**AIR EMISSION PERMIT NO. 05300480-002**

**IS ISSUED TO**

**AMERICAN IRON AND SUPPLY COMPANY**

2800 Pacific Street North

Minneapolis, Hennepin County, Minnesota 55411

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

| Permit Type | Application Date |
|---|---|
| Total Facility Operating Permit | August 21, 1996 |

This permit authorizes the Permittee to operate and construct the stationary source at the address listed above unless otherwise noted in Table A. The Permittee must comply with all the conditions of the permit and with all general conditions listed in Minn. R. 7007.0800, subp. 16, which are incorporated by reference. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit are as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

**Permit Type:** State; True Minor

**Issue Date:** December 8, 1998

**Expiration:** Permit does not expire

Michael J. Sandusky
Acting Division Manager
Air Quality Division

for Peder A. Larson
Commissioner
Minnesota Pollution Control Agency

JP:lao

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**NOTICE TO THE PERMITTEE:**

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

| | |
|---|---|
| Metro Area | (612)296-6300 |
| Outside Metro Area | 1-800-657-3864 |
| TTY | (612)282-5332 |

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

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

**PERMIT SHIELD:**

Subject to the limitations in Minn. R. 7007.1800, compliance with the conditions of this permit shall be deemed compliance with the specific provision of the applicable requirement identified in the permit as the basis of each condition. Any requirements which have been determined not to apply are listed in Table A of this permit.

The permit shield, however does not apply to: Minn. R. ch. 7030 (Noise Pollution Control).

**FACILITY DESCRIPTION:**

The Permittee is a metal recycling firm which has operated at its existing yard on the Mississippi River north of downtown Minneapolis since 1951. The facility includes 12 acres of property and eight buildings; office with truck scale; red metal (copper containing metal) recycling building; crane maintenance building; old baler; metal shear; aluminum recycling building; and two storage buildings.

To increase its capacity to recycle metals and to improve quality by producing a higher grade of ferrous scrap for the recycled metals market, the Permittee intends to install a metal shredding machine manufactured by Lindemann Maschinenfabrik GmbH which carries the trademark "Kondirator." The process consists of transfer equipment, the 100 ton-per-hour hammermill metal shredder, size separation equipment, a cleaning process collectively referred to as the cascade cleaning system, magnetic and manual separation, and the associated air pollution control equipment (cyclones and baghouse).

Prior to the processing of the application for this permit, an Environmental Assessment Worksheet (EAW) was prepared in accordance with the Minnesota Environmental Policy Act and additional legislation enacted in 1994 (Minn. Stat. § 116G.151). At the conclusion of that process, a Negative Declaration (on the need for an Environmental Impact Statement) was issued by the MPCA Citizens' Board on June 11, 1996, which included approval of the Findings of Fact on the EAW (EAW Findings). The EAW Findings include an attachment entitled "Attachment 2: Permit Terms to Mitigate Risks" which summarizes terms and conditions that the EAW assumed would be reflected in MPCA permits for the facility. More detailed descriptions of the proposed metal shedding process, raw materials, emissions evaluations, and other analyses are contained in the EAW, EAW Findings, and the Technical Support Document for this permit.

**LIST OF ABBREVIATIONS:**

| Abbreviation | Meaning |
|---|---|
| Ag | Silver |
| As | Arsenic |
| B | Boron |
| Ba | Barium |
| Be | Beryllium |
| Ca | Calcium |
| Cd | Cadmium |
| CE | Control Equipment |
| Co | Cobalt |
| Cr | Chromium, total |
| Cr6+ | Chromium, hexavalent |
| Cu | Copper |
| EAW | Environmental Assessment Worksheet |
| EU | Emission Unit |
| Fe | Iron |
| FS | Fugitive Source |
| Hg | Mercury |
| Li | Lithium |
| Mg | Magnesium |
| Minn. R. | Minnesota Rules |
| Mn | Manganese |
| Mo | Molybdenum |
| Nb | Niobium |
| Ni | Nickel |
| Pb | Lead |
| PCBs | Polychlorinated biphenyls |
| PM | Particulate Matter |
| $PM_{10}$ | PM smaller than 10 microns |
| Sb | Antimony |
| Se | Selenium |
| Sn | Tin |
| SV | Stack/Vent |
| Ti | Titanium |
| V | Vanadium |
| W | Tungsten |
| Zn | Zinc |
| Zr | Zirconium |

## TABLE A: LIMITS AND OTHER REQUIREMENTS

12/08/98

Facility Name: American Iron and Supply Company

Permit Number: 05300480 - 002

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

**Subject Item:** **Total Facility**

| What to do | Why to do it |
|---|---|
| The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16. | Minn. R. 7007.0800, subp. 16 |
| Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated, unless otherwise noted in Table A. | Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J) |
| Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. | Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J) |
| Shutdowns: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any process or control equipment if the shutdown would cause an increase in the emissions of any regulated air pollutant. At the time of notification, notify the Commissioner of the cause of the shutdown and the estimated duration. Notify the Commissioner again when the shutdown is over. | Minn. R. 7019.1000, subp. 3 |
| Breakdowns: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any process or control equipment if the breakdown causes an increase in the emissions of any regulated air pollutant. At the time of notification or as soon thereafter as possible, also notify the Commissioner of the cause of the breakdown and the estimated duration. Notify the Commissioner again when the breakdown is over. | Minn. R. 7019.1000, subp. 2 |
| Monitoring Equipment: Install or make needed repairs to monitoring equipment prior to initial startup of associated process equipment. | Minn. R. 7007.0800, subp. 4(D) |
| Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment (any requirements applying to continuous emission monitors are listed separately in this permit). | Minn. R. 7007.0800, subp. 4(D) |
| Operation of Monitoring Equipment: Unless otherwise noted in Tables A, B, and/or C, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system. | Minn. R. 7007.0800, subp. 4(D) |
| Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted. | Minn. R. 7011.0020 |
| Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A, B, and/or C. Note that this requirement does not impact those requirements associated with Minn. R. 7030.0010-7030.0080. | Minn. R. ch. 7017 |
| Operating and/or production limits will be placed on emission units based on operating conditions during performance testing. Limits set as a result of a performance test (conducted before or after permit issuance) apply until new operating/production limits are set following formal review of a performance test as specified by Minn. R. 7017.2025. | Minn. R. 7017.2025 |
| Oral Notification of Deviations Endangering Human Health or the Environment: Within 24 hours of discovery, orally notify the Commissioner of any deviation from permit conditions which could endanger human health or the environment. | Minn. R. 7019.1000, subp. 1 |
| Discovery of Deviations Endangering Human Health or the Environment Report (written): within two working days of discovery of the deviation, submit a written description of any deviation endangering human health or the environment to the Commissioner. Include the following information in this written description: cause of the deviation; exact dates of the period of the deviation; if the deviation has not been corrected, the anticipated time it is expected to be corrected; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation. | Minn. R. 7019.1000, subp. 1 |
| Application for Permit Amendment: If you need a permit amendment, submit application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed. | Minn. R. 7007.1150 through Minn. R. 7007.1500 |
| Emission Fees: due 60 days after receipt of an MPCA bill | Minn. R. 7002.0005 through Minn. R. 7002.0095 |

