

**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION**

EFFECTIVE DATE: December 28, 2011

ISSUED TO

Orchard Hill Sanitary Landfill

State Registration Number (SRN): N5719

LOCATED AT

3290 Hennesey Road, Watervliet, Michigan 49098

RENEWABLE OPERATING PERMIT

Permit Number: MI-ROP-N5719-2011

Expiration Date: December 28, 2016

Administratively Complete ROP Renewal Application Due Between June 28, 2015 and June 28, 2016

This Renewable Operating Permit (ROP) is issued in accordance with and subject to Section 5506(3) of Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451). Pursuant to Michigan Air Pollution Control Rule 210(1), this ROP constitutes the permittee's authority to operate the stationary source identified above in accordance with the general conditions, special conditions and attachments contained herein. Operation of the stationary source and all emission units listed in the permit are subject to all applicable future or amended rules and regulations pursuant to Act 451 and the federal Clean Air Act.

SOURCE-WIDE PERMIT TO INSTALL

Permit Number: MI-PTI-N5719-2011

This Permit to Install (PTI) is issued in accordance with and subject to Section 5505(5) of Act 451. Pursuant to Michigan Air Pollution Control Rule 214a, the terms and conditions herein, identified by the underlying applicable requirement citation of Rule 201(1)(a), constitute a federally enforceable PTI. The PTI terms and conditions do not expire and remain in effect unless the criteria of Rule 201(6) are met. Operation of all emission units identified in the PTI is subject to all applicable future or amended rules and regulations pursuant to Act 451 and the federal Clean Air Act.

Michigan Department of Environmental Quality

Mary A. Douglas, Kalamazoo District Supervisor

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AUTHORITY AND ENFORCEABILITY

For the purpose of this permit, the **permittee** is defined as any person who owns or operates an emission unit at a stationary source for which this permit has been issued. The **department** is defined in Rule 104(d) as the Director of the Michigan Department of Environmental Quality (MDEQ) or his or her designee.

The permittee shall comply with all specific details in the permit terms and conditions and the cited underlying applicable requirements. All terms and conditions in this ROP are both federally enforceable and state enforceable unless otherwise footnoted. Certain terms and conditions are applicable to most stationary sources for which an ROP has been issued. These general conditions are included in Part A of this ROP. Other terms and conditions may apply to a specific emission unit, several emission units which are represented as a flexible group, or the entire stationary source which is represented as a Source-Wide group. Special conditions are identified in Parts B, C, D and/or the appendices.

In accordance with Rule 213(2)(a), all underlying applicable requirements will be identified for each ROP term or condition. All terms and conditions that are included in a PTI, are streamlined or subsumed, or is state only enforceable will be noted as such.

In accordance with Section 5507 of Act 451, the permittee has included in the ROP application a compliance certification, a schedule of compliance, and a compliance plan. For applicable requirements with which the source is in compliance, the source will continue to comply with these requirements. For applicable requirements with which the source is not in compliance, the source will comply with the detailed schedule of compliance requirements that are incorporated as an appendix in this ROP. Furthermore, for any applicable requirements effective after the date of issuance of this ROP, the stationary source will meet the requirements on a timely basis, unless the underlying applicable requirement requires a more detailed schedule of compliance.

Issuance of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.

A. GENERAL CONDITIONS

Permit Enforceability

- All conditions in this permit are both federally enforceable and state enforceable unless otherwise noted. **(R 336.1213(5))**
- Those conditions that are hereby incorporated in a state only enforceable Source-Wide PTI pursuant to Rule 201(2)(d) are designated by footnote one. **(R 336.1213(5)(a), R 336.1214a(5))**
- Those conditions that are hereby incorporated in federally enforceable Source-wide PTI No. MI-PTI-N5719-2011 pursuant to Rule 201(2)(c) are designated by footnote two. **(R 336.1213(5)(b), R 336.1214a(3))**

General Provisions

1. The permittee shall comply with all conditions of this ROP. Any ROP noncompliance constitutes a violation of Act 451, and is grounds for enforcement action, for ROP revocation or revision, or for denial of the renewal of the ROP. All terms and conditions of this ROP that are designated as federally enforceable are enforceable by the Administrator of the United States Environmental Protection Agency (USEPA) and by citizens under the provisions of the federal Clean Air Act (CAA). Any terms and conditions based on applicable requirements which are designated as "state only" are not enforceable by the USEPA or citizens pursuant to the CAA. **(R 336.1213(1)(a))**
2. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this ROP. **(R 336.1213(1)(b))**
3. This ROP may be modified, revised, or revoked for cause. The filing of a request by the permittee for a permit modification, revision, or termination, or a notification of planned changes or anticipated noncompliance does not stay any ROP term or condition. This does not supersede or affect the ability of the permittee to make changes, at the permittee's own risk, pursuant to Rule 215 and Rule 216. **(R 336.1213(1)(c))**
4. The permittee shall allow the department, or an authorized representative of the department, upon presentation of credentials and other documents as may be required by law and upon stating the authority for and purpose of the investigation, to perform any of the following activities **(R 336.1213(1)(d))**:
 - a. Enter, at reasonable times, a stationary source or other premises where emissions-related activity is conducted or where records must be kept under the conditions of the ROP.
 - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of the ROP.
 - c. Inspect, at reasonable times, any of the following:
 - i. Any stationary source.
 - ii. Any emission unit.
 - iii. Any equipment, including monitoring and air pollution control equipment.
 - iv. Any work practices or operations regulated or required under the ROP.
 - d. As authorized by Section 5526 of Act 451, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the ROP or applicable requirements.
5. The permittee shall furnish to the department, within a reasonable time, any information the department may request, in writing, to determine whether cause exists for modifying, revising, or revoking the ROP or to determine compliance with this ROP. Upon request, the permittee shall also furnish to the department copies of any records that are required to be kept as a term or condition of this ROP. For information which is claimed by the permittee to be confidential, consistent with the requirements of the 1976 PA 442, MCL §15.231 et seq.,

and known as the Freedom of Information Act, the person may also be required to furnish the records directly to the USEPA together with a claim of confidentiality. **(R 336.1213(1)(e))**

6. A challenge by any person, the Administrator of the USEPA, or the department to a particular condition or a part of this ROP shall not set aside, delay, stay, or in any way affect the applicability or enforceability of any other condition or part of this ROP. **(R 336.1213(1)(f))**
7. The permittee shall pay fees consistent with the fee schedule and requirements pursuant to Section 5522 of Act 451. **(R 336.1213(1)(g))**
8. This ROP does not convey any property rights or any exclusive privilege. **(R 336.1213(1)(h))**

Equipment & Design

9. Any collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in Rule 370(2). **(R 336.1370)**
10. Any air cleaning device shall be installed, maintained, and operated in a satisfactory manner and in accordance with the Michigan Air Pollution Control rules and existing law. **(R 336.1910)**

Emission Limits

11. Except as provided in Subrules 2, 3, and 4 of Rule 301, states in part; "a person shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of a density greater than the most stringent of Rule 301(1)(a) or (b) unless otherwise specified in this ROP." The grading of visible emissions shall be determined in accordance with Rule 303 **(R 336.1301(1) in pertinent part)**:
 - a. A 6-minute average of 20 percent opacity, except for one 6-minute average per hour of not more than 27 percent opacity.
 - b. A limit specified by an applicable federal new source performance standard.
12. The permittee shall not cause or permit the emission of an air contaminant or water vapor in quantities that cause, alone or in reaction with other air contaminants, either of the following:
 - a. Injurious effects to human health or safety, animal life, plant life of significant economic value, or property.¹ **(R 336.1901(a))**
 - b. Unreasonable interference with the comfortable enjoyment of life and property.¹ **(R 336.1901(b))**

Testing/Sampling

13. The department may require the owner or operator of any source of an air contaminant to conduct acceptable performance tests, at the owner's or operator's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001(1). **(R 336.2001)**
14. Any required performance testing shall be conducted in accordance with Rule 1001(2), Rule 1001(3) and Rule 1003. **(R 336.2001(2), R 336.2001(3), R 336.2003(1))**
15. Any required test results shall be submitted to the Air Quality Division (AQD) in the format prescribed by the applicable reference test method within 60 days following the last date of the test. **(R 336.2001(4))**

Monitoring/Recordkeeping

16. Records of any periodic emission or parametric monitoring required in this ROP shall include the following information specified in Rule 213(3)(b)(i), where appropriate **(R 336.1213(3)(b))**:
 - a. The date, location, time, and method of sampling or measurements.
 - b. The dates the analyses of the samples were performed.
 - c. The company or entity that performed the analyses of the samples.
 - d. The analytical techniques or methods used.
 - e. The results of the analyses.
 - f. The related process operating conditions or parameters that existed at the time of sampling or measurement.
17. All required monitoring data, support information and all reports, including reports of all instances of deviation from permit requirements, shall be kept and furnished to the department upon request for a period of not less than 5 years from the date of the monitoring sample, measurement, report or application. Support information includes all calibration and maintenance records and all original strip-chart recordings, or other original data records, for continuous monitoring instrumentation and copies of all reports required by the ROP. **(R 336.1213(1)(e), R 336.1213(3)(b)(ii))**

Certification & Reporting

18. Except for the alternate certification schedule provided in Rule 213(3)(c)(iii)(B), any document required to be submitted to the department as a term or condition of this ROP shall contain an original certification by a responsible official which states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. **(R 336.1213(3)(c))**
19. A responsible official shall certify to the appropriate AQD District Office and to the USEPA that the stationary source is and has been in compliance with all terms and conditions contained in the ROP except for deviations that have been or are being reported to the appropriate AQD District Office pursuant to Rule 213(3)(c). This certification shall include all the information specified in Rule 213(4)(c)(i) through (v) and shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the certification are true, accurate, and complete. The USEPA address is: USEPA, Air Compliance Data - Michigan, Air and Radiation Division, 77 West Jackson Boulevard, Chicago, Illinois 60604. **(R 336.1213(4)(c))**
20. The certification of compliance shall be submitted annually for the term of this ROP as detailed in the special conditions, or more frequently if specified in an applicable requirement or in this ROP. **(R 336.1213(4)(c))**
21. The permittee shall promptly report any deviations from ROP requirements and certify the reports. The prompt reporting of deviations from ROP requirements is defined in Rule 213(3)(c)(ii) as follows, unless otherwise described in this ROP **(R 336.1213(3)(c))**:
 - a. For deviations that exceed the emissions allowed under the ROP, prompt reporting means reporting consistent with the requirements of Rule 912 as detailed in Condition 25. All reports submitted pursuant to this paragraph shall be promptly certified as specified in Rule 213(3)(c)(iii).
 - b. For deviations which exceed the emissions allowed under the ROP and which are not reported pursuant to Rule 912 due to the duration of the deviation, prompt reporting means the reporting of all deviations in the semiannual reports required by Rule 213(3)(c)(i). The report shall describe reasons for each deviation and the actions taken to minimize or correct each deviation.
 - c. For deviations that do not exceed the emissions allowed under the ROP, prompt reporting means the reporting of all deviations in the semiannual reports required by Rule 213(3)(c)(i). The report shall describe the reasons for each deviation and the actions taken to minimize or correct each deviation.

