



# **Peace AirShed Zone Association**

## **Ambient Air Monitoring Network Summary**

**Continuous Ambient Air Quality Monitoring Program  
Monthly Report  
May 2011**

**Operations and Reporting**

**FOCUS**  
**AIR QUALITY MONITORING**

July 13, 2011

**Alberta Environment**  
 11<sup>th</sup> Floor, Oxbridge Place  
 9820-106 Street  
 Edmonton Alberta T5K 2J6

**RE: Peace Airshed Zone Association (PAZA) – May 2011 Ambient Air Report**

Enclosed is the PAZA Ambient Monitoring Network Report for the month of **May 2011**.

This report is submitted by PAZA on behalf of the industrial member companies to satisfy the requirements of the following facility Operating Approvals:

Company	Facility	LSD	AENV Number	Approval
Advantage Oil & Gas Ltd.	Sunset House	06-22-0707-20-W5	138884-01-00	
	Glacier	05-02-076-13-W6	262479-00-00	
AltaGas Ltd.	Pouce Coupe	03-03-081-13-W6	247673-00-00	
	Ante Creek	02-26-068-25-W5	266694-00-00	
	Gordondale	16-31-78-11-W6M	287474-00-00	
Barrick Energy Inc.	Sturgeon/Valleyview	02-02-069-22-W5	1633-02-00	
Birchcliff Energy Ltd.	Pouce Coupe	03-22-078-12-W6	252529-00-00	
Bonavista Energy Corporation	Rycroft	08-25-077-06-W6	11351-02-00	
	Spirit River	08-34-077-06-W6	11096-02-00	
Canadian Natural Resources Limited	Bonanza	11-25-081-11-W6	0000029-01-00	
	Progress/Gordondale	01-01-077-10-W6	00010036-02-00	
	Gold Creek	13-26-067-05-W6	00010446-02-00	
	Teepee Creek	SE-2-074-04-W6	00001635-02-00	

Conocophillips Canada Energy Partnership	Wembley	06-19-073-08-W6	00000212-01-00
Devon Canada	Tangent	16-20-080-24-W5	00011346-01-00
	NW Belloy (Dunvegan)	16-36-079-03-W6	00009810-02-00
	Eaglesham (South)	02-14-077-25-W5	00047669-01-00
	Puskwaskau	03-26-074-01-W6	00017524-01-00
	North Normanville	03-36-079-23-W5	00047455-01-00
	West Culp	05-34-078-25-W6	00136284-00-00
	Cecil	08-15-084-08-W6	00010032-02-00
EnCana Corporation	Hythe Brainard	11-18-074-12-W6	00010910-02-00
	Sexsmith	04-08-075-07-W6	00010002-01-00
Galleon Energy Inc.	Eaglesham	01-25-076-01-W6	00241532-00-00
	Kakut	14-12-075-03-W6	00248469-00-00
	Donnelly	06-01-077-21-W5	00000087-02-00
Grande Prairie Generation Inc.	Northern Prairie Power Project	04-19-073-08-W6	00238762-00-00
Penn West Petroleum Ltd.	Tangent	13-29-080-23-W5	00001746-02-00
	Pouce Coupe	16-07-078-11-W6	00000614-01-00
Spectra Energy Midstream Corporation	Fourth Creek	16-11-0/82-09-W6	00000263-01-00
Suncor Energy Inc.	Progress	07-22-078-09-W6	00011428-02-00
Taq North Ltd.	Valhalla	13-21-076-09-W6	00017620-01-00
Weyerhaeuser Canada	Grande Prairie Pulp and Wood Plant	01-14-070-05-W6	00000113-02-00

Included in this report is a summary of the monthly continuous monitoring, detailed hourly average reports and multipoint calibration reports of all instruments. Operational summaries can be found on the “Monthly Continuous Data Summary” and “Continuous Network Equipment Summary” pages of the report.

**Continuous Monitoring: Six (6) Stations including Henry Pirker (Grande Prairie), Evergreen Park, Smoky Heights, Beaverlodge, Bonanza (portable) and Valleyview.**

During the month of **May** the following events were noted:

**Henry Pirker Station:**

- ◆ The measured ambient air quality was within the Alberta Ambient Air Quality Objectives (AAAQO) for the Henry Pirker station, except for the PM<sub>2.5</sub> which had twelve (12) 1-hour exceedences of the AAAQG and two (2) 24-hour of the AAAQO:
  - May 23 06:00 89 µg/m<sup>3</sup> Alberta Environment Reference #247452.
  - May 23 07:00 132 µg/m<sup>3</sup> Alberta Environment Reference #247452.
  - May 23 08:00 108 µg/m<sup>3</sup> Alberta Environment Reference #247452.
  - May 23 09:00 84 µg/m<sup>3</sup> Alberta Environment Reference #247452.
  - May 28 07:00 127 µg/m<sup>3</sup> Alberta Environment Reference #247728.
  - May 28 08:00 185 µg/m<sup>3</sup> Alberta Environment Reference #247728.
  - May 28 09:00 231 µg/m<sup>3</sup> Alberta Environment Reference #247728.
  - May 28 10:00 247 µg/m<sup>3</sup> Alberta Environment Reference #247728.
  - May 28 11:00 235 µg/m<sup>3</sup> Alberta Environment Reference #247728.
  - May 28 12:00 197 µg/m<sup>3</sup> Alberta Environment Reference #247728.
  - May 28 15:00 110 µg/m<sup>3</sup> Alberta Environment Reference #247728.
  - May 28 16:00 82 µg/m<sup>3</sup> Alberta Environment Reference #247728.
  - May 23 24-hr 37 µg/m<sup>3</sup> Alberta Environment Reference #247452.
  - May 28 24-hr 91 µg/m<sup>3</sup> Alberta Environment Reference #247728.
- ◆ All analyzers and sensors at the Henry Pirker station had an operational uptime greater than 90% for the month of May.

**Evergreen Park Station:**

- ◆ The measured ambient air quality was within the AAAQO for the Evergreen Park station, except for the PM<sub>2.5</sub> which had sixteen (16) 1-hour exceedences of the AAAQG and two (2) 24-hour of the AAAQO:
  - May 03 09:00 141 µg/m<sup>3</sup> Alberta Environment Reference #246796.
  - May 03 10:00 296 µg/m<sup>3</sup> Alberta Environment Reference #246796.
  - May 03 11:00 337 µg/m<sup>3</sup> Alberta Environment Reference #246796.
  - May 03 12:00 130 µg/m<sup>3</sup> Alberta Environment Reference #246796.
  - May 03 14:00 89 µg/m<sup>3</sup> Alberta Environment Reference #246796.
  - May 23 05:00 84 µg/m<sup>3</sup> Alberta Environment Reference #247453.
  - May 23 06:00 111 µg/m<sup>3</sup> Alberta Environment Reference #247453.
  - May 23 07:00 88 µg/m<sup>3</sup> Alberta Environment Reference #247453.
  - May 28 06:00 86 µg/m<sup>3</sup> Alberta Environment Reference #247727.
  - May 28 07:00 141 µg/m<sup>3</sup> Alberta Environment Reference #247727.
  - May 28 08:00 166 µg/m<sup>3</sup> Alberta Environment Reference #247727.
  - May 28 09:00 146 µg/m<sup>3</sup> Alberta Environment Reference #247727.

- May 28 10:00 159  $\mu\text{g}/\text{m}^3$  Alberta Environment Reference #247727.
  - May 28 11:00 116  $\mu\text{g}/\text{m}^3$  Alberta Environment Reference #247727.
  - May 28 13:00 83  $\mu\text{g}/\text{m}^3$  Alberta Environment Reference #247727.
  - May 28 24:00 113  $\mu\text{g}/\text{m}^3$  Alberta Environment Reference #247727.
  - May 03 24-hr 61  $\mu\text{g}/\text{m}^3$  Alberta Environment Reference #246796.
  - May 28 24-hr 68  $\mu\text{g}/\text{m}^3$  Alberta Environment Reference #247727
- ◆ All analyzers / sensors at the Evergreen Park station had an operational uptime greater than 90% for the month of May.

### Smoky Heights Station:

- ◆ The measured ambient air quality was within the AAAQO for the Smoky Heights station, except for the  $\text{PM}_{2.5}$  which had ten (10) 1-hour exceedences of the AAAQG and one (1) 24-hour of the AAAQO:
- May 23 04:00 124  $\mu\text{g}/\text{m}^3$  Alberta Environment Reference #247448.
  - May 23 05:00 96  $\mu\text{g}/\text{m}^3$  Alberta Environment Reference #247448.
  - May 28 05:00 140  $\mu\text{g}/\text{m}^3$  Alberta Environment Reference #247729.
  - May 28 06:00 117  $\mu\text{g}/\text{m}^3$  Alberta Environment Reference #247729.
  - May 28 07:00 116  $\mu\text{g}/\text{m}^3$  Alberta Environment Reference #247729.
  - May 28 08:00 114  $\mu\text{g}/\text{m}^3$  Alberta Environment Reference #247729.
  - May 28 09:00 138  $\mu\text{g}/\text{m}^3$  Alberta Environment Reference #247729.
  - May 28 10:00 153  $\mu\text{g}/\text{m}^3$  Alberta Environment Reference #247729.
  - May 28 11:00 115  $\mu\text{g}/\text{m}^3$  Alberta Environment Reference #247729.
  - May 28 12:00 84  $\mu\text{g}/\text{m}^3$  Alberta Environment Reference #247729.
  - May 28 24-hr 91  $\mu\text{g}/\text{m}^3$  Alberta Environment Reference #247448.
- ◆ All analyzers / sensors at the Smoky Heights station had an operational uptime greater than 90% for the month of May.

### Beaverlodge Station:

- ◆ The measured ambient air quality was within the AAAQO for the Beaverlodge station, except for the  $\text{PM}_{2.5}$  which had thirteen (13) 1-hour exceedences of the AAAQG and two (2) 24-hour of the AAAQO:
- May 23 05:00 119  $\mu\text{g}/\text{m}^3$  Alberta Environment Reference #247449.
  - May 23 06:00 149  $\mu\text{g}/\text{m}^3$  Alberta Environment Reference #247449.
  - May 23 07:00 134  $\mu\text{g}/\text{m}^3$  Alberta Environment Reference #247449.
  - May 23 08:00 114  $\mu\text{g}/\text{m}^3$  Alberta Environment Reference #247449.
  - May 23 09:00 92  $\mu\text{g}/\text{m}^3$  Alberta Environment Reference #247449.
  - May 23 10:00 83  $\mu\text{g}/\text{m}^3$  Alberta Environment Reference #247449.
  - May 28 07:00 119  $\mu\text{g}/\text{m}^3$  Alberta Environment Reference #247726.
  - May 28 08:00 162  $\mu\text{g}/\text{m}^3$  Alberta Environment Reference #247726.
  - May 28 09:00 179  $\mu\text{g}/\text{m}^3$  Alberta Environment Reference #247726.
  - May 28 10:00 181  $\mu\text{g}/\text{m}^3$  Alberta Environment Reference #247726.
  - May 28 11:00 163  $\mu\text{g}/\text{m}^3$  Alberta Environment Reference #247726.
  - May 28 12:00 132  $\mu\text{g}/\text{m}^3$  Alberta Environment Reference #247726.
  - May 28 14:00 87  $\mu\text{g}/\text{m}^3$  Alberta Environment Reference #247726.
  - May 23 24-hr 51  $\mu\text{g}/\text{m}^3$  Alberta Environment Reference #247449.
  - May 28 24-hr 85  $\mu\text{g}/\text{m}^3$  Alberta Environment Reference #247726.
- ◆ All analyzers / sensors at the Beaverlodge station had an operational uptime greater than 90% for the month of May.

**Portable – Bonanza Station:**

- ◆ The measured ambient air quality was within the AAAQO for the Bonanza station.
- ◆ All analyzers / sensors at the Bonanza station had an operational uptime of 100% for the month of May.

**Valleyview Station:**

- ◆ The measured ambient air quality was within the AAAQO for the Valleyview station.
- ◆ All analyzers / sensors at the Valleyview station had an operational uptime greater than 90% for the month of May.

**Passive Monitoring - 43 Stations throughout the PAZA zone:**

There were four duplicate sites sampled in the month of May: Forth Creek, Woking, Bear Lake and Valleyview. There are no SO<sub>2</sub>, O<sub>3</sub> and NO<sub>2</sub> sample results for Wapiti; samples were found destroyed at site upon collection. The passive sample analyses were performed by MAXXAM Analytics Inc.

A summary of the passive data collected are reported as follows:

- Monthly average concentrations for SO<sub>2</sub> passives ranged from 0.1 ppb to 0.4 ppb, with a mean of 0.2 ppb.
- Monthly average concentrations for NO<sub>2</sub> passives ranged from 0.1 ppb to 2.3 ppb, with a mean of 0.8 ppb.
- Monthly average concentrations for O<sub>3</sub> passives ranged from 29.8 ppb to 47.5 ppb, with a mean of 38.5 ppb.

If you have any questions or concerns, please contact Shelly Pruden, PAZA Program Manager at 780.833.4343 or 780.882.4071.

On Behalf of the,  
Peace Airshed Zone Association

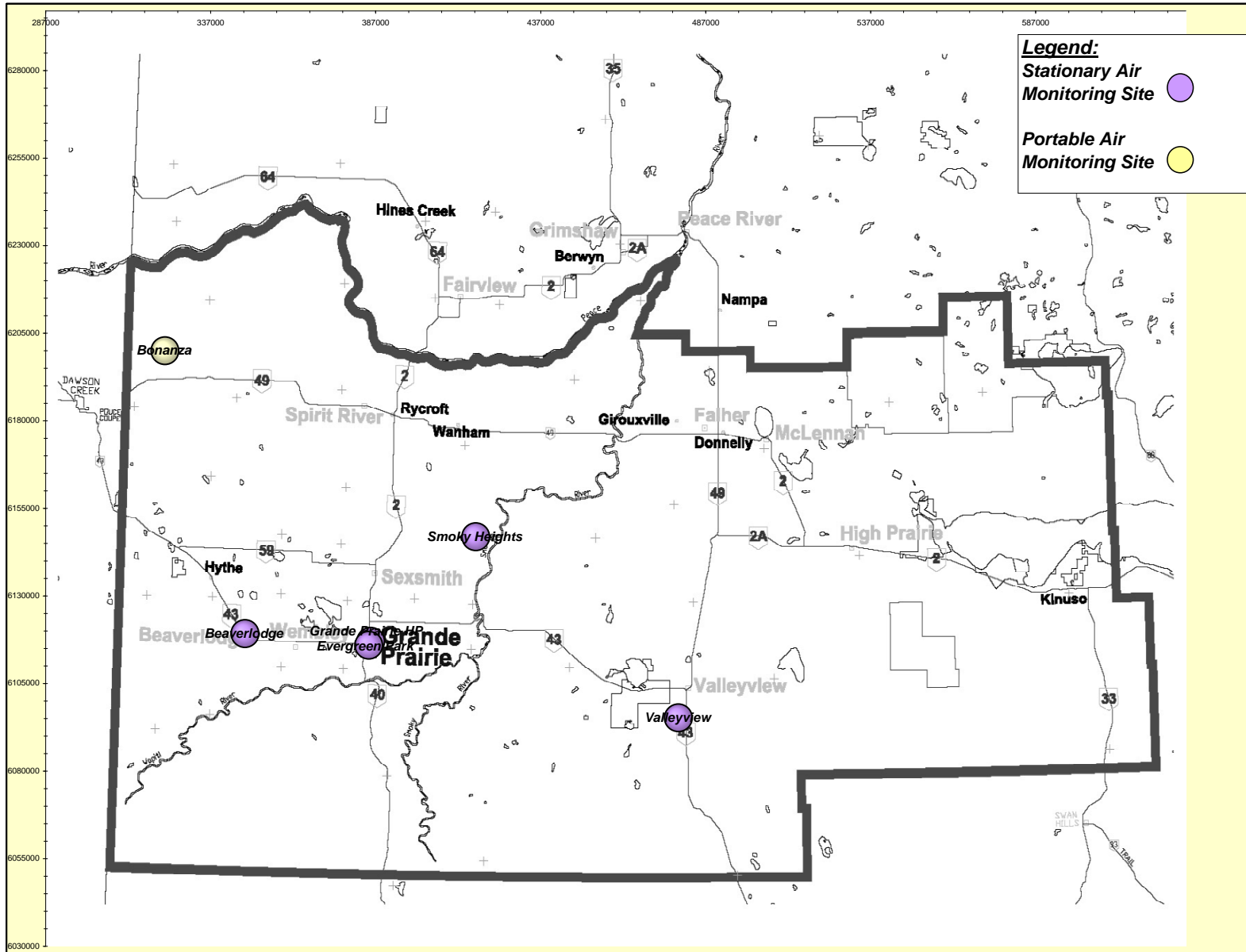


Shelly Pruden  
Program Manager



Sharon Whiteley, B.Sc.  
FOCUS AQM Data Specialist

# Location of PAZA Continuous Monitoring Stations



## PAZA Monthly Continuous Data Summary

May-2011 Peace Airshed Zone Association									Maximum Recorded Values				Operational Time (%)
Pollutant (units)	Objectives			Station	Monthly Average	Exceedence			Conc	Day	24-hr / 8-hr		
	1-hr	24-hr	30-day			1-hr	24-hr	30-day			Conc	Day	
SO <sub>2</sub> (ppb)	172	48	11	Henry Pirker	0.2	0	0	0	4.0	May-27 07:00	0.6	May-27	100.0%
SO <sub>2</sub> (ppb)	172	48	11	Evergreen Park	0.2	0	0	0	2.4	May-10 09:00	0.5	May-28	100.0%
SO <sub>2</sub> (ppb)	172	48	11	Smoky Heights	0.4	0	0	0	10.1	May-06 06:00	2.0	May-06	100.0%
SO <sub>2</sub> (ppb)	172	48	11	Beaverlodge	0.2	0	0	0	4.5	May-28 10:00	0.9	May-28	100.0%
SO <sub>2</sub> (ppb)	172	48	11	Portable-Bonanza	0.2	0	0	0	4.0	May-24 09:00	0.6	May-24	100.0%
SO <sub>2</sub> (ppb)	172	48	11	Valleyview	0.6	0	0	0	45.7	May-06 08:00	3.6	May-04	100.0%
NO (ppb)				Henry Pirker	0.7	0	0	-	17.3	May-20 08:00	2.8	May-20	100.0%
NO <sub>2</sub> (ppb)	212	106		Henry Pirker	5.3	0	0	-	21.6	May-31 07:00	9.7	May-20	100.0%
NO <sub>x</sub> (ppb)				Henry Pirker	6.0	0	0	-	34.5	May-10 07:00	12.5	May-20	100.0%
NO (ppb)				Beaverlodge	0.2	0	0	-	7.0	May-20 07:00	0.9	May-20	100.0%
NO <sub>2</sub> (ppb)	212	106		Beaverlodge	2.0	0	0	-	10.7	May-16 07:00	3.5	May-28	100.0%
NO <sub>x</sub> (ppb)				Beaverlodge	2.3	0	0	-	15.7	May-20 07:00	4.4	May-20	100.0%
NO (ppb)				Portable-Bonanza	0.4	0	0	-	16.2	May-30 07:00	1.0	May-30	100.0%
NO <sub>2</sub> (ppb)	212	106		Portable-Bonanza	2.6	0	0	-	14.5	May-30 07:00	5.1	May-27	100.0%
NO <sub>x</sub> (ppb)				Portable-Bonanza	2.9	0	0	-	30.3	May-30 07:00	5.9	May-28	100.0%
O <sub>3</sub> (ppb)	82			Henry Pirker	37.1	0	-	-	62.0	May-29 14:00	47.7	May-15	100.0%
O <sub>3</sub> (ppb) - 8-hr				Henry Pirker			0				58.7	May-30	
O <sub>3</sub> (ppb)	82			Beaverlodge	41.3	0	-	-	64.9	May-31 14:00	54.0	May-28	99.9%
O <sub>3</sub> (ppb) - 8-hr				Beaverlodge			0				62.8	May-31	
O <sub>3</sub> (ppb)	82			Portable-Bonanza	37.8	0	-	-	64.5	May-31 16:00	49.3	May-15	100.0%
O <sub>3</sub> (ppb) - 8-hr				Portable-Bonanza			0				61.7	May-31	
CO (ppm)	13			Henry Pirker	0.21	-	-	-	1.0	May-28 08:00	0.5	May-28	100.0%
CO (ppm) - 8-hr		5		Henry Pirker			0				0.7	May-28	
THC (ppm)				Henry Pirker	1.99	-	-	-	2.5	May-09 08:00	2.1	May-20	100.0%
TRS (ppb)				Henry Pirker	0.3	-	-	-	1.2	May-19 11:00	0.4	May-22	100.0%
TRS (ppb)				Evergreen Park	0.6	-	-	-	1.7	May-22 04:00	0.7	May-11	100.0%
TRS (ppb)				Smoky Heights	0.3	-	-	-	1.0	May-22 04:00	0.6	May-22	100.0%
TRS (ppb)				Portable-Bonanza	0.6	-	-	-	1.9	May-24 11:00	0.9	May-20	100.0%
H <sub>2</sub> S (ppb)	10	3		Valleyview	0.1	0	0	-	2.3	May-06 08:00	0.3	May-06	100.0%



## PAZA Monthly Continuous Data Summary – continued

May-2011		Peace Airshed Zone Association							Maximum Recorded Values				
									1-hr		24-hr / 8-hr		
PM2.5 (µg/m3)	80	30		Henry Pirker	12.8	12	2	-	247.1	May-28 09:00	90.6	May-28	97.5%
PM2.5 (µg/m3)	80	30		Evergreen Park	10.4	16	2	-	336.7	May-03 11:00	67.6	May-28	98.7%
PM2.5 (µg/m3)	80	30		Smoky Heights	8.5	10	1	-	153.5	May-28 10:00	58.3	May-28	100.0%
PM2.5 (µg/m3)	80	30		Beaverlodge	14.5	13	2	-	181.3	May-28 10:00	84.8	May-28	99.9%
RH (%)				Henry Pirker	54.2	-	-	-	92.2	May-22 06:00	77.0	May-23	100.0%
RH (%)				Evergreen Park	57.1	-	-	-	99.5	May-22 10:00	88.8	May-23	100.0%
RH (%)				Beaverlodge	52.8	-	-	-	94.2	May-20 02:00	79.7	May-23	98.5%
RH (%)				Valleyview	56.3	-	-	-	99.8	May-22 07:00	83.6	May-23	100.0%
SR (W/m <sup>2</sup> )				Henry Pirker	188.6	-	-	-	787.6	May-08 14:00	267.2	May-30	100.0%
Temp (°C)				Henry Pirker	12.1	-	-	-	24.8	May-16 16:00	17.4	May-16	100.0%
Temp (°C)				Evergreen Park	11.9	-	-	-	24.4	May-14 17:00	17.5	May-15	100.0%
Temp (°C)				Smoky Heights	11.9	-	-	-	24.0	May-16 17:00	17.2	May-16	100.0%
Temp (°C)				Beaverlodge	11.8	-	-	-	24.2	May-14 18:00	17.7	May-16	98.8%
Temp (°C)				Portable-Bonanza	12.0	-	-	-	26.4	May-16 17:00	17.0	May-15	100.0%
Temp (°C)				Valleyview	12.3	-	-	-	24.8	May-16 18:00	18.2	May-16	100.0%
WSPD s (km/hr)				Henry Pirker	10.6	-	-	-	39.0	May-04 14:00	28.3	May-03	94.6%
WSPD s (km/hr)				Evergreen Park	6.5	-	-	-	31.0	May-03 11:00	20.5	May-03	100.0%
WSPD s (km/hr)				Smoky Heights	13.3	-	-	-	43.0	May-15 15:00	28.4	May-15	100.0%
WSPD s (km/hr)				Beaverlodge	13.1	-	-	-	44.0	May-03 13:00	27.9	May-03	100.0%
WSPD s (km/hr)				Portable-Bonanza	12.2	-	-	-	39.0	May-03 09:00	28.5	May-03	100.0%
WSPD s (km/hr)				Valleyview	6.6	-	-	-	28.0	May-15 10:00	20.0	May-15	100.0%
WSPD v (km/hr)				Henry Pirker	1.2	-	-	-	39.0	May-04 14:00	27.5	May-03	94.6%
WSPD v (km/hr)				Evergreen Park	0.3	-	-	-	31.0	May-03 11:00	20.0	May-03	100.0%
WSPD v (km/hr)				Smoky Heights	1.4	-	-	-	43.0	May-15 14:00	27.9	May-03	100.0%
WSPD v (km/hr)				Beaverlodge	2.6	-	-	-	44.0	May-03 13:00	27.3	May-03	100.0%
WSPD v (km/hr)				Portable-Bonanza	1.9	-	-	-	39.0	May-03 09:00	27.9	May-03	100.0%
WSPD v (km/hr)				Valleyview	1.3	-	-	-	28.0	May-15 10:00	19.5	May-15	100.0%
WDIR				Henry Pirker	SE	-	-	-	-	-	-	-	94.6%
WDIR				Evergreen Park	SW	-	-	-	-	-	-	-	100.0%
WDIR				Smoky Heights	ESE	-	-	-	-	-	-	-	100.0%
WDIR				Beaverlodge	E	-	-	-	-	-	-	-	100.0%
WDIR				Portable-Bonanza	SSE	-	-	-	-	-	-	-	100.0%
WDIR				Valleyview	SSE	-	-	-	-	-	-	-	100.0%

# Continuous Network Equipment Summary

## PAZA – Henry Pirker Station

### General Station Issues

Routine monthly calibrations were performed on May 18<sup>th</sup> (TRS, CO & THC) and May 19<sup>th</sup> (SO<sub>2</sub>, NO<sub>x</sub> & O<sub>3</sub>).

Parameter	Make	Model	Notes
SO <sub>2</sub>	TEI	43C	No operational issues observed.
NO <sub>x</sub> /NO/NO <sub>2</sub>	TEI	42C	No operational issues observed.
O <sub>3</sub>	TEI	49C	No operational issues observed.
CO	TEI	48C	No operational issues observed.
THC	TEI	51-CLT	Spans outside target range on May 7 <sup>th</sup> , 19 <sup>th</sup> to 21 <sup>st</sup> suspect regulator pressure on span cylinder as all other diagnostics are good.
TRS	TEI	45C/43C	No operational issues observed.
PM <sub>2.5</sub>	R&P	1400AB	Ongoing troubleshooting issues on FDMS sensor. A total of eleven (11) hours were flagged maintenance to continually replace the sensor with different units sent by AENV May 4 <sup>th</sup> , May 19 <sup>th</sup> and May 26 <sup>th</sup> . A total of eight (8) hours were flagged invalid due to spiking issues caused by the case temperature within the FDMS sensor unit. There were twelve 1-hour exceedences of the AAAQG and two 24-hour exceedences of the AAAQO: May 23: 05:00 89 µg/m <sup>3</sup> AE Reference # 247452 May 23: 06:00 132 µg/m <sup>3</sup> AE Reference # 247452 May 23: 07:00 108 µg/m <sup>3</sup> AE Reference # 247452 May 23: 08:00 84 µg/m <sup>3</sup> AE Reference # 247452 May 28: 06:00 127 µg/m <sup>3</sup> AE Reference # 247726 May 28: 07:00 185 µg/m <sup>3</sup> AE Reference # 247726 May 28: 08:00 231 µg/m <sup>3</sup> AE Reference # 247726 May 28: 09:00 247 µg/m <sup>3</sup> AE Reference # 247726 May 28: 10:00 235 µg/m <sup>3</sup> AE Reference # 247726 May 28: 11:00 197 µg/m <sup>3</sup> AE Reference # 247726 May 28: 14:00 110 µg/m <sup>3</sup> AE Reference # 247726 May 28: 15:00 82 µg/m <sup>3</sup> AE Reference # 247726 May 23: 24-hour 37.3 µg/m <sup>3</sup> AE Reference # 247452 May 28: 24-hour 90.6 µg/m <sup>3</sup> AE Reference # 247726
RH	Met One	083D	No operational issues observed.
ET	Met One	083D	No operational issues observed.
SR	Met One	096-1	No operational issues observed.
WS / WD	Met One	010C/020C	Forty (40) hours were flagged invalid due to flatlining - bearings were replaced June 2 <sup>nd</sup> .

**PAZA – Evergreen Park Station**

**General Station Issues**

Routine monthly calibrations were performed on May 24<sup>th</sup> (SO<sub>2</sub> & TRS).

Parameter	Make	Model	Notes
SO <sub>2</sub>	TEI	43i	No operational issues observed.
TRS	TEI	43C	No operational issues observed.
PM <sub>2.5</sub>	R&P	1400AB	<p>On May 6<sup>th</sup> three hours were flagged invalid due to flow issue- followed by two hours of maintenance (unit was replaced). Five (5) additional hours were flagged maintenance to replace parts in sensor during the month of May.</p> <p>There were sixteen 1-hour exceedences of the AAAQG and two 24-hour exceedences of the AAAQO:</p> <p>May 3: 09:00 141 µg/m<sup>3</sup> AE Reference # 246796            May 3: 10:00 296 µg/m<sup>3</sup> AE Reference # 246796            May 3: 11:00 337 µg/m<sup>3</sup> AE Reference # 246796            May 3: 12:00 130 µg/m<sup>3</sup> AE Reference # 246796            May 3: 14:00 89 µg/m<sup>3</sup> AE Reference # 246796            May 23: 05:00 84 µg/m<sup>3</sup> AE Reference # 247453            May 23: 06:00 111 µg/m<sup>3</sup> AE Reference # 247453            May 23: 07:00 88 µg/m<sup>3</sup> AE Reference # 247453            May 28: 06:00 86 µg/m<sup>3</sup> AE Reference # 247727            May 28: 07:00 141 µg/m<sup>3</sup> AE Reference # 247727            May 28: 08:00 166 µg/m<sup>3</sup> AE Reference # 247727            May 28: 09:00 146 µg/m<sup>3</sup> AE Reference # 247727            May 28: 10:00 159 µg/m<sup>3</sup> AE Reference # 247727            May 28: 11:00 116 µg/m<sup>3</sup> AE Reference # 247727            May 28: 13:00 83 µg/m<sup>3</sup> AE Reference # 247727            May 28: 24:00 113 µg/m<sup>3</sup> AE Reference # 247727            May 3: 24-hour 61.1 µg/m<sup>3</sup> AE Reference # 246796            May 28: 24-hour 67.6 µg/m<sup>3</sup> AE Reference # 247727</p>
ET	Met One/Gill	083D	No operational issues observed.
RH	Met One/Gill		No operational issues observed.
WS / WD	Met One/ Gill		No operational issues observed.

**PAZA – Smoky Heights Station**

**General Station Issues**

Routine monthly calibrations were performed on May 9<sup>th</sup> (SO<sub>2</sub>, TRS & PM<sub>2.5</sub>).

Parameter	Make	Model	Notes
SO <sub>2</sub>	TEI	43C	No operational issues observed.
TRS	TEI	43C	Span on May 31 <sup>st</sup> outside target range – reason unknown. No other operational issues observed.
PM <sub>2.5</sub>	R&P	1400AB	No operational issues observed. There were ten 1-hour exceedences of the AAAQG and one 24-hour exceedence of the AAAQO: May 23: 04:00 124 µg/m <sup>3</sup> AE Reference # 247448 May 23: 05:00 96 µg/m <sup>3</sup> AE Reference # 247448 May 28: 05:00 140 µg/m <sup>3</sup> AE Reference # 247729 May 28: 06:00 117 µg/m <sup>3</sup> AE Reference # 247729 May 28: 07:00 116 µg/m <sup>3</sup> AE Reference # 247729 May 28: 08:00 114 µg/m <sup>3</sup> AE Reference # 247729 May 28: 09:00 138 µg/m <sup>3</sup> AE Reference # 247729 May 28: 10:00 153 µg/m <sup>3</sup> AE Reference # 247729 May 28: 11:00 115 µg/m <sup>3</sup> AE Reference # 247729 May 28: 12:00 84 µg/m <sup>3</sup> AE Reference # 247729 May 28: 24-hour 58.3 µg/m <sup>3</sup> AE Reference # 247729
ET	Met One	083D	No operational issues observed.
WS / WD	Met One	010C/020C	No operational issues observed.

**PAZA – Beaverlodge Station**

**General Station Issues**

Routine monthly calibrations were performed on May 3<sup>rd</sup> (SO<sub>2</sub>, NO<sub>x</sub> & O<sub>3</sub>).

Parameter	Make	Model	Notes
SO <sub>2</sub>	TEI	43CTL	Spans just outside the target range on May 1 <sup>st</sup> – reason unknown.
NO <sub>x</sub> /NO/NO <sub>2</sub>	TEI	42C	No operational issues observed.
O <sub>3</sub>	TEI	49C	One (1) hour was flagged for a power bump on May 8 <sup>th</sup> .
PM <sub>2.5</sub>	R&P	1400AB	<p>One (1) hour was flagged for a power bump on May 8<sup>th</sup>.            There were thirteen 1-hour exceedences of the AAAQG and two 24-hour exceedences of the AAAQG:</p> <p>May 23: 05:00 119 µg/m<sup>3</sup> AE Reference # 247449            May 23: 06:00 149 µg/m<sup>3</sup> AE Reference # 247449            May 23: 07:00 134 µg/m<sup>3</sup> AE Reference # 247449            May 23: 08:00 114 µg/m<sup>3</sup> AE Reference # 247449            May 23: 09:00 92 µg/m<sup>3</sup> AE Reference # 247449            May 23: 10:00 83 µg/m<sup>3</sup> AE Reference # 247449            May 28: 07:00 119 µg/m<sup>3</sup> AE Reference # 247729            May 28: 08:00 162 µg/m<sup>3</sup> AE Reference # 247729            May 28: 09:00 179 µg/m<sup>3</sup> AE Reference # 247729            May 28: 10:00 181 µg/m<sup>3</sup> AE Reference # 247729            May 28: 11:00 163 µg/m<sup>3</sup> AE Reference # 247729            May 28: 12:00 132 µg/m<sup>3</sup> AE Reference # 247729            May 28: 14:00 87 µg/m<sup>3</sup> AE Reference # 247729            May 23: 24-hour 50.7 µg/m<sup>3</sup> AE Reference # 247449            May 28: 24-hour 84.8 µg/m<sup>3</sup> AE Reference # 247729</p>
ET	n/a	n/a	Nine (9) hours were flagged invalid due to power / signal interference.
RH	n/a	n/a	Eleven (11) hours were flagged invalid due to signal interference.
WS / WD	Blue Sky	857	No operational issues observed.

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**PAZA – Bonanza (Portable) Station**

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**General Station Issues**

Routine monthly calibrations were performed on May 29<sup>th</sup> (SO<sub>2</sub>, TRS, NO<sub>x</sub> & O<sub>3</sub>).

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<b>Parameter</b>	<b>Make</b>	<b>Model</b>	<b>Notes</b>
SO <sub>2</sub>	TEI	43C	No operational issues observed.
TRS	TEI	43C	Spans were outside the target zone May 19 <sup>th</sup> – 21 <sup>st</sup> , 23 <sup>rd</sup> & 28 <sup>th</sup> – due to oxidizer temperature failing – oxidizer rebuilt May 29 <sup>th</sup> .
NO <sub>x</sub> /NO/NO <sub>2</sub>	TEI	42I	No operational issues observed.
O <sub>3</sub>	TEI	49C	No operational issues observed.
ET	Met One		No operational issues observed.
WS / WD	Met One	010C/020C	No operational issues observed.

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**PAZA – Valleyview Station**

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**General Station Issues**

Routine monthly calibrations were performed on May 6<sup>th</sup> (SO<sub>2</sub> & H<sub>2</sub>S).

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<b>Parameter</b>	<b>Make</b>	<b>Model</b>	<b>Notes</b>
SO <sub>2</sub>	TEI	43i	No operational issues observed.
H <sub>2</sub> S	TEI	43A	No operational issues observed.
ET	Gill	Met Pak 3	No operational issues observed.
RH	Gill	Met Pak 3	No operational issues observed.
WS / WD	Gill	Met Pak 3	No operational issues observed.

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PAZA

Henry Pirker Station

Monthly Summary Tables, Graphs and  
Roses



## Hourly Averages

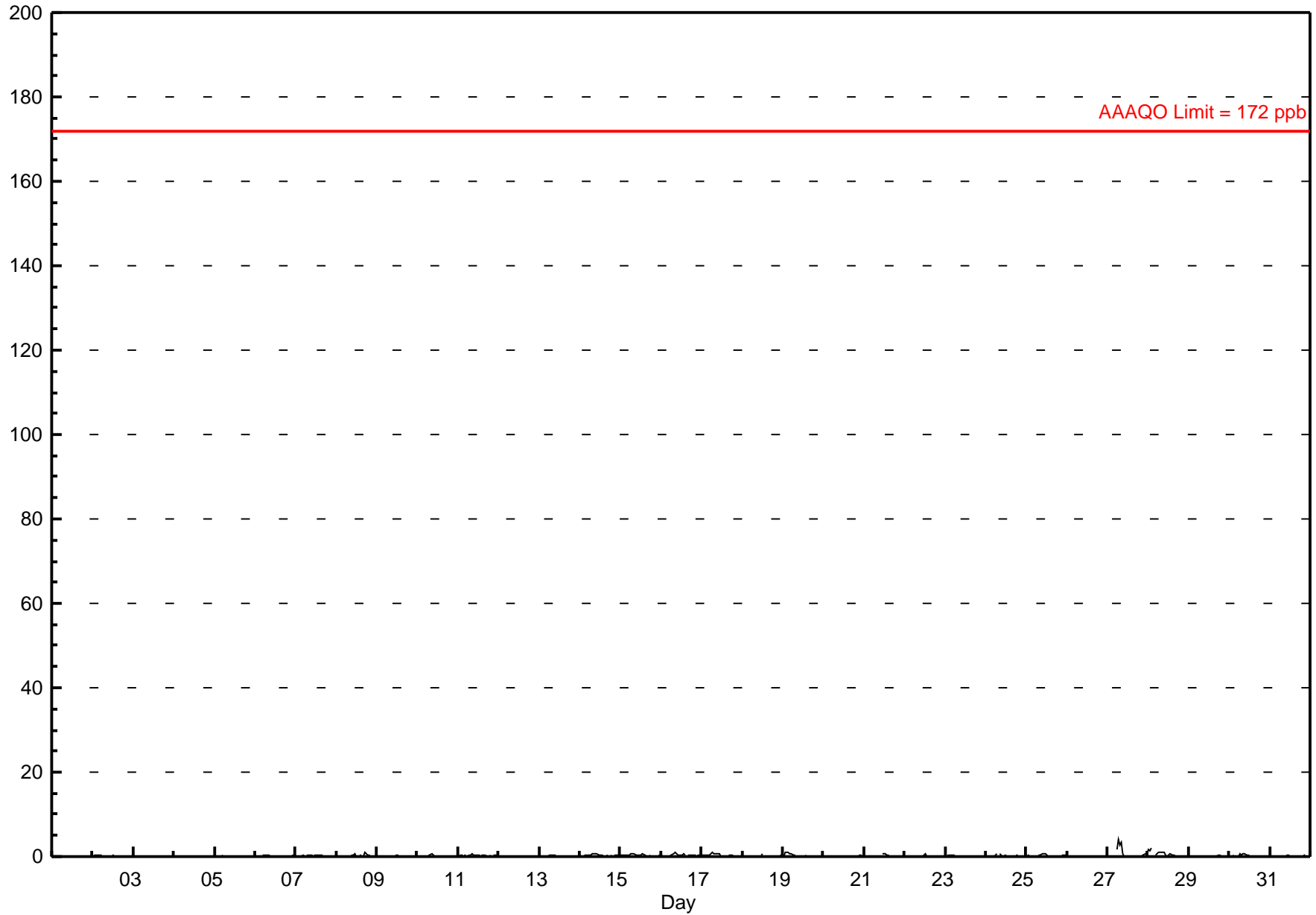
Sulphur Dioxide (SO<sub>2</sub>) - ppb

Henry Pirker - May 2011

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 4.0 ppb on May 27 07:00	Maximum Daily Average: 0.6 ppb on May 27		Hours of Data:	708
Minimum Value: 0 ppb on May 1 02:00	Minimum Daily Average: 0.0 ppb on May 4		Hours of Missing Data:	36
Maximum Diurnal Average: 0.4 ppb at hour 9	Minimum Diurnal Average: 0.1 ppb at hour 16		Hours of Calibration:	36
Monthly Average: 0.16 ppb	Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.1 Q <sub>3</sub> = 0.2 P <sub>90</sub> = 0.4 P <sub>99</sub> = 1.1		Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
2-May	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
3-May	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.2
4-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
5-May	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.3
6-May	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
7-May	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
8-May	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	A	0.2	0.9
9-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.2
10-May	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.1	0.5
11-May	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.3	0.7
12-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.1	0.2
13-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.1	0.4
14-May	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	A	0	0	0	0	0	0	0.3	0.7
15-May	0	0	0	0	0	0	1	1	1	0	0	0	0	1	0	0	A	0	0	0	0	0	0	0	0.3	0.7
16-May	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	A	0	0	0	0	0	0	0	0	0.4	1.1
17-May	0	0	0	0	0	1	1	1	1	1	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.3	1.1
18-May	0	0	0	0	0	0	0	0	0	0	0	0	1	A	0	0	0	0	0	0	0	0	0	0	0.1	0.6
19-May	0	1	1	1	1	1	0	0	C	C	C	1	A	0	0	0	0	0	0	0	0	0	0	0	0.3	1.1
20-May	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.4
21-May	0	0	0	0	0	0	0	0	0	0	A	1	1	0	0	0	0	0	0	0	0	0	0	0	0.1	0.8
22-May	0	0	0	0	0	0	0	0	0	A	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0.0	0.5
23-May	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
24-May	0	0	0	0	0	0	1	A	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.7
25-May	0	0	0	0	0	0	A	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.8
26-May	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
27-May	0	0	0	0	A	2	4	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.6	4.0
28-May	2	1	2	A	0	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0.6	1.9
29-May	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
30-May	0	A	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.8
31-May	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.1	0.3

C - Calibration      A - Automated Daily Zero Span  
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb    24-hr 48 ppb    30-day 11 ppb



## Hourly Maximums

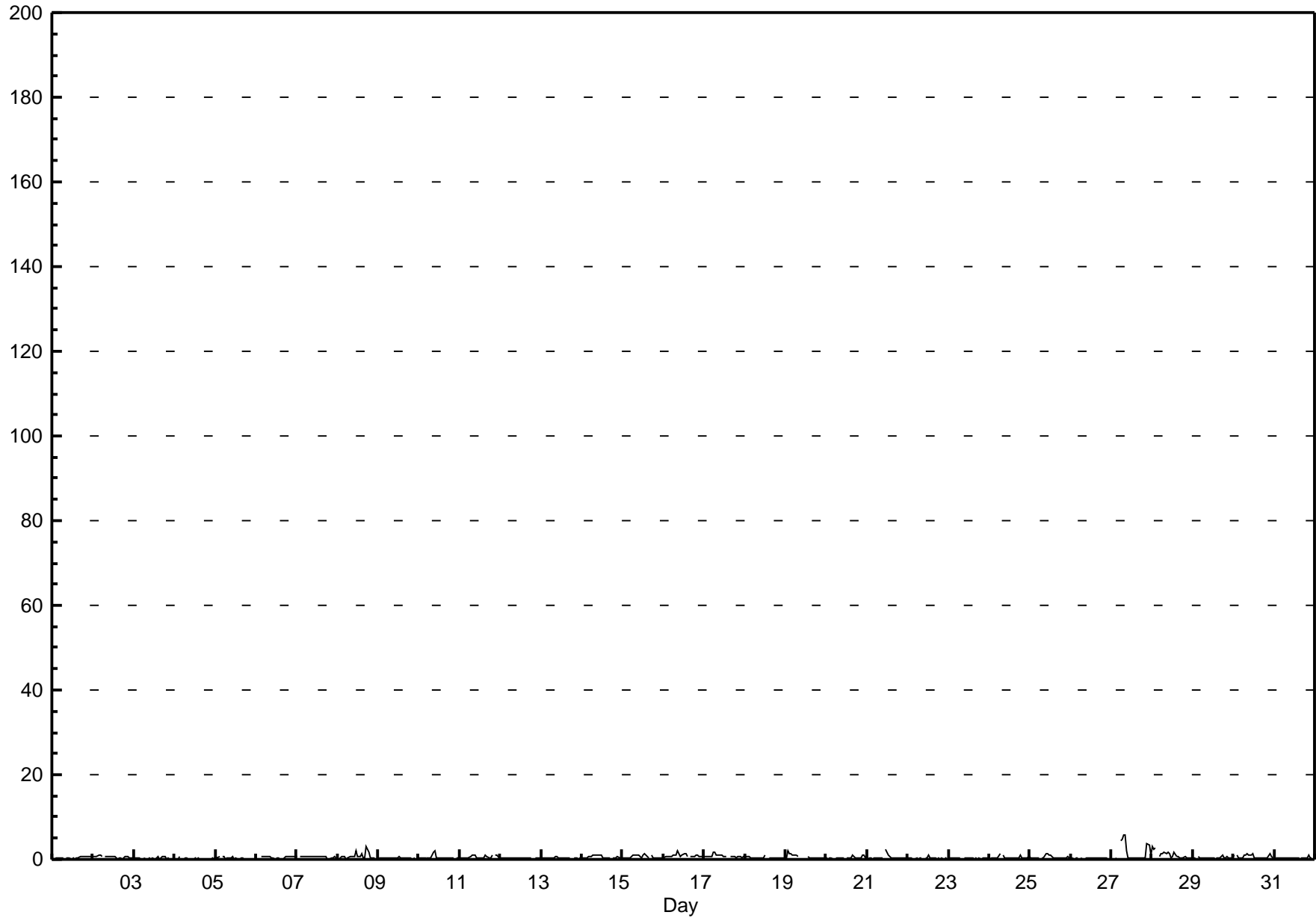
Sulphur Dioxide (SO<sub>2</sub>) - ppb

Henry Pirker - May 2011

Maximum Value: 5.9 ppb on May 27 08:00		Maximum Daily Average: 1.5 ppb on May 27		Hours in Service: 744																							
Minimum Value: 0 ppb on May 20 02:00		Minimum Daily Average: 0.1 ppb on May 4		Hours of Data: 708																							
Maximum Diurnal Average: 0.8 ppb at hour 9		Minimum Diurnal Average: 0.4 ppb at hour 16		Hours of Missing Data: 36																							
Monthly Average: 0.54 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.1 Q <sub>1</sub> = 0.4 Median = 0.5 Q <sub>3</sub> = 0.5 P <sub>90</sub> = 1.0 P <sub>99</sub> = 3.2		Hours of Calibration: 36																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-May	0	0	1	1	0	0	0	A	0	0	0	0	1	0	0	1	1	1	1	1	1	1	1	1	0.4	0.5	
2-May	1	1	1	1	1	1	A	1	1	1	1	1	1	1	0	0	0	0	0	1	1	1	1	0	0.5	1.0	
3-May	0	0	0	0	0	A	0	0	0	1	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0.2	0.5	
4-May	0	0	0	1	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.5	
5-May	1	0	1	A	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.6	
6-May	0	0	A	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0.4	0.7	
7-May	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	1	0	0.5	0.6	
8-May	A	0	1	1	1	0	0	1	1	1	1	2	1	1	2	1	0	3	2	0	0	0	0	A	0.8	3.0	
9-May	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	A	0	0.4	0.6	
10-May	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.6	2.0	
11-May	0	0	0	0	0	0	1	1	1	1	0	0	0	0	1	1	0	0	1	A	1	1	0	0.6	1.1		
12-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0.4	0.4	
13-May	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.4	0.5	
14-May	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	A	0	0	0	1	0	0	0.6	0.9	
15-May	0	0	0	0	0	1	1	1	1	1	1	0	1	1	1	0	A	1	0	0	1	1	1	1	0.7	1.5	
16-May	1	1	1	1	1	1	1	1	2	2	1	1	2	1	1	A	1	1	1	1	1	1	1	1	0.8	2.0	
17-May	1	1	1	1	1	2	2	1	1	1	1	1	1	1	A	1	1	1	1	0	1	1	0	1	0.7	1.5	
18-May	0	1	1	1	1	0	0	0	0	0	0	0	1	A	0	0	0	0	0	0	0	0	0	0	0.5	1.0	
19-May	0	2	1	1	1	1	1	1	C	C	C	1	A	1	0	0	0	0	0	0	0	0	0	0	0.7	2.0	
20-May	0	0	0	0	0	0	0	0	0	0	A	0	0	0	1	1	0	0	0	0	0	1	1	0	0.4	0.9	
21-May	0	0	0	0	0	0	0	0	0	0	A	2	1	1	0	0	0	0	0	0	0	0	0	0	0.5	2.4	
22-May	0	0	0	0	0	0	0	0	0	A	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0.3	0.9	
23-May	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.5	
24-May	0	0	0	0	0	0	1	A	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0.5	1.5	
25-May	0	0	0	0	0	0	A	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0.6	1.5	
26-May	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.4	
27-May	0	0	0	0	A	4	5	6	6	2	0	0	0	0	0	0	0	0	0	0	0	4	3	1	1.5	5.9	
28-May	3	2	3	A	1	1	1	2	1	2	1	0	1	2	1	1	0	0	1	0	0	0	0	0	1.1	3.2	
29-May	0	0	A	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0.4	0.9	
30-May	1	A	1	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	1	0	0.7	1.4	
31-May	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	A	0.4	0.9	
		0.5	0.5	0.5	0.5	0.5	0.6	0.7	0.8	0.8	0.7	0.5	0.6	0.6	0.5	0.4	0.4	0.4	0.5	0.5	0.4	0.4	0.6	0.5	0.4	Diurnal Average	
		3.2	2.3	2.8	1.5	1.0	4.4	4.9	5.9	5.9	2.0	1.5	2.4	1.5	1.8	1.5	0.9	0.6	3.0	1.8	1.1	1.0	3.7	3.2	1.0	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									

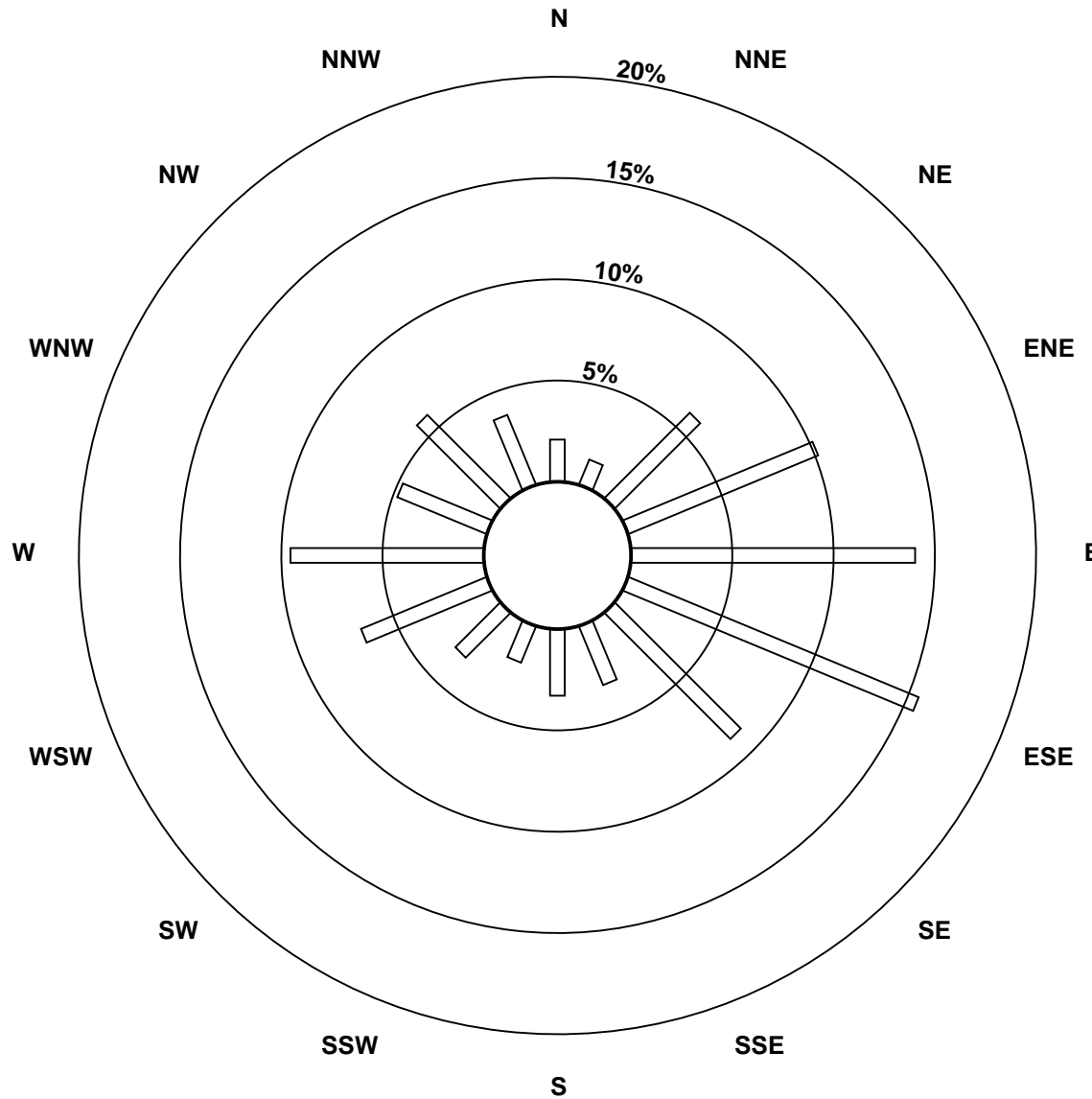
**Hourly Maximums**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Henry Pirker - May 2011**

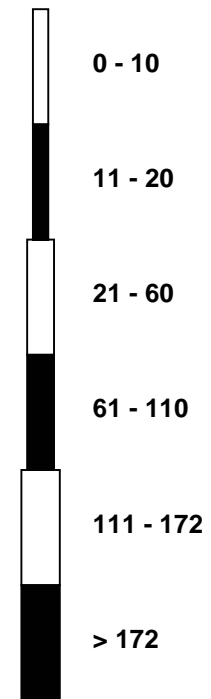


**Pollutant Rose**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Henry Pirker - May 2011**

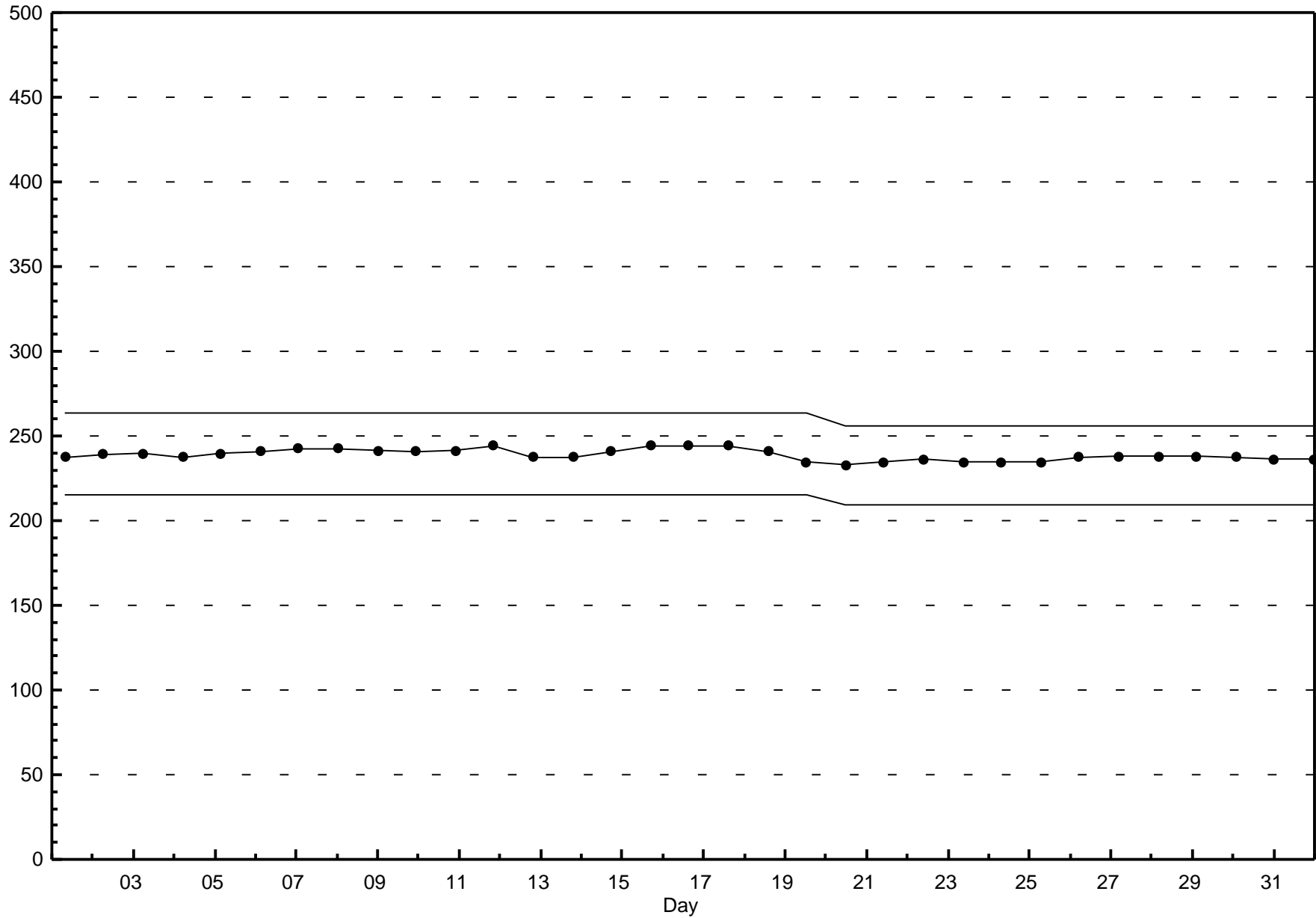


**Pollutant Classes (ppb)**



### Span Responses

Sulphur Dioxide (SO<sub>2</sub>)  
Henry Pirker - May 2011



## Hourly Averages

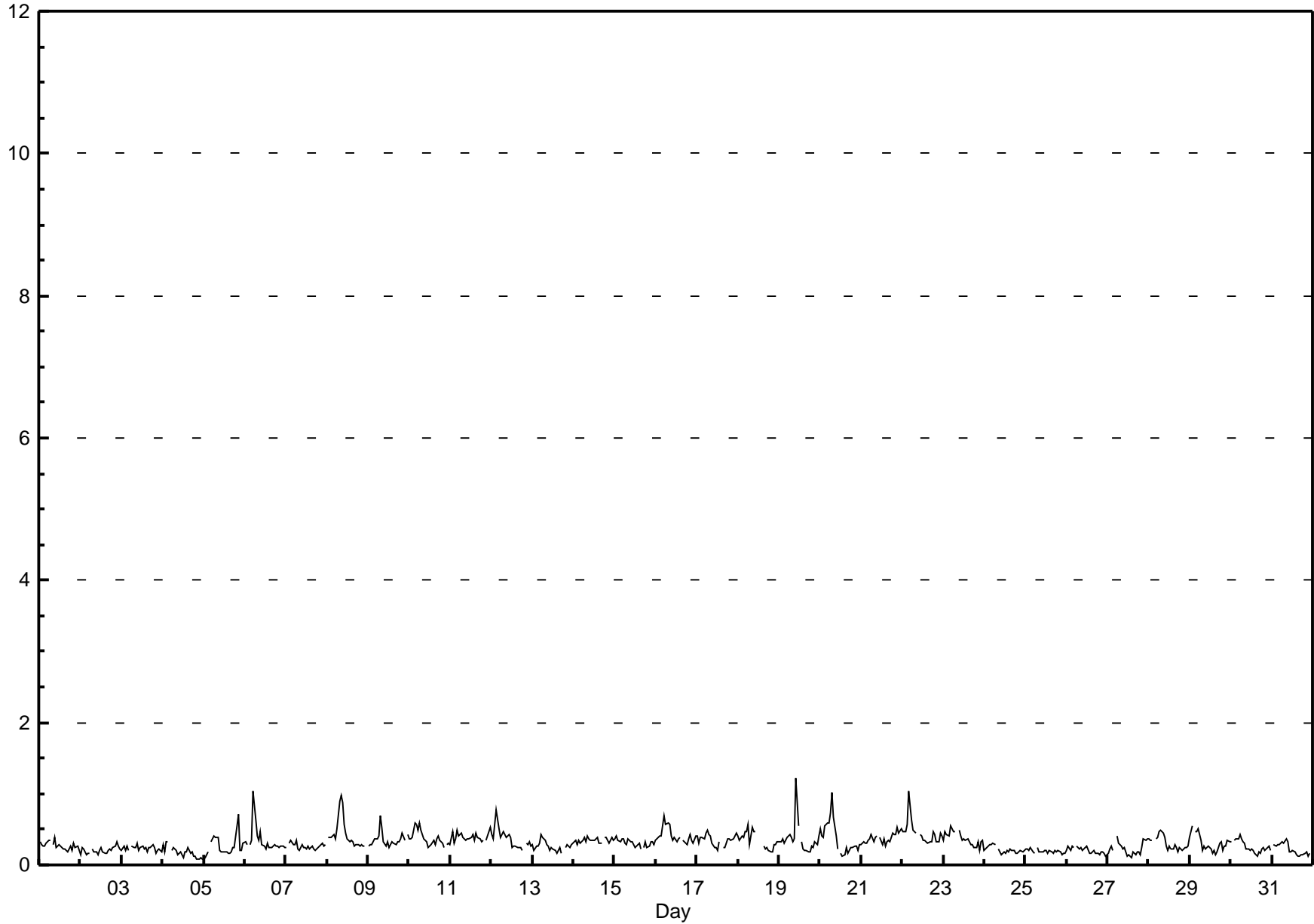
Total Reduced Sulphur (TRS) - ppb

Henry Pirker - May 2011

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 1.2 ppb on May 19 11:00	Maximum Daily Average: 0.4 ppb on May 22		Hours of Data:	708
Minimum Value: 0 ppb on May 4 21:00	Minimum Daily Average: 0.2 ppb on May 4		Hours of Missing Data:	36
Maximum Diurnal Average: 0.4 ppb at hour 7	Minimum Diurnal Average: 0.2 ppb at hour 17		Hours of Calibration:	36
Monthly Average: 0.31 ppb	Percentiles: P <sub>1</sub> = 0.1 P <sub>10</sub> = 0.2 Q <sub>1</sub> = 0.2 Median = 0.3 Q <sub>3</sub> = 0.4 P <sub>90</sub> = 0.4 P <sub>99</sub> = 0.9		Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.4
2-May	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
3-May	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
4-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
5-May	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0.3	0.7
6-May	0	0	A	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	1.0
7-May	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.3
8-May	A	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	A	0.4	1.0
9-May	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.4	0.7
10-May	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.4	0.6
11-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	1	0.4	0.5
12-May	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0.4	0.8
13-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.3	0.4
14-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.3	0.4
15-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.3	0.4
16-May	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.4	0.7
17-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.3	0.5
18-May	0	0	0	0	0	0	1	0	1	0	0	C	C	C	C	0	0	0	0	0	0	0	0	0	0.4	0.6
19-May	0	0	0	0	0	0	0	0	0	0	1	C	A	0	0	0	0	0	0	0	0	0	0	0	0.4	1.2
20-May	1	0	0	1	1	1	1	1	1	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.4	1.0
21-May	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	1	0	0.4	0.5
22-May	0	0	0	1	1	1	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	1.0
23-May	0	0	0	0	1	1	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.5
24-May	0	0	0	0	0	0	0	A	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
25-May	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.2
26-May	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
27-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
28-May	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5
29-May	0	1	A	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5
30-May	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.4
31-May	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.2	0.4

C - Calibration      A - Automated Daily Zero Span  
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb    24-hr 3 ppb



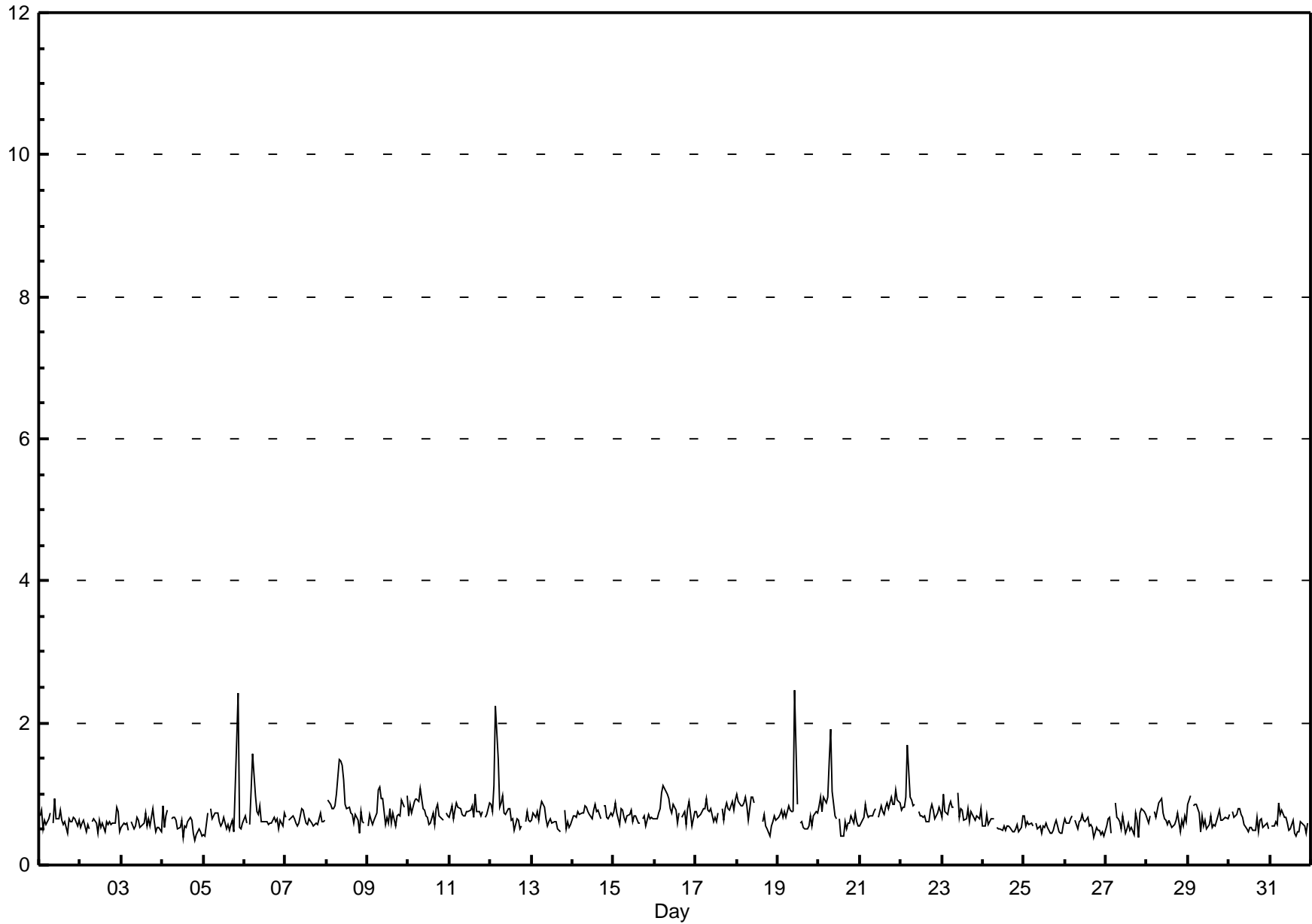


## Hourly Maximums

Total Reduced Sulphur (TRS) - ppb

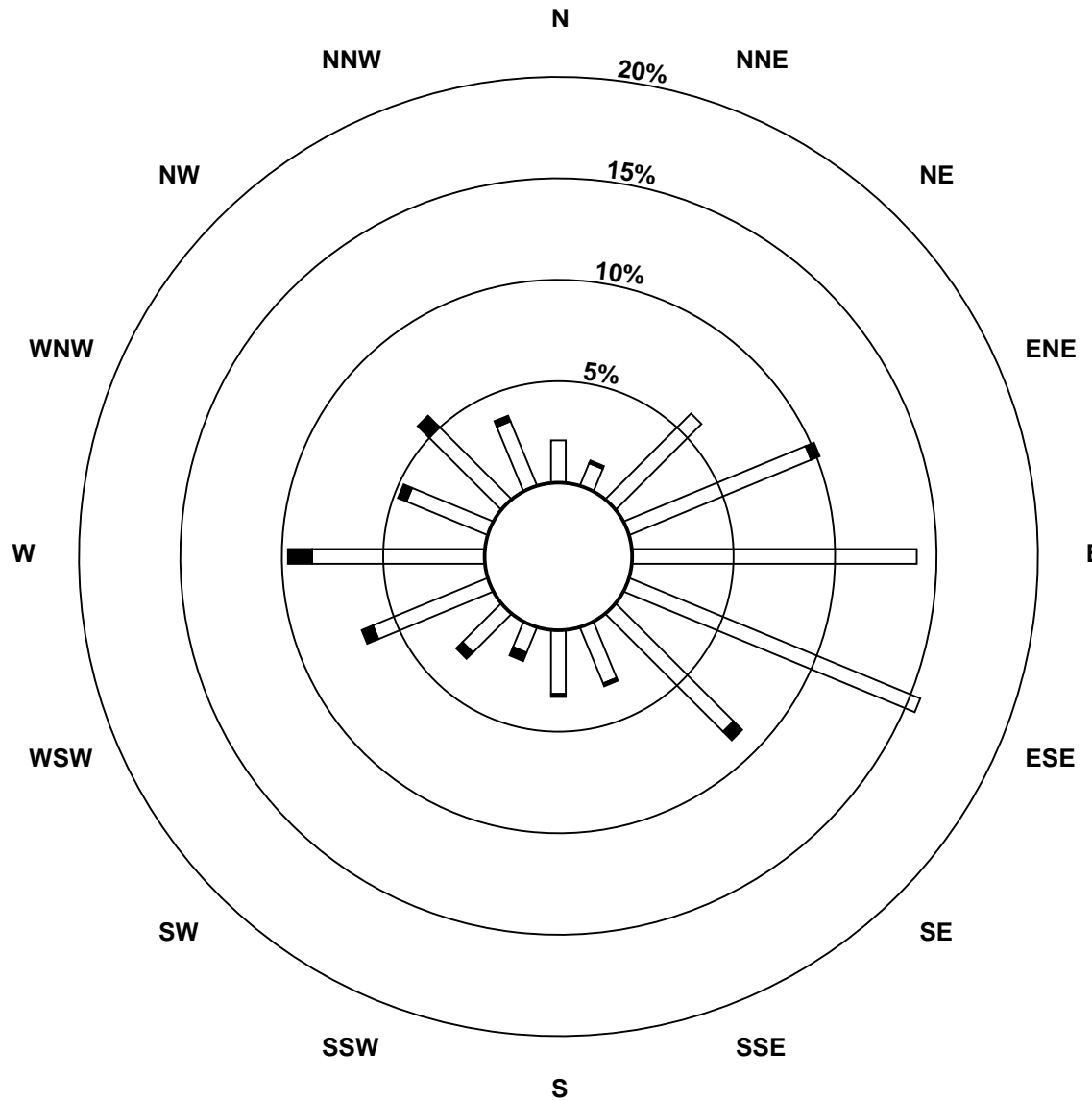
Henry Pirker - May 2011

Maximum Value: 2.5 ppb on May 19 11:00		Maximum Daily Average: 0.9 ppb on May 8		Hours in Service: 744																							
Minimum Value: 0 ppb on May 4 20:00		Minimum Daily Average: 0.5 ppb on May 25		Hours of Data: 708																							
Maximum Diurnal Average: 0.8 ppb at hour 7		Minimum Diurnal Average: 0.6 ppb at hour 15		Hours of Missing Data: 36																							
Monthly Average: 0.69 ppb		Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 0.5 Q <sub>1</sub> = 0.6 Median = 0.7 Q <sub>3</sub> = 0.8 P <sub>90</sub> = 0.9 P <sub>99</sub> = 1.5		Hours of Calibration: 36																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-May	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0.6	0.9	
2-May	1	1	1	0	1	1	A	1	1	1	0	1	1	1	0	1	1	1	1	1	1	1	1	0	0.6	0.8	
3-May	1	1	1	1	0	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0.6	0.8	
4-May	1	1	1	1	A	1	1	1	1	1	1	1	0	1	1	1	1	1	0	0	0	1	0	0	0.6	0.8	
5-May	0	0	1	A	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	2	2	1	1	1	0.7	2.4	
6-May	1	1	A	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.6	
7-May	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	0.8	
8-May	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	A	0.9	1.5	
9-May	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.1	
10-May	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	0.8	1.1	
11-May	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	0.8	1.0	
12-May	1	1	1	2	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	A	1	1	1	1	0.8	2.2	
13-May	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	A	1	1	1	1	1	1	0.6	0.9	
14-May	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	0.7	0.8	
15-May	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	0.7	0.9	
16-May	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	0.8	1.1	
17-May	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	0.8	0.9	
18-May	1	1	1	1	1	1	1	1	1	1	1	C	C	C	C	1	1	1	1	0	1	1	1	1	0.7	1.0	
19-May	1	1	1	1	1	1	1	1	1	2	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0.8	2.5	
20-May	1	1	1	1	1	1	1	2	1	1	1	A	1	0	0	1	1	1	1	1	1	1	1	1	0.8	1.9	
21-May	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.1	
22-May	1	1	1	1	2	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.7	
23-May	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.0	
24-May	1	1	1	1	1	1	1	A	1	1	1	0	1	0	1	1	1	0	0	0	1	0	1	1	0.5	0.7	
25-May	1	1	1	1	1	1	A	1	1	1	0	1	1	1	1	0	0	0	1	1	0	0	0	1	0.5	0.7	
26-May	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0.6	0.7	
27-May	1	1	1	0	A	1	1	1	1	0	1	0	1	0	1	0	1	1	0	1	1	1	1	1	0.6	0.9	
28-May	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	0.7	0.9	
29-May	1	1	A	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.0	
30-May	1	A	1	1	1	1	1	1	1	1	0	1	1	0	0	1	0	1	1	1	1	1	1	1	0.6	0.8	
31-May	A	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	1	1	1	0	1	A	0.6	0.9	
		0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.6	0.6	0.7	Diurnal Average	
		1.0	1.0	1.1	2.2	1.7	1.6	1.5	1.9	1.5	1.4	2.5	0.9	0.8	0.8	0.7	1.0	0.9	0.8	1.0	1.8	2.4	1.1	0.9	1.0	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									

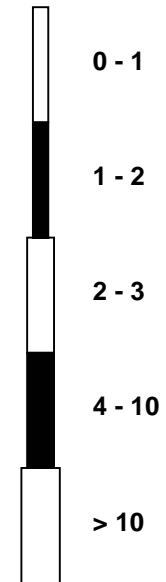


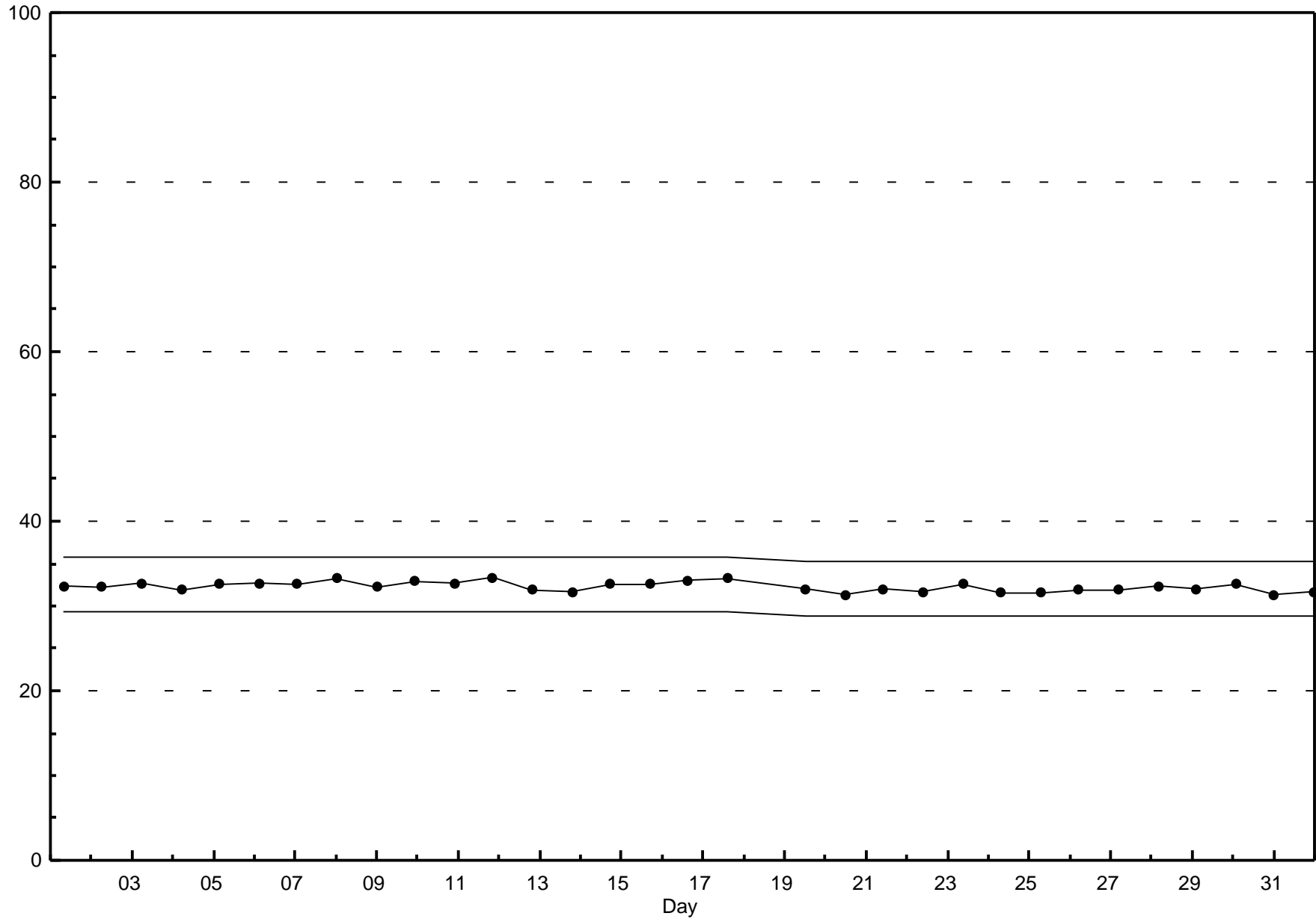
**Pollutant Rose**

**Total Reduced Sulphur (TRS) - ppb**  
**Henry Pirker - May 2011**



**Pollutant Classes (ppb)**





## Hourly Averages

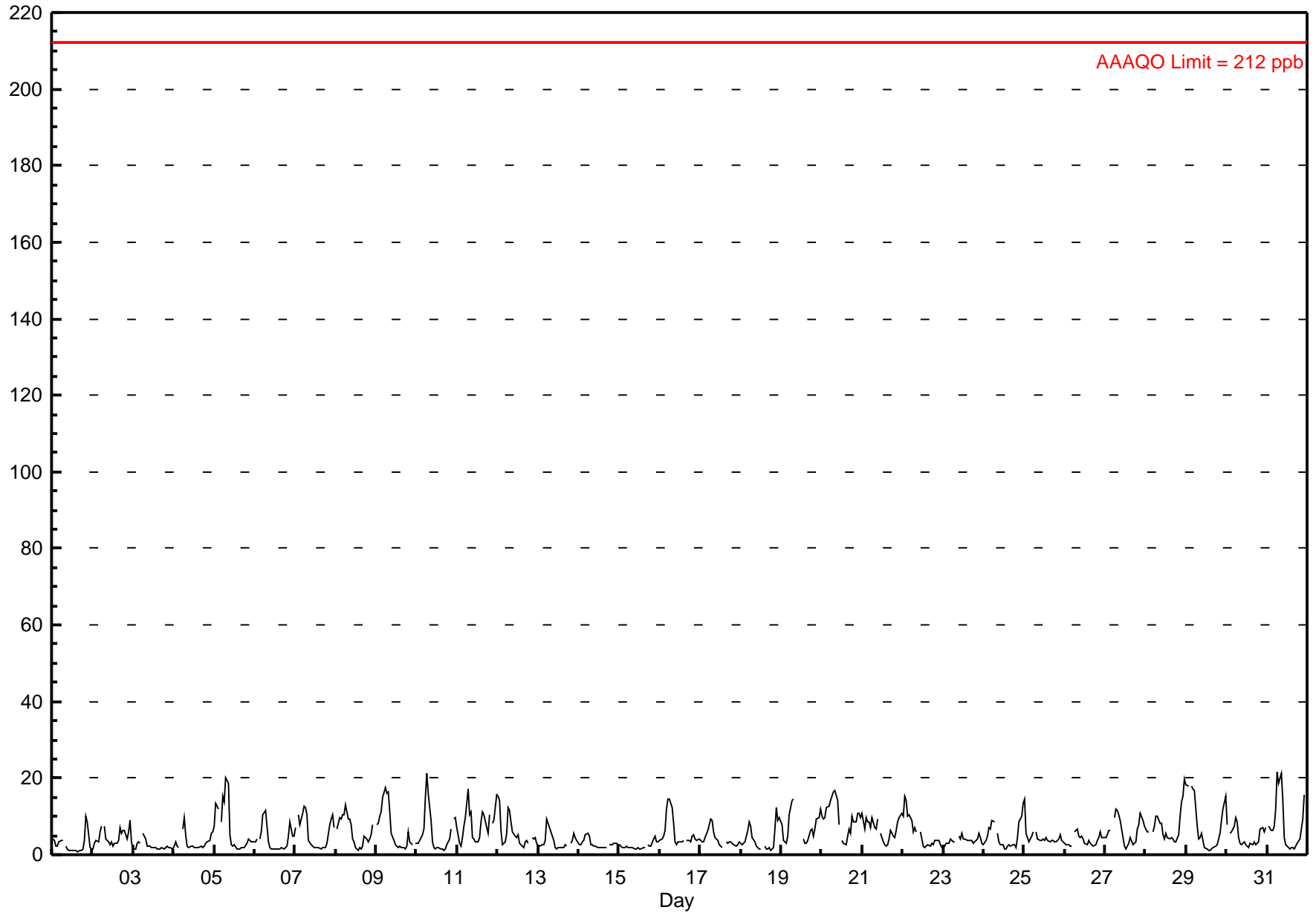
## Nitrogen Dioxide (NO<sub>2</sub>) - ppb

### Henry Pirker - May 2011

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 21.6 ppb on May 31 07:00	Maximum Daily Average: 9.7 ppb on May 20		Hours of Data:	707
Minimum Value: 1 ppb on May 1 16:00	Minimum Daily Average: 2.2 ppb on May 3		Hours of Missing Data:	37
Maximum Diurnal Average: 10.5 ppb at hour 7	Minimum Diurnal Average: 2.4 ppb at hour 14		Hours of Calibration:	37
Monthly Average: 5.27 ppb	Percentiles: P <sub>1</sub> = 1.1 P <sub>10</sub> = 1.8 Q <sub>1</sub> = 2.4 Median = 3.8 Q <sub>3</sub> = 7.0 P <sub>90</sub> = 10.5 P <sub>99</sub> = 18.6		Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-May	4	4	2	2	3	4	4	A	2	2	1	1	1	1	1	1	1	1	1	4	10	9	2	1	2.7	10.2	
2-May	1	3	4	3	6	7	A	7	4	3	3	3	2	3	3	4	7	6	6	6	4	6	9	4	4.6	9.1	
3-May	2	2	3	3	3	A	6	4	2	2	2	2	2	2	1	1	2	1	2	2	2	2	2	2	2.2	5.6	
4-May	2	3	2	2	A	7	10	5	2	2	2	2	2	2	2	2	2	2	2	3	3	4	6	6	3.2	9.5	
5-May	7	13	12	A	9	15	14	20	19	5	3	2	2	2	2	2	2	2	2	3	4	4	3	3	6.5	20.2	
6-May	3	4	A	4	6	10	12	7	3	2	1	2	1	1	2	1	2	2	2	2	5	8	5	5	3.9	11.7	
7-May	7	A	10	8	11	13	12	11	4	2	2	2	2	2	2	2	2	2	2	3	8	9	10	7	5.8	12.8	
8-May	A	7	10	9	10	11	13	9	8	4	3	2	1	2	2	2	5	4	3	4	5	8	A	A	6.0	13.1	
9-May	8	8	10	11	15	18	16	16	12	6	4	3	2	2	2	2	2	2	2	6	3	3	A	A	6.7	17.6	
10-May	3	3	4	5	7	15	21	16	9	3	2	1	2	2	2	2	1	1	3	4	7	A	A	9	5.7	21.3	
11-May	7	3	2	5	7	10	17	10	11	4	4	3	3	5	9	11	10	7	6	10	A	8	9	16	7.8	17.0	
12-May	15	14	6	2	3	6	12	12	8	6	5	4	5	3	3	2	3	4	3	A	5	4	4	3	5.8	15.2	
13-May	2	2	3	3	4	9	8	6	5	4	2	1	2	2	2	2	2	2	A	3	4	5	5	4	3.6	9.5	
14-May	3	3	3	4	5	6	5	3	3	2	2	2	2	2	2	2	2	A	3	3	2	3	3	3	2.9	5.6	
15-May	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	A	2	2	2	4	5	3	3	2.3	4.7	
16-May	4	4	5	6	12	14	14	12	8	3	3	3	3	3	4	A	4	4	3	5	5	4	4	4	5.8	14.5	
17-May	4	3	3	5	6	8	9	9	6	4	4	3	2	2	A	3	3	3	4	3	3	2	3	4	4.2	9.4	
18-May	3	3	3	5	6	8	8	5	3	2	2	2	2	A	2	2	1	2	1	2	7	12	9	10	4.3	12.3	
19-May	8	4	3	3	5	10	14	14	C	C	C	C	C	C	A	4	3	3	4	6	7	5	7	9	10	6.9	14.4
20-May	10	9	10	12	13	14	15	16	17	14	8	A	4	3	3	5	7	6	10	9	8	11	11	10	9.7	16.7	
21-May	11	7	10	8	9	7	10	7	7	9	A	6	3	3	2	3	4	6	5	4	6	9	10	11	6.8	10.9	
22-May	10	15	14	10	11	9	6	7	6	A	6	4	2	2	2	3	2	3	2	4	4	4	2	2	5.7	15.3	
23-May	2	2	3	3	4	4	3	3	A	5	4	5	4	4	4	4	4	4	3	4	4	6	4	3	3.7	5.7	
24-May	3	4	5	7	7	9	9	A	6	3	3	2	1	2	2	3	2	3	3	2	4	8	10	13	4.8	13.3	
25-May	15	6	4	3	5	6	A	6	4	4	4	4	4	4	4	3	4	4	3	3	4	5	4	3	4.6	14.7	
26-May	3	3	3	2	2	A	6	7	5	4	5	4	3	3	4	3	3	2	3	4	4	6	4	4	3.8	6.7	
27-May	5	5	6	6	A	10	12	11	10	9	7	2	2	2	3	5	3	3	4	7	8	11	9	7	6.3	12.0	
28-May	7	6	6	A	6	8	10	10	8	8	5	4	6	5	4	4	4	3	3	5	10	14	15	20	7.5	19.9	
29-May	18	18	A	18	17	17	8	4	5	6	4	2	2	1	1	1	2	2	3	4	6	9	12	15	7.5	18.2	
30-May	8	A	6	6	8	10	9	5	3	3	3	3	2	2	3	3	3	3	3	3	7	7	6	7	4.8	9.8	
31-May	A	7	6	6	8	12	22	19	21	14	4	3	2	2	2	2	1	2	3	4	7	9	16	A	7.9	21.6	
	6.1	5.7	5.6	5.7	7.2	9.5	10.5	9.1	7.0	4.9	3.4	2.8	2.5	2.4	2.6	2.7	3.0	3.2	3.3	4.1	5.3	6.7	6.9	6.7	Diurnal Average		
	18.2	17.8	14.3	17.8	17.3	17.6	21.6	20.2	21.4	14.3	7.9	5.7	5.6	4.5	8.6	11.1	10.4	7.2	10.0	10.5	10.2	13.9	15.7	19.9	Diurnal Maximum		

C - Calibration      A - Automated Daily Zero Span  
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 212 ppb    24-hr 106 ppb



## Hourly Maximums

Nitrogen Dioxide (NO<sub>2</sub>) - ppb

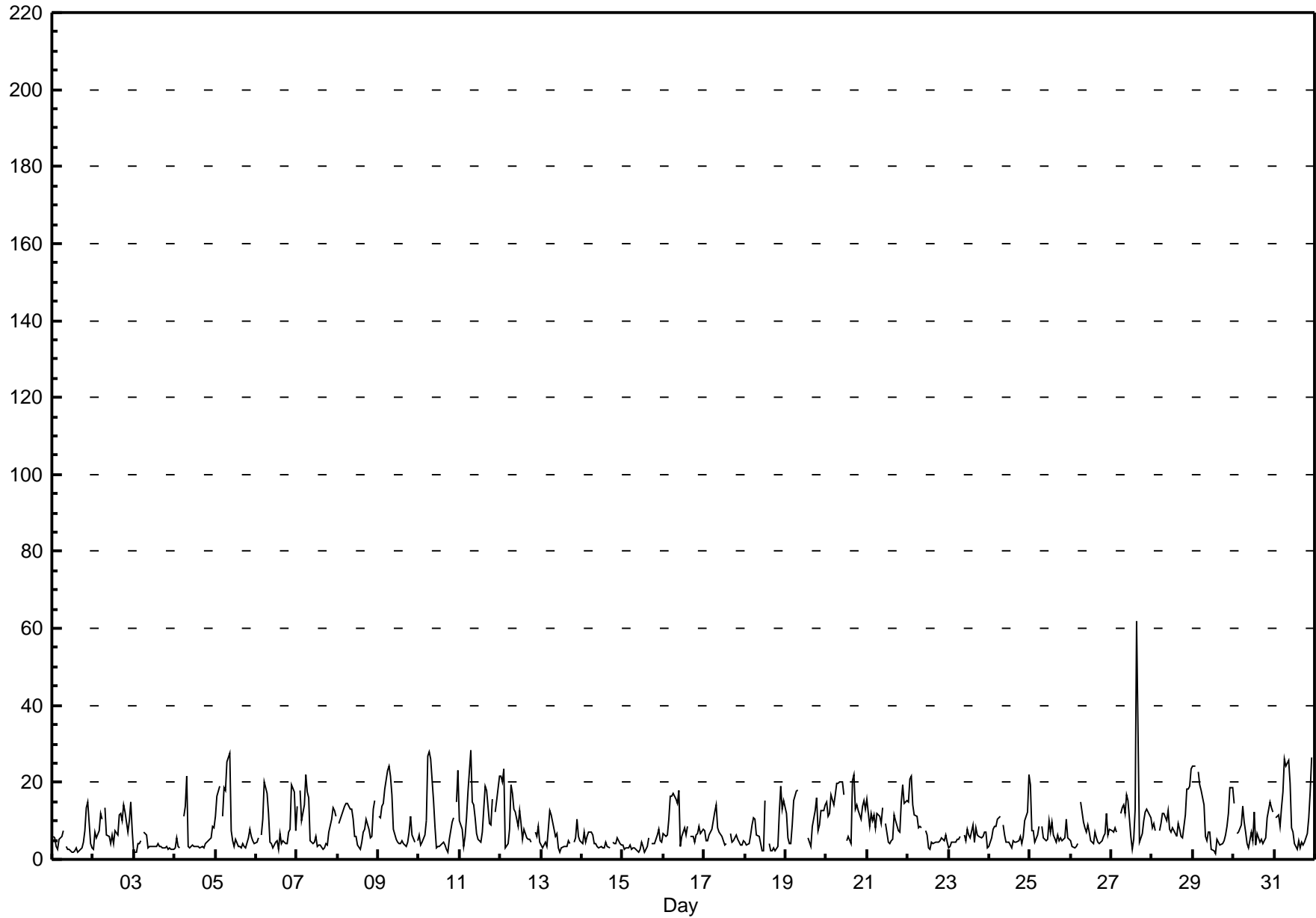
Henry Pirker - May 2011

Maximum Value: 61.7 ppb on May 27 16:00		Maximum Daily Average: 14.4 ppb on May 20		Hours in Service: 744																							
Minimum Value: 2 ppb on May 29 14:00		Minimum Daily Average: 3.5 ppb on May 3		Hours of Data: 707																							
Maximum Diurnal Average: 14.5 ppb at hour 7		Minimum Diurnal Average: 4.3 ppb at hour 14		Hours of Missing Data: 37																							
Monthly Average: 8.36 ppb		Percentiles: P <sub>1</sub> = 2.0 P <sub>10</sub> = 3.1 Q <sub>1</sub> = 4.2 Median = 6.4 Q <sub>3</sub> = 11.4 P <sub>90</sub> = 16.6 P <sub>99</sub> = 26.2		Hours of Calibration: 37																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-May	6	5	4	2	5	6	8	A	3	2	2	2	2	3	2	2	3	4	7	14	15	4	3	4.7	14.8		
2-May	2	7	5	8	12	10	A	14	6	6	4	6	4	7	6	12	12	10	14	12	7	10	15	7	8.6	14.9	
3-May	2	2	4	4	5	A	7	6	3	3	3	3	3	4	3	3	3	3	3	3	3	3	2	2	3.5	7.1	
4-May	3	5	3	3	A	11	14	21	3	3	4	3	3	3	3	3	3	4	4	5	5	8	8	5.7	21.5		
5-May	11	16	19	A	11	19	18	25	28	7	5	3	5	3	3	3	4	3	3	5	8	6	5	4	9.5	27.5	
6-May	4	5	A	6	10	20	17	12	4	4	3	4	5	2	7	4	5	4	4	7	8	20	17	8	7.9	20.2	
7-May	14	A	18	10	14	22	18	16	5	4	4	6	3	4	4	2	3	4	4	7	10	13	13	11	9.1	22.0	
8-May	A	9	12	12	14	14	14	13	13	10	6	6	4	2	4	7	8	10	8	6	6	13	15	A	9.5	15.4	
9-May	11	11	14	14	18	23	24	21	17	8	5	4	4	4	5	4	3	4	7	11	6	4	A	5	10.0	24.3	
10-May	6	4	4	6	10	27	28	26	15	8	3	3	4	4	4	4	2	2	5	10	11	A	15	23	9.8	27.9	
11-May	10	8	3	6	11	18	28	15	14	11	7	5	4	7	13	19	18	9	9	16	A	12	15	22	12.2	28.2	
12-May	22	20	23	3	4	8	20	17	13	12	8	13	10	5	8	6	5	5	4	A	7	6	8	4	10.1	23.4	
13-May	4	3	4	4	8	13	12	8	6	7	3	2	3	3	3	3	5	4	A	4	5	10	6	5	5.5	12.5	
14-May	4	7	4	6	7	7	6	4	4	3	3	3	3	4	3	3	A	4	4	4	4	5	4	4	4.5	7.0	
15-May	4	3	3	3	4	3	3	3	2	2	2	4	3	2	4	6	A	4	4	4	6	8	5	4	3.8	8.0	
16-May	7	6	6	10	17	17	17	16	14	18	3	6	8	6	8	A	6	6	4	6	7	8	7	8	9.2	17.8	
17-May	8	5	5	6	8	10	12	14	8	7	6	5	4	4	A	7	4	5	6	6	5	4	4	5	6.5	14.2	
18-May	4	4	4	6	9	11	10	6	4	2	2	15	A	4	2	2	3	2	3	12	19	13	15	7.1	18.9		
19-May	12	5	4	4	9	15	18	18	C	C	C	C	C	6	4	3	9	13	16	8	9	13	13	14	10.1	17.9	
20-May	15	11	12	17	14	17	20	20	20	20	17	A	5	6	4	20	22	13	14	13	10	14	15	13	14.4	22.0	
21-May	16	9	12	10	11	8	12	11	9	13	A	10	5	4	5	5	11	10	8	7	15	19	15	15	10.5	19.3	
22-May	15	21	22	14	12	11	8	9	8	A	8	7	3	2	5	4	5	4	4	5	5	5	6	4	8.1	21.6	
23-May	3	3	4	4	5	5	5	6	A	6	5	8	6	6	9	4	8	6	6	5	6	7	7	3	5.7	8.8	
24-May	3	5	8	9	9	11	11	A	9	6	5	5	4	3	5	5	5	5	6	4	6	10	12	22	7.2	22.0	
25-May	20	8	7	5	6	9	A	9	6	5	5	10	7	10	6	5	6	5	6	5	6	10	6	5	7.2	19.6	
26-May	5	4	3	3	4	A	15	10	8	7	9	7	5	4	7	6	4	4	5	6	7	12	6	8	6.4	15.0	
27-May	8	7	8	7	A	12	14	14	12	17	15	6	3	5	13	62	5	6	7	10	12	13	11	11	12.0	61.7	
28-May	8	9	7	A	7	9	12	12	10	13	8	7	8	7	6	9	8	6	5	11	18	18	19	24	10.6	23.6	
29-May	24	24	A	23	20	18	14	6	5	7	7	3	2	2	5	5	4	4	5	7	9	12	19	19	10.5	24.1	
30-May	15	A	7	7	9	14	10	7	4	3	7	5	12	4	7	5	5	4	5	6	11	15	13	12	8.1	15.1	
31-May	A	11	11	9	13	18	26	24	26	20	8	7	4	3	5	3	5	4	4	7	11	18	26	A	11.9	26.3	
		9.1	8.2	8.4	7.7	9.9	13.3	14.5	13.2	9.8	8.2	5.8	5.4	5.1	4.3	5.7	7.5	6.2	5.6	6.0	7.0	8.3	11.0	10.9	10.0	Diurnal Average	
		24.1	24.1	23.4	22.6	19.5	27.0	28.2	26.0	27.5	20.1	16.8	12.6	15.3	9.5	13.1	61.7	22.0	13.1	16.1	15.5	18.1	19.5	26.3	23.6	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									

**Hourly Maximums**

**Nitrogen Dioxide (NO<sub>2</sub>) - ppb**

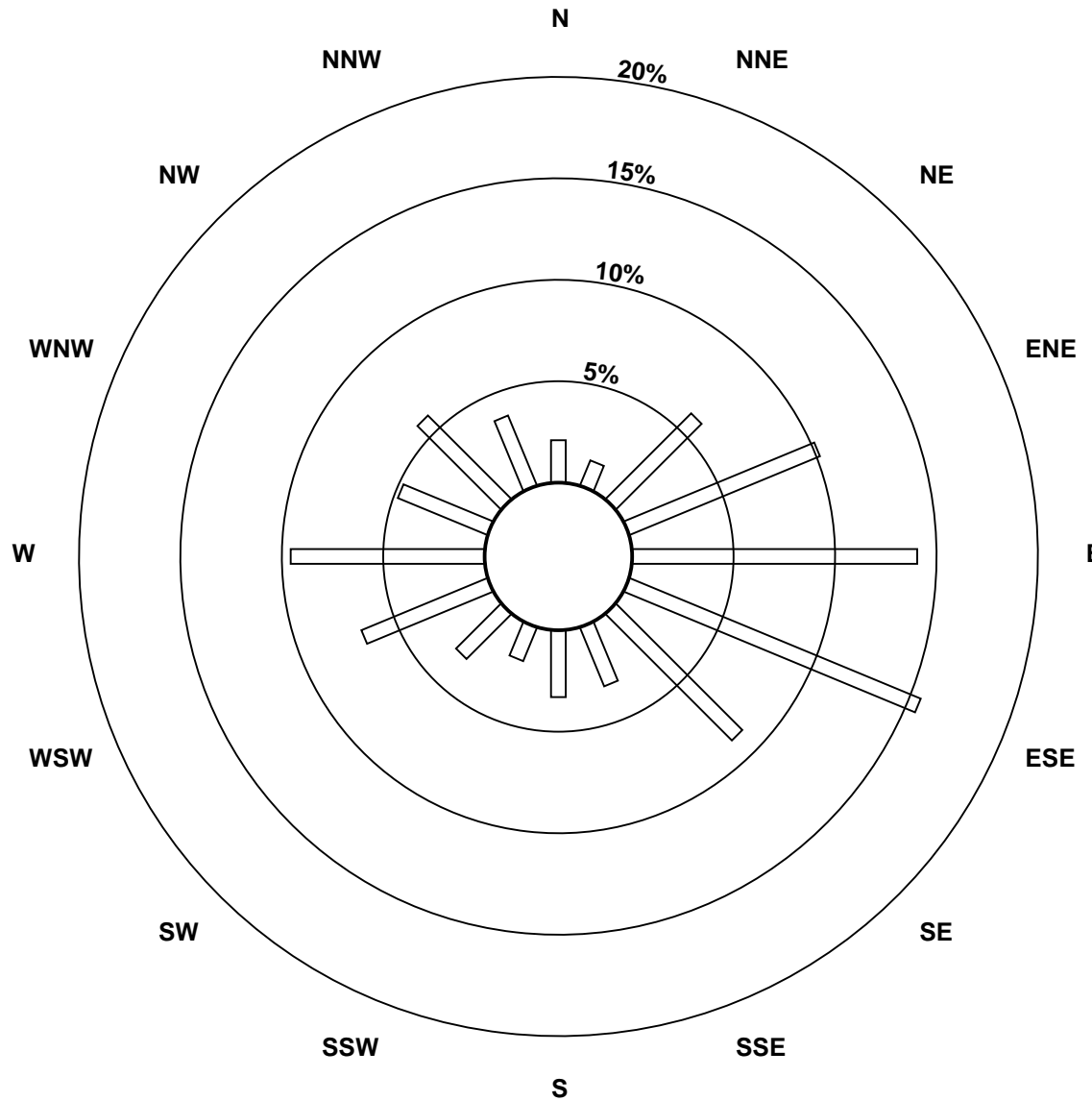
**Henry Pirker - May 2011**



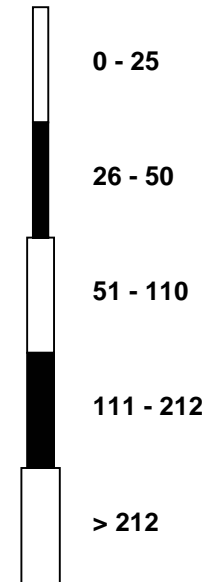


**Pollutant Rose**

**Nitrogen Dioxide (NO<sub>2</sub>) - ppb**  
**Henry Pirker - May 2011**

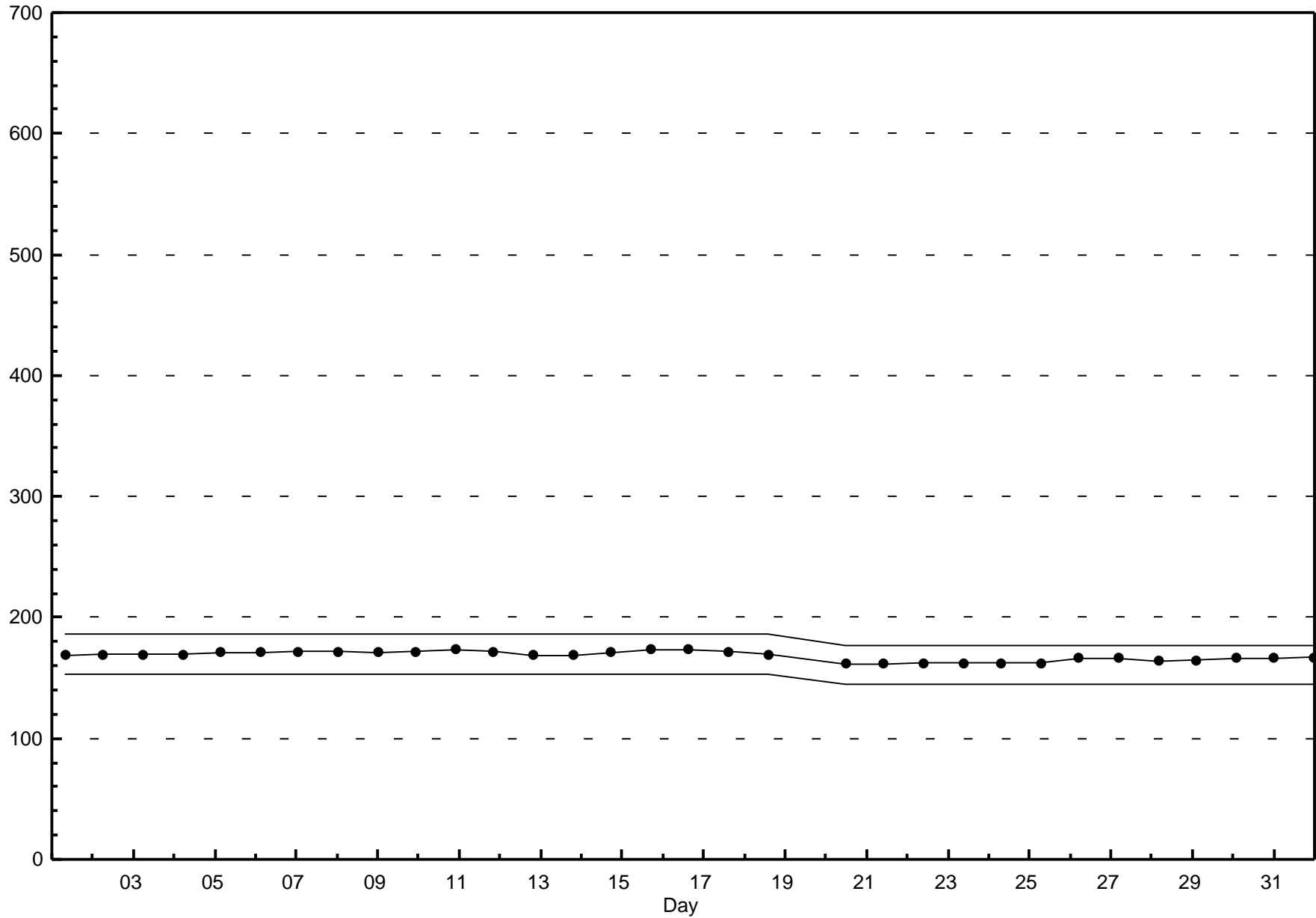


**Pollutant Classes (ppb)**



### Span Responses

**Nitrogen Dioxide (NO<sub>2</sub>)**  
**Henry Pirker - May 2011**



## Hourly Averages

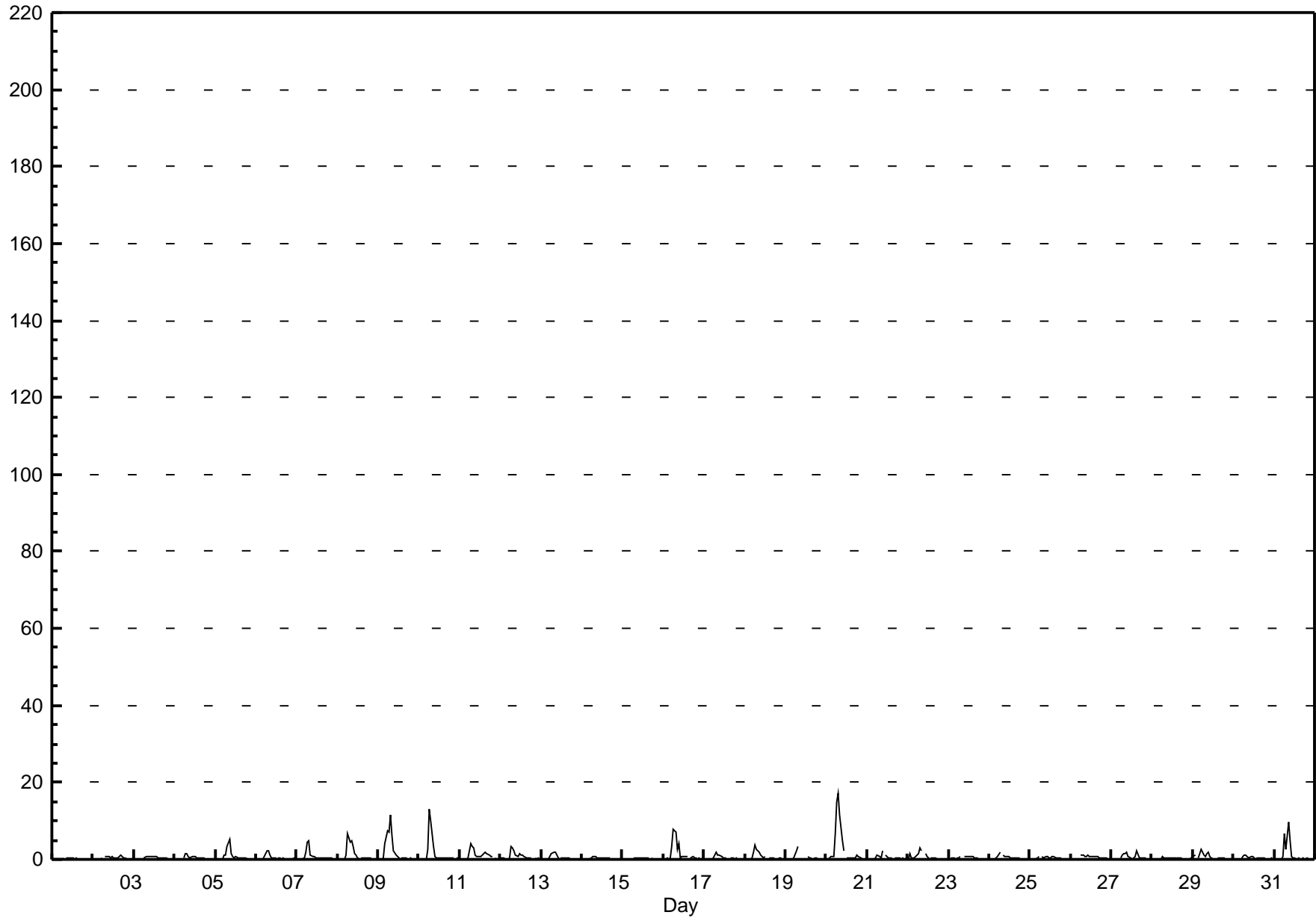
Nitrogen Oxide (NO) - ppb

Henry Pirker - May 2011

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 17.3 ppb on May 20 08:00	Maximum Daily Average: 2.8 ppb on May 20		Hours of Data:	707
Minimum Value: 0 ppb on May 3 22:00	Minimum Daily Average: 0.1 ppb on May 1		Hours of Missing Data:	37
Maximum Diurnal Average: 3.2 ppb at hour 8	Minimum Diurnal Average: 0.1 ppb at hour 1		Hours of Calibration:	37
Monthly Average: 0.70 ppb	Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.1 Median = 0.3 Q <sub>3</sub> = 0.6 P <sub>90</sub> = 1.4 P <sub>99</sub> = 9.7		Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.5
2-May	0	0	0	0	0	0	A	1	1	1	1	1	0	1	0	1	1	1	1	0	0	0	0	0	0.4	1.2
3-May	0	0	0	0	0	A	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0.3	0.8	
4-May	0	0	0	0	A	0	2	2	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0.4	1.7	
5-May	0	0	0	A	0	1	1	3	5	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0.7	5.2	
6-May	0	0	A	0	0	1	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	2.2	
7-May	0	A	0	0	0	2	5	5	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.8	4.7	
8-May	A	0	0	0	0	1	7	5	5	3	2	1	0	0	0	0	0	0	1	0	0	0	0	1.2	6.5	
9-May	0	0	0	0	4	8	7	11	6	2	1	1	0	0	0	0	0	0	0	0	0	0	A	1.8	11.5	
10-May	0	0	0	0	0	2	13	10	3	1	0	0	0	0	0	0	0	0	0	1	0	A	0	1.5	13.1	
11-May	0	0	0	0	0	0	4	3	3	1	1	1	1	2	2	1	1	1	1	A	0	0	0	1.0	4.2	
12-May	0	0	1	0	0	0	3	3	2	1	1	1	1	1	0	1	1	0	A	0	0	0	0	0.8	3.3	
13-May	0	0	0	0	0	1	1	2	2	1	0	0	0	0	0	0	0	A	0	0	0	0	0	0.4	1.9	
14-May	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	A	A	0	0	0	0	0	0.2	0.6	
15-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.2	0.4	
16-May	0	0	0	0	0	3	8	7	3	4	0	1	1	1	1	A	1	1	0	0	0	0	0	1.4	8.0	
17-May	0	0	0	0	0	0	1	2	1	1	1	0	0	0	A	0	0	0	0	0	0	0	0	0.4	1.8	
18-May	0	0	0	0	0	2	4	3	2	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0.7	3.9	
19-May	0	0	0	0	0	0	2	3	C	C	C	C	C	1	0	0	0	0	0	0	0	0	0	0.4	3.2	
20-May	0	0	0	1	1	7	15	17	12	5	2	A	0	1	0	0	0	0	1	1	0	0	0	2.8	17.3	
21-May	0	0	0	0	0	0	1	1	1	2	A	1	1	0	0	0	0	0	0	0	0	0	0	0.4	2.1	
22-May	0	1	1	0	0	1	2	3	2	A	1	1	0	0	0	0	0	0	0	0	0	0	0	0.6	2.8	
23-May	0	0	0	0	0	0	0	1	A	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0.3	0.9	
24-May	0	0	0	0	0	1	2	A	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0.4	1.8	
25-May	0	0	0	0	0	1	A	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0.3	0.7	
26-May	0	0	0	0	0	A	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0.5	1.2	
27-May	0	0	0	0	A	0	1	2	2	2	1	1	0	0	1	2	0	0	0	0	0	0	0	0.6	2.3	
28-May	0	0	0	A	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.6	
29-May	1	1	A	0	1	3	1	1	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0.6	2.6	
30-May	0	A	0	0	0	1	1	1	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0.4	1.3	
31-May	A	0	0	0	0	1	7	3	10	5	1	0	0	0	0	0	0	0	0	0	0	0	A	1.3	9.9	
	0.1	0.1	0.1	0.1	0.3	1.3	3.2	3.2	2.4	1.4	0.7	0.6	0.5	0.4	0.5	0.5	0.4	0.3	0.3	0.2	0.1	0.1	0.1	0.1	Diurnal Average	
	0.7	1.5	0.5	0.8	4.1	7.6	14.8	17.3	11.6	5.0	2.2	1.3	1.1	1.0	1.6	2.3	1.4	1.0	1.0	0.7	0.3	0.4	0.3	0.3	Diurnal Maximum	

C - Calibration                      A - Automated Daily Zero Span



## Hourly Maximums

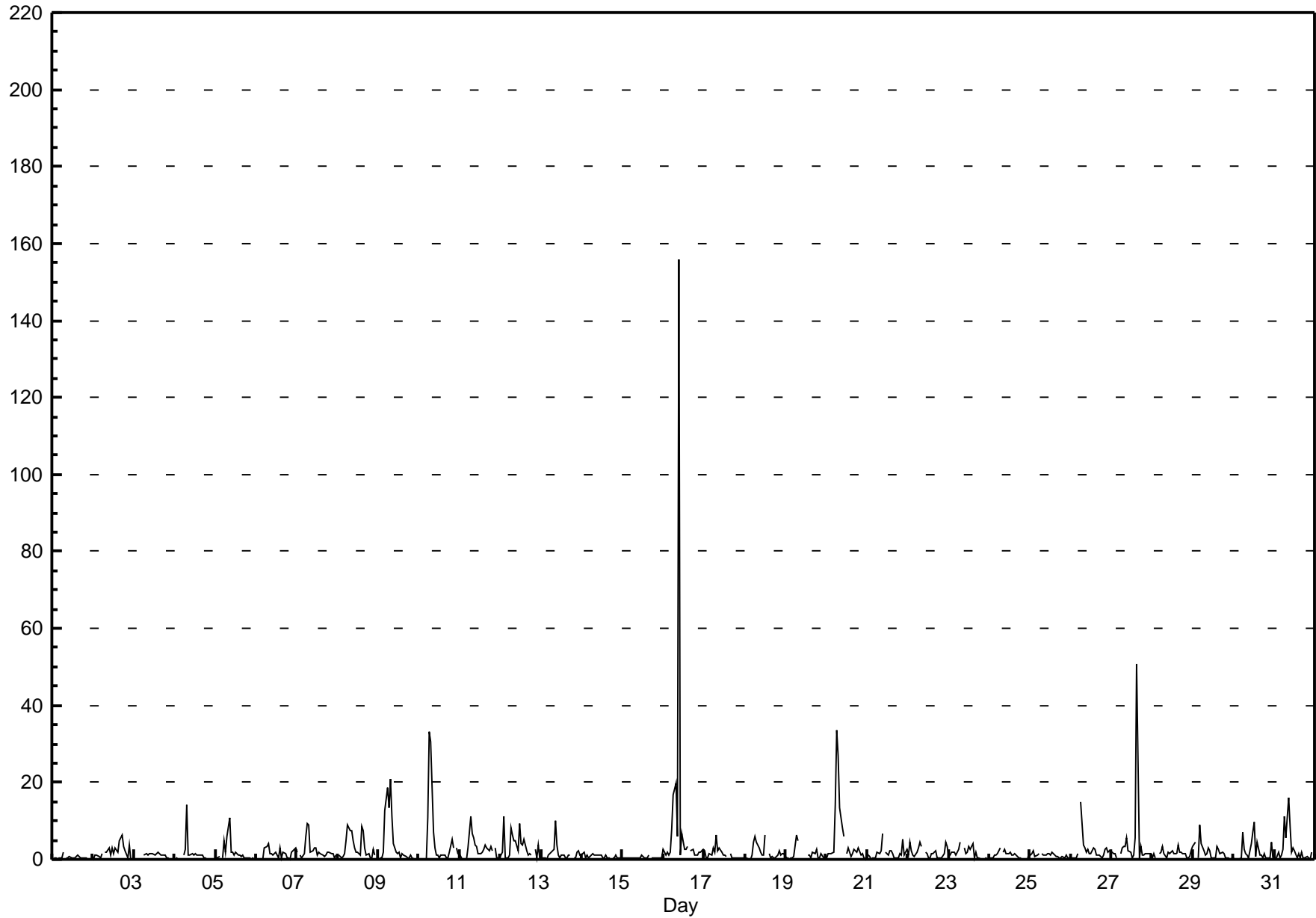
Nitrogen Oxide (NO) - ppb

Henry Pirker - May 2011

Maximum Value: 156.0 ppb on May 16 10:00		Maximum Daily Average: 10.7 ppb on May 16		Hours in Service: 744																							
Minimum Value: 0 ppb on May 18 04:00		Minimum Daily Average: 0.5 ppb on May 1		Hours of Data: 707																							
Maximum Diurnal Average: 8.3 ppb at hour 10		Minimum Diurnal Average: 0.6 ppb at hour 4		Hours of Missing Data: 37																							
Monthly Average: 2.39 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.4 Q <sub>1</sub> = 0.5 Median = 1.0 Q <sub>3</sub> = 2.2 P <sub>90</sub> = 4.7 P <sub>99</sub> = 17.6		Hours of Calibration: 37																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-May	0	0	0	0	0	0	2	A	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0.5	1.7	
2-May	0	1	1	1	0	1	A	2	2	3	1	3	1	3	2	5	6	6	3	2	0	4	0	0	2.1	6.2	
3-May	0	0	0	0	0	A	1	1	1	1	2	1	1	1	2	1	1	1	1	0	0	0	0	0	0.8	1.8	
4-May	0	0	0	0	A	1	2	14	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	1.3	14.2		
5-May	0	0	1	A	0	5	2	6	11	2	2	1	2	1	1	1	0	0	0	0	0	0	0	1.7	10.7		
6-May	0	0	A	0	0	3	3	4	2	2	1	2	1	0	3	0	2	1	0	0	0	2	2	3	1.5	3.9	
7-May	2	A	1	0	1	6	9	9	2	2	3	3	1	2	1	1	1	1	2	2	1	1	0	1	2.4	9.4	
8-May	A	1	0	1	1	5	9	8	7	5	3	2	2	1	9	8	3	1	1	0	0	2	1	A	3.3	9.0	
9-May	0	0	0	2	13	19	14	21	11	4	2	2	2	0	1	1	1	0	0	1	0	0	A	0	4.1	21.0	
10-May	0	0	0	0	0	11	33	31	7	3	1	1	0	1	1	1	0	0	2	5	3	A	3	1	4.6	33.1	
11-May	1	0	0	0	0	3	11	7	6	4	3	1	1	2	3	4	3	2	3	2	A	3	0	0	2.7	11.2	
12-May	1	2	11	0	0	1	8	7	5	5	2	9	4	4	5	2	1	1	1	A	3	0	4	0	3.4	11.0	
13-May	0	0	0	0	1	2	2	2	10	4	1	0	1	1	0	0	1	1	A	0	0	2	2	1	1.5	10.0	
14-May	1	2	0	1	0	1	1	1	1	1	1	1	0	0	1	0	0	A	0	0	1	0	0	0	0.8	2.0	
15-May	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	A	0	0	0	0	0	0	0	0.5	1.2	
16-May	3	1	2	1	2	8	17	20	6	156	1	7	3	2	3	A	2	3	1	1	1	2	2	2	10.7	156.0	
17-May	2	0	0	1	1	3	2	6	2	3	2	1	1	1	A	2	0	0	0	0	0	0	0	0	1.4	6.2	
18-May	0	0	0	0	1	5	6	4	3	2	1	1	7	A	1	0	1	1	1	0	1	2	1	2	1.8	6.5	
19-May	1	0	0	0	0	1	6	5	C	C	C	C	C	C	1	1	0	2	1	3	0	0	1	0	1.3	6.2	
20-May	0	1	1	2	2	14	34	27	14	8	6	A	1	3	1	1	2	2	2	3	1	1	0	0	5.6	33.6	
21-May	1	1	0	0	0	0	2	2	2	7	A	2	1	2	2	1	0	0	0	1	1	5	1	2	1.6	6.7	
22-May	1	4	2	1	1	2	3	4	3	A	2	1	0	0	2	1	2	0	0	0	0	1	4	3	1.9	4.5	
23-May	1	1	2	2	1	2	2	5	A	3	2	2	3	3	4	0	2	0	0	0	0	0	0	0	1.6	4.7	
24-May	0	0	0	1	1	1	3	A	2	2	1	1	2	1	1	1	1	0	0	0	0	0	0	2	1.1	3.0	
25-May	1	2	2	1	1	1	A	1	1	1	1	1	1	2	1	1	1	0	0	1	0	1	0	0	1.1	2.4	
26-May	0	0	0	0	2	A	15	4	3	2	2	2	1	3	2	1	1	1	0	1	2	3	2	2	2.3	15.0	
27-May	2	1	1	0	A	1	3	3	3	5	2	2	0	1	6	51	0	3	1	1	1	2	1	1	4.1	50.7	
28-May	0	2	0	A	1	2	3	1	0	2	1	2	2	2	2	4	2	2	1	1	0	0	1	2	1.6	3.8	
29-May	3	5	A	0	9	4	2	1	2	3	2	0	0	0	3	2	1	2	2	0	0	0	0	0	2.0	9.0	
30-May	0	A	0	0	1	7	2	2	1	0	4	7	10	1	4	1	1	0	1	0	0	0	4	0	2.2	9.5	
31-May	A	0	2	0	1	2	11	6	16	9	2	3	2	0	1	0	2	0	0	1	0	0	2	A	2.9	16.0	
		0.9	1.0	1.1	0.6	1.5	3.9	7.3	7.0	4.3	8.3	1.9	2.1	1.9	1.4	2.3	3.3	1.5	1.2	1.1	1.0	0.8	1.2	1.2	1.0	Diurnal Average	
		3.5	4.7	11.0	2.0	12.5	18.5	33.6	30.6	16.0	156.0	6.0	9.3	9.5	3.8	8.7	50.7	5.7	6.2	3.4	5.3	2.8	5.2	4.4	3.3	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									