## TABLE A: LIMITS AND OTHER REQUIREMENTS

12/08/98

Facility Name: American Iron and Supply Company

Permit Number: 05300480 - 002

| | |
|---|---|
| Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150. | Minn. R. 7011.0150 |
| Inspections: Upon presentation of credentials and other documents as may be required by law, allow the Agency, or its representative, to enter the Permittee's premises, to have access to and copy any records required by this permit, to inspect at reasonable times (which include any time the source is operating) any facilities, equipment, practices or operations, and to sample or monitor any substances or parameters at any location. | Minn. R. 7007.0800, subp. 9(A) |
| Record keeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007.1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350, subp. 2), including records of the emissions resulting from those changes. | Minn. R. 7007.0800, subp. 5(B) |
| Record keeping: Retain all records at the stationary source for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A). | Minn. R. 7007.0800, subp. 5(C) |
| Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H). | Minn. R. 7007.1400, subp. 1(H) |
| Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not federally enforceable. | Minn. R. 7030.0010-7030.0080 |
| Initial Performance Test: due 180 days after Initial Startup , but not to exceed 90 days after achieving the normal production rate to measure noise. | EAW Findings<br>Attachment 2.E.1 |
| Submit: due 30 days before Initial Performance Test . A Noise Monitoring Plan, in accordance with Minn. R. 7030.0060, shall be submitted for MPCA approval. | EAW Findings<br>Attachment 2.E.1 and<br>Minn. R. 7030.0060 |
| Performance Test: due before end of each calendar year following Initial Startup to measure noise. | EAW Findings<br>Attachment 2.E.1 |
| Submit: due 30 days before end of each calendar year following Initial Performance Test . A Noise Monitoring Plan, in accordance with Minn. R. 7030.0060, shall be submitted for MPCA approval. (30 days before each Noise Performance Test.) | EAW Findings<br>Attachment 2.E.1 and<br>Minn. R. 7030.0060 |

## TABLE A: LIMITS AND OTHER REQUIREMENTS

12/08/98

Facility Name: American Iron and Supply Company

Permit Number: 05300480 - 002

**Subject Item: SV 001**

| What to do | Why to do it |
|---|---|
| Opacity: less than or equal to 20 percent opacity | Minn. R. 7011.0715, subp. 1(B) |
| Total Particulate Matter: less than or equal to 0.43 lbs/hour (Includes organic condensibles) | EAW Findings<br>Attachment 2.A.1<br>(Limit is less than that provided by Minn. R. 7011.0715, subp. 1(A)) |
| Particulate Matter < 10 micron: less than or equal to 0.43 lbs/hour | EAW Findings<br>Attachment 2.A.1 |
| Lead: less than or equal to 0.00093 lbs/hour | EAW Findings<br>Attachment 2.D.2 |
| Mercury: less than or equal to 0.00079 lbs/hour | EAW Findings<br>Attachment 2.C |
| Arsenic compounds: less than or equal to 0.00052 lbs/hour (The limit is on the weight of arsenic itself.) | EAW Findings<br>Attachment 2.A.2 |
| Beryllium: less than or equal to 0.00022 lbs/hour | EAW Findings<br>Attachment 2.A.2 |
| Cadmium compounds: less than or equal to 0.00034 lbs/hour (The limit is on the weight of cadmium itself.) | EAW Findings<br>Attachment 2.A.2 |
| Chromium compounds: less than or equal to 0.00031 lbs/hour (The limit is on the weight of hexavalent chromium itself.) | EAW Findings<br>Attachment 2.A.2 |
| Manganese compounds: less than or equal to 0.0088 lbs/hour (The limit is on the weight of manganese itself.) | EAW Findings<br>Attachment 2.A.2 |
| Nickel compounds: less than or equal to 0.0041 lbs/hour (The limit is on the weight of nickel itself.) | EAW Findings<br>Attachment 2.A.2 |
| Initial Performance Test: due 180 days after Initial Startup , but not to exceed 90 days after achieving the normal production rate to measure PM, PM10, Pb, Hg, As, Be, Cd, Cr6+, Mn, Ni and Opacity emissions. | EAW Findings<br>Attachment 2.A.3 and<br>Minn. R. 7017.2020, subp. 1 |
| Performance Test Pre-test Meeting: due 7 days before Initial Performance Test for PM, PM10, Pb, Hg, As, Be, Cd, Cr6+, Mn, Ni, and Opacity | Minn. R. 7017.2030, subp. 4 |
| Initial Performance Test: due 180 days after Initial Startup , but not to exceed 90 days after achieving the normal production rate to measure PCBs, Dioxin, and Asbestos emissions. | EAW Findings<br>Attachment 2.A.6 and 2.E.8 and<br>Minn. R. 7017.2020, subp.1 |
| Performance Test Pre-test Meeting: due 7 days before Initial Performance Test for PCBs, Dioxin, and Asbestos | Minn. R. 7017.2030, subp. 4 |
| Initial Performance Test: due 180 days after Initial Startup , but not to exceed 90 days after achieving the normal production rate to measure Sb, Ba, B, Ca, Cr, Co, Cu, Fe, Li, Mg, Mo, Nb, Se, Ag, Sn, Ti, W, V, Zn, and Zr emissions. | EAW Findings<br>Attachment 2.A.5 and<br>Minn. R. 7017.2020, subp. 1 |
| Performance Test Pre-test Meeting: due 7 days before Initial Performance Test for Sb, Ba, B, Ca, Cr, Co, Cu, Fe, Li, Mg, Mo, Nb, Se, Ag, Sn, Ti, W, V, Zn, and Zr. | Minn. R. 7017.2030, subp. 4 |
| The Permittee must submit to the commissioner for approval any revisions to the stack parameters (not already reflected in the permit application), which were assumed in the air dispersion modeling conducted for the EAW and associated risk assessments, no later than 60 days prior to beginning actual construction of the change. The parameters include height, temperature, velocity, diameter, location, and orientation. The Permittee must demonstrate that the dispersion characteristics due to the changes are equivalent to or better than those modeled. | Minn. R. 7007.0800, subp. 2 |

