

B2103

MANILA

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

B210346019

FACILITY: GLWA Water Resource Recovery Facility		SRN / ID: B2103
LOCATION: 9300 W. JEFFERSON AVE, DETROIT		DISTRICT: Detroit
CITY: DETROIT		COUNTY: WAYNE
CONTACT: Majid Khan , Director of Wastewater Operations		ACTIVITY DATE: 07/12/2018
STAFF: Stephen Weis	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Compliance inspection of the Great Lakes Water Authority's Water Resource Recovery Facility (WRRF). The WRRF facility is scheduled for inspection in FY 2018.		
RESOLVED COMPLAINTS:		

Location:

**Great Lakes Water Authority
Water Resource Recovery Facility (SRN B2103)
9300 West Jefferson Avenue
Detroit**

Date of Activity:

Tuesday, January 9 and Thursday, July 12, 2018

Personnel Present:

**Steve Weis, DEQ-AQD Detroit Office
James Kyzar, Process and Safety Engineer, NEFCO (January 9 visit)
Melvin Dacres, Water Systems Chemist, GLWA (July 12 visit)**

Purpose of Activity

Self-initiated inspections of the Great Lakes Water Authority (GLWA) Water Resource Recovery Facility (hereinafter "GLWA WRRF", or "WRRF") were conducted on Tuesday, January 9, 2018 and on Thursday, July 12, 2018. The GLWA WRRF is on my list of sources targeted for an inspection during FY 2018. The purpose of this inspection was to determine compliance of operations at the GLWA WRRF facility with applicable rules, regulations and standards as promulgated by Public Act 451 of 1994 (NREPA, Part 55 Air Pollution Control), and Federal standards. The facility is also subject to the terms and conditions of Renewable Operating Permit (ROP) No. MI-ROP-B2103-2014d.

Facility Site Description

The GLWA WRRF facility is located along Jefferson Avenue in the southwest portion of the City of Detroit. The facility is located just north of the Rouge River, and most of the wastewater treatment operations are located west of Jefferson Avenue. The Biosolids Drying Facility (BDF), which is part of the GLWA WRRF stationary source but is operated by New England Fertilizer Company (NEFCO), is located on the east side of Jefferson Avenue, directly across the street from the WRRF. The construction of the Biosolids Drying Facility was completed in the Fall of 2015, and the BDF commenced operating at that time. The facility's chlorination process is located in buildings on the east side of Jefferson Avenue, directly south of the BDF, on a parcel that extends to the original Rouge River channel.

The GLWA WRRF is located adjacent to primarily industrial properties, but there are residential neighborhoods in relatively close proximity. The City of River Rouge is located across the Rouge River from the WRRF, and the northern edge of the residential area in this city is just over ¼ mile south of the WRRF's southern property line. There are also residential areas in Detroit to the north and northwest of the northern portion of the WRRF property, where the facility's secondary treatment and biosolids thickening tanks are located, that are located less than 100 yards from the WRRF property line. The areas to the south and east of the GLWA WRRF contain some heavy industrial facilities. Zug Island, which contains some of U.S. Steel's operations (blast furnaces) and other activities associated with steelmaking, such as EES Coke's coke oven, lies just to the east and northeast of the GLWA WRRF, across the original Rouge River channel. U.S. Gypsum and Carmeuse Lime, Inc. are located directly across the Rouge River in the city of River Rouge. There are material/aggregate handling facilities

operating in the area south of the WRRF's property line between the Rouge River and Brennan Street.

Facility Operations

The GLWA WRRF is a publicly-owned wastewater treatment plant. The facility operates as part of the Great Lakes Water Authority's sewerage handling and treatment system. The system was formerly owned and operated by the City of Detroit and operated by the Detroit Water and Sewerage Department (DWSD). GLWA began a 40-year lease with the City of Detroit that provided for GLWA's operation of the regional water and sewerage system on January 1, 2016. The facility is now referred to as a water resource recovery facility rather than a wastewater treatment plant. The WRRF is a municipal utility that operates 24 hours per day, 7 days per week, and every day of the year.

The GLWA WRRF is one of the largest such facilities in terms of design treatment capacity in the world; according to information on the GLWA website, the facility is the largest single site wastewater treatment facility in the United States. The treatment capacity, or wet weather capacity, of the WRRF is 1.7 billion gallons per day primary treatment capacity, and up to 930 million gallons per day (MGD) of wastewater can receive secondary treatment (activated sludge, disinfection and dechlorination). The average dry weather flow of wastewater influent to the WRRF is 750 MGD.

The GLWA WRRF facility collects and treats domestic and industrial wastewater from the Metro Detroit area, serving the City of Detroit and 76 other communities in Southeast Michigan. The facility receives wastewater via three (3) major interceptors – the Detroit River interceptor, which contains flow from Detroit; the Oakwood/Rouge interceptor, which directs flow from the west side of Detroit and western suburbs; and the North interceptor (also known as the Oakland Macomb Interceptor Drain, or OMID), which contains flow from some of Detroit's northern suburbs.

The wastewater treatment process involves the removal of large solids from the influent wastewater stream using bar racks and grit chambers; primary and secondary biological treatment to remove suspended and dissolved solids; secondary treatment, which involves the use of oxygen activated sludge tanks and clarifier tanks; and chlorination of water from secondary clarifiers, followed by dechlorination of the effluent stream prior to discharge. The treated wastewater is discharged as effluent to Rouge and Detroit Rivers. Solids generated during the primary and secondary biological treatment processes are gravity thickened, then the resulting sludge/biosolids are dewatered using centrifuges and belt filter presses. After dewatering, the sludge is currently disposed of utilizing one of the following options:

- 1) The biosolids are incinerated in one of the facility's eight multiple hearth sewage sludge incinerators, which are located in the incineration complex building.
- 2) The material is conveyed under Jefferson Avenue to the NEFCO BDF, where the biosolids are dried into pellets that are used either as a fertilizer pellet, or as a fuel for cement kilns. The BDF process consists of four biosolids dryers, which are capable of processing up to 576 dry tons of biosolids per day (for all four dryers).
- 3) The biosolids can be directed to WRRF's on-site Central Offload Facility, where lime is added to the material to stabilize it by driving off additional moisture, and to reduce any remaining pathogens. Material that is processed at the Central Offload Facility is trucked off-site for either land application, or disposal in a landfill.

The wastewater treatment portion of the facility consists of a multitude of treatment tanks that provide primary and secondary treatment of wastewater influent to the WRRF. Many of these wastewater treatment tanks are open to the atmosphere, and the presence of odorous material in the tanks has the potential to cause an odor in the ambient air. However, the wastewater treatment processes, including the treatment tanks, are not permitted by the Air Quality Division as this type of equipment is exempt from air quality permitting requirements per the provisions of Michigan Administrative Rule 285(m).

The primary sources of air emissions at the WRRF are the eight multiple hearth sewage sludge incinerators, or SSIs, located in the WRRF's incineration complex, and the four natural gas-fired biosolids dryers at the NEFCO BDF. The exhaust air flow from each of the incinerators, identified as Incinerators 7 through 14, or EUINC07 through EUINC14, is directed through a series of scrubbers to treat the air emissions. The treated exhaust is discharged to the ambient air via two tall stacks (one that

vents incinerators 7-10, while the other exhausts incinerators 11-14) that discharge 254 feet above grade.

Each of the four biosolids dryers, also referred to as “dryer trains”, are natural gas-fired triple-pass rotary dryers that are equipped with low-NOx burners. Dried solids that are produced in the dryers are discharged to a cyclonic separator, then screened to sort out product, recycle material and unusable solids material. The recycle material is sent to recycle bins (each dryer train has its own recycle bin), and the bins are equipped with a baghouse for particulate control. The ambient exhaust flow from each of the dryer trains is exhausted through the cyclone to a three-stage impingement tray (IT) scrubber followed by a regenerative thermal oxidizer (RTO), and finally through a packed tower scrubber. Some of the exhaust from the IT scrubbers is recycled to the inlet of the dryers for heat recovery. The treated exhaust from the dryers is discharged to the ambient air via four stacks (one for each dryer) that discharge 130 feet above grade. According to information provided in the Compliance Assurance Monitoring (CAM) plan for the BDF, vendor data provides that the impingement tray scrubbers should provide 98% removal efficiency of particulate matter, and the RTO is designed to provide 98% destruction efficiency for VOC and CO emissions. In addition, the air from inside of the BDF building is vented through four alkaline hypochlorite scrubbers to control potential odors present in the building air. The scrubbers exhaust through stacks 80 feet above grade.

There have been changes to the operations at the facility over the past couple of years due to a couple of events. First, 40 CFR Part 60 Subpart M (Emission Guidelines and Compliance Times for Existing Sewage Sludge Incineration Units) was promulgated on March 21, 2011 for the purpose of establishing emission guidelines and compliance schedules for the control of emissions from sewage sludge incineration (SSI) units. There were fourteen SSIs operating at the WRRF facility for many years. The incinerators were located in two “Complexes” in the incineration building. Incinerators 1 through 6, which were built in the 1940’s, operated in Complex 1, while Incinerators 7-14, which were built around 1970, still operate in an area of the building classified as Complex 2. The regulatory requirements introduced by Subpart M include putting forth emission standards/limits for several air pollutants emitted by the SSIs, along with the requirement to conduct periodic compliance emissions testing to demonstrate compliance with the emission limits. The effective date of Subpart M was March 21, 2016. To comply with the requirements of Subpart M, GLWA made the following upgrades and changes at the WRRF facility:

- 1) Upgrading SSIs 7 through 14 and their associated air pollution control equipment. The upgrades, referred to in subsequent permitting documents as “air quality control improvements”, involved modifying some of the hearths, air ports and burners in these eight incinerators to achieve improved combustion and emissions control, and upgrading the scrubber systems on each of these incinerators.
- 2) Constructing and operating the Biosolids Drying Facility and its four biosolids dryer trains.
- 3) Permanently ceasing operation of the Complex 1 incinerators, as it was determined that the older Complex 1 incinerators would not be able to meet the emission standards, and that they could not feasibly be upgraded or modified to do so, whereas the Complex 2 incinerators could be upgraded to meet the standards put forth in Subpart M.

