

AIR EMISSION PERMIT NO. 13700318- 003
Major Amendment

IS ISSUED TO

Mesabi Nugget Delaware LLC
Steel Dynamics Inc

MESABI NUGGET DELAWARE LLC
6500 Hwy 135
Aurora, St. Louis County, MN 55750

The emission units, control equipment and emission stacks at the stationary source authorized in this permit amendment are as described in the Permit Applications Table.

This permit amendment supersedes Air Emission Permit No. 13700318-002 and authorizes the Permittee to operate and modify 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.

Unless otherwise indicated, all the Minnesota rules cited as the origin of the permit terms are incorporated into the State Implementation Plan under 40 CFR § 52.1220 and as such are enforceable by U.S. Environmental Protection Agency Administrator or citizens under the Clean Air Act.

Permit Type: Federal; Part 70/Major for NSR

Operating Permit Issue Date: 7/29/05

Authorization to Construct and Operate (40 CFR § 52.21 and 112g) Issuance Date: December 23, 2009

Major Amendment Issue Date: January 8, 2010

Expiration Date: 07/29/2010 – Title I Conditions do not expire.

Christopher J. Nelson, P.E., Manager
Metallic Mining Sector
Industrial Division

for Paul Eger
Commissioner
Minnesota Pollution Control Agency

Permit Applications Table

Permit Type	Application Date	Permit Action
Total Facility Operating Permit	11/11/04	001
Administrative Amendment	11/1/07	002
Major Amendment, Minor Amendment	8/05/09, 10/8/09	003

TABLE OF CONTENTS

Notice to the Permittee

Permit Shield

Facility Description

Table A: Limits and Other Requirements

Table B: Submittals

Appendices

Appendix A: [Not used in Permit Number 13700318-001]

Appendix B: Insignificant Activities

Appendix C: Modeling Parameters

Appendix D: Determination of Allowances Needed to Address Visibility Impacts

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 (PER001):

The Mesabi Nugget facility is a commercial-scale demonstration plant. It will be the first iron nugget production-scale plant to be built.

The raw materials for the process will consist of various coals, fluxes, and binders, as well as iron ore concentrate from the Northshore Mining Company facility in Silver Bay, Minnesota. Raw materials will be delivered by rail, truck, or in bulk supersacks. Iron ore concentrate will be stored in indoor storage piles, tanks or bins, while other raw materials will be stored in outdoor storage piles or storage bins. The coals and fluxes will be pulverized on-site.

Coals, fluxes, binders and iron ore concentrate will be mixed and formed into “green balls.” The balls will be dried and fed to a rotary hearth furnace, where they will be converted to metallic iron and slag material. The iron and slag are cooled and separated. The iron nuggets and slag materials will either be directly loaded into rail cars or stored in on-site piles for later shipment.

An emergency generator may be installed to provide power during disruptions in electrical power supply. A process water cooling tower may provide cooling for scrubber water and other contact cooling water. Blowdown from the process cooling water may be treated at the water treatment plant. A clean water cooling tower may provide cooling for equipment and other non-contact cooling requirements. Blowdown from the clean water cooling tower may be sent to the process cooling tower.

AMENDMENT DESCRIPTION (PER002):

This administrative amendment (Permit Action Number 002) reflects a change in ownership to Mesabi Nugget Delaware, LLC and Steel Dynamics, Inc (co-permittees). This amendment provides administrative edits to Permit Action Number 001 and does not allow for an increase or decrease in emission limits nor affect regulatory requirements.

AMENDMENT DESCRIPTION (PER003):

The minor amendments are DQ number 2872 and are being rolled into a major amendment, which is DQ number 2782.

The first minor amendment permits construction and operation of a second emergency generator to ensure that the facility can maintain power to parts of the facility that could otherwise be unsafe if forced into a cold shutdown.

The second minor amendment permits construction and operation of a recycled fines crusher. The crusher is being added to crush recovered concentrate fragments to prevent scrapping concentrate fines that are otherwise too large to be processed.

The third minor amendment permits construction and operation of a concentrate feeder breaker. It also permits the outdoor storage of taconite concentrate. The feeder breaker will be used to break up concentrate if it is frozen together since the concentrate will be stored outdoors.

The major (Prevention of Significant Deterioration Program (PSD)) amendment permits a change in operation of concentrate receiving from being delivered to the facility primarily by rail to being delivered to the facility primarily by road or rail. The main pollutants of concern are particulate matter smaller than ten microns (PM_{10}) and particulate matter smaller than 2.5 microns, which are emitted from trucks driving on paved roads.

The second major (PSD) amendment permits a change in the greenball dryer nitrogen oxides (NO_x) emission rate limit (on a lb/MMBtu basis). The initial permit action included a lb/hr limit that was calculated incorrectly and a lb/MMBtu limit that has no clear basis. The NO_x emission rate limit (on a lb/hr basis) was removed because it was redundant. Also, the final design of the greenball dryer has changed, and the fuel use limits have changed accordingly.

This permit action is rolling in three independent minor amendments with two major (PSD) amendments. The facility was initially classified as a 250 tons per year, major PSD source and was not major for any other reason. The activities allowed by the moderate permit amendment primarily consist of fugitive source PM_{10} emissions. Fugitive source emissions are included in the potential to emit calculations (September 30, 2009, stay of the December 2008 rule that exempted some facilities), which determine whether the PSD significance thresholds have been exceeded. The activities allowed by this permit action exceed the PSD significance thresholds. The second major amendment is major for PSD because best available control technology determined NO_x limits on the greenball dryer are being changed.

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-1 01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 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
SOURCE-SPECIFIC REQUIREMENTS	hdr
For changes that do not require a permit amendment: - The Permittee shall submit a Part 1 MACT application within 30 days of startup of any 112(j) affected source. The application shall meet the requirements of 40 CFR Section 63.53(a). - The Permittee shall submit a Part 2 MACT application within 90 days of startup of any 112(j) affected source. The application shall meet the requirements of 40 CFR Section 63.53(b). 112(j) affected source is defined in 40 CFR Section 63.51. As of permit issuance, 112(j) affected sources include industrial, commercial, and institutional boilers and process heaters; brick and structural clay products manufacturing; clay ceramics manufacturing.	40 CFR Section 63.52(b)(1) and 63.52(e)(1)
The construction authorization expires 18 months after permit issuance. The Permittee must keep a record of the dates of installation and start-up on site.	Title I Condition: 40 CFR Section 52.21(r)(2): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g)(4): MACT and Minn. R. 7007.3010
Comply with Fugitive Emission Control Plan: The Permittee shall follow the actions and record keeping specified in the control plan. The plan may be amended by the Permittee with the Commissioner's approval. If the Commissioner determines the Permittee is out of compliance with Minn. R. 7011.0150 or the fugitive control plan, then the Permittee may be required to amend the control plan and/or to install and operate particulate matter ambient monitors as requested by the Commissioner.	Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0100; Minn. R. 7007.0800, subp. 2; Minn. R. 7011.0150; Minn. R. 7009.0020
Parameters Used in Modeling: Stack heights, emission rates, and other parameters used in the modeling for this permit (13700318-003) are listed in Appendices C.1 and C.2 of PER003. The Permittee must submit to the Commissioner for approval any revisions of these parameters and must wait for a written approval before making such changes. The information submitted must include, at a minimum, the locations, heights and diameters of the stacks, locations and dimensions of nearby buildings, the velocity and temperatures of the gases emitted, and the emission rates. The plume dispersion characteristics due to the revisions of the information must be equivalent to or better than the dispersion characteristics modeled.	Title I Condition: 40 CFR Section 52.21(k) and Minn. R. 7007.3000
(CONTINUED) (Continued from above) The Permittee shall demonstrate this equivalency in the proposal. If the information does not demonstrate equivalent or better dispersion characteristics, or if a conclusion cannot readily be made about the dispersion, the Permittee must remodel.	Title I Condition: 40 CFR Section 52.21(k) and Minn. R. 7007.3000
For changes that do not involve an increase in an emission rate and that do not require a permit amendment, this proposal must be submitted as soon as practicable, but no less than 60 days before beginning actual construction of the stack or associated emission unit. For changes involving increases in emission rates and that require a minor permit amendment, the proposal must be submitted as soon as practicable, but no less than 60 days before beginning actual construction of the stack or associated emission unit. For changes involving increases in emission rates and that require a permit amendment other than a minor amendment, the proposal must be submitted with the permit application.	Title I Condition: 40 CFR Section 52.21(k) and Minn. R. 7007.3000
OPERATIONAL REQUIREMENTS	hdr
The Permittee shall comply with National Primary and Secondary Ambient Air Quality Standards, 40 CFR pt. 50, and the Minnesota Ambient Air Quality Standards, Minn. R. 7009.0010 to 7009.0080. Compliance shall be demonstrated upon written request by the MPCA.	40 CFR pt. 50; Minn. Stat. Sec. 116.07, subds. 4a and 9; Minn. R. 7007.0100, subps. 7A, 7L and 7M; Minn. R. 7007.0800, subps. 1, 2, and 4; Minn. R. 7009.0010-7009.0080.
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

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-2** 01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Air Pollution Control Equipment: Operate all 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)
Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and control practices and shall include a preventative maintenance program for the equipment and practices, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment and practices to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment and practices, and the records kept to demonstrate plan implementation.	Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)
Operation Changes: In any shutdown, breakdown, or deviation the Permittee shall immediately take all practical steps to modify operations to reduce the emission of any regulated air pollutant. The Commissioner may require feasible and practical modifications in the operation to reduce emissions of air pollutants. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment shall be permitted to operate.	Minn. R. 7019.1000, subp. 4
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
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 enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7030.0010 - 7030.0080
Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A).	Minn. R. 7007.0800, subp. 9(A)
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
PERFORMANCE TESTING	hdr
Initial Performance Test Trigger Date: The Initial Performance Test Trigger date refers to the day on which the Mesabi Nugget Plant has produced 200,000 metric tons of iron nuggets since initial startup.	Minn. R. 7017.2020; Minn. R. 7007.0800, subp. 2 & 4
Notification of the Initial Performance Test Trigger Date: Not more than 15 days after the Initial Performance Test Trigger Date, the Permittee shall notify the Agency of the Initial Performance Test Trigger Date.	Minn. R. 7017.2020; Minn. R. 7007.0800, subp. 2 & 4
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 Test Notifications and Submittals: Performance Tests are due as outlined in Tables A and B of the permit. See Table B for additional testing requirements. Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche Copy: due 105 days after each Performance Test The Notification, Test Plan, and Test Report may be submitted in alternative format as allowed by Minn. R. 7017.2018. NOTE: Performance tests required for compliance with MACT conditions have their own notification and submittal requirements. Those requirements are found in GP005.	Minn. Rs. 7017.2030, subp. 1-4, 7017.2018 and Minn. R. 7017.2035, subp. 1-2
Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as specified by Minn. R. 7017.2025 following formal review of a subsequent performance test on the same unit.	Minn. R. 7017.2025
MONITORING REQUIREMENTS	hdr
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)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-3** 01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Operation of Monitoring Equipment: Unless otherwise noted in Tables 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, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.	Minn. R. 7007.0800, subp. 4(D)
QA Plan required: Prior to the startup of each CEM, develop and implement a written quality assurance plan that covers each CEMS. The plan shall be on site and available for inspection within 30 days after monitor certification. The plan shall contain the written procedures listed in Minn. R. 7017.1170, subp. 2.	Minn. R. 7017.1210, subp. 1; Minn. R. 7017.1170, subp. 2
PERMIT REOPENING	hdr
If a required stack test demonstrates that these emission limits are less stringent than what is achieved in practice, the Agency may, at its discretion, use the authority under Minn. R. 7007.1600, subp. 2.C to reopen and revise the emission limit(s) to more closely reflect the actual stack test results.	Minn. R. 7007.1600, subp. 2.C.
Because best available control technology (BACT) levels have not previously been established for an iron nugget production plant, if a required stack test demonstrates that the emission limit initially established in this permit is not achievable in practice, the Permittee may submit to the Agency an application for a revision to the permit to reflect the emission level achieved in the stack test. The Permittee has the burden of demonstrating that it took all steps necessary to ensure that the emissions levels achieved in the stack test were the lowest achievable. Any revision of the emission limits made as the result of this provision shall be subject to the best available control technology (BACT) review and air quality analysis, specified in 40 CFR pt 52.21 and Minn. R. 7007.3000.	40 CFR pt. 52.21 and Minn. R. 7007.3000
The Agency will provide an opportunity for public notice and comment under Minn. R. 7007.0850, subp. 2.A prior to finalizing any permit amendment. If the action involves a Title I condition, the procedures provided under Minn. R. 7007.0850, subp. 4 also apply to the permit amendment. Minn. R. 7007.0850, subp. 3 (Petitions for meetings and hearings) shall apply to the permit amendment.	Minn. R. 7007.0850, subps. 2, 3, and 4
RECORDKEEPING	hdr
Record keeping: 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 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)
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)
If the Permittee determines that no permit amendment or notification is required prior to making a change, the Permittee must retain records of all calculations required under Minn. R. 7007.1200. For expiring permits, these records shall be kept for a period of five years from the date the change was made or until permit reissuance, whichever is longer. The records shall be kept at the stationary source for the current calendar year of operation and may be kept at the stationary source or office of the stationary source for all other years. The records may be maintained in either electronic or paper format.	Minn. R. 7007.1200, subp. 4
REPORTING/SUBMITTALS	hdr
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. 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.	Minn. R. 7019.1000, subp. 3

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-4** 01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

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. 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.	Minn. R. 7019.1000, subp. 2
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
Application for Permit Amendment: If a permit amendment is needed, submit an 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)
Emission 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.	Minn. R. 7019.3000 through Minn. R. 7019.3100
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 through Minn. R. 7002.0095
DETERMINING IF A PROJECT/MODIFICATION IS SUBJECT TO NEW SOURCE REVIEW	hdr
These requirements apply if a reasonable possibility (RP) as defined in 40 CFR Section 52.21(r)(6)(vi) exists that a proposed project, analyzed using the actual-to-projected-actual (ATPA) test (either by itself or as part of the hybrid test at Section 52.21(a)(2)(iv)(f)) and found to not be part of a major modification, may result in a significant emissions increase (SEI). If the ATPA test is not used for the project, or if there is no RP that the proposed project could result in a SEI, these requirements do not apply to that project. The Permittee is only subject to the Preconstruction Documentation requirement for a project where a RP occurs only within the meaning of Section 52.2(r)(6)(vi)(a). Even though a particular modification is not subject to New Source Review (NSR), or where there isn't a RP that a proposed project could result in a SEI, a permit amendment, recordkeeping, or notification may still be required by Minn. R. 7007.1150 - 7007.1500.	Title I Condition: 40 CFR Section 52.21(r)(6); Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 2
Preconstruction Documentation -- Before beginning actual construction on a project, the Permittee shall document the following: 1. Project description 2. Identification of any emission unit (EU) whose emissions of an NSR pollutant could be affected 3. Pre-change potential emissions of any affected existing EU, and the projected post-change potential emissions of any affected existing or new EU. 4. 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 projected actual emissions, the amount of emissions excluded due to increases not associated with the modification and that the EU 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. The Permittee shall maintain records of this documentation.	Title I Condition: 40 CFR Section 52.21(r)(6); Minn. R. 7007.3000; Minn. R. 7007.1200, subp. 4; Minn. R. 7007.0800, subps. 4 & 5

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-5** 01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

<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 in the hybrid test. The Permittee shall calculate and maintain a record of the sum of the actual and potential (if the hybrid test was 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>	<p>Title I Condition: 40 CFR Section 52.21(r)(6); Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 4 & 5</p>
<p>The Permittee must submit a report to the Agency if the annual summed (actual, plus potential if used in hybrid test) emissions differ from the preconstruction projection and exceed the baseline actual emissions by a significant amount as listed at 40 CFR Section 52.21(b)(23). Such report shall be submitted to the Agency within 60 days after the end of the year in which the exceedances occur. The report shall contain:</p> <ul style="list-style-type: none"> a. The name and ID number of the facility, and the name and telephone number of the facility contact person b. The annual emissions (actual, plus potential if any part of the project was analyzed using the hybrid test) for each pollutant for which the preconstruction projection and significant emissions increase are exceeded. c. Any other information, such as an explanation as to why the summed emissions differ from the preconstruction projection. 	<p>Title I Condition: 40 CFR Section 52.21(r)(6); Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 4 & 5</p>
<p>MERCURY REDUCTION EFFORTS</p>	<p>hdr</p>
<p>Design and construct air pollution control equipment such that sufficient space exists after the rotary hearth furnace for the installation of chemical addition or other pollution control equipment necessary to achieve further mercury reductions.</p> <p>This is a state-only requirement and is not enforceable by the EPA Administrator and citizens under the Clean Air Act.</p>	<p>Minn. Laws Chap. 220 (2004) Sec. 1(d); Minn. R. 7007.0800, subp. 2</p>
<p>Submittal: due 540 days after the Initial Performance Test Trigger Date - a plan describing the campaign for identifying and testing options to control mercury from the rotary hearth furnace. The mercury reduction report must contain the information described in the facility-level requirements under Mercury Reduction Efforts.</p>	<p>Minn. Laws Chap. 220 (2004) Sec. 1(d); Minn. R. 7007.0800, subp. 2</p>
<p>The mercury reduction report must:</p> <ul style="list-style-type: none"> 1) Review technical developments in mercury control since the submittal of the facility's revised permit application in May 2005. 2) Identify options targeting a reduction, from the baseline determined after initial startup, of at least fifty percent of the annual mercury emissions from the rotary hearth furnace (RHF). 3) Evaluate the effectiveness of, at a minimum, the following options: <ul style="list-style-type: none"> a) Changing to raw materials with a lower mercury concentration. b) Installing additional control devices to the flue gas cleanup process, including the use of sorbent injection or the modification of existing control devices. c) Enhancing the existing flue gas cleanup process to remove mercury through process modifications or chemical addition to the furnace or flue gas. d) A combination of any or all of the above techniques. <p>(CONTINUED)</p>	<p>Minn. Laws Chap. 220 (2004) Sec. 1(d); Minn. R. 7007.0800, subp. 2</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-6** 01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

(continued from above)	Minn. Laws Chap. 220 (2004) Sec. 1(d); Minn. R. 7007.0800, subp. 2
<p>4) Present three options to the Commissioner that can be implemented at the RHF to lower the amount of mercury emitted. To select these options, the first criterion shall be the potential for greatest removal of mercury, while the second criterion is technical feasibility.</p> <p>5) Include, for each option presented, a schedule for constructing or installing new needed equipment, operating the equipment (including shakedown), and testing the mercury reduction method selected by the Commissioner for further implementation.</p> <p>(Mercury performance testing of the selected option shall be conducted according to Minn. R. 7017.2001 to 7017.2060 for data submittal engineering tests, including the preparation of test plan and test reports, providing the MPCA adequate notice of the test, and submittal of test reports.)</p> <p>This is a state-only requirement and is not enforceable by the EPA Administrator and citizens under the Clean Air Act.</p>	
<p>Upon the Commissioner's approval of the mercury reduction options report and the Commissioner's selection of a mercury control option, the Permittee shall follow the schedule in the mercury reduction report to initiate construction and operation of the selected option, and conduct data submittal and engineering tests of that option. (These performance tests will be conducted in addition to those required to demonstrate compliance with the case-by-case MACT limit for mercury.)</p> <p>This is a state-only requirement and is not enforceable by the EPA Administrator and citizens under the Clean Air Act.</p>	Minn. Laws Chap. 220 (2004) Sec. 1(d); Minn. R. 7007.0800, subp. 2
<p>Conduct a performance test for mercury at least 60 days after but not more than 180 after implementing the selected option to implement the goal of achieving at least a fifty percent reduction in baseline mercury emissions.</p> <p>This is a state-only requirement and is not enforceable by the EPA Administrator and citizens under the Clean Air Act.</p>	Minn. Laws Chap. 220 (2004) Sec. 1(d); Minn. R. 7007.0800, subp. 2
PROTECTION OF VISIBILITY IN CLASS I AREAS	hdr
The Permittee must meet the Class I visibility requirements by (1) reducing visibility impairing emissions from the facility and demonstrating with USEPA approved modeling at the facility's maximum 24-hour average, allowed emission rate that the visibility impacts from the facility are less than a perceptible change over natural background; OR (2) the Permittee shall acquire and permanently retire sulfur dioxide allowances from the EPA Acid Rain Program sufficient to mitigate its visibility impacts, as described below; OR (3) The Permittee may propose an alternative means to reduce the visibility impacts, including emission reductions at other facilities.	Title I Condition: 40 CFR 52.21(p) and Minn. R. 7007.3000
(1) Emission Reductions and Modeling. The Permittee may propose to reduce the emission rate of visibility impairing pollutants from its facility and then make a demonstration of the impact of the new emission rate to visibility by submitting a permit amendment to the Agency. The proposal will be shared with the Federal Land Managers of Superior National Forest (for the Boundary Waters Canoe Area Wilderness) and of Voyageurs National Park. After considering the comments of the Federal Land Managers, the Commissioner may approve the submittal following the MPCA's procedure for modifying a Title I Condition.	Title I Condition: 40 CFR 52.21(p) and Minn. R. 7007.3000
(2) Retirement of Acid Rain Allowances. (a) Each calendar year, the Permittee shall determine the number of sulfur dioxide allowances or nitrogen oxides allowances (if available) needed to be permanently retired according to Appendix D.	Title I Condition: 40 CFR 52.21(p) and Minn. R. 7007.3000
(2)(b) - Acceptable sulfur dioxide allowances or nitrogen oxide allowances (if available) shall be acquired from facilities that were allocated allowances under 40 CFR Part 73 or under a future emissions trading program administered by USEPA to reduce acid rain and/or meet the NAAQS.	Title I Condition: 40 CFR 52.21(p) and Minn. R. 7007.3000
(2)(c) The vintage year of the allowances shall correspond to the calendar year that is being mitigated.	Title I Condition: 40 CFR 52.21(p) and Minn. R. 7007.3000
(2)(d) The Permittee shall transfer these allowances into an account in the Allowance Tracking System administered by the U.S. EPA for the Acid Rain Program (or a similar trading program), to be identified by the Commissioner. These retired allowances can never be used by the Permittee to meet any compliance requirement under the Clean Air Act or any State Implementation Plan.	Title I Condition: 40 CFR 52.21(p) and Minn. R. 7007.3000

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-7** 01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

(2)(e) The Permittee shall submit a report to the Commissioner no later than 60 days after the end of the calendar year. The report shall contain the amount of sulfur dioxide, nitrogen oxide, particulate matter, and sulfuric acid mist emitted by the Mesabi Nugget facility; the amount, facility name, location of facility (including the distances, in kilometers, from the Boundary Waters Canoe Area Wilderness and Voyageurs National Park), vintage year of allowances retired, proof that allowances have been transferred into the account identified by the Commissioner and any applicable serial or other identification associated with the retired allowances.	Title I Condition: 40 CFR 52.21(p) and Minn. R. 7007.3000
(3) Alternative Proposal. The Permittee may propose an alternative means to reduce the visibility impacts, including emission reductions at other facilities. Such an alternative proposal shall be made by submitting a permit amendment to the Agency that includes a modeling demonstration and proposed federally enforceable permit conditions. The proposal will be shared with the Federal Land Managers of Superior National Forest (for the Boundary Waters Canoe Area Wilderness) and of Voyageurs National Park. After considering the comments of the Federal Land Managers, the Commissioner may approve the submittal following the MPCA's procedure for modifying a Title I Condition.	Title I Condition: 40 CFR 52.21(p) and Minn. R. 7007.3000
AMBIENT BOUNDARY	hdr
1. This permit authorizes the Permittee to perform the activities identified on the cover page of this permit under the conditions and terms of this permit. 2. This permit does not authorize the Permittee to enter, invade or trespass on any property (e.g., surface estates, mineral estates, etc.), including but not limited to the property depicted within the ambient air boundary in Figure 2, Appendix G of the Permittee's PSD Permit Application for Mesabi Nugget LLC, Hoyt Lakes, Minnesota, May, 2005. This permit shall not be construed as authorizing the Permittee to enter, invade or trespass upon any property (e.g., surface estates, mineral estates, etc.), including but not limited to the property depicted within the ambient air boundary in Figure 2, Appendix G of the Permittee's PSD Permit Application for Mesabi Nugget LLC, Hoyt Lakes, Minnesota, May, 2005.	Title I Condition: 40 CFR 52.21(k); Minn. R. 7007.3000, Minn. R., 7007.0800, subp. 2
3. This permit does not authorize the Permittee to use, impair, injure, hinder, encumber or interfere with any property (e.g., surface estates, mineral estates, etc.), including but not limited to the property depicted within the ambient air boundary in Figure 2, Appendix G of the Permittee's PSD Permit Application for Mesabi Nugget LLC, Hoyt Lakes, Minnesota, May, 2005. This permit shall not be construed as authorizing the Permittee to use, impair, injure, hinder, encumber or interfere with any property (e.g., surface estates, mineral estates, etc.), including but not limited to the property depicted within the ambient air boundary in Figure 2, Appendix G of the Permittee's PSD Permit Application for Mesabi Nugget LLC, Hoyt Lakes, Minnesota, May, 2005.	Title I Condition: 40 CFR 52.21(k); Minn. R. 7007.3000, Minn. R., 7007.0800, subp. 2
4. The Permittee is solely responsible for obtaining from all property owners (e.g., surface estates, mineral estates, etc.) access to, possession and control of any and all property (e.g., surface estates, mineral estates, etc.) necessary to implement and comply with the terms and conditions of this permit. 5. The Permittee shall exercise the authorizations under this permit in compliance with the terms and conditions of all other conveyances of property interests (e.g., leases, etc.) to the Permittee. 6. The Permittee shall obtain and maintain exclusive possession of and control over all property (e.g., surface estates only) within the ambient air boundary of Figure 2, Appendix G of the Permittee's PSD Permit Application for Mesabi Nugget LLC, Hoyt Lakes, Minnesota, May, 2005.	Title I Condition: 40 CFR 52.21(k); Minn. R. 7007.3000, Minn. R., 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-8**

01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Subject Item: GP 001 Particulate MACT Monitoring Equipment**Associated Items:** MR 001 Coal 1 Pulverizer - Differential Pressure

MR 002 Coal 2 Pulverizer - Differential Pressure

MR 006 RHF - Differential Pressure

MR 007 RHF - Scrubber Water Flow

MR 009 RHF - Offgas Flow

MR 010 RHF - O2 content

MR 012 Flux 1 Pulverizer - Differential Pressure

MR 013 Coal Flux/Unload - Differential Pressure

MR 014 Rail Loadout - Differential Pressure

What to do	Why to do it
MONITORING REQUIREMENTS	xhdr
Prior to startup, install, calibrate, maintain, and operate a continuous parameter monitoring system for measuring and recording pressure drop across the control equipment by the startup date.	Title I Condition: 40 CFR 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 63.8(c)(1),(2),(3),(4)
The Permittee shall develop and implement a CMS quality control program. As part of the quality control program, the Permittee shall develop and submit to the Commissioner for approval upon request a site-specific performance evaluation test plan for the performance evaluation required in 40 CFR 63.8 (e)(3)(i), according to the procedures specified in paragraph (e). Each quality control program shall include, at a minimum, a written protocol that describes procedures for each of the operations listed in items (1) through (6) below. (1) Initial and any subsequent calibration of the CMS; (2) Determination and adjustment of the calibration drift of the CMS; (3) Preventive maintenance of the CMS, including spare parts inventory; (4) Data recording, calculations, and reporting; (5) Accuracy audit procedures, including sampling and analysis methods; and (6) Program of corrective action for a malfunctioning CMS. (CONTINUED)	40 CFR Section 63.8(d): MACT and Minn. R. 7007.3010
(Continued from above) The Permittee shall keep these written procedures on record for the life of the affected source or until the affected source is no longer subject to the provisions of this part, to be made available for inspection, upon request, by the Commissioner. If the performance evaluation plan is revised, the Permittee shall keep previous (i.e., superseded) versions of the performance evaluation plan on record to be made available for inspection, upon request, by the Commissioner, for a period of 5 years after each revision to the plan. Where relevant, e.g., program of corrective action for a malfunctioning CMS, these written procedures may be incorporated as part of the affected source's startup, shutdown, and malfunction plan to avoid duplication of planning and recordkeeping efforts.	40 CFR Section 63.8(d): MACT and Minn. R. 7007.3010
MONITORING AND COLLECTING DATA	hdr
Except for monitoring malfunctions, associated repairs, and required quality assurance or control activities (including as applicable, calibration checks and required zero and span adjustments), monitor continuously (or collect data at all required intervals) at all times an affected source is operating.	Title I Condition: 40 CFR 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR 63.43(g): MACT and Minn. R. 7007.3010
Do not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels, or to fulfill a minimum data availability requirement. All the data collected during all other periods must be used in assessing compliance.	Title I Condition: 40 CFR 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR 63.43(g): MACT and Minn. R. 7007.3010
A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not considered malfunctions.	Title I Condition: 40 CFR 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR 63.43(g): MACT and Minn. R. 7007.3010

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-9** 01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Subject Item: GP 002 Cooling Towers**Associated Items:** EU 014 Process Water Cooling Tower

EU 015 Clean Water Cooling Tower

What to do	Why to do it
EMISSION AND OPERATING LIMITS	hdr
Cooling tower drift rate: Less than or equal to 0.001 percent. [This is a design criterion, and a basis of the BACT determination.]	Title I Condition: 40 CFR 52.21(j): BACT and Minn. Rules 7007.3000
Cooling water flow rate: Less than or equal to 30,000 gpm. [Basis of BACT limit.]	Title I Condition: 40 CFR 52.21(j): BACT and Minn. Rules 7007.3000
Cooling water total dissolved solids content: Less than or equal to 15,100 parts per million. [Basis of BACT limit.]	Title I Condition: 40 CFR 52.21(j): BACT and Minn. Rules 7007.3000
MONITORING REQUIREMENTS	hdr
By the startup date of the cooling tower: Install, calibrate, maintain, and operate a continuous monitoring system for measuring and recording cooling water circulation.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. Rules 7007.3000
Measure and record the cooling tower flow rate of each cooling tower at least once per month.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. Rules 7007.3000
Measure and record the concentration of total dissolved solids in each cooling tower at least once per month.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. Rules 7007.3000

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-10** 01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Subject Item: GP 003 Green Ball Dryer/Material Transfer Operations Baghouses**Associated Items:** CE 007 Fabric Filter - High Temperature, i.e., T>250 Degrees F

CE 009 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 010 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

What to do	Why to do it
EMISSIONS LIMITATIONS AND OPERATING REQUIREMENTS	hdr
Operate and maintain the Green Ball Dryer/Material Transfer Operations (EU 002), including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the emission limitations.	Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.6; Minn. R. 7017.0200
Prepare, and at all times operate according to, a written operation and maintenance plan for each control device applied to meet the particulate matter emission limit developed for the Green Ball Dryer in the case-by-case MACT determination. Each site-specific operation and maintenance plan must be submitted to the Administrator on or before the initial startup date. The submitted plan must explain why the chosen practices (i.e., quantified objectives) are effective in performing corrective actions. The Administrator will review the adequacy of the site-specific practices and objectives to be followed and the records that will be kept to demonstrate compliance with the Plan. If the Administrator determines that any portion of the operation and maintenance plan is not adequate, those portions of the plan can be rejected and additional information addressing the relevant issues will need to be provided. In the interim of this process, continue to follow the current	Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.6; Minn. R. 7017.0200
(CONTINUED)	
(continued from above)	
site-specific practices and objectives, as submitted until the revisions are accepted as adequate by the Administrator. Maintain a current copy of the operation and maintenance plan onsite. It must be available for inspection upon request. Keep the plan for the life of the affected source or until the affected source is no longer subject to the requirements of this subpart. Each operation and maintenance plan must address the elements in paragraphs (1) and (2), below.	Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.6; Minn. R. 7017.0200
(1) Preventative maintenance for each control device, including a preventative maintenance schedule that is consistent with the manufacturer's instructions for routine and long-term maintenance.	
(2) Corrective action procedures for bag leak detection systems. In the event a bag leak detection system alarm is triggered, you must initiate corrective action to determine the cause of the alarm within 1 hour of the alarm, initiate corrective action to correct the cause of the	
(CONTINUED)	
(continued from above)	
problem within 24 hours of the alarm, and complete the corrective action as soon as practicable. Corrective actions may include, but are not limited to, the actions in paragraphs (i) through (vi), below.	Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.6; Minn. R. 7017.0200
(i) Inspecting the baghouse for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in emissions.	
(ii) Sealing off defective bags or filter media.	
(iii) Replacing defective bags or filter media or otherwise repairing the control device.	
(iv) Sealing off a defective baghouse compartment.	
(v) Cleaning the bag leak detection system probe, or otherwise repairing the bag leak detection system.	
(vi) Adjusting the process operation producing the particulate emissions.	
GENERAL COMPLIANCE REQUIREMENTS	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-11** 01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

