MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

EFFECTIVE DATE: January 31, 2014
REVISION DATES: June 13, 2014; October 16, 2015; January 1, 2016; August 29, 2017

ISSUED TO

GREAT LAKES WATER AUTHORITY
DETROIT WASTEWATER TREATMENT PLANT

State Registration Number (SRN): B2103

LOCATED AT

9300 W. Jefferson Avenue, Detroit, Michigan 48209-2696

RENEWABLE OPERATING PERMIT

Permit Number: MI-ROP-B2103-2014d

Expiration Date: January 31, 2019

Administratively Complete ROP Renewal Application
Due Between July 31, 2017 and July 31, 2018

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-B2103-2014d

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

Michigan Department of Environmental Quality

_____
Wilhemina McLemore, Detroit District Supervisor

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AUTHORITY AND ENFORCEABILITY

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

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

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

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

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

A. GENERAL CONDITIONS

Permit Enforceability

- All conditions in this permit are both federally enforceable and state enforceable unless otherwise noted. **(R 336.1213(5))**

- Those conditions that are hereby incorporated in a state-only enforceable Source-Wide PTI pursuant to Rule 201(2)(d) are designated by footnote one. **(R 336.1213(5)(a), R 336.1214a(5))**

- Those conditions that are hereby incorporated in 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). **(R 336.1370)**

10. Any air cleaning device shall be installed, maintained, and operated in a satisfactory manner and in accordance with the Michigan Air Pollution Control rules and existing law. **(R 336.1910)**

Emission Limits

11. Except as provided in Subrules 2, 3, and 4 of Rule 301, states in part; "a person shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of a density greater than the most stringent of Rule 301(1)(a) or (b) unless otherwise specified in this ROP." The grading of visible emissions shall be determined in accordance with Rule 303. **(R 336.1301(1) in pertinent part)**:
    a. A 6-minute average of 20 percent opacity, except for one 6-minute average per hour of not more than 27 percent opacity.
    b. A limit specified by an applicable federal new source performance standard.

12. The permittee shall not cause or permit the emission of an air contaminant or water vapor in quantities that cause, alone or in reaction with other air contaminants, either of the following:
    a. Injurious effects to human health or safety, animal life, plant life of significant economic value, or property.[1] **(R 336.1901(a))**
    b. Unreasonable interference with the comfortable enjoyment of life and property.[1] **(R 336.1901(b))**

Testing/Sampling

13. The department may require the owner or operator of any source of an air contaminant to conduct acceptable performance tests, at the owner's or operator's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001(1). **(R 336.2001)**

14. Any required performance testing shall be conducted in accordance with Rule 1001(2), Rule 1001(3) and Rule 1003. **(R 336.2001(2), R 336.2001(3), R 336.2003(1))**

15. Any required test results shall be submitted to the Air Quality Division (AQD) in the format prescribed by the applicable reference test method within 60 days following the last date of the test. **(R 336.2001(4))**

Monitoring/Recordkeeping

16. Records of any periodic emission or parametric monitoring required in this ROP shall include the following information specified in Rule 213(3)(b)(i), where appropriate **(R 336.1213(3)(b))**:
    a. The date, location, time, and method of sampling or measurements.
    b. The dates the analyses of the samples were performed.
    c. The company or entity that performed the analyses of the samples.
    d. The analytical techniques or methods used.
    e. The results of the analyses.
    f. The related process operating conditions or parameters that existed at the time of sampling or measurement.

17. All required monitoring data, support information and all reports, including reports of all instances of deviation from permit requirements, shall be kept and furnished to the department upon request for a period of not less than 5 years from the date of the monitoring sample, measurement, report or application. Support information includes all calibration and maintenance records and all original strip-chart recordings, or other original data records, for continuous monitoring instrumentation and copies of all reports required by the ROP. **(R 336.1213(1)(e), R 336.1213(3)(b)(ii))**

Certification & Reporting

18. Except for the alternate certification schedule provided in Rule 213(3)(c)(iii)(B), any document required to be submitted to the department as a term or condition of this ROP shall contain an original certification by a responsible official which states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. **(R 336.1213(3)(c))**

19. A responsible official shall certify to the appropriate AQD District Office and to the USEPA that the stationary source is and has been in compliance with all terms and conditions contained in the ROP except for deviations that have been or are being reported to the appropriate AQD District Office pursuant to Rule 213(3)(c). This certification shall include all the information specified in Rule 213(4)(c)(i) through (v) and shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the certification are true, accurate, and complete. The USEPA address is: USEPA, Air Compliance Data - Michigan, Air and Radiation Division, 77 West Jackson Boulevard, Chicago, Illinois 60604. **(R 336.1213(4)(c))**

20. The certification of compliance shall be submitted annually for the term of this ROP as detailed in the special conditions, or more frequently if specified in an applicable requirement or in this ROP. **(R 336.1213(4)(c))**

21. The permittee shall promptly report any deviations from ROP requirements and certify the reports. The prompt reporting of deviations from ROP requirements is defined in Rule 213(3)(c)(ii) as follows, unless otherwise described in this ROP. **(R 336.1213(3)(c))**
    a. For deviations that exceed the emissions allowed under the ROP, prompt reporting means reporting consistent with the requirements of Rule 912 as detailed in Condition 25. All reports submitted pursuant to this paragraph shall be promptly certified as specified in Rule 213(3)(c)(iii).
    b. For deviations which exceed the emissions allowed under the ROP and which are not reported pursuant to Rule 912 due to the duration of the deviation, prompt reporting means the reporting of all deviations in the semiannual reports required by Rule 213(3)(c)(i). The report shall describe reasons for each deviation and the actions taken to minimize or correct each deviation.
    c. For deviations that do not exceed the emissions allowed under the ROP, prompt reporting means the reporting of all deviations in the semiannual reports required by Rule 213(3)(c)(i). The report shall describe the reasons for each deviation and the actions taken to minimize or correct each deviation.

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. **(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(9))**

33. Pursuant to Rule 216(1)(b)(iii), Rule 216(2)(d) and Rule 216(4)(d), after a change has been made, and until the department takes final action, the permittee shall comply with both the applicable requirements governing the change and the ROP terms and conditions proposed in the application for the modification. During this time period, the permittee may choose to not comply with the existing ROP terms and conditions that the application seeks to change. However, if the permittee fails to comply with the ROP terms and conditions proposed in the application during this time period, the terms and conditions in the ROP are enforceable. **(R 336.1216(1)(c)(iii), R 336.1216(2)(d), R 336.1216(4)(d))**

Reopenings

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

Renewals

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

Stratospheric Ozone Protection

36. If the permittee is subject to Title 40 of the Code of Federal Regulations (CFR), Part 82 and services, maintains, or repairs appliances except for motor vehicle air conditioners (MVAC), or disposes of appliances containing refrigerant, including MVAC and small appliances, or if the permittee is a refrigerant 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 Part 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, MDEQ.[2] **(R 336.1219)**

46. If the installation, reconstruction, relocation, or modification of the equipment for which PTI terms and conditions have been approved has not commenced within 18 months, or has been interrupted for 18 months, the applicable terms and conditions from that PTI shall become void unless otherwise authorized by the department. Furthermore, the person to whom that PTI was issued, or the designated authorized agent, shall notify the department via the Supervisor, Permit Section, MDEQ, AQD, P. O. Box 30260, Lansing, Michigan 48909, if it is decided not to pursue the installation, reconstruction, relocation, or modification of the equipment allowed by the terms and conditions from that PTI. [2] **(R 336.1201(4))**

Footnotes:
[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).

Consent Orders

The conditions contained in this ROP for which a Consent Order is the only identified underlying applicable requirement shall be considered null and void upon the effective date of termination of the Consent Order. The effective date of termination is defined for the purposes of this condition as the date upon which the Termination Order is signed by the Chief of the AQD.

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

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Beryllium	10 grams	24-hour period	All process equipment at the facility, including equipment covered by other permits, grand-fathered equipment and exempt equipment.	Appendix 4	**40 CFR 61.32(a)**
2. Mercury	3,200 grams	24-hour period	All process equipment at the facility, including equipment covered by other permits, grand-fathered equipment and exempt equipment.	SC V.1, Appendix 4	**40 CFR 61.52(b)**

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	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))**

1. The permittee shall test sewage sludge samples from the incinerator feed system once per calendar month for mercury content using EPA Reference Method 105. If the measured mercury content from the incinerator feed system exceeds 1.43 mg/kg, then the permittee shall notify the District Supervisor. Test results shall be submitted to the District Supervisor. **(40 CFR 61.52(b), 40 CFR 61.53(d)(2), 40 CFR 61.54(a), 40 CFR Part 503.43, 40 CFR Part 503.46)**

See Appendix 5

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 records of the fugitive dust control measures taken at the facility, utilizing the format in Appendix 4.1. **(Act 451, Part 55** §**324.5524), (Consent Order MDEQ SIP No. 11-1993)**

See Appendix 4

VII. REPORTING

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

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

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
NA	NA	NA	NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall implement and maintain a Fugitive Dust Control Plan, including the following provisions:

   1. Paved Road
      a) Daily sweeping, washing, or vacuuming in the material handling area on days when material handling takes place
      b) Weekly sweeping, washing or vacuuming – All other paved roadways
      c) The frequency of the above treatment in a & b can be exempted when at least one of the following conditions occurs:
         i. Daily precipitation exceeds 0.1 in.
         ii. Daily high temperature does not exceed 32° F.
         iii. Road salt is applied and for 48 hours thereafter
         iv. Freezing conditions are anticipated
         v. No bulk material handling operations are conducted.

      (Consent Order MDEQ SIP No. 11-1993), **(Act 451, Part 55 §324.5524)**

   2. Gravel Parking - Add gravel cover as needed. **(Consent Order MDEQ SIP No. 11-1993)**, **(Act 451, Part 55 §324.5524)**

3. Incineration Complexes I and II - Watering daily to the following area
   a) Five Ash Silos
   b) Gravity Discharge
   (Consent Order MDEQ SIP No. 11-1993), (Act 451, Part 55 §**324.5524)**

4. Unpaved roads, paved roads, storage piles, and material handling, and open areas and lots, created after the effective date of the consent order (dated May 19, 1993) shall meet the same requirements as similar area sources specifically identified in Appendix 4.1. **(Consent Order MDEQ SIP No. 11-1993), (Act 451, Part 55** §**324.5524)**

5. The permittee shall notify the Division within 30 calendar days following the quarter in which any new area sources were created and the notification shall include a description of any new area source. **(R336.1213(3)), (Consent Order MDEQ SIP No. 11-1993)**

6. The permittee shall not retain dewatered sludge on the plant site for more than 12 hours, except when landfill opportunities are limited, such as weekends and holidays. **(R336.1901)[1], (Act 451, Part 55** §**324.5524)**

7. The sludge from the exterior of the vehicles hauling sludge shall be washed at intervals at the plant. Such washings shall be routed to the treatment plant. **(R336.1901)[1], (Act 451, Part 55** §**324.5524)**

8. The permittee shall wash and clean all roadways on a daily basis or more frequent if odor occurs to prevent accumulations of sludge or the generation of odors. **(R336.1901)[1], (Act 451, Part 55** §**324.5524)**

9. The conditions contained in this RO permit for which a Consent Order is the only identified applicable requirement shall be considered null and void upon the effective date of the termination of the Consent Order. The effective date of termination is defined for the purposes of this condition as the date upon which the Termination Order is signed by the Chief of Air Quality Division. **(Consent Order MDEQ SIP No. 11-1993)**

10 The permittee shall comply with the fugitive dust control plan as described below:

GREAT LAKES WATER AUTHORITY-WASTEWATER TREATMENT PLANT
FUGITIVE DUST CONTROL PLAN

Wind Erosion and Traffic Emissions
Roads, Parking Lots, and Open Areas

Type of Surface Usage	PAVED ROAD	GRAVEL ROAD	PAVED PARKING	GRAVEL PARKING	CONSTRUCTION AREA
SURFACE AREA (Square Feet)	713,361	4,531	145,307	20,575	445,254
Average Vehicle Speed (MPH)	10	10			
PASSENGER CARS & SMALL TRUCKS					
Average number per day	90	15			
Average feet traveled/vehicle	32,000	1,100			
MED. DUTY VEHICLES (3-15 TONS)					
Average number per day	10	10			
Average Feet traveled/vehicle	12,000	1,100			
HEAVY DUTY VEHICLES (>15 Tons)					

Average Number per day	20	10
Average feet traveled/vehicle	6,000	1,100

Sweep, wash, or vacuuming for material handling areas daily and for other roadways weekly.

(Act 451, Part 55 §324.5524),(Consent Order MDEQ SIP No. 11-1993, Fugitive Control Plan, May, 1993)

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
EUINC01	Incinerator combusts dewatered municipal sewage sludge with the aid of natural gas burners to reduce its volume. Residual ash is sent to storage silos or lagoon before transport to landfill. Emissions are controlled by a venturi scrubber followed by an impingement type wet scrubber and mist eliminator. (PTI No. 61-13A)	01/01/1960	FGCOMPLEX1 FGDryIncTrans
EUINC02	Incinerator combusts dewatered municipal sewage sludge with the aid of natural gas burners to reduce its volume. Residual ash is sent to storage silos or lagoon before transport to landfill. Emissions are controlled by a venturi scrubber followed by an impingement tray wet scrubber and mist eliminator. (PTI No. 61-13A)	1/1/1940	NA
EUINC03	Incinerator combusts dewatered municipal sewage sludge with the aid of natural gas burners to reduce its volume. Residual ash is sent to storage silos or lagoon before transport to landfill. Emissions are controlled by a venturi scrubber followed by an impingement type wet scrubber and mist eliminator. (PTI No. 61-13A)	01/01/1940	FGCOMPLEX1 FGDryIncTrans
EUINC04	Incinerator combusts dewatered municipal sewage sludge with the aid of natural gas burners to reduce its volume. Residual ash is sent to storage silos or lagoon before transport to landfill. Emissions are controlled by a venturi scrubber followed by an impingement type wet scrubber and mist eliminator. (PTI No. 61-13A)	01/01/1940	FGCOMPLEX1 FGDryIncTrans

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EUINC05	Incinerator combusts dewatered municipal sewage sludge with the aid of natural gas burners to reduce its volume. Residual ash is sent to storage silos or lagoon before transport to landfill. Emissions are controlled by a venturi scrubber followed by an impingement type wet scrubber and mist eliminator. (PTI No. 61-13A)	01/01/1940	FGCOMPLEX1 FGDryIncTrans
EUINC06	Incinerator combusts dewatered municipal sewage sludge with the aid of natural gas burners to reduce its volume. Residual ash is sent to storage silos or lagoon before transport to landfill. Emissions are controlled by a venturi scrubber followed by an impingement type wet scrubber and mist eliminator. (PTI No. 61-13A)	01/01/1960	FGCOMPLEX1 FGDryIncTrans
EUC1ASH01	System for conveying ash from Complex 1 sludge incinerators and storing it prior to transport to sanitary landfill. Emissions are controlled by a fabric filter.	01/01/1937	FGC1ASH
EUC1ASH02	System for conveying ash from Complex 1 sludge incinerators and storing it prior to transport to sanitary landfill. Emissions are controlled by a fabric filter.	01/01/1937	FGC1ASH
EUC1ASH03	System for conveying ash from Complex 1 sludge incinerators and storing it prior to transport to sanitary landfill. Emissions are controlled by a fabric filter.	01/01/1937	FGC1ASH
EUINC07	Multiple hearth sewage sludge incinerator combusts dewatered municipal sewage sludge with the aid of natural gas burners to reduce its volume. Residual ash is sent to storage silos or lagoon before transport to landfill. Emissions are controlled by a venturi scrubber followed by an impingement tray wet scrubber and a mist eliminator. Following the air quality control improvements (AQCI), emissions will be controlled by an upgraded impingement tray wet scrubber followed by a new venturi scrubber and a mist eliminator. (PTI No. 61-13A)	11/01/1970 / 11/01/2013 / 7/7/2015	FGCOMPLEX2 FGAQCI FG4M-INCIN FG2013Project FGDryIncTrans

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EUINC08	Multiple hearth sewage sludge incinerator combusts dewatered municipal sewage sludge with the aid of natural gas burners to reduce its volume. Residual ash is sent to storage silos or lagoon before transport to landfill. Emissions are controlled by a venturi scrubber followed by an impingement tray wet scrubber and a mist eliminator. Following the air quality control improvements (AQCI), emissions will be controlled by an upgraded impingement tray wet scrubber followed by a new venturi scrubber and a mist eliminator. (PTI No. 61-13A)	11/01/1970 / 11/01/2013 / 7/7/2015	FGCOMPLEX2 FGAQCI FG4M-INCIN FG2013Project FGDryIncTrans
EUINC09	Multiple hearth sewage sludge incinerator combusts dewatered municipal sewage sludge with the aid of natural gas burners to reduce its volume. Residual ash is sent to storage silos or lagoon before transport to landfill. Emissions are controlled by a venturi scrubber followed by an impingement tray wet scrubber and a mist eliminator. Following the air quality control improvements (AQCI), emissions will be controlled by an upgraded impingement tray wet scrubber followed by a new venturi scrubber and a mist eliminator. (PTI No. 61-13A)	11/01/1970 / 11/01/2013 / 7/7/2015	FGCOMPLEX2 FGAQCI FG4M-INCIN FG2013Project FGDryIncTrans
EUINC10	Multiple hearth sewage sludge incinerator combusts dewatered municipal sewage sludge with the aid of natural gas burners to reduce its volume. Residual ash is sent to storage silos or lagoon before transport to landfill. Emissions are controlled by a venturi scrubber followed by an impingement tray wet scrubber and a mist eliminator. Following the air quality control improvements (AQCI), emissions will be controlled by an upgraded impingement tray wet scrubber followed by a new venturi scrubber and a mist eliminator. (PTI No. 61-13A)	11/01/1970 / 11/01/2013 / 7/7/2015	FGCOMPLEX2 FGAQCI FG4M-INCIN FG2013Project FGDryIncTrans
EUINC11	Multiple hearth sewage sludge incinerator combusts dewatered municipal sewage sludge with the aid of natural gas burners to reduce its volume. Residual ash is sent to storage silos or lagoon before transport to landfill. Emissions are controlled by a venturi scrubber followed by an impingement tray wet scrubber and a mist eliminator. Following the air quality control improvements (AQCI), emissions will be controlled by an upgraded impingement tray wet scrubber followed by a new venturi scrubber and a mist eliminator. (PTI No. 61-13A)	11/01/1970 / 11/01/2013 / 7/7/2015	FGCOMPLEX2 FGAQCI FG4M-INCIN FG2013Project FGDryIncTrans

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EUINC12	Multiple hearth sewage sludge incinerator combusts dewatered municipal sewage sludge with the aid of natural gas burners to reduce its volume. Residual ash is sent to storage silos or lagoon before transport to landfill. Emissions are controlled by a venturi scrubber followed by an impingement tray wet scrubber and a mist eliminator. Following the air quality control improvements (AQCI), emissions will be controlled by an upgraded impingement tray wet scrubber followed by a new venturi scrubber and a mist eliminator. (PTI No. 61-13A)	11/01/1970 / 11/01/2013 / 7/7/2015	FGCOMPLEX2 FGAQCI FG4M-INCIN FG2013Project FGDryIncTrans
EUINC13	Multiple hearth sewage sludge incinerator combusts dewatered municipal sewage sludge with the aid of natural gas burners to reduce its volume. Residual ash is sent to storage silos or lagoon before transport to landfill. Emissions are controlled by a venturi scrubber followed by an impingement tray wet scrubber and a mist eliminator. Following the air quality control improvements (AQCI), emissions will be controlled by an upgraded impingement tray wet scrubber followed by a new venturi scrubber and a mist eliminator. (PTI No. 61-13A)	11/01/1970 / 11/01/2013 / 7/7/2015	FGCOMPLEX2 FGAQCI FG4M-INCIN FG2013Project FGDryIncTrans
EUINC14	Multiple hearth sewage sludge incinerator combusts dewatered municipal sewage sludge with the aid of natural gas burners to reduce its volume. Residual ash is sent to storage silos or lagoon before transport to landfill. Emissions are controlled by a venturi scrubber followed by an impingement tray wet scrubber and a mist eliminator. Following the air quality control improvements (AQCI), emissions will be controlled by an upgraded impingement tray wet scrubber followed by a new venturi scrubber and a mist eliminator. (PTI No. 61-13A)	11/01/1970 / 11/01/2013 / 7/7/2015	FGCOMPLEX2 FGAQCI FG4M-INCIN FG2013Project FGDryIncTrans
EUC2ASH01	System for conveying ash from Complex 2 sludge incinerators and storing it prior to transport to sanitary landfill. Emissions are controlled by a fabric filter.	11/01/1970	FGC2ASH
EUC2ASH02	System for conveying ash from Complex 2 sludge incinerators and storing it prior to transport to sanitary landfill. Emissions are controlled by a fabric filter.	11/01/1970	FGC2ASH
EULIMESTOR1	Storage device for lime used to stabilize residuals hauled to landfill. Emissions are controlled by a pulse jet baghouse.	11/01/1983 / 05/12/2005	FGLIMESTORAGE