22. For reports required pursuant to Rule 213(3)(c)(ii), prompt certification of the reports is described in Rule 213(3)(c)(iii) as either of the following **(R 336.1213(3)(c))**:
- Submitting a certification by a responsible official with each report which states that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.
 - Submitting, within 30 days following the end of a calendar month during which one or more prompt reports of deviations from the emissions allowed under the ROP were submitted to the department pursuant to Rule 213(3)(c)(ii), a certification by a responsible official which states that, "based on information and belief formed after reasonable inquiry, the statements and information contained in each of the reports submitted during the previous month were true, accurate, and complete". The certification shall include a listing of the reports that are being certified. Any report submitted pursuant to Rule 213(3)(c)(ii) that will be certified on a monthly basis pursuant to this paragraph shall include a statement that certification of the report will be provided within 30 days following the end of the calendar month.
23. Semiannually for the term of the ROP as detailed in the special conditions, or more frequently if specified, the permittee shall submit certified reports of any required monitoring to the appropriate AQD District Office. All instances of deviations from ROP requirements during the reporting period shall be clearly identified in the reports. **(R 336.1213(3)(c)(i))**
24. On an annual basis, the permittee shall report the actual emissions, or the information necessary to determine the actual emissions, of each regulated air pollutant as defined in Rule 212(6) for each emission unit utilizing the emissions inventory forms provided by the department. **(R 336.1212(6))**
25. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the appropriate AQD District Office. The notice shall be provided not later than two business days after the start-up, shutdown, or discovery of the abnormal conditions or malfunction. Notice shall be by any reasonable means, including electronic, telephonic, or oral communication. Written reports, if required under Rule 912, must be submitted to the appropriate AQD District Supervisor within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal conditions or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5) and shall be certified by a responsible official in a manner consistent with the CAA. **(R 336.1912)**

Permit Shield

26. Compliance with the conditions of the ROP shall be considered compliance with any applicable requirements as of the date of ROP issuance, if either of the following provisions is satisfied **(R 336.1213(6)(a)(i), R 336.1213(6)(a)(ii))**:
- The applicable requirements are included and are specifically identified in the ROP.
 - The permit includes a determination or concise summary of the determination by the department that other specifically identified requirements are not applicable to the stationary source.
- Any requirements identified in Part E of this ROP have been identified as non-applicable to this ROP and are included in the permit shield.
27. Nothing in this ROP shall alter or affect any of the following:
- The provisions of Section 303 of the CAA, emergency orders, including the authority of the USEPA under Section 303 of the CAA. **(R 336.1213(6)(b)(i))**
 - The liability of the owner or operator of this source for any violation of applicable requirements prior to or at the time of this ROP issuance. **(R 336.1213(6)(b)(ii))**
 - The applicable requirements of the acid rain program, consistent with Section 408(a) of the CAA. **(R 336.1213(6)(b)(iii))**

- d. The ability of the USEPA to obtain information from a source pursuant to Section 114 of the CAA. **(R 336.1213(6)(b)(iv))**
28. The permit shield shall not apply to provisions incorporated into this ROP through procedures for any of the following:
- a. Operational flexibility changes made pursuant to Rule 215. **(R 336.1215(5))**
 - b. Administrative Amendments made pursuant to Rule 216(1)(a)(i)-(iv). **(R 336.1216(1)(b)(iii))**
 - c. Administrative Amendments made pursuant to Rule 216(1)(a)(v) until the amendment has been approved by the department. **(R 336.1216(1)(c)(iii))**
 - d. Minor Permit Modifications made pursuant to Rule 216(2). **(R 336.1216(2)(f))**
 - e. State-Only Modifications made pursuant to Rule 216(4) until the changes have been approved by the department. **(R 336.1216(4)(e))**
29. Expiration of this ROP results in the loss of the permit shield. If a timely and administratively complete application for renewal is submitted not more than 18 months, but not less than 6 months, before the expiration date of the ROP, but the department fails to take final action before the end of the ROP term, the existing ROP does not expire until the renewal is issued or denied, and the permit shield shall extend beyond the original ROP term until the department takes final action. **(R 336.1217(1)(c), R 336.1217(1)(a))**

Revisions

30. For changes to any process or process equipment covered by this ROP that do not require a revision of the ROP pursuant to Rule 216, the permittee must comply with Rule 215. **(R 336.1215, R 336.1216)**
31. A change in ownership or operational control of a stationary source covered by this ROP shall be made pursuant to Rule 216(1). **(R 336.1219(2))**
32. For revisions to this ROP, an administratively complete application shall be considered timely if it is received by the department in accordance with the time frames specified in Rule 216. **(R 336.1210(9))**
33. Pursuant to Rule 216(1)(b)(iii), Rule 216(2)(d) and Rule 216(4)(d), after a change has been made, and until the department takes final action, the permittee shall comply with both the applicable requirements governing the change and the ROP terms and conditions proposed in the application for the modification. During this time period, the permittee may choose to not comply with the existing ROP terms and conditions that the application seeks to change. However, if the permittee fails to comply with the ROP terms and conditions proposed in the application during this time period, the terms and conditions in the ROP are enforceable. **(R 336.1216(1)(c)(iii), R 336.1216(2)(d), R 336.1216(4)(d))**

Reopenings

34. A ROP shall be reopened by the department prior to the expiration date and revised by the department under any of the following circumstances:
- a. If additional requirements become applicable to this stationary source with three or more years remaining in the term of the ROP, but not if the effective date of the new applicable requirement is later than the ROP expiration date. **(R 336.1217(2)(a)(i))**
 - b. If additional requirements pursuant to Title IV of the CAA become applicable to this stationary source. **(R 336.1217(2)(a)(ii))**
 - c. If the department determines that the ROP contains a material mistake, information required by any applicable requirement was omitted, or inaccurate statements were made in establishing emission limits or the terms or conditions of the ROP. **(R 336.1217(2)(a)(iii))**
 - d. If the department determines that the ROP must be revised to ensure compliance with the applicable requirements. **(R 336.1217(2)(a)(iv))**

Renewals

35. For renewal of this ROP, an administratively complete application shall be considered timely if it is received by the department not more than 18 months, but not less than 6 months, before the expiration date of the ROP. **(R 336.1210(7))**

Stratospheric Ozone Protection

36. If the permittee is subject to Title 40 of the Code of Federal Regulations (CFR), Part 82 and services, maintains, or repairs appliances except for motor vehicle air conditioners (MVAC), or disposes of appliances containing refrigerant, including MVAC and small appliances, or if the permittee is a refrigerant reclaiming, appliance owner or a manufacturer of appliances or recycling and recovery equipment, the permittee shall comply with all applicable standards for recycling and emissions reduction pursuant to 40 CFR, Part 82, Subpart F.
37. If the permittee is subject to 40 CFR, Part 82, and performs a service on motor (fleet) vehicles when this service involves refrigerant in the MVAC, the permittee is subject to all the applicable requirements as specified in 40 CFR, Part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners. The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed by the original equipment manufacturer. The term MVAC as used in Subpart B does not include the air-tight sealed refrigeration system used for refrigerated cargo or an air conditioning system on passenger buses using Hydrochlorofluorocarbon-22 refrigerant.

Risk Management Plan

38. If subject to Section 112(r) of the CAA and 40 CFR, Part 68, the permittee shall register and submit to the USEPA the required data related to the risk management plan for reducing the probability of accidental releases of any regulated substances listed pursuant to Section 112(r)(3) of the CAA as amended in 40 CFR, Part 68.130. The list of substances, threshold quantities, and accident prevention regulations promulgated under 40 CFR, Part 68, do not limit in any way the general duty provisions under Section 112(r)(1).
39. If subject to Section 112(r) of the CAA and 40 CFR, Part 68, the permittee shall comply with the requirements of 40 CFR, Part 68, no later than the latest of the following dates as provided in 40 CFR, Part 68.10(a):
- June 21, 1999,
 - Three years after the date on which a regulated substance is first listed under 40 CFR, Part 68.130, or
 - The date on which a regulated substance is first present above a threshold quantity in a process.
40. If subject to Section 112(r) of the CAA and 40 CFR, Part 68, the permittee shall submit any additional relevant information requested by any regulatory agency necessary to ensure compliance with the requirements of 40 CFR, Part 68.
41. If subject to Section 112(r) of the CAA and 40 CFR, Part 68, the permittee shall annually certify compliance with all applicable requirements of Section 112(r) as detailed in Rule 213(4)(c). **(40 CFR, Part 68)**

Emission Trading

42. Emission averaging and emission reduction credit trading are allowed pursuant to any applicable interstate or regional emission trading program that has been approved by the Administrator of the USEPA as a part of Michigan's State Implementation Plan. Such activities must comply with Rule 215 and Rule 216. **(R 336.1213(12))**

Permit To Install (PTI)

43. The process or process equipment included in this permit shall not be reconstructed, relocated, or modified unless a PTI authorizing such action is issued by the department, except to the extent such action is exempt from the PTI requirements by any applicable rule.² **(R 336.1201(1))**
44. The department may, after notice and opportunity for a hearing, revoke PTI terms or conditions if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of the PTI or is violating the department's rules or the CAA.² **(R 336.1201(8), Section 5510 of Act 451)**
45. The terms and conditions of a PTI shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by the PTI. If a new owner or operator submits a written request to the department pursuant to Rule 219 and the department approves the request, this PTI will be amended to reflect the change of ownership or operational control. The request must include all of the information required by Subrules (1)(a), (b) and (c) of Rule 219. The written request shall be sent to the appropriate AQD District Supervisor, MDEQ.² **(R 336.1219)**
46. If the installation, reconstruction, relocation, or modification of the equipment for which PTI terms and conditions have been approved has not commenced within 18 months, or has been interrupted for 18 months, the applicable terms and conditions from that PTI shall become void unless otherwise authorized by the department. Furthermore, the person to whom that PTI was issued, or the designated authorized agent, shall notify the department via the Supervisor, Permit Section, MDEQ, AQD, P.O. Box 30260, Lansing, Michigan 48909, if it is decided not to pursue the installation, reconstruction, relocation, or modification of the equipment allowed by the terms and conditions from that PTI.² **(R 336.1201(4))**

Footnotes:

¹This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

²This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

B. SOURCE-WIDE CONDITIONS

Part B outlines the Source-Wide Terms and Conditions that apply to this stationary source. The permittee is subject to these special conditions for the stationary source in addition to the general conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply to this source, NA (not applicable) has been used in the table. If there are no Source-Wide Conditions, this section will be left blank.

C. EMISSION UNIT CONDITIONS

Part C outlines terms and conditions that are specific to individual emission units listed in the Emission Unit Summary Table. The permittee is subject to the special conditions for each emission unit in addition to the General Conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply, NA (not applicable) has been used in the table. If there are no conditions specific to individual emission units, this section will be left blank.

EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EULANDFILL	This emission unit represents the general Municipal Solid Waste (MSW) landfill.	1-1-76/11-27-06	NA
EUACTIVECOLL	This emission unit represents the active landfill gas collection system at the MSW landfill that uses gas mover equipment to draw landfill gas from the wells and moves the gas to the control equipment.	1-1-88/11-24-10	NA
EUOPENFLARE	Open flare is an open combustor without enclosure or shroud.	11-8-10	NA
EUASBESTOS	Any active or inactive asbestos disposal site.	1-1-76	NA
EUCOLDCLEANERS	Coldcleaners with an air/vapor interface less than 10 square feet are exempt from R 336.1201 pursuant to R 336.1281(h).	1-1-93	FGCOLDCLEANERS

**EULANDFILL
 EMISSION UNIT CONDITIONS**

DESCRIPTION – This emission unit represents the general MSW landfill in which the collected landfill gas is sent primarily to a treatment system.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT – EUOPENFLARE

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Methane concentration	500 ppm above background level	Calendar quarter	Surface of Landfill	V.1., V.2.	40 CFR 60.753(d), 40 CFR 60.755(c), 40 CFR 63.1955(a)(1) ³

II. MATERIAL LIMIT(S) - NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall comply with the requirements in 40 CFR 63.1955(b) and 40 CFR 63.1960 through §63.1980. (40 CFR 63.1945(d))³

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IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall have installed a collection and control system that captures the landfill gas generated within the landfill as required by 40 CFR 60.752(b)(2)(i)(C), 40 CFR 60.752(b)(2)(ii), and 40 CFR 60.752(b)(2)(iii). (40 CFR 60.752(b)(2)(i)(C), 40 CFR 60.752(b)(2)(ii), 40 CFR 60.752(b)(2)(iii), 40 CFR 63.1955(a)(1))³
2. The permittee shall route all the collected landfill gas to at least one of the following:
 - a. A flare designed in accordance with §60.18 except as noted in 40 CFR 60.754(e). (40 CFR 60.752(b)(2)(iii)(A), 40 CFR 63.1955(a)(1))³
 - b. A control system designed and operated to reduce NMOC by 98 weight-percent, or, when an enclosed combustion device is used for control, 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 reduction efficiency or parts per million by volume shall be established by an initial performance test to be completed no later than 180 days after the initial startup of the approved control system using the test methods specified in § 60.754(d). (40 CFR 60.752(b)(2)(iii)(B), 40 CFR 63.1955(a)(1))³
 - c. To a treatment system that processes the collected gas for subsequent sale or use. The treatment system shall be designed so that all emissions from any atmospheric vent(s) shall be subject to 40 CFR 60.752(b)(2)(iii)(A) or (B). (40 CFR 60.752(b)(2)(iii)(C), 40 CFR 63.1955(a)(1))³

V. TESTING/SAMPLING

Records shall be maintained on file for a period of 5 years. **(R 336.1213(3)(b)(ii))**

1. To determine if the methane concentration is less than 500 ppm above background at the surface of the landfill 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 be developed that includes a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30 meter intervals. Areas with steep slopes or other dangerous areas may be excluded from the surface testing. **(40 CFR 60.753(d), 40 CFR 63.1955(a)(1))³**
2. The permittee shall use the following procedures for compliance with the surface methane operational standard as provided in §60.753(d)³.
 - a. 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 approved by the AQD) 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 §60.755(d). **(40 CFR 60.755(c)(1), 40 CFR 63.1955(a)(1))³**
 - b. 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), 40 CFR 63.1955(a)(1))³**
 - c. Surface emission monitoring shall be performed in accordance with Section 4.3.1 of Method 21 of Appendix A of 40 CFR Part 60, 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), 40 CFR 63.1955(a)(1))³**
 - d. Any reading of 500 parts per million or more above background at any location shall be recorded as a monitored exceedance and the actions specified below shall be taken. As long as the specified actions are taken, the exceedance is not a violation of the operational requirements of §60.753(d) **(40 CFR 60.755(c)(4), 40 CFR 63.1955(a)(1))³**.
 - i. The location of each monitored exceedance shall be marked and the location recorded. **(40 CFR 60.755(c)(4)(i), 40 CFR 63.1955(a)(1))³**
 - 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 the location shall be re-monitored within 10 calendar days of detecting the exceedance. **(40 CFR 60.755(c)(4)(ii), 40 CFR 63.1955(a)(1))³**
 - 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 §60.755(c)(4)(v) (below in condition **V.2.d.v.**) shall be taken, and no further monitoring of that location is required until the action specified in §60.755(c)(4)(v) (below in condition **V.2.d.v.**) has been taken. **(40 CFR 60.755(c)(4)(iii), 40 CFR 63.1955(a)(1))³**
 - 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 60.755(c)(4) (ii) or (iii) (above in conditions **V.2.d.ii.** or **iii.**) shall be re-monitored 1 month from the initial exceedance. If the 1-month re-monitoring shows a concentration less than 500 parts per million above backgrounds, no further monitoring of that location is required until the next quarterly monitoring period. If the 1-month re-monitoring shows an exceedance, the actions specified in §60.755(c)(4)(iii) (above in condition **V.2.d.iii.**) or in §60.755(c)(4)(v) (below in condition **V.2.d.v.**) shall be taken. **(40 CFR 60.755(c)(4)(iv), 40 CFR 63.1955(a)(1))³**
 - v. For any location where monitored methane concentration equals or exceeds 500 parts per million above backgrounds 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 to the AQD for approval. **(40 CFR 60.755(c)(4)(v), 40 CFR 63.1955(a)(1))³**

3. The permittee shall comply with the provisions in §60.755(c) with the following instrumentation specifications and procedures for surface emission monitoring devices **(40 CFR 60.755(d), 40 CFR 63.1955(a)(1))³**:
 - a. The portable analyzer shall meet the instrument specifications provided in Section 3 of Method 21 of Appendix A of 40 CFR Part 60, except that "methane" shall replace all references to VOC. **(40 CFR 60.755(d)(1), 40 CFR 63.1955(a)(1))³**
 - b. The calibration gas shall be methane, diluted to a nominal concentration of 500 parts per million in air. **(40 CFR 60.755(d)(2), 40 CFR 63.1955(a)(1))³**
 - c. To meet the performance evaluation requirements in Section 3.1.3 of Method 21 of Appendix A of 40 CFR Part 60, the instrument evaluation procedures of Section 4.4 of Method 21 of Appendix A of 40 CFR Part 60 shall be used. **(40 CFR 60.755(d)(3), 40 CFR 63.1955(a)(1))³**
 - d. The calibration procedures provided in Section 4.2 of Method 21 of Appendix A of 40 CFR Part 60 shall be followed immediately before commencing a surface monitoring survey. **(40 CFR 60.755(d)(4), 40 CFR 63.1955(a)(1))³**
4. The permittee shall keep the following written records pertaining to surface methane monitoring **(R 336.1213(3))**:
 - a. The route traversed including any areas not monitored because of unsafe conditions (i.e. Truck traffic, construction, active face, dangerous areas, etc.) and areas included where visual observations indicate elevated levels of landfill gas, **(R 336.1213(3))**
 - b. The location(s) and concentrations of any reading above 500 ppm above background, **(40 CFR 60.755(c)(4)(i), R 336.1213(3))**
 - c. The meteorological conditions the day of the testing including wind speed, wind direction, temperature, and cloud cover). **(R 336.1213(3))**
5. The permittee shall monitor surface concentrations of methane according to the instrument specifications and procedures provided in §60.755(d). 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), 40 CFR 63.1955(a)(1))³**
6. If the permittee elects to perform **Tier 2** or **Tier 3** testing, the permittee shall perform the testing in accordance with **Appendix 5** and use the resulting data in the emission calculations prescribed in **Appendix 7** or the most recent version of USEPA's Landfill Gas Emissions Model (LandGEM). **(R 336.1213(3))**
7. If the tested **Tier 2** (see **Appendices 5 & 7**) NMOC mass emission rate is less than 50 megagrams per year, the permittee shall submit a periodic estimate of the emission rate report as provided in § 60.757(b)(1) and retest the site-specific NMOC concentration every 5 years using the methods specified § 60.754. **(R 336.1213(3))**
8. The permittee may use other methods to determine the NMOC concentration or a site-specific k (see **Appendix 7**) as an alternative to the methods required in § 60.754(a)(3) and (a)(4) if the method has been approved by the US EPA, Region V. **(R 336.1213(3))**

See Appendices 5 & 7

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of 5 years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall implement a program to monitor on a monthly basis for cover integrity and implement cover repairs as necessary. **(40 CFR 60.755(c)(5), 40 CFR 63.1955(a)(1))³**
2. Except as provided in §60.752(b)(2)(i)(B), the permittee shall maintain up-to-date, readily accessible, on-site records of the design capacity report which triggered §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. **(40 CFR 60.758(a), 40 CFR 63.1955(a)(1))³**

3. Landfill owners or operators who convert design capacity from volume to mass or mass to volume to demonstrate that landfill design capacity is less than 2.5 million megagrams or 2.5 million cubic meters, as provided in the definition of "design capacity", shall keep readily accessible, on-site records of the annual recalculation of site-specific density, design capacity, and the supporting documentation. Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable. **(40 CFR 60.758(f), 40 CFR 63.1955(a)(1))**³
4. The permittee shall calculate and record the NMOC emission rate for purposes of determining when the system can be removed as provided in 40 CFR 60.752(b)(2)(v), using the equation presented in 40 CFR 60.754(b). **(40 CFR 60.754(b))**
5. 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 shall keep a record of calculations showing that the percent moisture by weight expected in 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 the 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 shall document the calculations and the basis of the assumptions. **(40 CFR 63.1980(g))**³

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. Report shall be postmarked or received by the appropriate AQD district office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**
3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. Report shall be postmarked or received by the appropriate AQD district office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**
4. The permittee shall submit an equipment removal report to the appropriate AQD District Supervisor 30 days prior to removal or cessation of operation of the control equipment. **(40 CFR 60.757(e), 40 CFR 63.1955(a)(1))**³
 - a. The equipment removal report shall contain all of the following items:
 - i. A copy of the closure report submitted in accordance with §60.757(d) **(40 CFR 60.757(e)(1)(i), 40 CFR 63.1955(a)(1))**³
 - ii. 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 **(40 CFR 60.757(e)(1)(iii), 40 CFR 63.1955(a)(1))**³
 - iii. A copy of the initial performance test report demonstrating that the 15 year minimum control period has expired. **(40 CFR 60.757(e)(1)(ii), 40 CFR 63.1955(a)(1))**³
 - b. The AQD may request such additional information as may be necessary to verify that all of the conditions for removal in §60.752(b)(2)(v) have been met. **(40 CFR 60.757(e)(2), 40 CFR 63.1955(a)(1))**³
5. The permittee shall submit reports which shall be postmarked or received by appropriate AQD district office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. The report shall include the location of each exceedance of the 500 parts per million methane concentrations as provided in §60.753(d) and the concentration recorded at each location for which an exceedance was recorded in the previous month. The report shall also contain include information on all deviations that occurred during the 6-month reporting period. **(40 CFR 60.757(f)(5), 40 CFR 63.1955(a)(1), 40 CFR 63.1955(c), 40 CFR 63.1980(a))**³
6. The permittee shall submit the startup, shutdown, and malfunction (SSM) report to the appropriate AQD district office and it shall be delivered or postmarked by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(40 CFR 63.10(a)(5), 40 CFR 63.10(d)(5))**³

7. The permittee shall submit a closure report to the appropriate AQD District Office within 30 days of waste acceptance cessation. The AQD may request additional information 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 to the AQD, no additional wastes may be placed into the landfill without filing a notification of modification as described under §60.7(a)(4). **(40 CFR 60.757(d), 40 CFR 63.1955(a)(1))**³

