals (1 inch water) gauge pressure for the gas stream pressure drop and within 5% of the scrubber water flow rate, plus or minus; and must be calibrated on an annual basis in accordance with manufacturer's instructions.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J); Minn. R. 7011.2700; 40 CFR 60.384(a); 40 CFR 60.384(b); 40 CFR 60.385(b); 40 CFR 60.385(c)
Process monitoring: the visual emissions observer in the facility staff shall check, unless the plume is limited by visible moisture, stack visible emissions (opacity) once daily when in operation using a checklist or checklists in the facility O & M plan, as a means to indicate when appropriate corrective actions in the O & M plan should be taken.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
C. PERFORMANCE TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 07/24/2000 on one (1) representative unit to determine PM and Opacity emissions. Note that the emission unit must be operated at 90% of current capacity or higher during the Performance Test, as detailed in Table A of this permit for Total Facility, "B. PERFORMANCE TESTING REQUIREMENTS," second condition.	Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before Performance Test.	Minn. R. 7017.2030, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/28/05

Facility Name: US Steel - Keewatin Taconite Operations

Permit Number: 13700063 - 003

Subject Item: GP 006 Additive Blending - actually flux processing

Associated Items: CE 015 Wet Scrubber-High Efficiency w/o Lime
CE 016 Wet Scrubber-High Efficiency w/o Lime
CE 017 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
CE 018 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
CE 117 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
EU 015 Phase I Additive Blending - actually flux processing
EU 016 Phase II Additive Blending - actually flux processing
EU 017 Phase I Additive Silo - actually flux processing
EU 018 Phase II Additive Silo - actually flux processing
SV 015
SV 016
SV 017
SV 018
SV 049 Title 5 reissuance app 2/4/02

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0710, subp. 1(A) for SV 015 & 017; Minn. R. 7011.0715, subp. 1(A) for SV 016, 018 & 049
Total Particulate Matter: greater than or equal to 85 percent collection efficiency or higher for the pollution control equipment, the entire emission facility is in compliance with NAAQS and MAAQS, and the emission facility is located not less than one-fourth mile from any residence or public roadway. (This is an Alternative demonstration of compliance to Total Particulate Matter Limit.)	Minn. R. 7011.0710, subp. 3 for SV 015 & 017; Minn. R. 7011.0715, subp. 3 for SV 016, 018 & 049
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0710, subp. 1(B)
Opacity: less than or equal to 20 percent opacity . (Note SV 017, SV 018, and SV 049 are subject to this requirement.)	Minn. R. 7011.0715, subp. 1(B)
B. CONTROL EQUIPMENT MONITORING	hdr
Air Pollution Control Equipment: Operate all air pollution control equipment whenever the corresponding process equipment and emission units are operated.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Gas Stream Pressure Drop: Monitor and record once every seven (7) days when in operation once the pressure gauge is installed. Complete pressure drop monitoring equipment debugging, troubleshooting, and establishment of parameter range within 180 days of installation. This requirement expires upon installation of the Continuous Parameter Monitoring System (CPMS) and corresponding update of the O & M Plan, or 10/30/2006 - whichever is sooner. At that time, the "Wet Scrubber monitoring" requirement will become effective.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Total Water Pressure: Monitor and record once every seven (7) days when in operation once the water total pressure gauge is installed. Complete water total pressure monitoring equipment debugging, troubleshooting, and establishment of parameter range within 180 days of installation. This requirement expires upon installation of the Continuous Parameter Monitoring System (CPMS) and corresponding update of the O & M Plan, or 10/30/2006 - whichever is sooner. At that time, the "Wet Scrubber monitoring" requirement will become effective.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Wet Scrubber Monitoring: 1) maintain the daily average pressure drop and daily average scrubber water flow rate at or above the minimum levels established in the O & M plan; 2) operate and maintain each Continuous Parameter Monitoring System according to the O & M plan and record all information needed to document conformance with these requirements; 3) collect and reduce monitoring data for pressure drop and scrubber water flow rate according to the O & M plan and record all information needed to document conformance with these requirements. This requirement becomes effective upon installation of the Continuous Parameter Monitoring System (CPMS) and corresponding update of the O & M Plan, or 10/30/2006 - whichever is sooner. At that time, the "Gas Stream Pressure Drop" and "Total Water Pressure" requirements will expire.	40 CFR 63.9580 to 63.9652; 40 CFR 64; Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/28/05

Facility Name: US Steel - Keewatin Taconite Operations

Permit Number: 13700063 - 003

Fabric Filter Gas Stream Pressure drop: Monitor and record once every seven (7) days when in operation once the pressure gauge is installed. Complete pressure drop monitoring equipment debugging, troubleshooting, and establishment of parameter range within 180 days of installation.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Process monitoring: the visual emissions observer in the facility staff shall check, unless the plume is limited by visible moisture, stack visible emissions (opacity) once daily when in operation using a checklist or checklists in the facility O & M plan, as a means to indicate when appropriate corrective actions in the O & M plan should be taken.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
C. PERFORMANCE TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 08/08/2001 on one (1) representative unit to determine PM and Opacity emissions. Note that the emission unit must be operated at 90% of current capacity or higher during the Performance Test, as detailed in Table A of this permit for Total Facility, "B. PERFORMANCE TESTING REQUIREMENTS," second condition.	Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before Performance Test.	Minn. R. 7017.2030, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/28/05

Facility Name: US Steel - Keewatin Taconite Operations

Permit Number: 13700063 - 003

Subject Item: EU 001 Gyratory Crusher-Primary Crusher No.1**Associated Items:** CE 001 Centrifugal Collector - Medium Efficiency

SV 001

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0710, subp. 1(A)
Total Particulate Matter: greater than or equal to 85 percent collection efficiency or higher for the pollution control equipment, the entire emission facility is in compliance with NAAQS and MAAQS, and the emission facility is located not less than one-fourth mile from any residence or public roadway. (This is an Alternative demonstration of compliance to Total Particulate Matter Limit.)	Minn. R. 7011.0710, subp. 3
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0710, subp. 1(B)
B. CONTROL EQUIPMENT MONITORING	hdr
Air Pollution Control Equipment: Operate all air pollution control equipment whenever the corresponding process equipment and emission units are operated.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Gas Stream Pressure Drop: Monitor and record once every seven (7) days when in operation once the pressure gauge is installed. Complete pressure drop monitoring equipment debugging, troubleshooting, and establishment of parameter range within 180 days of installation. This requirement expires upon installation of the Continuous Parameter Monitoring System (CPMS) and corresponding update of the O & M Plan, or 10/30/2006 - whichever is sooner. At that time, the "Control Equipment Monitoring" requirement will become effective.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Control Equipment Monitoring: 1) maintain the daily average pressure drop at or above the minimum levels established in the O & M plan; 2) operate and maintain each Continuous Parameter Monitoring System according to the O & M plan and record all information needed to document conformance with these requirements; 3) collect and reduce monitoring data for pressure drop according to the O & M plan and record all information needed to document conformance with these requirements.	40 CFR 63.9580 to 63.9652; 40 CFR 64; Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
This requirement becomes effective upon installation of the Continuous Parameter Monitoring System (CPMS) and corresponding update of the O & M Plan, or 10/30/2006 - whichever is sooner. At that time, the "Gas Stream Pressure Drop" requirement will expire.	
Process monitoring: the visual emissions observer in the facility staff shall check stack visible emissions (opacity) once daily when in operation using a checklist or checklists in the facility O & M plan, as a means to indicate when appropriate corrective actions in the O & M plan should be taken.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
C. PERFORMANCE TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 07/31/2001 to determine PM and Opacity emissions. Note that the emission unit must be operated at 90% of current capacity or higher during the Performance Test, as detailed in Table A of this permit for Total Facility, "B. PERFORMANCE TESTING REQUIREMENTS," second condition.	Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before Performance Test.	Minn. R. 7017.2030, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/28/05

Facility Name: US Steel - Keewatin Taconite Operations

Permit Number: 13700063 - 003

Subject Item: EU 002 Gyratory Crusher-Primary Crusher No.2**Associated Items:** CE 002 Wet Scrubber-High Efficiency w/o Lime
SV 002

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Total Particulate Matter: greater than or equal to 85 percent collection efficiency or higher for the pollution control equipment, the entire emission facility is in compliance with NAAQS and MAAQS, and the emission facility is located not less than one-fourth mile from any residence or public roadway. (This is an Alternative demonstration of compliance to Total Particulate Matter Limit.)	Minn. R. 7011.0715, subp. 3
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
B. CONTROL EQUIPMENT MONITORING	hdr
Air Pollution Control Equipment: Operate all air pollution control equipment whenever the corresponding process equipment and emission units are operated.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Gas Stream Pressure Drop: Monitor and record once every seven (7) days when in operation once the pressure gauge is installed. Complete pressure drop monitoring equipment debugging, troubleshooting, and establishment of parameter range within 180 days of installation. This requirement expires upon installation of the Continuous Parameter Monitoring System (CPMS) and corresponding update of the O & M Plan, or 10/30/2006 - whichever is sooner. At that time, the "Wet Scrubber monitoring" requirement will become effective.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Total Water Pressure: Monitor and record once every seven (7) days when in operation once the water total pressure gauge is installed. Complete water total pressure monitoring equipment debugging, troubleshooting, and establishment of parameter range within 180 days of installation. This requirement expires upon installation of the Continuous Parameter Monitoring System (CPMS) and corresponding update of the O & M Plan, or 10/30/2006 - whichever is sooner. At that time, the "Wet Scrubber monitoring" requirement will become effective.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Wet Scrubber Monitoring: 1) maintain the daily average pressure drop and daily average scrubber water flow rate at or above the minimum levels established in the O & M plan; 2) operate and maintain each Continuous Parameter Monitoring System according to the O & M plan and record all information needed to document conformance with these requirements; 3) collect and reduce monitoring data for pressure drop and scrubber water flow rate according to the O & M plan and record all information needed to document conformance with these requirements. This requirement becomes effective upon installation of the Continuous Parameter Monitoring System (CPMS) and corresponding update of the O & M Plan, or 10/30/2006 - whichever is sooner. At that time, the "Gas Stream Pressure Drop" and "Total Water Pressure" requirements will expire.	40 CFR 63.9580 to 63.9652; 40 CFR 64; Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Process monitoring: the visual emissions observer in the facility staff shall check, unless the plume is limited by visible moisture, stack visible emissions (opacity) once daily when in operation using a checklist or checklists in the facility O & M plan, as a means to indicate when appropriate corrective actions in the O & M plan should be taken.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
C. PERFORMANCE TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 08/07/2001 to determine PM and Opacity emissions. Note that the emission unit must be operated at 90% of current capacity or higher during the Performance Test, as detailed in Table A of this permit for Total Facility, "B. PERFORMANCE TESTING REQUIREMENTS," second condition.	Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before Performance Test.	Minn. R. 7017.2030, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/28/05

Facility Name: US Steel - Keewatin Taconite Operations

Permit Number: 13700063 - 003

Subject Item: EU 003 Conveyor Transfer-Drive House No. 1 Primary Conveyor**Associated Items:** CE 003 Centrifugal Collector - Medium Efficiency

SV 003

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0710, subp. 1(A)
Total Particulate Matter: greater than or equal to 85 percent collection efficiency or higher for the pollution control equipment, the entire emission facility is in compliance with NAAQS and MAAQS, and the emission facility is located not less than one-fourth mile from any residence or public roadway. (This is an Alternative demonstration of compliance to Total Particulate Matter Limit.)	Minn. R. 7011.0710, subp. 3
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0710, subp. 1(B)
B. CONTROL EQUIPMENT MONITORING	hdr
Air Pollution Control Equipment: Operate all air pollution control equipment whenever the corresponding process equipment and emission units are operated.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Gas Stream Pressure Drop: Monitor and record once every seven (7) days when in operation once the pressure gauge is installed. Complete pressure drop monitoring equipment debugging, troubleshooting, and establishment of parameter range within 180 days of installation. This requirement expires upon installation of the Continuous Parameter Monitoring System (CPMS) and corresponding update of the O & M Plan, or 10/30/2006 - whichever is sooner. At that time, the "Control Equipment Monitoring" requirement will become effective.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Control Equipment Monitoring: 1) maintain the daily average pressure drop at or above the minimum levels established in the O & M plan; 2) operate and maintain each Continuous Parameter Monitoring System according to the O & M plan and record all information needed to document conformance with these requirements; 3) collect and reduce monitoring data for pressure drop according to the O & M plan and record all information needed to document conformance with these requirements.	40 CFR 63.9580 to 63.9652; 40 CFR 64; Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
This requirement becomes effective upon installation of the Continuous Parameter Monitoring System (CPMS) and corresponding update of the O & M Plan, or 10/30/2006 - whichever is sooner. At that time, the "Gas Stream Pressure Drop" requirement will expire.	
Process monitoring: the visual emissions observer in the facility staff shall check stack visible emissions (opacity) once daily when in operation using a checklist or checklists in the facility O & M plan, as a means to indicate when appropriate corrective actions in the O & M plan should be taken.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
C. PERFORMANCE TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 07/31/2001 to determine PM and Opacity emissions. Note that the emission unit must be operated at 90% of current capacity or higher during the Performance Test, as detailed in Table A of this permit for Total Facility, "B. PERFORMANCE TESTING REQUIREMENTS," second condition.	Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before Performance Test.	Minn. R. 7017.2030, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/28/05

Facility Name: US Steel - Keewatin Taconite Operations

Permit Number: 13700063 - 003

Subject Item: EU 004 Conveyor Transfer-Drive House No. 2 Primary Conveyor**Associated Items:** CE 004 Wet Scrubber-High Efficiency w/o Lime

