Moats, Nikki B <nikki.b.moats@wv.gov>

RE: [External] - Further questions for Tucker and Mercer County Landfill permits

Tommy Sweat <tsweat@montrose-env.com> Mon, Aug 26, 2024 at 9:59 PM
To: "Moats, Nikki B" <nikki.b.moats@wv.gov>
Cc: Tommy Sweat <tsweat@montrose-env.com>

Nikki,

For Tucker, I found errors in our Emissions Summary page. We included “Benzene - Co-disposal - HAP/VOC” and “Toluene - Co-disposal - HAP/VOC” from LandGEM, which we should not have listed. It does not impact the total HAP calculated at the bottom of the Emissions Summary page – we excluded those emissions from the total.

For the PTE, there are some non-VOC HAPs (2.31 tons/yr) emitted from the landfill based on the LandGEM model:

1,1,1-Trichloroethane (methyl chloroform) – HAP (7.92E-02 tons/yr)

Dichloromethane (methylene chloride) – HAP (1.47E+00 tons/yr)

Perchloroethylene (tetrachloroethylene) – HAP (7.59E-01 tons/yr)

Mercury (total) – HAP (7.20E-05 tons/yr)

The first three HAPs listed above are exempt from the definition of VOC.

For the PM PTE, we reported controlled emissions in our summary table. We should have reported uncontrolled, given that there is not an enforceable control measure required at the landfill. For the 2023 emissions statement, we reported uncontrolled emissions. We also found that our road dust round trip distance should be increased from 1.25 miles to 2 miles.

Attached are relevant updated PTE calculations for Tucker.

Also, below are the install dates you requested for Tucker.

E001 – Landfill (Solid Waste): 1989

T-1 Diesel Fuel Tank 500 gal: 2018

T-2 Diesel Fuel Tank 1670 gal: 2021

T-3 Diesel Fuel Tank 1670 gal: 2006

T-4 Gasoline Tank 290 gal: 2006

T-5 Leachate Tank 40,000 gal: 1994

I should have a response on Mercer for you tomorrow or Wednesday.

[Quoted text hidden]
[Quoted text hidden]

Tucker Emissions Calculations PTE for Title V Application REVISED 2024 08 26.pdf
73K

Emissions Summary

Pollutant	Emission Rate (short tons/year)
Total landfill gas	3.71E+04
[2]Methane	9.92E+03
[2]Carbon Dioxide	2.72E+04
NMOC	1.13E+01
1,1,1-Trichloroethane (methyl chloroform) - HAP	7.92E-02
1,1,2,2-Tetrachloroethane - HAP/VOC	2.28E-01
1,1-Dichloroethane (ethylidene dichloride) - HAP/VOC	2.94E-01
1,1-Dichloroethene (vinylidene chloride) - HAP/VOC	2.40E-02
1,2-Dichloroethane (ethylene dichloride) - HAP/VOC	5.02E-02
1,2-Dichloropropane (propylene dichloride) - HAP/VOC	2.52E-02
2-Propanol (isopropyl alcohol) - VOC	3.72E+00
Acetone	5.03E-01
Acrylonitrile - HAP/VOC	4.13E-01
Benzene - No or Unknown Co-disposal - HAP/VOC	1.84E-01
Bromodichloromethane - VOC	6.28E-01
Butane - VOC	3.59E-01
Carbon disulfide - HAP/VOC	5.46E-02
Carbon monoxide	4.85E+00
Carbon tetrachloride - HAP/VOC	7.61E-04
Carbonyl sulfide - HAP/VOC	3.64E-02
Chlorobenzene - HAP/VOC	3.48E-02
Chlorodifluoromethane	1.39E-01
Chloroethane (ethyl chloride) - HAP/VOC	1.04E-01
Chloroform - HAP/VOC	4.43E-03
Chloromethane - VOC	7.49E-02
Dichlorobenzene - (HAP for para isomer/VOC)	3.82E-02
Dichlorodifluoromethane	2.39E+00
Dichlorofluoromethane - VOC	3.31E-01
Dichloromethane (methylene chloride) - HAP	1.47E+00
Dimethyl sulfide (methyl sulfide) - VOC	5.99E-01
Ethane	3.31E+01
Ethanol - VOC	1.54E+00
Ethyl mercaptan (ethanethiol) - VOC	1.77E-01
Ethylbenzene - HAP/VOC	6.04E-01
Ethylene dibromide - HAP/VOC	2.32E-04
Fluorotrichloromethane - VOC	1.29E-01
Hexane - HAP/VOC	7.04E-01
Hydrogen sulfide	1.52E+00
Mercury (total) - HAP	7.20E-05
Methyl ethyl ketone - HAP/VOC	6.33E-01

Table Continued on Page 2

Methyl isobutyl ketone - HAP/VOC	2.35E-01
Methyl mercaptan - VOC	1.49E-01
Pentane - VOC	2.94E-01
Perchloroethylene (tetrachloroethylene) - HAP	7.59E-01
Propane - VOC	6.00E-01
t-1,2-Dichloroethene - VOC	3.36E-01
Toluene - No or Unknown Co-disposal - HAP/VOC	4.44E+00
Trichloroethylene (trichloroethene) - HAP/VOC	4.55E-01
Vinyl chloride - HAP/VOC	5.64E-01
Xylenes - HAP/VOC	1.58E+00
[1]Particulate Matter	4.28E+01
[1]PM-10	1.36E+01
[1]PM-2.5	1.36E+00

Total Facility Emissions Calculation	**Potential Emissions (tons)**
Landfill VOC (NMOC)	1.13E+01
Leachate VOC Emissions	5.81E-03
Diesel Tank VOC Emissions	1.63E-03
Gasoline Tank VOC Emissions	5.29E-02
Total VOC Emissions	**11.36**
Total HAP Emissions	**13.02**

Notes:

[1]Values pasted from LandGEM for all pollutants with exception of PM, PM-10, and PM-2.5. These are totaled from the "Daily Cover" and "Road Dust" Tabs.

[2]Carbon Dioxide and Methane are non-regulated emissions.

[3]For benzene and toluene, only the no-co-disposal values are considered in emission totals, since this landfill does not accept hazardous waste, so co-disposal emission estimates are not applicable.

Daily Cover Loading/Unloading

Emission Factor, E = k(0.0032)[(u/5)^1.3/(M/2^1.4]

Where, k = Particle Size Multiplier
u = mean wind speed (mph)
M = moisture content (%)

	TSP	PM10	PM2.5
k =	0.74	0.35	0.11
u =	6.2	6.2	6.2
M =	6.7	6.7	6.7

Emissions Factor (lbs/ton)	0.0006	0.0003	0.0001

Daily Cover Tonnage = 11,999
(10% of Waste Disposal)

UNCONTROLLED	TSP	PM10	PM2.5
Pounds per Year	**6.92**	**3.27**	**1.03**
Tons per Year	**0.0035**	**0.0016**	**0.0005**

CONTROLLED	TSP	PM10	PM2.5
Tons per year	0.0035	0.0016	0.0005

Control Efficiency 0

Emission Factor Calculation Source: AP-42 Section 13.2.4

SOLID WASTE HAULING
UNPAVED ROADS

Emission Factor, E = [k(s/12)^a(W/30)^b]*((365-p)/365)