## TABLE A: LIMITS AND OTHER REQUIREMENTS

12/08/98

Facility Name: American Iron and Supply Company

Permit Number: 05300480 - 002

**Subject Item: EU 001 Kondirator Metal Shredder**

| What to do | Why to do it |
|---|---|
| Feedstock Control. The Permittee shall not use as shredder feedstock the following types of scrap:<br>- Auto hulks<br>- Stainless steel scrap *<br>- Aluminum scrap *<br>- Brass scrap *<br>- Copper scrap *<br>* Except for incidental amounts of stainless steel, aluminum, brass and copper not to exceed two percent, two percent, one percent and one percent respectively. | EAW Findings Attachment 2.C, 2.D.1, 2.E.3, and 2.E.4 |
| Feedstock Control. The Permittee shall implement a feedstock control plan to prevent the inclusion of the following materials in the shredder feedstock:<br>- Lead-containing materials (such as batteries)<br>- Mercury-containing materials (such as mercury switches)<br>- Other problematic materials:<br>-- Hazardous wastes<br>-- Explosive materials<br>-- Radioactive materials<br>-- Combustible materials<br>-- PCB-containing materials<br>-- Asbestos-containing materials<br>-- Used oil filters | EAW Findings Attachment 2.C, 2.D.1, 2.E.3, and 2.E.4 |
| Feedstock Control. The Permittee shall retain at the stationary source the feedstock control plan which shall contain, at a minimum, the following components:<br>- Supplier notification and education<br>- Supplier certification<br>- Employee education<br>- Visual inspection<br>- Rejection of loads containing materials not meeting specifications for feedstock<br>- Preparation requirements for such items as appliances, automobile parts, containers and compressed gas cylinders and bottles | EAW Findings Attachment 2.C, 2.D.1, 2.E.3, and 2.E.4 |
| Submit: due 60 days after Permit Issuance is a copy of the feedstock control plan which the Permittee is required to retain at the stationary source. Also submit any subsequent updates or revisions to the plan upon making the update or revision. The resulting plan must still meet the minimum requirements of a feedstock control plan as cited in this permit. | EAW Findings Attachment 2.C, 2.D.1, 2.E.3, and 2.E.4 |
| Recordkeeping. The Permittee shall maintain records relating to feedstock control, including at a minimum:<br>- Weight, origin, and brief description of all loads supplying the shredder (EU 001), daily<br>- Description and documentation of materials rejected and the reason for rejection, daily<br>- Weight of all ferrous metals produced at the shredder, daily<br>- Weight of all non-ferrous metals produced at the shredder, at least monthly<br>- Weight of all residue and materials collected by pollution control equipment, at least monthly<br>Monthly totals of weights shall be calculated and recorded by the 15th of the following month. | EAW Findings Attachment 2.C, 2.D.1, 2.E.3, and 2.E.4 |
| Process Throughput: less than or equal to 377800 tons/year using 12-month Rolling Sum (Record weight of scrap processed in shredder daily, when operating, and calculate and record 12-month Rolling Sum by 15th of following month.) | EAW Findings Attachment 2 |
| The Permittee shall operate the metal shredder only during the hours listed below:<br>Monday through Friday: 7:00 a.m. to 6:00 p.m.<br>Saturday, Sunday and Legal Holidays: 9:00 a.m. to 6:00 p.m. | Minn. R. 7007.0800, subp. 2 |

## TABLE A: LIMITS AND OTHER REQUIREMENTS

12/08/98

Facility Name: American Iron and Supply Company

Permit Number: 05300480 - 002

**Subject Item: CE 001 Centrifugal Collector - High Efficiency**

| What to do | Why to do it |
|---|---|
| The Permittee shall comply with the control equipment general requirements in Minn. R. 7011.0075, subp. 1-7. | Minn. R. 7011.0075 |
| The Permittee shall comply with the monitoring and recordkeeping for listed control equipment in Minn. R. 7011.0080 as it applies to CE 001. | Minn. R. 7011.0080 |

## TABLE A: LIMITS AND OTHER REQUIREMENTS

12/08/98

Facility Name: American Iron and Supply Company

Permit Number: 05300480 - 002

**Subject Item: CE 003 Fabric Filter - Low Temperature, i.e., T<180 Degrees F**

| What to do | Why to do it |
|---|---|
| The Permittee shall comply with the control equipment general requirements in Minn. R. 7011.0075, subp. 1-7. | Minn. R. 7011.0075 |
| The Permittee shall comply with the monitoring and recordkeeping for listed control equipment in Minn. R. 7011.0080 as it applies to CE 003, except that recording of pressure drop shall be done twice each day of operation instead of once. | Minn. R. 7011.0080; Minn. R. 7007.0800, subp. 2 |

## TABLE A: LIMITS AND OTHER REQUIREMENTS

12/08/98

Facility Name: American Iron and Supply Company

Permit Number: 05300480 - 002

**Subject Item: FS 001 Product storage piles**

| What to do | Why to do it |
|---|---|
| Opacity: less than or equal to 0 percent opacity for fugitive emissions. | EAW Findings<br>Attachment 2.B.1 |
| Initial Performance Test: due 180 days after Initial Startup , but not to exceed 90 days after achieving the normal production rate to measure opacity. The test shall be conducted concurrent with any PM/PM10 testing required for SV 001. | EAW Findings<br>Attachment 2.B.2 and<br>Minn. R. 7017.2020, subp. 1 |
| Performance Test Pre-test Meeting: due 7 days before Initial Performance Test for Opacity | Minn. R. 7017.2030, subp. 4 |

## TABLE A: LIMITS AND OTHER REQUIREMENTS

12/08/98

Facility Name: American Iron and Supply Company

Permit Number: 05300480 - 002

**Subject Item: FS 002 Paved roads**

| What to do | Why to do it |
|---|---|
| The Permittee shall pave and maintain all primary road surfaces, internal roads and exits of the Permittee's property at 2800 Pacific St. N. within 90 days of Initial Startup except that, if Initial Startup occurs after October 1, the Permittee shall complete paving as soon as practicable the next spring but no later than May 1. | EAW Findings<br>Attachment 2.E.5 |
| The Permittee shall, at a minimum, clean once per day all primary road entrances, internal roads, and exits of the Permittee's property, as well as Pacific St. N. between 28th Ave. N. and 31st Ave. N., in such a manner as to prevent avoidable amounts of particulate matter from becoming airborne. The exception to this is during business hours when there is sufficient moisture, ice or snow that prevents fugitive emissions. The Permittee shall keep records of precipitation and cleaning events. | EAW Findings<br>Attachment 2.E.5 |

## TABLE B: SUBMITTALS

12/08/98

Facility Name: American Iron and Supply Company

Permit Number: 05300480 - 002

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

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

**Send any application for a permit or permit amendment to:**

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

**Also, where required by an applicable rule or permit condition, send to the Permit Technical Advisor notices of:**
**- accumulated insignificant activities,**
**- installation of control equipment,**
**- replacement of an emissions unit, and**
**- changes that contravene a permit term.**

