MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
AIR QUALITY DIVISION

EFFECTIVE DATE: July 30, 2019

ISSUED TO

Pine Tree Acres, Inc. and Sumpter Energy Associates, LLC

State Registration Number (SRN): N5984

LOCATED AT

36600 29 Mile Road and 36450 29 Mile Road, Lenox Township, Michigan 48048

RENEWABLE OPERATING PERMIT

Permit Number: MI-ROP-N5984-2019

Expiration Date: July 30, 2024

Administratively Complete ROP Renewal Application
Due Between January 30, 2023 and January 30, 2024

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-N5984-2019

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 Environment, Great Lakes, and Energy

_____

Joyce Zhu, Warren District Supervisor

TABLE OF CONTENTS

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 Environment, Great Lakes, and Energy (EGLE) 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 are identified for each ROP term or condition. All terms and conditions that are included in a PTI are streamlined, subsumed and/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.

SECTION 1 – PINE TREE ACRES, INC.

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 a federally enforceable Source-Wide PTI 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).[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. Unless otherwise specified in this ROP, the permittee shall comply with Rule 301, which states, in part, "Except as provided in Subrules 2, 3, and 4 of this rule, 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 the following:"[2] **(R 336.1301(1))**
    a. A 6-minute average of 20% opacity, except for one 6-minute average per hour of not more than 27% opacity.
    b. A limit specified by an applicable federal new source performance standard.

    The grading of visible emissions shall be determined in accordance with Rule 303.

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).[2] **(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(5))**

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 60604-3507. **(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))**
    a. 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.
    b. 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.[2] **(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))**
    a. The applicable requirements are included and are specifically identified in the ROP.
    b. 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:
    a. 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))**
    b. 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))**
    c. 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(10))**

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(9))**

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 reclaimer, 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 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 68.10(a):
    a. June 21, 1999,
    b. Three years after the date on which a regulated substance is first listed under 40 CFR 68.130, or
    c. 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, EGLE.[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 of the original PTI issuance date, or has been interrupted for 18 months, the applicable terms and conditions from that PTI, as incorporated into the ROP, 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, EGLE, 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:
[1]This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).
[2]This 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.

SOURCE-WIDE CONDITIONS

POLLUTION CONTROL EQUIPMENT

Sulfur/Total Reduced Sulfur removal system

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

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

NA

VI. MONITORING/RECORDKEEPING

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

NA

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 8-1

VIII. STACK/VENT RESTRICTION(S)

N/A

IX. OTHER REQUIREMENT(S)

1. The operational restrictions and testing requirements in SC II.1, SC III.3 and SC V.3 under FG-ICENGINES at Pine Trees Acres (section 1) also applies to the landfill gas supplied to FG-ENGINES at the facility operated by Sumpter Energy (section 2).[2] **(R 336.2803, R 336.2804, 40 CFR 52.21 (c) & (d))**

Footnotes:
[1]This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

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
EU-ASBESTOS	Any active or inactive asbestos disposal at the MSW landfill.	01/01/1988	FG-LANDFILL-XXX FG-LANDFILL-WWW
EU-LANDFILL	A municipal solid waste (MSW) landfill that commenced construction, reconstruction, or modification after July 17, 2014. The MSW landfill has a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters, and NMOC emissions equal to or greater than 34 Mg per year.	06/30/1986	FG-LANDFILL-XXX FG-LANDFILL-WWW
EU-ACTIVECOLLECTION	This emission unit represents the active landfill gas collection system that uses gas mover equipment to draw landfill gas from the wells and moves the gas to the control equipment.	01/01/1993	FG-LANDFILL-XXX FG-LANDFILL-WWW FG-ACTIVECOLLECTION-XXX FG-ACTIVECOLLECTION-WWW
EU-TREATMENTSYSTEM	A treatment system that filters, de-waters, and compresses landfill gas for subsequent sale or beneficial use. The treatment system removes particulate to at least the 10-micron level, compresses the landfill gas, and removes enough moisture to ensure good combustion of gas for subsequent use.	07/24/2001	FG-LANDFILL-XXX FG-LANDFILL-WWW FG-TREATMENTSYSTEM-XXX FG-TREATMENTSYSTEM-WWW
EU-FLARE3	A 3,000 CFM open flare. Open flare is an open combustor without enclosure or shroud.	08/12/2005 / 08/01/2006	FG-LANDFILL-XXX FG-LANDFILL-WWW FG-FLARES FG-OPENFLARES-XXX FG-OPENFLARES-WWW

Section 1 – Pine Tree Acres, Inc.

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EU-FLARE4	A 3,000 CFM enclosed flare with a sulfur removal system for reducing sulfur content of landfill gas prior to combustion. An enclosed flare is an enclosed combustor or firebox which maintains a relatively constant limited peak temperature generally using a limited supply of combustion air.	06/24/2009	FG-LANDFILL-XXX FG-LANDFILL-WWW FG-FLARES FG-ENCLOSEDFLARES-XXX FG-ENCLOSEDFLARES-WWW
EU-FLARE5	A 2,100 CFM portable, back-up only, open flare. Open flare is an open combustor without enclosure or shroud.	03/18/2009	FG-LANDFILL-XXX FG-LANDFILL-WWW FG-FLARES FG-OPENFLARES-XXX FG-OPENFLARES-WWW
EU-FLARE6	A 6,000 CFM enclosed flare with a sulfur removal system for reducing sulfur content of landfill gas prior to combustion. An enclosed flare is an enclosed combustor or firebox which maintains a relatively constant limited peak temperature generally using a limited supply of combustion air.	04/01/2011	FG-LANDFILL-XXX FG-LANDFILL-WWW FG-FLARES FG-ENCLOSEDFLARES-XXX FG-ENCLOSEDFLARES-WWW
EU-COLDCLEANER	This emission unit represents one or more small cold cleaners/degreasers installed after July 1, 1979, which are exempt from permit-to-install requirements.	06/26/2001	FG-COLDCLEANERS
EU-ICENGINE1	Spark ignition, lean burn, reciprocating internal combustion engine (Caterpillar G3520C, 2,233 bhp at 100% load) and associated generator set for combusting treated landfill gas to produce electricity (1.6-megawatt gross electrical output). This emission unit, and any replacement of this unit as applicable under R 336.1285(2)(a)(vi), is for a Caterpillar G3520C internal combustion engine greater than 500hp fueled with treated landfill/digester gas to produce electricity.	02/28/11	FG-ICENGINES FG-RICEMACT FG-RICENSPS

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EU-ICENGINE2	Spark ignition, lean burn, reciprocating internal combustion engine (Caterpillar G3520C, 2,233 bhp at 100% load) and associated generator set for combusting treated landfill gas to produce electricity (1.6-megawatt gross electrical output). This emission unit, and any replacement of this unit as applicable under R 336.1285(2)(a)(vi), is for a Caterpillar G3520C internal combustion engine greater than 500hp fueled with treated landfill/digester gas to produce electricity.	02/28/11	FG-ICENGINES FG-RICEMACT FG-RICENSPS
EU-ICENGINE3	Spark ignition, lean burn, reciprocating internal combustion engine (Caterpillar G3520C, 2,233 bhp at 100% load) and associated generator set for combusting treated landfill gas to produce electricity (1.6-megawatt gross electrical output). This emission unit, and any replacement of this unit as applicable under R 336.1285(2)(a)(vi), is for a Caterpillar G3520C internal combustion engine greater than 500hp fueled with treated landfill/digester gas to produce electricity.	02/28/11	FG-ICENGINES FG-RICEMACT FG-RICENSPS
EU-ICENGINE4	Spark ignition, lean burn, reciprocating internal combustion engine (Caterpillar G3520C, 2,233 bhp at 100% load) and associated generator set for combusting treated landfill gas to produce electricity (1.6-megawatt gross electrical output). This emission unit, and any replacement of this unit as applicable under R 336.1285(2)(a)(vi), is for a Caterpillar G3520C internal combustion engine greater than 500hp fueled with treated landfill/digester gas to produce electricity.	02/28/11	FG-ICENGINES FG-RICEMACT FG-RICENSPS

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EU-ICENGINE5	Spark ignition, lean burn, reciprocating internal combustion engine (Caterpillar G3520C, 2,233 bhp at 100% load) and associated generator set for combusting treated landfill gas to produce electricity (1.6-megawatt gross electrical output). This emission unit, and any replacement of this unit as applicable under R 336.1285(2)(a)(vi), is for a Caterpillar G3520C internal combustion engine greater than 500hp fueled with treated landfill/digester gas to produce electricity.	02/28/11	FG-ICENGINES FG-RICEMACT FG-RICENSPS
EU-ICENGINE6	Spark ignition, lean burn, reciprocating internal combustion engine (Caterpillar G3520C, 2,233 bhp at 100% load) and associated generator set for combusting treated landfill gas to produce electricity (1.6-megawatt gross electrical output). This emission unit, and any replacement of this unit as applicable under R 336.1285(2)(a)(vi), is for a Caterpillar G3520C internal combustion engine greater than 500hp fueled with treated landfill/digester gas to produce electricity.	02/28/11	FG-ICENGINES FG-RICEMACT FG-RICENSPS
EU-ICENGINE7	Spark ignition, lean burn, reciprocating internal combustion engine (Caterpillar G3520C, 2,233 bhp at 100% load) and associated generator set for combusting treated landfill gas to produce electricity (1.6-megawatt gross electrical output). This emission unit, and any replacement of this unit as applicable under R 336.1285(2)(a)(vi), is for a Caterpillar G3520C internal combustion engine greater than 500hp fueled with treated landfill/digester gas to produce electricity.	02/28/11	FG-ICENGINES FG-RICEMACT FG-RICENSPS

Section 1 – Pine Tree Acres, Inc.

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EU-ICENGINE8	Spark ignition, lean burn, reciprocating internal combustion engine (Caterpillar G3520C, 2,233 bhp at 100% load) and associated generator set for combusting treated landfill gas to produce electricity (1.6-megawatt gross electrical output). This emission unit, and any replacement of this unit as applicable under R 336.1285(2)(a)(vi), is for a Caterpillar G3520C internal combustion engine greater than 500hp fueled with treated landfill/digester gas to produce electricity.	02/28/11	FG-ICENGINES FG-RICEMACT FG-RICENSPS

EU-ASBESTOS
EMISSION UNIT CONDITIONS

DESCRIPTION

Any active or inactive asbestos disposal at the MSW landfill.

Flexible Group ID: FG-LANDFILL-XXX, FG-LANDFILL-WWW

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

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 required in 40 CFR 61.154(b), or the requirements of 40 CFR 61.154(c)(1) must be met.

        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. 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:

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 PARAMETER(S)

1. Any segregated area of asbestos or nondegradable material may be excluded from collection if documented as provided under 40 CFR 60.758(d) or 40 CFR 60.768(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), 40 CFR 60.769(a)(3)(i))**

V. TESTING/SAMPLING

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

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five 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 USEPA 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 USEPA 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 USEPA 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 40 CFR 60.759(a)(3)(i) or 40 CFR 60.769(a)(3)(i). **(40 CFR 60.758(d)(2), 40 CFR 60.768(d)(2))**

4. The permittee shall keep records of one the following regarding any active disposal site where asbestos containing materials have been deposited:

   a. USEPA Method 22 readings demonstrating no visible emissions from any active disposal site where asbestos containing materials have been deposited. These readings are to be taken for 15 minutes each operating day.

   b. Records of the date asbestos waste is received, the amount and type of material that has been used to cover the asbestos waste, and documentation that the cover material was applied in the frequency required in SC III.1.c. **(40 CFR 61.154(c))**

   c. Records pursuant to an alternative emissions control method that has prior written approval of the AQD District Supervisor as noted in SC III.1.d. **(40 CFR 61.154(d))**

The permittee shall keep all records on file in a format acceptable to the AQD District Supervisor and make them available upon request. **(R 336.1213(3), 40 CFR 61.154)**

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))**

4. For all asbestos-containing waste material received, the permittee of the active waste disposal site shall:

   a. Report in writing to the AQD District Supervisor by the following working day, the presence of a significant amount of improperly enclosed or uncovered waste and submit a copy of the waste shipment record along with the report. **(40 CFR 61.154(e)(1)(iv))**

   b. 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 AQD Supervisor. Describe the discrepancy and attempts to reconcile it and submit a copy of the waste shipment record along with the report. **(40 CFR 61.154(e)(3))**

5. The permittee shall notify the AQD Technical Programs Unit and 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. The notice shall include the following information:

   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))**

6. 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))**

See Appendix 8-1

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60, Subparts A and WWW. **(40 CFR 60, Subparts A and WWW)**

2. The permittee shall comply with all applicable provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60, Subparts A and XXX. **(40 CFR 60, Subparts A and XXX)**

3. The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR Part 61 Subparts A and M. **(40 CFR 61, Subparts A and M)**

Footnotes:
[1]This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).
[2]This 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
FG-LANDFILL-XXX	This flexible group represents the general MSW landfill with a required collection and control system. This flexible group contains 40 CFR 60, Subpart XXX requirements.	EU-LANDFILL EU-ACTIVECOLLECTION EU-TREATMENTSYSTEM EU-ASBESTOS EU-FLARE3 EU-FLARE4 EU-FLARE5 EU-FLARE6
FG-LANDFILL-WWW	This flexible group represents the general MSW landfill with a required collection and control system. This flexible group contains 40 CFR 60, Subpart WWW requirements.	EU-LANDFILL EU-ACTIVECOLLECTION EU-TREATMENTSYSTEM EU-ASBESTOS EU-FLARE3 EU-FLARE4 EU-FLARE5 EU-FLARE6
FG-ACTIVECOLLECTION-XXX	This flexible group 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. This flexible group contains 40 CFR 60, Subpart XXX requirements.	EU-ACTIVECOLLECTION
FG-ACTIVECOLLECTION-WWW	This flexible group represents the active landfill gas collection system that uses gas mover equipment to draw landfill gas from the wells and moves the gas to the control equipment. This flexible group contains 40 CFR 60, Subpart WWW requirements.	EU-ACTIVECOLLECTION
FG-TREATMENTSYSTEM-XXX	A treatment system that filters, de-waters, and compresses landfill gas for subsequent sale or beneficial use. The treatment system removes particulate to at least the 10-micron level, compresses the landfill gas, and removes enough moisture to ensure good combustion of gas for subsequent use. This flexible group contains the requirements of 40 CFR Part 60, Subpart XXX.	EU-TREATMENTSYSTEM

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FG-TREATMENTSYSTEM-WWW	A treatment system that filters, de-waters, and compresses landfill gas for subsequent sale or beneficial use. The treatment system removes particulate to at least the 10-micron level, compresses the landfill gas, and removes enough moisture to ensure good combustion of gas for subsequent use. This flexible group contains the requirements of 40 CFR Part 60, Subpart WWW.	EU-TREATMENTSYSTEM
FG-ENCLOSEDFLARES-XXX	Two enclosed flares with a combined capacity of 9,000 CFM, used in combusting landfill gas. An enclosed flare is an enclosed combustor or firebox which maintains a relatively constant limited peak temperature generally using a limited supply of combustion air. This flexible group contains the requirements of 40 CFR Part 60, Subpart XXX.	EU-FLARE4 EU-FLARE6
FG-ENCLOSEDFLARES-WWW	Two enclosed flares with a combined capacity of 9,000 CFM, used in combusting landfill gas. An enclosed flare is an enclosed combustor or firebox which maintains a relatively constant limited peak temperature generally using a limited supply of combustion air. This flexible group contains the requirements of 40 CFR Part 60 Subpart WWW.	EU-FLARE4 EU-FLARE6
FG-OPENFLARES-XXX	Two open flares with a combined capacity of 5,100 CFM used to control LFG generated by the landfill. An open flare is an open combustor without enclosure or shroud. EUFLARE5 serves as a backup flare and only operates if one or more flares and/or engines are not in operation. This flexible group contains the requirements of 40 CFR Part 60 Subpart XXX.	EU-FLARE3 EU-FLARE5
FG-OPENFLARES-WWW	Two open flares with a combined capacity of 5,100 CFM used to control LFG generated by the landfill. An open flare is an open combustor without enclosure or shroud. EUFLARE5 serves as a backup flare and only operates if one or more flares and/or engines are not in operation. This flexible group contains the requirements of 40 CFR Part 60 Subpart WWW.	EU-FLARE3 EU-FLARE5
FG-FLARES	Four flares (one open, two enclosed, and one stand by portable open flare) with a combined capacity of 14,200 CFM, used in combusting landfill gas.	EU-FLARE3 EU-FLARE4 EU-FLARE5 EU-FLARE6
FG-COLDCLEANERS	This flexible group represents one or more small cold cleaners/degreasers installed after July 1, 1979, which are exempt from permit-to-install requirements.	EU-COLDCLEANERS
FG-ICENGINES	Eight internal combustion engines and associated generator sets for combusting treated landfill gas to produce electricity.	EU-ICENGINE1 EU-ICENGINE2 EU-ICENGINE3 EU-ICENGINE4 EU-ICENGINE5 EU-ICENGINE6 EU-ICENGINE7 EU-ICENGINE8

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FG-RICEMACT	New and reconstructed non-emergency engines greater than 500 hp firing landfill/digester gas, located at a major source of HAPs. Commenced construction or reconstruction on or after December 19, 2002.	EU-ICENGINE1 EU-ICENGINE2 EU-ICENGINE3 EU-ICENGINE4 EU-ICENGINE5 EU-ICENGINE6 EU-ICENGINE7 EU-ICENGINE8
FG-RICENSPS	Non-emergency engine(s) greater than 500 hp, fueled with landfill/digester gas. Engine(s) ordered after June 12, 2006 and manufactured on or after July 1, 2007.	EU-ICENGINE1 EU-ICENGINE2 EU-ICENGINE3 EU-ICENGINE4 EU-ICENGINE5 EU-ICENGINE6 EU-ICENGINE7 EU-ICENGINE8

FG-LANDFILL-XXX
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

This flexible group represents the general MSW landfill with a required collection and control system. This flexible group contains 40 CFR 60, Subpart XXX requirements.

Emission Units: EU-LANDFILL, EU-ACTIVECOLLECTION, EU-TREATMENTSYSTEM, EU-FLARE3, EU-FLARE4, EU-FLARE5, EU-FLARE6, EU-ASBESTOS

POLLUTION CONTROL EQUIPMENT

Open and enclosed flare, landfill gas treatment system.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Methane concentration	Less than 500 ppm above background level	Calendar quarter	Surface of Landfill	SC V.1 SC VI.1	**40 CFR 60.763(d)**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall develop a written startup, shutdown, and malfunction (SSM) plan that describes how emissions will be minimized during periods of startup, shutdown, and malfunction; and a program of corrective action for the malfunctioning process, air pollution control, and monitoring equipment used to comply. **(R 336.1213(3), R 336.1911)**

2. During periods of startup, shutdown, and malfunction, you must comply with the work practice specified in 40 CFR 60.763(e) in lieu of the compliance provisions in 40 CFR 60.765. **(40 CFR 60.765(e))**

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall install a collection and control system that captures the landfill gas generated within the landfill according to the requirements in 40 CFR 60.762(b)(2)(ii) and 40 CFR 60.762(b)(2)(iii). **(40 CFR 60.762(b)(2))**

2. The permittee shall route all the collected landfill gas to at least one of the following:

   a. An open flare designed in accordance with 40 CFR 60.18 except as noted in 40 CFR 60.764(e). **(40 CFR 60.762(b)(2)(iii)(A))**

   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 ppmv on dry basis, as hexane at 3 percent oxygen. **(40 CFR 60.762(b)(2)(iii)(B)**

c. To a treatment system that processes the collected gas for subsequent sale or beneficial use. The treatment system shall be designed so that all emissions from any atmospheric vent(s) shall be subject to 40 CFR 60.762(b)(2)(iii)(A) or (B). **(40 CFR 60.762(b)(2)(iii)(C))**

V. TESTING/SAMPLING

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

1. Quarterly, 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 and all cover penetrations. A surface monitoring design plan shall be developed that includes a topographical map with the monitoring route, any alternative traversing pattern that ensures equivalent coverage, and the rationale for any site-specific deviations from the 30-meter intervals. **(40 CFR 60.763(d))**

2. The permittee shall use the procedures in 40 CFR 60.765(c) for compliance with the surface methane operational standard in 40 CFR 60.763(d). **(40 CFR 60.765(c)**

3. The permittee shall document any reading of 500 ppm or more above background at any location as a monitored exceedance. As long as the following specified actions are taken, the exceedance is not a violation of the operational requirements of 40 CFR 60.763(d). **(40 CFR 60.765(c)(4))**

   a. The location of each monitored exceedance shall be marked, and the location and concentration recorded. **(40 CFR 60.765(c)(4)(i))**

   b. 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 60.765(c)(4)(ii))**

   c. 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 SC V.3.e shall be taken, and no further monitoring of that location is required until the action specified in SC V.3.e has been taken. **(40 CFR 60.765(c)(4)(iii))**

   d. 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 60.765(c)(4)(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 ppm 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 SC V.3.c or SC V.3.e shall be taken. **(40 CFR 60.765(c)(4)(iv))**

   e. For any location where monitored methane concentration equals or exceeds 500 ppm 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 60.765(c)(4)(v))**

4. The permittee shall comply with instrumentation specifications and procedures in 40 CFR 60.765(d) for surface emission monitoring devices. **(40 CFR 60.765(d))**

   a. The portable analyzer shall meet the instrument specifications provided in 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))**

   b. The calibration gas shall be methane, diluted to a nominal concentration of 500 ppm in air. **(40 CFR 60.755(d)(2))**

   c. To meet the performance evaluation requirements in Method 21 of Appendix A of 40 CFR Part 60, the instrument evaluation procedures of Method 21 of Appendix A of 40 CFR Part 60 shall be used. **(40 CFR 60.755(d)(3))**

d. The calibration procedures provided in 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))**

5. 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 60.766(f))**

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall keep monthly records of the surface methane monitoring including the following information at a minimum:

   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.

   b. The location(s) and concentrations of the methane readings and noting any reading above 500 ppm above background.

   c. The meteorological conditions the day of the testing including wind speed, wind direction, temperature, and cloud cover.

