

B11 - BOILER, DIGESTER GAS FIRED, UNCONTROLLED

CALCULATION METHODS	Annual Emissions: $E_a = U_a \times EF$ (lbs/mmft ³)
	Hourly Emissions: $E_h = U_h$ (scfm) x (60/1000000) x EF (lbs/mmft ³)

NOTES:

- Control efficiencies must be included in emission factors since the calculation procedure will not refer to this data.
- No particulate speciation table exists for digester gas combustion. The HCl is estimated using the chlorine content of raw gas.
- Emission factors for NOx, CO, and TOG are based on the uncontrolled <100 mm BTU boiler(AP42) data adjusted for BTU content of digester gas as per AP-42 instructions(600/1020)
- The ROG factor is based on natural gasfired boiler factor in AP-42 adjusted for BTU content
- Individual pollutant factors are estimated using Pt. Loma raw gas speciation (1996) and an assumed 98% destruction efficiency.

POLLUTANT	DISTRICT EMISSION FACTORS (lbs/ million ft ³ fuel burned)	EPA REFERENCE DOCUMENT	EPA-FACTOR	(UNITS)	COMMENTS
NOX	58.82	AP-42, Sect.1.4,2/98, Table 1.4-1	1.00E+02	lbs/million ft3	
CO	49.41	AP-42, Sect.1.4,2/98, Table 1.4-1	8.40E+01	lbs/million ft3	
SOX	2.00				Based on Pt Loma raw gas sulfur content and a 98% conversion to Sox.
TOG	6.47	AP-42, Sect.1.4, 3/98, Table 1.4-2	11	lbs/million ft3	
ROG	3.24	AP-42, Sect.1.4, 3/98, Table 1.4-2	5.50E+00	lbs/million ft3	
TSP	4.47	AP-42, Sect.1.4, 3/98, Table 1.4-2	7.60E+00	lbs/million ft3	
PM10	4.47	AP-42, Sect.1.4, 3/98, Table 1.4-2	7.60E+00	lbs/million ft3	Assumes PM10-TSP per EPA instructions
ACETONE	0.0007				Based on Pt Loma raw gas content with a 98% DRE.
AMMONIA	0.0048				Based on Pt Loma raw gas content with a 98% DRE.
ARSENIC		District's Approved Emission Factors		lb/MMscf	Landfills Operations, Sec 3.3.1
BENZENE	0.0259		4.00%	lbs/lb TOC	
1,3 BUTADIENE					
CARBON TETRACHLORIDE					

POLLUTANT	DISTRICT EMISSION FACTORS (lbs/ million ft ³ fuel burned)	EPA REFERENCE DOCUMENT	EPA-FACTOR	(UNITS)	COMMENTS
CHLORINE					
CHLOROBENZENE	0.0002				Based on Pt Loma raw gas content with a 98% DRE.
CHLOROFORM					
CHLOROFLUORO-CARBONS					
DICHLOROBENZENE	0.0018				Based on Pt Loma raw gas content with a 98% DRE.
ETHYL BENZENE	0.0010				Based on Pt Loma raw gas content with a 98% DRE.
ETHYLENE DIBROMIDE					
ETHYLENE DICHLORIDE	0.0014				Based on Pt Loma raw gas content with a 98% DRE.
FORMALDEHYDE	0.135*	EPA VOC Speciation Profile # 1001 1/90.	0.81%	lbs/lb TOC	* When available, District's Approved Emission Factors will be used, Ref: Landfills Operations, Sec 3.3.2
HEXANE	0.0647	EPA VOC Specification Profile #003 1/90	1.00%	lbs/lb TOC	
HYDROGEN CHLORIDE	0.6455				Based on Pt Loma raw gas content with a 98% DRE.
HYDROGEN SULFIDE	0.0215				Based on Pt Loma raw gas content with a 98% DRE.
ISOPROPANOL					
METHANOL					
METHYLENE CHLORIDE	0.0001				Based on Pt Loma raw gas content with a 98% DRE.
METHYL ISOBUTYL KETONE					
METHYL ETHYL KETONE	0.0001				Based on Pt Loma raw gas content with a 98% DRE.
PERCHLOROETHYLENE	0.0005				Based on Pt Loma raw gas content with a 98% DRE.
PROPYLENE					
TOLUENE	0.1294	EPA VOC Specification Profile #003 1/90	2.00%	lbs/lbs TOC	Based on Pt Loma raw gas content with a 98% DRE.
1,1,1-TRICHLOROETHANE	0.0001				Based on Pt Loma raw gas content with a 98% DRE.
TRICHLOROETHYLENE	0.0003				Based on Pt Loma raw gas content with a 98% DRE.
VYNYL CHLORIDE					
VINYLDIENE CHLORIDE					
XYLENES	0.0045				Based on Pt Loma raw gas content with a 98% DRE.