

**AIR EMISSION PERMIT NO. 14100041- 001**  
**IS ISSUED TO**

**WASTE MANAGEMENT INC -ELK RIVER LANDFILL**

22460 U.S. Highway 169 Northwest  
Elk River, Sherburne County, MN 55330

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	June 14, 1996 (updated May 2002 and August 2002)
Major Amendment Application	April, 2001
Minor Amendment Application	August 2, 2000

This permit authorizes the Permittee to construct and 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; Part 70

**Issue Date:** March 29, 2004

**Expiration:** March 29, 2009  
Title I Conditions do not expire.

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Ann M. Foss  
Major Facilities Section Manager  
Majors & Remediation Division

for Sheryl 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. Certain requirements which have been determined not to apply are listed in Table A of this permit.

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 facility is a municipal solid waste landfill with a landfill gas collection system that consists of 31 vertical extraction wells with associated laterals and headers. The collected gas is conveyed to four combustion devices installed to control "non-methane organic compounds" (NMOCs) – an enclosed flare and three internal combustion engine/generator sets (ICE/Generators). These devices operate in parallel, and control NMOCs from landfill gas to meet the requirements of the federal new source performance standards.

**History:**

The Elk River Landfill first began accepting waste in 1972. An open flare was installed on February 15, 1996, to control landfill gas emissions. The open flare had a capacity to combust 1050 cubic feet per minute of landfill gas. An internal combustion engine/generator was installed in November of 1998, with a capacity to combust landfill gas in parallel with the flare.

An enclosed flare was installed in November of 2000, with a capacity to combust 2000 cubic feet per minute of landfill gas.

The open flare and single internal combustion engine/generator were removed in April of 2002.

Three internal combustion engine/generators were installed in the fall of 2002 to combust landfill gas in parallel with the enclosed flare. The three generators have a capacity of 800 kilowatts each.

The Permittee's Collection and Control System Design Plan (Plan) was approved on December 10, 2002. The Plan includes regulatory alternatives granted to the facility, and the Title V permit incorporates these alternatives.

**Authorized Changes:**

The permit authorizes the continued expansion of the landfill gas collection system, including vertical extraction wells, trenches, laterals, and headers, in accordance with the approved Collection and Control System Design Plan. This permit also allows a capacity increase of the enclosed flare.

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

03/29/04

Facility Name: Waste Management Inc -Elk River Landfill

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**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**

<b>What to do</b>	<b>Why to do it</b>
Unless otherwise specified in this permit, the following conditions apply to the total facility.	Minn. R. 7017.1004, subp. 1(A) regarding state testing and monitoring requirements; 40 CFR 60.11(f) as applicable
<b>SOURCE-SPECIFIC REQUIREMENTS</b>	hdr
Comply with Fugitive Emission Control Plan: The Permittee shall follow the actions and record keeping specified in the control plan. The plan may be amended by the Permittee with the Commissioner's approval. If the Commissioner determines the Permittee is out of compliance with Minn. R. 7011.0150 or the fugitive control plan, then the Permittee may be required to amend the control plan and/or to install and operate particulate matter ambient monitors as requested by the Commissioner.	Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0800, subp. 2
<b>OPERATIONAL REQUIREMENTS</b>	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; For NSPS facilities: 40 CFR 60.12
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 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
<b>PERFORMANCE TESTING</b>	hdr
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A, B, and/or C.	Minn. R. ch. 7017
Performance Test Notifications and Submittals:	Minn. Rs. 7017.2030, subp. 1-4, 7017.2018 and Minn. R. 7017.2035, subp. 1-2
Performance Tests are due as outlined in Tables A and B of the permit. See Table B for additional testing requirements.	
<b>CONTINUED</b>	<b>CONTINUED</b>
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	For NSPS facilities: 40 CFR Section 60.8(a) regarding performance test reports; 40 CFR 60.8(c) regarding information to be supplied; 40 CFR 60.8(d) regarding 30-day notification.

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

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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, B, and/or C, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.	Minn. R. 7007.0800, subp. 4(D)
RECORDKEEPING	hdr
Record keeping: Retain all records at the stationary source for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).	Minn. R. 7007.0800, subp. 5(C)
Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007. 1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350 subp. 2), including records of the emissions resulting from those changes.	Minn. R. 7007. 0800, subp. 5(B)
REPORTS/SUBMITTALS	hdr
Submit all information required to be submitted to EPA under 40 CFR 60.4(a) to the MPCA address shown in the introduction to Table B of this permit.	40 CFR 60.4 as applicable
Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3.  At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.	Minn. R. 7019.1000, subp. 3
Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2.  At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.	Minn. R. 7019.1000, subp. 2
Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.	Minn. R. 7019.1000, subp. 1
Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description: 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.	Minn. R. 7019.1000, subp. 1
Excess Emissions/Downtime Reports (EER's): due 30 days after end of each calendar quarter following Permit Issuance. (Submit Deviations Reporting Form DRF-1 as amended). The EER shall indicate all periods of monitor bypass and all periods of exceedances of the limit including exceedances allowed by an applicable standard, i.e. during startup, shutdown, and malfunctions.	Minn. R. 7017.1110, subp. 1 & 2. For NSPS facilities: 40 CFR Section 60.7(c); 40 CFR 60.7(d); 40 CFR 60.13(h) regarding CEMS data reduction.

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

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Semiannual Deviations Report: due 30 days after end of each calendar half-year following Permit Issuance. The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. If no deviations have occurred, the Permittee shall submit the report stating no deviations.	Minn. R. 7007.0800, subp. 6(A)(2); 40 CFR 60.7(c)
Fugitive Control Plan: due 60 days after Permit Issuance. The Permittee shall submit a fugitive emissions control plan for review and approval by the Commissioner. The plan shall identify all fugitive emission sources, primary and contingent control measures, and record keeping. The Permittee shall follow the actions and record keeping specified in the control plan. The plan may be amended by the Permittee with the Commissioner's approval. If the Commissioner determines the Permittee is out of compliance with Minn. R. 7011.0150 or the fugitive emission control plan, then the Permittee may be required to amend the control plan and/or to install and operate particulate matter ambient monitors.  The Fugitive Control Plan shall include, but not be limited to, PM/PM-10 fugitives and organic emissions from any above-grade gas conveyance devices under positive pressure relative to the atmosphere.	Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0800, subp. 2
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
Application for Permit Reissuance: due 180 days before expiration of Existing Permit	Minn. R. 7007.0400, subp. 2
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)
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.	Minn. R. 7007.0800, subp. 6(C)
Emission Inventory Report: due 91 days after end of each calendar year following permit issuance (April 1). To be submitted on a form approved by the Commissioner.	Minn. R. 7019.3000 through Minn. R. 7019.3010
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 through Minn. R. 7002.0095

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

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Facility Name: Waste Management Inc -Elk River Landfill

Permit Number: 14100041 - 001

**Subject Item: GP 002 ICE/Generators**

**Associated Items:** CE 006 Other  
CE 007 Other  
CE 008 Other  
EU 004 ICE/Generator A (#4)  
EU 005 ICE/Generator B (#3)  
EU 006 ICE/Generator C (#2)  
SV 004 Generator A (#4)  
SV 005 Generator B (#3)  
SV 006 Generator C (#2)

What to do	Why to do it
NOTE: This set of Group requirements regulates the ICE/Generators both as Control Equipment and as Emission Units.  Additional requirements for ICE/Generators are contained in the "EU 007 Landfill" portion of this permit.	hdr
A. EMISSION LIMITS	hdr
Opacity: less than or equal to 20 percent once operating temperatures have been obtained.	Minn. Rules 7011.2300, subp. 1
Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input . Performance testing for sulfur dioxide is not required as long as the ICE/Generators burn only landfill gas.	Minn. Rules 7011.2300, subp. 2
B. OPERATIONAL REQUIREMENTS	hdr
The Permittee shall operate and maintain the ICE/Generators in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
C. PERFORMANCE TESTING	hdr
(see also Subject Item "EU 007 Landfill" in Table A for additional performance testing requirements)	hdr
Performance Test: due before end of each 60 months starting 05/31/2003. The first test is due 5/31/2008, then every 60 months thereafter.  Each engine shall be tested for opacity. For additional applicable performance test requirements, see 'General Performance Test Requirements' in Table A, Subject Item "Total Facility".	Minn. R. 7017.2020, subp. 1
D. MONITORING	hdr
E. REPORTS/SUBMITTALS	hdr
SEE ALSO: Control equipment requirements included under EU007 (Landfill)	hdr



**TABLE A: LIMITS AND OTHER REQUIREMENTS**

03/29/04

Facility Name: Waste Management Inc -Elk River Landfill

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**Subject Item:** GP 003 Flare**Associated Items:** CE 005 Flaring

EU 003 Flare 2

What to do	Why to do it
NOTE: This set of Group requirements regulates the enclosed flare both as Control Equipment and as an Emission Unit.  Additional requirements for the enclosed flare are contained in the "EU 007 Landfill" portion of this permit.	hdr
OPERATIONAL REQUIREMENTS	hdr
The Permittee shall operate and maintain the enclosed flare in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
INCREASING FLARE CAPACITY	hdr
The Permittee is authorized by this permit to increase the enclosed flare capacity to a maximum of 3000 cfm. The construction authorization does not expire during the life of this permit. The Permittee must keep a record of the dates of installation and start-up on site.	Minn. R. 7007.0800, subp. 2
Notification of any physical or operational change which increases emission rate: due 60 days (or as soon as practical) before the change is commenced. Changes subject to this permit condition include any increases to enclosed flare capacity.	Minn. R. 7007.0800, subp. 2

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

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Facility Name: Waste Management Inc -Elk River Landfill

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**Subject Item:** GP 004 Activities subject to MACT (40 CFR pt. 63)

**Associated Items:** CE 005 Flaring  
CE 006 Other  
CE 007 Other  
CE 008 Other  
EU 003 Flare 2  
EU 004 ICE/Generator A (#4)  
EU 005 ICE/Generator B (#3)  
EU 006 ICE/Generator C (#2)  
EU 007 Landfill

What to do	Why to do it
The Permittee must comply with the following conditions by January 16, 2004.	40 CFR 63.1945(b); 40 CFR 63.1980(b)
A. PROHIBITED ACTIVITIES AND CIRCUMVENTION	hdr
Circumvention. No Permittee subject to the provisions of 40 CFR pt. 63 shall build, erect, install, or use any article, machine, equipment, or process to conceal an emission that would otherwise constitute noncompliance with a relevant standard. Such concealment includes, but is not limited to-- (1) The use of diluents to achieve compliance with a relevant standard based on the concentration of a pollutant in the effluent discharged to the atmosphere; (2) The use of gaseous diluents to achieve compliance with a relevant standard for visible emissions	40 CFR 63.4(b)
Fragmentation. Fragmentation after November 15, 1990 which divides ownership of an operation, within the same facility among various owners where there is no real change in control, will not affect applicability. The Permittee must not use fragmentation or phasing of reconstruction activities (i.e., intentionally dividing reconstruction into multiple parts for purposes of avoiding new source requirements) to avoid becoming subject to new source requirements.	40 CFR 63.4(c)
B. PRECONSTRUCTION REVIEW AND NOTIFICATION REQUIREMENTS.	hdr
Prior to construction or reconstruction of an "affected source" under the promulgated MACT standards, the Permittee must apply for and obtain an air emission permit.	40 CFR Section 63.5(b)(3)
C. COMPLIANCE WITH STANDARDS AND MAINTENANCE REQUIREMENTS	hdr
C.01. Operation and maintenance requirements.	hdr
At all times (including periods of startup, shutdown, and malfunction) the Permittee shall operate and maintain the emission unit subject to the applicable standards of 40 CFR pt. 63 and its associated air pollution control equipment in a manner consistent with good air pollution control practices for minimizing emissions, pursuant to the requirements in 40 CFR 63.6(e)(1)(i).	40 CFR Section 63.6(e)(1)(i)
Malfunctions shall be corrected as soon as practicable after their occurrence in accordance with the startup, shutdown, and malfunction plan required by 40 CFR 63.6(e)(3). To the extent that an unexpected event arises during a startup, shutdown, or malfunction, the Permittee must comply by minimizing emissions during such a startup, shutdown, and malfunction event consistent with safety and good air pollution control practices.	40 CFR Section 63.6(e)(1)(ii)
C.02. Startup, shutdown, and malfunction plan (SSMP)	hdr
The Permittee shall prepare and implement a Startup, Shutdown, and Malfunction Plan (SSMP) for each of the emission units subject to Maximum Control Technology Standards. The SSMP shall be prepared in accordance with 40 CFR Section 63.6(e)(3) and shall include requirements specified therein.	40 CFR 63.6(e)(3)(i); 40 CFR 63.6(e)(3)(ix) regarding the need to have an SSMP
During periods of startup, shutdown, and malfunction, the Permittee shall operate and maintain the source in accordance with the procedures specified in the startup, shutdown, and malfunction plan.	40 CFR 63.6(e)(3)(ii); 40 CFR 63.6(e)(3)(ix) regarding operation pursuant to the SSMP

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

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When taking actions taken during a startup, shutdown, or malfunction (including actions taken to correct a malfunction) are consistent with the procedures specified in the affected source's SSMP, keep records for that event which demonstrate that the procedures specified in the SSMP were followed. These records may take the form of a "checklist," or other effective form of recordkeeping that confirms conformance with the SSMP for that event.	40 CFR 63.6(e)(3)(iii)
Keep records of these events as specified in 40 CFR 63.10(b), including records of the occurrence and duration of each startup, shutdown, or malfunction of operation and each malfunction of the air pollution control and monitoring equipment. Confirm that actions taken during the relevant reporting period during periods of startup, shutdown, and malfunction were consistent with the affected source's SSMP in the semiannual (or more frequent) startup, shutdown, and malfunction report required in 40 CFR 63.10(d)(5)	
If an action taken during a startup, shutdown, or malfunction (including an action taken to correct a malfunction) is not consistent with the procedures specified in the affected source's SSMP, and the source exceeds any applicable emission limitation in the relevant emission standard, then record the actions taken for that event.	40 CFR 63.6(e)(3)(iv) regarding recordkeeping
The SSMP must be located at the plant site and must be kept updated. The Permittee must make the SSP available upon request for inspection and copying by the Administrator. When the SSMP is updated or revised, the Permittee must keep all previous versions of the SSMP for a period of 5 years. The Permittee must submit the SSMP when required, pursuant to the requirements in 40 CFR 63.6(e)(3)(v). If the affected source ceases operation or is otherwise no longer subject to the 40 CFR pt. 63, the Permittee must retain a copy of the most recent plan for 5 years from the date the source ceases operation or is no longer subject to this part and must make the plan available upon request for inspection and copying by the Administrator.	40 CFR 63.6(e)(3)(v)
To satisfy the requirements of this section to develop a SSMP, the Permittee may use the affected source's standard operating procedures (SOP) manual, or an Occupational Safety and Health Administration (OSHA) or other plan, provided the alternative plans meet all the requirements for the SSMP and are made available for inspection or submitted when requested by the Administrator.	40 CFR 63.6(e)(3)(vi)
The Permittee must make appropriate revisions to an SSMP, if the Administrator finds that the plan: (A) Does not address a startup, shutdown, or malfunction event that has occurred; (B) Fails to provide for the operation of the source (including associated air pollution control and monitoring equipment) during a startup, shutdown, or malfunction event in a manner consistent with the general duty to minimize emissions established by 40 CFR 63.6(e)(1)(i); (C) Does not provide adequate procedures for correcting malfunctioning process and/or air pollution control and monitoring equipment as quickly as practicable; or (D) Includes an event that does not meet the definition of startup, shutdown, or malfunction listed in 40 CFR 63.2.	40 CFR 63.6(e)(3)(vii)
The Permittee may periodically revise the SSMP as necessary to satisfy the requirements of 40 CFR pt. 63 or to reflect changes in equipment or procedures. Unless the Commissioner provides otherwise, the Permittee may make such revisions to the SSMP without prior approval by the Administrator or the Commissioner. Report each revision to the SSMP in the semiannual report required by 40 CFR 63.10(d)(5). If the SSMP fails to address or inadequately addresses an event that meets the characteristics of a malfunction but was not included in the SSMP at the time the Permittee developed the plan, revise the SSMP within 45 days after the event. In the revision, include detailed procedures for operating and maintaining the source during similar malfunction events and a program of corrective action for similar malfunctions of process or air pollution control and monitoring equipment. [CONTINUED BELOW]	40 CFR 63.6(e)(3)(viii)
CONTINUED In the event that the Permittee makes any revision to the SSMP which alters the scope of the activities at the source which are deemed to be a startup, shutdown, or malfunction, or otherwise modifies the applicability of any emission limit, work practice requirement, or other requirement in a standard established under this part, the revised plan shall not take effect until after the Permittee has provided a written notice describing the revision to the Commissioner.	CONTINUED 40 CFR 63.6(e)(3)(viii)
Any revisions made to the SSMP in accordance with the procedures established by 40 CFR pt. 63 shall not be deemed to constitute permit revisions under 40 CFR pt. 70 or pt. 71. None of the procedures specified by the SSMP shall be deemed to fall within the permit shield.	40 CFR 63.6(e)(3)(ix)
D. COMPLIANCE WITH NONOPACITY EMISSION STANDARDS	hdr
D.01. Applicability	hdr

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

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The applicable non-opacity emission standards set forth in 40 CFR pt. 63 shall apply at all times except during periods of startup, shutdown, and malfunction, and as otherwise specified in an applicable subpart. If a startup, shutdown, or malfunction of one portion of an affected source does not affect the ability of particular emission points within other portions of the affected source to comply with the non-opacity emission standards set forth in this 40 CFR pt. 63, then that emission point must still be required to comply with the non-opacity emission standards and other applicable requirements.	40 CFR 63.6(f)(1)
D.02. Methods for determining compliance	hdr
The Administrator will determine compliance with nonopacity emission standards in 40 CFR pt. 63 based on the results of performance tests conducted according to the procedures in 40 CFR 63.7, unless otherwise specified in an applicable subpart of 40 CFR pt. 63.	40 CFR 63.6(f)(2)(i)
The Administrator will determine compliance with nonopacity emission standards in 40 CFR pt. 63 by evaluation of the Permittee's conformance with operation and maintenance requirements, including the evaluation of monitoring data, as specified in 40 CFR 63.6(e) and applicable subparts of 40 CFR pt. 63.	40 CFR 63.6(f)(2)(ii)
If the Permittee conducts performance testing at startup to obtain an operating permit, the results of such testing may be used to demonstrate compliance with a relevant standard if-- (A) The performance test was conducted within a reasonable amount of time before an initial performance test is required to be conducted under the relevant standard; (B) The performance test was conducted under representative operating conditions for the source; (C) The performance test was conducted and the resulting data were reduced using EPA-approved test methods and procedures, as specified in 40 CFR 63.7(e); and (D) The performance test was appropriately quality-assured, as specified in 40 CFR 63.7(c).	40 CFR 63.6(f)(2)(iii)
The Administrator will determine compliance with design, equipment, work practice, or operational emission standards in 40 CFR pt. 63 by review of records, inspection of the source, and other procedures specified in applicable subparts of 40 CFR pt. 63.	40 CFR 63.6(f)(2)(iv)
The Administrator will determine compliance with design, equipment, work practice, or operational emission standards in 40 CFR pt. 63 by evaluation of a Permittee's conformance with operation and maintenance requirements, as specified in 40 CFR 63.6(e) of and applicable subparts of 40 CFR pt. 63.	40 CFR 63.6(f)(2)(v)
E. RECORDKEEPING AND REPORTING REQUIREMENTS (see also the SSMP requirements)	hdr
The Permittee shall maintain files of all information required by this part in a form suitable and readily available for expeditious inspection and review. The files should be retained for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.	40 CFR Section 63.10(b)(1); Minn. R. 7007.0800, subp. 5(C) regarding record location
The Permittee shall maintain relevant records for-- (i) The occurrence and duration of each startup, shutdown, or malfunction of operation (i.e., process equipment); (ii) The occurrence and duration of each malfunction of the required air pollution control and monitoring equipment; (iii) All required maintenance performed on the air pollution control and monitoring equipment; (iv) Actions taken during periods of startup, shutdown, and malfunction (including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation) when such actions are different from the procedures specified in the affected source's SSMP; [CONTINUED BELOW]	40 CFR 63.10(b)(2)
CONTINUED (v) All information necessary to demonstrate conformance with the affected source's SSMP when all actions taken during periods of startup, shutdown, and malfunction (including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation) are consistent with the procedures specified in the SSMP. (The information needed to demonstrate conformance with the SSMP may be recorded using a "checklist," or some other effective form of recordkeeping, in order to minimize the recordkeeping burden for conforming events);	CONTINUED 40 CFR 63.10(b)(2)
Periodic Startup, Shutdown, and Malfunction Report Submittal. The Permittee shall submit the Periodic Startup, Shutdown, and Malfunction Report 30 days after end of each calendar half-year following Permit Issuance, but reports shall only be required if a startup, shutdown, or malfunction occurred during the reporting period. The reporting shall be consistent with the requirements in 40 CFR 63.10(d)(5)(i).	40 CFR 63.10(d)(5)(i)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

03/29/04

Facility Name: Waste Management Inc -Elk River Landfill

Permit Number: 14100041 - 001

<p>Immediate Startup, Shutdown, and Malfunction Reports. Any time an action taken during a startup, shutdown, or malfunction (including actions taken to correct a malfunction) is not consistent with the procedures specified in the SSMP, contact the commissioner and report the actions taken for that event within 2 working days after commencing actions inconsistent with the plan followed by a letter within 7 working days after the end of the event. The reports shall be in accordance with 40 CFR 63.10(d)(5), unless alternative reporting has been arranged, in advance, with the Administrator.</p> <p>This report is in addition to the Breakdown Notification requirements in the Total Facility portion of this permit.</p>	<p>40 CFR 63.10(d)(5)(ii); 40 CFR Section 63.6(e)(3)(iv) regarding reporting</p>
AVAILABILITY OF INFORMATION AND CONFIDENTIALITY	hdr
<p>Confidentiality.</p> <p>(1) If a Permittee is required to submit information entitled to protection from disclosure under section 114(c) of the Act, the Permittee may submit such information separately. The requirements of section 114(c) shall apply to such information.</p> <p>(2) The contents of a title V permit shall not be entitled to protection under section 114(c) of the Act; however, information submitted as part of an application for a title V permit may be entitled to protection from disclosure.</p>	<p>40 CFR 63.15(b)</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

03/29/04

Facility Name: Waste Management Inc -Elk River Landfill

Permit Number: 14100041 - 001

**Subject Item: GP 005 Oxygen monitors -- ICE/Generators****Associated Items:** CE 006 Other

CE 007 Other

CE 008 Other

EU 004 ICE/Generator A (#4)

EU 005 ICE/Generator B (#3)

EU 006 ICE/Generator C (#2)

SV 004 Generator A (#4)

SV 005 Generator B (#3)

SV 006 Generator C (#2)