The SSI scrubber improvements referenced in 1) involved:

- Installing new quench sprays and a quench duct section upstream of the scrubber to ensure proper saturation of the exhaust from the Complex 2 incinerators. The ductwork leading to the scrubber was also reconfigured to allow for the new scrubber components.
- Fitting the existing impingement tray scrubbers with new trays and water sprays. Per the information presented in the application materials for Permit to Install 61-13, this part of the scrubber system removes larger and medium-sized particles, further cools the exhaust gases, and removes acid gases and metals, not including mercury.
- Installation of new venturi scrubbers following the impingement tray section of the scrubber system. The

venturi scrubbers were equipped with inlet and throat sprays.

- Installation of mist eliminators following the venturi section of the scrubber system to remove water droplets from the exhaust stream.

DWSD/GLWA applied for and acquired the necessary permits from DEQ-AQD to address any regulatory requirements associated with the changes and upgrades to the Complex 2 incinerators, and the operation of the BDF. During the permit review process, DEQ-AQD staff analyzed the changes and upgrades to the WRRF against applicable federal and state air quality requirements, including New Source Review permitting requirements. The resulting permit conditions put forth terms and conditions to ensure that the proposed steps involved with the changes and upgrades at the WRRF, as provided by DWSD and GLWA, would be compliant with federal and state air quality requirements. Permit to Install Nos. 61-13 and 61-13A were issued by DEQ-AQD.

After completing the upgrades and changes to incinerators 7 and 8, compliance emissions testing was performed in April of 2015. Similarly, incinerators 9 and 10 were upgraded, and compliance emissions testing was conducted on these SSI units in October 2015. The upgrades on the remaining four incinerators was progressing, and compliance emissions testing was scheduled for Spring of 2016.

On March 4, 2016, a section of the biosolids conveyor system serving the Complex 2 incinerators caught fire. The fire caused major damage to the Complex 2 section of the incineration building, with damage sustained to the roof, many of the biosolids conveyors, and smoke and water damage to electrical components, as well as to the control room and many control panels, among other damage.

While making repairs to the damage caused to the facility by the fire, the WRRF was still operational; wastewater was still directed to the facility for treatment, and the treatment process was generating biosolids that needed to be processed in compliance with applicable air and water regulations. In order to ensure that the WRRF facility had the necessary biosolids processing capacity to adequately handle the biosolids produced by the wastewater treatment process, one of the decisions that GLWA made was to continue to operate some of the SSIs in Complex 1 past the March 21, 2016 Subpart M MMMM effective date. The facility operated three of the Complex 1 SSIs that were still in service to dispose of a portion of the biosolids produced at the facility in response to the fire, in addition to landfilling some of the biosolids, and utilizing the biosolids dryers at the NEFCO BDF. As the repairs to Complex 2 progressed, GLWA utilized the Complex 1 SSIs less as time went on, favoring the other alternatives. The operation of any Complex 1 SSIs past this date was a violation of the facility's air permits. A violation notice was issued to GLWA citing the aspects of the operation of the incinerators that were not in compliance with Subpart M MMMM, and an additional violation notice was issued to GLWA in relation to issues relating to compliance emissions testing that was performed on the biosolids dryers at the BDF in January and February of 2016. As a result of these violations, Consent Order AQD No. 17-2017 was entered between GLWA and DEQ-AQD. The Consent Order will be discussed in the "Permits/Orders/Regulations" section of this report.

In 2017, the repairs to the Complex 2 incinerators were completed. As a result, the Complex 1 SSIs have permanently ceased operation, and the compliance emissions testing schedule that is required to be performed on the Complex 2 incinerators by Subpart M MMMM has resumed. In addition, the emissions controls at the BDF were upgraded, and subsequent compliance emissions testing of the biosolids dryers demonstrated compliance with applicable emissions standards.

Inspection Narrative

The inspection of the GLWA WRRF facility occurred in two parts – I conducted a site visit and compliance review of the NEFCO BDF portion of the facility on Tuesday, January 9, 2018, and I conducted a site visit and compliance review of the wastewater treatment and SSI portion of the facility on Thursday, July 12, 2018. Both of these site visits were conducted on dates that compliance emissions testing was occurring at that portion of the facility. A separate inspection narrative will be provided for each date that I visited the facility.

January 9, 2018 – BDF site visit

My visit to the NEFCO BDF on this day served a two-fold purpose – to check on the progress of the testing, and to conduct a compliance review of the facility's operations. I arrived at the facility and

checked in at the security desk at 11:30am. I was directed to a conference room and watched the facility's required safety video.

After watching the video, Chuck from NEFCO took me to the facility's control room on the second floor, where we were met by Lyle. They showed me the various monitoring screens that are used to track the operating parameters associated with the biosolids dryers, the associated pollution control equipment and the product silos and their associated dust control equipment. The monitoring screens have been updated to include the new pollution control equipment layout with the addition of the packed tower scrubbers. The monitors also show how excess air from the exhaust is sent back to the dryers as make-up air. Dryer A was being tested, and test run two began at 11:50am. I wrote down some operating parameters for Dryer A as the test was going on. For the packed bed scrubber, the liquid flow rate was 161.6 gallons per minute (gpm), the pH was 6.54, the pressure drop across the scrubber was 0.65 inches of water, and the exhaust temperature was 122°F. For the recycle bin baghouse, the pressure drop was 3.3 inches of water. For the impingement tray scrubber, the pressure drop across the scrubber was 6.8 inches of water, and the screened final effluent (SFE) flow was 450 gpm. For the RTO, the combustion chamber temperature was 1570°F.

At 12:35pm, I went up to the roof of the BDF building to check on the sampling points. DEQ-AQD Technical Programs Unit (TPU) staff were present, so I discussed the ongoing compliance emissions test with them. After a while, I returned to the control room.

At 1:20pm, I was met by James Kyzar of NEFCO, and we began a compliance review of the BDF portion of the WRRF facility. We discussed the permit conditions in the ROP for the process equipment at the BDF; the permit requirements for this portion of the WRRF facility are found in the FGDryerTrains and FGDryerFacility Flexible Groups.

We discussed the daily and monthly records that track various operating parameters of the dryers. James showed me the SCADA (Supervisory Control and Data Acquisition) system, an internal software system used by GLWA and NEFCO that monitors the operating parameters of the dryers. James showed me some screens from the SCADA system and pointed out items that are continuously monitored. One of the screens is titled "Train #_ Overview", and it displays schematics, process flow information and operating parameters starting with the biosolids storage bins just downstream in the process from the centrifuges, to the weigh belts to the conveyors, to the dryers, to the product handling portion of the process (the cyclone separators, the product screeners, the recycle bins, the pellet coolers, and the storage silos). Parameters such as temperature, pressure drop and amperage are continuously monitored. James showed another screen titled "Train #_ Emissions Control" that displays the operating parameters that are being monitored for the air pollution control equipment; this includes the product recycle bin baghouse, the impingement tray scrubber, the RTO and the packed tower scrubber. James provided me with an example print out of the two SCADA process flow and monitoring screens from January 9, 2018, which is attached to this report for reference.

The information that is monitored by the SCADA system is summarized in spreadsheets that present daily totals or averages of the monitored parameters for each month. Examples of this information includes the RTO temperature, the liquid flow rate and pressure drop across the IT scrubber, the baghouse pressure drop, and the building odor scrubber solution pH and ORP. Facility staff also enter daily visible emissions check on one of the spreadsheets.

Regarding the hours of operation of the biosolids dryers, James said that the dryers cannot be operated unless the centrifuges are being fed and de-watering biosolids material. NEFCO tracks the centrifuge run time every day, and once a week, the centrifuge run time is tabulated (centrifuge downtime is subtracted), and the information is tabulated to get the daily, weekly and monthly operating time totals.

James told me that the emissions estimates are based on the tons of dried biosolids product produced and the dryer run time. This information is summarized in the spreadsheets. NEFCO also tabulates and records the burner run times, and the make-up air unit run times. Daily natural gas readings are taken, and the monthly and 12 month rolling natural gas usage numbers are used to estimate CO_{2e} emissions.

James told me that the BDF facility records are tabulated and summarized each month, and they are sent to Melvin Dacres of GLWA WRRF for him to use in any required facility-wide reporting. James provided me with a print out of the spreadsheets that were sent to Melvin in November 2017. Copies of these spreadsheets are attached to this report for reference.

After James and I completed the compliance review, I returned to the roof of the facility. I met up with Mark Dziadosz of DEQ-AQD's TPU, and Manuel Irujo of NEFCO, who was onsite for the compliance emissions testing. Manuel, Mark and I toured the BDF facility from the ground floor as Manuel described the process. Manuel pointed out the exhaust air recirculation ducts for each dryer train. He explained that 80% of the exhaust air is recirculated back to the dryers. The exhaust air is cooled to 120° F to remove some of the moisture. Manuel explained that the benefits of using the recirculated air is that much of the contaminant stream is recirculated back to the dryer, and the recirculated air has an oxygen content of around 8%, which is safer to send to the combustible atmosphere of the dryer than ambient make up air.

After the walk through, I left the facility just after 3:00pm.

July 12, 2018 – WRRF site visit

I arrived at the GLWA WRRF facility at 11:40am. Melvin Dacres met me at the security office, and we proceeded to the control and conference room in the Complex 2 SSI building. Compliance stack testing was ongoing, with SSI Unit No. 11 being tested at the time of my visit. Just as with my visit to the BDF in January, this visit to the WRRF served a two-fold purpose – to check on the progress of the testing, and to conduct a compliance review of the facility's operations.

When Melvin and I arrived at the Complex 2 conference and control room, which serves as the staging area for the compliance emissions testing, we were met by the WRRF facility's incineration consultant, Gene Waltz of Incinerator Rx. Gene spoke with us about the process and control equipment monitoring during the tests. Gene told me that, based on the preliminary information, the compliance emissions tests for SSI Units 7, 9 and 10 are indicating that all of the measured emissions are in compliance with permit and regulatory limits. The measured NOx emissions are below the permit limit, but at over 75% of the Subpart M standard, meaning that NOx testing will need to be performed on these SSI units within 11-13 months of the date of these tests. Gene described, and pointed out on the SCADA display screen, how the double hearth/zero hearth change to the SSI, the addition of the venturi pack scrubber and the use of a variable speed fan have all contributed to lower emissions from the SSIs.

