

**DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
ACTIVITY REPORT: Scheduled Inspection**

P042635785

|  |                               |                           |
|--|-------------------------------|---------------------------|
| FACILITY: ADRIAN ENERGY ASSOCIATES LLC                           |                               | SRN / ID: P0426           |
| LOCATION: 1900 NORTH OGDEN HWY, ADRIAN                           |                               | DISTRICT: Jackson         |
| CITY: ADRIAN   |                               | COUNTY: LENAWEE           |
| CONTACT: Robert Meads , Plant Operator                           |                               | ACTIVITY DATE: 07/15/2016 |
| STAFF: Zachary Durham  | COMPLIANCE STATUS: Compliance |                           |
| SUBJECT: Scheduled, unannounced inspection of MI-ROP-P0426-2014. |                               | SOURCE CLASS: MAJOR       |
| RESOLVED COMPLAINTS:   |                               |                           |

**Contacts**

**Robert Meads**  
**Plant Operator**  
**Adrian Energy Associates**  
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**Purpose**

This was a scheduled, unannounced inspection of the equipment and facilities identified in the Renewable Operating Permit (ROP) No. MI-ROP-P0426-2014 issued to Adrian Energy Associates, LLC. The purpose of this inspection was to determine compliance with the federal and state applicable requirements, including Act 451, Part 55, Air Pollution Control regulations and conditions of their ROP. Alex Whitlow, of the Office of Waste Management and Radiological Protection (OWMRP), was accompanying me on my inspection. We arrived at about 11:45am on July 15, 2016 and met with Robert Meads, plant operator. The inspection included a brief overview of the inspection process, followed by a facility tour, and finally a closing meeting.

**Background**

Adrian Energy Associates, LLC (AEA) receives landfill gas (LFG) that is produced by the decomposition of waste materials stored in the adjacent property owned and operated by Adrian Landfill. The LFG is routed to AEA via a collection system that is maintained by Adrian Landfill and treated by AEA before being combusted in their engines. Both Adrian Landfill and AEA were previously permitted as a single entity, however, they now each have separate ROPs, which work in tandem to fulfill the requirements of the New Source Performance Standard (NSPS) as written in Title 40 of the Code of Federal Regulations (CFR) Part 60, Subpart WWW for Municipal Solid Waste (MSW) Landfills. They are also subject to the National Emission Standard for Hazardous Air Pollutants (NESHAP) in 40 CFR Part 63, Subpart AAAA for MSW Landfills and Subpart ZZZZ for reciprocating internal combustion engines (RICE) maximum achievable control technology (MACT) standards.

The 2015 MAERS Report audit was completed by Diane Kavanaugh Vetort on 5/18/16 and found to be in compliance with the emission limits set out in their ROP.

**Compliance Evaluation****EUTREATMENTSYS**

This is the emission unit (EU) describing the treatment system that LFG is routed to from the collection system in place at Adrian Landfill. The treatment system is maintained regularly as described in the Preventative Maintenance Plan (PMP) and Startup, Shutdown and Malfunction (SSM) Plan. The primary function is to filter out particulates, de-waters, and compresses the gas stream. The most recent version of the plans is from 7/23/2009. This treatment system has been design to operate in a manner consistent with the requirements of the NSPS in 40 CFR Part 60, Subpart WWW to ensure destruction of non-methane organic compounds (NMOC). Attached are about a month's worth of preventative maintenance and daily operating parameters logs as required in this section. Each day the system is checked for condensate accumulation in the knockout vessel, blower discharge pressure, primary filter differential

pressure, polishing filter differential pressure, and outlet gas temperature. Also attached is the work order completed 6/27/16 for routine greasing of the blower bearings.

Additionally, Robert indicated that LFG is routed to the treatment system continuously while the plant is operational, thus fulfilling provisions in Subpart WWW under 60.752(b)(2)(iv) and 60.753(f). Only when the plant is down is gas then routed to the emergency backup flare, which is owned and operated by Adrian Landfill.

## **FGENGINES**

This is the flexible group for the three engines that combust LFG, which generate electricity for use in the power grid. NSPS Subpart WWW is not applied to this section because of the treatment system in place for the LFG before combustion. Emission limits on carbon monoxide (CO), nitrogen oxides (NOx), and volatile organic compounds (VOC) are included in this section. Attached is the most recent engine performance and throughput data for July 2016.

Monitoring and recordkeeping requirements included in the attachment cover LFG flow rate, kilowatt hour (kWh), weekly BTU content, average hourly heat input, hours of operation, air/fuel temperature, and average hourly emission rates for CO, NOx, and VOC. The following is a summary for the limits on regulated pollutants vs. their most recent hourly average of emissions, as combined amongst three engines:

- CO limit = 21.25 lb/hr. On 7/20/16 average combined CO emissions = 16.65 lb/hr.
- NOx limit = 15.38 lb/hr. On 7/20/16 average combined NOx emissions = 2.66 lb/hr.
- VOC limit = 6.73 lb/hr. On 7/20/16 average combined VOC emissions = 3.58 lb/hr.

While on site I also noted incoming LFG flow at 967scfm at 8.6psig and 89.5°F. The meter reading electrical generation was at 1,951kW of power being generated and sent to the grid. Additionally, I observed the hour readings for Engines 1, 2, and 3, which read 77902.9, 78480.3, and 78375.7 hours, respectively.

## **FGRICEMACT**

This is the flexible group for the LFG combustion engines which are located at an area source of hazardous air pollutants (HAP). The RICE MACT allows for the engines to undergo an oil analysis program to ensure adequate engine maintenance is being performed. Attached are the most recent oil analyses for each engine, which appear to show compliance with the standards for each metric (Total acid number, viscosity, and percent water content) set out in the RICE MACT. Also attached is the maintenance log for the last 12 months of work performed on each engine.

## **Summary**

After leaving the Adrian Landfill area, Alex Whitlow and I proceeded into the premises owned and operated by AEA. We met with Robert Meads and discussed with him the purpose of the visit. I provided him with a copy of the Environmental Inspections brochure and explained to him what to expect from the inspection. I indicated to Robert that I would like to take a walk through to see the engines as well as the treatment system and would also be asking for some records to verify compliance with the ROP.

Robert led us to the control panels that were tracking incoming gas flow and electrical output from the engines, which were currently all running. I took note of the displays readings (see above) and we proceeded into the engine room. Hearing protection is required in this area. We walked around each engine and I noted the hours being tracked by the non-resettable meter. I also observed the area where they sample the gas stream once a week to determine methane concentration and heating value in BTU. We exited the back of the engine room to the treatment system. The treatment system seemed contained as no LFG odors were present in the area. We also saw a flare unit, which Robert described as being disconnected and non-functional for several years since LFG is routed to the flare owned and operated by Adrian Landfill if AEA goes down.

We then proceeded back to the control room and file storage area where we began the inspection. I told Robert which record keeping documents I needed and he began to look through paper and electronic files. He showed me the electronic spreadsheet they keep that is used to track LFG and engine data. He

also showed me the online system to track engine maintenance. I said that I could accept the data via email, which he sent to me on 7/20/16, and we left the facility. I also received some treatment system monitoring and preventative maintenance logs on 8/2/16.

#### Compliance Determination

After a review of the recordkeeping documents, on-site inspection, and audit of the 2015 MAERS Report, I have determined that this facility is in compliance with ROP No. MI-ROP-P0426-2014.

NAME Fach Durham

DATE 8/2/16

SUPERVISOR 