

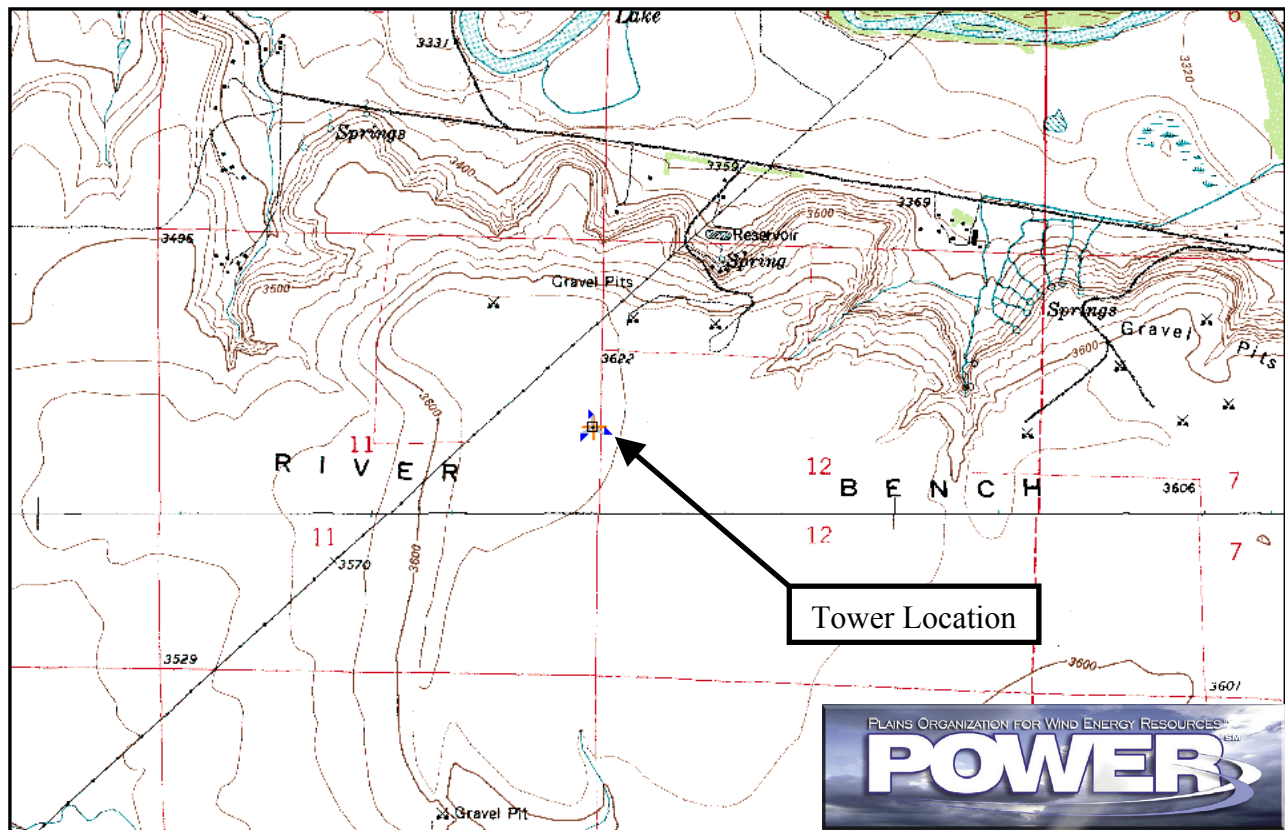
Wind Resource Summary for Great Falls, MT

Summer 2003 (June – August 2003)

Site Description:

Latitude: N 47° 30' 10"	Township: 20 N
Longitude: W 111° 25' 56"	Range: 2 E
Elevation: 3,627 feet	Section: 11
Tower Type: NRG Tilt-Up	Tower Height: 131 feet

The tower is approximately 7 miles west of Great Falls and located on a rim above the Sun River. The site has good exposure to the wind in all directions.

