AIR EMISSION PERMIT NO. 10900030- 001

IS ISSUED TO

Mayo Foundation

MAYO WASTE MANAGEMENT FACILITY
7123 L.C. Drive Southwest
Rochester, Olmsted County, Minnesota 55902

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	December 13, 1995; Updated September 14, 2000; Updated March 31, 2003, Updated April 28, 2005

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

Permit Type: Federal; Pt 70/Limits to Avoid Major Source Status for 40 CFR pt. 63

Issue Date: September 20, 2005

Expiration: September 20, 2010
All Title I Conditions do not expire.

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

for Sheryl A. Corrigan
Commissioner
Minnesota Pollution Control Agency

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NOTICE TO THE PERMITTEE:

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

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

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

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

PERMIT SHIELD:

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

FACILITY DESCRIPTION:

The Mayo Foundation operates a medical waste incinerator unit at the Mayo Waste Management Facility in Rochester, Minnesota. The facility is a two-level, 26,700 square foot building housing the medical waste incinerator, a 200 pound per hour pathological waste incinerator, and two steam decontaminating/waste processing units. The facility operates 24-hours per day Monday through Friday. The Incinerator has an operating capacity of 2,200 pounds per hour. Waste processed at the facility consists primarily of general waste and infectious waste generated from healthcare, medical research and medical education activities at Mayo's Rochester facilities. Infectious and pathological waste from medical waste generators in Olmsted and Dodge Counties are also incinerated.

The incinerator was classified as a Class III Waste Combustor under Minn. R. 7011.1201, subp. 15 when it began operating in 1994 based on a capacity of 15 million Btu's per hour (MMBtu's/hr) and has been permitted as a Class III in all subsequent permits. Information in the Title V permit application indicated that the Incinerator was capable of operating above the operating limit for Class III waste combustors. Engineering data from the manufacturer of the Incinerator has been used to re-rate the Incinerator to 16.25 MMBtu's/hr and the classification was changed to a Class II incinerator.

The Permittee was also granted a variance from Minn. R. 7011.1260, subp. 3.C. which requires continuous monitoring of Sulfur Dioxide (SO_2) from the combustion unit. The Permittee was not required to have a continuous SO_2 monitor for its combustion unit as a Class III unit and under the variance they do not have to install one. In the future, the incinerator will be subject to a Federal Plan Requirements for Hospital/Medical/Infectious Waste Incinerators Constructed On or Before June 20, 1996. The Federal Plan Requirements include an SO_2 limit but do not include a requirement for continuous monitoring of SO_2.

The wastes handled by the incinerator exclude significant volumes of paper, cardboard, plastic, aluminum, glass, food, metal and electronic wastes recovered in Mayo's recycling program. Air pollution control consists of a high efficiency wet scrubbing system. The scrubber liquor pH is also monitored and maintained. Under normal operation, all general and medical waste is processed through the incinerator. When the incinerator is nonfunctional, the steam decontamination/waste processing units provide back-up for processing medical waste. More routinely, the steam decontamination/waste processing units are used to sterilize glassware prior to recycling or disposal at a landfill. Tissues and animals from clinical research activities are processed in the pathological incinerator.

The high efficiency wet scrubber system consists of the following: a quencher; a condenser/absorber; a venturi or rotary atomizer for particulate removal; a caustic system for pH control and an induced draft fan. Emissions are monitored for opacity, oxygen and carbon monoxide. The pressure drop across the scrubber, the scrubber liquor flow rate and the scrubber liquor pH will also be continuously monitored. Individual waste load weights are automatically recorded via an electronic scale system.

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/20/05

Facility Name: Mayo Waste Management Facility

Permit Number: 10900030 - 001

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

Subject Item: **Total Facility**

What to do	Why to do it
SOURCE-SPECIFIC REQUIREMENTS	hdr
Comply with Fugitive Emission Control Plan: The Permittee shall follow the actions and recordkeeping specified in the Plan. The Plan may be amended by the Permittee with the Commissioner's approval. If the Commissioner determines the Permittee is out of compliance with Minn. R. 7011.0150 or the Fugitive Emission Control Plan, then the Permittee may be required to amend the Plan and/or to install and operate particulate matter ambient monitors as requested by the Commissioner.	Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0800, subp. 2
OPERATIONAL REQUIREMENTS	hdr
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
Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated, unless otherwise noted in Table A.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and shall include a preventative maintenance program for that equipment, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment, and the records kept to demonstrate plan implementation.	Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)
Operation Changes: In any shutdown, breakdown, or deviation covered by Minn. R. 7019.1000 subp. 1, 2, and/or 3 the Permittee shall immediately take all practical steps to modify operations to reduce the emission of any regulated air pollutant. The Commissioner may require feasible and practical modifications in the operation to reduce emissions of air pollutants. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment shall be permitted to operate.	Minn. R. 7019.1000, subp. 4
Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150.	Minn. R. 7011.0150
Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7030.0010 - 7030.0080
Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A).	Minn. R. 7007.0800, subp. 9(A)
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
PERFORMANCE TESTING	hdr
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A and/or B.	Minn. R. ch. 7017
Performance Test Notifications and Submittals: Performance Tests are due as outlined in Tables A and B of the permit. See Table B for additional testing requirements. Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche Copy: due 105 days after each Performance Test The Notification, Test Plan, and Test Report may be submitted in alternative format as allowed by Minn. R. 7017.2018.	Minn. Rs. 7017.2030, subp. 1-4, 7017.2018 and Minn. R. 7017.2035, subp. 1-2

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Mayo Waste Management Facility

Permit Number: 10900030 - 001

Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as specified by Minn. R. 7017.2025 following formal review of a subsequent performance test on the same unit.	Minn. R. 7017.2025
MONITORING REQUIREMENTS	hdr
Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment (any requirements applying to continuous emission monitors are listed separately in this permit).	Minn. R. 7007.0800, subp. 4(D)
Operation of Monitoring Equipment: Unless otherwise noted in Tables A and/or B, 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)
RECORDKEEPING	hdr
Recordkeeping: Retain all records at the stationary source for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).	Minn. R. 7007.0800, subp. 5(C)
Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007. 1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350 subp. 2), including records of the emissions resulting from those changes.	Minn. R. 7007. 0800, subp. 5(B)
REPORTING/SUBMITTALS	hdr
Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the Permittee does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3. At the time of notification, the Permittee shall inform the Commissioner of the cause of the shutdown and the estimated duration. The Permittee shall notify the Commissioner when the shutdown is over.	Minn. R. 7019.1000, subp. 3
Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the Permittee. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2. At the time of notification or as soon as possible thereafter, the Permittee shall inform the Commissioner of the cause of the breakdown and the estimated duration. The Permittee shall notify the Commissioner when the breakdown is over.	Minn. R. 7019.1000, subp. 2
Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.	Minn. R. 7019.1000, subp. 1
Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description: 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.	Minn. R. 7019.1000, subp. 1
Fugitive Emissions Control Plan: The Permittee shall submit a fugitive emissions control plan within 60 days of the date of permit issuance for review and approval by the Commissioner. The plan shall identify all fugitive emission sources, primary and contingent control measures, and recordkeeping. The Permitee shall follow the actions and recordkeeping specified in the control plan. The plan may be amended by the Permittee with the Commissioner's approval.	Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/20/05

Facility Name: Mayo Waste Management Facility

Permit Number: 10900030 - 001

Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed.	Minn. R. 7007.1150 through Minn. R. 7007.1500
Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H).	Minn. R. 7007.1400, subp. 1(H)
Emission Inventory Report: due April 1st each year following permit issuance. To be submitted on a form approved by the Commissioner.	Minn. R. 7019.3000 through Minn. R. 7019.3100
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 through Minn. R. 7002.0095
PLANS	hdr
The Permittee is required to submit a Risk Management Plan (RMP) under the federal rule, 40 CFR pt. 68. A complete RMP has been submitted.	40 CFR pt. 68
Prepare (if not completed by the effective date of this permit) and maintain the following plans with the Operating Manual - Security requirements in Minn. R. 7035.2535, subp. 3; - General inspection requirements in Minn. R. 7035.2535, subp. 4; - Household hazardous waste management requirements of Minn. R. 7035.2535, subp. 6; - Emergency preparedness and prevention plans and emergency procedures shall be prepared in accordance with Minn. R. 7035.2595 and 7035.2605; - Contingency action plans in Minn. R. 7035.2615; - Closure plans in Minn. R. 7035.2625 and closure procedures in Minn. R. 7035.2635; - Solid waste transfer facility requirements as required in Minn. R. 7035.2865; and - For waste combustors accepting infectious wastes, infectious waste management requirements of Minn. R. 7035.9100 to 7035.9150. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7011.1245; Minn. R. 7007.0800, subp. 2
The Permittee must prepare and maintain a waste management plan that identifies both the feasibility of, and the approach for, separating certain components of solid waste from the health care waste stream in order to reduce the amount of toxic emissions from incinerated waste. The waste management plan developed may address, but is not limited to, paper, cardboard, plastics, glass, battery, or metal recycling, or purchasing recycled or recyclable products. In developing the waste management plan, the Permittee must consider the American Hospital Association publication entitled "Ounce of Prevention: Waste Reduction Strategies for Health Care Facilities."	40 CFR 62.14430 and 40 CFR 62.14431
As specified in 40 CFR 62.14463 and 40 CFR 62.14464, the Permittee must submit the waste management plan with the initial report, which is due 60 days after the initial performance test.	40 CFR 62.14432
Industrial Waste Management Plan. The Permittee shall prepare a plan for the management of industrial solid wastes in accordance with part Minn. R. 7035.2535, subpart 5, items A and B. The plan shall include the contents listed in Minn. R. 7011.1250, subp. 2. The Permittee shall modify the industrial waste management plan whenever the management practices or solid wastes identified in the plan have changed. The Permittee shall submit the amended plan to the commissioner for approval. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7011.1250, subps. 1 and 3
A waste composition study is required every five years. Solid waste composition studies shall be conducted as described in Minn. R. 7007.0501, subpart 2.	Minn. R. 7011.1265, subp. 10; Minn. R. 7011.1270 B.(4)

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/20/05

Facility Name: Mayo Waste Management Facility

Permit Number: 10900030 - 001

Subject Item: **EU 001 Joy Incinerator**

Associated Items: CE 004 Wet Scrubber - High Efficiency

What to do	Why to do it
GENERAL REQUIREMENTS	hdr
Applicability of Standards: the standards of Minn. R. 7011.1229, 7011.1240, subp. 2 and 7011.1272, subp. 2 apply at all times when waste is being continuously burned. The standards do not apply, up to a maximum of three hours, during periods of start-up, shutdown or malfunction provided that no hospital or medical/infectious waste is charged during this period. Fugitive emissions standards applicable to the ash conveying system do not apply during periods of maintenance and repair of the ash conveying system. The permittee shall not cause to be emitted into the atmosphere from each waste combustor unit gases in excess of the applicable standards. Emissions, except opacity, shall be calculated under standard conditions corrected to seven percent oxygen on a dry volume basis. During startup, shutdown, or malfunction periods longer than 3 hours, emissions data cannot be discarded from compliance calculations and all provisions under 40 CFR 60.11(d) apply.	Minn. R. 7011.1215, subp. 4; Minn. R. 7011.1229; 40 CFR 62.14413
A "Class II waste combustor" means that the design capacity for a waste combustor unit is 15 million Btu/hr or more and less than 93.75 million Btu/hr, and that construction of the unit is commenced after September 20, 1994, or modification or reconstruction is commenced after June 19, 1996. On August 23, 2005 the Mayo Foundation was granted a variance from the commence construction date of Minn. R. 7011.1201, subp. 14. The variance is attached to this permit as Appendix 4.	Minn. R. 7011.1201, subp. 14 and Variance approved on August 23, 2005
PART 60 GENERAL REQUIREMENTS	hdr
The 40 CFR Part 60 subpart A general provisions and appendicies to Part 60 apply to Part 62, except as follows: 40 CFR 60.7(a)(3), 60.7(a)(3), and 60.8(a) and where special provisions set forth under the applicable subpart of this Part shall apply instead of any conflicting provisions.	40 CFR 62.02(b)(2)
At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions, in accordance with 40 CFR 60.11(d).	40 CFR 60.11(d)
All continuous monitoring systems and monitoring devices required under Part 62, Subpart HHH shall be installed and operational prior to conducting performance tests under 40 CFR 60.8.	40 CFR 60.13(b)
Continuous Operation: Except for continuous monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments, all continuous monitoring systems (including CEMS and COMS) shall be in continuous operation during all periods of emission unit operation. This includes periods of emission unit start-up, shutdown, or malfunction.	40 CFR 60.13(e); Minn. R. 7017.1090, subp. 1
All continuous monitoring systems or monitoring devices required under Part 62, Subpart HHH shall be installed such that representative measurements of emissions or process parameters from the affected facility are obtained.	40 CFR 60.13(f)
EMISSION LIMITS	hdr
Total Particulate Matter: less than or equal to 0.020 grains/dry standard cubic foot corrected to 7% oxygen.	Minn. R. 7011.1229
Front-half Particulate Matter: less than or equal to 0.015 grains/dry standard cubic foot corrected to 7% oxygen.	40 CFR 62.14411; Table 1 of 40 CFR Part 62, Subpart HHH; Minn. R. 7011.1229
Carbon Monoxide: less than or equal to 40 parts per million by volume corrected to 7% oxygen. This limit is more stringent than the 50 ppm limit in Minn. R. 7011.1229.	40 CFR 62.14411; Table 1 of 40 CFR Part 62, Subpart HHH; Minn. R. 7011.1229
PCDD/PCDF (Dioxins): less than or equal to 30 nanograms/DSCM corrected to 7% oxygen.	Minn. R. 7011.1229
PCDD/PCDF (Dioxins): less than or equal to 125 nanograms/DSCM or 2.3 nanograms/DSCM TEQ (toxic equivalency factor), both corrected to 7% oxygen.	40 CFR 62.14411; Table 1 of 40 CFR Part 62, Subpart HHH
Hydrochloric acid: less than or equal to 100 parts per million corrected to 7% oxygen or 93 percent removal.	40 CFR 62.14411; Table 1 of 40 CFR Part 62, Subpart HHH
Hydrochloric acid: less than or equal to 25 parts per million corrected to 7% oxygen or 90% removal.	Minn. R. 7011.1229
Mercury: less than or equal to 100 micrograms/DSCM corrected to 7% oxygen, or 85% removal, short-term limit.	Minn. R. 7011.1229

