

**Commonwealth of Kentucky**  
**Division for Air Quality**  
***STATEMENT OF BASIS / SUMMARY***

Title V, Operating  
Permit: V-25-002  
Jones Sanitation, LLC dba West Kentucky Landfill  
3426 US Route 45 South  
Mayfield, KY 42066  
January 30, 2025  
Amy K. Tempus-Doom, P.E., Reviewer

SOURCE ID:	21-083-00051
AGENCY INTEREST:	1551
ACTIVITY:	APE20230005

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## SECTION 1 – SOURCE DESCRIPTION

SIC Code and description: 4953 - Refuse Systems (solid waste landfills)

Single Source Det. ☐ Yes ☒ No If Yes, Affiliated Source AI:

Source-wide Limit ☐ Yes ☒ No If Yes, See Section 4, Table A

28 Source Category ☐ Yes ☒ No If Yes, Category:

County: Graves

Nonattainment Area ☒ N/A ☐ PM<sub>10</sub> ☐ PM<sub>2.5</sub> ☐ CO ☐ NO<sub>x</sub> ☐ SO<sub>2</sub> ☐ Ozone ☐ Lead

PTE\* greater than 100 tpy for any criteria air pollutant ☐ Yes ☒ No

If yes, for what pollutant(s)?

☐ PM<sub>10</sub> ☐ PM<sub>2.5</sub> ☐ CO ☐ NO<sub>x</sub> ☐ SO<sub>2</sub> ☐ VOC

PTE\* greater than 250 tpy for any criteria air pollutant ☐ Yes ☒ No

If yes, for what pollutant(s)?

☐ PM<sub>10</sub> ☐ PM<sub>2.5</sub> ☐ CO ☐ NO<sub>x</sub> ☐ SO<sub>2</sub> ☐ VOC

PTE\* greater than 10 tpy for any single hazardous air pollutant (HAP) ☐ Yes ☒ No

If yes, list which pollutant(s):

PTE\* greater than 25 tpy for combined HAP ☐ Yes ☒ No

\*PTE does not include self-imposed emission limitations.

### Description of Facility:

West Kentucky Landfill in Graves County, Kentucky is a municipal solid waste (MSW) landfill that commenced construction in 1960 and was modified in 2004, 2007, and 2022. The landfill has a design capacity of 8,754,764 megagrams and a calculated emission rate of less than 34 megagrams per year of non-methane organic compounds (NMOC).

This landfill voluntarily installed a Gas Collection and Control System (GCCS) in February 2018.

The landfill consists of Area 1, which accepted waste from 1976 to 1988, Area 2, which accepted waste from 1987 to 1988, and Areas 3, 4, and 5, which began accepting waste in 1988, and Area 6 which began accepting waste in 2004.

The source is required to obtain a Title V permit by 401 KAR 52:020, Section 1(4) and 40 CFR 60.752(b). The landfill has fuel (diesel) storage tanks, gas flares, haul roads, leachate storage tanks, a non-road diesel-powered storm water pump, a non-road diesel backup generator, propane heaters, and site construction.

## SECTION 2 – CURRENT APPLICATION AND EMISSION SUMMARY FORM

Permit Number: V-25-002

Activities: APE20230005

Received: July 28, 2023

Application Complete Date(s): September 24, 2023

Permit Action: ☐ Initial ☒ Renewal ☐ Significant Rev ☐ Minor Rev ☐ Administrative

Construction/Modification Requested? ☒ Yes ☐ No NSR Applicable? ☐ Yes ☒ No

Previous 502(b)(10) or Off-Permit Changes incorporated with this permit action ☐ Yes ☒ No

### Description of Action:

West Kentucky Landfill submitted an application to renew their Title V permit on July 28, 2023. In the renewal application, West Kentucky Landfill also indicated that the landfill has received a permit from the Division of Waste Management to for a vertical expansion of waste capacity. This expansion constitutes a modification under 40 CFR 60, Subpart XXX. Because this is a vertical expansion on an existing landfill, modification occurred upon approval of the expansion, which was granted on November 17, 2022.

