APPENDIX B

Minnesota Pollution Control Agency

Minnesota Steel Industries, LLC
Air Emission Permit

RESPONSES TO COMMENTS ON THE DRAFT AIR EMISSION PERMIT

I. Correspondence from Governmental Organizations


Comment 1-1: “There has been recent discussion that the following item in the visibility mitigation section on page A-2 of the draft permit may not be clear:

   (2) Visibility offsets. The Permittee shall offset actual annual NOX emissions above 1300 tons per year from the Minnesota Steel facility by acquiring...

We feel that clarifying language should be added to the final permit to make it clear that the term "facility" in the language above includes haul trucks, shovels and other mobile material handling equipment related to the mining activities.”

Response: The modeling submitted by the Permittee in support of its visibility demonstration included emissions from the planned facility and associated mobile sources that are projected to be part of Minnesota Steel Industries, LLC (Minnesota Steel) normal operations. The facility is the planned stationary source, comprised primarily of “point” emission sources, such as emission units like furnaces and material handling equipment. (See the definition of stationary source in 40 CFR 52.21(b)(1)(i).)

To establish the 1300 ton per year (tpy) threshold, a number of modeling runs were conducted in which the visibility impacts were determined as the emissions from the facility were varied; during these runs, the contribution of the mobile sources was kept constant. The 1300 tpy threshold applies to the facility emissions only, so the language of the draft permit – as it applies to the facility emissions – is appropriate.

However, the draft permit did not contain language addressing the mobile source emissions that were modeled. To clarify the visibility mitigation methodology, the MPCA has added language to the provisions of the “Protection of Visibility in Class I Areas” section to ensure that the modeling performed in support of the Permittee’s visibility demonstration, which included the contribution of mobile source emissions, remains representative of actual operations.

Comment 1-2: “We support MPCA’s BACT determinations.”

Response: Comment noted.

Comment 1-3: “We believe that the results of the modeling analysis demonstrate that the NOX emissions from the MSI facility may significantly impair visibility in Voyageurs NP. We therefore recommend that, if the cost of controlling NOX for any of the indurating lines falls below $12,000 per ton, then MPCA should direct MSI to install and operate appropriate additional NOX.”
**Response:** The cost threshold recommended by National Park Service falls near the top of the range observed nationwide for BACT determinations for NO\textsubscript{X}. The MPCA believes that NPS is advocating this higher cost threshold due to the sensitivity of the National Parks to visibility impairment from NO\textsubscript{X} emissions. The MPCA recognizes the potential of emissions from the proposed project to impair visibility in Class I areas.

The BACT determination submitted in May 2007 estimated the cost of implementing the LoTOx™ technology for NO\textsubscript{X} control to be under $5,000 for EU039 and over $18,000 for EU038. If the MPCA had determined LoTOx™ to be technically feasible, the MPCA would have identified LoTOx™ as BACT for EU039 but not for EU038. The use of the threshold recommended by NPS would result in the same determination.

The draft permit requires the MPCA Commissioner to review the LoTOx™ feasibility report. There is also the possibility that the Commissioner will review a new BACT analysis for NO\textsubscript{X} controls. In these reviews, the MPCA will consider the recommendation of the NPS as a factor in its determination of economic and technical feasibility of NO\textsubscript{X} controls.

**Comment 1-4:** “We agree with the visibility mitigation measures discussed above.”

**Response:** Comment noted.

**Comment 1-5:** “Analyses of nitrogen and sulfur deposition in Voyageurs NP indicate that impacts would be insignificant. SO\textsubscript{2} and NO\textsubscript{x} emissions from the project (without LoTOx™) are not expected to have an adverse effect on terrestrial or aquatic ecosystems in the Class I areas.”

**Response:** Comment noted.

**II. Correspondence from Tribal Entities**

2. **Comments by Wayne Dupuis, Fond du Lac Band, Letter received electronically July 31, 2007**

**Comment 2-1:** “On Page A-2 of the draft permit, paragraph (2)(a) Visibility Offsets should state that “Each calendar year, the Permittee shall calculate facility-wide annual NO\textsubscript{X} emissions…” This would make the process clearer.”

**Response:** The emissions in question are those from the stationary source. The MPCA has clarified this language by adding a definition of “facility” to the permit.

**Comment 2-2:** “On Page A-3, paragraph (3) Alternative Methods, please explain more regarding how allowing MSI to take credit for emissions reductions at other facilities would work. Will reductions be 1:1? Is there a certain range of distance from MSI where reductions must take place? Will a modeling demonstration need to be performed for an “exchange” to be allowed, and what must the modeling show?”

**Response:** The MPCA has changed this language to clarify that Minnesota Steel is required to follow the mitigation strategy involving offsets if NO\textsubscript{X} emissions exceed 1300 tons per year. The permit includes a reference to “Alternative Methods” so that the company and the public are aware that, if conditions or regulatory requirements change, the permittee may propose an alternative strategy by submitting a permit amendment to the MPCA. Before becoming effective, those alternative strategies must be reviewed by the MPCA with the input of the Federal Land Managers (FLMs). A major amendment to the permit, which
requires a public comment period, is needed before the permittee can adopt an Alternative Method of protecting visibility in Class I areas.

While the assessment of any Alternative Method will take place at the time a major permit amendment is proposed, the MPCA would likely require any proposal that argues for reduced impacts based on emission reductions at other facilities to be supported by modeling of the overall visibility impacts on Class I areas from the combined increases at Minnesota Steel and the reductions at the other facilities. The MPCA would likely interpret visibility impacts identified from the combined contributions of the facilities (emission increases from Minnesota Steel, emission decreases at the other facilities) using guidance prepared by the FLMs. The MPCA’s evaluation would be similar to the process used to examine the impacts for the emissions from the proposed Minnesota Steel project.

Comment 2-3: “The paragraph on Sampling Methodology on page A-5 suggests that “for samples for which the lead or fluoride concentration is less than the detection limit, the Permittee shall assume a concentration of lead or fluoride equal to one half the detection limit”. Please explain why this approach is suggested. The Band believes that, in order to be conservative, the Permittee should assume a concentration equal to the detection limit.”

Response: The detection limit is the lowest concentration that the sampling equipment can reliably process and report. It has been the practice of the MPCA to use 50% of the detection limit to calculate an emission rate when a performance test reports a constituent at or below the detection limit. The MPCA recognizes that practice of using half the detection limit is not the most, nor the least, conservative assumption. The chemical concentration may be actually at a concentration ranging anywhere from zero up to the detection limit. Therefore, assuming the presence of an individual chemical is half of the detection limit results in an equal possibility that the actual concentration may be higher or lower than the assumed concentration.

Because pilot sampling of the ore and pellets reported results below the detection limit, it is anticipated that the lead and fluoride concentrations in the ore and taconite pellets would be very low. The MPCA believes this approach to be appropriate.

Comment 2-4: “The second item on page A-14 (Units Subject to Taconite Maximum Achievable Control Technology standards [MACT]) states that “In the event that an exceedance of an established operating limit except for a baghouse occurs, the Permittee shall initiate corrective action and determine the cause of the operating limit exceedence and complete the corrective action within 10 calendar days”. Please provide further explanation. The Band would like to know why baghouses are excluded from this requirement.”

Response: The second item on page A-22 establishes different, more stringent requirements for baghouses. This item states in part “The Permittee shall identify and implement a set of site-specific preventative maintenance and corrective action plan including the following:

1)...

2) Corrective action procedures for bag leak detection systems. In the event a bag leak detection system alarm is triggered, the Permittee shall 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 problem within 24 hours of the alarm, and complete the corrective action as soon as practicable.”

Comment 2-5: “There doesn’t appear to be follow-up testing for opacity on cooling towers EU 012, 109, 132, 140, 141, or 142. Although initial stack testing on these towers is required within 180 days after
start-up, further testing or examination is not required. While testing might not be necessary, some type of regular evaluation should be included in the permit.”

**Response:**
For Emission Units (and the associated Stack/Vents), EU 012 (SV 005), EU 109 (SV 033), EU 132 (SV 048), EU 140 (SV 053), EU 141 (SV 054), and EU 142 (SV 055), the Permittee must submit a Test Frequency Plan based on the results of the initial performance test (page B-4 of the draft permit) for opacity. Agency guidance identifies testing intervals of one to five years depending upon what percentage of the limit the actual emissions were measured during the initial performance test. In addition to the periodic testing, the Permittee is required to continuously monitor the liquid flow rate through the cooling towers vented through SVs 005 and 033. The liquid flow rate is the variable that most influences the particulate emissions from a cooling tower (other factors are design features). Therefore maintaining and monitoring the liquid flow rate through the cooling tower are effective means of limiting and monitoring the particulate emissions (and therefore opacity) from cooling towers.

**Comment 2-6:** “Under grouping GP015 (non-road fugitives), there is an opacity limit. However, there does not appear to be a requirement to regularly evaluate whether this limit is being met or exceeded. Also, there appear to be both 5% and 10% opacity requirements for these sources. Please make clear that the most stringent of these limits applies.”

**Response:**
The draft permit follows the example of the 40 CFR part 63, subpart RRRRR (Taconite MACT). The Taconite MACT regulates fugitive dust emissions through an approved and enforceable fugitive dust control plan. Under the Taconite MACT and the draft permit, the Permittee must develop, maintain and operate in accordance with a plan that addresses all fugitive dust sources. The Plan is intended and designed to minimize all fugitive emissions. The plan must contain a description of the work practices and methods of control including the application of suppressants, monitoring and record keeping necessary to comply with and demonstrate compliance with all applicable requirements. Additionally, the draft permit requires the Permittee to conduct daily Visible Emissions (VE) checks on fugitive emissions sources that have the potential to be the most significant; these fugitive emissions sources are included in GP 022.

Both opacity limits are listed in the permit because both are applicable requirements from separate regulatory programs. For example, a 7 percent opacity reading would be a violation of the BACT limit of 5 percent but would not violate the New Source Performance Standards (NSPS) limit of 10 percent. This situation would be different from an opacity of 12 percent which would clearly violate both limits potentially resulting in a different enforcement action.

The MPCA believes that this approach is appropriate and complies with all applicable requirements.

**Comment 2-7:** “The grouping of fugitive sources known as GP019 has a 10% opacity limit and a requirement to use Method 9 to test this limit within 180 days of start-up, but has no requirement for the facility to follow up regularly to make sure the limit continues to be met.”

**Response:**
GP 019 is the group of fugitive sources that are subject to the NSPS 40 CFR part 60, subpart LL. The NSPS requires the Permittee to conduct an initial performance test within 180 days of initial start-up with no additional testing, so the permit conforms to this requirement. However, in addition to the NSPS-related requirements, the draft permit follows the example of the Taconite MACT established at 40 CFR
part 63, subpart RRRRR (Taconite MACT). The Taconite MACT regulates fugitive dust emissions through an approved and enforceable fugitive dust control plan (Plan). Under the Taconite MACT and the draft permit, the Permittee must develop, maintain and operate in accordance with a Plan that addresses all fugitive dust sources. The Plan is intended and designed to minimize all fugitive emissions. The Plan must contain a description of the work practices and methods of control including the application of suppressants, monitoring and record keeping necessary to comply with and demonstrate compliance with all applicable requirements.

The MPCA believes that this approach is appropriate and complies with all applicable requirements.

Comment 2-8: “On page A-47, visual emissions checks are required for the grouping GP022 “while in operation”. The Band finds this to be overly vague and would like the MPCA to set a regular timeframe, such as daily or weekly, for this to be performed.”

Response: The individual emissions units that make up GP 022 are not always operated every day. Therefore the phrase “while in operation” is included in the requirement. It is the intent of the draft permit that the Permittee conduct a VE check on each of these fugitive emission sources each and every day that the sources are in operation. To clarify the intent of this requirement, the draft permit will be amended to include the word “daily” in the requirement to do VE checks.

Comment 2-9: “On page A-84, under “Emissions Monitoring”, the draft permit states that emissions shall be monitored at “SV018” in some items, but at “SV019” in other items. Is this an error or is it intentional due to the configuration of the process and its stacks? Also under SV019, it appears that no follow-up test for mercury emissions is required, even after the installation of LoTOx. The Band believes that testing every few years, and especially after the installation of this control device, should be included in the permit. Unit SV018, in contrast, requires follow-up testing one year after the initial mercury test.”

Response: The NOx and oxygen (O2) monitoring requirements inadvertently state that monitoring for these constituents should be conducted at SV 018. The requirement should refer to SV 019. The permit will be corrected.

The draft permit’s 15th line under “Performance Testing” under SV 019 states “Performance Test: due 180 days after the Permittee has completed installation and startup of a full scale LoTOx™ system for control of NOX emissions from EU 039 for mercury.”

Comment 2-10: “For process SV031, Oxide Charging Area, how will compliance with the opacity limit be demonstrated beyond the required initial performance test? Please answer the same for SV005 and SV033, DRI Plant Cooling Towers, and for GP004 and GP009.”

Response: The periodic monitoring section of the Technical support document (TSD) discusses the monitoring required to continuously demonstrate compliance with all applicable requirements. For SV 031, the TSD identifies the draft permit’s requirement for the Permittee to submit a Test Frequency Plan based on the results of the initial performance test (page B-5 of the draft permit). Agency guidance identifies testing intervals of one to five years depending upon what percentage of the limit the actual emissions were measured during the initial performance test. Additionally, because the emission unit vented through SV 031 is controlled by a baghouse and subject to the Taconite MACT, the emissions will be continuously monitored with a bag leak detector. Leak detectors are very sensitive to small changes in particulate emission rates and therefore very effective monitors of pollutants that contribute to opacity.
The permit also requires the Permittee to submit Test Frequency Plans SVs 005 and 033. In addition to the periodic testing, the Permittee is required to continuously monitor the liquid flow rate through the cooling towers vented through SVs 005 and 033. The liquid flow rate is the variable that most influences the particulate emissions from a cooling tower (other factors are design features). Therefore maintaining and monitoring the liquid flow rate through the cooling tower are effective means of limiting and monitoring the particulate emissions (and therefore opacity) from cooling towers.

For all of the EUs included in GP 004, the Permittee is required to submit a Test Frequency Plan based on the results of the initial performance test (page B-4 and 5 of the draft permit). Agency guidance identifies testing intervals of one to five years depending upon what percentage of the limit the actual emissions were measured during the initial performance test. Additionally, all of the EUs in GP 004 are controlled by wet scrubbers or baghouses and all of the emission units in GP 004 are subject to the Taconite MACT. Therefore, all of the EUs in GP 004 with baghouses are continuously monitored with bag leak detectors. Bag leak detectors are very sensitive to small changes in particulate emission rates and therefore very effective monitors of pollutants that contribute to opacity. The wet scrubbers that control the emissions from the rest of the EUs in GP004 are continuously monitored for liquid flow rate and pressure drop, the two primary indicators of performance for wet scrubbers.

For all of the SVs included in GP 009, the Permittee is required to submit a Test Frequency Plan based on the results of the initial performance test (page B-5 of the draft permit). Agency guidance identifies testing intervals of one to five years depending upon what percentage of the limit the actual emissions were measured during the initial performance test. Additionally, all of the SVs in GP 009 are controlled by baghouses and all of the emission units that vent through the SVs in GP 009 are subject to the Taconite MACT. Therefore, all of the SVs in GP 009 are continuously monitored with bag leak detectors. Bag leak detectors are very sensitive to small changes in particulate emission rates and therefore very effective monitors of pollutants that contribute to opacity.

Comment 2-11: “We find the language on page A-82, item #2 to be confusing. The item addresses greenball lead and fluoride concentration testing to be performed for unit EU038 (SV018), Indurating Furnace, Hood Exhaust. The second paragraph of the item states that if, after 12 months of weekly analysis, “the upper 95% confidence interval of all samples taken in the previous 12 month period is greater than the limit, the Permittee shall sample and analyze weekly until the upper 95% confidence interval of all samples taken in a continuous 12 month period is less than the limit”. Does this mean that sampling will be discontinued after this point or reduced to monthly, as stated in the first paragraph of the item as follows: in the case that “If, after the first year, each sample is less than the concentration limit or the upper 95% confidence interval of all samples taken in the previous 12 month period is less than the concentration limit, the Permittee may reduce the sampling frequency to monthly”? This example may also apply to other units that are required to sample periodically for lead or fluorides.”

Response: The intent of the draft permit was for the Permittee to return to monthly sampling after demonstrating that the limit is met with a 95 percent confidence interval on a 12 month basis. The MPCA agrees that this is unclear in the permit as drafted and proposes to replace the text as follows:

“For the first consecutive 12 months after initial start-up, the Permittee shall sample and analyze weekly.

If, after 12 consecutive months, each sample is less than the concentration limit or if the upper 95% confidence interval of all samples taken in the previous 12 month period is less than the concentration limit, the Permittee may reduce the sampling frequency to monthly.”
If, thereafter, the upper 95% confidence interval of all samples taken in the previous 12 month period is greater than the limit, the Permittee shall sample and analyze weekly until the upper 95% confidence interval of all samples taken in a continuous 12 month period is less than the limit. The Permittee may then reduce the sampling frequency to monthly.

The Permittee shall use the method described under the "Total Facility" requirements to calculate the upper 95% confidence interval."