<p>Comply with the work practice standards, operation and maintenance requirements, notification requirements, reporting requirements, and recordkeeping requirements for the Green Ball Dryer and its associated control equipment at all times, except during periods of startup, shutdown, and malfunction. The terms startup, shutdown, and malfunction are defined in 40 CFR Section 63.2.</p> <p>Between the date of initial startup and the date upon which continuous monitoring systems have been installed and certified and any applicable operating limits have been set, maintain a log detailing the operation and maintenance of the process and emissions control equipment. This includes the daily monitoring and recordkeeping of air pollution control device operating parameters as specified in this permit.</p>	<p>Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.6; Minn. R. 7017.0200</p>
MONITORING REQUIREMENTS	hdr
<p>Install, calibrate, maintain, and operate a continuous monitoring system for measuring and recording particulate matter passing through the control equipment by the startup date.</p>	<p>Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.6; Minn. R. 7017.0200; 40 CFR Section 63.8(c)(1),(2),(3),(4)</p>
<p>Install, operate, and maintain a bag leak detection system to monitor the relative change in particulate matter loadings according to the requirements in this permit, and conduct inspections at their specified frequencies according to the requirements in paragraphs (1) through (8), below.</p> <p>(1) Monitor the pressure drop across each baghouse cell each day to ensure pressure drop is within the normal operating range.</p> <p>(2) Confirm that dust is being removed from hoppers through weekly visual inspections or other means of ensuring the proper functioning of removal mechanisms.</p> <p>(3) Check the compressed air supply of pulse-jet baghouses each day.</p> <p>(4) Monitor cleaning cycles to ensure proper operation using an appropriate methodology.</p> <p>(5) Check bag cleaning mechanisms for proper functioning through monthly visual inspections or equivalent means.</p> <p>(CONTINUED)</p>	<p>Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.6; Minn. R. 7017.0200</p>
<p>(continued from above)</p> <p>(5) Check bag cleaning mechanisms for proper functioning through monthly visual inspections or equivalent means.</p> <p>(6) Make monthly visual checks of bag tension on reverse air and shaker-type baghouses to ensure that bags are not kinked (knead or bent) or lying on their sides. If it is a shaker-type baghouses that has self-tensioning (spring-loaded) devices, this check is not needed.</p> <p>(7) Confirm the physical integrity of the baghouse through quarterly visual inspections of the baghouse interior for air leaks.</p> <p>(8) Inspect fans for wear, material buildup, and corrosion through quarterly visual inspections, vibration detectors, or equivalent means.</p>	<p>Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.6; Minn. R. 7017.0200</p>
OPERATION AND MAINTENANCE REQUIREMENTS - BAG LEAK DETECTION SYSTEM	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-12** 01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

<p>For each negative pressure baghouse or positive pressure baghouse equipped with a stack, applied to meet any MACT-based particulate emission limit, install, operate, and maintain a bag leak detection system according to the requirements in paragraphs (1) through (8), below.</p> <p>(1) The system must be certified by the manufacturer to be capable of detecting emissions of particulate matter at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less.</p> <p>(2) The system must provide output of relative changes in particulate matter loadings.</p> <p>(3) The system must be equipped with an alarm that will sound when an increase in relative particulate loadings is detected over the alarm level set point established according to paragraph (4) of this section. The alarm must be located such that it can be heard by the appropriate plant personnel.</p> <p>(CONTINUED)</p>	<p>Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.6; Minn. R. 7017.0200</p>
<p>(continued from above)</p> <p>(4) For each bag leak detection system, develop and submit to the Administrator for approval, a site-specific monitoring plan that addresses the items identified in paragraphs (i) through (v), below. For each bag leak detection system that operates based on the triboelectric effect, the monitoring plan shall be consistent with the recommendations contained in the U.S. Environmental Protection Agency (U.S. EPA) guidance document, "Fabric Filter Bag Leak Detection Guidance" (EPA-454/R-98-015). This document is available on the EPA's Technology Transfer Network at http://www.epa.gov/ttn/emc/cem/tribo.pdf (Adobe Acrobat version) or http://www.epa.gov/ttn/emc/cem/tribo.wpd (WordPerfect version). Operate and maintain the bag leak detection system according to the site-specific monitoring plan at all times. The plan shall describe all of the items in paragraphs (i) through (v), below.</p> <p>(CONTINUED)</p>	<p>Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.6; Minn. R. 7017.0200</p>
<p>(continued from above)</p> <p>(i) Installation of the bag leak detection system.</p> <p>(ii) Initial and periodic adjustment of the bag leak detection system including how the alarm set-point will be established.</p> <p>(iii) Operation of the bag leak detection system including quality assurance procedures.</p> <p>(iv) How the bag leak detection system will be maintained including a routine maintenance schedule and spare parts inventory list.</p> <p>(v) How the bag leak detection system output shall be recorded and stored.</p> <p>(CONTINUED)</p>	<p>Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.6; Minn. R. 7017.0200</p>
<p>(continued from above)</p> <p>(5) To make the initial adjustment of the system, establish the baseline output by adjusting the sensitivity (range) and the averaging period of the device. Then, establish the alarm set points and the alarm delay time (if applicable).</p> <p>(6) Following initial adjustment, do not adjust averaging period, alarm set point, or alarm delay time, without approval from the Administrator except as provided for in the following paragraph.</p> <p>Once per quarter, you may adjust the sensitivity of the bag leak detection system to account for seasonal effects, including temperature and humidity, according to the procedures identified in the site-specific monitoring plan required under paragraph (4) of this section.</p> <p>(7) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.</p> <p>(8) The bag leak detector sensor must be installed downstream of the baghouse and upstream of any wet scrubber.</p>	<p>Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.6; Minn. R. 7017.0200</p>
CONTINUOUS COMPLIANCE DEMONSTRATION - EMISSION LIMITS	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-13** 01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Maintain the mean concentration of particulate matter below the MACT emission limit listed under EU002.	Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.6; Minn. R. 7017.0200
Conduct subsequent performance tests following the test frequency schedule.	Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.6; Minn. R. 7017.0200
<p>Demonstrate continuous compliance by completing the requirements in paragraphs (1) and (2), below.</p> <p>(1) Maintaining records of the time corrective actions were taken in the event of a bag leak detection system alarm, the corrective action(s) taken, and the date on which corrective action was completed.</p> <p>(2) Inspecting and maintaining each baghouse according to the requirements in this permit's operating and maintenance conditions and recording all information needed to document conformance with these requirements. If the sensitivity of the bag leak detection system is increased or decreased beyond the limits specified in your site-specific monitoring plan, include a copy of the required written certification by a responsible official in the next semiannual compliance report.</p>	Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.6; Minn. R. 7017.0200
<p>If the daily average operating parameter value for the Green Ball Dryer does not meet the corresponding established operating limit, follow the procedures in paragraphs (1) through (4), below.</p> <p>(1) Initiate and complete initial corrective action within 10 calendar days and demonstrate that the initial corrective action was successful. During any period of corrective action, continue to monitor and record all required operating parameters for equipment that remains in operation. After 10 calendar days, measure and record the daily average operating parameter value for the emission unit or group of similar emission units on which corrective action was taken. After the initial corrective action, if the daily average operating parameter value for the emission unit meets the operating limit established for the corresponding unit or group, then the corrective action was successful and the emission unit is in compliance with the established operating limits.</p> <p>(CONTINUED)</p> <p>(continued from above)</p>	Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.6; Minn. R. 7017.0200
<p>(2) If the initial corrective action required in paragraph (1) of this section was not successful, then complete an additional corrective action within 10 calendar days and demonstrate that the subsequent corrective action was successful. During any period of corrective action, continue to monitor and record all required operating parameters for equipment that remains in operation. After the second set of 10 calendar days allowed to implement corrective action, again measure and record the daily average operating parameter value for the emission unit. If the daily average operating parameter value for the emission unit meets the operating limit established for the corresponding unit or group, then the corrective action was successful and the emission unit is in compliance with the established operating limits.</p> <p>(CONTINUED)</p> <p>(continued from above)</p>	Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.6; Minn. R. 7017.0200
<p>(3) If the second attempt at corrective action required in paragraph (2) was not successful, then you must repeat the procedures of paragraph (2) of this section until the corrective action is successful. If the third attempt at corrective action is unsuccessful, you must conduct another performance test in accordance with the procedures in this permit and report to the Administrator as a deviation the third unsuccessful attempt at corrective action.</p> <p>(CONTINUED)</p> <p>(continued from above)</p>	Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.6; Minn. R. 7017.0200
<p>(4) After the third unsuccessful attempt at corrective action, you must submit to the Administrator the written report required in paragraph (3) of this section within 5 calendar days after the third unsuccessful attempt at corrective action. This report must notify the Administrator that a deviation has occurred and document the types of corrective measures taken to address the problem that resulted in the deviation of established operating parameters and the resulting operating limits.</p>	Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.6; Minn. R. 7017.0200
CONTINUOUS COMPLIANCE DEMONSTRATION - OPERATION AND MAINTENANCE REQUIREMENTS	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-14** 01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

<p>Demonstrate continuous compliance with the operation and maintenance requirements in this permit by completing the requirements of paragraphs (1) and (2), below.</p> <p>(1) Performing preventative maintenance for each control device in accordance with this permit and recording all information needed to document conformance with these requirements;</p> <p>(2) Initiating and completing corrective action for a bag leak detection system alarm in accordance with this permit and recording all information needed to document conformance with these requirements.</p>	<p>Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.6; Minn. R. 7017.0200</p>
<p>Maintain a current copy of the operation and maintenance plan onsite. It must be available for inspection upon request. Keep the plan for the life of the affected source or until the affected source is no longer subject to the requirements of this subpart.</p>	<p>Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.6; Minn. R. 7017.0200</p>
<p>CONTINUOUS COMPLIANCE DEMONSTRATION - OTHER REQUIREMENTS</p>	<p>hdr</p>
<p>(a) Deviations. Report each instance in which an emission limitation was not met. This includes periods of startup, shutdown, and malfunction in accordance with the paragraph (b), below. Report each instance in which the work practice standards in this permit were not met and each instance in which the operation and maintenance requirement in this permit were not met. These instances are deviations from the emission limitations, work practice standards, and operation and maintenance requirements in this subpart. Report these deviations in accordance with the requirements in this permit.</p> <p>(CONTINUED)</p>	<p>Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7007.3010; 40 CFR Section 64.5 and Minn. R 7017.0200</p>
<p>(continued from above)</p> <p>(b) Startups, shutdowns, and malfunctions. During periods of startup, shutdown, and malfunction, operate in accordance with your startup, shutdown, and malfunction plan and the requirements in paragraphs (1) and (2), below.</p> <p>(1) Consistent with 40 CFR Section 63.6(e) and 63.7(e)(1), deviations that occur during a period of startup, shutdown, or malfunction are not violations if it is demonstrated to the Administrator's satisfaction that the emission unit and control equipment were operating in accordance with the startup, shutdown, and malfunction plan.</p> <p>(2) The Administrator will determine whether deviations that occur during a period of startup, shutdown, or malfunction are violations, according to the provisions in 40 CFR Section 63.6(e).</p> <p>[These startup, shutdown, and malfunction provisions apply only to the MACT (40 CFR 63.43(g)) limits. There is no startup, shutdown, and malfunction exception for the limits set under BACT (40 CFR 52.21).]</p>	<p>Title I Condition: 40 CFR Section 63.43(g): MACT; Minn. R. 7007.3010; 40 CFR Section 63.6(e) and 63.7(e)(1); 40 CFR Section 64.5</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-15 01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Subject Item: GP 004 Baghouses not subject to CAM

Associated Items: CE 003 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
CE 004 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
CE 005 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
CE 006 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
CE 008 Fabric Filter - High Temperature, i.e., T>250 Degrees F
CE 011 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
CE 012 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
CE 013 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
CE 014 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
CE 015 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
CE 016 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

What to do	Why to do it
EMISSIONS LIMITATIONS AND OPERATING REQUIREMENTS	hdr
The baghouses in this group (GP004) are not subject to the Compliance Assurance Monitoring requirements for large pollutant-specific emissions unit. However, they are subject to the monitoring requirements of GP001 (MACT).	Title I Condition: 40 CFR Section 63.43(g): case-by-case MACT; Minn. R. 7007.3010; 40 CFR Section 64.6; Minn. R. 7017.0200
Operate and maintain the baghouses and associated monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at least to the emission limitations.	Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
For baghouses without bag leak detection systems, the continuous parameter monitoring system (CPMS) is the system that measures the differential pressure drop across the baghouse. For each required CPMS, develop and make available for inspection upon request by the permitting authority a site-specific monitoring plan that addresses the requirements in paragraphs (1) through (7), below. (1) Installation of the CPMS sampling probe or other interface at a measurement location relative to each affected emission unit such that the measurement is representative of control of the exhaust emissions (e.g., on or downstream of the last control device). (2) Performance and equipment specifications for the sample interface, the parametric signal analyzer, and the data collection and reduction system. (CONTINUED)	Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 63.8(c)(1), (3), (4)(ii), (7), and (8)
(continued from above) (3) Performance evaluation procedures and acceptance criteria (e.g., calibrations). (4) Ongoing operation and maintenance procedures in accordance with the general requirements of 40 CFR Section 63.8(c)(1), (3), (4)(ii), (7), and (8). (5) Ongoing data quality assurance procedures in accordance with the general requirements of 40 CFR Section 63.8(d). (6) Ongoing recordkeeping and reporting procedures in accordance with the general requirements of 40 CFR Section 63.10(c), (e)(1), and (e)(2)(i). (7) Corrective action procedures that you will follow in the event an air pollution control device exceeds an established operating limit.	Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 63.8(d); 40 CFR Section 63.10(c), (e)(1), and (e)(2)(i)
Unless otherwise specified, each CPMS must meet the requirements in paragraphs (1) and (2), below. (1) Each CPMS must complete a minimum of one cycle of operation for each successive 15-minute period while the associated emission unit(s) is in operation and must have valid data for at least 95 percent of every daily averaging period. (2) Each CPMS must determine and record the daily average of all recorded readings while the associated emission unit(s) was in operation.	Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-16** 01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Conduct a performance evaluation of each CPMS in accordance with the site-specific monitoring plan.	Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Operate and maintain the CPMS in continuous operation according to the site-specific monitoring plan.	Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
MONITORING AND COLLECTING DATA	hdr
Except for monitoring malfunctions, associated repairs, and required quality assurance or control activities (including as applicable, calibration checks and required zero and span adjustments), monitor continuously (or collect data at all required intervals) at all times an affected source is operating.	Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Do not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels, or to fulfill a minimum data availability requirement. All the data collected during all other periods must be used in assessing compliance.	Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not considered malfunctions.	Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Prepare and at all times operate according to a written operation and maintenance plan for each control device applied to meet the particulate matter emission limit for the baghouses in GP004. Submit the site-specific operation and maintenance plan to the Administrator on or before the start of operation. The plan you submit must explain why the chosen practices (i.e., quantified objectives) are effective in performing corrective actions. Maintain a current copy of the operation and maintenance plan onsite. It must be available for inspection upon request. Keep the plan for the life of the affected source or until the affected source is no longer subject to the requirements of this subpart. Each operation and maintenance plan must address the elements in paragraphs (1) and (2), below.	Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
(CONTINUED)	
(Continued from above)	Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
(1) Preventative maintenance for each control device, including a preventative maintenance schedule that is consistent with the manufacturer's instructions for routine and long-term maintenance.	
(2) In the event an established operating limit for a baghouse is exceeded, initiate corrective action to determine the cause of the operating limit exceedance and complete the corrective action within 10 calendar days. The corrective action procedures taken must be consistent with the installation, operation, and maintenance procedures listed in the facility's site-specific CPMS monitoring plan.	
MONITORING REQUIREMENTS	hdr
Install, calibrate, maintain, and operate a continuous parameter monitoring system (CPMS) for measuring and recording pressure drop across the control equipment by the startup date.	Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 63.8(c)(1),(2),(3),(4)
The Permittee shall develop and implement a CMS quality control program. As part of the quality control program, the Permittee shall develop and submit to the Commissioner for approval upon request a site-specific performance evaluation test plan for the performance evaluation required in 40 CFR 63.8 (e)(3)(i), according to the procedures specified in paragraph (e). Each quality control program shall include, at a minimum, a written protocol that describes procedures for each of the operations listed in items (1) through (6) below.	40 CFR Section 63.8(d): MACT and Minn. R. 7007.3010
(1) Initial and any subsequent calibration of the CMS;	
(2) Determination and adjustment of the calibration drift of the CMS;	
(3) Preventive maintenance of the CMS, including spare parts inventory;	
(4) Data recording, calculations, and reporting;	
(5) Accuracy audit procedures, including sampling and analysis methods; and	
(6) Program of corrective action for a malfunctioning CMS.	
(CONTINUED)	

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-17** 01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

(Continued from above) The Permittee shall keep these written procedures on record for the life of the affected source or until the affected source is no longer subject to the provisions of this part, to be made available for inspection, upon request, by the Commissioner. If the performance evaluation plan is revised, the Permittee shall keep previous (i.e., superseded) versions of the performance evaluation plan on record to be made available for inspection, upon request, by the Commissioner, for a period of 5 years after each revision to the plan. Where relevant, e.g., program of corrective action for a malfunctioning CMS, these written procedures may be incorporated as part of the affected source's startup, shutdown, and malfunction plan to avoid duplication of planning and recordkeeping efforts.	40 CFR Section 63.8(d): MACT and Minn. R. 7007.3010
Install, operate, and maintain a pressure drop monitoring system to monitor the relative change in pressure drop according to the requirements in this permit. Conduct inspections at their specified frequencies according to the requirements in paragraphs (1) through (8), below. (1) Monitor the pressure drop across each baghouse cell each day to ensure pressure drop is within the normal operating range. (2) Confirm that dust is being removed from hoppers through weekly visual inspections or other means of ensuring the proper functioning of removal mechanisms. (3) Check the compressed air supply of pulse-jet baghouses each day. (4) Monitor cleaning cycles to ensure proper operation using an appropriate methodology. (5) Check bag cleaning mechanisms for proper functioning through monthly visual inspections or equivalent means. (CONTINUED)	Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
(continued from above) (5) Check bag cleaning mechanisms for proper functioning through monthly visual inspections or equivalent means. (6) Make monthly visual checks of bag tension on reverse air and shaker-type baghouses to ensure that bags are not kinked (knead or bent) or lying on their sides. If it is a shaker-type baghouses that has self-tensioning (spring-loaded) devices, this check is not needed. (7) Confirm the physical integrity of the baghouse through quarterly visual inspections of the baghouse interior for air leaks. (8) Inspect fans for wear, material buildup, and corrosion through quarterly visual inspections, vibration detectors, or equivalent means.	Title I Condition: 40 CFR Section 52.21: BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
RECORDKEEPING	hdr
QA Plan: Develop and implement a written quality assurance plan that covers the pressure drop CPMS. The plan shall be on site and available for inspection within 30 days after monitor certification. The plan shall contain all of the information required by 40 CFR Section 63.8(d).	40 CFR Section 63.8(d)(2); Minn. R. 7017.1170, subp. 2
Recordkeeping: The owner or operator must retain records of all pressure drop CPMS monitoring data and support information for a period of five years from the date of the monitoring, sample, measurement, or report. Records shall be kept at the source.	40 CFR Section 63.10(b); Minn. R. 7017.1130

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-18**

01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Subject Item: GP 005 Emission Units subject to MACT

Associated Items: EU 001 Rotary Hearth Furnace (RHF)

EU 002 Green Ball Dryer/Material Transfer Operations

EU 003 Product Separator

EU 004 Coal 1 Pulverizer

EU 005 Coal 2 Pulverizer

EU 006 Flux 1 Pulverizer

EU 007 Coal Flux/Unload Baghouse

EU 008 Rail Loadout Baghouse/Material Transfer Operations

EU 010 Material Transfer Operations

EU 011 Back-up Generator 3

EU 012 Flux 2 Pulverizer

EU 013 Product Cooler

What to do	Why to do it
NOTIFICATION & REPORTING REQUIREMENTS	hdr
STARTUP, SHUTDOWN, AND MALFUNCTION REQUIREMENTS	hdr
At all times the Permittee shall operate and maintain the emission unit subject to the MACT standard and its associated air pollution control equipment in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by all relevant standards, as described at 40 CFR Section 63.6(e)(1)(i).	40 CFR Section 63.6(e)(1)(i)
During periods of startup, shutdown, and malfunction, the owner or operator of an affected source must operate and maintain such source (including associated air pollution control and monitoring equipment) in accordance with the procedures specified in the startup, shutdown, and malfunction plan developed under 40 CFR Section 63.6(e)(3)(i). Malfunctions shall be corrected as soon as practicable after their occurrence in accordance with the startup, shutdown, and malfunction plan.	40 CFR Section 63.6(e)(1)(ii); 40 CFR Section 63.6(e)(3)(ii); 40 CFR Section 63.6(e)(3)(iii)
The Permittee shall prepare and implement a Startup, Shutdown, and Malfunction Plan (SSMP) for each of the emission units subject to Maximum Control Technology Standards by the start of operation. The SSMP is a federally enforceable part of the permit and shall be prepared in accordance with 40 CFR Section 63.6(e)(3) and include requirements specified therein. The SSMP must be located at the plant site and must be kept updated. When the SSMP is updated, the Permittee must keep all previous versions of the SSMP for a period of 5 years. The Permittee must submit the SSMP when required.	40 CFR Section 63.6(e)(3)(i); 40 CFR Section 63.6(e)(3)(v)
If the Permittee deviates from the startup, shutdown, and malfunction plan (SSMP) during a startup, shutdown or malfunction, the Permittee shall record the actions taken for that event and report such actions within 2 working days after commencing actions inconsistent with the plan, followed by a letter within 7 working days after the end of the event. The report must contain name, title, and signature of a responsible official who is certifying its accuracy, explaining the circumstances of the event, the reasons for not following the SSMP, and whether any excess emissions and/or parameter monitoring exceedances are believed to have occurred.	40 CFR Section 63.6(e)(3)(iv); 40 CFR Section 63.10(d)(5)(ii)
A written SSMP must contain the minimum of the following information: 1. A procedure that documents how any startup, shutdown, or malfunction event that has occurred will be addressed and documented; 2. Information regarding the operation of the source and its associated pollution control devices during a startup, shutdown, or malfunction event in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by all relevant standards; and 3. Adequate procedures for correcting malfunctioning process and/or air pollution control equipment as quickly as practicable.	40 CFR Section 63.6(e)(3)(vii)
The Permittee shall maintain files of all information required by this part in a form suitable and readily available for expeditious inspection and review. The files should be retained for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. Only the most recent two years of information must be kept on site.	40 CFR Section 63.10(b)(1)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-19**

01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

<p>The Permittee shall maintain, at a minimum, the following information in the files:</p> <p>1) the occurrence and duration of each startup, shutdown, or malfunction of operation;</p> <p>2) the occurrence and duration of each malfunction of the air pollution control equipment;</p> <p>3) all maintenance performed on the pollution control equipment;</p> <p>4) actions taken during periods of startup, shutdown, and malfunction when such actions are different from the procedures specified in the affected source's startup, shutdown, and malfunction plan (SSMP). In this case, the Permittee shall report this action within 2 days of occurrence and follow by a written notification within 7 days of occurrence.</p> <p>5) all information necessary to demonstrate conformance with the affected source's SSMP and actions taken in accordance with SSMP;</p> <p>(CONTINUED)</p>	40 CFR Section 63.10(b)(2)
<p>(continued from above)</p> <p>6) each period during which a continuous monitoring system (CMS) is malfunctioning or inoperative;</p> <p>7) all required measurements needed to demonstrate compliance with a relevant standard;</p> <p>8) all results of performance test, CMS performance evaluations, and opacity and visible emission observations;</p> <p>9) all measurements as may be necessary to determine the conditions of performance tests and performance evaluations;</p> <p>10) all CMS calibration checks;</p> <p>11) all adjustments and maintenance performed on CMS;</p> <p>12) any information demonstrating whether a source is meeting the requirements for a waiver of record keeping or reporting requirements under this part;</p> <p>13) all documents supporting initial notifications and notifications of compliance status.</p>	40 CFR Section 63.10(b)(2)
<p>Startup, shutdown, and malfunction reports shall be submitted only if there is an occurrence of startup, shutdown, or malfunction during the reporting period and shall be delivered or postmarked by the 30th day following the end of each calendar half year.</p>	40 CFR Section 63.10(d)(5)(i)
TEST METHODS AND OTHER PROCEDURES - MACT EMISSION LIMITS	hdr
<p>Determine compliance with each MACT emission limit for particulate matter according to the requirements in 40 CFR Section 63.7(e)(1) and by following the test methods and procedures in paragraphs (1) and (2), below.</p> <p>(1) Determine the concentration of particulate matter for each stack according to the test methods in 40 CFR part 60, appendix A. The applicable test methods are listed in paragraphs (i) through (v), below.</p> <p>(i) Method 1 or 1A to select sampling port locations and the number of traverse points. Sampling ports must be located at the outlet of the control device and prior to any releases to the atmosphere.</p> <p>(ii) Method 2, 2A, 2C, 2D, 2F, or 2G, as applicable, to determine the volumetric flow rate of the stack gas.</p> <p>(iii) Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.</p> <p>(iv) Method 4 to determine the moisture content of the stack gas.</p> <p>(v) Method 5, 5D, or 17 to determine the concentration of particulate matter.</p> <p>(CONTINUED)</p>	40 CFR part 60, appendix A; 40 CFR Section 63.7(e)(1); 40 CFR Section 63.43(g)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-20**

01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

(Continued from above) (2) Each Method 5, 5D, or 17 performance test must consist of three separate runs. Each run must be conducted for a minimum of 2 hours. (The duration of the runs may be changed with the approval of the Commissioner.) The average particulate matter concentration from the three runs will be used to determine compliance.	40 CFR part 60, appendix A; 40 CFR Section 63.7(e)(1); 40 CFR Section 63.43(g)
PERFORMANCE TESTING NOTIFICATIONS	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-21 01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Subject Item: GP 007 Material Handling Operations - Fugitives**Associated Items:** FS 001 Material Handling Operation, Coal

FS 003 Material Handling Operation, Flux (Limestone, Dolomite)

FS 005 Material Handling Operation, Slag

FS 007 Material Handling Operation, Nuggets

What to do	Why to do it
EMISSION LIMITATIONS	hdr
Opacity: less than or equal to 5 percent opacity using 6-minute Average	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000
WORK PRACTICE STANDARDS	hdr
Prior to startup, prepare, and at all times operate according to, a fugitive dust emissions control plan that describes in detail the measures that will be put in place to control fugitive dust emissions from the locations listed in paragraphs (1) through (5), below. (1) Stockpiles (includes, but is not limited to, stockpiles of uncrushed coal, crushed coal, or slag); (2) Material transfer points; (3) Plant roadways; (4) Nugget loading areas; and (5) Yard areas.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Maintain a current copy of the fugitive dust emissions control plan onsite. It must be available for inspection upon request. Keep the plan for the life of the affected source or until the affected source is no longer subject to the requirements of this subpart.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Follow fugitive dust emissions control plan for applicable recordkeeping requirements. Perform weekly visibility checks for the stockpiles and maintain watering records for stockpile operations.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 63.6(e); 40 CFR Section 63.8(b)); Minn. R. 7007.0800, subp. 6(A)(2)
For each work practice standard and operation and maintenance requirement that applies where initial compliance is not demonstrated using a performance test, demonstrate initial compliance within 30 calendar days after initial startup. Demonstrate continuous compliance with the work practice standard requirements by operating in accordance with the fugitive dust emissions control plan at all times.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Clean up all coal spilled on roads or access areas as soon as practicable using methods that minimize the amount of dust suspended. Control fugitive particulate emissions by dust suppression methods on such operations so that fugitive particulate emissions are minimized. However, during freezing temperatures, owners or operators shall not be required to apply water or dust suppressants. No nonessential coal handling operations shall be conducted that are not shielded from the wind or enclosed in a building when steady wind speeds exceed 30 miles per hour as determined at the nearest official station of the United States Weather Bureau or by wind speed instruments on or adjacent to the site. This does not authorize the use of surface hardening agents, wetting or chemical agents, foam agents, and oils that may cause ground water or surface water contamination in violation of any applicable water pollution law.	Minn. R. 7011.1105.A.; Minn. R. 7011.1120; Minn. R. 7011.1125; Minn. R. 7011.1140
Hold initial notifications, all other reports, testing and compliance data for at least five years.	40 CFR Section 63.10(b)); Minn. R. 7007.0800, subp. 6(A)(2)
CONTROL EQUIPMENT REQUIREMENTS	hdr
Check for visible emissions (during daylight hours) from the material handling operations once each calendar week while in operation.	Minn. R. 7007.0800, subp. 4
Corrective Actions: If visible emissions (VEs) are observed, determine the cause and take corrective actions as soon as possible to eliminate the VEs. Corrective action may be in the form of discontinuing material transfer operations.	Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Mesabi Nugget Delaware LLC
Permit Number: 13700318 - 003

Recordkeeping: Record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5
Maintain watering records for material handling operations.	

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-23**

01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Subject Item: GP 008 Storage Piles - Fugitives**Associated Items:** FS 002 Wind Erosion, Coal

FS 004 Wind Erosion, Flux (Limestone, Dolomite)

FS 006 Wind Erosion, Slag

FS 008 Wind Erosion, Nuggets

What to do	Why to do it
EMISSION LIMITATIONS	hdr
Opacity: less than or equal to 5 percent opacity using 6-minute Average	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000
WORK PRACTICE STANDARDS	hdr
Prepare, and at all times operate according to, a fugitive dust emissions control plan that describes in detail the measures that will be put in place to control fugitive dust emissions from the locations listed in paragraphs (1) through (5), below. (1) Stockpiles (includes, but is not limited to, stockpiles of uncrushed coal, crushed coal, or slag); (2) Material transfer points; (3) Plant roadways; (4) Nugget loading areas; and (5) Yard areas.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Maintain a current copy of the fugitive dust emissions control plan onsite. It must be available for inspection upon request. Keep the plan for the life of the affected source or until the affected source is no longer subject to the requirements of this subpart.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
For each work practice standard and operation and maintenance requirement that applies where initial compliance is not demonstrated using a performance test, demonstrate initial compliance within 30 calendar days after initial startup. Demonstrate continuous compliance with the work practice standard requirements by operating in accordance with the fugitive dust emissions control plan at all times.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Clean up all coal spilled on roads or access areas as soon as practicable using methods that minimize the amount of dust suspended. Control fugitive particulate emissions by dust suppression methods on such operations so that fugitive particulate emissions are minimized. However, during freezing temperatures, owners or operators shall not be required to apply water or dust suppressants. No nonessential coal handling operations shall be conducted that are not shielded from the wind or enclosed in a building when steady wind speeds exceed 30 miles per hour as determined at the nearest official station of the United States Weather Bureau or by wind speed instruments on or adjacent to the site. This does not authorize the use of surface hardening agents, wetting or chemical agents, foam agents, and oils that may cause ground water or surface water contamination in violation of any applicable water pollution law.	Minn. R. 7011.1105.A.; Minn. R. 7011.1120; Minn. R. 7011.1125; Minn. R. 7011.1140
Hold initial notifications, all other reports, testing and compliance data for at least five years.	40 CFR Section 63.10(b)); Minn. R. 7007.0800, subp. 6(A)(2)
VISIBLE EMISSION REQUIREMENTS	hdr
Check for visible emissions (during daylight hours) from the storage piles once each calendar week.	Minn. R. 7007.0800, subp. 4
Corrective Actions: If visible emissions (VEs) are observed, determine the cause and take corrective actions as soon as possible to eliminate the VEs.	Minn. R. 7007.0800, subp. 2
Recordkeeping: Record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5
Maintain watering records for storage piles.	

