

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

N600866148

FACILITY: Oakland Heights Development, Inc.		SRN / ID: N6008
LOCATION: 2350 Brown Road, AUBURN HILLS		DISTRICT: Warren
CITY: AUBURN HILLS		COUNTY: OAKLAND
CONTACT: Robb Moore , Environmental Manager		ACTIVITY DATE: 12/13/2022
STAFF: Robert Joseph	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Scheduled inspection of municipal landfill		
RESOLVED COMPLAINTS:		

On December 13, 2022, I, Michigan Department Environment, Great Lakes, and Energy-Air Quality Division staff Robert Joseph, conducted a scheduled inspection of Oakland Heights Development, Inc. (SRN: N6008) located at 2350 Brown Road, Auburn Hills, Michigan 48326. The purpose of the inspection was to determine the facility's compliance with the requirements of the Federal Clean Air Act Part 55 - Air Pollution Control, Natural Resources and Environmental Protection Act - 1994 PA 451, Michigan Department of Environment, Great Lakes, and Energy-Air Quality Division (EGLE-AQD) Administrative Rules, and conditions of the facility's Renewable Operating Permit (ROP) MI-ROP-N6008-2020a, and Consent Order 9-2017.

Background Information

The ROP is a two-sectioned ROP with Section 1 belonging to Oakland Heights Development, Inc. (OHD) a Republic Services landfill entity, and Section 2 belonging to Waste Management Renewable Energy of Michigan (WMRE of MI), the landfill gas treatment entity for the facility.

The facility's ROP was modified and reissued late last year on November 10, 2022. This was due to the facility's previous ROP, MI-ROP-N6008-2020 – issued on October 30, 2020, having been issued within two years from the date of the modified National Emission Standards for Hazardous Air Pollutants (NESHAP) for Municipal Solid Waste Landfills, 40 CFR Part 63 - Subpart AAAA, which took effect on September 28, 2021. The facility is also subject to Part 62 – Approval and Promulgation of State Plans for Designated Facilities and Pollutants, Subpart OOO, Federal Plan Requirements for Municipal Solid Waste Landfills That Commenced Construction on or before July 17, 2014, and Have Not Been Modified or Reconstructed Since July 17, 2014. These regulations replaced the now defunct Subpart WWW for municipal landfills under the New Source Performance Standards (NSPS).

Both Subpart OOO and the NESHAP share similar regulations with some slight differences. The NESHAP allows landfills more flexibility with gas collection operations, however, additional monitoring and reporting are required to remain compliant. The facility chose to opt-in to the following three sections of the modified NESHAP (AAAA) – Operational Standards, Compliance Provisions, and Monitoring of Operations over their counterparts in Subpart OOO in September 2021, however, the facility remains subject to the remaining sections of both.

Lastly, Consent Order 9-2017 was a result of a violation notice issued to the facility for having an unpermitted flare in 2016. The facility originally had two flares permitted in the facility's previous ROP, MI-ROP-N6008-2015. The facility applied for PTI #11-15 in 2015 requesting to replace the two flares with a single 3,000 ft³/min capacity flare. Upon inspection in 2016, the AQD observed this flare to have a capacity of 5,100 ft³/min, which

resulted in a violation notice being issued. This prompted the initial PTI, #117-16, to be issued – only to eventually be replaced by PTI #117-16a in 2019 (this was issued due to the removal of the H₂S material limit at the facility's request given that monthly sampling was required). This PTI was then rolled into the facility's current ROP.

Section 2 is a gas-to-energy pipeline located within the property lines of the facility which is owned, operated, and maintained by WMRE of MI. This pipeline sells treated landfill gas – which includes a sulfur removal system to a third party, the General Motors Orion Plant for usage in the facility's boilers/engines.

Section 1 - Oakland Heights Development, Inc.

Facility Introduction

I arrived at the facility and met with Robb Moore, Environmental Manger, and Ben Kotrba, Environmental Scientist, for Environmental Information Logistics LLC, which is the facility's environmental consulting firm. I introduced myself and presented my identification and credentials and stated the purpose of my visit. I asked Robb to provide me some general information regarding the landfill. Robb indicated that Oakland Heights Development Inc. is a subsidiary of Republic Services. The facility's hours of operation are 6:30 a.m.-4:30 p.m. Monday-Friday. There are 7 employees at the facility which includes operators, the site manager, and grounds crew. The facility began operations in 1989 and operates roughly 365 days a year.

