COMBUSTION EQUIPMENT DETAILED CALCULATIONS

Unit No.	Unit Description	Operating Hours		Heat Input (MMBtu)		Fuel Usage			Power Output		Controls		Emissions					References
		Daily	Annual	Hourly	Annual	Hourly	Annual	Units	Amount	Units	Type	Efficiency or Dry Volume Flow Rate	Pollutant	Factor	Unit	Hourly Rate (lbs/hr)	Yearly Rate (tons/yr)	
	System No. & Name:	**25: Emergency Diesel Generator <500 hp**																
S2.075	**Admin Emergency Diesel Generator: ≤205 kw, 2006 or newer**	**24**	**100**	**1.92**	**192**	**13.7**	**1,375**	**gal**	**205**	**kW**	**None**	**N/A**	PM	**0.2**	**g/kW-hr**	**0.090**	**0.0045**	**40 CFR Part 1039 Appendix I - Table 3, Tier 3 for PM, CO, NOx; AP-42, Table 3.3-1 for VOC (10/96); SO2 mass balance 15 ppm S**
													PM_{10}	**0.2**	**g/kW-hr**	**0.090**	**0.0045**	
													$PM_{2.5}$	**0.2**	**g/kW-hr**	**0.090**	**0.0045**	
													SO_2	**0.0015**	**lb/MMBtu**	**0.0029**	**0.00014**	
													NO_X	**4.0**	**g/kW-hr**	**1.81**	**0.090**	
													CO	**3.5**	**g/kW-hr**	**1.58**	**0.079**	
													VOC	**0.36**	**lb/MMBtu**	**0.69**	**0.035**	

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GREENHOUSE GASES (GHG) DETAILED CALCULATIONS

Unit No.	Unit Description	Operating Hours		Heat Input (MMBtu)		Fuel Usage			Controls		Emissions						References
		Daily	Annual	Hourly	Annual	Hourly	Annual	Units	Type	Efficiency or Dry Volume Flow Rate	Pollutant	Factor	GWP Multiplier	Unit	Hourly Rate (lbs/hr)	Yearly Rate (tons/yr)	
System No. & Name:		**25: Emergency Diesel Generator <500 hp**															
S2.075	**Admin Emergency Diesel Generator: ≤205 kw, 2006 or newer**	**24**	**100**	**1.92**	**192**	**13.7**	**1,375**	**gal**	**None**	**N/A**	CO_2	**73.96**	**1**	**kg/MMBtu**	**313.8**	**15.7**	**40 CFR Part 98, Table C-1 to Subpart C, Distillate Fuel Oil #2**
											CH_4	**0.003**	**28**	**kg/MMBtu**	**0.36**	**0.018**	**40 CFR Part 98, Table C-2 to Subpart C, Petroleum Products**
											N_2O	**0.0006**	**265**	**kg/MMBtu**	**0.67**	**0.034**	**40 CFR Part 98, Table C-2 to Subpart C, Petroleum Products**

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HAZARDOUS AIR POLLUTANTS (HAPS) DETAILED CALCULATIONS

Unit No.	Unit Description	Operating Hours		Heat Input (MMBtu)		Fuel Usage			Controls		Emissions					References
		Daily	Annual	Hourly	Annual	Hourly	Annual	Units	Type	Efficiency or Dry Volume Flow Rate	Pollutant	Factor	Unit	Hourly Rate (lbs/hr)	Yearly Rate (tons/yr)	
	System No. & Name:	25: Emergency Diesel Generator <500 hp														
S2.075	Admin Emergency Diesel Generator: ≤205 kw, 2006 or newer	24	100	1.92	192	13.7	1,375	gal	None	N/A	Benzene	9.33E-04	lb/MMBtu	1.80E-03	8.98E-05	AP-42, Table 3.3-2 (10/96), Diesel Industrial Engines
											Toluene	4.09E-04	lb/MMBtu	7.87E-04	3.94E-05	
											Xylenes	2.85E-04	lb/MMBtu	5.48E-04	2.74E-05	
											1,3-Butadiene	3.91E-05	lb/MMBtu	7.52E-05	3.76E-06	
											Formaldehyde	1.18E-03	lb/MMBtu	2.27E-03	1.14E-04	
											Acetaldehyde	7.67E-04	lb/MMBtu	1.48E-03	7.38E-05	
											Acrolein	9.25E-05	lb/MMBtu	1.78E-04	8.90E-06	
											Naphthalene	8.48E-05	lb/MMBtu	1.63E-04	8.16E-06	
											Acenaphthylene	5.06E-06	lb/MMBtu	9.74E-06	4.87E-07	
											Acenaphthene	1.42E-06	lb/MMBtu	2.73E-06	1.37E-07	
											Fluorene	2.92E-05	lb/MMBtu	5.62E-05	2.81E-06	
											Phenanthrene	2.94E-05	lb/MMBtu	5.66E-05	2.83E-06	
											Anthracene	1.87E-06	lb/MMBtu	3.60E-06	1.80E-07	
											Fluoranthene	7.61E-06	lb/MMBtu	1.46E-05	7.32E-07	
											Pyrene	4.78E-06	lb/MMBtu	9.20E-06	4.60E-07	
											Benz(a)anthracene	1.68E-06	lb/MMBtu	3.23E-06	1.62E-07	
											Chrysene	3.53E-07	lb/MMBtu	6.79E-07	3.40E-08	
											Benzo(b)fluoranthene	9.91E-08	lb/MMBtu	1.91E-07	9.54E-09	
											Benzo(k)fluoranthene	1.55E-07	lb/MMBtu	2.98E-07	1.49E-08	
											Benzo(a)pyrene	1.88E-07	lb/MMBtu	3.62E-07	1.81E-08	
											Indeno(1,2,3-cd)pyrene	3.75E-07	lb/MMBtu	7.22E-07	3.61E-08	
											Dibenz(a,h)anthracene	5.83E-07	lb/MMBtu	1.12E-06	5.61E-08	
											Benzo(g,h,i)perylene	4.89E-07	lb/MMBtu	9.41E-07	4.70E-08	

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