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-24**

01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Subject Item: GP 009 Continuous Monitors subject to BACT and MACT**Associated Items:** MR 003 RHF - SO2 Monitor

MR 005 RHF - CO Monitor

MR 009 RHF - Offgas Flow

MR 010 RHF - O2 content

What to do	Why to do it
MONITORING AND COLLECTING DATA	hdr
Do not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels, or to fulfill a minimum data availability requirement. All the data collected during all other periods must be used in assessing compliance.	Minn. R. 7007.0800, subp. 2
Installation Notification: due 60 days before installing the continuous emissions monitoring system. The notification shall include plans and drawings of the system.	Minn. R. 7017.1040, subp. 1
CEMS Installation: install CEMS such that representative measurements of emissions or process parameters from the source are obtained. In addition the CEMS shall be located according to procedures contained in the applicable performance specifications of 40 CFR pt. 60, Appendix B.	Minn. R. 7017.1040, subp. 2 ; 40 CFR Section 63.8(c)(2)(i)
When two or more emission units required to be monitored with a CEMS are not subject to the same emission limit, a separate CEMS shall be installed on each emission unit.	Minn. R. 7017.1040, subp. 3
CEMS Certification Test: due within 60 days after the due date of the first excess emissions report required for the CEMS. Follow the Performance Specifications listed in 40 CFR pt. 60, Appendix B.	Minn. R. 7017.1050, subp. 1; 40 CFR Section 63.8(e)(5)
CEMS Certification Test Plan: due 60 days before CEMS Certification Test	Minn. R. 7017.1060, subp.1 & 2; 40 CFR Section 63.8(e)(3)
CEMS Certification Test Pretest Meeting: due 7 days before CEMS Certification Test.	Minn. R. 7017.1060, subp. 3
All CEMS must be certified according to the appropriate performance specifications listed in 40 CFR pt. 60, Appendix B.	Minn. R. 7017.1070, subp. 1
CEMS Certification Test Report: due 45 days after CEMS Certification Test	Minn. R. 7017.1080, subp. 1, 2, & 4
CEMS Certification Test Report - Microfiche Copy: due 105 days after CEMS Certification Test	Minn. R. 7017.1080, subp. 3
Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Minn. R. 7017.1090, subp. 1; 40 CFR Section 63.8(c)(4)
Acceptable monitor downtime includes reasonable periods as listed in Items A, B, C and D of Minn. R. 7017.1090, subp. 2.	
Excess Emissions/Downtime Reports (EERs): due 30 days after end of each calendar quarter following CEMS Certification Test (Submit Deviations Reporting Form DRF-1 as amended). The EER shall indicate all periods of monitor bypass and all periods of exceedances of the limit including exceedances allowed by an applicable standard, i.e. during startup, shutdown, and malfunctions.	Minn. R. 7017.1110, subp. 1 & 2; 40 CFR Section 63.8(c)(8); 40 CFR Section 63.10(e)(3)
Recordkeeping: The owner or operator must retain records of all CEMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source.	Minn. R. 7007.1130

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-25**

01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

<p>All data points collected by a CEMS shall be used to calculate individual hourly emission averages unless another applicable requirement or compliance document requires more frequent averaging. Each hourly average starts at the beginning of the hour and ends at the beginning of the following hour.</p> <p>In order for an hour of data to be considered valid, it must contain the following minimum number of data points during the hour:</p> <ul style="list-style-type: none"> - four data points, equally spaced, if the emission unit operated during the entire hour; - two data points, at least 15 minutes apart, during periods of monitor calibration, and periods of time to conduct quality control audits or routine maintenance; and - one data point if the emission unit operated for 15 minutes or less during the hour. <p>Monitoring data shall be recorded in the same units of measurement and averaging period as the facility's emission standard.</p>	Minn. R. 7017.1160; 40 CFR 63.8(c)(4)
QA Plan: Develop and implement a written quality assurance plan that covers each CEMS. The plan shall be on site and available for inspection within 30 days after monitor certification. The plan shall contain all of the information required by 40 CFR pt. 60, App. F, section 3.	Minn. R. 7017.1170, subp. 2; 40 CFR Section 63.8(d)
CEMS Daily Calibration Drift (CD) Test: The CD shall be quantified and recorded at zero (low-level) and upscale (high-level) gas concentrations at least once daily. The CEMS shall be adjusted whenever the CD exceeds twice the specification of 40 CFR pt. 60, Appendix B. 40 CFR pt. 60, Appendix F, shall be used to determine out-of-control periods for CEMS. Follow the procedures in 40 CFR pt. 60, Appendix F.	Minn. R. 7017.1170, subp. 3; 40 CFR Section 63.8(c)(6)
Cylinder Gas Audit (CGA): due before end of each calendar half-year following CEMS Certification Test. Conduct CGA at least 3 months apart and not greater than 8 months apart. Follow the procedures in 40 CFR pt. 60, Appendix F.	Minn. R. 7017.1170, subp. 4
Cylinder Gas Audit (CGA) Results Summary: due 30 days after end of each calendar half-year following Cylinder Gas Audit (CGA).	Minn. R. 7017.1180, subp. 1
CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar year following CEMS Certification Test. Follow the procedures in 40 CFR pt. 60, Appendix F, as amended.	Minn. R. 7017.1170, subp. 5
Relative Accuracy Test Audit (RATA) Notification: due 30 days before CEMS Relative Accuracy Test Audit (RATA).	Minn. R. 7017.1180, subp. 2
Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of each calendar quarter in which the CEMS RATA was conducted.	Minn. R. 7017.1180, subp. 3
CEM Certification Test: Written notification of the planned test date shall be postmarked or received at least 60 days before the planned test date.	Minn. R. 7017.2030, subp. 1; 40 CFR Section 63.8(e)(2)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-26**

01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Subject Item: GP 010 Concentrate Receiving Fugitives**Associated Items:** FS 010 Material Handling Operation, Concentrate Receiving

FS 011 Wind Erosion, Concentrate Receiving Storage

What to do	Why to do it
EMISSION LIMITATIONS	hdr
Opacity: less than or equal to 10 percent opacity using 6-minute Average	40 CFR 60.382(b) Minn. R. 7011.2700
WORK PRACTICE STANDARDS	hdr
Prior to startup, prepare, and at all times operate according to, a fugitive dust emissions control plan that describes in detail the measures that will be put in place to control fugitive dust emissions from the locations listed in paragraphs (1) through (4), below. (1) Stockpiles of concentrate; (2) Material transfer points; (3) Plant roadways; (4) Yard areas.	40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Maintain a current copy of the fugitive dust emissions control plan onsite. It must be available for inspection upon request. Keep the plan for the life of the affected source or until the affected source is no longer subject to the requirements of this subpart.	40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Follow fugitive dust emissions control plan for applicable recordkeeping requirements. Perform weekly visibility checks for the stockpiles and maintain watering records for stockpile operations.	40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 63.6(e); 40 CFR Section 63.8(b)); Minn. R. 7007.0800, subp. 6(A)(2)
For each work practice standard and operation and maintenance requirement that applies where initial compliance is not demonstrated using a performance test, demonstrate initial compliance within 30 calendar days after initial startup. Demonstrate continuous compliance with the work practice standard requirements by operating in accordance with the fugitive dust emissions control plan at all times.	40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Maintain records of initial notifications, all other reports, testing and compliance data for at least five years.	40 CFR Section 63.10(b)); Minn. R. 7007.0800, subp. 6(A)(2)
CONTROL REQUIREMENTS	hdr
Check for visible emissions (during daylight hours) from the concentrate handling and storage operations once each calendar week while in operation.	Minn. R. 7007.0800, subp. 4
Corrective Actions: If visible emissions (VEs) are observed, determine the cause and take corrective actions as soon as possible to eliminate the VEs. Corrective action may be in the form of discontinuing concentrate handling and storage operations.	Minn. R. 7007.0800, subp. 2
Recordkeeping: Record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5
Maintain watering records for material handling operations.	

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-27** 01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Subject Item: EU 001 Rotary Hearth Furnace (RHF)**Associated Items:** CE 001 Wet Scrubber - High Efficiency

CE 002 Air Infiltration

GP 005 Emission Units subject to MACT

MR 003 RHF - SO₂ MonitorMR 004 RHF - NO_x Monitor

MR 005 RHF - CO Monitor

MR 006 RHF - Differential Pressure

MR 007 RHF - Scrubber Water Flow

MR 008 RHF - pH

MR 009 RHF - Offgas Flow

MR 010 RHF - O₂ content

SV 001 Rotary Hearth Furnace Stack Vent

SV 008 Rotary Hearth Furnace Bypass Stack Vent

What to do	Why to do it
EMISSION & OPERATING LIMITS	hdr
Sulfur Dioxide: less than or equal to 75.0 lbs/hour using 3-hour Block Average [With the use of natural gas in the RHF, compliance with this limit demonstrates compliance with Minn. R. 7011.0610, Subp. 2.B.]	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7011.0610, Subp. 2.B.
Sulfur Content of Coal: Less than or equal to 0.85 percent by weight	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000
Sulfur Dioxide: greater than or equal to 90 percent control efficiency using 3-hour Block Average	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000
Opacity: less than or equal to 10 percent opacity using 6-minute Average Compliance with this limit also fulfills the requirements of Minn. R. 7011.0610, subp. 1(A)(2).	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7011.0610, subp. 1(A)(2)
Front-half Particulate Matter: less than or equal to 0.015 grains/dry standard cubic foot using 3-hour Rolling Average at 7% oxygen using Method 5. [Front-catch particulate Matter is a surrogate for the control of metal HAPs.] Because PM emissions (as measured by Method 5) from commercial-scale iron nugget rotary hearth furnaces have not been quantified, the actual emissions may exceed the above emission rate. If the Permittee cannot meet the above limit during normal operation, the MPCA may adjust the PM emission rate to a level not to exceed 0.020 gr/dscf at 7% oxygen using Method 5, following the MPCA's review of the stack test results. The Permittee has the burden of demonstrating that it took all steps necessary to ensure that the emissions levels achieved in the stack test were the lowest achievable. This change in the permit will be accomplished administratively. [This fulfills the requirements of Minn. R. 7011.0610, subp. 1(A)(1).]	Title I Condition: 40 CFR Section 52.21(j): BACT; Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g) and Minn. R. 3010; Minn. R. 7011.0610, subp. 1(A)(1).
Front-half Particulate Matter: less than or equal to 44.3 lbs/hour using 3-hour Block Average	Title I Condition: 40 CFR Section 52.21(j): BACT; Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 3010
Front-half Particulate Matter: greater than or equal to 92 percent control efficiency using 3-hour Block Average	Title I Condition: 40 CFR Section 52.21(j): BACT; Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 3010

TABLE A: LIMITS AND OTHER REQUIREMENTS
A-28 01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Particulate Matter < 10 micron: less than or equal to 0.020 grains/dry standard cubic foot using 3-hour Block Average at 7% oxygen. Because PM10 emissions from commercial-scale iron nugget rotary hearth furnaces have not been quantified, the actual emissions may exceed the above emission rate. If the the Permittee cannot meet the above limit during normal operation, the MPCA may adjust the PM10 emission rate to a level not to exceed 0.025 gr/dscf at 7% oxygen, following the MPCA's review of the stack test results. The Permittee has the burden of demonstrating that it took all steps necessary to ensure that the emissions levels achieved in the stack test were the lowest achievable. This change in the permit will be accomplished administratively. [PM10 is also a surrogate for the control of inorganic HAPs.]	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000
Particulate Matter < 10 micron: less than or equal to 44.3 lbs/hour using 3-hour Block Average	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000
Particulate Matter < 10 micron: greater than or equal to 92 percent control efficiency using 3-hour Block Average	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000
Carbon Monoxide: less than or equal to 60 parts per million using 3-hour Block Average dry at 7% oxygen. [Carbon monoxide concentration is a surrogate for the control of volatile HAPs.]	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Carbon Monoxide: less than or equal to 58.2 lbs/hour using 3-hour Block Average	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000
Volatile Organic Compounds: less than or equal to 4.86 lbs/hour using 3-hour Rolling Average at maximum capacity	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000
Volatile Organic Compounds: less than or equal to 1.0 parts per million using 3-hour Block Average wet, at 7% oxygen (as propane, using Method 25A)	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 125 parts per million using 3-hour Rolling Average dry by volume at 7% oxygen	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 205.8 lbs/hour using 3-hour Block Average	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000
Lead: less than or equal to 0.96 lbs/hour at maximum capacity	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000
Lead: greater than or equal to 90 percent control efficiency using 3-hour Block Average	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000
Fluorides: less than or equal to 24.6 lbs/hour using 3-hour Block Average	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000
Fluorides: greater than or equal to 97 percent control efficiency using 3-hour Block Average	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000
Sulfuric Acid Mist: less than or equal to 20.2 lbs/hour using 3-hour Block Average	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000
Sulfuric Acid Mist: greater than or equal to 90 percent control efficiency using 3-hour Block Average	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000
Mercury: less than or equal to 0.0086 lbs/hour at maximum capacity calculated as a two-hour average	Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Always operate and maintain the rotary hearth furnace (EU001), including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 63.6(e)(1)(i); 40 CFR Section 64.5
Operate a wet scrubber at all times the emission unit is operating to control emissions of sulfur dioxide, particulate matter, particulate matter less than ten microns in diameter, lead, fluorides, and sulfuric acid mist.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000
Operate a wet scrubber at all times the emission unit is operating to control emissions of metal HAPs and acid gas HAPs.	Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Operate an air infiltration system at all times the emission unit is operating to control emissions of carbon monoxide and volatile organic compounds.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000
Operate an air infiltration system at all times the emission unit is operating to control emissions of volatile organic HAPs.	Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
MONITORING REQUIREMENTS	hdr
Coal Properties Monitoring: The Permittee shall obtain, from the supplier of each coal shipment, a certificate that specifies the sulfur content (in percent sulfur by weight). For any shipment received without the certificate, the Permittee shall obtain a representative sample from the shipment for analysis of sulfur content and heating value.	Minn. R. 7011.0610, Subp. 2.B.
For compliance assurance monitoring provisions, EU001 is a large emission pollutant-specific unit for SO2, PM, PM10, CO, fluorides, and sulfuric acid mist.	40 CFR Section 64.6 and Minn. R. 7017.0200

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-29** 01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Emissions Monitoring: The owner or operator shall install and operate a CO CEMS to measure CO emissions from the rotary hearth furnace and to be used as a surrogate monitoring parameter for VOCs and volatile organic HAPs.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.6 and Minn. R. 7017.0200; Minn. R. 7017.1006
Emissions Monitoring: The owner or operator shall install and operate an SO2 CEMS to measure SO2 emissions from the rotary hearth furnace and to be used as a surrogate monitoring parameter for sulfuric acid mist.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.6 and Minn. R. 7017.0200; Minn. R. 7017.1006
Emissions Monitoring: The owner or operator shall install and operate a NOx CEMS to measure NOx emissions from the rotary hearth furnace.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7017.1006
Emissions Monitoring: The owner or operator shall install and operate an offgas flow monitor to measure offgas flow from the rotary hearth furnace. (Basis: This is needed to determine lbs of emissions from concentration measurements.)	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.6 and Minn. R. 7017.0200; Minn. R. 7017.1006
Emissions Monitoring: The owner or operator shall install and operate an oxygen monitor to measure the oxygen content in the offgas flow from the rotary hearth furnace. (Basis: This is needed to correct concentrations to a specific oxygen content.)	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.6 and Minn. R. 7017.0200; Minn. R. 7017.1006
Conduct Visual Emissions checks once weekly.	Minn. R. 7007.0800, subp. 4
NOTIFICATION REQUIREMENTS	hdr
TESTING REQUIREMENTS	hdr
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date. This test is to demonstrate initial compliance with the BACT PM limit and with the case-by-case MACT limit for metals HAPs (for which PM is a surrogate).	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7007.0800, subp. 4
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date. This test is to demonstrate initial compliance with the BACT PM10 limit and with the case-by-case MACT limit for acid gas HAPs (for which PM10 is a surrogate).	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7007.0800, subp. 4
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date. This test is to demonstrate initial compliance with the BACT limits for opacity, volatile organic compounds, lead, fluorides, and sulfur acid mist.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date. This test is to demonstrate initial compliance with the MACT limit for mercury.	Title I Condition: 40 CFR 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7007.0800, subp. 4
SO2 CEM Certification Test: due 90 days after Initial Performance Test Trigger Date.	Title I Condition: 40 CFR Section 52.21(j): MACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7007.0800, subp. 4
CO CEM Certification Test: due 90 days after Initial Performance Test Trigger Date.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7007.0800, subp. 4
NOx CEM Certification Test: due 90 days after Initial Performance Test Trigger Date.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4
O2 CEM Certification Test: due 90 days after Initial Performance Test Trigger Date.	Title I Condition: 40 CFR Section 52.21(j): MACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7007.0800, subp. 4
Offgas flow CEM Certification Test: due 90 days after Initial Performance Test Trigger Date.	Title I Condition: 40 CFR Section 52.21(j): MACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7007.0800, subp. 4
Mercury Performance Test: due 270 days before Application for Permit Reissuance	Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Mercury Performance Test: due 730 days after the previous performance test for mercury	Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7007.0800, subp. 2
WET SCRUBBER OPTIMIZATION STUDY	hdr
Wet scrubber optimization study: Within 180 days after the Initial Performance Test Trigger Date, the Permittee shall complete a study of the wet scrubber according to the plan submitted to the MPCA.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7007.0800, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-30**

01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

<p>Wet scrubber optimization study report: Within 90 days of completing the wet scrubber optimization study, the Permittee shall submit a report to the MPCA. The report must contain:</p> <ol style="list-style-type: none"> 1) All parameter data and pollutant emission data gathered during the process; 2) A description of any deviations from the plan submitted to the MPCA; 3) A description of the variability and uncertainty using a significance level of five percent; 4) Proposed limits (maximum pound per hour; minimum removal efficiency or pound per ton of product) for SO₂, PM, PM₁₀, lead, fluorides, and sulfuric acid mist with the rationale for those limits; 5) Proposed ranges for operating parameters to monitor the performance of the wet scrubber; and 6) A demonstration that the Permittee took all steps necessary to ensure that the emissions levels achieved in the stack test were the lowest achievable. <p>(CONTINUED)</p>	<p>Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR 63.43(g); MACT and Minn. R. 7007.3010; Minn. R. 7007.0800, subp. 4</p>
<p>(continued from above)</p> <p>The MPCA may use the information provided in the report on the wet scrubber optimization study as described under PERMIT REOPENING in the facility conditions.</p> <p>The Permittee may use the information provided by the report on the wet scrubber optimization study to request changes to emission rates as described under PERMIT REOPENING in the facility conditions.</p>	<p>Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR 63.43(g); MACT and Minn. R. 7007.3010; Minn. R. 7007.0800, subp. 4</p>
MACT GENERAL COMPLIANCE REQUIREMENTS	hdr
<p>Comply with the emission limitations, work practice standards, operation and maintenance requirements, notification requirements, reporting requirements, and recordkeeping requirements for the wet scrubber at all times, except during periods of startup, shutdown, and malfunction. The terms startup, shutdown, and malfunction are defined in 63.2.</p> <p>During the period between initial startup and the date upon which continuous monitoring systems have been installed and certified and any applicable operating limits have been set, maintain a log detailing the operation and maintenance of the process and emissions control equipment. This includes the daily monitoring and recordkeeping of air pollution control device operating parameters.</p> <p>[These startup, shutdown, and malfunction provisions apply only to the MACT (40 CFR 63.43(g)) limits. There is no startup, shutdown, and malfunction exception for the limits set under BACT (40 CFR 52.21).]</p>	<p>Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.6 and Minn. R. 7017.0200</p>
<p>Prior to startup, develop and implement a written startup, shutdown, and malfunction plan according to the provisions in 63.6(e)(3).</p>	<p>Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 63.6(e)(3); ; 40 CFR Section 64.6 and Minn. R. 7017.0200</p>
NO_x CONTROL STUDY	hdr
<p>The Permittee shall design and complete a study of NO_x control for the RHF.</p>	<p>Minn. R. 7007.0800, subp. 2</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-31**

01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

<p>The Permittee shall:</p> <ol style="list-style-type: none"> 1. Within 60 days of the Initial Performance Trigger Date, design, install and operate a selective noncatalytic reduction (SNCR) system for the RHF for the purposes of determining the emission rate and reduction achievable, reliability and feasibility of SNCR; 2. Within 365 days of the Initial Performance Trigger Date, submit a report to the Commissioner of the results of the SNCR NOx emissions control study. The report shall, at a minimum, describe in detail the following: <ol style="list-style-type: none"> a. the system installed; b. operating conditions of the RHF and the affects of varying these conditions; c. operating parameters of SNCR and the affects of varying these parameters; d. problems and efforts taken to address those problems; e. reliability of the SNCR; f. efforts taken to optimize the system; and g. feasibility of the controls. <p>(CONTINUED)</p>	Minn. R. 7007.0800, subp. 2
<p>(continued from above)</p> <ol style="list-style-type: none"> 3. If the Commissioner determines that selective noncatalytic reduction is feasible, the Commissioner shall notify the Permittee and the Permittee shall submit an application for a permit amendment to incorporate the emission limits reflective of the control efficiency and/or emission rate achieved with SNCR, and the operating and monitoring conditions, as appropriate, within 180 days of the notification of the feasibility of SNCR. 	Minn. R. 7007.0800, subp. 2
<p>If the commissioner determines that SNCR is not feasible, upon notification by the Commissioner, the Permittee may shutdown the SNCR system and the Permittee shall design and complete a study of alternative NOx control for the RHF.</p>	Minn. R. 7007.0800, subp. 2
<p>The study shall consist of the following steps:</p> <ol style="list-style-type: none"> 1. A literature search of other NOx control technologies including non-thermal plasma control; 2. Selection of a technology for a pilot-scale demonstration; 3. Submittal, within 180 days of the Commissioner's notification of the infeasibility of SNCR, of a plan and schedule for a pilot-scale project for the control of NOx for approval by the commissioner; 4. Implementation of a pilot-scale NOx emission reduction project for the RHF for the purposes of determining the emission rate and reduction achievable, the dollar costs per ton of NOx reduced, reduction and increases of other pollutants associated with the technology, reliability and feasibility of selected technology; 5. Submittal, within 540 days of Commissioner's notification of the infeasibility of SNCR, of a report to the commissioner of the results of the NOx emissions control study. The report shall, at a minimum, describe in detail the following: <p>(CONTINUED)</p>	Minn. R. 7007.0800, subp. 2
<p>(continued from above)</p> <ol style="list-style-type: none"> a) The system installed; b) Operating conditions of the RHF and the affects of varying these conditions; c) Operating parameters of the system and the affects of varying these parameters; d) Problems and efforts taken to address those problemsproblems and efforts taken to address those problems; e) Reliability of the system; f) Efforts taken to optimize the system; and g) Feasibility of the controls. 	Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Mesabi Nugget Delaware LLC
Permit Number: 13700318 - 003

If the commissioner determines that the alternative technology is cost effective and feasible, the Commissioner shall notify the Permittee and the Permittee shall submit an application for a permit amendment to incorporate the emission limits reflective of the control efficiency and/or emission rate achieved with the alternative technology, and the operating and monitoring conditions, as appropriate, within 180 days of the Commissioner's notification of the determination of the feasibility and cost effectiveness of the alternative technology.	Minn. R. 7007.0800, subp. 2
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TABLE A: LIMITS AND OTHER REQUIREMENTS**A-33** 01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Subject Item: EU 002 Green Ball Dryer/Material Transfer Operations**Associated Items:** CE 007 Fabric Filter - High Temperature, i.e., T>250 Degrees F

CE 009 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 010 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

GP 005 Emission Units subject to MACT

MR 011 Green Ball Dryer - Bag Alarm

SV 001 Rotary Hearth Furnace Stack Vent

What to do	Why to do it
EMISSION AND OPERATING LIMITS	hdr
Opacity: less than or equal to 10 percent opacity using 6-minute Average Compliance with this limit also fulfills the requirements of Minn. R. 7011.0610, subp. 1.A(2)	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7011.0610, subp. 1.A(2)
Front-half Particulate Matter: less than or equal to 0.010 grains/dry standard cubic foot using 3-hour Average Compliance with this limit also fulfills the requirements of Minn. R. 7011.0610, subp. 1.A(1) [Front-half particulate matter is a surrogate for the capture of metals HAPs]	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7011.0610, subp. 1.A(1)
Front-half Particulate Matter: less than or equal to 35.2 lbs/hour using 3-hour Block Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Front-half Particulate Matter: greater than or equal to 92 percent control efficiency using 3-hour Block Average .	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Particulate Matter < 10 micron: less than or equal to 0.015 grains/dry standard cubic foot using 3-hour Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Particulate Matter < 10 micron: less than or equal to 35.2 lbs/hour using 3-hour Block Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Particulate Matter < 10 micron: greater than or equal to 92 percent control efficiency using 3-hour Block Average .	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Volatile Organic Compounds: less than or equal to 19.4 lbs/hour using 3-hour Block Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Volatile Organic Compounds: less than or equal to 0.094 lbs/million Btu heat input using 3-hour Block Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 0.25 lbs/million Btu heat input using 3-hour Block Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Carbon Monoxide: less than or equal to 37.2 lbs/hour using 3-hour Block Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Carbon Monoxide: less than or equal to 60 parts per million using 3-hour Block Average at 7% oxygen	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Fuel Usage: Limited to natural gas or propane (as backup) only. Complying with this restriction also fulfills the requirements of Minn. R. 7011.0610, subp. 2.B. [Basis for BACT for sulfur dioxide.]	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7011.0610, subp. 2.B
Fuel Usage: less than or equal to 232 million cubic feet/year using 12-month Rolling Sum [This is a basis for the BACT analysis.]	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Operate with low-NOx burners only. [Basis for BACT for nitrogen oxides.]	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Operate the baghouses (CE007, CE009, and CE010) at all times the emission unit is operating to control particulate emissions.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Operate and maintain the Green Ball Dryer (EU 002), including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the emission limitations. See GP005 for additional requirements.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
MONITORING AND RECORDKEEPING REQUIREMENTS	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-34**

01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

For compliance assurance monitoring provisions, EU002 is a large emission pollutant-specific unit for PM10.	40 CFR Section 64.6 and Minn. R. 7017.0200
Conduct Visual Emissions checks once weekly.	Minn. R. 7007.0800, subp. 4
Recordkeeping: Record and maintain records of the amount of natural gas combusted on a monthly basis. These records may consist of purchase records or receipts.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4
COMPLIANCE DEMONSTRATIONS	hdr
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date to demonstrate compliance with the BACT opacity limit.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date. This test is to demonstrate initial compliance with the BACT PM limit and with the case-by-case MACT limit for metals HAPs (for which PM is a surrogate).	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7007.0800, subp. 4
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date. This test is to demonstrate initial compliance with the BACT PM10 limit.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date to measure emissions of VOCs. This test will verify permit application assumptions about VOC emissions.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date. This test is to demonstrate initial compliance with the BACT NOx limit.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date. This test is to demonstrate initial compliance with the BACT CO limit.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4
12-Month Rolling Sum calculation of Natural Gas Consumption: Calculate the 12-month rolling sum of the volume of natural gas consumed (in million cubic feet) by summing the monthly volume of natural gas consumed for the previous 12 operating months.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-35** 01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Subject Item: EU 003 Product Separator**Associated Items:** CE 008 Fabric Filter - High Temperature, i.e., T>250 Degrees F

GP 005 Emission Units subject to MACT

SV 001 Rotary Hearth Furnace Stack Vent

What to do	Why to do it
EMISSION AND OPERATING LIMITS	hdr
Front-half Particulate Matter: less than or equal to 0.010 grains/dry standard cubic foot using 3-hour Average Compliance with this limit also fulfills the requirements of Minn. R. 7011.0610, subp. 1.A(1) [Front-half particulate matter is a surrogate for the capture of metals HAPs]	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7011.0610, subp. 1.A(1)
Particulate Matter < 10 micron: less than or equal to 0.015 grains/dry standard cubic foot using 3-hour Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Opacity: less than or equal to 10 percent opacity using 6-minute Average Compliance with this limit also fulfills the requirements of Minn. R. 7011.0610, subp. 1.A(2)	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7011.0610, subp. 1.A(2)
Volatile Organic Compounds: less than or equal to 0.13 lbs/hour using 3-hour Block Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Volatile Organic Compounds: less than or equal to 0.0054 lbs/million Btu heat input using 3-hour Block Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 1.2 lbs/hour using 3-hour Block Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 0.049 lbs/million Btu heat input using 3-hour Block Average at 7% oxygen	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Carbon Monoxide: less than or equal to 2.1 lbs/hour using 3-hour Block Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Carbon Monoxide: less than or equal to 0.082 lbs/million Btu heat input using 3-hour Block Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Fuel Usage: Limited to natural gas or propane (as backup) only. Complying with this restriction also fulfills the requirements of Minn. R. 7011.0610, subp. 2.B. [Basis for BACT for sulfur dioxide.]	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7011.0610, subp. 2.B
Operate and maintain the Product Separator (EU 003), including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the emission limitations.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Operate the baghouse (CE008) at all times the emission unit is operating to control particulate emissions. Also, operate in compliance with the requirements in GP004.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
MONITORING REQUIREMENTS	hdr
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date to demonstrate initial compliance with the BACT opacity limit.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date to demonstrate initial compliance with the BACT particulate matter limit and with the case-by-case MACT limit for metals HAPs (for which PM is a surrogate).	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7007.0800, subp. 4
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date. This test is to demonstrate initial compliance with the BACT PM10 limit.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date. This test is to demonstrate initial compliance with the BACT VOC limit.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date. This test is to demonstrate initial compliance with the BACT NOx limit.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date. This test is to demonstrate initial compliance with the BACT CO limit.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4
Conduct Visual Emissions checks once weekly.	Minn. R. 7007.0800, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-36**

01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Subject Item: EU 004 Coal 1 Pulverizer**Associated Items:** CE 005 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

GP 005 Emission Units subject to MACT

MR 001 Coal 1 Pulverizer - Differential Pressure

SV 002 Pulverizer Stack Vent (CE 004, CE 005, CE 012, CE 016)

What to do	Why to do it
EMISSION AND OPERATING LIMITS	hdr
Opacity: less than or equal to 10 percent using 6-minute Average from any coal processing and conveying equipment, coal storage system, or coal transfer and loading system processing coal [Compliance with this limit indicates compliance with the opacity limits in 40 CFR Section 60.252(c); Minn. R. 7011.0610; Minn. R. 7011.1115, Subp. 2.B; Minn. R. 7011.1150]	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000
Front-half Particulate Matter: less than or equal to 0.010 grains/dry standard cubic foot using 3-hour Average Compliance with this limit also fulfills the requirements of Minn. R. 7011.0610, subp. 1.A(1) [Front-half particulate matter is also a surrogate for (particulate) metals HAPs.]	Title I Condition: 40 CFR 52.21(j); BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7011.0610, subp. 1.A(1)
Particulate Matter < 10 micron: less than or equal to 0.015 grains/dry standard cubic foot using 3-hour Average	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000
Volatile Organic Compounds: less than or equal to 0.19 lbs/hour using 3-hour Block Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Volatile Organic Compounds: less than or equal to 0.0054 lbs/million Btu heat input using 3-hour Block Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 1.8 lbs/hour using 3-hour Block Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 0.049 lbs/million Btu heat input using 3-hour Block Average at 7% oxygen	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Carbon Monoxide: less than or equal to 3.0 lbs/hour using 3-hour Block Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Carbon Monoxide: less than or equal to 0.082 lbs/million Btu heat input using 3-hour Block Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Fuel Usage: Limited to natural gas or propane (as backup) only. Complying with this restriction also fulfills the requirements of Minn. R. 7011.0610, subp. 2.B. [Basis for BACT for sulfur dioxide.]	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7011.0610, subp. 2.B.
Operate with low-NOx burners only. Complying with this restriction also fulfills the requirements of Minn. R. 7011.0610, subp. 2.B. [Basis for BACT for nitrogen oxides.]	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000
Operate and maintain the Coal 1 Pulverizer (EU 004), including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the emission limitations.	Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. Rules 7007.3010
Operate the baghouse (CE005) at all times the emission unit is operating to control particulate emissions. Also, operate in compliance with the requirements in GP004.	Title I Condition: 40 CFR 52.21(j); BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
OPERATIONAL & CONTROL REQUIREMENTS	hdr
Install thermal dryers in a manner that performance tests for particulate matter can be run in accordance with applicable procedures and methods.	Minn. R. 7011.1115, Subp. 3.
VISIBLE EMISSIONS REQUIREMENTS	hdr
Check for visible emissions (during daylight hours) from the control equipment (CE005) once each calendar week while EU004 is in operation.	40 CFR Section 60.252(c); Minn. R. 7011.0600 - 7011.0610; Minn. R. 7007.0800, subp. 4
Corrective Actions: If visible emissions (VEs) are observed, determine the cause and take corrective actions as soon as possible to eliminate the VEs. Corrective action may be in the form of discontinuing venting emissions to the atmosphere through CE005.	Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-37** 01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Recordkeeping: Record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5
MONITORING REQUIREMENTS	hdr
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date to demonstrate compliance with the BACT opacity limit.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date to demonstrate initial compliance with the BACT particulate matter limit and with the case-by-case MACT limit for metals HAPs (for which PM is a surrogate).	Title I Condition: 40 CFR 52.21(j); BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7007.0800, subp. 4
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date. This test is to demonstrate initial compliance with the BACT PM10 limit.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date. This test is to demonstrate initial compliance with the BACT VOC limit.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date. This test is to demonstrate initial compliance with the BACT NOx limit.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date. This test is to demonstrate initial compliance with the BACT CO limit.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4
Prior to startup, install and operate a monitoring device for the measurement of the temperature of the gas stream at the exit of the thermal dryer on a continuous basis. The monitoring device shall be certified by the manufacturer to be accurate within three degrees Fahrenheit.	Minn. R. 7011.1115, Subp. 4.A.
Recalibrate each device required by Minn. R. 7011.1115 annually in accordance with the manufacturer's written requirements for checking the operation and calibration of the device.	Minn. R. 7011.1115, Subp. 4.C.
RECORDKEEPING	hdr
QA Plan: Develop and implement a written quality assurance plan that covers the pressure drop CMS. The plan shall be on site and available for inspection within 30 days after monitor certification. The plan shall contain all of the information required by 40 CFR Section 63.8(d).	Title I Condition: 40 CFR 52.21(j): BACT; 40 CFR Section 63.8(d)(2); Minn. R. 7017.1170, subp. 2
Recordkeeping: The owner or operator must retain records of all pressure drop CMS monitoring data and support information for a period of five years from the date of the monitoring, sample, measurement, or report. Records shall be kept at the source.	Title I Condition: 40 CFR 52.21(j): BACT; 40 CFR Section 63.10(b); Minn. R. 7017.1130

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-38** 01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Subject Item: EU 005 Coal 2 Pulverizer**Associated Items:** CE 006 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

