

**Douglas Road Landfill Superfund Site
Operations and Maintenance (O&M) Report
1st Quarter 2021
Mishawaka, Indiana
Patriot Project No. 16-1731-04E**

Prepared For

Indiana Department of
Environmental Management
Office of Land Quality, Federal Programs
Indianapolis, Indiana 46204
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Prepared By

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April 6, 2021

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**FIRST QUARTER 2021
OPERATION AND MAINTENANCE REPORT
DOUGLAS ROAD LANDFILL SUPERFUND SITE
MISHAWAKA, INDIANA
PATRIOT PROJECT NO. 16-1731-04E**

1.0 INTRODUCTION

Patriot Engineering and Environmental, Inc. (Patriot) was retained by the Indiana Department of Environmental Management (IDEM) to oversee and implement activities related to post-closure operations and maintenance of the Douglas Road Landfill (DRL) Superfund Site located in Mishawaka, St. Joseph County, Indiana (Site). Figure 1 depicts the Site's location and general features. This report provides information about ongoing operation and maintenance (O&M) activities conducted at the Site for the reporting period of January 1, 2021 through March 31, 2021 (First Quarter 2021).

In mid-June 2017, Patriot took over O&M responsibility at the Site. O&M activities conducted this quarter included: inspection and air compliance monitoring of the landfill gas collection system and monitoring probes; compliance sampling and analysis of the exhaust from the landfill gas extraction system, monthly inspections of the perimeter fencing and site security, and monthly inspections and one detailed inspection of the landfill cap and drainage system.

Inspection reports documenting these operational tasks are provided as Attachment 1.

2.0 LANDFILL GAS COLLECTION SYSTEM

2.1 Monitoring Tasks

The Landfill Gas (LFG) collection system consists of a vacuum extraction blower with associated process piping, valves, and controls (Blower System), equipment shed, and 15 landfill gas (LG) vent wells: LG-1 through LG-15.

Monitoring tasks conducted this quarter on the LFG collection system included monthly inspections, checking the integrity of the equipment shed, quarterly gas compliance monitoring on the LG vent wells, and quarterly effluent vapor sampling from the blower discharge.

The vent wells are monitored on a quarterly basis for methane, carbon dioxide, and oxygen (measured in percent). The First Quarter 2021 data was collected on March 25, 2021 using an RKI Eagle 2 direct reading multiple gas meter. First Quarter 2021 readings can be found in Attachment 2 and are discussed further in Section 2.3.

The LFG collection system monitoring is conducted to evaluate trends in the LFG gas generation rate and to aid in determining if adjustments are needed in either the Blower

System or Vent Wells to maximize gas removal and capture. Historical LFG vent well readings can be found in Table 1 and the GM readings can be found in Table 2.

A quarterly effluent vapor sample from the blower discharge was collected on March 26, 2021 using a Summa® canister and an 8-hour regulator and submitted to Pace National Laboratory for Testing & Innovation (Pace National) in Mount Juliet, Tennessee for volatile organic compound (VOC) analysis per the Environmental Protection Agency (EPA) Method TO-15. The sampling was conducted to evaluate organic Hazardous Air Pollutants (HAPs) discharges to the atmosphere. Current HAPs discharge amounts can be found in Table 3 and are discussed further in Section 2.3.

2.2 Maintenance Tasks

No maintenance/repair activities were required during this reporting period.

2.3 System Evaluation

Methane was detected in 13 of the 15 LG wells in March 2021. Methane concentrations ranged from 0 to greater than 100% of the lower explosive level (LEL). The highest methane concentrations were greater than 100% of the LEL in LG-6 and LG-13 and greater than 50% of the LEL in LG-4 (70%) and LG-7 (62%).

The quarterly Blower System effluent sample results (Attachment 3) were used to estimate the HAPs emitted, in pounds per quarter (lbs/qtr). The laboratory data was reviewed and validated following IDEM data validation guidelines and was determined to be acceptable for use. The data validation memorandum is provided in Attachment 4.

An air emission calculator was created in an Excel spreadsheet, using the ideal gas law to convert parts per billion (ppb) and flow (Q) to pounds emitted per quarter. The formula uses the molecular weight of each detected compound and the respective concentrations of those compounds to calculate the mass of each compound emitted. The result (in pounds per quarter) is obtained by multiplying this number by the discharge rate of the extraction system blower. For all calculations, a discharge rate of 90 standard cubic feet per minute (SCFM) was used. This number is derived from the blower curve supplied by CarbonAir Environmental Systems, Inc. as provided in the O&M Manual and represents the discharge rate of the blower based on actual vacuum readings.

Using the above referenced formula, approximately 2.49 pounds (0.0012 tons) of VOCs were emitted during the first quarter 2021, including a total of approximately 1.67 pounds (0.0008 Tons) of HAPs. Toluene was the single greatest individual contingent emitted, totaling approximately 0.76 pounds (0.0004 tons), followed by Trichlorofluoromethane totaling approximately 0.54 pounds (0.0003 tons). The results indicate a much lower emission rate compared to the previous sampling event conducted on December 14, 2020. At that time, the total VOCs emitted was reported at approximately 9.58 pounds (0.005 tons) and the total HAPs emitted was reported to be approximately 7.49 pounds (0.004 tons), with toluene having the greatest concentration reported at 2.83 pounds (0.0014 tons).

Using an annual average, the total emissions continue to be well below the major source thresholds specified in 326 IAC 2-7-1(22) of 10 tons (20,000 pounds) per year of a single HAP, as defined under Section 112(b) of the Clean Air Act (CAA), and 25 tons (50,000 pounds) per year of any combination of HAPs for the calendar year.

Patriot determined adjustments are not needed in either the Blower System or Vent Wells at this time.

3.0 LANDFILL GAS MONITORING SYSTEM

3.1 Monitoring Tasks

The LFG monitoring network consists of 18 perimeter LFG monitoring probes, GM-1 through GM-18. The monitoring probes are inspected monthly for integrity and monitored quarterly for methane, carbon dioxide, and oxygen levels (measured in percent). Quarterly gas monitoring was conducted on March 25, 2021 using an RKI Eagle 2 direct reading multiple gas meter. Monitoring is conducted to evaluate trends in gas migration and to document compliance with state and federal regulations.

Results are also used to determine if adjustments are needed in the LFG Collection System to maximize gas capture and ensure the safety of the surrounding properties. Results of monitoring activities from this quarter can be found in Attachment 2 and are discussed further in Section 3.3 below.

3.2 Maintenance Tasks

No maintenance/repair activities were required during this reporting period.

3.3 System Evaluation

Methane monitoring results for the GM probes during the reporting period ranged from 0.0% to 0.5%. This is consistent with historical data, for all probes, which historically have been at or near 0%. The site-specific action level is 5% methane by volume. All methane readings from the GM Probes can be seen on Form DRL-5 included in Attachment 2.

Patriot determined adjustments are not needed in the LFG Collection System at this time.

4.0 LANDFILL COVER SYSTEM AND PERIMETER CONTROLS

4.1 Monitoring Tasks

The Landfill Cover System consists of a cap over the landfill, perimeter storm water ditches and associated drainage structures, a perimeter access road, and perimeter fencing with an entrance gate. Landfill cap, drainage system, access road, and fencing

inspection activities were performed at the Site throughout this reporting period. Inspections were conducted monthly to ensure the landfill cover system was intact, free of debris, free of nuisance plants/animals, has no evidence of erosion/settlement, and otherwise functioning properly. In addition, a detailed quarterly cap inspection was conducted on March 25, 2021.

4.2 Maintenance Tasks

Routine maintenance activities were performed throughout this quarter including removal and disposal of trash and debris found on the cap and along the fence line. In addition, debris from the storm water drop inlets located within the perimeter drainage ditches was removed as needed throughout the quarter.

Vegetation on the perimeter gravel road was noted last year. During the March 2021 inspections, vegetation was observed beginning to grow up through the gravel roads. The north, east and south portions of the perimeter road need more gravel applied to help prevent vegetative growth. *Patriot* obtained costs from U.S. Lawns last year for adding more gravel to perimeter road. Per IDEM, at this time *Patriot* will not be moving forward with adding gravel to the road. However, *Patriot* does recommend adding more gravel this year if possible.

Additionally, during the March inspection, it was noted that the grass was starting to grow and will most likely need to be mowed next quarter. *Patriot* will arrange to have the landfill mowed by US Lawns in the second quarter when appropriate.

The presence of nuisance animals, such as moles and groundhogs were not encountered; therefore, *Patriot* did not trap any nuisance animals during this quarter.

4.3 System Evaluation

A detailed cap inspection was conducted on March 25, 2021. The Landfill Cover System has remained in good condition. Vegetation was observed in the gravel path, but the road is still mostly visible. As previously mentioned, *Patriot* recommends adding additional gravel to the roads, particularly on the north, east, and south sides of the landfill. During the last detailed inspection in December standing water was observed in the ditches, but there was no standing water observed during this quarter. A copy of the inspection report is included in Attachment 2.

5.0 CONSTRUCTED WETLANDS TREATMENT SYSTEM

5.1 Monitoring Tasks

The Wetlands Treatment System consists of four cells, of which three are lined, surface-flow wetlands that total 8.8 acres and the fourth is a 1.8-acre, unlined infiltration basin. GES discharge as well as precipitation for the entire 30-acre Site is directed into the wetland system. All wetland treated water was designed to be discharged back into the environment via two mechanisms; 1) through the wetland system's infiltration basin,

and/or 2) into the City of Mishawaka storm sewer system that discharges into a filter strip near Juday Creek. Since the GES was shut down on February 4, 2015, no samples were collected this quarter.

5.2 Maintenance Tasks

The system was not operational during the quarter and therefore no maintenance was performed on the system.

5.3 System Evaluation

The system was not operational during the quarter and therefore no evaluation could be made.

6.0 MONITORING WELL NETWORK

Groundwater sampling was not conducted this quarter. The last annual sampling event was performed August 18-20, 2020 during the 3rd Quarter 2020. Results for the groundwater sampling event can be reviewed in the 3rd Quarter 2020 Operation and Maintenance (O&M) Report dated September 29, 2020. The next groundwater monitoring and sampling event is scheduled for August of 2021.

7.0 CONCLUSIONS

O&M activities were completed for the First Quarter 2021 which covers the period from January 1, 2021 through March 31, 2021. Activities conducted this quarter included operation, maintenance and monitoring of the gas collection system, landfill cover and perimeter controls, and compliance air sampling.

The Site remains in compliance with the CAA, as no exceedances of air emissions or gas migration was encountered during the quarterly monitoring event. Approximately 1.67 pounds (0.0008 tons) of HAPs were emitted this quarter. Toluene was the single greatest HAP emitted, reported at approximately 0.76 pounds (0.0004 tons). The results indicate a significantly lower emission rate than the previous sampling event conducted on December 14, 2020.

Methane was detected in 13 LG wells during this reporting period. Methane concentrations ranged from 0 to greater than 100% of the lower explosive level (LEL). The highest methane concentrations were greater 100% of the LEL in LG-6 and LG-13 and above 50% in LG-4 and LG-7.

The landfill cover remains in generally good condition. Some vegetation was observed growing through the gravel roads, but the roads are still visible. Patriot recommends adding additional gravel to the roads. This area will be closely monitored and addressed as needed.

If you have any additional questions or comment, please contact Kendra Gutowski at (317) 558-5060 or kgutowski@patrioteng.com.

Respectfully submitted,

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FIGURES

Figure 1 - Site Vicinity Map

TABLES

Table 1 - Historical LFG Collector Vent Well Readings

Table 2 - HAPs Discharge Summary

ATTACHMENTS

Attachment 1 – PM Performed Field Tasks

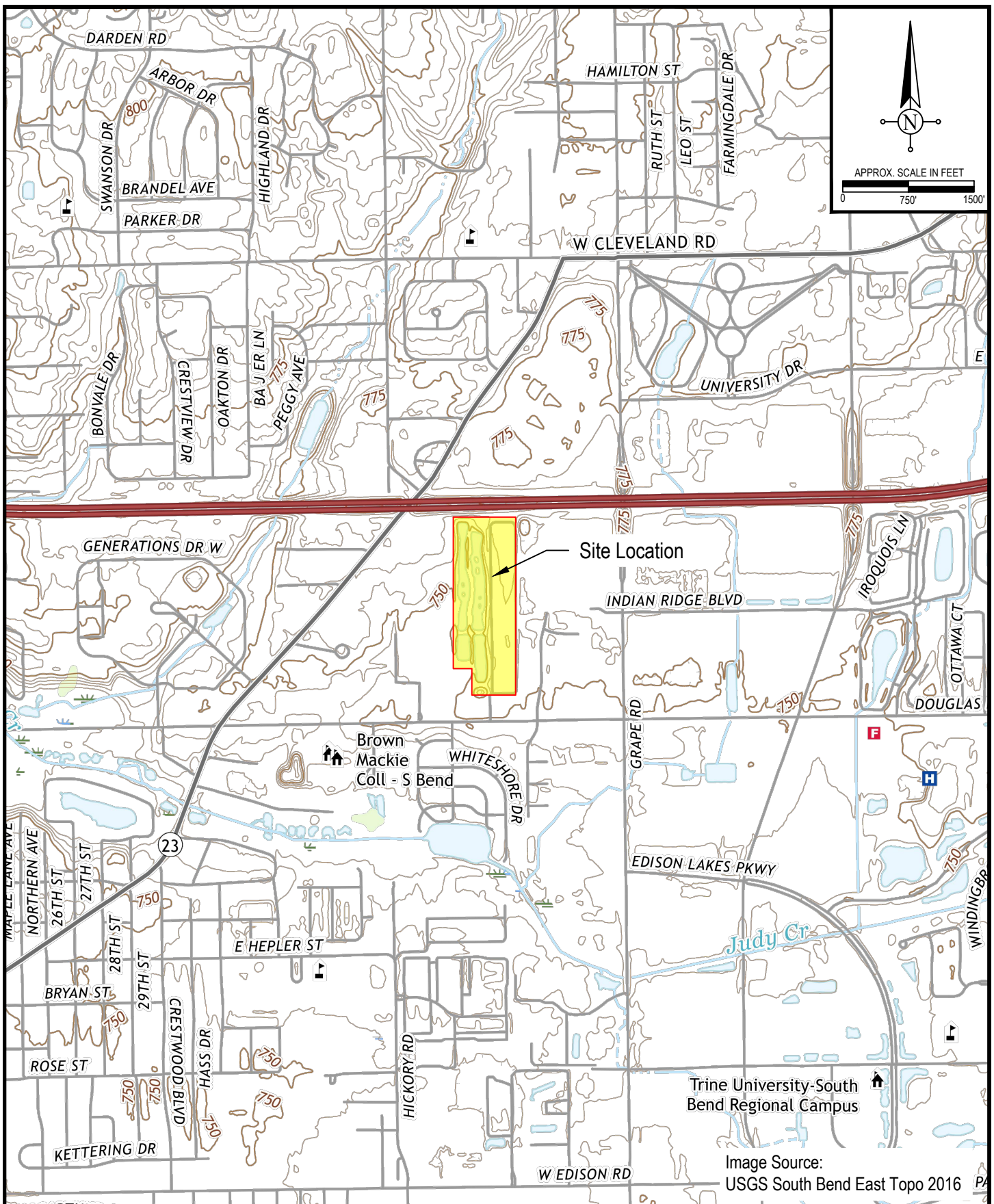
Attachment 2 – Monthly Inspections

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Attachment 4 – Landfill Gas Effluent Analytical Report

Attachment 5 – Landfill Gas Effluent Data Validation Memorandum

Figures



Patriot Engineering &
Environmental, Inc.