The facility is a Type II Sanitary Landfill which is a discrete area of land that accepts municipal solid waste (MSW). The facility accepts approximately 1,500 to 2,500 tons of waste per day, which consists of approximately 85% MSW and 15% construction and debris. The facility accepts waste primarily from Oakland and Macomb counties in southeast Michigan.

The site has approximately 119 acres with 106 acres dedicated to waste placement. The remaining acreage is used for roadways within the facility and for leasing space. The facility leases storage space for a water tower to the city of Auburn Hills. Approximately 30 acres of waste placement are still in-use with 50 acres under final cover in Phase I. Waste is currently being placed in Cells B and C vertically within rows as the facility has exhausted all vertical space. There is approximately 325,000 ft³ of air space available for waste placement. The facility is located in an urbanized area just north of the former site of the Palace of Auburn Hills and to the west of a car dealership and several franchise restaurants. The landfill has approximately 1 to 2 years of storage space remaining based on the current footprint.

The landfill gas (LFG) is collected through an active landfill gas collection system consisting of wells, headers, and gas mover equipment. Risers are also installed to tie-in the gas wells. The collected LFG can be routed to the facility's flare for combustion, or sent to the General Motors (GM) Orion Assembly Plant for combustion in their boilers/engines via the WMRE gas-to-energy pipeline.

Facility Tour

Robb provided me a tour of the facility as he discussed some the facility's features.

Waste is placed in two phases, phase I and II. Waste was placed in Phase I between 1989 to 2005. Phase I is the oldest section of the landfill and is lined with a ten-foot clay liner and capped with 24 inches of soil, a geosynthetic clay liner, a plastic layer, a drainage layer, a geo-composite layer, and 18 inches of soil. Phase I is still producing landfill gas.

The landfill was given a permit to expand in 1994 for Phase II (cells A-F) with waste placement occurring in cell A (1996-2010), cell B (1997-present), cell C (2000-present), cell D (2004-2010), cell E (2009-2021), and cell F (2013-2021). Cells E and F are the most recently permitted cells by EGLE's Materials Management Division in 2009. Cells A and B have a two-foot clay liner, cell C has a double geo-composite layer and a geo-synthetic clay liner, and cells D, E, and F have geo-composite liners.

Daily cover on new waste is typically 6 to 12 inches of soil and intermediate cover over uncapped portions of the landfill is 1.5 to 2 feet of soil. The landfill gas (LFG) is collected through an active landfill gas collection system, which consists of wells, headers, and gas mover equipment. Risers are also installed to tie-in the collectors. There are approximately 119 wells on site which are a combination of vertical and horizontal gas collectors. Some of these wells are constructed as caissons which allow the wells to move distances vertically. In addition, depending on location and depth, some wells have a dedicated pump to control leachate build-up within the waste. OHD does not employ their own field technicians, so the wells are monitored and maintained by Monitoring Control Compliance, an independent contractor, located in Livonia.

The landfill has drainage layers at the base of each cell to collect the leachate produced by the waste. The leachate from Phase I is processed through three tanks containing liquid activated carbon to remove polychlorinated biphenyls (PCBs) before being discharged to the local municipality. Phase II leachate is not processed because the facility no longer takes specific commercial waste containing these compounds.

The collected LFG is moved through the network by three blowers (two operate at a time) typically around 3,700 ft³/min. The collected LFG is then routed to the facility's 5,100 ft³/min open flare (model: ZEF 1645) or sent to both the flare and the nearby General Motors plant via the gas pipeline owned and operated by WMRE. The flow to the flare at the time of inspection was 3,800 ft³/min.

The facility installed the third blower (used as a back-up) in August 2019 as part of their attempt to resolve a violation notice issued by the AQD in February 2019. This was a result of the gas collection control system (GCCS) being shut down for nearly three days between January 28-30, 2019. The facility reported the shutdown was due to the pilot of the flare freezing during low atmospheric temperatures. The facility was unable to obtain a manlift when the pilot froze for two days and required an additional day to defrost the pilot and bring it up to operational standards. The AQD cited this was a failure of state rule 910, Air-cleaning devices, as the facility did not maintain the flare in accordance with rules and existing law.