SV 004

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Total Particulate Matter: greater than or equal to 85 percent collection efficiency or higher for the pollution control equipment, the entire emission facility is in compliance with NAAQS and MAAQS, and the emission facility is located not less than one-fourth mile from any residence or public roadway. (This is an Alternative demonstration of compliance to Total Particulate Matter Limit.)	Minn. R. 7011.0715, subp. 3
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
B. CONTROL EQUIPMENT MONITORING	hdr
Air Pollution Control Equipment: Operate all air pollution control equipment whenever the corresponding process equipment and emission units are operated.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Gas Stream Pressure Drop: Monitor and record once every seven (7) days when in operation once the pressure gauge is installed. Complete pressure drop monitoring equipment debugging, troubleshooting, and establishment of parameter range within 180 days of installation. This requirement expires upon installation of the Continuous Parameter Monitoring System (CPMS) and corresponding update of the O & M Plan, or 10/30/2006 - whichever is sooner. At that time, the "Wet Scrubber monitoring" requirement will become effective.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Total Water Pressure: Monitor and record once every seven (7) days when in operation once the water total pressure gauge is installed. Complete water total pressure monitoring equipment debugging, troubleshooting, and establishment of parameter range within 180 days of installation. This requirement expires upon installation of the Continuous Parameter Monitoring System (CPMS) and corresponding update of the O & M Plan, or 10/30/2006 - whichever is sooner. At that time, the "Wet Scrubber monitoring" requirement will become effective.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Wet Scrubber Monitoring: 1) maintain the daily average pressure drop and daily average scrubber water flow rate at or above the minimum levels established in the O & M plan; 2) operate and maintain each Continuous Parameter Monitoring System according to the O & M plan and record all information needed to document conformance with these requirements; 3) collect and reduce monitoring data for pressure drop and scrubber water flow rate according to the O & M plan and record all information needed to document conformance with these requirements. This requirement becomes effective upon installation of the Continuous Parameter Monitoring System (CPMS) and corresponding update of the O & M Plan, or 10/30/2006 - whichever is sooner. At that time, the "Gas Stream Pressure Drop" and "Total Water Pressure" requirements will expire.	40 CFR 63.9580 to 63.9652; 40 CFR 64; Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Process monitoring: the visual emissions observer in the facility staff shall check, unless the plume is limited by visible moisture, stack visible emissions (opacity) once daily when in operation using a checklist or checklists in the facility O & M plan, as a means to indicate when appropriate corrective actions in the O & M plan should be taken.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
C. PERFORMANCE TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 05/04/2004 to determine PM and Opacity emissions. Note that the emission unit must be operated at 90% of current capacity or higher during the Performance Test, as detailed in Table A of this permit for Total Facility, "B. PERFORMANCE TESTING REQUIREMENTS," second condition.	Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before Performance Test.	Minn. R. 7017.2030, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/28/05

Facility Name: US Steel - Keewatin Taconite Operations

Permit Number: 13700063 - 003

Subject Item: EU 024 Cooler Dump Zone, Phase II**Associated Items:** CE 024 Wet Scrubber-High Efficiency w/o Lime

SV 024 Ctrl eqp upgrade 4/7/04 letter

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Total Particulate Matter: greater than or equal to 85 percent collection efficiency or higher for the pollution control equipment, the entire emission facility is in compliance with NAAQS and MAAQS, and the emission facility is located not less than one-fourth mile from any residence or public roadway. (This is an Alternative demonstration of compliance to Total Particulate Matter Limit.)	Minn. R. 7011.0715, subp. 3
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
B. CONTROL EQUIPMENT MONITORING	hdr
Air Pollution Control Equipment: Operate all air pollution control equipment whenever the corresponding process equipment and emission units are operated.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Gas Stream Pressure Drop: Monitor and record once every seven (7) days when in operation once the pressure gauge is installed. Complete pressure drop monitoring equipment debugging, troubleshooting, and establishment of parameter range within 180 days of installation. This requirement expires upon installation of the Continuous Parameter Monitoring System (CPMS) and corresponding update of the O & M Plan, or 10/30/2006 - whichever is sooner. At that time, the "Wet Scrubber monitoring" requirement will become effective.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Total Water Pressure: Monitor and record once every seven (7) days when in operation once the water total pressure gauge is installed. Complete water total pressure monitoring equipment debugging, troubleshooting, and establishment of parameter range within 180 days of installation. This requirement expires upon installation of the Continuous Parameter Monitoring System (CPMS) and corresponding update of the O & M Plan, or 10/30/2006 - whichever is sooner. At that time, the "Wet Scrubber monitoring" requirement will become effective.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Wet Scrubber Monitoring: 1) maintain the daily average pressure drop and daily average scrubber water flow rate at or above the minimum levels established in the O & M plan; 2) operate and maintain each Continuous Parameter Monitoring System according to the O & M plan and record all information needed to document conformance with these requirements; 3) collect and reduce monitoring data for pressure drop and scrubber water flow rate according to the O & M plan and record all information needed to document conformance with these requirements. This requirement becomes effective upon installation of the Continuous Parameter Monitoring System (CPMS) and corresponding update of the O & M Plan, or 10/30/2006 - whichever is sooner. At that time, the "Gas Stream Pressure Drop" and "Total Water Pressure" requirements will expire.	40 CFR 63.9580 to 63.9652; 40 CFR 64; Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Process monitoring: the visual emissions observer in the facility staff shall check, unless the plume is limited by visible moisture, stack visible emissions (opacity) once daily when in operation using a checklist or checklists in the facility O & M plan, as a means to indicate when appropriate corrective actions in the O & M plan should be taken.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
C. PERFORMANCE TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 05/04/2004 to determine PM and Opacity emissions. Note that the emission unit must be operated at 90% of current capacity or higher during the Performance Test, as detailed in Table A of this permit for Total Facility, "B. PERFORMANCE TESTING REQUIREMENTS," second condition.	Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before Performance Test.	Minn. R. 7017.2030, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/28/05

Facility Name: US Steel - Keewatin Taconite Operations

Permit Number: 13700063 - 003

Subject Item: EU 026 Pellet Cooler - Phase II**Associated Items:** SV 026

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Total Particulate Matter: greater than or equal to 85 percent collection efficiency or higher for the pollution control equipment, the entire emission facility is in compliance with NAAQS and MAAQS, and the emission facility is located not less than one-fourth mile from any residence or public roadway. (This is an Alternative demonstration of compliance to Total Particulate Matter Limit.)	Minn. R. 7011.0715, subp. 3
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
B. PROCESS MONITORING	hdr
Process monitoring: the visual emissions observer in the facility staff shall check, unless the plume is limited by visible moisture, stack visible emissions (opacity) once daily when in operation using a checklist or checklists in the facility O & M plan, as a means to indicate when appropriate corrective actions in the O & M plan should be taken.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
C. PERFORMANCE TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 36 months starting 05/31/2004 to determine PM and Opacity emissions. Note that the emission unit must be operated at 90% of current capacity or higher during the Performance Test, as detailed in Table A of this permit for Total Facility, "B. PERFORMANCE TESTING REQUIREMENTS," second condition.	Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before Performance Test.	Minn. R. 7017.2030, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/28/05

Facility Name: US Steel - Keewatin Taconite Operations

Permit Number: 13700063 - 003

Subject Item: EU 030 Grate Kiln - Indurator Waste Gas, Phase II

Associated Items: CE 030 Centrifugal Collector - High Efficiency
CE 031 Centrifugal Collector - High Efficiency
CE 035 Centrifugal Collector - Medium Efficiency
CE 036 Centrifugal Collector - Medium Efficiency
CE 110 Wet Scrubber - High Efficiency
CE 111 Wet Scrubber - High Efficiency
SV 051 New Phase II waste gas stack

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Total Particulate Matter: less than or equal to 448 tons/year using 12-month Rolling Sum , after the end of the 11th month from Initial Startup of CE 110 and CE 111. From Initial Startup of CE 110 and CE 111 to the end of the 11th month, this PM, 12-month Rolling Sum emission limit is calculated as: $E \text{ (tons/year)} = 2298 - 154.17 \times m$; where m is the month number since initial Startup of CE 110 and CE 111 (m is an integer between 1 and 11, inclusive) and E is rounded to whole number.	Title I Condition: to avoid a significant net emissions increase as defined in 40 CFR 52.21(b)(3); Minn. R. 7007.0800, subp. 2; to avoid environmental review per Minn. R. 4410.4300, subp. 15(A)
Particulate Matter < 10 micron: less than or equal to 448 tons/year using 12-month Rolling Sum , after the end of the 11th month from Initial Startup of CE 110 and CE 111. From Initial Startup of CE 110 and CE 111 to the end of the 11th month, this PM10, 12-month Rolling Sum emission limit is calculated as: $E \text{ (tons/year)} = 1039 - 49.25 \times m$; where m is the month number since initial Startup of CE 110 and CE 111 (m is an integer between 1 and 11, inclusive) and E is rounded to whole number.	Title I Condition: to avoid a significant net emissions increase as defined in 40 CFR 52.21(b)(3); Minn. R. 7007.0800, subp. 2; to avoid environmental review per Minn. R. 4410.4300, subp. 15(A)
Nitrogen Oxides: less than or equal to 6076 tons/year using 12-month Rolling Sum , after the end of the 11th month from Initial Startup of CE 110 and CE 111. From Initial Startup of CE 110 and CE 111 to the end of the 11th month, this NOx, 12-month Rolling Sum emission limit is calculated as: $E \text{ (tons/year)} = 6041 + 2.917 \times m$; where m is the month number since initial Startup of CE 110 and CE 111 (m is an integer between 1 and 11, inclusive) and E is rounded to whole number.	Title I Condition: to avoid a significant net emissions increase as defined in 40 CFR 52.21(b)(3)
Sulfur Dioxide: less than or equal to 951 tons/year using 12-month Rolling Sum , after the end of the 11th month from Initial Startup of CE 110 and CE 111. From Initial Startup of CE 110 and CE 111 to the end of the 11th month, this SO2, 12-month Rolling Sum emission limit is calculated as: $E \text{ (tons/year)} = 916 + 2.917 \times m$; where m is the month number since initial Startup of CE 110 and CE 111 (m is an integer between 1 and 11, inclusive) and E is rounded to whole number.	Title I Condition: to avoid a significant net emissions increase as defined in 40 CFR 52.21(b)(3)
Carbon Monoxide: less than or equal to 123 tons/year using 12-month Rolling Sum , after the end of the 11th month from Initial Startup of CE 110 and CE 111. From Initial Startup of CE 110 and CE 111 to the end of the 11th month, this CO, 12-month Rolling Sum emission limit is calculated as: $E \text{ (tons/year)} = 33 + 7.5 \times m$; where m is the month number since initial Startup of CE 110 and CE 111 (m is an integer between 1 and 11, inclusive) and E is rounded to whole number.	Title I Condition: to avoid a significant net emissions increase as defined in 40 CFR 52.21(b)(3)
Volatile Organic Compounds: less than or equal to 75 tons/year using 12-month Rolling Sum , after the end of the 11th month from Initial Startup of CE 110 and CE 111. From Initial Startup of CE 110 and CE 111 to the end of the 11th month, this VOC, 12-month Rolling Sum emission limit is calculated as: $E \text{ (tons/year)} = 40 + 2.917 \times m$; where m is the month number since initial Startup of CE 110 and CE 111 (m is an integer between 1 and 11, inclusive) and E is rounded to whole number.	Title I Condition: to avoid a significant net emissions increase as defined in 40 CFR 52.21(b)(3)
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0610, subp. 1(A)(1)
Total Particulate Matter: greater than or equal to 85 percent collection efficiency or higher for the pollution control equipment, the entire emission facility is in compliance with NAAQS and MAAQS, and the emission facility is located not less than one-fourth mile from any residence or public roadway. (This is an Alternative demonstration of compliance to Total Particulate Matter Limit.)	Minn. R. 7011.0610, subp. 1(A)(1); Minn. R. 7011.0715, subp. 3
Sulfur Dioxide: less than or equal to 2 lbs/million Btu heat input , if a liquid fossil fuel is burned; or less than or equal to 4 lbs/million Btu heat input, if a solid fossil fuel is burned.	Minn. R. 7011.0610, subp. 2(B)(1)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
B. PROCESS LIMITATION AND CONTROL EQUIPMENT MONITORING	hdr
Fuel use is limited to natural gas, distillate fuel oil No. 1 or No. 2, coal, and petroleum coke.	Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/28/05

Facility Name: US Steel - Keewatin Taconite Operations

Permit Number: 13700063 - 003

Permittee shall not reintroduce the solid material captured in the waste gas wet scrubber system (CE 110 and CE 111) into the agglomerating process. This is a state-only requirement and is not enforceable by the EPA Administrator and citizens under the Clean Air Act.	Minn. R. 7007.0800, subp. 2
Air Pollution Control Equipment: Operate all air pollution control equipment whenever the corresponding process equipment and emission units are operated.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Install, calibrate, maintain, and operate a monitoring device for the continuous measurement of the pressure differential of the gas stream across each scrubber and the scrubbing liquid flow rate and pH. Record the meter output once every 15 minutes for calculating a daily average. The Permittee shall maintain a continuous hard copy readout or computer data file of the pressure differential of the gas stream across each scrubber and the scrubbing liquid flow rate and pH. The Permittee shall calculate and record the calculated daily average data.	40 CFR 64 (Compliance Assurance Monitoring); 40 CFR 63.9580 to 63.9652; Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
A minimum differential pressure, to be determined (TBD), in. WC, on a daily average basis, is the proposed indicator range for the operating pressure of the scrubber or as determined during the most recent performance test. The Permittee shall manage the scrubber differential pressure for proper gas-liquid mixing inside the scrubber. A minimum scrubbing liquid flow rate, TBD, gpm, on a daily average basis, is the proposed indicator range for the operating liquid flow rate or as determined during the most recent performance test. The Permittee shall manage the liquid flow rate to maintain the proper Liquid/Gas ratio. A minimum pH value for the scrubbing solution, TBD, on a daily average basis, is the proposed indicator range for lime addition to the scrubbing liquid or as determined during the most recent performance test. The Permittee shall maintain the pH to maintain adequate sulfur removal from the gas stream.	40 CFR 64 (Compliance Assurance Monitoring); 40 CFR 63.9580 to 63.9652; Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
If daily average readings drop below an indicator range, i.e., an excursion occurs, corrective actions must be taken and the incident must be documented. Corrective Actions: If the monitored parameter is out of the range as described above, the Permittee shall follow the facility O & M plan and perform the necessary corrective action(s) as soon as possible to get the parameters back into the correct range. The Permittee shall keep a record of the type and date of all corrective actions taken.	40 CFR 64 (Compliance Assurance Monitoring); 40 CFR 63.9580 to 63.9652; Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Fuel Sampling: The Permittee shall obtain and maintain a fuel supplier certification of the sulfur weight percent and heating value for each shipment of liquid or solid fuel. In absence of fuel certification, the Permittee shall sample liquid or solid fuel after each delivery but not more than once each calendar week, when multiple deliveries are made. Current ASTM method(s) must be used to determine sulfur content in percent by weight and fuel heating value. The Permittee shall maintain records of fuel deliveries and analysis results.	Minn. R. 7007.0800, subp. 4(B)
Monthly Calculation: By the 15th of the month, the Permittee shall calculate and record the following: 1) Monthly emissions of PM, PM10, NOx, SO2, CO, and VOC for the previous month. Emission calculations that are based on process throughput or fuel usage must be based on daily records of these rates. (An MPCA-approved mass balance scheme for sulfur can be used to estimate SO2 emission.) 2) The 12 month rolling sum solids usage for the previous 12 month period by summing the monthly solids usage data for the previous 12 months.	Title I Condition: to avoid a significant net emissions increase as defined in 40 CFR 52.21(b)(3); Minn. R. 7007.0800, subp. 4 and 5
Process monitoring: the visual emissions observer in the facility staff shall check, unless the plume is limited by visible moisture, stack visible emissions (opacity) once daily when in operation using a checklist or checklists in the facility O & M plan, as a means to indicate when appropriate corrective actions in the O & M plan should be taken.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
C. PERFORMANCE TESTING REQUIREMENTS	hdr
Initial Performance Test: due 180 days after Initial Startup of CE 110 & CE 111 or 90 days after Initial Startup of solid fuel firing, whichever is later, to develop emission factors (normalized to pellet production rate) for PM, PM10, NOx, CO, VOC, and the TBD values referenced above for EU 030. The test must be completed at different firing rate combinations for natural gas, coal, and petroleum coke so as to make the resultant emission factors useful.	Title I Condition: to avoid a significant net emissions increase as defined in 40 CFR 52.21(b)(3); Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1
Initial Performance Test: due 180 days after Initial Startup of CE 110 & CE 111 or 90 days after Initial Startup of solid fuel firing, whichever is later, to develop emission factors (normalized to pellet production rate) for SO2 and the TBD values referenced above for EU 030. A material and sulfur balance can be used; however, SO2 control efficiency of the wet scrubbing system must be determined with valid source sampling of gas stream at locations upstream of the scrubber inlets and at the stack.	Title I Condition: to avoid a significant net emissions increase as defined in 40 CFR 52.21(b)(3); Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/28/05

