

Site Information:

Project: Wind Hybrid Project
 Location: Morris, MN
 Elevation: 350 m

Sensor Information:

1 NRG #40 Anem. m/s
 2 NRG #40 Anem. m/s
 3 NRG #40 Anem. m/s
 4 NRG #40 Anem. m/s
 5 NRG #40 Anem. m/s
 6 NRG #40 Anem. m/s
 7 #200P Wind Vane
 8 #200P Wind Vane
 9 NRG #110S Temp C
 10 BP-20 Barom. mb
 11 No SCM Installed
 12 No SCM Installed

April 2004**Summary Report**

SITE 1080

WCROC

Channel	1	2	3	4	5	6	7	8	9	10		
Height	50 m	50 m	40 m	40 m	30 m	30 m	50 m	40 m	2 m	2 m	-----	-----
Units	m/s	m/s	m/s	m/s	m/s	m/s	deg	deg	C	mb	-----	-----
Intervals with Valid Data	4320	4320	4320	4320	4320	4320	4320	4320	4320	4320		
Average Filtered Data	7.2	7.32	6.76	7	6.42	6.55	341.98	342.14	9.24	978.08		
Average for All Data	7.2	7.32	6.76	7	6.42	6.55	341.98	342.14	9.24	978.08		
Min Interval Average	0.4	0.4	0.4	0.4	0.4	0.4			-8.3	954.1		
Date of Min Interval	4/12/2004	4/12/2004	4/4/2004	4/4/2004	4/4/2004	4/4/2004			4/11/2004	4/28/2004		
Time of Min Interval	6:40:00 AM	7:00:00 AM	5:50:00 AM	5:50:00 AM	5:30:00 AM	5:30:00 AM			4:50:00 AM	1:00:00 PM		
Max Interval Average	20	20.5	19	19.7	18.4	19			35.5	990.3		
Date of Max Interval	4/7/2004	4/7/2004	4/7/2004	4/7/2004	4/7/2004	4/7/2004			4/28/2004	4/3/2004		
Time of Max Interval	4:20:00 PM	4:20:00 PM	4:20:00 PM	4:20:00 PM	4:20:00 PM	4:20:00 PM			1:10:00 PM	8:00:00 AM		
Average Interval SD	0.86	0.84	0.87	0.86	0.88	0.88	7.58	8.11	0.08	0		
Min Sample	0.4	0.4	0.4	0.4	0.4	0.4			-8.5	953.5		
Date of Min Sample	4/2/2004	4/2/2004	4/2/2004	4/2/2004	4/2/2004	4/2/2004			4/11/2004	4/28/2004		
Time of Min Sample	12:10:00 PM	12:10:00 PM	12:00:00 PM	12:00:00 PM	12:00:00 PM	12:00:00 PM			4:50:00 AM	12:50:00 PM		
Max Sample	25.6	26	25.6	26.8	24	25.2			36	990.1		
Date of Max Sample	4/7/2004	4/7/2004	4/29/2004	4/29/2004	4/29/2004	4/29/2004			4/28/2004	4/2/2004		
Time of Max Sample	5:00:00 PM	5:00:00 PM	12:40:00 AM	12:40:00 AM	12:40:00 AM	12:40:00 AM			1:00:00 PM	9:40:00 AM		
Average Interval TI	0.13	0.13	0.14	0.14	0.15	0.15						
Wind Speed Direction							NW	NW				

Site Information:

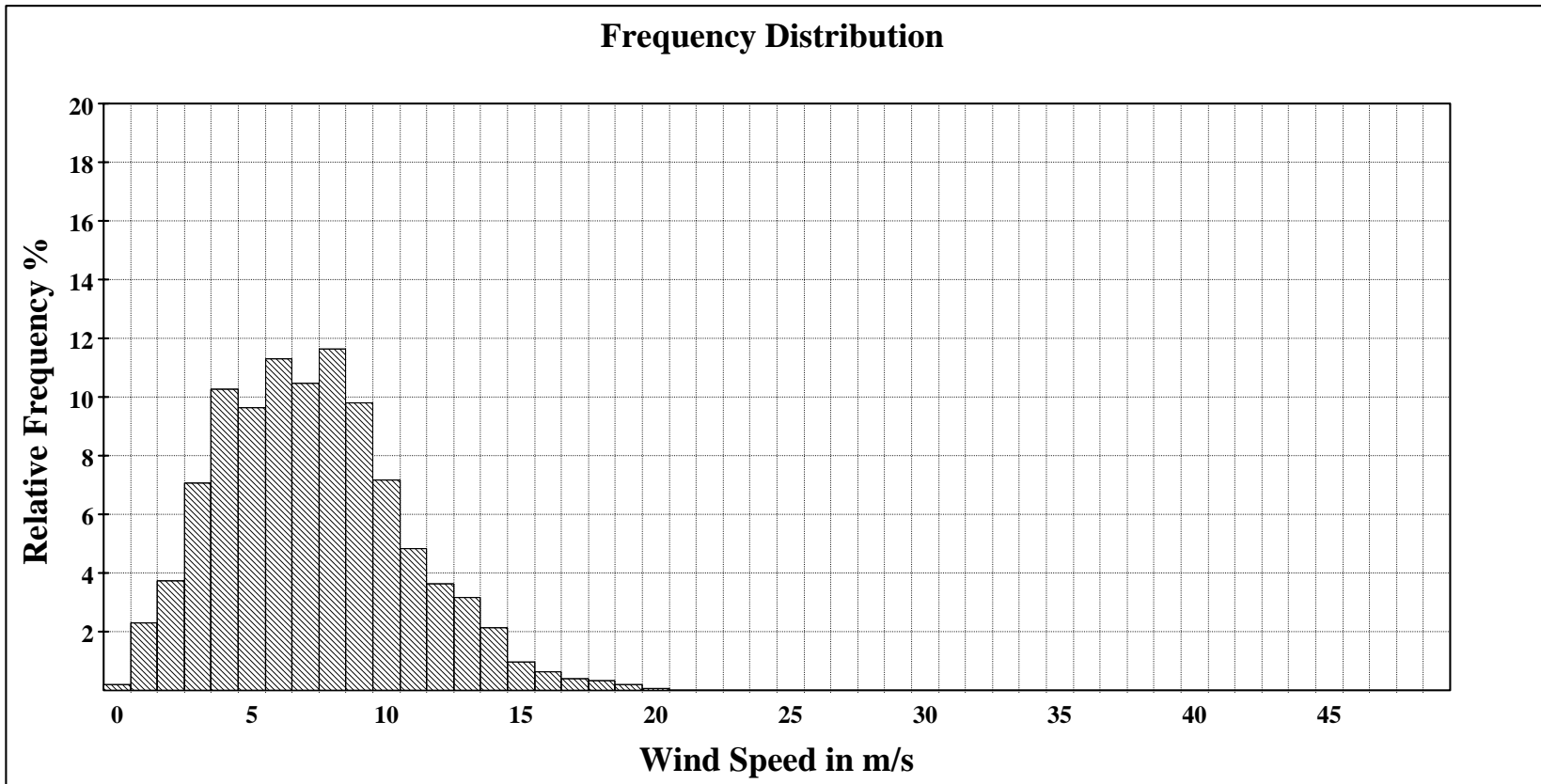
Project: Wind Hybrid Project
 Location: Morris, MN
 Elevation: 350 m