Due to the renewal application, the following changes were made:

- Updates to the Insignificant activities list in Section C to reflect the submitted DEP7007DD form.
- Removal of the passive flares. With the operation of active gas control system and open flare, the passive solar flares (EU 011) have been decommissioned.
- Corrected the design capacity of the flare (EU 010) from 2,000 scfm to 1,200 scfm.
- Updates to the flare and landfill fugitive emission calculations to reflect site specific H<sub>2</sub>S data.
- Updates to the paved and unpaved roads (EU 004), Site Construction (EU 005), and solidification process (EU 012) maximum capacities to reflect current site configuration.
- Update to the applicable landfill requirements reflect the applicability of 40 CFR 63, Subpart XXX due to the modification of the landfill.
- Updates to permit language to be consistent and clear.
- In August 2024, EPA published a final revision to AP-42, Chapter 2.4 for Municipal Solid Waste Landfills. While the emission factor data remained largely the same as the previously used draft AP-42 Chapter 2.4, the Division has incorporated the changes into the emission calculations for the flares and uncaptured emissions from the landfill. This revised chapter of AP-42 also now includes the following statement: "...Section 3.1 (Stationary Gas Turbines) and Section 13.5 (Industrial Flares) of the Electronic AP-42: Compilation of Air Emissions Factors from Stationary Sources also contains emission factors for landfill gas (LFG) fired turbines and open flares, respectively." Accordingly, the Division has revised its approach to calculating CO and NO<sub>x</sub> for open flares combusting landfill gas.

West Kentucky landfill continues to have a calculated NMOC emission rate less than 34 Mg and operates a voluntary GCCS system.

V-25-002 Emission Summary		
Pollutant	2023 Actual (tpy) <sup>2</sup>	PTE V-25-002 (tpy) <sup>1</sup>
CO	1.43 <sup>3</sup>	54.80
NOx	1.36 <sup>3</sup>	11.94
PT	26.32	2.95
PM <sub>10</sub>	3.60	2.95
PM <sub>2.5</sub>	1.37	2.95
SO <sub>2</sub>	0.39	3.17
VOC	3.99	0.87
Lead	0.0000286	0
Greenhouse Gases (GHGs)		
Carbon Dioxide	17,127	50,882
Methane	6,716	7,990
Nitrous Oxide	0.05	0.38
CO <sub>2</sub> Equivalent (CO <sub>2</sub> e)	185,042	250,754
Hazardous Air Pollutants (HAPs)		
2,4,5-Trichlorophenol	---	1.67
Dichloromethane	---	1.08
Dimethyl sulfide	---	0.83
Hexane	---	0.52
Hydrochloric Acid	0.13	1.22
Tetrachloroethylene	---	0.56
Toluene	2.72	3.26
Xylenes (Total)	0.75	1.16
Combined HAPs:	3.6	13.76

<sup>1</sup>Note: Potential to emit emissions updated with this revision due to site specific data for H<sub>2</sub>S. Totals do not include fugitive emissions, except HAPs.

<sup>2</sup>Note: Actual reported emissions include fugitive emissions.

<sup>3</sup>Note: The Division previously used lower emission factors for CO and NOx for enclosed flares in AP-42 Chapter 2.4.

### SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS

#### Emission Unit 001 - Municipal Solid Waste (MSW) Landfill

**Initial Construction and Modification Date:** 1960, modified 2004, 2007, & 2022.

**Process Description:**

A MSW landfill that has accepted waste since November 8, 1987, commenced construction, reconstruction, or modification after July 17, 2014, having a design capacity equal to or greater than 2.5 million megagrams by mass or 2.5 million cubic meters by volume, and an NMOC emission rate (Calculated according to 40 CFR 60.764) less than 34 Mg/yr.

