



State of Oregon
Department of
Environmental
Quality

Permit Number: 33-0007-TV-01

Expiration Date: 1/2/2025

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OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY
OREGON TITLE V OPERATING PERMIT

Eastern Region
475 NE Bellevue Dr., Suite 110
Bend, OR 97701
(541) 388-6146

Issued in accordance with provisions of ORS 468A.040
and based on land use compatibility findings included in the permit record.

ISSUED TO:

Wasco County Landfill, Inc.
P.O. Box 61726
Vancouver, WA 98666

INFORMATION RELIED UPON:

Application Number: 29107
Received: 5/31/17

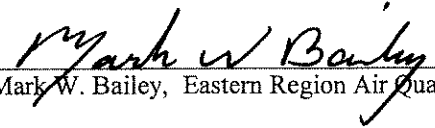
PLANT SITE LOCATION:

2550 Steele Road
The Dalles, OR 97058

LAND USE COMPATIBILITY STATEMENT:

Issued by: Wasco County
Dated: 12/01/2000

ISSUED BY THE DEPARTMENT OF ENVIRONMENTAL QUALITY


Mark W. Bailey, Eastern Region Air Quality Manager

JAN 21 2020

Date

Nature of Business

Municipal Solid Waste Landfill

SIC

4953

NAICS

562212

RESPONSIBLE OFFICIAL

Title: Site Manager

FACILITY CONTACT PERSON

Name: Brian Evola

Title: District Manager

Phone: 541-965-1339



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LIST OF ABBREVIATIONS THAT MAY BE USED IN THIS PERMIT

ACDP	Air Contaminant Discharge Permit	NA	Not Applicable
Act	Federal Clean Air Act	NMOC	Non-Methane Organic Compound
ASTM	American Society of Testing and Minerals	NOx	Nitrogen Oxides
Btu	British thermal unit	O2	Oxygen
CFR	Code of Federal Regulations	OAR	Oregon Administrative Rules
CO	Carbon Monoxide	ODEQ	Oregon Department of Environmental Quality
CO2E	Carbon Dioxide Equivalent	ORS	Oregon Revised Statutes
CPMS	Continuous Parameter Monitoring System	O&M	Operation and Maintenance
DEQ	Department of Environmental Quality	Pb	Lead
dscf	dry standard cubic feet	PCD	Pollution Control Device
EF	Emission Factor	PM	Particulate Matter
EPA	US Environmental Protection Agency	PM10	Particulate Matter less than 10 microns in size
EU	Emissions Unit	PM2.5	Particulate Matter less than 2.5 microns in size
FCAA	Federal Clean Air Act	ppm	parts per million
FSA	Fuel Sampling and Analysis	PSEL	Plant Site Emission Limit
GHG	Greenhouse Gas	psia	Pounds per square inch, actual
gr/dscf	Grain per dry standard cubic feed (1 pound = 7000 grains)	SERP	Source Emissions Reduction Plan
HAP	Hazardous Air Pollutant as defined by OAR 340-244-0040	SO2	Sulfur Dioxide
HCFC	Halogenated Chloro-Fluoro-Carbons	ST	Source Test
ID	Identification Number or Label	VE	Visible Emissions
I&M	Inspection and Maintenance	VMT	Vehicle Miles Traveled
LFG	Landfill Gas	VOC	Volatile Organic Compounds

PERMITTED ACTIVITIES

1. Until such time as this permit expires or is modified or revoked, the permittee is allowed to discharge air contaminants from those processes and activities directly related to or associated with air contaminant source(s) in accordance with the requirements, limitations and conditions of this permit. [OAR 340-218-0010 and 340-218-0120(2)]
2. All conditions in this permit are federally enforceable, meaning that they are enforceable by DEQ, EPA and citizens under the Clean Air Act, except Conditions 6, 7, 8, 13, 14, 15, 16, G5 and G9 (OAR 340-248-0005 through 340-248-0180) are only enforceable by the state. [OAR 340-218-0060]

EMISSIONS UNIT (EU) AND POLLUTION CONTROL DEVICE (PCD) IDENTIFICATION

3. The emissions units regulated by this permit are the following: [OAR 340-218-0040(3)]

Emission Unit Description	EU ID	Pollution Control Device Description	PCD ID
Landfill Gas	LFG-01	Collection system meeting 40 CFR 60.752(b)(2)(ii)	NA
Landfill Gas Control	CTRL-01	Control device meeting 40 CFR 60.752(b)(2)(iii)	TBD
Engines ¹ – Tipper	ENG-01	No controls	NA
Unpaved Roads	UPR-01	Water	NA
Leachate	LEA-01	No controls	NA
Petroleum Contaminated Soil	PCS-01	Wet suppression, chemical stabilization, physical stabilization	NA

1. Other engines are on-site but have insignificant emissions.

EMISSION LIMITS AND STANDARDS, TESTING, MONITORING AND RECORDKEEPING REQUIREMENTS

The following tables and conditions contain the applicable requirements along with testing, monitoring, and recordkeeping requirements for the emissions units to which those requirements apply.

Facility-Wide Requirements

Applicable Requirement	Condition Number	Pollutant/Parameter	Limit/Standard	Averaging Time	Testing Condition	Monitoring Condition
340-208-0210	4	Fugitive emissions	minimize	NA	NA	5
340-208-0300	6	Nuisance	no nuisance	NA	NA	8
340-208-0450	7	PM >250μ	no fallout	NA	NA	8
40 CFR 80.510(b)	9.a	Ultra low sulfur diesel content	≤0.0015% S by weight	Each shipment	Vendor certificate	10



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Applicable Requirement	Condition Number	Pollutant/Parameter	Limit/Standard	Averaging Time	Testing Condition	Monitoring Condition
340-228-0110(1)	9.b	#1 Distillate oil sulfur content	$\leq 0.3\%$ S by weight	Each shipment	Vendor certificate	10
340-228-0110(2)	9.c	#2 Distillate oil sulfur content	$\leq 0.5\%$ S by weight	Each shipment	Vendor certificate	10
40 CFR Part 68	12	Risk management	Risk management plan	NA	NA	12

4. Applicable Requirement: The permittee must not allow or permit any materials to be handled, transported, or stored; or a building, its appurtenances, or a road to be used, constructed, altered, repaired or demolished; or any equipment to be operated, without taking reasonable precautions to prevent particulate matter from becoming airborne.

- 4.a. Such reasonable precautions must include, but not be limited to the following: [OAR 340-208-0210(1)]

- 4.a.i. Use, where possible, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads or the clearing of land;
- 4.a.ii. Application of water, or other suitable chemicals on unpaved roads, materials stockpiles, and other surfaces which can create airborne dusts;
- 4.a.iii. Full or partial enclosure of materials stockpiles in cases where application of water or chemicals are not sufficient to prevent particulate matter from becoming airborne;
- 4.a.iv. Installation and use of hoods, fans and fabric filters to enclose and vent the handling of dusty materials;
- 4.a.v. Adequate containment during sandblasting or other similar operations;
- 4.a.vi. Covering, at all times when in motion, open bodied trucks transporting materials likely to become airborne; and
- 4.a.vii. Prompt removal from paved streets of earth or other material that does or may become airborne.

- 4.b. Upon request by DEQ, the permittee must develop a fugitive emission control plan for approval by DEQ if the above precautions are not adequate, and implement the plan whenever fugitive emissions leave the property for more than 18 seconds in a six-minute period.

5. Monitoring Requirement: At least once each month for a minimum period of 30 minutes, the permittee must visually survey the plant for any sources of excess fugitive emissions. For the purpose of this survey, excess fugitive emissions are considered to be any visible emissions that leave the plant site boundaries for more than 18 seconds in a six-minute period. The person conducting the observation must follow the procedures of EPA Method 22. If sources of visible emissions are identified, the permittee must:

- 5.a. Immediately take corrective action to minimize the fugitive emissions, including but not limited to those actions identified in Condition 4; or
- 5.b. Develop a DEQ approved fugitive emission control plan upon request by DEQ and implement the plan whenever fugitive emissions leave the property for more than 18 seconds in a six-minute period. [OAR 340-218-0050(3)(a)]
- 5.c. Recordkeeping: The permittee must maintain records of the fugitive emissions surveys, corrective actions (if necessary), and/or the results of any EPA Method 22 tests.

Nuisance Conditions

6. Applicable Requirement: The permittee must not cause or allow air contaminants from any source to cause a nuisance. Nuisance conditions will be verified by DEQ personnel. [OAR 340-208-0300] This condition is enforceable only by the State.
7. Applicable Requirement: The permittee must not cause or permit the deposition of any particulate matter larger than 250 microns in size at sufficient duration or quantity, as to create an observable deposition upon the real property of another person. [OAR 340-208-0450] This condition is enforceable only by the State.
8. Monitoring Requirement: The permittee must maintain a log of each nuisance complaint received by the permittee during the operation of the facility. Documentation must include date of contact, time of observed nuisance condition, description of nuisance condition, location of receptor, status of plant operation during the observed period, and time of response to complainant. A plant representative must immediately investigate the condition following the receipt of the nuisance complaint and a plant representative must provide a response to the complainant within 24 hours, if possible. This condition is only enforceable by the state. [OAR 340-218-0050(3)(a)]

Fuels

9. Applicable Requirement: If the permittee burns any of the fuels listed below, the sulfur content cannot exceed:
 - 9.a. 0.0015% sulfur by weight for ultra low sulfur diesel; [40 CFR 80.510(b)]
 - 9.b. 0.3% sulfur by weight for ASTM Grade 1 distillate oil; [OAR 340-228-0110(1)]
 - 9.c. 0.5% sulfur by weight for ASTM Grade 2 distillate oil; [OAR 340-228-0110(2)]
 - 9.d. The permittee is allowed to use on-specification used oil that contains no more than 0.5% sulfur by weight. The permittee must obtain analyses from the marketer or, if generated on site, have the used oil analyzed, so that it can be demonstrated that each shipment of oil does not exceed the used oil specifications contained in 40 CFR Part 279.11, Table 1.
10. Monitoring Requirement: The permittee must monitor the sulfur content of each shipment of fuel received by: [OAR 340-218-0050(3)(a)]
 - 10.a. Obtaining a sulfur content certificate from each vendor for each shipment of fuel received; or
 - 10.b. Analyzing or having analyzed by a contract laboratory a representative sample taken by the permittee from each shipment of fuel received.
11. Recordkeeping Requirement: The permittee must keep records of:
 - 11.a. Type and amount of fuels used in the engines; and
 - 11.b. Sulfur content of fuel used in the engines.

Accidental Release Prevention

12. Applicable Requirement: Should this stationary source become subject to the accidental release prevention regulations in 40 CFR Part 68, then the permittee must submit a risk management plan (RMP) by the date specified in 40 CFR 68.10 and comply with the plan and all other applicable Part 68 requirements. [40 CFR Part 68]



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Landfill Requirements

Applicable Requirement	Condition Number	Pollutant/Parameter	Limit/Standard	Averaging Time	Testing Condition	Monitoring Condition
340-248-0280(10)	13, 14, 15	Asbestos	Offload asbestos to prevent emissions and cover with 12 inches of soil	As it occurs, recorded monthly	Visual emissions observation per occurrence	16
40 CFR 60.752(b)(2)(i)	17	LFG	Submit plan for collection and control of LFG	NA	NA	NA
40 CFR 60.752(b)(2)(ii)	18	LFG	Install LFG collection and control system	NA	NA	NA
40 CFR 60.753(b)	19.a	Wellhead pressure	Maintain negative	NA	NA	19.a
40 CFR 60.753(c)	19.b	Wellhead temperature and oxygen/nitrogen	Temperature < 55°C Oxygen < 5% Nitrogen < 20%	NA	19.b.i, 19.b.ii	19.b
40 CFR 60.753(d)	19.c	Surface methane concentration	< 500 ppm CH ₄ above background	NA	19.c	19.c
40 CFR 60.752(b)(2)(ii)	20	NMOC control device	Send LFG to control device or treatment system	NA	21	20

Asbestos

13. Applicable Requirement: For all asbestos-containing waste material received, the permittee must:

- 13.a. Ensure that off-loading of asbestos-containing waste material is done under the direction and supervision of the landfill operator, or their authorized agent, and accomplished in a manner that prevents the leak-tight transfer containers from rupturing and prevents visible emissions to the air. [OAR 340-248-0280(10)(a)(A)] If visible emissions are observed, the permittee must immediately take measures to suppress emissions. Such measures include, but are not limited to, wetting the source of emissions or covering the source of emissions with soil.
- 13.b. Ensure that off-loading of asbestos-containing waste material occurs at the immediate location where the waste is to be buried and restrict public access to the off-loading area until the waste is covered. [OAR 340-248-0280(10)(a)(B)]
- 13.c. Immediately notify DEQ by telephone, followed by a written report the following day, of the presence of improperly enclosed or uncovered waste. Submit a copy of the signed asbestos waste shipment record along with the report. [OAR 340-248-0280(10)(a)(D)]
- 13.d. Send a copy of the signed asbestos waste shipment record to the asbestos waste generator as soon as possible, but not longer than 30 days after receipt of the waste. [OAR 340-248-0280(10)(a)(E)]

- 13.e. Upon discovering a discrepancy between the quantity of waste designated on the asbestos waste shipment records and the quantity actually received, attempt to reconcile the discrepancy with the asbestos waste generator. If the discrepancy cannot be reconciled, the permittee must report the discrepancy and reconciliation attempts in writing to DEQ within the 15th day after receiving the waste. A copy of the asbestos waste shipment record with the DEQ assigned asbestos project number shall be submitted with this report. [OAR 340-248-0280(10)(a)(F)]
- 13.f. Select the asbestos waste burial site in an area of minimal work activity that is not subject to future excavation. [OAR 340-248-0280(10)(a)(G)]
- 13.g. Cover all asbestos-containing waste material deposited at the disposal site with at least 12 inches of soil or six inches of soil plus 12 inches of other waste before compacting equipment runs over it and complete such covering and compaction no later than the end of the operating day that the waste is received. [OAR 340-248-0280(10)(a)(H)]

These conditions are enforceable only by the state.

