

Iowa Department of Natural Resources

Draft Title V Operating Permit Fact Sheet

This document has been prepared to fulfill the public participation requirements of 40 CFR Part 70 and 567 Iowa Administrative Code (IAC) 22.107(6). 40 CFR Part 70 contains operating permit regulations pursuant to Title V of the Clean Air Act.

The Iowa Department of Natural Resources (DNR) finds that:

1. Metro Methane Recovery Facility, located at 12161 NE 12th Avenue, Mitchellville, Iowa 50169 has applied to renew their Title V Operating Permit. The designated responsible official of this facility is Mr. Joe Durako, Senior District Manager.
2. Metro Methane Recovery Facility performs conversion of Landfill Gas to Electric Power, SIC 4911, NAICS 221119. This facility consists of twenty- four (24) significant emission units with potential emissions of:

Pollutant	Abbreviation	Potential Emissions (Tons per Year)
Particulate Matter ($\leq 10 \mu\text{m}$)	PM ₁₀	21.31
Particulate Matter	PM	21.31
Sulfur Dioxide	SO ₂	54.28
Nitrogen Oxides	NO _x	221.55
Volatile Organic Compounds	VOC	33.00
Carbon Monoxide	CO	452.94
Hazardous Air Pollutants ⁽¹⁾	HAP	13.70

⁽¹⁾ May include the following: 1,1,2,2- Tetrachloroethane, 1,1 Dichloroethane, Acrylonitrile, Benzene, Dichloromethane, Ethylbenzene, Formaldehyde, Hexane, Hydrochloric Acid, MIBK, Tetrachloroethylene, Trichloroethylene, Vinyl Chloride, Toluene, and Xylene (mixed isomers).

3. Metro Methane Recovery Facility submitted a Title V Operating Permit renewal application on September 25, 2013 and any additional information describing the facility on November 13, 2013 and February 18, 2015. Based on the information provided in these documents, DNR has made an initial determination that the facility meets all the applicable criteria for the issuance of an operating permit specified in 567 IAC 22.107.
4. DNR has complied with the procedures set forth in 567 IAC 22.107, including those regarding public notice, opportunity for public hearing, and notification of EPA and surrounding state and local air pollution programs.

DNR procedures for reaching a final decision on the draft permit:

1. The public comment period for the draft permit will run from October 31, 2016 through November 29, 2016. The beginning date of this public comment period also serves as the beginning of the U.S. Environmental Protection Agency's (EPA) 45-day review period, provided the EPA does not seek a separate review period. During this time, anyone may submit written comments on the permit. Mail signed comments to Jeff Gabby at the Polk County address shown below.
2. Written requests for a public hearing concerning the permit may also be submitted during the comment period. Any hearing request must state the person's interest in the subject matter, and the nature of the issues proposed to be raised at the hearing. DNR will hold a public hearing upon finding, on the basis of requests, a significant degree of relevant public interest in a draft permit. Mail hearing requests to Jeff Gabby at the Polk County address shown below.
3. DNR will keep a record of the issues raised during the public participation process, and will prepare written responses to all comments received. The comments and responses will be compiled into a responsiveness summary document. After the close of the public comment period, DNR will make a final decision on the renewal application. The responsiveness summary and the final permit will be available to the public upon request.

Mr. Jeffrey M. Gabby
Polk County Public Works
Air Quality Division
5885 NE 14th Street
Des Moines, Iowa 50313
Phone: (515) 286-3389
E-mail: jeffrey.gabby@polkcountyiowa.gov

DNR concludes that:

1. DNR has authority under 455B.133 Code of Iowa to promulgate rules contained in 567 IAC Chapters 20-35, including, but not limited to, rules containing emission limits, providing for compliance schedules, compliance determination methods and issuance of permits.
2. DNR has the authority to issue operating permits for air contaminant sources and to include conditions in such permits under 455B.134 Code of Iowa.
3. The emission limits included in this permit are authorized by 455B.133 Code of Iowa and 567 IAC Chapters 20-35.
4. DNR is required to comply with 567 IAC Chapter 22 in conjunction with issuing a Title V Operating Permit.
5. The issuance of this permit does not preclude the DNR or Polk County from pursuing enforcement action for any violation.

Applicant: Metro Methane Recovery Facility**Review Engineer:**

EIQ Number: 92-6791

Jeff Gabby

Facility File Number: 77-14-002

Application Evaluation

A. Project Briefing:

This project regards a Part 70 Title V permit renewal to operate the following significant emission units: eight (8) Landfill Gas Reciprocating Engines, Caterpillar Model 3516, 0.8 MW and 8.27 MMBTU/ hr., (EU 1 - 8 / EP 1 - 8); eight (8) Crankcase Oil Breather Vents w/ Solberg Oil Mist Eliminators for EU 1 - 8, (EU 12 -19 / CE 1 -8 / EP 15 - 22); (3) 14.26 MMBtu, 2,245 Bhp Caterpillar Model 3520 Reciprocating Engines Combusting Landfill Gas (EU 33- 35 / EP 23 – 25), (3) Crankcase Oil Breather Vents, w/ (3) Solberg Oil Mist Eliminators (EU 36 – 38 / CE 9 – 11 / EP 26 – 28); and Parnell Biogas Dual Open Flare System (2), 81.6 MMBtu/hr per flare (163.8 MMBtu/hr total system) (EU 39 – 40 / EP 29 – 30).