See Appendix 8

VIII. STACK/VENT RESTRICTION(S) - NA

IX. OTHER REQUIREMENTS

1. The collection and control system may be capped or removed provided that all the following conditions are met:
 - a. The landfill shall be a closed landfill as defined in §60.751. A closure report shall be submitted to the appropriate AQD District Office as provided in §60.757(d) **(40 CFR 60.752(b)(2)(v)(A), 40 CFR 63.1955(a)(1))**³
 - b. The collection and control system shall have been in operation a minimum of 15 years; and **(40 CFR 60.752(b)(2)(v)(B), 40 CFR 63.1955(a)(1))**³
 - c. Following the procedures specified in §60.754(b), 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)(C), 40 CFR 63.1955(a)(1))**³
2. If monitoring demonstrates that the operational requirements above in §60.753(b), (c), or (d) are not met, corrective action shall be taken as specified in §60.755(a)(3) through (5) or §60.755(c). If corrective actions are taken as specified in condition §60.755, the monitored exceedance is not a violation of the operational requirements in this section. **(40 CFR 60.753(g), 40 CFR 63.1955(a)(1))**³
3. For the approval of collection and control systems that includes any alternatives to the operational standards, test methods, procedures, compliance measures, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions, the permittee shall follow the procedures in 40 CFR 60.752(b)(2). **(40 CFR 63.1955(c))**³
4. The permittee shall comply with all applicable provisions of 40 CFR Part 60, Subpart A and Subpart WWW. **(40 CFR Part 60, Subparts A and WWW)**
5. The permittee shall comply with the requirements of 40 CFR Part 63, Subpart AAAA, including the general provisions specified in Table 1 and the SSM requirements in 40 CFR Part 63.6. **(40 CFR 63.1955, 40 CFR 63.6)**³
6. The permittee is no longer required to comply with the requirements of Subpart AAAA of Part 63 when it is no longer required to apply controls as specified in 40 CFR 60.752(b)(2)(v) of Subpart WWW. **(40 CFR 63.1950)**³

Footnotes:

¹This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).

²This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

³This condition, as it applies to the requirements of 40 CFR Part 63, Subpart A and AAAA, is future applicable and takes effect when the estimated uncontrolled NMOC emissions are equal to or greater than 50 Mg/yr as calculated according to 60.754(a) of the MSW landfill's NSPS in 40 CFR Part 60, Subpart WWW. The permittee has been conducting site specific Tier II NMOC testing, with the last testing done in the summer of 2007, and the follow-up 5 year testing will be required to be conducted by August 31, 2012.

EUACTIVECOLL
EMISSION UNIT CONDITIONS

DESCRIPTION – This emission unit represents the active landfill gas collection system at the landfill that uses gas mover equipment to draw landfill gas from the wells and moves the gas to the control equipment.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT: EUOPENFLARE

I. EMISSION LIMIT(S) - NA

II. MATERIAL LIMIT(S) - NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. 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), 40 CFR 63.1955(a))³
2. The permittee shall 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:
 - a. 5 years or more if active; or (40 CFR 60.753(a)(1), 40 CFR 63.1955(a))³
 - b. 2 years or more if closed or at final grade (40 CFR 60.753(a)(2), 40 CFR 63.1955(a))³
3. The permittee shall operate the collection system with negative pressure at each wellhead except under the following conditions (40 CFR 60.753(b), 40 CFR 63.1955(a))³:
 - a. 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 semi-annual reports as provided in §60.757(f)(1). (40 CFR 60.753(b)(1), 40 CFR 63.1980(a), 40 CFR 63.1955(a))³
 - b. Use of a geo-membrane or synthetic cover. The owner or operator shall develop acceptable pressure limits in the design plan (40 CFR 60.753(b)(2), 40 CFR 63.1955(a))³
 - c. A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows. All design changes shall be approved by the AQD (40 CFR 60.753(b)(3), 40 CFR 63.1955(a))³
4. The permittee shall operate each interior wellhead in the collection system with a landfill gas temperature less than 55 °C and with an oxygen level less than 5 percent. The owner or operator may establish a higher operating temperature or oxygen value at a particular well. A higher operating value demonstration shall be submitted to the appropriate Air Quality Division District for approval and it shall include supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens. (40 CFR 60.753(c), 40 CFR 60.756(e), 40 CFR 63.1955(a))³
5. The permittee shall operate the installed collection system in accordance with the provisions of §60.753, §60.755, and §60.756. (40 CFR 60.752(b)(2)(iv), 40 CFR 63.1955(a))³

IV. DESIGN/EQUIPMENT PARAMETERS

1. An active collection system shall:
 - a. 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 (40 CFR 60.752(b)(2)(ii)(A)(1), 40 CFR 63.1955(a))³

- b. The permittee shall place each well or design component in the collection system as specified in the approved design plan as provided in §60.752(b)(2)(i). 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 5 years or more if active; or 2 years or more if closed at final grade. **(40 CFR 60.755(b), 40 CFR 60.752(b)(2)(ii)(A)(2), 40 CFR 63.1955(a))**³
 - c. Collect gas at a sufficient extraction rate **(40 CFR 60.752(b)(2)(ii)(A)(3), 40 CFR 63.1955(a))**³
 - d. Be designed to minimize off-site migration of subsurface gas. **(40 CFR 60.752(b)(2)(ii)(A)(4), 40 CFR 63.1955(a))**³
2. The permittee shall design the collection system so that all collected gases are vented to a control system designed and operated in compliance with §60.752(b)(2)(iii). **(40 CFR 60.753(e), 40 CFR 63.1955(a))**³
 3. When adding gas collectors to the active gas collection system, a sufficient density of gas collectors shall be installed in compliance with §60.752(b)(2)(ii)(A)(2) (as specified above in condition **IV.1.**). The permittee shall design a system of vertical wells, horizontal collectors, or other collection devices, satisfactory to the appropriate AQD District Office, capable of controlling and extracting gas from all portions of the landfill sufficient to meet all operational and performance standards in NSPS WWW **(40 CFR 60.755(a)(2), 40 CFR 63.1955(a))**³:
 - a. If the permittee is seeking to demonstrate compliance through the use of a collection system not conforming to the specifications provided in §60.759, then the permittee shall provide information that satisfies the AQD District Supervisor as specified in §60.752(b)(2)(i)(C), demonstrating that off site migration is being controlled. **(40 CFR 60.755(a)(6), 40 CFR 63.1955(a))**³
 4. The permittee shall install a sampling port and a thermometer, other temperature measuring device, or an access port for temperature measurements at each wellhead. **(40 CFR 60.756(a), 40 CFR 63.1955(a))**³
 5. 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 unless alternative procedures have been approved by the appropriate AQD District Supervisor as provided in §60.752(b)(2)(i)(C) and (D):
 - a. The collection devices within the interior and along the perimeter areas shall be certified, by a professional engineer, to achieve comprehensive control of surface gas emissions. 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. **(40 CFR 60.759(a)(1), 40 CFR 63.1955(a))**³
 - b. The sufficient density of gas collection devices determined in §60.759(a)(1) (above in condition **IV.5.a.**) 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. **(40 CFR 60.759(a)(2), 40 CFR 63.1955(a))**³
 - c. The placement of gas collection devices determined in §60.759(a)(1) (above in condition **IV.5.a.**) shall control all gas producing areas, except as provided in §60.759(a)(3) (i) and (ii) (below in conditions **IV.5.c.i.** and **ii**) **(40 CFR 60.759(a)(3), 40 CFR 63.1955(a))**³:
 - i. Any segregated area of asbestos or nondegradable material may be excluded from collection if documented as provided under §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 to the District Supervisor upon request. **(40 CFR 60.759(a)(3)(i), 40 CFR 63.1955(a))**³
 - 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 amount, location, and age of the material shall be documented and provided to the AQD District Supervisor upon request. A separate NMOC emissions estimate shall be made for each section proposed for exclusion, and the sum of all such sections shall be compared to the NMOC emissions estimate for the entire landfill. Emissions from each section shall be computed using the equation in Appendix 7. **(40 CFR 60.759(a)(3)(ii), 40 CFR 63.1955(a))**³

See Appendix 7

6. The permittee shall construct the gas collection devices using the following equipment or procedures:
 - a. 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)(1), 40 CFR 63.1955(a))**³
 - b. 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. **(40 CFR 60.759(b)(2), 40 CFR 63.1955(a))**³
 - c. 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. **(40 CFR 60.759(b)(3), 40 CFR 63.1955(a))**³
7. The active gas collection system shall be designed convey the landfill gas to a control system in compliance with §60.752(b)(2)(iii) 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 **(40 CFR 60.759(c), 40 CFR 63.1955(a))**³.
 - a. For existing collection systems, the flow data shall be used to project the maximum flow rate. If no flow data exists, the procedures in §60.759(c)(2) shall be used. **(40 CFR 60.759(c)(1), 40 CFR 63.1955(a))**³
 - b. For new collection systems, the maximum flow rate shall be in accordance with §60.755(a)(1). **(40 CFR 60.759(c)(2), 40 CFR 63.1955(a))**³

See Appendix 7

V. TESTING/SAMPLING - NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of 5 years. **(R 336.1213(3)(b)(ii))**

1. For the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with §60.752(b)(2)(ii)(A)(3), the permittee shall measure gauge pressure in the gas collection header at each individual well, monthly. If a positive pressure exists, action shall be initiated to correct the exceedance within 5 calendar days, except for the three conditions allowed under §60.753(b) (above in conditions **III.3.a-c**). 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 to the AQD for approval **(40 CFR 60.755(a)(3), 40 CFR 60.756(a)(1), 40 CFR 63.1955(a))**³.
 - a. If monitoring demonstrates that the negative pressure is not being met, then corrective action shall be taken as noted in §60.755(a)(3) (above in condition **VI.1.**). If corrective actions are taken as specified in §60.755, the monitored exceedance is not a violation of the operational requirements. **(40 CFR 60.753(g), 40 CFR 63.1955(a))**³
2. The permittee is not required to expand the gas collection system as required in §60.755(a)(3) (above in condition **VI.1.**) during the first 180 days after gas collection system startup. **(40 CFR 60.755(a)(4), 40 CFR 63.1955(a))**³