Melvin and I sat down at one of the tables in the room to perform the compliance review of the WRRF facility. I had a hard copy of the facility ROP to look at, as well as an electronic copy open on my laptop. Melvin had brought various records along to review. We started by discussing a report that Melvin was working on, the Subpart M Annual Compliance Report. This report was due in August 2018, the due date being determined by the date that the facility's Subpart M Initial Compliance Report was submitted. According to 40 CFR 60.5235(c)(4), the Annual Compliance Report requires that results of the most recent compliance emissions test be included in the Report. Melvin wanted to know how to address this, as the test that was currently taking place would not have results available by the submittal due date for the Annual Compliance Report. I recommended to Melvin that he include the dates of the compliance emissions test and the specifics of the test (i.e. the pollutants that are being tested for, the test methods being used, the name of the testing company). I also recommended that the Annual Compliance Report include a statement that the test results will be submitted to DEQ-AQD when available, and in accordance with the requirements of the ROP, and that the test results can be made available to EPA if needed.

We then proceeded to review the facility's compliance with the ROP. We started with the Source-Wide Conditions, and we proceeded to discuss the various Emission Unit and Flexible Group tables in the ROP. As we went through the permit and regulatory requirements, Melvin described how GLWA tracks compliance with the requirements. For some of the permit conditions, he showed me records. During the course of going over the requirements of the ROP, I requested and received copies of some of the records that Melvin showed me. We briefly discussed the requirements associated with the NEFCO BDF portion of the facility. I summarized to Melvin the compliance discussion that I had with NEFCO staff during my January 9 visit to the BDF facility, and the information that I was provided.

We concluded our compliance review at 1:40pm. I observed the compliance stack test for a while, and I left the facility at 2:30pm.

Permits/Orders/Regulations

Permits

The primary source of the regulatory requirements that are currently applicable to the Detroit WWTP are found in the facility's Renewable Operating Permit. The current version of the ROP, No. MI-ROP-B2103-2014d, became effective on August 29, 2017. This modification to the ROP, which was a minor modification, was made to incorporate a change in the control equipment for each of the sludge dryers at the BDF – the addition of a packed tower scrubber to the exhaust stream for each dryer train, which is exempt from AQD permitting.

The ROP references the applicable State air regulatory requirements, as well as the applicable Federal air regulatory requirements. The primary regulation that is applicable to the operations at the GLWA WRRF is 40 CFR Part 60, Subpart M. As mentioned previously in this report, this Federal standard has an effective date of March 21, 2016. The requirements of Subpart M are adopted by reference into the Michigan Administrative Rules per Michigan Administrative Rule 902 (R 336.1902), and the requirement for subject facilities in Michigan to comply with the provisions of Subpart M are put forth by Michigan Administrative Rule 972 (R 336.1972), which is listed as an applicable requirement in the ROP.

The following paragraphs provide a summary of the compliance of the operations associated with the GLWA WRRF facility with the terms and conditions put forth by ROP No. MI-ROP-B2103-2014d, with the headings representing the sections of the ROP.

Source-Wide Conditions

The Source-Wide Conditions table in the ROP addresses two separate items:

- Emission standards put forth in 40 CFR Part 61 for beryllium and mercury;
- Fugitive dust control measures on the Detroit WWTP property.

40 CFR Part 61, Subparts C (National Emission Standards for Beryllium) and E (National Emission Standards for Mercury) are applicable to the GLWA WRRF due to the potential presence of these materials in the wastewater influent treated at the facility, as well as in the sludge/biosolids produced by the treatment process. Section "I. Emission Limits" of the Source-Wide Conditions section contains emission limits for these two elements, while under section "V. Testing/Sampling", Special Condition (SC) V.1 requires that monthly samples of the sewage sludge be tested for mercury content. Melvin described that samples of sludge are taken around the first of every month from the Central Offload facility, where sludge is prepared for off-site use/disposal, and from the incinerator feed belts (specifically the J belt). Melvin confirmed that the sampling analysis procedure is the same as was described to me during my visit in 2017 - the samples are analyzed at the GLWA analytical lab, which is located at 2nd and Temple Streets in Detroit, and the results go into the report required by 40 CFR Part 503 (Standards for the Use or Disposal of Sewage Sludge). The Part 503 report is sent to DEQ-Water Division staff in October of each year, and to EPA in January. The Part 503 report requires analysis of cadmium, chromium, mercury, beryllium, arsenic, lead and nickel content of the sludge samples. In addition, DWSD sends reports of the mercury sampling results to DEQ-AQD.

In Subpart C, 40 CFR 61.32(c) puts forth the beryllium limit of 10 grams per 24 hour period, and 40 CFR 61.33 (a) requires that emission testing be performed using a prescribed test method "...unless a waiver of emission testing is obtained under 61.13...". According to GLWA staff, they recall receiving a waiver many years ago, with the sludge sampling serving as a substitute for the emissions testing. According to facility records, the last emissions testing for beryllium took place in 1993, and the test results showed "none detected".

Melvin showed me some sample test results, which showed beryllium and mercury well below the limits in Subparts C and E. He told me that the results of the sampling and testing have been consistently compliant. The facility is in compliance with these requirements.

The requirements in this section of the ROP that relate to fugitive dust management cite Consent Order SIP No. 11-1993 as an applicable requirement. This Consent Order is part of the State of Michigan's State Implementation Plan (SIP); this part of the SIP was submitted by the State of Michigan as part of the attainment demonstration for PM-10. The Michigan Department of Natural Resources submitted the PM-10 SIP to EPA on June 11, 1993, and, after a couple of revisions, the nonattainment area PM SIP for

Wayne County, Michigan was approved and became effective on February 16, 1995. One element of the SIP was the requirement that facilities with designated standard industrial classifications that are located in the area designated in Table 36 of Michigan Administrative Rule 371 "...develop and implement an approved fugitive dust control operating program and to have the program embodied in a legally enforceable order..." (this quote was taken from the preamble to the Consent Order). Many of the larger facilities in the portion of Wayne County designated in Table 36 were issued Orders as part of the SIP. The Detroit WWTP was issued the Consent Order referred to as SIP No. 11-1993.

The fugitive dust-related conditions in the Source-Wide Conditions section of the ROP contain requirements to perform daily sweeping in the material handling area when material handling takes place (Special Condition IX.1.1.a); weekly sweeping of paved roadways (IX.1.1.b); adding gravel cover to gravel parking areas as needed (IX.1.2.); washing sludge from the exterior of vehicles that haul sludge from the facility (IX.1.7); and daily washings/cleanings of roadways in the sludge haul area (IX.1.8). A checklist is kept by GLWA of the daily sweepings and washings of roadways. Melvin showed me a facility document titled "Fugitive Dust Control Treatment Log" on which fugitive dust management measures are tracked. A copy of the form is attached to this report for reference. Facility staff complete the form by listing the areas of the facility that were washed/swept, and the date. There is also a group of rows provided that list the reasons that the frequency of treatment can be lessened, as put forth in SC IX.1.1(c). Regarding SC IX.6, Melvin told me that GLWA does not keep sludge outside. The facility looks to be in compliance with the fugitive dust management requirements.

EULIMEPAD

EULIMEPAD is the only Emission Unit identified in the ROP that is not part of a Flexible Group. The ROP contains the following description for EULIMEPAD:

"The old sludge/lime mixing facility and the Lime Pad have been replaced with indoor Central Offloading Facility (COF) and a new outdoor Lime Pad facility. Belt conveyors transfer sludge cake from Complex 1 and Complex 2 dewatering units to three holding tanks and the cake is then transferred to three cake mixers where lime from three silos are added by gravity to mixers. All the cake mixers are connected to a scrubber, where any residual dust and gases are scrubbed. The mixture is dropped directly into trucks for transport to a landfill. Occasionally, the mixture of cake and lime is dropped into the Lime Pad area, where scum or ash is added and mixed with front loaders. Lime Pad is an outdoor three-sided concrete/steel mixing area used to prepare residuals for disposal in a sanitary landfill. The mixture is allowed to stabilize, then loaded into trucks for transport to a landfill."

The Emission Unit table only contains two permit Special Conditions – IX.1, which requires that all trucks hauling sludge from the facility have their wheels cleaned, and IX.2, which requires that all sludge conveyors and conveyor transfer points be inspected one per shift. Melvin explained that there is a weight ticket referred to as a "Scale House Ticket" form for each inbound and outbound sludge hauling truck on which the weights of the truck is entered. If the "Material Hauled" field on the form shows sludge or lime, then the truck wheels are washed.

Regarding the conveyor inspections, required in SC IX.2, all of the conveyors in the COF are enclosed, so no material can drop to the ground. I was told during my site visit last year that GLWA plans to request that SC IX.2 be changed during the next ROP renewal to have the permit requirements accurately reflect the operation of the COF. The ROP renewal application was sent to DEQ-AQD in correspondence dated July 23, 2018. The application requests that SC IX.2 be removed from the ROP. The appropriate way to address the conveyors will be addressed during the drafting of the ROP renewal. The facility looks to be in compliance with the conditions in EULIMEPAD.

FGC1ASH and FGC2ASH

This Flexible Group addresses the incinerator ash conveyance and storage systems associated with Incinerator Complexes 1 and 2. The ash is stored prior to being transported to a landfill for disposal.

The Complex 1 ash conveyance and storage systems last operated on January 4, 2017, and they are now permanently shut down; the requirements under FGC1ASH were not evaluated during this site visit, and they are no longer applicable to the facility. The paragraphs that follow provide a summary of the GLWA WRRF facility's compliance with the Special Conditions for Flexible Group FGC2ASH.

I. Emission Limits

There are two Special Conditions- I.1 contains a DEQ-AQD Air Pollution Control Part 3-based particulate limit of 0.2 lbs. of particulate matter per 1,000 lbs. of exhaust air, and I.2 is an opacity limit put forth by Subpart M MMM. The primary method of compliance with the particulate limit has been to monitor and record the pressure drop across the baghouse, and to perform visible emission observations. The opacity limit also requires that the same tasks be performed. In addition, the Monitoring/Testing Method column in the "I. Emission Limits" references Special Condition V.1 as one of the compliance bases for the particulate limit. Table 3 to Subpart M MMM states that, for the visible emission limit, the test method for demonstrating compliance with these Special Conditions is an EPA Method 22 visible emission test to check for the presence of visible emissions. From my read, the Monitoring/Testing Method column in the "I. Emission Limits" section should reference Special Condition V.1 for the visible emissions limits, but not for the particulate matter limit. The facility is in compliance.