Project: Douglas Road Landfill Superfund Site
St. Joseph County
Mishawaka, Indiana

Project Number: 16-1731-04	Drawn By: J. DuMond
Date: September 19, 2017	Approved: CJ Eastman
	DWG: 16-1731-04_site

Figure 1

Site Vicinity Map

Tables

Table 1 - Historical LFG Collector Vent Well Readings

Table 2 – Historical GM Collector Vent Well Readings

Table 3 – HAPs Discharge Summary

Table 1
Historical LFG Collector Vent Well Readings
4th Quarter 2020- Operation and Maintenance Report
Douglas Road Landfill Superfund Site
Mishawaka, Indiana

Designation	Date	%CH4	%O2	%CO2	Valve Position
LG-1	11/24/2007	0.0	4.0	14.7	Closed
	2/23/2008	0.0	9.2	7.9	Closed
	10/3/2009	0.1	4.3	14.9	Open for test & then closed 50%
	2/20/2010	0.1	15.0	5.9	Open for test & then closed 75%
	7/10/2010	0.3	12.7	7.3	Open for test & then closed 75%
	9/18/2010	0.0	10.5	9.5	Open for test & then closed
	12/4/2010	0.0	4.5	14.2	Open for test & then closed 50%
	3/19/2011	0.0	19.5	0.9	Open for test & then closed 75%
	6/11/2011	0.0	12.5	6.7	Open for test & then closed 75%
	9/17/2011	0.0	13.5	5.1	Open for test & then closed 75%
	12/10/2011	0.0	14.7	5.8	Open for test & then closed
	3/10/2012	0.0	16.8	4.5	Open for test & then closed
	6/23/2012	0.0	5.9	12.1	Open for test & then closed 75%
	9/15/2012	0.0	11.9	7.5	Open for test & then closed 75%
	12/8/2012	0.0	10.1	7.5	Open for test & then closed 50%
	3/16/2013	0.0	12.1	5.5	Open for test & then closed 75%
	6/8/2013	0.0	14.5	4.1	Open for test & then closed 50%
	5/3/2014	0.0	18.2	3.5	Open for test & then closed 100%
	9/20/2014	0.0	2.8	3.5	Open for test & then closed 25%
	11/27/2014	0.0	2.2	3.1	Open for test & then closed 25%
	3/21/2015	3.6	8.1	8.1	Open for test & then closed 25%
	6/27/2015	0.0	4.6	3.1	Open for test & then closed 25%
	9/26/2015	0.0	3.0	14.5	Open for test & then closed 50%
	11/22/2015	0.0	3.5	16.5	Open for test & then closed 50%
	2/27/2016	0.0	2.8	13.2	Open 100% & then closed 75%
	9/26/2017	0.0	20.6	0.0	Open for test & then closed 100%
	12/1/2017	0.0	21.3	0.0	Valve open for test and closed
	3/6/2018	0.0	20.5	0.0	Valve open for test and closed
	6/26/2018	0.0	21.3	0.0	Valve open for test and closed
	9/27/2018	0.0	20.9	0.0	Valve open for test and closed
	11/28/2018	0.0	20.9	0.0	Valve open for test and closed
	3/22/2019	0.0	20.9	0.0	Valve open for test and closed
	6/11/2019	0.0	20.5	0.0	Valve open for test and closed
	12/11/2019	0.1	17.7	3.6	Valve open for test and closed
	3/19/2020	0.0	18.2	3.4	Valve open for test and closed
	6/24/2020	0.0	20.1	1.8	Valve open for test and closed
	9/14/2020	0.0	20.2	1.8	Valve open for test and closed
	12/14/2020	0.0	17.9	3.3	Valve open for test and closed
	3/25/2021	0.0	17.5	3.8	Valve open for test and closed
LG-2	11/24/2007	0.0	17.3	3.6	Closed
	2/23/2008	0.0	19.3	1.6	Closed
	10/3/2009	0.0	17.0	3.8	Open for test & then closed
	2/20/2010	0.0	20.7	1.2	Open for test & then closed
	7/10/2010	0.0	18.4	6.1	Open for test & then closed
	9/18/2010	0.0	18.0	2.6	Open for test & then closed
	12/4/2010	0.0	17.0	3.4	Open for test & then closed
	3/19/2011	0.0	19.5	0.9	Open
	6/11/2011	0.0	19.4	0.8	Open for test & then closed
	9/17/2011	0.0	19.7	0.5	Open for test & then closed
	12/10/2011	0.0	19.9	1.6	Open for test & then closed
	3/10/2012	0.0	20.7	0.1	Open for test & then closed
	6/23/2012	0.0	17.5	2.0	Open for test & then closed
	9/15/2012	0.0	17.1	2.9	Open for test & then closed
	12/8/2012	0.0	16.1	2.9	Open for test & then closed
	3/16/2013	0.0	18.1	4.9	Open for test & then closed
	6/8/2013	0.0	17.9	4.1	Open for test & then closed
	5/3/2014	0.0	20.5	1.4	Open for test & then closed 100%
	9/20/2014	0.0	16.5	1.4	Open for test & then closed 100%
	11/27/2014	0.0	16.5	1.4	Open for test & then closed 100%
	3/21/2015	0.0	15.0	2.9	Open for test & then closed 100%
	6/27/2015	0.0	16.0	3.0	Open for test & then closed 100%
	9/26/2015	0.0	17.0	3.4	Open for test & then closed 100%
	11/22/2015	0.0	19.0	1.5	Open for test & then closed 100%
	2/27/2016	0.0	16.8	4.2	Open for test & then closed 100%
	9/26/2017	0.0	20.8	0.0	Open for test & then closed 100%
	12/1/2017	0.0	21.4	0.0	Valve open for test and closed
	3/16/2018	0.0	20.0	0.0	Valve open for test and closed
	6/26/2018	0.0	21.4	0.0	Valve open for test and closed
	9/27/2018	0.0	20.7	0.6	Valve open for test and closed
	11/28/2018	0.0	20.3	1.0	Valve open for test and closed
	3/22/2019	0.0	20.3	0.0	Valve open for test and closed
	6/11/2019	0.0	20.5	0.0	Valve open for test and closed
	12/11/2019	0.1	19.9	1.2	Valve open for test and closed
	3/19/2020	0.0	20.2	0.8	Valve open for test and closed
	6/24/2020	0.0	18.2	3.2	Valve open for test and closed
	9/14/2020	0.0	18.1	3.4	Valve open for test and closed
	12/14/2020	0.0	19.8	1.1	Valve open for test and closed
	3/25/2021	0.0	19.5	1.5	Valve open for test and closed

Table 1
Historical LFG Collector Vent Well Readings
4th Quarter 2020- Operation and Maintenance Report
Douglas Road Landfill Superfund Site
Mishawaka, Indiana

Designation	Date	%CH4	%O2	%CO2	Valve Position
LG-3	11/24/2007	2.1	5.7	13.5	Open
	2/23/2008	1.2	6.5	10.0	Open
	10/3/2009	1.3	5.4	12.5	Open
	2/20/2010	0.6	7.8	11.2	Open
	7/10/2010	1.4	6.8	12.4	Open
	9/18/2010	1.3	3.8	13.8	Open
	12/4/2010	1.3	6.4	12.6	Open
	3/19/2011	1.1	7.7	10.3	Open for test & then closed
	6/11/2011	0.9	6.3	11.5	Open
	9/17/2011	1.2	5.5	12.6	Open
	12/10/2011	1.1	7.2	10.8	Open
	3/10/2012	0.8	8.6	10.1	Open
	6/23/2012	0.8	7.6	10.9	Open
	9/15/2012	1.5	5.8	10.9	Open
	12/8/2012	1.3	8.2	10.8	Open
	3/16/2013	0.9	9.5	9.4	Open
	6/8/2013	0.5	8.0	9.7	Open
	5/3/2014	1.2	9.5	10.4	Valve open 100%
	9/20/2014	0.7	7.5	10.9	Valve open 75%
	11/27/2014	1.2	6.4	12.1	Valve open 75%
	3/21/2015	5.4	14.1	12.1	Valve open 75%
	6/27/2015	0.9	7.0	13.4	Valve open 75%
	9/26/2015	0.6	8.4	9.8	Valve open 75%
	11/22/2015	0.6	7.9	10.8	Open for test & then closed 100%
	2/27/2016	0.5	0.9	13.4	Open 100% & then closed 50%
	9/26/2017	0.0	20.6	0.0	Open for test & then closed 100%
	12/1/2017	0.0	21.3	0.0	Valve open for test and closed
	3/16/2018	0.0	21.3	0.0	Valve open for test and closed
	6/26/2018	0.0	21.3	0.0	Valve open for test and closed
	9/27/2018	7.0	14.4	4.9	Valve open for test and closed
	11/28/2018	5.0	18.0	4.7	Valve open for test and closed
	3/22/2019	5.0	19.0	5.0	Valve open for test and closed
	6/11/2019	5.0	20.0	5.0	Valve open for test and closed
	12/11/2019	1.3	7.2	11.3	Valve open for test and closed
	3/19/2020	1.3	7.4	10.8	Valve open for test and closed
	6/24/2020	1.1	9.3	10.1	Valve open for test and closed
	9/14/2020	0.9	9.1	10.3	Valve open for test and closed
	12/14/2020	1.1	7.4	11.1	Valve open for test and closed
	3/25/2021	1.5	7.1	11.3	Valve open for test and closed
LG-4	11/24/2007	20.0	0.7	19.6	Open
	2/23/2008	10.8	1.6	15.7	Open
	10/3/2009	16.4	0.0	20.1	Open
	2/20/2010	6.2	0.9	17.0	Open
	7/10/2010	0.5	11.3	18.4	Open
	9/18/2010	0.0	7.3	10.5	Open
	12/4/2010	12.7	0.0	18.4	Open
	3/19/2011	10.1	1.2	15.8	Open
	6/11/2011	11.7	1.1	17.7	Open
	9/17/2011	5.0	0.0	15.3	Open
	12/10/2011	8.5	0.9	16.9	Open
	3/10/2012	8.1	1.4	16.0	Open
	6/23/2012	7.0	1.0	18.0	Open
	9/15/2012	11.5	0.2	18.4	Open
	12/8/2012	10.6	0.6	17.0	Open
	3/16/2013	7.5	4.0	16.2	Open
	6/8/2013	6.7	1.5	16.0	Open
	5/3/2014	14.0	1.4	18.1	Valve open 100%
	9/20/2014	8.1	1.0	17.3	Valve open 100%
	11/27/2014	8.2	1.0	17.3	Valve open 100%
	3/21/2015	8.6	0.9	17.1	Valve open 100%
	6/27/2015	2.4	5.1	13.4	Valve open 100%
	9/26/2015	5.0	1.3	17.0	Valve open 100%
	11/22/2015	3.9	1.2	16.5	Valve open 100%
	2/27/2016	4.9	2.7	13.8	Valve open 100%
	9/26/2017	0.0	20.6	0.0	Open for test & then closed 100%
	12/1/2017	0.0	21.5	0.0	Valve open for test and closed
	3/16/2018	0.0	21.0	0.0	Valve open for test and closed
	6/26/2018	0.1	21.5	0.0	Valve open for test and closed
	9/27/2018	11.0	18.2	2.1	Valve open for test and closed
	11/28/2018	15.0	19.5	3.5	Valve open for test and closed
	3/22/2019	5.0	20.0	5.0	Valve open for test and closed
	6/11/2019	0.0	20.6	0.0	Valve open for test and closed
	12/11/2019	4.0	4.9	13.3	Valve open for test and closed
	3/19/2020	4.4	2.1	15.5	Valve open for test and closed
	6/24/2020	4.4	1.6	18.4	Valve open for test and closed
	9/14/2020	4.6	1.7	18.3	Valve open for test and closed
	12/14/2020	3.8	5.1	13.5	Valve open for test and closed
	3/25/2021	3.5	4.7	14.2	Valve open for test and closed

Table 1
Historical LFG Collector Vent Well Readings
4th Quarter 2020- Operation and Maintenance Report
Douglas Road Landfill Superfund Site
Mishawaka, Indiana

Designation	Date	%CH4	%O2	%CO2	Valve Position
LG-5	11/24/2007	1.7	9.0	11.0	Closed
	2/23/2008	1.2	11.6	7.2	Closed
	10/3/2009	0.6	9.2	10.4	Open for test & then closed 50%
	2/20/2010	0.3	13.2	6.6	Open for test & then closed 50%
	9/18/2010	9.1	0.9	18.2	Open
	12/4/2010	0.0	11.1	8.5	Open
	3/19/2011	0.1	12.2	6.4	Open for test & then closed 50%
	6/11/2011	0.1	10.6	7.8	Open for test & then closed 50%
	9/17/2011	0.2	9.7	7.3	Valve open for test and closed
	12/10/2011	0.0	12.6	6.7	Open for test & then closed 50%
	3/10/2012	0.1	1.4	5.7	Open for test & then closed 50%
	6/23/2012	0.0	12.4	6.9	Open for test & then closed 50%
	9/15/2012	0.2	10.4	9.7	Open for test & then closed 50%
	12/8/2012	0.2	12.4	6.8	Open
	3/16/2013	0.2	13.8	5.8	Open
	6/8/2013	0.0	12.4	5.7	Open 50%
	5/3/2014	0.1	14.4	6.2	Valve open 50%
	9/20/2014	0.0	11.6	7.9	Valve open 50%
	11/27/2014	0.0	13.1	6.8	Valve open 50%
	3/21/2015	1.2	13.1	6.8	Valve open 50%
	6/27/2015	13.2	6.7	6.8	Valve open 50%
	9/26/2015	0.0	13.0	6.0	Open % Test Closed 50%
	11/22/2015	0.1	13.2	7.2	Open % Test Closed 50%
	2/27/2016	0.0	11.3	8.4	Open 100% Test Closed 75%
	9/26/2017	0.0	20.5	0.0	Open 100% Test Closed 75%
	12/1/2017	0.0	21.5	0.0	Valve open for test and closed
	3/16/2018	0.0	21.5	0.0	Valve open for test and closed
	6/26/2018	0.0	21.5	0.0	Valve open for test and closed
	9/27/2018	0.0	20.9	0.0	Valve open for test and closed
	11/28/2018	0.0	19.9	0.1	Valve open for test and closed
	3/22/2019	0.0	19.9	0.1	Valve open for test and closed
	6/11/2019	0.0	19.9	0.0	Valve open for test and closed
	12/11/2019	0.5	10.8	8.3	Valve open for test and closed
	3/19/2020	0.5	11.8	7.1	Valve open for test and closed
	6/24/2020	0.2	11.0	8.4	Valve open for test and closed
	9/14/2020	0.3	11.2	8.1	Valve open for test and closed
	12/14/2020	0.3	10.9	8.5	Valve open for test and closed
	3/25/2021	0.5	10.6	9.1	Valve open for test and closed
LG-6	11/24/2007	24.7	4.2	21.0	Open
	2/23/2008	13.4	4.3	16.0	Open
	10/3/2009	0.0	0.0	0.0	no vacuum present
	2/20/2010	3.7	2.9	15.9	Open
	7/10/2010	8.3	2.2	17.7	Open
	9/18/2010	9.8	1.3	18.2	Open
	12/4/2010	11.6	1.9	17.8	Open
	3/19/2011	10.6	3.2	14.5	Open
	6/11/2011	10.9	2.5	15.8	Open
	9/17/2011	11.7	0.8	17.9	Open
	12/10/2011	9.6	2.8	15.9	Open
	3/10/2012	8.7	2.7	14.3	Open
	6/23/2012	5.7	2.9	16.0	Open
	9/15/2012	11.8	1.3	18.2	Open
	12/8/2012	10.0	3.3	15.9	Open
	3/16/2013	6.1	5.7	13.3	Open
	6/8/2013	5.2	3.8	13.6	Open
	5/3/2014	12.4	4.6	15.5	Valve open 100%
	9/20/2014	8.0	3.0	15.6	Valve open 100%
	11/27/2014	9.1	2.7	16.6	Valve open 100%
	3/21/2015	9.3	2.4	16.6	Valve open 100%
	6/27/2015	3.1	5.0	12.3	Valve open 100%
	9/26/2015	4.2	3.2	15.6	Valve open 100%
	11/22/2015	5.5	3.9	16.1	Valve open 100%
	2/27/2016	6.1	5.6	12.9	Valve open 100%
	9/26/2017	0.0	20.4	0.0	Valve open 100%
	12/1/2017	0.0	21.4	0.0	Valve open for test and closed
	3/16/2018	0.0	20.0	0.1	Valve open for test and closed
	6/26/2018	0.0	21.4	0.0	Valve open for test and closed
	9/27/2018	2.0	20.9	0.0	Valve open for test and closed
	11/28/2018	2.0	20.9	0.0	Valve open for test and closed
	3/22/2019	2.0	20.9	2.0	Valve open for test and closed
	6/11/2019	2.0	20.9	2.0	Valve open for test and closed
	12/11/2019	8.1	3.8	15.4	Valve open for test and closed
	3/19/2020	7.5	4.4	13.9	Valve open for test and closed
	6/24/2020	6.0	4.9	14.5	Valve open for test and closed
	9/14/2020	6.1	4.2	4.1	Valve open for test and closed
	12/14/2020	7.6	4.1	15.7	Valve open for test and closed
	3/25/2021	8.1	3.7	16.1	Valve open for test and closed

Table 1
Historical LFG Collector Vent Well Readings
4th Quarter 2020- Operation and Maintenance Report
Douglas Road Landfill Superfund Site
Mishawaka, Indiana

Designation	Date	%CH4	%O2	%CO2	Valve Position
LG-7	11/24/2007	2.2	0.3	16.7	Open
	2/23/2008	17.4	0.7	15.9	Open
	10/3/2009	0.0	2.3	15.6	Open
	2/20/2010	5.7	0.0	17.7	Open
	7/10/2010	0.2	3.9	14.7	Open
	9/18/2010	1.9	1.8	17.4	Open
	12/4/2010	0.5	0.8	16.9	Open
	3/19/2011	1.0	0.4	14.7	Open
	6/11/2011	3.1	0.8	17.1	Open
	9/17/2011	0.2	4.3	16.1	Open
	12/10/2011	0.0	4.6	13.0	Open
	3/10/2012	0.0	6.1	11.3	Open
	6/23/2012	0.0	3.0	15.5	Open
	9/15/2012	0.4	3.4	14.9	Open
	12/8/2012	0.1	3.6	14.2	Open
	3/16/2013	0.1	7.5	10.4	Open
	6/8/2013	0.0	4.9	12.0	Open
	5/3/2014	14.8	0.3	18.1	Valve open 100%
	9/20/2014	11.2	0.7	11.3	Valve open 100%
	11/27/2014	9.7	0.2	16.7	Valve open 100%
	3/21/2015	9.7	0.3	18.7	Valve open 100%
	6/27/2015	10.0	8.7	18.7	Valve open 100%
	9/26/2015	0.6	0.8	17.0	Valve open 100%
	11/22/2015	5.4	8.5	11.2	Valve open 100%
	2/27/2016	9.6	0.0	15.6	Valve open 100%
	9/26/2017	0.0	20.3	0.0	Valve open 100%
	12/1/2017	0.0	21.3	0.0	Valve open for test and closed
	3/16/2018	0.0	20.0	0.1	Valve open for test and closed
	6/26/2018	0.0	21.3	0.0	Valve open for test and closed
	9/27/2018	2.0	16.6	0.0	Valve open for test and closed
	11/28/2018	2.0	18.2	0.0	Valve open for test and closed
	3/22/2019	2.0	19.9	0.0	Valve open for test and closed
	6/11/2019	0.0	20.5	0.0	Valve open for test and closed
	12/11/2019	3.1	12.9	6.1	Valve open for test and closed
	3/19/2020	8.7	0.5	16.0	Valve open for test and closed
	6/24/2020	9.1	0.6	18.9	Valve open for test and closed
	9/14/2020	8.9	0.9	18.7	Valve open for test and closed
	12/14/2020	2.6	13.1	6.3	Valve open for test and closed
	3/25/2021	3.1	12.7	6.7	Valve open for test and closed
LG-8	11/24/2007	0.8	1.1	16.3	Open
	2/23/2008	0.2	12.5	5.9	Open
	10/3/2009	0.0	2.2	15.8	Open
	2/20/2010	0.0	14.6	15.5	Open for test & then closed 50%
	7/10/2010	0.2	4.1	14.7	Open for test & then closed 50%
	9/18/2010	0.5	0.9	17.9	Open
	12/4/2010	0.4	0.8	16.8	Open
	3/19/2011	0.2	2.8	13.4	Open
	6/11/2011	0.5	2.1	15.4	Open
	9/17/2011	0.4	1.3	17.9	Open
	12/10/2011	0.0	3.9	13.4	Open
	3/10/2012	0.0	6.3	11.3	Open
	6/23/2012	0.0	2.7	15.9	Open
	9/15/2012	0.5	0.6	17.6	Open
	12/8/2012	0.1	3.2	14.4	Open
	3/16/2013	0.1	7.4	10.4	Open
	6/8/2013	0.0	5.3	11.6	Open
	5/3/2014	0.0	15.7	5.0	Valve open 50%
	9/20/2014	0.0	12.3	6.9	Valve open 50%
	11/27/2014	0.0	13.1	6.4	Valve open 50%
	3/21/2015	0.7	12.1	9.4	Valve open 50%
	6/27/2015	0.0	10.3	8.4	Valve open 50%
	9/26/2015	0.2	2.5	15.3	Open for test & then closed 50%
	11/22/2015	0.2	12.5	8.9	Open 100% & then closed 100%
	2/27/2016	0.0	18.0	5.2	Open 100% & then closed 100%
	9/26/2017	0.0	20.2	0.0	Open 100% & then closed 100%
	12/1/2017	0.0	21.2	0.0	Valve open for test and closed
	3/16/2018	0.0	20.5	0.1	Valve open for test and closed
	6/26/2018	0.0	21.2	0.0	Valve open for test and closed
	9/27/2018	2.0	16.6	2.3	Valve open for test and closed
	11/28/2018	2.0	18.2	2.3	Valve open for test and closed
	3/22/2019	2.0	18.2	2.0	Valve open for test and closed
	6/11/2019	2.0	20.5	2.0	Valve open for test and closed
	12/11/2019	0.1	6.8	11.0	Valve open for test and closed
	3/19/2020	0.0	14.2	5.7	Valve open for test and closed
	6/24/2020	0.1	12.6	6.1	Valve open for test and closed
	9/14/2020	2.0	12.4	6.3	Valve open for test and closed
	12/14/2020	0.0	7.3	10.7	Valve open for test and closed
	3/25/2021	0.1	7.1	11.1	Valve open for test and closed