Facility Name: US Steel - Keewatin Taconite Operations

Permit Number: 13700063 - 003

Performance Test: due before end of each 36 months following Initial Performance Test to determine emissions of PM, PM10, NOx, SO2, CO, VOC, and Opacity. The Permittee may conduct additional tests and submit test results for review by the MPCA. Note that the emission unit must be operated at 90% of current capacity or higher during the Performance Test, as detailed in Table A of this permit for Total Facility, "B. PERFORMANCE TESTING REQUIREMENTS," second condition.	Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before Performance Test.	Minn. R. 7017.2030, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/28/05

Facility Name: US Steel - Keewatin Taconite Operations

Permit Number: 13700063 - 003

Subject Item: EU 032 Pellet Cooler Product Belts and Vibrating Feeders**Associated Items:** CE 032 Wet Scrubber-High Efficiency w/o Lime

SV 032

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Total Particulate Matter: greater than or equal to 85 percent collection efficiency or higher for the pollution control equipment, the entire emission facility is in compliance with NAAQS and MAAQS, and the emission facility is located not less than one-fourth mile from any residence or public roadway. (This is an Alternative demonstration of compliance to Total Particulate Matter Limit.)	Minn. R. 7011.0715, subp. 3
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
B. CONTROL EQUIPMENT MONITORING	hdr
Air Pollution Control Equipment: Operate all air pollution control equipment whenever the corresponding process equipment and emission units are operated.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Gas Stream Pressure Drop: Monitor and record once every seven (7) days when in operation once the pressure gauge is installed. Complete pressure drop monitoring equipment debugging, troubleshooting, and establishment of parameter range within 180 days of installation. This requirement expires upon installation of the Continuous Parameter Monitoring System (CPMS) and corresponding update of the O & M Plan, or 10/30/2006 - whichever is sooner. At that time, the "Wet Scrubber monitoring" requirement will become effective.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Total Water Pressure: Monitor and record once every seven (7) days when in operation once the water total pressure gauge is installed. Complete water total pressure monitoring equipment debugging, troubleshooting, and establishment of parameter range within 180 days of installation. This requirement expires upon installation of the Continuous Parameter Monitoring System (CPMS) and corresponding update of the O & M Plan, or 10/30/2006 - whichever is sooner. At that time, the "Wet Scrubber monitoring" requirement will become effective.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Wet Scrubber Monitoring: 1) maintain the daily average pressure drop and daily average scrubber water flow rate at or above the minimum levels established in the O & M plan; 2) operate and maintain each Continuous Parameter Monitoring System according to the O & M plan and record all information needed to document conformance with these requirements; 3) collect and reduce monitoring data for pressure drop and scrubber water flow rate according to the O & M plan and record all information needed to document conformance with these requirements. This requirement becomes effective upon installation of the Continuous Parameter Monitoring System (CPMS) and corresponding update of the O & M Plan, or 10/30/2006 - whichever is sooner. At that time, the "Gas Stream Pressure Drop" and "Total Water Pressure" requirements will expire.	40 CFR 63.9580 to 63.9652; 40 CFR 64; Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Process monitoring: the visual emissions observer in the facility staff shall check, unless the plume is limited by visible moisture, stack visible emissions (opacity) once daily when in operation using a checklist or checklists in the facility O & M plan, as a means to indicate when appropriate corrective actions in the O & M plan should be taken.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
C. PERFORMANCE TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 07/30/2002 to determine PM and Opacity emissions. Note that the emission unit must be operated at 90% of current capacity or higher during the Performance Test, as detailed in Table A of this permit for Total Facility, "B. PERFORMANCE TESTING REQUIREMENTS," second condition.	Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before Performance Test.	Minn. R. 7017.2030, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/28/05

Facility Name: US Steel - Keewatin Taconite Operations

Permit Number: 13700063 - 003

Subject Item: EU 034 Pellet Loadout Drive House**Associated Items:** CE 034 Wet Scrubber-High Efficiency w/o Lime
SV 034

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0710, subp. 1(A)
Total Particulate Matter: greater than or equal to 85 percent collection efficiency or higher for the pollution control equipment, the entire emission facility is in compliance with NAAQS and MAAQS, and the emission facility is located not less than one-fourth mile from any residence or public roadway. (This is an Alternative demonstration of compliance to Total Particulate Matter Limit.)	Minn. R. 7011.0710, subp. 3
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0710, subp. 1(B)
B. CONTROL EQUIPMENT MONITORING	hdr
Air Pollution Control Equipment: Operate all air pollution control equipment whenever the corresponding process equipment and emission units are operated.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Gas Stream Pressure Drop: Monitor and record once every seven (7) days when in operation once the pressure gauge is installed. Complete pressure drop monitoring equipment debugging, troubleshooting, and establishment of parameter range within 180 days of installation. This requirement expires upon installation of the Continuous Parameter Monitoring System (CPMS) and corresponding update of the O & M Plan, or 10/30/2006 - whichever is sooner. At that time, the "Wet Scrubber monitoring" requirement will become effective.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Total Water Pressure: Monitor and record once every seven (7) days when in operation once the water total pressure gauge is installed. Complete water total pressure monitoring equipment debugging, troubleshooting, and establishment of parameter range within 180 days of installation. This requirement expires upon installation of the Continuous Parameter Monitoring System (CPMS) and corresponding update of the O & M Plan, or 10/30/2006 - whichever is sooner. At that time, the "Wet Scrubber monitoring" requirement will become effective.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Wet Scrubber Monitoring: 1) maintain the daily average pressure drop and daily average scrubber water flow rate at or above the minimum levels established in the O & M plan; 2) operate and maintain each Continuous Parameter Monitoring System according to the O & M plan and record all information needed to document conformance with these requirements; 3) collect and reduce monitoring data for pressure drop and scrubber water flow rate according to the O & M plan and record all information needed to document conformance with these requirements. This requirement becomes effective upon installation of the Continuous Parameter Monitoring System (CPMS) and corresponding update of the O & M Plan, or 10/30/2006 - whichever is sooner. At that time, the "Gas Stream Pressure Drop" and "Total Water Pressure" requirements will expire.	40 CFR 63.9580 to 63.9652; 40 CFR 64; Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Process monitoring: the visual emissions observer in the facility staff shall check, unless the plume is limited by visible moisture, stack visible emissions (opacity) once daily when in operation using a checklist or checklists in the facility O & M plan, as a means to indicate when appropriate corrective actions in the O & M plan should be taken.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/28/05

Facility Name: US Steel - Keewatin Taconite Operations

Permit Number: 13700063 - 003

Subject Item: EU 060 Secondary Pellet Cooler**Associated Items:** CE 115 Wet Scrubber-High Efficiency

SV 055 Secondary Pellet Cooler

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Total Particulate Matter: less than or equal to 0.05 grams/dry standard cubic meter (0.022 grains/dry standard cubic foot) of exhaust gas on and after the date on which the performance test required is completed.	40 CFR Section 60.385(a)(1); Minn. R. 7011.2700
Opacity: less than or equal to 10 percent opacity for any Process Fugitive Emissions.	40 CFR Section 60.385(b); Minn. R. 7011.2700
Front-half Particulate Matter: less than or equal to 0.008 grains/dry standard cubic foot .	40 CFR 63.9590(a)
B. CONTROL EQUIPMENT MONITORING	hdr
Air Pollution Control Equipment: Operate all air pollution control equipment whenever the corresponding process equipment and emission units are operated.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Wet Scrubber Monitoring: 1) maintain the daily average pressure drop and daily average scrubber water flow rate at or above the minimum levels established in the O & M plan; 2) operate and maintain each Continuous Parameter Monitoring System according to the O & M plan and record all information needed to document conformance with these requirements; 3) collect and reduce monitoring data for pressure drop and scrubber water flow rate according to the O & M plan and record all information needed to document conformance with these requirements.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J); Minn. R. 7011.2700; 40 CFR 60.384(a); 40 CFR 60.384(b); 40 CFR 60.385(b); 40 CFR 60.385(c)
The monitoring device must be certified by the manufacturer to be accurate within 250 Pascals (1 inch water) gauge pressure for the gas stream pressure drop and within 5% of the scrubber water flow rate, plus or minus; and must be calibrated on an annual basis in accordance with manufacturer's instructions.	
Process monitoring: the visual emissions observer in the facility staff shall check, unless the plume is limited by visible moisture, stack visible emissions (opacity) once daily when in operation using a checklist or checklists in the facility O & M plan, as a means to indicate when appropriate corrective actions in the O & M plan should be taken.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
C. PERFORMANCE TESTING REQUIREMENTS	hdr
Initial Performance Test: due 180 days after Initial Startup to determine PM, Opacity emissions, and control equipment operating parameter ranges. The Permittee shall conduct performance test to demonstrate compliance with 40 CFR 63.9590(a) upon Initial Startup, which can be a separate test performed sooner.	40 CFR 60.8; Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before Performance Test.	Minn. R. 7017.2030, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

02/28/05

Facility Name: US Steel - Keewatin Taconite Operations

Permit Number: 13700063 - 003

Subject Item: EU 061 Powdered Lime Receiving**Associated Items:** CE 116 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 056 Powdered Lime Receiving

What to do	Why to do it
A. POLLUTANT LIMITS	hdr
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Total Particulate Matter: greater than or equal to 85 percent collection efficiency or higher for the pollution control equipment, the entire emission facility is in compliance with NAAQS and MAAQS, and the emission facility is located not less than one-fourth mile from any residence or public roadway. (This is an Alternative demonstration of compliance to Total Particulate Matter Limit.)	Minn. R. 7011.0715, subp. 3
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
B. CONTROL EQUIPMENT MONITORING	hdr
Air Pollution Control Equipment: Operate all air pollution control equipment whenever the corresponding process equipment and emission units are operated.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Fabric Filter Gas Stream Pressure drop: Monitor and record once every seven (7) days when in operation once the pressure gauge is installed. Complete pressure drop monitoring equipment debugging, troubleshooting, and establishment of parameter range within 180 days of installation.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
Process monitoring: the visual emissions observer in the facility staff shall check, unless the plume is limited by visible moisture, stack visible emissions (opacity) once daily when in operation using a checklist or checklists in the facility O & M plan, as a means to indicate when appropriate corrective actions in the O & M plan should be taken.	Minn. R. 7007.0800, subp. 4(D); Minn. R. 7007.0800, subp. 14; Minn. R. 7007.0800, subp. 16(J)
C. PERFORMANCE TESTING REQUIREMENTS	hdr
Initial Performance Test: due 180 days after Initial Startup to determine PM and Opacity emissions and control equipment operating parameter range. Note that the emission unit must be operated at 90% of current capacity or higher during the Performance Test, as detailed in Table A of this permit for Total Facility, "B. PERFORMANCE TESTING REQUIREMENTS," second condition.	Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months following Initial Performance Test.	Minn. R. 7017.2020, subp. 1
Performance Test Pre-test Meeting: due 7 days before Performance Test.	Minn. R. 7017.2030, subp. 4

TABLE B: SUBMITTALS

02/28/05

Facility Name: US Steel - Keewatin Taconite Operations
Permit Number: 13700063 - 003

Table B lists most of the submittals required by this permit. Please note that some submittal requirements may appear in Table A or, if applicable, within a compliance schedule located in Table C. Table B is divided into two sections in order to separately list one-time only and recurrent submittal requirements.

Each submittal must be postmarked or received by the date specified in the applicable Table. Those submittals required by parts 7007.0100 to 7007.1850 must be certified by a responsible official, defined in Minn. R. 7007.0100, subp. 21. Other submittals shall be certified as appropriate if certification is required by an applicable rule or permit condition.

Send any application for a permit or permit amendment to:

Permit Technical Advisor
Permit Section
Air Quality Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Also, where required by an applicable rule or permit condition, send to the Permit Technical Advisor notices of:

- accumulated insignificant activities,
- installation of control equipment,
- replacement of an emissions unit, and
- changes that contravene a permit term.