			TSP	PM10	PM2.5
Where,	k = Particle Size Multiplier	k =	4.9	1.5	0.15
	s = Silt Content of Road Surface (%)	s =	6.4	6.4	6.4
	a = 0.8	a =	0.7	0.9	0.9
	W = Average Vehicluar Weight (tons)	W =	8	8	8
	b = 0.4	b =	0.45	0.45	0.45
	M = Moisture Content of Road Surface	M =	1	1	1
	c = 0.3	c =	0.3	0.2	0.2
		C =	0.00047	0.00047	0.00036
	p = Days With 0.10 Inches or Greater Precipitation	p =	150	150	150

	Emissions Factor (lbs/vehicle-mile)	1.78	0.57	0.06

Landfill Disposal Tonnage =	119,988
Tons per Trip	5.00
Trips per Year	23997.6
Miles per Round Trip	2
Miles per year	47995.2

UNCONTROLLED	TSP	PM10	PM2.5
Pounds per Year	**85592.07**	**27140.97**	**2714.10**
Pounds per Ton	**0.71**	**0.23**	**0.02**
Tons per Year	**42.80**	**13.57**	**1.36**

CONTROLLED EMISSIONS

CONTROLLED	TSP	PM10	PM2.5
Tons per year	**12.84**	**4.07**	**0.41**

Control Efficiency 0.7

Received
November 6, 2023
WV DEP/Div of Air Quality

Division of Air Quality Permit Application Submittal

Please find attached a permit application for : Tucker County Solid Waste Authority; Davis, West Virginia
[Company Name; Facility Location]

- DAQ Facility ID (for existing facilities only): 093-00026
- Current 45CSR13 and 45CSR30 (Title V) permits associated with this process (for existing facilities only):

- Type of NSR Application (check all that apply):
  - ☐ Construction
  - ☐ Modification
  - ☐ Class I Administrative Update
  - ☐ Class II Administrative Update
  - ☐ Relocation
  - ☐ Temporary
  - ☐ Permit Determination

- Type of 45CSR30 (TITLE V) Application:
  - ☑ Title V Initial
  - ☐ Title V Renewal
  - ☐ Administrative Amendment**
  - ☐ Minor Modification**
  - ☐ Significant Modification**
  - ☐ Off Permit Change

**If the box above is checked, include the Title V revision information as ATTACHMENT S to the combined NSR/ Title V application.

- Payment Type:
  - ☐ Credit Card (Instructions to pay by credit card will be sent in the Application Status email.)
  - ☑ Check (Make checks payable to: WVDEP – Division of Air Quality)
    Mail checks to:
    WVDEP – DAQ – Permitting
    Attn: NSR Permitting Secretary
    601 57th Street, SE
    Charleston, WV 25304

Please wait until DAQ emails you the Facility ID Number and Permit Application Number. Please add these identifiers to your check or cover letter with your check.

- If the permit writer has any questions, please contact (all that apply):
  - ☑ Responsible Official/Authorized Representative
    - Name: Jody Alderman
    - Email: tcswa@frontiernet.net
    - Phone Number: 304-259-4867
  - ☑ Company Contact
    - Name: Jody Alderman
    - Email: tcswa@frontiernet.net
    - Phone Number: 304-259-4867
  - ☑ Consultant
    - Name: Thomas Sweat
    - Email: tsweat@montrose-env.com
    - Phone Number: 678-336-8530

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TUCKER COUNTY SOLID WASTE AUTHORITY
DAVIS, WEST VIRGINIA

Title V Permit Application **1-16**

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Plot Plan ..... Attachment B

Process Flow Diagram ..... Attachment C

Equipment Table ..... Attachment D

Emission Unit Forms ..... Attachment E

Potential Emissions Calculations ..... Attachment I

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF AIR QUALITY
601 57th Street SE
Charleston, WV 25304
Phone: (304) 926-0475
www.dep.wv.gov/daq

INITIAL/RENEWAL TITLE V PERMIT APPLICATION - GENERAL FORMS

Section 1: General Information

1. **Name of Applicant (As registered with the WV Secretary of State's Office):** Tucker County Solid Waste Authority	**2. Facility Name or Location:** Tucker County Solid Waste Authority Davis, West Virginia
3. DAQ Plant ID No.: 093-00026	**4. Federal Employer ID No. (FEIN):** 55-0686534

5. **Permit Application Type:**

- ☑ Initial Permit — When did operations commence? 1/1/1989
- ☐ Permit Renewal — What is the expiration date of the existing permit? N/A
- ☐ Update to Initial/Renewal Permit Application

6. Type of Business Entity:

☐ Corporation ☑ Governmental Agency ☐ LLC
☐ Partnership ☐ Limited Partnership

7. Is the Applicant the:

☐ Owner ☐ Operator ☑ Both

If the Applicant is not both the owner and operator, please provide the name and address of the other party.
Tucker County Solid Waste Authority

8. Number of onsite employees:

13

9. Governmental Code:

- ☐ Privately owned and operated; 0
- ☐ Federally owned and operated; 1
- ☐ State government owned and operated; 2
- ☑ County government owned and operated; 3
- ☐ Municipality government owned and operated; 4
- ☐ District government owned and operated; 5

10. Business Confidentiality Claims

Does this application include confidential information (per 45CSR31)? ☐ Yes ☑ No

If yes, identify each segment of information on each page that is submitted as confidential, and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's *"PRECAUTIONARY NOTICE-CLAIMS OF CONFIDENTIALITY"* guidance.

11. Mailing Address		
Street or P.O. Box: PO Box 445		
City: Davis	**State:** WV	**Zip:** 26260
Telephone Number: 304-259-4867	**Fax Number:** 304-259-4868	

12. Facility Location (Physical Address)		
Street: 284 Landfill Road	**City:** Davis	**County:** Tucker
UTM Easting: 632.0 km	**UTM Northing:** 4333.7 km	**Zone:** ☑ 17 or ☐ 18
Directions: 0.3 miles northwest of the intersection of Route 32 and Route 93, between Thomas and Davis,WV.		
Portable Source? ☐ Yes ☑ No		
Is facility located within a nonattainment area? ☐ Yes ☑ No		**If yes, for what air pollutants?**
Is facility located within 50 miles of another state? ☑ Yes ☐ No		**If yes, name the affected state(s).** Maryland; Pennsylvania
Is facility located within 100 km of a Class I Area[1]? ☑ Yes ☐ No **If no, do emissions impact a Class I Area[1]?** ☐ Yes ☑ No		**If yes, name the area(s).** Dolly Sods, Otter Creek Wilderness Area

[1] *Class I areas include Dolly Sods and Otter Creek Wilderness Areas in West Virginia, and Shenandoah National Park and James River Face Wilderness Area in Virginia.*

13. Contact Information		
Responsible Official: Jody Alderman		**Title:** Executive Director
Street or P.O. Box: PO Box 445		
City: Davis	**State:** WV	**Zip:** 26260
Telephone Number: 304-259-4867	**Cell Number:**	
E-mail address: tcswa@frontiernet.net		
Environmental Contact: Jody Alderman		**Title:** Executive Director
Street or P.O. Box: PO Box 445		
City: Davis	**State:** WV	**Zip:** 26260
Telephone Number: 304-259-4867	**Cell Number:**	
E-mail address: tcswa@frontiernet.net		
Application Preparer: Thomas Sweat		**Title:** Senior Principal
Company: Montrose Environmental Solutions LLC		
Street or P.O. Box: 400 Northridge Rd #400		
City: Sandy Springs	**State:** GA	**Zip:** 30350
Telephone Number: 678-336-8530	**Cell Number:**	
E-mail address: tsweat@montrose-env.com		

14. Facility Description

List all processes, products, NAICS and SIC codes for normal operation, in order of priority. Also list any process, products, NAICS and SIC codes associated with any alternative operating scenarios if different from those listed for normal operation.