After the violation notice was issued, the facility indicated the manual actuator valve on the flare leaked hydraulic fluid, thus causing the flare components to freeze. The facility replaced the valve with a pneumatic valve on May 20, 2019. In addition, the facility installed an electrical signal on the flare to confirm that power is being supplied to the heat tracer wire, and a third blower was installed to ensure redundancy. Lastly, the facility relocated the pilot orifice of the flare from the top portion of the flare to near ground level. This will allow

the facility to defrost the flare at ground level rather than waiting for a manlift to be delivered to the facility should it require service again in low atmospheric temperatures.

The facility has not had any malfunctions occur with the gas collection and control system since these infrastructure upgrades due to the violation notice issued. The landfill has probes installed around the boundary of the landfill to detect landfill gas migration. In addition, to help control landfill gas odors, the facility has an odor neutralizing system installed around the perimeter of the landfill which operates 24 hours a day.

MI-ROP-N6008-2020a

EU - FLARE1

The facility's flare was previously permitted in PTI 117-16A and was rolled into the facility's ROP upon renewal. As previously indicated, the facility received a violation notice in 2016 for having an unpermitted 5,100 ft³/min flare on site. This led to Consent Order (9-2017) and PTI 117-16 to be issued in 2016. The facility applied for a permit modification in 2018 due to their exceedance of the H₂S material limit which led to PTI 117-16A to be issued in 2019.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario
1. Visible Emissions	0 percent Opacity, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours	At all times, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours
2. SO ₂	89.4 tons per year	12-month rolling time period as determined at the end of each calendar month

There were no visible emissions being emitted from the flare at the time of inspection. According to facility SO₂ records, 5.24 tons is the highest monthly emission total in 2022 (July), and 4.08 tons was the highest monthly emission total in 2021 (March). The current 12-month rolling total is 39.07 tons (November) and was 38.27 tons through 2021.

II. MATERIAL LIMIT(S)

Material	Limit	Time Period / Operating Scenario
1. Net heating value of landfill gas	≥ 200 Btu/scf for non-assisted flares	At all times
2. Landfill Gas	2,680 MMscf per year	12-month rolling time period as determined at the end of each calendar month

According to facility landfill gas flow records, 1,425.67 MMft³ is the highest 12-month rolling total in 2022 (January), and 1,884 MMft³ was highest rolling total in 2021 (January). The 2022 current 12-month rolling flow total is 1,326.68 MMft³ (November), and 1,426 MMft³ was the total for 2021.

The lowest net heating value in 2022 is 536.31 BTU/ft³ (June), and 502 BTU/ft³ was lowest net heating value in 2021 (February).

III. PROCESS/OPERATIONAL RESTRICTION(S)

The facility is currently operating the flare in accordance with all applicable federal and state rules. A thermocouple (similar to a pilot on a stove) is installed on the flare to indicate the presence of a flame. This thermocouple extends into the flame zone of the flare. It is equipped with test ports, a flow meter, and pressure control valve. The facility has maintained the proper net heating landfill gas value of 200 Btu/ft³ and records indicate it was calibrated in July 2022 by Thermal Instruments.

In their effort to resolve the 2019 violation notice issued to the facility for the flare being shut down in late January for nearly three days, the facility installed a pneumatic valve on the flare to prevent cracking of the seals. The previous valve was an actuator valve – which according to the facility, leaked hydraulic fluid onto the thermocouple thus causing it freeze. In addition, the facility installed an electric signal to the heat trace wire which indicates that power is being supplied to it, and the orifice plate was relocated to near ground level so a manlift is not required to access it.

There were no visible emissions at the flare at the time of inspection. The flare performance test on February 6, 2018, provided an exit velocity of 44.1 ft/s, an inlet gas flow rate of 3,705 ft³/m, and a net heating value of 416.8 Btu/ft³. The exit velocity is less than the maximum velocity, V_{max} 82.1 ft/s, as required per Special Condition III.6b since it is a non-assisted flare. The current flare is rated for a maximum flare velocity of 82.1 ft/s. According to facility records and reports, the flare is shut down within one hour when the collection system is inoperable.