These changes will also be made for the following, with the corresponding appropriate header language (e.g., “waste rock lead and fluoride concentration”):

SV 018, 019 030, 044, 049, 066,
FS 042
GP 009, 026, 027, 028, 029, 030

Comment 2-12: “For SV042, Flurospar Handling System, there does not appear to be a method to demonstrate compliance with the opacity limit except the initial testing. Please respond as to how the facility will demonstrate continuous compliance after the initial performance test.”

Response: Because the majority of the emissions from SV 042 occur during filling of the storage silo and this will occur relatively infrequently and over a very short period of time, the estimated controlled annual emission rate for this emission unit is very small, 0.0005 tons. The draft permit requires the Permittee to submit a Test Frequency Plan based on the results of the initial performance test (page B-3 of the draft permit). Agency guidance identifies testing intervals of one to five years depending upon what percentage of the limit the actual emissions were measured during the initial performance test. Additionally, the draft permit requires the permittee to conduct VE checks daily when the unit is being filled.

Comment 2-13: “For SV044 and SV049, Lines 1 and 2 EAF Baghouses, the emission limits section states that “No NOx emission data have been collected from an Electric Arc Furnace using Direct Reduced Iron to make high-quality slab steel. Within 13 months of initial start-up, the Permittee shall submit CEM data for the first 12 months of operation. The Commissioner shall establish a NOx limit and amend this permit to reflect the actual level of emissions. Any decrease in this permit limit will be accomplished administratively”. Yet on page A-104 of the draft permit, emission limits do exist for this process. Please explain how these limits were set and whether dispersion modeling will be updated to reflect the new limits when they are set.”

Response: The Line 1 and Line 2 EAF Baghouses are proposed to be identical units, so the emission limits in the draft permit are the same for both units. The draft permit establishes an hourly emission limit of 53 lb NOx/hr for each proposed EAF. This is an emission rate proposed by the Permittee and is the basis on which the modeling for the permit was performed. This rate cannot be changed without a major permit amendment; the major amendment process includes a public comment period.

The draft permit also establishes a limit of 0.30 lb NOx/ton of liquid steel. This limit ensures that, even at lower production rates, emissions are capped. (This ensures that they are well-controlled.) The level of 0.30 lb NOx/ton represents an upper emission level that these EAFs should be able to meet. This belief is based on (1) data collected from an EAF with somewhat different characteristics, and (2) engineering judgment concerning the differences between the characteristic between the EAFs.
The NOX emissions from the proposed EAFs will be monitored with Continuous Emission Monitors (CEMs). The provision mentioned in the comment allows the MPCA to review the data collected by the CEMs and adjust the emission limit downward if the data indicate that such a reduction can be made. Since the MPCA will not be changing the limit of 53 lb NOX/hr, the dispersion modeling will not be revisited.

**Comment 2-14:** “On page A-114, please explain how compliance with the NOx and opacity requirements for SV050 (Vacuum Degasser Boiler) will be demonstrated after the initial performance test is completed. No regular follow-up activity appears to be required. Likewise, SV051 (Tunnel Furnace) does not appear to have any emission limit demonstration requirements apart from the initial tests for any of the criteria pollutants emitted. These pollutants are limited to very specific pound-per-hour, grains-per-dry-standard-cubic-foot, pounds-per-ton-produced, or parts per million values. How can compliance be demonstrated without periodic review?”

**Response:** For SV 050, the Permittee is required to submit a Test Frequency Plan based on the results of the initial performance test (page B-4 of the draft permit) for NOx and opacity. Agency guidance identifies testing intervals of one to five years depending upon what percentage of the limit the actual emissions were measured during the initial performance test.

For SV 051, the Permittee is required to submit a Test Frequency Plan based on the results of the initial performance test (page B-4 of the draft permit) for PM, PM10, NOx, SO2, VOC, CO and opacity. Agency guidance identifies testing intervals of one to five years depending upon what percentage of the limit the actual emissions were measured during the initial performance test.

Based on experience and the fact that these emission units combust only natural gas, it is anticipated that these emission units will have no difficulty operating in compliance with all permit requirements. Additionally, the MPCA has the ability and authority to require performance testing if it is suspected that any emissions unit is not operating within its permitted limits.

**Comment 2-15:** “In examining SV063, SV064, and SV069 (Line 1 Pneumatic Gas Transfer Depressurization, Line 2 Depressurization, and Line 2 Pneumatic Gas Transfer Depressurization) although it appears that the requirements are largely similar, only SV0064 requires particulate testing to be performed every 36 months. Is this due to differences in process configuration? If so, how will continuous compliance with particulate limits be demonstrated for SV0063 and SV0069 after the initial performance test?”

**Response:** The emissions vented through SVs 063, 064, and 069 are controlled by wet scrubbers. The draft permit requires the Permittee to continuously monitor the wet scrubber’s liquid flow rate and pressure drop. Liquid flow rate and pressure drop are the two primary indicators of performance for wet scrubbers. The minimum pressure drop and liquid flow rates will be determined during initial and periodic testing. The wet scrubbers associated with these vents (CE 101, 096 and 102 respectively) are all part of GP 024. The requirement to continuously monitor the wet scrubbers is found on page A-48 of the draft permit. The draft permit requires the Permittee to submit a Test Frequency Plan based on the results of the initial performance test (page B-4 of the draft permit). Agency guidance identifies testing intervals of one to five years depending upon what percentage of the limit the actual emissions were measured during the initial performance test.
Comment 2-16: “Please explain how compliance with the opacity requirement for SV065 (Line 2 Package Boiler) will be demonstrated after the initial performance test is completed. No regular follow-up activity appears to be required.”

Response: For SV 051, the Permittee is required to submit a Test Frequency Plan based on the results of the initial performance test (page B-4 of the draft permit) for NOx and opacity. Agency guidance identifies testing intervals of one to five years depending upon what percentage of the limit the actual emissions were measured during the initial performance test.

Based on experience and the fact that these emission units combust only natural gas, it is anticipated that these emission units will have no difficulty operating in compliance with all permit requirements. Additionally, the MPCA has the ability and authority to require performance testing if it is suspected that any emissions unit is not operating within its permitted limits.

Comment 2-17: “After studying the requirements for wet scrubbers CE014, 015, 016, 019, 021, 022, 023, and 095 the Band is curious as to why Operation and Maintenance plans and corrective action procedures are only required for CE016 and CE019. Although the other scrubbers might not be controlling the level of emissions that CE016 and CE019 are, they are subject to taconite MACT and should have Operation and Maintenance plans and corrective procedures in place.”

Response: The permit does require an Operation and Maintenance plan and corrective action procedures for the listed scrubbers.

The first and second requirements under GP 008 (Wet Scrubbers Subject to Taconite MACT: CE 014, CE 015, CE 021, CE 022 and CE 023) states “The Permittee shall prepare, and at all times operate according to a written operation and maintenance plan. The Permittee shall maintain a current copy of the operation and maintenance plan onsite, and it must be available for inspection upon request. The plan must be kept for the life of the affected source or until the affected source is no longer subject to 40 CFR part 63, subpart RRRRR.” The permit also states: “The plan shall address 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. In the event that an exceedance of an established operating limit for an air pollution control device occurs, the Permittee shall 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 site-specific continuous parameter monitoring system (CPMS) monitoring plan in accordance with 40 CFR section 63.9632(b).” These are the same requirements and rule citations as those established in the draft permit for CEs 016 and 019.

The first requirement under GP 024 (Wet Scrubbers Subject to Case-by-Case MACT: CE 095, CE 096, CE 101, CE 102, CE 105, and CE 106) states “Operation and Maintenance Plan: The Permittee shall prepare, and at all times operate according to a written operation and maintenance plan. The Permittee shall maintain a current copy of the operation and maintenance plan onsite, and it must be available for inspection upon request. The plan must be kept for the life of the affected source.” The permit also provides: “Operation and Maintenance Plan (continued): The plan shall address 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. In the event that an exceedance of an established operating limit for an air pollution control device occurs, the Permittee shall 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 site-specific continuous parameter
monitoring system (CPMS) monitoring plan.” These are the same requirements as those established in the draft permit for CEs 016 and 019. The citations are different because the rule under which the requirement is imposed is the case-by-case MACT rule rather than a source category MACT.

III. Correspondence from Individuals and Companies


Comment 3-1: “I am concerned for my families health, well being and about the daily interruption to my now peaceful retirement due to the emissions and noise. As part of this permit the MPCA should encourage MN Steel to increase the buffer zone on the proposed project boundary to help protect the local community.”

Response: Minnesota Steel’s air quality impact analyses demonstrated that ambient levels of air pollution are not expected to exceed National or Minnesota Ambient Air Quality Standards (NAAQS or MAAQS) or health-based benchmarks at or beyond the proposed property boundary. The conclusions of the air quality analysis do not support a requirement to expand the project boundary. In addition to this analysis, a health risk assessment examined potential health impacts beyond the property boundary and found potential risks to be below a level of health concern.

The potential for ‘nuisance’ noise levels to increase due to mining operations and traffic is acknowledged, as described in Section 4.10.2 and 6.8.2.2 of the Minnesota Department of Natural Resources and U.S. Army Corps of Engineers’ Final Environmental Impact Statement for the Minnesota Steel project (Final EIS); however, the increases would not likely exceed state noise regulatory thresholds.

Analysis of potential blasting impacts and mitigation are included in Final EIS Sections 4.10.2.2 and 4.10.3.2, respectively. Minnesota Steel has indicated that blasting is anticipated to occur only once a week. Although the nuisance factor related to blasting is acknowledged, the limited frequency of blasts (plus the other blasting mitigation strategies described in Section 4.10.3.2 of the Final EIS) may lessen the overall nuisance effect.

Comment 3-2: “After reviewing the permit application it seems that further emissions reductions are technologically and economically feasible but the company has chosen lower control standards due to higher costs. To protect the community that has to live with this facility in their back yards, I encourage the MPCA to increase the BACT economic thresholds considered to be economically feasible to drive emissions down. For a mere 0.8% of the total project cost published recently, approximately 800 tons of emissions (640 NOX, 120 sulfur dioxide [SO2] and 32 hydrogen sulfide [H2S]) could be reduced on an annual basis as discussed below in detail. This would reduce almost 20,000 tons of emissions over the project life if it operates for 20 years consistent with the Final EIS.”

Response: Whenever it conducts a BACT analysis, the MPCA follows the guidance of the U.S. Environmental Protection Agency (U.S. EPA) in determining the appropriate controls for each pollutant subject to BACT at each source that emits that pollutant. The MPCA also did so for the proposed Minnesota Steel facility. The method of determining cost-effectiveness proposed by the commenter is not supported by regulatory guidance or by the MPCA’s practice.

Comment 3-3: “Although the Class II modeling analysis shows that this permit application does not exceed MAAQS and NAAQS standards, PM10 emissions in the area are approaching 50% of the limit. At some point this could limit future development in the area.”
Response: Predicted air pollution impacts are neither so high nor so widespread that future development should be affected in the general area surrounding Minnesota Steel. New facilities in the area will need to demonstrate compliance with the applicable standards, including NAAQS and MAAQS for particulate matter less than 10 microns (PM$_{10}$).

Comment 3-4: “The fugitive dust control plan should meet or exceed BACT standards to help control PM and PM$_{10}$ emissions.”

Response: The MPCA reviewed the fugitive dust control plan submitted by Minnesota Steel and determined that it met BACT standards.

Comment 3-5: “Referencing the technical support document (TSD), the waste gas stack potential uncontrolled emissions are 134 tons per year. Assuming that the same control efficiency of 90% can be achieved this would lead to a 121 ton reduction in SO$_2$ emissions. The TSD mentioned that this control was not economically feasible because the control cost was $22,000 per ton of reduction. Therefore in order to reduce 121 tons of emissions the company would have to pay 2.66 million dollars. This cost is only 0.15% of the total project cost of 1.7 billion dollars.”

Response: While the costs of controls may be low relative to the cost of the entire facility, they are high when compared to typical guidelines for determining cost effectiveness. The MPCA followed the guidance of the U.S. EPA in determining the appropriate controls (i.e., BACT) for each pollutant from each emission source at the proposed facility. This included SO$_2$ emissions from the waste gas stack.

Comment 3-6: “Low temperature oxidation (LTOX) has been selected as the control technology for the waste gas stream. As stated in the TSD this technology has not been used in this application before and the results are unknown. At best, 88% control efficiency is expected. During the shake down period the proposed NOx limits are 330 lbs/hr and 928 lbs/hr while the company is figuring out how to make LTOX work. This is not a reasonable approach and ULNBs or IFGR should be considered as an alternative control strategy. Assuming that it will take the company 30 days to learn how to make LTOX work and install the correct equipment this would lead to an additional 453 tons (assuming 24 hours of operation for the 30 day period) of unnecessary NOx emissions had an alternative control strategy been selected. The 453 tons would be approximately 30% of the entire facilities NOx emissions for an entire year and it seems that another more proven technology would be the best choice to protect the public.”

Response: Due to the high temperatures needed for the reaction that occurs in the pelletizing furnace, technologies such as ultra low NOx burners (ULNBs) and internal flue gas recirculation (IFGR) that reduce the flame temperature to reduce NOX have limited effectiveness. However, the draft permit does require the installation and operation of low-NOX burners on the pelletizing furnace. (See the requirements for EU039/SV019.)

Comment 3-7: “A control technology was not selected for the hood exhaust stream. The proposed permit limit is 165 lb/hr. Had a control technology been selected with an assumed control efficiency of 88%, the emissions reduction would be 636 tons per year (165 lb/hr x 8760 hrs of operation / 2000 lbs * 0.88 CE = 636 tons). The TSD mentions control cost would be $18,000 per ton. Therefore, to get the 636 ton reduction the company would have to spend 11.4 million dollars. This cost is only 0.67% of the total project cost of 1.7 billion dollars.”

Response: While the costs of controls may be low relative to the cost of the entire facility, they are high when compared to typical guidelines for determining cost effectiveness. The MPCA followed the
guidance of the U.S. EPA in determining the appropriate controls (i.e., BACT) for each pollutant from each emission source at the proposed facility. This included NOX emissions from the hood exhaust.

**Comment 3-8:** “The Company has selected to not control the H2S emissions due to the cost and has proposed a limit of 8.2 lb/hr. Had a control technology been selected and assuming a 90% reduction can be achieved the emissions reduction would be approximately 32 tons per year (8.2 lb/hr x 8760 hrs of operation / 2000 lbs x 0.9 CE). The cost of controlling the emissions is $29,000 per ton of reduction per the TSD. If the company had decided to control the emissions the cost would be close to one million dollars. This cost is only 0.05% of the total project cost of 1.7 billion dollars.

H2S emissions are a big concern to the community from an odor and safety perspective. The MPCA could raise the BACT cost threshold and nearly eliminate H2S emissions from the facility based on the analysis above.”

**Response:** While the costs of controls may be low relative to the cost of the entire facility, they are high when compared to typical guidelines for determining cost effectiveness. The MPCA followed the guidance of the U.S. EPA in determining the appropriate controls (i.e., BACT) for each pollutant from each emission source at the proposed facility. This included H2S emissions from the Direct Reduced Iron top gas purification system.

**Comment 3-9:** “The H2S emissions in the facility summary of the TSD are 65 tons per year. This appears to be an error since the only source found was the DRI top gas purification stream. The 65 represented was in ppm and when calculated out to tons per year equals 32. Please correct this error if appropriate.”

**Response:** The value of 65 tons per year is correct. There are two direct reduced iron lines, each with a top gas purification stream that emits 32 tons per year. Rounding accounts for the fact that 65 is greater than 32 doubled.

**Comment 3-10:** “In general CO emissions are uncontrolled as they should be throughout the permit application. The increased energy and associated NOx emissions (assuming thermal oxidation is selected) to convert CO emissions into CO2 emissions is unnecessary since the CO emissions will naturally become CO2 in the atmosphere. This does increase green house gases and contribute to global warming but all of industry will be required to reduce these emissions when the regulations catch up. For now, it is better to not increase NOx that will create ozone when mixed with VOC emissions.

Following the comment above, the flare used to control the vacuum degasser CO emissions should be removed and the cost savings could be applied to other pollutants like H2S. The CO oxidation is not worth the additional fuel combustion and energy consumption. The emissions should be just vented to atmosphere until global warming regulations are applicable. At that time appropriate reductions can be made across all industries.”

**Response:** The MPCA followed the guidance of the U.S. EPA in determining the appropriate controls (i.e., BACT) for each pollutant from each emission source at the proposed facility. This included CO emissions from the vacuum degasser.

**Comment 3-11:** “As mentioned in the cover letter, the company can achieve approximately 800 tons (120 SO2, 640 NOx, 32 H2S) of additional emissions reduction beyond the current permit application for approximately another 15 million dollars. This would require the MPCA to consider BACT economic thresholds of up to $19,000 per ton of emissions when looking at all pollutants that can be reduced instead
of an individual pollutant analysis. This cost is very reasonable for a new green field facility considering that the cost would be less than 1% of the total project cost of 1.7 billion dollars. The overall project life impact would be close to 20,000 tons of emissions reduced if the facility operates for 20 years as described in the Final EIS. This cost is also reasonable because other industries in Minnesota are spending millions of dollars to reduce pounds of mercury emissions per year.”

**Response:** The MPCA followed the guidance of the U.S. EPA in determining the appropriate controls (i.e., BACT) for each pollutant from each emission source at the proposed facility. One element of the BACT determination is a cost-effectiveness demonstration. Most of the technologies advocated by the commenter that the MPCA did not identify as BACT were determined not to be cost-effective. (Ultra low-NOX burners (ULNBs) and internal flue gas recirculation (IFGR) were determined not to be technically feasible.) The method of determining cost-effectiveness proposed by the commenter is not supported by regulatory guidance or by the MPCA’s practice.