3. For the purpose of identifying whether excess air infiltration into the landfill is occurring, the permittee shall monitor each well monthly for temperature and oxygen as provided in §60.753(c). If a well exceeds one of these operating parameters, 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 to the AQD for approval **(40 CFR 60.755(a)(5), 40 CFR 60.756(a)(2), 40 CFR 60.756(a)(3), 40 CFR 63.1955(a))**³.
 - a. If monitoring demonstrates that the temperature and oxygen levels are not being met, then corrective action shall be taken as noted above and specified in §60.755(a)(5). If corrective actions are taken as specified in §60.755, the monitored exceedance is not a violation of the operational requirements. **(40 CFR 60.753(g), 40 CFR 63.1955(a))**³
 - b. Unless an alternative test method is established as allowed by §60.752(b)(2)(i), 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 **(40 CFR 60.753(c)(i), 40 CFR 63.1955(a))**³
 - ii. A data recorder is not required **(40 CFR 60.753(c)(ii), 40 CFR 63.1955(a))**³
 - iii. Only two calibration gases are required, a zero and span, and ambient air may be used as the span **(40 CFR 60.753(c)(iii), 40 CFR 63.1955(a))**³
 - iv. A calibration error check is not required **(40 CFR 60.753(c)(iv), 40 CFR 63.1955(a))**³
 - v. The allowable sample bias, zero drift, and calibration drift are ±10 percent. **(40 CFR 60.753(c)(v), 40 CFR 63.1955(a))**³
4. Except as provided in §60.752(b)(2)(i)(B), the permittee shall keep up-to-date, readily accessible records for the life of the control equipment of the data listed in §60.758(b)(1) (below in conditions **VI.4.a-b**) as measured during the compliance determination. Records of the control device vendor specifications shall be maintained until removal. **(40 CFR 60.758(b), 40 CFR 63.1955(a))**³.
 - a. The maximum expected gas generation flow rate as calculated in §60.755(a)(1). The permittee may use another method to determine the maximum gas generation flow rate, if the method has been approved by the appropriate AQD District Office. **(40 CFR 60.758(b)(1)(i), 40 CFR 63.1955(a))**³
 - b. The density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in §60.759(a)(1). **(40 CFR 60.758(b)(1)(ii), 40 CFR 63.1955(a))**³
5. Except as provided in §60.752(b)(2)(i)(B), 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; and the installation date and location of all newly installed collectors as specified under §60.755(b) (above in condition **IV.1.b.**). **(40 CFR 60.758(d), 40 CFR 60.758(d)(1), 40 CFR 63.1955(a))**³
6. The permittee shall keep readily accessible records of all collection and control system exceedances of the operational standards in §60.753, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance. **(40 CFR 60.758(e), 40 CFR 63.1955(a))**³
7. The permittee shall maintain the following information:
 - a. 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. **(40 CFR 60.757(g)(1), 40 CFR 63.1955(a))**³
 - b. 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. **(40 CFR 60.757(g)(2), 40 CFR 63.1955(a))**³
 - c. 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. **(40 CFR 60.757(g)(3), 40 CFR 63.1955(a))**³

- d. The sum of the gas generation flow rates for all areas from which collection wells have been excluded based on non-productivity and the calculations of gas generation flow rate for each excluded area. **(40 CFR 60.757(g)(4), 40 CFR 63.1955(a))**³
- e. 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. **(40 CFR 60.757(g)(5), 40 CFR 63.1955(a))**³
- f. The provisions for the control of off-site migration. **(40 CFR 60.757(g)(6), 40 CFR 63.1955(a))**³
- g. The permittee shall maintain the dates of the landfill gas well installations, the age of the waste in which the landfill gas wells were installed, and the age of the in place waste for each portion of the landfill. **(R 336.1213(3))**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. Report shall be postmarked or received by appropriate AQD district office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**
3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. Report shall be postmarked or received by appropriate AQD district office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**
4. The permittee shall submit to the appropriate AQD district office semi-annual reports for the gas collection system. Reports shall be postmarked or received by the appropriate AQD district office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. For enclosed combustion devices and flares, reportable exceedances are defined under §60.758(c). The semi-annual reports for the gas collection system shall include the following information **(40 CFR 60.757(f), 40 CFR 63.1980(a), 40 CFR 63.1955(a), 40 CFR 63.1965)**³:
 - a. Value and length of time for exceedance of applicable parameters monitored under §60.756(a), (above in conditions **VI.1. and VI.3.**). **(40 CFR 60.757(f)(1))**
 - b. All periods when the collection system was not operating in excess of 5 days. **(40 CFR 60.757(f)(4))**
 - c. The date of installation and the location of each well or collection system expansion added pursuant to §60.755(a)(3), §60.755(b), and §60.755(c)(4) conditions **IV.1.b., VI.1. and VI.3.** **(40 CFR 60.757(f)(6))**
 - d. Any deviations as listed in 40 CFR 63.1965. **(40 CFR 63.1965)**³
 - e. The permittee shall record instances when a positive pressure occurs in efforts to avoid fire. **(40 CFR 60.753(b)(1))**
5. The permittee shall submit the startup, shutdown, and malfunction (SSM) report to the appropriate AQD district office and it shall be delivered or postmarked by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(40 CFR 63.10(a)(5), 40 CFR 63.10(d)(5))**³

See Appendix 8

VIII. STACK/VENT RESTRICTION(S) - NA

IX. OTHER REQUIREMENTS

1. If monitoring demonstrates that the operational requirements in §60.753(b), (c), or (d) (above in conditions **III.3. and III.4.**) are not met, corrective action shall be taken as specified above in §60.755(a)(3) through (5) or §60.755(c) (conditions **VI.1. and VI.3.**). If corrective actions are taken as specified in §60.755 (above in conditions **VI.1. and VI.3.**), the monitored exceedance is not a violation of the operational requirements in §60.753 (conditions **III.3. and III.4.**). **(40 CFR 60.753(g), 40 CFR 63.1955(a))**³

2. The provisions of 40 CFR Part 60, 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. **(40 CFR 60.755(e), 40 CFR 63.1955(a))**³
3. If the permittee is seeking to install a collection system that does not meet the specifications in §60.759 (above in conditions **IV.5. IV.6., and IV.7.**) or is seeking to monitor alternative parameters to those required by §60.753 through §60.756, they shall provide information satisfactory to the appropriate AQD District Office as provided in §60.752(b)(2)(i)(B) and (C) describing the design and operation of the collection system, the operating parameters that would indicate proper performance, and appropriate monitoring procedures. The AQD may specify additional appropriate monitoring procedures. **(40 CFR 60.756(e), 40 CFR 63.1955(a))**³
4. The permittee shall have developed and implemented a written SSM plan according to the provision in 40 CFR 63.6(e)(3) for EUACTIVECOLL. A copy of the SSM plan shall be maintained on site. **(40 CFR 63.1960)**³

Footnotes:

¹This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).

²This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

³This condition, as it applies to the requirements of 40 CFR Part 63, Subpart A and AAAAA, is future applicable and takes effect when the estimated uncontrolled NMOC emissions are equal to or greater than 50 Mg/yr as calculated according to 60.754(a) of the MSW landfill's NSPS in 40 CFR Part 60, Subpart WWW. The permittee has been conducting site specific Tier II NMOC testing, with the last testing done in the summer of 2007, and the follow-up 5 year testing will be required to be conducted by August 31, 2012.

EUOPENFLARE EMISSION UNIT CONDITIONS

DESCRIPTION - Open flare is an open combustor without enclosure or shroud. The initial performance testing for the open flare has already been performed and; therefore, is not required by this table.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT: NA

I. EMISSION LIMIT(S) - NA

II. MATERIAL LIMIT(S) - NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall operate the flare in accordance with §60.18 except as noted in 40 CFR 60.754(e). **(40 CFR 60.752(b)(2)(iii)(A), 40 CFR 63.1955(a))**³
2. The permittee shall operate the flare at all times when the collected gas is routed to it. **(40 CFR 60.753(f), 40 CFR 63.1955(a))**³
3. The flare shall be operated with no visible emissions, as determined by the methods specified in 40 CFR 60.18(f), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. **(40 CFR 60.18(c)(1))**
4. The flare shall be operated with a flame present at all times, as determined by the methods specified in 40 CFR 60.18(f). **(40 CFR 60.18(c)(2))**
5. The flare shall be used only with the net heating value of the gas being combusted of 7.45 MJ/scm (200 Btu/scf) or greater if the flare is non-assisted. The net heating value of the gas being combusted shall be determined by the methods specified in 40 CFR 60.18(f). **(40 CFR 60.18(c)(3))**
6. Non-assisted flares shall be designed for and operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18(f)(4), less than 18.3 m/sec (60 ft/sec), except as provided in 40 CFR 60.18(c)(4)(ii) and (iii) **(40 CFR 60.18(c)(4)(i))**:
 - a. Non-assisted flares designed for and operated with an exit velocity, equal to or greater than 18.3 m/sec (60 ft/sec) but less than 122 m/sec (400 ft/sec) are allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf). **(40 CFR 60.18(c)(4)(ii))**
 - b. Non-assisted flares designed for and operated with an exit velocity, as determined by the methods specified in §60.18(f)(4) less than the velocity, V_{max}, as determined by the method specified in §60.18(f)(5), and less than 122 m/sec (400 ft/sec) are allowed. **(40 CFR 60.18(c)(4)(iii))**
7. Flares used to comply with provisions of 40 CFR Part 60 Subpart A shall be operated at all times when emissions may be vented to them. **(40 CFR 60.18(e))**
8. The permittee shall operate control system such that all collected gases are vented to a control system designed and operated in accordance with §60.752(b)(2)(iii). In 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 shall contributing to venting of the gas to the atmosphere shall be closed within one hour. **(40 CFR 60.753(e), 40 CFR 63.1955(a))**³

IV. DESIGN/EQUIPMENT PARAMETER(S) - NA

V. TESTING/SAMPLING - NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of 5 years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall install, calibrate, maintain, and operate according to the manufacturer's specifications the following equipment:
 - a. A heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light or the flame itself to indicate the continuous presence of a flame. **(40 CFR 60.756(c)(1), 40 CFR 63.1955(a))³**
2. Except as provided in §60.752(b)(2)(i)(B), the permittee shall keep up-to-date, readily accessible records for the life of the open flare of the data listed in §60.758(b)(4) (below in condition **VI.3.**) 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 open flare vendor specifications shall be maintained until removal. **(40 CFR 60.758(b), 40 CFR 63.1955(a))³**
3. The permittee shall maintain records regarding the flare type (i.e., steam-assisted, air-assisted, or non-assisted), all visible emission readings, heat content determination, flow rate or bypass flow rate measurements, and exit velocity determinations made during the performance test as specified in §60.18; continuous records of the open flare pilot flame or open flare flame monitoring and records of all periods of operations during which the pilot flame of the flare flame is absent. **(40 CFR 60.758(b)(4), 40 CFR 63.1955(a))³**
4. Except as provided in §60.752(b)(2)(i)(B), the permittee shall keep readily accessible continuous records of the equipment operating parameters specified to be monitored in §60.756 (above in condition **VI.1.**), 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))**:
 - a. The permittee shall keep up-to-date, readily accessible continuous records of the flame or flare pilot flame monitoring specified under §60.756(c) (condition **VI.1.a.**), and up-to-date, readily accessible records of all periods of operation in which the flame or flare pilot flame is absent. **(40 CFR 60.758(c)(4), 40 CFR 63.1955(a))³**
5. The following records for the flare shall be maintained onsite:
 - a. Records indicating presence of flare pilot flame **(40 CFR 60.18(f)(2))**
 - b. The net heating value of the gas being combusted in the flare shall be calculated and recorded using the equation provided in Appendix 7. **(40 CFR 60.18(f)(3))**
 - c. The actual exit velocity of the flare shall be calculated and recorded by dividing the volumetric flow rate (in units of standard temperature and pressure), as determined by Federal Reference Test Methods 2, 2A, 2C, or 2D as appropriate, by the unobstructed (free) cross sectional area of the flare tip. **(40 CFR 60.18(f)(4))**
 - d. The maximum permitted velocity, V_{max} , for flares complying with 40 CFR 60.18(c)(4)(iii) shall be calculated and recorded using the equation provided in Appendix 7. **(40 CFR 60.18(f)(5))**
 - e. The maximum permitted velocity, V_{max} , for air-assisted flares shall be calculated and recorded using the equation provided in Appendix 7. **(40 CFR 60.18(f)(6))**