Mercury: less than or equal to 60 micrograms/DSCM corrected to 7% oxygen, or 85% removal, long-term limit.	Minn. R. 7011.1229
Mercury: less than or equal to 550 micrograms/DSCM corrected to 7% oxygen, or 85% removal.	40 CFR 62.14411; Table 1 of 40 CFR Part 62, Subpart HHH
Sulfur Dioxide: less than or equal to 30 parts per million or 80 percent removal, corrected to 7% oxygen.	Minn. R. 7011.1229
Sulfur Dioxide: less than or equal to 55 parts per million	40 CFR 62.14411; Table 1 of 40 CFR Part 62, Subpart HHH
Nitrogen Oxides: less than or equal to 250 parts per million corrected to 7% oxygen.	40 CFR 62.14411; Table 1 of 40 CFR Part 62, Subpart HHH
Lead: less than or equal to 1.2 milligrams/DSCM (or 0.52 grains/1000 DSCF) corrected to 7% oxygen or 70% reduction.	40 CFR 62.14411; Table 1 of 40 CFR Part 62, Subpart HHH
Cadmium compounds: less than or equal to 0.16 milligrams/DSCM (or 0.07 grains/1000 DSCF) corrected to 7% oxygen or 65% reduction.	40 CFR 62.14411; Table 1 of 40 CFR Part 62, Subpart HHH
Opacity: less than or equal to 10 percent opacity using 6-minute Average	Minn. R. 7011.1229; 40 CFR 62.14412
AVERAGING PERIODS	hdr
Averaging Periods: For emission limits or operational limits which are monitored continuously, the following averaging periods shall be used: - for particulate matter control device inlet temperature monitoring, four-hour arithmetic block averages calculated from four consecutive one-hour arithmetic averages. - for opacity, a 6-minute average calculated using 36 or more data points equally spaced over a 6-minute period. - for carbon monoxide, an arithmetic average of the 1-hour arithmetic average emission rates concentration during each 4-hour daily period measured from midnight to midnight. At least 4 data points equally spaced in time shall be used to calculate each 1-hour arithmetic average. For CO, each 1-hour average shall be corrected to 7% O2 on an hourly basis using the one-hour arithmetic average of the O2 or CO2 continuous emissions monitoring system.	Minn. R. 7011.1260, subp. 4
OPERATIONAL REQUIREMENTS	hdr
The Permittee shall be limited to incineration of waste from the Mayo Foundation and affiliated corporations, with the exeption that medical waste from non-Mayo Foundation generators in Olmsted and Dodge Counties may also be incinerated.	Minn. R. 7007.0800, subp. 2
For the particulate matter control device operating parameters according to Minn. R. 7011.1240, subp. 2, see the requirements under the Wet Scrubber (CE 004).	Minn. R. 7011.1240, subp. 2
Start-up on waste prohibited. During start-up from a cold furnace, auxiliary fuels shall be used to achieve combustion chamber operating temperature. The use of solid waste solely to provide thermal protection of the grate or hearth during the start-up period when solid waste is not being fed to the grate is not considered to be continuous burning.	Minn. R. 7011.1240, subp. 3
No Permittee shall operate the waste combustor while combusting solid waste at a level above 110 percent of the maximum demonstrated capacity of the combustion system, except as allowed in Minn. R. 7011.1240, subp. 5.A. and Minn. R. 7011.1240, subp. 5.B., without conducting a performance test which demonstrates compliance with the applicable emission limitations at greater than 110 percent of the maximum demonstrated capacity.	Minn. R. 7011.1240, subp. 5
During the annual PCDD/PCDF performance test (or during the alternative 2.5 year PCDD/PCDF testing schedule as allowed by Minn. R. 7011.1270 B.(2)), and the two weeks preceding the annual (or 2.5 year) PCDD/PCDF performance test, no waste combustor maximum demonstrated capacity is applicable.	Minn. R. 7011.1240, subp. 5.A.
The commissioner shall waive the maximum demonstrated capacity limit for the purpose of evaluating system performance, testing new technology or control technologies, diagnostic testing, or related activities for the purpose of improving facility performance or advancing the state-of-the-art for controlling facility emissions, provided a written notification is submitted to the commissioner 30 days prior to undertaking any of the activities above, with the following information: - a description of the proposed project, and the outcome the project is designed to evaluate; - how the project conforms with the activities described in this subpart for which the maximum demonstrated capacity limit can be waived; and - the length of time the project will take to complete.	Minn. R. 7011.1240, subp. 5.B.
Facility Operation: Properly maintain and operate air pollution control equipment at all times when the waste combustor is in operation and combusting waste. A dumpstack shall only be used at a waste combustor when plant or worker safety would be in jeopardy without its use.	Minn. R. 7011.1240, subp. 7; Minn. R. 7007.0800, subp. 16(J)

Except as provided in 40 CFR 62.14455(f) or (g), if the Hospital/Medical/Infectious Waste Incinerator (HMIWI) is equipped with a wet scrubber and the HMIWI operates above the maximum charge rate (3-hour rolling average for continuous and intermittent HMIWI, daily average for batch HMIWI) and below the minimum secondary chamber temperature (3-hour rolling average) simultaneously, then the Permittee is in violation of the CO emission limit.	40 CFR 62.14455(d)(1)
Except as provided in 40 CFR 62.14455(f) or (g), if the HMIWI is equipped with a wet scrubber and the HMIWI operates above the maximum charge rate (3-hour rolling average for continuous and intermittent HMIWI, daily average for batch HMIWI) and below the minimum pressure drop across the wet scrubber (3- hour rolling average) or below the minimum horsepower or amperage to the system (3-hour rolling average) simultaneously, then the Permittee is in violation of the PM emission limit.	40 CFR 62.14455(d)(2)
Except as provided in 40 CFR 62.14455(f) or (g), if the HMIWI is equipped with a wet scrubber and the HMIWI operates above the maximum charge rate (3-hour rolling average for continuous and intermittent HMIWI, daily average for batch HMIWI), below the minimum secondary chamber temperature (3-hour rolling average), and below the minimum scrubber liquor flow rate (3-hour rolling average) simultaneously, then the Permittee is in violation of the dioxin/furan emission limit.	40 CFR 62.14455(d)(3)
Except as provided in 40 CFR 62.14455(f) or (g), if the HMIWI is equipped with a wet scrubber and the HMIWI operates above the maximum charge rate (3-hour rolling average for continuous and intermittent HMIWI, daily average for batch HMIWI) and below the minimum scrubber liquor pH (3-hour rolling average) simultaneously, then the Permittee is in violation of the HCl emission limit.	40 CFR 62.14455(d)(4)
Except as provided in 40 CFR 62.14455(f) or (g), if the HMIWI is equipped with a wet scrubber and the HMIWI operates above the maximum flue gas temperature (3-hour rolling average) and above the maximum charge rate (3-hour rolling average for continuous and intermittent HMIWI, daily average for batch HMIWI) simultaneously, then the Permittee is in violation of the Hg emission limit.	40 CFR 62.14455(d)(5)
Except as provided in 40 CFR 62.14455(f) or (g), if the HMIWI is equipped with a wet scrubber and the HMIWI uses the bypass stack (except during startup, shutdown, or malfunction), then the Permittee is in violation of the PM, dioxin/furan, HCl, Pb, Cd, and Hg emission limits.	40 CFR 62.14455(d)(6)
OPERATOR TRAINING & CERTIFICATION	hdr
The Permittee must have a fully trained and qualified Hospital/Medical/Infectious Waste Incinerator (HMIWI) operator pursuant to 40 CFR Part 62, either at the facility or able to be at the facility within 1 hour. The trained and qualified HMIWI operator may operate the HMIWI directly or be the direct supervisor of one or more HMIWI operators.	40 CFR 62.14420
The Permittee can obtain training and qualification through a State-approved program; or, if there are no State-approved training and qualification programs available or if the Permittee does not want to participate in a State-approved program, then the Permittee must complete a training course that includes the requirements in 40 CFR 62.14422 and satisfy the qualification requirements in 40 CFR 62.14423.	40 CFR 62.14421
Presence of certified operator. For Class II waste combustors, either a chief facility operator or shift supervisor who holds a certificate as described in Minn. R. 7011.1281, subp. 1, shall be present at the waste management facility at all times when waste is being combusted.	Minn. R. 7011.1240, subp. 1.A
A "fully certified operator" means a person who has obtained "certified municipal waste combustor examiner" certification as described in Minn. R. 7011.1282; a person who has obtained both "provisional certification" and "operator certification: according to ASME QRO-1-1994; or a person who is a "fully certified operator" as described in Minn. R. 7011.1284.	Minn. R. 7011.1281
The Commissioner shall certify a person provided the person can demonstrate the completion of ASME provisional operator certification as described in Standard for the Qualification and Certification of Resource Recovery Facility Operators, American Society of Mechanical Engineers QRO-1-1994 for chief facility operators and shift supervisors of municipal waste combustors; or to complete the coursework and examination program described in Minn. R. 7011.1280, subp. 3.B.	Minn. R. 7011.1280, subp. 1
The chief facility operator and shift supervisors shall be certified through the process established in Minn. R. 7011.1280.	Minn. R. 7011.1280, subp. 2

To be certified, a person must demonstrate the skill, knowledge, and experience necessary to operate a waste combustor, by meeting the criteria below. Persons who possess a Minnesota Department of Labor and Industry boiler license of at least second class engineer, Grade B, shall: - have one year of experience operating a steam generation plant or Class I, II, III, A, C, or D waste combustor at the licensure level of at least second class engineer, Grade B, and complete at least 24 hours of training approved by the commissioner which are designed to ensure competency to operate a Class I, II, III, A, C, or D waste combustor; - complete the certification process described in Minn. R. 7011.1280, subp. 4; and - pass the examination described in Minn. R. 7011.1280, subp. 5. (continued below)	Minn. R. 7011.1280, subp. 3
(continued) Persons who do not meet the qualifications of Minn. R. 7011.1280, subp. 3.B.(1)(a), shall: - have three years of experience operating a Class I, II, III, A, C, or D waste combustor or in power generation and complete at least 24 hours of training approved by the commissioner which are designed to ensure competency to operate a Class I, II, III, A, C, or D waste combustor; - complete the certification process described in Minn. R. 7011.1280, subp. 4; and - pass the examination described in Minn. R. 7011.1280, subp. 5.	Minn. R. 7011.1280, subp. 3
The Permittee shall establish a program to review the plant-specific operating manual with people whose responsibilities affect the operation of the waste combustor. Initial review of the operating manual shall be completed prior to assumption of any job related activities affecting air emissions.	Minn. R. 7011.1275, subp. 1
Develop and maintain the Operating Manual in accordance with Minn. R. 7011.1275, subp. 3, items A through O (items listed below) and update the manual following each performance test to include operational changes resulting from emissions performance testing results. Include the revision dates within the Operating Manual and store the Operating Manual in a location easily accessed by staff.	Minn. R. 7011.1275, subp. 3; 40 CFR 62.14424
The Permittee shall develop and update on a yearly basis a site specific operating manual that shall, at a minimum, address the following elements of waste combustor unit operation: - a summary of the applicable state rules and federal regulations to the activities described in the facility's air emissions permit; - a description of basic combustion theory applicable to the facility's waste combustor unit; - procedures for receiving, handling, and feeding solid waste; - waste combustor unit start-up, shutdown, and malfunction procedures; - procedures for maintaining proper combustion air levels; - procedures for operating the waste combustor within the standards established in Minn. R. 7011.1201 to 7011.1290; - procedures for responding to periodic upset or off-specification conditions; - procedures for minimizing particulate matter carryover; - procedures for monitoring the degree of solid waste burnout; - procedures for handling ash; (continued below)	Minn. R. 7011.1275, subp. 3
(continued) - procedures for monitoring waste combustor emissions; - procedures for reporting and recordkeeping; - timetables and procedures for routine inspection and maintenance of equipment affecting air emissions; - procedures for activating communications and alarm systems; and - procedures to implement the facility's industrial waste management plan. The operating manual shall be kept in a location easily accessed by the personnel described in Minn. R. 7011.1275, subp. 2.	Minn. R. 7011.1275, subp. 3 (continued)
Training Program: Persons without waste combustor or boiler operation experience must work under the direct supervision of a certified operator or a certified operator's designee for 40 hours before assuming job-related activities affecting air emissions.	Minn. R. 7011.1275, subp. 1(C)(1)