### Hourly Maximums

Nitrogen Oxide (NO) - ppb  
Henry Pirker - May 2011

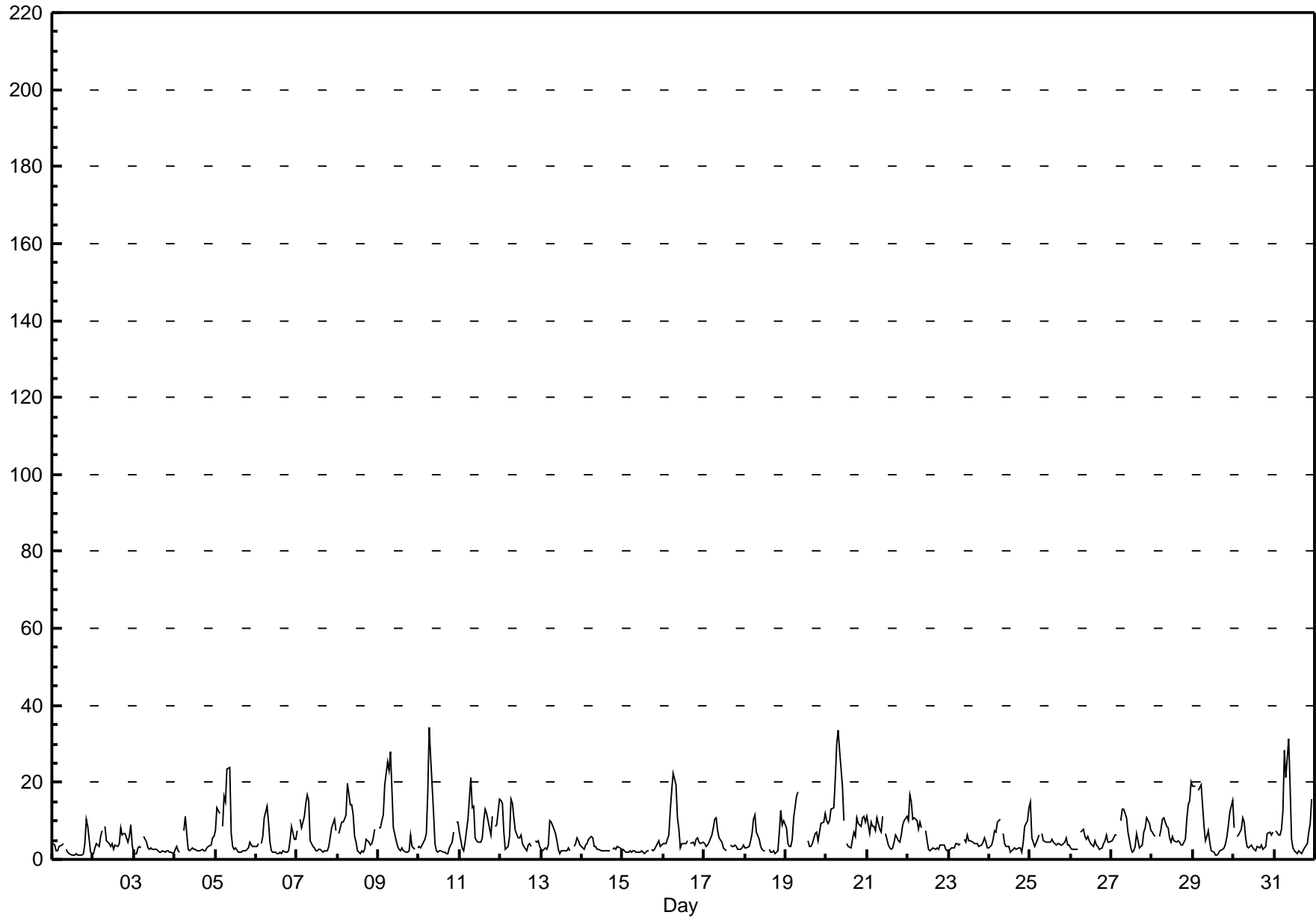


## Hourly Averages

Oxides of Nitrogen (NO<sub>x</sub>) - ppb

Henry Pirker - May 2011

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 34.5 ppb on May 10 07:00      Maximum Daily Average: 12.5 ppb on May 20		Hours in Service: 744 Hours of Data: 707 Hours of Missing Data: 37 Hours of Calibration: 37 Percent Operational Time: 100.0																																														
Minimum Value: 1 ppb on May 1 16:00 Maximum Diurnal Average: 13.8 ppb at hour 7 Monthly Average: 6.01 ppb		Minimum Daily Average: 2.5 ppb on May 15 Minimum Diurnal Average: 2.8 ppb at hour 14 Percentiles: P <sub>1</sub> = 1.3 P <sub>10</sub> = 2.1 Q <sub>1</sub> = 2.7 Median = 4.3 Q <sub>3</sub> = 7.5 P <sub>90</sub> = 11.5 P <sub>99</sub> = 27.5																																														
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-May	4	4	2	2	3	4	4	A	3	2	2	1	1	1	1	1	1	1	1	4	10	9	2	1	2.9	10.4																						
2-May	2	3	4	3	6	8	A	8	5	4	3	4	3	4	3	4	8	6	7	7	4	6	9	4	5.0	9.1																						
3-May	1	2	3	3	3	A	6	5	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2.6	5.9																						
4-May	2	4	2	2	A	7	11	7	3	2	3	3	3	2	2	3	2	2	3	3	4	6	6	3.7	11.2																							
5-May	7	13	12	A	9	16	15	24	24	7	3	3	2	2	2	2	2	2	2	3	4	4	3	3	7.2	23.9																						
6-May	3	4	A	4	6	11	14	10	4	2	2	2	2	2	1	2	2	2	2	5	9	5	5	4.4	13.9																							
7-May	7	A	11	8	11	15	17	15	5	3	3	2	2	2	3	2	2	2	2	3	8	9	10	7	6.6	17.0																						
8-May	A	7	10	10	11	12	20	14	14	11	6	4	2	2	2	3	5	5	4	4	6	8	A	3	7.2	19.7																						
9-May	8	8	10	12	19	25	23	28	18	8	5	3	3	2	3	2	2	2	2	6	3	3	A	3	8.7	27.8																						
10-May	3	3	4	5	7	17	34	26	12	4	2	2	2	2	2	2	2	2	3	5	7	A	10	10	7.2	34.5																						
11-May	7	3	2	5	7	10	21	14	14	5	5	4	4	6	10	13	12	8	6	11	A	9	9	16	8.8	21.3																						
12-May	15	14	7	3	3	6	16	15	11	7	6	6	6	4	3	2	4	4	3	A	5	4	5	3	6.7	15.6																						
13-May	2	2	3	3	4	10	10	8	7	5	2	2	2	2	2	2	3	2	A	3	4	6	5	4	4.0	10.2																						
14-May	3	3	4	4	5	6	5	3	3	3	3	2	2	2	2	2	2	A	3	3	3	3	3	3	3.2	6.0																						
15-May	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	A	3	2	3	4	5	3	4	2.5	4.9																						
16-May	4	4	5	7	13	18	22	19	11	8	3	4	4	4	5	A	4	4	4	5	6	5	4	5	7.2	22.5																						
17-May	4	3	4	5	6	8	10	11	7	5	4	3	3	2	A	4	3	3	4	3	3	3	3	4	4.6	10.9																						
18-May	3	3	3	5	7	10	11	7	5	3	2	2	2	A	3	2	2	2	2	2	7	13	9	10	5.0	12.6																						
19-May	8	4	3	3	5	11	16	18	C	C	C	C	C	C	5	3	3	4	7	7	5	7	9	10	12	7.4	17.6																					
20-May	10	9	10	13	13	21	30	34	28	19	10	A	4	3	3	5	7	6	11	9	9	11	11	10	12.5	33.6																						
21-May	11	7	10	9	9	7	11	8	7	11	A	7	4	3	3	3	4	6	5	5	6	9	10	11	7.2	11.3																						
22-May	10	17	15	10	11	10	8	10	8	A	7	5	3	2	3	3	3	3	3	4	4	4	3	2	6.4	16.8																						
23-May	2	3	3	3	4	4	4	4	A	5	5	6	5	5	4	4	4	4	3	4	4	6	5	3	4.1	6.4																						
24-May	3	4	5	7	7	10	11	A	7	4	3	3	2	2	3	3	3	3	3	2	5	8	10	13	5.2	13.5																						
25-May	15	6	4	3	5	7	A	7	5	4	5	5	4	5	4	4	4	4	4	4	4	5	4	4	5.0	14.9																						
26-May	3	3	3	2	2	A	7	8	6	5	6	5	4	3	5	4	3	3	3	4	5	6	5	5	4.3	7.9																						
27-May	5	5	6	6	A	10	13	13	12	11	7	3	2	2	3	7	3	3	4	7	8	11	9	8	6.9	13.1																						
28-May	7	6	6	A	6	8	10	11	8	8	6	4	6	5	5	4	4	4	4	5	10	14	15	20	7.8	20.3																						
29-May	19	19	A	18	19	19	9	5	6	8	4	2	2	1	1	2	2	2	3	4	6	9	12	15	8.2	19.3																						
30-May	8	A	6	6	8	11	10	6	3	3	4	3	3	2	4	3	4	3	3	3	7	7	6	7	5.1	10.7																						
31-May	A	7	6	6	8	13	28	21	31	19	5	3	2	2	2	2	1	2	3	4	7	9	16	A	9.1	31.1																						
																								6.3	5.9	5.7	5.8	7.6	10.9	13.8	12.4	9.4	6.3	4.2	3.4	3.0	2.8	3.1	3.2	3.5	3.5	3.6	4.3	5.5	6.9	7.1	6.8	Diurnal Average
																								19.0	18.9	14.9	18.0	19.3	25.2	34.5	33.6	31.1	19.1	10.2	6.6	6.5	5.6	10.2	13.0	11.9	8.3	11.0	11.2	10.4	14.1	15.8	20.3	Diurnal Maximum
C - Calibration      A - Automated Daily Zero Span																																																



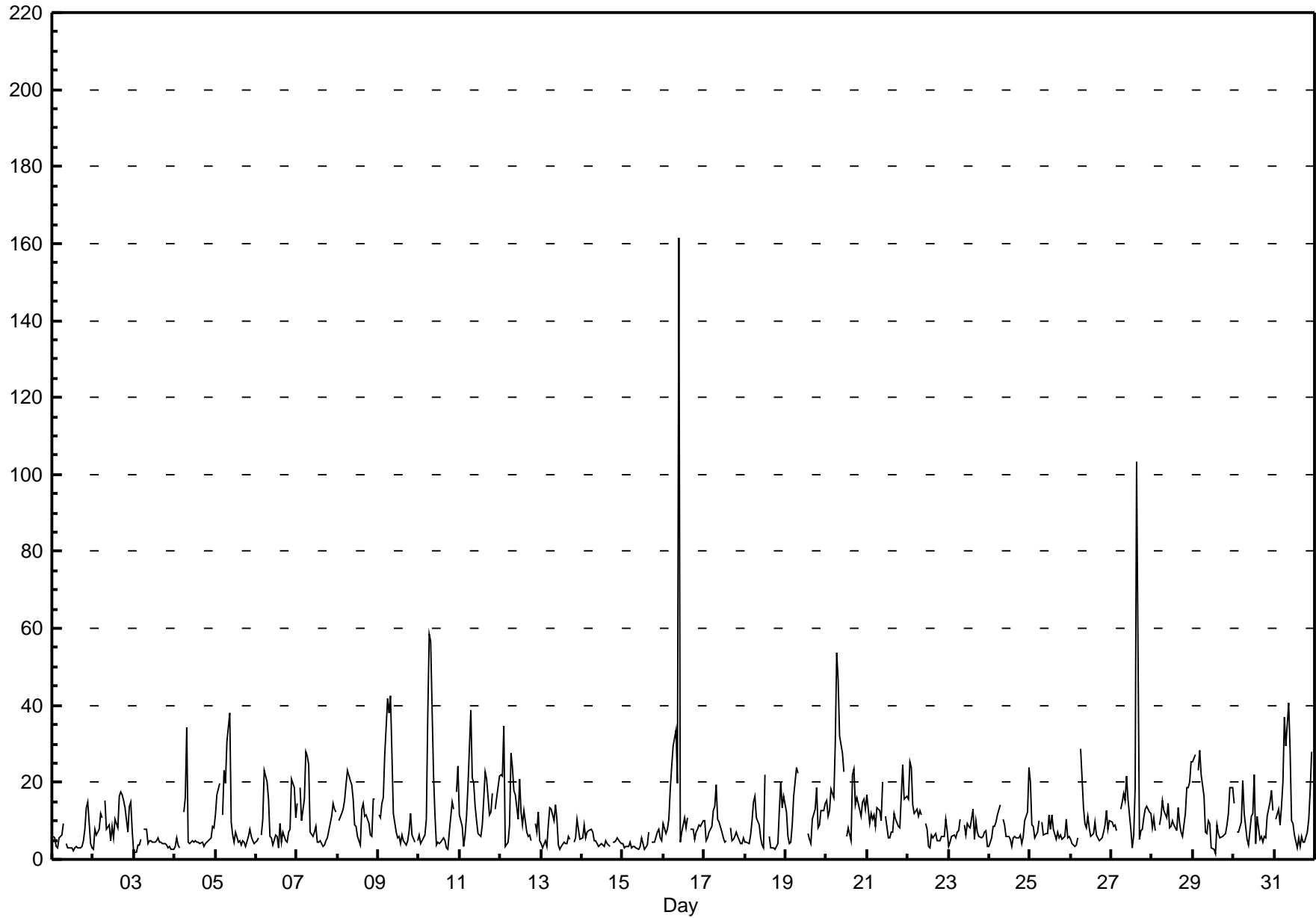


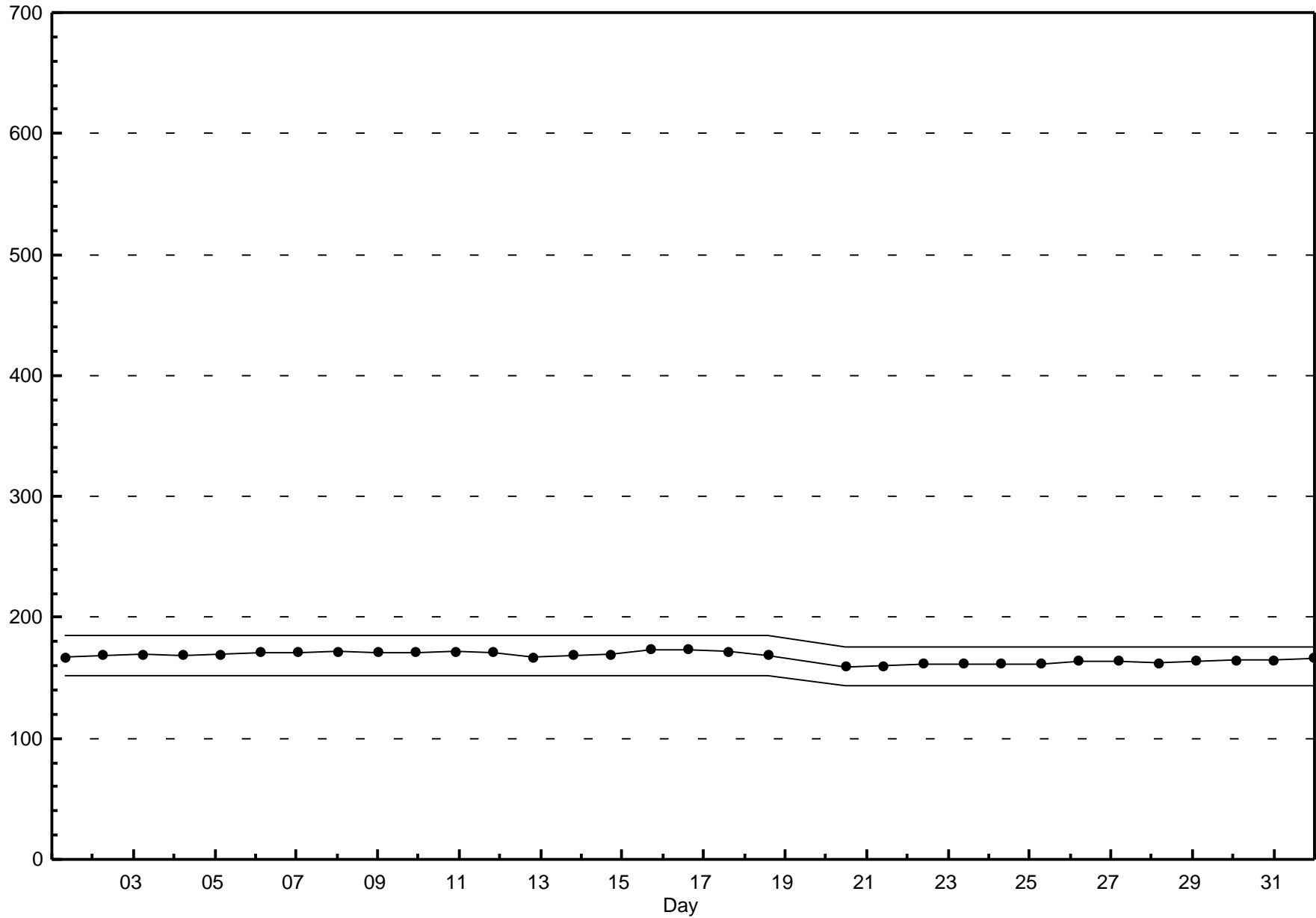
## Hourly Maximums

Oxides of Nitrogen (NO<sub>x</sub>) - ppb

Henry Pirker - May 2011

Maximum Value: 161.4 ppb on May 16 10:00		Maximum Daily Average: 19.6 ppb on May 20		Hours in Service: 744																							
Minimum Value: 2 ppb on May 29 14:00		Minimum Daily Average: 4.3 ppb on May 3		Hours of Data: 707																							
Maximum Diurnal Average: 21.3 ppb at hour 7		Minimum Diurnal Average: 5.5 ppb at hour 14		Hours of Missing Data: 37																							
Monthly Average: 10.50 ppb		Percentiles: P <sub>1</sub> = 2.5 P <sub>10</sub> = 3.8 Q <sub>1</sub> = 5.0 Median = 7.7 Q <sub>3</sub> = 12.8 P <sub>90</sub> = 20.1 P <sub>99</sub> = 40.1		Hours of Calibration: 37																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-May	6	6	4	3	6	6	9	A	4	3	3	3	2	3	4	3	3	4	5	8	14	15	4	3	5.1	14.9	
2-May	2	8	6	8	12	11	A	15	8	9	5	9	5	10	8	16	17	17	15	14	7	14	15	8	10.4	17.5	
3-May	2	2	4	4	5	A	8	8	4	5	5	4	4	5	6	5	4	4	4	4	3	3	2	2	4.3	7.9	
4-May	3	5	4	3	A	12	16	34	4	4	5	4	5	4	4	4	4	3	4	4	5	5	9	8	6.9	34.4	
5-May	12	17	20	A	12	23	20	31	38	10	6	4	7	4	5	4	5	4	3	6	8	6	5	4	11.0	37.9	
6-May	5	6	A	7	11	23	20	16	6	5	4	6	6	3	9	4	7	5	4	7	8	21	19	11	9.2	23.2	
7-May	15	A	19	10	16	28	27	25	7	6	7	9	4	4	5	4	4	5	6	8	11	15	13	12	11.2	28.1	
8-May	A	10	12	13	15	20	23	21	20	16	9	6	4	13	15	11	11	9	6	6	16	16	A	5	12.7	23.0	
9-May	11	11	14	16	27	42	38	43	28	12	7	6	4	6	5	4	5	8	12	6	4	A	A	5	13.9	42.5	
10-May	6	4	5	7	10	38	59	57	22	12	4	4	4	4	5	5	3	2	7	15	13	A	18	24	14.2	58.6	
11-May	12	9	4	6	11	19	39	21	20	14	10	7	6	9	16	23	21	11	12	17	A	13	16	22	14.6	38.9	
12-May	22	22	35	4	4	9	27	24	18	17	10	21	12	9	13	7	6	6	5	A	9	7	12	5	13.2	34.7	
13-May	4	3	5	4	9	14	13	10	14	10	4	2	4	4	4	4	6	5	A	4	5	11	8	5	6.6	14.3	
14-May	5	9	5	7	7	8	7	5	5	4	4	4	4	4	5	4	4	A	4	4	5	5	4	4	5.1	8.8	
15-May	4	3	4	3	4	3	3	3	3	2	3	5	4	2	4	7	A	4	4	4	7	8	6	5	4.3	8.0	
16-May	9	7	8	11	18	24	29	34	20	161	4	7	11	8	11	A	8	8	5	7	8	9	8	10	18.5	161.4	
17-May	10	5	5	7	8	13	14	20	10	10	7	6	4	5	A	8	5	5	6	7	6	4	4	5	7.6	19.5	
18-May	4	4	4	6	10	15	16	11	9	5	4	3	22	A	6	3	3	3	2	4	13	20	13	16	8.6	21.8	
19-May	12	6	4	4	9	16	24	23	C	C	C	C	C	C	7	5	4	11	13	19	8	9	13	14	11.2	24.0	
20-May	15	11	13	18	16	30	54	47	32	28	23	A	6	8	5	22	23	14	16	15	11	15	16	13	19.6	53.8	
21-May	17	9	12	11	11	9	14	13	10	20	A	11	6	6	7	7	12	11	8	8	16	25	16	17	11.9	24.6	
22-May	16	25	24	14	12	13	11	13	12	A	9	8	4	3	6	6	7	5	5	5	6	6	10	8	9.9	25.4	
23-May	3	4	6	6	6	7	7	10	A	9	6	10	9	8	13	5	10	7	6	5	6	7	8	4	7.1	13.0	
24-May	4	6	9	9	10	12	14	A	11	9	6	6	5	4	6	6	6	6	7	4	6	10	12	24	8.2	23.9	
25-May	20	9	8	6	7	10	A	10	6	7	7	12	8	12	8	5	7	6	6	5	6	11	6	6	8.0	20.1	
26-May	5	4	4	4	5	A	29	14	9	8	11	8	6	7	10	7	5	5	6	7	9	13	8	10	8.4	28.9	
27-May	10	8	9	8	A	13	15	17	15	22	16	8	3	6	19	103	5	7	8	11	13	14	12	12	15.4	103.2	
28-May	8	11	7	A	9	11	15	13	11	15	8	9	10	9	8	13	9	7	6	12	19	19	20	25	11.9	25.4	
29-May	25	27	A	23	28	22	16	7	7	10	9	3	3	2	9	7	5	6	7	7	9	12	19	19	12.2	28.4	
30-May	15	A	7	7	10	21	12	9	5	4	11	12	22	4	11	5	6	4	6	6	11	15	18	13	10.1	22.0	
31-May	A	11	13	9	14	20	37	30	41	28	10	9	6	3	6	3	6	4	5	7	11	18	28	A	14.5	40.7	
		9.8	9.0	9.4	8.1	11.2	16.9	21.3	19.9	13.7	16.0	7.5	7.2	6.8	5.5	7.8	10.4	7.6	6.6	6.9	7.7	8.9	11.7	11.9	10.8	Diurnal Average	
		25.5	27.1	34.7	23.1	28.4	41.8	58.6	56.6	40.7	161.4	22.6	20.8	22.0	11.6	18.7	103.2	23.5	16.6	18.7	17.0	18.6	24.6	27.8	25.4	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									





## Hourly Averages

Ozone (O<sub>3</sub>) - ppb

Henry Pirker - May 2011

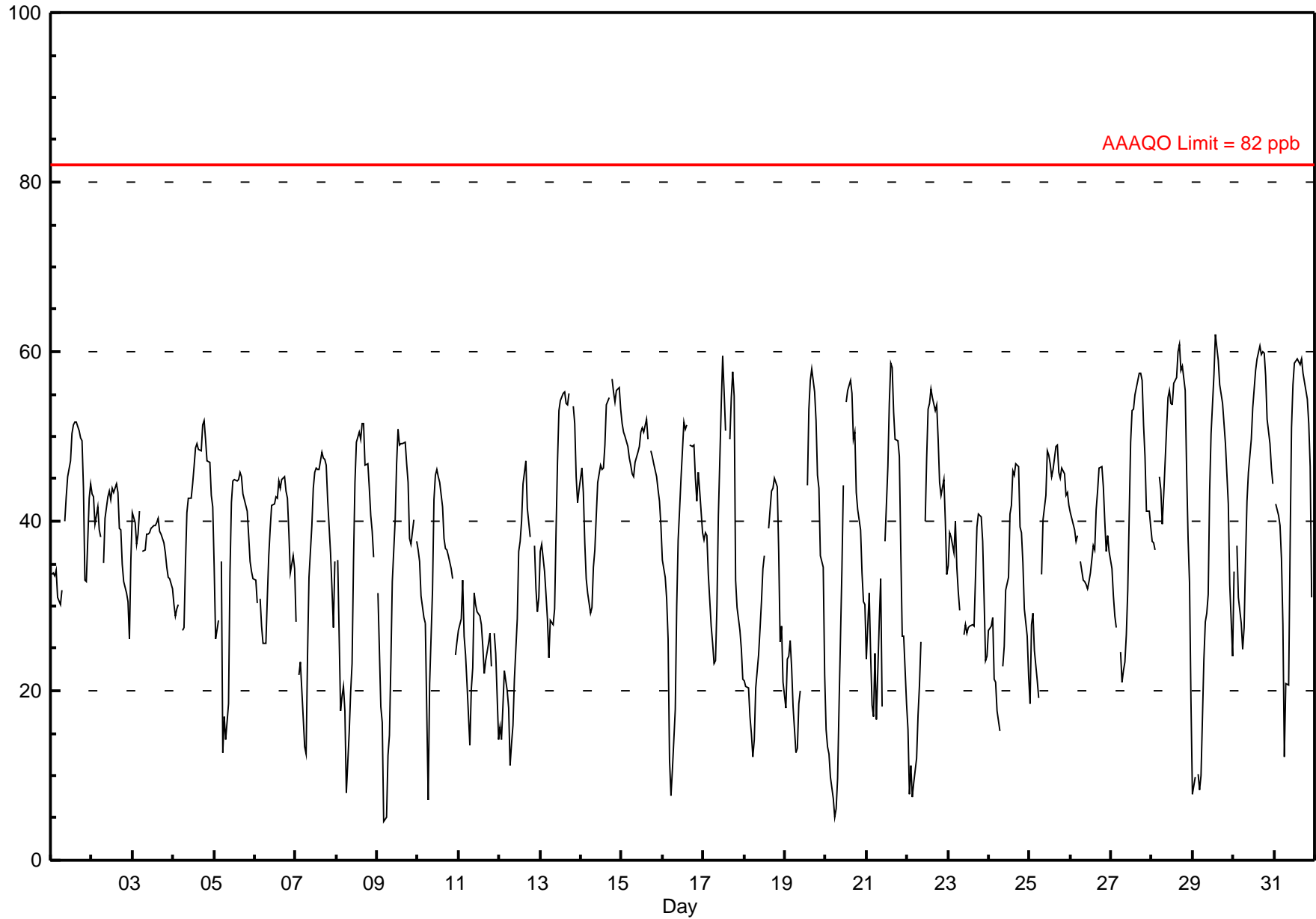
Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 62.0 ppb on May 29 14:00	Maximum Daily Average: 47.7 ppb on May 15		Hours of Data:	709
Minimum Value: 5 ppb on May 9 05:00	Minimum Daily Average: 25.0 ppb on May 11		Hours of Missing Data:	35
Maximum Diurnal Average: 48.6 ppb at hour 16	Minimum Diurnal Average: 21.2 ppb at hour 7		Hours of Calibration:	35
Monthly Average: 37.14 ppb	Percentiles: P <sub>1</sub> = 7.5 P <sub>10</sub> = 18.7 Q <sub>1</sub> = 27.9 Median = 38.5 Q <sub>3</sub> = 46.3 P <sub>90</sub> = 53.7 P <sub>99</sub> = 59.7		Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-May	34	34	34	34	31	30	32	A	40	43	45	47	50	51	52	52	51	50	50	44	33	33	43	44	41.6	51.6																						
2-May	43	43	40	42	39	38	A	35	40	43	44	43	44	43	44	43	39	39	35	33	31	30	26	36	38.8	44.3																						
3-May	41	40	37	38	41	A	36	37	38	38	39	39	40	40	40	40	39	39	38	36	35	33	33	32	37.8	41.2																						
4-May	30	29	30	30	A	27	27	35	41	43	43	44	46	49	49	48	48	51	52	50	47	47	43	42	41.4	51.8																						
5-May	35	26	28	A	35	13	17	14	19	34	42	45	45	45	46	45	43	43	41	38	35	34	33	34.8	45.8																							
6-May	33	30	A	31	28	26	26	31	36	39	42	42	43	43	45	44	45	45	44	43	39	34	36	34	37.2	45.2																						
7-May	28	A	22	23	17	13	13	24	33	40	44	46	46	46	46	48	47	47	47	43	36	32	27	35	35.0	48.2																						
8-May	A	35	18	19	20	18	8	15	20	23	35	45	49	51	50	52	51	47	47	44	41	39	36	A	34.6	51.5																						
9-May	31	25	18	16	5	5	12	15	23	33	40	47	51	49	49	49	49	47	45	38	37	40	A	38	33.2	50.8																						
10-May	37	35	31	29	28	18	7	21	32	42	45	46	45	44	42	38	37	37	36	34	33	A	24	26	33.4	46.0																						
11-May	27	28	33	26	24	21	14	20	23	32	30	29	29	28	25	22	24	26	27	23	A	27	24	14	25.0	33.1																						
12-May	16	14	18	22	20	18	11	14	16	21	28	36	38	40	44	47	42	40	38	A	37	32	29	31	28.4	47.1																						
13-May	36	37	34	31	28	24	28	28	30	39	47	53	54	55	55	54	54	55	A	54	51	45	42	44	42.6	55.3																						
14-May	46	43	37	33	32	29	30	35	37	41	45	47	46	46	49	54	55	A	57	55	54	55	56	53	45.0	56.8																						
15-May	52	50	50	49	47	47	46	45	47	48	49	51	51	50	52	50	A	48	48	47	45	44	42	39	47.7	52.0																						
16-May	35	33	31	26	12	8	11	18	30	38	41	45	52	51	51	A	49	49	49	45	42	46	44	39	36.7	51.7																						
17-May	38	39	38	34	28	26	23	24	30	41	54	59	55	51	A	50	55	58	55	33	30	27	25	21	38.8	59.5																						
18-May	21	21	20	17	15	12	14	20	24	27	31	34	36	A	39	41	44	44	45	44	36	26	28	21	28.7	45.0																						
19-May	18	24	24	26	23	18	13	13	18	20	C	C	C	44	53	57	58	55	52	45	44	36	35	22	33.2	58.0																						
20-May	15	13	13	10	7	5	6	10	18	34	44	A	54	55	57	55	50	50	43	41	39	34	30	30	31.1	56.7																						
21-May	24	31	24	18	17	24	17	28	33	18	A	38	46	54	59	58	53	50	50	48	36	26	26	18	34.7	58.7																						
22-May	15	8	11	7	9	12	17	21	26	A	40	48	53	54	56	55	53	54	50	45	43	45	40	34	34.5	55.6																						
23-May	35	39	38	36	40	35	32	30	A	27	28	27	27	28	28	28	33	39	41	40	38	31	24	24	32.4	40.8																						
24-May	27	28	29	21	21	18	15	A	23	25	32	33	41	42	46	45	47	46	39	39	35	30	26	22	31.7	46.8																						
25-May	18	28	29	25	21	19	A	34	40	43	48	48	47	45	46	49	49	46	45	46	46	43	43	42	39.1	48.9																						
26-May	41	40	39	38	38	A	35	33	33	33	32	33	34	37	37	41	44	46	46	44	40	36	38	36	38.1	46.4																						
27-May	34	31	29	28	A	25	21	22	23	27	32	49	53	53	55	56	58	57	57	51	48	41	41	39	40.4	57.5																						
28-May	38	37	37	A	45	44	40	43	51	55	56	54	54	56	57	60	61	58	58	55	46	38	33	19	47.5	60.9																						
29-May	8	10	A	10	8	10	24	28	29	31	44	50	57	62	61	59	56	54	52	49	46	42	33	24	36.8	62.0																						
30-May	34	A	37	31	28	25	28	36	42	46	50	53	56	58	59	61	60	60	60	57	52	49	46	44	46.6	60.7																						
31-May	A	42	41	40	36	28	12	21	21	37	51	56	59	59	59	58	59	58	56	54	52	46	31	A	44.3	59.2																						
																								30.7	30.9	30.0	27.3	25.6	21.8	21.2	25.8	30.5	35.3	41.4	44.4	46.7	47.6	48.3	48.6	48.4	47.9	46.7	44.1	41.0	37.5	34.7	32.3	Diurnal Average
																								51.5	50.5	50.0	48.8	47.4	46.5	45.6	45.3	50.9	54.6	55.5	59.5	58.7	62.0	60.6	60.7	60.9	60.1	59.8	57.0	54.0	55.4	55.8	53.3	Diurnal Maximum

C - Calibration      A - Automated Daily Zero Span  
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 82 ppb    24-hr na

### Hourly Averages

Ozone (O<sub>3</sub>) - ppb  
Henry Pirker - May 2011



## Hourly Maximums

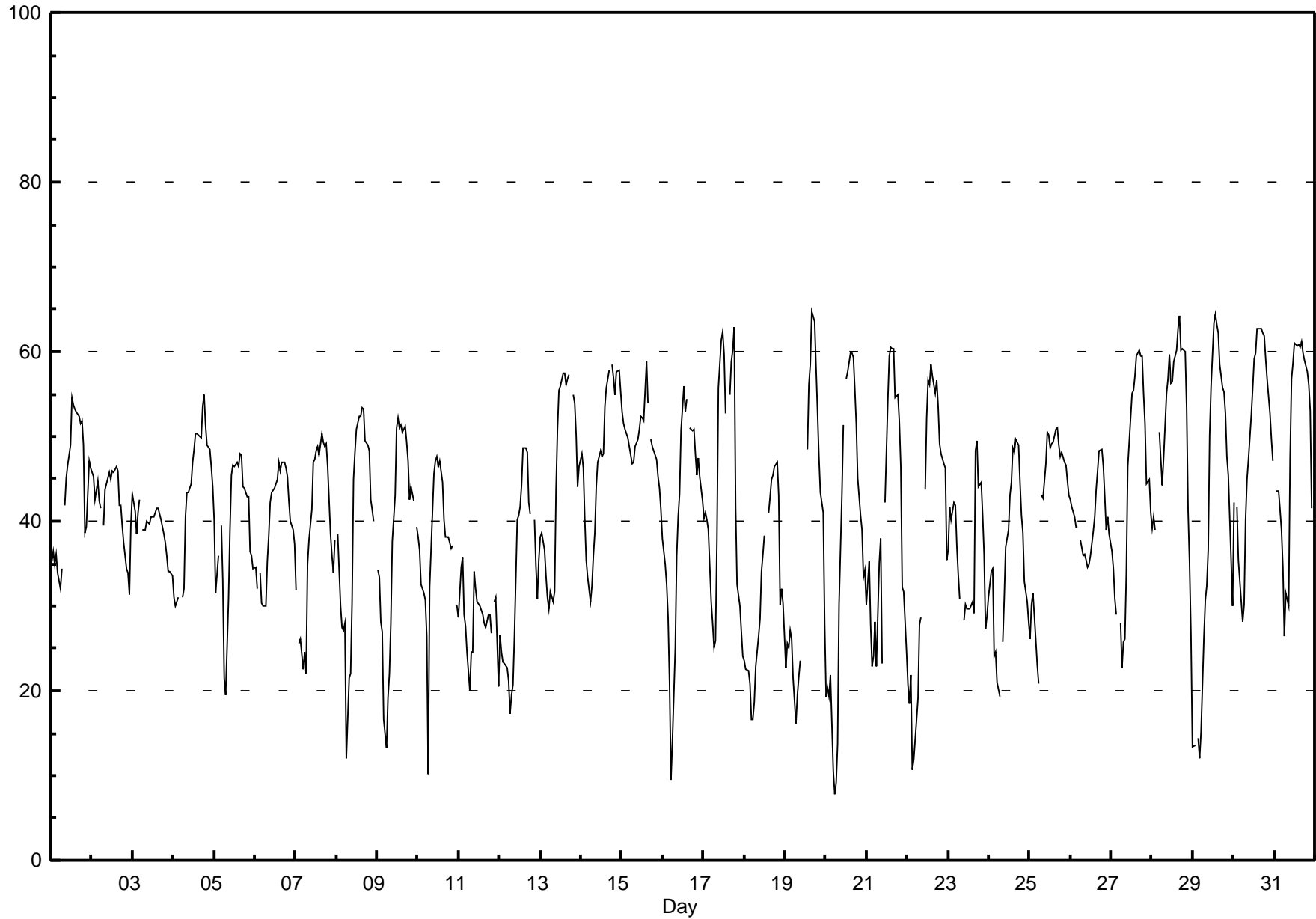
Ozone (O<sub>3</sub>) - ppb

Henry Pirker - May 2011

Maximum Value: 64.8 ppb on May 19 17:00		Maximum Daily Average: 51.1 ppb on May 28		Hours in Service: 744																																												
Minimum Value: 8 ppb on May 20 06:00		Minimum Daily Average: 28.6 ppb on May 11		Hours of Data: 709																																												
Maximum Diurnal Average: 51.9 ppb at hour 17		Minimum Diurnal Average: 25.3 ppb at hour 7		Hours of Missing Data: 35																																												
Monthly Average: 40.69 ppb		Percentiles: P <sub>1</sub> = 12.0 P <sub>10</sub> = 24.5 Q <sub>1</sub> = 31.5 Median = 41.5 Q <sub>3</sub> = 49.0 P <sub>90</sub> = 56.5 P <sub>99</sub> = 62.6		Hours of Calibration: 35																																												
				Percent Operational Time: 100.0																																												
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-May	35	36	35	36	34	32	34	A	42	45	47	49	55	54	53	53	52	52	49	39	39	47	46	44.2	54.6																							
2-May	46	45	43	45	42	42	A	40	44	45	46	45	46	46	46	42	42	39	37	34	34	31	39	42.0	46.5																							
3-May	43	41	39	41	42	A	39	39	40	40	40	40	40	41	41	41	40	38	37	36	34	34	34	39.3	43.3																							
4-May	31	30	31	31	A	31	32	40	43	43	44	47	48	50	50	50	50	54	55	51	49	48	46	44	43.5	54.9																						
5-May	40	31	36	A	39	33	22	19	31	39	45	47	46	47	46	48	48	44	44	43	43	36	36	34	39.1	47.9																						
6-May	35	32	A	34	30	30	30	35	38	42	43	44	44	45	47	46	47	47	46	45	42	40	39	37	40.0	46.9																						
7-May	32	A	26	26	23	25	22	35	38	41	47	47	48	49	48	50	49	49	49	46	38	36	34	38	39.0	50.4																						
8-May	A	38	30	27	27	28	12	21	22	31	45	48	51	52	52	53	53	49	49	48	42	41	40	A	39.2	53.4																						
9-May	34	33	28	27	17	13	19	22	28	38	43	51	52	51	51	50	51	49	47	43	44	42	A	39	38.0	52.1																						
10-May	38	37	33	32	31	26	10	32	41	46	47	48	46	47	45	40	38	38	38	37	37	A	30	30	36.8	47.6																						
11-May	29	35	36	29	28	25	20	25	25	34	32	31	30	30	29	28	28	29	29	27	A	30	31	21	28.6	35.8																						
12-May	27	25	23	23	23	21	17	20	21	26	40	41	42	44	49	49	48	42	41	A	40	35	31	35	33.1	48.7																						
13-May	38	39	37	34	31	30	32	30	32	44	51	55	56	57	57	56	57	57	A	55	54	50	44	46	45.3	57.4																						
14-May	48	46	40	35	33	30	32	36	39	44	47	48	48	48	54	56	58	A	58	57	55	58	58	55	47.1	58.5																						
15-May	53	52	51	50	49	48	47	47	49	50	51	52	52	52	59	54	A	50	49	48	47	45	44	41	49.5	58.8																						
16-May	38	35	32	29	21	10	14	25	36	41	43	51	56	53	54	A	51	51	51	48	45	47	45	42	39.9	55.9																						
17-May	40	41	40	39	30	28	25	26	38	56	61	62	60	53	A	55	59	60	63	42	32	30	27	24	43.1	62.8																						
18-May	24	22	22	21	17	17	19	23	26	28	34	36	38	A	41	43	45	45	46	47	43	30	32	30	31.8	46.9																						
19-May	23	26	25	27	26	22	16	19	22	24	C	C	C	49	56	58	65	64	58	53	48	43	41	28	37.7	64.8																						
20-May	19	20	19	22	10	8	9	14	30	43	51	A	57	58	60	60	59	56	51	45	41	39	33	34	36.5	59.9																						
21-May	30	35	28	23	24	28	23	35	38	23	A	42	54	60	61	60	60	55	55	52	46	32	32	25	40.0	60.5																						
22-May	21	19	22	11	12	17	19	28	29	A	44	52	57	56	58	57	55	57	54	49	48	47	46	35	38.7	58.4																						
23-May	37	42	40	42	42	37	34	31	A	28	30	30	30	30	30	29	48	49	44	45	41	36	27	29	36.1	49.4																						
24-May	31	34	34	24	25	21	19	A	26	31	37	39	43	45	49	48	50	49	45	41	39	33	31	28	35.6	49.7																						
25-May	26	30	32	29	23	21	A	43	43	47	51	50	49	49	51	51	49	48	48	47	47	45	43	42.1	51.0																							
26-May	42	42	40	39	39	A	38	36	36	35	35	35	36	39	40	44	46	48	49	46	43	39	40	38	40.3	48.5																						
27-May	36	34	31	29	A	28	23	26	26	34	47	52	55	55	57	59	60	59	59	55	52	44	45	41	43.9	60.1																						
28-May	39	40	39	A	51	47	44	48	55	57	60	56	57	59	60	63	64	60	60	60	53	41	35	27	51.1	64.2																						
29-May	13	14	A	14	12	15	26	31	32	37	50	56	63	64	63	62	59	56	55	53	48	45	40	30	40.9	64.4																						
30-May	42	A	42	35	31	28	30	40	45	47	53	56	59	60	63	63	63	62	62	59	57	53	50	47	49.8	62.8																						
31-May	A	44	44	41	39	35	26	31	30	48	57	59	61	61	61	61	61	60	59	58	56	53	42	A	49.3	61.2																						
																								34.2	34.4	33.7	30.9	29.3	26.7	25.3	30.9	34.8	39.5	45.5	47.2	49.3	50.0	51.1	51.1	51.9	50.8	49.8	47.5	44.6	41.0	38.6	36.0	Diurnal Average
																								52.8	51.5	50.9	49.9	50.5	47.8	46.7	47.6	55.0	56.8	61.3	62.3	63.4	64.4	63.3	62.8	64.8	63.6	62.8	59.9	56.7	57.6	57.7	55.2	Diurnal Maximum
C - Calibration																								A - Automated Daily Zero Span																								

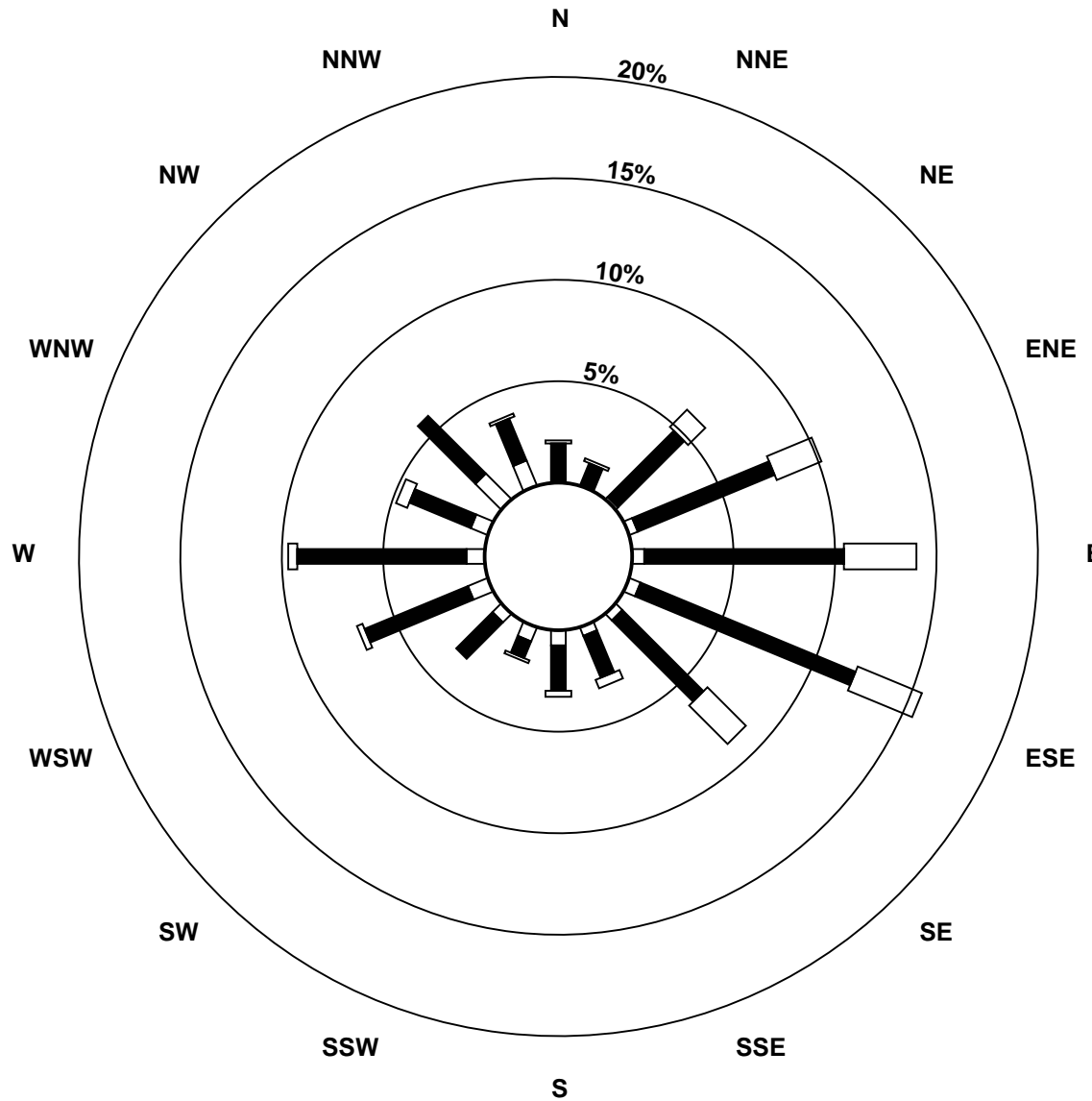
# Hourly Maximums

Ozone (O<sub>3</sub>) - ppb  
Henry Pirker - May 2011

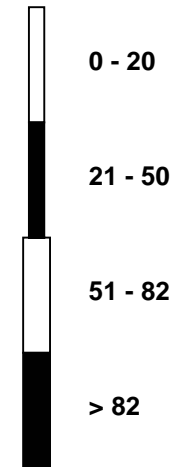


**Pollutant Rose**

Ozone (O<sub>3</sub>) - ppb  
Henry Pirker - May 2011



**Pollutant Classes (ppb)**





# Eight Hour Running Averages

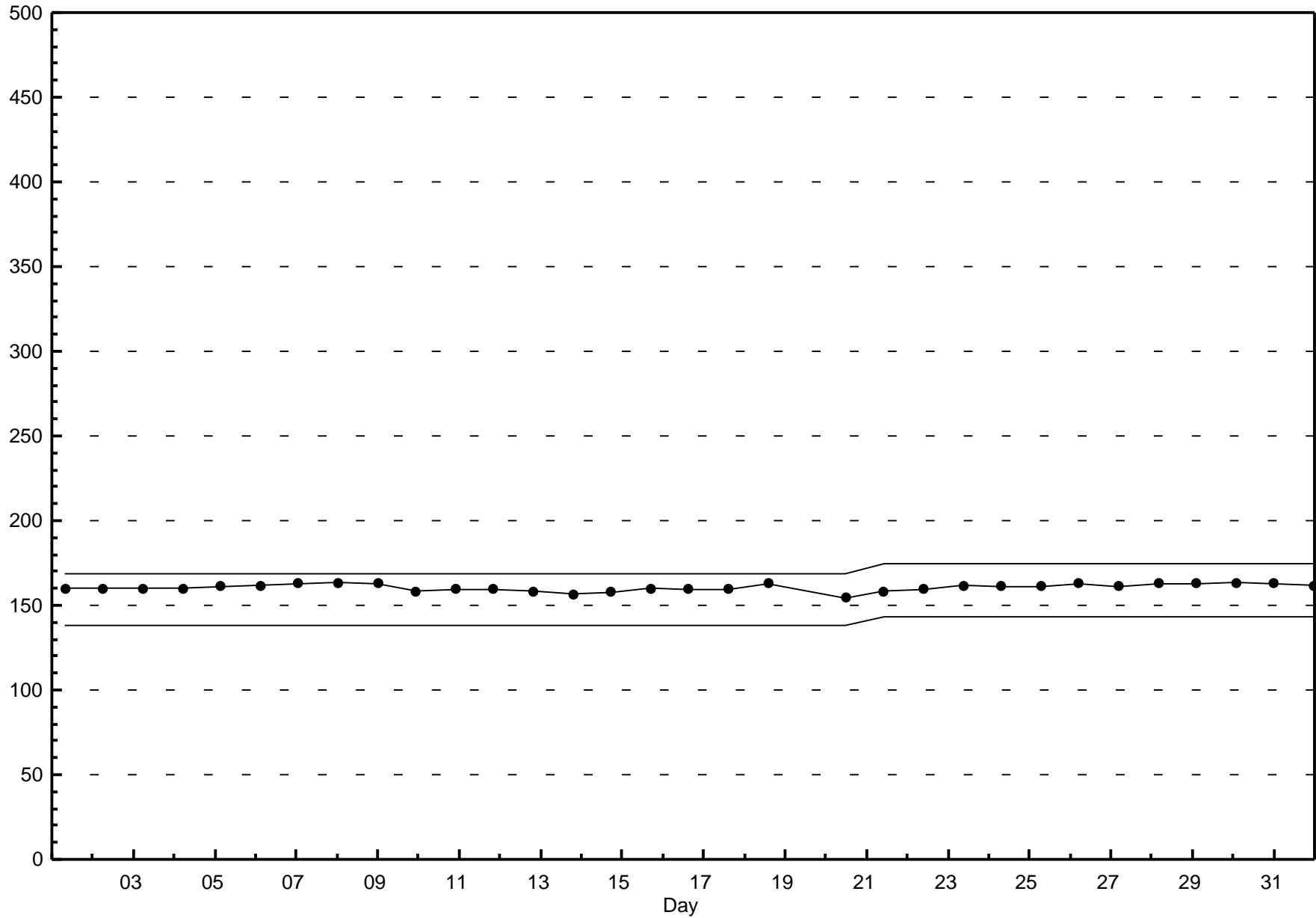
Ozone (O<sub>3</sub>) - ppb

Henry Pirker - May 2011

Maximum Value: 58.7 ppb on May 30 20:00																					Hours in Service:	744			
Minimum Value: 9.9 ppb on May 20 08:00																					Hours of Data:	738			
Percentiles: P <sub>1</sub> = 13.4 P <sub>10</sub> = 22.8 Q <sub>1</sub> = 29.8 Median = 38.1 Q <sub>3</sub> = 44.8 P <sub>90</sub> = 50.8 P <sub>99</sub> = 57.3																					Hours of Missing Data:	6			
																					Hours of Calibration:	6			
																					Percent Operational Time:	100.0			
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-May	38	37	36	35	34	33	33	33	34	35	36	38	41	44	47	48	49	50	50	50	48	45	44	43	50.3
2-May	42	42	40	40	41	41	41	40	40	40	40	40	41	42	42	43	43	42	41	40	39	37	35	34	43.0
3-May	34	34	34	35	36	37	39	39	38	38	38	38	38	38	39	39	39	39	39	39	38	37	37	36	39.3
4-May	34	33	32	31	31	30	29	30	31	33	35	37	38	41	44	45	46	47	49	49	49	49	48	47	49.3
5-May	46	43	40	38	37	32	28	24	22	23	25	27	29	33	36	40	43	44	45	44	43	42	41	39	45.8
6-May	38	36	35	34	32	31	29	29	30	31	32	34	36	38	40	42	43	44	44	44	43	42	41	40	43.8
7-May	38	37	34	31	28	25	22	20	21	23	26	29	32	36	41	44	45	46	47	46	45	43	41	39	46.7
8-May	38	37	32	29	27	25	22	19	19	18	20	23	27	31	36	40	44	47	49	49	48	46	44	43	48.8
9-May	41	37	33	29	24	19	16	16	15	16	19	22	28	34	38	43	46	48	48	47	45	44	44	42	48.2
10-May	40	39	37	35	34	31	28	26	25	26	28	30	32	35	40	42	42	42	41	39	38	37	34	32	42.5
11-May	31	30	29	28	27	26	25	24	24	24	24	24	25	26	27	27	27	27	26	25	25	25	25	23	31.0
12-May	22	21	20	19	20	18	17	17	17	18	19	21	23	26	30	34	37	39	41	41	41	40	38	36	41.2
13-May	35	34	34	34	32	31	31	31	30	30	32	35	38	42	45	48	51	53	54	54	54	53	51	49	54.4
14-May	48	47	45	43	40	38	37	36	34	34	35	37	39	41	43	45	48	49	50	52	53	54	55	55	55.1
15-May	55	54	53	52	52	50	49	48	48	47	47	47	48	48	49	50	50	50	50	49	49	48	46	45	54.6
16-May	44	42	40	37	33	28	24	22	21	22	23	25	30	36	41	44	47	48	49	49	48	47	46	45	49.4
17-May	44	43	41	40	38	36	33	31	30	30	32	35	39	42	45	49	52	54	55	51	47	44	41	38	54.6
18-May	34	29	25	23	21	19	18	18	18	19	20	22	25	27	30	33	36	38	40	42	42	40	38	36	41.9
19-May	33	30	28	25	24	23	21	20	20	19	19	18	N	N	N	N	N	N	53	52	51	50	48	43	53.2
20-May	38	33	28	23	19	15	11	10	10	13	17	18	25	32	39	45	50	52	52	51	49	46	43	40	52.2
21-May	37	34	32	29	26	25	23	23	24	22	22	25	29	33	39	44	47	51	51	52	51	47	43	38	52.1
22-May	34	28	24	19	15	13	12	13	14	15	19	25	31	37	42	47	51	51	53	52	51	50	48	45	52.7
23-May	43	41	40	39	38	37	36	35	36	34	32	31	29	28	28	27	28	30	31	33	34	35	34	34	43.1
24-May	33	31	30	28	26	24	23	23	22	22	22	24	27	30	35	36	39	42	42	43	42	41	38	36	43.1
25-May	32	30	28	27	25	24	23	25	28	30	33	36	40	44	44	46	47	47	47	47	46	46	46	45	47.2
26-May	44	43	43	41	41	40	39	38	37	36	35	34	33	34	34	35	36	38	40	41	42	42	42	41	44.0
27-May	40	38	36	34	33	32	29	27	26	25	25	28	32	35	39	44	48	52	55	55	54	53	51	49	55.0
28-May	47	44	42	40	40	40	40	40	42	45	48	48	49	51	53	55	56	57	57	57	56	54	51	46	57.4
29-May	39	33	30	23	18	14	13	14	17	20	23	28	34	41	45	49	53	55	56	56	55	52	49	44	56.4
30-May	42	40	38	35	33	30	30	31	32	34	36	38	42	46	50	53	55	57	58	59	58	57	56	54	58.7
31-May	53	50	47	45	42	39	35	31	30	29	31	33	36	39	45	50	55	57	58	58	57	55	52	51	58.0
54.6 54.1 53.2 52.4 51.6 50.5 49.2 48.2 47.6 47.4 47.5 48.3 49.4 50.9 53.1 55.2 56.5 57.4 58.2 58.7 58.3 57.2 55.6 55.0																									
Diurnal Maximums																									
N - Not Valid																									

### Span Responses

Ozone (O<sub>3</sub>)  
Henry Pirker - May 2011



## Hourly Averages

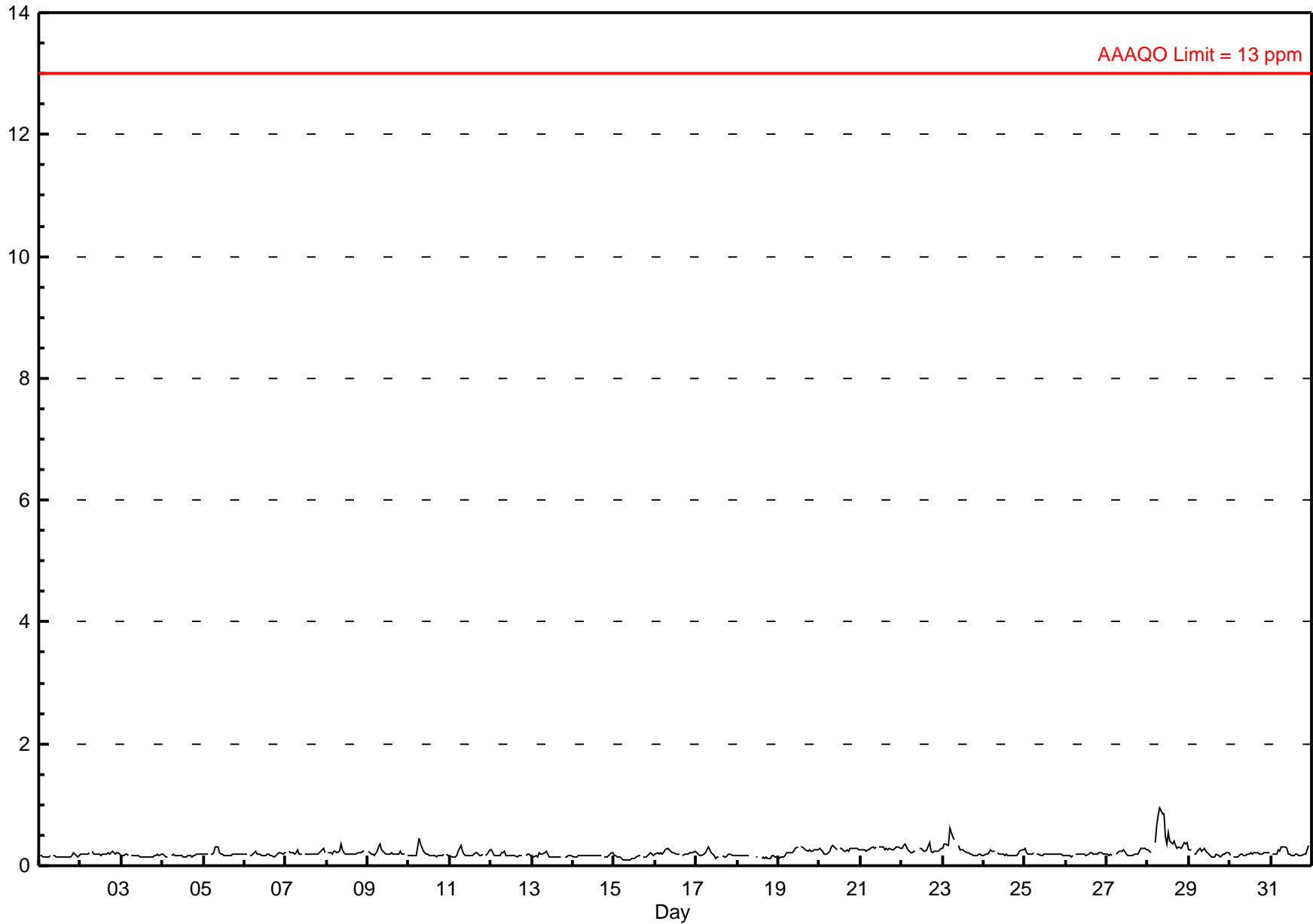
**Carbon Monoxide (CO) - ppm**

**Henry Pirker - May 2011**

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 0.95 ppm on May 28 08:00	Maximum Daily Average: 0.45 ppm on May 28		Hours of Data:	707
Minimum Value: 0.1 ppm on May 15 08:00	Minimum Daily Average: 0.14 ppm on May 15		Hours of Missing Data:	37
Maximum Diurnal Average: 0.27 ppm at hour 8	Minimum Diurnal Average: 0.18 ppm at hour 18		Hours of Calibration:	37
Monthly Average: 0.209 ppm	Percentiles: P <sub>1</sub> = 0.12 P <sub>10</sub> = 0.15 Q <sub>1</sub> = 0.16 Median = 0.19 Q <sub>3</sub> = 0.23 P <sub>90</sub> = 0.29 P <sub>99</sub> = 0.52		Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																							
1-May	0.2	0.2	0.1	0.1	0.2	0.1	0.2	A	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.16	0.20																					
2-May	0.2	0.2	0.2	0.2	0.2	0.2	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.20	0.23																					
3-May	0.2	0.2	0.2	0.2	0.2	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.16	0.19																					
4-May	0.2	0.2	0.1	0.1	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.16	0.18																					
5-May	0.2	0.2	0.2	A	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.19	0.30																					
6-May	0.2	0.2	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.19	0.23																					
7-May	0.2	A	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.21	0.29																					
8-May	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	A	A	0.22	0.36																					
9-May	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	A	0.2	0.21	0.36																					
10-May	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	A	0.2	0.2	0.20	0.45																					
11-May	0.2	0.2	0.1	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	A	0.2	0.2	0.19	0.33																					
12-May	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	A	0.2	0.2	0.2	0.18	0.27																					
13-May	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	A	0.2	0.2	0.2	0.2	0.2	0.17	0.25																					
14-May	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	A	0.1	0.1	0.1	0.1	0.2	0.2	0.16	0.21																					
15-May	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	A	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.14	0.22																					
16-May	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.21	0.28																					
17-May	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.1	A	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.18	0.30																					
18-May	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	C	C	C	0.1	0.1	A	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.15	0.18																					
19-May	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	A	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.23	0.32																					
20-May	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	A	0.3	0.3	0.3	0.2	0.2	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.26	0.32																					
21-May	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	A	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.28	0.32																					
22-May	0.3	0.3	0.4	0.3	0.3	0.2	0.2	0.2	0.2	A	0.3	0.3	0.3	0.2	0.2	0.3	0.4	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.26	0.37																					
23-May	0.3	0.4	0.4	0.3	0.6	0.6	0.5	0.4	A	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.29	0.61																					
24-May	0.2	0.2	0.2	0.2	0.3	0.2	0.2	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.20	0.27																						
25-May	0.3	0.2	0.2	0.2	0.2	0.2	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.19	0.29																						
26-May	0.2	0.2	0.2	0.2	0.2	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.19	0.22																					
27-May	0.2	0.2	0.2	0.2	A	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.21	0.29																					
28-May	0.3	0.2	0.2	A	0.4	0.7	0.8	1.0	0.9	0.9	0.5	0.3	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.45	0.95																					
29-May	0.3	0.3	A	0.2	0.2	0.2	0.3	0.2	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.21	0.29																					
30-May	0.2	A	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.19	0.23																					
31-May	A	0.2	0.2	0.2	0.3	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	A	0.22	0.34																					
Diurnal Average																								0.20	0.20	0.19	0.19	0.21	0.23	0.26	0.27	0.25	0.23	0.21	0.20	0.20	0.19	0.19	0.19	0.19	0.18	0.19	0.20	0.21	0.22	0.22	0.21
Diurnal Maximum																								0.29	0.36	0.35	0.34	0.61	0.65	0.83	0.95	0.86	0.86	0.47	0.35	0.54	0.39	0.37	0.41	0.37	0.29	0.30	0.29	0.33	0.39	0.36	0.37

C - Calibration                      A - Automated Daily Zero Span  
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 13 ppm    24-hr na



## Hourly Maximums

Carbon Monoxide (CO) - ppm

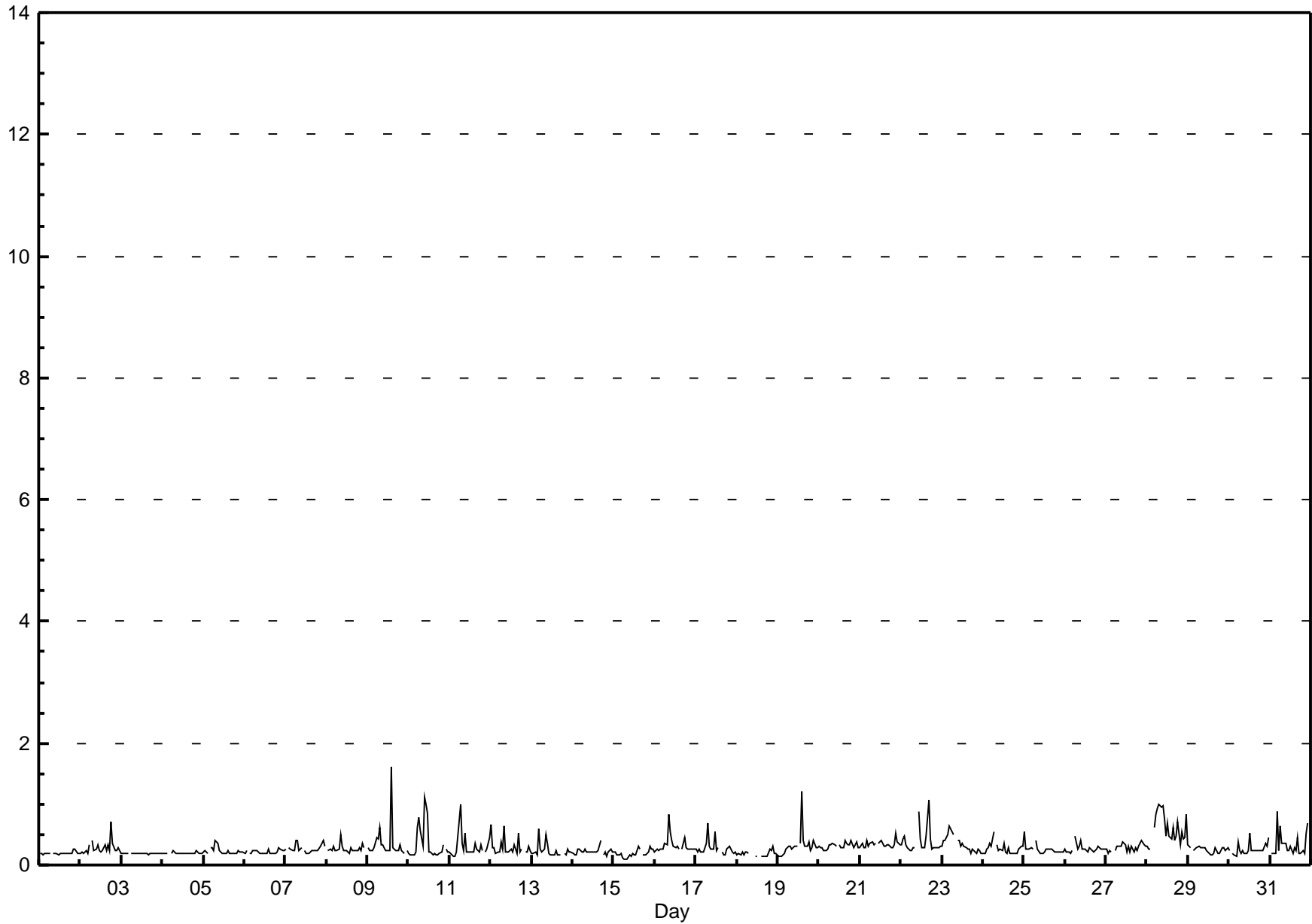
Henry Pirker - May 2011

Maximum Value: 1.62 ppm on May 9 15:00		Maximum Daily Average: 0.60 ppm on May 28		Hours in Service: 744																							
Minimum Value: 0.1 ppm on May 15 07:00		Minimum Daily Average: 0.18 ppm on May 15		Hours of Data: 707																							
Maximum Diurnal Average: 0.38 ppm at hour 7		Minimum Diurnal Average: 0.23 ppm at hour 4		Hours of Missing Data: 37																							
Monthly Average: 0.284 ppm		Percentiles: P <sub>1</sub> = 0.15 P <sub>10</sub> = 0.18 Q <sub>1</sub> = 0.20 Median = 0.25 Q <sub>3</sub> = 0.30 P <sub>90</sub> = 0.40 P <sub>99</sub> = 0.98		Hours of Calibration: 37																							
		Percent Operational Time: 100.0																									
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-May	0.2	0.2	0.2	0.2	0.2	0.2	0.2	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.20	0.25
2-May	0.2	0.2	0.2	0.2	0.2	0.3	A	0.4	0.2	0.3	0.3	0.2	0.2	0.2	0.3	0.2	0.3	0.2	0.7	0.3	0.2	0.2	0.3	0.2	0.2	0.29	0.72
3-May	0.2	0.2	0.2	0.2	0.2	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.19	0.20
4-May	0.2	0.2	0.2	0.2	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.19	0.24
5-May	0.2	0.2	0.2	A	0.3	0.3	0.2	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.23	0.39
6-May	0.2	0.2	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.21	0.29	
7-May	0.3	A	0.3	0.3	0.2	0.2	0.4	0.4	0.2	0.3	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.3	0.27	0.40	
8-May	A	0.2	0.3	0.2	0.3	0.2	0.2	0.3	0.5	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.3	A	0.27	0.49	
9-May	0.3	0.2	0.2	0.2	0.3	0.4	0.4	0.6	0.3	0.3	0.2	0.2	0.2	1.6	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.2	A	0.2	0.35	1.62	
10-May	0.2	0.2	0.2	0.2	0.2	0.6	0.8	0.6	0.3	1.1	1.0	0.9	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	A	0.3	0.2	0.37	1.11	
11-May	0.2	0.2	0.2	0.2	0.2	0.5	1.0	0.3	0.2	0.5	0.2	0.2	0.2	0.2	0.4	0.3	0.2	0.3	0.2	A	0.2	0.3	0.5	0.29	0.98		
12-May	0.7	0.3	0.3	0.2	0.2	0.2	0.4	0.3	0.6	0.2	0.2	0.2	0.3	0.2	0.3	0.2	0.5	0.2	0.3	A	0.2	0.2	0.3	0.2	0.29	0.66	
13-May	0.2	0.2	0.2	0.2	0.6	0.3	0.2	0.3	0.5	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	A	0.2	0.2	0.3	0.2	0.2	0.23	0.59	
14-May	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4	A	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.22	0.41	
15-May	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3	A	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.18	0.31	
16-May	0.2	0.3	0.2	0.3	0.3	0.3	0.4	0.3	0.8	0.6	0.4	0.3	0.3	0.3	A	0.3	0.5	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.32	0.83	
17-May	0.3	0.2	0.3	0.2	0.2	0.3	0.4	0.7	0.3	0.3	0.3	0.5	0.2	0.3	A	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.28	0.70	
18-May	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	C	C	C	0.2	0.2	A	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.2	0.19	0.30	
19-May	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	A	0.4	1.2	0.4	0.3	0.3	0.4	0.2	0.3	0.4	0.3	0.3	0.32	1.21	
20-May	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.4	0.3	0.3	A	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.4	0.3	0.3	0.4	0.3	0.32	0.40	
21-May	0.3	0.4	0.3	0.3	0.4	0.3	0.3	0.4	0.3	0.4	A	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.5	0.4	0.3	0.34	0.53	
22-May	0.3	0.4	0.5	0.3	0.3	0.2	0.2	0.3	0.3	A	0.9	0.4	0.3	0.3	0.3	0.5	1.1	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.38	1.06	
23-May	0.3	0.4	0.4	0.5	0.7	0.6	0.5	0.5	A	0.4	0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.2	0.3	0.2	0.2	0.3	0.2	0.2	0.35	0.65	
24-May	0.2	0.2	0.3	0.3	0.4	0.3	0.5	A	0.3	0.2	0.3	0.2	0.3	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.27	0.54	
25-May	0.5	0.3	0.3	0.3	0.3	0.3	A	0.4	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.25	0.55	
26-May	0.3	0.2	0.2	0.2	0.2	A	0.5	0.3	0.3	0.4	0.3	0.3	0.3	0.2	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.26	0.46	
27-May	0.3	0.2	0.2	0.2	A	0.2	0.3	0.3	0.3	0.3	0.4	0.3	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.3	0.4	0.4	0.3	0.3	0.28	0.40	
28-May	0.3	0.3	0.3	A	0.6	0.8	0.9	1.0	0.9	1.0	0.8	0.5	0.7	0.5	0.4	0.6	0.4	0.5	0.7	0.3	0.5	0.4	0.4	0.8	0.60	1.01	
29-May	0.3	0.3	A	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.3	0.2	0.3	0.25	0.34	
30-May	0.2	A	0.2	0.2	0.1	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.26	0.53	
31-May	A	0.2	0.2	0.2	0.9	0.2	0.6	0.3	0.3	0.3	0.2	0.2	0.3	0.2	0.3	0.2	0.4	0.2	0.2	0.2	0.2	0.5	0.7	A	0.34	0.88	
		0.26	0.24	0.23	0.23	0.30	0.31	0.38	0.36	0.34	0.34	0.32	0.28	0.26	0.24	0.33	0.26	0.29	0.24	0.26	0.25	0.26	0.29	0.29	0.28	Diurnal Average	
		0.66	0.44	0.49	0.50	0.88	0.82	0.98	1.01	0.94	1.11	0.99	0.85	0.68	0.47	1.62	0.63	1.06	0.48	0.72	0.39	0.53	0.53	0.70	0.82	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									

**Hourly Maximums**

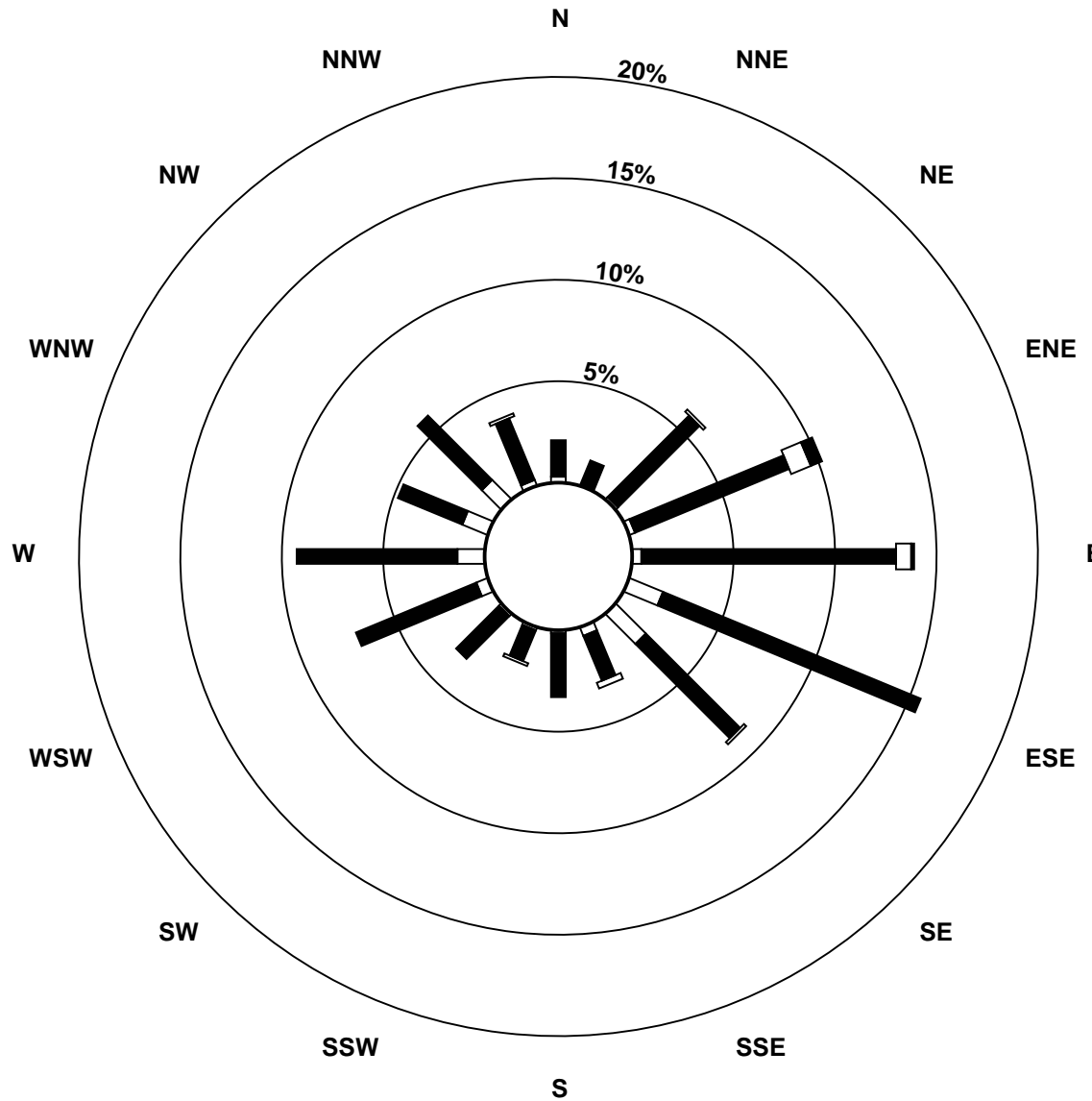
**Carbon Monoxide (CO) - ppm**

**Henry Pirker - May 2011**

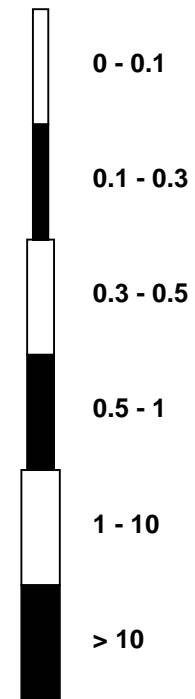


**Pollutant Rose**

**Carbon Monoxide (CO) - ppm**  
**Henry Pirker - May 2011**



**Pollutant Classes (ppm)**



## Eight Hour Running Averages

## Carbon Monoxide (CO) - ppm

### Henry Pirker - May 2011

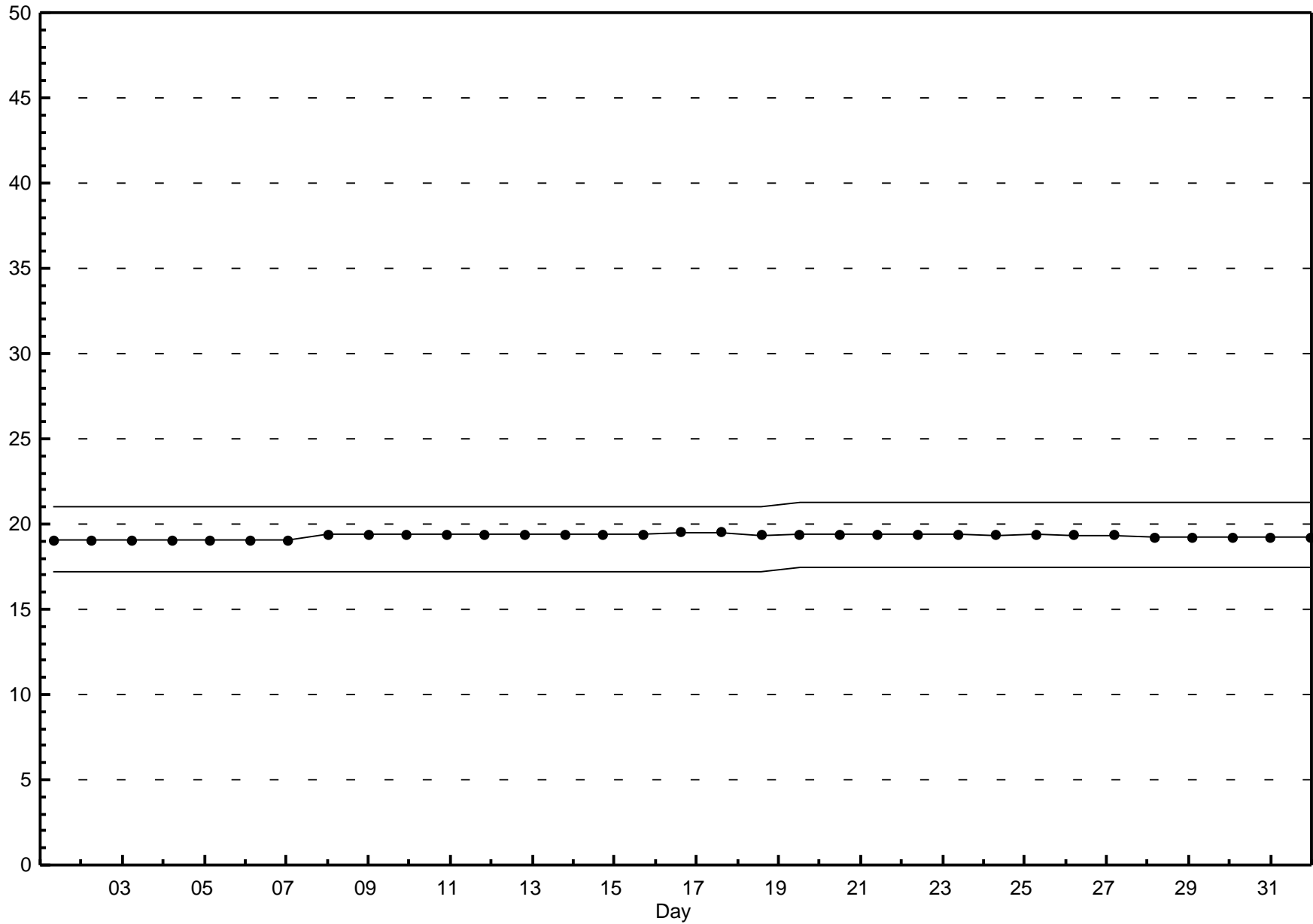
Number of Exceedences (AAAQO): 8-hr: 0	Hours in Service: 744
Maximum Value: 0.71 ppm on May 28 11:00	Hours of Data: 737
Minimum Value: 0.11 ppm on May 15 12:00	Hours of Missing Data: 7
	Hours of Calibration: 7
	Percent Operational Time: 100.0
Percentiles: P <sub>1</sub> = 0.13 P <sub>10</sub> = 0.16 Q <sub>1</sub> = 0.17 Median = 0.19 Q <sub>3</sub> = 0.23 P <sub>90</sub> = 0.27 P <sub>99</sub> = 0.58	

Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-May	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.17
2-May	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.21
3-May	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.20
4-May	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.17
5-May	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.23
6-May	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.19
7-May	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.22
8-May	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.24
9-May	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.25
10-May	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.27
11-May	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.20
12-May	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.21
13-May	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.20
14-May	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.17
15-May	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.17
16-May	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.23
17-May	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.22
18-May	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	N	N	N	N	N	N	N	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.17
19-May	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.28
20-May	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.29
21-May	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.30
22-May	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.31
23-May	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.44
24-May	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.22
25-May	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.23
26-May	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.20
27-May	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.24
28-May	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.5	0.6	0.7	0.7	0.7	0.7	0.7	0.6	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.71
29-May	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.33
30-May	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.21
31-May	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.26
	0.33	0.32	0.32	0.31	0.34	0.38	0.41	0.51	0.59	0.68	0.71	0.67	0.69	0.66	0.60	0.53	0.46	0.39	0.37	0.36	0.34	0.34	0.34	0.33	

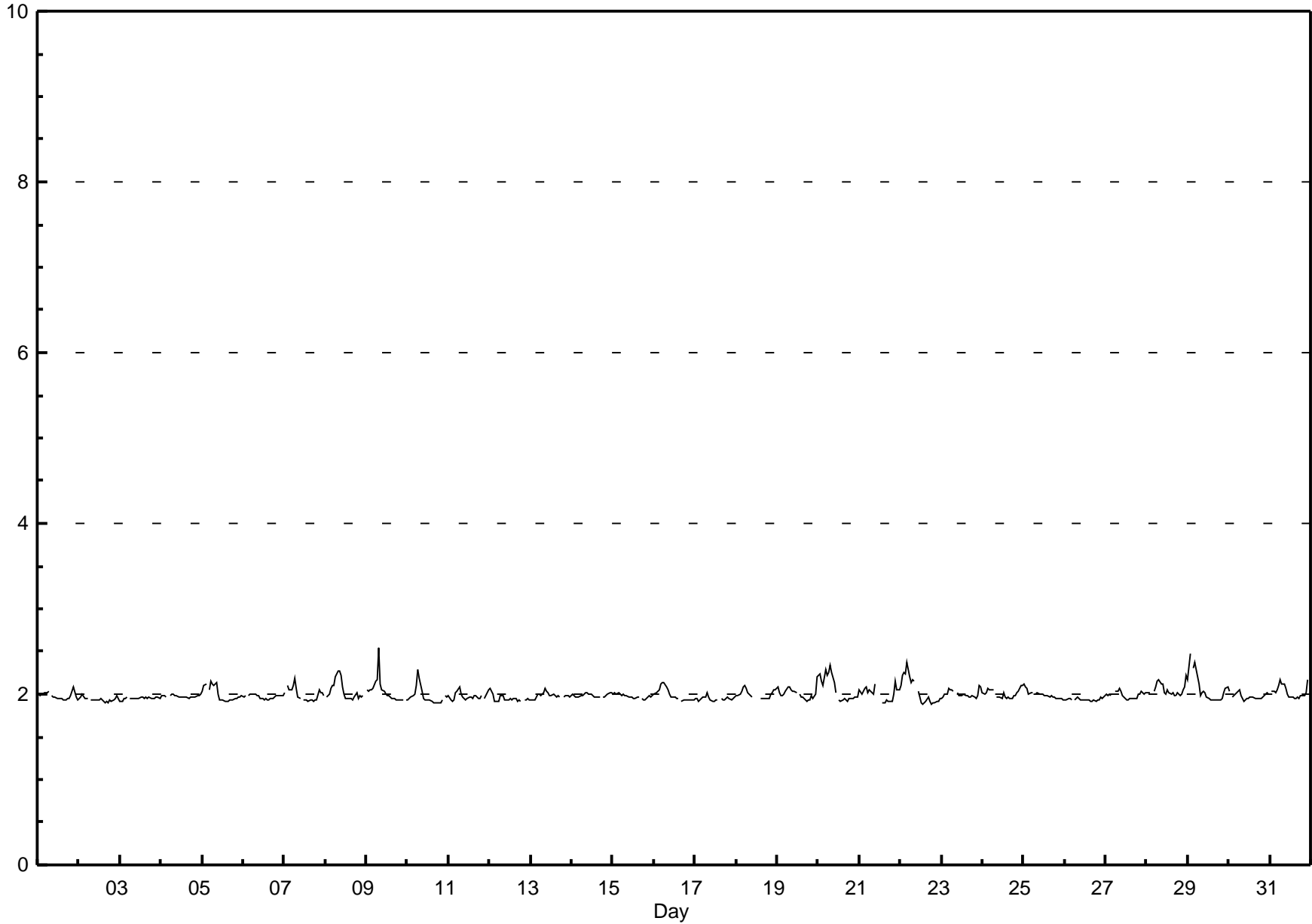
Diurnal Maximums

N - Not Valid  
 Alberta Ambient Air Quality Objectives (AAAQO): 8-hr 5 ppm









## Hourly Maximums

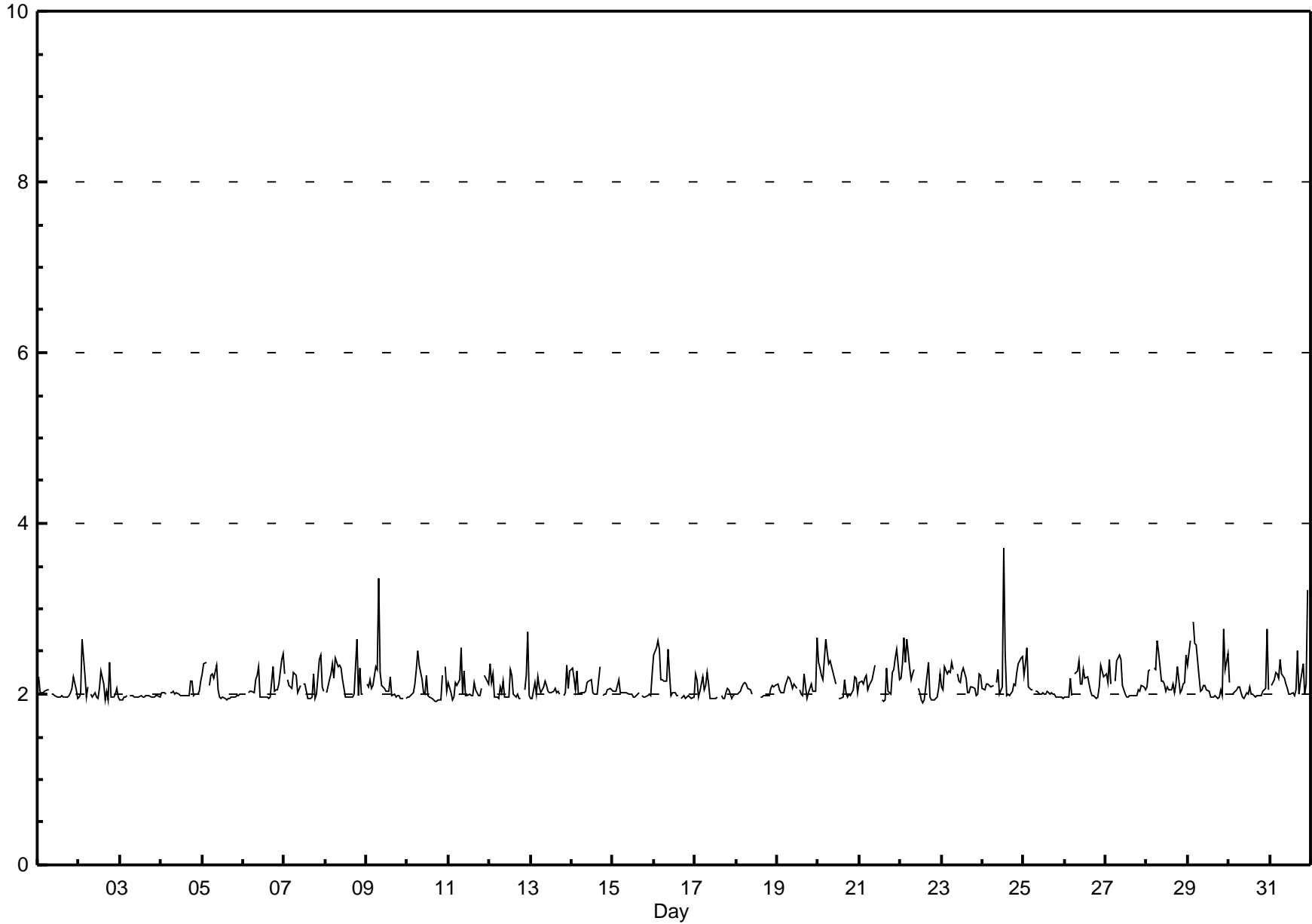
## Total Hydrocarbons (THC) - ppm

### Henry Pirker - May 2011

Maximum Value: 3.71 ppm on May 24 13:00		Maximum Daily Average: 2.22 ppm on May 24		Hours in Service:	744																																											
Minimum Value: 1.9 ppm on May 22 14:00		Minimum Daily Average: 1.97 ppm on May 3		Hours of Data:	707																																											
Maximum Diurnal Average: 2.23 ppm at hour 8		Minimum Diurnal Average: 2.00 ppm at hour 16		Hours of Missing Data:	37																																											
Monthly Average: 2.104 ppm		Percentiles: P <sub>1</sub> = 1.93 P <sub>10</sub> = 1.96 Q <sub>1</sub> = 1.98 Median = 2.04 Q <sub>3</sub> = 2.18 P <sub>90</sub> = 2.33 P <sub>99</sub> = 2.71		Hours of Calibration:	37																																											
				Percent Operational Time:	100.0																																											
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-May	2.2	2.0	2.0	2.0	2.0	2.1	2.1	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.1	2.0	2.02	2.21																						
2-May	2.0	2.0	2.6	2.2	2.0	2.1	A	2.0	2.0	2.0	2.0	1.9	2.1	2.3	2.1	1.9	2.0	1.9	2.4	2.0	2.0	2.0	2.1	2.0	2.07	2.65																						
3-May	1.9	1.9	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.97	1.99																						
4-May	2.0	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.2	2.0	2.0	2.0	2.0	2.1	2.02	2.16																						
5-May	2.2	2.4	2.4	A	2.1	2.2	2.2	2.2	2.3	2.1	2.0	1.9	2.0	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.07	2.38																						
6-May	2.0	2.0	A	2.0	2.0	2.0	2.0	2.2	2.2	2.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.3	2.0	2.0	2.1	2.1	2.4	2.5	2.09	2.48																						
7-May	2.2	A	2.2	2.1	2.1	2.2	2.2	2.2	2.0	2.1	A	2.1	2.1	2.0	2.0	2.0	2.0	2.2	2.0	2.0	2.4	2.5	2.1	2.0	2.12	2.46																						
8-May	A	2.0	2.2	2.2	2.4	2.2	2.4	2.3	2.3	2.3	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.6	2.0	2.3	2.0	2.0	A	2.15	2.64																						
9-May	2.1	2.1	2.2	2.1	2.1	2.3	2.3	3.4	2.2	2.1	2.1	2.0	2.0	2.0	2.2	2.0	2.0	2.0	2.0	2.0	1.9	1.9	A	1.9	2.13	3.36																						
10-May	2.0	2.0	2.0	2.0	2.1	2.3	2.5	2.3	2.2	2.0	2.0	2.2	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	2.2	A	2.3	2.0	2.07	2.50																						
11-May	2.1	2.0	1.9	2.0	2.1	2.1	2.2	2.6	2.0	2.3	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.1	A	2.2	2.2	2.1	2.09	2.55																						
12-May	2.4	2.1	2.2	2.0	2.0	1.9	2.1	2.0	2.2	2.0	2.0	2.0	2.3	2.2	2.0	2.0	2.0	1.9	1.9	A	2.0	2.2	2.7	2.0	2.09	2.73																						
13-May	1.9	2.0	2.1	2.0	2.2	2.1	2.0	2.1	2.2	2.1	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	A	2.0	2.0	2.3	2.1	2.3	2.07	2.34																						
14-May	2.3	2.2	2.1	2.3	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.2	2.0	2.0	2.0	2.0	2.3	A	2.0	2.0	2.0	2.1	2.1	2.1	2.08	2.32																						
15-May	2.0	2.0	2.0	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.02	2.24																						
16-May	2.5	2.5	2.6	2.5	2.2	2.2	2.2	2.1	2.5	2.2	2.0	2.0	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.14	2.62																						
17-May	2.2	2.2	2.0	2.0	2.2	2.0	2.1	2.2	2.1	2.0	1.9	1.9	2.0	2.0	A	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.04	2.25																						
18-May	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.0	2.0	C	C	1.9	A	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.04	2.13																						
19-May	2.1	2.0	2.0	2.0	2.0	2.1	2.2	2.2	2.1	2.1	2.1	2.1	A	2.0	2.0	2.0	2.2	2.0	2.0	2.1	2.1	2.0	2.0	2.7	2.10	2.67																						
20-May	2.4	2.3	2.2	2.2	2.6	2.5	2.4	2.4	2.3	2.2	2.1	A	2.0	2.0	2.0	2.2	2.0	2.0	2.0	2.0	2.0	2.2	2.2	2.0	2.18	2.64																						
21-May	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.2	2.3	2.3	A	2.3	A	1.9	1.9	1.9	2.3	2.0	2.0	2.3	2.3	2.4	2.5	2.2	2.17	2.53																						
22-May	2.2	2.4	2.7	2.4	2.6	2.3	2.2	2.2	2.3	A	2.1	2.0	1.9	1.9	1.9	2.1	2.4	2.0	1.9	1.9	1.9	2.0	2.1	2.2	2.15	2.66																						
23-May	2.1	2.1	2.3	2.2	2.3	2.3	2.4	2.3	A	2.2	2.1	2.1	2.3	2.3	2.2	2.0	2.0	2.1	2.1	2.1	2.0	2.0	2.2	2.2	2.17	2.37																						
24-May	2.1	2.1	2.1	2.1	2.1	2.1	2.1	A	2.1	2.3	2.0	2.1	3.7	2.5	2.0	2.0	2.0	2.0	2.1	2.1	2.3	2.4	2.4	2.4	2.22	3.71																						
25-May	2.2	2.4	2.5	2.1	2.0	2.1	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	2.05	2.54																						
26-May	2.0	2.0	2.0	2.2	2.0	A	2.2	2.3	2.4	2.1	2.1	2.3	2.2	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.3	2.3	2.2	2.12	2.39																						
27-May	2.2	2.1	2.4	2.1	A	2.2	2.4	2.4	2.5	2.4	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.1	2.1	2.1	2.13	2.45																						
28-May	2.1	2.3	2.3	A	2.3	2.3	2.6	2.5	2.1	2.1	2.1	2.0	2.1	2.1	2.0	2.1	2.0	2.1	2.3	2.0	2.0	2.1	2.5	2.19	2.63																							
29-May	2.3	2.6	A	2.8	2.6	2.6	2.2	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.8	2.3	2.5	2.21	2.84																						
30-May	2.1	A	2.0	2.0	2.0	2.1	2.1	2.0	2.0	1.9	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.8	2.1	2.05	2.76																						
31-May	A	2.1	2.2	2.3	2.2	2.2	2.4	2.2	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.5	2.0	2.1	2.4	2.0	2.1	3.2	A	2.20	3.21																						
																								2.14	2.13	2.18	2.15	2.16	2.16	2.20	2.23	2.16	2.12	2.04	2.05	2.08	2.04	2.00	2.00	2.05	2.01	2.04	2.02	2.06	2.13	2.21	2.14	Diurnal Average
																								2.47	2.63	2.66	2.84	2.65	2.58	2.63	3.36	2.52	2.41	2.17	2.33	3.71	2.47	2.20	2.16	2.51	2.32	2.64	2.36	2.41	2.76	3.21	2.67	Diurnal Maximum
C - Calibration																								A - Automated Daily Zero Span																								

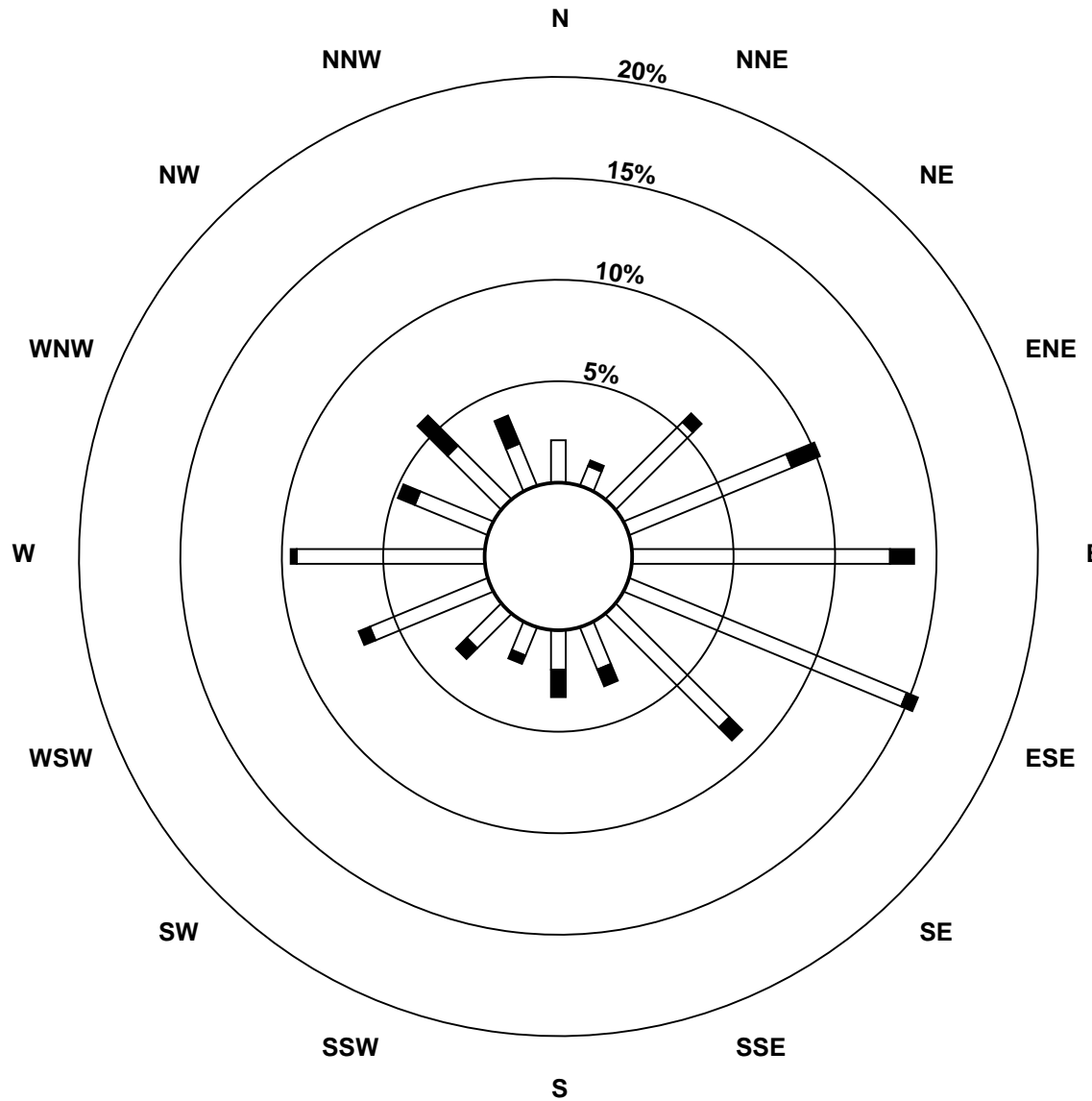
**Hourly Maximums**

**Total Hydrocarbons (THC) - ppm**  
**Henry Pirker - May 2011**

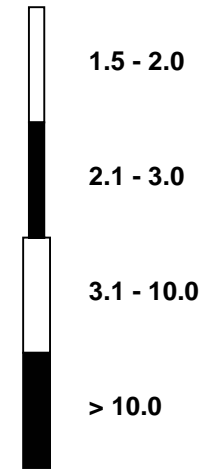


**Pollutant Rose**

**Total Hydrocarbons (THC) - ppm**  
**Henry Pirker - May 2011**

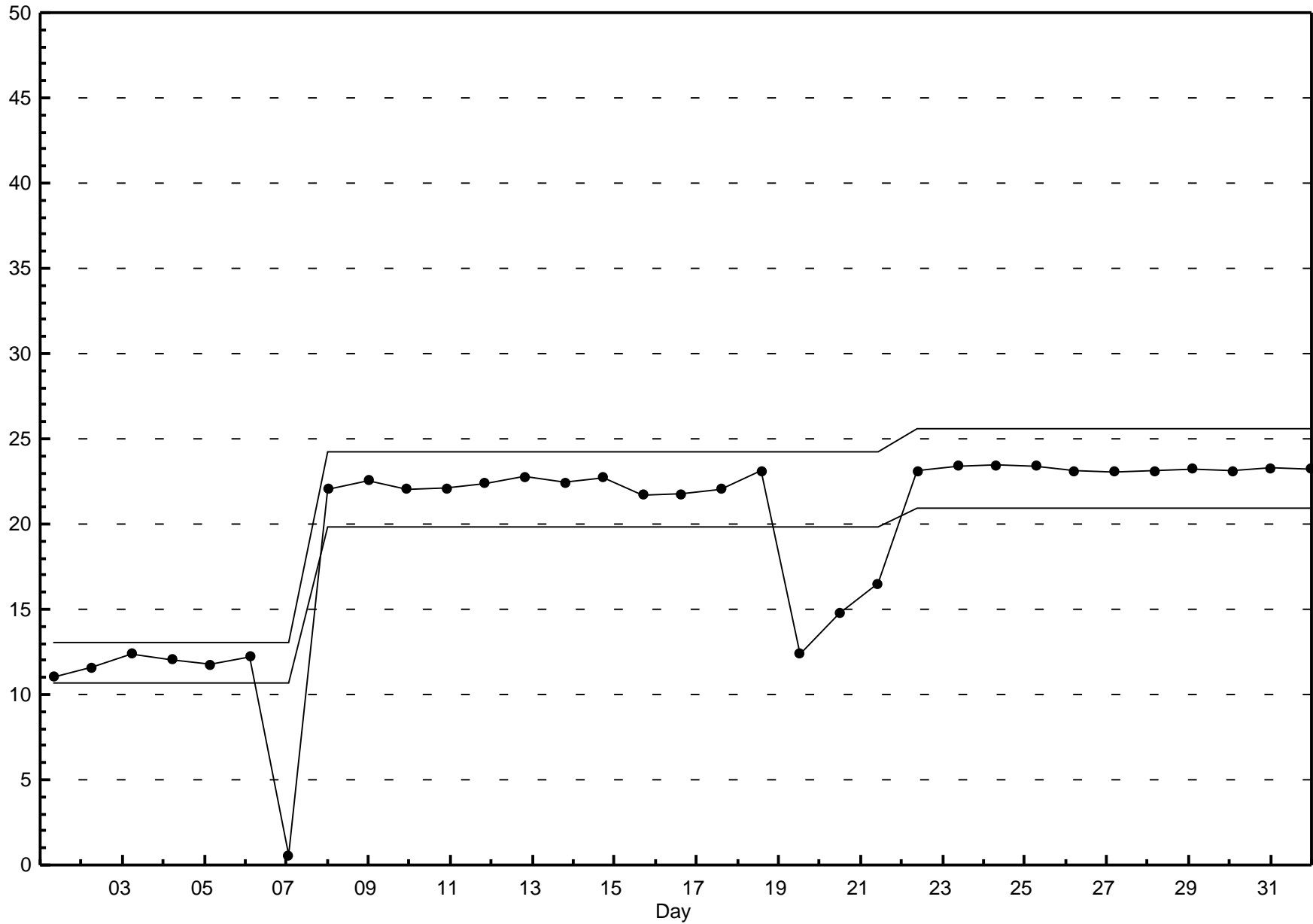


**Pollutant Classes (ppm)**



**Span Responses**

**Total Hydrocarbons (THC)**  
**Henry Pirker - May 2011**



## Hourly Averages

## Particulate Matter 2.5 (PM<sub>2.5</sub>) - µg/m<sup>3</sup>

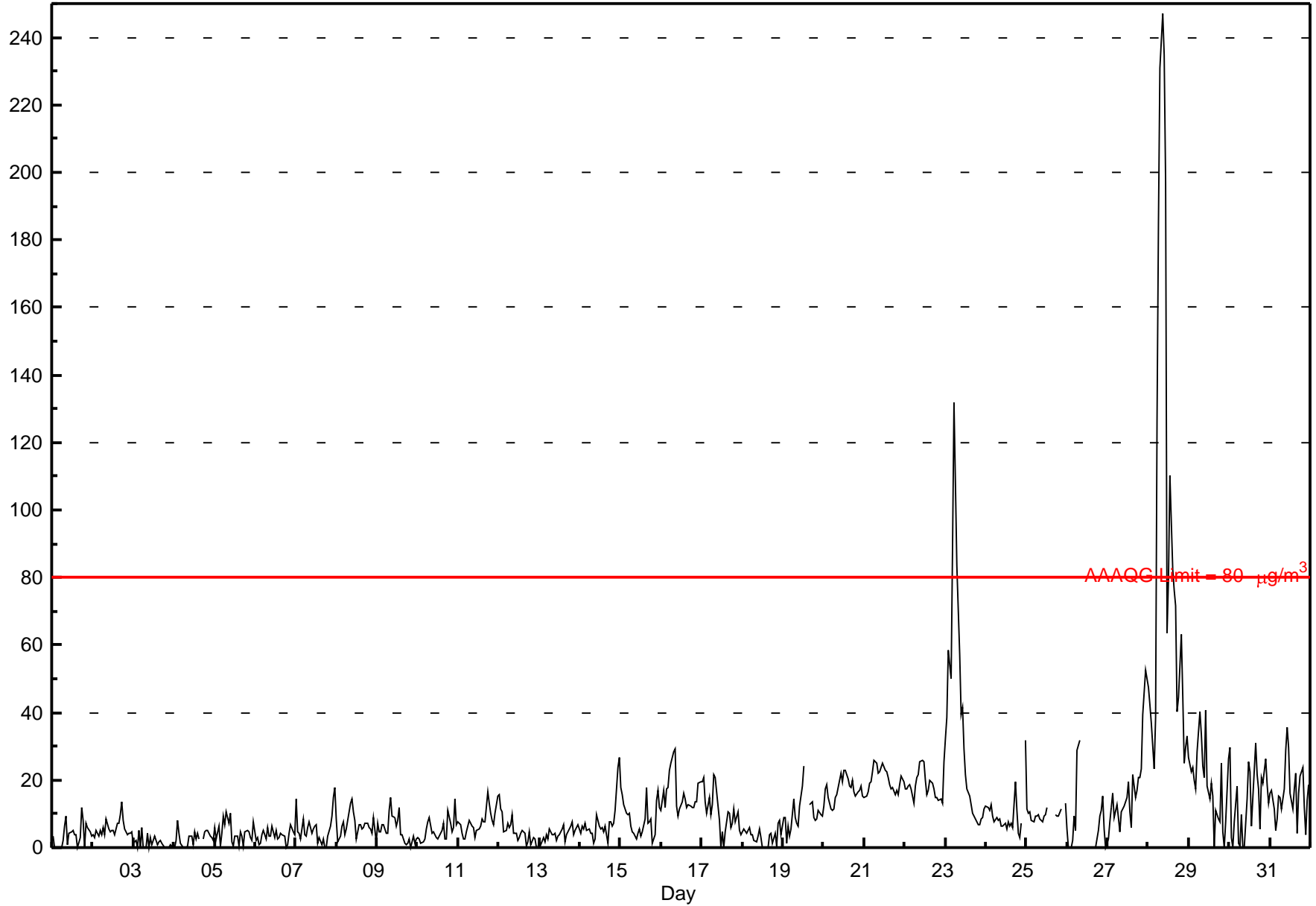
### Henry Pirker - May 2011

Number of Exceedences: 1-hr: 12 24-hr: 2	Hours in Service: 744
Maximum Value: 247.1 µg/m <sup>3</sup> on May 28 09:00	Maximum Daily Average: 90.6 µg/m <sup>3</sup> on May 28
Minimum Value: 0 µg/m <sup>3</sup> on May 1 02:00	Hours of Data: 725
Minimum Daily Average: 1.5 µg/m <sup>3</sup> on May 3	Hours of Missing Data: 19
Maximum Diurnal Average: 20.5 µg/m <sup>3</sup> at hour 8	Hours of Calibration: 0
Monthly Average: 12.83 µg/m <sup>3</sup>	Percent Operational Time: 97.5
Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 1.5 Q <sub>1</sub> = 3.9 Median = 7.4 Q <sub>3</sub> = 15.0 P <sub>90</sub> = 23.5 P <sub>99</sub> = 122.5	

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	4	0	0	0	0	0	2	7	9	1	4	5	5	4	4	0	3	12	8	0	7	6	4	3	3.7	12.0
2-May	4	3	5	3	5	4	6	4	9	5	5	5	5	4	7	7	10	14	8	6	4	4	4	5	5.6	13.5
3-May	1	2	0	5	0	6	0	0	4	0	3	1	3	2	1	2	2	1	0	0	0	0	1	0	1.5	5.8
4-May	0	2	8	4	1	0	0	0	0	3	4	1	5	3	4	3	M	3	5	5	5	3	3	2	2.8	7.9
5-May	6	3	6	0	4	10	7	11	7	10	2	1	3	3	0	4	4	0	5	5	5	3	2	8	4.5	10.7
6-May	2	3	1	1	4	5	2	6	4	3	6	3	5	3	3	4	4	3	0	1	4	7	5	4	3.5	6.6
7-May	15	5	4	3	8	4	3	6	8	4	5	6	7	1	3	1	3	0	0	3	6	9	15	18	5.8	17.9
8-May	8	2	4	6	8	4	6	11	13	14	11	8	2	7	7	6	6	7	7	6	6	4	9	2	6.8	14.4
9-May	7	5	4	7	7	4	4	11	15	9	9	7	8	12	4	4	1	1	1	3	0	4	1	2	5.4	15.0
10-May	3	2	1	2	2	6	8	9	4	5	4	3	2	3	5	7	3	3	11	7	4	6	14	7	5.1	14.3
11-May	8	7	4	3	3	5	8	7	6	6	3	5	5	6	8	8	7	16	13	10	8	7	10	15	7.4	16.4
12-May	16	12	10	5	5	7	6	7	10	4	4	2	3	4	5	4	0	2	5	1	3	3	0	0	4.9	15.6
13-May	2	1	3	2	4	3	5	4	4	4	2	3	4	5	7	1	4	5	6	8	4	5	6	7	4.1	7.6
14-May	4	6	5	7	5	6	4	4	1	3	10	6	6	6	5	6	1	8	7	6	7	11	24	27	7.4	26.9
15-May	18	16	13	10	10	10	6	5	4	2	4	5	3	5	8	18	7	8	8	1	4	14	17	12	8.7	18.0
16-May	11	17	12	17	18	23	25	28	29	12	9	11	13	16	14	12	13	12	12	12	14	14	19	20	16.0	29.3
17-May	20	21	14	10	15	10	13	22	21	17	8	0	5	0	5	11	10	6	7	11	8	11	5	4	10.4	21.6
18-May	5	5	4	5	6	4	4	2	2	3	5	3	0	0	0	0	4	4	1	4	0	7	8	4	3.4	8.3
19-May	9	9	1	6	4	5	15	9	7	6	12	18	24	M	M	M	13	14	9	8	8	11	10	9	9.9	24.2
20-May	12	17	19	15	11	11	12	15	15	20	22	20	23	23	20	18	18	20	17	15	17	17	18	15	17.1	23.0
21-May	15	15	16	19	20	22	26	25	22	22	24	25	23	22	21	19	17	18	16	17	16	19	21	20	20.0	25.8
22-May	17	17	18	19	17	13	18	21	21	26	26	26	20	16	17	20	19	17	15	15	14	14	13	25	18.5	25.8
23-May	32	39	58	50	89	132	108	84	57	39	41	29	22	17	15	13	10	9	8	7	7	9	9	12	37.3	131.8
24-May	12	12	11	13	9	8	9	8	9	6	6	7	6	8	6	7	6	20	11	4	3	7	N	32	9.6	31.7
25-May	11	10	11	8	8	9	9	10	9	8	9	10	12	N	10	N	N	10	9	9	12	N	N	13	9.8	13.2
26-May	5	0	0	2	9	5	29	32	N	N	M	M	M	M	M	M	M	0	5	9	11	15	6	0	--	31.9
27-May	3	8	12	16	9	13	9	5	10	11	12	15	19	10	6	22	15	17	21	21	23	39	52	50	17.4	52.5
28-May	47	42	37	23	39	127	185	231	247	235	197	64	80	110	82	76	72	40	45	63	45	25	29	33	90.6	247.1
29-May	27	23	24	20	17	29	40	33	24	21	41	18	14	19	15	0	11	8	8	25	5	0	7	26	18.9	40.6
30-May	30	3	0	8	18	1	0	10	0	0	14	26	23	6	15	31	22	17	6	21	19	26	19	13	13.6	30.8
31-May	16	17	11	5	8	15	15	11	18	29	36	30	16	11	18	22	4	16	21	24	12	4	14	19	16.3	35.5
11.9 10.4 10.3 9.5 11.7 16.1 18.8 20.5 19.7 17.7 18.0 12.1 12.2 11.7 10.9 11.6 10.3 10.0 9.5 10.6 9.0 10.1 11.9 13.1																								Diurnal Average		
47.4 42.5 58.4 49.8 88.8 131.8 185.4 231.1 247.1 234.9 197.2 63.8 79.7 110.1 82.1 76.2 71.7 40.2 44.6 63.0 45.0 39.2 52.5 49.8																								Diurnal Maximum		

M - Maintenance N - Not Valid  
 Alberta Ambient Air Quality Guideline (AAAQG): 1-hr 80 µg/m<sup>3</sup> Alberta Ambient Air Quality Objective (AAAQO): 24-hr 30 µg/m<sup>3</sup>



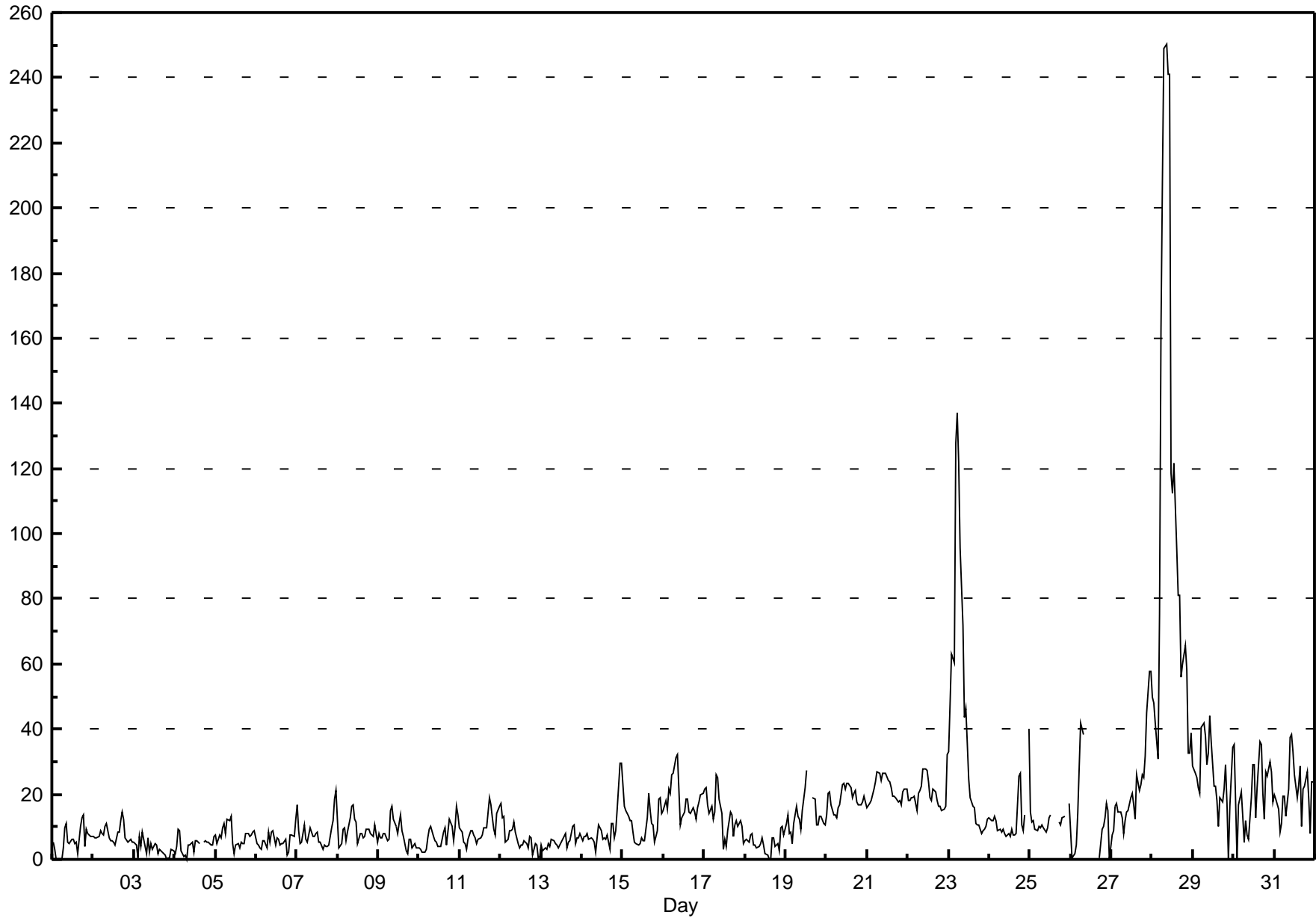


## Hourly Maximums

## Particulate Matter 2.5 (PM<sub>2.5</sub>) - µg/m<sup>3</sup>

### Henry Pirker - May 2011

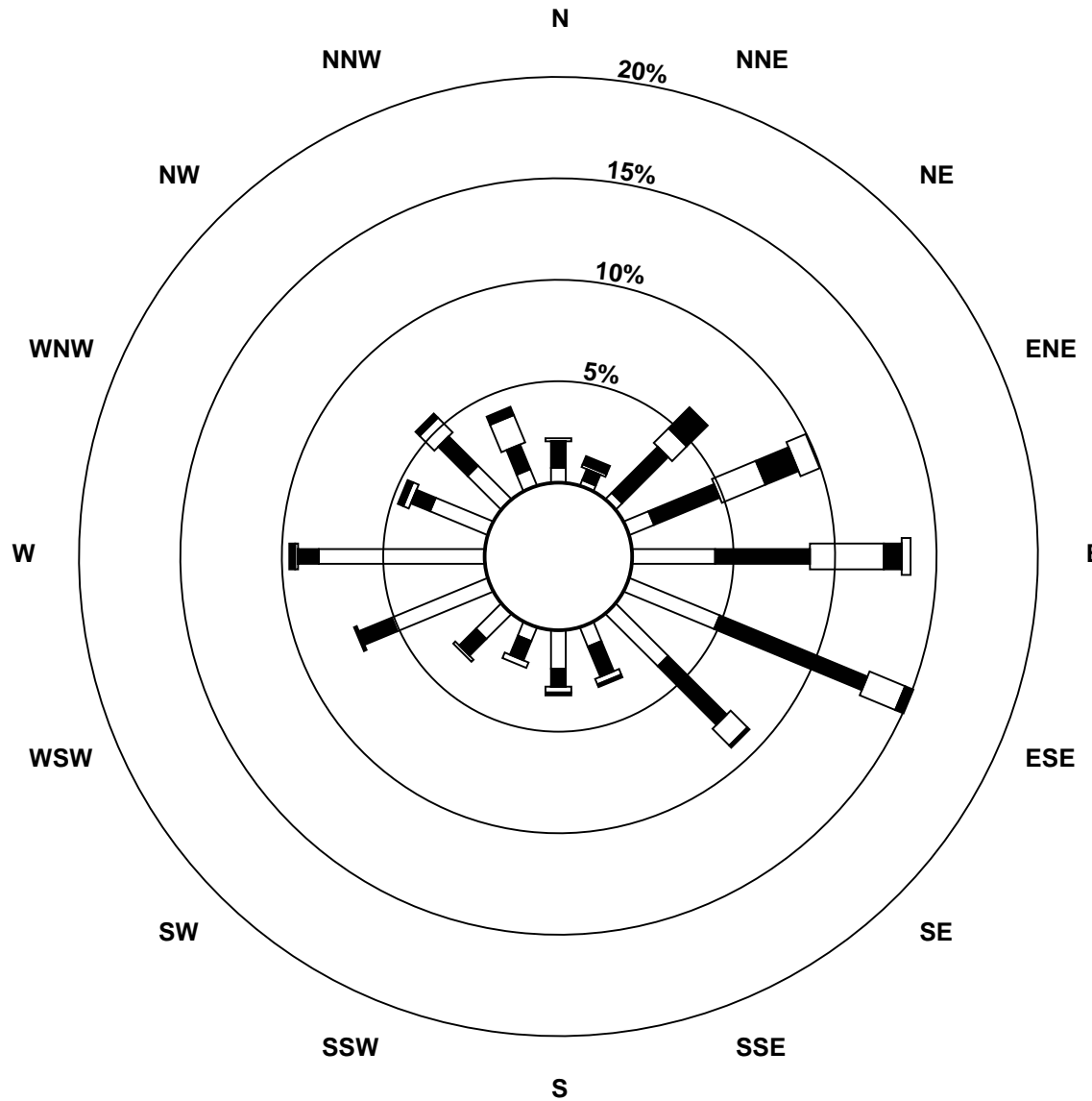
<b>Maximum Value: 250.5 µg/m<sup>3</sup> on May 28 09:00</b>		<b>Maximum Daily Average: 106.3 µg/m<sup>3</sup> on May 28</b>		Hours in Service: 744 Hours of Data: 725 Hours of Missing Data: 19 Hours of Calibration: 0 Percent Operational Time: 97.5																						
<b>Minimum Value: 0 µg/m<sup>3</sup> on May 1 03:00</b>		<b>Minimum Daily Average: 3.4 µg/m<sup>3</sup> on May 3</b>																								
<b>Maximum Diurnal Average: 23.6 µg/m<sup>3</sup> at hour 8</b>		<b>Minimum Diurnal Average: 12.3 µg/m<sup>3</sup> at hour 4</b>																								
<b>Monthly Average: 16.04 µg/m<sup>3</sup></b>		<b>Percentiles: P<sub>1</sub> = 0.0 P<sub>10</sub> = 3.7 Q<sub>1</sub> = 5.9 Median = 9.9 Q<sub>3</sub> = 18.1 P<sub>90</sub> = 27.1 P<sub>99</sub> = 118.3</b>																								
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	5	3	0	0	0	0	3	10	11	5	5	6	6	5	5	2	10	13	14	4	9	8	7	7	5.8	13.8
2-May	7	7	7	7	9	8	8	10	11	6	6	6	5	5	8	8	12	14	12	6	5	6	6	5	7.7	14.4
3-May	5	4	1	7	4	8	6	2	7	2	5	3	5	4	2	3	3	2	2	0	1	1	3	3	3.4	8.4
4-May	2	4	9	9	3	1	1	0	4	5	5	2	6	6	5	5	M	5	6	5	5	4	4	7	4.5	9.4
5-May	7	5	8	7	10	11	8	13	12	13	5	2	4	5	4	5	5	5	8	8	7	7	9	9	7.3	13.0
6-May	5	4	4	3	6	6	3	9	5	9	9	4	7	6	4	5	5	6	1	2	7	7	7	13	5.7	12.6
7-May	17	9	5	5	11	6	5	7	10	7	7	8	8	5	5	3	4	4	4	4	10	12	19	21	8.2	21.2
8-May	12	3	5	9	10	6	8	13	16	17	12	11	5	8	8	6	7	9	9	8	8	7	10	5	9.0	16.9
9-May	8	6	6	8	8	6	6	15	16	13	10	8	11	14	9	7	3	2	6	6	4	5	3	3	7.7	16.2
10-May	3	3	2	2	3	7	9	10	7	6	5	4	4	4	8	10	4	9	12	10	6	10	16	14	7.0	16.4
11-May	10	8	6	5	3	6	9	9	8	6	5	6	7	8	10	10	10	19	17	13	9	8	14	16	9.1	19.1
12-May	17	13	13	5	6	9	9	9	12	9	5	3	4	4	6	5	4	7	6	1	5	4	1	1	6.7	17.4
13-May	5	3	3	3	5	4	6	6	5	4	4	4	5	7	8	3	5	6	10	11	5	6	7	8	5.5	10.6
14-May	6	7	7	8	6	6	6	5	2	7	11	9	6	6	6	8	3	11	11	7	9	15	29	30	9.2	29.5
15-May	23	16	15	13	12	12	8	5	5	4	5	7	6	6	13	20	15	11	11	5	9	19	19	14	11.3	22.9
16-May	15	18	16	21	20	26	27	31	32	21	11	13	14	18	18	14	14	16	14	12	16	18	20	20	18.7	32.2
17-May	22	22	17	14	16	12	15	26	25	19	14	3	6	4	9	15	13	7	11	12	10	12	10	5	13.3	25.9
18-May	6	6	5	8	8	4	4	4	4	5	6	4	2	1	0	0	7	7	4	5	3	10	10	7	5.0	10.1
19-May	11	14	8	8	5	11	16	13	12	9	15	22	27	M	M	M	19	19	10	11	13	13	11	11	13.3	27.1
20-May	14	20	21	17	14	14	13	16	17	23	23	22	23	23	22	19	20	21	18	17	17	18	19	18	18.6	23.5
21-May	16	17	18	20	21	24	27	27	24	27	27	26	24	24	22	20	20	19	18	18	17	21	22	21	21.6	26.9
22-May	18	18	19	19	19	15	20	21	22	28	28	27	24	19	18	22	21	18	16	16	15	15	16	32	20.3	32.0
23-May	33	48	63	60	128	137	122	96	72	43	46	36	25	19	16	16	11	11	11	8	9	9	10	12	43.3	137.0
24-May	13	12	12	13	12	9	9	8	9	8	7	8	7	9	8	8	8	25	26	11	9	14	N	40	12.4	40.3
25-May	14	11	12	9	9	10	10	11	10	8	10	13	14	N	15	N	N	11	10	13	13	N	N	17	11.6	17.3
26-May	9	1	2	4	14	28	42	38	N	N	M	M	M	M	M	M	M	0	9	10	13	17	15	0	--	41.8
27-May	8	9	16	17	14	14	13	8	12	14	15	19	20	17	12	26	21	23	26	25	32	45	58	58	21.7	57.5
28-May	50	48	42	31	75	162	208	249	251	241	241	118	112	122	95	81	81	56	60	66	58	33	32	39	106.3	250.5
29-May	29	27	25	22	20	41	42	38	29	32	44	36	23	23	18	10	19	18	22	29	17	0	16	34	25.6	44.2
30-May	35	18	0	17	21	13	5	12	7	6	19	29	29	13	22	36	35	20	12	27	25	30	27	18	19.9	36.1
31-May	20	18	15	8	11	19	19	13	21	38	39	33	26	19	23	29	10	21	22	27	19	8	24	24	21.1	38.5
		14.4	13.0	12.3	12.3	16.2	20.5	22.2	23.6	22.6	21.2	21.4	16.5	15.6	14.4	13.8	14.1	13.9	13.4	13.5	12.8	12.3	12.7	15.4	16.5	Diurnal Average
		50.0	48.2	62.9	60.4	128.0	162.0	207.9	249.2	250.5	241.0	241.0	118.4	112.4	121.6	95.0	81.0	81.0	56.1	59.9	65.8	58.0	44.8	57.5	57.5	Diurnal Maximum
M - Maintenance		N - Not Valid																								