Sensor on channel 1:

NRG #40 Anem. m/s
 Height: 50 m
 Serial #: SN:

April 2004

Frequency Distribution, 50 m, Ch 1
 SITE 1080
 WCROC



Site Information:

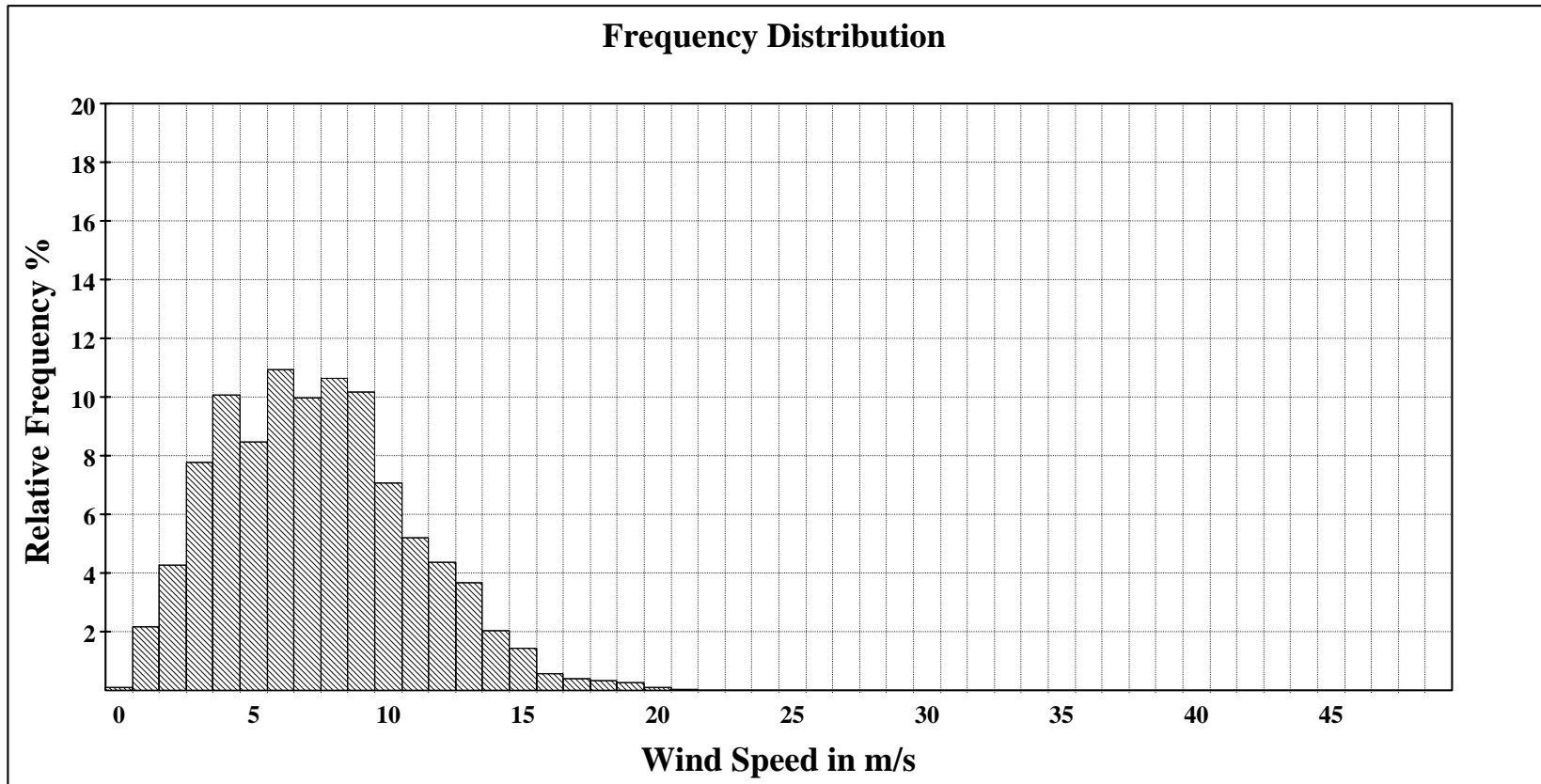
Project: Wind Hybrid Project
Location: Morris, MN
Elevation: 350 m

Sensor on channel 2:

NRG #40 Anem. m/s
Height: 50 m
Serial #: SN:

April 2004**Frequency Distribution, 50m, Ch 2**

SITE 1080
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Site Information:

Project: Wind Hybrid Project
 Location: Morris, MN
 Elevation: 350 m

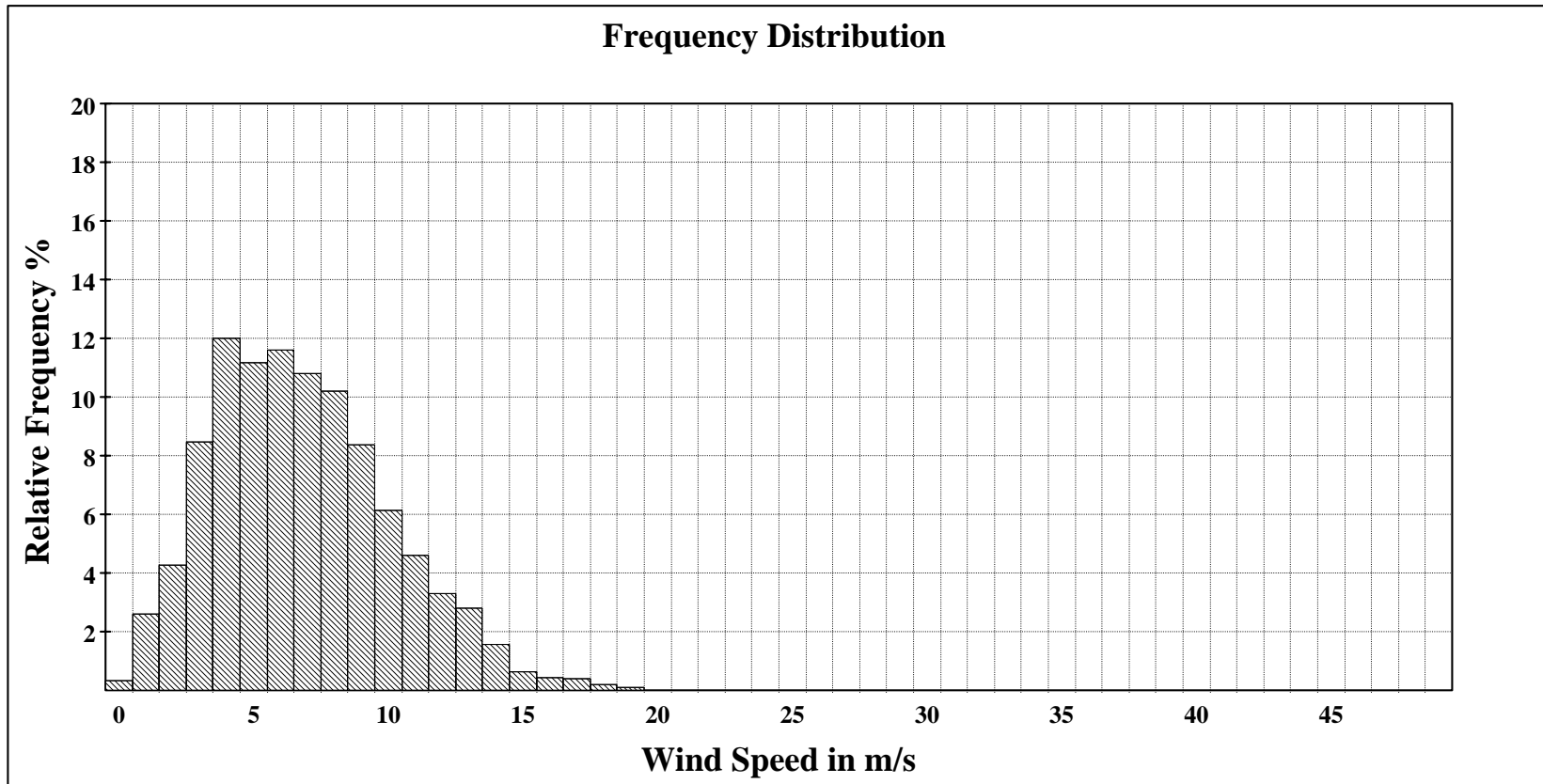
Sensor on channel 3:

NRG #40 Anem. m/s
 Height: 40 m
 Serial #: SN:

April 2004

Frequency Distribution, 40m, Ch 3

SITE 1080
 WCROC



Site Information:

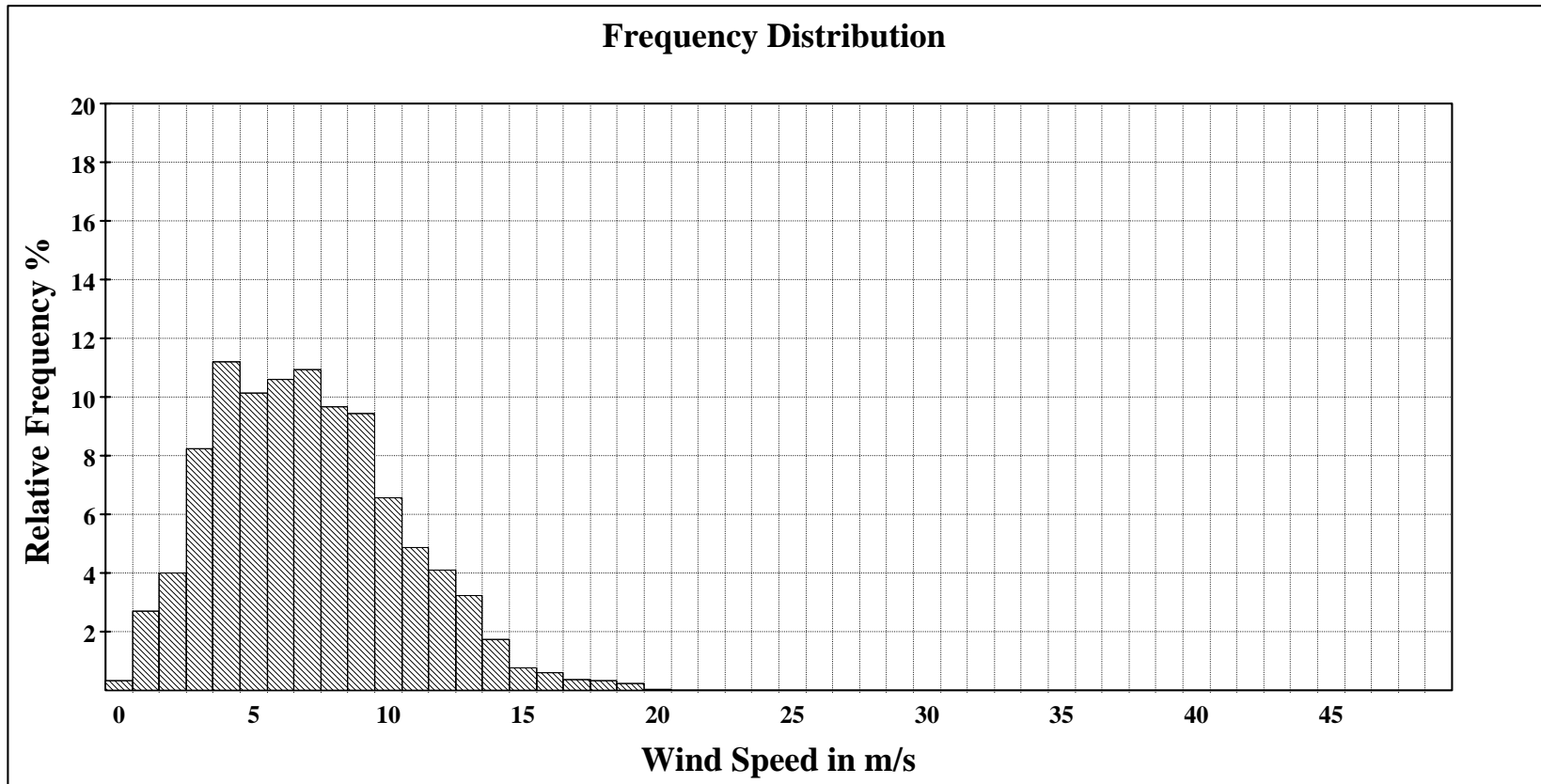
Project: Wind Hybrid Project
Location: Morris, MN
Elevation: 350 m

Sensor on channel 4:

NRG #40 Anem. m/s
Height: 40 m
Serial #: SN:

April 2004**Frequency Distribution, 40m, Ch 4**

SITE 1080
WCROC



Site Information:

Project: Wind Hybrid Project
Location: Morris, MN
Elevation: 350 m

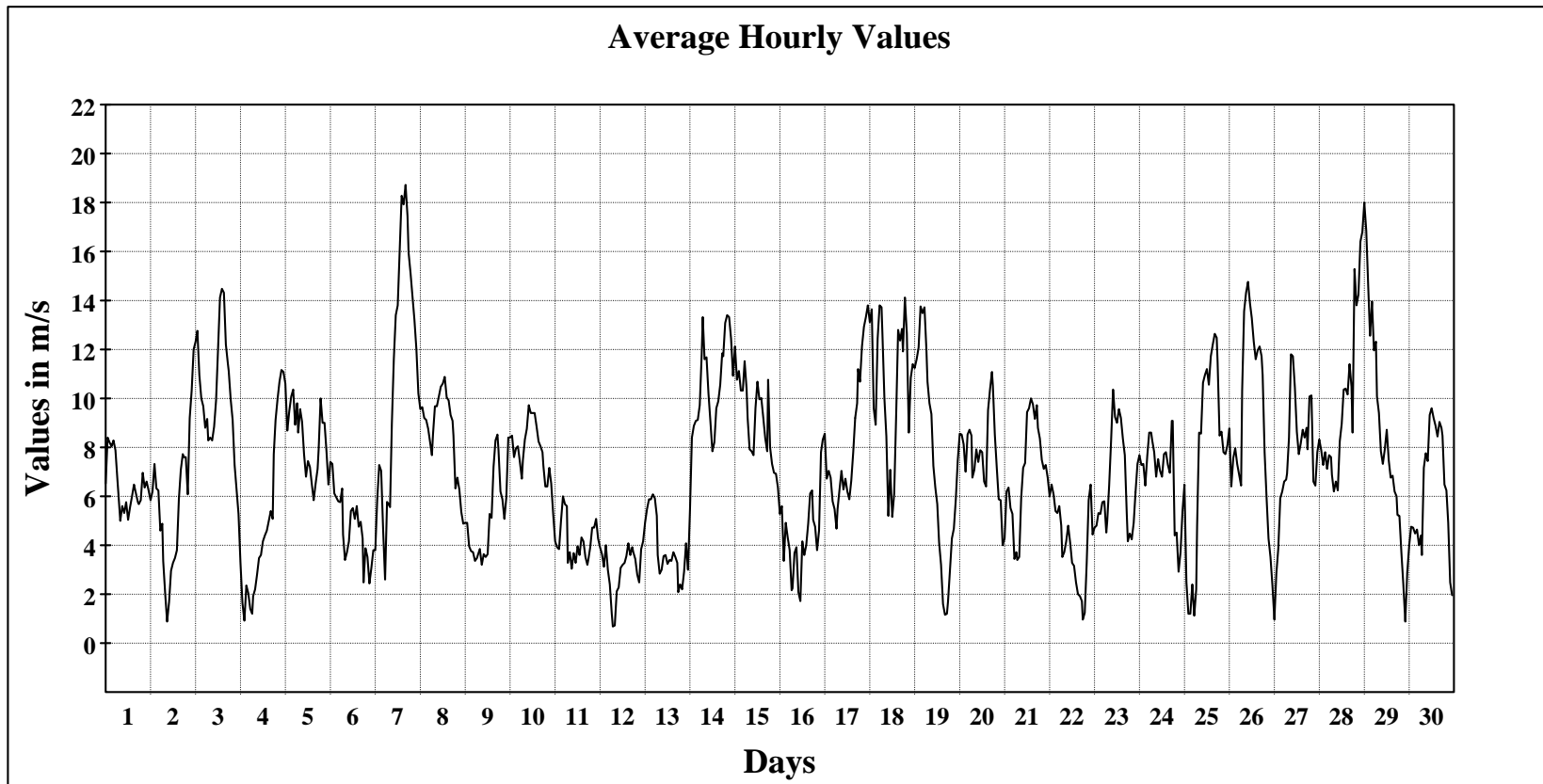
Sensor on channel 1:

NRG #40 Anem. m/s
Height: 50 m
Serial #: SN:

April 2004**Hourly Averages Graph, 50m, Ch 1**

SITE 1080

WCROC

**Average Value: 7.2**

Site Information:

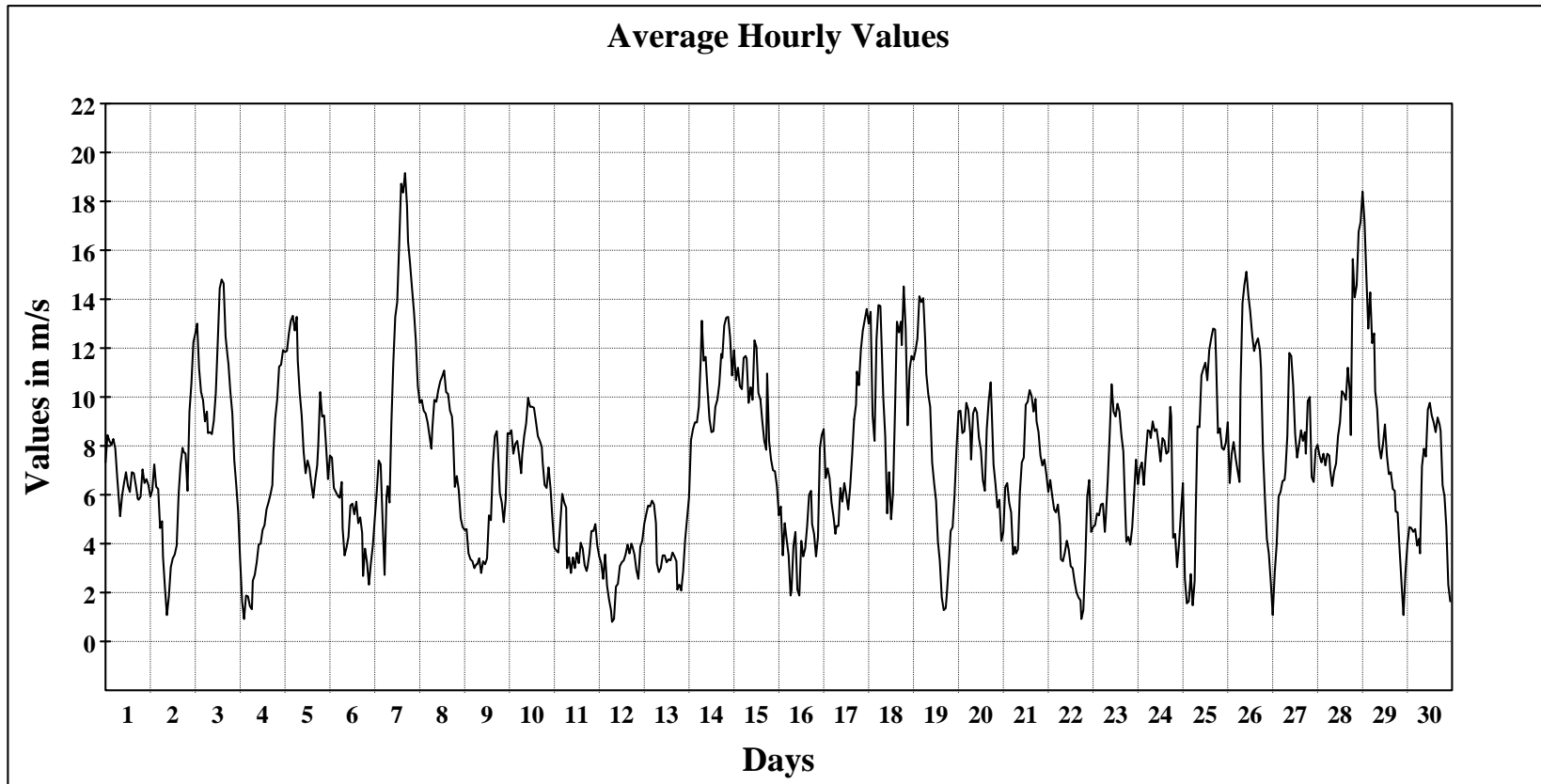
Project: Wind Hybrid Project
Location: Morris, MN
Elevation: 350 m