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EULIMESTOR2	Storage device for lime used to stabilize residuals hauled to landfill. Emissions are controlled by a pulse jet baghouse.	11/01/1983 / 05/12/2005	FGLIMESTORAGE
EULIMESTOR3	Storage device for lime used to stabilize residuals hauled to landfill. Emissions are controlled by a pulse jet baghouse.	11/1/1983 / 05/12/2005	FGLIMESTORAGE
EUGEN-D1A	Caterpillar Model 3512 diesel-fired emergency generator, rated at 1,500kW.	06/01/2007	FGENGINES, FCIENGINES
EUGEN-D1B	Caterpillar Model 3512 diesel-fired emergency generator, rated at 1,500kW.	06/01/2007	FGENGINES, FGCIENGINES
EUGEN-D2	Caterpillar Model 3508 diesel-fired emergency generator, rated at 1,000kW.	06/01/2007	FGENGINES, FGCIENGINES
EUGEN-D4	Caterpillar Model C32 diesel-fired emergency generator, rated at 1,000kW.	06/01/2007	FGENGINES, FGCIENGINES
EUGEN-D5	Caterpillar Model C15 diesel-fired emergency generator, rated at 400kW.	06/01/2007	FGENGINES, FGCIENGINES
EUGEN-D6	Caterpillar Model 1103C-33G1 diesel-fired emergency generator, rated at 20kW.	06/01/2007	FGENGINES, FGCIENGINES
EUGEN-G1	Caterpillar Model G3406 NA natural gas-fired emergency generator, rated at 150kW.	06/01/2007	FGENGINES
EUGEN-G2	Caterpillar Model G3406 NA natural gas-fired emergency generator, rated at 150kW.	06/01/2007	FGENGINES
EUGEN-G3	Ford Model G30F3 natural gas-fired emergency generator, rated at 30kW.	06/01/2007	FGENGINES
EUGEN-G4	Ford Model G20F3 natural gas-fired emergency generator, rated at 20kW.	06/01/2007	FGENGINES
EUGEN-G5	Ford Model G30F3 natural gas-fired emergency generator, rated at 30kW.	06/01/2007	FGENGINES
EUGEN-G6	Ford Model G20F3 natural gas-fired emergency generator, rated at 20kW.	06/01/2007	FGENGINES
EUGEN-G8	Ford Model G40F3 natural gas-fired emergency generator, rated at 30kW.	06/01/2007	FGENGINES
EUGEN-G9	Ford Model G20F3 natural gas-fired emergency generator, rated at 20kW.	06/01/2007	FGENGINES
EUGEN-G10	Caterpillar Model G3516 LE natural gas-fired emergency generator, rated at 1,040kW.	06/01/2007	FGENGINES
EUGEN-P1	Portable diesel-fired emergency generator, rated at 70kW.	06/01/2007	FGENGINES, FGCIENGINES
EUGEN-P2	Portable diesel-fired emergency generator, rated at 70kW.	06/01/2007	FGENGINES, FGCIENGINES
EUBOILER7	A natural gas-fired boiler with a heat input capacity of 16.24 MMBTU/hr. This boiler is identified as Boiler #6.	01/01/2004	FGNSPSBOILERS
EUBOILER8	A natural gas-fired boiler with a heat input capacity of 16.24 MMBTU/hr. This boiler is identified as Boiler #7.	01/01/2004	FGNSPSBOILERS
EUBOILER9	A natural gas-fired boiler with a heat input capacity of 16.24 MMBTU/hr. This boiler is identified as Boiler #8.	01/01/2004	FGNSPSBOILERS

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EUBOILER10	A natural gas-fired boiler with a heat input capacity of 10 MMBTU/hr. This boiler is identified as Boiler #9.	01/01/2000	FGNSPSBOILERS
EULIMEPAD	The old sludge/lime mixing facility and the Lime Pad have been replaced with indoor Central Offloading Facility (COF) and a new outdoor Lime Pad facility. Belt conveyors transfer sludge cake from Complex 1 and Complex 2 dewatering units to three holding tanks and the cake is then transferred to three cake mixers where lime from three silos are added by gravity to mixers. All the cake mixers are connected to a scrubber, where any residual dust and gases are scrubbed. The mixture is dropped directly into trucks for transport to a landfill. Occasionally, the mixture of cake and lime is dropped into the Lime Pad area, where scum or ash is added and mixed with front loaders. Lime Pad is an outdoor three-sided concrete/steel mixing area used to prepare residuals for disposal in a sanitary landfill. The mixture is allowed to stabilize, then loaded into trucks for transport to a landfill.	10/01/1983 / 05/12/2005	NA
EUDryerTrainA	Biosolids dryer train consisting of a triple-pass rotary natural gas-fired dryer equipped with a low-NO_X burner and exhaust recirculation, a cyclone product collector, a vibrating screener, a recycle bin, and a crusher. Emissions from the dryer train's cyclone exhaust through a three-stage impingement tray scrubber followed by a regenerative thermal oxidizer, and then a packed tower liquid counter flow scrubber. Emissions from the recycle bin are controlled with a fabric filter collector. (PTI No. 61-13A)	11/01/2013 7/7/2015 12/31/2017	FGDryerTrains, FGDryerFacility, FG2013Project FGDryIncTrans
EUDryerTrainB	Biosolids dryer train consisting of a triple-pass rotary natural gas-fired dryer equipped with a low-NO_X burner and exhaust recirculation, a cyclone product collector, a vibrating screener, a recycle bin, and a crusher. Emissions from the dryer train's cyclone exhaust through a three-stage impingement tray scrubber followed by a regenerative thermal oxidizer, and then a packed tower liquid counter flow scrubber. Emissions from the recycle bin are controlled with a fabric filter collector. (PTI No. 61-13A)	11/01/2013 7/7/2015 12/31/2017	FGDryerTrains, FGDryerFacility, FG2013Project FGDryIncTrans

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EUDryerTrainC	Biosolids dryer train consisting of a triple-pass rotary natural gas-fired dryer equipped with a low-NO_X burner and exhaust recirculation, a cyclone product collector, a vibrating screener, a recycle bin, and a crusher. Emissions from the dryer train's cyclone exhaust through a three-stage impingement tray scrubber followed by a regenerative thermal oxidizer, and then a packed tower liquid counter flow scrubber. Emissions from the recycle bin are controlled with a fabric filter collector. (PTI No. 61-13A)	11/01/2013 7/7/2015 12/31/2017	FGDryerTrains, FGDryerFacility, FG2013Project FGDryIncTrans
EUDryerTrainD	Biosolids dryer train consisting of a triple-pass rotary natural gas-fired dryer equipped with a low-NO_X burner and exhaust recirculation, a cyclone product collector, a vibrating screener, a recycle bin, and a crusher. Emissions from the dryer train's cyclone exhaust through a three-stage impingement tray scrubber followed by a regenerative thermal oxidizer, and then a packed tower liquid counter flow scrubber. Emissions from the recycle bin are controlled with a fabric filter collector. (PTI No. 61-13A)	11/01/2013 7/7/2015 12/31/2017	FGDryerTrains, FGDryerFacility, FG2013Project FGDryIncTrans
EUSolidsSilo1	Storage silo for dried biosolids product, with approximate capacity of 800 dry tons. (PTI No. 61-13A)	11/01/2013 7/7/2015	FGDryerFacility, FG2013Project
EUSolidsSilo2	Storage silo for dried biosolids product, with approximate capacity of 800 dry tons. (PTI No. 61-13A)	11/01/2013 7/7/2015	FGDryerFacility, FG2013Project
EUSolidsSilo3	Storage silo for dried biosolids product, with approximate capacity of 800 dry tons. (PTI No. 61-13A)	11/01/2013 7/7/2015	FGDryerFacility, FG2013Project
EUSolidsSilo4	Storage silo for dried biosolids product, with approximate capacity of 800 dry tons. (PTI No. 61-13A)	11/01/2013 7/7/2015	FGDryerFacility, FG2013Project
EUWaterHeater	Provides hot water for the biosolids drying facility. Heat input duty approximately 0.15 MMBTU/hr. (PTI No. 61-13A)	11/01/2013 7/7/2015	FGDryerFacility, FG2013Project
EUAirHandling	Provides comfort heat for office and shop area of the biosolids drying facility. Heat input duty approximately 0.80 MMBTU/hr. (PTI No. 61-13A)	11/01/2013 7/7/2015	FGDryerFacility, FG2013Project
EUMakeUpAir	The four make-up air units provide comfort heat for the process area of the biosolids drying facility. Heat input duty approximately 5.121 MMBTU/hr per unit. (PTI No. 61-13A)	11/01/2013 7/7/2015	FGDryerFacility, FG2013Project

EULIMEPAD
EMISSION UNIT CONDITIONS

DESCRIPTION

The old sludge/lime mixing facility and the Lime Pad have been replaced with indoor Central Offloading Facility (COF) and a new outdoor Lime Pad facility. Belt conveyors transfer sludge cake from Complex 1 and Complex 2 dewatering units to three holding tanks and the cake is then transferred to three cake mixers where lime from three silos are added by gravity to mixers. All the cake mixers are connected to a scrubber, where any residual dust and gases are scrubbed. The mixture is dropped directly into trucks for transport to a landfill. Occasionally, the mixture of cake and lime is dropped into the Lime Pad area, where scum or ash is added and mixed with front loaders. Lime Pad is an outdoor three-sided concrete/steel mixing area used to prepare residuals for disposal in a sanitary landfill. The mixture is allowed to stabilize, then loaded into trucks for transport to a landfill.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	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

See Appendix 5

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

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
NA	NA	NA	NA

IX. OTHER REQUIREMENT(S)

1. All trucks hauling away sludge or blended sludge off site from facility shall have their wheels cleaned after the trucks are loaded, so as to prevent sludge trackout off of plant property. **(R336.1213(3))**

2. All unstabilized and blended sludge conveyors and conveyor transfer points shall be inspected once per operating shift for spillage, and any spill shall be cleaned up during that operating shift. Such inspections shall be logged including date of inspection, time of inspection, name of person performing such inspections, conditions observed with respect to spillage, and actions taken. Such logs shall be made available to the Division upon request. **(R336.1213(3))**

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
FGC1ASH	Three ash conveying and storage systems for conveying ash from the Complex 1 sludge incinerators and storing it prior to transport to sanitary landfill.	EUC1ASH01, EUC1ASH02, EUC1ASH03
FGC2ASH	Two ash conveying and storage systems for conveying ash from the Complex 2 sludge incinerators and storing it prior to transport to sanitary landfill.	EUC2ASH01, EUC2ASH02
FGCOMPLEX1	Incineration Complex 1, which consists of five (5) sewage sludge incinerators, each with a venturi scrubber followed by an impingement type wet scrubber and mist eliminator.	EUINC01, EUINC03, EUINC04, EUINC05, EUINC06
FGCOMPLEX2	This flexible group covers the Complex 2 incinerators before the air quality control improvements. It consists of eight (8) multiple hearth sewage sludge incinerators, each with an impingement tray wet scrubber followed by a venturi scrubber and a mist eliminator. (PTI No. 61-13A)	EUINC07, EUINC08, EUINC09, EUINC10, EUINC11, EUINC12, EUINC13, EUINC14
FGLIMESTORAGE	This flexible group includes the storage devices for lime that is used to stabilize residuals hauled to landfill.	EGLIMESTOR1, EGLIMESTOR2, EGLIMESTOR3
FGENGINES	Seventeen (17) emergency generators.	EUGEN-D1A, EUGEN-D1B, EUGEN-D2, EUGEN-D4, EUGEN-D5, EUGEN-D6, EUGEN-G1, EUGEN-G2, EUGEN-G3, EUGEN-G4, EUGEN-G5, EUGEN-G6, EUGEN-G8, EUGEN-G9, EUGEN-G10, EUGEN-P1, EUGEN-P2
FGCIENGINES	Five (5) compression ignition, diesel-fired engines that are subject to specific provisions of the New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines (40 CFR Part 60, Subpart IIII).	EUGEN-D1A, EUGEN-D1B, EUGEN-D2, EUGEN-D5, EUGEN-D6
FGNSPSBOILERS	Four (4) small boilers that are subject to the requirement in NSPS Subpart Dc to track fuel usage rates.	EUBOILER7, EUBOILER8, EUBOILER9, EUBOILER10

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGCOLDCLEANERS	Any cold cleaner that is grandfathered or exempt from Rule 201 pursuant to Rule 278 and Rule 281(h) or Rule 285(r)(iv). Existing cold cleaners were placed into operation prior to July 1, 1979. New cold cleaners were placed into operation on or after July 1, 1979.	
FGAQCI	This flexible group covers the Complex 2 incinerators for which the air quality control improvements (AQCI) have been completed. When the AQCI have been completed, it will consist of eight (8) multiple hearth sewage sludge incinerators, each with a venturi scrubber followed by an impingement tray wet scrubber and a mist eliminator. (PTI No. 61-13A)	EUINC07, EUINC08, EUINC09, EUINC10, EUINC11, EUINC12, EUINC13, EUINC14
FG4M-INCIN	This flexible group covers all sewage sludge incinerators subject to 40 CFR Part 60, Subpart MMMM. The conditions for this flexible group take effect on and after the effective date of Subpart MMMM: March 21, 2016. (PTI No. 61-13A)	EUINC07, EUINC08, EUINC09, EUINC10, EUINC11, EUINC12, EUINC13, EUINC14
FGDryerTrains	This flexible group covers all four dryer trains in the biosolids drying facility. (PTI No. 61-13A)	EUDryerTrainA, EUDryerTrainB, EUDryerTrainC, EUDryerTrainD
FGDryerFacility	This flexible group covers the entire biosolids drying facility. In addition to the dryer trains, the storage silos, and the biosolids drying facility roadways, it includes the following equipment inside the building to prepare feed to the dryer trains: eight sludge grinders (two for each dryer train), eight electrically-powered dewatering centrifuges (two for each dryer train), a cake bin and enclosed pug mill for each dryer train, and conveyors to transfer materials. The facility also has a hot water heater, an air handling unit, and make-up air units for the building, all natural gas-fired. All process area building ventilation exhaust is routed through four alkaline hypochlorite scrubbers. (PTI No. 61-13A)	EUDryerTrainA, EUDryerTrainB, EUDryerTrainC, EUDryerTrainD, EUSolidsSilo1, EUSolidsSilo2, EUSolidsSilo3, EUSolidsSilo4, EUWaterHeater, EUAirHandling, EUMakeUpAir
FG2013Project	This flexible group covers all the upgraded incinerators and the biosolids drying facility. It addresses the emissions of the overall project, which consists of the incinerator upgrades and the biosolids drying facility. (PTI No. 61-13A)	EUINC07, EUINC08, EUINC09, EUINC10, EUINC11, EUINC12, EUINC13, EUINC14, EUDryerTrainA, EUDryerTrainB, EUDryerTrainC, EUDryerTrainD, EUSolidsSilo1, EUSolidsSilo2, EUSolidsSilo3, EUSolidsSilo4, EUWaterHeater, EUAirHandling, EUMakeUpAir

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGDryIncTrans	This flexible group contains requirements to ensure that during operation of the biosolids drying facility before incinerators 1, 3, 4, 5, and 6 permanently cease operating, there is not a significant emissions increase of a regulated new source review pollutant. The flexible group requires that these incinerators permanently cease operating no later than March 20, 2016. The flexible group terminates when incinerators 1, 3, 4, 5, and 6 have permanently ceased operating, at which time its conditions will no longer be applicable requirements for any of the equipment in the flexible group. (PTI No. 61-13A)	EUINC01, EUINC03, EUINC04, EUINC05, EUINC06, EUINC07, EUINC08, EUINC09, EUINC10, EUINC11, EUINC12, EUINC13, EUINC14, EUDryerTrainA, EUDryerTrainB, EUDryerTrainC, EUDryerTrainD

FGC1ASH
FLEXIBLE GROUP CONDITIONS

DESCRIPTION
Three ash conveying and storage systems for conveying ash from the Complex 1 sludge incinerators and storing it prior to transport to sanitary landfill.

Emission Units: EUC1ASH01, EUC1ASH02, EUC1ASH03

POLLUTION CONTROL EQUIPMENT
Fabric filters

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Particulate Matter	0.2 pounds per 1,000 pounds exhaust air	As determined by the average of three one hour test runs.	FGC1ASH	SC V.1, SC VI.1	**R336.1331(3)**
2. Visible emissions	Presence of visible emissions for no more than 5 percent of the hourly observation period [3]	Three one hour observation periods	FGC1ASH	SC VI.1	**40 CFR Part 60, Subpart MMMM**

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The pressure drop across each baghouse shall not exceed 10 inches of water. **(R336.1213(3))**

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))**

1. The permittee shall conduct emission tests to demonstrate initial compliance with the emission limits and standards for fugitive emissions from ash handling operations. The emission test must be conducted using the test methods, averaging methods and minimum sampling volumes or durations specified in Table 2 or 3 of 40 CFR Part 60, Subpart MMMM, and according to the testing, monitoring and calibration requirements specified

in 40 CFR 60.5220(a). The permittee may use results from a performance test conducted within the two previous years that was conducted under the same conditions and demonstrated compliance with the emission limits and standards specified in the Emission Limits section of this Flexible Group, provided that no process changes have been made since the performance test was conducted. If the results of a past performance test are used, the permittee must continue to meet the operating limits established during that performance test that demonstrated compliance with the applicable emission limits. The past performance test must have used the same test methods specified in Table 2 or 3 of 40 CFR Part 60 Subpart MMMM. Not less than 30 days prior to the anticipated test date, a complete stack testing plan shall be submitted to the AQD District Supervisor for approval.[3] **(40 CFR 60.5185(a))**

2. The permittee shall have the option of demonstrating continuous compliance with the emission limits and standards for fugitive emissions from ash handling operations using a performance test. If the permittee elects to choose the option of performance testing to demonstrate initial and continuous compliance with the emission limits for the pollutants previously listed, performance tests shall be conducted on an annual basis for each pollutant (between 11 and 13 calendar months following the previous performance test), except as provided in 40 CFR 60.5205(a)(3) and (e). The performance tests must be conducted using the test methods, averaging methods and minimum sampling volumes or durations specified in Table 2 or 3 of 40 CFR Part 60, Subpart MMMM, and according to the testing, monitoring and calibration requirements specified in 40 CFR 60.5220(a). Not less than 30 days prior to the anticipated test date, a complete stack testing plan shall be submitted to the AQD District Supervisor for approval. The permittee may elect to choose, in lieu of performance testing, to demonstrate continuous compliance with the emission limit using a continuous emissions monitoring system as described in 40 CFR 60.5205(b).[3] **(40 CFR 60.5205(a) and (b))**

See Appendix 5

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 comply with the following conditions while operating any ash silo in FGC1ASH:[3] **(R336.1213(3), 40 CFR Part 60, Subpart MMMM)**
   a. The permittee shall monitor and record, on a daily basis, the pressure drop across the baghouse serving the ash silo operation.
   b. The permittee shall perform and record, on a daily basis, a visible emissions observation to determine the presence or absence of visible emissions. This may be performed by either a certified or non-certified reader.
   c. If visible emissions are observed, it should be recorded along with the corrective action.
   d. The permittee shall perform and record a visible emission observations utilizing Method 22 to determine the presence or absence of visible emissions. The visible emissions observations shall consist of three one hour observation periods. This Method 22 visible emissions observation shall be performed as part of the initial compliance testing for FGCOMPLEX1.

2. The permittee shall develop and submit a site-specific monitoring plan for the ash handling system.[3] **(40 CFR 60.5200)**

See Appendices 3 and 4

VII. REPORTING

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

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

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. SV1ASH01	12 [2]	122.5 [2]	**R336.1201(1)**
2. SV1ASH02	12 [2]	122.5 [2]	**R336.1201(1)**
3. SV1ASH03	12 [2]	122.5 [2]	**R336.1201(1)**

IX. OTHER REQUIREMENT(S)

NA

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).
[3]This condition is future applicable. The date of future applicability is based upon the date of approval of the State Plan, and will be the earlier of (1) March 15, 2016, or (2) three years after the effective date of State Plan approval.

FGC2ASH
FLEXIBLE GROUP CONDITIONS

DESCRIPTION
Two ash conveying and storage systems for conveying ash from the Complex 2 sludge incinerators and storing it prior to transport to sanitary landfill.

Emission Units: EUC2ASH01, EUC2ASH02

POLLUTION CONTROL EQUIPMENT
Fabric filters

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Particulate Matter	0.2 pounds per 1,000 pounds of exhaust air	As determined by the average of three one hour test runs.	FGC2ASH	SC V.1, SC VI.1	**R336.1331(3)**
2. Visible emissions	Presence of visible emissions for no more than 5 percent of the hourly observation period [3]	Three one hour observation periods	FGC1ASH	SC VI.1	**40 CFR Part 60, Subpart MMMM**

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The pressure drop across each baghouse shall not exceed 10 inches of water. **(R336.1213(2))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. NA

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 conduct emission tests to demonstrate initial compliance with the emission limits and standards for fugitive emissions from ash handling operations. The emission test must be conducted using the test methods, averaging methods and minimum sampling volumes or durations specified in Table 2 or 3 of 40 CFR Part 60, Subpart MMMM, and according to the testing, monitoring and calibration requirements specified

in 40 CFR 60.5220(a). The permittee may use results from a performance test conducted within the two previous years that was conducted under the same conditions and demonstrated compliance with the emission limits and standards specified in the Emission Limits section of this Flexible Group, provided that no process changes have been made since the performance test was conducted. If the results of a past performance test are used, the permittee must continue to meet the operating limits established during that performance test that demonstrated compliance with the applicable emission limits. The past performance test must have used the same test methods specified in Table 2 or 3 of 40 CFR Part 60 Subpart MMMM. Not less than 30 days prior to the anticipated test date, a complete stack testing plan shall be submitted to the AQD District Supervisor for approval.[3] **(40 CFR 60.5185(a))**

2. The permittee shall have the option of demonstrating continuous compliance with the emission limits and standards for fugitive emissions from ash handling operations using a performance test. If the permittee elects to choose the option of performance testing to demonstrate initial and continuous compliance with the emission limits for the pollutants previously listed, performance tests shall be conducted on an annual basis for each pollutant (between 11 and 13 calendar months following the previous performance test), except as provided in 40 CFR 60.5205(a)(3) and (e). The performance tests must be conducted using the test methods, averaging methods and minimum sampling volumes or durations specified in Table 2 or 3 of 40 CFR Part 60, Subpart MMMM, and according to the testing, monitoring and calibration requirements specified in 40 CFR 60.5220(a). Not less than 30 days prior to the anticipated test date, a complete stack testing plan shall be submitted to the AQD District Supervisor for approval. The permittee may elect to choose, in lieu of performance testing, to demonstrate continuous compliance with the emission limit using a continuous emissions monitoring system as described in 40 CFR 60.5205(b).[3] **(40 CFR 60.5205(a) and (b))**

See Appendix 5

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 comply with the following conditions while operating any ash silo in FGC2ASH: [3] **(R336.1213(3), 40 CFR Part 60, Subpart MMMM)**
   a. The permittee shall monitor and record, on a daily basis, the pressure drop across the baghouse serving the ash silo operation.
   b. The permittee shall perform and record, on a daily basis, a visible emissions observation to determine the presence or absence of visible emissions. This may be performed by either a certified or non-certified reader.
   c. If visible emissions are observed, it should be recorded along with the corrective action.
   d. The permittee shall perform and record a visible emission observations utilizing Method 22 to determine the presence or absence of visible emissions. The visible emissions observations shall consist of three one hour observation periods. This Method 22 visible emissions observation shall be performed as part of the initial compliance testing for FGCOMPLEX2.