- 14. Applicable Requirement: Excavation or disturbance of asbestos-containing waste material that has been deposited at a waste disposal site and is covered, shall be considered an asbestos abatement project. The notification for any such project shall be submitted as specified in OAR 340-248-0260 with some exceptions as required by OAR 340-248-0280(10)(c). This condition is only enforceable by the state.
- 15. Applicable Requirement: Upon closure of an active asbestos-containing waste disposal site, each owner or operator shall comply with all the provisions of OAR 340-248-0280(10)(d). This condition is only enforceable by the state.
- 16. Monitoring and Recordkeeping Requirements: The permittee must maintain the following records for asbestos: This condition is only enforceable by the state.
 - 16.a. Asbestos waste shipment records for at least two years. Ensure that all information requested on the DEQ form regarding waste disposal has been supplied. [OAR 340-248-0280(10)(a)(C)]
 - 16.b. Records of the location, depth and area, and quantity in cubic yards of asbestos-containing waste material within the disposal site on a map or diagram of the disposal area until closure. [OAR 340-248-0280(10)(b)] Copies of these records indicating locations and quantities shall be submitted to DEQ upon closure of the landfill. [OAR 340-0280(10)(d)(B)]

New Source Performance Standards

- 17. Applicable Requirement: The permittee must submit a landfill gas collection and control system design plan prepared by a professional engineer to DEQ no later than December 31, 2020. The system described in the plan must meet the requirements of 40 CFR 60.752(b)(2)(ii). The plan shall include any alternatives to the operational standards, test methods, compliance measures, monitoring, recordkeeping and reporting requirements in 40 CFR 60.753 through 758. The plan shall either conform to the specifications for active collection systems in 40 CFR 60.759 or demonstrate to DEQ's satisfaction the sufficiency of the alternative provisions to 40 CFR 60.759. [40 CFR 60.752(b)(2)(i)]
- 18. Applicable Requirement: The permittee shall install a collection and control system that captures the gas generated in the landfill no later than July 1, 2022. The collection system shall be designed to: [40 CFR 60.752(b)(2)(ii)]
 - 18.a. Handle the maximum expected gas flow rate from the entire area of the landfill that warrants control over the intended use period of the gas control or treatment system equipment as required in 40 CFR 60.755(a)(1);

18.b. Collect gas from each area, cell, or group of cells in the landfill in which the initial solid waste has been placed for a period of 5 years or more if active; or 2 years or more if closed or at final grade as required in 40 CFR 60.755(a)(2); [40 CFR 60.753(a)] Collect gas at a sufficient extraction rate as required in 40 CFR 60.755(a)(3).

18.c. Minimize off-site migration of subsurface gas.

19. Applicable Requirement: Operation of the landfill gas collection system, once installed, is subject to the following requirements: The requirements apply at all times, except during periods of startup, shutdown or malfunction, provided that the duration of startup, shutdown or malfunction shall not exceed 5 days for collection systems and 1 hour for treatment or control devices. [40 CFR 60.755(e)] A sampling port shall be installed at each well head. [40 CFR 60.756(a)]

19.a. A negative pressure must be maintained at each wellhead except when a fire or increased well temperature occurs or at a decommissioned well. The permittee shall record instances when positive pressure occurs in efforts to avoid a fire. These records shall be submitted with the annual reports. [40 CFR 60.753(b)] The permittee shall measure gage pressure in the gas collection header at each individual well monthly. If positive pressure exists, action shall be initiated to correct the exceedance within 5 calendar days except when a fire or increased well temperature occurs or when a well is decommissioned. If negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first measurement, the gas collection system must be expanded to correct the exceedance within 120 days of the initial measurement of positive pressure. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternate timeline for correcting the exceedance may be submitted to DEQ for approval. [40 CFR 60.755(a)(3)] The permittee is not required to expand the system during the first 180 days after gas collection system startup. [40 CFR 60.755(a)(4)]

19.b. For each interior wellhead, the landfill gas temperature shall be less than 55°C and either a nitrogen level less than 20% or an oxygen level less than 5%. The permittee may establish higher limits for temperature, nitrogen, and oxygen at a particular well as long as supporting data are provided demonstrating that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens. [40 CFR 60.753(c)] The permittee shall monitor each well monthly for temperature and nitrogen or oxygen. If a well exceeds one of these operating parameter, action shall be initiated to correct the exceedance within 5 calendar days. If correction of the exceedance cannot be achieved within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure shall not cause the exceedance of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to DEQ for approval.

19.b.i. The nitrogen level shall be determined using EPA Method 3C unless an alternate method is approved.

19.b.ii. The oxygen level shall be determined using EPA Method 3A or 3C unless an alternate method is approved. The span shall be set so that the limit is between 20% - 50% of the span. A data recorded is not required. Only two calibration gases are required, a zero and a span and ambient air may be used as the span. A calibration error check is not required. The allowable sample bias, zero drift, and calibration drift are $\pm 10\%$.

19.c. The methane concentration shall be less than 500 ppm above background at the surface of the landfill. The permittee shall conduct surface testing around the entire perimeter of the waste collection area and along a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated levels of landfill gas, such as distressed vegetation and cracks or seeps in the cover. A surface monitoring plan shall be developed that includes a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30 meter

intervals. Areas with steeper slopes or other dangerous areas may be excluded from surface testing. [40 CFR 60.753(d)] Monitoring shall be conducted on a quarterly basis using an organic vapor analyzer, flame ionization detector, or other portable monitoring meeting 40 CFR 60.755(d). [40 CFR 60.755(c)(1)] The background concentration shall be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter wells. [40 CFR 60.755(c)(2)] Surface monitoring shall be performed in accordance with Section 4.3.1 of EPA Method 21, except the probe inlet shall be placed within 5 to 10 centimeters of the ground. Monitoring shall be performed during typical meteorological conditions. [40 CFR 60.755(c)(3)] Any reading of 500 ppm or more above background shall be recorded as a monitored exceedance and the following action shall be taken. [40 CFR 60.755(c)(4)]

- 19.c.i. The location of each monitored exceedance shall be marked and the location recorded.
- 19.c.ii. Cover maintenance or adjustments to the vacuum of the adjacent wells to increase the gas collection in the vicinity of each exceedance shall be made and the location shall be re-monitored within 10 calendar days of detecting the exceedance.
- 19.c.iii. If the re-monitoring of the location shows a second exceedance, additional corrective action shall be taken and the location shall be monitored again within 10 days of the second exceedance. If the re-monitoring shows a third exceedance for the same location, the action in Condition 19.c.v shall be taken and no further monitoring of that location is required until the action specified in Condition 19.c.v has been taken.
- 19.c.iv. Any location that initially showed an exceedance but has a methane concentration less than 500 ppm methane above the background at the 10 day re-monitoring specified in Condition 19.c.ii or 19.c.iii shall be re-monitored 1 month from the initial exceedance. If the 1-month re-monitoring shows a concentration less than 500 ppm above background, no further monitoring of that location is required until the next quarterly monitoring period. If the 1-month monitoring shows an exceedance, the actions specified in Condition 19.c.iii or 19.c.v shall be taken.
- 19.c.v. For any location where the monitored methane concentration equals or exceeds 500 ppm above background three times within a quarterly period, a new well or other collection device shall be installed within 120 calendar days of the initial exceedance. An alternative remedy to the exceedance, such as upgrading the blower, header pipes or control device, and a corresponding timeline for installation may be submitted to DEQ for approval.

The permittee shall implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis. [40 CFR 60.755(c)(5)]

If monitoring demonstrates that the operational requirements of Conditions 19.a, 19.b and 19.c are not being met, the corrective actions in those conditions shall be taken. If the corrective actions are taken, the monitored exceedance is not a violation. [40 CFR 60.753(g), 755(c)(4)]

20. Applicable Requirement: The permittee shall route all the collected gas to a control system that is either: [40 CFR 60.752(b)(2)(ii)]

- 20.a. An open flare designed and operated in accordance with 40 CFR 60.18, except the net heating value of the combusted landfill gas is calculated from the concentration of methane in the landfill gas as measured by EPA Method 3C (a minimum of three 30-minute samples). The measurement of other organic components, hydrogen, and carbon monoxide is not applicable. Method 3C may be used to determine the landfill gas molecular weight for calculating the flare gas exit velocity under 40 CFR 60.18(f)(4). [40 CFR 60.754(e)] If an open flare is used to control NMOC emissions the permittee shall install, calibrate, maintain and operate according to the manufacturer's specifications the following equipment: [40 CFR 60.756(c)]

- 20.a.i. A heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light or the flame itself to indicate the continuous presence of a flame.
- 20.a.ii. A device that records flow to or bypass of the flare. The permittee can either install, calibrate and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes; or secure the bypass line valve in the closed position with a car-seal or lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line
- 20.b. A control system designed and operated to reduce NMOC by 98 weight percent, or, when an enclosed combustion device is used for control, either reduce NMOC by 98 weight percent or reduce the outlet NMOC concentration to less than 20 parts per million by volume, dry basis, as hexane, at 3 percent oxygen. The reduction efficiency or ppmv will be established by an initial performance test completed no later than 180 days after the initial startup of the approved control system using the test method in 40 CFR 60.754(d). If an enclosed combustor is used to control NMOC emissions the permittee shall calibrate, maintain and operate according to the manufacturer's specifications the following equipment: [40 CFR 60.756(b)]
 - 20.b.i. A temperature monitoring device equipped with a continuous recorder and having a minimum accuracy of $\pm 1\%$ of the temperature being measured expressed in degrees Celsius or $\pm 0.5^\circ\text{C}$, whichever is greater. A temperature monitoring device is not required for boilers or process heaters with a design heat input capacity equal to or greater than 44 MW.
 - 20.b.ii. A device that records flow to or bypass of the control device. The permittee can either install, calibrate and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes; or secure the bypass line valve in the closed position with a car-seal or lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.
- 20.c. Route the collected gas to a treatment system that processes the collected gas for subsequent sale or use. All emissions from any atmospheric vent from the gas treatment system shall be subject to the requirements of Conditions 20.a or 20.b.

In the event the collection or control system is inoperable, the gas mover shall be shut down and all valves in the collection and control system contributing to the venting of LFG to the atmosphere shall be closed within 1 hour. [40 CFR 60.753(e)]

The permittee must operate the control or treatment system at all times when the collected gas is routed to the system. [40 CFR 60.753(f)]

- 21. Testing Requirement: To demonstrate compliance with Condition 20.b or 20.c, EPA Method 25, 25C or 18 must be used unless DEQ approves another method. Method 3 or 3A shall be used to determine oxygen for correcting the NMOC concentration to 3%. In cases where the outlet concentration is less than 50 ppm NMOC as carbon (8 ppm NMOC as hexane), Method 25A should be used in place of Method 25. If using Method 18 the minimum list of compounds to be tested are those in the most recent AP-42. [40 CFR 60.754(d)]

Landfill Gas Control (CTRL-01) Requirements

Applicable Requirement	Condition Number	Pollutant/Parameter	Limit/Standard	Monitoring Requirement	Monitoring Condition
340-208-0110(4)	22	Visible emissions	20% opacity, 6-minute block average	VE periodic monitoring	23
340-226-0210(2)(a)	24	PM	0.1 gr/dscf, avg. of 3 test runs	ST periodic monitoring	25
40 CFR 63.1960	26	SSM	Develop a startup, shutdown and malfunction plan	NA	26

22. **Applicable Requirement:** In addition to the requirements of Conditions 20 and 21, if the LFG control device is an open flare or enclosed combustion device, visible emissions may not equal or exceed an average of 20 percent opacity. [OAR 340-208-0110(4)] The visible emissions standard is based on the average of 24 consecutive observations recorded at 15-second intervals, or more frequently as allowed under Condition 22.b, which comprise a six-minute block. Six-minute blocks need not be consecutive in time and in no case may two blocks overlap. For each set of 24 observations, the six-minute block average is calculated by summing the opacity of the 24 observations and dividing the sum by 24. Six-minute block averages are measured by:
- 22.a. EPA Method 9; or
 - 22.b. A continuous opacity monitoring system (COMS) installed and operated in accordance with the DEQ Continuous Monitoring Manual or 40 CFR Part 60; or
 - 22.c. An alternative monitoring method approved by DEQ that is equivalent to EPA Method 9.
23. **Monitoring Requirement:** At any time that the permittee is burning landfill gas, the permittee is not required to conduct any visible emissions or particulate matter monitoring because it is extremely unlikely that these standards could be violated while burning landfill gas. If visible emissions are to be measured for any reason, the visible emissions must be measured in accordance with DEQ's Source Sampling Manual.
24. **Applicable Requirement:** In addition to the requirements of Conditions 20 and 21, the permittee may not emit particulate matter emissions from the LFG control device (open flare or enclosed combustion device) in excess of 0.10 grains per dry standard cubic foot. [OAR 340-226-0210(2)(c)]
25. **Testing Requirement:** Within 180 days of commencing operation of the LFG control device an Oregon Method 5 test must be used for measuring particulate matter emissions from the enclosed LFG combustion device. Each test run must be a minimum of 60 minutes long with a minimum sample volume of 31.8 dscf. Test results must be reported as grains per dry standard cubic feet, pounds per hour, and pounds per million cubic feet of landfill gas burned. During each test run, the permittee must record the following information:
- 25.a. Visible emissions as measured by EPA Method 9 for a minimum of 6 minutes during or within 30 minutes before or after each Oregon Method 5 test run or as measured by a COMS;
 - 25.b. Landfill gas flow rate (ft³/minute); and
 - 25.c. Control device operating parameters.

