

State Registration Number  
M4469

Michigan Department of Environmental Quality  
Air Quality Division  
**RENEWABLE OPERATING PERMIT  
STAFF REPORT**

ROP Number  
MI-ROP-M4469-2015a

**Riverview Energy Systems, LLC**  
Located at  
20000 Grange Road, Riverview, Wayne County, Michigan 48193

and

**CITY OF RIVERVIEW**  
**Riverview Land Preserve**  
Located at  
20863 Grange Road, Riverview, Wayne County, Michigan 48193

SRN: M4469

Permit Number: MI-ROP-M4469-2015a

Staff Report Date: October 6, 2014

Amended Date: June 26, 2017

This Staff Report is published in accordance with Sections 5506 and 5511 of Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451). Specifically, Rule 214(1) requires that the Michigan Department of Environmental Quality (MDEQ), Air Quality Division (AQD), prepare a report that sets forth the factual basis for the terms and conditions of the Renewable Operating Permit (ROP).

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**RENEWABLE OPERATING PERMIT**

**OCTOBER 6, 2014 STAFF REPORT**

**Purpose**

Major stationary sources of air pollutants, and some non-major sources, are required to obtain and operate in compliance with a ROP pursuant to Title V of the federal Clean Air Act of 1990 and Michigan's Administrative Rules for air pollution control pursuant to Section 5506(1) of Act 451. Sources subject to the ROP program are defined by criteria in Rule 211(1). The ROP is intended to simplify and clarify a stationary source's applicable requirements and compliance with them by consolidating all state and federal air quality requirements into one document.

This report, as required by Rule 214(1), sets forth the applicable requirements and factual basis for the draft permit terms and conditions including citations of the underlying applicable requirements, an explanation of any equivalent requirements included in the draft permit pursuant to Rule 212(5), and any determination made pursuant to Rule 213(6)(a)(ii) regarding requirements that are not applicable to the stationary source.

**General Information**

Stationary Source Section 1 Mailing Address:	Riverview Energy Systems 20000 Grange Road Riverview, Michigan 48193
Stationary Source Section 2 Mailing Address:	Riverview Land Preserve 20863 Grange Road Riverview, MI 48193
Source Registration Number (SRN):	M4469
North American Industry Classification System (NAICS) Code:	562212
Number of Stationary Source Sections:	2
Is Application for a Renewal or Initial Issuance?	Renewal
Application Number:	201300074
Responsible Official Section 1:	Gary S. Quantock, Vice President Operations 734-913-2080
Responsible Official Section 2:	Douglas Drysdale, City Manager 734-281-4201
AQD Contact:	Gina McCann, Environmental Quality Analyst 989-894-6218
Date Permit Application Received:	May 7, 2013
Date Application Was Administratively Complete:	May 7, 2013
Is Application Shield In Effect?	Yes
Date Public Comment Begins:	October 6, 2014
Deadline for Public Comment:	November 5, 2014

## **Source Description**

Riverview Energy Systems and Riverview Land Preserve are located at 20000 and 20863 Grange Road, respectively, in the City of Riverview between King Road and Sibley Road. The nearest residential area is about 400 feet west of the Riverview Land Preserve facility's property line and about 800 feet west of Riverview Energy Systems facility's property line. Adjacent to the east is the Riverview municipal golf course, which operates a driving range and practice course that is located on a closed portion of the landfill on the north side.

Riverview Land Preserve, a Type II Landfill, which is owned and operated by City of Riverview, accepts solid waste such as municipal household waste and wastes such as construction and demolition debris. The facility receives no asbestos, hazardous waste or sewage sludge. A Municipal Solid Waste (MSW) Landfill or a Type II Landfill according to ACT 451, Part 115, Solid Waste Management is:

“ A landfill which received household waste, municipal solid waste, incinerator ash or sewage sludge and which is not a land application unit, surface impoundment, injection well or waste pile. A municipal solid waste landfill also may receive other types of solid waste, such as commercial waste, non-hazardous sludge, conditionally exempt small quantity generator waste and industrial waste. Such a landfill may be publicly or privately owned.”