Unless another person is identified in the applicable Table, send all other submittals to:

Supervisor
Compliance Determination Unit
Air Quality Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Send submittals that are required to be submitted to the U.S. EPA regional office to:

Mr. George Czerniak
Air and Radiation Branch
EPA Region V
77 West Jackson Boulevard
Chicago, Illinois 60604

Send submittals that are required by the Acid Rain Program to:

U.S. Environmental Protection Agency
Clean Air Markets Division
1200 Pennsylvania Avenue NW (6204N)
Washington, D.C. 20460

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS

02/28/05

Facility Name: US Steel - Keewatin Taconite Operations

Permit Number: 13700063 - 003

What to send	When to send	Portion of Facility Affected
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility
Notification of the Actual Date of Initial Startup	due 15 days after Initial Startup of CE 110 and CE 111.	EU030
Notification of the Actual Date of Initial Startup	due 15 days after Initial Startup of firing EU 030 with solid fuel (coal, petroleum coke, or any blend of them).	EU030
Notification of the Actual Date of Initial Startup	due 15 days after Initial Startup.	EU060, EU061, GP003
Notification of the Actual Date of Initial Startup	due 15 days after Resuming Operation of idled Phase I emission units EU019, EU021, EU023, EU025, EU027, EU028, and EU029.	Total Facility
Performance Test Notification (written)	due 30 days before Performance Test.	EU001, EU002, EU003, EU004, EU024, EU026, EU030, EU032, EU060, EU061, GP001, GP002, GP003, GP004, GP005, GP006
Performance Test Plan	due 30 days before Performance Test.	EU001, EU002, EU003, EU004, EU024, EU026, EU030, EU032, EU060, EU061, GP001, GP002, GP003, GP004, GP005, GP006
Performance Test Report - Microfiche Copy	due 105 days after Performance Test. A CD-ROM copy of the test report shall be accepted as an alternative to the microfiche copy, provided that the test report in the CD-ROM is in PDF or TIF format to address compatibility issues.	EU001, EU002, EU003, EU004, EU024, EU026, EU030, EU032, EU060, EU061, GP001, GP002, GP003, GP004, GP005, GP006
Performance Test Report	due 45 days after Performance Test.	EU001, EU002, EU003, EU004, EU024, EU026, EU030, EU032, EU060, EU061, GP001, GP002, GP003, GP004, GP005, GP006
Testing Frequency Plan	due 60 days after Initial Performance Test. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on one-year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required upon written approval of the MPCA.	EU060
The Permittee shall revise the O & M plan to include the idled Phase I emission units and control equipment (CE019, CE021, CE023, CE027, CE028, CE029 and CE033) after resuming operation of any Phase I equipment. Revision of the O & M plan shall include the normal operating ranges for all control equipment monitoring devices. The revisions to the Operation and Maintenance Plan	due 210 days after Resuming Operation	Total Facility

TABLE B: RECURRENT SUBMITTALS

02/28/05

Facility Name: US Steel - Keewatin Taconite Operations

Permit Number: 13700063 - 003

What to send	When to send	Portion of Facility Affected
Semiannual Deviations Report	due 30 days after end of each calendar half-year following Permit Issuance of occurrences when the measurements of the scrubber pressure loss (gain) and liquid flow rate differ by more than 30%, plus or minus, from the average obtained during the most recent performance test.	EU060
Semiannual Deviations Report	due 30 days after end of each calendar half-year following Permit Issuance of occurrences when the measurements of the scrubber pressure loss (gain) and liquid flow rate differ by more than 30%, plus or minus, from the average obtained during the most recent performance test.	GP005
Semiannual Deviations Report	due 30 days after end of each calendar half-year following Permit Issuance. The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. If no deviations have occurred, the Permittee shall submit the report stating no deviations.	Total Facility
Compliance Certification	due 30 days after end of each calendar year starting 08/08/1997 (for the previous calendar year). To be submitted on a form approved by the Commissioner, both to the Commissioner and to the US EPA regional office in Chicago. This report covers all deviations experienced during the calendar year.	Total Facility

TECHNICAL SUPPORT DOCUMENT
For AIR EMISSION PERMIT NO. 13700063-003

This technical support document is intended for all parties interested in the permit and to meet the requirements that have been set forth by the federal and state regulations (40 CFR § 70.7(a)(5) and Minn. R. 7007.0850, subp.1). The purpose of this document is to provide the legal and factual justification for each applicable requirement or policy decision considered in the preliminary determination to issue the draft permit.

1. Facility and Emission Information

1.1. Applicant and Stationary Source Location:

Applicant/Address	Stationary Source/Address (SIC: 1011)
U.S. Steel Corp. Minnesota Ore Operations P.O. Box 217 Keewatin, MN 55753	Keewatin Taconite 1 Mine Road Keewatin; St. Louis County
Contact: LaTisha Gietzen, Environmental Department Manager, Phone: (218) 778-8672	

1.2. Description of the Permit Action

The Permittee operates a taconite (iron ore) mine and processing plant in Keewatin, Minnesota. The facility produces taconite pellets for use as a primary raw ingredient at iron and steel mills. Major activity areas at the facility include: mines and crushers, concentrating, pelletizing, pellet storage and loadout, additive receiving and handling, concentrate storage, loadout and receiving, and support activities. Four permit applications are processed through this permit action (003).

1. Part 70 Permit Reissuance

A plan for Compliance Assurance Monitoring (CAM) was submitted on April 6, 2004, which supplemented the Part 70 permit reissuance application submittal of February 5, 2002.

2. Administrative Amendment for Ownership Change

The application date is July 21, 2003. A temporary measure was taken then by making a new cover page for Permit No. 13700063-002 to reflect facility ownership change. Permit action 003 will make the facility name change in Tables A and B, in addition to the cover page change.

3. Major Permit Amendment for Fuel Diversification and Other Projects – a Major Modification
The August 3, 2004, permit application includes the following three projects.

The first project, pollution control equipment upgrade, *in itself*, does not require a major permit amendment, as per Minn. R. 7007.1150, Item C(1). Phase II induration waste gas stream at the outlets of the two existing multiclones (CE 030 and CE 031) will be connected to two new wet scrubbers (CE 110 and CE 111, respectively) for venting through a new, combined waste gas stack (SV 051). Permittee undertakes this project to meet the requirements of Subpart RRRRR of National Emission Standards for Hazardous Air Pollutants: Taconite Iron Ore Processing

(NESHAP; 40 CFR 63.9580 to 63.9652). On September 27, 2004, Permittee broke ground to begin construction.

Fuel diversification, the second project, will enable the Phase II indurating kiln to burn coal and petroleum coke in addition to natural gas and distillate fuel oil. Coal handling equipment (GP 003), which is subject to Subpart Y of New Source Performance Standards (NSPS; 40 CFR 60.250 to 60.254), is expected to start up initial operation on September 30, 2005.

Adding a scrubber-equipped secondary annular cooler to the Phase II grate-kiln-cooler system (commonly referred to as *grate-kiln system*), the third project, will enable Permittee to make approximately 6.0 million long tons of taconite concentrate pellets per year, a 10% increase from the current level. The new, secondary cooler is expected to start up initial operation on May 31, 2007, after the actual startup of the first project and the compliance date of NESHAP, subp. RRRRR, October 30, 2006. It is subject to both NESHAP, subp. RRRRR, and NSPS, subp. LL.

Permittee has shown through netting that, with the proposed annual emission limits for Phase II waste gas stack on PM, PM₁₀, NO_x, SO₂, CO, and VOC, calculated as their respective 12-month rolling sums, the three projects combined will be a minor modification under Prevention of Significant Deterioration (PSD; 40 CFR 52.21) regulations. A major permit amendment is required for the last two projects, as per Minn. R. 7007.1500, subp. 1. Permittee has proposed wet scrubber monitoring conditions to meet the requirements of NESHAP, subp. RRRRR.

4. Administrative Amendment for Control Equipment Monitoring

In a permit application dated August 20, 2004, in order to meet the requirements of NESHAP, subp. RRRRR, Permittee proposed to phase in, by October 30, 2006, new continuous parametric monitoring systems (CPMS) at designated, existing control devices (*which are not associated with the projects for the Major Permit Amendment described above*), which include wet scrubbers (CE 002, CE 004 - CE 016, CE 020, CE 022, CE 024, CE 032, and CE 034) and centrifugal collectors (CE 001 and CE 003). The O & M plan will be updated with the CPMS.

In this permit action, the six groups of units are revised to exclude idled Phase I equipment. GP 003 is now for solid fuel (coal & petroleum coke) handling equipment; GP 004 for Phase II grate feed and discharge; GP 006 for additive blending (actually fluxstone processing) with more units added. Other groups remain unchanged from previous permit actions. Table A requirements are now set at facility (FC), group (GP), and emission unit (EU) levels.

1.3 Description of Amendments Issued Since the Issuance of the Last Total Facility Permit

Permit Number & Issuance Date	Action Authorized
13700063-003 August 17, 1998	Revision of performance testing requirements based on initial performance testing results.

1.4. Facility Emissions:

Table 1. Summary of Potential to Emit (PTE, ton/year)

Pollutant	NO_x	PM	PM₁₀	SO₂	CO	SO₃	VOC	Pb	HAPs
Net PTE Change for the Projects ¹	35.0	-1379	-287	35.0	90.0	3.50	35.0	0.0491	See foot-note ²
Total facility PTE with the Projects	6,076	1,899	1,293	951	123	95.1	74.6	0.228	> 25
Total facility PTE with the Projects & ³ Idled Phase I	10,200	4,900	3,730	1,480	170	95.1	103	0.595	> 25

1. The Projects refer to the major modification described in Section 1.2 of this TSD. See Sections 1.4.1 and 1.4.2 for detail. The PM and PM₁₀ values in this row resulted from netting, for which fluoride (a PSD pollutant) PTE values were left blank. However, PTE change of fluoride for the projects is expected to be less than 3.0 ton/year.
2. Taconite NESHAP (40 CFR 63, subp. RRRRR) regulate PM (front-half catch of a Method 5 sampling train as a surrogate for hazardous air pollutants (HAPs). PTE of mercury for the Projects is a net reduction, 124.75 – 125.65 = - 0.9 lb/year. See Sections 1.4.3 and 1.4.4 for more detail.
3. Phase I is an older indurating grate-kiln system (with a multiclone-controlled waste gas stack), which has been idled before Permit Action 001. PTE for Phase I and associated equipment was estimated for Permit Action 001 (with an exception – SO₃ was not estimated) and has not been changed. While understanding reactivating Phase I would be reviewed under PSD (40 CFR 52.21), Permittee has asked MPCA permit staff to keep “Permit Allowable (ton/year)” values for Phase I equipment in DELTA. As a result, this bottom row is the total values given in DELTA “Facility Description.” Note that the corresponding “Actual Emission (ton/year)” values have been set to zero for Phase I and associated equipment since Permit Action 001.

Table 2. Facility Classification

Classification	Major/Affected Source	Synthetic Minor	Minor
PSD	Facility	Projects	
Part 70 Permit Program	✓		
Part 63 NESHAP	✓		

1.4.1. Potential to Emit Calculation

The August 3, 2004, permit application provides tables of baseline actual emissions for point sources (Table 3) and for fugitive sources (Table 4); projected actual emissions for point sources (Table 5) and for fugitive sources (Table 6); the resultant emissions increase for existing point sources and fugitive sources (Table 7).

The permit application also provides tables of future potential emissions for new point sources (Table 8) and for new fugitive sources (Table 9). Finally, Table 10 gives a summary for the major modification.

Table 3. Baseline Actual Emissions for Point Sources

Stack Vent	Pollutant	Emission Factor (lb/ton pellet)	Factor From	% Total	Tons Throughput	Emissions (tons/yr)
001	PM	0.0012	S.T.-' 01	0.30	6091332	1.09
	PM10	0.0012	S.T.-' 01	0.30	6091332	1.09
002	PM	0.00033	S.T.-' 99	0.70	6091332	0.70
	PM10	0.00033	S.T.-' 99	0.70	6091332	0.70
003	PM	0.0084	S.T.-' 01	0.30	6091332	7.64
	PM10	0.0084	S.T.-' 01	0.30	6091332	7.64
004	PM	0.00056	S.T.-' 01	0.70	6091332	1.20
	PM10	0.00056	S.T.-' 01	0.70	6091332	1.20
005-010	PM	0.048	S.T.-' 02	0.6	6091332	87.72
	PM10	0.048	S.T.-' 02	0.6	6091332	87.72
011-014	PM	0.00156	S.T.-' 01	0.4	6091332	1.90
	PM10	0.00156	S.T.-' 01	0.4	6091332	1.90
015	PM	0.037	S.T.-' 01	0.125	44461	0.10
	PM10	0.037	S.T.-' 01	0.125	44461	0.10
016	PM	0.037	S.T.-' 01	0.875	44461	0.72
	PM10	0.037	S.T.-' 01	0.875	44461	0.72
017	PM	0.024	AP-42		66490	0.80
	PM10	0.024	AP-42		66490	0.80
018	PM	0.024	AP-42	0.7	44461	0.37
	PM10	0.024	AP-42	0.7	44461	0.37
020	PM	0.0015	S.T.-' 02		6091332	4.57
	PM10	0.0015	S.T.-' 02		6091332	4.57
022	PM	0.0013	S.T.-' 02		6091332	3.96
	PM10	0.0013	S.T.-' 02		6091332	3.96
024	PM	0.0012	S.T.-' 01		6091332	3.65
	PM10	0.0012	S.T.-' 01		6091332	3.65
026	PM	0.066	S.T.-' 01		6091332	201.01
	PM10	0.021	S.T.-' 01		6091332	63.96
030	PM	0.3446	S.T.-04		6091332	1049.54
030+031	PM10	0.341	S.T.-' 00		6091332	1038.57
	CO	0.0108	S.T.-' 00		6091332	32.89
	SO2	0.3009	S.T.-04		6091332	916.44
	NOx	1.9836	S.T.-' 00		6091332	6041.38
	VOC	0.013	S.T.-' 00		6091332	39.59
	Pb	0.00005872	S.T.-' 99		6091332	0.18
	H2SO4 Mist	0.03009	10% SOx		6091332	91.64
031	PM	0.4098	S.T.-04		6091332	1248.11
032	PM	0.00066	S.T.-' 02		6091332	2.01
	PM10	0.00066	S.T.-' 02		6091332	2.01
034	PM	0.0036	AP-42		6091332	10.96
	PM10	0.0036	AP-42		6091332	10.96
037	PM	0.00053	S.T.-' 00		6091332	1.61
	PM10	0.00053	S.T.-' 00		6091332	1.61

Table 3. Baseline Actual Emissions for Point Sources (Continued)

Stack Vent	Pollutant	Emission Factor (lb/ton pellet)	Factor From	% Total	Tons Throughput	Emissions (tons/yr)
038	PM	0.00053	S.T.-'00		6091332	1.61
	PM10	0.00053	S.T.-'00		6091332	1.61
039	PM	0.024	AP-42	0.3	44461	0.16
	PM10	0.024	AP-42	0.3	44461	0.16

TOTAL for Stack Vents:

The values for PM10, NOx, CO, and VOC were calculated using the 2000 Stack Test and dividing the lb/hr value by the TPH at test time (885 GBFR* 0.71 reduction factor = 628 LTPH *1.12 = 703.36 TPH). This value is multiplied by two to represent both waste gas stacks. SOx was calculated the same as above using 2004 data.