**Comment 3-12:** “The permit application states that the information submitted in the Final EIS is sufficient to complete the ESA consultation. The Final EIS states that the process is currently being negotiated with the USFWS and EPA Region 5. These statements are conflicting each other. The information submitted in the Final EIS is just a general overview and there are no modeling results for each pollutant over PSD levels compared to each endangered or threatened species (plant or animal). A food chain analysis should also be completed as part of the review consistent with what other industries have recently been required to do. It seems that EPA Region 5 is allowing a more lenient review compared to other industries in Minnesota and the region to push this application through without a full analysis. The MPCA should require the full process to be followed consistent with several other facilities that have had a fraction of the emissions increase. Examples of facilities that have had to complete the full review with a fraction of the emissions increase compared to this project can be found at the following website.

http://yosemite.epa.gov/r5/r5ard.nsf/ESA%20Documents!OpenView”

**Response:** An Endangered Species Act (ESA) consultation is required of the federal government for certain federal actions, including for the proposed Minnesota Steel project. The responsibility for the consultation lies with the Army Corps of Engineers in its role as the Lead Federal Agency for the EIS. The Army Corps of Engineers in consultation with the USFWS completed its consultation on August 23, 2007.

**Comment 3-13:** “According to page 26 of the TSD, “the exhaust leaving an indurating furnace is high in water vapor which condenses as it enters the atmosphere.” This makes determining the opacity near the stack difficult if not impossible using Method 9. Because of this difficulty, the opacity limit is set at 10% which is higher than necessary. Rather than allowing a higher opacity limit due to difficulties with compliance demonstration, the MPCA should require a continuous opacity monitoring system (COMS) and set a more appropriate limit of 3%. By using a analyzer system in the stack the water is still a full vapor and it can read right through it getting a pure opacity reading of the stack. This system will ensure that the company is not using the attached steam plume to mask unnecessary emissions, will give the community the reassurance that this facility is truly meeting top of the line emission standards and will greatly simplify compliance demonstration making it easier for the company to certify their Title V permit.”

**Response:** The MPCA identified a wet scrubber as the (BACT) for controlling particulate emissions. The wet scrubber causes the flue gases to be highly saturated. Such highly saturated streams interfere with accurate opacity measurement when continuous opacity monitoring systems (COMS) are used, since the
water vapor will be cooling and forming droplets within the stack. For that reason, the MPCA did not require Minnesota Steel to install and operate COMS or set an opacity limit less than the 10% included in the draft permit.


Comment 4-1: “A citizen’s advisory committee is required but was not established…..why not?”

Response: MPCA believes this comment was directed to the Nashwauk Public Utilities Commission (PUC) proposal to route a gas pipeline to serve the Minnesota Steel project, and is not related to the MPCA air emissions permit that is the subject of this proceeding. The proposal to route a gas pipeline is currently subject to environmental review at the Minnesota Department of Commerce and Minnesota Public Utilities Commission.

Comment 4-2: “First year engineering students learn that flow in a straight pipe is more efficient than making turns and does not produce wear patterns due to flow. It is also safer as there are less welds required. The first choice of a route should have been the straightest line from source to site.”

Response: See answer to comment 4-1 above.

Comment 4-3: “What are the credentials of the engineering company …. Pipeline construction and operating experience?”

Response: See answer to comment 4-1 above.

Comment 4-4: “What are the credentials of the Nashwauk PUC? How can a self-appointed group of homegrown boys with no experience in this type of business be given the power to disrupt the lives of neighbors and community members while spending our tax dollars to fund a billion dollar project that has no guarantee of success?”

Response: See answer to comment 4-1 above.

Comment 4-5: “Why is information on the progress of this project being withheld from the public when it involves public land and funds ie core samples, Environmental Impact, expenditures, change of route to appease a wealthy non-resident landowner?”

Response: See answer to comment 4-1 above. With regard to the environmental permits subject to the jurisdiction of the MPCA, the MPCA notes that the draft air and water permits were available for public review, as is the data supporting those permits. A public meeting for the draft permits was held on July 11th, 2007 in Nashwauk. The draft and final EIS and supporting data were also available for public review. A public meeting for the draft EIS was held March 14th, 2007 in Nashwauk. Minnesota Steel and its consultant provided core sample data in response to at least one citizen request.

Comment 4-6: “Why when this area is already experiencing an excess of health problems, was a study not done to determine what the effect of adding another industry is going to do to the citizens? Far too many people do not realize the difference between a taconite mine and a mine with a steel mill attached.
Informing everyone should have been the first order of business. As cancer, asbestosis and mesothelioma from mining are being studied as potential causes of our health problems, this seems to be a very poor time to move into something that may be a major contributor.”

Response: The impacts of air pollutants, including chemicals that may cause cancer, were assessed in the air quality analyses conducted as part of the Final EIS for and draft air permit Minnesota Steel. These analyses looked at inhalation of air pollution as well as the uptake of pollutants in plants. MPCA concluded that the predicted impacts from Minnesota Steel operations would meet applicable standards and health benchmarks.

The specific types of health effects mentioned in the comment, asbestosis and mesothelioma, are associated with exposures to asbestos. Ore samples were analyzed and examined for the presence of fibers (e.g., asbestos, amphibole minerals) in the ore body that Minnesota Steel proposes to mine. The Final EIS for the Minnesota Steel project concluded that fibers are not expected to be present in that ore deposit. These results are consistent with historical information indicating that the identity of the minerals from tailings samples from the western part of the Mesabi Iron Range is vastly different from the minerals from tailings operations on the east end of the Range.

Given this information, it is unlikely that amphibole minerals or asbestos will be released from ore deposits or taconite proposed to be mined by Minnesota Steel. For more information please see section 4.7.2.6 of the Final EIS.

Comment 4-7: “What is the future of steel in the world market? What guarantee is there that Essar will be able to compete especially in light of the fact that it already has and will have more steel mills in countries where construction costs are much lower and wages are pennies per hour?”

Response: The commenter expresses concerns about the world steel market. The MPCA does not evaluate the financial viability of projects when permits are issued.

Comment 4-8: “This project requires additional electrical power. There will be costs for construction and operation…..for whom?”

Response: It was determined during the EIS process that there is sufficient power on the electrical grid to provide necessary electricity to Minnesota Steel. Any new proposed electricity-generating units will follow appropriate rules for environmental review and ratepayer billing.

Comment 4-9: “What guarantee is there that at any point Essar will not bow out leaving Itasca County with the mess and the costs? Essar being an Indian company, has it been considered that this may be an opportunity for a “payback” for what Enron did to them?”

Response: This comment expresses concern over what will happen to the facility site if the mining operation proves uneconomical. The MPCA does not typically require financial assurance in water and air permits because, in most cases, the water discharges and air emissions stop when the permittee goes out of business. The MPCA notes that the DNR can require financial assurance for closure of mine projects under the Permit-To-Mine.
Comment 4-10: “Has it been considered that the ore is a natural resource that will be depleted and that is going to go into the world market, not take care of our domestic needs? What will this country do sixty years from now when it is gone and another war develops? We will not successfully defend ourselves with paper airplanes and plastic ships and those that possess the material we need may be the opposition.”

Response: The commenter expresses concern over national security if ore resources are depleted. The MPCA has no authority to deny a permit on the basis of long-term national security issues.

Comment 4-11: “Has it been considered what this is going to do to the tourist industry of Itasca County? Very few citizens realize the size of the project, the amount of water it will use, the amount, the type or the odor of emissions that will come from this process.”

Response: The MPCA staff believes this comment was directed to the Final EIS and that the Final EIS addressed this issue. The project’s size, water use, and emissions were all described in the Final EIS.

Comment 4-12: “There is little doubt that the next presidential election is going to bring some major changes. Should the next administration 18 months from now include Mr Gore or Christy Whitman and other serious environmentalists, these projects are going to die a swift (but painful for Itasca County) death.”

Response: Minnesota Steel’s air permit includes all applicable rules and requirements. The facility will also need to comply with any future environmental rules.

Comment 4-13: “I would like to end with questions concerning rumors that abound. The first is that the concept of this project originated with a study performed by National Steel that was stolen and given to one of the big promoters of this project. How did MSI come by the information?”

Response: This comment is not related to the terms of the draft air emissions permit. As noted above, the MPCA does not evaluate the financial viability of permit applicants. In this case, as in most cases involving a substantial investment, the MPCA staff assumes that the project promoters have completed an economic analysis of the project and are confident that it can be operated economically.

Comment 4-14: “The second was that National Steel did not move forward with it because they realized that there was not enough water to operate in Keewatin and Nashwauk and the cost fuel and of transporting the additional material for manufacturing steel was prohibitive. This was nearly 20 years ago, what will it be now?”

Response: See response to comment 4-13. This comment is not related to the terms of the draft air emissions permit. The MPCA encourages the commenter to submit this comment to Minnesota Steel.

Comment 4-15: “Surely everyone has crested Midway Hill on a sunny day to see Rapids shrouded in a fog or seen Clay-Boswell’s plume sinking rather than rising. This is due to a weather phenomenon called a temperature inversion. Rarely occurring over islands in the ocean due to winds and the stable water temps, it occurs anytime in Minnesota but mostly during winter. This results from a strong northern cold front riding over a warm air mass. The warm air and all it contains is pushed to ground level. Dependent on the winds, this situation could be maintained for hours or days. I live on a finger of land in a riverbed and watch it happen as my wood stove smoke fills the riverbed to the north. As the front moves, the smoke stays at ground level but is pushed south down the riverbed. This happened Friday morning, December 8th, 2006.”
Excelsior intends to build to the Mesaba Project with three gasifier stacks much shorter than Clay-Boswell’s north and above the nearby towns. Temperature inversions will continue to occur. Toxic gases being discharged will accumulate as the plant operates and increase dramatically if there is an “upset” in one or more of the gasifiers when the system is opened to prevent an explosion. Mr. Wadley gave a presentation for Excelsior last summer. Though no longer with Excelsior, he was very knowledgeable, reciting “anticipated” levels of sulfur dioxide, carbon dioxide, carbon monoxide, nitrous oxide, hydrogen sulfide and several others in parts per million and stated these were within “acceptable limits” during “normal” operations. What was not said was NIOSH (National Institute of Occupational Safety and Health) established permissible exposure limits for adult males for working eight hours per day not exceeding 40 hours per week. This doesn’t apply to pregnant women or young children being exposed 24/7.

Most remember the disaster of Bouphal, India where toxic gases held at ground level for miles caused thirty thousand casualties. Not many remember that an inversion over London in 1952 killed 12,000 people or that 70 died and hundreds were sickened in Donora, Pennsylvania.

Imagine the horror of having a four generation family living in Taconite, Bovey or Marble? Or had the Mesaba Project been operational December 8th as the kids got off the school buses. The lakes to the north will be a catch basin for this toxic brew as inversions develope.”

Response: The comment appears to refer to the Mesaba / Excelsior Energy project and not Minnesota Steel.

Comment 4-16: “Mining companies have known for years it was not safe to blast during inversions as the deadly fumes would stay in the pits.

What would an inversion have done for Nashwauk, Pengilly or Calumet had Tom Micheletti successfully turned Butler Taconite’s kiln into a hazardous waste incinerator? Sorry Tom, not everyone has forgotten. Maybe Itasca would already be Minnesota’s number one most polluted rather than the current number three? The inversion hazard will also apply to Nashwauk when MSI becomes a reality that fills the Hawkins Pit and Sucker Lakes.

We can debate global warming or the “potential” of mercury poisoning our lakes, we cannot change the topography or the vagaries of Mother Nature. Do we really want history to repeat itself? Taconite? A ghost town or town of ghosts?

...my comments and concerns are EIS "related" but I am trying to provide a look at "the big picture"......what we are doing to the area (and the earth). A temp inversion that rolls out of the Hawkins over Nashwauk with the toxicity of what this plant will discharge is going to provide a huge problem.”

Response: The air quality impacts analyses completed as part of the air emissions permit and Final EIS included predictions of air pollution impacts during inversions and other meteorological conditions that may increase ambient concentrations of air pollution. The studies demonstrated that predicted air quality impacts would comply with air quality standards during a wide range of meteorological conditions.

Comment 4-17: “AND, forgot to ask the question on mercury discharge......in March, MSI was admitting to 160-180 pounds annually (and we know that was low ball figure), now it is suddenly 60 pounds and they are admitting to a much larger operation??????”

Response: None of Minnesota Steel’s submittals to MPCA included emissions estimates in the range of 160-180 pounds per year. The estimated quantity of mercury emitted from the proposed facility is based
on statistical analysis of the mercury content of ore samples taken from the actual ore body to be mined. The estimate is based on the belief that all the mercury available for liberation will be released during the first high temperature heating of the pellet in the taconite furnace. To verify the emission rate, the permit requires the Permittee to conduct mercury emissions performance tests on both taconite furnace stacks (SV 018 and SV 019) within 180 days of initial start up and one year after initial start on SV 018. Because LoTOx™ has the potential to control elemental mercury emissions in addition to NOx, the permit requires the Permittee to test SV 019 for mercury emissions after the installation of LoTOx™ to test its effectiveness. Minnesota is also in the process of developing the mercury Total Maximum Daily Load (TMDL) Implementation Plan. The goal of this plan is to reduce mercury emissions in Minnesota by 93 percent. With the implementation of the plan, significant mercury emission reductions will probably be required at all new and existing mercury sources in Minnesota. The permit does not exempt the proposed project from consideration as a source of potential further mercury emission reductions.


Comment 5-1: “What effect will the mining and blasting have on my well water and the well of my son’s family next to us?”

Response: Please see the responses to comments on the draft water quality permit.

Comment 5-2: “What will the blasting do to our personal property? Having been employed by a mine I know the damage blasting can do.”

Response: The impacts of blasting were covered in Section 4.10 of the Final EIS. Minnesota Steel will follow existing regulations related to blasting.

Comment 5-3: “The Northwest wind will blow dirt and dust right into my home. How is MSI going to clean the air from dust and particles so small the eye cannot see…..CO2 dust, asbestos, silicone, etc.”

Response: The draft permit requires Minnesota Steel to install and operate particulate controls on its operations. These particulate controls are highly effective at removing particles from the emission streams. Using emission rates that include these controls, the air quality impacts analysis performed in support of the air permit indicated that the ambient air quality – such as the air quality around your home – will comply with all regulatory standards.

Comment 5-4: “Not long ago, the Butler Mine was closed due to poor ore and old mining practices. Now the NEW PLAN for MSI is to use the same type of equipment and mining practices that were used by them from the 60’s and the 70’s…………all that plan did was leave a mess! Have you looked at the Red Paint Rock and the Tailings Ponds? The last mess dumped on the area has never been cleaned up and now you want to start again.”

Response: While some of the mining technologies may be similar to those employed by Butler Taconite, the air and water permits will require Minnesota Steel to meet all modern pollution control regulations. The specific impacts of the project were studied in detail in the Final EIS.

Comment 5-5: “I wonder---------have you an answer to what will become of Snowball and Swan Lakes, and all the area residents should you put in this mine?”
Response: The effects of the Minnesota Steel project on local lakes were assessed as part of the Final EIS and water quality permit development. Please see the responses to comments on the draft water quality permit.

Comment 5-6: “I have heard about the job promises and I really don’t want to anymore as I question how many of our local people will actually be hired!”

Response: Concerns regarding the local economy are beyond the scope of the air emissions permit but Section 6.14 of the Final EIS analyzes socioeconomic effects of the project.

Comment 5-7: “I would really appreciate a straight forward satisfactory answer to what will become of our level of living resources.”

Response: The Final EIS examined the effect of the proposed project on the local environment and quality of life, including local infrastructure and recreational trails. Predicted air quality impacts attributable to Minnesota Steel do not significantly degrade local air quality.


Comment 6-1: “We are very concerned about the environmental dangers that people living near the propose plant would be exposed to. The present design is totally unacceptable and must be redone to insure much greater protection to the land, water, wildlife and people in the area. Many of our neighbors and I would be very happy if the plant were not built in our area. Perhaps it should be built in India.”

Response: The commenter’s written concerns are general but the issues listed were included in the Final EIS. The recommended mitigation measures related to air quality from the Final EIS were incorporated into the draft air emissions permit along with applicable rules and regulations. Human health and ecological risk assessments were conducted as part of the Final EIS to characterize potential effects from the facility’s emissions to natural resources and public health. These assessments concluded that risks posed by the facility’s emissions will be at or below applicable standards or health benchmarks.


Comment 7-1: “We would like a copy sent to us of the proceedings from tonights meeting – please.”

Response: A copy of the meeting transcript was sent to Mr. Baumchen on July 24, 2007.


Comment 8-1: “I’d like to receive your written response to the concerns addressed at this evening’s meeting in Nashwauk – specifically the concerns raised by the gentleman who lived on Swan Lake and was so against this project and its using “old” technology.”

Response: Responses to comments made at the July 11, 2007 public meeting and submitted to MPCA in written form will be sent out to all commenters and others who request copies.


Comment 9-1: “I am not opposed to MSI’s mine project. We need this.”
Response:  Comment noted.

Comment 9-2:  “I am opposed to the mine being so close to my house and 14 others on the west side of Snowball Lake. The noise and dust from blasting and mining will be terrible.”