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

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

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

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

## TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS

12/08/98

Facility Name: American Iron and Supply Company

Permit Number: 05300480 - 002

| What to send | When to send | Portion of Facility Affected |
|---|---|---|
| Noise Performance Test Report | due 30 days after Initial Performance Test | Total Facility |
| Notification of the Actual Date of Initial Startup | due 15 days after Initial Startup (Initial Startup is defined as the first time metal is processed through EU 001 (the metal shredder).) | Total Facility |
| Operation and Maintenance Plan | due 60 days after Permit Issuance is a copy of the operation and maintenance plan which the Permittee is required to retain at the stationary source. Also submit any subsequent updates or revisions to the plan upon making the update or revision. The resulting plan must still meet the minimum requirements for an operation and maintenance plan as cited in this permit. | Total Facility |
| Performance Test Notification (written) | due 30 days before Initial Performance Test for Opacity | FS001 |
| Performance Test Notification (written) | due 30 days before Initial Performance Test for PCBs, Dioxin, and Asbestos | SV001 |
| Performance Test Notification (written) | due 30 days before Initial Performance Test for PM, PM10, Pb, Hg, As, Be, Cd, Cr6+, Mn, Ni, and Opacity | SV001 |
| Performance Test Notification (written) | due 30 days before Initial Performance Test for Sb, Ba, B, Ca, Cr, Co, Cu, Fe, Li, Mg, Mo, Nb, Se, Ag, Sn, Ti, W, V, Zn, and Zr. | SV001 |
| Performance Test Plan | due 30 days before Initial Performance Test for Opacity. The test plan submitted shall address feedstock characterization during testing. | FS001 |
| Performance Test Plan | due 30 days before Initial Performance Test for PCBs, Dioxin, and Asbestos. The test plan submitted shall also address feedstock characterization during testing. The test plan submitted shall also provide a cumulative tabular summary of the results of the analyses needed for disposal of the waste collected by the cyclones (CE001 and CE002) and the fabric filter (CE003). | SV001 |
| Performance Test Plan | due 30 days before Initial Performance Test for PM, PM10, Pb, Hg, As, Be, Cd, Cr6+, Mn, Ni, and Opacity. The test plan submitted shall also address feedstock characterization during testing. The test plan submitted shall also provide a cumulative tabular summary of the results of the analyses needed for disposal of the waste collected by the cyclones (CE001 and CE002) and the fabric filter (CE003). | SV001 |
| Performance Test Plan | due 30 days before Initial Performance Test for Sb, Ba, B, Ca, Cr, Co, Cu, Fe, Li, Mg, Mo, Nb, Se, Ag, Sn, Ti, W, V, Zn, and Zr. The test plan submitted shall also address feedstock characterization during testing. The test plan submitted shall also provide a cumulative tabular summary of the results of the analyses needed for disposal of the waste collected by the cyclones (CE001 and CE002) and the fabric filter (CE003). | SV001 |
| Performance Test Report - Microfiche Copy | due 120 days after Initial Performance Test for Opacity | FS001 |
| Performance Test Report - Microfiche Copy | due 120 days after Initial Performance Test for PCBs, Dioxin, and Asbestos | SV001 |
| Performance Test Report - Microfiche Copy | due 120 days after Initial Performance Test for PM, PM10, Pb, Hg, As, Be, Cd, Cr6+, Mn, Ni, and Opacity | SV001 |
| Performance Test Report - Microfiche Copy | due 120 days after Initial Performance Test for Sb, Ba, B, Ca, Cr, Co, Cu, Fe, Li, Mg, Mo, Nb, Se, Ag, Sn, Ti, W, V, Zn, and Zr. | SV001 |

## TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS

12/08/98

Facility Name: American Iron and Supply Company

Permit Number: 05300480 - 002

| | | |
|---|---|---|
| Performance Test Report | due 60 days after Initial Performance Test for Opacity | FS001 |
| Performance Test Report | due 60 days after Initial Performance Test for PCBs, Dioxin, and Asbestos | SV001 |
| Performance Test Report | due 60 days after Initial Performance Test for PM, PM10, Pb, Hg, As, Be, Cd, Cr6+, Mn, Ni, and Opacity | SV001 |
| Performance Test Report | due 60 days after Initial Performance Test for Sb, Ba, B, Ca, Cr, Co, Cu, Fe, Li, Mg, Mo, Nb, Se, Ag, Sn, Ti, W, V, Zn, and Zr. | SV001 |
| Testing Frequency Plan | due 60 days after Initial Performance Test for opacity. The plan shall specify a testing frequency using the test data based on MPCA guidance. Future performance tests based on year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required on written approval of MPCA per Minn. R. 7017.2020, subp. 1. The Permittee shall incorporate the requirement for concurrent testing of FS 001 for Opacity with PM/PM10 testing required for SV 001. | FS001 |
| Testing Frequency Plan | due 60 days after Initial Performance Test for PCBs, Dioxin, and Asbestos emissions. The plan shall specify a testing frequency using the test data and MPCA guidance. Future performance tests based on year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required on written approval of MPCA per Minn. R. 7017.2020, subp. 1. | SV001 |
| Testing Frequency Plan | due 60 days after Initial Performance Test for PM, PM10, Pb, Hg, As, Be, Cd, Cr6+, Mn, Ni and Opacity emissions. The plan shall specify a testing frequency using the test data and MPCA guidance. Future performance tests based on year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required on written approval of MPCA per Minn. R. 7017.2020, subp. 1. For the purposes of Hg, the testing frequency shall be annually if the result of the previous performance test was more than half of the permit emission rate limit. | SV001 |
| Testing Frequency Plan | due 60 days after Initial Performance Test to measure Sb, Ba, B, Ca, Cr, Co, Cu, Fe, Li, Mg, Mo, Nb, Se, Ag, Sn, Ti, W, V, Zn, and Zr emissions. The plan shall specify a testing frequency using the test data and MPCA guidance. Future performance tests based on year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required on written approval of MPCA per Minn. R. 7017.2020, subp. 1. | SV001 |

## TABLE B: RECURRENT SUBMITTALS

12/08/98

Facility Name: American Iron and Supply Company

Permit Number: 05300480 - 002

| What to send | When to send | Portion of Facility Affected |
|---|---|---|
| Semiannual Deviations Report | due 30 days after end of each calendar half-year following Permit Issuance | Total Facility |
| Compliance Certification | due 30 days after end of each calendar year following Permit Issuance (for the previous calendar year). To be submitted on a form approved by the Commissioner. | Total Facility |
| Emissions Inventory Report | due 91 days after end of each calendar year following Permit Issuance | Total Facility |
| Performance Test Report | due 60 days after end of each calendar year following Performance Test (60 days after each Noise Performance Test). | Total Facility |

**TECHNICAL SUPPORT DOCUMENT**
**RECOMMENDED AIR EMISSION PERMIT NO. 05300480-002**
**American Iron and Supply Company**
**AQD File No. 2406**

This Technical Support Document is for all the interested parties of the draft permit. The purpose of this document is to set forth the legal and factual basis for the draft permit conditions, including references to the applicable statutory or regulatory provisions.

## 1. General Information

### 1.1. Applicant and Stationary Source Location

| Applicant/Address | Stationary Source/Address (SIC Code: 5093) |
|---|---|
| American Iron and Supply Company | American Iron and Supply Company |
| 2800 Pacific Street North | 2800 Pacific Street North |
| Minneapolis, Minnesota 55411 | Minneapolis, Minnesota 55411 |

### 1.2. Description Of The Permit Action and Facility

This permit action is for a Total Facility Air Emissions Permit for the construction and operation of a metal shredding process at the Permittee's existing stationary source (or facility) which is an existing scrapyard site on the Mississippi River north of downtown Minneapolis. The Permittee is a metal recycling firm which has operated at its existing yard since 1951. The facility includes 12 acres of property and eight buildings; office with truck scale; red metal (copper containing metal) recycling building; crane maintenance building; old baler; metal shear; aluminum recycling building; and two storage buildings.

To increase its capacity to recycle metals and to improve quality by producing a higher grade of ferrous scrap for the recycled metals market, the Permittee intends to install a metal shredding machine manufactured by Lindemann Corporation of Duesseldorf, Germany (Lindemann Maschinenfabrik GmbH), which carries the trademark "Kondirator." The process consists of transfer equipment, the 100 ton-per-hour hammermill metal shredder, size separation equipment, a cleaning process collectively referred to as the cascade cleaning system, magnetic and manual separation and the associated air pollution control equipment (cyclones and baghouse). The metal shredder would process the following raw materials: heavy melting steel, new production sheet metal in the form of clips and No. 1 bundles, old sheet metal, old sheet metal in the form of No. 2 and No. 3 bundles, and cast iron. Under the terms of the permit, the Permittee is not allowed to shred auto hulks and is required to implement shredder feedstock control measures to prevent the inclusion of such materials as lead- and mercury-containing devices.