Sensor on channel 2:

NRG #40 Anem. m/s
Height: 50 m
Serial #: SN:

April 2004

Hourly Averages Graph, 50m, Ch 2
SITE 1080
WCROC



Average Value: 7.3

Site Information:

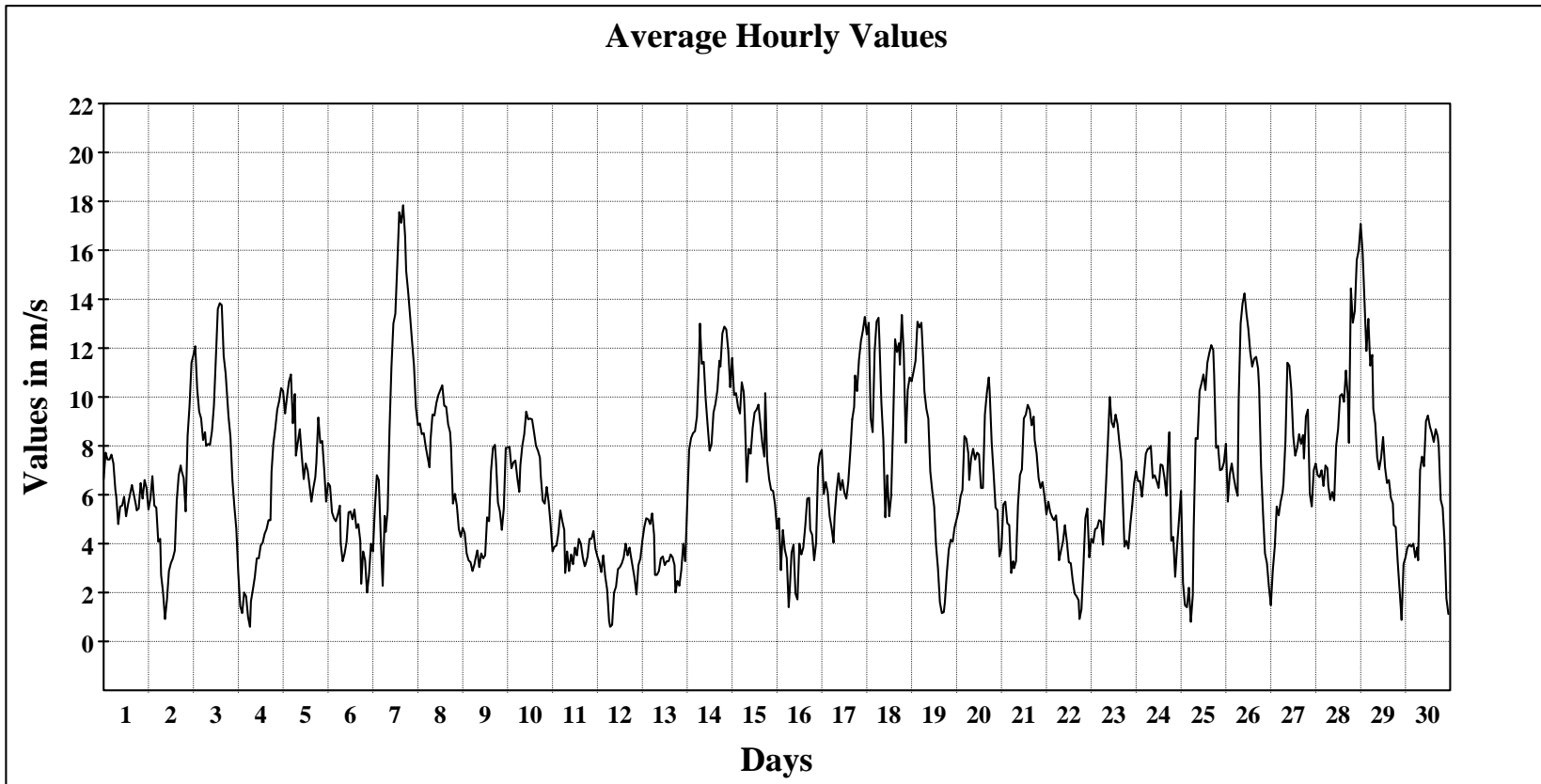
Project: Wind Hybrid Project
 Location: Morris, MN
 Elevation: 350 m

Sensor on channel 3:

NRG #40 Anem. m/s
 Height: 40 m
 Serial #: SN:

April 2004

Hourly Averages Graph, 40m, Ch 3
 SITE 1080
 WCROC



Average Value: 6.8

Site Information:

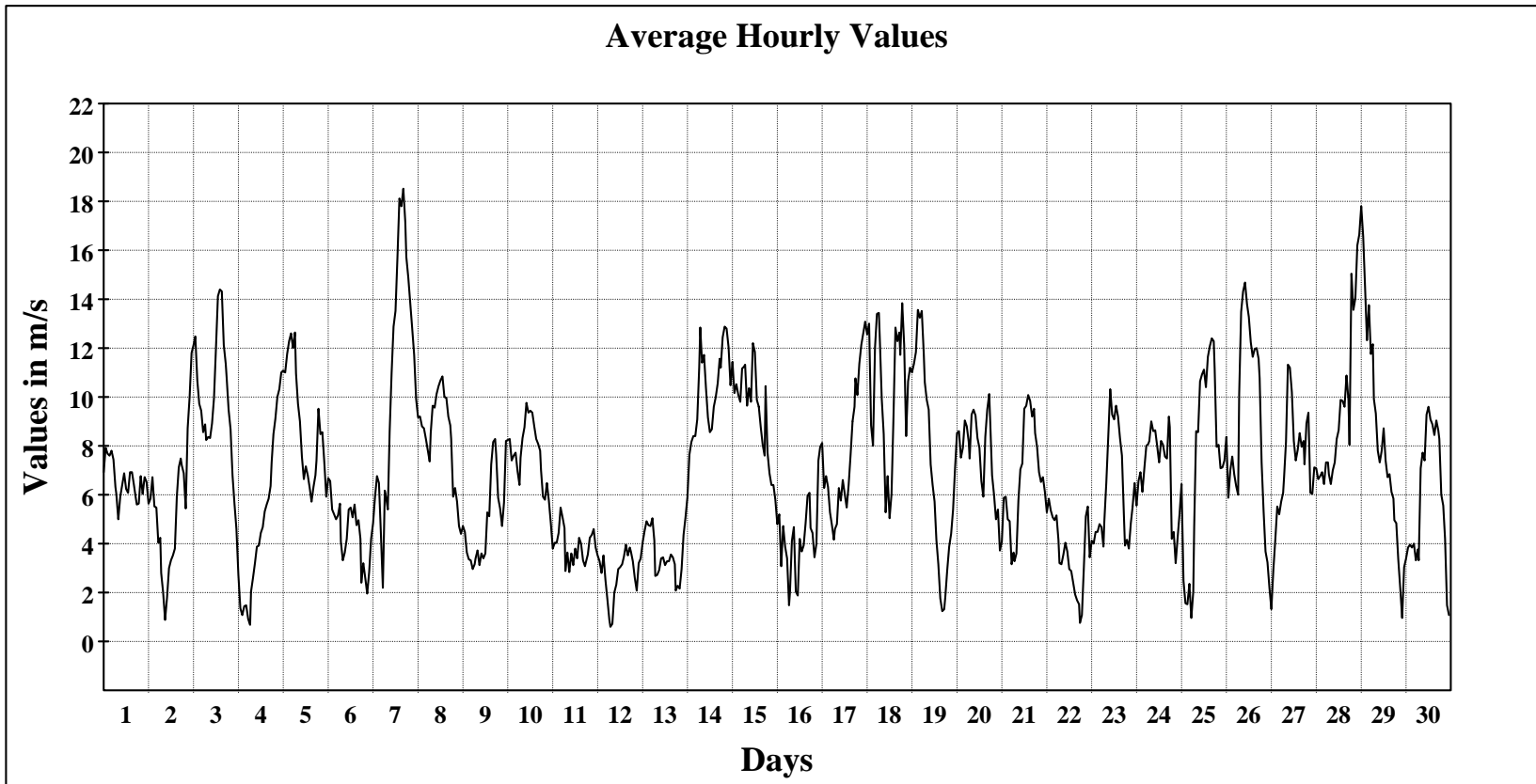
Project: Wind Hybrid Project
 Location: Morris, MN
 Elevation: 350 m

Sensor on channel 4:

NRG #40 Anem. m/s
 Height: 40 m
 Serial #: SN:

April 2004

Hourly Averages Graph, 40m, Ch 4
 SITE 1080
 WCROC



Average Value: 7.0

Site Information:

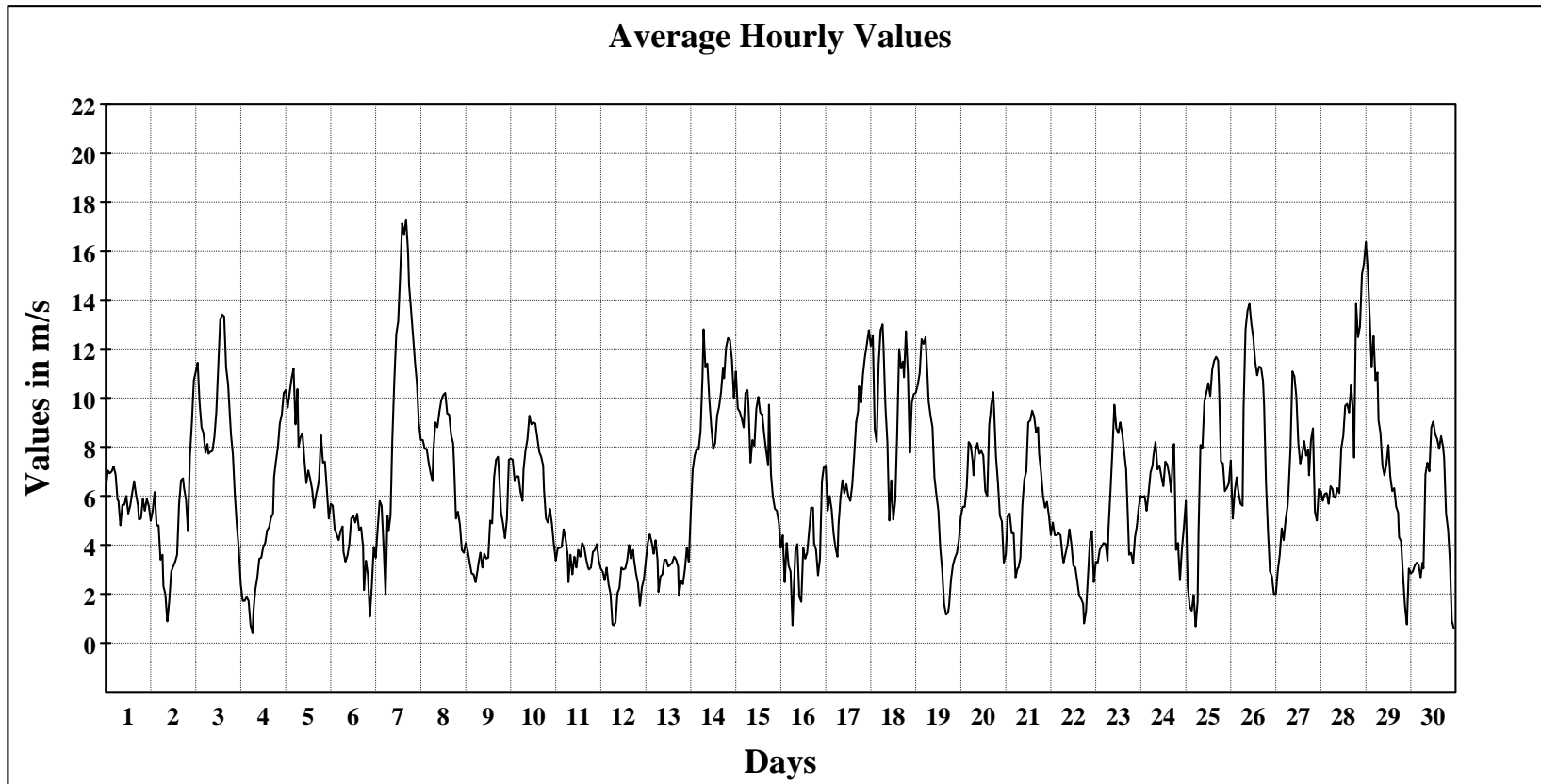
Project: Wind Hybrid Project
 Location: Morris, MN
 Elevation: 350 m