II. Material Limits

There are no material limits put forth for this Flexible Group.

III. Process/Operational Restrictions

Special Condition III.1 limits the pressure drop across each baghouse controlling particulate emissions to 10 inches of water. Pressure drop readings are taken once per shift and recorded on the "Ash System Shift Report". This report is completed by GLWA staff during each shift, and it is accessible via the facility's central data system. This report is also used to log visible emissions during each shift. A copy of the example Complex 2 Ash System Shift Report for May 22, 2017 that I obtained during my site visit in 2017 is attached to this report. Melvin showed me some recent examples of the report during this site visit, and they showed compliance.

IV. Design/Equipment Parameters

There are no design or equipment parameter requirements associated with this Flexible Group.

V. Testing/Sampling

Special Conditions V.1 and V.2 contain requirements put forth by Subpart M MMM. In relation to this particular Flexible Group, the language in Subpart M MMM addresses fugitive emissions from ash conveying systems, including conveyor transfer points. As discussed in "I. Emission Limits", these testing requirements relate to the visible emissions limit in Special Condition I.2, and they involve performing Method 22 VE readings over three 1-hour observation periods to check for compliance with the 5% opacity limit. According to Melvin, visible emissions readings were taken during the initial compliance emission tests for the Complex 2 incinerators by the test consultant, Gammie Air Monitoring, LLC, to satisfy the Subpart M MMM requirements and also during the subsequent compliance emission tests. The facility is in compliance with these conditions.

VI. Monitoring/Recordkeeping

Special Conditions:

VI.1 – Compliance. GLWA is monitoring and recording the pressure drop across the baghouses, and performing and logging visible emission observations on the Complex 2 Ash System Shift Report, as previously described.

VI.2 – Compliance. A Site-Specific Monitoring Plan was submitted for the facility that included the ash handling system. It was received by DEQ-AQD on February 10, 2015.

VII. Reporting

All required reports required by SCs VII.1 through 3 are being submitted.

VIII. Stack/Vent Restrictions

The stack parameters were not discussed during this site visit.

IX. Other Requirements

There are no SCs in this section for this Flexible Group.

FGCOMPLEX1

The Complex 1 incinerators last operated on January 4, 2017. These incinerators have been permanently shut down. This Flexible Group was not evaluated as part of this site visit.

FGCOMPLEX2

Special Condition IX.1 in this Flexible Group reads:

“1. Both of the following apply to each incinerator in FGCOMPLEX2, and to its scrubber train, when the incinerator commences trial operation after the air quality control improvements authorized by this Permit have been completed for that incinerator²:

- a. The Special Conditions in FGAQCI become applicable requirements for that incinerator and its scrubber train.**
- b. The Special Conditions in FGCOMPLEX2 cease to be applicable requirements for that incinerator and its scrubber train.”**

The air quality improvements for the Complex 2 incinerators have been completed, and trial operation of these incinerators had commenced. Per SC 1.b, the Special Conditions in FGCOMPLEX2 are no longer applicable requirements for these incinerators or their associated control equipment. As such, FGCOMPLEX2 was not evaluated as part of this site visit.

FGLIMESTORAGE

This Flexible Group includes the storage devices that are used to store lime, which is used to stabilize the sludge that is hauled offsite for landfilling. This Flexible Group addresses process equipment that is part of the Central Offload Facility. There are Special Conditions in this Flexible Group that put forth emission limits for particulate matter and opacity (S.C. I.1 and I.2). Special Conditions VI.1 through VI.3 serve as the compliance method for these emission limits, requiring that the baghouses associated with the Flexible Group are inspected at least once per month, that the pressure drop across the baghouse is monitored, and that visible emission readings be performed and recorded during daylight hours.

Melvin told me that the preventative maintenance activities at the facility have not changed since my site visit in 2017. Preventative maintenance activities are tracked via the facility's Work Assessment Management System, or WAMS, software program. I was provided with a screen shot from the WAMS system during last year's site visit that shows that a monthly instrumentation inspection is performed on the lime silos, and provides the dates for the next scheduled maintenance, which is one month later. A copy of the screen shot is attached to this report for reference.

Regarding the requirement to monitor and record the pressure drop and visible emissions from the baghouse during lime loading, Melvin stated that this is being done the same way as it was last year. For the pressure drop, he explained that the facility's Ovation software system has a screen for the lime storage silos that indicates the pressure drop and includes an alarm indicator when the pressure drop exceeds its set point. Melvin provided me a screen shot from the Ovation system that shows the operating parameters that are being monitored when the lime system operates, which is attached to this report. The area of the screen where the alarm indicator is located is highlighted. Visible emissions readings are logged by facility staff, and records are sent to Melvin.

The facility is in compliance with these conditions.

FGENGINES

This Flexible Group addresses the seventeen emergency engines at the Detroit WWTP. These engines are a mix of natural gas and diesel-fired units. GLWA tracks the usage and NOx emissions from these engines via an electronic spreadsheet. Engine usage is initially tracked using a form called the "Emergency Generator Usage Report", and the information is summarized on a form that is completed for each month titled "Emergency Generator Operating Data Summary for xx", where xx is the month. Melvin provided me with a copy of the form for June 2018, which is attached to this report for reference.

This form presents the cumulative operating hours on each engine at the beginning and end of the month, the hours that each engine operated during that month, and the monthly NOx emissions for each engine. SC I.1 limits emissions from the seventeen engines to 36 tons per year (tpy). GLWA is able to query a spreadsheet at the end of each month titled "Emergency Generator Operating Summary for the Previous 12-months" that shows the total hours operated and the NOx emissions for each engine over the 12-month rolling time period. During last year's site visit, I was provided with a printout of the 12-month spreadsheet for the time period from April 29, 2016 through April 29, 2017. The information for this time period showed the calculated 12 month rolling time period NOx emissions from all of the engines in this Flexible Group for the time period was just under 1,728 pounds, which is well below the 36 tpy limit, and the engine with the highest recorded usage over the 12 month time period logged 27 hours of operation (SC III.2 limits each engine to 500 hours of operation per 12-month rolling time period). These numbers were well in compliance with permitted limits. Melvin told me that engine usage has been consistent over the past year.

In reference to the sulfur in fuel requirement put forth in SCs III.1 and VI.4, the fuel supply company for GLWA sends an analysis for each batch of diesel fuel that they supply to the WRRF facility. The facility uses ultra-low-sulfur diesel fuel, and the measured sulfur content has been well below the 15 ppm limit.

All of the records required in section VI of this Flexible Group are being maintained. The WRRF facility is in compliance with the requirements in FGGENGINES.

FGCIENGINES

This Flexible Group also addresses emergency diesel-fired engines, separating out five of the seventeen engines from FGGENGINES into a different Flexible Group. These five engines are diesel-fired units, and they are subject to the requirements of 40 CFR Part 60, Subpart IIII (New Source Performance Standards for Stationary Compression Ignition Engines). This Flexible Group puts forth the separate, specific requirements that these five engines are subject to in addition to the requirements found in FGGENGINES.

Some of the limits in this Flexible Group and the records required are similar to FGGENGINES. The sulfur in fuel information is, again, provided by the fuel supplier and maintained by GLWA. The hours of operation, as required by SC III.2, and the reason that the engines are used, as referenced in SC III.3, is tracked using the Emergency Generator Usage Report, a copy of which is attached to this report for reference. The engines are equipped with non-resettable hours meters, as required in SC IV.1. In addition, staff at the WRRF maintain a spreadsheet that tracks the level of diesel fuel in each engine each month, as well as any fuel additions, to produce a record of the diesel fuel usage. In addition, the maintenance activities associated with these engines are tracked using the aforementioned WAMS internal software system. This information is used to track the number of hours operated for maintenance and testing purposes, which is limited by Subpart IIII to 100 hours for these purposes. All of the required records relating to the operation of the engines in FGCIENGINES, as described in the Special Conditions in Section VI of the Flexible Group, appear to be kept and maintained by GLWA.

Regarding Special Condition V.1, DWSD received manuals for each engine that include the manufacturer emission certifications. This information is maintained by GLWA. Accordingly, the engines did not need to have an initial performance test conducted. The facility is in compliance with the requirements in FGCIENGINES.

FGNSPSBOILERS

This Flexible Group addresses four small natural gas-fired boilers that, due to their relatively small heat input rating, are exempt from DEQ-AQD permitting requirements. These boilers are still subject to 40 CFR Part 60, Subpart Dc. The only permit requirements associated with this Flexible Group are a requirement that the boilers only fire natural gas (SC III.1), and a requirement to record the amount of natural gas used in each boiler on a calendar month basis (SC VI.1). GLWA staff keep track of facility-wide natural gas usage. There is a separate natural gas meter for each building at the facility, and a separate meter for each of the boilers. GLWA tracks the gas usage and records it in a spreadsheet on a monthly basis. The facility is in compliance with FGNSPSBOILERS.

FGCOLDCLEANERS

During my site visit in 2017, I was told that facility staff did a facility-wide inventory of cold cleaners, and

found that there are only two left. The cold cleaners are no longer in use; they are empty, and the lids are closed. During the 2017 site visit, GLWA said that planned to assess whether they will continue to have any cold cleaners on site during the ROP renewal process. The ROP renewal application still maintains this Flexible Group table.

FGAQCI

The description for this Flexible Group reads:

“This flexible group covers the Complex 2 incinerators for which the air quality control improvements (AQCI) have been completed. When the AQCI have been completed, it will consist of eight (8) multiple hearth sewage sludge incinerators, each with a venturi scrubber followed by an impingement tray wet scrubber and a mist eliminator. (PTI No. 61-13A)”

The upgrades to the Complex 2 incinerators were completed in 2017. The following paragraphs describe the compliance of Incinerator Units 7 through 14 with the requirements in FGAQCI.

