APPENDIX A

REGULATED POLLUTANT MONITORING AND METEOROLOGY

Boulder, Wyoming
Monitored Parameters and Equipment

Parameters	Manufacturer/Model	Collected by ARS	Collected by IML	Operational Period
Particle Scattering	OPTEC NGN-2	X		01/20/2005 – 12/31/2005
Ozone	API 400E		X	01/01/2005 – 12/31/2005
Nitrogen Dioxide	API 200E		X	02/01/2005 – 12/31/2005
PM_{10} TEOM	Rupprecht & Patashnick Series 1400a		X	02/01/2005 – 12/31/2005
Ambient Temperature	Rotronics MP101A	X	X	01/20/2005 – 12/31/2005
Relative Humidity	Rotronics MP101A	X	X	01/20/2005 – 12/31/2005
Wind Speed	RM Young AQ		X	02/01/2005 – 12/31/2005
Wind Direction	RM Young AQ		X	02/01/2005 – 12/31/2005
Barometric Pressure	Campbell Scientific CS 105		X	02/01/2005 – 12/31/2005
Precipitation	Met One 12” Heated Tipping Bucket		X	08/04/2005 – 12/31/2005
Solar Radiation	Li-Cor Pyranometer		X	02/01/2005 – 12/31/2005
Digital Photography	ARS HRDC-R	X		01/01/2005 – 12/31/2005

Daniel, Wyoming
Monitored Parameters and Equipment

Parameters	Manufacturer/Model	Collected by ARS	Collected by IML	Operational Period
Ozone	API 400E		X	07/01/2005 – 12/31/2005
Nitrogen Dioxide	API 200E		X	07/01/2005 – 12/31/2005
PM_{10} TEOM	Rupprecht & Patashnick Series 1400a		X	07/01/2005 – 12/31/2005
Ambient Temperature	RM Young 4132		X	07/01/2005 – 12/31/2005
Relative Humidity	Campbell Scientific CS 500		X	07/01/2005 – 12/31/2005
Wind Speed	RM Young AQ		X	07/01/2005 – 12/31/2005
Wind Direction	RM Young AQ		X	07/01/2005 – 12/31/2005
Barometric Pressure	Campbell Scientific CS 105		X	07/01/2005 – 12/31/2005
Precipitation	Met One 12” Heated Tipping Bucket		X	07/01/2005 – 12/31/2005
Solar Radiation	Li-Cor Pyranometer		X	07/01/2005 – 12/31/2005
Digital Photography	ARS HRDC-R	X		07/15/2005 – 12/31/2005

Jonah, Wyoming
Monitored Parameters and Equipment

Parameters	Manufacturer/Model	Collected by ARS	Collected by MSI	Operational Period
Ozone	API 400A		X	01/01/2005 – 12/31/2005
Nitric Oxide	API 200A		X	01/01/2005 – 12/31/2005
Nitrogen Dioxide	API 200A		X	01/01/2005 – 12/31/2005
Oxides of Nitrogen	API 200A		X	01/01/2005 – 12/31/2005
PM_{10}	Rupprecht & Patashnick Series 1400ab		X	01/01/2005 – 12/31/2005
Ambient Temperature	RM Young 41342		X	01/01/2005 – 12/31/2005
Relative Humidity	RM Young 41342		X	01/01/2005 – 12/31/2005
Wind Speed	RM Young 05103		X	01/01/2005 – 12/31/2005
Wind Direction	RM Young 05103		X	01/01/2005 – 12/31/2005
Barometric Pressure	Vaisala PTB101B		X	01/01/2005 – 12/31/2005
Precipitation	Met One 385		X	01/01/2005 – 12/31/2005
Solar Radiation	Li Cor 200X		X	01/01/2005 – 12/31/2005
Digital Photography	ARS HRDC-R	X		01/01/2005 – 12/31/2005

Summary of Selected Meteorological Data

Boulder

Final Validation

02/01/2005 - 12/31/2005

Parameter	Value	Units	Number	Std Dev
SCALAR WIND SPEED				
Average	4.0	m/s	7853	2.9
Maximum	16.5	m/s		
Percent calm = 0.55				
AMBIENT TEMPERATURE				
Average	4.6	degC	7998	11.7
Maximum	34.0	degC		
Minimum	-29.8	degC		
RELATIVE HUMIDITY				
Average	59	percent	8016	23
Maximum	100	percent		
Minimum	6	percent		
PRECIPITATION (Rainfall or Snow melt)				
Average non-zero rate	.9	mm/hr	54	1.7
Maximum non-zero rate	12.2	mm/hr		
Minimum non-zero rate	.3	mm/hr		
Accumulated during period	50.1	mm		
SOLAR RADIATION				
Average Daily Total	17,645,810	joules/m2day	318	7,742,782
Maximum Daily Total	32,115,258	joules/m2day		
Minimum Daily Total	2,327,627	joules/m2day		

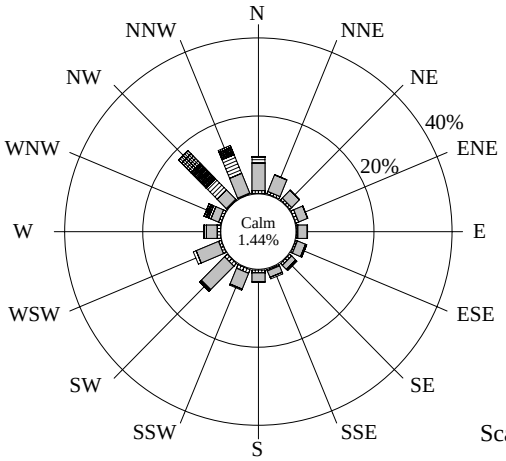
Note: Calms are included in the average scalar wind speed and are defined as winds less than 0.5 m/s (1.0 mph).

Solar radiation terms are based on the calculation of the total amount of solar energy incident on a unit area during each day. The maximum and minimum daily totals are selected from the list of daily totals. The totals for all days are then added and divided by the number of days to yield the average daily total. Only days with 24 valid values are included in these statistics.

NA indicates instrument not available.

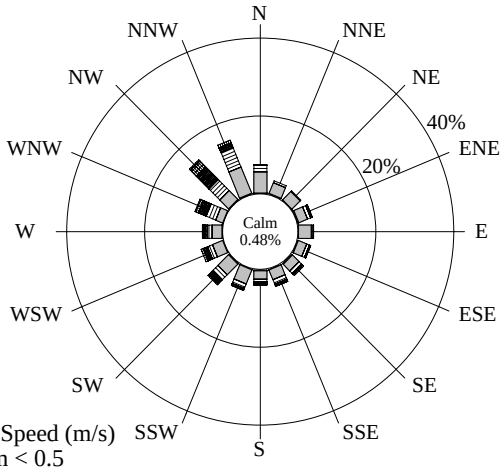
*Precipitation sensor installed 08/04/05

FIRST QUARTER (JAN-MAR)



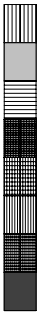
99.6% Collected 99.6% Valid
1399 Possible /1394 Collected /1393 Valid
(includes WS and WD)

SECOND QUARTER (APR-JUN)



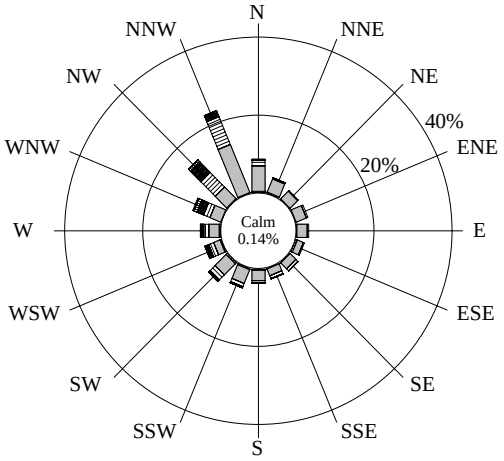
100.0% Collected 95.1% Valid
2184 Possible /2183 Collected /2076 Valid
(includes WS and WD)

Key
Scalar Wind Speed (m/s)
Calm < 0.5



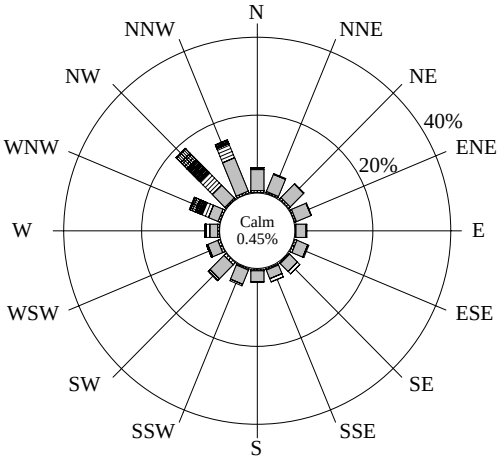
0.5-0.9
1.0-3.9
4.0-6.9
7.0-9.9
10.0-12.9
13.0-15.9
16.0-18.9
19.0+

THIRD QUARTER (JUL-SEP)



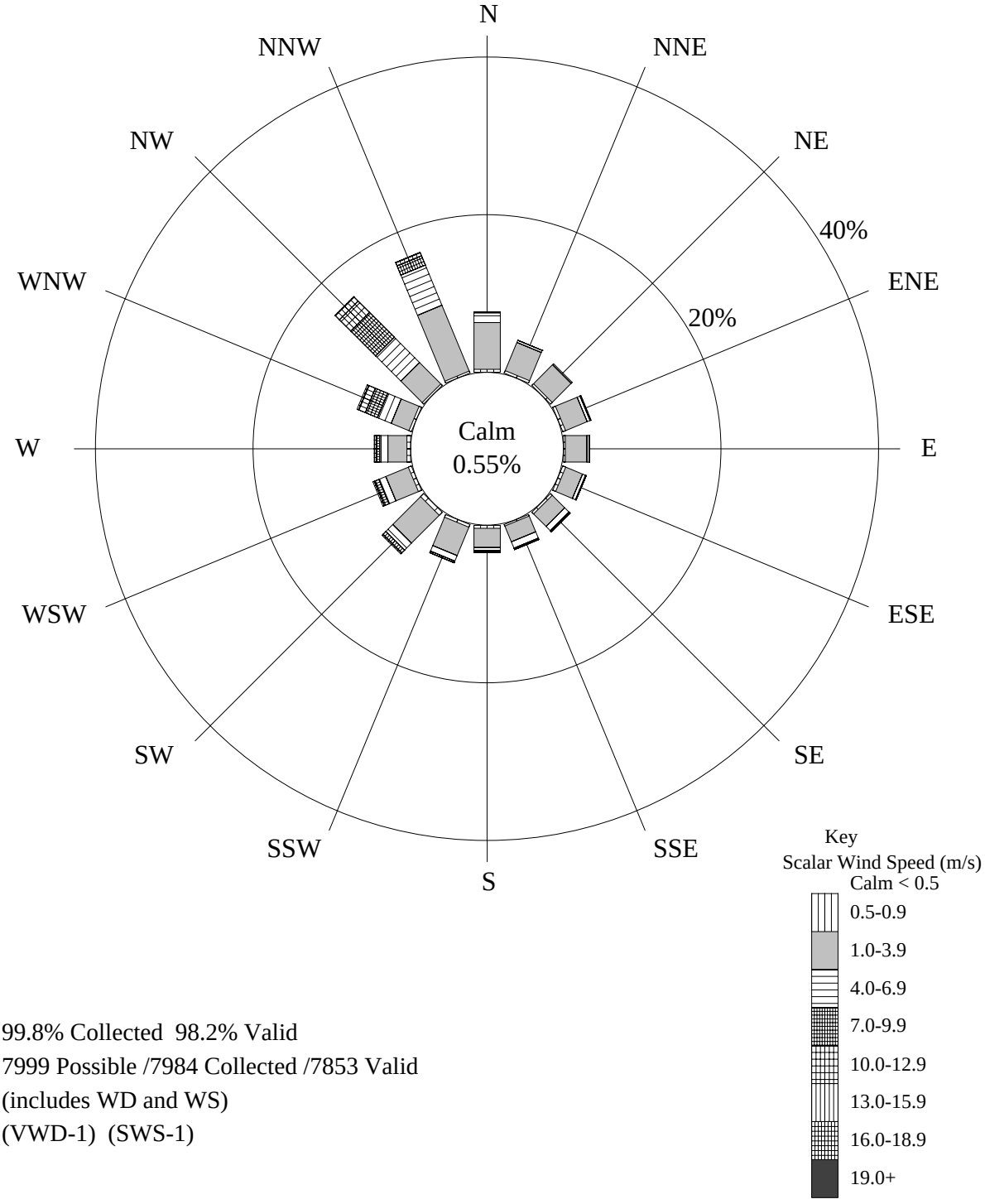
99.7% Collected 98.6% Valid
2208 Possible /2201 Collected /2178 Valid
(includes WS and WD)

FOURTH QUARTER (OCT-DEC)



99.9% Collected 99.9% Valid
2208 Possible /2206 Collected /2206 Valid
(includes WS and WD)

Boulder Wind Rose 02/01/2005 - 12/31/2005



99.8% Collected 98.2% Valid
7999 Possible /7984 Collected /7853 Valid
(includes WD and WS)
(VWD-1) (SWS-1)

Final Validation 03-14-2006

Summary of Selected Meteorological Data

Daniel

Final Validation

07/01/2005 - 12/31/2005

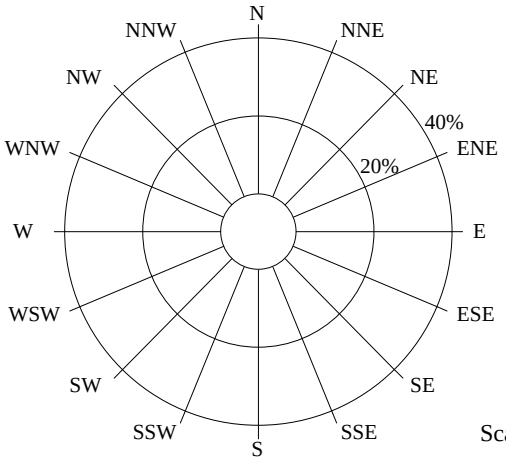
Parameter	Value	Units	Number	Std Dev
SCALAR WIND SPEED				
Average	3.3	m/s	4405	2.2
Maximum	13.2	m/s		
Percent calm = 0.77				
AMBIENT TEMPERATURE				
Average	5.5	degC	4405	12.2
Maximum	31.7	degC		
Minimum	-35.4	degC		
RELATIVE HUMIDITY				
Average	60	percent	4405	26
Maximum	100	percent		
Minimum	9	percent		
PRECIPITATION (Rainfall or Snow melt)				
Average non-zero rate	.7	mm/hr	110	1.0
Maximum non-zero rate	5.3	mm/hr		
Minimum non-zero rate	.3	mm/hr		
Accumulated during period	79.4	mm		
SOLAR RADIATION				
Average Daily Total	15,741,512	joules/m2day	174	8,898,903
Maximum Daily Total	32,603,652	joules/m2day		
Minimum Daily Total	2,084,807	joules/m2day		

Note: Calms are included in the average scalar wind speed and are defined as winds less than 0.5 m/s (1.0 mph).

Solar radiation terms are based on the calculation of the total amount of solar energy incident on a unit area during each day. The maximum and minimum daily totals are selected from the list of daily totals. The totals for all days are then added and divided by the number of days to yield the average daily total. Only days with 24 valid values are included in these statistics.

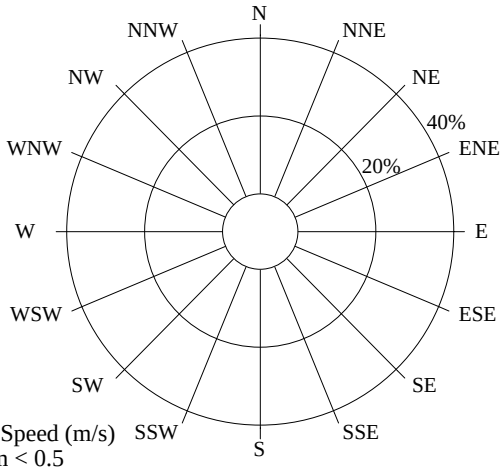
NA indicates instrument not available.

FIRST QUARTER (JAN-MAR)



0.0% Collected 0.0% Valid
0 Possible /0 Collected /0 Valid
(includes WS and WD)

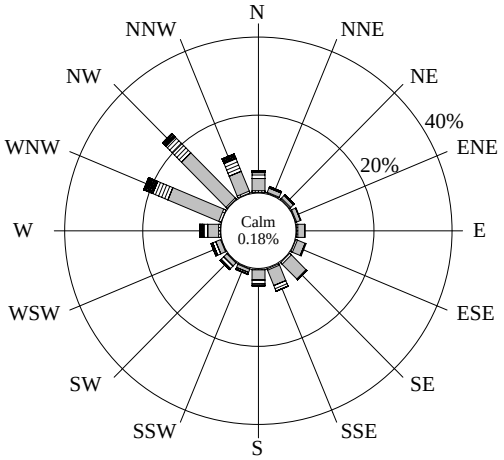
SECOND QUARTER (APR-JUN)



0.0% Collected 0.0% Valid
0 Possible /0 Collected /0 Valid
(includes WS and WD)

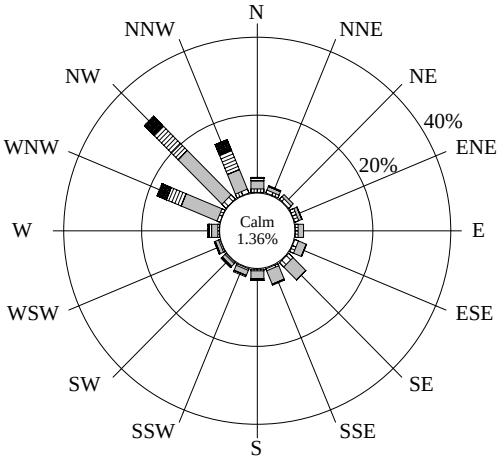
Key
Scalar Wind Speed (m/s)
Calm < 0.5
0.5-0.9
1.0-3.9
4.0-6.9
7.0-9.9
10.0-12.9
13.0-15.9
16.0-18.9
19.0+

THIRD QUARTER (JUL-SEP)



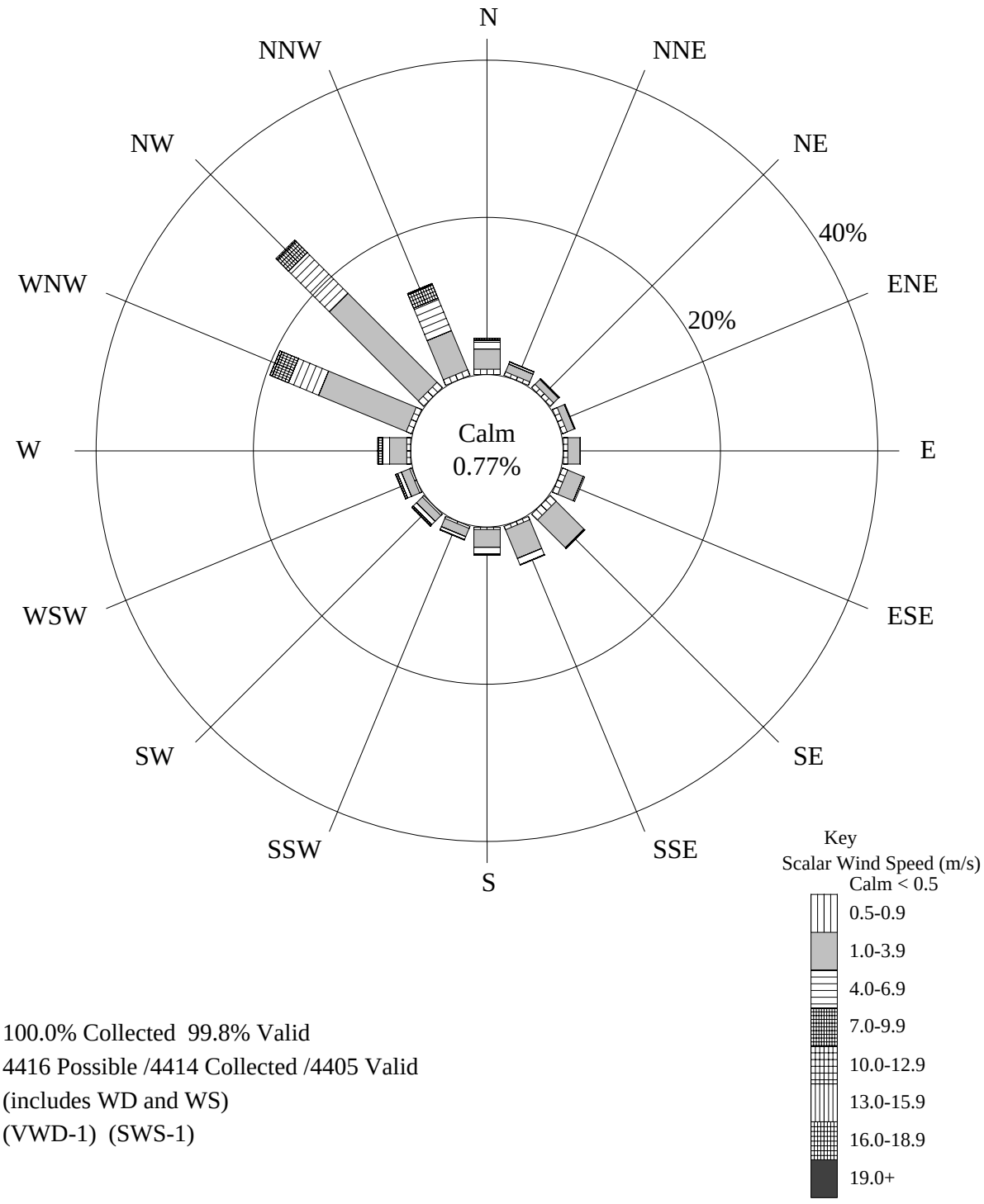
99.9% Collected 99.6% Valid
2207 Possible /2205 Collected /2199 Valid
(includes WS and WD)

FOURTH QUARTER (OCT-DEC)



100.0% Collected 99.9% Valid
2208 Possible /2208 Collected /2206 Valid
(includes WS and WD)

Daniel Wind Rose 07/01/2005 - 12/31/2005



100.0% Collected 99.8% Valid
4416 Possible /4414 Collected /4405 Valid
(includes WD and WS)
(VWD-1) (SWS-1)

Final Validation 03-14-2006

Summary of Selected Meteorological Data

Jonah

Final Validation

01/01/2005 - 12/31/2005

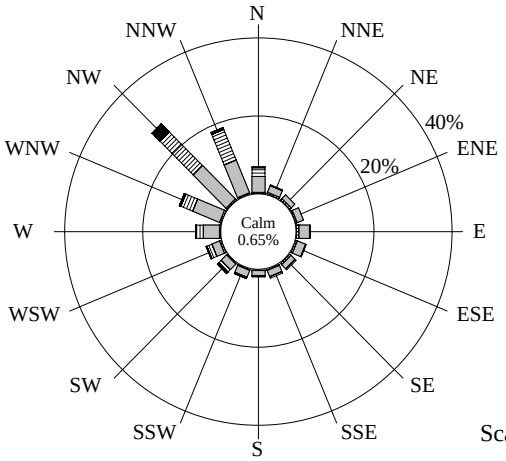
Parameter	Value	Units	Number	Std Dev
SCALAR WIND SPEED				
Average	3.9	m/s	8756	2.2
Maximum	14.0	m/s		
Percent calm = 0.39				
AMBIENT TEMPERATURE				
Average	4.1	degC	8756	11.0
Maximum	33.4	degC		
Minimum	-30.4	degC		
RELATIVE HUMIDITY				
Average	NA			
Maximum				
Minimum				
PRECIPITATION (Rainfall or Snow melt)				
Average non-zero rate	.9	mm/hr	325	1.3
Maximum non-zero rate	14.7	mm/hr		
Minimum non-zero rate	.3	mm/hr		
Accumulated during period	291.3	mm		
SOLAR RADIATION				
Average Daily Total	18,057,432	joules/m2day	364	8,275,957
Maximum Daily Total	34,365,600	joules/m2day		
Minimum Daily Total	2,278,800	joules/m2day		

Note: Calms are included in the average scalar wind speed and are defined as winds less than 0.5 m/s (1.0 mph).

Solar radiation terms are based on the calculation of the total amount of solar energy incident on a unit area during each day. The maximum and minimum daily totals are selected from the list of daily totals. The totals for all days are then added and divided by the number of days to yield the average daily total. Only days with 24 valid values are included in these statistics.

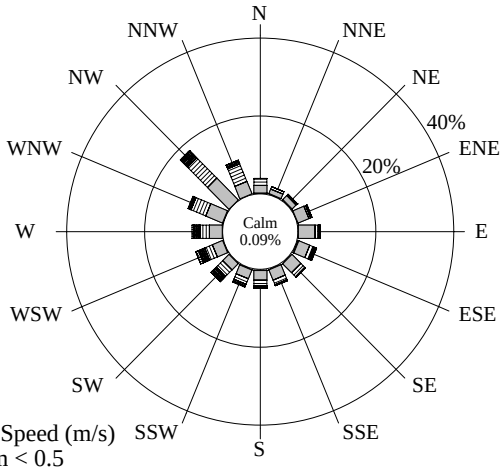
NA indicates instrument not available.