   The permittee shall keep all records on file in a format acceptable to the AQD District Supervisor and make them available upon request. **(R 336.1213(3), 40 CFR 60.763(d))**

2. The permittee shall implement a program to monitor on a monthly basis for cover integrity and implement cover repairs as necessary. Records of the cover integrity and any cover repairs shall be kept on file in a format acceptable to the AQD District Supervisor and made available upon request. **(40 CFR 60.765(c)(5)**

3. The permittee shall keep monthly records of the SSM events including the date of the event, how emissions were minimized during the event, and the corrective action taken for the malfunctioning process, air pollution control, and monitoring equipment. The permittee shall keep all records on file in a format acceptable to the AQD District Supervisor and make them available upon request. **(R 336.1213(3), R 336.1911)**

4. The permittee shall maintain up-to-date, readily accessible, on-site records of the design capacity report which triggered 40 CFR 60.762(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 four hours. The permittee shall keep all records on file in a format acceptable to the AQD District Supervisor and make them available upon request. **(40 CFR 60.768(a))**

5. 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 four hours. Either paper copy or electronic formats are acceptable. **(40 CFR 60.768(f))**

6. If reporting leachate or other liquids addition under 40 CFR 60.767(k), the permittee shall keep records of any engineering calculations or company records used to estimate the quantities of leachate or liquids added, the surface areas for which the leachate or liquids were applied, and the estimates of annual waste acceptance or total waste in place in the areas where leachate or liquids were applied. **(40 CFR 60.768(j))**

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 reports which shall be postmarked or received by appropriate AQD District Office by March 15 for reporting period January 1 to December 31. The report shall include the location of each exceedance of the 500 ppm methane concentrations as provided in 40 CFR 60.763(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 six-month reporting period. **(40 CFR 60.767(g)(5))**

5. Semiannually, the permittee shall submit a startup, shutdown, and malfunction (SSM) plan 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. The report shall include actions taken to minimize emissions consistent with the procedures specified in the (SSM) plan. If actions taken are not consistent with the SSM plan, the permittee shall report actions taken within two working days after commencing such actions followed by a letter seven days after the event. **(R 336.1213(3), R 336.1911)**

6. 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 60.767(f))**

   a. The equipment removal report shall contain all of the following items:

      i. A copy of the closure report submitted in accordance with 40 CFR 60.767(d); **(40 CFR 60.767(f)(1)(i))**

      ii. A copy of the initial performance test report demonstrating that the 15-year minimum control period has expired. **(40 CFR 60.767(f)(1)(ii))**

      iii. Dated copies of three successive NMOC emission rate reports demonstrating that the landfill is no longer producing 34 megagrams or greater of NMOC per year; and **(40 CFR 60.767(f)(1)(iii))**

   b. The AQD may request such additional information as may be necessary to verify that all of the conditions for removal in 40 CFR 60.762(b)(2)(v) have been met. **(40 CFR 60.767(e)(2))**

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 40 CFR 60.7(a)(4). **(40 CFR 60.767(e))**

See Appendix 8-1

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENTS

1. The permittee that has already submitted a design plan under 40 CFR 60.767(c) shall submit a revised design plan to the AQD for approval as follows:
   a. At least 90 days before expanding operations to an area not covered by the previously approved design plan. **(40 CFR 60.767(d)(1))**

b. Prior to installing or expanding the gas collection system in a way that is not consistent with the design plan that was submitted plan under 40 CFR 60.767(c). **(40 CFR 60.767(d)(2))**

2. The collection and control system may be capped or removed as provided in 40 CFR 60.762(b)(2)(v) if all the following conditions are met:

   a. The landfill shall be a closed landfill as defined in 40 CFR 60.761. A closure report shall be submitted to the appropriate AQD District Office as provided in 40 CFR 60.767(e); **(40 CFR 60.762(b)(2)(v)(A))**

   b. The collection and control system shall have been in operation a minimum of 15 years or the landfill owner or operator demonstrates that the GCCS will be unable to operate for 15 years due to declining gas flow; and **(40 CFR 60.762(b)(2)(v)(B))**

   c. Following the procedures specified in 40 CFR 60.764(b), the calculated NMOC gas produced by the landfill shall be less than 34 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 60.762(b)(2)(v)(C))**

3. The permittee shall comply with all applicable provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60, Subparts A and XXX. **(40 CFR 60, Subparts A and XXX)**

Footnotes:
[1]This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FG-LANDFILL-WWW
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

This flexible group represents the general Municipal Solid Waste (MSW) landfill in which the collected landfill gas is sent primarily to a treatment system. This flexible group contains 40 CFR 60, Subpart WWW requirements.

Emission Units: EU-LANDFILL, EU-ACTIVECOLLECTION, EU-TREATMENTSYSTEM, EU-FLARE 3, EU-FLARE 4, EU-FLARE 5, EU-FLARE 6, EU-ASBESTOS

POLLUTION CONTROL EQUIPMENT

Open and enclosed flares, landfill gas treatment system.

I. EMISSION LIMIT(S)

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

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 40 CFR 63.1980. **(40 CFR 63.1945(d))**

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))**

2. The permittee shall route all the collected landfill gas to at least one of the following:

   a. A flare designed in accordance with 40 CFR 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))**

   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 ppm by volume, dry basis as hexane at three percent oxygen. The reduction efficiency or ppm 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 40 CFR 60.754(d). **(40 CFR 60.752(b)(2)(iii)(B), 40 CFR 63.1955(a)(1))**

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)(B) or (C). **(40 CFR 60.752(b)(2)(iii)(C), 40 CFR 63.1955(a)(1))**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five 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))**

2. The permittee shall use the following procedures for compliance with the surface methane operational standard as provided in 40 CFR 60.753(d).

   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 40 CFR 60.755(d). **(40 CFR 60.755(c)(1), 40 CFR 63.1955(a)(1))**

   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))**

   c. Surface emission monitoring shall be performed in accordance with Section 8.3.1 of Method 21 of Appendix A of 40 CFR Part 60, except that the probe inlet shall be placed within five 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))**

   d. Any reading of 500 ppm 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 40 CFR 60.753(d). **(40 CFR 60.755(c)(4), 40 CFR 63.1955(a)(1))**

      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))**

      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))**

      iii. If the re-monitoring of the location shows a second exceedance, additional corrective action shall be taken, and the location shall be monitored again within 10 days of the second exceedance. If the re-monitoring shows a third exceedance for the same location, the action specified in 40 CFR 60.755(c)(4)(v) (below in SC V.2.d.v.) shall be taken, and no further monitoring of that location is required until the action specified in 40 CFR 60.755(c)(4)(v) (below in SC V.2.d.v.) has been taken. **(40 CFR 60.755(c)(4)(iii), 40 CFR 63.1955(a)(1))**

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 SC V.2.d.ii. or iii.) shall be re-monitored one month from the initial exceedance. If the one-month re-monitoring shows a concentration less than 500 ppm above backgrounds, no further monitoring of that location is required until the next quarterly monitoring period. If the one-month re-monitoring shows an exceedance, the actions specified in 40 CFR 60.755(c)(4)(iii) (above in SC V.2.d.ii. or iii.) or in 40 CFR 60.755(c)(4)(v) (below in SC V.2.d.v.) shall be taken. **(40 CFR 60.755(c)(4)(iv), 40 CFR 63.1955(a)(1))**

v. For any location where monitored methane concentration equals or exceeds 500 ppm 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. The permittee shall comply with the provisions in 40 CFR 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))**

   a. The portable analyzer shall meet the instrument specifications provided in Section 6 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))**

   b. The calibration gas shall be methane, diluted to a nominal concentration of 500 ppm in air. **(40 CFR 60.755(d)(2), 40 CFR 63.1955(a)(1))**

   c. To meet the performance evaluation requirements in Section 8.1 of Method 21 of Appendix A of 40 CFR Part 60, the instrument evaluation procedures of Section 8.1 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))**

   d. The calibration procedures provided in Sections 8 and 10 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))**

4. The permittee shall monitor surface concentrations of methane according to the instrument specifications and procedures provided in 40 CFR 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))**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five 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))**

2. 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))**

   d. Monitoring date. **(R 336.1213(3))**

3. Except as provided in 40 CFR 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 40 CFR 60.752(b), the current amount of solid waste in place, and the year-by-year waste acceptance rate. Off-site records may be maintained if they are retrievable within four hours. Either paper copy or electronic formats are acceptable. **(40 CFR 60.758(a), 40 CFR 63.1955(a)(1))**

4. 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 four hours. Either paper copy or electronic formats are acceptable. **(40 CFR 60.758(f), 40 CFR 40 CFR 63.1955(a)(1))**

5. 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))**

6. 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, 40 CFR 63.1955(c), and 40 CFR 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))**

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))**

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))**

   a. The equipment removal report shall contain all of the following items:

      i. A copy of the closure report submitted in accordance with 40 CFR 60.757(d). **(40 CFR 60.757(e)(1)(i), 40 CFR 63.1955(a)(1))**

      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))**

      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))**

   b. The AQD may request such additional information as may be necessary to verify that all of the conditions for removal in 40 CFR 60.752(b)(2)(v) have been met. **(40 CFR 60.757(e)(2), 40 CFR 63.1955(a)(1))**

5. 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 40 CFR 60.7(a)(4). **(40 CFR 60.757(d), 40 CFR 63.1955(a)(1))**

6. 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 ppm methane concentrations as provided in 40 CFR 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 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))**

7. 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))**

See Appendix 8-1

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 40 CFR 60.751. A closure report shall be submitted to the appropriate AQD District Office as provided in 40 CFR 60.757(d). **(40 CFR 60.752(b)(2)(v)(A), 40 CFR 63.1955(a)(1))**

   b. The collection and control system shall have been in operation a minimum of 15 years. **(40 CFR 60.752(b)(2)(v)(B), 40 CFR 63.1955(a)(1))**

   c. Following the procedures specified in 40 CFR 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))**

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

3. For the approval of collection and control systems that includes any alternatives to the operational standards, 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))**

4. The permittee shall comply with the requirements of 40 CFR Part 60, Subpart WWW. **(40 CFR 63.1955(a)(1))**

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 63.6. **(40 CFR 63.1955, 40 CFR 63.6)**

6. The permittee is no longer required to comply with the requirements of 40 CFR Part 63, Subpart AAAA 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)**

Footnotes:
[1]This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FG-ACTIVECOLLECTION-XXX
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

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

Emission Unit: EU-ACTIVECOLLECTION

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. 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. Five years or more if active; or **(40 CFR 60.763(a)(1))**

   b. Two years or more if closed or at final grade. **(40 CFR60.763(a)(2))**

2. The permittee shall operate the collection system with negative pressure at each wellhead except under the following conditions:

   a. A fire or increased well temperature. The owner or operator must record instances when positive pressure occurs in efforts to avoid a fire. These records must be submitted with the annual reports as provided in §60.767(g)(1). **(40 CFR 60.763(b)(1))**

   b. Use of a geo-membrane or synthetic cover. **(40 CFR 60.763(b)(2))**

   c. A decommissioned well. A well may experience a static positive pressure after shutdown to accommodate for declining flows. All design changes must be approved by the AQD as specified in 40 CFR 60.767(c). **(40 CFR 60.763(b)(3))**

3. The permittee shall operate each interior wellhead in the collection system with a landfill gas temperature less than 55°C (131°F). The permittee may establish a higher operating temperature at a particular well. A higher operating value demonstration shall be submitted to the AQD 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 60.763(c), 40 CFR 60.766(e))**

4. During periods of startup, shutdown, and malfunction, the permittee shall comply with the work practice specified in 40 CFR 60.763(e) in lieu of the compliance provisions in 40 CFR 60.765 as follows:

   a. Operate the system such that all collected gases are vented to a control system designed and operated in compliance with 40 CFR 60.762(b)(2)(iii). **(R 336.1911, 40 CFR 60.765(e))**

b. In the event the collection or control system is not operating, 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 one hour of the collection or control system not operating. **(R 336.1911, 40 CFR 60.765(e))**

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall install an active collection system that meets the following requirements:

   a. 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 system equipment. (**40 CFR 60.762(b)(2)(ii)(C)(1))**

   b. 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 60.765(b), 40 CFR 60.762(b)(2)(ii)(C)(2))**

   c. Collects gas at a sufficient extraction rate. **(40 CFR 60.762(b)(2)(ii)(C)(3))**

   d. Designed to minimize off-site migration of subsurface gas. **(40 CFR 60.762(b)(2)(ii)(C)(4))**

2. The permittee shall operate the collection system so that all collected gases are vented to a control system designed and operated in compliance with 40 CFR 60.762(b)(2)(iii). **(40 CFR 60.763(e))**

3. 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 60.766(a))**

4. The permittee shall site active gas collection devices as required in 40 CFR 60.769 and shall control all gas producing areas, except as provided below.

   a. Any segregated area of asbestos or non-degradable material may be excluded from collection if documented as provided under 40 CFR 60.768(d). **(40 CFR 60.769(a)(3)(i))**

   b. 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 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 7-1. **(40 CFR 60.769(a)(3)(ii))**

V. TESTING/SAMPLING

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

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five 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 40 CFR 60.762(b)(2)(ii)(C)(3), the permittee shall measure, on a monthly basis, the gauge pressure in the gas collection header at each individual well as provided in 40 CFR 60.765(a)(3) and 40 CFR 60.766(a)(1). If a positive pressure exists, the following corrective actions shall be taken:

   a. Action shall be initiated to correct the exceedance within five calendar days, except for the three conditions allowed under 40 CFR 60.763(b). Any attempted corrective measure shall not cause exceedances of other operational or performance standards. **(40 CFR 60.765(a)(3))**

   b. If negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first measurement of positive pressure, the permittee must conduct a root cause analysis and correct the exceedance as soon as practicable, but no later than 60 days after positive pressure was first measured. **(40 CFR 60.765(a)(3)(i))**

c. If corrective actions cannot be fully implemented within 60 days following the positive pressure measurement for which the root cause analysis was required, the permittee must also conduct a corrective action analysis and develop an implementation schedule to complete the corrective action(s) as soon as practicable, but no more than 120 days following the positive pressure measurement. **(40 CFR 60.765(a)(3)(ii))**

d. If corrective action is expected to take longer than 120 days to complete after the initial exceedance, the permittee must submit the root cause analysis, corrective action analysis, and corresponding implementation timeline to the AQD, according to 40 CFR 60.767(g)(7) and 40 CFR 60.767(j). **(40 CFR 60.753(g), 40 CFR 60.765(a)(3)(iii))**

2. The permittee shall monitor each well monthly for temperature as provided in 40 CFR 60.763(c) and 40 CFR 60.766(a)(3). If a well exceeds the operating parameter for temperature, the following corrective actions shall be taken:

   a. Action shall be initiated to correct the exceedance within five calendar days. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. **(40 CFR 60.765(a)(5))**

   b. If a landfill gas temperature less than 55°C (131°F) cannot be achieved within 15 calendar days of the first measurement of landfill gas temperature greater than 55°C (131°F), the permittee shall conduct a root cause analysis and correct the exceedance as soon as practicable, but no later than 60 days after a landfill gas temperature greater than 55°C (131°F) was first measured. **(40 CFR 60.765(a)(5)(i))**

   c. If corrective actions cannot be fully implemented within 60 days following the positive pressure measurement for which the root cause analysis was required, the permittee shall also conduct a corrective action analysis and develop an implementation schedule to complete the corrective action(s) as soon as practicable, but no more than 120 days following the measurement of landfill gas temperature greater than 55°C (131°F). **(40 CFR 60.765(a)(5)(ii))**

   d. If corrective action is expected to take longer than 120 days to complete after the initial exceedance, the permittee shall submit the root cause analysis, corrective action analysis, and corresponding implementation timeline to the AQD, according to §60.767(g)(7) and §60.767(j). **(40 CFR 60.765(a)(5)(iii))**

3. The permittee shall monitor, on a monthly basis, the nitrogen or oxygen concentration in the landfill gas using the procedures in 40 CFR 60.766(a)(2)(i) or (ii). **(40 CFR 60.766(2))**

4. The permittee shall keep, on a monthly basis, readily accessible records of the following:

   a. All collection and control system exceedances of the operational standards in 40 CFR 60.763, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance. **(40 CFR 60.768(e)(1))**

   b. Each wellhead temperature monitoring value of 55°C (131°F) or above, each wellhead nitrogen level at or above 20 percent, and each wellhead oxygen level at or above 5 percent. **(40 CFR 60.768(e)(2))**

   c. For any root cause analysis for which corrective actions are required in 40 CFR 60.765(a)(3)(i) or (a)(5)(i), keep a record of the root cause analysis conducted, including a description of the recommended corrective action(s) taken, and the date(s) the corrective action(s) were completed. **(40 CFR 60.768(e)(3))**

   d. For any root cause analysis for which corrective actions are required in 40 CFR 60.765(a)(3)(ii) or (a)(5)(ii), keep a record of the root cause analysis conducted, the corrective action analysis, the date for corrective action(s) already completed following the positive pressure reading or high temperature reading, and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates. **(40 CFR 60.768(e)(4))**

   e. For any root cause analysis for which corrective actions are required in 40 CFR 60.765(a)(3)(iii) or (a)(5)(iii), keep a record of the root cause analysis conducted, the corrective action analysis, the date for corrective action(s) already completed following the positive pressure reading or high temperature reading, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates, and a copy of any comments or final approval on the corrective action analysis or schedule from the AQD. **(40 CFR 60.768(e)(5))**

5. The permittee shall keep up-to-date, readily accessible records for the life of the control equipment of the data listed as follows:

   a. The maximum expected gas generation flow rate as calculated in 40 CFR 60.765(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 60.768(b)(1)(i))**

   b. The density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in 40 CFR 60.769(a)(1). **(40 CFR 60.768(b)(1)(ii))**

6. 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 40 CFR 60.765(b). **(40 CFR 60.768(d), 40 CFR 60.768(d)(1))**

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 60.767(h)(1))**

   b. The documentation of the presence of asbestos or non-degradable material for each area from which collection wells have been excluded based on the presence of asbestos or non-degradable material. **(40 CFR 60.767(h)(3))**

   c. 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 CFR60.757(h)(4))**

   d. 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 60.767(h)(5))**

   e. The provisions for the control of off-site migration. **(40 CFR 60.767(h)(6))**

   f. 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), 40 CFR 60.769(a)(3)(ii))**

   g. The permittee shall maintain the current amount of solid waste in-place, and the year-by-year waste acceptance rate. **(40 CFR 60.768(a))**

See Appendix 7-1

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 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 January 1 to December 31. The report for the gas collection system shall include the following information:

a. Value and length of time for exceedance of applicable parameters monitored under 40 CFR 60.766(a). **(40 CFR 60.767(g)(1))**

b. All periods when the collection system was not operating and length of time not operating. **(40 CFR 60.767(g)(4))**

c. The date of installation and the location of each well or collection system expansion added pursuant to 40 CFR 60.765(a)(3), 40 CFR 60.765(a)(5), 40 CFR 60.765(b), and 40 CFR 60.765(c)(4)**. (40 CFR 60.767(g)(6))**

d. The permittee shall record instances when a positive pressure occurs in efforts to avoid fire. **(40 CFR 60.763(b)(1))**

5. Annually, the permittee shall submit to the appropriate AQD District Office reports for any corrective action analysis for which corrective actions are required in 40 CFR 60.765(a)(3) or (5) and that take more than 60 days to correct the exceedance. The report shall include the following information:

   a. The root cause analysis conducted, including a description of the recommended corrective action(s), the date for corrective action(s) already completed following the positive pressure reading. **(40 CFR 60.767(g)(7))**

   b. For action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates. **(40 CFR 60.767(g)(7))**

6. The permittee shall submit to the appropriate AQD District Office reports for any corrective action and the corresponding timeline as follows:

   a. For corrective action that is required according to 40 CFR 60.765(a)(3)(iii) or (a)(5)(iii) and is expected to take longer than 120 days after the initial exceedance to complete, submit the root cause analysis, corrective action analysis, and corresponding implementation timeline as soon as practicable but no later than 75 days after the first measurement of positive pressure or temperature monitoring value of 55°C (131°F). The AQD must approve the plan for corrective action and the corresponding timeline. **(40 CFR 60.767(j)(1))**

   b. For corrective action that is required according to 40 CFR 60.765(a)(3)(iii) or (a)(5)(iii) and is not completed within 60 days after the initial exceedance, submit a notification as soon as practicable but no later than 75 days after the first measurement of positive pressure or temperature exceedance. **(40 CFR 60.767(j)(2))**

See Appendix 8-1

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENTS

1. Each permittee seeking to demonstrate compliance with 40 CFR 60.762(b)(2)(ii)(C)(4) through the use of a collection system not conforming to the specifications provided in 40 CFR 60.769 shall provide information satisfactory to the AQD as specified in 40 CFR 60.767(c)(3) demonstrating that off-site migration is being controlled. **(40 CFR 60.765(a)(6))**

2. Each permittee seeking to install a collection system that does not meet the specifications in 40 CFR 60.759 or is seeking to monitor alternative parameters to those required by 40 CFR 60.763 through 40 CFR 60.766 shall provide information satisfactory to the appropriate AQD District Office as required in 40 CFR 60.767(c)(2) and (3) 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 60.766(e))**

3. The permittee shall comply with all applicable provisions of the Federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60, Subparts A and XXX. **(40 CFR 60, Subparts A and XXX)**

Footnotes:
[1]This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FG-ACTIVECOLLECTION-WWW
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

This flexible group represents the active landfill gas collection system that uses gas mover equipment to draw landfill gas from the wells and moves the gas to the control equipment. This flexible group contains 40 CFR 60, Subpart WWW requirements.