2. The permittee shall develop and submit a site-specific monitoring plan for the ash handling system.[3] **(40 CFR 60.5200)**

See Appendices 3 and 4

VII. REPORTING

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

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

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. SVC2ASH1	20 [2]	119.5 [2]	**R336.1201(1)**
2. SVC2ASH2	20 [2]	119.5 [2]	**R336.1201(1)**

IX. OTHER REQUIREMENT(S)

NA

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).
[3]This condition is future applicable. The date of future applicability is based upon the date of approval of the State Plan, and will be the earlier of (1) March 15, 2016, or (2) three years after the effective date of State Plan approval.

FGCOMPLEX1
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Five (5) sewage sludge incinerators, each with a venturi scrubber followed by an impingement type wet scrubber and mist eliminator.

Emission Units: EUINC01, EUINC02, EUINC03, EUINC04, EUINC05, EUINC06

POLLUTION CONTROL EQUIPMENT

Emissions from the incinerators are controlled by a venturi scrubber followed by an impingement type wet scrubber and mist eliminator.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Particulate Matter	80 milligrams per dry standard cubic meter[3]	Average of three test runs (a minimum of 0.75 dry standard cubic meters collected per test run).	FGCOMPLEX1	SC V.1, SC VI.7 – SC VI.13	**40 CFR Part 60, Subpart MMMM (§60.5165)**
2. Hydrogen chloride	1.2 part per million, dry volume[3]	Average of three test runs (for Method 26, collect a minimum volume of 200 liters per run. For Method 26A, collect a minimum volume of 1 dry standard cubic meters per test run).	FGCOMPLEX1	SC V.1, SC VI.7 – SC VI.13	**40 CFR Part 60, Subpart MMMM (§60.5165)**
3. Carbon monoxide	3,800 parts per million, dry volume[3]	Average of three test runs (collect sample for a minimum duration of one hour per run).	FGCOMPLEX1	SC V.1, SC VI.3, SC VI.4	**40 CFR Part 60, Subpart MMMM (§60.5165)**
4. Dioxins/furans (total mass basis) [a]	5.0 nanograms per dry standard cubic meter[3]	Average of three test runs (a minimum of 1 dry standard cubic meters collected per test run).	FGCOMPLEX1	SC V.1	**40 CFR Part 60, Subpart MMMM (§60.5165)**
5. Dioxins/furans (toxic equivalency basis) [a]	0.32 nanograms per dry standard cubic meter[3]	Average of three test runs (a minimum of 1 dry standard cubic meters collected per test run).	FGCOMPLEX1	SC V.1	**40 CFR Part 60, Subpart MMMM (§60.5165)**
6. Mercury	0.28 milligrams per dry standard cubic meter[3]	Average of three test runs (for Method 29 and ASTM D6784-02, collect a minimum volume of 1 dry standard cubic meters per run. For Method 30B, collect a minimum sample as specified in method 30B at 40 CFR Part 60, appendix A-8).	FGCOMPLEX1	SC V.1	**40 CFR Part 60, Subpart MMMM (§60.5165)**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
7. Oxides of nitrogen	220 parts per million, dry volume[3]	Average of three test runs (collect sample for a minimum duration of one hour per run).	FGCOMPLEX1	SC V.1, SC VI.3, SC VI.4	**40 CFR Part 60, Subpart MMMM (§60.5165)**
8. Sulfur Dioxide	26 part per million, dry volume[3]	Average of three test runs (for Method 6, collect a minimum volume of 200 liters per run. For Method 6C, collect sample for a minimum duration of one hour per run).	FGCOMPLEX1	SC V.1, SC VI.7 – SC VI.13	**40 CFR Part 60, Subpart MMMM (§60.5165)**
9. Cadmium	0.095 milligrams per dry standard cubic meter[3]	Average of three test runs (a minimum of 1 dry standard cubic meters collected per test run).	FGCOMPLEX1	SC V.1, SC VI.7 – SC VI.13	**40 CFR Part 60, Subpart MMMM (§60.5165)**
10. Lead	0.30 milligrams per dry standard cubic meter[3]	Average of three test runs (a minimum of 1 dry standard cubic meters collected per test run).	FGCOMPLEX1	SC V.1, SC VI.7 – SC VI.13	**40 CFR Part 60, Subpart MMMM (§60.5165)**

* All emission limits are measured at 7 percent oxygen, dry basis at standard conditions.

The emission limits and standards apply at all times any of the emission units addressed by FGCOMPLEX1 are operating and during periods of malfunction. The emission limits and standards apply to emissions from a bypass stack or vent while sewage sludge is in the combustion chamber (i.e. until the sewage sludge feed to the combustor has been cut off for a period of time not less than the sewage sludge incineration residence time).

[a] The permittee has the option to comply with either the dioxin/furan limit on a total mass basis or the dioxin/furan emission limit on a toxic equivalency basis.

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate the incinerators in FGCOMPLEX1 unless the venturi/impingement tray wet scrubbers and mist eliminators are installed and operating properly. Such control equipment shall be maintained in good repair and operated in such a manner as to ensure compliance with emission requirements and visible emission requirement.[2] **(R336.1201(3)), (R336.1910)**

2. The permittee shall operate the incinerators in FGCOMPLEX1 such that hearth #1 burners will maintain a combustion temperature between 1100°F and 1500°F, based on a 24-hour block average, unless it can be demonstrated that an alternative operating range can be used to achieve compliance with particulate matter and opacity limits. **(R336.1213(3))**

3. The pressure drop across the venturi-impingement tray scrubber shall not be less than 18 inches of water column, based on an 8-hour block average. **(R336.1910), (R336.1213(3))**

4. Use of the bypass stack associated with an incinerator in FGCOMPLEX1 at any time that sewage sludge is being charged to that incinerator is an emissions standards deviation for all of the pollutants listed in Special Conditions I.1 through I.10.[3] **(40 CFR 60.5220(d))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall conduct an air pollution control device inspection, in accordance with 40 CFR 60.5220(c), by the compliance date of 40 CFR Part 60, Subpart MMMM. The inspection shall include, at a minimum[3]: **(40 CFR 60.5195, 40 CFR 60.5220)**
   a. Inspect air pollution control device(s) for proper operation;
   b. Generally observe that the equipment is maintained in good operating condition;
   c. Develop a site-specific monitoring plan according to the requirements of 40 CFR 60.5200.

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 have the option of conducting emission tests to demonstrate initial compliance with the emission limits and standards for particulate matter, hydrogen chloride, carbon monoxide, dioxins/furans (total mass or toxic equivalency basis), mercury, nitrogen oxides, sulfur dioxide, cadmium, and lead. If the permittee chooses the option of performing emission tests, then the emission tests must be conducted using the test methods, averaging methods and minimum sampling volumes or durations specified in Table 2 or 3 of 40 CFR Part 60, Subpart MMMM, and according to the testing, monitoring and calibration requirements specified in 40 CFR 60.5220(a). The permittee may use results from a performance test conducted within the two previous years that was conducted under the same conditions and demonstrated compliance with the emission limits and standards specified in the Emission Limits section of this Flexible Group, provided that no process changes have been made since the performance test was conducted. If the results of a past performance test are used, the permittee must continue to meet the operating limits established during that performance test that demonstrated compliance with the applicable emission limits. The past performance test must have used the same test methods specified in Table 2 or 3 of 40 CFR Part 60 Subpart MMMM. Not less than 30 days prior to the anticipated test date, a complete stack testing plan shall be submitted to the AQD District Supervisor for approval.[3] **(40 CFR 60.5185(a))**

2. In lieu of conducting the emissions test specified in Special Condition V.1, the permittee may elect to demonstrate initial compliance with the emission limits for particulate matter, hydrogen chloride, carbon monoxide, dioxins/furans, mercury, nitrogen oxides, sulfur dioxide, cadmium and lead by substituting the use of a continuous emission monitoring system for any or all of these pollutants in accordance with the requirements of 40 CFR 60.5185(b).[3] **(40 CFR 60.5185(b))**

3. The permittee shall have the option of demonstrating continuous compliance with the emission limits and standards for particulate matter, hydrogen chloride, carbon monoxide, dioxins/furans (total mass or toxic equivalency basis), mercury, nitrogen oxides, sulfur dioxide, cadmium and lead using a performance test. If the permittee elects to choose the option of performance testing to demonstrate initial and continuous compliance with the emission limits for the pollutants previously listed, performance tests shall be conducted on an annual basis for each pollutant (between 11 and 13 calendar months following the previous performance test), except as provide in 40 CFR 60.5205(a)(3) and (e). The performance tests must be conducted using the test methods, averaging methods and minimum sampling volumes or durations specified in Table 2 or 3 of 40 CFR Part 60, Subpart MMMM, and according to the testing, monitoring and calibration requirements specified in 40 CFR 60.5220(a). Not less than 30 days prior to the anticipated test date, a complete stack testing plan shall be submitted to the AQD District Supervisor for approval. [3] **(40 CFR 60.5205(a))**

4. In lieu of conducting the performance tests specified in Special Condition V.3, the permittee may elect to demonstrate continuous compliance with the emission limits for particulate matter, hydrogen chloride, carbon monoxide, dioxins/furans, mercury, nitrogen oxides, sulfur dioxide, cadmium and lead by substituting the use of a continuous emissions monitoring system for any or all of these pollutants in accordance with the requirements of 40 CFR 60.5205(b). A continuous automated sampling system can be used in lieu of performance tests to demonstrate continuous compliance with the mercury or dioxin/furans emission limits.[3] **(40 CFR 60.5205(b))**

5. The use of a bypass stack during a performance test invalidates the results of the performance test.[3] **(40 CFR 60.5220(d))**

See Appendix 5

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 monitor and record the sewage sludge feed rate to the incinerators in FGCOMPLEX1 on a continuous basis, and calculate the daily average sewage sludge feed to each incinerator in FGCOMPLEX1 for all hours of operation during each 24-hour period.[3] **(40 CFR 60.5170(f)(1))**

2. The permittee shall monitor and record the moisture content (as a weight percent) of the sewage sludge by taking a grab sample of the sewage sludge, on a daily basis, for the purpose of recording the range of moisture content. If the permittee takes more than one grab sample in a day, then the daily average moisture content for the number of grab samples taken shall be calculated.[3] **(40 CFR Part 60.5170(f)(2))**

3. The permittee shall monitor and record the combustion chamber temperature for each incinerator in FGCOMPLEX1 on a continuous basis. Measurements of the combustion chamber temperature shall be recorded every 15 minutes.[3] **(40 CFR 60.5170(a))**

4. The permittee shall establish a minimum combustion chamber operating temperature (or minimum afterburner temperature), equal to the lowest 4-hour average combustion chamber temperature (or afterburner temperature) measured during the most recent performance test demonstrating compliance with all applicable emission limits.[3] **(40 CFR 60.5190)**

5. The permittee shall develop and submit a site-specific monitoring plan for each continuous monitoring system required by 40 CFR Part 60 Subpart MMMM.[3] **(40 CFR 60.5200)**

6. Permittee shall monitor and record the opacity from FGCOMPLEX1, on a continuous basis in a manner and with instrumentation acceptable to the Air Quality Division and according to the monitoring requirements in 40 CFR Part 75.[2] **(R336.1213(3)), Consent Order MDEQ SIP No. 11-1993)**

7. Except during periods when an incinerator is out of service (in cold standby mode), the permittee shall conduct monthly inspections for the purpose of determining the operating condition of the scrubber, and, if necessary, the reasons for malfunction or failure, using monitoring and recordkeeping procedures outlined in Appendix 3 and 4. **(R336.1213(3))**

8. The permittee shall monitor and record, on a continuous basis, the pressure drop across the inlet and outlet of the scrubber serving any incinerator in operation. Measurements of the pressure drop shall be recorded every 15 minutes.[3] **(40 CFR 60.5190)**

9. The permittee shall establish a minimum pressure drop across each wet scrubber that is used to meet the particulate matter, lead and cadmium emission limits, equal to the lowest 4-hour average pressure drop across each scrubber measured during the most recent performance test demonstrating compliance with the particulate matter, lead and cadmium emission limits. The permittee is not required to establish the minimum pressure drop if a continuous monitoring system is used to demonstrate compliance with these emission limits.[3] **(40 CFR 60.5190)**

10. The permittee shall monitor and record, on a continuous basis, the liquid flow rate through the scrubber serving any incinerator in operation. Measurements of the scrubber liquid flow rate shall be recorded every 15 minutes.[3] **(40 CFR 60.5190)**

11. The permittee shall establish a minimum scrubber liquid flow rate (measured at the inlet to each wet scrubber), equal to the lowest 4-hour average liquid flow rate measured during the most recent performance test demonstrating compliance with all applicable emission limits. [3] **(40 CFR 60.5190)**

12. The permittee shall monitor and record, on a continuous basis, the scrubber liquid pH. Measurements of the scrubber liquid pH shall be recorded every 15 minutes. [3] **(40 CFR 60.5190)**

13. The permittee shall establish a minimum scrubber liquid pH for each wet scrubber used to meet the sulfur dioxide or hydrogen chloride emission limits equal to the lowest 1-hour average scrubber liquid pH measured during the most recent performance test demonstrating compliance with these emission limits. [3] **(40 CFR 60.5190)**

14. The permittee shall monitor oxygen concentration for each operating incinerator. **(R336.1213(3))**

15. Except for periods when an incinerator is out of service (cold standby mode), the permittee shall conduct the preventative maintenance for the devices and with the frequency as indicated in Appendix 9. **(R336.1213(3))**

16. The permittee shall maintain hourly records of incinerator status, i.e. whether an incinerator is in service, on stand-by, pre-start up, start up, malfunctioning or out of service. **(R336.1213(3))**

See Appendices 3, 4 and 9

VII. REPORTING

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

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

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. SVBYPASS01/2	NA	NA	NA
2. SVSTUB01	NA	NA	NA
3. SVSTACK01	32 [2]	254 [2]	**R336.1201(1)**
4. SVSTUB02	NA	NA	NA
5. SVSTACK02	32 [2]	254 [2]	**R336.1201(1)**
6. SVBYPASS03/4	NA	NA	NA
7. SVSTUB03	NA	NA	NA
8. SVSTACK03	32 [2]	254 [2]	**R336.1201(1)**
9. SVSTUB04	NA	NA	NA

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
10. SVSTACK04	32 [2]	254 [2]	**R336.1201(1)**
11. SVBYPASS05/6	NA	NA	NA
12. SVSTUB05	NA	NA	NA
13. SVSTACK05	32 [2]	254 [2]	**R336.1201(1)**
14. SVSTUB06	NA	NA	NA
15. SVSTACK06	32 [2]	254 [2]	**R336.1201(1)**

IX. OTHER REQUIREMENT(S)

1. The permittee shall maintain the stack gas oxygen concentration monitoring systems and opacity monitoring systems. **(R336.1213(3))**

2. The permittee shall implement and comply with the Operator Training and Qualification provisions as specified in 40 CFR 60.5130 through 60.5160.[3] **(40 CFR 60.5130, 40 CFR 60.5135, 40 CFR 60.5140, 40 CFR 60.5145, 40 CFR 60.5150, 40 CFR 60.5155, 40 CFR 60.5160)**

3. The permittee must conduct an air pollution control device inspection according to 40 CFR 60.5220(c) by the final compliance date for 40 CFR Part 60 Subpart MMMM. For air pollution devices installed after the final compliance date, the permittee must conduct the air pollution control device inspection within 60 days after installation of the control device.[3] **(40 CFR 60.5195, 40 CFR 60.5220(c))**

4. Except during periods when an incinerator is out of service (in cold standby mode), the permittee shall implement a Malfunction Abatement Plan (MAP) and record incidents of high opacity and inappropriate hearth temperatures as well as corrective actions and updates to the MAP. The MAP dated March 22, 2007, or its most recent revision, shall be implemented. All maintenance activities regarding the MAP shall be recorded and made available to AQD upon request.[2] **(R336.1911, Consent Order No. 17-2006)**

5. The permittee shall comply with all applicable provisions of the Standards of Performance for New Stationary Sources, as specified in 40 CFR Part 60, Subpart A and Subpart MMMM for Existing Sewage Sludge Incineration Units by the compliance date.[3] **(40 CFR Part 60, Subparts A and MMMM)**

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).
[3]This condition is future applicable. The date of future applicability is based upon the date of approval of the State Plan, and will be the earlier of (1) March 15, 2016, or (2) three years after the effective date of State Plan approval.

FGCOMPLEX2
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

This flexible group covers the Complex 2 incinerators before the air quality control improvements. It consists of eight (8) multiple hearth sewage sludge incinerators, each with an impingement tray wet scrubber followed by a venturi scrubber and a mist eliminator. (PTI No. 61-13A)

Emission Units: EUINC07, EUINC08, EUINC09, EUINC10, EUINC11, EUINC12, EUINC13, EUINC14

POLLUTION CONTROL EQUIPMENT

For each incinerator: an impingement type wet scrubber followed by a venturi scrubber and a mist eliminator.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. PM	0.15 lb per 1,000 pounds of exhaust gases[2]	Test protocol*	Each incinerator in FGCOMPLEX2	GC 13	**R 336.1331(1)(c)**
*Test protocol shall specify averaging time.					

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate the incinerators in FGCOMPLEX2 unless the venturi/impingement tray wet scrubbers and mist eliminators are installed and operating properly. Such control equipment shall be maintained in good repair and operated in such a manner as to ensure compliance with emission requirements and visible emission requirements.[2] **(R 336.1910)**

2. The permittee shall operate each incinerator in FGCOMPLEX2 such that hearth #1 burners will maintain a combustion temperature between 1100°F to 1500°F, based on a 24-hour block average, unless it can be demonstrated that an alternative operating range can be used to achieve compliance with particulate matter and opacity limits.[2] **(R 336.1910)**

3. The differential pressure drop across the scrubber train shall not be less than 18 inches of water column, based on an 8-hour block average.[2] **(R 336.1910)**

4. The permittee shall implement a Malfunction Abatement Plan (MAP) for each incinerator in FGCOMPLEX2, and shall record all updates to the MAP. The MAP dated March 22, 2007, or its most recent revision, shall be implemented.[2] **(R 336.1911, Consent Order No. 17-2006)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall maintain the stack gas oxygen concentration monitoring systems and opacity monitoring systems.[2] **(R 336.1911)**

V. TESTING/SAMPLING

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

NA

See Appendix 5

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 monitor and record the opacity of emissions from each incinerator in FGCOMPLEX2, on a continuous basis in a manner and with instrumentation acceptable to the Air Quality Division and according to the monitoring requirements in 40 CFR Part 75. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2] **(Consent Order MDNRE SIP No. 11-1993)**

2. The permittee shall conduct monthly inspections of each incinerator in FGCOMPLEX2, except during periods when the incinerator is out of service (in cold standby mode), for the purpose of determining the operating condition of the scrubber, and, if necessary, the reasons for malfunction or failure, using monitoring and recordkeeping procedures outlined in Appendices 3 and 4.[2] **(R 336.1910)**

3. The permittee shall monitor and record daily all of the following for each incinerator in FGCOMPLEX2, except during periods when the incinerator is out of service (in cold standby mode). The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2] **(R 336.1910)**
   a. Water flow rate through the associated scrubber train.
   b. Differential pressure across the inlet and outlet of each scrubber in the associated scrubber train.
   c. Hearth #1 combustion temperature

4. For each incinerator in FGCOMPLEX2, the permittee shall monitor and record the daily sludge feed rate, as wet tons per day, except during periods when there is no sludge in the incinerator. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2] **(40 CFR 61.52)**

5. The permittee shall monitor oxygen concentration for each operating incinerator. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2] **(R 336.1911)**

6. Except for periods when an incinerator is out of service (cold standby mode), the permittee shall conduct the preventative maintenance for the devices and with the frequency as indicated in Appendix 9.[2] **(R 336.1910, R 336.1911)**

7. The permittee shall maintain hourly records of incinerator status, i.e. whether an incinerator is in service, on stand-by, pre-start up, start up, malfunctioning, or out of service. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2] **(R 336.1910, R 336.1911)**

8. For each incinerator in FGCOMPLEX2, the permittee shall keep a record of incidents of high opacity and inappropriate hearth temperature as well as corrective actions taken and shall make the record available to the AQD upon request.[2] **(R 336.1911, Consent Order No. 17-2006)**

9. For each incinerator in FGCOMPLEX2, the permittee shall keep a record of all maintenance activities regarding the MAP and shall make the record available to the AQD upon request.[2] **(R 336.1911, Consent Order No. 17-2006)**

See Appendices 3, 4 and 9

VII. REPORTING

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

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

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 Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVSTACK07	39[2]	254[2]	**R 336.1201(1)**
2. SVSTACK08	39[2]	254[2]	**R 336.1201(1)**
3. SVSTACK09	39[2]	254[2]	**R 336.1201(1)**
4. SVSTACK10	39[2]	254[2]	**R 336.1201(1)**
5. SVSTACK11	39[2]	254[2]	**R 336.1201(1)**
6. SVSTACK12	39[2]	254[2]	**R 336.1201(1)**
7. SVSTACK13	39[2]	254[2]	**R 336.1201(1)**
8. SVSTACK14	39[2]	254[2]	**R 336.1201(1)**

IX. OTHER REQUIREMENT(S)

1. Both of the following apply to each incinerator in FGCOMPLEX2, and to its scrubber train, when the incinerator commences trial operation after the air quality control improvements authorized by this Permit have been completed for that incinerator:[2] **(R 336.1201(3))**
   a. The Special Conditions in FGAQCI become applicable requirements for that incinerator and its scrubber train.
   b. The Special Conditions in FGCOMPLEX2 cease to be applicable requirements for that incinerator and its scrubber train.

