



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION III

Four Penn Center - 1600 John F Kennedy Blvd
Philadelphia, Pennsylvania 19103-2852

Report Title: Clean Air Act Inspection of Cherry Island Landfill

Inspection Date(s): 3/29/2023

Regulatory Program(s): Title V, NESHAP, NSPS

Company Name: Delaware Solid Waste Authority - Cherry Island Landfill

Facility Name: Delaware Solid Waste Authority - Cherry Island Landfill

Facility Location: 1706 East 12th Street, Wilmington, DE 19809

Latitude: 39.732754

Longitude: -75.517487

County/Parish: New Castle County

AFS/ICIS-Air Number: DE0000001000300111

Permit Number: AQM-003/00111-Renewal 3

NAICS Code: 562212

SIC: 5171

Unique Project #: 3E23CA021A

Facility Representatives:

Point of Contact

Rich Winterringer, LFG Engineer Operations



Phone: 850-346-7160 Email: raw@dswa.com

Andrew Kluge, Environmental Compliance Supervisor



Phone: 302-222-7924 Email: ack@dswa.com

Nicole Burkhardt, LFG Engineer Compliance



Phone: 302-387-5154 Email: vngb@dswa.com

EPA Inspectors:

Stafford Stewart, Environmental Engineer

Phone: 215-814-5352 Email: Stewart.stafford@epa.gov

Bruce Augustine, Environmental Scientist

Phone: 215-814-2131 Email: Augustine.bruce@epa.gov

Alex Everhardt, Environmental Scientist

Phone: 215-814-2119 Email: Augustine.bruce@epa.gov

State/Local Inspectors:

Brad Klotz, Environmental Engineer

Phone: 302-323-4542

Email: Bradley.klotz@delaware.gov

Kevin Schwar, Environmental Compliance Specialist

Phone: 302-242-1527

Email: Kevin.schwar@delaware.gov

EPA Lead Inspector

Signature

Stafford Stewart

Date

1600 John F Kennedy Blvd
Philadelphia, PA 19103-2852

Supervisor
Signature

Kristen Hall

Date

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I. Introduction

The United States Environmental Protection Agency (EPA) conducted a Clean Air Act (CAA) inspection at Delaware Solid Waste Authority - Cherry Island Landfill (Cherry Island Landfill or Facility) to verify compliance with applicable State and Federal regulations. The Department of Natural Resources and Environmental Resources (DNREC) of the State of Delaware was notified of the inspection on March 27, 2023, via email. On March 27, 2023, EPA notified the Facility of the planned inspection via phone and email. EPA emailed a list of records for review to Cherry Island Landfill, prior to the inspection (see Attachment 1). These records are listed in the Records Review section of the report.

The inspection included an evaluation of the Facility's processes and its compliance with the CAA. All information included in this report is the result of statements by the Facility representatives, materials shown to the inspectors by the Facility representatives, and/or documents provided by the Facility representatives to the inspectors at the time of, or after the inspection. In addition, information gathered prior to the inspection from a review of EPA and State records may be included in this report.

A. Summary of the Facility

The Facility is located at 1706 E 12th Street, Wilmington, DE 19809. This is a 250-acre landfill owned and operated by the Delaware Solid Waste Authority. The landfill began accepting municipal solid waste (MSW) and construction and demolition (C&D) waste in 1985, waste is received via trucks from commercial and industrial companies, as well as from the general public throughout the State of Delaware. The design capacity of the landfill is 23.1 million tons (Mtons), which is above the threshold of the 2.75 million tons required for Title V permits. There are currently about 16.3 Mtons of waste in place, the current waste throughput is 1500 tons per day. The landfilled waste is typically 85 % MSW and 15 % C&D waste. White goods are recycled, and any refrigerants are removed and are handled by a 3rd party, tires are treated in the same manner, they are recycled and sent to a 3rd party located in Virginia.

The Facility received a Title V permit (AQM-003/00111-Renewal 3) from DNREC issued on August 1, 2017, this permit expired on August 1, 2022, the Facility's permit renewal application is currently under review. A permit (APC-2021/0079) to construct and install a landfill gas collection and removal system as part of the landfill expansion was issued on April 30, 2021, this permit expires on April 30, 2024.

Cherry Island Landfill is classified as major source for volatile organic compounds (VOCs). The Facility is subject to, or potentially subject to the following federal regulations:

- 40 CFR Part 63: Subpart AAAA- National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills
- 40 CFR Part 60: Subpart XXX – Standards of Performance for Municipal Solid Waste Landfills That Commenced Construction, Reconstruction, or Modification after July 11, 2014

Cherry Island Landfill current waste acceptance operational hours are from 7:00am to 5:00 pm Mondays to Fridays, 7:00am to 3:00 pm on Saturdays. There are currently 15 full time employees, including laborers, equipment operators, managers, and contractors.