Table 1
Historical LFG Collector Vent Well Readings
4th Quarter 2020- Operation and Maintenance Report
Douglas Road Landfill Superfund Site
Mishawaka, Indiana

Designation	Date	%CH4	%O2	%CO2	Valve Position
LG-9	11/24/2007	3.6	2.7	15.8	Open
	2/23/2008	2.3	3.5	12.5	Open
	10/3/2009	2.6	1.6	16.6	Open
	2/20/2010	0.7	4.9	14.1	Open
	7/10/2010	1.6	3.4	15.7	Open
	9/18/2010	2.7	1.4	17.3	Open
	12/4/2010	3.7	2.9	16.8	Open
	3/19/2011	3.6	4.2	14.2	Open
	6/11/2011	2.7	3.7	15.5	Open
	9/17/2011	3.9	2.3	18.0	Open
	12/10/2011	12.7	3.8	14.4	Open
	3/10/2012	2.1	3.6	13.6	Open
	6/23/2012	2.0	3.9	15.3	Open
	9/15/2012	3.9	2.6	16.5	Open
	12/8/2012	3.2	4.3	14.9	Open
	3/16/2013	2.1	4.9	13.5	Open
	6/8/2013	1.4	4.5	12.9	Open
	5/3/2014	2.7	6.0	14.5	Valve open 100%
	9/20/2014	1.6	4.5	14.6	Valve open 100%
	11/27/2014	1.7	4.9	13.7	Valve open 100%
	3/21/2015	2.6	3.9	15.7	Valve open 100%
	6/27/2015	0.9	6.1	11.8	Valve open 100%
	9/26/2015	1.2	4.7	13.8	Valve open 100%
	11/22/2015	1.0	2.9	13.9	Valve open 100%
	2/27/2016	2.6	4.3	12.4	Valve open 100%
	9/26/2017	0.0	20.2	0.0	Valve open 100%
	12/1/2017	0.0	21.4	0.0	Valve open for test and closed
	3/16/2018	0.0	20.1	0.1	Valve open for test and closed
	6/26/2018	0.0	21.4	0.0	Valve open for test and closed
	9/27/2018	0.0	20.9	0.0	Valve open for test and closed
	11/28/2018	0.0	20.9	0.0	Valve open for test and closed
	3/22/2019	0.0	20.9	0.0	Valve open for test and closed
	6/11/2019	0.0	20.1	0.1	Valve open for test and closed
	12/11/2019	1.7	3.9	13.7	Valve open for test and closed
	3/19/2020	1.3	5.9	12.3	Valve open for test and closed
	6/24/2020	1.4	5.3	13.9	Valve open for test and closed
	9/14/2020	1.8	5.1	14.1	Valve open for test and closed
	12/14/2020	1.4	4.4	13.6	Valve open for test and closed
	3/25/2021	1.6	4.2	13.8	Valve open for test and closed
LG-10	11/24/2007	3.5	4.3	16.7	Open
	2/23/2008	0.1	12.3	7.1	Closed
	10/3/2009	3.7	9.6	11.4	Open for test & then closed 50%
	2/20/2010	1.2	11.3	8.7	Open for test & then closed 50%
	7/10/2010	0.2	19.0	1.2	Open for test & then closed 75%
	9/18/2010	4.0	5.1	11.4	Open
	12/4/2010	5.2	5.4	14.9	Open
	3/19/2011	4.5	10.6	8.6	Open for test & then closed 75%
	6/11/2011	3.3	9.7	9.6	Open
	9/17/2011	4.6	8.6	13.0	Open
	12/10/2011	5.8	4.2	14.9	Open
	3/10/2012	3.7	7.4	11.8	Open
	6/23/2012	1.2	15.1	4.1	Open 50%
	9/15/2012	4.0	7.6	14.6	Open
	12/8/2012	6.1	5.6	14.4	Open
	3/16/2013	2.5	13.6	8.0	Open
	6/8/2013	1.5	14.2	13.8	Open
	5/3/2014	3.0	11.8	18.7	Valve open 100%
	9/20/2014	2.1	8.5	13.1	Valve open 100%
	11/27/2014	3.0	4.7	14.4	Valve open 100%
	3/21/2015	3.9	3.7	16.1	Valve open 100%
	6/27/2015	1.0	7.1	11.9	Valve open 100%
	9/26/2015	0.2	11.0	9.0	Valve open 100%
	11/22/2015	0.0	23.0	0.1	No vacuum present/Valve open 100%
	2/27/2016	3.2	0.0	16.4	Valve open 100%
	9/26/2017	0.0	19.9	0.0	Open for test & then closed 100%
	12/1/2017	0.0	21.5	0.0	Valve open for test and closed
	3/16/2018	0.0	21.2	0.0	Valve open for test and closed
	6/26/2018	0.0	21.5	0.0	Valve open for test and closed
	9/27/2018	0.0	19.0	1.2	Valve open for test and closed
	11/28/2018	0.0	19.0	1.2	Valve open for test and closed
	3/22/2019	0.0	19.0	0.0	Valve open for test and closed
	6/11/2019	0.0	19.0	1.2	Valve open for test and closed
	12/11/2019	1.9	3.1	14.1	Valve open for test and closed
	3/19/2020	1.6	0.4	15.7	Valve open for test and closed
	6/24/2020	0.4	17.4	3.6	Valve open for test and closed
	9/14/2020	0.3	17.6	3.1	Valve open for test and closed
	12/14/2020	1.3	3.3	14.0	Valve open for test and closed
	3/25/2021	1.7	2.9	14.4	Valve open for test and closed

Table 1
Historical LFG Collector Vent Well Readings
4th Quarter 2020- Operation and Maintenance Report
Douglas Road Landfill Superfund Site
Mishawaka, Indiana

Designation	Date	%CH4	%O2	%CO2	Valve Position
LG-11	11/24/2007	1.1	5.7	13.7	Closed
	2/23/2008	1.1	1.7	13.0	Closed
	10/3/2009	0.4	6.5	13.1	Open for test & then closed 50%
	2/20/2010	0.0	12.7	7.6	Open for test & then closed 50%
	7/10/2010	0.1	6.6	11.6	Open for test & then closed 75%
	9/18/2010	0.1	0.2	19.2	Open
	12/4/2010	0.0	6.7	12.9	Open
	3/19/2011	0.0	16.3	3.2	Open
	6/11/2011	0.0	17.4	2.0	Open for test & then closed 75%
	9/17/2011	0.0	6.5	2.0	Open for test & then closed 50%
	12/10/2011	0.2	12.2	7.7	Open for test & then closed 50%
	3/10/2012	0.0	18.4	3.3	Open for test & then closed 50%
	6/23/2012	0.1	11.7	6.3	Open for test & then closed 50%
	9/15/2012	0.0	15.4	47.5	Open for test & then closed 75%
	12/8/2012	0.0	18.7	10.2	Open for test & then closed 50%
	3/16/2013	0.1	16.5	4.1	Open for test & then closed 50%
	6/8/2013	0.7	11.1	7.2	Open for test & then closed 50%
	5/3/2014	0.3	8.7	11.7	Valve open for test and closed 50%
	9/20/2014	0.2	10.3	8.8	Valve open for test and closed 50%
	11/27/2014	0.2	14.5	5.9	Valve open for test and closed 50%
	3/21/2015	2.6	10.9	8.6	Valve open for test and closed 50%
	6/27/2015	0.1	7.1	11.9	Valve open for test and closed 50%
	9/26/2015	0.2	4.9	13.5	Open for test & then closed 100%
	11/22/2015	0.3	2.2	15.5	Valve open 100%
	2/27/2016	0.0	10.6	8.9	Valve closed 75%
	9/26/2017	0.0	20.1	0.0	Valve open 100%
	12/1/2017	0.0	21.3	0.0	Valve open for test and closed
	3/16/2018	0.0	21.3	0.0	Valve open for test and closed
	6/26/2018	0.0	21.3	0.0	Valve open for test and closed
	9/27/2018	0.0	18.4	3.3	Valve open for test and closed
	11/28/2018	2.0	18.2	2.3	Valve open for test and closed
	3/22/2019	2.0	19.0	2.0	Valve open for test and closed
	6/11/2019	2.0	19.9	2.0	Valve open for test and closed
	12/11/2019	0.4	7.6	11.1	Valve open for test and closed
	3/19/2020	0.2	8.6	9.9	Valve open for test and closed
	6/24/2020	0.2	11.3	7.5	Valve open for test and closed
	9/14/2020	0.1	11.5	7.3	Valve open for test and closed
	12/14/2020	0.2	7.8	11.3	Valve open for test and closed
	3/25/2021	0.4	8.1	11.5	Valve open for test and closed
LG-12	11/24/2007	18.1	0.8	21.0	Open
	2/23/2008	11.2	0.8	16.3	Closed
	10/3/2009	6.1	0.3	18.7	Open (valve broken)
	2/20/2010	2.5	2.3	16.7	Open (valve broken)
	7/10/2010	4.3	1.5	17.9	Open (valve broken)
	9/18/2010	5.2	2.5	18.3	Open
	12/4/2010	4.5	3.8	16.4	Open
	3/19/2011	4.3	3.0	15.1	Open
	6/11/2011	3.6	2.4	16.2	Open
	9/17/2011	3.9	3.2	16.8	Open
	12/10/2011	3.8	2.6	15.8	Open
	3/10/2012	2.6	3.0	14.6	Open
	6/23/2012	2.5	4.0	13.7	Open
	9/15/2012	4.5	2.3	17.8	Open
	12/8/2012	4.2	3.3	15.6	Open
	3/16/2013	3.0	4.2	15.0	Open
	6/8/2013	0.0	19.0	0.0	Open 25%
	5/3/2014	4.9	3.7	16.5	Valve open 100%
	9/20/2014	4.3	2.1	17.0	Valve open 100%
	11/27/2014	2.6	8.5	11.6	Valve open 100%
	3/21/2015	3.9	4.8	13.8	Valve open 100%
	6/27/2015	0.1	5.6	12.4	Valve open 100%
	9/26/2015	2.9	4.1	15.9	Valve open 100%
	11/22/2015	1.9	4.0	15.2	Valve open 100%
	2/27/2016	3.6	1.4	14.7	Valve open 100%
	9/26/2017	0.0	19.8	0.0	Valve open 100%
	12/1/2017	0.0	21.5	0.0	Valve open for test and closed
	3/16/2018	0.0	21.3	0.0	Valve open for test and closed
	6/26/2018	0.0	21.5	0.0	Valve open for test and closed
	9/27/2018	0.0	19.8	1.3	Valve open for test and closed
	11/28/2018	0.0	19.9	1.4	Valve open for test and closed
	3/22/2019	0.0	19.9	0.0	Valve open for test and closed
	6/11/2019	0.0	19.9	1.4	Valve open for test and closed
	12/11/2019	2.3	4.4	14.1	Valve open for test and closed
	3/19/2020	2.0	6.0	12.7	Valve open for test and closed
	6/24/2020	1.8	6.4	12.7	Valve open for test and closed
	9/14/2020	1.5	6.7	12.8	Valve open for test and closed
	12/14/2020	1.9	4.7	13.9	Valve open for test and closed
	3/25/2021	2.3	5.1	14.1	Valve open for test and closed

Table 1
Historical LFG Collector Vent Well Readings
4th Quarter 2020- Operation and Maintenance Report
Douglas Road Landfill Superfund Site
Mishawaka, Indiana

Designation	Date	%CH4	%O2	%CO2	Valve Position
LG-13	11/24/2007	11.0	0.8	10.6	Open
	2/23/2008	7.0	0.4	16.0	Open
	10/3/2009	3.8	0.0	20.4	Open
	2/20/2010	3.0	0.0	17.6	Open
	7/10/2010	0.0	0.0	0.0	No vacuum present
	9/18/2010	4.3	0.2	22.4	Open
	12/4/2010	9.8	0.1	21.7	Open
	3/19/2011	2.5	1.5	15.9	Open for test & then closed 50%
	6/11/2011	1.6	1.0	16.7	Open
	9/17/2011	3.6	0.0	18.5	Open
	12/10/2011	3.0	1.1	17.0	Open
	3/10/2012	1.5	14.6	1.5	Open
	6/23/2012	2.4	1.0	16.6	Open
	9/15/2012	4.1	0.1	20.2	Open
	12/8/2012	5.0	0.6	17.4	Open
	3/16/2013	1.5	2.2	15.1	Open
	6/8/2013	1.4	1.7	15.4	Open
	5/3/2014	2.5	0.0	18.0	Valve open 100%
	9/20/2014	8.4	0.4	20.1	Valve open 100%
	11/27/2014	8.1	0.1	18.8	Valve open 100%
	3/21/2015	8.3	0.1	20.8	Valve open 100%
	6/27/2015	1.7	5.6	12.4	Valve open 100%
	9/26/2015	2.6	1.0	18.0	Valve open 100%
	11/22/2015	2.1	0.6	17.3	Valve open 100%
	2/27/2016	3.4	0.0	15.3	Valve open 100%
	9/26/2017	0.0	20.0	0.0	Valve open 100%
	12/1/2017	0.0	20.5	0.0	Valve open for test and closed
	3/16/2018	0.0	0.2	0.0	Valve open for test and closed
	6/26/2018	0.0	20.0	0.0	Valve open for test and closed
	9/27/2018	0.0	6.8	11.8	Valve open for test and closed
	11/28/2018	4.0	14.7	3.9	Valve open for test and closed
	3/22/2019	3.0	14.5	3.0	Valve open for test and closed
	6/11/2019	3.0	15.5	3.0	Valve open for test and closed
	12/11/2019	5.2	0.0	18.4	Valve open for test and closed
	3/19/2020	2.8	0.9	17.3	Valve open for test and closed
	6/24/2020	2.1	1.2	19.2	Valve open for test and closed
	9/14/2020	1.7	1.5	18.9	Valve open for test and closed
	12/14/2020	4.9	0.2	18.2	Valve open for test and closed
	3/25/2021	5.2	0.7	17.2	Valve open for test and closed
LG-14	11/24/2007	10.6	0.9	20.4	Open
	2/23/2008	6.3	0.0	15.6	Open
	10/3/2009	3.9	0.0	20.0	Open
	2/20/2010	2.9	0.0	17.4	Open
	7/10/2010	0.0	0.1	0.0	No vacuum present
	9/18/2010	1.3	5.7	21.1	Open
	12/4/2010	0.0	12.0	15.0	Open
	3/19/2011	0.0	10.7	7.1	Open for test & then closed 50%
	6/11/2011	0.0	6.4	8.1	Open for test & then closed 75%
	9/17/2011	0.0	12.1	12.8	Open for test & then closed 75%
	12/10/2011	0.0	14.7	8.2	Open for test & then closed 75%
	3/10/2012	0.0	11.3	6.2	Open for test & then closed 50%
	6/23/2012	0.1	0.8	7.2	Open for test & then closed 75%
	9/15/2012	0.1	10.4	16.3	Open for test & then closed 75%
	12/8/2012	0.1	13.5	9.5	Open for test & then closed 75%
	3/16/2013	0.1	12.9	6.3	Open for test & then closed 75%
	6/8/2013	0.0	0.0	5.5	Open for test & then closed 75%
	5/3/2014	2.5	0.0	18.1	Valve open 100%
	9/20/2014	2.5	7.7	18.1	Valve open 100%
	11/29/2014	0.0	6.2	17.6	Valve open 100%
	3/21/2015	2.1	9.7	14.6	Valve open 100%
	6/27/2015	0.0	11.0	8.8	Valve open 100%
	11/22/2015	0.0	0.3	9.7	Open 100% & test closed 50%
	2/27/2016	0.0	20.0	13.6	Open 100% & test closed 50%
	9/26/2017	0.0	21.2	0.0	Valve open 100%
	12/1/2017	0.0	21.3	0.0	Valve open for test and closed
	3/16/2018	0.0	21.3	0.0	Valve open for test and closed
	6/26/2018	0.0	21.2	0.0	Valve open for test and closed
	9/27/2018	4.0	14.7	3.9	Valve open for test and closed
	11/28/2018	3.0	14.3	4.9	Valve open for test and closed
	3/22/2019	3.0	14.5	3.0	Valve open for test and closed
	6/11/2019	2.0	19.9	2.0	Valve open for test and closed
	12/11/2019	0.1	8.9	10.9	Valve open for test and closed
	3/19/2020	0.0	11.9	8.9	Valve open for test and closed
	6/24/2020	0.0	9.2	9.8	Valve open for test and closed
	9/14/2020	0.0	10.1	9.5	Vave open for test and closed
	12/14/2020	0.3	8.7	11.1	Valve open for test and closed
	3/25/2021	0.7	10.1	11.4	Vave open for test and closed