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).

FGLIMESTORAGE
FLEXIBLE GROUP CONDITIONS

DESCRIPTION
This flexible group includes the storage devices for lime that is used to stabilize residuals hauled to landfill.

Emission Units: EULIMESTOR1, EULIMESTOR2, EULIMESTOR3

POLLUTION CONTROL EQUIPMENT
Pulse jet fabric filter baghouse.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Particulate Matter	0.1 pounds per 1,000 pounds of exhaust air	As determined by the average of three one hour test runs.	FGLIMESTORAGE	SC VI.1 – SC VI.3	**R336.1331(1)(c)**
2. Visible Emissions	5% opacity	6 minute average	FGLIMESTORAGE	SC VI.3	**R336.1301(1)(c)**

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	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

See Appendix 5

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

1. At least once a month, the permittee shall conduct regular inspections for the purpose of determining the operating condition of the baghouse, and, if necessary, the reasons for malfunction or failure, using monitoring and recordkeeping procedures outlined in Appendix 3 and 4. **(R336.1213(3))**

2. The permittee shall monitor and record the pressure drop across the baghouse during the lime loading. **(R336.1213(3))**

3. The permittee shall perform and record visible emission observations during daylight hours when lime is loaded into the silo to determine the presence or absence of visible emissions. If visible emission exceeds 5%, the permittee shall also record the corrective actions along with the visible emission reading. **(R336.1213(3))**

See Appendices 3 and 4

VII. REPORTING

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

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

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. SVLIMESTOR1	10 [2]	85 [2]	**R336.1201(1)**
2. SVLIMESTOR2	10 [2]	85 [2]	**R336.1201(1)**
3. SVLIMESTOR3	10 [2]	85 [2]	**R336.1201(1)**

IX. OTHER REQUIREMENT(S)

1. The permittee shall repair or replace any defective parts discovered during the monthly preventive maintenance inspection or place unit out of service. **(R336.1213(3))**

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).

FGENGINES
FLEXIBLE GROUP CONDITIONS

DESCRIPTION
Seventeen emergency generators

Emission Units: EUGEN-D1A, EUGEN-D1B, EUGEN-D2, EUGEN-D4, EUGEN-D5, EUGEN-D6, EUGEN-G1, EUGEN-G2, EUGEN-G3, EUGEN-G4, EUGEN-G5, EUGEN-G6, EUGEN-G8, EUGEN-G9, EUGEN-G10, EUGEN-P1, EUGEN-P2

POLLUTION CONTROL EQUIPMENT
NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. NO_x	36 tons per year [2]	12 month rolling time period as determined at the end of each calendar month.	FGENGINES	SC III.2, SC VI.1, SC VI.3, SC VI.5	**R336.1205**

The NOx limit is based on the engine-specific emission factors listed in Appendix 7, or determined from emissions testing, whichever is greater.

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The sulfur content of the diesel fuel used in any of the generators in FGENGINES shall not exceed 15 ppm (0.0015) percent by weight. **(R336.1205, R336.1402(1), 40 CFR 60.4207, 40 CFR 80.510(b))**

2. The permittee shall not operate FGENGINES for more than 500 hours each per 12-month rolling time period as determined at the end of each calendar month.[2] **(R336.1205, R336.1225, R336.1702(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 monitor in a satisfactory manner the hours of operation for FGENGINES on a monthly basis.[2] **(R336.1205, R336.1225, R336.1702(a))**

2. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. [2] **(R336.1205)**

3. The permittee shall keep, in a satisfactory manner, monthly and previous 12-month NO_x emission calculation records for FGENGINES, as required by Special Condition I.1. 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] **(R336.1205)**

4. The permittee shall keep records of the fuel oil sulfur content, in percent by weight, for each shipment of fuel oil received. 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] **(R336.1205)**

5. The permittee shall keep, in a satisfactory manner, a written log of the monthly hours of operation of FGENGINES. 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] **(R336.1205, R336.1225, R336.1702(a))**

See Appendix 7

VII. REPORTING

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

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

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-D1A	8 [1]	13.2 [1]	**R336.1225**
2. SV-D1B	8 [1]	13.2 [1]	**R336.1225**
3. SV-D2	8 [1]	13.2 [1]	**R336.1225**
4. SV-D4	8 [1]	13.5 [1]	**R336.1225**
5. SV-D5	9 [1]	8.4 [1]	**R336.1225**
6. SV-D6	3 [1]	6 [1]	**R336.1225**
7. SV-P1	4 [1]	9 [1]	**R336.1225**
8. SV-P2	4 [1]	9 [1]	**R336.1225**
9. SV-G1	5 [1]	12 [1]	**R336.1225**
10. SV-G2	5 [1]	12 [1]	**R336.1225**
11. SV-G3	3.4 [1]	5.2 [1]	**R336.1225**
12. SV-G4	2.5 [1]	4.83 [1]	**R336.1225**

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
13. SV-G5	3.4 [1]	5.2 [1]	**R336.1225**
14. SV-G6	2.5 [1]	4.83 [1]	**R336.1225**
15. SV-G8	3.4 [1]	5.2 [1]	**R336.1225**
16. SV-G9	2.5 [1]	4.83 [1]	**R336.1225**
17. SV-G10	7.1 [1]	13.2 [1]	**R336.1225**

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with the provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subpart A, Subpart IIII and Subpart JJJJ, as they apply to the engines in FGENGINES. **(40 CFR Part 60 Subparts A, IIII & 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 the engines in FGENGINES. **(40 CFR Part 63 Subparts A and ZZZZ, 40 CFR 63.6595)**

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).

FGCIENGINES
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Five (5) compression ignition, diesel-fired engines that are subject to specific provisions of the New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines (40 CFR Part 60, Subpart IIII).

Emission Units: EUGEN-D1A, EUGEN-D1B, EUGEN-D2, EUGEN-D5, EUGEN-D6

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. NMHC + NO_x	9.5 g/KW-hr (7.1 g/hp-hr)	Hourly	EUGEN-D6	SCV.1, SCVI.2	**40 CFR 60.4205(a)**
2. HC	1.3 g/KW-hr (1.0 g/hp-hr)	Hourly	EUGEN-D5, EUGEN-D2	SCV.1, SCVI.2	**40 CFR 60.4205(a)**
3. NO_x	9.2 g/KW-hr (6.9 g/hp-hr)	Hourly	EUGEN-D5, EUGEN-D2	SCV.1, SCVI.2	**40 CFR 60.4205(a)**
4. NO_x	17.0 g/KW-hr (12.7 g/hp-hr) when the maximum test speed is less than 130 rpm; 45.0 x $N^{-0.20}$ when the maximum test speed is at least 130 but less than 2000 rpm (where N is the maximum test speed of the engine in rpm); 9.8 g/KW-hr (7.3 g/hp-hr) when the maximum test speed is 2000 rpm or more.	Hourly	EUGEN-D1A, EUGEN-D1B	SCV.1, SCVI.2	**40 CFR 60.4205(a), 40 CFR 94.8(a)(1)**
4. CO	11.4 g/KW-hr (8.5 g/hp-hr)	Hourly	EUGEN-D5, EUGEN-D2	SCV.1, SCVI.2	**40 CFR 60.4205(a)**
5. CO	5.5 g/KW-hr (0.41 g/hp-hr)	Hourly	EUGEN-D6	SCV.1, SCVI.2	**40 CFR 60.4205(a)**
6. PM	0.54 g/KW-hr (0.40 g/hp-hr)	Hourly	EUGEN-D5, EUGEN-D2	SCV.1, SCVI.2	**40 CFR 60.4205(a)**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
7. PM	0.80 g/KW-hr (0.60 g/hp-hr)	Hourly	EUGEN-D6	SCV.1, SCVI.2	**40 CFR 60.4205(a)**

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The sulfur content of the diesel fuel used in any of the engines in FGICENGINES shall not exceed 15 ppm (0.0015) percent by weight. **(R336.1205, R336.1402(1), 40 CFR 60.4207, 40 CFR 80.510(b))**

2. The permittee shall not operate FGCIENGINES for more than 500 hours each per 12-month rolling time period as determined at the end of each calendar month. The 500 hours includes the 100 hours for the purpose of necessary maintenance checks and readiness testing as described in SC III.3. **(R 336.1205(1)(a) & (3), R 336.1225, R 336.1702(a), R 336.2803, R 336.2804, 40 CFR 52.21 (c) & (d))**

3. The permittee may operate the engines in FGICENGINES for no more than 100 hours per 12-month rolling time period as determined at the end of each calendar month for the purpose of necessary maintenance checks and readiness testing, provided that the tests are recommended by Federal, State, or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Permittee may petition the Department for approval of additional hours to be used for maintenance checks and readiness testing. A petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency internal combustion engines beyond 100 hours per year. The engines in FGICENGINES may operate up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing. The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply non-emergency power as part of a financial arrangement with another entity. **(40 CFR 60.4211(f))**

4. The permittee shall install, maintain, and operate each of the engines in FGICENGINES according to the manufacturer written instructions, or procedures developed by the owner/operator and approved by the engine manufacturer, over the entire life of the engine. **(R 336.1205(1)(a) & (3), R 336.1225, R 336.1911, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d), 40 CFR 60.4206, 40 CFR 60.4211)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall equip and maintain each engine in FGCIENGINES with non-resettable hours meters to track the operating hours. **(R 336.1205(1)(a) & (3), R 336.1225, 40 CFR 60.4209)**

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 conduct an initial performance test for the engines in FGCIENGINES within one year after startup of the engines to demonstrate compliance with the emission limits in 40 CFR 60.4205 unless the engines have been certified by the manufacturer and the permittee maintains the engine as required by 40 CFR Part 60 Subpart IIII. If a performance test is required, the performance tests shall be conducted according to 40 CFR 60.4212 (less than 30 liters) or 40 CFR 60.4213 (greater than 30 liters). 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. 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. **(40 CFR 60.4211, 40 CFR 60.4212, 40 CFR Part 60 Subpart IIII)**

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 complete all required calculations in a format acceptable to the AQD District Supervisor by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. **(R 336.1205(1)(a) & (3), R 336.2803, R 336.2804, 40 CFR 52.21 (c) & (d))**

2. The permittee shall keep, in a satisfactory manner, a record of testing required in SC V.1 or manufacturer certification documentation indicating that the engines in FGCIENGINES meet the applicable emission limitations contained in the federal Standards of Performance for New Stationary Sources 40 CFR Part 60 Subpart IIII. The permittee shall keep all records on file and make them available to the Department upon request. **(40 CFR 60.4211)**

3. The permittee shall monitor and record the total hours of operation and the hours of operation during non-emergencies for the engines in FGCIENGINES, on a monthly and 12-month rolling time period basis, in a manner acceptable to the District Supervisor, Air Quality Division. The permittee shall document how many hours are spent for emergency operation of the engines in FGCIENGINES, including what classified the operation as emergency and how many hours are spent for non-emergency operation. **(R 336.1205(1)(a) & (3), 40 CFR 60.4211, 40 CFR 60.4214)**

4. The permittee shall keep, in a satisfactory manner, fuel supplier certification records or fuel sample test data, for each delivery of diesel fuel oil used in the engines in FGCIENGINES, demonstrating that the fuel sulfur content meets the requirement of 40 CFR 80.510(b). The certification or test data shall include the name of the oil supplier or laboratory, and the sulfur content of the fuel oil. **(R 336.1205(1)(a) & (3), R 336.1402(1), 40 CFR 80.510(b))**

5. The permittee shall monitor and record in a satisfactory manner the diesel fuel usage rate for the engines in FGCIENGINES on a monthly and 12-month rolling time period basis. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a) & (3), R 336.1225, R 336.1702(a), R 336.2803, R 336.2804, 40 CFR 52.21 (c) & (d))**

See Appendix 7

VII. REPORTING

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

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

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-D1A	8 [1]	13.2 [1]	**R336.1225**
2. SV-D1B	8 [1]	13.2 [1]	**R336.1225**
3. SV-D2	8 [1]	13.2 [1]	**R336.1225**
4. SV-D5	9 [1]	8.4 [1]	**R336.1225**
5. SV-D6	3 [1]	6 [1]	**R336.1225**

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with the provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subpart A and Subpart IIII, as they apply to the engines in FGCIENGINES. **(40 CFR Part 60 Subparts A & IIII)**
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 the engines in FGCIENGINES. **(40 CFR Part 63 Subparts A and ZZZZ, 40 CFR 63.6595)**

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).

FGNSPSBOILERS
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Four (4) small natural gas-fired boilers that are subject to the requirement in NSPS Subpart Dc to track fuel usage rates.

Emission Units: EUBOILER7, EUBOILER8, EUBOILER9, EUBOILER10

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall only fire natural gas in the boilers that make up FGNSPSBOILERS. **(R336.1213(3))**

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 record and maintain records of natural gas usage in each boiler on a calendar month basis. In lieu of recording the actual fuel usage rates, the permittee may record potential fuel usage based on the maximum design capacity of a boiler. **(40 CFR 60.48c(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))**

See Appendix 8

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
NA	NA	NA	NA

IX. OTHER REQUIREMENT(S)

NA

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).

FGCOLDCLEANERS
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

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

Emission Unit: NA

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 ten square feet. **(R 336.1281(h))**
   b. The cold cleaner is used for cleaning metal parts and the emissions are released to the general in-plant environment. **(R 336.1285(r)(iv))**

2. The cold cleaner shall be equipped with a device for draining cleaned parts. **(R 336.1611(2)(b), R 336.1707(3)(b))**

3. All new and existing cold cleaners shall be equipped with a cover and the cover shall be closed whenever parts are not being handled in the cold cleaner. **(R 336.1611(2)(a), R 336.1707(3)(a))**

4. The cover of a new cold cleaner shall be mechanically assisted if the Reid vapor pressure of the solvent is more than 0.3 psia or if the solvent is agitated or heated. **(R 336.1707(3)(a))**

5. If the Reid vapor pressure of any solvent used in a new cold cleaner is greater than 0.6 psia; or, if any solvent used in a new cold cleaner is heated above 120 degrees fahrenheit, then the cold cleaner must comply with at least one of the following provisions:
   a. The cold cleaner must be designed such that the ratio of the freeboard height to the width of the cleaner is equal to or greater than 0.7. **(R 336.1707(2)(a))**

b. The solvent bath must be covered with water if the solvent is insoluble and has a specific gravity of more than 1.0. **(R 336.1707(2)(b))**
c. The cold cleaner must be controlled by a carbon adsorption system, condensation system, or other method of equivalent control approved by the AQD. **(R 336.1707(2)(c))**

V. TESTING/SAMPLING

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 each new cold cleaner in which the solvent is heated, the solvent temperature shall be monitored and recorded at least once each calendar week during routine operating conditions. **(R 336.1213(3))**

2. The permittee shall maintain the following information on file for each cold cleaner: **(R 336.1213(3))**
   a. A serial number, model number, or other unique identifier for each cold cleaner.
   b. The date the unit was installed, manufactured or that it commenced operation.
   c. The air/vapor interface area for any unit claimed to be exempt under Rule 281(h).
   d. The applicable Rule 201 exemption.
   e. The Reid vapor pressure of each solvent used.
   f. If applicable, the option chosen to comply with Rule 707(2).

3. The permittee shall maintain written operating procedures for each cold cleaner. These written procedures shall be posted in an accessible, conspicuous location near each cold cleaner. **(R 336.1611(3), R 336.1707(4))**

4. As noted in Rule 611(2)(c) and Rule 707(3)(c), if applicable, an initial demonstration that the waste solvent is a safety hazard shall be made prior to storage in non-closed containers. If the waste solvent is a safety hazard and is stored in non-closed containers, verification that the waste solvent is disposed of so that not more than 20 percent, by weight, is allowed to evaporate into the atmosphere shall be made on a monthly basis. **(R 336.1213(3), R 336.1611(2)(c), R 336.1707(3)(c))**

VII. REPORTING

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

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

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).

FGAQCI
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

This flexible group covers the Complex 2 incinerators for which the air quality control improvements (AQCI) have been completed. When the AQCI have been completed, it will consist of eight (8) multiple hearth sewage sludge incinerators, each with a venturi scrubber followed by an impingement tray wet scrubber and a mist eliminator. (PTI No. 61-13A)

Emission Units: EUINC07, EUINC08, EUINC09, EUINC10, EUINC11, EUINC12, EUINC13, EUINC14

POLLUTION CONTROL EQUIPMENT

For each incinerator: a venturi scrubber followed by an impingement type wet scrubber and a mist eliminator.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. Particulate Matter	80 milligrams per dry standard cubic meter [a 2]	Test protocol*	Each incinerator in FGAQCI	GC 13, SC V.1	**R 336.1331, R 336.2801(ee)**
2. PM2.5	1.20 lb/hr[2]	Test protocol*	Each incinerator in FGAQCI	GC 13, SC V.1	**R 336.2801(ee), 40 CFR 52.21(c) & (d)**
3. PM10	1.20 lb/hr[2]	Test protocol*	Each incinerator in FGAQCI	GC 13, SC V.1	**R 336.2801(ee), 40 CFR 52.21(c) & (d)**
4. Hydrogen chloride	1.2 ppmv dry [a 1]	Test protocol*	Each incinerator in FGAQCI	GC 13, SC V.1	**R 336.1224**
5. Carbon monoxide	3,800 ppmv dry [a 2]	Test protocol*	Each incinerator in FGAQCI	GC 13, SC V.1	**R 336.2801(ee), 40 CFR 52.21(d)**
6. VOC	3.20 lb/hr[2]	Test protocol*	Each incinerator in FGAQCI	GC 13, SC V.1	**R 336.2801(ee), R 336.1702(a)**
7. Dioxins/furans (total mass basis) [b, c]	5.0 nanograms per dry standard cubic meter [a, 1]	Test protocol*	Each incinerator in FGAQCI	GC 13, SC V.1	**R 336.1224**
8. Dioxins/furans (toxic equivalency basis) [b, c]	0.32 nanograms per dry standard cubic meter [a, 1]	Test protocol*	Each incinerator in FGAQCI	GC 13, SC V.1	**R 336.1224**
9. Mercury	0.28 milligrams per dry standard cubic meter [a, 1]	Test protocol*	Each incinerator in FGAQCI	GC 13, SC V.1	**R 336.1224**
10. Nitrogen oxides	220 ppmv dry [a 2]	Test protocol*	Each incinerator in FGAQCI	GC 13, SC V.1	**R 336.2801(ee), 40 CFR 52.21(c) & (d)**
11. Sulfur Dioxide	26 ppmv dry [a 2]	Test protocol*	Each incinerator in FGAQCI	GC 13, SC V.1	**R 336.2801(ee)**
12. H_2SO_4	1.3 lb/hr[2]	Test protocol*	Each incinerator in FGAQCI	GC 13, SC V.1	**R 336.1224, R 336.2801(ee) 40 CFR 52.21(b)(3)(i)**
13. Cadmium	0.095 milligrams per dry standard cubic meter [a, 1]	Test protocol*	Each incinerator in FGAQCI	GC 13, SC V.1	**R 336.1224, R 336.1225(2)**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
14. Lead	0.30 milligrams per dry standard cubic meter [a] [2]	Test protocol*	Each incinerator in FGAQCI	GC 13, SC V.1	**R 336.2801(ee), 40 CFR 52.21(d)**
15. Fluorides	1.73 lb/hr[2]	Test protocol*	Each incinerator in FGAQCI	GC 13, SC V.1	**R 336.2801(ee)**
16. PM	46.6 tpy[2]	12-month rolling time period as determined at the end of each calendar month	FGAQCI	SC VI.7	**R 336.1205(1), R 336.2801(ee)**
17. PM10	59.6 tpy[2]	12-month rolling time period as determined at the end of each calendar month	FGAQCI	SC VI.7	**R 336.1205(1), R 336.2801(ee)**
18. PM2.5	58.3 tpy[2]	12-month rolling time period as determined at the end of each calendar month	FGAQCI	SC VI.7	**R 336.1205(1), R 336.2801(ee), 40 CFR 52.21(b)(3)(i)**
19. CO	1,522.4 tpy[2]	12-month rolling time period as determined at the end of each calendar month	FGAQCI	SC VI.7	**R 336.1205(1), R 336.2801(ee)**
20. NO_X	663.4 tpy[2]	12-month rolling time period as determined at the end of each calendar month	FGAQCI	SC VI.7	**R 336.1205(1), R 336.2801(ee)**
21. SO_2	37.6 tpy[2]	12-month rolling time period as determined at the end of each calendar month	FGAQCI	SC VI.7	**R 336.1205(1), R 336.2801(ee)**
22. VOC	64.8 tpy[2]	12-month rolling time period as determined at the end of each calendar month	FGAQCI	SC VI.7	**R 336.1205(1), R 336.2801(ee)**
23. Lead	0.54 tpy[2]	12-month rolling time period as determined at the end of each calendar month	FGAQCI	SC VI.7	**R 336.1205(1), R 336.2801(ee)**
24. CO_2e	237,275 tpy[2]	12-month rolling time period as determined at the end of each calendar month	FGAQCI	SC VI.7	**R 336.1205(1), 40 CFR 52.21(b)(3)(i)**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
25. H_2SO_4	25.9 tpy[2]	12-month rolling time period as determined at the end of each calendar month	FGAQCI	SC VI.7	**R 336.1205(1), R 336.2801(ee)**
26. Fluorides	35.0 tpy[2]	12-month rolling time period as determined at the end of each calendar month	FGAQCI	SC VI.7	**R 336.1205(1), R 336.2801(ee)**

[a] All emission limits are measured at 7 percent oxygen, dry basis, at standard conditions. For the emission limits in this table, standard conditions means a temperature of 68 °F (20 °C) and a pressure of 1 atmosphere (101.3 kilopascals).
[b] Dioxins/furans means tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans.
[c] The permittee has the option to comply with either the dioxin/furan limit on a total mass basis or the dioxin//furan emission limit on a toxic equivalency basis.
* Test protocol shall specify averaging time.