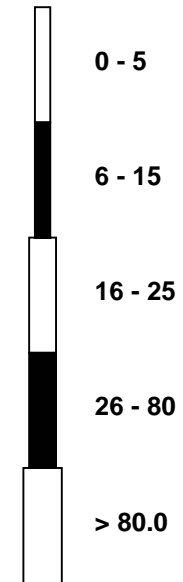
**Pollutant Rose**

**Particulate Matter 2.5 (PM<sub>2.5</sub>) - μg/m<sup>3</sup>**

**Henry Pirker - May 2011**



**Pollutant Classes (μg/m<sup>3</sup>)**



## Hourly Averages

External Temperature (ET) - °C

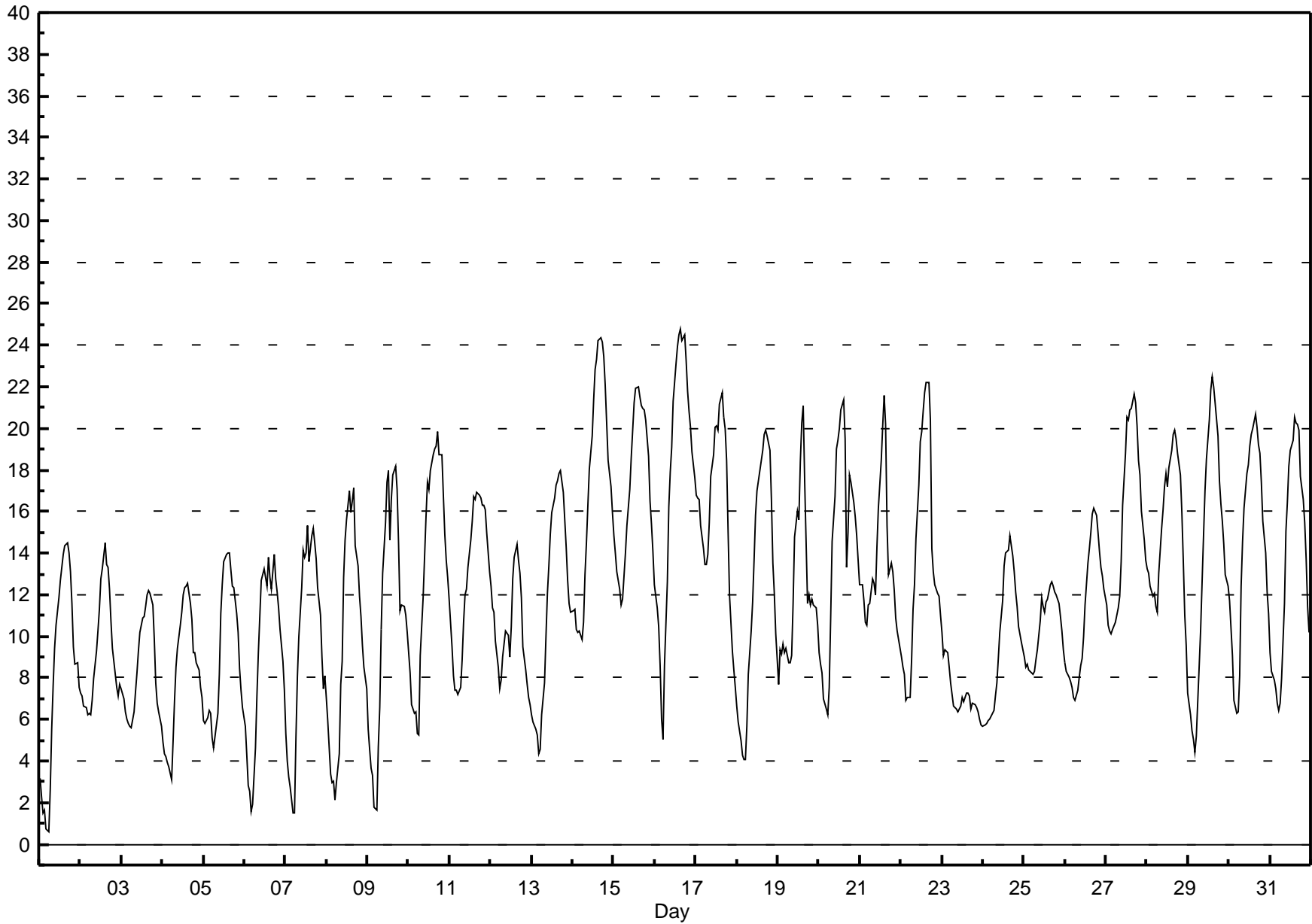
Henry Pirker - May 2011

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 24.8 °C on May 16 16:00 Maximum Daily Average: 17.4 °C on May 16																	Hours in Service: 744 Hours of Data: 744 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0									
Minimum Value: 1 °C on May 1 06:00 Minimum Daily Average: 7.3 °C on May 23 Maximum Diurnal Average: 17.5 °C at hour 16 Minimum Diurnal Average: 6.5 °C at hour 6 Monthly Average: 12.14 °C Percentiles: P <sub>1</sub> = 1.6 P <sub>10</sub> = 6.0 Q <sub>1</sub> = 8.2 Median = 11.8 Q <sub>3</sub> = 15.9 P <sub>90</sub> = 19.7 P <sub>99</sub> = 24.1																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	3	2	1	2	1	1	3	6	8	9	11	12	13	13	14	14	14	14	13	12	9	9	9	8	8.3	14.5
2-May	7	7	7	7	6	6	6	7	8	9	10	11	13	13	14	13	13	12	11	9	8	8	7	8	9.3	14.5
3-May	8	7	6	6	6	6	6	6	7	8	9	10	11	11	11	12	12	12	12	10	8	7	6	6	8.4	12.2
4-May	5	4	4	4	4	3	5	7	9	9	11	11	12	12	12	13	12	11	9	9	9	8	8	7	8.2	12.6
5-May	6	6	6	6	6	5	5	5	6	8	11	12	14	14	14	14	13	12	12	11	10	8	7	7	9.2	14.0
6-May	6	4	3	3	2	2	5	7	9	11	13	13	13	12	14	13	12	14	13	12	11	10	9	7	9.1	14.0
7-May	5	4	3	3	1	2	5	8	10	12	14	14	14	15	14	15	15	15	14	12	11	9	8	8	9.6	15.3
8-May	7	6	3	3	3	2	3	4	8	9	13	15	16	17	16	17	17	14	13	12	11	10	9	7	9.8	17.1
9-May	6	5	4	3	2	2	5	7	10	13	15	17	18	15	17	18	18	17	14	11	12	11	11	10	10.8	18.2
10-May	9	8	7	6	6	5	5	9	12	14	16	17	17	18	19	19	19	20	19	19	17	15	14	13	13.4	19.9
11-May	12	9	8	7	7	7	8	9	11	12	12	13	15	16	17	17	17	17	17	16	16	16	15	13	12.8	17.0
12-May	12	11	11	10	8	8	8	9	10	10	10	9	10	13	14	14	14	13	12	9	8	8	7	7	10.2	14.4
13-May	6	6	6	5	4	5	6	8	10	12	13	15	16	17	17	18	18	18	17	16	14	13	12	11	11.7	17.9
14-May	11	11	10	10	10	10	11	13	14	16	18	20	21	23	23	24	24	24	23	22	20	18	17	16	17.2	24.4
15-May	15	14	13	12	12	12	13	14	15	17	19	20	21	22	22	21	21	21	21	20	19	16	15	14	17.1	22.0
16-May	12	11	10	9	6	5	9	13	16	18	19	21	23	24	24	25	24	24	23	22	21	20	19	18	17.4	24.8
17-May	17	17	17	15	14	13	13	14	15	18	19	20	20	20	21	22	21	20	18	15	12	9	8	8	16.1	21.7
18-May	7	6	5	4	4	4	6	8	10	12	14	16	17	18	18	19	20	20	20	19	17	14	12	10	12.4	19.9
19-May	8	9	9	10	9	9	9	9	9	12	15	16	16	18	20	21	17	12	12	11	12	11	11	11	12.3	21.1
20-May	9	9	8	7	7	6	8	11	15	17	19	19	20	21	21	20	13	15	18	17	16	16	15	14	14.2	21.4
21-May	13	12	12	11	11	12	12	13	13	12	14	16	18	20	22	20	15	13	14	13	12	11	10	9	13.6	21.6
22-May	9	9	8	7	7	7	9	11	12	15	17	19	20	21	22	22	22	20	14	13	12	12	12	11	13.9	22.2
23-May	10	9	9	9	8	8	7	7	7	6	7	7	7	7	7	7	7	7	7	7	7	6	6	6	7.3	10.2
24-May	6	6	6	6	6	6	6	7	8	9	10	12	13	14	14	14	15	14	13	12	11	10	10	9	9.9	14.9
25-May	9	9	9	8	8	8	8	9	9	11	12	11	11	12	12	12	13	12	12	12	12	11	10	9	10.4	12.6
26-May	9	8	8	8	8	7	7	7	8	9	9	10	11	14	14	15	16	16	16	15	14	13	13	12	11.1	16.2
27-May	12	11	10	10	10	11	11	11	12	14	16	19	21	20	21	21	22	21	20	18	18	16	15	14	15.5	21.7
28-May	13	13	12	12	12	11	11	13	15	16	17	18	17	18	19	20	20	20	19	18	16	14	11	10	15.2	19.9
29-May	7	6	5	5	4	5	9	10	13	15	17	19	20	22	22	22	21	20	17	16	16	14	13	12	13.8	22.5
30-May	12	10	9	7	6	6	8	12	15	16	18	18	19	20	20	21	20	19	19	17	16	14	12	11	14.4	20.7
31-May	9	8	8	7	7	6	7	8	12	15	16	18	19	19	21	20	20	20	18	17	15	14	11	10	13.6	20.5
																								Diurnal Average		
																								Diurnal Maximum		

**Hourly Averages**

**External Temperature (ET) - °C**

**Henry Pirker - May 2011**



# Hourly Averages

Relative Humidity (RH) - %

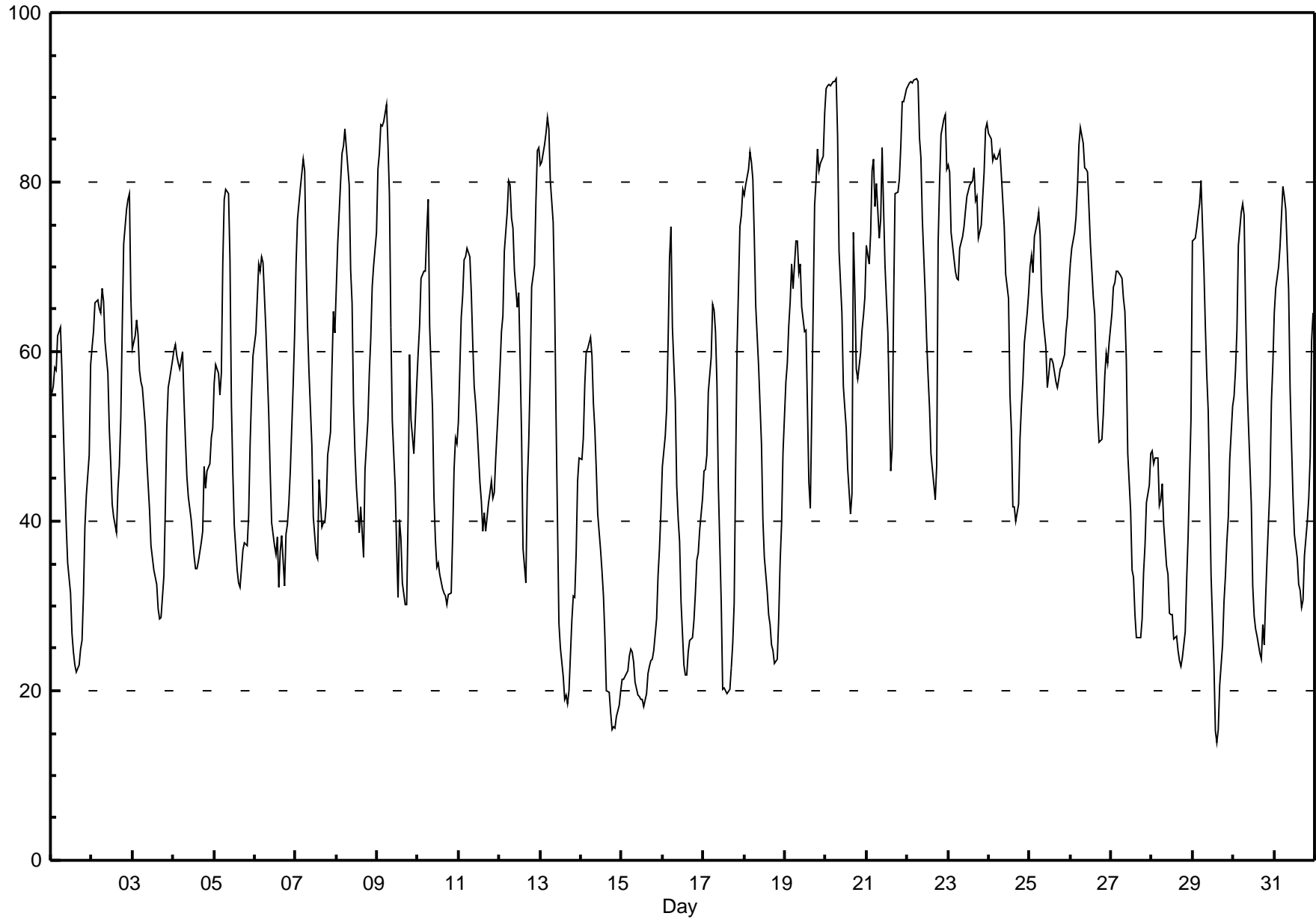
Henry Pirker - May 2011

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 92.2 % on May 22 06:00 Maximum Daily Average: 77.0 % on May 23		Hours in Service: 744 Hours of Data: 744 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																									
Minimum Value: 14 % on May 29 15:00 Maximum Diurnal Average: 72.6 % at hour 6 Monthly Average: 54.23 %		Minimum Daily Average: 24.0 % on May 15 Minimum Diurnal Average: 35.2 % at hour 16 Percentiles: P <sub>1</sub> = 17.5 P <sub>10</sub> = 26.3 Q <sub>1</sub> = 38.2 Median = 55.7 Q <sub>3</sub> = 70.3 P <sub>90</sub> = 81.1 P <sub>99</sub> = 91.9																									
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-May	55	56	58	58	62	63	58	51	45	39	35	32	27	25	23	22	23	25	26	31	39	43	48	59	41.8	62.9	
2-May	60	62	66	66	65	65	67	66	61	58	51	47	42	41	39	44	47	52	63	73	77	78	79	66	59.7	78.6	
3-May	60	62	64	62	58	56	56	51	47	44	41	37	34	33	33	30	28	29	33	42	51	56	57	59	46.9	63.8	
4-May	60	61	60	59	58	60	54	49	45	43	40	38	36	34	34	35	37	39	46	44	46	47	50	51	47.0	60.9	
5-May	56	58	57	55	57	71	78	79	79	71	54	46	40	34	33	32	34	37	37	37	41	49	55	59	52.1	79.2	
6-May	62	66	70	69	71	70	62	58	53	46	40	37	36	38	32	36	38	32	38	40	42	46	56	62	50.1	71.2	
7-May	70	76	78	79	83	81	71	63	58	49	41	38	36	36	45	39	40	40	42	48	50	58	65	62	56.1	82.6	
8-May	67	73	80	83	84	86	84	80	70	66	54	48	44	39	42	39	36	46	52	57	62	68	70	74	62.7	86.4	
9-May	82	83	87	87	87	89	84	78	63	52	44	37	31	40	38	33	30	30	40	60	52	48	52	56	57.6	89.1	
10-May	60	63	69	70	70	74	78	63	53	43	38	35	35	34	32	32	31	30	31	32	38	46	50	49	48.1	77.9	
11-May	52	64	67	71	71	72	71	67	61	56	54	51	45	42	39	41	39	42	43	45	43	43	47	54	53.3	72.2	
12-May	58	62	64	72	76	80	80	76	75	70	65	67	59	50	37	33	44	50	57	68	70	78	84	84	64.9	84.0	
13-May	82	82	84	86	88	86	80	75	66	52	40	28	25	22	19	19	18	20	28	31	31	36	45	47	49.7	87.6	
14-May	47	50	56	60	60	62	60	54	51	46	41	37	34	31	26	20	20	18	16	16	16	17	18	20	36.4	61.7	
15-May	21	21	22	22	24	25	25	23	21	20	19	19	19	18	20	22	23	24	24	25	28	34	37	41	24.0	41.1	
16-May	46	50	53	61	71	75	63	54	44	40	38	31	23	22	22	25	26	26	28	32	35	36	39	43	41.0	74.7	
17-May	46	46	48	55	59	66	65	62	56	44	30	20	20	20	20	20	23	26	30	46	60	75	76	79	45.6	79.1	
18-May	79	80	81	84	82	80	74	65	58	54	49	40	36	32	29	28	25	25	23	24	28	35	40	48	50.0	83.5	
19-May	56	59	63	66	70	67	73	73	69	70	65	62	63	54	45	42	53	77	80	84	81	82	83	88	67.8	88.2	
20-May	91	91	92	91	92	92	92	86	72	65	56	53	51	46	41	43	74	67	58	57	60	63	64	66	69.3	92.2	
21-May	73	70	74	81	83	77	80	73	76	84	77	70	62	54	46	49	66	79	79	80	84	89	89	91	74.4	90.9	
22-May	91	92	92	92	92	92	92	85	83	76	67	61	57	53	48	46	42	47	73	80	86	88	88	81	75.2	92.2	
23-May	82	81	74	71	69	69	69	72	74	75	77	78	79	80	80	82	78	78	73	75	78	81	86	87	77.0	87.0	
24-May	86	85	83	83	83	83	84	81	78	75	69	66	55	51	42	42	40	42	50	54	57	61	65	67	65.8	85.7	
25-May	70	71	69	74	75	76	74	67	64	61	56	57	59	59	59	56	56	57	58	58	60	62	64	68	63.8	76.4	
26-May	70	72	74	76	80	84	86	85	82	82	81	77	73	66	64	58	53	49	50	53	57	60	59	61	68.8	86.4	
27-May	65	68	68	70	69	69	69	66	65	59	48	41	34	33	29	26	26	26	28	34	37	42	44	48	48.6	69.5	
28-May	48	47	47	47	42	44	40	35	34	29	29	29	26	26	25	24	23	24	27	33	38	45	52	35.7	51.9		
29-May	73	73	75	76	77	80	70	63	57	53	44	34	23	15	14	15	21	25	31	33	38	41	47	54	47.2	80.2	
30-May	55	58	63	73	76	78	76	65	57	52	42	32	29	27	26	24	24	28	25	31	36	44	54	58	47.2	77.5	
31-May	65	67	70	72	76	80	78	77	67	56	49	43	39	36	32	32	30	31	36	40	43	48	61	65	53.8	79.6	
		64.2	66.2	68.0	70.0	71.4	72.6	70.8	66.1	60.8	55.8	49.5	44.9	41.1	38.4	35.9	35.2	37.1	39.3	42.7	46.9	50.3	54.6	58.6	61.3	Diurnal Average	
		91.4	91.8	91.9	91.8	92.0	92.2	92.2	85.5	83.0	84.0	81.2	78.3	79.1	79.6	80.1	81.6	77.7	78.6	80.2	83.9	85.6	89.5	89.5	90.9	Diurnal Maximum	

**Hourly Averages**

**Relative Humidity (RH) - %**

**Henry Pirker - May 2011**



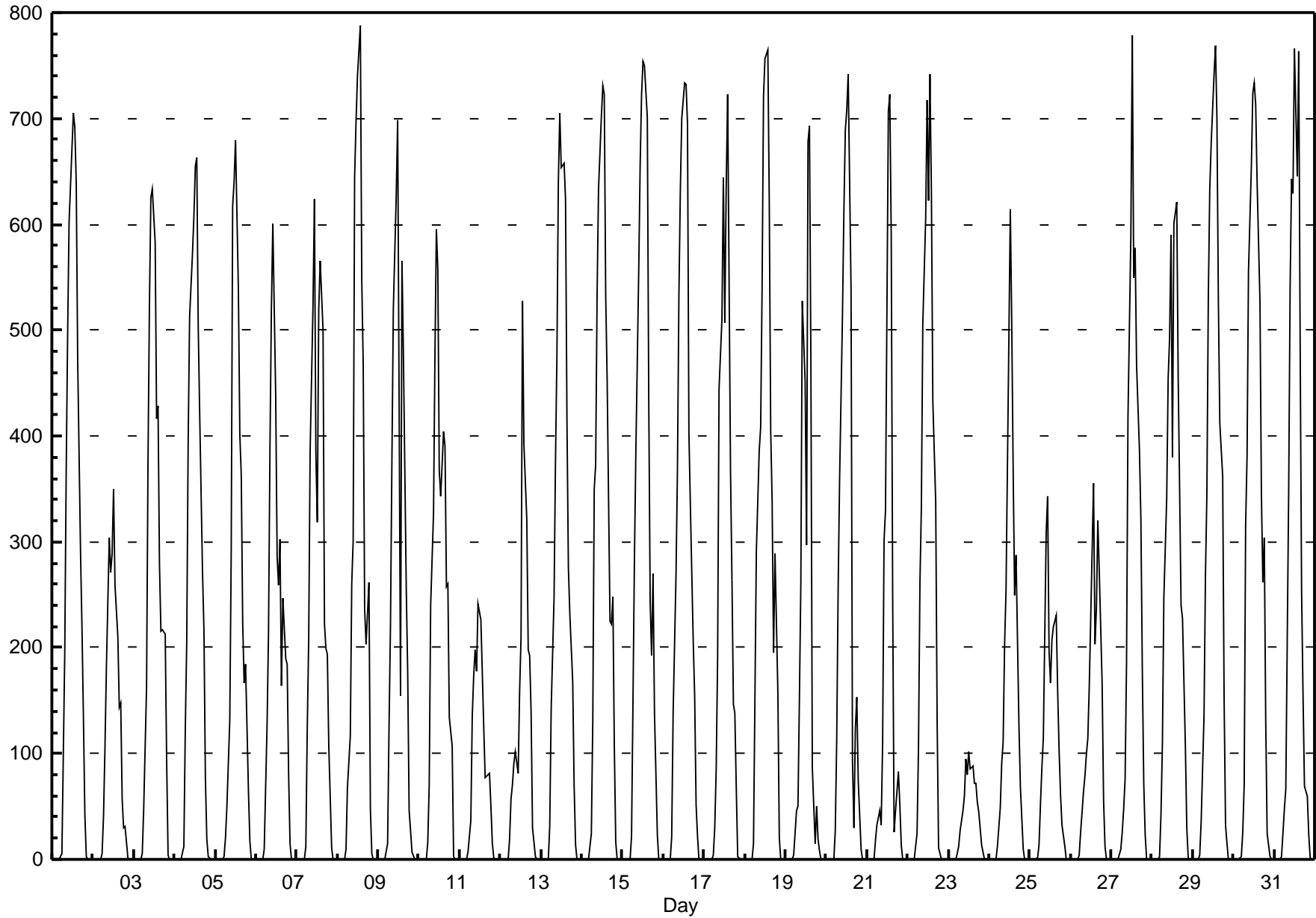


## Hourly Averages

Solar Radiation (SR) - W/m<sup>2</sup>

Henry Pirker - May 2011

Number of Exceedences (AAQO): 1-hr: 0 24-hr: 0 Maximum Value: 787.6 W/m <sup>2</sup> on May 8 14:00      Maximum Daily Average: 267.2 W/m <sup>2</sup> on May 30		Hours in Service: 744 Hours of Data: 744 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																								
Minimum Value: 0 W/m <sup>2</sup> on May 1 01:00 Maximum Diurnal Average: 545.7 W/m <sup>2</sup> at hour 14 Monthly Average: 188.60 W/m <sup>2</sup>		Minimum Daily Average: 36.0 W/m <sup>2</sup> on May 23 Minimum Diurnal Average: 0.0 W/m <sup>2</sup> at hour 1 Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 69.7 Q <sub>3</sub> = 330.3 P <sub>90</sub> = 608.5 P <sub>99</sub> = 749.4																								
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	0	0	0	0	0	5	100	196	368	496	602	671	705	691	639	472	288	218	135	42	2	0	0	0	234.6	705.5
2-May	0	0	0	0	0	6	41	105	180	304	271	288	350	259	210	144	148	57	29	32	1	0	0	0	101.0	350.0
3-May	0	0	0	0	0	6	48	163	374	524	626	634	583	416	428	280	215	217	213	93	5	0	0	0	201.0	633.6
4-May	0	0	0	0	0	13	124	207	394	513	572	607	655	663	504	422	271	217	77	20	2	0	0	0	219.2	663.4
5-May	0	0	0	0	0	3	20	50	131	291	616	641	679	538	401	364	224	166	185	65	18	0	0	0	183.1	679.4
6-May	0	0	0	0	0	10	128	214	387	519	601	438	286	258	302	164	246	189	185	82	14	0	0	0	167.6	600.5
7-May	0	0	0	0	0	12	123	207	385	523	624	384	319	520	565	501	223	200	194	108	11	0	0	0	204.1	624.4
8-May	0	0	0	0	0	9	67	116	260	301	644	696	740	788	546	468	236	204	262	48	5	0	0	0	224.7	787.6
9-May	0	0	0	0	0	14	126	221	376	521	626	698	440	155	565	478	256	177	46	27	6	0	0	0	197.2	698.0
10-May	0	0	0	0	0	17	70	240	327	477	595	557	368	344	404	390	257	260	134	107	3	0	0	0	189.6	595.3
11-May	0	0	0	0	0	7	37	136	174	197	177	242	226	176	125	77	79	82	50	14	1	0	0	0	75.0	242.0
12-May	0	0	0	0	0	19	57	70	91	102	81	158	210	528	392	322	198	193	139	29	3	0	0	0	108.1	528.1
13-May	0	0	0	0	0	32	143	247	376	476	640	706	653	657	623	415	275	231	169	69	14	0	0	0	238.6	705.7
14-May	0	0	0	0	0	24	132	349	372	533	633	703	731	723	532	454	226	223	249	108	16	0	0	0	250.3	731.1
15-May	0	0	0	0	0	22	148	281	384	555	655	723	754	750	701	436	243	192	270	139	22	0	0	0	261.4	754.4
16-May	0	0	0	0	0	22	139	269	367	531	631	699	733	732	695	403	335	206	155	52	22	0	0	0	249.6	733.0
17-May	0	0	0	0	0	5	29	84	190	445	509	644	507	637	723	367	264	146	138	68	3	0	0	0	198.3	722.7
18-May	0	0	0	0	0	14	152	292	386	408	541	721	756	765	620	405	337	195	289	158	20	0	0	0	252.5	764.7
19-May	0	0	0	0	0	4	45	51	153	260	528	452	296	678	693	473	87	15	51	19	8	0	0	0	158.9	693.4
20-May	0	0	0	0	0	27	113	255	359	513	611	689	708	742	539	93	29	123	153	75	10	0	0	0	209.9	741.9
21-May	0	0	0	0	0	18	33	46	33	110	301	330	706	723	590	248	26	45	83	52	13	0	0	0	139.9	723.0
22-May	0	0	0	0	0	24	105	260	332	506	604	717	622	742	630	432	338	130	11	6	0	0	0	0	227.5	741.9
23-May	0	0	0	0	0	6	12	27	46	60	94	79	102	86	88	72	72	55	44	14	6	0	0	0	36.0	101.8
24-May	0	0	0	0	0	12	48	91	111	202	254	492	614	506	365	250	287	127	69	39	10	0	0	0	144.9	614.5
25-May	0	0	0	0	1	14	52	87	113	309	342	197	167	208	219	231	159	103	61	33	12	0	0	0	96.2	342.4
26-May	0	0	0	0	0	5	25	63	79	99	113	163	225	355	203	238	319	272	166	56	13	0	0	0	99.7	355.5
27-May	0	0	0	0	0	9	26	47	76	186	417	589	778	550	577	467	386	322	178	72	23	0	0	0	196.0	777.8
28-May	0	0	0	0	2	42	109	246	342	454	492	590	380	601	621	455	349	240	228	107	29	2	0	0	220.4	620.7
29-May	0	0	0	0	5	35	136	269	346	532	633	676	741	769	699	528	412	362	152	32	15	0	0	0	264.3	768.6
30-May	0	0	0	0	3	26	70	316	381	555	655	724	734	713	639	526	344	262	304	131	24	2	0	0	267.2	734.1
31-May	0	0	0	0	3	25	47	67	347	539	643	629	766	645	763	487	253	155	69	59	23	2	0	0	230.1	766.1
		0.0	0.0	0.0	0.0	0.5	15.7	80.9	170.2	265.8	388.4	494.7	533.4	533.4	545.7	503.3	356.8	238.2	180.1	144.8	63.1	11.5	0.2	0.0	0.0	Diurnal Average
		0.0	0.0	0.0	0.0	4.6	42.0	152.4	349.4	394.1	555.5	655.1	724.5	777.8	787.6	763.0	528.4	412.3	361.9	303.8	157.7	29.5	2.3	0.0	0.0	Diurnal Maximum





## Hourly Averages

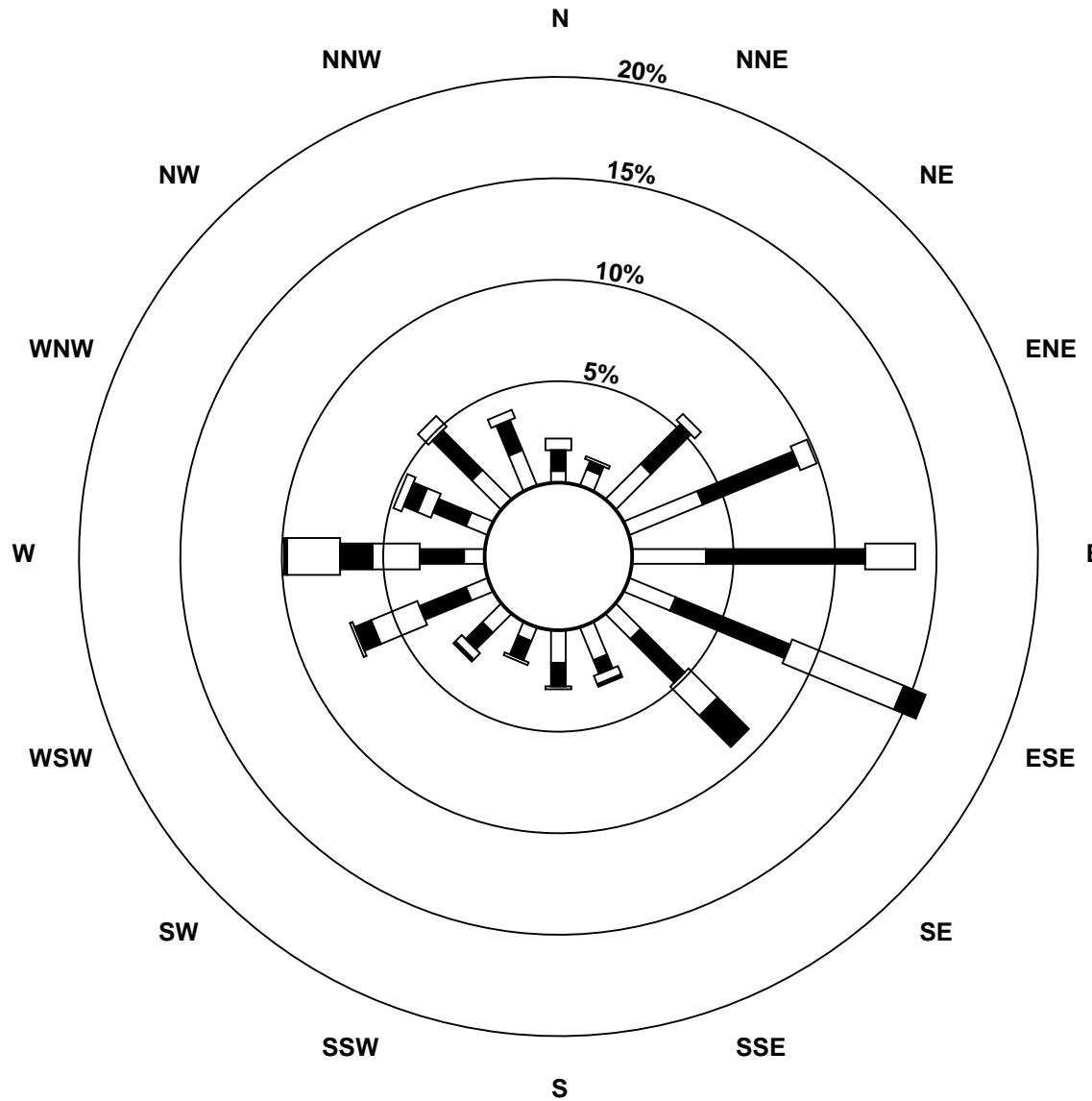
Wind Speed (km/h)  
Wind Direction (deg)  
Henry Pirker - May 2011

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
23 Spd	12	9	11	12	14	15	13	12	10	9	9	7	6	5	N	N	N	5	N	6	N	N	N	N	--	15.4
Dir	76	62	68	67	68	67	67	64	64	51	50	45	75	79	N	N	N	156	N	248	N	N	N	N	--	67.5
24 Spd	N	N	N	N	N	N	5	7	6	5	6	7	9	9	14	9	12	12	10	10	6	5	4	2	128.9	117.2
Dir	N	N	N	N	N	N	102	101	103	99	118	137	109	124	117	105	127	139	167	174	162	159	158	111	128.9	117.2
25 Spd	3	4	7	8	9	9	10	13	14	16	19	16	16	15	16	14	14	14	14	13	12	10	12	11	11.7	19.1
Dir	63	64	82	90	104	108	107	113	117	119	127	123	119	107	117	116	108	114	108	108	111	115	121	114	112.1	127.3
26 Spd	11	11	11	9	10	11	11	10	10	11	10	11	11	10	10	13	15	17	15	11	4	4	N	N	10.5	17.4
Dir	112	106	100	85	87	83	77	71	75	87	92	84	75	78	83	90	90	97	98	93	84	79	N	N	88.5	96.8
27 Spd	N	N	N	N	N	3	5	6	4	3	1	1	1	3	4	3	5	4	5	1	1	2	2	4	2.9	5.8
Dir	N	N	N	N	N	53	57	63	62	66	77	94	65	105	65	85	61	61	65	58	55	29	42	48	63.5	63.4
28 Spd	9	6	8	9	8	5	2	N	N	4	4	3	5	8	5	2	3	5	4	2	3	1	1	1	4.2	8.7
Dir	46	55	50	57	82	78	70	N	N	98	88	73	57	76	90	34	60	33	68	89	97	93	67	337	66.3	45.6
29 Spd	1	4	3	3	2	2	4	10	3	5	7	7	4	2	1	4	7	10	7	6	7	3	2	3	1.1	10.1
Dir	297	310	5	309	317	278	290	259	261	160	139	120	145	292	68	48	58	55	65	76	97	119	332	313	64.4	55.4
30 Spd	8	10	10	6	6	6	7	9	6	3	3	4	4	5	6	7	12	13	12	11	7	9	6	4	3.0	13.3
Dir	347	344	335	317	322	325	321	302	307	264	352	56	88	104	87	81	83	93	101	113	125	117	91	92	51.0	93.3
31 Spd	2	2	4	5	3	3	1	1	2	3	4	5	6	3	2	5	3	6	9	9	8	4	1	2	3.2	8.9
Dir	56	63	72	93	89	147	330	190	325	171	147	88	118	122	122	139	106	115	124	135	144	112	174	148	120.4	134.7
Spd	0.6	0.8	1.1	0.4	0.1	0.5	0.6	1.6	2.4	2.2	2.7	2.4	2.4	1.8	1.2	0.4	2.4	2.5	3.0	3.0	2.3	1.3	0.9	1.1	Diurnal Average	
Dir	64.9	23.0	358.8	307.8	334.7	63.5	152.4	203.6	218.2	205.3	177.6	154.3	155.5	145.4	121.6	93.9	112.9	128.1	132.0	133.8	135.1	119.8	117.0	110.0	Diurnal Maximum	
Spd	22.1	20.0	19.2	20.1	20.1	19.8	21.5	25.7	35.1	36.7	37.7	36.8	37.4	38.9	37.3	35.0	34.3	35.8	34.1	32.9	29.3	24.0	26.6	27.1	Diurnal Maximum	
Dir	255.9	117.7	255.8	257.8	259.2	131.2	140.1	267.9	268.1	262.9	260.4	266.8	267.8	275.1	278.5	290.9	288.2	268.1	269.5	258.7	260.1	258.9	258.9	257.6	Diurnal Maximum	
Maximum Speed Value: 39 km/h on May 4 14:00		Minimum Speed Value: 0 km/h on May 12 02:00												Hours in Service: 744												
Maximum Daily Speed Average: 27.5 km/h on May 3		Minimum Daily Speed Average: 0.9 km/h on May 27												Hours of Data: 704												
Maximum Diurnal Speed Average: 3.0 km/h at hour 19		Minimum Diurnal Speed Average: 0.1 km/h at hour 5												Hours of Missing Data: 40												
Monthly Average Velocity: 1.17 km/h 144.63 deg		Speed Percentiles: P <sub>1</sub> = 0.9 P <sub>10</sub> = 2.6 Q <sub>1</sub> = 4.7 Median = 8.3 Q <sub>3</sub> = 12.6 P <sub>90</sub> = 19.5 P <sub>99</sub> = 35.3												Percent Operational Time: 94.6												
All monthly, daily, and diurnal averages have been calculated using vector methods																										
N - Not Valid																										
Frequency Distribution																										
		Speed Range (km/h)																								
Direction	0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total																			
North	9	13	6	0	0	0	28																			
NorthEast	42	36	8	0	0	0	86																			
East	47	98	40	0	0	0	185																			
SouthEast	20	42	42	27	1	0	132																			
South	19	19	4	0	0	0	42																			
SouthWest	14	14	7	1	0	0	36																			
West	12	37	33	22	22	1	127																			
NorthWest	26	30	8	4	0	0	68																			
Total	189	289	148	54	23	1	704																			

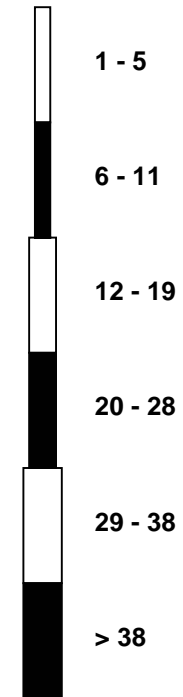
**Wind Rose**

**Wind Speed (WS) (km/h)**

**Henry Pirker - May 2011**



**Wind Speed Classes (km/h)**



# Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Henry Pirker - May 2011

Maximum Speed: 39 km/h on May 4 14:00	Maximum Daily Speed Average: 28.3 km/h on May 3	Hours in Service: 744
Minimum Speed: 1 km/h on May 28 22:00	Minimum Daily Speed Average: 3.3 km/h on May 27	Hours of Data: 704
Maximum Diurnal Speed Average: 14.1 km/h at hour 19	Minimum Diurnal Speed Average: 7.5 km/h at hour 6	Hours of Missing Data: 40
Monthly Average Speed: 10.62 km/h	Percentiles: P <sub>1</sub> = 1.2 P <sub>10</sub> = 3.6 Q <sub>1</sub> = 5.7 Median = 9.1 Q <sub>3</sub> = 13.0 P <sub>90</sub> = 20.1 P <sub>99</sub> = 35.8	Percent Operational Time: 94.6

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	8	7	8	10	7	8	11	12	20	23	24	22	23	22	21	21	19	19	15	10	4	7	16	19	14.9	23.7
2-May	13	N	N	8	8	8	9	10	13	14	16	12	6	6	4	9	8	10	9	10	11	6	6	12	9.5	16.4
3-May	19	17	14	15	15	19	21	26	34	37	38	37	38	34	35	35	35	34	35	33	29	24	27	27	28.3	38.1
4-May	22	17	19	20	20	12	13	23	35	36	32	32	31	39	38	32	34	36	23	16	13	10	8	6	23.8	39.5
5-May	5	3	5	5	4	8	4	4	5	10	12	16	18	19	20	21	22	26	25	21	16	16	18	17	13.3	25.7
6-May	16	11	8	8	8	7	8	10	16	15	12	10	10	14	6	14	7	1	12	10	6	5	7	7	9.6	16.2
7-May	4	4	5	4	4	4	2	4	8	8	10	10	7	12	21	13	12	8	10	12	5	4	5	10	7.9	21.3
8-May	7	4	3	5	6	3	2	3	4	5	7	9	8	8	16	12	4	16	16	14	12	9	8	6	7.8	16.3
9-May	3	3	3	4	3	3	4	6	5	6	8	8	6	15	10	8	8	13	15	13	15	16	13	11	8.3	16.2
10-May	12	11	8	8	5	3	3	5	8	12	11	10	11	8	10	10	9	7	4	7	7	5	7	7	7.8	12.1
11-May	8	19	11	5	4	3	5	6	3	7	11	11	11	11	10	12	11	11	13	10	8	11	7	3	8.8	18.9
12-May	3	2	19	17	13	6	5	7	7	3	10	11	6	9	9	7	9	13	17	17	11	9	8	15	9.8	18.6
13-May	12	14	5	6	5	8	8	7	7	8	10	9	10	14	16	16	15	16	21	22	17	12	13	12	11.8	21.8
14-May	11	11	11	11	12	11	12	16	13	10	10	9	11	13	16	20	20	23	24	23	24	23	21	19	15.5	23.8
15-May	19	20	19	13	14	20	22	21	25	24	24	26	27	27	28	29	26	23	20	18	14	14	13	11	20.7	28.8
16-May	10	10	7	4	5	5	6	7	6	9	11	11	13	13	13	12	11	10	10	11	8	9	8	8	8.9	13.1
17-May	8	9	9	1	4	9	8	6	9	11	13	13	16	18	13	13	15	16	21	21	22	16	10	10	12.2	22.5
18-May	10	6	5	5	8	9	13	15	17	13	9	10	10	10	9	8	8	7	7	7	8	6	7	8	8.9	16.7
19-May	11	13	13	11	8	5	6	10	11	10	7	8	8	8	7	7	12	12	12	6	5	6	4	2	8.4	12.9
20-May	3	1	3	4	2	1	1	3	3	4	4	8	6	8	6	11	10	13	6	6	7	6	5	3	5.2	13.0
21-May	4	4	3	3	6	10	4	7	10	7	5	9	9	8	5	4	15	11	12	N	N	N	N	N	7.2	14.6
22-May	N	N	N	N	N	N	N	N	N	N	4	7	9	7	4	6	6	8	17	12	9	12	11	11	--	17.1
23-May	12	9	12	12	14	16	13	12	10	9	9	7	7	6	N	N	N	6	N	6	N	N	N	N	--	15.6
24-May	N	N	N	N	N	N	6	7	7	6	7	8	10	10	15	9	12	13	11	10	6	5	4	3	8.2	15.2
25-May	3	4	7	8	9	9	11	14	14	16	20	17	16	15	16	15	14	14	14	13	13	10	12	11	12.2	19.6
26-May	11	11	11	10	10	11	11	10	10	11	11	12	11	11	10	13	15	18	15	11	4	4	N	N	10.9	17.6
27-May	N	N	N	N	N	3	5	6	5	3	1	2	2	4	5	4	5	4	5	1	1	2	2	4	3.3	6.0
28-May	9	6	9	9	9	5	2	N	N	5	4	4	5	9	5	3	3	6	4	2	4	1	1	1	4.8	8.9
29-May	1	4	3	4	2	2	4	10	4	5	8	9	6	6	7	7	8	10	8	6	7	4	3	3	5.6	10.4
30-May	9	10	10	6	6	6	7	9	7	5	5	5	5	6	7	8	12	14	13	11	8	9	6	5	7.8	13.8
31-May	2	2	4	5	3	3	2	3	3	4	6	7	7	3	5	7	3	7	10	9	9	4	3	3	4.8	9.6
	9.1	8.6	8.6	7.9	7.7	7.5	7.6	9.8	11.0	11.2	11.6	11.9	11.7	12.7	13.0	12.9	12.9	13.6	14.1	12.2	10.4	9.1	9.0	9.1	Diurnal Average	
	22.2	20.1	19.3	20.1	20.1	19.9	21.7	26.1	35.5	37.0	38.1	37.5	38.0	39.5	37.8	35.3	34.7	36.2	34.5	33.1	29.4	24.1	26.7	27.2	Diurnal Maximum	

N - Not Valid  
 All monthly, daily, and diurnal averages have been calculated using scalar methods

## Hourly Standard Deviations

Wind Direction (WD) - deg

Henry Pirker - May 2011

Maximum Value: 93.1 deg on May 29 15:00																								Hours in Service: 744	
Minimum Value: 4.4 deg on May 4 04:00																								Hours of Data: 704	
Percentiles: P <sub>1</sub> = 5.5 P <sub>10</sub> = 8.5 Q <sub>1</sub> = 11.1 Median = 17.1 Q <sub>3</sub> = 33.8 P <sub>90</sub> = 53.6 P <sub>99</sub> = 86.9																								Hours of Missing Data: 40	
																								Hours of Calibration: 0	
																								Percent Operational Time: 94.6	
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-May	13	21	13	8	7	16	16	8	9	11	11	16	15	15	13	14	15	14	13	9	15	9	15	8	21.2
2-May	14	N	N	34	11	10	10	11	10	10	12	13	34	43	79	54	15	23	73	32	12	26	27	16	78.9
3-May	7	7	6	6	6	6	8	9	8	8	9	11	11	11	9	7	8	10	9	6	6	6	6	5	10.7
4-May	5	7	5	4	5	14	13	8	8	10	12	9	12	10	9	9	8	9	14	11	8	12	13	39	38.7
5-May	62	46	44	42	53	19	79	90	30	15	22	22	17	20	14	16	21	9	9	8	10	5	6	6	89.7
6-May	6	32	19	21	13	10	15	12	15	13	24	44	29	27	54	56	33	72	26	14	12	87	20	12	86.8
7-May	44	18	14	40	16	62	91	36	24	29	26	22	36	25	12	16	14	26	35	12	25	36	42	9	91.0
8-May	13	28	76	17	17	36	41	33	48	50	44	40	41	58	40	43	36	15	11	11	21	16	8	13	76.5
9-May	35	46	57	28	77	35	11	31	19	46	53	62	90	61	57	51	40	24	48	86	23	8	6	11	90.3
10-May	7	11	10	9	37	74	60	22	18	17	24	52	29	36	30	23	38	46	43	19	17	37	32	12	74.1
11-May	48	12	13	19	35	26	35	51	65	23	14	11	11	12	13	52	35	14	15	14	11	20	27	61	64.7
12-May	79	74	22	12	19	32	25	37	22	18	21	41	36	26	40	38	32	12	14	9	16	46	20	9	79.1
13-May	8	17	33	20	50	13	14	23	28	33	41	78	43	23	24	17	19	16	9	7	9	11	7	8	78.3
14-May	10	10	7	9	7	7	9	11	14	28	22	18	21	25	16	21	15	14	10	7	6	7	6	7	28.0
15-May	6	5	7	13	12	8	8	10	11	12	13	16	14	18	14	13	11	13	9	12	8	6	12	13	17.5
16-May	12	9	9	23	23	12	10	19	61	25	26	20	17	23	21	27	23	19	15	11	15	12	10	12	61.0
17-May	12	11	6	19	13	15	15	16	17	16	15	19	14	13	23	30	14	14	27	21	37	20	19	13	37.3
18-May	14	25	28	21	15	12	12	11	11	17	43	38	34	45	63	51	81	71	42	24	10	10	11	23	80.7
19-May	7	6	6	7	26	62	47	48	34	19	49	41	39	42	53	76	88	53	14	71	34	31	50	61	87.8
20-May	41	61	41	57	82	36	13	38	59	73	87	32	19	18	19	41	86	16	15	13	14	11	13	40	87.1
21-May	53	40	29	37	17	9	25	26	62	71	74	19	31	29	38	33	26	45	28	N	N	N	N	N	74.0
22-May	N	N	N	N	N	N	N	N	N	N	35	68	31	29	25	18	22	25	20	31	25	17	17	13	68.5
23-May	11	13	13	10	10	10	10	13	15	17	15	18	28	22	N	N	N	28	N	20	N	N	N	N	27.9
24-May	N	N	N	N	N	N	15	15	22	35	26	26	23	28	19	13	15	16	13	10	9	6	8	36	36.4
25-May	9	10	11	8	9	9	9	11	10	10	13	15	10	11	12	13	13	11	10	9	9	9	9	8	14.6
26-May	10	9	9	9	10	10	9	9	11	13	12	14	15	15	16	11	11	9	9	8	9	9	N	N	15.6
27-May	N	N	N	N	N	16	17	14	20	25	23	64	83	49	44	26	21	18	16	19	15	14	12	13	83.0
28-May	12	16	18	17	13	14	16	N	N	15	22	32	18	22	27	40	30	34	25	17	7	7	27	29	40.0
29-May	14	28	55	37	26	23	20	11	50	41	37	42	62	87	93	73	22	14	16	18	9	56	57	26	93.1
30-May	15	9	8	11	15	16	18	10	37	63	71	35	50	58	41	32	19	17	17	10	13	9	17	53	70.5
31-May	28	25	16	17	21	23	65	79	71	78	62	46	49	65	74	64	59	27	29	34	11	25	81	45	81.2
	79.1	74.5	76.5	57.4	81.5	74.1	91.0	89.7	71.0	77.6	87.1	78.3	90.3	87.4	93.1	76.2	87.8	71.8	72.7	86.3	37.3	86.8	81.2	61.4	
N - Not Valid																									

PAZA

Evergreen Park Station

Monthly Summary Tables, Graphs and  
Roses



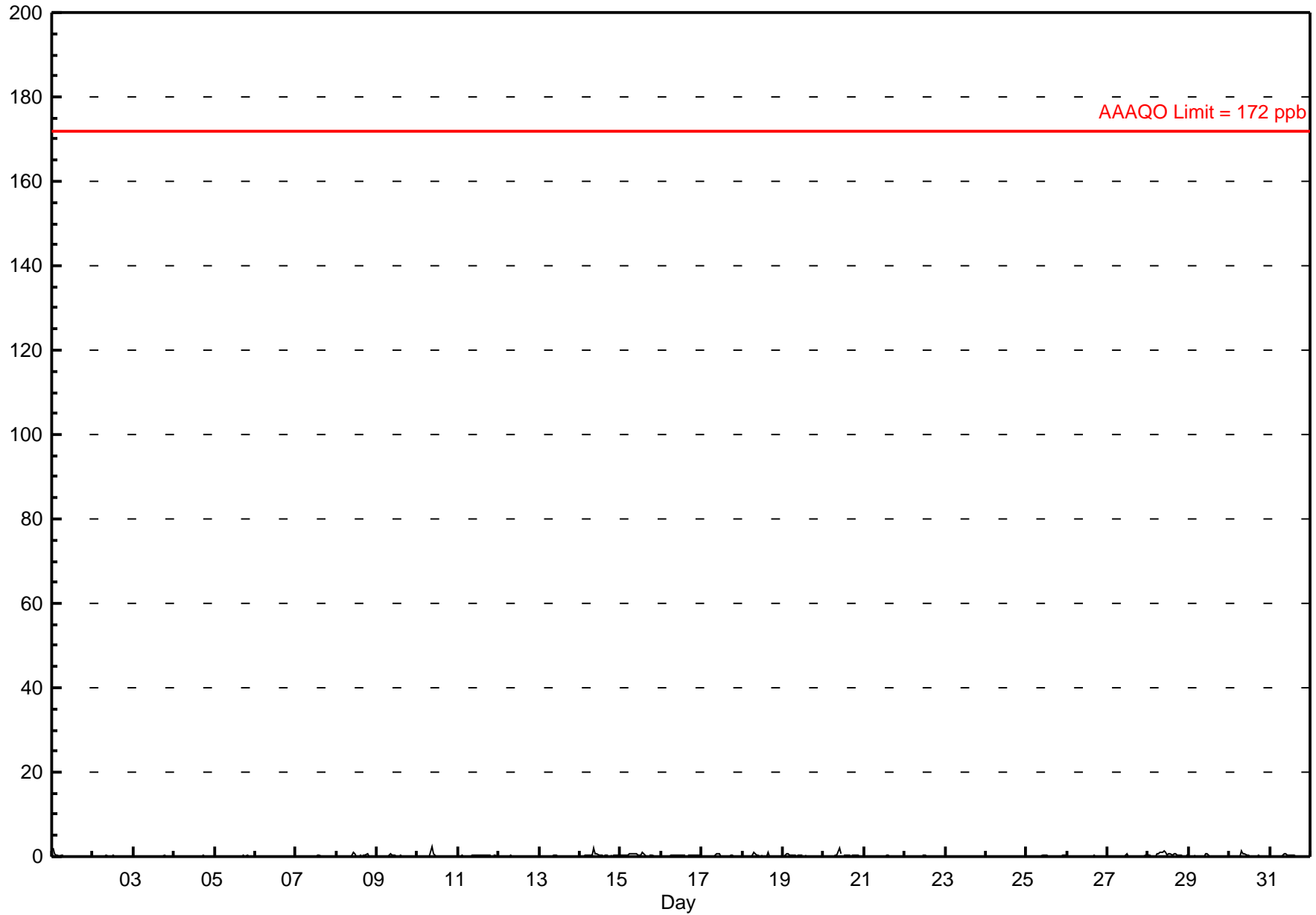
## Hourly Averages

## Sulphur Dioxide (SO<sub>2</sub>) - ppb Evergreen Park - May 2011

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 2.4 ppb on May 10 09:00	Maximum Daily Average: 0.5 ppb on May 28		Hours of Data:	708
Minimum Value: 0 ppb on May 3 22:00	Minimum Daily Average: 0.0 ppb on May 23		Hours of Missing Data:	36
Maximum Diurnal Average: 0.4 ppb at hour 9	Minimum Diurnal Average: 0.1 ppb at hour 21		Hours of Calibration:	36
Monthly Average: 0.16 ppb	Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.1 Q <sub>3</sub> = 0.2 P <sub>90</sub> = 0.4 P <sub>99</sub> = 1.2		Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	2	1	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1.9
2-May	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
3-May	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
4-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
5-May	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
6-May	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
7-May	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
8-May	A	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	A	0.2	1.0
9-May	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.1	0.6
10-May	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.2	2.4
11-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.2	0.5
12-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0.1	0.2
13-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.1	0.2
14-May	0	0	0	0	0	0	0	0	2	1	1	0	0	0	0	0	0	A	0	0	0	0	0	0	0.4	1.9
15-May	0	0	0	0	0	1	1	1	1	1	0	0	0	1	0	0	A	0	0	0	0	0	0	0	0.4	1.0
16-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.2	0.5
17-May	0	0	0	0	0	0	0	0	0	1	1	0	0	0	A	0	0	0	0	0	0	0	0	0	0.1	0.5
18-May	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1.2
19-May	0	0	1	1	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.2	0.7
20-May	0	0	0	0	0	0	0	0	0	2	1	A	0	0	0	0	0	0	0	0	0	0	0	0	0.3	1.9
21-May	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
22-May	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
23-May	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
24-May	0	0	0	0	0	0	0	A	0	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
25-May	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
26-May	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
27-May	0	0	0	0	A	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0.1	0.8
28-May	0	0	0	A	0	1	1	1	1	1	1	0	1	1	0	1	1	0	0	0	0	0	0	0	0.5	1.2
29-May	0	0	A	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.8
30-May	0	A	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1.2
31-May	A	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.2	0.7
	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.4	0.3	0.3	0.3	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	Diurnal Average	
	1.9	0.6	0.7	0.6	0.5	0.6	0.8	1.2	2.4	1.9	1.0	0.8	0.6	1.0	0.5	1.1	0.5	0.4	0.7	0.4	0.3	0.4	0.4	0.6	Diurnal Maximum	

C - Calibration      A - Automated Daily Zero Span  
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb    24-hr 48 ppb    30-day 11 ppb



## Hourly Maximums

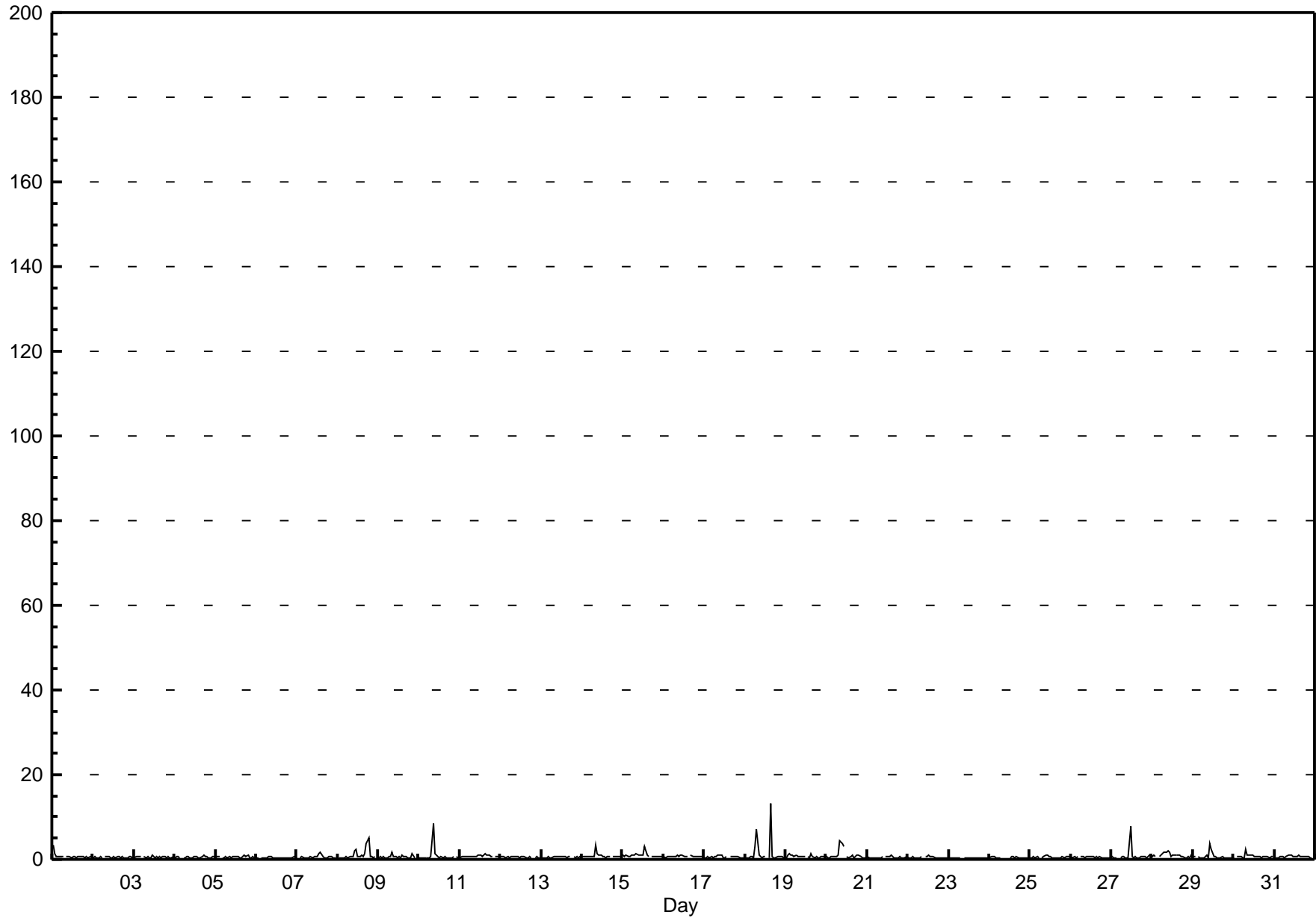
Sulphur Dioxide (SO<sub>2</sub>) - ppb

Evergreen Park - May 2011

Maximum Value: 13.2 ppb on May 18 16:00		Maximum Daily Average: 1.5 ppb on May 18		Hours in Service: 744																							
Minimum Value: 0 ppb on May 25 01:00		Minimum Daily Average: 0.4 ppb on May 23		Hours of Data: 708																							
Maximum Diurnal Average: 1.2 ppb at hour 9		Minimum Diurnal Average: 0.5 ppb at hour 22		Hours of Missing Data: 36																							
Monthly Average: 0.70 ppb		Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 0.4 Q <sub>1</sub> = 0.5 Median = 0.5 Q <sub>3</sub> = 0.7 P <sub>90</sub> = 1.0 P <sub>99</sub> = 3.6		Hours of Calibration: 36																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-May	4	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	3.5	
2-May	0	1	0	1	1	0	A	1	1	1	0	0	1	0	1	1	1	1	0	0	1	1	1	0	0.5	0.8	
3-May	0	1	1	1	1	A	1	0	1	0	0	1	0	1	0	1	0	1	1	0	1	0	0	1	0.6	1.2	
4-May	0	1	1	0	A	0	1	1	1	1	0	1	1	1	1	0	1	1	1	1	0	0	1	1	0.5	1.0	
5-May	0	1	1	A	0	0	1	0	1	0	1	1	1	1	0	0	1	1	1	1	0	0	1	0	0.6	1.0	
6-May	0	0	A	0	0	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0.5	0.7	
7-May	0	A	0	1	0	0	0	0	1	0	1	1	1	1	2	1	0	0	0	1	1	0	0	0	0.6	1.6	
8-May	A	0	0	0	0	1	0	1	1	1	2	2	1	1	1	1	1	4	5	1	1	0	1	A	1.1	5.2	
9-May	0	1	0	1	0	0	1	1	2	1	1	0	1	0	1	1	1	0	0	1	1	1	A	1	0.6	1.7	
10-May	0	0	0	0	0	0	0	1	9	1	1	1	0	1	0	1	0	0	1	0	1	A	1	0	0.9	8.6	
11-May	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	0.7	1.3	
12-May	1	1	1	0	1	0	1	1	1	1	1	0	1	1	1	0	0	1	0	A	0	1	0	0	0.5	0.7	
13-May	0	1	0	1	1	0	0	1	1	1	1	1	1	1	1	0	1	1	A	1	0	1	0	1	0.5	0.8	
14-May	1	1	1	1	1	1	1	1	3	1	1	1	1	1	0	1	1	A	1	1	1	1	1	1	0.9	3.4	
15-May	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1	1	A	1	1	1	1	1	1	1	1.0	3.1	
16-May	1	0	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	0.7	1.1	
17-May	0	0	1	0	1	0	1	1	1	1	1	0	0	1	A	1	1	1	1	1	1	1	1	0	0.6	1.2	
18-May	0	0	0	1	1	0	3	7	1	1	0	1	1	A	0	13	1	0	0	1	1	1	1	0	1.5	13.2	
19-May	0	1	1	1	1	1	1	1	1	1	1	1	A	1	0	1	1	0	1	0	0	1	1	0	0.7	1.3	
20-May	1	0	0	1	1	1	1	1	4	4	3	A	1	0	1	1	0	1	1	1	1	1	0	0	1.0	4.3	
21-May	1	0	0	1	0	0	0	0	0	1	A	1	1	1	1	1	0	0	0	1	0	0	0	1	0.5	0.9	
22-May	0	0	0	1	0	0	0	0	1	A	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0.5	0.9	
23-May	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.5	
24-May	0	1	1	1	0	0	0	A	1	C	C	C	0	1	1	0	1	0	0	0	0	0	0	0	0.5	0.7	
25-May	0	0	1	0	1	0	A	0	1	1	1	1	1	1	0	0	0	0	0	1	0	1	1	1	0.6	0.9	
26-May	1	0	1	0	1	A	1	1	1	1	1	1	1	1	0	1	0	1	0	0	1	0	0	0	0.5	0.7	
27-May	1	0	0	0	A	0	1	1	0	0	0	8	1	0	1	0	0	1	1	1	1	0	1	1	0.9	7.7	
28-May	1	1	1	A	1	1	1	2	2	2	2	1	1	1	1	1	1	1	1	0	0	1	0	1	1.0	1.9	
29-May	1	1	A	1	0	0	0	1	1	0	4	2	1	1	0	0	0	0	1	0	0	0	0	0	0.7	3.9	
30-May	0	A	1	1	1	0	0	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	2.5	
31-May	A	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0.7	1.1	
		0.6	0.6	0.6	0.5	0.6	0.5	0.7	0.9	1.2	0.9	1.0	1.0	0.6	0.7	0.6	1.0	0.6	0.7	0.7	0.6	0.6	0.5	0.5	0.6	Diurnal Average	
		3.5	1.2	1.3	1.0	1.0	1.1	3.2	7.1	8.6	3.7	3.9	7.7	1.2	3.1	1.6	13.2	1.4	3.6	5.2	1.0	1.5	0.8	0.9	1.1	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									

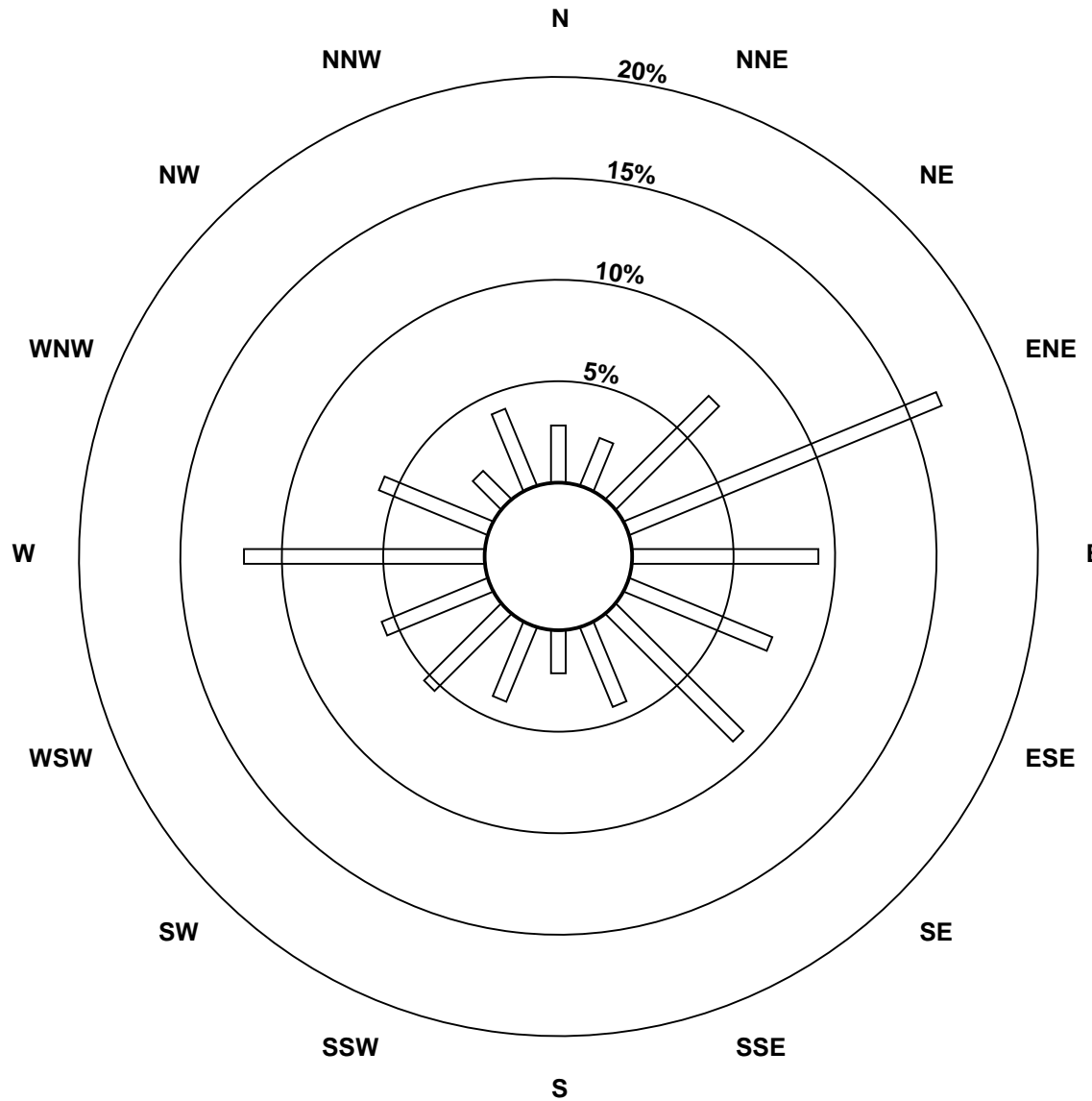
**Hourly Maximums**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Evergreen Park - May 2011**

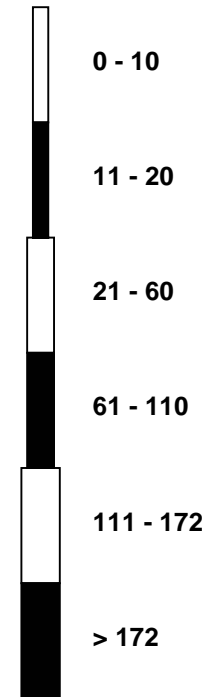


**Pollutant Rose**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Evergreen Park - May 2011**

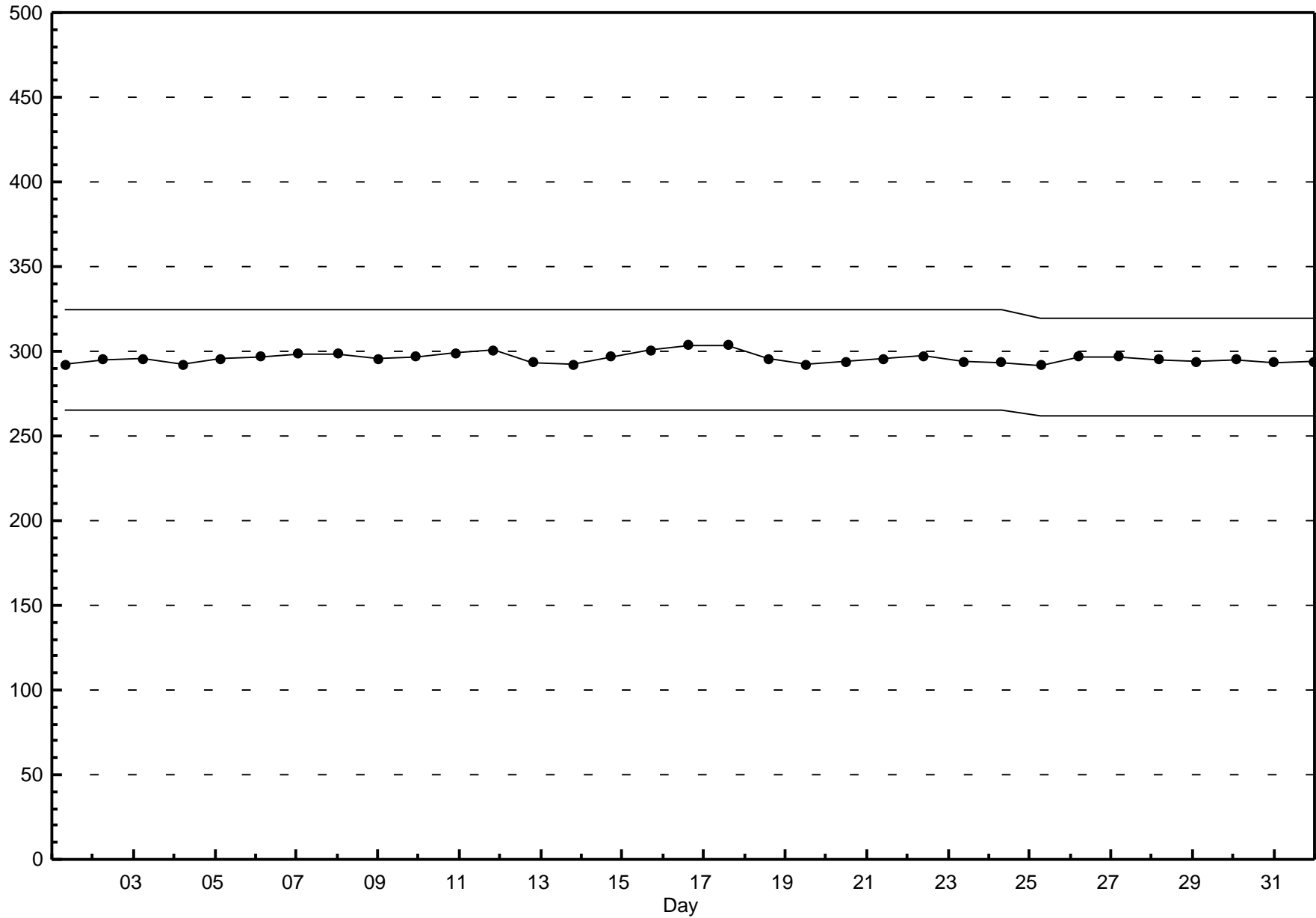


**Pollutant Classes (ppb)**



### Span Responses

Sulphur Dioxide (SO<sub>2</sub>)  
Evergreen Park - May 2011



## Hourly Averages

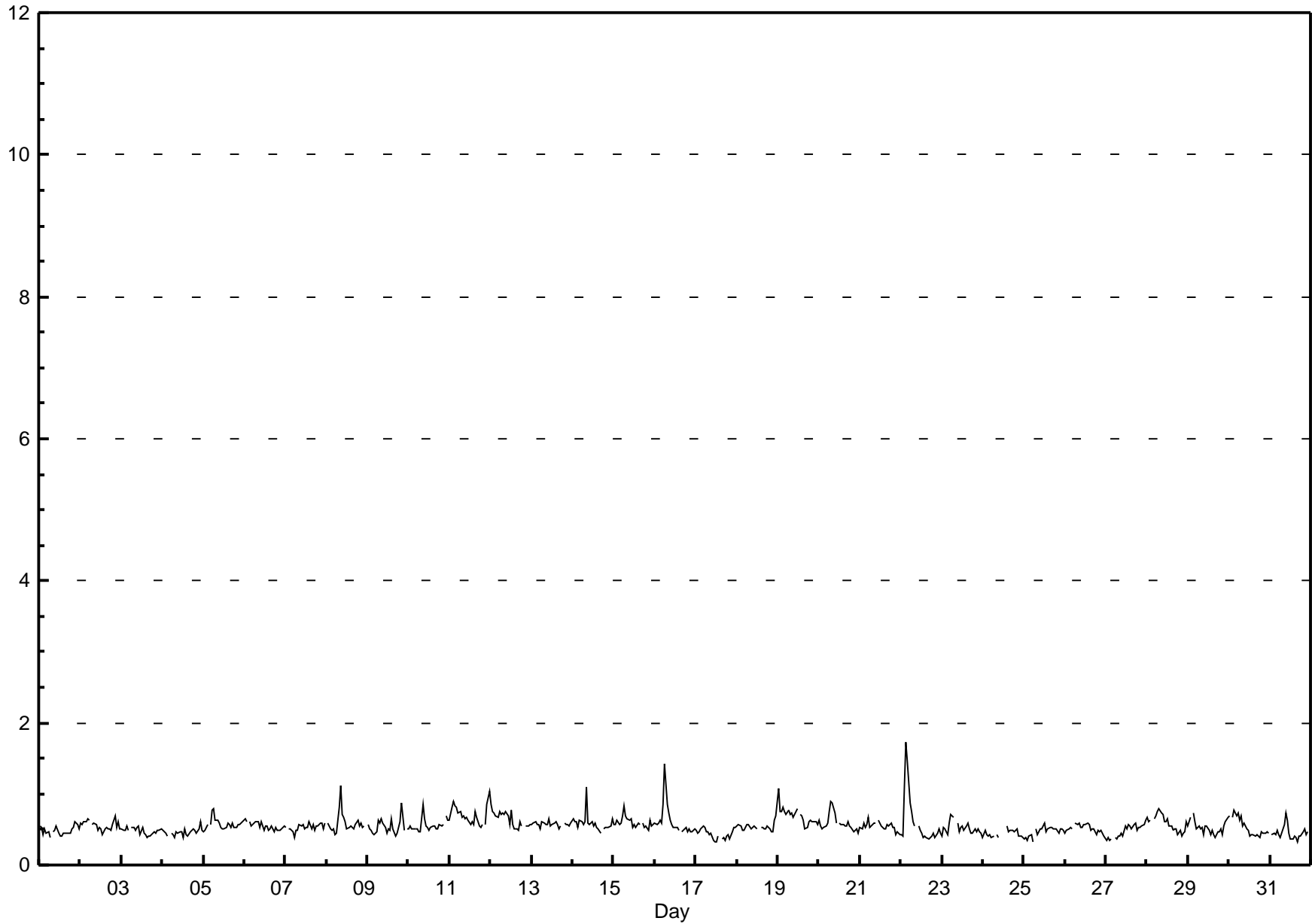
Total Reduced Sulphur (TRS) - ppb

Evergreen Park - May 2011

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 1.7 ppb on May 22 04:00	Maximum Daily Average: 0.7 ppb on May 11		Hours of Data:	707
Minimum Value: 0 ppb on May 25 06:00	Minimum Daily Average: 0.4 ppb on May 17		Hours of Missing Data:	37
Maximum Diurnal Average: 0.6 ppb at hour 9	Minimum Diurnal Average: 0.5 ppb at hour 17		Hours of Calibration:	37
Monthly Average: 0.55 ppb	Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 0.4 Q <sub>1</sub> = 0.5 Median = 0.5 Q <sub>3</sub> = 0.6 P <sub>90</sub> = 0.7 P <sub>99</sub> = 1.1		Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	1	1	0	1	0	0	0	A	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1	0.5	0.6
2-May	1	1	1	1	1	1	A	1	1	1	0	1	1	0	1	1	1	1	0	1	1	1	1	1	0.6	0.7
3-May	1	0	0	1	0	A	1	1	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0.5	0.6
4-May	0	0	0	0	A	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	1	0	0.5	0.6
5-May	0	0	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	0.8
6-May	1	1	A	1	1	1	1	1	1	1	1	0	1	1	0	1	1	0	1	0	0	0	1	1	0.6	0.7
7-May	1	A	1	1	0	0	0	0	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0.5	0.6
8-May	A	1	1	0	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	0.6	1.1
9-May	1	1	0	0	0	0	1	1	1	1	1	0	1	0	1	1	0	0	1	1	1	0	A	1	0.5	0.9
10-May	1	1	1	0	1	1	0	0	1	1	1	1	0	1	1	1	1	1	1	1	1	1	A	1	0.6	0.9
11-May	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	0.7	1.0
12-May	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	A	1	1	1	1	0.6	0.9
13-May	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	0.6	0.7
14-May	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	A	1	1	1	1	1	1	0.6	1.1
15-May	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	0	1	1	0.6	0.8
16-May	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	A	0	1	1	0	1	0	0	1	0.6	1.4
17-May	0	0	0	1	1	1	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	1	0.4	0.5
18-May	1	1	1	0	0	1	1	1	1	1	1	1	0	A	1	1	1	1	1	1	0	0	1	1	0.5	0.7
19-May	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0.7	1.1
20-May	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	0	0	1	0.6	0.9
21-May	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	0	1	1	1	1	1	1	0	0	0.5	0.7
22-May	0	0	1	2	1	1	1	1	1	A	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6	1.7
23-May	0	1	1	0	1	1	1	1	A	1	0	1	1	0	1	1	1	0	0	0	0	0	0	0	0.5	0.7
24-May	0	0	0	0	0	0	0	A	0	0	C	C	C	C	1	0	0	0	0	0	0	1	0	0	0.4	0.5
25-May	0	0	0	0	0	0	A	0	0	1	1	1	1	0	0	1	1	1	1	1	1	0	1	0	0.5	0.6
26-May	0	0	1	1	1	A	1	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0.5	0.6
27-May	0	0	0	0	A	0	0	0	0	0	0	1	1	1	1	1	1	1	0	1	1	1	1	1	0.5	0.6
28-May	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	0	1	0.6	0.8
29-May	1	1	A	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	0	1	1	1	0.5	0.7
30-May	1	A	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0.8
31-May	A	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0.5	0.7
	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	Diurnal Average	
	1.1	0.8	1.1	1.7	1.5	0.9	1.4	0.9	1.1	0.7	0.7	0.8	0.8	0.7	0.7	0.8	0.7	0.6	0.6	0.6	0.9	0.6	0.8	1.0	Diurnal Maximum	

C - Calibration      A - Automated Daily Zero Span  
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb    24-hr 3 ppb





## Hourly Maximums

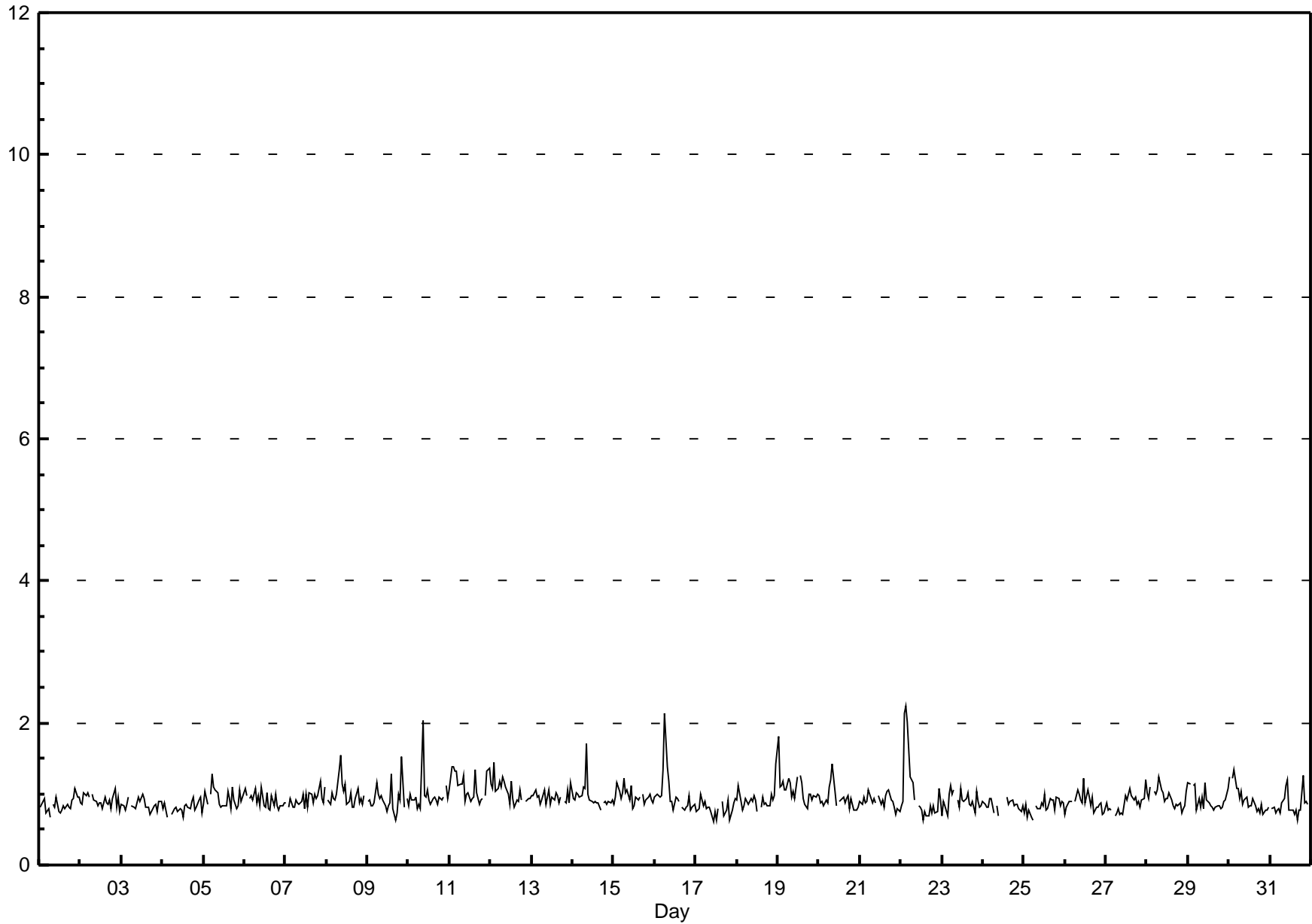
Total Reduced Sulphur (TRS) - ppb

Evergreen Park - May 2011

Maximum Value: 2.2 ppb on May 22 04:00 Minimum Value: 1 ppb on May 17 11:00 Maximum Diurnal Average: 1.0 ppb at hour 9 Monthly Average: 0.93 ppb		Maximum Daily Average: 1.1 ppb on May 11 Minimum Daily Average: 0.8 ppb on May 17 Minimum Diurnal Average: 0.8 ppb at hour 17 Percentiles: P <sub>1</sub> = 0.7 P <sub>10</sub> = 0.8 Q <sub>1</sub> = 0.8 Median = 0.9 Q <sub>3</sub> = 1.0 P <sub>90</sub> = 1.1 P <sub>99</sub> = 1.7		Hours in Service: 744 Hours of Data: 707 Hours of Missing Data: 37 Hours of Calibration: 37 Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
1-May	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.1
2-May	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.1
3-May	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.0
4-May	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.0
5-May	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.3
6-May	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.1
7-May	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.2
8-May	A	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1.0	1.5
9-May	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	A	A	1	0.9	1.5
10-May	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1.0	2.0
11-May	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1.1	1.4
12-May	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1.0	1.5
13-May	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1.0	1.2
14-May	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1.0	1.7
15-May	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1.0	1.2
16-May	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1.0	2.1
17-May	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	0.8	1.0
18-May	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.4
19-May	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.1	1.8
20-May	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.4
21-May	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.1
22-May	1	1	2	2	2	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	2.2
23-May	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.1
24-May	1	1	1	1	1	1	1	A	1	1	C	C	C	C	1	1	1	1	1	1	1	1	1	1	1	0.8	1.0
25-May	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.0
26-May	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.2
27-May	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.2
28-May	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.2
29-May	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.2
30-May	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.3
31-May	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	0.8	1.3
	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9		Diurnal Average
	1.8	1.4	2.1	2.2	2.0	1.3	2.1	1.4	2.0	1.1	1.2	1.2	1.2	1.3	1.3	1.4	1.0	1.1	1.1	1.3	1.5	1.1	1.3	1.4		Diurnal Maximum	
C - Calibration																								A - Automated Daily Zero Span			

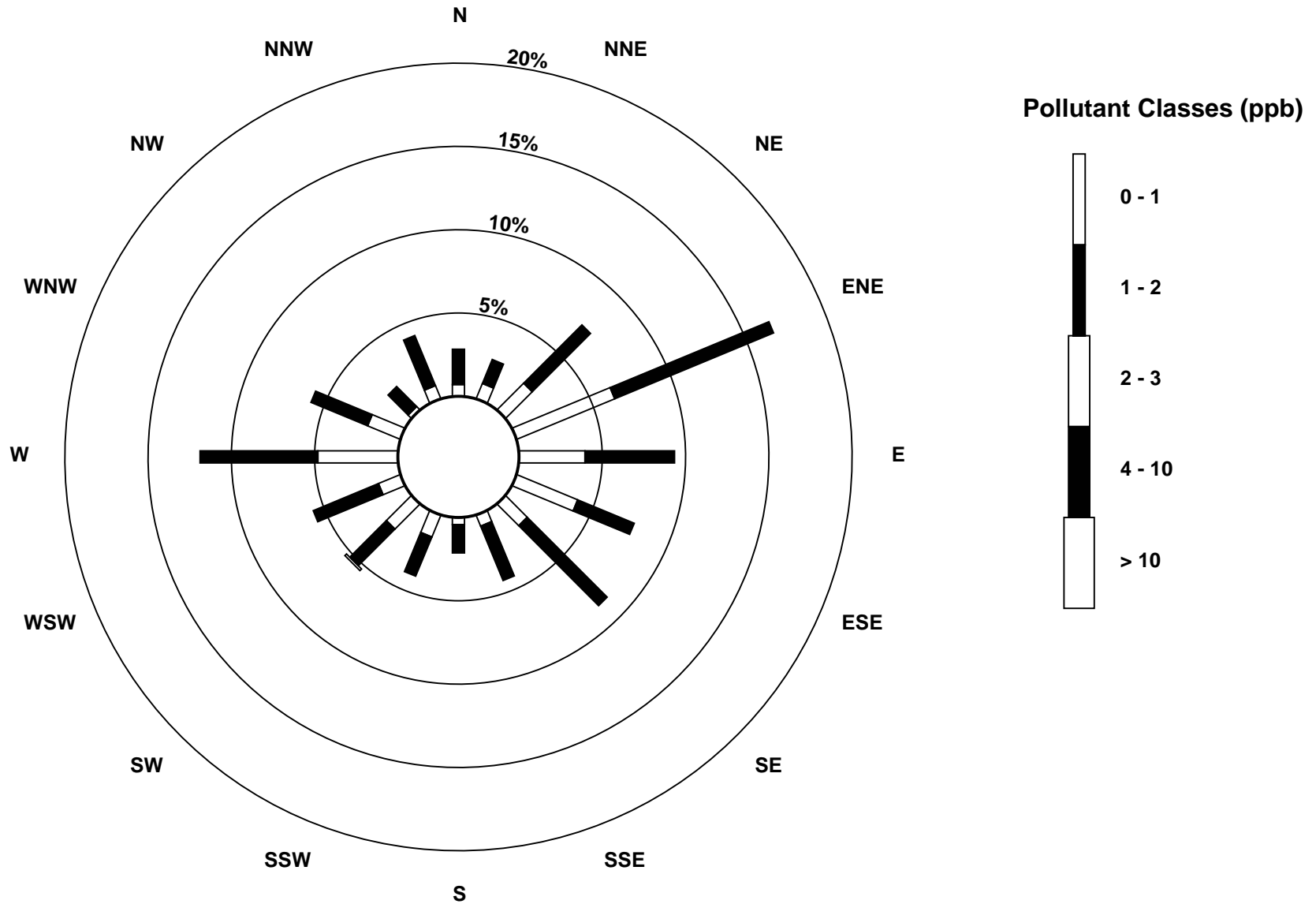
**Hourly Maximums**

**Total Reduced Sulphur (TRS) - ppb**  
**Evergreen Park - May 2011**



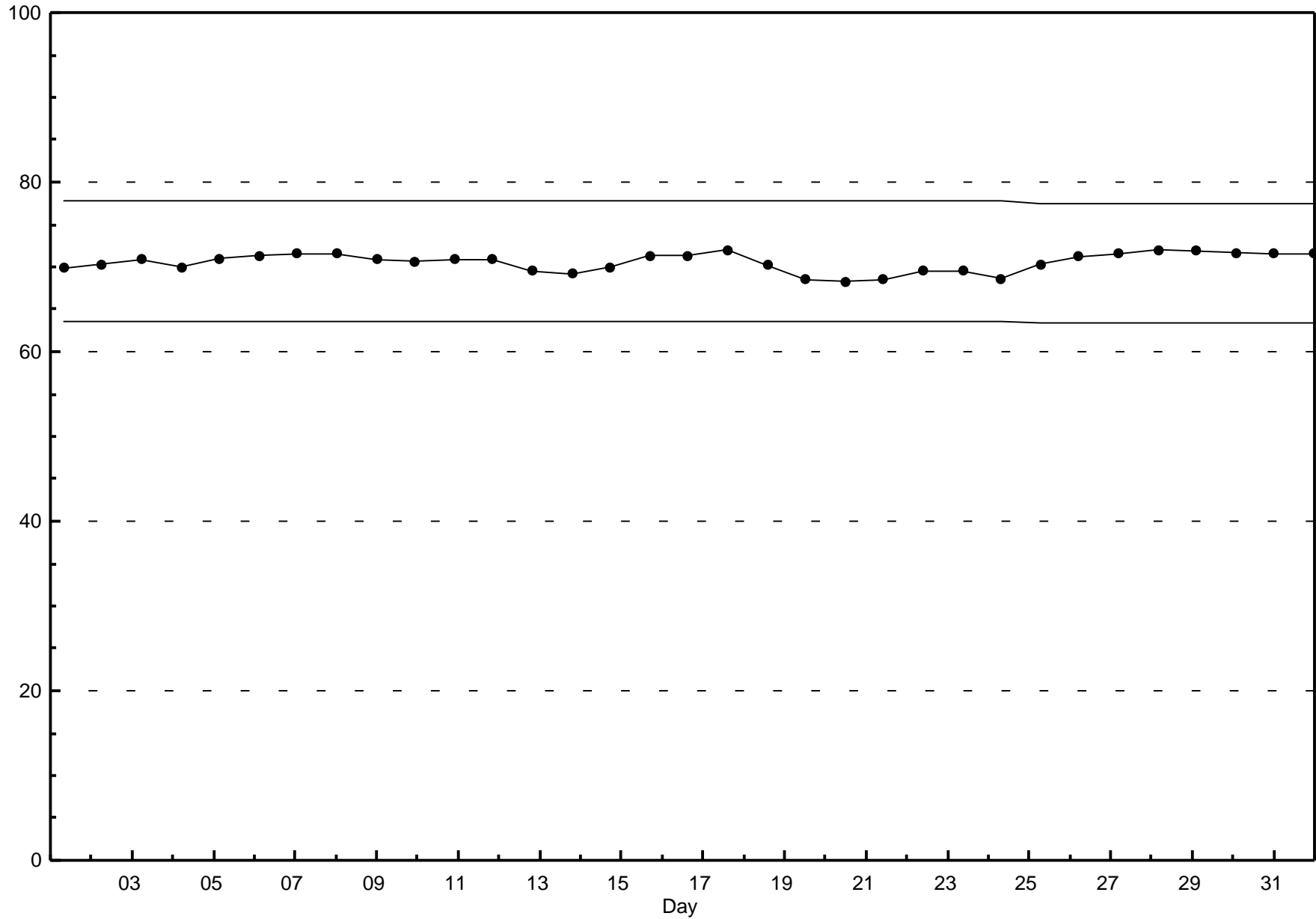
**Pollutant Rose**

**Total Reduced Sulphur (TRS) - ppb**  
**Evergreen Park - May 2011**



### Span Responses

Total Reduced Sulphur (TRS)  
Evergreen Park - May 2011



## Hourly Averages

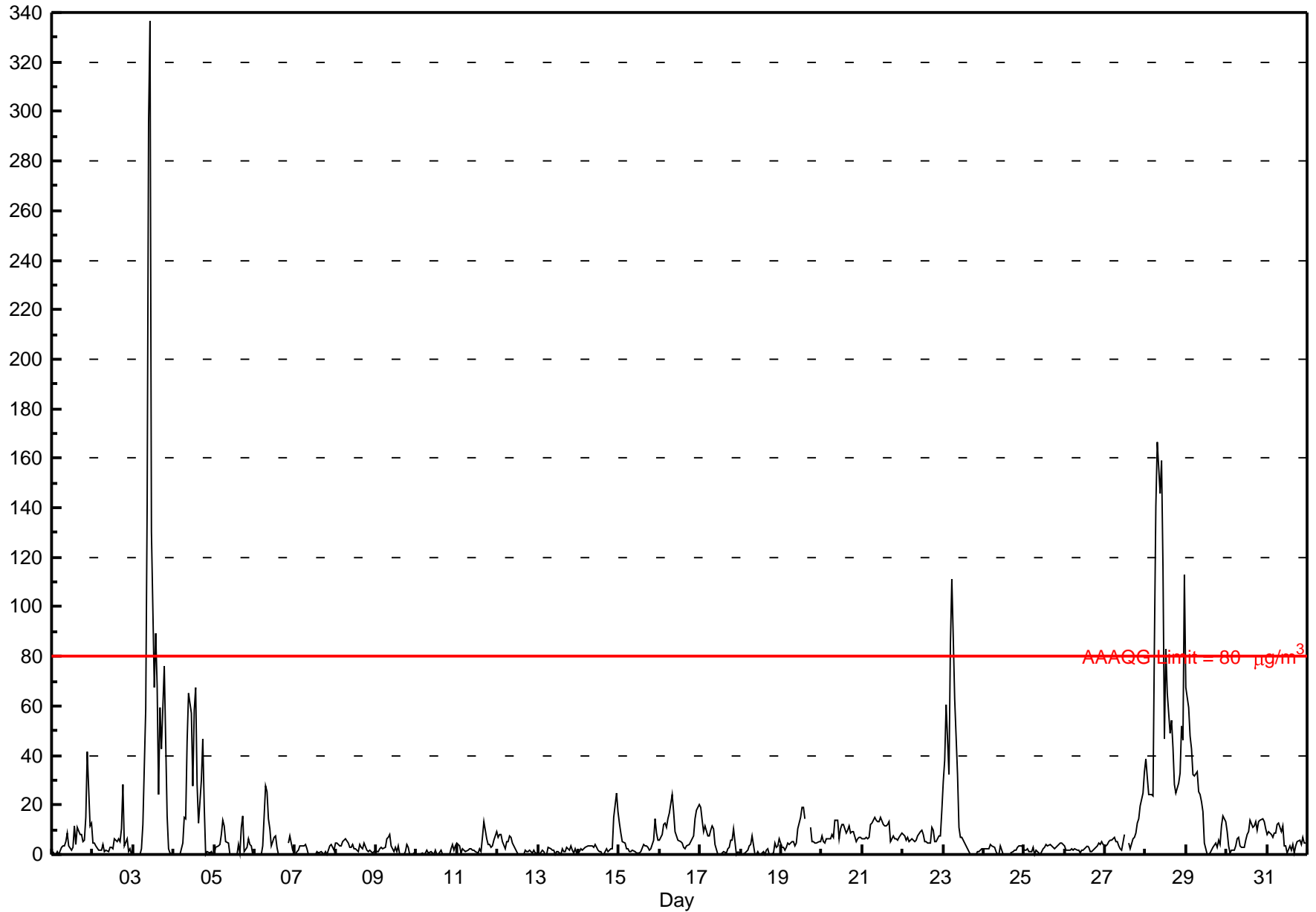
## Particulate Matter 2.5 (PM<sub>2.5</sub>) - µg/m<sup>3</sup>

### Evergreen Park - May 2011

Number of Exceedences: 1-hr: 16 24-hr: 2	Hours in Service: 744
Maximum Value: 336.7 µg/m <sup>3</sup> on May 3 11:00	Maximum Daily Average: 67.6 µg/m <sup>3</sup> on May 28
Minimum Value: 0 µg/m <sup>3</sup> on May 1 05:00	Hours of Data: 732
Maximum Diurnal Average: 21.3 µg/m <sup>3</sup> at hour 10	Hours of Missing Data: 12
Monthly Average: 10.37 µg/m <sup>3</sup>	Hours of Calibration: 2
Minimum Daily Average: 0.9 µg/m <sup>3</sup> on May 10	Percent Operational Time: 98.7
Minimum Diurnal Average: 6.3 µg/m <sup>3</sup> at hour 21	
Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.1 Q <sub>1</sub> = 1.5 Median = 3.7 Q <sub>3</sub> = 8.3 P <sub>90</sub> = 19.4 P <sub>99</sub> = 140.6	

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-May	1	0	0	1	0	3	4	4	5	9	3	2	3	12	4	11	8	8	5	6	15	41	12	13	7.0	41.3																							
2-May	4	5	4	2	2	1	4	1	2	1	3	3	2	6	5	6	5	10	28	4	6	1	2	0	4.5	28.3																							
3-May	0	0	0	0	0	2	12	59	141	296	337	130	67	89	68	24	59	43	76	45	16	2	1	0	61.1	336.7																							
4-May	0	0	0	0	0	4	15	15	46	65	57	28	58	67	28	12	30	47	19	0	1	1	1	0	20.6	67.4																							
5-May	0	3	4	4	8	14	12	5	5	0	0	0	0	0	4	1	11	15	1	3	7	4	4	0	4.4	15.3																							
6-May	0	0	0	0	0	4	28	25	14	10	3	7	8	3	0	N	N	N	M	M	5	7	2	1	6.2	27.8																							
7-May	0	1	2	4	3	3	4	2	0	0	0	0	0	1	1	1	1	0	1	0	3	4	3	2	1.5	4.2																							
8-May	4	5	3	3	5	6	7	5	3	3	4	2	2	1	4	3	2	5	1	1	2	1	0	2	3.1	6.5																							
9-May	1	1	2	3	3	3	6	7	8	4	1	3	1	4	0	0	0	1	4	3	0	0	0	0	2.3	7.8																							
10-May	0	0	0	1	0	0	2	1	1	1	0	2	0	0	2	0	0	0	0	0	2	4	2	4	0.9	3.9																							
11-May	5	4	1	2	2	1	2	2	2	2	2	1	1	2	1	7	13	6	4	4	3	3	6	10	3.6	13.4																							
12-May	7	8	8	5	2	5	5	8	7	5	2	1	0	0	0	0	2	1	1	2	1	2	1	1	3.0	8.2																							
13-May	0	0	1	1	0	0	3	2	2	2	0	1	1	0	2	1	1	3	2	4	2	1	2	1	1.3	3.5																							
14-May	1	2	2	3	3	4	3	3	4	3	4	2	1	1	0	0	2	1	2	2	2	15	25	17	4.3	24.9																							
15-May	12	9	5	4	2	2	1	1	2	1	1	1	0	1	4	4	3	3	2	3	6	15	9	6	4.0	14.6																							
16-May	6	8	12	13	11	14	17	24	17	9	8	6	5	5	3	3	4	4	5	6	8	14	18	20	10.0	24.2																							
17-May	19	14	9	12	8	7	10	12	11	4	0	0	0	1	1	0	2	3	6	6	11	0	1	0	5.6	18.8																							
18-May	1	0	0	1	2	3	4	8	0	0	1	0	0	1	0	2	2	0	0	1	5	3	4	6	1.8	7.6																							
19-May	3	3	2	3	5	4	5	5	4	5	10	15	19	19	14	M	M	11	5	5	5	5	5	5	7.2	19.1																							
20-May	8	5	5	6	6	6	8	7	14	14	6	11	12	12	8	10	12	9	9	9	5	6	7	7	8.4	14.1																							
21-May	6	6	7	7	7	12	13	15	14	13	13	15	12	12	12	12	13	5	8	6	6	6	7	8	9.8	14.9																							
22-May	8	8	6	7	5	6	6	5	6	8	9	10	8	5	5	5	4	11	10	5	5	8	8	18	7.3	18.1																							
23-May	30	38	61	33	84	111	88	63	32	11	7	7	6	5	2	1	0	0	0	0	1	1	2	2	24.3	111.0																							
24-May	2	2	2	2	4	3	3	1	0	0	3	0	0	M	M	M	1	1	2	2	3	3	3	2	2.0	4.3																							
25-May	2	2	2	1	1	3	0	2	1	0	1	2	3	4	4	4	3	3	2	3	4	5	4	4	2.5	4.9																							
26-May	4	2	2	2	2	2	2	2	2	1	2	2	2	4	3	1	1	2	3	3	4	4	5	4	2.5	5.1																							
27-May	4	4	5	6	6	7	5	5	3	2	2	8	C	C	5	2	7	7	9	12	14	20	25	33	8.7	33.4																							
28-May	39	31	24	24	24	86	141	166	146	159	116	47	83	65	49	54	43	28	25	29	33	52	46	113	67.6	166.3																							
29-May	67	60	48	43	32	31	34	25	24	21	17	4	0	0	1	3	5	3	6	4	12	16	13		19.6	67.3																							
30-May	9	3	1	2	2	3	6	7	3	3	3	6	8	9	14	11	12	13	10	13	14	14	13	10	7.9	14.2																							
31-May	8	9	8	7	9	9	12	13	9	12	3	3	0	4	2	4	1	4	5	6	4	7	5	4	6.2	12.8																							
																								8.1	7.5	7.3	6.5	7.6	11.7	14.8	16.1	17.0	21.3	20.0	10.2	10.2	11.5	8.2	6.5	8.5	8.3	8.3	6.3	6.3	8.4	7.7	9.9	Diurnal Average	
																								67.3	59.6	60.6	42.6	84.5	111.0	140.8	166.3	145.8	295.6	336.7	130.2	83.2	89.2	67.9	54.0	59.2	46.6	76.2	45.5	32.7	51.8	46.4	113.1	Diurnal Maximum	

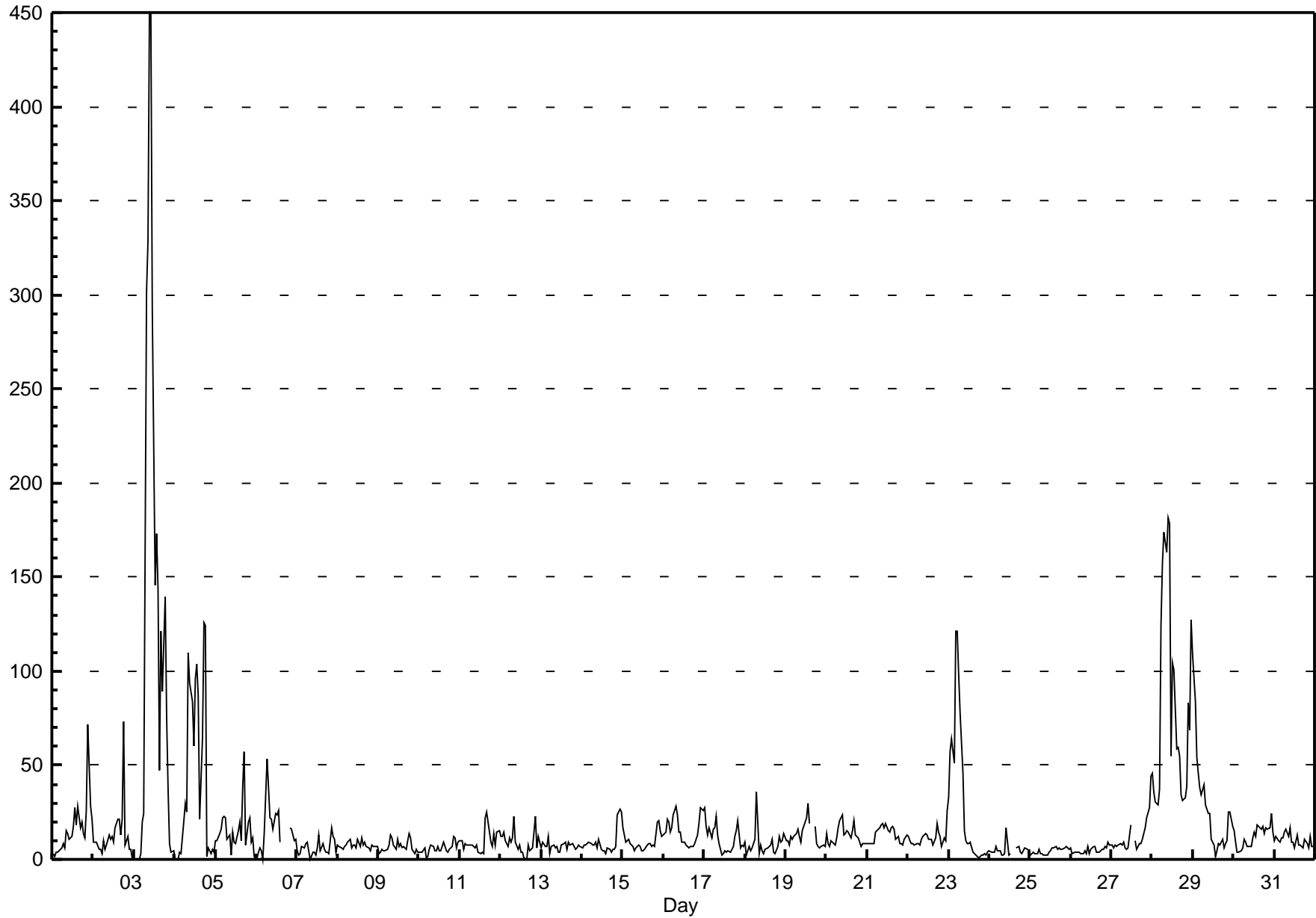
C - Calibration M - Maintenance N - Not Valid  
 Alberta Ambient Air Quality Guideline (AAAQG): 1-hr 80 µg/m<sup>3</sup> Alberta Ambient Air Quality Objective (AAAQO): 24-hr 30 µg/m<sup>3</sup>



## Hourly Maximums

## Particulate Matter 2.5 (PM<sub>2.5</sub>) - µg/m<sup>3</sup> Evergreen Park - May 2011

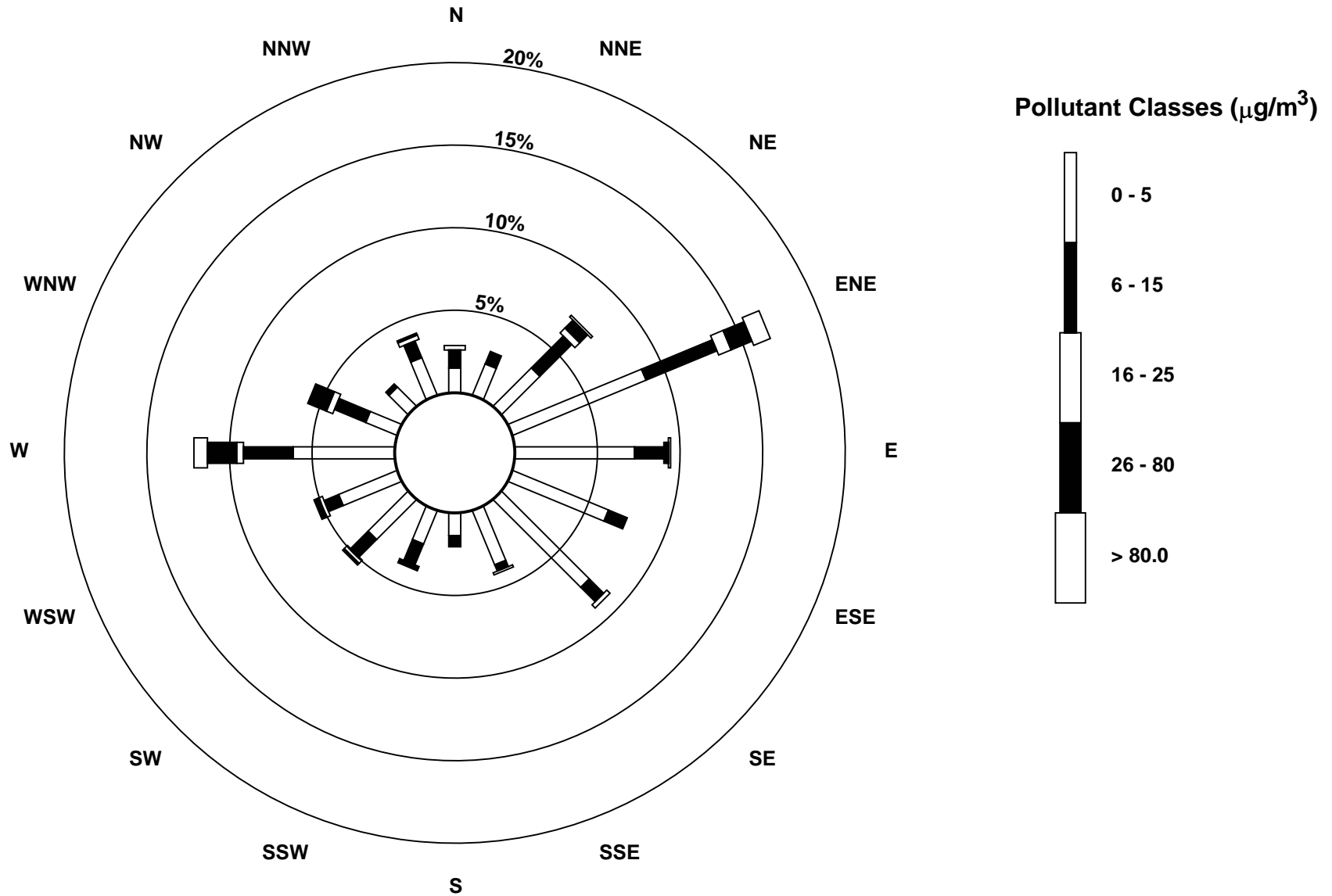
Maximum Value: 449.6 µg/m <sup>3</sup> on May 3 10:00		Maximum Daily Average: 119.1 µg/m <sup>3</sup> on May 3		Hours in Service: 744																							
Minimum Value: 0 µg/m <sup>3</sup> on May 3 01:00		Minimum Daily Average: 4.5 µg/m <sup>3</sup> on May 25		Hours of Data: 732																							
Maximum Diurnal Average: 32.5 µg/m <sup>3</sup> at hour 10		Minimum Diurnal Average: 10.8 µg/m <sup>3</sup> at hour 4		Hours of Missing Data: 12																							
Monthly Average: 18.50 µg/m <sup>3</sup>		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 3.5 Q <sub>1</sub> = 5.5 Median = 8.5 Q <sub>3</sub> = 15.3 P <sub>90</sub> = 29.7 P <sub>99</sub> = 176.5		Hours of Calibration: 2																							
				Percent Operational Time: 98.7																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-May	3	1	4	4	4	6	9	6	15	14	11	13	17	27	18	28	17	20	13	12	26	72	28	22	16.2	72.0	
2-May	10	9	9	5	5	3	10	5	8	13	11	12	9	17	22	22	13	22	73	8	12	5	5	0	12.8	73.3	
3-May	0	0	0	0	3	20	25	302	329	450	450	292	146	173	144	48	121	89	140	75	38	8	4	4	119.1	449.6	
4-May	0	0	0	4	3	21	30	25	110	94	84	60	96	104	87	21	64	126	124	2	6	3	5	4	44.6	125.7	
5-May	10	10	14	16	22	23	22	11	13	2	14	9	9	15	20	10	38	57	8	20	22	9	11	1	16.1	57.2	
6-May	1	4	6	4	0	14	54	38	22	21	16	25	24	26	9	N	N	N	M	M	17	16	10	10	16.7	53.7	
7-May	5	3	3	7	6	9	9	5	0	4	4	2	6	13	5	9	6	4	4	3	17	12	11	4	6.2	16.7	
8-May	7	7	6	5	7	8	9	11	6	8	8	6	11	7	12	8	9	7	6	5	8	7	7	7	7.5	11.7	
9-May	3	4	6	5	4	5	8	13	11	7	5	10	7	9	6	7	5	10	13	12	5	3	5	4	7.0	13.4	
10-May	4	4	4	6	1	2	5	7	7	5	5	7	5	5	9	7	4	4	5	7	12	11	6	9	5.9	12.2	
11-May	10	10	6	8	8	8	7	7	7	6	7	4	3	4	3	22	26	14	9	7	13	7	15	15	9.4	25.5	
12-May	12	12	14	10	7	11	9	11	23	9	6	8	4	4	0	0	7	5	6	6	23	6	12	9	9.0	23.2	
13-May	6	9	7	7	12	3	7	7	6	7	4	4	8	8	9	5	9	7	8	7	5	6	7	7	7.0	12.1	
14-May	6	7	8	8	9	8	8	7	9	6	11	6	5	5	3	6	5	4	5	6	7	24	27	25	8.9	27.0	
15-May	17	13	9	10	8	8	7	5	6	7	7	5	5	5	7	8	8	7	8	6	20	20	15	12	9.3	20.4	
16-May	13	14	21	20	15	17	23	28	24	15	15	9	9	7	7	6	7	7	9	11	13	19	27	26	15.1	28.4	
17-May	27	17	13	17	12	16	17	23	13	9	3	3	4	4	5	4	5	7	12	15	21	6	8	7	11.2	27.5	
18-May	9	3	7	5	6	8	11	36	3	7	5	3	5	6	7	8	11	4	3	7	12	9	10	14	8.3	35.8	
19-May	10	10	7	12	11	12	14	16	12	9	15	20	22	30	19	M	M	17	8	7	6	7	7	7	12.7	29.9	
20-May	14	8	7	10	8	8	11	17	21	24	13	14	15	15	12	15	21	13	12	12	7	8	8	8	12.5	23.6	
21-May	8	8	8	8	8	15	15	17	18	19	17	19	16	15	17	17	16	11	12	8	8	7	10	13	13.0	19.4	
22-May	12	10	9	8	8	8	8	8	11	12	14	13	11	11	10	7	11	19	14	12	7	11	10	26	11.3	25.7	
23-May	33	57	64	51	121	121	99	77	46	15	10	9	9	9	4	3	2	1	1	2	3	3	3	3	31.1	121.4	
24-May	4	4	4	4	7	5	4	2	2	3	17	2	3	M	M	M	6	7	4	3	5	6	6	5	4.9	17.0	
25-May	2	3	4	3	3	6	3	3	3	3	3	4	5	6	6	7	5	6	5	6	6	7	6	5	4.5	6.7	
26-May	6	3	4	4	4	4	3	3	5	3	7	3	5	7	7	4	4	4	5	6	7	6	9	7	5.0	8.9	
27-May	7	6	7	7	8	9	7	9	6	5	6	19	C	C	10	5	8	8	10	14	17	22	28	45	12.0	44.6	
28-May	46	36	30	29	37	124	157	174	163	181	179	55	105	100	58	60	55	34	32	33	39	83	69	127	83.6	181.4	
29-May	109	84	54	46	38	34	40	29	26	24	25	10	7	2	4	8	8	10	6	8	10	25	25	18	27.1	109.4	
30-May	15	9	4	4	5	6	10	9	7	7	7	11	14	13	18	17	16	17	14	17	16	16	25	14	12.2	24.8	
31-May	10	12	10	9	11	11	15	16	12	17	9	9	6	13	7	8	7	6	11	8	6	12	7	7	10.0	17.0	
		13.5	12.2	11.2	10.8	13.0	17.8	21.2	30.0	30.4	32.5	31.7	21.5	19.7	22.7	18.2	13.2	17.8	18.2	19.4	11.5	13.3	14.8	13.7	15.1	Diurnal Average	
		109.4	84.1	64.3	51.2	121.2	124.1	157.0	302.0	328.7	449.6	449.6	292.3	145.8	173.1	143.6	59.7	121.1	125.7	139.5	75.3	39.0	83.1	68.7	127.4	Diurnal Maximum	
C - Calibration		M - Maintenance					N - Not Valid																				





