

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

B159836407

FACILITY: FLINT WATER POLLUTION CONTROL FACILITY		SRN / ID: B1598
LOCATION: G-4652 BEECHER RD, FLINT		DISTRICT: Lansing
CITY: FLINT		COUNTY: GENESEE
CONTACT: Robert Case , Supervisor		ACTIVITY DATE: 08/30/2016
STAFF: Nathaniel Hude	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Scheduled inspection to confirm incinerator shutdown, in addition to engine stack test, and MAERS review will be part of FCE.		
RESOLVED COMPLAINTS:		

Inspection Report

B1598- Flint Water Pollution Control Facility
G-4652 Beecher Road, Flint, Michigan

Inspection Date:

8/30/16

Facility Contacts:Robert Case- Division Supervisor, 810-766-7210, rcase@cityofflint.com**MDEQ AQD Personnel:**Nathan Hude – 517-284-6779, huden@michigan.gov**Facility Description:**

Flint Water Pollution Control Facility is the treatment plant for all of the Flint residences. They have a capacity of 50 million gallons per day, yet the average is 22 million gallons per day. 4 incinerators are onsite used to burnt sludge waste up until March 10, 2016 in which they ceased due to new regulatory constraints. The ash was mixed with the scrubber wash and sent to a lagoon on west side of N Linden Road. By shutting down the incinerators, the plant avoids compliance requirements with 40CFR60 MMMM which had requirements beginning March 30, 2016.

Around May 2011, they installed a bio digester with a flare through a Swedish Company, BioWorks Energy. The digester and flare is owned by the city. The site has now installed an engine to produce electricity. The engine was purchased by BioWorks, who will maintain ownership yet operate the engine on the Flint Water Pollution Control Facility property. The engine is exempt due to being less than 10MMBtu per R336.1285(g) yet is subject to 40CFR60 JJJJ. Post bio digester sludge is sent to a landfill. It is estimated that the sludge is reduced in volume and weight by approx. 35-40% via the digestion process.

Applicable Regulations:

1. Voided PTI 228-73A for confirmation of shut down
2. PTI 660-81 for odor control vent system
3. PTI 659-81 for quad odor control system
4. R336.1285(g) for engine < 10MMBtu
5. 40CFR60 JJJJ
6. R336.1282(g) for flare < 1 lbs/hr sulfur

Previous Inspections:

6/15/16, Nathan Hude engine JJJJ stack test observation
7/14/2015, Nathan Hude, no violations yet identified 40CFR60JJJJ applicability
5/11/2012, Brad Myott, violation due to scrubber differential pressure out of range
5/28/2009, Brad Myott, no violations

This Inspection Key Concerns:

1. none

Inspection Summary

This FCE will be completed using multiple visits to the facility which includes the 6/15/16 stack test and this inspection on 8/30/16. The inspections into was to confirm shut down of the incinerators for voidance of 228-73A, review and inspection of PTI's 659-81 and 660-81 which were unknown or previously not included in past

inspections. The review of R336.1285(g) and 40CFR60 JJJJ were completed during the 6/15/16 stack test and through review of the test results.

I arrived onsite at approx. 1030 for an scheduled and unannounced inspection. The front office area was under construction, so I entered the building through the back door. I went to the front area where I met Bob; he was shortly to attend a meeting so he had the manager (I did not write down his name but recognized him from the last inspection) escort me for the inspection.

1. Voided PTI 228-73A for confirmation of shut down

We walked from the office to the incinerator area. As we walked by, I could hear the bio-engine running. When we arrived the manager showed me how the feed system had been dismantled and reversed. The sludge delivery system from the press / dewatering area to the incinerators had been removed. The system now has an auger going the opposite way to a load out building. The press / dewatering area is now used, yet it is used after the sludge has been bio-digested and used to reduce water content before the digested sludge is transported to the landfill. This was official confirmation that the incinerators are shut down and unusable unless significant effort was made to make them operational.

2. PTI 660-81 for odor control vent system

3. PTI 659-81 for quad odor control system

We then discussed PTI's 659-81 and 660-81. It should be of note, that these permits were identified as active through permit cards; copies of the permits are not located in the Permit Section "Active" or "Voided" area; yet copies are available in the district files. Both of these permits are for odor control of the "Zimpro decant tanks". Apparently the Zimpro system was used to dry sludge prior to the installation of the press / dewatering area before feeding to the incinerators. The Zimpro system has not been used in 30 years. Since the system is not in use, I did not inspect the conditions of these permits. The odor control equipment is the only thing that is not exempt from the permit process, otherwise the decant tanks, valves and piping would be exempt per R336.1285(m). In a 8/31/16 email, Bob Case confirmed that the Zimpro was shutdown in 1987 and with the incinerator shutdown, use of the device will not occur.