II. MATERIAL LIMIT(S)

Material	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. Total sludge feed	129,564 dry tons per year[2]	12-month rolling time period as determined at the end of each calendar month	FGAQCI	SC VI.6, VI.8	**R 336.1205(1), R 336.1225(1), R 336.1225(2), R 336.2801(ee), 40 CFR 52.21(b)(3)(i)**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate any incinerator in FGAQCI unless the associated venturi scrubber, impingement tray wet scrubber, and mist eliminator are installed, maintained, and operating in a satisfactory manner.[2] **(R 336.1224, R 336.1910)**

2. The permittee shall not feed sludge to any incinerator in FGAQCI unless the parameters listed below are within the ranges specified in the approved malfunction abatement plan (MAP), except for limited periods while attempting to restore a parameter to its specified range, as provided for in the approved MAP.[2]
   a. Water flow rate for each scrubber in the associated scrubber train.
   b. Differential pressure across the inlet and outlet of each scrubber in the associated scrubber train.
   c. Hearth #1 combustion temperature
   (R 336.1224, R 336.1702(a), R 336.1910)

3. The permittee shall not operate any incinerator in FGAQCI unless an update to the malfunction abatement plan (MAP) for the incineration process has been submitted within 180 days of commencing trial operation of the first incinerator in FGAQCI, and the updated MAP 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 336.1911)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the parameters specified below for each incinerator in FGAQCI and its associated scrubber train.[2]
   a. Water flow rate for each scrubber in the associated scrubber train.
   b. Differential pressure across the inlet and outlet of each scrubber in the associated scrubber train.
   c. Hearth #1 combustion temperature
   (R 336.1224, R 336.1702(a), R 336.1910)

2. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the oxygen emissions for each incinerator in FGAQCI on a continuous basis.[2] **(R 336.1224, R 336.2801(ee), 40 CFR 52.21(b)(3)(i))**

3. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the visible emissions from each incinerator in FGAQCI on a continuous basis.[2] **(R 336.1301)**

V. TESTING/SAMPLING

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

1. This condition applies to each pair of incinerators in FGAQCI for which this permit authorizes air quality control improvements. After the air quality control improvements have been completed for each pair of incinerators in FGAQCI, and within 180 days after commencement of trial operation of either incinerator in that pair of incinerators, the permittee shall verify PM, PM10, PM2.5, HCl, CO, VOC, dioxins/furans, mercury, NO_X, SO_2, H_2SO_4, cadmium, lead, and fluorides emission rates from one of the incinerators in the pair 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 336.1224, R 336.1225, R 336.1702(a), R 336.2001, R 336.2003, R 336.2004, R 336.2801(ee), 40 CFR 52.21(b)(3)(i), 40 CFR 52.21(c) & (d))**

See Appendix 5

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, in a satisfactory manner, the oxygen emissions from each incinerator in FGAQCI. The permittee shall operate each Continuous Emission Monitoring System (CEMS) to meet the timelines, requirements and reporting detailed in Appendix B.[2] **(R 336.1224, R 336.2801(ee), 40 CFR 52.21(b)(3)(i))**

2. The permittee shall continuously monitor and record, in a satisfactory manner, the visible emissions from each incinerator in FGAQCI. The permittee shall operate each COM system to meet the timelines, requirements and reporting detailed in Appendix 3.3.C.[2] **(R 336.1301, Consent Order MDNRE SIP No. 11-1993)**

3. The permittee shall conduct periodic inspections of each incinerator in FGAQCI as provided in the approved MAP, except during periods when the incinerator is out of service (in cold standby mode). The permittee shall keep records of all inspections and actions taken in response to the inspections on file at the facility and make them available to the Department upon request.[2] **(R 336.1910, R 336.1911)**

4. The permittee shall monitor and record, in a satisfactory manner, all of the following for each incinerator in FGAQCI on a daily basis, except during periods when the incinerator is out of service (in cold standby mode). The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2]
   a. Water flow rate through the associated scrubber train.
   b. Differential pressure across the inlet and outlet of each scrubber in the associated scrubber train.

c. Hearth #1 combustion temperature
(R 336.1910)

5. The permittee shall monitor and record, in a satisfactory manner, all other parameters identified in the approved malfunction abatement plan for FGAQCI, at the frequency identified in the plan, except during periods when there is no sludge in the incinerator. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2] **(R 336.1911)**

6. For each incinerator in FGAQCI, the permittee shall monitor and record the daily sludge feed rate, as wet tons per day, except during periods when there is no sludge in the incinerator. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2] **(40 CFR 61.52)**

7. The permittee shall calculate the emission rates of the pollutants listed below from FGAQCI monthly, both for the calendar month and for the 12-month rolling time period ending that month, using a method acceptable to the AQD District Supervisor. 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 336.2801(ee), 40 CFR 52.21(b)(3)(i))**
   a. PM
   b. PM10
   c. PM2.5
   d. CO
   e. NO_X
   f. SO_2
   g. VOC
   h. Lead
   i. CO_2e
   j. H_2SO_4
   k. Fluorides

8. For each incinerator in FGAQCI and for FGCOMPLEX2, EUINCIN01, EUINCIN03, EUINCIN04, EUINCIN05, and EUINCIN06, the permittee shall monitor and record the sludge feed rate for each calendar month and for the 12-month rolling time period ending that month, as dry tons per month, except during periods when there is no sludge in the incinerator. 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 336.2801(ee), 40 CFR 52.21(b)(3)(i))**

See Appendices 3 and 4

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. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification authorized by this Permit to Install for each incinerator in FGAQCI, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than commencement of trial operation of the incinerator as part of FGAQCI.[2] **(R 336.1201(7)(a))**

5. No later than the date that the permittee permanently ceases operating EUINCIN02, the permittee or the authorized agent pursuant to Rule 204 shall submit a closure notification, including the date of closure, to the AQD District Supervisor. For this condition, "permanently ceases operating" means that the unit has ceased operating and that the permittee has decided to not restart it.[2] **(R 336.1972, 40 CFR 60.5125)**

See Appendix 8

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 Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVSTACK07	39[2]	254[2]	**R 336.1225, 40 CFR 52.21(c) & (d)**
2. SVSTACK08	39[2]	254[2]	**R 336.1225, 40 CFR 52.21(c) & (d)**
3. SVSTACK09	39[2]	254[2]	**R 336.1225, 40 CFR 52.21(c) & (d)**
4. SVSTACK10	39[2]	254[2]	**R 336.1225, 40 CFR 52.21(c) & (d)**
5. SVSTACK11	39[2]	254[2]	**R 336.1225, 40 CFR 52.21(c) & (d)**
6. SVSTACK12	39[2]	254[2]	**R 336.1225, 40 CFR 52.21(c) & (d)**
7. SVSTACK13	39[2]	254[2]	**R 336.1225, 40 CFR 52.21(c) & (d)**
8. SVSTACK14	39[2]	254[2]	**R 336.1225, 40 CFR 52.21(c) & (d)**

IX. OTHER REQUIREMENT(S)

1. Both of the following apply to each incinerator in FGAQCI, and to its scrubber train, when the incinerator commences trial operation after the air quality control improvements authorized by this Permit to Install have been completed for that incinerator[2]:
   a. The Special Conditions in FGAQCI become applicable requirements for that incinerator and its scrubber train.
   b. The Special Conditions in FGCOMPLEX2 cease to be applicable requirements for that incinerator and its scrubber train.
   (R 336.1201(3))

2. Except during periods when an incinerator is out of service (cold standby mode), the permittee shall implement a MAP and record incidents of high opacity and inappropriate hearth temperatures as well as corrective actions and updates to the MAP. The MAP dated March 22, 2007, or its most recent revision, shall be implemented. All maintenance activities regarding the MAP shall be recorded and made available to AQD upon request.[2] **(R 336.1911, Consent Order No. 17-2006)**

3. No later than start-up of any incinerator in FGAQCI after the air quality control improvements authorized by this Permit to Install have been completed for that incinerator, the permittee shall permanently cease operating EUINC02. "Start-up" shall have the meaning given in R 336.1119. **(R 336.2801(ee), 40 CFR 52.21(b)(3)(i))**

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).

FG4M-INCIN
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

This flexible group covers all sewage sludge incinerators subject to the 40 CFR Part 60, Subpart MMMM emission guidelines through Rule 972 (R 336.1972). The conditions for this flexible group take effect on and after the effective date of Subpart MMMM: March 21, 2016. (PTI No. 61-13A)

Emission Units: EUINC07, EUINC08, EUINC09, EUINC10, EUINC11, EUINC12, EUINC13, EUINC14

POLLUTION CONTROL EQUIPMENT

For each incinerator: a venturi scrubber followed by an impingement tray wet scrubber and a mist eliminator.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. Particulate Matter	80 milligrams per dry standard cubic meter [a 2]	Test protocol*	Each incinerator in FG4M-INCIN	SC V.1-5, VI.5, VI.6, VI.9	**R 336.1972, 40 CFR 60.5165**
2. Hydrogen chloride	1.2 ppmv dry [a 2]	Test protocol*	Each incinerator in FG4M-INCIN	SC V.1-5, VI.5-7, VI.9	**R 336.1972, 40 CFR 60.5165**
3. Carbon monoxide	3,800 ppmv dry [a 2]	Test protocol*	Each incinerator in FG4M-INCIN	SC V.1-5, VI.3, VI.9	**R 336.1972, 40 CFR 60.5165**
4. Dioxins/furans (total mass basis) [b, c]	5.0 nanograms per dry standard cubic meter [a 2]	Test protocol*	Each incinerator in FG4M-INCIN	SC V.1-5, VI.3, VI.9	**R 336.1972, 40 CFR 60.5165**
5. Dioxins/furans (toxic equivalency basis) [b, c]	0.32 nanograms per dry standard cubic meter [a 2]	Test protocol*	Each incinerator in FG4M-INCIN	SC V.1-5, VI.3, VI.9	**R 336.1972, 40 CFR 60.5165 40 CFR 60.5185(c)**
6. Mercury	0.28 milligrams per dry standard cubic meter [a 2]	Test protocol*	Each incinerator in FG4M-INCIN	SC V.1-5, VI.9	**R 336.1972, 40 CFR 60.5165**
7. Oxides of nitrogen	220 ppmv dry [a 2]	Test protocol*	Each incinerator in FG4M-INCIN	SC V.1-5, VI.3, VI.9	**R 336.1972, 40 CFR 60.5165**
8. Sulfur Dioxide	26 ppmv dry [a 2]	Test protocol*	Each incinerator in FG4M-INCIN	SC V.1-5, VI.5-7, VI.9	**40 CFR 60.5165**
9. Cadmium	0.095 milligrams per dry standard cubic meter [a 2]	Test protocol*	Each incinerator in FG4M-INCIN	SC V.1-5, VI.5, VI.6, VI.9	**R 336.1972, 40 CFR 60.5165**
10. Lead	0.30 milligrams per dry standard cubic meter [a 2]	Test protocol*	Each incinerator in FG4M-INCIN	SC V.1-5, VI.5, VI.6, VI.9	**R 336.1972, 40 CFR 60.5165**

[a] All emission limits are measured at 7 percent oxygen, dry basis, at standard conditions. For the emission limits in this table, standard conditions are defined in 40 CFR 60.5250.
[b] Dioxins/furans are defined in 40 CFR 60.5250.
[c] The permittee has the option to comply with either the dioxin/furan limit on a total mass basis or the dioxin//furan emission limit on a toxic equivalency basis.
* Test protocol shall specify averaging time.

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. Use of the bypass stack associated with an incinerator in FG4M-INCIN at any time that sewage sludge is being charged to that incinerator is an emissions standards deviation for all of the pollutants listed in Special Conditions I.1 through I.10.[2] **(R 336.1972, 40 CFR 60.5220(d))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. For each pollutant and incinerator for which the permittee has chosen the compliance demonstration option specified in SC V.2 or V.4, the permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the pollutant emissions from the incinerator on a continuous basis.[2] **(R 336.1972, 40 CFR 60.13, 40 CFR 60.5220(b)(3)))**

2. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the sewage sludge feed rate for each incinerator in FG4M-INCIN on a continuous basis.[2] **(R 336.1972, 40 CFR 60.5170(f)(1))**

3. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the combustion chamber temperature for each incinerator in FG4M-INCIN on a continuous basis.[2] **(R 336.1910, R 336.1972, 40 CFR 60.5200, R 336.1972, 40 CFR 60.5170(a))**

4. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the pressure drop across the inlet and outlet of each scrubber in each scrubber train for FG4M-INCIN on a continuous basis.[2] **(R 336.1910, R 336.1972, 40 CFR 60.5200, R 336.1972, 40 CFR 60.5170(b))**

5. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the liquid flow rate through each scrubber in each scrubber train for FG4M-INCIN on a continuous basis.[2] **(R 336.1910, R 336.1972, 40 CFR 60.5200, R 336.1972, 40 CFR 60.5170(b))**

6. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the liquid pH for each scrubber in each scrubber train for FG4M-INCIN on a continuous basis.[2] **(R 336.1910, R 336.1972, 40 CFR 60.5200, R 336.1972, 40 CFR 60.5170(b))**

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 have the option of conducting emission tests to demonstrate initial compliance with the emission limits and standards for particulate matter, hydrogen chloride, carbon monoxide, dioxins/furans (total mass or toxic equivalency basis), mercury, nitrogen oxides, sulfur dioxide, cadmium, and lead. If the permittee chooses the option of performing emission tests, then the emission tests shall be conducted using the test methods, averaging methods and minimum sampling volumes or durations specified in Table 3 of 40 CFR Part 60, Subpart MMMM, and according to the testing, monitoring and calibration requirements specified in 40 CFR 60.5220(a). Stack testing procedures and the location of stack testing ports shall be in accordance with the applicable federal Reference Methods, 40 CFR Part 60 Appendix A. The permittee may use results from a performance test conducted within the two previous years that was conducted under the same conditions and demonstrated compliance with the emission limits and standards specified in the Emission Limits section of this Flexible Group, provided that no process changes have been made since the performance test was conducted. If the results of a past performance test are used, the permittee shall continue to meet the operating limits established during that performance test that demonstrated compliance with the applicable emission limits. The past performance test must have used the same test methods specified in Table 3 of 40 CFR Part 60 Subpart MMMM. Not less than 30 days prior to the anticipated test date, a complete stack

testing plan shall be submitted to the AQD Technical Programs Unit and District Office for approval. The AQD must approve the final plan prior to testing.[2] **(R 336.1972, 40 CFR 60.5185(a))**

2. In lieu of conducting the emissions test specified in Special Condition V.1, the permittee may demonstrate initial compliance with the emission limits for particulate matter, hydrogen chloride, carbon monoxide, dioxins/furans, mercury, nitrogen oxides, sulfur dioxide, cadmium and lead by substituting the use of a continuous emission monitoring system for any or all of these pollutants in accordance with the requirements of 40 CFR 60.5185(b).[2] **(R 336.1972, 40 CFR 60.5185(b))**

3. The permittee shall have the option of demonstrating continuous compliance with the emission limits and standards for particulate matter, hydrogen chloride, carbon monoxide, dioxins/furans (total mass or toxic equivalency basis), mercury, nitrogen oxides, sulfur dioxide, cadmium and lead using a performance test. If the permittee elects to choose the option of performance testing to demonstrate continuous compliance with the emission limits for the pollutants previously listed, performance tests shall be conducted on an annual basis for each pollutant (between 11 and 13 calendar months following the previous performance test), except as provide in 40 CFR 60.5205(a)(3) and (e). The performance tests shall be conducted using the test methods, averaging methods and minimum sampling volumes or durations specified in Table 3 of 40 CFR Part 60, Subpart MMMM, and according to the testing, monitoring and calibration requirements specified in 40 CFR 60.5220(a). Stack testing procedures and the location of stack testing ports shall be in accordance with the applicable federal Reference Methods, 40 CFR Part 60 Appendix A. Not less than 30 days prior to the anticipated test date, a complete stack testing plan shall be submitted to the AQD Technical Programs Unit and District Office for approval. The AQD must approve the final plan prior to testing.[2] **(R 336.1972, 40 CFR 60.5205(a))**

4. In lieu of conducting the performance tests specified in Special Condition V.3, the permittee may elect to demonstrate continuous compliance with the emission limits for particulate matter, hydrogen chloride, carbon monoxide, dioxins/furans, mercury, nitrogen oxides, sulfur dioxide, cadmium and lead by substituting the use of a continuous emissions monitoring system (CEMS) for any or all of these pollutants in accordance with the requirements of 40 CFR 60.5205(b). A continuous automated sampling system can be used in lieu of performance tests to demonstrate continuous compliance with the mercury or dioxin/furans emission limits. Should the permittee discontinue use of the CEMS to demonstrate continuous compliance with an emission limit for an incinerator, then a performance test, as specified in SC V.3, shall be performed before discontinuing use of the CEMS.[2] **(R 336.1972, 40 CFR 60.5205(b))**

5. As specified in 40 CFR 60.5190, the permittee shall establish the following parameters from the performance tests specified in SC V.1 and V.3:
   a. A minimum combustion chamber operating temperature (or minimum afterburner temperature) for each incinerator.
   b. A minimum pressure drop across each wet scrubber in each scrubber train.
   c. A minimum scrubber liquid flow rate (measured at the inlet to each wet scrubber in each scrubber train).
   d. A minimum scrubber liquid pH for each wet scrubber in each scrubber train

   Each established parameter shall be equal to the lowest 4-hour average of the parameter measured during the most recent performance test demonstrating compliance with all applicable emission limits. The permittee shall keep records on file at the facility for a period of five years.[2] **(R 336.1972, 40 CFR 60.5190)**

6. The use of a bypass stack during a performance test invalidates the results of the performance test.[2] **(R 336.1972, 40 CFR 60.5220(d))**

See Appendix 5

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 monitor and record the sewage sludge feed rate to the incinerators in FG4M-INCIN on a continuous basis, and calculate the daily average sewage sludge feed to each incinerator in FG4M-INCIN for

all hours of operation during each 24-hour period. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2] **(R 336.1972, 40 CFR 60.5170(f)(1))**

2. The permittee shall monitor and record the moisture content (as a weight percent) of the sewage sludge by taking a grab sample of the sewage sludge, on a daily basis, for the purpose of recording the range of moisture content. If the permittee takes more than one grab sample in a day, then the daily average moisture content for the number of grab samples taken shall be calculated. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2] **(R 336.1972, 40 CFR 60.5170(f)(2))**

3. The permittee shall monitor and record the combustion chamber temperature for each incinerator in FG4M-INCIN on a continuous basis. Measurements of the combustion chamber temperature shall be recorded every 15 minutes. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2] **(R 336.1972, 40 CFR 60.5170(a))**

4. The permittee shall develop and submit to the AQD District Supervisor a site-specific monitoring plan for each continuous monitoring system required by 40 CFR Part 60 Subpart MMMM.[2] **(R 336.1972, 40 CFR 60.5200)**

5. The permittee shall monitor and record, on a continuous basis, the pressure drop across the inlet and outlet of each scrubber in each scrubber train serving any incinerator in operation. Measurements of the pressure drop shall be recorded every 15 minutes. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2] **(R 336.1972, 40 CFR 60.5170(b))**

6. The permittee shall monitor and record, on a continuous basis, the liquid flow rate through each scrubber in the scrubber train serving any incinerator in operation. Measurements of the scrubber liquid flow rate for each scrubber in the scrubber train shall be recorded every 15 minutes. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2] **(R 336.1972, 40 CFR 60.5170(b), 40 CFR 60.5230)**

7. The permittee shall monitor and record, on a continuous basis, the scrubber liquid pH for each scrubber in the scrubber train serving any incinerator in operation. Measurements of the scrubber liquid pH for each scrubber in the scrubber train shall be recorded every 15 minutes. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2] **(R 336.1972, 40 CFR 60.5170(b), 40 CFR 60.5230)**

8. The permittee shall keep records of any notifications to the AQD District Supervisor required by SC VII.1 and VII.2. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2] **(R 336.1972, 40 CFR 60.5230(g)(1))**

9. For each pollutant and incinerator for which the permittee has chosen the compliance demonstration option specified in SC V.2 or V.4, the permittee shall continuously monitor and record, in a satisfactory manner, the pollutant emissions from the incinerator. The permittee shall operate each Continuous Emission Monitoring System (CEMS) to meet the timelines, requirements and reporting detailed in Appendix A and shall use the CEMS data to demonstrate compliance with the applicable emission limit in SC I.1-10.[2] **(R 336.1972, 40 CFR 60.13, 40 CFR 60.5165, 40 CFR 60.5185(c), 40 CFR 60.5220(b)(3))**

See Appendices 3 and 4

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 notify the AQD District Supervisor, in writing, one month before starting use of a continuous emissions monitoring system to demonstrate continuous compliance with an emission limit in SC I.1-10.[2] **(R 336.1972, 40 CFR 60.5220(b)(1))**

5. The permittee shall notify the AQD District Supervisor, in writing, one month before stopping use of a continuous emissions monitoring system to demonstrate compliance with an emission limit in SC I.1-10.[2] **(R 336.1972, 40 CFR 60.5220(b)(1))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

1. The requirements of this flexible group become effective on March 21, 2016. Before that date, they are not applicable requirements.[2] **(R 336.1972, 40 CFR Part 60, Subparts A and MMMM)**

2. The permittee shall implement and comply with the Operator Training and Qualification provisions as specified in 40 CFR 60.5130 through 60.5160.[2] **(R 336.1972, 40 CFR 60.5130, 40 CFR 60.5135, 40 CFR 60.5140, 40 CFR 60.5145, 40 CFR 60.5150, 40 CFR 60.5155, 40 CFR 60.5160)**

3. For each air pollution control device in FG4M-INCIN, the permittee shall conduct an air pollution control device inspection according to 40 CFR 60.5220(c) by March 21, 2016. For air pollution devices installed after the final compliance date, the permittee must conduct the air pollution control device inspection within 60 days after installation of the control device. The inspection shall include, at a minimum, all of the following[2]:
   a. Inspect air pollution control device(s) for proper operation;
   b. Generally observe that the equipment is maintained in good operating condition;
   c. Develop a site-specific monitoring plan according to the requirements of 40 CFR 60.5200.
   (R 336.1972, 40 CFR 60.5195(a), 40 CFR 60.5220(c))

4. The permittee shall comply with all applicable provisions of the Standards of Performance for New Stationary Sources for Existing Sewage Sludge Incineration Units, as specified in 40 CFR Part 60, Subparts A and MMMM.[2] **(R 336.1972, 40 CFR Part 60, Subparts A and MMMM)**

5. The emission limits and standards of 40 CFR Part 60, Subparts A and MMMM, apply to each emission unit in FG4M-INCIN at all times the emission unit is operating and during periods of malfunction. The emission limits and standards apply to emissions from a bypass stack or vent while sewage sludge is in the combustion chamber (i.e. until the sewage sludge feed to the combustor has been cut off for a period of time not less than the sewage sludge incineration residence time).[2] **(R 336.1972, 40 CFR 60.5165)**

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).