Emission Unit: EU-ACTIVECOLLECTION

POLLUTION CONTROL EQUIPMENT

NA

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 one hour. **(40 CFR 60.753(e), 40 CFR 63.1955(a))**

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. Five years or more if active; or **(40 CFR 60.753(a)(1), 40 CFR 63.1955(a))**

   b. Two years or more if closed or at final grade. **(40 CFR60.753(a)(2), 40 CFR 63.1955(a))**

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))**

   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 semiannual reports as provided in 40 CFR 60.757(f)(1). **(40 CFR 60.753(b)(1), 40 CFR 63.1955(a))**

   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))**

   c. A decommissioned well. A well may experience a static positive pressure after shutdown 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))**

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 five 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 AQD District Office 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))**

5. The permittee shall operate the installed collection system in accordance with the provisions of 40 CFR 60.753, 40 CFR 60.755, and 40 CFR 60.756. **(40 CFR 60.752(b)(2)(iv), 40 CFR 63.1955(a))**

IV. DESIGN/EQUIPMENT PARAMETERS

1. An active collection system:

   a. Shall 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))**

   b. The permittee shall place each well or design component in the collection system as specified in the approved design plan as provided in 40 CFR 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 five years or more if active; or two 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))**

   c. Collect gas at a sufficient extraction rate. **(40 CFR 60.752(b)(2)(ii)(A)(3), 40 CFR 63.1955(a))**

   d. Shall be designed to minimize off-site migration of subsurface gas. **(40 CFR 60.752(b)(2)(ii)(A)(4), 40 CFR 63.1955(a))**

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 40 CFR 60.752(b)(2)(iii). **(40 CFR 60.753(e), 40 CFR 63.1955(a))**

3. When adding gas collectors to the active gas collection system, a sufficient density of gas collectors shall be installed in compliance with 40 CFR 60.752(b)(2)(ii)(A)(2) (as specified above in SC 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))**

   a. If the permittee is seeking to demonstrate compliance through the use of a collection system not conforming to the specifications provided in 40 CFR 60.759, then the permittee shall provide information that satisfies the AQD District Supervisor as specified in 40 CFR 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))**

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))**

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 40 CFR 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))**

   b. The sufficient density of gas collection devices determined in 40 CFR 60.759(a)(1) (above in SC 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))**

   c. The placement of gas collection devices determined in 40 CFR 60.759(a)(1) (above in SC IV.5.a.) shall control all gas producing areas, except as provided in 40 CFR 60.759(a)(3) (i) and (ii) (below in SC IV.5.c.i. and ii.). **(40 CFR 60.759(a)(3), 40 CFR 63.1955(a))**

i. Any segregated area of asbestos or non-degradable material may be excluded from collection if documented as provided under 40 CFR 60.758(d). The documentation shall provide the nature, date of deposition, location and amount of asbestos or non-degradable 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))**

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 one 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 7-1. **(40 CFR 60.759(a)(3)(ii), 40 CFR 63.1955(a))**

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))**

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))**

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))**

7. The active gas collection system shall be designed so as to convey the landfill gas to a control system in compliance with 40 CFR 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))**

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 40 CFR 60.759(c)(2) shall be used. **(40 CFR 60.759(c)(1), 40 CFR 63.1955(a))**

b. For new collection systems, the maximum flow rate shall be in accordance with 40 CFR 60.755(a)(1). **(40 CFR 60.759(c)(2), 40 CFR 63.1955(a))**

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 the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with 40 CFR 60.752(b)(2)(ii)(A)(3), 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 five calendar days, except for the three conditions allowed under 40 CFR 60.753(b) (above in SC 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))**

    a. If monitoring demonstrates that the negative pressure is not being met, then corrective action shall be taken as noted in 40 CFR 60.755(a)(3) (above in SC VI.1.). If corrective actions are taken as specified in 40 CFR 60.755, the monitored exceedance is not a violation of the operational requirements. **(40 CFR 60.753(g), 40 CFR 63.1955(a))**

2. The permittee is not required to expand the gas collection system as required in 40 CFR 60.755(a)(3) (above in SC VI.1.) during the first 180 days after gas collection system startup. **(40 CFR 60.755(a)(4), 40 CFR 63.1955(a))**

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 40 CFR 60.753(c). If a well exceeds one of these operating parameters, action shall be initiated to correct the exceedance within five 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))**

    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 40 CFR 60.755(a)(5). If corrective actions are taken as specified in 40 CFR 60.755, the monitored exceedance is not a violation of the operational requirements. **(40 CFR 60.753(g), 40 CFR 63.1955(a))**

    b. Unless an alternative test method is established as allowed by 40 CFR 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))**

        ii. A data recorder is not required. **(40 CFR 60.753(c)(ii), 40 CFR 63.1955(a))**

        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))**

        iv. A calibration error check is not required. **(40 CFR 60.753(c)(iv), 40 CFR 63.1955(a))**

        v. The allowable sample bias, zero drift, and calibration drift are ±10 percent. **(40 CFR 60.753(c)(v), 40 CFR 63.1955(a))**

4. Except as provided in 40 CFR 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 40 CFR 60.758(b)(1) (below in SC 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))**

    a. The maximum expected gas generation flow rate as calculated in 40 CFR 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))**

b. The density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in 40 CFR 60.759(a)(1). **(40 CFR 60.758(b)(1)(ii), 40 CFR 63.1955(a))**

5. Except as provided in 40 CFR 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 40 CFR 60.755(b) (above in SC IV.1.b.). **(40 CFR 60.758(d), 40 CFR 60.758(d)(1), 40 CFR 63.1955(a))**

6. The permittee shall keep readily accessible records of all collection and control system exceedances of the operational standards in 40 CFR 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))**

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))**

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))**

c. The documentation of the presence of asbestos or non-degradable material for each area from which collection wells have been excluded based on the presence of asbestos or non-degradable material. **(40 CFR 60.757(g)(3), 40 CFR 63.1955(a))**

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 CFR60.757(g)(4), 40 CFR 63.1955(a))**

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))**

f. The provisions for the control of off-site migration. **(40 CFR 60.757(g)(6), 40 CFR 63.1955(a))**

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))**

See Appendix 7-1

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))**

4. The permittee shall submit to the appropriate AQD District Office semiannual reports for the gas collection system. The 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 40 CFR 60.758(c). The semiannual 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)**

   a. Value and length of time for exceedance of applicable parameters monitored under 40 CFR 60.756(a), (above in SC VI.1. and VI.3.). **(40 CFR 60.757(f)(1))**

   b. All periods when the collection system was not operating in excess of five 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 40 CFR 60.755(a)(3), 40 CFR 60.755(b), and 40 CFR 60.755(c)(4) (above in SC 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)**

   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))**

See Appendix 8-1

VIII. STACK/VENT RESTRICTION(S)

N/A

IX. OTHER REQUIREMENTS

1. If monitoring demonstrates that the operational requirements in 40 CFR 60.753(b), (c), or (d) (above in SC III.3. and III.4.) are not met, corrective action shall be taken as specified above in 40 CFR 60.755(a)(3) through (5) or 40 CFR 60.755(c) (SC VI.1. and VI.3.). If corrective actions are taken as specified in 40 CFR 60.755 755 (above in SC VI.1. and VI.3.), the monitored exceedance is not a violation of the operational requirements in 40 CFR 60.753 (SC III.3. and III.4.). **(40 CFR 60.753(g), 40 CFR 63.1955(a))**

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 five days for collection systems and shall exceed one hour for treatment and control devices. **(40 CFR 60.755(e), 40 CFR 63.1955(a))**

3. If the permittee is seeking to install a collection system that does not meet the specifications in 40 CFR 60.759 (above in SC IV.5, IV.6 and IV.7.) or is seeking to monitor alternative parameters to those required by 40 CFR 60.753 through 40 CFR 60.756, they shall provide information satisfactory to the appropriate AQD District Office as provided in 40 CFR 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))**

4. The permittee shall have developed and implemented a written SSM plan according to the provision in 40 CFR 63.6(e)(3) for EU-ACTIVECOLLECTION. A copy of the SSM plan shall be maintained on site. **(40 CFR 63.1960)**

Footnotes:
[1]This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FG-TREATMENTSYSTEM-XXX
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Processing equipment that treats landfill gas before it is used for subsequent use or sale. The treatment system removes particulate to at least the 10-micron level, compresses the landfill gas, and removes enough moisture to ensure good combustion of gas for subsequent use. This flexible group contains the requirements of 40 CFR Part 60, Subpart XXX.

Emission Unit: EU-TREATMENTSYSTEM

POLLUTION CONTROL EQUIPMENT

Any emissions from any atmospheric vents or stacks associated with the treatment system shall be subject to 40 CFR 60.762(b)(2)(iii)(A) or (B).

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall operate the treatment system at all times when the collected gas is routed to the treatment system. **(40 CFR 60.763(f))**

2. The permittee shall operate the treatment system so that any emissions from any atmospheric vents or stacks associated with the treatment system shall be subject to 40 CFR 60.762(b)(2)(iii)(A) or (B). **(40 CFR 60.762(b)(2)(iii)(C) and (D)**

3. The permittee shall develop a site-specific treatment system monitoring plan as required in 40 CFR 60.768(b)(5)(ii). The plan shall at a minimum contain the following: **(40 CFR 60.766(g))**

    a. Monitoring of filtration, de-watering, and compression parameters that ensure the treatment system is operating properly for each intended end use of the treated landfill gas. **(40 CFR 60.768(b)(5)(ii)(A))**

    b. Monitoring methods, frequencies, and operating ranges for each monitored operating parameter based on manufacturer's recommendations or engineering analysis for each intended end use of the treated landfill gas. **(40 CFR 60.768(b)(5)(ii)(B))**

    c. Documentation of the monitoring methods and ranges, along with justification for their use. **(40 CFR 60.768(b)(5)(ii)(C))**

    d. Identify who is responsible (by job title) for data collection. **(40 CFR 60.768(b)(5)(ii)(D))**

    e. Processes and methods used to collect the necessary data. **(40 CFR 60.768(b)(5)(ii)(E))**

    f. Description of the procedures and methods that are used for quality assurance, maintenance, and repair of all continuous monitoring systems. **(40 CFR 60.768(b)(5)(ii)(F))**

4. The monitoring requirements apply at all times the treatment system is operating except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities. The permittee shall complete monitoring system repairs in response to monitoring system malfunctions and to return the monitoring system to operation as expeditiously as practicable. **(R 336.1911, 40 CFR 60.766(h))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall install and properly operate a treatment system in accordance with 40 CFR 60.767(c)(2). **(40 CFR 60.766(d))**

2. The permittee shall install, calibrate, maintain, and operate according to the manufacturer's specifications, a device that records flow to the treatment system and bypass of the treatment system (if applicable). **(40 CFR 60.766(g))**

V. TESTING/SAMPLING

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

NA

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall keep monthly records of all treatment system operating parameters specified to be monitored according to 40 CFR 60.766(g). The records shall include:

   a. Continuous records of the indication of flow and gas flow rate to the treatment system. **(40 CFR 60.768(c)(2))**

   b. The indication of bypass flow or records of monthly inspections of car-seals or lock-and-key configurations used to seal bypass lines. **(40 CFR 60.768(c)(2))**

   c. Maintenance and repair of the monitoring system. **(40 CFR 60.766(h))**

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 annual reports for the landfill gas treatment system. The report shall be received by appropriate AQD District Office by March 15 for reporting period January 1 to December 31. The report shall include the following:

   a. Value and length of time for exceedance of applicable parameters monitored under 40 CFR 60.766(g). **(40 CFR 60.767(g)(1))**

   b. Description and duration of all periods when the gas stream is diverted from the treatment system through a bypass line or the indication of bypass flow. **(40 CFR 60.767(g)(2))**

   c. Description and duration of all periods when the treatment system was not operating and length of time the control device was not operating. **(40 CFR 60.767(g)(3))**

See Appendix 8-1

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60, Subparts A and XXX. **(40 CFR 60, Subparts A and XXX)**

Footnotes:
[1]This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FG-TREATMENTSYSTEM-WWW
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

A treatment system that filters, de-waters, and compresses landfill gas for subsequent sale or beneficial use. The treatment system removes particulate to at least the 10-micron level, compresses the landfill gas, and removes enough moisture to ensure good combustion of gas for subsequent use. This flexible group contains the requirements of 40 CFR Part 60, Subpart WWW.

Emission Unit: EU-TREATMENTSYSTEM

POLLUTION CONTROL EQUIPMENT

Any emissions from any atmospheric vents or stacks associated with the treatment system shall be subject to 40 CFR 60.752(b)(2)(iii)(A) or (B).

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall operate the treatment system at all times when the collected gas is routed to the treatment system. **(40 CFR 60.753(f))**

2. The permittee shall operate the treatment system so that any emissions from any atmospheric vents or stacks associated with the treatment system 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(c))**

3. The permittee shall operate the treatment system to comply with the provisions of 40 CFR 60.753(e) and (f), and 40 CFR 60.756(d). **(40 CFR 60.752(b)(2)(iv), 40 CFR 63.1955(c))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The treatment system shall be designed as approved by AQD. **(40 CFR 60.752(b)(2)(iii)(C), 40 CFR 60.752(b)(2)(i)(D), 40 CFR 63.1955(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. The permittee shall keep up-to-date; readily accessible records of all control or treatment system exceedances of the operational standards in 40 CFR 60.753(e) and (f). **(40 CFR 60.758(e), 40 CFR 63.1955(a))**

2. The permittee shall keep records of all preventative maintenance performed in accordance with the preventative maintenance plan (PMP) prepared pursuant to SC IX.3 of this permit. **(40 CFR 60.756(d), R 336.1213(3))**

3. The permittee shall provide information to the AQD as provided in 40 CFR 60.752(b)(2)(i)(B) describing the operation of the control device, the operating parameters that would indicate proper performance, and appropriate monitoring procedures. The AQD shall review the information and either approve it, or request that additional information be submitted. The AQD may specify additional appropriate monitoring procedures. **(40 CFR 60.756(d)).**

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 semiannual reports for the landfill gas treatment system. The report 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. **(40 CFR 60.757(f), 40 CFR 63.1980(a), 40 CFR 63.1955(a))**

   The report shall include:

   a. Value and length of time for exceedance of applicable parameters monitored under 40 CFR 60.756(d). **(R 336.1213(3), 40 CFR 60.757(f)(1), 40 CFR 63.1980(a), 40 CFR 63.1955(c))**

   b. Description and duration of all periods when the gas stream is diverted from the treatment system through a bypass line or the indication of bypass flow. **(R 336.1213(3))**

   c. Description and duration of all periods when the treatment system was not operating for a period exceeding one 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(c))**

   d. Description and duration of all periods when the treatment system was not operated in accordance with the operating parameters and monitoring procedures that were part of the plan in SC VII.4. **(R 336.1213(3))**

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))**

See Appendix 8-1

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 one hour for the treatment system. **(40 CFR 60.755(e), 40 CFR 63.1955(c))**

2. The permittee shall have developed and implemented a written SSM plan according to the provision in 40 CFR 63.6(e)(3) for EUTREATMNTSYSTEM. A copy of the SSM plan shall be maintained on-site. **(40 CFR 63.1960, (40 CFR 63.1965(c))**

3. The permittee shall have implemented a written preventative maintenance plan (PMP) for EUTREATMNTSYSTEM. At a minimum, the plan shall include a schedule of maintenance activities consistent with manufacturer's recommendations, and the operating variables that will be monitored to detect a malfunction or failure. A copy of the PMP shall be maintained on site and available upon request. **(40 CFR 60.756(d), R 336.1213(3), R 336.1911)**

Footnotes:
[1]This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FG-ENCLOSEDFLARE-XXX
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Two enclosed flares with a combined capacity of 9,000 CFM, used in combusting landfill gas. An enclosed flare is an enclosed combustor or firebox which maintains a relatively constant limited peak temperature generally using a limited supply of combustion air. This flexible group contains the requirements of 40 CFR Part 60, Subpart XXX.

Emission Unit: EU-FLARE4, EU-FLARE6

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMITS

NA

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. NMOC	20 ppmv dry as hexane at 3% oxygen -OR- 98% weight reduction or more	Hourly	Enclosed Flares	SC V.1 SC V.2	**40 CFR 60.762(b)(2)(iii)(B)**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall operate the enclosed flare at all times when the collected gas is routed to it. **(40 CFR 60.763(f))**

2. The permittee shall operate control system such that all collected gases are vented to a control system designed and operated in accordance 60.762(b)(2)(iii). **(40 CFR 60.762(b)(2)(iii)(B)**

3. The enclosed flare shall be operated within the parameter ranges established during the most recent performance test in compliance with 40 CFR 60.764(d). **(40 CFR 60.762(b)(2)(iii)(B)(2))**

4. In the event the 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 one hour. **(R 336.1911, 40 CFR 60.763(e))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall install, calibrate, maintain, and operate according to the manufacturer's specifications, the following equipment:

a. A temperature monitoring device equipped with a continuous recorder and having a minimum accuracy of ±1 percent of the temperature being measured expressed in degrees Celsius or ±0.5 degrees Celsius, whichever is greater. **(40 CFR 60.766(b)(1))**

b. A device that records flow to the control device and bypass of the control device (if applicable). **(40 CFR 60.766(b)(2))**

V. TESTING/SAMPLING

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

1. Within 180 days of permit issuance or five years from the last test date, whichever is later, the permittee shall verify the NMOC reduction efficiency or ppmv from EU-FLARE4 and EU-FLARE6, by testing at owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA method listed in 40 CFR 60, Appendix A. An alternate method, or a modification to the approved EPA method, may be specified in an AQD approved test protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.2001, R 336.2003, R 336.2004, 40 CFR 60.762(b)(2)(iii)(B), 40 CFR 60.764(d))**

2. The permittee shall verify the NMOC reduction efficiency or ppmv from EU-FLARE4 and EU-FLARE6 every five years from the date of the last test. **(R 336.1213(3), R 336.2001, R 336.2003, R 336.2004, 40 CFR 60.762(b)(2)(iii)(B), 40 CFR 60.764(d))**

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall keep monthly records of the operating parameters specified to be monitored in 40 CFR 60.766(b). The records shall include:

   a. Continuous records of the indication of flow and gas flow rate to the control device. **(40 CFR 60.766(b)(2)(i))**

   b. The indication of bypass flow or records of monthly inspections of car-seals or lock-and-key configurations used to seal bypass lines. **(40 CFR 60.766(b)(2)(ii))**

2. The permittee shall keep monthly, readily accessible records for periods of operation during which the parameter boundaries established during the most recent performance test are exceeded.

   a. The average combustion temperature measured at least every 15 minutes and averaged over the same time period of the performance test. **(40 CFR 60.768(b)(2)(i))**

   b. All three-hour periods of operation during which the average combustion temperature was more than 28°C (82°F) below the average combustion temperature during the most recent performance test at which compliance with 40 CFR 60.762(b)(2)(iii) was determined. **(40 CFR 60.768(c)(1)(i))**

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 annual reports for the control system. Reports shall be received by appropriate AQD District Office by March 15 for reporting period January 1 to December 31. For enclosed combustion devices, reportable exceedances are defined under 40 CFR 60.768(c). The report shall include the following:

   a. Value and length of time for exceedance of applicable parameters monitored under 40 CFR 60.766(b). **(40 CFR 60.767(g)(1))**

   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 40 CFR 60.766. **(40 CFR 60.767(g)(2))**

   c. Description and duration of all periods when the control device was not operating and length of time the control device was not operating. **(40 CFR 60.767(g)(3))**

5. The permittee shall submit any performance test reports to the AQD Technical Programs Unit and District Office, in a format approved by the AQD. **(R 336.2001(5))**

6. Within 60 days after the date of completing each performance test (as defined in 40 CFR 60.8), the owner or operator must submit the results of each performance test for data collected using test methods supported by the EPA's Electronic Reporting Tool (ERT) as listed on the EPA's ERT Web site (*https://www3.epa.gov/ttn/chief/ert/ert_info.html*) at the time of the test. The permittee shall submit the results of the performance test to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI). CEDRI can be accessed through the EPA's Central Data Exchange (CDX) (*https://cdx.epa.gov/*). **(40 CFR 60.767(i))**

See Appendix 8-1

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENTS

1. The permittee shall comply with all applicable provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60, Subparts A and XXX. **(40 CFR 60, Subparts A and XXX)**

Footnotes:
[1]This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FG-ENCLOSEDFLARE-WWW
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Two enclosed flares with a combined capacity of 9,000 CFM, used in combusting landfill gas. An enclosed flare is an enclosed combustor or firebox which maintains a relatively constant limited peak temperature generally using a limited supply of combustion air. This flexible group contains the requirements of 40 CFR Part 60 Subpart WWW.