26. Applicable Requirement: The permittee must develop a written startup, shutdown and malfunction plan according to the provisions of 40 CFR 63.6(e)(3). A copy of the plan must be maintained on site. Failure to write or maintain a copy of the startup, shutdown and malfunction plan is a deviation from the requirements of this condition. [40 CFR 63.1960]

Engines (ENG-01) Requirements

Applicable Requirement	Condition Number	Pollutant/Parameter	Limit/Standard	Monitoring Requirement	Monitoring Condition
OAR 340-208-0110(4)	27	Visible emissions	20% opacity, 6 minute block	EPA Method 9	28

27. Applicable Requirement: The permittee must not cause or allow the emissions of any air contaminant into the atmosphere from ENG-01 which is equal to or greater than 20% opacity during any six minute block period. [OAR 340-208-0110(4)]
28. Testing/Monitoring Requirement: The opacity standard is based on the average of 24 consecutive observations recorded at 15-second intervals which comprise a six-minute block. Six-minute blocks need not be consecutive in time and in no case may two blocks overlap. For each set of 24 observations, the six-minute block average is calculated by summing the opacity of the 24 observations and dividing the sum by 24 - Six-minute block averages are measured by EPA Method 9; a continuous opacity monitoring system (COMS) installed and operated in accordance with the DEQ Continuous Monitoring Manual or 40 CFR Part 60; or an alternative monitoring method approved by DEQ that is equivalent to EPA Method 9.
- 28.a. The Method 9 tests must be conducted at least once each day, excluding weekends and holidays;
- 28.b. If 5 consecutive days of Method 9 testing are less than the standard in Condition 27, the test frequency may be monthly;
- 28.c. If 8 consecutive months of Method 9 testing are less than the standard in Condition 27, the test frequency may be quarterly;
- 28.d. If any test result exceeds the standard in Condition 27, the test frequency must be daily for 5 consecutive days following the exceedance. If the results of the daily tests are all less than the standard, the test frequency may revert to the same frequency as before the exceedance occurred;
- 28.e. If, on a regularly scheduled test day, it is not possible to conduct a Method 9 due to inclement weather conditions or interference from other fugitive sources, the permittee must make three attempts during the day at approximately 10 AM, noon, and 2 PM. If it is still not possible to conduct the test, the permittee must perform the test the following day. The permittee must record in a log the reason for not conducting the test on a regularly scheduled test day.
- 28.f. The test must be conducted when the engines are in operation.
- 28.g. The permittee must keep records of compliance tests for Condition 27 and describe the operating condition.
- 28.h. The permittee must inspect and maintain the engines in accordance with manufacturer's recommendation.

Air Pollution Control Practice

29. Applicable Requirement: At all times, including periods of startup, shutdown and malfunction, the permittee must maintain and operate any affected emission unit in accordance with good air pollution control practice for minimizing emissions in accordance with 40 CFR 63.6(e). [40 CFR 60.11(d), 63.6(e)]

Insignificant Activities Requirements

30. DEQ acknowledges that insignificant emissions units (IEUs) identified by rule as either categorically insignificant activities or aggregate insignificant emissions as defined in OAR 340-200-0020 exist at facilities required to obtain an Oregon Title V Operating Permit. IEUs must comply with all applicable requirements. In general, the requirements that could apply to IEUs are incorporated as follows:
 - 30.a. OAR 340-208-0110 (20% opacity).
 - 30.b. OAR 340-228-0210 (0.10 gr/dscf corrected to 12% CO₂ or 50% excess air for fuel burning equipment).
 - 30.c. OAR 340-226-0210 (0.10 gr/dscf for non-fugitive, non-fuel burning equipment).
 - 30.d. OAR 340-226-0310 (process weight limit for non-fugitive, non-fuel burning process equipment).
 - 30.e. The permittee must not allow gasoline to be handled in a manner that would result in vapor releases to the atmosphere for extended periods of time. Measures to be taken include, but are not limited to the following: [40 CFR 63.11116(a), (b), (d) and OAR 340-244-0240, federally enforceable]
 - 30.e.i. Minimize gasoline spills;
 - 30.e.ii. Clean up spills as expeditiously as practicable;
 - 30.e.iii. Cover all open gasoline containers and all gasoline storage tank fill-pipes with a gasketed seal when not in use;
 - 30.e.iv. Minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators.
 - 30.e.v. The permittee is not required to submit the notifications or reports as specified in 40 CFR 63.11124 and 63.11126, or Subpart A, but the permittee must have records available within 24 hours of a request by DEQ to document gasoline throughput.
 - 30.e.vi. Portable gasoline containers that meet the requirements of 40 CFR Part 59, Subpart F, are considered acceptable for compliance with Condition 30.e.iii.
 - 30.f. In addition to the measures specified in Condition 30.e, the permittee must take the following measures to minimize vapor releases: [OAR 340-244-0240, state only enforceable]
 - 30.f.i. Do not top off or overfill vehicle tanks. If a person can confirm that a vehicle tank is not full after the nozzle clicks off (such as by checking the vehicle's fuel tank gauge), the person may continue to dispense fuel using best judgment and caution to prevent a spill;
 - 30.f.ii. Post a sign at the gasoline dispensing facility (GDF) instructing a person filling up a motor vehicle to not top off the vehicle tank;
 - 30.f.iii. Ensure that cargo tanks unloading at the GDF comply with Conditions 30.e.i through 30.e.iii, 30.f.i, and 30.f.ii.
 - 30.f.iv. The permittee must only load gasoline into storage tanks at the facility by utilizing submerged filling, as defined in OAR 340-244-0030. The submerged fill pipe must be no more than 12 inches from the bottom of the storage tank.
 - 30.g. Emergency stationary reciprocating internal combustion engines (RICE) are subject to the following requirements: [40 63.6640(f)]
 - 30.g.i. For each emergency stationary RICE, the permittee must:
 - 30.g.i.A. Change oil and filter every 500 hours of operation or annually, whichever comes first; [40 CFR 63. 6603(a), Table 2d(4)(a)]
 - 30.g.i.B. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first; [40 CFR 63. 6603(a), Table 2d(4)(b)]
 - 30.g.i.C. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary; [40 CFR 63. 6603(a), Table 2d(4)(c)]



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- 30.g.i.D. During periods of startup, minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply; [40 CFR 63. 6603(a), Table 2d]
- 30.g.ii. The permittee must install a non-resettable hour meter on each emergency stationary RICE, if one is not already installed. [40 CFR 63.6625(f)]
- 30.g.iii. The permittee must operate and maintain the stationary RICE according to the manufacturer's emission related operation and maintenance instructions. [40 CFR 63.6640(a), Table 6(9)]
- 30.g.iv. Operating conditions: [40 CFR 63.6640(f)(2)]
 - 30.g.iv.A. There is no time limit on the use of emergency stationary RICE in emergency situations.
 - 30.g.iv.B. Emergency stationary RICE may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by the manufacturer, the vendor, or the insurance company associated with the engine. Required testing of such units should be minimized, but there is no time limit on the use of emergency stationary RICE in emergency situations and for routine testing and maintenance.
 - 30.g.iv.C. Emergency stationary RICE may be operated for an additional 50 hours per year in non-emergency situations. The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another utility.
- 30.g.v. The permittee must keep records of the hours of operation of each emergency stationary RICE that is recorded through the non-resettable hour meter. The permittee must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engines are used for demand response operation, the permittee must keep records of the notification of the emergency situation, and the time the engine was operated as part of demand response. [40 CFR 63.6655(f)]

Unless otherwise specified in this permit or an applicable requirement, DEQ is not requiring any testing, monitoring, recordkeeping or reporting for the applicable emissions limits and standards that apply to IEUs. However, if testing were performed for compliance purposes, the permittee would be required to use the test methods identified in and perform the testing in accordance with DEQ's Source Sampling Manual.

PLANT SITE EMISSION LIMITS

31. The permittee must not cause or allow plant site emissions to exceed the following limits for any 12 consecutive calendar month period: [OAR 340-222-0035 through OAR 340-222-0041]

Pollutant	Plant Site Emission Limit (tons/yr)
PM	34
PM ₁₀	14
PM _{2.5}	9
SO ₂	39
NO _x	39
CO	99
VOC	43
NOC	49
NMOC	49
GHG (CO ₂ e)	146,262

32. Monitoring Requirement: The permittee must determine compliance with the Plant Site Emission Limits established in Condition 31 of this permit by conducting monitoring and calculations for each 12-month period in accordance with the following procedures, test methods and frequencies except for GHGs: [OAR 340-218-0050(3)]

- 32.a. The permittee must calculate emissions using the following formula, process parameters, and emission factors:

$$E = P_{eu} \times EF_{eu} \times K$$

Where:

- | | | |
|------------------|---|--|
| E | = | Pollutant emissions in lbs/month and tons/yr. |
| P _{eu} | = | Process parameter identified in the table below; |
| EF _{eu} | = | Emission factor identified for each emissions unit and pollutant in the table below; |
| K | = | Conversion constant: 1 lb/lb for monthly emissions calculations;
1 ton/2,000 lbs for annual emissions calculations. |



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Emission Unit	Throughput Type [Units]	Emission Factors (lb/throughput unit)							
		PM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO	VOC	NMOC
UPR	Vehicle miles traveled (VMT)	0.51	0.14	0.014	--	--	--	--	--
ENG -Tipper	Horsepower-hours (hp-hr)	2.20E-03	2.20E-03	2.20E-03	2.05E-03	0.031	6.68E-03	2.47E-03	--
LFG									LandGEM
PCS	Tons PCS (ton)	--	--	--	--	--	--	0.86	--
LEA-01	Thousand gallons (Mgal)	--	--	--	--	--	--	0.73	--
Aggregate Insignificant Emissions	Year (year)	2000	2000	2000	2000	2000	2000	2000	2000

- 32.b. The emissions factors listed in Condition 32.a are not enforceable limits unless otherwise specified in this permit. Compliance with PSELs must be determined by the calculations contained in this condition.
- 32.c. Recordkeeping: The permittee must maintain the following records:
- 32.c.i. Hours of operation each month of diesel and gas engines;
 - 32.c.ii. Miles travelled on unpaved roads;
 - 32.c.iii. Volume of landfill gas collected and sent to a control device;
 - 32.c.iv. Tons of petroleum contaminated soil received and used as daily cover;
 - 32.c.v. Gallons of leachate collected.

EMISSION FEES

33. Emission fees will be based on the Plant Site Emission Limits, unless permittee elects to report actual emissions for one or more permitted processes/pollutants. [OAR 340-220-0090]

GENERAL TESTING REQUIREMENTS

34. Unless otherwise specified in this permit, the permittee must conduct all testing in accordance with DEQ's Source Sampling Manual and 40 CFR 60.8. [OAR 340-212-0120]
- 34.a. Unless otherwise specified by a state or federal regulation, the permittee must submit a source test plan to DEQ at least 30 days prior to the date of the test. The test plan must be prepared in accordance with the Source Sampling Manual and address any planned variations or alternatives to prescribed test methods. Permittee should be aware, if significant variations are requested, it may require more than 30 days for DEQ to grant approval and may require EPA approval in addition to approval by DEQ.
 - 34.b. Only regular operating staff may adjust the processes or emission control device parameters during a compliance source test and within two (2) hours prior to the tests. Any operating adjustments made during a compliance source test, which are a result of consultation during the tests with source testing personnel, equipment vendors, or consultants, may render the source test invalid.

- 34.c. Unless otherwise specified by permit condition or DEQ approved source test plan, all compliance source tests must be performed as follows:
 - 34.c.i. At least 90% of the design capacity for new or modified equipment;
 - 34.c.ii. At least 90% of the maximum operating rate for existing equipment; or
 - 34.c.iii. At 90 to 110% of the normal maximum operating rate for existing equipment. For purposes of this permit, the normal maximum operating rate is defined as the 90th percentile of the average hourly operating rates during a 12 month period immediately preceding the source test. Data supporting the normal maximum operating rate must be included with the source test report.
- 34.d. Each source test must consist of at least three (3) test runs and the emissions results must be reported as the arithmetic average of all valid test runs. If for reasons beyond the control of the permittee a test run is invalid, DEQ may accept two (2) test runs for demonstrating compliance with the emission limit or standard.
- 34.e. Source test reports prepared in accordance with DEQ's Source Sampling Manual must be submitted to DEQ within 60 days of completing any required source test, unless a different time period is approved in the source test plan submitted prior to the source test.