**Pollutant Rose**

**Particulate Matter 2.5 (PM<sub>2.5</sub>) - μg/m<sup>3</sup>**  
**Evergreen Park - May 2011**



## Hourly Averages

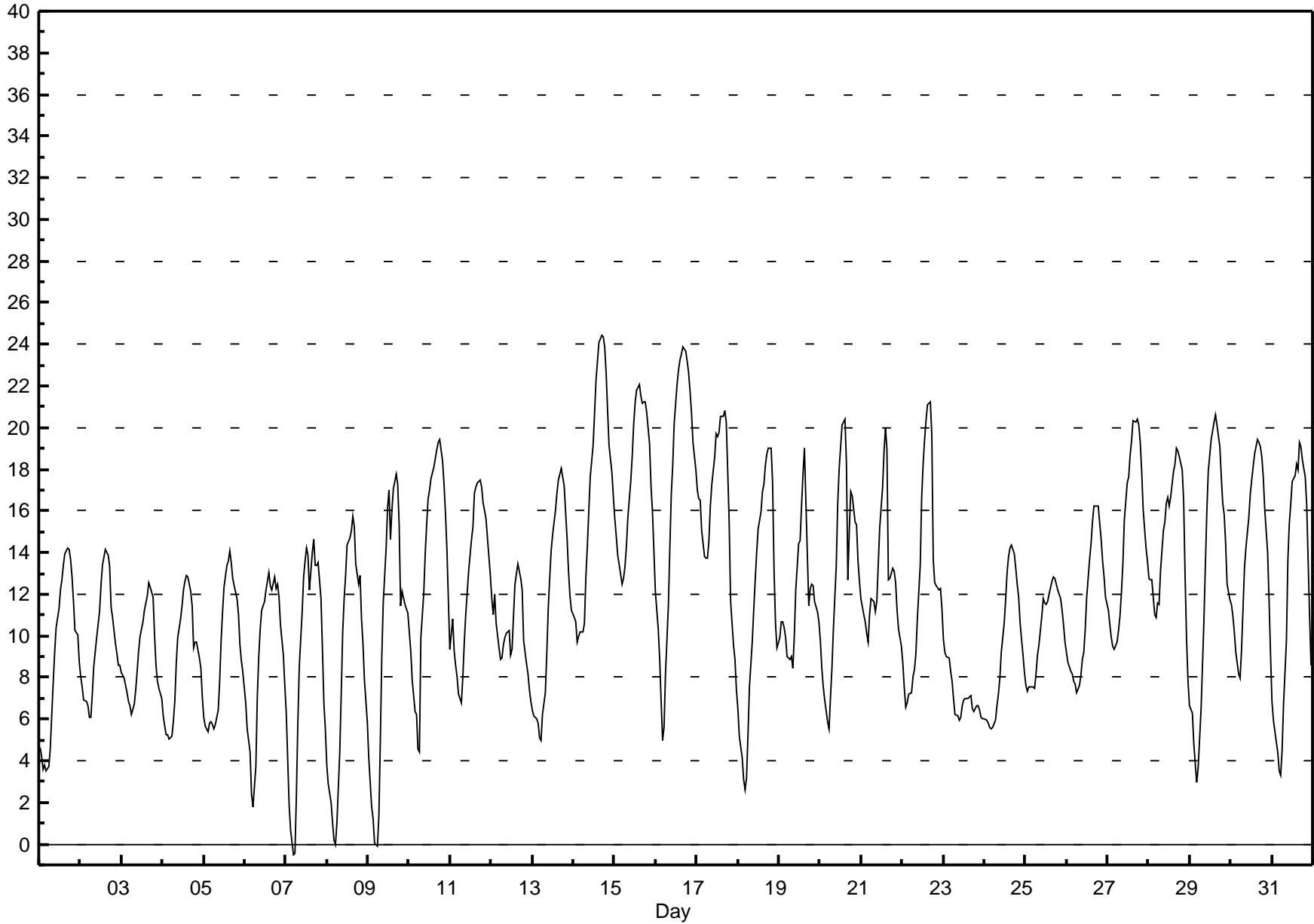
External Temperature (ET) - °C

Evergreen Park - May 2011

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 24.4 °C on May 14 17:00      Maximum Daily Average: 17.5 °C on May 15		Hours in Service: 744 Hours of Data: 744 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																									
Minimum Value: -1 °C on May 7 05:00 Maximum Diurnal Average: 16.9 °C at hour 16 Monthly Average: 11.85 °C		Minimum Daily Average: 7.1 °C on May 23 Minimum Diurnal Average: 6.4 °C at hour 6 Percentiles: P <sub>1</sub> = 1.0 P <sub>10</sub> = 5.8 Q <sub>1</sub> = 8.1 Median = 11.6 Q <sub>3</sub> = 15.4 P <sub>90</sub> = 18.9 P <sub>99</sub> = 23.4																									
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-May	5	4	4	4	3	4	5	6	8	9	10	11	12	13	13	14	14	14	14	13	12	10	10	9	9.2	14.2	
2-May	8	8	7	7	7	6	6	7	9	10	11	11	12	13	14	14	14	13	11	11	10	9	9	9	9.8	14.1	
3-May	8	8	8	7	7	7	6	7	7	8	9	10	11	11	12	12	13	12	12	10	9	8	7	7	9.0	12.6	
4-May	6	6	5	5	5	5	6	7	9	10	11	11	12	13	13	13	12	11	9	10	10	9	8	7	8.9	12.9	
5-May	6	6	5	6	6	6	5	6	6	8	10	11	12	13	14	14	14	13	12	12	11	10	9	8	9.3	14.1	
6-May	7	6	5	4	2	2	4	7	9	10	11	12	12	13	13	12	12	13	12	12	12	11	9	8	9.1	13.1	
7-May	6	4	2	1	-1	0	2	6	9	11	13	14	14	14	12	14	15	13	13	14	12	9	7	6	8.7	14.6	
8-May	4	3	2	1	0	0	1	5	7	10	12	13	14	15	15	16	15	13	12	13	11	10	8	6	8.6	15.8	
9-May	4	3	2	1	0	0	1	5	9	12	14	16	17	15	16	17	18	17	15	11	12	12	11	11	10.0	17.8	
10-May	10	9	8	6	6	5	4	10	12	14	15	17	17	18	18	19	19	19	19	18	17	16	14	12	13.5	19.4	
11-May	9	11	9	9	8	7	7	8	10	11	12	13	15	15	17	17	17	17	17	16	16	16	15	13	12.7	17.5	
12-May	12	11	12	11	9	9	9	10	10	10	10	9	9	11	13	13	13	13	12	10	9	8	7	7	10.3	13.5	
13-May	6	6	6	6	5	5	6	7	9	11	13	14	15	16	17	17	18	18	17	16	15	13	12	11	11.7	18.0	
14-May	11	11	10	10	10	10	11	13	14	16	18	19	21	22	23	24	24	24	24	23	21	19	18	17	17.2	24.4	
15-May	16	15	14	13	12	13	13	14	16	17	19	20	21	22	22	22	21	21	21	21	19	17	16	14	17.5	22.0	
16-May	12	10	9	7	5	6	8	11	14	17	18	20	22	23	23	24	24	24	23	23	22	21	19	18	16.8	23.9	
17-May	17	17	17	15	14	14	14	15	16	17	19	20	20	20	21	21	21	20	18	15	12	10	9	7	16.0	20.8	
18-May	6	5	4	3	3	3	5	8	10	11	13	14	15	16	17	17	18	19	19	19	17	13	11	9	11.5	19.0	
19-May	10	11	11	10	10	9	9	9	8	10	12	14	15	16	18	19	16	11	12	13	12	12	11	11	12.1	19.0	
20-May	10	8	8	7	6	6	7	8	10	13	16	18	19	20	20	18	13	15	17	17	15	15	14	13	13.1	20.4	
21-May	12	11	11	10	10	11	12	12	11	12	13	15	17	19	20	19	13	13	13	13	13	11	10	10	12.9	20.0	
22-May	9	7	7	7	7	7	8	8	9	11	13	17	18	19	20	21	21	20	14	13	12	12	12	11	12.7	21.2	
23-May	10	9	9	9	8	8	7	6	6	6	6	7	7	7	7	7	7	7	6	7	7	6	6	6	7.1	9.9	
24-May	6	6	6	6	6	6	6	7	7	8	9	11	12	13	14	14	14	14	13	13	12	11	9	8	9.5	14.4	
25-May	8	7	8	8	8	7	8	9	10	11	12	12	12	12	12	13	13	13	12	12	12	11	11	10	10.3	12.8	
26-May	9	9	8	8	8	8	7	8	8	9	9	10	12	14	14	15	16	16	16	15	15	14	13	12	11.4	16.2	
27-May	11	11	10	10	9	10	10	11	12	13	16	17	18	19	19	20	20	20	20	19	18	16	14	14	14.9	20.4	
28-May	13	13	13	11	11	12	12	13	15	15	16	17	16	17	18	18	19	19	19	18	16	13	10	8	14.6	19.0	
29-May	7	6	5	4	3	4	6	9	11	13	16	18	19	20	20	21	20	19	18	16	16	14	12	12	12.9	20.6	
30-May	12	11	10	9	8	8	9	11	13	14	16	17	18	18	19	19	19	19	19	18	16	14	12	9	14.1	19.4	
31-May	7	6	5	4	4	3	4	7	10	14	15	16	17	18	18	18	19	19	18	18	16	14	11	9	12.1	19.3	
		8.9	8.3	7.6	7.0	6.4	6.4	7.1	8.7	10.2	11.7	13.2	14.3	15.2	15.9	16.5	16.9	16.6	16.2	15.5	14.7	13.7	12.3	11.1	10.0	Diurnal Average	
		17.0	16.6	16.5	15.1	13.8	13.7	13.7	14.6	16.2	17.4	18.6	20.2	22.1	22.8	23.3	24.1	24.4	24.4	23.9	22.7	21.7	20.7	19.3	18.0	Diurnal Maximum	

**Hourly Averages**

**External Temperature (ET) - °C**  
**Evergreen Park - May 2011**



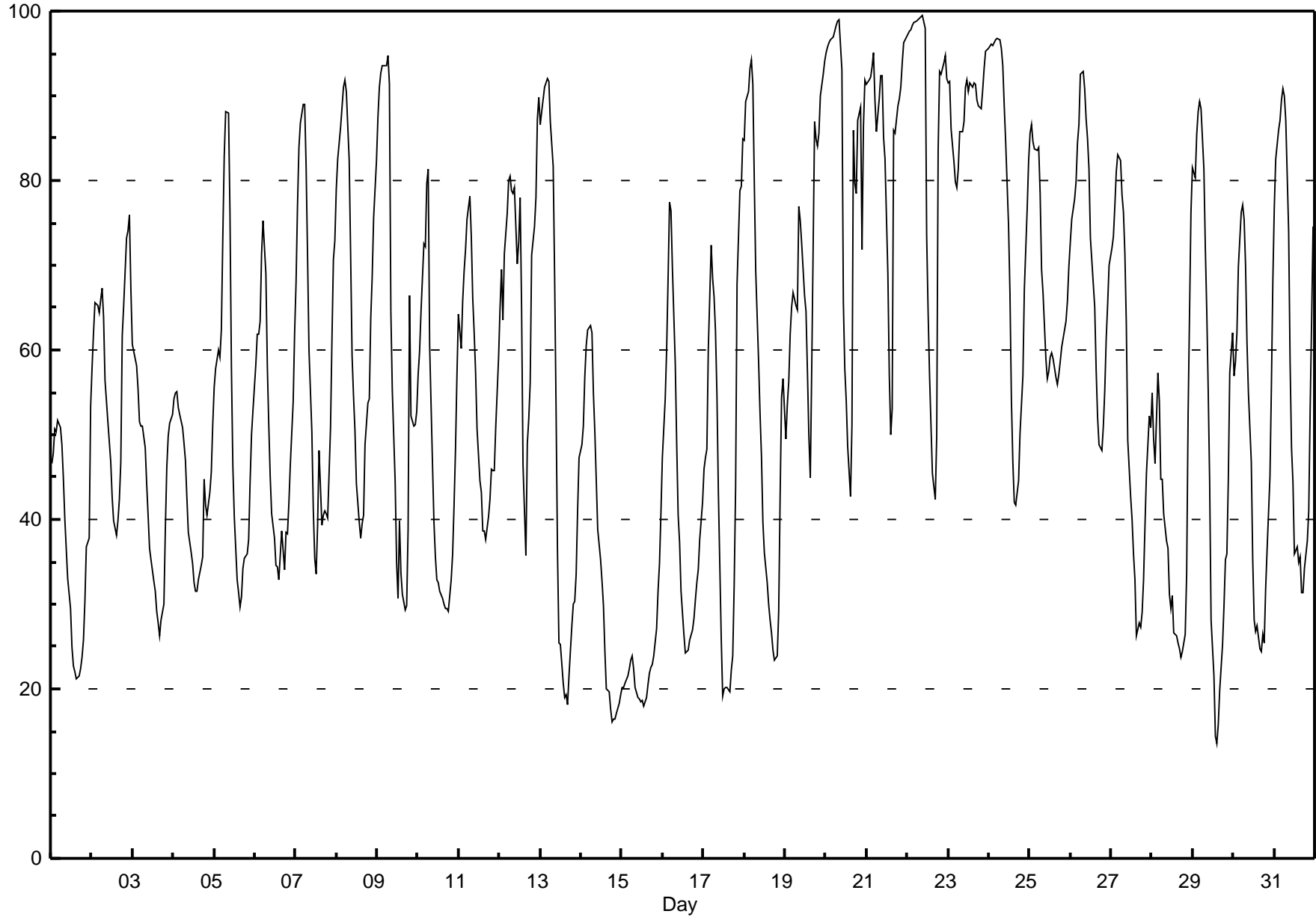
# Hourly Averages

Relative Humidity (RH) - %  
Evergreen Park - May 2011

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0										Hours in Service: 744																																							
Maximum Value: 99.5 % on May 22 10:00										Maximum Daily Average: 88.8 % on May 23										Hours of Data: 744																													
Minimum Value: 14 % on May 29 15:00										Minimum Daily Average: 23.0 % on May 15										Hours of Missing Data: 0																													
Maximum Diurnal Average: 76.6 % at hour 6										Minimum Diurnal Average: 35.6 % at hour 16										Hours of Calibration: 0																													
Monthly Average: 57.09 %										Percentiles: P <sub>1</sub> = 17.6 P <sub>10</sub> = 26.3 Q <sub>1</sub> = 37.4 Median = 55.0 Q <sub>3</sub> = 78.0 P <sub>90</sub> = 91.0 P <sub>99</sub> = 98.7										Percent Operational Time: 100.0																													
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-May	47	48	51	50	52	51	49	45	40	37	33	30	25	23	22	21	22	22	24	26	30	37	38	53	36.4	53.4																							
2-May	58	62	66	65	64	66	67	64	56	52	49	47	43	40	38	40	42	47	62	65	73	74	76	67	57.6	76.0																							
3-May	61	59	58	55	51	51	51	48	44	40	37	35	33	32	29	28	26	28	30	39	46	50	51	52	43.2	60.7																							
4-May	54	55	55	53	52	51	49	47	42	38	36	35	33	31	32	33	35	36	45	42	40	43	46	51	43.1	55.1																							
5-May	56	58	60	59	62	73	83	88	88	76	58	46	40	33	31	30	31	34	35	36	38	44	50	53	52.6	88.2																							
6-May	58	62	62	63	71	75	69	58	51	45	41	38	35	34	33	36	39	34	38	38	42	46	54	62	49.4	75.3																							
7-May	68	77	84	87	89	89	82	71	60	50	41	35	34	39	48	39	41	41	41	40	51	61	71	73	58.8	89.0																							
8-May	79	82	86	89	91	92	90	82	71	59	55	50	44	40	38	39	40	49	54	54	64	69	76	82	65.7	91.9																							
9-May	87	91	93	94	94	94	95	91	65	55	44	35	31	40	34	31	29	30	39	66	52	51	51	53	60.2	94.7																							
10-May	57	60	65	73	72	80	81	61	47	40	36	33	32	32	31	30	30	30	29	33	36	42	48	57	47.1	81.4																							
11-May	64	60	66	69	72	75	78	73	66	62	57	51	45	43	39	39	38	40	42	46	46	46	51	59	55.3	78.2																							
12-May	65	70	63	71	76	80	80	79	78	79	70	73	78	65	47	36	49	52	56	71	75	78	87	90	69.5	89.8																							
13-May	87	88	91	92	92	92	87	82	69	53	36	25	25	21	19	19	18	22	27	30	30	34	41	47	51.1	92.0																							
14-May	49	51	57	61	62	63	62	55	50	45	39	35	33	30	24	20	20	18	16	16	16	17	18	19	36.5	62.8																							
15-May	20	20	21	22	22	23	24	22	20	19	19	18	19	18	19	20	22	23	23	24	27	31	35	41	23.0	40.6																							
16-May	47	54	60	68	77	76	70	58	49	40	37	31	26	24	24	25	26	27	28	31	33	34	38	42	42.8	77.5																							
17-May	46	47	48	60	72	68	66	62	55	43	26	19	20	20	20	20	22	24	32	44	68	79	79	85	47.0	85.0																							
18-May	85	89	90	93	94	91	80	69	59	53	47	40	36	32	30	28	27	25	23	24	29	43	54	57	54.1	94.3																							
19-May	50	54	56	62	65	67	65	65	77	75	73	67	65	57	50	45	58	87	85	84	86	90	93	94	69.5	94.0																							
20-May	95	96	96	97	97	98	98	99	99	93	66	58	54	49	43	51	86	80	78	87	89	72	86	92	81.6	99.0																							
21-May	91	92	92	93	95	90	86	90	92	92	85	83	69	57	50	53	86	86	89	90	91	94	96	97	84.9	97.0																							
22-May	97	98	98	98	99	99	99	99	99	99	98	74	65	57	51	45	42	50	84	93	93	94	95	92	84.1	99.5																							
23-May	92	92	86	82	80	79	81	86	86	87	91	92	91	92	91	91	91	89	89	88	91	93	95	95	88.8	95.4																							
24-May	96	96	96	96	97	97	97	96	94	89	85	75	67	54	47	42	42	45	50	53	57	67	77	82	74.7	96.7																							
25-May	86	87	85	84	84	84	79	69	67	59	57	57	59	60	59	57	56	57	59	60	62	63	66	70	67.7	86.6																							
26-May	73	76	78	80	84	87	93	93	91	87	85	81	73	68	65	58	52	49	48	51	55	61	65	70	71.8	92.8																							
27-May	72	73	77	81	83	82	78	76	71	63	49	43	40	36	33	26	28	27	29	33	39	45	52	51	53.7	83.0																							
28-May	55	49	47	57	54	45	45	41	38	37	31	30	31	27	26	25	25	24	24	26	34	52	64	76	40.1	76.2																							
29-May	81	80	85	88	89	88	81	72	65	55	45	28	21	14	14	16	20	25	30	35	36	45	57	62	51.4	89.4																							
30-May	57	59	62	70	76	77	75	70	61	55	47	35	28	27	27	25	24	26	25	32	36	45	56	68	48.5	77.2																							
31-May	77	83	86	87	89	91	90	87	74	59	48	44	36	37	35	36	31	31	34	37	41	53	63	75	59.4	90.9																							
																								68.0	69.9	71.6	74.2	76.1	76.6	75.2	70.9	65.3	59.3	52.3	46.5	42.8	39.7	37.1	35.6	38.6	40.5	44.2	48.3	51.8	56.6	62.3	66.7	Diurnal Average	
																								97.4	97.6	97.9	98.3	98.7	98.9	99.1	99.2	99.3	99.5	98.0	91.8	90.5	91.5	91.0	91.4	91.3	89.4	88.8	92.9	92.6	94.0	96.3	97.0	Diurnal Maximum	

**Hourly Averages**

**Relative Humidity (RH) - %**  
**Evergreen Park - May 2011**



# Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Evergreen Park - May 2011

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1 Spd	6	6	5	6	5	9	10	14	17	17	14	14	14	14	11	13	13	12	8	5	2	2	8	9	9.0	17.4
Dir	255	253	261	259	250	256	263	266	275	277	286	271	285	287	304	301	286	293	309	326	298	296	340	350	283.9	274.8
2 Spd	6	3	2	3	2	3	3	5	8	8	7	6	3	4	5	2	7	5	7	7	8	3	3	6	2.5	8.1
Dir	39	15	71	130	134	99	89	100	107	109	97	90	88	37	69	67	61	25	331	340	340	351	258	259	57.6	340.1
3 Spd	10	10	11	11	11	16	17	20	24	30	31	27	26	25	21	18	23	24	24	28	22	18	20	16	20.0	30.8
Dir	274	277	270	270	276	275	276	274	275	270	270	275	277	276	286	294	283	278	277	269	272	269	272	268	275.1	270.2
4 Spd	14	13	11	12	13	15	16	19	23	24	23	22	23	24	20	17	19	24	18	12	12	9	7	3	15.8	24.1
Dir	263	260	257	260	260	264	265	262	271	285	284	287	281	280	290	295	290	269	257	241	253	245	245	219	271.4	280.1
5 Spd	2	2	1	1	0	2	2	2	3	8	8	10	13	14	12	13	15	19	19	14	12	11	14	11	8.0	19.0
Dir	85	64	70	123	239	282	264	249	225	260	274	269	267	275	294	305	291	276	272	276	278	270	271	274	276.4	272.1
6 Spd	7	6	7	3	1	1	1	7	13	13	8	7	6	7	4	5	7	3	7	5	1	1	5	3	3.9	12.9
Dir	272	251	263	283	18	325	242	271	279	278	289	269	262	339	342	289	352	249	246	221	236	143	82	47	280.9	278.6
7 Spd	1	1	1	0	0	1	1	1	4	4	5	5	4	10	11	10	8	6	5	5	2	0	1	1	3.1	11.1
Dir	78	18	42	42	275	219	2	22	65	47	74	92	119	92	125	109	109	90	68	73	224	23	71	78	91.4	124.6
8 Spd	0	1	0	1	1	1	1	3	2	3	3	5	6	3	9	7	3	7	6	6	4	3	1	1	1.4	9.0
Dir	351	202	78	61	210	217	225	259	239	164	187	141	142	67	348	8	139	146	132	128	112	121	100	227	128.5	348.0
9 Spd	1	1	0	0	1	1	2	2	4	3	2	3	5	8	3	3	5	6	8	1	8	7	9	8	2.9	8.7
Dir	58	57	83	62	218	211	210	261	286	258	195	242	235	207	177	352	217	236	238	303	304	260	247	244	245.5	246.9
10 Spd	10	9	7	1	2	0	1	1	6	6	5	7	5	6	7	6	5	1	2	3	3	1	3	0	2.4	10.4
Dir	245	244	232	276	205	154	68	115	165	141	154	227	233	242	268	258	247	287	164	69	68	359	69	164	225.5	245.5
11 Spd	1	8	6	2	2	1	1	2	2	3	4	6	5	5	5	5	6	5	5	4	3	1	0	0	1.0	8.0
Dir	235	319	328	249	213	70	50	91	57	60	117	120	125	132	128	293	296	353	30	58	72	108	164	79	54.5	319.1
12 Spd	0	1	14	13	5	3	2	2	3	2	6	4	5	6	4	2	5	6	8	8	4	3	4	7	0.3	14.5
Dir	336	297	273	275	310	345	204	237	248	329	293	318	95	95	78	47	149	159	137	105	92	92	67	98	144.0	273.0
13 Spd	4	5	4	2	3	2	2	4	5	4	4	7	4	6	7	8	9	10	12	13	7	5	6	7	4.7	12.5
Dir	109	135	173	176	202	122	172	204	220	179	215	193	152	158	146	141	143	133	128	125	117	88	80	78	141.3	125.1
14 Spd	7	3	2	5	4	3	3	7	6	5	6	7	8	9	12	12	12	12	13	13	12	14	11	10	7.8	13.8
Dir	79	72	54	89	97	106	101	142	154	133	116	140	119	124	142	140	142	131	134	138	137	135	131	132	128.9	135.4
15 Spd	10	9	9	8	7	8	8	11	11	11	12	12	14	14	14	14	13	13	11	9	7	6	6	4	9.6	14.3
Dir	127	127	130	126	125	144	158	162	157	154	148	148	155	168	147	157	132	128	132	129	120	115	119	88	141.2	168.2
16 Spd	4	4	2	1	0	0	3	4	3	5	7	10	10	11	10	11	9	10	10	9	8	10	7	5	5.9	10.7
Dir	84	77	65	226	345	282	341	336	4	77	71	75	75	62	73	68	58	59	56	57	65	74	71	72	63.7	62.1
17 Spd	5	5	3	2	2	4	5	6	7	8	10	10	10	9	8	11	8	11	11	17	9	11	6	6	3.3	16.6
Dir	71	76	93	42	13	50	59	70	81	81	89	108	116	106	91	85	122	123	192	245	223	246	267	228	117.4	244.9
18 Spd	4	1	1	2	3	3	4	9	12	11	9	6	5	6	2	2	5	4	4	3	2	2	0	1	3.1	11.8
Dir	229	213	195	211	214	216	269	273	281	289	281	285	328	297	359	316	343	0	357	17	31	31	334	345	294.2	281.2
19 Spd	4	7	7	4	5	4	4	4	5	7	7	4	6	5	4	2	4	7	6	2	1	2	1	2	2.1	7.2
Dir	335	342	335	289	273	227	280	243	282	277	266	224	225	303	285	351	119	61	42	217	291	25	87	184	290.8	61.0
20 Spd	2	1	0	0	1	0	3	2	0	0	2	4	5	7	5	8	4	4	2	1	1	2	1	1	1.0	7.9
Dir	216	50	267	186	209	240	223	213	190	262	28	74	73	63	80	221	53	32	78	58	88	111	43	357	79.3	221.3
21 Spd	2	0	1	1	1	2	1	2	4	1	1	3	4	5	6	1	7	3	5	2	2	1	1	1	0.8	6.5
Dir	48	352	276	68	355	324	261	199	220	263	359	77	81	82	66	127	195	140	50	82	207	148	175	41	100.0	194.8
22 Spd	1	1	1	1	3	1	2	3	3	1	2	5	5	6	7	9	8	6	7	5	5	8	5	7	2.2	8.7
Dir	210	124	61	220	324	295	218	215	246	256	91	108	96	67	60	61	77	147	201	111	15	43	48	77	81.2	60.6

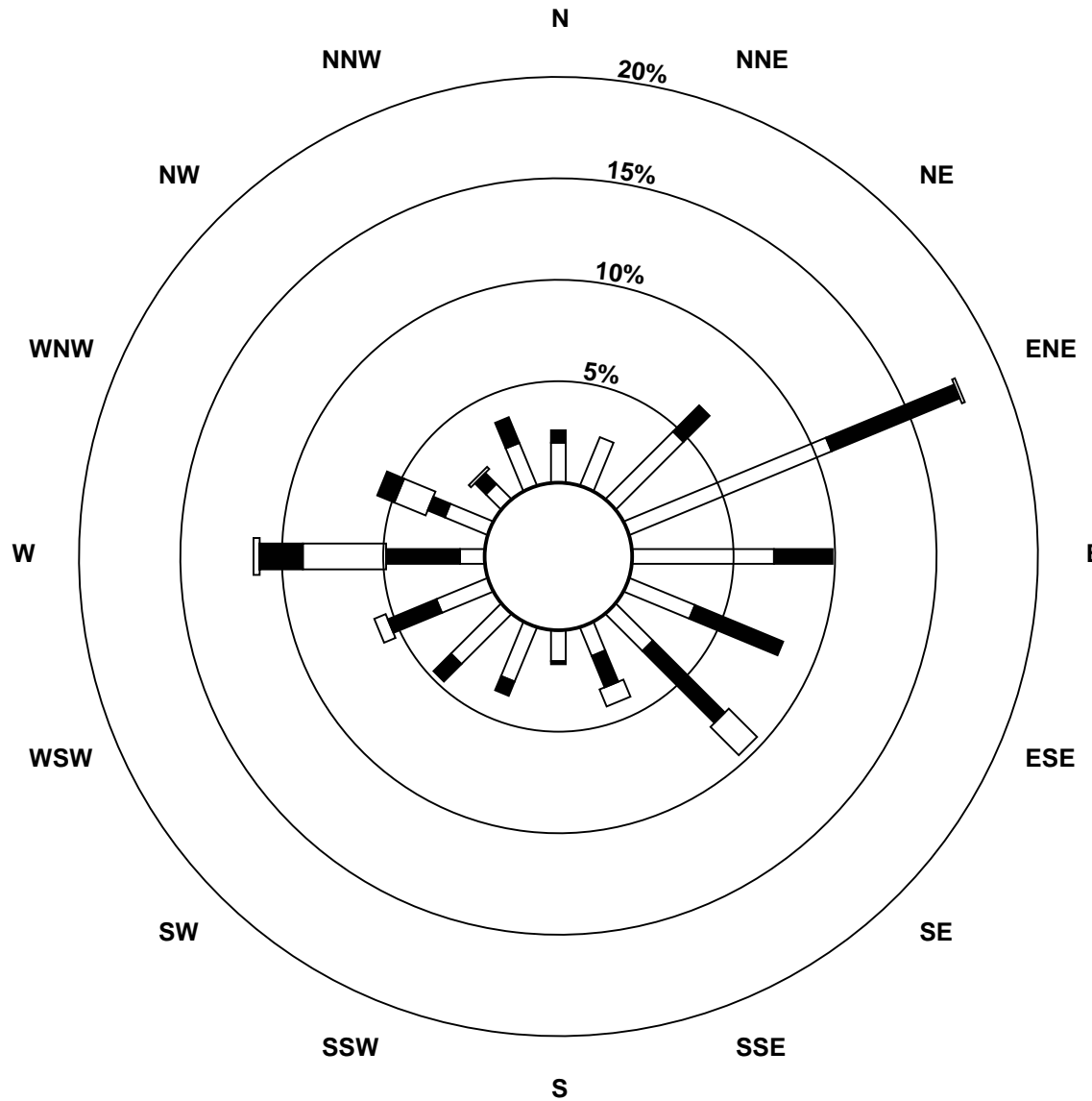
## Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Evergreen Park - May 2011

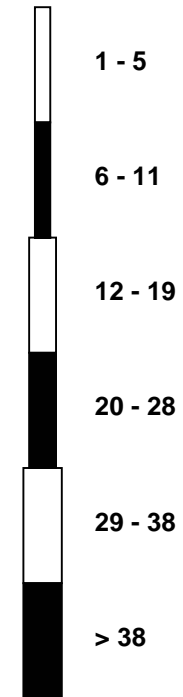
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
23 Spd	8	7	6	8	7	7	6	6	6	6	4	2	3	2	2	2	2	4	2	1	1	1	2	2	3.3	7.7
Dir	81	64	71	73	74	72	73	68	68	65	57	66	78	93	36	40	108	145	249	335	357	153	206	208	74.0	80.6
24 Spd	1	1	1	1	2	2	2	2	2	3	2	2	4	6	6	5	7	6	6	4	2	0	0	1	2.3	7.0
Dir	47	347	89	81	98	105	93	77	110	100	104	142	134	137	104	107	136	164	188	181	169	223	60	55	129.6	135.7
25 Spd	2	2	4	3	2	2	4	6	8	12	10	9	9	8	9	8	8	8	7	6	5	6	6	6	5.9	11.6
Dir	65	72	79	81	96	70	113	118	125	135	126	133	126	121	122	122	118	125	119	110	117	129	122	120	119.4	135.2
26 Spd	5	4	5	4	4	5	4	5	5	5	6	4	5	5	5	8	9	10	9	7	4	3	2	2	5.1	10.4
Dir	113	100	93	84	82	87	79	74	76	88	95	74	87	76	86	87	96	104	111	102	85	80	68	67	90.2	104.1
27 Spd	2	2	1	1	1	1	3	3	3	3	1	4	4	2	3	7	8	8	7	4	3	2	2	2	2.7	8.5
Dir	65	56	32	37	33	26	57	65	67	71	115	354	251	56	44	64	61	56	61	61	55	42	42	45	53.6	60.6
28 Spd	2	3	1	0	4	4	4	2	2	6	6	7	7	7	6	7	5	7	6	4	1	1	1	1	3.6	7.2
Dir	38	55	43	294	63	87	70	75	66	59	73	64	53	53	69	61	69	56	66	86	77	278	289	265	63.0	53.2
29 Spd	1	1	0	1	1	2	3	6	4	3	3	5	1	4	4	6	9	12	7	4	1	0	1	0	1.1	11.9
Dir	277	259	271	240	208	213	222	273	250	234	167	154	47	8	15	51	60	65	69	73	109	275	5	52	64.0	64.8
30 Spd	1	3	5	4	2	2	2	7	4	5	3	5	6	7	7	7	10	10	9	6	3	4	2	0	2.8	10.0
Dir	48	30	333	313	325	19	347	317	339	345	48	41	53	52	70	61	84	87	103	140	136	123	67	276	53.6	86.7
31 Spd	1	1	1	0	0	0	0	2	1	2	3	3	3	7	4	4	5	7	6	5	3	1	0	1	1.4	7.1
Dir	42	350	41	116	270	338	104	210	191	183	159	71	144	47	49	54	67	135	214	145	139	64	127	46	111.6	134.7
Spd	0.0	0.4	1.0	0.8	0.6	0.5	0.9	1.9	2.2	1.7	1.0	0.8	0.9	0.5	1.4	1.4	1.4	1.6	1.2	1.3	0.3	0.5	0.1	0.1	Diurnal Average	
Dir	85.1	327.5	282.7	260.8	256.8	246.2	254.7	249.9	256.3	260.3	244.5	203.4	185.9	51.7	62.5	44.9	92.6	116.4	165.2	151.6	197.8	169.5	266.9	172.5	Diurnal Maximum	
Spd	14.5	13.3	14.5	12.8	12.5	16.0	16.9	20.4	23.8	29.7	30.8	27.2	25.7	24.6	21.4	17.8	22.6	24.2	24.0	27.7	21.8	18.0	20.0	16.4	Diurnal Maximum	
Dir	263.3	259.8	273.0	274.7	259.6	274.5	275.6	273.8	274.9	269.7	270.2	274.8	276.7	276.0	286.2	293.6	283.1	278.3	277.3	269.1	272.2	269.4	272.0	268.3	Diurnal Maximum	
Maximum Speed Value: 31 km/h on May 3 11:00		Minimum Speed Value: 0 km/h on May 20 04:00												Hours in Service: 744												
Maximum Daily Speed Average: 20.0 km/h on May 3		Minimum Daily Speed Average: 0.3 km/h on May 21												Hours of Data: 744												
Maximum Diurnal Speed Average: 2.2 km/h at hour 9		Minimum Diurnal Speed Average: 0.0 km/h at hour 1												Hours of Missing Data: 0												
Monthly Average Velocity: 0.30 km/h 218.87 deg		Speed Percentiles: P <sub>1</sub> = 0.2 P <sub>10</sub> = 0.9 Q <sub>1</sub> = 2.1 Median = 4.7 Q <sub>3</sub> = 7.7 P <sub>90</sub> = 11.8 P <sub>99</sub> = 23.8												Percent Operational Time: 100.0												
All monthly, daily, and diurnal averages have been calculated using vector methods																										
Frequency Distribution																										
		Speed Range (km/h)																								
Direction	0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total																			
North	38	11	0	0	0	0	49																			
NorthEast	81	39	1	0	0	0	121																			
East	93	70	0	0	0	0	163																			
SouthEast	32	61	22	0	0	0	115																			
South	25	11	1	0	0	0	37																			
SouthWest	57	22	2	0	0	0	81																			
West	41	31	41	21	2	0	136																			
NorthWest	22	13	7	0	0	0	42																			
Total	389	258	74	21	2	0	744																			

**Wind Rose**

**Wind Speed (WS) (km/h)**  
**Evergreen Park - May 2011**



**Wind Speed Classes (km/h)**





# Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Evergreen Park - May 2011

Maximum Speed: 31 km/h on May 3 11:00	Maximum Daily Speed Average: 20.5 km/h on May 3	Hours in Service: 744
Minimum Speed: 1 km/h on May 7 05:00	Minimum Daily Speed Average: 3.2 km/h on May 20	Hours of Data: 744
Maximum Diurnal Speed Average: 9.6 km/h at hour 18	Minimum Diurnal Speed Average: 3.4 km/h at hour 5	Hours of Missing Data: 0
Monthly Average Speed: 6.50 km/h	Percentiles: P <sub>1</sub> = 1.0 P <sub>10</sub> = 1.5 Q <sub>1</sub> = 2.7 Median = 5.5 Q <sub>3</sub> = 8.3 P <sub>90</sub> = 12.8 P <sub>99</sub> = 24.1	Percent Operational Time: 100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	6	6	5	6	5	9	10	14	18	17	15	15	15	16	13	14	14	13	9	5	2	2	8	10	10.3	17.7
2-May	7	4	3	4	2	3	3	5	8	9	8	7	5	5	5	7	6	8	7	8	3	3	7	7	5.5	8.6
3-May	10	10	11	11	12	16	17	21	24	30	31	28	27	25	22	19	23	25	24	28	22	18	20	16	20.5	31.2
4-May	15	13	12	12	13	15	16	19	23	24	24	23	24	25	21	18	20	24	19	12	12	9	7	4	16.8	24.6
5-May	2	2	2	2	2	2	3	3	4	8	9	11	14	15	13	14	16	19	19	14	12	11	14	11	9.3	19.2
6-May	7	6	7	3	2	2	2	7	13	13	9	7	7	8	5	10	8	4	7	6	1	3	5	3	6.1	13.4
7-May	2	1	1	1	1	2	1	2	4	5	7	7	7	12	12	10	9	7	5	6	4	2	2	2	4.6	11.7
8-May	1	1	2	1	2	1	1	3	2	4	5	6	8	5	10	9	6	7	7	7	4	3	2	1	4.1	9.7
9-May	1	2	1	1	1	1	2	3	5	4	4	5	5	10	6	5	6	7	11	5	9	8	9	8	5.0	11.3
10-May	11	9	7	2	2	1	1	2	6	7	7	9	6	7	8	7	7	4	3	3	3	2	3	1	5.0	10.5
11-May	2	9	7	3	3	2	2	2	3	4	4	6	6	5	5	6	6	6	5	5	4	4	3	2	4.2	9.1
12-May	2	2	15	13	6	3	2	3	4	3	6	5	5	7	5	4	6	7	8	8	4	3	6	7	5.5	14.9
13-May	5	6	4	3	3	3	2	4	5	6	7	10	8	9	9	10	10	11	12	13	8	5	6	7	6.9	12.8
14-May	7	4	3	5	4	3	4	8	7	7	7	8	9	10	13	14	13	13	14	13	13	14	12	11	8.8	14.2
15-May	10	9	9	8	7	8	8	11	11	12	14	13	15	15	15	15	14	13	12	10	8	6	6	4	10.6	15.4
16-May	4	4	2	2	1	1	3	4	4	6	7	10	11	11	11	11	10	11	10	10	9	10	8	5	6.9	11.5
17-May	5	5	3	2	2	4	5	6	7	8	10	11	11	10	10	11	10	11	14	17	12	11	7	6	8.3	17.1
18-May	4	2	1	2	3	3	5	9	12	12	9	8	8	7	4	4	6	6	6	3	2	2	1	2	5.2	12.4
19-May	4	7	7	5	5	4	5	6	7	7	7	4	7	7	6	5	7	8	6	3	3	3	2	3	5.3	8.2
20-May	2	1	2	1	2	1	3	2	2	2	4	6	7	8	7	9	6	4	2	1	2	2	1	1	3.2	8.7
21-May	2	1	1	2	1	2	2	3	5	4	2	4	5	6	6	7	10	5	5	3	3	2	2	2	3.6	9.6
22-May	2	2	1	2	3	1	2	4	3	2	3	5	5	7	8	10	9	10	9	6	6	8	5	8	5.0	9.8
23-May	8	7	6	8	7	7	6	6	6	6	4	2	3	2	2	2	2	4	3	2	1	2	2	2	4.3	8.0
24-May	1	1	1	1	2	2	2	2	3	3	2	4	5	7	7	7	8	7	6	4	2	1	1	1	3.4	7.8
25-May	2	2	4	3	2	2	5	7	8	12	11	10	9	9	9	8	8	8	7	6	5	6	6	6	6.5	12.1
26-May	5	4	5	4	4	5	5	5	5	5	6	5	6	6	6	8	10	11	10	7	4	3	2	2	5.5	11.0
27-May	2	2	1	1	1	2	3	3	3	3	3	5	5	4	5	8	9	8	7	4	3	2	2	2	3.6	8.9
28-May	3	3	2	2	4	4	4	2	3	6	7	7	8	8	7	7	6	7	7	4	1	1	1	1	4.4	7.7
29-May	2	1	1	1	1	2	3	6	4	3	5	6	4	6	6	7	10	12	7	4	2	1	1	1	4.1	12.4
30-May	3	3	5	5	2	2	3	7	5	6	5	7	7	8	8	8	10	11	9	7	3	4	2	1	5.4	10.9
31-May	1	1	1	1	1	1	1	3	2	3	5	5	6	7	5	5	6	8	7	6	4	2	1	1	3.4	7.7
	4.5	4.2	4.2	3.8	3.4	3.8	4.2	5.9	7.0	7.8	8.0	8.4	8.6	9.3	8.7	8.9	9.4	9.6	9.0	7.3	5.6	4.9	4.9	4.5	Diurnal Average	
	14.6	13.4	14.9	12.9	12.6	16.1	17.0	20.7	24.1	30.1	31.2	27.7	26.5	25.2	22.2	18.8	23.1	24.6	24.3	27.9	22.0	18.1	20.1	16.5	Diurnal Maximum	

All monthly, daily, and diurnal averages have been calculated using scalar methods

# Hourly Standard Deviations

Wind Direction (WD) - deg  
Evergreen Park - May 2011

Maximum Value: 99.8 deg on May 20 04:00																						Hours in Service:	744		
Minimum Value: 4.0 deg on May 27 02:00																						Hours of Data:	744		
Percentiles: P <sub>1</sub> = 5.7 P <sub>10</sub> = 10.5 Q <sub>1</sub> = 16.9 Median = 26.8 Q <sub>3</sub> = 48.6 P <sub>90</sub> = 70.7 P <sub>99</sub> = 93.8																						Hours of Missing Data:	0		
																						Hours of Calibration:	0		
																						Percent Operational Time:	100.0		
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-May	8	6	10	10	22	5	6	8	10	12	16	20	22	28	27	23	24	21	17	13	24	26	19	19	27.8
2-May	26	31	65	34	24	14	16	20	20	22	21	24	69	50	40	83	13	38	38	13	13	38	29	18	82.7
3-May	7	7	7	6	9	7	7	10	10	10	9	11	14	13	16	20	14	11	9	8	7	7	7	6	19.6
4-May	6	5	5	5	7	5	6	8	12	12	12	12	17	12	14	19	13	14	11	9	7	8	11	88	87.7
5-May	57	40	66	85	84	46	33	69	46	19	24	23	24	18	32	24	20	10	10	10	8	6	6	7	85.4
6-May	8	12	7	32	49	71	57	41	14	17	32	20	35	31	56	69	21	59	19	17	71	86	12	15	85.5
7-May	70	36	25	85	96	46	36	58	32	38	45	49	64	27	20	22	25	26	19	19	85	83	42	59	95.6
8-May	78	57	92	34	42	75	67	25	48	62	55	42	58	67	27	65	56	24	16	19	25	25	55	60	92.4
9-May	80	63	87	79	50	53	32	41	33	52	58	73	47	44	65	61	44	37	52	94	15	22	14	11	93.8
10-May	8	6	5	77	21	87	68	74	22	37	47	41	44	36	34	38	56	94	57	14	18	51	30	88	94.5
11-May	86	30	28	65	46	57	59	74	45	29	31	21	26	20	22	56	32	20	24	14	9	39	75	95	95.2
12-May	89	69	15	6	28	48	31	57	46	35	33	62	15	23	32	86	48	27	22	13	23	36	48	15	89.0
13-May	29	26	25	63	26	32	74	30	23	43	81	57	70	58	50	37	31	22	16	13	16	10	9	8	81.1
14-May	9	30	43	11	12	11	15	25	30	41	47	38	35	34	21	30	29	20	15	15	15	15	13	16	47.2
15-May	13	18	17	17	21	22	20	20	21	25	27	25	27	21	26	19	19	19	19	16	18	12	15	17	27.0
16-May	16	10	36	75	85	83	22	29	42	47	30	21	23	24	23	24	26	19	11	12	10	13	9	10	84.8
17-May	7	10	24	32	19	17	10	10	16	22	23	30	25	31	39	19	35	18	43	14	36	21	19	11	43.2
18-May	15	29	59	14	20	18	27	14	17	18	26	50	65	58	87	62	41	70	63	27	18	25	76	41	87.0
19-May	17	8	11	31	20	28	60	48	37	19	26	44	24	42	57	79	61	29	19	56	60	55	60	35	79.3
20-May	41	56	86	100	74	84	36	41	90	96	54	64	42	34	56	31	44	21	12	25	11	19	62	67	99.8
21-May	24	71	60	67	55	25	82	67	41	92	73	42	35	35	30	69	58	75	33	76	48	89	69	79	92.1
22-May	96	69	53	78	29	76	49	21	35	74	64	38	37	36	33	25	24	50	44	29	35	14	16	16	96.1
23-May	14	12	13	12	15	14	14	15	25	16	15	25	32	36	24	26	41	31	61	49	32	45	15	20	61.5
24-May	79	76	46	50	21	20	29	39	25	32	47	55	35	35	32	39	28	31	16	16	27	75	70	19	78.9
25-May	8	8	10	9	18	11	30	21	16	17	20	19	21	25	20	28	21	18	19	19	16	18	19	15	30.4
26-May	16	18	14	15	16	17	17	21	21	23	23	25	34	36	27	23	26	20	17	17	16	13	11	8	35.5
27-May	7	4	29	49	25	21	6	10	17	28	78	62	39	91	63	36	20	19	17	16	14	13	21	27	90.6
28-May	28	10	66	79	15	22	16	47	66	30	31	26	21	24	39	30	42	30	23	24	37	63	48	37	79.3
29-May	69	73	68	65	31	7	17	18	34	51	50	45	93	64	67	35	20	18	24	21	51	84	16	82	92.8
30-May	67	19	12	25	33	36	33	19	37	35	62	49	40	36	35	37	23	28	21	19	12	16	37	77	76.8
31-May	75	64	54	96	71	89	79	58	73	66	62	62	72	28	53	23	38	24	36	27	22	73	85	41	96.4
96.1	75.5	92.4	99.8	95.6	89.4	82.4	74.2	90.5	96.0	81.1	73.2	92.8	90.6	87.0	86.0	60.9	94.5	62.7	93.8	84.8	88.9	84.8	95.2		

PAZA

## Smoky Heights Station

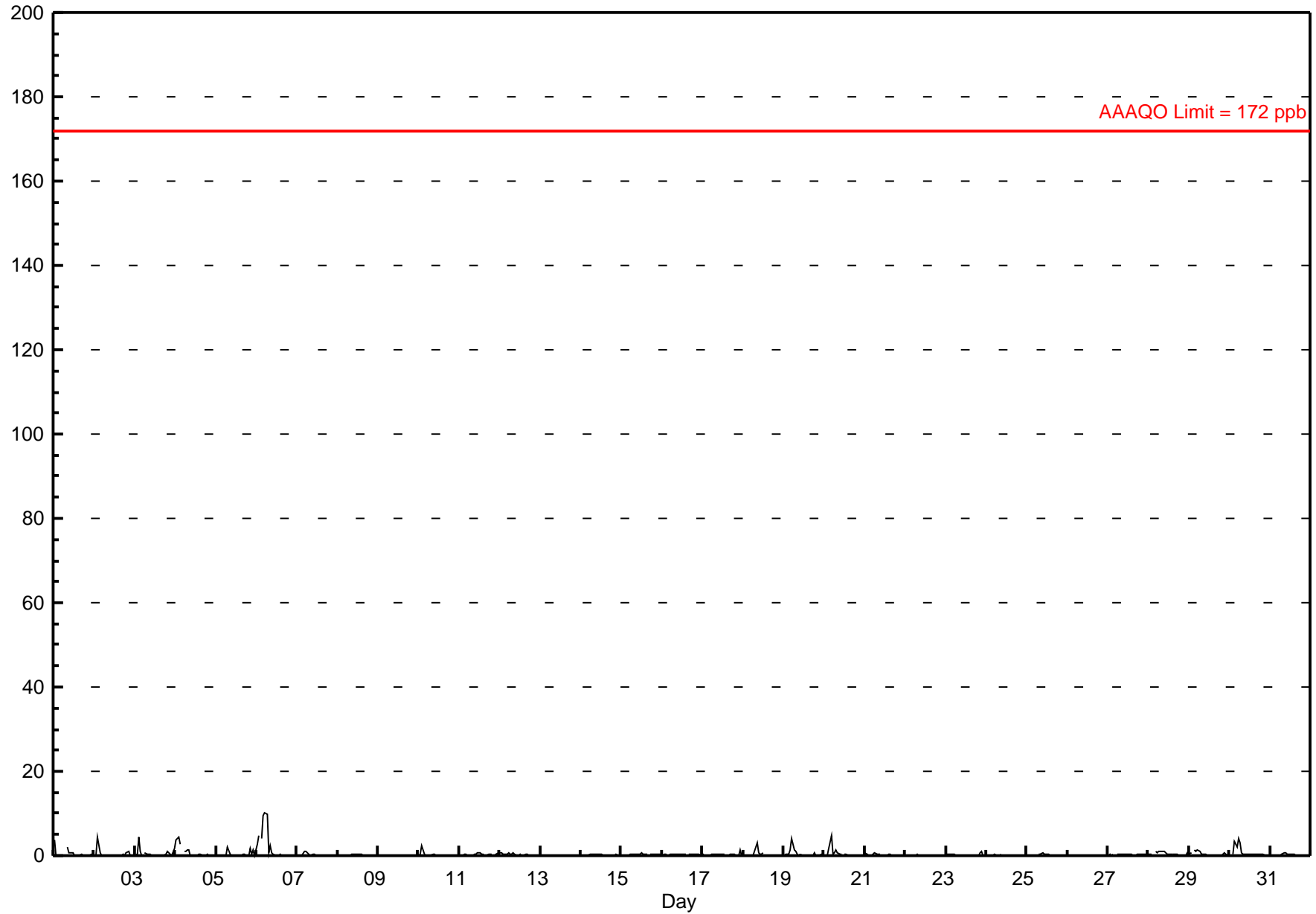
Monthly Summary Tables, Graphs and  
Roses

## Hourly Averages

Sulphur Dioxide (SO<sub>2</sub>) - ppb

Smoky Heights - May 2011

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 10.1 ppb on May 6 06:00      Maximum Daily Average: 2.0 ppb on May 6		Hours in Service: 744 Hours of Data: 708 Hours of Missing Data: 36 Hours of Calibration: 36 Percent Operational Time: 100.0																																																
Minimum Value: 0 ppb on May 21 21:00 Maximum Diurnal Average: 0.9 ppb at hour 6 Monthly Average: 0.35 ppb		Minimum Daily Average: 0.0 ppb on May 26 Minimum Diurnal Average: 0.1 ppb at hour 17 Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.1 Median = 0.1 Q <sub>3</sub> = 0.3 P <sub>90</sub> = 0.6 P <sub>99</sub> = 4.3																																																
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																										
1-May	4	0	0	0	0	0	0	A	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.4	3.7																								
2-May	0	0	4	1	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0.4	4.4																								
3-May	0	0	5	1	0	A	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0.5	4.6																								
4-May	4	4	4	3	A	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.9	4.4																								
5-May	0	0	0	A	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0.3	1.9																								
6-May	3	5	A	4	9	10	10	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.0	10.1																								
7-May	0	A	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1.1																								
8-May	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.1	0.3																								
9-May	0	0	0	0	0	0	0	0	0	0	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0.0	0.3																								
10-May	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	A	0	0.2	2.4																								
11-May	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	A	0	0	1	0.3	0.8																								
12-May	1	1	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.3	0.7																								
13-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.1	0.1																								
14-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.1	0.3																								
15-May	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	A	0	0	0	0	0	0	0	0.3	0.5																								
16-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.2	0.3																								
17-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.3	1.4																								
18-May	0	0	0	0	0	0	0	1	3	1	0	0	1	A	0	0	0	0	0	0	0	0	0	0	0.3	2.9																								
19-May	0	0	0	0	1	4	1	1	0	0	0	0	A	0	0	0	0	0	1	0	0	0	0	0	0.5	4.0																								
20-May	0	0	0	2	5	0	1	2	1	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.5	4.7																								
21-May	1	0	0	0	0	0	1	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.8																								
22-May	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4																								
23-May	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0.2	1.1																								
24-May	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2																								
25-May	0	0	0	0	0	0	A	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.6																								
26-May	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1																								
27-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5																								
28-May	0	0	0	A	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.4	1.0																								
29-May	0	1	A	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.4	1.4																								
30-May	0	A	0	3	2	4	3	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.8	4.0																								
31-May	A	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.2	0.6																								
																								0.5	0.5	0.7	0.6	0.8	0.9	0.8	0.5	0.6	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	Diurnal Average
																								3.7	4.8	4.6	4.1	9.3	10.1	9.7	1.9	2.9	0.9	0.8	0.5	0.6	0.4	0.4	0.3	0.3	0.3	0.3	0.8	1.1	1.7	1.1	1.4	1.8	Diurnal Maximum	
C - Calibration      A - Automated Daily Zero Span Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb    24-hr 48 ppb    30-day 11 ppb																																																		



## Hourly Maximums

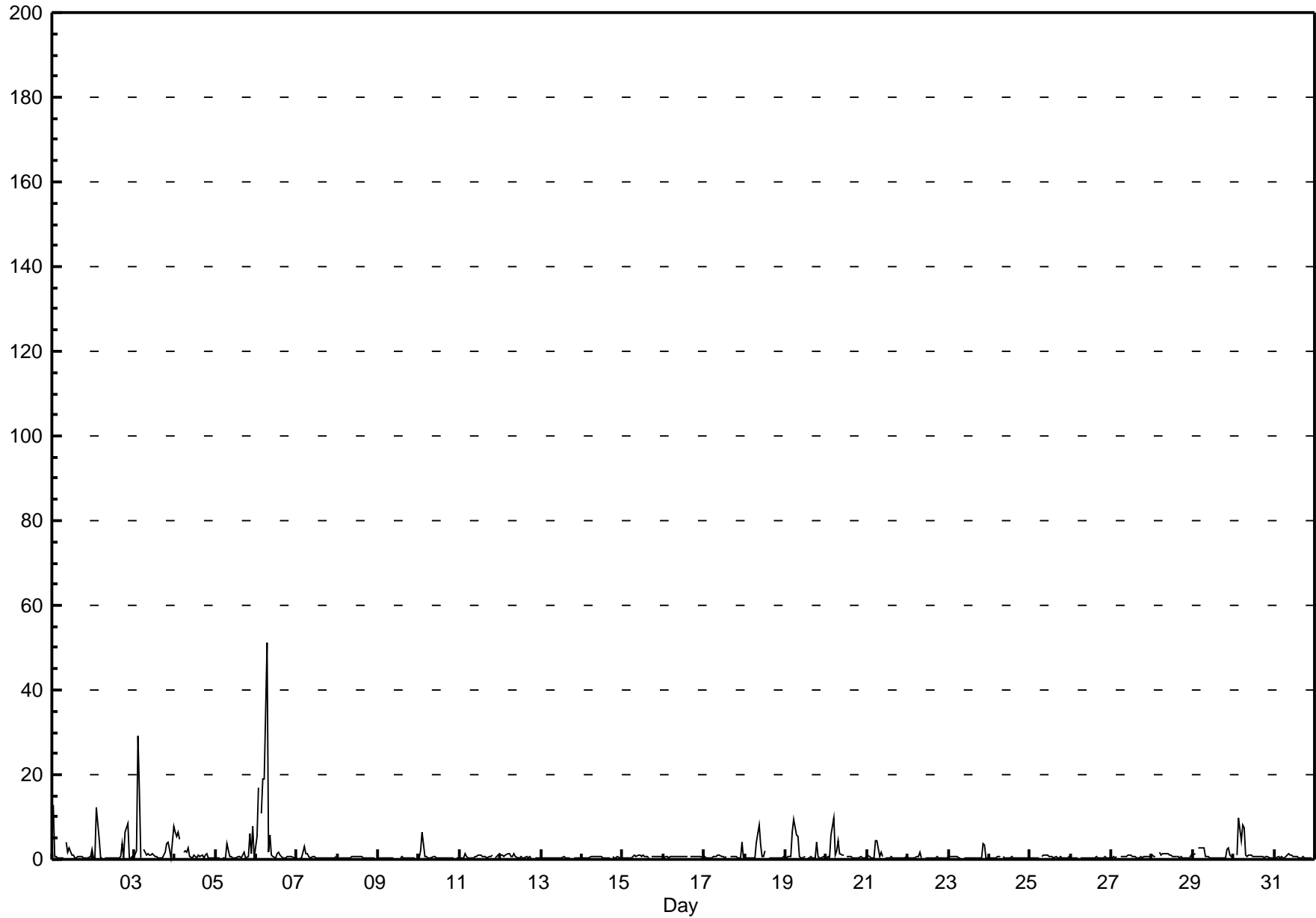
Sulphur Dioxide (SO<sub>2</sub>) - ppb

Smoky Heights - May 2011

Maximum Value: 51.3 ppb on May 6 07:00		Maximum Daily Average: 6.1 ppb on May 6		Hours in Service: 744																							
Minimum Value: 0 ppb on May 22 04:00		Minimum Daily Average: 0.4 ppb on May 13		Hours of Data: 708																							
Maximum Diurnal Average: 3.1 ppb at hour 7		Minimum Diurnal Average: 0.5 ppb at hour 17		Hours of Missing Data: 36																							
Monthly Average: 1.13 ppb		Percentiles: P <sub>1</sub> = 0.2 P <sub>10</sub> = 0.3 Q <sub>1</sub> = 0.4 Median = 0.5 Q <sub>3</sub> = 0.7 P <sub>90</sub> = 1.7 P <sub>99</sub> = 11.0		Hours of Calibration: 36																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-May	13	1	1	0	0	0	0	A	4	2	3	1	1	0	0	1	1	1	0	0	0	0	1	2	1.5	12.9	
2-May	0	0	12	5	0	0	A	0	0	0	0	0	0	0	0	0	1	4	0	6	8	0	0	1	1.8	12.1	
3-May	0	2	29	16	0	A	2	1	1	1	1	1	1	0	0	0	0	2	4	4	2	0	8	3.4	29.1		
4-May	6	5	6	5	A	2	2	2	3	1	0	1	1	0	1	1	1	0	1	1	0	0	0	0	1.8	6.5	
5-May	0	0	0	A	0	0	0	4	1	1	0	0	0	1	1	0	1	2	0	1	6	1	8	0	1.3	7.9	
6-May	5	17	A	11	19	19	51	2	6	1	1	0	1	2	1	1	0	0	1	1	1	1	0	0	6.1	51.3	
7-May	0	A	0	0	3	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6	3.0	
8-May	A	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	A	0.5	0.8	
9-May	0	0	0	0	0	0	0	0	0	0	C	C	C	0	1	0	0	0	0	0	0	0	A	1	0.4	1.0	
10-May	0	2	6	1	1	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	1	A	0	0	0.7	6.3	
11-May	0	0	0	1	1	0	0	0	0	1	1	1	1	1	1	1	0	1	1	1	A	0	1	1	0.6	1.4	
12-May	1	1	1	1	1	1	1	1	1	1	0	0	1	0	0	1	0	1	0	A	0	0	0	0	0.7	1.4	
13-May	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	A	0	1	0	0	0	0.4	0.5	
14-May	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	A	1	0	0	0	1	0	0	0.5	0.7	
15-May	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	0.6	0.9	
16-May	0	1	1	0	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	0.6	0.8	
17-May	1	0	1	0	0	1	1	1	1	1	1	1	0	1	A	1	1	1	1	1	1	0	0	4	0	0.7	4.1
18-May	0	0	0	0	0	0	0	4	8	4	1	1	2	A	0	0	0	0	0	0	0	0	0	1	1.1	8.0	
19-May	0	1	1	1	6	9	6	5	1	0	0	1	A	0	0	1	0	0	4	1	0	0	1	1	1.7	9.4	
20-May	0	1	0	6	10	1	2	4	1	1	1	A	1	1	1	0	0	0	0	0	1	0	0	0	1.4	9.7	
21-May	1	1	0	0	0	4	4	1	2	1	A	0	0	0	1	0	0	0	0	0	0	0	0	1	0.9	4.5	
22-May	0	0	0	0	0	1	1	2	0	A	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0.4	1.8	
23-May	1	1	1	1	1	1	0	0	A	0	0	0	0	0	0	0	0	0	0	0	4	3	0	0	0.7	3.6	
24-May	0	0	0	0	0	1	1	A	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0.4	0.6	
25-May	0	0	0	0	0	0	A	1	1	1	1	1	1	1	0	1	0	0	1	0	0	0	0	1	0.5	1.0	
26-May	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0.4	0.6	
27-May	0	1	0	1	A	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	0.6	1.0	
28-May	1	1	1	A	2	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	1	0.8	1.6	
29-May	1	1	A	3	3	3	3	3	1	1	1	0	0	0	0	0	0	0	0	0	2	3	1	0	1.2	2.9	
30-May	0	A	1	10	4	8	7	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	1.8	9.9	
31-May	A	0	1	0	1	0	0	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	0	A	0.6	1.2	
		1.3	1.4	2.3	2.3	2.0	2.1	3.1	1.3	1.3	0.8	0.7	0.6	0.6	0.6	0.5	0.5	0.5	0.6	0.6	0.8	1.2	0.7	0.8	0.9	Diurnal Average	
		12.9	16.9	29.1	16.2	19.1	19.1	51.3	5.3	8.0	3.5	2.9	1.2	1.9	1.8	1.0	0.7	1.1	3.6	4.0	6.4	8.3	3.3	7.9	7.9	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									

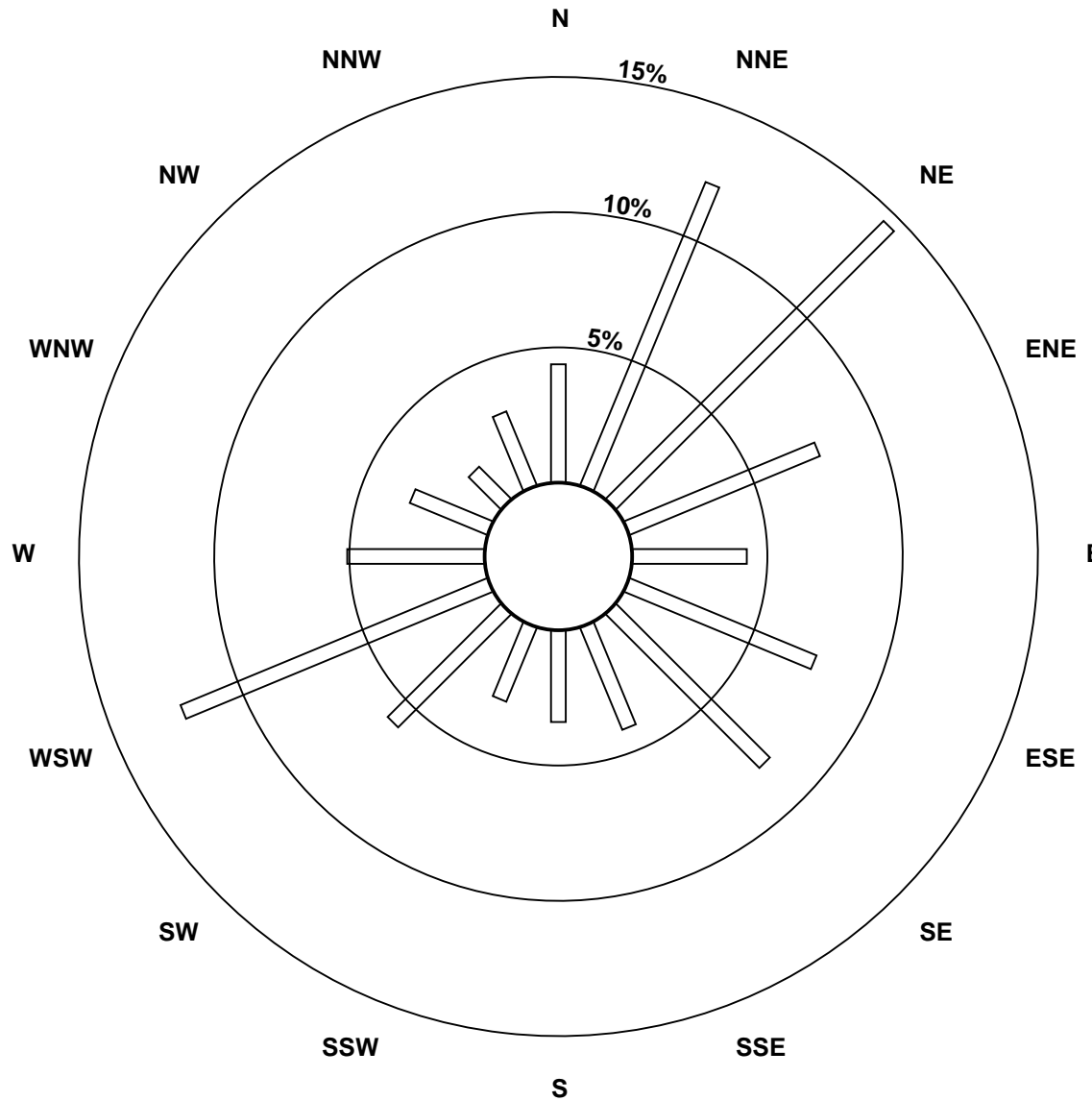
### Hourly Maximums

Sulphur Dioxide (SO<sub>2</sub>) - ppb  
Smoky Heights - May 2011

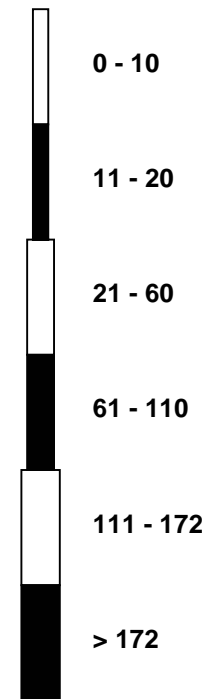


**Pollutant Rose**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Smoky Heights - May 2011**



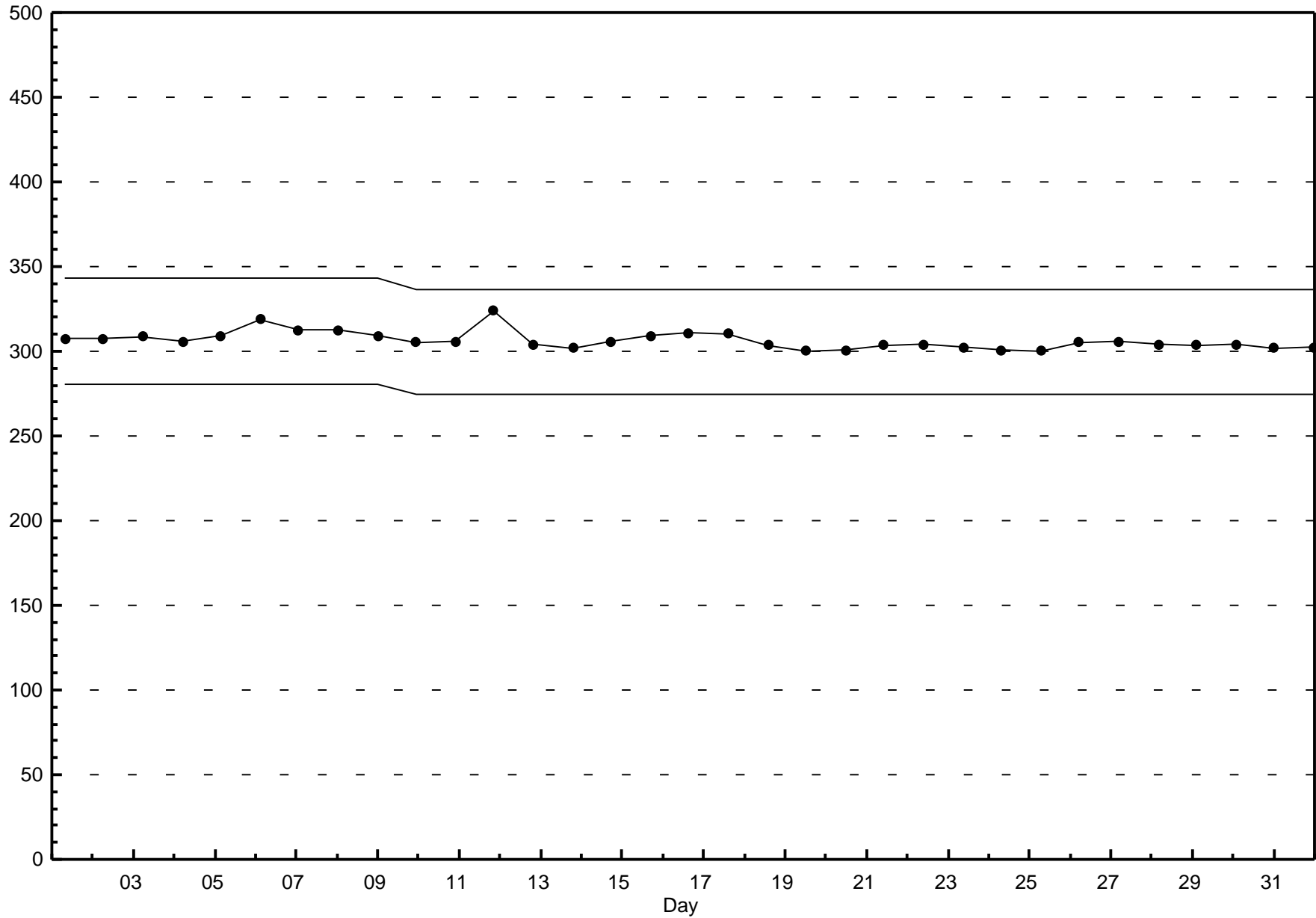
**Pollutant Classes (ppb)**





**Span Responses**

**Sulphur Dioxide (SO<sub>2</sub>)  
Smoky Heights - May 2011**

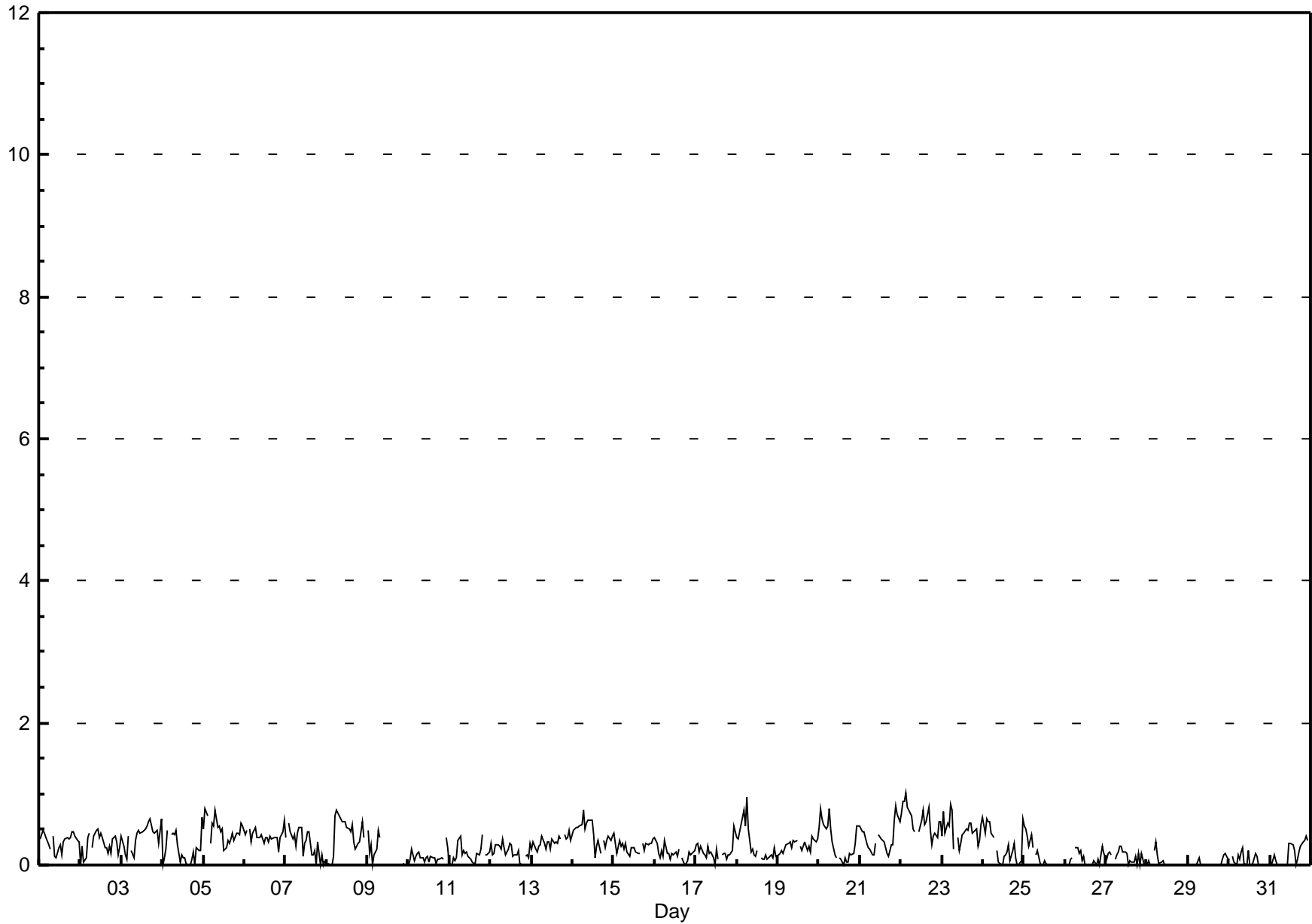


## Hourly Averages

Total Reduced Sulphur (TRS) - ppb

Smoky Heights - May 2011

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 1.0 ppb on May 22 04:00 Maximum Daily Average: 0.6 ppb on May 22		Hours in Service: 744 Hours of Data: 704 Hours of Missing Data: 40 Hours of Calibration: 40 Percent Operational Time: 100.0																																															
Minimum Value: 0 ppb on May 2 01:00 Maximum Diurnal Average: 0.4 ppb at hour 7 Monthly Average: 0.26 ppb		Minimum Daily Average: 0.0 ppb on May 29 Minimum Diurnal Average: 0.2 ppb at hour 19 Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.1 Median = 0.2 Q <sub>3</sub> = 0.4 P <sub>90</sub> = 0.6 P <sub>99</sub> = 0.8																																															
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-May	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5																							
2-May	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5																							
3-May	0	0	0	0	0	A	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	1	0.4	0.7																								
4-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	0.7																							
5-May	1	1	1	A	0	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0.5	0.8																							
6-May	0	0	A	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.4	0.6																							
7-May	0	A	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.6																							
8-May	A	0	0	0	0	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	1	0	A	0.4	0.8																							
9-May	0	0	0	0	0	0	0	0	0	C	C	C	C	C	C	0	0	0	0	0	0	0	A	0	--	0.5																							
10-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.1	0.4																							
11-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.1	0.4																							
12-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0.2	0.4																							
13-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.3	0.5																							
14-May	0	1	1	1	1	1	1	0	1	1	1	1	0	0	0	0	0	A	0	0	0	0	0	0	0.5	0.8																							
15-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.3	0.4																							
16-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.2	0.4																							
17-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	1	0	0.2	0.5																							
18-May	0	0	1	1	1	1	1	1	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.3	1.0																							
19-May	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	A	0	0	0	0	0.3	0.4																							
20-May	1	1	1	1	1	1	1	1	0	0	A	0	0	0	0	0	0	0	0	0	0	0	1	1	0.3	0.8																							
21-May	1	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	1	1	1	0.4	0.8																							
22-May	1	1	1	1	1	1	1	1	0	A	0	1	1	1	1	1	1	0	0	0	0	0	1	1	0.6	1.0																							
23-May	0	1	0	1	1	1	1	0	A	0	0	0	0	0	1	0	1	1	0	0	1	0	0	1	0.5	0.9																							
24-May	1	0	1	1	1	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	0.7																							
25-May	1	1	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.6																							
26-May	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3																							
27-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3																							
28-May	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.3																							
29-May	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.2																							
30-May	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2																							
31-May	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.1	0.4																							
																								0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	Diurnal Average	
																								0.7	0.9	0.9	1.0	0.8	0.9	1.0	0.8	0.6	0.6	0.6	0.6	0.6	0.8	0.6	0.6	0.8	0.7	0.5	0.5	0.6	0.8	0.7	0.7	Diurnal Maximum	
C - Calibration A - Automated Daily Zero Span Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb																																																	



## Hourly Maximums

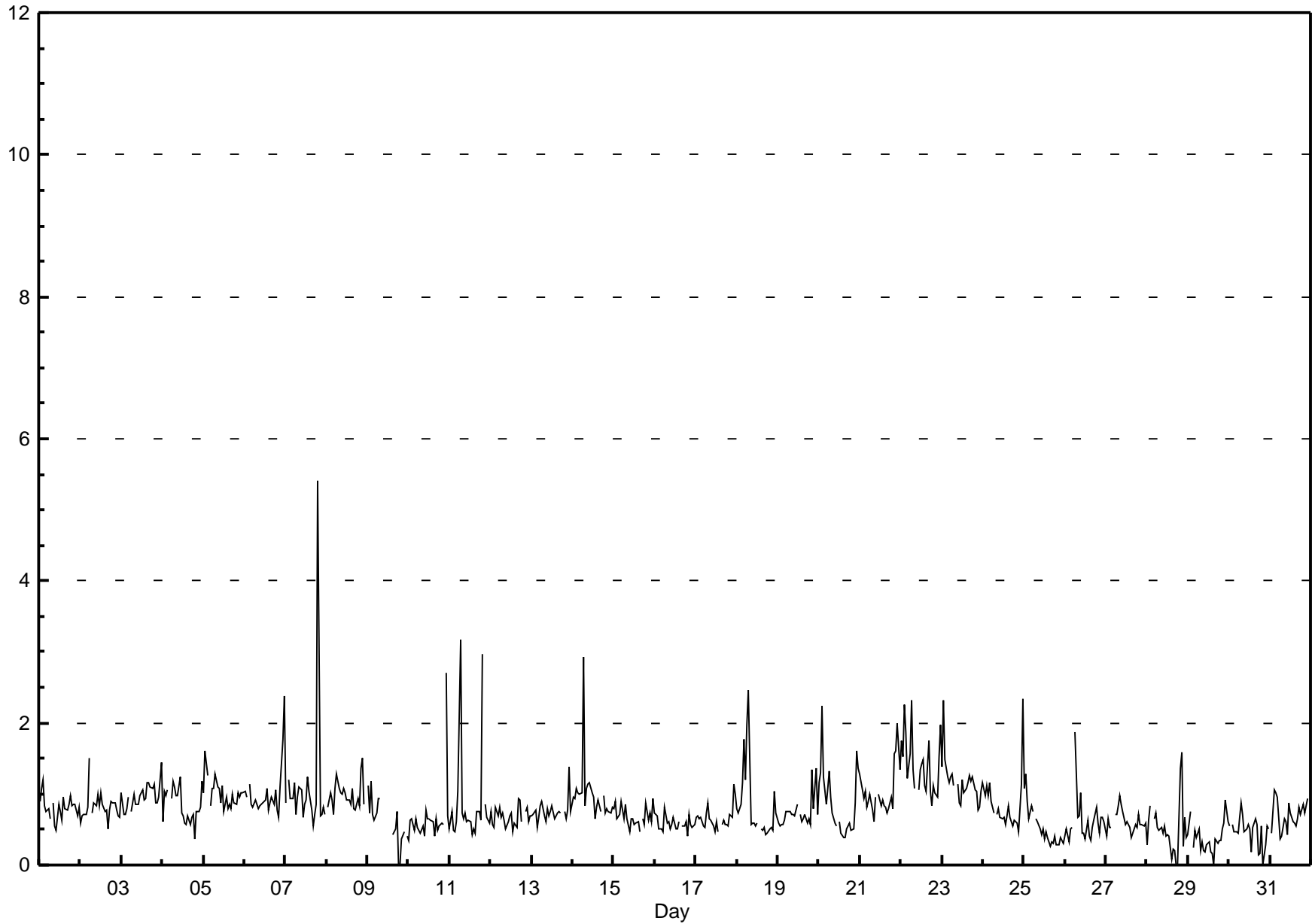
Total Reduced Sulphur (TRS) - ppb

Smoky Heights - May 2011

Maximum Value: 5.4 ppb on May 7 20:00		Maximum Daily Average: 1.4 ppb on May 22		Hours in Service: 744																						
Minimum Value: 0 ppb on May 9 19:00		Minimum Daily Average: 0.4 ppb on May 29		Hours of Data: 704																						
Maximum Diurnal Average: 1.1 ppb at hour 7		Minimum Diurnal Average: 0.6 ppb at hour 16		Hours of Missing Data: 40																						
Monthly Average: 0.80 ppb		Percentiles: P <sub>1</sub> = 0.1 P <sub>10</sub> = 0.4 Q <sub>1</sub> = 0.6 Median = 0.7 Q <sub>3</sub> = 0.9 P <sub>90</sub> = 1.2 P <sub>99</sub> = 2.3		Hours of Calibration: 40																						
				Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	1	1	1	1	1	1	1	A	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.2
2-May	1	1	1	1	1	2	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.5
3-May	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	1.5
4-May	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	0.8	1.2
5-May	1	2	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	1.6
6-May	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	2.4
7-May	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	1	1	1	1	1.1	5.4
8-May	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	A	1.0	1.5
9-May	1	1	1	1	1	1	1	1	C	C	C	C	C	C	C	0	1	1	0	0	0	0	A	0	--	1.2
10-May	0	1	1	0	1	1	0	0	1	0	1	1	1	1	1	0	1	0	1	1	1	A	3	1	0.7	2.7
11-May	1	1	0	1	1	1	3	1	1	1	1	1	1	0	1	0	1	1	1	3	A	1	1	1	0.9	3.2
12-May	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	A	1	1	1	1	0.7	0.9
13-May	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	0.8	1.4
14-May	1	1	1	1	1	1	3	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1.0	2.9
15-May	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	0	A	1	1	1	1	1	1	1	0.7	0.9
16-May	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	A	1	1	1	0	1	1	1	1	0.6	0.8
17-May	1	1	1	1	1	1	1	1	1	1	0	1	1	0	A	1	1	1	1	1	1	1	1	1	0.7	1.1
18-May	1	1	1	1	2	1	2	2	1	1	1	1	1	A	1	0	1	0	0	0	1	0	1	1	0.8	2.5
19-May	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0.7	1.4
20-May	1	1	2	1	1	1	1	1	1	1	A	1	0	0	0	0	1	1	1	1	0	1	1	2	0.9	2.2
21-May	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	2	2	2	1	1.0	2.0
22-May	2	2	2	2	1	2	2	1	1	A	1	1	1	1	1	1	2	1	1	1	1	1	2	2	1.4	2.3
23-May	1	2	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.2	2.3
24-May	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	2	0.9	2.3
25-May	1	1	1	1	1	1	A	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0.5	1.3
26-May	0	1	0	1	1	A	2	1	1	1	0	0	0	1	0	0	1	1	1	1	0	1	1	1	0.6	1.9
27-May	0	1	1	1	A	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0.6	1.0
28-May	0	1	1	A	1	1	1	0	1	0	1	0	0	0	0	0	0	0	0	1	2	0	1	0	0.5	1.6
29-May	0	1	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0.4	0.9
30-May	1	A	1	0	0	0	1	1	1	0	1	1	1	0	1	1	1	0	0	1	0	0	1	1	0.5	0.9
31-May	A	0	1	1	1	1	0	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	A	0.7	1.1
		0.8	0.9	0.9	0.8	0.8	0.9	1.1	0.9	0.8	0.7	0.7	0.8	0.7	0.7	0.7	0.6	0.7	0.7	0.7	0.9	0.8	0.8	1.0	0.9	Diurnal Average
		1.7	2.3	2.3	1.9	1.8	1.6	3.2	2.5	1.1	1.1	1.2	1.3	1.4	1.5	1.1	1.2	1.7	1.2	1.2	5.4	1.6	1.6	2.7	2.4	Diurnal Maximum
C - Calibration		A - Automated Daily Zero Span																								

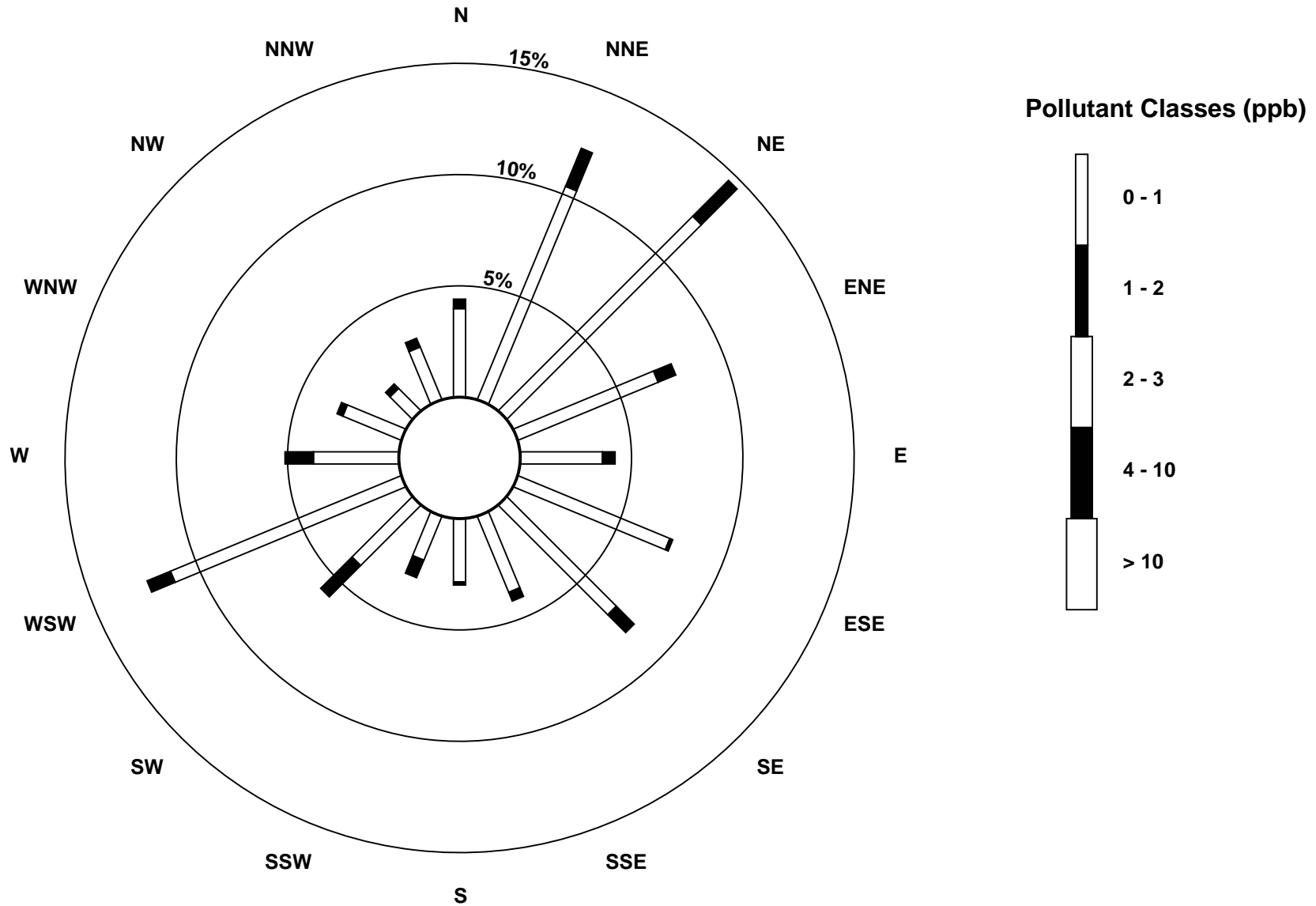
**Hourly Maximums**

**Total Reduced Sulphur (TRS) - ppb**  
**Smoky Heights - May 2011**



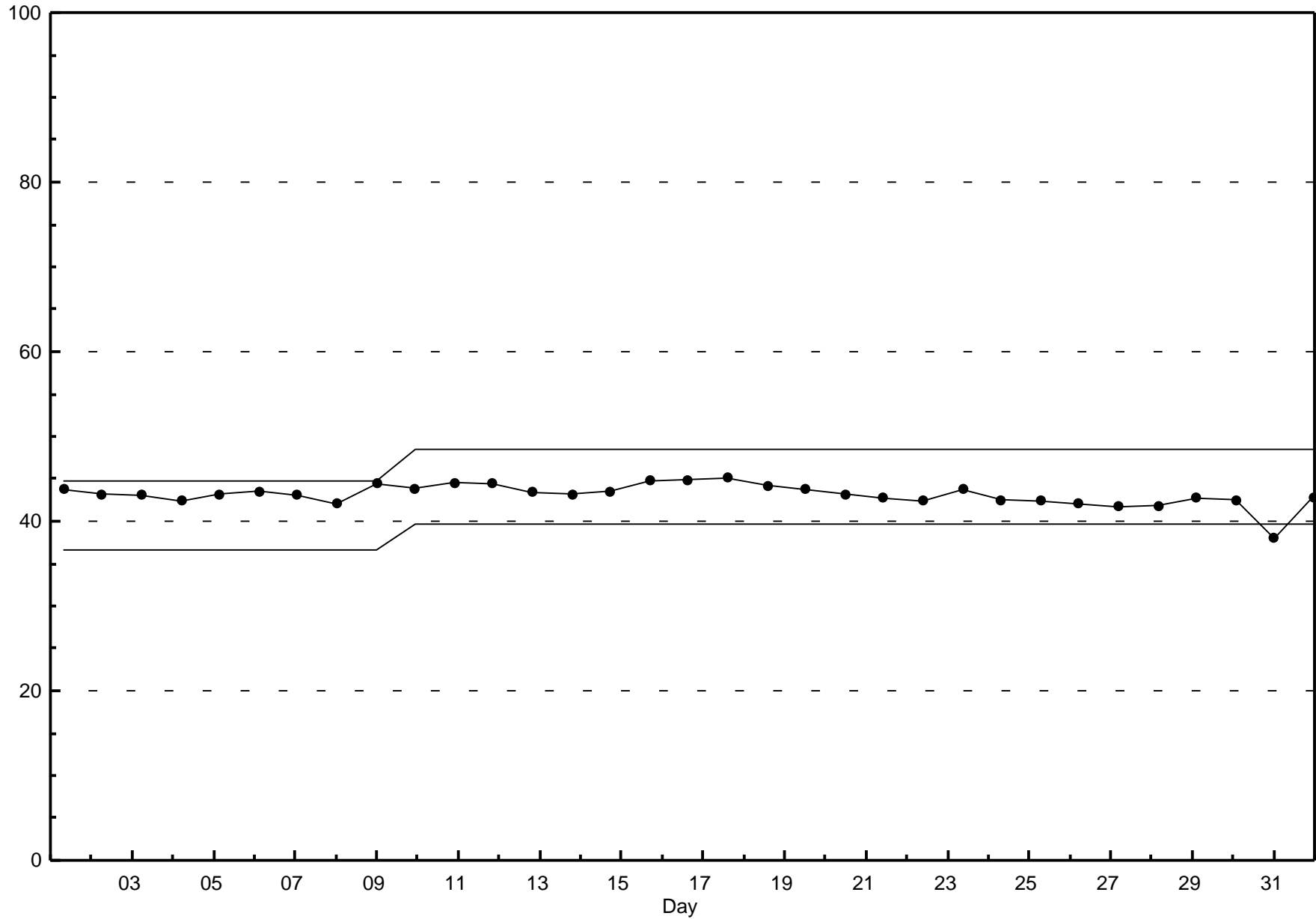
**Pollutant Rose**

**Total Reduced Sulphur (TRS) - ppb**  
**Smoky Heights - May 2011**



**Span Responses**

**Total Reduced Sulphur (TRS)  
Smoky Heights - May 2011**



## Hourly Averages

## Particulate Matter 2.5 (PM<sub>2.5</sub>) - µg/m<sup>3</sup>

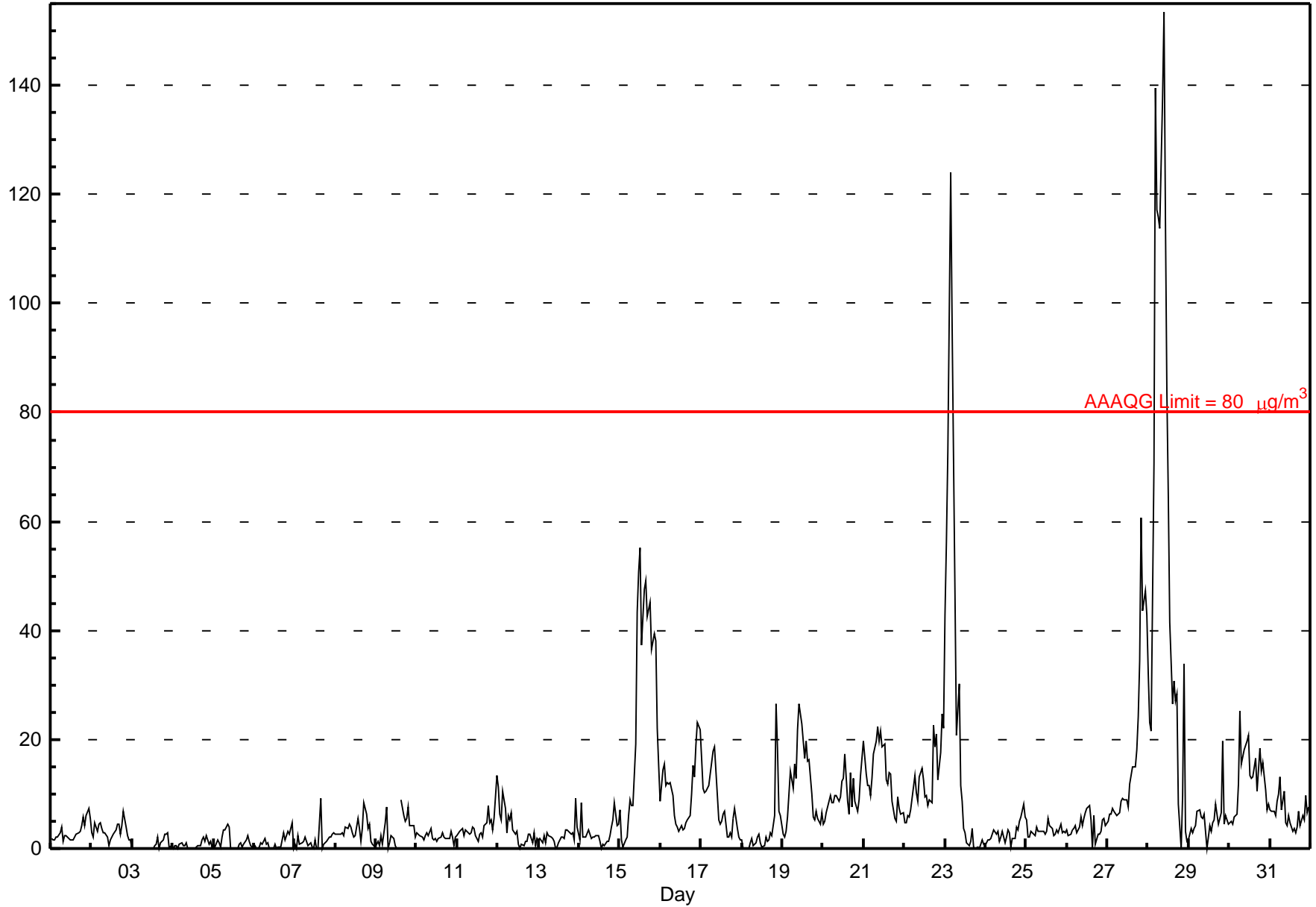
### Smoky Heights - May 2011

Number of Exceedences: 1-hr: 10 24-hr: 1	Hours in Service: 744
Maximum Value: 153.5 µg/m <sup>3</sup> on May 28 10:00	Maximum Daily Average: 58.3 µg/m <sup>3</sup> on May 28
Minimum Value: 0 µg/m <sup>3</sup> on May 3 01:00	Hours of Data: 742
Maximum Diurnal Average: 11.6 µg/m <sup>3</sup> at hour 5	Hours of Missing Data: 2
Monthly Average: 8.52 µg/m <sup>3</sup>	Hours of Calibration: 2
Minimum Daily Average: 0.6 µg/m <sup>3</sup> on May 3	Percent Operational Time: 100.0
Minimum Diurnal Average: 6.2 µg/m <sup>3</sup> at hour 2	
Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.4 Q <sub>1</sub> = 1.7 Median = 3.6 Q <sub>3</sub> = 8.4 P <sub>90</sub> = 18.6 P <sub>99</sub> = 114.8	

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-May	2	2	2	2	2	3	4	1	2	2	2	2	2	2	2	3	3	3	4	6	4	6	7	5	3.1	7.5																						
2-May	3	2	5	3	4	5	4	3	3	2	0	2	2	3	3	5	5	3	4	7	4	2	2	2	3.2	6.9																						
3-May	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	1	2	3	3	3	0	0	0.6	2.8																						
4-May	0	0	1	0	1	1	0	0	1	0	0	0	0	0	0	1	1	1	2	1	2	1	1	0	0.6	2.3																						
5-May	1	0	2	1	0	2	3	3	5	4	0	0	0	0	0	1	1	0	1	2	2	1	0	0	1.3	4.5																						
6-May	1	0	0	0	1	1	2	1	1	0	0	0	1	0	0	0	0	3	1	2	3	3	5	0	1.0	4.7																						
7-May	1	0	2	1	1	1	2	1	1	1	0	0	2	0	0	9	0	1	1	1	2	2	3	3	1.5	9.1																						
8-May	3	3	3	3	3	2	4	4	4	4	3	2	2	5	4	1	4	8	6	4	5	1	1	0	3.3	8.3																						
9-May	1	1	1	2	1	5	8	0	1	2	2	1	0	C	C	9	6	5	6	7	4	4	4	2	3.3	8.9																						
10-May	3	3	2	2	2	2	3	2	4	2	2	2	1	2	2	3	2	2	2	2	3	2	0	2	2.2	3.8																						
11-May	2	3	3	4	2	3	3	3	3	4	4	2	1	3	3	2	4	5	8	5	5	3	5	13	4.0	13.3																						
12-May	11	6	5	11	7	3	6	5	7	4	3	3	1	0	1	0	1	1	3	3	1	3	0	2	3.6	11.4																						
13-May	1	2	1	2	1	3	2	2	2	1	0	0	1	2	2	2	3	4	3	3	3	2	9	4	2.3	9.3																						
14-May	2	8	2	2	2	3	3	2	2	2	2	2	1	0	1	0	1	1	2	4	5	9	4	5	2.8	8.5																						
15-May	7	2	0	2	2	6	9	8	8	19	43	51	55	37	47	49	43	44	45	36	39	38	22	15	26.2	55.2																						
16-May	9	14	16	12	12	12	12	10	6	5	4	3	4	3	4	5	5	6	10	15	13	19	23	22	10.1	23.0																						
17-May	17	11	10	10	11	14	16	18	19	14	5	4	5	6	7	2	2	3	2	6	7	4	2	1	8.2	18.6																						
18-May	2	0	0	0	0	1	2	0	1	2	3	1	0	0	2	1	2	3	2	6	26	18	7	6	3.6	26.4																						
19-May	3	2	3	6	10	14	11	16	13	22	26	23	20	17	20	16	16	10	6	5	7	5	4	7	11.7	26.5																						
20-May	4	5	7	8	10	8	8	10	10	9	9	12	13	17	9	6	14	8	13	9	7	9	13	17	9.8	17.2																						
21-May	20	14	11	12	10	13	17	20	22	20	21	19	19	13	12	14	14	9	6	5	10	7	6	7	13.3	22.2																						
22-May	5	5	6	6	7	11	13	10	9	13	15	13	10	10	8	9	8	23	19	21	13	18	25	22	12.4	24.6																						
23-May	43	56	73	124	96	71	46	21	30	12	9	4	3	1	1	1	4	0	0	0	0	1	2	1	24.9	124.0																						
24-May	1	2	2	2	3	3	3	3	1	2	3	1	2	3	3	0	2	2	4	3	5	6	8	6	2.9	8.0																						
25-May	5	2	2	3	3	2	4	3	3	3	3	3	3	6	4	4	2	3	3	3	4	3	3	3	3.3	5.5																						
26-May	3	2	3	3	4	4	3	4	6	4	6	7	7	8	5	0	6	1	3	3	3	5	5	4	4.1	7.8																						
27-May	5	6	6	7	7	6	6	7	9	9	9	9	8	12	13	15	15	18	24	34	61	43	47	43	17.5	60.6																						
28-May	32	23	22	71	140	117	116	114	138	153	115	84	65	41	27	31	27	28	8	0	10	34	3	1	58.3	153.5																						
29-May	2	4	3	4	4	7	7	6	6	6	3	0	4	3	5	5	8	4	6	7	20	5	6	4	5.3	19.6																						
30-May	5	5	4	6	6	12	25	15	17	18	20	21	13	13	13	16	11	14	18	14	16	11	7	8	12.9	25.3																						
31-May	7	7	7	6	9	10	13	7	11	5	4	6	5	3	4	3	4	7	4	6	5	10	7	8	6.5	13.2																						
																								6.4	6.2	6.6	10.1	11.6	11.2	11.5	9.7	11.0	11.1	10.2	8.9	8.1	7.0	6.7	7.0	6.9	7.1	7.0	7.2	9.4	9.0	7.6	6.9	Diurnal Average
																								42.8	56.3	72.7	124.0	139.5	117.2	115.8	113.8	137.6	153.5	115.3	83.7	64.7	41.5	47.4	49.2	42.7	43.9	45.1	36.4	60.6	43.5	47.2	42.7	Diurnal Maximum

C - Calibration  
 Alberta Ambient Air Quality Guideline (AAAQG): 1-hr 80 µg/m<sup>3</sup> Alberta Ambient Air Quality Objective (AAAQO): 24-hr 30 µg/m<sup>3</sup>



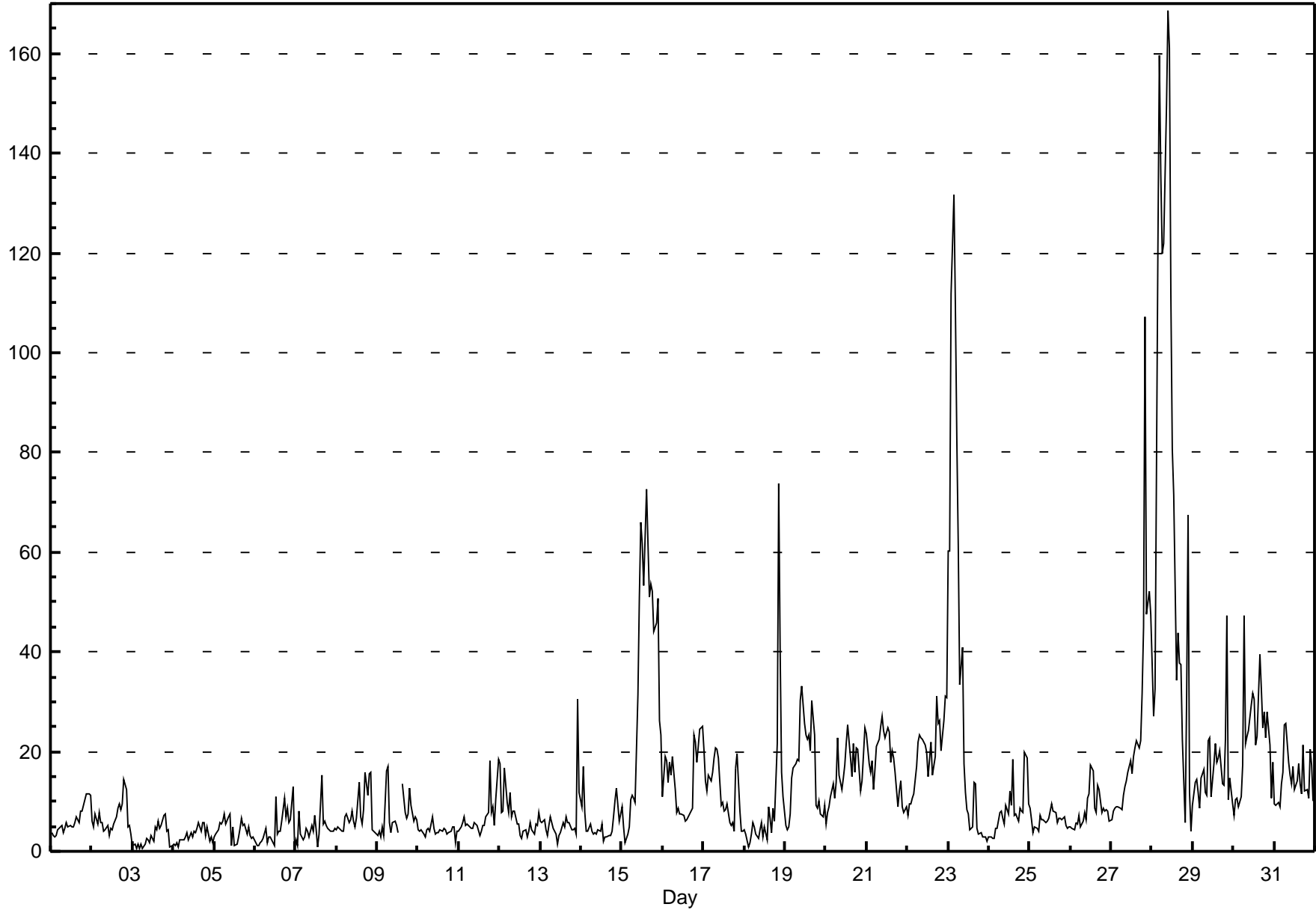


## Hourly Maximums

## Particulate Matter 2.5 (PM<sub>2.5</sub>) - µg/m<sup>3</sup>

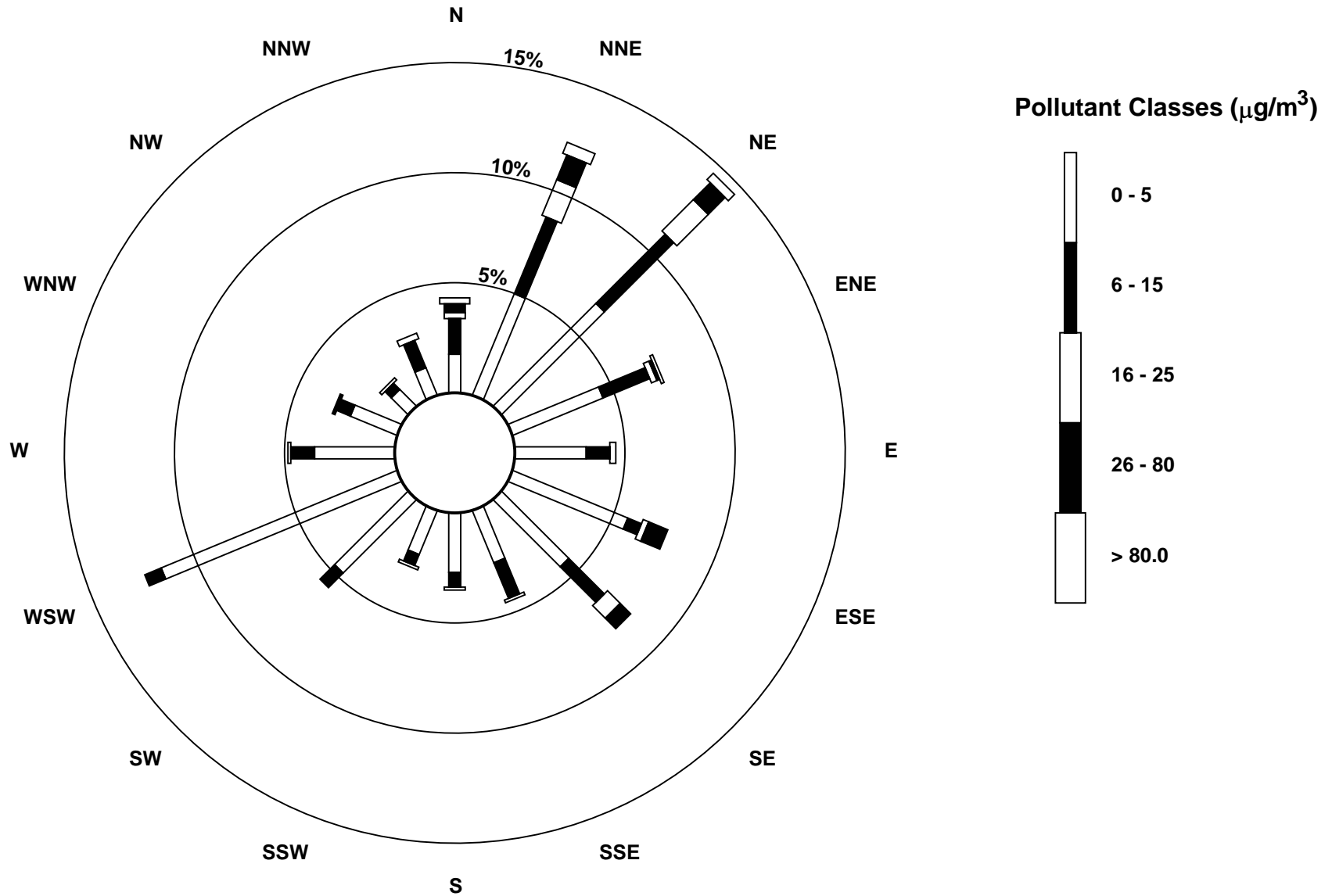
### Smoky Heights - May 2011

Maximum Value: 168.6 µg/m <sup>3</sup> on May 28 10:00 Minimum Value: 0 µg/m <sup>3</sup> on May 3 05:00 Maximum Diurnal Average: 18.3 µg/m <sup>3</sup> at hour 21 Monthly Average: 13.75 µg/m <sup>3</sup>		Maximum Daily Average: 74.8 µg/m <sup>3</sup> on May 28 Minimum Daily Average: 3.0 µg/m <sup>3</sup> on May 3 Minimum Diurnal Average: 9.3 µg/m <sup>3</sup> at hour 2 Percentiles: P <sub>1</sub> = 1.0 P <sub>10</sub> = 3.0 Q <sub>1</sub> = 4.5 Median = 7.6 Q <sub>3</sub> = 15.9 P <sub>90</sub> = 25.2 P <sub>99</sub> = 113.1		Hours in Service: 744 Hours of Data: 742 Hours of Missing Data: 2 Hours of Calibration: 2 Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
1-May	4	3	3	3	4	5	5	4	4	6	5	5	5	5	6	7	6	8	8	9	10	12	12	11	6.2	11.6	
2-May	6	5	8	5	8	6	6	4	4	5	3	5	4	6	7	9	10	8	10	15	12	5	5	3	6.6	14.5	
3-May	1	2	1	1	0	2	1	1	2	2	2	3	2	5	4	6	5	5	7	7	4	4	1	1	3.0	7.4	
4-May	1	1	2	1	2	2	2	3	4	2	4	3	4	4	5	6	4	6	6	3	5	2	3	2	3.2	5.9	
5-May	3	3	4	6	6	6	7	5	7	8	1	5	1	1	3	5	7	5	5	4	5	3	3	3	4.4	7.6	
6-May	2	1	1	2	2	3	5	2	3	3	2	1	11	3	4	4	6	11	7	9	6	6	13	1	4.4	13.0	
7-May	2	1	8	3	2	3	5	4	3	5	4	7	4	1	3	15	5	6	5	5	4	4	4	5	4.6	15.2	
8-May	4	5	4	4	4	7	7	6	6	8	6	5	7	14	7	6	8	16	11	16	16	4	4	3	7.5	15.9	
9-May	3	4	3	5	3	16	17	6	4	6	6	5	4	C	C	13	8	7	8	13	9	6	7	6	7.2	17.1	
10-May	4	4	4	3	3	4	5	4	7	5	3	4	4	4	4	5	4	3	4	4	5	5	2	4	4.1	6.8	
11-May	4	5	6	7	5	6	5	5	5	6	5	5	3	4	5	5	7	8	18	8	9	5	10	18	6.8	18.3	
12-May	18	8	8	17	10	8	12	7	8	8	5	5	3	3	4	4	3	4	6	4	3	5	5	8	6.9	17.6	
13-May	6	6	6	4	3	5	7	4	4	3	1	3	4	6	5	7	6	6	4	4	5	3	31	12	6.1	30.5	
14-May	9	17	8	4	4	5	4	3	4	3	4	4	6	2	3	3	3	3	4	7	10	13	6	7	5.7	17.0	
15-May	9	5	2	3	5	10	11	11	10	31	51	66	62	53	73	62	51	54	52	44	46	51	26	23	33.8	72.6	
16-May	11	19	18	14	18	15	19	12	8	9	8	8	7	6	6	7	8	9	23	22	18	21	24	25	13.9	25.2	
17-May	20	14	12	15	14	16	19	21	21	19	9	10	8	8	10	6	5	6	4	17	20	8	4	4	12.0	20.8	
18-May	4	3	1	2	3	6	5	3	3	4	6	3	5	2	9	7	4	9	6	22	74	40	16	11	10.3	73.8	
19-May	5	4	5	7	15	17	18	19	18	30	33	26	23	22	23	20	30	23	9	9	10	8	7	9	16.3	33.2	
20-May	5	8	9	11	13	11	14	23	15	12	15	17	22	25	19	15	22	16	21	21	12	14	19	25	16.0	25.4	
21-May	24	17	16	18	12	16	21	22	25	27	24	23	25	24	18	20	19	16	9	12	14	9	8	9	17.9	27.1	
22-May	7	10	10	11	11	17	22	23	23	22	21	20	15	18	22	15	19	31	26	26	20	26	31	31	19.9	31.1	
23-May	60	60	112	132	109	83	61	33	41	18	12	8	8	4	5	14	14	5	3	4	3	3	3	2	33.1	131.7	
24-May	3	3	3	3	5	5	8	8	7	6	9	8	12	9	19	7	8	6	9	8	8	20	19	10	8.3	19.8	
25-May	9	6	4	5	5	4	7	6	6	6	6	7	8	10	8	8	6	7	7	6	7	5	5	5	6.3	9.6	
26-May	5	5	4	6	5	7	5	6	8	6	11	12	17	16	9	8	13	12	8	9	8	8	8	6	8.4	17.3	
27-May	6	8	9	9	9	9	8	11	13	14	16	18	16	19	21	22	21	22	32	45	107	48	52	47	24.3	107.2	
28-May	37	27	33	122	160	136	120	122	150	169	161	112	81	71	34	44	38	37	22	6	32	68	12	4	74.8	168.6	
29-May	9	14	14	12	9	15	16	12	11	22	23	11	18	22	18	19	20	14	13	22	47	10	15	10	16.5	47.4	
30-May	7	10	11	9	11	17	47	22	23	24	29	32	31	21	23	40	33	25	28	23	28	21	11	18	22.6	47.2	
31-May	10	9	10	9	14	16	25	26	18	15	14	17	13	14	18	13	11	21	12	12	11	20	17	10	14.8	25.6	
		9.7	9.3	10.9	14.6	15.3	15.3	16.6	14.1	14.9	16.3	16.1	14.7	13.9	13.5	13.1	13.5	13.0	13.1	12.5	13.3	18.3	14.8	12.3	10.8	Diurnal Average	
		60.1	60.1	111.9	131.7	159.7	135.6	120.0	122.0	149.8	168.6	161.2	111.8	80.6	71.3	72.6	61.6	50.9	53.7	52.0	44.9	107.2	67.5	52.0	47.4	Diurnal Maximum	
C - Calibration																											



**Pollutant Rose**

**Particulate Matter 2.5 (PM<sub>2.5</sub>) - μg/m<sup>3</sup>**  
**Smoky Heights - May 2011**





Peace Airshed Zone Association

# Hourly Averages

External Temperature (ET) - °C

Smoky Heights - May 2011

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 24.0 °C on May 16 17:00	Maximum Daily Average: 17.2 °C on May 16		Hours of Data:	744
Minimum Value: 1 °C on May 1 05:00	Minimum Daily Average: 7.8 °C on May 1		Hours of Missing Data:	0
Maximum Diurnal Average: 17.0 °C at hour 15	Minimum Diurnal Average: 6.4 °C at hour 5		Hours of Calibration:	0
Monthly Average: 11.90 °C	Percentiles: P <sub>1</sub> = 2.3 P <sub>10</sub> = 5.3 Q <sub>1</sub> = 8.1 Median = 11.9 Q <sub>3</sub> = 15.5 P <sub>90</sub> = 19.2 P <sub>99</sub> = 22.9		Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	4	2	1	1	1	1	2	4	6	8	10	11	11	12	13	13	14	13	13	11	10	8	7	8	7.8	13.6
2-May	8	8	7	6	6	5	6	7	8	9	10	12	13	15	15	14	13	12	11	10	8	8	8	7	9.5	15.2
3-May	8	7	6	5	5	4	5	6	7	8	9	10	11	12	12	11	12	12	12	11	9	7	6	5	8.3	12.3
4-May	4	4	3	3	3	2	4	6	8	10	11	11	12	13	13	13	12	11	10	9	9	7	6	5	7.9	13.2
5-May	4	5	4	4	5	5	5	5	5	7	9	11	12	13	13	13	13	13	12	12	10	8	7	7	8.4	13.4
6-May	7	6	5	5	4	3	4	6	8	10	11	12	13	13	14	14	15	14	13	11	10	8	7	6	9.2	15.0
7-May	6	4	3	3	4	4	5	7	9	12	14	14	12	14	16	11	13	14	12	12	10	9	8	7	9.3	15.6
8-May	6	5	5	5	4	4	5	6	9	11	12	13	14	15	14	16	15	12	10	10	9	7	6	5	9.0	16.0
9-May	4	3	3	3	2	3	5	6	8	10	13	15	17	17	16	16	16	16	15	13	10	9	9	10	9.9	17.4
10-May	9	7	6	5	5	4	6	8	10	13	14	16	17	17	17	18	18	19	19	18	15	14	14	13	12.6	19.3
11-May	12	11	9	8	8	7	8	9	10	13	15	16	18	20	20	21	21	20	18	18	19	18	17	17	14.7	20.7
12-May	17	17	16	13	10	10	11	11	12	12	12	10	9	10	10	9	10	9	8	8	7	7	6	5	10.4	17.4
13-May	5	5	5	5	4	3	6	7	9	10	13	13	15	15	16	17	17	17	16	15	14	12	11	11	10.8	16.8
14-May	10	9	9	9	8	9	10	12	14	16	17	19	21	22	23	23	23	23	22	21	19	17	16	15	16.1	23.3
15-May	14	13	13	13	12	12	13	14	16	17	18	19	20	20	20	19	19	19	19	18	17	16	14	13	16.1	20.0
16-May	12	11	10	8	6	6	10	13	15	17	20	21	23	23	24	24	24	24	24	22	21	19	18	17	17.2	24.0
17-May	16	15	15	14	14	14	14	14	15	16	18	19	19	19	21	21	20	20	20	18	14	11	9	7	16.0	20.8
18-May	6	5	4	3	2	2	5	7	10	12	14	15	16	17	18	18	19	19	18	16	13	11	13	11.7	18.7	
19-May	14	13	12	11	10	10	10	11	12	14	16	18	19	19	20	20	14	12	12	12	11	11	11	11	13.6	20.1
20-May	10	9	9	8	7	7	8	10	12	12	14	17	20	21	20	20	20	21	20	18	17	15	14	13	14.3	20.6
21-May	13	14	12	12	12	13	13	14	13	15	16	17	18	20	21	21	17	12	12	13	12	12	12	11	14.4	21.5
22-May	10	9	8	7	7	7	9	11	11	13	17	19	20	20	22	21	21	20	17	15	14	14	12	12	14.1	21.7
23-May	11	11	10	9	8	7	7	7	7	9	9	9	9	9	9	9	8	8	8	8	8	7	6	6	8.2	10.6
24-May	5	5	5	5	5	6	7	10	10	12	13	14	14	14	14	15	15	15	14	13	12	10	9	8	10.5	15.1
25-May	8	8	8	8	7	8	9	9	10	11	12	13	14	13	13	13	13	13	13	12	11	10	9	9	10.8	13.8
26-May	8	8	8	8	8	7	8	8	8	9	10	10	13	14	14	14	16	16	15	15	14	13	13	12	11.2	15.8
27-May	12	12	11	11	11	11	11	12	13	15	18	20	19	20	20	21	21	20	19	18	16	15	15	14	15.7	21.0
28-May	13	12	12	11	9	9	11	12	13	14	15	16	17	19	19	19	20	19	18	18	16	12	10	9	14.3	19.5
29-May	8	6	5	4	2	3	5	7	9	13	16	18	19	19	20	19	17	17	16	14	11	9	9	9	11.5	19.9
30-May	7	7	6	6	5	5	8	10	12	14	16	18	19	19	19	19	19	19	18	17	15	13	10	7	13.0	19.5
31-May	7	6	4	4	4	6	8	10	12	13	16	18	18	19	19	20	20	18	18	18	15	12	9	9	12.6	20.1

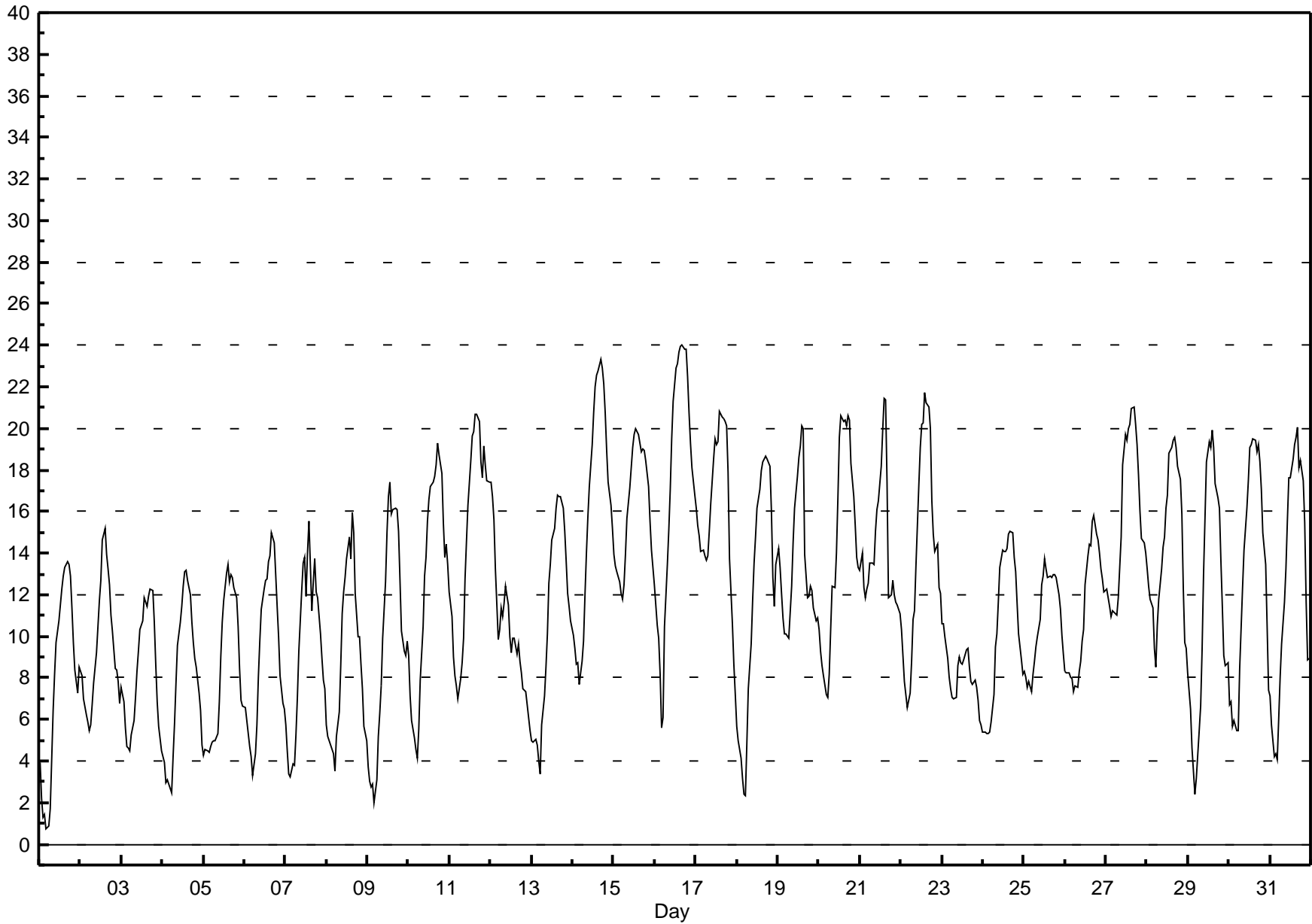
9.0	8.4	7.5	7.0	6.4	6.4	7.7	9.0	10.4	12.1	13.8	15.0	15.8	16.6	17.0	16.9	16.6	16.0	15.3	14.4	12.9	11.5	10.3	9.8	Diurnal Average	
17.4	16.7	15.6	14.0	14.1	13.9	13.7	14.0	15.7	17.1	19.5	21.3	22.9	23.1	23.7	24.0	24.0	23.8	23.8	22.5	20.7	19.3	18.1	17.4	Diurnal Maximum	