Metro Methane Recovery Facility, (MMRF), is co-located with Metro Park East Sanitary Landfill, (MPEL), EIQ #92-6849, DNR # 77-14-003. MMRF acts as control for landfill gas generated by MPEL, and keeps MPEL in compliance with NSPS Subpart WWW. MMRF buys landfill gas from MPEL, converts the gas into electricity through the combustion engines, and then sells the electricity it produces to MidAmerican Energy Company. Since the two facilities do not have common control, (the owners of the facilities are separate entities), it was determined that the sources are separate stationary sources. This decision was determined in previous discussions with Ward Burns, USEPA, DNR, and Polk County staff.

MMRF has a landfill gas treatment system, prior to the emission units and points. The treatment system consists of gas compression, dewatering, and filtration. The treatment system meets the requirements of NSPS 40 CFR 60.752 Subpart WWW. [Refer to: 40 CFR 60.752 (b) (2) (iii) (c)] The landfill gas wells and collection equipment, (piping), are owned by Metro Park East Sanitary Landfill (MPEL). MMRF has a dual open backup flare prior to the treatment system. It is regulated by Polk County Construction Permit # 2685 and 40 CFR 60.18. Similar decisions regarding landfill gas treatment systems can be found in: a) USEPA Region III letter to Southwest Public Service Authority, dated October 03, 2002; b) email from Jolynn Collins, USEPA, to Greg Johnston, Golder Associates, Inc., dated 10/24/03; and c) USEPA Region 5 letter to Derenzo and Associates, Inc., dated December 09, 2003.

MMRF has previously petitioned to have serial numbers removed from the Title V permit EU descriptions for the engines, since they routinely have to switch out engines in order to perform maintenance on the units. They have 2 standby engines being worked on or in a standby status at any given time. This action does not circumvent Title I permitting in Polk County's opinion, and is not prohibited by existing construction permits, since the units are identical. The action serves only to keep the units operating clean and efficient. All Polk County Construction permits for MMRF's engines have been modified to allow for switching out of engines with identical type units, without notification, permitting, or testing requirements when this is done. Recordkeeping requirements of these events consist of date of replacement and ending hour meter reading of engine being replaced.

The following are insignificant emission units, per 567 IAC 22.103: Hot Water Parts Washer equipped with Oil Skimmer, (EU 10); one (1) Leachate and Condensate Underground Storage Tank, 10,000 gallon capacity, (EU 11); Sandblaster, Internally Vented, (EU 20); One (1) Mig Welder, (EU 21); Oxygen Acetylene Cutting Torch, (EU 22); Grinding Wheel, (EU 23); Belt Grinder, (EU 24); Drill Press, (EU 25); Band Saw, (EU 26); Two (2) Crankcase Oil Tanks, 40 weight, 1,000 gallon capacity (each), (EU 28); Crankcase Used Oil Tank, 2,000 gallon capacity, (EU 29); Eight (8) Crankcase Oil Day Tanks, 19 gallons (each), (EU 30); Gas Chromatograph Vent, (EU 31); Used Oil Tank (Plant 3), 1,500 gallon capacity (EU 41); Engine Coolant Tank (Plant 3), 750 gallon capacity (EU 42); Three (3) Day Oil Tanks (Plant 3), 50 gallon capacity (each) (EU 43); and Gas Chromatograph Vent (Plant 3) (EU 44).

One (1) Parnell Biogas 81.9 MMBtu Enclosed Flare Combusting Landfill Gas, (EU 32/ CE-3 / EP 14) was replaced by the Parnell Biogas Dual Open Flare System (2), 81.6 MMBtu/hr per flare (163.8 MMBtu/hr total system) (EU 39 – 40 / EP 29 – 30). (EU 32/ CE-3 / EP 14) no longer exists.

B. Applicable rules and regulations:

1. Emission limits and conditions:

Polk County Construction Permit # 0614 Modified limits PM/ PM₁₀ to 0.02 lb./ hr., 0.09 TPY, 0.10 gr./dscf; Opacity to <20%; SO_x to 0.26 lb./ hr., 1.16 TPY, 500 ppmv; NO_x to 3.90 lb./ hr., 17.08 TPY; VOC to 0.12 lb./ hr., 0.51 TPY; and CO to 4.30 lb./ hr., 18.84 TPY, from each of four (4) Landfill Gas Reciprocating Engines, Caterpillar Model 3516, 0.8 MW and 8.27 MMBTU/ hr., (EU 1 - 4 / EP 1 - 4).

Polk County Construction Permit # 0689 Modified #2 limits PM/ PM₁₀ to 0.02 lb./ hr., 0.09 TPY, 0.10 gr./dscf; Opacity to <20%; SO_x to 0.27 lb./ hr., 1.18 TPY, 500 ppmv; NO_x to 3.90 lb./ hr., 17.08 TPY; VOC to 0.12 lb./ hr., 0.51 TPY; and CO to 4.30 lb./ hr., 18.84 TPY, from each of four (4) Landfill Gas Reciprocating Engines, Caterpillar Model 3516, 0.8 MW and 8.27 MMBTU/ hr., (EU 5 - 8 / EP 5 - 8).