GENERAL MONITORING AND RECORDKEEPING REQUIREMENTS

General Monitoring Requirements:

- 35. The permittee must not knowingly render inaccurate any required monitoring device or method. [OAR 340-218-0050(3)(a)(E)]
- 36. The permittee must use the same methods to determine compliance as those used to determine actual emissions for fee purposes and can be no less rigorous than the requirements of OAR 340-218-0080. [OAR 340-218-0050(3)(a)(F)]
- 37. The permittee must comply with the monitoring requirements on the date of permit issuance unless otherwise specified in the permit or an applicable requirement. [OAR 340-218-0050(3)(a)(G)]

General Recordkeeping Requirements

- 38. The permittee must maintain the following general records of testing and monitoring required by this permit: [OAR 340-218-0050(3)(b)(A)]
 - 38.a. The date, place as defined in the permit, and time of sampling or measurements;
 - 38.b. The date(s) analyses were performed;
 - 38.c. The company or entity that performed the analyses;
 - 38.d. The analytical techniques or methods used;
 - 38.e. The results of such analyses;
 - 38.f. The operating conditions as existing at the time of sampling or measurement;
 - 38.g. The records of quality assurance for continuous monitoring systems (including but not limited to quality control activities, audits, calibration drift checks);
 - 38.h. All process parameters identified in Condition 32.a (monthly); and
 - 38.i. All calculations identified in Condition 32.
- 39. Unless otherwise specified by permit condition, the permittee must make every effort to maintain 100 percent of the records required by the permit. If information is not obtained or recorded for legitimate reasons (e.g., the monitor or data acquisition system malfunctions due to a power outage), the missing

record(s) will not be considered a permit deviation provided the amount of data lost does not exceed 10% of the averaging periods in a reporting period or 10% of the total operating hours in a reporting period, if no averaging time is specified. Upon discovering a required record is missing, the permittee must document the reason for the missing record. In addition, any missing record that can be recovered from other available information will not be considered a missing record. [OAR 340-214-0110, 340-214-0114, and 340-218-0050(3)(b)]

40. The permittee must comply with the recordkeeping requirements on the date of permit issuance unless otherwise specified in the permit or an applicable requirement. [OAR 340-218-0050(3)(b)(C)]
41. Unless otherwise specified, the permittee must retain records of all required monitoring data and support information for a period of at least five (5) years from the date of the monitoring sample, measurement, report or application. Support information includes all calibration and maintenance records and all original strip-chart recordings (or other original data) for continuous monitoring instrumentation, and copies of all reports required by the permit. All existing records required by the previous Air Contaminant Discharge Permit or Oregon Title V Operating Permit must also be retained for five (5) years from the date of the monitoring sample, measurement, report or application. [OAR 340-218-0050(b)(B)]
42. The permittee must keep for at least 5 years up-to-date records of the maximum design capacity, the current amount of solid waste in place, and the year by year acceptance rate. Offsite records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic forms are acceptable. [40 CFR 60.758(a)]

REPORTING REQUIREMENTS

General Reporting Requirements

43. Excess Emissions Reporting: The permittee must report all excess emissions as follows: [OAR 340-214-0300 through 340-214-0360]
 - 43.a. Immediately (within 1 hour of the event) notify DEQ of an excess emission event by phone, email or facsimile; and
 - 43.b. Within 15 days of the excess emissions event, submit a written report that contains the following information: [OAR 340-214-0340(1)]
 - 43.b.i. The date and time of the beginning of the excess emissions event and the duration or best estimate of the time until return to normal operation;
 - 43.b.ii. The date and time the permittee notified DEQ of the event;
 - 43.b.iii. The equipment involved;
 - 43.b.iv. Whether the event occurred during planned startup, planned shutdown, scheduled maintenance, or as a result of a breakdown, malfunction or emergency;
 - 43.b.v. Steps taken to mitigate emissions and corrective action taken, including whether the approved procedures for a planned startup, shutdown or maintenance activity were followed;
 - 43.b.vi. The magnitude and duration of each occurrence of excess emissions during the course of an event and the increase over normal rates or concentrations as determined by continuous monitoring or best estimate (supported by operating data and calculations);
 - 43.b.vii. The final resolution of the cause of the excess emissions; and
 - 43.b.viii. Where applicable, evidence supporting any claim that emissions in excess of technology-based limits were due to any emergency pursuant to OAR 340-214-0360.



- 43.c. In the event of any excess emissions which are of a nature that could endanger public health and occur during non-business hours, weekends or holidays, the permittee must immediately notify DEQ by calling the Oregon Emergency Response System (OERS). The current number is 1-800-452-0311.
- 43.d. If startups, shutdowns or scheduled maintenance may result in excess emissions, the permittee must submit startup, shutdown or scheduled maintenance procedures used to minimize excess emissions to DEQ for prior authorization, as required in OAR 340-214-0310 and 340-214-0320. New or modified procedures must be received by DEQ in writing at least 72 hours prior to the first occurrence of the excess emission event. The permittee must abide by the approved procedures and have a copy available at all times.
- 43.e. The permittee must notify DEQ of planned startup/shutdown or scheduled maintenance events.
- 43.f. The permittee must continue to maintain a log of all excess emissions in accordance with OAR 340-214-0340(3). However, the permittee is not required to submit the detailed log with the semi-annual and annual monitoring reports. The permittee is only required to submit a brief summary listing the date, time, and the affected emissions units for each excess emission that occurred during the reporting period. [OAR 340-218-0050(3)(c)]
44. Permit Deviations Reporting: The permittee must promptly report deviations from permit requirements that do not cause excess emissions, including those attributable to upset conditions, as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken. "Prompt" means within 15 days of the deviation. Deviations that cause excess emissions, as specified in OAR 340-214-0300 through 340-214-0360 must be reported in accordance with Condition 43.
45. All required reports must be certified by a responsible official consistent with OAR 340-218-0040(5). [OAR 340-218-0050(3)(c)(D)]
46. Reporting requirements must commence on the date of permit issuance unless otherwise specified in the permit. [OAR 340-218-0050(3)(c)(E)]

Addresses of regulatory agencies are the following, unless otherwise instructed:

Submit all notices, reports and applications to the Eastern Region Permit Coordinator.

DEQ Eastern Region
475 NE Bellevue Dr. Suite 110
Bend, OR 97701
541-633-2021

Submit payments to DEQ's Business Office:

DEQ – Business Office
700 NE Multnomah, Suite 600
Portland, OR 97204
503-229-5359

Submit all EPA reports to:

CAA Compliance Manager
US EPA Region 10
Mail Stop OCE-101
1200 Sixth Avenue, Ste. 900
Seattle, WA 98101

NSPS Reporting Requirements

47. The permittee must submit an NMOC report to DEQ annually until after installation of a landfill gas collection and control system in compliance with Condition 18 during such time as the collection and control system is in operation and in compliance with Conditions 19 and 20. [40 CFR 60.757(b)]
- 47.a. The NMOC emission rate report must contain an annual estimate of the NMOC emission rate calculated using the procedures of 40 CFR 60.754(a). [40 CFR 60.757(b)(1)]
- 47.b. The NMOC emission rate report must include all the data, calculations, sample reports and measurements used to estimate the annual emissions. [40 CFR 60.757(b)(2)]

- 47.c. The permittee must submit a closure report to DEQ within 30 days of waste acceptance cessation. DEQ may request additional information as may be necessary to verify that permanent closure has taken place in accordance with the requirements of 40 CFR 258.60. If a closure report has been submitted to DEQ, no additional wastes may be placed into the landfill without filing a notification of modification as described in 40 CFR 60.7(a)(4). [40 CFR 60.757(d)]

Semi-Annual and Annual Reports

48. The permittee must submit three (3) copies of reports of any required monitoring at least every 6 months, completed on forms approved by DEQ. Six month periods are January 1 to June 30, and July 1 to December 31. One copy of the report must be submitted to the EPA and two copies to the DEQ regional office. All instances of deviations from permit requirements must be clearly identified in such reports: [OAR 340-218-0050(3)(c)(A) and 340-218-0080(6)(d)]
- 48.a. The first semi-annual report is due on **July 30** and must include the semi-annual compliance certification, OAR 340-218-0080.
- 48.b. The annual report is due on **February 15** and must consist of the following:
- 48.b.i. The emission fee report; [OAR 340-220-0100]
 - 48.b.ii. A summary of the excess emissions upset log; [OAR 340-214-0340]
 - 48.b.iii. The second semi-annual compliance certification; and [OAR 340-218-0080]
 - 48.b.iv. The annual certification that the risk management plan is being properly implemented; OAR 340-244-0230. [OAR 340-218-0080(7)]
 - 48.b.v. Other annual reporting requirements:
 - 48.b.v.A. Estimated annual amount of landfill gas generated based on LandGEM;
 - 48.b.v.B. Annual quantity of refuse in place;
 - 48.b.v.C. Volume of landfill gas collected and sent to a control device;
 - 48.b.v.D. Annual vehicle miles traveled on unpaved roads;
 - 48.b.v.E. 12-month rolling total emissions.
49. The semi-annual compliance certification must include the following (provided that the identification of applicable information may cross-reference the permit or previous reports, as applicable): [OAR 340-218-0080(6)(c)]
- 49.a. The identification of each term or condition of the permit that is the basis of the certification;
- 49.b. The identification of the method(s) or other means used by the permittee for determining the compliance status with each term and condition during the certification period, and whether such methods or other means provide continuous or intermittent data. Such methods and other means must include, at a minimum, the methods and means required under OAR 340-218-0050(3). *Note: Certification of compliance with the monitoring conditions in the permit is sufficient to meet this requirement, except when the permittee must certify compliance with new applicable requirements that are incorporated by reference into the permit. When certifying compliance with new applicable requirements that are not yet in the permit, the permittee must provide the information required by this condition.* If necessary, the permittee must identify any other material information that must be included in the certification to comply with Section 113(c)(2) of the FCAA, which prohibits knowingly making a false certification or omitting material information;
- 49.c. The status of compliance with terms and conditions of the permit for the period covered by the certification, including whether compliance during the period was continuous or intermittent. The certification must be based on the method or means designated in Condition 49.b of this rule. The certification must identify each deviation and take it into account in the compliance certification.

The certification must also identify as possible exceptions to compliance any periods during which compliance is required and in which an excursion or exceedance, as defined under OAR 340-200-0020, occurred; and

- 49.d. Such other facts as DEQ may require to determine the compliance status of the source.
50. Greenhouse Gas Registration and Reporting: If the calendar year emission rate of greenhouse gases (CO₂e) is greater than or equal to 2,756 tons (2,500 metric tons), the permittee must register and report its greenhouse gas emissions with DEQ in accordance with OAR 340-215. The greenhouse gas report must be certified by the responsible official consistent with OAR 340-218-0040(5).
51. Notwithstanding any other provision contained in any applicable requirement, the permittee may use monitoring as required under OAR 340-218-0050(3) and incorporated into the permit, in addition to any specified compliance methods, for the purpose of submitting compliance certifications. [OAR 340-218-0080(6)(e)]

GENERAL CONDITIONS

G1. General Provision

Terms not otherwise defined in this permit have the meaning assigned to such terms in the referenced regulation.

G2. Reference materials

Where referenced in this permit, the versions of the following materials are effective as of the dates noted unless otherwise specified in this permit:

- a. Source Sampling Manual; April 16, 2015 - State Implementation Plan Volume 3, Appendix A4;
- b. Continuous Monitoring Manual; April 16, 2015 - State Implementation Plan Volume 3, Appendix A6; and
- c. All state and federal regulations as in effect on the date of issuance of this permit.

G3. Applicable Requirements [OAR 340-218-0010(3)(b)]

Oregon Title V Operating Permits do not replace requirements in Air Contaminant Discharge Permits (ACDP) issued to the source even if the ACDP(s) have expired. For a source operating under a Title V permit, requirements established in an earlier ACDP remain in effect notwithstanding expiration of the ACDP or Title V permit, unless a provision expires by its terms or unless a provision is modified or terminated following the procedures used to establish the requirement initially. Source specific requirements, including, but not limited to TACT, RACT, BACT, and LAER requirements, established in an ACDP must be incorporated into the Oregon Title V Operating Permit and any revisions to those requirements must follow the procedures used to establish the requirement initially.

G4. Compliance [OAR 340-218-0040(3)(n)(C), 340-218-0050(6), and 340-218-0080(4)]

- a. The permittee must comply with all conditions of this permit. Any permit condition noncompliance constitutes a violation of the Federal Clean Air Act and/or state rules and is grounds for enforcement action; for permit termination, revocation and re-issuance, or modification; or for denial of a permit renewal application. Any noncompliance with a permit condition specifically designated as enforceable only by the state constitutes a violation of state

rules only and is grounds for enforcement action; for permit termination, revocation and re-issuance, or modification; or for denial of a permit renewal application.

- b. Any schedule of compliance for applicable requirements with which the source is not in compliance at the time of permit issuance is supplemental to, and does not sanction noncompliance with the applicable requirements on which it is based.
- c. For applicable requirements that will become effective during the permit term, the source must meet such requirements on a timely basis unless a more detailed schedule is expressly required by the applicable requirement.

G5. Masking Emissions

The permittee must not install or use any device or other means designed to mask the emission of an air contaminant that causes or is likely to cause detriment to health, safety, or welfare of any person or otherwise violate any other regulation or requirement. [OAR 340-208-0400] This condition is enforceable only by the State.

G6. Credible Evidence

Notwithstanding any other provisions contained in any applicable requirement, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any such applicable requirements. [OAR 340-214-0120]

G7. Certification [OAR 340-214-0110, 340-218-0040(5), 340-218-0050(3)(c)(D), and 340-218-0080(2)]

Any document submitted to DEQ or EPA pursuant to this permit must contain certification by a responsible official of truth, accuracy and completeness. All certifications must state that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and, complete. The permittee must promptly, upon discovery, report to DEQ a material error or omission in these records, reports, plans, or other documents.

G8. Open Burning [OAR Chapter 340, Division 264]

The permittee is prohibited from conducting open burning, except as may be allowed by OAR 340-264-0020 through 340-264-0200.

G9. Asbestos [40 CFR Part 61, Subpart M (federally enforceable), OAR Chapter 340-248-0005 through 340-248-0180 (state-only enforceable) and 340-248-0205 through 340-248-0280]

The permittee must comply with OAR Chapter 340, Division 248, and 40 CFR Part 61, Subpart M when conducting any renovation or demolition activities at the facility.