Prior to the processing of this individual state Air Emissions Permit application, an Environmental Assessment Worksheet (EAW--and associated health and ecological risk studies) was prepared by MPCA staff and a consultant in accordance with the Minnesota Environmental Policy Act and additional legislation enacted in 1994, (Minn. Stat. § 116G.151). At the conclusion of that process, a Negative Declaration (on the need for an Environmental Impact Statement) was issued by the MPCA Citizens' Board on June 11, 1996, which included approval of the Findings of Fact on the EAW (EAW Findings). The EAW Findings include an attachment entitled "Attachment 2: Permit Terms to Mitigate Risks" (EAW Findings Attachment 2) which summarizes terms and conditions that the EAW assumed would be reflected in MPCA permits for the facility. The principal mitigation condition is the requirement for an emission limit for particulate matter of 0.43 lb/hr which the Permittee intends to accomplish with the fabric filter (baghouse) control device on the single, common stack for the overall process. More detailed descriptions of the proposed metal shredding process, raw materials, emissions evaluations, modeling, and other analyses are contained in the EAW along with the EAW Findings.

After the negative declaration, the Permittee submitted a permit application which was received on June 19, 1996. After a follow-up submittal, the application was deemed complete as of August 21, 1996; this is the date indicated on the permit cover page. (The permit action number indicates "-002" because a registration permit application received by the Permittee was withdrawn as the Permittee is ineligible for one because of permit requirements stemming from an EAW.) After waiting several months to allow the City of Minneapolis and the Permittee some time to work towards a solution to their land-use dispute, the Commissioner directed staff to begin the permit process. The MPCA issued a press release in February 1997, announcing the start of the permit process indicating an estimate of late spring for the start of the public comment period.

[While this permit was being developed, the EAW decision was being appealed in Hennepin County District Court. Further background on the adminsitrative process for this permit, including the subsequent steps after public noitce are discussed in the Board Item and the Findings of Fact, Conclusions of Law and Order (Permit Findings; Board Item Attachment A). Several revisions were made to the draft permit in response to public comments which are summarized in Board Item Attachment D and further explained in the Responses to Comments (Board Item Attachment G). Further explanations regarding the permit terms and their underlying basis is also provided in the Permit Findings and Responses to Comments and are not reiterated in this Technical Support Document. Corrections or clarifications in this Technical Support Document and attachments made after the expiration of the public comment period are noted in brackets " [ ]."]

### 1.3. Emissions of the Facility

The following is a summary of the air emissions of the facility. More details on the emissions and the associated calculations and evaluations can be found in the EAW and EAW Findings as well as the attachments to this Technical Support Document.

**Table 1. Total Facility Potential to Emit Summary and Attainment Status:**

| Pollutant | Potential to Emit (tons/year = tpy) | Attainment or Unclassified? (Yes or No) |
|---|---|---|
| Particulate Matter (PM) | 1.26 | Not Applicable (N/A) |
| Particulate Matter less than 10 micron ($PM_{10}$) | 1.04 | Yes |
| Sulfur Dioxide ($SO_2$) | Negl. | Yes |
| Nitrogen Oxides ($NO_X$) | Negl. | Yes |
| Volatile Organic Compounds (VOCs)/Ozone | Negl. | Yes |
| Carbon Monoxide (CO) | Negl. | No |
| Lead | 0.0018 | Yes |
| Total Hazardous Air Pollutants (HAPs) | 0.043 | N/A |

**Table 2. Facility Classification**

| Classification (put x in appropriate box) | Major | Synthetic Minor | Nonmajor | N/A |
|---|---|---|---|---|
| Prevention of Significant Deterioration (PSD) | | | **X** | |
| Nonattainment Area (for CO) New Source Review (NSR) | | | **X** | |
| Operating Permit Program | | | **X** | |

(For some additional information concerning facility classification, see the discussion under CE 001 and CE 003.)

## 2. Background and Regulatory and/or Statutory Basis of Emission Limits and other Requirements

### Requirements at the Total Facility Level:

This section of the permit contains primarily standard permit language with no further remarks necessary except for the following clarifications:

**"Air Pollution Control Equipment" and "Operation and Maintenance Plan":** This is standard permit language at the Total Facility level when control equipment is involved. It is somewhat redundant with the rule citations at the CE level for CE 001 and CE 003, but is included for completeness. Though the cascade cleaning system cyclone, CE 002, is considered inherent process equipment for purposes of permit program applicability, it is included in the application for continuity from the EAW process. Under these two permit requirements, the Permittee is required to operate CE 002 and include it in the retained Operation and Maintenance Plan for such things as spare parts and routine inspections and maintenance (with the exception of monitoring pressure drop). (See also the clarifications for CE 001 and CE 003 in this Technical Support Document.)

**"Breakdowns":** Anticipating the forthcoming slight revisions to the rules in this part, the phrase "or as required by Minn. R. 7019.1000 as amended after permit issuance" was added. The amended rule would govern anyway, but this was added as a clarification.

**"Monitoring Equipment":** The standard language (suited mainly for operating permits for existing equipment) was adjusted for this case involving construction to link the installation of the monitoring equipment to initial startup of the associated process equipment (rather than permit issuance).

**"Fugitive Emissions":** This is standard permit language at the Total Facility level. Additional requirements reflecting assumptions summarized in EAW Findings Attachment 2 for paved roads and product storage piles are located at the FS (fugitive source) level rather than the Total Facility level for the purposes of clarity.

**"Initial Startup":** This definition for "Initial Startup" was placed in the permit to avoid uncertainty after permit issuance because a number of permit requirements are linked, in terms of timing, with Initial Startup. It was included because no applicable requirement with an incorporated definition of the term (such as a New Source Performance Standard (NSPS) under 40 CFR pt. 60) is associated with the permit. This definition, which was arrived at mutually with the Permittee, is adapted from the NSPS definition for "startup" at 40 CFR § 60.2 ("*Startup* means the setting in operation of an affected facility for any purpose"). Unlike the NSPS definition, however, the definition in the permit would allow for the equipment to be turned on without triggering "initial startup" provided no metal is run through the machine. Thus, a certain amount of equipment testing (but only that which does not involve feeding metal through the machine) could occur without triggering initial startup.

**"Noise":** Usually only the general reference to the noise standards is included as standard permit language. The annual noise testing requirement language is included in this permit because it was assumed in EAW Findings Attachment 2. The requirements are structured as they are to enable tracking through the permitting and compliance computer system ("Delta"). The initial noise test report is due within 30 days which is sufficient for noise testing, but the subsequent noise test reports are timed to match the 60 days provided in the permit for stack testing for the sake of consistency. Due to a software constraint, the Noise Monitoring Plan and recurrent noise test submittals are not summarized in Table B but are in Table A.