PM	2629.46
PM10	1233.32
CO	32.89
VOC	39.59
SOx	916.44
NOx	6041.38

Gray Highlighting denotes bentonite or limestone usage as throughput.

Table 4. Baseline Actual Emissions for Fugitive Sources

Fugitive Source	Pollutant	Emission Factor	Factor From	Throughput	Units	Emissions (tons/yr)
002	PM	671.8	FEW	1.82	Acres	0.61
	PM10	335.9	FEW			0.31
003	PM	0.0026	FEW	19909609.5	Ore	25.88
	PM10	0.0012	FEW			11.95
004	PM	0.00182	FEW	5947708	Ore#1	5.41
	PM10	0.00084	FEW			2.50
005	PM	0.00182	FEW	13961901.5	Ore#2	12.71
	PM10	0.00084	FEW			5.86
007	PM	0.93	FEW	405150.6475	VMT	188.40
	PM10	0.52	FEW			105.34
012	PM	671.8	FEW	3.69	Acres	1.24
	PM10	335.9	FEW			0.62
014	PM	0.0007	FEW	8075414.5	tons ore	2.83
	PM10	0.0003	FEW			1.21
015	PM	0.93	FEW	405150.6475	VMT	188.40
	PM10	0.52	FEW			105.34
016	PM	0.0007	FEW	8075414.5	tons ore	2.83
	PM10	0.0003	FEW			1.21
017	PM	432	FEW	103.05	acres	22.26
	PM10	216	FEW			11.13
018	PM	0.193	FEW	810301.29	VMT	78.19
	PM10	0.108	FEW			43.76
019	PM	432	FEW	172.1	acres	37.17
	PM10	216	FEW			18.59
021	PM	0.0007	FEW	403142.3	tons	0.14
	PM10	0.0003	FEW			0.06

Table 4. Baseline Actual Emissions for Fugitive Sources (Continued)

Fugitive Source	Pollutant	Emission Factor	Factor From	Throughput	Units	Emissions (tons/yr)
022	PM	0.0007	FEW	403142.3	tons	0.14
	PM10	0.0003	FEW			0.06
023	PM	1130.6	FEW	3.20	acres	1.81
	PM10	565.3	FEW			0.91
027	PM	671.8	FEW	0.51	acres	0.17
	PM10	335.9	FEW			0.09
028	PM	0.00738	FEW	6091332.24	tons	22.48
	PM10	0.00348	FEW			10.60
029	PM	671.8	FEW	1.24	acres	0.42
	PM10	335.9	FEW			0.21
030	PM	1130.6	FEW	2.57	acres	1.45
	PM10	565.3	FEW			0.73
033	PM	0.0123	FEW	6091332.24	tons	37.46
	PM10	0.0058	FEW			17.66
035	PM	0.00052	FEW	19909609.50	ore	5.18
	PM10	0.00024	FEW			2.39
036	PM	0.00156	FEW	22505.93	tons	0.02
	PM10	0.00072	FEW			0.01
039	PM	0.004428	FEW	6091332.24	tons	13.49
	PM10	0.002088	FEW			6.36

TOTAL for Fugitive Sources:
FEW means "(MPCA-Taconite Industry) fugitive emission workgroup."

PM	648.67
PM10	346.87

Table 5. Projected Actual Emissions for Point Sources

Stack Vent	Pollutant	Emission Factor (lb/ton pellet)	Factor From	% Total	Tons Throughput	Emissions (tons/yr)
001	PM	0.0012	S.T.-' 01	0.30	6720000	1.20
	PM10	0.0012	S.T.-' 01	0.30	6720000	1.20
002	PM	0.00033	S.T.-' 99	0.70	6720000	0.78
	PM10	0.00033	S.T.-' 99	0.70	6720000	0.78
003	PM	0.0084	S.T.-' 01	0.30	6720000	8.43
	PM10	0.0084	S.T.-' 01	0.30	6720000	8.43
004	PM	0.00056	S.T.-' 01	0.70	6720000	1.32
	PM10	0.00056	S.T.-' 01	0.70	6720000	1.32
005-010	PM	0.048	S.T.-' 02	0.6	6720000	96.77
	PM10	0.048	S.T.-' 02	0.6	6720000	96.77
011-014	PM	0.00156	S.T.-' 01	0.4	6720000	2.10
	PM10	0.00156	S.T.-' 01	0.4	6720000	2.10
015	PM	0.037	S.T.-' 01	0.125	49050	0.11
	PM10	0.037	S.T.-' 01	0.125	49050	0.11

Table 5. Projected Actual Emissions for Point Sources (Continued)

Stack Vent	Pollutant	Emission Factor (lb/ton pellet)	Factor From	% Total	Tons Throughput	Emissions (tons/yr)
016	PM	0.037	S.T.-' 01	0.875	49050	0.79
	PM10	0.037	S.T.-' 01	0.875	49050	0.79
017	PM	0.024	AP-42		73352	0.88
	PM10	0.024	AP-42		73352	0.88
018	PM	0.024	AP-42	0.7	49050	0.41
	PM10	0.024	AP-42	0.7	49050	0.41
020	PM	0.0015	S.T.-' 02		6720000	5.04
	PM10	0.0015	S.T.-' 02		6720000	5.04
022	PM	0.0013	S.T.-' 02		6720000	4.37
	PM10	0.0013	S.T.-' 02		6720000	4.37
024	PM	0.0012	S.T.-' 01		6720000	4.03
	PM10	0.0012	S.T.-' 01		6720000	4.03
026	PM	0.066	S.T.-' 01		6720000	221.76
	PM10	0.021	S.T.-' 01		6720000	70.56
040 replaces 030 & 031	PM	0.02 gr/dscf	596000	LIMIT @ 0.02 gr/dscf		447.51
	PM10	0.02 gr/dscf	596000	LIMIT @ 0.02 gr/dscf		447.51
	CO	0.0108	S.T.-' 00	LIMIT @ Actual + 90		122.89
	SO2	0.3009	S.T.-' 04	LIMIT @ Actual + 35		951.44
	NOx	1.9836	S.T.-' 00	LIMIT @ Actual + 35		6076.38
	VOC	0.013	S.T.-' 00	LIMIT @ Actual + 35		74.59
	Pb - pellets	0.00005872	S.T.-' 99		6720000	0.20
	Pb - coal	4.20E-04	AP-42		146105	0.03
	H2SO4 Mist	0.03009	10% of SO2 Emissions			95.14
032	PM	0.00066	S.T.-' 02		6720000	2.22
	PM10	0.00066	S.T.-' 02		6720000	2.22
034	PM	0.0036	AP-42		6720000	12.10
	PM10	0.0036	AP-42		6720000	12.10
037	PM	0.00053	S.T.-' 00		6720000	1.78
	PM10	0.00053	S.T.-' 00		6720000	1.78
038	PM	0.00053	S.T.-' 00		6720000	1.78
	PM10	0.00053	S.T.-' 00		6720000	1.78
039	PM	0.024	AP-42	0.3	49050	0.18
	PM10	0.024	AP-42	0.3	49050	0.18

TOTAL for Stack Vents:

PM	813.56
PM10	662.36
CO	122.89
VOC	74.59
SOx	951.44
NOx	6076.38

Table 6. Projected Actual Emissions for Fugitive Sources

Fugitive Source	Pollutant	Emission Factor	Factor From	Throughput	Units	Emissions (tons/yr)
002	PM	671.8	FEW	4.02	Acres	1.35
	PM10	335.9	FEW			0.67
003	PM	0.0026	FEW	25045700.9	Ore	32.56
	PM10	0.0012	FEW			15.03
004	PM	0.00182	FEW	9461491.6	Ore#1	8.61
	PM10	0.00084	FEW			3.97
005	PM	0.00182	FEW	15584210.4	Ore#2	14.18
	PM10	0.00084	FEW			6.55
007	PM	0.93	FEW	645045.83	VMT	299.95
	PM10	0.52	FEW			167.71
012	PM	671.8	FEW	7.58	Acres	2.55
	PM10	335.9	FEW			1.27
014	PM	0.0007	FEW	10986650.4	tons ore	3.85
	PM10	0.0003	FEW			1.65
015	PM	0.93	FEW	645045.83	VMT	299.95
	PM10	0.52	FEW			167.71
016	PM	0.0007	FEW	10986650.4	tons ore	3.85
	PM10	0.0003	FEW			1.65
017	PM	432	FEW	160.24	acres	34.61
	PM10	216	FEW			17.31
018	PM	0.193	FEW	1290091.66	VMT	124.49
	PM10	0.108	FEW			69.66
019	PM	432	FEW	220.0	acres	47.52
	PM10	216	FEW			23.76
021	PM	0.0007	FEW	525092.0	tons	0.18
	PM10	0.0003	FEW			0.08
022	PM	0.0007	FEW	525092.0	tons	0.18
	PM10	0.0003	FEW			0.08
023	PM	1130.6	FEW	5.69	acres	3.21
	PM10	565.3	FEW			1.61
027	PM	671.8	FEW	1.10	acres	0.37
	PM10	335.9	FEW			0.18
028	PM	0.00738	FEW	6720000.00	tons	24.80
	PM10	0.00348	FEW			11.69
029	PM	671.8	FEW	2.83	acres	0.95
	PM10	335.9	FEW			0.47
030	PM	1130.6	FEW	3.96	acres	2.24
	PM10	565.3	FEW			1.12
033	PM	0.0123	FEW	6720000.00	tons	41.33
	PM10	0.0058	FEW			19.49
035	PM	0.00052	FEW	25045700.9	ore	6.51
	PM10	0.00024	FEW			3.01

Table 6. Projected Actual Emissions for Fugitive Sources (Continued)

036	PM	0.00156	FEW	64650.43	tons	0.05
	PM10	0.00072	FEW			0.02
039	PM	0.004428	FEW	6720000.00	tons	14.88
	PM10	0.002088	FEW			7.02

TOTAL for Fugitive Sources:

PM	968.16
PM10	521.71

Table 7. Emissions Increase for Existing Point and Fugitive Sources

Stack Vent	Pollutant	Emissions Increase (tons/yr)
001	PM	0.11
	PM10	0.11
002	PM	0.07
	PM10	0.07
003	PM	0.79
	PM10	0.79
004	PM	0.12
	PM10	0.12
005-010	PM	9.05
	PM10	9.05
011-014	PM	0.20
	PM10	0.20
015	PM	0.01
	PM10	0.01
016	PM	0.07
	PM10	0.07
017	PM	0.08
	PM10	0.08
018	PM	0.04
	PM10	0.04
020	PM	0.47
	PM10	0.47
022	PM	0.41
	PM10	0.41
024	PM	0.38
	PM10	0.38
026	PM	20.75
	PM10	6.60
040 replaces 030 & 031	PM	-1850.14
	PM10	-591.06
	CO	90
	SO2	35

Fugitive Source	Pollutant	Emissions Increase (tons/yr)
002	PM	0.74
	PM10	0.37
003	PM	6.68
	PM10	3.08
004	PM	3.20
	PM10	1.48
005	PM	1.48
	PM10	0.68
007	PM	111.55
	PM10	62.37
012	PM	1.31
	PM10	0.65
014	PM	1.02
	PM10	0.44
015	PM	111.55
	PM10	62.37
016	PM	1.02
	PM10	0.44
017	PM	12.35
	PM10	6.18
018	PM	46.30
	PM10	25.91
019	PM	10.35
	PM10	5.18
021	PM	0.04
	PM10	0.02
022	PM	0.04
	PM10	0.02
023	PM	1.40
	PM10	0.70
027	PM	0.20
	PM10	0.10

Table 7. Emissions Increase for Existing Point and Fugitive Sources (Continued)

Stack Vent	Pollutant	Emissions Increase (tons/yr)
040 replaces 030 & 031 (continued)	NOx	35
	VOC	35
	Pb - total	0.05
	H2SO4 Mist	3.5
032	PM	0.21
	PM10	0.21
034	PM	1.13
	PM10	1.13
037	PM	0.17
	PM10	0.17
038	PM	0.17
	PM10	0.17
039	PM	0.02
	PM10	0.02

Fugitive Source	Pollutant	Emissions Increase (tons/yr)
028	PM	2.32
	PM10	1.09
029	PM	0.53
	PM10	0.27
030	PM	0.79
	PM10	0.39
033	PM	3.87
	PM10	1.82
035	PM	1.34
	PM10	0.62
036	PM	0.03
	PM10	0.02
039	PM	1.39
	PM10	0.66

TOTAL for Stack Vents:

PM (increases only)	34.24
PM10 (increases only)	20.10
CO	90
VOC	35
SOx	35
NOx	35
Pb	0.049
H2SO4 Mist	3.5

TOTAL for Fugitive Sources:

PM	319.49
PM10	174.84

Table 8. Potential to Emit from New Point Sources

Unit ID	EU 061	EU 057		EU 058	EU 059	EU 060
Unit description	Lime receiving	Coal receiving (at hopper)		Coal crushing and transfers	Coal pulverizing & transfers	Secondary cooler (MACT)
Emission factor	PM: 2.20	PM: 0.191	PM ₁₀ : 0.0231	PM/PM ₁₀ : 0.22	PM/PM ₁₀ : 0.22	PM/PM ₁₀ : 0.008
Emission fac. unit	lb/ton	lb/ton		lb/ton	lb/ton	Gr/dscf
Design throughput capacity	25.0	16.7		16.7	16.7	350,000
Design throughput capacity unit	ton/hr	ton/hr		ton/hr	ton/hr	dscfm
Max uncontrolled emission (lb/hr)	55.0	3.19	0.38	3.67	3.67	
Max uncontrolled emission (ton/yr)	2.75	13.96	1.69	16.09	16.09	
Pollution control efficiency ^{1,2,3} (%)	99	79		95	95	
Max controlled emission (lb/hr)	0.55	0.67	0.08	0.18	0.18	24.0
Max controlled emission (ton/yr)	0.03	2.93	0.35	0.80	0.80	105
Emission factor notes	(4)	(5)		(6)	(6)	(7)

Notes:

1. Fabric filter control efficiency per Minn. R. 7011.0070 of 99% for emission unit with total enclosure.
2. Fabric filter control efficiency of 95% is based on 80% capture efficiency of dust collector and remaining amount is captured within the building: (80% x 99%) + (20% x 80% x 99%).
3. Fabric filter control efficiency of 79% is based on 80% capture efficiency of outside dust collector: (80% x 99%).
4. AP-42 Chapter 11.17, Lime Manufacturing, February 1998, Table 11.17-4, for "Product transfer and conveying," (SCC #3-05-016-15). PM is assumed to be equal to PM₁₀.
5. AP-42 Chapter 11.9, Western Surface Coal Mining, October 1998, Table 11.9-1, for "Truck loading."
6. AP-42 Section 12.2, Coke Production, Draft August 2001, Table 12.2-18, "Coal crushing with cyclone." Uncontrolled emissions are back-calculated using assumed 50% control efficiency. PM is assumed to be equal to PM₁₀.
7. Calculated based on Taconite MACT limit of 0.008 gr/dscf. PM is assumed to be equal to PM₁₀.