GP 005 Emission Units subject to MACT

MR 002 Coal 2 Pulverizer - Differential Pressure

SV 007 Material Transfer Operations Stack Vent

What to do	Why to do it
EMISSION AND OPERATING LIMITS	hdr
Opacity: less than or equal to 10 percent using 6-minute Average from any coal processing and conveying equipment, coal storage system, or coal transfer and loading system processing coal [Compliance with this limit indicates compliance with the opacity limits in 40 CFR Section 60.252(c); Minn. R. 7011.0610; Minn. R. 7011.1115, Subp. 2.B; Minn. R. 7011.1150]	Title I Condition: 40 CFR 52.21(j); BACT and Minn. R. 7007.3000;
Front-half Particulate Matter: less than or equal to 0.010 grains/dry standard cubic foot using 3-hour Average Compliance with this limit also fulfills the requirements of Minn. R. 7011.0610, subp. 1.A(1) [Front-half particulate matter is also a surrogate for (particulate) metals HAPs.]	Title I Condition: 40 CFR 52.21(j); BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g); MACT and Minn. R. 7007.3010; Minn. R. 7011.0610, subp. 1.A(1)
Particulate Matter < 10 micron: less than or equal to 0.015 grains/dry standard cubic foot using 3-hour Average	Title I Condition: 40 CFR Section 52.21(j); BACT and Minn. R. 7007.3000
Volatile Organic Compounds: less than or equal to 0.05 lbs/hour using 3-hour Block Average	Title I Condition: 40 CFR 52.21(j); BACT and Minn. R. 7007.3000
Volatile Organic Compounds: less than or equal to 0.0054 lbs/million Btu heat input using 3-hour Block Average	Title I Condition: 40 CFR 52.21(j); BACT and Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 0.45 lbs/hour using 3-hour Block Average	Title I Condition: 40 CFR 52.21(j); BACT and Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 0.049 lbs/million Btu heat input using 3-hour Block Average at 7% oxygen	Title I Condition: 40 CFR 52.21(j); BACT and Minn. R. 7007.3000
Carbon Monoxide: less than or equal to 0.76 lbs/hour using 3-hour Block Average	Title I Condition: 40 CFR 52.21(j); BACT and Minn. R. 7007.3000
Carbon Monoxide: less than or equal to 0.082 lbs/million Btu heat input using 3-hour Block Average	Title I Condition: 40 CFR 52.21(j); BACT and Minn. R. 7007.3000
Fuel Usage: Limited to natural gas or propane (as backup) only. Complying with this restriction also fulfills the requirements of Minn. R. 7011.0610, subp. 2.B. [Basis for BACT for sulfur dioxides.]	Title I Condition: 40 CFR 52.21(j); BACT and Minn. R. 7007.3000; Minn. R. 7011.0610, subp. 2.B.
Operate with low-NOx burners only. [Basis for BACT for nitrogen oxides.]	Title I Condition: 40 CFR 52.21(j); BACT and Minn. R. 7007.3000
Operate and maintain the Coal 2 Pulverizer (EU 005), including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the emission limitations.	Title I Condition: 40 CFR 52.21(j); BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g); MACT and Minn. R. 7007.3010
Operate the baghouse (CE006) at all times the emission unit is operating to control particulate emissions. Also, operate in compliance with the requirements in GP004.	Title I Condition: 40 CFR 52.21(j); BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g); MACT and Minn. R. 7007.3010
OPERATIONAL & CONTROL REQUIREMENTS	hdr
Install thermal dryers in a manner that performance tests for particulate matter can be run in accordance with applicable procedures and methods.	Minn. R. 7011.1115, Subp. 3.
VISIBLE EMISSIONS REQUIREMENTS	hdr
Check for visible emissions (during daylight hours) from the control equipment (CE006) once each calendar week while EU005 is in operation.	40 CFR Section 60.252(c); Minn. R. 7011.0600 - 7011.0610; Minn. R. 7007.0800, subp. 4
Corrective Actions: If visible emissions (VEs) are observed, determine the cause and take corrective actions as soon as possible to eliminate the VEs. Corrective action may be in the form of discontinuing venting emissions to the atmosphere through CE006.	Minn. R. 7007.0800, subp. 2
Recordkeeping: Record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-39**

01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

MONITORING REQUIREMENTS	hdr
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date to demonstrate compliance with the BACT opacity limit.	Title I Condition: 40 CFR 52.21(j); BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date to demonstrate initial compliance with the BACT particulate matter limit and with the case-by-case MACT limit for metals HAPs (for which PM is a surrogate).	Title I Condition: 40 CFR 52.21(j); BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g); MACT and Minn. R. 7007.3010; Minn. R. 7007.0800, subp. 4
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date. This test is to demonstrate initial compliance with the BACT PM10 limit.	Title I Condition: 40 CFR 52.21(j); BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date. This test is to demonstrate initial compliance with the BACT VOC limit.	Title I Condition: 40 CFR 52.21(j); BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date. This test is to demonstrate initial compliance with the BACT NOx limit.	Title I Condition: 40 CFR 52.21(j); BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date. This test is to demonstrate initial compliance with the BACT CO limit.	Title I Condition: 40 CFR 52.21(j); BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4
Prior to startup, install and operate a monitoring device for the measurement of the temperature of the gas stream at the exit of the thermal dryer on a continuous basis. The monitoring device shall be certified by the manufacturer to be accurate within three degrees Fahrenheit.	Minn. R. 7011.1115, Subp. 4.A.
Recalibrate each device required by Minn. R. 7011.1115 annually in accordance with the manufacturer's written requirements for checking the operation and calibration of the device.	Minn. R. 7011.1115, Subp. 4.C.
RECORDKEEPING	hdr
QA Plan: Develop and implement a written quality assurance plan that covers the pressure drop CMS. The plan shall be on site and available for inspection within 30 days after monitor certification. The plan shall contain all of the information required by 40 CFR Section 63.8(d).	Title I Condition: 40 CFR 52.21(j); BACT; 40 CFR Section 63.8(d)(2); Minn. R. 7017.1170, subp. 2
Recordkeeping: The owner or operator must retain records of all pressure drop CMS monitoring data and support information for a period of five years from the date of the monitoring, sample, measurement, or report. Records shall be kept at the source.	Title I Condition: 40 CFR 52.21(j); BACT; 40 CFR Section 63.10(b); Minn. R. 7017.1130

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-40** 01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Subject Item: EU 006 Flux 1 Pulverizer**Associated Items:** CE 004 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

GP 005 Emission Units subject to MACT

MR 012 Flux 1 Pulverizer - Differential Pressure

SV 002 Pulverizer Stack Vent (CE 004, CE 005, CE 012, CE 016)

What to do	Why to do it
EMISSION AND OPERATING LIMITS	hdr
Opacity: less than or equal to 10 percent opacity using 6-minute Average Compliance with this limit also fulfills the requirements of Minn. R. 7011.0610, subp. 1.A(2)	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7011.0610, subp. 1.A(2)
Front-half Particulate Matter: less than or equal to 0.010 grains/dry standard cubic foot using 3-hour Average Compliance with this limit also fulfills the requirements of Minn. R. 7011.0610, subp. 1.A(1) [Front-half particulate matter is a surrogate for the capture of metals HAPs]	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7011.0610, subp. 1.A(1)
Particulate Matter < 10 micron: less than or equal to 0.015 grains/dry standard cubic foot using 3-hour Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Volatile Organic Compounds: less than or equal to 0.08 lbs/hour using 3-hour Block Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Volatile Organic Compounds: less than or equal to 0.0054 lbs/million Btu heat input using 3-hour Block Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 0.71 lbs/hour using 3-hour Block Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 0.049 lbs/million Btu heat input using 3-hour Block Average at 7% oxygen	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Carbon Monoxide: less than or equal to 1.2 lbs/hour using 3-hour Block Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Carbon Monoxide: less than or equal to 0.082 lbs/million Btu heat input using 3-hour Block Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Fuel Usage: Limited to natural gas or propane (as backup) only. Complying with this restriction also fulfills the requirements of Minn. R. 7011.0610, subp. 2.B. [Basis for BACT for sulfur dioxide.]	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7011.0610, subp. 2.B
Operate and maintain the Flux 1 Pulverizer (EU006), including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the emission limitations.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Operate the baghouse (CE004) at all times the emission unit is operating to control particulate emissions. Also, operate in compliance with the requirements in GP004.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
VISIBLE EMISSIONS REQUIREMENTS	hdr
Check for visible emissions (during daylight hours) from the control equipment (CE004) once each calendar week while EU006 is in operation.	Minn. R. 7007.0800, subp. 4
Corrective Actions: If visible emissions (VEs) are observed, determine the cause and take corrective actions as soon as possible to eliminate the VEs. Corrective action may be in the form of discontinuing venting emissions to the atmosphere through CE004.	Minn. R. 7007.0800, subp. 2
Recordkeeping: Record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5
MONITORING REQUIREMENTS	hdr
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date to demonstrate compliance with the BACT opacity limit.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date to demonstrate initial compliance with the BACT particulate matter limit and with the case-by-case MACT limit for metals HAPs (for which PM is a surrogate).	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7007.0800, subp. 4
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date. This test is to demonstrate initial compliance with the BACT PM10 limit.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-41**

01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date. This test is to demonstrate initial compliance with the BACT VOC limit.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date. This test is to demonstrate initial compliance with the BACT NOx limit.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date. This test is to demonstrate initial compliance with the BACT CO limit.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-42**

01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Subject Item: EU 007 Coal Flux/Unload Baghouse**Associated Items:** CE 003 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

GP 005 Emission Units subject to MACT

MR 013 Coal Flux/Unload - Differential Pressure

SV 003 Coal/Flux Unloading Stack Vent

What to do	Why to do it
EMISSION AND OPERATING LIMITS	hdr
Front-half Particulate Matter: less than or equal to 0.005 grains/dry standard cubic foot using 3-hour Rolling Average for rail unloading and conveyor systems	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Particulate Matter < 10 micron: less than or equal to 0.005 grains/dry standard cubic foot using 3-hour Block Average	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000
Opacity: less than or equal to 10 percent opacity using 6-minute Average [This condition fulfills the opacity-related requirements of Minn. R. 7011.1105.H.]	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Coal unloading stations. Control fugitive particulate emissions from the unloading of trucks, haulers, and railcars by dust suppression methods so that emissions from such sources are minimized.	Minn. R. 7011.1105.B
Unload railcars only within a permanent building or structure.	Minn. R. 7011.1105.H
Operate and maintain the Coal Flux/Unload Baghouse operations (EU007), including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the emission limitations.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Operate the fabric filter (CE003) at all times the emission unit is operating to control particulate emissions. Also, operate in compliance with the requirements in GP004.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
VISIBLE EMISSION REQUIREMENTS	hdr
Check for visible emissions (during daylight hours) from the control equipment (CE003) once each calendar week, while EU 007 is in operation.	Minn. R. 7007.0800, subp. 4
Corrective Actions: If visible emissions (VEs) are observed, determine the cause and take corrective actions as soon as possible to eliminate the VEs. Corrective action may be in the form of discontinuing venting emissions to the atmosphere through CE003.	Minn. R. 7007.0800, subp. 2
Recordkeeping: Record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5
MONITORING REQUIREMENTS	hdr
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date to demonstrate initial compliance with the BACT opacity limit.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date to demonstrate initial compliance with the BACT particulate matter limit and with the case-by-case MACT limit for metals HAPs (for which PM is a surrogate).	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7007.0800, subp. 4
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date to demonstrate compliance with the BACT PM10 limit.	Title I Condition: 40 CFR Section 52.21(j): BACT; Minn. R. 7007.3000

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-43

01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Subject Item: EU 008 Rail Loadout Baghouse/Material Transfer Operations**Associated Items:** CE 014 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 015 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

GP 005 Emission Units subject to MACT

MR 014 Rail Loadout - Differential Pressure

SV 004 Railcar Loadout Stack Vent

What to do	Why to do it
EMISSION & OPERATING LIMITS	hdr
Front-half Particulate Matter: less than or equal to 0.005 grains/dry standard cubic foot using 3-hour Average [Front-half Particulate Matter is also a surrogate for the control of metal HAPs.]	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Particulate Matter < 10 micron: less than or equal to 0.005 grains/dry standard cubic foot using 3-hour Block Average	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000
Opacity: less than or equal to 10 percent using 6-minute Average . If opacity exceeds 10 percent, then action must be taken to control exhaust gases so that particulate matter emissions do not exceed 0.020 gr/dscf.. [Compliance with this condition fulfills the requirements of 40 CFR Section 60.252(c) and Minn. R. 7011.1105 (G)]	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; 40 CFR Section 60.252(c); Minn. R. 7011.1105 (G)
Do not build, erect, install, or use any article, machine, equipment, or process, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard.	40 CFR Section 60.12
Operate and maintain the Rail Loadout Baghouse/Material Transfer Operations (EU008), including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the emission limitations.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Operate the baghouses (CE014 and CE015) at all times the emission unit is operating to control particulate emissions. Also, operate in compliance with the requirements in GP004.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
NOTIFICATION REQUIREMENTS	hdr
Notification of Anticipated Date for Conducting Opacity Observations: due 30 days prior to observation date.	40 CFR Section 60.7(a)(4); Minn. R. 7019.0100, subp. 1
Notification of any physical change or operational change which increases emissions rate: due 60 days (or as soon as practicable) before the change is commenced. Within 180 days of completion of any physical or operational change subject to the control measures specified in 40 CFR Section 60.14(a), compliance with all applicable standards must be achieved.	40 CFR Section 60.7(a)(4); Minn. R. 7019.0100, subp. 1
VISIBLE EMISSION REQUIREMENTS	hdr
Check for visible emissions (during daylight hours) from the control equipment (CE014 and CE015) once each calendar week, while EU 008 is in operation.	Minn. R. 7007.0800, subp. 4
Corrective Actions: If visible emissions (VEs) are observed, determine the cause and take corrective actions as soon as possible to eliminate the VEs. Corrective action may be in the form of discontinuing venting emissions to the atmosphere through CE014 or CE015.	Minn. R. 7007.0800, subp. 2
Recordkeeping: Record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5
TESTING REQUIREMENTS	hdr
Initial Performance Test: due 60 days after achieving maximum capacity but not more than 180 days after initial startup of the rail loadout to measure opacity.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; 40 CFR Section 60.8
Initial Performance Test: due 60 days after achieving maximum capacity but not more than 180 days after initial startup. This test is to demonstrate initial compliance with the NSPS particulate matter limit, the BACT particulate matter limit and with the case-by-case MACT limit for metals HAPs (for which PM is a surrogate).	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 60.8; 40 CFR Section 63.7(a)(2), (e); Minn. R. 7017.2020, subp. 1; Minn. R. 7017.2030, subp. 4
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date to demonstrate compliance with the BACT PM10 limit.	Title I Condition: 40 CFR Section 52.21(j): BACT; Minn. R. 7007.3000
RECORDKEEPING REQUIREMENTS	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-44**

01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the facility including any malfunction of the air pollution control equipment, or any periods during which a continuous monitoring system or monitoring device is inoperable.	40 CFR Section 60.7(b); Minn. R. 7019.0100, subp. 1
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TABLE A: LIMITS AND OTHER REQUIREMENTS**A-45**

01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Subject Item: EU 009 RHF Roof Monitor/Heat Control**Associated Items:** SV 005 RHF Roof Monitor Stack Vent

What to do	Why to do it
EMISSION LIMITS AND OPERATING REQUIREMENTS	hdr
Opacity: less than or equal to 20 percent opacity	Minn. R. 7007.0800, subp. 2
VISIBLE EMISSIONS REQUIREMENTS	hdr
Check for visible emissions (during daylight hours) from the RHF roof monitor once each calendar week while the RHF is in operation.	Minn. R. 7007.0800, subp. 4
Corrective Actions: If visible emissions (VEs) are observed, determine the cause and take corrective actions as soon as possible to eliminate the VEs. Corrective action may be in the form of discontinuing venting emissions to the atmosphere through SV 005.	Minn. R. 7007.0800, subp. 2
Recordkeeping: Record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-46**

01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Subject Item: EU 010 Material Transfer Operations

Associated Items: CE 011 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 CE 012 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 CE 013 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 GP 005 Emission Units subject to MACT
 SV 002 Pulverizer Stack Vent (CE 004, CE 005, CE 012, CE 016)
 SV 007 Material Transfer Operations Stack Vent

What to do	Why to do it
EMISSION AND OPERATING LIMITS	hdr
Front-half Particulate Matter: less than or equal to 0.005 grains/dry standard cubic foot using 3-hour Average [Front-half Particulate Matter is also a surrogate for the control of metal HAPs.]	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Particulate Matter < 10 micron: less than or equal to 0.005 grains/dry standard cubic foot using 3-hour Block Average	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000
Opacity: less than or equal to 10 percent opacity using 6-minute Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Operate and maintain the Material Transfer Operations (EU 010), including air pollution capture, control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the emission limitations.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Operate the baghouses (CE011, CE012, and CE013) at all times the emission unit is operating to control particulate emissions. Also, operate in compliance with the requirements in GP004.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
VISIBLE EMISSIONS REQUIREMENTS	hdr
Check for visible emissions (during daylight hours) from the control equipment (CE011, CE012, and CE013) once each calendar week while EU010 is in operation.	Minn. R. 7007.0800, subp. 4
Corrective Actions: If visible emissions (VEs) are observed, determine the cause and take corrective actions as soon as possible to eliminate the VEs. Corrective action may be in the form of discontinuing venting emissions to the atmosphere through CE011, CE012, or CE013.	Minn. R. 7007.0800, subp. 2
Recordkeeping: Record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5
MONITORING REQUIREMENTS	hdr
Initial Hood Certification and Evaluation: The control device hood shall conform to the requirements listed in Minn. R. 7011.0070, subp. 1, and the Permittee shall certify this as specified in Minn. R. 7011.0070, subps. 1 and 3. The Permittee shall maintain a copy of the evaluation and certification on site.	Minn. R. 7011.0070, subps. 1 & 3
Annual Hood Evaluation: The Permittee shall measure and record at least once every 12 months the fan rotation speed, fan power draw, or face velocity of each hood, or other comparable air flow indication method as required by Minn. R. 7011.0080. The Permittee shall maintain a copy of the annual evaluation on site.	Minn. R. 7011.0080
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date to demonstrate initial compliance with the BACT opacity limit.	Title I Condition: 40 CFR Section 52.21(j): BACT; Minn. R. 7007.3000
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date to demonstrate initial compliance with the BACT particulate matter limit and with the case-by-case MACT limit for metals HAPs (for which PM is a surrogate).	Title I Condition: 40 CFR Section 52.21(j): BACT; Minn. R. 7007.3000
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date to demonstrate compliance with the BACT PM10 limit.	Title I Condition: 40 CFR Section 52.21(j): BACT; Minn. R. 7007.3000

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-47 01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Subject Item: EU 011 Back-up Generator 3**Associated Items:** GP 005 Emission Units subject to MACT

SV 006 Back-up Generator 3 Stack Vent

What to do	Why to do it
EMISSION & OPERATING LIMITS	hdr
Operating Hours: less than or equal to 100 hours/year using 12-month Rolling Sum to be calculated by the 15th day of each month for the previous 12-month period as described later in this permit.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000
Visible Emissions: less than or equal to 20 percent once operating temperatures have been obtained	Minn. R. 7011.2300, subp. 1
Fuel type: No. 2 fuel oil only by design. [Basis for BACT analysis.]	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Sulfur Content of Fuel: less than or equal to 0.05 percent by weight [Basis for BACT analysis for PM, PM10, and SO2.]	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7011.2300, Subp. 2
Operating Hours: less than or equal to 100 hours/year based on a 12-month rolling sum to be calculated by the 15th day of each month. [Basis for BACT analysis for PM, PM10, SO2, CO, VOCs, and NOx.]	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Install, calibrate, and maintain an hour clock.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
MONITORING AND RECORDKEEPING REQUIREMENTS	hdr
Fuel Supplier Certification: The Permittee shall obtain and maintain a fuel supplier certification for each shipment of No. 2 fuel oil, certifying that the sulfur content does not exceed 0.05 percent by weight.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Hours of Operation: The Permittee shall maintain documentation on site that the unit is an emergency diesel generator by design that qualifies under the U.S. EPA memorandum entitled "Calculating Potential to Emit (PTE) for Emergency Generators" dated September 6, 1995, limiting operation to 500 hours per year. [In this case, operation is limited to 100 hours per year.]	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Monthly Recordkeeping -- Hours of operation. By the 15th of the month, the Permittee shall calculate and record the following: 1) The hours of operation for back-up generator (EU011) during the previous month as recorded by the hour clock.. 2) The 12 month rolling sum hours of operation for the previous 12 month period by summing the monthly hours of operation data for the previous 12 months.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
RECIPROCATING INTERNAL COMBUSTION ENGINE (RICE) MACT NOTIFICATION REQUIREMENTS	hdr
Submit: due 120 days after Initial Startup of the RICE an Initial Notification required by 40 CFR 63 Subpart ZZZZ.	40 CFR Section 63.6645(c)
The Initial Notification should include the information in 40 CFR Section 63.9(b)(2)(i) through (v), a statement that the stationary RICE has no additional requirements, and an explanation of the basis of the exclusion.	40 CFR Section 63.9(b)(2)(i)-(v); 40 CFR Section 63.6645(d)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-48**

01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Subject Item: EU 012 Flux 2 Pulverizer**Associated Items:** CE 016 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

GP 005 Emission Units subject to MACT

SV 002 Pulverizer Stack Vent (CE 004, CE 005, CE 012, CE 016)

What to do	Why to do it
EMISSION AND OPERATING LIMITS	hdr
Opacity: less than or equal to 10 percent opacity using 6-minute Average Compliance with this limit also fulfills the requirements of Minn. R. 7011.0610, subp. 1.A(2)	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7011.0610, subp. 1.A(2)
Front-half Particulate Matter: less than or equal to 0.010 grains/dry standard cubic foot using 3-hour Average Compliance with this limit also fulfills the requirements of Minn. R. 7011.0610, subp. 1.A(1) [Front-half particulate matter is a surrogate for the capture of metals HAPs]	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7011.0610, subp. 1.A(1)
Particulate Matter < 10 micron: less than or equal to 0.015 grains/dry standard cubic foot using 3-hour Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Volatile Organic Compounds: less than or equal to 0.08 lbs/hour using 3-hour Block Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Volatile Organic Compounds: less than or equal to 0.0054 lbs/million Btu heat input using 3-hour Block Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 0.71 lbs/hour using 3-hour Block Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 0.049 lbs/million Btu heat input using 3-hour Block Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Carbon Monoxide: less than or equal to 1.2 lbs/hour using 3-hour Block Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Carbon Monoxide: less than or equal to 0.082 lbs/million Btu heat input using 3-hour Block Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Fuel Usage: Limited to natural gas or propane (as backup) only. Complying with this restriction also fulfills the requirements of Minn. R. 7011.0610, subp. 2.B. [Basis for BACT for sulfur dioxide.]	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7011.0610, subp. 2.B
Operate and maintain the Flux 1 Pulverizer (EU006), including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the emission limitations.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Operate the baghouse (CE004) at all times the emission unit is operating to control particulate emissions. Also, operate in compliance with the requirements in GP004.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
VISIBLE EMISSIONS REQUIREMENTS	hdr
Check for visible emissions (during daylight hours) from the control equipment (CE016) once each calendar week while EU012 is in operation.	Minn. R. 7007.0800, subp. 4
Corrective Actions: If visible emissions (VEs) are observed, determine the cause and take corrective actions as soon as possible to eliminate the VEs. Corrective action may be in the form of discontinuing venting emissions to the atmosphere through CE016.	Minn. R. 7007.0800, subp. 2
Recordkeeping: Record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5
MONITORING REQUIREMENTS	hdr
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date to demonstrate compliance with the BACT opacity limit.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date to demonstrate initial compliance with the BACT particulate matter limit and with the case-by-case MACT limit for metals HAPs (for which PM is a surrogate).	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date. This test is to demonstrate initial compliance with the BACT PM10 limit.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date. This test is to demonstrate initial compliance with the BACT VOC limit.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Mesabi Nugget Delaware LLC
Permit Number: 13700318 - 003

Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date. This test is to demonstrate initial compliance with the BACT NOx limit.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date. This test is to demonstrate initial compliance with the BACT CO limit.	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-50**

01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Subject Item: EU 013 Product Cooler**Associated Items:** CE 001 Wet Scrubber - High Efficiency

GP 005 Emission Units subject to MACT

SV 001 Rotary Hearth Furnace Stack Vent

What to do	Why to do it
EMISSION AND OPERATING LIMITS	hdr
Opacity: less than or equal to 10 percent opacity using 6-minute Average	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000
Front-half Particulate Matter: less than or equal to 0.010 grains/dry standard cubic foot using 3-hour Average	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
[Front-half particulate matter is a surrogate for the capture of metals HAPs]	
Particulate Matter < 10 micron: less than or equal to 0.015 grains/dry standard cubic foot using 3-hour Block Average	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000
Operate and maintain the Product Cooler (EU013), including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the emission limitations.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Operate the wet scrubber (CE001) to control particulate emissions.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
VISIBLE EMISSIONS REQUIREMENTS	hdr
Check for visible emissions (during daylight hours) from the control equipment (CE001) once each calendar week while EU013 is in operation.	Minn. R. 7007.0800, subp. 4
Corrective Actions: If visible emissions (VEs) are observed, determine the cause and take corrective actions as soon as possible to eliminate the VEs.	Minn. R. 7007.0800, subp. 2
Recordkeeping: Record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5
MONITORING REQUIREMENTS	hdr
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date to demonstrate compliance with the BACT opacity limit.	Title I Condition: 40 CFR Section 52.21(j): BACT; Minn. R. 7007.3000
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date to demonstrate initial compliance with the BACT particulate matter limit and with the case-by-case MACT limit for metals HAPs (for which PM is a surrogate).	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Initial Performance Test: due 90 days after the Initial Performance Test Trigger Date to demonstrate compliance with the BACT PM10 limit.	Title I Condition: 40 CFR Section 52.21(j): BACT; Minn. R. 7007.3000

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-51** 01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Subject Item: EU 017 Emergency Generator 2**Associated Items:** SV 011 Emergency Generator Stack Vent

What to do	Why to do it
EMISSION & OPERATING LIMITS	hdr
Visible Emissions: less than or equal to 20 percent once operating temperatures have been obtained	Minn. R. 7011.2300, subp. 1
The Permittee shall comply with the emission standards in table 1 to subpart IIII for all pollutants.	40 CFR Section 60.4205(a)
Prior to October 1, 2010, diesel fuel must meet the requirements of 40 CFR Section 80.510(a) for nonroad diesel fuel as follows: Sulfur content, 500 ppm maximum; A minimum cetane index of 40 or a maximum aromatic content of 35 volume percent.	40 CFR Section 60.4207(a) 40 CFR Section 60.4207(b) Most stringent, meets limit required by Minn. R. 7011.2300
On and after October 1, 2010, diesel fuel must meet the requirements of 40 CFR Section 80.510(b) for nonroad diesel fuel as follows: Sulfur content, 15 ppm maximum; A minimum cetane index of 40 or a maximum aromatic content of 35 volume percent.	40 CFR Section 60.4207(a) 40 CFR Section 60.4207(b) Most stringent, meets limit required by Minn. R. 7011.2300
Annual operation for maintenance and readiness testing is limited to 100 hrs/yr.	40 CFR Section 60.4211(e)
MONITORING REQUIREMENTS	hdr
Fuel Supplier Certification: The Permittee shall obtain and maintain a fuel supplier certification for each shipment of distillate fuel oil, certifying that the sulfur content meets the requirements above.	Minn. R. 7007.0800, subps. 4 & 5
The engine must be equipped with a nonresettable hours-of-operation meter.	40 CFR Section 60.4209(a)
The Permittee shall keep the records or perform the tests specified in one of the methods in 40 CFR Section 60.4211.	40 CFR Section 60.4211(b)
RECORDKEEPING REQUIREMENTS	hdr
Daily Recordkeeping -- Hours of Operation. The Permittee shall record each day of operation, the number of hours of operation.	Minn. R. 7007.0800, subp. 4 & 5
Monthly Recordkeeping -- Hours of operation. By the 15th of the month, the Permittee shall calculate and record the following: 1) The hours of operation for back-up generator (EU017) during the previous month as recorded by the hour clock. 2) The 12 month rolling sum hours of operation for the previous 12 month period by summing the monthly hours of operation data for the previous 12 months.	40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
RECIPROCATING INTERNAL COMBUSTION ENGINE (RICE) NOTIFICATION REQUIREMENTS	hdr
Submit: due 120 days after Initial Startup of the RICE an Initial Notification required by 40 CFR 63 Subpart ZZZZ.	40 CFR Section 63.6645(c)
The Initial Notification should include the information in 40 CFR Section 63.9(b)(2)(i) through (v), a statement that the stationary RICE has no additional requirements, and an explanation of the basis of the exclusion.	40 CFR Section 63.9(b)(2)(i)-(v); 40 CFR Section 63.6645(d)
Hours of Operation: The Permittee shall maintain documentation on site that the unit is an emergency diesel generator by design that qualifies under the U.S. EPA memorandum entitled "Calculating Potential to Emit (PTE) for Emergency Generators" dated September 6, 1995, limiting hours of operation to 500 hours per year.	40 CFR Section 63.43(g): MACT and Minn. R. 7007.0310

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-52**

01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Subject Item: EU 018 Recycled Fines Crusher**Associated Items:** CE 017 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715 subp. 1.B
Front-half Particulate Matter: less than or equal to 0.010 grains/dry standard cubic foot using a 3-hour average. This limit is more stringent than Minn. R. 7011.0715 (12.7 lb/hr).	40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7011.0715, subp. 1.A
PM < 10 micron: less than or equal to 0.010 grains/dry standard cubic foot using 3-hour average.	Minn. R. ch. 7009
Operate and maintain the Recycled Fines Crusher (EU 018), including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions.	40 CFR Section 63.43 (g): MACT and Minn. R. 7007.3010
Operate the baghouse (CE 017) at all times the emission unit is operating to control particulate emissions.	40 CFR Section 63.43 (g): MACT and Minn. R. 7007.3010
VISIBLE EMISSIONS REQUIREMENTS	hdr
Check for visible emissions (during daylight hours) from the control equipment (CE 017) once each calendar week while EU 018 is in operation.	Minn. R. 7007.0800, subp. 4
Corrective Actions: If visible emissions (VEs) are observed, determine the cause and take corrective actions as soon as possible to eliminate the VEs. Corrective action may be in the form of discontinuing venting emissions to the atmosphere through CE 017.	Minn. R. 7007.0800, subp. 2
Recordkeeping: Record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-53** 01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Subject Item: CE 001 Wet Scrubber - High Efficiency**Associated Items:** EU 001 Rotary Hearth Furnace (RHF)

EU 013 Product Cooler

MR 003 RHF - SO2 Monitor

MR 006 RHF - Differential Pressure

MR 007 RHF - Scrubber Water Flow

MR 008 RHF - pH

What to do	Why to do it
CAM REQUIREMENTS	hdr
Measure the pressure drop across the wet scrubber with a differential pressure transducer.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.5 and Minn. R. 7017.0200
Measure the wet scrubber liquid flow rate using a flow meter.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.5 and Minn. R. 7017.0200
Measure the pH of the scrubber water with a pH meter. [This is an indicator of the alkalinity of the scrubber water.]	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.5 and Minn. R. 7017.0200
Monitor scrubber performance for particulate matter control by monitoring pressure drop across the wet scrubber and liquid flow rate.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.5 and Minn. R. 7017.0200
Monitor scrubber performance for fluoride control by monitoring pressure drop across the wet scrubber, liquid flow rate, and pH.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.5 and Minn. R. 7017.0200
An excursion of the pressure drop is defined as a pressure drop less than TBD inches of water at TBD offgas flow rate.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.5 and Minn. R. 7017.0200
An excursion of the liquid flow rate is defined as a scrubber liquid flow rate of less than TBD gallons per minute and greater than TBD gallons per minute for a TBD offgas flow rate.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.5 and Minn. R. 7017.0200
An excursion shall trigger an inspection, a corrective action as necessary, and a report.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.5 and Minn. R. 7017.0200
Calibrate the differential pressure transducer reading on at least an annual basis, or more frequently if required by the manufacturer's specifications. The reading shall be accurate to within (1) one inch of water gauge pressure (250 pascals); or (2) two percent of span.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.5 and Minn. R. 7017.0200
MACT LIMITATIONS	hdr
Maintain the daily average pressure drop and daily average scrubber water flow rate at or above the minimum levels established during the initial performance test for a given RHF offgas flow rate.	Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.5 and Minn. R. 7017.0200
MACT OPERATION AND MAINTENANCE REQUIREMENTS	hdr
Install, operate, and maintain a CPMS according to the requirements in this permit and monitor the daily average pressure drop, daily average scrubber water flow rate, and pH according to the applicable requirements.	Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.5 and Minn. R. 7017.0200

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-54**

01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

<p>Prepare and at all times operate according to a written operation and maintenance plan for the wet scrubber installed to meet the particulate matter emission limit for EU001. Submit the site-specific operation and maintenance plan to the Administrator on or before the start of operation. The submitted plan must explain why the chosen practices (i.e., quantified objectives) are effective in performing corrective actions. Maintain a current copy of the operation and maintenance plan onsite. It must be available for inspection upon request. Keep the plan for the life of the affected source or until the affected source is no longer subject to the requirements of this subpart. Each operation and maintenance plan must address the elements in paragraphs (1) through (3), below.</p> <p>(1) Preventative maintenance for the wet scrubber, including a preventative maintenance schedule that is consistent with the manufacturer's instructions for routine and long-term maintenance.</p> <p>(CONTINUED)</p>	<p>Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.5 and Minn. R. 7017.0200</p>
<p>(Continued from above:)</p> <p>(2) In the event you exceed an established operating limit for the scrubber, you must initiate corrective action to determine the cause of the operating limit exceedance and complete the corrective action within 10 calendar days. The corrective action procedures you take must be consistent with the installation, operation, and maintenance procedures listed in your site-specific CPMS monitoring plan.</p> <p>(3) Good combustion practices. Identify and implement a set of site-specific GCP for the RHF. These GCP should correspond to your standard operating procedures for maintaining the proper and efficient combustion within the furnace.</p>	<p>Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.5 and Minn. R. 7017.0200</p>
<p>MACT ESTABLISHING AND DEMONSTRATING INITIAL COMPLIANCE WITH THE OPERATING LIMITS</p>	<p>hdr</p>
<p>Establish site-specific operating limits according to the procedures in paragraphs (1) and (2).</p> <p>(1) Using the required CPMS, measure and record the pressure drop and scrubber water flow rate every 15 minutes during each run of the particulate matter performance test.</p> <p>(2) Calculate and record the average pressure drop and scrubber water flow rate for each individual test run. Your operating limits are established as the lowest average pressure drop and the lowest average scrubber water flow rate corresponding to any of the three test runs.</p> <p>You may change the operating limits for any air pollution control device as long as you meet the requirements in paragraphs (1) through (3), below.</p> <p>(1) Submit a written notification to the Administrator of your request to conduct a new performance test to revise the operating limit.</p> <p>(2) Conduct a performance test to demonstrate compliance with the applicable PM emission limitation.</p> <p>(CONTINUED)</p>	<p>Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.5 and Minn. R. 7017.0200</p>
<p>(Continued from above)</p> <p>(3) Establish revised operating limits according to the applicable procedures to establish site-specific operating limits, above.</p>	<p>Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 64.5 and Minn. R. 7017.0200</p>
<p>MACT INSTALLATION, OPERATION, AND MAINTENANCE REQUIREMENTS FOR THE MONITORING EQUIPMENT</p>	<p>hdr</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-55**