Response:  The draft air permit includes requirements for control of fugitive dust from mining activities. Results of the air quality analysis completed as part of the permit comply with NAAQS and MAAQS. Noise was evaluated in Section 4.10 of the Final EIS, concluding that predicted noise levels would meet state standards.

Comment 9-3:  “It could make our wells go dry.”

Response:  Please see responses to comments on the draft water quality permit.


Comment 10-1:  “MSI must (needs to) follow all global warming laws and pollution control laws to make this area safe for all our citizens in the area.”

Response:  The Minnesota Steel permit includes a condition that notifies the permittee that it is required to comply with laws enacted in the future. When future regulations related to climate change or other air pollution issues are promulgated, this proposed project as well as other entities would be required to meet all applicable regulations.


Comment 11-1:  “Now, when we look at the maps and you see the borders that are drawn, the borders eliminate the area around Snowball and Oxhide Lakes. They just arbitrarily go up and around these areas. Now, I can't believe that the pollution is going to be coming through and see your line on this map and go around these areas. These areas are going to be in direct line with the pollution, the air quality pollution when it comes through there. How can you eliminate these areas arbitrarily just because you don't want to deal with the people there?

The boundary, it comes down 169, goes around these two areas and then follows 169 basically. Now, they're excluding them just for expediency, but the line says that this is the area for air pollution. The air pollution doesn't know that you've excluded us.”

Response:  Air quality analyses conducted as part of the Final EIS and air emissions permit development conclude that all applicable ambient air standards will be met in the areas surrounding Snowball and Ox Hide Lakes, external to Minnesota Steel property. The human health risk assessment examined health risks beyond the property boundary across a grid occupying areas referenced in the comment. Impacts from air emissions were modeled in these locations and risks were calculated assuming “worst-case” operating conditions. The potential impacts in this area did not demonstrate excessive risks.

Comment 11-2:  “You're going to be dewatering these old mine pits. Has the sediment in the pits ever been tested? Because I know in the old mines they used to use a lot of lead based lubricants that were just dropped on the ground, and they're probably laying dormant in the bottom of these pits. When you start pumping them, you're going to stir this up. Is this going to be pumped into Snowball and Oxhide and Swan or wherever?”
But what I'm talking about isn't the water as it stands now but the sediment when it gets stirred up.”

**Response:** Please see responses to comments on the draft water quality permit.

12. **Comments by Robert Bassing. Oral and written comments at public meeting on July 11, 2007.**

**Comment 12-1:** “My question on the monitoring of the wells around the tailings pond, that's the issue. Who does the testing and who pays who for the testing?

A follow-up question on that. Then they pay an outfit to do the testing of the water to see that it's up to standards? What procedures does the MPCA have in place to protect against the fox guarding the chicken coop?

How would you know you have faulty data and how would you follow up and how would you make sure that this company that is being paid to do this testing isn't giving you a basket of goods that are camouflaged?”

**Response:** Please see responses to comments on the draft water quality permit.

**Comment 12-2:** “There's a lot of good intentions here, and people like to trust one another. But the fact of the matter is in a democracy we have to be vigilant. I hear a lot of, the MPCA is doing a good job. But when I ask them questions, they say, the company provides the results from a company they pay to do the testing. I guess I'm willing to trust people but not a corporation that much. I think we should put a rigid box around these corporations that have real hard penalties if they try to pull the wool over the public's eyes.”

**Response:** Minnesota Steel is responsible for conducting testing required in the environmental permits and submitting the results of the tests to MPCA. It is common practice for a company the size of Minnesota Steel to rely on an environmental consulting firm to provide testing services, although Minnesota Steel will likely obtain some sample results using its own staff. The permit requires Minnesota Steel to submit records and follow protocols that make it difficult to manipulate results. MPCA staff will review the details of the submittals and determine compliance. The MPCA has the authority to collect its own samples or to split samples, to monitor testing as it is conducted, and to review records. Falsified data could lead to a serious and possibly criminal enforcement action against the company.

**Comment 12-3:** “Are tertiary treatment of discharge water, pH testing of discharge water, and CBOD testing of discharge water being considered?”

**Response:** Please see responses to comments on the draft water quality permit.

13. **Comments by Bob Tammen. Oral comment at public meeting on July 11, 2007.**

**Comment 13-1:** “You said here there will be no steel plant process water discharge. That includes the taconite concentrate processing in with the steel plant?

Because, you know, Minntac says it's not economical to clean up their process water, so we'd have the same problem here, of course.”
Response: Please see responses to comments on the draft water quality permit.


Comment 14-1: “However, what people need to understand on any of these applications is that Minnesota Iron & Steel supplied all the information to the PCA and to the DNR for these evaluations, and there's not a chance they overstated their emissions. They're always going to be understated.”

Response: Minnesota Steel and their consultants provided data to MPCA in support of their air emissions permit application. MPCA critically reviewed the data and worked with the company to determine appropriate emissions limits for the permit, in compliance with state and federal rules. Based on its evaluation and its familiarity with similar facilities, the MPCA permit staff believes that the information supplied by the company and its consultants was conservative with regard to stated emissions. The air emissions permit requires monitoring and recordkeeping to ensure those limits are met.

Comment 14-2: “Now, the concern we're going to have, things like the height of the tailings basin has never even been disclosed, and we understand it will be 70 to 100 feet tall. And at those kinds of levels -- beach area has a one and a half page covering of how they're going to remediate such a thing. There's no description of the area they're going to allow to be exposed in sand.”

Response: The Fugitive Dust Control Plan in the Technical Support Document for the draft air permit contains a detailed description of the measures Minnesota Steel will take to control emissions from the tailings basin. Fugitive emissions from the tailings basin were included in the air quality analyses conducted for the air permit and the Final EIS, the results of which complied with state and federal standards.

Comment 14-3: “We also have carbon monoxide that's way undercounted from my own monitoring and experience on direct reduction of iron facilities without the data available.”

Response: The commenter failed to provide verifiable scientific information that supports his claim. The emission data provided in the permit application is consistent with information that comes from the vendors that design the Direct Reduced Iron process equipment that Minnesota Steel plans to use. The MPCA supports the use of vendor data as it is likely to accurately reflect emissions from the process that the vendor will provide.

Comment 14-4: “One of the more serious ones that I understood now tonight better, I think, NOx, is probably the haze issue that they're concerned about in the Boundary Waters Canoe Area. You made a point on the air emissions, listing the 1300 -- I'm not sure what the unit was, but I'm assuming it's some kind of a mass unit -- micrograms per cubic meter. But whatever the unit is, the issue is they did not include the 200 megawatts of natural gas-fired power that MSI is going to need to have to operate the facility, which are major NOx generators, so it's going to go way over the number that's being disclosed in that application.”

Response: The draft air emissions permit for Minnesota Steel includes emission limits for NOx based on the proposed facility design. Neither the MPCA nor the Minnesota Department of Commerce has received any applications for the construction of new natural gas-fired power plants in Nashwauk. If such a source were ever proposed, the project would undergo appropriate environmental review and permitting. MPCA spoke to a representative of the Nashwauk PUC, who stated that there are no plans to build any additional power sources to serve Minnesota Steel.
Comment 14-5: “Also the groundwater itself is right next to Swan Lake. When Butler was in place and operating, the lake was contaminated. Multiple requests to the EIS and the EIS process to have the evaluations done on the lake were not done for heavy metals and also for red water, it's called, when everybody used to get itching reactions from this as the plant operated. There is no change in practice from the previous practice as far as the approach that Minnesota Steel will use, except to make a much steeper and bigger tailings basin closer to the lake, so the effect is not going to be negative. There's a known effect by people that live on the lake, and it's going to get worse. That's not covered or addressed in any way, shape, manner or form, and we've made at least six or seven comments.”

Response: Please see responses to comments on the draft water quality permit.

Comment 14-6: “Many, many other things are occurring, but I want to just address one more, and that's the heavy metals issue. Very limited heavy metals looks like they're being finally monitored a little bit; five wells around the tailings basin. There's been no analysis disclosed of complete heavy metal and toxic metal analysis of the actual ore, so we have no basis to know when it's ground up what's going to enter the groundwater.”

Response: Please see responses to comments on the draft water quality permit.

Comment 14-7: “In addition, we don't know where the monitoring wells are located; and again, it's being monitored by Minnesota Iron & Steel, who have no reason to disclose any bad samples that they might be having.”

Response: Please see responses to comments on the draft water quality permit.

Comment 14-8: “And from what I understand, on Lone Pine Township's land purchase requirement has also told us that they don't want to deal with the environmental issues of the past Butler. They're just going to pile it on top. So there's a bunch of already existing disposal underneath that's not being addressed. They're just covering it up.”

Response: Please see responses to comments on the draft water quality permit.

Comment 14-9: “And the amount of flow that will be reduced because of the demand of water is taking away from the drainage area of Swan Lake, so our flow is going way down.”

Response: Please see responses to comments on the draft water quality permit.

Comment 14-10: “Another non-disclosed thing, which I don't understand why it's not fully disclosed, is that on severe drought conditions they actually have a statement that they will pump from Swan Lake. And means that their pits are already empty, the flow is going reverse, the concentrations will build up in Swan Lake with the very limited flow, and no matter what they do, we're in trouble.”

Response: Please see responses to comments on the draft water quality permit.

Comment 14-11: “You made a comment that if in fact the wells detect heavy metals, then they would have to do something. It's too late. If they already detect it, they've got feet after feet after feet of tailings, and there's nothing they can really do. They need to line this thing before they put it down, to guarantee there's no groundwater infiltration. That would also minimize the amount of water they would use and increase the flow in Swan Lake and enable us to have a higher quality of lake.”
Response: Please see responses to comments on the draft water quality permit.

Comment 14-12: “There can be accidents with it. DRI tells us under pressure that carbon monoxide can leak out suddenly and actually affect people's health. The particles now that have been disclosed causing people's health, for the mine workers that are there, they also affect everybody who lives nearby.”

Response: Air dispersion modeling demonstrated that the predicted concentrations of CO attributable to Minnesota Steel are far below health-based ambient standards in and around Nashwauk. CO was also included in the human health risk assessment which demonstrated that it is not expected to contribute significantly to potential health risks near the plant. The impacts of particles associated with Minnesota Steel operations were also analyzed and found to be in compliance with applicable standards.

Mesothelioma has been linked to asbestos. The Final EIS included a study of possible fibers in the ore. The study concluded that asbestos-like fibers are not expected to be present in the ore deposit which Minnesota Steel proposes to mine.

Comment 14-13: “Just to let you know, this trust level, first of all, no matter what their intentions, they're going to be selling it to an Indian-owned company that doesn't base here. Whatever their intentions are, it's going away.”

Response: Comment noted.

Comment 14-14: “I wanted to let you know what the intentions of our legislators are. They exempted this plant, which it doesn't appear the MPCA knows, from future CO2 regulations in Minnesota. They are exempt. They were the only plant, along with Mesaba and another coal plant, all the major sources of new carbon dioxide were exempted by our legislators. So, therefore, they're not covered, and they're going to cause a significant increase in global warming.”

Response: Recent state legislation does include some exemptions to the current prohibition on constructing new large energy facilities, or importing energy from such facilities, and it would appear that the legislature did not intend to limit statewide power generation that might be needed for the Minnesota Steel project. Minn. Stat. § 216H.03, subd. 5. However, Minnesota Steel and the Nashwauk Public Utilities Commission have stated throughout the environmental review and permitting process that additional power plants will not need to be built in order to supply electricity to Minnesota Steel. Moreover, it is worth noting that the prohibition itself is only in effect until a “comprehensive and enforceable state law or rule pertaining to green house gases. . . is enacted and in effect.” Minn. Stat. § 216H.03, subd. 3. When future comprehensive regulations related to greenhouse gases and climate change are promulgated this proposed project and its power sources would be required to meet all applicable regulations.

Comment 14-15: “The last thing is, the reason that Blue Lake became a blue lake was not because of the PCA, even though I'd like it to be that way. The reason is they stopped mining, the lake cleared up.”

Response: Please see responses to comments on the draft water quality permit.

Comment 14-16: “Think, people. This is not going to be a rosy scenario. You're believing things that simply will not occur. They will not live up to their promises. They're using very expensive energy. You're going to be subsidizing it. Your taxes will go up. When they go bankrupt, because energy prices will go up and steel prices will go down, you're going to be on the hook, as Itasca County and the State of
Minnesota taxpayers, you'll be paying taxes. 255 million dollars or more, 267 is the highest number I've heard, given to this company, and they'll just depart for India when they're done, and they won't care, and we'll have to clean up the mess, just like we did with Butler. I just want you to understand this and think about it. Short-term benefit, long-term disaster. It happened before, it'll happen again.”

Response: This comment is outside the scope of the air emissions permit. Socioeconomic issues were addressed in the Final EIS.

Comment 14-17: “They're not using modern technology, even though they say they are. I know what modern technology is. They're not doing it.”

Response: Minnesota Steel proposed the technology for the proposed facility. MPCA is not in a position to determine if the mining process equipment is modern or not, but the air pollution control technology has been deemed by MPCA to be BACT under federal regulations. The air pollution limits in the draft permit reflect those controls and the resulting emissions are not expected to lead to ambient impacts in excess of any standards or health benchmarks.


Comment 15-1: “Alongside the tailings basin is a body of water that, you know, locally here we call Blue Lake, and it's great fisheries. And I know the DNR does a good job of measuring mercury in fish and giving consumption advisories and things like that. I haven't seen it for Blue. But I hope that they're -- and I see you're doing a lot of monitoring of the lakes around, and I hope that there's some baseline monitoring initially done and continuous monitoring done of Blue Lake and the fish.

And I'm concerned about -- you know, that tailings area is a lot of wetlands there. Are we going to make sure that mercuries or other things don't build up in Blue Lake or in the fisheries there? That's one of my concerns. I don't even think there's any citizen -- you know, I do citizen based monitoring on Buck Lake, and at least there is some baseline. I don't think that Blue Lake even has any.”

Response: Please see responses to comments on the draft water quality permit.

Comment 15-2: “My other comments, carbon dioxide, I didn't see any mention. What if a few years from now -- and it seems like it's coming up everywhere with global warning -- if carbon dioxide emissions have to be controlled, measured and monitored, what could that do to this project?”

Response: Greenhouse gas emissions are not subject to current air permit regulations. When future climate change or greenhouse gas regulations are promulgated the proposed Minnesota Steel project, as well as other applicable entities, would be required to meet all applicable regulations. Note that the integrated design (mining through steel production) and energy choices of the Minnesota Steel project result in energy conservation and therefore a reduction in the amount of greenhouse gases from those facilities using more traditional, non-integrated methods.

Comment 15-3: “You know, maybe if you could think now like alternative forms of energy, maybe if you put up windmills and could even get, you know, credits or incentives for that, you're not burning natural gas, you could reduce carbon dioxide before it becomes a problem. That's what my other question was about, have they thought about using alternative forms of energy.”

Response: The emission limits included in the draft permit meet all current air pollution rules and regulations. Minnesota Steel may choose to voluntarily purchase renewable energy. When future
comprehensive regulations related to greenhouse gases and climate change are promulgated this proposed project and other entities would be required to meet all applicable regulations.


Comment 16-1: “My fear is the major health problems due to toxins such as mercury, chromium and asbestos and etc. from chimney emissions, from the proposed Minnesota Steel plant, carried by the prevailing winds day after day. From the "dumpsite" approx. 2200" from County Rd. 12, fine particles from the emissions can find there way into our bodies, backyards and lake. Since the dump area is logged off already, the wind speeds increase making the emission deposits heavier. As a master gardner, I have learned that heavy metals become systemic in plants, especially in green and leafy plants. We will inhale an ingest these toxins. Due to climate change and heavy rains it will make it possible for the "wind blown deposits" to move closer to our homes and into the lake. Forsight and perventionis the key to avoid disaster. Please help us fight this situation.”

Response: The impacts of air pollutants, including metals and particles, were assessed in the human health risk assessment conducted as part of the Final EIS and draft air permit for Minnesota Steel. These analyses looked at inhalation of air pollution as well as the uptake of pollutants in plants, fish, and animals and the availability of pollutants to people that might consume those plants, fish, and animals. The Final EIS concluded that the predicted impacts from Minnesota Steel operations would meet applicable standards and health benchmarks.


Comment 17-1: “I have lived here in the Lone Pine township for 50 yrs. I have seen many things that have happened to our environment and health over these past few years. My husband worked in the mines doing various jobs over the years. He died from cancer and it wasn't very pleasant to watch. I have asthma and with the air emissions that will come from the proposed plant (Minnesota Steel) and giving off asbestos as well as other possible metals, I don't want to suffer the same as my husband. For the industry damaging the environment, it means jobs, but what about our health, isn't that more important? I want the air I breathe clean.”

Response: The impacts of air pollutants were assessed in the air quality analyses conducted for the Final EIS and draft air permit for Minnesota Steel. These analyses looked at inhalation of air pollution and possible effects on human health, including cancer. The Final EIS concluded that the resulting risks were below a level of health concern. The analysis examined a large geographic area and multiple chemicals and exposure routes. It also assumed “worst-case” operating conditions at the facility. The predicted impacts from Minnesota Steel operations would meet applicable standards and health benchmarks.