Table 1
Historical LFG Collector Vent Well Readings
4th Quarter 2020- Operation and Maintenance Report
Douglas Road Landfill Superfund Site
Mishawaka, Indiana

Designation	Date	%CH4	%O2	%CO2	Valve Position
LG-15	11/24/2007	NM	NM	NM	Closed
	2/23/2008	NM	0.0	NM	Closed
	10/3/2009	4.0	0.0	20.3	Open
	2/20/2010	3.0	0.0	17.6	Open
	9/18/2010	3.5	0.0	19.1	Open
	12/4/2010	1.6	3.6	19.4	Open
	3/19/2011	0.1	4.0	12.4	Open
	6/11/2011	0.0	7.9	12.7	Open
	9/17/2011	1.7	3.5	10.3	Open
	12/10/2012	0.0	6.4	14.3	Open
	3/10/2012	0.0	4.0	10.7	Open
	6/23/2012	0.1	0.0	12.9	Open
	9/15/2012	0.6	3.1	19.1	Open
	12/8/2012	0.2	7.6	15.7	Open
	3/16/2013	0.1	6.9	10.6	Open
	6/8/2013	0.0	0.0	10.2	Open
	5/3/2014	2.6	0.4	18.1	Valve open 100%
	9/20/2014	1.7	9.5	18.9	Valve open 100%
	11/27/2014	1.5	1.4	10.1	Valve open 100%
	3/21/2015	1.7	1.8	16.2	Valve open 100%
	6/27/2015	0.7	5.6	11.4	Valve open 100%
	9/26/2015	0.0	3.9	0.0	Valve open 100%
	11/22/2015	1.9	0.0	14.1	Valve open 100%
	2/27/2016	0.5	20.0	15.0	Valve open 100%
	9/26/2017	0.0	21.3	0.0	Valve open 100%
	12/1/2017	0.0	21.3	0.0	Valve open for test and closed
	3/16/2018	0.0	21.3	0.0	Valve open for test and closed
	6/26/2018	0.0	21.4	0.0	Valve open for test and closed
	9/27/2018	2.0	8.9	9.6	Valve open for test and closed
	11/28/2018	0.0	19.9	0.1	Valve open for test and closed
	3/22/2019	0.0	19.9	0.0	Valve open for test and closed
	6/11/2019	0.0	20.0	0.1	Valve open for test and closed
	12/11/2019	0.6	0.0	17.6	Valve open for test and closed
	3/19/2020	0.1	7.7	11.0	Valve open for test and closed
	6/24/2020	0.1	6.8	11.5	Valve open for test and closed
	9/14/2020	0.1	10.3	9.3	Valve open for test and closed
	12/14/2020	0.8	0.1	17.4	Valve open for test and closed
	3/25/2021	1.1	3.1	16.9	Valve open for test and closed

Table 2
Historical GM Collector Vent Well Readings
4th Quarter 2020- Operation and Maintenance Report
Douglas Road Landfill Superfund Site
Mishawaka, Indiana

Designation	Date	%CH4	%O2	%CO2
GM-1	9/26/2017	0.1	20.8	0.0
	12/1/2017	0.0	21.3	0.0
	3/16/2018	0.0	21.2	0.0
	6/26/2018	0.1	20.8	0.0
	9/28/2018	0.0	20.9	0.2
	11/28/2018	0.0	20.9	0.2
	3/21/2019	0.0	10.9	0.1
	6/12/2019	0.0	20.9	0.0
	12/11/2019	0.1	12.9	6.6
	3/19/2020	0.0	17.0	3.2
	6/24/2020	0.0	11.2	6.9
	9/14/2020	0.0	11.4	6.7
	12/14/2020	0.0	13.2	6.3
	3/25/2021	0.0	13.7	5.9
GM-2	9/26/2017	0.1	20.6	0.0
	12/1/2017	0.0	21.4	0.0
	3/16/2018	0.0	21.5	0.0
	6/26/2018	0.1	20.6	0.0
	9/28/2018	0.0	12.2	4.2
	11/28/2018	0.0	16.2	3.3
	3/21/2019	0.0	20.9	0.1
	6/12/2019	0.0	20.9	0.0
	12/11/2019	0.1	17.4	4.4
	3/19/2020	0.0	19.8	1.9
	6/24/2020	0.0	20.7	0.0
	9/14/2020	0.0	20.8	0.0
	12/14/2020	0.1	17.9	4.2
	3/25/2021	0.2	18.1	5.9
GM-3	9/26/2017	0.1	20.4	0.0
	12/1/2017	0.0	21.4	0.0
	3/16/2018	0.0	21.4	0.0
	6/26/2018	0.1	20.4	0.0
	9/28/2018	0.0	17.2	1.3
	11/28/2018	0.0	16.2	1.3
	3/21/2019	0.0	20.9	0.1
	6/12/2019	0.0	20.9	0.0
	12/11/2019	0.1	19.1	2.4
	3/19/2020	0.0	21.1	0.5
	6/24/2020	0.0	10.0	1.8
	9/14/2020	0.0	19.5	1.5
	12/14/2020	0.1	18.9	2.6
	3/25/2021	0.1	19.1	2.8
GM-4	9/26/2017	0.1	20.2	0.0
	12/1/2017	0.0	21.3	0.0
	3/16/2018	0.0	21.3	0.0
	6/26/2018	0.1	20.2	0.0
	9/28/2018	0.0	20.9	0.0
	11/28/2018	0.0	20.9	0.0
	3/21/2019	0.0	20.9	0.0
	6/12/2019	0.0	20.9	0.0
	12/11/2019	0.1	18.8	0.3
	3/19/2020	0.0	20.7	1.0
	6/24/2020	0.0	18.8	1.2
	9/14/2020	0.0	19.1	1.0
	12/14/2020	0.0	18.7	0.5
	3/25/2021	0.0	18.9	0.3
GM-5	9/26/2017	0.1	20.1	0.0
	12/1/2017	0.0	21.3	0.0
	3/16/2018	0.0	21.3	0.0
	6/26/2018	0.1	20.1	0.0
	9/28/2018	0.0	20.9	0.0
	11/28/2018	0.0	20.9	0.0
	3/21/2019	0.0	20.9	0.0
	6/12/2019	0.0	20.9	0.0
	12/11/2019	0.1	20.9	0.1
	3/19/2020	0.0	21.3	0.3
	6/24/2020	0.0	19.7	0.7
	9/14/2020	0.0	19.6	0.8
	12/14/2020	0.1	20.8	0.0
	3/25/2021	0.2	20.6	0.0
GM-6	9/26/2017	0.1	20.0	0.0
	12/1/2017	0.0	21.5	0.0
	3/16/2018	0.0	21.4	0.01
	6/26/2018	0.1	20.0	0.0
	9/28/2018	0.0	18.9	1.2
	11/28/2018	0.0	20.9	0.0
	3/21/2019	0.0	20.9	0.0
	6/12/2019	0.0	20.9	0.0
	12/11/2019	0.1	20.8	0.3
	3/19/2020	0.0	21.3	0.3
	6/24/2020	0.0	20.5	0.0
	9/14/2020	0.0	20.6	0.0
	12/14/2020	0.1	20.9	0.2
	3/25/2021	0.1	20.7	0.2

Table 2
Historical GM Collector Vent Well Readings
4th Quarter 2020- Operation and Maintenance Report
Douglas Road Landfill Superfund Site
Mishawaka, Indiana

Designation	Date	%CH4	%O2	%CO2
GM-7	9/26/2017	0.0	20.0	0.0
	12/1/2017	0.0	21.3	0.0
	3/16/2018	0.0	21.2	0.01
	6/26/2018	0.0	20.0	0.0
	9/28/2018	0.0	19.5	1.3
	11/28/2018	0.0	20.9	0.0
	3/21/2019	0.0	20.9	0.0
	6/12/2019	0.0	20.9	0.0
	12/11/2019	0.0	20.7	0.1
	3/19/2020	0.0	21.4	0.1
	6/24/2020	0.0	19.9	0.4
	9/14/2020	0.0	19.8	0.4
	12/14/2020	0.0	20.8	0.2
	3/25/2021	0.0	20.9	0.1
GM-8	9/26/2017	0.0	19.9	0.0
	12/1/2017	0.0	21.2	0.0
	3/16/2018	0.0	20.2	0.01
	6/26/2018	0.0	19.9	0.0
	9/28/2018	0.0	20.9	0.1
	11/28/2018	0.0	20.9	0.1
	3/21/2019	0.0	20.9	0.1
	6/12/2019	0.0	20.9	0.1
	12/11/2019	0.0	20.5	0.3
	3/19/2020	0.0	21.1	0.4
	6/24/2020	0.0	19.6	0.8
	9/14/2020	0.0	19.8	0.6
	12/14/2020	0.0	20.4	0.2
	3/25/2021	0.0	20.3	0.3
GM-9	9/26/2017	0.0	21.0	0.0
	12/1/2017	0.0	21.0	0.0
	3/16/2018	0.0	21.2	0.01
	6/26/2018	0.0	21.0	0.0
	9/28/2018	0.0	20.9	0.0
	11/28/2018	0.0	20.9	0.0
	3/21/2019	0.0	20.9	0.0
	6/12/2019	0.0	20.9	0.0
	12/11/2019	0.0	20.3	0.3
	3/19/2020	0.0	21.4	0.0
	6/24/2020	0.0	20.5	0.0
	9/14/2020	0.0	20.6	0.0
	12/14/2020	0.1	20.5	0.1
	3/25/2021	0.1	20.3	0.4
GM-10	9/26/2017	0.0	21.2	0.0
	12/1/2017	0.0	21.2	0.0
	3/16/2018	0.0	21.5	0.0
	6/26/2018	0.0	21.2	0.0
	9/28/2018	0.0	19.8	0.1
	11/28/2018	0.0	19.5	0.4
	3/21/2019	0.0	19.5	0.5
	6/12/2019	0.0	19.5	0.5
	12/11/2019	0.2	19.8	0.4
	3/19/2020	0.0	21.4	0.0
	6/24/2020	0.0	20.5	0.0
	9/14/2020	0.0	20.5	0.0
	12/14/2020	0.3	19.7	0.3
	3/25/2021	0.5	19.4	0.5
GM-11	9/26/2017	0.0	19.9	0.0
	12/1/2017	0.0	21.5	0.0
	3/16/2018	0.0	21.5	0.0
	6/26/2018	0.0	19.9	0.0
	9/28/2018	0.0	20.3	0.0
	11/28/2018	0.0	18.6	1.5
	3/21/2019	0.0	18.6	1.5
	6/12/2019	0.0	19.5	0.5
	12/11/2019	0.0	20.2	0.2
	3/19/2020	0.0	21.3	0.1
	6/24/2020	0.0	19.9	0.5
	9/14/2020	0.0	19.3	0.8
	12/14/2020	0.0	20.1	0.2
	3/25/2021	0.0	20.3	0.5
GM-12	9/26/2017	0.0	19.8	0.0
	12/1/2017	0.0	21.3	0.0
	3/16/2018	0.0	21.3	0.0
	6/26/2018	0.0	19.8	0.0
	9/28/2018	0.0	20.9	0.0
	11/28/2018	0.0	29.9	0.6
	3/21/2019	0.0	20.9	0.1
	6/12/2019	0.0	20.9	0.1
	12/11/2019	0.0	20.0	0.2
	3/19/2020	0.0	21.2	0.1
	6/24/2020	0.0	19.9	0.6
	9/14/2020	0.0	19.8	0.7
	12/14/2020	0.0	20.2	0.1
	3/25/2021	0.0	20.5	0.1

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Mishawaka, Indiana

Designation	Date	%CH4	%O2	%CO2
GM-13	9/26/2017	0.0	19.9	0.0
	12/1/2017	0.0	21.3	0.0
	3/16/2018	0.0	21.3	0.0
	6/26/2018	0.0	19.9	0.0
	9/28/2018	0.0	20.9	0.1
	11/28/2018	0.0	20.5	0.2
	3/21/2019	0.0	20.0	0.5
	6/12/2019	0.0	20.0	0.5
	12/11/2019	0.0	19.9	0.3
	3/19/2020	0.0	21.1	0.2
	6/24/2020	0.0	19.7	0.8
	9/14/2020	0.0	19.7	0.8
	12/14/2020	0.0	20.1	0.2
	3/25/2021	0.0	20.3	0.2
GM-14	9/26/2017	0.0	20.0	0.0
	12/1/2017	0.0	21.5	0.0
	3/16/2018	0.0	21.5	0.0
	6/26/2018	0.0	20.0	0.0
	9/28/2018	0.0	20.5	0.2
	11/28/2018	0.0	20.9	0.1
	3/21/2019	0.0	20.9	0.1
	6/12/2019	0.0	20.9	0.1
	12/11/2019	0.2	19.7	0.3
	3/19/2020	0.0	21.0	0.2
	6/24/2020	0.0	19.7	0.9
	9/14/2020	0.0	19.6	0.9
	12/14/2020	0.1	19.8	0.2
	3/25/2021	0.1	19.5	0.6
GM-15	9/26/2017	0.0	20.0	0.0
	12/1/2017	0.0	21.5	0.0
	3/16/2018	0.0	21.5	0.0
	6/26/2018	0.0	20.0	0.0
	9/28/2018	0.0	16.5	4.8
	11/28/2018	0.0	18.5	1.8
	3/21/2019	0.0	18.9	1.5
	6/12/2019	0.0	19.5	0.5
	12/11/2019	0.1	19.7	0.3
	3/19/2020	0.0	20.8	0.3
	6/24/2020	0.0	19.7	1.0
	9/14/2020	0.0	19.6	1.0
	12/14/2020	0.2	19.7	0.4
	3/25/2021	0.1	19.7	0.6
GM-16	9/26/2017	0.0	20.0	0.0
	12/1/2017	0.0	21.5	0.0
	3/16/2018	0.0	21.5	0.0
	6/26/2018	0.0	20.0	0.0
	9/28/2018	0.0	18.9	1.5
	11/28/2018	0.0	18.9	1.5
	3/21/2019	0.0	19.5	0.4
	6/12/2019	0.0	19.5	0.5
	12/11/2019	0.1	19.1	0.2
	3/19/2020	0.0	20.5	0.7
	6/24/2020	0.0	19.1	1.5
	9/14/2020	0.0	18.9	1.7
	12/14/2020	0.1	19.4	0.2
	3/25/2021	0.2	19.8	0.1
GM-17	9/26/2017	0.0	20.1	0.0
	12/1/2017	0.0	21.5	0.0
	3/16/2018	0.0	21.5	0.0
	6/26/2018	0.0	20.1	0.0
	9/28/2018	0.0	20.9	0.0
	11/28/2018	0.0	20.9	0.0
	3/21/2019	0.0	20.9	0.1
	6/12/2019	0.0	20.9	0.0
	12/11/2019	0.1	19.6	1.0
	3/19/2020	0.0	20.5	0.4
	6/24/2020	0.0	19.7	1.2
	9/14/2020	0.0	19.5	1.0
	12/14/2020	0.2	19.7	0.9
	3/25/2021	0.1	20.1	0.6
GM-18	9/26/2017	0.0	20.0	0.0
	12/1/2017	0.0	21.3	0.0
	3/16/2018	0.0	21.3	0.0
	6/26/2018	0.0	20.0	0.0
	9/28/2018	0.0	18.6	1.5
	11/28/2018	0.0	18.6	1.5
	3/21/2019	0.0	20.5	0.3
	6/12/2019	0.0	20.0	0.5
	12/11/2019	0.1	20.4	0.2
	3/19/2020	0.0	21.1	0.5
	6/24/2020	0.0	19.1	1.9
	9/14/2020	0.0	19.4	1.6
	12/14/2020	0.1	20.5	0.1
	3/25/2021	0.1	20.3	0.3

Table 2
HAPs Discharge Summary
First Quarter 2021- Operation and Maintenance Report
Douglas Road Landfill Superfund Site
Mishawaka, Indiana

Formula: $ER = Q * C * MW * 0.000001581$ where:

ER = Emission rate (lb/hr)

Q = Flow rate (scfm)

C = Concentration (ppmV)

MW = Molecular weight (g/mol)