What to do	Why to do it
OPERATION	hdr
CEMS Monitor Design: Each CEMS shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.	40 CFR 60.13(e)(2)
TESTING	hdr
CEMS Certification Test Plan: due 30 days before CEMS Certification Test. This requirement applies to each monitor individually.	Minn. R. 7017.1060, subp. 1 & 2. For NSPS CEMS: 40 CFR Section 60.7(a)(5)
CEMS Certification Test Pretest Meeting: due 7 days before CEMS Certification Test. This requirement applies to each monitor individually.	Minn. R. 7017.1060, subp. 3
CEMS Certification Test Report: due 45 days after CEMS Certification Test. This requirement applies to each monitor individually.	Minn. R. 7017.1080, subp. 1, 2, & 4; 40 CFR 60.13(c)(2)
CEMS Certification Test Report - Microfiche Copy: due 105 days after CEMS Certification Test. This requirement applies to each monitor individually.	Minn. R. 7017.1080, subp. 3
MONITOR QA/QC	hdr
CEMS QA/QC: The Permittee is subject to the performance specifications listed in 40 CFR 60, Appendix B.	40 CFR Section 60.13(a)
CEMS Daily Calibration Drift (CD) Test: The CD shall be quantified and recorded at zero (low level value between 0 and 20 percent of span value) and span (50 to 100 percent of span value) gas concentrations at least once daily. The CEMS shall be adjusted whenever the CD exceeds twice the specification of 40 CFR pt. 60, Appendix B. This requirement applies to each monitor individually. The CD Test applies only on days when a given monitor is operated.	40 CFR Section 60.13(d)(1) regarding CEMS.
QA Plan: Develop and implement a written quality assurance plan that covers each CEMS. The plan shall be on site and available for inspection within 30 days after monitor certification. The plan shall contain all of the information required by 40 CFR 60, App. F, section 3. The plan shall include the manufacturer's spare parts list for each CEMS and require that those parts be kept at the facility unless the commissioner gives written approval to exclude specific spare parts from the list.	Minn. R. 7017.1170, subp. 2
CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar year following CEMS Certification Test. This requirement applies to each monitor individually. The RATA applies only in years when a given monitor is operated.	Minn. R. 7017.1170, subp. 5
Relative Accuracy Test Audit (RATA) Notification: due 30 days before CEMS Relative Accuracy Test Audit (RATA) .	Minn. R. 7017.1180, subp. 2
Relative Accuracy Test Audit (RATA) Results Summary: due 30 days after end of each calendar quarter in which the CEMS RATA was conducted.	Minn. R. 7017.1180, subp. 3

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

03/29/04

Facility Name: Waste Management Inc -Elk River Landfill

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<p>Cylinder Gas Audit (CGA): due before end of each calendar half-year following CEMS certification test. A CGA is not required during any calendar half-year in which a RATA was performed.</p> <p>The CGAs shall be conducted at least three months apart but no more than eight months apart. A CGA shall be conducted according to the procedures in Code of Federal Regulations, title 40, part 60, appendix F, section 5.1.2. If the monitored emission unit was operated for less than 24 hours during the calendar half year, a CGA is not required on that CEMS during that calendar half year.</p> <p>This requirement applies to each monitor individually. The CGA applies only in the calendar half year when a given monitor is operated.</p>	Minn. R. 7017.1170, subp. 4
Cylinder Gas Audit (CGA) Results Summary: due 30 days after end of each calendar quarter following Cylinder Gas Audit (CGA).	Minn. R. 7017.1180, subp.1
RECORDKEEPING	hdr
Recordkeeping: The owner or operator must retain records of all CEMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source.	Minn. R. 7007.0800, subp. 5. For NSPS facilities: 40 CFR Section 60.7(f)
<p>CONTINUED</p> <p>(1) This requirement applies where the CEMS installed is automated, and where the calculated data averages do not exclude periods of CEMS breakdown or malfunction. An automated CEMS records and reduces the measured data to the form of the pollutant emission standard through the use of a computerized data acquisition system. In lieu of maintaining a file of all CEMS subhourly measurements as required under 40 CFR 60.7(f), retain the most recent consecutive three averaging periods of subhourly measurements and a file that contains a hard copy of the data acquisition system algorithm used to reduce the measured data into the reportable form of the standard.</p>	<p>CONTINUED</p> <p>40 CFR 60.7(f)</p>
<p>CONTINUED</p> <p>(2) This requirement applies where the measured data is manually reduced to obtain the reportable form of the standard, and where the calculated data averages do not exclude periods of CEMS breakdown or malfunction. In lieu of maintaining a file of all CEMS subhourly measurements as required under 40 CFR 60.7(f), retain all subhourly measurements for the most recent reporting period. The subhourly measurements shall be retained for 120 days from the date of the most recent summary or excess emission report submitted to the Administrator.</p>	<p>CONTINUED</p> <p>40 CFR 60.7(f)</p>
<p>Monitoring Data: Reduce all oxygen monitoring data to 1-hour averages, in accordance with 40 CFR 60.13(h). 1-hour averages shall be computed from four or more data points equally spaced over each 1-hour period.</p> <p>This requirement applies to each monitor individually.</p>	40 CFR 60.13(h) regarding continuous monitoring systems other than COMS

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

03/29/04

Facility Name: Waste Management Inc -Elk River Landfill

Permit Number: 14100041 - 001

**Subject Item:** EU 007 Landfill

**Associated Items:** CE 005 Flaring  
CE 006 Other  
CE 007 Other  
CE 008 Other  
GP 004 Activities subject to MACT (40 CFR pt. 63)  
SV 003 Flare 2  
SV 004 Generator A (#4)  
SV 005 Generator B (#3)  
SV 006 Generator C (#2)

What to do	Why to do it
A. STANDARDS FOR AIR EMISSIONS	hdr
A.01. Design and installation	hdr
An active collection and control system that captures the gas generated within the landfill as required by 40 CFR 60.752(b)(2)(ii)(A) and 40 CFR 60.752(b)(2)(iii) shall be installed by August 1, 2003.	40 CFR 60.752(b)(2)(ii)
CONTINUED: The active collection system shall: (1) Be designed to handle the maximum expected gas flow rate from the entire area of the landfill that warrants control over the intended use period of the gas control or treatment system equipment; (2) Collect gas from each area, cell, or group of cells in the landfill in which the initial solid waste has been placed for a period of: (i) 5 years or more if active; or (ii) 2 years or more if closed or at final grade. (3) Collect gas at a sufficient extraction rate; (4) Be designed to minimize off-site migration of subsurface gas.	CONTINUED: 40 CFR 60.752(b)(2)(ii)
Notify the commissioner in writing when the landfill gas flow of the collected landfill gases first exceeds 3275 cubic feet per minute (30-day average). The notification shall state that the reason for the notification is to accommodate the increasing quantity of landfill gas generated.	40 CFR 60.752(b)(2)(iii)
Submit permit application within 30 days after the landfill gas flow of the collected landfill gases first exceeds 3275 cubic feet per minute (30-day average), unless an alternative for managing landfill gas has been approved by the Commissioner. The Permittee shall apply for an amendment to increase in control equipment capacity to accommodate additional landfill gas flow.	CONTINUED 40 CFR 60.752(b)(2)(iii)
A.02. Emission limits	CONTINUED 40 CFR 60.752(b)(2)(iii)
Route all the collected gas to an enclosed control system designed and operated to either reduce NMOC by 98 weight percent or reduce the outlet NMOC concentration to less than 20 parts per million by volume, dry basis as hexane at 3 percent oxygen.	CONTINUED 40 CFR 60.752(b)(2)(iii)
A.03. System operation	CONTINUED 40 CFR 60.752(b)(2)(iii)
The reduction efficiency or parts per million by volume are established by an initial performance testing or subsequent performance testing, using the test methods specified in 40 CFR 60.754(d). [see TEST METHODS AND PROCEDURES] If the Permittee chooses to measure the reduction efficiency described above, inlet gas shall be sampled immediately upstream of the control device to minimize any effects of dilution due to air infiltration.	CONTINUED 40 CFR 60.752(b)(2)(iii)
The control device shall be operated within the parameter ranges established during the initial or most recent performance test. The operating parameters to be monitored are specified in 40 CFR 60.756.	
Operate the collection and control device installed to comply with 40 CFR 60, Subpart WWW, in accordance with the provisions of 40 CFR 60.753 [Operational standards for collection and control systems], 40 CFR 60.755 [Compliance provisions] and 40 CFR 60.756 [Monitoring of operations].	40 CFR 60.752(b)(2)(iv)
A.04. System retirement	hdr



**TABLE A: LIMITS AND OTHER REQUIREMENTS**

03/29/04

Facility Name: Waste Management Inc -Elk River Landfill

Permit Number: 14100041 - 001

The collection and control system may be capped or removed provided that all the conditions of paragraphs (A), (B), and (C) below are met: (A) The landfill shall be a closed landfill as defined in 40 CFR 60.751. A closure report shall be submitted as provided in 40 CFR 60.757(d); (B) The collection and control system shall have been in operation a minimum of 15 years; and (C) Following the procedures specified in 40 CFR 60.754(b) [NMOC emission calculations], the calculated NMOC gas produced by the landfill shall be less than 50 megagrams per year on three successive test dates. The test dates shall be no less than 90 days apart, and no more than 180 days apart.	40 CFR 60.752(b)(2)(v)
When the MSW landfill is closed, the Permittee is no longer subject to the requirement to maintain an operating permit under 40 CFR pts. 70 or 71 for the landfill if the landfill is not otherwise subject to the requirements of either part 70 or 71 and if the Permittee meets the conditions for control system removal specified in 40 CFR 60.752(b)(2)(v).	40 CFR 60.752(d)
The Permittee is no longer required to comply with the requirements of 40 CFR pt. 63, subp. AAAAA when the Permittee is no longer required to apply controls as specified in 40 CFR 60.752(b)(2)(v).	40 CFR 63.1950
<b>B. OPERATIONAL STANDARDS FOR COLLECTION AND CONTROL SYSTEMS</b>	hdr
(see additional limits and requirements under "G. RECORDKEEPING")	hdr
Operate the collection system such that gas is collected from each area, cell, or group of cells in the MSW landfill in which solid waste has been in place for: (1) 5 years or more if active; or (2) 2 years or more if closed or at final grade	40 CFR 60.753(a)
Operate the system such that all collected gases are vented to a control system designed and operated in compliance with 40 CFR. 60.752(b)(2)(iii) [Control equipment design]. In the event the collection or control system is inoperable, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within 1 hour.	40 CFR 60.753(e)
Operate the control or treatment system at all times when the collected gas is routed to the system.	40 CFR 60.753(f)
<b>B.01. Operational Limits for the Collection System</b>	hdr
If monitoring demonstrates that the operational requirements below for pressure, temperature, oxygen/nitrogen, or surface methane are not met, corrective action shall be taken as specified in 60 CFR 60.755(a)(3) through (5) or 40 CFR 60.755(c). If corrective actions are taken as specified in 40 CFR 60.755, the monitored exceedance is not a violation of the operational requirements of 40 CFR 60.753.	40 CFR 60.753(g)
The Permittee may establish a higher operating temperature, nitrogen, or oxygen value at a particular well. A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens.	40 CFR 60.753(c) regarding changes to oxygen and temperature limits
<b>B.01.a. Pressure at wellhead</b>	hdr
Operate the collection system with negative pressure at each wellhead except under the following conditions: (1) A fire or increased well temperature. The owner or operator shall record instances when positive pressure occurs in efforts to avoid a fire. These records shall be submitted with the annual reports as provided in 40 CFR. 60.757(f)(1); (2) <reserved>; (3) A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows. All design changes shall be submitted for approval.	40 CFR 60.753(b)
<b>B.01.b. Temperature at wellhead</b>	hdr
Temperature: less than or equal to 55 degrees C (131 degrees F) for each interior wellhead in the collection system, unless a higher operating temperature value at a particular well has been approved. Existing approvals are listed below.	40 CFR 60.753(c) regarding temperature limits
Temperature: less than or equal to 140 degrees F for Well 15R and Well 16	CONTINUED 40 CFR 60.753(c) regarding temperature limits
Temperature: less than or equal to 150 degrees F for Well 21R	CONTINUED 40 CFR 60.753(c) regarding temperature limits
<b>B.01.c. Oxygen/nitrogen at wellhead</b>	hdr
For each interior wellhead in the collection system,  Oxygen: less than 5 percent or Nitrogen: less than 20 percent	40 CFR 60.753(c) regarding oxygen/nitrogen limits

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

03/29/04

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For each interior wellhead, the nitrogen level shall be determined using Method 3C	40 CFR 60.753(c) regarding nitrogen monitoring
The oxygen shall be determined by an oxygen meter using Method 3A or 3C except that: (i) The span shall be set so that the regulatory limit is between 20 and 50 percent of the span; (ii) A data recorder is not required; (iii) Only two calibration gases are required, a zero and span, and ambient air may be used as the span; (iv) A calibration error check is not required; (v) The allowable sample bias, zero drift, and calibration drift are plus-or-minus 10 percent.	40 CFR 60.753(c) regarding oxygen monitoring
B.01.d. Surface methane	hdr
Operate the collection system so that the methane concentration is less than 500 parts per million above background at the surface of the landfill.	40 CFR 60.753(d) regarding the methane limit
B.02. Evaluating surface methane	hdr
To determine if the surface methane level is exceeded, the Permittee shall conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. The Permittee may establish an alternative traversing pattern that ensures equivalent coverage. A surface monitoring design plan shall include a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30 meter intervals.	40 CFR 60.753(d)
CONTINUED The Permittee shall conduct a visual inspection of the dangerous areas excluded from the surface scan route.	CONTINUED 40 CFR 60.753(d)
CONTINUED If, at any time, evidence of leaking landfill gas is present (e.g., hissing sounds, vegetative damage, leachate outbreaks, odors), the Permittee shall monitor surface emissions in that area to determine if an exceedance of the methane surface emission limit is occurring.	CONTINUED 40 CFR 60.753(d); Minn. R. 7007.0800, subp. 2
CONTINUED The Permittee may exclude the following from the surface testing pattern: - roads; - the active area; - truck traffic areas; - slopes steeper than or equal to 4:1; - areas with ongoing construction or reconstruction of the gas collection system; - Construction and Demolition Cells D1 and D2	CONTINUED 40 CFR 60.753(d); 40 CFR 60.752(b)(2)(i) regarding alternatives
C. TEST METHODS AND PROCEDURES	hdr
After the installation of a collection and control system in compliance with 40 CFR 60.755, the Permittee shall calculate the NMOC emission rate for purposes of determining when the system can be removed as provided in 40 CFR 60.752(b)(2)(v) by following the procedures of 40 CFR 60.754(b).	40 CFR 60.754(b)
When calculating emissions for PSD purposes, the Permittee shall estimate the NMOC emission rate for comparison to the PSD major source and significance levels in 40 CFR 51.166 or 40 CFR 52.21 using AP-42 or other approved measurement procedures.	40 CFR 60.754(c)
C.01. Performance Testing	hdr
(See also Subject Item "GP 002 ICE/Generators" in Table A for additional applicable performance test requirements for these devices regulated as emission units.)	hdr
Performance Test: due before end of each 60 months starting 05/31/2003, to measure NMOC emissions from an ICE/generator using the test methods specified in 40 CFR 60.754(d). The first test is due 5/31/2008, then every 60 months thereafter.  This requirement applies to each ICE/generator individually.  For additional applicable performance test requirements, see "General Performance Test Requirements" in Table A, Subject Item "Total Facility".	Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 03/08/2001, to measure NMOC emissions from the enclosed flare using the test methods specified in 40 CFR 60.754(d). The first test is due 03/08/06, then every 60 months thereafter.  For additional applicable performance test requirements, see "General Performance Test Requirements" in Table A, Subject Item "Total Facility".	Minn. R. 7017.2020, subp. 1

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

03/29/04

Facility Name: Waste Management Inc -Elk River Landfill

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<p>Initial Performance Test: due 60 days after achieving maximum capacity, but not later than 180 days after initial startup of the enclosed flare, to measure NMOC emissions from the enclosed flare using the test methods specified in 40 CFR 60.754(d).</p> <p>This requirement applies to the enclosed flare following changes that increase the flare's capacity to combust landfill gas.</p> <p>For additional applicable performance test requirements, see "General Performance Test Requirements" in Table A, Subject Item "Total Facility".</p> <p>"Initial performance test" means the test required under 40 CFR 60.8.</p>	<p>40 CFR 60.8(a); 40 CFR 60.752(b)(iii) regarding testing; Minn. R. 7017.2001, subp. 1</p>
<p>For the performance tests required above, Method 25, 25C, or Method 18 must be used to determine compliance with the 98 weight-percent efficiency or the 20 ppmv outlet concentration level. Method 3 or 3A shall be used to determine oxygen for correcting the NMOC concentration as hexane to 3 percent. In cases where the outlet concentration is less than 50 ppm NMOC as carbon (8 ppm NMOC as hexane), Method 25A should be used in place of Method 25. If using Method 18, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42).</p> <p>"Method" means the methods contained in 40 CFR 60, Appendix A.</p>	<p>40 CFR 60.754(d)</p>
<p>The following equation shall be used to calculate efficiency:</p> $\text{Control Efficiency} = (\text{NMOCin} - \text{NMOCout}) / (\text{NMOCin})$ <p>where,</p> <p>NMOCin = mass of NMOC entering control device NMOCout = mass of NMOC exiting control device</p>	<p>CONTINUED 40 CFR 60.754(d)</p>
<p>Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test. Emissions in excess of the level of the applicable emission limit during periods of startup, shutdown, and malfunction shall not be considered a violation of the applicable emission limit.</p>	<p>40 CFR 60.8(c)</p>
<p>Comply with the performance testing requirements of 40 CFR 60.8(d) [Notifications], 40 CFR 60.8(e) [Site preparation], and 40 CFR 60.8(f) [Sampling runs]</p>	<p>40 CFR 60.8(d); 40 CFR 60.8(e); 40 CFR 60.8(f)</p>
<p>D. COMPLIANCE PROVISIONS</p>	<p>hdr</p>
<p>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).</p>	<p>40 CFR 60.11(d)</p>
<p>D.01. Well parameters</p>	<p>hdr</p>
<p>For the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with 40 CFR 60.752(b)(2)(ii)(A)(3) [Collect at a sufficient rate], the Permittee shall measure gauge pressure in the gas collection header at each individual well, monthly.</p>	<p>40 CFR 60.755(a)(3) regarding requirement to monitor</p>
<p>If a positive pressure exists in the gas collection header at an individual well, action shall be initiated to correct the exceedance within 5 calendar days, except for the conditions allowed by this permit. If negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial measurement of positive pressure. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted for approval.</p> <p>The Permittee is not required to expand the system as required above during the first 180 days after gas collection system startup.</p>	<p>40 CFR 60.755(a)(3) regarding response to positive pressure; 40 CFR 60.755(a)(4)</p>
<p>For the purpose of identifying whether excess air infiltration into the landfill is occurring, the Permittee shall monitor each well monthly for temperature and nitrogen or oxygen as provided in 40 CFR 60.753(c) [Wellhead monitoring].</p>	<p>40 CFR 60.755(a)(5) regarding requirement to monitor</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

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Facility Name: Waste Management Inc -Elk River Landfill

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If a well exceeds operating parameter limits for temperature or nitrogen or oxygen, action shall be initiated to correct the exceedance within 5 calendar days. If correction of the exceedance cannot be achieved within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted for approval.	40 CFR 60.755(a)(5) regarding response to exceedances
For purposes of compliance with 40 CFR 60.753(a) [Operate to collect all gas], the Permittee shall place each well or design component as specified in the approved design plan as provided in 40 CFR 60.752(b)(2)(i) [Design submittal]. Each well shall be installed no later than 60 days after the date on which the initial solid waste has been in place for a period of: (1) 5 years or more if active; or (2) 2 years or more if closed or at final grade.	40 CFR 60.755(b)
D.02. Surface methane	hdr
D.02.a. Surface monitoring methodology	hdr
After installation of the collection system, the Permittee shall monitor surface concentrations of methane along the entire perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals (or a site-specific established spacing) for each collection area on a quarterly** basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in 40 CFR 60.755(d).  ** Or in accordance with the timetable established in the approved collection and control system design plan required by 40 CFR 60.752(b)(2)(i).	40 CFR 60.755(c)(1)
The background concentration shall be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter wells.	40 CFR 60.755(c)(2)
Surface emission monitoring shall be performed in accordance with section 4.3.1 of Method 21 of 40 CFR 60, Appendix A, except that the probe inlet shall be placed within 5 to 10 centimeters of the ground. Monitoring shall be performed during typical meteorological conditions.	40 CFR 60.755(c)(3)
D.02.b. Excess methane detection	hdr
For any reading of 500 parts per million or more above background at any location, actions specified in item (i) through (v) below shall be taken. As long as the specified actions are taken, the exceedance is not a violation of the operational requirements of 40 CFR. 60.753(d) [Surface methane limit].	40 CFR 60.755(c)(4)
(i) The location of each monitored exceedance shall be marked and the location recorded.	CONTINUED 40 CFR 60.755(c)(4)
(ii) Cover maintenance or adjustments to the vacuum of the adjacent wells to increase the gas collection in the vicinity of each exceedance shall be made and then the location shall be re-monitored. The Permittee will log the range of days available for the surface monitoring, pursuant to 40 CFR 60.755(c)(1) or 40 CFR 60.756(f); the scheduled date of the surface monitoring; a 5-day weather forecast on the scheduled date, together with a 5-day weather forecast from all earlier days within the range of days available; the current weather conditions; and the cap conditions. The log will be kept with the NSPS files.	CONTINUED 40 CFR 60.755(c)(4); 40 CFR 60.753(d) regarding alternatives to timelines
(ii) CONTINUED The location shall be re-monitored within 10 calendar days of detecting the exceedance, or the log will include a justification of why the additional time for repairs is needed, and the date the repairs are made will be documented. The remonitoring of the cover after repairs are made will occur as quickly as possible. In no instance will the delay in remonitoring exceed 30 days.	CONTINUED 40 CFR 60.755(c)(4); 40 CFR 60.753(d) regarding alternatives to timelines
(iii) If the re-monitoring of the location shows a second exceedance, additional corrective action shall be taken and the location shall be monitored again within 10 days of the second exceedance. If the re-monitoring shows a third exceedance for the same location, the action specified in 40 CFR 40.755(c)(4)(v), and no further monitoring of that location is required until the action specified in 40 CFR 40.755(c)(4)(v) has been taken.	CONTINUED 40 CFR 60.755(c)(4)
(iv) Any location that initially showed an exceedance but has a methane concentration less than 500 ppm methane above background at the 10-day re-monitoring specified in 40 CFR 60.755(c)(4) (ii) or (iii) shall be re-monitored 1 month (no fewer than 20 days but no more than 30 days) from the initial exceedance. If the 1-month remonitoring shows a concentration less than 500 parts per million above background, no further monitoring of that location is required until the next quarterly monitoring period. If the 1-month remonitoring shows an exceedance, the actions specified in 40 CFR 60.755(c)(4) (iii) or (v) shall be taken.	CONTINUED 40 CFR 60.755(c)(4); 40 CFR 60.752(b)(2)(i) regarding alternatives to timelines