**Requirements at the SV, EU and CE Levels:**

| | |
|---|---|
| Stack/Vent I.D.: | SV 001 |
| Emission Unit I.D./ Description: | EU 001 - "Kondirator" Hammermill Metal Shredder<br>EU 002 - Cascade Cleaning System |
| Control Equipment I.D./ Description | CE 001 - High Efficiency Cyclone (Centrifugal Collector) on EU 001<br>CE 002 - High Efficiency Cyclone on EU 002<br>CE 003 - Common Fabric Filter (Baghouse) for EU 001 and EU 002 and CE 001 and CE 002 |
| Limits and/or Special Conditions: | See permit |
| Factual and legal basis: | See permit |
| Comments: | - The cyclone on the cascade cleaning system (CE 002) is considered--for purposes of emissions calculations for permit program applicability--inherent process equipment because it is part of the system to separate out desired scrap product; it is listed as CE in the permit application for the sake of continuity with the discussions in the EAW. (See also remarks under Total Facility and CE 001 and CE 003.)<br>- The permit limits are for the elements themselves (e.g., manganese vs. manganese compounds); thus the clarifications in the permit, where needed, due to computer software constraints. |

Further discussion:

**SV 001 (Single, Common Process Stack):**

- Emission rate limits:

The primary mitigation condition in EAW Findings Attachment 2 is the assumption of a particulate emission rate limit on the Kondirator of 0.43 lb/hr $PM/PM_{10}$ (for the combined process stack, SV 001). With the originally assumed particulate emission rate of 9.98 lb/hr in the EAW (absent doing a more detailed analysis) it became apparent in the EAW process that the calculated potential risks attributable to the Permittee's facility were above MPCA and Minnesota Department of Health (MDH) tolerable thresholds. Three chemicals were of concern at the 9.98 lb/hr rate with their assumed percentage of the particulate emissions: arsenic, beryllium and hexavalent chromium. (For these percentages, see Human Health Risk Assessment (HHRA) Table 3-2 which is referred to in EAW Findings Attachment 2 and is attached to this Technical Support Document.)

It was found in the risk reduction calculations in the EAW process that lowering the assumed particulate emission rate to 0.43 lb/hr would bring the human health risks assessed down to below MPCA and MDH tolerable thresholds (see also EAW Findings Item 49). This emission rate was also found to satisfactorily resolve the ecological risk concerns, which were associated with hexavalent chromium. The emission rate limits shown in the permit for arsenic, beryllium and hexavalent chromium are the result of multiplying 0.43 lb/hr by their respective percentages in HHRA Table 3-2, namely: 0.12 percent, 0.05 percent, and 0.071 percent respectively (hexavalent chromium was conservatively assumed to be 10 percent of total chromium in the risk assessments). (Though the Permittee has disagreed with the need for a hexavalent chromium limit--pointing to the comments made during the EAW process--it agrees to comply with the limit and conduct the testing indicated in the permit.)

Even though (at the 9.98 lb/hr particulate emission rate originally assumed in the EAW process) cadmium, manganese, and nickel did not account for the calculated potential risks attributable to the Permittee's facility being above MPCA and MDH tolerable thresholds, they are included in the permit with limits reflecting the 0.43 lb/hr particulate emission limit and the respective percentages in HHRA Table 3-2. This was done to conservatively reflect in the permit the assumption summarized in EAW Findings Attachment 2, Item A.2. These three metals combined with arsenic, beryllium and hexavalent chromium account for 100 percent of the remaining (at the 0.43 lb/hr particulate emission rate) calculated potential cancer and non-cancer risk from inhalation exposure attributable to the Permittee's facility (Cancer: arsenic, beryllium, cadmium, hexavalent chromium, and nickel; Non-cancer: manganese). These six metals also account for the vast majority of the remaining incremental risk calculated for the other pathways studied. Mercury and lead are discussed in the following paragraph and other metals are discussed, below, under testing provisions.

Mercury and lead were the subject of attention in the EAW process, and the emission rate limits shown in the permit for them come from their respective references in EAW Findings Attachment 2. The 0.00093 lb/hr limit for lead differs from the 0.0016 lb/hr figure shown in the body of EAW Findings Attachment 2 under Item D because of modifying language in the Addendum to Findings Attachment 2. The 0.00093 figure is based on the discussion within the paragraph in the Addendum concluding that the Permittee can achieve this lower limit.

It was arrived at by first calculating a lower weighted-average percentage for lead in HHRA Table 3-2 (two percent was assumed for the lead content of aluminum, and one percent was assumed for the aluminum content of potential feed metal). This results in a weighted average of 0.216 percent which multiplied by 0.43 lb/hr (the particulate emission rate limit) equals 0.00093 lb/hr for the lead limit. (Pointing to comments made during the EAW process, the Permittee believes the Kondirator metal shredding process would not be a material source of lead and does not believe a limit (with the associated stack testing costs) is warranted, but has agreed to comply with the terms in the permit.)

- Testing provisions:

The testing requirements for SV 001 to reflect the assumptions in EAW Findings Attachment 2 are in essence packaged into three sets. The manner in which they are structured to a great extent is to facilitate tracking through the agency's Delta computerized permitting and compliance system. The first set of testing is to measure the emissions of those constituents which have emission rate limits ($PM/PM_{10}$, lead, mercury, arsenic, beryllium, cadmium, hexavalent chromium, manganese, and nickel (see discussion above), along with opacity which stems from a standard state rule requirement). The second set of testing requirements addresses EAW Findings Attachment 2, Items A.6 and E.8 (the latter is found in the Addendum to EAW Findings Attachment 2) to measure what, if any, polychlorinated biphenyls (PCBs), asbestos, and dioxin emissions are present, with the details to be agreed upon through the Performance Test Plan approval process. The third set of testing requirements is to characterize the metallic composition (beyond those metals discussed above) of the particulate emissions from the stack and compare the results to the percentages in HHRA Table 3-2 as indicated in EAW Findings Attachment 2, Item A.5 (some of this may be done in association with some of the first set of testing requirements, with the details to be worked out through the Performance Test Plan approval process).

Normally performance test plans are not submitted for Air Emission Permits until after permit issuance -- usually after equipment startup -- following the typical timing requirements which are reflected in this permit. In this case, the staff team along with the Permittee decided to have a draft Performance Test Plan prepared before the draft permit was placed on public notice. In doing so it was possible to work through some of the logistical details in advance and verify that the testing program, though rigorous, is feasible, can achieve suitable detection limits, and otherwise can gather the needed information. Pre-submitting and reviewing the draft Performance Test Plan in this way also affords interested parties the opportunity to review the draft plan during the public notice period for the draft permit.

(The Permittee indicated, and the staff team agreed, that all of the elements listed in HHRA Table 3-2 can be tested for with approved test methods with the exception of aluminum, carbon and silicon. It is not feasible to gather stack emissions data for aluminum and silicon because the approved testing procedures involve the use of aluminum/silicon-containing glass filters and there is no way to distinguish between aluminum/silicon collected in the sample and that contained in the filter and/or binder itself.

Regarding elemental carbon, no approved test method for stack emissions exists for it. Discussions in the Human Health Risk Assessment (HHRA) and Ecological Risk Assessment (page 66 and page 72 respectively) in essence say aluminum, carbon and silicon are of known low toxicity (and no chronic health and ecological effects criteria are available). Therefore, it was agreed that this particular technical limitation is considered inconsequential. This explains why these three elements are not listed along with the other miscellaneous elements from HHRA Table 3-2 in the permit under the testing requirements for SV 001.)

(It should be noted that the usual time frame for submitting a Performance Test Report is 45 days. This permit, however, indicates 60 days because the staff team agreed that an extra 15 days is justifiable given the nature and amount of required testing.)