Emission Unit ID: EU-FLARE4, EU-FLARE6

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. NMOC	20 ppmv dry as hexane at 3% oxygen -OR- 98% reduction or more	Hourly	Enclosed Flare	SC V.1 SC V.2	**40 CFR 60.762(b)(2)(iii)(B)**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall only burn landfill gas in EU-FLARE4 and EU-FLARE6. **(R 336.1213(3)(a)(iii))**

2. The permittee shall operate the enclosed flare at all times when the collected gas is routed to the enclosed flare. **(40 CFR 60.753(f), 40 CFR 63.1955(a))**

3. The permittee shall operate a 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 the event that 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 one hour. **(40 CFR 60.753(e), 40 CFR 63.1955(a))**

4. The permittee shall route all collected untreated gas to the enclosed flares, or another control system designed and operated to 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. **(40 CFR 60.752(b)(2)(iii)(B), 40 CFR 63.1955(a))**

   a. The enclosed flare shall be operated within the parameter ranges established during the most recent performance test in compliance with 40 CFR 60.754(d). The operating parameters to be monitored are specified in 40 CFR 60.756 (below in condition **VI.5.**). **(40 CFR 60.752(b)(2)(iii)(B)(2), 40 CFR 63.1955(a))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

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

NA

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall calibrate, maintain, and operate the enclosed flare according to the manufacturer's specifications, including the following:

   a. A temperature monitoring device equipped with a continuous recorder and having a minimum accuracy of plus or minus one percent of the temperature being measured expressed in degrees centigrade or plus or minus 0.5 degrees centigrade, whichever is greater. **(40 CFR 60.756(b)(1), 40 CFR 63.1955(a))**

   b. A device that records flow to or bypass of the control device. The permittee shall either:

      i. Install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes; (**40 CFR 60.756(b)(2)(i), 40 CFR 63.1955(a)) or**

      ii. Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line. **(40 CFR 60.756(b)(2)(ii), 40 CFR 63.1955(a))**

2. Except as provided in 40 CFR 60.752(b)(2)(i)(B), the permittee shall keep readily accessible continuous records of the equipment operating parameters specified to be monitored in 40 CFR 60.756 (above in condition VI.5.), 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 following constitute exceedances that shall be recorded and reported under 40 CFR 60.757(f) (above in condition III.2.)

      i. All three-hour periods of operation during which the average combustion temperature was more than 28 °C (82° F) below the average combustion temperature during the most recent performance test at which compliance with 40 CFR 60.752(b)(2)(iii) (above in condition III.4.) was determined. **(40 CFR 60.758(c)(1)(i))**

         A. Three-hour block averages are calculated in the same way as they are calculated in 40 CFR Part 60, Subpart WWW, except that the data collected during the events listed below are not to be included in any average computed for 40 CFR Part 63, Subpart AAAA. **(40 CFR 63.1975)**

            (a) Monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments. **(40 CFR 63.1975(a))**

            (b) Startups. **(40 CFR 63.1975(b))**

            (c) Shutdowns. **(40 CFR 63.1975(c))**

            (d) Malfunctions. **(40 CFR 63.1975(d))**

3. The permittee shall keep up-to-date, readily accessible continuous records of the indication of flow to the control device or the indication of bypass flow or records of monthly inspections of car-seals or lock-and-key configurations used to seal bypass lines, specified in 40 CFR 60.756 (above in condition VI.5.). **(40 CFR 60.758(c)(2)**

4. The following information shall be recorded:

a. The average combustion temperature measured at least every 15 minutes and averaged over the same time period of the performance test. **(40 CFR 60.758(b)(2)(i))**

b. The percent reduction of NMOC determined as specified in 40 CFR 60.752(b)(2)(iii)(B) achieved by the control device. **(40 CFR 60.758(b)(2)(ii))**

5. The permittee shall keep up-to-date, readily accessible records of all control system exceedances of the operational standards in 40 CFR 60.753 (above in conditions III.2. and III.3.). **(40 CFR 60.758(e))**

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))**

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 40 CFR 60.758(c). **(40 CFR 60.757(f), 40 CFR 63.1980(a), 40 CFR 63.1955(a)).** The semi-annual report shall contain:

   a. Value and length of time for exceedance of applicable parameters monitored in 40 CFR 60.756(b) (above in condition VI.5.). **(40 CFR 60.757(f)(1), 40 CFR 63.1980(a), 40 CFR 63.1955(a))**

   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 in 40 CFR 60.756 (above in condition VI.5.b.). **(40 CFR 60.757(f)(2), 40 CFR 63.1980(a), 40 CFR 63.1955(a))**

   c. Description and duration of all periods when the control device was not operating for a period exceeding one 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))**

5. The permittee shall submit an equipment removal report to the AQD 30 days prior to removal or cessation of operation of the enclosed 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 40 CFR 60.757(d). **(40 CFR 60.757(e)(1)(i), 40 CFR 63.1955(a))**

      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))**

      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))**

   b. Additional information may be requested as may be necessary to verify that all of the conditions for removal in 40 CFR 60.752(b)(2)(v) have been met. **(40 CFR 60.757(e)(2), 40 CFR 63.1955(a))**

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))**

See Appendix 8-1

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))**

2. Compliance 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 under 40 CFR 60.756(b)(1) (above in SC VI.1) are used to demonstrate compliance with the operating conditions for the enclosed flare. The permittee shall have developed and implemented a written SSM plan according to the provision in 40 CFR 63.6(e)(3) for the enclosed flares. A copy of the SSM plan shall be maintained on site. **(40 CFR 63.1960)**

3. The permittee shall comply with all applicable provisions of 40 CFR Part 60, Subparts A and WWW "Standard of Performance for Municipal Solid Waste Landfills as they apply to EU-FLARE4, EU-FLARE6.[2] **(40 CFR Part 60, Subparts A and WWW)**

4. The permittee shall comply with all applicable provisions of 40 CFR Part 63, Subparts A and AAAA "National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills as they apply to EU-FLARE 4, EU-FLARE 6.[2] **(40 CFR Part 60 Subparts A and AAAA)**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FG-OPENFLARE-XXX
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Open flare is an open combustor without enclosure or shroud. Two open flares with a combined capacity of 5,100 CFM used to control LFG generated by the landfill. EU-FLARE5 serves as a backup flare and only operates if one or more flares and/or engines are not in operation. This flexible group contains the requirements of 40 CFR Part 60 Subpart XXX.

Emission Unit: EU-FLARE3, EU-FLARE5

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

1. There shall be no visible emissions from EU-FLARE3 and EU-FLARE5 except for periods not to exceed a total of five minutes during any two consecutive hours. **(R 336.1301(1)(c), 40 CFR 60.18(c)(1))**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall operate the flare in accordance with the parameters established in 40 CFR 60.18. **(40 CFR 60.762(b)(2)(iii)(A))**

2. The permittee shall operate the flare at all times when the collected gas is routed to it. **(40 CFR 60.763(f)))**

3. The flare shall be operated with a flame present at all times. **(40 CFR 60.18(c)(2))**

4. In the event the 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 one hour. **(R 336.1911, 40 CFR 60.763(e))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall install, calibrate, maintain, and operate according to the manufacturer's specifications, 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 60.18(f)(2), 40 CFR 60.766(c)(1))**

2. The permittee shall install, calibrate, maintain, and operate according to the manufacturer's specifications, a device that records flow to or bypass of the flare (if applicable). **(40 CFR 60.766(c)(2))**

V. TESTING/SAMPLING

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

1. Within 180 days of permit issuance or five years from the last test date, whichever is later, the permittee shall verify visible emissions from EU-FLARE3 and EU-FLARE5, by testing at owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA method listed in 40 CFR 60, Appendix A. An alternate method, or a modification to the approved EPA method, may be specified in an AQD approved test protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to

testing including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.213(3), R 336.2001, R 336.2003, R 336.2004, 40 CFR 60.18(f))**

2. The permittee shall verify visible emissions from EU-FLARE3 and EU-FLARE5 every five years from the date of the last test. **(R 336.1213(3), R 336.2001, R 336.2003, R 336.2004, 40 CFR 60.18(f))**

VI. MONITORING/RECORDKEEPING

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

1. 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 40 CFR 60.18. **(40 CFR 60.768(b)(4))**

2. The permittee shall keep monthly records of the operating parameters specified to be monitored in 40 CFR 60.766(c). The records shall include:

   a. Continuous records of the indication of flow and gas flow rate to the control device. **(40 CFR 60.768(b)(4))**

   b. The indication of bypass flow or records of monthly inspections of car-seals or lock-and-key configurations used to seal bypass lines. **(40 CFR 60.766(c)(2)(ii))**

   c. 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 60.768(b)(4))**

3. The following records for the flare shall be maintained onsite:

   a. The net heating value of the gas being combusted in the flare shall be calculated and recorded using the equation provided in Appendix 7-1. **(40 CFR 60.18(f)(3))**

   b. The exit velocity for steam-assisted, air-assisted, or non-assisted flares as determined by the methods specified in 40 CFR 60.18(f)(4) provided in Appendix 7-1. **(40 CFR 60.18(f)(4))**

See Appendix 7-1

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 annual reports for the gas collection system. Reports shall be received by appropriate AQD District Office by March 15 for reporting period January 1 to December 31. For enclosed combustion devices and flares, reportable exceedances are defined under 40 CFR 60.768(c). The report shall include the following:

   a. Value and length of time for exceedance of applicable parameters monitored under 40 CFR 60.766(c). **(40 CFR 60.767(g)(1))**

   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 40 CFR 60.766. **(40 CFR 60.767(g)(2))**

c. Description and duration of all periods when the control device or treatment system was not operating and length of time the control device or treatment system was not operating. **(40 CFR 60.767(g)(3))**

5. The permittee shall submit any performance test reports to the AQD Technical Programs Unit and District Office, in a format approved by the AQD. **(R 336.2001(5))**

6. Within 60 days after the date of completing each performance test (as defined in 40 CFR 60.8), the owner or operator must submit the results of each performance test for data collected using test methods supported by the EPA's Electronic Reporting Tool (ERT) as listed on the EPA's ERT Web site (*https://www3.epa.gov/ttn/chief/ert/ert_info.html*) at the time of the test. The permittee shall submit the results of the performance test to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI). CEDRI can be accessed through the EPA's Central Data Exchange (CDX). **(40 CFR 60.767(i))**

See Appendix 8-1

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60, Subparts A and XXX. **(40 CFR 60, Subparts A and XXX)**

Footnotes:
[1]This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FG-OPENFLARE-WWW
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Open flare is an open combustor without enclosure or shroud. Two open flares with a combined capacity of 5,100 CFM used to control LFG generated by the landfill. EU-FLARE5 serves as a backup flare and only operates if one or more flares and/or engines are not in operation. This flexible group contains the requirements of 40 CFR Part 60 Subpart WWW.

Emission Unit ID: EU-FLARE3, EU-FLARE5

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

1. There shall be no visible emissions from EU-FLARE3 and EU-FLARE5 except for periods not to exceed a total of five minutes during any 2 consecutive hours. **(R 336.1301(1)(c), 40 CFR 60.18(c)(1))**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall operate the flare in accordance with 40 CFR 60.18 except as noted in 40 CFR 60.754(e). **(40 CFR 60.752(b)(2)(iii)(A), 40 CFR 63.1955(a))**

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. 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 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted; or 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 40 CFR 60.18(f)(4) less than the velocity, Vmax, as determined by the method specified in 40 CFR 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 40 CFR 60.752(b)(2)(iii). 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 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))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

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

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five 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))**

   b. A device that records flow to or bypass of the flare. **(40 CFR 60.756(c)(2), 40 CFR 63.1955(a))** The owner or operator shall either:

      i. Install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes; or **(40 CFR 60.756(c)(2)(i), 40 CFR 63.1955(a))**

      ii. Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line. **(40 CFR 60.756(c)(2)(ii), 40 CFR 63.1955(a))**

2. Except as provided in 40 CFR 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 40 CFR 60.758(b)(4) (below in SC 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 five years. Records of the open flare vendor specifications shall be maintained until removal. **(40 CFR 60.758(b), 40 CFR 63.1955(a))**

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 40 CFR 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))**

4. Except as provided in 40 CFR 60.752(b)(2)(i)(B), the permittee shall keep readily accessible continuous records of the equipment operating parameters specified to be monitored in 40 CFR 60.756 (above in SC 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 indication of flow to the control device or the indication of bypass flow or records of monthly inspections of car-seals or lock-and-key configurations used to seal bypass lines, specified under 40 CFR 60.756. **(40 CFR 60.758(c)(2), 40 CFR 63.1955(a))**

b. The permittee shall keep up-to-date, readily accessible continuous records of the flame or flare pilot flame monitoring specified under 40 CFR 60.756(c) (above in SC 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(c))**

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 7-1. **(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, Vmax, for flares complying with 40 CFR 60.18(c)(4)(iii) shall be calculated and recorded using the equation provided in Appendix 7-1. **(40 CFR 60.18(f)(5))**

   e. The maximum permitted velocity, Vmax, for air-assisted flares shall be calculated and recorded using the equation provided in Appendix 7-1. **(40 CFR 60.18(f)(6))**

6. The permittee shall submit any performance test reports to the AQD Technical Programs Unit and District Office, in a format approved by the AQD. **(R 336.2001(5))**

See Appendix 7-1

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 semiannual 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 40 CFR 60.758(c). **(40 CFR 60.757(f), 40 CFR 63.1980(a), 40 CFR 63.1955(a))**

   The semiannual report shall contain:

   a. Value and length of time for exceedance of applicable parameters monitored under 40 CFR 60.756(b). **(40 CFR 60.757(f)(1), 40 CFR 63.1980(a), 40 CFR 63.1955(a))**

   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 40 CFR 60.756. **(40 CFR 60.757(f)(2), 40 CFR 63.1980(a), 40 CFR 63.1955(a))**

c. Description and duration of all periods when the control device was not operating for a period exceeding one 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))**

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 40 CFR 60.757. **(40 CFR 60.757(e)(1)(i), 40 CFR 63.1955(a))**

      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))**

      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))**

      iv. Additional information may be requested as may be necessary to verify that all of the conditions for removal in 40 CFR 60.752(b)(2)(v) have been met. **(40 CFR 60.757(e)(2), 40 CFR 63.1955(a))**

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))**

7. The permittee shall submit any performance test reports to the AQD Technical Programs Unit and District Office in a format approved by the AQD. **(R 336.2001(5))**

See Appendix 8-1

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

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))**

2. Compliance of 40 CFR Part 63, Subpart 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 40 CFR 60.756(c)(1) (above in SC **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 FG-OPENFLARE. A copy of the SSM plan shall be maintained on site. **(40 CFR 63.1960)**

Footnotes:
[1]This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FG-FLARES
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Four flares, (one open, two enclosed, and one stand-by portable open flare) with a combined capacity of 14,100 CFM, used for combusting landfill gas.

Emission Units: EU-FLARE3, EU-FLARE4, EU-FLARE5, EU-FLARE6

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. SO_2	8.1 lb/hr[2]	Hour	EU-FLARE4	SC V.1 SC V.2	**R 336.2803 R 336.2804 40 CFR 52.21(c) & (d)**
2. SO_2	16.1 lb/hr[2]	Hour	EU-FLARE6	SC V.1 SC V.2	**R 336.2803 R 336.2804 40 CFR 52.21(c) & (d)**
3. NOx	0.06 lb/MMBtu[2]	Hour	EU-FLARE4 and EU-FLARE6	SC V.2	**R 336.2803 R 336.2804 R 336.2810 40 CFR 52.21(c (d) & (j)**
4. CO	0.2 lb/MMBtu[2]	Hour	EU-FLARE4 and EU-FLARE6	SC V.2	**R 336.2804 R 336.2810 40 CFR 52.21(d) & (j)**
5. PM	1.4 lb/hr[2]	Hour	EU-FLARE4	SC III.4 SC V.3	**R 336.2803 R 336.2804 R 336.2810 40 CFR 52.21(c) (d) & (j)**
6. PM	2.9 lb/hr[2]	Hour	EU-FLARE6	SC III.4 SC V.3	**R 336.2803 R 336.2804 R 336.2810 40 CFR 52.21(c) (d) & (j)**
7. PM_{10}	1.4 lb/hr[2]	Hour	EU-FLARE4	SC III.4 SC V.3	**R 336.2803 R 336.2804 R 336.2810 40 CFR 52.21(c) (d) & (j)**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
8. PM_{10}	2.9 lb/hr[2]	Hour	EU-FLARE6	SC III.4 SC V.3	**R 336.2803 R 336.2804 R 336.2810 40 CFR 52.21(c) (d) & (j)**
9. Visible Emissions	20% Opacity[2]	6-minute average	EU-FLARE4 and EU-FLARE6	SC III.4 SC V.2	**R 336.1301(1)(c) R 336.2810 40 CFR 52.21(j)**
10. SO_2	18 lb/hr	Hour	EU-FLARE4	SC V.1 SC V.2	**R 336.2810**
11. SO_2	35.9 lb/hr	Hour	EU-FLARE6	SC V.1 SC V.2	**R 336.2810**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall only operate the back-up flare, EU-FLARE5, if one or more of the other flares (EU-FLARE3, EU-FLARE4, and EU-FLARE6) or engines are not in operation.[2] **(R 336.1205)**

2. The permittee shall only burn landfill gas in EU-FLARE4 and EU-FLARE6 that has been treated according to SC III.3 and by the sulfur removal system except as provided in the approved malfunction abatement/operation and maintenance plan, required under Special Condition IV.1. **(R 336.1213(2))**

3. The permittee shall manage all landfill gas in FG-FLARES in compliance with 40 CFR 60.752(b)(2)(iii)[2]. **(R 336.1225, 40 CFR 60.752(b)(2)(iii))**

4. The permittee shall not operate EU-FLARE4 and EU-FLARE6 unless a malfunction abatement plan (MAP) as described in Rule 911(2), for EU-FLARE4 and EU-FLARE6, has been submitted within 60 days after permit issuance, and is implemented and maintained. If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits.[2] **(R 336.1225, R 336.1331, R 336.1702(b), R 336.1910, R 336.1911, R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(c), (d) and (j))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate EU-FLARE4 and EU-FLARE6 unless the sulfur removal system is installed, maintained, and operated in a satisfactory manner. Proper operation shall include but is not limited to submitting an approvable malfunction abatement/operation and maintenance plan (MAP/O&M plan) for the sulfur removal system and EU-FLARE4 and EU-FLARE6 to the District Supervisor, Air Quality Division within 30 days prior to start-up of the sulfur removal system. The MAP/O&M plan shall include as a minimum the manufacturer operation and maintenance specifications for the sulfur removal system. **(R 336.1213(3), R 336.1910))**

V. TESTING/SAMPLING

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

1. The permittee shall verify the hydrogen sulfide or total reduced sulfur content of the landfill gas burned in EU-FLARE4 and EU-FLARE6 on a daily basis by gas sampling. Daily gas sampling excludes holidays and weekends unless requested by the District Supervisor, Air Quality Division. If, after a year, each of the daily concentrations of the hydrogen sulfide or total reduced sulfur concentration of the landfill gas are below 269 ppm (TRS equivalent), the permittee may petition the District Supervisor, Air Quality Division to reduce the frequency of gas sampling and recording the hydrogen sulfide / total reduced sulfur concentration of the treated landfill gas to weekly. If at any time the concentration readings exceed 269 ppm (TRS equivalent), the permittee shall resume sampling and recording on a daily basis and shall review all operating and maintenance activities for the landfill gas collection and treatment system along with keeping records of corrective actions taken. Once the concentration determined from the daily readings are maintained below 269 ppm of hydrogen sulfide/total reduced sulfur concentration in the landfill gas for one year after an exceedance, the permittee may resume weekly monitoring and recordkeeping. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2] **(R 336.1205(1), R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(c), (d) and (j))**

2. Within 180 days of permit issuance or five years from the last test date, whichever is later, and then every five years thereafter, the permittee shall verify Visible Emissions (per a USEPA Method 9 certified visible emissions observation shall be conducted for a minimum of 15 minutes to determine the actual opacity from that emission point), NO_x, SO_2, and CO emission rates from EU-FLARE4 and EU-FLARE6, by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.2001, R 336.2803, R 336.2804, R 336.2003, R 336.2004, 40 CFR 52.21(c) and (d))**

3. Within 180 days of permit issuance or five years from the last test date, whichever is later, and then every five years thereafter, the permittee shall verify PM and PM10 emission rates from EU-FLARE4 and EU-FLARE6 by testing at the owner's expense, in accordance with the Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1213(3), R 336.2001, R 336.2003, R 336.2004)**

4. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
PM	40 CFR Part 60, Appendix A; Part 10 of the Michigan Air Pollution Control Rules
PM_{10}	40 CFR Part 51, Appendix M
NO_x	40 CFR Part 60, Appendix A
SO_2	40 CFR Part 60, Appendix A
CO	40 CFR Part 60, Appendix A
Visible Emissions	40 CFR Part 51, Appendix M; 40 CFR Part 60, Appendix A and B

5. The permittee shall notify the AQD Technical Programs Unit Supervisor and the District Supervisor not less than 30 days of the time and place before performance tests are conducted. **(R 336.1213(3))**

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall install, calibrate, and maintain a gas flow measuring device that shall continuously record the total actual flow of landfill gas to FG-FLARES.[2] **(40 CFR 60.756(c)(2)(i), 40 CFR 63.1955(a))**

2. The permittee shall keep records of the landfill gas consumed in FGFLARES on a monthly basis and 12-month rolling time period basis, as determined at the end of each calendar month. All records shall be made available to the Department upon request.[2] **(R 336.1205)**

3. The permittee shall keep records of the date, time and reason why EU-FLARE5 is operated.[2] **(R 336.1205)**

4. The permittee shall keep, in a satisfactory manner, monthly SO_2 mass emission calculation records for EU-FLARE4 and EU-FLARE6. The permittee shall keep all records on file for a period of at least five years and make them available to the Department upon request. **(R336.1213(3))**

5. The permittee shall maintain a log of all maintenance activities conducted according to the malfunction abatement/preventative maintenance plan (pursuant to SC III.4). The permittee shall keep this log on file at the facility and make it available to the Department upon request. **(R 336.1213(3), R 336.1911)**

VII. REPORTING

1. The permittee shall notify the AQD district office within one week of when the frequency of the gas sampling changes for any reason. **(R 336.1201(3))**

2. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

3. 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))**

4. 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))**

5. The permittee shall submit any performance test reports to the AQD Technical Programs Unit and District Office, in a format approved by the AQD. **(R 336.1213(3)(c), R 336.2001(5))**

See Appendix 8-1

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV-FLARE4	144[2]	50[2]	**R 336.1225 R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)**
2. SV-FLARE6	156[2]	60[2]	**R 336.1225 R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)**

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable provisions of 40 CFR Part 60 Subpart A and WWW, "Standards of Performance for Municipal Solid Waste Landfills", as they apply to FG-FLARES.[2] **(40 CFR Part 60 Subpart A and WWW)**

2. The permittee shall comply with all applicable provisions of 40 CFR Part 60 Subpart A and XXX, "Standards of Performance for Municipal Solid Waste Landfills" that Commenced Construction, Reconstruction, or Modification After July 17, 2014 as they apply to FG-FLARES. **(40 CFR Part 60 Subpart A and XXX)**

Footnotes:
[1]This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FG-COLDCLEANERS
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Any cold cleaner that is grandfathered or exempt from Rule 201 pursuant to 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: EU-COLDCLEANER

POLLUTION CONTROL EQUIPMENT

NA

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 10 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%, 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 8-1

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

FG-ICENGINES
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Eight reciprocating internal combustion engines (RICE) that will only combust treated landfill gas for fuel. Each engine drives an associated generator set for producing electricity.

