

B11 - BOILER, DIGESTER GAS FIRED, UNCONTROLLED

CALCULATION METHODS

$E_a = U_a \times EF \text{ (lbs/mmft}^3\text{)}$

$E_h = U_h \text{ (scfm)} \times (60/1000000) \times EF \text{ (lbs/mmft}^3\text{)}$

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. HCl is estimated using chlorine content of raw gas.
- Emission factors for NOx, CO, and TOG are based on the uncontrolled <100 mmBTU boiler (AP-42) data adjusted for BTU content of digester gas as per AP-42 instructions (600 / 1020).
- The ROG factor is based on the natural gas fired 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 Factor	EPA REFERENCE	EPA	(UNITS)	COMMENTS
	(lbs/million ft3 fuel burned)	DOCUMENT	FACTOR		
NOX	58.82	AP-42, Sect.1.4, 2/98, Table 1.4-1	100	lbs/million ft3	
CO	49.41	AP-42, Sect.1.4, 2/98, Table 1.4-1	84	lbs/million ft3	
SOX	2.00				Based on Pt Loma raw gas sulfur content with 98% conversion to SOx.
TOG	6.47	AP-42, Section 1.4, 3/98, Table 1.4-2	11	lbs/million ft3	
ROG	3.24	AP-42, Section 1.4, 3/98, Table 1.4-2	5.5	lbs/million ft3	
TSP	4.47	AP-42, Section 1.4, 3/98, Table 1.4-2	7.6	lbs/million ft3	
PM10	4.47	AP-42, Section 1.4, 3/98, Table 1.4-2	7.6	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.
BENZENE	0.2588	EPA VOC Speciation Profile # 0003 1/90	4.00%	lbs/lb TOC	
1,3-BUTADIENE					
CARBON TETRACHLORIDE					
CHLORINE					
CHLOROBENZENE	0.0002				Based on Pt Loma raw gas content with a 98% DRE.
CHLOROFORM					
CHLOROFLUOROCARBONS					
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	0.5176	EPA VOC Speciation Profile # 0003 1/90	8.00%	lbs/lb TOC	
HEXANE	0.0647	EPA VOC Speciation Profile # 0003 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 Speciation Profile # 0003 1/90	2.00%	lbs/lb TOC	
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.
VINYL CHLORIDE					
VINYLDENE CHLORIDE					
XYLENES	0.0045				Based on Pt Loma raw gas content with a 98% DRE.

Last Updated on 8/23/99
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