Process	Products	NAICS	SIC
MSW Landfill	None	562212	4953

Provide a general description of operations.

Tucker County Landfill is a 131-acre municipal solid waste (MSW) landfill. The facility accepts solid waste, construction/demolition debris and other approved wastes as specified in its Solid Waste Facility Permit No. SWF-8295/WV0109126. Waste is transported to the disposal area where it is placed, compacted and covered with daily soil cover. The landfill has a monthly tonnage limit of 9,999 tons.

15. Provide an **Area Map** showing plant location as **ATTACHMENT A**.

16. Provide a **Plot Plan(s)**, e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is located as **ATTACHMENT B**. For instructions, refer to "Plot Plan - Guidelines."

17. Provide a detailed **Process Flow Diagram(s)** showing each process or emissions unit as **ATTACHMENT C**. Process Flow Diagrams should show all emission units, control equipment, emission points, and their relationships.

Section 2: Applicable Requirements

18. Applicable Requirements Summary	
Instructions: Mark all applicable requirements.	
☐ SIP	☐ FIP
☐ Minor source NSR (45CSR13)	☐ PSD (45CSR14)
☑ NESHAP (45CSR34)	☐ Nonattainment NSR (45CSR19)
☑ Section 111 NSPS	☐ Section 112(d) MACT standards
☐ Section 112(g) Case-by-case MACT	☐ 112(r) RMP
☐ Section 112(i) Early reduction of HAP	☐ Consumer/commercial prod. reqts., section 183(e)
☐ Section 129 Standards/Reqts.	☐ Stratospheric ozone (Title VI)
☐ Tank vessel reqt., section 183(f)	☐ Emissions cap 45CSR§30-2.6.1
☐ NAAQS, increments or visibility (temp. sources)	☐ 45CSR27 State enforceable only rule
☑ 45CSR4 State enforceable only rule	☐ Acid Rain (Title IV, 45CSR33)
☐ Emissions Trading and Banking (45CSR28)	☐ **C**ompliance **A**ssurance **M**onitoring (40CFR64)
☐ Cross-State Air Pollution Rule (45CSR43)	

19. Non Applicability Determinations
List all requirements which the source has determined not applicable and for which a permit shield is requested. The listing shall also include the rule citation and the reason why the shield applies. 40 C.F.R. 60 Subpart Kb: The Leachate Tank's VOL vapor pressure is less than 3.4 kPa. 40 C.F.R. 64 Compliance Assurance Monitoring (CAM): The facility does not have a pollutant specific emissions unit with a control device to meet an applicable standard or limit. Therefore, the facility is not subject to the Compliance Assurance Monitoring (CAM) rule.
☐ Permit Shield

19. Non Applicability Determinations *(Continued)* - *Attach additional pages as necessary.*

List all requirements which the source has determined not applicable and for which a permit shield is requested. The listing shall also include the rule citation and the reason why the shield applies.

☐ Permit Shield

20. Facility-Wide Applicable Requirements

List all facility-wide applicable requirements. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*).

40 CFR 60 Subpart A
40 CFR 60 Subpart WWW
WV 45CSR23 ("Rule 23")

☐ Permit Shield

For all facility-wide applicable requirements listed above, provide monitoring/testing / recordkeeping / reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number and/or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Are you in compliance with all facility-wide applicable requirements? ☑ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

20. Facility-Wide Applicable Requirements *(Continued)* - *Attach additional pages as necessary.*

List all facility-wide applicable requirements. For each applicable requirement, include the rule citation and/or permit with the condition number.

☐ Permit Shield

For all facility-wide applicable requirements listed above, provide monitoring/testing/recordkeeping/ reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number and/or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Are you in compliance with all facility-wide applicable requirements? ☐ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

21. Active Permits/Consent Orders		
Permit or Consent Order Number	Date of Issuance MM/DD/YYYY	List any Permit Determinations that Affect the Permit *(if any)*
CO-R23, 30-E-2023-04	06-23-2023	N/A

22. Inactive Permits/Obsolete Permit Conditions		
Permit Number	Date of Issuance MM/DD/YYYY	Permit Condition Number

Section 3: Facility-Wide Emissions

23. Facility-Wide Emissions Summary [Tons per Year]	
Criteria Pollutants	Potential Emissions
Carbon Monoxide (CO)	4.85
Nitrogen Oxides (NO_X)	0
Lead (Pb)	0
Particulate Matter ($PM_{2.5}$)[1]	0.26
Particulate Matter (PM_{10})[1]	2.55
Total Particulate Matter (TSP)	8.03
Sulfur Dioxide (SO_2)	0
Volatile Organic Compounds (VOC)	11.36
Hazardous Air Pollutants[2]	Potential Emissions
Total HAPs	13.02
Toluene (Max Individual HAP)	4.44
Regulated Pollutants other than Criteria and HAP	Potential Emissions
Hydrogen sulfide	1.52

[1]$PM_{2.5}$ and PM_{10} are components of TSP.
[2]For HAPs that are also considered PM or VOCs, emissions should be included in both the HAPs section and the Criteria Pollutants section.

Section 4: Insignificant Activities

24. Insignificant Activities (Check all that apply)		
☑	1.	Air compressors and pneumatically operated equipment, including hand tools.
☐	2.	Air contaminant detectors or recorders, combustion controllers or shutoffs.
☑	3.	Any consumer product used in the same manner as in normal consumer use, provided the use results in a duration and frequency of exposure which are not greater than those experienced by consumer, and which may include, but not be limited to, personal use items; janitorial cleaning supplies, office supplies and supplies to maintain copying equipment.
☑	4.	Bathroom/toilet vent emissions.
☑	5.	Batteries and battery charging stations, except at battery manufacturing plants.
☐	6.	Bench-scale laboratory equipment used for physical or chemical analysis, but not lab fume hoods or vents. Many lab fume hoods or vents might qualify for treatment as insignificant (depending on the applicable SIP) or be grouped together for purposes of description.
☐	7.	Blacksmith forges.
☐	8.	Boiler water treatment operations, not including cooling towers.
☑	9.	Brazing, soldering or welding equipment used as an auxiliary to the principal equipment at the source.
☐	10.	CO_2 lasers, used only on metals and other materials which do not emit HAP in the process.
☑	11.	Combustion emissions from propulsion of mobile sources, except for vessel emissions from Outer Continental Shelf sources.
☑	12.	Combustion units designed and used exclusively for comfort heating that use liquid petroleum gas or natural gas as fuel.
☑	13.	Comfort air conditioning or ventilation systems not used to remove air contaminants generated by or released from specific units of equipment.
☐	14.	Demineralized water tanks and demineralizer vents.
☐	15.	Drop hammers or hydraulic presses for forging or metalworking.
☑	16.	Electric or steam-heated drying ovens and autoclaves, but not the emissions from the articles or substances being processed in the ovens or autoclaves or the boilers delivering the steam.
☑	17.	Emergency (backup) electrical generators at residential locations.
☐	18.	Emergency road flares.
☐	19.	Emission units which do not have any applicable requirements and which emit criteria pollutants (CO, NO_x, SO_2, VOC and PM) into the atmosphere at a rate of less than 1 pound per hour and less than 10,000 pounds per year aggregate total for each criteria pollutant from all emission units. Please specify all emission units for which this exemption applies along with the quantity of criteria pollutants emitted on an hourly and annual basis:

24. Insignificant Activities (Check all that apply)		
☐	20.	Emission units which do not have any applicable requirements and which emit hazardous air pollutants into the atmosphere at a rate of less than 0.1 pounds per hour and less than 1,000 pounds per year aggregate total for all HAPs from all emission sources. This limitation cannot be used for any source which emits dioxin/furans nor for toxic air pollutants as per 45CSR27. Please specify all emission units for which this exemption applies along with the quantity of hazardous air pollutants emitted on an hourly and annual basis:
☐	21.	Environmental chambers not using hazardous air pollutant (HAP) gases.
☐	22.	Equipment on the premises of industrial and manufacturing operations used solely for the purpose of preparing food for human consumption.
☐	23.	Equipment used exclusively to slaughter animals, but not including other equipment at slaughterhouses, such as rendering cookers, boilers, heating plants, incinerators, and electrical power generating equipment.
☑	24.	Equipment used for quality control/assurance or inspection purposes, including sampling equipment used to withdraw materials for analysis.
☑	25.	Equipment used for surface coating, painting, dipping or spray operations, except those that will emit VOC or HAP.
☑	26.	Fire suppression systems.
☐	27.	Firefighting equipment and the equipment used to train firefighters.
☐	28.	Flares used solely to indicate danger to the public.
☐	29.	Fugitive emission related to movement of passenger vehicle provided the emissions are not counted for applicability purposes and any required fugitive dust control plan or its equivalent is submitted.
☐	30.	Hand-held applicator equipment for hot melt adhesives with no VOC in the adhesive formulation.
☑	31.	Hand-held equipment for buffing, polishing, cutting, drilling, sawing, grinding, turning or machining wood, metal or plastic.
☐	32.	Humidity chambers.
☐	33.	Hydraulic and hydrostatic testing equipment.
☐	34.	Indoor or outdoor kerosene heaters.
☐	35.	Internal combustion engines used for landscaping purposes.
☐	36.	Laser trimmers using dust collection to prevent fugitive emissions.
☐	37.	Laundry activities, except for dry-cleaning and steam boilers.
☐	38.	Natural gas pressure regulator vents, excluding venting at oil and gas production facilities.
☐	39.	Oxygen scavenging (de-aeration) of water.
☐	40.	Ozone generators.

24. Insignificant Activities (Check all that apply)		
☑	41.	Plant maintenance and upkeep activities (e.g., grounds-keeping, general repairs, cleaning, painting, welding, plumbing, re-tarring roofs, installing insulation, and paving parking lots) provided these activities are not conducted as part of a manufacturing process, are not related to the source's primary business activity, and not otherwise triggering a permit modification. (Cleaning and painting activities qualify if they are not subject to VOC or HAP control requirements. Asphalt batch plant owners/operators must still get a permit if otherwise requested.)
☑	42.	Portable electrical generators that can be moved by hand from one location to another. "Moved by Hand" means that it can be moved without the assistance of any motorized or non-motorized vehicle, conveyance, or device.
☐	43.	Process water filtration systems and demineralizers.
☑	44.	Repair or maintenance shop activities not related to the source's primary business activity, not including emissions from surface coating or de-greasing (solvent metal cleaning) activities, and not otherwise triggering a permit modification.
☑	45.	Repairs or maintenance where no structural repairs are made and where no new air pollutant emitting facilities are installed or modified.
☐	46.	Routing calibration and maintenance of laboratory equipment or other analytical instruments.
☐	47.	Salt baths using nonvolatile salts that do not result in emissions of any regulated air pollutants. Shock chambers.
☐	48.	Shock chambers.
☐	49.	Solar simulators.
☑	50.	Space heaters operating by direct heat transfer.
☐	51.	Steam cleaning operations.
☐	52.	Steam leaks.
☐	53.	Steam sterilizers.
☐	54.	Steam vents and safety relief valves.
☐	55.	Storage tanks, reservoirs, and pumping and handling equipment of any size containing soaps, vegetable oil, grease, animal fat, and nonvolatile aqueous salt solutions, provided appropriate lids and covers are utilized.
☑	56.	Storage tanks, vessels, and containers holding or storing liquid substances that will not emit any VOC or HAP. Exemptions for storage tanks containing petroleum liquids or other volatile organic liquids should be based on size limits such as storage tank capacity and vapor pressure of liquids stored and are not appropriate for this list.
☐	57.	Such other sources or activities as the Director may determine.
☐	58.	Tobacco smoking rooms and areas.
☐	59.	Vents from continuous emissions monitors and other analyzers.

Section 5: Emission Units, Control Devices, and Emission Points

25. Equipment Table
Fill out the **Title V Equipment Table** and provide it as **ATTACHMENT D**.
26. Emission Units
For each emission unit listed in the **Title V Equipment Table**, fill out and provide an **Emission Unit Form** as **ATTACHMENT E**.
For each emission unit not in compliance with an applicable requirement, fill out a **Schedule of Compliance Form** as **ATTACHMENT F**.
27. Control Devices
For each control device listed in the **Title V Equipment Table**, fill out and provide an **Air Pollution Control Device Form** as **ATTACHMENT G**.
For any control device that is required on an emission unit in order to meet a standard or limitation for which the potential pre-control device emissions of an applicable regulated air pollutant is greater than or equal to the Title V Major Source Threshold Level, refer to the **Compliance Assurance Monitoring (CAM) Form(s)** for CAM applicability. Fill out and provide these forms, if applicable, for each Pollutant Specific Emission Unit (PSEU) as **ATTACHMENT H**.

Section 6: Certification of Information

28. Certification of Truth, Accuracy and Completeness and Certification of Compliance

Note: This Certification must be signed by a responsible official as defined in 45CSR§30-2.38.

a. Certification of Truth, Accuracy and Completeness

I certify that I am a responsible official (as defined at 45CSR§30-2.38) and am accordingly authorized to make this submission on behalf of the owners or operators of the source described in this document and its attachments. I certify under penalty of law that I have personally examined and am familiar with the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine and/or imprisonment.

b. Compliance Certification

Except for requirements identified in the Title V Application for which compliance is not achieved, I, the undersigned hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

Responsible official (type or print)

Name:	Title:
Jody Alderman	Executive Director

Responsible official's signature:

Signature: Jody Alderman Signature Date: 11-2-23

(Must be signed and dated in blue ink or have a valid electronic signature)

Note: Please check all applicable attachments included with this permit application:

☑	ATTACHMENT A: Area Map
☑	ATTACHMENT B: Plot Plan(s)
☑	ATTACHMENT C: Process Flow Diagram(s)
☑	ATTACHMENT D: Equipment Table
☑	ATTACHMENT E: Emission Unit Form(s)
☐	ATTACHMENT F: Schedule of Compliance Form(s)
☐	ATTACHMENT G: Air Pollution Control Device Form(s)
☐	ATTACHMENT H: Compliance Assurance Monitoring (CAM) Form(s)

All of the required forms and additional information can be found and downloaded from, the DEP website at www.dep.wv.gov/daq, requested by phone (304) 926-0475, and/or obtained through the mail.