IV. DESIGN/EQUIPMENT PARAMETER(S)

The flare is a John Zink, ZEF-1645 model, rated at 5,100 ft³/min.

V. TESTING/SAMPLING

Performance test results indicate that the average methane concentration and net heating value of the combusted landfill gas to be between 50-54% and 501-538 Btu/ft³, respectively. Visible emissions of the flare were determined to be 0%. In addition, the facility has been performing monthly and semi-annual lab H₂S sampling.

If the H₂S (or TRS equivalent) concentration of the landfill gas sample exceeds 400 ppmv, then the facility must perform H₂S (TRS equivalent) sampling on a weekly basis and review all operating and maintenance activities for the landfill gas collection and treatment system along with maintaining records of the corrective actions taken. Once the H₂S (or TRS equivalent) concentration of the landfill gas from the weekly samples are maintained below 400 ppmv, for one month after an exceedance, the facility may resume monthly monitoring and recordkeeping.

VI. MONITORING/RECORDKEEPING

The facility monitors and records on a monthly basis the average Btu content of the landfill gas burned in EU-FLARE1. The content has ranged between 499 Btu/ft³ and 537 Btu/ft³ in 2022, and between 502 Btu/ft³ and 541 Btu/ft³ in 2021.

The facility records the monthly and 12-month rolling heat input calculations for EU-FLARE1. The monthly heat input has ranged between 50,000 MMBtu to 71,000 MMBtu in 2022, and the 12-month rolling heat input total is currently at 688,467 MMBtu. The monthly heat input ranged between 48,000 MMBtu to 77,000 MMBtu in 2021, and the 12-month rolling heat input total was 747,989 MMBtu.

The thermocouple was calibrated in July 2022. The flare operates as a non-assist air device and performance tests indicated the exit velocity to be 44.1 ft/s. The maximum permitted velocity, V_{max} , was determined to be 44.1 ft/s. The facility has documented when the flare flame is absent per the semi-annual reports.

The landfill gas usage and the flare's operating hours are also monitored and recorded by the facility. The monthly landfill gas flow has ranged between 94 MMft³ and 121 MMft³ in 2022 with the flare operating monthly between 668 hrs and 744 hrs. In 2021, monthly landfill gas flow ranged between 95 MMft³ and 142 MMft³ with the flare operating monthly between 672 hrs and 744 hrs.

The semi-annual H₂S (TRS concentration) lab sampling events occurred during the week of February 14 and August 24, 2022. The results were 340 ppm and 245 ppm, respectively. In addition, weekly/monthly sampling results indicate an H₂S concentration between 260 ppm and 500 ppm the last two years. The 12-month rolling SO₂ emission rate from EU-FLARE1 has ranged between 36 tons to 40 tons in 2022, and between 38 tons to 51 tons in 2021.

VII. REPORTING

The facility has submitted the annual and semi-annual reports for the gas collection and control system per special condition VII.1. The facility is required to notify the AQD each time the H₂S gas test frequency changes.

EU - ASBESTOS

The facility has been accepting asbestos waste recently (Cells B and C). Asbestos is contained primarily in cell A which had waste placement between 1996-2010 and is currently under 60 feet of final cover. It is documented its location via GPS (Global Positioning System).

III. PROCESS/OPERATIONAL RESTRICTION(S)

I did not detect any asbestos fugitive emissions while on-site. The facility places topsoil and aggregate materials over the asbestos area daily and uses a petroleum-based cover to minimize dust generation.

IV. DESIGN/EQUIPMENT PARAMETERS

The facility stated there are no areas in the landfill where asbestos is placed by itself as it is placed in active waste cell areas with other waste. Its location is documented to prevent unnecessary disturbance or damage to the waste during future construction.

VI. MONITORING/RECORDKEEPING

When received, the facility maintains waste shipment records of all asbestos containing waste received. It lists the name, address and phone number of the waste generator and transporter. A recent manifest from June 2022 was observed for 22 yd³ which contained the documented information. The facility also maintains the location and depth of the asbestos material. There are no asbestos containing areas excluded from gas collection.

VII. REPORTING

The facility has not reported any instances regarding asbestos disturbance.