Emission Units: EU-ICENGINE1, EU-ICENGINE2, EU-ICENGINE3, EU-ICENGINE4, EU-ICENGINE5, EU-ICENGINE6, EU-ICENGINE7, EU-ICENGINE8

POLLUTION CONTROL EQUIPMENT

Sulfur removal system for reducing sulfur content of landfill gas prior to combustion only when the sulfur content of the landfill gas exceeds 269 ppm. Air-to-fuel ratio controller on each engine.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. CO	3.3 g/bhp-hr[2]	Hour	Each engine in FG-ICENGINES	SC V.1	**R 336.2804 R 336.2810 40 CFR 52.21(d) & (j)**
2. CO	16.3 lbs/hr[2]	Hour	Each engine in FG-ICENGINES	SC V.1	**R 336.2804 40 CFR 52.21(d)**
3. NO_x	0.6 g/bhp-hr[2]	Hour	Each engine in FG-ICENGINES	SC V.1	**R 336.2803 R 336.2804 R 336.2810 40 CFR 52.21(c),(d) & (j)**
4. NO_x	3.0 lbs/hr[2]	Hour	Each engine in FG-ICENGINES	SC V.1	**R 336.2803 R 336.2804 R 336.2810 40 CFR 52.21(c) and (d)**
5. SO_2	1.57 lbs/hr[2]	Hour	Each engine in FG-ICENGINES	SC V.1 SC V.3	**R 336.2803 R 336.2804 40 CFR 52.21(c) and (d)**
6. PM	0.24 g/bhp-hr[2]	Hour	Each engine in FG-ICENGINES	SC V.1	**R 336.2803 R 336.2804 R 336.2810 40 CFR 52.21(c) (d) & (j)**
7. PM	1.2 lb/hr[2]	Hour	Each engine in FG-ICENGINES	SC V.1	**R 336.2803 R 336.2804 R 336.2810 40 CFR 52.21(c) (d) & (j)**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
8. PM_{10}	0.24 g/bhp-hr[2]	Hour	Each engine in FG-ICENGINES	SC V.1	**R 336.2803 R 336.2804 R 336.2810 40 CFR 52.21(c) (d) & (j)**
9. PM_{10}	1.2 lb/hr[2]	Hour	Each engine in FG-ICENGINES	SC V.1	**R 336.2803 R 336.2804 R 336.2810 40 CFR 52.21(c) (d) & (j)**
10. VOC	1.0 lb/hr[2]	Hour	Each engine in FG-ICENGINES	SC V.1	**R 336.1702(a)**
11. Visible Emissions	10% Opacity[2]	6-minute average	Each Engine in FG-ICENGINES	SC V.1	**R 336.1301(1)(c) R 336.2810 40 CFR 52.21 (j)**
12. Formaldehyde	2.07 lb/hr[1]	Hour	Each Engine in FG-ICENGINES	SC V.2	**R 336.1225**
13. SO_2	3.51 lbs/hr[2]	Hour	Each Engine in FG-ICENGINES	SC V.1 SC V.3	**R 336.2810**

II. MATERIAL LIMIT(S)

1. The total reduced sulfur (TRS)/hydrogen sulfide concentration of the landfill gas combusted in FGICENGINES shall not exceed 269 ppm.[2] **(R 336.1205, R 336.2803, R 336.2804, 40 CFR 52.21 (c) and (d))**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall only burn landfill gas in FG-ICENGINES that has been treated in a system which complies with 40 CFR 60.752(b)(2)(iii)(C).[2] **(R 336.1225, 40 CFR 63.6625(c))**

2. At least 60 days prior to start-up of any engine in FGICENGINES, the permittee shall submit to the AQD District Supervisor, for review and approval, a malfunction abatement/preventative maintenance plan for FG-ICENGINES. After approval of the malfunction abatement/preventative maintenance plan by the AQD District Supervisor, the permittee shall not operate FG-ICENGINES unless the malfunction abatement/preventative maintenance plan, or an alternate plan approved by the AQD District Supervisor, is implemented and maintained. The plan shall incorporate procedures recommended by the equipment manufacturer as well as incorporating standard industry practices. At a minimum the plan shall include:

   a. Identification of the equipment and, if applicable, air-cleaning device, and the supervisory personnel responsible for overseeing the inspection, maintenance, and repair.

   b. Description of the items or conditions to be inspected and frequency of the inspections or repairs.

   c. Identification of the equipment and, if applicable, air-cleaning device, operating parameters that shall be monitored to detect a malfunction or failure, the normal operating range of these parameters and a description of the method of monitoring or surveillance procedures.

   d. Identification of the major replacement parts that shall be maintained in inventory for quick replacement.

   e. A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.

   If the plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction at the time the plan is initially developed, the owner or operator shall revise the plan within 45 days after such an

event occurs and submit the revised plan for approval to the AQD District Supervisor. Should the AQD determine the malfunction abatement/preventative maintenance plan to be inadequate, the AQD District Supervisor may request modification of the plan to address those inadequacies.[2] **(R 336.1702(a), R 336.1910, R 336.1911, R 336.1912, R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(c), (d) and (j))**

3. The permittee shall not operate any engine in FG-ICENGINES unless the sulfur removal system is installed, maintained, and operated in a satisfactory manner, except as provided in the approved malfunction abatement/operation and maintenance plan. Proper operation shall include but is not limited to submitting an approvable malfunction abatement/operation and maintenance plan (MAP/O&M plan) for the sulfur removal system to the District Supervisor, Air Quality Division. The MAP/O&M plan shall include the manufacturer operation and maintenance specifications.[2] **(R 336.1205, R 336.1225, R 336.1901, R 336.1910, R 336.2803, R 336.2804, 40 CFR 52.21(c) and (d))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate any engine in FG-ICENGINES unless the engines air/fuel ratio controller is installed, maintained and operated in a satisfactory manner.[2] **(R 336.1702, R 336.1910, R 336.2810(j), 40 CFR 52.21(j))**

2. The permittee shall equip FG-ICENGINES with a device to monitor and record the total daily fuel usage of the engines.[2] **(R 336.1201(3), R 336.1225)**

3. The design capacity of each engine of FG-ICENGINES shall not exceed 2,233 hp, as specified by the equipment manufacturer.[2] **(R 336.1205(1)(a), R 336.1225, R 336.1702, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**

V. TESTING/SAMPLING

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

1. Within 180 days of permit issuance or five years from the last test date, whichever occurs later, and then every five years thereafter, the permittee shall verify Visible Emissions (per a USEPA Method 9 certified visible emissions observation shall be conducted for a minimum of 15 minutes to determine the actual opacity from that emission point), NO_x, PM, PM-10, VOC, SO_2 and CO emission rates from each engine in FG-ICENGINES at maximum routine operating conditions, by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test as required by SC VII.4.[2] **(R 336.2001, R 336.2803, R 336.2804, R 336.2003, R 336.2004, 40 CFR 52.21(c) and (d))**

2. Within 180 days of permit issuance or five years from the last test date, whichever occurs later, and then every five years thereafter, the permittee shall verify formaldehyde emission rates from each engine in FG-ICENGINES at maximum routine operating conditions, by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test, as required by SC VII.4.[2] **(R 336.1225, R 336.2001, R 336.2003, R 336.2004)**

3. The permittee shall verify the hydrogen sulfide or total reduced sulfur content of the landfill gas burned in FG-ICENGINES on a daily basis by gas sampling as described in the plan required by SC III.3. Daily gas sampling excludes holidays and weekends unless requested by the District Supervisor, Air Quality Division. If, after a year, each of the daily concentrations of the hydrogen sulfide or total reduced sulfur concentration of the landfill gas are below 269 ppm (TRS equivalent), the permittee may petition the District Supervisor, Air Quality Division to reduce the frequency of gas sampling and recording the hydrogen sulfide / total reduced sulfur concentration of the treated landfill gas to weekly. If at any time the concentration readings exceed 269 ppm (TRS equivalent), the permittee shall resume sampling and recording on a daily basis and shall review all operating and

maintenance activities for the landfill gas collection and treatment system along with keeping records of corrective actions taken. Once the concentration determined from the daily readings are maintained below 269 ppm of hydrogen sulfide/total reduced sulfur concentration in the landfill gas for one year after an exceedance, the permittee may resume weekly monitoring and recordkeeping. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2] **(R 336.1205(1), R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21 (c), (d) and (j))**

4. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
PM	40 CFR Part 60, Appendix A; Part 10 of the Michigan Air Pollution Control Rules
PM_{10}	40 CFR Part 51, Appendix M
NO_x	40 CFR Part 60, Appendix A
SO_2	40 CFR Part 60, Appendix A
CO	40 CFR Part 60, Appendix A
VOC	40 CFR Part 60, Appendix A
Visible Emissions	40 CFR Part 51, Appendix M; 40 CFR Part 60, Appendix A and B
HAPs	40 CFR Part 63, Appendix A

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD-approved Test Protocol. **(R 336.1213(3), R 336.2003)**

5. The permittee shall notify the AQD Technical Programs Unit Supervisor and the District Supervisor not less than 30 days of the time and place before performance tests are conducted. **(R 336.1213(3))**

6. The permittee shall notify the AQD district office within one week of when the frequency of the gas sampling changes for any reason. **(R 336.1201(3))**

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall continuously monitor, in a satisfactory manner, the total landfill gas fuel usage of the FG-ICENGINES.[2] **(R 336.2803, R 336.2804, 40 CFR 52.21(c) and (d))**

2. The permittee shall maintain a log of all maintenance activities conducted according to the malfunction abatement/preventative maintenance plan (pursuant to SC III.2). The permittee shall keep this log on file at the facility and make it available to the Department upon request.[2] **(R 336.1702(a), R 336.1911, R 336.1912, R 336.2803, R 336.2804, 40 CFR 52.21(c) and (d))**

3. The permittee shall keep, in a satisfactory manner, records of the landfill gas usage for FG-ICENGINES on a daily basis. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2] **(R 336.1225, R 336.1702, R 336.1910, R 336.2803, R 336.2804, 40 CFR 52.21(c) and (d))**

4. The permittee shall keep, in a satisfactory manner, monthly SO_2 mass emission calculation records for each engine in FG-ICENGINES. The permittee shall keep all records on file for a period of at least five years and make them available to the Department upon request.[2] **(R 336.1213(3), R 336.2803, R 336.2804, 40 CFR 52.21(c) and (d)).**

5. The permittee shall keep, in a satisfactory manner, records of the hours of operation for each engine included in FG-ICENGINES on a daily basis. The permittee shall keep all records on file at the and make them available to the Department upon request.[2] **(R 336.1225, R 336.1702, R 336.1910, R 336.2803, R 336.2804, 40 CFR 52.21(c) and (d))**

6. The permittee shall maintain the following record for each engine in FG-ICENGINES. The following information shall be recorded and kept on file at the facility:

a. Engine manufacturer;
b. Date engine was manufactured;
c. Engine model number;
d. Engine horsepower;
e. Engine serial number;
f. Engine specification sheet;
g. Date of initial startup of the engine; and
h. Date engine was removed from service at this stationary source.

All of the above information shall be stored in a format acceptable to the AQD District Supervisor.[2] **(R 336.1205, R 336.1225, R 336.1301, R 336.1331, R 336.1702, R 336.1910, R 336.1911, R 336.1912, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**

7. The permittee shall maintain records of all information necessary for all notifications and reports for each engine in FG-ICENGINES, as specified in these special conditions as well as that information necessary to demonstrate compliance with the emission limits of this permit. An example of the information that may be needed includes but is not limited to the following:

   a. Compliance tests and any testing required under the special conditions of this permit;

   b. Monitoring data for the hours of operation and landfill gas usage;

   c. Calculated amount of landfill gas combusted in each engine on a monthly and 12-month rolling basis, as required by SC VI.3;

   d. Hours of operation on a monthly and 12-month rolling basis, as required by SC VI.4;

   e. Manufacturer's data, specifications, and operating and maintenance procedures;

   f. Maintenance activities conducted according to the PM/MAP, as required by SC VI.2;

   g. All calculations necessary to show compliance with the limits contained in this permit.

   All of the above information shall be stored in a format acceptable to the AQD District Supervisor.[2] **(R 336.1205, R 336.1225, R 336.1301, R 336.1331, R 336.1702(a), R 336.1910, R 336.1911, R 336.1912, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**

8. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor and make them available by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition.[2] **(R 336.1205, R 336.1225, R 336.1702, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**

VII. REPORTING

1. The permittee shall notify the AQD district office within one week of when the frequency of the gas sampling changes for any reason. **(R 336.1201(3))**

2. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

3. 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))**

4. 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))**

5. The permittee shall submit a complete report of the stack test results to the AQD District Supervisor in an acceptable format within 60 days after the performance test has been completed. **(R 336.1205, R336.1224, R 336.1225, R 336.1702, R 336.2001, R 336.2003, R 336.2004, R 336.2803, R 336.2804, R 336.2810(2), 40 CFR 52.21(j), 40 CFR 52.21(c) and (d))**

See Appendix 8-1

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV-ICENG1	14^2	60^2	**R 336.1225 R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)**
2. SV-ICENG2	14^2	60^2	**R 336.1225 R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)**
3. SV-ICENG3	14^2	60^2	**R 336.1225 R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)**
4. SV-ICENG4	14^2	60^2	**R 336.1225 R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)**
5. SV-ICENG5	14^2	60^2	**R 336.1225 R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)**
6. SV-ICENG6	14^2	60^2	**R 336.1225 R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)**
7. SV-ICENG7	14^2	60^2	**R 336.1225 R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)**
8. SV-ICENG8	14^2	60^2	**R 336.1225 R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)**

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable provisions of the New Source Performance Standards, as specified in 40 CFR Part 60, Subpart A and Subpart JJJJ, as they apply to each engine. **(40 CFR Part 60 Subparts A and JJJJ)**

2. The permittee shall comply with the provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR, Part 63, Subpart A and Subpart ZZZZ, as they apply to each engine. **(40 CFR Part 63, Subparts A and ZZZZ)**

Footnotes:
[1]This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FG-RICEMACT
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

New and reconstructed non-emergency engines greater than 500 hp fueled with landfill/digester gas, located at a major source of HAPs. Construction or reconstruction commenced on or after December 19, 2002.

Emission Unit: EU-ICENGINE1, EU-ICENGINE2, EU-ICENGINE3, EU-ICENGINE4, EU-ICENGINE5, EU-ICENGINE6, EU-ICENGINE7, EU-ICENGINE8

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. Each engine in FG-RICEMACT shall operate in a manner which reasonably minimizes HAP emissions. **(40 CFR 63.6625(c))**

2. Each engine in FG-RICEMACT shall operate in a manner which minimizes time spent at idle during startup and minimize the startup time to a period needed for appropriate and safe loading of each engine, not to exceed 30 minutes. **(40 CFR 63.6625(h))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The engines in FG-RICEMACT shall equip and maintain separate individual fuel meters to monitor and record the daily fuel usage and volumetric flow rate of each fuel used. **(40 CFR 63.6625(c))**

V. TESTING/SAMPLING

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

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii), 40 CFR 63.6660)**

1. The engines in FG-RICEMACT, which fire landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, must monitor and record the daily fuel usage with separate fuel meters to measure the volumetric flow rate of each fuel. **(40 CFR 63.6625(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))**

4. The permittee shall submit an annual report in accordance with Table 7 of 40 CFR Part 63, Subpart ZZZZ to 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. The following information shall be included in this annual report: **(40 CFR 63.6650(g), 40 CFR 63.6650(b)(5))**

   a. The fuel flow rate and the heating values that were used in the permittee's calculations. Also, the permittee must demonstrate that the percentage of heat input provided by landfill gas or digester gas is equivalent to 10 percent or more of the total fuel consumption on an annual basis. **(40 CFR 63.6650(g)(1))**

   b. The operating limits provided in the permittee's federally enforceable permit, and any deviations from these limits. **(40 CFR 63.6650(g)(2))**

   c. Any problems or errors suspected from the fuel flow rate meters. **(40 CFR 63.6650(g)(3))**

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with the provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR, Part 63, Subpart A and Subpart ZZZZ, as they apply to each engine in FG-RICEMACT. (40 CFR Part 63, Subparts A and ZZZZ)

Footnotes:
[1]This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FG-RICENSPS
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Non-emergency engine(s) greater than 500 hp, fueled with landfill/digester gas. Engine(s) ordered after June 12, 2006 and manufactured on or after July 1, 2007.

Emission Units: EU-ICENGINE1, EU-ICENGINE2, EU-ICENGINE3, EU-ICENGINE4, EU-ICENGINE5, EU-ICENGINE6, EU-ICENGINE7, EU-ICENGINE8

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. NO_x	2.0 g/hp-hr[2]	Hour	Each engine in FG-RICENSPS	SC V.1	**40 CFR 60.4233(e)**
2. CO	5.0 g/hp-hr[2]	Hour	Each engine in FG-RICENSPS	SC V.1	**40 CFR 60.4233(e)**
3. VOC	1.0 g/hp-hr[2]	Hour	Each engine in FG-RICENSPS	SC V.1	**40 CFR 60.4233(e)**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall operate and maintain each engine in FG-RICENSPS such that it meets the emission limits established, over the entire life of the engine.[2] **(40 CFR 60.4234, 40 CFR 60.4243(b))**

2. If the permittee purchased a non-certified engine or a certified engine operating in a non-certified manner, the permittee shall keep a maintenance plan for each engine in FG-RICENSPS and shall, to the extent practicable, maintain and operate each engine in a manner consistent with good air pollution control practice for minimizing emissions.[2] **(40 CFR 60.4243(b))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall equip and maintain FGRICENSPS with non-resettable hours meters to track the operating hours. **(40 CFR 60.4243)**

V. TESTING/SAMPLING

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

1. Except as provided in 40 CFR 60.4243(b), the permittee shall conduct an initial performance test for each engine in FG-RICENSPS within one year after startup of the engine and every 8760 hours of operation (as determined through the use of a non-resettable hour meter) or three years, whichever occurs first, to demonstrate compliance with the emission limits in 40 CFR 60.4233(e), unless the engine(s) have been certified by the manufacturer in accordance with 40 CFR Part 60 Subpart JJJJ and the permittee maintains the engine as required by 40 CFR

60.4243(a)(1). If a performance test is required, the performance tests shall be conducted according to 40 CFR 60.4244. No less than 30 days prior to any testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test.[2] **(40 CFR 60.4243, 40 CFR 60.4244, 40 CFR Part 60 Subpart JJJJ)**

2. The permittee shall notify the AQD Technical Programs Unit Supervisor and the District Supervisor not less than 30 days of the time and place before performance tests are conducted. **(R 336.1213(3))**

VI. MONITORING/RECORDKEEPING

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

1. If the permittee purchased a non-certified engine or a certified engine operating in a non-certified manner, the permittee shall keep a maintenance plan and records of conducted maintenance for each engine in FG-RICENSPS and shall, to the extent practicable, maintain and operate each engine in a manner consistent with good air pollution control practice for minimizing emissions.[2] **(40 CFR 60.4243(b))**

2. The permittee shall monitor emissions and operating information, including monitoring and recording the hours of operation of each engine in FG-RICENSPS, in accordance with the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subparts A and JJJJ. The permittee shall keep records of all source emissions data and operating information for each engine in FG-RICENSPS on file at the facility and make the records available upon request.[2] **(40 CFR 60.4245, 40 CFR Subparts A & JJJJ)**

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))**

4. The permittee shall submit an initial notification as required by 40 CFR 60.7(a)(1) for each engine in FG-RICENSPS if the engine(s) installed is/are not certified by an engine manufacturer to meet the emission standards in 40 CFR 60.4231. The notification shall include the information below, as specified in 40 CFR 60.4245 (c)(1) through (5):[2]

   a. Name and address of the owner or operator; **(40 CFR 60.4245(c)(1))**

   b. The address of the affected source; **(40 CFR 60.4245(c)(2))**

   c. Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement; **(40 CFR 60.4245(c)(3))**

   d. Emission control equipment; and **(40 CFR 60.4245(c)(4))**

   e. Fuel used. **(40 CFR 60.4245(c)(5))**

   f. The permittee shall submit the initial notification to the AQD District Supervisor in an acceptable format within 30 days of commencing construction of any engine in FGRICENSPS. **(40 CFR Part 60 Subpart JJJJ)**

5. The permittee shall submit two complete test protocols to the AQD, one to the Technical Programs Unit Supervisor and one to the District Supervisor for approval at least 30 days prior to the anticipated test date. The protocol shall describe the test method(s) and the maximum routine operating conditions, including targets for

key operational parameters associated with air pollution control equipment to be monitored and recorded during testing.[2] **(R 336.1205, R 336.2001(3))**

See Appendix 8-1

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable provisions of the New Source Performance Standards, as specified in 40 CFR Part 60, Subpart A and Subpart JJJJ, as they apply to each engine in FG-RICENSPS.[2] **(40 CFR Part 60 Subparts A and JJJJ)**

Footnotes:
[1]This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

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. Acronyms and Abbreviations

Common Acronyms		Pollutant / Measurement Abbreviations	
AQD	Air Quality Division	acfm	Actual cubic feet per minute
BACT	Best Available Control Technology	BTU	British Thermal Unit
CAA	Clean Air Act	°C	Degrees Celsius
CAM	Compliance Assurance Monitoring	CO	Carbon Monoxide
CEM	Continuous Emission Monitoring	CO_2e	Carbon Dioxide Equivalent
CEMS	Continuous Emission Monitoring System	dscf	Dry standard cubic foot
CFR	Code of Federal Regulations	dscm	Dry standard cubic meter
COM	Continuous Opacity Monitoring	°F	Degrees Fahrenheit
Department/ department	Michigan Department of Environment, Great Lakes, and Energy	gr	Grains
		HAP	Hazardous Air Pollutant
EGLE	Michigan Department of Environment, Great Lakes, and Energy	Hg	Mercury
		hr	Hour
EU	Emission Unit	HP	Horsepower
FG	Flexible Group	H_2S	Hydrogen Sulfide
GACS	Gallons of Applied Coating Solids	kW	Kilowatt
GC	General Condition	lb	Pound
GHGs	Greenhouse Gases	m	Meter
HVLP	High Volume Low Pressure*	mg	Milligram
ID	Identification	mm	Millimeter
IRSL	Initial Risk Screening Level	MM	Million
ITSL	Initial Threshold Screening Level	MW	Megawatts
LAER	Lowest Achievable Emission Rate	NMOC	Non-methane Organic Compounds
MACT	Maximum Achievable Control Technology	NO_x	Oxides of Nitrogen
MAERS	Michigan Air Emissions Reporting System	ng	Nanogram
MAP	Malfunction Abatement Plan	PM	Particulate Matter
MSDS	Material Safety Data Sheet	PM10	Particulate Matter equal to or less than 10 microns in diameter
NA	Not Applicable		
NAAQS	National Ambient Air Quality Standards	PM2.5	Particulate Matter equal to or less than 2.5 microns in diameter
NESHAP	National Emission Standard for Hazardous Air Pollutants	pph	Pounds per hour
		ppm	Parts per million
NSPS	New Source Performance Standards	ppmv	Parts per million by volume
NSR	New Source Review	ppmw	Parts per million by weight
PS	Performance Specification	%	Percent
PSD	Prevention of Significant Deterioration	psia	Pounds per square inch absolute
PTE	Permanent Total Enclosure	psig	Pounds per square inch gauge
PTI	Permit to Install	scf	Standard cubic feet
RACT	Reasonable Available Control Technology	sec	Seconds
ROP	Renewable Operating Permit	SO_2	Sulfur Dioxide
SC	Special Condition	TAC	Toxic Air Contaminant
SCR	Selective Catalytic Reduction	Temp	Temperature
SNCR	Selective Non-Catalytic Reduction	THC	Total Hydrocarbons
SRN	State Registration Number	tpy	Tons per year
TEQ	Toxicity Equivalence Quotient	µg	Microgram
USEPA/EPA	United States Environmental Protection Agency	µm	Micrometer or Micron
		VOC	Volatile Organic Compounds
VE	Visible Emissions	yr	Year

*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 psig.