I. Emission Limits and V. Testing/Sampling

When the Complex 2 incinerators were upgraded, new emission limits and emissions testing requirements were triggered. The testing requirement is the method through which compliance with the emission limits in section I (Emission Limits) of FGAQCI is determined. Some of the pollutants and their associated emission limits, as listed in this section, are taken directly from Subpart Mmmm. The other pollutants/emission limits were analyzed as part of the review of Permit to Install Nos. 61-13 and 61-13A. The emission limits put forth for this Flexible Group do not serve to ensure compliance with Subpart Mmmm, but rather to ensure compliance with DEQ-AQD air toxics regulations and to opt the incinerator upgrades out of federal New Source Review (NSR) requirements. The testing required in SC V.1 in this Flexible Group is only required to be performed once after the air quality control improvements have been completed for each pair of incinerators in FGAQCI, within 180 days after trial operation of either incinerator in that pair of incinerators.

Emission testing was performed on Incinerators 7 and 8 in April 2015, and on Incinerators 9 and 10 in October 2015 to demonstrate compliance with the emission limits in FGAQCI, to satisfy the testing requirement of Special Condition V.1, and to satisfy the initial compliance requirement put forth by paragraph 60.5185 of 40 CFR Part 60 Subpart Mmmm. In the aftermath of the March 4, 2016 fire, it was decided that these units would be re-tested to determine post-fire repair emissions for Units 7-10, and to verify that the emissions are still compliant after the repairs to the SSIs and their associated emission control equipment. In addition, the initial testing needed to be performed on SSI Units 11-14. The testing required in SC V.1 in the Flexible Group was completed in April and May of 2017. The test results are summarized as follows, comparing the test results to the permitted limit:

For Incinerator 7, tested May 19-20, 2017:

Pollutant	Test result	Permit limit
Particulate matter	16.81 mg/dscm	80 mg/dscm
PM2.5	0.87 lb/hr	1.2 lb/hr
PM10	0.89 lb/hr	1.2 lb/hr
Hydrogen chloride	<0.14 ppmvd	1.2 ppmvd
Carbon monoxide	465.9 ppmvd	3,800 ppmvd
VOC	0.15 lb/hr	3.2 lb/hr
Dioxins/furans	0.14 ng/dscm	5.0 ng/dscm
	0.003 ng/dscm TEF	0.32 mg/dscm TEF
Mercury	0.045 mg/dscm	0.28 mg/dscm
Nitrogen oxides	191.7 ppmvd	220 ppmvd
Sulfur Dioxide	0.56 ppmvd	26 ppmvd
Sulfuric acid	0.10 lb/hr	1.3 lb/hr
Cadmium	0.046 mg/dscm	0.095 mg/dscm
Lead	0.083 mg/dscm	0.3 mg/dscm
Fluorides	0.0018 lb/hr	1.73 lb/hr

For Incinerator 8, tested April 19-20, 2017:

Pollutant	Test result	Permit limit
Particulate matter	17.29 mg/dscm	80 mg/dscm
PM2.5	0.74 lb/hr	1.2 lb/hr
PM10	0.74 lb/hr	1.2 lb/hr
Hydrogen chloride	0.14 ppmvd	1.2 ppmvd
Carbon monoxide	1,691.5 ppmvd	3,800 ppmvd
VOC	0.54 lb/hr	3.2 lb/hr
Dioxins/furans	1.74 ng/dscm	5.0 ng/dscm
	0.048 ng/dscm TEF	0.32 mg/dscm TEF
Mercury	0.052 mg/dscm	0.28 mg/dscm
Nitrogen oxides	153.2 ppmvd	220 ppmvd
Sulfur Dioxide	0.5 ppmvd	26 ppmvd
Sulfuric acid	0.094 lb/hr	1.3 lb/hr
Cadmium	0.022 mg/dscm	0.095 mg/dscm
Lead	0.087 mg/dscm	0.3 mg/dscm
Fluorides	<0.0019 lb/hr	1.73 lb/hr

For Incinerator 9, tested April 24-25, 2017:

Pollutant	Test result	Permit limit
Particulate matter	7.94 mg/dscm	80 mg/dscm
PM2.5	0.66 lb/hr	1.2 lb/hr
PM10	0.70 lb/hr	1.2 lb/hr
Hydrogen chloride	<0.131 ppmvd	1.2 ppmvd
Carbon monoxide	733.7 ppmvd	3,800 ppmvd
VOC	0.23 lb/hr	3.2 lb/hr
Dioxins/furans	0.66 ng/dscm	5.0 ng/dscm
	0.018 ng/dscm TEF	0.32 mg/dscm TEF
Mercury	0.049 mg/dscm	0.28 mg/dscm
Nitrogen oxides	197.5 ppmvd	220 ppmvd
Sulfur Dioxide	0.2 ppmvd	26 ppmvd
Sulfuric acid	0.064 lb/hr	1.3 lb/hr
Cadmium	0.021 mg/dscm	0.095 mg/dscm
Lead	0.061 mg/dscm	0.3 mg/dscm
Fluorides	<0.0019 lb/hr	1.73 lb/hr

For Incinerator 10, tested April 21-22, 2017:

Pollutant	Test result	Permit limit
Particulate matter	12.53 mg/dscm	80 mg/dscm
PM2.5	0.74 lb/hr	1.2 lb/hr
PM10	0.79 lb/hr	1.2 lb/hr
Hydrogen chloride	<0.134 ppmvd	1.2 ppmvd
Carbon monoxide	1,585.4 ppmvd	3,800 ppmvd
VOC	0.54 lb/hr	3.2 lb/hr
Dioxins/furans	3.53 ng/dscm	5.0 ng/dscm

	0.116 ng/dscm TEF	0.32 mg/dscm TEF
Mercury	0.076 mg/dscm	0.28 mg/dscm
Nitrogen oxides	169.8 ppmvd	220 ppmvd
Sulfur Dioxide	0.4 ppmvd	26 ppmvd
Sulfuric acid	0.045 lb/hr	1.3 lb/hr
Cadmium	0.021 mg/dscm	0.095 mg/dscm
Lead	0.173 mg/dscm	0.3 mg/dscm
Fluorides	<0.0019 lb/hr	1.73 lb/hr

For Incinerator 11, tested May 15-16, 2017:

Pollutant	Test result	Permit limit
Particulate matter	19.0 mg/dscm	80 mg/dscm
PM2.5	0.76 lb/hr	1.2 lb/hr
PM10	0.81 lb/hr	1.2 lb/hr
Hydrogen chloride	<0.12 ppmvd	1.2 ppmvd
Carbon monoxide	213.3 ppmvd	3,800 ppmvd
VOC	0.08 lb/hr	3.2 lb/hr
Dioxins/furans	2.32 ng/dscm	5.0 ng/dscm
	0.109 ng/dscm TEF	0.32 mg/dscm TEF
Mercury	0.055 mg/dscm	0.28 mg/dscm
Nitrogen oxides	143.3 ppmvd	220 ppmvd
Sulfur Dioxide	0.41 ppmvd	26 ppmvd
Sulfuric acid	0.059 lb/hr	1.3 lb/hr
Cadmium	0.048 mg/dscm	0.095 mg/dscm
Lead	0.045 mg/dscm	0.3 mg/dscm
Fluorides	0.0023 lb/hr	1.73 lb/hr

For Incinerator 12, tested May 17-18, 2017:

Pollutant	Test result	Permit limit
Particulate matter	17.72 mg/dscm	80 mg/dscm
PM2.5	0.84 lb/hr	1.2 lb/hr
PM10	0.86 lb/hr	1.2 lb/hr
Hydrogen chloride	<0.094 ppmvd	1.2 ppmvd
Carbon monoxide	1,068.8 ppmvd	3,800 ppmvd
VOC	0.45 lb/hr	3.2 lb/hr
Dioxins/furans	1.89 ng/dscm	5.0 ng/dscm
	0.082 ng/dscm TEF	0.32 mg/dscm TEF
Mercury	0.043 mg/dscm	0.28 mg/dscm
Nitrogen oxides	177.6 ppmvd	220 ppmvd
Sulfur Dioxide	0.42 ppmvd	26 ppmvd
Sulfuric acid	0.100 lb/hr	1.3 lb/hr
Cadmium	0.052 mg/dscm	0.095 mg/dscm
Lead	0.097 mg/dscm	0.3 mg/dscm
Fluorides	<0.0015 lb/hr	1.73 lb/hr

For Incinerator 13, tested May 22-23, 2017:

Pollutant	Test result	Permit limit
Particulate matter	14.73 mg/dscm	80 mg/dscm
PM2.5	0.97 lb/hr	1.2 lb/hr
PM10	0.98 lb/hr	1.2 lb/hr
Hydrogen chloride	<0.16 ppmvd	1.2 ppmvd
Carbon monoxide	516.8 ppmvd	3,800 ppmvd
VOC	0.34 lb/hr	3.2 lb/hr
Dioxins/furans	0.58 ng/dscm	5.0 ng/dscm
	0.012 ng/dscm TEF	0.32 mg/dscm TEF
Mercury	0.076 mg/dscm	0.28 mg/dscm
Nitrogen oxides	183.7 ppmvd	220 ppmvd
Sulfur Dioxide	0.53 ppmvd	26 ppmvd
Sulfuric acid	0.171 lb/hr	1.3 lb/hr
Cadmium	0.063 mg/dscm	0.095 mg/dscm
Lead	0.159 mg/dscm	0.3 mg/dscm
Fluorides	0.0027 lb/hr	1.73 lb/hr

For Incinerator 14, tested May 24-25, 2017:

Pollutant	Test result	Permit limit
Particulate matter	13.48 mg/dscm	80 mg/dscm
PM2.5	0.65 lb/hr	1.2 lb/hr
PM10	0.66 lb/hr	1.2 lb/hr
Hydrogen chloride	<0.16 ppmvd	1.2 ppmvd
Carbon monoxide	1,249.2 ppmvd	3,800 ppmvd
VOC	0.35 lb/hr	3.2 lb/hr
Dioxins/furans	3.44 ng/dscm	5.0 ng/dscm
	0.099 ng/dscm TEF	0.32 mg/dscm TEF
Mercury	0.070 mg/dscm	0.28 mg/dscm
Nitrogen oxides	187.4 ppmvd	220 ppmvd
Sulfur Dioxide	0.20 ppmvd	26 ppmvd
Sulfuric acid	0.055 lb/hr	1.3 lb/hr
Cadmium	0.037 mg/dscm	0.095 mg/dscm
Lead	0.091 mg/dscm	0.3 mg/dscm
Fluorides	0.0020 lb/hr	1.73 lb/hr

These results are well in compliance with the applicable emission limits for each pollutant listed in Section I. of FGAQCI. The compliance emissions tests satisfy the requirements in Section V of this Flexible Group. The test reports associated with these compliance emissions tests can be found in the WRRF facility file.