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Mayo Waste Management Facility

Permit Number: 10900030 - 001

Training Program: The Permittee will implement a training program, based on the Operating Manual, designed to maintain compliance with this permit, Minn. Rules and federal regulations. Individual training must be specific to the position held. Waste combustor personnel who have responsibilities which affect the operation of the waste combustor must be trained in the operation of the facility. These personnel include, but are not limited to: - chief facility operators, - shift supervisors, - control room personnel, - ash handlers, - maintenance personnel, and - load handlers. (continued below)	Minn. R. 7011.1275, subp. 1; Minn. R. 7011.1275, subp. 2
Training Program: (continued) The Permittee will: - Implement the required training; - Identify all people described above who must be trained; - Include a separate page for each of these people in the Operating Record; - Report the names of those who have been trained and the type of training received in the Annual Report following training as required under Minn. R. 7011.1285, subp. 2.	Minn. R. 7011.1275, subp. 1; Minn. R. 7011.1275, subp. 2
Certified Operator: The Permitee shall: - Maintain at the facility a record of the names of all certified personnel. This record shall contain the exam dates, the content of the exam, the full name of the certified individual, the examiner's signature and the certification statement in Minn. R. 7011.1284, subp. 3. - Maintain at the facility a record of the names of all personnel who have obtained provisional certification by ASME. The Permittee shall allow the commissioner and/or administrator to review all records related to the certification of operators including the facility's program for examination and certification of operators, the record required in Minn. R. 7011.1284, subp. 3, and the content and results of an individual's exam.	Minn. R. 7011.1284, subp. 3; Minn. R. 7011.1284, subp. 3a
TESTING REQUIREMENTS	hdr
The Permittee must conduct an initial performance test for PM, opacity, CO, dioxin/furan, HCl, Pb, Cd, and Hg using the test methods and procedures outlined in 40 CFR 62.14452. Performance tests using EPA Reference Methods are not required for pollutants monitored with CEMS as outlined in 40 CFR 62.14452(l)(1).	40 CFR 62.14451(a)
The Permittee must determine compliance with the opacity limit by conducting an annual performance test (no more than 12 months following the previous performance test) using the applicable procedures and test methods listed in 40 CFR 62.14452.	40 CFR 62.14451(b)(1)
Determine compliance with the PM, CO, and HCl emission limits by conducting an annual performance test (within 12 months after the previous test) using the procedures and methods listed in 40 CFR 62.14452. If all three performance tests over a 3-year period indicate compliance with the emission limit for a pollutant the Permittee may forego a performance test for that pollutant for the next 2 years. At a minimum, the Permittee must conduct a performance test for PM, CO, and HCl every third year (within 36 months after the previous test). If a performance test conducted every third year shows compliance with the emission limit for a pollutant the Permittee may forego a performance test for that pollutant for an additional 2 years. If any performance test indicates noncompliance with the respective emission limit, the Permittee must conduct a performance test for that pollutant annually until all annual performance tests over a 3-year period indicate compliance with the emission limit.	40 CFR 62.14451(b)(2)
Performance tests shall be conducted on waste combustors to determine the emission concentrations for lead, cadmium, mercury, and any other air contaminant for which an emission limitation applies to the waste combustor, except for opacity and those contaminants for which compliance is demonstrated by the use of a continuous monitor.	Minn. R. 7011.1265, subp. 5
Conduct performance tests once annually except as required by Minn. R. 7011.1270 B(3). Fugitive emissions from ash handling do not need to be tested more frequently than the initial test. If three annual performance tests for a three-year period show compliance with standards in Minn. R. 7011.1225, the Permittee may continue to conduct annual testing, or may choose to conduct performance tests every 2-1/2 years, except as required by Minn. R. 7011.1270 B(3). At a minimum, a performance test shall be conducted every 2-1/2 years, but no more than 30 months following the previous compliance test. (continued below)	Minn. R. 7011.1270 B.(2)

(continued) If a performance test indicates noncompliance with applicable standards, the Permittee shall resume annual testing for three years for that pollutant for which noncompliance was demonstrated. If three annual performance tests for the three-year period show compliance with standards in Minn. R. 7011.1229, the Permittee may again conduct performance testing every 2-1/2 years.	Minn. R. 7011.1270 B.(2)
All performance tests must consist of a minimum of three test runs conducted under representative operating conditions when conducting performance tests to determine compliance with the emission limits.	40 CFR 62.14452(a); Minn. R. 7017.2020, subp. 5
The minimum sample time must be 1 hour per test run unless otherwise indicated in 40 CFR 62.14452 when conducting performance tests to determine compliance with the emission limits.	40 CFR 62.14452(b)
The Permittee must use EPA Reference Method 1 of 40 CFR Part 60, appendix A to select the sampling location and number of traverse points when conducting performance tests to determine compliance with the emission limits.	40 CFR 62.14452(c)
The Permittee must use EPA Reference Method 3, 3A, or 3B of 40 CFR part 60, appendix A for gas composition analysis, including measurement of oxygen concentration when conducting performance tests to determine compliance with the emission limits. The Permittee must use EPA Reference Method 3, 3A, or 3B of 40 CFR Part 60, appendix A simultaneously with each reference method.	40 CFR 62.14452(d); Minn. R. 7011.1265, subp. 4b
The Permittee must adjust pollutant concentrations to 7 percent oxygen using the equation in 40 CFR 62.14452(e) when conducting performance tests to determine compliance with the emission limits.	40 CFR 62.14452(e)
Except as provided in 40 CFR 62.14452(l), the Permittee must use EPA Reference Method 5 or 29 of 40 CFR part 60, appendix A to measure particulate matter emissions when conducting performance tests to determine compliance with the emission limits of 40 CFR 62.14411.	40 CFR 62.14452(f)
Except as provided in 40 CFR 62.14452(l), the Permittee must use EPA Reference Method 9 of 40 CFR Part 60, appendix A to measure stack opacity.	40 CFR 62.14452(g); Minn. R. 7011.1265, subp. 2.B.
Except as provided in 40 CFR 62.14452(l), the Permittee must use EPA Reference Method 10 or 10B of 40 CFR part 60, appendix A to measure the CO emissions when conducting performance tests to determine compliance with the emission limits.	40 CFR 62.14452(h)
Except as provided in 40 CFR 62.14452(l), the Permittee must use EPA Reference Method 23 of 40 CFR part 60, appendix A to measure total dioxin/furan emissions when conducting performance tests to determine compliance with the emission limits. The minimum sample time must be 4 hours per test run. If the Permittee has selected the toxic equivalency standards for dioxin/furans under 40 CFR 62.14411, use the following procedures to determine compliance: - Measure the concentration of each dioxin/furan tetra-through octa-congener emitted using EPA Reference Method 23; - For each dioxin/furan congener measured in accordance with 40 CFR 62.14452(i)(1), multiply the congener concentration by its corresponding toxic equivalency factor specified in Table 2 of Subpart HHH - Sum the products calculated in accordance with 40 CFR 62.14452(i)(2) to obtain the total concentration of dioxins/furans emitted in terms of toxic equivalency.	40 CFR 62.14452(i); Minn. R. 7011.1265, subp. 3.B.
Except as provided in 40 CFR 62.14452(l), the Permittee must use EPA Reference Method 26 of 40 CFR part 60, appendix A to measure HCl emissions when conducting performance tests to determine compliance with the emission limits. If the Permittee has selected the percentage reduction standards for HCl under 40 CFR 62.14411, compute the percentage reduction in HCl emissions using the formula in 40 CFR 62.14452(j).	40 CFR 62.14452(j); Minn. R. 7011.1265, subp. 3.A.
Except as provided in 40 CFR 62.14452(l), the Permittee must use EPA Reference Method 29 of 40 CFR part 60, appendix A to measure Pb, Cd, and Hg emissions when conducting performance tests to determine compliance with the emission limits. If the Permittee has selected the percentage reduction standards for metals under 40 CFR 62.14411, compute the percentage reduction in emissions using the formula in 40 CFR 62.14452(k).	40 CFR 62.14452(k); Minn. R. 7011.1265, subp. 3.C.
If the Permittee is using a continuous emission monitoring system (CEMS) to demonstrate compliance with any of the emission limits under 40 CFR 62.14411 or 62.14412, the Permittee must: - Determine compliance with the appropriate emission limit(s) using a 12-hour rolling average, calculated each hour as the average of the previous 12 operating hours (not including startup, shutdown, or malfunction). Performance tests using EPA Reference Methods are not required for pollutants monitored with CEMS. - Operate a CEMS to measure oxygen concentration, adjusting pollutant concentrations to 7 percent oxygen as specified in 40 CFR 62.14452(e). - Operate all CEMS in accordance with the applicable procedures under appendices B and F of 40 CFR Part 60.	40 CFR 62.14452(l)
Use of the bypass stack during a performance test will invalidate the performance test.	40 CFR 62.14452(m)

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Mayo Waste Management Facility

Permit Number: 10900030 - 001

The Permittee shall provide and maintain a schedule for testing the waste combustor ash. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7007.0801, subp. 3.B.
The Permittee of a waste combustor required to conduct performance tests for a waste combustor shall use the performance test methods and procedures specified in Minn. R. 7017.2001 to 7017.2060 except as modified in Minn. R. 7011.1265.	Minn. R. 7011.1265, subp. 1
The Permittee of a waste combustor required to conduct performance tests for particulate matter, sulfur dioxide, or nitrogen oxides shall use test methods as described in Minn. R. 7011.1265, subp. 2, subitems A to D.	Minn. R. 7011.1265, subp. 2
Part 7011.0725 shall apply to tests for particulate matter, except that for Class II waste combustors, the minimum sample volume shall be 1.7 dscm, and the probe and filter holder heating systems in the sample train shall be set to provide a gas temperature no greater than 160 degrees Celsius, plus or minus 14 degrees. Smaller sampling times or sample volumes shall be approved by the commissioner, when the commissioner determines that they are necessitated by process variables or other factors. An oxygen or carbon dioxide measurement shall be obtained simultaneously with each Method 5 test run for particulate matter. Particulate matter emissions, expressed in gr/dscf, shall be corrected to seven percent oxygen by using the formula in Minn. R. 7011.1265, subp.2.A.	Minn. R. 7011.1265, subp. 2.A.
Total particulate matter emission is the concentration of particulate matter as measured by Minn. R. 7011.0725.	Minn. R. 7011.1265, subp. 2.A.(1) and (2)
For fugitive ash emissions, CFR 40, Part 60, Appendix A, Method 22, as shall be used. The minimum observation time shall be a series of three one-hour observations. The observation period shall include times when the facility is transferring ash from the waste combustor unit to the area where ash is stored or loaded into containers or trucks. The average duration of visible emissions per hour shall be calculated from the three one-hour observations. The average shall be used to determine compliance with the emission limit.	Minn. R. 7011.1265, subp. 2.D.
The Permittee shall report to the commissioner the operating conditions during performance testing including operating parameters of the air pollution control equipment, flue gas temperatures, air flow rates, and pressure drop across the combustion system.	Minn. R. 7011.1265, subp. 6
The Permittee shall conduct a waste composition study every five years.	Minn. R. 7011.1270 B.(4)
MONITORING REQUIREMENTS	hdr
The Permittee must establish the appropriate maximum and minimum operating parameters, indicated in Subpart HHH, Table 3, as site-specific operating parameters during the initial performance test to determine compliance with the emission limits.	40 CFR 62.14453(a)(1)
The HMIWI must not operate above any of the applicable maximum operating parameters or below any of the applicable minimum operating parameters listed in Subpart HHH, Table 3 and measured as 3-hour rolling averages (calculated each hour as the average of the previous 3 operating hours), at all times except during startup, shutdown, malfunction, and performance tests.	40 CFR 62.14453(a)(2)
The Permittee must install, calibrate (to manufacturers' specifications), maintain, and operate devices (or establish methods) for monitoring the applicable maximum and minimum operating parameters listed in Table 3 of Subpart HHH such that these devices (or methods) measure and record values for the operating parameters at the frequencies indicated in Table 3 of Subpart HHH at all times except during periods of startup and shutdown. For charge rate, the device must measure and record the date, time, and weight of each charge fed to the HMIWI. This must be done automatically, meaning that the only intervention from an operator during the process would be to load the charge onto the weighing device. (continued below)	40 CFR 62.14454(a)
(continued) Specifically at the Mayo facility the: - Maximum flue gas temperature must be measured continuously and recorded once per minute; - Minimum pressure drop across the wet scrubber or minimum horsepower or amperage to the wet scrubber must be monitored continuously and recorded once per minute; - Minimum scrubber liquor flow rate shall be monitored continuously and recorded once per minute. - Minimum scrubber liquor pH must be monitored continuously and recorded once per minute.	40 CFR 62.14454(a) (continued)
The Permittee must install, calibrate (to manufacturers' specifications), maintain, and operate a device or method for measuring the use of the bypass stack, including the date, time, and duration of such use.	40 CFR 62.14454(b)