Comment 18-1: “We are writing regarding our concerns over likely air pollution issues that will result from the proposed taconite tailings dumping on land bordering the Swan Lake area. The MSI plan proposes establishing tailings dumping within approximately 1200 feet of the shores of Swan Lake. Tailings contain toxic materials. You have only to look at the pollution that has been generated by tailings dumping from taconite operations in years past by other plants on the Iron Range. We have lost two neighbors who worked in the taconite plants for 40 years--both of them died as a result of lung cancer. Presently, mesothelioma seems to be the cancer that is ravaging many taconite workers--and there are
some findings that other horrendous sufferings are also associated with particulate from the taconite tailings—including brain tumors.

Certainly, the dust coming from the tailings dumping will cause and aggravate many lung diseases and afflictions—including asthma. In our family there are at least three members who have asthma, and certainly taconite dust blowing off the dumps will make it much worse.”

Response: Mesothelioma is associated with exposure to asbestos. Ore samples were analyzed and examined for the presence of fibers (e.g., asbestos, amphibole minerals) in the ore body that Minnesota Steel proposes to mine. The Final EIS concluded that fibers are not expected to be present in that ore deposit. These results are consistent with historical information indicating that the identity of the minerals from tailings samples from the western part of the Mesabi Iron Range is vastly different from the minerals from tailings operations on the east end of the Range.

Given this information, it is unlikely that amphibole minerals or asbestos will be released from ore deposits or taconite proposed to be mined by Minnesota Steel. For more information please see section 4.7.2.6 of the Final EIS.

Possible health impacts related to specific pollutants or particulate matter in general were studied in the air quality impact analyses conducted as part of the air emission permit and the EIS. Those studies concluded that predicted impacts from Minnesota Steel would meet relevant standards and health benchmarks.

Comment 18-2: “Please do not grant permits to MSI to put their taconite tailings in the Swan Lake basin. There are other alternatives available to MSI that will not endanger areas that are as heavily populated as are the shores of Swan Lake.”

Response: The site of the proposed tailings basin and possible alternatives were evaluated in the Final EIS. The current proposed location was deemed to be the best option. Air pollution impacts from dust blowing off the proposed basin were evaluated in the areas surrounding the basin, including Swan Lake, and the emissions were found to be in compliance with ambient standards.


Comment 19-1: “I am greatly opposed and very concerned about the air emissions from the proposed plant (Minnesota Steel). Because of prevailing winds we will be breathing this contaminated air all the time. I understand the dump / tailings pond wall will be tall. Winds will certainly send contaminated soil on my property, even though trees will be planted, which will be right next to the tailings pond wall.”

Response: The impacts of air pollutants were assessed in the air quality analyses conducted as part of the Final EIS and draft air permit for Minnesota Steel. These analyses looked at inhalation of air pollution and possible effects on human health, including emissions from the tailings basin. The Final EIS concluded that the predicted impacts from Minnesota Steel operations would result in human health risks below a level of health concern.

Comment 20-1: “I'm writing to you to state that I'm opposed to MSI locating some of their planned operations if permits are granted near Swan Lake. My main concern now that the water quality is taken care of is the air emissions.

I have been summer resident of the lake since 1971, so I was here when MA Hanna was operating I do know the effect improper emissions cause.”

Response: The Final EIS included a risk assessment to determine potential human health risks from Minnesota Steel’s operations. This assessment was reviewed and revised during the EIS process. Ultimately, the assessment examined multiple chemicals, exposures, and health effects and demonstrated that the potential risk to human health would be below levels of concern.

The air emission permit will require that the best available controls be installed on process equipment. These controls will be much better than anything that was required of any of the previous mining companies operating at the site.


Comment 21-1: “If there ever were a time in Minnesota for concern about the impact of taconite dust on the health of miners and mining project neighbors it is now. Citizens are outraged at the withholding of information about miner's lung cancer deaths and mesothelioma suspected to be caused by the fibers discharged into the atmosphere by taconite crushing. I was disappointed by the choice of the University of Minnesota, the inventor of the taconite process, as the organization to study these related issues. Choice of a disinterested outside scientific organization would have generated confidence in the study results.

The responsibility is definitely in Minnesota regulator's hands now in matters of infrastructure, proposed projects, and health safety. MSI compliance of health safety and pollution considerations will be difficult to determine because we won't hear the above study results until the project is well into construction. As Swan Lake residents our family, which has been here since the turn of the past century, is concerned that health safety for us, our children and grandchildren is secured.

We advise permitting adhere strictly to the rules, and that guarantees of future testing, enforcement and compliance be in place for the health and safety of all.”

Response: The impacts of air pollutants, including taconite dust, were assessed in the air quality analyses conducted as part of the Final EIS and draft air permit for Minnesota Steel. These analyses looked at inhalation of air pollution as well as the uptake of pollutants in plants. MPCA concluded that the predicted impacts from Minnesota Steel operations would meet applicable standards and health benchmarks.

The commenter mentioned concerns about mesothelioma, which is associated with exposures to asbestos. Ore samples were analyzed and examined for the presence of fibers (e.g., asbestos, amphibole minerals) in the ore body that Minnesota Steel proposes to mine. The Final EIS concluded that fibers are not expected to be present in that ore deposit. These results are consistent with historical information indicating that the identity of the minerals from tailings samples from the western part of the Mesabi Iron Range is vastly different from the minerals from tailings operations on the east end of the Range.

Given this information, it is unlikely that amphibole minerals or asbestos will be released from ore deposits or taconite proposed to be mined by Minnesota Steel. For more information please see section 4.7.2.6 of the Final EIS.

Comment 22-1: “I am concerned about the water quality & ground water & water wells near Swan Lake & Snowball Lake.

I live a few miles south of Pit 6 & 5 when these pits are dewatered, will my well go dry?”

Response: Please see the responses to comments on the draft water quality permit.

Comment 22-2: “I’m also concerned about the massive electrical surge when the arc furnaces use electricity.”

Response: The air quality permit cannot address the effects of electrical energy use by Minnesota Steel on the electricity distribution to other customers. This concern may be better addressed to the local utility companies.

Comment 22-3: “I’m also concerned about contamination from the unlined tailings basin & what will leach into Swan Lake. I’m concerned about contaminated water wells for people living on Swan Lake especially on the North & East sides.”

Response: Please see the responses to comments on the draft water quality permit.

Comment 22-4: “Suggestions.
1) line the tailings basin
2) put the tailings back into the empty mine pits – line 1st, then cover
3) monitor emissions & make corrective changes
4) have smaller electric arc furnaces – 4 or 5, not 2, to smooth out the power load.”

Response: The suggestions numbered 1, 2 and 4 do not appear to relate to the air quality permit. With regard to issue 3), the draft permit requires a number of continuous emission monitor systems (CEMS) to demonstrate compliance with permit limitations at the proposed facility. The draft permit would also require Minnesota Steel to conduct performance tests to demonstrate compliance with permit limitations. If these compliance monitoring methods indicate that the facility falls out of compliance, the MPCA will take appropriate steps to require the facility to come back into compliance.


Comment 23-1: “My greatest concern about this application is the increase in mercury emissions. According to Section 303 of the Clean Water Act, a state such as Minnesota that has water bodies that are impaired for a contaminate such as mercury, must prepare a TMDL that will outline the Total Maximum Daily Load that would have to be achieved to allow the water bodies to be delisted. That process has been completed and the document has been approved by the EPA. At this point Section 303(d) mandates that the state allocate sources in permits that would reduce the mercury by 93% in order for the water bodies in Minnesota to be delisted for mercury contamination. At the present time, considering all the potential reductions in mercury emissions, the state will fall short of its EPA mercury reduction goal by 1,543 pounds per year.

In response to that predicament, the Commissioner of the MPCA has convened a Strategy
Work Group to put together a set of recommendations to the MPCA as to how the state must allocate mercury emissions to reach the reduction goal. This process is to be completed in one year. If MSI is allowed to release 80 pounds of mercury, then some other industry will have to reduce their emissions by their allocations, plus part of the 80 pounds MSI would be permitted to emit. Please explain how the MPCA can permit a sizable new source of mercury emissions (MSI) when the TMDL clearly mandates that we reduce mercury emissions. Does the permitting section of the MPCA trump TMDL section of the MPCA? Would it not be prudent to delay the permit until the Commissioner approves fair allocations for all the impacted parties?"

Response: Minnesota Steel will need to comply with future rules and regulations related to mercury discharge, including the mercury TMDL. It is MPCA practice to allow permits to be issued to new, well-controlled sources of mercury. Future reductions will come from those sources with cost-effective control options. If goals are not met, further reductions will be required from mercury sources. MPCA expects mercury control technology to continue to improve. The LoTOx™ control technology that Minnesota Steel will test on their furnace stack, for example, may also reduce mercury emissions significantly.


Comment 24-1: “The SLA understands that Table B, “Potential-to-Emit Summary for Criteria and New Source Review Pollutants” (attached) presumably provided by MSI or its consultant(s) purports to quantify the “Potential-to-Emit” (PTE) of the major processes in the permit. The source of most or all of the steel mill data is assumed to be EPA’s Draft AP-42 Draft “mini-mill” emission factors (this is not clear from the table however). Such emission factors for the DRI process were provided to the EPA by Midrex presumably for a 1 atmosphere DRI tower stack design of their manufacture.

This data is seriously flawed. Midrex DRI processes are known to be very “leaky”. Such DRI processes contain about 20% CO as well as much smaller amounts of other criteria pollutants. Leaks that occur emit CO in concentrations close to 200,000 ppm. Stack flares when present emit 10,000 ppm to 35,000 ppm of CO depending on their design. The fugitive emissions from such DRI towers exceed the stack emissions, are not included in the Draft AP-42, and it is clear the consultant assumed “0” CO from such sources.

Measurements of 1 atmosphere (15 psia) pressure DRI and similar atmosphere carburizing processes indicate actual fugitive and stack CO together are emitted at a rate approximately 60 times that disclosed by Midrex. The SLA knows this because one of our directors has personally measured similar stack and fugitive emissions for Method 10 permitting and using a more advanced technology gas analyzer than used in Method 10. If this were a Midrex unit, the air emissions of CO (stack plus fugitive) would approximate 32,400 TPY PTE (based on the 540 TPY in the table), which would cause the total facility CO emission to exceed 10 times that assumed by the MSI consultant. H2S emissions, SOx emissions, and NOx emissions are likely much higher than assumed too.

This is not the whole concern however; MSI does not propose to use a 1 atmosphere (15 psia) pressure Midrex DRI system. They instead propose an 8 atmosphere (120 psia) pressure DRI process (HYL), only one of which is operating in Monterrey, Mexico at significantly smaller scale than MSI’s proposed unit. Repeated SLA requests for actual HYL data or monitoring during the EIS process were ignored. The likelihood remains that CO and other criteria pollutant air emissions from the DRI process will be far greater than assumed or permitted.”
Response: The commenter failed to provide verifiable scientific information that supports his claim. The emission data provided in the permit application are based on information from the vendor responsible for the design of the Direct Reduced Iron process equipment that Minnesota Steel plans to use. The MPCA supports the use of vendor data as it is likely to accurately reflect emissions from the process that the vendor will provide.

Comment 24-2: “To address this concern the SLA specifically recommends:
1. The HYL process in Monterrey, Mexico be monitored for stack and fugitive air emissions while operating at full capacity;
2. The measured values increased in proportion to the size proposed by MSI and;
3. These upsized actual values be used to determine MSI’s permit, air monitoring, and pollution control requirements instead of the incorrect low values assumed.”

Response: The emission data provided in the permit application are based on information from the vendor responsible for the design of the Direct Reduced Iron process equipment that Minnesota Steel plans to use. The draft permit contains emission limits based on this information. The performance of the equipment installed by Minnesota Steel will be measured against those emission limits. Should the equipment installed by Minnesota Steel fail to meet the permit’s requirements, the MPCA may respond using its enforcement authority.

Information on the specific HYL facility would be useful only if the information provided in the permit application was somehow in error and the data from the Monterrey, Mexico facility provided a better indication of the likely performance of the Direct Reduced Iron process equipment. The MPCA has no evidence that these conditions are both true. Furthermore, the MPCA does not have the authority to require testing of the Monterrey, Mexico facility.

Comment 24-3: “The known and undocumented air emissions from the project are also of special concern to the Swan Lake Association. The taconite mining technology proposed in this project is not significantly different from that practiced by Butler in 1967. PM 2.5 and especially submicron dust particles from taconite and steel operations as well as disposed are of concern to SLA because of the close proximity of the SLA members and others to the proposed MSI operations (less than 1000 feet from many operations). These particles are presumably primarily silicon dioxide but also contain an unknown amount of iron, toxic heavy metals and asbestos.

Barr reports indicate taconite particles will be ground to -325 mesh. ESPI Metals indicates that particle size would be 44 microns or smaller, but much of the powder could be considerably less than 44 microns and still qualify as a -325 mesh powder. It could be 1 micron and qualify as -325 mesh, it could even be sub-micron and meet the -325 mesh specification. Such dusts can cause a number of debilitating and fatal lung and other diseases, and are very hard to track since the most destructive 1 micron and below sizes are invisible and penetrate very deeply into the lungs where they become lodged.

No chemical analysis of the hazardous materials in the ore is presented and no HAPs regulation of these dusts included.

This lack of hazardous substance analysis in representative ore and test tailings is a very serious omission, especially in light of recent MDH mesothelioma concerns and most especially since a very extensive tailings basin is proposed next to Swan Lake with a height of 70 to 100 feet above current ground levels.”
Response: Appendix B of the air quality permit application includes emission estimates of hazardous air pollutants (HAPs) from the facility, including the dust emissions from the tailings basin. Chemical analysis of the ore was conducted along with other materials, and this information is also in Appendix B. In addition, a human-health risk assessment was performed in support of the Final EIS. The emissions of hazardous air pollutants, including those from the tailings basin, were included. The risk assessment concluded that all risks were at or below the standards or health benchmarks. In addition, a Fibers Study was conducted as part of the Final EIS. Fibers are not known to exist on the west side of the Mesabi iron range, only on the far eastern side. Historical data was reviewed and samples from the Minnesota Steel site were collected. No asbestos or asbestos-like fibers were found.

Comment 24-4: “It is clear from the information presented described in Appendix E of MSI’s air permit application that the AP-42 Section 13.2.5 Industrial Wind Erosion information was used to determine the fugitive dust dispersion in the Class II modeling of airborne dusts. It is not clear how that information was used in the model, however it appears that the dust particle size assumption for bulldozing rock (55.0% 2.5 um and 45% 10 um) through Dozer activity at Tailings Basin (35.5% 2.5 um; 64.5 % 10 um) to the Grading Activity at Tailings Basin (10.8 % 2.5 um; 89.2 % 10 um) indicates the model assumes loss of most of the dangerous 2.5 um and below particles to the air.”

Response: The particle size distribution of the tailings dust was determined through computer simulations of the tailings generation from the screening and flotation circuit of the concentrator. The particle size distribution data developed from this model were used to estimate wind erosion emissions using USEPA wind erosion predictive methodologies. Tailings basin wind erosion emissions were included in the particulate modeling required for the air permit application. The modeling showed attainment with ambient air quality standards at the ambient air boundary.

The particle size distributions for all sources were estimated using USEPA particle size distribution data for point and fugitive sources as shown in Table E-4 of the Class II Air Modeling Report (Appendix E of the Permit Application). The HAPs concentrations in the particulates were assumed to be the same as those for each of the representative material that the dust is originating from (crude ore, waste rock, concentrate, DRI, slag). Concentrations of HAPs in these materials are based on laboratory analysis conducted on samples of the materials used or generated in pilot testing.

Comment 24-5: “It is also clear that the Draft Air Permit makes no attempt to regulate these dangerous fugitive dust emissions at all. The only requirement is for opacity (visible emissions). The most dangerous particles cannot be seen, so the entire fugitive dust emission limitation does little to protect air quality.”

Response: The draft permit includes requirements for Minnesota Steel to follow the fugitive dust control plan submitted in the permit application. The plan includes several design measures and operating practices that Minnesota Steel will employ to minimize emissions from the tailings basin. The permit requires that Minnesota Steel follow this plan and maintain records to demonstrate that it is in compliance.

In addition, the human health risk assessment evaluated the potential human health effects of 114 metals and nonmetals from the proposed facility associated with Minnesota Steel’s activities and processes all of which were referenced in the Final EIS.

Comment 24-6: “To address this concern, the SLA specifically recommends:
1. The final Air Permit should contain specific requirements to control and monitor PM2.5 particulates at or near the property boundary of MSI, most especially around the tailings basin. In absence of a specific requirement and for purposes of regulation, the plant boundary should be regulated at the level of a PM2.5 non-attainment area. Sampling and testing should be automated or occur very frequently. Should PM2.5 dust levels in excess of the standard occur; MSI should be required to identify the cause and correct the problem within 24 hours of discovery (presumably by increasing wetting of the problem areas). If not so remedied, MSI should be required to install emergency covers over affected areas, until the cause of the problem can be addressed.

Response: The air quality analyses conducted for the air emissions permit and the Final EIS examined the impacts of PM10 at and beyond Minnesota Steel’s property boundary. The analysis concluded that ambient PM10 levels would not exceed ambient air quality standards or PSD increments. Federal guidance does not exist for a similar analysis for PM2.5. However, the 24-hour PM10 PSD increment level (30 μg/m3) is less than the 24-hour PM2.5 NAAQS (35 μg/m3). Given that predicted impacts from Minnesota Steel meet the PM10 PSD increment and that PM2.5 emissions would only be a subset of PM10 emissions, MPCA concludes that the air surrounding Minnesota Steel can reasonably be expected to meet the PM2.5 NAAQS.