Attachment A

MONTROSE ENVIRONMENTAL
400 Northridge Road
Suite: 400
Sandy Springs, GA 30350
404.315.9113

N

TITLE V PERMIT APPLICATION

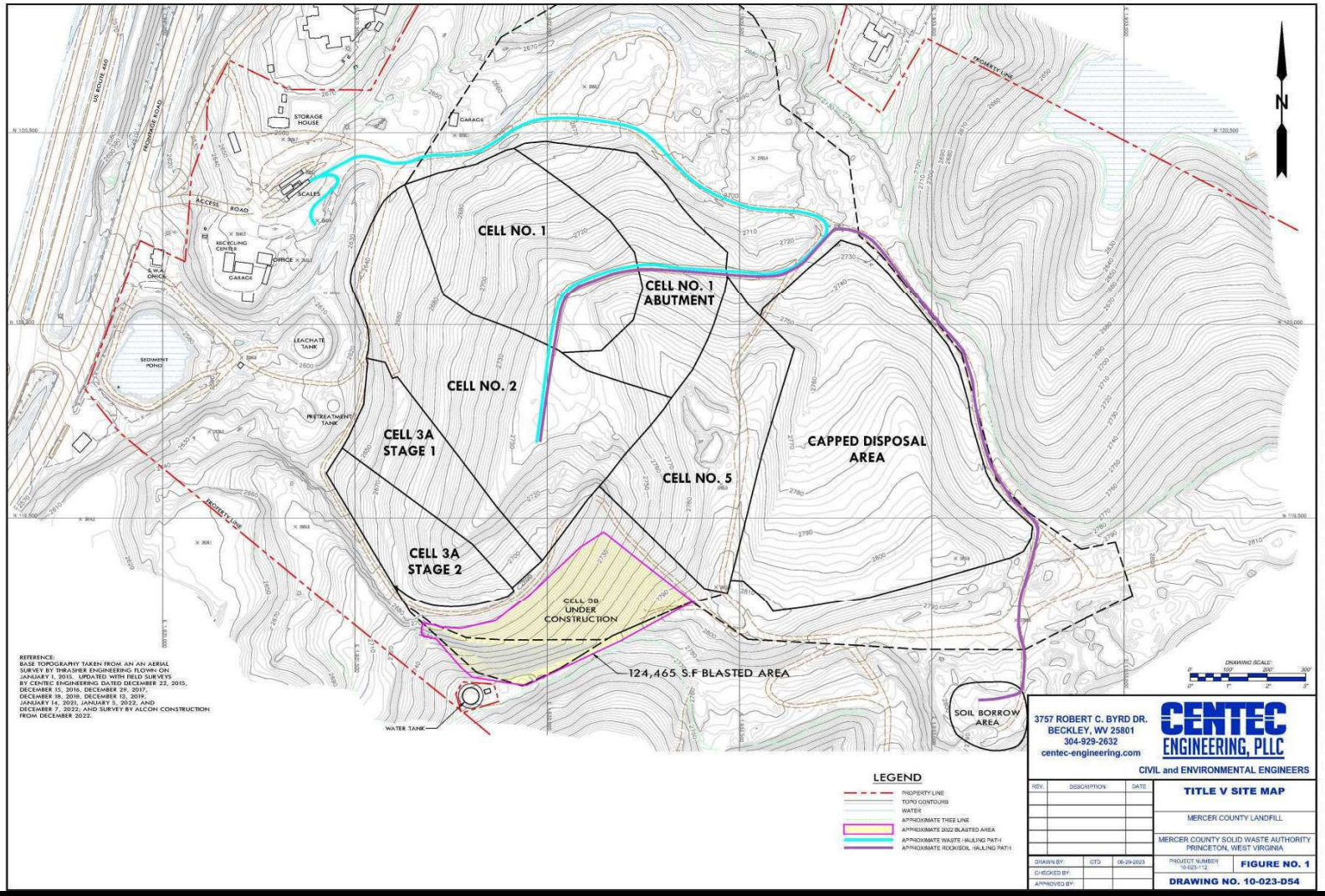
Tucker County Solid Waste Authority
284 Landfill Rd.
Davis, WV 26260

GENERAL AREA MAP

FIGURE

A-1

Attachment B



MONTROSE ENVIRONMENTAL

400 Northridge Road
Suite 400
Sandy Springs, GA 30350
Phone (404) 315-9113
Fax (404) 315-8509

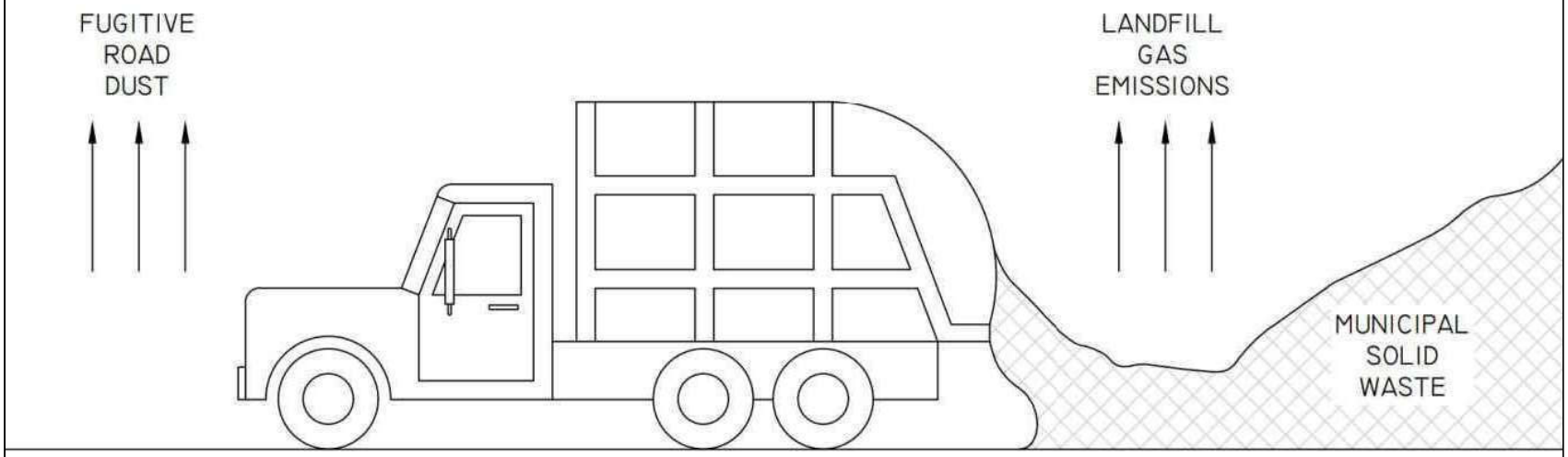
Facility Layout
Tucker County Solid Waste Authority, 284 Landfill Rd., Davis, WV 26260

Title V Permit Application
October 2023

Figure

B-1

Attachment C



MONTROSE ENVIRONMENTAL	**400 Northridge Road Suite 400 Sandy Springs, GA 30350 Phone (404) 315-9113 Fax (404) 315-8509**		Process Flow Diagram Tucker County Solid Waste Authority, 284 Landfill Rd. Davis, WV 26260 Title V Permit Application October 2023	**Figure C-1**

ATTACHMENT D - Title V Equipment Table
(includes all emission units at the facility except those designated as insignificant activities in Section 4, Item 24 of the General Forms)

Emission Unit ID[1]	Emission Point ID[1]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Control Device[1]
E001	E001	Landfill Solid Waste		4,367,000 tons	None
T-1	T-1	Diesel Fuel Tank		500 gal	None
T-2	T-2	Diesel Fuel Tank		1670 gal	None
T-3	T-3	Diesel Fuel Tank		1670 gal	None
T-4	T-4	Gasoline Tank		290 gal	None
T-5	T-5	Leachate Tank		40,000 gal	None