FIRST QUARTER (JAN-MAR)



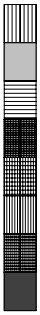
100.0% Collected 100.0% Valid
2160 Possible /2160 Collected /2160 Valid
(includes WS and WD)

SECOND QUARTER (APR-JUN)



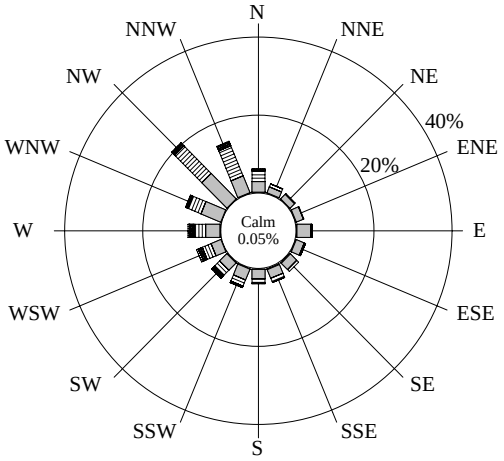
100.0% Collected 99.9% Valid
2184 Possible /2184 Collected /2182 Valid
(includes WS and WD)

Key
Scalar Wind Speed (m/s)
Calm < 0.5



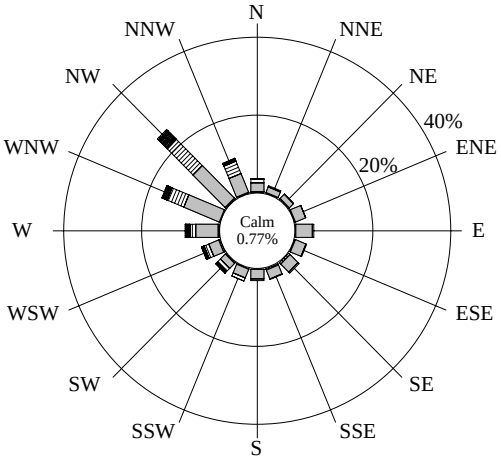
0.5-0.9
1.0-3.9
4.0-6.9
7.0-9.9
10.0-12.9
13.0-15.9
16.0-18.9
19.0+

THIRD QUARTER (JUL-SEP)



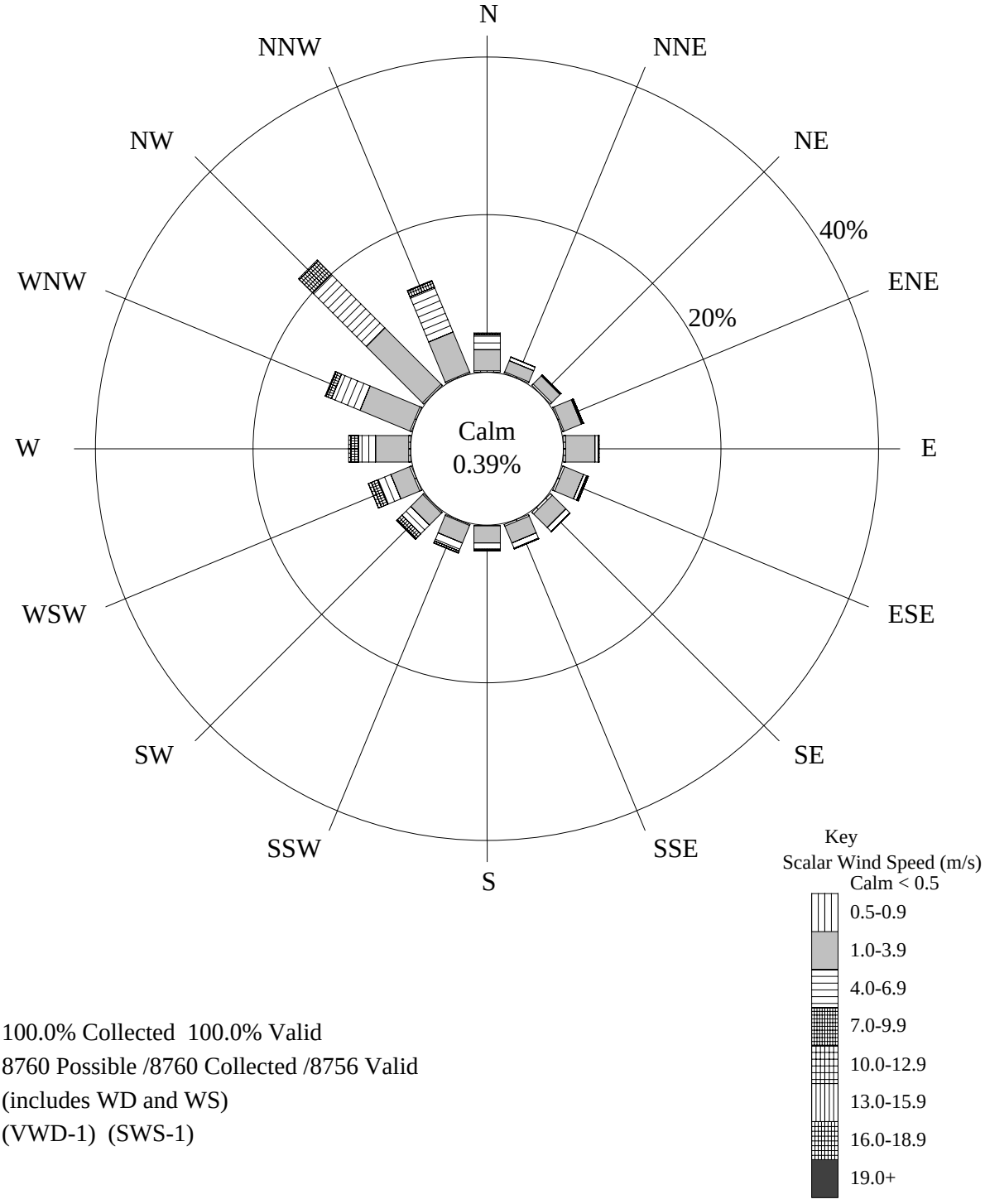
100.0% Collected 100.0% Valid
2208 Possible /2208 Collected /2208 Valid
(includes WS and WD)

FOURTH QUARTER (OCT-DEC)



100.0% Collected 99.9% Valid
2208 Possible /2208 Collected /2206 Valid
(includes WS and WD)

Jonah Annual Wind Rose 2005



100.0% Collected 100.0% Valid
8760 Possible /8760 Collected /8756 Valid
(includes WD and WS)
(VWD-1) (SWS-1)

Final Validation 03-14-2006

Ozone

10 Highest Daily 1-Hour Average Maximum Concentrations
Boulder

Final Validation
02/01/2005 - 12/31/2005

Value	Date	Hour	Concentration (ppb)
Ozone			
1	02/20/2005	15	110
2	02/22/2005	16	101
3	02/24/2005	16	98
4	02/04/2005	16	94
5	02/03/2005	17	93
6	02/27/2005	14	93
7	02/05/2005	14	92
8	03/03/2005	16	88
9	02/25/2005	15	86
10	02/19/2005	16	86

Ozone
Summary of the Highest Daily Maximum 8-Hour Averages
Boulder

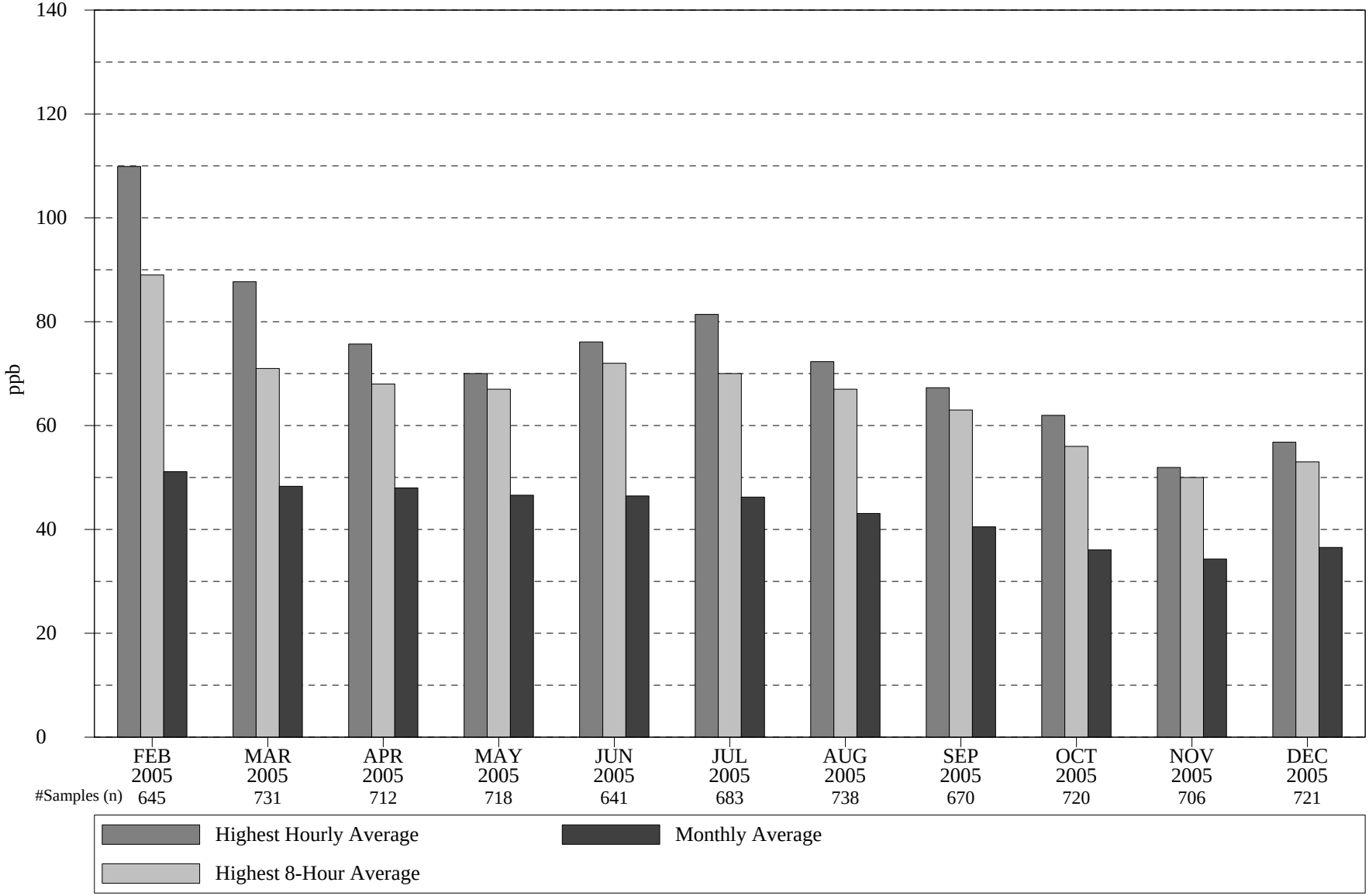
Final Validation
02/01/2005 - 12/31/2005

Date	Start and End Time of Daily Maximum 8-Hour Average	Daily Maximum 8-Hour Average (ppb)
02/20/2005	13 - 20	89
02/03/2005	13 - 20	81
02/04/2005	14 - 21	80
02/24/2005	13 - 20	80
02/19/2005	12 - 19	79
02/22/2005	13 - 20	75
02/27/2005	12 - 19	74
06/27/2005	11 - 18	72
02/25/2005	13 - 20	72
03/03/2005	13 - 20	71
1	Days this period with 8-hour averages > .08 ppm (84 ppb)	

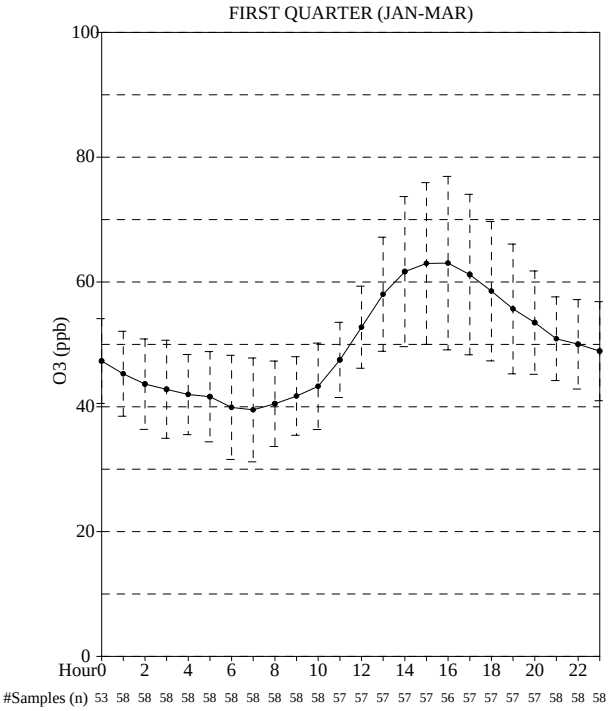
Boulder

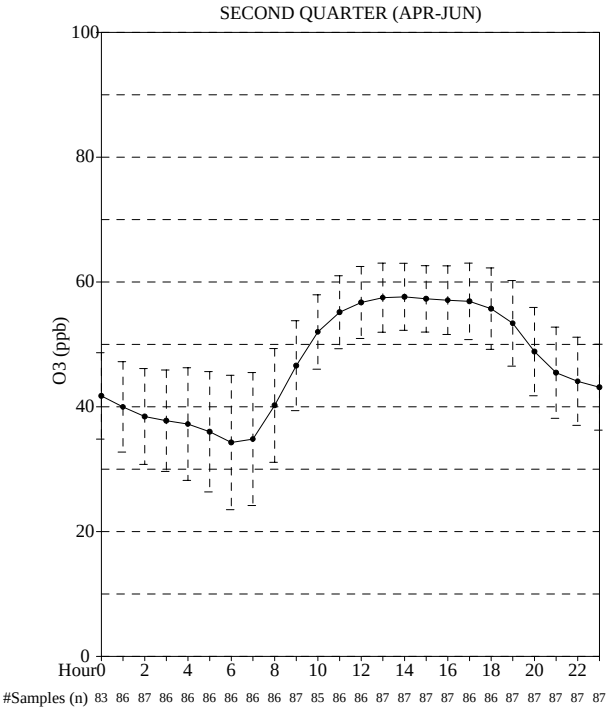
Ozone Data Summary by Month
February 2005 to December 2005

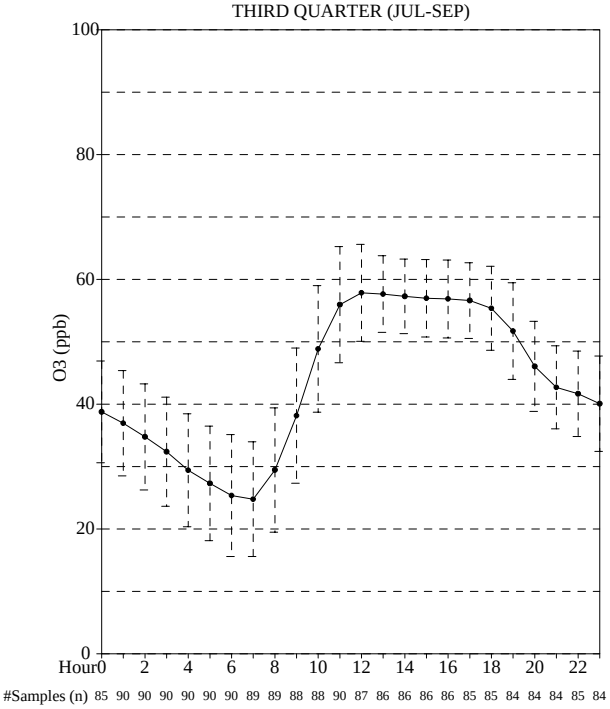
02/01/2005 - 12/31/2005

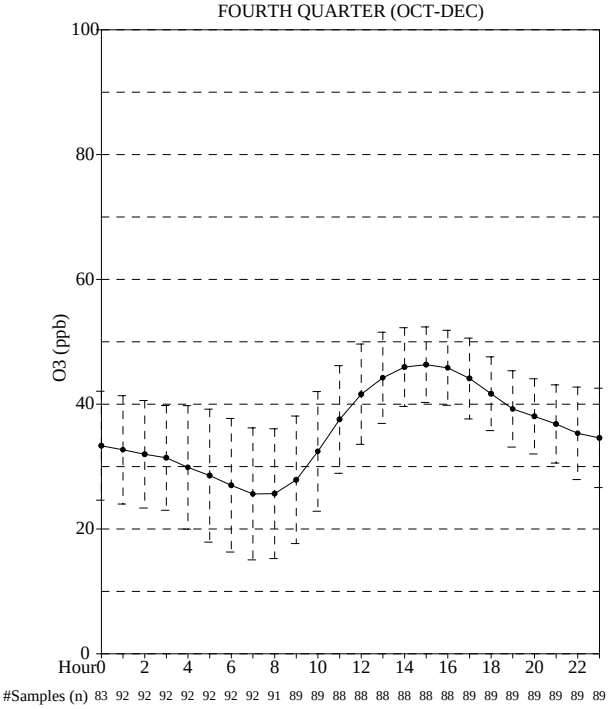


Final Validation



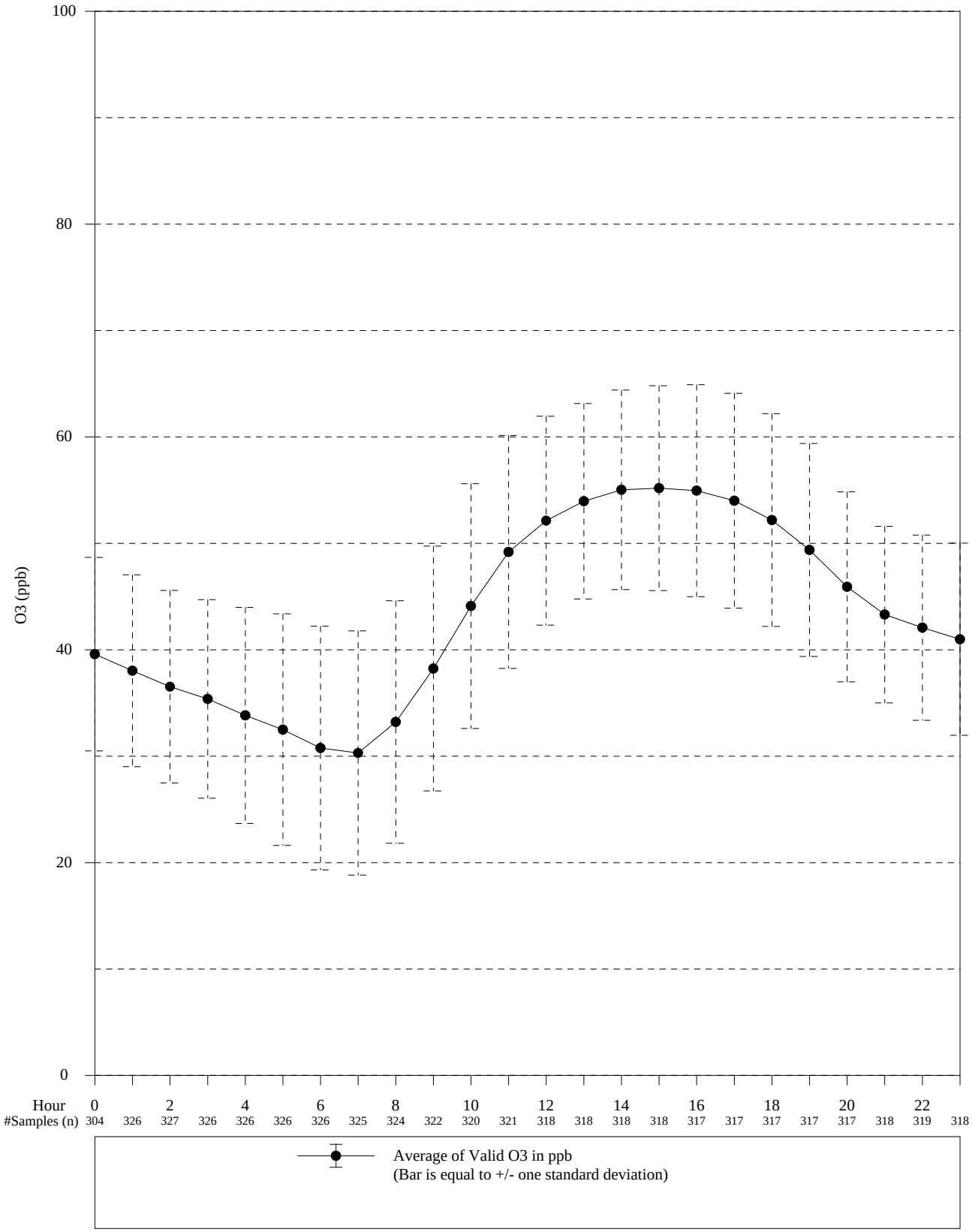






Average of Valid O3 in ppb
(Bar is equal to +/- one standard deviation)

Boulder Diurnal Ozone Plot 02/01/2005 - 12/31/2005

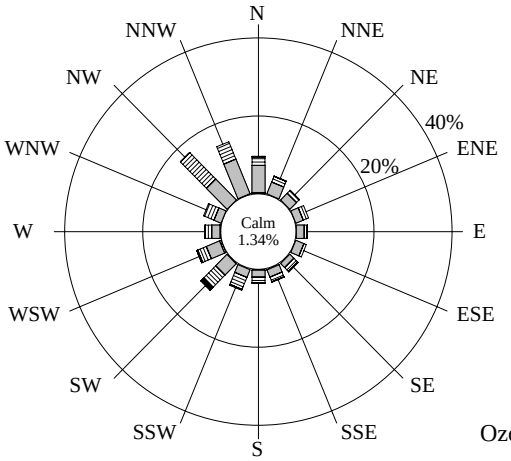


Final Validation 03-15-2006

Boulder Ozone 02/01/2005 - 12/31/2005

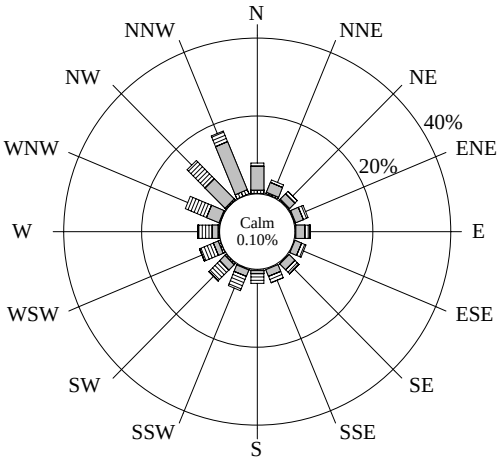
Pollutant Rose

2/1/2005-4/30/2005



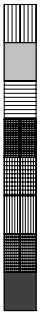
98.7% Collected 98.3% Valid
2119 Possible /2092 Collected /2083 Valid
(includes WS and WD)

5/1/2005-7/31/2005



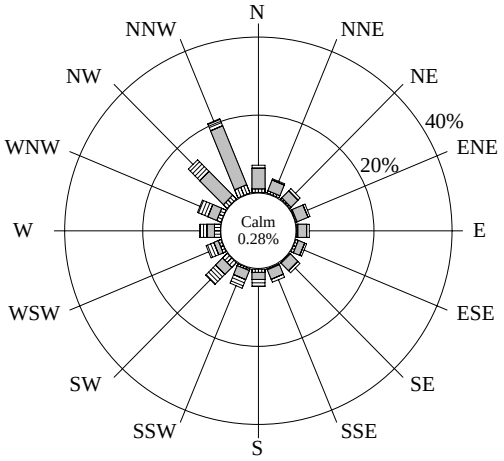
99.4% Collected 92.3% Valid
2208 Possible /2194 Collected /2037 Valid
(includes WS and WD)

Key
Ozone (ppb)



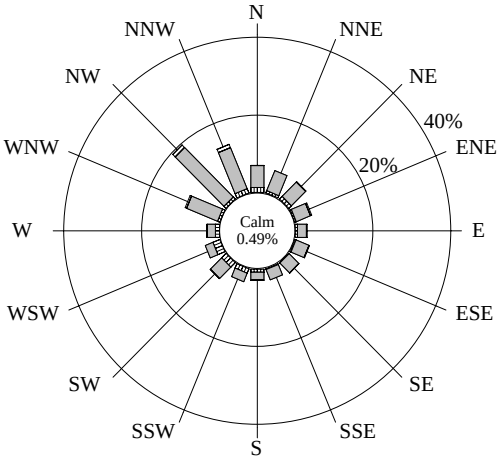
0-24
25-49
50-74
75-99
100-124
125-149
150-174
175+

8/1/2005-10/31/2005



97.8% Collected 96.4% Valid
2208 Possible /2160 Collected /2128 Valid
(includes WS and WD)

11/1/2005-1/31/2006

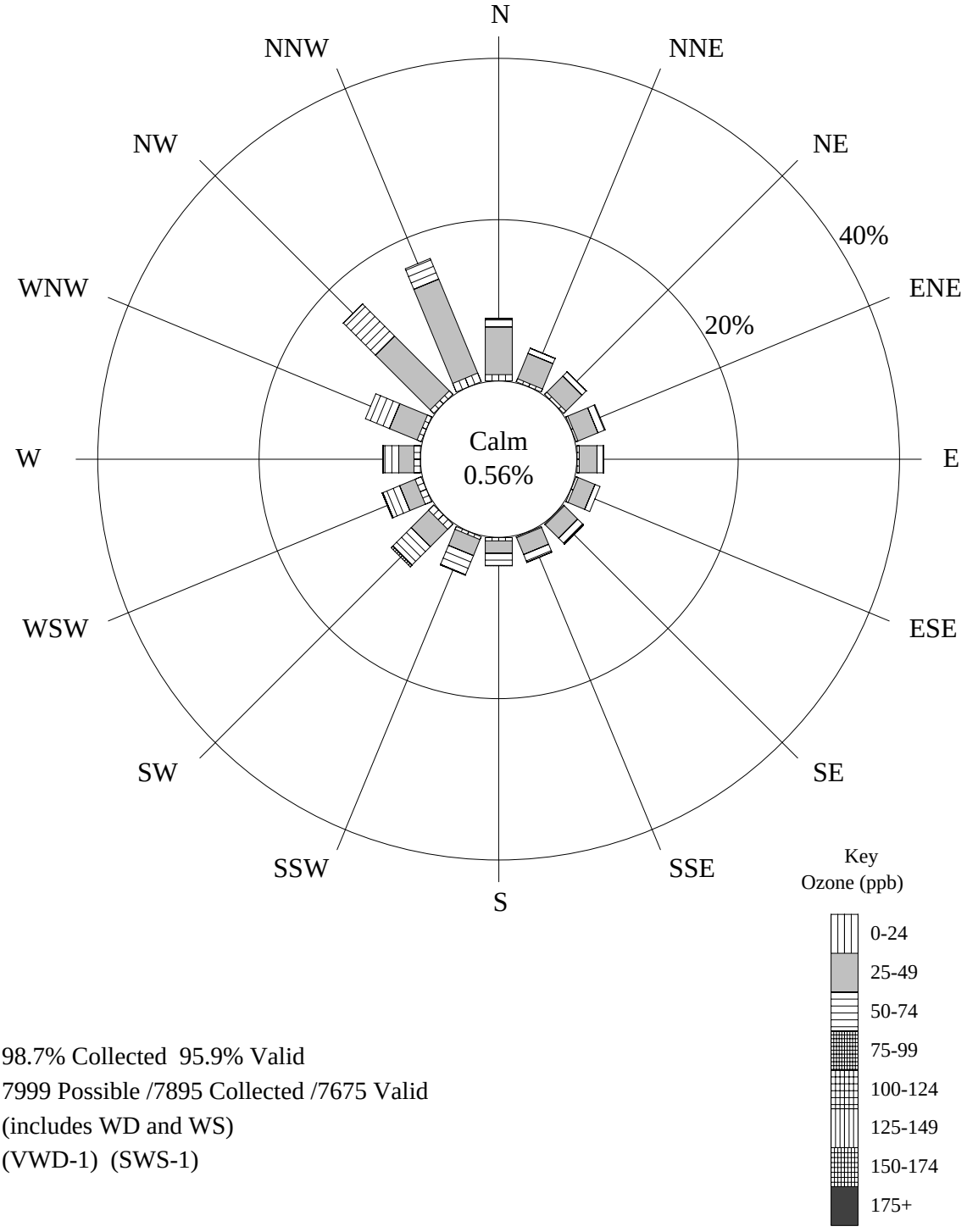


99.3% Collected 64.6% Valid
2208 Possible /2193 Collected /1427 Valid
(includes WS and WD)

Final Validation 03-13-2006

Boulder Ozone 02/01/2005 - 12/31/2005

Pollutant Rose



98.7% Collected 95.9% Valid
7999 Possible /7895 Collected /7675 Valid
(includes WD and WS)
(VWD-1) (SWS-1)

Final Validation 03-13-2006

Ozone 10 Highest Daily 1-Hour Average Maximum Concentrations Daniel Final Validation 07/01/2005 - 12/31/2005			
Value	Date	Hour	Concentration (ppb)
Ozone			
1	07/11/2005	16	75
2	07/08/2005	13	73
3	07/07/2005	12	71
4	07/22/2005	13	70
5	07/03/2005	16	69
6	08/07/2005	11	68
7	08/26/2005	16	67
8	07/20/2005	16	66
9	07/12/2005	11	66
10	09/16/2005	15	66