Polk County Construction Permit # 2332 limits PM/ PM₁₀ to 0.009 lb./ hr., 0.036 TPY, 0.10 gr./dscf; Opacity to <20% from EU 12- EU 15 Individually; and PM/ PM₁₀ to 0.033 lb./ hr., 0.142 TPY, 0.10 gr./dscf; Opacity to <20% from EU 12- EU 15 Combined, for the four (4) Crankcase Oil Breather Vents w/ Solberg Oil Mist Eliminators for EU 1 - 4, (EU 12 –15 / CE 1 -4 / EP 15 - 18).

Polk County Construction Permit # 2333 limits PM/ PM₁₀ to 0.009 lb./ hr., 0.036 TPY, 0.10 gr./dscf; Opacity to <20% from EU 16 - EU 19 Individually; and PM/ PM₁₀ to 0.033 lb./ hr., 0.142 TPY, 0.10 gr./dscf; Opacity to <20% from EU 16- EU 19 Combined, for the four (4) Crankcase Oil Breather Vents w/ Solberg Oil Mist Eliminators for EU 5 - 8, (EU 16 –19 / CE 5 -8 / EP 19 - 22).

Polk County Construction Permit # 2522 limits PM/ PM₁₀ to 0.75 lb./ hr., 3.30 TPY, 0.10 gr./dscf; Opacity to <20%; SO_x to 1.30 lb./ hr., 5.71 TPY, 500 ppmv; NO_x to 4.93 lb./ hr., 21.60 TPY, 1.0 grams/BHP-hour; VOC to 1.97 lb./ hr., 8.60 TPY, 0.40 grams/BHP- hour; and CO to 17.26 lb./ hr., 75.60 TPY, 3.50 grams/BHP-hour (Engines Individually); and PM/ PM₁₀ to 2.26 lb./ hr., 9.90 TPY; SO_x to 3.91 lb./ hr., 17.12 TPY; NO_x to 14.80 lb./ hr., 64.81 TPY; VOC to 5.92 lb./ hr., 25.96 TPY; and CO to 51.79 lb./ hr., 226.84 TPY (3 Engines Combined) from (3) 14.26 MMBtu, 2,245 Bhp Caterpillar Model 3520 Reciprocating Engines Combusting Landfill Gas (EU 33- 35 / EP 23 – 25).

Polk County Construction Permit # 2522 limits PM/ PM₁₀ to 0.08 lb./ hr., 0.34 TPY, 0.10 gr./dscf; Opacity to <20% (Crankcase Oil Breather Vents Individually); and PM/ PM₁₀ to 0.23 lb./ hr., 1.01 TPY (3 Crankcase Oil Breather Vents Combined), from (3) Crankcase Oil Breather Vents, w/ (3) Solberg Oil Mist Eliminators (EU 36 – 38 / CE 9 – 11 / EP 26 – 28).

Polk County Construction Permit #2685 limits PM/ PM₁₀/ PM_{2.5} to 3.04 lb./ hr., 9.04 TPY, PM to 0.10 gr./dscf; Opacity to <20%; SO_x to 8.97 lb./ hr., 27.8 TPY, 500 ppmv; NO_x to 6.49 lb./ hr., 20.10 TPY; NMOC to 0.96 lb./ hr., 2.96 TPY, <20 ppmv, dry basis as hexane at 3% oxygen; HAP to 0.19 lb./ hr., 0.82 TPY; CO to 24.35 lb./ hr., 75.38 TPY, from the Parnell Biogas Dual Open Flare System (2), 81.6 MMBtu/hr per flare (163.8 MMBtu/hr total system) (EU 39 – 40 / EP 29 – 30).

2. Opacity for the facility: Less than 20% opacity- Polk County Board of Health Rules and Regulations: Chapter V, Article IV, Section 5-9.

Opacity for EP 1 through EP 4: <20% Opacity, (Polk County Construction Permit # 0614 Modified), for each of these EP.

Opacity for EP 5 through 8: < 20% opacity, (Polk County Construction Permit # 0689 Modified #2), for each of these EP.

Opacity for EP 15 through 18: < 20% opacity, (Polk County Construction Permit # 2332), for each of these EP.

Opacity for EP 19 through 22: < 20% opacity, (Polk County Construction Permit # 2333), for each of these EP.

Opacity for EP 23 through 25: < 20% opacity, (Polk County Construction Permit # 2522), for each of these EP.

Opacity for EP 26 through 28: < 20% opacity, (Polk County Construction Permit # 2522), for each of these EP.

Opacity for EP 29 through 30: < 20% opacity, (Polk County Construction Permit # 2685), for each of these EP.

3. NSPS: The source acts as the control of NMOC emissions for Metro Park East Sanitary Landfill, (MPEL), which is subject to NSPS Subpart WWW. MMRF has a landfill gas treatment system, prior to the emission units and points. The treatment system consists of gas compression, dewatering, and filtration. The treatment system meets the requirements of NSPS 40 CFR 60.752 Subpart WWW. [Refer to: 40 CFR 60.752 (b) (2) (iii) (c)] The following NSPS Subpart WWW provision will be placed in the plant-wide conditions: "**§ 60.752 Standards for air emissions from municipal solid waste landfills. (Subpart WWW)** (C) Route the collected gas to a treatment system that processes the collected gas for subsequent sale or use. All emissions from any atmospheric vent from the gas treatment system shall be subject to the requirements of paragraph (b)(2)(iii) (A) or (B) of this section." The facility meets the requirements of the NSPS because all EPs are downstream from the landfill gas treatment system.