The solid waste is transported to the facility in a variety of vehicles that potentially generate fugitive dust emissions to an area (cell) where their load of solid waste is deposited on the working face. The deposited waste is covered with soil or other approved cover material on a daily basis. When a cell reaches its design capacity, a liner is installed covering the waste.

Over time, the waste undergoes aerobic natural microbial decomposition which transforms the waste into leachate and landfill gas (LFG). At this stage the LFG is predominantly nitrogen gas and carbon dioxide. As oxygen is depleted, the gas composition changes to a mixture of roughly 50% methane and 50% carbon dioxide. LFG typically contains a small percentage of Non-Methane Organic Compounds (NMOC). The NMOC fraction consists of various organic hazardous air pollutants (HAP), greenhouse gases, and volatile organic compounds and is the primary regulated air pollutant associated with landfill gas generation.

The New Source Performance Standards (NSPS), Standards of Performance for Municipal Solid Waste (MSW) Landfills, codified at 40 CFR, 60 Subpart WWW are applicable to each MSW landfill that commenced construction, reconstruction or modification on or after May 30, 1991. The subpart requires subject facilities, those with design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters, to submit an initial design capacity report and a NMOC emission projection. Furthermore subject facilities are required to submit a design plan and install a LFG collection system and control system if NMOC emissions are greater than or equal to 50 megagrams per year. A gas collection system and control system is required to be installed 30 months after the NMOC emissions rate report is submitted to the regulatory agency which shows that the MSW landfill produces 50 megagrams or greater per year of NMOC. Riverview Landfill, with a design capacity of 31,004,410 cubic meters (40,552,240 cubic yards) and having been last modified on April 8, 2004, is subject to NSPS Subpart WWW requirements and has submitted information indicating that NMOC emissions are greater than 50 megagrams per year.

LFG is collected at the landfill by an active landfill gas system. This system consists of vertical and horizontal extraction wells that are installed into the landfill refuse, which creates a path for the migration of landfill gas. A vacuum is applied to these wells using a gas blower system. The collection system transports the LFG to a treatment system (EUTREATMENTSYS) which conditions the gas to ensure efficient combustion, and thus proper destruction of NMOC. The conditioning consists of dewatering, particulate removal, and compression, after which the gas is considered a commodity. It is then sent to the electricity generating facility, which consists of two Solar combustion turbine generators (CTG), which produce the electricity. Two open flares (EUOPENFLARE1 and EUOPENFLARE2) are on-site to provide

back-up control for the landfill gas, should the treatment system or turbines fail. The capacity of the open flares are 2,131 scfm and 4,700 scfm respectively. As the CTG were subject to new source review, the requirements for the turbines can be found in FGTURBINES. Finally, the maintenance shop for Riverview Energy Systems has a cold cleaner which is exempt under Rule 336.1281(h) from permit to install. The requirements for the cold cleaner can be found in FGCOLDCLEANERS.

The EUTREATMENTSYS emission unit was incorporated into the previous ROP (199600239b) on May 24, 2006 through the significant modification process.

Each of the two stationary gas turbines has a heat input design capacity of 56.33 MMBtu/hr and a maximum gas consumption rate of 3.8 million standard cubic feet per day. The heating value of the landfill gas used is expected to average 520 Btu/scf. The Riverview Energy Systems has the ability to use natural gas as the auxiliary fuel for the turbines.

Additionally, the EUBIOGASTREATSYS Is a biogas conditioning system (BioCNG) that economically produces biogas-based fuel to power compressed natural gas (CNG) vehicles. The treatment system removes particulate greater than 3 microns, LFG then proceeds to several steps of gas compression and additional moisture removal process.