G10. Stratospheric Ozone and Climate Protection [40 CFR 82 Subpart F, OAR 340-260-0040]

The permittee must comply with the standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F, Recycling and Emissions Reduction.

G11. Permit Shield [OAR 340-218-0110]

- a. Compliance with the conditions of the permit is deemed compliance with any applicable requirements as of the date of permit issuance provided that:
 - i. Such applicable requirements are included and are specifically identified in the permit; or

- ii. DEQ, in acting on the permit application or revision, determines in writing that other requirements specifically identified are not applicable to the source, and the permit includes the determination or a concise summary thereof.
- b. Nothing in this rule or in any federal operating permit alters or affects the following:
 - i. The provisions of ORS 468.115 (enforcement in cases of emergency) and ORS 468.035 (function of department);
 - ii. The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance;
 - iii. The applicable requirements of the national acid rain program, consistent with section 408(a) of the FCAA; or
 - iv. The ability of DEQ to obtain information from a source pursuant to ORS 468.095 (investigatory authority, entry on premises, status of records).
- c. Sources are not shielded from applicable requirements that are enacted during the permit term, unless such applicable requirements are incorporated into the permit by administrative amendment, as provided in OAR 340-218-0150(1)(h), significant permit modification, or reopening for cause by DEQ.

G12. Inspection and Entry [OAR 340-218-0080(3)]

Upon presentation of credentials and other documents as may be required by law, the permittee must allow DEQ, or an authorized representative (including an authorized contractor acting as a representative of the EPA Administrator), to perform the following:

- a. Enter upon the permittee's premises where an Oregon Title V Operating Permit program source is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under conditions of the permit;
- c. Inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and
- d. As authorized by the FCAA or state rules, sample or monitor, at reasonable times, substances or parameters, for the purposes of assuring compliance with the permit or applicable requirements.

G13. Fee Payment [OAR 340-220-0010, and 340-220-0030 through 340-220-0190]

The permittee must pay an annual base fee and an annual emission fee for particulates, sulfur dioxide, nitrogen oxides, and volatile organic compounds. The permittee must submit payment to the Department of Environmental Quality, Financial Services, 811 SW 6th Ave., Portland, OR 97204, within 30 days of date DEQ mails the fee invoice or August 1 of the year following the calendar year for which emission fees are paid, whichever is later. Disputes must be submitted in writing to DEQ. Payment must be made regardless of the dispute. User-based fees will be charged for specific activities (e.g., computer modeling review, ambient monitoring review, etc.) requested by the permittee.

G14. Off-Permit Changes to the Source [OAR 340-218-0140(2)]

- a. The permittee must monitor for, and record, any off-permit change to the source that:
 - i. Is not addressed or prohibited by the permit;
 - ii. Is not a Title I modification;
 - iii. Is not subject to any requirements under Title IV of the FCAA;
 - iv. Meets all applicable requirements;
 - v. Does not violate any existing permit term or condition; and

- vi. May result in emissions of regulated air pollutants subject to an applicable requirement but not otherwise regulated under this permit or may result in insignificant changes as defined in OAR 340-200-0020.
- b. A contemporaneous notification, if required under OAR 340-218-0140(2)(b), must be submitted to DEQ and the EPA.
- c. The permittee must keep a record describing off-permit changes made at the facility that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under the permit, and the emissions resulting from those off-permit changes.
- d. The permit shield of Condition G11 does not extend to off-permit changes.

G15. Section 502(b)(10) Changes to the Source [OAR 340-218-0140(3)]

- a. The permittee must monitor for, and record, any section 502(b)(10) change to the source, which is defined as a change that would contravene an express permit term but would not:
 - i. Violate an applicable requirement;
 - ii. Contravene a federally enforceable permit term or condition that is a monitoring, recordkeeping, reporting, or compliance certification requirement; or
 - iii. Be a Title I modification.
- b. A minimum 7-day advance notification must be submitted to DEQ and the EPA in accordance with OAR 340-218-0140(3)(b).
- c. The permit shield of Condition G11 does not extend to section 502(b)(10) changes.

G16. Administrative Amendment [OAR 340-218-0150]

Administrative amendments to this permit must be requested and granted in accordance with OAR 340-218-0150. The permittee must promptly submit an application for the following types of administrative amendments upon becoming aware of the need for one, but no later than 60 days of such event:

- a. Legal change of the registered name of the company with the Corporations Division of the State of Oregon, or
- b. Sale or exchange of the activity or facility.

G17. Minor Permit Modification [OAR 340-218-0170]

The permittee must submit an application for a minor permit modification in accordance with OAR 340-218-0170.

G18. Significant Permit Modification [OAR 340-218-0180]

The permittee must submit an application for a significant permit modification in accordance with OAR 340-218-0180

G19. Staying Permit Conditions [OAR 340-218-0050(6)(c)]

Notwithstanding Conditions G16 and G17, the filing of a request by the permittee for a permit modification, revocation and re-issuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

G20. Construction/Operation Modification [OAR 340-218-0190]

The permittee must obtain approval from DEQ prior to construction or modification of any stationary source or air pollution control equipment in accordance with OAR 340-210-0200 through OAR 340-210-0250.

G21. New Source Review Modification [OAR 340-224-0010]

The permittee may not begin construction of a major source or a major modification of any stationary source without having received an Air Contaminant Discharge Permit (ACDP) from DEQ and having satisfied the requirements of OAR 340, Division 224.

G22. Need to Halt or Reduce Activity Not a Defense [OAR 340-218-0050(6)(b)]

The need to halt or reduce activity will not be a defense. It will not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

G23. Duty to Provide Information [OAR 340-218-0050(6)(e) and OAR 340-214-0110]

The permittee must furnish to DEQ, within a reasonable time, any information that DEQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit, or to determine compliance with the permit. Upon request, the permittee must also furnish to DEQ copies of records required to be retained by the permit or, for information claimed to be confidential, the permittee may furnish such records to DEQ along with a claim of confidentiality.

G24. Reopening for Cause [OAR 340-218-0050(6)(c) and 340-218-0200]

- a. The permit may be modified, revoked, reopened and reissued, or terminated for cause as determined by DEQ.
- b. A permit must be reopened and revised under any of the circumstances listed in OAR 340-218-0200(1)(a).
- c. Proceedings to reopen and reissue a permit must follow the same procedures as apply to initial permit issuance and affect only those parts of the permit for which cause to reopen exists.

G25. Severability Clause [OAR 340-218-0050(5)]

Upon any administrative or judicial challenge, all the emission limits, specific and general conditions, monitoring, recordkeeping, and reporting requirements of this permit, except those being challenged, remain valid and must be complied with.

G26. Permit Renewal and Expiration [OAR 340-218-0040(1)(a)(D) and 340-218-0130]

- a. This permit expires at the end of its term, unless a timely and complete renewal application is submitted as described below. Permit expiration terminates the permittee's right to operate.
- b. Applications for renewal must be submitted at least 12 months before the expiration of this permit, unless DEQ requests an earlier submittal. If more than 12 months is required to process a permit renewal application, DEQ must provide no less than six (6) months for the owner or operator to prepare an application.



- c. Provided the permittee submits a timely and complete renewal application, this permit will remain in effect until final action has been taken on the renewal application to issue or deny the permit.

G27. Permit Transference [OAR 340-218-0150(1)(d)]

The permit is not transferable to any person except as provided in OAR 340-218-0150(1)(d).

G28. Property Rights [OAR 340-200-0020 and 340-218-0050(6)(d)]

The permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations, except as provided in OAR 340-218-0110.

G29. Permit Availability [OAR 340-200-0020 and 340-218-0120(2)]

The permittee must have available at facility at all times a copy of the Oregon Title V Operating Permit and must provide a copy of the permit to DEQ or an authorized representative upon request.

ALL INQUIRIES SHOULD BE DIRECTED TO:

DEQ – Eastern Region
475 NE Bellevue Dr., Suite 110
Bend, OR 97701
541-388-6146



OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY
OREGON TITLE V OPERATING PERMIT
REVIEW REPORT

Eastern Region
475 NE Bellevue Dr., Suite 110
Bend, OR 97701

Source Information:

SIC	4953
NAICS	562212

Public Participation Category	III
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Compliance and Emissions Monitoring Requirements:

Unassigned emissions	
Emission credits	
Compliance schedule	
Source test [date(s)]	

COMS	
CEMS	
PEMS	
Ambient monitoring	

Reporting Requirements

Annual report (due date)	2/15
Emission fee report (due date)	2/15
SACC (due date)	2/15, 7/30
Quarterly report (due dates)	

Monthly report (due dates)	
Excess emissions report	
Other reports (type)	

Air Programs

NSPS (list subparts)	A, Cf, WWW
NESHAP (list subparts)	A, AAAA
CAM	
Regional Haze (RH)	
Synthetic Minor (SM)	
Part 68 Risk Management	
CFC	
RACT	

TACT	
Title V	X
ACDP (SIP)	
Major HAP source	
Federal major source	
NSR	
PSD	
Acid Rain	

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LIST OF ABBREVIATIONS USED IN THIS REVIEW REPORT

AQMA	Air Quality Management Area	N ₂ O	Nitrous Oxide (greenhouse gas)
ASTM	American Society of Testing and Materials	NA	Not Applicable
BDT	Bone Dry Ton	NESHAP	National Emission Standard for Hazardous Air Pollutants
CEMS	Continuous Emissions Monitoring System	NMOC	Non-Methane Organic Compound
CFR	Code of Federal Regulations	NO _x	Oxides of Nitrogen
CH ₄	Methane (greenhouse gas)	NSPS	New Source Performance Standard
CMS	Continuous Monitoring System	NSR	New Source Review
CO	Carbon Monoxide	O ₂	Oxygen
CO _{2e}	Carbon Dioxide Equivalent	OAR	Oregon Administrative Rules
COMS	Continuous Opacity Monitoring System	ORS	Oregon Revised Statutes
DEQ	Oregon Department of Environmental Quality	O&M	Operation and Maintenance
dscf	dry standard cubic feet	Pb	Lead
EF	Emission Factor	PCD	Pollution Control Device
EPA	United States Environmental Protection Agency	PEMS	Predictive Emissions Monitoring System
EU	Emissions Unit	PM	Particulate Matter
FCAA	Federal Clean Air Act	PM ₁₀	Particulate Matter less than 10 microns in size
GHG	Greenhouse Gas	PM _{2.5}	Particulate Matter less than 2.5 microns in size
gr/dscf	grains per dry standard cubic feet	ppmv	parts per million by volume
HAP	Hazardous Air Pollutant	PSD	Prevention of Significant Deterioration
ID	Identification Code	PSEL	Plant Site Emission Limit
I&M	Inspection and Maintenance	SO ₂	Sulfur Dioxide
LFG	Landfill Gas	ST	Source Test
MB	Material Balance	VE	Visible Emissions
Mg	Megagrams, 1,000,000 Grams	VMT	Vehicle Mile Traveled
Mlb	1000 Pounds	VOC	Volatile Organic Compound
MM	Million		

INTRODUCTION

1. This review report supports a renewed Title V operating permit for Wasco County Landfill, Inc. The existing permit was issued on 6/7/13 and was scheduled to expire on 6/1/18. A timely and complete renewal application was submitted on 5/31/17. The current permit will remain valid until DEQ takes action on this renewal.
2. In accordance with OAR 340-218-0120(1)(f), this Review Report is intended to provide the legal and factual basis for the draft permit conditions. In most cases, the legal basis for a permit condition is included in the permit by citing the applicable regulation. In addition, the factual basis for the requirement may be the same as the legal basis. However, when the regulation is not specific and only provides general requirements, this Review Report is used to provide a more thorough explanation of the factual basis for the draft permit conditions.
3. There have been no changes made to the permit since the last renewal.
4. The following changes are proposed for this renewal.

New Permit Condition Number	Old Permit Condition Number	Description of Change	Reason for Change
Title Page	Title Page	Changed facility contact person.	Change requested in application.
2	2	Removed reference to rule cross-reference table.	Table removed since new rules have been incorporated into SIP.
3	3	Added landfill gas control emission unit.	Landfill gas will need to be collected and controlled during the permit term.
--	4	Removed opacity limit on fugitive emissions.	Rule change makes opacity limit no longer applicable to fugitive emissions. (OAR 340-208-0110(1))
4	5	Modified language of fugitive emission condition.	Better reflects rule language.
5	6	Modified language of monitoring condition.	Replaced EPA Method 9 references (opacity measurement) with Method 22 references.
9	10	Added condition allowing combustion of ultra-low sulfur diesel.	Operational flexibility.
14, 15, 16	14, 15, 16	Added statement that the conditions are enforceable only by the state.	Clarification
17 - 21	17 -18	Modified NSPS conditions. Removed requirements for NMOC calculation and added requirements for LFG collection and control.	NMOC emissions greater than 50 Mg/yr triggered requirement to install LFG collection and control. Added the required conditions.
22 - 25	--	Added opacity and grain loading requirements for LFG control device.	Applicable requirements.
26, 27	19, 20	Changed opacity averaging time. Streamlines process parameter and inspection conditions.	Reflect rule change in definition of opacity. Clarify condition language.
12	22	Moved accidental release condition.	Formatting change to keep condition with facility-wide requirements.
29	23	Modified condition to include NESHAP conditions for gas dispensing facilities and emergency engine.	New applicable requirement for equipment potentially at the facility.