FG - LANDFILL – Subparts OOO/AAA

I. EMISSION LIMITS

Pollutant	Limit	Time Period/ Operating Scenario	Equipment
1. Methane (CH ₄) concentration	Less than 500 ppm above background level	Calendar quarter	Surface of Landfill

All locations which are scanned for methane must not show an exceedance three (3) times during each quarterly scan. Exceedances are re-monitored within 10 - days of detecting the exceedance, and again one month from the initial exceedance. For any location where the monitored methane concentration equals or exceeds 500 parts per million above background three times within a quarterly period, a new well or other collection device shall be installed within 120 calendar days of the initial exceedance.

The facility reported zero (0) surface scan exceedances during the 1st quarter scan performed on March 19, 2021, and there were two (2) surface scan exceedances during the 2nd quarter scan performed on May 19, 2021. The areas were successfully remediated within 30-days. The facility reported three (3) surface scan exceedances during 3rd quarter scan and (14) during the 4th quarter scan in 2021. All were successfully remediated within 30 days. All exceedances were successfully remediated with additional cover materials placed over the affected areas.

The facility has reported a total eight (8) surface scan emissions exceeded 500-ppm in 2022. Three (3) exceedances each occurred during the 1st quarter scan on March 1, 2022, and 2nd quarter scan on May 5, 2022. The facility reported (0) surface exceedances during the 3rd quarter scan on August 19, 2022. The facility states the exceedances were corrected upon re-monitoring. The 4th quarter scan occurred on November 21-22, 2022. This resulted in two (2) exceedances which continued to be present upon re-monitoring. The facility has submitted an alternative remedy to the AQD for review for the redrilling of two well locations.

There were no occurrences when the GCCS vented to the atmosphere for more than one hour, nor any treatment system exceedances. All scan monitoring information is reported by the facility in semi-annual reports submitted by the facility on March 15 (for scans occurring from July through December) and September 15 (for scans occurring from January through June). In addition, annual reports are required per the NESHAP.

III. PROCESS/OPERATIONAL RESTRICTIONS

The facility is no longer required to submit an SSM report since they've opted-in to the modified NESHAP regulations which require landfills to now comply with the SSM work practices at all times to minimize emissions. The facility monitors all events via monthly records and the corrective actions taken are documented. In addition, efforts to repair the collection or control system must be initiated and completed in a manner such that downtime is kept to a minimum, and the collection and control system must be returned to operation.

IV. DESIGN/EQUIPMENT PARAMETERS

The facility has a network of devices such as vertical and horizontal wells, piping, and a three-blower system to capture the landfill gas, as well as a flare as a control device. The flare is an open flare and is designed in accordance with 40 CFR part 60. The facility's treatment and sulfur removal systems process the gas before it is routed to the General Motors facility for subsequent use.

V. TESTING/SAMPLING

The facility uses a TVA 2020 analyzer to perform the monitoring surface scan tests in a transverse pattern. The facility provided a map which shows the landfill locations tested. The facility does not test the active areas citing safety reasons per the NSPS. The facility performs quarterly scans of the landfill, and the results and exceedances are documented in the facility's NESHAP reports along with the corrective actions taken for any exceedance.

VI. MONITORING/RECORDKEEPING

The facility monitors the cover integrity of the gas well collection system on a monthly basis and intermittently each week.

The facility maintains on-site records of the design capacity for the current amount of solid waste in place and the year-by-year waste acceptance rate. The waste in-place at the end of 2021 is approximately 10,897,883 tons. The facility accepted 204,104 tons in 2021, and maintains on-site records of the design capacity for the solid waste in place and the year-by-year waste acceptance rate via the LandGem software.

The facility has not converted design capacity from volume to mass or mass to volume. The facility's waste design capacity is 18,904,931 tons.

The facility has not converted design capacity from volume to mass or mass to volume and does not add any liquids in a controlled fashion to the waste mass. Leachate forms from the waste mass and is captured within a collection pipe that is constructed outside the waste area.

VII. REPORTING

The facility has not recirculated volume leachate nor submitted documentation for equipment removal. The facility continues to receive and accept waste and submits the semi-annual, annual, and liquids reports notification as required per the facility's ROP, NSPS, and NESHAP reporting requirements.

