

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

N561926481

FACILITY: Pitsch Sanitary Landfill		SRN / ID: N5619
LOCATION: 7905 Johnson Rd, BELDING		DISTRICT: Grand Rapids
CITY: BELDING		COUNTY: IONIA
CONTACT: Bruce Monroe, Site Manager		ACTIVITY DATE: 07/31/2014
STAFF: David Morgan	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MAJOR
SUBJECT:		
RESOLVED COMPLAINTS:		

On July 31, 2014, Air Quality Division staff Dave Morgan conducted a scheduled inspection at the Pitsch Sanitary Landfill located at 7905 Johnson Road in Belding. The purpose of the visit was to determine the facility's compliance with state and federal air pollution regulations. Accompanying AQD staff on the visit was Bruce Monroe, Site Manager and Adam Monroe, Site Operator.

FACILITY DESCRIPTION

The Pitsch Sanitary Landfill is a municipal solid waste landfill located in Belding, in Ionia County, Michigan. The facility is subject to the New Source Performance Standards (NSPS) under 40 CFR Part 60, Subpart A for flares and Subpart WWW for Municipal Solid Waste Landfills. The facility is also subject to the National Emission Standard for Hazardous Air Pollutants (NESHAP) under 40 CFR Part 63, Subpart AAAA for Municipal Solid Waste Landfills.

The Pitsch Sanitary Landfill began operation in the 1970's and currently has a design capacity greater than 2.5 million cubic meters. The facility consists of eight solid waste disposal cells and one closed area. Cells 1 through 4 are capped and closed, Cells 5 & 6 are active, and Cells 7 & 8 are permitted but not constructed. There is also a closed Act 87 area that began operations in 1975 and ceased operations in 1992. The company completed installation of a landfill gas collection and control system (GCCS) to control non-methane organic compound emissions (NMOC) in August 2009 to comply with Subpart WWW. Renewable Operating Permit (ROP) No. MI-ROP-N5619-2009 was issued on October 2, 2009 and a ROP Renewal application was submitted on March 7, 2014. It is noted that historically Pitsch accepts more construction and demolition materials than municipal solid waste which reduces the potential for gas generation.

COMPLIANCE EVALUATION

In May 2012, USEPA and Pitsch entered into an Administrative Consent Order (ACO) to address NSPS requirements not being met. As part of that ACO, Pitsch has to meet the following:

- Pitsch must conduct monitoring, recordkeeping, and reporting as specified by the NSPS and ROP.
- Pitsch must conduct testing to demonstrate current NMOC emissions from the landfill, using the procedures specified in 40 CFR 60.754(a)(3) and in accordance with the following requirements:
 - Pitsch must conduct the test procedures specified in the ACO on three successive test dates. The test dates shall be no less than 90 days apart and no more than 180 days apart.
 - Pitsch must submit a test plan to EPA for review and approval within 60 days of the ACO effective date.
 - Pitsch must conduct the first of the three tests within 45 days after EPA approves the test plan. (Testing began on July 23, 2012).
 - Pitsch must submit a test report for each of the three tests to EPA within 45 days of the test.
 - After completing the initial performance testing, Pitsch must thereafter submit an annual NMOC emission rate report containing an estimate of the NMOC emission rate calculated using the formula and procedures provided in 40 CFR 60.754(a) or (b), as applicable, for three years. Pitsch must submit the first of the three annual reports one year after submittal of the third of the three test reports.
- If all testing and emission estimates show NMOC emissions to be below 50 Mg/yr., Pitsch may submit a periodic emission rate report every 5 years consistent with 40 CFR 60.757(b)(1)(ii).
- Pitsch may discontinue submitting the annual NMOC emission rate reports upon capping or removal of the capture and collection system and closure of the landfill pursuant to 40 CFR 60.752(b)(2)(v).

The last NMOC emission report required under the ACO was dated December 26, 2013. This report showed NMOC concentrations of 36.7 ppmv, as hexane, with total estimated NMOC emissions of less than 3.0

Megagrams/year which is significantly below the 50 Megagram/year collection and control threshold in the NSPS, Subpart WWW.