Comment 24-7: “The Draft Air Permit should contain a specific HAPs requirement(s) for all the tailings material. Such regulation would require (at least) a complete heavy metal and asbestos analysis of representative ore and test tailings samples both prior to facility construction and periodically after operations commence. Such analyses could be conducted on the samples collected by the PM2.5 dust monitors recommended in Item 1.”

Response: The Taconite MACT (40 CFR 63 Subpart RRRRR) addresses emissions from taconite plants, including the emissions from the tailings basin. A portion of that regulation (see 40 CFR § 63.9591(a)(4)) requires Minnesota Steel to control emissions from the tailings basin according to the Fugitive Dust Control Plan submitted as part of the permit application. If there had been additional concern raised by the Human Health Risk Assessment (conducted as part of the Final EIS), the MPCA may have imposed additional controls. However, the results of the risk assessment indicated that all potential health risks were at or below the health risk standards and guidelines and the Final EIS did not recommend mitigation.

Metals were among the pollutants evaluated in the Human Health Risk Assessment. This assessment examined potential human health risks from these emissions through inhalation and ingestion of metals in the air, plants, fish, and livestock. The Final EIS also included an analysis of the ore that will be mined, including a fiber analysis.

Comment 24-8: “The Draft Air Permit for MSI does not include any mention of additional electric power sources required for its operation. MSI states that it needs 450 MW of electricity to operate and that the 450 MW will come from existing, already permitted, power plants. However, the two electric arc furnaces (EAFs) that MSI is proposing for its steel mill operate in an “off” state (almost 0 power) for 15 minutes and an “on” state (consuming 80-100 MW each) for about 45 minutes (this power amount is an estimate, such information has not been publicly disclosed by MSI). The current surrounding power plant infrastructure and transmission lines cannot handle the surge of power caused by potential swings of 80 to 200 MW in demand (information from several MSI proponents and consultants).”

Response: This comment is not relevant to the air permit, and is better directed at local utility operators.

Comment 24-9: “The SLA has attended several meetings of the newly formed “Nashwauk PUC” (NPUC). It has been formed for three reasons: to provide natural gas to MSI for its non-electric operations
(taconite “roasting”; DRI operation; and to provide “backup” gas for the proposed Mesaba Energy facility). However, NPUC disclosed that it is sizing the gas line so it can operate two 100 MW simple cycle gas turbine-generators to provide MSI the load-following capability it needs for its EAFs. The SLA was told that no air permit applications will be filed for these plants until MSI obtains their permit even though these plants are being built in close proximity to the MSI plant for the sole (or at least primary) purpose of providing electricity to MSI. The SLA believes MSI is not disclosing the power requirement since the primary criteria air emissions of NOx from the MSI operations would more than double if included.

The proposed NPUC power plants being constructed for MSI should be considered part of the MSI’s facility permit application and included in it.”

Response: Neither the MPCA nor the Minnesota Department of Commerce has received any applications for the construction of new natural gas-fired power plants in Nashwauk. If such a source were ever proposed, the project would undergo appropriate environmental review and permitting. MPCA spoke to a representative of the Nashwauk PUC, who stated that there are no plans to build any additional power sources to serve Minnesota Steel.

Comment 24-10: “Reduced NOx emission standards should be imposed on MSI to accommodate the additional power plants before granting MSI’s facility air permit.”

Response: See response to comment 24-9 above.

Comment 24-11: “Low NOx burners should be required (not just hoped for “if feasible”) as a condition of MSI’s air permit.”

Response: This comment may refer to controlling NOx emissions from a new natural gas-fired power plant. If so, the air quality permit for Minnesota Steel is not the appropriate regulatory instrument for requiring low-NOx burners at such a facility.

If the comment is meant to address emission units at facility proposed by Minnesota Steel, it should be noted that the draft permit requires low-NOx burners or ultra low-NOx on the process heaters (EU066 and EU083) and several boilers (EU065, EU069, EU082, EU086, and EU137). Low-NOx burners are also required on a number of smaller units.


Comment 25-1: “Some kind of plan should be in effect to reduce over-all mercury emissions from taconite mining before any new permitting is done.”

Response: The Department of Natural Resources and other groups are currently researching ways to reduce mercury emissions from taconite processing. Minnesota Steel will need to comply with future rules and regulations related to mercury, including the mercury TMDL. It is MPCA practice to allow permits to be issued to new, well-controlled sources of mercury. Future reductions will come from those sources with cost-effective control options. If reduction goals are not met, further reductions will be required from mercury sources. MPCA expects mercury control technology to continue to improve. The LoTOx™ control technology that Minnesota Steel will test on their furnace stack, for example, may also reduce mercury emissions significantly.
Comment 25-2: “Any emissions listed should also include emissions from the power sources required to run the operation. Electric arc steel production uses a huge amount of electricity.”

Response: The MPCA has issued air quality permits to the Minnesota power facilities that will likely supply a portion of the power that will be acquired by this new facility, and persons interested in emissions from power facilities can review emissions data related to those permits. However, it is not possible to list power-related emissions in this permit because Minnesota Steel will ultimately acquire its power from the regional power pool that includes a variety of sources, some local and some not local.

Comment 25-3: “Before any water permits are issued, studies should be done regarding global climate change and warming. In other words, how will Minnesota Steel contribute to localized global warming? Will increased heat and evaporation due to global climate change increase the levels of dissolved solids remaining in the water?”

Response: The Final EIS included a carbon footprint analysis of the project, but current science is not adequate to predict what the impact of the project-related carbon emissions would be, either globally or locally. MPCA reviewed air quality analyses conducted for the air permit and Final EIS and concluded that air pollution emitted by Minnesota Steel will not violate any state or federal standards in the local area surrounding the proposed plant. Regional effects of climate change are beyond the scope of the air permit and must be addressed in a broader effort.

Comment 25-4: “What are the procedures if monitoring finds that Minnesota Steel is not meeting air and water requirements after startup?

This plan should be spelled out up front so that everyone involved knows what actions will take place to protect our air and water if technology doesn't perform as anticipated.”

Response: The MPCA will enforce all requirements of the permit, and state and federal law. If monitoring or an inspection finds that Minnesota Steel is not meeting the requirements, the MPCA has enforcement authority and many enforcement tools available. What action will be taken will depend on the facts and circumstances associated with the non-compliance.


Comment 26-1: “Hello, I am a 30+ year retiree from the now defunct National Steel Pellet Plant in Keewatin, MN. My father had a 44 year career in the mines and both grandfathers had over 65 years combined in the mines. My Dad died of heart related problems 4 years ago at 74. Grandfather Stish died of lung cancer at 65. I would like to voice my opposition to the proposed MSI project near Nashwauk MN. MY concern lies with the “asbestos-like” particles that have been connected to several mesothelioma deaths on the Range. The very nature of taconite mining is associated with lung disease, cancer, and other health related problems.

To allow a new mine to go into operation before a comprehensive study is complete is irresponsible. Iron Range miners have long known that a disproportionate number of fellow miners have succumbed to cancer, lung and heart disease. Please consider the health of future taconite miners and those living in close proximity to this project. More has to be learned about the consequences of mining before any new project should be permitted and built.”

Response: Mesothelioma is associated with exposures to asbestos. Ore samples were analyzed and examined for the presence of fibers (e.g., asbestos, amphibole minerals) in the ore body that Minnesota
Steel proposes to mine. The Final EIS concluded that fibers are not expected to be present in that ore deposit. These results are consistent with historical information indicating that the identity of the minerals from tailings samples from the western part of the Mesabi Iron Range is vastly different from the minerals from tailings operations on the east end of the Range.

Given this information, it is unlikely that amphibole minerals or asbestos will be released from ore deposits or taconite proposed to be mined by Minnesota Steel. For more information please see section 4.7.2.6 of the Final EIS.

Possible health impacts related to specific pollutants or particulate matter in general were studied in the air quality impact analyses conducted as part of the air emission permitting process and the Final EIS. Those studies and the Final EIS concluded that predicted impacts from Minnesota Steel would meet relevant standards and health benchmarks.

IV. Correspondence from Environmental Groups

27. Comments by Kevin Reuther, Minnesota Center for Environmental Advocacy (MCEA).

Comment 27-1: “NOx emissions from the pellet plant are underestimated based on use of an unexplained emissions factor, which is far lower than the U.S. Environmental Protection Agency's ("EPA's") published emissions factor, and an assumption of reductions from a demonstration project.

The NOx emission factor from "flux" pelletization in a straight grate pelleting or indurating furnace is provided in AP-42, Table 11.23-5. This is the same kind of indurating furnace as proposed by MSI. See Appendix C, Section 7.2. The AP-42 emission factor is 2.5 lb/ton. Assuming the process rate used by MSI (4,608,111 tons/year), this corresponds to a NOx emission rate of approximately 5,760 tons/year. The MSI NOx emissions are estimated to be far lower than this.

MSI NOx emissions are apparently estimated based on "Hibbtac emission factors" and a 10% margin as noted in Table B-1 (see EU 038 and EU 039). These factors, including the margin, are shown as 0.74 lb/ton at the waste gas stack and 0.265 at the hood stack, collectively = 1.005 lb/ton. This is considerably smaller than the AP-42 NOx emission factor.

The basis for using the Hibbtac emission factor and/or the margin are not discussed. Why the Hibbtac factors are representative and how Hibbtac emission results may or may not have been used in deriving the MSI emission factors are also not discussed. Thus, their use is not transparent or justified. The margin is supposed to assure that the factors used are conservative – yet without any transparency on the underlying reliance on Hibbtac results, the 10% margin used is meaningless. As discussed earlier, AP-42 NOx emissions are over two times greater than what is used. The application, technical support document (“TSD”), and draft permit do not discuss why the AP-42 factor is inappropriate.

Thus, while the EPA emissions factor suggests NOx emissions from the pelletizer of 5,760 tons/year, the emissions factor used by MSI and the Minnesota Pollution Control Agency (“PCA”) predicts only 2,316 tons/year. Such a large discrepancy should be explained in detail.

After having used the “Hibbtac” emissions factor to conclude a lower emissions rate, MSI and the PCA then, for purposes of modeling impacts, inexplicably reduce further the project NOx emissions based on an assumption that 90% of the waste gas NOx will be controlled (either by using LoTox, for which a
demonstration project is proposed or by using unspecified offsets). Thus, the modeled NOx emissions from the indurating furnace are approximately 781 tons/year. Based on a comparison to the AP-42-based value discussed above (5,760 tons/year), the modeled NOx (781 tons/year) is roughly 13.5% of what it could be.”

Response: The MPCA believes that the emission calculations relied on for the permit are conservative; that is, actual emissions are likely to be lower than those on which the permit is based. This is due to a number of factors.

First, the pelletizing furnace that Minnesota Steel has proposed would produce acid pellets rather than flux pellets. Making flux pellets consumes more energy and emits greater amounts of NOX than the production of acid pellets. Second, relatively recent emission data from Hibbtac were used for assessing emissions from the pelletizing furnace proposed by Minnesota Steel due to the anticipated similarities between the two furnaces. The MPCA prefers such emission data (i.e., data based on actual emissions from a similar facility) to more generic emission factors from AP-42 that incorporate information from a number of facilities that are not similar to the proposed facility. Third, the emissions calculations relied on for permitting also include the ten percent margin referenced in the comment. The overall effect of these three factors is that actual emissions are expected to be less than potential emissions.

In its permit application, Minnesota Steel submitted three air quality modeling scenarios. In the “proposed project” scenario, emissions are calculated and modeled assuming the installation and operation of a control technology (like LoTOx™) that achieves 90 percent control of NOX emissions. However, in the scenario that best addresses the commenter’s concerns, the facility is modeled as it would operate without LoTOx™ control of NOX emissions from the pelletizing furnace. (See Table 6-1, NOX option [c] in “Application for a Permit to Construct and Operate an Integrated Steel Plant, Volume 1.”) The modeling supporting Table 6-1 demonstrated compliance with the Class II PSD increments and the NAAQS. In addition, Tables 7-1, 7-2, and 7-3 of the Application illustrate the results of the modeling for Class I visibility; Appendix F includes the remainder of the Class I modeling for the facility as it would operate without LoTOx™ control of NOX emissions from the pelletizing furnace.

The modeling of the facility for all scenarios (including the one in which LoTOx™ is unsuccessful) demonstrates compliance with the NAAQS and the Class I and Class II PSD increments. Information on the effects of the project on Class I Air Quality Related Values can be found in Appendix F of the permit application. In addition, conditions related to visibility are included in the Facility portion of the permit under “Protection of Visibility in Class I Areas.”

Comment 27-2: “Obviously, the accurate calculation of NOx emissions has important consequences. The emissions will impact not only haze in Class I areas but also increment consumption and compliance demonstration with NAAQS.”

Response: The MPCA believes that the NOX emission calculations are accurately portrayed, leading to an appropriate analysis of visibility impairment, increment consumption, and compliance with the NAAQS.

Comment 27-3: “In addition, the calculation of uncontrolled emissions has an effect on the cost effectiveness of proposed emissions controls and, therefore, the determination of BACT.”

Response: The MPCA agrees that the calculation of uncontrolled emissions may affect the cost effectiveness of proposed emission controls and, consequently, the determination of the BACT. As
indicated above, however, the MPCA believes that the NO\textsubscript{X} emissions are conservatively calculated, leading to an appropriate determination of BACT.

**Comment 27-4:** “The modeling assumes reductions from a technology that the permit does not require and therefore is inadequate.

The permit does not ensure that emissions reductions assumed from the LoTox technology for purposes of doing the air impact analyses will, in fact, be achieved. There is significant uncertainty, as admitted by MSI itself as to whether LoTox will work at all, much less at the assumed 90% efficiency. In fact, MSI provides a number of qualitative criteria by which it will judge whether LoTox will work:

- The technical and economic feasibility of LoTox will be evaluated based on the following criteria:
  - Ability to provide at least a 70% reduction in NO\textsubscript{X} emissions over a 24-hour period of operation at a range of NO\textsubscript{X} emission rates corresponding to those occurring during operation at the pellet plant.
  - Ability to achieve a cost effectiveness of less than $5,000 per ton of NO\textsubscript{X} removed.
  - Blowdown from the wet scrubber are within treatment parameters of the reverse osmosis system.
  - Particulate and SO\textsubscript{2} control of the scrubber are unaffected by ozone injection.
  - No excessive oxygen or energy usage or significant pressure drop required.
  - No excessive requirements for additional energy infrastructure.
  - No significant associated environmental impacts.
  - No major operational difficulties.
  - No significant safety hazards.

*See Appendix C, pp. 75.*

MSI has provided itself with more than sufficient leeway to refuse LoTox even if it proves capable of controlling NO\textsubscript{X} emissions. Many of these factors are vague and subjective.

There is a high risk that, given these factors, LoTox will be deemed ineffective. In order to implement the LoTox test fairly, a test plan must be prepared, incorporated in the permit, and subject to public review. The pass/fail criteria that will be used to determine if the test is successful or not should be provided in quantitative terms, to the maximum extent possible.”

**Response:** The air quality modeling submitted by Minnesota Steel included the scenario in which the facility is operated without LoTOx\textsuperscript{TM} control of NO\textsubscript{X} emissions from the pelletizing furnace. (See Table 6-1, NO\textsubscript{X} option [c] in “Application for a Permit to Construct and Operate an Integrated Steel Plant, Volume 1.”) The modeling supporting Table 6-1 demonstrated compliance with the Class II PSD increments and the NAAQS. Tables 7-1, 7-2, and 7-3 of the Application illustrate the results of the modeling for Class I visibility; Appendix F includes the remainder of the Class I modeling for the facility as it would operate without LoTOx\textsuperscript{TM} control of NO\textsubscript{X} emissions from the pelletizing furnace.

As noted above, Minnesota Steel’s permit application identified a set of criteria on which it plans to make its determination of the feasibility of the LoTOx\textsuperscript{TM} technology. These criteria are not binding on the MPCA and its analysis of the feasibility of the LoTOx\textsuperscript{TM} technology. The MPCA will review the feasibility report submitted by Minnesota Steel; using those data, the MPCA will make its own decision about the LoTOx\textsuperscript{TM} technology based on criteria similar to those used in a BACT determination. As noted in the conditions for EU039, “[i]f the Permittee or Commissioner concludes that LoTOx\textsuperscript{TM} control of
NOx emissions from EU 039 is feasible, the Permittee shall complete installation and startup of a full scale LoTOx™ system within 25 months of completion of the trial testing.” The MPCA can make the decision to require the company to install the LoTOx™ technology unilaterally.

The modeling of the facility for all scenarios (including the one in which LoTOx™ is unsuccessful) demonstrates compliance with the NAAQS and the Class I and Class II PSD increments. Information on the effects of the project on Class I Air Quality Related Values can be found in Appendix F of the permit application. In addition, conditions related to visibility are included in the Facility portion of the permit under “Protection of Visibility in Class I Areas.”

The draft permit requires Minnesota Steel to submit a test plan for the LoTOx™ control technology 90 days prior to the start of the test. The MPCA will review the test plan to ensure that the performance testing will generate the information needed for MPCA to determine the technical and economic feasibility of the proposed control technology. The test plan is public information; should members of the public be interested in the test plan for the LoTOx™ trial, it will be available upon request.