Permitted Design Capacity: 8,773,159 megagrams

**Applicable Regulations:**

**401 KAR 53:010**, *Ambient air quality standards.*

**401 KAR 60:005, Section 2(2)(zzz), 40 C.F.R. 60.760 through 60.769 (Subpart XXX)**, *Standards of Performance for Municipal Solid Waste Landfills that Commenced Construction, Reconstruction, or Modification After July 17, 2014*

**401 KAR 63:010**, *Fugitive emissions*

**40 CFR 61, Subpart M**, *National Emission Standard for Asbestos.*

**PRECLUDED REGULATION:**

**401 KAR 63:002, Section 2(4)(hhh), 40 C.F.R. 63.1930 to 63.1990, Table 1 (Subpart AAAA)**, *National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills*, precluded by not adding liquid other than leachate in a controlled fashion into the waste mass (often in combination with recirculating leachate) to reach a minimum average moisture content of at least 40 percent by weight to accelerate or enhance the anaerobic (without oxygen) biodegradation of the waste.

**Comments:**

Emission factors from AP-42 - Table 2.4.1 (August 2024) and LandGEM. H<sub>2</sub>S monitoring for the landfill gas collection system has been included in the permit and is used for accurate quantification of fugitive H<sub>2</sub>S emissions and in determination of SO<sub>2</sub> levels produced in the flare. Previous experience and data indicates the H<sub>2</sub>S concentration in AP-42 - Table 2.4.1 (August 2024) and LandGEM underestimates levels actually seen at landfills.

Monitoring of liquid levels for gas wells is included in the permit to ensure adequate gas collection which is dependent on the availability of well perforations. Excessive liquid in wells can also inhibit proper methane production and degrade monitored well parameters causing excessive oxygen intrusion and high temperatures.

### Emission Unit 003 - Paved and Unpaved Haul Roads

**Initial Construction Date:** 1960

**Process Description:**

Paved haul roads and unpaved haul roads.

Maximum Capacity: 109,075 VMT/yr paved, 26,095 VMT/yr unpaved

Control Devices: Water trucks

**Applicable Regulation:**

**401 KAR 63:010**, *Fugitive emissions*

**Comments:**

Emission factors from AP-42 - 13.2.1 and AP-42 - 13.2.2. Potential emissions are calculated using the “maximum capacity” listed, however, roads at landfills change often, and the maximum capacity does not reflect the usage of the roads at any given time. The maximum capacity represents the maximum that the PTE was calculated with and a permit revision application should be submitted if this maximum is not adequate to estimate the potential emissions of the activity in the future.

### Emission Unit 005 - Site Construction

**Initial Construction Date:** 1994

**Process Description:**

Description: Material handling including equipment operations of bulldozer(s), compactor(s), excavator(s) and loader(s), soil material and soil covering operations.

Maximum Capacity: 72,000 tons/yr of cover material, 15,626 hours/yr for all equipment

Control Devices: Wetting of Material

**Applicable Regulation:**

**401 KAR 63:010**, *Fugitive emissions*

**Comments:**

Emission factors from AP-42 - 13.2.4. and AP-42-13.2.

### Emission Unit 010 – Open Landfill Flare

Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
Opacity	20% except for periods not to exceed a total of 3 mins during any 1 day	401 KAR 63:015, Section 3	N/A	Daily Qualitative Observations, recordkeeping

**Initial Construction Date:** 2018

**Process Description:**

Open landfill flare which combusts landfill gas.

Maximum Capacity: 1,200 scfm of landfill gas

### Emission Unit 010 – Open Landfill Flare

**Applicable Regulations:**

**401 KAR 53:010**, *Ambient air quality standards*

**401 KAR 63:015**, *Flares*

**Comments:** The gas collection system associated with this flare is not required to be operated by 40 CFR 60, Subpart XXX. Emissions estimated using site-specific H<sub>2</sub>S data, AP 42-Table 2.4.1 (August 2024) and AP-42, Chapter 13.5. Control efficiency for Non Methane Organic Compounds (NMOC) is 98%.

### Emission Unit 012 - Industrial Waste Solidification Process

**Initial Construction Date:** 2003

**Process Description:** Mixing of liquid industrial wastes from various sources with dry mediums to form a solid to be landfilled.

Maximum Capacity: 5,000 tons per year of liquid waste

**Applicable Regulation:**

**401 KAR 63:010**, *Fugitive emissions*

**State-Origin Requirement:**

**401 KAR 63:020**, *Potentially hazardous matter or toxic substances*, applies to each affected facility which emits or may emit potentially hazardous or toxic substances provide such emissions are not elsewhere subject to provisions of the administrative regulations of the Division for Air Quality.