B. Inspection Opening Conference

At 9:00 am on March 29, 2023, EPA inspectors arrived at the Facility for a CAA Inspection and conducted an opening conference. Cherry Island Landfill was represented by Rich Winterringer, LFG Engineer of Operations, Nicole Burkhardt, LFG Engineer of Compliance and Andrew Kluge, Environmental Compliance Supervisor. Also present from DNREC were Brad Klutz, Environmental Engineer, and Kevin Schwar, Environmental Compliance Specialist. EPA inspectors, Stafford Stewart, Environmental Engineer, Bruce Augustine, Environmental Scientist and Alex Everhardt, Environmental Scientist, presented their credentials and explained the purpose of the visit was to conduct a full compliance evaluation (FCE) to determine compliance with their permit and any applicable regulations. Additionally, EPA informed the facility representatives of their right to claim any confidential business information (CBI). At that time, Cherry Island Landfill did not claim any photos or documentation as CBI.

EPA Inspectors explained to the Facility that the inspection was part of a National Compliance Initiative (NCI) and that the inspection would include an opening meeting, a facility walkthrough, and a records review. The Facility was also informed by EPA inspectors that during the walkthrough, photographs would be taken, and that monitoring would be performed using a TVA camera as well as an FLIR camera.

II. Site Activity/Process Description

Cherry Island Landfill is owned and operated by the Delaware Solid Waste Authority (DSWA). Operations commenced at this site in 1985, Cereza Energy, Inc. was managing the operations at that time. On or about the year 2000, NPower started managing the operations until 2006. Currently Greggo and Ferrara are managing the operations, DSWA has always owned the landfill, however they contract a 3rd party to operate the landfill. DSWA is a quasi-state agency, they receive no funding from the State, all revenues come from tipping fees and landfill gas sales. Waste have been accepted in six phases over the following periods, Phase 1 started accepting waste in 1986, Phase 2 from 1987 – 1991, Phase 1A from 1991 – 1993, Phases 3 and 4 from 1993 to 1997, Phases 3, 4, and 5 from 1997 to present, and Phase 5A from 2022 to the present. The Facility operates a Gas Collection and Control System (GCCS) to collect landfill gas generated by the degradation of waste in the landfill. According to Nicole Burkhardt, the GCCS is operated in all areas of the landfill. The landfill gas generated is either flared or sold to a 3rd party as part of a beneficial use project, the gas sold contains a minimum of 45% methane and is transferred by a pipeline which is owned by the 3rd party. There is a gas meter that monitors the ejection rate of gas per day, current production level is 3000 standard cubic feet per minute (SCFM), gas flow is regulated automatically based on methane concentration of the gas, the Facility representative, Nicole Burkhardt stated that the methane concentration in the gas is

fairly constant. Any gas not sold is flared, whenever the gas plant is not in operation all landfill gas generated is flared. Notices of passive flare use are sent to the State, there are daily odor surveys and daily visible opacity readings are conducted. In the event of any gas shutdown the Facility has an auto-dialer system which alerts the responsible staff to restart the system. There are 12 portable flares that are connected and used as needed for odor control, these portable flares are used in areas such as manholes and pump stations. None of the portable flares were in use during the time of the inspection. DSWA is responsible for monitoring the well heads for gas leaks, SCS Engineers is the company contracted to conduct surface emissions monitoring (SEM) for gas leaks, the Facility representative, Rich Winterringer stated that it is not normal to find leaks during SEM. The well field has QED well heads with fine tune adjustment, these types of well heads are useful to help prevent landfill gas migration, emissions, and subsurface fires.

The Facility was then asked by EPA inspectors how the leachate generated at the landfill is managed. Nicole Burkhardt stated that leachate is piped directly to the City of Delaware's POTW and that there are no leachate storage tanks. No leachate is re-circulated on site, there is also no leachate pre-treatment. Some leachate is trucked in from a central landfill, this leachate is placed into wells and pumped off to the POTW.

The opening conference concluded at 10:35 am.

III. Observations

EPA inspectors were led on a walkthrough of the Facility at 10:45 am by Rich Winterringer, Nicole Burkhardt, and Andrew Kluge, of Cherry Island Landfill and Brad Klotz and Kevin Schwar of DNREC were also present for the walkthrough. EPA inspectors noted photos would be taken and a FLIR camera and a toxic vapor analyzer (TVA) would be used during the Facility walkthrough (Attachment 2).