II. Material Limits

The Complex 2 incinerators are limited to 129,564 dry tons of total sludge feed per year. All of the sludge that is to be processed in the incinerators is loaded onto the J Belt conveyor from the filter presses adjacent to the incinerators. The J Belt runs the length of Complex 2 on the south side of the building. Sludge from the J Belt is directed to the M Belt, which feeds incinerators 7-10, and the N Belt, which feeds incinerators 11-14. Using incinerators 7-10 as an example, a reading of the weight of the sludge on the M Belt is taken, then another reading is taken of the weight of the sludge on the Q Belt, which directs some of the sludge on the M Belt to incinerators 9 and 10. In this way, the facility tracks the amount of wet tons of sludge that is sent to the incinerators. Once each shift (or every 8 hours), sludge samples are taken to determine certain properties, including percent dry solids and pH. This

information is factored with the tracking of the amount of sludge, in wet tons, sent to the incinerators to determine the dry solids feed rate.

The facility's Ovation software system is used to track all incinerator operating hours, as well as the time that each unit is in standby and is out of service. Melvin told me that he tracks the amount of dry tons of sludge fed to the incinerators per day, the incinerator operating hours per day, and the dry tons per hour fed to each incinerator, based on averaging. GLWA reported in their most recent MAERS submittal for the WRRF that 25,794.8 tons of sludge was fed to the SSIs in FGAQCI in 2017. The facility is in compliance with this limit.

III.Process/Operational Restrictions

GLWA is in compliance with the Special Conditions in this section.

For SC III.1, the facility maintains and operates the scrubber system when the incinerators are operating.

For SCs III.2 and III.3, GLWA has a Malfunction Abatement Plan (MAP) with established scrubber and incinerator hearth temperature parameters. In accordance with paragraph 60.5190 of Subpart M, as well as Special Condition V.5 of FG-4M-INCIN, GLWA establishes new operating parameters for incinerator temperature, scrubber liquid flow rate, and pressure drop across the scrubber, along with scrubber liquid pH, as required during compliance emissions testing events. An updated Malfunction Abatement Plan for GLWA Incinerators was included with the ROP renewal application for the WRRF.

IV. Design/Equipment Parameters

All of the required monitoring equipment/devices were installed in compliance with the conditions in this section. SC IV.1 requires devices to monitor the water flow rate for each scrubber, the differential pressure across the inlet and outlet of each scrubber, and the hearth #1 combustion temperature. SC IV.2 requires that the oxygen emissions for each incinerator be monitored on a continuous basis. SC IV.3 requires that the visible emissions from each incinerator be monitored on a continuous basis; this is accomplished via the COMS units for each SSI.

VI. Monitoring/Recordkeeping

The facility is in compliance with the monitoring and recordkeeping requirements in this section.

For SC VI.1, GLWA continuously monitors oxygen from each incinerator, when operating.

For SC VI.2, visible emissions/opacity are continuously being monitored using the facility's COMS.

For SC VI.3, periodic inspections are performed on the incinerators. Records of inspections and any resulting maintenance are kept by GLWA staff and logged in internal software programs such as WAMS.

For SCs VI.4 and VI.5, as provided in the discussion for SC IV.1, the required incinerator and scrubber operating parameters are being monitored and recorded. The MAP is revised after the upgrades are made.

SCs VI.6 and VI.8 – These conditions address the monitoring of sludge feed rate. VI.6 requires that the daily sludge feed rate, on a wet ton basis, be monitored and recorded. VI.8 requires that the sludge feed rate, on a dry tons basis, be monitored and recorded on a calendar month and 12 month rolling time period basis. Each of these SCs specifies that the information shall be monitored and recorded, "... except during periods when there is no sludge in the incinerator." The monitoring of sludge feed rate was described in more detail in the Material Limits section for this Flexible Group.

For SC VI.7, Melvin provided me with print outs of the monthly and 12-month rolling total emissions recordkeeping spreadsheet for Incinerator No. 7, and the 12-month rolling total emission estimates for FGAQCI. These print outs are attached to this report for reference.

VII. Reporting

All required reports are being submitted by GLWA.

For SC VII.4, GLWA notified DEQ-AQD when the modifications to the Complex 2 incinerators were

completed in accordance with this condition.

For SC VII.5, DWSD, who was the owner and operator of the WRRF facility at the time, submitted the closure notification for Incinerator No. 2.

VIII. Stack/Vent Restrictions

The stack parameters provided in the SC table have been established and used for different air quality related purposes, including air dispersion modeling and MAERS reports, for many years. The stack parameters were not specifically discussed during this site visit.

IX. Other Requirements

The facility is in compliance with the Special Conditions in this section.

For SC IX.1, this condition states that FGAQCI becomes applicable when the upgrades are made to the Complex 2 incinerators, and that the terms and conditions of FGCOMPLEX2 are no longer applicable.

Regarding SC IX.2, GLWA has drafted and implemented a Malfunction Abatement Plan.

For SC IX.3, Incinerator No. 2 has been permanently shut down.

FG4M-INCIN

This Flexible Group contains the requirements associated with 40 CFR Part 60 Subpart M MMMM that apply to the incinerators at the WRRF. These requirements became effective on March 21, 2016. As described in the last section, as the Complex2 incinerators were upgraded, emissions testing was performed that serves to meet the initial compliance demonstration requirements of Subpart M MMMM, which is also presented in Special Condition V.1 of this Flexible Group.

The following paragraphs describe the compliance of Incinerator Units 7 through 14 with the requirements in FG4M-INCIN.

I. Emission Limits and V. Testing/Sampling

As previously mentioned, at the time of my site visit, compliance emissions testing was taking place (it was scheduled to take place from July 10-18, 2018). This emission testing was being performed to satisfy the continuous compliance requirements for the emission limits put forth in 40 CFR 60.5205 (and adopted by Rule 972). This compliance emissions test differs from those that were performed to demonstrate compliance with the emission limits in FGAQCI as those served as the initial compliance emissions tests required in 40 CFR 60.5185. The Air Emissions Test Report, which summarizes the results of the July 2018 testing, was submitted to DEQ-AQD in correspondence dated September 14, 2018. The information presented in the report shows that the emissions measured during the tests are in compliance with the emission limits in SCs I.1 through 10. A copy of a summary of the test results from the Air Emissions Test Report is attached to this report for reference.

Regarding the testing/sampling requirements in Section V, the recent compliance emissions testing satisfies the testing requirements in Subpart M MMMM, as put forth in SCs V.1 and V.4. As part of the emissions testing, the facility established the incinerator and control equipment parameters detailed in SC V.5.a through d, as specified by 40 CFR 60.5190. In accordance with SC V.6, the bypass stack was not used during any of the compliance tests. The WRRF looks to be in compliance with the conditions in Section V of this Flexible Group.

The test report associated with the July 2018 compliance emissions tests can be found in the WRRF facility file.

II. Material Limits

There are no material limits put forth in the ROP for this Flexible Group.

III.Process/Operational Restrictions

SC III.1 puts forth that use of the bypass stack associated with an incinerator at any time that sewage

sludge is being charged to that incinerator is an emission standards deviation for all of the pollutants listed in and limited by SCs I.1 through 10. Any use of bypass stacks is tracked on a form in the facility's Telecon software system. The Incineration Complex Supervisor is charged with recording all stack bypasses. In addition, the facility's Ovation software system tracks all times that the damper to the bypass stack is open. GLWA notifies DEQ-AQD of all bypass events, and the bypass events are reported as deviations in the facility's Subpart Mmmm deviation reports and the Subpart Mmmm Annual Compliance Report.

IV. Design/Equipment Parameters

SC IV.1 – the facility did not choose the compliance demonstration option described in SCs V.2 and V.4, instead opting to perform compliance emissions tests, as described in SCs V.1 and V.3. Thus, SC IV.1 is not valid.

For SCs IV.2 through IV.6, the facility is in compliance with these requirements. All of the monitoring equipment/devices that are specified in these SCs were installed during the upgrades to the Complex 2 incinerators.

VI. Monitoring/Recordkeeping

GLWA is in compliance with the monitoring and recordkeeping requirements in this section.

For SC VI.1, Melvin confirmed that the method by which the facility monitors the sewage sludge feed rate is the same as described during my last site visit. GLWA staff monitor and record the sludge feed rate. Weightometers on the sludge conveyors send a wet tons feed rate value to the Ovation system every 15 seconds. In addition, facility staff calculate the daily average sewage sludge feed rate to each incinerator. For each shift day, an Incineration Report is created that includes the total sludge feed. WRRF staff track the amount of material on the sludge feed belts, the hours of incineration, and the number of wet tons per day (which is used to calculate the dry tons) to obtain the daily average.

For SC VI.2, a grab sample of sludge is taken once per shift, more frequently than required by this condition, and the moisture content of each sample is determined and used to determine the sludge feed rate in dry tons.

For SC VI.3, the Ovation system used to track the operation of the incinerators includes measurements of the combustion temperature that are taken and recorded in the system every 15 seconds.

For SC VI.4, a site-specific monitoring plan, as described in 60.5200, was submitted to DEQ-AQD on February 10, 2015.

For SCs VI.5 through VI.7, the pressure drop across the inlet and outlet of each scrubber (VI.5), the liquid flow rate through each scrubber (VI.6), and the scrubber liquid pH (VI.7) are measured and recorded in accordance with the conditions.

For SC VI.8, GLWA keeps track of permit deviations.

For SC VI.9, GLWA does not elect to utilize the compliance option described in SCs V.2 and V.4.

VII. Reporting

The WRRF facility is in compliance with the reporting requirements in the Flexible Group.

VIII. Stack/Vent Restrictions

There are no stack/vent parameters specified for this Flexible Group.

IX. Other Requirements

SC IX.1 states that the requirements of FG4M-INCIN became effective on March 21, 2016.