Compound	C (ppbv)	C (ppmv)	MW (g/mol)	Q (scfm)	ER (lb/hr)	VOCs	HAPs
						ER (lb/qtr)	ER (lb/qtr)
Acetone	4.99	0.00499	58.1	90	4E-06	0.01	-
Allyl Chloride	0	0	58.1	90	0E+00	0.00	0.00
Benzene	6.04	0.00604	78.1	90	7E-06	0.01	0.01
Carbon disulfide	0	0	76.1	90	0E+00	0.00	0.00
Chloroethane	0	0	64.5	90	0E+00	0.00	0.00
Chloromethane	0.448	0.000448	50.5	90	3E-05	0.00	0.00
2-Chlorotoluene	0	0	50.5	90	0E+00	0.00	0.00
Cyclohexane	43.4	0.0434	84.2	90	5E-05	0.11	-
1,1-Dichloroethane	17.2	0.0172	98.0	90	2E-05	0.05	0.05
1,1-Dichloroethene	0	0	96.9	90	0E+00	0.00	0.00
Cis-1,2-Dichloroethene	22.6	0.0226	96.9	90	3E-03	0.07	-
trans-1,2-Dichloroethene	0.376	0.000376	96.9	90	5E-05	0.00	-
Ethanol	3.59	0.00359	46.1	90	2E-06	0.01	-
Ethylbenzene	12.6	0.0126	106.2	90	2E-05	0.04	0.04
4-Ethyltoluene	0.98	0.00098	120	90	2E-06	0.00	-
Trichlorofluoromethane	125	0.125	137.4	90	2E-04	0.54	-
Dichlorodifluoromethane	1.41	0.00141	120.92	90	2E+04	0.01	-
Heptane	23.3	0.0233	100.2	90	3E-05	0.07	-
n-Hexane	67.8	0.0678	86.2	90	8E-05	0.18	0.18
Isopropylbenzene	0	0	120.2	90	0E+00	0.00	0.00
Methylene Chloride	2.79	0.00279	84.9	90	3E-06	0.01	0.01
2-Butanone (MEK)	0	0	72.1	90	0E+00	0.00	0.00
2-Propanol	0	0	60.1	91	0E+00	0.00	-
Propene	0	0	42.1	90	0E+00	0.00	-
Tetrachloroethylene	4.3	0.0043	166	90	1E-05	0.02	0.02
Toluene	264	0.264	92.1	90	3E-04	0.76	0.76
1,1,1-Trichloroethane	54.8	0.0548	133	90	1E-04	0.23	0.23
Trichloroethylene	4.16	0.00416	131	90	8E-06	0.02	0.02
1,2,4-Trimethylbenzene	1.25	0.00125	120	90	2E-06	0.00	-
1,3,5-Trimethylbenzene	0.801	0.000801	120	90	1E-06	0.00	-
2,2,4-Trimethylpentane	14	0.014	114.2	90	2E-05	0.05	0.05
Vinyl Chloride	5.34	0.00534	62.5	90	5E-06	0.01	0.01
Vinyl Bromide	0.321	0.000321	106.95	90	5E-07	0.00	0.00
m&p-Xylene	67	0.067	106	90	1E-04	0.22	0.22
o-Xylene	19.4	0.0194	106	90	3E-05	0.06	0.06
Total Emissions (lbs)						2.49	1.67
Total Emissions (tons)						0.0012	0.0008

Concentration of 0 indicated no laboratory detection during this sampling event

VOCs 2021 Discharge Summary Comparison
Operation and Maintenance Report
Douglas Road Landfill Superfund Site
Mishawaka, Indiana

Compound	Detected Components					VOC Emission Rate				
	1Q2020 C (ppmv)	2Q2020 C (ppmv)	3Q2020 C (ppmv)	4Q2020 C (ppmv)	1Q2021 C (ppmv)	1Q2020 ER (lb/qtr)	2Q2020 ER (lb/qtr)	3Q2020 ER (lb/qtr)	4Q2020 ER (lb/qtr)	1Q2021 ER (lb/qtr)
Acetone	0.368	0.133	0.089	0.006	4.990	0.667	0.241	0.161	0.011	0.009
Allyl Chloride	0.000	0.000	0.0008	0.000	0.000	0.000	0.000	0.001	0.000	0.000
Benzene	2.010	0.261	0.498	0.059	6.040	4.894	0.636	1.213	0.144	0.015
Carbon disulfide	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.002	0.000	0.000
Chloroethane	0.203	0.000	0.089	0.006	0.000	0.408	0.000	0.178	0.012	0.000
Chloromethane	0.000	0.000	0.003	0.000	0.448	0.000	0.000	0.005	0.001	0.001
Cyclohexane	2.700	0.639	1.650	0.301	0.000	7.088	1.678	4.332	0.790	0.000
1,1-Dichloroethane	0.788	0.083	0.280	0.038	43.400	2.408	0.254	0.856	0.116	0.114
1,1-Dichloroethene	0.010	0.000	0.004	0.001	17.200	0.031	0.000	0.011	0.002	0.053
Cis-1,3-Dichloroethene	0.707	0.099	0.333	0.042	0.000	2.136	0.299	1.006	0.125	0.000
trans-1,2-Dichloroethene	0.006	0.000	0.001	0.001	22.600	0.018	0.000	0.002	0.002	0.068
Ethanol	0.000	0.100	0.022	0.006	0.376	0.000	0.144	0.031	0.009	0.001
Ethylbenzene	1.400	0.392	1.040	0.082	3.590	4.636	1.298	3.444	0.273	0.005
4-Ethyltoluene	0.070	0.000	0.032	0.002	12.600	0.263	0.000	0.118	0.009	0.042
Trichlorofluoromethane	0.574	0.057	0.263	0.097	0.980	2.459	0.214	1.127	0.415	0.004
Dichlorodifluoromethane	0.005	0.073	0.004	0.002	125.000	0.020	0.313	0.014	0.006	0.535
Heptane	2.340	0.000	2.040	0.221	1.410	7.310	0.000	6.373	0.690	0.005
n-Hexane	12.300	0.709	8.740	0.865	23.300	33.057	2.215	23.490	2.325	0.073
Isopropylbenzene	0.039	2.760	0.017	0.001	67.800	0.147	7.418	0.063	0.005	0.182
Methylene Chloride	0.470	0.000	0.092	0.008	0.000	1.244	0.000	0.243	0.022	0.000
2-Butanone (MEK)	2.720	0.058	1.030	0.021	2.790	6.114	0.154	2.315	0.047	0.007
4-Methyl-2-Pentanone (MIBK)	0.066	0.506	0.000	0.000	0.000	0.205	1.137	0.000	0.000	0.000
2-Propanol	0.000	1.170	0.000	0.000	0.000	0.000	2.217	0.000	0.000	0.000
Propene	0.177	0.000	0.056	0.011	0.000	0.232	0.000	0.074	0.014	0.000
Tetrachloroethylene	0.058	0.024	0.031	0.006	4.300	0.300	0.126	0.162	0.033	0.022
Toluene	21.300	4.280	16.300	0.986	264.000	61.164	12.290	46.806	2.831	0.758
1,1,1-Trichloroethane	0.861	0.094	0.313	0.072	54.800	3.570	0.389	1.298	0.300	0.227
Trichloroethylene	0.122	0.024	0.000	0.010	4.160	0.498	0.096	0.000	0.040	0.017
1,2,4-Trimethylbenzene	0.046	0.059	0.024	0.003	1.250	0.172	0.219	0.091	0.010	0.005
1,3,5-Trimethylbenzene	0.030	0.022	0.016	0.002	0.801	0.114	0.082	0.059	0.006	0.003
2,2,4-Trimethylpentane	0.897	0.196	0.288	0.051	14.000	3.194	0.698	1.025	0.181	0.050
Vinyl Chloride	1.440	0.168	0.359	0.093	5.340	2.806	0.327	0.700	0.181	0.010
Vinyl Bromide	0.000	0.000	0.000	0.000	0.321	0.000	0.000	0.000	0.000	0.001
m&p-Xylene	3.570	0.960	2.880	0.246	67.000	11.799	3.173	9.518	0.813	0.221
o-Xylene	1.830	0.192	0.581	0.050	19.400	6.048	0.635	1.920	0.165	0.064
Total Emissions (lbs)						163.003	36.250	106.636	9.58	2.49
Total Emissions (tons)						0.082	0.018	0.053	0.005	0.001

HAPs 2021 Discharge Summary Comparison
Operation and Maintenance Report
Douglas Road Landfill Superfund Site
Mishawaka, Indiana

Compound	Detected Components					HAPs Emissions				
	1Q2020 C (ppmv)	2Q2020 C (ppmv)	3Q2020 C (ppmv)	4Q2020 C (ppmv)	1Q2021 C (ppmv)	1Q2020 ER (lb/qtr)	2Q2020 ER (lb/qtr)	3Q2020 ER (lb/qtr)	4Q2020 ER (lb/qtr)	1Q2021 ER (lb/qtr)
Acetone	0.368	0.133	0.089	0.006	4.990	-	-	-	-	-
Allyl Chloride	0.000	0.000	0.00082	0.000	0.000	0.000	0.000	0.001	0.000	0.000
Benzene	2.010	0.261	0.498	0.059	6.040	4.894	0.636	1.213	0.144	0.015
Carbon disulfide	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.002	0.000	0.000
Chloroethane	0.203	0.000	0.089	0.006	0.000	0.408	0.000	0.178	0.012	0.000
Chloromethane	0.000	0.000	0.003	0.000	0.448	0.000	0.000	0.005	0.001	0.001
Cyclohexane	2.700	0.639	1.650	0.301	0.000	-	-	-	-	0.000
1,1-Dichloroethane	0.788	0.083	0.280	0.038	43.400	2.408	0.254	0.856	0.116	-
1,1-Dichloroethene	0.010	0.000	0.004	0.001	17.200	0.031	0.000	0.011	0.002	0.053
Cis-1,3-Dichloroethene	0.707	0.099	0.333	0.042	0.000	-	-	-	-	0.000
trans-1,2-Dichloroethene	0.006	0.000	0.001	0.001	22.600	-	-	-	-	-
Ethanol	0.000	0.100	0.022	0.006	0.376	-	-	-	-	-
Ethylbenzene	1.400	0.392	1.040	0.082	3.590	4.636	1.298	3.444	0.273	-
4-Ethyltoluene	0.070	0.000	0.032	0.002	12.600	-	-	-	-	0.042
Trichlorofluoromethane	0.574	0.057	0.263	0.097	0.980	-	-	-	-	-
Dichlorodifluoromethane	0.005	0.073	0.004	0.002	125.000	-	-	-	-	-
Heptane	2.340	0.000	2.040	0.221	1.410	-	-	-	-	-
n-Hexane	12.300	0.709	8.740	0.865	23.300	33.057	2.215	23.490	2.325	-
Isopropylbenzene	0.039	2.760	0.017	0.001	67.800	0.147	7.418	0.063	0.005	0.182
Methylene Chloride	0.470	0.000	0.092	0.008	0.000	1.244	0.000	0.243	0.022	0.000
2-Butanone (MEK)	2.720	0.058	1.030	0.021	2.790	6.114	0.154	2.315	0.047	0.007
4-Methyl-2-Pentanone (MIBK)	0.066	0.506	0.000	0.000	0.000	-	-	-	-	0.000
2-Propanol	0.000	1.170	0.000	0.000	0.000	-	-	-	-	-
Propene	0.177	0.000	0.056	0.011	0.000	-	-	-	-	-
Tetrachloroethylene	0.058	0.024	0.031	0.006	4.300	0.300	0.126	0.162	0.033	0.022
Toluene	21.300	4.280	16.300	0.986	264.000	61.164	12.290	46.806	2.831	0.758
1,1,1-Trichloroethane	0.861	0.094	0.313	0.072	54.800	3.570	0.389	1.298	0.300	0.227
Trichloroethylene	0.122	0.024	0.000	0.010	4.160	0.498	0.096	0.000	0.040	0.017
1,2,4-Trimethylbenzene	0.046	0.059	0.024	0.003	1.250	-	-	-	-	-
1,3,5-Trimethylbenzene	0.030	0.022	0.016	0.002	0.801	-	-	-	-	-
2,2,4-Trimethylpentane	0.897	0.196	0.288	0.051	14.000	3.194	0.698	1.025	0.181	0.050
Vinyl Chloride	1.440	0.168	0.359	0.093	5.340	2.806	0.327	0.700	0.181	0.010
Vinyl Bromide	0.000	0.000	0.000	0.000	0.321	0.000	0.000	0.000	0.000	0.001
m&p-Xylene	3.570	0.960	2.880	0.246	67.000	11.799	3.173	9.518	0.813	0.221
o-Xylene	1.830	0.192	0.581	0.050	19.400	6.048	0.635	1.920	0.165	0.064
Total Emissions (lbs)						142.318	29.707	93.250	7.490	1.671
Total Emissions (tons)						0.071	0.015	0.047	0.004	0.0008

Attachment 1

PM Performed Field Tasks (DRL-11)



PATRIOT ENGINEERING

FORM: DRL-11
PM Performed Field Tasks
Douglas Road Landfill (DRL) Superfund Site
Patriot Project No. 16-1731-04E

Employee	STEVE SITTLER							Week ending:	i-17-21	
Project #:	16-1731-04E								i-13	Total
Tasks and Description	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Hours		
B.1 – Site Security & Fence Inspections (1 x per month) Form DRL-1			0.50					0.50		
B.2 – Perimeter Security Fence/Post/Barbed Wire – All Repair (as needed)										
B.3 – Perimeter Fence Veg Control & Removal (Yearly Event)										
C.1 – Landfill Cap & Drainage System Inspections (2 x per month) Form DRL-3			0.75					0.75		
C.2 – Detailed Landfill Cap/Cover Inspections (Quarterly) Form DRL-3										
C.3.1 – Mow Southern Half of Drainage Ditches, Landfill Cap and Perimeter (Spring Quarter)										
C.3.2 – Mow other Half, of Drainage Ditches, Landfill Cap and Perimeter (Fall Quarter)										
C.3.3 – Mow All Perimeter Areas of Wetland Treatment System (Spring Quarter)										
C.4 – Vegetative Growth Control on Access Road and Drainage Ditches Ditch (Yearly Event)										
C.5 – Nuisance Animal Control (as needed, up to 10 events)										
D.1 – Landfill Gas System Inspections (2 x per month) Form DRL-2			0.75					0.75		
D.2 – Landfill Gas System Maintenance and Repairs (as needed)										
D.3.1 – Landfill Gas System Building Painting and Sealing (one event)										
D.3.2 – Landfill Gas System Building Maintenance and Repair (two events)										
E.1 – Landfill Compliance Monitoring (Quarterly) Form DRL- 4 and DRL-5										
E.2 – Landfill Compliance Sampling – Collect 8-hr Air Exhaust Samples (Quarterly)										
F.1 – Groundwater Monitoring Network Inspection and Maintenance (1Q and 3Q/ Year) Form DRL-7										
F.2 – Groundwater Monitoring Water Level Measurement and Sampling (1Q and 3Q/ Year) Form DRL-8										
F.5.1 – Monitoring Well Redevelopment (up to 4 wells)										
F.5.2 – Monitoring Well Abandonment (up to 4 wells)										
G.1 – Utility Support Services (up to 8 events)										
G.2 – Utility Systems Repair & Maintenance (up to 8 events)										
Total by Day:			2.0					2.0		



PATRIOT ENGINEERING

FORM: DRL-11
PM Performed Field Tasks
Douglas Road Landfill (DRL) Superfund Site
Patriot Project No. 16-1731-04E

Employee	STEVE SITTLER						
Project #:	16-1731-04E						
	Week ending: 2-7-2021						
					2/5		Total
Tasks and Description	Mon	Tue	Wed	Thu	Fri	Sat	Sun
B.1 – Site Security & Fence Inspections (1 x per month) Form DRL-1					0.50		0.50
B.2 – Perimeter Security Fence/Post/Barbed Wire – All Repair (as needed)							
B.3 – Perimeter Fence Veg Control & Removal (Yearly Event)							
C.1 – Landfill Cap & Drainage System Inspections (2 x per month) Form DRL-3					0.75		0.75
C.2 – Detailed Landfill Cap/Cover Inspections (Quarterly) Form DRL-3							
C.3.1 – Mow Southern Half of Drainage Ditches, Landfill Cap and Perimeter (Spring Quarter)							
C.3.2 – Mow other Half, of Drainage Ditches, Landfill Cap and Perimeter (Fall Quarter)							
C.3.3 – Mow All Perimeter Areas of Wetland Treatment System (Spring Quarter)							
C.4 – Vegetative Growth Control on Access Road and Drainage Ditches Ditch (Yearly Event)							
C.5 – Nuisance Animal Control (as needed, up to 10 events)							
D.1 – Landfill Gas System Inspections (2 x per month) Form DRL-2					0.75		0.75
D.2 – Landfill Gas System Maintenance and Repairs (as needed)							
D.3.1 – Landfill Gas System Building Painting and Sealing (one event)							
D.3.2 – Landfill Gas System Building Maintenance and Repair (two events)							
E.1 – Landfill Compliance Monitoring (Quarterly) Form DRL- 4 and DRL-5							
E.2 – Landfill Compliance Sampling – Collect 8-hr Air Exhaust Samples (Quarterly)							
F.1 – Groundwater Monitoring Network Inspection and Maintenance (1Q and 3Q/ Year) Form DRL-7							
F.2 – Groundwater Monitoring Water Level Measurement and Sampling (1Q and 3Q/ Year) Form DRL-8							
F.5.1 – Monitoring Well Redevelopment (up to 4 wells)							
F.5.2 – Monitoring Well Abandonment (up to 4 wells)							
G.1 – Utility Support Services (up to 8 events)							
G.2 – Utility Systems Repair & Maintenance (up to 8 events)							
Total by Day:					2.0		2.0



FORM: DRL-11
PM Performed Field Tasks
Douglas Road Landfill (DRL) Superfund Site
Patriot Project No. 16-1731-04E