The Permittee must obtain monitoring data at all times during HMIWI operation except during periods of monitoring equipment malfunction, calibration, or repair. At a minimum, valid monitoring data must be obtained for 75 percent of the operating hours per day for 90 percent of the operating days per calendar quarter that the HMIWI is combusting hospital waste and/or medical/infectious waste.	40 CFR 62.14454(d); Minn. R. 7011.1260.5.B
Particulate matter control device temperature monitors. The Permittee shall install, calibrate, maintain, and operate at all times temperature monitors that continuously read and record the temperatures of the flue gas at the inlet of each particulate matter control device.	Minn. R. 7011.1260, subp. 2
The Permittee requested a variance from Minn. R. 7011.1260, subp. 3.C. MPCA approved the request as the requirement for continuous monitoring of SO2 is not required in the federal plan and will not be required for this facility when the Minnesota rule is amended. The variance is attached to this permit as Appendix 4.	Minn. R. 7011.1260, subp. 3.C and Variance approved on August 23, 2005.
Monitoring data shall be obtained for at least 75 percent of the hours per day for 90 percent of the days per calendar quarter that the combustor is operating and combusting materials.	Minn. R. 7011.1260, subp. 5(B)
The Permittee shall use all valid data from the continuous emission monitoring systems in calculating emission concentrations and percent reductions. If CEM data is unavailable, the Permittee shall meet the minimum data requirements using the alternative methods set forth in 40 CFR part 60, Appendix A, Method 10 for CO; Method 9 for opacity; Method 3A or 3B for O2 or CO2.	Minn. R. 7011.1260, subp. 5(C) and (D)
CEM Certification Test: due 60 days after first Excess Emissions Report. This requirement applies to any CEMS which have not previously been certified.	Minn. R. 7017.1050, subp. 1
CEM Certification Test Plan: due 30 days before CEM Certification Test.	Minn. R. 7017.1060, subp. 1 and 2
CEM Certification Test Pretest Meeting: due 7 days before CEM Certification Test.	Minn. R. 7017.1060, subp. 3
CEM Certification Test Report: due 45 days after CEM Certification Test.	Minn. R. 7017.1080, subp. 1, 2, and 4
CEM Certification Test Report - Microfiche Copy: due 105 days after CEM Certification Test.	Minn. R. 7017.1080, subp. 3
CEMS Daily Calibration Drift (CD) Test: The CD shall be quantified and recorded at zero (low-level) and upscale (high-level) gas concentrations at least once daily according to the procedures of 40 CFR 60.13. 40 CFR pt. 60, Appendix F, shall be used to determine out-of-control periods for CEMS.	Minn. R. 7011.1260, subp. 5(E); Minn. R. 7017.1170, subp. 3
The span value of the oxygen monitor shall be 25 percent oxygen. The span value of the carbon monoxide monitor shall be 125 percent of the maximum estimated hourly potential carbon monoxide emissions of the waste combustor unit.	Minn. R. 7011.1260, subp. 5(F)
Cylinder Gas Audit: due before end of each calendar quarter following CEM Certification Test except for quarters in which a RATA was performed. This requirement applies to each CEMS as well as each diluent monitor.	Minn. R. 7011.1260, subp. 5(G); Minn. R. 7007.0800, subp. 2
Cylinder Gas Audit (CGA) Results Summary: due 30 days after end of each calendar quarter following Cylinder Gas Audit.	Minn. R. 7011.1285, subp. 3(G); Minn. R. 7007.0800, subp. 2; Minn.R. 7017.1180, subp. 1
CEMS Relative Accuracy Test Audit (RATA): due before end of each year following CEM Certification Test. Follow the procedure in 40 CFR pt. 60, Appendix F. The RATA shall be conducted during the calendar quarter in which a cylinder gas audit (CGA) is not performed. This requirement applies to each CEMS individually. Conduct annual evaluations of your continuous emission monitoring systems no more than 13 months after the previous evaluation was conducted.	Minn. R. 7011.1260, subp. 5(G); Minn. R. 7007.0800, subp. 2
The oxygen monitor shall conform to Performance Specification 3 in CFR 40, part 60, Appendix B, as amended, except that section 2.3 shall not apply.	Minn. R. 7011.1260, subp. 5(I)
Relative Accuracy Test Audit (RATA) Notification: Due 30 days before CEMS Relative Accuracy Test Audit (RATA)	Minn. R. 7007.0800, subp. 2; MInn. R. 7017.1180, subp. 2
Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of the calendar quarter in which the Audit was performed.	Minn. R. 7011.1285, subp. 3(G); Minn. R. 7007.0800, subp. 2; Minn. R. 7017.1180, subp. 3
Exceedances of Continuously Monitored Emissions: If accurate and valid data results collected from the sulfur dioxide and/or carbon monoxide monitors exceed emission limits, the following procedures shall be followed. - Exceedance shall be reported to the commissioner as soon as reasonably possible. - Appropriate repairs or modifications to return the waste combustor to compliance must be commenced within 72 hours. If compliance cannot be achieved within 72 hours, then the waste combustor shall be shut down. If modifications to return the waste combustor to compliance require the amendment of this permit, the waste combustor shall shut down within 72 hours of the exceedance. (continued below)	Minn. R. 7011.1260, subp. 7

Exceedances of Continuously Monitored Emissions (continued) - When repairs or modifications have been completed, The Permitee shall demonstrate to the Commissioner that the waste combustor is in compliance. The waste combustor may be started up after the Permitee has notified the commissioner in writing of the date the Permittee plans to start up the waste combustor and the date that performance testing is schedule. Notification shall be given at least 10 days in advance of the compliance test date.	Minn. R. 7011.1260, subp. 7 (continued)
RECORDKEEPING	hdr
The Permittee must maintain the following at the facility: - Summary of the applicable standards under Part 62 Subpart HHH; - Description of basic combustion theory applicable to a Hospital/Medical/Infectious Waste Incinerator (HMIWI); - Procedures for receiving, handling, and charging waste; - Procedures for startup, shutdown, and malfunction; - Procedures for maintaining proper combustion air supply levels; - Procedures for operating the HMIWI and associated air pollution control systems within the standards established under Subpart HHH; - Procedures for responding to malfunction or conditions that may lead to malfunction; - Procedures for monitoring HMIWI emissions; - Reporting and recordkeeping procedures; and - Procedures for handling ash.	40 CFR 62.14424(a)
The Permittee must keep the information listed in 40 CFR 62.14424(a) in a readily accessible location for all HMIWI operators. This information, along with records of training, must be available for inspection by the EPA or its delegated enforcement agent upon request.	40 CFR 62.14424(b)
The Permittee must establish a program for reviewing the information listed in 40 CFR 62.14424 annually with each HMIWI operator as defined in 40 CFR 62.14490. The Permittee must conduct the initial review of the information listed in 40 CFR 62.14424 prior to assumption of responsibilities affecting HMIWI operation. The Permittee must conduct subsequent reviews of the information listed in 40 CFR 62.14424 annually.	40 CFR 62.14425
The Permittee must maintain the calendar date of each record.	40 CFR 62.14460(a)
The Permittee must maintain Records of the following data: - Concentrations of any pollutant listed in Table 1 of Subpart HHH of Part 62 and/or measurements of opacity; - The HMIWI charge dates, times, and weights and hourly charge rates; - Secondary combustion chamber temperatures recorded during each minute of operation; - Liquor flow rate to the wet scrubber inlet during each minute of operation, as applicable; - Pressure drop across the wet scrubber system during each minute of operation, as applicable; (continued below)	40 CFR 62.14460(b)
(continued) - Temperature at the outlet from the wet scrubber during each minute of operation, as applicable; - The pH at the inlet to the wet scrubber during each minute of operation, as applicable; - Records of the annual equipment inspections, any required maintenance, and any repairs not completed within 10 operating days of an inspection or the time frame established by the EPA Administrator or delegated enforcement authority, as applicable; - Records indicating use of the bypass stack, including dates, times, and durations; and - If the Permittee is complying by monitoring site-specific operating parameters under 40 CFR 62.14453(b), maintain all operating data collected.	40 CFR 62.14460(b) (continued)
The Permittee must maintain records of the identification of calendar days for which data on emission rates or operating parameters specified under 40 CFR 62.14460(b)(1) through (15) were not obtained, with an identification of the emission rates or operating parameters not measured, reasons for not obtaining the data, and a description of corrective actions taken.	40 CFR 62.14460(c)
The Permittee must maintain records of the identification of calendar days, times and durations of malfunctions, and a description of the malfunction and the corrective action taken.	40 CFR 62.14460(d)

The Permittee must maintain records of the identification of calendar days for which data on emission rates or operating parameters specified under 40 CFR 62.14460 (b)(1) through (15) exceeded the applicable limits, with a description of the exceedances, reasons for such exceedances, and a description of corrective actions taken.	40 CFR 62.14460(e)
The Permittee must maintain records of the results of the initial, annual, and any subsequent performance tests conducted to determine compliance with the emission limits and/or to establish operating parameters, as applicable.	40 CFR 62.14460(f)
Records showing the names of HMIWI operators who have completed review of the documentation in 40 CFR 62.14424 as required by 40 CFR 62.14425, including the date of the initial review and all subsequent annual reviews; Records showing the names of the HMIWI operators who have completed the operator training requirements, including documentation of training and the dates of the training; and Records showing the names of the HMIWI operators who have met the criteria for qualification under 40 CFR 62.14423 and the dates of their qualification	40 CFR 62.14460(g); (h); and (i); Minn. R. 7011.1275, subp. 4
Records of calibration of any monitoring devices as required under 40 CFR 62.14454	40 CFR 62.14460(j)
The Permittee must maintain the records specified under 40 CFR 62.14460 for a period of at least 5 years.	40 CFR 62.14461
The Permittee must maintain all records specified under 40 CFR 62.14460 onsite in either paper copy or computer-readable format, unless an alternative format is approved by the EPA Administrator.	40 CFR 62.14462
Recordkeeping: Maintain a file of all measurements, maintenance, reports and records for at least five years including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by this part recorded in a permanent form suitable for inspection.	Minn. R. 7019.0100, subp. 1; Minn. R. 7007.0800, subp. 5(C); 40 CFR Section 60.7(f); 40 CFR 60.7(f)
Recordkeeping: The Permittee will maintain a record of continuously measured parameters as specified in Minn. R. 7011.1260, subp. 6.	Minn. R. 7011.1260, subp. 6
The Permittee shall: - Keep all records on-site in paper copy or electronic format. - Make all records available for submittal to the Administrator or Commissioner, or for on-site review by the Administrator or Commissioner.	Minn. R. 7011.1285, subp. 1
Recordkeeping: record in the daily operating record the four-hour arithmetic average gas stream temperature as measured at the wet scrubber inlet during the most recent PCDD/PCDF performance test demonstrating compliance with the PCDD/PCDF emission limits in part 7011.1225 and 40 CFR 62.14.	Minn. R. 7011.1265, subp. 8; Minn. R. 7011.1240, subp. 2; Minn. R. 7007.0800, subp. 2
The Permittee shall maintain on site for five years after the report is generated, a paper copy of each quarterly report, initial compliance report, and performance test report required under Minn. R. 7011.1285, subparts 3, 5, and 6 respectively.	Minn. R. 7011.1285, subp. 1
Daily Operating Record: The Permittee shall maintain on-site daily records for the operation of the waste combustor. Daily records include such things as the operator log book, operator daily log sheets, trend records, CEMS records, and the daily operating report. The record shall contain: - the calendar date; - the hours of operation; - the time when waste begins feeding and the unit load of the steam turbine at the time; - the time the waste feed to the combustion chamber ceases; - the weight of waste combusted; - the weight of waste requiring disposal at a solid waste land disposal facility, including separated noncombustibles, excess waste, and ash; - the amount and description of industrial solid waste received each day, the generator's name, and the method of handling; - the measurements and determination of emissions averages as required in Minn. R. 7011.1260, subpart 6; (continued below)	Minn. R. 7011.1285; Minn. R. 7017.1130; Minn. R. 7007.0800, subp. 2; 40 CFR 62.14454(b)