**Hourly Averages**

**External Temperature (ET) - °C**

**Smoky Heights - May 2011**





## Hourly Averages

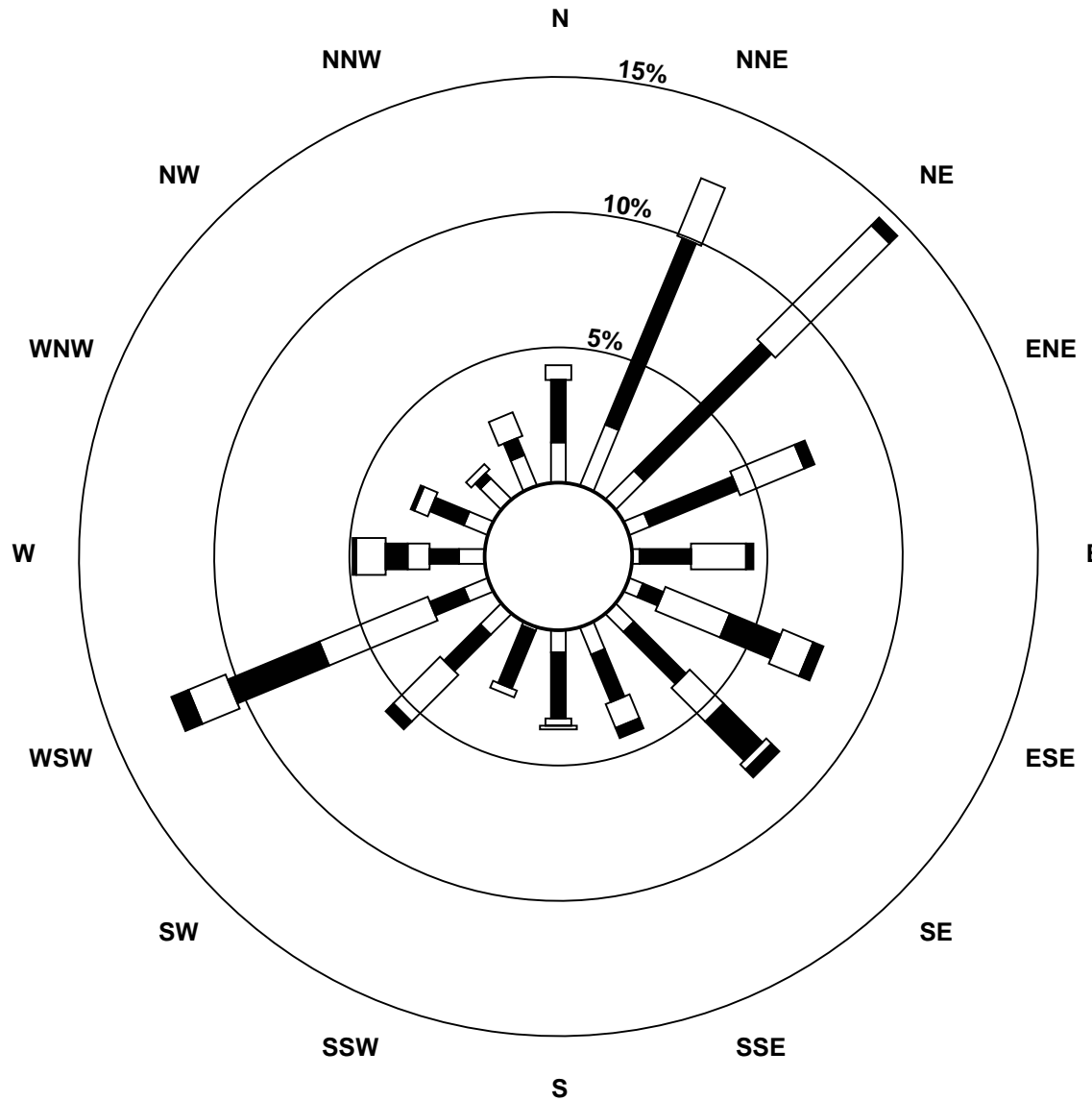
Wind Speed (km/h)  
Wind Direction (deg)  
Smoky Heights - May 2011

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
23 Spd	13	16	17	20	19	17	18	18	16	15	14	13	14	12	9	9	12	11	10	11	10	8	8	6	6.9	19.7
Dir	40	46	46	48	45	46	47	44	32	36	32	49	54	47	41	113	173	210	216	226	215	231	205	233	51.4	48.1
24 Spd	6	1	2	2	3	4	4	5	5	2	1	2	8	11	15	12	10	15	11	10	9	6	4	2	3.7	15.2
Dir	229	295	30	20	17	37	57	46	115	111	309	89	134	145	159	158	142	166	183	192	195	241	290	37	157.9	166.2
25 Spd	5	6	6	5	6	8	7	10	16	18	18	22	23	23	20	20	19	17	15	15	10	12	12	10	11.9	23.3
Dir	29	27	30	22	28	65	99	133	135	125	108	126	129	137	126	100	102	111	105	107	110	112	123	117	111.4	136.9
26 Spd	9	8	9	8	9	8	10	12	12	13	13	14	17	17	16	15	14	15	12	10	8	7	8	7	10.7	17.1
Dir	100	76	53	49	44	40	46	47	44	51	51	48	52	45	51	84	74	63	74	79	71	36	23	20	55.8	52.2
27 Spd	8	8	9	8	11	12	10	8	9	11	12	9	12	10	11	12	12	11	9	6	6	8	8	8	9.1	11.9
Dir	18	29	29	19	16	16	11	26	20	14	33	35	49	55	59	43	35	44	38	40	7	10	11	11	29.2	43.3
28 Spd	8	9	11	10	6	6	7	10	10	11	12	12	10	9	13	11	12	11	11	10	4	5	6	7	8.9	12.6
Dir	13	18	31	28	24	2	9	22	27	33	38	61	33	42	44	12	32	30	49	46	38	15	14	10	30.1	43.9
29 Spd	5	6	4	2	1	1	4	6	5	5	7	5	0	4	7	9	17	10	6	3	4	3	7	5	2.3	17.4
Dir	1	19	6	12	90	170	145	166	179	190	151	128	166	153	53	359	29	33	39	346	271	319	22	4	40.9	28.7
30 Spd	5	4	3	8	5	2	4	9	9	12	12	11	11	13	13	14	13	15	16	12	15	7	3	3	7.3	16.3
Dir	12	342	335	21	330	313	38	29	34	35	30	55	69	62	61	75	80	74	82	91	132	123	152	43	61.2	82.2
31 Spd	6	3	1	4	1	4	5	6	3	7	1	2	5	4	2	6	8	14	10	7	5	2	3	4	2.7	14.5
Dir	18	359	17	340	328	352	280	49	16	57	52	142	140	122	156	120	114	71	52	47	42	16	248	160	63.9	71.1
Spd	1.6	1.7	1.6	2.0	2.1	1.6	0.9	0.9	2.1	1.6	2.0	3.5	3.7	4.1	3.3	4.2	5.1	4.8	3.5	2.0	2.6	1.4	0.3	0.2	Diurnal Average	
Dir	289.4	317.9	311.2	330.6	311.5	342.2	17.9	150.5	177.6	170.6	142.6	135.2	120.4	119.4	120.3	118.6	111.6	120.5	118.2	132.4	138.5	94.1	114.0	244.1	Diurnal Maximum	
Spd	26.0	26.7	25.3	24.4	26.6	24.9	23.0	27.4	35.5	40.8	41.2	39.4	39.9	42.6	42.5	41.5	40.4	39.4	37.3	35.5	33.0	27.8	27.8	25.2	Diurnal Maximum	
Dir	256.0	260.4	115.7	116.1	239.3	127.0	245.2	253.3	246.5	254.9	254.5	124.6	122.3	123.4	130.3	254.6	257.9	260.4	252.8	254.5	122.1	249.9	250.4	256.4	Diurnal Maximum	
Maximum Speed Value: 43 km/h on May 15 14:00																		Minimum Speed Value: 0 km/h on May 29 13:00						Hours in Service:		744
Maximum Daily Speed Average: 27.9 km/h on May 3																		Minimum Daily Speed Average: 2.3 km/h on May 31						Hours of Data:		744
Maximum Diurnal Speed Average: 5.1 km/h at hour 17																		Minimum Diurnal Speed Average: 0.2 km/h at hour 24						Hours of Missing Data:		0
Monthly Average Velocity: 1.37 km/h 121.80 deg																		Speed Percentiles: P <sub>1</sub> = 1.0 P <sub>10</sub> = 4.0 Q <sub>1</sub> = 6.8 Median = 10.6 Q <sub>3</sub> = 15.9 P <sub>90</sub> = 23.7 P <sub>99</sub> = 39.5						Percent Operational Time:		100.0
All monthly, daily, and diurnal averages have been calculated using vector methods																										
Frequency Distribution																										
		Speed Range (km/h)																								
Direction	0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total																			
North	23	46	15	0	0	0	84																			
NorthEast	18	94	72	4	0	0	188																			
East	8	21	35	12	0	0	76																			
SouthEast	11	34	25	30	10	7	117																			
South	9	29	11	0	1	0	50																			
SouthWest	12	29	38	10	2	0	91																			
West	9	17	26	28	16	7	103																			
NorthWest	17	9	7	2	0	0	35																			
Total	107	279	229	86	29	14	744																			

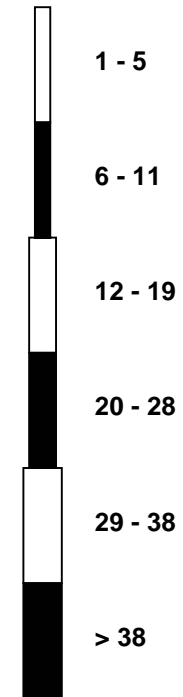


**Wind Rose**

**Wind Speed (WS) (km/h)**  
**Smoky Heights - May 2011**



**Wind Speed Classes (km/h)**



# Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Smoky Heights - May 2011

Maximum Speed: 43 km/h on May 15 15:00	Maximum Daily Speed Average: 28.4 km/h on May 15	Hours in Service: 744
Minimum Speed: 2 km/h on May 29 05:00	Minimum Daily Speed Average: 6.3 km/h on May 29	Hours of Data: 744
Maximum Diurnal Speed Average: 17.6 km/h at hour 16	Minimum Diurnal Speed Average: 9.1 km/h at hour 6	Hours of Missing Data: 0
Monthly Average Speed: 13.32 km/h	Percentiles: P <sub>1</sub> = 2.5 P <sub>10</sub> = 5.1 Q <sub>1</sub> = 7.7 Median = 11.5 Q <sub>3</sub> = 16.6 P <sub>90</sub> = 23.9 P <sub>99</sub> = 40.5	Percent Operational Time: 100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	22	20	19	17	12	11	12	19	25	31	26	27	27	28	26	23	21	19	16	13	11	8	11	24	19.4	30.8
2-May	20	15	14	13	10	5	6	8	11	14	17	15	14	10	8	14	16	12	12	13	13	13	5	9	12.1	19.8
3-May	16	15	14	14	14	14	18	26	36	41	41	38	38	38	36	30	30	33	35	36	33	28	28	25	28.3	41.5
4-May	26	27	25	23	22	21	23	27	31	33	32	32	32	36	39	42	41	40	38	28	22	12	13	10	28.1	41.8
5-May	12	8	7	6	5	4	8	7	8	9	16	19	19	20	23	18	12	9	13	16	18	15	14	15	12.5	22.9
6-May	17	19	22	20	20	16	10	18	16	16	15	17	15	12	9	11	11	15	7	10	12	11	9	10	14.1	22.0
7-May	6	5	6	7	9	10	12	9	7	4	10	19	24	18	11	24	17	16	11	12	10	8	5	8	11.1	24.1
8-May	4	4	5	6	5	3	4	3	7	10	10	11	12	13	11	8	8	23	9	7	9	6	7	6	7.9	22.6
9-May	3	3	3	4	4	4	7	10	10	9	9	10	11	13	29	21	17	12	11	17	12	9	7	12	10.4	29.3
10-May	11	13	14	13	13	8	5	11	8	8	12	11	10	9	12	7	7	7	9	6	8	9	12	15	9.9	14.6
11-May	13	15	12	10	9	6	6	8	12	7	6	8	17	25	20	21	17	18	11	6	17	15	9	15	12.6	24.6
12-May	22	15	14	22	27	14	8	9	15	24	16	21	22	11	8	10	10	10	11	11	9	12	8	9	14.1	26.8
13-May	4	7	9	7	7	6	7	11	12	11	11	12	13	15	19	18	20	24	24	22	15	10	7	13	12.6	24.3
14-May	16	15	12	10	11	10	9	14	23	21	18	21	23	27	30	32	32	34	35	33	33	28	27	25	22.5	35.0
15-May	18	22	25	25	25	25	22	25	32	35	40	40	40	43	43	41	39	32	26	18	22	17	15	12	28.4	43.2
16-May	12	6	9	4	5	4	5	8	9	10	10	16	19	18	16	17	16	16	16	16	16	16	14	11	12.0	18.7
17-May	12	10	8	8	11	14	15	13	15	19	23	23	25	22	19	20	22	22	24	20	33	24	16	13	17.9	33.0
18-May	10	13	12	9	12	10	10	19	21	19	17	15	12	12	13	12	12	11	9	10	9	8	15	15	12.5	20.7
19-May	18	19	18	18	15	14	12	13	7	11	9	8	9	7	9	10	16	17	17	11	5	4	5	6	11.6	19.5
20-May	5	6	4	5	6	5	5	6	5	6	6	7	5	7	15	14	12	9	10	12	7	9	6	6	7.4	14.9
21-May	8	7	6	7	6	7	11	14	9	10	6	8	14	16	13	13	20	11	11	15	10	4	4	4	9.7	19.5
22-May	4	5	3	3	3	4	4	5	6	8	6	9	10	9	12	15	17	24	22	9	11	17	10	15	9.6	23.8
23-May	14	16	17	20	19	18	19	18	17	16	15	14	14	12	9	9	12	12	10	11	10	8	8	7	13.5	19.9
24-May	7	3	2	2	4	4	5	6	5	4	5	7	8	12	16	13	10	16	12	11	9	6	5	2	7.1	15.7
25-May	5	6	6	5	6	8	7	10	16	18	18	23	24	24	20	21	20	17	15	15	10	12	12	10	13.7	23.8
26-May	9	8	9	9	9	8	10	12	12	13	13	14	17	17	16	15	15	15	12	10	9	7	8	7	11.4	17.4
27-May	8	8	9	8	11	12	10	8	9	11	12	10	13	11	12	13	12	11	9	7	6	8	8	8	9.8	13.4
28-May	8	9	12	10	6	6	8	10	11	11	12	12	11	10	14	13	13	11	12	10	5	5	6	7	9.6	13.5
29-May	5	6	4	2	2	2	4	7	6	5	8	7	6	6	9	13	18	10	6	3	4	4	7	6	6.3	17.9
30-May	6	5	5	8	6	5	5	9	10	12	12	12	13	13	14	16	14	16	17	13	15	15	5	4	10.4	17.3
31-May	6	3	2	4	3	5	6	6	4	8	5	6	9	8	7	11	10	15	10	7	5	2	5	5	6.3	15.0
	11.1	10.8	10.5	10.3	10.2	9.1	9.4	12.0	13.3	14.6	14.9	15.9	17.0	16.8	17.4	17.6	17.3	17.4	15.5	13.7	13.2	11.4	9.7	10.7	Diurnal Average	
	26.0	26.8	25.5	24.6	26.8	25.0	23.1	27.5	35.7	41.2	41.5	40.1	40.4	43.1	43.2	41.8	40.6	39.5	37.6	35.6	33.2	27.9	27.9	25.3	Diurnal Maximum	

All monthly, daily, and diurnal averages have been calculated using scalar methods

# Hourly Standard Deviations

Wind Direction (WD) - deg

Smoky Heights - May 2011

Maximum Value: 98.0 deg on May 9 21:00																	Hours in Service: 744					Hours of Data: 744				
Minimum Value: 2.2 deg on May 4 03:00																	Hours of Missing Data: 0					Hours of Calibration: 0				
Percentiles: P <sub>1</sub> = 2.8 P <sub>10</sub> = 6.4 Q <sub>1</sub> = 8.9 Median = 13.9 Q <sub>3</sub> = 25.8 P <sub>90</sub> = 47.4 P <sub>99</sub> = 88.9																	Percent Operational Time: 100.0									
Day	Hourly Period Ending At (MST)																								Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	3	3	2	3	19	4	7	5	6	5	9	10	10	10	15	12	11	10	6	5	12	11	13	22	21.9	
2-May	5	12	17	10	8	39	20	9	8	10	14	13	17	28	73	29	20	34	10	52	21	6	46	18	72.6	
3-May	4	4	4	5	5	4	4	5	7	7	6	8	9	9	9	8	9	9	7	4	4	3	4	4	9.3	
4-May	3	2	2	3	7	4	6	4	6	8	9	10	13	11	8	7	5	4	7	4	3	5	16	6	15.9	
5-May	5	33	34	19	57	58	9	18	11	14	16	12	17	16	14	12	17	45	16	17	10	3	5	7	58.5	
6-May	4	3	3	3	2	4	23	10	12	11	20	13	59	40	41	48	53	17	63	64	14	14	11	9	63.6	
7-May	35	10	12	12	8	9	7	10	24	62	35	17	9	12	46	24	20	10	19	8	16	9	73	24	73.5	
8-May	85	30	17	12	15	60	19	56	19	25	19	26	26	49	15	45	59	27	84	71	21	35	41	8	84.8	
9-May	46	23	57	10	16	29	19	8	11	14	24	23	31	29	23	49	17	17	19	32	98	16	38	27	98.0	
10-May	16	12	5	4	6	37	35	10	18	26	18	33	29	46	22	39	39	24	28	19	9	8	12	23	45.9	
11-May	9	20	19	43	17	20	14	5	9	20	26	22	9	9	11	10	9	43	39	44	23	26	17	14	44.1	
12-May	6	10	10	32	8	32	59	8	14	10	19	13	7	20	68	7	11	12	11	11	19	16	23	18	68.2	
13-May	44	26	29	18	34	26	20	10	17	21	21	32	25	20	23	24	21	11	8	8	10	10	21	11	44.1	
14-May	6	6	8	7	6	7	11	17	11	13	18	14	15	12	11	11	11	9	8	8	7	7	6	4	18.0	
15-May	9	7	7	8	6	4	5	8	8	9	9	11	9	9	11	11	9	10	8	7	7	7	11	14	14.4	
16-May	5	62	7	87	19	20	16	16	14	16	24	16	14	14	21	19	19	13	9	6	5	6	13	8	87.4	
17-May	8	13	16	9	8	6	6	8	8	8	9	19	12	18	26	24	14	13	14	18	29	14	19	11	28.8	
18-May	21	12	8	10	9	4	6	8	8	12	13	14	24	30	32	56	26	24	33	15	18	8	7	10	56.1	
19-May	6	7	7	13	12	15	27	39	46	34	42	65	63	47	34	33	76	38	14	29	89	75	66	34	89.0	
20-May	34	47	78	53	89	11	22	41	56	18	44	27	71	61	41	16	18	25	21	14	10	9	8	12	89.1	
21-May	11	59	40	22	12	13	13	9	23	19	26	29	13	16	15	19	60	24	55	34	41	39	94	22	93.7	
22-May	27	37	42	53	79	48	54	53	33	23	42	24	28	30	18	17	9	15	11	55	72	25	18	14	79.2	
23-May	12	7	7	7	6	7	7	9	6	10	12	12	10	15	16	24	10	12	10	11	9	10	13	11	23.9	
24-May	28	82	44	37	11	11	20	21	33	79	89	83	25	19	18	17	21	14	10	5	5	15	33	21	88.9	
25-May	5	6	9	8	7	22	15	8	8	12	12	12	14	10	14	12	10	10	11	10	8	14	10	10	22.1	
26-May	14	11	8	7	10	7	7	7	8	6	9	9	11	11	9	13	19	10	8	11	16	7	8	10	19.3	
27-May	10	10	12	7	7	7	8	10	11	11	17	28	30	20	22	20	20	16	11	13	10	8	7	10	30.1	
28-May	9	8	9	13	21	20	14	11	14	13	12	19	22	36	23	33	19	20	10	8	13	11	9	7	36.4	
29-May	13	7	10	44	71	66	19	22	18	28	26	52	98	63	41	53	13	14	13	48	28	41	8	38	97.6	
30-May	23	66	51	12	37	78	42	11	12	14	20	25	32	19	25	27	22	17	19	12	8	64	64	38	78.1	
31-May	22	20	73	38	96	42	33	21	74	19	97	80	69	63	83	78	37	15	13	9	14	50	70	42	97.0	
84.8	81.7	78.5	87.4	95.5	78.1	59.0	56.2	73.7	78.8	97.0	82.7	97.6	63.3	83.1	77.9	76.3	45.1	83.7	71.1	98.0	75.2	93.7	41.6			

PAZA

Beaverlodge Station

Monthly Summary Tables, Graphs and  
Roses

## Hourly Averages

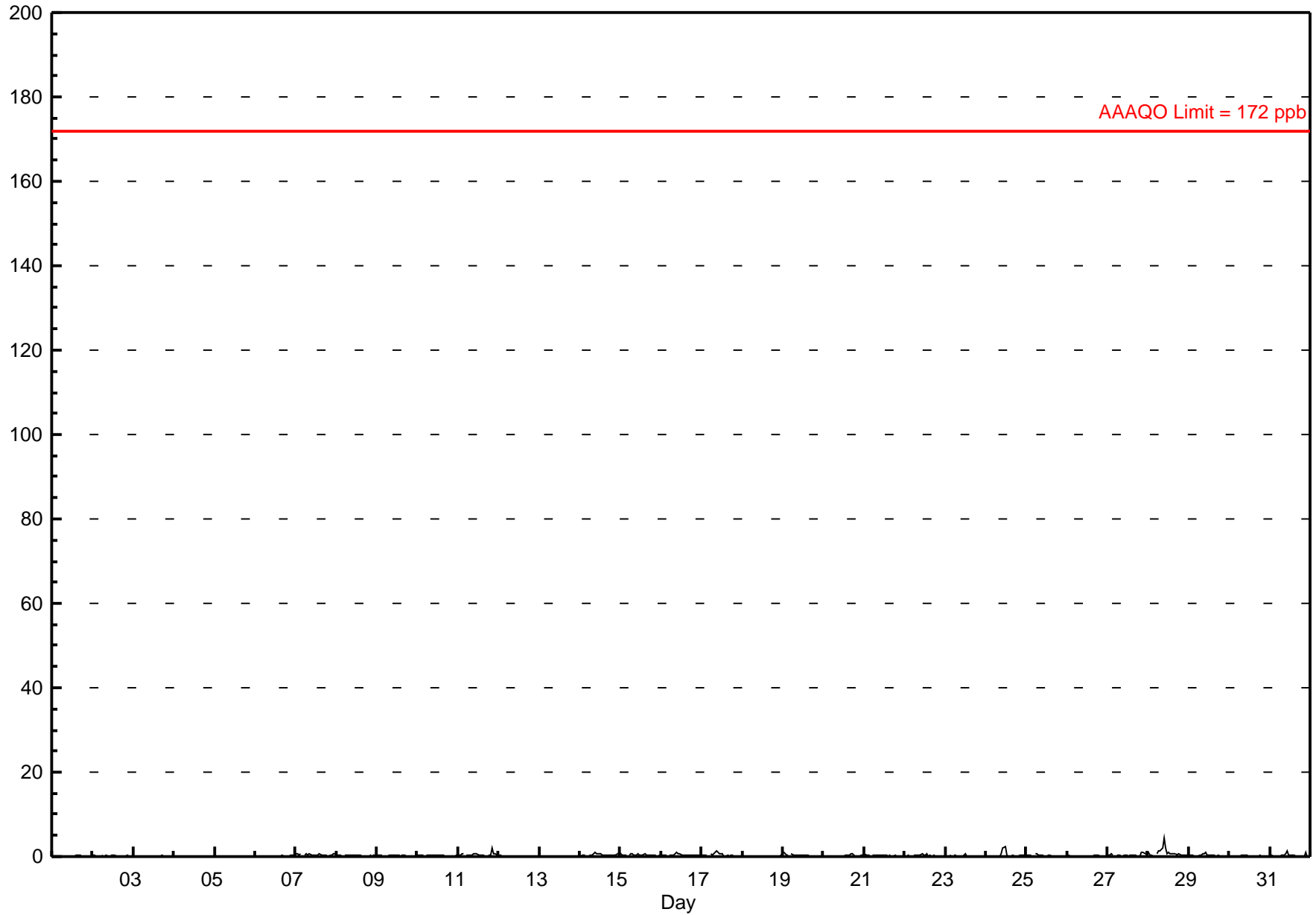
Sulphur Dioxide (SO<sub>2</sub>) - ppb

Beaverlodge - May 2011

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 4.5 ppb on May 28 10:00	Maximum Daily Average: 0.9 ppb on May 28		Hours of Data:	706
Minimum Value: 0 ppb on May 2 18:00	Minimum Daily Average: 0.0 ppb on May 5		Hours of Missing Data:	38
Maximum Diurnal Average: 0.5 ppb at hour 10	Minimum Diurnal Average: 0.1 ppb at hour 20		Hours of Calibration:	38
Monthly Average: 0.24 ppb	Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.1 Median = 0.2 Q <sub>3</sub> = 0.3 P <sub>90</sub> = 0.5 P <sub>99</sub> = 1.1		Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	
2-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
3-May	0	0	0	0	A	0	0	0	C	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	--	0.5	
4-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	
5-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	
6-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4	
7-May	1	1	0	1	A	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0.4	0.6	
8-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5	
9-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4	
10-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4	
11-May	0	1	1	1	A	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	2	1	1	0	0.5	2.0	
12-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3	
13-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	
14-May	0	0	0	0	A	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	1	0.5	1.1	
15-May	1	0	0	0	A	0	1	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0.4	0.7	
16-May	0	0	0	0	A	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.4	1.0	
17-May	0	0	0	0	A	1	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0.4	1.2	
18-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.3	
19-May	1	1	0	0	A	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	1.1	
20-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0.2	0.6	
21-May	1	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5	
22-May	0	0	0	0	A	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0.2	0.6	
23-May	0	0	0	0	A	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0.1	0.6	
24-May	0	0	0	0	A	0	0	0	0	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0.3	2.3	
25-May	0	0	0	0	A	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.6	
26-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	
27-May	0	0	1	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0.4	1.0	
28-May	1	0	0	0	A	1	1	1	2	5	2	1	1	1	1	1	1	1	1	0	0	0	0	0	0.9	4.5	
29-May	0	0	0	0	A	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.9	
30-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4	
31-May	0	0	0	0	A	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0.3	1.4	
	0.3	0.2	0.2	0.2	--	0.2	0.3	0.3	0.4	0.5	0.5	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	Diurnal Average		
	1.1	0.8	0.6	0.7	--	0.8	1.3	1.3	2.0	4.5	2.0	2.3	0.9	0.7	0.7	0.8	0.6	0.6	0.7	0.4	2.0	1.0	0.8	0.9	Diurnal Maximum		

C - Calibration      A - Automated Daily Zero Span  
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb    24-hr 48 ppb    30-day 11 ppb



## Hourly Maximums

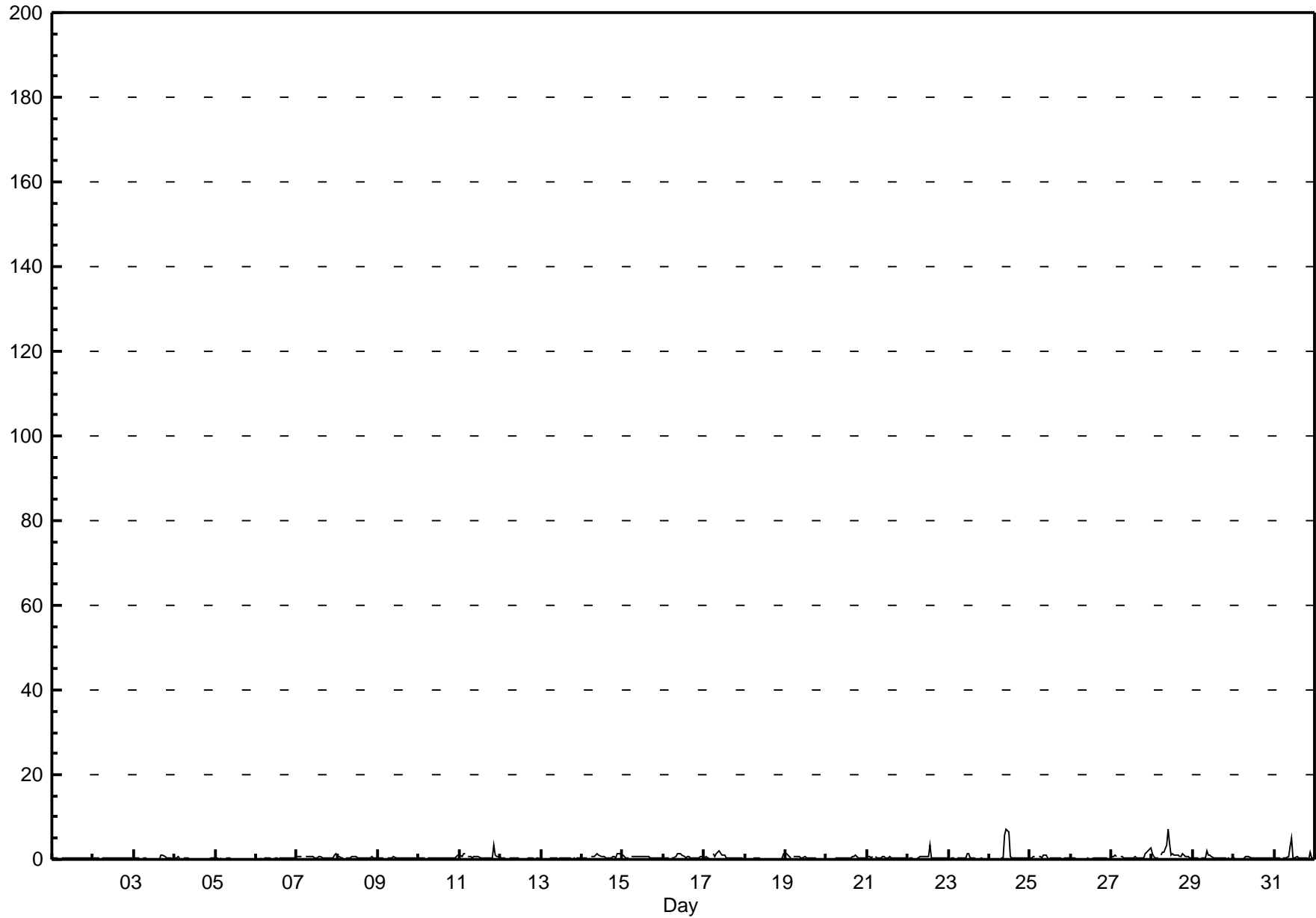
Sulphur Dioxide (SO<sub>2</sub>) - ppb

Beaverlodge - May 2011

Maximum Value: 7.2 ppb on May 28 10:00		Maximum Daily Average: 1.4 ppb on May 28		Hours in Service: 744																							
Minimum Value: 0 ppb on May 5 11:00		Minimum Daily Average: 0.1 ppb on May 5		Hours of Data: 706																							
Maximum Diurnal Average: 1.0 ppb at hour 10		Minimum Diurnal Average: 0.3 ppb at hour 20		Hours of Missing Data: 38																							
Monthly Average: 0.46 ppb		Percentiles: P <sub>1</sub> = 0.1 P <sub>10</sub> = 0.1 Q <sub>1</sub> = 0.2 Median = 0.3 Q <sub>3</sub> = 0.5 P <sub>90</sub> = 0.8 P <sub>99</sub> = 3.1		Hours of Calibration: 38																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3	
2-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.4	
3-May	0	0	0	0	A	0	0	0	C	C	C	C	C	C	C	0	1	1	1	0	0	0	0	0	--	1.0	
4-May	0	0	1	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5	
5-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4	
6-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	0.6	
7-May	1	1	1	1	A	1	1	1	1	1	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0.6	1.4	
8-May	1	1	0	0	A	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0.4	0.7	
9-May	0	0	0	0	A	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5	
10-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.3	0.9	
11-May	1	1	1	1	A	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	3	1	1	1	0.7	3.3	
12-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4	
13-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3	
14-May	0	0	0	0	A	1	1	1	1	1	1	1	1	1	0	0	0	0	1	1	0	1	1	1	0.7	1.5	
15-May	1	1	0	0	A	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0.5	1.0	
16-May	0	0	0	0	A	0	0	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	1	1	0.6	1.4	
17-May	0	1	0	0	A	1	1	1	2	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0.6	2.1	
18-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	1.3	
19-May	1	1	1	0	A	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0.4	1.4	
20-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0.3	1.1	
21-May	1	1	0	1	A	1	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0.4	0.8	
22-May	0	0	0	0	A	0	0	1	1	1	1	1	1	3	0	0	0	0	0	0	0	0	0	0	0.5	3.3	
23-May	0	0	0	0	A	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0.3	1.4	
24-May	0	0	0	0	A	0	0	0	0	6	7	6	1	0	0	0	0	0	0	0	0	0	0	0	1.0	7.0	
25-May	0	0	1	1	A	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.9	
26-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4	
27-May	1	1	1	1	A	1	1	0	0	0	0	0	0	0	1	1	0	0	0	0	1	2	2	3	0.7	2.7	
28-May	1	1	0	0	A	1	2	2	3	7	4	1	1	1	1	1	1	1	1	1	1	1	0	0	1.4	7.2	
29-May	0	0	0	0	A	0	0	0	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.5	2.0	
30-May	0	0	0	0	A	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.6	
31-May	0	0	0	0	A	0	0	0	1	3	5	0	0	1	0	0	0	0	0	0	0	0	2	0	0.7	4.9	
		0.4	0.4	0.4	0.3	--	0.4	0.4	0.5	0.6	1.0	0.9	0.6	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.5	Diurnal Average
		1.4	1.0	1.3	1.3	--	1.4	1.6	1.6	3.4	7.2	7.0	6.3	1.4	3.3	0.9	1.0	0.9	1.1	1.2	0.5	3.3	1.8	2.2	2.7	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									

### Hourly Maximums

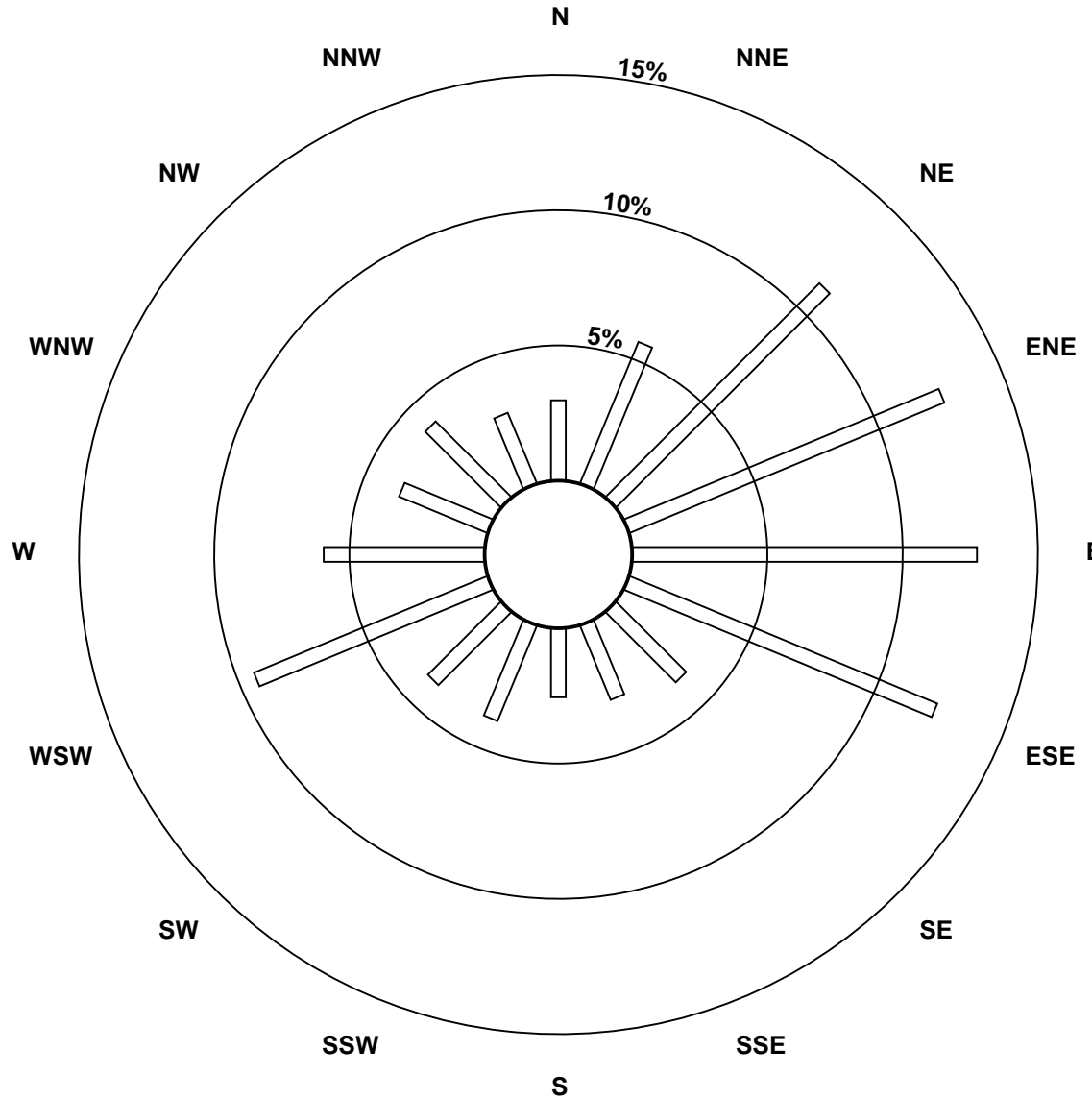
Sulphur Dioxide (SO<sub>2</sub>) - ppb  
Beaverlodge - May 2011



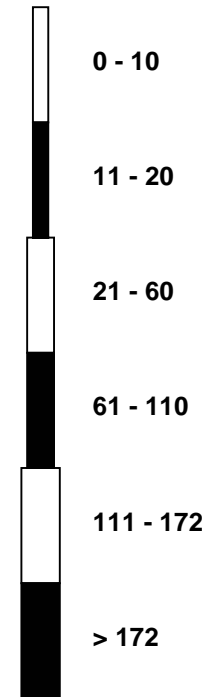


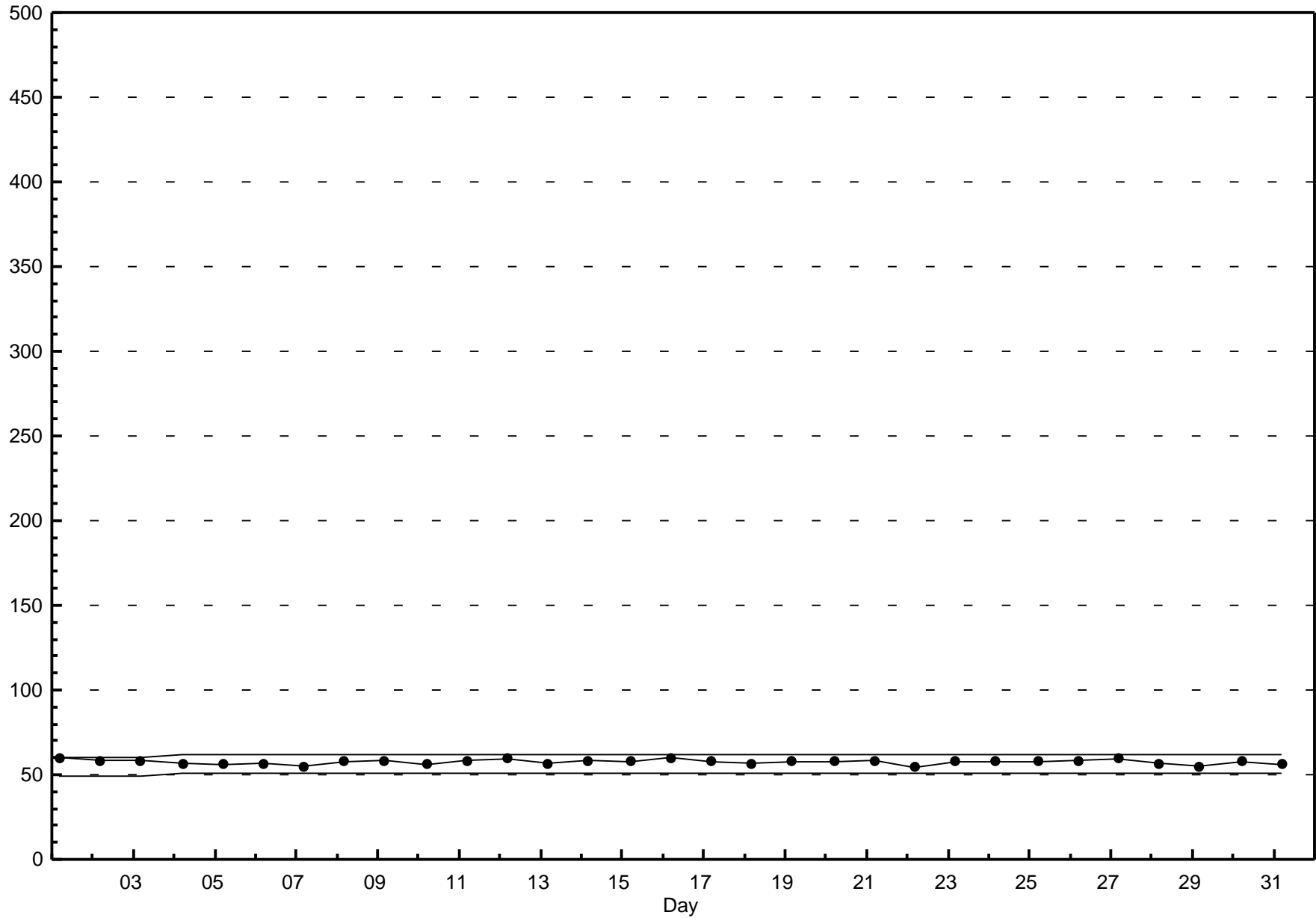
**Pollutant Rose**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Beaverlodge - May 2011**



**Pollutant Classes (ppb)**





## Hourly Averages

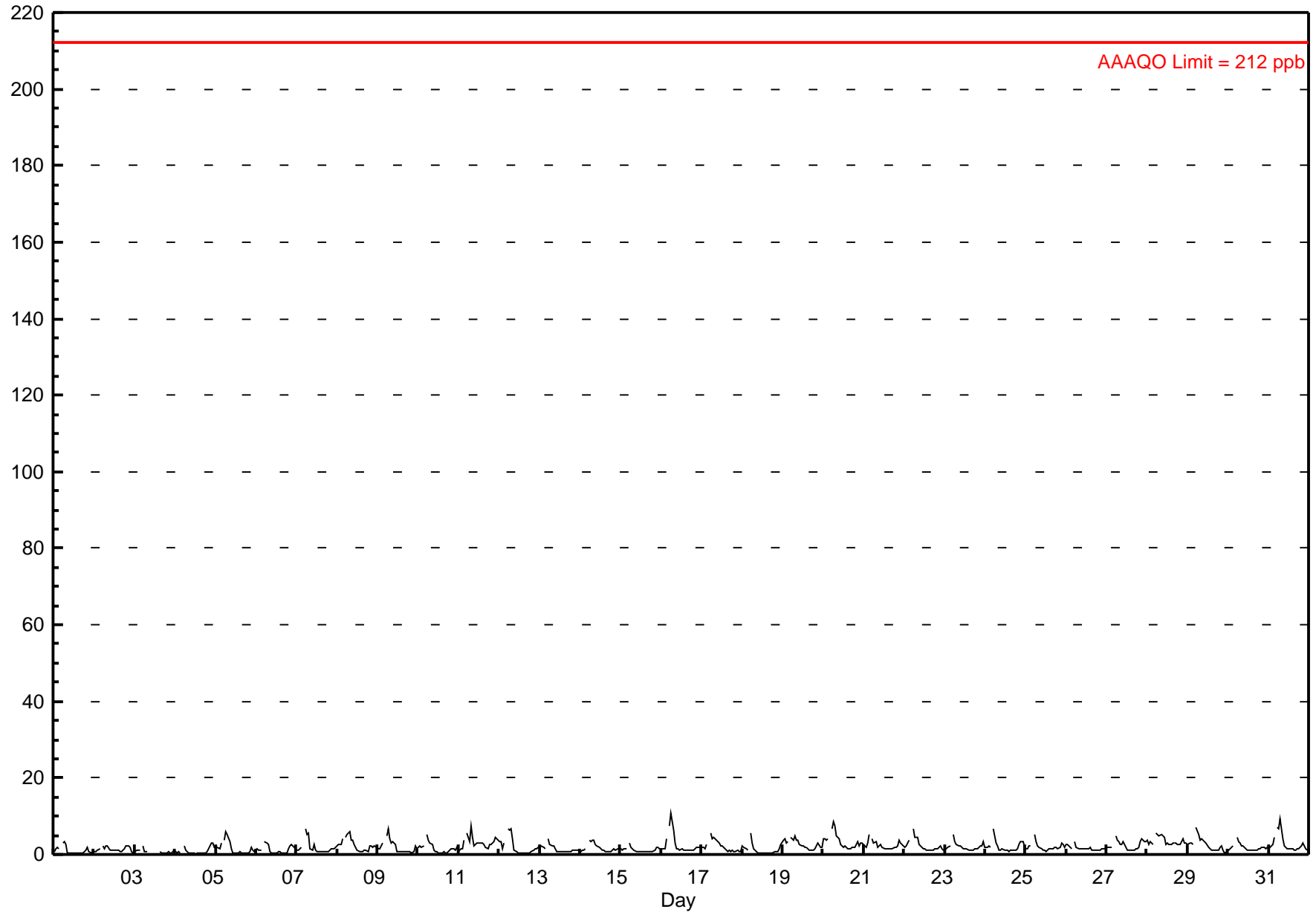
## Nitrogen Dioxide (NO<sub>2</sub>) - ppb

### Beaverlodge - May 2011

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 10.7 ppb on May 16 07:00	Maximum Daily Average: 3.5 ppb on May 28		Hours of Data:	706
Minimum Value: 0 ppb on May 4 13:00	Minimum Daily Average: 0.9 ppb on May 4		Hours of Missing Data:	38
Maximum Diurnal Average: 4.8 ppb at hour 6	Minimum Diurnal Average: 1.0 ppb at hour 17		Hours of Calibration:	38
Monthly Average: 1.98 ppb	Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 0.6 Q <sub>1</sub> = 1.0 Median = 1.6 Q <sub>3</sub> = 2.6 P <sub>90</sub> = 3.9 P <sub>99</sub> = 6.9		Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	1	2	2	2	A	3	3	3	1	0	0	0	0	0	0	0	0	0	1	1	2	1	1	1	1.1	3.4
2-May	1	1	1	1	A	2	2	2	2	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1	1.3	2.4
3-May	1	1	1	1	A	2	1	1	C	C	C	C	C	C	C	1	0	0	0	0	1	0	1	1	--	2.1
4-May	1	0	1	1	A	2	1	1	0	0	0	0	0	0	0	0	0	0	0	1	2	3	3	2	0.9	3.1
5-May	2	2	1	3	A	4	6	5	3	1	1	0	0	0	1	0	0	0	0	0	1	2	1	1	1.6	6.1
6-May	2	1	1	1	A	3	3	3	1	0	0	0	0	1	1	0	0	0	0	2	2	3	2	1	1.2	3.3
7-May	1	1	1	2	A	7	5	5	2	1	3	1	1	1	1	1	1	1	1	1	1	2	1	2	1.8	6.9
8-May	2	2	3	4	A	5	5	6	4	4	2	2	1	1	1	1	1	1	1	2	2	2	2	2	2.4	5.9
9-May	2	2	2	3	A	5	7	4	3	3	3	1	1	1	1	1	1	1	1	1	0	1	2	2	2.0	6.7
10-May	2	2	2	2	A	5	4	3	3	1	1	1	1	1	0	1	0	0	1	1	1	2	1	2	1.6	5.3
11-May	1	1	2	4	A	5	3	8	4	2	3	3	3	3	3	2	1	3	3	3	3	3	4	4	3.1	7.6
12-May	3	3	2	3	A	7	6	7	4	1	1	1	0	0	0	1	1	0	0	1	1	2	1	2	2.0	6.6
13-May	2	2	2	2	A	4	3	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.4	4.3
14-May	1	1	1	1	A	4	3	4	4	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1.7	3.8
15-May	1	1	1	1	A	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	1.2	3.0
16-May	1	1	1	4	A	7	11	6	3	2	2	1	1	1	1	1	1	1	1	1	1	2	2	2	2.4	10.7
17-May	2	2	2	3	A	6	4	5	4	4	3	2	2	2	1	1	1	1	1	1	1	1	1	1	2.1	5.5
18-May	2	2	1	1	A	5	3	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	2	3	1.2	5.4
19-May	4	4	3	3	A	4	4	5	4	4	3	2	2	2	2	1	1	1	1	1	2	3	2	2	2.7	5.0
20-May	4	4	4	4	A	7	9	8	5	4	3	2	2	2	2	2	2	2	2	2	3	2	3	3	3.4	8.7
21-May	3	2	3	5	A	4	3	3	2	2	2	2	2	1	1	1	1	2	2	2	2	4	3	2	2.4	5.1
22-May	2	2	3	4	A	7	4	5	5	3	2	2	1	1	1	1	1	1	1	1	2	2	2	1	2.3	6.6
23-May	1	1	2	2	A	5	3	3	2	2	2	2	1	1	1	1	1	1	1	2	2	2	2	3	2.0	5.2
24-May	2	2	2	2	A	7	3	2	1	1	2	1	1	1	1	1	1	1	1	1	3	3	3	2	2.0	6.8
25-May	2	2	2	2	A	5	3	2	2	2	1	1	1	1	2	2	2	2	2	2	2	3	3	2	2.0	5.2
26-May	3	3	2	2	A	3	2	2	1	1	1	1	2	2	2	1	1	1	1	1	1	1	1	2	1.6	3.3
27-May	2	2	2	2	A	5	4	3	3	3	3	2	1	1	1	1	1	1	1	2	3	4	3	3	2.4	4.9
28-May	4	3	3	3	A	6	5	5	5	5	5	3	3	3	3	3	3	3	3	3	3	4	3	3	3.5	5.5
29-May	3	3	3	3	A	7	5	4	4	4	3	3	2	1	1	1	1	1	1	2	2	1	1	1	2.5	6.9
30-May	1	1	2	2	A	5	3	3	2	2	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1.8	4.5
31-May	1	2	3	4	A	7	7	9	4	2	2	2	2	2	1	1	1	1	2	2	3	2	2	1	2.8	9.3
	1.8	1.9	2.0	2.5	--	4.8	4.1	3.9	2.7	2.1	1.8	1.4	1.2	1.2	1.1	1.0	1.0	1.0	1.1	1.4	1.8	2.1	1.9	1.8	Diurnal Average	
	4.1	4.3	3.8	5.1	--	7.3	10.7	9.3	5.2	5.0	4.6	2.9	3.1	2.9	3.0	2.9	2.9	2.8	2.7	2.8	3.4	4.1	4.3	3.7	Diurnal Maximum	

C - Calibration      A - Automated Daily Zero Span  
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 212 ppb    24-hr 106 ppb



## Hourly Maximums

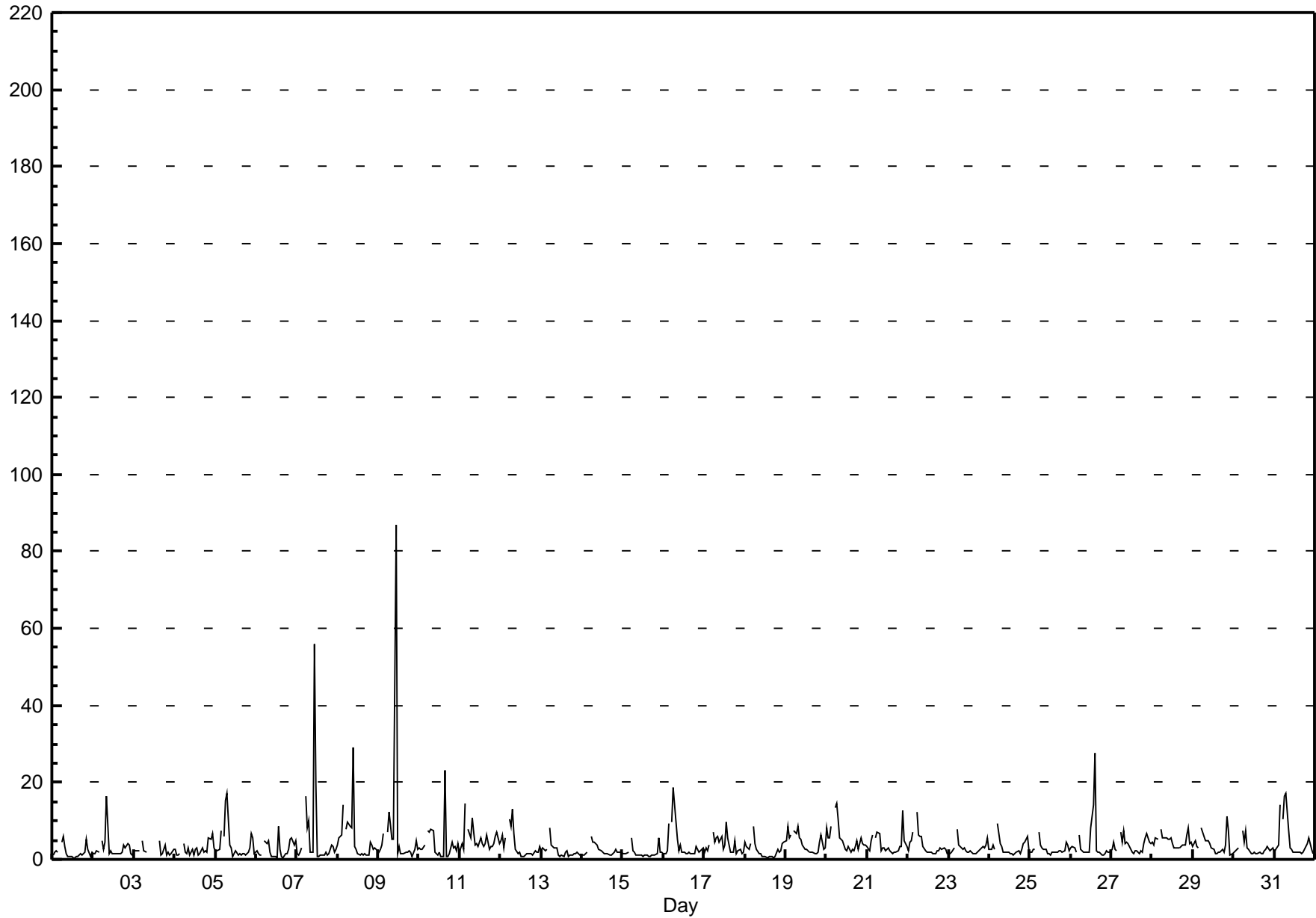
Nitrogen Dioxide (NO<sub>2</sub>) - ppb

Beaverlodge - May 2011

Maximum Value: 86.7 ppb on May 9 11:00		Maximum Daily Average: 7.3 ppb on May 9		Hours in Service: 744																							
Minimum Value: 0 ppb on May 18 14:00		Minimum Daily Average: 1.7 ppb on May 15		Hours of Data: 706																							
Maximum Diurnal Average: 7.8 ppb at hour 6		Minimum Diurnal Average: 1.7 ppb at hour 17		Hours of Missing Data: 38																							
Monthly Average: 3.68 ppb		Percentiles: P <sub>1</sub> = 0.6 P <sub>10</sub> = 1.2 Q <sub>1</sub> = 1.7 Median = 2.4 Q <sub>3</sub> = 4.3 P <sub>90</sub> = 7.0 P <sub>99</sub> = 18.1		Hours of Calibration: 38																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-May	1	2	2	2	A	4	6	3	1	1	1	1	1	1	1	1	1	1	1	2	5	2	1	2	1.9	5.8	
2-May	1	2	2	2	A	5	2	5	17	2	2	1	1	1	2	2	1	2	4	3	4	4	2	1	2.9	16.5	
3-May	2	2	2	2	A	5	2	2	C	C	C	C	C	C	5	1	2	4	1	2	1	2	3	--	5.0		
4-May	3	1	1	2	A	4	2	1	3	1	3	1	3	3	1	1	3	2	2	2	5	5	7	3	2.6	6.7	
5-May	2	2	3	7	A	6	15	17	4	3	1	1	2	1	2	1	2	2	1	2	3	7	6	1	4.0	17.1	
6-May	2	1	1	1	A	5	4	5	2	1	1	1	1	9	3	1	1	2	1	3	5	6	4	5	2.7	8.6	
7-May	1	1	2	3	A	16	8	10	2	2	56	20	1	1	1	1	1	2	1	1	4	3	2	2	6.2	56.0	
8-May	4	6	6	14	A	8	10	9	8	29	3	3	2	1	1	1	2	1	1	4	4	3	3	2	5.4	29.1	
9-May	2	2	4	7	A	7	12	9	5	5	87	2	3	2	2	1	2	2	2	2	1	3	5	3	7.3	86.7	
10-May	3	3	3	4	A	8	7	8	7	2	1	1	2	1	1	23	1	1	2	5	3	3	2	4	4.0	23.3	
11-May	2	4	3	15	A	8	6	11	7	4	4	3	6	4	4	4	6	3	3	4	4	6	7	4	5.2	14.7	
12-May	5	7	3	6	A	10	8	13	7	3	2	2	1	1	1	1	2	1	2	1	2	2	2	3	3.6	13.0	
13-May	2	3	2	3	A	8	4	3	3	3	1	1	1	1	2	2	1	1	1	2	2	2	2	1	2.2	8.3	
14-May	1	1	1	2	A	6	4	4	4	4	3	2	2	1	2	1	1	1	1	2	2	2	2	2	2.3	5.9	
15-May	2	1	1	2	A	6	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	6	2	2	1.7	5.7	
16-May	2	2	2	9	A	10	19	10	5	2	4	2	2	1	1	2	1	2	2	3	3	2	2	3	3.9	18.7	
17-May	2	3	2	4	A	7	5	6	6	4	6	3	4	10	6	2	2	2	5	2	2	3	2	2	3.8	9.8	
18-May	4	3	3	4	A	9	4	3	1	1	1	1	0	1	1	1	1	1	1	3	2	2	4	5	2.3	8.6	
19-May	5	9	6	6	A	7	7	9	5	5	4	3	3	2	2	2	2	2	1	2	4	6	3	3	4.2	8.6	
20-May	8	6	5	9	A	13	14	10	6	5	4	3	2	3	2	3	2	4	5	3	5	4	4	4	5.4	14.4	
21-May	3	2	5	6	A	6	7	7	2	3	3	2	3	2	2	2	2	2	2	3	3	13	5	3	3.8	12.5	
22-May	2	4	5	7	A	12	6	6	6	3	2	2	2	2	2	2	1	2	2	3	3	3	3	1	3.6	12.3	
23-May	1	2	2	3	A	8	4	3	2	3	2	2	2	2	2	1	2	2	2	3	3	3	4	6	2.8	7.7	
24-May	3	3	4	3	A	9	4	3	2	2	2	2	2	2	1	1	2	2	1	3	4	4	6	2	2.9	9.3	
25-May	2	2	3	3	A	7	4	3	3	3	1	1	1	2	2	2	2	2	2	2	2	4	4	2	2.5	7.2	
26-May	3	3	3	2	A	6	3	2	2	2	2	2	8	14	27	2	2	2	1	1	2	2	2	2	4.1	27.4	
27-May	3	5	3	2	A	7	5	7	4	5	4	2	2	2	2	2	2	2	2	4	5	7	4	4	3.7	7.3	
28-May	4	4	6	5	A	8	6	5	6	5	5	6	4	3	3	3	3	4	4	4	6	8	4	5	4.8	8.3	
29-May	3	5	3	3	A	8	6	5	5	5	4	3	3	2	1	2	2	3	2	4	11	7	1	2	3.8	11.2	
30-May	2	2	3	3	A	8	5	7	3	3	2	1	2	1	1	2	1	2	2	3	3	2	2	3	2.8	7.5	
31-May	2	3	4	14	A	10	16	17	8	3	2	2	2	2	2	2	2	2	2	4	5	4	3	2	4.8	17.0	
		2.7	3.1	3.0	4.9	--	7.8	6.7	6.6	4.6	3.8	7.1	2.5	2.2	2.6	2.6	2.5	1.7	1.8	2.1	2.6	3.7	4.2	3.2	2.8	Diurnal Average	
		8.4	8.6	6.4	14.7	--	16.4	18.7	17.1	16.5	29.1	86.7	19.8	8.2	14.1	27.4	23.3	6.5	3.5	4.9	4.5	11.2	12.5	6.9	5.7	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									

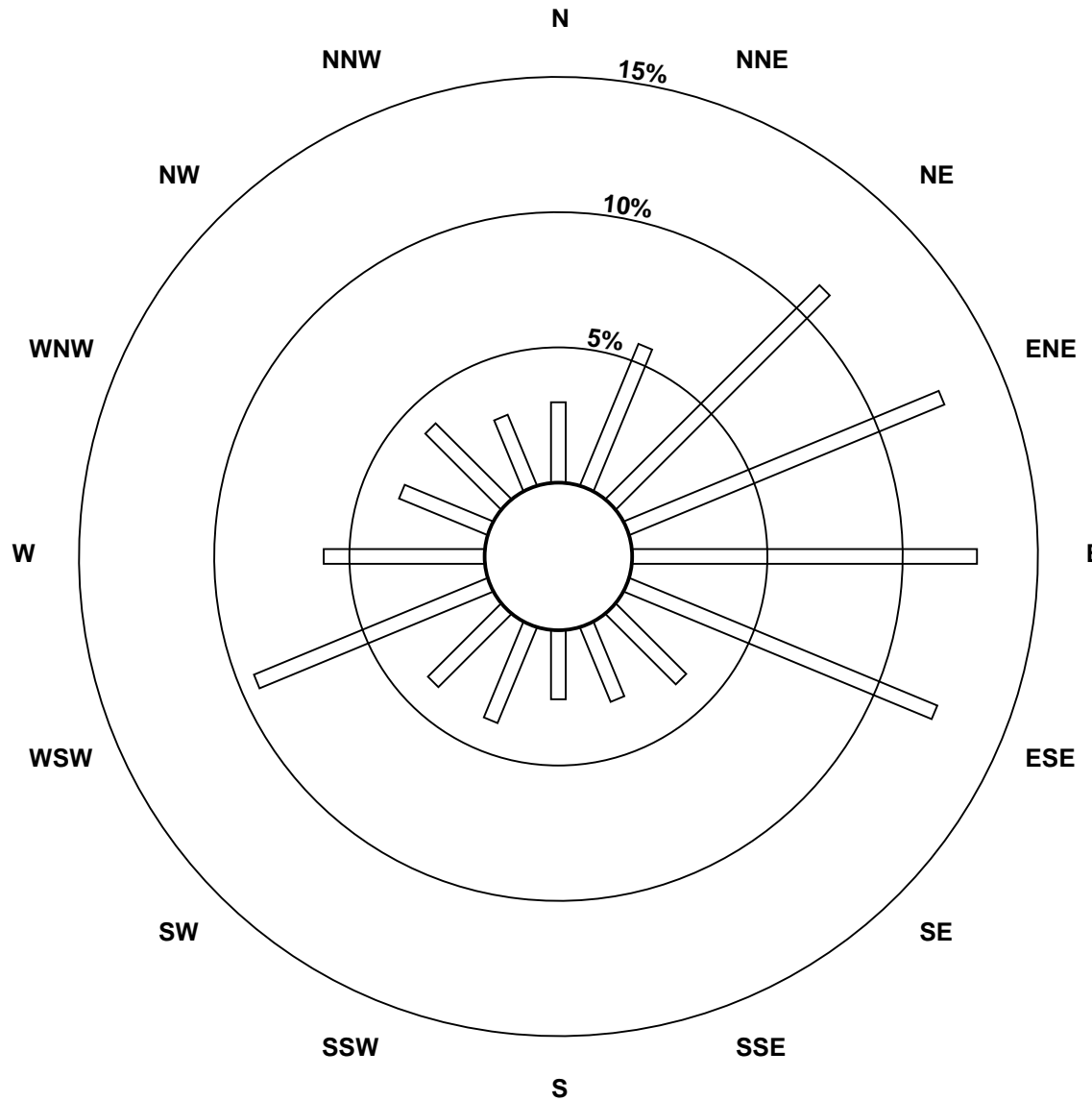
### Hourly Maximums

Nitrogen Dioxide (NO<sub>2</sub>) - ppb  
Beaverlodge - May 2011

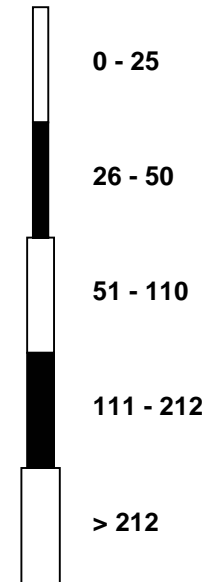


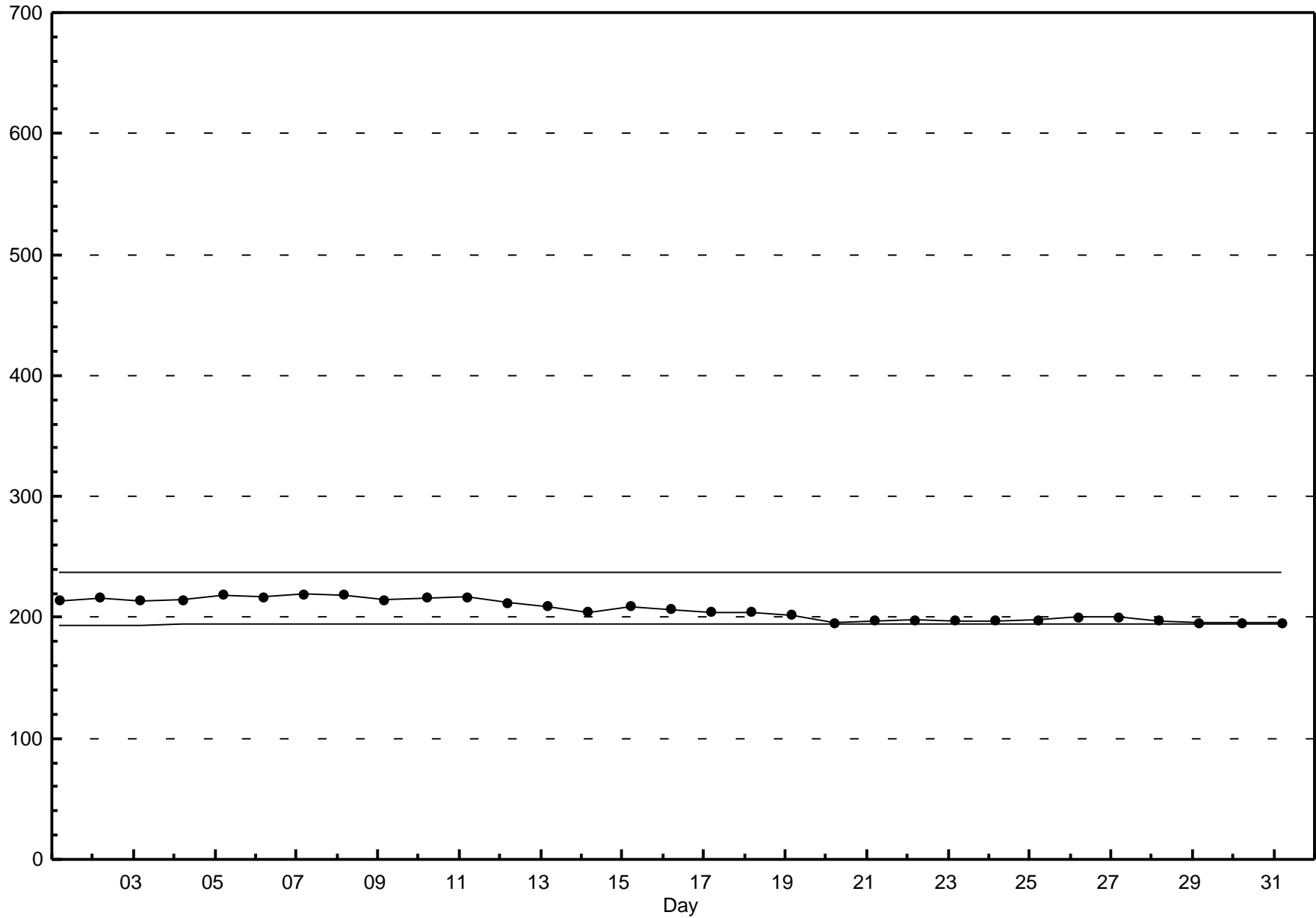
**Pollutant Rose**

**Nitrogen Dioxide (NO<sub>2</sub>) - ppb**  
**Beaverlodge - May 2011**



**Pollutant Classes (ppb)**







## Hourly Averages

Nitrogen Oxide (NO) - ppb

Beaverlodge - May 2011

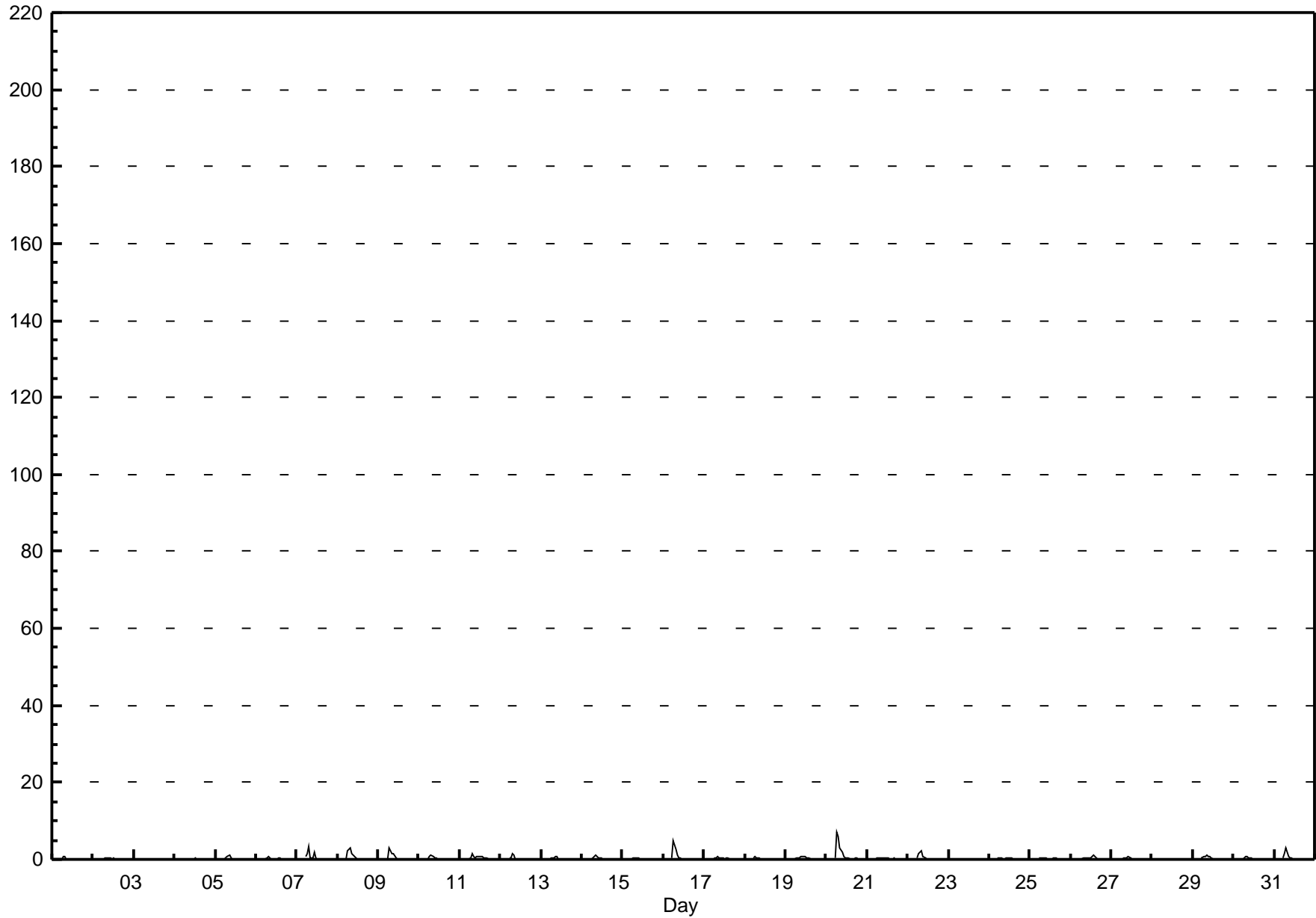
Number of Exceedences (AAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 7.0 ppb on May 20 07:00	Maximum Daily Average: 0.9 ppb on May 20		Hours of Data:	706
Minimum Value: 0 ppb on May 1 22:00	Minimum Daily Average: 0.0 ppb on May 28		Hours of Missing Data:	38
Maximum Diurnal Average: 1.1 ppb at hour 8	Minimum Diurnal Average: 0.0 ppb at hour 2		Hours of Calibration:	38
Monthly Average: 0.23 ppb	Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.1 Q <sub>3</sub> = 0.2 P <sub>90</sub> = 0.5 P <sub>99</sub> = 2.9		Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	0	0	0	0	A	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.7
2-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
3-May	0	0	0	0	A	0	0	0	C	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	--	0.2
4-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
5-May	0	0	0	0	A	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1.0
6-May	0	0	0	0	A	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0.1	0.8
7-May	0	0	0	0	A	1	2	3	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	3.2
8-May	0	0	0	0	A	0	2	3	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	3.1
9-May	0	0	0	0	A	0	3	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	2.9
10-May	0	0	0	0	A	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1.0
11-May	0	0	0	0	A	0	0	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0.3	1.4
12-May	0	0	0	0	A	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1.6
13-May	0	0	0	0	A	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.8
14-May	0	0	0	0	A	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1.0
15-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
16-May	0	0	0	0	A	1	5	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	4.7
17-May	0	0	0	0	A	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.6
18-May	0	0	0	0	A	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.8
19-May	0	0	0	0	A	0	0	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.8
20-May	0	0	0	0	A	1	7	6	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.9	7.0
21-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
22-May	0	0	0	0	A	0	1	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	2.3
23-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
24-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
25-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
26-May	0	0	0	0	A	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0.2	1.2
27-May	0	0	0	0	A	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.7
28-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
29-May	0	0	0	0	A	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1.0
30-May	0	0	0	0	A	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.9
31-May	0	0	0	0	A	0	1	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	2.9
	0.0	0.0	0.0	0.0	--	0.2	0.9	1.1	0.7	0.5	0.4	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	Diurnal Average	
	0.1	0.1	0.1	0.1	--	0.6	7.0	6.0	2.9	1.9	1.8	0.9	0.7	1.2	0.9	0.4	0.2	0.3	0.2	0.1	0.1	0.1	0.1	0.1	Diurnal Maximum	

C - Calibration                      A - Automated Daily Zero Span

**Hourly Averages**

**Nitrogen Oxide (NO) - ppb**  
**Beaverlodge - May 2011**



## Hourly Maximums

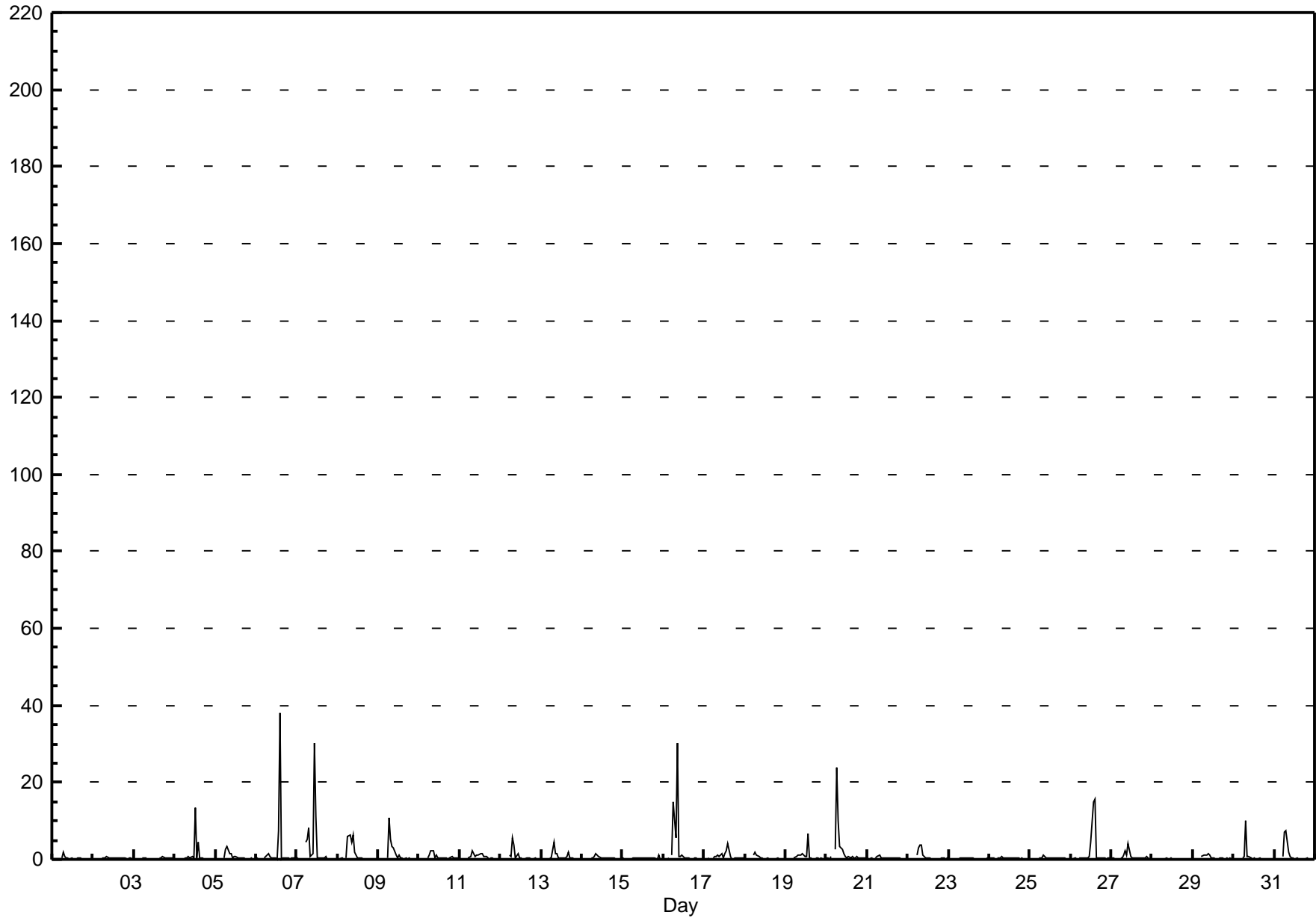
Nitrogen Oxide (NO) - ppb

Beaverlodge - May 2011

Maximum Value: 38.1 ppb on May 6 15:00		Maximum Daily Average: 2.8 ppb on May 7		Hours in Service: 744																						
Minimum Value: 0 ppb on May 29 01:00		Minimum Daily Average: 0.2 ppb on May 28		Hours of Data: 706																						
Maximum Diurnal Average: 2.9 ppb at hour 7		Minimum Diurnal Average: 0.1 ppb at hour 3		Hours of Missing Data: 38																						
Monthly Average: 0.85 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.1 Q <sub>1</sub> = 0.2 Median = 0.2 Q <sub>3</sub> = 0.5 P <sub>90</sub> = 1.3 P <sub>99</sub> = 15.0		Hours of Calibration: 38																						
				Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	0	0	0	0	A	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	1.8
2-May	0	0	0	0	A	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.6
3-May	0	0	0	0	A	0	0	1	C	C	C	C	C	C	0	0	1	0	0	1	0	0	0	--	0.6	
4-May	0	0	0	0	A	0	0	0	1	0	1	0	13	0	4	0	0	0	0	0	0	0	0	1.0	13.5	
5-May	0	0	0	0	A	0	3	3	2	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0.6	3.4	
6-May	0	0	0	0	A	0	1	2	1	0	0	0	7	38	0	0	0	0	0	0	0	0	1	2.3	38.1	
7-May	0	0	0	0	A	5	5	8	1	2	30	11	0	0	1	0	1	0	0	0	0	0	0	2.8	30.1	
8-May	0	0	0	0	A	0	6	6	4	6	2	1	0	0	0	0	0	0	0	0	0	0	0	1.3	6.5	
9-May	0	0	0	0	A	0	11	5	3	3	1	1	1	0	0	0	0	0	0	0	0	0	0	1.2	10.7	
10-May	0	0	0	0	A	0	1	2	2	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0.5	2.4	
11-May	0	0	0	0	A	0	1	2	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0.6	2.3	
12-May	0	0	0	0	A	1	1	6	4	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0.7	5.5	
13-May	0	0	0	0	A	1	0	4	1	1	0	0	0	0	1	2	0	0	0	0	0	0	0	0.6	4.4	
14-May	0	0	0	0	A	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0.4	1.3	
15-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0.3	1.1	
16-May	0	0	0	0	A	1	15	5	30	1	1	1	0	0	0	0	0	0	0	0	0	0	0	2.5	30.2	
17-May	0	0	0	0	A	0	1	1	1	1	2	1	1	2	4	1	0	0	0	0	1	0	0	0.7	3.9	
18-May	0	0	0	0	A	1	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	1.9	
19-May	0	0	0	0	A	0	1	1	1	1	1	1	1	7	0	0	0	0	0	0	0	0	0	0.8	6.7	
20-May	0	0	0	1	A	3	24	10	4	3	1	1	0	1	0	1	0	1	1	0	0	0	0	2.2	23.9	
21-May	0	0	0	0	A	0	1	1	0	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0.4	1.0	
22-May	0	0	0	0	A	1	3	4	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.7	3.8	
23-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5	
24-May	0	0	0	0	A	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0.3	0.6	
25-May	0	0	0	0	A	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	1.0	
26-May	0	0	0	0	A	0	0	0	0	0	0	1	4	15	16	0	0	0	0	0	0	0	0	1.8	15.5	
27-May	0	0	0	0	A	0	0	1	2	1	4	1	1	0	0	0	0	0	0	0	0	1	0	0.6	4.1	
28-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3	
29-May	0	0	0	0	A	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0.4	1.4	
30-May	0	0	0	0	A	0	1	10	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.7	10.1	
31-May	0	0	0	0	A	1	7	8	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.9	7.5	
		0.1	0.1	0.1	0.2	--	0.6	2.9	2.8	2.4	1.0	1.8	0.8	1.0	1.3	2.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.2	Diurnal Average
		0.3	0.3	0.3	0.6	--	4.5	23.9	10.2	30.2	6.5	30.1	11.2	13.5	15.1	38.1	0.8	1.9	0.6	0.6	0.7	0.6	1.1	0.4	0.6	Diurnal Maximum
C - Calibration		A - Automated Daily Zero Span																								

### Hourly Maximums

Nitrogen Oxide (NO) - ppb  
Beaverlodge - May 2011



## Hourly Averages

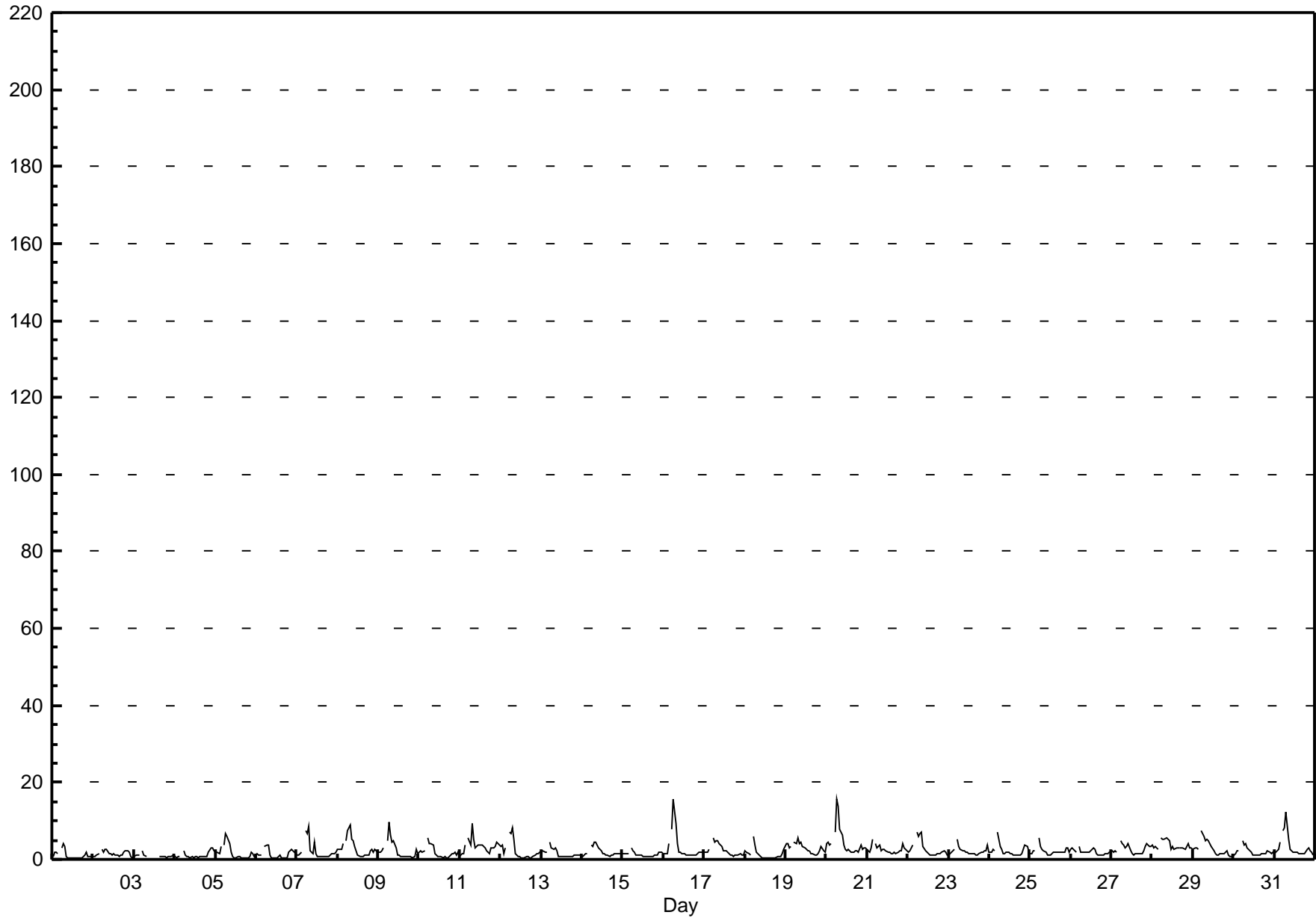
## Oxides of Nitrogen (NO<sub>x</sub>) - ppb

### Beaverlodge - May 2011

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 15.7 ppb on May 20 07:00	Maximum Daily Average: 4.4 ppb on May 20		Hours of Data:	706
Minimum Value: 0 ppb on May 6 17:00	Minimum Daily Average: 1.0 ppb on May 4		Hours of Missing Data:	38
Maximum Diurnal Average: 5.1 ppb at hour 7	Minimum Diurnal Average: 1.1 ppb at hour 18		Hours of Calibration:	38
Monthly Average: 2.25 ppb	Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 0.6 Q <sub>1</sub> = 1.1 Median = 1.7 Q <sub>3</sub> = 2.9 P <sub>90</sub> = 4.3 P <sub>99</sub> = 9.2		Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	1	2	2	2	A	3	4	3	1	0	0	0	0	0	0	0	1	1	1	1	2	1	1	1	1.2	4.1
2-May	1	1	1	1	A	3	2	3	3	2	1	1	1	1	1	1	1	1	2	2	2	2	1	1	1.5	2.6
3-May	1	1	1	1	A	2	1	1	C	C	C	C	C	C	C	1	1	1	1	1	1	1	1	1	--	2.2
4-May	1	0	1	1	A	2	1	1	1	1	1	1	1	1	0	1	1	1	1	1	2	3	3	2	1.0	3.1
5-May	2	2	2	3	A	4	7	6	4	2	1	1	1	1	1	0	1	1	0	0	1	2	1	1	1.8	6.6
6-May	2	1	1	1	A	3	4	4	1	1	0	0	0	1	1	0	0	1	0	2	2	3	2	1	1.4	3.7
7-May	1	1	1	2	A	8	7	9	2	1	5	1	1	1	1	1	1	1	1	1	1	2	2	2	2.2	8.8
8-May	2	3	3	4	A	5	8	9	5	5	3	2	1	1	1	1	1	1	1	2	2	2	2	2	2.9	9.1
9-May	2	2	2	3	A	5	10	6	5	5	3	1	1	1	1	1	1	1	1	1	0	1	2	2	2.4	9.7
10-May	2	2	2	2	A	5	4	4	4	2	1	1	1	1	0	1	1	1	1	2	2	2	1	2	1.8	5.5
11-May	1	1	2	4	A	6	4	9	5	3	3	4	4	3	3	2	2	3	3	3	3	3	4	4	3.5	9.2
12-May	3	4	2	3	A	7	7	8	5	1	1	1	0	0	0	1	1	1	1	1	1	2	2	2	2.3	8.3
13-May	2	2	2	2	A	4	3	3	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.6	4.5
14-May	1	1	1	2	A	4	3	4	5	4	3	2	2	1	1	1	1	1	1	1	2	1	2	2	2.0	4.7
15-May	1	1	1	1	A	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	1.3	3.1
16-May	2	1	1	4	A	8	16	9	4	2	2	1	2	1	1	1	1	1	1	1	1	2	2	2	2.9	15.6
17-May	2	2	2	3	A	6	4	5	5	4	3	2	2	2	2	1	1	1	1	1	1	1	1	1	2.3	5.7
18-May	2	2	2	1	A	6	4	2	1	1	0	0	0	0	0	0	1	1	1	1	1	1	2	3	1.4	5.9
19-May	4	4	3	3	A	5	4	5	4	4	3	3	3	2	2	2	1	1	1	1	1	2	3	2	2.9	5.5
20-May	4	4	4	4	A	7	16	14	8	6	4	3	2	3	2	2	2	2	2	2	2	4	2	3	4.4	15.7
21-May	3	2	3	5	A	4	3	4	2	3	3	2	2	2	2	2	2	2	2	2	2	4	3	2	2.6	5.2
22-May	2	2	3	4	A	7	6	7	7	3	2	2	2	1	1	1	1	1	2	2	2	2	2	1	2.7	7.1
23-May	1	1	2	2	A	5	3	3	2	2	2	2	2	2	1	1	1	1	2	2	2	2	2	4	2.1	5.3
24-May	2	2	3	2	A	7	3	3	1	1	2	2	2	1	1	1	1	1	1	2	3	4	4	2	2.2	7.1
25-May	2	2	2	2	A	5	3	3	2	2	1	1	1	2	2	2	2	2	2	2	2	3	3	2	2.1	5.5
26-May	3	3	2	2	A	3	2	2	2	2	2	2	2	3	3	1	1	1	1	1	1	2	2	2	1.9	3.4
27-May	2	2	2	2	A	5	4	4	3	3	4	2	1	1	1	1	1	2	2	2	3	4	4	4	2.6	5.0
28-May	4	3	3	3	A	6	5	5	5	5	5	3	3	3	3	3	3	3	3	3	3	4	3	3	3.6	5.6
29-May	3	3	3	3	A	7	6	5	5	5	4	3	2	2	1	1	1	1	1	2	2	1	1	1	2.8	7.3
30-May	1	2	2	2	A	5	4	4	3	3	2	1	1	1	1	1	1	1	1	2	2	2	2	2	2.0	4.7
31-May	1	2	3	4	A	7	8	12	5	3	2	2	2	2	2	1	1	2	2	2	3	2	2	1	3.1	12.3
	1.9	2.0	2.0	2.5	--	5.1	5.1	5.1	3.5	2.6	2.2	1.6	1.4	1.4	1.3	1.2	1.1	1.1	1.2	1.5	1.9	2.1	2.0	1.9	Diurnal Average	
	4.2	4.3	3.9	5.2	--	7.9	15.7	13.7	7.7	6.2	4.7	3.9	3.8	3.6	3.4	3.1	3.0	2.9	2.9	2.9	3.6	4.2	4.3	3.7	Diurnal Maximum	

C - Calibration                      A - Automated Daily Zero Span

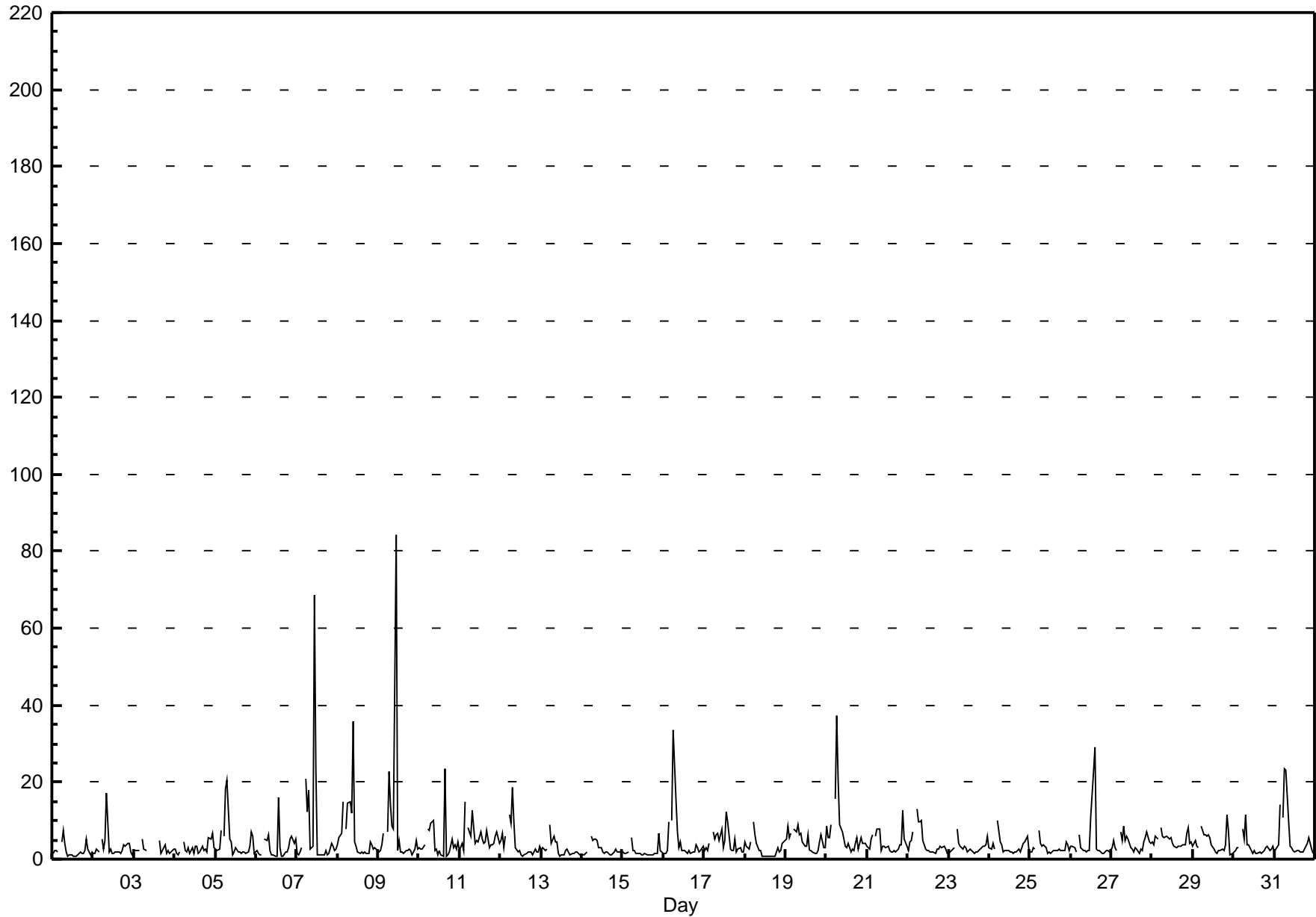


# Hourly Maximums

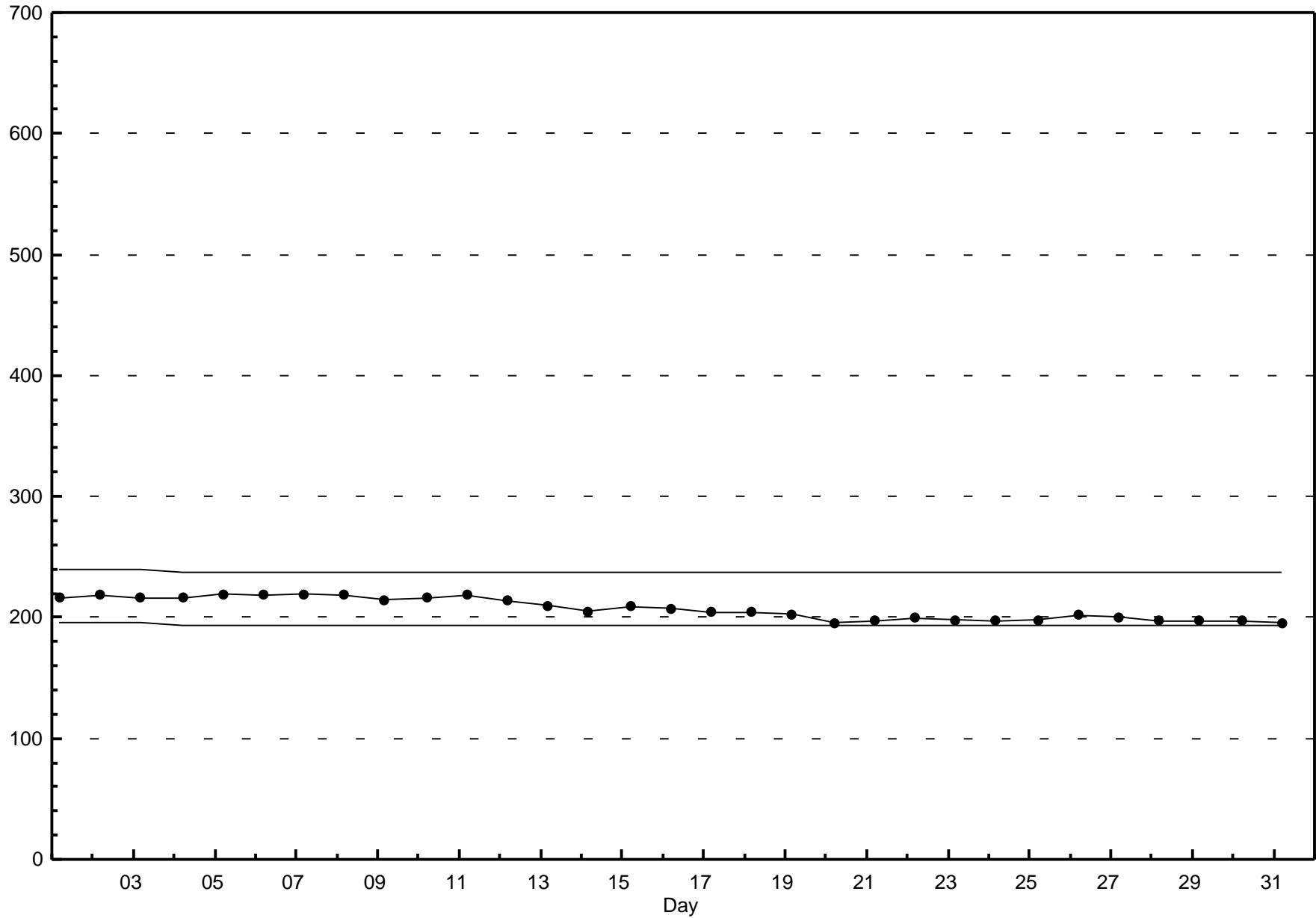
## Oxides of Nitrogen (NO<sub>x</sub>) - ppb

### Beaverlodge - May 2011

<b>Maximum Value: 84.1 ppb on May 9 11:00</b>		<b>Maximum Daily Average: 8.3 ppb on May 9</b>		Hours in Service: 744 Hours of Data: 706 Hours of Missing Data: 38 Hours of Calibration: 38 Percent Operational Time: 100.0																							
<b>Minimum Value: 1 ppb on May 18 14:00</b>		<b>Minimum Daily Average: 1.9 ppb on May 15</b>																									
<b>Maximum Diurnal Average: 9.4 ppb at hour 7</b>		<b>Minimum Diurnal Average: 2.0 ppb at hour 17</b>																									
<b>Monthly Average: 4.27 ppb</b>		Percentiles: P <sub>1</sub> = 0.7 P <sub>10</sub> = 1.4 Q <sub>1</sub> = 1.9 Median = 2.7 Q <sub>3</sub> = 4.7 P <sub>90</sub> = 7.8 P <sub>99</sub> = 20.7																									
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-May	1	2	2	2	A	4	8	4	2	1	1	1	1	1	1	1	2	1	1	2	5	3	1	2	2.1	7.6	
2-May	1	2	2	2	A	5	3	5	17	2	3	2	2	2	2	2	2	2	4	3	4	4	2	1	3.2	17.3	
3-May	2	2	2	2	A	5	3	2	C	C	C	C	C	C	C	5	1	2	4	2	2	1	2	2	--	5.2	
4-May	3	1	1	2	A	4	2	2	3	2	3	1	3	3	1	2	3	2	3	2	5	5	7	3	2.8	6.9	
5-May	2	2	3	8	A	6	18	21	5	4	1	2	3	2	2	1	2	2	2	2	3	7	6	1	4.6	20.6	
6-May	2	2	1	1	A	5	5	6	2	1	1	1	1	16	3	1	1	2	2	3	5	6	4	5	3.3	16.1	
7-May	1	1	2	3	A	21	12	18	3	3	69	24	1	1	1	1	1	2	1	2	4	3	2	3	7.8	68.7	
8-May	4	6	7	15	A	8	15	15	12	36	5	3	2	1	2	1	2	1	1	5	4	3	3	2	6.6	35.8	
9-May	2	2	4	7	A	7	23	14	8	8	84	2	5	2	2	2	2	2	3	2	1	3	5	3	8.3	84.1	
10-May	3	3	3	4	A	8	8	9	10	2	3	1	2	1	1	23	1	1	2	5	3	4	3	4	4.5	23.5	
11-May	2	4	2	15	A	8	6	13	8	4	5	5	7	5	4	5	7	3	4	4	4	6	7	4	5.8	14.9	
12-May	5	7	3	6	A	12	9	19	10	3	2	2	1	1	1	2	2	2	2	1	3	2	2	3	4.3	18.6	
13-May	2	3	2	3	A	9	4	6	5	4	2	1	1	1	2	3	2	1	1	2	2	2	2	1	2.6	8.8	
14-May	1	1	1	2	A	6	5	5	5	5	3	3	2	2	2	2	1	1	1	2	2	2	2	2	2.6	6.0	
15-May	2	2	2	2	A	6	2	2	2	1	1	1	1	1	1	1	1	1	1	1	2	7	2	2	1.9	6.8	
16-May	2	2	2	10	A	10	34	15	7	3	5	2	2	2	2	2	2	2	2	4	3	2	2	3	5.2	33.6	
17-May	2	3	2	4	A	7	5	6	7	5	8	3	5	12	10	3	2	2	5	2	3	3	2	2	4.4	12.2	
18-May	5	3	3	4	A	10	6	4	2	2	1	1	1	1	1	1	1	1	1	3	2	2	4	5	2.7	9.7	
19-May	5	9	6	7	A	8	7	9	6	7	5	4	3	6	2	2	2	2	2	2	4	6	3	3	4.8	9.0	
20-May	9	6	6	9	A	16	37	21	9	7	5	3	3	4	2	3	2	4	6	3	6	4	4	4	7.4	37.5	
21-May	3	2	5	6	A	6	8	8	2	3	3	3	4	2	2	2	2	2	3	4	4	13	5	4	4.1	12.7	
22-May	2	5	5	7	A	13	10	10	10	5	3	2	2	2	2	2	2	2	3	3	3	3	3	2	4.3	13.0	
23-May	1	2	2	3	A	8	4	3	3	3	3	2	2	3	2	2	2	2	2	3	3	3	4	6	3.0	7.9	
24-May	3	3	4	3	A	10	4	4	2	2	2	2	2	2	1	2	2	3	2	3	4	5	6	2	3.2	9.9	
25-May	2	2	3	3	A	7	4	3	4	3	2	2	1	2	2	2	2	3	2	2	2	4	4	2	2.8	7.5	
26-May	3	3	3	2	A	6	3	2	2	2	2	2	11	23	29	3	2	2	2	1	2	2	2	2	4.9	29.0	
27-May	3	5	3	2	A	7	5	9	5	6	5	3	2	2	3	2	2	2	2	4	6	7	5	4	4.1	8.6	
28-May	4	4	6	5	A	8	6	6	6	5	5	6	4	3	3	3	3	4	4	4	7	8	4	5	4.9	8.4	
29-May	3	5	3	3	A	9	6	6	6	6	5	4	3	2	2	2	2	3	2	4	12	8	1	2	4.3	11.7	
30-May	2	2	3	3	A	8	5	11	4	4	2	2	2	2	2	2	2	2	2	3	3	2	2	3	3.2	11.5	
31-May	2	3	4	14	A	11	23	23	10	3	3	2	2	2	2	2	2	2	3	4	6	4	3	2	5.7	23.5	
		2.8	3.1	3.1	5.1	--	8.3	9.4	9.1	5.9	4.8	8.0	3.0	2.7	3.6	3.0	2.8	2.0	2.0	2.3	2.8	3.8	4.3	3.3	2.9	Diurnal Average	
		8.5	8.7	6.5	14.9	--	21.0	37.5	23.2	17.3	35.8	84.1	23.6	10.7	22.8	29.0	23.5	7.4	4.0	5.5	5.2	11.7	12.7	7.0	6.0	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									









# Hourly Averages

Ozone (O<sub>3</sub>) - ppb

Peace Airshed Zone Association

Beaverlodge - May 2011

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 64.9 ppb on May 31 14:00	Maximum Daily Average: 54.0 ppb on May 28		Hours of Data:	709
Minimum Value: 12 ppb on May 20 07:00	Minimum Daily Average: 30.0 ppb on May 11		Hours of Missing Data:	35
Maximum Diurnal Average: 50.2 ppb at hour 16	Minimum Diurnal Average: 28.1 ppb at hour 7		Hours of Calibration:	34
Monthly Average: 41.29 ppb	Percentiles: P <sub>1</sub> = 15.6 P <sub>10</sub> = 27.4 Q <sub>1</sub> = 33.5 Median = 41.8 Q <sub>3</sub> = 49.4 P <sub>90</sub> = 54.6 P <sub>99</sub> = 62.7		Percent Operational Time:	99.9

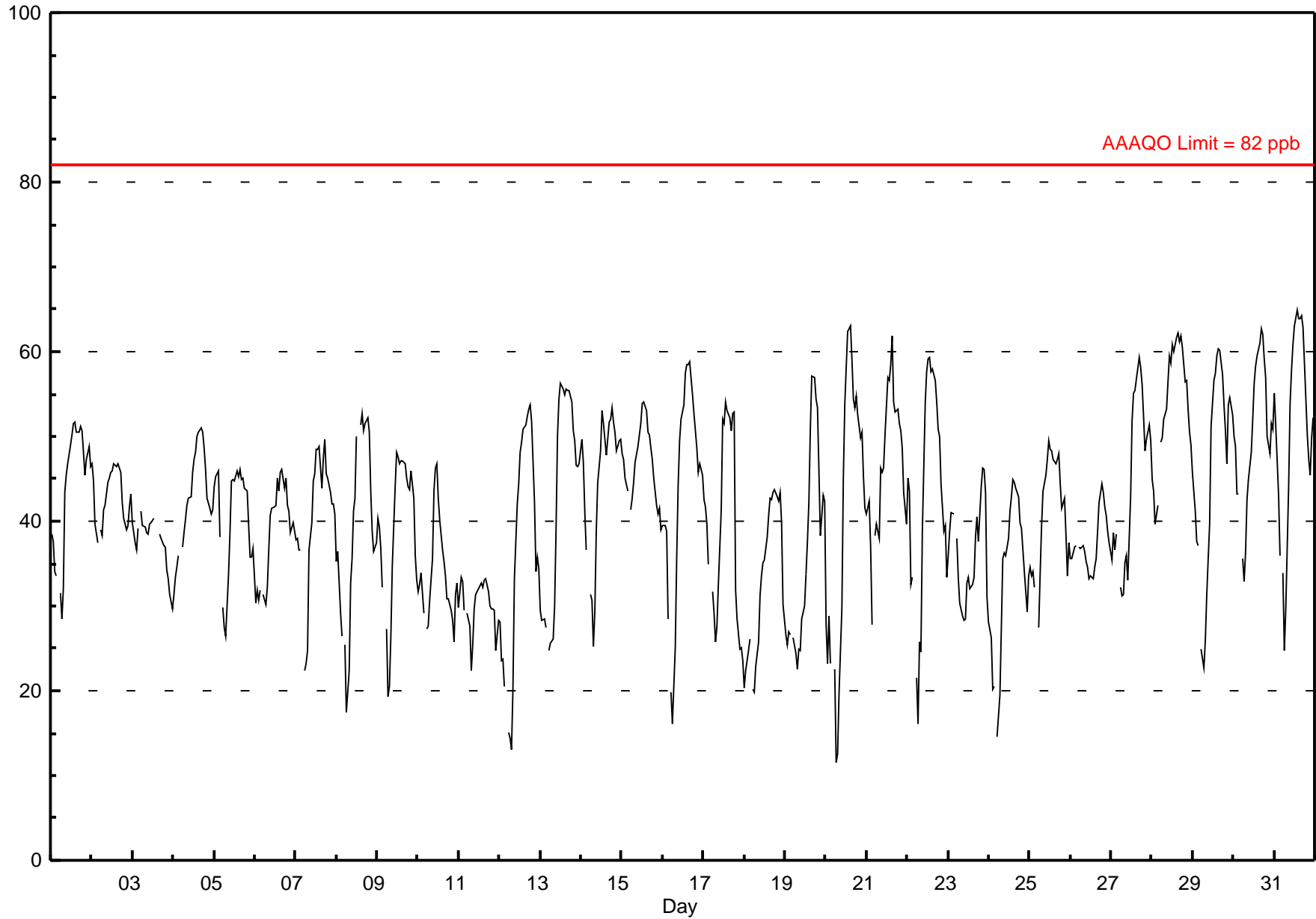
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	38	38	34	34	A	32	28	32	43	45	47	49	50	51	52	50	51	51	51	48	45	47	49	46	44.0	51.6
2-May	47	45	40	37	A	39	38	41	42	45	45	46	46	47	46	47	46	46	42	40	39	39	42	43	43.0	46.8
3-May	40	37	37	39	A	41	39	39	39	39	40	40	40	C	C	C	38	38	37	37	34	33	31	30	37.4	41.3
4-May	31	33	35	36	A	37	39	40	42	43	43	46	47	48	50	51	51	51	49	46	43	42	41	41	42.7	51.0
5-May	44	45	46	38	A	30	27	26	34	39	45	45	45	46	45	46	45	45	44	44	39	36	36	37	40.3	46.2
6-May	30	32	31	32	A	31	30	32	37	41	42	42	42	45	43	46	46	44	45	42	41	39	40	39	38.7	46.0
7-May	38	38	37	37	A	22	23	25	37	40	45	46	48	48	49	44	47	50	46	45	43	42	42	41	40.5	49.6
8-May	35	36	29	26	A	25	17	22	33	36	41	43	50	P	51	53	51	52	52	51	44	39	36	37	39.1	52.8
9-May	40	39	37	32	A	27	19	21	26	35	44	48	48	47	47	47	47	45	44	44	46	43	36	33	38.9	48.1
10-May	32	33	34	29	A	27	28	31	36	44	46	47	43	40	37	35	34	31	31	30	28	26	31	33	34.0	46.7
11-May	30	33	33	29	A	29	28	22	25	30	31	32	32	33	32	33	33	32	30	30	30	29	25	28	30.0	33.4
12-May	28	24	24	20	A	15	14	13	20	33	42	44	48	49	51	51	52	53	54	52	42	34	36	34	36.3	53.7
13-May	30	28	28	28	A	25	26	26	30	39	50	54	56	56	55	56	55	55	54	51	49	47	46	47	43.1	56.3
14-May	50	47	41	37	A	31	31	25	29	39	45	48	53	51	50	48	52	52	53	52	50	48	50	50	44.8	53.4
15-May	48	47	45	44	A	41	43	45	47	49	50	51	54	54	53	51	50	49	47	45	42	41	41	39	46.8	54.1
16-May	39	40	39	29	A	20	16	25	36	44	50	52	54	58	58	58	59	55	53	51	49	46	47	45	44.4	58.9
17-May	43	42	40	35	A	32	29	26	28	33	41	52	52	54	53	52	51	53	53	32	28	25	25	24	39.1	54.1
18-May	20	22	25	26	A	20	20	23	26	31	34	35	35	38	41	43	43	44	43	42	43	40	30	30	33.4	43.8
19-May	27	25	27	27	A	26	24	22	25	25	28	30	34	38	42	51	57	57	54	53	46	38	43	42	36.6	57.1
20-May	28	23	29	23	A	23	12	13	20	30	45	54	58	62	63	59	54	53	55	53	50	50	45	42	41.0	63.1
21-May	41	42	37	28	A	38	40	38	46	46	46	50	57	57	59	62	54	53	53	52	51	49	43	40	47.0	61.8
22-May	45	44	33	33	A	22	16	26	25	39	54	58	59	59	58	58	57	54	51	50	44	39	40	33	43.2	59.4
23-May	36	39	41	41	A	38	33	30	29	28	29	33	33	32	33	33	38	41	38	44	46	46	43	31	36.3	46.3
24-May	28	26	20	21	A	15	19	27	36	36	36	38	41	43	45	45	44	43	40	39	37	34	29	34	33.7	44.9
25-May	34	34	34	32	A	27	34	39	43	45	47	50	48	48	47	47	47	48	44	41	43	38	33	37	41.1	49.5
26-May	36	36	37	37	A	37	37	37	37	35	35	33	34	33	35	36	39	42	44	43	42	41	39	37	37.4	44.4
27-May	35	39	37	38	A	32	31	31	35	36	33	43	52	55	55	57	59	58	56	52	48	50	51	50	45.0	59.3
28-May	45	44	40	42	A	49	50	52	53	56	60	59	61	60	62	62	61	62	60	57	57	53	51	49	54.0	62.2
29-May	46	41	38	37	A	25	23	26	31	36	40	51	57	58	60	60	60	57	54	51	47	54	55	53	46.0	60.4
30-May	50	49	43	43	A	36	33	36	43	45	48	52	56	58	60	61	63	62	59	57	50	48	51	51	50.2	62.7
31-May	55	51	43	36	A	34	25	30	44	54	58	61	63	65	64	64	64	63	59	50	47	45	50	52	51.2	64.9

37.7	37.2	35.2	33.1	--	29.9	28.1	29.8	34.7	39.1	43.2	46.1	48.3	49.4	49.8	50.2	50.0	49.6	48.3	45.9	43.3	41.4	40.9	39.6	Diurnal Average
55.1	51.4	46.0	43.5	--	49.3	49.8	52.0	53.2	56.5	59.5	60.8	63.0	64.9	63.8	63.9	64.2	62.8	60.5	56.9	56.6	53.7	54.6	52.6	Diurnal Maximum

C - Calibration      P - Power Failure      A - Automated Daily Zero Span  
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 82 ppb      24-hr na

# Hourly Averages

Ozone (O<sub>3</sub>) - ppb  
Beaverlodge - May 2011



# Hourly Maximums

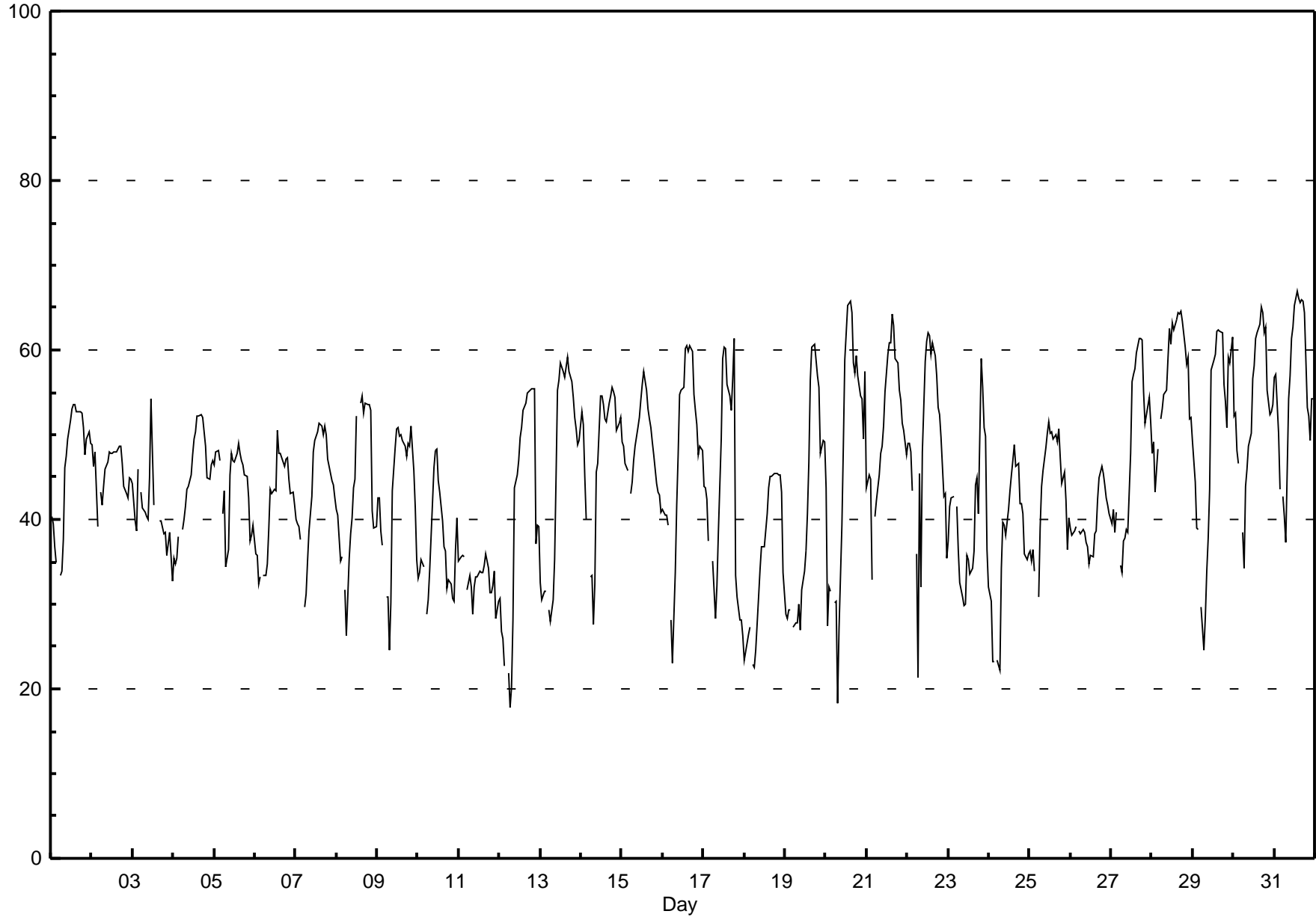
Ozone (O<sub>3</sub>) - ppb

Beaverlodge - May 2011

Maximum Value: 66.9 ppb on May 31 14:00 Minimum Value: 18 ppb on May 12 07:00 Maximum Diurnal Average: 52.8 ppb at hour 16 Monthly Average: 44.80 ppb		Maximum Daily Average: 57.1 ppb on May 28 Minimum Daily Average: 33.1 ppb on May 11 Minimum Diurnal Average: 33.2 ppb at hour 7 Percentiles: P <sub>1</sub> = 22.8 P <sub>10</sub> = 31.4 Q <sub>1</sub> = 37.1 Median = 45.2 Q <sub>3</sub> = 52.1 P <sub>90</sub> = 58.8 P <sub>99</sub> = 65.1		Hours in Service: 744 Hours of Data: 709 Hours of Missing Data: 35 Hours of Calibration: 34 Percent Operational Time: 99.9																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	40	39	37	35	A	33	34	38	46	47	49	52	53	54	54	53	53	53	52	51	48	50	50	49	46.5	53.6
2-May	49	46	48	39	A	43	42	44	46	47	48	48	48	48	48	49	49	47	44	43	43	45	45	45.8	48.9	
3-May	44	40	39	46	A	43	41	41	40	40	45	54	42	C	C	C	40	40	38	38	36	37	39	33	40.8	54.3
4-May	35	35	35	38	A	39	40	41	44	44	45	48	49	50	52	52	52	52	50	49	45	45	46	47	45.0	52.3
5-May	46	48	48	47	A	41	43	34	37	45	48	47	47	48	49	48	47	46	45	45	42	37	38	39	44.2	48.9
6-May	36	36	32	33	A	33	33	35	39	44	43	44	43	51	48	48	47	46	47	47	45	43	43	42	41.7	50.6
7-May	40	40	39	38	A	30	31	35	39	43	48	49	50	50	51	51	50	51	50	47	45	45	44	43	43.8	51.4
8-May	41	41	35	36	A	32	26	35	38	40	44	45	52	P	54	55	52	54	54	54	53	41	39	39	43.6	54.6
9-May	43	42	39	37	A	31	31	25	30	43	48	51	51	50	50	49	49	48	49	49	51	46	41	35	42.9	50.9
10-May	33	34	35	34	A	29	31	34	42	46	48	48	45	43	40	37	36	32	33	32	31	30	36	40	36.9	48.3
11-May	35	36	36	36	A	32	33	32	29	32	33	33	34	34	34	35	36	34	31	31	32	34	28	30	33.1	35.9
12-May	31	27	26	23	A	22	18	20	28	44	45	47	50	51	53	54	55	55	55	55	55	37	39	39	40.4	55.4
13-May	32	30	31	31	A	29	28	31	35	45	55	56	58	58	57	58	59	57	56	54	52	51	49	49	46.3	59.1
14-May	53	51	45	40	A	33	33	28	32	46	47	55	55	54	52	52	54	55	56	55	54	50	51	52	47.9	55.6
15-May	49	49	47	46	A	43	44	47	49	51	52	54	56	58	55	53	52	51	49	48	44	43	43	41	48.8	57.5
16-May	41	41	40	39	A	28	23	34	42	48	55	55	56	60	61	60	60	60	55	53	51	48	49	48	48.1	60.5
17-May	44	44	42	38	A	35	32	28	32	39	50	59	60	60	56	54	53	57	61	33	31	28	28	26	43.1	61.3
18-May	23	24	26	27	A	23	22	25	31	34	37	37	37	41	44	45	45	45	45	45	45	43	34	34	35.9	45.5
19-May	29	28	29	29	A	27	28	28	30	27	32	34	36	41	47	57	60	61	59	57	56	48	49	49	40.9	60.7
20-May	44	27	32	31	A	30	30	18	27	39	49	59	62	65	66	64	58	57	59	57	55	54	49	58	47.5	65.8
21-May	44	45	45	33	A	40	42	45	48	49	51	55	59	61	61	64	63	59	59	55	54	51	50	48	51.4	64.2
22-May	49	49	48	43	A	36	21	45	32	48	59	61	62	62	59	61	59	57	53	52	50	43	43	35	49.1	62.0
23-May	37	42	43	43	A	41	36	33	31	30	30	36	35	34	34	36	44	45	41	59	56	51	50	36	40.1	59.0
24-May	32	30	23	23	A	23	22	34	40	39	38	41	43	45	47	49	46	47	42	42	41	36	35	36	37.2	48.8
25-May	36	35	36	34	A	31	39	44	46	48	50	51	50	50	49	50	49	51	47	44	46	42	36	40	43.8	51.5
26-May	39	38	39	39	A	39	38	39	39	37	37	35	36	36	38	39	42	45	46	45	44	43	42	41	39.8	46.3
27-May	40	41	38	41	A	35	34	37	38	39	39	48	56	57	58	60	61	61	61	55	51	52	54	51	48.2	61.4
28-May	48	49	43	48	A	52	53	55	55	59	63	61	63	62	64	64	64	65	63	60	58	59	52	52	57.1	64.6
29-May	49	44	39	39	A	30	25	29	34	38	44	58	59	59	62	62	62	62	62	56	54	51	59	58	49.3	62.3
30-May	52	53	48	47	A	38	34	44	46	49	50	57	58	61	62	63	65	64	62	63	55	52	53	54	53.5	65.0
31-May	57	57	50	44	A	43	40	37	54	57	61	63	65	67	66	66	66	66	64	53	52	49	54	54	55.9	66.9
		41.0	40.0	38.6	37.3	--	34.3	33.2	35.3	38.6	43.1	46.5	49.6	50.7	52.0	52.3	52.8	52.6	52.4	51.2	49.3	47.5	44.9	44.5	43.5	Diurnal Average
		56.8	57.2	50.1	48.4	--	51.9	53.1	54.7	55.2	59.0	62.5	62.6	65.2	66.9	66.1	65.6	65.9	65.7	64.5	62.8	58.3	59.2	58.4	61.5	Diurnal Maximum
C - Calibration		P - Power Failure				A - Automated Daily Zero Span																				