Sensor on channel 5:

NRG #40 Anem. m/s
 Height: 30 m
 Serial #: SN:

April 2004

Hourly Averages Graph, 30m, Ch 5
 SITE 1080
 WCROC



Average Value: 6.4

Site Information:

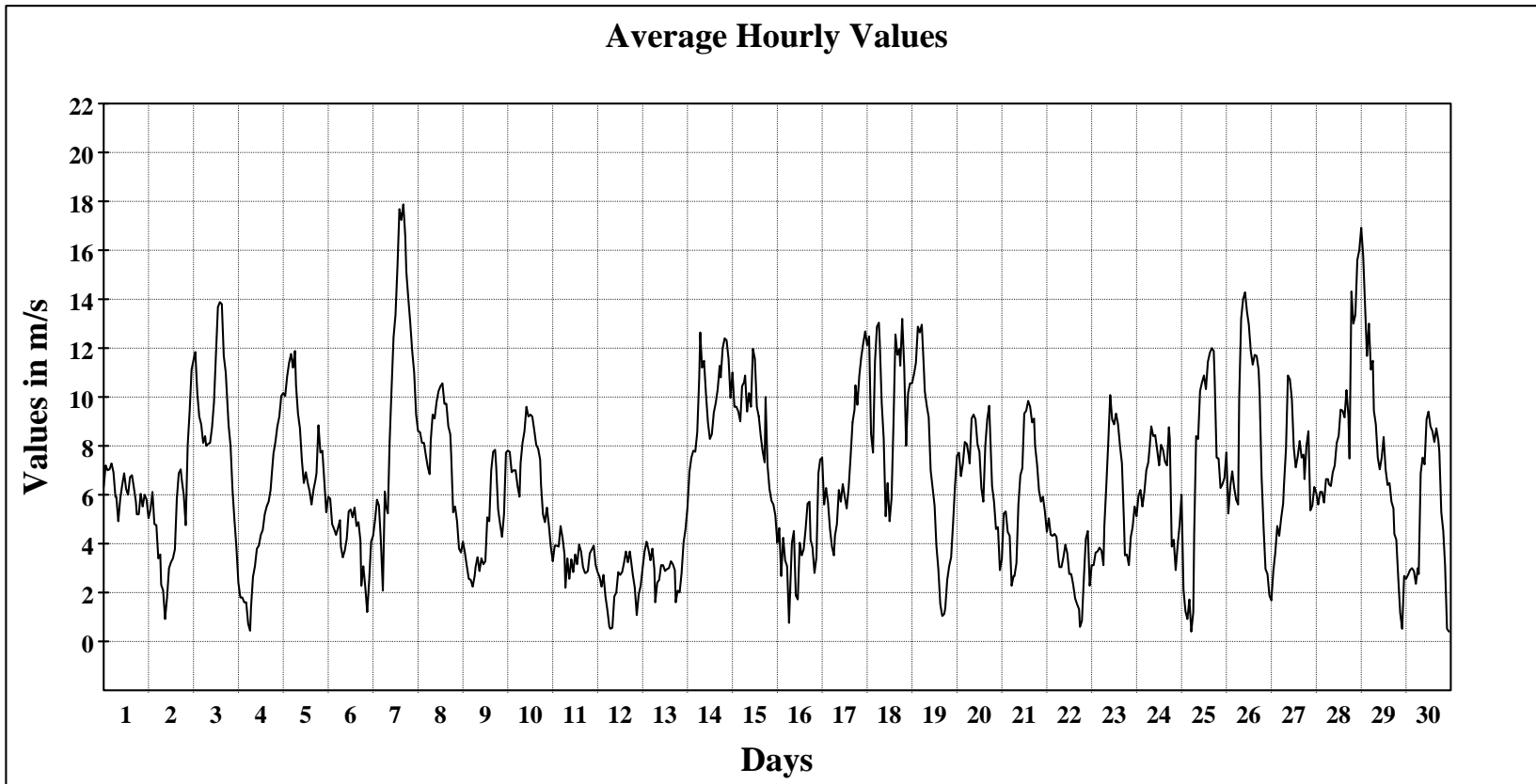
Project: Wind Hybrid Project
 Location: Morris, MN
 Elevation: 350 m

Sensor on channel 6:

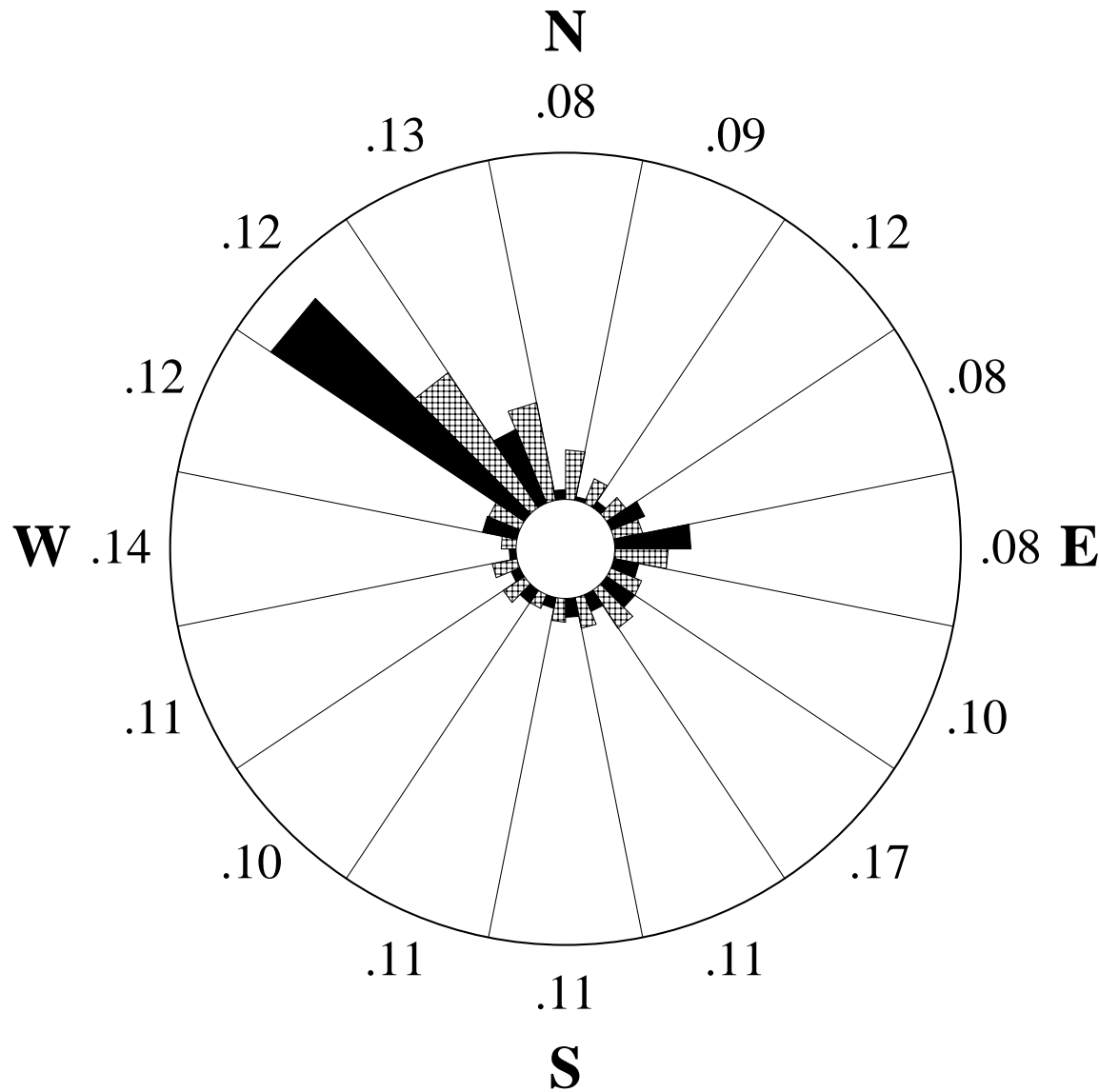
NRG #40 Anem. m/s
 Height: 30 m
 Serial #: SN:



April 2004

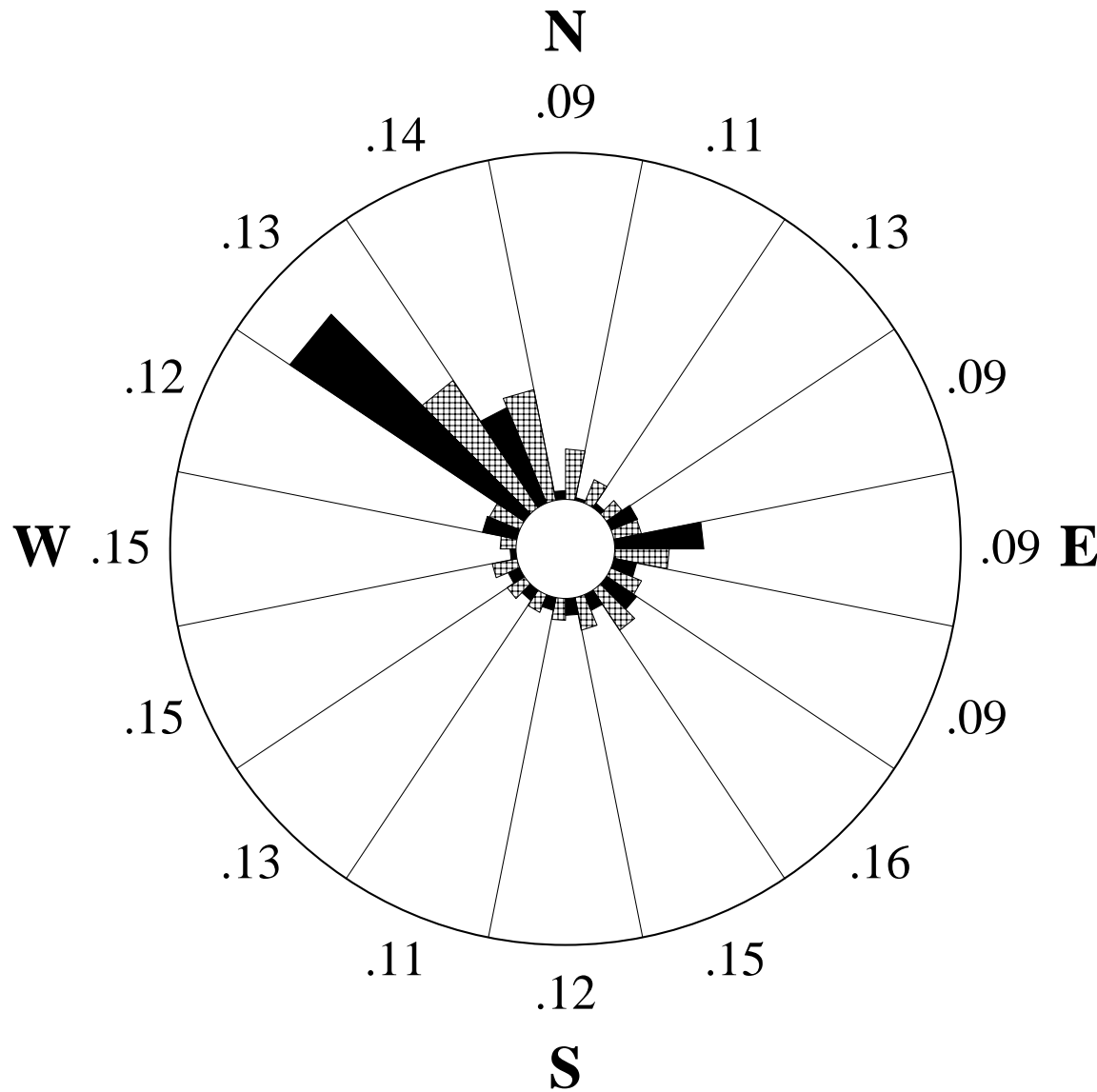
Hourly Averages Graph, 30m, Ch 6
 SITE 1080
 WCROC



Average Value: 6.5



<p>April 2004</p> <p>Wind Rose, 50m, Ch 1, 7</p> <p>SITE 1080</p> <p>WCROC</p>	
<p>Site Information:</p> <p>Project: Wind Hybrid Project</p> <p>Location: Morris, MN</p> <p>Elevation: 350 m</p>	
<p>Anemometer on channel 1:</p> <p>NRG #40 Anem. m/s</p> <p>Height: 50 m</p> <p>Serial #: SN:</p>	
<p>Vane on channel 7:</p> <p>#200P Wind Vane</p> <p>Height: 50 m</p> <p>Serial #: SN:</p>	
<p>Outer Numbers are Average TIs for speeds greater than 4.5 m/s</p> <p>Inner Circle = 0%</p> <p>Outer Circle = 50%</p>	
	Percent of Total Wind Energy
	Percent of Total Time



April 2004

Wind Rose, 40 m, Ch 3, 8
 SITE 1080
 WCROC

Site Information:
 Project: Wind Hybrid Project
 Location: Morris, MN
 Elevation: 350 m

Anemometer on channel 3:
 NRG #40 Anem. m/s
 Height: 40 m
 Serial #: SN:

Vane on channel 8:
 #200P Wind Vane
 Height: 40 m
 Serial #: SN:

Outer Numbers are Average TIs for speeds greater than 4.5 m/s
 Inner Circle = 0%
 Outer Circle = 50%

■ Percent of Total Wind Energy
 ▒ Percent of Total Time