01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

<p>Develop and make available for inspection upon request by the permitting authority a site-specific monitoring plan that addresses the requirements in paragraphs (1) through (7).</p> <p>(1) Installation of the CPMS sampling probe or other interface at a measurement location relative to each affected emission unit such that the measurement is representative of control of the exhaust emissions (e.g., on or downstream of the last control device).</p> <p>(2) Performance and equipment specifications for the sample interface, the parametric signal analyzer, and the data collection and reduction system.</p> <p>(3) Performance evaluation procedures and acceptance criteria (e.g., calibrations).</p> <p>(4) Ongoing operation and maintenance procedures in accordance with the general requirements of 63.8(c)(1), (3), (4)(ii), (7), and (8).</p> <p>(5) Ongoing data quality assurance procedures in accordance with the general requirements of 63.8(d).</p> <p>(CONTINUED)</p>	<p>Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7007.3010; 40 CFR Section 63.8(c)(1), (3), (4)(ii), (7), and (8); 40 CFR Section 64.5 and Minn. R. 7017.0200</p>
<p>(continued from above)</p> <p>(6) Ongoing recordkeeping and reporting procedures in accordance with the general requirements of 63.10(c), (e)(1), and (e)(2)(i).</p> <p>(7) Corrective action procedures that you will follow in the event an air pollution control device exceeds an established operating limit as required for this emission unit (EU001).</p>	<p>Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7007.3010; 40 CFR Section 63.10(c), (e)(1), and (e)(2)(i); 40 CFR Section 64.5 and Minn. R. 7017.0200</p>
<p>(1) Each CPMS must complete a minimum of one cycle of operation for each successive 15-minute period and must have valid data for at least 95 percent of every daily averaging period.</p> <p>(2) Each CPMS must determine and record the daily average of all recorded readings.</p>	<p>Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7007.3010; 40 CFR Section 64.5 and Minn. R. 7017.0200</p>
<p>Conduct a performance evaluation of each CPMS in accordance with your site-specific monitoring plan. Operate and maintain the CPMS in continuous operation according to the site-specific monitoring plan.</p>	<p>Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7007.3010; 40 CFR Section 64.5 and Minn. R. 7017.0200</p>
<p>DEMONSTRATING CONTINUOUS COMPLIANCE - MONITORING AND COLLECTING DATA</p>	<p>hdr</p>
<p>(a) Except for monitoring malfunctions, associated repairs, and required quality assurance or control activities (including as applicable, calibration checks and required zero and span adjustments), monitor continuously (or collect data at all required intervals) at all times an affected source is operating.</p> <p>(b) Do not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels, or to fulfill a minimum data availability requirement. Use all the data collected during all other periods in assessing compliance.</p> <p>(c) A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not considered malfunctions.</p>	<p>Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7007.3010; 40 CFR Section 64.5 and Minn. R. 7017.0200</p>
<p>DEMONSTRATING CONTINUOUS COMPLIANCE WITH EMISSION LIMITATIONS</p>	<p>hdr</p>
<p>The mean concentration of particulate matter for the RHF must be maintained at or below the particulate emission limit. Demonstrate continuous compliance by completing the requirements of paragraphs (1) through (4) of this section.</p> <p>(1) Maintain the daily average pressure drop and daily average scrubber water flow rate at or above the minimum levels established during the initial or subsequent performance test.</p> <p>(2) Operate and maintain each wet scrubber CPMS and record all information needed to document conformance with these requirements.</p> <p>(3) Collect and reduce monitoring data for pressure drop and scrubber water flow rate and record all information needed to document conformance with these requirements.</p> <p>(CONTINUED)</p>	<p>Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7007.3010; 40 CFR Section 64.5 and Minn. R. 7017.0200</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-56**

01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

<p>(Continued from above)</p> <p>(4) If the daily average pressure drop or daily average scrubber water flow rate is below the operating limits established for a corresponding emission unit or group of similar emission units, then follow the corrective action procedures in the following paragraph.</p>	<p>Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7007.3010; 40 CFR Section 64.5 and Minn. R 7017.0200</p>
<p>If the daily average operating parameter value for an emission unit or group of similar emission units does not meet the corresponding established operating limit, follow the procedures in paragraphs (1) through (4) of this section.</p> <p>(1) Initiate and complete the initial corrective action within 10 calendar days and demonstrate that the initial corrective action was successful. During any period of corrective action, continue to monitor and record all required operating parameters for equipment that remains in operation. After 10 calendar days, measure and record the daily average operating parameter value for the emission unit or group of similar emission units on which corrective action was taken. After the initial corrective action, if the daily average operating parameter value for the emission unit or group of similar emission units meets the operating limit established for the corresponding unit or group, then the corrective action was successful and</p> <p>(CONTINUED)</p>	<p>Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7007.3010; 40 CFR Section 64.5 and Minn. R 7017.0200</p>
<p>(continued from above)</p> <p>the emission unit or group of similar emission units is in compliance with the established operating limits.</p> <p>(2) If the initial corrective action required in paragraph (1) (immediately preceding) was not successful, then complete an additional corrective action within 10 calendar days and demonstrate that the subsequent corrective action was successful. During any period of corrective action, continue to monitor and record all required operating parameters for equipment that remains in operation. After the second set of 10 calendar days allowed to implement corrective action, measure and record the daily average operating parameter value for the emission unit or group of similar emission units again. If the daily average operating parameter value for the emission unit or group of similar emission units meets the operating limit established for the corresponding unit or group, then the corrective action was successful and the</p> <p>(CONTINUED)</p>	<p>Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7007.3010; 40 CFR Section 64.5 and Minn. R 7017.0200</p>
<p>(continued from above)</p> <p>emission unit or group of similar emission units is in compliance with the established operating limits.</p> <p>(3) If the second attempt at corrective action required in paragraph (2) (immediately preceding) was not successful, then you must repeat the procedures of paragraph (2) until the corrective action is successful. If the third attempt at corrective action is unsuccessful, you must conduct another performance test in accordance with the procedures in this permit and report to the Administrator as a deviation the third unsuccessful attempt at corrective action.</p> <p>(4) After the third unsuccessful attempt at corrective action, submit to the Administrator the written report required in paragraph (3) (immediately preceding) within 5 calendar days after the third unsuccessful attempt at corrective action. This report must notify the Administrator that a deviation has occurred and document the types of corrective measures taken to address</p> <p>(CONTINUED)</p>	<p>Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7007.3010; 40 CFR Section 64.5 and Minn. R 7017.0200</p>
<p>(continued from above)</p> <p>the problem unit that resulted in the deviation of established operating parameters and the resulting operating limits.</p>	<p>Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7007.3010; 40 CFR Section 64.5 and Minn. R 7017.0200</p>
<p>COMPLIANCE WITH OPERATING AND MAINTENANCE REQUIREMENTS</p>	<p>hdr</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-57** 01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

<p>Demonstrate continuous compliance with the operation and maintenance requirements by completing the requirements of paragraphs (1) through (3), below.</p> <p>(1) Perform preventative maintenance for each control device in accordance with this permit and record all information needed to document conformance with these requirements;</p> <p>(2) Initiate and complete the corrective action for a CPMS when an established operating limit is exceeded for the wet scrubber in accordance with this permit and record all information needed to document conformance with these requirements; and record all information needed to document conformance with these requirements.</p> <p>(3) Implement and maintain good combustion practices for the RHF in accordance with this permit and record all information needed to document conformance with these requirements.</p>	<p>Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7007.3010; 40 CFR Section 64.5 and Minn. R 7017.0200</p>
REPORTING REQUIREMENTS	hdr
<p>(a) Deviations. Report each instance in which an emission limitation was not met. This includes periods of startup, shutdown, and malfunction in accordance with the paragraph (b), below. Report each instance in which the work practice standards in this permit were not met and each instance in which the operation and maintenance requirement in this permit were not met. These instances are deviations from the emission limitations, work practice standards, and operation and maintenance requirements in this subpart. Report these deviations in accordance with the requirements in this permit.</p> <p>(CONTINUED)</p>	<p>Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; Minn. R. 7007.3010; 40 CFR Section 64.5 and Minn. R 7017.0200</p>
<p>(continued from above)</p> <p>(b) Startups, shutdowns, and malfunctions. During periods of startup, shutdown, and malfunction, operate in accordance with your startup, shutdown, and malfunction plan and the requirements in paragraphs (1) and (2), below.</p> <p>(1) Consistent with 40 CFR Section 63.6(e) and 63.7(e)(1), deviations that occur during a period of startup, shutdown, or malfunction are not violations if it is demonstrated to the Administrator's satisfaction that the emission unit and control equipment were operating in accordance with the startup, shutdown, and malfunction plan.</p> <p>(2) The Administrator will determine whether deviations that occur during a period of startup, shutdown, or malfunction are violations, according to the provisions in 40 CFR Section 63.6(e).</p> <p>[These startup, shutdown, and malfunction provisions apply only to the MACT (40 CFR 63.43(g)) limits. There is no startup, shutdown, and malfunction exception for the limits set under BACT (40 CFR 52.21).]</p>	<p>Title I Condition: 40 CFR Section 63.43(g): MACT; Minn. R. 7007.3010; 40 CFR Section 63.6(e) and 63.7(e)(1); 40 CFR Section 64.5</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-58**

01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Subject Item: CE 017 Fabric Filter - Low Temperature, i.e., T<180 Degrees F**Associated Items:** EU 018 Recycled Fines Crusher

What to do	Why to do it
EMISSIONS LIMITATIONS AND OPERATING REQUIREMENTS	hdr
This baghouse is not subject to the Compliance Assurance Monitoring requirements for large pollutant-specific emissions unit.	40 CFR Section 63.43(g): case-by-case MACT; Minn. R. 7007.3010; 40 CFR Section 64.6; Minn. R. 7017.0200
Operate and maintain the baghouses and associated monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at least to the emission limitations.	40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
For baghouses without bag leak detection systems, the continuous parameter monitoring system (CPMS) is the system that measures the differential pressure drop across the baghouse. For each required CPMS, develop and make available for inspection upon request by the permitting authority a site-specific monitoring plan that addresses the requirements in paragraphs (1) through (7), below. (1) Installation of the CPMS sampling probe or other interface at a measurement location relative to each affected emission unit such that the measurement is representative of control of the exhaust emissions (e.g., on or downstream of the last control device). (2) Performance and equipment specifications for the sample interface, the parametric signal analyzer, and the data collection and reduction system. (CONTINUED)	40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 63.8(c)(1), (3), (4)(ii), (7), and (8)
(continued from above) (3) Performance evaluation procedures and acceptance criteria (e.g., calibrations). (4) Ongoing operation and maintenance procedures in accordance with the general requirements of 40 CFR Section 63.8(c)(1), (3), (4)(ii), (7), and (8). (5) Ongoing data quality assurance procedures in accordance with the general requirements of 40 CFR Section 63.8(d). (6) Ongoing recordkeeping and reporting procedures in accordance with the general requirements of 40 CFR Section 63.10(c), (e)(1), and (e)(2)(i). (7) Corrective action procedures that you will follow in the event an air pollution control device exceeds an established operating limit.	40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 63.8(d); 40 CFR Section 63.10(c), (e)(1), and (e)(2)(i)
Unless otherwise specified, each CPMS must meet the requirements in paragraphs (1) and (2), below. (1) Each CPMS must complete a minimum of one cycle of operation for each successive 15-minute period while the associated emission unit(s) is in operation and must have valid data for at least 95 percent of every daily averaging period. (2) Each CPMS must determine and record the daily average of all recorded readings while the associated emission unit(s) was in operation.	40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Conduct a performance evaluation of each CPMS in accordance with the site-specific monitoring plan.	40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Operate and maintain the CPMS in continuous operation according to the site-specific monitoring plan.	40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
MONITORING AND COLLECTING DATA	hdr
Except for monitoring malfunctions, associated repairs, and required quality assurance or control activities (including as applicable, calibration checks and required zero and span adjustments), monitor continuously (or collect data at all required intervals) at all times an affected source is operating.	40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Do not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels, or to fulfill a minimum data availability requirement. All the data collected during all other periods must be used in assessing compliance.	40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-59**

01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not considered malfunctions.	40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Prepare and at all times operate according to a written operation and maintenance plan for CE017 (which may be the operation and maintenance plan for GP004). Submit the site-specific operation and maintenance plan to the Administrator on or before the start of operation. The plan you submit must explain why the chosen practices (i.e., quantified objectives) are effective in performing corrective actions. Maintain a current copy of the operation and maintenance plan onsite. It must be available for inspection upon request. Keep the plan for the life of the affected source or until the affected source is no longer subject to the requirements of this subpart. Each operation and maintenance plan must address the elements in paragraphs (1) and (2), below. (CONTINUED)	40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
(Continued from above) (1) Preventative maintenance for each control device, including a preventative maintenance schedule that is consistent with the manufacturer's instructions for routine and long-term maintenance. (2) In the event an established operating limit for a baghouse is exceeded, initiate corrective action to determine the cause of the operating limit exceedance and complete the corrective action within 10 calendar days. The corrective action procedures taken must be consistent with the installation, operation, and maintenance procedures listed in the facility's site-specific CPMS monitoring plan.	40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
MONITORING REQUIREMENTS	hdr
Install, calibrate, maintain, and operate a continuous parameter monitoring system (CPMS) for measuring and recording pressure drop across the control equipment by the startup date.	40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010; 40 CFR Section 63.8(c)(1),(2),(3),(4)
The Permittee shall develop and implement a CMS quality control program. As part of the quality control program, the Permittee shall develop and submit to the Commissioner for approval upon request a site-specific performance evaluation test plan for the performance evaluation required in 40 CFR 63.8 (e)(3)(i), according to the procedures specified in paragraph (e). Each quality control program shall include, at a minimum, a written protocol that describes procedures for each of the operations listed in items (1) through (6) below. (1) Initial and any subsequent calibration of the CMS; (2) Determination and adjustment of the calibration drift of the CMS; (3) Preventive maintenance of the CMS, including spare parts inventory; (4) Data recording, calculations, and reporting; (5) Accuracy audit procedures, including sampling and analysis methods; and (6) Program of corrective action for a malfunctioning CMS. (CONTINUED)	40 CFR Section 63.8(d): MACT and Minn. R. 7007.3010
(Continued from above) The Permittee shall keep these written procedures on record for the life of the affected source or until the affected source is no longer subject to the provisions of this part, to be made available for inspection, upon request, by the Commissioner. If the performance evaluation plan is revised, the Permittee shall keep previous (i.e., superseded) versions of the performance evaluation plan on record to be made available for inspection, upon request, by the Commissioner, for a period of 5 years after each revision to the plan. Where relevant, e.g., program of corrective action for a malfunctioning CMS, these written procedures may be incorporated as part of the affected source's startup, shutdown, and malfunction plan to avoid duplication of planning and recordkeeping efforts.	40 CFR Section 63.8(d): MACT and Minn. R. 7007.3010

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-60**

01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

<p>Install, operate, and maintain a pressure drop monitoring system to monitor the relative change in pressure drop according to the requirements in this permit. Conduct inspections at their specified frequencies according to the requirements in paragraphs (1) through (8), below.</p> <p>(1) Monitor the pressure drop across each baghouse cell each day to ensure pressure drop is within the normal operating range.</p> <p>(2) Confirm that dust is being removed from hoppers through weekly visual inspections or other means of ensuring the proper functioning of removal mechanisms.</p> <p>(3) Check the compressed air supply of pulse-jet baghouses each day.</p> <p>(4) Monitor cleaning cycles to ensure proper operation using an appropriate methodology.</p> <p>(5) Check bag cleaning mechanisms for proper functioning through monthly visual inspections or equivalent means.</p> <p>(CONTINUED)</p>	40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
<p>(continued from above)</p> <p>(5) Check bag cleaning mechanisms for proper functioning through monthly visual inspections or equivalent means.</p> <p>(6) Make monthly visual checks of bag tension on reverse air and shaker-type baghouses to ensure that bags are not kinked (kneed or bent) or lying on their sides. If it is a shaker-type baghouses that has self-tensioning (spring-loaded) devices, this check is not needed.</p> <p>(7) Confirm the physical integrity of the baghouse through quarterly visual inspections of the baghouse interior for air leaks.</p> <p>(8) Inspect fans for wear, material buildup, and corrosion through quarterly visual inspections, vibration detectors, or equivalent means.</p>	40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
RECORDKEEPING	hdr
<p>QA Plan: Develop and implement a written quality assurance plan that covers the pressure drop CPMS. The plan shall be on site and available for inspection within 30 days after monitor certification. The plan shall contain all of the information required by 40 CFR Section 63.8(d).</p>	40 CFR Section 63.8(d)(2); Minn. R. 7017.1170, subp. 2
<p>Recordkeeping: The owner or operator must retain records of all pressure drop CPMS monitoring data and support information for a period of five years from the date of the monitoring, sample, measurement, or report. Records shall be kept at the source.</p>	40 CFR Section 63.10(b); Minn. R. 7017.1130

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-61**

01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Subject Item: FS 009 Roads

What to do	Why to do it
EMISSION LIMITATIONS	hdr
Opacity: less than or equal to 5 percent opacity using 6-minute Average	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000
Install asphalt or concrete surfaces or chemical agents on all active truck haul roads of the coal handling facility when the coal throughput by truck is 200,000 tons per year or greater. All paved roads and areas shall be cleaned to minimize the discharge to the atmosphere of fugitive particulate emissions in accordance with the fugitive dust plan. Such cleaning shall be accomplished in a manner which minimizes resuspension of particulate matter. Access areas surrounding coal stockpiles and parking facilities which are located within a coal handling facility shall be treated with water, oils, or chemical agents.	Minn. R. 7011.1105 A(1)
VISIBLE EMISSIONS REQUIREMENTS	hdr
Check for visible emissions (during daylight hours) from the roads while in operation.	Minn. R. 7007.0800, subp. 4
Corrective Actions: If visible emissions (VEs) are observed, determine the cause and take corrective actions as soon as possible to eliminate the VEs.	Minn. R. 7007.0800, subp. 2
Recordkeeping: Record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the date the actions were taken.	Minn. R. 7007.0800, subp. 5
WORK PRACTICE STANDARDS	hdr
Prepare, and at all times operate according to, a fugitive dust emissions control plan that describes in detail the measures that will be put in place to control fugitive dust emissions from the locations listed in paragraphs (1) through (5), below. (1) Stockpiles (includes, but is not limited to, stockpiles of uncrushed coal, crushed coal, or slag); (2) Material transfer points; (3) Plant roadways; (4) Nugget loading areas; and (5) Yard areas.	Title I Condition: 40 CFR Section 52.21(j): BACT and Minn. R. 7007.3000; Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Maintain a current copy of the fugitive dust emissions control plan onsite. It must be available for inspection upon request. Keep the plan for the life of the affected source or until the affected source is no longer subject to the requirements of this subpart.	Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
For each work practice standard and operation and maintenance requirement that applies where initial compliance is not demonstrated using a performance test, demonstrate initial compliance within 30 calendar days after initial startup. Demonstrate continuous compliance with the work practice standard requirements by operating in accordance with the fugitive dust emissions control plan at all times.	Title I Condition: 40 CFR Section 63.43(g): MACT and Minn. R. 7007.3010
Clean up all coal spilled on roads or access areas as soon as practicable using methods that minimize the amount of dust suspended. Control fugitive particulate emissions by dust suppression methods on such operations so that fugitive particulate emissions are minimized. However, during freezing temperatures, owners or operators shall not be required to apply water or dust suppressants. No nonessential coal handling operations shall be conducted that are not shielded from the wind or enclosed in a building when steady wind speeds exceed 30 miles per hour as determined at the nearest official station of the United States Weather Bureau or by wind speed instruments on or adjacent to the site. This does not authorize the use of surface hardening agents, wetting or chemical agents, foam agents, and oils that may cause ground water or surface water contamination in violation of any applicable water pollution law.	Minn. R. 7011.1105.A.; Minn. R. 7011.1120; Minn. R. 7011.1125; Minn. R. 7011.1140
Hold initial notifications, all other reports, testing and compliance data for at least five years.	40 CFR Section 63.10(b); Minn. R. 7007.0800, subp. 6(A)(2)
Follow fugitive dust emissions control plan for applicable recordkeeping requirements, including weekly visibility checks.	40 CFR Section 63.6(e); 40 CFR Section 63.8(b)); Minn. R. 7007.0800, subp. 6(A)(2)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-62**

01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

<p>Paved Road Silt Load Tests:</p> <p>4 tests shall be conducted during a 12-month timeframe.</p> <p>Silt loading tests shall be conducted in accordance with EPA guidance in Appendix C.1 and Appendix C.2 of AP-42.</p> <p>Each silt load test shall include a separate test for each of 3 paved road segments in accordance with a performance test plan approved by the Commissioner. Each test result shall also include silt load values for PM10 and PM2.5.</p> <p>The 3 paved road segments that shall be tested are between the west entrance to the property at Highway 135 and West Road, the transition between the West Road and Main Road, and the transition between Main Road and Unpaved road.</p> <p>If tested silt load values are found to be greater than those assumed in the air impact modeling for PM10 or PM2.5, then the Permittee shall either remodel using the tested values, or propose changes to the road cleaning method and/or frequency to reduce the silt load values to those assumed in the modeling.</p> <p>(CONTINUED)</p>	40 CFR Section 52.21(k)
<p>(continued from above)</p> <p>The assumed silt load values are listed in the modeling documents.</p> <p>Schedule the silt load tests for each calendar quarter of 2010 with at least 60 days between tests. A scheduled test date may be changed due to weather conditions by written notice to the Commissioner. At least one of the four tests must be done in the month of January, February, or December.</p>	40 CFR Section 52.21(k)

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-63**

01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Subject Item: MR 004 RHF - NOx Monitor**Associated Items:** EU 001 Rotary Hearth Furnace (RHF)

What to do	Why to do it
MONITORING AND COLLECTING DATA	hdr
Do not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels, or to fulfill a minimum data availability requirement. All the data collected during all other periods must be used in assessing compliance.	Minn. R. 7007.0800, subp. 2
Installation Notification: submitted October 6, 2009.	Minn. R. 7017.1040, subp. 1
CEMS Installation: install CEMS such that representative measurements of emissions or process parameters from the source are obtained. In addition the CEMS shall be located according to procedures contained in the applicable performance specifications of 40 CFR pt. 60, Appendix B.	Minn. R. 7017.1040, subp. 2
When two or more emission units required to be monitored with a CEMS are not subject to the same emission limit, a separate CEMS shall be installed on each emission unit.	Minn. R. 7017.1040, subp. 3
CEMS Certification Test: due within 90 days after the due date of the first excess emissions report required for the CEMS. Follow the Performance Specifications listed in 40 CFR pt. 60, Appendix B.	Minn. R. 7017.1050, subp. 1
CEMS Certification Test Plan: due 30 days before CEMS Certification Test	Minn. R. 7017.1060, subp. 1 & 2
CEMS Certification Test Pretest Meeting: due 7 days before CEMS Certification Test.	Minn. R. 7017.1060, subp. 3
All CEMS must be certified according to the appropriate performance specifications listed in 40 CFR pt. 60, Appendix B.	Minn. R. 7017.1070, subp. 1
CEMS Certification Test Report: due 45 days after CEMS Certification Test	Minn. R. 7017.1080, subp. 1, 2, & 4
CEMS Certification Test Report - Microfiche Copy: due 105 days after CEMS Certification Test	Minn. R. 7017.1080, subp. 3
Continuous Operation: CEMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment. Acceptable monitor downtime includes reasonable periods as listed in Items A, B, C and D of Minn. R. 7017.1090, subp. 2.	Minn. R. 7017.1090, subp. 1
Excess Emissions/Downtime Reports (EERs): due 30 days after end of each calendar quarter following CEMS Certification Test (Submit Deviations Reporting Form DRF-1 as amended). The EER shall indicate all periods of monitor bypass and all periods of exceedances of the limit including exceedances allowed by an applicable standard, i.e. during startup, shutdown, and malfunctions.	Minn. R. 7017.1110, subp. 1 & 2
Recordkeeping: The owner or operator must retain records of all CEMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source.	Minn. R. 7007.1130
All data points collected by a CEMS shall be used to calculate individual hourly emission averages unless another applicable requirement or compliance document requires more frequent averaging. Each hourly average starts at the beginning of the hour and ends at the beginning of the following hour. In order for an hour of data to be considered valid, it must contain the following minimum number of data points during the hour: - four data points, equally spaced, if the emission unit operated during the entire hour; - two data points, at least 15 minutes apart, during periods of monitor calibration, and periods of time to conduct quality control audits or routine maintenance; and - one data point if the emission unit operated for 15 minutes or less during the hour. Monitoring data shall be recorded in the same units of measurement and averaging period as the facility's emission standard.	Minn. R. 7017.1160

TABLE A: LIMITS AND OTHER REQUIREMENTS**A-64**

01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

QA Plan: Develop and implement a written quality assurance plan that covers each CEMS. The plan shall be on site and available for inspection within 30 days after monitor certification. The plan shall contain all of the information required by 40 CFR part 60, Appendix F, section 3.	Minn. R. 7017.1170, subp. 2
CEMS Daily Calibration Drift (CD) Test: The CD shall be quantified and recorded at zero (low-level) and upscale (high-level) gas concentrations at least once daily. The CEMS shall be adjusted whenever the CD exceeds twice the specification of 40 CFR part 60, Appendix B. 40 CFR part 60, Appendix F, shall be used to determine out-of-control periods for CEMS. Follow the procedures in 40 CFR part 60, Appendix F.	Minn. R. 7017.1170, subp. 3
Cylinder Gas Audit (CGA): due before end of each calendar half-year following CEMS Certification Test. Conduct CGA at least 3 months apart and not greater than 8 months apart. Follow the procedures in 40 CFR pt. 60, Appendix F.	Minn. R. 7017.1170, subp. 4
Cylinder Gas Audit (CGA) Results Summary: due 30 days after end of each calendar half-year following Cylinder Gas Audit (CGA).	Minn. R. 7017.1180, subp. 1
CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar year following CEMS Certification Test. Follow the procedures in 40 CFR pt. 60, Appendix F, as amended.	Minn. R. 7017.1170, subp. 5
Relative Accuracy Test Audit (RATA) Notification: due 30 days before CEMS Relative Accuracy Test Audit (RATA).	Minn. R. 7017.1180, subp. 2
Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of each calendar quarter in which the CEMS RATA was conducted.	Minn. R. 7017.1180, subp. 3
CEM Certification Test: Written notification of the planned test date shall be postmarked or received at least 30 days before the planned test date.	Minn. R. 7017.2030, subp. 1

TABLE B: SUBMITTALS**B-1** 01/08/10

Facility Name: Mesabi Nugget Delaware LLC
Permit Number: 13700318 - 003

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.

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

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.

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

Send any application for a permit or permit amendment to:

AQ Permit Technical Advisor
Industrial Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

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.

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

AQ Compliance Tracking Coordinator
Industrial Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS**B-2** 01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 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 compliance status	due 60 days after Performance Test	GP005
Notification of the Actual Date of Initial Startup	due 15 days after Initial Startup	EU008
Notification of the Actual Date of Initial Startup	due 15 days after Initial Startup of each listed EU.	GP005
Notification of the Actual Date of Initial Startup	due 15 days after Initial Startup of the rotary hearth furnace using form NT-01. Submit the name and number of the control device (or emissions unit) and the actual date of initial startup the control device (or emissions unit).	EU001
Notification of the Anticipated Date of Initial Startup	due 30 days before Anticipated Date of Initial Startup of the rotary hearth furnace	EU001
Notification of the Anticipated Date of Initial Startup	due 30 days before Anticipated Date of Initial Startup. Submit the name and number of each unit and the anticipated date of initial startup of each unit.	GP005
Notification of the Date Construction Began	due 30 days after Start Of Construction of the rotary hearth furnace	EU001
Notification of the Date Construction Began	due 30 days after Start Of Construction. Submit the name and number of each unit and the date construction of each unit began.	GP005
Notification of the Date Construction Began	due 30 days after Start Of Construction. Submit the name and number of each unit and the date construction of each unit began.	EU008
Performance Test Notification (written)	due 60 days before Performance Test. Simultaneously provide written notification of the date the performance evaluation of the continuous monitoring system is scheduled to begin.	GP005
Testing Frequency Plan	due 60 days after Initial Performance Test for opacity, particulate matter, and particulate matter less than ten microns in diameter. 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.	EU007, EU008, EU010, EU013
Testing Frequency Plan	due 60 days after Initial Performance Test for opacity, particulate matter, particulate matter less than ten microns in diameter, and nitrogen oxides. 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.	EU004
Testing Frequency Plan	due 60 days after Initial Performance Test for opacity, particulate matter, particulate matter less than ten microns in diameter, carbon monoxide, nitrogen oxides, and volatile organic compounds. 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.	EU002

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS**B-3** 01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

Testing Frequency Plan	due 60 days after Initial Performance Test for opacity, particulate matter, particulate matter less than ten microns in diameter, volatile organic compounds, nitrogen oxides, and carbon monoxide. 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.	EU003, EU005, EU006, EU012
Testing Frequency Plan	due 60 days after Initial Performance Test for opacity, PM, PM10, VOC, lead, fluoride, and sulfuric acid mist emissions. 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.	EU001

TABLE B: RECURRENT SUBMITTALS**B-4** 01/08/10

Facility Name: Mesabi Nugget Delaware LLC

Permit Number: 13700318 - 003

What to send	When to send	Portion of Facility Affected
Excess Emissions/Downtime Reports (EER's)	due 30 days after end of each calendar quarter following Initial Startup of the Monitor. Submit Deviations Reporting Form DRF-1 as amended. The EER must contain all of the information requested in 40 CFR Section 63.10(c)(3)(v). The EER shall indicate all periods of monitor bypass and all periods of exceedances of the limit including exceedances allowed by an applicable standard (i.e., during startup, shutdown, and malfunction).	GP005
Semiannual Deviations Report	due 30 days after end of each calendar half-year starting 01/25/2007 . 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
Semiannual Deviations Report	due 30 days after end of each calendar half-year starting 01/27/2007 . 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.	FS009
Compliance Certification	due 31 days after end of each calendar year starting 01/25/2007 (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

APPENDIX MATERIAL

Facility Name: Mesabi Nugget

Permit Number: 13700318-003

Appendix A

(Not used in Permit Number13700318-003)

APPENDIX MATERIAL

Facility Name: Mesabi Nugget
Permit Number: 13700318-003

Appendix B

Insignificant Activities

Space heaters fueled by kerosene, natural gas, or propane

Infrared electric ovens

Storage tanks with a combined total tankage of $\leq 10,000$ gallons of gasoline

Storage tanks with a combined total tankage of $\leq 10,000$ gallons of non-HAP VOCs and with a vapor pressure of ≤ 1.0 psia at 60 °F.

Laboratory activities, including equipment for forging, pressing, drawing, spinning or extruding hot metals

Equipment used for hydraulic or hydrostatic testing

Brazing, soldering, or welding equipment for maintenance-related activities

Alkaline/phosphate cleaners and associated cleaners and burners

Infrequent use of spray paint equipment for routine housekeeping or plant upkeep activities not associated with primary production processes

Hot water heaters (2), 5 MMBtu/hr each

Silos (dolomite – 1, limestone – 2, coal – 2)

Emergency piles for nuggets, slag, bird shot nuggets, product separation surge, pellets bypass, recycle coal #2

Material handling operations (coal, limestone, dolomite, slag, nuggets)

Wind erosion (coal, limestone, dolomite, slag, nuggets)

Green Ball Drum/Disc

Pneumatic conveying of water treatment materials

Parts washers

Feederbreaker

APPENDIX MATERIAL

Facility Name: Mesabi Nugget

Permit Number: 13700318-003

Appendix C.1

Modeling Parameters (PER001)

Introduction

For this project, both Class I and Class II modeling were conducted. Class II modeling was conducted first, and contains higher emission rates than the permit limits in the permit. However, because the modeling at the higher emission rates showed attainment and maintenance of the NAAQS and increment, the Class II modeling was not repeated with the lower, permitted emission rates.