**Comments:**

Emissions from source based on Toxicity Characteristic Leaching Procedure (TCLP) maximum values for listed HAPs and assumption of 100% VOC emission. If more refined data becomes available for each waste, the more refined data should be used by the source for HAP calculations to ensure all HAPs are accounted for.

### SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS (CONTINUED)

#### Testing Requirements/Results

Emission Unit(s)	Control Device	Parameter	Regulatory Basis	Frequency	Test Method	Permit Limit	Test Result	Thruput and Operating Parameter(s) Established During Test	Activity Graybar	Date of last Compliance Testing
001	None	C <sub>NMOC</sub> M <sub>NMOC</sub>	40 CFR 60.754(a)(3)	Once every 5 years until $\geq 50$ Mg	U.S. EPA Method 25C	50 Mg	5.39 Mg/yr (2005)	127.6 ppmv as Hexane; 275,000 tpy waste disposed	CRE20050004	6/7/2005-6/13/2005
001	None	C <sub>NMOC</sub> M <sub>NMOC</sub>	40 CFR 60.754(a)(3)	Once every 5 years until $\geq 50$ Mg	U.S. EPA Method 25C	50 Mg	1.74 Mg/yr (2010)	35.8 ppmv as Hexane; 100,000 tpy waste disposed	CMN20100004	12/13/2010
001	None	C <sub>NMOC</sub> M <sub>NMOC</sub>	40 CFR 60.754(a)(3)	Once every 5 years until $\geq 50$ Mg	U.S. EPA Method 25C	50 Mg	2.48 Mg/yr (2015)	37.9 ppmv as Hexane; 200,000 tpy waste disposed	CMN20150002	7/28/2015 – 7/29/2015; 8/12/2015 – 8/13/2015
001	None	C <sub>NMOC</sub> M <sub>NMOC</sub>	40 CFR 60.764(a)(3)	Once every 5 years until $\geq 34$ Mg	U.S. EPA Method 25C	34 Mg	7.271 Mg/yr (2020)	75.3 ppmv as Hexane; 300,000 tpy waste disposed	CMN20200005	12/15/2020-12/17/2020
001	None	C <sub>NMOC</sub> M <sub>NMOC</sub>	40 CFR 60.764(a)(3)	Once every 5 years until $\geq 34$ Mg	U.S. EPA Method 25C	34 Mg	TBD	TBD	TBD	2025



Emission Unit(s)	Control Device	Parameter	Regulatory Basis	Frequency	Test Method	Permit Limit	Test Result	Thruput and Operating Parameter(s) Established During Test	Activity Graybar	Date of last Compliance Testing
001	None	H <sub>2</sub> S ppm	401 KAR 50:045, Section 1	Within 180 days of final permit issuance, Annually thereafter	ASTM D5504	N/A	60.60 ppmv	236,537 tpy waste disposed	CMN20200005	12/15/2020-12/17/2020
001	None	H <sub>2</sub> S ppm	401 KAR 50:045, Section 1	Annual	ASTM D5504	N/A	11.57 ppmv	Not included in report.	CMN20230003	11/13/2023
001	None	H <sub>2</sub> S ppm	401 KAR 50:045, Section 1	Annual	ASTM D5504	N/A	TBD	TBD	TBD	2024*

**Footnotes:**

\*Note: No protocol or test result has been submitted for 2024.

## SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS

**Table A - Group Requirements:**

Emission and Operating Limit	Regulation	Emission Unit
N/A		

**Table B - Summary of Applicable Regulations:**

Applicable Regulations	Emission Unit
<b>401 KAR 53:010, Ambient air quality standards.</b> This regulation contains the primary and secondary ambient air quality standards for sulfur oxides, particulate matter, carbon monoxide, ozone, nitrogen dioxide, lead, hydrogen sulfide, gaseous fluorides, total fluorides, and odors are specified in Appendix A of 401 KAR 53:010.	Site-wide
<b>401 KAR 60:005, Section 2(2)(zzz), 40 C.F.R. 60.760 through 60.769 (Subpart XXX), Standards of Performance for Municipal Solid Waste Landfills that Commenced Construction, Reconstruction, or Modification After July 17, 2014,</b> applies to each municipal solid waste landfill that commenced construction, reconstruction, or modification after July 17, 2014.	EU 001, EU 010
<b>401 KAR 63:010, Fugitive emissions,</b> applies to each affected facility which emits or may emit fugitive emissions provided such emissions are not elsewhere subject to an opacity standard within the administrative regulation of the Division for Air Quality..	EU 001, EU 003, EU 005, EU 012
<b>401 KAR 63:015, Flares,</b> applies to each affected facility which means flares as defined in 401 KAR 63:015, Section 2.	EU 010
<b>401 KAR 63:020, Potentially hazardous matter or toxic substances,</b> applies to each affected facility which emits or may emit potentially hazardous or toxic substances provide such emissions are not elsewhere subject to provisions of the administrative regulations of the Division for Air Quality.	EU 012
<b>40 CFR 61, Subpart M, National Emission Standard for Asbestos,</b> applies to each active asbestos waste disposal site.	EU 001

**Table C - Summary of Precluded Regulations:**

Precluded Regulations	Emission Unit
<b>401 KAR 63:002, Section 2(4)(hhh), 40 C.F.R. 63.1930 to 63.1990, Table 1 (Subpart AAAA), National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills.</b> The applicability of this regulation is precluded by not adding liquid other than leachate in a controlled fashion into the waste mass (often in combination with recirculating leachate) to reach a minimum average moisture content of at least 40 percent by weight to accelerate or enhance the anaerobic (without oxygen) biodegradation of the waste.	EU 001

## SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS (CONTINUED)

**Table D - Summary of Non Applicable Regulations:**

Non Applicable Regulations	Emission Unit
N/A	

### **Air Toxic Analysis**

#### **401 KAR 63:020, *Potentially Hazardous Matter or Toxic Substances***

The Division for Air Quality (Division) has performed AERMOD on October 5, 2018 of potentially hazardous matter or toxic substances that may be emitted by the facility based upon the process rates, material formulations, stack heights and other pertinent information provided by the applicant. Based upon this information, the Division has determined that the conditions outlined in this permit will assure compliance with the requirements of 401 KAR 63:020.

### **Single Source Determination**

N/A

**SECTION 5 – PERMITTING HISTORY**

<b>Permit</b>	<b>Permit Type</b>	<b>Activity#</b>	<b>Complete Date</b>	<b>Issuance Date</b>	<b>Summary of Action</b>	<b>PSD/Syn Minor</b>
G-12-001	Renewal	APE20120002	7/4/2012	2/19/2013	Renewal	N/A
V-18-017	Renewal	APE20170004	8/17/2017	10/16/2017	Renewal	N/A

## **SECTION 6 – PERMIT APPLICATION HISTORY**

None

## **APPENDIX A – ABBREVIATIONS AND ACRONYMS**

AAQS	– Ambient Air Quality Standards
BACT	– Best Available Control Technology
Btu	– British thermal unit
CAM	– Compliance Assurance Monitoring
CO	– Carbon Monoxide
Division	– Kentucky Division for Air Quality
ESP	– Electrostatic Precipitator
GHG	– Greenhouse Gas
HAP	– Hazardous Air Pollutant
HF	– Hydrogen Fluoride (Gaseous)
MSDS	– Material Safety Data Sheets
mmHg	– Millimeter of mercury column height
NAAQS	– National Ambient Air Quality Standards
NESHAP	– National Emissions Standards for Hazardous Air Pollutants
NO <sub>x</sub>	– Nitrogen Oxides
NSR	– New Source Review
PM	– Particulate Matter
PM <sub>10</sub>	– Particulate Matter equal to or smaller than 10 micrometers
PM <sub>2.5</sub>	– Particulate Matter equal to or smaller than 2.5 micrometers
PSD	– Prevention of Significant Deterioration
PTE	– Potential to Emit
SO <sub>2</sub>	– Sulfur Dioxide
TF	– Total Fluoride (Particulate & Gaseous)
VOC	– Volatile Organic Compounds