Daily Operating Record (Continued) - results of performance tests conducted on waste combustor units as required in this permit; - instances of dumpstack use including the date, time, duration and the reason for such use; - the time when PM control equipment by-pass begins; - the time when PM control bypass ceases; - the names of persons who have completed initial review or subsequent annual review of the operating manual; - continuous monitoring system records including: - each one-hour emission average recorded by the CEMS; - each six-minute opacity average recorded by the COMS; - monitor certification test reports; - excess emissions reports; - cylinder gas audit reports; - calibration error audit reports; - relative accuracy test audits; (continued below)	Minn. R. 7011.1285; Minn. R. 7017.1130; Minn. R. 7007.0800, subp. 2; 40 CFR 62.14454(b)
Daily Operating Record (Continued) - linearity check reports; - results of daily calibration drift checks; - log of adjustments made to the CEMS or COMS and maintenance performed on the CEMS or COMS; - the reasons for exceeding any of the average emission rates, percent reductions, or operating parameters specified under Minn. R. 7011.1260, subpart 6, item C, or six-minute average COMS measurements that exceed the opacity limit and a description of corrective actions taken; - reasons for not obtaining the minimum number of hours of sulfur dioxide or operational data (opacity, carbon monoxide emissions, steam flow, particulate matter control device temperature) and a description of corrective actions taken. - the date of the calibration of all signal conversion elements associated with steam flow monitoring as required in Minn. R. 7011.1265, subp. 4.	Minn. R. 7011.1285; Minn. R. 7017.1130; Minn. R. 7007.0800, subp. 2; 40 CFR 62.14454(b)
Recordkeeping: The Permittee shall maintain a file of the following CEMS or COMS information at the emission facility in a form suitable for inspection for at least five years from the date of each record. - all monitoring system information required by an applicable compliance document; and - an up-to-date monitor QA/QC plan.	Minn. R. 7017.1130
Recordkeeping: The Permittee shall maintain records of the occurence and duration of any startup, shutdown, or malfunction in the operation of the facility including any malfunction of the air pollution control equipment or any periods during which a continuous monitoring system or monitoring device is inoperative.	Minn. R. 7007.0800, subp. 2
Recordkeeping, Training and Certification: The Permittee shall keep records of training courses completed and certifications achieved, including: - Names of the chief facility operator, shift supervisors, and control room operators who are provisionally certified by the American Society of Mechanical Engineers. - Dates of the initial provisional certifications. - Documentation showing current provisional certifications. - Names of the chief facility operator, shift supervisors, and control room operators who have completed the EPA or State operator training course. - Dates of completion of the operator training course. - Documentation showing completion of operator training course. - Names of persons who have reviewed the operating manual. - Date of the initial review. - Dates of subsequent annual reviews.	Minn. R. 7011.1280, subp. 11
REPORTING	hdr
Shutdown or breakdown reporting requirements. The Permittee shall comply with Minn. R. 7019.1000 and Minn. Stat. 116.85.	Minn. R. 7011.1240, subp. 8
The Industrial Solid Waste Management Plan must address how the following additional categories of solid waste will be managed to comply with the requirements of Minn. R. 7035.2535, subp. 5.A, subitems (2) to (4), as well as state whether each of the following solid wastes will be accepted at the facility: - spilled fossil fuels and the sorbents used to collect the spilled fossil fuels; - infectious and pathological wastes; - media contaminated with oil; - problem materials as defined in Minnesota Statutes, section 115A.03, subdivision 24a; and - any other solid wastes that can be identified that would adversely impact waste combustor operations or result in environmental and health problems if combusted.	Minn. R. 7011.1250, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Mayo Waste Management Facility

Permit Number: 10900030 - 001

The Permittee shall modify the industrial waste management plan whenever the management practices or solid wastes identified in the plan have changed. The Permittee shall submit the amended plan to the commissioner for approval.	Minn. R. 7011.1250, subp. 3
Quarterly Reports: The report shall contain the following items: - calendar date; - a graphic or tabular presentation of the sulfur dioxide and carbon monoxide emissions, the maximum waste combustor unit load level and particulate matter control device temperatures as recorded by Minn. R. 7011.1260, subp. 6, item C, and the daily maximum opacity readings as recorded by Minn. R. 7011.1260, subp. 6, item B, subitem (1). The graphs shall be prepared as follows: (1) the graph shall represent one operating parameter or pollutant; (2) the applicable limit of the parameter or pollutant shall be indicated on the graph; and (3) data shall be expressed in the same units as the applicable operating parameter or emissions limit; - instances of dumpstack use; (continued below)	Minn. R. 7011.1285, subp. 3
Quarterly Reports (Continued): - the identification of operating days when any of the average emission concentrations, percent reductions, operating parameters specified under Minn. R. 7011.1260, subp 6(C), Minn. R. 7011.1272, subp. 2 exceeded the applicable limits or any 6 minute average opacity greater than the opacity limit. The report shall include the emission levels recorded during the exceedance, reasons for such exceedances and a description of corrective actions taken; - the percent of the operating time for the quarter that the COMS was operating and collecting valid data; - the identification of operating days for which the minimum number of hours that emission concentrations, percent reductions, operating parameters specified under Minn. R. 7011.1260, subp. 6(C), Minn. R. 7011.1272, subp. 2 or the opacity level data have not been obtained, including reasons for not obtaining sufficient data and a description of corrective actions taken; (continued below)	Minn. R. 7011.1285, subp. 3 (Continued)
Quarterly Reports (Continued) - the information required in Minn. R. 7011.1285, subp 2(C), (D), and (E), summarized to reflect quarterly totals; - a compliance certification as required in Minn. R. 7007.0800, subp 6(C)	Minn. R. 7011.1285, subp. 3 (Continued)
The Permittee must report the values for the site specific operating parameters established under 40 CFR 62.14453 within 60 days following the initial performance test.	40 CFR 62.14463(b)
The Permittee must report the highest maximum operating parameter and the lowest minimum operating parameter for each parameter recorded for the for the calendar year as well as the previous year in order to provide a 2-year summary of the performance of the incinerator.	40 CFR 62.14463(d) and (e)
The Permittee must report any information recorded under 40 CFR 62.14460(c) through (e) for the calendar year being reported including: - Identification of calendar days for which data on emission rates or operating parameters specified under 40 CFR 62.14460(b)(1) through (15) were not obtained, with an identification of the emission rates or operating parameters not measured, reasons for not obtaining the data, and a description of corrective actions taken; - Identification of calendar days, times and durations of malfunctions, and a description of the malfunction and the corrective action taken. - Identification of calendar days for which data on emission rates or operating parameters specified under 40 CFR 62.14460(b)(1) through (15) exceeded the applicable limits, with a description of the exceedances, reasons for such exceedances, and a description of corrective actions taken.	40 CFR 62.14463(f)

The Permittee must report any information recorded under 40 CFR 62.14460(c) to (e) for the calendar year preceding the year being reported, in order to provide a summary of the performance of the incinerator over a 2-year period: - Identification of calendar days for which data on emission rates or operating parameters specified under 40 CFR 62.14460(b)(1) through (15) were not obtained, with an identification of the emission rates or operating parameters not measured, reasons for not obtaining the data, and a description of corrective actions taken; - Identification of calendar days, times and durations of malfunctions, and a description of the malfunction and the corrective action taken. - Identification of calendar days for which data on emission rates or operating parameters specified under 40 CFR 62.14460(b)(1) through (15) exceeded the applicable limits, with a description of the exceedances, reasons for such exceedances, and a description of corrective actions taken.	40 CFR 62.14463(g)
The Permittee must report the results of any performance test conducted during the reporting period.	40 CFR 62.14463(h)
If no exceedances or malfunctions occurred during the calendar year being reported, the Permittee must submit a statement that no exceedances occurred during the reporting period.	40 CFR 62.14463(i)
The Permittee must report any use of the bypass stack, duration of such use, reason for malfunction, and corrective action taken.	40 CFR 62.14463(j)
The Permittee must submit records of the annual equipment inspections, any required maintenance, and any repairs not completed within 10 days of an inspection or the time frame established by the EPA Administrator (or delegated enforcement authority).	40 CFR 62.14463(k)
The Permittee must submit the information specified in 40 CFR 62.14463(a) through (c) no later than 60 days following the initial performance test.	40 CFR 62.14464(a)
The Permittee must submit an annual report to the EPA Administrator (or delegated enforcement authority) no more than 1 year following the submission of the information in 40 CFR 62.14464(a) and must submit subsequent reports no more than semiannually following the previous report. The annual report must include the information specified in 40 CFR 62.14463(d) through (k), as applicable.	40 CFR 62.14464(b)
The Permittee must submit semiannual reports containing any information recorded under 40 CFR 62.14460(c) through (e) no later than 60 days following the end of the semiannual reporting period. The first semiannual reporting period ends 6 months following the submission of information in 40 CFR 62.14464(a). Subsequent reports must be submitted no later than 6 calendar months following the previous report.	40 CFR 62.14464(c)
All reports must be signed by the facilities manager as defined in 40 CFR 62.14490.	40 CFR 62.14465

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/20/05

Facility Name: Mayo Waste Management Facility

Permit Number: 10900030 - 001

Subject Item: EU 002 Generator

What to do	Why to do it
EMISSION LIMITS	hdr
Opacity: less than or equal to 20.0 percent opacity once operating temperatures have been attained.	Minn. R. 7011.2300, subp. 1
Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input	Minn. R. 7011.2300, subp. 2
OPERATING CONDITIONS	hdr
Fuel type: No. 2 fuel oil only.	Minn. R. 7007.0800, subp. 2
Operating Hours: less than or equal to 500 hours/year . The Permittee shall maintain documentation on site that the unit is an emergency diesel generator by design that qualifies under the U.S. EPA memorandum entitled "Calculating Potential to Emit (PTE) for Emergency Generators" dated September 6, 1995, limiting operation to 500 hours per year.	Minn. R. 7007.0800, subp. 4 & 5
RECORDKEEPING	hdr
Monthly Recordkeeping: Emergency Generator Operating Hours. By the 15th of the month, the Permittee shall calculate and record the following: 1) the total operating hours for the previous calendar month using daily records. 2) the 12-month rolling sum of operating hours for the previous 12 month period by summing the monthly hours data for the previous 12 months.	Minn. R. 7007.0800, subp. 4 & 5
Fuel Supplier Certification: Obtain and maintain a fuel supplier certification for each shipment of No. 2 fuel oil, certifying that the sulfur content does not exceed 0.5% by weight.	Minn. R. 7007.0800, subp. 4 & 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/20/05

Facility Name: Mayo Waste Management Facility

Permit Number: 10900030 - 001

Subject Item: EU 003 Pathological Waste Incinerator

What to do	Why to do it
A combustor is not subject to 40 CFR 60.50c during periods when only pathological waste, low-level radioactive waste, and/or chemotherapeutic waste (all defined in 40 CFR 60.51c) is burned, provided the Permittee: - Notifies the Administrator of an exemption claim; and - Keeps records on a calendar quarter basis of the periods of time when only pathological waste, low-level radioactive waste and/or chemotherapeutic waste is burned.	40 CFR 60.50c(b)
The Permittee shall burn only only pathological waste, low-level radioactive waste, and/or chemotherapeutic waste as defined in 40 CFR 60.51c.	40 CFR 60.50c(b)
Opacity: less than or equal to 20.0 percent opacity	Minn. R. 7011.1215, subp. 3.A.
The Permittee must install and operate an afterburner which maintains flue gases at 1,200 degrees Fahrenheit for at least 0.3 seconds.	Minn. R. 7011.1215, subp. 3.B.
Afterburner temperature monitor. The Permittee shall install, calibrate, maintain, and operate at all times a temperature monitoring device(s) on the afterburner. A minimum of one thermocouple shall be installed in the combustion zone of the afterburner. Each temperature monitoring device shall be certified by the manufacturer to have an accuracy of +/-5% over its operating range. the temperature monitoring device shall be operated continuously and data recorded during all periods of operation of the Pathological Waste Incinerator. ("Continuously" is defined as determining at least one data point in each 15-minute time interval)	Minn. R. 7007.0800, subp. 4
Ash shall be stored and transported in such a manner to prevent avoidable amounts of particulate matter to become airborne.	Minn. R. 7011.1215, subp. 3.C.
Recordkeeping: Maintain permanent records for a period of five years of the operating temperature as measured in the afterburner. ("Permanent records" means records that are in a form that is retrievable and readable such as hard copy or a computer disk)	Minn. R. 7007.0800, subp. 4
Fuel Usage: only natural gas or propane may be used as an auxiliary fuel in the incinerator afterburner.	Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/20/05

Facility Name: Mayo Waste Management Facility

Permit Number: 10900030 - 001

Subject Item: **CE 004 Wet Scrubber - High Efficiency**

Associated Items: EU 001 Joy Incinerator

What to do	Why to do it
Pressure Drop: greater than or equal to 40 inches of water column and less than or equal to 60 inches of water column using 3-hour Average	40 CFR 62.14454(a)
Scrubber Liquid Flow Rate: greater than or equal to 100 gallons/minute using 3-hour Average	40 CFR 62.14454(a)
pH: greater than or equal to 6 pH using 3-hour Average for the scrubber liquid.	40 CFR 62.14454(a)
The Permittee shall continuously monitor and record the minimum pressure drop across the wet scrubber or minimum horsepower or amperage to the wet scrubber once per minute.	40 CFR 62.14454(a)
The Permittee shall continuously monitor and record the minimum scrubber liquor flow rate once per minute.	40 CFR 62.14454(a)
The Permittee shall continuously monitor and record the minimum scrubber liquor pH once per minute.	40 CFR 62.14454(a)
The inlet gas stream to each particulate matter control device as measured by Minn. R. 7011.1260, subp. 4.A, shall have a temperature of no greater than 30 degrees Fahrenheit above the highest four-hour arithmetic mean temperature measured during four consecutive hours for this gas stream during the most recent performance test for PCDD/PCDF that demonstrated compliance, except as allowed in Minn. R 7011.1240, subp. 2.A and 2.B.	Minn. R. 7011.1240, subp. 2
During the annual PCDD/PCDF performance test and the two weeks preceding the annual PCDD/PCDF performance test, no particulate matter control device temperature limitations are applicable.	Minn. R. 7011.1240, subp. 2.A.
The commissioner shall waive the particulate matter control device temperature limits for the purpose of evaluating system performance, testing new technology or control technologies, diagnostic testing, or related activities for the purpose of improving facility performance or advancing the state-of-the-art for controlling facility emissions, provided a written notification is submitted to the commissioner 30 days prior to undertaking any of the activities above, with the following information: - a description of the proposed project, and the outcome the project is designed to evaluate; - how the project conforms with the activities described in this subpart for which the temperature limit can be waived; and - the length of time the project will take to complete.	Minn. R. 7011.1240, subp. 2.B.