Class II modeling includes all sources except insignificant activities. Class I modeling includes only those sources which are expected to impact the Class I areas. Except for emission rates, modeled parameters are identical between Class I and Class II modeling

Table 1a – Class II Modeling – Stack Sources <Ruth prepares>

MPCA ID	Nugget ID	Source Description	Emission Rates (g/s)					Modeled Parameters			
			PM10	NOX	SO2	CO	Lead	Stack Height (m)	Stack Exit Temp. (K)	Exit Velocity (m/s)	Stack Exit Diameter (m)
SV001	SV201	RHF	10.30	31.5	28.42	13.98	0.121	60	358	25	4.23
SV002	SV202	Pulverizer	2.04	0.37	0.0044	0.00	0.00015	40	355	25	1.98
SV003	SV203	Coal Flux Unload	0.358	0	0	0	0	30	298	25	1.26
SV004	SV204	Rail Loadout	0.358	0	0	0	0	30	298	25	1.26
SV007	SV207	RHF Building Baghouse	0.540	0	0	0	0	40	298	25	1.55
SV009	SV208A	Process Water Cooling Tower	0.0230	0	0	0	0	18.7	311	5.1	2.7
	SV208B	Process Water Cooling Tower	0.0230	0	0	0	0	18.7	311	5.1	2.7
	SV208C	Process Water Cooling Tower	0.0230	0	0	0	0	18.7	311	5.1	2.7
	SV208D	Process Water Cooling Tower	0.0230	0	0	0	0	18.7	311	5.1	2.7
	SV208E	Process Water Cooling Tower	0.0230	0	0	0	0	18.7	311	5.1	2.7
	SV208F	Process Water Cooling Tower	0.0230	0	0	0	0	18.7	311	5.1	2.7
SV010	SV209A	Clean Water Cooling Tower	0.0090	0	0	0	0	10.7	311	5.1	2.7
	SV209B	Clean Water Cooling Tower	0.0090	0	0	0	0	10.7	311	5.1	2.7
	SV209C	Clean Water Cooling Tower	0.0090	0	0	0	0	10.7	311	5.1	2.7

APPENDIX MATERIAL

Facility Name: Mesabi Nugget

Permit Number: 13700318-003

Table 1b – Class II modeling – Fugitive Emission Sources

Emission Unit ID	Source Description	Modeled Parameters			
		PM10 Emission Rate (g/s)	Release Height (m)	Sigma-Y (m)	Sigma-Z (m)
FS034	Coal Material Handling	4.10E-02	5	3.544	4.65
FS035	Flux Material Handling	9.30E-02	5	3.544	4.65
FS037	Slag Material Handling	9.00E-02	5	3.544	4.65
FS038	Coal Wind Erosion	1.00E+00	5	3.544	4.65
FS039	Flux Wind Erosion	1.00E+00	5	3.544	4.65
FS041	Slag Wind Erosion	1.00E+00	5	3.544	4.65
SV205	RHF Roof Monitor	2.23E-01	30	5.581	14
PR001	Paved Road Segment	5.53E-03	3	9.3	2.79
PR002	Paved Road Segment	5.53E-03	3	9.3	2.79
PR003	Paved Road Segment	5.53E-03	3	9.3	2.79
PR004	Paved Road Segment	5.53E-03	3	9.3	2.79
PR005	Paved Road Segment	5.53E-03	3	9.3	2.79
PR006	Paved Road Segment	5.53E-03	3	9.3	2.79
PR007	Paved Road Segment	5.53E-03	3	9.3	2.79
PR008	Paved Road Segment	5.53E-03	3	9.3	2.79
PR009	Paved Road Segment	5.53E-03	3	9.3	2.79
PR0 10	Paved Road Segment	5.53E-03	3	9.3	2.79
PR0 11	Paved Road Segment	5.53E-03	3	9.3	2.79
PR0 12	Paved Road Segment	5.53E-03	3	9.3	2.79
PR0 13	Paved Road Segment	5.53E-03	3	9.3	2.79
PR0 14	Paved Road Segment	5.53E-03	3	9.3	2.79
PR0 15	Paved Road Segment	5.53E-03	3	9.3	2.79
PR0 16	Paved Road Segment	5.53E-03	3	9.3	2.79
PR0 17	Paved Road Segment	5.53E-03	3	9.3	2.79
PR0 18	Paved Road Segment	5.53E-03	3	9.3	2.79
PR0 19	Paved Road Segment	5.53E-03	3	9.3	2.79
PR020	Paved Road Segment	5.53E-03	3	9.3	2.79
PR021	Paved Road Segment	5.53E-03	3	9.3	2.79
PR022	Paved Road Segment	5.53E-03	3	9.3	2.79
PR023	Paved Road Segment	5.53E-03	3	9.3	2.79
PR024	Paved Road Segment	5.53E-03	3	9.3	2.79
PR025	Paved Road Segment	5.53E-03	3	9.3	2.79
PR026	Paved Road Segment	5.53E-03	3	9.3	2.79
PR027	Paved Road Segment	5.53E-03	3	9.3	2.79
PR028	Paved Road Segment	5.53E-03	3	9.3	2.79
PR029	Paved Road Segment	5.53E-03	3	9.3	2.79
PR030	Paved Road Segment	5.53E-03	3	9.3	2.79
PR031	Paved Road Segment	5.53E-03	3	9.3	2.79

APPENDIX MATERIAL

Facility Name: Mesabi Nugget

Permit Number: 13700318-003

Table 1b – Class II modeling – Fugitive Emission Sources (continued)

Emission Unit ID	Source Description	Modeled Parameters			
		PM10 Emission Rate (g/s)	Release Height (m)	Sigma-Y (m)	Sigma-Z (m)
PR032	Paved Road Segment	5.53E-03	3	9.3	2.79
PR033	Paved Road Segment	5.53E-03	3	9.3	2.79
PR034	Paved Road Segment	5.53E-03	3	9.3	2.79
PR035	Paved Road Segment	5.53E-03	3	9.3	2.79
PR036	Paved Road Segment	5.53E-03	3	9.3	2.79
PR037	Paved Road Segment	5.53E-03	3	9.3	2.79
PR038	Paved Road Segment	5.53E-03	3	9.3	2.79
PR039	Paved Road Segment	5.53E-03	3	9.3	2.79
PR040	Paved Road Segment	5.53E-03	3	9.3	2.79
PR041	Paved Road Segment	5.53E-03	3	9.3	2.79
PR042	Paved Road Segment	5.53E-03	3	9.3	2.79
PR043	Paved Road Segment	5.53E-03	3	9.3	2.79
PR044	Paved Road Segment	5.53E-03	3	9.3	2.79
PR045	Paved Road Segment	5.53E-03	3	9.3	2.79
PR046	Paved Road Segment	5.53E-03	3	9.3	2.79
PR047	Paved Road Segment	5.53E-03	3	9.3	2.79
PR048	Paved Road Segment	5.53E-03	3	9.3	2.79
PR049	Paved Road Segment	5.53E-03	3	9.3	2.79
PR050	Paved Road Segment	5.53E-03	3	9.3	2.79
PR051	Paved Road Segment	5.53E-03	3	9.3	2.79
PR052	Paved Road Segment	5.53E-03	3	9.3	2.79
PR053	Paved Road Segment	5.53E-03	3	9.3	2.79
PR054	Paved Road Segment	5.53E-03	3	9.3	2.79
PR055	Paved Road Segment	5.53E-03	3	9.3	2.79
PR056	Paved Road Segment	5.53E-03	3	9.3	2.79
PR057	Paved Road Segment	5.53E-03	3	9.3	2.79
PR058	Paved Road Segment	5.53E-03	3	9.3	2.79
PR059	Paved Road Segment	5.53E-03	3	9.3	2.79
PR060	Paved Road Segment	5.53E-03	3	9.3	2.79
PR061	Paved Road Segment	5.53E-03	3	9.3	2.79
PR062	Paved Road Segment	5.53E-03	3	9.3	2.79
PR063	Paved Road Segment	5.53E-03	3	9.3	2.79
PR064	Paved Road Segment	5.53E-03	3	9.3	2.79
PR065	Paved Road Segment	5.53E-03	3	9.3	2.79
PR066	Paved Road Segment	5.53E-03	3	9.3	2.79
PR067	Paved Road Segment	5.53E-03	3	9.3	2.79
PR068	Paved Road Segment	5.53E-03	3	9.3	2.79
PR069	Paved Road Segment	5.53E-03	3	9.3	2.79
PR070	Paved Road Segment	5.53E-03	3	9.3	2.79
PR071	Paved Road Segment	5.53E-03	3	9.3	2.79
PR072	Paved Road Segment	5.53E-03	3	9.3	2.79

APPENDIX MATERIAL

Facility Name: Mesabi Nugget

Permit Number: 13700318-003

Table 1b – Class II modeling – Fugitive Emission Sources (continued)

Emission Unit ID	Source Description	Modeled Parameters			
		PM10 Emission Rate (g/s)	Release Height (m)	Sigma-Y (m)	Sigma-Z (m)
PR073	Paved Road Segment	5.53E-03	3	9.3	2.79
PR074	Paved Road Segment	5.53E-03	3	9.3	2.79
PR075	Paved Road Segment	5.53E-03	3	9.3	2.79
PR076	Paved Road Segment	5.53E-03	3	9.3	2.79
PR077	Paved Road Segment	5.53E-03	3	9.3	2.79
PR078	Paved Road Segment	5.53E-03	3	9.3	2.79
PR079	Paved Road Segment	5.53E-03	3	9.3	2.79
PR080	Paved Road Segment	5.53E-03	3	9.3	2.79
PR081	Paved Road Segment	5.53E-03	3	9.3	2.79
PR082	Paved Road Segment	5.53E-03	3	9.3	2.79
PR083	Paved Road Segment	5.53E-03	3	9.3	2.79
PR084	Paved Road Segment	5.53E-03	3	9.3	2.79
PR085	Paved Road Segment	5.53E-03	3	9.3	2.79

APPENDIX MATERIAL

Facility Name: Mesabi Nugget

Permit Number: 13700318-003

Table 2a Class I Modeling Parameters – Stack Sources

MPCA ID	Nugget ID	Includes Emission Units	Source Description	Emission Rates (g/s)			Modeled Parameters			
				PM10	NOX	SO2	Stack Height (m)	Stack Exit Temp. (K)	Exit Velocity (m/s)	Stack Exit Diameter (m)
SV001	SV201	EU001, 002, 003, 013	RHF	10.3	26.96	11.98	60	358	25	4.23
SV002	SV202	EU004, 005, 006, 012	Pulverizer	2.04	0.37	0.0044	40	355	25	1.98
SV003	SV203	EU 007	Coal Flux Unload	0.358	0	0	30	298	25	1.26
SV004	SV204	EU 008	Rail Loadout	0.358	0	0	30	298	25	1.26
SV007	SV207	EU010	RHF Building Baghouse	0.540	0	0	40	298	25	1.55

Class I modeling SO₂ emissions levels for the RHF (SV201), were reduced from those levels modeled in the Class II modeling. Since Class II modeling showed attainment and maintenance of the NAAQS and increment at the higher levels, it was unnecessary to revise the Class II model, as further reductions would not change the acceptability of the original results.

Class I levels reflected in this table are from the modeling performed on April 22, 2005, with reductions in SO₂. These values correspond to the spreadsheet CALCS_superseded_05_09_05. Only certain fugitive sources were modeled in the Class I analysis – see table below.

Emergency sources, including the RHF Bypass stack (SV 008) and the emergency diesel generator (EU 011) were not modeled in the Class I analysis.

Stack parameters (height, exit temperature, exit velocity, exit diameter) were not changed between Class I and II modeling.

APPENDIX MATERIAL

Facility Name: Mesabi Nugget
Permit Number: 13700318-003

Table 2b Class I Modeling Parameters – Area Sources

MPCA Emission ID	Nugget Emission ID	Source Description	Modeled Parameters			
			PM10 Emission Rate (g/s)	Release Height (m)	Sigma-Y (m)	Sigma-Z (m)
FS 001	FS034	Coal Material Handling	4.13E-02	5	3.544	4.65
FS 003	FS035	Flux Material Handling	9.27E-02	5	3.544	4.65
FS 005	FS037	Slag Material Handling	8.97E-02	5	3.544	4.65
SV 005	SV205	RHF Roof Monitor	2.23E-01	30	5.581	14

Only these fugitive sources were modeled in Class I modeling. Other fugitive PM sources, such as nugget material handling (FS 007) and paved roads (FS 009) were not modeled in the Class I analysis, as they consist of small, low level, coarse particulate emissions which will not affect the Class I areas. Fugitive VOC sources such as parts washer (FS 010) were not modeled because they are low, cold, minor sources of VOC which will not affect the Class I areas. Finally, insignificant sources were not modeled, including cooling towers, emergency and recycle materials piles, and wind erosion off storage piles because they consist of low level, coarse particulate emissions which will not affect the Class I areas.

APPENDIX MATERIAL

Facility Name: Mesabi Nugget

Permit Number: 13700318-003

Appendix C.2

Modeling Parameters (PER003)

APPENDIX MATERIAL

Facility Name: Mesabi Nugget
 Permit Number: 13700318-003

Table 1: Model Options

Mesabi Nugget, LLC Phase I Permit Amendment Modeling Report Summary of Selected Model Options			
<u>Option</u>	<u>Selection</u>		
Model	AERMOD version 07026		
Building Downwash	BPIPPRM version 04274		
Meteorological Data	5 year period 2001-2005		
Surface Station	Hibbing, MN (NWS Station 94931)		
Upper Air Station	International Falls, MN (NWS Station 14918)		
Terrain	Elevated – Receptor grid processed using AERMAP version 09040		
Receptor Grid	50-m spacing along boundary. 200-m spacing out to 1 kilometer. 2 km spaced 10 degree polar grid out 8 km from ambient air boundary		
<u>POLLUTANT</u>	<u>AVG PERIOD</u>	<u>Standard Evaluated</u>	
		NAAQS	INCREMENT
PM10	24 HOUR / ANNUAL	YES	YES
PM2.5	24 HOUR / ANNUAL	YES	NA
<u>Option</u>	<u>Selection</u>		
Control Pathway	DEFAULT selected		

APPENDIX MATERIAL

Facility Name: Mesabi Nugget

Permit Number: 13700318-003

Table 2: Point Sources

Source ID	X Coord. [m]	Y Coord. [m]	Base Elevation [m]	Release Height [m]	Emission Rate [g/s]	Gas Exit Temperature [K]	Gas Exit Velocity [m/s]	Inside Diameter [m]	Description
SV001	560874.8	5270799	512.65	60	10.3	354.9	21.45	4.23	RHF and Green Ball Dryer
SV002	560996	5270768	509.29	40	2.04	343.97	5.31	1.98	Pulverizer
SV003	561325.5	5270586	481.52	30	0.358	298	56.77	1.26	Coal/Flux Unloading
SV004	561336.5	5270622	490.8	30	0.358	298	18.92	1.26	Railcar Loadout
SV007	560764.7	5270591	499.37	40	0.54	322.8	26.7	1.55	Material Transfer Operations
SV09A	560871.4	5270546	496.22	18.7	0.023	324.3	55.28	2.7	Cooling Tower 9 Cell A
SV09B	560880.6	5270547	496.24	18.7	0.023	324.3	55.28	2.7	Cooling Tower 9 Cell B
SV10A	560897.9	5270550	496.23	18.7	0.023	311.9	44.97	2.7	Cooling Tower 10 Cell A
SV10B	560906.8	5270552	496.21	18.7	0.023	311.9	44.97	2.7	Cooling Tower 10 Cell B

APPENDIX MATERIAL

Facility Name: Mesabi Nugget

Permit Number: 13700318-003

Table 3: Volume Sources

Source ID	X Coord. [m]	Y Coord. [m]	Base Elevation [m]	Release Height [m]	Emission Rate [g/s]	Side Length [m]	Building Height [m]	Initial Lateral Dimension [m]	Initial Vertical Dimension [m]	Description
FS034	561164.3	5270676	496.25	5	0.041	15.05		3.5	4.65	Coal Material Handling
FS038	561164.3	5270676	496.25	5	1	15.05		3.5	4.65	Coal Wind Erosion
FS035	561261.7	5270725	496.53	5	0.093	15.05		3.5	4.65	Flux Material Handling
FS039	561261.7	5270725	496.53	5	1	15.05		3.5	4.65	Flux Wind Erosion
FS037	560773.4	5270534	495.64	5	0.09	15.05		3.5	4.65	Slag Material Handling
FS041	560773.4	5270534	495.64	5	1	15.05		3.5	4.65	Slag Wind Erosion
FS010	561498.2	5270800	497.11	5	0.227	15.05		3.5	4.65	Concentrate Material Handling
FS011	561498.2	5270800	497.11	5	1	15.05		3.5	4.65	Concentrate Wind Erosion
SV005	560759	5270711	512.41	30.48	0.223	24.08		5.6	14.18	RHF Roof Monitor
SV012	560957.4	5270763	511.7	24.08	0.117	24.08		5.6	11.2	Pulverizer Roof Monitor
MAIN059	562079.8	5271158	513.39	3.11	0.00925	59.98		13.95	2.89	
MAIN060	562067.2	5271185	514.68	3.11	0.00925	59.98		13.95	2.89	
MAIN061	562054.6	5271212	516.45	3.11	0.00925	59.98		13.95	2.89	
MAIN062	562042	5271239	518.3	3.11	0.00925	59.98		13.95	2.89	
MAIN063	562029.4	5271267	520.24	3.11	0.00925	59.98		13.95	2.89	
MAIN064	562017.7	5271294	521.67	3.11	0.00925	59.98		13.95	2.89	
MAIN065	562006.5	5271322	524.01	3.11	0.00925	59.98		13.95	2.89	
MAIN066	561995.3	5271350	525.95	3.11	0.00925	59.98		13.95	2.89	
MAIN067	561984.5	5271378	528.3	3.11	0.00925	59.98		13.95	2.89	
MAIN068	561970.5	5271404	529.28	3.11	0.00925	59.98		13.95	2.89	
MAIN069	561952.8	5271428	530.24	3.11	0.00925	59.98		13.95	2.89	
MAIN070	561934.2	5271452	530.84	3.11	0.00925	59.98		13.95	2.89	
MAIN071	561910.3	5271470	533.14	3.11	0.00925	59.98		13.95	2.89	

APPENDIX MATERIAL

Facility Name: Mesabi Nugget

Permit Number: 13700318-003

MAIN072	561883.4	5271483	534.39	3.11	0.00925	59.98	13.95	2.89
MAIN073	561854.9	5271492	534.68	3.11	0.00925	59.98	13.95	2.89
MAIN074	561825	5271491	534.26	3.11	0.00925	59.98	13.95	2.89
MAIN075	561795.8	5271485	536.47	3.11	0.00925	59.98	13.95	2.89
MAIN076	561767.5	5271475	537.1	3.11	0.00925	59.98	13.95	2.89
MAIN077	561739.4	5271465	537	3.11	0.00925	59.98	13.95	2.89
MAIN078	561711.6	5271454	536.92	3.11	0.00925	59.98	13.95	2.89
MAIN079	561683.8	5271442	534.87	3.11	0.00925	59.98	13.95	2.89
MAIN080	561656	5271431	532.62	3.11	0.00925	59.98	13.95	2.89
MAIN081	561628.2	5271420	533.78	3.11	0.00925	59.98	13.95	2.89
MAIN082	561600.4	5271408	534.09	3.11	0.00925	59.98	13.95	2.89
MAIN083	561572.6	5271397	530.67	3.11	0.00925	59.98	13.95	2.89
MAIN084	561545.2	5271385	531.5	3.11	0.00925	59.98	13.95	2.89
MAIN085	561517.8	5271373	529.97	3.11	0.00925	59.98	13.95	2.89
MAIN086	561490.3	5271361	529.37	3.11	0.00925	59.98	13.95	2.89
MAIN087	561462.9	5271348	529.73	3.11	0.00925	59.98	13.95	2.89
MAIN088	561435.5	5271336	526.67	3.11	0.00925	59.98	13.95	2.89
MAIN089	561408	5271324	528.01	3.11	0.00925	59.98	13.95	2.89
MAIN090	561380.6	5271312	528.38	3.11	0.00925	59.98	13.95	2.89
MAIN091	561353.2	5271300	525.47	3.11	0.00925	59.98	13.95	2.89
MAIN092	561325.9	5271287	527.24	3.11	0.00925	59.98	13.95	2.89
MAIN093	561298.6	5271275	523.98	3.11	0.00925	59.98	13.95	2.89
MAIN094	561271.3	5271262	522.96	3.11	0.00925	59.98	13.95	2.89
MAIN095	561243.8	5271250	524.65	3.11	0.00925	59.98	13.95	2.89
MAIN096	561215.1	5271242	522.01	3.11	0.00925	59.98	13.95	2.89
MAIN097	561185.5	5271237	521.27	3.11	0.00925	59.98	13.95	2.89
MAIN098	561155.9	5271232	521.68	3.11	0.00925	59.98	13.95	2.89

APPENDIX MATERIAL

Facility Name: Mesabi Nugget

Permit Number: 13700318-003

MAIN099	561126	5271229	521.25	3.11	0.00925	59.98	13.95	2.89
MAIN100	561096.2	5271226	522.84	3.11	0.00925	59.98	13.95	2.89
MAIN101	561066.3	5271223	523.04	3.11	0.00925	59.98	13.95	2.89
MAIN102	561036.5	5271220	524.42	3.11	0.00925	59.98	13.95	2.89
MAIN103	561006.8	5271216	525.44	3.11	0.00925	59.98	13.95	2.89
MAIN104	560978.3	5271207	525.57	3.11	0.00925	59.98	13.95	2.89
MAIN105	560949.8	5271198	524.66	3.11	0.00925	59.98	13.95	2.89
MAIN106	560923.1	5271184	522.41	3.11	0.00925	59.98	13.95	2.89
MAIN107	560898.3	5271168	521.4	3.11	0.00925	59.98	13.95	2.89
MAIN108	560874.3	5271149	521.57	3.11	0.00925	59.98	13.95	2.89
MAIN109	560850.4	5271131	521.33	3.11	0.00925	59.98	13.95	2.89
MAIN110	560826.5	5271113	521.13	3.11	0.00925	59.98	13.95	2.89
MAIN111	560802.6	5271095	521.55	3.11	0.00925	59.98	13.95	2.89
MAIN112	560779.1	5271076	520.21	3.11	0.00925	59.98	13.95	2.89
MAIN113	560755.8	5271058	519.38	3.11	0.00925	59.98	13.95	2.89
MAIN114	560732.6	5271039	517.9	3.11	0.00925	59.98	13.95	2.89
MAIN115	560709.3	5271020	516.77	3.11	0.00925	59.98	13.95	2.89
MAIN116	560686	5271001	516.44	3.11	0.00925	59.98	13.95	2.89
MAIN117	560662.7	5270982	516.13	3.11	0.00925	59.98	13.95	2.89
MAIN118	560639.4	5270963	515.94	3.11	0.00925	59.98	13.95	2.89
MAIN119	560616.2	5270944	515.54	3.11	0.00925	59.98	13.95	2.89
WEST009	560597.8	5270929	515.11	3.11	0.0136	59.98	13.95	2.89
WEST010	560574	5270911	514.68	3.11	0.0136	59.98	13.95	2.89
WEST011	560550.2	5270892	513.86	3.11	0.0136	59.98	13.95	2.89
WEST012	560526.4	5270874	512.25	3.11	0.0136	59.98	13.95	2.89
WEST013	560503.2	5270855	509.84	3.11	0.0136	59.98	13.95	2.89
WEST014	560479.4	5270837	508.89	3.11	0.0136	59.98	13.95	2.89

APPENDIX MATERIAL

Facility Name: Mesabi Nugget

Permit Number: 13700318-003

WEST015	560454.7	5270820	509.01	3.11	0.0136	59.98	13.95	2.89
WEST016	560428.9	5270804	509.06	3.11	0.0136	59.98	13.95	2.89
WEST017	560403.1	5270789	508.16	3.11	0.0136	59.98	13.95	2.89
WEST018	560376.8	5270775	507.8	3.11	0.0136	59.98	13.95	2.89
WEST019	560349.8	5270762	507.36	3.11	0.0136	59.98	13.95	2.89
WEST020	560322.3	5270750	506.73	3.11	0.0136	59.98	13.95	2.89
WEST021	560294.7	5270738	505.97	3.11	0.0136	59.98	13.95	2.89
WEST022	560267.2	5270726	503.82	3.11	0.0136	59.98	13.95	2.89
WEST023	560239.6	5270714	502.41	3.11	0.0136	59.98	13.95	2.89
WEST024	560212	5270702	501.2	3.11	0.0136	59.98	13.95	2.89
WEST025	560184.3	5270691	500.75	3.11	0.0136	59.98	13.95	2.89
WEST026	560156.5	5270680	500.1	3.11	0.0136	59.98	13.95	2.89
WEST027	560128.7	5270668	499.51	3.11	0.0136	59.98	13.95	2.89
WEST028	560100.3	5270659	498.35	3.11	0.0136	59.98	13.95	2.89
WEST029	560071.7	5270650	498.2	3.11	0.0136	59.98	13.95	2.89
WEST030	560043.1	5270641	498.66	3.11	0.0136	59.98	13.95	2.89
WEST031	560014.6	5270631	499.82	3.11	0.0136	59.98	13.95	2.89
WEST032	559986	5270622	502.13	3.11	0.0136	59.98	13.95	2.89
WEST033	559957.4	5270613	501.82	3.11	0.0136	59.98	13.95	2.89
WEST034	559928.7	5270604	498.64	3.11	0.0136	59.98	13.95	2.89
WEST035	559900	5270596	496.43	3.11	0.0136	59.98	13.95	2.89
WEST036	559871.2	5270587	495.36	3.11	0.0136	59.98	13.95	2.89
WEST037	559842.4	5270579	494.64	3.11	0.0136	59.98	13.95	2.89
WEST038	559813.7	5270570	493.57	3.11	0.0136	59.98	13.95	2.89
WEST039	559784.9	5270562	492.26	3.11	0.0136	59.98	13.95	2.89
WEST040	559756.2	5270553	491.55	3.11	0.0136	59.98	13.95	2.89
WEST041	559727.4	5270545	491.41	3.11	0.0136	59.98	13.95	2.89

APPENDIX MATERIAL

Facility Name: Mesabi Nugget

Permit Number: 13700318-003

WEST042	559698.7	5270536	491.1	3.11	0.0136	59.98	13.95	2.89
WEST043	559670	5270527	490.96	3.11	0.0136	59.98	13.95	2.89
WEST044	559641.2	5270519	490.93	3.11	0.0136	59.98	13.95	2.89
WEST045	559612.5	5270510	490.91	3.11	0.0136	59.98	13.95	2.89
WEST046	559583.8	5270501	490.91	3.11	0.0136	59.98	13.95	2.89
WEST047	559555.1	5270493	490.92	3.11	0.0136	59.98	13.95	2.89
WEST048	559526.4	5270484	490.93	3.11	0.0136	59.98	13.95	2.89
WEST049	559497.6	5270475	491.35	3.11	0.0136	59.98	13.95	2.89
WEST050	559468.9	5270467	492.26	3.11	0.0136	59.98	13.95	2.89
WEST051	559440.1	5270458	492.87	3.11	0.0136	59.98	13.95	2.89
WEST052	559411.3	5270450	493.12	3.11	0.0136	59.98	13.95	2.89
WEST053	559382.5	5270441	493.33	3.11	0.0136	59.98	13.95	2.89
WEST054	559353.7	5270433	493.4	3.11	0.0136	59.98	13.95	2.89
WEST055	559324.9	5270425	493.39	3.11	0.0136	59.98	13.95	2.89
WEST056	559296	5270417	493.39	3.11	0.0136	59.98	13.95	2.89
WEST057	559267	5270409	493.25	3.11	0.0136	59.98	13.95	2.89
WEST058	559238	5270401	492.96	3.11	0.0136	59.98	13.95	2.89
WEST059	559208.8	5270394	493.05	3.11	0.0136	59.98	13.95	2.89
WEST060	559179.5	5270388	493.11	3.11	0.0136	59.98	13.95	2.89
WEST061	559150.2	5270382	493.32	3.11	0.0136	59.98	13.95	2.89
WEST062	559120.7	5270376	493.75	3.11	0.0136	59.98	13.95	2.89
WEST063	559091.1	5270371	493.91	3.11	0.0136	59.98	13.95	2.89
WEST064	559061.6	5270366	493.91	3.11	0.0136	59.98	13.95	2.89
WEST065	559031.9	5270361	493.89	3.11	0.0136	59.98	13.95	2.89
WEST066	559002.3	5270357	493.86	3.11	0.0136	59.98	13.95	2.89
WEST067	558972.7	5270352	493.74	3.11	0.0136	59.98	13.95	2.89
WEST068	558943	5270347	493.7	3.11	0.0136	59.98	13.95	2.89

APPENDIX MATERIAL

Facility Name: Mesabi Nugget

Permit Number: 13700318-003

WEST069	558913.4	5270343	493.58	3.11	0.0136	59.98	13.95	2.89
WEST070	558883.7	5270338	493.25	3.11	0.0136	59.98	13.95	2.89
WEST071	558854.1	5270334	493.12	3.11	0.0136	59.98	13.95	2.89
WEST072	558824.4	5270329	492.59	3.11	0.0136	59.98	13.95	2.89
WEST073	558794.7	5270325	491.63	3.11	0.0136	59.98	13.95	2.89
WEST074	558765	5270320	490.8	3.11	0.0136	59.98	13.95	2.89
WEST075	558735.3	5270317	489.69	3.11	0.0136	59.98	13.95	2.89
WEST076	558705.3	5270317	488.76	3.11	0.0136	59.98	13.95	2.89
WEST077	558676.5	5270325	488.02	3.11	0.0136	59.98	13.95	2.89
WEST078	558648.7	5270336	486.67	3.11	0.0136	59.98	13.95	2.89
WEST079	558622.6	5270351	485.23	3.11	0.0136	59.98	13.95	2.89
WEST080	558599.8	5270370	484.85	3.11	0.0136	59.98	13.95	2.89
WEST081	558582	5270394	484.84	3.11	0.0136	59.98	13.95	2.89
WEST082	558567.2	5270420	484.87	3.11	0.0136	59.98	13.95	2.89
WEST083	558554.4	5270447	485.54	3.11	0.0136	59.98	13.95	2.89
WEST084	558541.5	5270474	487.05	3.11	0.0136	59.98	13.95	2.89
WEST085	558528.5	5270501	488.05	3.11	0.0136	59.98	13.95	2.89
WEST086	558515.4	5270528	489.02	3.11	0.0136	59.98	13.95	2.89
WEST087	558502.2	5270555	489.77	3.11	0.0136	59.98	13.95	2.89
WEST088	558489.1	5270582	490.14	3.11	0.0136	59.98	13.95	2.89
WEST089	558476	5270609	490.59	3.11	0.0136	59.98	13.95	2.89
WEST090	558463.2	5270636	491.47	3.11	0.0136	59.98	13.95	2.89
WEST091	558450.6	5270664	491.76	3.11	0.0136	59.98	13.95	2.89
WEST092	558438.1	5270691	491.91	3.11	0.0136	59.98	13.95	2.89
WEST093	558425.9	5270718	492.42	3.11	0.0136	59.98	13.95	2.89
WEST094	558413.8	5270746	493.44	3.11	0.0136	59.98	13.95	2.89
WEST095	558401.9	5270773	494.24	3.11	0.0136	59.98	13.95	2.89

APPENDIX MATERIAL

Facility Name: Mesabi Nugget

Permit Number: 13700318-003

WEST096	558391	5270801	494.52	3.11	0.0136	59.98	13.95	2.89
WEST097	558382.2	5270830	494.72	3.11	0.0136	59.98	13.95	2.89
WEST098	558374	5270859	495.12	3.11	0.0136	59.98	13.95	2.89
WEST099	558366.2	5270888	496.34	3.11	0.0136	59.98	13.95	2.89
WEST100	558355.3	5270915	497.09	3.11	0.0136	59.98	13.95	2.89
WEST101	558332.2	5270934	497.56	3.11	0.0136	59.98	13.95	2.89
UPVD001	562081	5271136	512.08	3.11	0.00311	59.98	13.95	2.89
UPVD002	562054.1	5271123	512.1	3.11	0.00439	59.98	13.95	2.89
UPVD003	562027.2	5271110	512.42	3.11	0.00621	59.98	13.95	2.89
UPVD004	562003	5271092	513.03	3.11	0.00761	59.98	13.95	2.89
UPVD005	561978.7	5271074	513.41	3.11	0.0108	59.98	13.95	2.89
UPVD006	561954.4	5271057	513.41	3.11	0.0108	59.98	13.95	2.89
UPVD007	561930.5	5271039	511.76	3.11	0.0108	59.98	13.95	2.89
UPVD008	561906.4	5271021	509.65	3.11	0.0108	59.98	13.95	2.89
UPVD009	561880.3	5271006	510.78	3.11	0.0108	59.98	13.95	2.89
UPVD010	561853.2	5270993	510.21	3.11	0.0108	59.98	13.95	2.89
UPVD011	561825.1	5270983	509.07	3.11	0.0108	59.98	13.95	2.89
UPVD012	561797.9	5270971	506.29	3.11	0.0108	59.98	13.95	2.89
UPVD013	561772.3	5270956	501.75	3.11	0.0108	59.98	13.95	2.89
UPVD014	561760.1	5270928	499.2	3.11	0.0108	59.98	13.95	2.89
UPVD015	561750.6	5270900	498.29	3.11	0.0108	59.98	13.95	2.89
UPVD016	561747	5270870	497.35	3.11	0.0108	59.98	13.95	2.89
UPVD017	561739.9	5270842	496.43	3.11	0.0108	59.98	13.95	2.89
UPVD018	561725.1	5270816	495.65	3.11	0.0108	59.98	13.95	2.89
UPVD019	561705.2	5270796	495.13	3.11	0.0108	59.98	13.95	2.89
UPVD020	561676	5270789	495.12	3.11	0.0108	59.98	13.95	2.89
UPVD021	561646.4	5270785	495.26	3.11	0.0108	59.98	13.95	2.89

APPENDIX MATERIAL

Facility Name: Mesabi Nugget

Permit Number: 13700318-003

UPVD022	561616.5	5270783	495.45	3.11	0.0108	59.98	13.95	2.89	
UPVD023	561586.7	5270783	495.74	3.11	0.0108	59.98	13.95	2.89	
UPVD024	561557	5270787	496.33	3.11	0.0108	59.98	13.95	2.89	
UPVD025	561527.5	5270793	496.85	3.11	0.0108	59.98	13.95	2.89	
UPVD026	561498.2	5270800	497.11	3.11	0.0108	59.98	13.95	2.89	
LECSV002	563186.1	5264463	440.23	16.76	0.003969	3.65	0.85	9.91	Coal Crusher
LECSV009	563079.9	5264381	439.52	11.9	0.0119	0.61	0.14	5.52	Lime Bin Vent

APPENDIX MATERIAL

Facility Name: Mesabi Nugget

Permit Number: 13700318-003

Table 4: Area Sources

Source ID	X Coord. [m]	Y Coord. [m]	Base Elevation [m]	Release Height [m]	24-HR Emission Rate [g/(s-m ²)]	Annual Emission Rate [g/(s-m ²)]	X Side Length [m]	Y Side Length [m]	Initial Vertical Dimension [m]	Description
FS01	557343.4	4921802	213	1	5.51E-06	4.72E-06	39	74	1.7	Unpaved Parking Lot
FS02A	557688.2	4921511	213.85	1	3.30E-08	2.74E-08	16.5	98.5	1.7	Vehicle Traffic - Paved Roads
FS02C	557639.6	4921596	214.01	1	3.30E-08	2.74E-08	100	52	1.7	Vehicle Traffic - Paved Roads
FS03	557542.5	4921760	214	1	1.10E-06	6.57E-08	52	23	2	Paved Roads - Shipping
FS04A	557488.7	4921818	213.08	1	5.29E-06	3.65E-06	8	42.5	2	Paved Road Deliveries
FS04B	557503.8	4921756	214	1	5.29E-06	3.65E-06	24	81	2	Paved Road Deliveries
FS04C	557441	4921773	213	1	5.29E-06	3.65E-06	27	21.5	2	Paved Road Deliveries
FS04D	557471.3	4921731	213.35	1	5.29E-06	3.65E-06	12	72	2	Paved Road Deliveries
FS02B	557594.7	4921612	213.93	1	3.30E-08	2.74E-08	136.5	16.3	1.7	Paved Front Parking Lot
FS04E	557463.9	4921723	213.35	1	5.29E-06	3.65E-06	11.5	34.5	2	Paved Delivery Road
FS05	557356.2	4921792	214	1	1.40E-08	1.02E-08	38.5	16	1.7	Paved Parking

APPENDIX MATERIAL

Facility Name: Mesabi Nugget
Permit Number: 13700318-003

Table 5: Modeling Results

Phase I Permit Amendment Dispersion Modeling Results

Model Run	Pollutant	Averaging Period	Standard ($\mu\text{g}/\text{m}^3$)	Maximum Modeled Concentration ($\mu\text{g}/\text{m}^3$) [1]	Background ($\mu\text{g}/\text{m}^3$) [2]	Total Modeled Concentration ($\mu\text{g}/\text{m}^3$) [3]	Percent of Standard
PSD Increment	PM ₁₀	24-hour	30	20	--	20	65
		Annual	17	3.0	--	3.0	18
NAAQS/MAAQS	PM ₁₀	24-hour	150	70	26	96	64
		Annual *	50	14	12	26	53
	PM _{2.5}	24-hour	35	8.8	17	26	74
		Annual	15	2.7	6.0	8.7	58

[1] PM₁₀ 24-hour increment is H2H of five individual years.