Ozone
Summary of the Highest Daily Maximum 8-Hour Averages
Daniel

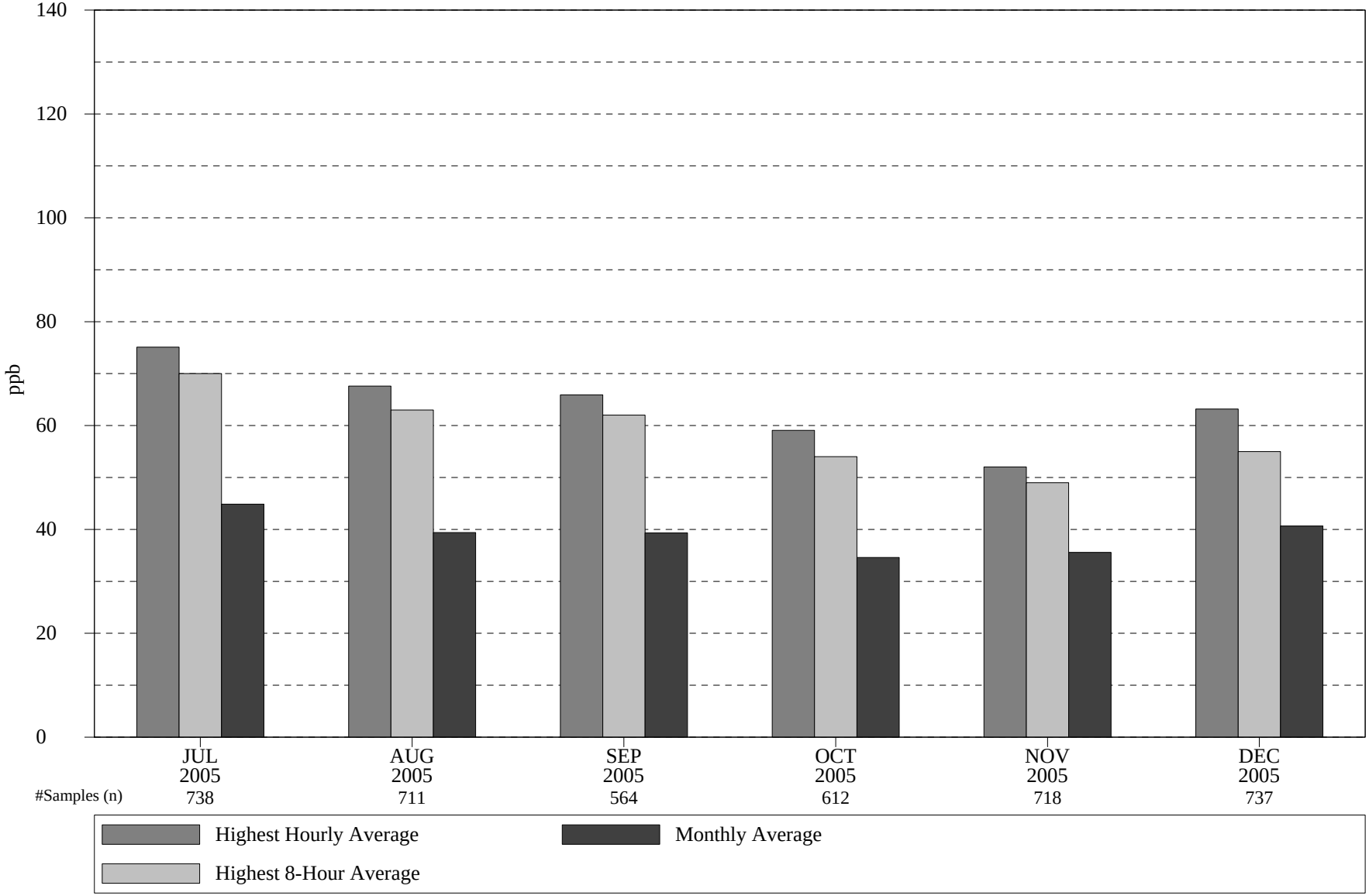
Final Validation
07/01/2005 - 12/31/2005

Date	Start and End Time of Daily Maximum 8-Hour Average	Daily Maximum 8-Hour Average (ppb)
07/08/2005	10 - 17	70
07/07/2005	11 - 18	67
07/22/2005	10 - 17	66
07/11/2005	12 - 19	66
07/03/2005	09 - 16	64
07/20/2005	12 - 19	64
08/26/2005	11 - 18	63
07/23/2005	09 - 16	63
09/16/2005	11 - 18	62
08/06/2005	12 - 19	62
0	Days this period with 8-hour averages > .08 ppm (84 ppb)	

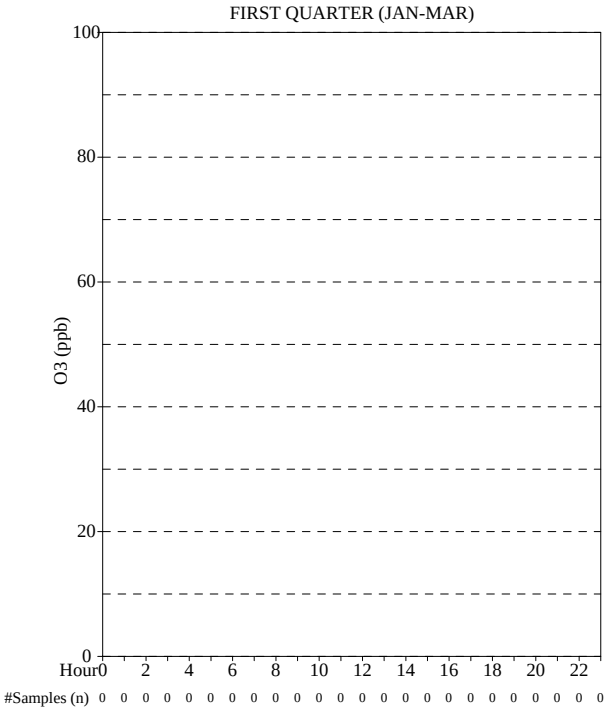
Daniel

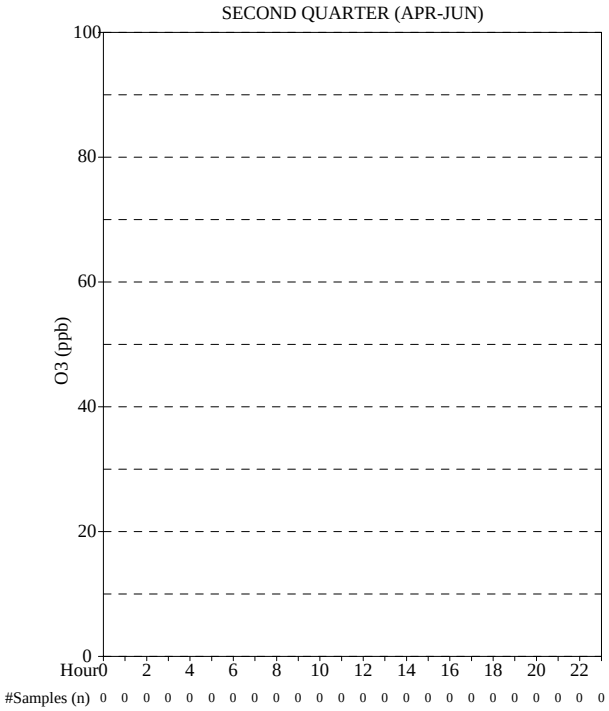
Ozone Data Summary by Month
July 2005 to December 2005

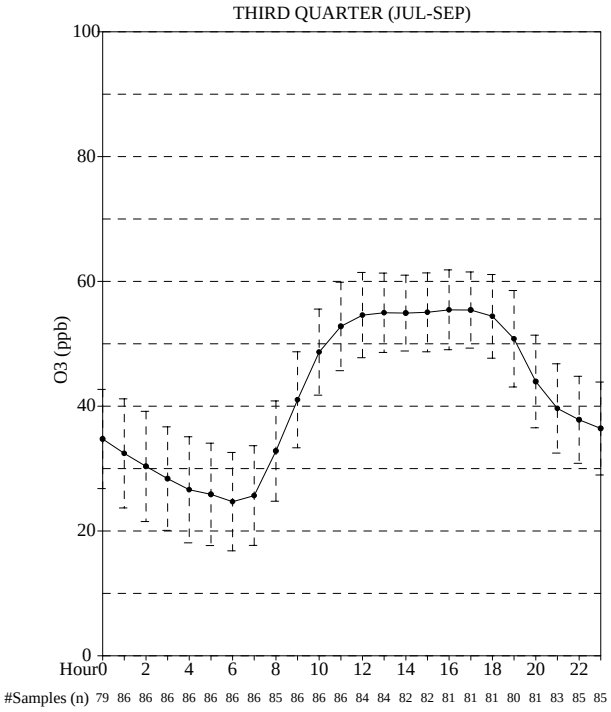
07/01/2005 - 12/31/2005

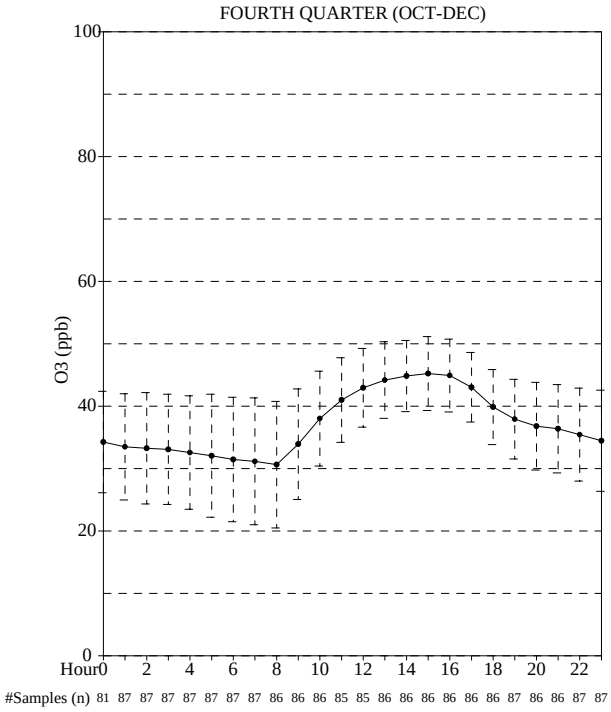


Final Validation

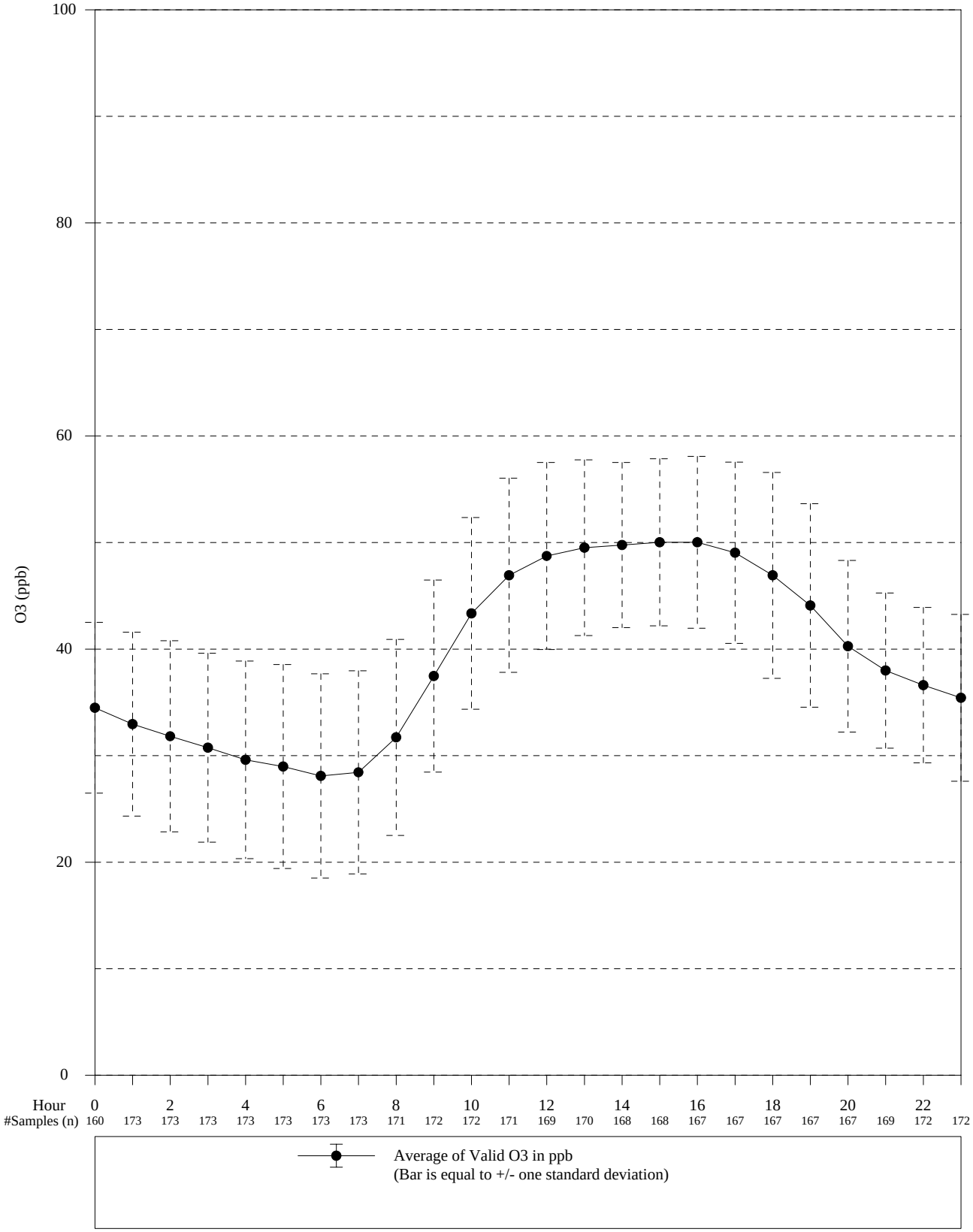






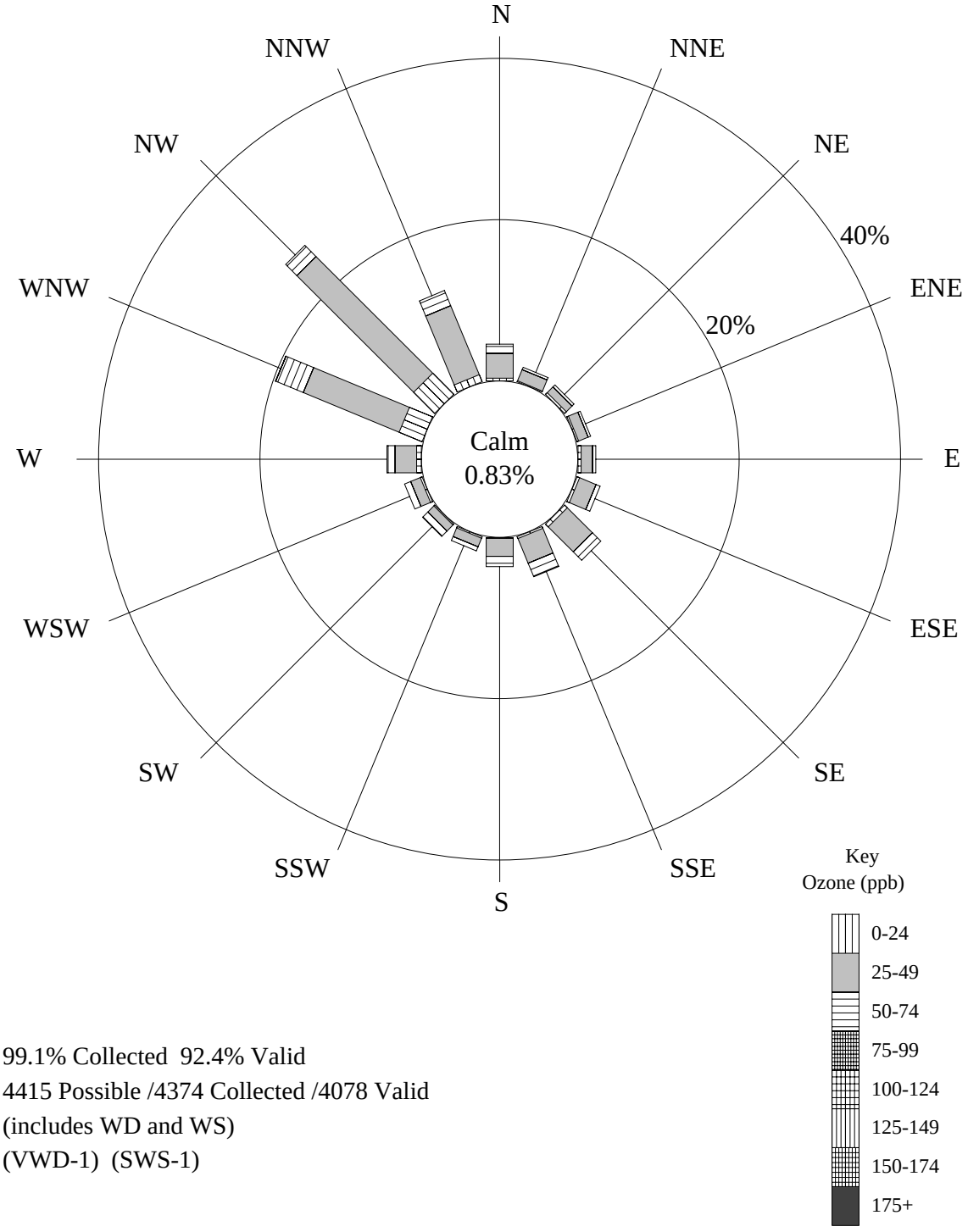


Average of Valid O3 in ppb
(Bar is equal to +/- one standard deviation)



Final Validation 03-15-2006

Daniel Ozone Pollutant Rose 07/01/2005 - 12/31/2005



99.1% Collected 92.4% Valid
4415 Possible /4374 Collected /4078 Valid
(includes WD and WS)
(VWD-1) (SWS-1)

Final Validation 03-13-2006

Ozone 10 Highest Daily 1-Hour Average Maximum Concentrations Jonah Final Validation 01/01/2005 - 12/31/2005			
Value	Date	Hour	Concentration (ppb)
Ozone			
1	02/03/2005	16	119
2	02/26/2005	17	119
3	02/27/2005	12	114
4	01/20/2005	15	107
5	01/24/2005	15	107
6	04/13/2005	16	107
7	02/04/2005	13	94
8	11/08/2005	11	91
9	01/26/2005	13	90
10	01/23/2005	15	89**

** This value was also recorded on one or more days later in the reported period.

Ozone
Summary of the Highest Daily Maximum 8-Hour Averages
Jonah

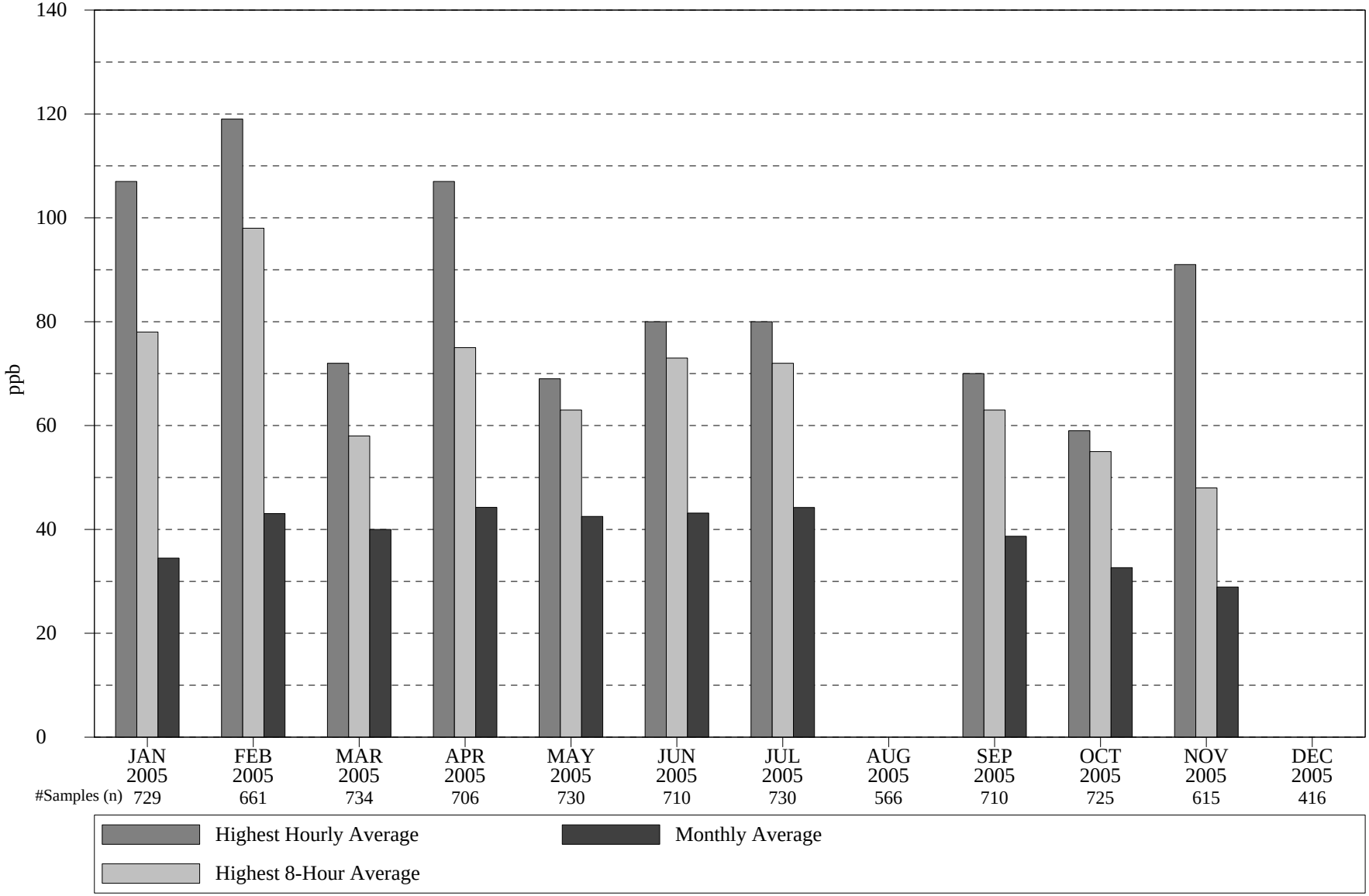
Final Validation
01/01/2005 - 12/31/2005

Date	Start and End Time of Daily Maximum 8-Hour Average	Daily Maximum 8-Hour Average (ppb)
02/03/2005	12 - 19	98
02/26/2005	12 - 19	89
01/24/2005	12 - 19	78
02/04/2005	10 - 17	76
04/13/2005	11 - 18	75
02/27/2005	11 - 18	75
06/27/2005	10 - 17	73
07/08/2005	10 - 17	72
02/28/2005	09 - 16	69
04/18/2005	09 - 16	68
2	Days this period with 8-hour averages > .08 ppm (84 ppb)	

Jonah

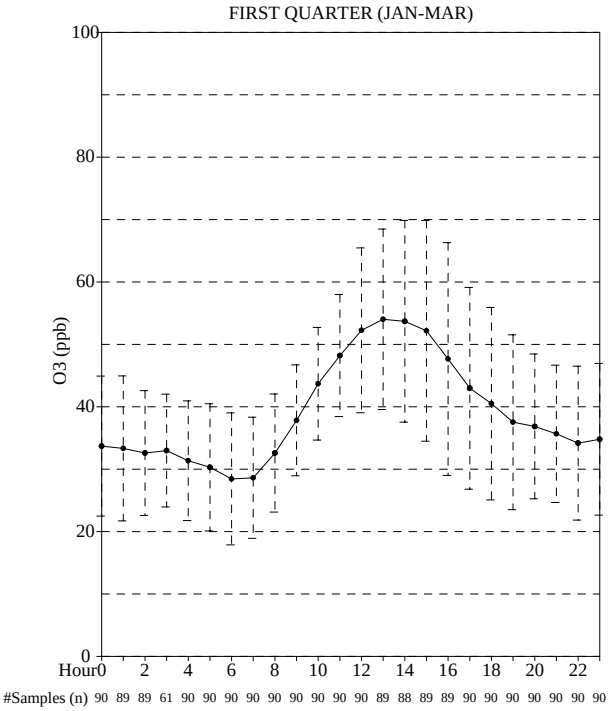
Ozone Data Summary by Month
January 2005 to December 2005