[1]For 45CSR13 permitted sources, the numbering system used for the emission points, control devices, and emission units should be consistent with the numbering system used in the 45CSR13 permit. For grandfathered sources, the numbering system should be consistent with registrations or emissions inventory previously submitted to DAQ. For emission points, control devices, and emissions units which have not been previously labeled, use the following 45CSR13 numbering system: 1S, 2S, 3S,... or other appropriate description for emission units; 1C, 2C, 3C,... or other appropriate designation for control devices; 1E, 2E, 3E, ... or other appropriate designation for emission points.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
001	Landfill Operations	

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

25.4 Acres (Closure Area)
10.6 Acres (Expansion Area)
31.6 Acres (Cell 7 Expansion 2015)

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	NA
Construction date:	**Installation date:**	**Modification date(s):**
MM/DD/YYYY	MM/DD/YYYY	MM/DD/YYYY

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

4,367,000 tons

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
	119,988 tons	24 hr/day, 365 days/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☑ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		4.85
Nitrogen Oxides (NO_X)		0
Lead (Pb)		0
Particulate Matter ($PM_{2.5}$)		0
Particulate Matter (PM_{10})		0
Total Particulate Matter (TSP)		0
Sulfur Dioxide (SO_2)		0
Volatile Organic Compounds (VOC)		11.30
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Total HAPs		13.02
Other HAPs below 10 TPY		
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
Hydrogen Sulfide		1.52

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

CO, VOC and HAP emissions were estimated from the Landfill Gas Emissions Model (LandGEM) computer program. NMOC emissions were estimated from LandGEM using default values for Lo and k.

PM-2.5, PM-10 and TSP were estimated using AP-42.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

CSR 45-6-3.1 Open burning prohibited
CSR 45-6-3.2a Open Burning Prohibited
40 CFR 61.145, 61.148, and 61.150 Asbestos – Facility Inspection
WV Code 22-5-4(a)(15) Conduct testing as required
CSR 45-4-3.1 Objectionable odor prohibited
CSR 45-11-5.2 Submit standby plan if requested
WV Code 22-5-4(a)(14) Submit annual emission inventory
CSR 45-23 Incorporate by reference Subparts Cc and WWW
CSR 45-7 Dust Control
CSR 45-30 Operating Permit
40 CFR 60.572(b)(2)(iv) Operational Standards, Compliance Provisions, Monitoring of NMOC operations

☐ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Are you in compliance with all applicable requirements for this emission unit? ☑ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	Emission unit name:	List any control devices associated with this emission unit:
T-1	Diesel Fuel Tank	NA

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

500 gallon diesel fuel storage tank for on-site equipment use.

Manufacturer:	Model number:	Serial number:
NA	NA	NA

Construction date:	Installation date:	Modification date(s):
MM/DD/YYYY	MM/DD/YYYY	MM/DD/YYYY

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

500 gallons

Maximum Hourly Throughput:	Maximum Annual Throughput:	Maximum Operating Schedule:
	52,596 gal	8760 hours/year

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☑ No	If yes, is it? ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO_X)		
Lead (Pb)		
Particulate Matter ($PM_{2.5}$)		
Particulate Matter (PM_{10})		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO_2)		
Volatile Organic Compounds (VOC)		2.85E-4
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emission Master 8.4.59 TANKS

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

None

☐ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

None

Are you in compliance with all applicable requirements for this emission unit? ☑ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
T-2, T-3	Diesel Fuel Tank	NA

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

Two (2) 1,670 gallon diesel fuel storage tanks for on-site equipment use.

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	NA
Construction date: MM/DD/YYYY	**Installation date:** MM/DD/YYYY	**Modification date(s):** MM/DD/YYYY

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

1,670 gallons (each)

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
	52,596 gal (each)	8760 hours/year

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☑ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO_X)		
Lead (Pb)		
Particulate Matter ($PM_{2.5}$)		
Particulate Matter (PM_{10})		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO_2)		
Volatile Organic Compounds (VOC)		6.74E04 (per each tank)
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emission Master 8.4.59 TANKS

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

None

☐ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

None

Are you in compliance with all applicable requirements for this emission unit? ☑ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	Emission unit name:	List any control devices associated with this emission unit:
T-4	Gasoline Tank	NA

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

290 gallon gasoline storage tank for fuel supply to site equipment.

Manufacturer:	Model number:	Serial number:
NA	NA	NA

Construction date:	Installation date:	Modification date(s):
MM/DD/YYYY	MM/DD/YYYY 2006	MM/DD/YYYY

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

290 gallons

Maximum Hourly Throughput:	Maximum Annual Throughput:	Maximum Operating Schedule:
	3,304 gal	8760 hr/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☑ No	If yes, is it? ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO_X)		
Lead (Pb)		
Particulate Matter ($PM_{2.5}$)		
Particulate Matter (PM_{10})		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO_2)		
Volatile Organic Compounds (VOC)		5.29E-2
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Emission Master 8.4.59 TANKS

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

None

☐ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

None

Are you in compliance with all applicable requirements for this emission unit? ☑ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
T-5	Leachate Tank	NA

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

40,000 gallon leachate storage tank

Manufacturer:	**Model number:**	**Serial number:**
NA	NA	NA
Construction date:	**Installation date:**	**Modification date(s):**
MM/DD/YYYY	MM/DD/YYYY	MM/DD/YYYY

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

40,000 gallons

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
	69,612 gal	24 hr/day, 365 days/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☑ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: NA	**Type and Btu/hr rating of burners:** NA

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

NA

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
NA			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO_X)		
Lead (Pb)		
Particulate Matter ($PM_{2.5}$)		
Particulate Matter (PM_{10})		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO_2)		
Volatile Organic Compounds (VOC)		0.006
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

☐ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Are you in compliance with all applicable requirements for this emission unit? ☑ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Attachment I

Emissions Summary

Pollutant	Emission Rate (short tons/year)
Total landfill gas	3.71E+04
[2]Methane	9.92E+03
[2]Carbon Dioxide	2.72E+04
NMOC	1.13E+01
1,1,1-Trichloroethane (methyl chloroform) - HAP	7.92E-02
1,1,2,2-Tetrachloroethane - HAP/VOC	2.28E-01
1,1-Dichloroethane (ethylidene dichloride) - HAP/VOC	2.94E-01
1,1-Dichloroethene (vinylidene chloride) - HAP/VOC	2.40E-02
1,2-Dichloroethane (ethylene dichloride) - HAP/VOC	5.02E-02
1,2-Dichloropropane (propylene dichloride) - HAP/VOC	2.52E-02
2-Propanol (isopropyl alcohol) - VOC	3.72E+00
Acetone	5.03E-01
Acrylonitrile - HAP/VOC	4.13E-01
Benzene - No or Unknown Co-disposal - HAP/VOC	1.84E-01
Benzene - Co-disposal - HAP/VOC	1.06E+00
Bromodichloromethane - VOC	6.28E-01
Butane - VOC	3.59E-01
Carbon disulfide - HAP/VOC	5.46E-02
Carbon monoxide	4.85E+00
Carbon tetrachloride - HAP/VOC	7.61E-04
Carbonyl sulfide - HAP/VOC	3.64E-02
Chlorobenzene - HAP/VOC	3.48E-02
Chlorodifluoromethane	1.39E-01
Chloroethane (ethyl chloride) - HAP/VOC	1.04E-01
Chloroform - HAP/VOC	4.43E-03
Chloromethane - VOC	7.49E-02
Dichlorobenzene - (HAP for para isomer/VOC)	3.82E-02
Dichlorodifluoromethane	2.39E+00
Dichlorofluoromethane - VOC	3.31E-01
Dichloromethane (methylene chloride) - HAP	1.47E+00
Dimethyl sulfide (methyl sulfide) - VOC	5.99E-01
Ethane	3.31E+01
Ethanol - VOC	1.54E+00
Ethyl mercaptan (ethanethiol) - VOC	1.77E-01
Ethylbenzene - HAP/VOC	6.04E-01
Ethylene dibromide - HAP/VOC	2.32E-04
Fluorotrichloromethane - VOC	1.29E-01
Hexane - HAP/VOC	7.04E-01
Hydrogen sulfide	1.52E+00
Mercury (total) - HAP	7.20E-05