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(v) For any location where monitored methane concentration equals or exceeds 500 parts per million above background three times within a quarterly period, a new well or other collection device shall be installed within 120 calendar days of the initial exceedance. An alternative remedy to the exceedance, such as upgrading the blower, header pipes or control device, and a corresponding timeline for installation may be submitted for approval.	CONTINUED 40 CFR 60.755(c)(4)
D.02.c. Monthly surface monitoring program	hdr
The Permittee shall implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis.	40 CFR 60.755(c)(5)
D.02.d. Analyzer requirements	hdr
The portable analyzer shall meet the instrument specifications provided in section 3 of Method 21 of appendix A of this part, except that "methane" shall replace all references to VOC.	40 CFR 60.755(d)(1)
The calibration gas shall be methane, diluted to a nominal concentration of 500 parts per million in air.	40 CFR 60.755(d)(2)
To meet the performance evaluation requirements in section 3.1.3 of Method 21 of 40 CFR 60, Appendix A, the instrument evaluation procedures of section 4.4 of Method 21 of 40 CFR 60, Appendix A shall be used.	40 CFR 60.755(d)(3)
The calibration procedures provided in section 4.2 of Method 21 of 40 CFR 60, Appendix A shall be followed immediately before commencing a surface monitoring survey.	40 CFR 60.755(d)(4)
D.03. Applicability	hdr
The provisions of this permit applicable pursuant to 40 CFR, Subpart WWW, apply at all times, except during periods of start-up, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction shall not exceed 5 days for collection systems and shall not exceed 1 hour for treatment or control devices.	40 CFR 60.755(e)
D.04. Compliance and Deviations	hdr
D.04.a. Compliance with 40 CFR pt. 60, subp. WWW, including performance testing, monitoring of the collection system, continuous parameter monitoring, and other credible evidence, is a requirement for compliance with 40 CFR pt. 63, subp. AAAA.	40 CFR 63.1960
D.04.b. Compliance demonstration with the operating conditions for control systems includes continuous parameter monitoring data, collected under 40 CFR 60.756(b)(1) [combustor temperature monitor (and oxygen monitor)], (c)(1)[open flare temperature monitor], and (d) [alternative combustion].	CONTINUED 40 CFR 63.1960
D.04.c. If a deviation occurs, the Permittee has failed to meet the control device operating conditions described in 40 CFR pt. 63, subp. AAAA and have deviated from the requirements of 40 CFR pt. 63, subp. AAAA.	CONTINUED 40 CFR 63.1960
D.04.d. Develop and implement a written startup, shutdown, and malfunction plan (SSMP) according to the provisions in 40 CFR 63.6(e)(3). A copy of the SSMP must be maintained on site. Failure to write, implement, or maintain a copy of the SSMP is a deviation.  See also Subject Items "GP 004 Activities subject to MACT (40 CFR pt. 63)" in Table A for additional SSMP requirements.	CONTINUED 40 CFR 63.1960
E. MONITORING OF OPERATIONS	hdr
E.01. Well monitoring	hdr
Install a sampling port and a thermometer, other temperature measuring device, or an access port for temperature measurements at each wellhead and: (1) Measure the gauge pressure in the gas collection header on a monthly basis as provided in 40 CFR 60.755(a)(3); and (2) Monitor nitrogen or oxygen concentration in the landfill gas on a monthly basis as provided in 40 CFR 60.755(a)(5); and (3) Monitor temperature of the landfill gas on a monthly basis as provided in 40 CFR 60.755(a)(5).	40 CFR 60.756(a)
E.02. Control device monitoring	hdr

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E.02.a. For each enclosed combustor (including enclosed flares and internal combustion engines), calibrate, maintain, and operate according to the manufacturer's specifications, a device that records flow to or bypass of the control device. The Permittee shall either: (i) Install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes; or (ii) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.	40 CFR 60.756(b)(2)
E.02.b. Combustion monitoring  For the enclosed flare, the Permittee shall comply with the requirements in E.02.b.(1).  For the ICE/Generators, the Permittee shall comply with the requirements in E.02.b.(2), or the Permittee may choose the alternative in E.02.b.(3).	40 CFR 60.752(b)(2)(i) regarding alternatives
E.02.b.(1). Flare combustion temperature monitoring	hdr
For each enclosed flare, calibrate, maintain, and operate according to the manufacturer's specifications, a temperature monitoring device equipped with a continuous recorder and having a minimum accuracy of plus-or-minus 1 percent of the temperature being measured expressed in degrees Celsius (or degrees Fahrenheit) or plus-or-minus 0.5 degrees Celsius (0.9 degrees Fahrenheit) whichever is greater.  (For the purposes of this requirement, "continuous" means "at least once every 15 minutes".)	40 CFR 60.756(b)(1)
The flare temperature monitoring devices and the gas flow rate measuring devices shall be installed and operational prior to conducting performance tests under 40 CFR Sec. 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 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)
Install the temperature monitoring devices and the gas flow rate measuring devices such that representative measurements of process parameters from the affected facility are obtained.	40 CFR 60.13(f)
E.02.b.(2). ICE/Generator combustion temperature monitoring	hdr
For each ICE/Generator, calibrate, maintain, and operate according to the manufacturer's specifications, temperature monitoring devices equipped with a continuous recorder and having a minimum accuracy of plus-or-minus 1 percent of the temperature being measured expressed in degrees Celsius (or degrees Fahrenheit) or plus-or-minus 0.5 degrees Celsius (0.9 degrees Fahrenheit) whichever is greater.  (For the purposes of this requirement, "continuous" means "at least once every 15 minutes".)	40 CFR 60.756(b)(1); 40 CFR 60.13(e)(2) regarding meaning of "continuous"
Location of Temperature Monitoring. For each engine, the Permittee shall monitor and record combustion temperature either by method (1) or (2) below.  (1) The Permittee shall monitor and record: (a) left bank exhaust temperatures at the exhaust outlet of the turbo at least once every 15 minutes. One-hour averages shall be calculated from these readings in accordance with 40 CFR 60.13(h). (b) right bank exhaust temperatures at the exhaust outlet of the turbo at least once every 15 minutes. One-hour averages shall be calculated from these readings in accordance with 40 CFR 60.13(h).  (2) The Permittee shall monitor and record the average of the individual cylinder exhaust port temperatures at least once every 15 minutes. One-hour averages shall be calculated from these readings in accordance with 40 CFR 60.13(h).	40 CFR 60.758(b)(2)(i) regarding monitor location; 40 CFR 60.758(c)(1)(i) regarding monitor location; 40 CFR 60.752(b)(2)(i) regarding monitoring alternatives
The ICE/Generator temperature monitoring devices and the gas flow rate measuring devices shall be installed and operational prior to conducting performance tests under 40 CFR Sec. 60.8.	40 CFR 60.13(b)

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Continuous Operation: Except for continuous monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments, all continuous monitoring systems (except the exhaust oxygen monitors) 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)
Install the temperature monitoring devices and the gas flow rate measuring devices such that representative measurements of process parameters from the affected facility are obtained.	(4) 40 CFR 60.13(f)
E.02.b.(3). ICE/Generator exhaust oxygen monitoring alternative	hdr
For each ICE/Generator, calibrate, maintain, and operate according to the manufacturer's specifications, an oxygen CEM equipped with a continuous recorder to measure oxygen emissions from the ICE/Generator.  (For the purposes of this requirement, "continuous" means "at least once every 15 minutes".)	40 CFR 60.756(b)(1); 40 CFR 60.752(b)(2)(i) regarding Approved Alternative Item 7
The oxygen CEMS and the gas flow rate measuring devices shall be installed and operational prior to conducting performance tests under 40 CFR Sec. 60.8.	40 CFR 60.13(b); 40 CFR 60.752(b)(2)(i) regarding Approved Alternative Item 9
Continuous Operation: Except for continuous monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments, all continuous monitoring systems (except the combustion temperature monitor) 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); 40 CFR 60.752(b)(2)(i) regarding Approved Alternative Item 7
Install the oxygen CEM and the gas flow rate measuring devices such that representative measurements of process parameters from the affected facility are obtained.	40 CFR 60.13(f); 40 CFR 60.752(b)(2)(i) regarding alternatives
Install and maintain an hour meter on each ICE/Generator.	40 CFR 60.756(b)(1); 40 CFR 60.752(b)(2)(i) regarding Approved Alternative Item 1
Install and maintain an automatic fail-safe block valve that will stop the flow of gas in the event of an engine failure on each ICE/Generator.	40 CFR 60.756(b)(1); 40 CFR 60.752(b)(2)(i) regarding Approved Alternative Item 2
Determine the oxygen content in the exhaust gas at the fuel-to-air ratio(s) that a given ICE/Generator operated at during each performance test required by 40 CFR 60.752(b)(2)(iii)(B) .	40 CFR 60.752(b)(2)(i) regarding Approved Alternative Item 4
The performance tests required by 40 CFR 60.752(b)(2)(iii)(B) shall be performed at or near each ICE/Generator's maximum load.	40 CFR 60.752(b)(2)(i) regarding Approved Alternative Item 5
Record the fuel-to-air ratio setting during the performance test required by 40 CFR 60.752(b)(2)(iii)(B) for each ICE/Generator and keep a record of this fuel-to-air setting for the life of the control equipment or until a subsequent performance test is performed.  If the Permittee chooses to operate an ICE/Generator between a maximum and minimum fuel-to-air ratio, the Permittee shall perform two NMOC performance tests on that ICE/Generator, one at a high fuel-to-air ratio and one at a low fuel-to-air ratio.	40 CFR 60.756(b)(1); 40 CFR 60.752(b)(2)(i) regarding Approved Alternative Item 3
Upon the commissioner's written notice that an ICE/Generator has demonstrated compliance under the conditions of the performance test, the Permittee shall operate the ICE/Generator at the same fuel-to-air ratio (or between the fuel-to-air ratios) that the engine operated at during that performance test.	40 CFR 60.752(b)(2)(i) regarding Approved Alternative Item 6
E.03. Surface methane monitoring	hdr
Monitor surface concentrations of methane according to the instrument specifications and procedures provided in 40 CFR 60.755(d) [Surface monitoring instrumentation]. Any closed landfill that has no monitored exceedances of the operational standard in three consecutive quarterly monitoring periods may skip to annual monitoring. Any methane reading of 500 ppm or more above background detected during the annual monitoring returns the frequency for that landfill to quarterly monitoring.	40 CFR 60.756(f)
F. REPORTING REQUIREMENTS	hdr
Included in the Semiannual Deviations Report shall be all deviations (as defined in 40 CFR pt. 63, subp. AAAA) that occurred during the 6-month reporting period. (Forms DRF-1 and DRF-2 are subsets of this report.) Deviations for continuous emission monitors or numerical continuous parameter monitors must be determined using a 3 hour monitoring block average.	40 CFR 63.1955(c) regarding report submittals
F.01. System retirement	hdr

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The Permittee shall submit a closure report within 30 days of waste acceptance cessation. Additional information may be requested as may be necessary to verify that permanent closure has taken place in accordance with the requirements of 40 CFR 258.60. If a closure report has been submitted, no additional wastes may be placed into the landfill without filing a notification of modification as described under 40 CFR 60.7(a)(4).	40 CFR 60.757(d)
<p>Submittal: due 30 days before Equipment Removal and/or Dismantlement. The Permittee shall submit an equipment removal report 30 days prior to removal or cessation of operation of the control equipment.</p> <p>(1) The equipment removal report shall contain all of the following items:</p> <p>(i) A copy of the closure report submitted in accordance with 40 CFR 60.757(d);</p> <p>(ii) A copy of the initial performance test report demonstrating that the 15 year minimum control period has expired; and</p> <p>(iii) Dated copies of three successive NMOC emission rate reports demonstrating that the landfill is no longer producing 50 megagrams or greater of NMOC per year.</p> <p>(2) Additional information may be requested as may be necessary to verify that all of the conditions for removal in 40 CFR 60.752(b)(2)(v) [Removal criteria] have been met.</p>	40 CFR 60.757(e)
F.02. Semi-annual report	hdr
<p>The Permittee shall submit semi-annual reports of the recorded information in (1) through (7) below. The initial semi-annual report shall be submitted within 180 days of installation and start-up of the collection and control system, and shall include the initial performance test report required under 40 CFR 60.8. For enclosed combustion devices and flares, reportable exceedances are defined under 40 CFR 60.758(c).</p> <p>In addition, the following are reportable exceedances:</p> <ul style="list-style-type: none"> <li>- It shall be considered a reportable exceedance if the engine's air-to-fuel ratio is not set as required by this permit.</li> <li>- It shall be considered a reportable exceedance if the ICE/Generator oxygen content in the exhaust gas is not maintained as required by this permit.</li> </ul>	40 CFR 60.757(f); 40 CFR 63.1980(a); 40 CFR 60.752(b)(2)(i) regarding Approved Alternative Items 6, 7, and 8
<p>CONTINUED</p> <p>(1) Value and length of time for exceedance of applicable parameters monitored under 40 CFR 60.756(a) [Wellhead temperature and nitrogen/oxygen] and 40 CFR 60.756(b) [Enclosed combustion temperature (or oxygen) and gas flow].</p> <p>(2) Description and duration of all periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass flow as specified under Sec. 60.756 [Monitoring of Operations].</p> <p>(3) Description and duration of all periods when the control device was not operating for a period exceeding 1 hour and length of time the control device was not operating.</p>	<p>CONTINUED</p> <p>40 CFR 60.757(f); 40 CFR 60.752(b)(2)(i) regarding Approved Alternative Items 6, 7, and 8</p>
<p>CONTINUED</p> <p>(4) All periods when the collection system was not operating in excess of 5 days.</p> <p>(5) The location of each exceedance of the 500 parts per million methane concentration as provided in Sec. 60.753(d) [Surface monitoring] and the concentration recorded at each location for which an exceedance was recorded in the previous month.</p> <p>(6) The date of installation and the location of each well or collection system expansion added pursuant to 40 CFR 60.755(a)(3) [Additional well to achieve negative pressure], 40 CFR 60.755(b) [Design plan installation timetable], and 40 CFR 60.755(c)(4) [Surface leak corrections].</p> <p>(7) Value and length of time of all periods when an ICE/Generator was not operated at an allowable fuel-to-air ratio.</p>	<p>CONTINUED</p> <p>40 CFR 60.757(f)</p>
F.03. Initial Performance Test Submittals	hdr
<p>Submittal: due 45 days after Initial Performance Test, to include the following gas collection system information with the initial performance test report required under Sec. 60.8. Update the information as needed, and include as-builts. If the information is unchanged from that submitted in the design plan, indicate so.</p> <p>(1) A diagram of the collection system showing collection system positioning including all wells, horizontal collectors, surface collectors, or other gas extraction devices, including the locations of any areas excluded from collection and the proposed sites for the future collection system expansion;</p> <p>(2) The data upon which the sufficient density of wells, horizontal collectors, surface collectors, or other gas extraction devices and the gas mover equipment sizing are based;</p>	40 CFR 60.757(g); Minn. R. 7017.2035, subp. 2



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<p>CONTINUED</p> <p>(3) The documentation of the presence of asbestos or nondegradable material for each area from which collection wells have been excluded based on the presence of asbestos or nondegradable material;</p> <p>(4) The sum of the gas generation flow rates for all areas from which collection wells have been excluded based on nonproductivity and the calculations of gas generation flow rate for each excluded area; and</p> <p>(5) The provisions for increasing gas mover equipment capacity with increased gas generation flow rate, if the present gas mover equipment is inadequate to move the maximum flow rate expected over the life of the landfill; and</p> <p>(6) The provisions for the control of off-site migration.</p>	<p>CONTINUED</p> <p>40 CFR 60.757(g)</p>
<p>G. RECORDKEEPING</p>	<p>hdr</p>
<p>G.01. Recordkeeping under 40 CFR pt. 60</p>	<p>hdr</p>
<p>G.01.a. General Recordkeeping</p>	<p>hdr</p>
<p>Recordkeeping: Maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the facility including; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.</p>	<p>40 CFR 60.7(b); Minn. R. 7019.0100, subp. 1</p>
<p>Recordkeeping: Maintain a file of all measurements, maintenance, reports and records required under 40 CFR 60.7(f) for at least five years.</p>	<p>40 CFR Section 60.7(f)</p>
<p>Monitoring Data: Reduce all temperature monitoring device, exhaust oxygen CEM, and gas flow rate measuring device data to 1-hour averages, in accordance with 40 CFR 60.13(h). 1-hour averages shall be computed from four or more data points equally spaced over each 1-hour period.</p>	<p>40 CFR 60.13(h) regarding continuous monitoring systems other than COMS</p>
<p>The Permittee shall keep for at least 5 years up-to-date, readily accessible, on-site records of the design capacity report which triggered 40 CFR 60.752(b), the current amount of solid waste in-place, and the year-by-year waste acceptance rate. Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable.</p>	<p>40 CFR 60.758(a)</p>
<p>The Permittee shall keep for the life of the collection system an up-to-date, readily accessible plot map showing each existing and planned collector in the system and providing a unique identification location label for each collector.</p> <p>(1) The Permittee shall keep up-to-date, readily accessible records of the installation date and location of all newly installed collectors as specified under 40 CFR 60.755(b) [Design plan installation timetable].</p> <p>(2) The Permittee shall keep readily accessible documentation of the nature, date of deposition, amount, and location of asbestos-containing or nondegradable waste excluded from collection as provided in 40 CFR. 60.759(a)(3)(i) [Exclusion for nondegradable waste] as well as any nonproductive areas excluded from collection as provided in 40 CFR 60.759(a)(3)(ii) [Exclusion for nonproductive waste].</p>	<p>40 CFR 60.758(d)</p>
<p>The Permittee shall keep for at least 5 years up-to-date, readily accessible records of all collection and control system exceedances of the operational standards in 40 CFR 60.753 [Operational Standards], the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance.</p>	<p>40 CFR 60.758(e)</p>
<p>G.01.b. Measurements during the initial performance test or compliance determination</p>	<p>hdr</p>
<p>The Permittee shall keep up-to-date, readily accessible records for the life of the control equipment of the data listed (1) through (4) below as measured during the initial performance test or compliance determination. Records of subsequent tests or monitoring shall be maintained for a minimum of 5 years. Records of the control device vendor specifications shall be maintained until removal.</p> <p>(1) Regarding collection and control:</p> <p>(i) The maximum expected gas generation flow rate as calculated in 40 CFR 60.755(a)(1) [Ongoing rate calculations]. The Permittee may use another method to determine the maximum gas generation flow rate, if the method has been approved.</p> <p>(ii) The density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in 40 CFR 60.759(a)(1) [Professional engineer certification].</p>	<p>40 CFR 60.758(b)</p>

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<p>CONTINUED</p> <p>(2) For landfill gas control through the use of an enclosed combustion device (including internal combustion engines) other than a boiler or process heater with a design heat input capacity equal to or greater than 44 megawatts:</p> <p>(i) The average combustion temperature measured at least every 15 minutes during the performance test and averaged over the same time period of the performance test.</p> <p>(ii) The percent reduction of NMOC determined as specified in 40 CFR 60.752(b)(2)(iii)(B) [Initial performance test] achieved by the control device.</p> <p>(iii) The average exhaust oxygen concentration recorded by the oxygen CEM measured at least every 15 minutes during the performance test and averaged over the same time period of the performance test.</p> <p>(3) &lt;reserved&gt;</p> <p>(4) &lt;reserved&gt;</p>	<p>CONTINUED</p> <p>40 CFR 60.758(b); 40 CFR 60.752(b)(2)(i) regarding Approved Alternative Item 3</p>
G.01.c. Continuous monitoring system record	hdr
The Permittee shall keep for 5 years up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored in 40 CFR 60.756 [Monitoring of Operations] as well as up-to-date, readily accessible records for periods of operation during which the parameter boundaries established during the most recent performance test are exceeded.	40 CFR 60.758(c)
<p>G.01.c.(1).</p> <p>The following constitute exceedances that shall be recorded and reported under 40 CFR 60.757(f) [Annual/semiannual report]:</p> <p>- When recording and reporting for the enclosed flare, the Permittee shall comply with the requirements in G.01.c.(1)(a).</p> <p>- When recording and reporting for the ICE/Generators, the Permittee shall comply with the requirements in G.01.c.(1)(b), or the Permittee may choose the alternative in G.01.c.(1)(c) or G.01.c.(1)(d).</p>	<p>CONTINUED</p> <p>40 CFR 60.758(c)</p>
G.01.c.(1)(a) Enclosed flare - continuous monitoring records	<p>CONTINUED</p> <p>40 CFR 60.758(c)</p>
<p>Report all periods of operation during which the 3-hour block average combustion temperature for the enclosed flare was more than 28 degrees C (50 degrees F) below the average combustion temperature during the most recent performance test at which compliance with 40 CFR 60.752(b)(2)(iii) [Control system] was determined.</p> <p>The compliance temperature (incorporating the 50-degree F allowance) is shown below.</p>	<p>CONTINUED</p> <p>40 CFR 60.758(c)</p>
<p>Temperature: greater than or equal to 1410 degrees F using a 3-hour Block Average at the Enclosed Flare (EU003/CE005).</p> <p>This limit is based on an average temperature of 1460 degrees F recorded during the 3/8/2001 performance test.</p>	<p>CONTINUED</p> <p>40 CFR 60.758(c)</p>
G.01.c.(1)(b) ICE/Generators - continuous monitoring records (combustion temperature monitoring)	<p>CONTINUED</p> <p>40 CFR 60.758(c)</p>
<p>Report all periods of operation during which the 3-hour block average exhaust temperature for each ICE/Generator was more than 28 degrees C (50 degrees F) below the average exhaust temperature during the most recent performance test at which compliance with 40 CFR 60.752(b)(2)(iii) [Control system] was determined.</p> <p>The compliance temperatures (incorporating the 50-degree F allowance) are shown below.</p>	<p>CONTINUED</p> <p>40 CFR 60.758(c)</p>
<p>Temperature: greater than or equal to 788 degrees F using a 3-hour Block Average, averaging the Left Bank and Right Bank Exhaust temperatures of EU 004/CE006 (ICE/Generator A, a.k.a. ICE/Generator #4).</p> <p>This limit is based on a Left Bank average temperature of 840 degrees F and a Right Bank average temperature of 835 degrees F recorded during the 5/5-6/2003 performance test.</p>	<p>CONTINUED</p> <p>40 CFR 60.758(c)</p>
<p>Temperature: greater than or equal to 780 degrees F using a 3-hour Block Average, averaging the Left Bank and Right Bank Exhaust temperatures of EU 005/CE007 (ICE/Generator B, a.k.a. ICE/Generator #3).</p> <p>This limit is based on a Left Bank average temperature of 825 degrees F and a Right Bank average temperature of 836 degrees F recorded during the 5/5-6/2003 performance test.</p>	<p>CONTINUED</p> <p>40 CFR 60.758(c)</p>