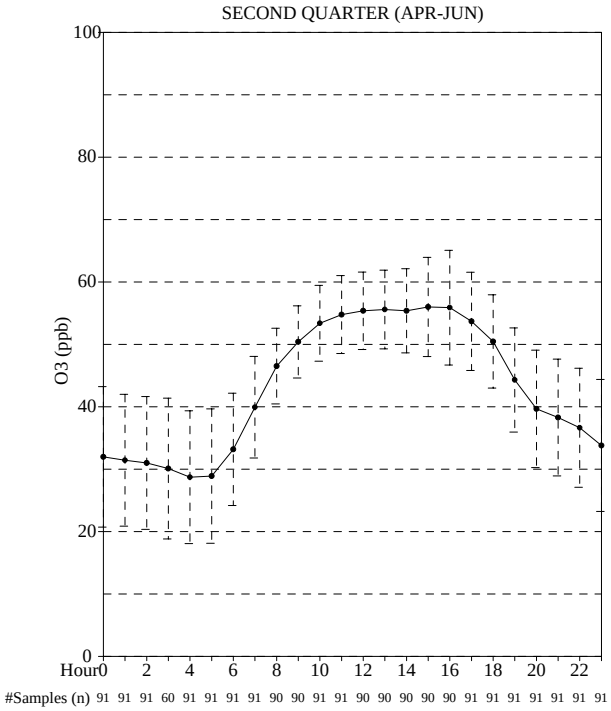
01/01/2005 - 12/31/2005

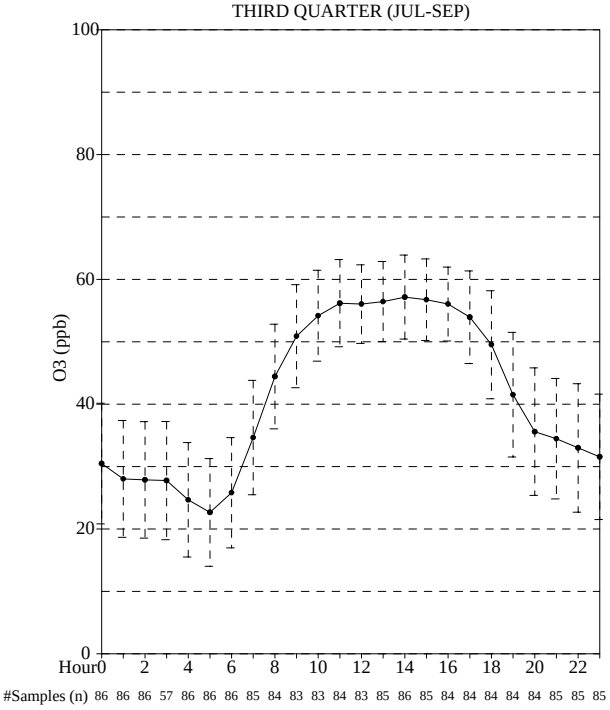


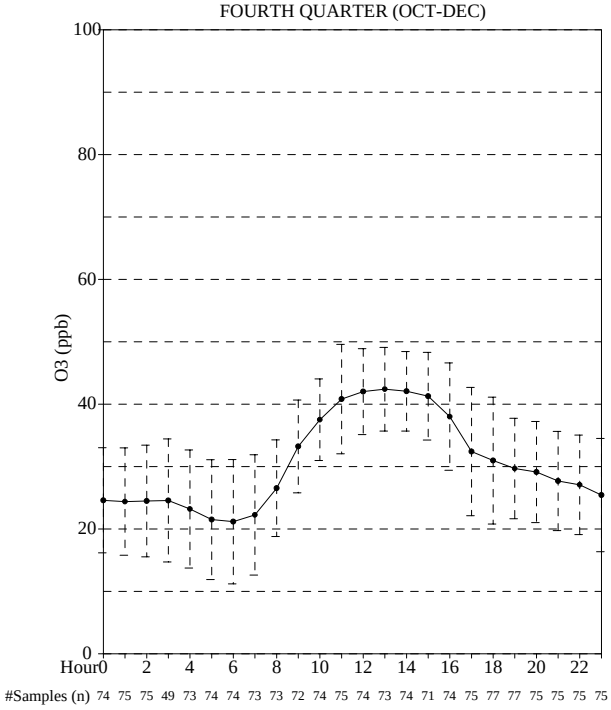
Final Validation

O3-3 04-24-2006







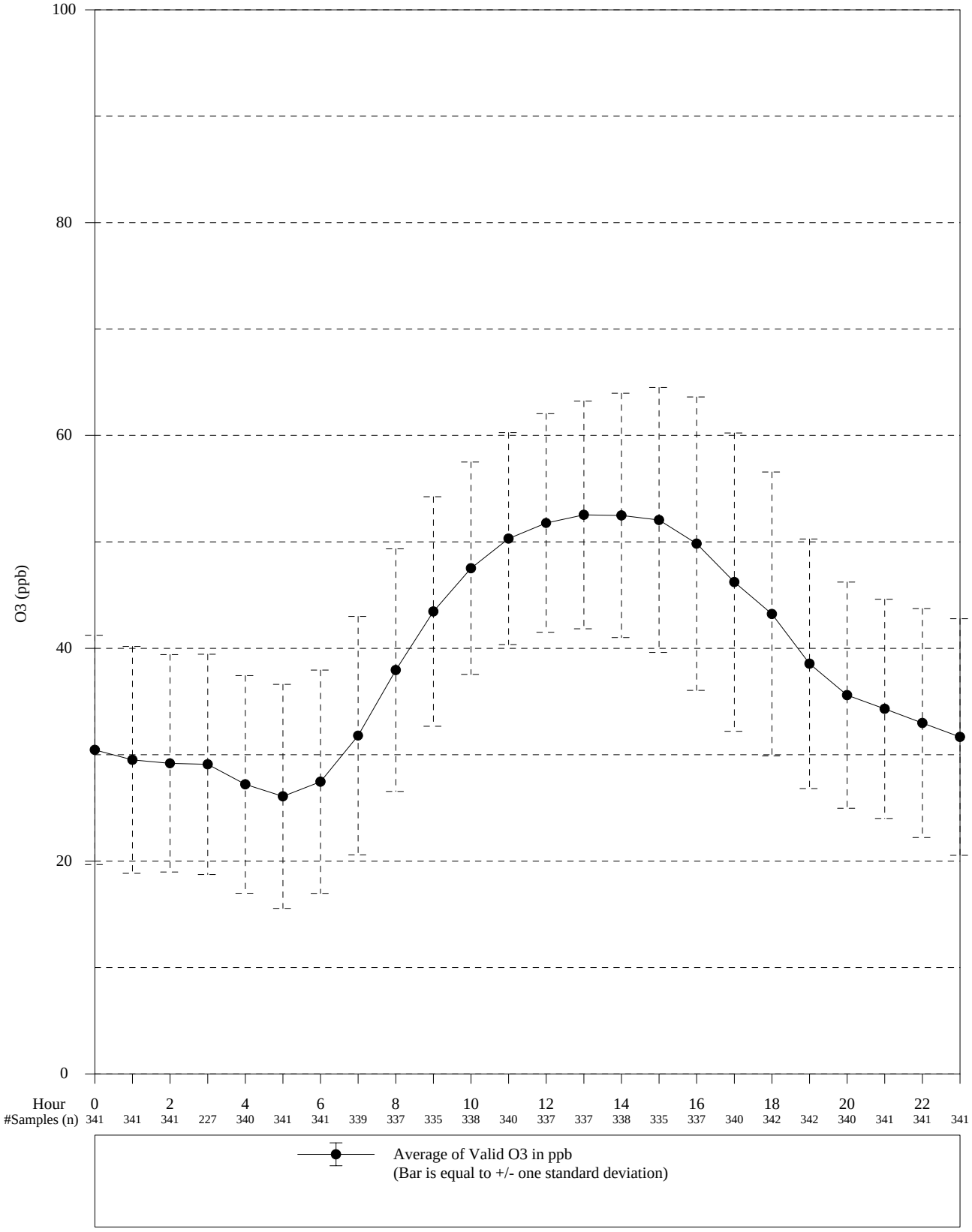


Average of Valid O3 in ppb
(Bar is equal to +/- one standard deviation)

Jonah

Annual Diurnal Ozone Plot

2005

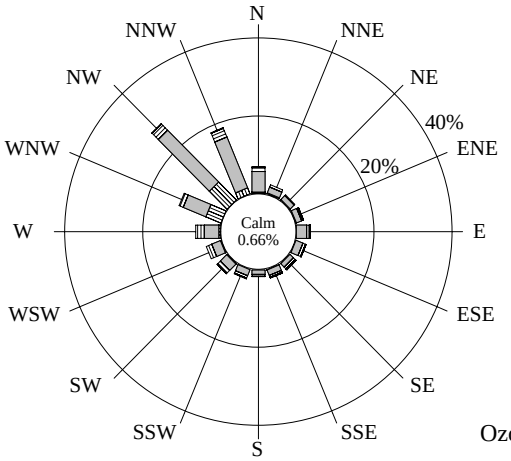


Final Validation

03-15-2006

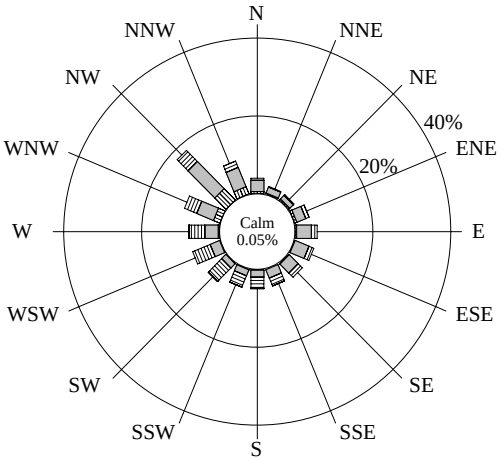
Pollutant Rose

FIRST QUARTER (JAN-MAR)



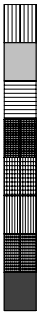
100.0% Collected 98.3% Valid
2160 Possible /2160 Collected /2124 Valid
(includes WS and WD)

SECOND QUARTER (APR-JUN)



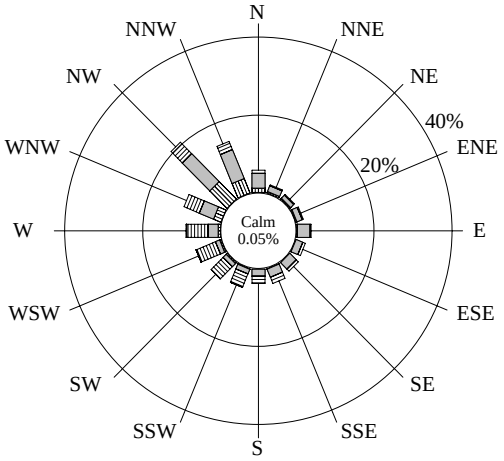
100.0% Collected 98.2% Valid
2184 Possible /2184 Collected /2144 Valid
(includes WS and WD)

Key
Ozone (ppb)



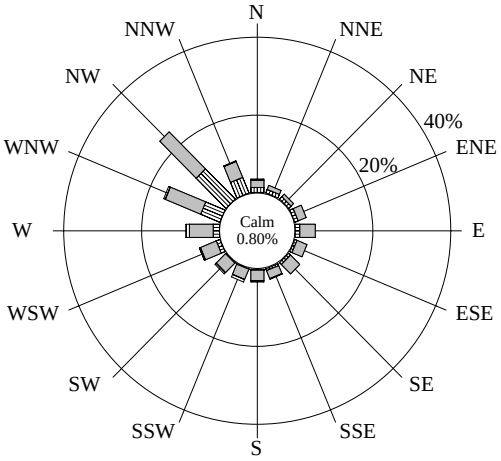
0-24
25-49
50-74
75-99
100-124
125-149
150-174
175+

THIRD QUARTER (JUL-SEP)



100.0% Collected 90.9% Valid
2208 Possible /2208 Collected /2006 Valid
(includes WS and WD)

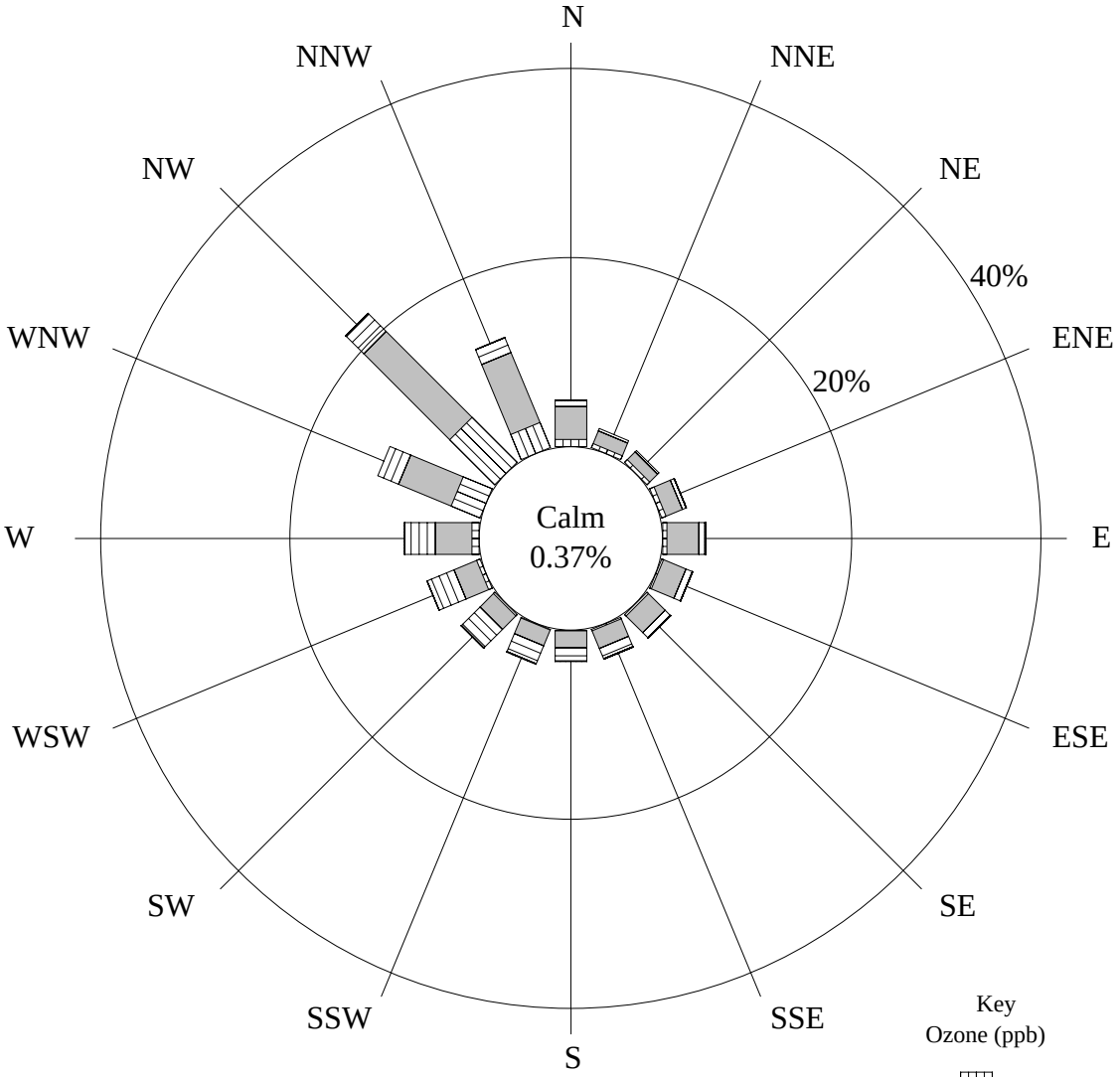
FOURTH QUARTER (OCT-DEC)



100.0% Collected 79.4% Valid
2208 Possible /2208 Collected /1754 Valid
(includes WS and WD)

Jonah Annual Ozone 2005

Pollutant Rose



Key
Ozone (ppb)

- 0-24
- 25-49
- 50-74
- 75-99
- 100-124
- 125-149
- 150-174
- 175+

100.0% Collected 91.6% Valid
8760 Possible /8760 Collected /8028 Valid
(includes WD and WS)
(VWD-1) (SWS-1)

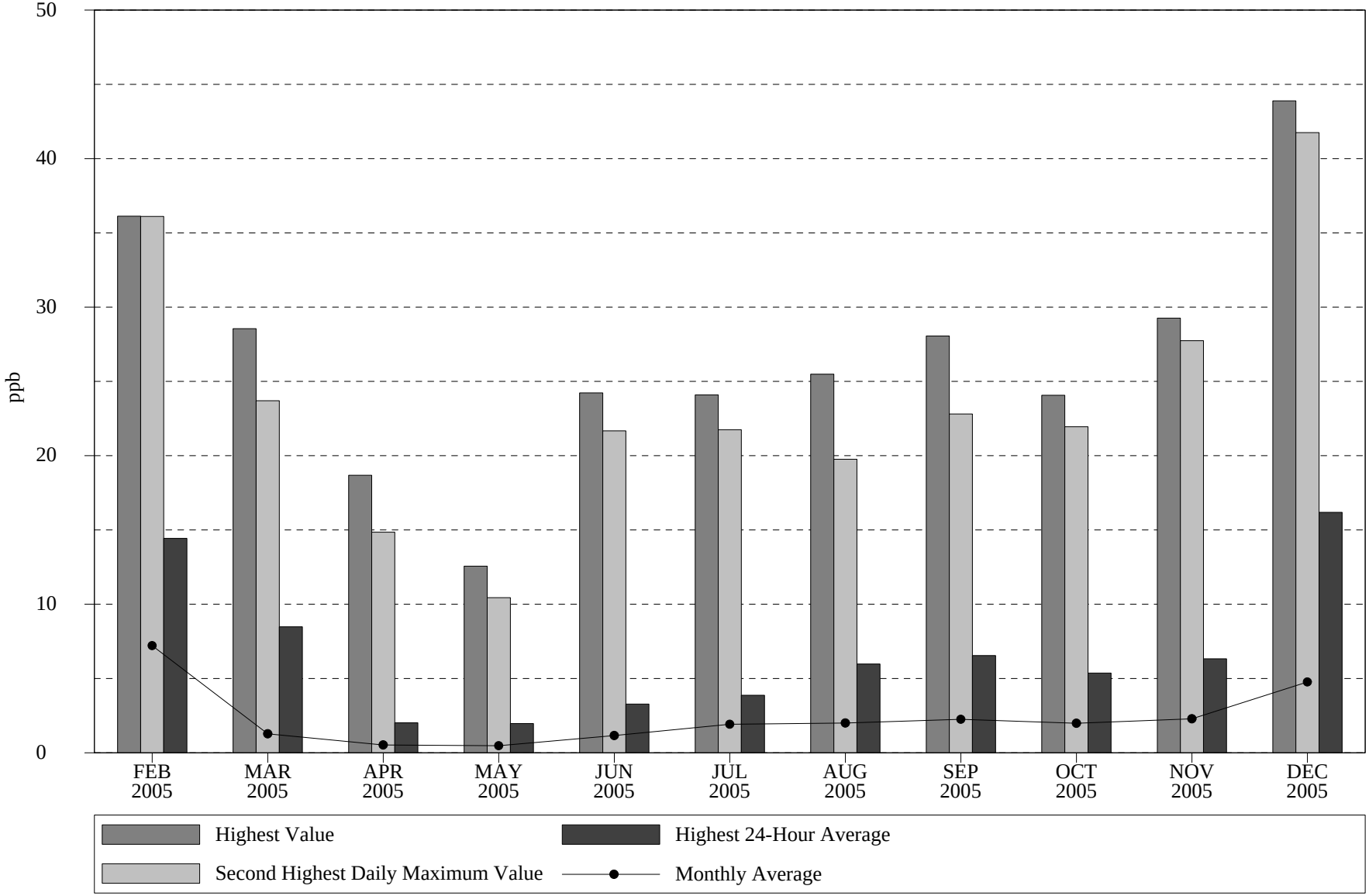
Final Validation 03-13-2006

Nitrogen Dioxide 10 Highest Daily 24-Hour Average Concentrations Boulder Final Validation 02/01/2005 – 12/31/2005		
Value	Date	Concentration (ppb)
Nitrogen Dioxide		
1	12/08/2005	16
2	12/12/2005	15
3	02/11/2005	14
4	02/24/2005	14
5	02/04/2005	13
6	02/03/2005	11
7	02/18/2005	11
8	02/25/2005	11
9	02/26/2005	10
10	02/27/2005	10

Boulder

Nitrogen Dioxide Data Summary by Month
February 2005 to December 2005

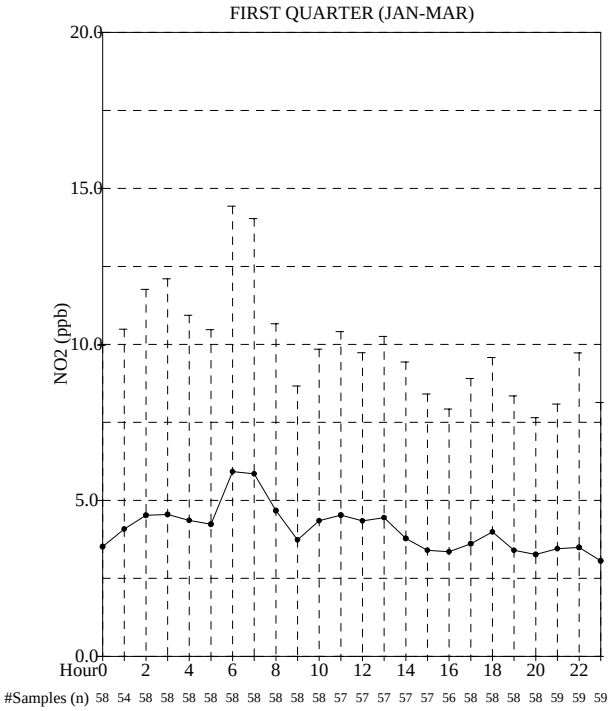
02/01/2005 - 12/31/2005

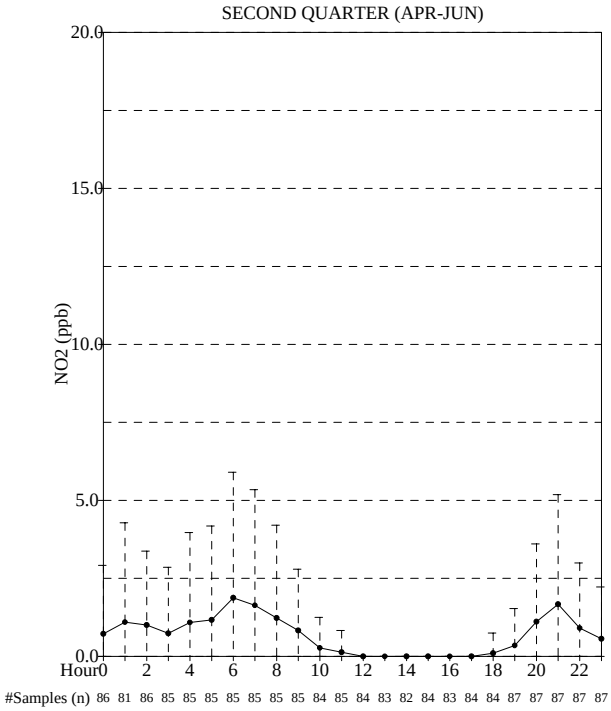


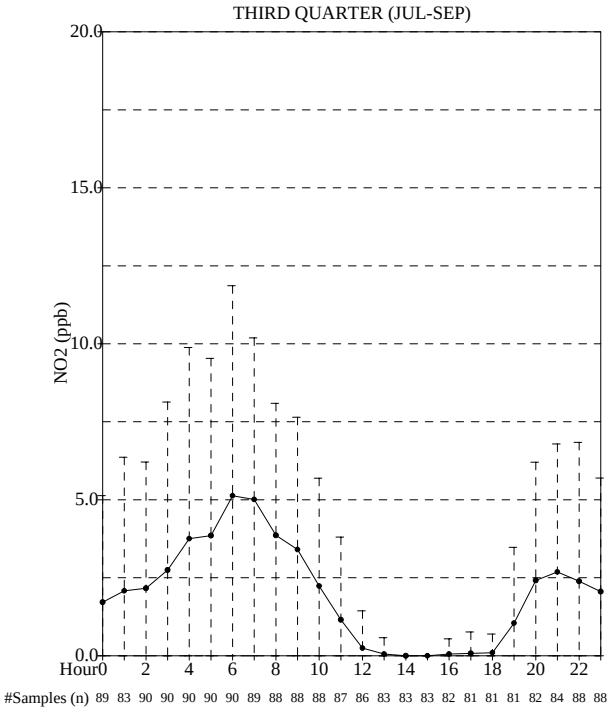
Preliminary Validation

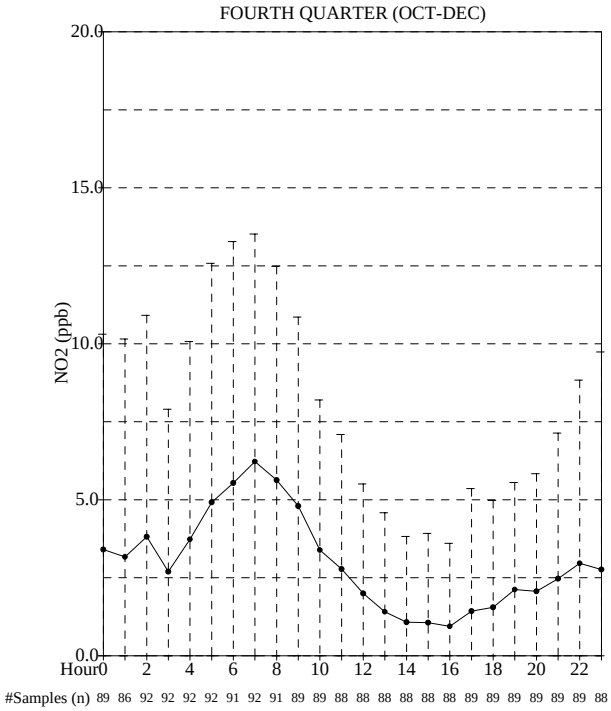
NO2-2 03-15-2006

Nitrogen Dioxide Plots



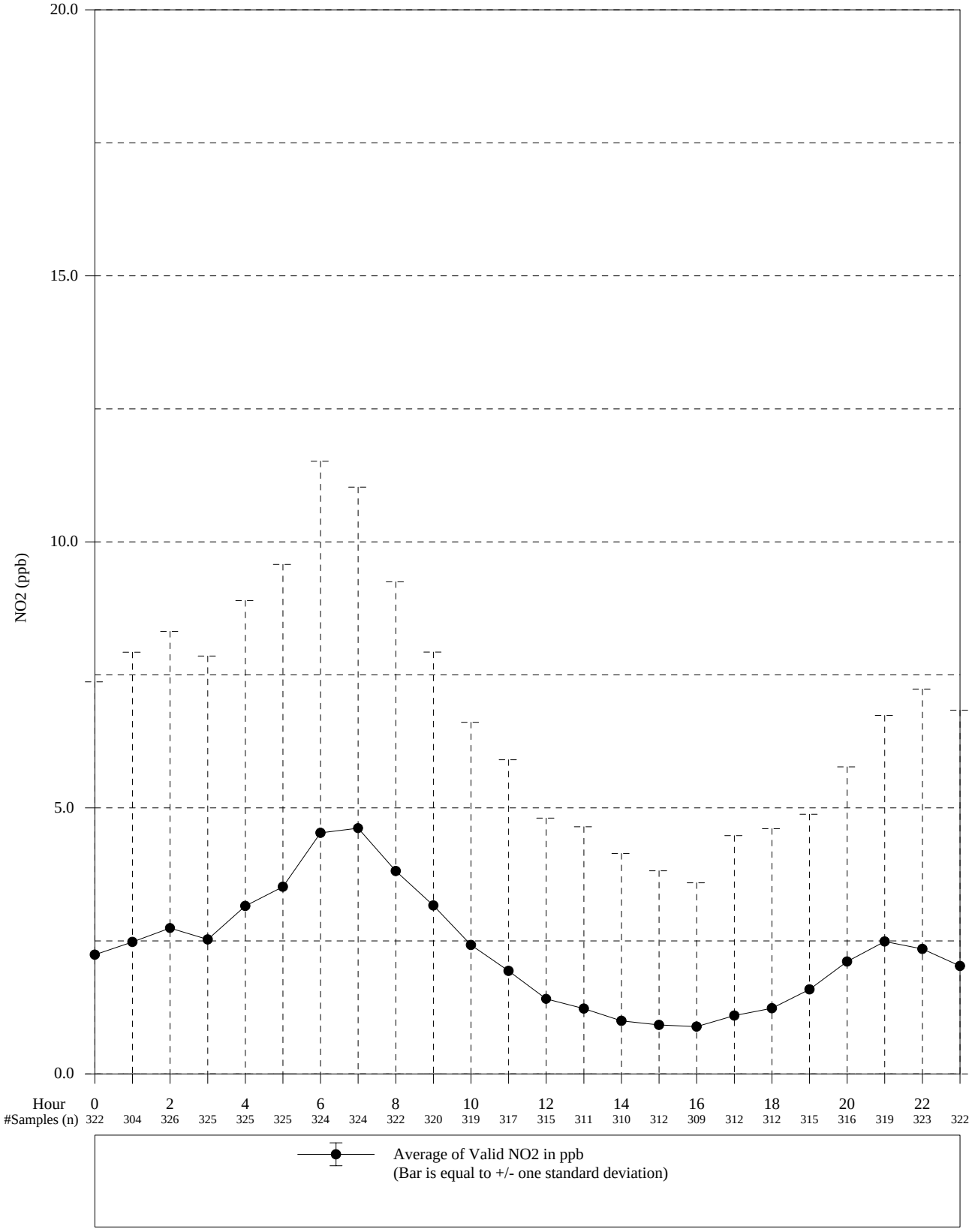






Average of Valid NO2 in ppb
(Bar is equal to +/- one standard deviation)