Appendix 2-1. Schedule of Compliance

The permittee certified in this ROP application that this stationary source, Pine Tree Acres Landfill, is in compliance with all applicable requirements of this ROP.

Appendix 3-1. 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 4-1. 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 5-1. Testing Procedures

Specific testing requirement plans, procedures, and averaging times are detailed in the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, this appendix is not applicable.

Appendix 6-1. Permits to Install

The following table lists any PTIs issued or ROP revision applications received since the effective date of the previously issued ROP No. MI-ROP-N5984-2013. Those ROP revision applications that are being issued concurrently with this ROP renewal are identified by an asterisk (*). Those revision applications not listed with an asterisk were processed prior to this renewal.

Source-Wide PTI No MI-PTI-N5984-2013a is being reissued as Source-Wide PTI No. MI-PTI-N5984-2019.

Permit to Install Number	ROP Revision Application Number	Description of Equipment or Change	Corresponding Emission Unit(s) or Flexible Group(s)
160-14	201600056	Conditions of PTI 160-14 were incorporated into MI-ROP-N5984-2013a. These are the conditions for the reciprocating internal combustion engines (1-8), flare 3 (open flare), flares 4 and 6 (enclosed flares), and flare 5 (back-up only, open flare).	FG-ICENGINES FG-RICEMACT FG-RICENSPS FG-FLARES

Appendix 7-1. Emission Calculations

The permittee shall use the following calculations in conjunction with monitoring, testing or recordkeeping data to determine compliance with the applicable requirements referenced in FG-ACTIVECOLLECTION and FG-OPENFLARES.

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 one 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 60.769(a)(3)(iii), 40 CFR 63.1955(a))**

$Q_i = 2\ k\ Lo\ Mi\ (e^{-kt\,i})\ (C_{NMOC})\ (3.6 \times 10^{-9})$ where,

Q_i = NMOC emission rate from the ith 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 ith section, megagram

t_i = age of the solid waste in the ith section, years

C_{NMOC} = concentration of non-methane organic compounds, parts per million by volume

3.6×10^{-9} = conversion factor

The values for k and C_{NMOC} 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 C_{NMOC} provided in 40 CFR 60.754(a)(1) and 40 CFR 60.764(a)(1) or the alternative values from 40 CFR 60.754(a)(5) and 40 CFR 60.764(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 40 CFR 60.759(a)(3)(i) and 40 CFR 60.769(a)(3)(i). **(40 CFR 60.759(a)(3)(iii), 40 CFR 60.769(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;

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

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

C_i = 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 40 CFR 60.17); and

H_i = 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 40 CFR 60.17) if published values are not available or cannot be calculated.

Calculation for V_{max} 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))**

$Log_{10}(V_{max})=(H_T+28.8)/31.7$

V_{max} = Maximum permitted velocity, M/sec

28.8 = Constant

31.7 = Constant

H_T = The net heating value as determined in 60.18(f)(3).

Calculation for Vmax for air-assisted flares

The maximum permitted velocity, V_{max}, for air-assisted flares shall be calculated and recorded using the equation provided in 40 CFR 60.18(f)(6). **(40 CFR 60.18(f)(6))**

$V_{max} = 8.706+0.7084 (H_T)$

V_{max} =Maximum permitted velocity, m/sec

8.706 = Constant

0.7084 = Constant

H_T = The net heating value as determined in 60.18(f)(3).

Appendix 8-1. Reporting

A. Annual, Semiannual, and Deviation Certification Reporting

The permittee shall use EGLE, AQD, Report Certification form (EQP 5736) and EGLE, AQD, 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.

SECTION 2 – SUMPTER ENERGY ASSOCIATES, LLC

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 a federally enforceable Source-Wide PTI pursuant to Rule 201(2)(c) are designated by footnote two. **(R 336.1213(5)(b), R 336.1214a(3))**

General Provisions

4. 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))**

5. 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))**

6. 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))**

9. 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.

10. 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))**

11. 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))**

12. The permittee shall pay fees consistent with the fee schedule and requirements pursuant to Section 5522 of Act 451. **(R 336.1213(1)(g))**

13. This ROP does not convey any property rights or any exclusive privilege. **(R 336.1213(1)(h))**

Equipment & Design

10. 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).[2] **(R 336.1370)**

11. 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

13. Unless otherwise specified in this ROP, the permittee shall comply with Rule 301, which states, in part, "Except as provided in Subrules 2, 3, and 4 of this rule, 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 the following:"[2] **(R 336.1301(1))**
    a. A 6-minute average of 20% opacity, except for one 6-minute average per hour of not more than 27% opacity.
    b. A limit specified by an applicable federal new source performance standard.

    The grading of visible emissions shall be determined in accordance with Rule 303.

14. 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

16. 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).[2] **(R 336.2001)**

17. 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))**

18. 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(5))**

Monitoring/Recordkeeping

18. 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.

19. 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

22. 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))**

23. 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 60604-3507. **(R 336.1213(4)(c))**

24. 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))**

25. 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.

26. 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))**
    a. 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.
    b. 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.

27. 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))**

28. 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))**

29. 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.[2] **(R 336.1912)**

Permit Shield

27. 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))**
    a. The applicable requirements are included and are specifically identified in the ROP.
    b. 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.

28. Nothing in this ROP shall alter or affect any of the following:
    d. 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))**
    e. 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))**
    f. The applicable requirements of the acid rain program, consistent with Section 408(a) of the CAA. **(R 336.1213(6)(b)(iii))**

e. The ability of the USEPA to obtain information from a source pursuant to Section 114 of the CAA. **(R 336.1213(6)(b)(iv))**

29. The permit shield shall not apply to provisions incorporated into this ROP through procedures for any of the following:
    f. Operational flexibility changes made pursuant to Rule 215. **(R 336.1215(5))**
    g. Administrative Amendments made pursuant to Rule 216(1)(a)(i)-(iv). **(R 336.1216(1)(b)(iii))**
    h. 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))**
    i. Minor Permit Modifications made pursuant to Rule 216(2). **(R 336.1216(2)(f))**
    j. State-Only Modifications made pursuant to Rule 216(4) until the changes have been approved by the department. **(R 336.1216(4)(e))**

34. 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

35. 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)**

36. 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))**

37. 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(10))**

38. 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

35. 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

38. 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(9))**

Stratospheric Ozone Protection

39. 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 reclaimer, 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.

40. 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

42. 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 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).

43. 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 68.10(a):
    a. June 21, 1999,
    b. Three years after the date on which a regulated substance is first listed under 40 CFR 68.130, or
    c. The date on which a regulated substance is first present above a threshold quantity in a process.

44. 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.

45. 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

47. 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)

48. 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))**

49. 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)**

50. 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, EGLE.[2] **(R 336.1219)**

51. 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 of the original PTI issuance date, or has been interrupted for 18 months, the applicable terms and conditions from that PTI, as incorporated into the ROP, 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, EGLE, 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:
[1]This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).
[2]This 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.

SOURCE-WIDE CONDITIONS

POLLUTION CONTROL EQUIPMENT

Sulfur/Total Reduced Sulfur removal system

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

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

NA

VI. MONITORING/RECORDKEEPING

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

NA

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 8-2

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

1. The operational restrictions and testing requirements in SC II.1, SC III.3 and SC V.3 under FG-ICENGINES at Pine Trees Acres (section 1) also applies to the landfill gas supplied to FG-ENGINES at the facility operated by Sumpter Energy (section 2). **(R 336.1213(3), R 336.2803, R 336.2804, 40 CFR 52.21 (c) & (d))**

Footnotes:
[1]This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

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
EU-ENGINE1	Reciprocating internal combustion engine. Landfill gas fired internal combustion engines (ICE) manufactured by Caterpillar Inc. (Model No. 3516) and rated at 1138 HP and 8.6 MMBtu/hr	07/24/01	FG-ENGINES FG-RICEMACT
EU-ENGINE2	Reciprocating internal combustion engine. Landfill gas fired internal combustion engines (ICE) manufactured by Caterpillar Inc. (Model No. 3516) and rated at 1138 HP and 8.6 MMBtu/hr	07/24/01	FG-ENGINES FG-RICEMACT
EU-ENGINE3	Reciprocating internal combustion engine. Landfill gas fired internal combustion engines (ICE) manufactured by Caterpillar Inc. (Model No. 3516) and rated at 1138 HP and 8.6 MMBtu/hr	07/24/01	FG-ENGINES FG-RICEMACT
EU-ENGINE4	Reciprocating internal combustion engine. Landfill gas fired internal combustion engines (ICE) manufactured by Caterpillar Inc. (Model No. 3516) and rated at 1138 HP and 8.6 MMBtu/hr	07/24/01	FG-ENGINES FG-RICEMACT
EU-ENGINE5	Reciprocating internal combustion engine. Landfill gas fired internal combustion engines (ICE) manufactured by Caterpillar Inc. (Model No. 3516) and rated at 1138 HP and 8.6 MMBtu/hr	07/24/01	FG-ENGINES FG-RICEMACT
EU-ENGINE6	Reciprocating internal combustion engine. Landfill gas fired internal combustion engines (ICE) manufactured by Caterpillar Inc. (Model No. 3516) and rated at 1138 HP and 8.6 MMBtu/hr	07/24/01	FG-ENGINES FG-RICEMACT
EU-ENGINE7	Reciprocating internal combustion engine. Landfill gas fired internal combustion engines (ICE) manufactured by Caterpillar Inc. (Model No. 3516) and rated at 1138 HP and 8.6 MMBtu/hr	07/24/01	FG-ENGINES FG-RICEMACT

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EU-ICENGINE8	Spark ignition, lean burn, reciprocating internal combustion engine (Caterpillar G3520C, 2,233 bhp at 100% load) for combusting treated landfill gas to produce electricity (1.6-megawatt gross electrical output). The engine will drive an associated generator set to produce the electricity.	03/02/10	FG-ICENGINE2 FG-RICEMACT
EU-ICENGINE9	Spark ignition, lean burn, reciprocating internal combustion engine (Caterpillar G3520C, 2,233 bhp at 100% load) for combusting treated landfill gas to produce electricity (1.6-megawatt gross electrical output). The engine will drive an associated generator set to produce the electricity.	03/02/10	FG-ICENGINE2 FG-RICEMACT
EU-ICENGINE10	Spark ignition, lean burn, reciprocating internal combustion engine (Caterpillar G3520C, 2,242 bhp at 100% load) for combusting treated landfill gas to produce electricity (1.6-megawatt gross electrical output). The engine will drive an associated generator set to produce the electricity. This emission unit, and any replacement of this unit as applicable under R 336.1285(a)(vi), is for a Caterpillar G3520C internal combustion engine greater than 500hp fueled with treated landfill/digester gas to produce electricity. The engine is subject to the New Source Performance Standard for spark ignition engines (40 CFR Part 60 Subpart JJJJ) that meet the following definition: non-emergency engine(s) greater than 500 hp, fueled with landfill/digester gas. Engine(s) ordered after June 12, 2006 and manufactured on or after July 1, 2007.	TBD	FG-RICEMACT10

EU-ICENGINE10
EMISSION UNIT CONDITIONS

DESCRIPTION

Spark ignition, lean burn, reciprocating internal combustion engine (Caterpillar G3520C, 2,242 bhp at 100% load) for combusting treated landfill gas to produce electricity (1.6-megawatt gross electrical output). The engine will drive an associated generator set to produce the electricity. This emission unit, and any replacement of this unit as applicable under R 336.1285(a)(vi), is for a Caterpillar G3520C internal combustion engine greater than 500hp fueled with treated landfill/digester gas to produce electricity.

The engine is subject to the New Source Performance Standard for spark ignition engines (40 CFR Part 60 Subpart JJJJ) that meet the following definition: non-emergency engine(s) greater than 500 hp, fueled with landfill/digester gas. Engine(s) ordered after June 12, 2006 and manufactured on or after July 1, 2007.

Flexible Group ID: FG-RICEMACT10

POLLUTION CONTROL EQUIPMENT

Electronic air-to-fuel ratio controller

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. NO_x	3.00 lb/hr[2]	Hourly	EU-ICENGINE10	SC V.1	**R 336.1205** **40 CFR 52.21(c) & (d)**
2. NO_x	2.0 g/bhp-hr[2] or 150 ppmvd corrected to 15% O_2	Hourly	EU-ICENGINE10	SC V.3	**40 CFR Part 60 Subpart JJJJ** **40 CFR 60.4233(e) and Table 1**
3. CO	16.3 lb/hr[2]	Hourly	EU-ICENGINE10	SC V.1	**R 336.1205** **40 CFR 52.21(d)**
4. CO	5.0 g/bhp-hr[2] or 610 ppmvd corrected to 15% O_2	Hourly	EU-ICENGINE10	SC V.3	**40 CFR Part 60 Subpart JJJJ** **40 CFR 60.4233(e) and Table 1**
5. VOC	4.84 lb/hr[2]	Hourly	EU-ICENGINE10	SC V.1	**R 336.1702**
6. VOC	1.0 g/bhp-hr[2] or 80 ppmvd corrected to 15% O_2	Hourly	EU-ICENGINE10	SC V.3	**40 CFR Part 60 Subpart JJJJ** **40 CFR 60.4233(e) and Table 1**
7. Formaldehyde	2.08 lb/hr[1]	Hourly	EU-ICENGINE10	SC V.2	**R 336.1225**
8. SO_2	4.71 lb/hr[2]	Monthly Average (based on the calculation in Appendix 7-2)	EU-ICENGINE10	SC V.1 SC V.4 SC VI.5	**40 CFR 52.21(c) & (d)**

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Treated Landfill Gas as specified in SC III.1	321.7 MMscf[2] per year	12-month rolling time period as determined at the end of each calendar month	EU-ICENGINE10	SC VI.4	**R 336.1205(1)(a) & (3) R 336.1225 R 336.1702(a)**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall only burn landfill gas in EU-ICENGINE10. The landfill gas must be treated in a system which complies with 40 CFR 60.752(b)(2)(iii)(C).[2] **(R 336.1225, R 336.1331, R 336.1702, 40 CFR 60.752(b)(2)(iii)(C))**

2. No later than 60 days prior to startup, the permittee shall submit to the AQD District Supervisor, for review and approval, a malfunction abatement/preventative maintenance plan for EU-ICENGINE10. After approval of the malfunction abatement/preventative maintenance plan by the AQD District Supervisor, the permittee shall not operate EU-ICENGINE10 unless the malfunction abatement/preventative maintenance plan, or an alternate plan approved by the AQD District Supervisor, is implemented and maintained. The plan shall incorporate procedures recommended by the equipment manufacturer as well as incorporating standard industry practices. At a minimum the plan shall include:

   a. Identification of the equipment and, if applicable, air-cleaning device, and the supervisory personnel responsible for overseeing the inspection, maintenance, and repair.

   b. Description of the items or conditions to be inspected and frequency of the inspections or repairs.

   c. Identification of the equipment and, if applicable, air-cleaning device, operating parameters that shall be monitored to detect a malfunction or failure, the normal operating range of these parameters and a description of the method of monitoring or surveillance procedures.

   d. Identification of the major replacement parts that shall be maintained in inventory for quick replacement.

   e. A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.

   f. For the exhaust system, include the design flow rate of the system and the method with which the exit velocity will be monitored, including a description of how the monitoring device will be operated and maintained

   If the plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction at the time the plan is initially developed, the owner or operator shall revise the plan within 45 days after such an event occurs and submit the revised plan for approval to the AQD District Supervisor. Should the AQD determine the malfunction abatement/preventative maintenance plan to be inadequate, the AQD District Supervisor may request modification of the plan to address those inadequacies.[2] **(R 336.1702(a), R 336.1910, R 336.1911, R 336.1912, 40 CFR 52.21(c) & (d))**

3. The permittee shall operate and maintain EU-ICENGINE10 such that it meets the emission limits established, over the entire life of the engine.[2] **(40 CFR 60.4234, 40 CFR 60.4243(b))**

4. If the permittee purchased a non-certified engine or a certified engine operating in a non-certified manner, the permittee shall keep a maintenance plan for EU-ICENGINE10 and shall, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions.[2] **(40 CFR 60.4243(b))**

5. EU-ICENGINE10 shall operate in a manner which reasonably minimizes HAP emissions.[2] **(40 CFR 63.6625(c))**

6. EU-ICENGINE10 shall operate in a manner which minimizes time spent at idle during startup and minimize the startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.[2] **(40 CFR 63.6625(h))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate EU-ICENGINE10 unless an air-to-fuel ratio controller is installed, maintained and operated in a satisfactory manner.[2] **(R 336.1702, R 336.1910)**

2. The design capacity of EU-ICENGINE10 shall not exceed 2,242 hp, (engine work output) as specified by the equipment manufacturer.[2] **(R 336.1205(1)(a), R 336.1225, R 336.1702, 40 CFR 52.21(c) & (d))**

3. The permittee shall equip and maintain EU-ICENGINE10 with a device to monitor and record the daily fuel usage.[2] **(R 336.1205, R 336.1225, R 336.1702)**

4. The permittee shall equip and maintain EU-ICENGINE10 with non-resettable hours meters to track the operating hours.[2] **(40 CFR 60.4243)**

V. TESTING/SAMPLING

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

1. Within 180 days after initial startup of EU-ICENGINE10 and within every five years from the date of completion of the most recent stack test, thereafter, the permittee shall verify NOx, CO, SO2, and VOC emission rates, from EU-ICENGINE10 at maximum routine operating conditions, by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to any testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test.[2] **(R 336.1702(a), R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))**

2. Within 180 days after initial startup of EU-ICENGINE10 and within every five years from the date of completion of the most recent stack test, thereafter, the permittee shall verify formaldehyde emission rate from EU-ICENGINE10 at maximum routine operating conditions, by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test.[2] **(R 336.1225, R 336.2001, R 336.2003, R 336.2004)**

3. Except as provided in 40 CFR 60.4243(b), the permittee shall conduct an initial performance test for EU-ICENGINE10 within one year after startup of the engine and every 8760 hours of operation (as determined through the use of a non-resettable hour meter) or three years, whichever occurs first, to demonstrate compliance with the emission limits in 40 CFR 60.4233(e), unless the engine(s) have been certified by the manufacturer in accordance with 40 CFR Part 60 Subpart JJJJ and the permittee maintains the engine as required by 40 CFR 60.4243(a)(1). If a performance test is required, the performance tests shall be conducted according to 40 CFR 60.4244. No less than 30 days prior to any testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test.[2] **(40 CFR 60.8, 40 CFR 60.4243, 40 CFR 60.4244, 40 CFR 60.4245, 40 CFR Part 60 Subpart JJJJ)**