TABLE B: SUBMITTALS

09/20/05

Facility Name: Mayo Waste Management Facility

Permit Number: 10900030 - 001

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:

AQ Permit Technical Advisor
Industrial 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:

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

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

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

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

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

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS

09/20/05

Facility Name: Mayo Waste Management Facility

Permit Number: 10900030 - 001

What to send	When to send	Portion of Facility Affected
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility
Performance Test Report - Microfiche Copy	due 105 days after Performance Test	EU001
Performance Test Report	due 45 days after Performance Test or 14 days after receipt of the Performance Test Report by the Permittee for each Performance Test conducted, whichever is later. Each report must bear the Permittee's date stamp receipt.	EU001

TABLE B: RECURRENT SUBMITTALS

09/20/05

Facility Name: Mayo Waste Management Facility

Permit Number: 10900030 - 001

What to send	When to send	Portion of Facility Affected
Excess Emissions/Downtime Reports (EER's)	due 30 days after end of each calendar quarter following Initial Startup of the Monitor (Submit Deviations Reporting Form DRF-1 as amended). The EER shall indicate all periods of CEMS/COMS bypass and all periods of exceedances of the limit including exceedances allowed by an applicable standard, i.e. during startup, shutdown, and malfunctions.	EU001
Quarterly Report	due 30 days after end of each calendar quarter following Permit Issuance	EU001
Semiannual Deviations Report	due 30 days after end of each calendar half-year following Permit Issuance. The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. If no deviations have occured, the Permittee shall submit the report stating no deviations.	Total Facility
Compliance Certification	due 31 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, both to the Commissioner and to the US EPA regional office in Chicago. This report covers all deviations experienced during the calendar year.	Total Facility

TECHNICAL SUPPORT DOCUMENT
For
AIR EMISSION PERMIT NO. 10900030-001

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

1. General Information

1.1 Applicant and Stationary Source Location:

Applicant/Address	Stationary Source/Address SIC Code: 8062
Mayo Waste Management Facility 200 First Street Southwest Rochester, MN 55905	7123 L.C. Drive Southwest Rochester, MN 55902 Olmsted County
Contact: David Senjem; Environmental Affairs Officer; 507-284-8890	

1.2 Description of the Permit Action

This permit action is for the issuance of total facility operating permit. The permit satisfies the permitting requirements under Title V of the 1990 Clean Air Act Amendments, codified in 40 CFR Part 70. The permit meets the requirements of Minn. R. 7007.0800 and 7007.0801, which respectively, specify the conditions necessary for Part 70 operating permits and waste combustor air emission permits.

1.3 Description of the Facility

The Mayo Foundation operates a medical waste incinerator unit at the Mayo Waste Management Facility in Rochester, Minnesota. The facility is a two-level, 26,700 square foot building housing the medical waste incinerator, a 200 pound per hour pathological waste incinerator, and two steam decontaminating/waste processing units. The facility operates 24-hours per day Monday through Friday. The permit application provided an operating capacity of the Incinerator of 2,200 pounds per hour of municipal solid waste and red-bag hospital waste. Waste processed at the facility consists primarily of general waste and infectious waste generated from healthcare, medical research and medical education activities at Mayo's Rochester facilities. Infectious and pathological waste from medical waste generators in Olmsted and Dodge Counties are also incinerated.

The wastes handled by the incinerator exclude significant volumes of paper, cardboard, plastic, aluminum, glass, food, metal and electronic wastes recovered in Mayo's recycling program. Air pollution control consists of a high efficiency wet scrubbing system. Under normal operation, all general and medical waste is processed through the incinerator. When the incinerator is nonfunctional, the steam decontamination/waste processing units provide back-up for processing medical waste. More routinely, the steam decontamination/waste processing units are used to sterilize glassware prior to recycling or disposal at a landfill. Tissues and animals from clinical research activities are processed in the pathological incinerator.

The high efficiency wet scrubber system consists of the following: a quencher; a condenser/absorber; a venturi or rotary atomizer for particulate removal; a caustic system for pH control and an induced draft fan. Emissions are monitored for opacity, oxygen and carbon monoxide. The pressure drop across the scrubber, the scrubber liquor flow rate and the scrubber liquor pH will also be continuously monitored. Individual waste load weights are automatically recorded via an electronic scale system.

1.4 Description of any Changes Allowed with this Permit Issuance

Under this permit the facility is classified as a Class II Waste Combustor according to Minn. R. 7011.1201 subpart 14 and the incinerator is allowed to operate at the higher design capacity. The incinerator was classified as a Class III Waste Combustor under Minn. R. 7011.1201, subp. 15 Standards of Performance for Waste Incinerators when it began operating in 1994 based on a capacity of 15 million Btu's per hour (MMBtu's/hr) and has been permitted as a Class III in all subsequent permits. A "Class III Waste Combustor" means that the design capacity for a waste combustor unit is 3.0×10^6 Btu/hr or more and less than 15×10^6 Btu/hr, and the waste combustor is issued a permit for construction after December 20, 1989.

Information in the Title V permit application indicated that the Incinerator was capable of operating above the operating limit for Class III waste combustors. The permit application dated March 2003, specified a heat value for the composite waste stream of 9170 Btu/lb and an operating capacity of 2200 pounds per hour. Using these numbers and looking at the facility operating data it was determined that the waste combustor was potentially operating above the Class III design capacity of 15×10^6 Btu/hr on a regular basis. Engineering data from the manufacturer of the Incinerator has been used to re-rate the Incinerator to 16.25 MMBtu's/hr. At this capacity the unit would be classified as a Class II incinerator. Through negotiations with the facility it was agreed that the facility would request a variance from the "commenced construction date" in the Class II rules and be permitted as a Class II Waste Combustor.

Mayo requested a variance in a letter dated April 28, 2005 from the date restriction in the definition of a Class II which says: "construction of the unit is commenced after September 20, 1994, or modification or reconstruction is commenced after June 19, 1996". Construction of the unit began in January of 1993. The variance was approved on …

The Permittee is also requesting a variance from Minn. R. 7011.1260, subp. 3.C. relating to the need for continuous monitoring of sulfur dioxide. Sulfur compounds are not typically a pollutant of concern from this type of facility and recent stack testing has shown low levels of SO2 compared to the 30 ppm limit. The facility is subject to the Federal Plan Requirements for Hospital/Medical/Infectious Waste Incinerators Constructed On or Before June 20, 1996. The Federal Plan Requirements do include an SO2 limit but do not include a requirement for continuous monitoring of SO2. In fact the federal plan does not even require initial or annual testing for SO2. MPCA staff supports the variance request as the requirement for continuous monitoring of SO2 is not required in the federal plan and will not be required for this facility when the Minnesota rule is rewritten.

1.5 Description of All Amendments Issued Since the Issuance of the Last Total Facility Permit and to be Included in the Part 70 Permit

Permit Number and Issuance Date	Action Authorized
Permit No. 1650B- 92-OT-1; October 9, 1992	Total Facility Permit
Amendment No. 1 to Permit No. 1650B- 92-OT-1; March 4, 1994	Administrative amendment correcting typographical errors and clarification of terms.
Amendment No. 2 to Permit No. 1650B- 92-OT-1; June 3, 2002	Replacement of the dry scrubbing system with a wet scrubbing system.

1.6 Facility Emissions:

Table 1. Total Facility Potential to Emit Summary:

	PM tpy	PM_{10} tpy	SO_2 tpy	NO_x tpy	CO tpy	VOC tpy	Single HAP tpy	All HAPs tpy
Total Facility Limited Potential Emissions	8.8	4.8	3.6	18.5	6.1	2	11.3	12.5
Total Facility Actual Emissions	0.4	0.34	2.1	9.7	3.9	0.9	6.37	6.43

Table 2. Facility Classification

Classification	Major/Affected Source	Synthetic Minor	Minor
PSD			PM, PM-10, SO2, NOx, CO, VOC's
Part 70 Permit Program	HAPs; The facility is required to obtain a Title V permit according to 40 CFR 62.14480		PM-10, SO2, NOx, CO, VOC's

2. Regulatory and/or Statutory Basis

New Source Review

The facility is not subject to New Source Review regulations until they make a qualifying change. No changes are authorized by this permit.

Part 70 Permit Program

The facility is a major source under the Part 70 permit program.

New Source Performance Standards (NSPS)

The facility is not subject to NSPS

Federal Implementation Plan (FIP)

This facility is subject to Part 62, Subpart HHH; Federal Plan Requirements for Hospital/Medical/Infectious Waste Incinerators Constructed on or before June 20, 1996.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

The facility has accepted limits on HAP usage such that it is a non-major source under 40 CFR 63. Thus, no NESHAPs apply.

Minnesota State Rules

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

- Minn. R. 7011.1215 Standards of Performance for Pathological Waste Incinerator.
- Minn. R. 7011.1201 subpart 14, Standards of Performance for Waste Combustors
- Minn. R. 7011.2300 Standards of Performance for Stationary Internal Combustion Engines

Table 3. Regulatory Overview of Facility

EU, GP, or SV	Applicable Regulations	Comments:
EU 001	40 CFR 62 Subp. HHH	Federal Plan Requirements for Hospital/Medical/

	Minn. R. 7011.1201 40 CFR 60, Subpart A	Infectious Waste Incinerators Constructed on or before June 20, 1996 Standards of Performance for Medical Waste Incinerator The General Provisions of 40 CFR Part 60 apply to the Incinerator due to the applicability of 40 CFR 62.
EU 002	Minn. R. 7011.1215, subp. 3	Standards of Performance for Pathological Waste Incinerator
EU 003	Minn. R. 7011.2300	Standards of Performance for Stationary Internal Combustion Engines

3. Technical Information

- Emission calculations are found in Appendix 2.
- Insignificant activities are listed in Appendix 3 to the permit

3.1 Calculations of Potential to Emit

Appendix 1 to this TSD contains general information (GI) forms, which summarize the emission units and control equipment, while Appendix 2 contains spreadsheets and supporting emissions information prepared by the Permittee and MPCA.

3.2 Periodic Monitoring

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

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

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

Table 4 summarizes the periodic monitoring requirements for those emission units for which the monitoring required by the applicable requirement is nonexistent or inadequate.

Table 4. Periodic Monitoring

Emission Unit or Group	Requirement (basis)	Additional Monitoring	Discussion
Incinerator EU 001	Subpart HHH	Flue gas monitoring, pressure drop, liquor flow rate, liquor pH	To establish maximum and minimum operating parameters to demonstrate compliance.
Incinerator EU 001	Control of Mercury and PCDD/PCDF	Additive monitoring system	Monitor an operating parameter that is an indicator of the additives feed rate.

3.3 Insignificant Activities

Mayo has several operations which are classified as insignificant activities. These are listed in Appendix 3 to the permit.

3.4 Comments Received

No comments were received during the public notice period.

3.5 MPCA Board Approval

On August 23, 2005, the MPCA staff approved the staff's resolution to grant the variances, adopted the Findings of Fact, Conclusions of Law and Order, and authorized issuance of the Air Emission permit. A copy of the signed Findings of Fact and Conclusions of Law and Order is attached to the permit.

4. Conclusion

Based on the information provided by Mayo, the MPCA has reasonable assurance that the operation of the emission facility, as described in the Air Emission Permit No. 10900030-001 and this technical support document, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team: Greg Kvaal (permit writer/engineer)
Peter Torkelson (Peer Review)
Anne Jackson (Permit team)
Greg Berger (enforcement)

Attachments:
1. GI-07 Forms
2. PTE Summary and Calculation Spreadsheets
3. Insignificant activities

ATTACHMENT 1

GI-07 FORMS

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

No actuals is listed on the ET

PERMIT APPLICATION FORM **GI-07**

FACILITY EMISSIONS SUMMARY

5/26/9

1) AQ Facility ID No.: _____ 2) Facility Name: Mayo Waste Management Facility

3a) Emission Source Type	3b) Emission Source ID No.	3c) CAS#: 630-08-0 / 3d) Pollutant Name: CO				CAS#: / Pollutant Name: NOx				CAS#: / Pollutant Name: PM			
		3e) Potential			3f) Actual	Potential			Actual	Potential			Actual
		Lbs per Hr	Unc tpy	Lim tpy	Tons per yr	Lbs per Hr	Unc tpy	Lim tpy	Tons per yr	Lbs per Hr	Unc tpy	Lim tpy	Tons per yr
EU	050	1.24	5.431	5.431	1.94	3.92	17.152	17.152	9.586	5.14	22.500	5.338	0.175
EU	064	0.15	0.657	0.657	0.038	0.30	1.314	1.314	0.075	0.80	3.504	3.504	0.20

4) Total Facility	Potential		Actual	Potential		Actual	Potential		Actual
	Unc	Lim	Yr	Unc	Lim	Yr	Unc	Lim	Yr
	6.088	6.088		18.466	18.466		26.004	8.842	

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MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