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<p>Temperature: greater than or equal to 792 degrees F , using a 3-hour Block Average, averaging the Left Bank and Right Bank Exhaust temperatures of EU 006/CE008 (ICE/Generator C, a.k.a. ICE/Generator #2).</p> <p>This limit is based on a Left Bank average temperature of 837 degrees F and a Right Bank average temperature of 848 degrees F recorded during the 5/5-6/2003 performance test.</p>	<p>CONTINUED 40 CFR 60.758(c)</p>
<p>G.01.c.(1)(c) ICE/Generators - continuous monitoring records (combustion temperature monitoring alternative)</p>	<p>CONTINUED 40 CFR 60.758(c)</p>
<p>Report all periods of operation during which the 3-hour block average cylinder exhaust port temperature for each ICE/Generator was more than 28 degrees C (50 degrees F) below the average cylinder exhaust port temperature during the most recent performance test at which compliance with 40 CFR 60.752(b)(2)(iii) [Control system] was determined.</p> <p>The compliance temperatures (incorporating the 50-degree F allowance) are shown below.</p>	<p>DUPLICATE (1) CONTINUED 40 CFR 60.758(c)</p>
<p>Temperature: greater than or equal to &lt;data not available&gt; degrees F , using a 3-hour Block Average, for the average of the individual cylinder exhaust port temperatures of EU 004/CE006 (ICE/Generator A, a.k.a. ICE/Generator #4).</p> <p>This limit is based on an average temperature of &lt;data not available&gt; degrees F recorded during the &lt;date not available&gt; performance test.</p>	<p>CONTINUED 40 CFR 60.758(c)</p>
<p>Temperature: greater than or equal to &lt;data not available&gt; degrees F , using a 3-hour Block Average, for the average of the individual cylinder exhaust port temperatures of EU 005/CE007 (ICE/Generator B, a.k.a. ICE/Generator #3).</p> <p>This limit is based on an average temperature of &lt;data not available&gt; degrees F recorded during the &lt;date not available&gt; performance test.</p>	<p>CONTINUED 40 CFR 60.758(c)</p>
<p>Temperature: greater than or equal to &lt;data not available&gt; degrees F , using a 3-hour Block Average, for the average of the individual cylinder exhaust port temperatures of EU 006/CE008 (ICE/Generator C, a.k.a. ICE/Generator #2).</p> <p>This limit is based on an average temperature of &lt;data not available&gt; degrees F recorded during the &lt;date not available&gt; performance test.</p>	<p>CONTINUED 40 CFR 60.758(c)</p>
<p>G.01.c.(1)(d) ICE/Generators - continuous monitoring records (exhaust oxygen monitoring alternative)</p>	<p>CONTINUED 40 CFR 60.758(c); 40 CFR 60.752(b)(2)(i) regarding alternatives</p>
<p>Report all periods of operation during which the 3-hour block average exhaust oxygen concentration from an ICE/Generator was more than plus-or-minus one-half percent of the Oxygen Compliance Value (see "DEFINITIONS").</p> <p>The oxygen compliance ranges are shown below.</p>	<p>CONTINUED 40 CFR 60.758(c); 40 CFR 60.752(b)(2)(i) regarding Approved Alternative Item 7</p>
<p>Oxygen: greater than or equal to &lt;data not available&gt; percent and less than or equal to &lt;data not available&gt; percent , using a 3-hour Block Average, measured in the exhaust gas of EU004/CE006 (ICE/Generator A, a.k.a. ICE/Generator #4).</p> <p>This limit is based on an Oxygen Compliance Value of &lt;data not available&gt; percent recorded during the &lt;date not available&gt; performance test.</p>	<p>CONTINUED 40 CFR 60.758(c); 40 CFR 60.752(b)(2)(i) regarding Approved Alternative Item 7</p>
<p>Oxygen: greater than or equal to &lt;data not available&gt; percent and less than or equal to &lt;data not available&gt; percent , using a 3-hour Block Average, measured in the exhaust gas of EU005/CE007 (ICE/Generator B, a.k.a. ICE/Generator #3).</p> <p>This limit is based on an Oxygen Compliance Value of &lt;data not available&gt; percent recorded during the &lt;date not available&gt; performance test.</p>	<p>CONTINUED 40 CFR 60.758(c); 40 CFR 60.752(b)(2)(i) regarding Approved Alternative Item 7</p>
<p>Oxygen: greater than or equal to &lt;data not available&gt; percent and less than or equal to &lt;data not available&gt; percent , using a 3-hour Block Average, measured in the exhaust gas of EU006/CE008 (ICE/Generator C, a.k.a. ICE/Generator #2).</p> <p>This limit is based on an Oxygen Compliance Value of &lt;data not available&gt; percent recorded during the &lt;date not available&gt; performance test.</p>	<p>CONTINUED 40 CFR 60.758(c); 40 CFR 60.752(b)(2)(i) regarding Approved Alternative Item 7</p>
<p>Report all periods of operation during which an ICE/Generator's air-to-fuel ratio is not set in accordance with the the Air-to-Fuel Compliance Value (see "DEFINITIONS").</p> <p>The air-to-fuel ratio compliance values are shown below.</p>	<p>CONTINUED 40 CFR 60.758(c); 40 CFR 60.752(b)(2)(i) regarding Approved Alternative Item 6</p>
<p>Air-to-Fuel Ratio: not to deviate from &lt;data not available&gt; for EU004/CE006 (ICE/Generator A, a.k.a. ICE/Generator #4).</p> <p>This limit is based on an Air-to-Fuel Compliance Value of &lt;data not available&gt; recorded during the &lt;date not available&gt; performance test.</p>	<p>CONTINUED 40 CFR 60.758(c); 40 CFR 60.752(b)(2)(i) regarding Approved Alternative Item 6</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

03/29/04

Facility Name: Waste Management Inc -Elk River Landfill

Permit Number: 14100041 - 001

<p>Air-to-Fuel Ratio: not to deviate from &lt;data not available&gt; for EU005/CE007 (ICE/Generator B, a.k.a. ICE/Generator #3).</p> <p>This limit is based on an Air-to-Fuel Compliance Value of &lt;data not available&gt; recorded during the &lt;date not available&gt; performance test.</p>	<p>CONTINUED 40 CFR 60.758(c); 40 CFR 60.752(b)(2)(i) regarding Approved Alternative Item 6</p>
<p>Air-to-Fuel Ratio: not to deviate from &lt;data not available&gt; for EU006/CE008 (ICE/Generator C, a.k.a. ICE/Generator #2).</p> <p>This limit is based on an Air-to-Fuel Compliance Value of &lt;data not available&gt; recorded during the &lt;date not available&gt; performance test.</p>	<p>CONTINUED 40 CFR 60.758(c); 40 CFR 60.752(b)(2)(i) regarding Approved Alternative Item 6</p>
<p>G.01.c.(2). The Permittee shall keep up-to-date, readily accessible continuous records of the indication of flow to the control device or the indication of bypass flow or records of monthly inspections of car-seals or lock-and-key configurations used to seal bypass lines, specified under 40 CFR 60.756.[Monitoring of Operations]</p>	<p>CONTINUED 40 CFR 60.758(c)</p>
<p>G.02. Recordkeeping under 40 CFR pt. 63</p>	<p>hdr</p>
<p>If the Permittee adds any liquids other than leachate in a controlled fashion to the waste mass and does not comply with the bioreactor requirements in 40 CFR 63.1947, 63.1955(c) and 63.1980(c) through (f), the Permittee must keep a record of calculations showing that the percent moisture by weight expected in the waste mass to which liquid is added is less than 40 percent. The calculation must consider the waste mass, moisture content of the incoming waste, mass of water added to the waste including leachate recirculation and other liquids addition and precipitation, and the mass of water removed through leachate or other water losses. Moisture level sampling or mass balances calculations can be used. The Permittee must document the calculations and the basis of any assumptions. The Permittee must keep the record of the calculations until liquids addition ceases. This requirement is effective beginning January 16, 2004.</p>	<p>40 CFR 63.1980(g); 40 CFR 63.1945(b) regarding compliance time</p>
<p>3-hour block averages are calculated in the same way as they are calculated in 40 CFR part 60, subpart WWW, except that the data collected during the events listed in items (a), (b), (c), and (d) below are not to be included in any average computed under 40 CFR part 60, subpart WWW:</p> <p>(a) Monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments.</p> <p>(b) Startups.</p> <p>(c) Shutdowns.</p> <p>(d) Malfunctions.</p>	<p>40 CFR 63.1975</p>
<p>H. SPECIFICATIONS FOR ACTIVE COLLECTION SYSTEMS</p>	<p>hdr</p>
<p>The Permittee shall site active collection wells, horizontal collectors, surface collectors, or other extraction devices at a sufficient density throughout all gas producing areas using the following procedures, including all alternative procedures approved in the collection and control system design plan (Plan).</p>	<p>40 CFR 60.759(a)</p>
<p>CONTINUED (1) The collection devices within the interior and along the perimeter areas shall be certified to achieve comprehensive control of surface gas emissions by a professional engineer. The following issues shall be addressed in the design: depths of refuse, refuse gas generation rates and flow characteristics, cover properties, gas system expandability, leachate and condensate management, accessibility, compatibility with filling operations, integration with closure end use, air intrusion control, corrosion resistance, fill settlement, and resistance to the refuse decomposition heat.</p>	<p>CONTINUED 40 CFR 60.759(a)</p>
<p>CONTINUED (2) The sufficient density of gas collection devices determined in the Plan shall address landfill gas migration issues and augmentation of the collection system through the use of active or passive systems at the landfill perimeter or exterior.</p>	<p>CONTINUED 40 CFR 60.759(a)</p>
<p>CONTINUED (3) The placement of gas collection devices determined in the Plan shall control all gas producing areas, except as follows in items (i) and (ii) below:</p> <p>(i) Any segregated area of asbestos or nondegradable material may be excluded from collection if documented as provided under 40 CFR 60.758(d). The documentation shall provide the nature, date of deposition, location and amount of asbestos or nondegradable material deposited in the area, and shall be provided upon request.</p> <p>(ii) Any nonproductive area of the landfill may be excluded from control, provided that the total of all excluded areas can be shown to contribute less than 1 percent of the total amount of NMOC emissions from the landfill. The Permittee shall follow the procedures in 40 CFR 60.759(a)(3)(ii).</p>	<p>CONTINUED 40 CFR 60.759(a)</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

03/29/04

Facility Name: Waste Management Inc -Elk River Landfill

Permit Number: 14100041 - 001

The Permittee shall construct the gas collection devices using the following equipment or procedures: (1) The landfill gas extraction components shall be constructed of polyvinyl chloride (PVC), high density polyethylene (HDPE) pipe, fiberglass, stainless steel, or other nonporous corrosion resistant material of suitable dimensions to: convey projected amounts of gases; withstand installation, static, and settlement forces; and withstand planned overburden or traffic loads. The collection system shall extend as necessary to comply with emission and migration standards. Collection devices such as wells and horizontal collectors shall be perforated to allow gas entry without head loss sufficient to impair performance across the intended extent of control. Perforations shall be situated with regard to the need to prevent excessive air infiltration.	40 CFR 60.759(b)
(2) Vertical wells shall be placed so as not to endanger underlying liners and shall address the occurrence of water within the landfill. Holes and trenches constructed for piped wells and horizontal collectors shall be of sufficient cross-section so as to allow for their proper construction and completion including, for example, centering of pipes and placement of gravel backfill. Collection devices shall be designed so as not to allow indirect short circuiting of air into the cover or refuse into the collection system or gas into the air. Any gravel used around pipe perforations should be of a dimension so as not to penetrate or block perforations.	CONTINUED 40 CFR 60.759(b)
(3) Collection devices may be connected to the collection header pipes below or above the landfill surface. The connector assembly shall include a positive closing throttle valve, any necessary seals and couplings, access couplings and at least one sampling port. The collection devices shall be constructed of PVC, HDPE, fiberglass, stainless steel, or other nonporous material of suitable thickness.	CONTINUED 40 CFR 60.759(b)
The Permittee shall convey the landfill gas to a control system in compliance with 40 CFR 60.752(b)(2)(iii) [Control system] through the collection header pipe(s). The gas mover equipment shall be sized to handle the maximum gas generation flow rate expected over the intended use period of the gas moving equipment using the following procedures: (1) For existing collection systems, the flow data shall be used to project the maximum flow rate. If no flow data exists, the procedures in paragraph (2) below shall be used. (2) For new collection systems, the maximum flow rate shall be in accordance with 40 CFR 60.755(a)(1).	40 CFR 60.759(c)
I. DEFINITIONS	hdr
I.01. Deviation	hdr
Deviation means any instance in which an affected source subject to this subpart [60 CFR pt. 63, subp. AAAAA], or an owner or operator of such a source: (1) Fails to meet any requirement or obligation established by this subpart, including, but not limited to, any emissions limitation (including any operating limit) or work practice standard; (2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or (3) Fails to meet any emission limitation, (including any operating limit), or work practice standard in this subpart during SSM [startup, shutdown, or malfunction], regardless of whether or not such failure is permitted by this subpart.	40 CFR 63.1990 for "Deviation"
A deviation includes the definition contained in 40 CFR 63.1990. For the purposes (under 40 CFR pt. 63, subp. AAAAA) of the landfill monitoring and SSMP requirements, deviations include the items (a) through (c) below: (a) A deviation occurs when the control device operating parameter boundaries described in 40 CFR 60.758(c)(1) [exceedance recording/reporting] are exceeded. (b) A deviation occurs when 1 hour or more of the hours during the 3-hour block averaging period does not constitute a valid hour of data. A valid hour of data must have measured values for at least three 15-minute monitoring periods within the hour. (c) A deviation occurs when a SSMP is not developed, implemented, or maintained on site.	40 CFR 63.1965
"Deviation" means any noncompliance with an applicable requirement or permit condition.	Minn. R. 7007.0100, subp. 8a
I.02. Emissions limitation	hdr
Emissions limitation means any emission limit, opacity limit, operating limit, or visible emissions limit.	40 CFR 63.1990 for "Emissions limitation"
I.03. Work practice	hdr
Work practice standard means any design, equipment, work practice, or operational standard, or combination thereof, that is promulgated pursuant to section 112(h) of the Clean Air Act.	40 CFR 63.1990 for "Work practice"
I.04. One-hour period (1-hour period)	hdr

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

03/29/04

Facility Name: Waste Management Inc -Elk River Landfill

Permit Number: 14100041 - 001

One-hour period means any 60-minute period commencing on the hour.	40 CFR 60.2 for "One-hour period"
I.05. Three-hour block average (or 3-hour block average)	hdr
"Three-hour block average" (or "3-hour block average") means the average of all hourly emission rates measured over discrete three-hour periods beginning at midnight.	Minn. R. 7007.0100, subp. 7a; Minn. R. 7007.0800, subp. 2
I.06. Oxygen Compliance Value	hdr
"Oxygen Compliance Value" means the oxygen content in the exhaust gas at the fuel to air ratio(s) that a given ICE/Generator operated at while demonstrating compliance during the performance test(s) required by 40 CFR 60.752(b)(2)(iii).	40 CFR 60.752(b)(2)(i) regarding Approved Alternative Item 7
I.07. Air-to-Fuel Compliance Value	hdr
"Air-to-Fuel Compliance Value" means the air-to-fuel ratio that a given ICE/Generator operated at while demonstrating compliance during the performance test(s) required by 40 CFR 60.752(b)(2)(iii).	40 CFR 60.752(b)(2)(i) regarding Approved Alternative Item 6

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

03/29/04

Facility Name: Waste Management Inc -Elk River Landfill

Permit Number: 14100041 - 001

**Subject Item:** MR 001 ICE/Generator A (#4) oxygen**Associated Items:** CE 006 Other

EU 004 ICE/Generator A (#4)

What to do	Why to do it
TESTING	hdr
CEM Certification Test: due 90 days after Quarterly Report (i.e., the first excess emissions report required for the CEMS) but not later than 30 days after the Initial Performance Test. Follow the Performance Specifications listed in 40 CFR pt. 60, Appendix B.	40 CFR 60.13(c) regarding CEMS; 40 CFR 13(f) regarding CEMS; Minn. R. 7017.1050, subp. 1 regarding CEMS
REPORTS/SUBMITTALS	hdr
Notification: due 60 days before Equipment Installation of the continuous emissions monitoring system. The notification shall include plans and drawings of the system.	Minn. R. 7017.1040, subp. 1

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

03/29/04

Facility Name: Waste Management Inc -Elk River Landfill

Permit Number: 14100041 - 001

**Subject Item:** MR 002 ICE/Generator B (#3) oxygen**Associated Items:** CE 007 Other

EU 005 ICE/Generator B (#3)

What to do	Why to do it
TESTING	hdr
CEM Certification Test: due 90 days after Quarterly Report (i.e., the first excess emissions report required for the CEMS) but not later than 30 days after the Initial Performance Test. Follow the Performance Specifications listed in 40 CFR pt. 60, Appendix B.	40 CFR 60.13(c) regarding CEMS; 40 CFR 13(f) regarding CEMS; Minn. R. 7017.1050, subp. 1 regarding CEMS
REPORTS/SUBMITTALS	hdr
Notification: due 60 days before Equipment Installation of the continuous emissions monitoring system. The notification shall include plans and drawings of the system.	Minn. R. 7017.1040, subp. 1



**TABLE A: LIMITS AND OTHER REQUIREMENTS**

03/29/04

Facility Name: Waste Management Inc -Elk River Landfill

Permit Number: 14100041 - 001

**Subject Item:** MR 003 ICE/Generator C (#2) oxygen**Associated Items:** CE 008 Other

EU 006 ICE/Generator C (#2)

What to do	Why to do it
TESTING	hdr
CEM Certification Test: due 90 days after Quarterly Report (i.e., the first excess emissions report required for the CEMS) but not later than 30 days after the Initial Performance Test. Follow the Performance Specifications listed in 40 CFR pt. 60, Appendix B.	40 CFR 60.13(c) regarding CEMS; 40 CFR 13(f) regarding CEMS; Minn. R. 7017.1050, subp. 1 regarding CEMS
REPORTS/SUBMITTALS	hdr
Notification: due 60 days before Equipment Installation of the continuous emissions monitoring system. The notification shall include plans and drawings of the system.	Minn. R. 7017.1040, subp. 1

## TABLE B: SUBMITTALS

03/29/04

Facility Name: Waste Management Inc -Elk River Landfill  
Permit Number: 14100041 - 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:

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

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

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

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

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

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

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

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

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

**TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS**

03/29/04

Facility Name: Waste Management Inc -Elk River Landfill

Permit Number: 14100041 - 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
Fugitive Control Plan	due 60 days after Permit Issuance. (See Table A for details)	Total Facility
Notification of the Actual Date of Initial Startup	due 15 days after Initial Startup. Applies to each unit individually.	GP002
Notification	due 60 days before Equipment Installation of the continuous emissions monitoring system. (See Table A)	MR001, MR002, MR003
Submittal	due 30 days before Equipment Removal and/or Dismantlement. The Permittee shall submit an equipment removal report 30 days prior to removal or cessation of operation of the control equipment. (see Table A)	EU007
Submittal	due 45 days after Initial Performance Test, to include gas collection system information with the initial performance test report required under Sec. 60.8. (See Table A)	EU007
Testing Frequency Plan	due 60 days after Initial Performance Test for NMOC emissions from the flare, following changes that increase the flare's capacity to combust landfill gas.	EU007
Testing Frequency Plan	due 60 days after Initial Performance Test for NMOC emissions. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on one-year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required upon written approval of the MPCA.	EU007

**TABLE B: RECURRENT SUBMITTALS**

03/29/04

Facility Name: Waste Management Inc -Elk River Landfill

Permit Number: 14100041 - 001

<b>What to send</b>	<b>When to send</b>	<b>Portion of Facility Affected</b>
Excess Emissions/Downtime Reports (EER's)	due 30 days after end of each calendar quarter following Permit Issuance. (See Table A for details)	Total Facility
Semiannual Deviations Report	due 30 days after end of each calendar half-year following Permit Issuance. (See Table A for details)	Total Facility
Submittal	due 30 days after end of each calendar half-year following Permit Issuance. The Permittee shall submit a semi-annual report. (See Table A)	EU007
Compliance Certification	due 31 days after end of each calendar year following Permit Issuance (for the previous calendar year). See Table A for details.	Total Facility

## APPENDIX MATERIAL

Facility Name: Waste Management Inc -Elk River Landfill

Permit Number: 14100041-001

## APPENDIX I

### Insignificant Activities Required to be Listed:

- Two Resoner space heaters fueled by LPG, 120,000 Btu/hr each. Located in shop building. Subject to Minnesota Performance Standards for Direct Heating Equipment.
- Bryant furnace fueled by LPG. Heat input of 95,000 Btu/hr. Used to heat office building. Subject to Minnesota Performance Standards for Direct Heating Equipment.
- Leachate recirculation within the MSW Landfill cells (expected to begin during 2003). Emissions are accounted for within the EU001 landfill gas emissions.
- Leachate collection system, including 3 underground tanks connected to one above ground tank and loadout area.

### Insignificant Activities and Applicable Requirements

Minn. R. 7007.1300, subpart	Rule Description of the Activity	Applicable Requirement
3(A)	Fuel use: space heaters fueled by, kerosene, natural gas, or propane.	Minn. R. 7011.0510/0515
3(B)	Furnaces, boilers, and pathological waste incinerators:	
	infrared electric ovens; and	Minn. R. 7011.0105/0110
	fuel burning equipment with a capacity less than 500,000 Btu/hour but only if the total combined capacity of all fuel burning equipment at the stationary source with a capacity less than 500,000 Btu per hour is less than or equal to 2,000,000 Btu/hour.	Minn. R. 7011.0510/0515 <i>OR</i> Minn. R. 7011.0610 + Minn. R. 7011.1215, subp. 3 ( <i>if pathological waste combustor</i> )
3(C)	Fabrication operations: equipment used exclusively for forging, pressing, drawing, spinning, or extruding hot metals.	Minn. R. 7011.0710/0715
3(D)	Processing operations:	
	1. open tumblers with a batch capacity of 1,000 pounds or less; and	Minn. R. 7011.0710/0715
	2. Equipment venting particulate matter (PM) or particulate matter less than 10 microns (PM-10) inside a building, provided that emissions from the equipment	Minn. R. 7011.0710/0715

<b>Minn. R. 7007.1300, subpart</b>	<b>Rule Description of the Activity</b>	<b>Applicable Requirement</b>
	are: a). filtered through an air cleaning system; and b). vented inside of the building 100% of the time.	
3(E)	Storage tanks:	
	1. gasoline storage tanks with a combined total tankage capacity of not more than 10,000 gallons; and	Minn. R. 7011.0710/0715 <i>OR</i> Minn. R. 7011.1505, subp. 2(B)/1505, subp. 3(B) <i>OR</i> Minn. R. 7011.0105/0110 ( <i>if not associated with industrial process per the IPE definition</i> )
	2. non-hazardous air pollutant VOC storage tanks with a combined total tankage capacity of not more than 10,000 gallons of non-hazardous air pollutant VOCs and with a vapor pressure of not more than 1.0 psia at 60 degrees Fahrenheit.	Minn. R. 7011.0710/0715 <i>OR</i> Minn. R. 7011.1505, subp. 2(B)/1505, subp. 3 (B) <i>OR</i> Minn. R. 7011.0105/0110 ( <i>if not associated with industrial process per the IPE definition</i> )
3(F)	Cleaning operations: commercial laundries, not including dry cleaners and industrial launderers.	Minn. R. 7011.0105/0110 ( <i>if industrial process equipment</i> )
3(G)	Emissions from a laboratory, as defined in the subpart.	Minn. R. 7011.0510/0515 + Minn. R. 7011.0610 + Minn. R. 7011.0710/0715
3(H)	Miscellaneous:	
	1. total usage of less than 200 gallons of VOC (including hazardous air pollutant-containing VOC) combined in any consecutive 12 months period at a stationary source;	Minn. R. 7011.0710/0715 <i>OR</i> Minn. R. 7011.0105/0110
	2. equipment used exclusively for packaging lubricants or grease;	Minn. R. 7011.0710/0715 <i>OR</i> Minn. R. 7011.0105/0110
	3. equipment used for hydraulic or hydrostatic testing;	Minn. R. 7011.0710/0715
	4. brazing, soldering or welding equipment;	Minn. R. 7011.0510/.0515 + Minn. R. 7011.0610 + Minn. R. 7011.0710/0715

<b>Minn. R. 7007.1300, subpart</b>	<b>Rule Description of the Activity</b>	<b>Applicable Requirement</b>
	5. blueprint copiers and photographic processes;	Minn. R. 7011.0105/0110
	6. equipment used exclusively for melting or application of wax;	Minn. R. 7011.0510/.0515 + Minn. R. 7011.0610 + Minn. R. 7011.0710/0715
	7. nonasbestos equipment used exclusively for bonding lining to brake shoes; and	Minn. R. 7011.0710/0715
	8. cleaning operations: alkaline/phosphate cleaners and associated cleaners and associated burners.	Minn. R. 7011.0510/.0515 + Minn. R. 7011.0610 + Minn. R. 7011.0710/0715
3(I)	Individual emissions units at a stationary source, each of which have a potential to emit the following pollutants in amounts less than:  1. 4,000 lbs/year of carbon monoxide; and  2. 2,000 lbs/year each of nitrogen oxide, sulfur dioxide, particulate matter, particulate matter less than ten microns, volatile organic compounds (including hazardous air pollutant-containing VOC), and ozone.	As applicable.  (No applicable requirements exist for the Leachate Recirculation.)
3(J)	Fugitive Emissions from roads and parking lots.	Minn. R. 7011.0150
3(K)	Infrequent use of spray paint equipment for routine housekeeping or plant upkeep activities not associated with primary production processes at the stationary source, such as spray painting of buildings, machinery, vehicles, and other supporting equipment.	Minn. R. 7011.0710/0715

**PROPOSED TECHNICAL SUPPORT DOCUMENT**  
**For**  
**PROPOSED AIR EMISSION PERMIT NO. 14100041-001**

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

**1. General Information**

1.1. Applicant and Stationary Source Location:

Owner and Operator Address and Phone Number (list both if different)	Facility Address (SIC Code: 4953)
Waste Management, Inc. 1001 Fannin, Suite 4000 Houston, Texas 77002	22460 Highway 169 Northwest Elk River Sherburne County (763) 441-2464

1.2. Description of the facility

The Elk River Landfill encompasses 146.5 acres, of which approximately 104 acres are permitted for the landfilling of non-hazardous solid waste. The site first began accepting waste in 1972, and final closure of the entire facility is projected in the year 2012. Actual closure will depend on refuse acceptance rates.