4. The permittee shall verify the hydrogen sulfide (H_2S) or total reduced sulfur (TRS) content of the treated landfill gas burned in EU-ICENGINE10 on a monthly basis by gas testing at owner's expense, in accordance with Department requirements. No less than 60 days prior to the initial test, the permittee shall submit a complete test plan to the AQD District Office. The AQD must approve the final plan prior to the first test. Thereafter, the permittee shall submit a test plan upon the request of the AQD District Supervisor. If at any time the H_2S (TRS

equivalent) concentration readings exceed 770 ppm, the permittee shall conduct sampling and recording on a weekly basis and shall review all operating and maintenance activities for the landfill gas collection and treatment system along with keeping records of corrective actions taken. Once the concentration determined from the weekly readings are maintained below 770 ppm of H_2S/TRS concentration in the landfill gas for one month after an exceedance, the permittee may resume monthly monitoring and recordkeeping. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2] **(R 336.1205(3), 40 CFR 52.21 (c) & (d))**

5. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
NOx	40 CFR Part 60, Appendix A
SO_2	40 CFR Part 60, Appendix A
CO	40 CFR Part 60, Appendix A
VOC	40 CFR Part 60, Appendix A
HAPs	40 CFR Part 63, Appendix A

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD-approved Test Protocol. **(R 336.1213(3), R 336.2003)**

6. The permittee shall notify the AQD Technical Programs Unit Supervisor and the District Supervisor not less than 30 days of the time and place before performance tests are conducted. **(R 336.1213(3))**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years.[2] **(R 336.1213(3)(b)(ii))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor and make them available by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition.[2] **(R 336.1205, R 336.1225, R 336.1702, 40 CFR 52.21(c) & (d))**

2. The permittee shall continuously monitor, in a satisfactory manner, the total landfill gas fuel usage for EU-ICENGINE10 and the hours of operation for EU-ICENGINE10.[2] **(40 CFR 52.21(c) & (d), 40 CFR Part 60 Subpart JJJJ)**

3. The permittee shall maintain a log of all maintenance activities conducted according to the malfunction abatement/preventative maintenance plan (pursuant to SC III.2). The permittee shall keep this log on file at the facility and make it available to the Department upon request.[2] **(R 336.1702(a), R 336.1911, R 336.1912, 40 CFR 52.21(c) & (d))**

4. The permittee shall keep, in a satisfactory manner, records of the landfill gas usage for EU-ICENGINE10 and the hours of operation for EU-ICENGINE10 on a daily basis, as required by SC VI.2. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2] **(R 336.1225, R 336.1702, R 336.1910, 40 CFR 52.21(c) & (d), 40 CFR Part 60 Subpart JJJJ, 40 CFR 63.6625(c))**

5. The permittee shall calculate and record the SO_2 emission rates from EU-ICENGINE10 using the equation in Appendix 7-2, or other method as approved by the AQD District Supervisor. The calculations shall utilize monthly gas testing data collected (SC V.4), the actual monthly gas usage, hours of operation, and the average ratio of total sulfur to sulfur as H_2S from the most recent laboratory test. All records shall be kept on file at the facility and make them available to the Department upon request.[2] **(R 336.1205(3)), 40 CFR 52.21 (c) & (d))**

6. The permittee shall monitor emissions and operating information, including monitoring and recording the hours of operation of EU-ICENGINE10, in accordance with the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subparts A and JJJJ. The permittee shall keep records of all source emissions data and operating information for EU-ICENGINE 10 on file at the facility and make the records available upon request.[2] **(40 CFR Subparts A & JJJJ, 40 CFR 60.4245))**

7. The permittee shall monitor and record, on a monthly basis, the average Btu content of the landfill gas burned in EU-ICENGINE10. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2] **(R 336.1702(a), 40 CFR 52.21(c) & (d))**

8. The permittee shall maintain the following record for EU-ICENGINE10. The following information shall be recorded and kept on file at the facility:

   a. Engine manufacturer;
   b. Date engine was manufactured;
   c. Engine model number and model year;
   d. Maximum engine power;
   e. Engine serial number;
   f. Engine specification sheet;
   g. Date of initial startup of the engine; and
   h. Date engine was removed from service at this stationary source.

   All of the above information shall be stored in a format acceptable to the AQD District Supervisor.[2] **(R 336.1205, R 336.1225, R 336.1301, R 336.1331, R 336.1702, R 336.1910, R 336.1911, R 336.1912, 40 CFR 52.21(c) & (d))**

9. The permittee shall maintain records of all information necessary for all notifications and reports for EU-ICENGINE10, as specified in these special conditions as well as that information necessary to demonstrate compliance with the emission limits of this permit. This information shall include, but shall not be limited to the following:

   a. Compliance tests and any testing required under the special conditions of this permit;
   b. Monitoring data for the hours of operation and landfill gas usage;
   c. Calculated amount of landfill gas combusted in the engine on a monthly and 12-month rolling basis;
   d. Hours of operation on a monthly and 12-month rolling basis;
   e. Manufacturer's data, specifications, and operating and maintenance procedures;
   f. Maintenance activities conducted according to the PM/MAP;
   g. All calculations necessary to show compliance with the limits contained in this permit.

   All of the above information shall be kept on file and stored in a format acceptable to the AQD District Supervisor.[2] **(R 336.1205, R 336.1225, R 336.1301, R 336.1331, R 336.1702(a), R 336.1910, R 336.1911, R 336.1912, 40 CFR 52.21(c) & (d))**

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))**

4. The permittee shall submit an initial notification as required by 40 CFR 60.7(a)(1) for EU-ICENGINE10 if the engine(s) installed is/are not certified by an engine manufacturer to meet the emission standards in 40 CFR 60.4231. The notification shall include the information below, as specified in 40 CFR 60.4245 (c)(1) through (5):

   a. Name and address of the owner or operator; **(40 CFR 60.4245(c)(1))**

   b. The address of the affected source; **(40 CFR 60.4245(c)(2))**

c. Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement; **(40 CFR 60.4245(c)(3))**

d. Emission control equipment; and **(40 CFR 60.4245(c)(4))**

e. Fuel used. **(40 CFR 60.4245(c)(5))**

The permittee shall submit the initial notification to the AQD District Supervisor in an acceptable format within 30 days of commencing construction of EU-ICENGINE10.[2] **(40 CFR Part 60 Subpart JJJJ)**

5. The permittee shall submit an annual report in accordance with Table 7 of 40 CFR Part 63, Subpart ZZZZ to the appropriate AQD district office by no later than January 31.[2] **(40 CFR 63.6650(g), 40 CFR 63.6650(b)(5))** The following information shall be included in this annual report:

   a. The fuel flow rate and the heating values that were used in the permittee's calculations. Also, the permittee must demonstrate that the percentage of heat input provided by landfill gas or digester gas is equivalent to 10 percent or more of the total fuel consumption on an annual basis.[2] **(40 CFR 63.6650(g)(1))**

   b. The operating limits provided in the permittee's federally enforceable permit, and any deviations from these limits.[2] **(40 CFR 63.6650(g)(2))**

   c. Any problems or errors suspected from the fuel flow rate meters.[2] **(40 CFR 63.6650(g)(3))**

6. At least seven (7) days prior to startup of EU-ICENGINE10, the permittee shall notify the AQD District Supervisor that the stack installation has been completed and certify that the stack meets the parameters as specified in SC VIII.1 to the satisfaction of the AQD. The permittee shall submit the exhaust fan design specifications, if applicable, for EU-ICENGINE10 exhaust stack along with the certification/demonstration that the stack for EU-ICENGINE10 meets the parameters specified in SC VIII.1.[2] **(R 336.1201(3), R 336.1225, 40 CFR 52.21(c) & (d))**

7. The permittee shall notify the AQD district office within one week of when the frequency of the gas sampling changes for any reason. **(R 336.1201(3))**

8. The permittee shall submit any performance test reports to the AQD Technical Programs Unit and District Office, in a format approved by the AQD. **(R 336.1213(3)(c), R 336.2001(5))**

See Appendix 8-2

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV-ENG10	16[2]	95[2]	**R 336.1225** **40 CFR 52.21(c) & (d)**

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable provisions of the New Source Performance Standards, as specified in 40 CFR Part 60, Subpart A and Subpart JJJJ, as they apply to EUICENGINE10. **(40 CFR Part 60 Subparts A and JJJJ)**

2. The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR, Part 63, Subpart A and Subpart ZZZZ. **(40 CFR Part 63, Subparts A and ZZZZ)**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2]This 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
FG-ENGINES	Seven reciprocating internal combustion engines (RICE) that will only combust treated landfill gas for fuel. Each engine drives an associated generator set for producing electricity.	EU-ENGINE1 EU-ENGINE2 EU-ENGINE3 EU-ENGINE4 EU-ENGINE5 EU-ENGINE6 EU-ENGINE7
FG-ICENGINE2	Two reciprocating internal combustion engines (RICE) that will only combust treated landfill gas for fuel. Each engine drives an associated generator set for producing electricity.	EU-ICENGINE8 EU-ICENGINE9
FG-RICEMACT	All existing, new and reconstructed engines located at a Major Source of HAPS, > 500 HP, non-emergency, firing Landfill/Digester Gas. New and reconstructed engines commenced construction or reconstruction on or after December 19, 2002, and the compliance date for these engines is upon start-up.	EU-ENGINE1 EU-ENGINE2 EU-ENGINE3 EU-ENGINE4 EU-ENGINE5 EU-ENGINE6 EU-ENGINE7 EU-ICENGINE8 EU-ICENGINE9
FG-RICEMACT10	New and reconstructed non-emergency engines greater than 500 hp fueled with landfill/digester gas, located at a major source of HAPs. Construction or reconstruction commenced on or after December 19, 2002	EU-ICENGINE10

FG-ENGINES
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Seven reciprocating internal combustion engines (RICE) that will only combust treated landfill gas for fuel. Each engine drives an associated generator set for producing electricity.

Emission Units: EU-ENGINE1, EU-ENGINE2, EU-ENGINE3, EU-ENGINE4, EU-ENGINE5, EU-ENGINE6, EU-ENGINE7

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. NO_x	35.2 lbs/hr[2]	Hour	FG-ENGINES	SC V.1	**R 336.1201(3)**
2. NO_x	154.2 tpy[2]	12-month rolling time period as determined at the end of each calendar month	FG-ENGINES	SC V.1	**R 336.1201(3)**
3. CO	51.1 lbs/hr[2]	Hour	FG-ENGINES	SC V.1	**R 336.1201(3)**
4. CO	223.8 tpy[2]	12-month rolling time period as determined at the end of each calendar month	FG-ENGINES	SC V.1	**R 336.1201(3)**
5. HCl	0.7 lbs/hr[1]	Hour	FG-ENGINES	SC V.1	**R 336.1224(1) R 336.1225**
6. HCl	3.0 tpy[1]	12-month rolling time period as determined at the end of each calendar month	FG-ENGINES	SC V.1	**R 336.1224(1) R 336.1225**
7. NMOC	8.8 lbs/hr[2]	Hour	FG-ENGINES	SC V.1	**R 336.1702(a)**
8. NMOC	38.5 tpy[2]	12-month rolling time period as determined at the end of each calendar month	FG-ENGINES	SC V.1	**R 336.1702(a)**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall only burn landfill gas in FG-ENGINES that has been treated in a system which complies with 40 CFR 60.752(b)(2)(iii)(C). **(R 336.1213(2))**

2. Within 60 days of permit issuance, the permittee shall not operate FG-ENGINES unless the preventative maintenance/malfunction abatement plan (PM/MAP) or an alternate plan approved by the AQD District Supervisor, is implemented and maintained. The plan shall incorporate procedures recommended by the equipment manufacturer as well as incorporating standard industry practices. At a minimum the plan shall include:

   a. Identification of the equipment and, if applicable, air-cleaning device, and the supervisory personnel responsible for overseeing the inspection, maintenance, and repair.

   b. Description of the items or conditions to be inspected and frequency of the inspections or repairs.

   c. Identification of the equipment and, if applicable, air-cleaning device, operating parameters that shall be monitored to detect a malfunction or failure, the normal operating range of these parameters and a description of the method of monitoring or surveillance procedures.

   d. Identification of the major replacement parts that shall be maintained in inventory for quick replacement.

   e. A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.

   If the plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction at the time the plan is initially developed, the owner or operator shall revise the plan within 45 days after such an event occurs and submit the revised plan for approval to the AQD District Supervisor. Should the AQD determine the PM/MAP to be inadequate, the AQD District Supervisor may request modification of the plan to address those inadequacies. **(R 336.1213(2), R 336.1911)**

3. Based on each engine's kilowatt output, the permittee shall adjust the engine's air/fuel ratio, as needed, to ensure that the engine operates at its maximum design output based on the fuel available to burn. **(R 336.1213(2))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate any engine in FG-ENGINES unless that engine's air/fuel ratio controller is installed, maintained and operated in a satisfactory manner. **(R 336.1213(2))**

2. The permittee shall equip each engine in FG-ENGINES with a device to monitor and record the hours of operation for each engine. **(R 336.1213(2))**

3. The permittee shall equip FG-ENGINES with a device to monitor and record the total daily fuel usage of the engines. **(R 336.1213(2))**

V. TESTING/SAMPLING

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

1. The permittee shall verify NOx, CO, HCl and NMOC emission rates from each engine in FG-ENGINES by testing at owner's expense, in accordance with the Department requirements. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
NOx	40 CFR Part 60, Appendix A
CO	40 CFR Part 60, Appendix A
HCl	40 CFR Part 60, Appendix A
NMOC	40 CFR Part 60, Appendix A

   An alternate method, or a modification to the approved EPA Method, may be specified in an AQD-approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD

Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal.

The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1213(3), R 336.2001, R 336.2003, R 336.2004)**

2. The permittee shall determine, by sampling on an annual basis, the chlorine compounds present in the landfill gas (LFG) stream influent to FG-ENGINES. Sampling shall be done by Method 18, or alternate method as approved by the AQD District Supervisor. No less than 30 days prior to testing, the permittee shall submit a complete sampling plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to sampling, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1213(3), R 336.2001, R 336.2003, R 336.2004)**

3. Within 180 days of permit issuance or five years from the last test date, whichever is later, and then every five years thereafter, the permittee shall verify the NOx, CO, HCl and NMOC emission rates from each engine in FG-ENGINES. **(R 336.1213(3), R 336.2001, R 336.2003, R 336.2004)**

4. The permittee shall notify the AQD Technical Programs Unit Supervisor and the District Supervisor not less than 30 days of the time and place before performance tests are conducted. **(R 336.1213(3))**

See Appendix 7-2

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall continuously monitor and record the following parameters:

   a. Electrical output (KW) of each generator driven by each internal combustion engine.
   b. Hours of operation of each generator driven by each internal combustion engine.[2]
   c. Total flow of landfill gas to FG-ENGINES (HCl compliance).

   The permittee shall use the equations and emission factors as specified in Appendix 7-2 to calculate the emissions of CO, NOx, HCl, and NMOC for each engine. Records of the monitored parameters and calculations shall be kept on file and made available to the Department upon request.[2] **(R 336.1224, R 336.1225, R 336.1702(a), 40 CFR 52.21(c) & (d))**

2. The permittee shall measure and record the heating value of the landfill gas used as fuel in the ICEs on a weekly basis (for HCl compliance). **(R 336.1213(3))**

3. The permittee shall keep a written record of the chlorinated compound content of the LFG as determined in the most recent sampling and analysis. **(R 336.1213(3))**

4. The permittee shall monitor and record the temperature of the air/fuel mixture at the after cooler outlet a minimum of once per day, excluding holidays and weekends, when an engine operator is not scheduled or called in, to be on site. A list of excluded holidays shall be maintained on site and be made available to the Air Quality Division upon request. **(R 336.1213(3))**

5. The permittee shall record and report as a deviation any air/fuel mixture temperature reading greater than five degrees Fahrenheit in excess of the maximum air/fuel mixture temperature observed during the performance test in which compliance with the NOx emission limit was established. **(R 336.1213(3))**

6. The permittee shall maintain a monthly log of all maintenance activities conducted on each engine in FGENGINES, including but not limited to the following: daily maintenance activities, top-end repairs, major overhauls, and engine replacements. **(R 336.1213(3))**

7. The permittee shall maintain the following record for FG-ENGINES. The following information shall be recorded and kept on file at the facility:

   a. Engine manufacturer;
   b. Date engine was manufactured;
   c. Engine model number and model year;
   d. Maximum engine power;
   e. Engine serial number;
   f. Engine specification sheet;
   g. Date of initial startup of the engine; and
   h. Date engine was removed from service at this stationary source.

   All of the above information shall be stored in a format acceptable to the AQD District Supervisor. **(R 336.1213(3), R 336.1911)**

8. The permittee shall maintain records of all information necessary for all notifications and reports for FGENGINES, as specified in these special conditions as well as that information necessary to demonstrate compliance with the emission limits of this permit. This information shall include, but shall not be limited to the following:

   a. Compliance tests and any testing/sampling required under the special conditions of this permit;
   b. Monitoring data for the hours of operation and landfill gas usage;
   c. Calculated amount of landfill gas combusted in the engines on a monthly and 12-month rolling basis;
   d. Hours of operation on a monthly and 12-month rolling basis;
   e. Manufacturer's data, specifications, and operating and maintenance procedures;
   f. Maintenance activities conducted according to the PM/MAP;
   g. All calculations necessary to show compliance with the limits contained in this permit.

   All of the above information shall be kept on file and stored in a format acceptable to the AQD District Supervisor. **(R 336.1213(3))**

See Appendix 7-2

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. 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 8-2

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV-ICE1	12[2]	23[2]	**R 336.1225, 40 CFR 52.21(c) & (d)**
2. SV-ICE2	12[2]	23[2]	**R 336.1225, 40 CFR 52.21(c) & (d)**
3. SV-ICE3	12[2]	23[2]	**R 336.1225, 40 CFR 52.21(c) & (d)**
4. SV-ICE4	12[2]	23[2]	**R 336.1225, 40 CFR 52.21(c) & (d)**
5. SV-ICE5	12[2]	23[2]	**R 336.1225, 40 CFR 52.21(c) & (d)**
6. SV-ICE6	12[2]	23[2]	**R 336.1225, 40 CFR 52.21(c) & (d)**
7. SV-ICE7	12[2]	23[2]	**R 336.1225, 40 CFR 52.21(c) & (d)**

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR, Part 63, Subpart A and Subpart ZZZZ for each engine. **(40 CFR Part 63, Subparts A and ZZZZ)**

Footnotes:
[1]This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FG-ICENGINE2
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Two reciprocating internal combustion engines (RICE) that will only combust treated landfill gas for fuel. Each engine drives an associated generator set for producing electricity.

Emission Unit: EU-ICENGINE8, EU-ICENGINE9

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. CO	3.3 g/bhp-hr[2]	Hour	Each engine in FG-ICENGINE2	SC V.1 SC V.2	**R 336.2804 R 336.2810 40 CFR 52.21(d) & (j) 40 CFR Part 60 Subpart JJJJ**
2. CO	16.3 lbs/hr[2]	Hour	Each engine in FG-ICENGINE2	SC V.1	**R 336.2804 40 CFR 52.21(d) & (j)**
3. NO_x	0.6 g/bhp-hr[2]	Hour	Each engine in FG-ICENGINE2	SC V.1 SC V.2	**40 CFR Part 60 Subpart JJJJ**
4. NO_x	3.0 lbs/hr[2]	Hour	Each engine in FG-ICENGINE2	SC V.1	**R 336.2803 R 336.2804 40 CFR 52.21(c) & (d)**
5. SO_2	7.5 lbs/hr[2]	Hour	FG-ICENGINE2	SC V.1 SC V.3	**R 336.1205(3) R 336.2803 R 336.2804 40 CFR 52.21(c) & (d)**
6. VOC	1.0 g/bhp-hr[2]	Hour	Each engine in FG-ICENGINE2	SC V.2	**40 CFR Part 60 Subpart JJJJ R 336.1702(b)**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall only burn landfill gas in FG-ICENGINE2 that has been treated in a system which complies with 40 CFR 60.752(b)(2)(iii)(C).[2] **(R 336.1225, R 336.1331, R 336.1702(b), 40 CFR 63.6625(c))**

2. The permittee shall not operate FG-ICENGINE2 unless the malfunction abatement/preventative maintenance plan, or an alternate plan approved by the AQD District Supervisor, is implemented and maintained. The plan shall incorporate procedures recommended by the equipment manufacturer as well as incorporating standard industry practices. At a minimum the plan shall include:

   a. Identification of the equipment and, if applicable, air-cleaning device, and the supervisory personnel responsible for overseeing the inspection, maintenance, and repair.

   b. Description of the items or conditions to be inspected and frequency of the inspections or repairs.

   c. Identification of the equipment and, if applicable, air-cleaning device, operating parameters that shall be monitored to detect a malfunction or failure, the normal operating range of these parameters and a description of the method of monitoring or surveillance procedures.

   d. Identification of the major replacement parts that shall be maintained in inventory for quick replacement.

   e. A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.