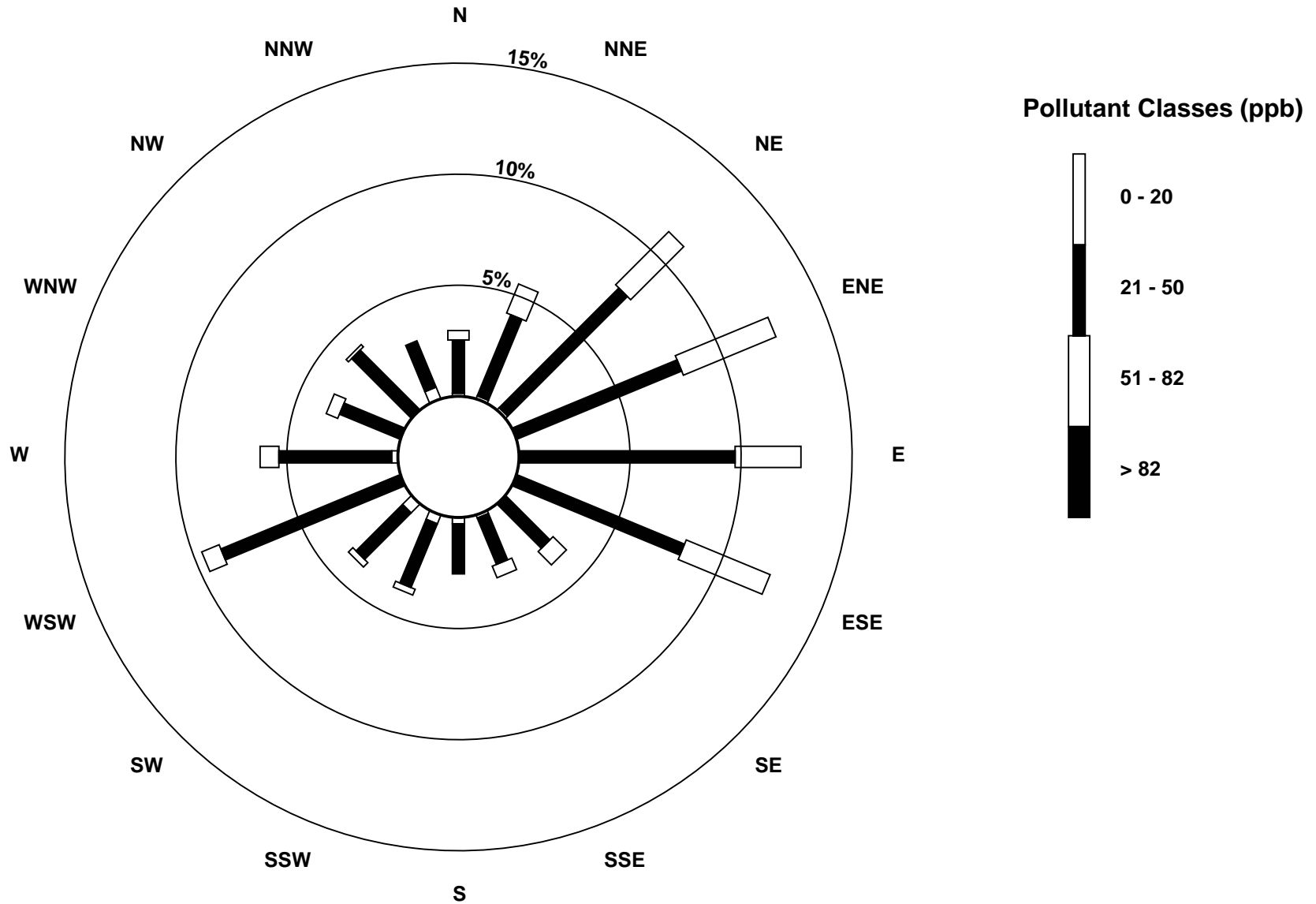
### Hourly Maximums

Ozone (O<sub>3</sub>) - ppb  
Beaverlodge - May 2011



**Pollutant Rose**

Ozone (O<sub>3</sub>) - ppb  
Beaverlodge - May 2011



## Eight Hour Running Averages

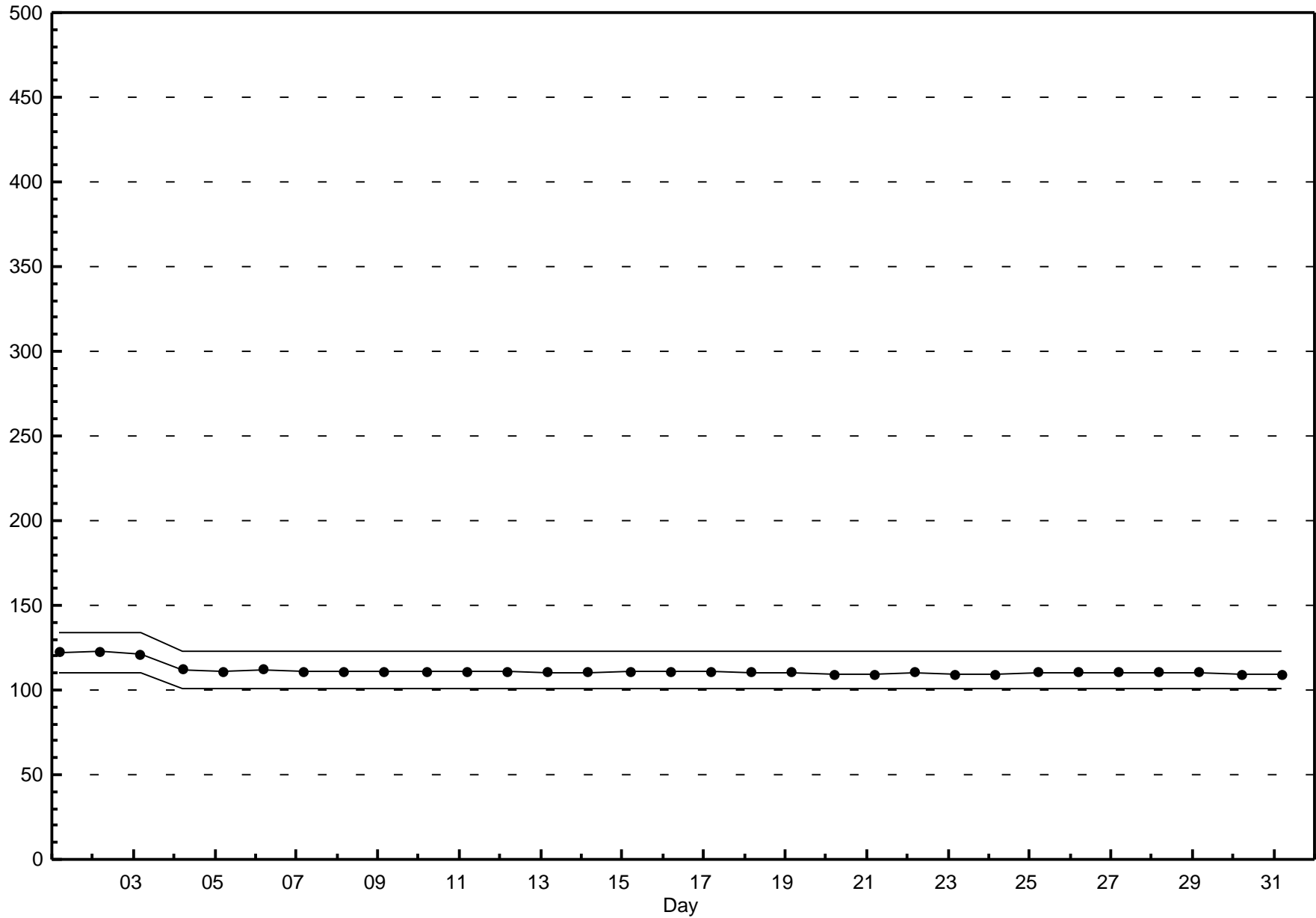
Ozone (O<sub>3</sub>) - ppb

Beaverlodge - May 2011

Maximum Value: 62.8 ppb on May 31 19:00																								Hours in Service:	744
Minimum Value: 18.7 ppb on May 12 09:00																								Hours of Data:	738
Percentiles: P <sub>1</sub> = 22.3 P <sub>10</sub> = 30.1 Q <sub>1</sub> = 34.5 Median = 40.7 Q <sub>3</sub> = 47.2 P <sub>90</sub> = 52.8 P <sub>99</sub> = 60.5																								Hours of Missing Data:	6
																								Hours of Calibration:	6
																								Percent Operational Time:	100.0
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-May	42	41	40	38	38	37	35	34	34	36	37	40	41	43	46	49	49	50	51	51	50	49	49	49	50.6
2-May	48	47	46	45	44	43	42	41	40	40	41	42	43	44	45	45	46	46	46	45	44	43	43	42	48.1
3-May	41	40	40	40	40	40	40	39	39	39	39	40	40	39	39	N	N	N	N	N	N	36	36	35	41.4
4-May	34	33	33	33	33	33	34	36	37	39	40	41	42	43	45	46	47	48	49	49	48	48	46	45	49.0
5-May	44	44	43	42	42	41	39	37	35	34	34	35	36	38	41	43	44	45	45	45	44	43	42	41	45.2
6-May	39	37	36	34	33	33	32	31	32	33	35	36	37	39	40	42	43	44	44	44	44	43	43	42	44.2
7-May	41	40	39	38	38	36	33	31	31	31	33	34	36	39	42	45	46	47	47	47	47	46	45	45	47.2
8-May	43	41	39	37	36	34	30	27	27	29	31	33	35	39	44	46	49	50	51	50	49	47	45	45	51.3
9-May	44	42	40	38	37	36	33	31	29	28	29	31	33	36	39	43	45	47	47	46	46	45	44	42	46.6
10-May	40	39	37	36	34	32	31	30	31	33	34	37	38	39	40	41	41	39	37	35	33	31	31	30	40.9
11-May	30	30	30	30	31	31	31	29	29	28	28	28	29	29	30	31	32	32	32	32	32	31	30	30	32.3
12-May	29	28	27	26	25	23	22	20	19	20	23	26	29	33	38	42	46	49	50	51	51	49	47	45	51.3
13-May	42	39	36	33	31	30	28	27	27	29	32	36	38	42	46	50	53	55	55	55	54	53	52	51	55.2
14-May	50	49	47	45	45	43	40	37	34	33	34	35	38	40	43	45	48	50	51	51	51	51	51	51	51.4
15-May	50	50	49	48	47	46	45	45	45	45	45	47	48	49	50	51	52	52	51	50	49	47	46	44	51.5
16-May	43	42	41	39	38	35	32	30	29	30	31	35	37	42	47	51	54	55	56	56	55	54	52	50	55.8
17-May	48	47	45	43	42	40	38	35	33	32	32	34	36	39	42	46	48	51	52	50	47	43	40	36	52.4
18-May	32	29	25	24	24	23	22	22	23	24	26	27	28	30	33	35	37	39	40	41	42	43	43	41	42.7
19-May	39	37	35	33	31	29	27	26	25	25	26	27	28	31	34	38	42	45	48	50	50	50	49	49	50.0
20-May	45	41	38	34	32	30	26	21	20	21	23	28	32	37	43	49	53	56	57	57	56	55	52	50	57.4
21-May	49	47	45	42	41	39	38	38	38	39	40	43	45	47	50	53	54	55	56	56	55	54	52	49	55.7
22-May	48	47	44	42	41	37	33	31	28	28	31	34	37	42	47	51	55	57	57	56	54	51	49	46	57.0
23-May	43	41	40	39	38	38	37	37	36	34	33	31	32	31	31	31	32	34	35	36	38	40	41	41	43.4
24-May	40	38	36	33	31	26	23	22	23	25	27	30	31	35	38	40	41	42	42	42	42	41	39	37	42.4
25-May	36	35	34	34	33	32	33	34	35	37	38	41	42	44	46	47	48	48	48	47	46	45	43	42	47.9
26-May	40	39	38	37	36	36	37	37	37	37	36	36	35	35	35	35	35	36	37	38	39	40	41	41	40.9
27-May	41	40	39	38	38	37	36	35	35	34	34	34	37	40	43	46	49	52	54	56	55	55	54	53	55.6
28-May	51	50	47	46	46	46	46	46	47	49	52	54	55	56	58	59	60	61	61	61	60	59	58	56	60.9
29-May	54	52	49	46	45	41	37	34	32	31	31	33	36	40	45	49	53	55	57	57	56	55	55	54	57.1
30-May	52	51	50	49	49	47	44	41	40	40	40	42	44	46	50	53	55	57	59	59	59	57	56	55	59.5
31-May	54	53	51	48	48	46	42	39	38	38	40	44	46	50	55	59	62	63	63	61	59	57	55	54	62.8
54.2 52.9 50.9 49.1 49.4 46.9 45.5 45.9 47.1 48.9 51.7 54.2 55.0 56.3 57.8 59.1 61.5 62.7 62.8 61.4 60.1 59.2 57.8 56.2																									
Diurnal Maximums																									
N - Not Valid																									

### Span Responses

Ozone (O<sub>3</sub>)  
Beaverlodge - May 2011





## Hourly Averages

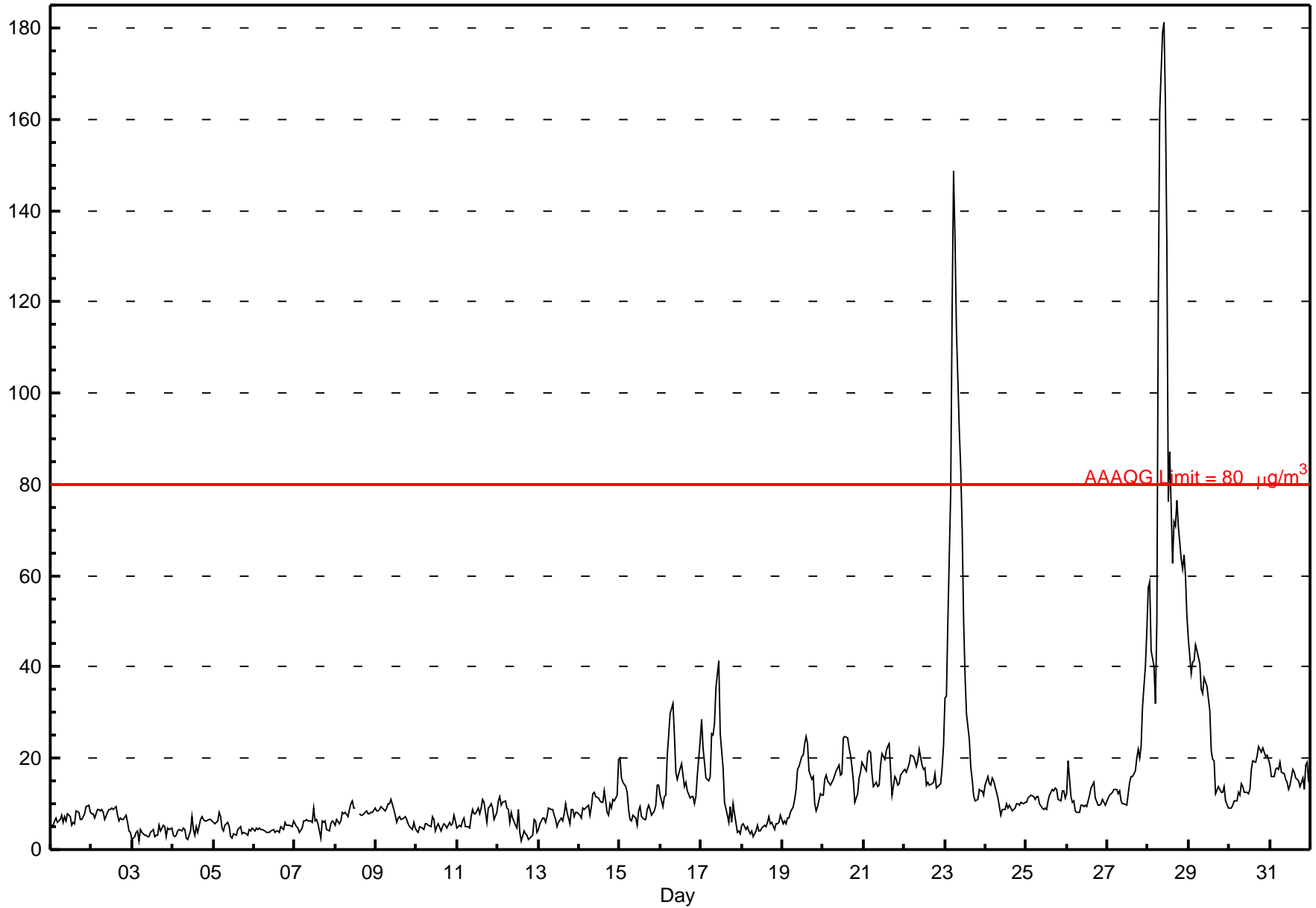
## Particulate Matter 2.5 (PM<sub>2.5</sub>) - μg/m<sup>3</sup>

### Beaverlodge - May 2011

Number of Exceedences: 1-hr: 13 24-hr: 2	Hours in Service: 744
Maximum Value: 181.3 μg/m <sup>3</sup> on May 28 10:00	Maximum Daily Average: 84.8 μg/m <sup>3</sup> on May 28
Minimum Value: 2 μg/m <sup>3</sup> on May 12 15:00	Hours of Data: 743
Maximum Diurnal Average: 19.4 μg/m <sup>3</sup> at hour 10	Hours of Missing Data: 1
Monthly Average: 14.52 μg/m <sup>3</sup>	Hours of Calibration: 0
Minimum Daily Average: 3.7 μg/m <sup>3</sup> on May 3	Percent Operational Time: 99.9
Minimum Diurnal Average: 11.1 μg/m <sup>3</sup> at hour 21	
Percentiles: P <sub>1</sub> = 2.4 P <sub>10</sub> = 4.3 Q <sub>1</sub> = 6.1 Median = 9.3 Q <sub>3</sub> = 15.2 P <sub>90</sub> = 23.0 P <sub>99</sub> = 130.3	

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	5	5	6	7	6	6	8	6	7	6	8	7	5	6	6	8	8	7	7	7	8	10	10	8	7.0	9.6
2-May	8	8	7	9	9	9	9	8	7	8	9	9	9	9	9	7	6	7	7	7	8	6	4	4	7.5	9.5
3-May	2	3	4	4	2	4	4	3	3	3	3	4	5	3	3	3	5	4	5	5	3	5	4	5	3.7	5.4
4-May	3	3	3	4	4	4	5	4	3	2	4	7	4	3	5	4	7	7	6	6	6	6	7	6	4.8	7.1
5-May	6	6	6	8	7	5	4	5	6	5	3	2	3	3	4	5	5	4	4	4	3	4	4	5	4.7	8.2
6-May	4	5	5	5	4	4	4	4	4	4	4	4	4	4	4	4	5	4	6	5	5	5	5	6	4.5	6.2
7-May	6	5	5	4	5	6	6	6	6	6	6	9	6	7	6	2	6	6	6	4	4	6	6	6	5.7	9.2
8-May	5	7	6	6	8	8	8	7	9	10	11	9	9	7	8	8	7	8	9	8	8	8	8	9	8.0	10.6
9-May	9	8	9	9	9	8	8	9	10	10	11	9	7	6	7	6	7	7	6	6	5	4	6	5	7.6	10.9
10-May	4	4	5	5	4	6	6	5	5	7	7	4	5	6	4	5	6	5	5	6	5	6	8	6	5.3	7.6
11-May	5	5	5	6	7	5	5	5	7	9	8	8	9	8	9	11	10	6	9	9	10	9	7	8	7.5	10.9
12-May	11	12	10	10	11	9	9	6	8	7	5	5	9	4	2	4	3	3	2	2	3	7	6	4	6.3	11.6
13-May	4	6	7	7	6	7	9	9	9	8	7	5	6	7	6	8	10	8	6	9	9	7	8	8	7.3	9.9
14-May	8	7	9	9	9	10	7	9	12	13	12	11	11	10	10	13	8	8	10	9	11	11	12	20	10.3	19.7
15-May	20	16	15	14	13	9	7	6	7	7	5	9	9	7	7	6	9	10	9	7	8	10	14	14	9.9	20.0
16-May	12	10	12	12	21	25	30	32	25	17	15	17	19	16	14	15	13	11	12	12	10	12	16	24	16.6	31.9
17-May	29	22	19	16	15	16	25	25	28	35	41	25	22	18	10	8	6	9	6	10	8	4	4	3	16.9	41.4
18-May	5	6	4	5	4	4	4	3	4	5	4	4	5	5	6	7	6	6	4	6	6	6	8	8	5.0	7.5
19-May	6	6	6	7	7	8	9	11	13	17	18	20	21	23	25	23	17	15	16	10	8	9	12	12	13.4	24.9
20-May	12	15	16	15	14	15	15	16	17	18	16	17	24	25	25	22	21	18	15	10	12	16	17	19	17.2	24.7
21-May	19	17	21	22	21	17	14	15	14	14	18	21	20	22	22	23	17	12	16	15	14	14	16	17	17.6	23.1
22-May	18	17	18	19	21	20	20	18	19	22	19	17	18	14	15	14	14	15	17	13	14	14	18	23	17.3	22.8
23-May	33	33	50	78	119	149	134	114	92	83	70	50	38	30	24	18	15	12	11	11	13	13	13	12	50.7	148.5
24-May	14	16	14	14	16	15	13	11	9	8	9	9	10	9	10	9	9	9	10	10	10	10	10	10	11.0	15.9
25-May	10	11	12	12	12	11	12	12	10	9	9	9	9	11	12	13	13	13	13	11	11	13	13	11	11.2	13.4
26-May	12	20	12	10	11	8	8	8	10	10	9	10	9	12	13	14	15	11	10	10	10	11	10	10	11.0	19.6
27-May	11	12	12	13	13	13	12	13	11	10	10	10	12	15	16	16	17	20	22	20	23	31	40	48	17.5	47.9
28-May	57	59	43	40	32	50	119	162	179	181	163	132	76	87	63	72	71	76	71	64	62	65	60	51	84.8	181.3
29-May	46	39	41	41	45	43	41	35	34	38	37	36	30	22	20	19	12	14	13	12	13	14	11	9	27.7	46.2
30-May	9	9	10	11	11	12	12	14	14	12	12	12	13	17	19	19	20	22	22	21	22	20	21	20	15.7	22.5
31-May	18	16	16	17	18	18	19	17	17	15	15	13	14	18	17	16	15	15	14	16	13	18	19	15	16.2	19.1
13.3 13.1 13.1 14.2 15.6 16.9 18.9 19.4 19.3 19.4 18.2 16.2 14.2 14.2 12.9 13.0 12.5 12.0 11.9 11.1 11.1 12.1 12.7 13.1																								Diurnal Average		
57.3 58.8 49.8 78.3 118.6 148.5 133.8 161.9 179.0 181.3 163.1 132.0 76.2 87.3 62.6 71.7 71.0 76.4 70.8 63.7 61.6 64.7 59.8 51.2																								Diurnal Maximum		

P - Power Failure  
 Alberta Ambient Air Quality Guideline (AAAQG): 1-hr 80 μg/m<sup>3</sup> Alberta Ambient Air Quality Objective (AAAQO): 24-hr 30 μg/m<sup>3</sup>

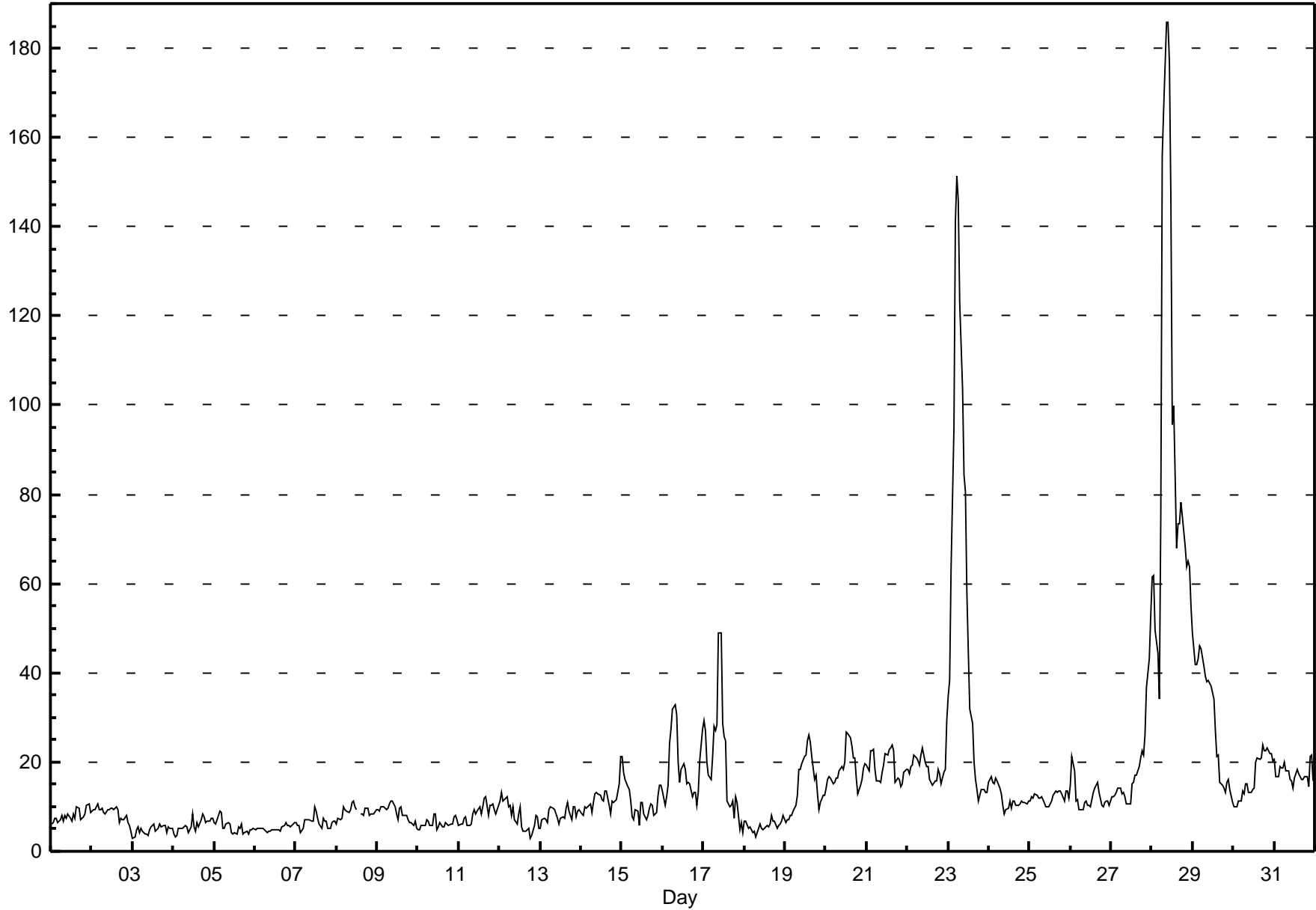


## Hourly Maximums

## Particulate Matter 2.5 (PM<sub>2.5</sub>) - μg/m<sup>3</sup>

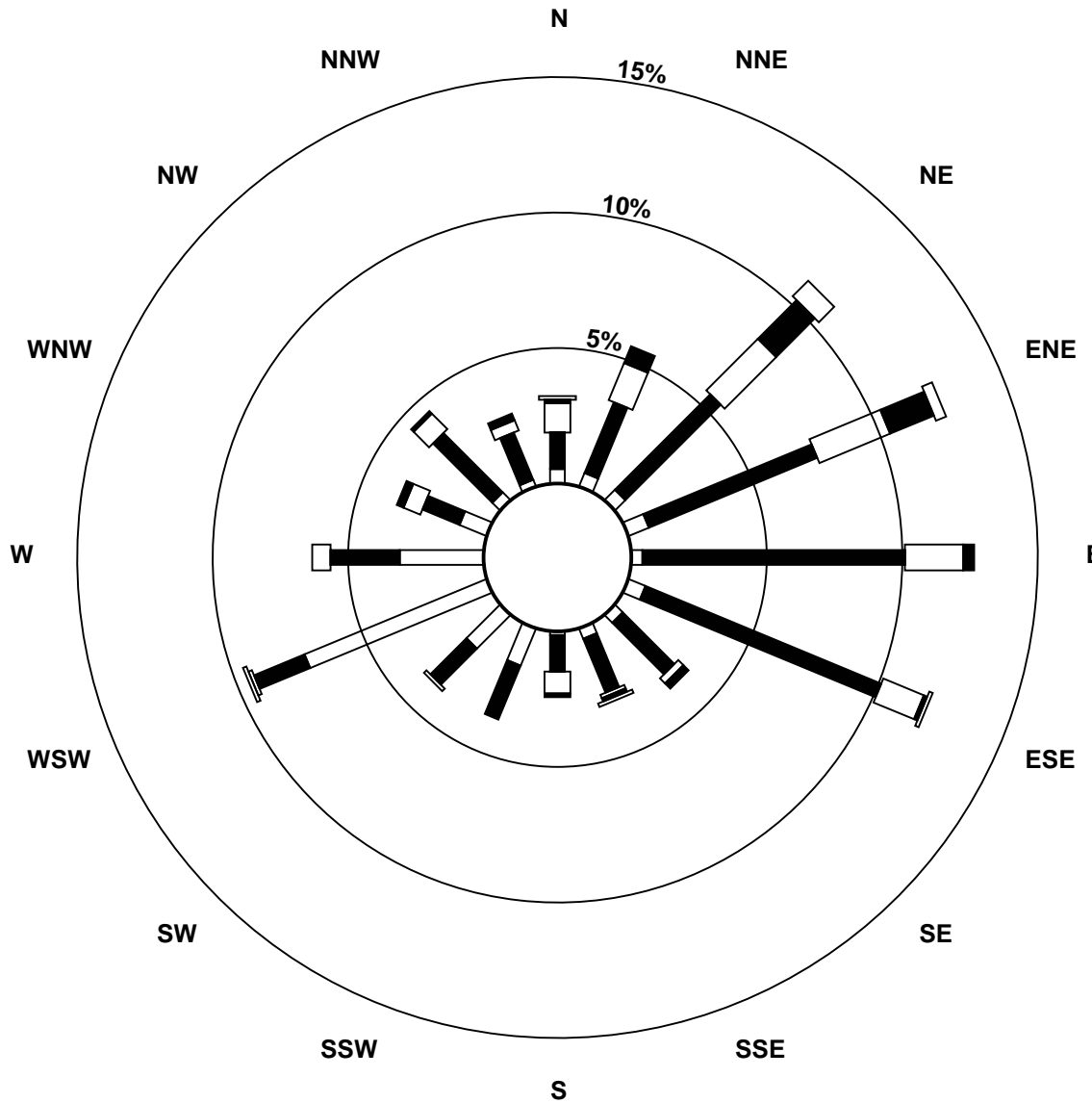
Beaverlodge - May 2011

Maximum Value: 185.9 μg/m <sup>3</sup> on May 28 09:00 Minimum Value: 3 μg/m <sup>3</sup> on May 3 01:00 Maximum Diurnal Average: 21.4 μg/m <sup>3</sup> at hour 7 Monthly Average: 16.12 μg/m <sup>3</sup>		Maximum Daily Average: 92.7 μg/m <sup>3</sup> on May 28 Minimum Daily Average: 4.8 μg/m <sup>3</sup> on May 3 Minimum Diurnal Average: 12.3 μg/m <sup>3</sup> at hour 21 Percentiles: P <sub>1</sub> = 3.6 P <sub>10</sub> = 5.3 Q <sub>1</sub> = 7.0 Median = 10.4 Q <sub>3</sub> = 16.4 P <sub>90</sub> = 25.9 P <sub>99</sub> = 142.4		Hours in Service: 744 Hours of Data: 743 Hours of Missing Data: 1 Hours of Calibration: 0 Percent Operational Time: 99.9																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-May	6	6	7	7	6	7	8	7	8	7	8	7	7	8	7	10	10	7	7	8	8	10	10	9	7.9	10.5	
2-May	9	9	9	10	9	9	10	9	8	9	9	10	10	9	10	9	7	7	7	7	8	7	6	5	8.5	10.5	
3-May	3	3	5	5	4	5	5	4	4	4	5	5	6	5	5	5	6	6	6	6	4	5	5	5	4.8	6.0	
4-May	4	3	4	5	5	5	6	6	5	4	5	9	6	5	6	6	7	8	8	7	7	7	7	7	5.8	8.5	
5-May	6	6	8	9	9	5	5	6	7	6	4	4	4	5	5	6	4	4	5	4	5	5	5	5	5.5	8.9	
6-May	5	5	5	5	5	5	5	4	5	4	5	5	5	5	5	6	6	7	6	6	6	6	7	5.2	6.5		
7-May	7	6	6	4	5	7	7	7	7	7	7	10	9	7	6	5	7	7	7	5	5	7	7	7	6.6	9.9	
8-May	6	7	7	8	10	9	9	9	9	11	11	10	9	P	9	8	8	10	10	8	8	8	8	9	8.8	11.4	
9-May	9	9	10	10	10	9	10	11	11	11	10	8	7	10	10	8	8	8	7	7	6	6	7	5	8.6	11.4	
10-May	5	5	6	6	6	7	7	6	6	8	8	5	6	7	5	5	7	6	6	6	6	8	8	7	6.2	8.5	
11-May	6	6	6	7	8	6	6	6	8	9	8	9	10	8	10	12	12	8	10	10	11	9	8	10	8.6	12.2	
12-May	11	13	11	12	12	10	10	8	10	7	6	8	10	5	5	5	5	5	3	3	6	8	8	5	7.8	13.1	
13-May	5	7	8	7	7	9	10	10	9	8	7	6	7	8	7	10	11	9	7	10	10	8	9	9	8.3	10.9	
14-May	8	8	10	10	10	11	9	11	13	13	13	13	12	11	14	14	10	9	11	11	11	12	15	21	11.6	21.3	
15-May	21	18	16	15	14	11	8	7	9	9	6	11	11	8	7	8	10	11	10	8	9	13	15	15	11.2	21.2	
16-May	14	10	12	15	24	27	32	33	31	20	16	18	20	18	15	15	15	12	13	13	10	13	20	27	18.5	33.0	
17-May	29	27	20	17	16	21	28	27	28	49	49	29	26	25	11	10	10	11	7	12	11	5	7	4	20.0	49.1	
18-May	7	7	5	6	5	4	5	3	5	6	5	5	5	6	5	6	8	7	7	5	6	6	7	8	5.8	8.1	
19-May	6	7	7	8	8	9	10	12	18	18	20	21	22	25	26	25	21	16	17	13	9	11	13	13	14.8	26.0	
20-May	14	16	17	17	15	15	16	16	18	19	18	20	27	26	25	24	21	21	16	13	15	16	19	20	18.5	26.7	
21-May	19	18	23	23	23	18	16	16	15	18	19	22	22	23	23	24	23	16	16	16	14	15	18	18	19.1	23.8	
22-May	18	17	19	19	22	21	20	19	22	23	20	19	19	16	16	15	16	16	18	17	15	18	18	29	18.9	29.5	
23-May	35	38	63	95	141	152	146	123	104	84	81	58	45	32	29	20	16	14	11	14	14	14	13	13	56.4	151.5	
24-May	15	17	15	15	16	16	14	13	10	8	9	10	11	10	11	11	10	10	11	11	11	11	11	11	12.0	16.7	
25-May	11	12	12	13	13	12	12	12	12	10	10	10	11	11	13	14	13	14	14	13	11	13	13	12	12.1	13.6	
26-May	15	21	18	11	12	9	9	9	11	11	10	10	10	13	14	15	16	13	10	10	11	11	11	10	12.2	21.4	
27-May	12	12	13	13	14	14	13	13	12	11	11	11	15	16	17	17	19	21	23	22	26	37	43	53	19.0	53.0	
28-May	61	62	50	45	34	75	156	167	186	186	177	147	96	100	68	74	73	78	75	68	64	65	64	55	92.7	185.9	
29-May	49	42	42	43	46	45	42	39	38	38	37	34	27	21	22	15	15	14	13	15	16	14	11	29.9	49.1		
30-May	10	10	10	11	11	13	13	15	15	13	13	14	14	20	21	21	21	24	23	22	23	22	22	20	16.8	23.8	
31-May	21	17	17	19	19	19	20	18	18	16	16	14	16	18	17	17	16	16	17	17	15	21	22	16	17.5	21.6	
		14.5	14.4	14.9	15.8	17.4	19.0	21.4	20.9	21.3	21.0	20.2	18.2	16.5	16.2	14.3	14.3	14.0	13.3	13.0	12.4	12.3	13.3	14.1	14.5	Diurnal Average	
		61.5	61.9	63.5	94.9	141.2	151.5	156.0	166.5	185.9	185.8	176.7	146.8	95.8	99.9	67.8	73.5	73.5	78.4	75.0	68.4	63.7	65.2	63.7	55.0	Diurnal Maximum	
P - Power Failure																											

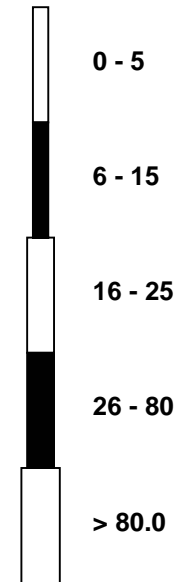


**Pollutant Rose**

**Particulate Matter 2.5 (PM<sub>2.5</sub>) - μg/m<sup>3</sup>**  
**Beaverlodge - May 2011**



**Pollutant Classes (μg/m<sup>3</sup>)**



## Hourly Averages

External Temperature (ET) - °C

Beaverlodge - May 2011

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 24.2 °C on May 14 18:00	Maximum Daily Average: 17.7 °C on May 16		Hours of Data:	735
Minimum Value: 0 °C on May 1 06:00	Minimum Daily Average: 6.7 °C on May 23		Hours of Missing Data:	9
Maximum Diurnal Average: 16.8 °C at hour 16	Minimum Diurnal Average: 6.1 °C at hour 6		Hours of Calibration:	0
Monthly Average: 11.83 °C	Percentiles: P <sub>1</sub> = 1.1 P <sub>10</sub> = 5.4 Q <sub>1</sub> = 7.7 Median = 11.6 Q <sub>3</sub> = 15.4 P <sub>90</sub> = 19.3 P <sub>99</sub> = 23.6		Percent Operational Time:	98.8

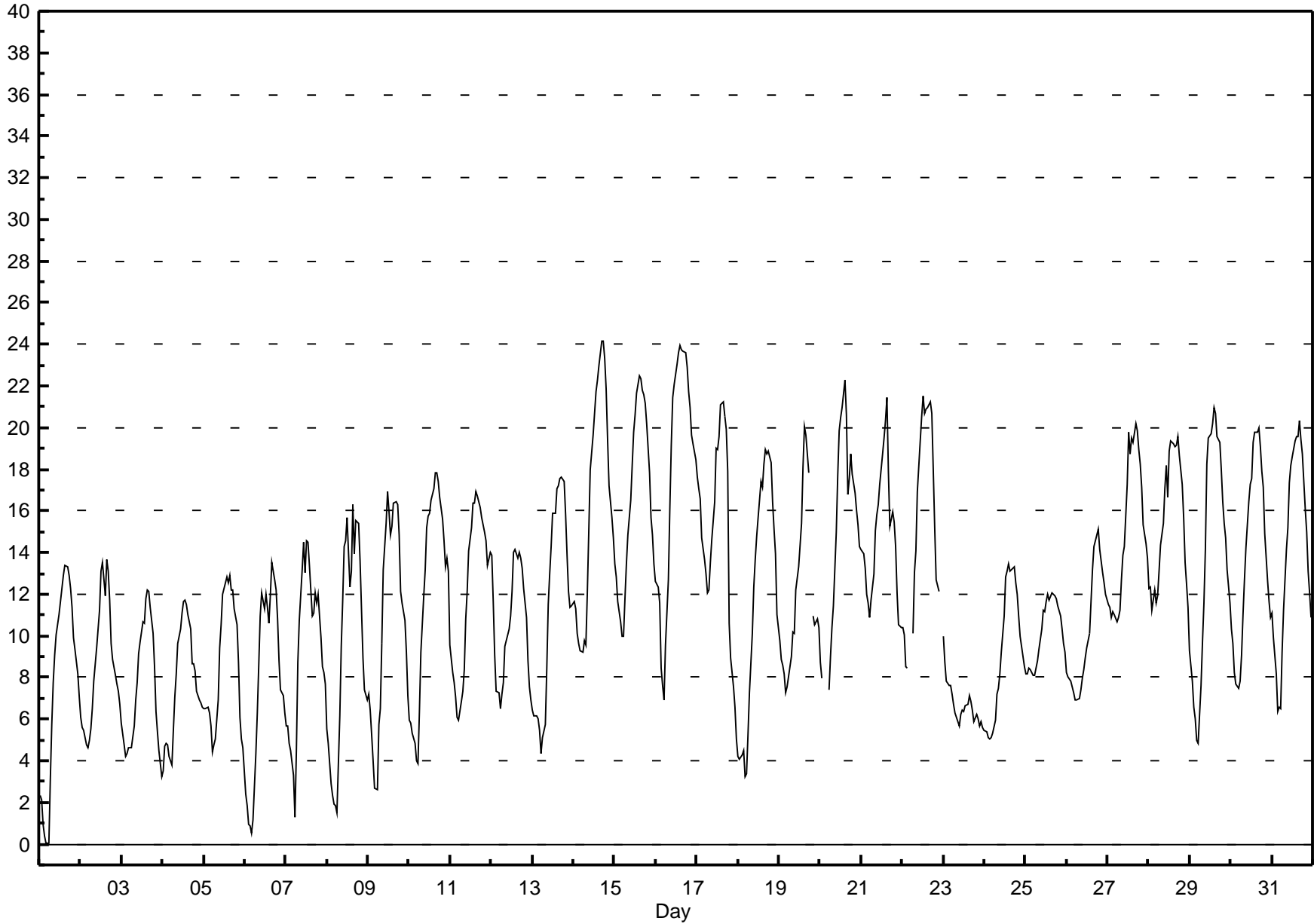
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-May	2	2	1	0	0	0	3	6	8	9	10	11	12	12	13	13	13	13	12	11	10	9	8	7	7.8	13.4																						
2-May	6	6	5	5	5	5	6	6	8	9	10	11	13	14	12	14	13	12	10	9	8	8	7	7	8.7	13.7																						
3-May	6	5	4	4	5	5	5	6	7	8	9	10	11	11	12	12	12	11	10	9	6	5	4	3	7.5	12.2																						
4-May	3	5	5	5	4	4	5	7	8	10	10	11	12	12	12	11	10	9	9	8	7	7	7	7	7.8	11.7																						
5-May	7	7	7	6	6	4	5	5	7	9	11	12	12	13	13	13	12	12	11	11	9	6	5	5	8.6	12.9																						
6-May	2	2	1	1	1	1	4	6	9	11	12	11	12	11	12	14	13	12	11	9	7	7	6	7.8	13.5																							
7-May	6	6	5	5	3	1	4	9	11	13	15	13	15	14	13	11	11	12	12	12	10	9	8	8	9.4	14.5																						
8-May	6	5	3	2	2	2	2	6	9	12	14	15	16	12	13	16	14	16	15	14	11	9	7	7	9.5	16.3																						
9-May	7	6	5	4	3	3	6	6	10	13	15	17	16	15	15	16	16	16	15	12	12	11	9	7	10.7	16.9																						
10-May	6	6	5	5	4	4	6	9	12	13	15	16	16	17	17	18	18	17	17	16	15	13	14	13	12.1	17.8																						
11-May	10	8	8	7	6	6	7	7	8	11	12	14	15	16	16	17	17	16	16	15	15	15	13	14	12.1	16.9																						
12-May	14	12	9	7	7	7	7	8	9	10	10	11	12	14	14	14	14	14	14	13	12	11	9	8	7	10.5	14.2																					
13-May	6	6	6	6	5	4	5	6	8	12	13	14	16	16	17	17	18	18	17	16	14	12	11	11	11.5	17.7																						
14-May	12	11	10	10	9	9	10	10	12	15	18	20	21	22	22	23	24	24	23	22	19	17	16	15	16.4	24.2																						
15-May	13	13	12	11	10	10	12	13	15	17	18	20	21	22	22	22	22	22	21	20	18	16	15	13	16.5	22.5																						
16-May	13	12	12	8	8	7	10	13	16	19	21	22	23	24	24	24	24	24	23	22	21	20	19	18	17.7	23.9																						
17-May	18	17	17	15	14	13	12	12	14	15	16	19	19	20	21	21	21	21	20	18	11	9	8	7	5	14.9	21.2																					
18-May	4	4	4	4	3	3	5	7	10	12	14	15	16	17	17	18	19	19	19	18	16	15	14	11	12.0	18.9																						
19-May	10	9	9	8	7	8	9	9	10	10	12	13	14	15	18	20	20	18	P	P	11	11	11	10	11.9	20.0																						
20-May	9	8	P	P	P	7	9	10	11	15	18	20	21	21	22	21	17	18	19	18	17	16	15	14	15.5	22.3																						
21-May	14	14	13	12	12	11	12	13	15	16	16	17	19	20	20	21	18	15	16	15	14	12	11	10	14.9	21.4																						
22-May	10	10	9	8	P	P	10	13	14	17	19	21	22	21	21	21	21	21	18	15	13	12	P	P	15.8	21.5																						
23-May	10	9	8	8	8	7	7	6	6	6	6	6	6	7	7	7	7	6	6	6	6	6	6	6	6.7	10.0																						
24-May	5	5	5	5	5	5	6	7	7	8	9	11	13	13	13	13	13	13	13	12	11	10	9	8	9.3	13.4																						
25-May	8	8	8	8	8	8	8	9	9	10	11	11	12	12	12	12	12	12	12	11	11	10	10	9	10.1	12.0																						
26-May	8	8	8	8	7	7	7	7	7	8	8	9	9	10	12	13	14	15	15	14	14	13	13	12	10.3	15.2																						
27-May	12	11	11	11	11	11	11	11	13	14	14	14	17	20	19	20	19	20	19	18	17	15	14	14	15.1	20.2																						
28-May	12	12	11	12	12	12	13	14	15	17	18	17	19	19	19	19	19	19	19	17	16	14	12	11	15.4	19.6																						
29-May	9	8	7	6	5	5	8	10	12	14	18	20	20	20	21	21	20	19	18	16	15	15	13	12	13.7	20.9																						
30-May	10	10	8	8	7	8	9	11	13	14	16	17	18	19	20	20	20	19	18	17	15	13	12	11	13.9	20.0																						
31-May	11	10	8	6	7	7	9	11	14	15	17	18	19	19	20	20	20	19	19	16	15	13	12	11	14.0	20.3																						
																								8.7	8.2	7.4	6.9	6.3	6.1	7.4	8.9	10.6	12.3	13.9	14.8	15.7	16.0	16.4	16.8	16.5	16.2	15.4	14.2	12.7	11.4	10.6	9.8	Diurnal Average
																								17.6	17.1	16.6	14.7	13.7	13.0	13.1	14.4	16.1	19.2	21.4	22.1	23.1	23.6	23.9	23.7	24.2	24.2	23.3	21.9	20.9	19.7	19.2	18.5	Diurnal Maximum

P - Power Failure

**Hourly Averages**

**External Temperature (ET) - °C**

**Beaverlodge - May 2011**



## Hourly Averages

Relative Humidity (RH) - %

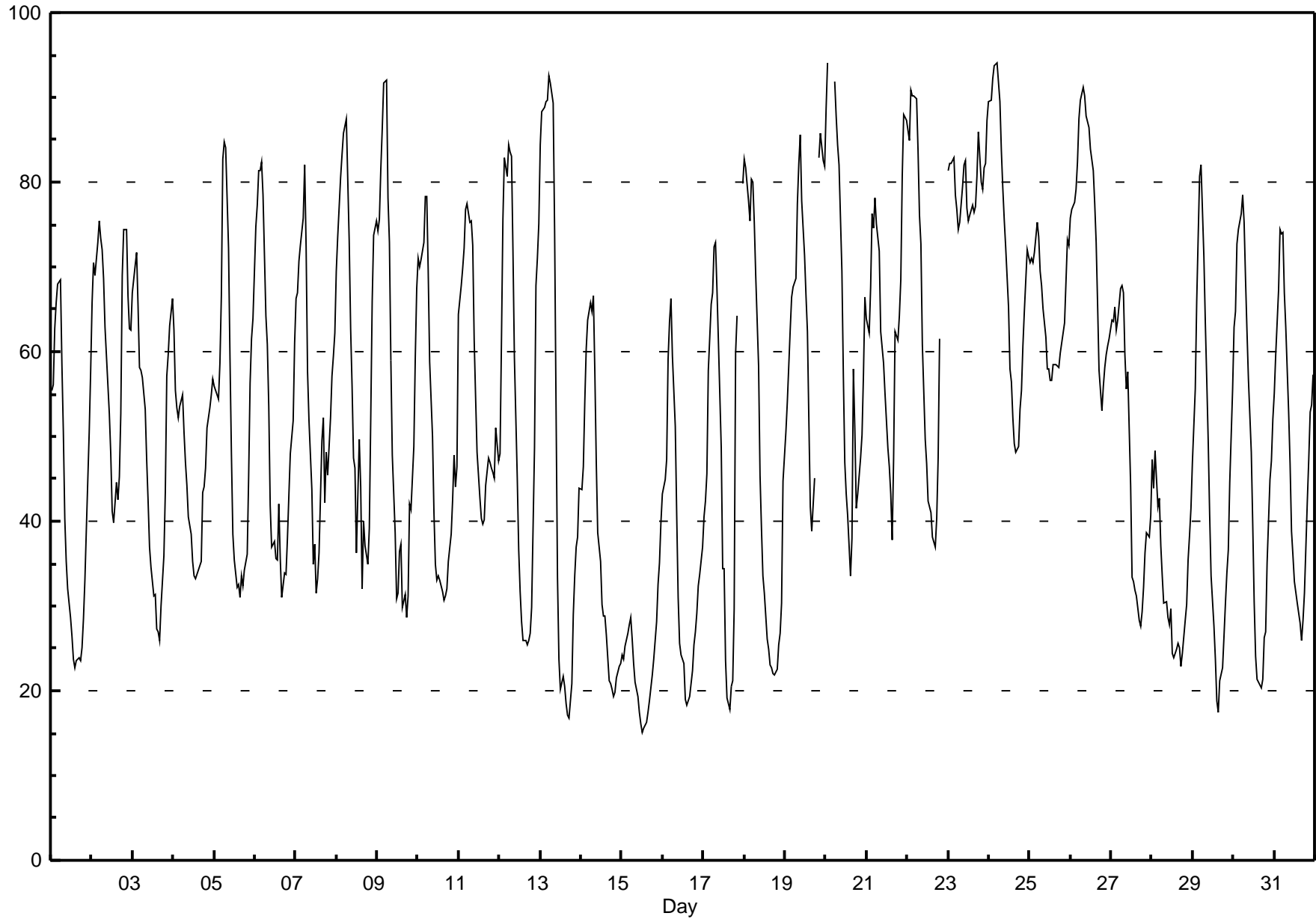
Beaverlodge - May 2011

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 94.2 % on May 20 02:00 Maximum Daily Average: 79.7 % on May 23																		Hours in Service: 744 Hours of Data: 733 Hours of Missing Data: 11 Hours of Calibration: 0 Percent Operational Time: 98.5																														
Minimum Value: 15 % on May 15 13:00 Minimum Daily Average: 23.5 % on May 15 Maximum Diurnal Average: 74.7 % at hour 6 Minimum Diurnal Average: 34.2 % at hour 16 Monthly Average: 52.80 % Percentiles: P <sub>1</sub> = 17.5 P <sub>10</sub> = 25.5 Q <sub>1</sub> = 34.9 Median = 52.7 Q <sub>3</sub> = 70.5 P <sub>90</sub> = 81.7 P <sub>99</sub> = 91.9																																																
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-May	55	56	63	66	68	68	59	51	40	35	32	29	26	24	23	24	24	24	25	29	33	39	50	58	41.6	68.4																						
2-May	66	70	69	73	75	73	72	69	63	56	53	48	41	40	45	42	45	53	69	74	74	67	63	63	61.0	75.4																						
3-May	67	70	72	65	58	58	57	53	47	42	37	35	31	31	27	27	26	30	36	44	57	60	63	66	48.3	71.7																						
4-May	62	55	53	52	54	55	50	47	44	40	38	35	33	33	34	34	35	43	44	46	51	53	55	57	46.1	62.5																						
5-May	56	55	54	59	67	83	85	84	72	59	48	39	35	32	33	31	34	32	34	36	45	56	61	64	52.3	84.8																						
6-May	75	77	81	81	82	78	64	61	54	42	37	38	36	35	42	36	31	34	34	38	43	48	52	61	52.5	82.5																						
7-May	66	67	71	72	76	82	72	58	52	44	35	37	31	33	36	49	52	42	48	45	52	57	59	62	54.2	82.1																						
8-May	69	74	81	83	86	87	87	73	63	56	47	46	36	50	44	32	40	37	35	39	52	66	74	75	59.7	87.4																						
9-May	74	76	81	86	92	92	78	73	59	48	39	31	32	36	37	30	31	29	31	42	41	49	59	68	54.7	92.0																						
10-May	71	70	71	73	78	78	70	59	50	41	35	33	33	33	32	31	31	32	35	38	42	48	44	46	49.0	78.4																						
11-May	64	68	70	72	77	77	75	75	73	61	55	48	43	40	40	40	44	47	47	46	46	45	51	47	56.3	77.5																						
12-May	48	61	76	83	81	84	84	83	72	59	45	37	32	28	26	26	25	26	27	30	49	68	71	75	53.9	84.4																						
13-May	84	88	89	90	90	92	92	89	74	53	33	24	20	22	21	18	17	17	21	29	33	37	38	44	50.7	92.5																						
14-May	44	46	54	60	64	66	65	67	58	47	39	35	30	29	29	27	21	21	20	19	20	22	23	23	38.6	66.6																						
15-May	24	24	25	27	28	29	26	23	21	19	17	16	15	16	17	19	20	22	24	28	32	35	40	23.5	39.8																							
16-May	43	45	47	59	64	66	59	51	41	31	26	24	23	19	18	19	19	22	26	27	29	32	34	37	35.9	66.3																						
17-May	41	42	46	58	66	67	72	73	67	61	49	34	34	24	19	18	20	21	30	60	64	P	P	80	47.6	79.8																						
18-May	83	82	78	75	80	80	75	69	58	45	39	34	32	26	25	23	23	22	22	23	25	27	30	45	46.7	82.7																						
19-May	50	54	58	62	66	68	69	78	82	86	78	71	67	62	52	42	39	45	P	P	83	86	83	82	66.5	85.8																						
20-May	89	94	P	P	P	92	88	84	82	70	57	47	43	41	34	38	58	51	42	43	47	50	57	66	60.6	94.2																						
21-May	64	62	68	76	75	78	75	72	62	60	59	55	49	46	43	38	47	62	61	64	69	81	88	87	64.3	87.9																						
22-May	86	85	91	90	90	90	84	76	73	61	50	47	42	42	41	38	37	40	48	62	P	P	P	P	63.6	90.8																						
23-May	81	82	82	83	78	77	74	75	79	82	83	77	75	76	77	76	77	81	86	80	79	82	82	87	79.7	87.3																						
24-May	89	90	92	94	94	94	89	84	79	76	72	65	58	56	52	49	48	49	53	55	61	65	72	71	71.2	94.0																						
25-May	71	71	71	72	75	73	69	68	65	62	58	58	57	57	58	59	58	58	60	61	63	68	73	73	64.9	75.2																						
26-May	76	77	78	79	82	87	90	91	90	88	87	86	84	81	77	73	66	58	53	56	58	60	61	62	75.0	91.1																						
27-May	64	64	65	62	64	68	68	67	60	56	58	44	33	33	32	31	28	28	29	32	36	39	38	41	47.4	67.7																						
28-May	47	44	48	42	43	37	34	30	31	29	28	30	24	24	25	26	25	23	24	28	30	35	38	41	32.8	48.3																						
29-May	47	56	66	73	81	82	71	63	57	49	41	34	28	24	19	17	21	23	26	30	34	37	45	56	44.9	82.0																						
30-May	63	65	73	74	76	78	75	68	62	57	48	40	30	24	21	21	20	21	26	27	35	45	47	52	47.9	78.5																						
31-May	55	60	67	74	74	74	67	63	53	47	39	36	33	30	29	28	26	28	32	42	47	53	54	57	48.7	74.4																						
																								63.7	65.5	68.0	70.6	72.7	74.7	70.8	67.0	60.7	53.6	47.1	42.3	38.4	37.0	35.7	34.2	35.2	36.1	38.2	42.4	47.7	51.9	55.2	59.5	Diurnal Average
																								89.4	94.2	92.1	93.8	93.8	94.0	91.6	91.1	90.3	87.8	87.2	86.4	84.0	81.4	77.4	76.4	77.1	80.7	86.0	80.0	82.9	85.8	87.9	87.3	Diurnal Maximum
P - Power Failure																																																



**Hourly Averages**

**Relative Humidity (RH) - %**  
**Beaverlodge - May 2011**





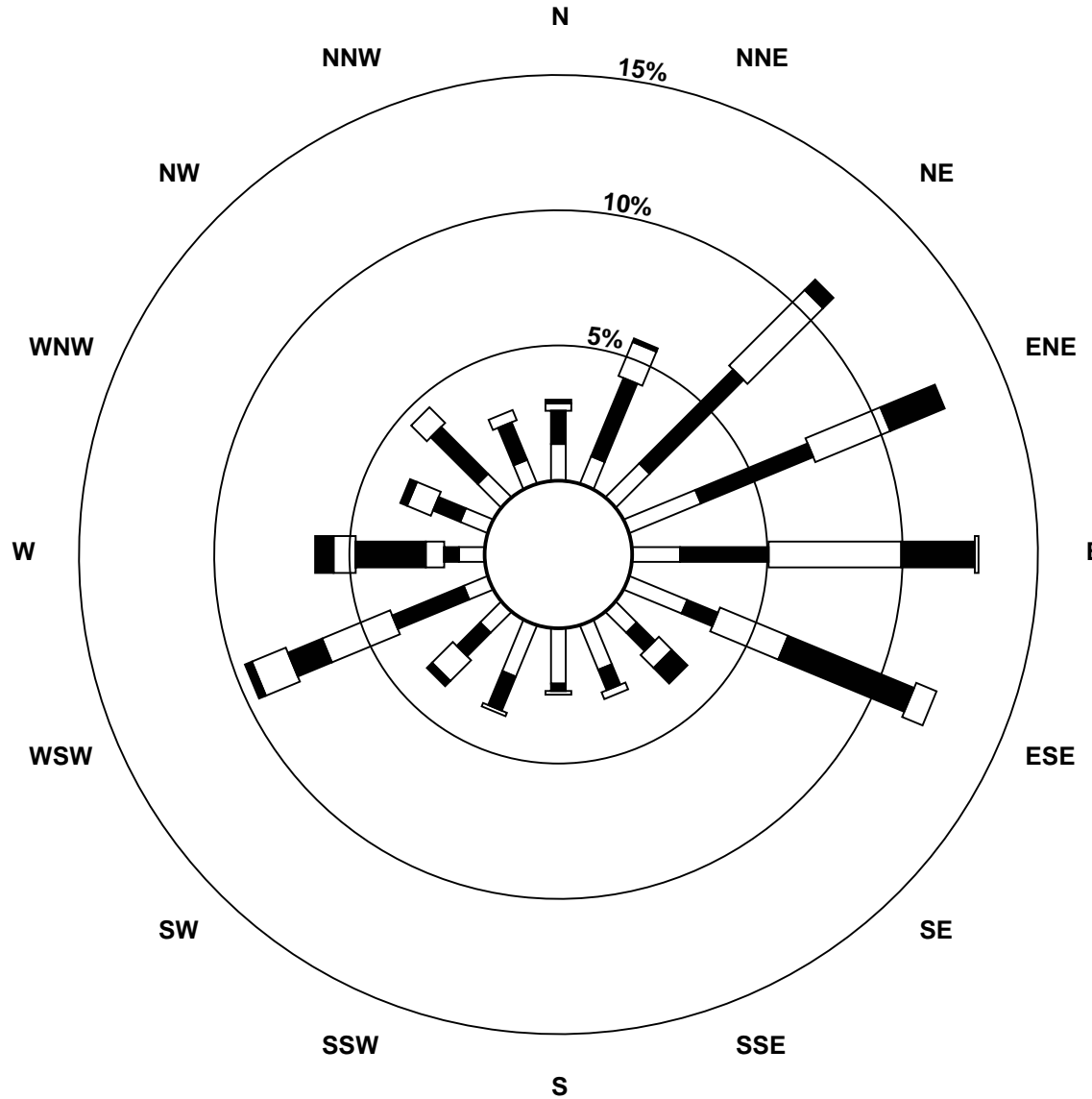
## Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Beaverlodge - May 2011

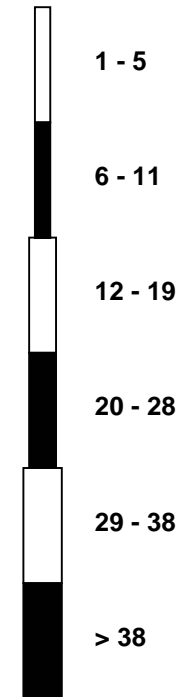
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
23 Spd	21	17	15	16	9	9	13	19	17	15	11	13	14	13	8	2	4	5	4	7	2	10	1	2	8.8	21.4
Dir	57	57	44	41	40	41	54	59	52	41	40	51	38	39	28	5	70	172	186	21	179	304	115	71	46	57
24 Spd	3	3	4	4	2	3	6	9	12	10	11	12	13	14	14	18	14	15	16	14	10	8	4	6	7.5	17.8
Dir	77	85	176	34	287	335	43	86	65	86	95	102	101	107	98	120	118	138	157	156	166	139	91	60	111	120
25 Spd	8	9	10	12	13	15	18	20	26	30	28	22	24	24	24	23	22	22	19	20	19	13	9	14	17.8	29.5
Dir	53	55	55	70	94	102	105	103	105	111	120	125	114	106	106	104	102	103	107	101	102	113	103	100	103	111
26 Spd	14	17	19	16	15	15	18	21	13	18	17	17	18	16	13	13	22	22	25	22	19	15	15	11	16.9	25.2
Dir	103	97	91	86	76	79	84	88	87	83	80	82	83	71	63	63	71	83	84	86	85	77	86	87	82	84
27 Spd	7	8	8	9	8	9	9	8	1	1	3	2	2	6	11	13	15	18	13	9	9	9	11	11	7.7	18.1
Dir	91	56	34	49	38	29	30	38	57	139	230	150	75	30	26	31	45	63	52	41	28	19	21	25	41	63
28 Spd	12	11	6	3	8	10	8	5	5	4	4	8	9	10	11	8	7	8	9	7	5	7	7	6	6.4	11.9
Dir	14	37	9	75	70	71	71	119	156	252	10	56	41	58	45	51	62	64	55	49	33	54	61	59	53	14
29 Spd	4	4	3	2	2	2	2	3	5	6	4	6	5	5	3	11	19	18	22	11	8	14	7	12	4.7	22.0
Dir	94	105	75	79	133	101	173	289	291	325	100	126	146	112	7	41	38	69	68	60	77	53	20	252	62	68
30 Spd	11	10	11	11	12	9	8	8	8	7	2	6	12	17	17	17	17	18	20	19	14	7	8	7	5.9	20.1
Dir	309	328	317	295	315	322	304	319	318	303	354	76	70	76	80	81	73	67	89	93	105	86	72	60	48	89
31 Spd	5	9	8	1	1	3	1	5	8	12	10	8	14	13	10	10	10	13	13	10	3	6	4	3	5.4	14.1
Dir	38	28	39	237	76	261	329	289	117	132	116	101	124	96	68	63	67	53	116	171	60	72	65	83	88	124
Spd	4.7	4.5	2.6	1.5	2.6	2.7	1.9	0.6	1.6	1.7	2.4	2.0	2.8	3.1	3.3	4.1	3.4	5.4	5.6	2.6	3.5	3.4	4.5	4.8	Diurnal Average	
Dir	58	63	51	21	31	34	62	120	182	187	182	125	113	74	63	77	83	103	108	93	106	84	66	67	Diurnal Maximum	
Spd	26.0	28.1	24.7	25.0	22.3	21.4	23.6	30.0	38.2	36.9	43.2	42.6	43.6	40.1	39.5	38.7	38.9	36.9	38.0	34.6	30.3	25.1	28.3	28.3	Diurnal Maximum	
Dir	82	108	264	267	107	255	256	258	258	256	259	259	259	257	267	266	252	263	254	253	107	109	106	107	Diurnal Maximum	
Maximum Speed Value: 44 km/h on May 3 13:00		Minimum Speed Value: 0 km/h on May 8 05:00		Hours in Service: 744																						
Maximum Daily Speed Average: 27.3 km/h on May 3		Minimum Daily Speed Average: 2.3 km/h on May 6		Hours of Data: 744																						
Maximum Diurnal Speed Average: 5.6 km/h at hour 19		Minimum Diurnal Speed Average: 0.6 km/h at hour 8		Hours of Missing Data: 0																						
Monthly Average Velocity: 2.57 km/h 82.3 deg		Speed Percentiles: P <sub>1</sub> = 0.9 P <sub>10</sub> = 2.7 Q <sub>1</sub> = 5.4 Median = 10.2 Q <sub>3</sub> = 17.6 P <sub>90</sub> = 24.1 P <sub>99</sub> = 38.5		Percent Operational Time: 100.0																						
All monthly, daily, and diurnal averages have been calculated using vector methods																										
Frequency Distribution																										
Direction	Speed Range (km/h)						Total																			
	0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38																				
North	18	18	9	2	0	0	47																			
NorthEast	26	59	51	14	0	0	150																			
East	33	42	60	58	8	0	201																			
SouthEast	22	17	13	16	3	0	71																			
South	23	14	1	0	0	0	38																			
SouthWest	19	32	18	6	0	0	75																			
West	17	17	19	29	14	9	105																			
NorthWest	14	27	15	1	0	0	57																			
Total	172	226	186	126	25	9	744																			

**Wind Rose**

**Wind Speed (WS) (km/h)**  
**Beaverlodge - May 2011**



**Wind Speed Classes (km/h)**



## Hourly Averages - Wind Speed (Scalar)

**Wind Speed (km/h)**

**Beaverlodge - May 2011**

<b>Maximum Speed: 44 km/h on May 3 13:00</b>	<b>Maximum Daily Speed Average: 27.9 km/h on May 3</b>	<b>Hours in Service: 744</b>
<b>Minimum Speed: 1 km/h on May 9 04:00</b>	<b>Minimum Daily Speed Average: 7.0 km/h on May 6</b>	<b>Hours of Data: 744</b>
<b>Maximum Diurnal Speed Average: 18.3 km/h at hour 18</b>	<b>Minimum Diurnal Speed Average: 8.3 km/h at hour 4</b>	<b>Hours of Missing Data: 0</b>
<b>Monthly Average Speed: 13.06 km/h</b>	<b>Percentiles: P<sub>1</sub> = 2.0 P<sub>10</sub> = 3.9 Q<sub>1</sub> = 6.9 Median = 11.2 Q<sub>3</sub> = 18.1 P<sub>90</sub> = 24.3 P<sub>99</sub> = 38.6</b>	<b>Percent Operational Time: 100.0</b>

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	5	5	3	2	3	3	3	3	23	28	27	24	24	24	23	21	23	20	14	12	9	21	14	15	14.6	27.6
2-May	18	13	9	4	5	8	12	17	20	22	19	16	9	7	15	16	11	9	11	11	7	10	17	16	12.6	21.9
3-May	10	7	8	12	13	21	24	27	32	37	43	43	44	40	40	38	38	37	38	35	27	22	18	12	27.9	44.2
4-May	12	20	25	25	20	18	19	30	38	33	36	36	38	37	39	39	39	34	24	14	9	7	6	4	25.1	39.4
5-May	4	4	4	5	5	5	4	5	7	10	12	17	17	18	20	27	28	27	27	24	14	13	9	5	13.0	27.8
6-May	2	2	2	2	3	3	3	5	12	10	12	11	7	12	14	9	6	16	8	3	3	3	10	9	7.0	15.7
7-May	8	7	4	2	2	2	4	2	3	4	13	15	11	18	17	16	22	19	19	12	6	6	7	10	9.6	21.9
8-May	7	3	4	3	2	3	3	3	3	3	5	11	13	23	12	10	11	9	7	4	12	15	9	7	7.5	22.9
9-May	6	5	3	1	3	3	2	5	6	6	7	8	12	15	15	13	7	15	28	28	25	20	15	15	11.0	28.4
10-May	12	11	7	3	2	3	3	4	8	12	12	10	17	15	14	8	6	8	7	5	8	10	11	11	8.7	16.9
11-May	22	11	7	4	8	9	7	8	6	4	9	13	10	9	5	4	8	11	15	15	11	6	5	2	8.8	22.1
12-May	7	19	14	7	11	8	4	4	4	14	24	23	16	13	17	12	18	16	6	12	9	10	8	9	11.9	24.4
13-May	9	11	5	6	9	6	5	5	6	7	9	9	11	17	23	21	22	22	24	31	30	24	24	28	15.1	30.9
14-May	26	26	22	20	19	13	9	4	3	7	6	10	19	21	17	20	21	25	26	28	28	25	28	28	18.8	28.4
15-May	26	28	25	23	22	20	22	25	22	20	22	25	26	26	27	30	30	31	27	26	22	23	23	18	24.6	30.8
16-May	11	9	4	7	13	5	4	7	8	13	15	21	18	20	19	21	21	21	21	20	18	18	27	28	15.3	27.7
17-May	21	20	21	8	7	15	24	17	17	19	21	22	22	24	25	25	21	19	24	28	16	17	16	10	19.2	28.1
18-May	7	7	8	8	3	7	8	11	10	13	13	11	9	11	9	10	11	8	6	6	6	9	12	13	9.0	12.8
19-May	13	8	12	9	8	14	8	11	9	10	13	10	8	9	8	7	11	18	25	18	8	6	7	6	10.6	25.3
20-May	4	5	5	6	7	8	4	5	5	5	5	8	16	18	17	20	20	29	15	7	5	6	10	9	10.0	29.1
21-May	11	8	8	14	14	13	10	7	10	8	5	12	13	10	12	8	19	10	9	12	6	4	4	7	9.8	19.5
22-May	8	10	6	7	6	4	4	6	7	5	6	9	12	11	14	18	17	19	29	18	9	11	16	17	11.2	29.4
23-May	22	17	15	16	9	10	13	19	17	15	11	13	14	13	9	3	4	7	6	9	5	11	2	3	11.0	21.5
24-May	4	4	4	4	3	4	6	9	12	10	11	12	14	14	14	18	15	15	16	14	10	8	5	6	9.8	18.4
25-May	8	9	10	12	13	15	18	20	26	30	28	23	24	24	24	24	23	22	19	20	19	13	10	14	18.6	29.7
26-May	15	17	19	16	15	15	18	21	16	18	17	17	18	16	13	14	22	22	25	22	19	15	15	11	17.3	25.4
27-May	7	8	9	9	8	9	9	8	3	3	4	4	5	7	12	13	16	18	14	9	9	9	12	11	9.0	18.2
28-May	12	12	11	6	9	11	9	6	7	5	7	9	10	12	12	9	9	9	8	5	7	7	7	7	8.6	12.2
29-May	4	5	3	2	3	3	2	4	5	7	6	8	8	8	6	13	20	19	22	11	9	16	12	13	8.7	22.1
30-May	12	10	11	11	12	9	8	8	9	8	5	8	14	18	18	18	18	19	20	20	14	7	8	7	12.2	20.3
31-May	6	9	8	2	3	4	3	5	8	12	11	9	15	15	12	12	11	14	19	10	4	6	4	4	8.6	18.5
	10.9	10.6	9.5	8.3	8.5	8.7	8.7	10.1	11.7	12.8	14.0	15.1	16.0	17.0	16.8	16.6	17.7	18.3	18.1	15.9	12.4	12.2	11.9	11.5	Diurnal Average	
	26.1	28.1	24.8	25.0	22.4	21.5	23.7	30.2	38.4	37.5	43.5	43.0	44.2	40.5	39.9	39.0	39.4	37.4	38.4	34.9	30.4	25.1	28.4	28.3	Diurnal Maximum	

All monthly, daily, and diurnal averages have been calculated using scalar methods

# Hourly Standard Deviations

Wind Direction (WD) - deg

Beaverlodge - May 2011

Maximum Value: 94.6 deg on May 19 09:00																							Hours in Service:	744	
Minimum Value: 1.9 deg on May 14 05:00																							Hours of Data:	744	
Percentiles: P <sub>1</sub> = 2.5 P <sub>10</sub> = 5.1 Q <sub>1</sub> = 8.1 Median = 16.6 Q <sub>3</sub> = 37.1 P <sub>90</sub> = 62.7 P <sub>99</sub> = 87.2																							Hours of Missing Data:	0	
																							Hours of Calibration:	0	
																							Percent Operational Time:	100.0	
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-May	15	13	45	28	18	24	40	39	11	9	12	14	17	13	12	15	13	11	10	5	5	6	26	6	44.7
2-May	5	23	66	34	53	15	7	5	7	8	9	11	22	37	16	11	19	84	58	8	24	15	5	4	83.7
3-May	6	11	9	20	9	5	4	6	8	10	7	8	10	8	9	10	9	10	9	7	3	2	2	3	20.5
4-May	6	4	3	3	6	4	5	6	5	9	12	11	10	14	10	7	9	6	4	5	8	7	35	83	82.8
5-May	8	12	18	79	51	28	80	17	17	22	31	20	16	14	12	12	9	6	7	6	5	4	8	33	80.2
6-May	62	57	42	37	29	25	36	19	14	23	18	31	56	41	21	54	78	11	14	37	39	19	7	17	77.7
7-May	12	8	32	68	84	82	67	54	43	71	56	23	28	13	46	30	10	10	5	15	54	26	16	6	84.2
8-May	49	68	60	93	86	62	76	44	54	70	57	22	22	12	14	89	29	47	46	38	65	4	8	8	92.7
9-May	8	24	76	46	42	43	66	19	20	30	28	55	45	62	34	60	77	62	8	13	9	8	5	3	77.0
10-May	7	6	10	59	25	16	32	20	23	18	18	40	13	21	31	46	92	58	66	40	16	14	9	87	92.1
11-May	17	13	29	34	19	15	11	22	19	46	33	12	16	13	55	72	84	13	6	3	3	57	59	74	84.3
12-May	52	21	6	28	37	35	59	55	58	23	9	13	19	41	14	42	26	23	21	35	76	21	21	33	75.9
13-May	21	10	61	25	14	69	22	32	23	30	38	72	72	22	14	18	25	14	9	5	4	8	3	3	72.4
14-May	5	4	3	3	2	6	27	18	41	40	61	68	11	18	23	18	18	14	6	4	4	3	3	3	68.4
15-May	2	3	4	3	2	2	4	6	12	18	15	13	13	12	16	14	9	9	8	7	3	3	4	7	18.4
16-May	8	8	63	38	22	57	54	37	35	17	18	13	14	22	17	18	13	17	8	7	5	5	4	3	63.4
17-May	4	4	8	44	37	8	7	7	8	9	8	12	28	10	13	17	18	16	44	9	53	39	17	8	53.1
18-May	15	11	20	8	82	8	14	6	20	18	22	36	53	50	61	61	91	43	69	45	13	5	14	5	90.5
19-May	5	9	5	8	14	4	66	22	95	22	16	25	22	32	52	52	54	42	25	10	81	80	15	51	94.6
20-May	49	31	36	71	23	20	84	24	19	20	52	62	26	18	25	17	13	7	14	31	83	10	4	34	84.1
21-May	7	16	82	10	25	5	37	52	11	61	49	22	23	22	37	68	76	64	43	19	40	21	26	11	82.3
22-May	6	7	84	25	45	72	89	72	22	46	73	53	36	22	20	22	15	14	25	26	93	11	9	9	93.1
23-May	6	7	9	6	24	21	12	6	7	5	8	10	8	7	10	65	39	48	68	43	65	14	68	84	84.2
24-May	29	30	46	19	35	40	12	14	8	13	8	13	20	12	17	15	16	19	7	7	10	3	22	8	45.7
25-May	3	3	3	9	6	5	4	6	6	7	10	10	7	9	10	10	9	9	7	6	4	7	5	4	10.2
26-May	8	4	3	6	5	5	5	5	71	8	7	9	9	9	10	13	7	7	6	5	4	4	4	4	71.4
27-May	9	7	5	7	12	4	6	13	93	76	44	83	79	36	29	16	17	7	11	15	5	4	7	7	92.9
28-May	7	23	69	73	34	25	18	44	57	61	75	42	32	40	29	43	46	27	11	10	6	11	8	49	74.7
29-May	18	21	12	15	41	39	37	48	16	41	55	40	59	70	81	32	15	18	7	7	19	35	70	24	80.8
30-May	17	12	4	8	8	7	8	14	29	28	84	53	29	21	18	20	20	17	9	11	11	10	7	7	83.7
31-May	8	12	16	82	80	53	84	42	32	14	23	42	22	35	33	39	31	18	47	10	84	13	20	29	84.4
61.9	68.4	83.6	92.7	85.9	82.1	88.8	72.3	94.6	75.6	83.7	83.4	78.7	70.4	80.8	88.7	92.1	83.7	69.2	45.3	93.1	80.5	69.7	86.8		

PAZA

Portable – Bonanza Station

Monthly Summary Tables, Graphs and  
Roses

## Hourly Averages

## Sulphur Dioxide (SO<sub>2</sub>) - ppb

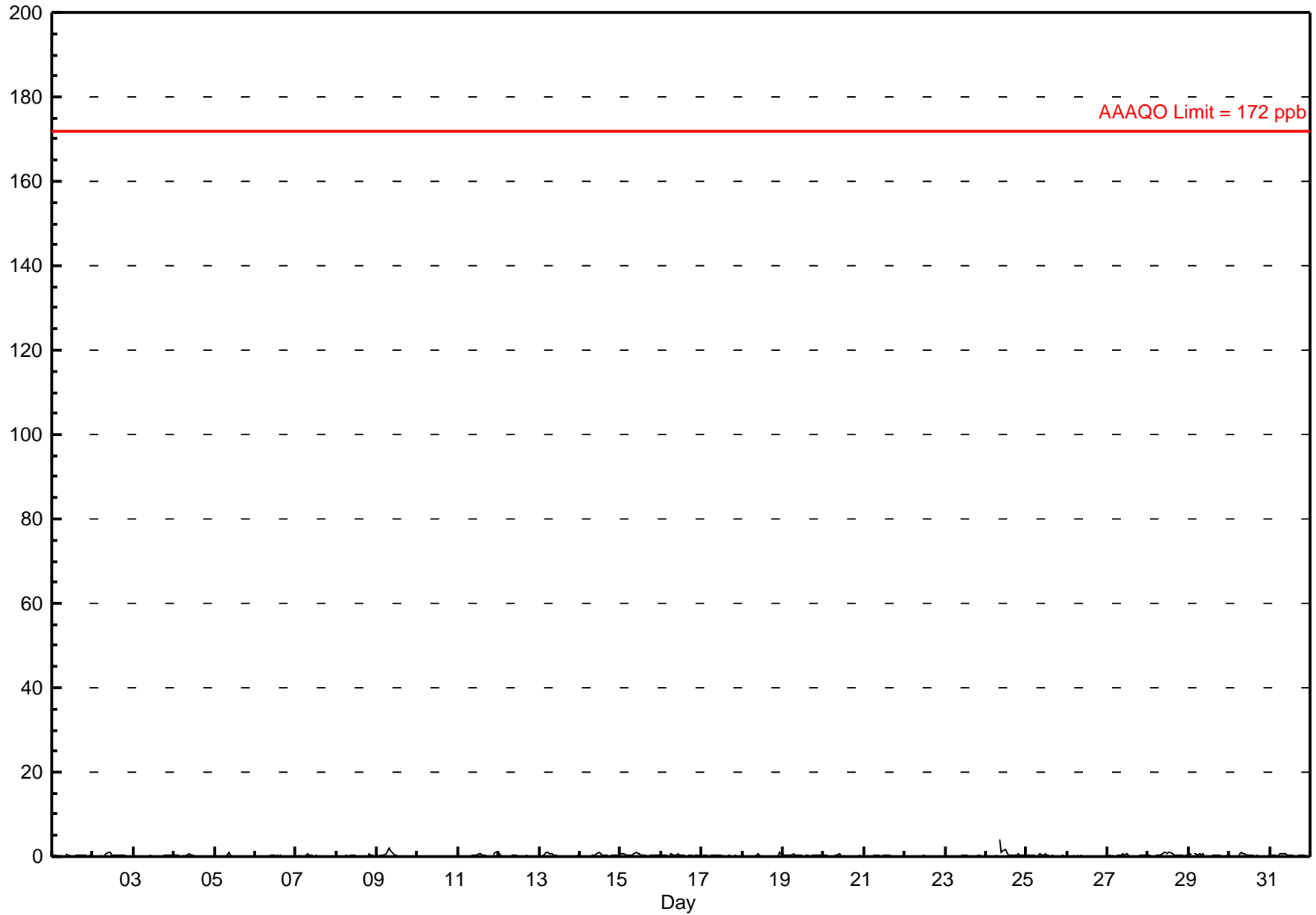
### Portable-Bonanza - May 2011

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 4.0 ppb on May 24 09:00	Maximum Daily Average: 0.6 ppb on May 24		Hours of Data:	708
Minimum Value: 0 ppb on May 4 22:00	Minimum Daily Average: 0.0 ppb on May 10		Hours of Missing Data:	36
Maximum Diurnal Average: 0.6 ppb at hour 9	Minimum Diurnal Average: 0.1 ppb at hour 21		Hours of Calibration:	36
Monthly Average: 0.24 ppb	Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.1 Median = 0.2 Q <sub>3</sub> = 0.3 P <sub>90</sub> = 0.5 P <sub>99</sub> = 1.1		Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	0	0	0	0	0	0	0	A	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.6
2-May	0	0	0	0	0	0	A	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	1.1
3-May	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
4-May	0	0	0	0	A	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5
5-May	0	0	0	A	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1.0
6-May	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
7-May	0	A	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.6
8-May	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	A	0.2	0.6
9-May	0	0	0	0	0	1	1	2	1	1	1	1	0	0	0	0	0	0	0	0	0	0	A	A	0.4	1.9
10-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.0	0.1
11-May	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	A	0	1	1	0.3	1.0
12-May	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0.1	0.6
13-May	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.2	0.9
14-May	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	A	A	0	0	0	0	0	0	0.3	0.9
15-May	1	1	1	0	0	0	0	0	1	1	1	1	0	0	0	A	0	0	0	0	0	0	0	1	0.5	0.8
16-May	0	0	0	0	0	0	1	0	0	0	1	1	0	0	A	0	0	0	0	0	0	0	0	0	0.3	0.6
17-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.2	0.4
18-May	0	0	0	0	0	0	0	0	1	0	0	0	1	0	A	0	0	0	0	0	0	0	1	1	0.2	0.9
19-May	0	0	0	0	0	0	1	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.3	0.8
20-May	0	0	0	0	0	0	0	0	0	1	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.8
21-May	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
22-May	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
23-May	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.5
24-May	0	0	0	0	0	0	0	A	4	1	1	2	1	0	0	0	0	0	0	1	0	0	0	0	0.6	4.0
25-May	0	0	0	0	0	0	A	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.7
26-May	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
27-May	0	0	0	0	A	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.6
28-May	0	0	0	A	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0.4	0.9
29-May	0	1	A	1	1	0	1	0	1	0	C	C	C	0	0	0	0	0	0	0	0	0	1	0	0.4	0.7
30-May	0	A	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.9
31-May	A	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.3	0.8
	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.6	0.5	0.4	0.4	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2	Diurnal Average	
	0.6	0.7	0.6	0.7	0.9	0.9	1.2	1.9	4.0	1.1	1.3	1.7	0.9	0.9	0.6	0.5	0.5	0.5	0.4	0.6	0.4	0.4	1.0	0.9	Diurnal Maximum	

C - Calibration      A - Automated Daily Zero Span  
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb    24-hr 48 ppb    30-day 11 ppb





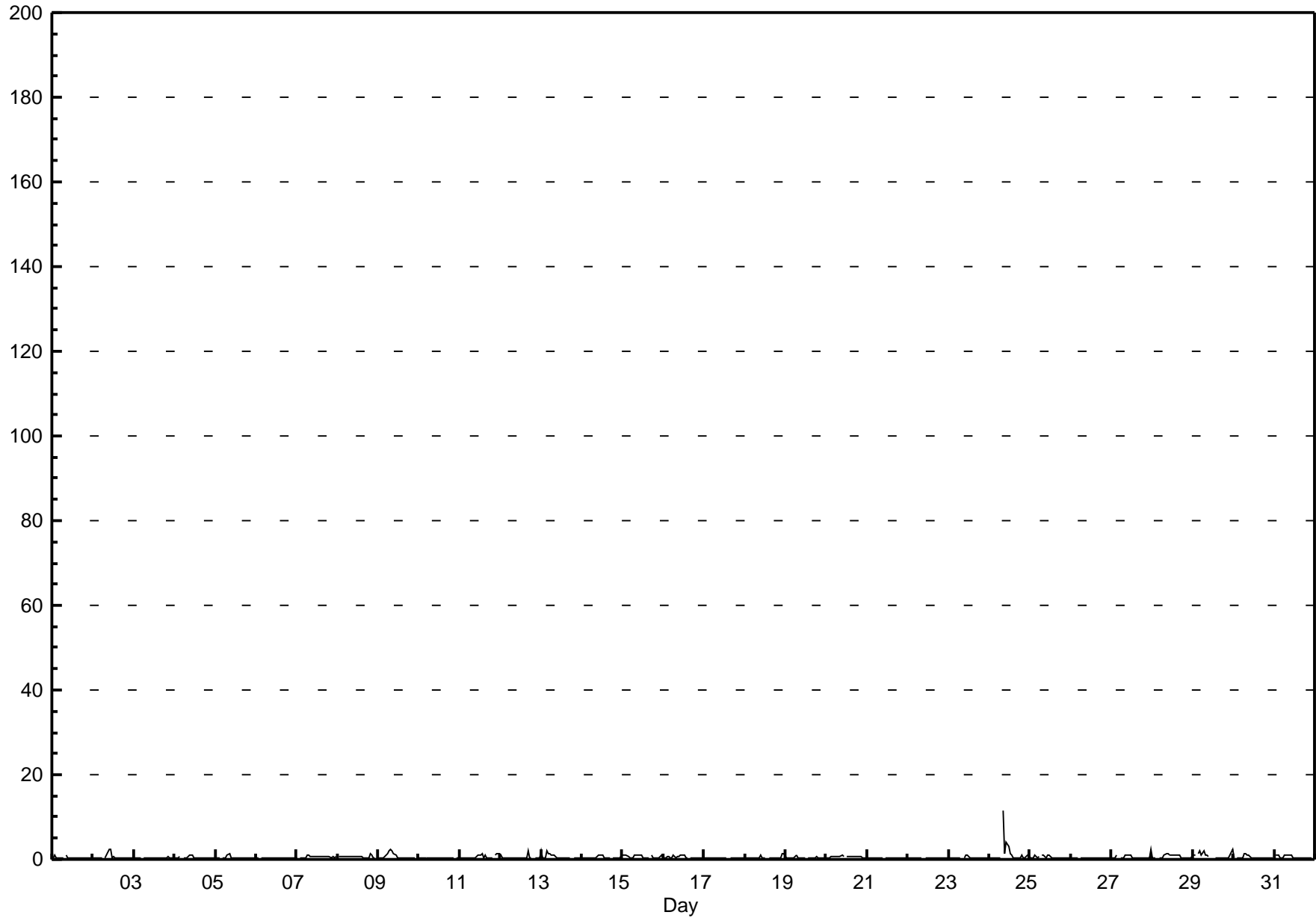
## Hourly Maximums

## Sulphur Dioxide (SO<sub>2</sub>) - ppb Portable-Bonanza - May 2011

Maximum Value: 11.5 ppb on May 24 09:00		Maximum Daily Average: 1.4 ppb on May 24		Hours in Service: 744																								
Minimum Value: 0 ppb on May 3 00:00		Minimum Daily Average: 0.4 ppb on May 10		Hours of Data: 708																								
Maximum Diurnal Average: 1.1 ppb at hour 9		Minimum Diurnal Average: 0.5 ppb at hour 19		Hours of Missing Data: 36																								
Monthly Average: 0.62 ppb		Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 0.4 Q <sub>1</sub> = 0.5 Median = 0.5 Q <sub>3</sub> = 0.5 P <sub>90</sub> = 1.0 P <sub>99</sub> = 2.5		Hours of Calibration: 36																								
				Percent Operational Time: 100.0																								
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24				
1-May	0	1	0	0	0	0	0	A	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	1.0		
2-May	0	0	0	0	0	0	A	0	1	2	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0.7	2.5		
3-May	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0.5	0.8		
4-May	0	0	0	1	A	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	1.0		
5-May	0	0	0	A	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	1.5		
6-May	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0.5	0.5		
7-May	0	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0.6	1.0		
8-May	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	A	0.6	1.4		
9-May	0	0	0	0	1	1	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.8	2.5		
10-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.4	0.5		
11-May	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	0	0	0	0	A	1	1	1	0.7	1.4		
12-May	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	A	0	0	0	0	0.5	2.0		
13-May	2	0	0	2	1	1	1	1	1	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.7	1.9		
14-May	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	A	0	0	0	0	0	1	0.6	1.0		
15-May	1	1	1	1	0	0	0	1	1	1	1	1	0	0	0	A	1	0	0	0	1	1	1	1	0.7	1.0		
16-May	1	1	1	1	0	0	1	0	1	1	1	1	0	0	A	0	0	0	0	0	0	0	1	1	0.6	1.0		
17-May	1	1	1	1	1	1	0	0	1	1	1	1	0	1	A	0	0	0	0	0	0	0	0	0	0.5	0.5		
18-May	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.6	1.5		
19-May	0	0	0	0	0	0	1	0	0	0	0	0	A	0	0	0	0	0	1	0	0	0	0	1	0.5	1.0		
20-May	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0.5	1.0		
21-May	1	1	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0.5		
22-May	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0.5		
23-May	0	0	0	0	0	0	0	0	A	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0.5	0.9		
24-May	0	0	0	0	0	0	0	A	11	1	4	3	1	1	0	0	0	0	0	1	0	0	1	1	1.4	11.5		
25-May	0	0	0	1	0	1	A	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0.6	1.0		
26-May	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0.5		
27-May	0	1	0	1	A	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	1	0	0	2	0.7	2.5		
28-May	0	0	0	A	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0.7	1.5		
29-May	1	1	A	1	2	1	2	1	1	1	1	C	C	C	0	0	0	0	0	0	0	1	2	0.9	2.3			
30-May	0	A	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6	1.5		
31-May	A	1	1	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	A	0.7	1.2		
		0.6	0.6	0.5	0.6	0.6	0.6	0.7	0.7	1.1	0.8	0.8	0.7	0.6	0.6	0.5	0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.6	0.7	Diurnal Average		
		1.9	1.2	1.0	1.9	2.0	1.5	2.0	2.5	11.5	2.5	4.0	3.0	1.3	1.4	1.0	1.0	2.0	1.0	1.0	0.8	1.4	1.0	1.1	1.5	2.5	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																										

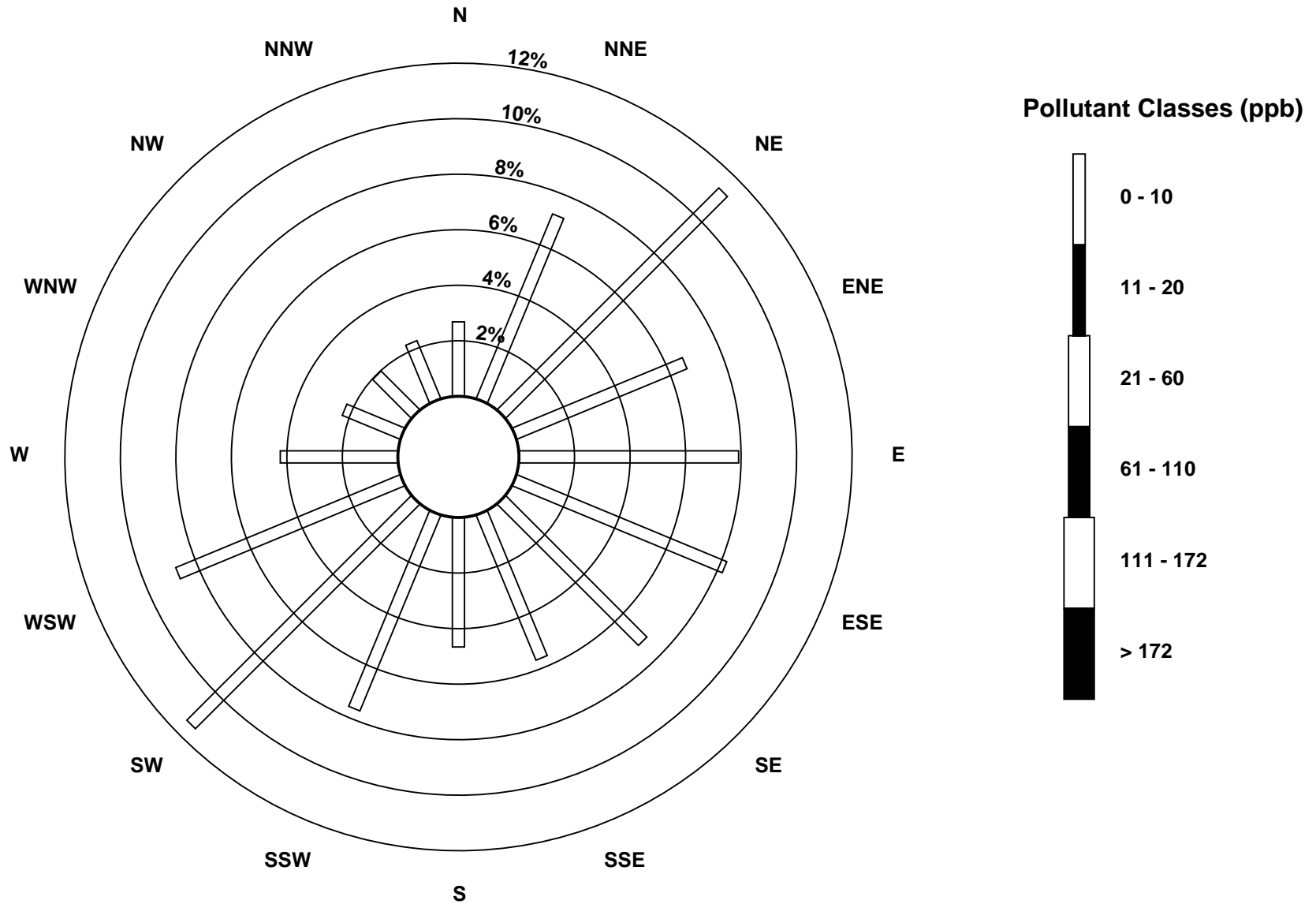
### Hourly Maximums

Sulphur Dioxide (SO<sub>2</sub>) - ppb  
Portable-Bonanza - May 2011



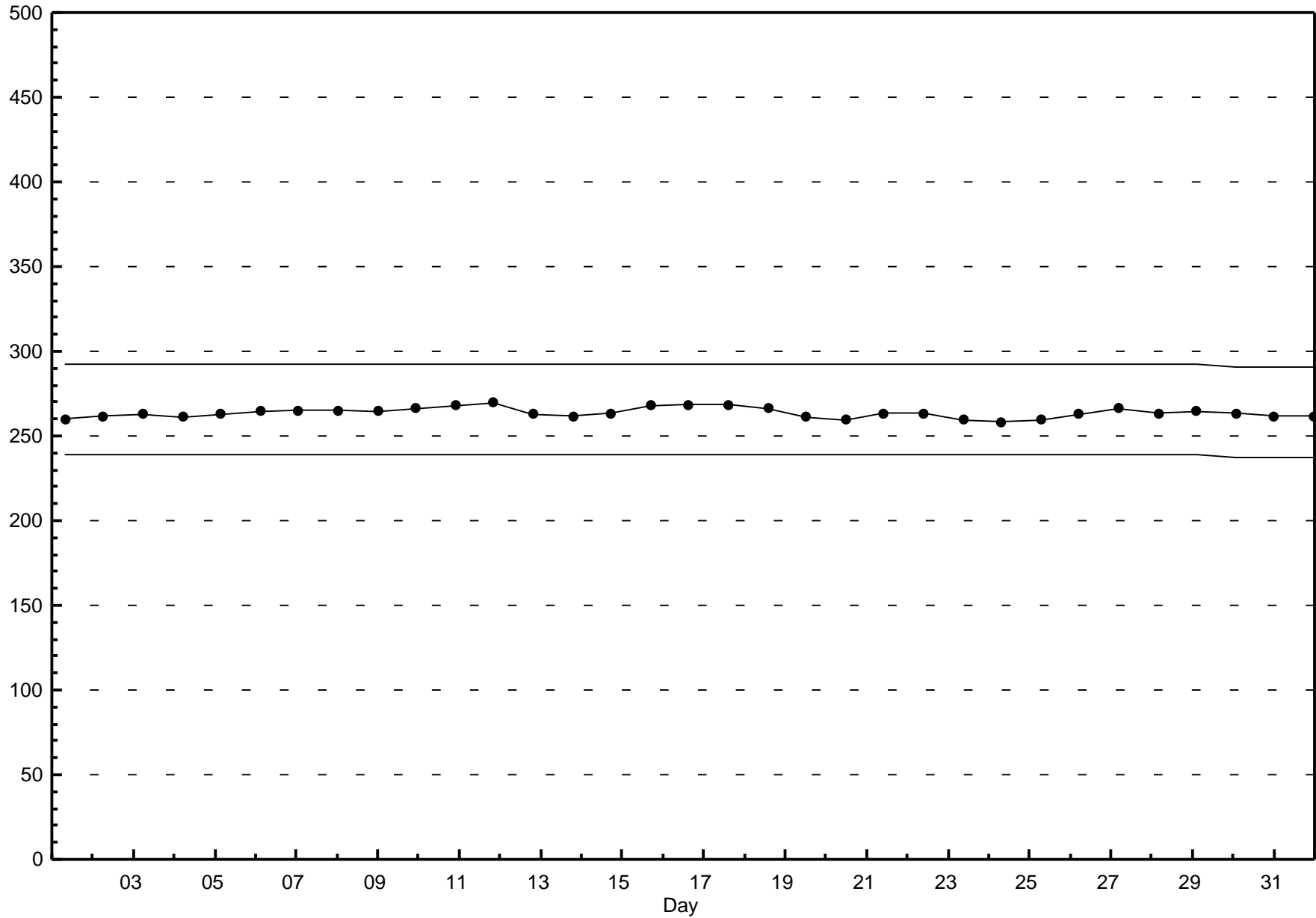
**Pollutant Rose**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Portable-Bonanza - May 2011**



### Span Responses

Sulphur Dioxide (SO<sub>2</sub>)  
Portable-Bonanza - May 2011



## Hourly Averages

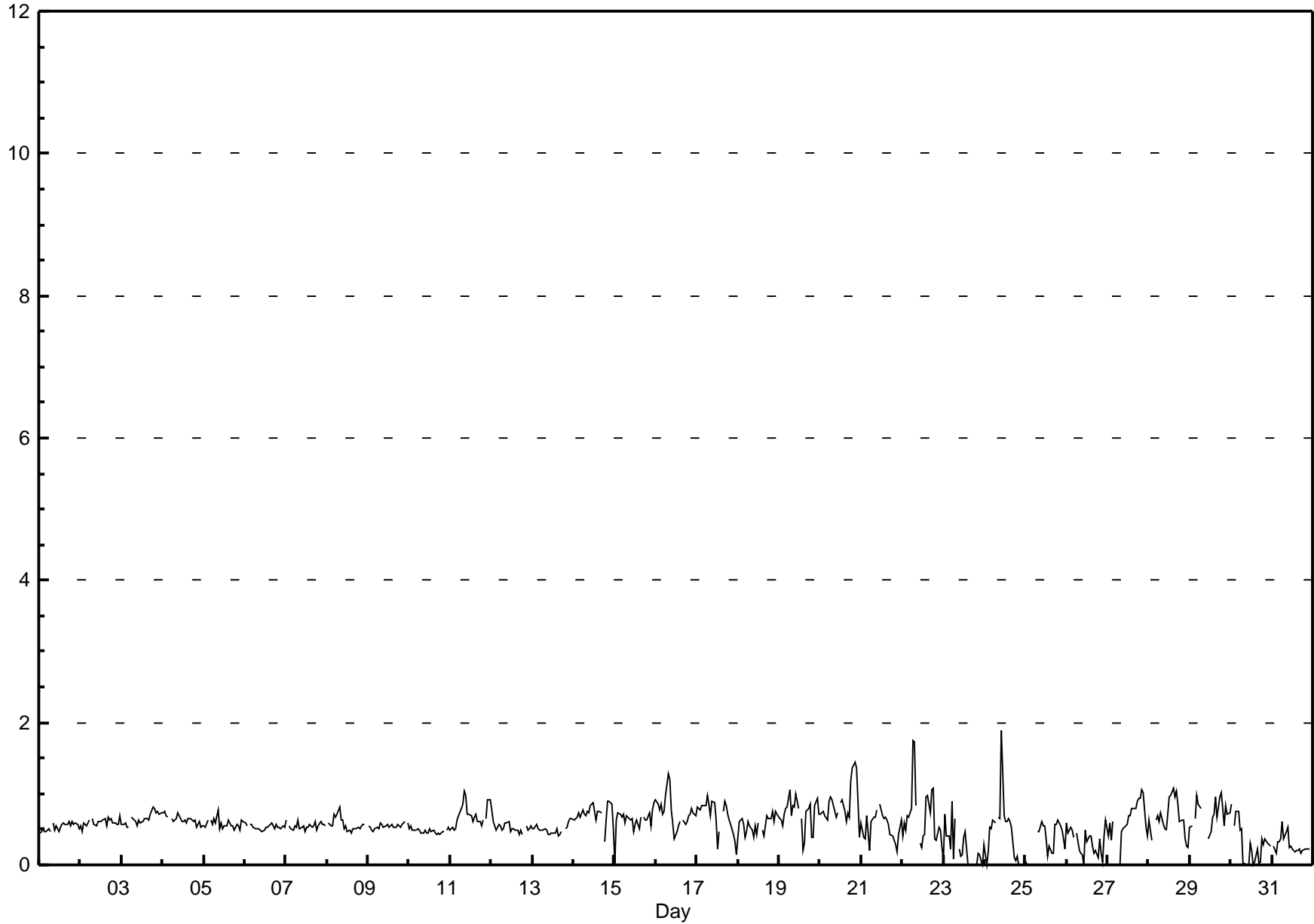
Total Reduced Sulphur (TRS) - ppb

Portable-Bonanza - May 2011

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 1.9 ppb on May 24 11:00	Maximum Daily Average: 0.9 ppb on May 20		Hours of Data:	707
Minimum Value: 0 ppb on May 23 15:00	Minimum Daily Average: 0.2 ppb on May 23		Hours of Missing Data:	37
Maximum Diurnal Average: 0.6 ppb at hour 7	Minimum Diurnal Average: 0.5 ppb at hour 24		Hours of Calibration:	37
Monthly Average: 0.56 ppb	Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.2 Q <sub>1</sub> = 0.5 Median = 0.6 Q <sub>3</sub> = 0.7 P <sub>90</sub> = 0.8 P <sub>99</sub> = 1.2		Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	0	0	1	0	0	0	0	A	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0.5	0.6
2-May	1	0	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	0.7
3-May	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	0.8
4-May	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	0.8
5-May	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	1	0.6	0.8
6-May	1	1	A	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0.5	0.6
7-May	1	A	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	0.5	0.6
8-May	A	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	1	A	0.6	0.8
9-May	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	0.5	0.6	
10-May	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	A	0	1	0.5	0.6
11-May	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	0.7	1.0
12-May	1	1	1	0	1	1	0	1	1	1	1	0	1	0	0	0	0	0	0	A	1	0	1	1	0.5	0.8
13-May	1	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	A	1	1	1	1	1	0.5	0.7
14-May	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	0	1	1	1	1	1	0.7	0.9
15-May	0	1	1	1	1	1	1	1	1	1	1	0	1	1	1	A	1	1	1	1	1	1	1	1	0.6	0.9
16-May	1	1	1	1	1	1	1	1	1	1	0	0	1	1	A	1	1	1	1	1	1	1	1	1	0.7	1.3
17-May	1	1	1	1	1	1	1	1	1	1	1	1	0	0	A	1	1	1	1	1	1	1	0	0	0.7	1.0
18-May	0	1	1	1	0	0	1	1	0	0	1	0	1	0	0	1	1	1	1	1	1	1	1	1	0.6	0.8
19-May	1	1	1	1	1	1	1	1	1	1	1	A	1	0	0	1	1	1	1	1	0	1	1	1	0.7	1.1
20-May	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0	0.9	1.4
21-May	1	0	0	1	0	0	1	1	1	1	A	1	1	1	1	1	1	0	0	0	0	0	0	1	0.5	0.9
22-May	0	1	0	1	1	1	2	2	1	A	0	0	0	0	1	1	1	1	1	0	0	1	0	0	0.7	1.8
23-May	0	1	0	0	0	1	0	1	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.9
24-May	0	0	0	1	1	1	1	A	1	1	2	1	1	1	1	1	1	0	0	0	0	0	0	0	0.4	1.9
25-May	0	0	0	0	0	0	A	0	0	1	1	1	0	0	0	0	0	1	1	1	1	0	0	0	0.3	0.6
26-May	1	0	1	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	0.6
27-May	0	1	0	1	A	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0.6	1.0
28-May	1	0	0	A	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0.7	1.1
29-May	1	1	A	1	1	1	1	C	C	C	C	0	0	1	1	1	1	1	1	1	1	1	1	1	0.7	1.0
30-May	1	A	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.9
31-May	A	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.3	0.6
	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.5	0.5	Diurnal Average
	0.9	0.8	0.8	0.9	1.0	0.9	1.8	1.7	1.2	1.0	1.9	0.9	0.9	1.0	1.1	1.0	1.0	1.1	1.2	1.4	1.4	1.4	1.4	0.9	0.9	Diurnal Maximum

C - Calibration      A - Automated Daily Zero Span  
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb    24-hr 3 ppb



## Hourly Maximums

Total Reduced Sulphur (TRS) - ppb

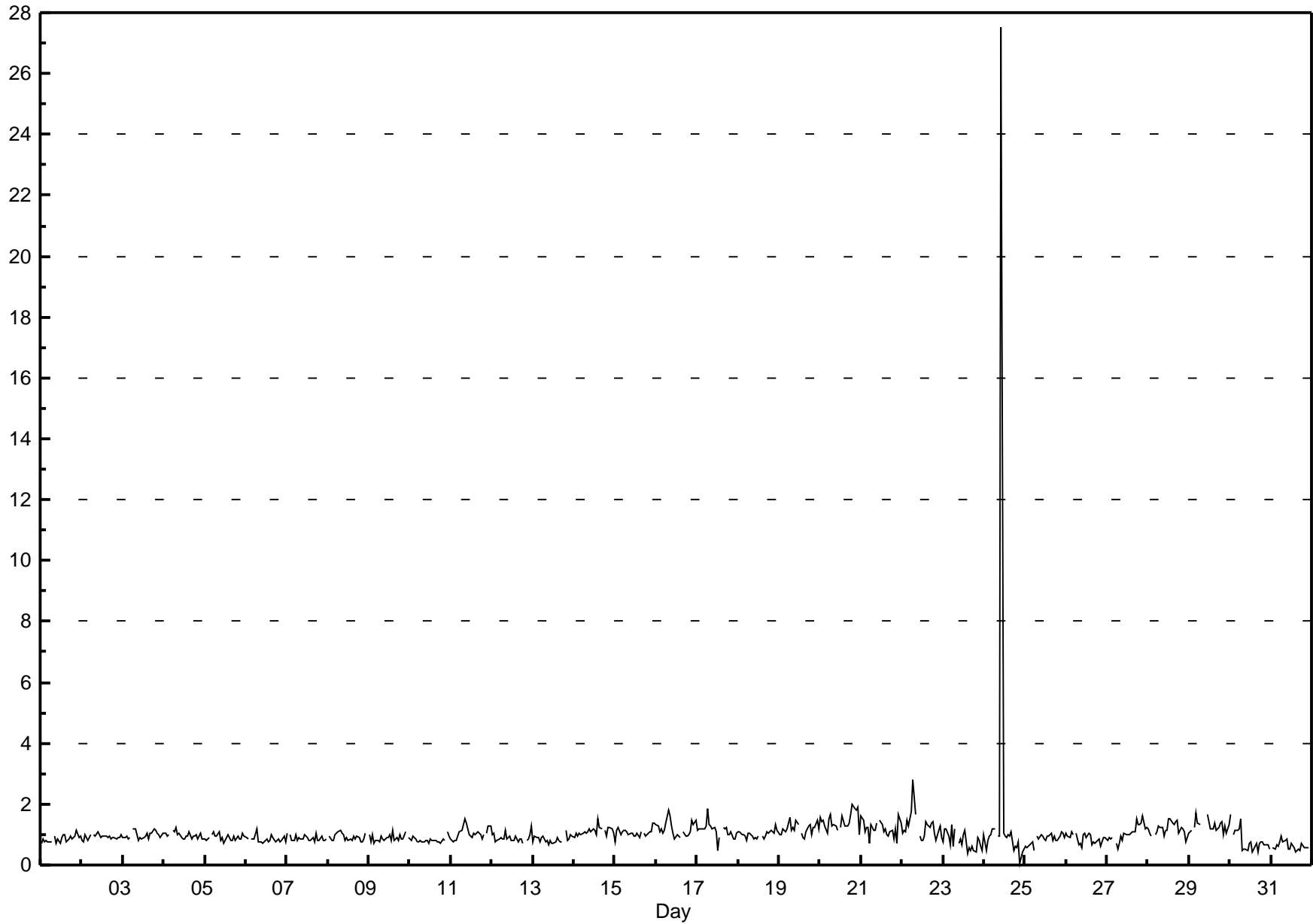
Portable-Bonanza - May 2011

Maximum Value: 27.5 ppb on May 24 11:00		Maximum Daily Average: 2.0 ppb on May 24		Hours in Service: 744																							
Minimum Value: 0 ppb on May 24 22:00		Minimum Daily Average: 0.6 ppb on May 31		Hours of Data: 707																							
Maximum Diurnal Average: 1.9 ppb at hour 11		Minimum Diurnal Average: 0.9 ppb at hour 12		Hours of Missing Data: 37																							
Monthly Average: 1.02 ppb		Percentiles: P <sub>1</sub> = 0.5 P <sub>10</sub> = 0.7 Q <sub>1</sub> = 0.8 Median = 1.0 Q <sub>3</sub> = 1.1 P <sub>90</sub> = 1.3 P <sub>99</sub> = 1.8		Hours of Calibration: 37																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-May	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.1	
2-May	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.1	
3-May	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	1.2	
4-May	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	1.2	
5-May	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.1	
6-May	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.2	
7-May	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.1	
8-May	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.2	
9-May	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.1	
10-May	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	0.8	1.1	
11-May	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1.1	1.5	
12-May	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	0.9	1.3	
13-May	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	0.8	1.2	
14-May	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	A	1	1	1	1	1	1	1	1.1	1.5	
15-May	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1.1	1.4	
16-May	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1.2	1.8	
17-May	1	1	1	1	1	1	2	1	1	1	1	1	0	1	A	1	1	1	1	1	1	1	1	1	1.1	1.9	
18-May	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1.0	1.3	
19-May	1	1	1	1	1	1	2	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1.2	1.6	
20-May	2	1	1	1	1	2	2	1	1	1	1	A	1	2	1	1	1	1	1	2	2	2	2	1	1.4	2.0	
21-May	2	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	2	1	1.2	1.6	
22-May	1	1	1	1	1	2	3	2	2	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.3	2.8	
23-May	1	1	1	1	1	1	1	1	A	1	1	1	1	0	1	0	1	0	0	0	1	1	1	0	0.8	1.3	
24-May	1	0	1	1	1	1	1	A	1	1	28	1	1	1	1	1	1	0	1	1	1	0	0	1	2.0	27.5	
25-May	1	1	1	1	1	0	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.1	
26-May	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.1	
27-May	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1.0	1.6	
28-May	1	1	1	A	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1.2	1.5	
29-May	1	1	A	1	2	1	1	C	C	C	C	2	1	1	1	1	1	1	1	1	1	1	1	1	1.3	1.7	
30-May	2	A	1	1	1	1	1	0	1	1	0	1	1	0	1	1	0	1	1	1	1	1	1	1	0.8	1.7	
31-May	A	1	0	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	1	1	1	1	1	A	0.6	0.9	
		1.0	1.0	1.0	1.0	1.0	1.0	1.2	1.1	1.0	0.9	1.9	0.9	0.9	1.0	1.0	1.0	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	Diurnal Average	
		1.7	1.5	1.5	1.5	1.7	1.8	2.8	2.2	1.7	1.4	27.5	1.7	1.5	1.6	1.5	1.4	1.4	1.5	1.6	2.0	1.8	1.8	1.9	1.5	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									



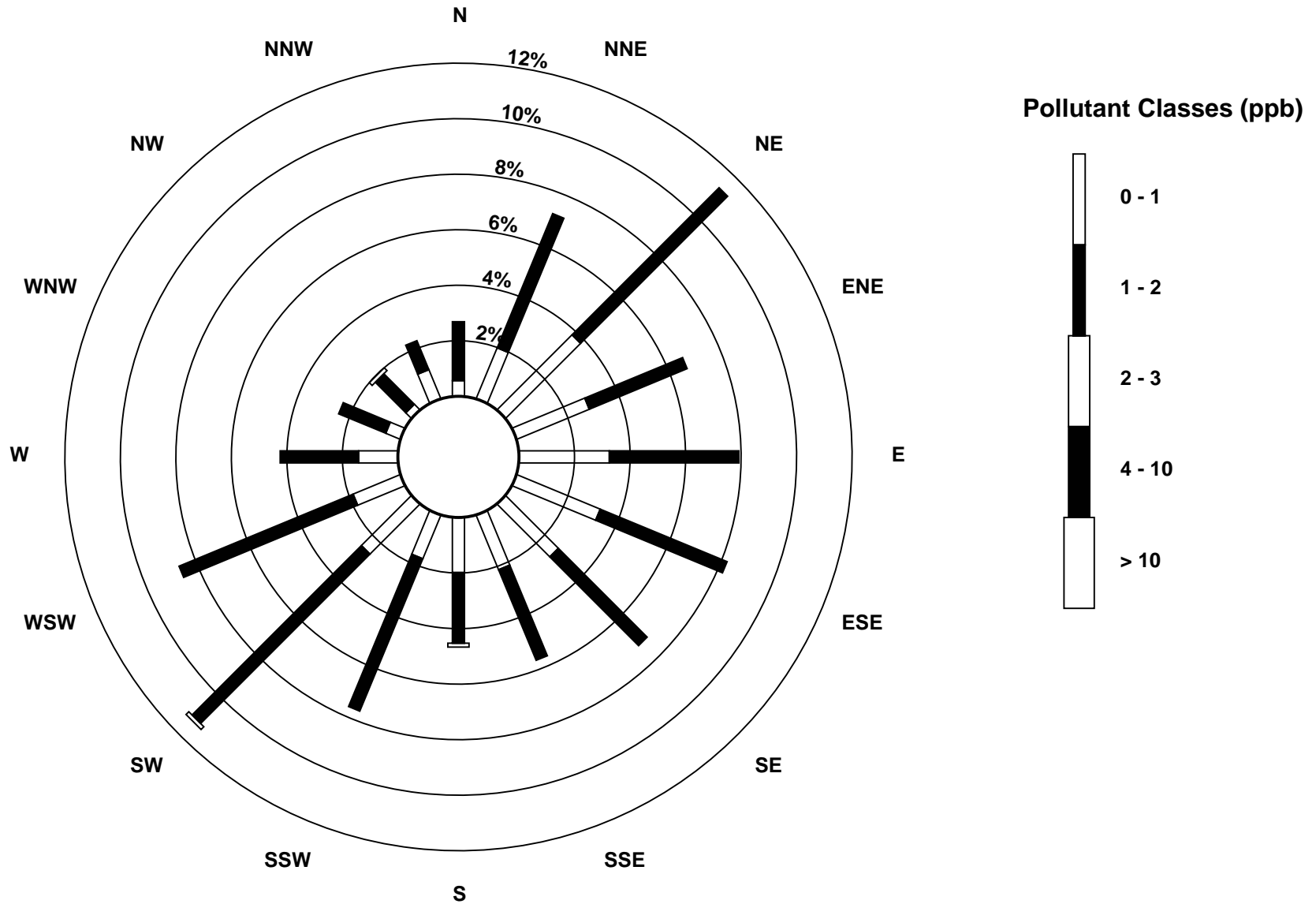
**Hourly Maximums**

**Total Reduced Sulphur (TRS) - ppb**  
**Portable-Bonanza - May 2011**



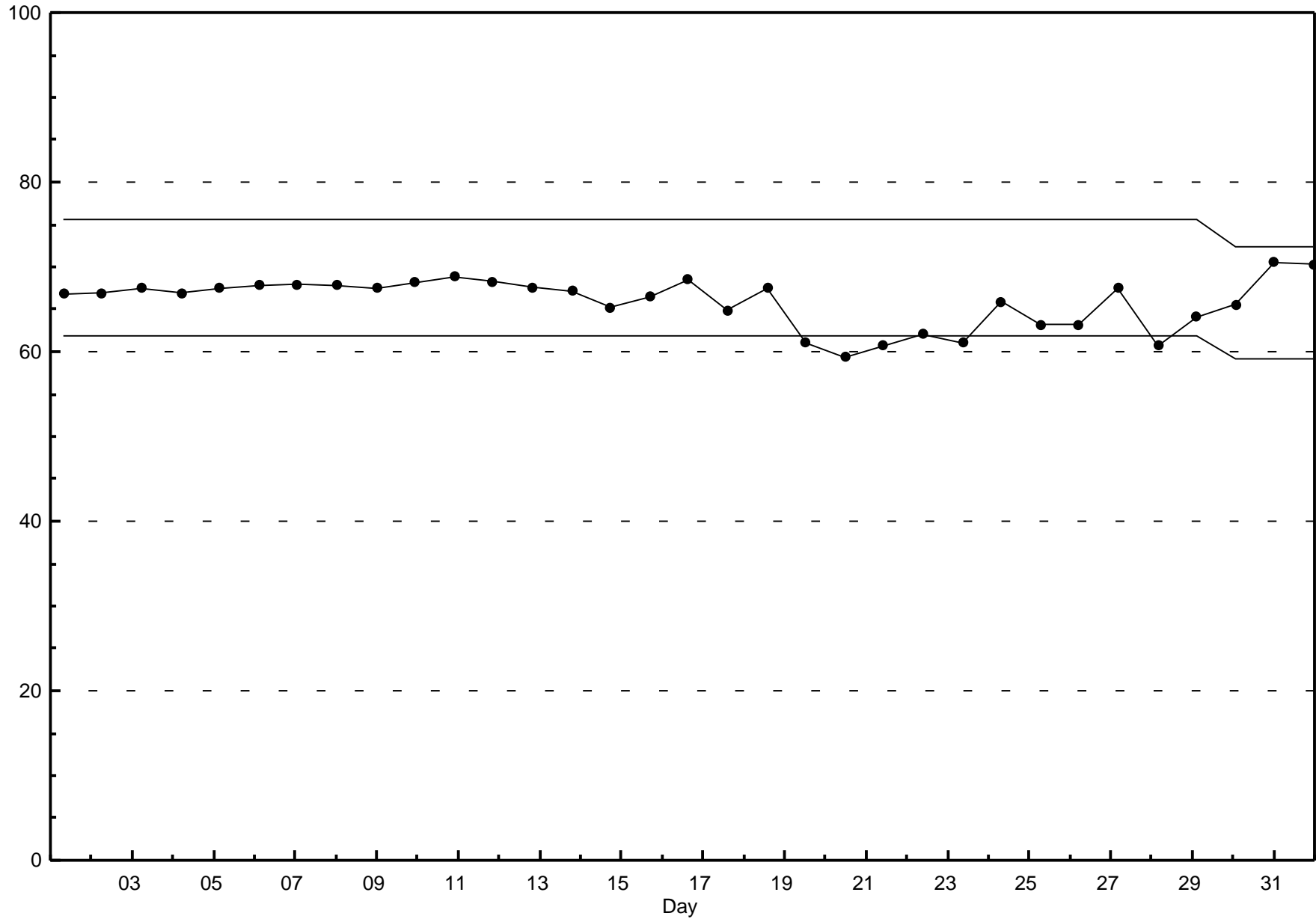
**Pollutant Rose**

**Total Reduced Sulphur (TRS) - ppb**  
**Portable-Bonanza - May 2011**



**Span Responses**

**Total Reduced Sulphur (TRS)  
Portable-Bonanza - May 2011**



## Hourly Averages

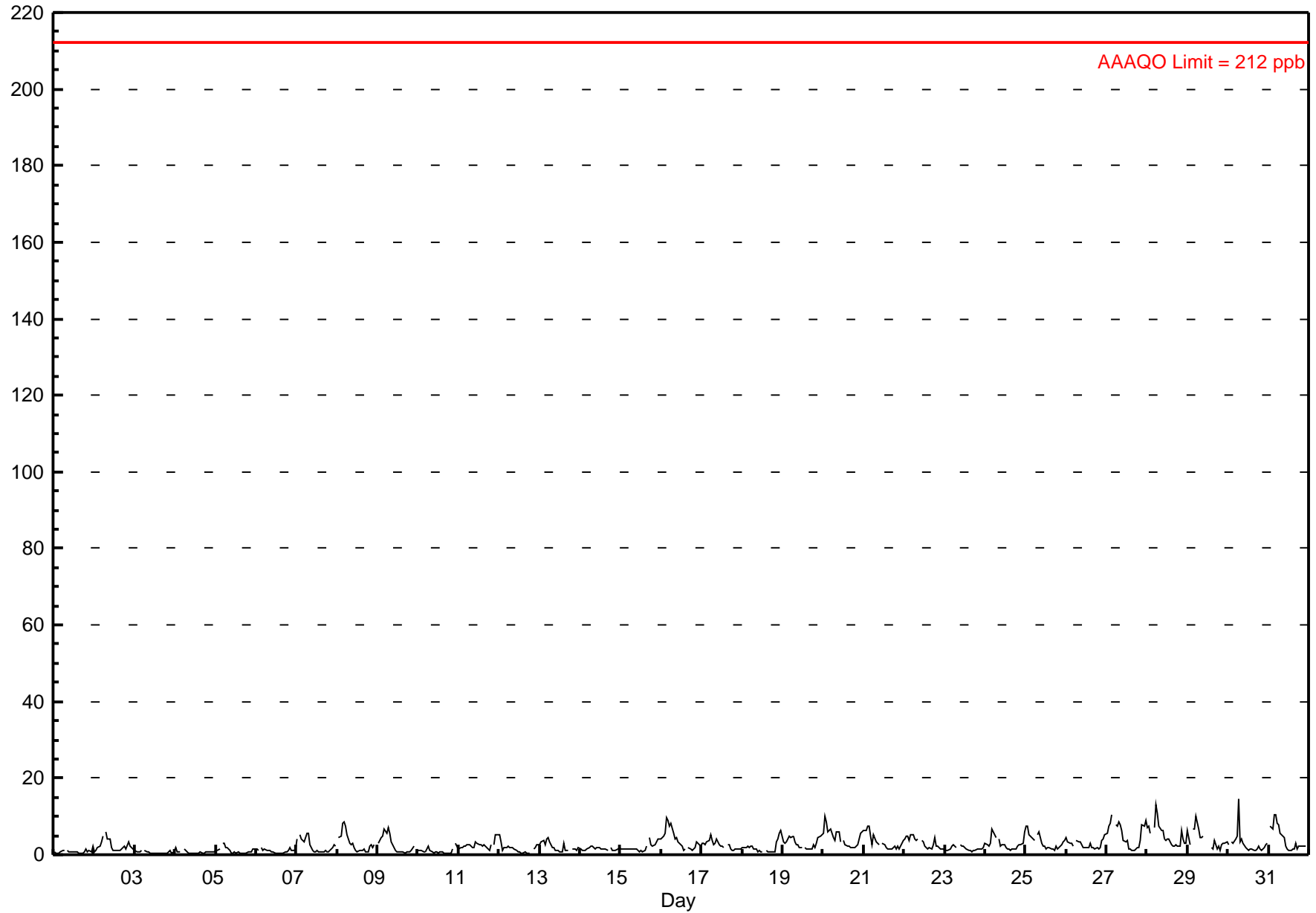
Nitrogen Dioxide (NO<sub>2</sub>) - ppb

Portable-Bonanza - May 2011

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0	Hours in Service: 744
Maximum Value: 14.5 ppb on May 30 07:00	Maximum Daily Average: 5.1 ppb on May 27
Minimum Value: 0 ppb on May 4 15:00	Hours of Data: 707
Maximum Diurnal Average: 4.6 ppb at hour 6	Hours of Missing Data: 37
Monthly Average: 2.55 ppb	Hours of Calibration: 37
Minimum Daily Average: 0.7 ppb on May 3	Percent Operational Time: 100.0
Minimum Diurnal Average: 1.3 ppb at hour 16	
Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 0.6 Q <sub>1</sub> = 1.1 Median = 1.9 Q <sub>3</sub> = 3.3 P <sub>90</sub> = 5.5 P <sub>99</sub> = 9.9	