(3) 14.26 MMBtu, 2,245 Bhp Caterpillar Model 3520 Reciprocating Engines Combusting Landfill Gas (EU 33- 35 / EP 23 – 25) are subject to NSPS 40 CFR 60.4243 Subpart JJJJ and General Provisions, 40 CFR 60 Subpart A. Applicable requirements from Subpart A and Subpart JJJJ are found in Polk County Construction Permit # 2522, and have been transferred into the Title V Permit. Initial Compliance Tests required by PC #2522 and Subpart JJJJ for NO_x, CO, and VOC were successfully completed on 4/24/2014, with subsequent testing completed on 1/12-13/2016.

The Parnell Biogas Dual Open Flare System (2), 81.6 MMBtu/hr per flare (163.8 MMBtu/hr total system) (EU 39 – 40 / EP 29 – 30) is subject to NSPS 40 CFR 60.752 Subpart WWW and General Provisions, 40 CFR 60 Subpart A. Applicable requirements from Subpart A and Subpart WWW are found in Polk County Construction Permit # 2685, and have been transferred into the Title V Permit.

4. **NESHAP:** Facility HAP PTE is 13.7 TPY. HAPs with a PTE > 0.01 TPY are: 1,1,2,2-Tetrachloroethane, 1,1 Dichloroethane, Acrylonitrile, Benzene, Dichloromethane, Ethylbenzene, Formaldehyde, Hexane, Hydrochloric Acid, MIBK, Tetrachloroethylene, Trichloroethylene, Vinyl Chloride, Toluene, and Xylene (mixed isomers).

MMRF is subject to **40 CFR 63 Subpart AAAA, because of § 63.1935 (a) (3):** Your MSW landfill is an area source landfill that has a design capacity equal to or greater than 2.5 million megagrams (Mg) and 2.5 million cubic meters (m³) and has estimated uncontrolled emissions equal to or greater than 50 megagrams per year (Mg/yr) NMOC as calculated according to Sec. 60.754(a) of the MSW landfills new source performance standards in 40 CFR part 60, subpart WWW, the Federal plan, or an EPA approved and effective State or tribal plan that applies to your landfill.

Sec. 63.1945 When do I have to comply with subpart AAAA?

(e) If your landfill is a new affected source and is an area source meeting the criteria in Sec. 63.1935(a)(3), you must comply with the requirements of Sec. Sec. 63.1955(b) and 63.1960 through 63.1980 by the date your landfill is required to install a collection and control system by 40 CFR 60.752(b)(2) of subpart WWW.

MMRF must develop and implement a written SSM plan according to the provisions in 40 CFR 63.6(e)(3). A copy of the SSM plan must be maintained on site. Failure to write, implement, or maintain a copy of the SSM plan is a deviation from the requirements of this subpart (AAAA). Applicable requirements from Subpart AAAA have been placed in Appendix 1 to the Title V Permit. The facility requested that a footnote be added to Appendix 1, which clarifies that only the flare and compressors prior to the treatment system are subject to the NESHAP. The following footnote was added: "*The engines, (EU 1 / EP 1) through (EU 8 / EP 8), which combust treated gas pursuant to 40 CFR 60.752(b)(2)(iii)(C), are not subject to the requirements of 40 CFR 63 Subpart AAAA. This is because they are combusting only treated landfill gas. However, emissions from any emission points prior to the treatment system, including the compressors and two (2) flares, are subject to the NESHAP requirements found in 40 CFR 63 Subpart AAAA.*"

The Parnell Biogas Dual Open Flare System (2), 81.6 MMBtu/hr per flare (163.8 MMBtu/hr total system) (EU 39 – 40 / EP 29 – 30) is subject to 40 CFR 63 Subpart AAAA. Applicable requirements from Subpart AAAA are found in Polk County Construction Permit # 2685, and have been transferred into the Title V Permit.

On April 30, 2002, Metro Methane Recovery Facility submitted a Part 1 MACT application to DNR, indicating that the facility may be subject to the MACT standard for Reciprocating Internal Combustion Engines, 40 CFR 63 Subpart ZZZZ, when it is promulgated. 40 CFR 63 Subpart ZZZZ became final on 2/26/2004 and did not apply to MMRF, since MMRF is not a major source of HAPs and Subpart ZZZZ applied, (at the time), to major HAP sources only. Subpart ZZZZ was revised 1/18/08 to apply to both major and area sources. Because this is an area source and units (EU 1-8 / EP 1-8) are existing (installed prior to 6/12/06), per the general amendments the permit changes do not constitute reconstruction or modification; therefore they are existing sources and are subject to, 40 CFR 63 Subpart ZZZZ-National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. Applicable Subpart ZZZZ requirements have been placed into the permit for (EU 1-8 / EP 1-8).

(EU 33-35 / EP 23-25): Per§63.4230(c), as a *Stationary Rice subject to Regulations under 40 CFR Part 60*, an affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of part 60 subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part. Therefore, 40 CFR 63 subpart ZZZZ-National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines requirements are met by complying with the requirements of NSPS Subpart JJJJ for EU 33-35.

