



## *Emissions Compliance Statement*

Progen LLC certifies that Progen's EMD 20/710GD engines  
Operating on Diesel Fuel Oil will be equipped to meet US EPA regs  
for diesel fired RICE units which fall under the EPA Size Category 2,  
US EPA Regulation 40 CFR 1042, for diesel ignited two stroke  
engine.

# PROGEN

ENERGY SIMPLIFIED

Manufacturer's certification for enhanced emissions performance. The manufacturer will provide a package that meets or exceeds the emissions levels below to support the Pikka Project Air Emissions Permitting Inventories.

Mode Point	Weight Factor	RPM	Power	CO (Not to exceed at any power level) <sup>Note 1</sup>		NOx (Not to exceed at any power level) <sup>Note 1</sup>		NMHC (Not to exceed at any power level) <sup>Note 1</sup>		PM (Not to exceed at any power level) <sup>Note 1</sup>	
				g/bkW/hr	Lb/hr	g/bkW/hr	Lb/hr	g/bkW/hr	Lb/hr	g/bkW/hr	Lb/hr
1	5%	900	100%	-----	2.62	-----	8.8	-----	.10	-----	.19 <sup>Note 2</sup>
2	25%	900	75%								
3	30%	900	50%								
4	30%	900	25%								
5	10%	900	10%								
Cycle Weighted Averages (per US EPA 40 CFR 1065)			47%	≤.35	-----	≤1.3	-----	≤.02	-----	≤.03	-----

Notes:

Note 1: The maximum pollutant emissions rate in lb/hr needs to be less than the value shown for any of the mode point power levels.

## Engine Cycle Data

Load	Speed	Power	Exhaust Flow	Exhaust Temp.	Fuel Cons.	NO <sub>x</sub>	O <sub>2</sub>	H <sub>2</sub> O
%		bhp	acfm (cfm)	° F		g/kW-hr	%	%
100	Rated	5,000	29102	650		6.1	12.1	12.5

## Emission Data (100% Load)

Emission	Raw Engine Emissions						Target Outlet Emissions						Calculated Reduction
	g/bhp-hr	tons/yr	ppmv @ 15% O <sub>2</sub>	ppmv	g/kW-hr	lb/MW-hr	g/bhp-hr	tons/yr	ppmv @ 15% O <sub>2</sub>	ppmv	g/kW-hr	lb/MW-hr	
NO <sub>x</sub> *	4.55	160.45	361	538	6.1	13.45	0.68	24.07	54	81	0.915	2.02	85%