See Appendix 7

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. Report shall be postmarked or received by appropriate AQD district office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. Report shall be postmarked or received by appropriate AQD district office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**
4. The permittee shall submit to the appropriate AQD District Office semi-annual reports for the gas collection system. Reports shall be received by appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. For enclosed combustion devices and flares, reportable exceedances are defined under §60.758(c). **(40 CFR 60.757(f), 40 CFR 63.1980(a), 40 CFR 63.1955(a))**³ The semi-annual report shall contain:
 - a. Value and length of time for exceedance of applicable parameters monitored under §60.756(b). **(40 CFR 60.757(f)(1), 40 CFR 63.1980(a), 40 CFR 63.1955(a))**³
 - b. 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 §60.756. **(40 CFR 60.757(f)(2), 40 CFR 63.1980(a), 40 CFR 63.1955(a))**³
 - c. 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. **(40 CFR 60.757(f)(3), 40 CFR 63.1980(a), 40 CFR 63.1955(a))**³
5. The permittee shall submit an equipment removal report to the AQD 30 days prior to removal or cessation of operation of the open flare **(40 CFR 60.757(e))**:
 - a. The equipment removal report shall contain all of the following items:
 - i. A copy of the closure report submitted in accordance with §60.757 **(40 CFR 60.757(e)(1)(i), 40 CFR 63.1955(a))**³
 - ii. A copy of the initial performance test report demonstrating that the 15 year minimum control period has expired **(40 CFR 60.757(e)(1)(ii), 40 CFR 63.1955(a))**³
 - 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. **(40 CFR 60.757(e)(1)(iii), 40 CFR 63.1955(a))**³
 - iv. Additional information may be requested as may be necessary to verify that all of the conditions for removal in §60.752(b)(2)(v) have been met. **(40 CFR 60.757(e)(2), 40 CFR 63.1955(a))**³
6. The permittee shall submit the startup, shutdown, and malfunction (SSM) report to the appropriate AQD district office and it shall be delivered or postmarked by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(40 CFR 63.10(a)(5), 40 CFR 63.10(d)(5))**³

See Appendix 8

VIII. STACK/VENT RESTRICTION(S) - NA

IX. OTHER REQUIREMENT(S)

1. The provisions of 40 CFR Part 60, 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 1 hour for control devices. **(40 CFR 60.755(e), 40 CFR 63.1955(a))**³
2. Compliance of 40 CFR Part 63, Part AAAA is determined in the same way it is determined for 40 CFR Part 60, subpart WWW, including performance testing, monitoring of the collection system, continuous parameter monitoring, and other credible evidence. In addition, continuous parameter monitoring data collected in §60.756(c)(1) (above in condition VI.1.) are used to demonstrate compliance with the operating conditions for the open flare. The permittee shall have developed and implemented a written SSM for EUOPENFLARE. A copy of the SSM plan shall be maintained on site. **(40 CFR 63.1960)**³

Footnotes:

¹This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).

²This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

³This condition, as it applies to the requirements of 40 CFR Part 63, Subpart A and AAAA, is future applicable and takes effect when the estimated uncontrolled NMOC emissions are equal to or greater than 50 Mg/yr as calculated

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according to 60.754(a) of the MSW landfill's NSPS in 40 CFR Part 60, Subpart WWW. The permittee has been conducting site specific Tier II NMOC testing, with the last testing done in the summer of 2007, and the follow-up 5 year testing will be required to be conducted by August 31, 2012.

**EUASBESTOS
EMISSION UNIT CONDITIONS**

DESCRIPTION: This landfill is actively accepting or has accepted asbestos waste in the past.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT - NA

I. EMISSION LIMIT(S) - NA

II. MATERIAL LIMIT(S)

III. PROCESS/OPERATIONAL RESTRICTIONS

1. If the landfill accepts asbestos-containing waste materials from a source covered under 40 CFR 61.149, 40 CFR 61.150, or 40 CFR 61.155, the permittee shall meet the following operational requirements **(40 CFR 61.154)**:
 - a. Either there must be no visible emissions to the outside air from any active waste disposal site where asbestos-containing waste material has been deposited, or the requirements of 40 CFR 61.154(c) or (d) must be met. **(40 CFR 61.154(a))**
 - b. Unless a natural barrier adequately deters access by the general public, either warning signs and fencing must be installed and maintained as follows, or the requirements of 40 CFR 61.154(c)(1) must be met **(40 CFR 61.154(b))**:
 - i. Warning signs must be displayed at all entrances and at intervals of 100 m (330 ft) or less along the property line of the site or along the perimeter of the sections of the site where asbestos-containing waste material is deposited. **(40 CFR 61.154(b)(1))** The warning signs must:
 1. Be posted in such a manner and location that a person can easily read the legend **(40 CFR 61.154(b)(1)(i))**
 2. Conform to the requirements of 51 cm by 36cm (20 inches by 14 inches) upright format signs specified in 29 CFR 1910.145(d)(4) and 40 CFR 61.154(b)(1) **(40 CFR 61.154(b)(1)(ii))**
 3. The permittee shall display the legend in the lower panel with letter sizes and styles of a visibility at least equal to those specified in 40 CFR 61.154(b)(1). Spacing between any two lines must be at least equal to the height of the upper of the two lines. **(40 CFR 61.154(b)(1)(iii))**
 - ii. The perimeter of the disposal site must be fenced in a manner adequate to deter access by the general public. **(40 CFR 61.154(b)(2))**
 - iii. Upon request and supply of appropriate information, the appropriate AQD District Supervisor will determine whether a fence or a natural barrier adequately deters access by the general public. **(40 CFR 61.154(b)(3))**
 - c. Rather than meet the no visible emission requirement of 40 CFR 61.154(a), at the end of each operating day, or at least once every 24-hour period while the site is in continuous operation, the asbestos-containing waste material that has been deposited at the site during the operating day or previous 24-hour period shall **(40 CFR 61.154(c))**:
 - i. Be covered with at least 15 centimeters (6 inches) of compacted non-asbestos-containing material. **(40 CFR 61.154(c)(1))** or
 - ii. Be covered with a resinous or petroleum-based dust suppression agent that effectively binds dust and controls wind erosion. Such an agent shall be used in the manner and frequency recommended for the particular dust by the dust suppression agent manufacturer to achieve and maintain dust control. Other equally effective dust suppression agents may be used upon prior approval by the appropriate AQD District Supervisor. For purposes of 40 CFR 61.154(c)(2), any used, spent, or other waste oil is not considered a dust suppression agent. **(40 CFR 61.154(c)(2))**
 - d. Rather than meet the no visible emission requirement of 40 CFR 61.154(a), use an alternative emissions control method that has received prior written approval by the appropriate AQD District Supervisor according to the procedures described in 40 CFR 61.149(c)(2). **(40 CFR 61.154(d))**

IV. DESIGN/EQUIPMENT PARAMETERS

1. The placement of gas collection devices determined in paragraph §60.759(a)(1) shall control all gas producing areas, except as provided by §60.759 (a)(3)(i) and (a)(3)(ii) **(40 CFR 60.759(a)(3))**:
 - a. Any segregated area of asbestos or nondegradable material may be excluded from collection if documented as provided under §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 to the AQD upon request. **(40 CFR 60.759(a)(3)(i))**

V. TESTING/SAMPLING - NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of 5 years. **(R 336.1213(3)(b)(ii))**

1. For all asbestos-containing waste material received, the permittee of the active waste disposal site shall:
 - a. Maintain waste shipment records that include the following information: **(40 CFR 61.154(e)(1))**
 - i. The name, address, and telephone number of the waste generator. **(40 CFR 61.154(e)(1)(i))**
 - ii. The name, address, and telephone number of the transporter(s). **(40 CFR 61.154(e)(1)(ii))**
 - iii. The quantity of the asbestos-containing waste material in cubic meters (cubic yards). **(40 CFR 61.154(e)(1)(iii))**
 - iv. The presence of improperly enclosed or uncovered waste, or any asbestos-containing waste material not sealed in leak-tight containers. Report in writing to the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the waste generator (identified in the waste shipment record), and, if different, the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the disposal site, by the following working day, the presence of a significant amount of improperly enclosed or uncovered waste. Submit a copy of the waste shipment record along with the report. **(40 CFR 61.154(e)(1)(iv))**
 - v. The date of the receipt. **(40 CFR 61.154(e)(1)(v))**
 - b. As soon as possible and no longer than 30 days after receipt of the waste, send a copy of the signed waste shipment record to the waste generator. **(40 CFR 61.154(e)(2))**
 - c. Upon discovering a discrepancy between the quantity of waste designated on the waste shipment records and the quantity actually received, attempt to reconcile the discrepancy with the waste generator. If the discrepancy is not resolved within 15 days after receiving the waste, immediately report in writing to the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the waste generator (identified in the waste shipment record) **(40 CFR 61.154(e)(3))**
2. The permittee shall maintain, until closure, records of the location, depth and area, and quantity in cubic meters (cubic yards) of asbestos-containing waste material within the disposal site on a map or diagram of the disposal area storage. **(40 CFR 61.154(f))**
3. 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 §60.759(a)(3)(i) as well as any nonproductive areas excluded from collection as provided in §60.759(a)(3)(ii). **(40 CFR 60.758(d)(2))**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. Report shall be postmarked or received by appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**
3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. Report shall be postmarked or received by appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. The permittee shall submit to the appropriate AQD District Supervisor, upon closure of the facility, a copy of records of asbestos waste disposal locations and quantities. **(40 CFR 61.154(h))**
5. The permittee shall furnish upon request, and make available during normal business hours for inspection by the AQD, all records required by 40 CFR Part 61. **(40 CFR 61.154(i))**
6. Notify the appropriate AQD District Office in writing at least 45 days prior to excavating or otherwise disturbing any asbestos-containing waste material that has been deposited at a waste disposal site and is covered. If the excavation will begin on a date other than the one contained in the original notice, notice of the new start date must be provided to the appropriate AQD District Office at least 10 working days before excavation begins and in no event shall excavation begin earlier than the date specified in the original notification. **(40 CFR 61.154(j))**
Include the following information in the notice:
 - a. Scheduled starting and completion dates. **(40 CFR 61.154(j)(1))**
 - b. Reason for disturbing the waste. **(40 CFR 61.154(j)(2))**
 - c. Procedures to be used to control emissions during the excavation, storage, transport, and ultimate disposal of the excavated asbestos-containing waste material. If deemed necessary, the AQD or may require changes in the emission control procedures to be used. **(40 CFR 61.154(j)(3))**
 - d. Location of any temporary storage site and the final disposal site. **(40 CFR 61.154(j)(4))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S) - NA

IX. OTHER REQUIREMENT(S) - NA

Footnotes:

¹This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).

²This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

D. FLEXIBLE GROUP CONDITIONS

Part D outlines the terms and conditions that apply to more than one emission unit. The permittee is subject to the special conditions for each flexible group in addition to the General Conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply, NA (not applicable) has been used in the table. If there are no special conditions that apply to more than one emission unit, this section will be left blank.

FLEXIBLE GROUP SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGCOLDCLEANERS	Any cold cleaner that is grandfathered or exempt from Rule 201 pursuant to Rule 278 and Rule 281(h), or Rule 285(r)(iv). Existing cold cleaners were placed into operation prior to July 1, 1979. New cold cleaners were placed into operation on or after July 1, 1979.	EUCOLDCLEANERS

**FGCOLDCLEANERS
FLEXIBLE GROUP CONDITIONS**

DESCRIPTION - Any cold cleaner that is grandfathered or exempt from Rule 201 pursuant to Rule 278 and Rule 281(h), or Rule 285(r)(iv). Existing cold cleaners were placed into operation prior to July 1, 1979. New cold cleaners were placed into operation on or after July 1, 1979.