New Permit Condition Number	Old Permit Condition Number	Description of Change	Reason for Change
30, 31	24, 25	Updated PSEL to include new emission units (LFG collection and control) and to update emission factors.	LFG collection and control system will be installed during the permit term.
32	26	Modified Title V emission fee condition to refer to the applicable regulation.	Simplification of condition language.
41	35	Modified recordkeeping condition to better reflect the regulatory requirement.	Clarification
46	40	Modified NMOC emission reporting to reflect only annual reports (not 5 year) since NMOC emissions will exceed 50 Mg/yr in the next 5 years. Added exemption to the reporting requirement once LFG collection and control system is installed.	Reflect regulatory language.
47.b.v	41.b.v	Removed Tier 2 reporting requirement and added LFG collection reporting.	Tier 2 testing is no longer required and permittee needs to monitor the quantity of LFG collected.
--	45	Removed non-applicable required condition.	Facility is no longer exempt since NMOC emissions will be greater than 50 Mg/yr during the permit term. The facility is considered an existing source (pre-11/7/00). [40 CFR 63.1940(c)]

PERMITTEE IDENTIFICATION

- Wasco County Landfill, Inc. is a wholly owned subsidiary of Waste Connections, Inc. which is located at 611 SW Kaiser Avenue, Suite 110 in Vancouver, Washington 98661. The landfill is located at 2550 Steele Road, The Dalles, OR 97058.

FACILITY DESCRIPTION

- Waste Connections operates the Wasco County Landfill on 213 acres of land south and east of The Dalles in a rural agricultural setting. Orchards are to the north and west and wheat fields are to the south and east of the facility. The current landfill has three working areas. One is a closed area where waste has been deposited for more than 2 years and has a passive perimeter landfill gas collection system, venting emissions to the atmosphere. A second area recently closed and has no collection system. A third area is the active working area of the landfill. Generally, emissions from the facility come from several sources. Landfill gas is vented by the passive collection system or from the surface of the landfill as the waste decomposes. Cover material is handled as scrapers transport cover material, or soil is recovered from cell construction and excavation. Trucks transport waste on dirt roads and create tailpipe emissions and fugitive dust from the roads. Petroleum contaminated soils are delivered to the site and used as daily cover and emit volatiles and particulate matter. Landfill leachate also produces volatile emissions.

EMISSIONS UNIT AND POLLUTION CONTROL DEVICE IDENTIFICATION

7. The emissions units at this facility are the following:

- 7.a. Landfill (LFG-01): The landfill is divided into separate areas called cells. Prior to placement of waste, a specific cell is prepared by installing a liner, leachate collection system, and low permeability soils as required by solid waste regulations. As waste is brought in it is placed on the prepared cell, compacted and covered with dirt at the end of the day. Only that portion of the cell in which waste is actively being placed is left uncovered. A typical cross-section of the landfill may contain 8 year-old waste on the bottom, topped by 4 year-old waste, topped by fresh waste. The landfill is permitted to receive asbestos contaminated waste. The asbestos contaminated waste is placed only in designated areas of the landfill. The landfill also accepts petroleum contaminated soil that is often used as daily cover.
- 7.a.i. Emissions of landfill gas result from the anaerobic decomposition of waste. The amount and composition of gas generated depends on many factors including the quantity, composition and age of the waste as well as landfill conditions (precipitation, compaction practices, etc.). Due to the heterogeneous nature of the waste and the difference in age of the waste, the amount and composition of LFG produced can vary from location to location within the landfill.
- 7.a.ii. Federal regulations (40 CFR 60, Subpart WWW) establish New Source Performance Standards (NSPS) for municipal solid waste landfills. Wasco County Landfill commenced operation prior to 5/30/91. However, the facility modified their design capacity in 2001, which made the facility subject to Subpart WWW. [40 CFR 60.750(a)] The design capacity of the landfill is greater than 2.5 million megagrams (Mg) which triggers a requirement to calculate non-methane organic compound (NMOC) emissions annually. [40 CFR 60.752(b)] Using the input parameters allowed in 40 CFR 60.754(a)(1) the calculated NMOC emissions are predicted to exceed 50 Mg/yr during this permit term. If NMOC emissions equal or exceed 50 Mg/yr the facility is required to submit a landfill gas collection and control system design plan prepared by a professional engineer within 1 year. [40 CFR 60.752(b)(2)(i)] The permittee is required to install the landfill gas collection and control system within 30 months after the first annual report where NMOC emissions are predicted to equal or exceed 50 Mg/yr, unless new Tier 2 or Tier 3 test results indicate the NMOC emission rate is less than 50 Mg/yr. [40 CFR 60.752(b)(2)(ii)]
- 7.a.iii. The National Emission Standard for Hazardous Air Pollutants (NESHAP – 40 CFR 63, Subpart AAAAA) for municipal waste landfills applies when the NMOC emissions equal or exceed 50 Mg/yr. [40 CFR 63.1935(a)(3)] The facility currently has the potential to exceed 50 Mg NMOC/yr during the permit term. Wasco County Landfill is considered an existing source under this regulation since it commenced construction prior to November 7, 2000. [40 CFR 63.1940(c)] As an existing area source (not a major source of HAP emissions) the facility is required to comply with Subpart AAAAA by the date installation of the landfill gas collection and control system is required under the NSPS, Subpart WWW. [40 CFR 63.1945(f)] Compliance is determined in the same way it is determined for Subpart WWW. [40 CFR 63.1955(b)] A written Startup, Shutdown, Malfunction plan must be developed and maintained at the site. [40 CFR 63.1960]
- 7.b. Internal Combustion Engines (ENG-01): Several internal combustion engines exist at the facility ranging from less than 1 up to 275 horsepower. Emissions of particulates/PM₁₀/PM_{2.5}, SO₂, VOC and HAPs from all engines are less than 1 ton/yr. Emissions of NO_x and CO are greater than 1 ton/yr. Greenhouse gas emissions from the engines are less than 2,756 ton/yr. The engines are summarized below.

Description	Fuel	Rating (hp)
New Tipper Engine	Diesel	275
Old Tipper Engine	Diesel	115
1 Light Plant	Diesel	50
2-2" Trash Pump Engine	Gasoline	5.5
2-3" Trash Pump Engine	Gasoline	8
Compressor	Gasoline	10
Air Compressor	Diesel	52
Generator in shop	Gasoline	6.5
Generator at Phase IV	Gasoline	8
Lawnmower	Gasoline	3.5
MADVAC 61D	Diesel	13.8
Pressure Washer	Diesel	<1
Underdrain Motor	Gasoline	10
Welder mounted on Truck	Gasoline	8

- 7.c. Unpaved Roads (UPR-01): Many areas of the facility carry vehicular traffic but are not paved. Fugitive dust is produced from traffic along these roads. Water is applied as a primary method of controlling fugitive dust. This emission unit also includes fugitive dust from material handling and storage piles. In preparing cells for placement of waste, dirt is removed and sometimes stockpiled for later use in covering the waste. Cover soil is not normally stored in stockpiles during excavation of cells. The amount of soil needed for daily and interim cover is excavated and transported by a scraper from future cells to active cells. Since the scraper fugitive dust emissions have been calculated, emissions from soil handling are not calculated separately in order to avoid double counting of emissions. Nevertheless, there may be some wind blowing across the stockpiles creating emissions of fugitive dust. The permit allows for this occurrence. Water is applied as required to suppress fugitive dust.
- 7.d. Leachate (LEA-01): Rain and other fluids flowing through the landfill waste are collected by the liner at the bottom of the waste. It is assumed that 100% of the leachate will volatilize as a conservative assumption. The leachate may contain trace amounts of various organic compounds which are emitted as fugitives.
- 7.e. Petroleum Contaminated Soil (PCS-01): The landfill accepts varying amounts of petroleum contaminated soil which is managed to allow for use as alternative daily cover. PCS contains VOCs that will evaporate over time.

8. Categorically insignificant activities include the following:

- Evaporative and tail pipe emissions from on-site motor vehicle operation
- Distillate oil, kerosene and gasoline fuel burning equipment rated at less than or equal to 0.4 million Btu/hr
- Natural gas and propane burning equipment rated at less than or equal to 2.0 million Btu/hr
- Office activities
- Janitorial activities
- Personal care activities
- Groundskeeping activities including, but not limited to building painting, and road and parking lot maintenance
- Instrument calibration
- Maintenance and repair shop
- Automotive repair shops or storage garages
- Air cooling or ventilating equipment not designed to remove air contaminants generated by or released from associated equipment
- Temporary construction activities

- Accidental fires
- Air vents from air compressors
- Routine maintenance, repair, and replacement such as anticipated activities most often associated with and performed during regularly scheduled equipment outages to maintain a plant and its equipment in good operating condition, including but not limited to steam cleaning, abrasive use and woodworking
- Electric motors
- Storage tanks, reservoirs, transfer and lubricating equipment used for ASTM grade distillate or residual fuels, lubricants and hydraulic fluids
- On-site storage tanks not subject to any New Source Performance Standards (NSPS), including underground storage tanks (UST), storing gasoline or diesel used exclusively for fueling of the facility's fleet of vehicles
- Natural gas, propane and liquefied petroleum gas (LPG) storage tanks and transfer equipment
- Pressurized tanks containing gaseous compounds
- Storm water settling basins
- Fire suppression and training
- Hazardous air pollutant emissions of fugitive dust from paved and unpaved roads except for those sources that have processes or activities that contribute to the deposition and entrainment of hazardous air pollutants from surface soils
- Health, safety and emergency response activities
- Emergency generators and pumps used only during loss of primary equipment or utility service due to circumstances beyond the reasonable control of the owner or operator, or to address a power emergency as determined by DEQ

EMISSION LIMITS AND STANDARDS, TESTING, MONITORING AND RECORDKEEPING

9. Most of the current emissions from the facility are fugitive in nature (not from a vent or stack). The fugitive emission regulations in OAR 340-208-0210 and nuisance requirements of OAR 340-208-300 through 450 will apply to these emission sources.
10. Since the facility was constructed after 1970, the applicable requirement for non-fugitive emission units (engines – ENG-01) is 20% opacity. [OAR 340-208-0110(4)] The grain loading standard of 0.14 gr/dscf applies to the engines since they were constructed after 1970 and have no representative test results. [OAR 340-226-0210(2)(b)(B)] A grain loading standard of 0.10 gr/dscf will apply to any LFG control devices installed during the permit term. [OAR 340-226-0210(2)(c)] Since current particulate emissions from the non-fugitive units are less than de minimis (1 ton/yr), DEQ will not require compliance testing for grain loading or opacity in this permit. The permittee will conduct monthly visible emissions surveys for a period of 30 minutes to monitor fugitive emissions and other emissions.
11. The diesel oil burned at the facility is limited to a sulfur content of 0.5 percent by weight or less. [OAR 340-228-0110]
 - 11.a. Testing Requirement: The permittee is required to obtain a certificate from the fuel supplier stating that the diesel meets the specifications. If they cannot get a certificate, then the permittee would have to analyze a sample of the fuel to demonstrate that it meets the specifications.
 - 11.b. Monitoring Requirement: The permittee is required to maintain records of the sulfur content of fuel used at the facility.

12. This facility is subject to the New Source Performance Standards (NSPS) for Municipal Solid Waste Landfills (40 CFR 60, Subpart WWW).
- 12.a. On May 22, 2001 the facility submitted an Amended Design Capacity Report as required in 40 CFR 60.757(a). The maximum design capacity was reported as 16.7 million Megagrams, which is greater than the 2.5 million Mg threshold which triggers NSPS applicability. Using the Tier 1 method contained in 40 CFR 60.754, the facility determined the NMOC emissions could be greater than 50 Mg/yr, which would trigger the need to install a landfill gas collection and control system. Default values in the calculation were not site-specific and the Tier 1 estimates were believed to be significantly overestimated. The permittee chose to calculate NMOC emissions based on Tier 2 methodology.
- 12.b. In October 2001 the permittee conducted a study using Tier 2 methodology in accordance with 40 CFR 60.754(a)(3). The study conducted a sampling and analysis of landfill gas to determine a site-specific NMOC concentration to be used in lieu of the Tier 1 default concentration. The Tier 2 study sampled at a distribution of 2 samples per hectare of landfill area using temporary, hydraulically-driven sampling probes at 25 locations. Samples were analyzed at a laboratory for NMOC, nitrogen, and oxygen content. The average methane content was 53.6% by volume and there was no evidence of significant air intrusion. The site-specific non-methane organic concentration was 674 ppmv as hexane. Using this site-specific NMOC concentration, the NMOC emissions were calculated to be less than 50 Mg/yr for at least the next five years.
- 12.c. In November 2006 the facility conducted a second study using Tier 2 methodology. Sampling was conducted at 38 locations in Phases 1, 3 and 4 of the landfill. After DEQ's review and corrections, the site-specific NMOC concentration was determined to be 359 ppmv as hexane. Using this value, the NMOC emissions would not exceed 50 Mg/yr until 2022.
- 12.d. In November 2011, the company conducted a third study using Tier 2 methodology. Sampling was conducted at 50 locations in Phases 1, 3 and 4 of the landfill. The site-specific NMOC concentration was 275.6 ppmv as hexane. Using this value the NMOC emissions would not exceed 50 Mg/yr in the following 5 years.
- 12.e. In August 2016 the facility again conducted a study using Tier 2 methodology. Sampling was conducted at 50 locations throughout Phases 1, 3 and 4 of the landfill. The site-specific NMOC concentration was 744 ppmv as hexane. The NMOC emissions are estimated to cross the 50 Mg/yr threshold in 2019.
- 12.f. Testing Requirements: Emissions of NMOC are estimated using the equation in 40 CFR 60.754(a)(1) and the site-specific NMOC concentration measured in 2016. The permittee must calculate NMOC emissions for NSPS compliance using a potential methane generation capacity (L_0) of 170 m³/Mg. [40 CFR 60.754(a)(1)] For PSEL compliance the default inventory value (100 m³/Mg) for L_0 may be used.
- 12.g. Monitoring and Reporting Requirements: Since the NMOC emissions will exceed 50 Mg/yr within the next 5 years the permittee must submit an NMOC emissions report annually until after installation of a LFG collection and control system. [40 CFR 60.757(b)]
- 12.h. When the NMOC emissions calculation is 50 Mg/yr or greater, a plan for a landfill gas collection and control system must be submitted within 1 year of the calculation. [40 CFR 60.752(b)(2)(i)] The collection and control system must be installed within 30 months after the first annual report in which the emissions rate equals or exceeds 50 Mg/yr. [40 CFR 60.752(b)(2)(ii)]
13. Since construction commenced before 7/17/14 the landfill is subject to the Emission Guidelines for Municipal Solid Waste Landfills (40 CFR 60, Subpart Cf). These guidelines are to be included in regulations drafted by the State (DEQ). DEQ is currently drafting regulations to comply with these guidelines. When the rules are finalized and approved, this permit will be modified to include any applicable requirements.