5. PSD: Source is currently major (PSD) for CO (PTE=452.94 TPY). If the facility makes any future qualifying changes, then they will need to submit a PSD permit application, i.e., applying for a significant increase of any pollutant.
6. NAAQS: Facility is located in an attainment area. Air modeling is not required at this time.
7. Title IV: Not applicable. Facility Plants 1 & 2 has 6.4 MW, plus Plant # 3 has 4.8 MW for a total generating capacity of 11.2 MW. It is a non-cogen facility, and sells electricity to the grid. Landfill gas is not defined as a fossil fuel in Title IV regulations. It is exempt under 40 CFR 72.6 (b).
8. Stratospheric ozone: the only ozone depleting chemicals (regulated by 40 CFR 82) at the facility are those used for air conditioning. 40 CFR 82, Subpart F, applies to the disposal of appliances containing Class I or Class II substances (i.e. air conditioners).

9. PM-10:

Polk County Construction Permit # 0614 Modified limits PM/ PM₁₀ to 0.02 lb./ hr., 0.09 TPY, 0.10 gr./dscf, from each of four (4) Landfill Gas Reciprocating Engines, Caterpillar Model 3516, 0.8 MW and 8.27 MMBTU/ hr., (EU 1 - 4 / EP 1 - 4).

Polk County Construction Permit # 0689 Modified #2 limits PM/ PM₁₀ to 0.02 lb./ hr., 0.09 TPY, 0.10 gr./dscf; from each of four (4) Landfill Gas Reciprocating Engines, Caterpillar Model 3516, 0.8 MW and 8.27 MMBTU/ hr., (EU 5 - 8 / EP 5 - 8).

Polk County Construction Permit # 2332 limits PM/ PM₁₀ to 0.009 lb./ hr., 0.036 TPY, 0.10 gr./dscf from EU 12- EU 15 Individually; and PM/ PM₁₀ to 0.033 lb./ hr., 0.142 TPY, 0.10 gr./dscf (combined); for the four (4) Crankcase Oil Breather Vents w/ Solberg Oil Mist Eliminators for EU 1 - 4, (EU 12 -15 / CE 1 -4 / EP 15 - 18).

Polk County Construction Permit # 2333 limits PM/ PM₁₀ to 0.009 lb./ hr., 0.036 TPY, 0.10 gr./dscf from EU 16- EU 19 Individually; and PM/ PM₁₀ to 0.033 lb./ hr., 0.142 TPY, 0.10 gr./dscf (combined); for the four (4) Crankcase Oil Breather Vents w/ Solberg Oil Mist Eliminators for EU 5 - 8, (EU 16 -19 / CE 5 -8 / EP 19 - 22)

Polk County Construction Permit # 2522 limits PM/ PM₁₀ to 0.75 lb./ hr., 3.30 TPY, 0.10 gr./dscf; (Engines Individually); and PM/ PM₁₀ to 2.26 lb./ hr., 9.90 TPY (3 Engines Combined) from (3) 14.26 MMBtu, 2,245 Bhp Caterpillar Model 3520 Reciprocating Engines Combusting Landfill Gas (EU 33- 35 / EP 23 - 25).

Polk County Construction Permit # 2522 limits PM/ PM₁₀ to 0.08 lb./ hr., 0.34 TPY, 0.10 gr./dscf; (Crankcase Oil Breather Vents Individually); and PM/ PM₁₀ to 0.23 lb./ hr., 1.01 TPY (3 Crankcase Oil Breather Vents Combined), from (3) Crankcase Oil Breather Vents, w/ (3) Solberg Oil Mist Eliminators (EU 36 - 38 / CE 9 - 11 / EP 26 - 28).

Polk County Construction Permit #2685 limits PM/ PM₁₀/ PM_{2.5} to 3.04 lb./ hr., 9.04 TPY, PM to 0.10 gr./dscf, from the Parnell Biogas Dual Open Flare System (2), 81.6 MMBtu/hr per flare (163.8 MMBtu/hr total system) (EU 39 - 40 / EP 29 - 30).

For purposes of reporting, regulating, and fee payment, it is being assumed that all PM is PM₁₀ from these EPs.

C. Monitoring Consideration:

PM:

Polk County Construction Permit # 0614 Modified limits PM/ PM₁₀ to 0.02 lb./ hr., 0.09 TPY, 0.10 gr./dscf, (uncontrolled minor) from each of four (4) Landfill Gas Reciprocating Engines, Caterpillar Model 3516, 0.8 MW and 8.27 MMBTU/ hr., (EU 1 - 4 / EP 1 - 4). Under DNR's Monitoring Guidance Policy and CAM, no additional monitoring is warranted.

Polk County Construction Permit # 0689 Modified #2 limits PM/ PM₁₀ to 0.02 lb./ hr., 0.09 TPY, 0.10 gr./dscf, (uncontrolled minor) from each of four (4) Landfill Gas Reciprocating Engines, Caterpillar Model 3516, 0.8 MW and 8.27 MMBTU/ hr., (EU 5 - 8 / EP 5 - 8). Under DNR's Monitoring Guidance Policy and CAM, no additional monitoring is warranted.

Polk County Construction Permit # 2332 limits PM/ PM₁₀ to 0.009 lb./ hr., 0.036 TPY, 0.10 gr./dscf from EU 12- EU 15 Individually; and PM/ PM₁₀ to 0.033 lb./ hr., 0.142 TPY, 0.10 gr./dscf from EU 12- EU 15 Combined, for the four (4) Crankcase Oil Breather Vents w/ Solberg Oil Mist Eliminators for EU 1 - 4, (EU 12 -15 / CE 1 -4 / EP 15 - 18) (controlled minor). Using the default DNR control efficiency for the Coalescing mist eliminator filter of 90%, (vendor claims 99.97%), yields an uncontrolled PTE of 0.36 TPY (uncontrolled minor). Under DNR's Monitoring Guidance Policy and CAM, no additional monitoring is warranted.