IX. OTHER REQUIREMENTS

The facility has not expanded the landfill in a way not consistent with the design plan as the GCCS continues to operate and has not been capped, removed, or decommissioned.

FG - ACTIVECOLLECTION – OOO/AAAA

III. PROCESS/OPERATIONAL RESTRICTIONS

The facility operates the gas collection system for all waste that has been in-place for five years. There are 119 gas wells in operation. Facility equipment includes blowers, vertical wells, horizontal wells, and risers. There have not been any documented events of a fire and the wells are maintained to operate at negative pressure.

The facility replaced three decommissioned gas wells in 2022 with three replacement gas wells (as well as additional equipment). Eight gas wells were decommissioned with replacements in 2021. The facility had requested an alternative operating scenario (AOS) or higher operating values (HOV) for the three wells (62R – HOV for temperature, 83A – AOS due to oxygen, and 49C – HOV for temperature) during the 1st half of 2021 when subject to the now defunct Subpart WWW regulations. There were no AOS or HOV requests made by the facility in the 2nd half of 2021 or 2022 as the facility became subject to Subparts OOO and AAAA as previously indicated. An HOV is requested for a defined time period based on wellfield conditions, and an AOS is requested for a defined time period while the facility investigates and implements measures to bring the well(s) back into compliance.

IV. DESIGN/EQUIPMENT PARAMETERS

The facility operates the gas collection system for all waste that has been in-place for five years and monitors the wellfield, and if necessary, adjustments are made to handle the gas flow rate by either adjusting the parameters of a specific well or installing additional wells or risers.

The facility has installed a series of horizontal, vertical, and horizontal wells capable of controlling and extracting the landfill gas, and each gas well is equipped with a sample port and thermometer to measure the subsurface temperature (Subparts OOO and AAAA). The facility submits their gas collection control system designs plans to the EGLE-MMD for approval, which is also reviewed by the EGLE-AQD. There are approximately 119 gas collection wells onsite. Each well is equipped with a sample port and thermometer to measure the subsurface temperature. The facility measures the temperature in the gas collection header at each individual well bi-weekly to monthly. The facility does not have technicians on site, so a third-party contractor (Monitoring Control Compliance) monitors the gas wells.

All collected gases are sent either to the facility's open flare (operated in accordance with the regulations) for combustion or sent to the General Motors plant for combustion in their boilers/engines. Gas flow rates are approximately 3,700 ft³/min and the gas mover equipment operates with three blowers.

The facility recently accepted asbestos waste and there are no documented areas that are excluded from gas control.

Facility records indicate that the wellfield operates in a manner that should the gas collection or control system become inoperable, the gas mover system shuts down and all valves in the gas collection and control system contributing to venting of the gas to the atmosphere are closed within 1 hour per the Startup, Shutdown, and Malfunction plan. There have not been any such events that were not consistent with the plan and the facility has not reported any exceedances.

VI. MONITORING/RECORDKEEPING

The facility measures gauge pressure, temperature, and oxygen in the gas collection header at each individual well monthly and daily as needed. The facility is required to submit a root cause analysis, corrective action plan, and implementation timeline (beginning and end date) for all temperature and pressure exceedances expected to exceed 120-days. Notifications for this are required no later than 75-days. In addition, notifications are required if corrective actions are not completed within 60-days per Subpart AAAA and must be submitted no later than 75-days from initial exceedance. The facility has not conducted enhanced monitoring due to gas well temperatures (required if a gas well temperature is greater than or equal to 170 F and if the carbon monoxide concentrations are greater than or equal to 1,000 ppm).

The facility provided notifications for three instances in 2022 regarding corrective actions that exceeded 60-days but they were completed in less than 120-days. Gas wells 107A, 118B, and 81B required replacement lateral lines due to obstruction which caused pressure exceedances.

The facility has maintained all wellhead monitoring records and does not have any gas wells currently operating above 145 F. Dates of the landfill gas well installations are maintained within the facility's database, and the age of the waste in which the landfill gas wells were installed is also documented. The wellfield density is based on the waste acceptance rates and expected gas generation as the present gas mover equipment is sufficient to handle the current gas flow.