The treatment system and turbines are owned and operated by DTE Biomass Energy. BioCNG is owned by the City of Riverview.

The following table lists stationary source emission information as reported to the Michigan Air Emissions Reporting System in the 2013 submittal.

### TOTAL STATIONARY SOURCE EMISSIONS

Pollutant	Tons per Year
Carbon Monoxide (CO)	66.76
Lead (Pb)	NA
Nitrogen Oxides (NO <sub>x</sub> )	62.30
Particulate Matter (PM)	12.49
Sulfur Dioxide (SO <sub>2</sub> )	12.22
Volatile Organic Compounds (VOCs)	4.33
<b>Individual Hazardous Air Pollutants (HAPs) **</b>	
NMOC (HAP surrogate per 40 CFR Part 63, Subpart AAA)	40.41
<b>Total Hazardous Air Pollutants (HAPs)</b>	<b>40.41</b>

\*\*As listed pursuant to Section 112(b) of the federal Clean Air Act.

In addition to the pollutants listed above that have been reported in MAERS, the potential to emit of Greenhouse Gases in tons per year of CO<sub>2</sub>e is less than 100,000. CO<sub>2</sub>e is a calculation of the combined global warming potentials of six Greenhouse Gases (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride).

See Parts C and D in the draft ROP for summary tables of all processes at the stationary source that are subject to process-specific emission limits or standards.

## **Regulatory Analysis**

The following is a general description and history of the source. Any determinations of regulatory non-applicability for this source are explained below in the Non-Applicable Requirement part of the Staff Report and identified in Part E of the ROP.

The stationary source is located in Wayne County, which is currently designated by the U.S. Environmental Protection Agency (USEPA) as attainment/unclassified for all criteria pollutants except for a portion of Wayne County designated as nonattainment for sulfur dioxide (SO<sub>2</sub>).

The stationary source is subject to Title 40 of the Code of Federal Regulations (CFR), Part 70, because the potential to emit carbon monoxide, sulfur dioxide and nitrogen oxides exceeds 100 tons per year. Additionally, 40 CFR 60.752(b) specifies that any landfill with a design capacity greater than 2.5 million megagrams which was modified after May 30, 1991 is subject to Part 70 permit requirements.

The stationary source is subject to the New Source Performance Standards for Stationary Gas Turbines and Municipal Solid Waste Landfills promulgated in Title 40 of the Code of Federal Regulations, Part 60, Subparts GG and WWW, respectively, as well as the general provisions under Subpart A.

The stationary source is subject to the Maximum Achievable Control Technology Standards for Municipal Solid Waste Landfills promulgated in Title 40 of the Code of Federal Regulations, Part 63, Subparts A and AAAA.

The stationary source is considered to be a minor source of HAP emissions because the potential to emit of any single HAP regulated by the federal Clean Air Act, Section 112, is less than 10 tons per year and the potential to emit of all HAPs combined are less than 25 tons per year.

The stationary source is not currently subject to Prevention of Significant Deterioration (PSD) of Title 40 of the Code of Federal Regulations, Part 52.21, regulations because its potential to emit of each criteria pollutant is less than 250 tons per year. However, modifications at this stationary source may be subject to PSD regulations.

The monitoring conditions contained in the ROP are necessary to demonstrate compliance with all applicable requirements and are consistent with the "Procedure for Evaluating Periodic Monitoring Submittals."

No emission units are subject to the federal Compliance Assurance Monitoring rule under 40 CFR, Part 64, because the emission limitations or standards for the MSW landfill are covered by 40 CFR, Part 60, Subpart WWW and 40 CFR, Part 63, Subpart AAAA. Thus, the MSW landfill is exempt from CAM requirements. Additionally, the stationary gas turbines are not equipped with a control device, thus exempting them from the provisions of CAM.

Please refer to Parts B, C and D in the draft ROP for detailed regulatory citations for the stationary source. Part A contains regulatory citations for general conditions.