Comment 27-5: “The permit does not ensure that emissions from MSI will comply with visibility requirements.

The permit notes that MSI will have to comply with Class 1 visibility requirements by controlling or offsetting its NOx emissions. However, the permit does not ensure that visibility Requirements will, in fact, be met. It inexplicably defers demonstration of the ability to meet visibility requirements until some unidentified date in the future (at which time, according to the permit terms, the Commissioner may then amend the permit). This is in error. The permit itself, before it can be issued, must ensure that the project will comply with visibility requirements.

There are a number of problems with the visibility provisions:

First, means and methods for offsetting all impacts should be identified now. The draft permit is set up to protect the polluter rather than the environment because it treats emission offsets/reductions as a consequence of future excess emissions. Instead, the permit should require MSI to identify and secure offsets for its likely NOx emissions prior to this permit being issued. Likely emissions are far greater than those contemplated in the modeling, since LoTox is deemed to work at 90% for modeling purposes. To protect the environment, MSI should be required to identify offsets or reductions based on its uncontrolled emissions. Then, if LoTox proves successful, those offsets procured by MSI could be released.”

Response: In response to this comment, the MPCA reviewed the visibility provisions of the draft permit, and determined that the proposed language could be interpreted as allowing future compliance with the visibility provisions pursuant to a permit amendment. This was not the MPCA’s intent. As a result, the MPCA has redrafted the visibility provisions to more clearly require Minnesota Steel to procure offsets for all emissions of NOx in excess of 1300 tons/year. The offsets that must be purchased are vintage offsets, with the result that the offsetting, while calculated on the basis of actual emissions, will in fact be concurrent with emissions. The permit does provide that, due to changing conditions or regulatory requirements, the offsetting provisions may change. This language reflects the fact that there may be other means to achieve compliance with visibility impacts, and that modeling currently under review at the federal level may change how compliance is demonstrated. However, as the commenter notes, no change will be made to the offsetting requirements in this permit until a permit amendment has been drafted, noticed, and issued. Such a permit amendment would be subject to both FLM and public review.
The following background is relevant. The PSD regulation, as delegated to Minnesota, addresses Class I visibility impacts at 40 CFR 52.21(p). This portion of the regulation gives FLMs an affirmative responsibility to protect the air quality related values (including visibility) in Class I areas. The FLMs for this project are representatives of U.S. Forest Service (for the Boundary Waters Canoe Area Wilderness and Rainbow Lakes Wilderness) and the National Park Service (for Voyageurs National Park and Isle Royale National Park).

In contrast to the NAAQS and the Class I and Class II increments, PSD does not identify a specific visibility parameter that must be met. Rather, the MPCA is required to address the concerns of the FLMs, who have developed guidance on addressing Class I impacts. (This guidance, referred to as FLAG 2000, can be found at www2.nature.nps.gov/air/Permits/flag/index.cfm.)

The MPCA worked closely with the FLMs to ensure that their concerns – particularly regarding visibility – were met. Minnesota Steel supported the efforts of the MPCA and the FLMs by performing modeling to assess Class I impacts using the current guidance provided by the FLMs. The FLAG 2000 guidance grants the FLMs some discretion on addressing visibility concerns and allows for mitigative measures.

The approach proposed in the draft permit has its roots in the permit for a power plant in West Virginia. (A two-part article describes that project. See Militana, L.; Huber, C.; Colbert, C.; Arrington, C.; Shepherd, D. Trading Places—An Innovative SO_2 Trading Program to Mitigate Potential Adverse Impacts on Class I Areas: Part I. Impacts; Environmental Manager 2005, July, 30-35; Part II. Mitigation Plan; Environmental Manager 2005, August, 28-32.) That project allowed the use the Acid Rain allowances to mitigate visibility impacts from the power plant, as does the permit for the proposed Minnesota Steel facility. The Mesabi Nugget permit, issued in 2005, extended the means of mitigating visibility impacts to Clean Air Interstate Rule (CAIR) allowances. The Minnesota Steel permit responds to the initiative of a representative of a Federal Land Manager by including Green Power, which was identified as another potential means to mitigate visibility impacts.

Comment 27-6: “Second, MSI is likely to have a very significant need for offsets and it is not clear whether enough offsets even exist. Even if the LoTox technology works at 90% and is, in fact, implemented successfully, MSI will have to offset NOx emissions. (The potential to emit ("PTE") for NOx with LoTox is 1,505 tons/year and the permit limits MSI emissions to 1,300 tons/year.) Based on the fact that there will be uncontrolled emissions prior to LoTox being implemented, during start-up and shut-down, and in the event that LoTox is not deemed effective (all of which are inappropriately left out of the PTE), it is likely MSI will have a significant need for offsets. The permit is very vague in terms of how offsets or reductions to account for these additional NOx emissions will, in fact be achieved, and does not effectively ensure that MSI's NOx emissions will be offset.”

Response: Based on the facility’s potential to emit, the commenter identifies a potential gap of roughly 205 tons that may need to be offset if LoTOx™ is successful. Additional offsets are possibly needed if LoTOx™ is not successful. The commenter suggests that offsets may be scarce.

The MPCA believes that a scarcity of allowances and other means to offset NOX emissions above the 1300 ton per year threshold would provide a strong incentive for Minnesota Steel to drive down NOX emissions from its own facility or pursue an emission-reduction agreement with another stationary source of emissions. Economic theory states that decreasing the availability of allowances raises their cost. This in turn makes a technology such as LoTOx™ increasingly attractive despite potential technical and economic challenges. Minnesota Steel may also look at other NOx emission units at its proposed facility for reductions.
The permit is not vague in terms of how offsets for emissions in excess of 1300 tons/year must be obtained. If stationary source emissions exceed the 1300 ton per (calendar) year threshold, Minnesota Steel must acquire allowances from the Acid Rain or the CAIR program that are of the same vintage (i.e., the date of the allowance corresponds to the calendar year in which Minnesota Steel exceeded the 1300 ton per year threshold.) These allowances are to be purchased through specific programs, at specific ratios. Alternatively or in combination with the purchase of allowances, Minnesota Steel would be able to purchase Green Energy in the same calendar year as it exceeded the threshold.

Comment 27-7: “Third, the timing for offsets is not clear nor is it clear what sources of offsets are available. The timing and source of offsets should be identified prior to permitting to ensure that emissions (and their concomitant impacts) are, in fact, offset. All NOx emissions greater than the modeled value should be offset contemporaneously, from sources that are in the vicinity of the plant, such that the impact on Class I areas is negated. Alternatively, if offsets are procured (still contemporaneously) from geographically distant areas, additional modeling demonstrations should be required in order to prove that such distant offsets are equally effective in mitigating impacts to Class I areas. This needs to be done now, not after significant public and private investment has been made.”

Response: Condition (2)(vii) on page A-2 of the draft permit requires “[t]he vintage of the allowances [shall] correspond to the calendar year for which the visibility impacts are being offset.” This language addresses the timing of Acid Rain and CAIR allowances. The following sentence covers the timing of the use of Green Energy, stating that “[f]or purposes of calculating visibility offsets, Green Energy used at or by Minnesota Steel during the calendar year under consideration generates offset ton-equivalents of 10.38 lb/MWh.” (Emphasis added.)

(The visibility section of the permit has been revised, but it retains the language described above.)

Comment 27-8: “Fourth, MSI cannot offset its emissions by purchasing "green energy." The permit's "green energy" provision is the result of misapprehending the total emissions and total impact of the project, an issue MCEA raised in comments of some length on the EIS for this project. MSI is a major electricity consumer. Emissions from the production of electricity supplied to MSI are a direct result of the project. Therefore, it makes no sense that MSI would "offset" its emissions by purchasing emission-free electricity. MSI would be reducing the emissions associated with its project by purchasing green energy, not offsetting its emissions.”

Response: The MPCA disagrees with the commenter to the extent that the commenter asserts that emissions from the production of electricity are a direct result of the project. As the DNR has noted in its response to commenter’s similar comments on the Final EIS, this project will run on power generated from existing facilities.

Major stationary sources of air pollution are required by the Clean Air Act to obtain an air pollution permit before commencing construction. Permits for sources in areas meeting the ambient air quality standards are referred to as prevention of significant air quality deterioration (PSD) permits. For the purposes of PSD, a stationary source is any building, structure, facility, or installation which emits or may emit any air pollutant subject to regulation under the Clean Air Act. "Building, structure, facility, or installation" means all the pollutant-emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under common ownership or control.

Based on the definition of a stationary source, PSD regulations do not require the inclusion of emissions from electricity usage in the air permit or associated modeling analysis of impacts unless the power-generating facility is part of the proposed project and meets the definition of a stationary source.
Minnesota Steel will obtain its electricity from existing facilities or from new facilities that are proposed and built independently of the Minnesota Steel project. They will not be part of the same industrial grouping, located on Minnesota Steel property, or under the common ownership or control of Minnesota Steel and, therefore, are not required to be part of Minnesota Steel's air permit. Any new future electrical generation facilities would be required to obtain their own air permits.

To the MPCA’s knowledge, there is no fossil-fueled generation facility that would provide electricity to Minnesota Steel that would be considered an integral part of the proposed facility or that would be considered a support facility. The Prevention of Significant Deterioration regulation does not attribute emissions from “the electrical grid” to a specific project in the way that the commenter suggests.

The goal of the visibility provisions of the air permit is to reduce visibility-related emissions from other sources. The purchase of green energy, in theory, reduces power-related emissions and encourages green energy markets. Because the MPCA does not view the power-related emissions as being directly attributable to Minnesota Steel, it is fair to look at reductions in those emissions as offsets.

Comment 27-9: “I note that this issue highlights the problem MCEA has repeatedly stated to the Agency about publishing a draft permit prior to completion of environmental review. The public should be able to assume that permit writers are actually digesting and benefiting from their comments on environmental review when they are constructing permits. The point to environmental review is to use the information developed in the EIS to write permits that mitigate environmental consequences and protect natural resources. The Agency’s decision, as here, to routinely complete a permit prior to environmental review being concluded subverts that purpose.”

Response: The rules of the EQB provide for the concurrent development of permitting documents with environmental review documents. Minn. R. 4410.2900 provides that “[w]ithin 90 days after the determination of the adequacy of a final EIS, final decision shall be made by the appropriate governmental units on those permits which were identified as required in the scoping process and for which information was developed concurrently with the preparation of the EIS. . . .” The MPCA believes that it is helpful and necessary to have the draft permits available for review with the environmental review document because that document will refer to the permits as mitigation. Without the language of the permit, the strength of the mitigation afforded by the permit would not be easy to assess. As a result, it is consistent with the law and the intent of the environmental review rules to put permits on public notice prior to the adequacy decision. Minn. R. 4410.2900 provides a procedure for permit issuers to follow to ensure that the environmental review document is appropriately used by the permitting authorities by requiring the permitting unit to make “a concise public record” of how it considered the Final EIS in its decision. Throughout these responses to comments, the MPCA has made reference to the documents included as part of the Final EIS that influenced its decision on the permit, including the Human Health Risk Assessment and the fibers study. The MPCA also notes that, in response to its request for more time, the MPCA provided commenter an extra week to develop its comments on this permit.

MPCA permit staff work collaboratively with those staff completing the environmental review process. As a result, the information developed in the Final EIS is used to write the draft permit, and the MPCA permit staff are well-aware of EIS comments that relate to the draft permit. Information in the Final EIS is made available to the MPCA permitting staff prior to finalization and issuance of the permit. The permit is finalized upon the EIS receiving an adequacy decision and incorporates the information contained in the EIS and final comments on the EIS. The Final EIS was substantially similar to the Draft EIS.
Comment 27-10: “Finally, there is inadequate information justifying the 1,300 tons/year threshold above which MSI will be required to offset its emissions. The TSD refers to an MSI air quality analysis demonstrating that the emissions below this level "will have minimal predicted impacts" on Class I areas. It is not clear what analysis the TSD is referring to, whether there is any margin built into the 1,300 tons/year threshold or what impacts, in fact, are demonstrated at the 1,300 tons/year level. The objective of the regional haze initiative and the requirement of the Clean Air Act is to reduce visibility impairments in Class 1 areas. Emission levels that will maintain existing problems or contribute, even minimally, to visibility problems run afoul of the Act's mandate.”

Response: The 1300 ton per year threshold is derived from a regression analysis of a series of modeling runs performed by Minnesota Steel. In these runs, the emissions from the stationary source were varied and the impact on visibility determined from the CALPUFF modeling. The 1300 ton (NOX) per year corresponds approximately to the highest level at which no adverse impacts on visibility are identified. (The assessment of adverse impacts is based on the FLAG 2000 guidance, developed by the FLMs, mentioned in an earlier response.)

This threshold was developed during discussions with representatives of the FLMs, who are charged with direct responsibility for management of Class I area and have an affirmative responsibility to protect the Air Quality Related Values (including visibility) in these areas. (See 40 CFR 52.21(p)(2).) This mitigation strategy, including the 1300 tpy threshold, is supported by the FLMs. (Please refer to the comments of the National Park Service, particularly comment 1-4.)

Comment 27-11: “Demonstration of selective catalytic reduction ("SCR") should be required in the event LoTox proves unacceptable.

Reasons provided for not conducting a similar demonstration test for SCR for the waste gas stream of the indurating furnace are not convincing. MSI has simply stated that an SCR demonstration would be more involved than the LoTox test. In the event that LoTox is rejected, SCR vendors should be contacted and provided detailed specifications of the gas composition and asked to provide bids. This should be required in the permit.”

Response: The draft permit contains a condition for the waste gas stack of the pelletizing furnace (EU039) requiring Minnesota Steel to “submit within 3 months of submittal of the feasibility report a complete new BACT analysis of NOX controls for EU 039” “[i]f the conclusion of the feasibility report is that LoTOx™ control of NOX emissions from EU 039 is not feasible.”

If a BACT analysis is required, the MPCA will review the analysis and consider the commenter’s request for Minnesota Steel to demonstrate selective catalytic reduction at that time. To require such a demonstration at this time presupposes the outcome of the BACT analysis.

Comment 27-12: “Some permit limits are different from what was modeled.

In several instances, proposed emission limits are greater than what was used for modeling. Obviously, it is not appropriate to model impacts with a lower value than is required by the permit. In all cases, permit limits should not exceed modeled values. One example of this is with the Electric Arc Furnace's NOx emissions. The NOx limit proposed is 0.30 lb/ton; however the emissions are calculated (see Table B-1) using 0.26 lb/ton. Thus, the permit limit' is more than 10% greater than what was modeled.”
Response: The comment correctly points out that the basis of the hourly emission rate in the draft permit differs from the throughput rate in the draft permit. The commenter errs in requiring that the two always be the same (although in many cases they are).

The dispersion modeling was performed using a NO\textsubscript{X} emission rate of 53 lb/hr from the proposed Electric Arc Furnaces, which is also cited in the draft permit. As noted by the commenter, the 53 lb NO\textsubscript{X}/hr rate corresponds to an emission rate of 0.26 lb NO\textsubscript{X}/ton of liquid steel based as well as an anticipated maximum throughput of 205 tons of liquid steel per hour. (205 tons per hour times 0.26 lb per ton equals 53.3 lb/hr.)

The limit of 0.30 lb NO\textsubscript{X}/ton of liquid steel allows for fluctuations in the throughput of the EAFs; for example, if there are disruptions in processing operations downstream of the EAF, the hourly emission (i.e., the 53 lb NO\textsubscript{X}/hr) would remain constant, but the throughput could drop; in this situation, an emission rate of 0.26 lb NO\textsubscript{X}/ton of liquid steel could be exceeded even though the Permittee was operating all equipment to minimize emissions. The limit of 0.30 lb NO\textsubscript{X}/ton of liquid steel was put in place to reflect this possibility.

Comment 27-13: “Improper BACT limit on tunnel furnace NO\textsubscript{X}.

The NO\textsubscript{X} limit of 0.10 lb/MMBtu or 0.024 lb/ton proposed for the tunnel furnace is too high. A more appropriate BACT limit is 0.07 lb/MMBtu. This level is being achieved at other plants. See, for example, the Rocky Mountain Steel Mills permit in this regard.”

Response: The MPCA has investigated the 0.07 lb NO\textsubscript{X}/MMBtu limit referred to in the comment. Based on that investigation, the MPCA has determined that the 0.024 lb NO\textsubscript{X}/ton limit from the draft permit remains appropriate.

After receiving this comment, the MPCA contacted the Colorado Department of Public Health and Environment as well as Rocky Mountain Steel Mills. According to a representative of the Air Pollution Control Division,\footnote{Phone conversation between Tom Lovell, Colorado Department of Public Health and Environment, Air Pollution Control Division and Richard Cordes of the MPCA, August 17, 2007.} Rocky Mountain Steel Mills was unable to demonstrate compliance with the 0.07 lb/MMBtu limit on an ongoing basis. (For example, the limit was exceeded 2.2 percent of the time during the first quarter of 2007.)

A conversation with a representative of Rocky Mountain Steel Mills confirmed this statement.\footnote{Phone conversation between Carl Hund and Richard Cordes of the MPCA, August 17, 2007. At the time of the conversation, Mr. Hund was a retired employee of Rocky Mountain Steel Mills working on a special assignment for the company.} He indicated that, due to problems demonstrating compliance on an ongoing basis, Rocky Mountain Steel Mills is in the process of obtaining an extension of the averaging period. The company is seeking a change to a 30-day weighted average from a daily average.