PM₁₀ 24-hour NAAQS is H6H over five years.

PM_{2.5} 24-hour NAAQS is 5-year average of H8H concentrations.

Annual concentrations are highest of five individual years.

[2] PM₁₀ background concentrations reflect Option 2 values taken from an updated Table 6 of MPCA's

Modeling Guidance for Title V Air Dispersion Modeling (Version 2.2, dated October 22, 2004).

PM_{2.5} background values from Virginia, MN 2006-2008 Monitoring Data.

[3] NAAQS/MAAQS concentration includes modeled concentration plus background.

* Annual PM₁₀ standard is MAAQS only

APPENDIX MATERIAL

Facility Name: Mesabi Nugget

Permit Number: 13700318-003

APPENDIX MATERIAL

Facility Name: Mesabi Nugget
Permit Number: 13700318-003

Appendix D: Determination of Allowances Needed to Address Visibility Impacts

To determine the allowances needed to be retired for a calendar year, follow these steps:

1. Identify the emissions of SO₂, NO_x, PM₁₀, and sulfuric acid mist, in tons, from the Mesabi Nugget facility during the specified calendar year. Add those emissions together to determine the facility's Q , or total emissions affecting visibility. Divide Q by the distance of the Mesabi Nugget facility from the nearest portion of the Boundary Waters Canoe Area Wilderness, d . If Q/d is less than 10, no further analysis is needed.
2. [Q/d greater than or equal to 10.] Identify the nearest facility from which allowances are available. Determine the distance ($d1$) of that facility from the nearest portion of the Boundary Waters. Mesabi Nugget will need to acquire (and retire) at least the number of allowances (of vintage equivalent to the calendar year in which Mesabi Nugget's emissions occurred) determined by subtracting ten from the Q/d for Mesabi Nugget and multiplying the result by $d1$ (i.e., $((Q/d - 10) * d1)$). The result must be rounded up to the next full allowance. If the resulting number of allowances ($A1$) can be acquired from that facility, no further analysis is needed. However, if the facility with allowances has fewer than quantity $A1$ allowances available, Mesabi Nugget will need to acquire the maximum number of allowances ($B1$) available and then move on to step 3. (Additional allowances will also be needed from at least one more facility.)
3. [$(Q/d - B1/d1)$ greater than or equal to 10]. Identify the next nearest facility from which allowances are available. Determine the distance ($d2$) of that facility from the nearest portion of the Boundary Waters. In addition to the allowances ($B1$) acquired in step 2, Mesabi Nugget will need to acquire (and retire) at least the number of allowances (of vintage equivalent to the calendar year in which Mesabi Nugget's emissions occurred) determined by subtracting 10 from the difference between Q/d and $B1/d1$ and multiplying the result by $d2$ (i.e., $((Q/d - B1/d1) - 10) * d2$). The result must be rounded up to the next full allowance. If the resulting number of allowances ($A2$) can be acquired from that facility, no further analysis is needed. (In this case, Mesabi Nugget would need to acquire the number of allowances $B1$ from the first facility and the number of allowances $A2$ from the second facility.) If the number of allowances $A2$ cannot be acquired from the second facility with available allowances, Mesabi Nugget will need to acquire the maximum number of allowances ($B2$) available and then move on to step 4. (Additional allowances will also be needed from at least one more facility.)
4. [$(Q/d - (B1/d1 + B2/d2))$ greater than or equal to 10]. The quantity of allowances, $A3$, to be sought from the third facility will equal $((Q/d - (10 + B1/d1 + B2/d2)) * d3)$. This determination can be continued at successive facilities until Mesabi Nugget is able to acquire all remaining needed allowances at a facility.

APPENDIX MATERIAL

Facility Name: Mesabi Nugget
Permit Number: 13700318-003

NOTE: Should a future trading program administered by USEPA include allowances for sulfur dioxide or nitrogen oxides, these would also be acceptable in combination or as a substitute for the Acid Rain program sulfur dioxide allowances

Example:

1. Assume that the Mesabi Nugget facility emits 200 tons of SO₂, 450 tons of NO_x, 300 tons of PM₁₀ and 50 tons of sulfuric acid mist in 2007. Q equals $200 + 450 + 300 + 50 = 1000$ tons. Let d equal 34 km, so Q/d equals 29.41. This is greater than 10, so step 2 is needed.
2. Assume that a power plant located 51 kilometers (i.e., $d1 = 51$) away from the BWCAW owns allowances and is willing to let Mesabi Nugget acquire up to 800 allowances. Calculating $Q/d - 10$ results in 19.41. Multiplying by $d1$ results in 990 ($A1$). But only 800 allowances ($B1$) are available, so Mesabi Nugget acquires them and moves on to step 3.
3. Assume that another power plant located 80 km away from the BWCAW (i.e., $d2 = 80$) owns allowances and is willing to let Mesabi Nugget acquire up to 500 allowances. Calculating $Q/d - B1/d1 - 10$ results in 3.73. Multiplying by $d2$ results in 298.04. Mesabi Nugget must acquire at least the number of allowances determined in this way (only whole allowances are available), so it must acquire 299 allowances from this second power plant. This power plant has that number available, so Mesabi Nugget acquires 299 allowances from the second power plant in addition to the 800 acquired from the first power plant. All credits must be of the same vintage that Mesabi Nugget emitted the pollution being address.

That would complete the needed allowance acquisitions for that calendar year. No further steps are needed.

TECHNICAL SUPPORT DOCUMENT
For
AIR EMISSION PERMIT NO. 13700318-003
Major Amendment

This technical support document (TSD) 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 determination to issue the permit.

1. General Information

1.1 Applicant and Stationary Source Location:

Table 1. Applicant and Source Address

Applicant/Address	Stationary Source/Address (SIC Code: 3312)
Mesabi Nugget Delaware LLC 6500 County Road 666 PO Box 235 Hoyt Lakes, MN 55750 Co-permittee: Steel Dynamics Inc 6714 Pointe Inverness Way, Ste 200 Fort Wayne, IN 46804	Mesabi Nugget Delaware LLC 6500 County Road 666 Hoyt Lakes, MN 55750
Contact: Jasmine Scheuring, Environmental Engineer Phone: 218-225-7331	

1.2 Facility Description

Mesabi Nugget is a 600,000 metric ton per year iron nugget production scale demonstration facility. The facility is near Hoyt Lakes, Minnesota, on a portion of the site formerly occupied by the LTV Steel Mining Company taconite mining and processing facility. Iron nuggets produced by the facility are approximately 96 to 98 percent iron and can be fed directly to electric arc furnaces (also known as mini-mills) as well as to conventional integrated iron and steel manufacturing facilities.

The iron nugget process produces iron directly from finely ground iron ore and coal. This technology has not yet been demonstrated in a facility of this size. Data gathered from a pilot plant located at the Northshore Mining Company taconite processing facility in Silver Bay, Minnesota were used to develop emission estimates used in the permit application and permitting review.

The facility includes a rotary hearth furnace (RHF), a product separator, coal pulverizers, flux pulverizers, green ball dryers, product coolers, and materials handling operations. The RHF is the major source of air pollutants, with significant emissions of carbon monoxide (CO), nitrogen oxides (NO_x), sulfur dioxide (SO₂), particulate matter (PM) and particulate matter less than ten microns in diameter (PM₁₀), volatile organic compounds (VOCs), lead, fluorides, sulfuric acid mist, and hazardous air pollutants (HAPs). The green ball dryer generates combustion gases (CO, NO_x, and VOCs) and particulate emissions. The coal

and flux pulverizers also generate combustion gases. The other emission units primarily generate particulate emissions.

The pollution controls on the RHF include an air infiltration system to reduce CO, VOC, and volatile HAP emissions and wet scrubbers to control SO₂, particulate matter, lead, fluoride, sulfuric acid mist, and particulate HAP emissions. Fabric filters (baghouses) are used on most other equipment to control particulate emissions, including particulate HAPs.

The facility will initially operate using raw materials that were successful in producing iron nuggets at the pilot plant to demonstrate that iron nuggets can be successfully made at this larger scale. However, the applicant has also indicated that the raw materials may change to advance economic, environmental, or technological agendas.

1.3 Description of the Activities Allowed by this Permit Action

The minor amendments are DQ number 2872 and are being rolled into a major amendment, which is DQ number 2782.

The first minor amendment permits construction and operation of a second emergency generator to ensure that the facility can maintain power to parts of the facility that could otherwise be unsafe if forced into a cold shutdown.

The second minor amendment permits construction and operation of a recycled fines crusher. The crusher is being added to crush recovered concentrate fragments to prevent scrapping concentrate fines that are otherwise too large to be processed.

The third minor amendment permits construction and operation of a concentrate feeder breaker. It also permits the outdoor storage of taconite concentrate. The feeder breaker will be used to break up concentrate if it is frozen together since the concentrate will be stored outdoors.

The major (PSD) amendment permits a change in operation of concentrate receiving from being delivered to the facility primarily by rail to being delivered to the facility primarily by road or rail. The main pollutants of concern are PM₁₀ and PM_{2.5}, which are emitted from trucks driving on paved roads.

The second major (PSD) amendment permits a change in the greenball dryer NO_x emission rate limit (on a lb/MMBtu basis). The initial permit action included a lb/hr limit that was calculated incorrectly and a lb/MMBtu limit that has no clear basis. The NO_x emission rate limit (on a lb/hr basis) was removed because it was redundant. Also, the final design of the greenball dryer has changed, and the fuel use limits have changed accordingly.

This permit action is rolling in three independent minor amendments with two major (PSD) amendments. The facility was initially classified as a 250 tpy, major PSD source and was not major for any other reason. The activities allowed by the moderate permit amendment primarily consist of fugitive source PM₁₀ emissions. Fugitive source emissions are included in the potential to emit calculations (September 30, 2009 stay of the December 2008 rule that exempted some facilities), which determine whether the PSD significance thresholds have been exceeded. The activities allowed by this permit action exceed the PSD significance thresholds. The second major amendment is major for PSD because BACT-determined NO_x limits on the greenball dryer are being changed.

1.4. Facility Emissions:

Table 2.1. Title I Emissions Increase¹ Summary – Greenball Dryer NO_x Limit Increase (EU 002)

Pollutant	Emissions Increase from the Modification (tpy)	Limited Emissions Increase from the Modification (tpy)	Source-wide Contemporaneous Increases and Decreases (tpy)	Net Emission Increase (tpy)	PSD/112(g) Significant Thresholds for major sources (tpy)	NSR/ 112(g) Review Required?(Yes/No)
NO _x	42.7	29.6	NA	29.6	40	No

The NO_x limit increase is a Title I change because it is part of an MPCA-initiated reopening, it is changing a BACT limit, and because it is a synthetic minor modification.

¹ Table 2.1 quantifies the NO_x emissions due to the Greenball Dryer Duct Burners, assuming no previous emissions. However, the current permit already allows 29.6 tpy of NO_x to be emitted, so there is no increase in annual allowable NO_x emissions.

Table 2.2. Title I Emissions Increase Summary – Concentrate Truck Delivery (FS 009)

Pollutant	Emissions Increase from the Modification (tpy)	Limited Emissions Increase from the Modification (tpy)	Source-wide Contemporaneous Increases and Decreases (tpy)	Net Emission Increase (tpy)	PSD/112(g) Significant Thresholds for major sources (tpy)	NSR/ 112(g) Review Required?(Yes/No)
PM ₁₀	≥ 67.7	67.7	NA	67.7	15	Yes
PM _{2.5}	≥ 10.2	10.2	NA	10.2	10	Yes
Total HAPs	≥ 0.02	< 0.02	NA	< 0.02	10/25	No

PM₁₀ and PM_{2.5} emissions depend on the silt load value that was assumed to be ~10 g/m².

Contemporaneous increases and decreases are not applicable because the plant is under construction and there have been no relevant changes since the issuance of the initial permit.

An NSR review is required for PM₁₀ and PM_{2.5}. See discussions below on PM₁₀ and PM_{2.5} BACT and modeling.

Allowance of concentrate delivery by truck only, if necessary, is a Title I change because the MPCA considers this to be a change in the facility's method of operation and the resulting increases in PM₁₀ (~ 68 tpy) and PM_{2.5} (~ 10 tpy) are greater than the PSD significance thresholds for modifications to major PSD sources (15 tpy and 10 tpy, respectively). A new BACT analysis was not completed. The MPCA considers the original BACT analysis for fugitive road dust to be sufficient. PSD modeling has been updated to take into account all modifications included in this amendment.

Table 2.3. Title I Emissions Increase Summary – Emergency Generator (EU 017)

Pollutant	Emissions Increase from the Modification (tpy)	Limited Emissions Increase from the Modification (tpy)	Source-wide Contemporaneous Increases and Decreases (tpy)	Net Emission Increase (tpy)	PSD/112(g) Significant Thresholds for major sources (tpy)	NSR/ 112(g) Review Required? (Yes/No)
PM	0.8	0.05	NA	0.05	25	No
PM ₁₀	0.8	0.04	NA	0.04	15	No
PM _{2.5}	0.7	0.04	NA	0.04	10	No
NO _x	23.9	1.37	NA	1.37	40	No
SO ₂	0.6	0.03	NA	0.03	40	No
CO	13.8	0.79	NA	0.79	100	No
Ozone (VOC)	1.6	0.09	NA	0.09	40	No
Total HAPs	< 0.1	< 0.1	NA	< 0.1	10/25	No

This is not a Title I change. The application used the generator manufacturer's hourly emission rates to determine an uncontrolled yearly emission rate based on 8760 hours of operation. None of the PSD significance thresholds are exceeded as a result of this addition. MPCA staff also verified that emissions due to this change do not exceed PSD significance thresholds when using emissions rates required by the NSPS.

Table 2.4. Title I Emissions Increase Summary – Recycled Fines Crusher (EU 018)

Pollutant	Emissions Increase from the Modification (tpy)	Limited Emissions Increase from the Modification (tpy)	Source-wide Contemporaneous Increases and Decreases (tpy)	Net Emission Increase (tpy)	PSD/112(g) Significant Thresholds for major sources (tpy)	NSR/ 112(g) Review Required? (Yes/No)
PM	4.1	4.1	NA	4.1	25	No
PM ₁₀	4.1	4.1	NA	4.1	15	No
PM _{2.5}	4.1	4.1	NA	4.1	10	No
Total HAPs	< 0.01	< 0.01	NA	< 0.01	10/25	No

This is not a Title I change. The application used the baghouse manufacturer's hourly emission rate (0.010 gr/dscf) to determine a controlled yearly emission rate. An uncontrolled emission rate cannot be obtained because the baghouse is an integral part of the process. None of the PSD significance thresholds are exceeded as a result of this addition.

Table 2.5. Title I Emissions Increase Summary – Outdoor Concentrate Storage (FS 010 and FS 011)

Pollutant	Emissions Increase from the Modification (tpy)	Limited Emissions Increase from the Modification (tpy)	Source-wide Contemporaneous Increases and Decreases (tpy)	Net Emission Increase (tpy)	PSD/112(g) Significant Thresholds for major sources (tpy)	NSR/ 112(g) Review Required? (Yes/No)
PM	13.1	13.1	NA	13.1	25	No
PM ₁₀	5.6	5.6	NA	5.6	15	No
PM _{2.5}	0.8	0.8	NA	0.8	10	No
Total HAPs	< 0.1	< 0.1	NA	< 0.1	10/25	No

This is not a Title I change. The application used the AP-42 emission factor equation for wind erosion. Moisture content of concentrate was assumed to be that of wind-dried concentrate. None of the PSD significance thresholds are exceeded as a result of this addition.

Table 3.1. Non-Title I Emissions Increase Summary – Emergency Generator (EU 017)

Pollutant	After Change (lb/hr)	Before Change (lb/hr)	Net Change (lb/hr)	Insignificant Modification Thresholds (lb/hr <)	Minor and Moderate Amendment Thresholds (lb/hr < or ≥)	Type of Amendment (Minor or Moderate)
PM ₁₀	0.17	0.0	0.17	0.855	3.42	
NO _x	5.47	0.0	5.47	2.28	9.13	Minor
SO ₂	0.14	0.0	0.14	2.28	9.13	
CO	3.16	0.0	3.16	5.70	22.80	
VOC	0.36	0.0	0.36	2.28	9.13	

Table 3.2. Non-Title I Emissions Increase Summary – Recycled Fines Crusher (EU 018)

Pollutant	After Change (lb/hr)	Before Change (lb/hr)	Net Change (lb/hr)	Insignificant Modification Thresholds (lb/hr <)	Minor and Moderate Amendment Thresholds (lb/hr < or ≥)	Type of Amendment (Minor or Moderate)
PM ₁₀	0.93	0.0	0.93	0.855	3.42	Minor

Table 3.3. Non-Title I Emissions Increase Summary – Outdoor Concentrate Storage (FS 010 and FS 011)

Pollutant	After Change (lb/hr)	Before Change (lb/hr)	Net Change (lb/hr)	Insignificant Modification Thresholds (lb/hr <)	Minor and Moderate Amendment Thresholds (lb/hr < or ≥)	Type of Amendment (Minor or Moderate)
PM ₁₀	2.35	0.0	2.35	0.855	3.42	Minor

Table 4. Total Facility Potential to Emit Summary

	PM₁₀ tpy	PM_{2.5} tpy	SO₂ tpy	NO_x tpy	CO tpy	VOC tpy	Single HAP tpy	All HAPs tpy
Total Facility Limited Potential Emissions	587	509	417	955	450	167	63	210

Table 5. Facility Classification

Classification	Major/Affected Source	Synthetic Minor	Minor
PSD	NO _x , SO ₂ , CO, PM ₁₀ , PM _{2.5}	VOC	
Part 70 Permit Program	NO _x , SO ₂ , CO, PM ₁₀ , PM _{2.5} , VOC,		
Part 63 NESHAP	X		

Pollutants in the Major/Affected Source column emit more than 250 tpy. VOC's are less than 250 tpy but exceed 40 tpy.

2. Regulatory and/or Statutory Basis

New Source Review

As of the date of issuance of this permit, Minnesota had no non-attainment areas under NSR. The facility is currently permitted as a major PSD source because its emissions are greater than 250 tpy. The facility is not major for any other reason.

This permit amendment authorizes the following changes and additions:

- Greenball Dryer (EU 002) Duct Burner lb NO_x/MMBtu Limit Increase. This change (from 0.09 lb NO_x/MMBtu to 0.25 lb NO_x/Btu) is being completed as an agency-initiated reopening. The limit is a BACT limit, so this change follows the major amendment process. The NO_x limit in the initial permit was erroneously calculated. While the lb NO_x/MMBtu limit is increasing, the size of burners is decreasing (from 205 MMBtu/hr to 39 MMBtu/hr), so the amount of fuel used is decreasing from

352 million cubic feet/year to 232 million cubic feet per year. The total annual NO_x emissions of 29.6 tpy do not increase from this change.

- Concentrate Truck Delivery (FS 009). This authorizes taconite concentrate to be delivered by truck only, if the facility chooses. The MPCA considers this to be a change in the method of operation. The total increase in PM₁₀ and PM_{2.5} emissions (including fugitives) due to this increased truck traffic is significant (exceeds 15 tpy and 10 tpy, respectively), so this is a major amendment under PSD. The MPCA considers the previously completed Fugitive Dust Control Plan to be BACT for the increased truck traffic.
- Emergency Generator (EU 017). A second emergency generator is being added. This is a minor amendment. The increase in emissions does not exceed significance thresholds.
- Recycled Fines Crusher (EU 018). A recycled fines crusher is being added. This is a minor amendment. The increase in emissions does not exceed significance thresholds.
- Outside Handling and Storage of Taconite Concentrate (FS 010 and FS 011). Taconite handling and storage were initially permitted to occur inside but will now be done outside. The increase in emissions does not exceed significance thresholds. Outside handling and storage of concentrate requires a Feederbreaker to break apart frozen chunks of concentrate during cold weather periods of time.
- The minor amendments included are independent of each other and independent of the major amendments.

The EPA deemed an Endangered Species Act (ESA) analysis necessary. The ESA analysis has been completed.

Part 70 Permit Program

The facility is a major source under the Part 70 permit program. With this permit amendment, the facility remains a major source under the Part 70 permit program. The bullet points above explain the changes being authorized in this permit amendment.

New Source Performance Standards (NSPS)

Two New Source Performance Standards are applicable to new operations at this facility. The Emergency Generator (EU 017) triggers 40 CFR pt. 60, subp. IIII and outside concentrate handling and storage (FS 010 and FS 011) triggers 40 CFR pt. 60, subp. LL.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

One NESHAP is applicable a new operation at this facility. The Emergency Generator (EU 017) triggers 40 CFR 63, subp. ZZZZ).

Compliance Assurance Monitoring (CAM)

The facility is a Part 70 major source, this is an amendment to the first-time permit, and there is one unit (EU 018) with a limit and add-on control. However, EU 018 is not a major source (based on controlled emissions), so CAM does not apply to the modifications allowed in this permit amendment.

Environmental Review

The increase in emissions due to each separate change or addition authorized in this permit is much less than the 250 tpy threshold. There is no other mandatory reason for completing environmental review for this project. Thus, environmental review is not necessary for this amendment. An Environmental Impact Statement is currently being completed for the Mesabi Nugget Phase II project.

AERA

None of the usual factors for requesting an updated AERA (e.g. increase in emissions of one single criteria pollutant exceeds 250 tons per year) prompted such a request by the project team. No new risk analysis was done. The AERA results will, however, be updated within the context of the ongoing Phase II Mesabi Nugget EIS.

Minnesota State Rules

Portions of the facility are subject to the following Minnesota Standards of Performance:

- Minn. R. 7011.2700 Standards of Performance for New Metallic Mineral Processing Plants.

Table 6. Regulatory Overview of Units Affected by the Modification/Permit Amendment

Level*	Applicable Regulations	Comments:
GP 007, GP 008, EU 009, and FS 009	40 CFR 52.21(j): BACT and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4	Removed the initial and subsequent opacity performance test requirements. The permit already contains a weekly visible emissions check, which is equally or more effective in detecting visible emissions.
GP 010	40 CFR pt. 60, subp. LL Minn. R. 7011.2700 40 CFR pt. 63, subp. B	Standards of Performance for Metallic Mineral Processing Plants. Permit authorizes outdoor concentrate unloading and stockpiling. Previous permit allowed indoor unloading and stockpiling. Requirements for Control Technology Determinations for Major Sources in Accordance with Clean Air Act Sections 112(g) and 112(j). Requires a case-by-case MACT determination when no NESHAP has been promulgated. Authority to require a fugitive emissions control plan onsite.
EU 002	Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000	The NO _x limit was changed from 0.09 lbs/MMBtu to 0.25 lbs/MMBtu because the previous limit was incorrectly calculated. The new limit is based on the expected inlet air temperature. The duty of the duct burners (39 MMBtu/hr) has changed from the initially permitted design (205 MMBtu/hr). The annual NO _x emissions of 29.6 tpy is not changing, so the fuel use will be reduced from 352 million cubic feet/year to 232 million cubic feet/year. The net effect is that the duct burners can be used 6072 hr/year. The 6.8 lb NO _x /hr limit has been removed from the permit because a lb/hr limit is redundant.
EU 017	40 CFR pt. 60, subp. IIII Minn. R. 7011.2300	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. <ul style="list-style-type: none"> • Limits hydrocarbons, nitrogen oxides, carbon monoxide and particulate matter. • Limits sulfur content of fuel. The limit becomes more stringent on October 1, 2010. • Limit on annual hours of testing. Sets opacity limit for the engine.
EU 018	40 CFR pt. 63, subp. B	Requirements for Control Technology Determinations for Major Sources in Accordance with Clean Air Act Sections

Level*	Applicable Regulations	Comments:
	Minn. R. 7011.0715 subp. 1.B Minn. R. ch. 7009	112(g) and 112(j). Requires a case-by-case MACT determination when no NESHAP has been promulgated. Specifically, limits were but on Front-half Particulate Matter and PM ₁₀ . Sets opacity limit. PM ₁₀ limit is used to show compliance with the ambient air standards through modeling.
CE 017	None	There are monitoring, preventative maintenance, and corrective action requirements based on 40 CFR pt. 63, subp. B. These are described in the periodic monitoring tables.

*Where the requirement appears in the permit (e.g., EU, SV, GP, etc.).

3. Technical Information

3.1 Increase Analysis

Emissions increase calculations are described in section 1.4 Facility Emissions. The spreadsheets containing detailed calculations are available upon request.

3.2 Periodic Monitoring

In accordance with the Clean Air Act, it is the responsibility of the owner or operator of a facility to have sufficient knowledge of the facility to certify that the facility is in compliance with all applicable requirements.

In evaluating the monitoring included in the permit, the MPCA considers the following:

- The likelihood of violating the applicable requirements;
- Whether add-on controls are necessary to meet the emission limits;
- The variability of emissions over time;
- The type of monitoring, process, maintenance, or control equipment data already available for the emission unit;
- The technical and economic feasibility of possible periodic monitoring methods; and
- The kind of monitoring found on similar units elsewhere.

The table below summarizes the periodic monitoring requirements for those emission units for which the monitoring required by the applicable requirement is nonexistent or inadequate.

Table 7. Periodic Monitoring

Level*	Requirement (rule basis)	Additional Monitoring	Discussion
GP 010	Opacity \leq 10 percent, using a 6-minute average. 40 CFR pt. 60, subp. LL	Weekly visibility checks required. Recordkeeping: Maintain watering records for stockpile operations. Fugitive dust control plan.	
EU 002	NO _x \leq 0.25 lbs/MMBtu. Fuel use \leq 232 million cubic feet/year. Title I Condition: 40 CFR 52.21(j): BACT and Minn. R. 7007.3000	Continuous monitoring of inlet air temperature. Gas flow metering	A lbs/MMBtu versus inlet air temperature curve is used to find the lbs/MMBtu for a given temperature. Hourly temperature averages are calculated from the continuous data. Then, three hour block averages are calculated from the hourly averages, and the corresponding lbs/MMBtu is determined from the curve. Gas metering data is recorded on a daily basis. This data is used to calculate a monthly total. A 12-month rolling sum is calculated based on the monthly totals.
EU 017	Opacity \leq 20 percent Minn. R. 7011.2300 Nonroad diesel fuel sulfur content \leq 500 ppm prior to October 1, 2010. Nonroad diesel fuel sulfur content \leq 15 ppm on or after October 1, 2010. Operation for maintenance and readiness testing \leq 100	Visibility check during each readiness test. Obtain and maintain fuel supplier sulfur content certification. Nonresettable hours-of-operation meter. Obtain and maintain	

Level*	Requirement (rule basis)	Additional Monitoring	Discussion
	hrs/yr. Comply with emissions standards in Table 1 to subp. IIII for all pollutants. 40 CFR pt. 60, subp. IIII	engine manufacturer certification.	
EU 018	Opacity \leq 20 percent? Minn. R. 7011.0715 subp. 1.B Front-half Particulate Matter \leq 0.010 grains/dry standard cubic foot. 40 CFR pt. 63, subp. B Minn. R. 7011.0715 subp. 1.B PM ₁₀ \leq 0.010 grains/dry standard cubic foot. 40 CFR pt. 63, subp. B	Initial performance test and weekly visible emissions check. Weekly visible emissions check and continuous parameter monitoring system to measure pressure drop (each successive 15 minute period).	
CE 017	No additional limits.		All limits are described at the emission unit it controls (EU 018).

*Where the requirement appears in the permit (e.g., EU, SV, GP, etc.).

3.3 Insignificant Activities

Mesabi Nugget has several operations which are classified as insignificant activities. These are listed in Appendix B to the permit. This permit action adds one additional insignificant activity as described below.

Table 8. Insignificant Activities

Insignificant Activity	General Applicable Emission limit	Discussion
Feederbreaker.	PM, variable depending on airflow Opacity \leq 20% (with exceptions) (Minn. R. 7011.0715 and Minn. R. 7011.610)	Due to the moisture content of the concentrate, the feederbreaker is expected to emit less than 2000 lb/year of all pollutants.

3.4 Dispersion Modeling Analysis

The Ambient Air Impact (for PM₁₀ and PM_{2.5}) is available in Attachment 1.

3.5 Comments Received

Public Notice Period: 11/5/09 – 12/4/09

EPA 45-day Review Period: 11/5/09 – 1/7/10

Comments were received from the Fond du Lac Band of Lake Superior Chippewa and EPA Region 5. MPCA received email confirmation from all parties that the MPCA response to comments was adequate to address their concerns. None of the comments requested a change in the draft permit. Resolution of the comments did not result in changes to the permit. As a result, the MPCA can proceed with two-stage issuance for this permit. A list of the comments and the MPCA's response is given below.

Comments were not received from the EPA during the additional 15-day review period. As a result, no changes to the permit were made.

3.5.1 Fond du Lac Band of Lake Superior Chippewa Comment

My comment is in reference to 40 CFR 52.21(r)(4) which requires that an updated BACT analysis be performed anytime BACT limits are changed, as this permit seeks to do for the greenball dryer. It does not appear that this update was done. Even though the original BACT analysis was done recently and the outcome may not change, I feel the update is needed in order to be consistent with EPA policy.

MPCA Response:

In response to the comment you made on the Mesabi Nugget Phase I permit, Barr submitted a supporting document. It contains a table that lists all NO_x control technologies, technical feasibility, and economic feasibility and concludes that Low NO_x Burners are BACT. The document is available upon request.

3.5.2 EPA Region 5 Comments

1) In the TSD, MPCA states that this permit action rolls three independent minor amendments with two major (PSD) amendments. On what basis were these activities deemed minor activities? Upon review of the permit, it seems like these activities would be related and should be aggregated for purposes of NSR applicability.

MPCA Response:

The different activities do not depend on one another. The owner will be updating their permit application to indicate why the activities are independent from each other.

Because the different activities do not depend on one another, the MPCA determined the three activities to be minor because they do not exceed minor amendment thresholds under Minnesota state rules (on a lb/hr basis).

A letter submitted by Barr to the MPCA that indicates why the activities are independent from each other was included as part of the MPCA's response to this comment. The letter is available upon request.

2) Please explain the basis for which the decision was made to modify the NOx BACT limits for the greenball dryer duct burner (EU 002) and the fuel usage condition that these limits were based upon, and not revisit the BACT analysis. Previous agency guidance about revising BACT conditions has also been rendered in documents such as Nov. 19, 1987 memo from OAQPS to R6 [<http://www.epa.gov/region07/programs/artd/air/nsr/nsrmemos/ogden.pdf>]; "Any time a permit limit founded in BACT is being considered for revision, a corresponding reevaluation (or reopening) of the original BACT determination is necessary." Please provide the reevaluation of the original BACT determination for this condition.

