

T12 - TURBINE, LANDFILL GAS FIRED, UNCONTROLLED

CALCULATION METHODS

Ea = Ua x EF (lbs/mmft3)

Eh = Uh (scfm) x (60/1000000) x EF (lbs/mmft3)

NOTES:

- Emission factors are based on a landfill gas methane concentration of 40% and a BTU content of 400 BTU/scf.
- Control efficiencies must be included in emission factors since the calculation procedures will not refer to this data.
- No particulate speciation table exists for landfill gas combustion. The HCL factor was estimated using the chlorine content of raw gas

(AP-42).

- The ROG factor is based on the EPA AP-42 assumption of 595 ppmv NMHC as hexane in the raw gas and a 98% DRE.
- Individual pollutant factors are estimated using AP-42 raw gas speciation (9/97) and an assumed 98% destruction efficiency.

Pollutant	District Emission Factor (lbs/million ft3 fuel burned)	EPA Reference Document	EPA Factor	Units	Comments
NOx	56.00	AP-42, Sect 3.1, 4/00, Table 3.1-1	1.40E-01	lbs/MMBTU	
CO	176.00	AP-42, Sect 3.1, 4/00, Table 3.1-1	4.40E-01	lbs/MMBTU	
SOx	7.34	AP-42, Sect 3.1, 4/00, Table 3.1-2b	4.50E-02	lbs/MMBTU	Based on AP-42 raw gas sulfur content with 98% conversion to SOx.
TOG	16.66	AP-42, Sect 3.1, 4/00, Table 3.1-2b		lbs/MMBTU	Assumes 99.9% CH4 DRE and a 40% average methane concentration.
ROG	2.66	AP-42, Sect 3.1, 4/00, Table 3.1-2b	1.30E-02	lbs/MMBTU	Assumes 98% DRE of 595 ppmv NMHC as hexane.
TSP	2.64	AP-42, Sect 3.1, 4/00, Table 3.1-2b	6.60E-03	lbs/MMBTU	Using factor for uncontrolled NG fired turbines
PM10	2.64	AP-42, Sect 3.1, 4/00, Table 3.1-2b	6.60E-03	lbs/MMBTU	Assumes PM10=TSP per EPA instructions.
Acetone	0.0212	AP-42, Sect 2.4, 11/98			Based on AP-42 raw landfill gas content with a 98% DRE.
Acrylonitrile	0.0174	AP-42, Sect 2.4, 11/98			Based on AP-42 raw landfill gas content with a 98% DRE.
Benzene	0.0078	AP-42, Sect 2.4, 11/98			Based on AP-42 raw landfill gas content with a 98% DRE.
1,3-Butadiene					
Carbon Disulfide	0.0023	AP-42, Sect 2.4, 11/98			Based on AP-42 raw landfill gas content with a 98% DRE.
Carbonyl Sulfide	0.0015	AP-42, Sect 2.4, 11/98			Based on AP-42 raw landfill gas content with a 98% DRE.
Chlorobenzene	0.0015	AP-42, Sect 2.4, 11/98			Based on AP-42 raw landfill gas content with a 98% DRE.
Chloroform	0.0002	AP-42, Sect 2.4, 11/98			Based on AP-42 raw landfill gas content with a 98% DRE.
Chlorofluorocarbons	0.0074	AP-42, Sect 2.4, 11/98			Based on AP-42 raw landfill gas content with a 98% DRE.
Dimethyl Sulfide	0.0252	AP-42, Sect 2.4, 11/98			Based on AP-42 raw landfill gas content with a 98% DRE.
Ethyl Benzene	0.0254	AP-42, Sect 2.4, 11/98			Based on AP-42 raw landfill gas content with a 98% DRE.
Ethylene Dichloride	0.0021	AP-42, Sect 2.4, 11/98			Based on AP-42 raw landfill gas content with a 98% DRE.
Formaldehyde	0.1350	EPA VOC Speciation Profile #1001 1/90	0.81%	lbs/lbs TOC	Based on AP-42 raw landfill gas content with a 98% DRE.
Hexane	0.0294	AP-42, Sect 2.4, 11/98			Based on AP-42 raw landfill gas content with a 98% DRE.
Hydrogen Chloride	7.4250	AP-42, Sect 2.4, 11/98			Based on AP-42 raw landfill gas content with a 98% DRE.
Hydrogen Sulfide	0.0628	AP-42, Sect 2.4, 11/98			Based on AP-42 raw landfill gas content with a 98% DRE.
Methylene Chloride	0.0631	AP-42, Sect 2.4, 11/98			Based on AP-42 raw landfill gas content with a 98% DRE.
Methyl Isobutyl Ketone	0.0097	AP-42, Sect 2.4, 11/98			Based on AP-42 raw landfill gas content with a 98% DRE.

Methyl Ethyl Ketone	0.0266	AP-42, Sect 2.4, 11/98			Based on AP-42 raw landfill gas content with a 98% DRE.
Perchloroethylene	0.0321	AP-42, Sect 2.4, 11/98			Based on AP-42 raw landfill gas content with a 98% DRE.
Propylene					
Toluene	0.1881	AP-42, Sect 2.4, 11/98			Based on AP-42 raw landfill gas content with a 98% DRE.
1,1,1-Trichloroethane	0.0033	AP-42, Sect 2.4, 11/98			Based on AP-42 raw landfill gas content with a 98% DRE.
Trichloroethylene	0.0192	AP-42, Sect 2.4, 11/98			Based on AP-42 raw landfill gas content with a 98% DRE.
Vinyl Chloride	0.0238	AP-42, Sect 2.4, 11/98			Based on AP-42 raw landfill gas content with a 98% DRE.
Vinylidene Chloride	0.0010	AP-42, Sect 2.4, 11/98			Based on AP-42 raw landfill gas content with a 98% DRE.
Xylenes	0.0667	AP-42, Sect 2.4, 11/98			Based on AP-42 raw landfill gas content with a 98% DRE.

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