14. Provided below is a list of the NSPS general requirements that are included in the permit as applicable requirements:

Section	Requirement	Permit Action
60.7(a)	Notifications	Not applicable. The initial design capacity report has been submitted, but a construction notification was not required.
60.7(b)	Records of startup/shutdown/malfunctions	Not currently applicable. The landfill cannot be started and shutdown but continues to emit around the clock. When LFG collection and control system is installed the system can experience startup/shutdown/malfunction. Appropriate requirements will be included when control equipment is installed.
60.7(c), 60.7(d), 60.7(e)	Excess emission reporting	Not currently applicable. These requirements will be applicable when LFG control equipment is installed.
60.7(f)	Maintenance records	Not currently applicable. These requirements will be applicable when LFG control equipment is installed.
60.8	Performance tests	Not currently applicable. These requirements will be applicable when LFG control equipment is installed.
60.11(b), 60.11(e)	Opacity observation in conjunction with performance test	Not applicable. No opacity standard associated with the applicable regulation.
60.11(d)	Operate equipment with good air pollution control practices	Not currently applicable. These requirements will be applicable when LFG control equipment is installed.
60.11(g)	Credible evidence	Applicable
60.12	Circumvention	Applicable
60.13	Monitoring requirements	Not applicable. Continuous monitoring not required

15. EPA has established a NESHAP for municipal solid waste landfills (40 CFR 63, Subpart AAAAA). The landfill is not a major source of HAP emission or located at a major source of HAP emissions, but has the potential to emit 50 Mg/yr or more of NMOC emissions during the permit term. Therefore, this facility may become subject to Subpart AAAAA during the permit term. [40 CFR 63.1935(a)] The landfill is an existing source since construction commenced prior to 11/7/2000. [40 CFR 63.1940] A written Startup, Shutdown, Malfunction plan for the collection/control system must be developed and maintained at the site. [40 CFR 63.1960]

Summary of NESHAP Subpart A – General Provision Requirements (from Subpart AAAAA, Table 1):

Part 63 Citation	Description	Explanation
63.1(a)	Applicability: general applicability of NESHAP in this part.	The provisions of paragraphs (a)(10)-(12) are similar to provisions in the NSPS, Subpart A.
63.1(b)	Applicability determination for stationary sources.	Subpart AAAAA will be applicable when NMOC emissions equal or exceed 50 Mg/yr.
63.1(e)	Title V permitting	The requirements of Subpart AAAAA will be included in the renewed Title V permit.
63.2	Definitions	Applicable
63.4	Prohibited activities and circumvention.	Similar to provisions in NSPS, Subpart A.
63.5(b)	Requirements for existing, newly constructed, and reconstructed sources.	Facility is considered an existing source
63.6(e)	Operation and maintenance requirements, startup, shutdown and malfunction plan provisions.	Applicable requirements are contained in the permit. SSM provisions apply to LFG control system since the landfill does not undergo startup and shutdown.

Part 63 Citation	Description	Explanation
63.6(f)	Compliance with non-opacity emission standards.	Similar to provisions in NSPS, Subpart A. Applicable requirements are contained in the permit.
63.10(b)(2)(i)-(b)(2)(v)	General recordkeeping requirements.	Applicable requirements are contained in the permit.
63.10(d)(5)	Periodic startup, shutdown and malfunction reports.	Applicable requirements are contained in the permit.
63.12(a)	State authority and delegation.	DEQ has not adopted standards more stringent than those specified.
63.15	Availability of information and confidentiality.	Applicable requirements are contained in the permit.

16. The engines at Wasco County Landfill meet the definition of non-road engines in 40 CFR 1068.30 (they are portable or transportable and are designed to be, or are capable of being carried or moved from one location to another. As a non-road engine, the engines are not considered to be stationary reciprocating internal combustion engines in the definitions of 40 CFR 60.4219 and 40 CFR 63.6675. Therefore, the NSPS and NESHAP for Stationary Reciprocating Internal Combustion Engines (Subparts IIII, JJJ of 40 CFR 60 and Subpart ZZZZ of 40 CFR 63, respectively) do not apply to the engines.
17. Since asbestos is disposed of at the landfill, the requirements of OAR 340-248-0280 and 40 CFR 61, Subpart M apply to the facility. These requirements deal mostly with proper handling and disposal of asbestos along with the associated recordkeeping.
18. There are no emission units that have uncontrolled emissions greater than 100 tons/yr so the Compliance Assurance Monitoring (CAM) provisions of OAR 340-212-0200 through 280 do not apply to this facility.
19. As identified earlier in this Review Report, this facility has insignificant emissions units (IEUs) that include categorically insignificant activities and aggregate insignificant emissions, as defined in OAR 340-200-0020. For the most part, the standards that apply to IEUs are for opacity (20% limit) and particulate matter (0.10 gr/dscf limit). DEQ does not consider it likely that IEUs could exceed an applicable emissions limit or standard because IEUs are generally equipment or activities that do not have any emission controls (e.g., small natural gas fired space heaters) and do not typically have visible emissions. Since there are no controls, no visible emissions, and the emissions are less than one ton per year, DEQ does not believe monitoring, recordkeeping or reporting is necessary for assuring compliance with the standards.

PLANT SITE EMISSION LIMITS

20. Provided below is a summary of the baseline emissions rate, netting basis, plant site emission limits, and emissions capacity.

Pollutant	Baseline Emission Rate (tons/yr)	Netting Basis		Plant Site Emission Limit (PSEL)		
		Previous (tons/yr)	Proposed (tons/yr)	Previous PSEL (tons/yr)	Proposed PSEL (tons/yr)	PSEL Increase (tons/yr)
PM	14.1	14.1	14.1	33	34	1
PM ₁₀	4.6	4.6	4.6	14	14	0
PM _{2.5}	NA	1.5	1.5	9	9	0
CO	1.5	1.5	1.5	99	99	0
NO _x	3.3	3.3	3.3	39	39	0
SO ₂	1.1	1.1	1.1	39	39	0
VOC	4.4	3.7	4.4	39	43	4
NMOC	3.6	2.8	3.6	49	49	0
GHG (CO ₂ e)	83,864	58,107	83,864	69,192	146,262	77,070

- 20.a. The baseline emission rate is the actual emissions during 1978, except for greenhouse gas (GHG) where the baseline period is 2010. [OAR 340-222-0048(1)] The baseline for GHG was corrected to change the global warming potential (GWP) for methane from 21 to 25. In addition, the previous baseline did not include LFG CO₂ emissions since biogenic CO₂ was excluded from GHG calculations at the time. These emissions are now considered GHG. In accordance with OAR 340-222-0048(1)(a) a baseline emission rate will not be established for PM_{2.5}.
- 20.b. The previous netting basis is the netting basis listed in the previous permit while the proposed netting basis is the netting basis proposed in this permit action. The netting basis for VOC and NMOC was corrected to use the NMOC concentration measured during Tier 2 testing in 2001, the earliest site-specific value. The netting basis for GHG has been corrected as explained above to include a GWP of 25 for methane and also to include CO₂ emissions from the landfill. Details of the calculation of the baseline/netting basis emissions are in the Emissions Detail Sheets attached to this Review Report.
- 20.c. The previous PSEL is the PSEL established in the previous permit, while the proposed PSEL is what is proposed in this permit renewal. The PSEL for PM₁₀, PM_{2.5}, CO, NO_x, SO₂ and NMOC is set at the generic level since the potential to emit these pollutants is less than the significant emission rate. [OAR 340-222-0041(1)] The PSEL for PM increased slightly due to an increase in the proposed operation of the diesel engines. The PSEL for VOC and GHG increased due to several factors. First, the Tier 2 sampling conducted in 2016 indicated an increase in the NMOC concentration since the 2011 Tier 2 test, which results in an increase in VOC emissions. Second, as additional waste is added and decomposes at the landfill, the amount of landfill gas produced increases. This also increases the emissions of VOC. The VOC emissions have the potential to exceed 43 tons/yr during the permit term, however, a LFG collection and control system will be installed during the permit term and will significantly reduce VOC emissions by collecting the LFG and sending it to a control device. The PSEL for VOC was established at 43 tons/yr to keep the permitted emissions increases below the SER. The increase in landfill gas emissions also causes an increase in greenhouse gases since 50% of the landfill gas is assumed to be CO₂ and about 50% is methane, which is 25 times more powerful than CO₂ as a greenhouse gas. The proposed PSEL for GHG also includes a GWP of 25 for methane and includes CO₂ emissions from the landfill where the previous PSEL did not. The landfill gas emissions are assumed to be the projected emissions in 2025 based on an EPA approved calculation (LandGEM).

SIGNIFICANT EMISSION RATE

21. The increase in the proposed PSEL over the netting basis is less than the significant emission rate (SER) for all pollutants. No further analysis is required for these pollutants.

Pollutant	SER	Requested Increase Over Previous Netting Basis	Increase Due to Utilizing Capacity that Existed in the Baseline Period	Increase Due to Physical Changes or Changes in the Method of Operation	Increase to Establish Generic PSEL
PM	25	20	20	0	0
PM ₁₀	15	9	4	0	5
PM _{2.5}	10	7.5	1.0	0	6.5
CO	100	98	2	0	96
NO _x	40	36	9.6	0	28.4
SO ₂	40	38	0.5	0	37.5
VOC	40	39	39	0	0
NMOC	50	45	38	0	7
GHG (CO ₂ e)	75,000	62,398	62,398	0	0

HAZARDOUS AIR POLLUTANTS

22. Hazardous air pollutants emissions at the facility are summarized below. Only emissions greater than 0.01 ton/yr (20 lb/yr) are listed. A more complete list of emissions is attached to this Review Report.

Compound	Emissions (ton/yr)
1,1,1-Trichloroethane	0.04
1,1,2,2-Tetrachloroethane	0.11
1,1-Dichloroethane	0.13
1,1-Dichloroethene	0.01
1,2-Dichloropropane	0.01
4-Methyl-2-pentanone (MIBK)	0.11
Acrylonitrile	0.19
Carbon disulfide	0.03
Carbonyl sulfide	0.02
Chlorobenzene	0.02
Chlorodifluoromethane	0.06
Chloroethane	0.05
Chloromethane	0.04
Dichlorobenzene	0.02
Dichlorofluoromethane	0.16
Dichloromethane	0.70
Ethylbenzene	0.28
n-Hexane	0.33
Methyl ethyl ketone	0.30
Tetrachloroethylene	0.36
Trichloroethylene	0.21
Vinyl chloride	0.27
Xylenes	0.74
Total HAPs	4.2

GENERAL BACKGROUND INFORMATION

23. The proposed permit is a renewal for an existing facility. Federal New Source Performance Standards (NSPS) require this facility to obtain a Title V Permit. [40 CFR 60.752(c)] When emissions of NMOC are calculated to equal or exceed 50 Mg/yr the NESHAP for municipal solid waste landfills (Subpart AAAA) will apply. [40 CFR 63.1935(a)(3)]
24. The Wasco County Landfill has a current solid waste permit (#53) and a 1200-Z Stormwater General NPDES Permit from DEQ.
25. This source is located in an area that is in attainment for all pollutants. The source is located within 100 kilometers (62 miles) of the Mount Hood Wilderness, Class 1 Air Quality Protection area and is just over 1 mile from the Columbia River Gorge National Scenic Area.

COMPLIANCE HISTORY

26. The facility has been inspected for compliance with the permit on 6/26/13, 3/25/17 and 6/29/17 and was found to be in compliance with all permit conditions.

SOURCE TEST RESULTS

27. The Tier 2 test results are summarized below.

Date	NMOC Concentration (as hexane)
October 2001	674 ppmv
November 2006	359 ppmv
November 2011	275.6 ppmv
August 2016	744 ppmv

PUBLIC NOTICE

28. This permit was placed on public notice from Nov. 15, 2019 to Dec. 23, 2019. **No comments were received in response to the public notice and no changes have been made to the permit.** A proposed permit will be sent to EPA for a 45 day review period. DEQ may request and EPA may agree to an expedited review of 5 days if there were no substantive or adverse comments during the comment period.

If EPA does not object in writing, any person may petition the EPA within 60 days after the expiration of EPA's 45-day review period to make such objection. Any such petition must be based only on objections to the permit that were raised with reasonable specificity during the public comment period provided for in OAR 340-218-0210, unless the petitioner demonstrates it was impracticable to raise such objections within such period, or unless the grounds for such objection arose after such period.

