

AUG 31 2018

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CITY OF FLINT
DEPARTMENT OF PUBLIC WORKS
WATER POLLUTION CONTROL DIVISION



Dr. Karen Weaver
Mayor

Michael Brown
WPC Supervisor

August 29, 2018

Mr. Daniel McGeen, Environmental Quality Analyst
State of Michigan, Department of Environmental Quality
Air Quality Division
525 W. Allegan, PO Box 30242
Lansing, MI. 48909

**RE: Violation Notice, Facility Odors Rule 910(b)
SRN: B1598, Genesee County**

Dear Mr. McGeen:

The City of Flint WPC has received, on August 21, 2018, your letter dated August 14, 2018 regarding foul odors detected during your August 2, 2018 inspection. You stated that the inspection was to verify compliance with the requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); the Air Pollution Control Rules; and to investigate a recent complaint received on that day regarding foul odors attributed to Flint WPC's operations. Your letter also states that we have until September 4, 2018 to respond, giving us 14 days.

There is some question as to violations of Rule 901, which by its nature is a subjective standard, and we don't necessarily agree that such violations have occurred. Nevertheless, we do acknowledge that odors are a part of wastewater treatment, due to the nature of the materials we must process for the public good, and it is possible that such odors may at times be detected offsite. As was discussed during your inspection, generally odors in the plant are not very intense, and are of a musty, but fleeting nature. The odors, as you experienced, were rather localized, and not necessarily detectable everywhere on site.

You have requested detailed information regarding dates a violation occurred, duration, causes, whether it is ongoing, and what actions have or are being taken to prevent recurrence. Generally speaking, the City of Flint WPC depend on odor complaints and our own observations to be aware when an on-site odor may have migrated off-site.

It is difficult to determine whether the degree to which odors are impacting the community, because of the lack of verifiable objective measurements beyond WPC's property line, the highly variable nature of odor, and having another facility that accepts trucked in waste waters and septage located in close proximity. Therefore, when it comes to odors and odor complaints, the approach WPC is continuing to take is to minimize odors on site, assuming that less on-site odor will reduce the potential for undesirable impacts.

Your request for information regarding actions WPC has taken to control odors in the past, be it mechanical or process based, and additional measures are in progress for the future. We believe odors have been reduced significantly, but recognize the potential for future impacts because of the nature of the work done at this facility. I will let you know that it is the responsibility of each employee on site to minimize any odor from this plant and process the wastewater into clean water to discharge into the Flint River.

It appears that some odors may be coming from the biosolids in storage or in process. At times, the covered East Tank, which is used for sludge blending and storage prior to digestion, has been quite full due to high solids inventory. In fact, in July of 2018, there was a sludge backup due to several plugged lines in the digester complex and other unforeseen equipment failures.

WPC has cleared all of the restricted sludge lines and has resumed the processing of digested sludge. That in turn will reduce the solids inventory and shorten the holding times of undigested sludge, which should also reduce gas production and odor potential from the East Tank since the detention time for bio solids in that tank is much longer than WPC would like.

WPC tracks waste waters that are trucked, the amount, and level in the East storage tank. This led to the discovery of one particular substrate that would cause a rapid rise of several feet in this storage tank. This is problematic due to the tank being covered by a geodesic dome, which is not airtight and may allow gas to escape. It was determined that the temperature of this substrate would cause it to prematurely digest and create excess gas in the storage tank. To stop this, WPC has been working with this company to cool down the substrate prior to acceptance. This seems to be working and will be monitored closely.