Employee	Mack Runyon							
Project #:	16-1731-04E							
	Week ending: March 29, 2021							
				3/25				Total
Tasks and Description	Mon	Tue	Wed	Thrs	Fri	Sat	Sun	Hours
B.1 – Site Security & Fence Inspections (1 x per month) Form DRL-1				.75				.75
B.2 – Perimeter Security Fence/Post/Barbed Wire – All Repair (as needed)								
B.3 – Perimeter Fence Veg Control & Removal (Yearly Event)								
C.1 – Landfill Cap & Drainage System Inspections (2 x per month) Form DRL-3								
C.2 – Detailed Landfill Cap/Cover Inspections (Quarterly) Form DRL-3				4.25				4.25
C.3.1 – Mow Southern Half of Drainage Ditches, Landfill Cap and Perimeter (Spring Quarter)								
C.3.2 – Mow other Half, of Drainage Ditches, Landfill Cap and Perimeter (Fall Quarter)								
C.3.3 – Mow All Perimeter Areas of Wetland Treatment System (Spring Quarter)								
C.4 – Vegetative Growth Control on Access Road and Drainage Ditches Ditch (Yearly Event)								
C.5 – Nuisance Animal Control (as needed, up to 10 events)								
D.1 – Landfill Gas System Inspections (2 x per month) Form DRL-2				.5				.5
D.2 – Landfill Gas System Maintenance and Repairs (as needed)								
D.3.1 – Landfill Gas System Building Painting and Sealing (one event)								
D.3.2 – Landfill Gas System Building Maintenance and Repair (two events)								
E.1 – Landfill Compliance Monitoring (Quarterly) Form DRL- 4 and DRL-5								
E.2 – Landfill Compliance Sampling – Collect 8-hr Air Exhaust Samples (Quarterly)								
F.1 – Groundwater Monitoring Network Inspection and Maintenance (1Q and 3Q/ Year) Form DRL-7								
F.2 – Groundwater Monitoring Water Level Measurement and Sampling (1Q and 3Q/ Year) Form DRL-8								
F.5.1 – Monitoring Well Redevelopment (up to 4 wells)								
F.5.2 – Monitoring Well Abandonment (up to 4 wells)								
G.1 – Utility Support Services (up to 8 events)								
G.2 – Utility Systems Repair & Maintenance (up to 8 events)								
Total by Day:				5.5				5.5



FORM: DRL-11
PM Performed Field Tasks
Douglas Road Landfill (DRL) Superfund Site
Patriot Project No. 16-1731-04E

Employee Steve Sittler	Week ending: 3/28/21							
Project #: 16-1731-04E					3/26			Total
Tasks and Description	Mon	Tue	Wed	Thrs	Fri	Sat	Sun	Hours
B.1 – Site Security & Fence Inspections (1 x per month) Form DRL-1								
B.2 – Perimeter Security Fence/Post/Barbed Wire – All Repair (as needed)								
B.3 – Perimeter Fence Veg Control & Removal (Yearly Event)								
C.1 – Landfill Cap & Drainage System Inspections (2 x per month) Form DRL-3								
C.2 – Detailed Landfill Cap/Cover Inspections (Quarterly) Form DRL-3								
C.3.1 – Mow Southern Half of Drainage Ditches, Landfill Cap and Perimeter (Spring Quarter)								
C.3.2 – Mow other Half, of Drainage Ditches, Landfill Cap and Perimeter (Fall Quarter)								
C.3.3 – Mow All Perimeter Areas of Wetland Treatment System (Spring Quarter)								
C.4 – Vegetative Growth Control on Access Road and Drainage Ditches Ditch (Yearly Event)								
C.5 – Nuisance Animal Control (as needed, up to 10 events)								
D.1 – Landfill Gas System Inspections (2 x per month) Form DRL-2								
D.2 – Landfill Gas System Maintenance and Repairs (as needed)								
D.3.1 – Landfill Gas System Building Painting and Sealing (one event)								
D.3.2 – Landfill Gas System Building Maintenance and Repair (two events)								
E.1 – Landfill Compliance Monitoring (Quarterly) Form DRL- 4 and DRL-5								
E.2 – Landfill Compliance Sampling – Collect 8-hr Air Exhaust Samples (Quarterly)					4			4
F.1 – Groundwater Monitoring Network Inspection and Maintenance (1Q and 3Q/ Year) Form DRL-7								
F.2 – Groundwater Monitoring Water Level Measurement and Sampling (1Q and 3Q/ Year) Form DRL-8								
F.5.1 – Monitoring Well Redevelopment (up to 4 wells)								
F.5.2 – Monitoring Well Abandonment (up to 4 wells)								
G.1 – Utility Support Services (up to 8 events)								
G.2 – Utility Systems Repair & Maintenance (up to 8 events)								
Total by Day:					4			

Attachment 2

**Monthly Fence Inspections (DRL-1)
Monthly Landfill Cap and Drainage System Inspection (DRL-2)
Monthly Landfill Gas System Inspection (DRL-2)
Quarterly Landfill Cap/Cover Inspection (DRL-3)**

Form DRL-1
Douglas Road Landfill Superfund Site
Site Security and Fence Perimeter Inspections
Monthly Inspection Checklist (Task B.1)
Patriot Project Number 16-1731-04E

Inspection Date: 1-13-2021

Weather	Sunny	Partly Cloudy	Overcast	Rain	Snow
Temperature	32° or below	33° - 50°	51° - 70°	71° - 90°	90° or above
Winds	5 - 20 mph	20 - 40 mph	40 - 60 mph	60 mph +	
Humidity	Dry	Medium	Humid		

Inspection Performed By: STEVE SITTNER
 Title: SR. PROJECT MANAGER
 Company: PATRIOT ENGINEERING
 Additional Attendees: —

Photos Taken: Yes ☐ No ☒

Site Security and Fence Perimeter Inspections (Task B.1)

- Are the perimeter fence and gates in satisfactory conditions and free of debris in and around the foot of the fence? Yes ☒ No ☐

Notes and/or Recommendations for Actions:

- Are locks on the gate and shed functioning properly? Yes ☒ No ☐

Notes and/or Recommendations for Actions:

Gate open upon arrival - cell tower personnel on site at their location

- Are there any signs of vandalism, forced entry, or breaching of the fence or shed?

Yes ☐ No ☒

Notes and/or Recommendations for Actions:



PATRIOT ENGINEERING

Form DRL-1
Douglas Road Landfill Superfund Site
Site Security and Fence Perimeter Inspections
Monthly Inspection Checklist (Task B.1)
Patriot Project Number 16-1731-04E

Inspection Date: 2-5-2021

Weather	Sunny	Partly Cloudy	Overcast	Rain	Snow
Temperature	32° or below	33° - 50°	51° - 70°	71° - 90°	90° or above
Winds	5 - 20 mph	20 - 40 mph	40 - 60 mph	60 mph +	
Humidity	Dry	Medium	Humid		

Inspection Performed By: STEVE SITTLER
Title: SR. PROJECT MANAGER
Company: PATRIOT ENGINEERING
Additional Attendees: —

Photos Taken: Yes ☐ No ☒

Site Security and Fence Perimeter Inspections (Task B.1)

- Are the perimeter fence and gates in satisfactory conditions and free of debris in and around the foot of the fence? Yes ☒ No ☐

Notes and/or Recommendations for Actions:

- Are locks on the gate and shed functioning properly? Yes ☒ No ☐

Notes and/or Recommendations for Actions:

- Are there any signs of vandalism, forced entry, or breaching of the fence or shed?

Yes ☐ No ☒

Notes and/or Recommendations for Actions:



PATRIOT ENGINEERING

Form DRL-1
Douglas Road Landfill Superfund Site
Site Security and Fence Perimeter Inspections
Monthly Inspection Checklist (Task B.1)
Patriot Project Number 16-1731-04E

Inspection Date: 03/25/2021

Weather	Sunny	Partly Cloudy	Overcast	Rain	Snow
Temperature	32° or below	33° - 50°	51° - 70°	71° - 90°	90° or above
Winds	5 - 20 mph	20 - 40 mph	40 - 60 mph	60 mph +	
Humidity	Dry	Medium	Humid		

Inspection Performed By: Mack Runyon

Title: Staff Scientist

Company: Patriot Engineering and Environmental Inc.

Additional Attendees: _____

Photos Taken: Yes ☐ No ☒

Site Security and Fence Perimeter Inspections (Task B.1)

- Are the perimeter fence and gates in satisfactory conditions and free of debris in and around the foot of the fence? Yes ☒ No ☐

Notes and/or Recommendations for Actions:

- Are locks on the gate and shed functioning properly? Yes ☒ No ☐

Notes and/or Recommendations for Actions:

- Are there any signs of vandalism, forced entry, or breaching of the fence or shed?

Yes ☐ No ☒

Notes and/or Recommendations for Actions:



Form DRL-2
Douglas Road Landfill Superfund Site
Landfill Cap & Drainage System Inspections (Task C.1)
and Landfill Gas System Inspections (Task D.1)
Twice a Month Inspection Checklist
Patriot Project Number 16-1731-04E

Inspection Date: 1-13-2021

Weather	Sunny	Partly Cloudy	Overcast	Rain	Snow
Temperature	32° or below	33° - 50°	51° - 70°	71° - 90°	90° or above
Winds	5 - 20 mph	20 - 40 mph	40 - 60 mph	60 mph +	
Humidity	Dry	Medium	Humid		

Inspection Performed By: STEVE SITTLER
 Title: SR. PROJECT MANAGER
 Company: PATRIOT ENGINEERING
 Additional Attendees: —

Photos Taken: Yes ☐ No ☒

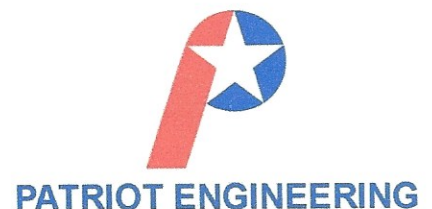
Landfill Cap Cover and Perimeter Drainage Ditch Inspections (Task C.1)

- Are there any holes, burrows, or other disturbances of the cap by animals or trespassers (especially any break 1.5 ft or more in depth)?
 Yes ☐ No ☒

Notes and/or Recommendations for Actions:

- Are there any depressions, general or localize, or evidence of standing water?
 Yes ☐ No ☒

Notes and/or Recommendations for Actions:



- Are there any signs of abnormal or excessive erosion within the main areas of the cap?

Yes ☐ No ☒

Notes and/or Recommendations for Actions:

- Is there a lack of vegetation due to either natural or manmade causes?

Yes ☐ No ☒

Notes and/or Recommendations for Actions:

- Are the storm drains within the perimeter ditch and the perimeter ditch itself free of debris?

Yes ☒ No ☐

Notes and/or Recommendations for Actions:

- Is there excessive standing water (greater than 20%) in the perimeter ditch?

Yes ☐ No ☒

Notes and/or Recommendations for Actions:

Landfill Gas System Inspections (Task D.1)Landfill Gas Collection System

- Are the vent wells in satisfactory condition? Note any signs of aging such as cracking and/or discoloration and any obstructions.

Yes ☒ No ☐

Notes and/or Recommendations for Actions:

- Are there any depressions or other signs of surface material eroding into the collector trenches, such as cracks in the soil overlying the trench?

Yes ☐ No ☒

Notes and/or Recommendations for Actions:

- Verify operations of rotron blower, check for any abnormal sounds and collect readings from all gauges.

Yes ☒ No ☐

Notes and/or Recommendations for Actions:

Blower Gauge @ -1 " H₂O KO Tank Gauge @ -3.5 " H₂O

- Drain the moisture separator if there is more than 6" of liquid present and pull and clean or replace air filter element as necessary.

Yes ☐ No ☒

Notes and/or Recommendations for Actions:

Landfill Gas Monitoring System

- Are the monitoring probes in satisfactory condition? Note any signs of aging such as cracking and/or discoloration and any obstructions.

Yes ☒ No ☐

Notes and/or Recommendations for Actions:

- Are there any signs of subsidence around the monitoring probes?

Yes ☐ No ☒

Notes and/or Recommendations for Actions:

Form DRL-2
Douglas Road Landfill Superfund Site
Landfill Cap & Drainage System Inspections (Task C.1)
and Landfill Gas System Inspections (Task D.1)
Twice a Month Inspection Checklist
Patriot Project Number 16-1731-04E

Inspection Date: 2-5-2021

Weather	Sunny	Partly Cloudy	Overcast	Rain	Snow
Temperature	32° or below	33° - 50°	51° - 70°	71° - 90°	90° or above
Winds	5 - 20 mph	20 - 40 mph	40 - 60 mph	60 mph +	
Humidity	Dry	Medium	Humid		

Inspection Performed By: STEVE SITTLER
Title: SR. PROJECT MANAGER
Company: PATRIOT ENGINEERING
Additional Attendees: —

Photos Taken: Yes ☐ No ☒

Landfill Cap Cover and Perimeter Drainage Ditch Inspections (Task C.1)

- Are there any holes, burrows, or other disturbances of the cap by animals or trespassers (especially any break 1.5 ft or more in depth)?

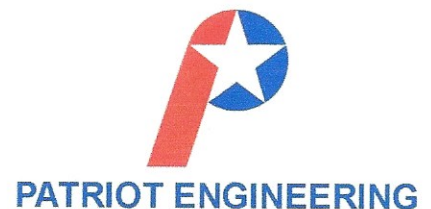
Yes ☐ No ☒

Notes and/or Recommendations for Actions:

- Are there any depressions, general or localize, or evidence of standing water?

Yes ☐ No ☒

Notes and/or Recommendations for Actions:



- Are there any signs of abnormal or excessive erosion within the main areas of the cap?

Yes ☐ No ☒

Notes and/or Recommendations for Actions:

- Is there a lack of vegetation due to either natural or manmade causes?

Yes ☐ No ☒

Notes and/or Recommendations for Actions:

- Are the storm drains within the perimeter ditch and the perimeter ditch itself free of debris?

Yes ☒ No ☐

Notes and/or Recommendations for Actions:

- Is there excessive standing water (greater than 20%) in the perimeter ditch?

Yes ☐ No ☒

Notes and/or Recommendations for Actions:

Landfill Gas System Inspections (Task D.1)Landfill Gas Collection System

- Are the vent wells in satisfactory condition? Note any signs of aging such as cracking and/or discoloration and any obstructions.

Yes ☒ No ☐

Notes and/or Recommendations for Actions:

- Are there any depressions or other signs of surface material eroding into the collector trenches, such as cracks in the soil overlying the trench?

Yes ☐ No ☒

Notes and/or Recommendations for Actions:

- Verify operations of rotron blower, check for any abnormal sounds and collect readings from all gauges.

Yes ☒ No ☐

Notes and/or Recommendations for Actions:

Blower Gauge @ -2 " H₂O KO Tank Gauge @ -1.5 " H₂O

- Drain the moisture separator if there is more than 6" of liquid present and pull and clean or replace air filter element as necessary.

Yes ☐ No ☒

Notes and/or Recommendations for Actions:

Landfill Gas Monitoring System

- Are the monitoring probes in satisfactory condition? Note any signs of aging such as cracking and/or discoloration and any obstructions.

Yes ☒ No ☐

Notes and/or Recommendations for Actions:

- Are there any signs of subsidence around the monitoring probes?

Yes ☐ No ☒

Notes and/or Recommendations for Actions:

Form DRL-3
Douglas Road Landfill Superfund Site
Detail Landfill Cap/Cover Inspection (Task C.2)
Quarterly Inspection Checklist
Patriot Project Number 16-1731-04E

Inspection Date: 03/25/2021

Weather	Sunny	Partly Cloudy	Overcast	Rain	Snow
Temperature	32° or below	33° - 50°	51° - 70°	71° - 90°	90° or above
Winds	5 - 20 mph	20 - 40 mph	40 - 60 mph	60 mph +	
Humidity	Dry	Medium	Humid		

Inspection Performed By: Mack Runyon
Title: Staff Scientist
Company: Patriot Engineering and Environmental Inc.
Additional Attendees: No

Photos Taken: Yes ☐ No ☒

General Conclusions on the Condition of the Landfill Cap:

No Significant changes from previous inspection. Once vegetation and grass recover from winter mowing and trimming will need to happen.

Report Prepared By: Mack Runyon

(Signature): *Mack Runyon*

Date: 3/25/21



Landfill Cap and Vegetation (Task C.2)

The landfill cap should be inspected by traversing the entire site and observing the surface of the cap. The final design grading and topography of the landfill cap is shown in Sheets 9 & 10, Appendix B of the O&M Manual. Items to note include:

Are there any depressions, general or localized or evidence of standing water? Yes ☐ No ☒

Are there any holes, burrows, or other disturbances of the cap by animals or trespassers (especially any breach 2.5 feet or more in depth)? Yes ☐ No ☒

Has adequate maintenance been performed (e.g. should mowing frequency be increased or decreased)? Yes ☒ No ☐

Have previously recommended repairs been made? Yes ☒ No ☐

Is there a lack of vegetation due to either natural or manmade activities? Yes ☐ No ☒

Are there any signs of abnormal or excessive erosion on the main areas of the cap? Yes ☐ No ☒

Notes and/or Recommendations for Actions:

Landfill Gas Venting System (Task C.2)

The landfill gas venting system should be inspected when the landfill cap and vegetation are inspected. Observations should be included in the quarterly inspection report. The landfill gas venting system consist of a series of shallow gas collector trenches (about 5 feet deep) within the middle portion of the landfill. The collector trenches contain 6-inch diameter corrugated and perforated horizontal HDPE gas collection pipes that have been backfilled with coarse aggregate. The 6-inch diameter HDPE gas collection pipes are connected to 6-inch diameter vertical polyvinyl chloride (PVC) gas vents that extend about 7 feet above the final landfill grade. The locations of the collector trenches and PVC gas vents are shown in the O&M Manual. Typical sections through collector and interceptor trenches and the PVC gas vent details are also shown. Inspection of the system should include walking the ground surface along the length of the collector and interceptor trenches and observing PVC gas vents. Items to note include:

Are the PVC gas vents in satisfactory condition?

Yes ☒ No ☐

Are there any signs on the PVC gas vents that show aging such as cracking, and/or discoloration?

Yes ☐ No ☒

The gas vents are showing signs of aging (rusting, discoloration, labeling wearing off), however, the structure and performance of the vent wells are in satisfactory condition.

Are there any obstructions around the vent caps?

Yes ☐ No ☒

Are there any depressions or other signs of surface material eroding into the collector trenches, such as cracks in the soil overlying the trench?

Yes ☐ No ☒

Notes and/or Recommendations for Actions:

Other Items (Task C.2)

The perimeter of the landfill is fenced for security purposes. The fence and each of the three gates should be inspected and observations should be included in the quarterly inspection report. Items to include:

Are the perimeter fence and gates in satisfactory condition? Yes ☒ No ☐

Are all locks functioning properly? Yes ☒ No ☐

Are there signs of vandalism, forced entry, or breaching of the fence? Yes ☐ No ☒

Is there any evidence of debris collection in or around the foot of the fence? Yes ☐ No ☒

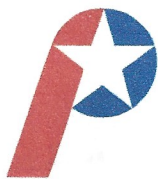
Are the gravel paths graded and free of vegetation? Yes ☐ No ☒

Some vegetation in the gravel paths but the road is still mostly visible.