Methane and carbon dioxide are the principal emissions from an uncontrolled landfill by weight, produced by the anaerobic activity of microscopic organisms within the landfill. Landfill gas also contains a small fraction of Non-Methane Organic Compounds (NMOCs), which include Hazardous Air Pollutants (HAP), greenhouse gases, stratospheric ozone depletion substances, and Volatile Organic Compounds (VOC). The NMOC emissions are required to be collected and treated, most commonly through combustion. The NMOCs that are captured and treated produce products of combustion, most notably Nitrogen Oxides (NO<sub>x</sub>) and Carbon (CO). The NMOCs that are not captured escape as fugitives.

Fugitive particulate matter results from the heavy machinery used in the mechanical process of transporting, placing, and covering waste.



The facility has an active gas collection system in place over a portion of the landfill area. At the time of the application, the system consisted of about 31 vertical gas extraction wells. More wells will be added as required, and will ultimately consist of 50 wells and associated header pipe.

Collected gas is sent either (1) to an enclosed flare; or (2) to reciprocating engines (ICE/Generators) that power electric generators. Neither the flare nor the engines use auxiliary fuel. They operate off landfill gas exclusively. According to the 2001 Solid Waste report, the landfill typically generates 650-850 cfm of landfill gas.

The installation of an active gas recovery system causes negative pressure within the landfill, which serves to reduce off-site migration of landfill gas. Much of the landfill has (or will have) bottom and sidewall liners, which deter migration. The landfill performs monitoring of perimeter gas wells to measure the effectiveness of the gas collection system at minimizing off-site migration.

#### 1.3 Description of any changes allowed with this permit issuance

This permit authorizes (1) the continued expansion of the landfill gas collection system; and (2) the upgrading of the enclosed flare from 2000 cfm to 3000 cfm. No other changes are authorized.

At the time of permit issuance, expansions to both the north and the south were being considered. This permit does not include these expansions.

#### 1.4 Description of all amendments issued since the issuance of the last total facility permit and to be included in the Part 70 Permit.

<b>Permit Number and Issuance Date</b>	<b>Action Authorized</b>
Amendment No. 14100041-003 June 1998	Install and operate a landfill gas internal combustion engine and generator. (This emission/control unit has since been removed)
August 2000	Minor amendment application to install a second flare (to be incorporated in this permitting action).
Amendment No. 14100041-004 October 4, 2002	Moderate amendment to install and operate three gas internal combustion engine/generator sets (application dated April 2001)

## 1.5. Facility Emissions:

Table 1. Total Facility Potential to Emit Summary:

EU #	SV#	Emission Unit Description	PM tpy	PM <sub>10</sub> tpy	SO <sub>2</sub> tpy	NO <sub>x</sub> tpy	CO tpy	VOC tpy	Pb tpy	Single HAP tpy	All HAPs tpy
003	003	Enclosed flare	7.88	7.88	6.00	25.03	62.58	1.07	-	-	-
004	004	Landfill gas internal combustion engine and Generator A	1.74	1.74	0.55	22.15	34.75	0.098	-	-	-
005	005	Landfill gas internal combustion engine and Generator B	1.74	1.74	0.55	22.15	34.75	0.098	-	-	-
006	006	Landfill gas internal combustion engine and Generator C	1.74	1.74	0.55	22.15	34.75	0.098	-	-	-
003 - 006	003 - 006	Totals, flare and engines								3.43	7.88
007		Landfill (uncaptured emissions)	-	-	-	-	2.14	14.4	-	8.24	12.43

FS #	SV #	Fugitive Source Description	PM tpy	PM <sub>10</sub> tpy	SO <sub>2</sub> tpy	NO <sub>x</sub> tpy	CO tpy	VOC tpy	Pb tpy	Single HAP tpy	All HAPs tpy
001	na	Unpaved roadway traffic	69.38	15.36							
002	na	Bulldozer operations in open landfill	13.79	10.34							

	PM tpy	PM <sub>10</sub> tpy	SO <sub>2</sub> tpy	NO <sub>x</sub> tpy	CO tpy	VOC tpy**	Pb tpy	Single HAP tpy	All HAPs tpy
Total Facility Limited Potential Emissions*	96.28	38.8	7.65	91.48	169.0	15.33	-	11.67	20.31

\*These are the limited potential emissions from column 3 in GI-07 from Delta. They may differ from those in the permit application sent by the company in that they have been verified and corrected as need be by MPCA staff. These are the potential emissions that would appear in a public notice.

\*\* Note that the total VOC emissions do not equal the sum of the individual emission units, due to mutually exclusive “worst case” operation scenarios. See “Attachment 1 - TSD: Calculations” for a discussion.

Table 2. Facility(TF) and Permit Classification

Classification (put x in appropriate box)	Major/Affected Source	*Synthetic Minor	*Minor
PSD (list pollutant)	None	None	All
NAAR (list pollutant)	N/A	N/A	N/A
Part 70 Permit Program (list pollutant)	CO Single HAP (Toluene)	None	PM, PM <sub>10</sub> , SO <sub>2</sub> , NO <sub>x</sub> , VOC, Total HAPs, remaining Single HAPs

\* Refers to potential emissions that are less than those specified as major by 40 CFR § 52.21, 40 CFR pt. 51 Appendix S, and 40 CFR pt. 70.

## 2. Regulatory and/or Statutory Basis

Summary Regulatory and/or Statutory Basis of the Emission or operational Limit

### Regulatory Overview of Facility

EU, GRP, or SV #	Applicable Regulations	Comments:
EU007 (landfill)	40 CFR pt. 60, Subpart WWW  40 CFR pt. 60, Subpart A  40 CFR pt. 63, Subpart AAAA 40 CFR pt. 63, Subpart A	Standards of Performance for Municipal Solid Waste Landfills  General Provisions to the Standards of Performance for New Stationary Sources National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills General Provisions for the National Emission Standards for Hazardous Air Pollutants
EU003 (flare)	Minn. R. 7011.0110	Visible Emission Restrictions For New Facilities (until the requirements under 40 CFR 60 are effective on August 1, 2003)
GP002 (ICEs)	Minn. R. 7011.2300	Standards of performance for stationary internal combustion engines.

### **3. Technical Information**

#### **3.1. NSPS Applicability.**

The facility submitted engineering drawings to the MPCA in 1994 which allowed development of approximately 9.616 million cubic meters of airspace. The landfill has an overall design capacity that is greater than 2.5 million cubic meters. Therefore, the landfill is subject to the New Source Performance Standards (NSPS) 40 CFR 60, Subpart WWW, for the municipal solid waste landfills.

#### **3.2. NSPS Design Plan.**

Calculations (utilizing the "Tier 1" defaults in the NSPS) showed NMOC emissions in excess of 50 Mg/year NMOC in February of 2001. Therefore, pursuant to 40 CFR 60.752(b)(2), the facility was required to submit a Collection and Control System Design Plan (Plan) for approval within one year of that date. This Plan was first submitted on June 29, 2001, and subsequent additions and edits were made to this Plan. This Plan was approved in a letter dated December 10, 2002. An amended plan was approved on <insert approval date>. Future collection and control must be made in accordance with the approved plan.

Subpart WWW was written recognizing the need for flexibility in methods of controlling emissions. 40 CFR § 60.752(b)(2)(i) allows the Plan to propose alternatives to Subpart WWW. Approval of the Plan includes approval of the alternatives as described in the Plan approval letter.

#### **3.3. NSPS requirements that have already been completed**

40 CFR 60, Subpart WWW, applies to all new municipal solid waste landfills. In brief, the rule requires facilities with solid waste design capacities of greater than 2.5 million megagrams and 2.5 million cubic meters, as well as annual NMOC emissions exceeding 50 megagrams per year, to design, install, and operate landfill gas collection and control systems. Landfills under these thresholds are required to monitor their capacities and/or NMOC emissions, and install collection/control systems once the thresholds are tripped.

In the case of the Permittee, these thresholds have already been tripped. The Permittee is already required to install and operate collection/control systems. Therefore, no requirements regarding increased capacities or reports of NMOC emissions are contained in this permit. A Collection and Control Design Plan has been approved; therefore, no requirements regarding initial Plan submittal are contained in this permit. However, any Plan amendments must be made and approved consistent with Subpart WWW.

The following NSPS requirements have also been completed and are therefore not included in the permit:

- 40 CFR § 60.8 regarding initial performance testing for the enclosed flare operating at 2000 cfm. If the flare capacity is expanded (as allowed by this permit), additional testing will be required.

- 40 CFR § 60.8 regarding initial performance testing for three internal combustion engines, but only when temperature monitoring is used as the operating parameter for compliance demonstration. If continuous emission monitors for oxygen are installed as an alternative compliance operating parameter, performance testing must be repeated pursuant to 40 CFR § 60.13(b).
- 40 CFR § 60.752(b)(2)(i) regarding the submittal of a Collection and Control Design Plan. This plan was first submitted in July of 2001 and approved on December 10, 2002.
- 40 CFR § 60.754(a) regarding NMOC calculations. The Permittee has already calculated NMOC emissions to exceed 50 ton/yr, so further calculations are unnecessary.
- 40 CFR § 60.755(a)(1) and (2) regarding the sizing of the gas collection system. The Permittee completed this in the Plan submittal.
- 40 CFR § 60.757(a) regarding an initial design capacity report. This information was previously submitted as part of the solid waste permit.
- 40 CFR § 60.757(b) regarding submittal of NMOC emission rates. In a 9/18/02 phone conversation with Julie Monahan of the U.S. Environmental Protection Agency (EPA) Region V, she said that NMOC emission rate reports are not required once a Design Plan has been submitted.
- 40 CFR § 60.757(c) regarding the submittal of a Collection and Control Design Plan. This plan was first submitted in July of 2001.

### **3.4. Impact of the Collection and Control Design Plan on the permit**

The NSPS recognizes the need for case-by-case determinations at individual landfills, and 40 CFR § 60.752(b)(2)(i) allows approved alternatives to these NSPS standards. The Plan approval letter, dated December 10, 2002, states which of the proposed alternatives have been approved. The permit language has been drafted to include these approved alternatives.

On April 30, 2003, the Permittee submitted a request to EPA Region V for an alternative to the requirement to monitor combustion temperature [40 CFR § 60.756(b)(1)], and EPA Region V approved this alternative in a May 13, 2003. EPA Region V later amended the approval on July 31, 2003. The approved alternative allows the Permittee to monitor exhaust oxygen once every 15 minutes as an alternative to monitoring combustion temperature. (See Attachment #4 - TSD: EPA Alternative Approval.) The permit includes the oxygen monitoring as a compliance alternative to combustion temperature.

### **3.5. Minnesota Rule requirements that have already been completed**

The Permittee must comply with Minn. R. 7011.3505, subp. 4, which requires submittal of increased landfill capacities or NMOC emissions. The facility has completed all of these submittals, so the state rule requirement is not included in the permit.

### **3.6. National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Landfills**

The Permittee must comply with the National Emission Standards for Hazardous Air Pollutants for Landfills (40 CFR pt. 63, Subpart AAAA) by no later than January 2004. As written, the Subp. AAAA text requires compliance with the NSPS (40 CFR part 60, subp. WWW), because the collection and control requirements satisfy MACT for the landfills. In large part, Subp. AAAA says, “Comply with the NSPS”.

Subp. AAAA does contain some additional or differing requirements, including:

- A requirement to create a “startup, shutdown, and malfunction plan” with the associated records and reports, reporting of operating condition deviations for out-of-range monitoring parameters
- A requirement to report some items semiannually rather than annually.
- A monitoring record exclusion for periods of startup, shutdown, malfunction, and monitor downtime.

Subp. AAAA includes several requirements for landfills that fit the definition of “bioreactor”. The Elk River facility does not fit the definition of a bioreactor. (In the past, Elk River conducted a pilot study in leachate recirculation, but the project did not fall under the definition.)

### **3.7. Internal Combustion Engines and the Flare – Are They Emission Units or Control Devices?**

For this permit, they are both.

40 CFR pt. 60, Subpart WWW, requires the collection and control of landfill gas from this landfill. The collected landfill gas must run through a control device, and the control devices specifically listed in the rule are all combustion devices. (Alternatives control devices are acceptable by rule, if approved.)

The goal of Subpart WWW is to control NMOC emissions, a pollutant which includes, but does not equate to, VOCs. The combustible portion of landfill gas is predominately methane, which is not a regulated pollutant. However, the combustion of methane within a flare or an internal combustion engine creates NO<sub>x</sub> and CO as byproducts, which are regulated pollutants.

The question of whether the flare and engines are control devices or emission units was answered in a very practical fashion by our Emissions Inventory staff, whose job it is to tally emissions from facilities. Their conclusion is that the flare and engines must be considered as BOTH control devices and emission units. Their reasoning is as follows:

- The flare and engines are control devices NMOC emissions from the landfill are being controlled. That control device must be identified in Delta in the emissions inventory.
- The flare and engines are also emission units because the NO<sub>x</sub> (and other) emissions are appearing from these activities. The Emissions Inventory requires activities producing emissions be identified in Delta as emission units.

The permit identifies the flare and engines accordingly, and assigns emission rates as well as control efficiencies to them.

### **3.8. Landfill Gas – Fugitive Emissions or Not?**

AP-42 emission factors acknowledge that landfill gas collection systems are not 100 percent efficient. AP-42 assumes that only 75 percent of the landfill gas is collected and sent to the control equipment. The remainder escapes collection and control.

The uncollected emissions from the landfill itself are treated the same as emissions that are not collected by a hood. They are not subject to the "Fugitive Emission Control Plan" required by this permit, because the landfill gas emissions are being collected to the extent practicable.

However, once the gas is contained in the pipes of the collection system, then any leakage fits the definition of fugitive emissions, much like gas pipes at a refinery. The portions of the collection system that would be subject to fugitive emissions are those under positive pressure. Because most of the system is under negative pressure, the portion subject to fugitive emissions is relatively short in length. This permit requires these emissions to be subject to the "Fugitive Emission Control Plan".

### **3.9. Environmental Review**

The MPCA Environmental Review staff have determined that no environmental review is required for this permitting action. See Attachment 3.

### **3.10. Title V Modeling**

Title V Computer Dispersion Modeling is not required for this facility because the Potential-to-Emit does not exceed 100 tons per year for PM<sub>10</sub>, SO<sub>2</sub>, or NO<sub>x</sub>.

### **3.11. Insignificant Activities Required to be Listed**

The Appendix to this permit contains the "Insignificant Activities Required to be Listed". Their respective applicable requirements are listed in table form, pursuant to EPA White Paper Number 2 (March 5, 1996), Section II. C. No periodic monitoring is required for these insignificant activities, pursuant to EPA's September, 1998, Periodic Monitoring Guidance, Section II.F.

### **3.12. Odor Flare - History**

Twice in 2003, the Permittee installed a temporary "solar powered flare" to address odor issues. The flare was installed along the east side of Cell 13, and the installation also included horizontal piping and four wells. The flare was put in place under a Contingency Action Plan developed with the staff of MPCA. An air quality permitting issues were not addressed prior to the installation. The flare has since been removed.

MPCA staff believe that the solar powered flare (solar flare) must be permitted if it is to be used, and must meet the performance requirements of 40 CFR § 60.752(b)(2)(iii). The rationale is as follows:

- The Plan discusses how the Permittee will comply with 40 CFR pt. 60, subp. WWW. The Plan also allows the Administrator to approve alternatives to Subpart WWW. The Permittee included alternatives in Section III of the Plan that were subsequently approved.
- The use of the solar flare is found in Section I, not Section III, meaning that no alternative from the rules was proposed for the solar flare.
- Pursuant to 40 CFR § 60.752(b)(2)(ii), all waste in place for five years must have a gas collection system installed. The Plan states how this collection system will be manifested, which includes a temporary collection system that will be used until wells can be installed.
- Pursuant to 40 CFR § 60.752(b)(2)(iii), the collected gas must be routed to a proven control system. The fact that solar flare and associated collection system is temporary does not exclude it from the requirements.

In summary, the solar flare must verify that it can provide proper destruction efficiencies, as well as comply with other control device requirement contained in Subp. WWW. It must be permitted if it is to be used.

### **3.13. HAP calculations for combustion in flares and engines**

The HAP emissions from the control devices are included as a separate Group in Delta – GP 006.

HAP emission factors (save hydrochloric acid) were only available for flares. For lack of alternative, the HAP calculation the three ICE/Generators use the same set of emission factors as the flare. This method approximates HAPs that would be emitted from the ICE/Generators, and is assumed to be accurate enough for the purposes of permitting.

The Permittee can choose which of the four control devices to operate when burning landfill gas. Currently, and for the foreseeable future, the Permittee has a surplus of control capacity, and the limiting parameter is the quantity of landfill gas generated. Because the Permittee can choose which control devices to operate, potential HAP emissions from all control devices were tallied as a group, and recorded in GP 006 in Delta.

### **3.14. Annotated CD-01**

Some of the conditions in this permit have some history that would be helpful for a reader or a future permit writer to know. Those permit conditions are contained in an annotated form of CD-01, which is attached to this document (TSD: Annotated CD-01). This attachment does not contain all of the permit's conditions, but does include those conditions (and citations) where an explanation is useful. For example, 40 CFR pt. 60, Subpart WWW does allow approved alternatives to its requirements. When these alternatives are employed, the annotated CD-01 discusses them.



### **3.15. Deviations from Delta Norms**

The **PROPOSED** permit and this TSD are written in accordance with the norms established for Delta permits and TSD with the following exceptions.

- (a) Rule citations of federal regulations do not always contain the word “section.” The norm is to write the citations as “40 CFR Section 62.15160. Given the frequency and length of the citations in the **PROPOSED** permit, the “section” was omitted.
- (b) To allow NSPS requirement to be easily located within the **PROPOSED** permit, the ordering of requirements within the “Landfill” portion of the **PROPOSED** permit coincides with the ordering of requirements within the applicable NSPS (40 CFR 60, subp. WWW).

### **3.16. Comments Received**

Two written comments were received during the public comment period – one from the landfill owner (Waste Management) and one from the ICE/Generator owner/operators (Elk River Public Utilities). The comment letters were similar to one another, and pertained to the monitoring of ICE/Generator operation. Some **PROPOSED** permit text was changed in response to these comments. These comments, and responses to these comments, are included as Attachment 5 (TSD: Comment Letters) and Attachment 6 (TSD: Response to Comments).

#### **4. Conclusion**

Based on the information provided by Waste Management, Inc., the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 14100041-001, and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team: Carolina Schutt (supervisor), Peter Torkelson (engineer), Dave Crowell (enforcement), Dave Beil (Peer Review), Barbara Conti (Environmental Review)

Attachment: (1) TSD: Calculations  
(2) TSD: Annotated CD-01  
(3) TSD: EAW Applicability  
(4) TSD: EPA Alternative Approval  
(5) [TSD: Comment Letters](#)  
(6) [TSD: Response to comments](#)

## Attachment 1: Calculations

### Emission Factors for LFG Flaring

The purpose of this sheet is to see if the HAPs calculated using emission factors exceed those calculated from assuming a control efficiency (the method used in the application).

In general, those calculated using the control efficiencies are larger.

The "Total HAPs" contained in the application were smaller than those calculate here, so the "Total HAPs " calculated here were input into Delta.

Factors are from the FIRE Database

The same factors are used for both the engines and the flare

The values entered into Delta are shown in the table below this one- "In Delta".