Despite this low NMOC emission rate and the ACO requiring periodic NMOC testing, collection and control requirements still apply to Pitsch because NMOC emissions initially calculated in 2001 were above 50 Megagrams/year using the NSPS Tier I NMOC concentration value. Previous U.S.EPA applicability determinations indicate that once a facility had missed the deadline to conduct Tier I testing (December 1999), a facility could not obtain additional site specific data under Tiers II or III that could be used to show site specific NMOC emissions. This resulted in facilities (including Pitsch) having to use the higher NMOC concentration of 4,000 ppm to determine NMOC emissions and then compare those emissions to the landfill gas collection and control threshold in the NSPS. The federal ACO does not exempt Pitsch from collection and control requirements of the NSPS.

(EULANDFILL>50):

In accordance with the NSPS, Subpart WWW, the company installed a GCCS consisting mainly of passive vents with spark ignition solar flares and a small active system in the Act 87 area. The GCCS was based on a design plan submitted in February 2009.

The NSPS and ROP requires that the collection system be operated so that the methane concentration is less than 500 ppm above background at the surface of the landfill and that the surface methane is monitored on a quarterly basis. If a reading above 500 ppm exists, corrective actions and re-monitoring is required. A violation exists if any reading above 500 parts per million (ppm) is detected three times within a quarterly period.

The company is monitoring the surface concentration of methane on a quarterly basis in accordance with the NSPS and ROP. Records are being kept of surface monitoring events including the sample date, sample location, exceedance location (if any) and analyzer calibration information. A TVA 1000 FID and Trimble SiteFID were used to verify surface methane during the 2013 and 2014 monitoring events.

Surface monitoring records for 2013 and 2014 were reviewed on site. The sampling and calibration appeared to be conducted in accordance with USEPA Method 21. In June 2014 a sample reading of 916 ppm methane was found which is above the 500 ppm concentration. Corrective actions were taken which included adding additional fill dirt. The area was re-monitored within 10 days and found to have a methane concentration of 181 ppm. The area was re-monitored after 30 days in accordance with the NSPS and found to have a methane concentration of 332 which is below the 500 ppm limit.

Records pertaining to maximum design capacity, year-to-year acceptance rate, and amount of waste in place are maintained by the company in accordance with the ROP and NSPS, Subpart WWW. This information is also reported to the MDEQ, Office of Waste Management and Radiological Protection on a quarterly basis. As of September 2013, the site had less than 2.0 million cubic yards of waste in place which is well below the permitted capacity of 4.2 million cubic yards. According to company records from July 2013 to July 2014, 90,684 tons of waste (or approximately 272,000 cubic yards) was received. This waste consisted roughly of 77% construction/demolition material and 17% municipal garbage. Gas generation rates can be lower with higher amounts of construction/demolition material received.

The company maintains the cover of the landfill on an as needed basis and at least on a monthly basis in accordance with the ROP.

Passive (EUPASSIVECOLL):

Currently Cells 1 through 5 have eighteen passive wells, each with its own solar vent flare, and includes two leachate collection risers vented to a single vent flare. A passive collection system is allowed under 40 CFR 60.752(b)(2)(ii)(B) provided it is installed with liners on the bottom and all sides, can handle the maximum expected gas flow rate, collects from areas where the waste is five years or older, and can minimize off-site migration. Alternate design and monitoring parameters are also allowed under EUPASSIVECOLL, Condition IX.3.

The location and density of all collection wells to control surface gas emissions was certified by a professional engineer in Pitsch's Landfill Gas Collection and Control System Design Plan dated February 2009. In addition, all collection wells are marked on an as built site map. Also in accordance with the design plan each well is constructed of HDPE material, equipped with a sampling port, positive throttle valve to shut the well down if need be, a data logger for flare operation, a solar panel to maintain the flare sparking mechanism, and a thermo-couple to monitor flare tip temperature.