   If the plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction at the time the plan is initially developed, the owner or operator shall revise the plan within 45 days after such an event occurs and submit the revised plan for approval to the AQD District Supervisor. Should the AQD determine the malfunction abatement/preventative maintenance plan to be inadequate, the AQD District Supervisor may request modification of the plan to address those inadequacies.[2] **(R 336.1702, R 336.1910, R 336.1911, R 336.1912, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**

3. The permittee shall operate each of the stationary reciprocating internal combustion engines (RICE) in a manner which reasonably minimizes HAP emissions.[2] **(40 CFR 63.6625(c))**

4. Based on each engine's kilowatt output, the permittee shall adjust the engine's air/fuel ratio, as needed, to ensure that the engine operates at its maximum design output based on the fuel available to burn.[2] **(R 336.1702, R 336.1910, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**

5. The permittee shall not operate FG-ICENGINE2 unless the sulfur monitoring and emission curtailment plan on file, or an alternate plan approved by the AQD District Supervisor, is implemented and maintained. **(R 336.1213(3))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate any engine in FG-ICENGINE2 unless that engine's air/fuel ratio controller is installed, maintained and operated in a satisfactory manner.[2] **(R 336.1702, R 336.1910)**

2. The permittee shall equip each engine in FG-ICENGINE2 with a device to monitor and record the hours of operation for each engine.[2] **(40 CFR Part 60, Subpart JJJJ)**

3. The permittee shall equip FG-ICENGINE2 with a device to monitor and record the total daily fuel usage of the engines.[2] **(R 336.1201(3), R 336.1225, 40 CFR 63.6625(c)))**

V. TESTING/SAMPLING

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

1. Except as provided in 40 CFR 60.4243(b), the permittee shall conduct an initial performance test for each engine in FG-ICENGINE2 within one year after startup of the engine and every 8760 hours of operation (as determined through the use of a non-resettable hour meter) or three years, whichever occurs first, to demonstrate compliance with the emission limits in 40 CFR 60.4233(e), unless the engines have been certified by the manufacturer as required by 40 CFR Part 60, Subpart JJJJ and the permittee maintains the engine as required by 40 CFR 60.4243(a)(1). If a performance test is required, the performance test(s) shall be conducted according to 40 CFR 60.4244. No less than 30 days prior to testing, a complete test plan shall be submitted to the AQD. The final plan must be approved by the AQD prior to testing.[2] **(40 CFR 60.4243, 40 CFR 60.4244, 40 CFR Part 60, Subpart JJJJ)**

2. The permittee shall verify NO_x, SO_2, VOC, and CO emission rates from each engine in FG-ICENGINE2, by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test.[2] **(R 336.1213(3), R 336.2001, R 336.2803, R 336.2804, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))**

3. The permittee shall verify the hydrogen sulfide or total reduced sulfur content of the treated landfill gas burned in FG-ICENGINE2 on a monthly basis by gas sampling. In addition, as outlined in the sulfur monitoring and emission curtailment plan, gas sampling shall be verified on a weekly basis whenever the monthly hydrogen sulfide or total reduced sulfur content level indicates a concentration of 500 ppmv or greater, and on a daily basis whenever a hydrogen sulfide or total reduced sulfur content concentration of 600 ppmv is observed. Once daily monitoring is triggered, the permittee will perform monitoring at least once per day (excluding weekends and holidays) until the measured hydrogen sulfide or total reduced sulfur content returns to a value of less than 600 ppmv. If after a year, each of the monthly concentrations of the hydrogen sulfide or total reduced sulfur concentration of the landfill gas are below 500 ppm (TRS equivalent), the permittee may petition the District Supervisor, Air Quality Division to reduce the frequency of gas sampling and recording the hydrogen sulfide/total reduced sulfur concentration of the treated landfill gas to once each calendar quarter. If, after two calendar years of quarterly sampling, each of the quarterly concentrations of the hydrogen sulfide or total reduced sulfur concentration of the landfill gas are below 500 ppm (TRS equivalent), the permittee may petition the District Supervisor, Air Quality Division to reduce the frequency of gas sampling and recording the hydrogen sulfide/total reduced sulfur concentration of the treated landfill gas to once each calendar year. If at any time the concentration readings exceed 500 ppm (TRS equivalent), the permittee shall review all operating and maintenance activities for the landfill gas collection and treatment system along with keeping records of corrective actions. The permittee shall notify the Department at least seven (7) days prior to sampling. The permittee shall keep all records on file at the facility for a period of at least five years and make them available to the Department upon request. **(R 336.1213(3))**

4. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
NOx	40 CFR Part 60, Appendix A
SO_2	40 CFR Part 60, Appendix A
VOC	40 CFR Part 60, Appendix A
CO	40 CFR Part 60, Appendix A

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD-approved Test Protocol. **(R 336.1213(3), R 336.2001, R 336.2003, R 336.2004)**

5. Within 180 days of permit issuance or five years from the last test date, whichever occurs later, and then every five years thereafter, the permittee shall verify the CO, NO_x, SO_2, and VOC emission rates from each engine in FG-ICENGINE2. **(R 336.1213(3), R 336.2001, R 336.2003, R 336.2004)**

6. The permittee shall notify the AQD Technical Programs Unit Supervisor and the District Supervisor not less than 30 days of the time and place before performance tests are conducted. **(R 336.1213(3))**

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall continuously monitor, in a satisfactory manner, the total landfill gas fuel usage of the engines and the hours of operation for each engine in FG-ICENGINE2.[2] **(R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d), 40 CFR 63.6625(c), 40 CFR Part 60 Subpart JJJJ)**

2. The permittee shall maintain a log of all maintenance activities conducted according to the malfunction abatement/preventative maintenance plan (pursuant to SC III.2). The permittee shall keep this log on file at the facility and make it available to the Department upon request.[2] **(R 336.1702, R 336.1911, R 336.1912, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**

3. The permittee shall keep, in a satisfactory manner, records of the total landfill gas usage of the engines and the hours of operation for each engine in FG-ICENGINE2 on a daily basis, as required by SC VI.1. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2] **(R 336.1225, R 336.1702, R 336.1910, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d), 40 CFR 63.6655(c), 40 CFR Part 60 Subpart JJJJ)**

4. The permittee shall keep, in a satisfactory manner, monthly SO_2 mass emission calculation records for each engine in FG-ICENGINE2. The SO_2 emission calculations shall be based on the most recent landfill gas sulfur content sampling results (per the sampling required under SC V.3) and the monthly landfill gas usage of the engines. The permittee shall keep all records on file and make them available to the Department upon request.[2] **(R 336.2803, R 336.2804, 40 CFR 52.21(c) &(d))**

5. The permittee shall monitor emissions and operating information, including monitoring and recording the hours of operation of each engine in FG-ICENGINE2, in accordance with the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60, Subparts A and JJJJ. The permittee shall keep records of all source emissions data and operating information for each engine in FG-ICENGINE 2 on file at the facility and make the records available upon request.[2] **(40 CFR Part 60, Subparts A & JJJJ, 40 CFR 60.4245)**

6. The permittee shall continuously monitor and record, in a satisfactory manner, the kilowatt output from each engine in FG-ICENGINE2.[2] **(R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**

7. The permittee shall calculate and keep records of the daily gas usage for each engine on a monthly basis using the kilowatt output from each engine. All daily gas usage calculations for each engine in FG-ICENGINE2 shall be done at the end of each calendar month and made available by the 15th of the following calendar month. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2] **(R 336.1702, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**

8. The permittee shall monitor and record, on a monthly basis, the average Btu content of the landfill gas burned in FG-ICENGINE2. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2] **(R 336.1702, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**

VII. REPORTING

1. The results of the monthly sulfur monitoring shall be submitted to the appropriate AQD District Office, along with SO_2 emission calculations, within 7 days of the monitoring event.

2. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

3. 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))**

4. 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))**

5. The permittee shall submit an annual report in accordance with Table 7 of 40 CFR Part 63, Subpart ZZZZ to 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. **(40 CFR 63.6650(g), 40 CFR 63.6650(b)(5))** The following information shall be included in this annual report:[2]

   a. The permittee shall report the fuel flow rate and the heating value that was used in the permittee's calculations. **(40 CFR 63.6650(g)(1))**

   b. The permittee shall report the operating limits provided in the permittee's federally enforceable permit, and any deviations from these limits. **(40 CFR 63.6650(g)(2))**

   c. The permittee shall report any problems or errors suspected from the fuel flow rate meters. **(40 CFR 63.6650(g)(3))**

6. The permittee shall submit any performance test and sampling reports to the AQD Technical Programs Unit and District Office, in a format approved by the AQD. **(R 336.1213(3)(c), R 336.2001(5))**

See Appendix 8-2

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV-ICENGINE8	16[2]	40[2]	**R 336.1225** **R 336.2803** **R 336.2804** **40 CFR 52.21 (c) & (d)**
2. SV-ICENGINE9	16[2]	40[2]	**R 336.1225** **R 336.2803** **R 336.2804** **40 CFR 52.21 (c) & (d)**

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable provisions of the New Source Performance Standards as specified in 40 CFR Part 60, Subpart A and Subpart JJJJ, as they apply to FG-ICENGINE 2.[2] **(40 CFR Part 60, Subparts A and JJJJ)**

2. The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR, Part 63, Subpart A and Subpart ZZZZ, as they apply to FG-ICENGINE 2.[2] **(40 CFR Part 63, Subparts A and ZZZZ)**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FG-RICEMACT
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

All existing, new and reconstructed engines located at a Major Source of HAPS, > 500 HP, non-emergency, firing Landfill/Digester Gas. New and reconstructed engines commenced construction or reconstruction on or after December 19, 2002, and the compliance date for these engines is upon start-up.

Emission Unit: EU-ENGINE1, EU-ENGINE2, EU-ENGINE3, EU-ENGINE4, EU-ENGINE5, EU-ENGINE6, EU-ENGINE7, EU-ICENGINE8, EU-ICENGINE9

POLLUTION CONTROL EQUIPMENT

Air-to-fuel ratio controller on each engine.

NA

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. Each engine in FG-RICEMACT shall operate in a manner which reasonably minimizes HAP emissions. **(40 CFR 63.6625(c))**

2. Each engine in FG-RICEMACT shall operate in a manner which minimizes time spent at idle during startup and minimize the startup time to a period needed for appropriate and safe loading of each engine, not to exceed 30 minutes. **(40 CFR 63.6625(h))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The engines in FG-RICEMACT shall be equipped with and maintain separate individual fuel meters to monitor and record the daily fuel usage and volumetric flow rate of each fuel used. **(40 CFR 63.6625(c))**

V. TESTING/SAMPLING

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

NA

VI. MONITORING/RECORDKEEPING

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

1. The engines in FG-RICEMACT, which fire landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, must monitor and record the daily fuel usage with separate fuel meters to measure the volumetric flow rate of each fuel. **(40 CFR 63.6625(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))**

4. The permittee shall submit an annual report in accordance with Table 7 of 40 CFR Part 63, Subpart ZZZZ to the appropriate AQD District Office by January 31 for the previous calendar year. The following information shall be included in this annual report: **(40 CFR 63.6650(g), 40 CFR 63.6650(b)(5))**

   a. The fuel flow rate and the heating values that were used in the permittee's calculations. Also, the permittee must demonstrate that the percentage of heat input provided by landfill gas or digester gas is equivalent to 10 percent or more of the total fuel consumption on an annual basis. **(40 CFR 63.6650(g)(1))**

   b. The operating limits provided in the permittee's federally enforceable permit, and any deviations from these limits. **(40 CFR 63.6650(g)(2))**

   c. Any problems or errors suspected from the fuel flow rate meters. **(40 CFR 63.6650(g)(3))**

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with the provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR Part 63, Subpart A and Subpart ZZZZ, as they apply to each engine in FGRICEMACT. **(40 CFR Part 63, Subparts A and ZZZZ)**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FG-RICEMACT10
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

New and reconstructed non-emergency engines greater than 500 hp fueled with landfill/digester gas, located at a major source of HAPs. Construction or reconstruction commenced on or after December 19, 2002.

Emission Unit ID: EU-ICENGINE10

POLLUTION CONTROL EQUIPMENT

Air-to-fuel ratio controller on each engine.

NA

I. EMISSION LIMITS

NA

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. Each engine in FG-RICEMACT10 shall operate in a manner which reasonably minimizes HAP emissions.[2] **(40 CFR 63.6625(c))**

2. Each engine in FG-RICEMACT10 shall operate in a manner which minimizes time spent at idle during startup and minimize the startup time to a period needed for appropriate and safe loading of each engine, not to exceed 30 minutes.[2] **(40 CFR 63.6625(h))**

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall equip and maintain separate fuel meters for the engine(s) in FG-RICEMACT10 to monitor and record the daily fuel usage and volumetric flow rate of each fuel used.[2] **(40 CFR 63.6625(c))**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years.[2] **(R 336.1201(3), 40 CFR 63.6660)**

1. The engines in FG-RICEMACT10, which fire landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, must monitor and record the daily fuel usage with separate fuel meters to measure the volumetric flow rate of each fuel.[2] **(40 CFR 63.6625(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))**

4. The permittee shall submit an annual report in accordance with Table 7 of 40 CFR Part 63, Subpart ZZZZ to the appropriate AQD district office by no later than January 31.[2] **(40 CFR 63.6650(g), 40 CFR 63.6650(b)(5))** The following information shall be included in this annual report:

   a. The fuel flow rate and the heating values that were used in the permittee's calculations. Also, the permittee must demonstrate that the percentage of heat input provided by landfill gas or digester gas is equivalent to 10 percent or more of the total fuel consumption on an annual basis.[2] **(40 CFR 63.6650(g)(1))**

   b. The operating limits provided in the permittee's federally enforceable permit, and any deviations from these limits.[2] **(40 CFR 63.6650(g)(2))**

   c. Any problems or errors suspected from the fuel flow rate meters.[2] **(40 CFR 63.6650(g)(3))**

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

1. The permittee shall comply with the provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR, Part 63, Subpart A and Subpart ZZZZ, as they apply to each engine in FG-RICEMACT.[2] **(40 CFR Part 63 Subparts A and ZZZZ)**

Footnotes:
[1]This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

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. Acronyms and Abbreviations

Common Acronyms		Pollutant / Measurement Abbreviations	
AQD	Air Quality Division	acfm	Actual cubic feet per minute
BACT	Best Available Control Technology	BTU	British Thermal Unit
CAA	Clean Air Act	°C	Degrees Celsius
CAM	Compliance Assurance Monitoring	CO	Carbon Monoxide
CEM	Continuous Emission Monitoring	CO_2e	Carbon Dioxide Equivalent
CEMS	Continuous Emission Monitoring System	dscf	Dry standard cubic foot
CFR	Code of Federal Regulations	dscm	Dry standard cubic meter
COM	Continuous Opacity Monitoring	°F	Degrees Fahrenheit
Department/ department	Michigan Department of Environment, Great Lakes, and Energy	gr	Grains
		HAP	Hazardous Air Pollutant
EGLE	Michigan Department of Environment, Great Lakes, and Energy	Hg	Mercury
		hr	Hour
EU	Emission Unit	HP	Horsepower
FG	Flexible Group	H_2S	Hydrogen Sulfide
GACS	Gallons of Applied Coating Solids	kW	Kilowatt
GC	General Condition	lb	Pound
GHGs	Greenhouse Gases	m	Meter
HVLP	High Volume Low Pressure*	mg	Milligram
ID	Identification	mm	Millimeter
IRSL	Initial Risk Screening Level	MM	Million
ITSL	Initial Threshold Screening Level	MW	Megawatts
LAER	Lowest Achievable Emission Rate	NMOC	Non-methane Organic Compounds
MACT	Maximum Achievable Control Technology	NO_x	Oxides of Nitrogen
MAERS	Michigan Air Emissions Reporting System	ng	Nanogram
MAP	Malfunction Abatement Plan	PM	Particulate Matter
MSDS	Material Safety Data Sheet	PM10	Particulate Matter equal to or less than 10 microns in diameter
NA	Not Applicable		
NAAQS	National Ambient Air Quality Standards	PM2.5	Particulate Matter equal to or less than 2.5 microns in diameter
NESHAP	National Emission Standard for Hazardous Air Pollutants	pph	Pounds per hour
		ppm	Parts per million
NSPS	New Source Performance Standards	ppmv	Parts per million by volume
NSR	New Source Review	ppmw	Parts per million by weight
PS	Performance Specification	%	Percent
PSD	Prevention of Significant Deterioration	psia	Pounds per square inch absolute
PTE	Permanent Total Enclosure	psig	Pounds per square inch gauge
PTI	Permit to Install	scf	Standard cubic feet
RACT	Reasonable Available Control Technology	sec	Seconds
ROP	Renewable Operating Permit	SO_2	Sulfur Dioxide
SC	Special Condition	TAC	Toxic Air Contaminant
SCR	Selective Catalytic Reduction	Temp	Temperature
SNCR	Selective Non-Catalytic Reduction	THC	Total Hydrocarbons
SRN	State Registration Number	tpy	Tons per year
TEQ	Toxicity Equivalence Quotient	µg	Microgram
USEPA/EPA	United States Environmental Protection Agency	µm	Micrometer or Micron
		VOC	Volatile Organic Compounds
VE	Visible Emissions	yr	Year

*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 psig.

Appendix 2-2. Schedule of Compliance

The permittee certified in this ROP application that this stationary source is in compliance with all applicable requirements of this ROP.

Appendix 3-2. 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 4-2. 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 5-2. Testing Procedures

Specific testing requirement plans, procedures, and averaging times are detailed in the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, this appendix is not applicable.

Appendix 6-2. Permits to Install

The following table lists any PTIs issued or ROP revision applications received since the effective date of the previously issued ROP No. MI-ROP-N8004-2013. Those ROP revision applications that are being issued concurrently with this ROP renewal are identified by an asterisk (*). Those revision applications not listed with an asterisk were processed prior to this renewal.

Source-Wide PTI No MI-PTI-N8004-2013 is being reissued as Source-Wide PTI No. MI-PTI-N5984-2019.

Permit to Install Number	ROP Revision Application Number/ Issuance Date	Description of Equipment or Change	Corresponding Emission Unit(s) or Flexible Group(s)
105-16	201700155	Spark ignition, lean burn, reciprocating internal combustion engine (Caterpillar G3520C, 2,242 bhp at 100% load) for combusting treated landfill gas to produce electricity (1.6-megawatt gross electrical output). The engine will drive an associated generator set to produce the electricity.	EU-ICENGINE 10

Appendix 7-2. Emission Calculations

The permittee shall use the following calculations in conjunction with monitoring, testing or recordkeeping data to determine compliance with the applicable requirements referenced in EU-ICENGINE 10 and FG-ENGINES.

I. Procedures for Calculating Emissions for EU-ICENGINE 10:

The permittee shall demonstrate compliance with the emission limits in this permit by vendor data, stack testing, and/or gas testing.

Vendor Data or Stack Testing:
The permittee shall use emission factors from vendor data or from source specific testing (if stack test data is available, use most recent stack test data), as available for EUICENGINE10. The permittee shall use emission factors contained in the most recent AP-42 (Compilation of Air Pollutant Emission Factors) or the most recent FIRE (Factor Information Retrieval) database if vendor or stack testing data is not available. If emission factors from other sources are used, the permittee shall obtain the approval of the AQD District Supervisor before using the emission factors to calculate emissions. The permittee shall document the source of each emission factor used in the calculations.

Calculation for Monthly SO_2 Emissions:
The following calculation for SO_2 emissions shall utilize monthly H_2S concentration measurements from testing data collected, the actual monthly gas usage, hours of operation, and the average ratio of total sulfur to sulfur as H_2S from the most recent laboratory test.

$$SO2\ Emissions\ (tons\ per\ month)$$

$$= \frac{Monthly\ H_2S\ Gas\ Sample(ppmv)}{1{,}000{,}000} \times \frac{1.1733\ mols\ Sulfur}{ft^3} \times \frac{34.065\ grams}{mol\ Sulfur} \times \frac{pound}{453.59\ grams} \times \frac{ton}{2{,}000\ pounds} \times \frac{1.88\ SO_2}{H_2S}$$

$$\times\ Average\ ratio\ of\ total\ sulfur\ to\ sulfur\ as\ H2S \times Actual\ Monthly\ Landfill\ Gas\ Usage\ (ft^3/month)$$

Calculation for hourly SO_2 Emissions:
The monthly calculation along with the daily hours of operation shall be used to calculate the hourly SO_2 emissions, as a monthly average.

II. Nitrogen Oxide (NO_x), Carbon Monoxide (CO), and Non-Methane Organic Compound (NMOC) for FG-ENGINES:

The permittee shall calculate emissions using the emission factors and equations listed below or an alternative method approved by the District Supervisor. The emission factors shall be established and updated through stack testing and approved by the District Supervisor.

Internal Combustion Engine horsepower (EGICE HP) = generator output (kW) / (0.746kW/HP * 93.9/100)

Pounds per hour (lb/Hr) = EGICE HP * lb/454g * X g/HP*Hr, where X is a factor from table below.

Ton per month (ton/mo) = lb/Hr * Hours of operation/month * Ton/2000 lbs

Pollutant	X
CO	2.9g/HP*Hr
NO_x	2.0g/HP*Hr
NMOC	0.2g/HP*Hr

III. Hydrogen chloride (HCl) for FG-ENGINES:

Present in the landfill gas are numerous chlorinated compounds. The permittee shall calculate the emissions using the emission factor and equation listed below or an alternative method approved by the District Supervisor. The emission factor shall be established and updated through stack testing and approved by the District Supervisor.

The following equations provide an example of how HCl emissions can be calculated using the measured landfill gas lower heating value to calculate the flow rate of gas entering the seven (7) ICEs:

Notes:
A heat input of 151,090 Btu/min (LHV) is required to operate the engines at 100% load = 9.0654 MMBtu/hr.
800 kilowatts (gross) of electricity are generated at 100% load; therefore, one kilowatt hour of power generation at 100% load requires a heat input of 11,331.75 Btu (LHV).

151,090 Btu/Min * 60 min/hr/ 800 = 11,331.75 Btu/kWhr

LFG = landfill gas
LHV = lower heating value
LFG LHV = landfill gas lower heating value, measured and recorded on a weekly basis
cf = cubic foot
kWhr = kilowatt hour

LFG consumed (cf) = total gross kWhr (units 1-7) * (11,331.75 LHV Btu/kWhr) / (LFG LHV)
Total LFG flow (cf) = cf of LFG consumed / (total engine hours * 7 engines)

Total HCl emitted per hour:

Pound(s) HCl /Hr = (5.1lbHCl/MMft3) * (Total LFG flow)

Appendix 8-2. Reporting

A. Annual, Semiannual, and Deviation Certification Reporting

The permittee shall use EGLE, AQD, Report Certification form (EQP 5736) and EGLE, AQD, 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.