MPCA Response:

The original BACT stated that low-NOx burners are BACT for NOx emissions from the Greenball Dryer (EU002). From the original BACT:

"Natural gas burners are intended to heat the dryer during startup periods or when sufficient preheated air is not available from the Itmk3 process [note: this is the rotary hearth furnace in the permit]. Pollutant emissions from combustion during these periods will be minimized by the use of natural gas in combination with low NOx burners and good combustion practices. We expect that the dryers will operate on preheated air at a minimum of 80 percent availability. Because the first step in a maintenance shutdown (See Part III.A.5 above) is to stop the forward feed, there should be no need for natural gas firing during shutdown."

The final design of the burners is smaller than originally planned. The original design planned to use 205 MMBtu/hr burners, and the final design will utilize 39 MMBtu/hr burners. Also, the originally permitted fuel use was 352 million standard cubic feet per year and will decrease to 232 million standard cubic feet per year. The annual NOx emissions of 29.6 tpy do not increase.

The MPCA accepts the original BACT determination as BACT.

Two documents submitted by Barr to the MPCA were included as part of the MPCA's response to this comment. The first document explains why the NOx limit changes were made. The second document contains a table that lists all NOx control technologies, technical feasibility, and economic feasibility and concludes that Low NOx Burners are BACT. Both documents are available upon request.

3) Please explain Table 2.1. Title 1 Emissions Increase Summary - Greenball Dryer NOx Limit Increase (EU002). The table states the NOx emissions increase from the modification is 42.7 tpy but is limited to 29.6 tpy, with a net emissions increase of 29.6 tpy NOx - an amount below the NSR threshold. I don't see anywhere in the TSD how the PTE is limited and do not understand the statement in the TSD (Section 2. Regulatory and/or Statutory Basis) that "The total annual NOx emissions of 29.6 tpy do not increase from this change". This seems contradictory to the chart, which clearly states that the emissions increase from the modification is 42.7 tpy.

MPCA Response:

A footnote will be added to Table 2.1 in the TSD. It will state, "Table 2.1 quantifies the NOx emissions due to the Greenball Dryer Duct Burners, assuming no previous emissions. However, the current permit

already allows 29.6 tpy of NO_x to be emitted, so there is no increase in annual allowable NO_x emissions.”

4) For the Concentrate Truck Delivery (FS009), please provide or explain how the previously completed Fugitive Dust Control Plan is BACT for this permit modification. The Fugitive Dust Control Plan does not seem to be part of the public notice documents for this permit and I couldn't find it in the original permit docs available on PCA's website.

MPCA Response:

The original BACT stated that a Fugitive Dust Control Plan is BACT for the fugitive particulate matter emissions from road dust. From the original BACT:

“It is impractical to totally enclose the roads leading into the Mesabi Nugget facility. Therefore, the next most effective methods: paving, wet suppression and good housekeeping will be used to control fugitive emissions as described above and in the fugitive dust control plan.”

The MPCA has reviewed the old BACT. It is thorough and covers all technologies. No new technologies have been developed since the original BACT was completed. The draft BACT analysis for the Mesabi Nugget Phase II project concludes that the Fugitive Dust Control Plan is BACT for fugitive dust.

The MPCA accepts the proposed Fugitive Dust Control Plan as BACT.

Copies of the BACT determination and Fugitive Dust Control Plan from the 2005 application and the Fugitive Dust Control Plan for the current permit action application were also forwarded in response to this comment.

5) The TSD states "At this time, a new Endangered Species Act (ESA) analysis has not been done. The EPA has not yet determined if an analysis will be necessary." Please indicate in the final TSD that EPA deemed an ESA analysis necessary and (once it is complete) that it was complete prior to permit issuance.

MPCA Response:

The TSD currently states, “At this time, a new Endangered Species Act (ESA) analysis has not been done. The EPA has not yet determined if an analysis will be necessary.” This language will be updated to say, “The EPA deemed an Endangered Species Act (ESA) analysis necessary. The ESA analysis has been completed.”

4. Conclusion

Based on the information provided by Mesabi Nugget, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 13700318-003 and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team: Joseph Miller (permit writer/engineer)
 Steven Palzkill (enforcement)
 Andy Place (stack testing)
 David Beil (peer reviewer)

AQ File No. 4238; DQ 2782, 2872

The following information is available upon request:

1. Emissions Increase Calculation Spreadsheets
2. Facility Description and CD-01 Forms
3. Standardized Mobile Source (SMS) Spreadsheet

ATTACHMENT 1

Ambient Air Impact (PM₁₀ and PM_{2.5})

DEPARTMENT OF POLLUTION CONTROL AGENCY
MINNESOTA

SF-00006-05 (4/86)
STATE OF MINNESOTA

Office Memorandum

DATE: 10/22/2009

TO: Joe Miller
Air Quality Permits
Industrial

FROM: Ruth Roberson
Research Scientist
Risk Assessment/Air Modeling Unit
EAO

PHONE: 651.757.2672

SUBJECT: Mesabi Nugget Phase I Permit Amendment -Air Dispersion Modeling for PM₁₀ and PM_{2.5}

Air Dispersion Modeling Review

Class II air dispersion modeling was conducted by Barr Engineering on behalf of the Mesabi Nugget Delaware facility located in Hoyt Lakes, MN. The Class II modeling includes analysis for the criteria pollutants PM₁₀ and PM_{2.5} for attainment of National Ambient Air Quality Standards (NAAQS) and Prevention of Significant Deterioration (PSD) increments established by the U.S. EPA and the Minnesota Ambient Air Quality Standards (MAAQS) established by the Minnesota Pollution Control Agency.

Modeling Summary

The ambient air quality impact analysis was conducted using the AMS/EPA Regulatory Model (AERMOD version 07026). Meteorology, building downwash, and terrain, were considered in the modeling analysis (Table 1). The inputs used in the dispersion model included specific building dimensions and point, area, and volume source parameters (Tables 2-4). The modeling analysis also incorporated as-built modifications to stack parameters and source locations made during the final design process and accounts for additional truck traffic within the facility due to the changes in the concentrate delivery system. The current modeling analysis is an update and revision of the Phase I Project Permit Application modeling report, and follows the procedures used in the Phase I Project Permit Application modeling analysis. The modeling updates and revisions incorporated in the current analysis include: (1) switching from the ISC-PRIME model to EPA's preferred model AERMOD; (2) changing the meteorological data set from Hibbing, MN 1972 – 1976 to Hibbing, MN 2001 – 2005; and (3) evaluating PM_{2.5} NAAQS impacts. The Class II modeling analysis evaluated the NAAQS and PSD increment impacts for PM₁₀ and PM_{2.5} (No PM_{2.5} increment has been promulgated).

Summary of Impacts

PM₁₀ NAAQS

The 24-hour and annual PM₁₀ NAAQS was run as a single 5 year run for 2001-2005 using hourly emission rates. The 24-hour PM₁₀ concentration, including nearby sources and the MPCA Option 2

background concentration of $26 \mu\text{g}/\text{m}^3$ resulted in a maximum modeled concentration of $96 \mu\text{g}/\text{m}^3$ which is 64 percent of the standard. The maximum modeled annual PM_{10} concentration, including nearby sources and a background concentration of $12 \mu\text{g}/\text{m}^3$ was $26 \mu\text{g}/\text{m}^3$, which is below the MAAQS of $50 \mu\text{g}/\text{m}^3$ and 53 percent of the standard.

PM_{10} Increment

The maximum modeled 24-hour PM_{10} concentration was $20 \mu\text{g}/\text{m}^3$ this is 65 percent of the 24-hour increment of $30 \mu\text{g}/\text{m}^3$.

The maximum annual PM_{10} increment concentration was $3.0 \mu\text{g}/\text{m}^3$ this is 18 percent of the annual increment of $17 \mu\text{g}/\text{m}^3$.

$\text{PM}_{2.5}$ NAAQS

The 24-hour and annual $\text{PM}_{2.5}$ NAAQS were run as a single 5 year run for 2001-2005 using hourly emission rates. The $\text{PM}_{2.5}$ 24-hour NAAQS result is the average high 8th high (H8H) concentration out of 5 years of meteorology data. The maximum H8H $\text{PM}_{2.5}$ concentration, including a background concentration of $17 \mu\text{g}/\text{m}^3$ and nearby sources, was $26 \mu\text{g}/\text{m}^3$ which is 74 percent of the NAAQS standard of $35 \mu\text{g}/\text{m}^3$. The maximum annual $\text{PM}_{2.5}$ concentration, including nearby sources and a background concentration of $6 \mu\text{g}/\text{m}^3$ was $8.4 \mu\text{g}/\text{m}^3$ which is 56 percent of the NAAQS standard of $15 \mu\text{g}/\text{m}^3$.

cc: Shelley Burman
AQ File 2177

Table 1: Model Options

Mesabi Nugget, LLC Phase I Permit Amendment Modeling Report Summary of Selected Model Options			
<u>Option</u>	<u>Selection</u>		
Model	AERMOD version 07026		
Building Downwash	BPIPPRM version 04274		
Meteorological Data	5 year period 2001-2005		
Surface Station	Hibbing, MN (NWS Station 94931)		
Upper Air Station	International Falls, MN (NWS Station 14918)		
Terrain	Elevated – Receptor grid processed using AERMAP version 09040		
Receptor Grid	50-m spacing along boundary. 200-m spacing out to 1 kilometer. 2 km spaced 10 degree polar grid out 8 km from ambient air boundary		
<u>POLLUTANT</u>	<u>AVG PERIOD</u>	<u>Standard Evaluated</u>	
		NAAQS	INCREMENT
PM10	24 HOUR / ANNUAL	YES	YES
PM2.5	24 HOUR / ANNUAL	YES	NA
<u>Option</u>	<u>Selection</u>		
Control Pathway	DEFAULT selected		

Table 2: Point Sources

Source ID	X Coord. [m]	Y Coord. [m]	Base Elevation [m]	Release Height [m]	Emission Rate [g/s]	Gas Exit Temperature [K]	Gas Exit Velocity [m/s]	Inside Diameter [m]	Description
SV001	560874.8	527079.9	512.65	60	10.3	354.9	21.45	4.23	RHF and Green Ball Dryer
SV002	560996	527076.8	509.29	40	2.04	343.97	5.31	1.98	Pulverizer
SV003	561325.5	527058.6	481.52	30	0.358	298	56.77	1.26	Coal/Flux Unloading
SV004	561336.5	527062.2	490.8	30	0.358	298	18.92	1.26	Railcar Loadout
SV007	560764.7	527059.1	499.37	40	0.54	322.8	26.7	1.55	Material Transfer Operations
SV09A	560871.4	527054.6	496.22	18.7	0.023	324.3	55.28	2.7	Cooling Tower 9 Cell A
SV09B	560880.6	527054.7	496.24	18.7	0.023	324.3	55.28	2.7	Cooling Tower 9 Cell B
SV10A	560897.9	527055.0	496.23	18.7	0.023	311.9	44.97	2.7	Cooling Tower 10 Cell A
SV10B	560906.8	527055.2	496.21	18.7	0.023	311.9	44.97	2.7	Cooling Tower 10 Cell B

Table 3: Volume Sources

Source ID	X Coord. [m]	Y Coord. [m]	Base Elevation [m]	Release Height [m]	Emission Rate [g/s]	Side Length [m]	Building Height [m]	Initial Lateral Dimension [m]	Initial Vertical Dimension [m]	Description
FS034	561164. 3	527067 6	496.25	5	0.041	15.05		3.5	4.65	Coal Material Handling
FS038	561164. 3	527067 6	496.25	5	1	15.05		3.5	4.65	Coal Wind Erosion
FS035	561261. 7	527072 5	496.53	5	0.093	15.05		3.5	4.65	Flux Material Handling
FS039	561261. 7	527072 5	496.53	5	1	15.05		3.5	4.65	Flux Wind Erosion
FS037	560773. 4	527053 4	495.64	5	0.09	15.05		3.5	4.65	Slag Material Handling
FS041	560773. 4	527053 4	495.64	5	1	15.05		3.5	4.65	Slag Wind Erosion
FS010	561498. 2	527080 0	497.11	5	0.227	15.05		3.5	4.65	Concentrate Material Handling
FS011	561498. 2	527080 0	497.11	5	1	15.05		3.5	4.65	Concentrate Wind Erosion
SV005	560759	527071 1	512.41	30.48	0.223	24.08		5.6	14.18	RHF Roof Monitor
SV012	560957. 4	527076 3	511.7	24.08	0.117	24.08		5.6	11.2	Pulverizer Roof Monitor
MAIN059	562079. 8	527115 8	513.39	3.11	0.00925	59.98		13.95	2.89	
MAIN060	562067. 2	527118 5	514.68	3.11	0.00925	59.98		13.95	2.89	
MAIN061	562054. 6	527121 2	516.45	3.11	0.00925	59.98		13.95	2.89	
MAIN062	562042	527123 9	518.3	3.11	0.00925	59.98		13.95	2.89	
MAIN063	562029.	527126	520.24	3.11	0.00925	59.98		13.95	2.89	

	4	7						
MAIN064	562017. 7	527129 4	521.67	3.11	0.00925	59.98	13.95	2.89
MAIN065	562006. 5	527132 2	524.01	3.11	0.00925	59.98	13.95	2.89
MAIN066	561995. 3	527135 0	525.95	3.11	0.00925	59.98	13.95	2.89
MAIN067	561984. 5	527137 8	528.3	3.11	0.00925	59.98	13.95	2.89
MAIN068	561970. 5	527140 4	529.28	3.11	0.00925	59.98	13.95	2.89
MAIN069	561952. 8	527142 8	530.24	3.11	0.00925	59.98	13.95	2.89
MAIN070	561934. 2	527145 2	530.84	3.11	0.00925	59.98	13.95	2.89
MAIN071	561910. 3	527147 0	533.14	3.11	0.00925	59.98	13.95	2.89
MAIN072	561883. 4	527148 3	534.39	3.11	0.00925	59.98	13.95	2.89
MAIN073	561854. 9	527149 2	534.68	3.11	0.00925	59.98	13.95	2.89
MAIN074	561825	527149 1	534.26	3.11	0.00925	59.98	13.95	2.89
MAIN075	561795. 8	527148 5	536.47	3.11	0.00925	59.98	13.95	2.89
MAIN076	561767. 5	527147 5	537.1	3.11	0.00925	59.98	13.95	2.89
MAIN077	561739. 4	527146 5	537	3.11	0.00925	59.98	13.95	2.89
MAIN078	561711. 6	527145 4	536.92	3.11	0.00925	59.98	13.95	2.89
MAIN079	561683. 8	527144 2	534.87	3.11	0.00925	59.98	13.95	2.89
MAIN080	561656	527143 1	532.62	3.11	0.00925	59.98	13.95	2.89

MAIN081	561628. 2	527142 0	533.78	3.11	0.00925	59.98	13.95	2.89
MAIN082	561600. 4	527140 8	534.09	3.11	0.00925	59.98	13.95	2.89
MAIN083	561572. 6	527139 7	530.67	3.11	0.00925	59.98	13.95	2.89
MAIN084	561545. 2	527138 5	531.5	3.11	0.00925	59.98	13.95	2.89
MAIN085	561517. 8	527137 3	529.97	3.11	0.00925	59.98	13.95	2.89
MAIN086	561490. 3	527136 1	529.37	3.11	0.00925	59.98	13.95	2.89
MAIN087	561462. 9	527134 8	529.73	3.11	0.00925	59.98	13.95	2.89
MAIN088	561435. 5	527133 6	526.67	3.11	0.00925	59.98	13.95	2.89
MAIN089	561408	527132 4	528.01	3.11	0.00925	59.98	13.95	2.89
MAIN090	561380. 6	527131 2	528.38	3.11	0.00925	59.98	13.95	2.89
MAIN091	561353. 2	527130 0	525.47	3.11	0.00925	59.98	13.95	2.89
MAIN092	561325. 9	527128 7	527.24	3.11	0.00925	59.98	13.95	2.89
MAIN093	561298. 6	527127 5	523.98	3.11	0.00925	59.98	13.95	2.89
MAIN094	561271. 3	527126 2	522.96	3.11	0.00925	59.98	13.95	2.89
MAIN095	561243. 8	527125 0	524.65	3.11	0.00925	59.98	13.95	2.89
MAIN096	561215. 1	527124 2	522.01	3.11	0.00925	59.98	13.95	2.89
MAIN097	561185. 5	527123 7	521.27	3.11	0.00925	59.98	13.95	2.89
MAIN098	561155.	527123	521.68	3.11	0.00925	59.98	13.95	2.89

	9	2						
MAIN099	561126	527122 9	521.25	3.11	0.00925	59.98	13.95	2.89
MAIN100	561096. 2	527122 6	522.84	3.11	0.00925	59.98	13.95	2.89
MAIN101	561066. 3	527122 3	523.04	3.11	0.00925	59.98	13.95	2.89
MAIN102	561036. 5	527122 0	524.42	3.11	0.00925	59.98	13.95	2.89
MAIN103	561006. 8	527121 6	525.44	3.11	0.00925	59.98	13.95	2.89
MAIN104	560978. 3	527120 7	525.57	3.11	0.00925	59.98	13.95	2.89
MAIN105	560949. 8	527119 8	524.66	3.11	0.00925	59.98	13.95	2.89
MAIN106	560923. 1	527118 4	522.41	3.11	0.00925	59.98	13.95	2.89
MAIN107	560898. 3	527116 8	521.4	3.11	0.00925	59.98	13.95	2.89
MAIN108	560874. 3	527114 9	521.57	3.11	0.00925	59.98	13.95	2.89
MAIN109	560850. 4	527113 1	521.33	3.11	0.00925	59.98	13.95	2.89
MAIN110	560826. 5	527111 3	521.13	3.11	0.00925	59.98	13.95	2.89
MAIN111	560802. 6	527109 5	521.55	3.11	0.00925	59.98	13.95	2.89
MAIN112	560779. 1	527107 6	520.21	3.11	0.00925	59.98	13.95	2.89
MAIN113	560755. 8	527105 8	519.38	3.11	0.00925	59.98	13.95	2.89
MAIN114	560732. 6	527103 9	517.9	3.11	0.00925	59.98	13.95	2.89
MAIN115	560709. 3	527102 0	516.77	3.11	0.00925	59.98	13.95	2.89

MAIN116	560686	527100 1	516.44	3.11	0.00925	59.98	13.95	2.89
MAIN117	560662. 7	527098 2	516.13	3.11	0.00925	59.98	13.95	2.89
MAIN118	560639. 4	527096 3	515.94	3.11	0.00925	59.98	13.95	2.89
MAIN119	560616. 2	527094 4	515.54	3.11	0.00925	59.98	13.95	2.89
WEST009	560597. 8	527092 9	515.11	3.11	0.0136	59.98	13.95	2.89
WEST010	560574	527091 1	514.68	3.11	0.0136	59.98	13.95	2.89
WEST011	560550. 2	527089 2	513.86	3.11	0.0136	59.98	13.95	2.89
WEST012	560526. 4	527087 4	512.25	3.11	0.0136	59.98	13.95	2.89
WEST013	560503. 2	527085 5	509.84	3.11	0.0136	59.98	13.95	2.89
WEST014	560479. 4	527083 7	508.89	3.11	0.0136	59.98	13.95	2.89
WEST015	560454. 7	527082 0	509.01	3.11	0.0136	59.98	13.95	2.89
WEST016	560428. 9	527080 4	509.06	3.11	0.0136	59.98	13.95	2.89
WEST017	560403. 1	527078 9	508.16	3.11	0.0136	59.98	13.95	2.89
WEST018	560376. 8	527077 5	507.8	3.11	0.0136	59.98	13.95	2.89
WEST019	560349. 8	527076 2	507.36	3.11	0.0136	59.98	13.95	2.89
WEST020	560322. 3	527075 0	506.73	3.11	0.0136	59.98	13.95	2.89
WEST021	560294. 7	527073 8	505.97	3.11	0.0136	59.98	13.95	2.89
WEST022	560267.	527072	503.82	3.11	0.0136	59.98	13.95	2.89

	2	6						
WEST023	560239. 6	527071 4	502.41	3.11	0.0136	59.98	13.95	2.89
WEST024	560212	527070 2	501.2	3.11	0.0136	59.98	13.95	2.89
WEST025	560184. 3	527069 1	500.75	3.11	0.0136	59.98	13.95	2.89
WEST026	560156. 5	527068 0	500.1	3.11	0.0136	59.98	13.95	2.89
WEST027	560128. 7	527066 8	499.51	3.11	0.0136	59.98	13.95	2.89
WEST028	560100. 3	527065 9	498.35	3.11	0.0136	59.98	13.95	2.89
WEST029	560071. 7	527065 0	498.2	3.11	0.0136	59.98	13.95	2.89
WEST030	560043. 1	527064 1	498.66	3.11	0.0136	59.98	13.95	2.89
WEST031	560014. 6	527063 1	499.82	3.11	0.0136	59.98	13.95	2.89
WEST032	559986	527062 2	502.13	3.11	0.0136	59.98	13.95	2.89
WEST033	559957. 4	527061 3	501.82	3.11	0.0136	59.98	13.95	2.89
WEST034	559928. 7	527060 4	498.64	3.11	0.0136	59.98	13.95	2.89
WEST035	559900	527059 6	496.43	3.11	0.0136	59.98	13.95	2.89
WEST036	559871. 2	527058 7	495.36	3.11	0.0136	59.98	13.95	2.89
WEST037	559842. 4	527057 9	494.64	3.11	0.0136	59.98	13.95	2.89
WEST038	559813. 7	527057 0	493.57	3.11	0.0136	59.98	13.95	2.89
WEST039	559784. 9	527056 2	492.26	3.11	0.0136	59.98	13.95	2.89

WEST040	559756. 2	527055 3	491.55	3.11	0.0136	59.98	13.95	2.89
WEST041	559727. 4	527054 5	491.41	3.11	0.0136	59.98	13.95	2.89
WEST042	559698. 7	527053 6	491.1	3.11	0.0136	59.98	13.95	2.89
WEST043	559670	527052 7	490.96	3.11	0.0136	59.98	13.95	2.89
WEST044	559641. 2	527051 9	490.93	3.11	0.0136	59.98	13.95	2.89
WEST045	559612. 5	527051 0	490.91	3.11	0.0136	59.98	13.95	2.89
WEST046	559583. 8	527050 1	490.91	3.11	0.0136	59.98	13.95	2.89
WEST047	559555. 1	527049 3	490.92	3.11	0.0136	59.98	13.95	2.89
WEST048	559526. 4	527048 4	490.93	3.11	0.0136	59.98	13.95	2.89
WEST049	559497. 6	527047 5	491.35	3.11	0.0136	59.98	13.95	2.89
WEST050	559468. 9	527046 7	492.26	3.11	0.0136	59.98	13.95	2.89
WEST051	559440. 1	527045 8	492.87	3.11	0.0136	59.98	13.95	2.89
WEST052	559411. 3	527045 0	493.12	3.11	0.0136	59.98	13.95	2.89
WEST053	559382. 5	527044 1	493.33	3.11	0.0136	59.98	13.95	2.89
WEST054	559353. 7	527043 3	493.4	3.11	0.0136	59.98	13.95	2.89
WEST055	559324. 9	527042 5	493.39	3.11	0.0136	59.98	13.95	2.89
WEST056	559296	527041 7	493.39	3.11	0.0136	59.98	13.95	2.89
WEST057	559267	527040	493.25	3.11	0.0136	59.98	13.95	2.89

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WEST058	559238	527040 1	492.96	3.11	0.0136	59.98	13.95	2.89
WEST059	559208. 8	527039 4	493.05	3.11	0.0136	59.98	13.95	2.89
WEST060	559179. 5	527038 8	493.11	3.11	0.0136	59.98	13.95	2.89
WEST061	559150. 2	527038 2	493.32	3.11	0.0136	59.98	13.95	2.89
WEST062	559120. 7	527037 6	493.75	3.11	0.0136	59.98	13.95	2.89
WEST063	559091. 1	527037 1	493.91	3.11	0.0136	59.98	13.95	2.89
WEST064	559061. 6	527036 6	493.91	3.11	0.0136	59.98	13.95	2.89
WEST065	559031. 9	527036 1	493.89	3.11	0.0136	59.98	13.95	2.89
WEST066	559002. 3	527035 7	493.86	3.11	0.0136	59.98	13.95	2.89
WEST067	558972. 7	527035 2	493.74	3.11	0.0136	59.98	13.95	2.89
WEST068	558943	527034 7	493.7	3.11	0.0136	59.98	13.95	2.89
WEST069	558913. 4	527034 3	493.58	3.11	0.0136	59.98	13.95	2.89
WEST070	558883. 7	527033 8	493.25	3.11	0.0136	59.98	13.95	2.89
WEST071	558854. 1	527033 4	493.12	3.11	0.0136	59.98	13.95	2.89
WEST072	558824. 4	527032 9	492.59	3.11	0.0136	59.98	13.95	2.89
WEST073	558794. 7	527032 5	491.63	3.11	0.0136	59.98	13.95	2.89
WEST074	558765	527032 0	490.8	3.11	0.0136	59.98	13.95	2.89

WEST075	558735. 3	527031 7	489.69	3.11	0.0136	59.98	13.95	2.89
WEST076	558705. 3	527031 7	488.76	3.11	0.0136	59.98	13.95	2.89
WEST077	558676. 5	527032 5	488.02	3.11	0.0136	59.98	13.95	2.89
WEST078	558648. 7	527033 6	486.67	3.11	0.0136	59.98	13.95	2.89
WEST079	558622. 6	527035 1	485.23	3.11	0.0136	59.98	13.95	2.89
WEST080	558599. 8	527037 0	484.85	3.11	0.0136	59.98	13.95	2.89
WEST081	558582	527039 4	484.84	3.11	0.0136	59.98	13.95	2.89
WEST082	558567. 2	527042 0	484.87	3.11	0.0136	59.98	13.95	2.89
WEST083	558554. 4	527044 7	485.54	3.11	0.0136	59.98	13.95	2.89
WEST084	558541. 5	527047 4	487.05	3.11	0.0136	59.98	13.95	2.89
WEST085	558528. 5	527050 1	488.05	3.11	0.0136	59.98	13.95	2.89
WEST086	558515. 4	527052 8	489.02	3.11	0.0136	59.98	13.95	2.89
WEST087	558502. 2	527055 5	489.77	3.11	0.0136	59.98	13.95	2.89
WEST088	558489. 1	527058 2	490.14	3.11	0.0136	59.98	13.95	2.89
WEST089	558476	527060 9	490.59	3.11	0.0136	59.98	13.95	2.89
WEST090	558463. 2	527063 6	491.47	3.11	0.0136	59.98	13.95	2.89
WEST091	558450. 6	527066 4	491.76	3.11	0.0136	59.98	13.95	2.89
WEST092	558438.	527069	491.91	3.11	0.0136	59.98	13.95	2.89

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WEST093	558425. 9	527071 8	492.42	3.11	0.0136	59.98	13.95	2.89
WEST094	558413. 8	527074 6	493.44	3.11	0.0136	59.98	13.95	2.89
WEST095	558401. 9	527077 3	494.24	3.11	0.0136	59.98	13.95	2.89
WEST096	558391	527080 1	494.52	3.11	0.0136	59.98	13.95	2.89
WEST097	558382. 2	527083 0	494.72	3.11	0.0136	59.98	13.95	2.89
WEST098	558374	527085 9	495.12	3.11	0.0136	59.98	13.95	2.89
WEST099	558366. 2	527088 8	496.34	3.11	0.0136	59.98	13.95	2.89
WEST100	558355. 3	527091 5	497.09	3.11	0.0136	59.98	13.95	2.89
WEST101	558332. 2	527093 4	497.56	3.11	0.0136	59.98	13.95	2.89
UPVD001	562081	527113 6	512.08	3.11	0.00311	59.98	13.95	2.89
UPVD002	562054. 1	527112 3	512.1	3.11	0.00439	59.98	13.95	2.89
UPVD003	562027. 2	527111 0	512.42	3.11	0.00621	59.98	13.95	2.89
UPVD004	562003	527109 2	513.03	3.11	0.00761	59.98	13.95	2.89
UPVD005	561978. 7	527107 4	513.41	3.11	0.0108	59.98	13.95	2.89
UPVD006	561954. 4	527105 7	513.41	3.11	0.0108	59.98	13.95	2.89
UPVD007	561930. 5	527103 9	511.76	3.11	0.0108	59.98	13.95	2.89
UPVD008	561906. 4	527102 1	509.65	3.11	0.0108	59.98	13.95	2.89

UPVD009	561880. 3	527100 6	510.78	3.11	0.0108	59.98	13.95	2.89
UPVD010	561853. 2	527099 3	510.21	3.11	0.0108	59.98	13.95	2.89
UPVD011	561825. 1	527098 3	509.07	3.11	0.0108	59.98	13.95	2.89
UPVD012	561797. 9	527097 1	506.29	3.11	0.0108	59.98	13.95	2.89
UPVD013	561772. 3	527095 6	501.75	3.11	0.0108	59.98	13.95	2.89
UPVD014	561760. 1	527092 8	499.2	3.11	0.0108	59.98	13.95	2.89
UPVD015	561750. 6	527090 0	498.29	3.11	0.0108	59.98	13.95	2.89
UPVD016	561747	527087 0	497.35	3.11	0.0108	59.98	13.95	2.89
UPVD017	561739. 9	527084 2	496.43	3.11	0.0108	59.98	13.95	2.89
UPVD018	561725. 1	527081 6	495.65	3.11	0.0108	59.98	13.95	2.89
UPVD019	561705. 2	527079 6	495.13	3.11	0.0108	59.98	13.95	2.89
UPVD020	561676	527078 9	495.12	3.11	0.0108	59.98	13.95	2.89
UPVD021	561646. 4	527078 5	495.26	3.11	0.0108	59.98	13.95	2.89
UPVD022	561616. 5	527078 3	495.45	3.11	0.0108	59.98	13.95	2.89
UPVD023	561586. 7	527078 3	495.74	3.11	0.0108	59.98	13.95	2.89
UPVD024	561557	527078 7	496.33	3.11	0.0108	59.98	13.95	2.89
UPVD025	561527. 5	527079 3	496.85	3.11	0.0108	59.98	13.95	2.89
UPVD026	561498.	527080	497.11	3.11	0.0108	59.98	13.95	2.89

	2	0							
LECSV002	563186. 1	526446 3	440.23	16.76	0.003969	3.65	0.85	9.91	Coal Crusher
LECSV009	563079. 9	526438 1	439.52	11.9	0.0119	0.61	0.14	5.52	Lime Bin Vent

Table 4: Area Sources

Source ID	X Coord. [m]	Y Coord. [m]	Base Elevation [m]	Release Height [m]	24-HR Emission Rate [g/(s-m²)]	Annual Emission Rate [g/(s-m²)]	X Side Length [m]	Y Side Length [m]	Initial Vertical Dimension [m]	Description
FS01	557343.4	4921802	213	1	5.51E-06	4.72E-06	39	74	1.7	Unpaved Parking Lot
FS02A	557688.2	4921511	213.85	1	3.30E-08	2.74E-08	16.5	98.5	1.7	Vehicle Traffic - Paved Roads
FS02C	557639.6	4921596	214.01	1	3.30E-08	2.74E-08	100	52	1.7	Vehicle Traffic - Paved Roads
FS03	557542.5	4921760	214	1	1.10E-06	6.57E-08	52	23	2	Paved Roads - Shipping
FS04A	557488.7	4921818	213.08	1	5.29E-06	3.65E-06	8	42.5	2	Paved Road Deliveries
FS04B	557503.8	4921756	214	1	5.29E-06	3.65E-06	24	81	2	Paved Road Deliveries
FS04C	557441	4921773	213	1	5.29E-06	3.65E-06	27	21.5	2	Paved Road Deliveries
FS04D	557471.3	4921731	213.35	1	5.29E-06	3.65E-06	12	72	2	Paved Road Deliveries
FS02B	557594.7	4921612	213.93	1	3.30E-08	2.74E-08	136.5	16.3	1.7	Paved Front Parking Lot
FS04E	557463.9	4921723	213.35	1	5.29E-06	3.65E-06	11.5	34.5	2	Paved Delivery Road
FS05	557356.2	4921792	214	1	1.40E-08	1.02E-08	38.5	16	1.7	Paved Parking

Table 5: Modeling Results**Phase I Permit Amendment Dispersion Modeling Results**

Model Run	Pollutant	Averaging Period	Standard (µg/m ³)	Maximum Modeled Concentration (µg/m ³) [1]	Background (µg/m ³) [2]	Total Modeled Concentration (µg/m ³) [3]	Percent of Standard
PSD Increment	PM ₁₀	24-hour	30	20	--	20	65
		Annual	17	3.0	--	3.0	18
NAAQS/MAAQS	PM ₁₀	24-hour	150	70	26	96	64
		Annual *	50	14	12	26	53
	PM _{2.5}	24-hour	35	8.8	17	26	74
		Annual	15	2.7	6.0	8.7	58

[1] PM₁₀ 24-hour increment is H2H of five individual years.

PM₁₀ 24-hour NAAQS is H6H over five years.

PM_{2.5} 24-hour NAAQS is 5-year average of H8H concentrations.

Annual concentrations are highest of five individual years.

[2] PM₁₀ background concentrations reflect Option 2 values taken from an updated Table 6 of MPCA's

Modeling Guidance for Title V Air Dispersion Modeling (Version 2.2, dated October 22, 2004).

PM_{2.5} background values from Virginia, MN 2006-2008 Monitoring Data.

[3] NAAQS/MAAQS concentration includes modeled concentration plus background.

* Annual PM₁₀ standard is MAAQS only