= Not a HAP									
Pollutant	Cas No.	Emission Factor	Unit	SCC	lb/hr	ton/yr	Value from C20, based on control efficiency	Larger value from	Toxicity factor
1,1,1-Trichloroethane	71-55-6	1.02E-05	lb/MMBtu	50200601	3.11E-04	1.4E-03	7.3E-03	C20	
1,2,3,4,6,7,8-Heptachlorodiben-zofuran	67562-39-4	1.52E-10	lb/MMBtu	50200601	4.64E-09	2.0E-08		(see TCDD)	#####
1,2,3,4,6,7,8-Heptachlorodiben-zo-p-dioxin	35822-46-9	9.45E-11	lb/MMBtu	50200601	2.88E-09	1.3E-08		(see TCDD)	#####
1,2,3,4,7,8-Hexachlorodiben-zofuran	70648-26-9	1.82E-10	lb/MMBtu	50200601	5.56E-09	2.4E-08		(see TCDD)	#####
1,2,3,6,7,8-Hexachlorodiben-zofuran	57117-44-9	5.28E-11	lb/MMBtu	50200601	1.61E-09	7.1E-09		(see TCDD)	#####
2,3,4,6,7,8-Hexachlorodiben-zofuran	60851-34-5	8.52E-11	lb/MMBtu	50200601	2.60E-09	1.1E-08		(see TCDD)	#####
2,3,4,7,8-Pentachlorodiben-zofuran	57117-31-4	1.42E-10	lb/MMBtu	50200601	4.33E-09	1.9E-08		(see TCDD)	5.0E-01
2,3,7,8-Tetrachlorodiben-zofuran	51207-31-9	1.76E-09	lb/MMBtu	50200601	5.37E-08	2.4E-07		(see TCDD)	1.0E-01
Benzene	71-43-2	7.10E-06	lb/MMBtu	50200601	2.17E-04	9.5E-04	2.0E-01	C20	
Benzo (a) anthracene	56-55-3	6.26E-11	lb/MMBtu	50200601					
Benzo (a) pyrene	50-32-8	1.14E-10	lb/MMBtu	50200601					

Carbon tetrachloride	56-23-5	7.26E-07 lb/MMBtu	50200601	2.22E-05	9.7E-05	7.0E-05	FIRE
Chlorobenzene	108-90-7	2.75E-06 lb/MMBtu	50200601	8.39E-05	3.7E-04	3.2E-03	C20
Chloroform	67-66-3	2.57E-06 lb/MMBtu	50200601	7.84E-05	3.4E-04	4.1E-04	C20
Chrysene	218-01-9	2.97E-08 lb/MMBtu	50200601				
Dichloromethane	75-09-2	2.14E-04 lb/MMBtu	50200601	6.54E-03	2.9E-02	1.4E-01	C20
Fluoranthene	206-44-0	7.26E-07 lb/MMBtu	50200601	2.22E-05	9.7E-05		FIRE
Isomers of xylene	1330-20-7	2.23E-05 lb/MMBtu	50200601	6.81E-04	3.0E-03	2.9E-01	C20
Naphthalene	91-20-3	1.00E-05 lb/MMBtu	50200601	3.05E-04	1.3E-03		FIRE
Octachlorodibenzofurans, total	39001-02-0	7.99E-11 lb/MMBtu	50200601	2.44E-09	1.1E-08		(see 1.0E-03 TCDD)
Octachlorodibenz o-p-dioxins, total	3268-87-9	5.52E-10 lb/MMBtu	50200601	1.68E-08	7.4E-08		(see 1.0E-03 TCDD)
o-Xylene	95-47-6	1.31E-05 lb/MMBtu	50200601	4.00E-04	1.8E-03		FIRE
Perchloroethylene	127-18-4	3.48E-06 lb/MMBtu	50200601	1.06E-04	4.6E-04	7.0E-02	C20
Polychlorinated biphenyls (PCB)	1336-36-3	6.10E-08 lb/MMBtu	50200601	1.86E-06	8.2E-06		FIRE
Toluene	108-88-3	1.23E-04 lb/MMBtu	50200601	3.74E-03	1.6E-02	#####	C20
Trichloroethylene	79-01-6	1.26E-06 lb/MMBtu	50200601	3.84E-05	1.7E-04	4.2E-02	C20
Vinyl chloride	75-01-4	4.17E-06 lb/MMBtu	50200601	1.27E-04	5.6E-04	5.2E-02	C20
2,3,7,8-tetrachlorodibenz o-p-dioxin				7.62E-09	3.3E-08		FIRE
<b>Other pollutants</b>							
Carbon monoxide	630-08-0	4.12E+02 lb/MMCF	50100410				Waste Gas
Nitrogen dioxide (NO2)	10102-44-0	2.20E+01 lb/MMCF	50100410				Waste Gas
Volatile organic compounds (VOC)		5.60E+00 lb/MMCF	50200601				Waste Gas
PM10		9.34E+00 lb/MMCF	50100410				Waste Gas
PM2.5		9.34E+00 lb/MMCF	50100410				Waste Gas

1.20E+07 cu.m./yr Landfill gas, from p. 3-19  
 4.24E+08 cf/yr = 1.20E+07 cu.m./yr / (0.02832 cu.m./cu.ft)  
 4.85E+04 cf/hr = 4.24E+08 cf/yr / 8760 hr/yr  
 630 Btu/cf Landfill gas heat content, assuming 60% methane (p. 3-21)

$$3.05\text{E}+07 \text{ Btu/hr} = 630 \text{ Btu/cf} * 4.85\text{E}+04 \text{ cf/hr}$$

$$30.52 \text{ mmBtu/hr} = 3.05\text{E}+07 \text{ Btu/hr} / 1\text{e}6$$

Sample calculation for 1,1,1-Trichloroethane

$$3.11\text{E}-04 \text{ lb/hr} = 1.02\text{E}-05\text{lb/MMBtu} * 30.52 \text{ mmBtu/hr}$$

$$1.36\text{E}-03 \text{ ton/yr} = 3.11\text{E}-04 \text{ lb/hr} * 8760 \text{ hr/yr} / 2000 \text{ lb/ton}$$

In Delta			
	Ton/yr	lb/hr	Max.
Acrylonitrile	7.59E-02	1.73E-02	
Benzene	1.96E-01	4.47E-02	
Carbon disulfide	9.98E-03	2.28E-03	
Carbon tetrachloride	9.71E-05	2.22E-05	
Carbonyl sulfide	6.65E-03	1.52E-03	
Chlorobenzene	3.20E-03	7.31E-04	
Chloroethane	9.18E-03	2.10E-03	
Chloroform	4.08E-04	9.32E-05	
1,4-Dichlorobenzene	3.51E-03	8.01E-04	
1,1-Dichloroethane	2.65E-02	6.05E-03	
1,2-Dichloroethane	4.62E-03	1.05E-03	
1,2-Dichloropropane	2.31E-03	5.27E-04	
Ethylbenzene	1.11E-01	2.53E-02	
Hexane	0.128	2.92E-02	
Hydrochloric acid	3.08E+00	7.03E-01	
Methyl ethyl ketone	1.16E-01	2.65E-02	
Methyl isobutyl ketone	4.23E-02	9.66E-03	
Naphthalene	0.001337	3.05E-04	
Mercury	9.52E-05	2.17E-05	
Polychlorinated biphenyls	8.16E-06	1.86E-06	
2,3,7,8-TCDD (dibenz-p-dioxin)	3.34E-08	7.62E-09	
1,1,2,2-Tetrachloroethane	2.12E-02	4.84E-03	
Tetrachloroethylene	7.04E-02	1.61E-02	
Toluene	3.43E+00	7.83E-01	Toluene
1,1,1-Trichloroethylene	7.29E-03	1.66E-03	
Trichloroethylene	4.22E-02	9.63E-03	
Vinyl chloride	5.22E-02	1.19E-02	
Vinylidene chloride	2.21E-03	5.05E-04	
Xylenes (mixed isomers)	2.90E-01	6.62E-02	
Methyl chloride (gas)	6.95E-03	1.59E-03	
Methylene chloride	1.38E-01	3.15E-02	
<b>Max</b>	3.43E+00		
<b>Total</b>	<b>7.88</b>	<b>1.80</b>	

This "In Delta" table compares the "percent controlled" calculations from page 3-20 with the "products of combustion" table from above, and selects the larger of the two.

Mixes isomers of xylene, rather than individual xylene isomers, are listed because the emission factors were not available for all individual isomers.

Value from page 3-21

## TSD Attachment #2 -- Annotated CD-01

Permit conditions that require further explanation or clarification are contained in this document. Not all permit conditions are included.

### Total Facility

The Permittee Why	The Permittee What	Comments
Minn. R. 7017.1004, subp. 1(A) regarding state testing and monitoring requirements; 40 CRF 60.11(f) as applicable	Unless otherwise specified in this permit, the following conditions apply to the total facility.	Portions of this facility are subject to NSPS, and some testing and monitoring requirements are regulated differently under NSPS than under state rule.
hdr	MODELING REQUIREMENTS	These requirements are not in permit. The facility has potential emissions of less than 100 TPY for each of PM-10, NO <sub>x</sub> , and SO <sub>2</sub> . Therefore, this permit contains no modeling information. (The facility is a Title V major source for CO and for Toluene, but no modeling is required for these pollutants.)
hdr	REPORTS/SUBMITTALS	
Minn. R. 7017.1110, subp. 1 & 2. For NSPS facilities: 40 CFR Section 60.7(c); 40 CFR 60.7(d); 40 CFR 60.13(h) regarding CEMS data reduction.	Excess Emissions/Downtime Reports (EER's): due 30 days after end of each calendar quarter following Permit Issuance. (Submit Deviations Reporting Form DRF-1 as amended). The EER shall indicate all periods of monitor bypass and all periods of exceedances of the limit including exceedances allowed by an applicable standard, i.e. during startup, shutdown, and malfunctions.	This requirement for a submittal appears twice in Delta – once as a Submittal/Action (S/A), and once as a Compliance Demonstration (C/D). This allows the requirement to appear in both Table A and Table B of the Delta permit.  The EER submittal will include either temperature monitoring or oxygen monitoring or both, depending on the options used for that quarter

<p>Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0800, subp. 2</p>	<p>Fugitive Control Plan: due 60 days after Permit Issuance. The Permittee shall submit a fugitive emissions control plan for review and approval by the Commissioner. The plan shall identify all fugitive emission sources, primary and contingent control measures, and record keeping. The Permittee shall follow the actions and record keeping specified in the control plan. The plan may be amended by the Permittee with the Commissioner's approval. If the Commissioner determines the Permittee is out of compliance with Minn. R. 7011.0150 or the fugitive emission control plan, then the Permittee may be required to amend the control plan and/or to install and operate particulate matter ambient monitors.</p> <p>The Fugitive Control Plan shall include, but not be limited to, PM/PM-10 fugitives and organic emissions from any above-grade gas conveyance devices under positive pressure relative to the atmosphere.</p>	<p>This requirement for a submittal appears twice in Delta – once as a Submittal/Action (S/A), and once as a Compliance Demonstration (C/D). This allows the requirement to appear in both Table A and Table B of the Delta permit.</p> <p>The second paragraph was added to ensure that "leaky" landfill gas pipes were included in the fugitive plan. Any landfill gas conveyance system under positive pressure can be subject to leaking.</p>
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### ICE/Generators (Group 002)

The Permittee Why	The Permittee What	Comments
hdr	<p>NOTE: This set of Group requirements regulates the ICE/Generators both as Control Equipment and as Emission Units.</p> <p>Additional requirements for ICE/Generators are contained in the "EU 007 Landfill" portion of this permit.</p>	<p>The Internal Combustion Engine/Generators (ICE/Generators) is both a control device and an emission unit. This "Group" has been formed to include requirements for both categories.</p> <p>The requirements in this Group are requirements that apply to the ICE/Generators that are not already included in the "Landfill" subject item.</p>
hdr	A. EMISSION LIMITS	

Minn. Rules 7011.2300, subp. 2	Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input . Performance testing for sulfur dioxide is not required as long as the ICE/Generators burn only landfill gas.	Landfill gas, according to AP-42 defaults, can be assumed to be 46.9 ppm sulfur. Assuming landfill gas has a heating content of 500 Btu/cf, the SO <sub>2</sub> produced from burning landfill gas calculates to 0.016 lb/mmBtu. This rate is well below the limit, so no SO <sub>2</sub> testing is necessary as long as landfill gas is the only fuel burned.
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### Flare (Group 003)

The Permittee Why	The Permittee What	Comments
hdr	<p>NOTE: This set of Group requirements regulates the enclosed flare both as Control Equipment and as an Emission Unit.</p> <p>Additional requirements for the enclosed flare are contained in the "EU 007 Landfill" portion of this permit.</p>	<p>The enclosed flare is both a control device and an emission unit. This "Group" has been formed to include requirements for both categories.</p> <p>The requirements in this Group are requirements that apply to the enclosed flare that are not already included in the "Landfill" subject item.</p>
hdr	INCREASING FLARE CAPACITY	Pursuant to 40 CFR 60.14(e)(5), an increase in landfill gas control capacity is not a modification: "(e) The following shall not, by themselves, be considered modifications under this part: ... (5) The addition or use of any system or device whose primary function is the reduction of air pollutants, except when an emission control system is removed or is replaced by a system which the Administrator determines to be less environmentally beneficial." Therefore the



		expansion can be included in this permit.
Minn. R. 7007.0800, subp. 2	The Permittee is authorized by this permit to increase the enclosed flare capacity to a maximum of 3000 cfm. The construction authorization does not expire during the life of this permit. The Permittee must keep a record of the dates of installation and start-up on site.	The enclosed flare's current capacity to burn landfill gas is 2000 cfm. The flare can be upgraded to burn 3000 cfm if and when the landfill gas flow rate requires an increase in landfill gas control. The Permittee is uncertain if this need will ever arise. Therefore, the time period when the change must be made remains flexible.
Minn. R. 7007.0800, subp. 2	Notification of any physical or operational change which increases emission rate: due 60 days (or as soon as practical) before the change is commenced. Changes subject to this permit condition include any increases to enclosed flare capacity.	The regulation cited is the generic authority to ensure compliance with the rules, even though the language is largely taken from the Delta notification language for 40 CFR Section 60.7(a)(4). The intent of this permit condition is to require the Permittee to let MPCA know that physical changes to the enclosed flare are happening, and that these physical changes must be followed by a performance test.

#### Activities subject to MACT (40 CFR pt. 63) (Group 004)

The Permittee Why	The Permittee What	Comments
		The purpose of this group is to capture all of the requirements contained in the NESHAP General Provisions. All become effective in January 2004, and apply broadly to the "affected source". The affected source includes "the entire disposal facility in a contiguous geographic space where household waste is placed in or on land, including any portion of the MSW

		landfill operated as a bioreactor.” Based on this definition, the “affected source” is the area of the grounds containing the landfill, and the operations associated with the landfill that are regulated by the NESHAP (which are the control devices).
hdr	C.02. Startup, shutdown, and malfunction plan (SSMP)	During the May 1, 2003, APTI T-003-03 Landfills NESHAP and NSPS 2003 Update, notice was given that these rules were being amended. May 9 was given as an amendment date. SSMP guidance is being developed by EPA, and it may be available in the future.
hdr	E. RECORDKEEPING AND REPORTING REQUIREMENTS (see also the SSMP requirements)	The SSMP conditions also contain recordkeeping requirements
40 CFR Section 63.10(b)(1); Minn. R. 7007.0800, subp. 5(C) regarding record location	The Permittee shall maintain files of all information required by this part in a form suitable and readily available for expeditious inspection and review. The files should be retained for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.	This permit condition as written is more stringent than allowed by federal rule. Federal rule includes the language, “Only the most recent two years of information must be kept on site.” For the sake of consistency with the Total Facility requirements, Minn. R. 7007.0800, subp. 5(C), is cited as a requirement to keep the records on site and readily retrievable.
40 CFR 63.10(d)(5)(ii); 40 CFR Section 63.6(e)(3)(iv) regarding reporting	Immediate Startup, Shutdown, and Malfunction Reports. Any time an action taken during a startup, shutdown, or malfunction (including actions taken to correct a malfunction) is not consistent with the procedures specified in the SSMP, contact the commissioner and report the actions taken for that event within 2 working days after commencing actions inconsistent with the plan followed by a letter within 7 working days after the end of the event. The reports shall be in accordance with 40 CFR 63.10(d)(5), unless alternative reporting has been arranged, in	This permit condition and the requirements for Breakdown Notification may overlap, but one does not replace the other.

	advance, with the Administrator.	
	This report is in addition to the Breakdown Notification requirements in the Total Facility portion of this permit.	

### GP 005 Oxygen monitors – ICE/Generators

The Permittee Why	The Permittee What	Comments
		Unlike other permits, the oxygen monitors are not always required to be operating. Exhaust oxygen monitoring is required only when the facility is not employing the “combustion temperature” option. Therefore, the permit condition language has been tailored to allow this flexibility.
hdr	MONITOR QA/QC	
40 CFR Section 60.13(d)(1) regarding CEMS.	CEMS Daily Calibration Drift (CD) Test: The CD shall be quantified and recorded at zero (low level value between 0 and 20 percent of span value) and span (50 to 100 percent of span value) gas concentrations at least once daily. The CEMS shall be adjusted whenever the CD exceeds twice the specification of 40 CFR pt. 60, Appendix B.  This requirement applies to each monitor individually. The CD Test applies only on days when a given monitor is operated.	The Permittee is not required to perform a CD test on days when the “exhaust oxygen” monitoring alternative is not being implemented.
Minn. R. 7017.1170, subp. 5	CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar year following CEMS Certification Test.  This requirement applies to each monitor individually. The RATA applies only in years when a given monitor is operated.	The Permittee is not required to perform a RATA in calendar years when the “exhaust oxygen” alternative was never implemented.
Minn. R. 7017.1170, subp. 4	Cylinder Gas Audit (CGA): due before end of each calendar half-year following CEMS certification test. A CGA is not required	The Permittee is not required to perform a CGA in calendar half-years when the

	<p>during any calendar half-year in which a RATA was performed.</p> <p>The CGAs shall be conducted at least three months apart but no more than eight months apart. A CGA shall be conducted according to the procedures in Code of Federal Regulations, title 40, part 60, appendix F, section 5.1.2. If the monitored emission unit was operated for less than 24 hours during the calendar half year, a CGA is not required on that CEMS during that calendar half year.</p> <p>This requirement applies to each monitor individually. The CGA applies only in the calendar half year when a given monitor is operated.</p>	<p>“exhaust oxygen” alternative was never implemented.</p> <p>Although the Alternative Monitoring (approved by Region V) does not require compliance with Appendix F, our state rules do require it.</p>
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## Landfill

The Permittee Why	The Permittee What	Comments
		<p>This portion of the permit is the repository for the federal requirements for landfills, found in 40 CFR pt. 60 and pt. 63. Requirements for items subject to these rules (such as the control devices) are found here. In other words, even though other portions of the permit contains Groups for the ICE/Engines and the Enclosed Flare, the engine and flare requirement contained in landfill rules of 40 CFR pt. 60 and pt. 63 are contained here in the Landfill portion of the permit.</p> <p>This Landfill portion of the permit differs from the normal format of Title V permits.</p>

		<p>The first attempt was to arrange it in the usual "Emission Limits", "Operational Limits", etc., but the sequencing with the NSPS became convoluted. This portion instead coincides with the section headings of 40 CFR 60, subp. WWW.</p> <p>Also applicable is 40 CFR pt. 63, subp. AAAA – the MACT standards for landfills – and those requirements are included here. Briefly, the MACT standards require compliance with AAAA, with additional requirements for increased reporting and the drafting of a startup, shutdown, and malfunction plan. For the most part, these MACT rules become effective in January 2004.</p>
hdr	A. STANDARDS FOR AIR EMISSIONS	
hdr	A.01. Design and installation	
40 CFR 60.752(b)(ii)	An active collection and control system that captures the gas generated within the landfill as required by 40 CFR 60.752(b)(2)(ii)(A) and 40 CFR 60.752(b)(2)(iii) shall be installed by August 1, 2003.	<p>The Permittee has portions of the gas collection system in place. The system is an active, not a passive, system. The permit condition is derived from the cited rule. The first annual report in which the emission rate equals or exceeds 50 megagrams per year was submitted in the 2000 annual report, received on Feb. 1, 2001. Compliance with the rule must be accomplished within 30 months of this date. 2/1/01 plus 30 months is 8/1/03.</p> <p>The permit application stated that the required date is <a href="#">December 28, 2002</a>, but</p>

		<p>Permittee comments on the draft permit later requested August 1, 2003. The City of Elk River (represented by Environmental Consulting Group, who was copied on your letter), in turn, commented that they want the Permittee to hold to the December 28, 2002, date, and felt it had a legal basis to do so.</p> <p>The permit language is the result strikeout/underline version of the rule shown below:</p> <p>40 CFR 60.752(b)(ii) <del>Install a</del><u>A</u> collection and control system that captures the gas generated within the landfill as required by <del>paragraphs 40 CFR 60.752(b)(2)(ii)(A) or (B)</del><u>[(B) covers passive systems]</u> and <u>40 CFR 60.752(b)(2)(iii) shall be installed</u> by Permit Issuance or by August 1, 2003, <del>whichever is earlier of this section within 30 months after the first annual report in which the emission rate equals or exceeds 50 megagrams per year, unless Tier 2 or Tier 3 sampling demonstrates that the emission rate is less than 50 megagrams per year, as specified in Sec. 60.757(c)(1) or (2).</del></p>
40 CFR 60.752(b)(2)(iii)	Notify the commissioner in writing when the landfill gas flow of the collected landfill gases first exceeds <u>3275</u> cubic feet per minute (30-day average). The notification shall state that the reason for the notification is to accommodate the increasing quantity of landfill gas generated.	This permitting action allows for <u>3825</u> cfm of landfill gas control capacity, compared with the facility's maximum landfill gas generation potential of either 3230 cfm (from the 8/2002 application) or 4045 cfm

		(from the Design Plan). If the landfill gas flows increase as calculated, eventually the control equipment will be unable to accommodate the flow. Very roughly, flow increases at 50-100 cfm per year. The Permittee shall give notice one year prior to the need for additional control. (continued below)
CONTINUED 40 CFR 60.752(b)(2)(iii)	Submit permit application within 30 days after the landfill gas flow of the collected landfill gases first exceeds 3275 cubic feet per minute (30-day average), unless an alternative for managing landfill gas has been approved by the Commissioner. The Permittee shall apply for an amendment to increase in control equipment capacity to accommodate additional landfill gas flow.	(continued from above) The permitted control equipment consists of an enclosed flare (up to 3000 cfm) and three engines (275 cfm each), totalling 3825 cfm of control capacity. The facility should at least have the capability of controlling all of the landfill gas flow even if one engine is down. Therefore the maximum gas flow desired is 3275 cfm before planning for additional control equipment needs to be undertaken. Because Environmental Review may be necessary (e.g., an EAW), a one-year permitting period is projected.
CONTINUED 40 CFR 60.752(b)(2)(iii)	A.02. Emission limits	
CONTINUED 40 CFR 60.752(b)(2)(iii)	Route all the collected gas to an enclosed control system designed and operated to either reduce NMOC by 98 weight percent or reduce the outlet NMOC concentration to less than 20 parts per million by volume, dry basis as hexane at 3 percent oxygen.	The rule condition combines 4 items which would normally appear in 4 separate parts of the permit – Emission Limits; Operational Requirements; Testing; and Monitoring. For the sake of consistency with the layout of the NSPS, these permit conditions have been placed adjacently in this permit. The Permittee has chosen to use internal

		combustion engines and an enclosed flare as control devices. Both are enclosed devices, and the permit condition has been written to reflect the requirements of enclosed devices. If an open flare is added, this language would have to be amended.
CONTINUED 40 CFR 60.752(b)(2)(iii)	A.03. System operation	
CONTINUED 40 CFR 60.752(b)(2)(iii)	<p>The reduction efficiency or parts per million by volume are established by an initial performance testing or subsequent performance testing, using the test methods specified in 40 CFR 60.754(d). [see TEST METHODS AND PROCEDURES] If the Permittee chooses to measure the reduction efficiency described above, inlet gas shall be sampled immediately upstream of the control device to minimize any effects of dilution due to air infiltration.</p> <p>The control device shall be operated within the parameter ranges established during the initial or most recent performance test. The operating parameters to be monitored are specified in 40 CFR 60.756.</p>	<p>See the discussion under "Emission limits" above.</p> <p>Other requirements for testing are included in TEST METHODS AND PROCEDURES. The rule language mentions the "initial performance test", and this was already conducted for the enclosed flare and the three ICE/Generators.</p> <p>If the "reduction efficiency" is tested, both the inlet and the outlet gases are to be tested using the performance testing methods described in this permit. Because of possible air infiltration, the maximum effects of dilution will be experienced just at the inlet of the control device. Dilution could have an effect on reduction efficiency (i.e., gaining credit for reduction merely through dilution), so the effects of dilution will be minimized by sampling inlet gas immediately upstream of the control device.</p>
hdr	B. OPERATIONAL STANDARDS FOR COLLECTION AND CONTROL SYSTEMS	
40 CFR 60.753(e)	Operate the system such that all collected gases are vented to a control system designed and operated in compliance with 40 CFR.	EPA was consulted on the meaning of this requirement, and it was addressed in a July