EPA inspector, Bruce Augustine started calibrating the TVA at 10:45 am to begin the SEM after the calibration step. EPA Inspectors agreed that Stafford Stewart would operate the TVA, Bruce Augustine would operate the FLIR camera and Alex Everhardt would take any still photos that were needed. At 11:15 am the inspection team proceeded to the Phase 4 and Phase 5 area of the site to start the SEM, EPA inspector Stafford Stewart began to sample several wellheads and areas of penetration in the well field. The areas sampled using the TVA and FLIR camera are identified in the table below and includes the locations where gas leaks were detected in excess of the permit allowable value of 500 ppm for methane.

The Facility tour continued with an inspection of the flare unit, several portable landfill gas flare units were observed, this is the area where these units are staged. The GCCS flare skid was also observed in this area, the system consists of a blower skid, blower, knockout pot, and controls,

the pressure reading across the knockout pot was -55 inches of water during the time of the inspection. The inspection team was able to observe a 350 Kw emergency generator, and the landfill gas processing facility, from this facility the landfill gas is piped to the delivery point where it is sold to the Cherry Island Renewable Energy, the excess gas is flared. The inspection team observed the blowers used to extract gas collected in the gas header. The blowers create a negative pressure in the well field to transfer the gas to the flare station. The flare and compressor control screens were observed, the flare control screen showed a flow rate of 2183 standard cubic feet per minute (scfm), the compressor control screen displayed readings of oxygen = 1.55%, methane = 50.7%, nitrogen = 12.7% and carbon dioxide 35%. The heat value being displayed on the compressor control screen was 5143 Btu, and the landfill gas flowrate was 1639 scfm. The flare and components on the gas collection header were observed by Bruce Augustine using the FLIR camera.

The walkthrough concluded at 2:00 pm.

IV. Records Review

The records review commenced after the plant walkthrough at 2:17 pm. EPA inspectors informed the Facility that the documents requested in the March 27, 2023, email to Cherry Island Landfill (see Attachment 1) could be sent after the inspection since the Facility did not have time to gather them. EPA would provide a link to an FTP site for the Facility to provide the records.

1. Facility plot plan which shows the entire landfill surface and the existing gas collection system. *This information was provided during the inspection.*
2. Copy of the most recent Title V permit issued by the DNREC, if an application has been submitted but the permit has not been renewed, provide a copy of the permit application. *To be provided.*
3. The amount of waste in place (tons) and the current design capacity (tons);
4. NMOC emissions (Mg/yr) and supporting calculations. *To be provided.*
5. Emissions statements submitted to DNREC for calendar years 2019-2022. *To be provided.*
6. For each combustion engine or boiler onsite provide:
 - a. The make and model;
 - b. The date of installation;
 - c. Size or rating (MMBtu/hr, HP, kW, etc.);
 - d. Fuel combusted monthly since 2019 to present (gallons, MMCF, etc.). *To be provided.*
7. Copies of any performance tests conducted on any source to determine emission rates, concentrations or compliance since 2000. *To be provided.*
8. Identify any periods when the GCCS was not operable or was out of service since 2019 to present. *To be provided.*
9. Records of monthly wellhead pressure, temperature, Nitrogen or Oxygen monitoring since 2019 to the present. *To be provided.*
10. Temperature and flow records for the existing flare since 2021. *To be provided.*

11. Any initial notifications, notifications of compliance status, or periodic reports submitted to EPA or DNREC pursuant to NSPS WWW, MACT AAAA since 2019. *To be provided.*
12. Copy of the LDAR monitoring plan and LDAR monitoring records for surface methane since 2019. *To be provided.*
13. Copies of any enforcement actions issued either by EPA or DNREC for any media. *To be provided.*

V. Closing Conference

After the records review, EPA inspectors, Rich Winterringer, Nicole Burkhardt, and Andrew Kluge, of Cherry Island Landfill and Brad Klutz, Kevin Schwar of DNREC had a brief closing conference to ask additional questions and discuss observations. The EPA inspectors noted that the investigation is on-going, and any areas of concern identified in the final report do not necessarily reflect a violation or deviation, rather, they are areas that will require further investigation. EPA also noted that they would issue an inspection report within in 60 days, with a copy to the State. Simultaneously, EPA will perform a detailed review of records and may have additional questions. The inspection concluded at 2:45 pm.

The following have been identified as *potential* issues during the inspection. They are issues that require either further investigation by EPA or additional information or explanation by Cherry Island Landfill.

- The SEM conducted showed that several areas had exceedances, these are identified above in this report. EPA inspectors reminded the Facility of the permit requirement to mark any location where exceedances are recorded and to correct the leaks and re-monitor within 10 calendar days. Furthermore, if re-monitoring still shows exceedances, then additional corrective action must be taken within 10 days of the second exceedance.

VI. List of Attachments

- Attachment 1: Email correspondence to Robin Roddy on March 29, 2023, of records requested to review during inspection
- Attachment 2: Photo Log, # 100-0252 to 100-0282