Boulder Diurnal Nitrogen Dioxide Plot 02/01/2005 - 12/31/2005

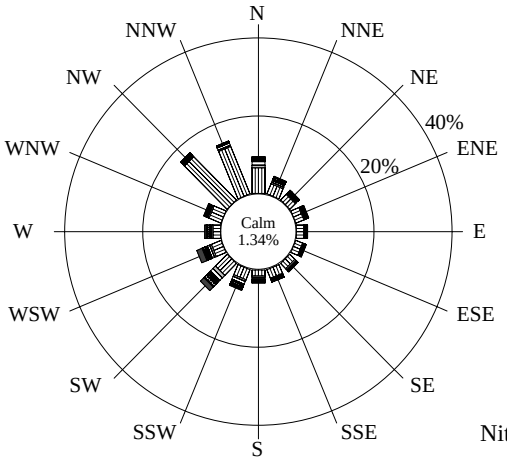


Final Validation 03-15-2006

Boulder | Nitrogen Dioxide | 02/01/2005 - 12/31/2005

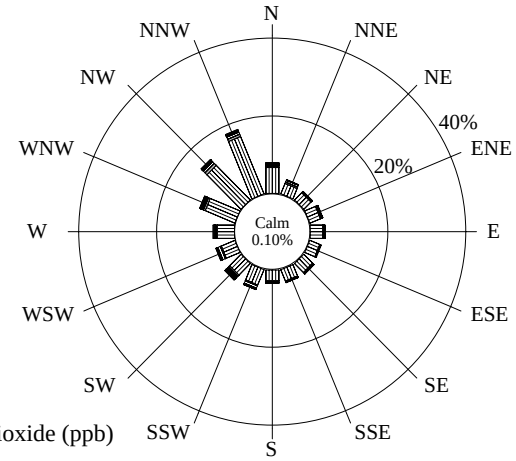
Pollutant Rose

2/1/2005-4/30/2005



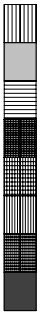
98.8% Collected 98.7% Valid
2119 Possible /2093 Collected /2092 Valid
(includes WS and WD)

5/1/2005-7/31/2005

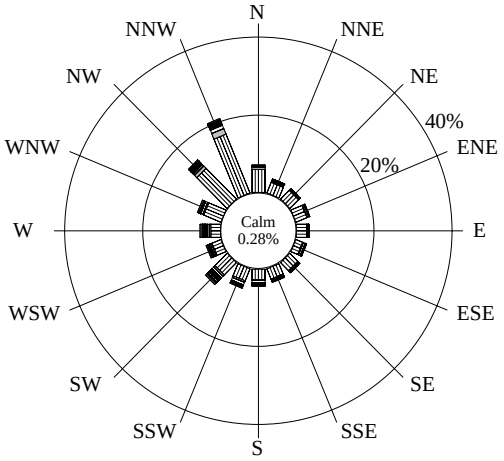


99.5% Collected 89.6% Valid
2208 Possible /2197 Collected /1978 Valid
(includes WS and WD)

Key
Nitrogen Dioxide (ppb)

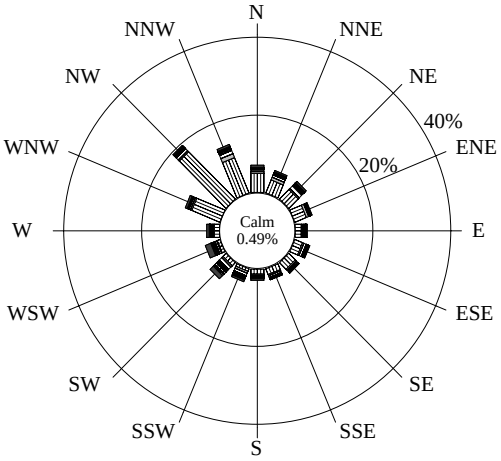


8/1/2005-10/31/2005



98.7% Collected 96.2% Valid
2208 Possible /2180 Collected /2124 Valid
(includes WS and WD)

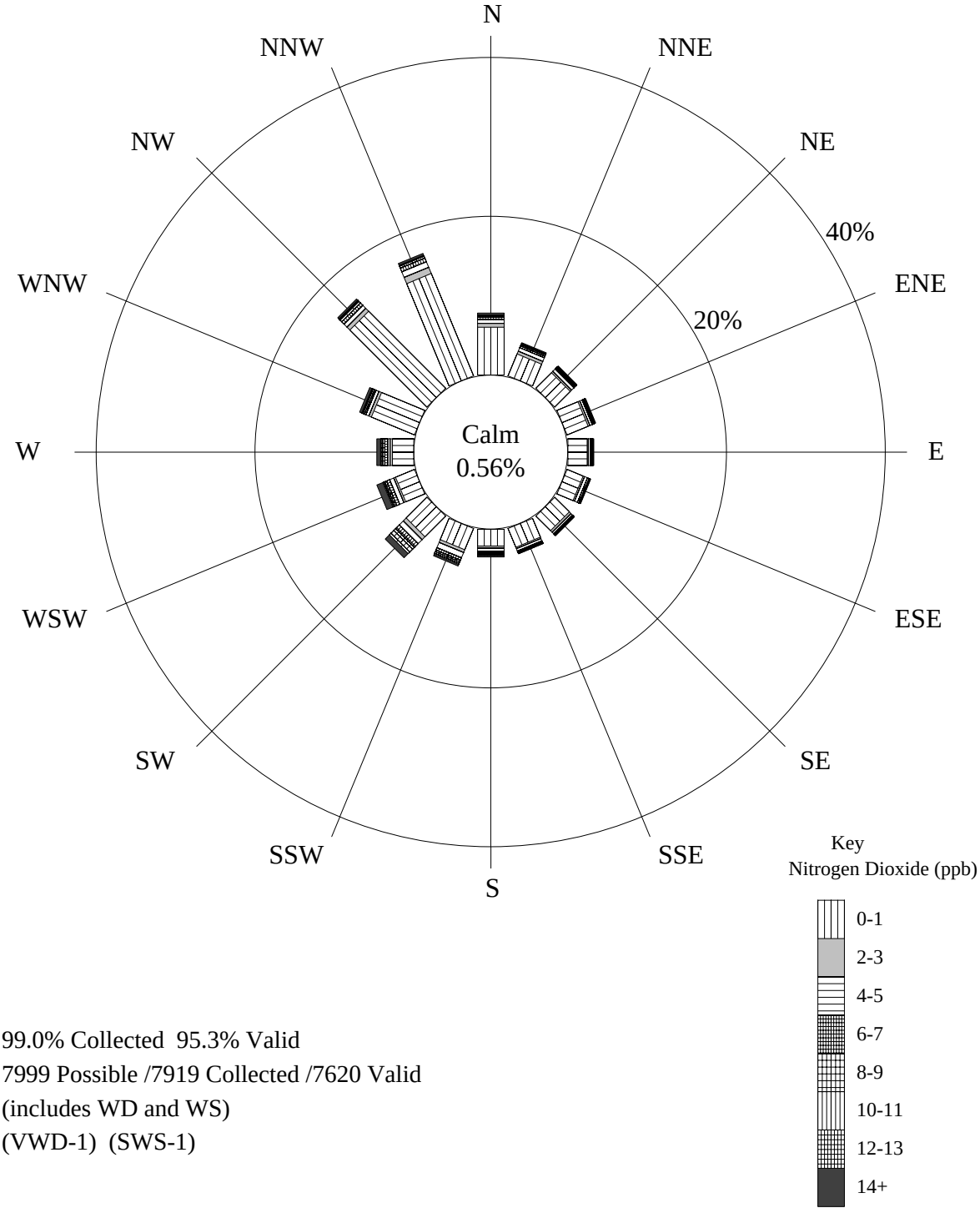
11/1/2005-1/31/2006



99.3% Collected 64.6% Valid
2208 Possible /2193 Collected /1426 Valid
(includes WS and WD)

Final Validation | 03-15-2006

Boulder | Nitrogen Dioxide Pollutant Rose | 02/01/2005 - 12/31/2005



99.0% Collected 95.3% Valid
7999 Possible /7919 Collected /7620 Valid
(includes WD and WS)
(VWD-1) (SWS-1)

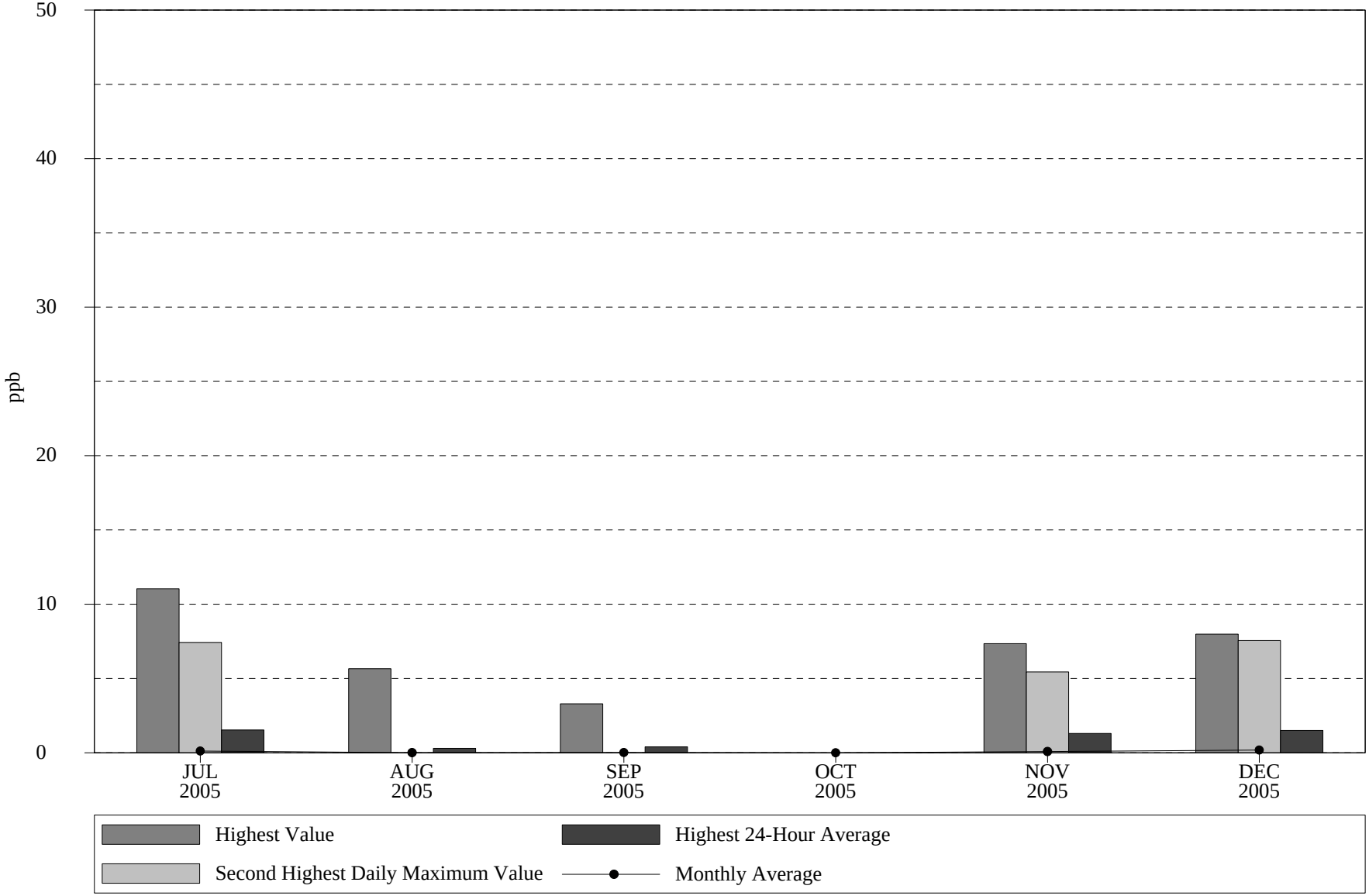
Final Validation | 03-15-2006

Nitrogen Dioxide 10 Highest Daily 24-Hour Average Concentrations Daniel Final Validation 07/01/2005 – 12/31/2005		
Value	Date	Concentration (ppb)
Nitrogen Dioxide		
1	07/31/2005	2
2	07/24/2005	1
3	11/02/2005	1
4	11/06/2005	1
5	12/11/2005	1
6	12/12/2005	1
7	12/21/2005	1
8	12/22/2005	1
9	12/26/2005	1
10	12/28/2005	1

Daniel

Nitrogen Dioxide Data Summary by Month
July 2005 to December 2005

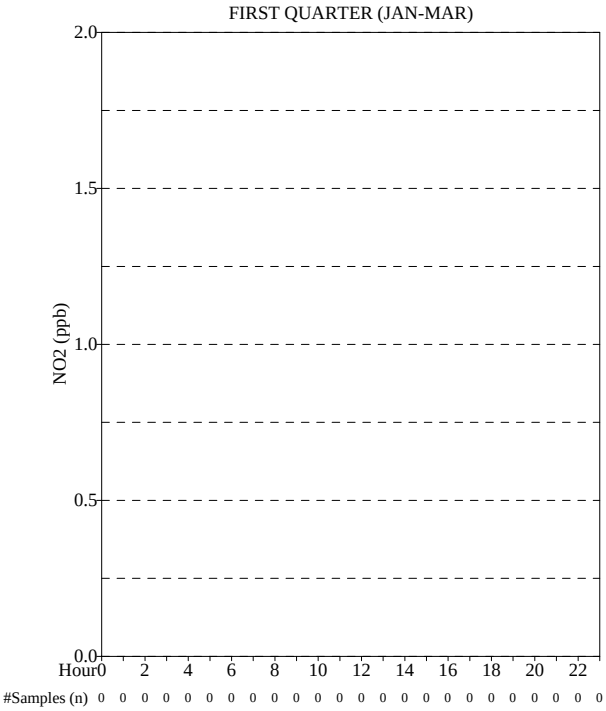
07/01/2005 - 12/31/2005

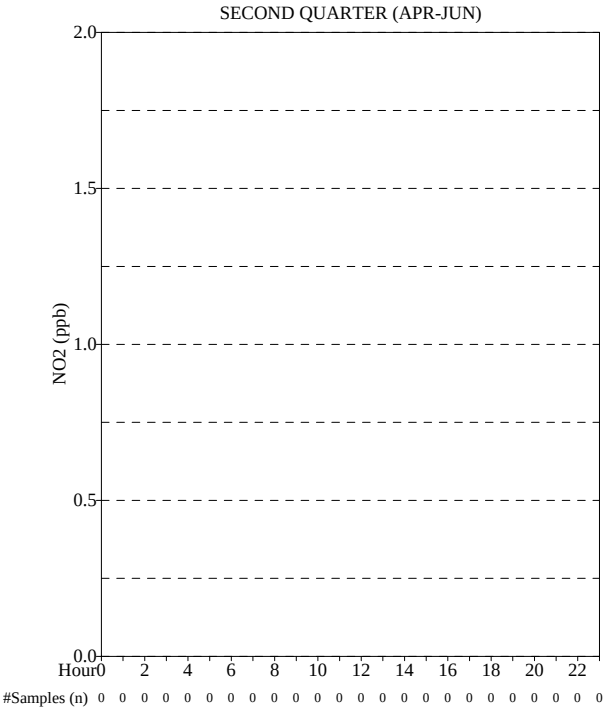


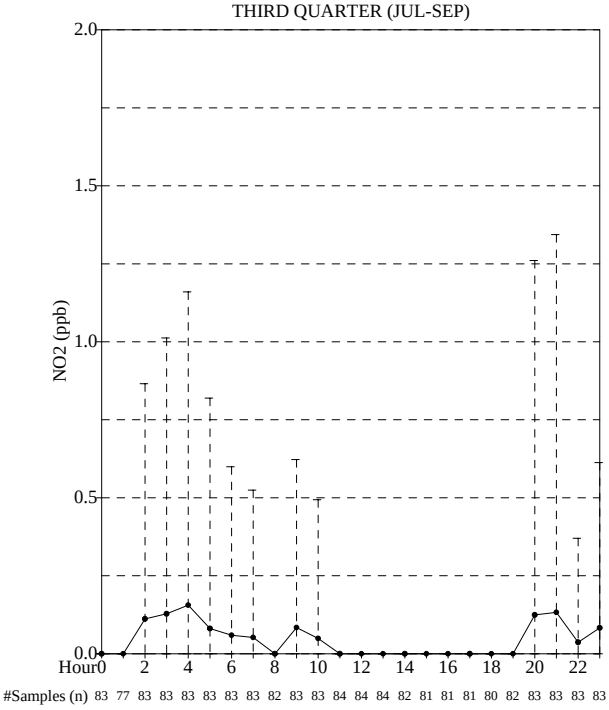
Preliminary Validation

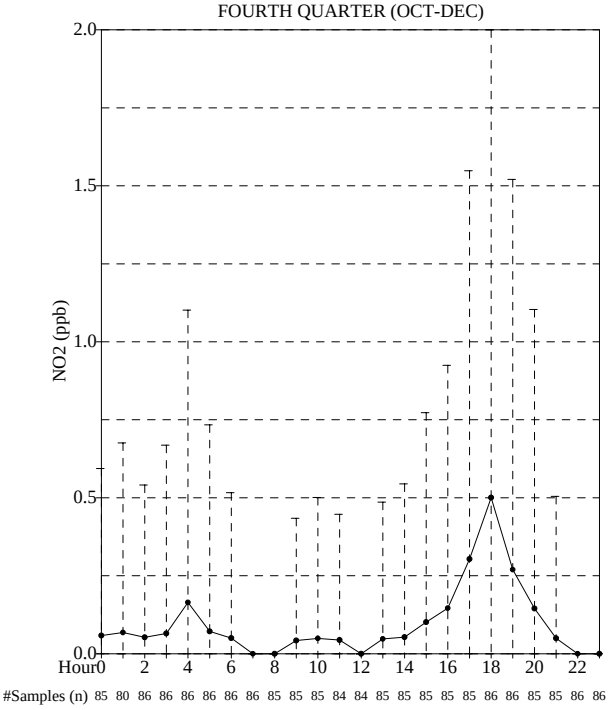
NO2-2 03-15-2006

Nitrogen Dioxide Plots



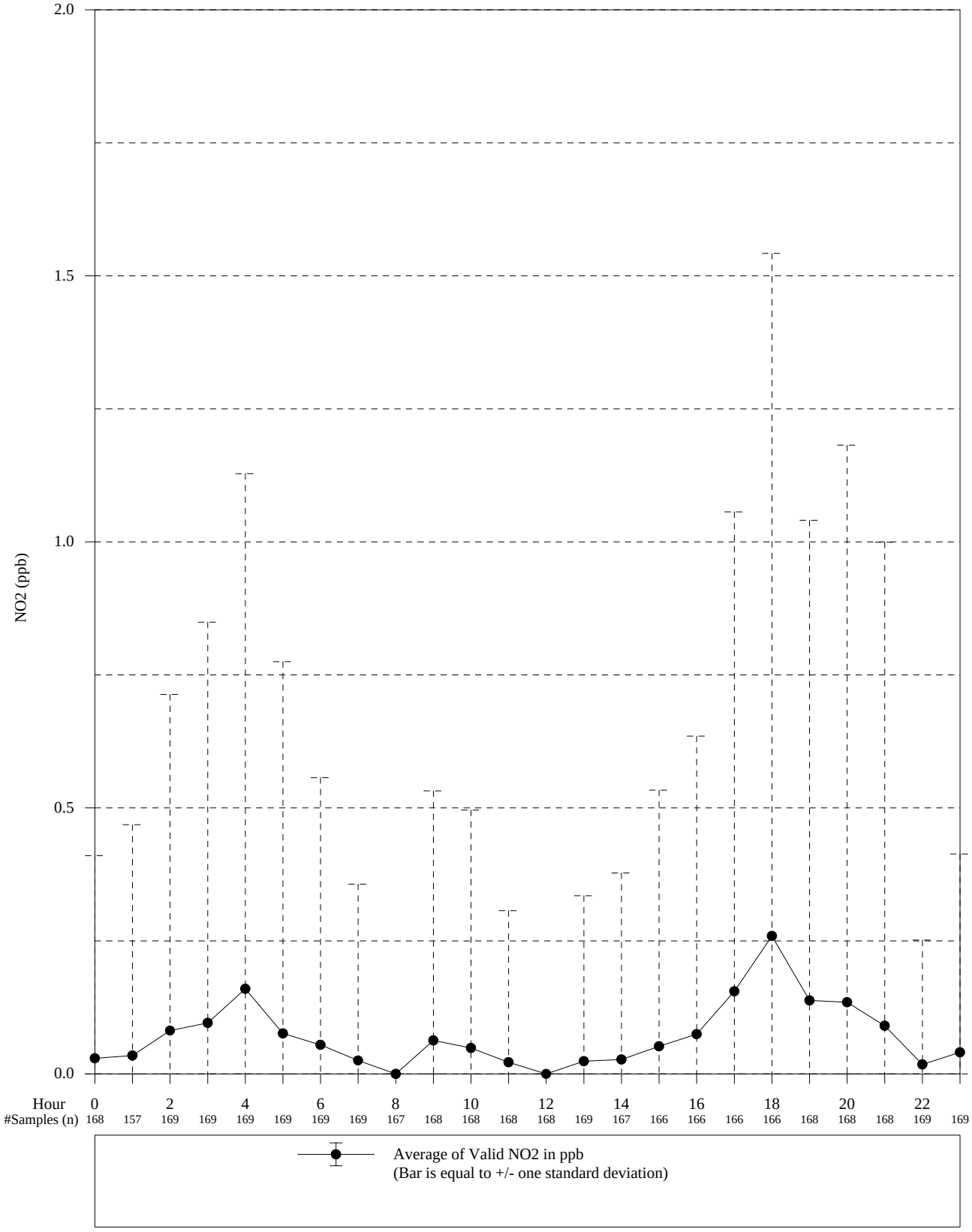






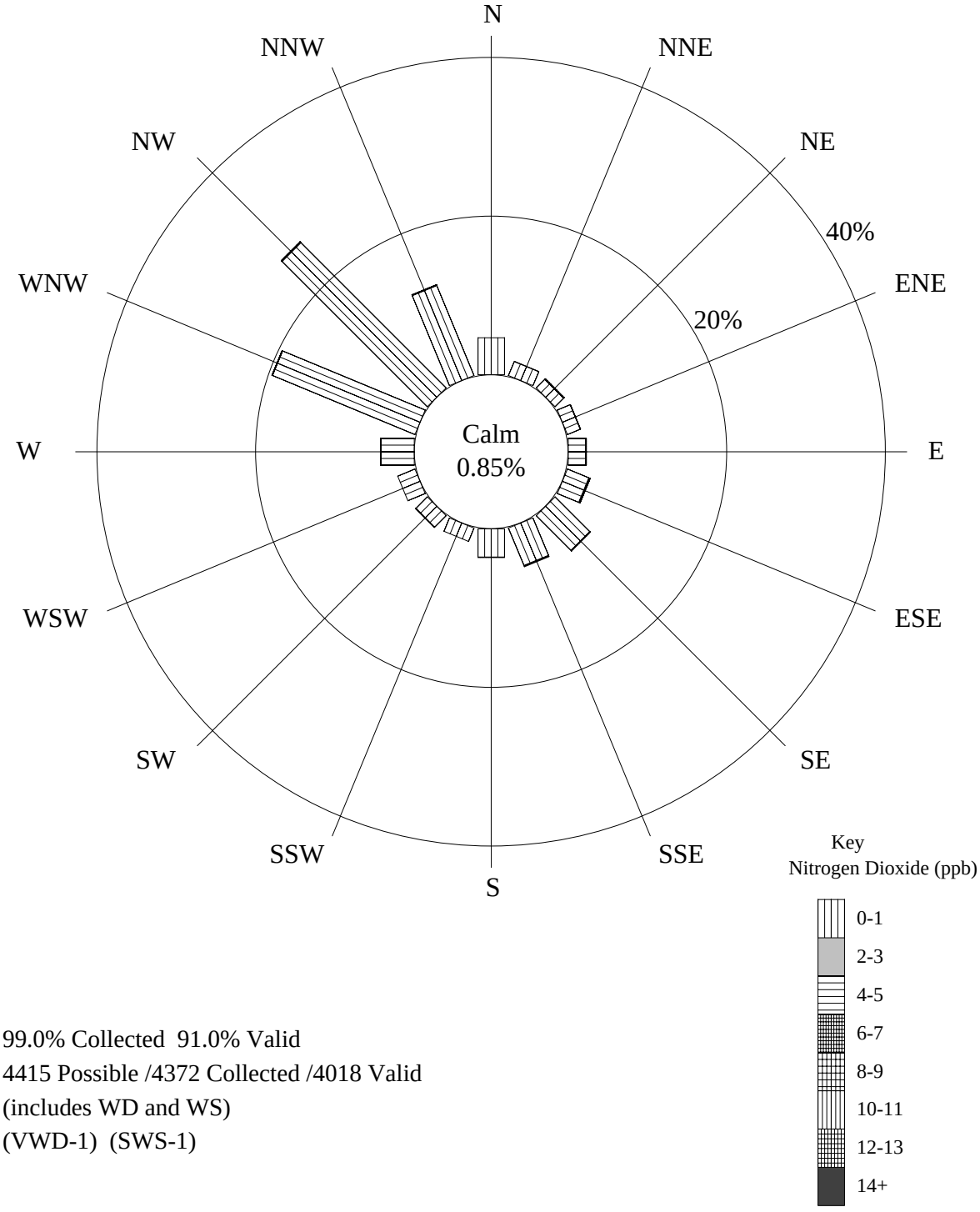
Average of Valid NO2 in ppb
(Bar is equal to +/- one standard deviation)

Daniel Diurnal Nitrogen Dioxide Plot 07/01/2005 - 12/31/2005



Final Validation 03-15-2006

Daniel | Nitrogen Dioxide Pollutant Rose | 07/01/2005 - 12/31/2005



99.0% Collected 91.0% Valid
4415 Possible /4372 Collected /4018 Valid
(includes WD and WS)
(VWD-1) (SWS-1)