## **Source-wide Permit to Install (PTI)**

Rule 214a requires the issuance of a Source-wide PTI within the ROP for conditions established pursuant to Rule 201. All terms and conditions that were initially established in a PTI are identified with a footnote designation in the integrated ROP/PTI document.

The following table lists all individual PTIs that were incorporated into previous ROPs. PTIs issued after the effective date of ROP No. MI-ROP-M4469-2008 are identified in Appendix 6 of the ROP.

PTI Number			
13-05	250-00	Wayne County Permit No. C-7926	Wayne County Permit No. C-7925

**Streamlined/Subsumed Requirements**

This permit does not include any streamlined/subsumed requirements pursuant to Rules 213(2) and 213(6).

**Non-applicable Requirements**

Part E of the draft ROP lists requirements that are not applicable to this source as determined by the AQD, if any were proposed in the application. These determinations are incorporated into the permit shield provision set forth in Part A (General Conditions 26 through 29) of the draft ROP pursuant to Rule 213(6)(a)(ii).

**Processes in Application Not Identified in Draft ROP**

The following table lists processes that were included in the ROP application as exempt devices under Rule 212(4). These processes are not subject to any process-specific emission limits or standards in any applicable requirement.

Exempt Emission Unit ID	Description of Exempt Emission Unit	ROP Exemption	Rule 201 Exemption
Air Compressors	Three (3) Gasoline fired portable air compressors with 9 horse power motors	Rule 212(4)(d)	Rule 285(g)
Gasoline Generator	Two (2) Gasoline fired portable generators with 13 horse power motors.	Rule 212(4)(d)	Rule 285 (g)
EU_GASOLINE_AST	One 300 gallon above-ground storage tank holding gasoline	Rule 212(4)(c)	Rule 284(g)(i)

**Draft ROP Terms/Conditions Not Agreed to by Applicant**

This permit does not contain any terms and/or conditions that the AQD and the applicant did not agree upon pursuant to Rule 214(2).

**Compliance Status**

The AQD finds that the stationary source is expected to be in compliance with all applicable requirements as of the effective date of this ROP.

**Action taken by the DEQ**

The AQD proposes to approve this permit. A final decision on the ROP will not be made until the public and affected states have had an opportunity to comment on the AQD's proposed action and draft permit. In addition, the U.S. Environmental Protection Agency (USEPA) is allowed up to 45 days to review the draft permit and related material. The AQD is not required to accept recommendations that are not based on applicable requirements. The delegated decision maker for the AQD is Wilhemina, McLemore, Detroit District Supervisor. The final determination for ROP approval/disapproval will be based on the contents of the permit application, a judgment that the stationary source will be able to comply with applicable emission limits and other terms and conditions, and resolution of any objections by the USEPA.

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**NOVEMBER 10, 2014 STAFF REPORT ADDENDUM**

MI-ROP-M4469-2015

**Purpose**

A Staff Report dated October 6, 2014, was developed in order to set forth the applicable requirements and factual basis for the draft Renewable Operating Permit (ROP) terms and conditions as required by R 336.1214(1). The purpose of this Staff Report Addendum is to summarize any significant comments received on the draft ROP during the 30-day public comment period as described in R 336.1214(3). In addition, this addendum describes any changes to the draft ROP resulting from these pertinent comments.

**General Information**

Responsible Official Section 1:	Gary S. Quantock, Vice President Operations 734-913-2080
Responsible Official Section 2:	Douglas Drysdale, City Manager 734-281-4201
AQD Contact:	Gina McCann, Environmental Quality Analyst 989-894-6218

**Summary of Pertinent Comments**

No pertinent comments were received during the 30-day public comment period.