Below are the details of each permit:

659-81 Information

PTI Application Equipment Description:

Quad Odor System consisting of a reaction chamber, fans, piping, controls to control odors produced by the Zimpro process (wet oxidation) using a Sodium Hypochlorite solution. This system will be used when the incinerators are on a stand-by status.

Special Conditions:

10. Applicant shall maintain effective seals on the Zimpro decant tanks so as to eliminate odorous emissions to the atmosphere
11. Exhaust gases from the Zimpro decant tanks and the other minor sources identified in this permit shall not be released to the atmosphere prior to control by either the Quad Unity or an Incinerator.
12. Applicant shall operate incinerator as the primary odor control device for the exhaust emission gases from the Zimpro decant tanks and other minor sources, using the Quad Unit only as a backup system when an incinerator is not burning sludge.
13. There shall be no visible emissions from the Quad odor control unit except uncombined water vapor.
14. The exhaust gases from the Quad odor control unit shall be discharged unobstructed vertically upwards to the ambient air from a stack with a maximum diameter of 18 inches at an exit point not less than 43 feet above the ground level.

660-81 Information

PTI Application Equipment Description:

A system consisting of fans, piping, valves and controls to effectively control odors produced by the Zimpro process (wet oxidation). The system will vent these odors into our multiple hearth incinerators where they will be destroyed by heat.

Special Conditions:

10. Applicant shall maintain effective seals on the Zimpro decant tanks so as to eliminate odorous emissions to the atmosphere
11. Exhaust gases from the Zimpro decant tanks and the other minor sources identified in this permit shall not be released to the atmosphere prior to control by either the Quad Unity or an Incinerator.
12. Applicant shall operate incinerator as the primary odor control device for the exhaust emission gases from the Zimpro decant tanks and other minor sources, using the Quad Unit only as a backup system when an incinerator is not burning sludge.

4. R336.1285(g) for engine < 10MMBtu- this engine meets the exemption as claimed with a rating of 3412.142 Btu.

5. 40CFR60 JJJJ

A confirmation of the engine being less than 10MMBtu has been confirmed in the past; using the conversion of 1 kW = 3412.142 Btu/hr, the 190kW rated engine calculates to 648307 Btu/hr or 0.65 MMBtu/hr which is well under the exemption limit. The bio-engine was tested for 40CFR60 JJJJ requirements on 6/15/16. This was a one-time test due to the engine being less than 500 HP per 40CFR60.4243(a)(2)(ii). The results were received by AQD on 8/3/16 showing compliance with Table 1 Limits in units of ppmvd @ 15% O2 while being operated at 185kW or 97.4% capacity. The results were as follows:

CO result 144, limit 610

NOx result 123, limit 150

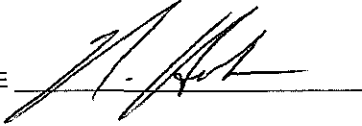
VOC result 2.8, limit 80

6. R336.1282(g) for flare < 1 lbs/hr sulfur

The flare was operating at the same time as the engine on my visit. At the current rate, they are producing more methane than what the engine can burn, thus the need for the flare will still exist. During the stack test, Chad Antle of BioWorks informed me that the sulfur content of the gas was 55ppm sulfur. The test approval letter requested a "Fuel sulfur content analysis (within the past 6 months)" yet the analysis was not included in the report. On 8/31/16, I emailed Chad and Jason Logan of Derenzo requesting copies of the information. Based on previous computations using the flare size and capability, the sulfur content of the fuel would have to be less than 180 ppm to maintain compliance with this exemption (using a fuel flow of 33,930 ft³/hr). On 9/13/16, Chad Antle sent a gas analysis stating the gas had 0 H2S. A copy of this report is attached.

Based on my inspection and review of applicable documentation it appears that permits 659-81 and 660-81 can be voided and the facility is in compliance with all applicable regulations. This report will be used to void PTI's permits 659-81 and 660-81.

NAME



DATE

9/15/16

SUPERVISOR