Table 9. Potential to Emit from New Fugitive Sources

Fugitive Source	FS 040		FS 041		FS 042	
Fugitive Source Description	Coal delivery		Coal receiving		Coal pile ⁽⁶⁾	
Emission Factors	10.4	2.77	0.007	0.001	0.0475	0.0237
Emission Factor Unit	lb PM per VMT	lb PM ₁₀ per VMT	lb PM per ton	lb PM ₁₀ per ton	lb PM per acre per yr	lb PM ₁₀ per acre per yr
Maximum Operating Parameter	1314		16.7		0.95	
Max Operating Parameter Unit	VMT/yr		Ton/hr		Surface area in acres	
Max Uncontrolled Emission ⁽¹⁾ (lb/hr)	1.70	0.45	0.12	0.02	0.05	0.03
Max Uncontrolled Emission (ton/yr)	6.86	1.82	0.51	0.07	0.23	0.11
Pollution Control Efficiency (%)	0		0		0	
Max Controlled Emission (lb/hr)	1.70	0.45	0.12	0.02	0.05	0.03
Max Controlled Emission (ton/yr)	6.86	1.82	0.51	0.07	0.23	0.11
Emission Factor Notes	(2)		(3)	(4)	(5)	

Notes:

- Coal delivery hourly emissions are calculated from the annual maximum uncontrolled emission rate and assume annual operation of 8,078 hours.
- AP-42 Chapter 13.2.2 Unpaved Roads, December 2003, Section 13.2.2.2, Formula 1a.
- AP-42 Chapter 11.9 Western Surface Coal Mining, October 1998, Table 11.9-4, for "End dump truck unloading (batch drop)", (SCC #3-05-010-40).
- In: PM10 Emission Factors Listing Developed by Technology Transfer and AIRS Source Classification Codes with Documentation, Use EPA-450/4-82-016, Appendix K-13; 15% 10 microns, March 1992, for "End dump truck unloading (batch drop)", (SCC #3-05-010-40).
- AP-42 Chapter 13.2.5 Industrial Wind Erosion, January 1995.
- Assumes a 10,000 ton conical storage pile, 30 ft high with a diameter at the base of 226 ft.

Estimated Vehicle Miles Traveled

N = 18 Number of Trucks; d = 0.2 Round Trip Distance (miles); wt = 20 Tons coal/ truck; 360 Tons coal/ day
VMT/yr = 1,314 Estimated Vehicle Miles Traveled/year (Assumes worst case 356 days/yr)

Calculated Emission Factors

Uncontrolled Coal Delivery: $E = k * [(s/12)^a * (W/3)^b] = 10.45 \text{ lb PM-30/VMT}$; and $E = 2.77 \text{ lb PM-10/VMT}$
(AP-42 Chapter 13.2.2 Unpaved Roads, December 2003, Section 13.2.2.2, Formula 1a)

Controlled Coal Delivery: $E_{ext} = E * [(365 - P)/365] = 7.01 \text{ lb PM-30/VMT}$; and $E = 1.86 \text{ lb PM-10/VMT}$

	PM-10	PM-30	
k =	1.5	4.9	Particle size multiplier (lb/VMT)
a =	0.9	0.7	Constant a
b =	0.45	0.45	Constant b
s =	5.8	5.8	Surface material silt content %
W =	50	50	Mean Vehicle weight (tons)
P =	120	120	Number of days with 0.01 inches of precipitation

Coal Pile: $E = 0.72 * u = 6.3144 \text{ lb TSP}/[(\text{acre}) * (\text{hr})] = 27.66 \text{ ton TSP}/[(\text{acre}) * (\text{yr})]$

AP-42 Chapter 11.9 Western Surface Coal Mining Table 11.9-1 for "Active Storage Pile (wind erosion and maintenance)"

Where u = Mean wind speed = 8.77 mph

Average of 5 years (1972-76) of hourly met data from Hibbing, Minnesota
(see www.pca.state.mn.us/air/modeling.html#data)

Table 10. The Major Modification Summary

POLLUTANT	Emissions increases from modified, replacement, or debottlenecked units (from Table 2) (tpy)	Emissions from new units (from Table 3) (tpy)	Total Increase (tpy)	Significant Thresholds for major sources
PM	354	117	471	25 ¹
PM ₁₀	195	109	304	15
NO _x	35		35	40
SO ₂	35		35	40
CO	90		90	100
Ozone (VOC)	35		35	40
Lead	0.05		0.05	0.6
Fluorides				3
Sulfuric acid mist	3.5		3.5	7
Hydrogen Sulfide, H ₂ S				10
Total Reduced Sulfur including H ₂ S				10
Reduced Sulfur Compounds including H ₂ S				10
MWC Organics ²				0.0000035
MWC Acid Gas ³				40
MWC Metals ⁴				15
MSW Landfill Gas				50

Notes:

1. July 31, 1987, the National Ambient Air Quality Standard for TSP (PM) was repealed and replaced with a standard for PM₁₀. The significant levels in this table are as they appear in the Code of Federal Regulations, March 1994. A source may not be required to comply with Nonattainment NSR for TSP increases above 25 tpy, but may be for PM₁₀ above 15 tpy.
2. MWC Organics means Municipal Waste Combustor Organics. These are defined as total tetra-thro-octa-chlorinated dibenzo-para-dioxins and dibenzofurans.
3. MWC acid gases are measured as the sum of sulfur dioxide and hydrochloric acid.
4. MWC Metals are measured as particulate matter

1.4.2. Netting for PSD Applicability Determination

The August 3, 2004, permit application provides netting calculations, as shown in Tables 11 through 13.

Table 11. Project Emissions Increase Compared to PSD Significant Emission Rate

Emission Unit	PM	PM ₁₀	SO ₂	NO _x	CO	VOC	Pb	Sulfuric Acid Mist
New Coal Handling Facilities (EU 057-059, FS 040-042)	12.1	3.97						
New Secondary Cooler (EU 060)	105	105						
New Lime Receiving Facility (EU 061)	0.0275	0.0275						
Existing Pellet Indurating Furnace (EU 030)	0 ^(A)	0 ^(A)	35	35	90	35	0.05	3.5
Existing Particulate Sources Associated with Project	354	195						
Project Emissions Increase (ton/yr)	471	304	35	35	90	35	0.05	3.5
PSD Significant Emission Rate (ton/yr)	25	15	40	40	100	40	0.6	7
Is Project Emissions Increase Greater than PSD Significant Emission Rate?	Yes	Yes	No	No	No	No	No	No

^A Permittee is proposing to decrease actual PM and PM 10 emissions from this unit. However an actual emissions decrease cannot be accounted for when calculation the project emissions increase under PSD rules. An emissions decrease is creditable only when a PSD netting analysis is performed.

Table 12. Netting Analysis Table for PM and PM₁₀ Emissions

Actual or Expected Startup Date	Modification Description	Permit No./Permit Application Submittal	Change in PM Emissions (ton/yr)	Change in PM ₁₀ Emissions (ton/yr)
May 2003	New bentonite conveyor (EU 018) dust collector (CE049)	Minn. R. 7007.1250, notification of pollution control equipment replacement	0.18	0.18
August 2003	Screen house (EU 037) dust collector replacement (CE 024)	Minn. R. 7007.1250, notification of pollution control equipment replacement	0.00	0.00
April 2004	Cooler dump zone (EU 024) dust collector replacement (CE 024)	Minn. R. 7007.1250, notification of pollution control equipment replacement	0.00	0.00
May 2005	Wet scrubber system on grate/kiln furnace	Major permit amendment submitted	-1,850.14	-591.06
August 2005	Alternative fuels at indurating kiln and facility production increase project	Major permit amendment submitted	471.01	304.04
Total Emissions Change in Contemporaneous Period:			-1,378.95	- 286.84

Contemporaneous Time Frame for the Project

May 2005	Expected start of construction
September 2005	Expected date of startup
May 2000	Start of Contemporaneous period
September 2005	End of Contemporaneous period

Table 13. Summary of Emissions for PSD Applicability Determination

	PM	PM ₁₀	SO ₂	NO _x	CO	VOC	Pb	Sulfuric Acid Mist
Project Emissions Increase (tpy)	471	304	35	35	90	35	0.05	3.5
PSD significant emission rate (tpy)	25	15	40	40	100	40	0.6	7
Is Project Emissions Increase Greater than PSD significant emission rate?	Yes	Yes	No	No	No	No	No	No
Netting Analysis: Sum of Contemporaneous Creditable Increases and Decreases Excluding Project Emissions Increase (tpy)	-1850	-591	N/A	N/A	N/A	N/A	N/A	N/A
Net Emissions Increase [Project Emissions Increase + Netting Analysis CCI/CCD] (tpy)	-1379	-287	N/A	N/A	N/A	N/A	N/A	N/A
Is Net Emissions Increase Greater than PSD significant emission rate?	No	No	N/A	N/A	N/A	N/A	N/A	N/A

1.4.3. Emission of Mercury Through the New Waste Gas Stack (SV 051)

The August 3, 2004, permit application includes a completed HG-2003 form with supportive process flow diagrams for the fuel diversification project.

These diagrams are presented as Figures 1 and 2. Figure 1 describes the current taconite concentrate pellet making process operations with natural gas as the indurating fuel fired at the grate-kiln furnace (distillate oil as the backup fuel, typically used during natural gas curtailment or other interruptions). Furnace exhaust gas (waste gas) exit through two parallel paths, each goes through a multiclone (a dry, centrifugal particulate control device – having little to no effect on removing mercury from the waste gas stream) before reaching one of the two waste gas stack (SV 030 & SV 031). Figure 2 describes the pellet making process operation, after the completion of new waste gas wet scrubber system and fuel diversification projects. Coal is shown as the indurating fuel for mercury assessment purpose. Waste gas stream at the outlets of the two existing multiclones will be connected to two new wet scrubbers, respectively, for venting through a new, combined waste gas stack (SV 051).

Stack mercury emission is attributed to crude taconite ore in Figure 1, and to crude taconite ore and coal with a certain level of removal effect of the new wet scrubbers (to be discussed in a paragraph below) in Figure 2. While natural gas can be assumed to contribute very little of mercury in the indurating process, coal is expected to contribute to stack mercury emission in Figure 2. A net reduction of stack mercury emission is expected as a result of the major modification; i.e., from the operations of Figure 1 to Figure 2:

$$124.75 - 125.65 = - 0.90 \text{ lb/year.}$$

Mass balance data (*material mercury content multiplied by material usage rates*), as shown in Figures 1 and 2, are not suitable for deriving stack mercury emission. This is due in part to the variability in materials, which becomes apparent in the mass balance gaps (the non-zero values of “outflows - inflows” marked in the boxes in Figures 1 and 2).