Michigan Department of Environmental Quality  
Air Quality Division

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**RENEWABLE OPERATING PERMIT**

ROP Number

M4469

**JUNE 26, 2017 STAFF REPORT FOR RULE  
216(3) SIGNIFICANT MODIFICATION**

MI-ROP-M4469-2015a

**Purpose**

On January 7, 2015 the Department of Environmental Quality (DEQ), Air Quality Division (AQD), approved and issued Renewable Operating Permit (ROP) No. MI-ROP-M4469-2015 to Riverview Energy Systems, LLC pursuant to R 336.1214. Once issued, a company is required to submit an application for changes to the ROP as described in R 336.1216. The purpose of this Staff Report is to describe the changes that were made to the ROP pursuant to R 336.1216(3).

**General Information**

Responsible Official:	Mark R. Hill, Jr., Vice President-Operations (Section 1) 734-913-2080
AQD Contact:	Caryn E. Owens, Environmental Quality Analyst 231-876-4414
Application Number:	201700016
Date Application For Significant Modification Was Submitted:	January 19, 2017
Date Public Comment Begins:	June 26, 2017
Deadline for Public Comment:	July 26, 2017

**Regulatory Analysis**

The AQD has determined that the change requested by the stationary source meets the qualifications for a Significant Modification pursuant to R 336.1216(3).

**Description of Changes to the ROP**

Incorporate the changes from PTI 250-00B into Section 1 of the ROP, which was to include Conditions as dictated by Consent Order 19-2016. The PTI modified the SO<sub>2</sub> limit to create a synthetic minor limitation for SO<sub>2</sub> for the turbines FGTURBINES at the facility. The facility is required to complete weekly gas sampling to obtain limits of 140 ppmvd and 32 tons per year, unless the 140 ppmvd is exceeded, then the gas sampling will be conducted daily.

Additionally, the Company requested to remove DTE Biomass Energy Systems as the Owner of the facility. All of the equipment covered in Section 1 of the ROP is owned and operated by Riverview Energy Systems, LLC.

**Compliance Status**

The AQD finds that the stationary source is expected to be in compliance with all applicable requirements associated with the emission unit(s) involved with the change as of the date of approval of the significant modification to the ROP.

### **Action Taken by the DEQ**

The AQD proposes to approve a Significant Modification to ROP No. MI-ROP-M4469-2015, as requested by the stationary source. A final decision on the Significant Modification to the ROP will not be made until the public and any affected states have had an opportunity to comment on the proposed changes to the ROP and the U.S. Environmental Protection Agency (USEPA) has been allowed 45 days to review the proposed changes to the ROP. The delegated decision maker for the AQD is the District Supervisor. The final determination for approval of the significant modification will be based on the contents of the permit application, a judgment that the stationary source will be able to comply with applicable emission limits and other requirements, and resolution of any objections by the public, any affected states or the USEPA.

Michigan Department of Environmental Quality  
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**RENEWABLE OPERATING PERMIT**

ROP Number

M4469

**AUGUST 1, 2017 STAFF REPORT FOR RULE  
216(3) SIGNIFICANT MODIFICATION**

MI-ROP-M4469-2015a

**Purpose**

On January 7, 2015, the Department of Environmental Quality, Air Quality Division (AQD), approved and issued Renewable Operating Permit (ROP) No. MI-ROP-M4469-2015a to Riverview Energy Systems, LLC pursuant to R 336.1214. Once issued, the AQD is required to modify the ROP if the criteria described in R 336.1216(3) are met. Only those conditions to be added or changed in the ROP are to be considered during this public comment period. The purpose of this Staff Report is to describe the changes that were made to the ROP following the 30-day public comment period.

**General Information**

Responsible Official:	Mark R. Hill, Jr., Vice President-Operations (Section 1) 734-913-2080
AQD Contact:	Caryn E. Owens, Environmental Engineer 231-876-4414

**Summary of Pertinent Comments**

No pertinent comments were received during the 30-day public comment period.

**Changes to the June 26, 2017 Draft ROP Significant Modification**

No changes were made to the proposed ROP Significant Modification.