Notes and/or Recommendations for Actions:

Attachment 3

Landfill Gas (LG) Vent Wells and Gas Monitoring (GM) Probes Results



PATRIOT ENGINEERING

FORM: DRL-4 DOUGLAS ROAD LANDFILL LANDFILL GAS COLLECTOR READINGS

Technician: Mack Runyon Date: 3/25/21

Weather: Ambient Temperature: 55 to 57 Degrees F

Atmospheric Pressure: 29.77 to 29.89 inHg

General Conditions: Mostly Clear/Cloudy

Instrument: RKI Eagle 2 Serial No.: E2A625

Location	Time	CH ₄ (%)	Oxygen (%)	CO ₂ (%)	CH ₄ (% LEL)	Notes:
LG-1	13:15	00.0	17.5	3.8	000	
LG-2	13:18	00.0	19.5	1.5	000	
LG-3	13:22	01.5	7.1	11.3	030	
LG-4	13:26	03.5	4.7	14.2	070	
LG-5	13:30	00.5	10.6	9.1	010	
LG-6	13:35	08.1	3.7	16.1	>100	
LG-7	13:40	03.1	12.7	6.7	062	
LG-8	13:44	00.1	7.1	11.1	002	
LG-9	13:49	01.6	4.2	13.8	032	
LG-10	13:53	01.7	2.9	14.4	034	
LG-11	13:58	00.4	8.1	11.5	008	
LG-12	14:03	02.3	05.1	14.1	046	
LG-13	14:08	05.2	0.7	17.2	>100	
LG-14	14:13	00.7	8.2	11.4	014	
LG-15	14:18	01.1	3.1	16.9	022	
INSIDE OF SHED	14:25	1.9	10.1	9.5	038	

Mack Runyon
Signature of Technician

3/25/21
Date

NOTES:



PATRIOT ENGINEERING

FORM: DRL-5 DOUGLAS ROAD LANDFILL LANDFILL GAS MONITORING PROBE READINGS

Technician: Mack Runyon

Date: 3/25/21

Weather: Ambient Temperature: 55 to 57 Degrees F

Atmospheric Pressure: 29.77 to 29.89 inHg

General Conditions: Mostly Clear/Cloudy

Instrument: RKI Eagle 2 Serial No.: E2A625

Location	Time	CH ₄ (%)	Oxygen (%)	CO ₂ (%)	CH ₄ (% LEL)	Notes:
GM-1	14:35	00.0	13.7	5.9	000	
GM -2	14:41	00.2	18.1	04.5	004	
GM -3	14:45	00.1	19.1	02.8	002	
GM -4	14:50	00.0	18.9	00.3	000	
GM -5	14:54	00.2	20.6	00.0	004	
GM -6	14:59	00.1	20.7	00.2	002	
GM -7	15:03	00.0	20.9	00.1	000	
GM -8	15:08	00.0	20.3	00.3	000	
GM -9	15:12	00.1	20.3	00.4	002	
GM -10	15:16	00.5	19.4	00.5	010	
GM -11	15:20	00.0	20.3	00.5	000	
GM -12	15:25	00.0	20.5	00.1	000	
GM -13	15:29	00.0	20.3	00.2	000	
GM -14	15:34	00.1	19.5	00.6	002	
GM -15	15:41	00.1	19.7	00.6	002	
GM -16	15:46	00.2	19.8	00.1	004	
GM -17	15:51	00.2	20.1	00.6	004	
GM -18	15:55	00.1	20.3	00.3	002	

Mack Runyon
Signature of Technician

3/25/21
Date

NOTES:

Attachment 4

Landfill Gas Effluent Analytical Report

April 05, 2021

Patriot Engineering - Ft. Wayne

Sample Delivery Group: L1331659
Samples Received: 03/27/2021
Project Number: 16-1731-04E
Description: Douglas Landfill
Site: MISHAWAKA, IN
Report To: Kendra Grossman Gutowski
6150 E. 75th Street
Indianapolis, IN 46250

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Entire Report Reviewed By:



Heather J Wagner
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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Volatile Organic Compounds (MS) by Method TO-15	7	⁵ Sr
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		⁸ Al
		⁹ Sc

SAMPLE SUMMARY

EFFLUENT AIR L1331659-01 Air

Collected by
Steve Sittler

Collected date/time
03/26/21 16:41

Received date/time
03/27/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1644041	1	04/01/21 19:05	04/01/21 19:05	DAH	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1644647	10	04/02/21 19:46	04/02/21 19:46	MBF	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

ACCOUNT:

Patriot Engineering - Ft. Wayne

PROJECT:

16-1731-04E

SDG:

L1331659

DATE/TIME:

04/05/21 14:28

PAGE:

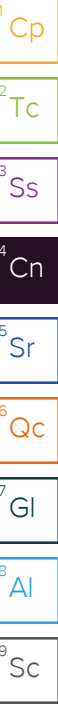
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CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Heather J Wagner
Project Manager



EFFLUENT AIR

Collected date/time: 03/26/21 16:41

SAMPLE RESULTS - 01

L1331659

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	4.99	11.9		1	WG1644041
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1644041
Benzene	71-43-2	78.10	0.200	0.639	6.04	19.3		1	WG1644041
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1644041
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1644041
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1644041
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1644041
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1644041
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1644041
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1644041
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1644041
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1644041
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1644041
Chloromethane	74-87-3	50.50	0.200	0.413	0.448	0.925		1	WG1644041
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1644041
Cyclohexane	110-82-7	84.20	0.200	0.689	43.4	149		1	WG1644041
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1644041
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1644041
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1644041
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1644041
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1644041
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1644041
1,1-Dichloroethane	75-34-3	98	0.200	0.802	17.2	68.9		1	WG1644041
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1644041
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	22.6	89.6		1	WG1644041
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	0.376	1.49		1	WG1644041
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1644041
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1644041
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1644041
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1644041
Ethanol	64-17-5	46.10	0.630	1.19	3.59	6.77		1	WG1644041
Ethylbenzene	100-41-4	106	0.200	0.867	12.6	54.6		1	WG1644041
4-Ethyltoluene	622-96-8	120	0.200	0.982	0.980	4.81		1	WG1644041
Trichlorofluoromethane	75-69-4	137.40	2.00	11.2	125	702		10	WG1644647
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	1.41	6.97		1	WG1644041
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1644041
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1644041
Heptane	142-82-5	100	0.200	0.818	23.3	95.3		1	WG1644041
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1644041
n-Hexane	110-54-3	86.20	0.630	2.22	67.8	239		1	WG1644041
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1644041
Methylene Chloride	75-09-2	84.90	0.200	0.694	2.79	9.69		1	WG1644041
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1644041
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1644041
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1644041
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1644041
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1644041
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1644041
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1644041
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1644041
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1644041
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1644041
Tetrachloroethylene	127-18-4	166	0.200	1.36	4.30	29.2		1	WG1644041
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1644041
Toluene	108-88-3	92.10	5.00	18.8	264	994		10	WG1644647
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1644041

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

ACCOUNT:

Patriot Engineering - Ft. Wayne

PROJECT:

16-1731-04E

SDG:

L1331659

DATE/TIME:

04/05/21 14:28

PAGE:

5 of 14

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	54.8	298		1	WG1644041
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1644041
Trichloroethylene	79-01-6	131	0.200	1.07	4.16	22.3		1	WG1644041
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	1.25	6.13		1	WG1644041
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	0.801	3.93		1	WG1644041
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	14.0	65.4		1	WG1644041
Vinyl chloride	75-01-4	62.50	0.200	0.511	5.34	13.7		1	WG1644041
Vinyl Bromide	593-60-2	106.95	0.200	0.875	0.321	1.40		1	WG1644041
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1644041
m&p-Xylene	1330-20-7	106	0.400	1.73	67.0	290		1	WG1644041
o-Xylene	95-47-6	106	0.200	0.867	19.4	84.1		1	WG1644041
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		100				WG1644041
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		102				WG1644647

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3637323-3 04/01/21 10:10

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	U		0.584	1.25
Allyl Chloride	U		0.114	0.200
Benzene	U		0.0715	0.200
Benzyl Chloride	U		0.0598	0.200
Bromodichloromethane	U		0.0702	0.200
Bromoform	U		0.0732	0.600
Bromomethane	U		0.0982	0.200
1,3-Butadiene	U		0.104	2.00
Carbon disulfide	U		0.102	0.200
Carbon tetrachloride	U		0.0732	0.200
Chlorobenzene	U		0.0832	0.200
Chloroethane	U		0.0996	0.200
Chloroform	U		0.0717	0.200
Chloromethane	U		0.103	0.200
2-Chlorotoluene	U		0.0828	0.200
Cyclohexane	U		0.0753	0.200
Dibromochloromethane	U		0.0727	0.200
1,2-Dibromoethane	U		0.0721	0.200
1,2-Dichlorobenzene	U		0.128	0.200
1,3-Dichlorobenzene	U		0.182	0.200
1,4-Dichlorobenzene	U		0.0557	0.200
1,2-Dichloroethane	U		0.0700	0.200
1,1-Dichloroethane	U		0.0723	0.200
1,1-Dichloroethene	U		0.0762	0.200
cis-1,2-Dichloroethene	U		0.0784	0.200
trans-1,2-Dichloroethene	U		0.0673	0.200
1,2-Dichloropropane	U		0.0760	0.200
cis-1,3-Dichloropropene	U		0.0689	0.200
trans-1,3-Dichloropropene	U		0.0728	0.200
1,4-Dioxane	U		0.0833	0.200
Ethylbenzene	U		0.0835	0.200
4-Ethyltoluene	U		0.0783	0.200
Dichlorodifluoromethane	U		0.137	0.200
1,1,2-Trichlorotrifluoroethane	U		0.0793	0.200
1,2-Dichlorotetrafluoroethane	U		0.0890	0.200
Heptane	U		0.104	0.200
Hexachloro-1,3-butadiene	U		0.105	0.630
n-Hexane	U		0.206	0.630
Isopropylbenzene	U		0.0777	0.200
Methylene Chloride	0.105	U	0.0979	0.200

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3637323-3 04/01/21 10:10

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Methyl Butyl Ketone	U		0.133	1.25
2-Butanone (MEK)	U		0.0814	1.25
4-Methyl-2-pentanone (MIBK)	U		0.0765	1.25
Methyl Methacrylate	U		0.0876	0.200
MTBE	U		0.0647	0.200
Naphthalene	U		0.350	0.630
2-Propanol	U		0.264	1.25
Propene	0.150	U	0.0932	0.400
Styrene	U		0.0788	0.200
1,1,2,2-Tetrachloroethane	U		0.0743	0.200
Tetrachloroethylene	U		0.0814	0.200
Tetrahydrofuran	U		0.0734	0.200
1,2,4-Trichlorobenzene	U		0.148	0.630
1,1,1-Trichloroethane	U		0.0736	0.200
1,1,2-Trichloroethane	U		0.0775	0.200
Trichloroethylene	0.156	U	0.0680	0.200
1,2,4-Trimethylbenzene	U		0.0764	0.200
1,3,5-Trimethylbenzene	U		0.0779	0.200
2,2,4-Trimethylpentane	U		0.133	0.200
Vinyl chloride	U		0.0949	0.200
Vinyl Bromide	U		0.0852	0.200
Vinyl acetate	U		0.116	0.200
m&p-Xylene	U		0.135	0.400
o-Xylene	U		0.0828	0.200
Ethanol	U		0.265	0.630
(S) 1,4-Bromofluorobenzene	98.2			60.0-140

¹Cp

²Tc

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⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3637323-1 04/01/21 08:50 • (LCSD) R3637323-2 04/01/21 09:31

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethanol	3.75	3.31	3.46	88.3	92.3	55.0-148			4.43	25
Propene	3.75	4.22	4.10	113	109	64.0-144			2.88	25
Dichlorodifluoromethane	3.75	4.23	4.16	113	111	64.0-139			1.67	25
1,2-Dichlorotetrafluoroethane	3.75	4.11	4.14	110	110	70.0-130			0.727	25
Chloromethane	3.75	3.87	3.93	103	105	70.0-130			1.54	25
Vinyl chloride	3.75	4.00	4.10	107	109	70.0-130			2.47	25
1,3-Butadiene	3.75	3.91	4.00	104	107	70.0-130			2.28	25

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3637323-1 04/01/21 08:50 • (LCSD) R3637323-2 04/01/21 09:31

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Bromomethane	3.75	3.99	3.94	106	105	70.0-130			1.26	25
Chloroethane	3.75	3.94	3.82	105	102	70.0-130			3.09	25
1,1,2-Trichlorotrifluoroethane	3.75	4.04	4.08	108	109	70.0-130			0.985	25
1,1-Dichloroethene	3.75	4.07	3.99	109	106	70.0-130			1.99	25
1,1-Dichloroethane	3.75	4.04	4.05	108	108	70.0-130			0.247	25
Acetone	3.75	3.77	3.73	101	99.5	70.0-130			1.07	25
2-Propanol	3.75	3.76	3.80	100	101	70.0-139			1.06	25
Carbon disulfide	3.75	4.12	4.11	110	110	70.0-130			0.243	25
Methylene Chloride	3.75	4.08	4.05	109	108	70.0-130			0.738	25
MTBE	3.75	4.00	4.00	107	107	70.0-130			0.000	25
trans-1,2-Dichloroethene	3.75	4.03	3.99	107	106	70.0-130			0.998	25
n-Hexane	3.75	4.12	4.06	110	108	70.0-130			1.47	25
Vinyl acetate	3.75	3.88	3.96	103	106	70.0-130			2.04	25
Methyl Ethyl Ketone	3.75	3.95	3.97	105	106	70.0-130			0.505	25
cis-1,2-Dichloroethene	3.75	4.19	4.07	112	109	70.0-130			2.91	25
Chloroform	3.75	4.06	4.12	108	110	70.0-130			1.47	25
Cyclohexane	3.75	4.03	4.10	107	109	70.0-130			1.72	25
1,1,1-Trichloroethane	3.75	4.13	4.13	110	110	70.0-130			0.000	25
Carbon tetrachloride	3.75	4.11	4.08	110	109	70.0-130			0.733	25
Benzene	3.75	4.06	4.05	108	108	70.0-130			0.247	25
1,2-Dichloroethane	3.75	4.15	4.10	111	109	70.0-130			1.21	25
Heptane	3.75	4.28	4.30	114	115	70.0-130			0.466	25
Trichloroethylene	3.75	3.47	3.40	92.5	90.7	70.0-130			2.04	25
1,2-Dichloropropane	3.75	4.01	4.03	107	107	70.0-130			0.498	25
1,4-Dioxane	3.75	3.74	3.71	99.7	98.9	70.0-140			0.805	25
Bromodichloromethane	3.75	4.12	4.05	110	108	70.0-130			1.71	25
cis-1,3-Dichloropropene	3.75	4.09	4.07	109	109	70.0-130			0.490	25
4-Methyl-2-pentanone (MIBK)	3.75	4.01	4.01	107	107	70.0-139			0.000	25
trans-1,3-Dichloropropene	3.75	4.16	4.20	111	112	70.0-130			0.957	25
1,1,2-Trichloroethane	3.75	4.06	4.01	108	107	70.0-130			1.24	25
Tetrachloroethylene	3.75	4.07	4.06	109	108	70.0-130			0.246	25
Methyl Butyl Ketone	3.75	4.02	4.09	107	109	70.0-149			1.73	25
Dibromochloromethane	3.75	4.13	4.12	110	110	70.0-130			0.242	25
1,2-Dibromoethane	3.75	4.06	4.04	108	108	70.0-130			0.494	25
Chlorobenzene	3.75	4.10	4.13	109	110	70.0-130			0.729	25
Ethylbenzene	3.75	4.01	4.08	107	109	70.0-130			1.73	25
m&p-Xylene	7.50	8.14	8.22	109	110	70.0-130			0.978	25
o-Xylene	3.75	4.06	4.07	108	109	70.0-130			0.246	25
Styrene	3.75	4.14	4.15	110	111	70.0-130			0.241	25
Bromoform	3.75	4.10	4.11	109	110	70.0-130			0.244	25

1Cp

2Tc

3Ss

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8Al

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Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3637323-1 04/01/21 08:50 • (LCSD) R3637323-2 04/01/21 09:31

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
1,1,2,2-Tetrachloroethane	3.75	4.07	4.08	109	109	70.0-130			0.245	25
4-Ethyltoluene	3.75	4.05	4.07	108	109	70.0-130			0.493	25
1,3,5-Trimethylbenzene	3.75	4.09	4.10	109	109	70.0-130			0.244	25
1,2,4-Trimethylbenzene	3.75	4.01	4.06	107	108	70.0-130			1.24	25
1,3-Dichlorobenzene	3.75	4.02	4.08	107	109	70.0-130			1.48	25
1,4-Dichlorobenzene	3.75	4.05	4.11	108	110	70.0-130			1.47	25
Benzyl Chloride	3.75	3.99	4.05	106	108	70.0-152			1.49	25
1,2-Dichlorobenzene	3.75	4.02	4.07	107	109	70.0-130			1.24	25
1,2,4-Trichlorobenzene	3.75	3.92	4.02	105	107	70.0-160			2.52	25
Hexachloro-1,3-butadiene	3.75	3.94	3.99	105	106	70.0-151			1.26	25
Naphthalene	3.75	3.97	4.07	106	109	70.0-159			2.49	25
Allyl Chloride	3.75	4.08	4.12	109	110	70.0-130			0.976	25
2-Chlorotoluene	3.75	4.07	4.12	109	110	70.0-130			1.22	25
Methyl Methacrylate	3.75	3.84	3.80	102	101	70.0-130			1.05	25
Tetrahydrofuran	3.75	4.30	4.24	115	113	70.0-137			1.41	25
2,2,4-Trimethylpentane	3.75	4.13	4.16	110	111	70.0-130			0.724	25
Vinyl Bromide	3.75	3.97	3.94	106	105	70.0-130			0.759	25
Isopropylbenzene	3.75	4.10	4.13	109	110	70.0-130			0.729	25
(S) 1,4-Bromofluorobenzene				99.9	101	60.0-140				

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Tc

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Sr

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Qc

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Sc

Method Blank (MB)

(MB) R3637572-3 04/02/21 10:04

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ppbv		ppbv	ppbv
Trichlorofluoromethane	U		0.0819	0.200
Toluene	U		0.0870	0.500
(S) 1,4-Bromofluorobenzene	102			60.0-140

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3637572-1 04/02/21 07:47 • (LCSD) R3637572-2 04/02/21 08:27

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ppbv	ppbv	ppbv	%	%	%			%	%
Trichlorofluoromethane	3.75	3.85	3.97	103	106	70.0-130			3.07	25
Toluene	3.75	4.44	4.50	118	120	70.0-130			1.34	25
(S) 1,4-Bromofluorobenzene				102	102	60.0-140				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

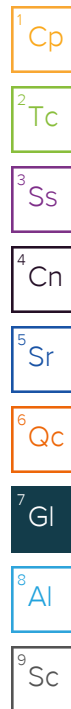
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
---	---



ACCREDITATIONS & LOCATIONS

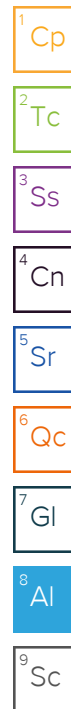
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



[illegible]

Attachment 5

Landfill Gas Effluent Data Validation Memorandum

April 6, 2021

RE: Validation of Analytical Results for the
Douglas Road Landfill Superfund Site #7500008
First Quarter 2021

The analytical results for the effluent vapor sample collected from the Douglas Road Landfill Superfund Site #7500008 in Mishawaka, Indiana on March 25, 2021 have been validated according to the criteria contained in Section 1.5 of the project specific Quality Assurance Project Plan (QAPP), dated June 24, 2016 and the Sampling and Analysis Plan (SAP), dated September 12, 2016. Quality Assurance/Quality Control (QA/QC) data quality objectives (DQO) were evaluated in terms of precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS). Reasons that the data are qualified are explained below.