Facility records indicate there were no instances where the active collection system was down for more than five days, and no occurrences when the GCCS vented to the atmosphere for more than one hour. In addition, the facility reports indicate there were three occurrences relating to maintenance which lasted between one to seven hours, and an electrical overload at the blower lasting for 1.25 hours during the 1st half of 2022. The facility also recorded each startup, shutdown, and malfunction occurrence. Malfunction events include loss of power, blower overload, and programming corruption. These events lasted between one minute and eight hours. The facility's report states that all the events were consistent with the procedures listed in the startup, shutdown, malfunction (SSM) Plan. The facility maintains an up-to-date plot showing each existing and planned collector in the system and maintains the dates of the newly installed collectors.

VII. REPORTING

The facility submits the semi-annual, annual, and liquids reporting notification as required per the facility's ROP, NSPS, and NESHAP reporting requirements. Each report documents all parameter exceedances (gas well pressure and temperature) as well as their respective oxygen concentrations. In addition, the corrective actions employed to achieve compliance status are documented.

The facility has not experienced any instances in which required corrective actions exceeded 60-days until recently, nor any gas wells that required enhanced monitoring per Subpart AAAA.

IX. OTHER REQUIREMENTS

The facility does not operate a system that does not conform to gas collection requirement per Subpart AAAA. The facility's wells are constructed of PVC (polyvinyl chloride) and HDPE (high density polyethylene). The wells are perforated to allow for gas entry. Horizontal wells are placed in areas of shallow waste to allow for greater gas collection. Vertical wells are placed in areas where the waste is deep and in areas where the well can be adjusted vertically to allow for gas collection at varying heights.

FG – FLARE1 – 000/AAAA

I. EMISSION LIMIT(S)

There were no visible emissions from EU-FLARE1 during my site visit, and there was 1.28 minutes (not to exceed five minutes) of visible emissions during two consecutive hours of testing during the recent Method 22 EPA performance test.

III. PROCESS/OPERATIONAL RESTRICTION(S)

The facility's flare operates in accordance with 40 CFR 60.18 regarding exit velocity and visible emissions, and the flare operates with a flame when landfill gas is routed to it. There have been no instances when the flare was venting uncontrolled to the atmosphere for more than one hour.

IV. DESIGN/EQUIPMENT PARAMETERS

The flare was calibrated in July 2022 and is maintained and operated according to the manufacturer's specifications and there is no bypass. This includes a temperature monitoring device equipped with a continuous recorder that records the flame temperature every two minutes. A propane tank is available to light the flare if necessary. A thermocouple measures the presence of a flame on the flare and there is no bypass in the system.

V. TESTING/SAMPLING

During the recent visible emissions test in 2022, there were 1.28 minutes of visible emissions (not to exceed five minutes) observed during two consecutive hours per EPA

Test Method 22. In addition, there were no visible emissions observed during the inspection.

The most recent flare performance test was conducted on February 6, 2018, which provided an exit velocity of 44.1 ft/s, an inlet gas flow rate of 3,705 ft³/m, and a net heating value of 416.8 Btu/ft³. The exit velocity is less than the maximum velocity, V_{\max} 82.1 ft/s, as required per Special Condition III.6b since it is a non-assisted flare. The current flare is rated for a maximum flare velocity of 82.1 ft/s.

VI. MONITORING/RECORDKEEPING

The facility does not utilize a bypass regarding the flare. The flare is a non-enclosed flare and is non-assisted. Per facility reports, the flare was not operational the last two years due to blower overload, DTE maintenance, flare maintenance, and emergency stop button errors ranging between 12 minutes to six hours. There is no bypass in the system, and the flare was operating at approximately 3,800 ft³/min at the time of inspection.

VII. REPORTING

The facility regularly submits the semi-annual and annual reports as required per the facility's ROP, NSPS, and NESHAP reporting requirements.

FG-COLDCLEANERS

The coldcleaner utilized by the facility is located in the facility's garage and is used for maintenance purposes. The facility provided the SDS of the solvent, Safety Kleen Premium Solvent.

II. MATERIAL LIMITS

The facility does not use any of cleaning solvents listed in this condition that are more than 5% by weight. It contains 100% distillates (petroleum), hydrotreated light.