Table Continued on Page 2

Methyl ethyl ketone - HAP/VOC	6.33E-01
Methyl isobutyl ketone - HAP/VOC	2.35E-01
Methyl mercaptan - VOC	1.49E-01
Pentane - VOC	2.94E-01
Perchloroethylene (tetrachloroethylene) - HAP	7.59E-01
Propane - VOC	6.00E-01
t-1,2-Dichloroethene - VOC	3.36E-01
Toluene - No or Unknown Co-disposal - HAP/VOC	4.44E+00
Toluene - Co-disposal - HAP/VOC	1.94E+01
Trichloroethylene (trichloroethene) - HAP/VOC	4.55E-01
Vinyl chloride - HAP/VOC	5.64E-01
Xylenes - HAP/VOC	1.58E+00
[1]Particulate Matter	8.03E+00
[1]PM-10	2.55E+00
[1]PM-2.5	2.55E-01

Total Facility Emissions Calculation	**Potential Emissions (tons)**
Landfill VOC (NMOC)	1.13E+01
Leachate VOC Emissions	5.81E-03
Diesel Tank VOC Emissions	1.63E-03
Gasoline Tank VOC Emissions	5.29E-02
Total VOC Emissions	**11.36**
Total HAP Emissions	**13.02**

Notes:

[1]Values pasted from LandGEM for all pollutants with exception of PM, PM-10, and PM-2.5. These are totaled from the "Daily Cover" and "Road Dust" Tabs.

[2]Carbon Dioxide and Methane are non-regulated emissions.

[3]For benzene and toluene, only the no-co-disposal values are considered in emission totals, since this landfill does not accept hazardous waste, so co-disposal emission estimates are not applicable.

Leachate Storage Emissions

Assumptions:	20	mg of VOC/L of Leachate
	100%	of VOCs emitted
Potential Leachate Generated:	69,612	gallons
Total VOC[1] =	11.62	lbs VOC
	0.006	tons VOC

NOTES:

1. Total VOC (lbs) = 69,612 gallons x 3.785 L/gal x 20 mg/L VOC x 2.205E-06 (lb/mg)

2. Estimated potential leachate generated by multiplying the 2022 leachate generated (40,000 gal) by the actvity ratio of 1.73 (ratio of CY2022 landfill waste generated to max annual landfill waste generated).

Waste Accepted (tons)

TUCKER COUNTY LANDFILL MAX TONNAGE TOTALS	
MAX ANNUAL	**119,988**

Tucker County Solid Waste Authority
Emissions Inventory - Initial Title V Permit Application

INVENTORY **Landfill Name or Identifier:** Tucker County Landfill PTE for Title V Application

Enter year of emissions inventory: 2057

Gas / Pollutant	Emission Rate				
	(Mg/year)	*(m^3/year)*	*(av ft^3/min)*	*(ft^3/year)*	*(short tons/year)*
Total landfill gas	3.376E+04	2.703E+07	1.816E+03	9.547E+08	3.714E+04
Methane	9.018E+03	1.352E+07	9.082E+02	4.774E+08	9.920E+03
Carbon dioxide	2.474E+04	1.352E+07	9.082E+02	4.774E+08	2.722E+04
NMOC	1.027E+01	2.866E+03	1.925E-01	1.012E+05	1.130E+01
1,1,1-Trichloroethane (methyl chloroform) - HAP	7.200E-02	1.298E+01	8.719E-04	4.583E+02	7.920E-02
1,1,2,2-Tetrachloroethane - HAP/VOC	2.076E-01	2.974E+01	1.998E-03	1.050E+03	2.284E-01
1,1-Dichloroethane (ethylidene dichloride) - HAP/VOC	2.671E-01	6.488E+01	4.359E-03	2.291E+03	2.938E-01
1,1-Dichloroethene (vinylidene chloride) - HAP/VOC	2.180E-02	5.407E+00	3.633E-04	1.909E+02	2.398E-02
1,2-Dichloroethane (ethylene dichloride) - HAP/VOC	4.562E-02	1.108E+01	7.447E-04	3.914E+02	5.018E-02
1,2-Dichloropropane (propylene dichloride) - HAP/VOC	2.287E-02	4.866E+00	3.270E-04	1.718E+02	2.516E-02
2-Propanol (isopropyl alcohol) - VOC	3.379E+00	1.352E+03	9.082E-02	4.774E+04	3.717E+00
Acetone	4.571E-01	1.892E+02	1.271E-02	6.683E+03	5.029E-01
Acrylonitrile - HAP/VOC	3.759E-01	1.703E+02	1.144E-02	6.015E+03	4.135E-01
Benzene - No or Unknown Co-disposal - HAP/VOC	1.669E-01	5.136E+01	3.451E-03	1.814E+03	1.836E-01
Benzene - Co-disposal - HAP/VOC	9.661E-01	2.974E+02	1.998E-02	1.050E+04	1.063E+00
Bromodichloromethane - VOC	5.711E-01	8.381E+01	5.631E-03	2.960E+03	6.282E-01
Butane - VOC	3.268E-01	1.352E+02	9.082E-03	4.774E+03	3.594E-01
Carbon disulfide - HAP/VOC	4.965E-02	1.568E+01	1.054E-03	5.537E+02	5.461E-02
Carbon monoxide	4.409E+00	3.785E+03	2.543E-01	1.337E+05	4.850E+00
Carbon tetrachloride - HAP/VOC	6.919E-04	1.081E-01	7.266E-06	3.819E+00	7.611E-04
Carbonyl sulfide - HAP/VOC	3.310E-02	1.325E+01	8.900E-04	4.678E+02	3.641E-02
Chlorobenzene - HAP/VOC	3.164E-02	6.758E+00	4.541E-04	2.387E+02	3.481E-02
Chlorodifluoromethane	1.264E-01	3.514E+01	2.361E-03	1.241E+03	1.390E-01
Chloroethane (ethyl chloride) - HAP/VOC	9.431E-02	3.514E+01	2.361E-03	1.241E+03	1.037E-01
Chloroform - HAP/VOC	4.027E-03	8.110E-01	5.449E-05	2.864E+01	4.430E-03
Chloromethane - VOC	6.813E-02	3.244E+01	2.180E-03	1.146E+03	7.494E-02
Dichlorobenzene - (HAP for para isomer/VOC)	3.471E-02	5.677E+00	3.814E-04	2.005E+02	3.818E-02
Dichlorodifluoromethane	2.175E+00	4.325E+02	2.906E-02	1.528E+04	2.393E+00
Dichlorofluoromethane - VOC	3.009E-01	7.029E+01	4.723E-03	2.482E+03	3.310E-01
Dichloromethane (methylene chloride) - HAP	1.337E+00	3.785E+02	2.543E-02	1.337E+04	1.471E+00
Dimethyl sulfide (methyl sulfide) - VOC	5.449E-01	2.109E+02	1.417E-02	7.447E+03	5.994E-01
Ethane	3.009E+01	2.406E+04	1.617E+00	8.497E+05	3.310E+01
Ethanol - VOC	1.399E+00	7.299E+02	4.904E-02	2.578E+04	1.539E+00
Ethyl mercaptan (ethanethiol) - VOC	1.607E-01	6.218E+01	4.178E-03	2.196E+03	1.767E-01
Ethylbenzene - HAP/VOC	5.491E-01	1.244E+02	8.355E-03	4.392E+03	6.040E-01
Ethylene dibromide - HAP/VOC	2.113E-04	2.703E-02	1.816E-06	9.547E-01	2.324E-04
Fluorotrichloromethane - VOC	1.174E-01	2.055E+01	1.380E-03	7.256E+02	1.291E-01
Hexane - HAP/VOC	6.396E-01	1.784E+02	1.199E-02	6.301E+03	7.035E-01
Hydrogen sulfide	1.380E+00	9.732E+02	6.539E-02	3.437E+04	1.517E+00
Mercury (total) - HAP	6.541E-05	7.840E-03	5.268E-07	2.769E-01	7.196E-05
Methyl ethyl ketone - HAP/VOC	5.757E-01	1.919E+02	1.290E-02	6.778E+03	6.332E-01
Methyl isobutyl ketone - HAP/VOC	2.140E-01	5.136E+01	3.451E-03	1.814E+03	2.354E-01
Methyl mercaptan - VOC	1.352E-01	6.758E+01	4.541E-03	2.387E+03	1.488E-01
Pentane - VOC	2.677E-01	8.921E+01	5.994E-03	3.151E+03	2.945E-01
Perchloroethylene (tetrachloroethylene) - HAP	6.899E-01	1.000E+02	6.721E-03	3.532E+03	7.589E-01
Propane - VOC	5.453E-01	2.974E+02	1.998E-02	1.050E+04	5.999E-01
t-1,2-Dichloroethene - VOC	3.052E-01	7.569E+01	5.086E-03	2.673E+03	3.357E-01
Toluene - No or Unknown Co-disposal - HAP/VOC	4.040E+00	1.054E+03	7.084E-02	3.723E+04	4.444E+00
Toluene - Co-disposal - HAP/VOC	1.761E+01	4.596E+03	3.088E-01	1.623E+05	1.937E+01
Trichloroethylene (trichloroethene) - HAP/VOC	4.137E-01	7.569E+01	5.086E-03	2.673E+03	4.551E-01
Vinyl chloride - HAP/VOC	5.130E-01	1.973E+02	1.326E-02	6.969E+03	5.643E-01
Xylenes - HAP/VOC	1.432E+00	3.244E+02	2.180E-02	1.146E+04	1.576E+00