Polk County Construction Permit # 2333 limits PM/ PM₁₀ to 0.009 lb./ hr., 0.036 TPY, 0.10 gr./dscf from EU 16- EU 19 Individually; and PM/ PM₁₀ to 0.033 lb./ hr., 0.142 TPY, 0.10 gr./dscf from EU 16- EU 19 Combined, for the four (4) Crankcase Oil Breather Vents w/ Solberg Oil Mist Eliminators for EU 5 - 8, (EU 16 -19 / CE 5 -8 / EP 19 - 22) (controlled minor). Using the default DNR control efficiency for the Coalescing mist eliminator filter of 90%, (vendor claims 99.97%), yields an uncontrolled PTE of 0.36 TPY (uncontrolled minor). Under DNR's Monitoring Guidance Policy and CAM, no additional monitoring is warranted.

Polk County Construction Permit # 2522 limits PM/ PM₁₀ to 0.75 lb./ hr., 3.30 TPY, 0.10 gr./dscf; (Engines Individually); (uncontrolled minor) and PM/ PM₁₀ to 2.26 lb./ hr., 9.90 TPY (3 Engines Combined) from (3) 14.26 MMBtu, 2,245 Bhp Caterpillar Model 3520 Reciprocating Engines Combusting Landfill Gas (EU 33- 35 / EP 23 - 25). Under DNR's Monitoring Guidance Policy and CAM, no additional monitoring is warranted.

Polk County Construction Permit # 2522 limits PM/ PM₁₀ to 0.08 lb./ hr., 0.34 TPY, 0.10 gr./dscf; (Crankcase Oil Breather Vents Individually) (uncontrolled minor); and PM/ PM₁₀ to 0.23 lb./ hr., 1.01 TPY (3 Crankcase Oil Breather Vents Combined), from (3) Crankcase Oil Breather Vents, w/ (3) Solberg Oil Mist Eliminators (EU 36 - 38 / CE 9 - 11 / EP 26 - 28). Under DNR's Monitoring Guidance Policy and CAM, no additional monitoring is warranted.

Polk County Construction Permit #2685 limits PM/ PM₁₀/ PM_{2.5} to 3.04 lb./ hr., 9.04 TPY, (uncontrolled minor); PM to 0.10 gr./dscf, from the Parnell Biogas Dual Open Flare System (2), 81.6 MMBtu/hr per flare (163.8 MMBtu/hr total system) (EU 39 - 40 / EP 29 - 30). Under DNR's Monitoring Guidance Policy and CAM, no additional monitoring is warranted.

Opacity:

Opacity for EP 1 through EP 4: <20% Opacity, (Polk County Construction Permit # 0614 Modified), for each of these EP). Since the landfill gas is similar to natural gas, no VEs are expected from these EUs and Monitoring for opacity will not be required.

Opacity for EP 5 through EP 8: <20% Opacity, (Polk County Construction Permit # 0689 Modified #2), for each of these EP). Since the landfill gas is similar to natural gas, no VEs are expected from these EUs and Monitoring for opacity will not be required. An action level of no visible emissions was placed into each EP's Periodic Monitoring in the original Title V permit, and an observer from the facility had to check for visible emissions each time the generators was operated. This allowed the company to avoid having to have a Method 9 certified opacity reader in house, and corrected any problems before they become significant. A decreasing schedule of checking for VEs was placed into the permit for these EPs, at the request of the facility, since landfill gas is similar to natural gas and no VEs are expected. The facility had no violations and no VEs observed under the original permit. Polk County and DNR staff agreed that opacity monitoring was no longer warranted for EP 5 through 8 and was removed from 03-TV-005R1.

Polk County Construction Permit # 2332 limits Opacity to <20% from EU 12- EU 15 Individually; and Opacity to <20% from EU 12- EU 15 Combined, for the four (4) Crankcase Oil Breather Vents w/ Solberg Oil Mist Eliminators for EU 1 - 4, (EU 12 -15 / CE 1 -4 / EP 15 - 18). An action level of no visible emissions is placed into EP's 15-18 Monitoring in the Title V permit, to be observed for visible emissions once a week when operated. This allows the company to avoid having to have a Method 9 certified opacity reader in house, and corrects any problems before they become significant.

Polk County Construction Permit # 2333 limits Opacity to <20% from EU 16- EU 19 Individually; and Opacity to <20% from EU 16- EU 19 Combined, for the four (4) Crankcase Oil Breather Vents w/ Solberg Oil Mist Eliminators for EU 5 - 8, (EU 16 -19 / CE 5 -8 / EP 19 - 22). An action level of no visible emissions is placed into EP's 19-22 Monitoring in the Title V permit, to be observed for visible emissions once a week when operated. This allows the company to avoid having to have a Method 9 certified opacity reader in house, and corrects any problems before they become significant.

