

Landfill Gas Emissions Reporting Waste-in-Place



State of Oregon
Department of
Environmental
Quality

On Oct. 1, 2021, the Environmental Quality Commission approved new Landfill Gas Emission rules as Oregon Administrative Rule 340 Division 239 (OAR 340-239). This division exempts landfills with less than 200,000 tons of waste-in-place that meet certain management practices (OAR 340-239-0010(3)(b)).

Owners or operators of landfills with greater than or equal to 200,000 tons of waste-in-place are required to submit an air contaminant discharge permit application. Additionally, owners or operators of landfills with greater than or equal to 200,000 tons of waste-in-place are required to submit annual Waste-in-Place (in tons) and Methane Generation Rate (in metric tons methane per year) reports to DEQ. For most landfills, the waste-in-place values are obtained from historic waste received information.

This guidance document is for use only if a landfill does not have existing data on the quantity of waste-in-place. This can refer to a portion of a landfill or an entire landfill. There are a variety of methods to estimate waste-in-place. If a facility uses a different method other than the one provided, the facility needs to include information on the method and the reason they chose that method.

The equations provided estimate a volume. The volume is then converted to a weight using an estimated density. Potential densities are provided.

Information regarding how data and density estimates were prepared must be submitted along with justifications for the estimates.

General Data Requirements

The facility must be able to estimate the horizontal and vertical extents of the landfill. This can be performed with a desktop analysis such as reviewing historical reports and aerial photographs of the landfill, estimating waste generation, or a physical analysis such as digging test pits around the landfill or using ground penetrating radar. Other methods may be allowed. Please contact DEQ if you have questions or would like to propose an alternative method.

Data Analysis

Total volume

There are various methods to estimate the volume of material in a landfill. These methods are summarized in the California Department of Resources Recycling and Recovery Publication #DRRR-2010-008, titled *Former Landfill and Disposal Site Investigations*, starting at page 24.

<https://www2.calrecycle.ca.gov/Publications/Download/1410>

Subtract soil cover

Daily soil cover used at landfills can be subtracted from the total volume of material. The percentage of total material that is actually soil varies significantly from landfill to landfill, especially in historic landfills.

Convert to tonnage

OAR 340-239-0015: The solid waste density is assumed to be 1,300 pounds per cubic yard. Alternate densities may be allowed if waste type is generally known. Any alternative density must be approved by the DEQ Air Quality Program in writing.

To convert the waste amount in cubic yard to tonnage for submittal in the Waste-in-Place Report, use the following conversion:

$$M = \frac{V * \rho}{2,000}$$

M = mass in tons

V = volume of waste in cubic yards (yd³)

ρ = density, assume 1,300 pounds per cubic yard (lb/yd³) unless otherwise approved by DEQ

2,000 = converts pounds waste to tons waste

Alternative formats

DEQ can provide documents in an alternate format or in a language other than English upon request. Call DEQ at 800-452-4011 or email deqinfo@deq.state.or.us.

Air Quality Program

700 NE Multnomah St., Suite
600
Portland, OR 97232
Phone: 503-407-7596
Fax: 503-229-6124
Contact: Heather
Kuoppamaki
heather.kuoppamaki@deq.state.or.us

www.oregon.gov/DEQ

*DEQ is a leader in restoring,
maintaining and enhancing
the quality of Oregon's air,
land and water.*