PERMIT APPLICATION FORM **GI-07**

FACILITY EMISSIONS SUMMARY

5/26/98

1) AQ Facility ID No.: _____ 2) Facility Name: Mayo Waste Management Facility

3a) Emission Source Type	3b) Emission Source ID No.	3c) CAS#: / 3d) Pollutant Name: PM10 — 3e) Potential Lbs per Hr	3e) Potential Unc tpy	3e) Potential Lim tpy	3f) Actual Tons per yr	CAS#: / Pollutant Name: SOx — Potential Lbs per Hr	Potential Unc tpy	Potential Lim tpy	Actual Tons per yr	CAS#: / Pollutant Name: VOC — Potential Lbs per Hr	Potential Unc tpy	Potential Lim tpy	Actual Tons per yr
EU	050	5.14	22.500	2.250	0.195	0.03	0.124	0.124	1.923	0.15	0.675	0.675	0.805
EU	064	0.59	2.593	2.593	0.148	0.80	3.504	3.504	0.200	0.30	1.314	1.314	0.075

4) Total Facility	[redacted] Potential Unc	Lim	Actual Yr	[redacted] Potential Unc	Lim	Actual Yr	[redacted] Potential Unc	Lim	Actual Yr
	25.093	4.843		3.628	3.628		1.989	1.989	

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MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

PERMIT APPLICATION FORM **GI-07**

FACILITY EMISSIONS SUMMARY

5/26/98

1) AQ Facility ID No.: _____ 2) Facility Name: Mayo Waste Management Facility

3a) Emission Source Type	3b) Emission Source ID No.	3c) CAS#:				CAS#:				CAS#:			
		3d) Pollutant Name: Antimony Compounds				Pollutant Name: Arsenic Compounds				Pollutant Name: Beryllium Compounds			
		3e) Potential			3f) Actual	Potential			Actual	Potential			Actual
		Lbs per Hr	Unc tpy	Lim tpy	Pounds per yr	Lbs per Hr	Unc tpy	Lim tpy	Pounds per yr	Lbs per Hr	Unc tpy	Lim tpy	Pounds per yr
EU	050	0.0004	0.002	0.002	0.8132	3.6e-5	1.575e-4	1.575e-4	0.0786	6.88e-6	3.011e-5	3.312e-6	0.0207
EU	064					0.0001	0.0003	0.0003	0.0340				

4) Total Facility	Potential			Actual	Potential			Actual	Potential			Actual
	[redacted]	Unc	Lim	Lb/Yr	[redacted]	Unc	Lim	Lb/Yr	[redacted]	Unc	Lim	Lb/Yr
		0.002	0.002	0.8132		0.0005	0.0005	0.1126		3.011e-5	3.312e-6	0.0207

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

PERMIT APPLICATION FORM **GI-07**

FACILITY EMISSIONS SUMMARY

5/26/98

1) AQ Facility ID No.: _____ 2) Facility Name: Mayo Waste Management Facility

3a) Emission Source Type	3b) Emission Source ID No.	3c) CAS#:				CAS#:				CAS#: 7647010			
		3d) Pollutant Name: Cadmium Compounds				Pollutant Name: Chromium Compounds				Pollutant Name: Hydrogen Chloride			
		3e) Potential			3f) Actual	Potential			Actual	Potential			Actual
		Lbs per Hr	Unc tpy	Lim tpy	Pounds per yr	Lbs per Hr	Unc tpy	Lim tpy	Pounds per yr	Lbs per Hr	Unc tpy	Lim tpy	Tons per yr
EU	050	0.006	0.026	0.003	0.5380	0.0009	0.004	4.107e-4	1.0340	2.58	11.298	11.298	6.3145
EU	064	0.0012	0.005	0.005	0.6000	0.0008	0.003	0.003	0.3900	0.21	0.929	0.929	0.0530

4) Total Facility	Potential		Actual	Potential		Actual	Potential		Actual
		Unc	Lim	Yr	Unc	Lim	Yr	Unc	Lim	Yr
	0.031	0.008	1.1380	0.007	0.00341	1.4240	12.227	12.227	6.3675

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

PERMIT APPLICATION FORM **GI-07**

FACILITY EMISSIONS SUMMARY

5/26/98

1) AQ Facility ID No.: _____ 2) Facility Name: Mayo Waste Management Facility

3a) Emission Source Type	3b) Emission Source ID No.	3c) CAS#: 7664393 / 3d) Pollutant Name: Hydrogen Fluoride				CAS#: / Pollutant Name: Lead Compounds				CAS#: / Pollutant Name: Manganese Compounds			
		3e) Potential			3f) Actual	Potential			Actual	Potential			Actual
		Lbs per Hr	Unc tpy	Lim tpy	Pounds per yr	Lbs per Hr	Unc tpy	Lim tpy	Pounds per yr	Lbs per Hr	Unc tpy	Lim tpy	Pounds per yr
EU	050	0.16	0.718	0.072	71.6272	0.08	0.351	0.098	0.4992	0.0006	0.003	3.01e-4	0.3359
EU	064					0.0009	0.004	0.004	0.4310	0.0011	0.005	0.005	0.5500

4) Total Facility	Potential		Actual	Potential		Actual	Potential		Actual
	Unc	Lim	Lb/Yr	Unc	Lim	Lb/Yr	Unc	Lim	Lb/Yr
	0.718	0.072	71.6272	0.355	0.102	0.9302	0.008	0.005	0.8859

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

PERMIT APPLICATION FORM **GI-07**

FACILITY EMISSIONS SUMMARY

5/26/98

1) AQ Facility ID No.: _____ 2) Facility Name: Mayo Waste Management Facility

3a) Emission Source Type	3b) Emission Source ID No.	3c) CAS#: / 3d) Pollutant Name: Mercury				CAS#: / Pollutant Name: Nickel				CAS#: / Pollutant Name: PCB's			
		3e) Potential			3f) Actual	Potential			Actual	Potential			Actual
		Lbs per Hr	Unc tpy	Lim tpy	Pounds per yr	Lbs per Hr	Unc tpy	Lim tpy	Pounds per yr	Lbs per Hr	Unc tpy	Lim tpy	Pounds per yr
EU	050	0.004	0.018	0.018	52.4548	0.0006	0.003	3.13e-4	1.5294	0.0001	0.0002	0.0002	0.2504
EU	064	0.0001	0.001	0.001	0.0635								

4) Total Facility	Potential		Actual	Potential		Actual	Potential		Actual
	Unc	Lim	Lb/Yr	Unc	Lim	Lb/Yr	Unc	Lim	Lb/Yr
	0.019	0.019	52.5183	0.003	0.0003	1.5294	0.0002	0.0002	0.2504

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

PERMIT APPLICATION FORM **GI-07**

FACILITY EMISSIONS SUMMARY

5/26/98

1) AQ Facility ID No.: _____ 2) Facility Name: Mayo Waste Management Facility

3a) Emission Source Type	3b) Emission Source ID No.	3c) CAS#:				CAS#: 71432				CAS#:			
		3d) Pollutant Name: PCDD/PCDF				Pollutant Name: Benzene				Pollutant Name:			
		3e) Potential			3f) Actual	Potential			Actual	Potential			Actual
		Lbs per Hr	Unc tpy	Lim tpy	Pounds per yr	Lbs per Hr	Unc tpy	Lim tpy	Pounds per yr	Lbs per Hr	Unc tpy	Lim tpy	Pounds per yr
EU	050	1.60e-6	7.00e-6	7.00e-6	0.0008								
EU	064	1.43e-6	6.26e-6	6.26e-6	0.0007	0.0009	0.004	0.004	0.4500				

4) Total Facility	Potential		Actual	Potential		Actual	Potential		Actual
	Unc	Lim	Yr	Unc	Lim	Yr	Unc	Lim	Yr
[redacted]	1.326e-5	1.326e-5	0.0015	0.004	0.004	0.4500			206585

6.43

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ATTACHMENT 2

PTE SUMMARY AND CALCULATION SPREADSHEETS

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

20 January, 2005 13:17

FACILITY DESCRIPTION: Potential-to-emit (by item)

Show: Active and Pending Records
AQD Facility ID: 10900030
Facility Name: Mayo Waste Management Facility

Item	Pollutant	Added By (Action)	Retired By (Action)	Hourly Potential (lbs per hr)	Unrestricted Potential (tons per yr)	Limited Potential (tons per yr)	Actual Emissions (tons per yr)
EU 001							
	Arsenic compounds	PER 001		3.600E-05	1.575E-04	1.575E-04	3.930E-05
	Beryllium Compounds	PER 001		6.880E-06	3.011E-05	3.312E-06	1.020E-05
	Cadmium compounds	PER 001		6.000E-03	2.600E-02	3.000E-03	2.700E-04
	Carbon Monoxide	PER 001		1.240E+00	5.431E+00	5.431E+00	
	Chromium compounds	PER 001		9.000E-04	4.000E-03	4.100E-04	5.200E-04
	Hydrogen fluoride	PER 001		1.600E-01	7.180E-01	7.200E-02	7.163E+01
	Mercury	PER 001		4.000E-03	1.800E-02	1.800E-02	2.620E-02
	Polychlorinated biphenyl (Arocl	PER 001		1.000E-03	2.000E-04	2.000E-04	1.250E-04
	Hydrochloric acid	PER 001		2.580E+00	1.130E+01	1.130E+01	6.315E+00
	Manganese compounds	PER 001		6.000E-04	3.000E-03	3.000E-04	1.680E-04
	Muni Waste Combust Organics	PER 001		1.600E-06	7.000E-06	7.000E-06	4.000E-07
	Lead Compounds	PER 001		8.000E-02	3.510E-01	9.800E-02	2.500E-04
	Nickel compounds	PER 001		6.000E-04	3.000E-03	3.130E-04	7.600E-04
	Nitrogen Oxides	PER 001		3.920E+00	1.715E+01	1.715E+01	9.586E+00
	Particulate Matter < 10 micron	PER 001		5.140E+00	2.250E+01	2.250E+00	1.950E-01
	Total Particulate Matter	PER 001		5.140E+00	2.250E+01	5.338E+00	1.950E-01
	Antimony compounds	PER 001		4.000E-04	2.000E-03	2.000E-03	4.100E-04
	Sulfur Dioxide	PER 001		3.000E-02	1.240E-01	1.240E-01	1.923E+00
	Volatile Organic Compounds	PER 001		1.500E-01	6.750E-01	6.750E-01	8.050E-01
EU 003							
	Benzene	PER 001		9.000E-04	4.000E-03	4.000E-03	2.250E-04
	Arsenic compounds	PER 001		1.000E-04	3.000E-04	3.000E-04	1.700E-05
	Cadmium compounds	PER 001		1.200E-03	5.000E-03	5.000E-03	3.000E-04
	Carbon Monoxide	PER 001		1.500E-01	6.570E-01	6.570E-01	3.800E-02
	Chromium compounds	PER 001		8.000E-04	3.000E-03	3.000E-03	1.950E-04
	Mercury	PER 001		1.000E-04	1.000E-03	1.000E-03	3.170E-05
	Hydrochloric acid	PER 001		2.100E-01	9.290E-01	9.290E-01	5.300E-02
	Manganese compounds	PER 001		1.100E-03	5.000E-03	5.000E-03	2.750E-04
	Muni Waste Combust Organics	PER 001		1.430E-06	6.260E-06	6.260E-06	3.500E-07
	Lead Compounds	PER 001		9.000E-04	4.000E-03	4.000E-03	2.160E-04
	Nitrogen Oxides	PER 001		3.000E-01	1.314E+00	1.314E+00	7.500E-02
	Particulate Matter < 10 micron	PER 001		5.900E-01	2.593E+00	2.593E+00	1.480E-01
	Total Particulate Matter	PER 001		8.000E-01	3.504E+00	3.504E+00	2.000E-01
	Sulfur Dioxide	PER 001		8.000E-01	3.504E+00	3.504E+00	2.000E-01
	Volatile Organic Compounds	PER 001		3.000E-01	1.314E+00	1.314E+00	7.500E-02