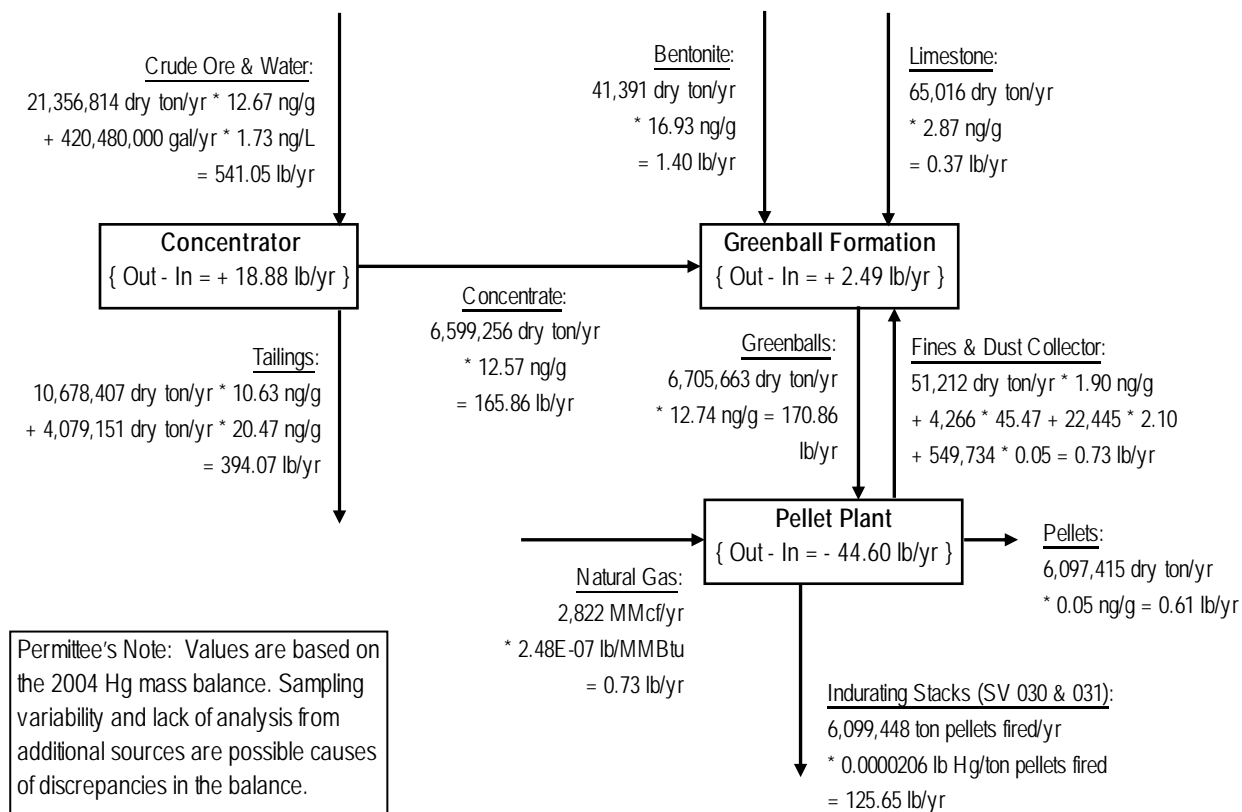


Figure 1. Keewatin Taconite Current Mercury Mass Balance

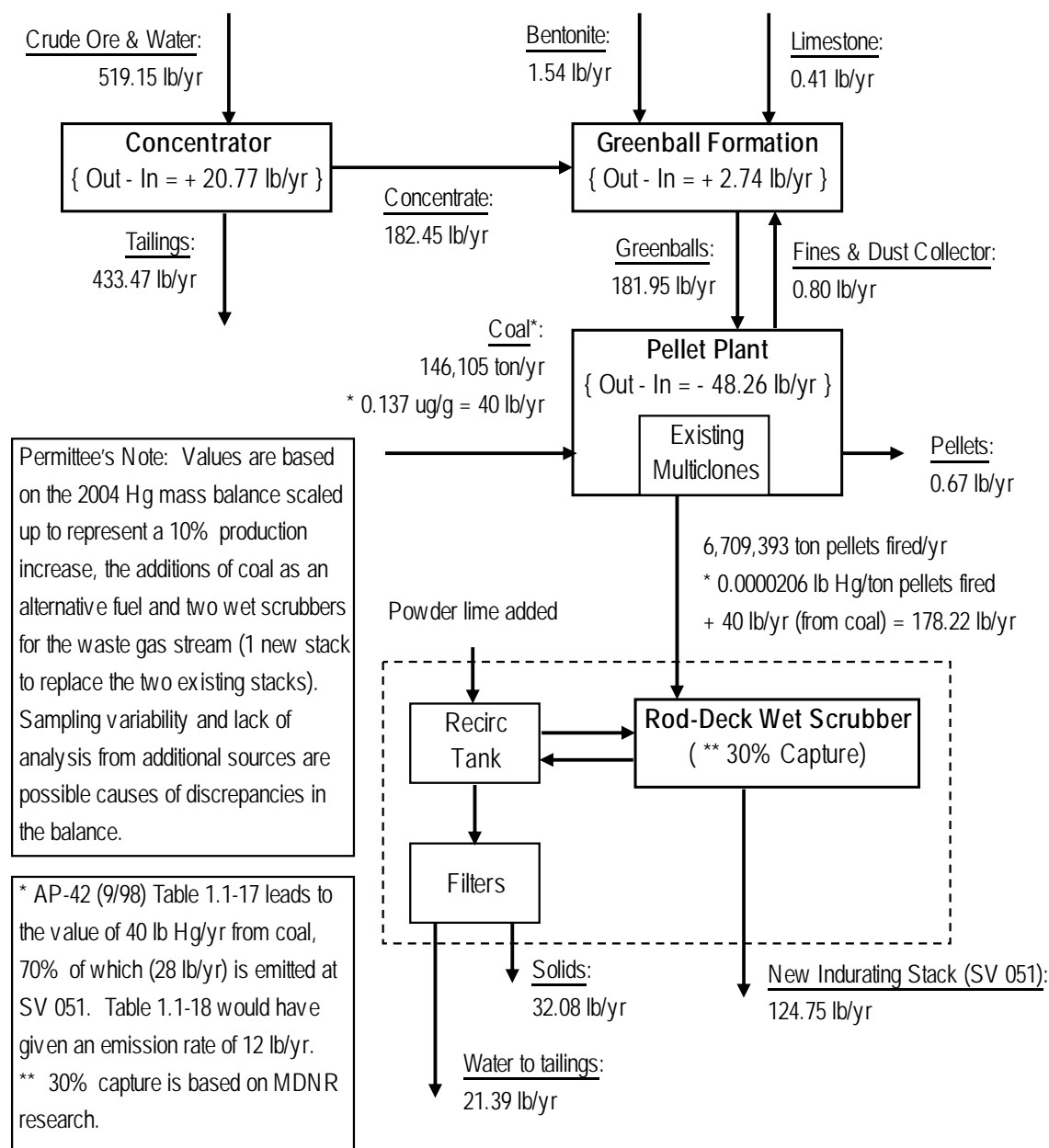


Figure 2. Keewatin Taconite Future Actual Mercury Mass Balance

As a contrast, stack mercury emission tests for the waste gas stream, when the indurating furnace was fired with natural gas, reported very close values, as shown in Table 14. Consequently, the 2004 stack mercury emission factor is used to estimate stack mercury emission in Figure 1, and to estimate stack mercury emission attributed to crude taconite ore in Figure 2.

Table 14. Stack Testing Results of EU 030 (Phase II Furnace): Total Mercury

Test Date	8/10/1999	1/27/2004
Mass emission rate (lb/hr)	0.0149	0.0146
Emission factor (lb Hg/ton pellets fired)	0.0000198	0.0000206
Emission factor (ng Hg/g pellets fired)	9.92	10.3

Stack mercury emission attributed to coal combustion is estimated using a mercury emission factor for external coal combustion from AP-42 (9/98) Table 1.1-17 and the expected fuel usage. The MPCA permit staff accepts 30% as the *mercury control efficiency* for the new wet scrubbers

1.4.3. Mercury Control Efficiency

According to a preliminary report from Minnesota Department of Natural Resources, saved in DELTA as “TSD info - DNR Hg report 2004,” waste gas wet scrubbers at U.S. Steel Minntac remove an average of 30% of mercury from the waste gas stream, while waste gas wet scrubbers at United Taconite remove an average of 2.7% of mercury. These are calculated with data from samples taken in 2003 and 2004. Fine dust captured in the wet scrubber is found to contain an elevated amount of mercury.

U.S. Steel Keewatin Taconite (Permittee) is planning for a new waste gas wet scrubber system not only similar to those at Minntac, but also with added sulfur removal capability (because of powdered lime addition to scrubber water and filtration of scrubber water downstream of the wet scrubbers). Permittee also accepts a state-only requirement that reads, “Permittee shall not reintroduce the solid material (fine dust) captured in the waste gas wet scrubber system (CE 110 and CE 111) into the agglomerating process” (*this permit condition is set at EU 030*). Thus, the 30% mercury control efficiency assumed in Figure 2 is reasonable to the MPCA permit staff.

The larger particles (containing high iron units and low mercury) will continue to be reclaimed from the pellet plant (including the existing multiclones) and reintroduced into the grinding circuits and the subsequent agglomerating process.

** The language used in the state-only requirement for EU 030, “This is a state-only requirement and is not enforceable by the EPA Administrator and citizens under the Clean Air Act,” refers to permit requirements that are mandated by state law rather than by the federal Clean Air Act. The language is to clarify the distinction between permit conditions that are required by federal law and those that are required by state law. State law requirements are not enforceable by the EPA or by citizens under the federal Clean Air Act, but are fully enforceable by the MPCA and citizens under provisions of state law.*

1.4.4. Idled Phase I and Associated Equipment

This permit action has two requirements in Table A, Item G. Permittee is aware that reactivating Phase I and associated equipment (**CE** 019, 021, 023, 027, 028, 029, and 033; **EU** 019, 021, 023, 025, 027, 028, and 029; **SV** 019, 021, 023, 025, 027, 028, and 029) will likely be reviewed under NSR/PSD rule. For this reason, additional requirements relating to air dispersion modeling, which existed in previous permit actions, have been removed.

2. Regulatory and/or Statutory Basis

New Source Review

The facility is an existing major source under New Source Review regulations. Netting and emission limits taken for Phase II indurating furnace make the Projects in this permit action a minor modification for New Source Review. NSR Reform rule is used in the applicability determination.

Part 70 Permit Program

The facility is a major source under the Part 70 permit program. A CAM plan was reviewed for Part 70 permit reissuance.

New Source Performance Standards (NSPS)

Subparts Y and LL of New Source Performance Standards are applicable to parts of the operations at this facility.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

Subpart RRRRR of National Emission Standards for Hazardous Air Pollutants: Taconite Iron Ore Processing (40 CFR 63.9580 to 63.9652) is applicable to parts of the operations at this facility. Subpart RRRRR becomes effective on October 30, 2006. Note that Continuous Parameter Monitoring Systems (CPMS) are required for all air pollution control devices except for baghouses (40 CFR 63.9600).

Environmental Review

Minn. R. 4410.4300, subp. 15.A, requires a mandatory Environmental Assessment Worksheet (EAW) when potential emissions increase by 100 ton/year or more of any single air pollutant after installation of air pollution control equipment. The projects of the major modification include the installation of new emission units that will exceed the 100 ton/year threshold for PM and PM₁₀. However, in accordance with MPCA's guidance, "Calculating Air Emissions Increases for EAW Applicability," dated November 2003, an emissions decrease in PM and PM₁₀ will occur with the installation and operation of the new waste gas wet scrubber system. The increase in emissions at maximum capacity from the new emissions units and the decrease in emissions at maximum capacity from installation of the new wet scrubber system are calculated to determine the net emissions change under these rules. For simplification, the actual emissions decrease is used in Table 15 for the new wet scrubber system.

Because the new wet scrubber system will be installed concurrently with physical changes that will allow fuel diversification and a production increase, these projects should be considered

together to determine the net emissions change. As shown Table 15, the net emissions change is less than the 100 ton/year increase threshold; therefore, a mandatory EAW is not required.

Table 15. EAW Applicability

Emission	PM (ton/yr)	PM ₁₀ (ton/yr)
Controlled potential to emit from new emission units (lime receiving, coal handling, secondary cooler)	117	109
Actual emissions decrease from pellet indurating kiln after wet scrubber installed	-1850	-591
Project emissions change under Minn. R. 7007.1200, subp. 3	-1733	-482

Minnesota State Rules

As shown in Table 16, parts of the operations at this facility are subject to the following Minnesota Standards of Performance:

- Minn. R. 7011.0610 Standards of Performance for Fossil-Fuel-Burning Direct Heating Equipment
- Minn. R. 7011.0710 Standards of Performance for Pre-1969 Industrial Process Equipment
- Minn. R. 7011.0715 Standards of Performance for Post-1969 Industrial Process Equipment
- Minn. R. 7011.1150 Standards of Performance for Coal Preparation Plants
- Minn. R. 7011.2700 Standards of Performance for Metallic Mineral Processing Plants

Table 16. Regulatory Overview of Facility

Unit ID	Applicable Regulations	Comments
FC	NESHAP, subp. RRRRR	A reminder is placed at the Facility Level in Table A for the compliance date for this new, federal rule.
GP 001	Minn. R. 7011.0710	Standards of Performance for Pre-1969 Industrial Process Equipment
GP 002	Minn. R. 7011.0715	Standards of Performance for Post-1969 Industrial Process Equipment
GP 003	NSPS, subp. Y and Minn. R. 7011.1150	Standards of Performance for Coal Preparation Plants

Table 16. Regulatory Overview of Facility (Continued)

Unit ID	Applicable Regulations	Comments
GP 004	Minn. R. 7011.0715	Standards of Performance for Post-1969 Industrial Process Equipment
GP 005	NSPS, subp. LL and Minn. R. 7011.2700	Standards of Performance for Metallic Mineral Processing Plants
GP 006	Minn. R. 7011.0710; Minn. R. 7011.0715	Standards of Performance for Pre- and Post- 1969 Industrial Process Equipment
EU 001	Minn. R. 7011.0710	Standards of Performance for Pre-1969 Industrial Process Equipment
EU 002	Minn. R. 7011.0715	Standards of Performance for Post-1969 Industrial Process Equipment
EU 003	Minn. R. 7011.0710	Standards of Performance for Pre-1969 Industrial Process Equipment
EU 004	Minn. R. 7011.0715	Standards of Performance for Post-1969 Industrial Process Equipment
EU 024	Minn. R. 7011.0715	Standards of Performance for Post-1969 Industrial Process Equipment
EU 026	Minn. R. 7011.0715	Standards of Performance for Post-1969 Industrial Process Equipment. More frequent testing due to lack of control.
EU 030	Title I Conditions related to 40 CFR 52.21 & Minn. R. 4410.4300, subp. 15.A; and a state-only requirement	Netting is performed & “synthetic minor” limits are proposed to avoid a significant net emissions increase; to avoid EAW. There is a “state-only” requirement* – for mercury removal consideration, fine dust, which is to be captured in wet scrubbers, must not be reintroduced into the agglomerating process.
EU 032	Minn. R. 7011.0715	Standards of Performance for Post-1969 Industrial Process Equipment
EU 034	Minn. R. 7011.0710	Standards of Performance for Pre-1969 Industrial Process Equipment
EU 060	NSPS, subp. LL and Minn. R. 7011.2700	Standards of Performance for Metallic Mineral Processing Plants
EU 061	Minn. R. 7011.0715	Standards of Performance for Post-1969 Industrial Process Equipment

* The language “This is a state-only requirement and is not enforceable by the EPA Administrator and citizens under the Clean Air Act” refers to permit requirements that are mandated by state law rather than by the federal Clean Air Act. The language is to clarify the distinction between permit conditions that are required by federal law and those that are required by state law. State law requirements are not enforceable by EPA or by citizens under the federal Clean Air Act, but are fully enforceable by the MPCA and citizens under provisions of state law.