Emission Unit: EUCOLDCLEANERS

I. EMISSION LIMIT(S) - NA

II. MATERIAL LIMIT(S)

1. The permittee shall not use cleaning solvents containing more than five percent by weight of the following halogenated compounds: methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, chloroform, or any combination thereof. **(R 336.1213(2))**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. Cleaned parts shall be drained for no less than 15 seconds or until dripping ceases. **(R 336.1611(2)(b), R 336.1707(3)(b))**
2. The permittee shall perform routine maintenance on each cold cleaner as recommended by the manufacturer. **(R 336.1213(3))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The cold cleaner must meet one of the following design requirements:
 - a. The air/vapor interface of the cold cleaner is no more than ten square feet. **(R 336.1281(h))**
 - b. The cold cleaner is used for cleaning metal parts and the emissions are released to the general in-plant environment. **(R 336.1285(r)(iv))**
2. The cold cleaner shall be equipped with a device for draining cleaned parts. **(R 336.1611(2)(b), R 336.1707(3)(b))**
3. All new and existing cold cleaners shall be equipped with a cover and the cover shall be closed whenever parts are not being handled in the cold cleaner. **(R 336.1611(2)(a), R 336.1707(3)(a))**
4. The cover of a new cold cleaner shall be mechanically assisted if the Reid vapor pressure of the solvent is more than 0.3 psia or if the solvent is agitated or heated. **(R 336.1707(3)(a))**
5. If the Reid vapor pressure of any solvent used in a new cold cleaner is greater than 0.6 psia; or, if any solvent used in a new cold cleaner is heated above 120 degrees Fahrenheit, then the cold cleaner must comply with at least one of the following provisions:
 - a. The cold cleaner must be designed such that the ratio of the freeboard height to the width of the cleaner is equal to or greater than 0.7. **(R 336.1707(2)(a))**
 - b. The solvent bath must be covered with water if the solvent is insoluble and has a specific gravity of more than 1.0. **(R 336.1707(2)(b))**
 - c. The cold cleaner must be controlled by a carbon adsorption system, condensation system, or other method of equivalent control approved by the AQD. **(R 336.1707(2)(c))**

V. TESTING/SAMPLING - NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. For each new cold cleaner in which the solvent is heated, the solvent temperature shall be monitored and recorded at least once each calendar week during routine operating conditions. **(R 336.1213(3))**
2. The permittee shall maintain the following information on file for each cold cleaner **(R 336.1213(3))**:
 - a. A serial number, model number, or other unique identifier for each cold cleaner.
 - b. The date the unit was installed, manufactured or that it commenced operation.
 - c. The air/vapor interface area for any unit claimed to be exempt under Rule 281(h).
 - d. The applicable Rule 201 exemption.
 - e. The Reid vapor pressure of each solvent used.
 - f. If applicable, the option chosen to comply with Rule 707(2).
3. The permittee shall maintain written operating procedures for each cold cleaner. These written procedures shall be posted in an accessible, conspicuous location near each cold cleaner. **(R 336.1611(3), R 336.1707(4))**
4. As noted in Rule 611(2)(c) and Rule 707(3)(c), if applicable, an initial demonstration that the waste solvent is a safety hazard shall be made prior to storage in non-closed containers. If the waste solvent is a safety hazard and is stored in non-closed containers, verification that the waste solvent is disposed of so that not more than 20 percent, by weight, is allowed to evaporate into the atmosphere shall be made on a monthly basis. **(R 336.1213(3), R 336.1611(2)(c), R 336.1707(3)(c))**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**
3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S) - NA

IX. OTHER REQUIREMENT(S) - NA

E. NON-APPLICABLE REQUIREMENTS

At the time of the ROP issuance, the AQD has determined that no non-applicable requirements have been identified for incorporation into the permit shield provision set forth in the General Conditions in Part A pursuant to Rule 213(6)(a)(ii).

APPENDICES

Appendix 1. Abbreviations and Acronyms

The following is an alphabetical listing of abbreviations/acronyms that may be used in this permit.

AQD	Air Quality Division	MM	Million
acfm	Actual cubic feet per minute	MSDS	Material Safety Data Sheet
BACT	Best Available Control Technology	MW	Megawatts
BTU	British Thermal Unit	NA	Not Applicable
°C	Degrees Celsius	NAAQS	National Ambient Air Quality Standards
CAA	Federal Clean Air Act	NESHAP	National Emission Standard for Hazardous Air Pollutants
CAM	Compliance Assurance Monitoring	NMOC	Non-methane Organic Compounds
CEM	Continuous Emission Monitoring	NOx	Oxides of Nitrogen
CFR	Code of Federal Regulations	NSPS	New Source Performance Standards
CO	Carbon Monoxide	NSR	New Source Review
COM	Continuous Opacity Monitoring	PM	Particulate Matter
department	Michigan Department of Environmental Quality	PM-10	Particulate Matter less than 10 microns in diameter
dscf	Dry standard cubic foot	pph	Pound per hour
dscm	Dry standard cubic meter	ppm	Parts per million
EPA	United States Environmental Protection Agency	ppmv	Parts per million by volume
EU	Emission Unit	ppmw	Parts per million by weight
°F	Degrees Fahrenheit	PS	Performance Specification
FG	Flexible Group	PSD	Prevention of Significant Deterioration
GACS	Gallon of Applied Coating Solids	psia	Pounds per square inch absolute
gr	Grains	psig	Pounds per square inch gauge
HAP	Hazardous Air Pollutant	PeTE	Permanent Total Enclosure
Hg	Mercury	PTI	Permit to Install
hr	Hour	RACT	Reasonable Available Control Technology
HP	Horsepower	ROP	Renewable Operating Permit
H ₂ S	Hydrogen Sulfide	SC	Special Condition
HVLP	High Volume Low Pressure *	scf	Standard cubic feet
ID	Identification (Number)	sec	Seconds
IRSL	Initial Risk Screening Level	SCR	Selective Catalytic Reduction
ITSL	Initial Threshold Screening Level	SO ₂	Sulfur Dioxide
LAER	Lowest Achievable Emission Rate	SRN	State Registration Number
lb	Pound	TAC	Toxic Air Contaminant
m	Meter	Temp	Temperature
MACT	Maximum Achievable Control Technology	THC	Total Hydrocarbons
MAERS	Michigan Air Emissions Reporting System	tpy	Tons per year
MAP	Malfunction Abatement Plan	µg	Microgram
MDEQ	Michigan Department of Environmental Quality	VE	Visible Emissions
mg	Milligram	VOC	Volatile Organic Compounds
mm	Millimeter	yr	Year

*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 pounds per square inch gauge (psig).

Appendix 2. Schedule of Compliance

The permittee certified in the ROP application that this stationary source is in compliance with all applicable requirements and the permittee shall continue to comply with all terms and conditions of this ROP. A Schedule of Compliance is not required. **(R 336.1213(4)(a), R 336.1119(a)(ii))**

Appendix 3. Monitoring Requirements

Specific monitoring requirement procedures, methods or specifications are detailed in Part A or the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, this appendix is not applicable.

Appendix 4. Recordkeeping

Specific recordkeeping requirement formats and procedures are detailed in Part A or the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, this appendix is not applicable.

Appendix 5. Testing Procedures

The permittee shall use the following approved procedures, to measure the pollutant emissions for the applicable requirements referenced in EULANDFILL.

Tier 2

The permittee shall determine the NMOC concentration using the following sampling procedure. The permittee shall install at least two sample probes per hectare of landfill surface that has retained waste for at least two years. If the landfill is larger than 25 hectares in area, only 50 samples are required. The sample probes should be located to avoid known areas of nondegradable solid waste. The permittee shall collect and analyze one sample of landfill gas from each probe to determine the NMOC concentration using Method 25 or 25C of Appendix A of 40 CFR Part 60. Method 18 of Appendix A of 40 CFR Part 60 may be used to analyze the samples collected by the Method 25 or 25C sampling procedure. Taking composite samples from different probes into a single cylinder is allowed; however, equal sample volumes must be taken from each probe. For each composite, the sampling rate, collection times, beginning and ending cylinder vacuums, or alternative volume measurements must be recorded to verify that composite volumes are equal. Composite sample volumes should not be less than one liter unless evidence can be provided to substantiate the accuracy of smaller volumes. Terminate compositing before the cylinder approaches ambient pressure where measurement accuracy diminishes. If using Method 18, the permittee must identify all compounds in the sample and, as a minimum, test for those compounds published in the most recent Compilation of Air Pollutant Emission Factors (AP-42), minus carbon monoxide, hydrogen sulfide, and mercury. As a minimum, the instrument must be calibrated for each of the compounds on the list. Convert the concentration of each Method 18 compound to CNMOC as hexane by multiplying by the ratio of its carbon atoms divided by six. If more than the required number of samples are taken, all samples must be used in the analysis. The permittee must divide the NMOC concentration from Method 25 or 25C of Appendix A of 40 CFR Part 60 by six to convert from CNMOC as carbon to CNMOC as hexane. If the landfill has an active or passive gas removal system in place, Method 25 or 25C samples may be collected from these systems instead of surface probes provided the removal system can be shown to provide sampling as representative as the two sampling probe per hectare requirement. For active collection systems, samples may be collected from the common header pipe before the gas moving or condensate removal equipment. For these systems, a minimum of three samples must be collected from the header pipe. **(40 CFR 60.754(a)(3))**

Tier 3

The site-specific methane generation rate constant shall be determined using the procedures provided in Method 2E of appendix A of 40 CFR Part 60. The permittee shall estimate the NMOC mass emission rate using **Equation 1** (§ 60.754(a)(1)(i)) or **Equation 2** (§ 60.754(a)(1)(ii)) and using a site-specific methane generation rate

constant k, and the site specific NMOC concentration as determined in § 60.754(a)(3) instead of the default values provided in § 60.754(a)(1). The permittee shall compare the resulting NMOC mass emission rate to the standard of 50 megagrams per year. **(40 CFR 60.754(a)(4))**

Performance Test

For the performance test required in § 60.752(b)(2)(iii)(B), Method 25, 25C, or Method 18 of Appendix A of 40 CFR Part 60 must be used to determine compliance with the 98 weight percent efficiency or the 20 ppm outlet concentration level, unless another method to demonstrate compliance has been approved by the District Supervisor as provided by § 60.752(b)(2)(i)(B). 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 of appendix A of 40 CFR Part 60, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The following equation shall be used to calculate efficiency: **(40 CFR 60.754(d))**

Control Efficiency = (NMOCin – NMOCout)/(NMOCin) where,
 NMOCin = mass of NMOC entering control device
 NMOCout = mass of NMOC exiting control device

Appendix 6. Permits to Install

The following table lists any PTIs issued since the effective date of previously issued ROP No. MI-ROP-~~N5719-2006a~~. This includes any PTI that were incorporated into the Source-Wide PTI No MI-ROP-~~N5719-2006a~~ through amendments or modifications and any PTI that remained off-permit until this ROP renewal.