GENERAL COMMENTS

The purpose of this event was to aid in the determination of volatile organic compounds (VOCs) discharges to the atmosphere. The effluent vapor sample identified as "Effluent Air", which was collected from the blower discharge at the site on March 26, 2021, was shipped on March 26 via overnight delivery and was received by Pace Analytical National Center for Testing and Innovation (Pace National), in Mt. Juliet, Tennessee on March 27, 2021. The analytical data are presented in an Analytical Report package (Sample Delivery Group L1331659, analytical batch WG1644041) dated April 5, 2021 that covers one investigative sample (Effluent Air) and laboratory QC samples. The sample was analyzed for VOCs using Air Method, Toxic Organics-15 (TO-15) and by mass spectrometry (MS). Two constituents, trichlorofluoromethane and toluene were diluted with a 10 times dilution factor, but all other sample aliquots were diluted with a 1 times dilution factor. There are no qualifiers in the report to indicate that the data quality was affected by the dilution.

The chain-of-custody was completed by the field sampling personnel. The laboratory indicated on the chain-of-custody form that the sample arrived intact, in the proper container, and with sufficient volume. The laboratory report also stated that all sample aliquots were received in laboratory supplied containers for the specified analysis and methodology of each COC and within method-specified holding times.

PRECISION

Field Precision

No duplicate was collected; therefore, field precision cannot be determined.

Laboratory Precision

Precision of the laboratory analyses are evaluated based upon the results of the laboratory control sample (LCS) / laboratory control sample duplicate (LCSD) analyses. Precision is reported as a relative percent difference (RPD) between the LCS and the LCSD. The RPDs ranged from 0.000% and 4.43%, all of which are well below the 25% acceptance criteria for the RPD.

ACCURACY

Field Accuracy

Trip blanks are used to assess field accuracy. The trip blank samples provide a measure of potential cross contamination of samples by VOCs during shipment and handling. For a TO-15 air analyses, a trip blank is not customary and as a result, a trip blank was not collected during this sampling event. Therefore, the occurrence of VOC cross-contamination cannot be determined.

Laboratory Accuracy

Laboratory accuracy was assessed by determining percent recoveries of a surrogate compound from the effluent vapor sample and the laboratory method blank, and percent recoveries of the spike amounts from the LCS and LCSD samples. Surrogate recovery of 1,4-bromofluorobenzene was 102 parts per billion by volume (ppbv) which is within the acceptable limits of 60.0 to 140 ppbv in the exhaust air sample Effluent Air. The surrogate recovery for the method blank was 98.2, which is within the acceptable limits of 60.0 to 140 ppbv. The spike recoveries for the LCS and LCSD samples were also within the acceptable limits of 60.0 to 140 ppbv.

Method blanks are used to assess potential for contamination from laboratory instruments or procedures. The laboratory ran one method blank for the sample batch that contained the exhaust air sample. All target analytes were qualified as not detected (U), except Methylene Chloride, Propene, and Trichloroethylene. These three exceptions were qualified as acceptable analytes since the value is an estimate (J). Therefore, the method blank is considered free of contamination.

REPRESENTATIVENESS

Representativeness is dependent upon the proper design of the sampling program and is accomplished by ensuring that the QAPP, the SAP, and standard procedures are followed. The goal is to have all samples and measurements representative of the media sampled. A review of the field notes and the chain-of-custody indicated that sampling protocols as outlined in the QAPP and SAP were followed during the sampling event.

COMPLETENESS OF DATA SET

Completeness is defined as the total number of usable results (results that were not rejected during data validation) divided by the total results reported by the laboratory. The field completeness goals stated in the QAPP is to have 90% of all samples be valid data. Completeness was assessed by comparing the number of valid (usable) sample results to the total possible number of results within a specific sample matrix or analysis. There was only one sampled, which was determined to be valid. Therefore, the results reported by the laboratory were 100% complete.

COMPARABILITY

The current sampling event was based on similar objectives, standardized methods, and set remedial goals. The same target analytes as historical results were reported. During the previous sampling event in the 1st quarter of 2020, 29 target analytes were reported with detectable concentrations; During the 2nd quarter of 2020 sampling event, there were 24 target analytes detected; During the 3rd quarter of 2020 sampling event, there were 32 target analytes detected; During the 4th quarter of 2020 sampling event, there were 29 target analytes detected. During the 1st Quarter of 2021, 26 target analytes were reported with detectable concentrations. Two compounds were reported in the 1st Quarter 2021 that were not detected in the 4th Quarter 2020 and five compounds were detected in the 4th Quarter 2020 that was not detected during the 1st Quarter 2021 sampling event. One compound, Vinyl Bromide was reported during this quarter that had not been previously reported in 2020. The comparison between the quarter detections can be seen in the attached Table, VOCs and hazardous air pollutants (HAPs) Discharge Summary Comparison.

The total emissions for the 1st quarter 2021 were estimated at 2.49 pounds of total VOCs and 1.67 pounds of HAPs, compared to 9.58 pounds of total VOCs and 7.49 pounds of HAPs in the 4th quarter 2020. The emissions for VOCs and HASPs have been decreasing since the 3rd quarter of 2020.

SENSITIVITY

The quantitation limits for the sample data were reviewed to ensure that the sensitivity of the analyses was sufficient to achieve the Site Closure Goal. The laboratory reported detection limits (RDLs) are based on the method detection limit (MDL) adjusted for sample size and dilution. The RDLs adjusted for dilution ranged from 0.413 to 18.8 micrograms per cubic meter (ug/m³). The majority of the adjusted RDLs are greater than the MDLs specified in Appendix C, Table 2 of the QAPP.

CONCLUSIONS

The data review process involved evaluating sample receipt, holding times, laboratory duplicate results, laboratory spike and spike duplicate results, laboratory control sample results, and surrogate recoveries. After evaluating these parameters, an overall assessment with respect to the quantitative and qualitative data quality assurance parameters of accuracy, precision, completeness, comparability, and representativeness was formulated. Based on the evaluation, it has been determined that the results are acceptable for use. Although sample dilution resulted in laboratory RDLs outside of the RDLs outlined in the QAPP, the data are still acceptable for the stated purpose of evaluating trends in the LFG vapor generation rates and evaluating the discharge of organic HAPs to the atmosphere.

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Attachment:

Table of Quarterly Detected Compounds

Attachment

VOCs and HAPs 2020 and 2021 Discharge Summary Comparison Table

VOCs 2021 Discharge Summary Comparison
Operation and Maintenance Report
Douglas Road Landfill Superfund Site
Mishawaka, Indiana

Compound	Detected Components					VOC Emission Rate				
	1Q2020 C (ppmv)	2Q2020 C (ppmv)	3Q2020 C (ppmv)	4Q2020 C (ppmv)	1Q2021 C (ppmv)	1Q2020 ER (lb/qtr)	2Q2020 ER (lb/qtr)	3Q2020 ER (lb/qtr)	4Q2020 ER (lb/qtr)	1Q2021 ER (lb/qtr)
Acetone	0.368	0.133	0.089	0.006	4.990	0.667	0.241	0.161	0.011	0.009
Allyl Chloride	0.000	0.000	0.0008	0.000	0.000	0.000	0.000	0.001	0.000	0.000
Benzene	2.010	0.261	0.498	0.059	6.040	4.894	0.636	1.213	0.144	0.015
Carbon disulfide	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.002	0.000	0.000
Chloroethane	0.203	0.000	0.089	0.006	0.000	0.408	0.000	0.178	0.012	0.000
Chloromethane	0.000	0.000	0.003	0.000	0.448	0.000	0.000	0.005	0.001	0.001
Cyclohexane	2.700	0.639	1.650	0.301	0.000	7.088	1.678	4.332	0.790	0.000
1,1-Dichloroethane	0.788	0.083	0.280	0.038	43.400	2.408	0.254	0.856	0.116	0.114
1,1-Dichloroethene	0.010	0.000	0.004	0.001	17.200	0.031	0.000	0.011	0.002	0.053
Cis-1,3-Dichloroethene	0.707	0.099	0.333	0.042	0.000	2.136	0.299	1.006	0.125	0.000
trans-1,2-Dichloroethene	0.006	0.000	0.001	0.001	22.600	0.018	0.000	0.002	0.002	0.068
Ethanol	0.000	0.100	0.022	0.006	0.376	0.000	0.144	0.031	0.009	0.001
Ethylbenzene	1.400	0.392	1.040	0.082	3.590	4.636	1.298	3.444	0.273	0.005
4-Ethyltoluene	0.070	0.000	0.032	0.002	12.600	0.263	0.000	0.118	0.009	0.042
Trichlorofluoromethane	0.574	0.057	0.263	0.097	0.980	2.459	0.214	1.127	0.415	0.004
Dichlorodifluoromethane	0.005	0.073	0.004	0.002	125.000	0.020	0.313	0.014	0.006	0.535
Heptane	2.340	0.000	2.040	0.221	1.410	7.310	0.000	6.373	0.690	0.005
n-Hexane	12.300	0.709	8.740	0.865	23.300	33.057	2.215	23.490	2.325	0.073
Isopropylbenzene	0.039	2.760	0.017	0.001	67.800	0.147	7.418	0.063	0.005	0.182
Methylene Chloride	0.470	0.000	0.092	0.008	0.000	1.244	0.000	0.243	0.022	0.000
2-Butanone (MEK)	2.720	0.058	1.030	0.021	2.790	6.114	0.154	2.315	0.047	0.007
4-Methyl-2-Pentanone (MIBK)	0.066	0.506	0.000	0.000	0.000	0.205	1.137	0.000	0.000	0.000
2-Propanol	0.000	1.170	0.000	0.000	0.000	0.000	2.217	0.000	0.000	0.000
Propene	0.177	0.000	0.056	0.011	0.000	0.232	0.000	0.074	0.014	0.000
Tetrachloroethylene	0.058	0.024	0.031	0.006	4.300	0.300	0.126	0.162	0.033	0.022
Toluene	21.300	4.280	16.300	0.986	264.000	61.164	12.290	46.806	2.831	0.758
1,1,1-Trichloroethane	0.861	0.094	0.313	0.072	54.800	3.570	0.389	1.298	0.300	0.227
Trichloroethylene	0.122	0.024	0.000	0.010	4.160	0.498	0.096	0.000	0.040	0.017
1,2,4-Trimethylbenzene	0.046	0.059	0.024	0.003	1.250	0.172	0.219	0.091	0.010	0.005
1,3,5-Trimethylbenzene	0.030	0.022	0.016	0.002	0.801	0.114	0.082	0.059	0.006	0.003
2,2,4-Trimethylpentane	0.897	0.196	0.288	0.051	14.000	3.194	0.698	1.025	0.181	0.050
Vinyl Chloride	1.440	0.168	0.359	0.093	5.340	2.806	0.327	0.700	0.181	0.010
Vinyl Bromide	0.000	0.000	0.000	0.000	0.321	0.000	0.000	0.000	0.000	0.001
m&p-Xylene	3.570	0.960	2.880	0.246	67.000	11.799	3.173	9.518	0.813	0.221
o-Xylene	1.830	0.192	0.581	0.050	19.400	6.048	0.635	1.920	0.165	0.064
Total Emissions (lbs)						163.003	36.250	106.636	9.58	2.49
Total Emissions (tons)						0.082	0.018	0.053	0.005	0.001

HAPs 2021 Discharge Summary Comparison
Operation and Maintenance Report
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Mishawaka, Indiana

Compound	Detected Components					HAPs Emissions				
	1Q2020 C (ppmv)	2Q2020 C (ppmv)	3Q2020 C (ppmv)	4Q2020 C (ppmv)	1Q2021 C (ppmv)	1Q2020 ER (lb/qtr)	2Q2020 ER (lb/qtr)	3Q2020 ER (lb/qtr)	4Q2020 ER (lb/qtr)	1Q2021 ER (lb/qtr)
Acetone	0.368	0.133	0.089	0.006	4.990	-	-	-	-	-
Allyl Chloride	0.000	0.000	0.00082	0.000	0.000	0.000	0.000	0.001	0.000	0.000
Benzene	2.010	0.261	0.498	0.059	6.040	4.894	0.636	1.213	0.144	0.015
Carbon disulfide	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.002	0.000	0.000
Chloroethane	0.203	0.000	0.089	0.006	0.000	0.408	0.000	0.178	0.012	0.000
Chloromethane	0.000	0.000	0.003	0.000	0.448	0.000	0.000	0.005	0.001	0.001
Cyclohexane	2.700	0.639	1.650	0.301	0.000	-	-	-	-	0.000
1,1-Dichloroethane	0.788	0.083	0.280	0.038	43.400	2.408	0.254	0.856	0.116	-
1,1-Dichloroethene	0.010	0.000	0.004	0.001	17.200	0.031	0.000	0.011	0.002	0.053
Cis-1,3-Dichloroethene	0.707	0.099	0.333	0.042	0.000	-	-	-	-	0.000
trans-1,2-Dichloroethene	0.006	0.000	0.001	0.001	22.600	-	-	-	-	-
Ethanol	0.000	0.100	0.022	0.006	0.376	-	-	-	-	-
Ethylbenzene	1.400	0.392	1.040	0.082	3.590	4.636	1.298	3.444	0.273	-
4-Ethyltoluene	0.070	0.000	0.032	0.002	12.600	-	-	-	-	0.042
Trichlorofluoromethane	0.574	0.057	0.263	0.097	0.980	-	-	-	-	-
Dichlorodifluoromethane	0.005	0.073	0.004	0.002	125.000	-	-	-	-	-
Heptane	2.340	0.000	2.040	0.221	1.410	-	-	-	-	-
n-Hexane	12.300	0.709	8.740	0.865	23.300	33.057	2.215	23.490	2.325	-
Isopropylbenzene	0.039	2.760	0.017	0.001	67.800	0.147	7.418	0.063	0.005	0.182
Methylene Chloride	0.470	0.000	0.092	0.008	0.000	1.244	0.000	0.243	0.022	0.000
2-Butanone (MEK)	2.720	0.058	1.030	0.021	2.790	6.114	0.154	2.315	0.047	0.007
4-Methyl-2-Pentanone (MIBK)	0.066	0.506	0.000	0.000	0.000	-	-	-	-	0.000
2-Propanol	0.000	1.170	0.000	0.000	0.000	-	-	-	-	-
Propene	0.177	0.000	0.056	0.011	0.000	-	-	-	-	-
Tetrachloroethylene	0.058	0.024	0.031	0.006	4.300	0.300	0.126	0.162	0.033	0.022
Toluene	21.300	4.280	16.300	0.986	264.000	61.164	12.290	46.806	2.831	0.758
1,1,1-Trichloroethane	0.861	0.094	0.313	0.072	54.800	3.570	0.389	1.298	0.300	0.227
Trichloroethylene	0.122	0.024	0.000	0.010	4.160	0.498	0.096	0.000	0.040	0.017
1,2,4-Trimethylbenzene	0.046	0.059	0.024	0.003	1.250	-	-	-	-	-
1,3,5-Trimethylbenzene	0.030	0.022	0.016	0.002	0.801	-	-	-	-	-
2,2,4-Trimethylpentane	0.897	0.196	0.288	0.051	14.000	3.194	0.698	1.025	0.181	0.050
Vinyl Chloride	1.440	0.168	0.359	0.093	5.340	2.806	0.327	0.700	0.181	0.010
Vinyl Bromide	0.000	0.000	0.000	0.000	0.321	0.000	0.000	0.000	0.000	0.001
m&p-Xylene	3.570	0.960	2.880	0.246	67.000	11.799	3.173	9.518	0.813	0.221
o-Xylene	1.830	0.192	0.581	0.050	19.400	6.048	0.635	1.920	0.165	0.064
Total Emissions (lbs)						142.318	29.707	93.250	7.490	1.671
Total Emissions (tons)						0.071	0.015	0.047	0.004	0.0008