For SC IX.2, GLWA submitted the Operator Training and Qualification Program to DEQ-AQD on August 26, 2015. AQD approved the program, and the initial training program was conducted at the facility during the week of January 5, 2016. I attended one of the training program sessions, along with some

other DEQ-AQD staff. GLWA continues to offer the training to new staff, and existing staff as needed.

For SC IX.3, Melvin told me during last year's site visit that the air pollution control devices were scheduled to be inspected, as required by this SC and 40 CFR 60.5220(c), as the upgrades to the incinerator controls were completed, as well as the initial compliance emissions tests required in 40 CFR 60.5185. The March 4, 2016 fire disrupted this schedule. I was told that the facility has completed the inspections as the Complex 2 incinerators were repaired and upgraded, brought into service, and had the required compliance emissions tests performed.

For SC IX.4, the WRRF facility is demonstrating substantial compliance with the applicable provisions of Subpart M MMM and Rule 972. The Subpart M MMM Initial Compliance Report for the GLWA WRRF facility, required by 40 CFR 60.5235(b), was submitted by GLWA via correspondence dated August 15, 2017. GLWA has completed and submitted the Subpart M MMM Annual Compliance Report, and the required Subpart M MMM deviation reports.

SC IX.5 – Compliance. The facility monitors compliance with the emission limits in Subpart M MMM at all times when sludge is in the combustion chamber. Melvin and I discussed this condition starting on November 28, 2017, specifically the intent of 40 CFR 60.5165. Melvin told me that when a bypass opens on an incinerator, the screw conveyor that feeds sludge to that incinerator shuts down, as does the burner.

Melvin spoke with Gene Waltz, the facility's incineration consultant, on November 29. Gene offered that from his experience, residence time, and whether it needs to be considered when dealing with duration of excursions, is an issue. Gene stated that even if the shaft that feeds sludge through the multiple hearths is stopped, there is still burning occurring (sludge in the combustion chamber); whatever sludge that is on the hearths will still burn out. In other words, if there is sludge in the combustion chamber, then sludge burning is still occurring. As long as it takes for the sludge in the combustion chamber to burn, that time should be counted as long as the bypass damper is open. Melvin told me that it is estimated that it takes 90 minutes to get the sludge burned out from hearths 3 to 6. After our conversation, Melvin and I had the following pending questions:

1. Are other facilities abiding by the requirement of 60.5180 that all emission limits apply during periods of malfunction?
2. Are other facilities submitting correspondence, per 60.5181, when they have a malfunction in order to establish the affirmative defense?
3. What does "charge" mean in the context of 60.5220(d)?

I sent an e-mail to DEQ-AQD's SIP Unit asking for their assistance in getting an interpretation of the intention of Subpart M MMM regarding emissions compliance during malfunctions. I spoke with Erica Wolf of DEQ-AQD's SIP unit regarding this issue. She found out that there was a lawsuit against the EPA when Subpart M MMM was being crafted; the party behind the lawsuit wanted Subpart M MMM to apply at all times, including during malfunctions. Erica forwarded my e-mail to staff at EPA's Region 5 office for their assistance in determining the intent of Subpart M MMM. Daniel Schaufelberger of EPA's Region 5 office consulted with staff at EPA headquarters regarding my question, and he sent an e-mail response on January 29, 2018. Dan provided that the intent of 40 CFR 60.5165 and 5180 is for the emission limits of Subpart M MMM to apply at any time that sludge remains and is burning in the combustion chamber and is venting to the ambient air, even during a malfunction event involving a bypass stack. A copy of EPA's response was shared with GLWA staff. GLWA estimates emissions during any periods of malfunction and bypass stack use, in accordance with the interpretation of Subpart M MMM.

A copy of the question that I e-mailed and the response that was received from EPA is attached to this report for reference.

FGDryerTrains

This Flexible Group addresses the four dryer trains in the NEFCO Biosolids Drying Facility (BDF). This BDF has been operating since the Fall of 2015, and a couple of rounds of compliance emissions testing

has been performed on the dryer trains.

The following paragraphs describe the compliance of the four sludge dryer trains with the requirements in FGDryerTrains. The information referenced in the compliance discussion for this Flexible Group were discussed and provided to me during my visit to the BDF on January 9, 2018.

I. Emission Limits

The facility is currently in compliance with the emission limits put forth in this section. Initial compliance emission testing was performed on the four sludge dryer trains, identified in the facility's permits as EUDryerTrainA, EUDryerTrainB, EUDryerTrainC and EUDryerTrainD, from January 18-21, 2016. The exhaust from the dryers, which are natural gas-fired and equipped with low-NOx burners, were tested for emissions of PM, PM10, PM2.5, NOx, CO, SO2, VOC, lead and hydrogen sulfide, and the results compared to the permit limits for these pollutants in SCs I.1 through I.12. The measured emissions of the PMs, NOx, CO, VOC, lead and hydrogen sulfide from all four dryers were in compliance with the applicable permit limit. However, the three-hour average hourly SO2 emissions from Dryer Train D, as measured during the test, were 0.92 pounds per hour, which is greater than the permit limit of 0.82 pounds of SO2 per hour. The measured SO2 emissions from the other three dryers were compliant with the permit limit. A second, follow-up compliance emissions test was performed on the dryers from February 2-3, 2016; this test only measured SO2 emissions from the four dryers. This test also resulted in measured emissions of SO2 in exceedance of the permit limits from one of the dryers, this time Dryer Train C; the three-hour average hourly SO2 emissions measured during this test event were 0.83 pounds per hour. DEQ-AQD issued a violation notice for the SO2 emission exceedances to GLWA on June 21, 2016.

The facility submitted a SO2 Compliance Plan to DEQ-AQD to address the SO2 exceedance, and GLWA submitted monthly SO2 Compliance Plan updates. In May 2017, NEFCO and GLWA made the decision to install packed tower scrubbers after the RTO in the exhaust stream for each dryer train.

GLWA and NEFCO performed compliance emissions testing at the BDF facility from January 9-11, 2018. This testing involved required periodic testing of NOx, CO, PM, PM10 and PM2.5 emissions, as well as required testing of SO2 emissions. In accordance with the requirements in SC V.2b, Dryer Trains A and D were tested for everything but SO2, which was tested for all four dryer trains. The testing showed that all of the measured emissions were in compliance with permitted limits. A summary of the test results is presented in the following tables.

For EUDryerTrainA:

<u>Pollutant</u>	<u>Test result</u>	<u>Permit Limit</u>
NOx	1.20 lb/hour	3.95 lb/hour
CO	0.23 lb/hour	3.67 lb/hour
PM/PM10/PM2.5	Front half: 0.04 lb/hour Back half: 0.22 lb/hour Front & Back half: 0.26 lb/hour	PM: 1.22 lb/hour PM10: 1.63 lb/hour PM2.5: 1.14 lb/hour

For EUDryerTrainD:

<u>Pollutant</u>	<u>Test result</u>	<u>Permit Limit</u>
NOx	1.02 lb/hour	3.95 lb/hour
CO	0.18 lb/hour	3.67 lb/hour
PM/PM10/PM2.5	Front half: 0.03 lb/hour Back half: 0.25 lb/hour Front & Back half: 0.28 lb/hour	PM: 1.22 lb/hour PM10: 1.63 lb/hour PM2.5: 1.14 lb/hour

For the PM/PM10/PM2.5 emissions, the front is the filterable portion of the particulate matter that was sampled and collected using EPA Method 5, and the back half represents the condensable portion of the particulate matter that was sampled and collected using EPA Method 202. The Compliance Emissions Test Report that was submitted by GLWA via correspondence dated February 28, 2018 includes a statement in the presentation of results that reads "For this test program, the PM10/PM2.5 emission rate is calculated as the sum of filterable PM emissions (M5) and CPM emissions (M202)", where CPM is condensable particulate matter. The test consultant presented the results as the sum of the front and back half compared to the lowest of the three particulate emission limits (1.14 lb/hour for PM2.5) to determine compliance.

SO2 results for the four dryer trains:

<u>Dryer Train</u>	<u>Test result</u>	<u>SO2 Permit Limit</u>
EUDryerTrainA	0.015 lb/hour	0.82 lb/hour
EUDryerTrainB	0.067 lb/hour	0.82 lb/hour
EUDryerTrainC	0.038 lb/hour	0.82 lb/hour
EUDryerTrainD	0.023 lb/hour	0.82 lb/hour

II. Material Limits

There are no material limits put forth for this Flexible Group.

III. Process/Operational Restrictions

I was provided with run time data during my visit to the BDF facility. I received a copy of the data for November 2017, which includes 12-month rolling time period totals. This information is attached to this report for reference. The records show that the 12-month rolling time period run hours for the four dryers, as of the end of November 2017, was 22,068 hours, which is in compliance with the permit limit of 31,536 hours.

IV. Design/Equipment Parameters

The facility is in compliance with the requirements in this section (SCs IV.1 through 5). According to NEFCO staff, the dryers are only operated when the associated control equipment (scrubbers, RTOs) are operational (SC IV.1 and 2). This is put forth in the Malfunction Abatement Plan for the BDF. Similarly, material is only sent to the recycle bins when the associated fabric filter controls are operating properly (SC.3). It was demonstrated to me that the facility is monitoring the RTO combustion chamber temperature, the pressure drop across the IT scrubbers and the recycle bin fabric filters, the liquid flow rate to the IT scrubber, and the liquid flow rate to and the scrubber liquid pH of the packed tower scrubber (SCs IV.4 and 5). This information is presented in the attached SCADA screen printouts and spreadsheets that were provided by NEFCO.

V. Testing/Sampling

As described in the information for Section I. (Emission Limits), the testing required by SC V.1 was conducted in compliance with this condition in January 2016. The facility performed the testing required in SC V.2 in January 2018. In accordance with the provisions in SC V.2b, Dryer Trains A and D were tested.

VI. Monitoring/Recordkeeping

The facility is in compliance with the recordkeeping requirements in this section. The attached records from November 2017 show that records of the hours of operation of the dryers (SC VI.1), the operating parameters of the dryer control equipment (SC VI.2 and 3), of the pressure drop across the recycle bin fabric filter dust collectors (SC VI.4), and of the visible emission readings of the recycle bin stacks during routine operating conditions (SC VI.5) are being kept.