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	0	0	1	1	2	1	1	1	2	0.8	2.2
2-May	1	1	2	2	3	5	A	6	4	4	2	1	1	1	1	1	1	2	2	2	3	2	2	2	2.2	6.1
3-May	1	1	1	1	1	A	1	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0.7	1.3
4-May	2	1	1	1	A	1	1	1	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	1	0.7	1.7
5-May	1	1	2	A	3	3	2	2	1	0	0	1	0	1	0	0	0	1	0	1	1	1	1	1	1.1	3.1
6-May	1	1	A	2	1	2	1	1	1	1	1	1	1	1	0	0	1	1	1	1	2	1	1	1	1.0	1.9
7-May	4	A	5	4	3	5	6	6	3	1	1	1	1	1	1	1	1	1	1	1	1	2	3	2	2.3	5.7
8-May	A	4	5	8	8	7	5	3	3	3	2	1	1	1	1	1	2	1	1	2	3	2	2	A	3.0	8.5
9-May	3	4	4	5	7	6	7	6	3	3	1	1	1	1	1	1	0	1	1	1	1	2	A	1	2.6	7.1
10-May	1	1	1	1	1	2	2	1	1	0	1	1	1	1	1	0	0	0	0	0	2	A	3	2	1.0	3.1
11-May	1	2	2	2	2	3	2	2	2	2	3	3	3	3	2	3	2	2	2	1	3	A	3	5	2.5	5.2
12-May	5	3	1	2	2	2	2	2	2	1	1	1	1	0	0	1	0	0	0	A	1	2	3	3	1.6	5.1
13-May	3	3	4	3	4	5	3	2	2	1	1	1	1	1	3	1	1	1	A	1	1	2	1	2	2.0	4.6
14-May	1	1	1	1	1	2	2	2	2	2	2	2	2	1	1	1	1	A	2	1	1	1	1	2	1.5	2.3
15-May	2	2	1	1	1	1	1	1	2	1	1	1	1	1	1	2	A	4	3	2	3	3	4	4	2.0	4.3
16-May	4	5	5	10	9	8	8	6	4	4	3	3	2	1	1	A	2	2	1	1	2	3	3	2	3.9	9.7
17-May	3	3	2	3	4	5	4	3	3	4	3	2	2	2	A	3	3	1	1	1	2	1	2	2	2.5	5.4
18-May	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	3	4	6	6	2.0	6.4
19-May	3	3	3	4	5	4	5	3	3	2	2	2	A	2	2	2	1	2	3	2	3	5	5	5	3.1	5.0
20-May	5	10	9	6	7	5	4	4	6	6	3	A	4	3	2	2	2	2	2	2	3	4	6	6	4.4	9.9
21-May	6	7	7	7	5	3	5	3	3	3	A	3	3	2	2	1	1	2	2	2	2	1	2	4	3.3	7.5
22-May	4	5	5	4	5	5	4	4	4	A	4	3	2	2	2	2	2	3	4	2	2	2	2	1	3.1	5.4
23-May	1	1	1	2	2	3	2	2	A	3	2	2	2	1	1	1	1	1	1	1	1	2	2	2	1.6	2.6
24-May	3	3	2	3	7	6	4	A	4	2	3	3	2	2	1	1	1	1	2	2	3	3	3	6	2.9	6.9
25-May	7	8	5	5	4	4	A	5	6	3	2	2	2	2	2	2	2	1	2	2	2	2	3	4	3.4	7.6
26-May	4	3	3	3	2	A	4	3	3	2	2	2	2	2	3	2	2	2	2	1	2	4	4	5	2.7	5.3
27-May	6	8	8	10	A	8	7	8	8	6	4	3	4	1	1	1	1	1	2	2	4	8	7	9	5.1	10.4
28-May	7	7	6	A	7	13	11	8	6	6	4	4	4	4	3	2	2	3	2	2	6	4	3	3	5.1	12.9
29-May	6	3	A	7	7	10	7	4	5	5	C	C	C	C	2	2	4	1	2	1	3	3	3	3	4.1	10.1
30-May	3	A	3	3	4	5	15	3	4	3	2	2	1	1	1	1	1	1	2	2	1	1	2	2	2.9	14.5
31-May	A	8	7	10	11	8	8	6	5	4	2	2	1	1	1	1	3	2	2	2	2	2	2	A	4.2	10.6
	3.2	3.5	3.4	3.9	4.1	4.6	4.4	3.4	3.0	2.6	1.9	1.6	1.5	1.3	1.3	1.3	1.3	1.3	1.3	1.6	1.5	2.1	2.5	2.8	3.1	Diurnal Average
	7.4	9.9	8.7	10.5	10.6	12.9	14.5	8.5	8.0	6.5	3.9	3.7	4.2	3.9	3.0	2.7	3.6	4.3	4.4	2.7	6.2	7.8	7.4	9.0	Diurnal Maximum	

C - Calibration      A - Automated Daily Zero Span  
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 212 ppb    24-hr 106 ppb



## Hourly Maximums

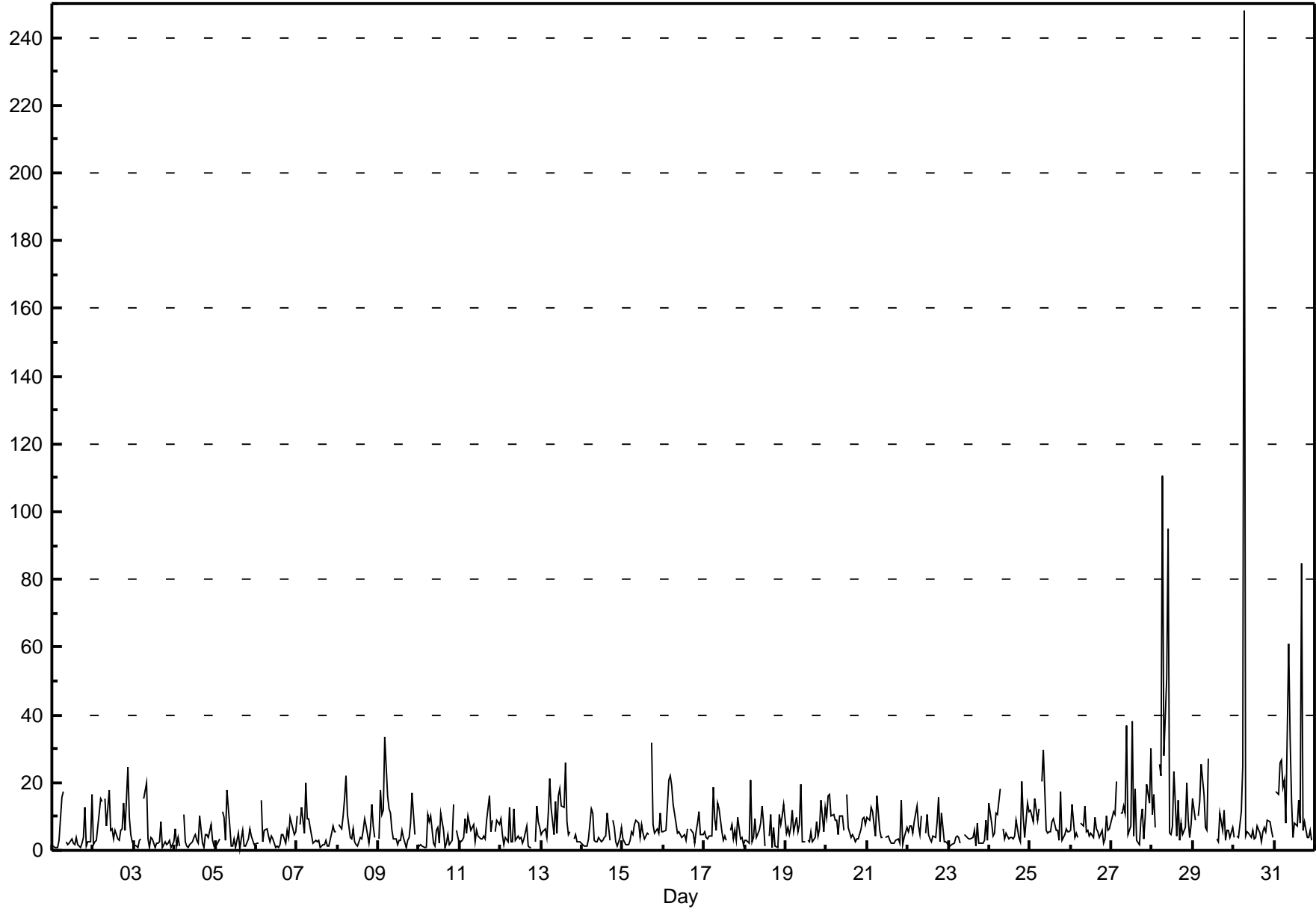
Nitrogen Dioxide (NO<sub>2</sub>) - ppb

Portable-Bonanza - May 2011

Maximum Value: 247.9 ppb on May 30 07:00		Maximum Daily Average: 21.2 ppb on May 28		Hours in Service: 744																						
Minimum Value: 1 ppb on May 5 15:00		Minimum Daily Average: 3.5 ppb on May 23		Hours of Data: 707																						
Maximum Diurnal Average: 21.8 ppb at hour 7		Minimum Diurnal Average: 4.8 ppb at hour 12		Hours of Missing Data: 37																						
Monthly Average: 7.74 ppb		Percentiles: P <sub>1</sub> = 0.7 P <sub>10</sub> = 1.7 Q <sub>1</sub> = 3.1 Median = 5.1 Q <sub>3</sub> = 9.1 P <sub>90</sub> = 15.0 P <sub>99</sub> = 31.0		Hours of Calibration: 37																						
				Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	1	1	1	1	3	16	17	A	2	2	2	3	2	2	4	2	1	2	4	13	1	3	2	17	4.4	17.2
2-May	2	3	3	11	15	14	A	15	7	18	6	6	3	6	4	3	6	6	14	6	24	10	5	2	8.3	24.5
3-May	2	1	1	3	3	A	15	20	3	1	4	3	1	2	2	3	8	1	3	2	2	3	1	2	3.7	20.0
4-May	6	1	4	1	A	11	3	1	1	2	3	4	5	3	2	10	2	1	5	5	4	7	3	1	3.7	10.7
5-May	2	2	4	A	12	10	3	18	7	1	1	3	1	5	1	4	6	1	1	3	6	4	3	2	4.3	18.0
6-May	2	2	A	15	2	6	6	4	3	4	3	1	1	1	2	5	5	2	6	4	10	8	5	5	4.4	14.8
7-May	10	A	8	13	5	20	9	10	7	2	2	3	3	3	1	2	2	3	1	1	5	7	5	5	5.5	19.8
8-May	A	8	6	10	15	22	10	4	4	6	3	2	1	4	3	6	9	7	2	6	14	7	4	A	7.0	22.1
9-May	3	18	11	12	33	16	12	11	6	3	4	2	3	3	6	4	1	3	4	8	17	5	A	A	8.1	33.4
10-May	1	2	1	1	1	11	9	10	2	1	6	7	2	11	6	1	2	5	2	3	13	A	6	4	4.6	13.4
11-May	2	3	4	9	5	10	6	7	7	3	6	4	3	3	4	4	9	16	6	9	A	6	9	8	6.2	16.0
12-May	9	5	2	4	2	13	2	3	12	3	4	3	4	2	3	7	1	1	1	A	3	13	8	7	4.9	13.0
13-May	5	5	6	4	11	21	12	5	15	5	16	18	13	13	26	8	5	6	A	3	5	2	3	2	9.1	26.0
14-May	2	1	1	1	3	12	11	3	3	2	4	3	3	4	4	11	3	A	9	7	2	1	4	7	4.4	12.5
15-May	3	3	2	2	3	5	5	7	9	8	4	8	5	3	5	5	A	32	7	5	6	5	11	5	6.5	31.9
16-May	6	6	13	21	22	19	14	8	5	6	5	4	5	3	6	A	6	5	2	6	8	12	5	5	8.2	21.9
17-May	5	4	3	4	4	19	9	6	14	12	5	3	4	3	A	6	8	3	6	3	10	4	4	2	6.2	18.8
18-May	3	3	2	21	2	4	9	4	6	8	13	8	1	A	4	11	1	7	1	1	11	8	10	14	6.6	20.6
19-May	5	7	5	7	12	6	10	5	8	20	3	2	A	3	2	6	3	4	8	4	6	15	6	13	6.9	19.7
20-May	10	16	17	10	11	9	9	5	10	10	6	A	17	7	4	4	4	3	3	3	6	9	10	8	8.3	16.6
21-May	10	9	13	12	7	4	16	6	4	4	A	4	4	3	2	2	2	3	3	2	15	2	4	7	6.0	15.9
22-May	5	7	7	5	9	13	7	5	10	A	5	11	5	4	3	4	4	8	16	3	11	2	3	2	6.5	15.8
23-May	1	1	2	2	4	4	4	2	A	5	4	4	3	4	4	6	1	8	2	2	2	3	9	3	3.5	9.1
24-May	14	8	4	5	11	11	18	A	6	3	5	3	4	4	3	4	9	4	3	20	10	4	14	12	7.8	20.3
25-May	12	10	9	15	9	12	A	20	30	6	5	5	6	8	9	6	6	3	18	3	5	6	6	6	9.3	29.5
26-May	6	14	4	5	4	A	8	7	13	6	6	4	5	4	10	6	6	4	6	2	3	10	6	7	6.3	13.6
27-May	10	12	10	20	A	11	11	13	11	37	4	7	38	4	18	3	2	9	12	3	10	20	14	30	13.5	38.3
28-May	10	17	7	A	26	22	111	28	51	95	5	5	7	23	4	15	3	8	5	7	20	9	4	7	21.2	110.5
29-May	15	9	A	10	14	25	17	7	6	27	C	C	C	C	3	2	11	6	12	3	6	6	4	7	10.1	27.3
30-May	4	A	4	4	11	25	248	4	5	5	4	6	3	4	7	5	3	6	7	6	9	8	6	4	16.9	247.9
31-May	A	17	16	26	27	19	21	8	61	34	15	4	8	7	15	8	85	6	9	4	4	6	3	A	18.3	84.9
		5.8	6.7	5.8	8.8	9.9	13.4	21.8	8.5	10.9	11.3	5.3	4.8	5.6	5.0	5.6	5.4	7.1	5.7	5.8	4.9	8.3	6.8	5.8	6.7	Diurnal Average
		15.4	17.6	16.5	26.1	33.4	25.4	247.9	28.1	61.0	95.0	16.2	18.4	38.3	23.2	26.0	14.7	84.9	31.9	17.5	20.3	24.5	19.6	14.1	30.3	Diurnal Maximum
C - Calibration		A - Automated Daily Zero Span																								

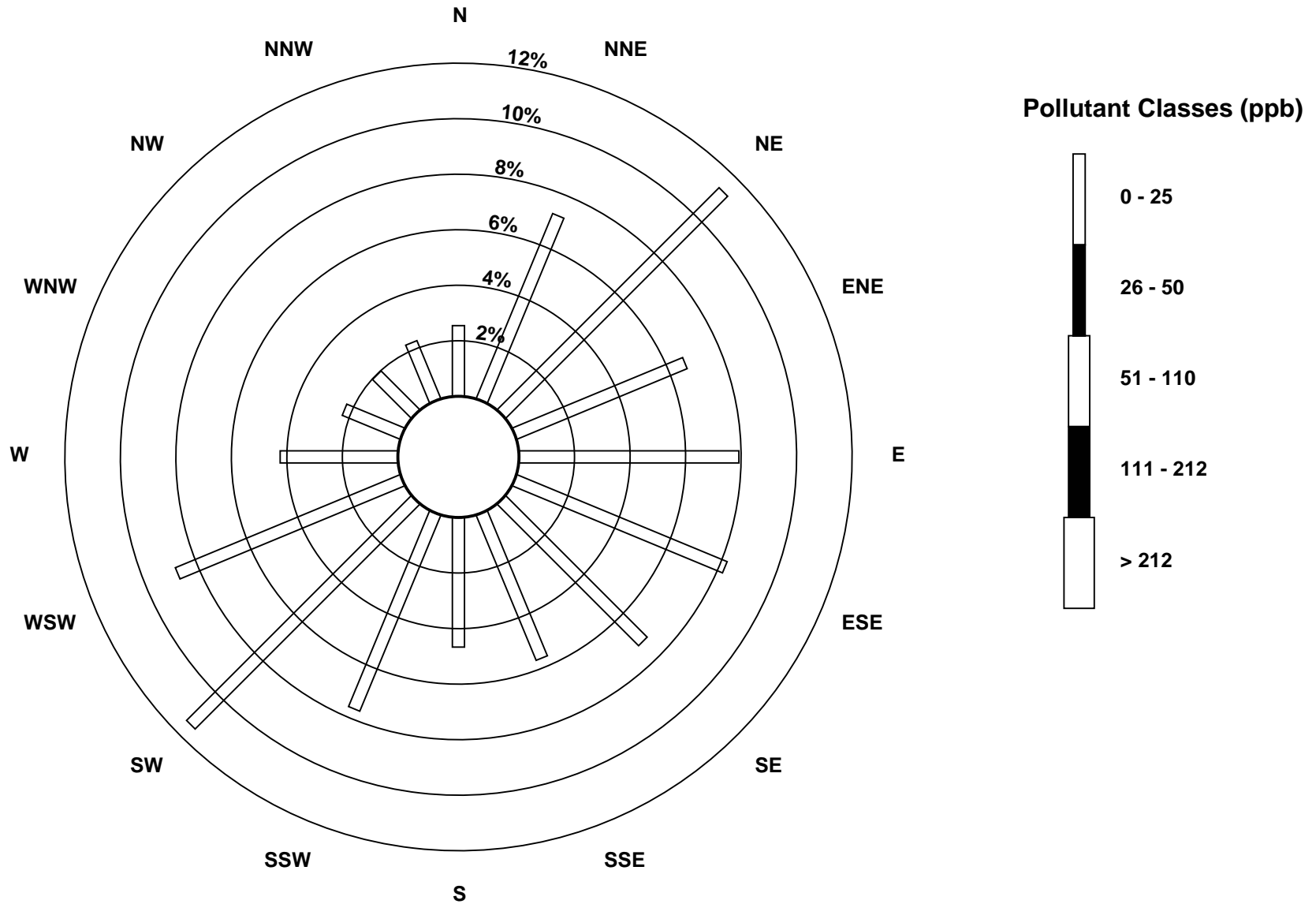
**Hourly Maximums**

**Nitrogen Dioxide (NO<sub>2</sub>) - ppb**  
**Portable-Bonanza - May 2011**



**Pollutant Rose**

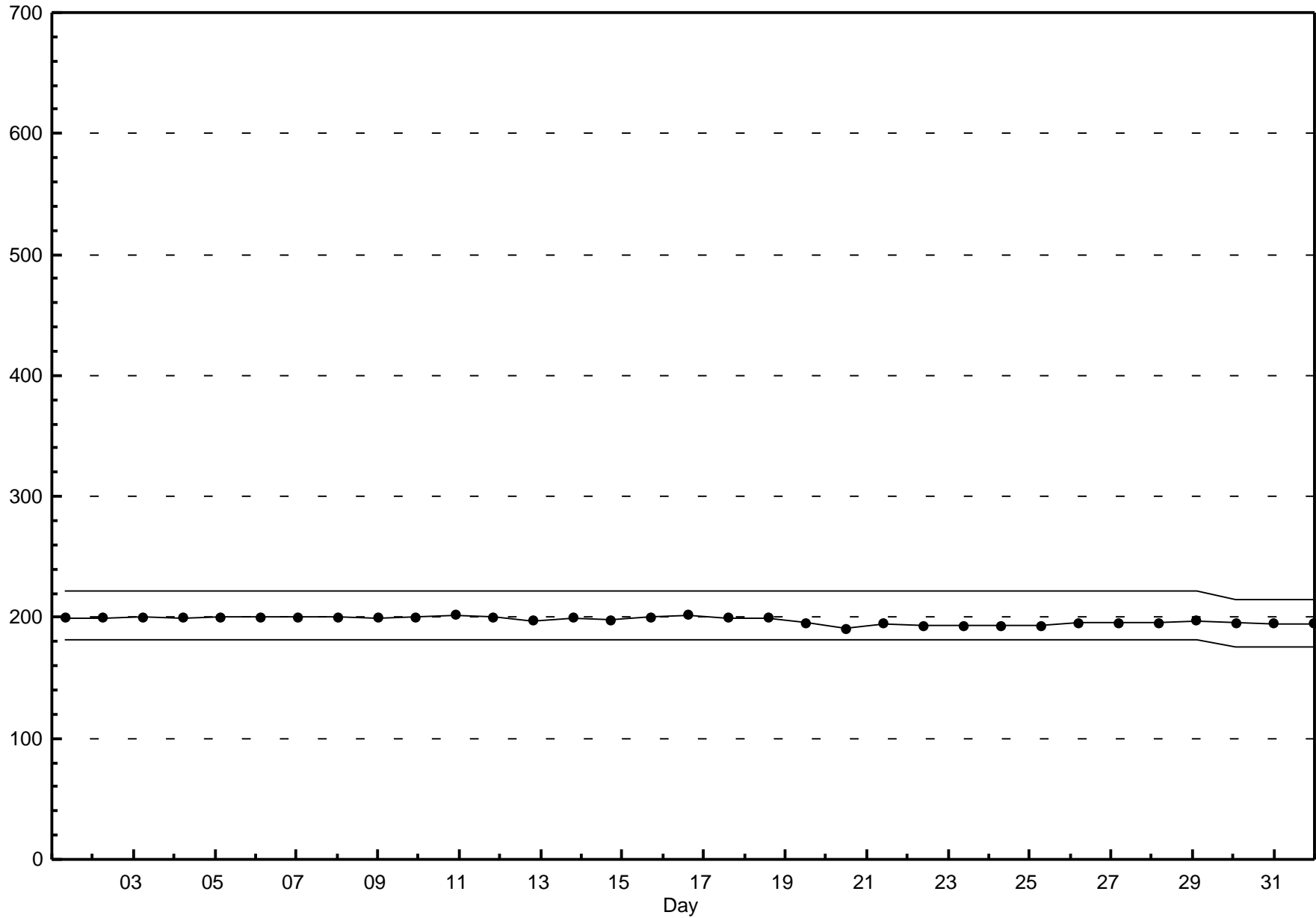
**Nitrogen Dioxide (NO<sub>2</sub>) - ppb**  
**Portable-Bonanza - May 2011**





### Span Responses

Nitrogen Dioxide (NO<sub>2</sub>)  
Portable-Bonanza - May 2011



## Hourly Averages

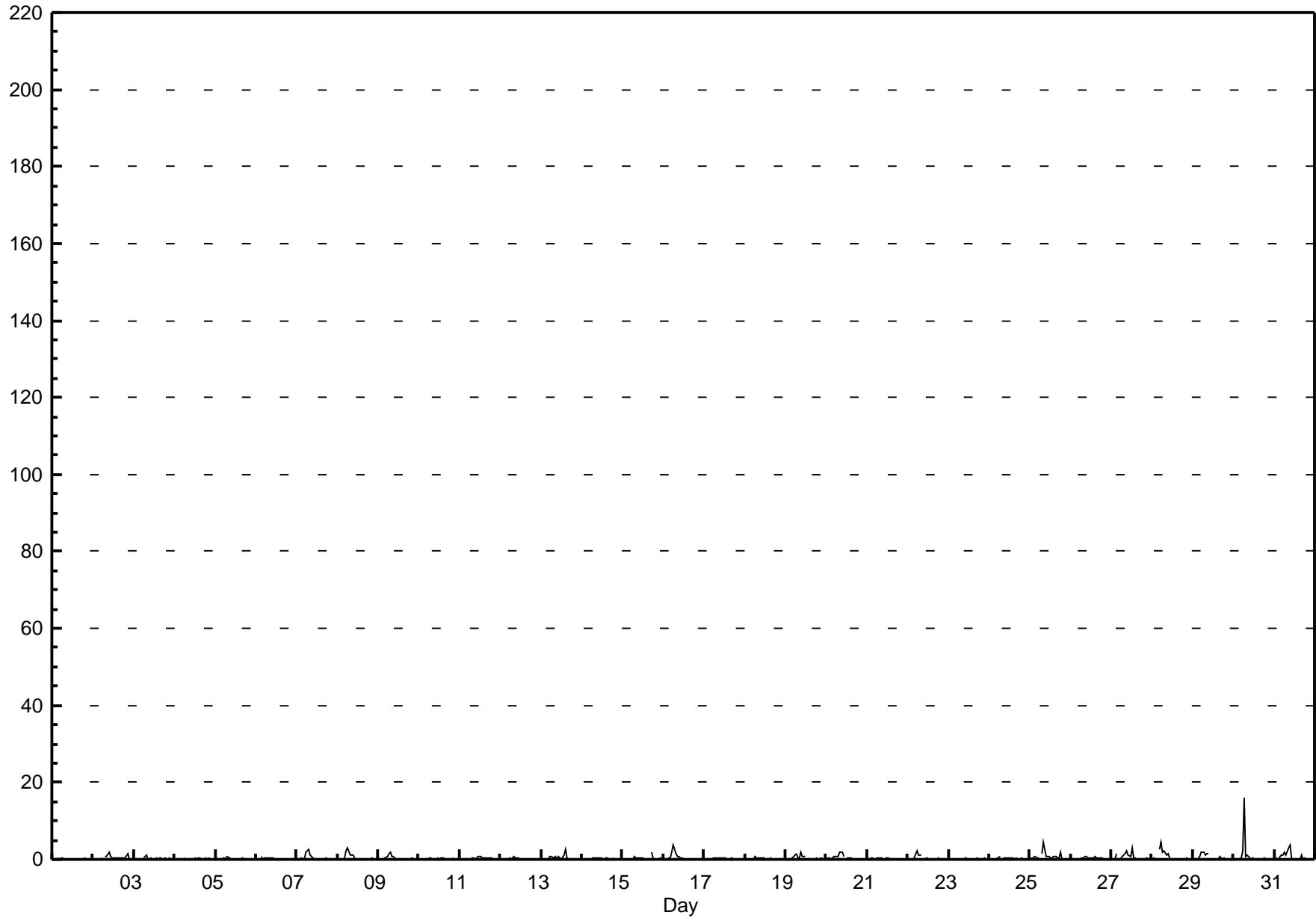
Nitrogen Oxide (NO) - ppb

Portable-Bonanza - May 2011

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 16.2 ppb on May 30 07:00	Maximum Daily Average: 1.0 ppb on May 30		Hours of Data:	707
Minimum Value: 0 ppb on May 1 02:00	Minimum Daily Average: 0.1 ppb on May 10		Hours of Missing Data:	37
Maximum Diurnal Average: 1.5 ppb at hour 7	Minimum Diurnal Average: 0.1 ppb at hour 3		Hours of Calibration:	37
Monthly Average: 0.35 ppb	Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.1 Median = 0.1 Q <sub>3</sub> = 0.3 P <sub>90</sub> = 0.8 P <sub>99</sub> = 3.0		Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
2-May	0	0	0	0	0	0	A	1	1	2	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0.4	2.0
3-May	0	0	0	0	0	A	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1.2
4-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
5-May	0	0	0	A	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.7
6-May	0	0	A	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.7
7-May	0	A	0	0	0	2	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	2.5
8-May	A	0	0	0	0	2	3	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.5	3.1
9-May	0	0	0	0	0	1	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.3	1.8
10-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.1	0.3
11-May	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	1	0	0	0	A	0	0	0	0.2	0.7
12-May	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0.1	0.6
13-May	0	0	0	0	0	1	1	0	1	0	1	0	0	1	2	0	0	0	A	0	0	0	0	0	0.4	2.5
14-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	2	0	0	0	0	0	0	0.2	0.4
15-May	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.3	2.0
16-May	0	0	0	1	0	2	4	2	1	1	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.5	3.7
17-May	0	0	0	0	0	0	0	0	0	1	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.2	0.5
18-May	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.2	0.8
19-May	0	0	0	0	0	1	1	1	0	2	1	1	A	0	0	0	0	0	0	0	0	0	0	0	0.4	1.9
20-May	0	0	0	0	1	1	1	1	2	2	1	A	0	0	0	0	0	0	0	0	0	0	0	0	0.4	2.0
21-May	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
22-May	0	0	0	0	0	2	1	1	1	A	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	2.1
23-May	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
24-May	0	0	0	0	0	0	1	A	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.7
25-May	0	0	0	1	0	0	A	1	5	1	1	1	0	0	1	1	1	0	2	0	0	0	0	0	0.7	4.5
26-May	0	0	0	0	0	A	0	0	1	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0.3	0.8
27-May	0	0	0	1	A	0	1	1	2	2	1	1	3	0	0	0	0	0	0	0	0	0	1	0	0.7	3.0
28-May	0	1	0	A	3	5	2	2	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.7	4.6
29-May	0	0	A	0	1	2	2	1	1	2	C	C	C	C	0	0	1	0	0	0	0	0	0	0	0.6	1.8
30-May	0	A	0	0	0	2	16	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.0	16.2
31-May	A	0	0	1	1	1	2	1	3	4	0	0	0	0	0	0	1	0	0	0	0	0	0	A	0.7	3.5

0.1	0.1	0.1	0.2	0.3	0.9	1.5	0.8	0.9	0.8	0.4	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	Diurnal Average
0.4	0.6	0.4	1.5	2.6	4.6	16.2	2.5	4.5	3.5	1.2	0.8	3.0	1.1	2.5	0.6	1.0	2.0	1.8	0.4	1.5	0.3	0.2	0.6	Diurnal Maximum	



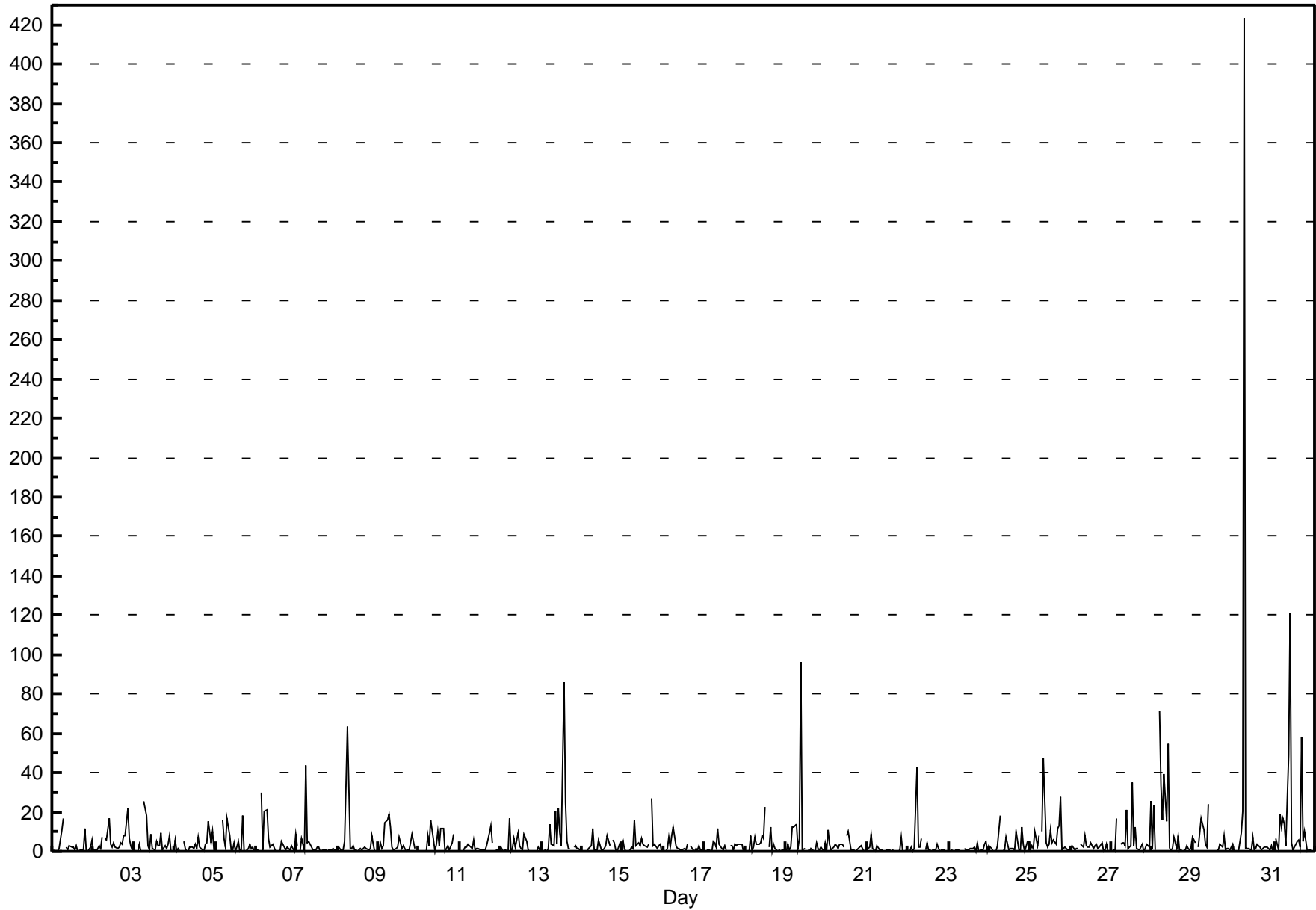
## Hourly Maximums

## Nitrogen Oxide (NO) - ppb Portable-Bonanza - May 2011

Maximum Value: 423.7 ppb on May 30 07:00		Maximum Daily Average: 21.2 ppb on May 30		Hours in Service: 744																							
Minimum Value: 0 ppb on May 10 05:00		Minimum Daily Average: 1.3 ppb on May 23		Hours of Data: 707																							
Maximum Diurnal Average: 24.6 ppb at hour 7		Minimum Diurnal Average: 1.0 ppb at hour 3		Hours of Missing Data: 37																							
Monthly Average: 5.23 ppb		Percentiles: P <sub>1</sub> = 0.1 P <sub>10</sub> = 0.2 Q <sub>1</sub> = 0.5 Median = 1.7 Q <sub>3</sub> = 4.1 P <sub>90</sub> = 11.3 P <sub>99</sub> = 55.6		Hours of Calibration: 37																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-May	1	0	0	0	1	11	17	A	2	1	3	2	2	0	3	0	1	1	1	12	0	0	2	6	2.8	16.6	
2-May	0	0	0	3	1	7	A	6	6	17	4	2	4	2	1	2	4	3	8	8	22	7	3	0	4.9	21.8	
3-May	0	0	0	3	0	A	25	19	3	1	9	2	1	5	3	3	10	0	3	2	3	8	0	0	4.4	25.2	
4-May	6	0	2	1	A	5	1	0	0	2	2	2	4	2	7	2	1	0	4	5	15	5	10	0	3.3	15.2	
5-May	0	0	0	A	16	7	2	17	8	1	0	4	0	5	0	1	18	0	0	1	3	2	2	0	3.9	18.4	
6-May	1	1	A	30	1	20	21	7	2	3	4	0	0	0	5	4	1	2	1	1	3	0	9	5.1	30.1		
7-May	3	A	0	6	1	43	4	5	3	1	1	1	2	2	0	0	1	0	0	1	1	1	1	1	3.4	43.4	
8-May	A	2	0	1	5	33	64	2	2	3	1	0	0	2	1	1	2	1	0	1	8	4	0	A	6.1	63.7	
9-May	0	4	1	3	14	16	19	12	2	1	1	2	7	4	2	3	0	0	0	4	9	1	A	0	4.7	19.2	
10-May	0	0	0	0	0	8	3	16	6	0	4	10	3	11	12	0	2	3	1	5	9	A	0	0	4.0	15.7	
11-May	0	0	1	2	2	3	2	1	6	0	1	1	1	1	1	1	3	10	13	5	A	0	1	0	2.4	13.4	
12-May	2	1	0	0	0	17	0	2	7	2	9	3	1	1	8	5	1	0	0	A	0	0	2	1	2.8	16.6	
13-May	0	0	0	0	1	14	3	3	20	3	22	9	3	86	25	5	1	2	A	2	3	1	2	0	9.0	85.8	
14-May	0	0	0	0	1	3	12	1	1	1	6	1	1	1	3	8	3	A	6	4	1	0	5	3	2.6	11.8	
15-May	6	1	0	0	1	2	2	16	3	5	3	6	4	3	2	4	A	27	3	4	1	3	4	0	4.3	27.0	
16-May	0	0	1	8	2	8	12	3	1	1	1	1	2	1	4	A	3	1	0	1	1	3	1	1	2.5	12.2	
17-May	0	0	0	1	0	5	4	2	11	4	1	1	3	1	A	3	3	1	4	3	3	3	3	0	2.5	11.4	
18-May	0	0	0	8	0	2	7	4	3	4	8	7	A	A	2	12	0	3	1	0	1	0	1	1	3.8	22.9	
19-May	0	4	1	2	12	12	14	1	7	96	1	1	A	A	1	0	2	0	0	4	1	1	2	0	4	7.3	95.9
20-May	1	11	4	0	2	4	3	1	3	4	2	A	8	10	0	1	1	0	1	1	3	2	0	1	2.7	10.7	
21-May	0	2	9	1	1	0	3	1	1	1	A	1	1	0	0	0	0	0	0	1	7	0	0	1	1.3	9.0	
22-May	0	0	2	0	2	43	2	2	7	A	1	4	1	1	0	1	0	3	2	0	1	0	0	0	3.2	43.3	
23-May	0	0	1	0	1	1	1	0	A	2	1	1	1	2	2	2	0	5	0	0	0	3	5	0	1.3	5.4	
24-May	3	2	0	0	0	3	18	A	1	0	7	1	2	2	1	1	10	1	0	13	4	0	5	5	3.4	18.1	
25-May	1	3	1	10	3	8	A	10	48	4	2	3	11	4	6	4	12	13	28	1	2	1	1	0	7.6	47.5	
26-May	1	3	0	1	1	A	3	2	8	3	2	2	4	1	3	3	1	2	5	0	1	4	0	0	2.3	7.8	
27-May	0	0	0	16	A	4	5	5	3	21	2	3	35	3	13	1	0	2	4	0	1	4	2	25	6.5	34.8	
28-May	1	23	1	A	72	33	16	40	16	54	1	1	2	8	1	8	0	1	0	1	3	1	1	2	12.4	71.5	
29-May	8	4	A	2	9	17	11	3	2	24	C	C	C	C	1	1	4	2	8	1	1	1	1	3	5.4	23.9	
30-May	0	A	0	0	9	20	424	1	2	2	1	7	1	1	4	2	1	2	2	2	2	1	3	0	21.2	423.7	
31-May	A	6	1	19	12	17	14	3	49	121	5	0	2	5	6	2	59	5	10	0	1	1	0	A	15.4	120.8	
		1.2	2.4	1.0	4.1	6.0	12.7	24.6	6.3	7.7	12.7	3.6	2.7	4.4	5.7	3.7	2.9	4.8	3.0	3.7	2.6	3.6	2.1	1.8	2.3	Diurnal Average	
		7.6	23.2	9.0	30.1	71.5	43.4	423.7	39.6	49.1	120.8	22.0	9.9	34.8	85.8	25.1	12.4	58.5	27.0	28.0	12.6	21.8	8.0	10.2	25.4	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									

### Hourly Maximums

Nitrogen Oxide (NO) - ppb  
Portable-Bonanza - May 2011



## Hourly Averages

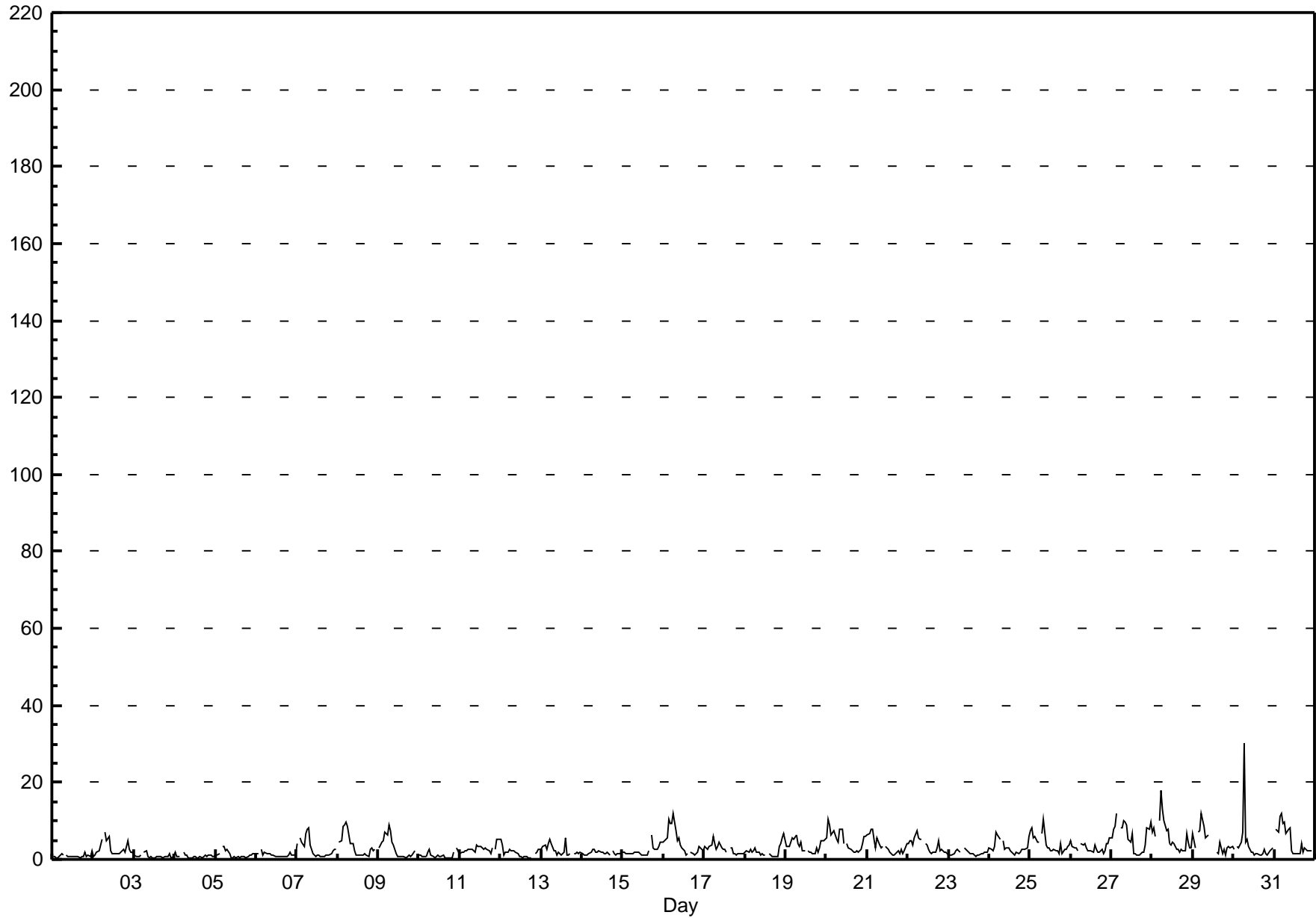
## Oxides of Nitrogen (NO<sub>x</sub>) - ppb

### Portable-Bonanza - May 2011

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 30.3 ppb on May 30 07:00	Maximum Daily Average: 5.9 ppb on May 28		Hours of Data:	707
Minimum Value: 0 ppb on May 9 17:00	Minimum Daily Average: 0.8 ppb on May 3		Hours of Missing Data:	37
Maximum Diurnal Average: 5.9 ppb at hour 7	Minimum Diurnal Average: 1.5 ppb at hour 16		Hours of Calibration:	37
Monthly Average: 2.92 ppb	Percentiles: P <sub>1</sub> = 0.5 P <sub>10</sub> = 0.7 Q <sub>1</sub> = 1.3 Median = 2.1 Q <sub>3</sub> = 3.7 P <sub>90</sub> = 6.4 P <sub>99</sub> = 11.9		Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	2	0.9	2.3
2-May	1	1	2	2	4	5	A	7	5	6	2	2	2	1	1	2	2	2	3	2	5	3	2	2	2.7	7.0
3-May	1	1	1	1	1	A	2	2	1	0	1	1	0	1	1	1	1	0	1	1	1	2	0	1	0.8	2.1
4-May	2	1	1	1	A	2	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0.8	1.8
5-May	1	1	2	A	4	3	2	3	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1.2	3.5
6-May	1	1	A	3	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	2	1	1	2	1.2	2.6
7-May	4	A	6	4	3	7	8	8	4	1	1	1	1	1	1	1	1	1	1	1	2	2	3	3	2.8	8.3
8-May	A	5	5	9	9	10	8	4	4	4	2	1	1	1	1	1	2	1	1	3	3	2	2	A	3.6	9.7
9-May	3	4	4	5	7	7	9	7	4	4	1	1	1	1	1	1	0	1	1	1	1	2	A	1	2.9	8.8
10-May	1	1	1	1	1	2	3	1	1	0	1	1	1	1	1	0	0	1	0	1	2	A	3	2	1.1	3.2
11-May	1	2	2	2	3	3	3	3	2	2	4	3	3	3	3	3	3	2	2	3	A	3	5	5	2.8	5.3
12-May	5	4	1	2	2	3	2	2	2	2	2	1	1	0	1	1	1	0	1	A	2	2	3	3	1.7	5.2
13-May	3	3	4	3	4	5	4	2	2	1	2	1	1	2	6	1	1	1	A	2	2	2	1	2	2.4	5.5
14-May	1	1	1	1	1	2	3	3	2	2	2	2	2	1	2	2	1	A	2	1	1	1	2	2	1.7	2.7
15-May	2	2	2	1	1	2	2	2	2	2	1	1	1	1	1	2	A	6	3	3	3	4	4	4	2.3	6.4
16-May	4	5	6	10	9	9	12	7	5	5	4	3	2	1	2	A	2	2	1	1	2	3	3	2	4.4	12.0
17-May	3	3	3	3	4	6	4	3	3	5	3	3	2	2	A	3	3	1	1	1	2	1	2	2	2.7	5.9
18-May	2	2	2	3	2	2	3	2	2	1	1	1	1	1	1	1	1	1	1	1	3	4	6	7	2.2	6.6
19-May	4	3	3	4	5	5	6	4	3	4	2	2	A	2	2	2	1	2	3	2	3	5	5	5	3.5	6.4
20-May	6	11	9	6	7	6	5	4	8	8	4	A	4	3	2	2	2	2	2	2	3	4	6	6	4.9	10.5
21-May	6	7	8	8	5	3	6	4	3	3	A	4	3	2	2	1	1	1	2	2	2	1	2	4	3.5	8.0
22-May	4	5	5	4	6	8	5	5	5	A	4	4	2	2	2	2	2	3	5	2	2	2	2	2	3.5	7.5
23-May	1	1	1	2	2	3	2	2	A	3	3	2	2	2	1	1	1	1	1	2	2	2	2	2	1.7	2.8
24-May	3	3	2	3	7	6	5	A	5	3	3	3	2	2	2	1	2	2	2	3	3	3	3	6	3.2	7.0
25-May	8	8	6	6	4	4	A	7	10	4	3	3	2	2	3	2	2	2	4	2	2	3	3	4	4.1	10.4
26-May	5	3	3	3	2	A	4	4	4	3	2	2	2	2	4	2	2	2	2	2	2	4	4	5	3.0	5.4
27-May	6	8	8	12	A	8	8	10	10	9	5	4	7	2	2	1	1	1	2	2	4	8	8	10	5.9	12.1
28-May	7	8	6	A	10	18	13	10	8	8	4	4	4	4	3	3	2	3	2	2	7	4	3	3	5.9	17.8
29-May	7	3	A	7	8	12	9	6	6	6	C	C	C	C	2	2	4	2	3	1	3	3	3	3	4.7	12.1
30-May	3	A	3	3	5	7	30	4	5	4	2	2	1	2	1	1	1	2	2	1	1	2	3	3	3.9	30.3
31-May	A	8	7	11	12	9	10	7	8	8	2	2	1	1	2	1	4	2	3	2	2	2	2	A	4.9	12.0

3.3	3.6	3.5	4.2	4.5	5.5	5.9	4.3	4.0	3.4	2.3	1.9	1.8	1.6	1.6	1.5	1.5	1.5	1.8	1.6	2.3	2.6	2.9	3.3	Diurnal Average
7.6	10.5	9.1	12.1	12.0	17.8	30.3	9.9	10.4	8.8	5.1	4.3	6.6	4.2	5.5	3.1	4.4	6.4	4.7	3.1	6.6	8.2	7.7	9.7	Diurnal Maximum



## Hourly Maximums

Oxides of Nitrogen (NO<sub>x</sub>) - ppb

Portable-Bonanza - May 2011

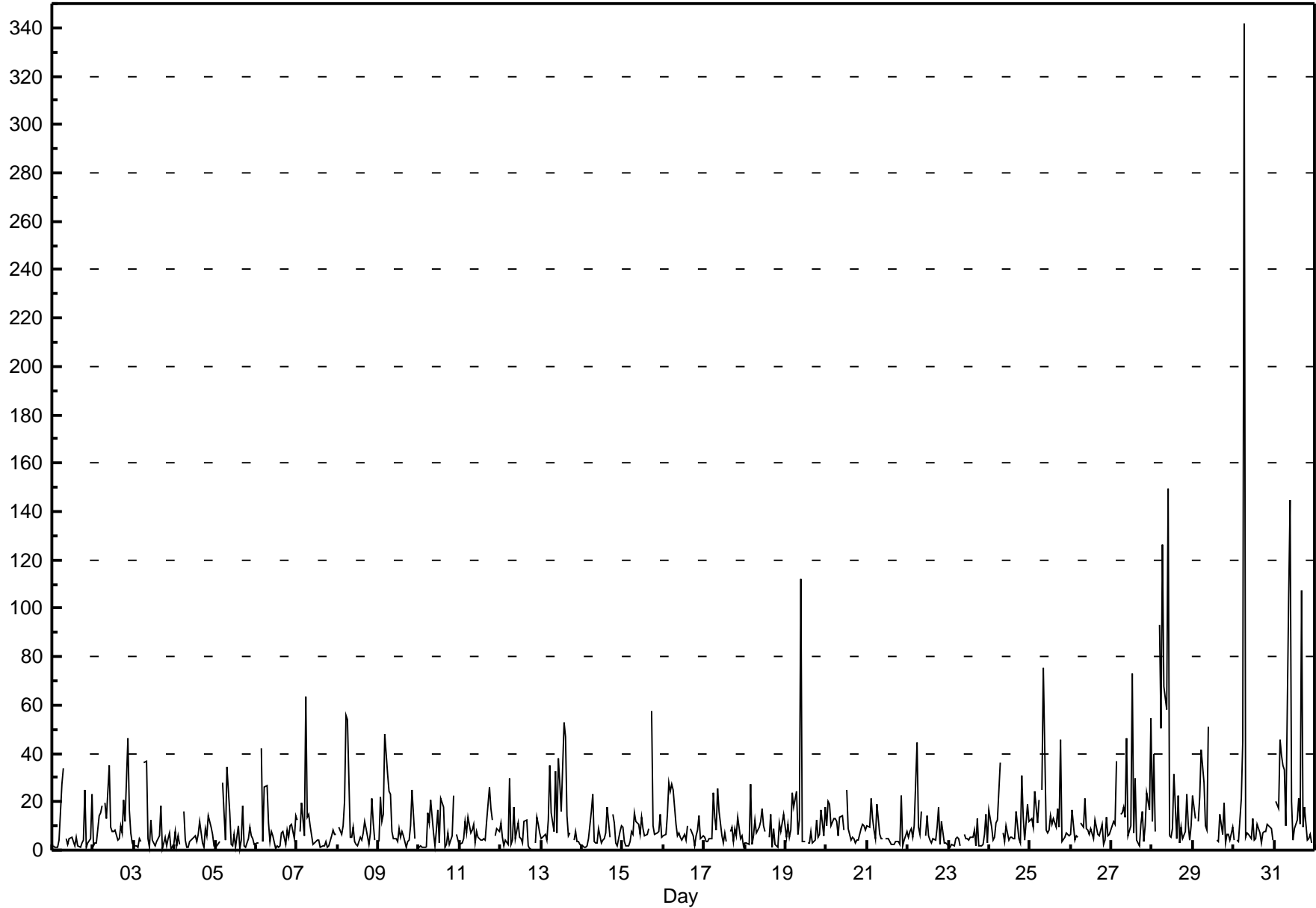
Maximum Value: 341.9 ppb on May 30 07:00		Maximum Daily Average: 32.9 ppb on May 28		Hours in Service: 744																							
Minimum Value: 1 ppb on May 3 23:00		Minimum Daily Average: 4.7 ppb on May 23		Hours of Data: 707																							
Maximum Diurnal Average: 33.7 ppb at hour 7		Minimum Diurnal Average: 6.7 ppb at hour 3		Hours of Missing Data: 37																							
Monthly Average: 11.85 ppb		Percentiles: P <sub>1</sub> = 0.9 P <sub>10</sub> = 2.0 Q <sub>1</sub> = 4.0 Median = 6.8 Q <sub>3</sub> = 12.7 P <sub>90</sub> = 23.7 P <sub>99</sub> = 103.1		Hours of Calibration: 37																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-May	2	1	1	1	4	27	34	A	5	2	5	6	4	2	5	2	1	3	4	25	1	3	5	23	7.2	33.9	
2-May	2	3	3	14	16	18	A	20	13	35	9	8	7	8	4	5	10	7	20	12	46	17	7	3	12.5	46.4	
3-May	2	2	1	5	3	A	36	37	5	1	12	4	2	3	5	6	18	1	5	2	5	7	1	2	7.2	37.1	
4-May	8	2	6	2	A	16	4	1	1	4	5	5	6	3	7	12	3	1	9	6	15	10	7	2	5.8	16.3	
5-May	2	2	4	A	28	15	4	35	15	2	2	6	1	10	1	4	18	2	1	5	9	6	5	2	7.8	34.7	
6-May	3	3	A	42	3	26	27	11	3	8	6	1	2	1	2	7	8	2	8	5	10	11	5	14	9.1	42.2	
7-May	13	A	8	19	6	63	14	15	10	3	3	4	4	4	1	2	2	4	1	2	6	8	6	6	8.9	63.3	
8-May	A	10	6	10	20	56	54	5	5	9	3	2	2	5	4	7	12	9	2	7	22	11	4	A	12.2	55.6	
9-May	3	22	12	15	48	31	24	23	8	5	5	4	9	6	7	6	1	3	4	10	25	5	A	2	12.1	48.2	
10-May	1	2	1	1	1	16	11	21	7	2	8	17	3	22	18	1	2	7	2	6	22	A	6	4	7.9	22.4	
11-May	2	3	5	12	7	14	7	8	10	3	7	5	4	4	5	4	12	26	17	12	A	6	9	8	8.3	26.0	
12-May	11	6	1	4	2	30	3	4	18	5	11	5	5	3	12	13	2	1	1	A	3	13	11	7	7.4	29.5	
13-May	5	5	6	4	12	35	16	8	33	7	38	28	16	53	47	14	6	7	A	4	8	3	4	3	15.7	52.7	
14-May	2	1	1	2	5	16	23	4	3	3	9	3	4	5	7	18	5	A	15	11	3	2	8	10	6.9	22.9	
15-May	10	3	2	2	3	8	7	16	12	11	7	14	9	6	7	9	A	57	10	7	7	7	15	6	10.1	57.5	
16-May	6	6	15	28	25	27	25	11	6	7	5	4	6	4	10	A	9	6	2	6	9	14	5	6	10.6	27.8	
17-May	5	4	4	5	5	24	14	8	25	16	6	3	7	4	A	8	9	4	9	6	13	5	6	2	8.3	25.5	
18-May	3	3	2	27	3	6	12	7	9	12	17	10	8	A	5	15	1	9	2	1	11	8	11	15	8.6	27.3	
19-May	5	11	6	8	24	18	24	6	13	112	3	4	A	3	3	7	3	4	13	5	7	17	6	18	13.9	111.9	
20-May	10	20	19	10	13	13	12	6	13	14	8	A	25	9	4	5	5	3	4	4	9	11	10	8	10.3	25.1	
21-May	10	10	21	13	8	4	19	6	5	5	A	4	5	4	2	2	2	3	3	3	22	2	4	8	7.3	22.4	
22-May	6	8	9	5	10	44	10	7	16	A	6	14	6	4	3	5	4	10	18	3	12	3	3	3	9.0	44.2	
23-May	2	1	2	2	5	5	5	2	A	7	5	5	4	5	5	8	2	13	2	2	3	6	15	3	4.7	14.8	
24-May	17	9	4	5	11	13	36	A	7	4	10	4	5	5	5	5	16	5	3	31	14	4	19	12	10.7	36.3	
25-May	13	13	10	24	11	21	A	25	75	8	7	8	14	11	13	10	17	9	46	4	6	7	6	6	15.8	75.4	
26-May	7	17	4	6	5	A	11	10	21	9	8	7	9	5	12	10	7	6	11	3	4	14	6	7	8.5	21.3	
27-May	10	12	11	37	A	15	15	18	14	47	6	10	73	7	30	4	2	11	16	4	10	24	16	54	19.4	73.1	
28-May	12	40	7	A	93	51	126	68	58	150	6	5	9	31	5	22	3	9	5	8	23	10	4	10	32.9	149.6	
29-May	23	13	A	12	22	41	28	10	8	51	C	C	C	C	4	3	15	7	20	3	6	7	4	9	15.1	51.0	
30-May	4	A	4	4	21	45	342	5	7	7	5	13	4	5	11	7	3	7	8	8	11	9	9	4	23.6	341.9	
31-May	A	20	17	45	39	35	33	10	105	145	20	4	9	12	21	10	107	10	18	4	5	7	3	A	30.9	144.8	
		6.8	8.7	6.7	12.6	15.7	25.3	33.7	14.0	17.7	23.0	8.4	7.2	9.0	8.4	8.8	7.7	10.2	8.2	9.3	6.9	11.6	8.5	7.3	8.9	Diurnal Average	
		22.6	39.8	21.4	45.4	93.2	63.3	341.9	67.7	104.6	149.6	38.2	28.1	73.1	52.7	46.8	22.3	107.2	57.5	45.6	31.0	46.4	23.8	19.0	54.5	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									



**Hourly Maximums**

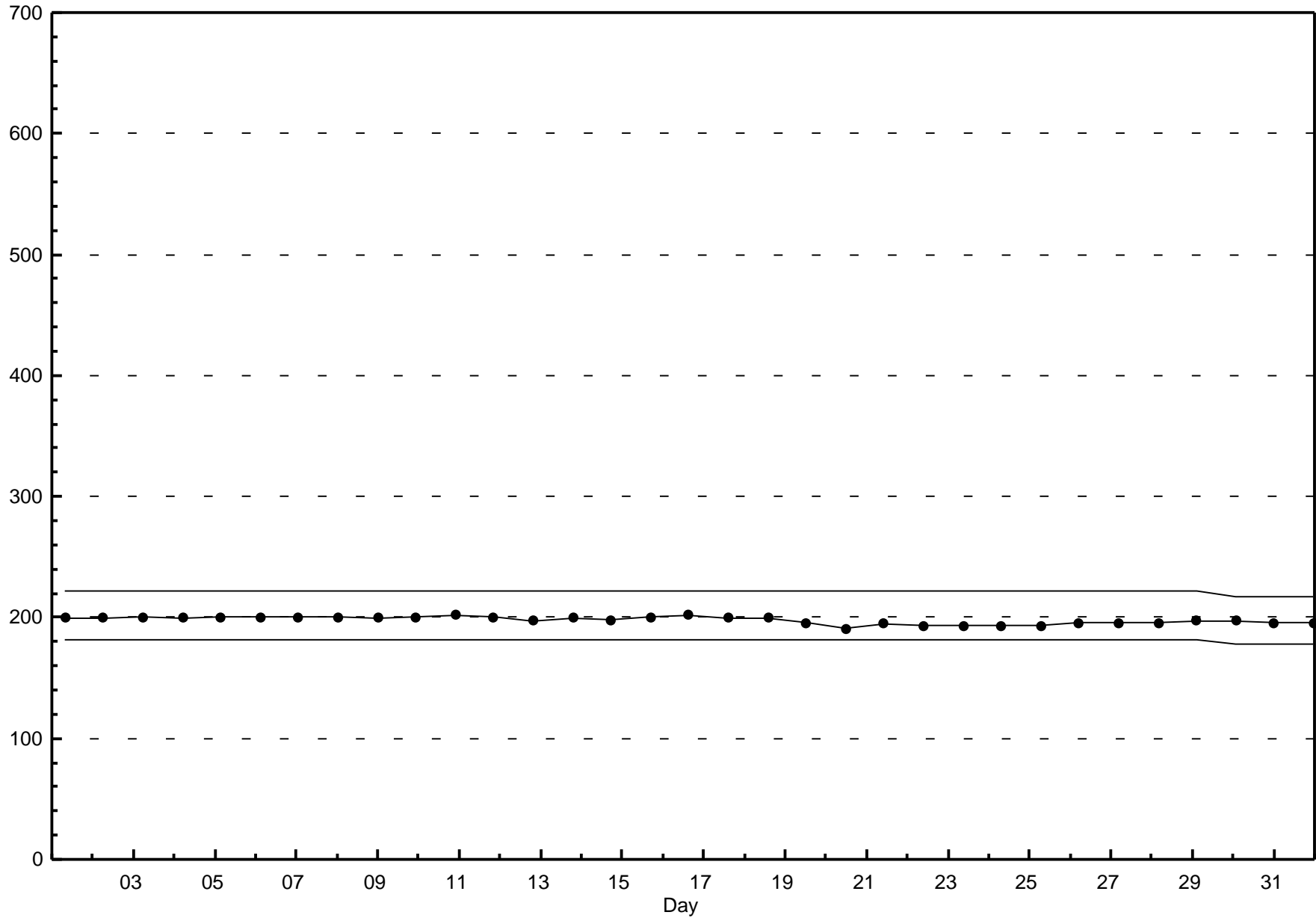
**Oxides of Nitrogen (NO<sub>x</sub>) - ppb**

**Portable-Bonanza - May 2011**



### Span Responses

Oxides of Nitrogen (NO<sub>x</sub>)  
Portable-Bonanza - May 2011

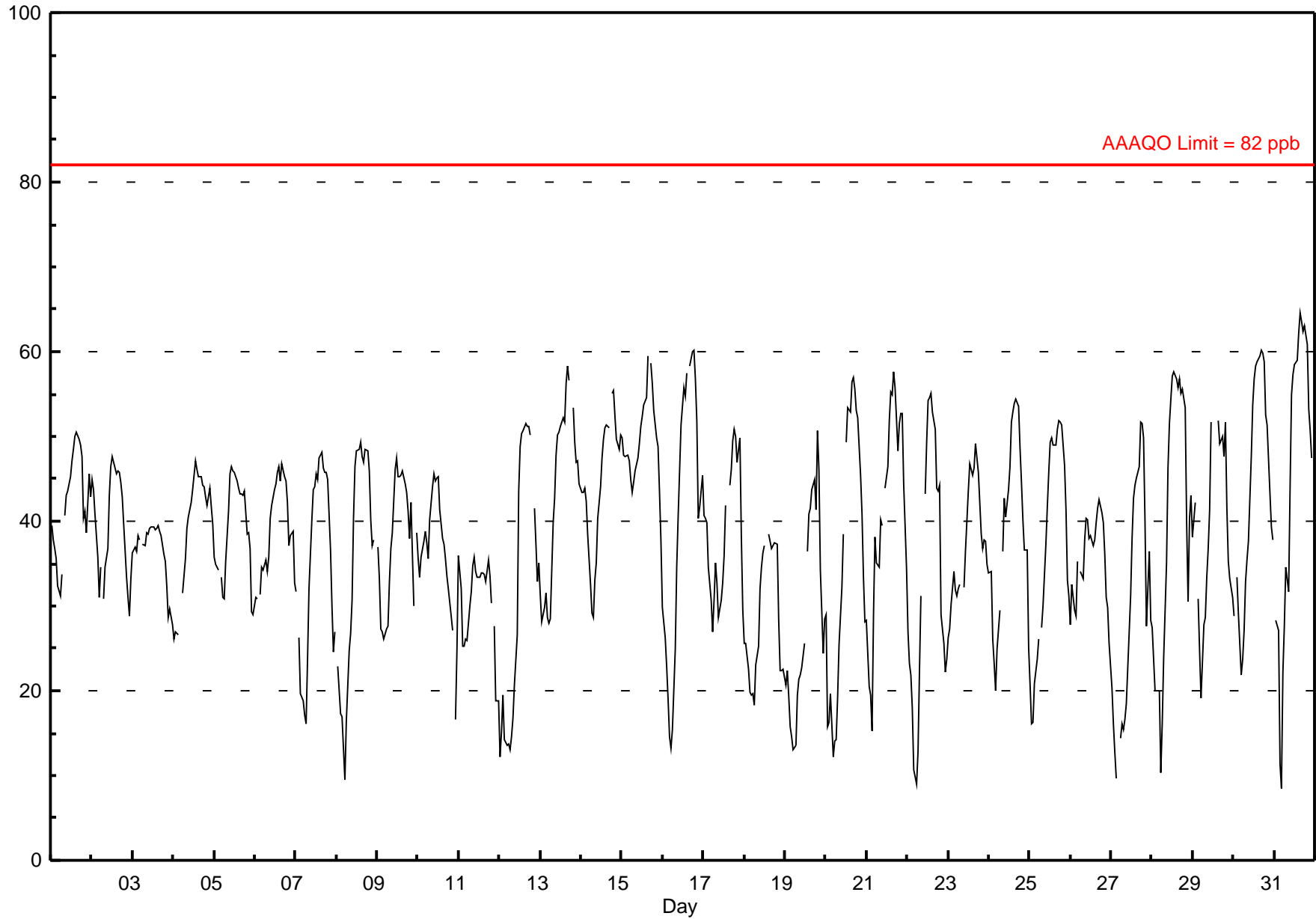


## Hourly Averages

Ozone (O<sub>3</sub>) - ppb

Portable-Bonanza - May 2011

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 64.5 ppb on May 31 16:00 Maximum Daily Average: 49.3 ppb on May 15		Hours in Service: 744 Hours of Data: 708 Hours of Missing Data: 36 Hours of Calibration: 36 Percent Operational Time: 100.0																								
Minimum Value: 8 ppb on May 31 05:00 Maximum Diurnal Average: 48.6 ppb at hour 18 Monthly Average: 37.79 ppb		Minimum Daily Average: 28.7 ppb on May 18 Minimum Diurnal Average: 24.3 ppb at hour 6 Percentiles: P <sub>1</sub> = 12.1 P <sub>10</sub> = 20.4 Q <sub>1</sub> = 29.8 Median = 38.3 Q <sub>3</sub> = 46.3 P <sub>90</sub> = 52.1 P <sub>99</sub> = 59.7																								
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	39	38	37	36	32	31	34	A	41	43	44	45	47	48	50	50	50	49	48	40	41	39	46	43	42.2	50.4
2-May	45	44	41	36	31	35	A	31	35	37	43	46	48	47	46	46	46	45	43	40	33	31	29	33	39.5	47.6
3-May	36	37	36	38	38	A	37	37	39	39	39	39	39	39	39	39	39	38	36	35	32	29	30	28	36.5	39.4
4-May	26	27	27	27	A	32	33	36	39	41	42	44	45	47	46	45	45	44	44	43	42	44	42	40	39.1	47.2
5-May	36	35	34	A	33	31	31	35	41	46	47	46	46	45	44	43	43	43	44	39	39	37	29	29	38.9	46.5
6-May	31	31	A	31	35	34	35	34	36	40	42	44	44	46	46	45	47	45	45	42	37	38	39	33	39.2	46.8
7-May	32	A	26	20	19	17	16	24	32	40	44	44	46	45	47	48	46	46	46	45	37	30	25	27	34.8	48.2
8-May	A	23	17	17	13	9	16	25	27	31	40	46	48	48	49	48	47	48	48	46	40	37	38	A	34.7	49.3
9-May	37	33	27	27	26	27	28	33	27	39	46	47	45	45	45	46	44	43	41	38	42	30	A	39	37.7	47.5
10-May	36	33	36	38	39	38	36	40	44	46	45	45	41	38	37	36	34	32	29	27	A	17	25	36.3	45.7	
11-May	36	32	25	25	26	26	30	32	35	36	34	33	33	34	34	34	33	35	33	30	A	28	19	19	30.5	35.9
12-May	12	15	19	14	14	14	13	15	17	21	27	44	49	50	51	52	51	51	50	A	42	37	33	35	31.5	51.6
13-May	31	28	30	32	29	28	28	40	43	48	50	50	51	52	52	56	58	57	A	53	49	47	47	44	43.7	58.3
14-May	43	43	44	42	38	33	29	29	33	35	40	44	47	50	51	51	51	A	55	55	52	50	48	50	44.2	55.4
15-May	50	48	48	48	47	45	43	45	46	47	49	51	52	54	55	59	A	59	56	53	50	49	44	38	49.3	59.5
16-May	30	26	23	19	15	13	15	25	35	40	46	51	56	55	57	A	58	60	60	57	52	40	42	45	40.0	60.1
17-May	41	40	40	35	31	27	31	35	33	29	31	33	36	42	A	44	46	49	51	50	47	50	38	29	38.5	50.8
18-May	26	26	22	20	19	20	18	23	25	32	35	36	37	A	38	38	37	37	38	37	28	22	22	23	28.7	38.5
19-May	21	22	19	16	15	13	14	20	21	22	23	26	A	36	41	41	44	45	41	51	46	34	24	28	28.8	50.6
20-May	29	16	16	20	12	14	14	19	25	32	38	A	49	53	53	56	57	56	53	52	45	41	33	28	35.4	56.9
21-May	28	20	19	15	29	38	35	35	40	39	A	44	46	52	55	55	58	56	48	52	53	53	44	34	41.3	57.6
22-May	27	23	22	18	11	9	13	22	31	A	43	49	54	55	55	53	51	44	44	44	29	26	22	24	33.4	55.0
23-May	26	27	30	34	32	31	32	33	A	32	36	40	44	47	45	46	49	48	46	38	37	38	38	35	37.6	49.2
24-May	34	34	26	23	20	25	29	A	36	43	41	44	47	52	53	54	54	54	49	45	40	37	37	25	39.1	54.4
25-May	21	16	16	21	24	26	A	27	30	37	42	46	49	50	49	49	51	52	52	51	47	41	33	31	37.4	51.9
26-May	28	33	30	29	35	A	34	33	38	40	40	38	38	37	38	40	42	43	41	40	36	31	30	26	35.6	42.5
27-May	20	16	13	10	A	14	16	15	17	18	23	31	38	43	44	45	46	52	51	50	40	28	36	28	30.3	51.7
28-May	27	24	20	A	20	10	16	24	35	46	52	54	57	58	57	56	57	55	56	53	40	30	40	43	40.5	57.6
29-May	38	42	A	31	25	19	28	29	33	37	41	52	C	C	C	52	49	50	48	52	42	35	33	31	38.3	51.9
30-May	29	A	33	29	22	24	27	33	35	38	48	54	57	58	59	59	60	60	59	53	51	43	39	38	43.8	60.1
31-May	A	28	27	11	8	22	28	35	32	44	55	57	58	59	62	65	64	62	63	61	53	51	47	A	45.1	64.5
																								Diurnal Average	Diurnal Maximum	
31.5 29.7 27.8 26.2 25.4 24.3 26.3 29.7 33.7 37.2 40.8 44.2 46.7 47.8 48.3 48.5 48.6 48.6 47.3 45.8 41.7 37.5 34.8 32.8 49.8 47.7 47.7 47.9 47.2 44.8 43.3 44.6 45.9 47.8 54.9 57.3 58.4 58.9 62.2 64.5 63.6 62.3 63.0 60.8 53.3 52.8 48.4 50.1																								Diurnal Average	Diurnal Maximum	
C - Calibration A - Automated Daily Zero Span Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 82 ppb 24-hr na																										



### Hourly Maximums

Ozone (O<sub>3</sub>) - ppb

Portable-Bonanza - May 2011

Maximum Value: 67.3 ppb on May 31 17:00	Maximum Daily Average: 51.8 ppb on May 15	Hours in Service: 744
Minimum Value: 12 ppb on May 22 06:00	Minimum Daily Average: 31.4 ppb on May 18	Hours of Data: 708
Maximum Diurnal Average: 51.4 ppb at hour 18	Minimum Diurnal Average: 29.3 ppb at hour 6	Hours of Missing Data: 36
Monthly Average: 41.77 ppb	Percentiles: P <sub>1</sub> = 16.3 P <sub>10</sub> = 27.7 Q <sub>1</sub> = 34.8 Median = 42.0 Q <sub>3</sub> = 49.5 P <sub>90</sub> = 56.0 P <sub>99</sub> = 63.1	Hours of Calibration: 36
		Percent Operational Time: 100.0

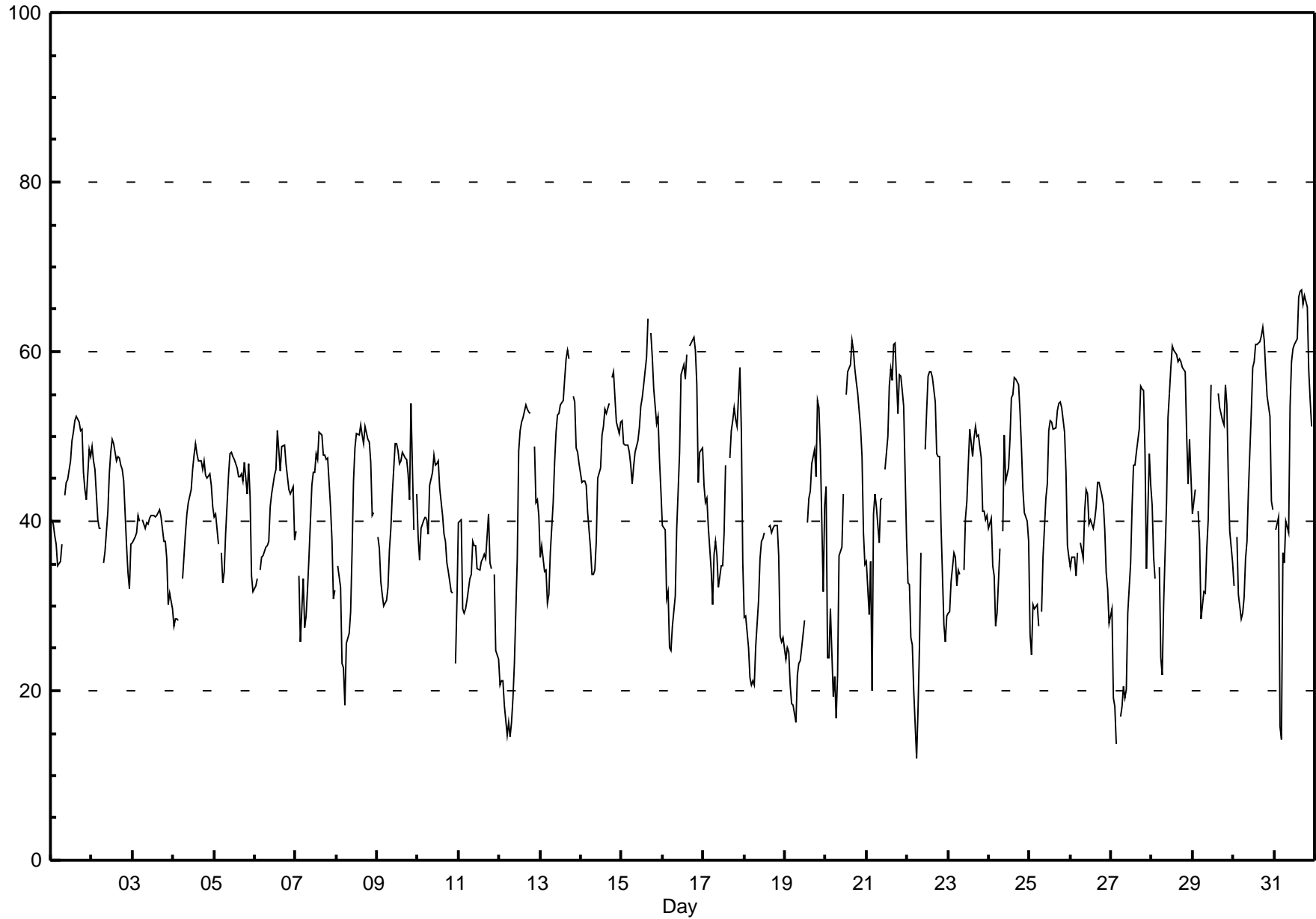
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	40	40	38	37	35	35	37	A	43	45	45	47	50	51	52	52	52	51	51	46	44	42	49	48	44.7	52.3
2-May	49	47	46	40	39	39	A	35	36	41	46	48	50	49	47	48	48	47	46	45	37	34	32	37	42.9	49.6
3-May	37	38	39	41	40	A	40	39	40	40	40	41	41	41	41	41	41	40	38	38	36	30	32	30	38.3	41.3
4-May	28	29	29	28	A	33	36	39	41	42	44	46	48	49	48	47	47	46	47	45	45	46	44	42	41.2	49.2
5-May	41	41	37	A	36	33	34	39	45	48	48	48	47	46	45	45	46	45	47	43	47	43	34	32	42.1	48.1
6-May	32	33	A	34	36	36	37	37	38	42	43	45	46	51	48	46	49	49	47	45	44	43	44	38	41.9	50.7
7-May	39	A	34	26	33	28	29	32	36	44	46	46	48	47	51	50	48	48	47	47	42	38	31	32	40.0	50.5
8-May	A	35	32	23	23	18	26	27	29	36	45	49	50	50	51	50	49	51	50	49	47	41	41	A	39.7	51.4
9-May	38	37	33	31	30	31	32	37	39	43	49	49	48	47	47	48	47	47	46	43	54	39	A	43	41.7	54.0
10-May	38	35	39	40	41	40	38	44	46	48	47	47	47	44	41	38	38	35	34	32	32	A	23	31	39.0	47.8
11-May	40	40	30	29	30	31	33	34	38	37	37	34	34	35	36	36	36	41	35	34	A	34	25	24	34.0	40.9
12-May	21	21	21	18	15	16	15	16	19	23	36	48	51	52	52	54	53	53	53	A	49	42	43	41	35.3	53.8
13-May	36	37	34	34	30	31	36	42	47	51	53	53	54	54	57	59	60	59	A	55	54	49	48	47	46.9	60.2
14-May	45	45	45	44	41	37	34	34	34	38	45	46	50	51	53	53	54	A	57	58	55	52	50	52	46.6	57.7
15-May	52	49	49	49	48	47	44	46	48	50	51	54	55	56	59	64	A	62	59	56	52	52	47	44	51.8	63.8
16-May	39	39	31	32	25	25	28	31	39	44	48	57	59	57	60	A	61	61	62	60	56	45	48	49	45.8	61.8
17-May	44	42	43	39	34	30	36	38	36	32	35	35	39	47	A	47	51	52	53	52	51	58	51	35	42.6	58.1
18-May	29	29	25	22	21	21	21	25	31	36	38	38	39	A	39	39	39	39	40	40	36	26	26	26	31.4	39.5
19-May	24	25	25	21	19	18	16	22	23	24	25	28	A	40	43	43	47	49	45	54	53	48	32	42	33.3	54.3
20-May	44	24	24	30	19	22	17	22	36	37	43	A	55	58	58	61	60	58	56	55	51	48	39	35	41.4	61.3
21-May	35	29	35	20	41	43	42	38	43	43	A	46	50	56	58	57	61	61	53	57	57	55	54	38	46.6	61.0
22-May	33	33	26	25	20	12	18	25	36	A	48	53	57	58	58	57	54	48	48	48	39	28	26	29	38.2	57.6
23-May	29	29	33	36	36	32	34	34	A	34	40	42	47	51	48	50	51	50	50	47	41	41	40	41	40.8	51.1
24-May	39	40	35	34	28	29	37	A	39	50	45	46	50	55	55	57	57	56	53	49	44	41	40	38	44.1	57.0
25-May	27	24	30	30	30	28	A	29	36	43	44	51	52	52	51	51	53	54	54	53	50	46	37	36	41.7	54.1
26-May	35	36	36	34	36	A	38	36	41	44	43	40	40	39	40	42	45	45	43	42	39	34	32	28	38.5	44.6
27-May	30	19	18	14	A	17	18	20	19	20	29	35	42	47	47	48	51	56	56	55	48	34	48	44	35.5	55.9
28-May	42	36	33	A	35	24	22	30	42	52	55	58	61	60	60	59	59	59	58	58	50	44	50	45	47.5	60.7
29-May	41	44	A	41	38	28	32	32	37	40	49	56	C	C	C	55	53	52	51	56	54	45	39	35	43.9	56.1
30-May	32	A	38	31	28	29	31	36	38	44	53	58	59	61	61	61	62	63	61	58	55	52	42	41	47.6	62.9
31-May	A	39	40	16	14	36	35	40	39	54	59	60	61	62	67	67	67	66	67	65	58	54	51	A	50.8	67.3

36.5	35.0	33.7	31.0	31.0	29.3	30.9	33.0	37.1	40.7	44.3	46.8	49.2	50.4	50.7	50.9	51.2	51.4	50.2	49.5	47.3	42.8	39.9	37.9	Diurnal Average	
51.9	49.1	49.1	49.0	48.2	46.6	44.5	46.4	48.1	53.6	58.8	60.3	60.9	61.5	66.5	67.2	67.3	65.7	66.7	65.2	57.9	58.1	53.6	51.7	Diurnal Maximum	

C - Calibration                      A - Automated Daily Zero Span

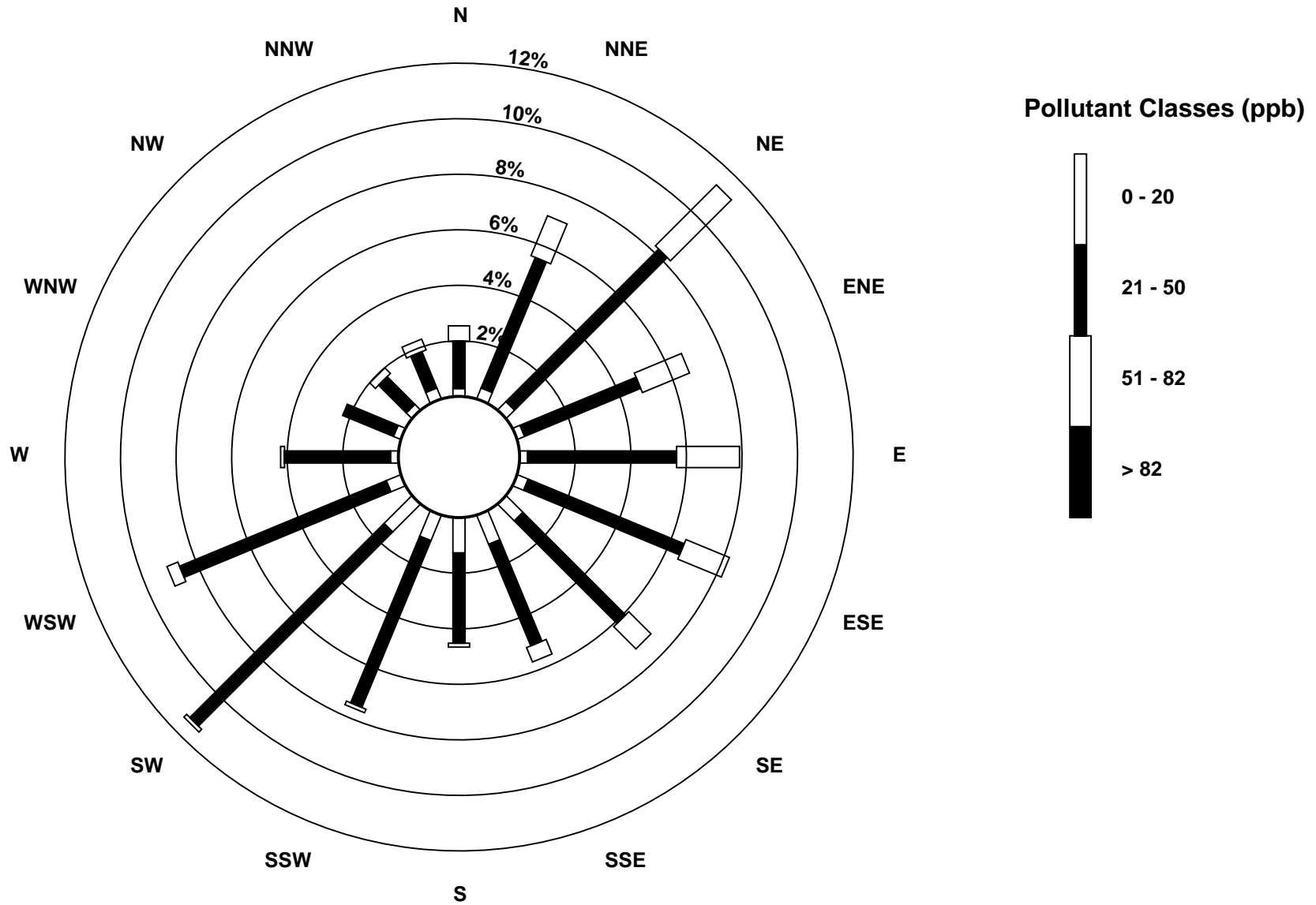
### Hourly Maximums

Ozone (O<sub>3</sub>) - ppb  
Portable-Bonanza - May 2011



**Pollutant Rose**

Ozone (O<sub>3</sub>) - ppb  
Portable-Bonanza - May 2011



## Eight Hour Running Averages

Ozone (O<sub>3</sub>) - ppb

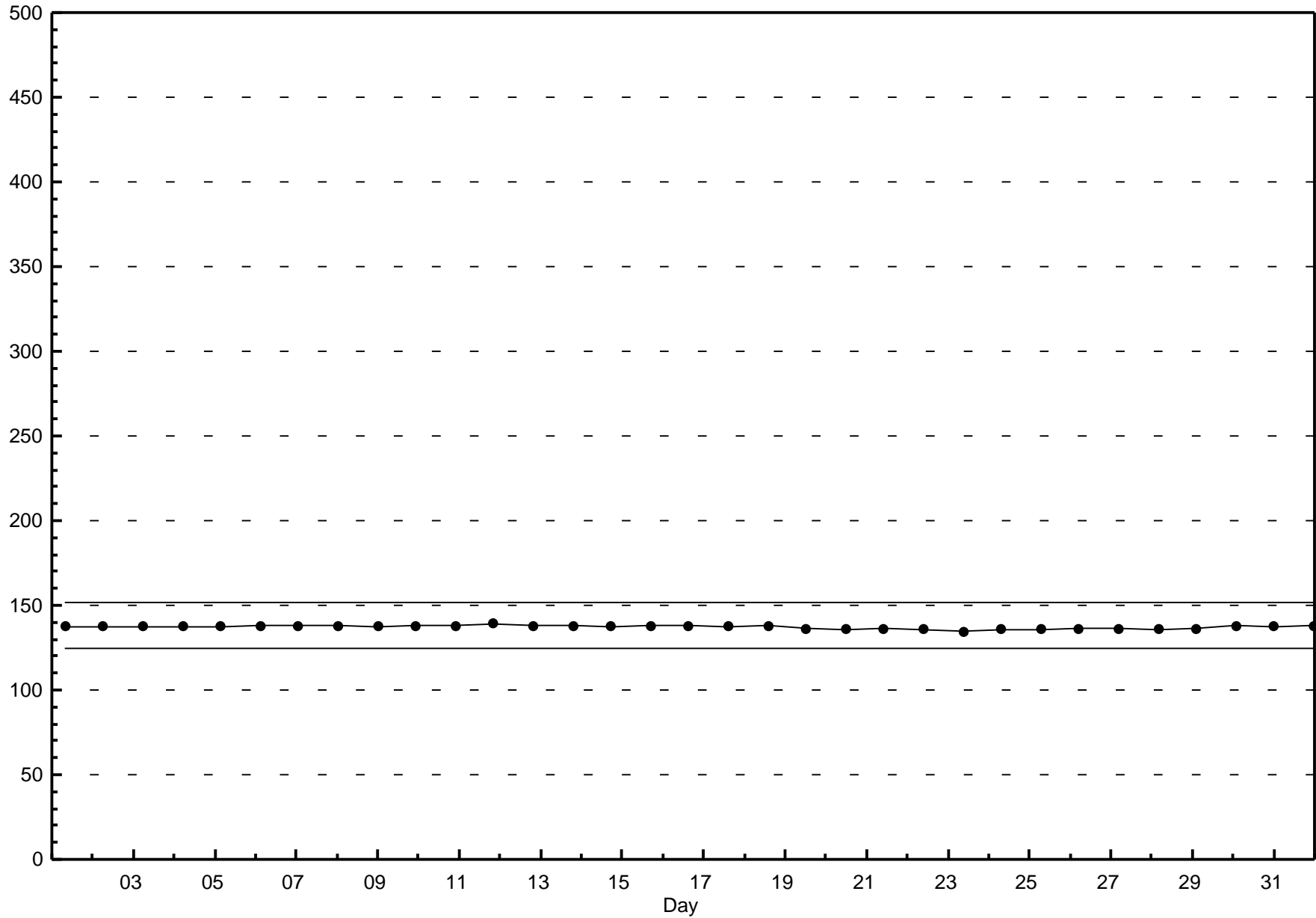
Portable-Bonanza - May 2011

Maximum Value: 61.7 ppb on May 31 20:00																					Hours in Service:	744			
Minimum Value: 14.4 ppb on May 27 09:00																					Hours of Data:	738			
Percentiles: P <sub>1</sub> = 15.7 P <sub>10</sub> = 23.9 Q <sub>1</sub> = 31.0 Median = 37.7 Q <sub>3</sub> = 44.7 P <sub>90</sub> = 50.4 P <sub>99</sub> = 58.2																					Hours of Missing Data:	6			
																					Hours of Calibration:	6			
																					Percent Operational Time:	100.0			
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-May	41	40	40	39	38	37	36	35	36	36	37	39	41	43	45	46	47	48	48	48	47	46	45	44	48.5
2-May	44	43	42	42	40	40	39	37	36	35	35	37	39	41	41	43	45	46	46	45	43	41	39	37	45.7
3-May	36	35	34	34	35	35	37	37	38	38	38	38	38	39	39	39	39	39	39	38	37	36	35	33	39.1
4-May	32	30	29	28	27	28	28	30	31	33	36	38	39	41	43	44	44	45	45	45	45	44	44	43	45.2
5-May	42	41	39	39	38	36	34	34	34	36	38	39	40	42	44	45	45	45	44	43	42	41	40	38	44.9
6-May	36	35	33	32	32	31	32	33	34	35	36	38	39	40	42	43	44	45	45	45	44	43	42	41	45.2
7-May	39	38	35	32	29	26	23	22	22	24	26	29	33	36	40	43	45	46	46	46	45	43	40	38	46.1
8-May	36	33	29	25	22	19	18	17	18	19	22	26	30	35	39	42	45	47	48	48	47	45	44	44	48.0
9-May	42	40	37	34	32	31	29	30	30	30	33	35	38	40	42	44	45	45	45	44	43	41	41	40	45.4
10-May	38	37	36	36	36	37	37	37	38	39	41	41	42	43	43	43	42	40	39	36	34	33	30	28	43.0
11-May	28	28	27	27	27	26	28	29	29	29	30	31	32	33	34	34	34	34	34	33	33	33	30	28	34.1
12-May	25	22	20	18	17	16	15	14	15	16	17	20	25	29	34	39	43	47	50	51	50	48	45	43	50.6
13-May	40	37	34	33	32	31	30	31	32	35	37	40	42	45	48	50	52	53	54	54	54	53	53	51	54.2
14-May	49	47	47	45	44	42	40	38	36	35	35	35	36	38	41	44	46	48	50	52	52	52	52	52	52.3
15-May	52	51	50	49	49	48	47	47	46	46	46	47	47	48	50	52	53	54	55	55	55	54	53	50	55.4
16-May	47	43	39	35	30	26	22	21	21	23	26	30	35	40	46	49	52	55	57	58	57	55	53	52	57.6
17-May	50	47	45	42	39	38	36	35	34	32	31	31	32	34	34	35	37	40	43	45	47	48	47	45	49.6
18-May	43	40	36	32	29	25	23	22	22	24	26	28	29	32	34	36	37	37	37	37	36	34	32	31	42.5
19-May	29	27	24	22	20	19	18	17	17	17	18	19	20	23	27	30	33	37	39	43	43	43	41	39	43.2
20-May	37	34	31	27	22	20	19	18	17	19	22	22	28	33	39	44	48	52	54	54	53	52	49	46	53.9
21-May	42	38	33	29	27	27	27	28	29	31	33	37	40	42	44	47	50	52	52	53	53	54	52	50	53.6
22-May	46	42	39	34	29	24	20	18	19	18	21	26	32	38	44	49	51	50	51	50	47	43	39	35	51.4
23-May	32	30	29	27	28	28	30	31	31	32	33	34	35	38	40	42	42	44	46	45	45	43	42	41	45.6
24-May	39	37	35	33	31	29	28	27	28	29	31	34	38	42	45	46	48	50	51	51	50	48	46	42	50.8
25-May	38	34	30	27	25	23	21	22	23	26	30	33	37	40	41	44	47	48	50	50	50	49	47	45	50.4
26-May	42	39	37	34	32	31	31	32	33	34	36	37	37	38	39	39	39	40	40	39	39	38	36	36	41.9
27-May	33	30	26	23	21	18	16	15	14	15	16	19	22	25	29	32	36	40	44	46	46	45	44	41	46.5
28-May	39	36	32	29	26	24	21	20	21	25	29	32	37	43	48	52	55	56	56	56	54	50	48	47	56.2
29-May	44	43	41	38	36	34	32	30	30	29	30	33	34	37	N	N	N	N	N	N	49	47	45	42	48.7
30-May	40	38	36	33	30	29	28	28	29	30	32	35	39	44	48	51	54	57	58	58	57	56	53	50	58.2
31-May	49	44	40	34	28	25	23	23	24	26	29	35	41	46	50	54	58	60	61	62	61	60	58	57	61.7
51.6 51.1 50.2 49.2 48.6 48.0 47.3 46.6 46.1 46.1 46.3 46.7 47.3 48.4 50.2 54.0 58.0 60.3 61.3 61.7 61.1 60.1 58.2 57.3																									
Diurnal Maximums																									
N - Not Valid																									



### Span Responses

Ozone (O<sub>3</sub>)  
Portable-Bonanza - May 2011



## Hourly Averages

External Temperature (ET) - °C

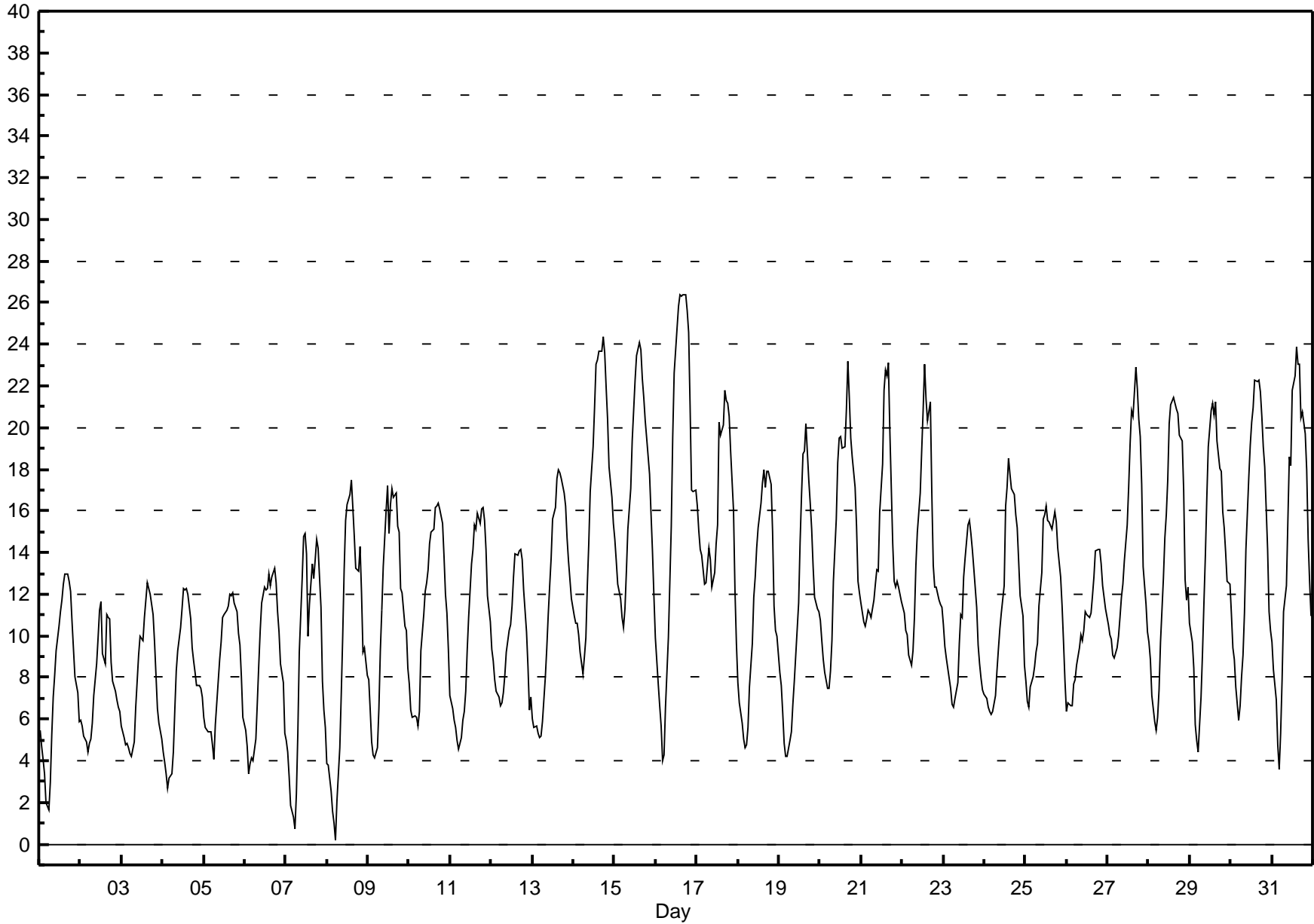
Portable-Bonanza - May 2011

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 26.4 °C on May 16 17:00      Maximum Daily Average: 17.0 °C on May 15		Hours in Service: 744 Hours of Data: 744 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																								
Minimum Value: 0 °C on May 8 06:00 Maximum Diurnal Average: 17.7 °C at hour 17 Monthly Average: 11.95 °C		Minimum Daily Average: 7.7 °C on May 2 Minimum Diurnal Average: 5.9 °C at hour 6 Percentiles: P <sub>1</sub> = 2.0 P <sub>10</sub> = 5.3 Q <sub>1</sub> = 7.8 Median = 11.4 Q <sub>3</sub> = 15.5 P <sub>90</sub> = 20.2 P <sub>99</sub> = 24.0																								
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	5	5	4	3	2	2	3	5	7	8	9	10	11	12	12	13	13	13	12	11	9	8	7	6	8.0	13.0
2-May	6	6	5	5	4	5	5	6	7	9	10	11	12	9	9	11	11	11	9	8	7	7	7	6	7.7	11.6
3-May	6	5	5	5	5	4	4	5	7	8	9	10	10	11	12	13	12	12	11	10	8	6	6	5	7.8	12.5
4-May	4	4	3	3	3	3	4	6	8	9	10	11	12	12	12	12	11	9	9	8	8	8	7	7	7.8	12.3
5-May	6	6	5	5	5	5	4	6	8	9	10	11	11	11	11	12	12	12	12	11	10	10	8	6	8.6	12.1
6-May	5	5	3	4	4	4	5	7	9	10	12	12	12	12	13	12	13	13	13	11	10	9	8	5	8.8	13.3
7-May	5	4	3	2	1	1	2	5	9	13	15	15	14	10	12	13	13	14	15	14	11	8	6	6	8.8	14.9
8-May	4	4	3	2	1	0	2	5	7	10	13	16	16	17	17	16	15	13	13	14	12	9	9	8	9.4	17.5
9-May	8	6	5	4	4	5	6	9	11	13	16	17	15	16	17	17	17	15	15	12	12	10	10	8	11.3	17.2
10-May	8	6	6	6	6	6	6	9	11	12	13	13	14	15	15	16	16	16	16	15	14	12	11	9	11.4	16.4
11-May	7	6	6	6	5	5	5	6	6	7	9	11	13	14	15	15	16	15	16	16	16	14	12	11	10.6	16.2
12-May	9	9	8	7	7	7	7	7	8	9	10	11	11	13	14	14	14	14	14	12	10	8	6	7	9.9	14.1
13-May	6	6	6	5	5	5	6	8	9	11	12	14	16	16	18	18	18	18	17	16	15	14	13	12	11.7	18.0
14-May	11	11	11	10	9	8	9	10	12	14	17	19	21	23	23	24	24	24	24	22	20	18	17	15	16.5	24.3
15-May	15	14	12	12	11	10	11	13	15	17	19	21	22	23	24	24	22	21	20	20	18	16	14	12	17.0	24.1
16-May	10	8	7	6	4	4	7	10	13	15	20	23	25	26	26	26	26	26	26	25	21	17	17	17	16.8	26.4
17-May	16	15	14	14	13	13	13	14	14	12	13	14	15	20	20	20	22	21	21	21	19	16	12	10	15.9	21.8
18-May	8	7	6	5	5	5	6	8	10	12	13	14	15	16	17	18	17	18	18	17	15	11	10	10	11.7	17.9
19-May	8	8	6	5	4	4	5	5	7	8	9	12	14	17	19	19	20	17	16	15	13	12	11	11	11.1	20.2
20-May	11	10	9	8	7	8	8	10	13	16	18	19	20	19	19	21	23	21	20	19	17	15	13	12	14.8	23.2
21-May	12	11	10	11	11	11	11	12	12	13	13	16	18	22	23	23	23	20	14	13	12	13	12	12	14.5	23.1
22-May	11	11	10	10	9	9	9	11	13	15	17	19	21	23	21	20	21	17	13	12	12	12	12	11	14.2	23.1
23-May	11	10	9	8	7	7	7	7	8	10	11	11	13	14	15	16	15	14	13	11	10	9	8	7	10.4	15.5
24-May	7	7	7	6	6	6	7	8	9	10	11	12	16	17	19	18	17	17	16	15	14	12	11	9	11.6	18.5
25-May	8	7	7	8	8	9	9	10	11	13	16	16	16	16	15	15	16	16	15	14	13	11	10	8	11.9	16.2
26-May	6	7	7	7	8	8	9	9	10	10	10	11	11	11	12	13	14	14	14	13	12	12	11	11	10.4	14.2
27-May	11	10	10	9	9	9	10	11	12	12	14	15	17	19	21	21	23	22	20	20	17	13	12	10	14.4	22.9
28-May	10	9	7	6	5	6	7	10	13	15	16	18	20	21	21	21	21	21	20	19	17	13	12	12	14.1	21.4
29-May	11	10	8	6	5	4	7	9	12	14	17	19	21	21	21	21	19	18	18	16	15	14	13	13	13.8	21.3
30-May	11	9	9	8	6	7	8	9	11	14	18	19	20	21	22	22	22	22	21	19	18	14	11	10	14.6	22.3
31-May	10	8	7	5	4	5	8	11	12	16	19	18	22	22	24	23	23	21	21	20	18	15	13	11	14.7	23.8
		8.5	7.8	7.0	6.4	6.0	5.9	6.8	8.4	10.2	11.8	13.5	14.8	16.0	16.8	17.4	17.6	17.7	17.0	16.1	15.2	13.7	11.8	10.6	9.6	Diurnal Average
		16.2	15.1	14.2	13.9	12.5	12.5	13.4	14.2	15.1	17.1	19.6	22.6	24.8	25.8	26.4	26.3	26.4	26.4	25.6	24.5	21.1	18.1	16.9	17.0	Diurnal Maximum

**Hourly Averages**

**External Temperature (ET) - °C**

**Portable-Bonanza - May 2011**



## Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Portable-Bonanza - May 2011

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1 Spd	15	17	16	14	12	12	16	20	26	24	23	25	24	20	19	18	19	19	15	11	16	15	28	13	17.8	27.7
Dir	205	211	214	222	232	237	233	233	240	243	251	248	240	250	248	248	254	239	246	249	252	244	241	225	239	241
2 Spd	8	7	7	5	5	14	12	12	11	13	11	10	7	16	4	13	11	6	9	6	6	5	6	12	7.4	15.9
Dir	149	102	104	133	127	128	136	130	124	117	105	91	129	199	74	92	115	111	198	154	152	154	174	206	134	199
3 Spd	14	17	16	21	23	22	20	26	39	38	36	35	32	35	38	37	33	31	38	35	27	23	23	18	27.9	39.1
Dir	207	212	226	223	229	231	224	224	234	237	246	246	244	241	244	245	244	247	236	236	229	229	240	233	236	234
4 Spd	17	16	14	13	13	12	13	23	28	34	32	33	34	37	35	35	35	35	26	23	17	17	17	13	23.2	36.7
Dir	227	223	218	218	206	207	210	231	244	244	250	254	237	231	227	233	242	232	230	219	209	199	203	203	230	231
5 Spd	4	3	3	4	7	8	6	11	22	19	18	18	19	20	18	18	15	16	15	19	12	7	13	13	11.2	21.8
Dir	156	196	220	205	168	155	187	224	245	251	260	250	264	256	269	255	270	293	267	244	266	262	218	212	248	245
6 Spd	13	12	10	7	11	8	8	12	11	11	8	10	7	15	6	19	10	14	14	8	5	4	6	3	7.5	18.7
Dir	208	208	221	202	204	201	196	223	235	249	248	280	263	271	227	217	224	235	208	181	28	89	27	106	225	217
7 Spd	3	3	2	4	5	4	3	4	7	7	10	13	11	10	10	7	11	12	19	12	6	5	6	3	4.8	18.7
Dir	193	120	117	49	99	135	216	355	27	59	29	24	52	219	283	30	47	36	40	45	62	70	53	101	45	40
8 Spd	2	5	4	4	4	3	4	6	5	3	4	5	4	13	10	17	9	17	17	11	6	12	11	11	4.3	17.4
Dir	355	168	107	129	179	181	167	197	232	274	354	11	340	121	115	23	26	164	134	130	134	122	137	135	127	164
9 Spd	12	5	9	7	7	11	12	11	6	4	9	9	13	16	18	12	19	7	12	24	13	11	18	12	8.0	23.6
Dir	137	144	128	135	127	120	131	130	170	199	192	180	270	139	162	193	229	316	262	222	206	225	192	168	182	222
10 Spd	12	10	10	13	12	11	10	11	12	10	15	11	15	19	13	10	9	7	4	9	7	6	2	17	8.8	19.1
Dir	178	164	158	183	176	162	145	162	185	189	213	215	197	214	234	242	222	220	223	211	265	60	278	238	199	214
11 Spd	21	2	6	7	6	5	3	8	4	3	6	6	7	8	9	5	13	23	19	12	10	4	8	2	1.2	22.7
Dir	246	208	205	208	194	175	205	210	207	282	14	19	14	335	311	277	100	119	101	117	76	355	302	313	145	119
12 Spd	7	19	22	10	10	3	6	7	7	8	13	26	17	12	6	14	18	20	22	19	9	6	4	7	11.2	25.9
Dir	236	233	250	251	217	203	263	249	235	221	233	238	230	236	213	241	253	270	283	274	289	280	158	185	246	238
13 Spd	5	8	10	9	9	6	4	11	8	12	13	14	8	10	12	16	13	15	14	14	16	15	16	16	8.9	16.2
Dir	133	126	142	144	146	180	169	166	187	174	196	193	161	177	127	124	129	101	101	77	71	83	91	88	130	124
14 Spd	15	16	16	15	12	6	1	2	5	5	3	6	7	13	14	17	16	17	15	14	16	18	24	24	11.6	24.5
Dir	82	78	67	77	74	42	53	303	60	49	97	25	34	65	82	92	85	86	87	75	86	89	106	119	82	106
15 Spd	23	25	16	15	12	12	11	14	19	18	14	19	21	18	21	24	28	27	29	27	22	20	18	2	18.6	29.1
Dir	116	112	95	89	82	88	88	98	112	120	119	111	113	101	108	97	96	100	106	113	110	113	121	175	106	106
16 Spd	2	6	5	3	5	2	7	7	7	5	7	12	14	11	11	12	12	14	14	14	9	9	14	14	6.0	14.4
Dir	108	88	177	172	129	152	203	236	263	312	15	19	23	36	52	29	29	34	45	47	74	46	39	39	40	39
17 Spd	14	14	13	9	8	8	9	12	14	11	14	15	18	20	19	22	25	19	21	21	14	19	23	11	12.6	25.3
Dir	37	39	42	53	35	27	39	53	50	46	49	34	37	36	36	28	32	65	68	60	60	132	153	198	53	32
18 Spd	5	9	11	9	7	7	6	11	14	19	19	16	15	12	9	16	12	14	11	13	14	11	12	12	9.0	19.2
Dir	172	150	146	149	164	176	226	230	240	232	240	233	248	257	259	234	248	242	258	271	307	300	289	286	241	240
19 Spd	6	4	8	5	4	8	5	10	8	12	12	10	4	7	4	8	8	10	5	17	8	3	4	2	2.5	16.7
Dir	305	233	232	188	204	222	249	316	264	270	292	316	283	306	317	357	346	24	50	141	170	132	103	122	279	141
20 Spd	2	2	3	3	4	4	4	2	2	4	4	9	3	6	16	14	21	23	19	16	10	8	6	5	4.7	23.2
Dir	141	350	147	129	207	196	199	178	18	5	356	360	97	221	312	16	37	39	45	69	62	90	24	50	38	39
21 Spd	5	0	1	11	7	7	16	9	6	7	8	6	9	7	8	9	10	3	17	18	18	14	3	7	1.8	18.4
Dir	50	185	168	233	279	344	26	24	271	243	275	344	14	28	12	56	35	139	193	135	119	72	58	221	53	135
22 Spd	3	6	5	4	4	3	4	5	1	4	5	3	3	6	9	11	13	21	20	12	13	13	6	11	5.1	20.6
Dir	111	44	86	145	226	166	171	219	240	341	359	25	22	47	337	356	355	10	6	345	37	44	48	53	19	10

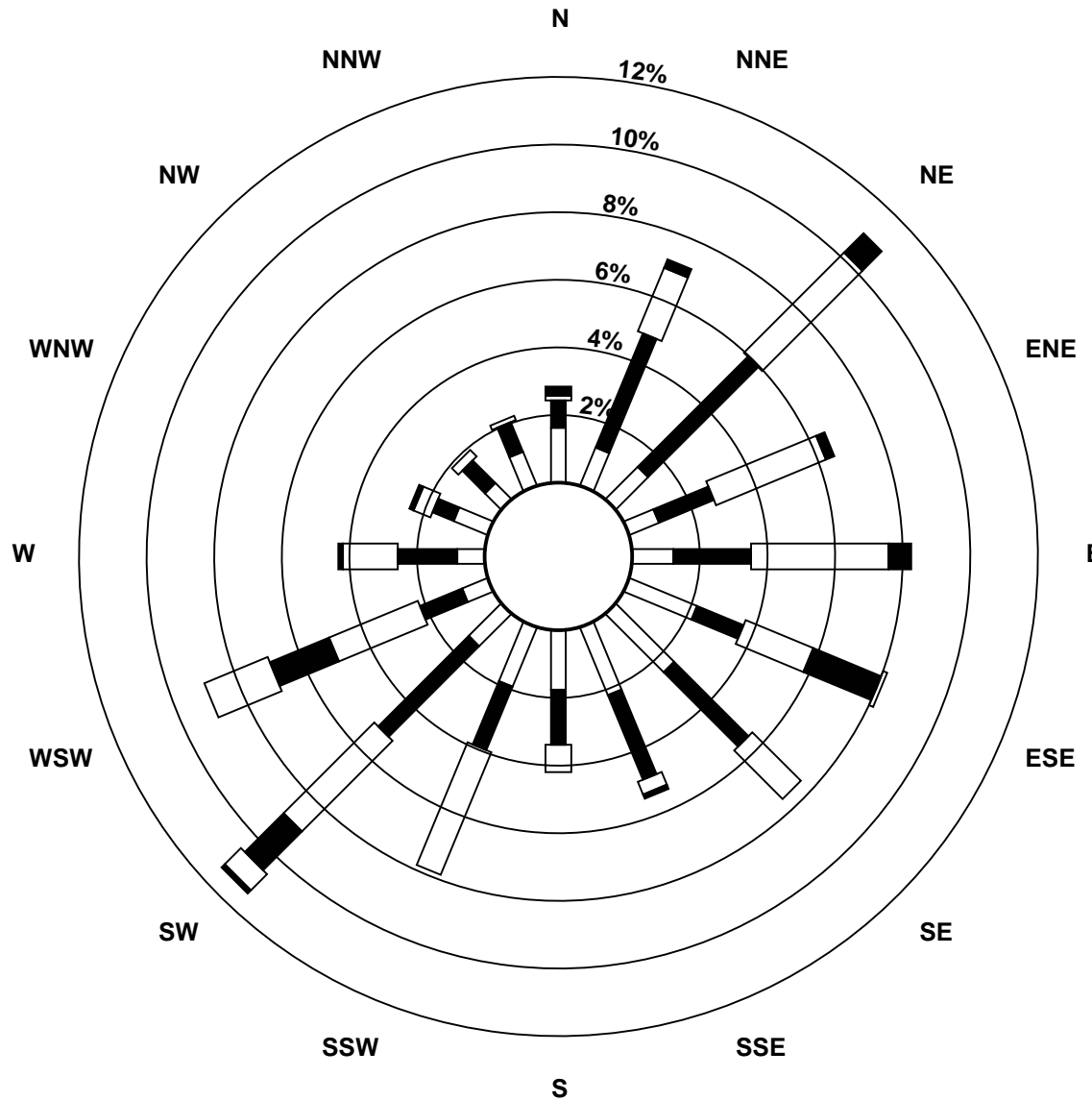
## Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Portable-Bonanza - May 2011

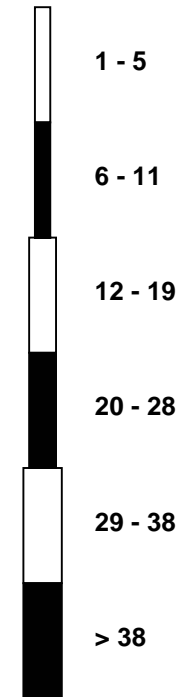
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
23 Spd	21	21	16	14	12	14	15	17	15	16	18	12	11	10	13	9	11	6	9	13	14	12	13	10	7.5	20.9
Dir	44	38	41	40	31	29	36	39	35	20	22	29	17	28	23	53	87	82	135	206	189	206	218	236	41	38
24 Spd	5	3	3	2	2	4	5	2	4	4	5	5	7	18	14	15	12	13	8	8	8	6	7	3	3.8	17.7
Dir	218	135	121	152	153	159	166	258	282	283	319	323	27	93	78	64	88	110	157	156	147	143	143	79	111	93
25 Spd	5	5	6	3	11	12	10	15	11	11	15	18	21	22	24	21	20	21	27	24	15	6	7	8	13.5	26.5
Dir	93	104	56	121	120	106	91	99	101	85	72	88	97	100	111	111	110	106	108	117	122	87	50	45	100	108
26 Spd	7	6	7	8	11	10	9	10	14	16	17	17	16	17	13	14	14	16	14	10	9	9	10	8	11.6	17.5
Dir	52	92	69	55	87	82	60	51	94	72	68	68	72	66	76	82	72	65	63	58	60	53	44	44	68	68
27 Spd	5	5	4	6	4	7	5	3	3	4	4	4	5	4	5	6	13	10	5	6	5	5	6	1	3.7	13.2
Dir	346	21	355	13	30	30	45	348	343	282	278	271	226	328	14	46	28	41	91	44	45	18	52	352	18	28
28 Spd	2	2	3	2	3	2	2	1	4	6	6	8	7	8	6	7	8	11	10	7	2	4	9	17	3.4	17.5
Dir	338	145	115	139	77	205	34	175	1	342	322	331	16	26	8	27	5	30	41	36	111	109	110	121	41	121
29 Spd	15	16	8	2	4	3	4	9	8	4	3	5	4	7	10	23	13	8	5	15	1	7	8	12	1.6	23.1
Dir	124	122	133	185	195	139	189	220	255	241	257	244	287	359	19	42	63	91	42	35	70	228	223	219	106	42
30 Spd	13	13	13	11	8	9	6	4	3	5	10	14	17	14	14	18	15	13	13	13	9	8	9	8	4.1	17.8
Dir	221	212	212	214	221	215	270	299	334	33	54	86	105	86	48	40	43	51	68	40	66	95	113	109	83	40
31 Spd	5	4	4	2	3	5	6	4	7	5	1	4	5	8	9	7	5	10	15	10	6	9	8	5	4.0	14.8
Dir	122	151	144	182	89	163	135	222	285	269	328	47	68	78	87	90	78	158	124	147	153	132	141	146	129	124
Spd	3.3	3.9	3.3	3.3	3.6	3.3	2.6	3.3	4.1	3.8	3.1	2.4	1.2	1.7	0.2	1.8	2.4	2.9	3.4	3.7	3.2	3.4	3.7	3.8	Diurnal Average	
Dir	157	145	155	167	166	159	165	202	229	239	264	276	243	191	63	60	57	91	117	136	123	125	154	169	Diurnal Maximum	
Spd	22.8	25.3	21.8	21.3	22.5	21.5	20.3	26.1	39.1	38.3	36.2	34.5	33.6	36.7	38.0	37.1	35.2	34.7	38.1	34.9	26.7	22.7	27.7	24.3	Diurnal Maximum	
Dir	116	112	250	223	229	231	224	224	234	237	246	246	237	231	244	245	242	232	236	236	229	229	241	119	Diurnal Maximum	
Maximum Speed Value: 39 km/h on May 3 09:00		Minimum Speed Value: 0 km/h on May 21 02:00										Hours in Service: 744														
Maximum Daily Speed Average: 27.9 km/h on May 3		Minimum Daily Speed Average: 1.2 km/h on May 27										Hours of Data: 744														
Maximum Diurnal Speed Average: 4.1 km/h at hour 9		Minimum Diurnal Speed Average: 0.2 km/h at hour 15										Hours of Missing Data: 0														
Monthly Average Velocity: 1.93 km/h 162.3 deg		Speed Percentiles: P <sub>1</sub> = 1.5 P <sub>10</sub> = 3.7 Q <sub>1</sub> = 5.9 Median = 10.2 Q <sub>3</sub> = 15.1 P <sub>90</sub> = 20.6 P <sub>99</sub> = 35.7										Percent Operational Time: 100.0														
All monthly, daily, and diurnal averages have been calculated using vector methods																										
Frequency Distribution																										
		Speed Range (km/h)																								
Direction	0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total																			
North	21	21	7	2	0	0	51																			
NorthEast	13	60	52	12	0	0	137																			
East	23	23	57	15	1	0	119																			
SouthEast	28	37	32	8	0	0	105																			
South	29	27	20	0	0	0	76																			
SouthWest	19	36	60	24	16	4	159																			
West	13	23	25	9	2	0	72																			
NorthWest	9	12	4	0	0	0	25																			
Total	155	239	257	70	19	4	744																			