Polk County Construction Permit # 2522 limits Opacity to <20% from (3) 14.26 MMBtu, 2,245 Bhp Caterpillar Model 3520 Reciprocating Engines Combusting Landfill Gas (EU 33- 35 / EP 23 - 25). Since the landfill gas is similar to natural gas, no VEs are expected from these EUs and Monitoring for opacity will not be required.

Polk County Construction Permit # 2522 limits Opacity to <20% (Crankcase Oil Breather Vents Individually) from (3) Crankcase Oil Breather Vents, w/ (3) Solberg Oil Mist Eliminators (EU 36 - 38 / CE 9 - 11 / EP 26 - 28). An action level of no visible emissions is placed into EP's 26-28 Monitoring in the Title V permit, to be observed for visible emissions once a week when operated. This allows the company to avoid having to have a Method 9 certified opacity reader in house, and corrects any problems before they become significant.

Polk County Construction Permit #2685 limits Opacity to <20% from the Parnell Biogas Dual Open Flare System (2), 81.6 MMBtu/hr per flare (163.8 MMBtu/hr total system) (EU 39 - 40 / EP 29 - 30). The flare operates nearly continuous, and its combustion is similar to natural gas combustion, no VEs are expected. Daily, then weekly observations required in previous operating permits for the EP 14 Flare did not result in any VEs being observed. An initial compliance test required for the EP 14 Enclosed Flare was completed on 2/17/2011. No opacity emissions were observed during the test. Opacity monitoring for EP 29 & 30 will not be required.

VOC:

Polk County Construction Permit # 0614 Modified limits VOC to 0.12 lb./ hr., 0.51 TPY, from each of four (4) Landfill Gas Reciprocating Engines, Caterpillar Model 3516, 0.8 MW and 8.27 MMBTU/ hr., (EU 1 - 4 / EP 1 - 4), (uncontrolled minor). Under DNR's Monitoring Guidance Policy and CAM, no additional monitoring is warranted.

Polk County Construction Permit # 0689 Modified #2 limits VOC to 0.12 lb./ hr., 0.51 TPY, from each of four (4) Landfill Gas Reciprocating Engines, Caterpillar Model 3516, 0.8 MW and 8.27 MMBTU/ hr., (EU 5 - 8 / EP 5 - 8), (uncontrolled minor). Under DNR's Monitoring Guidance Policy and CAM, no additional monitoring is warranted.

(EU 12 -15 / CE 1 -4 / EP 15 - 18) are not VOC sources.

(EU 16 -19 / CE 5 -8 / EP 19 - 22) are not VOC sources.

Polk County Construction Permit # 2522 limits VOC to 1.97 lb./ hr., 8.60 TPY, 0.40 grams/BHP- hour (Engines Individually) (uncontrolled minor) and VOC to 5.92 lb./ hr., 25.96 TPY (3 Engines Combined) from (3) 14.26 MMBtu, 2,245 Bhp Caterpillar Model 3520 Reciprocating Engines Combusting Landfill Gas (EU 33- 35 / EP 23 - 25). 40 CFR 60 Subpart JJJJ has requirements within it which are sufficient for VOC Monitoring purposes. Under DNR's Monitoring Guidance Policy and CAM, no additional monitoring is warranted.

(EU 36 - 38 / CE 9 - 11 / EP 26 - 28) are not VOC sources.

Polk County Construction Permit #2685 limits NMOC to 0.96 lb./ hr., 2.96 TPY, <20 ppmv, dry basis as hexane at 3% oxygen, from the Parnell Biogas Dual Open Flare System (2), 81.6 MMBtu/hr per flare (163.8 MMBtu/hr total system) (EU 39 - 40 / EP 29 - 30). Flares have a default control of 90%, yielding 29.6 TPY NMOC (uncontrolled minor). Under DNR's Monitoring Guidance Policy and CAM, no additional monitoring is warranted.

HAPs:

Polk County Construction Permit #2685 limits HAP to 0.19 lb./ hr., 0.82 TPY, from the Parnell Biogas Dual Open Flare System (2), 81.6 MMBtu/hr per flare (163.8 MMBtu/hr total system) (EU 39 - 40 / EP 29 - 30). Flares have a default control of 90%, yielding 8.20 TPY (uncontrolled minor). Under DNR's Monitoring Guidance Policy and CAM, no additional monitoring is warranted.

Total PTE of HAPs from the facility is 13.7 TPY, with all HAPS' PTE < 10 TPY individually (uncontrolled minor). Under DNR's Monitoring Guidance Policy and CAM, no additional monitoring is warranted.

CO, NO_x, and SO₂

Polk County Construction Permit # 0614 Modified limits SO_x to 0.26 lb./ hr., 1.16 TPY, 500 ppmv (uncontrolled minor); NO_x to 3.90 lb./ hr., 17.08 TPY (uncontrolled minor); and CO to 4.30 lb./ hr., 18.84 TPY (uncontrolled minor), from each of four (4) Landfill Gas Reciprocating Engines, Caterpillar Model 3516, 0.8 MW and 8.27 MMBTU/ hr., (EU 1 - 4 / EP 1 - 4). Under DNR's Monitoring Guidance Policy and CAM, no additional monitoring is warranted. Testing for NO_x, (40 CFR Part 60, Appendix A, Method 7E) and CO, (40 CFR Part 60, Appendix A, Method 10), were completed on March 21, 1994 on EU 4, as a requirement of Polk County Construction Permit Number 0614. The results were an average of 3.9 lbs./hr. NO_x, and 4.3 lbs./ hr. CO. Engines #1 - #4 (EU 1-4 / EP 1-4) were each tested for NO_x and CO on 11/17/2009. Test results ranged from 2.44 lbs./ hr - 3.33 lbs./ hr NO_x, which is less than the permitted 3.90 lbs./ hr. NO_x. Test results for CO ranged from 3.72 lbs./ hr - 3.88 lbs./ hr, which is less than the permitted 4.30 lbs./ hr.