FGDryerTrains
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

This flexible group covers all four dryer trains in the biosolids drying facility. (PTI No. 61-13A)

Emission Units: EUDryerTrainA, EUDryerTrainB, EUDryerTrainC, EUDryerTrainD

POLLUTION CONTROL EQUIPMENT

Each dryer train has its own emission controls:
- Three-stage impingement scrubber
- Regenerative thermal oxidizer (RTO)
- Packed tower liquid counter flow scrubber

Each recycle bin has its own emission control device:
- Fabric filter collector

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. PM	0.005 gr/dscf[2]	Test protocol*	Each recycle bin in FGDryerTrains	GC 13, SC VI.4-5	**R 336.1331**
2. PM10	0.005 gr/dscf[2]	Test protocol*	Each recycle bin in FGDryerTrains	GC 13, SC VI.4-5	**40 CFR 52.21(c) & (d)**
3. PM2.5	0.005 gr/dscf[2]	Test protocol*	Each recycle bin in FGDryerTrains	GC 13, SC VI.4-5	**40 CFR 52.21(c) & (d)**
4. NO_X	3.95 lb/hr[2]	Test protocol*	Each dryer train in FGDryerTrains	SC V.1-V.2	**40 CFR 52.21(c) & (d)**
5. CO	3.67 lb/hr[2]	Test protocol*	Each dryer train in FGDryerTrains	SC V.1-V.2, SC VI.2	**40 CFR 52.21(d)**
6. PM	1.22 lb/hr[2]	Test protocol*	Each dryer train in FGDryerTrains	SC V.1-V.2, SC VI.2	**R 336.1331(c)**
7. PM10	1.63 lb/hr[2]	Test protocol*	Each dryer train in FGDryerTrains	SC V.1-V.2, SC VI.2	**40 CFR 52.21(c) & (d)**
8. PM2.5	1.14 lb/hr[2]	Test protocol*	Each dryer train in FGDryerTrains	SC V.1-V.2, SC VI.2	**40 CFR 52.21(c) & (d)**
9. SO_2	0.82 lb/hr[2]	Test protocol*	Each dryer train in FGDryerTrains	SC V.1 SC VI.3	**R 336.1407(a)**
10. VOC	1.68 lb/hr[2]	Test protocol*	Each dryer train in FGDryerTrains	SC V.1, SC VI.2	**R 336.1702(a)**
11. Lead	2.5×10^{-4} lb/hr[2]	Test protocol*	Each dryer train in FGDryerTrains	SC V.1	**40 CFR 52.21(d)**
12. H_2S	0.38 lb/hr[1]	Test protocol*	Each dryer train in FGDryerTrains	SC V.1, SC VI.2	**R 336.1224**

* Test protocol shall specify averaging time.

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The total operating time for all dryer trains in FGDryerTrains shall not exceed 31,536 hours per 12-month rolling time period as determined at the end of each calendar month. For this condition, a dryer train shall be considered to be operating whenever the dryer is processing sludge cake.[2] **(R 336.1205(1), R 336.1225(2), R 336.2801(ee), 40 CFR 52.21(b)(3)(i), 40 CFR 52.21(c) & (d))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate any dryer train in FGDryerTrains unless the associated impingement tray scrubber and RTO are installed, maintained, and operated in a satisfactory manner.[2] **(R 336.1224, R 336.1702(a), R 336.1910)**

2. On and after January 31, 2018, the permittee shall not operate any dryer train in FGDryerTrains unless the associated packed tower liquid scrubber is installed, maintained, and operated in a satisfactory manner. **(R 336.1213(3), R 336.1910)**

3. The permittee shall not transfer material to any recycle bin in FGDryerTrains unless the associated fabric filter collector is installed, maintained, and operated in a satisfactory manner.[2] **(R 336.1910)**

4. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, devices for each drying train in FGDryerTrains to monitor and record the parameters listed below, on a continuous basis, during operation of the dryer train.[2] **(R 336.1224, R 336.1702(a), R 336.1910)**
   a. Temperature in the RTO combustion chamber
   b. Liquid flow rate to the impingement tray scrubber
   c. Pressure drop across the impingement tray scrubber
   d. Pressure drop across the recycle bin fabric filter collector

5. On and after January 31, 2018, the permittee shall install, calibrate, maintain and operate in a satisfactory manner, devices for each drying train in FGDryerTrains to monitor the parameters listed below, on a continuous basis, during operation of the dryer train. **(R 336.1213(3), R 336.1910)**
   a. Liquid flow rate to the packed tower liquid scrubber
   b. The pH of the scrubber liquid in each packed tower liquid scrubber.

V. TESTING/SAMPLING

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

1. For each dryer train in FGDryerTrains, within 180 days after commencement of trial operation of the dryer train, the permittee shall verify NO_X, CO, PM, PM10, PM2.5, SO_2, VOC, lead, and H_2S emission rates from the dryer train 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 336.1224, R 336.1331(c), R 336.1407(a), R 336.1702(a), R 336.2001, R 336.2003, R 336.2004, R 336.2801(ee), 40 CFR 52.21(b)(3)(i), 40 CFR 52.21(c) & (d))**

2. The permittee shall periodically verify NO_X, CO, PM, PM10, and PM2.5, emission rates from all dryer trains in FGDryerTrains by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to each test, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve each 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. Periodic verification of emission rates shall comply with the following:[2] **(R 336.1331(c), R 336.2001, R 336.2003, R 336.2004)**
   a. The permittee shall conduct the first tests required by this condition no later than 30 months after commencement of trial operation of the first dryer train in FGDryerTrains,

b. Every two years, the permittee shall conduct testing for two dryer trains. The test plan submitted for approval for each test shall identify the dryer trains to be tested.
c. The permittee shall rotate the dryer trains tested so that each dryer train is tested at least once every six years. If extenuating circumstances preclude meeting this requirement for a particular test, the submitted test plan shall describe the extenuating circumstances and request that this requirement be waived for that test.

See Appendix 5

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, in a satisfactory manner, a log of the monthly and 12-month rolling time period hours of operation for the dryer trains in FGDryerTrains. 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 336.2801(ee), 40 CFR 52.21(b)(3)(i), 40 CFR 52.21(c) & (d))**

2. The permittee shall monitor and record, in a satisfactory manner, the parameters listed below for each drying train in FGDryerTrains on the specified basis. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2] **(R 336.1224, R 336.1702(a), R 336.1910)**
   a. Temperature in the RTO combustion chamber, whenever a dryer train is exhausting to the RTO, on a continuous basis
   b. Liquid flow rate to the impingement tray scrubber, once each day that the dryer train operates
   c. Pressure drop across the impingement tray scrubber, once each day that the dryer train operates

3. On and after January 31, 2018, the permittee shall monitor and record, in a satisfactory manner, the parameters listed below for each drying train in FGDryerTrains on the specified basis. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1213(3), R 336.1910)**
   a. Liquid flow rate to the packed tower liquid scrubber, once each day that the dryer train operates
   b. The pH of scrubber liquid in each packed tower liquid scrubber, once each shift that the scrubber operates.

4. The permittee shall monitor and record, in a satisfactory manner, the pressure drop across each recycle bin fabric filter collector on a weekly basis, during operation of the associated dryer train. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2] **(R 336.1910)**

5. The permittee shall conduct a daily visible emissions check of each recycle bin's stack during routine operating conditions. For this condition, such checks do not have to be in accordance with Method 9. If a check reveals any visible emissions from a stack other than uncombined water vapor, the permittee shall inspect the fabric filter collector associated with the stack and perform any maintenance required to eliminate visible emissions. The permittee shall keep records of the results of the daily visible emissions check and of any maintenance performed after visible emissions are observed. The permittee shall keep these records on file and make them available to the AQD upon request.[2] **(R 336.1910)**

See Appendices 3 and 4

VII. REPORTING

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

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

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 Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVDryerTrainA	30[2]	130[2]	**R 336.1225, 40 CFR 52.21(c) & (d)**
2. SVDryerTrainB	30[2]	130[2]	**R 336.1225, 40 CFR 52.21(c) & (d)**
3. SVDryerTrainC	30[2]	130[2]	**R 336.1225, 40 CFR 52.21(c) & (d)**
4. SVDryerTrainD	30[2]	130[2]	**R 336.1225, 40 CFR 52.21(c) & (d)**
5. SVRecycleBinA	8[2]	130[2]	**40 CFR 52.21(c) & (d)**
6. SVRecycleBinB	8[2]	130[2]	**40 CFR 52.21(c) & (d)**
7. SVRecycleBinC	8[2]	130[2]	**40 CFR 52.21(c) & (d)**
8. SVRecycleBinD	8[2]	130[2]	**40 CFR 52.21(c) & (d)**

IX. OTHER REQUIREMENT(S)

NA

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).

FGDryerFacility
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

This flexible group covers the entire biosolids drying facility. In addition to the dryer trains, the storage silos, and the biosolids drying facility roadways, it includes the following equipment inside the building to prepare feed to the dryer trains: eight sludge grinders (two for each dryer train), eight electrically-powered dewatering centrifuges (two for each dryer train), a cake bin and enclosed pug mill for each dryer train, and conveyors to transfer materials. The facility also has a hot water heater, an air handling unit, and make-up air units for the building, all natural gas-fired. All process area building ventilation exhaust is routed through four alkaline hypochlorite scrubbers. (PTI No. 61-13A)

Emission Units: EUDryerTrainA, EUDryerTrainB, EUDryerTrainC, EUDryerTrainD, EUSolidsSilo1, EUSolidsSilo2, EUSolidsSilo3, EUSolidsSilo4, EUWaterHeater, EUAirHandling, EUMakeUpAir

POLLUTION CONTROL EQUIPMENT

All building ventilation exhaust is routed through four alkaline hypochlorite scrubbers.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. NO_X	71.5 tpy[2]	12-month rolling time period as determined at the end of each calendar month	FGDryerFacility	SC VI.2	**R 336.1205(1), R 336.2801(ee)**
2. CO	65.7 tpy[2]	12-month rolling time period as determined at the end of each calendar month	FGDryerFacility	SC VI.2	**R 336.1205(1), R 336.2801(ee)**
3. PM	20.0 tpy[2]	12-month rolling time period as determined at the end of each calendar month	FGDryerFacility	SC VI.2	**R 336.1205(1), R 336.2801(ee)**
4. PM10	26.9 tpy[2]	12-month rolling time period as determined at the end of each calendar month	FGDryerFacility	SC VI.2	**R 336.1205(1), R 336.2801(ee)**
5. PM2.5	19.2 tpy[2]	12-month rolling time period as determined at the end of each calendar month	FGDryerFacility	SC VI.2	**R 336.1205(1), R 336.2801(ee), 40 CFR 52.21(b)(3)(i)**
6. CO_2e	90,361 tpy[2]	12-month rolling time period as determined at the end of each calendar month	FGDryerFacility	SC VI.2	**R 336.1205(1), 40 CFR 52.21(b)(3)(i)**

7. Visible emissions from all truck traffic at the biosolids drying facility shall not exceed five (5) percent opacity. Compliance shall be demonstrated using Test Method 9D as defined in Section 324.5525(j) of Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451).[2] **(R 336.1301)**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall keep each pug mill's cover closed when the pug mill is in operation, except as necessary for operation, inspection, and maintenance.[2] **(R 336.1910)**

2. The permittee shall not feed biosolids to any dryer train in FGDryerFacility unless a malfunction abatement plan (MAP) as described in Rule 911(2), for all FGDryerFacility operations has been submitted, 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 AQD 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 336.1911)**

3. Whenever trucks are loaded with material from the silos in FGDryerFacility, the permittee shall apply non-volatile oil to the material being transferred, to minimize the generation of fugitive dust.[2] **(R 336.1371, R 336.1372, Act 451 324.5524)**

4. The permittee shall only transfer material to silos in FGDryerFacility through enclosed conveyors.[2] **(R 336.1910)**

5. The total natural gas-burning time for all equipment in EUMakeUpAir shall not exceed 16,000 hours per 12-month rolling time period as determined at the end of each calendar month. For this condition, "natural gas burning time" means time when natural gas burners are consuming fuel.[2] **(R 336.1205(1), 40 CFR 52.21(c) & (d))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall pave all roadways at FGDryerFacility and maintain them in good condition, to minimize the generation of fugitive dust.[2] **(R 336.1205(1), R 336.1371, R 336.1372, R 336.2801(ee))**

2. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, devices to monitor and record the parameters specified below for equipment in FGDryerFacility:[2] **(R 336.1910, R 336.1911)**
   a. The pH of the scrubber liquid in each alkaline hypochlorite scrubber.
   b. The oxidation-reduction potential (ORP) of the scrubber liquid in each alkaline hypochlorite scrubber.
   c. All other parameters identified in the approved malfunction abatement plan for FGDryerFacility, at the frequency identified in the plan

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 complete all required calculations in a format acceptable to the AQD District Supervisor 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(1))**

2. The permittee shall calculate the emission rates of the pollutants listed below from FGDryerFacility monthly, both for the calendar month and for the 12-month rolling time period ending that month, using a method

acceptable to the AQD District Supervisor. 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 336.2801(ee), 40 CFR 52.21(b)(3)(i))**

a. NO_X
b. CO
c. PM
d. PM10
e. PM2.5
f. CO_2e

3. The permittee shall monitor and record, in a satisfactory manner, the parameters listed below for FGDryerFacility, on the specified basis. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2] **(R 336.1910, R 336.1911)**
   a. The pH of the scrubber liquid in each alkaline hypochlorite scrubber, once each shift that the scrubber operates.
   b. The oxidation-reduction potential (ORP) of the scrubber liquid in each alkaline hypochlorite scrubber, once each shift that the scrubber operates.
   c. All other parameters identified in the approved malfunction abatement plan for FGDryerFacility, on the basis identified in the plan.

4. The permittee shall keep, in a satisfactory manner, a log of all actions taken to comply with SC IV.1. 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 336.1371, R 336.1372, R 336.2801(ee))**

5. The permittee shall keep, in a satisfactory manner, a log of the monthly and 12-month rolling time period hours of operation of EUMakeUpAir. 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), 40 CFR 52.21(c) & (d))**

See Appendices 3 and 4

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. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification authorized by this Permit to Install for FGDryerFacility, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than commencement of trial operation of any dryer in FGDryerFacility, which is considered to occur when the permittee first feeds sludge cake to any dryer.[2] **(R 336.1201(7)(a))**

See Appendix 8

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 Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVScrubber1	60[2]	80[2]	**40 CFR 52.21(c) & (d)**
2. SVScrubber2	60[2]	80[2]	**40 CFR 52.21(c) & (d)**
3. SVScrubber3	60[2]	80[2]	**40 CFR 52.21(c) & (d)**
4. SVScrubber4	60[2]	80[2]	**40 CFR 52.21(c) & (d)**
5. SVWaterHeater	12[2]	60[2]	**R 336.1225, 40 CFR 52.21(c) & (d)**
6. SVAirHandling	8[2]	60[2]	**R 336.1225, 40 CFR 52.21(c) & (d)**

IX. OTHER REQUIREMENT(S)

NA

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).

FG2013Project
FLEXIBLE GROUP CONDITIONS

DESCRIPTION
This flexible group covers all the upgraded incinerators and the biosolids drying facility. (PTI No. 61-13A)

Emission Units: EUINC07, EUINC08, EUINC09, EUINC10, EUINC11, EUINC12, EUINC13, EUINC14, EUDryerTrainA, EUDryerTrainB, EUDryerTrainC, EUDryerTrainD, EUSolidsSilo1, EUSolidsSilo2, EUSolidsSilo3, EUSolidsSilo4, EUWaterHeater, EUAirHandling, EUMakeUpAir

POLLUTION CONTROL EQUIPMENT
NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. NO_X	735.0 tpy[2]	12-month rolling time period as determined at the end of each calendar month	FG2013Project	SC VI.1	**R 336.1205(1), R 336.2801(ee)**
2. CO	1,588.1 tpy[2]	12-month rolling time period as determined at the end of each calendar month	FG2013Project	SC VI.1	**R 336.1205(1), R 336.2801(ee)**
3. PM	66.6 tpy[2]	12-month rolling time period as determined at the end of each calendar month	FG2013Project	SC VI.1	**R 336.1205(1), R 336.2801(ee)**
4. PM10	86.5 tpy[2]	12-month rolling time period as determined at the end of each calendar month	FG2013Project	SC VI.1	**R 336.1205(1), R 336.2801(ee)**
5. PM2.5	77.5 tpy[2]	12-month rolling time period as determined at the end of each calendar month	FG2013Project	SC VI.1	**R 336.1205(1), R 336.2801(ee), 40 CFR 52.21(b)(3)(i)**
6. CO_2e	327,636 tpy[2]	12-month rolling time period as determined at the end of each calendar month	FG2013Project	SC VI.1	**R 336.1205(1), 40 CFR 52.21(b)(3)(i)**

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))**

1. The permittee shall calculate the emission rates of the pollutants listed below from FG2013Project monthly, both for the calendar month and for the 12-month rolling time period ending that month, using a method acceptable to the AQD District Supervisor. 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 336.2801(ee), 40 CFR 52.21(b)(3)(i))**
   a. NO_X
   b. CO
   c. PM
   d. PM10
   e. PM2.5
   f. CO_2e

2. The permittee shall conduct an ambient air monitoring program for NO_2 in a manner and with instrumentation approved by the AQD Air Monitoring Unit. Monitoring shall consist of at least two air monitoring locations and shall begin no later than the earlier of the dates listed below. The permittee shall conduct monitoring in accordance with the plan for three years or until one year of acceptable data collection shows that the ambient air concentrations of NO_2 are no higher than 50% of the applicable 1-hour and annual NO_2 National Ambient Air Quality Standards, whichever comes first. "Acceptable data collection" means fully quality assured and no less than 75% complete.[2] **(40 CFR 52.21(d))**
   a. By startup of the last dryer train in FG2013Project.
   b. March 21, 2016

See Appendices 3 and 4

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. No later than 90 days after issuance of this permit, the permittee shall submit to the AQD Air Monitoring Unit an acceptable plan for the ambient air monitoring program for NO_2 required by SC VI.2.[2] **(40 CFR 52.21(d))**

5. The permittee shall submit all ambient air monitoring data records to the AQD Air Monitoring Unit in an acceptable format within 30 days following the end of the month in which the data were collected.[2] **(40 CFR 52.21(d))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

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).