	60.752(b)(2)(iii) [Control equipment design]. In the event the collection or control system is inoperable, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within 1 hour.	1 e-mail sent by Julie Monahan from Region V. Obviously, the landfill will continue to generate gas whether or not the valves are closed to the collection and control equipment. She cited "AIR EMISSIONS FROM MUNICIPAL WOLID WASTE LANDFILLS – BACKGROUND INFORMATION FOR FINAL STANDARDS AND GUIDELINES", EPA-453/R-94-021, December 1995. The burden is on the facility to be able to resume control of landfill gas in a short time. For example, the facility could quickly affect repairs on the control equipment. Or it could route landfill gas to redundant equipment.
hdr	B.01. Operational Limits for the Collection System	
40 CFR 60.753(g)	If monitoring demonstrates that the operational requirements below for pressure, temperature, oxygen/nitrogen, or surface methane are not met, corrective action shall be taken as specified in 60 CFR 60.755(a)(3) through (5) or 40 CFR 60.755(c). If corrective actions are taken as specified in 40 CFR 60.755, the monitored exceedance is not a violation of the operational requirements in this section.	A July 1 e-mail sent by Julie Monahan from EPA Region V addresses these limits. If, for example, the 500 ppm limit is exceeded as the result of a malfunction, the exceedance is exempted under 40 CFR 60.755(e) for up to 5 days. The e-mail points out that the objective of the 500 ppm limit is to determine if the collection system is working. If it is not working, it needs to be repaired. If repaired pursuant to the rule, no violation of the limit occurred
40 CFR 60.753(c) regarding changes to oxygen and temperature limits	The Permittee may establish a higher operating temperature, nitrogen, or oxygen value at a particular well. A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic	The burden of proof lies with the facility in order to establish alternative values. On 8/28/03, the Permittee submitted a “higher temperature” request to Region V. EPA

	decomposition by killing methanogens.	approved the request on 10/9/03. The approved alternatives are included in the permit.
hdr	B.01.a. Pressure at wellhead	
40 CFR 60.753(b)	<p>Operate the collection system with negative pressure at each wellhead except under the following conditions:</p> <p>(1) A fire or increased well temperature. The owner or operator shall record instances when positive pressure occurs in efforts to avoid a fire. These records shall be submitted with the annual reports as provided in 40 CFR. 60.757(f)(1);</p> <p>(2) &lt;reserved&gt;;</p> <p>(3) A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows. A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows. All design changes shall be submitted for approval.</p>	<p>In the cited rule, Item 2, states" (2) Use of a geomembrane or synthetic cover. The owner or operator shall develop acceptable pressure limits in the design plan;" However, the Permittee did not request a positive pressure in the Design Plan as approved, and justification of a positive pressure would require much technical justification, so this exception has been rewritten as "&lt;reserved&gt;," A permit amendment would be required, and an amendment is justified.</p> <p>Table 3 of the Design Plan lists an applied vacuum at each wellhead.</p>
hdr	B.01.b. Temperature at wellhead	
40 CFR 60.753(c) regarding temperature limits	Temperature: less than or equal to 55 degrees C (131 degrees F) for each interior wellhead in the collection system, unless a higher operating temperature value at a particular well has been approved. Existing approvals are listed below.	
CONTINUED 40 CFR 60.753(c) regarding temperature limits	Temperature: less than or equal to 140 degrees F for Well 15R and Well 16	On October 9, 2003, EPA Region V sent letter approving the alternative wellhead temperatures shown.
CONTINUED 40 CFR 60.753(c) regarding temperature limits	Temperature: less than or equal to 150 degrees F for Well 21R	On October 9, 2003, EPA Region V sent letter approving the alternative wellhead temperature shown.
hdr	B.01.d. Surface methane	
40 CFR 60.753(d) regarding the	Operate the collection system so that the methane concentration is	The permit condition is the portion of the

methane limit	less than 500 parts per million above background at the surface of the landfill.	cited rule that represents an operational limit.
hdr	B.02. Evaluating surface methane	
40 CFR 60.753(d)	To determine if the surface methane level is exceeded, the Permittee shall conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. The Permittee may establish an alternative traversing pattern that ensures equivalent coverage. A surface monitoring design plan shall include a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30 meter intervals.	The cited rule allows for alternatives to the surface monitoring pattern. The two permit conditions that follow incorporate the approved alternatives. A monitoring plan has already been submitted and approved, and the permit language reflects this
CONTINUED 40 CFR 60.753(d)	CONTINUED The Permittee shall conduct a visual inspection of the dangerous areas excluded from the surface scan route.	Because these areas are excluded from routine monitoring, other evidence of leaking must be observed.
CONTINUED 40 CFR 60.753(d); Minn. R. 7007.0800, subp. 2	CONTINUED If, at any time, evidence of leaking landfill gas is present (e.g., hissing sounds, vegetative damage, leachate outbreaks, odors), the Permittee shall monitor surface emissions in that area to determine if an exceedance of the methane surface emission limit is occurring.	As written, the rule requires surface monitoring to be conducted only once per quarter. This permit condition has been expanded to require monitoring when landfill gas leakage is evident.
CONTINUED 40 CFR 60.753(d); 40 CFR 60.752(b)(2)(i) regarding alternatives	CONTINUED The Permittee may exclude the following from the surface testing pattern: - roads; - the active area; - truck traffic areas; - slopes steeper than or equal to 4:1; - areas with ongoing construction or reconstruction of the gas collection system; - Construction and Demolition Cells D1 and D2	40 CFR 60.753(d) allows alternatives to surface testing. 40 CFR 60.752(b)(2)(i) allows approved alternatives to other standards. This permit condition contains the approved alternatives to the surface monitoring pattern, found on page III-20 of the Design Plan. The "slopes" exclusion was approved by EPA in a pair of 12/31/01 e-mails from Julie Monahan.

hdr	C. TEST METHODS AND PROCEDURES	
hdr	(See also Subject Item "GP 002 ICE/Generators" in Table A for additional applicable performance test requirements for these devices regulated as emission units.)	The testing in the "Landfill" portion of the permit is limited to that required under NSPS and the MACT. Other testing requirements are listed in "GP 002 ICE/Generators"
hdr	C.01. Performance Testing	The initial performance testing dates are triggered by the initial startup of the control devices.
Minn. R. 7017.2020, subp. 1	<p>Performance Test: due before end of each 60 months starting 05/31/2003, to measure NMOC emissions from an ICE/generator using the test methods specified in 40 CFR 60.754(d). The first test is due 5/31/2008, then every 60 months thereafter.</p> <p>This requirement applies to each ICE/generator individually.</p> <p>For additional applicable performance test requirements, see "General Performance Test Requirements" in Table A, Subject Item "Total Facility".</p>	<p>This condition applies to each ICE/generator. The Initial Performance Test was completed on 05/31/2003. According to performance testing guidance, they qualify for the 60-month testing cycle.</p> <p>Note that these tests are for the landfill and the control of NMOCs from the landfill. It is independent of the opacity tests required of the ICE/generators.</p>
Minn. R. 7017.2020, subp. 1	<p>Performance Test: due before end of each 60 months starting 03/08/2001, to measure NMOC emissions from the enclosed flare using the test methods specified in 40 CFR 60.754(d). The first test is due 03/08/06, then every 60 months thereafter.</p> <p>For additional applicable performance test requirements, see "General Performance Test Requirements" in Table A, Subject Item "Total Facility".</p>	<p>The Initial Performance Test was completed for the enclosed flare on March 8, 2001. According to performance testing guidance, it qualifies for the 60-month testing cycle.</p> <p>If another "Initial Performance Test" is required due to the expansion of the enclosed flare, then this 60-month schedule should be adjusted.</p>
40 CFR 60.8(a); 40 CFR 60.752(b)(iii) regarding testing; Minn. R. 7017.2001, subp. 1	Initial Performance Test: due 60 days after achieving maximum capacity, but not later than 180 days after initial startup of the enclosed flare, to measure NMOC emissions from the enclosed	This condition applies only to the enclosed flare. The Initial Performance Test has already been completed for the enclosed

	<p>flare using the test methods specified in 40 CFR 60.754(d). This requirement applies to the enclosed flare following changes that increase the flare's capacity to combust landfill gas.</p> <p>"Initial performance test" means the test required under 40 CFR 60.8.</p>	<p>flare at 2000 cfm, but the facility is authorized by this permit to increase flare capacity to up to 3000 cfm. An additional Initial Performance Test for the flare is not required until the flare capacity is increased.</p> <p>Note that these tests are for the landfill and the control of NMOCs from the landfill. It is independent of the opacity tests required of the flare.</p>
40 CFR 60.754(d)	<p>For the performance tests required above, Method 25, 25C, or Method 18 must be used to determine compliance with the 98 weight-percent efficiency or the 20 ppmv outlet concentration level. Method 3 or 3A shall be used to determine oxygen for correcting the NMOC concentration as hexane to 3 percent. In cases where the outlet concentration is less than 50 ppm NMOC as carbon (8 ppm NMOC as hexane), Method 25A should be used in place of Method 25. If using Method 18, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42).</p> <p>"Method" means the methods contained in 40 CFR 60, Appendix A.</p>	40 CFR 60.754(d) allows the Permittee to use approved alternatives to the testing methods contained in the rule. The Permittee did not request any alternative methods in the Design Plan, so none are contained in this permit.
hdr	D. COMPLIANCE PROVISIONS	
hdr	D.01. Well parameters	
40 CFR 60.755(a)(3) regarding response to positive pressure; 40 CFR 60.755(a)(4)	If a positive pressure exists in the gas collection header at an individual well, action shall be initiated to correct the exceedance within 5 calendar days, except for the conditions allowed by this permit. If negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance	This condition contains the language "except for the conditions allowed by this permit" instead of the rule language, "except for the three conditions allowed under Sec. 60.753(b)". The reason is as follows: Sec. 60.753(b) allows the system

	<p>within 120 days of the initial measurement of positive pressure. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted for approval.</p> <p>The Permittee is not required to expand the system as required above during the first 180 days after gas collection system startup.</p>	<p>to operate under positive pressure (under Design Plan approval). This permit does not allow system positive pressure without a permit amendment. (see “B.01.a. Pressure at wellhead” above.)</p>
hdr	D.02. Surface methane	
hdr	D.02.a. Surface monitoring methodology	
40 CFR 60.755(c)(1)	<p>After installation of the collection system, the Permittee shall monitor surface concentrations of methane along the entire perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals (or a site-specific established spacing) for each collection area on a quarterly** basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in 40 CFR 60.755(d).</p> <p>** Or in accordance with the timetable established in the approved collection and control system design plan required by 40 CFR 60.752(b)(2)(i).</p>	<p>The NSPS requires quarterly surface monitoring, but the Permittee can propose an alternative in its Design Plan. The Design Plan was approved with no request for an alternative surface monitoring schedule.</p> <p>In a February 5, 2003, e-mail, EPA Region V stated that severe winter weather conditions should not prevent landfills from scheduling surface monitoring during the 4<sup>th</sup> or 1<sup>st</sup> calendar quarters. The regulations do not specify specific time frames. For example, the WM could schedule monitoring in October and March to avoid some of the winter weather and still be in compliance with the rule.</p> <p>If the “quarterly” requirement is changed, the Solid Waste staff in Detriot Lakes (currently Kathy Holland-Hanson) have been asked to be notified.</p>
hdr	D.02.b. Excess methane detection	

CONTINUED 40 CFR 60.755(c)(4); 40 CFR 60.752(b)(2)(i) regarding alternatives to timelines	<p>(ii) Cover maintenance or adjustments to the vacuum of the adjacent wells to increase the gas collection in the vicinity of each exceedance shall be made and then the location shall be re-monitored. The Permittee will log the range of days available for the surface monitoring, pursuant to 40 CFR 60.755(c)(1) or 40 CFR 60.756(f); the scheduled date of the surface monitoring; a 5-day weather forecast on the scheduled date, together with a 5-day weather forecast from all earlier days within the range of days available; the current weather conditions; and the cap conditions. The log will be kept with the NSPS files.</p> <p>(ii) CONTINUED The location shall be re-monitored within 10 calendar days of detecting the exceedance, or the log will include a justification of why the additional time for repairs is needed, and the date the repairs are made will be documented. The remonitoring of the cover after repairs are made will occur as quickly as possible. In no instance will the delay in remonitoring exceed 30 days.</p>	If surface monitoring shows an exceedance of the 500 ppm methane limit, item (ii) under 40 CFR 60.755(c)(4) requires repairs and remonitoring within 10 days, stating "Cover maintenance or adjustments to the vacuum of the adjacent wells to increase the gas collection in the vicinity of each exceedance shall be made and the location shall be re-monitored within 10 calendar days of detecting the exceedance." In their Design Plan, the Permittee argued that, if the weather is not conducive, attempted repairs can do more harm than good. The Permittee and MPCA staff negotiated this alternative language. EPA's Julie Monahan approved of the alternative in a 12/31/01 e-mail response.
CONTINUED 40 CFR 60.755(c)(4); 40 CFR 60.752(b)(2)(i) regarding alternatives to timelines	(iv) Any location that initially showed an exceedance but has a methane concentration less than 500 ppm methane above background at the 10-day re-monitoring specified in 40 CFR 60.755(c)(4) (ii) or (iii) shall be re-monitored 1 month (no fewer than 20 days but no more than 30 days) from the initial exceedance. If the 1-month remonitoring shows a concentration less than 500 parts per million above background, no further monitoring of that location is required until the next quarterly monitoring period. If the 1-month remonitoring shows an exceedance, the actions specified in 40 CFR 60.755(c)(4) (iii) or (v) shall be taken.	In its Design Plan, the Permittee requested an alternative to the 1-month remonitoring. The "alternative" is actually more like an acceptable clarification. The rule itself states that the location, "shall be re-monitored 1 month from the initial exceedance". The "alternative" is to provide a range of days for the remonitoring, rather than the requirement to remonitor on the single day 1 month following the exceedance.
hdr	E. MONITORING OF OPERATIONS	
hdr	E.02. Control device monitoring	
40 CFR 60.752(b)(2)(i) regarding alternatives	E.02.b. Combustion monitoring	On July 25, 2003, EPA Region V issued an alternative approval to the Permittee to

	<p>For the enclosed flare, the Permittee shall comply with the requirements in E.02.b.(1).</p> <p>For the ICE/Generators, the Permittee shall comply with the requirements in E.02.b.(2), or the Permittee may choose the alternative in E.02.b.(3).</p>	<p>monitor ICE/Generator exhaust oxygen concentrations as an alternative to combustion temperature monitoring. The permit includes the alternative monitoring requirements. The permit allows both the temperature and oxygen monitoring options.</p>
hdr	E.02.b.(2). ICE/Generator combustion temperature monitoring	
40 CFR 60.756(b)(1); 40 CFR 60.13(e)(2) regarding meaning of "continuous"	<p>For each ICE/Generator, calibrate, maintain, and operate according to the manufacturer's specifications, temperature monitoring devices equipped with a continuous recorder and having a minimum accuracy of plus-or-minus 1 percent of the temperature being measured expressed in degrees Celsius (or degrees Fahrenheit) or plus-or-minus 0.5 degrees Celsius (0.9 degrees Fahrenheit) whichever is greater.</p> <p>(For the purposes of this requirement, "continuous" means "at least once every 15 minutes".)</p>	<p>The rule does not define the term "continuous", and questions arose regarding the frequency of obtaining data.</p> <p>In a 7/14/2003 e-mail from Region V, Julie Monahan supported the meaning of the term "continuous" to imply "once every 15 minutes". This is consistent with 40 CFR 60.13(e)(2).</p>
40 CFR 60.758(b)(2)(i) regarding monitor location; 40 CFR 60.758(c)(1)(i) regarding monitor location; 40 CFR 60.752(b)(2)(i) regarding monitoring alternatives	<p>Location of Temperature Monitoring. For each engine, the Permittee shall monitor and record combustion temperature either by method (1) or (2) below.</p> <p>(1) The Permittee shall monitor and record:</p> <p>(a) left bank exhaust temperatures at the exhaust outlet of the turbo at least once every 15 minutes. One-hour averages shall be calculated from these readings in accordance with 40 CFR 60.13(h).</p> <p>(b) right bank exhaust temperatures at the exhaust outlet of the turbo at least once every 15 minutes. One-hour averages shall be calculated from these readings in accordance with 40 CFR 60.13(h).</p> <p>(2) The Permittee shall monitor and record the average of the</p>	<p>The location of the "combustion temperature" monitors has been an issue with the Permittee. The Permittee's concern has been that it is impractical to measure "combustion temperature" within the cylinders of their engines.</p> <p>In EPA's May 1, 2003, APTI T-003-03 Landfills NESHAP and NSPS 2003 Update, the panel did not take the term "combustion temperature" as literally as the Permittee. They concluded that multiple positions were acceptable, including the exhaust manifold. Therefore, the exhaust manifold has been identified as an acceptable location for monitoring</p>



	individual cylinder exhaust port temperatures at least once every 15 minutes. One-hour averages shall be calculated from these readings in accordance with 40 CFR 60.13(h).	temperatures. As an alternative, the cylinder exhaust ports are equipped with temperature monitors as standard equipment, and that location is the closest to the actual combustion zone. Temperatures are least likely to fluctuate at this location due to external conditions so it is the preferred location to take temperature readings. However, this would require additional connections and software not in existence at the time of permit issuance.
40 CFR 60.13(e)	Continuous Operation: Except for continuous monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments, all continuous monitoring systems (except the exhaust oxygen monitors) shall be in continuous operation during all periods of emission unit operation. This includes periods of emission unit start-up, shutdown, or malfunction.	The oxygen monitors do not need to be operating when the "combustion temperature" alternative is chosen.
hdr	E.02.b.(3). ICE/Generator exhaust oxygen monitoring alternative	
40 CFR 60.756(b)(1); 40 CFR 60.752(b)(2)(i) regarding Approved Alternative Item 7	For each ICE/Generator, calibrate, maintain, and operate according to the manufacturer's specifications, an oxygen CEM equipped with a continuous recorder to measure oxygen emissions from the ICE/Generator.  (For the purposes of this requirement, "continuous" means "at least once every 15 minutes".)	Approved Alternative Item 7 reads: 7. Operate each engine within $\pm 1/2$ % of the O <sub>2</sub> content in the exhaust gas at the fuel to air ratio(s) that the engine operated at while demonstrating compliance in 3(a) or 3(b) above. On a continuous basis, measure and record the O <sub>2</sub> content in the exhaust gas of each engine. It shall be considered a reportable exceedance if the engine's O <sub>2</sub> content in the exhaust gas is not maintained as required by this paragraph.
40 CFR 60.13(b); 40 CFR 60.752(b)(2)(i) regarding	The oxygen CEMS and the gas flow rate measuring devices shall be installed and operational prior to conducting performance tests	Approved Alternative Item 9 reads: 9. A device capable of measuring the O <sub>2</sub>

Approved Alternative Item 9	under 40 CFR Sec. 60.8.	content in the exhaust gas of each engine shall be maintained on site for use during inspection visits. If this device is not the same device used during the performance test, it shall be calibrated to achieve a one to one correlation with the device used to measure the O <sub>2</sub> content in the exhaust gas during the performance test.
40 CFR 60.13(e); 40 CFR 60.752(b)(2)(i) regarding Approved Alternative Item 7	Continuous Operation: Except for continuous monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments, all continuous monitoring systems (except the combustion temperature monitor) shall be in continuous operation during all periods of emission unit operation. This includes periods of emission unit start-up, shutdown, or malfunction.	Approved Alternative Item 7 reads: 7. Operate each engine within $\pm\frac{1}{2}$ % of the O <sub>2</sub> content in the exhaust gas at the fuel to air ratio(s) that the engine operated at while demonstrating compliance in 3(a) or 3(b) above. On a continuous basis, measure and record the O <sub>2</sub> content in the exhaust gas of each engine. It shall be considered a reportable exceedance if the engine's O <sub>2</sub> content in the exhaust gas is not maintained as required by this paragraph.
40 CFR 60.13(f); 40 CFR 60.752(b)(2)(i) regarding alternatives	Install the oxygen CEM and the gas flow rate measuring devices such that representative measurements of process parameters from the affected facility are obtained.	40 CFR 60.13(f) requires proper location of required monitors. 40 CFR 60.752(b)(2)(i) includes oxygen monitoring as an approved alternative to temperature monitoring.
40 CFR 60.756(b)(1); 40 CFR 60.752(b)(2)(i) regarding Approved Alternative Item 1	Install and maintain an hour meter on each ICE/Generator.	Approved Alternative Item 1 reads: 1. Install and maintain an hour meter on each engine that burns landfill gas.
40 CFR 60.756(b)(1); 40 CFR 60.752(b)(2)(i) regarding Approved Alternative Item 2	Install and maintain an automatic fail-safe block valve that will stop the flow of gas in the event of an engine failure on each ICE/Generator.	Approved Alternative Item 2 reads: 2. Install and maintain an automatic fail-safe block valve that will stop the flow of gas in the event of an engine failure on each engine that burns landfill gas.
40 CFR 60.752(b)(2)(i) regarding Approved Alternative	Determine the oxygen content in the exhaust gas at the fuel-to-air ratio(s) that a given ICE/Generator operated at during each	Approved Alternative Item 4 reads: 4. During the performance test, determine