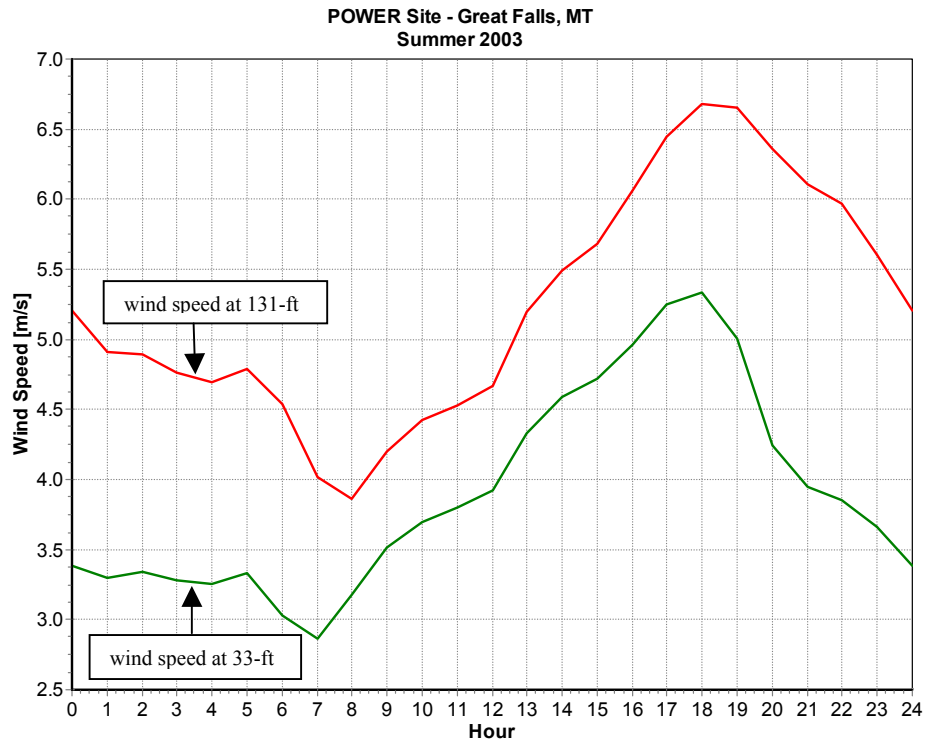


Summary Wind Data:	33 ft AGL ^a	98 ft AGL	131 ft AGL
Mean Wind Speed	8.8 mph	10.6 mph	11.7 mph
Maximum, 10-min Mean Wind Speed	35.9 mph	43.8 mph	48.6 mph
Mean Wind Power Density	69 W/m ²	114 W/m ²	154 W/m ²

^a Above ground level.

Average Hourly Wind Speeds

LST	131-ft AGL	131-ft AGL	33-ft AGL	33-ft AGL
	(m/s)	(mph)	(m/s)	(mph)
0000	5.20	11.6	3.38	7.6
0100	4.91	11.0	3.30	7.4
0200	4.89	10.9	3.34	7.5
0300	4.76	10.6	3.28	7.3
0400	4.69	10.5	3.26	7.3
0500	4.79	10.7	3.33	7.5
0600	4.53	10.1	3.03	6.8
0700	4.02	9.0	2.86	6.4
0800	3.86	8.6	3.17	7.1
0900	4.20	9.4	3.51	7.9
1000	4.43	9.9	3.69	8.3
1100	4.53	10.1	3.80	8.5
1200	4.67	10.4	3.92	8.8
1300	5.20	11.6	4.33	9.7
1400	5.49	12.3	4.59	10.3
1500	5.68	12.7	4.72	10.6
1600	6.06	13.6	4.96	11.1
1700	6.45	14.4	5.25	11.7
1800	6.68	15.0	5.34	11.9
1900	6.66	14.9	5.01	11.2
2000	6.35	14.2	4.25	9.5
2100	6.11	13.7	3.95	8.8
2200	5.97	13.4	3.85	8.6
2300	5.60	12.5	3.66	8.2



Energy & Environmental Research Center
701-777-5000 or wind@undeerc.org

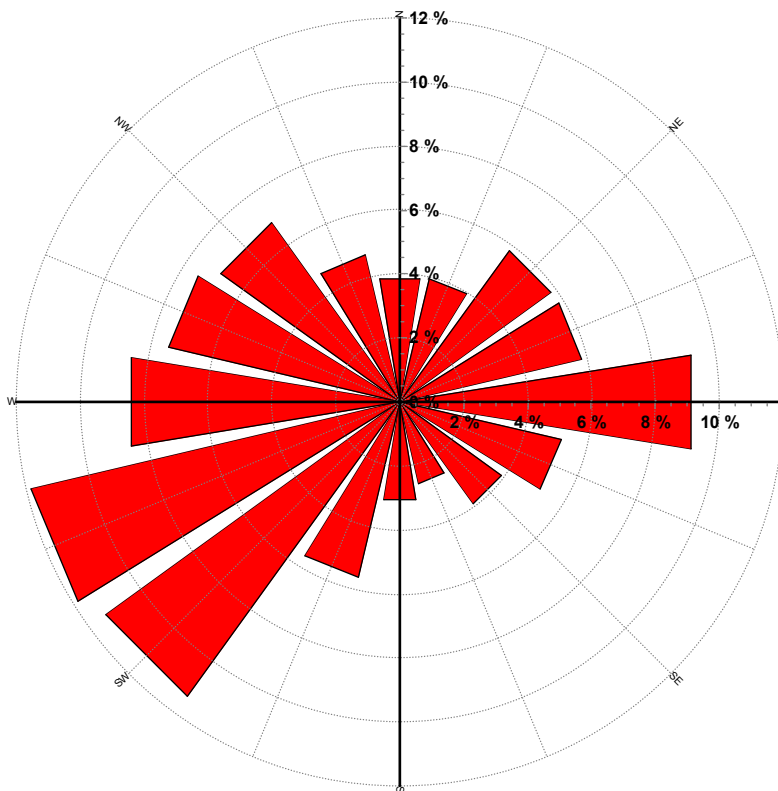
Creation Date: 11/06/2003

Wind Directional Frequency

Winds from the... Frequency (%)

NNW	4.7
NW	6.9
WNW	7.4
W	8.5
WSW	11.9
SW	11.4
SSW	5.6
S	3.1
SSE	2.6
SE	3.9
ESE	5.2
E	9.2
ENE	5.9
NE	5.8
NNE	4.0
N	3.9

POWER Site - Great Falls, MT
Wind Rose for 131-ft AGL
Summer 2003



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