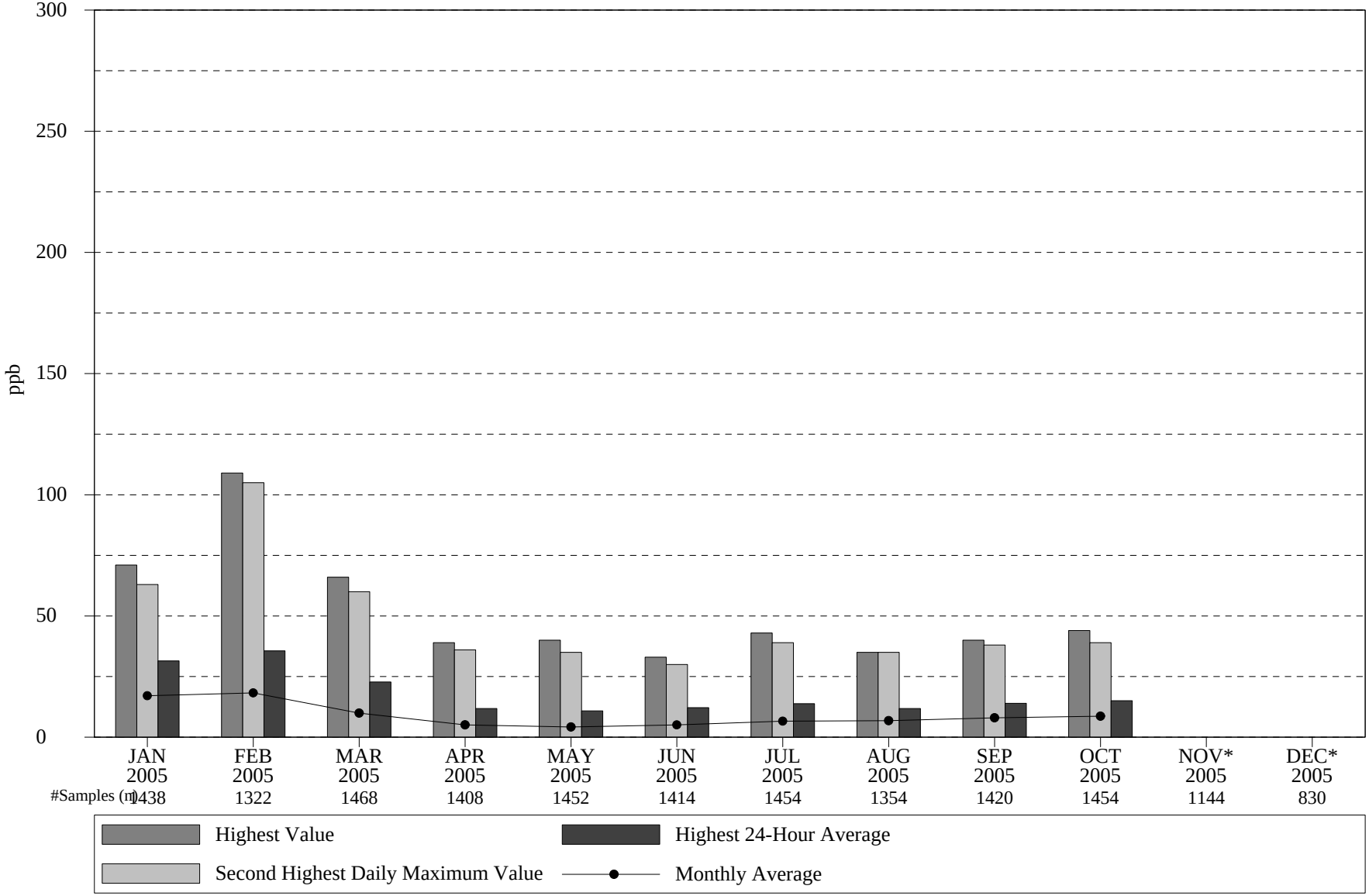
Final Validation 03-15-2006

Nitrogen Dioxide 10 Highest Daily 24-Hour Average Concentrations Jonah Final Validation 01/01/2005 – 12/31/2005		
Value	Date	Concentration (ppb)
Nitrogen Dioxide		
1	02/04/2005	36
2	02/03/2005	34
3	02/05/2005	32
4	01/26/2005	31
5	01/17/2005	29
6	02/09/2005	27
7	02/18/2005	27
8	01/19/2005	26
9	01/24/2005	26
10	01/14/2005	25

Jonah

Nitrogen Dioxide Data Summary by Month
January 2005 to December 2005

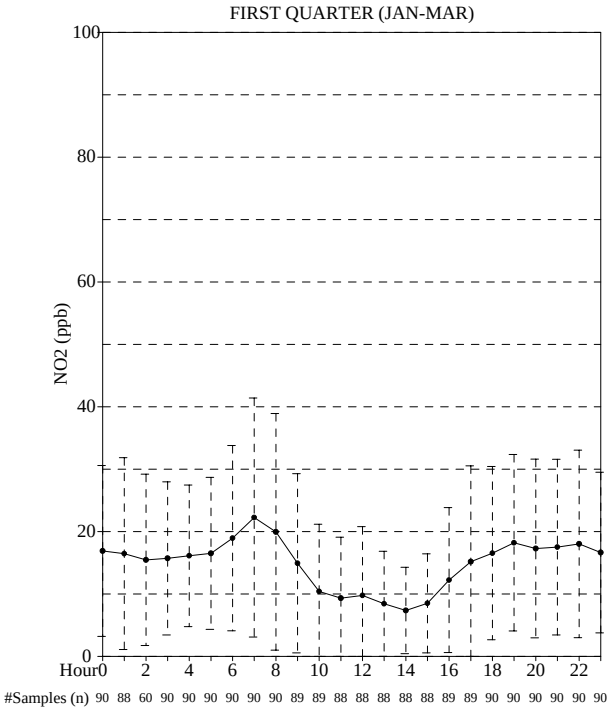
01/01/2005 - 12/31/2005

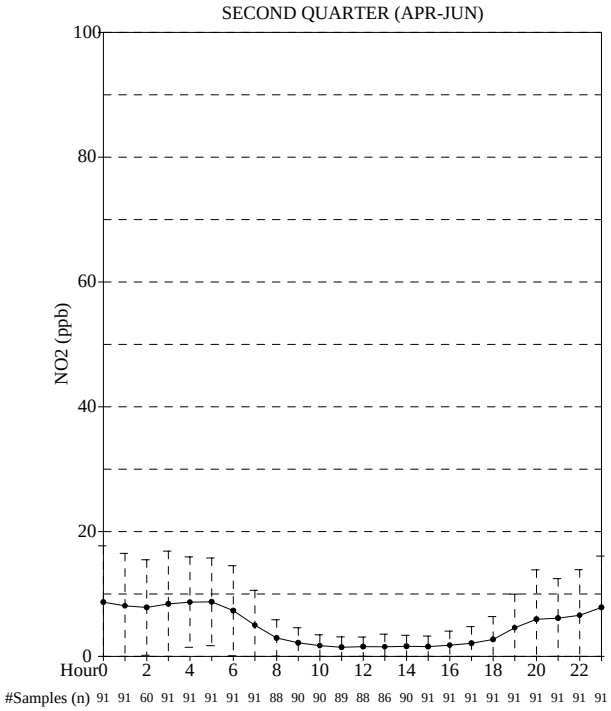


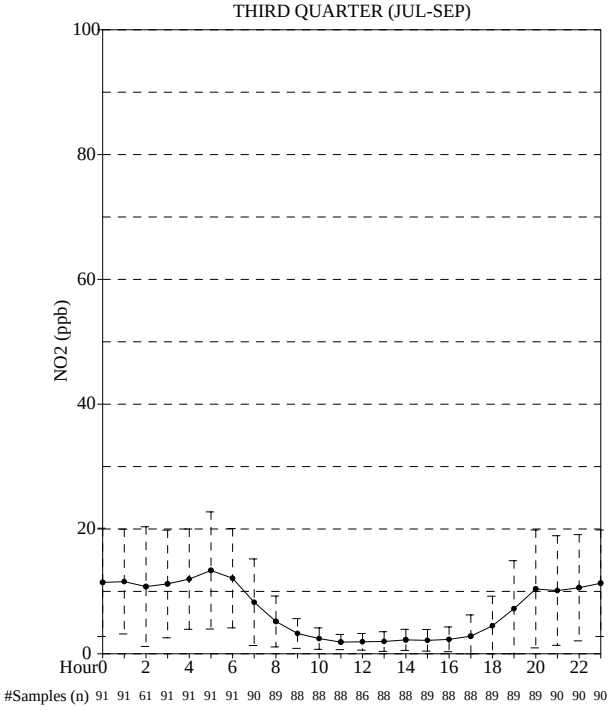
* <75% of days have >75% valid data

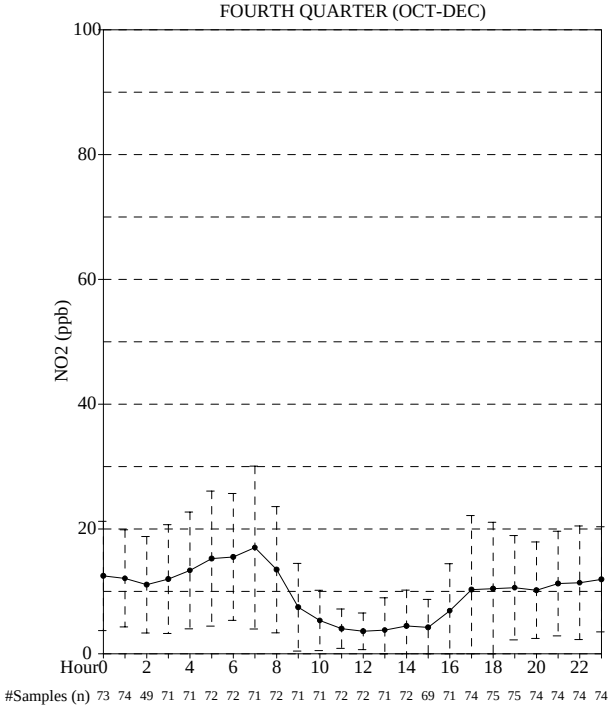
Final Validation

NO2-2 03-13-2006



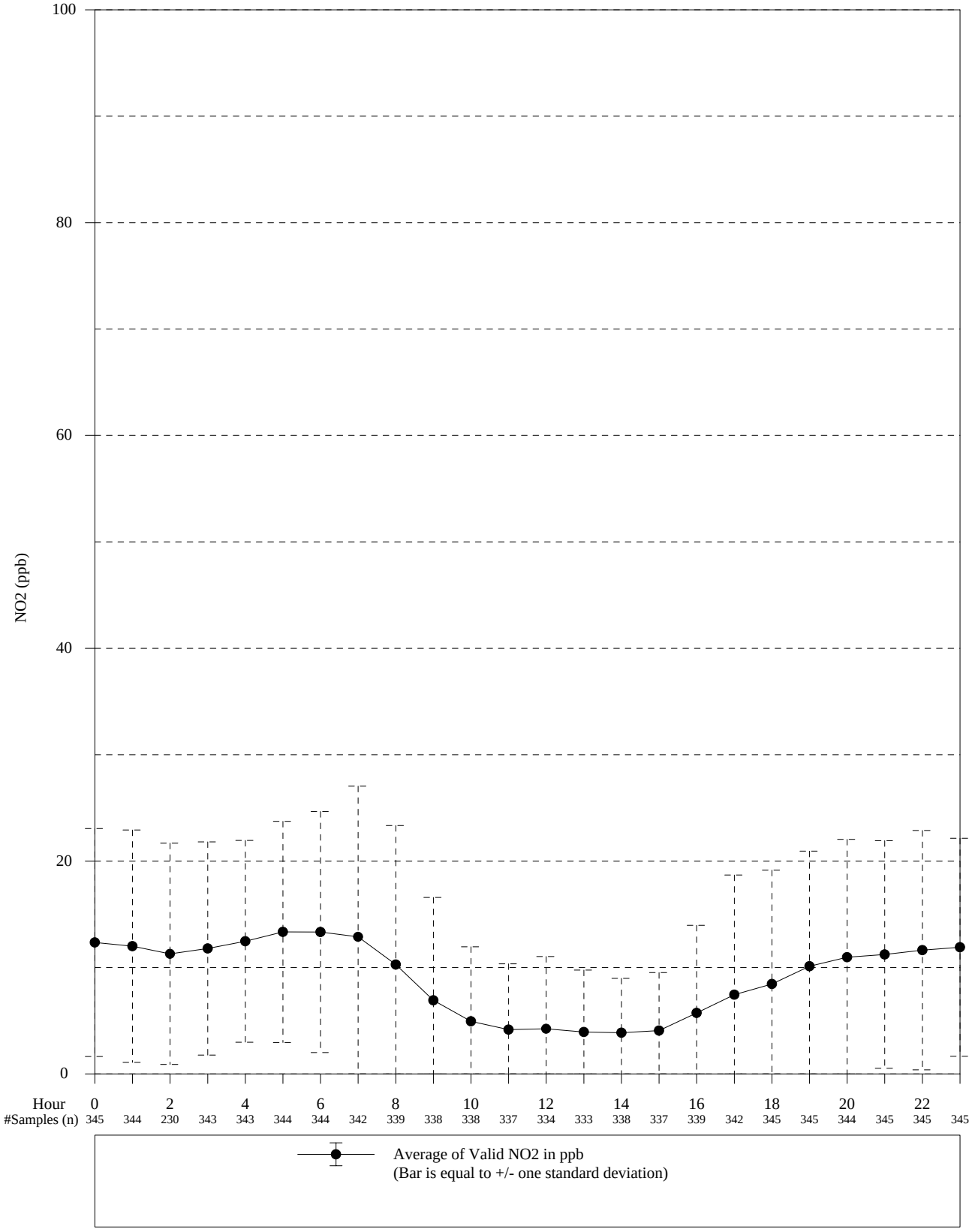






Average of Valid NO2 in ppb
(Bar is equal to +/- one standard deviation)

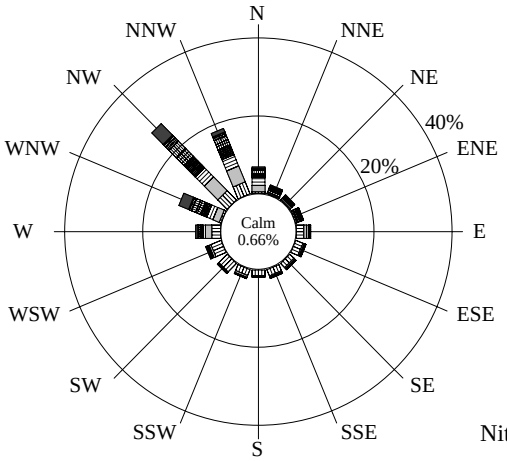
Jonah | Annual Diurnal Nitrogen Dioxide Plot | 2005



Final Validation 03-15-2006

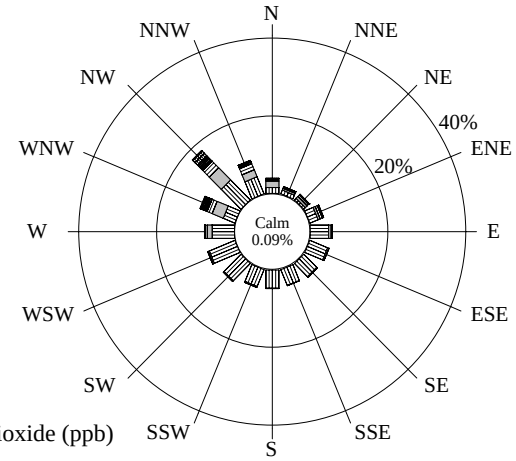
Pollutant Rose

FIRST QUARTER (JAN-MAR)



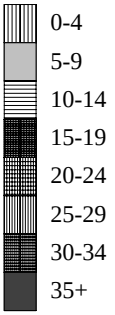
100.0% Collected 97.9% Valid
2160 Possible /2160 Collected /2114 Valid
(includes WS and WD)

SECOND QUARTER (APR-JUN)

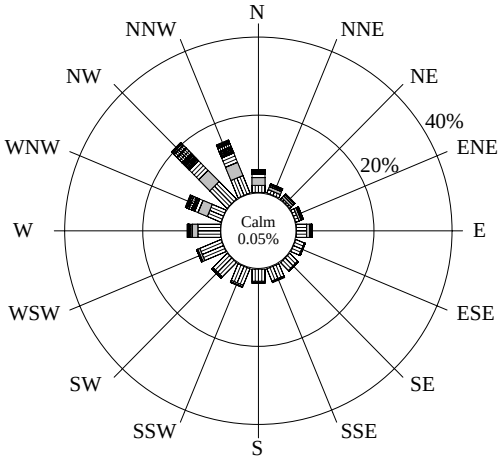


100.0% Collected 97.8% Valid
2184 Possible /2184 Collected /2136 Valid
(includes WS and WD)

Key
Nitrogen Dioxide (ppb)

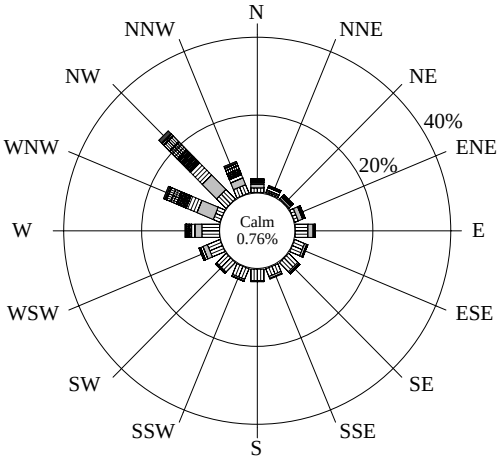


THIRD QUARTER (JUL-SEP)



100.0% Collected 95.7% Valid
2208 Possible /2208 Collected /2114 Valid
(includes WS and WD)

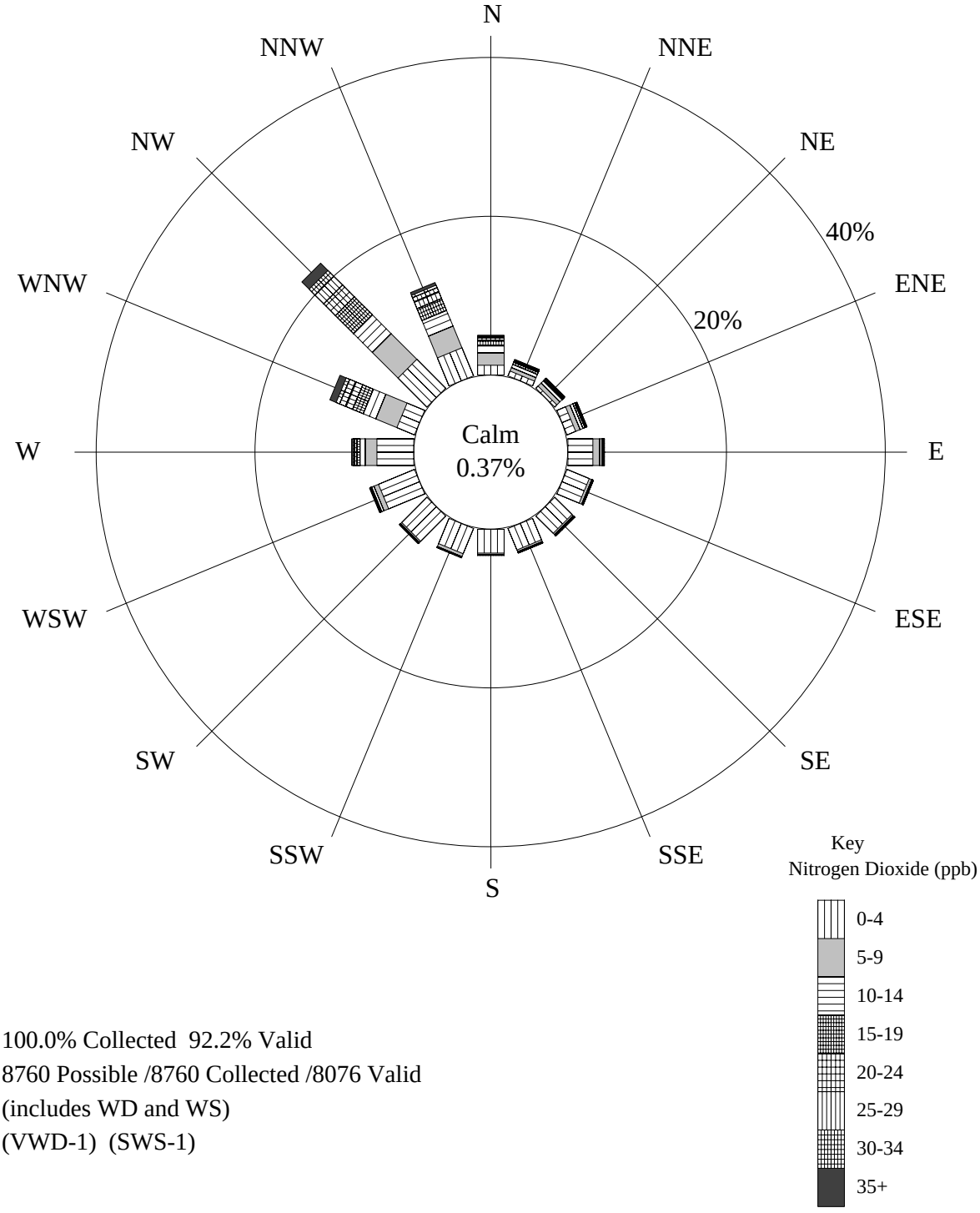
FOURTH QUARTER (OCT-DEC)



100.0% Collected 77.5% Valid
2208 Possible /2208 Collected /1712 Valid
(includes WS and WD)

Jonah Annual Nitrogen Dioxide 2005

Pollutant Rose



100.0% Collected 92.2% Valid
8760 Possible /8760 Collected /8076 Valid
(includes WD and WS)
(VWD-1) (SWS-1)

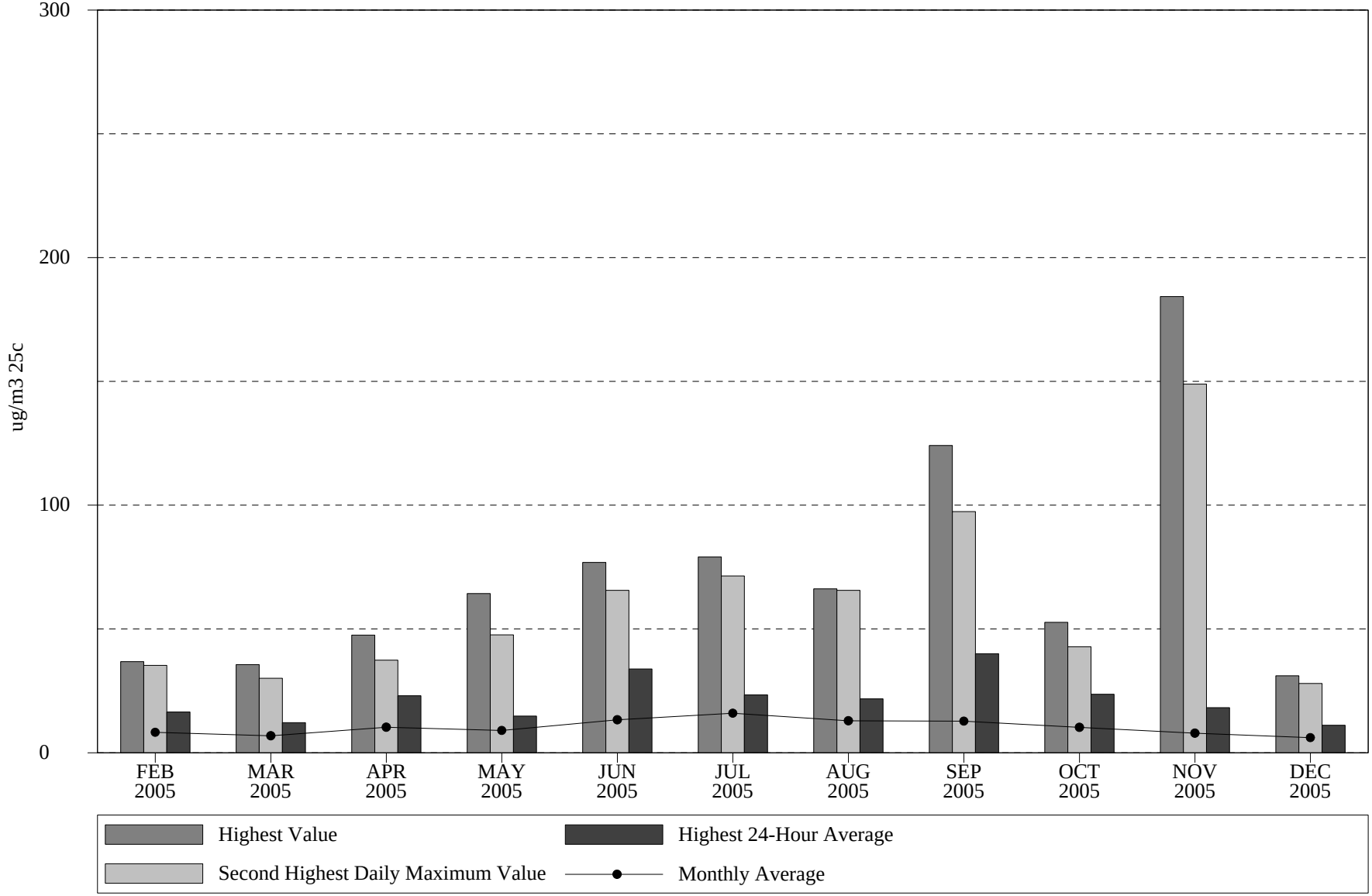
Final Validation 03-13-2006

PM_{10} TEOM 10 Highest Daily 24-Hour Average Concentrations Boulder Final Validation 02/01/2005 – 12/31/2005		
Value	Date	Concentration (ppb)
PM_{10}		
1	09/10/2005	39.5
2	06/25/2005	33.3
3	06/28/2005	24.9
4	06/18/2005	24.6
5	10/02/2005	23.2
6	07/16/2005	23.0
7	04/18/2005	22.7
8	06/27/2005	22.2
9	07/08/2005	21.8
10	07/07/2005	21.4