FGDryIncTrans
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

This flexible group contains requirements to ensure that during operation of the biosolids drying facility before incinerators 1, 3, 4, 5, and 6 permanently cease operating, there is not a significant emissions increase of a regulated new source review pollutant. The flexible group requires that these incinerators permanently cease operating no later than March 20, 2016. The flexible group terminates when incinerators 1, 3, 4, 5, and 6 have permanently ceased operating, at which time its conditions will no longer be applicable requirements for any of the equipment in the flexible group. (PTI No. 61-13A)

Emission Units: EUINC01, EUINC03, EUINC04, EUINC05, EUINC06, EUINC07, EUINC08, EUINC09, EUINC10, EUINC11, EUINC12, EUINC13, EUINC14, EUDryerTrainA, EUDryerTrainB, EUDryerTrainC, EUDryerTrainD

POLLUTION CONTROL EQUIPMENT

For each of EUINC01, EUINC03, EUINC04, EUINC05, and EUINC06:

A venturi scrubber followed by an impingement tray wet scrubber and mist eliminator

For each of EUINC07, EUINC08, EUINC09, EUINC10, EUINC11, EUINC12, EUINC13, EUINC14 before it is upgraded:

An impingement tray wet scrubber followed by a venturi scrubber and a mist eliminator

For each of EUINC07, EUINC08, EUINC09, EUINC10, EUINC11, EUINC12, EUINC13, EUINC14 after it is upgraded:

A venturi scrubber followed by an impingement tray wet scrubber and a mist eliminator

For each of EUDryerTrainA, EUDryerTrainB, EUDryerTrainC, and EUDryerTrainD:

A three-stage impingement scrubber followed by a regenerative thermal oxidizer (RTO)

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Total sludge feed	157,000 dry tons per year[2]	12-month rolling time period as determined at the end of each calendar month	FGDryIncTrans	SC VI.2	**R 336.1205(1), R 336.2801(ee), 40 CFR 52.21(b)(3)(i)**

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))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor 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(1), R 336.2801(ee), 40 CFR 52.21(b)(3)(i))**

2. For all the equipment listed below, the permittee shall monitor and record the sludge feed rate for each calendar month and for the 12-month rolling time period ending that month, as dry tons per month, except during periods when there is no sludge in the incinerator or sludge cake in the dryer. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2]
   a. Each incinerator in FGAQCI
   b. Each dryer in FGDryerFacility
   c. FGCOMPLEX2, EUINC01, EUINC03, EUINC04, EUINC05, and EUINC06

   (R 336.1205(1), R 336.2801(ee), 40 CFR 52.21(b)(3)(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. 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 each incinerator listed below, no later than the date that the permittee permanently ceases operating the incinerator, the permittee or the authorized agent pursuant to Rule 204 shall submit a closure notification, including the date of closure, to the AQD District Supervisor. For this condition, "permanently ceases operating" means that the unit has ceased operating and that the permittee has decided to not restart it.[2] **(R 336.1205(1), R 336.1972, R 336.2801(ee), 40 CFR 52.21(b)(3)(i), R 336.1972, 40 CFR 60.5125)**
   a. EUINC01
   b. EUINC03
   c. EUINC04
   d. EUINC05
   e. EUINC06

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

1. No later than March 20, 2016, the permittee shall permanently cease operating EUINC01, EUINC03, EUINC04, EUINC05, and EUINC06. When all five of these incinerators have permanently ceased operating, the conditions in this flexible group shall cease to be applicable requirements for the equipment in FGDryIncTrans.[2] **(R 336.1205(1), R 336.2801(ee), 40 CFR 52.21(b)(3)(i))**

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: Abbreviations and Acronyms

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

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

Appendix 2. Schedule of Compliance

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

Appendix 3. Monitoring Requirements

The following monitoring procedures, methods, or specifications are the details to the monitoring requirements identified and referenced in flexible groups FGCOMPLEX1, FGCOMPLEX2, and FGLIMESTORAGE.

3.1 BAGHOUSE INSPECTIONS

1. Inspections shall be conducted during scheduled outages or downtimes, and immediately after observing visible emissions or pressure drops outside the normal range, but not less frequently than every six months. **(R336.1213(3))**

2. The operational condition, and if necessary, reasons for failure or malfunction of the bags, metal housings, fans, blowers, hopper bottom discharge valve, reverse air dampers or pulse jets, access doors and gaskets (whichever is applicable) shall be determined during the inspection. **(R336.1213(3))**

3. Any repairs and corrective actions needed to address the causes of malfunction or failure shall be performed promptly to maintain compliance. **(R336.1213(3))**

4. Permittee shall perform weekly maintenance inspections of the baghouses which shall include visual inspection of the fabric filter bags for security of attachment, holes or tears in the fabric filter bags for security of attachment, holes or tears in the fabric and evidence of dust leakage. **R336.1213(3))**

3.2 SCRUBBER INSPECTIONS

The following monitoring procedures, methods, or specifications are the details to the monitoring requirements identified and referenced in FGCOMPLEX2.

1. Inspections shall be conducted during scheduled outages or downtimes, and immediately after observing visible emissions or differential pressures outside the normal range, but not less frequently than every six months. **(R336.1910)**

2. The operational condition, and if necessary, reasons for failure or malfunction of the pumps, spray nozzles, venturi throats, plates, baffles, packing, orifices, tangential openings, mechanically driven rotors, entrainment separators (mist eliminators), fans, blowers, (whichever is applicable), shall be determined during the inspection. **(R336.1910)**

3. Any repairs and corrective actions needed to address the causes of malfunction or failure shall be performed promptly to maintain compliance. **(R336.1910)**

3.3.A. POLLUTANT MONITORING FOR 40 SUBPART 60 SUBPART MMMM, Continuous Emission Monitoring System (CEMS) Requirements

1. Within 30 calendar days of submitting the written notification required by FG4M-INCIN SC VII.1, the permittee shall submit two copies of a Monitoring Plan to the AQD, for review and approval. The Monitoring Plan shall include drawings or specifications showing proposed locations and descriptions of the required CEMS.

2. Within 150 calendar days of submitting the written notification required by FG4M-INCIN SC VII.1, the permittee shall submit two copies of a complete test plan for the CEMS to the AQD for approval.

3. Within 180 calendar days of submitting the written notification required by FG4M-INCIN SC VII.1, the permittee shall complete the installation and testing of the CEMS.

4. Within 60 days of completion of testing, the permittee shall submit to the AQD two copies of the final report demonstrating the CEMS complies with the requirements of the corresponding Performance Specifications (PS) in the following table.

Pollutants with a Promulgated PS	Applicable PS
PM	11
HCl	13
CO	4
Mercury	12A or 12B
Nitrogen oxides	2
SO_2	2
Oxygen	3

Pollutants without a promulgated PS	Applicable PS
Cadmium	NA*
Lead	NA*
Dioxins/furans	NA*

* Upon promulgation of a PS for this pollutant, the promulgated PS becomes an "applicable PS" for this appendix.

5. The span value shall be 2.0 times the lowest emission standard or as specified in the federal regulations.

6. Each CEMS shall be installed, calibrated, maintained, and operated in accordance with the procedures set forth in 40 CFR 60.13 and the above-listed PS of Appendix B to 40 CFR Part 60.

7. Each calendar quarter, the permittee shall perform the Quality Assurance Procedures of the CEMS set forth in Appendix F of 40 CFR Part 60. Within 30 days following the end of each calendar quarter, the permittee shall submit the results to the AQD in the format of the data assessment report (Figure 1, Appendix F).

8. In accordance with 40 CFR 60.7(c) and (d), the permittee shall submit two copies of an excess emission report (EER) and summary report in an acceptable format to the AQD, within 30 days following the end of each calendar quarter. The Summary Report shall follow the format of Figure 1 in 40 CFR 60.7(d). The EER shall include the following information:
   a) A report of each exceedance above the limits specified in the conditions of this permit. This includes the date, time, magnitude, cause and corrective actions of all occurrences during the reporting period.
   b) A report of all periods of CEMS downtime and corrective action.
   c) A report of the total operating time of the incinerator served by the CEMS during the reporting period.
   d) A report of any periods that the CEMS exceeds the instrument range.
   e) If no exceedances or CEMS downtime occurred during the reporting period, the permittee shall report that fact.

The permittee shall keep all monitoring data on file for a period of at least five years and make them available to the AQD upon request.

3.3.B. OXYGEN MONITORING FOR FGAQCI, Continuous Emission Monitoring System (CEMS) Requirements

1. The span value shall be 2.0 times the lowest emission standard or as specified in the federal regulations.

2. The CEMS shall be installed, calibrated, maintained, and operated in accordance with the procedures set forth in 40 CFR 60.13 and PS 3 of Appendix B to 40 CFR Part 60.

3. Each calendar quarter, the permittee shall perform the Quality Assurance Procedures of the CEMS set forth in Appendix F of 40 CFR Part 60. Within 30 days following the end of each calendar quarter, the permittee shall submit the results to the AQD in the format of the data assessment report (Figure 1, Appendix F).

4. In accordance with 40 CFR 60.7(c) and (d), the permittee shall submit two copies of an excess emission report (EER) and summary report in an acceptable format to the AQD, within 30 days following the end of each calendar quarter. The Summary Report shall follow the format of Figure 1 in 40 CFR 60.7(d). The EER shall include the following information:
   a) A report of all periods of CEMS downtime and corrective action.
   b) A report of the total operating time of the incinerator during the reporting period.
   c) A report of any periods that the CEMS exceeds the instrument range.
   d) If no exceedances or CEMS downtime occurred during the reporting period, the permittee shall report that fact.

The permittee shall keep all monitoring data on file for a period of at least five years and make them available to the AQD upon request.

3.3.C. VISIBLE EMISSIONS MONITORING FOR FGAQCI, Continuous Opacity Monitoring System (COMS) Requirements

1. The span value shall be 2.0 times the lowest emission standard or as specified in the federal regulations.

2. The COMS shall be installed, calibrated, maintained, and operated in accordance with the procedures set forth in 40 CFR 60.13 and PS 1 of Appendix B, 40 CFR Part 60.

3. The permittee shall perform an annual audit of the COMS using the procedures set forth in USEPA Publication 450/4-92-010, “Performance Audits Procedures for Opacity Monitors”, or a procedure acceptable to AQD. Within 30 days after the completion of the audit, the results of the annual audit shall be submitted to the AQD.

4. In accordance with 40 CFR 60.7(c) and (d), the permittee shall submit two copies of an excess emission report (EER) and summary report in an acceptable format to Air Quality Division, within 30 days following the end of each calendar quarter. The Summary Report shall follow the format of Figure 1 in 40 CFR 60.7(d). The EER shall include the following information:
   a) A report of all periods of COMS downtime and corrective action.
   b) A report of the total operating time of the incinerator during the reporting period.
   c) If no exceedances or COMS downtime occurred during the reporting period, the permittee shall report that fact.

The permittee shall keep all monitoring data on file for a period of at least five years and make them available to the AQD upon request.

Appendix 4. Recordkeeping

The permittee shall use the following approved formats and procedures for the recordkeeping requirements referenced in the Source Wide Requirements and flexible groups FGCOMPLEX1, FGCOMPLEX2, and FGLIMESTORAGE. Alternative formats must be approved by the AQD District Supervisor.

For Requirements in FGLIMESTORAGE

BAGHOUSE INSPECTIONS

A. A log of the inspections, cause(s) of malfunctions or failures, repairs made and corrective actions taken shall be maintained on file for a period of at least five years. **(R336.1213(3))**

B. The permittee shall keep records of the preventive maintenance inspections. These records shall include the date and time of inspection, name of person making the inspection, identification of the unit inspected, conditions of the unit and descriptions of any corrective action taken. These records shall be maintained for a minimum of five years and made available to the Division upon request. **(R336.1213(3))**

For Requirements in FGCOMPLEX1, FGCOMPLEX2

SCRUBBER INSPECTIONS

A log of the inspections, cause(s) of malfunctions or failures, repairs made and corrective actions taken shall be maintained on file (hardcopy or electronic) for a period of at least five years. **(R336.1910)**

For Requirements under Source Wide Requirements

Mercury and Beryllium

1. The permittee shall retain records of emission test results and other data needed to determine total emissions of beryllium at the facility for a minimum of five years and made available, upon request, for inspection, by the Division. **(40CFR 61.33(e))**

2. The permittee shall retain records of emission test results and other data needed to determine total emissions of mercury at the facility for a minimum of five years and made available, upon request, for inspection, by the Division. **(40CFR 61.53(d)(6))**

Appendix 4.1: Recordkeeping (continued)

The permittee shall use the following approved formats and the procedures for the recordkeeping requirements referenced in Source Wide Requirements.

1. The permittee shall keep records of implementation of requirements specified in the fugitive dust control program described below and for all requirements of the Consent Orders, Civil Actions and Consent Judgments described in Table B. These records shall be kept on file at the facility for the most recent five-year period and shall be made available to the Division upon request.
   (R336.1213(3)), (Consent Order MDEQ SIP No. 11-1993)

ADDENDUM

(Act 451, Part 55 324.5524), (Consent Order MDEQ SIP No. 11-1993, Fugitive Control Plan, May, 1993)

RECORDKEEPING FOR FUGITIVE DUST SOURCES

REQUIRED RECORDS

UNPAVED ROADS/LOTS

1. DATE OF TREATMENT
2. CONTROL MEASURE USED
3. RESPONSIBLE PERSON'S INITIALS
4. NAME OF PRODUCT APPLIED
5. AMOUNT OF SOLUTION/WATER APPLIED
6. DILUTION RATIO
7. ROAD SEGMENT/LOT IDENTIFICATION

PAVED ROADS/LOTS

1. DATE OF TREATMENT
2. CONTROL MEASURE USED
3. RESPONSIBLE PERSON'S INITIALS
4. ROAD SEGMENT/LOT IDENTIFICATION

STORAGE PILES/MATERIAL HANDLING

1. DATE OF TREATMENT
2. CONTROL MEASURE USED
3. RESPONSIBLE PERSON'S INITIALS
4. DILUTION RATIO (IF APPLICABLE)
5. AMOUNT DUST SUPPRESSANT/WATER APPLIED
6. IDENTIFICATION OF PILE/MATERIAL HANDLING OPERATION TREATED
7. EQUIPMENT USED

OPTIONAL RECORDS

WEATHER CONDITIONS

1. PRECIPITATION
2. TEMPERATURE
3. WIND DIRECTION AND VELOCITY

Appendix 5. Testing Procedures

The following table lists the test methods that are to be used, in accordance with 40 CFR Part 60, Subpart MMMM, to satisfy the testing requirements for FGC1ASH, FGC2ASH, FGCOMPLEX1 and FGCOMPLEX2.

Pollutant	Test Method	Minimum sampling volumes or durations
Particulate matter	EPA Reference Test Method 5 at 40 CFR part 60, appendix A-3; Method 26A or Method 29 at 40 CFR part 60, appendix A-8.	3-run average (collect a minimum volume of 0.75 dry standard cubic meters per run)

Pollutant	Test Method	Minimum sampling volumes or durations
Hydrogen chloride	EPA Reference Test Method 26 or 26A at 40 CFR part 60, appendix A-8.	3-run average (For Method 26, collect a minimum volume of 200 liters per run. For Method 26A, collect a minimum volume of 1 dry standard cubic meters per run)
Carbon Monoxide	EPA Reference Test Method 10, 10A, or 10B at 40 CFR part 60, appendix A-4.	3-run average (collect sample for a minimum duration of one hour per run)
Dioxins/furans (total mass basis)	EPA Reference Test Method 23 at 40 CFR part 60, appendix A-7.	3-run average (collect a minimum volume of 1 dry standard cubic meters per run)
Mercury	EPA Reference Test Method 29 at 40 CFR part 60, appendix A-8; Method 30B at 40 CFR part 60, appendix A-8; or ASTM D6784-02 (Reapproved 2008)	3-run average (For Method 29 and ASTM D6784-02 (Reapproved 2008), collect a minimum volume of 1 dry standard cubic meters per run. For Method 30B, collect a minimum sample as specified in Method 30B at 40 CFR part 60, appendix A-8)
Oxides of nitrogen	EPA Reference Test Method 7 or 7E at 40 CFR part 60, appendix A-4	3-run average (Collect sample for a minimum duration of one hour per run)
Sulfur dioxide	EPA Reference Test Method 6 or 6C at 40 CFR part 40, appendix A-4; or ANSI/ASME PTC 19.10-1981.	3-run average (For Method 6, collect a minimum volume of 200 liters per run. For Method 6C, collect sample for a minimum duration of one hour per run)
Cadmium	EPA Reference Test Method 29 at 40 CFR part 60, appendix A-8.	3-run average (collect a minimum volume of 1 dry standard cubic meters per run)
Lead	EPA Reference Test Method 29 at 40 CFR part 60, appendix A-8.	3-run average (collect a minimum volume of 1 dry standard cubic meters per run)
Fugitive emissions from ash handling	Visible emission test (Method 22 of appendix A-7 of this part).	Three 1-hour observation periods.

Appendix 6. Permits to Install

The following table lists any PTIs issued since the effective date of previously issued ROP No. 199600412. 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.

Permit to Install Number	ROP Revision Application Number	Description of Equipment or Change	Corresponding Emission Unit(s) or Flexible Group(s)
252-06	NA	Seventeen (17) emergency generators	FGENGINES, FGCIENGINES
NA	200400018*	Special conditions were added to sections VI. And X. of the Flexible Group tables to address required inspections and maintenance activities for incinerators that have been placed in shutdown or cold standby mode.	FGCOMPLEX1, FGCOMPLEX2
NA	200900029*	A component of the fugitive dust plan was changed to reflect operations at the facility; a visible emission monitoring requirement was updated to clarify that visible emissions observation are not expected to occur at night; special conditions addressing an incinerator operating temperature requirement and the scrubber pressure drop were updated.	Source-Wide Conditions, FGCOMPLEX1, FGCOMPLEX2, FGLIMESTORAGE

The following ROP amendments or modifications were issued after the effective date of ROP No. MI-ROP-B2103-2014.

Permit to Install Number	ROP Revision Application Number/Issuance Date	Description of Change	Corresponding Emission Unit(s) or Flexible Group(s)
61-13	201400048/ June 13, 2014	Incorporate Permit to Install (PTI) No. 61-13.	FGCOMPLEX2 FGAQCI FG4M-INCIN FGDryerTrains FGDryerFacility FG2013Project
61-13A	201500119/ October 16, 2015	Incorporate PTI No. 61-13A. PTI 61-13A is modification of PTI No. 61-13 to allow more flexibility for sludge processing during the early stages of operating the new biosolids drying facility. Specifically, the DWSD requested flexibility to operate any of the remaining 13 incinerators during the transition period from beginning operation of the biosolids drying facility until all Complex I incinerators have permanently ceased operating. The applicant proposes no changes to the equipment configuration, no changes to emission controls, and no changes to allowed emissions, stack parameters, or stack locations.	FGCOMPLEX2 FGAQCI FG4M-INCIN FGDryerTrains FGDryerFacility FG2013Project FGDryIncTrans
NA	201700081 / August 29, 2017	The facility installed a Packed tower liquid counter flow scrubber to each dryer train (EUDryerTrainA, EUDryerTrainB, EUDryerTrainC, and EUDryerTrainD) using exemption R 336.1285(2)(e) to further reduce SO_2 emissions. With the installation of the new control equipment, the Detroit District Office requested Conditions be added to FGDryerTrains, so the equipment is operated and maintained properly.	EUDryerTrainA, EUDryerTrainB, EUDryerTrainC, EUDryerTrainD, FGDryerTrains

Appendix 7. Emission Calculations

The permittee shall use the following emission factors in conjunction with monitoring, testing or recordkeeping data to determine compliance with the applicable requirements referenced in FGENGINES.

Engine-Specific Emission Factors

Emission Unit ID	Emission Unit Description	NOx emissions @ 100% load (lb/hr)
EU-D1A	Caterpillar 3512 diesel fired 1500 kW generator	28.98
EU-D1B	Caterpillar 3512 diesel fired 1500 kW generator	28.98
EU-D2	Caterpillar 3508 diesel fired 1000 kW generator	29.67
EU-D4	Caterpillar C32 diesel fired 1000 kW generator	18.83
EU-D5	Caterpillar C15 diesel fired 400 kW generator	5.93
EU-D6	Caterpillar 1103C-33G1 diesel fired 20 kW generator	0.28
EU-P1	Portable diesel fired 70 kW generator	0.98
EU-P2	Portable diesel fired 70 kW generator	0.98
EU-G1	Caterpillar G3406 NA natural gas fired 150 kW generator	5.75
EU-G2	Caterpillar G3406 NA natural gas fired 150 kW generator	5.75
EU-G3	Ford G30F3 natural gas fired 30 kW generator	0.78
EU-G4	Ford G20F3 natural gas fired 20 kW generator	0.49
EU-G5	Ford G30F3S natural gas fired 30 kW generator	0.78
EU-G6	Ford G20F3 natural gas fired 20 kW generator	0.49
EU-G8	Ford G40F3 natural gas fired 30 kW generator	0.78
EU-G9	Ford G20F3 natural gas fired 20 kW generator	0.49
EU-G10	Caterpillar G3516 LE natural gas fired 1040 kW generator	6.45
The permittee shall calculate NOx emissions for each engine by multiplying the hours of operation for each engine by its respective engine-specific emission factor listed above, or as determined from testing, whichever is greater.		

Appendix 8. Reporting

A. Annual, Semiannual, and Deviation Certification Reporting

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

B. Other Reporting

The permittee shall use the following approved formats and procedures for the reporting requirements referenced in Source Wide Requirements, FGCOMPLEX1, FGCOMPLEX2. Alternative formats must be approved by the AQD District Supervisor.

For Source Wide Requirements

1. Beginning with the calendar quarter starting on October 1, 1993, and quarterly thereafter, the Permittee shall submit to the Division a report identifying each day in which any emission limit, operational requirement, or recordkeeping requirement, was not met.
   (R336.1213(3)), (Consent Order MDEQ SIP No. 11-1993)

2. The report specified in Condition 1 (above) shall, for each instance, explain the reason that the emission limit, operational requirement, or recordkeeping requirement was not met, the duration of the event, the remedial action taken, and a description of the steps which were taken to prevent recurrence.
   (R336.1213(3)), (Consent Order MDEQ SIP No. 11-1993)

3. The report specified in Condition 1 (above) shall be submitted within 30 days following the end of the calendar quarter in which data were collected**.**
   (R336.1213(3)), (Consent Order MDEQ SIP No. 11-1993)

Appendix 9. Preventative Maintenance Summary

For details about the Preventative Maintenance Summary, please refer to the updated Malfunction Abatement Plan, which was last revised in March 2007, and which is attached in the pages that follow.

Malfunction Abatement Plan

The City of Detroit
Wastewater Treatment Plant
9300 West Jefferson Avenue
Detroit, MI 48209

Revision C

March 2007

Table of Contents

Incineration Process Malfunction Abatement Plan

The City of Detroit Wastewater Treatment Plant

This document contains the Incineration Process Malfunction Abatement Plan to be used at the City of Detroit's Wastewater Treatment Plant, 9300 West Jefferson Avenue, Detroit, Michigan 48209. The plan's purpose is to assure compliance with the emission limit on opacity in the event of a malfunction or failure of any part of the process that affects opacity.