Item 4	performance test required by 40 CFR 60.752(b)(2)(iii)(B) .	the O <sub>2</sub> content in the exhaust gas at the fuel-to-air ratio(s) that the engine operated at while demonstrating compliance in 3(a) or 3(b) above.
40 CFR 60.752(b)(2)(i) regarding Approved Alternative Item 5	The performance tests required by 40 CFR 60.752(b)(2)(iii)(B) shall be performed at or near each ICE/Generator's maximum load.	Approved Alternative Item 5 reads: 5. The performance tests required by 40 C.F.R. § 60.752(b)(2)(iii)(B) shall be performed at or near each engine's maximum load.
40 CFR 60.756(b)(1); 40 CFR 60.752(b)(2)(i) regarding Approved Alternative Item 3	<p>Record the fuel-to-air ratio setting during the performance test required by 40 CFR 60.752(b)(2)(iii)(B) for each ICE/Generator and keep a record of this fuel-to-air setting for the life of the control equipment or until a subsequent performance test is performed.</p> <p>If the Permittee chooses to operate an ICE/Generator between a maximum and minimum fuel-to-air ratio, the Permittee shall perform two NMOC performance tests on that ICE/Generator, one at a high fuel-to-air ratio and one at a low fuel-to-air ratio.</p>	Approved Alternative Item 3 reads: 3. Do one of the following: a. Record the fuel-to-air ratio setting during the performance test required by 40 C.F.R. § 60.752(b)(2)(iii)(B) for each engine and keep a record of this fuel-to-air setting for the life of the control equipment or until a subsequent performance test is performed or, b. Do two performance tests on each engine, one at a high fuel-to-air ratio and one at a low fuel-to-air ratio and keep a record of this fuel-to-air setting for the life of the control equipment or until a subsequent set of performance tests is done.
40 CFR 60.752(b)(2)(i) regarding Approved Alternative Item 6	Upon the commissioner's written notice that an ICE/Generator has demonstrated compliance under the conditions of the performance test, the Permittee shall operate the ICE/Generator at the same fuel-to-air ratio (or between the fuel-to-air ratios) that the engine operated at during that performance test.	Approved Alternative Item 6 reads: 6. Operate each engine at the same fuel-to-air ratio that the engine operated at while demonstrating compliance in 3(a) above or between the fuel-to-air ratios that the engine operated at while demonstrating compliance in 3(b) above. It shall be considered a reportable exceedance if the engine's air-to-fuel ratio is not set as

		required by this paragraph.
hdr	F. REPORTING REQUIREMENTS	
40 CFR 60.757(b)	(NMOC Emission Rate report submittals) Not included in this permit.	EPA's Julie Monahan, in a 9/18/02 phone conversation, stated that NMOC Emission Rate report submittals are not necessary once the Design Plan has been submitted. Therefore this set of requirements is not in the permit.
hdr	F.02. Semi-annual report	(formerly "Annual report". See below)
40 CFR 60.757(f) regarding submittal date; 40 CFR 63.1980(a)	Submittal: due 30 days after end of each calendar half-year following Permit Issuance. The Permittee shall submit a semi-annual report. (See Table A)	40 CFR 60.757(f) requires an <u>annual</u> report, but the MACT standard (40 CFR 63.1980(a)) increases the reporting frequency to semi-annual.
40 CFR 60.757(f); 40 CFR 63.1980(a); 40 CFR 60.752(b)(2)(i) regarding Approved Alternative Items 6, 7, and 8	<p>The Permittee shall submit semi-annual reports of the recorded information in (1) through (7) below. The initial semi-annual report shall be submitted within 180 days of installation and start-up of the collection and control system, and shall include the initial performance test report required under 40 CFR 60.8. For enclosed combustion devices and flares, reportable exceedances are defined under 40 CFR 60.758(c).</p> <p>In addition, the following are reportable exceedances:  It shall be considered a reportable exceedance if the engine's air-to-fuel ratio is not set as required by this permit.  It shall be considered a reportable exceedance if the ICE/Generator oxygen content in the exhaust gas is not maintained as required by this permit.</p> <p>(Items 1-7 are listed in the permit)</p>	<p>As above, the frequency is semi-annual, as required by 40 CFR 63.1980(a).</p> <p>Approved Alternative Items 6, 7, and 8 read (in part):</p> <p>6. ... It shall be considered a reportable exceedance if the engine's air-to-fuel ratio is not set as required by this paragraph.</p> <p>7. ... It shall be considered a reportable exceedance if the engine's O2 content in the exhaust gas is not maintained as required by this paragraph.</p> <p>8. Each annual report required by 40 C.F.R. § 60.757(f) shall also state whether each engine complied with 6 and 7 above.</p>
hdr	F.03. Initial Performance Test	

Minn. R. 7017.2020, subp. 1	Testing Frequency Plan: due 60 days after Initial Performance Test for NMOC emissions. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on one-year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required upon written approval of the MPCA.	<p>The ICE/generators and the enclosed flare are subject to routine performance tests, in accordance with performance testing guidance. The enclosed flare may have to retest if the capacity expansion takes place.</p> <p>Note that these tests are for the landfill and the control of NMOCs from the landfill. This requirement is independent of the opacity tests required of the ICE/generators.</p>
40 CFR 60.757(g)	<p>Submittal: due 45 days after Initial Performance Test, to include the following information with the initial performance test report required under Sec. 60.8. Update the information as needed, and include as-builts. If the information is unchanged from that submitted in the design plan, indicate so.</p> <p>(1) A diagram of the collection system showing collection system positioning including all wells, horizontal collectors, surface collectors, or other gas extraction devices, including the locations of any areas excluded from collection and the proposed sites for the future collection system expansion;</p> <p>(2) The data upon which the sufficient density of wells, horizontal collectors, surface collectors, or other gas extraction devices and the gas mover equipment sizing are based;</p>	<p>The "initial performance testing" will be required for each individual control device, and the test for the enclosed flare has already been completed.</p> <p>Items 1-6 are verbatim from the rule. These items were already submitted as part of the Design Plan, and there is no need for the facility to resubmit duplicate material unless changes have occurred. Therefore, only updates and as-builts are requested.</p> <p>(This item is in Delta both at an S/A and a CD requirement.)</p>
40 CFR 60.757(g) CONTINUED	<p>CONTINUED</p> <p>(3) The documentation of the presence of asbestos or nondegradable material for each area from which collection wells have been excluded based on the presence of asbestos or nondegradable material;</p> <p>(4) The sum of the gas generation flow rates for all areas from which collection wells have been excluded based on nonproductivity and the calculations of gas generation flow rate for each excluded area; and</p> <p>(5) The provisions for increasing gas mover equipment capacity</p>	(see above)

	with increased gas generation flow rate, if the present gas mover equipment is inadequate to move the maximum flow rate expected over the life of the landfill; and (6) The provisions for the control of off-site migration.	
hdr	G. RECORDKEEPING	
hdr	G.01. Recordkeeping under 40 CFR pt. 60	The standards under 40 CFR pt. 60 and 40 CFR pt. 63 apply to this facility. The two sets of requirements do not coincide in all areas. The requirements below address issues of combustion temperature monitoring.
40 CFR 60.13(h) regarding continuous monitoring systems other than COMS	Monitoring Data: Reduce all temperature monitoring device and gas flow rate measuring device data to 1-hour averages, in accordance with 40 CFR 60.13(h). 1-hour averages shall be computed from four or more data points equally spaced over each 1-hour period.	One-hour period means any 60-minute period commencing on the hour.
hdr	G.01.b. Measurements during the initial performance test or compliance determination	
CONTINUED 40 CFR 60.758(b)	<p>CONTINUED</p> <p>(2) For landfill gas control through the use of an enclosed combustion device (including internal combustion engines) other than a boiler or process heater with a design heat input capacity equal to or greater than 44 megawatts:</p> <p>(i) The average combustion temperature measured at least every 15 minutes during the performance test and averaged over the same time period of the performance test.</p> <p>(ii) The percent reduction of NMOC determined as specified in 40 CFR 60.752(b)(2)(iii)(B) [Initial performance test] achieved by the control device.</p> <p>(3) &lt;reserved&gt;</p> <p>(4) &lt;reserved&gt;</p>	<p>In (2)(i), the text “ during the performance test ” does not appear in rule, and was added for clarification. The text within (2)(i) does not apply at all times, but applies only during the performance test. This was verified during the May 1, 2003, APTI T-003-03 Landfills NESHAP and NSPS 2003 Update, this requirement was clarified to say that the recordkeeping process applies only during the performance test.</p> <p>40 CFR 60.758(b)(3) applies to boilers and process heaters that are used as control</p>

		equipment. It is listed as <reserved> because it does not apply to the control process. 40 CFR 60.758(b)(4) applies to open flares. It is listed as <reserved> because the facility does not operate an open flare.
hdr	G.01.c. Continuous monitoring system records	The permit conditions under this rule get a little lengthy, because the permit spells out the monitoring requirements tailored for this facility. The permit must contain the actual numerical results obtained during the most recent performance test that demonstrates compliance.
40 CFR 60.758(c)	The Permittee shall keep for 5 years up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored in 40 CFR 60.756 [Monitoring of Operations] as well as up-to-date, readily accessible records for periods of operation during which the parameter boundaries established during the most recent performance test are exceeded.	The permit conditions that fall under 40 CFR 60.758(c) are lengthy in this permit, and include facility-specific information. The permit conditions also include an approved alternative to the rule.
CONTINUED 40 CFR 60.758(c)	G.01.c.(1). The following constitute exceedances that shall be recorded and reported under 40 CFR 60.757(f) [Annual/semiannual report]:  - When recording and reporting for the enclosed flare, the Permittee shall comply with the requirements in G.01.c.(1)(a).  - When recording and reporting for the ICE/Generators, the Permittee shall comply with the requirements in G.01.c.(1)(b), or the Permittee may choose the alternative in G.01.c.(1)(c) or G.01.c.(1)(d).	The reporting requirements vary depending on the control device and the alternative chosen. These variations have been spelled out in the permit.
CONTINUED 40 CFR 60.758(c)	G.01.c.(1)(a) Enclosed flare - continuous monitoring records	
CONTINUED	Report all periods of operation during which the 3-hour block	This is the reporting requirement as it

40 CFR 60.758(c)	<p>average combustion temperature for the enclosed flare was more than 28 degrees C (50 degrees F) below the average combustion temperature during the most recent performance test at which compliance with 40 CFR 60.752(b)(2)(iii) [Control system] was determined.</p> <p>The compliance temperature (incorporating the 50-degree F allowance) is shown below.</p>	<p>appears in the rule.</p> <p>The rule language requires temperature exceedances to be reported. The text “(50 degrees F)” does not appear in rule, and was added for clarification. The monitors will read and record in degrees F, and the permit text conversion to degrees F simplifies compliance.</p> <p>40 CFR 60.755(e) says that requirements do not apply during periods of startup, shutdown, and malfunction provided these periods do not exceed 1 hour for control equipment; this rule does not seem to exempt them from the temperature reporting requirement to report, but it may make the exceedance exempt.</p>
CONTINUED 40 CFR 60.758(c)	<p>Temperature: greater than or equal to <b>1410</b> degrees F using a 3-hour Block Average at the Enclosed Flare (EU003/CE005).</p> <p>This limit is based on an average temperature of <b>1460</b> degrees F recorded during the <b>3/8/2001</b> performance test.</p>	<p>This is the performance test-based operating limit for the enclosed flare.</p>
CONTINUED 40 CFR 60.758(c)	<p>G.01.c.(1)(b) ICE/Generators - continuous monitoring records (combustion temperature monitoring)</p>	<p>Left- and Right-Bank Exhaust Temperature option</p>
CONTINUED 40 CFR 60.758(c)	<p>Report all periods of operation during which the 3-hour block average exhaust temperature for each ICE/Generator was more than 28 degrees C (50 degrees F) below the average exhaust temperature during the most recent performance test at which compliance with 40 CFR 60.752(b)(2)(iii) [Control system] was determined.</p> <p>The compliance temperatures (incorporating the 50-degree F allowance) are shown below.</p>	<p>This is the reporting requirement as required in the rule. (see text for the enclosed flare above)</p>
CONTINUED	<p>Temperature: greater than or equal to 788 degrees F using a 3-</p>	<p>This is one sample of performance test-</p>



40 CFR 60.758(c)	<p>hour Block Average, averaging the Left Bank and Right Bank Exhaust temperatures of EU 004/CE006 (ICE/Generator A, a.k.a. ICE/Generator #4).</p> <p>This limit is based on a Left Bank average temperature of 840 degrees F and a Right Bank average temperature of 835 degrees F recorded during the 5/5-6/2003 performance test.</p>	based operating limits for an ICE/Generator.
CONTINUED 40 CFR 60.758(c)	G.01.c.(1)(c) ICE/Generators - continuous monitoring records (combustion temperature monitoring alternative)	Cylinder exhaust port temperature option
CONTINUED 40 CFR 60.758(c)	<p>Report all periods of operation during which the 3-hour block average cylinder exhaust port temperature for each ICE/Generator was more than 28 degrees C (50 degrees F) below the average cylinder exhaust port temperature during the most recent performance test at which compliance with 40 CFR 60.752(b)(2)(iii) [Control system] was determined.</p> <p>The compliance temperatures (incorporating the 50-degree F allowance) are shown below.</p>	<p>This is the reporting requirement as required in the rule. (see text for the enclose flare above)</p>
CONTINUED 40 CFR 60.758(c)	<p>Temperature: greater than or equal to &lt;data not available&gt; degrees F , using a 3-hour Block Average, for the average of the individual cylinder exhaust port temperatures of EU 004/CE006 (ICE/Generator A, a.k.a. ICE/Generator #4).</p> <p>This limit is based on an average temperature of &lt;data not available&gt; degrees F recorded during the &lt;date not available&gt; performance test.</p>	This is one sample of performance test-based operating limits for an ICE/Generator. Because no such data was recorded during the most recent performance test, this requirement serves as a placeholder.
CONTINUED 40 CFR 60.758(c); 40 CFR 60.752(b)(2)(i) regarding alternatives	G.01.c.(1)(a) ICE/Generators - continuous monitoring records (exhaust oxygen monitoring alternative)	Exhaust oxygen monitoring option
CONTINUED 40 CFR 60.758(c); 40 CFR 60.752(b)(2)(i) regarding	Report all periods of operation during which the 3-hour block average exhaust oxygen concentration from an ICE/Generator was more than plus-or-minus one-half percent of the Oxygen	<p>This is the reporting requirement as required in the rule. (see text for the enclose flare above)</p>

Approved Alternative Item 7	<p>Compliance Value (see "DEFINITIONS").</p> <p>The oxygen compliance ranges are shown below.</p>	<p>Approved Alternative Items 7 reads (in part):</p> <p>7. Operate each engine within <math>\pm\frac{1}{2}</math> % of the O<sub>2</sub> content in the exhaust gas at the fuel to air ratio(s) that the engine operated at while demonstrating compliance in 3(a) or 3(b) above. ... It shall be considered a reportable exceedance if the engine's O<sub>2</sub> content in the exhaust gas is not maintained as required by this paragraph.</p>
<p>CONTINUED</p> <p>40 CFR 60.758(c); 40 CFR 60.752(b)(2)(i) regarding Approved Alternative Item 7</p>	<p>Oxygen: greater than or equal to &lt;data not available&gt; percent and less than or equal to &lt;data not available&gt; percent , using a 3-hour Block Average, measured in the exhaust gas of EU004/CE006 (ICE/Generator A, a.k.a. ICE/Generator #4).</p> <p>This limit is based on an Oxygen Compliance Value of &lt;data not available&gt; percent recorded during the &lt;date not available&gt; performance test.</p>	<p>This is one sample of performance test-based operating limits for an ICE/Generator.</p> <p>Because no such data was recorded during the most recent performance test, this requirement serves as a placeholder.</p>
<p>CONTINUED</p> <p>40 CFR 60.758(c); 40 CFR 60.752(b)(2)(i) regarding Approved Alternative Item 6</p>	<p>Report all periods of operation during which an ICE/Generator's air-to-fuel ratio is not set in accordance with the the Air-to-Fuel Compliance Value (see "DEFINITIONS").</p> <p>The air-to-fuel ratio compliance values are shown below.</p>	<p>Approved Alternative Items 6 reads:</p> <p>6. Operate each engine at the same fuel-to-air ratio that the engine operated at while demonstrating compliance in 3(a) above or between the fuel-to-air ratios that the engine operated at while demonstrating compliance in 3(b) above. It shall be considered a reportable exceedance if the engine's air-to-fuel ratio is not set as required by this paragraph.</p>
<p>CONTINUED</p> <p>40 CFR 60.758(c); 40 CFR 60.752(b)(2)(i) regarding Approved Alternative Item 6</p>	<p>Air-to-Fuel Ratio: not to deviate from &lt;data not available&gt; for EU004/CE006 (ICE/Generator A, a.k.a. ICE/Generator #4).</p> <p>This limit is based on an Air-to-Fuel Compliance Value of &lt;data</p>	<p>This is one sample of performance test-based operating limits for an ICE/Generator.</p> <p>Because both oxygen data and air-to-fuel</p>

	not available> recorded during the <date not available> performance test.	ratios were not recorded during the most recent performance test, this requirement serves as a placeholder.
hdr	G.02. Recordkeeping under 40 CFR pt. 63	
40 CFR 63.1975	<p>3-hour block averages are calculated in the same way as they are calculated in 40 CFR part 60, subpart WWW, except that the data collected during the events listed in items (a), (b), (c), and (d) below are not to be included in any average computed under 40 CFR part 60, subpart WWW:</p> <p>(a) Monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments.</p> <p>(b) Startups.</p> <p>(c) Shutdowns.</p> <p>(d) Malfunctions.</p>	<p>This requirement lists the exceptions from the 3-hour block average calculation. Although the language says, “3-hour block averages are calculated in the same way as they are calculated in 40 CFR part 60, subpart WWW”, in reality Subpart WWW does not describe how they are to be calculated. This permit, on the other hand, rectifies this by defining a three-hour block average.</p>
	H. SPECIFICATIONS FOR ACTIVE COLLECTION SYSTEMS	
40 CFR 60.759(a)	<p>The Permittee shall site active collection wells, horizontal collectors, surface collectors, or other extraction devices at a sufficient density throughout all gas producing areas using the following procedures, including all alternative procedures approved in the collection and control system design plan (Plan). CONTINUED</p> <p>(1) The collection devices within the interior and along the perimeter areas shall be certified to achieve comprehensive control of surface gas emissions by a professional engineer. The following issues shall be addressed in the design: depths of refuse, refuse gas generation rates and flow characteristics, cover properties, gas system expandability, leachate and condensate management, accessibility, compatibility with filling operations, integration with closure end use, air intrusion control, corrosion resistance, fill settlement, and resistance to the refuse decomposition heat.</p>	<p>This portion of the rule is a mix of plan requirements and operational requirements. Basically, it tells the Permittee to install and operate the system described in the collection and control system design plan (Plan). The rule language includes a reference to 40 CFR 60.752(b)(2)(i), which covers the information that must be contained in the Design Plan. The permit language eliminates the middleman and simply references the Plan.</p> <p>Item (1) was completed for the Plan, but still applies to any Plan revisions.</p> <p>Other parts of the rule under item (3)</p>

	<p>CONTINUED</p> <p>(2) The sufficient density of gas collection devices determined in the Plan shall address landfill gas migration issues and augmentation of the collection system through the use of active or passive systems at the landfill perimeter or exterior.</p> <p>CONTINUED</p> <p>(3) The placement of gas collection devices determined in the Plan shall control all gas producing areas, except as follows in items (i) and (ii) below:</p> <p>(i) Any segregated area of asbestos or nondegradable material may be excluded from collection if documented as provided under 40 CFR 60.758(d). The documentation shall provide the nature, date of deposition, location and amount of asbestos or nondegradable material deposited in the area, and shall be provided upon request. (ii) Any nonproductive area of the landfill may be excluded from control, provided that the total of all excluded areas can be shown to contribute less than 1 percent of the total amount of NMOC emissions from the landfill. The Permittee shall follow the procedures in 40 CFR 60.759(a)(3)(ii) and (iii).</p>	<p>pertaining to "nonproductive areas" are more comprehensively described in the rule. For brevity, they are not included.</p>
hdr	I. DEFINITIONS	
hdr	I.01. Deviation	<p>The term "deviation" is defined in at least three locations. All three apply. Because the Permittee is required to record and report deviations, all definitions must be considered. They are not necessarily conflicting definitions – those from 40 CFR pt. 63 contain details that also fall under the definition from Minn. R. 7007.0100.</p>
40 CFR 63.1990 for "Deviation"	<p>Deviation means any instance in which an affected source subject to this subpart [60 CFR pt. 63, subp. AAAA], or an owner or operator of such a source:</p>	

	<p>(1) Fails to meet any requirement or obligation established by this subpart, including, but not limited to, any emissions limitation (including any operating limit) or work practice standard;</p> <p>(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or</p> <p>(3) Fails to meet any emission limitation, (including any operating limit), or work practice standard in this subpart during SSM [startup, shutdown, or malfunction], regardless of whether or not such failure is permitted by this subpart.</p>	
40 CFR 63.1965	<p>A deviation includes the definition contained in 40 CFR 63.1990. For the purposes (under 40 CFR pt. 63, subp. AAAA) of the landfill monitoring and SSMP requirements, deviations include the items (a) through (c) below:</p> <p>(a) A deviation occurs when the control device operating parameter boundaries described in 40 CFR 60.758(c)(1) [exceedance recording/reporting] are exceeded.</p> <p>(b) A deviation occurs when 1 hour or more of the hours during the 3-hour block averaging period does not constitute a valid hour of data. A valid hour of data must have measured values for at least three 15-minute monitoring periods within the hour.</p> <p>(c) A deviation occurs when a SSMP is not developed, implemented, or maintained on site.</p>	
Minn. R. 7007.0100, subp. 8a	"Deviation" means any noncompliance with an applicable requirement or permit condition.	
hdr	I.05. Three-hour block average (or 3-hour block average)	
Minn. R. 7007.0100, subp. 7a; Minn. R. 7007.0800, subp. 2	"Three-hour block average" (or "3-hour block average") means the average of all hourly emission rates measured over discrete three-hour periods beginning at midnight.	No definition of "Three-hour block average" was found in any applicable federal NSPS or NESHAP. Minn. R. 7007.0100, subp. 7a defines "block average". The general authority under Minn. R. 7007.0800, subp. 2, was cited to

		create a specific definition applicable to this permit.
hdr	I.06. Oxygen Compliance Value	
40 CFR 60.752(b)(2)(i) regarding Approved Alternative Item 7	"Oxygen Compliance Value" means the oxygen content in the exhaust gas at the fuel to air ratio(s) that a given ICE/Generator operated at while demonstrating compliance during the performance test(s) required by 40 CFR 60.752(b)(2)(iii).	<p>This definition was created to create a more concise term than the phrase in the approved alternative.</p> <p>Approved Alternative Item 7 reads (in part):</p> <p>7. Operate each engine within <math>\pm 1/2</math> % of the O<sub>2</sub> content in the exhaust gas at the fuel to air ratio(s) that the engine operated at while demonstrating compliance in 3(a) or 3(b) above. ...</p>
hdr	I.07. Air-to-Fuel Compliance Value	
40 CFR 60.752(b)(2)(i) regarding Approved Alternative Item 6	"Air-to-Fuel Compliance Value" means the air-to-fuel ratio that a given ICE/Generator operated at while demonstrating compliance during the performance test(s) required by 40 CFR 60.752(b)(2)(iii).	<p>This definition was created to create a more concise term than the phrase in the approved alternative.</p> <p>Approved Alternative Item 6 reads (in part):</p> <p>6. Operate each engine at the same fuel-to-air ratio that the engine operated at while demonstrating compliance in 3(a) above or between the fuel-to-air ratios that the engine operated at while demonstrating compliance in 3(b) above. ...</p>

### Individual ICE/Generator Oxygen Monitors

The Permittee Why	The Permittee What	Comments
40 CFR 60.13(c) regarding CEMS; 40 CFR 13(f) regarding CEMS; Minn. R. 7017.1050,	CEM Certification Test: due 90 days after Quarterly Report (i.e., the first excess emissions report required for the CEMS) but not later than 30 days after the Initial Performance Test. Follow the	The certification test requirements are listed by unit, because they may not happen all at the same time.

subp. 1 regarding CEMS	Performance Specifications listed in 40 CFR pt. 60, Appendix B.	
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