

Project:
Subject:

Hunt Utilities Group LLC, Pine River, MN
Emission Reduction from Wind vs. Coal

Wind Turbine Description: Jacobs 31-20
 Rated Turbine Capacity: 20 kW
 Predicted Power Output: **15,000** kW-Hr/Yr
 Predicted Power Output: 1,250 kW-Hr/Month
 Predicted Power Output: 51,180,000 Btu/Yr
 Coal Heat Content: 12,300 Btu/Lb
 Energy Conversion Efficiency (estimate): 33%
 Equivalent Coal Usage: 6.30 Tons/Yr
 Coal Sulfur Content: 3 % by wt.
 Electrostatic Precipitator Control Efficiency: 95%

Pollutant	Emission Factor¹ (lb/ton)	Emission Reduction (tons/yr)
Particulate Matter (controlled by ESP)	66.0	0.0104
Particulate Matter less than 10 microns (controlled by ESP)	13.2	0.0021
Carbon Monoxide	5.0	0.0158
Hydrogen Chloride	1.2	0.0038
Hydrogen Fluoride	0.15	0.0005
Total Nonmethane Organic Compounds	0.05	0.0002
Sulfur Dioxide	114.0	0.3594
Nitrogen Oxides	8.8	0.0277
Carbon Dioxide	4810	15.1623
Antimony	0.000018	0.000000
Arsenic	0.00041	0.000001
Beryllium	0.000021	0.000000
Cadmium	0.000051	0.000000
Chromium	0.00026	0.000001
Chromium (VI)	0.00008	0.000000
Cobalt	0.00010	0.000000
Lead	0.00042	0.000001
Magnesium	0.01100	0.000035
Manganese	0.00049	0.000002
Mercury	0.00008	0.000000
Nickel	0.00028	0.000001
Selenium	0.00130	0.000004
Total Emissions		15.5821

¹ Emission factors taken from USEPA, Compilation of Air Pollutant Emission Factors for Bituminous and Subbituminous Coal Combustion, AP-42, Section 1.1