Daily Cover Loading/Unloading

Emission Factor, E = k(0.0032)[(u/5)^1.3/(M/2^1.4]

Where, k = Particle Size Multiplier
u = mean wind speed (mph)
M = moisture content (%)

	TSP	PM10	PM2.5
k =	0.74	0.35	0.11
u =	6.2	6.2	6.2
M =	6.7	6.7	6.7

Emissions Factor (lbs/ton)	0.0006	0.0003	0.0001

Daily Cover Tonnage = 11,999
(10% of Waste Disposal)

UNCONTROLLED	TSP	PM10	PM2.5
Pounds per Year	**6.92**	**3.27**	**1.03**
Tons per Year	**0.0035**	**0.0016**	**0.0005**

CONTROLLED	TSP	PM10	PM2.5
Tons per year	0.0069	0.0033	0.0010

Control Efficiency 0

Emission Factor Calculation Source: AP-42 Section 13.2.4

Diesel Emissions from Emission Master 8.4.59 TANKS

Emissions From Vessel: Tucker Landfill Diesel Tank 1

	Effective Vp	Working	Breathing	Weight	Rate
[Non Condensables]	(mmHg)	(lb)	(lb)	(lb)	(lb/hr)
Air	707.4642	228.2142	54.0687	282.2829	0.0322
[Condensables]	(mmHg)	(lb)	(lb)	(lb)	(lb/hr)
No. 2 Fuel Oil (Diesel)					
VOC	0.3182	0.4537	0.116	0.5697	6.50E-05

Annual VOC Emissions: 2.85E-04 tons

Diesel Emissions from Emission Master 8.4.59 TANKS

Emissions From Vessel: Tucker Landfill Diesel Tank 2

	Effective Vp	Working	Breathing	Weight	Rate
[Non Condensables]	(mmHg)	(lb)	(lb)	(lb)	(lb/hr)
Air	707.463	505.0558	160.1878	665.2436	0.0759
[Condensables]	(mmHg)	(lb)	(lb)	(lb)	(lb/hr)
No. 2 Fuel Oil (Diesel)					
VOC	0.3194	1.004	0.3435	1.3476	2.00E-04

Annual VOC Emissions: 6.74E-04 tons

Diesel Emissions from Emission Master 8.4.59 TANKS

Emissions From Vessel: Tucker Landfill Diesel Tank 2

	Effective Vp	Working	Breathing	Weight	Rate
[Non Condensables]	(mmHg)	(lb)	(lb)	(lb)	(lb/hr)
Air	707.463	505.0558	160.1878	665.2436	0.0759
[Condensables]	(mmHg)	(lb)	(lb)	(lb)	(lb/hr)
No. 2 Fuel Oil (Diesel)					
VOC	0.3194	1.004	0.3435	1.3476	2.00E-04

Annual VOC Emissions: 6.74E-04 tons

SOLID WASTE HAULING
UNPAVED ROADS

Emission Factor, E = [k(s/12)^a(W/30)^b]*((365-p)/365)

			TSP	PM10	PM2.5
Where,	k = Particle Size Multiplier	k =	4.9	1.5	0.15
	s = Silt Content of Road Surface (%)	s =	6.4	6.4	6.4
	a = 0.8	a =	0.7	0.9	0.9
	W = Average Vehicluar Weight (tons)	W =	8	8	8
	b = 0.4	b =	0.45	0.45	0.45
	M = Moisture Content of Road Surface	M =	1	1	1
	c = 0.3	c =	0.3	0.2	0.2
		C =	0.00047	0.00047	0.00036
	p = Days With 0.10 Inches or Greater Precipitation	p =	150	150	150

	Emissions Factor (lbs/vehicle-mile)	1.78	0.57	0.06

Landfill Disposal Tonnage =	119,988
Tons per Trip	5.00
Trips per Year	23997.6
Miles per Round Trip	1.25
Miles per year	29997

UNCONTROLLED	TSP	PM10	PM2.5
Pounds per Year	**53495.04**	**16963.11**	**1696.31**
Pounds per Ton	**0.45**	**0.14**	**0.01**
Tons per Year	**26.75**	**8.48**	**0.85**

CONTROLLED EMISSIONS

CONTROLLED	TSP	PM10	PM2.5
Tons per year	**8.02**	**2.54**	**0.25**

Control Efficiency 0.7

Gasoline Emissions from Emission Master 8.4.59 TANKS

Emissions From Vessel: Tucker Landfill Gasoline Tank

[Non Condensables]	Effective Vp (mmHg)	Working (lb)	Breathing (lb)	Total (lb)	Rate (lb/hr)
Air	469.6305	20.5228	71.0048	91.5276	0.0104
[Condensables]	**(mmHg)**	**(lb)**	**(lb)**	**(lb)**	**(lb/hr)**
Gasoline RVP10	238.1518	25.4447	80.2967	105.7414	0.0121

Annual VOC Emissions: 5.29E-02 tons