EMISSIONS DETAIL SHEETS**BASELINE EMISSIONS****Particulate**

Emission Point	Operating Parameters		Emission Factor		Reference	ton/yr
UPR-01 Unpaved Roads	50,622	VMT/yr	0.51	lb/VMT	AP-42 Sec. 13.2.2 ¹	12.98
ENG Diesel	146,280	hp-hr/yr	2.20E-03	lb/hp-hr	AP-42, Table 3.3-1	0.16
Aggregate Insignificant						1.0
Total Particulate Emissions						14.1

PM₁₀

Emission Point	Operating Parameters		Emission Factor		Reference	ton/yr
UPR-01 Unpaved Roads	50,622	VMT/yr	0.14	lb/VMT	AP-42 Sec. 13.2.2 ²	3.48
ENG Diesel	146,280	hp-hr/yr	2.20E-03	lb/hp-hr	AP-42, Table 3.3-1	0.16
Aggregate Insignificant						1.0
Total PM₁₀ Emissions						4.6

PM_{2.5}

Emission Point	Operating Parameters		Emission Factor		Reference	ton/yr
UPR-01 Unpaved Roads	50,622	VMT/yr	0.014	lb/VMT	AP-42 Sec. 13.2.2 ³	0.35
ENG Diesel	146,280	hp-hr/yr	2.20E-03	lb/hp-hr	AP-42, Table 3.3-1	0.16
Aggregate Insignificant						1.0
Total PM_{2.5} Emissions						1.5

SO₂

Emission Point	Operating Parameters		Emission Factor		Reference	ton/yr
ENG Diesel	146,280	hp-hr/yr	2.05E-03	lb/hp-hr	AP-42, Table 3.3-1	0.15
Aggregate Insignificant						1.0
Total SO₂ Emissions						1.1

NO_x

Emission Point	Operating Parameters		Emission Factor		Reference	ton/yr
ENG Diesel	146,280	hp-hr/yr	3.10E-02	lb/hp-hr	AP-42, Table 3.3-1	2.27
Aggregate Insignificant						1.0
Total NO_x Emissions						3.3

CO

Emission Point	Operating Parameters	Emission Factor	Reference	ton/yr
ENG Diesel	146,280 hp-hr/yr	6.68E-03 lb/hp-hr	AP-42, Table 3.3-1	0.49
Aggregate Insignificant				1.0
Total CO Emissions				1.5

VOC

Emission Point	Operating Parameters	Emission Factor	Reference	ton/yr
ENG Diesel	146,280 hp-hr/yr	2.47E-03 lb/hp-hr	AP-42, Table 3.3-1	0.18
LFG	34.4 MMcf/yr ⁴	150.34 lb/MMdscf ⁵	LandGEM	2.6
PCS	1,480 ton PCS/yr	0.86 lb/ton	10% BTEX Limit	0.6
LEA-01 Leachate	92,977 gal/yr	0.73 lb/1000 gal	2001 Sample	0.03
Aggregate Insignificant				1.0
Total VOC Emissions				4.4

NMOC

Emission Point	Operating Parameters	Emission Factor	Reference	ton/yr
LFG	34.4 MMcf/yr ⁴	150.80 lb/MMdscf ⁵	LandGEM	2.6
Aggregate Insignificant				1.0
Total NMOC Emissions				3.6

Greenhouse Gas

Emission Point	Operating Parameters	Emission Factor	Reference	ton/yr
ENG				
Diesel CO ₂	1,070 gal/yr	2.25E+01 lb/gal	40 CFR 98 Table C-1	12.04
CH ₄ (CO ₂ e)		1.92E-02 lb/gal	40 CFR 98 Table C-2	0.01
N ₂ O (CO ₂ e)		5.66E-02 lb/hp-hr	40 CFR 98 Table C-2	0.03
Total				12.08
LFG CO ₂	281 MMcf/yr	57,049 lb/MMdscf	LandGEM	8,021
CH ₄ (CO ₂ e)	281 MMcf/yr	519,744 lb/MMdscf	LandGEM	73,075
Total				81,096
Aggregate Insignificant				2,756.0
Total GHG Emissions				83,864

1. k=4.9, s=6.2, a=0.7, b=0.45, p=120 days, 88% control due to watering.
2. k=1.5, s=6.2, a=0.9, b=0.45, p=120 days, 88% control due to watering
3. k=0.15, s=6.2, a=0.9, b=0.45, p=120 days, 88% control due to watering
4. From LandGEM in 1978
5. Assume 99.7% of NMOC is VOC. NMOC concentration from 2001 Tier 2 sampling.

CURRENT PSEL

Particulate

Emission Point	Operating Parameters	Emission Factor	Reference	ton/yr
UPR-01 Unpaved Roads	124,379 VMT/yr	0.51 lb/VMT	AP-42 Sec. 13.2.2 ¹	31.90
ENG				
Diesel	610,740 hp-hr/yr	2.20E-03 lb/hp-hr	AP-42, Table 3.3-1	0.67
Gas	15,328 hp-hr/yr	7.21E-04 lb/hp-hr	AP-42, Table 3.3-1	0.01
Total				0.68
Aggregate Insignificant				1.0
Total Particulate Emissions				33.6

PM₁₀

Emission Point	Operating Parameters	Emission Factor	Reference	ton/yr
UPR-01 Unpaved Roads	124,379 VMT/yr	0.14 lb/VMT	AP-42 Sec. 13.2.2 ²	8.56
ENG				
Diesel	610,740 hp-hr/yr	2.20E-03 lb/hp-hr	AP-42, Table 3.3-1	0.67
Gas	15,328 hp-hr/yr	7.21E-04 lb/hp-hr	AP-42, Table 3.3-1	0.01
Total				0.68
Aggregate Insignificant				1.0
Total PM₁₀ Emissions				10.2

PM_{2.5}

Emission Point	Operating Parameters	Emission Factor	Reference	ton/yr
UPR-01 Unpaved Roads	124,379 VMT/yr	0.014 lb/VMT	AP-42 Sec. 13.2.2 ³	0.86
ENG				
Diesel	610,740 hp-hr/yr	2.20E-03 lb/hp-hr	AP-42, Table 3.3-1	0.67
Gas	15,328 hp-hr/yr	7.21E-04 lb/hp-hr	AP-42, Table 3.3-1	0.01
Total				0.68
Aggregate Insignificant				1.0
Total PM_{2.5} Emissions				2.5

SO₂

Emission Point	Operating Parameters	Emission Factor	Reference	ton/yr
ENG				
Diesel	610,740 hp-hr/yr	2.05E-03 lb/hp-hr	AP-42, Table 3.3-1	0.63
Gas	15,328 hp-hr/yr	5.91E-04 lb/hp-hr	AP-42, Table 3.3-1	0.005
Total				0.63
Aggregate Insignificant				1.0
Total SO₂ Emissions				1.6

NO_x

Emission Point	Operating Parameters	Emission Factor	Reference	ton/yr
ENG				
Diesel	610,740 hp-hr/yr	3.10E-02 lb/hp-hr	AP-42, Table 3.3-1	9.47
Gas	15,328 hp-hr/yr	1.10E-02 lb/hp-hr	AP-42, Table 3.3-1	0.08
Total				9.55
Aggregate Insignificant				1.0
Total NO_x Emissions				10.6

CO

Emission Point	Operating Parameters	Emission Factor	Reference	ton/yr
ENG				
Diesel	610,740 hp-hr/yr	6.68E-03 lb/hp-hr	AP-42, Table 3.3-1	2.04
Gas	15,328 hp-hr/yr	6.96E-03 lb/hp-hr	AP-42, Table 3.3-1	0.05
Total				2.09
Aggregate Insignificant				1.0
Total CO Emissions				3.1

VOC (through 2025 assume no collection/control)

Emission Point	Operating Parameters	Emission Factor	Reference	ton/yr
ENG				
Diesel	610,740 hp-hr/yr	2.47E-03 lb/hp-hr	AP-42, Table 3.3-1	0.75
Gas	15,328 hp-hr/yr	1.50E-02 lb/hp-hr	AP-42, Table 3.3-1	0.12
Total				0.87
LFG	496.2 MMcf/yr ⁴	165.95 lb/MMdscf	LandGEM	41.2
PCS	3,637 ton PCS/yr	0.86 lb/ton	10% BTEX Limit	1.6
LEA-01 Leachate	3,500,000 gal/yr	0.73 lb/1000 gal	2001 Sample	1.28
Aggregate Insignificant				1.0
Total VOC Emissions				45.9

NMOC (through 2025 assume no collection/control)

Emission Point	Operating Parameters	Emission Factor	Reference	ton/yr
LFG	496.2 MMcf/yr ⁴	166.45 lb/MMdscf	LandGEM	41.3
Aggregate Insignificant				1.0
Total NMOC Emissions				42.3

Greenhouse Gas (through 2025 assume no collection/control)

Emission Point	Operating Parameters	Emission Factor	Reference	ton/yr
ENG				
Diesel CO ₂	610,740 Hp-hr/yr	4.15E-01 lb/hp-hr	40 CFR 98 Table C-1	126.73
CH ₄ (CO ₂ e)		4.21E-04 lb/hp-hr	40 CFR 98 Table C-2	0.13
N ₂ O (CO ₂ e)		1.00E-03 lb/hp-hr	40 CFR 98 Table C-2	0.31
Gas CO ₂	15,328 Hp-hr/yr	3.94E-01 lb/hp-hr	40 CFR 98 Table C-1	3.02
CH ₄ (CO ₂ e)		4.21E-04 lb/hp-hr	40 CFR 98 Table C-2	0.003
N ₂ O (CO ₂ e)		1.00E-03 lb/hp-hr	40 CFR 98 Table C-2	0.01
Total				130.19
LFG CO₂	496.2 MMcf/yr ⁵	57,138 lb/MMdscf	LandGEM	14,176 ⁵
CH ₄ (CO ₂ e)	496.2 MMcf/yr ⁵	520,758 lb/MMdscf	LandGEM	129,200 ⁵
Total				143,376
Aggregate Insignificant				2,756.0
Total GHG Emissions				146,262

1. k=4.9, s=6.2, a=0.7, b=0.45, p=120 days, 88% control due to watering.
2. k=1.5, s=6.2, a=0.9, b=0.45, p=120 days, 88% control due to watering
3. k=0.15, s=6.2, a=0.9, b=0.45, p=120 days, 88% control due to watering
4. LandGEM 2025 prediction
5. LandGEM 2025 prediction. Emission factor calculated by dividing LandGEM CO₂ and CH₄ estimate by LandGEM LFG estimate.

HAZARDOUS AIR POLLUTANTS

Diesel Engines: 1544 MMBtu/yr
 Landfill Methane Gas: 7.027 MM m³ CH₄/yr

Compound	Engines		Landfill			TOTAL
	lb/MMBtu	ton/yr	kg/m ³ CH ₄	kg/yr	ton/yr	ton/yr
1,1,1-Trichloroethane			4.767E-06	33.499042	3.69E-02	3.69E-02
1,1,2,2,-Tetrachloroethane			1.387E-05	97.464642	1.07E-01	1.07E-01
1,1-Dichloroethane			1.731E-05	121.66739	1.34E-01	1.34E-01
1,1-Dichloroethene			1.443E-06	10.142284	1.12E-02	1.12E-02
1,2-Dichloropropane			1.514E-06	10.639354	1.17E-02	1.17E-02
1,3-Butadiene	3.91E-05	3.04E-05				3.04E-05
4-Methyl-2-pentanone			1.394E-05	97.980283	1.08E-01	1.08E-01
Acetaldehyde	7.67E-04	5.96E-04				5.96E-04
Acrylonitrile			2.5E-05	175.70079	1.94E-01	1.94E-01
Acrolein	9.25E-05	7.19E-05				7.19E-05
Benzene	9.33E-04	7.25E-04				7.24E-04
Carbon disulfide			3.287E-06	23.09865	2.55E-02	2.55E-02
Carbon tetrachloride			4.58E-08	0.3219082	3.55E-04	3.55E-04
Carbonyl sulfide			2.191E-06	15.397722	1.70E-02	1.70E-02
Chlorobenzene			2.095E-06	14.720646	1.62E-02	1.62E-02
Chlorodifluoromethane			8.367E-06	58.804637	6.48E-02	6.48E-02
Chloroethane			6.003E-06	42.189768	4.65E-02	4.65E-02
Chloroform			2.666E-07	1.8736651	2.07E-03	2.07E-03
Chloromethane			4.547E-06	31.959024	3.52E-02	3.52E-02
Dichlorobenzene			2.298E-06	16.148768	1.78E-02	1.78E-02
Dichlorofluoromethane			2.007E-05	141.05999	1.55E-01	1.55E-01
Dichloromethane			9.041E-05	635.40563	7.00E-01	7.00E-01
Ethylbenzene			3.643E-05	256.01452	2.82E-01	2.82E-01
Ethylene dibromide			1.398E-08	0.0982841	1.08E-04	1.08E-04
Formaldehyde	1.18E-03	9.17E-04				9.17E-04
n-Hexane			4.215E-05	296.19289	3.26E-01	3.26E-01
Mercury			4.36E-09	0.0306435	3.38E-05	3.38E-05
Methyl ethyl ketone			3.806E-05	267.45117	2.95E-01	2.95E-01
Naphthalene	8.48E-05	6.59E-05				6.59E-05
Tetrachloroethylene			4.604E-05	323.57481	2.14E-01	2.14E-01
Toluene	4.09E-04	3.18E-04				3.18E-04
Trichloroethylene			2.758E-05	193.84171	2.14E-01	2.14E-01
Vinyl chloride			3.415E-05	239.9821	2.65E-01	2.65E-01
Xylenes	2.85E-04	2.21E-04	9.561E-05	671.9687	0.74	7.41E-01
TOTAL		2.95E-03			4.16	4.17E+00