**EU 001 (Hammermill Metal Shredder):**

The feedstock requirements for EU 001 appropriately reflect, and meet or exceed, the assumed mitigation conditions summarized in EAW Findings Attachment 2, in combination with the manner in which the emission limits and related testing requirements are addressed for SV 001. The intent is mutually agreed to by the Permittee and Air Quality Division staff, and is deemed to be feasible to implement as well as to enforce. The tracking and recordkeeping is sufficient to document activities for any needed subsequent evaluation. Although stainless steel scrap, aluminum scrap, brass scrap, and copper scrap are listed in the permit as ineligible types of scrap to be used as shredder feedstock, it is not in the Permittee's business interest to shred these. The permit does not preclude, however, incidental amounts of stainless steel, aluminum, brass and copper being present in the shredder feedstock. (As described in the EAW narrative under Item 6.C.--which goes into more detail--the shredder feedstock will consist of: heavy melting steel, new production sheet metal in the form of clips and No. 1 bundles, old sheet metal, old sheet metal in the form of No. 2 and No. 3 bundles, and cast iron.) A variety of mechanisms are included in the permit and related plans which provide a way to verify that the levels of stainless steel, aluminum, brass, and copper are indeed incidental and below the levels assumed in the EAW risk assessments (namely: two percent, two percent, one percent and one percent, respectively--see Human Health Risk Assessment Table 3-2). These include: recordkeeping on the weight, origin and brief description of all loads supplying the shredder; recordkeeping on the weight of ferrous and non-ferrous metals produced at the shredder; feedstock characterization associated with performance tests on the emissions from SV 001; and actual stack test results. (The two recordkeeping items indicated to be recorded at least monthly (as opposed to the others which are daily) are indicated as such because these materials would otherwise only be weighed when the associated container is full.)

Even though such plans as the Feedstock Control Plan are normally not submitted to the Air Quality Division, the staff team and the Permittee agreed to do so in this situation prior to placing the draft permit on pubic notice.

The operating hours limitation refers generally to EAW Findings Attachment 2 rather than a specific item because it is an underlying assumption for the major mitigating conditions. (It is specifically mentioned in Item C.) As indicated in the EAW, the 3778 hours/year limit reflects the requirements that the City of Minneapolis has on the facility in terms of allowable hours of business.

**CE 001 (Hammermill Cyclone) and CE 003 (Fabric Filter):**

The reason the Control Equipment Rule (Minn. R. 7011.0060-0080) is cited for the control equipment operation and maintenance, monitoring, and recordkeeping conditions is primarily for the administrative bookkeeping to determine the applicable permit classification ("true minor" vs. "synthetic minor." The permit limits stemming from the EAW Findings Attachment 2 are lower than if the default efficiencies of the listed control equipment (CE 001--cyclone, and CE 003--fabric filter) are assumed. If one assumes the default efficiencies, however, and works through the emissions calculations (considering the cascade cleaning system cyclone, CE 002, inherent process equipment as mentioned above), one finds that the stationary source is a "true minor" for both NSR/PSD and Part 70 (40 CFR pt. 70) permitting. This is because the Control Equipment Rule is already a federally enforceable part of Minnesota's State Implementation Plan. The additional set of calculations is included in the attachments to this Technical Support Document. Had these calculation results been different, the permit requirements would have been the same, only the rule citations would have changed to reflect "synthetic minor" limits.

Although operation and maintenance plans typically are retained at the facility and not submitted to the Air Quality Division, the staff team and the Permittee agreed to have a draft Operation and Maintenance Plan prepared and submitted prior to placing the draft permit on public notice.

**<u>Requirements at the FS Level</u>:**

**FS 001 Product Storage Piles; FS 002 Paved Roads:**

Though both are insignificant activities and were deemed not to have appreciable emissions in the EAW studies (with mitigation conditions implemented), FS 001 and 002 were created in the Delta computer system to accommodate in the permit the requirements reflecting the assumptions summarized in EAW Findings Attachment 2.

[FS 003 Raw Material Handling is subject to Minn. R. 7011.0150 which is found at the Total Facility level.]

**Summary of Where EAW Findings Attachment 2 Items are Addressed**

A. Reliability of Results of Risk Assessments.

Addressed in air permit under SV 001.

B. Assumption that Product Pile Will Not Contain Entrainable Dust.

1. Product piles zero percent opacity limit.
and
2. Testing concurrent with SV 001 PM/PM10 stack testing.

Addressed in air permit under FS 001.

3. Spillage into the river when loading.
and
4. Runoff to the river

Addressed in water permit.

C. Assumption that Mercury Sources Will Be Removed from Kondirator Feedstock.

Addressed in air permit under EU 001 in combination with SV 001.

D. Assumption that Kondirator Will Not Add Significantly to Lead Levels. (And additional text in Addendum.)

Addressed in air permit under SV 001 in combination with EU 001.

E. Other Permit Terms.

1. Concerns about facility noise.

Addressed in air permit at the Total Facility level.

2. Concerns about storage pile leachate (and additional text in Addendum).

Addressed in water permit.

3. Concerns about what types of auto waste will be allowed to be shredded.

Addressed in air permit under EU 001.

5. Concerns about site road and surface sanitation.

   Addressed in air permit under FS 002 as well at Total Facility level with standard permit language from rules on preventing particulate matter from becoming airborne.

6. Concerns about pollution control equipment failure.

   Addressed in air permit at Total Facility level with standard permit language from rules.

7. VOC emissions from space heaters.

   Determined to be an insignificant activity (emissions calculations found in Attachment 1 of this Technical Support Document).

8. (Listed in Addendum to EAW Findings Attachment 2) Concerns about dioxin.

   Requirement to test emissions addressed in air permit.
   Requirement to test discharges in water permit.

## 3. Conclusion

Based on the information provided by American Iron and Supply Company, the MPCA has reasonable assurance that the proposed construction and operation of the emission facility, as described in Air Emission Permit No. 05300480-002 and this Technical Support Document, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Attachments:

1. Facility Emissions Summary and Emissions Calculations
2. EAW Findings Attachment 2
3. EAW Human Health Risk Assessment Table 3-2

Contact for further information:
Permit Engineer: Jeffrey Peltola
Telephone No.: (612)282-2603
Facsimile No.: (612)297-7709

# Technical Support Document Attachments

# Technical Support Document Attachment 1

# Facility Emissions Summary and Emissions Calculations

# Technical Support Document Attachment 2

# EAW Findings Attachment 2

**ATTACHMENT 2**
**PERMIT TERMS TO MITIGATE RISKS**

The following permit terms and conditions were developed by MPCA staff to address the issues identified in the EAW and the comments on it. (Note: If permit terms are violated, the MPCA has the authority to take appropriate enforcement action. Appropriate enforcement action may include the imposition of additional mitigation of emissions, imposition of a civil penalty and/or the imposition of corrective action. The exact nature of the action resulting from such a violation will not be specified in the permit, but will be determined on a case-by-case basis, based on the severity and/or frequency of the particular violation.)

A. Reliability of Results of Risk Assessments. Some commenters expressed concern that data used in the risk assessments may be unreliable because they were based on MSDS data. The commenters said that some chemicals that should have been quantitatively evaluated in the risk assessments were not. They also said that percentages of each chemical species listed in each feedstock may have been underestimated. The following permit terms could resolve this data reliability issue:

1. $PM/PM_{10}$ (particulate) emissions from the Kondirator shall be no greater than 0.43 lb./hour.

2. Emission rates for all other chemicals of concern analyzed in the risk assessments shall be no greater than those assumed in the risk assessments.

3. Testing shall be conducted within 90 days of achieving a normal production rate and not less than 180 days after initial startup to verify compliance with the $PM/PM_{10}$ emission rate.