Boulder

PM10 TEOM Data Summary by Month
February 2005 to December 2005

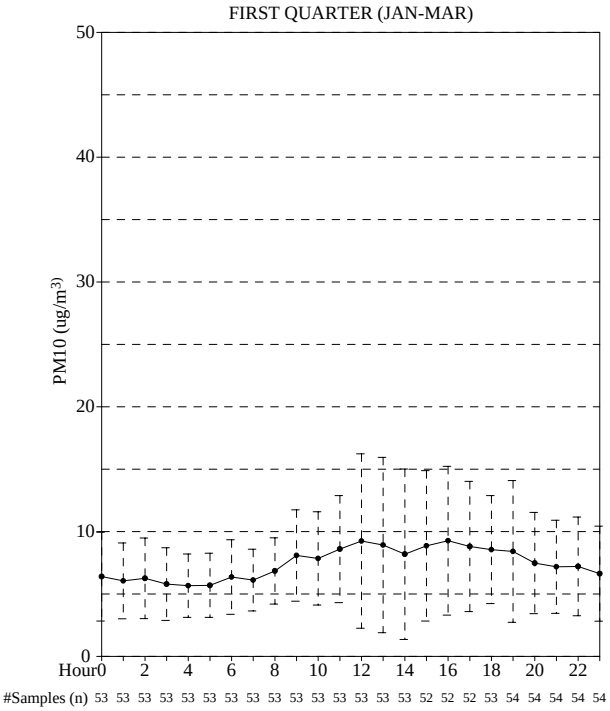
02/01/2005 - 12/31/2005

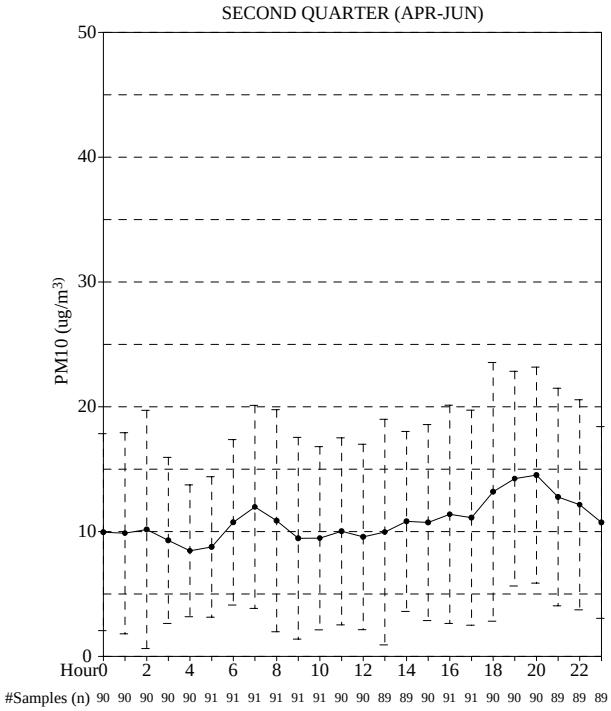


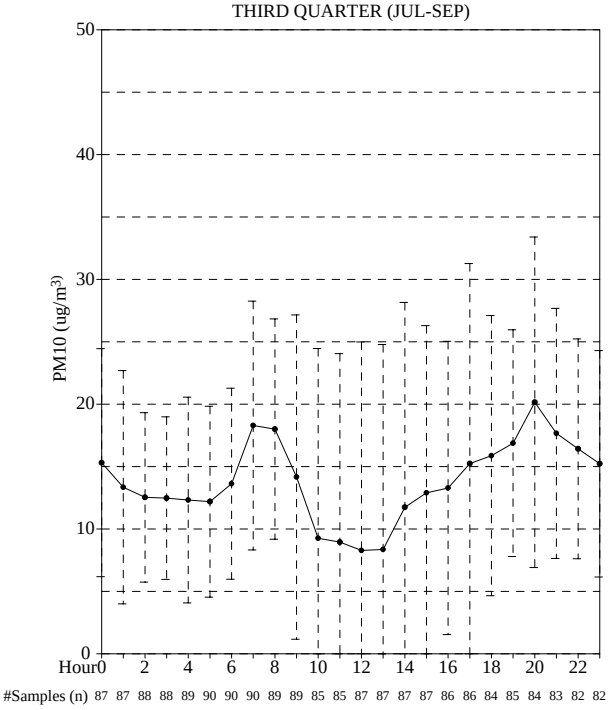
Preliminary Validation

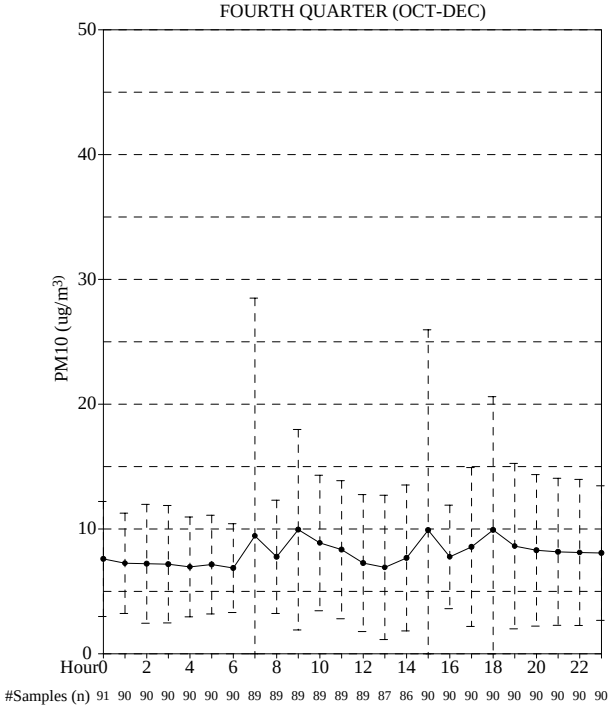
PM10-3 03-15-2006

PM10 TEOM Plots

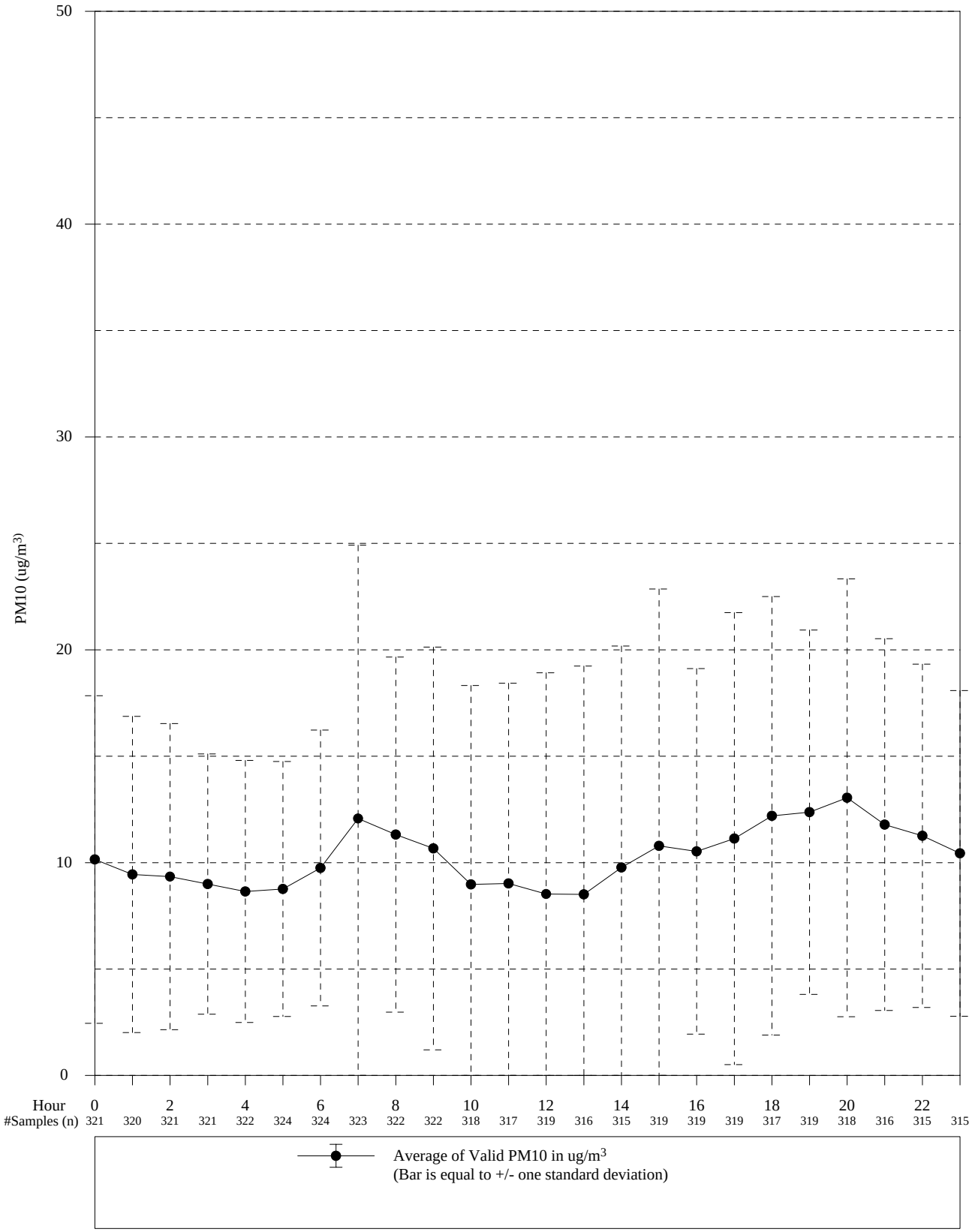








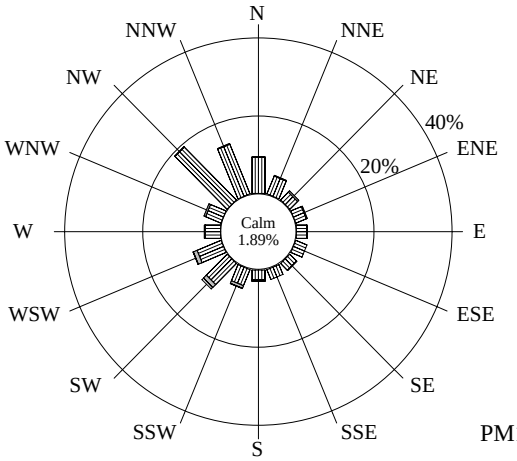
Average of Valid PM10 in ug/m^3
(Bar is equal to +/- one standard deviation)



Final Validation 03-15-2006

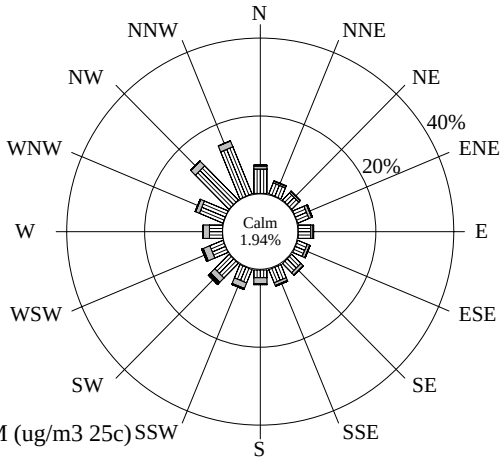
Pollutant Rose

FIRST QUARTER (JAN-MAR)



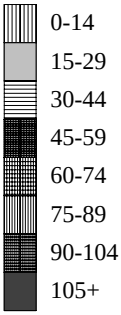
99.6% Collected 91.0% Valid
1399 Possible /1394 Collected /1273 Valid
(includes WS and WD)

SECOND QUARTER (APR-JUN)

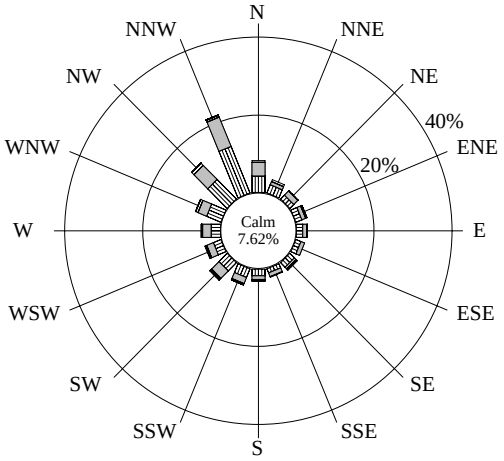


100.0% Collected 94.2% Valid
2184 Possible /2183 Collected /2057 Valid
(includes WS and WD)

Key
PM10 TEOM (ug/m3 25c)

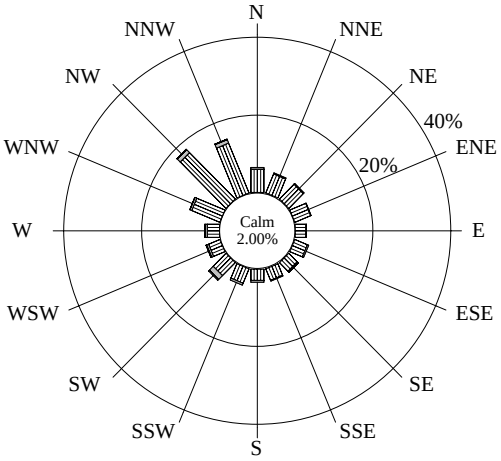


THIRD QUARTER (JUL-SEP)



99.7% Collected 92.8% Valid
2208 Possible /2201 Collected /2048 Valid
(includes WS and WD)

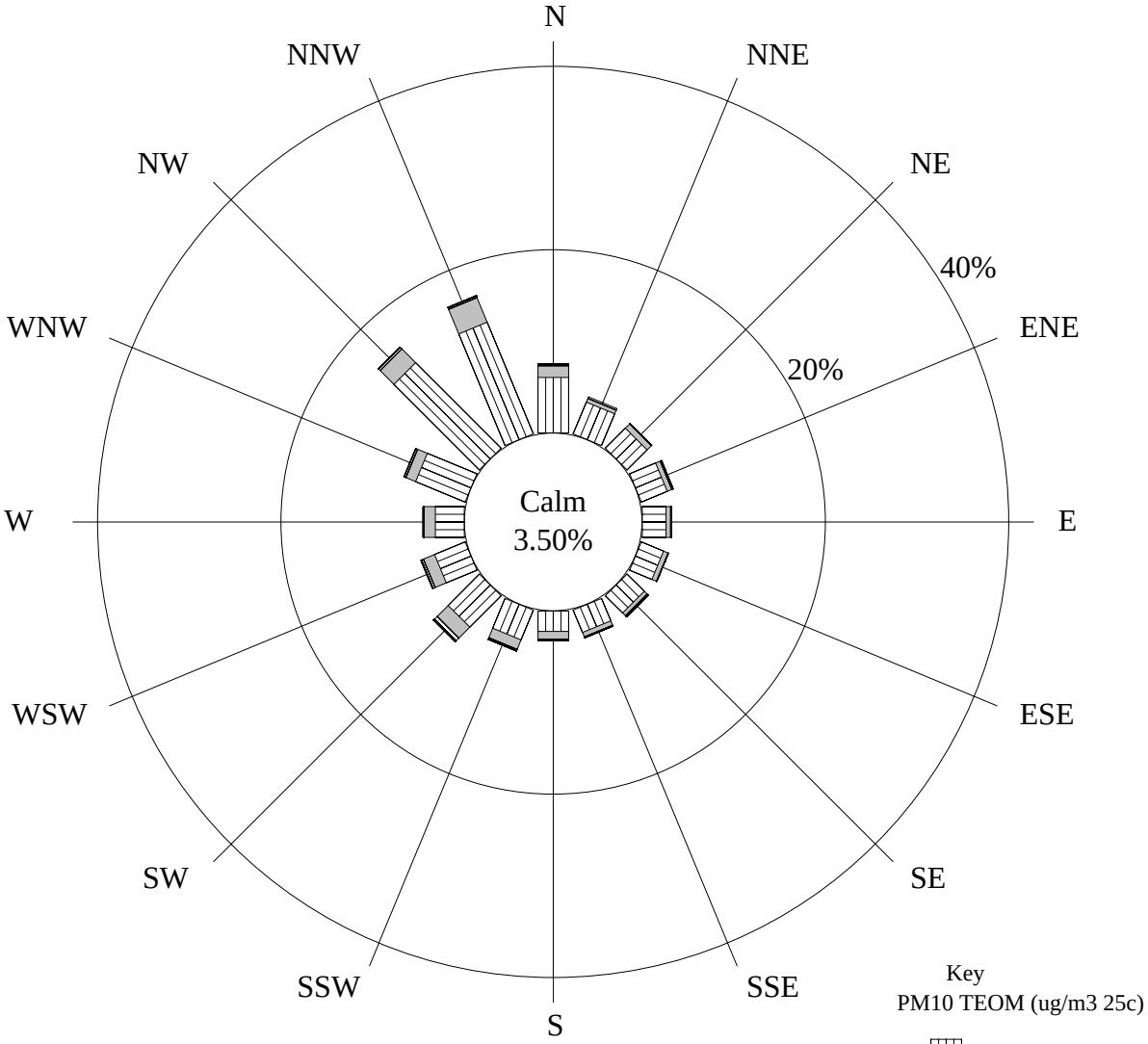
FOURTH QUARTER (OCT-DEC)



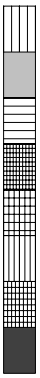
100.0% Collected 97.2% Valid
2208 Possible /2208 Collected /2146 Valid
(includes WS and WD)

Boulder PM10 TEOM 02/01/2005 - 12/31/2005

Pollutant Rose



Key
PM10 TEOM (ug/m3 25c)



99.8% Collected 94.1% Valid
7999 Possible /7986 Collected /7524 Valid
(includes WD and WS)
(VWD-1) (SWS-1)

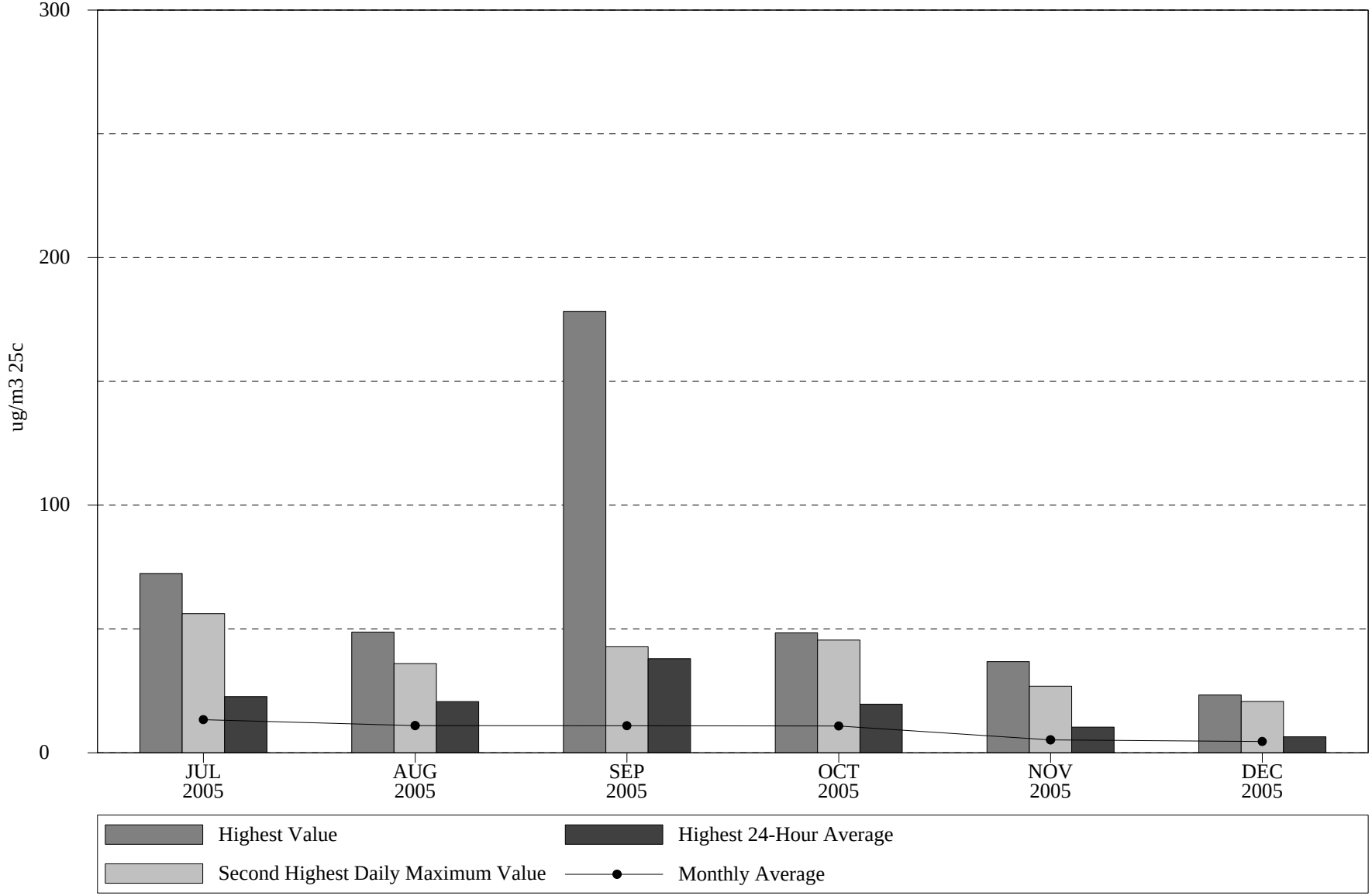
Final Validation 03-15-2006

PM_{10} TEOM 10 Highest Daily 24-Hour Average Concentrations Daniel Final Validation 07/01/2005 – 12/31/2005		
Value	Date	Concentration (ppb)
PM_{10}		
1	09/10/2005	38.0
2	07/22/2005	22.7
3	07/07/2005	21.7
4	08/30/2005	20.7
5	07/08/2005	20.3
6	10/16/2005	19.6
7	07/16/2005	19.5
8	09/06/2005	18.1
9	10/02/2005	17.7
10	07/09/2005	17.4