From an analytical testing standpoint, grab samples are collected by Operations personnel on a daily basis from the North Digester, and weekly from the East Storage tank and brought to the laboratory. In the table below analytical information from 2018 is summarized:

Sample Matrix	% Total Solids	% Volatile Solids	pH	Alkalinity	Volatile Fatty Acids	V/A
Digestate Sludge	3.1%	55.4%	7.4 S.U.	3897 mg/L	162 mg/L	0.042
East Storage Tank Sludge	5.0%	69.2%	5.3 S.U.	245 mg/L	3853 mg/L	8.710

These results show a significant difference between the two (2) sample matrices. It is imperative that the detention time of the sludge in the East Storage Tank be reduced as much as possible due to the high Percent Volatile Solids, low pH, and high Volatile Fatty Acids.

WPC has discovered issues with the North tank instrumentation that caused upsets in the level control, which resulted in the liquid levels rising or falling rapidly. If the level drops rapidly, the normal water seal will be lost, and could at times allow odorous gases to escape. There were two issues found. First, the location for the level sensor was found to be bridging at times, resulting in a constant reading, even as the level varied. The radar level sensor has been relocated and has been working properly since. Secondly, the orifice plate flow meter, which was used to measure the biogas flow from the digester, was icing up in colder weather creating a blockage on the gas line which would cause the digester to build up pressure and overflow. This meter and been replaced with a meter that does not have a restriction and is functioning properly.

In addition to the work we have done on the East tank; WPC has purchased an odor control system to handle air inside the East tank. The new system, scheduled for fall installation, uses a blower to draw air from the tank gas space and runs it through a proprietary two stage absorption media. The first stage is a converting media that absorbs H₂S and volatile mercaptans. The second stage is a polishing media that consists of activated carbon, which is designed to scrub low levels of H₂S and other malodors.

WPC has informed Charles Bennett P.E., MDEQ Water Resources Division, of its intent to file for a Part 41 permit to install this odor control system. An application and engineered drawings were mailed to him on August 28, 2018 with the intent to install when the plan is approved and a permit is issued. We intend to have the unit on line as soon as possible; at the very latest by December 15, 2018, if no other problems surface with the instillation.

Finally, WPC plans to increase digestion capacity with the addition of another anaerobic digester. The second digester has a floating cover, and a much better ability to cope with level changes. The floating cover can rise to expand its gas space, and maintain the water seal. Eventually, the North digester will be modified to convert it back to a floating or flexible cover. This will substantially reduce the potential for odorous gas to escape. Currently, the refurbishment of the second digester is in progress with an anticipated completion date by December 30, 2018.

The one possible odor problem that WPC cannot work to minimize is the County's acceptance of liquid waste from waste haulers and trucked in wastes that occurs near our plant. We have seen as many as 7 large tankers delivering upwards of 5,000 gallons per load to their receiving site. WPC personnel have noticed odors from this operation.

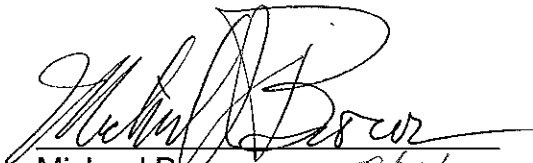
In reviewing the past correspondence, I see that Mr. Case, the previous WPC Supervisor, responded to a violation notice on March 12, 2018 about odor complaints from the months of October and November. In his letter he stated other actions that the WPC facility has taken. Those projects were completed and are not listed in this response.

We are confident that the measures planned will significantly reduce or even eliminate the most intense odors on the plant site. Much has been done, but much more is planned. It may not be possible to entirely eliminate all odors on site. WPC does believe any odors can and will be minimized or eliminated before they travel offsite in time.

I hope this answers your questions and that you can see from this letter that WPC is working to control or eliminate odors from the operations on this site. WPC wishes to be a good steward and keep odors from impacting our neighbors. Even though, as stated earlier, the nature of our business is one that can produce odors from time to time.

If you require additional information, please contact me at your earliest convenience at (810) 766-7210 x 3622.

Respectfully submitted,


Michael Brown
WPC Supervisor

3/30/18

c: Mr. R. Bincsik, COF-DPW Director
Ms. J. Camilleri, DEQ-AQD