EUPASSIVECOLL, Condition VI.1 requires that each interior wellhead be operated with a landfill gas temperature less than 131°F and an oxygen level less than 5% and monitored monthly. In addition, EUPASSIVECOLL, Condition VI.6 requires that the static pressure and methane content of the gas from each gas vent be monitored and recorded on a monthly basis. This monitoring was approved in the design plan and incorporated into the ROP to demonstrate proper operation of the vent flare.

The company monitors each well at the site on a monthly basis using a MX6 model iBrid Multi-Gas Monitor. Monthly monitoring records account for oxygen (O₂) concentration, temperature, methane content, spark igniter function (Y/N), flare flame presence (Y/N) and static pressure. See attached records.

The company continues to experience operational issues that have been identified in previous AQD inspections and violations cited. These issues include methane gas quantity and quality, the ability to meet NSPS operating parameters for oxygen concentration, and keeping the control system operating when gas is present. The company may need to seek alternate design and monitoring parameters under EUPASSIVECOLL, Condition IX.3 (40 CFR 756(e)).

Active Collection System (EUACTIVECOLL):

The old Act 87 consists of two unlined closed cells; one is a Type II waste cell and the other is a Type III construction and demolition waste cell. Because the Act 87 area is unlined it could not meet the NSPS requirements for a passive system which requires a synthetic liner on the bottom and sides. Therefore an active collection system needed to be installed. The Type II waste cell (only) has four collection wells which are manifolded to a single vent flare. This system is considered active because it has an in-line blower to maintain a slight vacuum on the cell. The blower motor is powered by a deep cycle battery which is charged using a solar panel. During the inspection, well GW-1-87 had a flame present and the blower was operational.

All monthly monitoring for this emission unit is conducted in accordance with the ROP and NSPS. Again, the company continues to experience the same operational issues with EUACTIVECOLL that were discovered during previous inspections.

Open Flare (EUOPENFLARE):

Each vertical well has a solar vent flare designed to burn landfill gas if gas flows are between 2 cubic feet per minute (cfm) and 90 cfm and if the gas quality contains methane in excess of 30% (see design plan). All vent flares contain a spark ignition system with spark plug, a pilot flame kit, a thermocouple to monitor the pilot flame, and a data logger.

In 2010, testing was conducted to determine the exit velocity, net heating value of the gas, and visible emissions from the 19 solar flares. The test results were submitted in July 2010 and demonstrated compliance with the applicable NSPS testing requirements.

The pilot flame kits were installed to insure the presence of a flame as required by the 40 CFR 60.18(f). As represented, the kit was supposed to direct a small amount of gas through a narrow tube directly in front of the sparker so that a pilot flame was constantly maintained. The pilot flame kit was unable to meet the requirements of 40 CFR 60.18(f) and was cited in previous violation notices. A thermocouple is used to monitor the presence of a flame and the temperature is recorded by the data logger. The company downloads the logged data monthly. Based on continuous flare temperature records, there are many occasions when there is no flare flame or pilot flame present, despite the spark igniter functioning. This is reflected in the record when the flare temperature equals the ambient temperature.

The company conducts daily observations to ensure that the flares are operating and maintains weekly inspection records of spark plug and flare performance. It is noted that the weekly flare monitoring records show that multiple flares are not operational during any given recorded day. It is indicative of the operational issues that affect the flares, including limited gas production, low methane concentration, and lack of a pilot flame among others. During the inspection flares on wells 1-6 and 8 were not operating.

Start-up, Shutdown, Malfunction (SSM) Plan:

The company has a SSM plan in accordance with EUOPENFLARE, Condition IX.2. The plan was modeled from another landfill company and contains sufficient procedures to document the occurrence of startup, shutdown, and malfunction events at Pitsch. Many of the documented shutdowns and startups are due to spark plug or igniter failure. See attached records.

Reporting:

Pitsch has submitted ROP certification reports in accordance with the ROP.

SUMMARY

The landfill gas wells and flares at the Pitsch Sanitary Landfill continue to operate in non-conformance with the applicable NSPS and ROP requirements as evidenced by the companies records. As stated earlier, an ACO between USEPA and Pitsch is intended to address ongoing noncompliance with the NSPS and ROP. Records are attached to this report.

NAME  DATE 9/16/14 SUPERVISOR 