

Frequently Asked Questions About Calculating Emissions for Municipal Solid Waste Landfills for the 2005 Emissions Inventory

Are there any models or guidance for calculating emissions for Municipal Solid Waste Landfills?

EPA developed the Landfill Gas Emissions Model (LandGEM) Version 2.0 for estimating air pollutant emissions from municipal solid waste (MSW) landfills.

What is LandGEM?

LandGEM is an emissions estimation tool built and distributed by EPA to estimate emission rates for methane, carbon dioxide, nonmethane organic compounds (NMOC), and individual air pollutants from landfills. LandGEM is based on a first order decay equation. The model can be run using site-specific data or default values, if site-specific data is not available.

What are the pollutants included in LandGEM?

LandGEM is used to estimate emissions of methane, carbon dioxide, nonmethane organic compounds (NMOC), and those listed in Table 4-1. See below:

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| 1,1,1-Trichloroethane (HAP) | Dichlorodifluoromethane (VOC) |
| 1,1,2,2-Tetrachloroethane (HAP/VOC) | Dichlorofluoromethane (VOC) |
| 1,1,2-Trichloroethane (HAP/VOC) | Dichloromethane (HAP) |
| 1,1-Dichloroethane (HAP/VOC) | Dimethyl Sulfide (VOC) |
| 1,1-Dichloroethene (HAP/VOC) | Ethane |
| 1,2-Dichloroethane (HAP/VOC) | Ethanol (VOC) |
| 1,2-Dichloropropane (HAP/VOC) | Ethylbenzene (HAP/VOC) |
| 2-Propanol (VOC) | Ethyl Mercaptan (VOC) |
| Acetone | Ethylene Dibromide (HAP/VOC) |
| Acrylonitrile (HAP/VOC) | Fluorotrichloromethane (VOC) |
| Benzene (HAP/VOC) | Hexane (HAP/VOC) |
| Bromodichloromethane (VOC) | Hydrogen Sulfide |
| Butane (VOC) | Mercury (HAP) |
| Carbon Disulfide (HAP/VOC) | Methyl Ethyl Ketone (HAP/VOC) |
| Carbon Monoxide | Methyl Isobutyl Ketone (HAP/VOC) |
| Carbon Tetrachloride (HAP/VOC) | Methyl Mercaptan (VOC) |
| Carbonyl Sulfide (HAP/VOC) | Pentane (VOC) |
| Chlorobenzene (HAP/VOC) | Perchloroethylene (HAP/VOC) |
| Chlorodifluoromethane (VOC) | Propane (VOC) |
| Chloroethane (HAP/VOC) | Toluene (HAP/VOC) |
| Chloroform (HAP/VOC) | Trichloroethene (HAP/VOC) |
| Chloromethane (HAP/VOC) | t-1,2-Dichloroethene |
| Dichlorobenzene (VOC/HAP for 1,4 isomer) | Vinyl Chloride (HAP/VOC) |
| | Xylene |

Where can I obtain LandGEM, the LandGEM user's manual, and municipal solid waste landfill guidance?

The EPA Emission Estimation Tools, Guidance, Fact Sheets, and Federal Register notices for Municipal Solid Waste Landfills may be obtained from <http://www.epa.gov/ttnecat1/products.html>.

Does the Hazardous Air Pollutant (HAP) reporting threshold apply to municipal solid waste landfills?

Yes. All facilities are required to report actual emissions of HAPs for each emission unit that emitted equal to or greater than 0.5 tpy of any HAP in 2005. For the purpose of emissions inventory reports, a landfill is considered an emissions unit. Consequently, municipal solid waste landfills are required to report HAPs equal to or greater than 0.5 tpy.