Permit to Install Number	Description of Equipment	Corresponding Emission Unit(s) or Flexible Group(s)
MI-ROP- N5719-2006a	Source-wide PTI	Total source

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Appendix 7. Emission Calculations

A. The permittee shall use the following calculations in conjunction with monitoring, testing or recordkeeping data to determine compliance with the applicable requirements referenced in EULANDFILL.

Default Values

The permittee shall calculate the NMOC emission rate using either **Equation 1** (the equation provided in § 60.754(a)(1)(i)) or **Equation 2** (the equation provided in § 60.754(a)(1)(ii)). Both equations may be used if the actual year-to-year solid waste acceptance rate is known, as specified in **Equation 1** (§ 60.754(a)(1)(i)), for part of the life of the landfill and the actual year-to-year solid waste acceptance rate is unknown, as specified in **Equation 2** (the equation provided in § 60.754(a)(1)(ii)), for part of the life of the landfill. The values to be used in both equations are 0.05 per year for k, 170 cubic meters per megagram for L_o, and 4,000 parts per million by volume as hexane for the C_{NMOC}. For landfills located in geographical areas with a thirty year annual average precipitation of less than 25 inches, as measured at the nearest representative official meteorologic site, the k value to be used is 0.02 per year. **(40 CFR 60.754(a)(1))**

Equation 1

The following equation shall be used if the actual year-to-year solid waste acceptance rate is known. **(40 CFR 60.754(a)(1)(i))**

$$M_{NMOC} = \sum_{i=1}^n 2 k L_o M_i (e^{-k t_i}) (C_{NMOC}) (3.6 \times 10^{-9})$$

Where:

M_{NMOC} = Total NMOC emission rate from the landfill, megagrams per year

k = methane generation rate constant, year⁻¹

L_o = methane generation potential, cubic meters per megagram solid waste

M_i = mass of solid waste in the i th section, megagrams

t_i = age of the i th section, years

C_{NMOC} = concentration of NMOC, parts per million by volume as hexane

3.6×10^{-9} = conversion factor

The mass of nondegradable solid waste may be subtracted from the total mass of solid waste in a particular section of the landfill when calculating the value for M_i if documentation of the nature and amount of such wastes is maintained.

Equation 2

The following equation shall be used if the actual year-to-year solid waste acceptance rate is unknown. **(40 CFR 60.754(a)(1)(ii))**

$$M_{NMOC} = 2L_o R (e^{-kc} - e^{-kt}) (C_{NMOC}) (3.6 \times 10^{-9})$$

Where:

M_{NMOC} = mass emission rate of NMOC, megagrams per year

L_o = methane generation potential, cubic meters per megagram solid waste

R = average annual acceptance rate, megagrams per year

k = methane generation rate constant, year⁻¹

t = age of landfill, years

C_{NMOC} = concentration of NMOC, parts per million by volume as hexane

c = time since closure, years; for active landfill $c = 0$ and $e^{-kc} = 1$

3.6×10^{-9} = conversion factor

The mass of nondegradable solid waste may be subtracted from the total mass of solid waste in a particular section of the landfill when calculating the value of R , if documentation of the nature and amount of such wastes is maintained.

Tier 2

The permittee shall recalculate the NMOC mass emission rate using the **Equation 1** or **Equation 2** in **Appendix 7** and using the average NMOC concentration from the collected samples (**Tier 2** testing in **Appendix 5**) instead of the default value in the equation provided in § 60.754(a)(1). **(40 CFR 60.754(a)(3)(i))**

If the resulting mass emission rate calculated using the site-specific NMOC concentration is equal to or greater than 50 megagrams per year, then the permittee shall either comply with § 60.752(b)(2) (submit a collection and control

system design plan prepared by a professional engineer within 1 year), or determine the site specific methane generation rate constant and recalculate the NMOC emission rate using the site specific methane generation rate using the procedure specified in **Tier 3** (§ 60.752(a)(4)). **(40 CFR 60.754(a)(3)(ii))**

If the resulting **Tier 2** NMOC mass emission rate is less than 50 megagrams per year, the permittee shall submit a periodic estimate of the emission rate report as provided in § 60.757(b)(1) and retest the site specific NMOC concentration every 5 years using the methods specified in this section. **(40 CFR 60.754(a)(3)(iii))**

Tier 3

If the Tier 3 NMOC mass emission rate as calculated using the site-specific methane generation rate and concentration of NMOC is equal to or greater than 50 megagrams per year, the permittee shall comply with § 60.752(b)(2) (submit a collection and control system design plan prepared by a professional engineer within 1 year). **(40 CFR 60.754(a)(4)(i))**

If the NMOC mass emission rate is less than 50 megagrams per year, then the permittee shall submit a periodic emission rate report as provided in § 60.757(b)(1) and shall recalculate the NMOC mass emission rate annually, as provided in § 60.757(b)(1) using **Equation 1** or **Equation 2**, and using the site-specific methane generation rate constant (**Tier 3**) and NMOC concentration (**Tier 2**) obtained in § 60.754(a)(3). The calculation of the methane generation rate constant (**Tier 3**) is performed only once, and the value obtained from this test shall be used in all subsequent annual NMOC emission rate calculations. **(40 CFR 60.754(a)(4)(ii))**

Calculating Expected Gas Generation Flow Rates From the Landfill

For the purposes of calculating the maximum expected gas generation flow rate from the landfill to determine compliance with § 60.752(b)(2)(ii)(A)(1), either **Equation 3** or **Equation 4**, below, shall be used. The k and L₀ kinetic factors should be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42) or other site specific values demonstrated to be appropriate and approved by the USEPA, Region V. If k has been determined as specified in § 60.754(a)(4), the value of k determined from the test shall be used. A value of no more than 15 years shall be used for the intended use period of the gas mover equipment. The active life of the landfill is the age of the landfill plus the estimated number of years until closure. **(40 CFR 60.755(a)(1))**

If a collection and control system has been installed, actual flow data may be used to project the maximum expected gas generation flow rate instead of, or in conjunction with, **Equation 3** or **Equation 4**. If the landfill is still accepting waste, the actual measured flow data will not equal the maximum expected gas generation rate, so calculations using **Equation 3** or **Equation 4** or other methods shall be used to predict the maximum expected gas generation rate over the intended period of use of the gas control system equipment. **(40 CFR 60.755(a)(1)(ii))**

Equation 3

For sites with unknown year-to-year solid waste acceptance rate:

$$Q_m = 2L_0 R (e^{-kc} - e^{-kt})$$

Where:

Q_m = maximum expected gas generation flow rate, cubic meters per year

L₀ = methane generation potential, cubic meters per megagram solid waste

R = average annual acceptance rate, megagrams per year

k = methane generation rate constant, year⁻¹

t = age of the landfill at equipment installation plus the time the owner or operator intends to use the gas mover equipment or active life of the landfill, whichever is less. If the equipment is installed after closure, t is the age of the landfill at installation, years

c = time since closure, years (for an active landfill c = 0 and e^{-kc} = 1)

Equation 4

For sites with known year-to-year solid waste acceptance rate:

$$Q_M = \sum_{i=1}^n 2 k L_o M_i (e^{-kt_i})$$

Where,

Q_M = maximum expected gas generation flow rate, cubic meters per year

k = methane generation rate constant, year⁻¹

L_o = methane generation potential, cubic meters per megagram solid waste

M_i = mass of solid waste in the i th section, megagrams

t_i = age of the i th section, years

B. The permittee shall use the following calculations in conjunction with monitoring, testing or recordkeeping data to determine compliance with the applicable requirements referenced in EUNACTIVECOLL and EUOPENFLARE.

Calculation Used to Determine NMOC Emissions From any Nonproductive Area

The following shall be used to determine if 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 amount, location, and age of the material shall be documented and provided to the District Supervisor upon request. A separate NMOC emissions estimate shall be made for each section proposed for exclusion, and the sum of all such sections shall be compared to the NMOC emissions estimate for the entire landfill. Emissions from each section shall be computed using the following equation: **(40 CFR 60.759(a)(3)(ii), 40 CFR 63.1955(a))**

$Q_i = 2 k L_o M_i (e^{-kt_i})$ (CNMOC) (3.6×10^{-9}) where,

Q_i = NMOC emission rate from the i th section, megagrams per year

k = methane generation rate constant, year⁻¹

L_o = methane generation potential, cubic meters per megagram solid waste

M_i = mass of the degradable solid waste in the i th section, megagram

t_i = age of the solid waste in the i th section, years

CNMOC = concentration of non-methane organic compounds, parts per million by volume

3.6×10^{-9} = conversion factor

The values for k and CNMOC determined in field testing shall be used if field testing has been performed in determining the NMOC emission rate or the radii of influence (this distance from the well center to a point in the landfill where the pressure gradient applied by the blower or compressor approaches zero). If field testing has not been performed, the default values for k , L_o and CNMOC provided in §60.754(a)(1) or the alternative values from §60.754(a)(5) shall be used. The mass of nondegradable solid waste contained within the given section may be subtracted from the total mass of the section when estimating emissions provided the nature, location, age, and amount of the nondegradable material is documented as provided in §60.759(a)(3)(i). **(40 CFR 60.759(a)(3)(iii), 40 CFR 63.1955(a))**

Net Heating Value of the Gas Being Combusted in the Flare:

The net heating value of the gas being combusted in the flare shall be calculated and recorded using the equation provided in 40 CFR 60.18(f)(3). **(40 CFR 60.18(f)(3))**

$$H_T = K \sum_{i=1}^n C_i H_i$$

WHERE:

HT=Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C;

$$K = \text{Constant} \cdot 1.740 \times 10^{-7} \left(\frac{1}{\text{ppm}} \right) \left(\frac{\text{g mole}}{\text{scm}} \right) \left(\frac{\text{MJ}}{\text{kcal}} \right)$$

where the standard temperature for $\left(\frac{\text{g mole}}{\text{scm}} \right)$ is 20°C;

Ci=Concentration of sample component i in ppm on a wet basis, as measured for organics by Reference Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946–77 or 90 (Reapproved 1994) (Incorporated by reference as specified in §60.17); and

Hi=Net heat of combustion of sample component i, kcal/g mole at 25 °C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382–76 or 88 or D4809–95 (incorporated by reference as specified in §60.17) if published values are not available or cannot be calculated.

Calculation for Vmax Steam-assisted and Non-assisted Flares

The maximum permitted velocity, Vmax, for flares complying with 40 CFR 60.18(c)(4)(iii) shall be calculated and recorded using the equation provided in 40 CFR 60.18(f)(5). **(40 CFR 60.18(f)(5))**

$$\text{Log}_{10} (V_{\text{max}}) = (\text{HT} + 28.8) / 31.7$$

Vmax=Maximum permitted velocity, M/sec 28.8=Constant 31.7=Constant HT=The net heating value as determined above.

Appendix 8. Reporting

A. Annual, Semiannual, and Deviation Certification Reporting

The permittee shall use the MDEQ Report Certification form (EQP 5736) and MDEQ Deviation Report form (EQP 5737) for the annual, semiannual and deviation certification reporting referenced in the Reporting Section of the Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Alternative formats must meet the provisions of Rule 213(4)(c) and Rule 213(3)(c)(i), respectively, and be approved by the AQD District Supervisor.

B. Other Reporting

Specific reporting requirement formats and procedures are detailed in Part A or the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, Part B of this appendix is not applicable.