4. Periodic testing shall be required to assure that emissions stay within the allowed rate. The frequency of this periodic testing would be driven by the results of the initial test (the closer test results are to the limit, the more frequently periodic tests would be required.) Frequency and type of future testing also shall be determined based on content and characteristics of the feedstock.

5. Require testing to include $PM/PM_{10}$ speciation of all relevant metals. Require that speciated emission rates be calculated in the test report so that it can be compared with the species percentages in the risk assessments, table 3-2.

6. Require testing for mercury, PCBs, and asbestos. (See also other terms for mercury, below).

B. Assumption that Product Pile Will Not Contain Entrainable Dust. Some commenters expressed concern that, should metal dust be found on the product pile, it could move off the product pile and into the environment. These commenters were concerned that the risk assessments did not quantitatively evaluate the human health and ecological risks associated with such a scenario. The following permit terms resolve the issue of dust on the product pile:

1. The product pile shall be subject to a zero percent opacity limit for fugitive emissions.

2. Testing concurrent with testing of $PM/PM_{10}$ emissions shall be conducted to verify compliance.

3. To address concerns raised about spillage into the river when loading barges, a collar/apron on the barge hatch and covered conveyors shall be used instead of cranes to the extent consistent with other compliance issues such as noise.

4. To address concerns about runoff to the river from the product pile, effluent limits shall be applied to the stormwater discharge based on acute toxicity criteria for metals. Also, require routing of discharges to the stormwater treatment pond, as well as routine monitoring to document compliance. Another option would be to route the stormwater discharge to the sanitary sewer for treatment, contingent on approval by the Metropolitan Council Environmental Services Wastewater Treatment authorities.

C. Assumption that Mercury Sources Will Be Removed from Kondirator Feedstock.. Some commenters expressed concern that all sources of mercury that could move from feedstock to the environment, via the shredding process, will not have been removed before shredding. Automobile parts were a particular concern. The following two sets of permit terms resolve the issue of mercury in the feedstock:

OPTION A:

1. Prohibit the Kondirator from using as a feedstock any scrap that contains mercury switches.

2. Prohibit the Kondirator from using as a feedstock any auto hulks.

3. Prohibit the Kondirator from using as a feedstock any coated/painted auto parts.

4. Prohibit the Kondirator from using as a feedstock other materials unless they are certified by a reputable supplier to contain no mercury.

5. Mercury emissions shall be no more than 3 lb./year (3778 hours of operation = 0.00079 lb./hour).

6. Testing shall be conducted within 90 days of achieving a normal production rate and not less than 180 days after initial startup to verify compliance with the mercury limit. Testing shall include multiple (at least three) runs to account for feedstock heterogeneity, using the feedstock that MPCA expects to generate highest mercury emissions.

7. Periodic testing shall be required to assure that emissions stay within the allowed rate. The frequency of this periodic testing would be driven by the results of the initial test (the closer test results are to the limit, the more frequently periodic tests would be required.)

OPTION B:

1. All post-consumer auto parts shall be separated from other scrap and individually inspected for mercury containing devices.

2. All mercury-containing devices shall be removed from feedstock before shredding.

3. Mercury emissions shall be no more than 3 lb./year (3778 hours of operation = 0.00079 lb./hour).

4. Testing shall be conducted within 90 days of achieving a normal production rate and not less than 180 days after initial startup to verify compliance with the mercury limit. Testing shall include multiple (at least three) runs to account for feedstock heterogeneity, using the feedstock that MPCA expects to generate highest mercury emissions.

5. Periodic testing shall be required to assure that emissions stay within the allowed rate. The frequency of this periodic testing would be driven by the results of the initial test (the closer test results are to the limit, the more frequently periodic tests would be required.)

D. Assumption that Kondirator Will Not Add Significantly to Lead Levels. Some commenters expressed concern that the Kondirator could be a source of additional lead contamination to the environment that could significantly raise blood lead levels in exposed individuals. The following permit terms resolve the issue of lead emissions:

1. Prohibit the Kondirator from using as a feedstock any lead containing devices (such as batteries).

2. Lead emissions shall be no more than 0.0016 lb./hour (the limit in the risk assessment).

3. Testing shall be conducted within 90 days of achieving a normal production rate and not less than 180 days after initial startup to verify compliance with the lead limit. Testing shall include multiple (at least three) runs to account for feedstock heterogeneity, using the feedstock that MPCA expects to generate highest lead emissions.

4. Periodic testing shall be required to assure that emissions stay within the allowed rate. The frequency of this periodic testing would be driven by the results of the initial

test (the closer test results are to the limit, the more frequently periodic tests would be required.)

E. Other Permit Terms. Some commenters have expressed other concerns in their comment letters and MPCA staff has responded that permit conditions can be fashioned to address these concerns. To address these concerns, MPCA staff has identified the following permit conditions to resolve these issues:

1. Concerns about facility noise. MPCA will require that annual testing be performed to comply with noise rules. MPCA will require noise standards be met by crane operations, including the use of crane operation limitations if necessary.

2. Concerns about storage pile leachate containing contaminants passing through asphalt. MPCA will require asphalt over a concrete and synthetic layer. The asphalt will act as a "sacrificial layer" to protect the underlying concrete/synthetic layers from mechanical abrasion and impacts.

3. Concerns about what types of auto waste will be allowed to be shredded. MPCA will prohibit shredding of auto hulks and other materials identified as problematic.

4. Concerns about feedstock mix. MPCA will require limitations on the amount of each scrap type to be shredded.

5. Concerns about site road and surface sanitation. MPCA will require road sweeping and cleaning to be done on a scheduled basis. MPCA will require record keeping of precipitation and cleaning events.

6. Concerns about pollution control equipment failure and emissions. MPCA will require immediate facility shutdown when significant air pollution control equipment failure occurs. No bypass of control equipment will be allowed except for the minimum amount of time needed to safely shut down the facility during breakdown.

7. Concerns about VOC emissions from space heaters. MPCA will require further analysis of this issue.

ADDENDUM TO FINDINGS ATTACHMENT 2.

Post-Board Document Additions to Attachment 2.

Add new text to item D.2. "**This assures that, at minimum, the EPA action level would not be violated. The actual emssion limit for lead would be based on information from the company that lead in the feedstock is considerably lower than the conservative value used in the risk assessments. Those statements indicate that instead of 9% lead in aluminum alloys (as assumed in the risk assessments), such alloys are at most in actuality 2% lead; and also that although the risk assessments assumed that aluminum would make up 2% of the Kondirator feedstock, in actuality this number would be an unspecified lower amount (see EAW Comment 12-9). Emissions of lead would thus be expected to be lower than the risk assessment assumed, and the limit would be set on that basis. This would assure that the Kondirator would not add materially to any existing lead contamination in the area, which is the intent of this permit condition.**

Add to the end of the first sentence in item E.2:

"...**or other liner material that MPCA agrees would serve as an impermeable barrier. If concrete is selected,** ..." and continue with the next sentence.

Beginning with a new item E.8. on page 41:

**8. Concerns about dioxin and organic emissions identified in material submitted in public comments on the board documents. MPCA will require testing of emissions and discharges as necessary to determine whether such substances do in fact occur in emissions from the Kondirator. Frequency and duration of such testing would be determined during the permitting process.**

**9. Other permit conditions may be developed and imposed as the agency deems necessary during the permitting process.**

# Technical Support Document Attachment 3

# EAW Human Health Risk Assessment Table 3-2