Rule 911 of the State of Michigan Air Pollution Control Rules requires the DWWTP to have a Malfunction Abatement Plan in place, "to prevent, detect, and correct malfunctions or equipment failures resulting in emissions exceeding any applicable emission limitation." The emission limitation this plan is concerned with is the opacity limitation of 20 percent. The rule requires that the plan specify, at a minimum:

a) A complete preventative maintenance program, including identification of the supervisory personnel responsible for overseeing the inspection, maintenance and repair of air-cleaning devices, a description of the items or conditions that shall be inspected, the frequency of these inspections or repairs, and an identification of the major replacement parts that shall be maintained in inventory for quick replacement.

b) An identification of the source and air-cleaning device operating variables that shall be monitored to detect a malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring or surveillance procedures.

c) 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.

The plan is divided into four sections in tabular format:

1. Represented by **Table 1**, *Key Monitored Process Parameters*, this section relates to R 336.1911 (2)(b) and delineates, "the source and air-cleaning device operating variables that shall be monitored to detect a malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring or surveillance procedures."

   The first column of Table 1 shows the reference number which is used to link the malfunction range (condition) of Table 2 items and maintenance activities in Table 3 with one or more process parameters given in Table 1. The Operations personnel at the DWWTP have determined, through experience, the incineration process parameters whose variance has a direct effect on the opacity of incineration emissions. These parameters are shown in column 2 of Table 1.

   Columns 3 to 7 contain information regarding the device or method used to monitor a given process parameter in column 2, the location of such device, the frequency of monitoring, the normal range of the process parameter and the malfunction range for a given parameter.

   The value of a given parameter is indicative of either normal operation or

malfunction or failure of the process. Table 1 contains fields for both the normal operating range and the malfunction range for each monitored process parameter. If any of these parameter's values fall within the particular parameter's malfunction range, remedial action must be taken to prevent a deviation from the emission limitation

2. Represented by **Table 2,** *Malfunction Abatement Summary*, this section relates to R 336.1911 (2)(c) and is an, "identification of the source and air-cleaning device operating variables that shall be monitored to detect a malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring or surveillance procedures." This table details the action(s) to be taken in the event that one or more of the monitored Process Parameters value(s) in Table #1 enters its malfunction range.

   As an example, assume the oxygen level has fallen below 4 percent. Using Table 1, it is determined that <4% oxygen is indicative of a malfunction. *Oxygen Level %,* in the first row of Table 1, has a *Process Parameter Reference Number* of "1." Using this reference number and Table 2, it is determined that there are three possible causes for this condition (low oxygen). The operator need only determine which of the three is the actual cause and take the action recommended in the *Remedial Action* column corresponding to the cause.

   All opacity exceedances and the corrective action(s) taken will be recorded. Records of each operator adjustment to prevent an opacity exceedance need not be recorded.

3. **Table 3,** *Preventative Maintenance Summary,* is a summary of the preventative maintenance to be performed on devices whose failure may contribute to opacity deviations. The maintenance program relates to requirement (2)(a) of R 336.1911.

   As an example, refer to the first row of Table 3. The induced draft fan affects process parameters associated with Process Parameter Reference Numbers 1-6, 9 and 11. These reference numbers are used to reference Table 1's first column which indicates that Oxygen Level (%), Temperature, Draft Pressure, Feed Rate, Hopper Depth, Auxiliary Combustion Air Damper, Manual Opacity Monitor Calibrations and Slag Buildup are all affected if the induced draft fan malfunctions. The frequency of PM activity applies to units that are operating. Records of PM activity will be maintained.

4. **Table 4,** *Spare Parts List,* lists parts that are in inventory for use in the maintenance of devices listed in Table 3. This table, along with Table 3, relates to requirement (2)(a) of R 336.1911. For convenience, the attached

spare parts list may detail supplier name and supplier part number. However, the Detroit Wastewater Treatment Plant reserves the right to purchase spare parts from any company offering an acceptable substitute. The quantity of parts included in this section is a suggested number of spares. The Detroit Wastewater Treatment Plant reserves the right to have suppliers expedite delivery of parts from their factory or warehouse in lieu of storing onsite.

The intended function of the malfunction abatement plan (MAP) is, "to prevent, detect, and correct malfunctions or equipment failures resulting in emissions exceeding any applicable emission limitation." The emission limitation is 20% opacity.

Definition of Acronyms

PLC – Programmable Logic Controller
OCS – Ovation Control System
SFE – Screened Final Effluent (process water used where water is needed)
DWWTP – Detroit Wastewater Treatment Plant
I.D. Fan – Induced Draft Fan
MAP – Malfunction Abatement Plan
COMS – Continuous Opacity Monitoring System
P.M. – Preventative Maintenance
ID – Inside diameter
OD – Outside diameter
C1 – Incineration Complex One
CII – Incineration Complex Two
IS – In-Service
I/O – Input/Output

Incineration Process Malfunction Abatement Plan

The City of Detroit Wastewater Treatment Plant

Table 1 - Key Monitored Process Parameters

Process Parameter Reference Number	Process Parameter	Monitoring Device or Method	Location of Monitor	Frequency of Monitoring	Normal Operating Range	Malfunction Range
1	**Oxygen Level (%)**	Oxygen Analyzer	Breach/Hearth #3	Continuous	1 – 12%	<1%
2	**Hearth #1 Temperature**	Thermocouple	Hearth #1	Continuous	1100 – 1500 °F.	<900 °F.
3	**Combustion Zone Temperature**	Thermocouple	Combustion zone hearths	Continuous	1200 – 1950 °F.	<1200 °F. or >1950 °F.
4	**Draft Pressure**	Pressure gauge	Breech/Hearth #5	Continuous	0.0 to –1.5 in. of H_2O	> +0.0 inches of H_2O
5	**Feed Rate**	Weightometers	Conveyor belts	Continuous	Complex I: 0-16 wet tons/hr; Complex II: 0-20 wet tons/hr	Complex I >16 wet tons/hr; Complex II >20 wet tons/hr
6	**Total Scrubber System Inlet-Outlet Differential Pressure**	Pressure gauges	Venturi section inlet and tray section outlet	Continuous	>18 inches of H_2O column	<18 inches of H_2O column
7	**Scrubber Water Flow**	Flow meters	Control Room	Continuous	3 – 4 SFE pumps in-service	< 3 SFE pumps in-service
8	**Sludge Combustion Air Supply**	Shaft return air and auxiliary air dampers	Control Room	Continuous	0 to 100% open	Unresponsive
9	**Slag Buildup**	Visual	Combustion zone hearths and center shaft	As needed	All holes open and center shaft clearance okay	≥ 25% holes blocked. Center shaft clearance not okay.
10	**Ash Buildup on Bottom Hearth**	Visual	Complex I – basement Complex II – first floor	As needed	Empty (no buildup)	Plugged drop hole
11	**Opacity**	Opacity monitor	Roof	Continuous	Below 20%	No reading or constant low or high readings

Incineration Process Malfunction Abatement Plan

The City of Detroit Wastewater Treatment Plant

Table 2 – Malfunction Abatement Summary

Process Parameter Reference Number	Condition	Possible Cause(s)	Means of Detection	Corrective Procedures
1	Low oxygen	Too many burners I.S.	PLC/OCS	Reduce burner firing rates or number of burners in use
1	Low oxygen	Low draft pressure	PLC/OCS	Increase draft pressure setpoint
1	Low oxygen	Process control problems	PLC/OCS	Increase oxygen set point, or manually increase air damper openings
2	Low hearth #1 temperature	Feed rate increase or lower cake solids	PLC/OCS	Increase upper hearth burner firing rates and/or reduce feed rate if necessary
3	Low combustion temperatures	Low burner use profiles	PLC/OCS	Increase number of burners in use and/or firing rates as needed.
3	Low combustion temperatures	Feed rate increase or lower cake solids	PLC/OCS	Increase number of burners in use and/or firing rates as needed. Or, if necessary, reduce feed rate.
3	High combustion temperatures	Lost feed, burner use profile, or change in cake solids	PLC/OCS	Restore feed or reduce number of burners and/or firing rates
4	Low or high draft	Various process changes	PLC/OCS	Increase or decrease draft pressure set point as needed
5	No feed	Conveyor(s) stopped or hopper bridging	PLC/OCS & visual inspections	Restart conveyors and/or clear hopper bridging. Check screw speed settings
5	Too much feed	Not enough incinerators	Visual Inspection	Put more incinerators in-service / decrease feed
5	Hopper bridging	Cake containing an excessive amount of polymer	Visual Inspection	Run the hopper until it is empty (this eliminates the bridging)
6	Low scrubber system differential pressure	Various process changes	PLC/OCS	Increase draft and venturi differential pressure set points
7	Low scrubber water flow rate	Incorrect settings or loss in water supply pressure	PLC/OCS	Increase flow settings and/or restore water supply pressure
8	Low or no sludge combustion air supply	Oxygen control system or air damper problems	PLC/OCS	Open air dampers in manual mode and visually check damper action, open lower hearth peep holes if necessary

Incineration Process Malfunction Abatement Plan

The City of Detroit Wastewater Treatment Plant

Table 2 – Malfunction Abatement Summary

Process Parameter Reference Number	Condition	Possible Cause(s)	Means of Detection	Corrective Procedures
9	Slag buildup	High combustion zone temperatures	PLC/OCS/Visual	De-slag affected hearths and/or center shaft sections if needed
10	Ash buildup on bottom hearth	Ash system not removing ash	PLC/OCS/Visual	Check ash system. If not working, stop feed, stop shaft and control burnout, and place incinerator out-of-service before corrective maintenance begins
11	Opacity monitor malfunction	Electrical or dirty lenses	PLC/OCS	Place incinerator out-of-service for instrument corrective maintenance
Any	Preventative Maintenance	Other components shut off as a result of P.M.	PLC/OCS	Control burnout and place incinerator in standby mode prior to PM

Incineration Process Malfunction Abatement Plan

City of Detroit Wastewater Treatment Plant

Table 3 – Preventative Maintenance Summary – Tasks Common to both Complex I and Complex II

Process Parameter Reference Number	Maintained Equipment	Preventative Maintenance Task	Frequency	Responsible Supervisor (Title)
4, 5, 6	Induced draft fan	Electrical inspection	Annually	EWG Sub-Foreman
		Oil lubrication & sensory check	Annually	Plant Maintenance Sub-Foreman
		Oil change - bearings	Annually	Plant Maintenance Sub-Foreman
1, 2, 3	Incinerator gas burner	Mechanical inspection of burners	Quarterly	Plant Maintenance Sub-Foreman
2, 3, 4, 5	Main stack damper	Electrical & pneumatic system checks	Quarterly	Operations
4	Scrubber damper	Check	Quarterly	Plant Maintenance Sub-Foreman
1, 2, 3, 5, 9, 11	Center shaft system	Lube and mechanical check	Monthly	Plant Maintenance Sub-Foreman
1, 2, 3, 4, 9, 11	Burner air fan	Oil level and mechanical inspection	Quarterly	Plant Maintenance Sub-Foreman
		Mechanical check – drive belt	Quarterly	Plant Maintenance Sub-Foreman
11	All opacity monitors	Opacity monitor P.M.	Monthly	WSCIT Sub-Foreman

Incineration Process Malfunction Abatement Plan

City of Detroit Wastewater Treatment Plant

Table 3 – Preventative Maintenance Summary – Tasks Common to both Complex I and Complex II

Process Parameter Reference Number	Maintained Equipment	Preventative Maintenance Task	Frequency	Responsible Supervisor (Title)
6, 7, 11	SFE pumps	Electrical inspection	Annually	EWG Sub-Foreman
		Mechanical inspection	Bi – Annually	Plant Maintenance Sub-Foreman
		Operator inspection – Butterfly valve leakage	Quarterly	Operations - HSPO
		Gear drive – Bearing oil change, anchor bolt check	Annually	Plant Maintenance Sub-Foreman
		Bearing housing inspection on strainers	Annually	Plant Maintenance Sub-Foreman
		Electrical inspection	Annually	EWG Sub-Foreman
		Flexible coupling – Lube, operation & alignment check	Bi – Annually	Plant Maintenance Sub-Foreman
		Bearing housing inspection	Bi – Annually	Plant Maintenance Sub-Foreman
2, 3, 5, 9, 11	Weightometer for belt # 15-1	Calibration/Inspection	Monthly	WSCIT Sub-Foreman
	Weightometer for belt # 15-2			
	Weightometer for belt # 15-3			
	Weightometer for belt # 15-4			
	Weightometer for belt # 15-5			
	Weightometer for belt # 15-6			
	Weightometer for belt # X-9			
	Weightometer for belt # P 7 & 8			

Incineration Process Malfunction Abatement Plan

City of Detroit Wastewater Treatment Plant

Table 3 – Preventative Maintenance Summary – Tasks Common to both Complex I and Complex II

Process Parameter Reference Number	Maintained Equipment	Preventative Maintenance Task	Frequency	Responsible Supervisor (Title)
2, 3, 5, 9, 11	Weightometer for belt # P 9 & 10	Calibration/Inspection	Monthly	WSCIT Sub-Foreman
	Weightometer for belt # P 11 & 12			
	Weightometer for belt # P 13 & 14			
	Weightometer for belt # K-1 & 2			
	Weightometer for belt # L-1 & 2			
	Weightometer for belt # Q-7 & 8			
	Weightometer for belt # Q-9 & 10			
	Weightometer for belt # Q-11 & 12			
	Weightometer for belt # Q-13 & 14			
	Weightometer for belt # M-1 & 2			
	Weightometer for belt # N-1 & 2			
1, 11	Incinerator #1 Oxygen Analyzers		Monthly	
	Incinerator #2 Oxygen Analyzers			
	Incinerator #3 Oxygen Analyzers			
	Incinerator #4 Oxygen Analyzers			

Incineration Process Malfunction Abatement Plan

City of Detroit Wastewater Treatment Plant

Table 3 – Preventative Maintenance Summary – Tasks Common to both Complex I and Complex II

Process Parameter Reference Number	Maintained Equipment	Preventative Maintenance Task	Frequency	Responsible Supervisor (Title)
1, 11	Incinerator #5 Oxygen Analyzers	Calibration/Inspection	Monthly	WSCIT Sub-Foreman
	Incinerator #6 Oxygen Analyzers			
	Incinerator #7A Oxygen Analyzer			
	Incinerator #7B Oxygen Analyzer			
	Incinerator #8A Oxygen Analyzer			
	Incinerator #8B Oxygen Analyzer			
	Incinerator #9A Oxygen Analyzer			
	Incinerator #9B Oxygen Analyzer			
	Incinerator #10A Oxygen Analyzer			
	Incinerator #10B Oxygen Analyzer			
	Incinerator #11A Oxygen Analyzer			
	Incinerator #11B Oxygen Analyzer			
	Incinerator #12A Oxygen Analyzer			
	Incinerator #12B Oxygen Analyzer			
	Incinerator #13A Oxygen Analyzer			

Incineration Process Malfunction Abatement Plan

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Table 3 – Preventative Maintenance Summary – Tasks Common to both Complex I and Complex II

Process Parameter Reference Number	Maintained Equipment	Preventative Maintenance Task	Frequency	Responsible Supervisor (Title)
1, 11	Incinerator #13B Oxygen Analyzer	Calibration/Inspection	Monthly	WSCIT Sub-Foreman
	Incinerator #14A Oxygen Analyzer			
	Incinerator #14B Oxygen Analyzer			

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Table 3 – Preventative Maintenance Summary – Tasks Peculiar to Incineration Complex II

Equipment Component Reference Number	Maintained Equipment	Preventative Maintenance Task	Frequency	Responsible Supervisor (Title)
4, 6, 7, 11	Venturi nozzle	Nozzle inspection	Semi-annually	Plant Maintenance Sub-Foreman
1, 2, 3, 4, 8	Auxiliary combustion air fan	Electrical inspection	Annually	EWG Sub-Foreman
		Mechanical check – belt drive	Semi-annually	Plant Maintenance Sub-Foreman

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Table 4 – Spare Parts Identification

Maintained Equipment	Description of Part	EMPAC or Mfg. Part Number	Quantity
Complex 2 Induced Draft Fan	Adapter, Bearing: 2-5/16" bore	000000000004203	2
	Bearing, Pillow Block: SKF FSAF 517	000000000007966	2
	Bearing, Roller: tapered with race	000000000003456	1
	Coupling, Flexible: Type crowned tooth	000000000000240	1
	Ring, Stabilizing: SKF SR17	000000000013075	1
	Seal, Ring: (grease) ID 2.938" OD 3.565"	000000000008361	4
Incinerator Gas Burners	Actuator, Valve #EA5300000-000013	000000000005499	15
C2 Central Shaft Cooling Air Fan	Belt, V-drive: Dayco P/N 5VX950	000000000002134	2
Incinerator Drive Reducers	Belt, V-drive: Dayco P/N 5VX950	000000000002134	2
	Limiter, Incinerator: Torque 409/3	000000000508320	1
Auxiliary Combustion Air Fan	Belt, V-drive: Goodyear	000000000008796	2
	Damper, Fan: Burner air fan #73-NH	000000000002496	1
Complex 1 Incinerator Piping/Hoses	Adapter, Incinerator	000000000002731	8
	Coupling, Hose: 1 ¼" type D female	000000000009922	8
	Hose, Incinerator	000000000003045	8
	Nozzle, Incinerator	000000000003964	2
	Nozzle, Spray	000000000007157	8

Incineration Process Malfunction Abatement Plan
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Table 4 – Spare Parts Identification

Maintained Equipment	Description of Part	EMPAC or Mfg. Part Number	Quantity
Complex 1 Shaft Cooling Air Fan	Belt, V-drive: Goodyear P/N C-90	000000000006584	3
	Sheave, Std V-belt: C/3 Grooves Type B-2	000000000004562	1
	Sheave, Std V-belt: C Groove 3 Type B2	000000000005484	1
Complex 1 Burner Air Fan	Bearing, Pillow Block: w/col ball	000000000010269	2
	Belt, V-drive: Wedge cog type	000000000009397	6
	Sheave, Std V-belt: 5V-belt grooves 6	000000000008123	1
	Sheave, Std V-belt: 6 groove OD 9"	000000000013117	1
Complex 1 Induced Draft Fan	Adapter, Bearing: 3-15/16" bore	000000000003642	2
	Bearing, Pillow Block: Linkbelt	000000000007546	2
	Bearing, Pillow Block: 3-15/16" bore	000000000012520	2
	Bearing, Roller: Spherical tapered	000000000004311	1
	Coupling, Flexible Fan: End bore 3-15/16"	000000000000524	1
Opacity Monitor	Connector Kit, Multi I/O	000000000508334	1
	Purge Filters	000000000508289	1
	Lens Cleaning Fluid	000000000508336	1

Incineration Process Malfunction Abatement Plan
City of Detroit Wastewater Treatment Plant

Table 4 – Spare Parts Identification

Maintained Equipment	Description of Part	EMPAC or Mfg. Part Number	Quantity
Opacity Monitor	Dessicator (Head)	000000000508637	1
	Dessicator (Retro)	000000000508636	1
	Alignment Tool	000000000508295	1
SFE Pump	O-Ring, 0.139 X-sect/ 3.359 ID	2611895 116	1
	O-Ring, 0.139 X-sect/26.500 ID	2612202 116	1
	Bearing, sleeve 3-11/16 4-3/16	2623773 186	1
	Bearing, sleeve 3-11/16 4-3/16	2623774 186	2
	Bearing, sleeve 3-11/16 4-3/16	2623775 186	3
	Ring, lateral bowl wear (core #262 32HXB)	2624327 118	1
	Core, lateral bowl wear ring 32HXB	2628537 222	1
	Bearing, sleeve 3-15/16 4-7/16	2727112 186	4
	Bearing, shaft 3-15/16 5-7/8	4778535 118	1
Oxygen Analyzer	Assembly, Filter: oxygen analyzer	000000000013438	1
	Board, printed circuit: power supply	000000000005146	1
	Board, printed circuit: indicator	000000000005443	1
	Board, printed circuit: processing	000000000012594	1
	Hexagon bolt M5 x 16 millimeter	000000000012086	12

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Table 4 – Spare Parts Identification

Maintained Equipment	Description of Part	EMPAC or Mfg. Part Number	Quantity
Oxygen Analyzer	Box, probe mounting	000000000004942	1
	Box, terminal: for detector	000000000005226	1
	Nipple, Teflon: for .25 OD tube	000000000007095	3
	O-ring, oxygen analyzer: for filter	000000000005678	6
	O-ring, seal: C-65	000000000007311	6
	Probe, sample: ZTA 30"	000000000010036	1
	Pump, air: 115VAC	000000000012838	1
	Sensor, oxygen: for zicromatic oxygen	000000000001073	1
	Terminal block, ceramic	000000000012390	1
	Valve, analyzer viton for oxygen	000000000013128	1
	Valve, 3-way knob control stainless	000000000005679	1
Digital Control System	Cable, control: programming/OIC cable	000000000007946	1
	Chassis, monitor: 10 slot	000000000001788	2
	Backlight lamp for LCD	000000000006782	1
	Module, control: modular card slot	000000000000328	4
	Module, control: analog output module	000000000001616	2

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Table 4 – Spare Parts Identification			
Maintained Equipment	**Description of Part**	**EMPAC or Mfg. Part Number**	**Quantity**
Weightometer-Technetics model	Transducer, LVDT	000000000015373	1
Weightometer-Autoweigh Integrator model Micro VI	Board, computer: P/N EC0074	000000000000409	1
	Board, display: supertwist P/N EC0725	000000000006492	1
	Board, power supply	000000000007842	1
	Encoder, weightometer belt speed model	000000000000731	1
	Integrator, weigh-scale: with enclosure	000000000006924	1
	Integrator, weigh-scale	000000000013662	1
	Transducer, load cell	000000000013541	1
Digital Control System	Controller, history: transfer card	000000000013057	2
	Controller, memory: card	000000000004303	4
	Controller, program: programmable	000000000006406	2
	Supply, processor: power	000000000004440	2
	Switch, transfer	000000000008247	1
Temperature Element	Sensor, temperature: and thermowell	000000000507867	20