Pollutant	Pollutant Type: VOC	PM	PM10	CO	SO2	NOx	HAP	Pb	Maximum Rate	Units per Time	Emission Factor Number	Emission Factor Units	Emission Factor Source	Emission Rate (lb/hr)	Uncontrolled Potential to Emit (PTE) (ton/yr)	Pollution Control Efficiency (%)	Controlled Potential to Emit (PTE) (ton/yr)	Limited Potential to Emit (PTE) (ton/yr)	Hours 2 Year Avg	Throughput 2 Year Avg (Units/yr)	Estimated Actual Emissions (ton/yr)	Ref. No.
lonoxide)				x					426558	SCFH	2.91E-06	lbs/scf	Emission Limit	1.24	5.431	0.00	5.431	5.431		5385.50	7.944	1
n oxides)						x			1.10	ton/hr	3.56	lbs/ton	AP-42	3.92	17.152	0.00	17.152	17.152		5385.50	9.586	2
te Matter)		x							1.10	ton/hr	4.67	lbs/ton	AP-42	5.14	22.500	90.00	2.250	5.338		5385.50	0.195	3
late Matter < 10 microns)			x						1.10	ton/hr	4.67	lbs/ton	AP-42	5.14	22.500	90.00	2.250	2.250		5385.50	0.195	3
noxide)					x				1.10	ton/hr	2.57E-02	lbs/ton	AP-42	0.03	0.124	0.00	0.124	0.124		5385.50	1.923	2
Organic Compounds)	x								1.10	ton/hr	1.40E-01	lbs/ton	AP-42	0.15	0.675	0.00	0.675	0.675		5385.50	0.805	3
							x		1.10	ton/hr	4.08E-04	lbs/ton	AP-42	0.0004	0.002	0.00	0.002	0.002		5385.50	0.0004	4
							x		1.10	ton/hr	3.27E-05	lbs/ton	AP-42	3.60E-05	1.575E-04	0.00	1.575E-04	1.575E-04		5385.50	0.0000	4
							x		1.10	ton/hr	0.00000625	lbs/ton	AP-42	6.88E-06	3.011E-05	89.00	3.312E-06	3.312E-06		5385.50	0.0000	4
							x		1.10	ton/hr	5.48E-03	lbs/ton	AP-42	0.0060	0.026	89.00	0.003	0.003		5385.50	0.0003	4
							x		1.10	ton/hr	0.000775	lbs/ton	AP-42	0.0009	3.734E-03	89.00	4.107E-04	4.107E-04		5385.50	0.0005	4
oride							x		1.10	ton/hr	33.5	lbs/ton	AP-42	36.85	161.403	93.00	11.298	11.298		5385.50	6.3145	5
oride							x		1.10	ton/hr	0.149	lbs/ton	AP-42	0.1639	0.718	90.00	0.072	0.072		5385.50	0.0358	4
							x	x	1.10	ton/hr	0.0728	lbs/ton	AP-42	0.0801	0.351	72.00	0.098	0.098		5385.50	0.0002	3
							x		1.10	ton/hr	0.000567	lbs/ton	AP-42	0.0006	2.732E-03	89.00	3.005E-04	3.005E-04		5385.50	0.0002	4
							x		426558	SCFH	9.37E-09	lbs/scf	Emission Limits	0.0040	0.018	0.00	0.018	0.018		5385.50	0.0262	6
							x		1.10	ton/hr	0.00059	lbs/ton	AP-42	0.0006	0.003	89.00	0.000	0.000		5385.50	0.0008	4
							x		1.10	ton/hr	4.65E-05	lbs/ton	AP-42	0.0001	0.0002	0.00	0.000	0.000		5385.50	0.0001	5
							x		426558	SCFH	3.75E-12	lbs/scf	Emission Limits	1.60E-06	7.00E-06	0.00	7.00E-06	7.00E-06		5385.50	0.0000	7
lonoxide)				x					0.10	ton/hr	1.5	lbs/ton	JAWMA 42: 784-791	0.15	0.657	0.00	0.657	0.657	500.00		0.038	8
n oxides)						x			0.10	ton/hr	3	lbs/ton	AIRS 5-02-005-05	0.30	1.314	0.00	1.314	1.314	500.00		0.075	9
te Matter)		x							0.10	ton/hr	8	lbs/ton	AIRS 5-02-005-05	0.80	3.504	0.00	3.504	3.504	500.00		0.200	9
late Matter < 10 microns)			x						0.10	ton/hr	5.92	lbs/ton	AIRS 5-02-005-05	0.59	2.593	0.00	2.593	2.593	500.00		0.148	9
xides)					x				0.10	ton/hr	8	lbs/ton	AIRS 5-02-005-05	0.80	3.504	0.00	3.504	3.504	500.00		0.200	9
Organic Compounds)	x								0.10	ton/hr	3	lbs/ton	AIRS 5-02-005-05	0.30	1.314	0.00	1.314	1.314	500.00		0.075	9
oride							x		0.10	ton/hr	2.12	lbs/ton	JAWMA 42: 784-791	0.2120	0.929	0.00	0.929	0.929	500.00		0.0530	10
							x		0.10	ton/hr	0.012	lbs/ton	JAWMA 42: 784-791	0.0012	0.005	0.00	0.005	0.005	500.00		0.0003	10
							x		0.10	ton/hr	8.62E-03	lbs/ton	JAWMA 42: 784-791	0.0009	0.004	0.00	0.004	0.004	500.00		0.0002	10
							x		0.10	ton/hr	1.27E-03	lbs/ton	JAWMA 42: 784-791	0.0001	0.001	0.00	0.001	0.001	500.00		0.0000	10
							x		0.10	ton/hr	1.43E-05	lbs/ton	JAWMA 42: 784-791	1.43E-06	6.26E-06	0.00	6.263E-06	6.263E-06	500.00		0.0000	10
							x		0.10	ton/hr	7.80E-03	lbs/ton	JAWMA 42: 784-791	0.0008	0.003	0.00	0.003	0.003	500.00		0.0002	10
							x		0.10	ton/hr	0.011	lbs/ton	JAWMA 42: 784-791	0.0011	0.005	0.00	0.005	0.005	500.00		0.0003	10
							x		0.10	ton/hr	6.80E-04	lbs/ton	JAWMA 42: 784-791	0.0001	0.0003	0.00	0.0003	0.0003	500.00		0.0000	10
							x		0.10	ton/hr	9.00E-03	lbs/ton	JAWMA 42: 784-791	0.0009	0.004	0.00	0.004	0.004	500.00		0.0002	10
															1.989		1.989	1.989			0.880	
															26.004		5.754	8.842			0.395	
															25.093		4.843	4.843			0.343	
															6.088		6.088	6.088			7.981	
															3.628		3.628	3.628			2.123	
															18.466		18.466	18.466			9.661	
															163.478		12.443	12.443			6.433	
															0.351		0.098	0.098			0.000	
															162.332		12.227	12.227			6.367	

Emission Calculations - Significant Sources
Mayo Waste Management Facility

References:

1. The average airflow for the incinerator is 543959 SCFH. The incinerator has an emission limit of 40 PPM corrected to 7% O_2 for carbon monoxide. The SCFH was adjusted from the typical oxygen content of the stack gas, 10%, to 7% oxygen. An emission factor was calculated by: 40 PPM / 1000000 (PPM/V/V) / (385.3 scf/mole) * 28 (lbs/lbmole) = 2.907 E-06 lb/scf. Actual emissions were calculated from waste combustion data for 2000 and 2001 and an emission factor from AP-42 Table 2.3-1.
2. The maximum capacity of this incinerator is 1.1 ton/hr. Emission factors for NO_x and SO_2 were taken from AP-42, 5th Edition, Table 2.3-1. The SO_2 emission factor includes the removal efficiency of the high energy scrubber. Actual emissions were calculated from 2000 and 2001 waste combustion throughput (tons). The actual SO_2 emissions were calculated with the emission factor for an incinerator with DSI/Carbon Injection/FF, which was the configuration of the system in 2000 and 2001.
3. Emission factors for PM, Lead, and TOC (VOC) were taken from AP-42, 5th Edition, Table 2.3-2. An emission factor for a system with a high energy scrubber was used for VOC, the other factors are uncontrolled. PM_{10} emissions were assumed to be equivalent to PM emissions, which would be expected for a system controlled by an efficient scrubber. Allowable PM emissions are based on the emission limit of 0.02 gr/dscf @ 7% oxygen, 543959 SCFH, and the typical oxygen content of the stack gas, 10%. Actual emissions were calculated from 2000 and 2001 waste combustion throughput (tons). The actual PM, PM_{10}, and lead emissions were calculated with the emission factor for an incinerator with DSI/Carbon Injection/FF, which was the configuration of the system in 2000 and 2001. The uncontrolled VOC emission factor was used because there is no VOC emission factor for this pollution control equipment configuration.
4. Emission factors for antimony, arsenic, berylium, cadmium, chromium, manganese, nickel, and hydrogen fluoride were taken from AP-42 Tables 2.3-4. 2.3-5, 2.3-6, 2.3-7, and 2.3-10. An emission factor for hydrogen fluoride for a system controlled with a high energy wet scrubber is not available, so the uncontrolled factor was used. From the uncontrolled and controlled emission factors for HCl, a scrubber removal efficiency of 99.6 can be calculated. The removal efficiency for hydrogen fluoride would be expected to be similar to that for HCl; a conservative value of 90% was used in the emission calculations. The antimony and arsenic emission factors are for a system with a high energy scrubber. There was no emission factor for beryllium for a system with a high energy scrubber. The emission factors for a system with a high energy scrubber were higher than the uncontrolled emission factor for cadmium, chromium, manganese and nickel. Uncontrolled emission factors were used for beryllium, cadmium, chromium, manganese, and nickel. The removal efficiency of the scrubber was estimated from the AP-42 controlled and uncontrolled factors for antimony, arsenic, and mercury. Actual emissions were calculated from 2000 and 2001 waste combustion throughput (tons). Actual emissions were calculated with the emission factor for an incinerator with DSI/Carbon Injection/FF, which was the configuration of the system in 2000 and 2001, with the exception of manganese, for which there is no emission factor for a system with this control equipment. The uncontrolled emission factor was used for manganese, assuming a control efficiency of 89.0%.
5. Uncontrolled HCl and Total PCB emission factors were taken from AP-42, 5th Edition, Table 2.3-3. The required control efficiency from the federal plan, 93%, was used in the HCl calculation with the uncontrolled emission factor. Compliance with this standard would result in higher potential emissions from the incinerator than the applicable concentration limits. Actual emissions were calculated from 2000 and 2001 waste combustion throughput (tons).
6. The average airflow for the incinerator is 543,959 SCFH. The incinerator has an emission limit for mercury of 0.15 mg/dscm corrected to 7% oxygen. The SCFH was adjusted from the typical oxygen content of the stack gas, 10%, to 7% oxygen. The emission limit can be converted to lb/dscf by: 0.15 (mg/dscm) / 1000000 (mg/kg) * 2.205 (lb/kg) / 35.31 (cf/cm) = 9.37 E-09 lb/dscf. Actual emissions were calculated from waste combustion data for 2000 and 2001 and an emission factor from AP-42 Table 2.3-7 for an incinerator equipped with DSI/Carbon Injection/FF which was the pollution control equipment configuration in 2000 and 2001.

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7. The average airflow for the incinerator is 543,959 SCFH. The incinerator has an emission limit of 60 ng/dscm or 0.06 μg/dscm for dioxins/furans corrected to 7% oxygen. The SCFH was adjusted from the typical oxygen content of the stack gas, 10%, to 7% oxygen. The emission limit can be converted to lb/dscf by: 0.06 (μg/dscm) / 1000000000 (μg/kg) * 2.205 (lb/kg) / 35.31 (cf/cm) = 3.747 E-12 lb/scf. Actual emission were calculated from waste combustion data for 2000 and 2001 and emission factors from AP-42 Table 2.3-12 and 2.3-12 for an incinerator equipped with DSI/Carbon Injection/FF, which was the pollution control equipment configuration in 2000 and 2001. The emission factors for Total PCDD and Total PCDF were added together to obtain an emissions factor for PCDD/PCDF.
8. The pathological incinerator has a capacity of 200 lb/hr or 0.1 ton/hr. AIRS 5-02-005-05 gives on emission factor of 0.0 for CO, which did not seem appropriate. The emission factor was taken from the *Journal of the Air & Waste Management Association*, June 1992, pp. 784-791 "Emission Factors for Medical Waste". Expected actual operation is 500 hours per year.
9. Emission factors for NO_x, PM, PM_{10}, SO2 and VOC were taken from AIRS 5-02-005-05.
10. Emission factors for HAPs were taken from the *Journal of the Air & Waste Management Association*, June 1992, pp. 784-791 "Emission Factors for Medical Waste".

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ATTACHMENT 3

INSIGNIFICANT ACTIVITIES

MINNESOTA POLLUTION CONTROL AGENCY
AIR QUALITY
520 LAFAYETTE ROAD
ST. PAUL, MN 55155-4194

PERMIT APPLICATION FORM **IA-01**
INSIGNIFICANT ACTIVITIES (REQUIRED TO BE LISTED)
5/26/98

1) AQ Facility ID No.:

2) Facility Name: Mayo Waste Management Facility

3) Description of Activities:

Minnesota Rules 7007.1300:

Subpart 3B(2)
Gas fired pressure washer (152,000 Btu/hr)

Subpart 3H(4) – brazing soldering or welding equipment
Various pieces of welding and soldering equipment

Subpart 4 – If a facility is applying for a part 70 permit, emissions units with emissions less than all the following limits but not included in subpart 2 must be listed in a part 70 permit application:

A. potential emissions of 5.7 pounds per hour or actual emissions of two tons per year of carbon monoxide;

B. potential emissions of 2.28 pounds per hour or actual emissions of one ton per year for particulate matter, particulate matter less than ten microns, nitrogen oxide, sulfur dioxide, and VOCs; and

C. for hazardous air pollutants, emissions units with:

(1) potential emissions of 25 percent or less of the hazardous air pollutant thresholds listed in subpart 5, or

(2) combined HAP actual emissions of one ton per year unless the emissions unit emits one or more of the following HAPs: carbon tetrachloride; 1,2-dibromo-3-chloropropane; ethylene dibromide; hexachlorobenzene; polycyclic organic matter; antimony compounds; arsenic compounds, including inorganic arsine; cadmium compounds; chromium compounds; lead compounds; manganese compounds; mercury compounds; nickel compounds; selenium compounds; 2,3,7,8-tetrachlorodibenzo-p-dioxin; or dibenzofuran. If the emissions unit emits one or more of the HAPs listed in this subitem, the emissions unit is not an insignificant activity under this subitem.

Activated Carbon Handling
Parts Washer
Pallet Chopper
Autoclave Boiler
Emergency Generator