Daniel

PM10 TEOM Data Summary by Month
July 2005 to December 2005

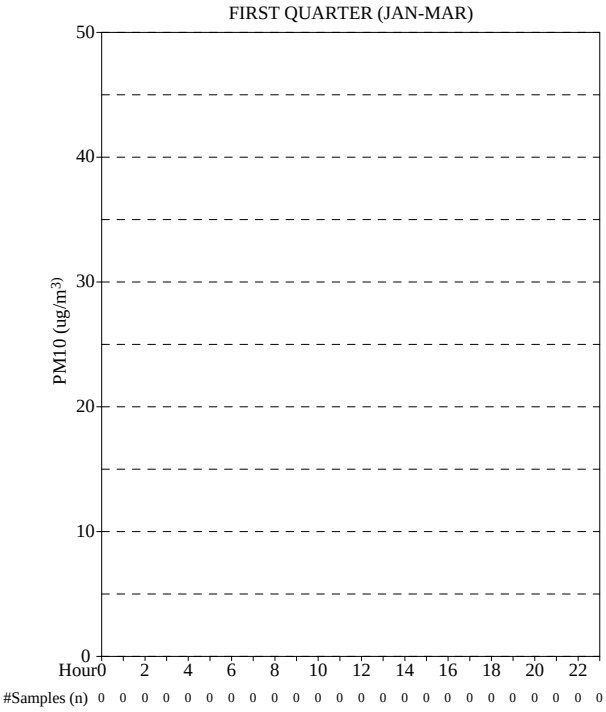
07/01/2005 - 12/31/2005

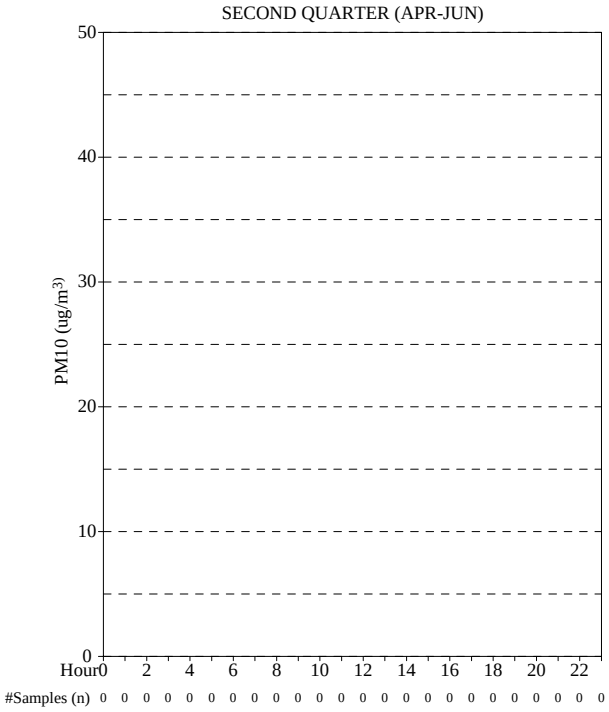


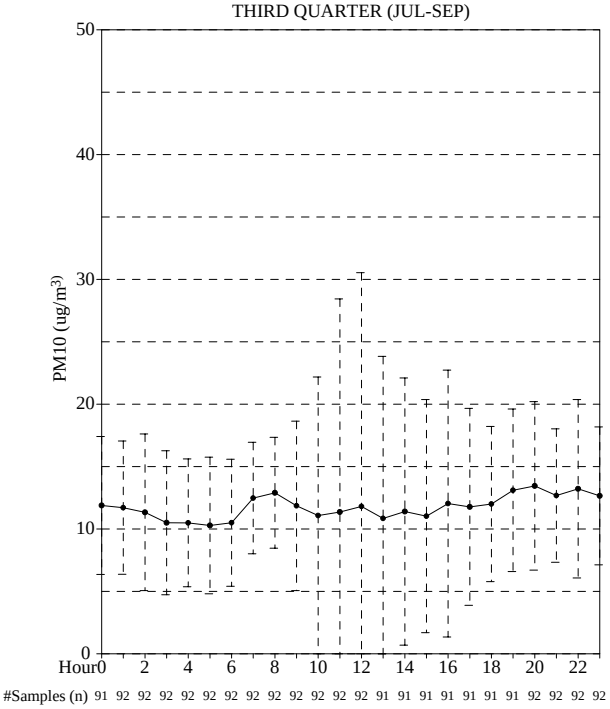
Preliminary Validation

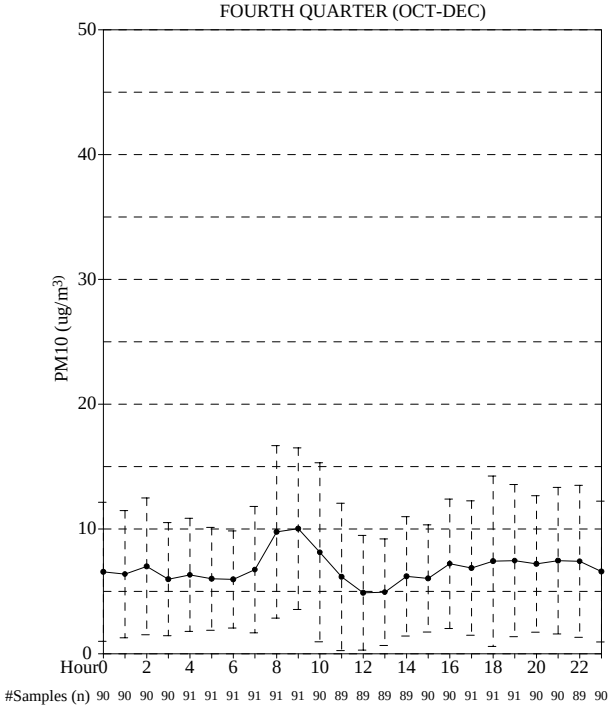
PM10-3 03-15-2006

PM10 TEOM Plots

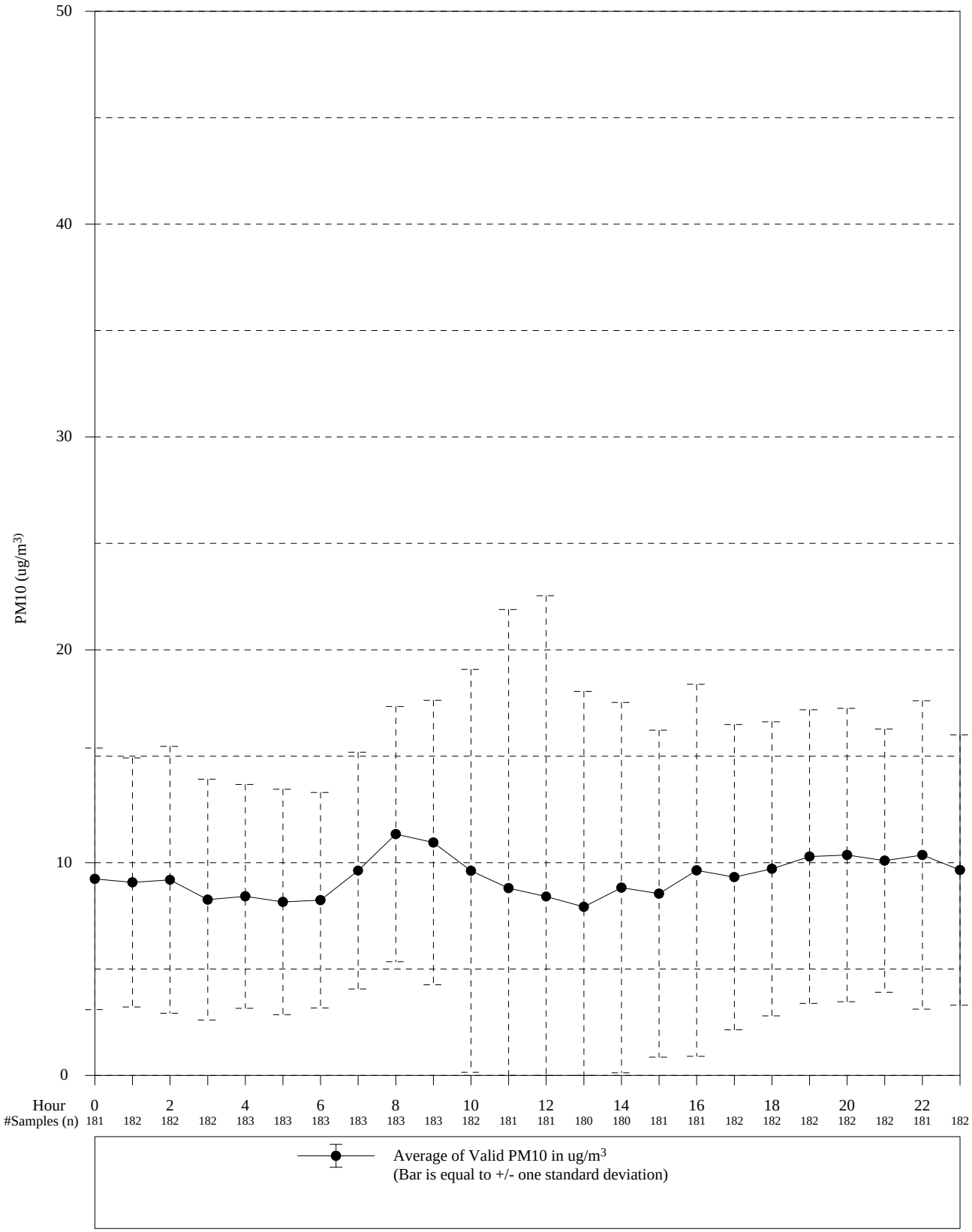






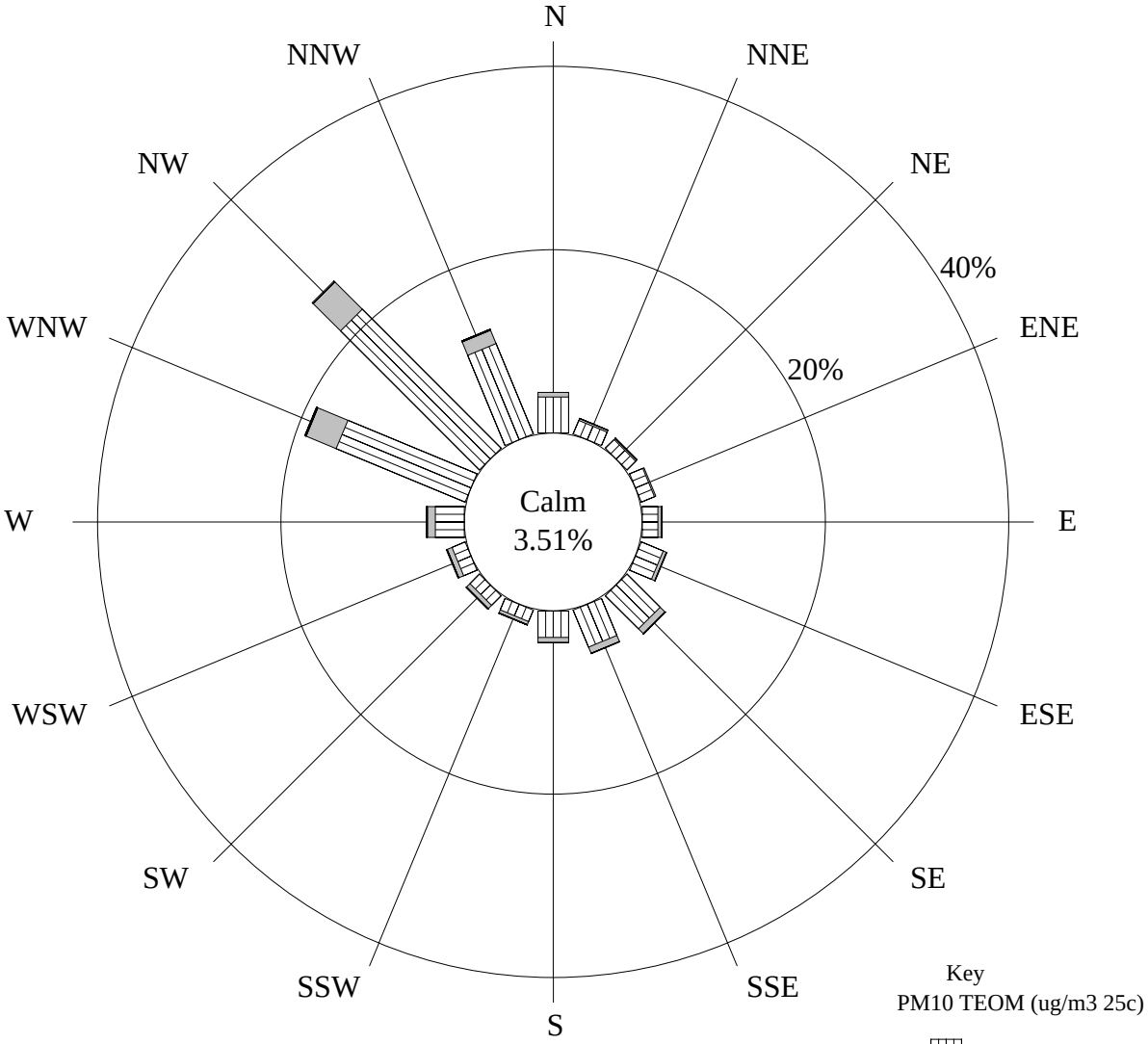


Average of Valid PM10 in ug/m^3
(Bar is equal to +/- one standard deviation)


50
40
30
20
10
0
PM10 (ug/m3)
Hour 0 2 4 6 8 10 12 14 16 18 20 22
#Samples (n) 181 182 182 182 183 183 183 183 183 183 182 181 181 180 180 181 181 182 182 182 182 182 181 182
Average of Valid PM10 in ug/m3
(Bar is equal to +/- one standard deviation)

Daniel PM10 TEOM 07/01/2005 - 12/31/2005

Pollutant Rose



Key
PM10 TEOM (ug/m3 25c)

- 0-14
- 15-29
- 30-44
- 45-59
- 60-74
- 75-89
- 90-104
- 105+

100.0% Collected 98.6% Valid
4416 Possible /4414 Collected /4354 Valid
(includes WD and WS)
(VWD-1) (SWS-1)

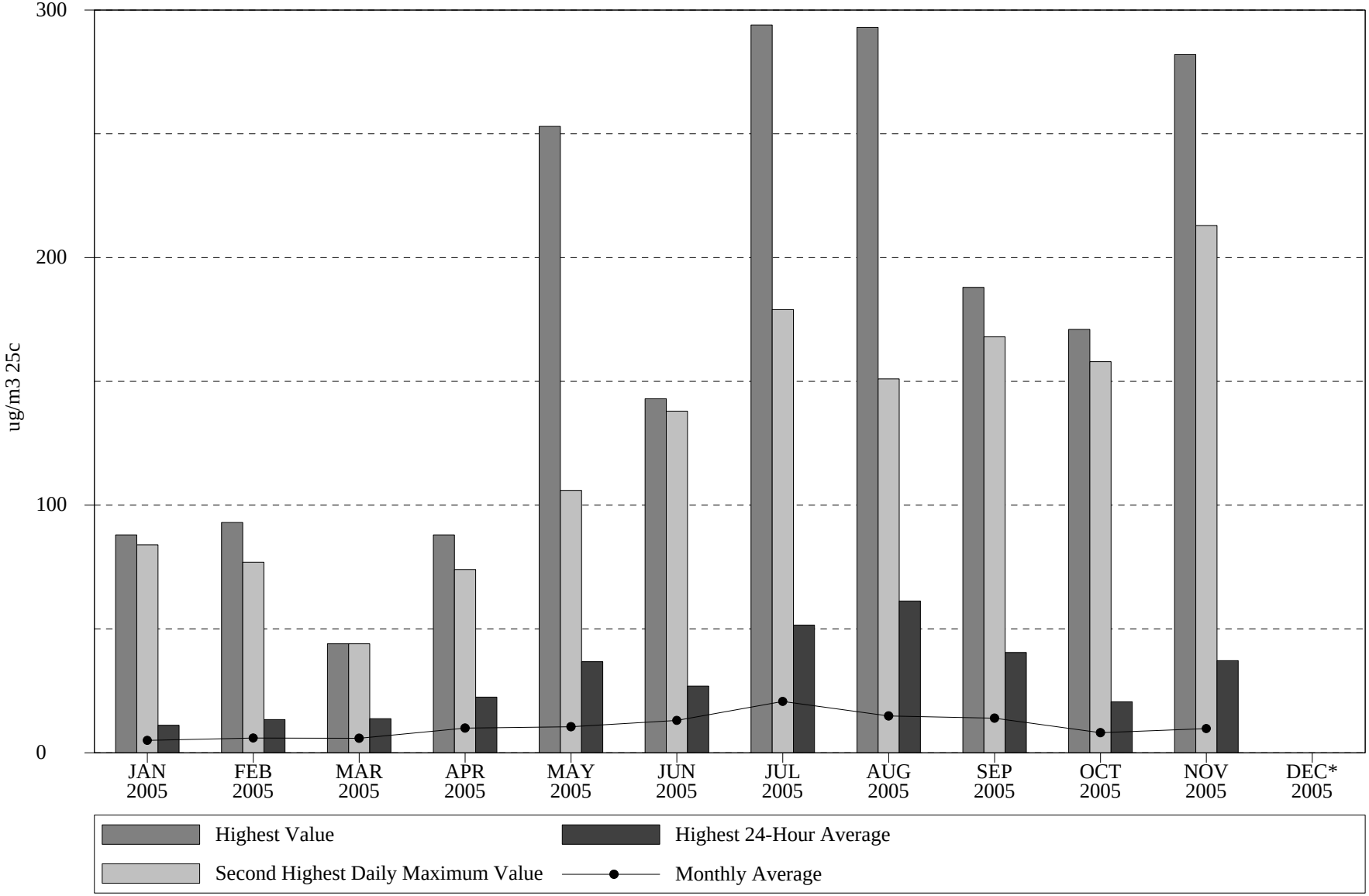
Final Validation 03-15-2006

PM_{10} TEOM 10 Highest Daily 24-Hour Average Concentrations Jonah Final Validation 01/01/2005 – 12/31/2005		
Value	Date	Concentration (ppb)
PM_{10}		
1	08/30/2005	61.3
2	07/14/2005	51.6
3	07/19/2005	44.3
4	07/20/2005	41.7
5	07/16/2005	41.2
6	09/08/2005	40.5
7	11/12/2005	37.2
8	07/07/2005	36.9
9	05/24/2005	36.8
10	09/02/2005	34.3

Jonah

PM10 TEOM Data Summary by Month
January 2005 to December 2005

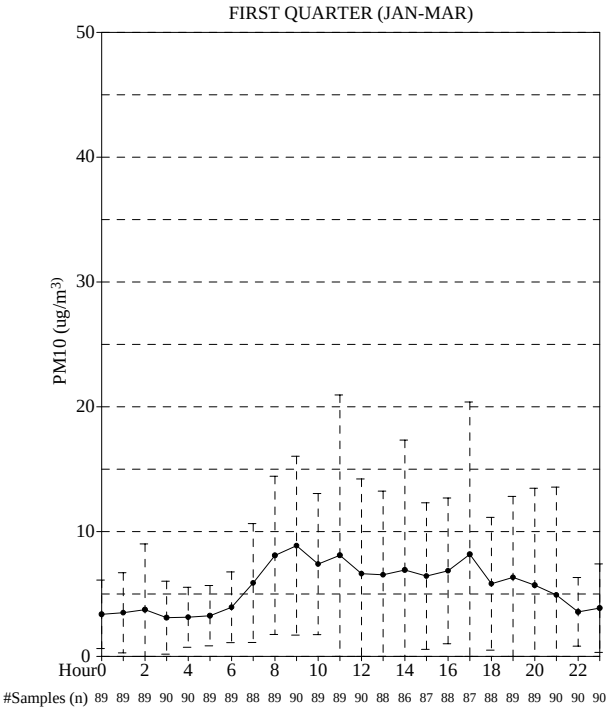
01/01/2005 - 12/31/2005

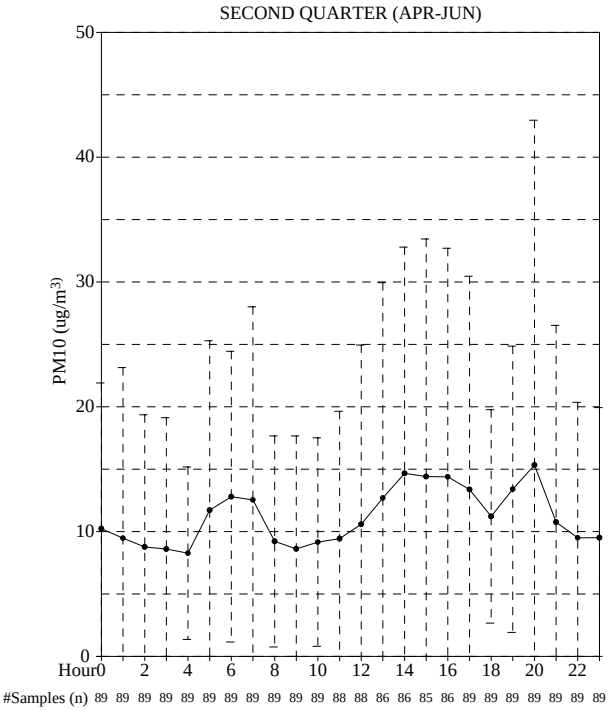


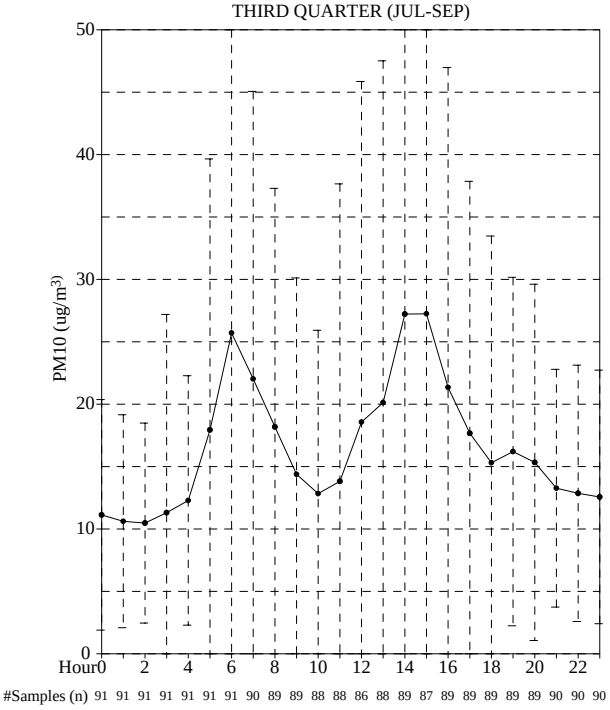
Preliminary Validation

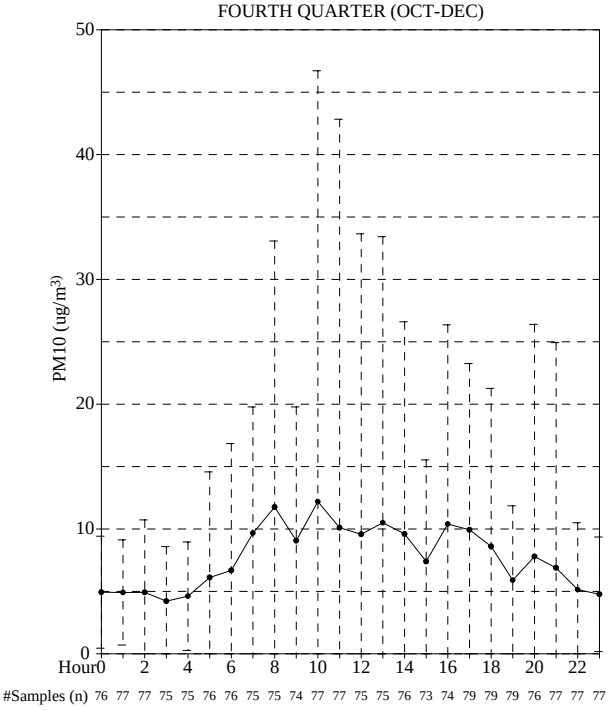
* <75% of days have >75% valid data

PM10 TEOM Plots



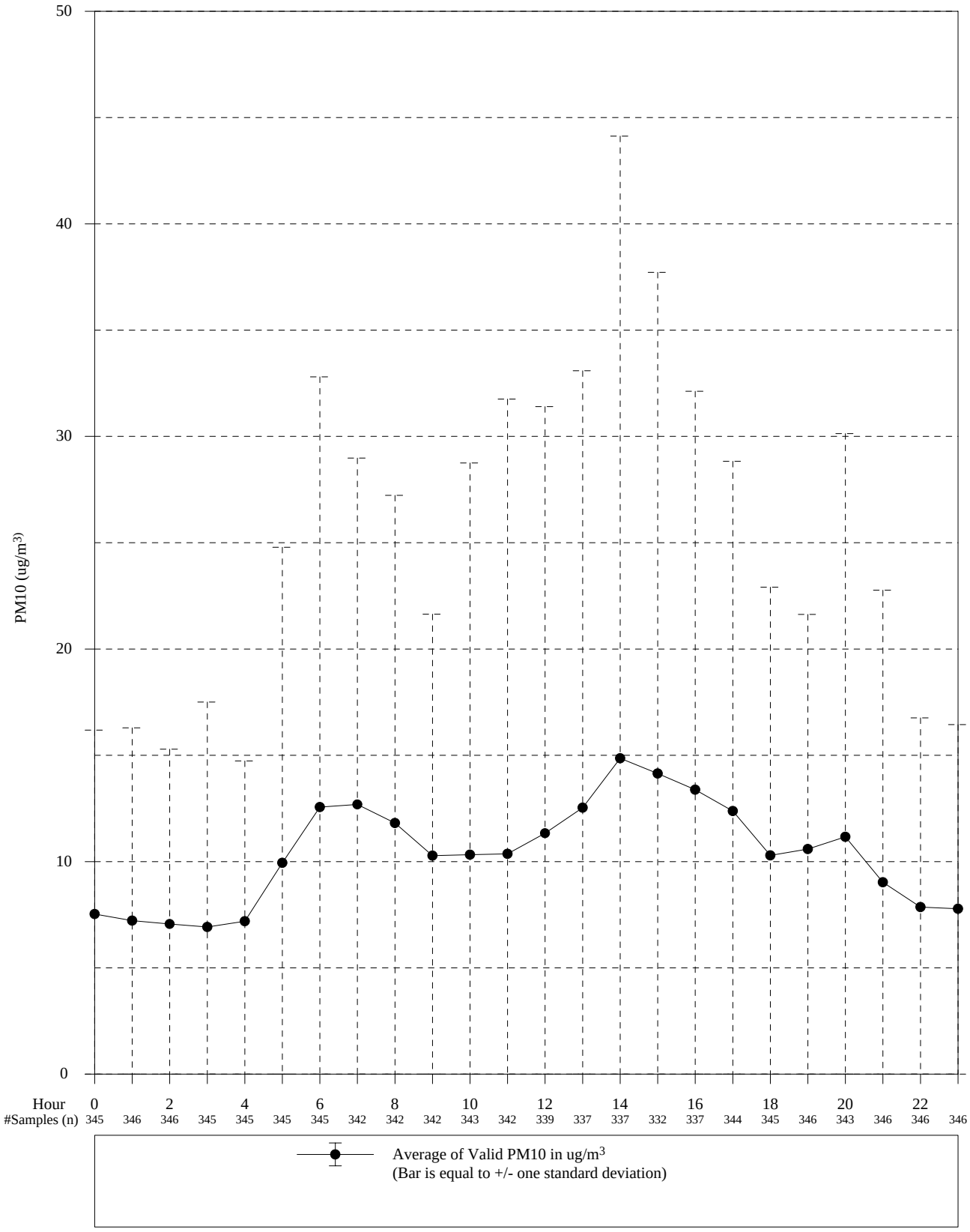






Average of Valid PM10 in ug/m^3
(Bar is equal to +/- one standard deviation)

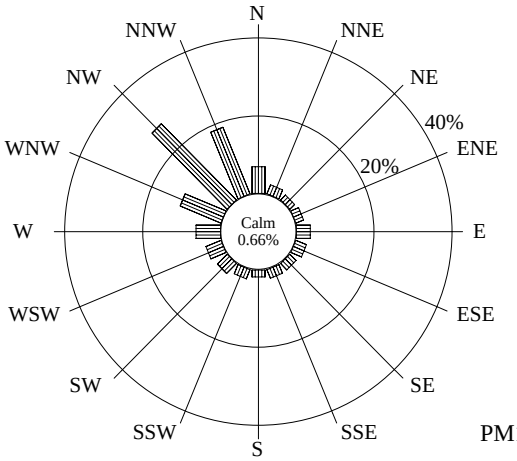
Jonah | Annual Diurnal PM10 TEOM Plot | 2005



Final Validation 03-15-2006

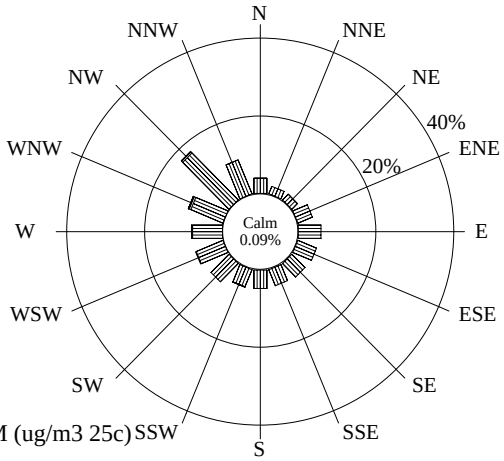
Pollutant Rose

FIRST QUARTER (JAN-MAR)



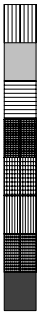
100.0% Collected 98.7% Valid
2160 Possible /2160 Collected /2132 Valid
(includes WS and WD)

SECOND QUARTER (APR-JUN)



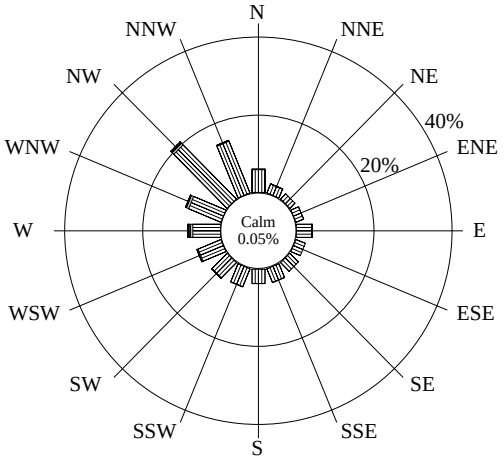
100.0% Collected 97.0% Valid
2184 Possible /2184 Collected /2119 Valid
(includes WS and WD)

Key
PM10 TEOM (ug/m3 25c)



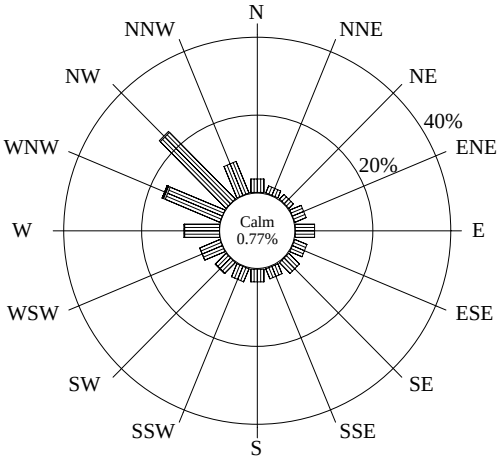
0-49
50-99
100-149
150-199
200-249
250-299
300-349
350+

THIRD QUARTER (JUL-SEP)



100.0% Collected 97.2% Valid
2208 Possible /2208 Collected /2146 Valid
(includes WS and WD)

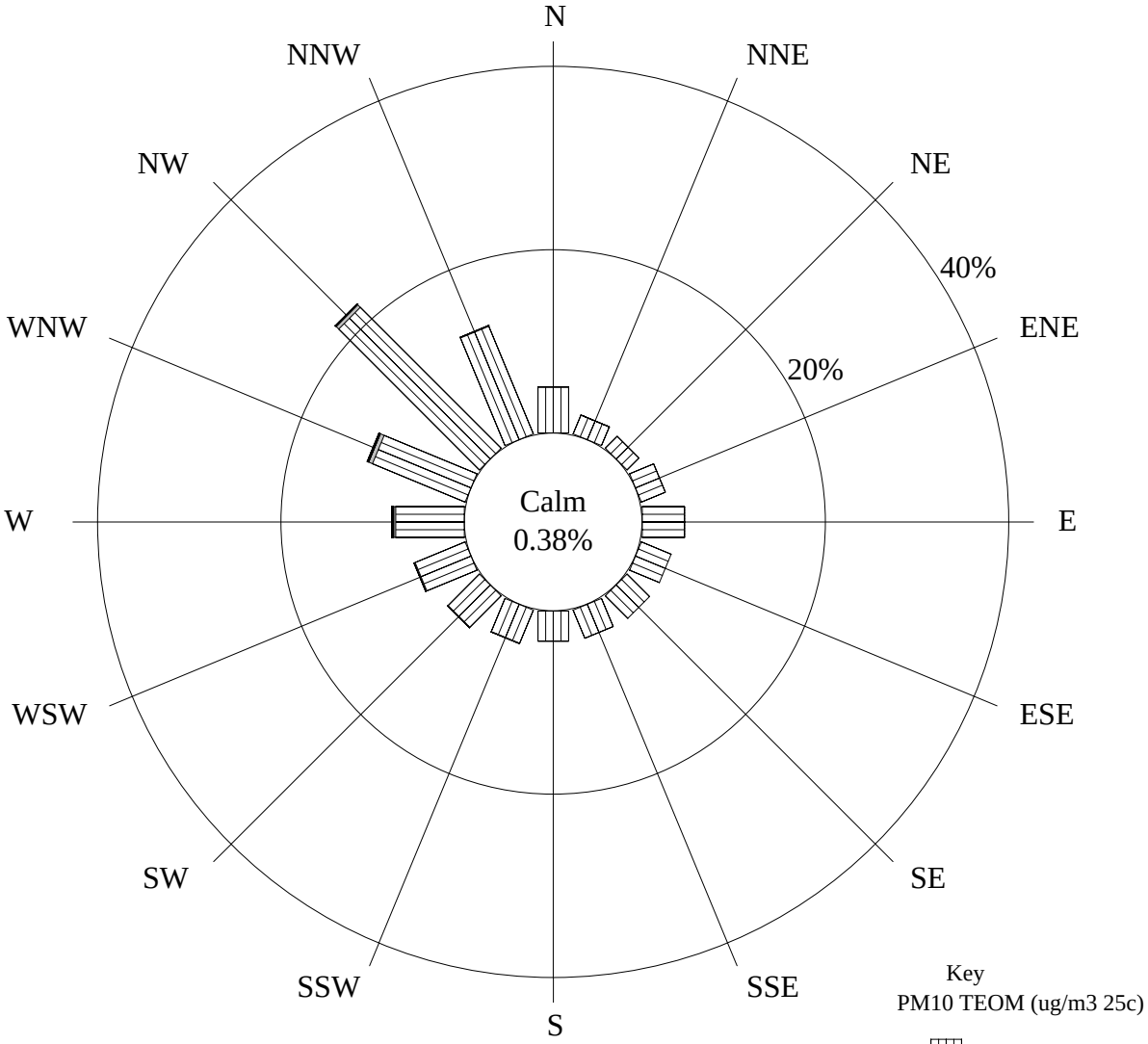
FOURTH QUARTER (OCT-DEC)



100.0% Collected 82.7% Valid
2208 Possible /2208 Collected /1825 Valid
(includes WS and WD)

Jonah Annual PM10 TEOM 2005

Pollutant Rose



Key
PM10 TEOM (ug/m3 25c)

- 0-49
- 50-99
- 100-149
- 150-199
- 200-249
- 250-299
- 300-349
- 350+

100.0% Collected 93.9% Valid
8760 Possible /8760 Collected /8222 Valid
(includes WD and WS)
(VWD-1) (SWS-1)

Final Validation 03-14-2006