VII. Reporting

All required reports required by SCs VII.1 through 3 are being submitted in relation to the dryers.

VIII. Stack/Vent Restrictions

The stack parameters for the dryers and recycle bins were not addressed during this site visit.

FGDryerFacility

As the description in the ROP provides, this Flexible Group covers the entire Biosolids Drying Facility. NEFCO staff track the BDF's compliance with the permit requirements that relate to their portion of the facility. This information is kept by NEFCO, and it is also shared with and kept by GLWA.

The following paragraphs describe the compliance of the BDF facility with the requirements in FGDryerFacility.

I. Emission Limits

NEFCO calculates monthly and 12 month rolling time period emissions to demonstrate compliance with the emission limits put forth in SCs I.1 through I.6. Attached to this report is information for November 2017 that includes the monthly and 12-month emission totals. This information shows that emissions from the BDF are in compliance with these emission limits. Reported 12 month rolling emissions are 43.59 tons of NOX (vs. permit limit of 71.5 tpy), 40.50 tons of CO (vs. permit limit of 65.7 tpy), 13.46 tons of PM (vs. permit limit of 20 tpy), 17.99 tons of PM10 (vs. permit limit of 26.9 tpy), 12.58 tons of PM2.5 (vs. permit limit of 19.2 tpy), and 36,796.25 tons of CO2e (vs. permit limit of 90,361 tpy). NEFCO tracks visible emissions from the roadways of the BDF. I was provided with a copy of the Fugitive Dust Emission Log that is used by NEFCO to track fugitive emissions.

II. Material Limits

There are no material limits put forth for this Flexible Group.

III. Process/Operational Restrictions

The facility looks to be in compliance with the permit requirements in this section of the Flexible Group. I was told that the facility keeps the pug mill's cover closed when the pug mill is in operation (SC III.1). A Malfunction Abatement Plan (MAP) has been submitted, and it was updated on September 25, 2017 to include the packed tower scrubbers downstream of the RTOs. I was told that NEFCO adheres to the MAP when operating the dryer trains (SC III.2). The facility adheres to the procedure of adding non-volatile oil to dryer product (pellets) that is being loaded to trucks (SC. III.3), and material is transferred to the silos using enclosed conveyors (SC III.4). The records that are kept by NEFCO account for the run time of the natural gas-fired make up air units (also referred to as air handling units). The November 2017 records that are attached to this report show a 12-month rolling total of 7,506.5 hours of operation of the air handling unit. This number represents the total operating time of the air handling equipment, not just the time when natural gas is being burned; thus, the facility is well in compliance with the total natural gas burning time limit in SC III.5 of 16,000 hours per 12-month rolling time period.

IV. Design/Equipment Parameters

The facility looks to be in compliance with the requirements in this section. Facility roadways are paved, and NEFCO adheres to a fugitive dust management plan for the BDF (SC IV.1). NEFCO monitors the information required to be monitored by SC IV.2.

V. Testing/Sampling

There are no testing/sampling requirements associated with this Flexible Group.

VI. Monitoring/Recordkeeping

The information that is required to be monitored and recorded by the conditions in this section is being kept by NEFCO. Per SC VI.1, GLWA and NEFCO maintain the required records in the required timeframes. The records from November 2017 that are attached to this report show that the monthly and 12 month rolling time period records of the emission calculations required in SC VI.2 are being kept in an acceptable format. The operating parameters for the scrubber that controls ambient exhaust from the BDF building is kept on a per shift basis (SC VI.3). The facility logs fugitive dust management

measures at the facility (SC VI.4), and the use of the air handling equipment (EUMakeUpAir) is logged (SC VI.5).

VII. Reporting

All required reports in SCs VII.1 through 4 are being submitted in relation to the BDF.

VIII. Stack/Vent Restrictions

The stack parameters for the various BDF building ambient exhaust points were not addressed during this site visit.

FG2013Project

This Flexible Group covers all of the Complex 2 incinerators that have been upgraded (which, as of the date of the site visit, is all of them), and the BDF. The following paragraphs describe the compliance of these portions of the WRRF facility with the requirements in FG2013Project.

I. Emission Limits

As described for the last two Flexible Groups, NEFCO calculates and logs emissions from the operations at the BDF. This information is provided to GLWA staff to compile the information necessary to demonstrate compliance with SCs I.1 through I.6. Melvin maintains a spreadsheet that combines the emissions information from the Complex 2 incinerators with the NEFCO emissions data. He provided me with a copy of the spreadsheet for 2018, which has updated monthly emissions information through June 2018. The 12-month rolling totals are updated as the most recent monthly totals are added in. The information presented for 2018 shows that the facility is currently in compliance with the emission limits. A copy of the spreadsheet is attached to this report for reference.

II. Material Limits

There are no material limits put forth for this Flexible Group.

III. Process/Operational Restrictions

There are no process/operational restrictions put forth for this Flexible Group.

IV. Design/Equipment Parameters

There are design/equipment parameters specified for this Flexible Group.

V. Testing/Sampling

There are no testing/sampling requirements associated with this Flexible Group

VI. Monitoring/Recordkeeping

As mentioned for the Emission Limit section, emissions information for the BDF portion of the facility is calculated and compiled by NEFCO staff, and this information is combined with the emissions information that GLWA staff compile for the SSIs operating in Complex 2. The facility is in compliance with SC VI.1.

Regarding SC.VI.2, GLWA, in coordination with DEQ-AQD's Air Monitoring Unit (AMU) group, has set up and operated the ambient NO₂ monitoring program required by this condition. GLWA feels that they have met the requirements in this SC to complete the monitoring program. This matter was discussed during my July 12 site visit. E-mail correspondence was sent to DEQ-AQD-AMU dated July 19, 2018. Per this correspondence, GLWA presented data to demonstrate one full year of NO₂ monitoring data showing numbers below 50% of the NO₂ NAAQS, and they requested DEQ-AQD-AMU approval to cease the NO₂ monitoring program. An e-mail message was sent to GLWA by DEQ-AQD-AMU dated September 13, 2018 that served to inform GLWA that they can cease the NO₂ monitoring program. A letter is to be sent to GLWA by DEQ-AQD-AMU to formally communicate this decision. GLWA has satisfied the requirements of SC VI.2, and this SC is no longer applicable going forward.

VII. Reporting

All required reports are being submitted.

FGDryIncTrans

This Flexible Group was created as a result of the review of Permit to Install No. 61-13A. The Flexible Group contains requirements to ensure that during operation of the biosolids drying facility before incinerators 1, 3, 4, 5, and 6 permanently cease operating, there is not a significant emission increase of a regulated new source review pollutant. The flexible group requires that the Complex 1 incinerators permanently cease operating no later than March 20, 2016. As described earlier in this report, because of the March 4, 2016 fire, some of the Complex 1 incinerators continued to operate after the March 21, 2016 deadline. The description for this Flexible Group states that the Flexible Group terminates when incinerators 1, 3, 4, 5, and 6 have permanently ceased operating, at which time its conditions will no longer be applicable requirements for any of the equipment in the Flexible Group.

In correspondence dated June 5, 2017, GLWA notified DEQ-AQD that Incinerators 1, 3, 4 and 5 have been permanently decommissioned on June 1, 2017. A copy of the letter can be found in the GLWA WRRF facility file. Accordingly, the requirements in FGDryIncTrans are no longer in effect.

Consent Order

Consent Order AQD No. 7-2017 became effective on June 5, 2017. The Order, which is in full force and effect for a period of at least four years (paragraph 18), was entered to resolve the air violations resulting from the March 4, 2016 fire at the WRRF facility, and the emissions testing violations associated with the biosolids dryers at the BDF portion of the facility. There are some specific requirements in the Order that pertain to operations at the facility.

Paragraph 9.A.- GLWA shall comply with the SO₂ emission limit in FGDryerTrains no later than December 31, 2017. GLWA and NEFCO have completed work on the SO₂ Compliance Plan in order to meet this deadline. The post-RTO packed tower scrubber has been installed and is operational; this was completed prior to the deadline.

Paragraph 9.B.1 – the facility permanently ceased operating the Complex 1 incinerators by June 30, 2017.

Paragraph 9.B.2 – the facility is in compliance. Sludge feed rate is monitored, but, as mentioned in the discussion for FGDryIncTrans, the requirements of this Flexible Group are no longer in effect with the permanent decommissioning of the Complex 1 incinerators.

Paragraph 9.C – the conditions in 9.C no longer apply after the requirement in paragraph 9.B.1 has been met.

Paragraph 9.D – the facility will be required to meet the testing requirements for the dryers in FGDryerTrains put forth in 9.D.1 through 5. The first milestone among these requirements was met as the facility submitted a test plan to test each of the dryers in FGDryerTrains by January 1, 2018. The testing was completed in January 2018, and the results were compliant with the permitted SO₂ emission limits.

Compliance Determination

Based upon the results of the two site visits that were made to the facility during the fiscal year – on January 9 and July 12, 2018 - and subsequent records review, along with the results of the most recent compliance emissions testing at the facility, the GLWA WRRF facility appears to be in substantial compliance with the terms and conditions of Renewable Operating Permit MI-ROP-B2103-2014d and, in turn, applicable State and Federal regulations.

Attachments to this report: A copy of the Fugitive Dust Control Treatment Log for the WRRF facility grounds; a copy of the "Complex 2 Ash System Shift Report" for 5/22/17; a screen shot from GLWA's WAMS software system that shows the preventative maintenance that was scheduled for the No. 1 lime silo on April 24, 2017 (this is from last year, but serves as an example); a screen shot of the facility's

Ovation software system that shows the operating parameters that are being monitored when the lime system operates; a copy of the "Emergency Generator Operating Data Summary for June 2018"; a copy of the Emergency Generator Usage Report; copies of the monthly FGAQCI emission summary report for Incinerator 7 and the 12-month rolling report for FGAQCI; a copy of the summary of test results from the Air Emissions Test Report for the testing that took place in July 2018; a copy of an e-mail exchange regarding SC IX.5 in FG4M-INCIN; a copy of and all of Copies of two SCADA process flow and monitoring screens for the BDF facility from January 9, 2018; copies of the emission report and run time spreadsheets that are compiled by NEFCO; a print out of FGProject2013 Emissions.

NAME Steve WiersDATE 10/24/18SUPERVISOR JK