III. PROCESS/OPERATIONAL RESTRICTIONS

There were no parts dripping with cold cleaner during the time of inspection, and the facility indicated that routine maintenance is performed on each cold cleaner as recommended.

IV. DESIGN/EQUIPMENT PARAMETERS

The cold cleaner air/vapor interface is less than 10 ft² (3 ft x 2 ft x 1.4 ft) and its emissions are released into the general plant environment. The device was equipped with a device for draining parts. The cold cleaner was covered during the time of inspection. The Reid vapor pressure of the chemical is less than 0.3 lb/in² and no solvents were being agitated or heated during the time of inspection.

VI. MONITORING/RECORDKEEPING

There was no documentation indicating the facility has heated the solvent during its use. Solvent in use is referenced as GHS82658 with a Reid vapor pressure at 20 degrees Celsius (68 Fahrenheit) that varies between 0.02 and 0.09 lb/in². The facility has posted

and provided a copy of the written operating procedures for each cold cleaner used near the unit.

SECTION 2 – WMRE Treatment System

General Information

The landfill gas pipeline is owned, operated, and maintained by WMRE of MI and is used to transport the treated gas to the General Motors Orion plant. The treatment system removes particulate matter (PM) to at least 10 microns, compresses the gas, and removes enough moisture to ensure good combination of landfill gas when used as fuel off-site by the third party, guaranteeing the destruction of NMOC will be maintained.

WMRE of MI installed a sulfur removal treatment in October 2018 due to the high sulfur concentration that appears on occasion within the landfill gas stream. The pipeline was not in operation at the time of inspection.

Facility Introduction

I met with Jason Mabe, Facility Manager, of the WMRE gas renewable energy pipeline. The facility is located off-site at 600 Silver Bell Road in Orion Township. The pipeline operates at various hours of the day and can be controlled by both Oakland Heights Development and the General Motors plant.

FG - TREATMENTSYSYSTEM – 000/AAAA

III. PROCESS/OPERATIONAL RESTRICTIONS

WMRE's process has no emission sources or atmospheric vents, and operates when the collected gas is routed to it. The facility has developed a site-specific monitoring plan which includes the list of responsible personnel, identifies operating variables to detect equipment malfunctions, and the method of inspection. This includes the post compression gas temperature, drain valves, and differential pressure across the mesh pad within the unit (10 micron).

The system consists of three vessels eight feet in diameter and eight feet tall (6,000 tons each by mass). These vessels contain activated granular carbon and represent what WMRE refers to as the final polishing treatment of the gas. The media was replaced on May 16, 2022. The vessels are downstream of the existing equipment and are used to compress, dewater, and filter the landfill gas. One vessel operates at a time with the remaining two serving as backup when not in operation. The facility regularly tests the H₂S concentration (typically monthly) on their own accord.

IV. DESIGN/EQUIPMENT PARAMETERS

The unit operates as designed by the manufacturer and the pipeline monitoring plan does not include any alternative operational methods. A measuring device details flow within the pipeline and there is no bypass.

VI. MONITORING/RECORDKEEPING

The temperature of the landfill gas is approximately 110 F during operation and facility conducts their own monthly sampling to measure the sulfur concentration. The facility employs a third-party contractor to vacuum out the vessels once each year to remove the used activated carbon which resides within the mesh pad of the vessel.

The facility operates and maintains the treatment system at all times when the landfill gas is routed to the General Motors facility. Based on records review, the pipeline doesn't operate when maintenance or malfunction events occur at Oakland Heights Development or when the General Motors plant is not accepting landfill gas. There have not been any control or treatment system exceedances regarding its operational standards per the Preventative Maintenance Plan.

Inspection records are maintained electronically and saved to the WMRE database. The facility also maintains a logbook on-site.

VII. REPORTING

The facility regularly submits the semi-annual and annual reports as required per the facility's ROP, NSPS, and NESHAP reporting requirements.

Conclusion

Based on the EGLE-AQD inspection and records review, Oakland Heights Development, Inc. and WMRE of MI are in compliance with the aforementioned requirements and the facility's Renewable Operating Permit (ROP) MI-ROP-N6008-2020a and Consent Order 9-2017.

NAME Robert Joseph

DATE 01-19-23

SUPERVISOR Joyce