3. Technical Information Notes

- Baseline Actual Emissions and Projected Actual Emissions are used in the analysis for the permit. For detail, see Sections 1.4.1 and 1.4.2. The information was presented in those sections to smooth reading, after the reader sees the summary of emissions in Table 1.
- Stack mercury emission change is discussed in Sections 1.4.3 and 1.4.4, in support of the state-only requirement – “Permittee shall not reintroduce the solid material (fine dust) captured in the waste gas wet scrubber system (CE 110 and CE 111) into the agglomerating process” – and the fuel diversification project. TSD info - DNR Hg report 2004 is a Word document, saved in DELTA, serves as supporting information in Section 1.4.4.
- Emission calculations presented in Tables 3 through 15 have been verified by MPCA permit staff using an Excel workbook (saved as “PTE calculation spreadsheet” in DELTA). As a result of the verification, the permit application was revised to improve presentation of the projects.
- TSD info - CAM Plan 4/6/2004 is a spreadsheet document, saved in DELTA, which was submitted by Permittee to meet the Compliance Assurance Monitoring requirements (40 CFR 64).
- Team Development Document and Community Involvement Form are saved in DELTA, which provide additional internal discussion at the MPCA for this permit action.

4. Comments Received and Responses Provided

Public Notice Period: December 11, 2004 – January 10, 2005

EPA 45-day Review Period: December 11, 2004 – February 17, 2005

Comments were received from the Mille Lacs Band of Ojibwe Department of Natural Resources and Environment Air Quality Program on 1/7/2005 via fax, 1/13/2005 via U.S. mail, and 1/14/2005 via e-mail; the Fond du Lac Band’s Air Program on 1/7/2005 via e-mail and 1/13/2005 via U.S. mail, during the public notice period. They are summarized below with MPCA response item-by-item. Changes to the permit were not made as a result of the comments, however.

Comment 1: Though coal and petroleum coke can be very cheap fuel sources, the inherent variability of mercury and other heavy metals in these fuels and in the crude taconite ore means that the powder lime wet scrubbers may or may not be an effective control device.

MPCA Response: The powder lime wet scrubbers are designed mainly to control emissions of particulate matter, sulfur dioxide, sulfuric acid mist, and other acid gases (hydrogen chloride and hydrogen fluoride). Depending on chemical and physical characteristics, some metal or non-metal compounds may or may not be removed from

the waste gas stream as effectively as the intended air pollutants. We are aware of material content variability in these fuels and the crude taconite ore. We will elaborate on mercury below.

Comment 2: Commenter states that mercury control by scrubbers is directly related to the amount of hydrogen chloride (HCl) found in the coal that is burned. Commenter further states that emissions from coal with a moderate HCl content can be well-controlled for mercury, while emissions from coal types with low or high HCl contents cannot be controlled for mercury with any degree of certainty. We are unaware of any permit conditions specifying what type of coal is to be burned at the facility, therefore we are not satisfied that mercury control and capture rates can be guaranteed.

MPCA Response: There is a correlation between mercury removal in a wet scrubber and HCl in the flue gas stream for coal fired utility boilers. The chloride need not come from the coal, but it can enter the furnace from other feed sources. In the taconite indurating process, the chloride could come from the process water, bentonite, limestone, dolomite, concentrate, etc. Research indicates that the presences of HCl in the waste gas oxidizes mercury or allows mercury to be maintained in the oxidized state, which in turn allows mercury capture by the wet scrubber. However, the presence of chloride does not appear to be the only thing in a taconite indurating furnace that allows for the capture of mercury.

This is illustrated by research conducted by John Engesser, a Principal Engineer for the Minnesota Department of Natural Resources. He and his colleagues found that when U.S. Steel Minntac produces fluxed pellets, the chloride concentration is higher than when it produces acid (standard) pellets, and yet mercury capture is higher during acid pellet production. So chloride might be important, but there also appears to be other interactions in the taconite indurating process that are not be present in a coal fired boiler.

Comment 3: Fuel species affects emissions of PM_{2.5} and their associated metals species, unless sufficiently effective filter controls are used. Commenters are unaware of any permit conditions specifying the fuel species for this facility, therefore are not satisfied that mercury control and capture rates can be guaranteed. If performance tests indicate that mercury control efforts are not meeting the assumed removal rate of 30%, what actions will be taken?

MPCA Response: As is currently adopted, Subpart RRRRR of National Emission Standards for Hazardous Air Pollutants (NESHAP), which EPA promulgated for the taconite industry to regulate emissions of hazardous air pollutants (HAPs), does not address mercury emissions. Instead, EPA decided to regulate HAP emissions by controlling particulate matter, a surrogate air pollutant. On January 14, 2005, we learned that EPA had agreed to remand taconite NESHAP for mercury and fibers, setting emission limits for these pollutants. We also learned that EPA would not be able to propose these emission limits in calendar year 2005.

Therefore, we do not specify in the permit at this time either a mass mercury emission rate for the stack or a mercury control efficiency value for the powder lime wet scrubbers. We will re-open the permit to implement any applicable mercury emission standard, after it is promulgated.

The assumed mercury removal of 30% is ensured with a permit condition that the solids captured by the powder lime wet scrubbers must not be reintroduced into the agglomerating process. This value is supported with DNR research data collected at U.S. Steel Minntac, which serves as the basis for the design of equipment and operation of Keetac's powder lime wet scrubbers. We have also used in the mercury emission calculation the higher mercury emission factor for coal from the EPA reference known as AP-42 (Table 1.1-17, instead of Table 1.1-18, in the current or September 1998 version). Due to mercury content variability in materials entering and leaving the indurating process, notwithstanding the lack of applicable requirements, we do not require performance testing in the permit at this time to verify the mercury removal value.

Fabric filters are not suitable for the waste gas stream due to high air flow and high moisture content.

Comment 4: Commenters have concerns regarding controls of dioxins from this facility. With any combustion processes of high-carbon chained organics, insufficiently high temperatures and incomplete combustion of coal produces dioxins, which like mercury have the potential to be deposited locally and bioaccumulate in our food sources.

MPCA Response: In our review of the permit application, we examined the applicability of federal and state regulations. The emissions from the projects proposed by Keewatin Taconite are limited below the levels at which the federal Prevention of Significant Deterioration (PSD) regulations (40 CFR 52.21) or the state Environmental Review program apply. There are no applicable state or federal regulations that directly address emissions of dioxins or furans.

For additional information, we looked for references that inventory emissions of these compounds. We found an EPA document and a European Commission document concerning emission sources of dioxins and furans, neither of which mentions iron ore pelletizing plants as an emission source category for dioxins/furans. Table 17 is taken from the first document, "Exposure and Human Health Reassessment of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD) and Related Compounds," Part I: Estimating Exposure to Dioxin-Like Compounds, Volume 2: Sources of Dioxin-Like Compounds in the United State," December 2003 (see the National Academy of Sciences Review Draft on-line at www.epa.gov/ncea/pdfs/dioxin/nas-review/pdfs/part1_vol1/dioxin_pt1_vol1_ch01_dec2003.pdf).

Table 17. Quantitative Inventory of Environmental Release of I-TEQ_{DF} in the U.S.*

Emission Source Category	Confidence Rating Reference Year 1995		Confidence Rating Reference Year 1987	
	B	C	B	C
Release (g TEQ/yr) to Air				
Waste Incineration				
Municipal waste incineration	1,100		7,915	
Hazardous waste incineration	5.7		5.0	
Boilers/industrial furnaces		0.38		0.77
Medical waste/pathological incineration		461		2,440
Crematoria		9.1		5.5
Sewage sludge incineration	14.6		6.0	
Tire combustion		0.11		0.11
Pulp and paper mill sludge incineration				
Power/Energy Generation				
Vehicle fuel combustion - leaded		1.7		31.9
- unleaded		5.6		3.3
- diesel		33.5		26.3
Wood combustion - residential		62.8		89.6
- industrial	26.2		25.1	
Coal combustion - utility	60.9		51.4	
Oil combustion - industrial/utility		9.3		15.5
Other High Temperature Sources				
Cement kilns (hazardous waste burning)		145.3		109.6
Lightweight aggregate kilns burning hazardous waste		3.3		2.4
Cement kilns (non hazardous waste burning)		16.6		12.7
Petroleum refining catalyst regeneration		2.11		2.14
Cigarette combustion		0.8		1.0
Carbon reactivation furnace		0.08		0.06
Kraft recovery boilers	2.3		2.0	
Minimally Controlled or Uncontrolled Combustion				
Backyard barrel burning		595		573
Metallurgical Processes				
Ferrous metal smelting/refining				
- Sintering plants	25.1			29.3
Nonferrous metal smelting/refining				
- Primary copper	< 0.5		< 0.5	
- Secondary aluminum		27.4		15.3
- Secondary copper		266		966
- Secondary lead	1.63		1.22	
Drum and barrel reclamation		0.08		0.08
Chemical Manufacturing/Processing Sources				
Ethylene dichloride/vinyl chloride	11.2			
TOTAL QUANTIFIED RELEASES TO AIR (g/yr)	2,888		12,331	

* Table 1-7 of the National Academy of Sciences Review Draft of the first document is an expanded table from Table 1-7 of a previous draft (EPA/600/P-00/001Bb, September 2000), which was issued by the Exposure Assessment and Risk Characterization Group, National Center for Environmental Assessment – Washington Office, Office of Research and Development, U.S. Environmental Protection Agency, Washington, D.C. Both drafts contain the same data relative to confidence ratings B and C.

Iron ore pelletizing plants are not a dioxins/furans emission source category, either, in the second document, “Integrated Pollution Prevention and Control (IPPC) - Best Available Techniques Reference Document on the Production of Iron and Steel,” European Commission, Dec. 2001 (see on-line at europa.eu.int/comm/environment/ippc/brefs/isp_bref_1201.pdf).

Because Keetac already has the capability to burn fuel oil and plans to add the capability to burn coal, we examined the relative emission rates of other types of emission units while they burn each of these fuels. Coal-firing and oil-firing utility boilers release dioxins/furans in the same order of magnitude in mass, from our calculation using emission data taken from the “Study of Hazardous Air Pollutant Emissions from Electric Utility Steam Generating Units – Final Report to Congress,” Volume 2. Appendices. EPA-453/R-98-004b, February, 1998, Tables A-4 and A-5 (see on-line at www.epa.gov/ttn/oarpg/t3/reports/eurtc2.pdf).

Because the emissions from oil-burning utility boilers are similar to coal-burning utility boilers, we do not anticipate a major change in the potential emissions of dioxins and furans due to the proposed modification at Keetac. Also, the addition of one powder line wet scrubber downstream of each of the two existing multiclones will reduce the stack gas temperature from 250°F to about 120°F. Thus, the waste gas pollution control equipment upgrade should act to limit the formation of dioxins and furans.

From our examination of the permit application and reference materials, we have decided not to add any new conditions to Keetac’s permit regarding dioxins and furans.

Comment 5: Commenters are concerned with control equipment monitoring requirements on all of the facility’s Control Equipment Devices. The permit specifies that gas stream pressure drop and total water pressure on these control devices only need to be monitored and recorded once every seven days until the Continuous Parameter Monitoring System (CPMS) is in place. Commenters would like to see this changed to a daily requirement, especially since the permit requires the upcoming O & M plan to establish daily average pressure drop and daily average scrubber water flow rates.

MPCA Response: The Taconite NESHAP requires CPMS for all air pollution control devices except for baghouses, per 40 CFR 63.9600 (b)(3). The NESHAP establishes a deadline for CPMS installation of October 30, 2006. In the mean time, the monitoring frequency of once every seven days meets current requirements.

EPA Review Comments & MPCA Responses: The revised permit was sent to EPA for their review on February 8, 2005, with the advice that MPCA planned to issue the permit by Monday, February 21, 2005. Comments were received from EPA on Thursday, February 17, 2005.

EPA would like to know if the permit term of “solids captured by the powder lime wet scrubbers must not be reintroduced into the agglomerating process,” which is set to ensure the assumed

30% mercury removal rate, is really an enforceable method. MPCA's response is "yes," because the captured solids can be tracked.

EPA reminded MPCA to ensure the CAM requirements, in 40 CFR 64.3(b)(4), are met so that the small emission units are subject to at least daily and the large emission units are subject to at least four-times-an-hour of parameter collection frequency. For this, the Permittee has the following statement (E-mail from LaTisha Gietzen to Hongming Jiang, February 22, 2005):

"All units are subject to MACT which will require 15 minute - daily averages, except the lime, limestone, bentonite, and coal baghouses. The baghouses are used intermittently and none exceed the 100 ton/year threshold and are therefore not subject to CAM."

On February 8, 2005, Charles J. Lippert, of the Mille Lacs Band of Ojibwe, sent Hongming Jiang an e-mail: "We have reviewed the responses you office have provided and we have no further comments." On February 15, 2005, Joy Wiecks, of the Fond du Lac Band's Air Program, sent an e-mail to request a copy of the Minnesota Department of Natural Resources report on taconite mercury (Attachment 2 of this TSD). She expressed in the e-mail that she understood MPCA's responses to the comments and was learning how to make effective comments on permits for the Fond du Lac Band. In a telephone conversation with Hongming Jiang, February 22, 2005, Joy Wiecks was interested in appealing this permit due to mercury concerns.

5. Conclusion

Based on the information provided by U.S. Steel Keewatin Taconite, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 13700063-003 and this technical support document, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team:

Hongming Jiang (permit engineer)
Bob Beresford (enforcement)
Sarah Kilgriff (compliance)
Dick Cordes (peer reviewer)

Attachments (all saved in DELTA):

1. PTE calculation spreadsheet
2. TSD info - DNR Hg report 2004
3. TSD info - CAM Plan 4/6/2004
4. Team Development Document
5. Community Involvement Form (this is the case form for a decision meeting)
6. Comment letter from the Mille Lacs Band of Ojibwe (Charles J. Lippert)
7. Comment letter from the Fond du Lac Band (Joy Wiecks)