There is another factor. A Federal Consent Decree imposed the 0.07 lb NO\textsubscript{X}/MMBtu limit on a reheat furnace at Rocky Mountain Steel Mills. The reheat furnace operates somewhat differently than the tunnel furnace; the reheat furnace heats up a cold billet, while the tunnel furnace prepares a steel slab for rolling by equalizing the temperature across the slab. The effect of the differences on emission is uncertain. The differences in the operation of the furnaces may lead to differences in NO\textsubscript{X} emissions; these differences...
were not explored in detail since the limit of 0.07 lb NO\textsubscript{X}/MMBtu with a daily averaging time has not been met on an ongoing basis.

Based on this investigation, the MPCA has determined that the comment is in error. The level of 0.07 lb/MBtu is not being achieved in practice on a tunnel furnace. The limit of 0.024 lb/ton included in the draft permit will be retained.

**Comment 27-14:** “The permit and TSD do not explain why NSPS Subpart AAa does not apply to the electric arch furnace (“EAF”).

The draft permit (pp. 9/151) states that direct reduced iron (“DRI”) will be "continuously fed" to the EAF and therefore NSPS Subpart AAa is exempt. However, Section 2.4.4 of the permit application states that "The steel mill will use an approximate 1-hour batch cycle process to melt a 376 metric ton per hour DRI pellet charge to the EAFs, though hot-charging DRI may reduce the cycle time. Each batch is referred to as a "heat."" This is inconsistent.”

**Response:**
The federal regulations “Standards of Performance for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 17, 1983, 40 CFR part 60, subpart AAa, section 60.270a (Applicability and designation of affected facility”) state: “The provisions of this subpart are applicable to the following affected facilities in steel plants that produce carbon, alloy, or specialty steels: electric arc furnaces, argon-oxygen decarburization vessels, and dust-handling systems.”

40 CFR Section 60.271a (Definitions) states: “Electric arc furnace (EAF) means a furnace that produces molten steel and heats the charge materials with electric arcs from carbon electrodes. For the purposes of this subpart, an EAF shall consist of the furnace shell and roof and the transformer. Furnaces that continuously feed direct-reduced iron ore pellets as the primary source of iron are not affected facilities within the scope of this definition.”

Because the primary source of iron for the proposed EAFs would be direct-reduced iron, these two provisions together exempt the EAFs from the requirements of 40 CFR part 60, subpart AAa.

All EAFs operate in a batch process. A quantity of metal is added, heated and then emptied from the EAF. In the context of the discussion in the Technical Support Document, “continuous” refers to the charge to the EAF being direct-reduced iron batch after batch compared to EAFs that may feed direct-reduced iron for one batch followed by a batch of scrap.

**Comment 27-15:** “Startup, Shutdown (SU/SD) and malfunction plans should be made available.

Startup, Shutdown, and Malfunction Plans, if not prepared prior to issuance of the permit, should be subject to public review and comment when available. This should be required in the permit.”

**Response:** The Startup, Shutdown, and Malfunction Plans are required for emission units subject to National Emission Standards for Hazardous Air Pollutants (NESHAPs) under 40 CFR Part 63. The NESHAP General Provisions (40 CFR 63.3(a)(3)) do not require the SSMPs to be subject to public notice or to be submitted to the Administrator. The Permittee must keep the SSMP on site and make it available for copying by the Administrator. If the SSMP is changed, the Permittee must keep the superseded part for 5 yrs after the change.

**Comment 27-16:** “SU/SD emissions are not supported and have not been included in modeling.”
SU/SD emissions are vague (two to three times normal) for various sources. No supporting data, for example from vendors, are provided. None of the modeling includes SU/SD even though substantial increases in emissions are certain. In addition, no basis is provided for the SU/SD durations (for example, 36 hours and 24 hours, respectively for SU and SD for the indurating furnace and the EAFs). And while the duration of SU/SD is controlled in the permit, nothing in the permit limits the number of SU/SD incidents at the facility.”

**Response:** Startup and shutdown provisions were made for volatile organic compounds (VOCs), CO, and oxides of nitrogen (NO\textsubscript{X}). Modeling is not required for VOCs since there is no state or federal ambient air quality standard. The modeling performed for CO emissions during normal operations indicated that emissions could rise by a factor of ten or more without threatening the ambient air quality standards. The actual increase in CO emissions during startup or shutdown events is only a doubling of emissions, at most.

Table E5 of Appendix E of the Permit Application shows that the most constraining circumstances for NO\textsubscript{X} emissions are when the pellet plant is uncontrolled and the modeling is performed to demonstrate compliance with the PSD increment. Under normal conditions in this scenario, the facility consumes forty percent of the increment. If all the NO\textsubscript{X}- emitting units operated at once at their highest rates (in startup or shutdown mode for those units with higher emission rates during those periods), total facility emissions would roughly double. This would raise the increment consumption to roughly eighty percent. Since the emission units that have the highest emission rates during startup and shutdown are those with the tallest stacks and the best dispersion, this is a conservation calculation.

The magnitude of the startup and shutdown emissions is based on engineering judgment. A doubling of the CO and VOC emissions from the combustion units during startup and shutdown is anticipated because the fuel use during these periods is expected to double to maintain the heat in the furnaces. (The rate of emissions increase of CO and VOC is linear with respect to the rate of fuel input.) The doubling or tripling of NO\textsubscript{X} emissions from low-NO\textsubscript{X} burners and ultra low-NO\textsubscript{X} burners during startup and shutdown is based on the expectation that those burners will act as regular burners until exhaust gases are available. Since these burners have roughly 40 to 50 percent of the emissions of an uncontrolled burner, emissions during startup and shutdown are expected to be 2.0 – 2.5 times the normal NO\textsubscript{X} emission rate. (1 divided by 0.50 equals 2.0; 1 divided by 0.40 equals 2.5.)

Although the permit does not explicitly address the potential number of startup and shutdown events, their duration and frequency will be limited by their cost. There is a significant disincentive to burning fuel without making a product. It will be in Minnesota Steel’s interest to make sure these events are infrequent and as short as they can be.

**Comment 27-17:** “Control efficiencies for PM and S02 are too low.

Control efficiencies for particulates from the indurating furnace (90% and 95% for PM\textsubscript{10} and PM, respectively) (Table B-1) are too low. Generally, particulate efficiencies for PM and PM\textsubscript{10} exceed 99% when using scrubbers. Control efficiency for S02 from the indurating furnace waste gas stack (90%) is too low. Generally wet scrubbers, which is the proposed control, provide 95-99% control for SO2.”

**Response:** The limits set in the draft permit are appropriate for the planned furnace. Please note that they are not based on a particular control efficiency, but on the concentrations of PM, PM\textsubscript{10}, and SO\textsubscript{2} achievable by the control technology the MPCA selected as the Best Available Control Technology.
One problem with using the removal efficiency as the major factor in determining the appropriate control is the dependence of the efficiency on the initial loading. For example, a high initial loading tends to result in enhanced removal efficiency. Since the removal of particles and sulfur dioxide in a wet scrubber is concentration limited, the concentrations of particulates and sulfur dioxide in the exhaust leaving the pelletizing furnace have the greatest impact on the control efficiency achieved in practice. (This is briefly discussed in the BACT analysis in the permit application from Minnesota Steel.)

There is a confounding factor for particulate removal. A number of recirculating scrubber installations have been made recently. Compliance testing performed after their installation has shown that the recirculating scrubbers are having difficulty meeting the limits set forth in the National Emission Standards for Hazardous Air Pollutants for Taconite Iron Ore Processing (40 CFR 63 Subpart RRRRR). Following their installation, it was noted that there was an increase in particulate emissions that has been linked to particles in the scrubber water that carried over to the stack. These particles are not emitted from the process, yet the performance testing method identifies them as particulate matter. Minnesota Steel plans to install a recirculating scrubber, so the particulate limit was set considering this information.

Comment 27-18: “The permit does not make clear whether emissions (other than fugitives) from the large mobile machines used in the mines were considered.

It appears, based on tables provided in the TSD, that emissions from the equipment used in the mines were not included in PCA's analyses for this permit. For example, in Table B, entitled "Potential-to-Emit Summary for Criteria and New Source Review Pollutants," the project area entitled "Mining & Crushing" presumes zero NOx emissions. Clearly, there will be NOx emissions from the burning of fuel to run the bulldozers, haul trucks, and other various large pieces of equipment. These sources are not described in the permit, not listed as emission units, and appear not to have been accounted for in the analyses. This should be corrected. To the extent such emissions were not considered, all of the air quality and haze analyses supporting the permit limits are insufficient. If mobile sources were considered, that should be made transparent for the reviewing public.

In addition, alternative fuels should be required for mobile units to lower emissions from these sources. As set out in our comments on the EIS, greenhouse gas emissions may be lowered by using alternative fuels. At a minimum, this option should be evaluated and, if not chosen, an explanation should be provided. I note that this issue highlights the problem MCEA has repeatedly stated to the PCA about publishing: a draft permit prior to completion of environmental review. The public should be able to assume that permit writers are actually digesting and benefiting from their comments on environmental review when they are constructing permits. The point to environmental review is to use the information developed in the EIS to write permits that mitigate environmental consequences and protect natural resources. The PCA's decision, as here, to routinely complete a permit prior to environmental review being concluded subverts that purpose.”

Response: As stated in the New Source Review Workshop Manual (U.S. EPA, Office of Air Quality Planning and Standards, October 1990, pages A-16 to A-18), “Secondary emissions are not considered in the potential emissions accounting procedure. Secondary emissions are those emissions which, although associated with a source, are not emitted from the source itself. Secondary emissions occur from any facility that is not a part of the source being reviewed, but which would not be constructed or increase its emissions except as a result of the construction or operation of the major stationary source or major modification. Secondary emissions do not include any emissions from any off-site facility which would be constructed or increase its emissions for some reason other than the construction or operation of the major stationary source or major modification.
Secondary emissions do not include any emissions which come directly from a mobile source, such as emissions from the tailpipe of a motor vehicle or from the propulsion unit of a train or a vessel. This exclusion is limited, however, to only those mobile sources that are regulated under Title II of the Act (see 43 FR 26403 - note #9). Most off-road vehicles are not regulated under Title II and are usually treated as area sources. [As a result of a court decision in NRDC v. EPA, 725 F.2d 761 (D.C. Circuit 1984), emissions from vessels at berth ("dockside") not to be included in the determination of secondary emissions but are considered primary emissions for applicability purposes.]

43 FR 26403 - note #9 states: “Where a new source will result in specific and well defined secondary emissions which can be accurately quantified, the reviewing authority should consider such secondary emissions in determining whether the source would cause or contribute to a violation of an ambient ceiling or increment. However, since EPA’s authority to perform or require indirect source review relating to mobile sources regulated under Title II of the Act (motor vehicles and aircraft), has been restricted by statute, consideration of indirect impacts of motor vehicles and aircraft traffic is not required under this Ruling.”

The vehicle emissions from the diesel powered mobile equipment at the proposed facility are regulated under Title II, Part A, Section 213 of the Clean Air Act, Nonroad Engines and Vehicles. Vehicle emissions were included in the Class I and visibility modeling analyses.

Minnesota Steel may choose to utilize alternate fuels in its vehicles to reduce emissions of greenhouse gases but there are no current rules or regulations in place to require those fuels in the air quality permit.

Comment 27-19: “Emissions from blasting were not considered in developing this permit.

Clearly, blasting is a major activity of surface mining that has the potential to emit many tons of pollutants into the air. See http://www.nsmining.com/Tour2.htm (video showing mine blast on corporate website). In a recent permit for a mine in Montana, blasting emissions were calculated and included PM10, NOx, S02 and CO. See http://deq.mt.gov/AirQuality/Rock_Creek_2414-01/2414-01DDm.pdf; see also http://www.deq.state.mt.us/AirQuality/arm-permits/1986-09.pdf. Based on these examples, it is clearly possible to calculate potential-to-emit for blasting and include those figures in the modeling of impacts. PCA and MSI, without explanation, have failed to include any emissions from blasting in developing this permit.

MCEA submits that there is no basis for ignoring emissions from blasting in any mining operation, and in this case, in particular, the failure to include emissions from blasting is unacceptable given the proximity of the MSI mine to Nashwauk, recreational users of land surrounding the project site, and Class I areas. The PCA must address these emissions and any controls for such emissions must be in the air permit.”


Comment 27-20: “MSI and PCA should also explain how the company intends to comply with Minn. Rule 7009.0020 without accounting for, either by modeling or monitoring, emissions from mine blasting.

MCEA requests that PCA require ambient air monitoring upwind and downwind of each blast event. The PCA cannot pretend an impact does not exist simply because it has not developed a way to calculate the impact. Monitoring will provide useful data about the air quality impacts of uncontrolled blasting.”

Response: Minnesota Steel calculated the potential emissions from blasting using emission factors from AP-42, Section 11.9: Western Coal Mining. These emission factors appear to be the source for emission
estimates included in Montana permits referenced by MCEA. The resulting emissions from blasting were 5% or less than total facility emissions for CO, NOX, SO2, and PM10. The potential increase in PM10 would be approximately 1% of facility fugitive PM10 emissions. These increases are relatively small and no changes to the conclusions of the air quality impact analysis are expected. MPCA concludes that monitoring of blasting emissions is not warranted.

Comment 27-21: “Overlapping comment periods preclude effective public participation.

As MCEA has repeatedly stated in the past, the PCA’s continued issuing of draft permits prior to completion of final environmental review prevents effective public participation in permitting and violates the spirit, intent, and plain language of the applicable laws. It is particularly disturbing that the PCA elected to overlap comment periods with the EIS and its air and water permits in this case, one of the largest and most complex projects ever proposed in Minnesota.

The EIS in this matter was noticed for public comment on June 18, 2007, with comments due July 23, 2007. PCA then issued the draft air and water permits, requiring comments by July 30, 2007, one week after comments were due on the EIS. Obviously, PCA did not take into account comments received on the EIS in drafting its permits. And clearly, public participation is hampered when comment periods run simultaneously, especially for a large project such as this.

As you know, an EIS is to be prepared early in the process, and the information and analysis developed in the EIS is to be used by the government to inform later permitting decisions. Minn. Stat. § 116D.04, subd. 2(a). The language of the statute regarding the consideration of the EIS information is mandatory: The governmental action shall be preceded by a detailed environmental impact statement. The law regarding environmental review further requires that government agencies not take final action on a project prior to the completion of environmental review. Minn. Stat. § 116D.04, subd. 2(b) and Minn. R. 4410.3100. PCA must not take any action, directly or indirectly, to further or assist a project prior to completion of environmental review. Minn. Stat. 116D.04, subd. 2a. The clear overall intent and purpose of the environmental review law, both in terms of the manner in which it is structured and the stated purpose and intent, is to fully inform government decisions and have them fully consider all of the potential environmental effects from a decision and, most importantly, to have that decision shaped in a manner that strives to avoid the potential significant environmental effects.

By completing draft water and air permits and placing them on public notice with the indication that these are the permits PCA proposes to issue, PCA is ignoring its obligations to avoid taking action prior to completion of environmental review and to ensure full consideration of the contents of, and public comment on, the final EIS in drafting the permits. PCA’s practice is violation of the law.

In order to rectify this violation of Minn. Stat. ch. 116D, PCA must re-issue drafts of the water and air permits for public comment following adoption of the final EIS in this matter. If not, MCEA will have no choice but to examine its options regarding legal challenge to this continued practice that is in violation of law.”

Response: See response to comment 27-9 and 27-10 above. The MPCA takes into account information in the Final EIS when making final changes to the draft permits prior to issuance. It is not a violation of the law for the MPCA to publish a draft permit for comment prior to a decision on adequacy of the Final EIS. If the information in the Final EIS suggests that significant changes are needed in the permit that was published for comment, the MPCA may make such changes and re-notice the permit for public comment. The MPCA provided commenter an additional week to submit comments on the draft permits.
after commenter requested additional time to submit comments both on the Final EIS and on the air permit

**Comment 27-22:** “EIS and comments incorporated.

Please ensure that the EIS for this project as well as MCEA’s comments on both the draft and final EIS's are incorporated into the record for any decision the PCA makes with regard to the air permit. In addition, please ensure that all referenced and cited materials (which are available on the internet) in this comment-letter as well as MCEA's comments on the draft and final EISs are included in the record. If you will require hard copies of any particular reference, please let me know.”

**Response:** The MPCA has corresponded with the commenter and believes that referenced and cited materials are available to be included in the record. The commenter’s EIS comments are of record in that proceeding and will be included in the record for this proceeding as requested.

**V. Correspondence Expressing Support for the Draft Air Emissions Permit**

**Comment Letters #28 through #62** have expressed support for the Project. The comments have been received by the MPCA and will be included in the official administrative record for the Minnesota Steel Industries project.

The following individuals expressed support for the Minnesota Steel project at the public meeting on July 11, 2007. Their oral comments are included in the meeting transcript and will be included in the official administrative record for the Minnesota Steel project.

63. Tom Saxhaug  
64. Scott Weappa  
65. John Fedo  
66. Mark Mandich  
67. Bill Hendricks  
68. Milt Latvala  
69. Jim Keranen  
70. John Grahek  
71. Bill Whiteside  
72. Rick Wolff  
73. Dave Leingang  
74. Bob Latvala  
75. Richard Spehn  
76. Larry Furlong