Polk County Construction Permit # 0689 Modified #2 limits SO_x to 0.27 lb./ hr., 1.18 TPY, 500 ppmv (uncontrolled minor); NO_x to 3.90 lb./ hr., 17.08 TPY (uncontrolled minor); and CO to 4.30 lb./ hr., 18.84 TPY (uncontrolled minor), from each of four (4) Landfill Gas Reciprocating Engines, Caterpillar Model 3516, 0.8 MW and 8.27 MMBTU/ hr., (EU 5 - 8 / EP 5 - 8). Under DNR's Monitoring Guidance Policy and CAM, no additional monitoring is warranted. Engine #6 (EU 6 / EP 6) was tested for NO_x on 11/18/2009. Test result was 3.57 lbs./ hr NO_x, which is less than the permitted 3.90 lbs./ hr.

(EU 12 –15 / CE 1 -4 / EP 15 - 18) are not CO, NO_x, or SO₂ sources.

(EU 16 –19 / CE 5 -8 / EP 19 - 22) are not CO, NO_x, or SO₂ sources.

Polk County Construction Permit # 2522 limits SO_x to 1.30 lb./ hr., 5.71 TPY, 500 ppmv; NO_x to 4.93 lb./ hr., 21.60 TPY, 1.0 grams/BHP-hour; and CO to 17.26 lb./ hr., 75.60 TPY, 3.50 grams/BHP-hour (Engines Individually); (SO_x, NO_x, and CO all uncontrolled minor) and SO_x to 3.91 lb./ hr., 17.12 TPY; NO_x to 14.80 lb./ hr., 64.81 TPY; and CO to 51.79 lb./ hr., 226.84 TPY (3 Engines Combined) from (3) 14.26 MMBtu, 2,245 Bhp Caterpillar Model 3520 Reciprocating Engines Combusting Landfill Gas (EU 33- 35 / EP 23 – 25). 40 CFR 60 Subpart JJJJ has requirements within it which are sufficient for NO_x and CO Monitoring purposes. Under DNR's Monitoring Guidance Policy and CAM, no additional monitoring is warranted.

(EU 36 – 38 / CE 9 – 11 / EP 26 – 28) are not CO, NO_x, or SO₂ sources.

Polk County Construction Permit #2685 limits SO_x to 8.97 lb./ hr., 27.8 TPY, 500 ppmv; NO_x to 6.49 lb./ hr., 20.10 TPY; CO to 24.35 lb./ hr., 75.38 TPY (SO_x, NO_x, and CO all uncontrolled minor), from the Parnell Biogas Dual Open Flare System (2), 81.6 MMBtu/hr per flare (163.8 MMBtu/hr total system) (EU 39 – 40 / EP 29 – 30). Under DNR's Monitoring Guidance Policy and CAM, no additional monitoring is warranted.

NMOC (Non-Methane Organic Compounds)

EU 1-8 were tested, (40 CFR Part 60, Appendix A, Method 18), for NMOC emissions on February 29, 2000 through March 3, 2000, in order to show compliance with 40 CFR Part 60.752 (b) (2) (iii) (B), Subpart WWW for Metro Park East Sanitary Landfill, EI# 92-6849. Each of the eight engines met the requirements of Subpart WWW. Subpart WWW requires that the engines exhaust not exceed 20 ppmv as hexane, corrected to 3% oxygen. The engines' exhaust ranged from 2.63 ppmv to 4.76 ppmv during the tests. MMRF is no longer subject to the NMOC limits because they now have a landfill gas treatment system, prior to the emission units and points. The treatment system consists of gas compression, dewatering, and filtration. The treatment system meets the requirements of NSPS 40 CFR 60.752 Subpart WWW. [Refer to: 40 CFR 60.752 (b) (2) (iii) (c)] No further testing is required at this time.

Polk County Construction Permit #2685 limits NMOC to 0.96 lb./ hr., 2.96 TPY, <20 ppmv, dry basis as hexane at 3% oxygen from the Parnell Biogas Dual Open Flare System (2), 81.6 MMBtu/hr per flare (163.8 MMBtu/hr total system) (EU 39 – 40 / EP 29 – 30). Flares have a default control of 90%, yielding 29.6 TPY NMOC (uncontrolled minor). Under DNR's Monitoring Guidance Policy and CAM, no additional monitoring is warranted. NSPS Subpart WWW requirements have sufficient monitoring requirements included for NMOC compliance. Applicable Subpart WWW requirements have been placed into PC Const. Permit #2685, which have been placed into the Title V permit.

D. Facility Proposed Limits:
None

E. Responsible Official: Mr. Joe Durako, Senior District Manager, Waste Management of Iowa, Inc., is in charge of a principle business function; that of selling electricity produced from the combustion of landfill gas and making a profit for Metro Methane Recovery Facility. He meets the definition of Responsible Official found in 567 IAC 22.100.