**Wind Rose**

**Wind Speed (WS) (km/h)**  
**Portable-Bonanza - May 2011**



**Wind Speed Classes (km/h)**



# Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

## Portable-Bonanza - May 2011

Maximum Speed: 39 km/h on May 3 09:00	Maximum Daily Speed Average: 28.5 km/h on May 3	Hours in Service: 744
Minimum Speed: 2 km/h on May 20 08:00	Minimum Daily Speed Average: 6.1 km/h on May 27	Hours of Data: 744
Maximum Diurnal Speed Average: 17.0 km/h at hour 18	Minimum Diurnal Speed Average: 8.2 km/h at hour 6	Hours of Missing Data: 0
Monthly Average Speed: 12.21 km/h	Percentiles: P <sub>1</sub> = 3.1 P <sub>10</sub> = 4.8 Q <sub>1</sub> = 6.9 Median = 11.0 Q <sub>3</sub> = 15.7 P <sub>90</sub> = 21.1 P <sub>99</sub> = 35.9	Percent Operational Time: 100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	15	17	16	14	12	12	16	20	27	24	23	25	24	21	19	19	20	19	16	11	16	16	28	14	18.4	27.8
2-May	8	8	7	6	6	14	12	12	11	13	12	10	10	16	8	14	11	7	11	7	6	5	7	13	9.8	16.2
3-May	14	17	16	21	23	22	20	26	39	39	37	35	32	36	39	38	33	32	38	35	27	23	23	18	28.5	39.3
4-May	18	16	14	13	14	13	14	23	29	34	33	33	34	37	36	35	36	35	26	23	17	17	17	13	24.1	37.2
5-May	4	5	3	5	8	8	7	12	22	20	19	20	20	20	19	19	17	16	16	19	14	9	13	13	13.6	22.1
6-May	13	12	10	7	11	8	8	12	11	12	9	11	8	16	8	19	10	15	15	8	6	8	7	4	10.4	18.9
7-May	5	4	6	6	7	4	4	5	7	8	11	14	16	13	11	12	12	19	12	7	5	6	5	8.7	18.8	
8-May	4	5	5	5	4	4	4	6	5	5	5	7	7	16	11	18	10	21	17	11	6	12	11	11	8.7	20.5
9-May	12	6	9	7	8	11	12	11	7	5	10	12	16	17	20	16	20	13	14	24	14	12	18	13	12.7	23.9
10-May	12	10	10	13	12	11	10	12	12	11	16	12	15	20	14	11	11	9	5	11	8	7	7	17	11.5	19.8
11-May	21	6	8	7	7	5	4	9	5	4	6	6	7	8	12	9	13	23	19	13	10	11	12	7	9.6	23.4
12-May	7	20	23	10	10	5	6	7	7	8	14	27	18	14	9	15	20	21	23	19	9	7	5	7	13.0	26.6
13-May	5	9	10	9	10	6	5	11	9	13	14	16	10	12	14	17	15	16	15	14	16	15	16	16	12.2	17.1
14-May	15	16	16	15	12	7	4	4	6	6	5	8	9	15	15	17	17	18	16	15	17	19	25	24	13.4	24.8
15-May	23	25	17	15	12	12	11	14	19	18	15	19	22	20	22	25	29	28	29	27	22	20	18	7	19.6	29.5
16-May	4	6	7	4	5	4	7	8	7	5	8	12	14	12	12	14	13	15	15	15	9	9	14	14	9.7	14.8
17-May	14	15	13	9	9	8	9	12	15	11	14	15	18	20	19	23	26	21	22	21	14	20	27	11	16.1	26.6
18-May	6	9	11	9	8	7	6	11	14	19	20	17	16	13	11	17	13	15	14	14	14	11	12	12	12.4	20.1
19-May	7	5	8	5	5	8	7	11	9	13	12	10	7	9	7	9	9	13	6	17	9	4	4	3	8.2	17.0
20-May	4	5	4	4	5	5	4	2	3	5	6	10	8	11	17	16	21	23	20	16	10	8	6	5	9.0	23.3
21-May	5	3	3	11	8	9	16	10	7	8	9	8	9	8	9	10	11	16	21	19	18	15	11	8	10.5	20.9
22-May	4	6	6	4	5	4	5	6	4	5	6	6	6	7	10	12	16	22	20	12	13	13	6	12	8.7	22.4
23-May	21	21	16	14	12	14	15	17	15	16	18	13	11	11	13	11	12	8	9	13	14	13	13	10	13.8	21.1
24-May	5	3	3	3	2	4	5	3	4	5	6	6	8	19	16	16	13	14	9	8	8	6	7	5	7.4	18.9
25-May	5	5	7	4	12	12	10	15	12	12	16	19	22	23	25	22	21	21	27	24	15	7	7	8	14.6	27.1
26-May	7	7	8	8	11	11	10	10	15	17	18	18	17	18	14	14	14	16	14	10	9	9	10	8	12.2	17.9
27-May	5	5	4	7	4	7	5	4	4	4	4	4	7	8	9	8	14	11	6	7	5	5	6	4	6.1	13.8
28-May	5	3	4	3	4	3	4	5	4	7	7	9	8	10	9	10	9	11	10	7	3	5	10	18	7.0	17.5
29-May	15	16	11	5	5	4	5	10	8	5	5	7	7	9	12	23	14	9	10	15	5	8	9	12	9.5	23.3
30-May	13	13	13	11	8	9	7	5	4	7	12	15	18	15	15	18	16	14	14	13	9	8	9	8	11.4	18.3
31-May	6	6	6	4	4	5	7	7	7	7	6	7	8	11	10	10	9	11	16	10	6	9	8	6	7.7	15.9
	9.8	9.7	9.5	8.4	8.4	8.2	8.3	10.3	11.2	11.8	12.7	13.9	14.0	15.6	15.0	16.6	16.2	17.0	16.5	15.1	11.5	10.8	11.9	10.6	Diurnal Average	
	22.9	25.4	22.6	21.4	22.6	21.6	20.4	26.3	39.3	38.6	36.6	34.9	34.3	37.2	38.5	37.7	35.5	34.9	38.2	35.0	26.8	22.8	27.8	24.3	Diurnal Maximum	

All monthly, daily, and diurnal averages have been calculated using scalar methods

# Hourly Standard Deviations

Wind Direction (WD) - deg  
Portable-Bonanza - May 2011

Maximum Value: 95.4 deg on May 31 11:00		Hours in Service: 744																								
Minimum Value: 2.6 deg on May 29 02:00		Hours of Data: 744																								
Percentiles: P <sub>1</sub> = 3.4 P <sub>10</sub> = 5.6 Q <sub>1</sub> = 9.8 Median = 17.1 Q <sub>3</sub> = 34.6 P <sub>90</sub> = 56.9 P <sub>99</sub> = 86.7		Hours of Missing Data: 0																								
		Hours of Calibration: 0																								
		Percent Operational Time: 100.0																								
Day	Hourly Period Ending At (MST)																								Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	5	3	4	6	5	5	3	4	6	9	10	13	10	18	16	14	14	11	9	5	4	5	6	11	17.7	
2-May	10	28	18	59	84	4	8	4	8	13	16	21	44	11	87	12	16	24	34	32	11	8	19	5	87.1	
3-May	4	4	5	5	5	6	6	7	5	6	8	9	11	10	9	10	8	12	6	5	5	4	4	3	11.5	
4-May	4	5	5	5	4	4	6	7	9	7	11	8	11	10	11	9	7	6	7	4	6	4	5	7	11.4	
5-May	47	58	15	30	21	8	33	13	9	15	18	26	17	11	9	12	28	14	18	9	31	38	6	4	58.4	
6-May	3	5	6	8	3	8	5	9	10	16	36	39	33	18	65	9	19	19	17	15	63	71	31	59	70.6	
7-May	56	38	73	70	40	20	39	36	17	28	27	18	45	47	18	62	16	7	6	10	30	19	13	58	73.0	
8-May	84	31	43	64	36	44	25	13	22	45	60	63	66	57	35	18	40	33	8	5	22	4	5	4	84.2	
9-May	4	44	7	12	20	8	3	7	33	39	38	42	33	23	28	42	18	56	40	10	19	15	11	10	56.0	
10-May	5	8	7	8	8	12	8	13	11	25	17	27	17	15	18	25	40	35	47	39	15	62	72	7	71.7	
11-May	16	70	53	16	30	24	46	15	55	47	22	22	16	15	39	72	8	16	10	7	13	77	48	90	90.3	
12-May	15	11	16	13	8	77	14	17	20	16	20	13	16	33	52	23	20	17	15	10	7	34	33	17	76.6	
13-May	29	18	7	8	8	20	42	13	30	24	16	25	52	38	29	20	30	20	18	11	10	12	13	11	51.7	
14-May	8	9	9	11	11	43	88	57	39	54	60	47	49	29	24	19	19	16	19	10	10	11	10	3	87.6	
15-May	7	5	12	10	12	12	12	14	13	13	17	18	16	24	19	16	17	14	10	5	5	5	4	79	78.5	
16-May	81	16	52	58	49	78	19	19	22	35	20	15	16	25	27	31	19	16	14	14	12	10	4	5	81.4	
17-May	5	5	5	13	13	8	15	11	8	12	12	6	9	8	9	8	10	24	13	10	15	27	30	13	30.2	
18-May	27	10	7	7	11	12	26	12	12	12	17	18	23	30	35	18	25	17	36	16	7	6	4	6	35.8	
19-May	53	46	10	29	29	9	36	16	23	20	12	29	66	38	65	28	40	41	28	15	28	52	32	66	66.3	
20-May	75	91	59	52	41	50	12	34	56	39	57	16	77	59	16	27	8	6	9	9	9	21	33	22	91.1	
21-May	23	90	84	14	26	38	13	35	31	46	24	40	22	37	31	29	22	77	34	9	11	16	82	27	89.7	
22-May	47	36	37	28	40	61	28	29	92	58	38	73	67	42	45	20	30	23	12	6	12	9	17	11	92.4	
23-May	10	4	5	6	7	7	6	5	7	11	10	12	17	28	15	41	21	35	18	26	12	18	6	7	40.7	
24-May	18	28	14	53	17	12	17	47	24	29	39	47	34	22	21	17	26	20	17	14	8	8	6	66	66.3	
25-May	21	20	17	68	24	9	13	9	15	19	19	19	16	15	14	13	15	16	12	8	7	23	6	4	67.6	
26-May	10	12	21	10	10	12	12	9	17	16	14	13	17	17	13	16	12	13	16	16	11	6	5	6	21.3	
27-May	31	12	32	32	39	7	23	32	14	18	27	27	54	68	64	55	18	30	35	43	14	16	5	76	76.5	
28-May	71	82	80	66	53	61	79	86	35	23	28	36	46	51	66	44	38	24	11	7	64	36	19	4	86.0	
29-May	4	3	71	65	51	42	31	24	18	58	56	39	71	45	43	8	15	21	68	19	81	30	23	4	81.0	
30-May	3	5	4	5	6	12	20	44	56	68	48	26	24	25	24	14	16	24	19	14	12	12	4	12	68.4	
31-May	51	53	57	65	56	22	14	55	14	44	95	72	58	55	43	57	75	21	30	15	11	6	6	33	95.4	
		84.2	91.1	84.4	70.4	83.6	77.8	87.6	86.0	92.4	68.4	95.4	72.6	77.1	67.8	87.1	72.4	75.5	76.6	67.5	43.2	81.0	77.4	81.8	90.3	



PAZA

## Valleyview Station

Monthly Summary Tables, Graphs and  
Roses

## Hourly Averages

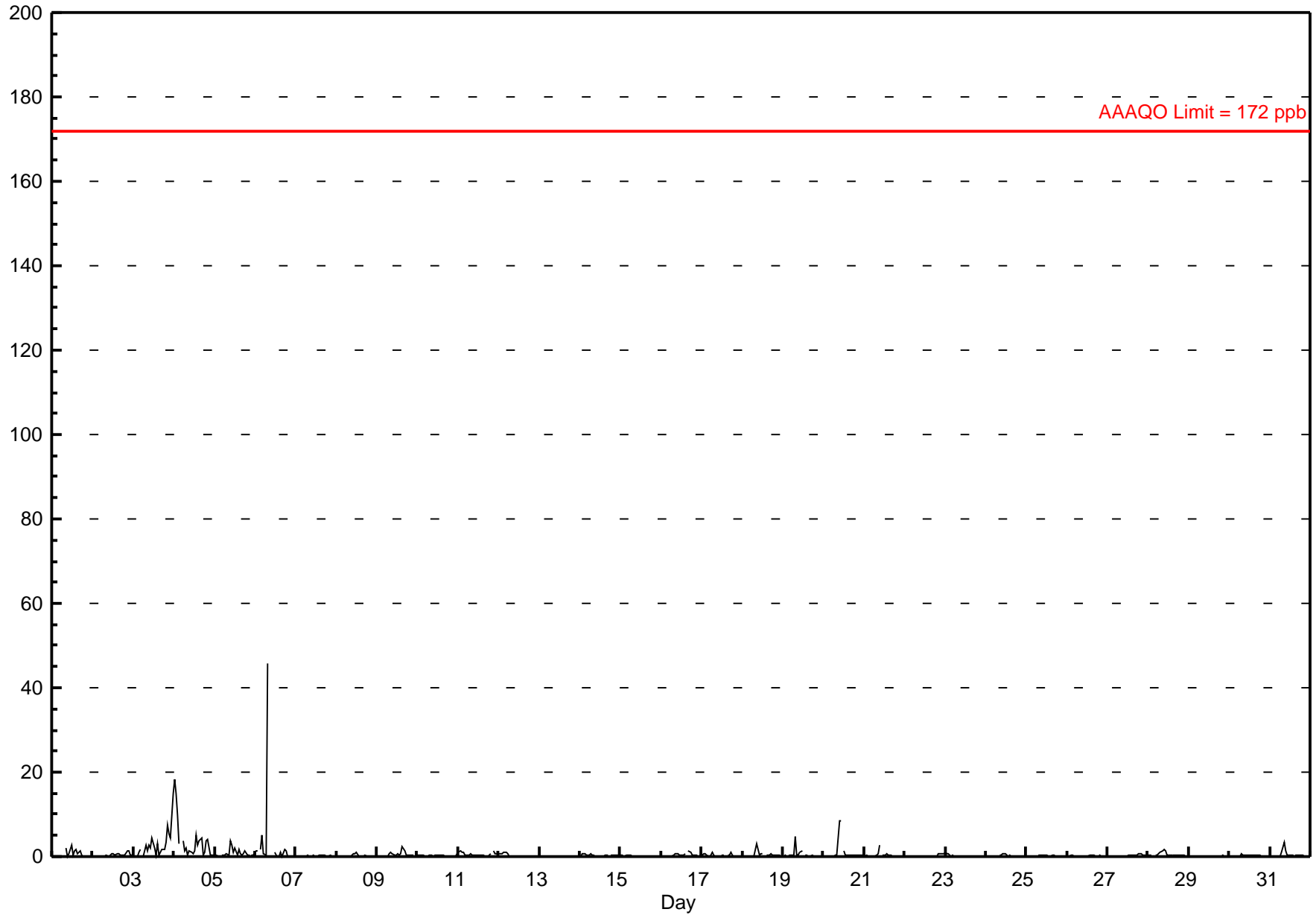
Sulphur Dioxide (SO<sub>2</sub>) - ppb

Valleyview - May 2011

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 45.7 ppb on May 6 08:00	Maximum Daily Average: 3.6 ppb on May 4		Hours of Data:	708
Minimum Value: 0 ppb on May 1 01:00	Minimum Daily Average: 0.0 ppb on May 13		Hours of Missing Data:	36
Maximum Diurnal Average: 2.2 ppb at hour 8	Minimum Diurnal Average: 0.2 ppb at hour 7		Hours of Calibration:	36
Monthly Average: 0.58 ppb	Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.2 Q <sub>3</sub> = 0.4 P <sub>90</sub> = 1.1 P <sub>99</sub> = 8.4		Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	0	0	0	0	0	0	0	A	2	0	1	3	0	1	2	1	1	0	0	0	0	0	0	0	0.5	2.7
2-May	0	0	0	0	0	0	A	0	0	0	0	1	1	0	1	1	0	0	0	0	0	1	1	0	0.4	1.4
3-May	0	0	0	1	2	A	0	3	1	3	2	4	2	0	3	0	1	2	2	4	7	5	5	15	2.7	14.9
4-May	18	15	10	3	A	4	1	2	0	1	1	1	2	5	3	4	4	0	1	4	4	0	0	0	3.6	18.5
5-May	0	0	0	A	0	0	0	1	0	4	3	1	2	0	2	1	0	1	2	0	0	0	0	0	0.8	3.8
6-May	1	1	A	2	5	1	0	46	C	C	C	1	0	0	0	1	0	2	1	0	0	0	0	0	3.1	45.7
7-May	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0.1	0.5
8-May	A	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	A	0.1	1.1
9-May	0	0	0	0	0	0	0	1	1	1	0	0	1	0	1	2	1	0	0	0	0	0	A	0	0.5	2.3
10-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.2	0.4
11-May	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	A	1	1	1	0.6	1.3
12-May	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0.2	1.1
13-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.0	0.1
14-May	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.3	0.8
15-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.1	0.3
16-May	0	0	0	0	0	0	0	1	1	1	0	0	0	0	1	A	1	1	0	0	0	0	0	0	0.4	1.2
17-May	0	1	1	0	0	0	1	0	0	0	0	0	0	0	A	0	0	1	0	0	0	0	0	0	0.3	1.1
18-May	0	0	0	0	0	0	0	0	3	2	0	1	1	A	0	0	0	1	0	0	0	0	0	0	0.4	3.1
19-May	0	0	0	0	0	0	0	5	0	0	1	1	A	0	0	0	0	0	0	0	0	0	0	0	0.5	4.8
20-May	0	0	0	0	0	0	0	0	0	9	8	A	1	0	0	0	0	0	1	0	0	0	0	0	1.0	8.5
21-May	0	0	0	0	0	0	0	1	3	A	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0.3	2.5
22-May	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0.1	0.7
23-May	1	1	1	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.9
24-May	0	0	0	0	0	0	0	A	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.7
25-May	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
26-May	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
27-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0.2	0.7
28-May	0	0	0	A	0	0	1	1	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	1.6
29-May	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
30-May	0	A	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.8
31-May	A	0	0	0	0	0	0	1	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.4	3.4
	0.9	0.8	0.5	0.3	0.4	0.3	0.2	2.2	0.6	1.0	0.8	0.6	0.5	0.4	0.5	0.4	0.5	0.4	0.4	0.4	0.4	0.6	0.4	0.3	0.7	Diurnal Average
	18.5	15.0	9.7	3.0	5.0	3.6	1.3	45.7	3.4	8.5	8.5	4.2	2.2	5.1	3.1	3.7	4.2	1.9	1.7	3.7	7.3	5.3	4.5	14.9	Diurnal Maximum	

C - Calibration      A - Automated Daily Zero Span  
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb    24-hr 48 ppb    30-day 11 ppb

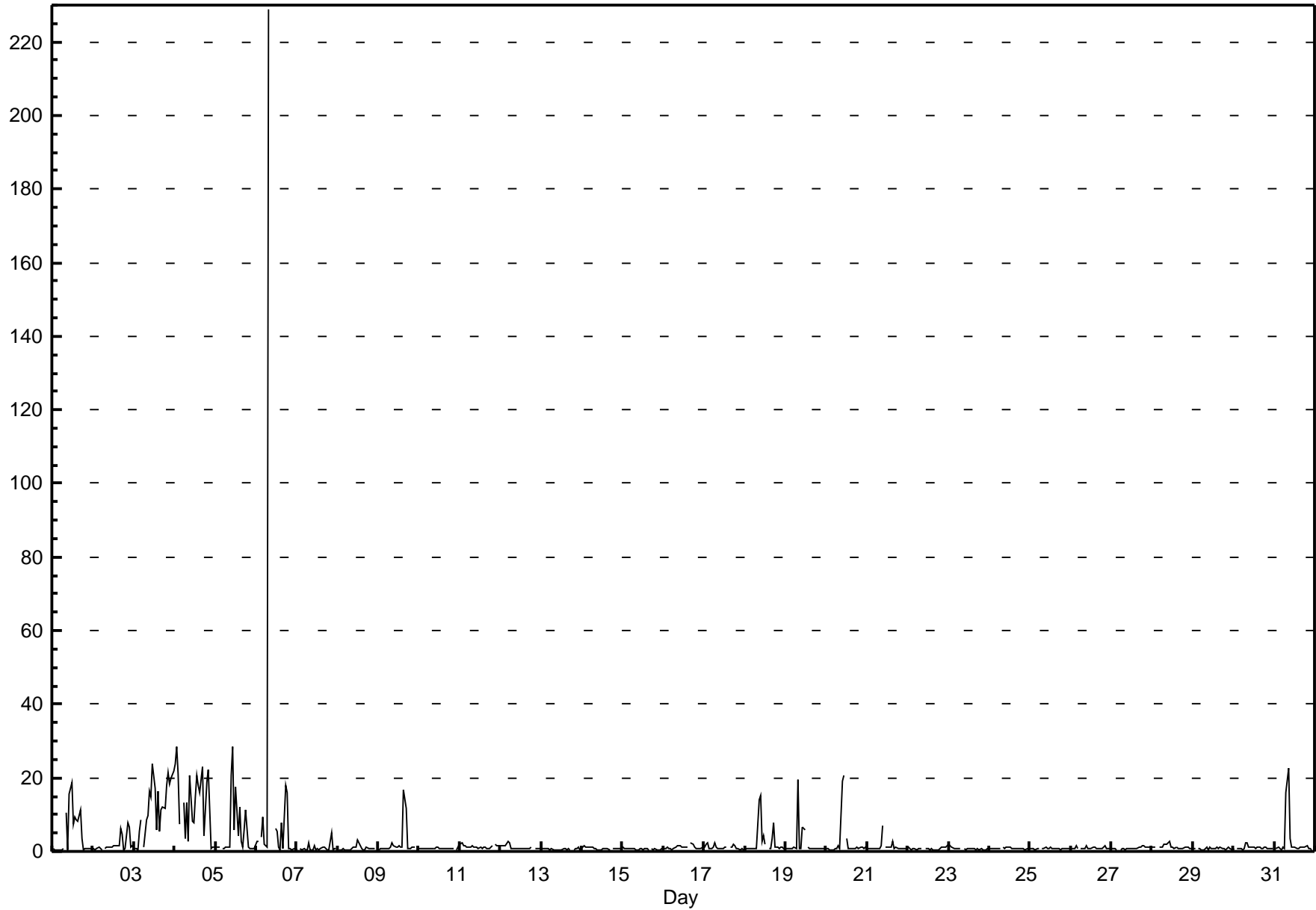


## Hourly Maximums

Sulphur Dioxide (SO<sub>2</sub>) - ppb

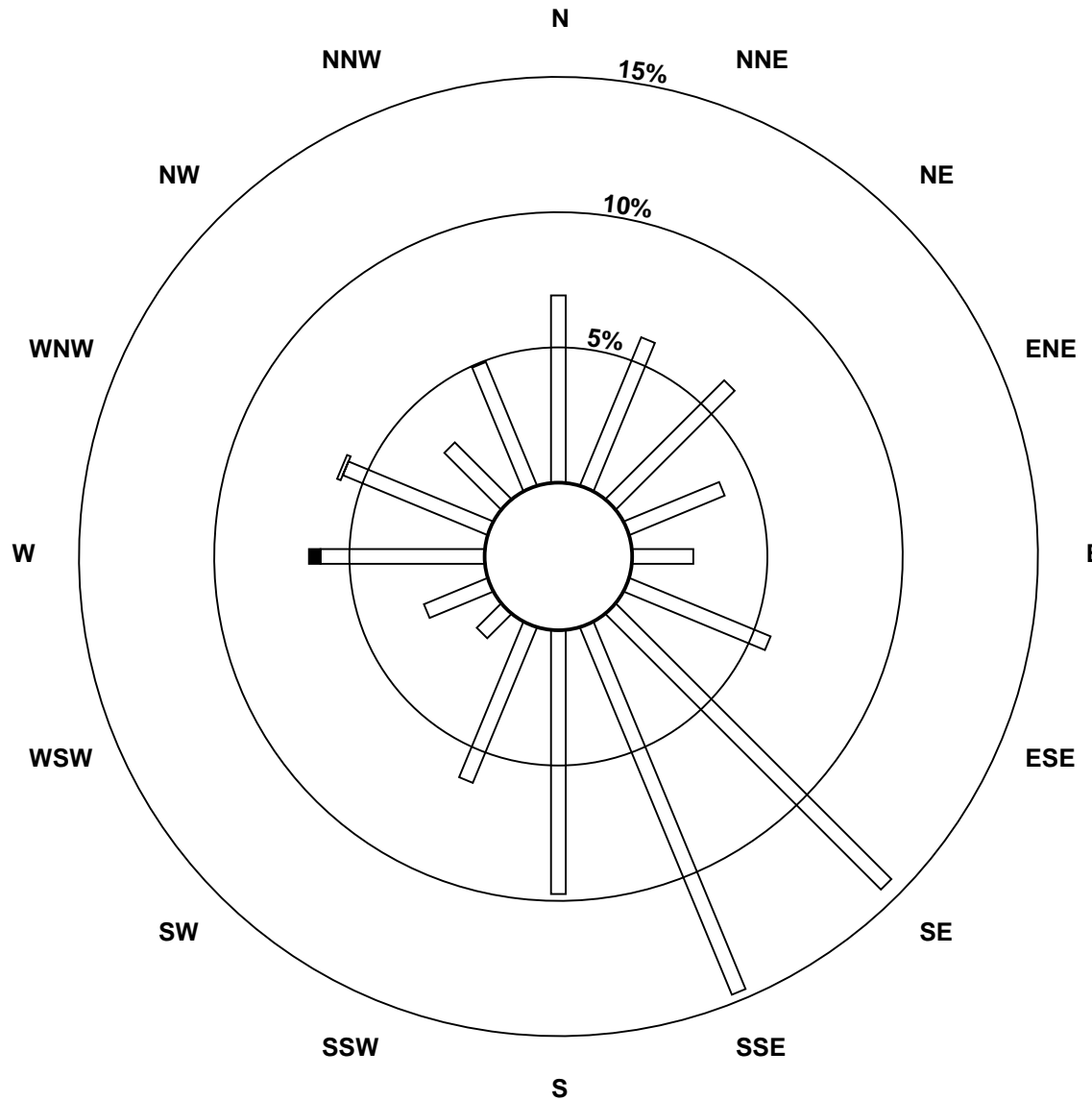
Valleyview - May 2011

Maximum Value: 228.9 ppb on May 6 08:00		Maximum Daily Average: 15.5 ppb on May 6		Hours in Service: 744																							
Minimum Value: 0 ppb on May 23 22:00		Minimum Daily Average: 0.6 ppb on May 13		Hours of Data: 708																							
Maximum Diurnal Average: 10.8 ppb at hour 8		Minimum Diurnal Average: 0.9 ppb at hour 7		Hours of Missing Data: 36																							
Monthly Average: 2.63 ppb		Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 0.6 Q <sub>1</sub> = 0.7 Median = 0.9 Q <sub>3</sub> = 1.2 P <sub>90</sub> = 5.6 P <sub>99</sub> = 22.3		Hours of Calibration: 36																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-May	1	0	0	1	0	0	1	A	11	1	16	19	7	9	8	8	11	4	1	1	1	1	1	1	4.4	18.8	
2-May	1	1	1	1	1	1	A	1	1	1	1	1	2	2	2	1	6	5	1	1	8	6	1	2	2.0	7.9	
3-May	1	1	1	5	8	A	1	8	10	16	15	24	17	6	16	6	11	12	12	18	21	18	20	22	11.7	24.0	
4-May	24	28	21	7	A	13	4	13	3	21	8	8	15	21	18	16	23	4	11	19	22	1	1	1	13.1	28.4	
5-May	1	1	1	A	1	1	1	1	1	21	28	6	18	4	12	3	1	6	11	1	1	1	1	1	5.3	28.4	
6-May	3	3	A	4	9	2	1	229	C	C	C	6	6	1	0	8	1	18	16	1	1	0	1	1	15.5	228.9	
7-May	0	A	1	0	1	0	1	2	1	1	2	1	1	1	1	1	1	1	1	1	5	1	1	1	1.0	4.9	
8-May	A	1	1	1	0	1	1	1	1	1	1	1	3	2	1	1	0	1	1	1	1	1	1	A	0.9	3.2	
9-May	0	1	1	1	1	1	1	1	2	2	1	1	2	1	1	17	12	1	1	1	1	1	A	1	2.2	16.7	
10-May	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	0.8	1.2	
11-May	2	2	2	2	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	2	A	2	1	2	1.3	2.2	
12-May	2	1	1	2	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1.0	2.8	
13-May	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	A	0	1	1	1	1	0.6	1.2	
14-May	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	0.9	1.5	
15-May	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	A	1	0	1	1	1	0	1	1	0.7	1.0	
16-May	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	A	2	2	1	1	1	1	1	1	1.1	2.2	
17-May	1	2	2	1	1	1	2	1	1	1	1	1	1	1	A	1	1	2	2	1	1	0	1	0	1.1	2.2	
18-May	1	1	1	1	1	1	1	1	14	15	3	4	2	A	1	1	4	8	1	1	1	1	1	1	2.7	15.2	
19-May	1	1	1	1	1	1	1	20	1	1	7	6	A	1	1	1	1	1	1	1	1	1	1	1	2.1	19.7	
20-May	1	1	1	1	1	1	1	1	1	19	21	A	3	1	1	1	1	1	1	1	1	1	1	1	2.6	20.8	
21-May	1	1	1	1	1	1	1	1	1	7	A	1	1	1	1	3	1	1	1	1	1	1	1	1	1.2	7.0	
22-May	1	1	0	1	1	0	1	1	1	A	1	1	1	1	1	0	1	0	1	1	1	1	1	1	0.8	1.4	
23-May	2	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	0.8	1.9	
24-May	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.3	
25-May	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.3	
26-May	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.5	
27-May	1	1	1	1	A	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.4	
28-May	1	1	1	A	1	1	1	1	2	2	2	3	1	1	1	1	1	1	1	1	1	1	1	1	1.2	2.9	
29-May	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	0.8	1.3	
30-May	1	A	1	1	1	1	1	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	2.5	
31-May	A	1	1	1	0	1	1	16	23	4	1	1	1	1	1	1	1	1	1	1	1	1	0	A	2.7	22.5	
		1.8	1.9	1.6	1.3	1.4	1.3	0.9	10.8	2.9	4.3	4.2	3.1	3.1	2.1	2.6	2.6	2.9	2.5	2.4	2.1	2.6	1.6	1.4	1.6	Diurnal Average	
		23.6	28.4	20.9	7.4	9.2	13.4	3.5	228.9	22.5	20.8	28.4	24.0	17.5	20.5	17.8	16.7	22.9	17.7	16.0	18.9	22.0	18.3	19.8	22.0	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									

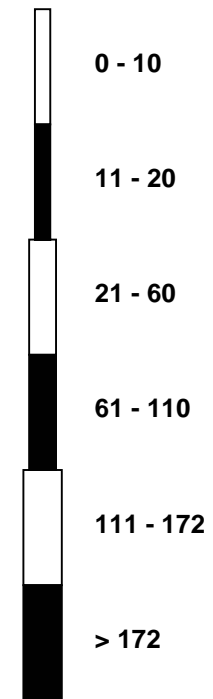


**Pollutant Rose**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Valleyview - May 2011**

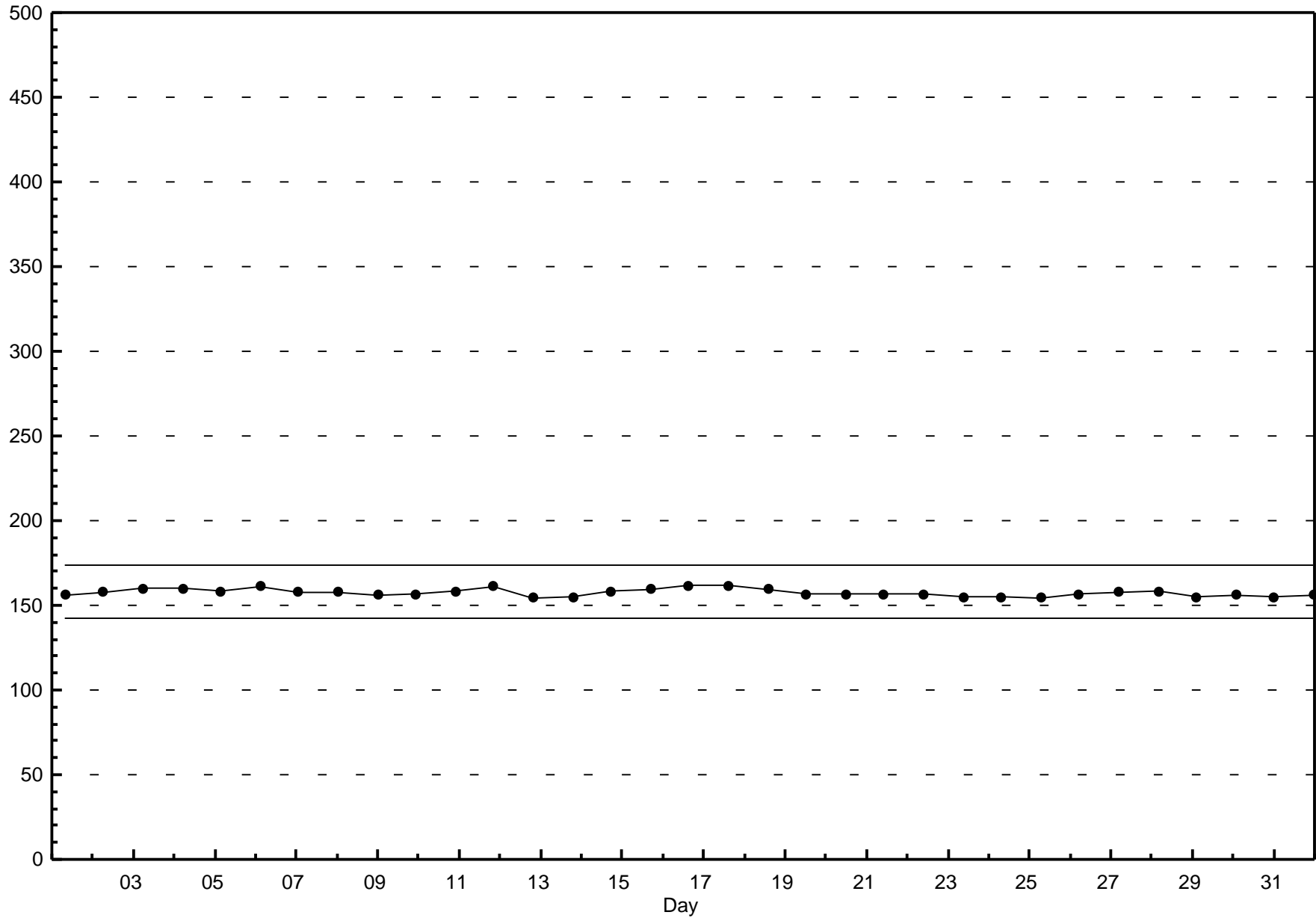


**Pollutant Classes (ppb)**



### Span Responses

Sulphur Dioxide (SO<sub>2</sub>)  
Valleyview - May 2011



## Hourly Averages

Hydrogen Sulphide (H<sub>2</sub>S) - ppb

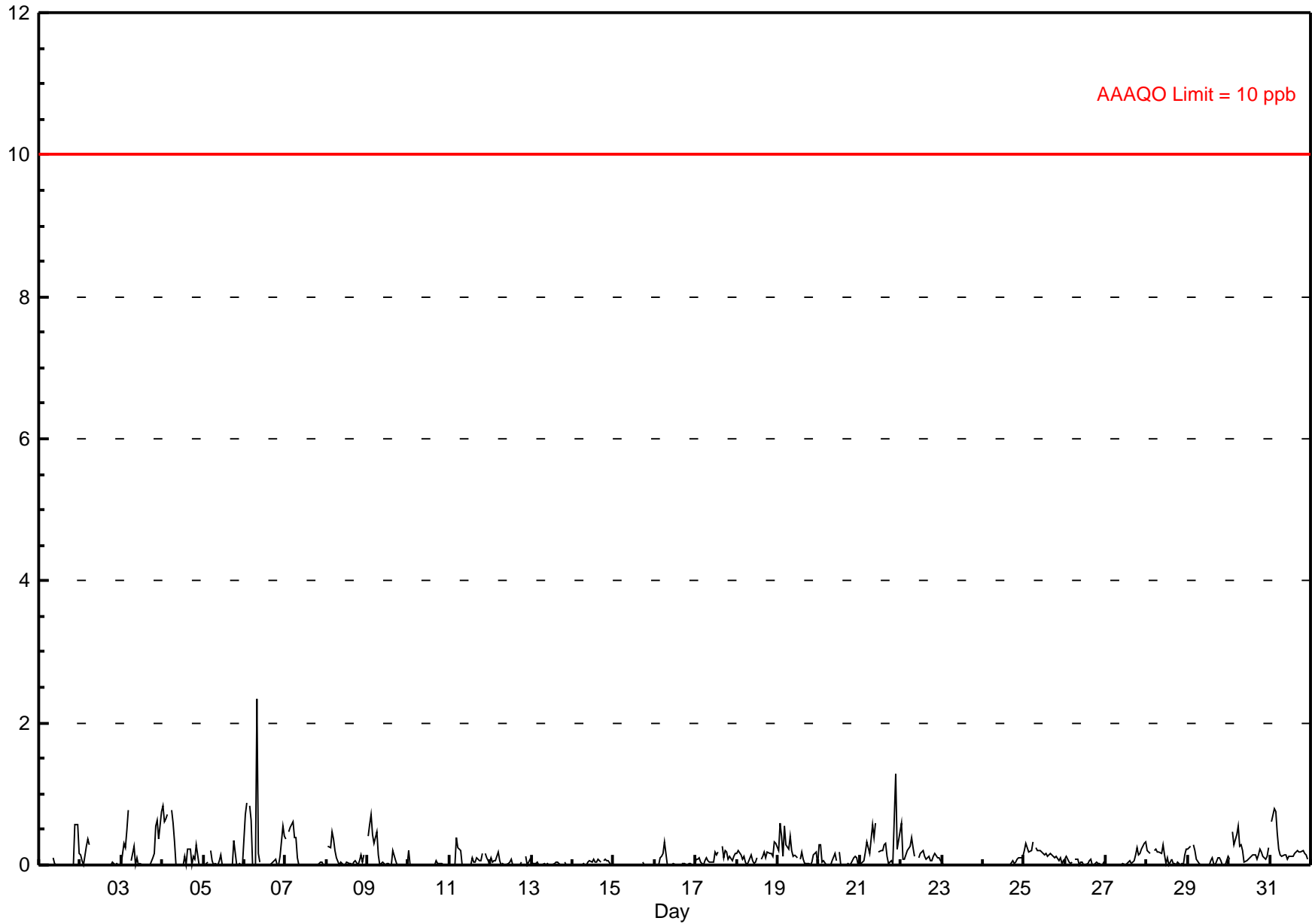
Valleyview - May 2011

Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	744
Maximum Value: 2.3 ppb on May 6 08:00	Maximum Daily Average: 0.3 ppb on May 6		Hours of Data:	708
Minimum Value: 0 ppb on May 1 01:00	Minimum Daily Average: 0.0 ppb on May 23		Hours of Missing Data:	36
Maximum Diurnal Average: 0.2 ppb at hour 5	Minimum Diurnal Average: 0.0 ppb at hour 11		Hours of Calibration:	36
Monthly Average: 0.11 ppb	Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.0 Q <sub>3</sub> = 0.1 P <sub>90</sub> = 0.3 P <sub>99</sub> = 0.8		Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-May	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0.1	0.6	
2-May	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
3-May	0	0	0	0	1	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0.2	0.8	
4-May	1	1	1	1	A	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.8	
5-May	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.3	
6-May	1	1	A	1	1	0	0	2	0	0	C	C	C	0	0	0	0	0	0	0	0	0	1	0	0.3	2.3	
7-May	0	A	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.6	
8-May	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.1	0.5	
9-May	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.1	0.7	
10-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.0	0.2	
11-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.1	0.4	
12-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.0	0.2	
13-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0.0	0.0	
14-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.0	0.1	
15-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.0	0.0	
16-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.0	0.3	
17-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.1	0.3	
18-May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.1	0.3	
19-May	0	1	0	0	1	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.6	
20-May	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3	
21-May	0	0	0	0	0	0	0	1	0	1	A	0	0	0	0	0	0	0	0	0	0	1	1	0	0.3	1.3	
22-May	1	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.6	
23-May	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	
24-May	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	
25-May	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3	
26-May	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	
27-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3	
28-May	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3	
29-May	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3	
30-May	0	A	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.6	
31-May	A	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.2	0.8	
	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	Diurnal Average		
	0.8	0.9	0.8	0.8	0.8	0.8	0.6	2.3	0.4	0.6	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.3	0.2	0.7	1.3	0.6	0.8	Diurnal Maximum		

C - Calibration      A - Automated Daily Zero Span  
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb    24-hr 3 ppb





## Hourly Maximums

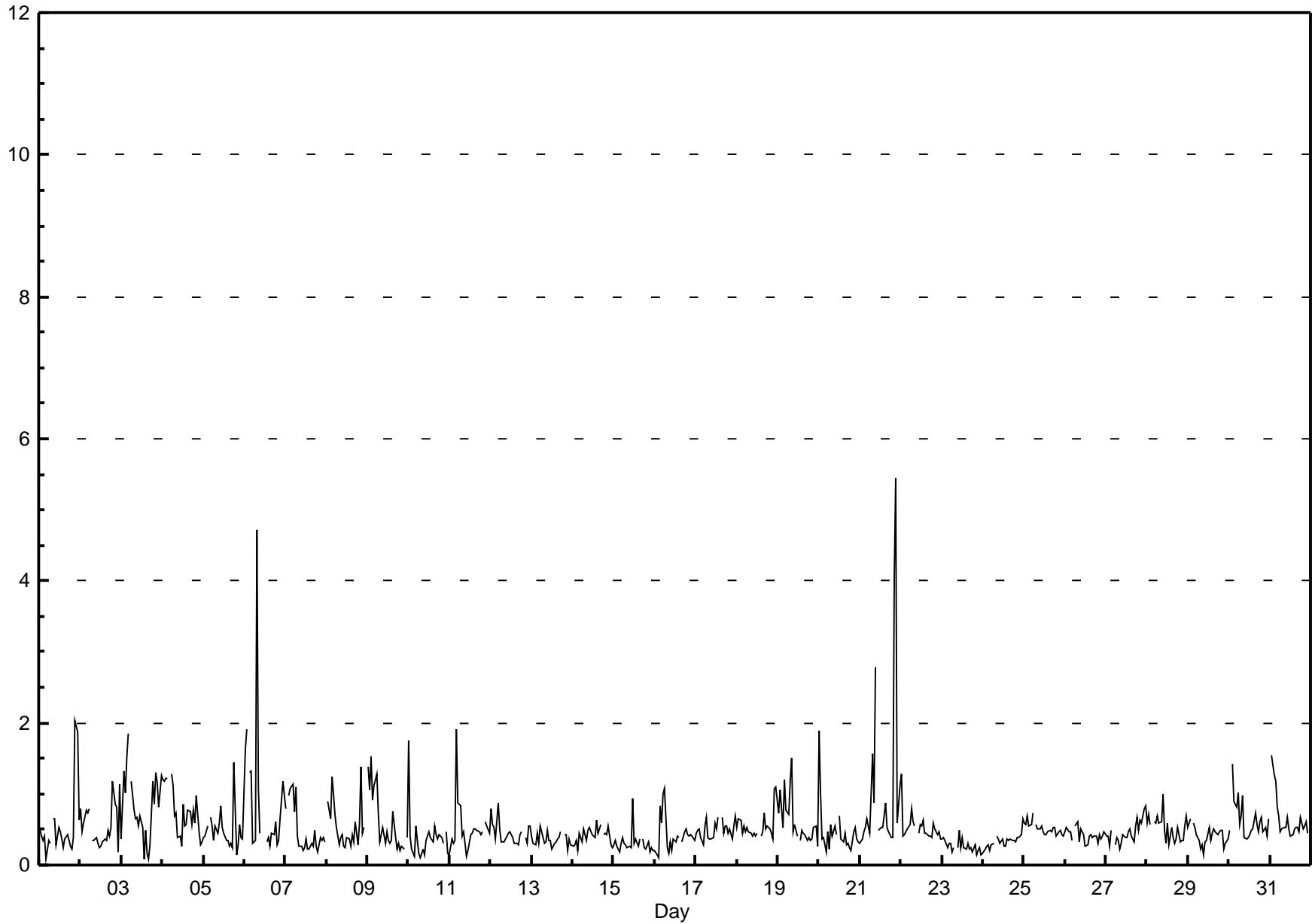
Hydrogen Sulphide (H<sub>2</sub>S) - ppb

Valleyview - May 2011

Maximum Value: 5.4 ppb on May 21 22:00		Maximum Daily Average: 1.1 ppb on May 21		Hours in Service: 744																							
Minimum Value: 0 ppb on May 1 05:00		Minimum Daily Average: 0.3 ppb on May 23		Hours of Data: 708																							
Maximum Diurnal Average: 0.7 ppb at hour 5		Minimum Diurnal Average: 0.4 ppb at hour 14		Hours of Missing Data: 36																							
Monthly Average: 0.53 ppb		Percentiles: P <sub>1</sub> = 0.1 P <sub>10</sub> = 0.3 Q <sub>1</sub> = 0.3 Median = 0.4 Q <sub>3</sub> = 0.6 P <sub>90</sub> = 0.9 P <sub>99</sub> = 1.9		Hours of Calibration: 36																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-May	0	0	0	0	0	0	0	A	1	1	0	1	0	0	0	0	0	0	0	0	0	2	2	1	0.5	2.0	
2-May	1	0	1	1	1	1	A	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	0.6	1.2	
3-May	0	1	1	2	2	A	1	1	1	1	1	1	1	0	0	0	0	0	1	1	1	1	1	1	0.8	1.9	
4-May	1	1	1	1	A	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0.7	1.3	
5-May	0	0	1	A	1	1	0	1	0	1	1	1	0	0	0	0	0	0	1	0	0	1	0	0	0.5	1.4	
6-May	2	2	A	1	1	0	0	5	1	0	C	C	C	0	0	0	0	0	1	0	0	1	1	1	1.0	4.7	
7-May	1	A	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	1.1	
8-May	A	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	A	0.6	1.4	
9-May	1	1	2	1	1	1	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	A	A	0.6	1.5	
10-May	2	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	A	A	0	0.4	1.8	
11-May	0	0	0	0	2	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	A	1	1	0	0.5	1.9	
12-May	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	1	1	0.4	0.9	
13-May	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.4	0.5	
14-May	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	1	A	0	0	0	1	0	0	0.4	0.6	
15-May	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	A	0	0	0	0	0	0	0	0	0.3	0.9	
16-May	0	0	0	1	1	1	1	0	0	0	0	0	0	0	A	0	0	1	0	0	0	0	0	0	0.4	1.1	
17-May	0	0	1	0	0	1	1	0	0	0	0	1	1	1	A	1	0	1	1	0	1	0	1	1	0.5	0.7	
18-May	1	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	1	0.6	1.1	
19-May	1	1	1	1	1	1	1	1	2	0	1	0	A	0	0	0	0	0	0	0	0	1	1	0	0.6	1.5	
20-May	2	1	0	0	0	0	0	1	0	1	0	A	1	0	0	0	0	0	0	0	0	0	1	0	0.5	1.9	
21-May	0	0	0	1	1	1	0	2	1	3	A	0	1	1	1	1	1	0	0	0	4	5	1	1	1.1	5.4	
22-May	1	0	0	0	1	1	1	1	1	A	0	1	1	1	0	0	0	0	0	1	1	0	0	0	0.5	1.3	
23-May	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5	
24-May	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	0.7	
25-May	1	1	1	1	1	1	A	1	1	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0.5	0.7	
26-May	0	1	0	0	0	A	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.6	
27-May	0	0	0	0	A	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	1	1	1	1	0.5	0.8	
28-May	1	1	1	A	1	1	1	1	1	1	0	0	1	0	1	0	0	1	0	0	0	0	1	1	0.5	1.0	
29-May	1	1	A	1	1	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0.4	0.7	
30-May	0	A	1	1	1	1	1	1	1	0	0	0	0	1	1	1	0	1	1	0	1	0	1	0	0.6	1.4	
31-May	A	2	1	1	1	1	0	1	1	1	1	1	0	0	1	1	1	0	1	1	1	1	0	A	0.7	1.5	
		0.7	0.7	0.6	0.6	0.7	0.6	0.6	0.6	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.4	0.5	0.4	0.6	0.7	0.5	0.5	Diurnal Average	
		1.9	1.9	1.5	1.5	1.9	1.3	1.2	4.7	1.5	2.8	0.8	0.9	0.9	0.7	0.7	0.9	0.7	0.6	1.4	1.2	4.1	5.4	1.9	1.3	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									

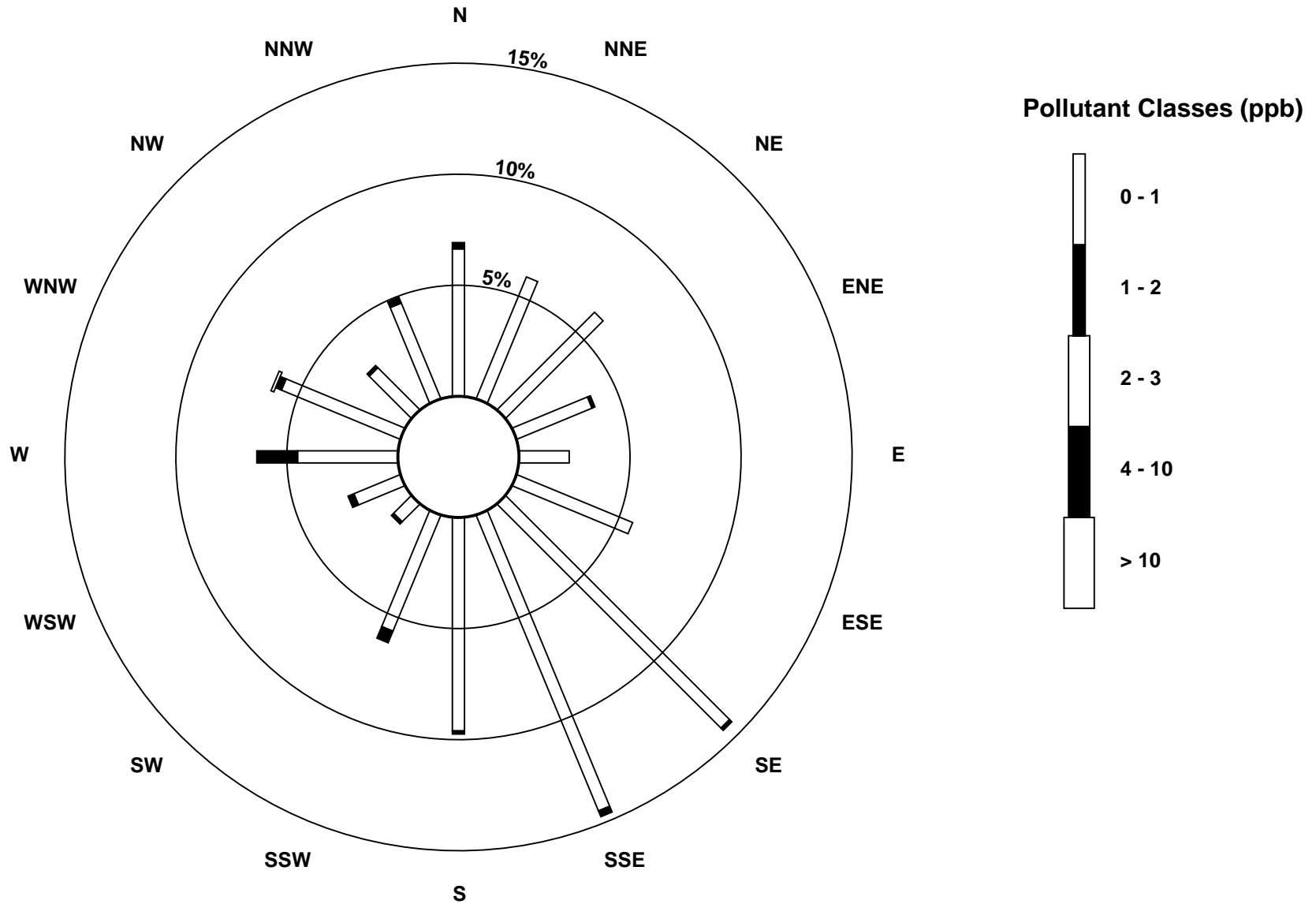
**Hourly Maximums**

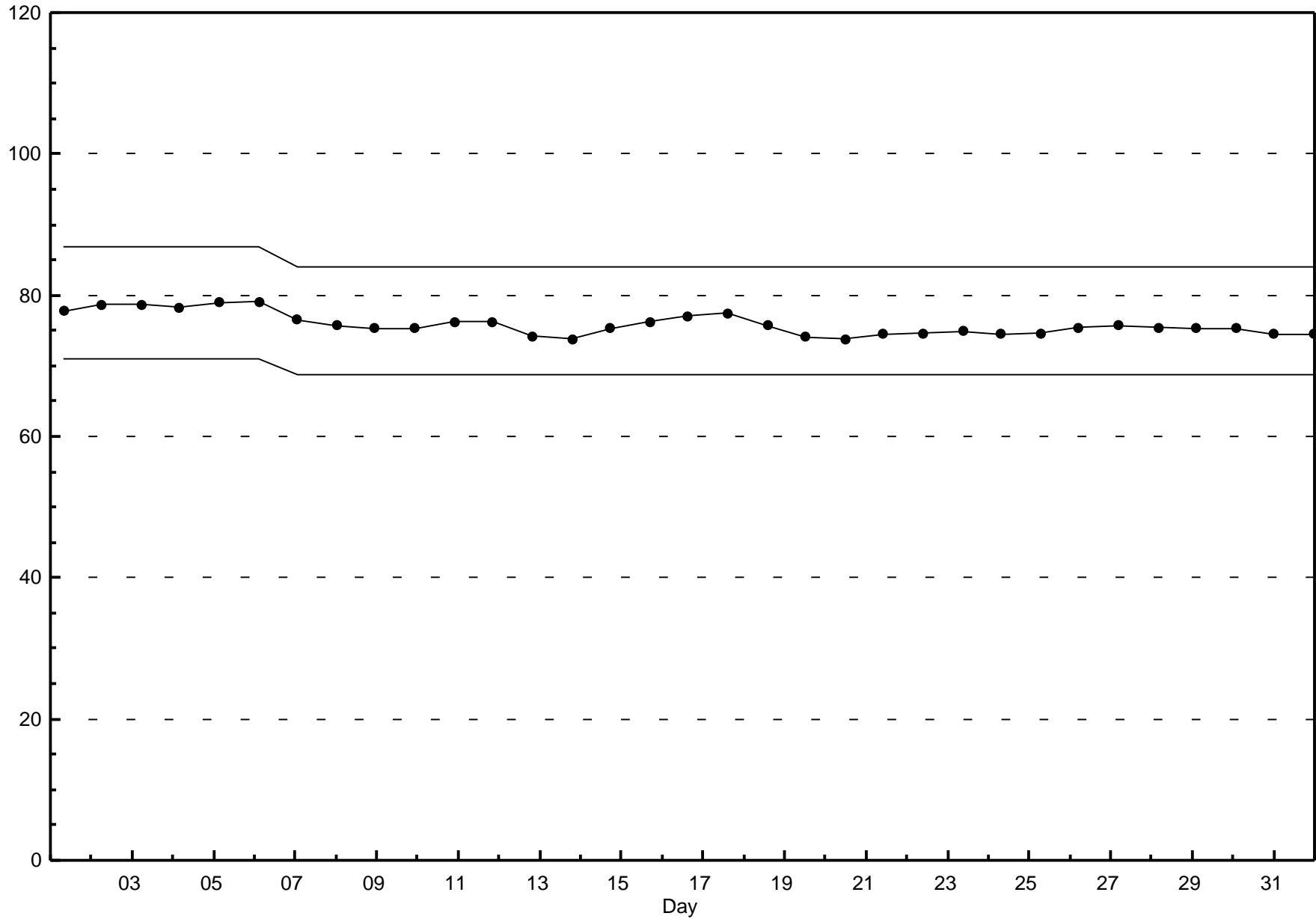
**Hydrogen Sulphide (H<sub>2</sub>S) - ppb**  
**Valleyview - May 2011**



**Pollutant Rose**

**Hydrogen Sulphide (H<sub>2</sub>S) - ppb**  
**Valleyview - May 2011**



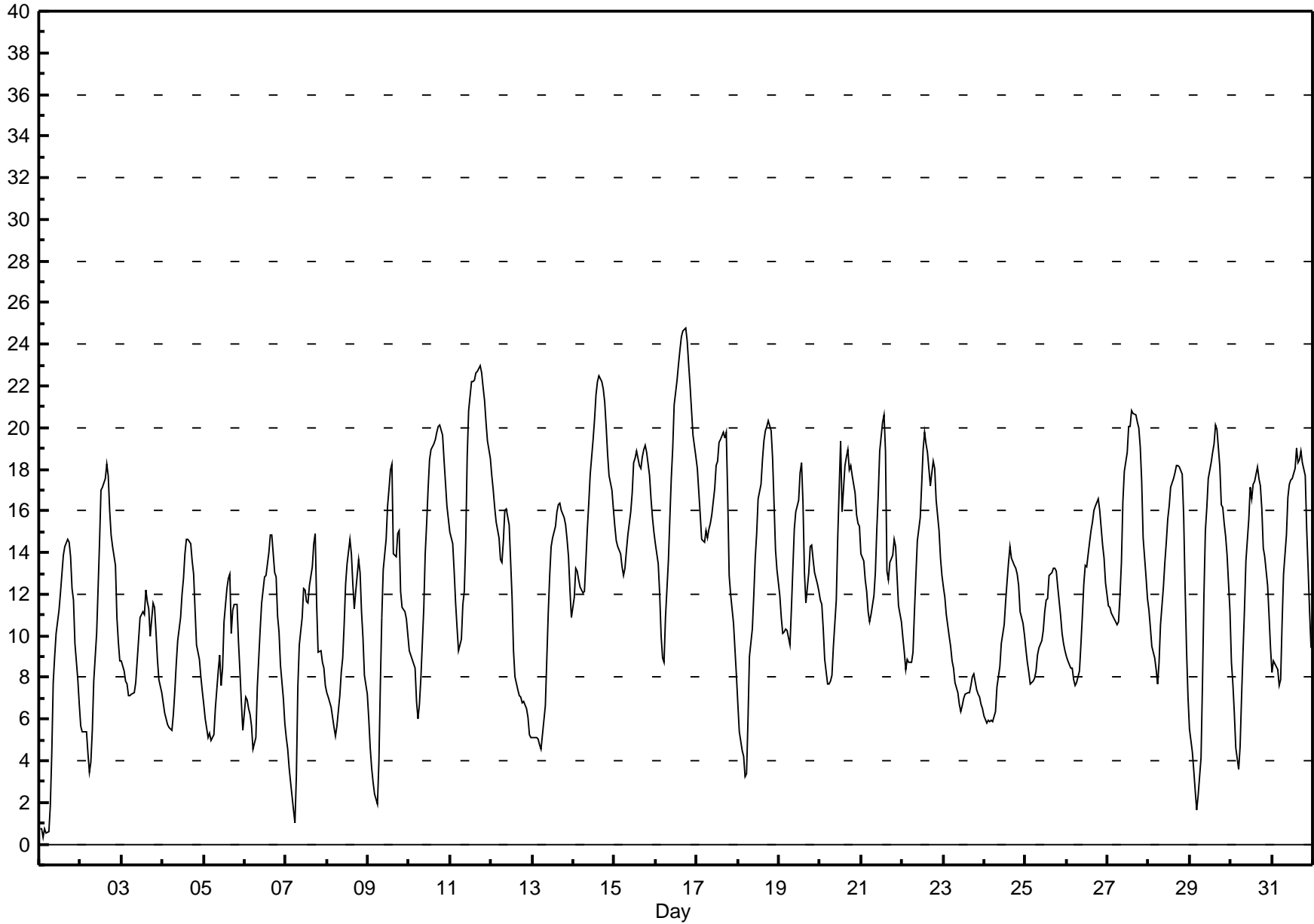


## Hourly Averages

External Temperature (ET) - °C

Valleyview - May 2011

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 24.8 °C on May 16 18:00 Maximum Daily Average: 18.2 °C on May 16																	Hours in Service: 744 Hours of Data: 744									
Minimum Value: 0 °C on May 1 03:00 Minimum Daily Average: 8.0 °C on May 1 Maximum Diurnal Average: 16.5 °C at hour 15 Minimum Diurnal Average: 7.1 °C at hour 6 Monthly Average: 12.33 °C Percentiles: P <sub>1</sub> = 1.6 P <sub>10</sub> = 6.0 Q <sub>1</sub> = 8.5 Median = 12.3 Q <sub>3</sub> = 16.0 P <sub>90</sub> = 18.9 P <sub>99</sub> = 23.0																	Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0									
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	1	1	0	1	0	1	2	4	8	9	10	11	12	13	14	14	15	15	14	12	12	10	8	7	8.0	14.7
2-May	6	5	5	5	4	3	4	5	8	10	12	15	17	17	18	18	18	16	15	14	13	11	10	9	10.8	18.3
3-May	9	8	8	8	7	7	7	7	8	9	10	11	11	11	12	12	11	10	12	11	10	9	8	7	9.3	12.2
4-May	7	6	6	6	6	5	6	7	9	10	11	12	13	14	15	15	14	14	13	11	10	9	8	7	9.7	14.6
5-May	7	6	5	5	5	5	5	6	8	9	8	8	11	12	13	13	10	11	12	11	10	8	7	5	8.4	12.9
6-May	7	7	7	6	6	5	5	8	9	10	12	13	13	13	14	15	15	13	13	11	10	9	7	6	9.7	14.9
7-May	5	5	4	3	2	1	3	8	10	11	12	12	12	12	12	13	14	15	12	9	9	9	8	8	8.7	14.9
8-May	7	7	7	6	6	5	6	7	8	9	11	12	13	15	14	12	11	12	14	13	11	10	8	7	9.7	14.7
9-May	6	5	4	3	2	2	4	8	11	13	15	16	17	18	18	14	14	15	15	12	11	11	11	10	10.6	18.2
10-May	9	9	9	8	7	6	7	8	11	14	15	17	18	19	19	19	20	20	20	20	18	17	16	16	14.3	20.1
11-May	15	14	13	12	10	9	10	11	12	15	19	21	22	22	22	23	23	23	23	22	21	20	19	19	17.5	23.0
12-May	18	17	16	15	15	14	14	15	16	16	15	14	12	9	8	7	7	7	7	7	7	6	5	5	11.3	17.7
13-May	5	5	5	5	5	5	5	7	9	11	13	14	15	15	16	16	16	16	16	15	15	14	12	11	11.1	16.4
14-May	12	13	13	13	12	12	12	14	15	16	18	19	20	22	22	22	22	22	21	20	19	18	17	16	17.1	22.5
15-May	15	15	14	14	13	13	13	14	15	16	17	18	19	19	18	18	19	19	19	19	18	17	16	15	16.3	19.2
16-May	14	13	12	10	9	9	11	14	16	18	19	21	22	23	24	24	25	25	24	23	22	21	20	19	18.2	24.8
17-May	18	17	16	15	14	15	15	15	15	16	17	18	18	19	19	20	20	20	17	13	12	11	9	8	15.7	19.8
18-May	7	5	5	4	3	3	6	9	10	12	14	15	17	17	18	19	20	20	20	20	19	16	14	13	12.8	20.4
19-May	12	11	10	10	10	10	10	11	13	15	16	17	18	18	16	13	12	13	14	14	14	13	13	12	13.2	18.3
20-May	12	12	10	9	8	8	8	8	9	12	15	17	19	16	18	19	19	18	18	18	17	16	15	15	14.0	19.4
21-May	14	14	13	12	11	11	11	12	13	15	17	19	20	21	19	13	13	14	14	15	14	13	11	11	14.1	20.6
22-May	10	9	8	9	9	9	9	11	13	15	16	17	19	20	19	19	17	18	18	18	17	15	14	13	14.2	19.8
23-May	12	12	11	10	9	9	8	8	7	7	6	7	7	7	7	7	8	8	8	7	7	7	7	7	8.1	12.4
24-May	6	6	6	6	6	6	6	8	8	8	10	11	12	13	13	14	14	13	13	13	12	11	11	10	9.8	14.3
25-May	9	9	8	8	8	8	8	9	9	10	10	11	12	12	13	13	13	13	13	12	11	10	10	9	10.4	13.3
26-May	9	9	8	8	8	8	8	8	10	11	12	13	13	14	15	15	16	16	17	16	15	14	14	13	12.2	16.6
27-May	11	11	11	11	11	11	11	12	14	16	18	19	20	20	21	21	21	20	20	19	17	15	13	12	15.6	20.8
28-May	11	10	10	9	8	8	9	11	12	14	15	16	16	17	18	18	18	18	18	18	16	12	9	7	13.2	18.2
29-May	6	4	3	3	2	2	4	8	12	15	16	18	18	19	19	20	20	18	16	15	15	14	11	11	12.3	20.1
30-May	9	8	6	5	4	5	7	9	11	14	16	17	17	17	17	18	18	17	16	14	14	12	11	9	12.1	18.1
31-May	8	9	9	8	8	8	11	13	15	17	17	17	18	18	19	18	18	19	18	18	15	13	11	9	13.9	19.0
																								Diurnal Average		
																								Diurnal Maximum		



# Hourly Averages

Relative Humidity (RH) - %

Valleyview - May 2011

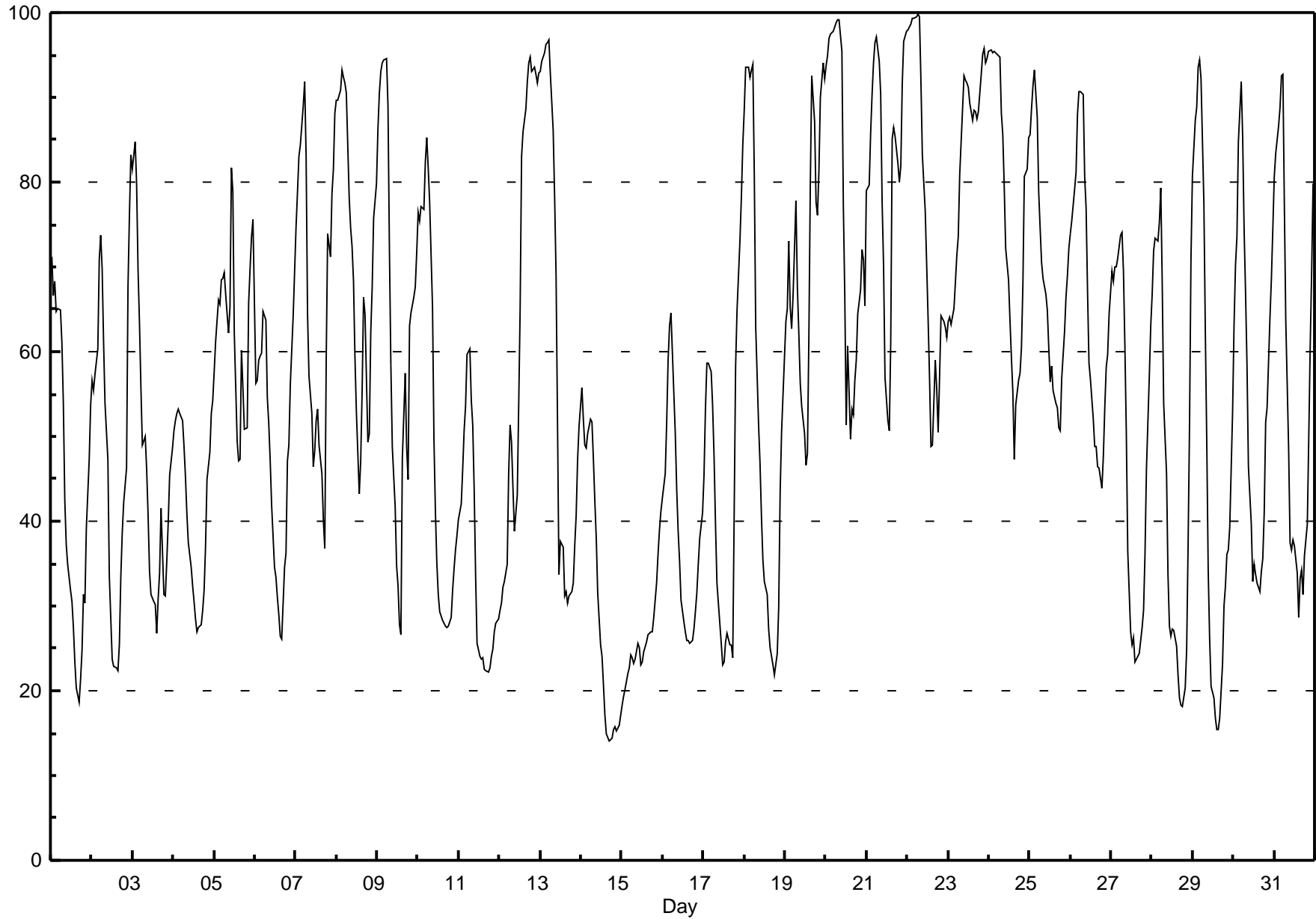
Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 99.8 % on May 22 07:00 Maximum Daily Average: 83.6 % on May 23		Hours in Service: 744 Hours of Data: 744 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																								
Minimum Value: 14 % on May 14 17:00 Maximum Diurnal Average: 75.9 % at hour 6 Monthly Average: 56.28 %		Minimum Daily Average: 26.3 % on May 15 Minimum Diurnal Average: 38.2 % at hour 15 Percentiles: P <sub>1</sub> = 15.5 P <sub>10</sub> = 25.5 Q <sub>1</sub> = 34.6 Median = 54.8 Q <sub>3</sub> = 75.3 P <sub>90</sub> = 91.8 P <sub>99</sub> = 99.1																								
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	71	67	68	65	65	65	61	54	43	37	35	32	30	27	23	20	19	21	25	31	30	39	47	54	42.9	71.2
2-May	57	55	57	60	71	74	70	61	54	47	34	29	24	23	23	22	25	33	39	42	46	68	76	83	48.9	83.2
3-May	81	85	80	70	63	56	49	50	46	41	34	31	30	30	27	31	34	41	31	31	35	40	45	49	46.3	84.8
4-May	51	52	53	53	53	52	49	45	41	37	35	32	30	28	27	27	28	30	32	37	45	48	53	54	41.3	54.2
5-May	58	61	66	66	68	69	69	67	62	65	82	79	62	49	47	47	60	56	51	51	66	70	74	76	63.4	81.7
6-May	56	57	59	59	60	65	64	55	52	47	42	35	33	31	29	26	26	35	36	47	49	56	64	69	48.0	69.5
7-May	75	79	83	84	89	92	83	64	57	53	46	48	52	53	49	46	40	37	59	74	71	79	81	88	66.0	91.9
8-May	90	90	91	93	92	92	90	78	75	72	68	59	53	43	47	55	66	64	49	50	62	68	76	80	71.0	93.2
9-May	86	91	93	94	94	95	89	72	58	49	42	35	32	28	27	47	58	49	45	63	65	66	68	72	63.2	94.6
10-May	76	75	77	77	82	85	82	78	65	50	41	35	31	29	28	28	28	27	28	29	32	34	37	38	49.7	85.2
11-May	40	42	46	51	54	60	60	54	51	44	34	26	24	24	23	22	22	23	24	25	27	28	28	28	35.6	60.3
12-May	30	30	32	33	35	46	51	49	44	39	43	54	65	83	86	89	92	94	95	93	93	93	92	93	64.7	94.8
13-May	93	94	95	96	96	97	93	86	78	69	52	34	38	37	31	32	30	31	32	33	37	41	47	51	59.3	96.8
14-May	56	52	49	49	50	52	52	47	42	38	32	25	24	21	17	15	14	14	14	16	16	15	16	17	31.0	55.7
15-May	18	19	20	22	23	24	24	23	24	26	25	23	23	25	26	27	27	27	27	29	33	36	39	41	26.3	41.2
16-May	43	46	51	59	63	65	60	50	44	39	35	31	28	27	26	26	26	26	27	29	32	35	38	41	39.4	64.6
17-May	45	53	59	59	58	54	48	40	33	30	26	23	23	26	27	25	25	24	41	58	65	73	78	84	44.9	84.4
18-May	89	94	93	92	93	94	81	63	51	47	41	35	33	31	27	25	24	23	22	24	30	43	51	55	52.6	93.9
19-May	64	65	73	65	63	67	78	68	62	56	54	50	47	48	62	80	92	87	78	76	81	90	94	92	70.5	94.1
20-May	94	95	97	97	98	98	99	99	99	95	77	67	51	61	50	53	53	57	59	64	67	72	71	65	76.6	99.2
21-May	79	80	86	90	94	97	97	94	90	78	70	57	52	51	61	85	86	85	82	80	82	92	97	98	81.8	97.8
22-May	98	98	99	99	99	99	100	99	92	83	77	70	64	57	49	49	59	56	51	57	64	63	63	62	75.3	99.8
23-May	64	64	63	65	68	71	74	81	89	93	92	92	91	89	87	88	88	87	88	93	95	96	94	95	83.6	95.7
24-May	95	96	95	95	95	95	95	88	86	79	72	68	64	59	55	47	54	57	57	60	68	81	82	85	76.3	95.7
25-May	86	89	91	93	88	79	75	71	69	67	65	61	56	58	55	54	53	51	51	57	62	66	69	72	68.2	93.2
26-May	74	76	79	81	88	91	91	90	81	77	67	59	57	52	49	49	46	46	44	48	53	58	60	64	65.8	90.7
27-May	69	68	70	70	71	74	74	70	61	50	36	27	25	26	23	24	24	26	28	30	36	46	57	63	47.9	74.1
28-May	67	72	73	73	75	79	68	54	46	34	28	26	27	27	25	22	19	18	18	20	25	37	51	71	44.0	79.4
29-May	81	87	89	94	94	92	78	62	49	34	26	20	19	17	15	15	17	23	30	32	36	37	39	53	47.5	94.4
30-May	63	70	74	85	92	85	74	67	59	46	40	33	35	34	33	32	34	36	41	52	53	64	69	75	56.0	91.8
31-May	81	83	87	89	93	93	77	64	48	38	37	38	37	34	29	33	34	31	36	40	50	61	69	80	56.7	92.7
		68.6	70.5	72.6	73.5	75.1	75.9	72.7	65.9	59.7	53.6	47.9	43.0	40.8	39.6	38.2	40.1	42.1	42.4	43.2	47.4	51.8	57.8	62.0	66.1	Diurnal Average
		98.0	98.4	98.7	99.2	99.4	99.5	99.8	99.5	99.2	95.5	92.1	91.6	91.2	89.3	87.3	88.7	92.5	94.1	94.8	93.1	95.0	95.7	96.7	97.8	Diurnal Maximum



## Hourly Averages

Relative Humidity (RH) - %

Valleyview - May 2011



## Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Valleyview - May 2011

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1 Spd	3	3	4	3	4	4	2	3	8	15	12	9	8	9	9	11	10	10	11	7	2	1	1	2	3.9	15.3
Dir	160	149	164	170	176	167	174	180	277	289	281	269	290	291	281	301	299	328	348	350	6	190	195	187	286	289
2 Spd	1	2	1	3	1	1	2	0	1	3	7	4	4	7	4	6	9	13	10	5	10	7	5	6	1.5	13.3
Dir	185	145	114	325	332	212	170	140	21	83	127	118	144	159	135	132	224	299	315	316	272	252	242	280	242	299
3 Spd	1	1	5	6	7	11	15	13	18	20	22	20	20	21	20	21	15	12	15	17	17	17	16	15	14.2	21.5
Dir	265	240	274	272	273	276	287	278	284	281	286	280	291	292	280	305	294	268	284	282	275	277	277	273	283	286
4 Spd	15	14	12	14	12	14	16	18	18	17	16	15	17	18	18	18	18	17	14	18	13	8	2	3	13.9	18.5
Dir	270	264	271	277	276	279	281	279	288	290	289	288	288	280	277	281	278	293	286	284	263	240	190	177	279	288
5 Spd	3	1	1	1	2	1	2	2	3	8	8	4	5	5	7	2	11	3	5	2	2	2	1	2	2.3	10.8
Dir	182	171	18	192	185	185	172	178	203	254	291	246	258	265	259	5	326	267	297	299	195	217	186	203	260	326
6 Spd	8	8	9	10	5	3	3	8	10	7	7	8	8	5	7	4	5	9	4	8	3	1	2	2	4.4	10.2
Dir	279	280	263	277	260	170	165	286	297	299	277	269	313	343	313	260	273	289	359	51	41	190	359	344	291	297
7 Spd	0	1	0	1	1	0	1	1	2	2	4	8	11	9	8	4	6	1	4	9	4	4	2	1	2.0	11.2
Dir	27	228	119	348	158	27	349	127	21	22	15	85	120	96	126	106	157	202	117	356	354	154	182	139	95	120
8 Spd	1	1	1	0	0	1	0	4	5	5	3	2	2	2	8	10	3	1	2	2	5	2	2	1	1.7	10.1
Dir	126	139	46	138	132	138	130	168	176	162	172	209	297	166	135	148	212	102	179	243	298	61	189	133	165	148
9 Spd	1	1	0	1	1	0	3	7	7	10	13	10	7	9	9	15	5	7	4	4	3	2	4	1	4.0	14.5
Dir	257	136	251	177	201	212	191	172	172	174	169	171	164	151	162	277	151	163	161	163	153	200	317	154	176	277
10 Spd	2	2	2	3	3	3	5	4	4	6	5	6	6	6	4	2	2	3	5	4	3	4	9	8	3.6	8.6
Dir	204	197	183	181	193	176	167	165	170	166	155	174	163	193	180	199	353	118	121	122	101	117	154	156	161	154
11 Spd	4	3	4	2	3	1	1	1	2	6	7	14	14	14	11	11	11	13	14	12	11	14	14	16	8.1	15.9
Dir	159	143	174	169	200	257	170	197	178	168	177	172	164	166	142	146	138	139	137	139	139	139	138	138	150	138
12 Spd	16	15	12	14	6	6	7	4	3	7	12	13	15	16	15	11	6	7	6	3	3	5	6	5	2.5	16.2
Dir	138	141	150	161	194	309	1	23	356	343	318	309	294	322	336	349	24	40	63	354	64	53	54	315	353	322
13 Spd	3	1	1	2	1	4	4	6	7	5	5	6	8	8	11	11	12	11	9	9	7	5	4	5	4.9	12.0
Dir	352	38	199	195	108	162	164	168	171	169	171	164	136	130	135	136	135	148	140	127	124	112	25	10	140	135
14 Spd	2	7	8	8	9	10	12	13	17	18	18	17	19	18	21	20	21	22	20	17	16	17	20	20	15.3	21.7
Dir	113	141	134	139	154	159	157	164	164	163	159	151	150	149	155	157	163	156	156	154	153	154	147	147	154	156
15 Spd	19	20	20	21	22	19	20	20	25	28	26	22	24	23	24	20	20	20	18	16	13	13	11	8	19.5	27.6
Dir	147	144	143	149	153	152	154	157	157	161	162	142	149	142	155	149	151	157	160	159	159	162	167	163	153	161
16 Spd	7	4	1	1	1	1	1	3	6	2	5	4	8	9	8	7	7	7	9	9	8	4	4	3	4.6	9.5
Dir	164	170	179	200	217	318	153	151	168	130	103	99	134	131	132	105	131	147	132	129	128	111	99	111	133	129
17 Spd	5	2	3	4	3	6	10	10	9	8	8	9	13	13	11	13	11	11	15	8	4	1	1	1	6.7	14.6
Dir	146	89	36	25	78	126	130	126	125	140	133	133	134	129	124	127	132	131	166	183	187	165	235	174	134	166
18 Spd	1	1	2	1	1	1	2	3	7	5	4	3	1	1	3	2	4	6	3	5	4	2	3	2	1.5	7.4
Dir	209	196	198	192	204	173	167	209	276	294	279	311	275	358	198	248	250	265	322	334	51	29	327	343	279	276
19 Spd	0	1	2	0	3	1	2	6	3	0	0	2	4	2	11	10	5	3	4	4	2	0	1	1	1.8	11.1
Dir	296	197	161	214	308	1	241	277	328	106	284	324	327	18	353	55	358	15	333	300	335	339	209	203	341	353
20 Spd	1	0	1	1	1	0	1	2	1	2	3	3	2	6	5	7	6	4	2	3	3	2	1	3	1.4	6.7
Dir	291	134	166	181	191	281	200	216	145	141	346	343	72	57	120	77	71	53	47	353	9	346	161	51	62	77
21 Spd	0	2	3	0	0	0	0	1	1	5	6	5	9	14	8	10	9	5	5	2	2	1	2	1	2.9	13.7
Dir	33	29	5	225	202	44	205	212	199	336	355	2	4	2	10	279	322	33	7	359	290	202	302	306	347	2
22 Spd	1	1	3	1	1	0	2	1	2	2	7	7	9	11	9	8	6	3	3	2	6	6	6	7	2.4	11.1
Dir	219	149	1	353	235	33	349	106	76	90	14	345	2	24	107	128	155	140	134	141	90	83	64	57	64	24

## Hourly Averages

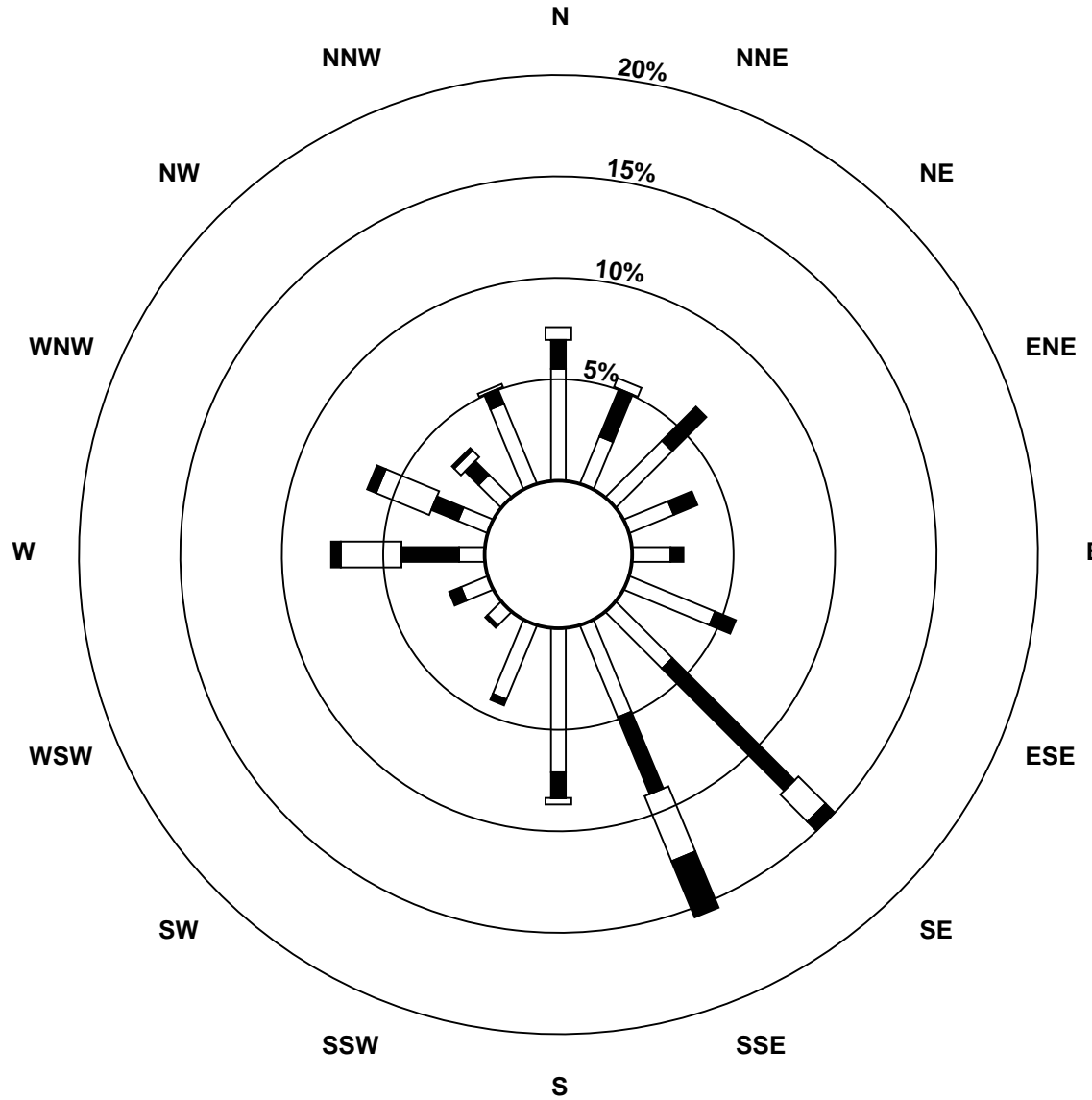
Wind Speed (km/h)  
Wind Direction (deg)  
Valleyview - May 2011

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
23 Spd	6	5	5	6	5	6	6	4	4	4	6	6	6	6	6	3	1	0	2	2	2	1	1	3.5	6.2	
Dir	50	44	50	29	35	28	61	66	56	55	47	39	36	40	45	38	50	41	212	211	180	172	179	163	47	28
24 Spd	1	1	1	1	0	2	1	0	1	1	1	1	2	2	2	4	3	2	1	0	1	1	1	0.6	4.0	
Dir	124	85	55	102	119	4	135	263	187	39	176	81	64	48	257	130	177	182	199	233	178	147	160	144	142	177
25 Spd	1	1	1	1	0	3	3	6	8	6	7	7	8	10	8	7	5	8	9	7	8	5	4	2	4.9	10.0
Dir	78	8	347	2	183	153	141	162	160	141	134	134	139	141	141	136	141	142	142	147	144	143	132	131	142	141
26 Spd	3	3	3	2	2	3	3	3	3	2	3	8	8	6	7	7	5	4	4	3	3	3	1	2	2.9	8.3
Dir	131	130	118	69	29	39	53	58	121	76	111	127	129	137	137	139	139	113	122	83	44	39	44	334	109	127
27 Spd	4	3	3	4	4	4	3	4	5	3	6	7	6	7	4	5	8	8	8	5	1	3	2	2	4.0	8.5
Dir	339	359	344	336	345	354	357	6	11	351	23	50	65	55	75	55	35	45	29	55	28	340	340	2	25	35
28 Spd	2	1	1	3	1	1	3	4	7	8	8	12	9	15	11	11	13	12	11	7	2	1	1	1	5.8	14.9
Dir	9	67	339	359	43	25	5	18	20	30	27	25	28	5	23	28	5	15	16	20	79	346	346	186	18	5
29 Spd	0	0	0	1	0	1	2	2	1	2	1	2	2	2	3	1	6	13	12	9	3	2	1	2	1.7	13.1
Dir	62	239	172	169	192	205	174	172	169	174	83	121	73	35	94	359	331	12	9	31	62	36	336	316	29	12
30 Spd	5	1	2	0	0	0	1	1	2	1	2	3	7	9	6	8	8	6	9	5	2	1	1	1	2.1	9.4
Dir	343	2	329	171	103	72	144	12	359	12	334	354	122	131	123	107	123	126	138	144	138	158	168	336	116	131
31 Spd	1	1	0	1	0	1	1	2	3	1	2	2	3	4	5	5	5	4	4	4	5	1	1	0	1.3	5.3
Dir	334	257	356	157	163	179	300	281	289	307	70	49	62	87	115	116	116	114	81	117	170	168	146	186	111	116
Spd	1.2	1.5	1.0	1.0	1.2	0.9	1.3	1.9	1.7	1.6	1.0	1.0	1.7	1.6	2.5	1.8	1.4	1.3	1.5	0.8	1.5	1.8	1.4	1.1	Diurnal Average	
Dir	166	156	166	190	197	189	176	191	206	210	212	165	141	111	143	131	157	136	124	130	160	159	156	156		
Spd	18.8	19.9	20.4	20.9	21.9	19.1	20.5	20.4	24.6	27.6	25.7	21.9	24.4	22.6	24.4	21.1	21.2	21.7	19.6	18.2	16.9	17.1	20.3	19.8	Diurnal Maximum	
Dir	147	144	143	149	153	152	154	157	157	161	162	142	149	142	155	305	163	156	156	284	275	277	147	147		
Maximum Speed Value: 28 ppb on May 15 10:00		Minimum Speed Value: 0 ppb on May 30 05:00										Hours in Service: 744														
Maximum Daily Speed Average: 19.5 ppb on May 15		Minimum Daily Speed Average: 0.6 ppb on May 24										Hours of Data: 744														
Maximum Diurnal Speed Average: 2.5 ppb at hour 15		Minimum Diurnal Speed Average: 0.8 ppb at hour 20										Hours of Missing Data: 0														
Monthly Average Velocity: 1.25 ppb 161.9 deg		Speed Percentiles: P <sub>1</sub> = 0.2 P <sub>10</sub> = 0.7 Q <sub>1</sub> = 1.8 Median = 4.1 Q <sub>3</sub> = 8.3 P <sub>90</sub> = 14.5 P <sub>99</sub> = 21.3										Percent Operational Time: 100.0														
All monthly, daily, and diurnal averages have been calculated using vector methods																										
Frequency Distribution																										
		Speed Range (ppb)																								
Direction	0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total																			
North	66	17	8	0	0	0	91																			
NorthEast	47	37	3	0	0	0	87																			
East	35	10	0	0	0	0	45																			
SouthEast	66	66	28	22	0	0	182																			
South	112	29	14	3	0	0	158																			
SouthWest	33	2	0	0	0	0	35																			
West	21	29	33	6	0	0	89																			
NorthWest	32	15	9	1	0	0	57																			
Total	412	205	95	32	0	0	744																			

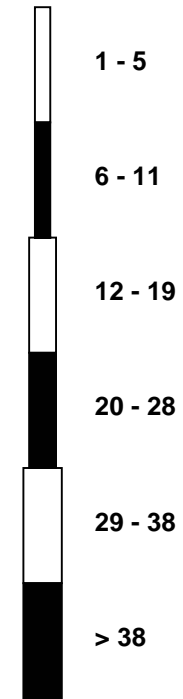
**Wind Rose**

**Wind Speed (WS) (km/h)**

**Valleyview - May 2011**



**Wind Speed Classes (km/h)**



# Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Valleyview - May 2011

Maximum Speed: 28 km/h on May 15 10:00	Maximum Daily Speed Average: 20.0 km/h on May 15	Hours in Service: 744
Minimum Speed: 1 km/h on May 8 04:00	Minimum Daily Speed Average: 1.8 km/h on May 24	Hours of Data: 744
Maximum Diurnal Speed Average: 10.3 km/h at hour 14	Minimum Diurnal Speed Average: 3.7 km/h at hour 5	Hours of Missing Data: 0
Monthly Average Speed: 6.56 km/h	Percentiles: P <sub>1</sub> = 0.7 P <sub>10</sub> = 1.3 Q <sub>1</sub> = 2.4 Median = 4.9 Q <sub>3</sub> = 8.9 P <sub>90</sub> = 15.0 P <sub>99</sub> = 21.6	Percent Operational Time: 100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-May	3	3	4	3	4	4	2	3	9	16	12	10	10	10	11	12	11	12	11	7	2	1	1	2	6.8	15.6	
2-May	2	2	2	3	2	2	2	1	2	4	7	5	6	7	5	7	11	14	10	6	11	7	5	6	5.3	13.6	
3-May	2	1	5	6	7	11	15	13	19	21	22	21	21	22	21	22	17	13	15	17	17	17	16	15	14.9	22.2	
4-May	15	14	13	14	13	14	16	18	19	18	16	16	18	18	19	19	18	17	14	19	13	8	2	3	14.7	18.9	
5-May	3	1	1	1	3	2	2	3	3	9	9	5	7	7	8	5	12	5	6	4	2	2	2	3	4.3	11.8	
6-May	8	8	9	10	6	3	3	9	11	7	8	9	9	7	10	6	7	10	7	8	3	2	3	2	6.8	10.6	
7-May	1	2	2	1	2	1	2	2	3	5	5	9	12	10	9	5	6	4	5	10	7	5	2	1	4.5	11.6	
8-May	1	1	1	1	1	1	1	4	5	5	3	4	5	4	9	11	4	3	3	6	6	2	2	2	3.4	10.7	
9-May	1	1	1	1	1	1	1	3	7	7	10	13	11	8	9	10	15	5	7	5	6	4	3	4	2	5.6	15.4
10-May	2	2	2	3	3	3	5	5	5	6	6	7	6	7	4	3	3	4	5	4	3	4	9	8	4.5	8.7	
11-May	4	3	4	3	3	1	1	1	2	6	7	14	14	14	11	11	12	13	14	12	11	14	14	16	8.6	16.1	
12-May	16	15	13	14	9	8	7	4	4	7	12	14	15	17	16	11	7	7	6	3	3	5	7	6	9.4	16.6	
13-May	4	2	2	2	2	4	5	6	7	6	6	7	9	8	12	12	12	12	10	9	7	5	5	5	6.6	12.2	
14-May	4	7	8	8	9	10	12	13	17	19	18	18	20	19	22	21	22	22	20	17	17	17	21	20	15.8	22.1	
15-May	19	20	21	21	22	19	21	21	25	28	26	22	25	23	25	20	21	20	19	17	13	13	11	8	20.0	27.9	
16-May	7	4	2	1	1	1	1	3	7	4	7	6	9	10	8	8	7	8	9	10	8	4	4	4	5.6	9.6	
17-May	5	3	3	4	4	6	10	10	9	9	9	9	13	13	12	13	11	11	15	8	4	2	2	2	7.8	15.5	
18-May	1	1	2	1	1	1	2	4	8	6	6	6	5	5	5	6	7	5	5	6	2	3	2	2	4.0	8.1	
19-May	1	1	2	2	5	4	3	7	4	3	3	4	6	3	11	12	6	4	4	4	2	1	3	2	4.0	11.9	
20-May	3	1	1	1	1	1	2	2	2	2	4	4	4	7	5	7	7	4	2	3	3	2	3	4	3.2	7.3	
21-May	2	4	4	1	1	1	1	2	2	5	6	6	9	14	11	11	9	6	5	2	2	1	3	1	4.6	14.1	
22-May	1	1	4	3	2	1	2	1	2	2	8	8	10	12	11	8	6	4	3	3	7	7	7	7	4.9	11.6	
23-May	6	5	6	6	5	6	6	5	4	5	6	6	6	6	6	6	3	1	1	2	2	2	1	1	4.3	6.3	
24-May	1	1	1	1	1	2	2	1	1	2	1	2	3	3	3	3	4	3	2	1	1	1	1	1	1.8	4.2	
25-May	1	1	1	1	1	3	3	7	8	7	7	7	8	10	9	7	6	8	9	7	8	5	4	2	5.4	10.3	
26-May	3	3	3	2	2	3	3	3	3	3	5	8	8	6	7	7	5	4	4	3	3	3	2	3	4.0	8.4	
27-May	4	3	3	4	4	4	3	5	5	4	8	8	7	8	5	7	9	9	9	5	1	3	2	3	5.1	9.2	
28-May	2	2	2	4	1	1	3	5	7	9	9	13	10	16	12	12	14	12	11	7	2	1	1	1	6.5	15.7	
29-May	1	1	1	1	1	1	2	2	2	4	4	4	4	6	4	4	7	14	12	9	3	3	2	2	3.8	13.6	
30-May	5	2	3	1	1	1	1	2	3	3	3	4	9	10	7	9	9	6	9	5	2	1	1	1	4.0	9.6	
31-May	1	1	2	1	1	1	1	3	4	3	4	4	4	6	6	6	6	4	4	5	5	2	1	1	3.2	6.1	
	4.2	3.8	4.0	4.0	3.7	3.9	4.6	5.5	6.7	7.6	8.4	8.7	9.7	10.3	10.1	9.8	9.1	8.7	8.2	7.1	5.8	4.7	4.6	4.3	Diurnal Average		
	19.1	20.1	20.8	21.1	22.2	19.3	20.8	20.6	24.9	27.9	26.1	22.3	24.8	23.1	25.0	22.2	21.6	22.1	20.0	18.8	17.1	17.3	20.5	20.1	Diurnal Maximum		

All monthly, daily, and diurnal averages have been calculated using scalar methods

# Hourly Standard Deviations

Wind Direction (WD) - deg

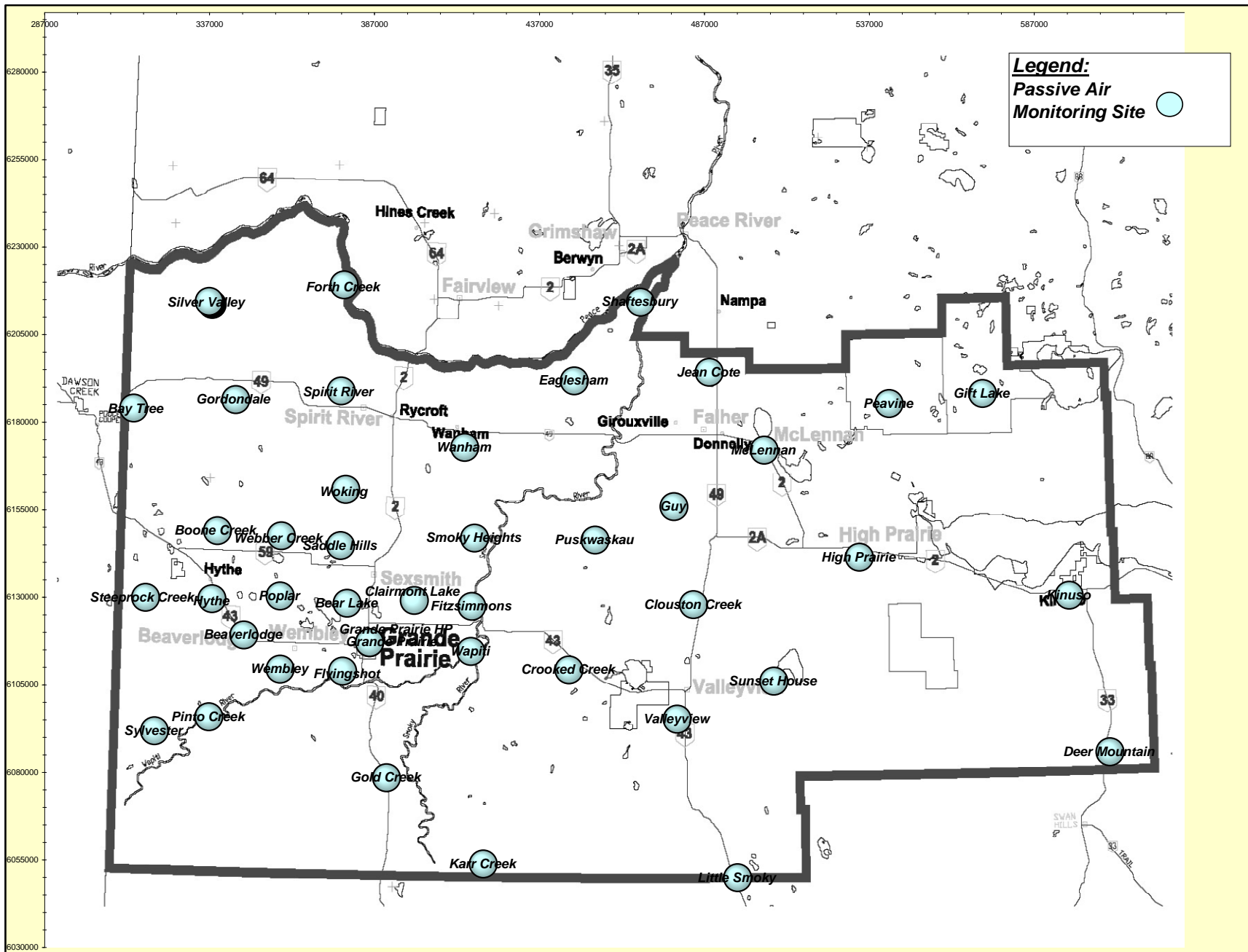
Valleyview - May 2011

Maximum Value: 98.9 deg on May 19 22:00																		Hours in Service: 744							
Minimum Value: 3.3 deg on May 27 04:00																		Hours of Data: 744							
Percentiles: P <sub>1</sub> = 6.7 P <sub>10</sub> = 9.8 Q <sub>1</sub> = 13.7 Median = 24.8 Q <sub>3</sub> = 49.9 P <sub>90</sub> = 74.2 P <sub>99</sub> = 93.7																		Hours of Missing Data: 0							
																		Hours of Calibration: 0							
																		Percent Operational Time: 100.0							
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-May	8	12	6	6	6	8	9	12	48	12	25	37	38	34	40	27	31	29	10	6	56	44	26	25	55.7
2-May	51	36	51	32	78	55	19	93	63	36	26	41	61	23	26	40	36	12	10	24	20	18	15	25	93.2
3-May	73	56	19	15	11	9	9	11	11	11	13	15	17	13	14	19	26	24	18	11	9	7	10	7	72.9
4-May	7	6	9	7	7	7	7	8	10	15	16	16	18	18	16	13	16	11	13	14	16	13	15	9	18.0
5-May	11	72	83	75	47	69	37	28	24	31	14	49	43	48	39	85	26	60	35	65	14	38	61	33	84.7
6-May	13	13	11	8	42	10	17	43	19	23	33	37	29	65	50	58	57	24	50	15	37	81	76	55	80.6
7-May	94	73	78	74	87	86	53	61	82	76	45	32	15	21	23	42	25	83	57	14	58	37	21	49	93.6
8-May	33	62	52	74	60	31	86	13	14	15	31	67	86	80	29	19	54	84	39	32	43	24	43	49	86.1
9-May	65	49	78	52	32	70	7	11	12	13	11	18	25	21	19	28	54	13	19	43	29	51	56	43	78.1
10-May	21	20	9	11	11	11	9	11	16	17	33	32	39	29	40	59	52	40	24	8	13	14	11	7	59.2
11-May	11	29	15	24	25	55	57	35	27	12	16	11	14	11	12	14	13	12	10	15	14	8	8	9	57.1
12-May	8	9	10	9	55	52	16	31	53	18	14	10	9	12	8	13	17	16	26	54	45	22	60	45	60.2
13-May	54	93	44	12	46	14	11	13	13	18	40	41	42	27	18	16	11	14	13	8	7	16	33	9	92.8
14-May	58	15	15	11	10	10	8	10	10	11	12	13	13	17	14	13	11	11	12	10	10	9	9	9	58.1
15-May	9	8	10	9	8	8	10	9	9	9	10	11	11	13	13	13	11	10	10	11	9	8	8	9	12.9
16-May	9	11	63	73	29	67	42	37	17	63	44	50	22	21	24	36	23	22	12	8	9	16	19	28	72.8
17-May	20	34	25	19	46	13	9	9	13	15	22	24	15	13	17	14	14	10	23	8	53	42	57	36	56.7
18-May	31	16	12	8	9	32	15	37	26	42	63	67	87	90	66	73	53	41	65	14	44	47	17	43	90.4
19-May	88	46	57	76	68	81	52	29	44	96	91	90	57	81	15	40	27	43	22	17	44	99	76	73	98.9
20-May	86	72	29	27	28	86	33	40	44	46	41	51	78	36	24	25	25	23	31	11	12	48	94	59	94.0
21-May	92	66	77	93	72	80	95	82	76	22	24	41	23	15	68	39	16	20	23	61	14	47	86	82	94.9
22-May	34	47	39	91	40	73	29	56	51	54	26	26	28	19	41	16	17	26	26	35	23	22	18	17	91.0
23-May	18	20	29	11	12	12	26	20	16	28	18	15	14	18	16	15	20	75	56	32	24	21	31	67	74.6
24-May	46	33	48	54	69	41	66	87	66	58	59	89	60	77	67	70	14	21	28	34	59	21	8	38	89.0
25-May	42	33	24	23	87	11	10	11	15	13	14	15	16	14	18	14	21	14	13	12	10	10	12	16	86.8
26-May	13	16	28	29	21	18	30	29	20	43	44	12	14	25	15	14	19	30	23	25	11	17	34	16	44.0
27-May	10	11	11	3	11	13	26	11	15	56	43	27	41	32	47	46	26	24	21	19	34	24	22	23	56.1
28-May	56	65	83	50	86	38	18	17	16	18	21	19	33	21	24	17	16	17	42	24	21	68	42	85.7	
29-May	70	73	93	60	67	50	15	19	54	46	93	65	74	84	45	95	47	19	10	18	39	44	94	52	94.8
30-May	14	85	53	90	84	84	66	95	58	84	83	75	46	13	31	26	19	18	12	13	18	12	65	70	95.0
31-May	82	69	92	54	93	66	76	66	83	88	76	68	48	51	30	31	27	38	35	44	12	20	29	85	92.7
	93.6	92.8	92.7	92.9	92.7	85.9	94.9	95.0	82.7	96.2	92.9	89.7	87.5	90.4	68.3	94.8	57.4	83.8	64.7	65.4	59.0	98.9	94.4	84.7	

# PAZA

## Monthly Passive Data Summary

# Location of PAZA Passive Monitoring Stations





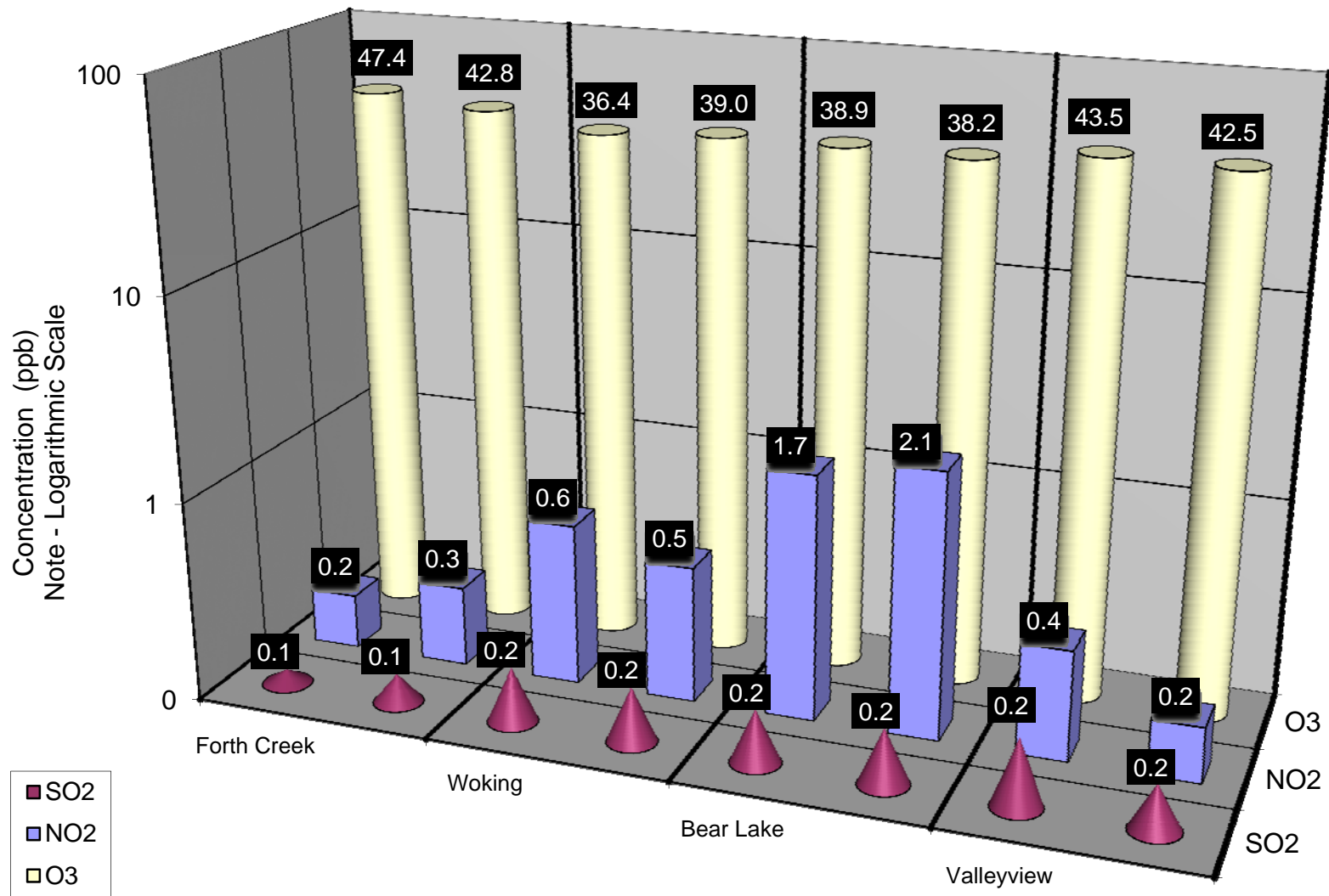
## PAZA Passive Results for May 2011

Station Number	Station Name	SO2 ppb	O3 ppb	NO2 ppb	Site Legal
<b>Duplicates</b>					
3a	Forth Creek	0.1	47.4	0.2	
3b	Forth Creek	0.1	42.8	0.3	
10a	Woking	0.2	36.4	0.6	
10b	Woking	0.2	39.0	0.5	
23a	Bear Lake	0.2	38.9	1.7	
23b	Bear Lake	0.2	38.2	2.1	
41a	Valleyview	0.2	43.5	0.4	
41b	Valleyview	0.2	42.5	0.2	
1	Silver Valley	0.2	38.8	0.5	08-27-081-11 W6M
2	Bay Tree	0.2	33.8	0.5	13-16-078-13 W6M
3	Fourth Creek	0.1	45.1	0.2	04-13-082-07 W6M
4	Gordondale	0.2	38.4	0.5	04-34-078-10 W6M
5	Boone Creek	0.1	35.9	0.4	16-36-074-11 W6M
7	Steepprock Creek	0.1	42.4	0.3	09-35-072-13 W6M
9	Spirit River	0.2	38.6	1.2	08-12-079-07 W6M
10	Woking	0.2	37.7	0.6	01-13-076-07 W6M
11	Webber Creek	0.2	41.0	1.0	09-36-074-09 W6M
12	Hythe	0.2	38.1	2.2	14-36-072-11 W6M
14	Sylvester	0.1	32.8	0.9	08-06-069-12 W6M
16	Beaverlodge	0.2	42.6	0.8	15-36-071-10 W6M
17	Poplar	0.2	37.4	1.3	13-06-073-08 W6M
18	Saddle Hills	0.2	37.9	0.3	04-25-074-07 W6M
19	Wanham	0.2	41.7	0.6	16-22-077-03 W6M
20	Shaftesbury	0.1	37.7	0.7	04-03-082-23 W5M
21	Eaglesham	0.1	34.1	0.7	16-21-079-25 W5M
23	Bear Lake	0.2	38.6	1.9	15-31-072-06 W6M

## PAZA Passive Results for May 2011 (Continued)

Station Number	Station Name	SO2 ppb	O3 ppb	NO2 ppb	Site Legal
24	Wembley	0.2	33.6	1.5	12-31-070-08 W6M
25	Pinto Creek	0.2	36.1	0.7	04-24-069-11 W6M
26	Flyingshot	0.2	35.2	0.8	15-36-070-07 W6M
27	Grande Prairie I	0.2	39.3	2.3	08-15-071-06 W6M
28	Clairmont Lake	0.2	41.4	0.6	09-06-073-04 W6M
29	Smoky Heights	0.4	46.0	0.8	04-06-075-02 W6M
30	Fitzsimmons	0.1	41.1	0.7	15-36-072-03 W6M
32	Gold Creek	0.3	30.2	0.6	06-33-067-05 W6M
33	Wapiti	N/A	N/A	N/A	02-25-071-03 W6M
34	Puskwaskau	0.1	34.2	0.2	15-35-074-25 W5M
35	Jean Cote	0.1	47.5	1.0	12-35-079-21 W5M
36	Guy	0.1	42.6	1.6	03-04-076-22 W5M
37	Crooked Creek	0.1	41.0	0.5	16-01-071-26 W5M
38	Karr Creek	0.1	29.8	0.7	10-16-065-02 W6M
39	Clouston Creek	0.1	39.0	0.4	12-01-073-22 W5M
40	McLennan	0.2	37.8	0.8	03-29-077-19 W5M
41	Valleyview	0.2	43.0	0.3	09-30-069-22 W5M
42	Sunset House	0.1	41.6	0.1	05-32-070-19 W5M
43	High Prairie	0.1	40.4	0.9	16-13-074-17 W5M
44	Peavine	0.2	40.3	0.2	03-05-079-15 W5M
45	Gift Lake	0.1	34.7	0.3	10-07-079-12 W5M
46	Little Smoky	0.2	38.5	0.6	12-01-065-21 W5M
47	Kinuso	0.2	34.9	0.2	12-10-073-10 W5M
48	Deer Mountain	0.1	35.5	0.3	15-22-068-09 W5M
49	Grande Prairie HP	0.2	41.3	2.0	17-26-071-06 W6M

\*BDL = Below Detection Level



Duplicate Summary Chart

## Passive Summary for May 2011

Stats	Sulphur Dioxide SO <sub>2</sub>	Ozone O <sub>3</sub>	Nitrogen Dioxide NO <sub>2</sub>
	ppb	ppb	ppb

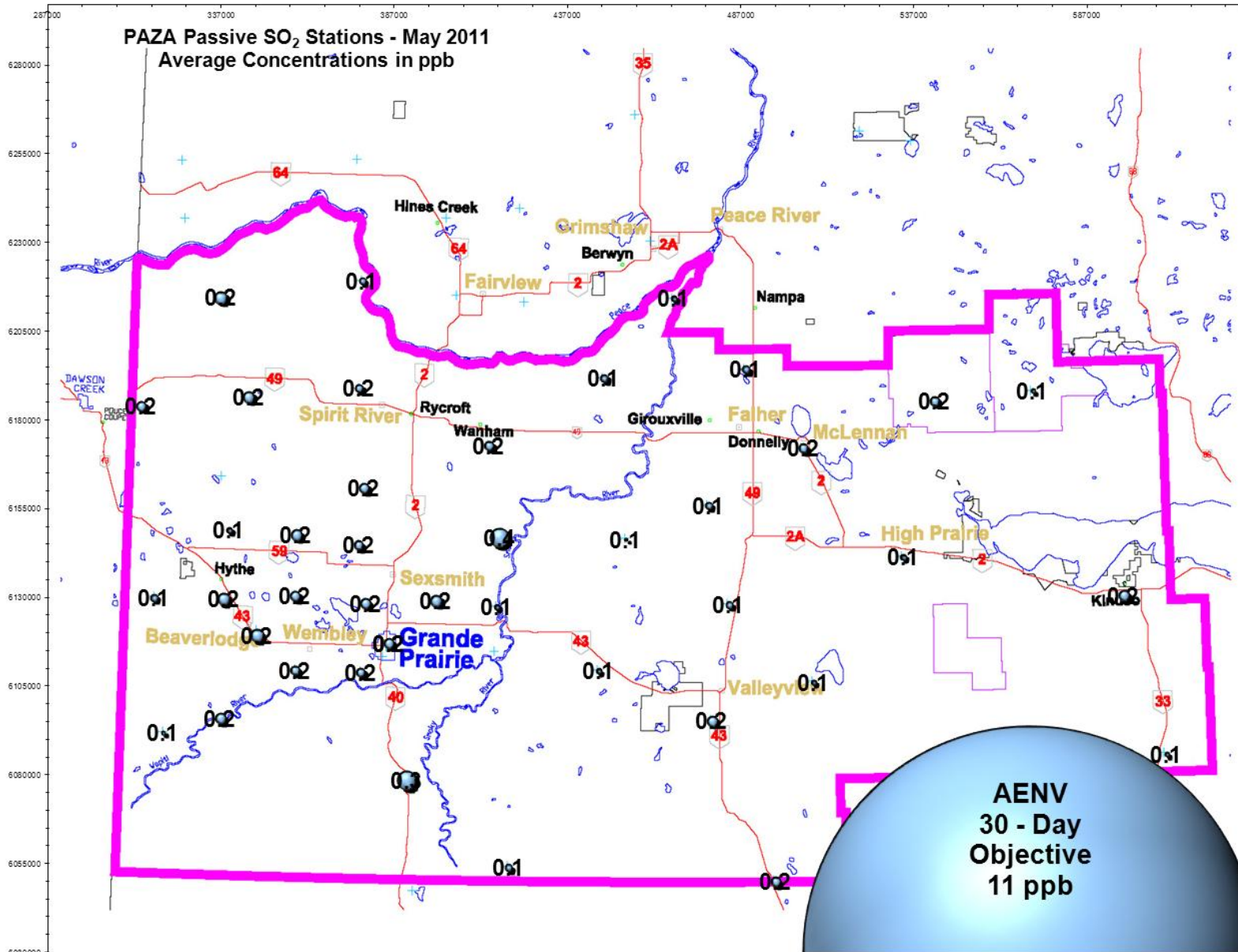
Passive Summary for May 2011 (PAZA Zone)			
<b>Mean</b>	<b>0.2</b>	<b>38.5</b>	<b>0.8</b>
<b>Standard Deviation</b>	<b>0.1</b>	<b>3.9</b>	<b>0.6</b>
<b>Minimum</b>	<b>0.1</b>	<b>29.8</b>	<b>0.1</b>
<b>Minimum At</b>	<b>Puskwaskau (#34)</b>	<b>Karr Creek (#38)</b>	<b>Sunset House (#42)</b>
<b>Maximum</b>	<b>0.4</b>	<b>47.5</b>	<b>2.3</b>
<b>Maximum At</b>	<b>Smoky Heights (#29)</b>	<b>Jean Cote (#35)</b>	<b>Grande Prairie I (#27)</b>

### Comparison between Continuous and Passive monitoring at Beaverlodge (passive #16 Beaverlodge)

	SO <sub>2</sub>	O <sub>3</sub>	NO <sub>2</sub>
PAZA Beaverlodge station	0.2	41.3	2.0
PAZA Beaverlodge passive	0.2	42.6	0.8

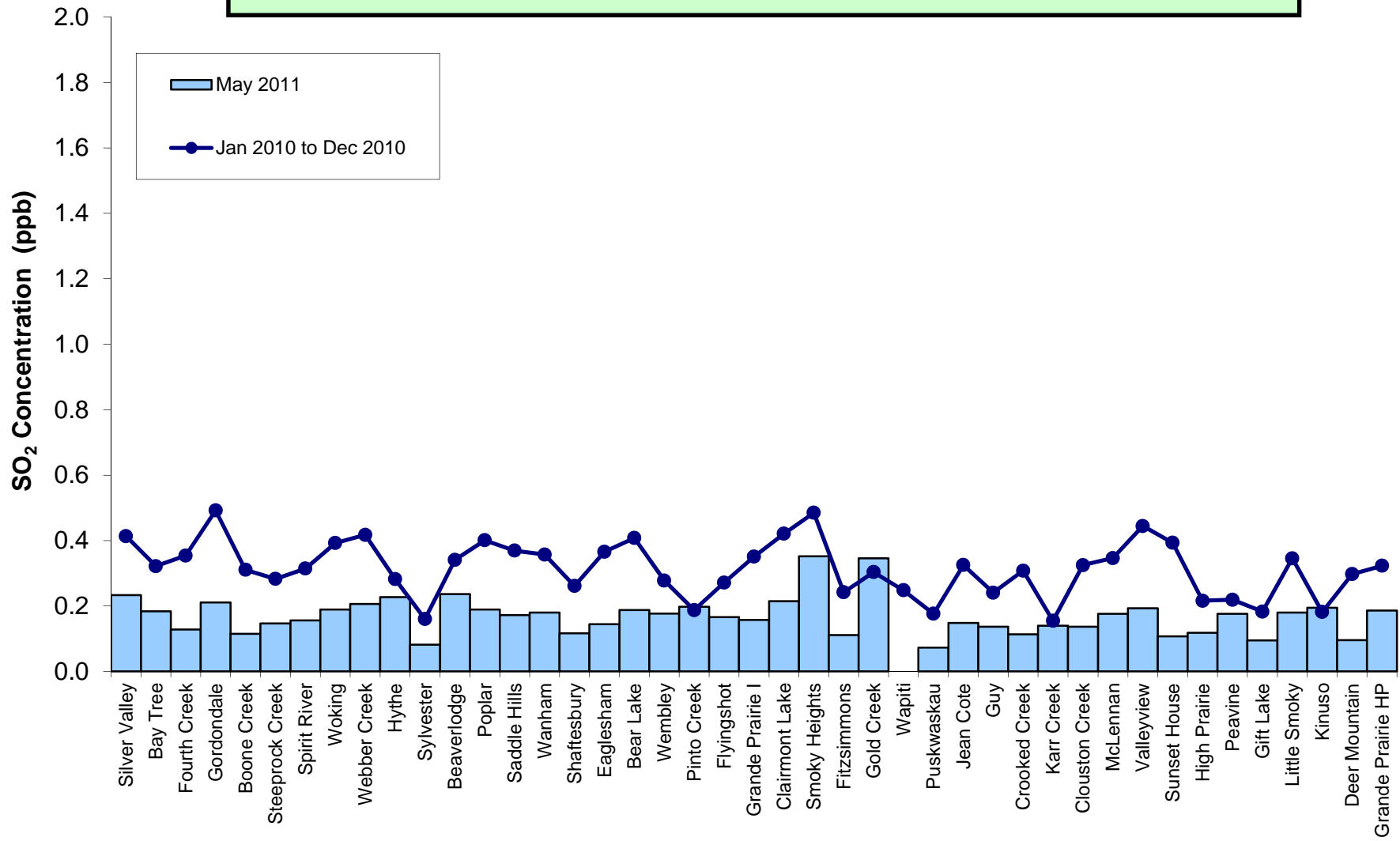
### Comparison between Continuous and Passive monitoring at Henry Pirker (passive #49 Grande Prairie HP)

	SO <sub>2</sub>	O <sub>3</sub>	NO <sub>2</sub>
PAZA Henry Pirker station	0.2	37.1	5.3
PAZA Grande Prairie passive	0.2	41.3	2.0

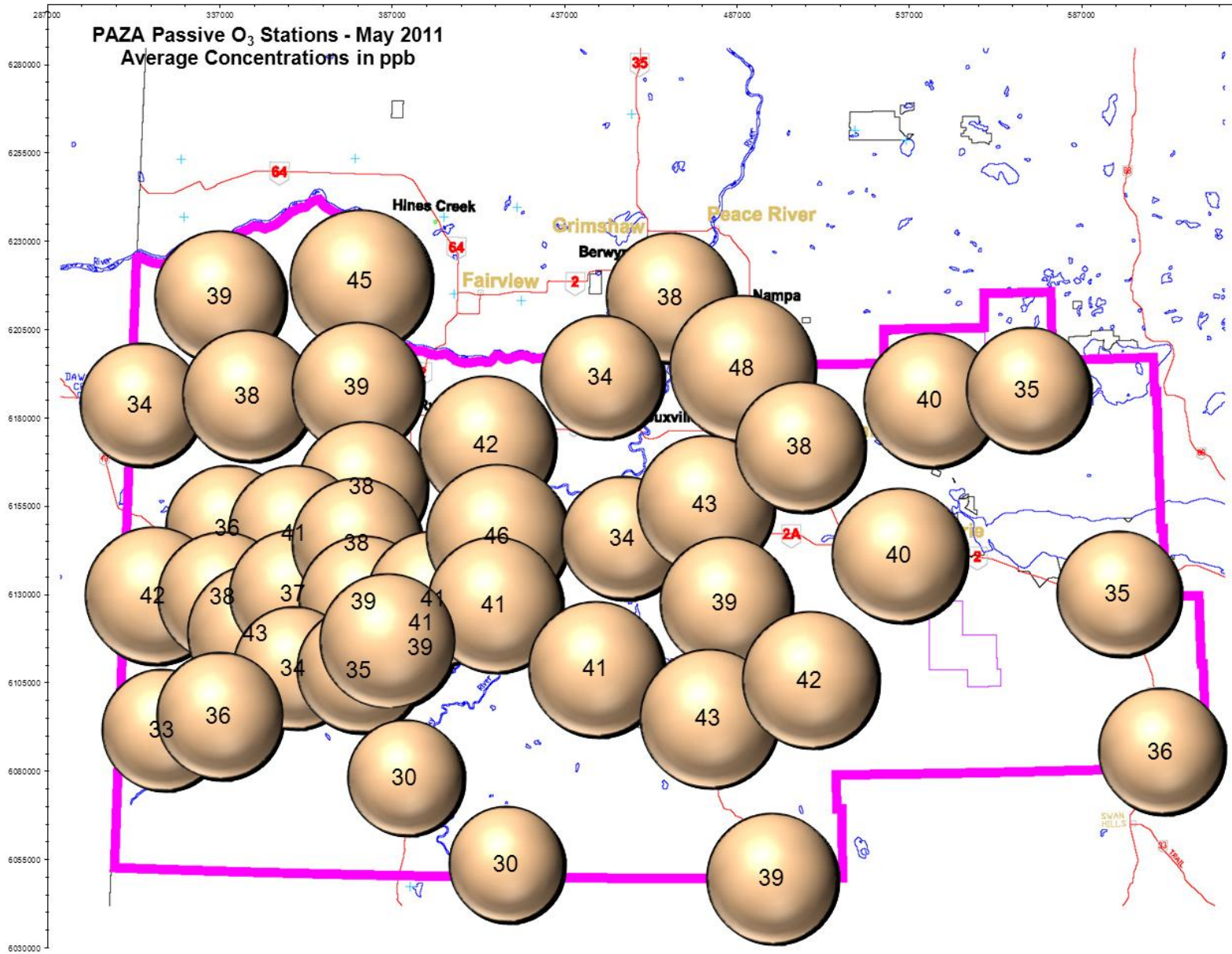


SO<sub>2</sub> Bubble Chart

**Alberta Ambient Air Quality Objective - Annual SO<sub>2</sub> Objective is 8 ppb**

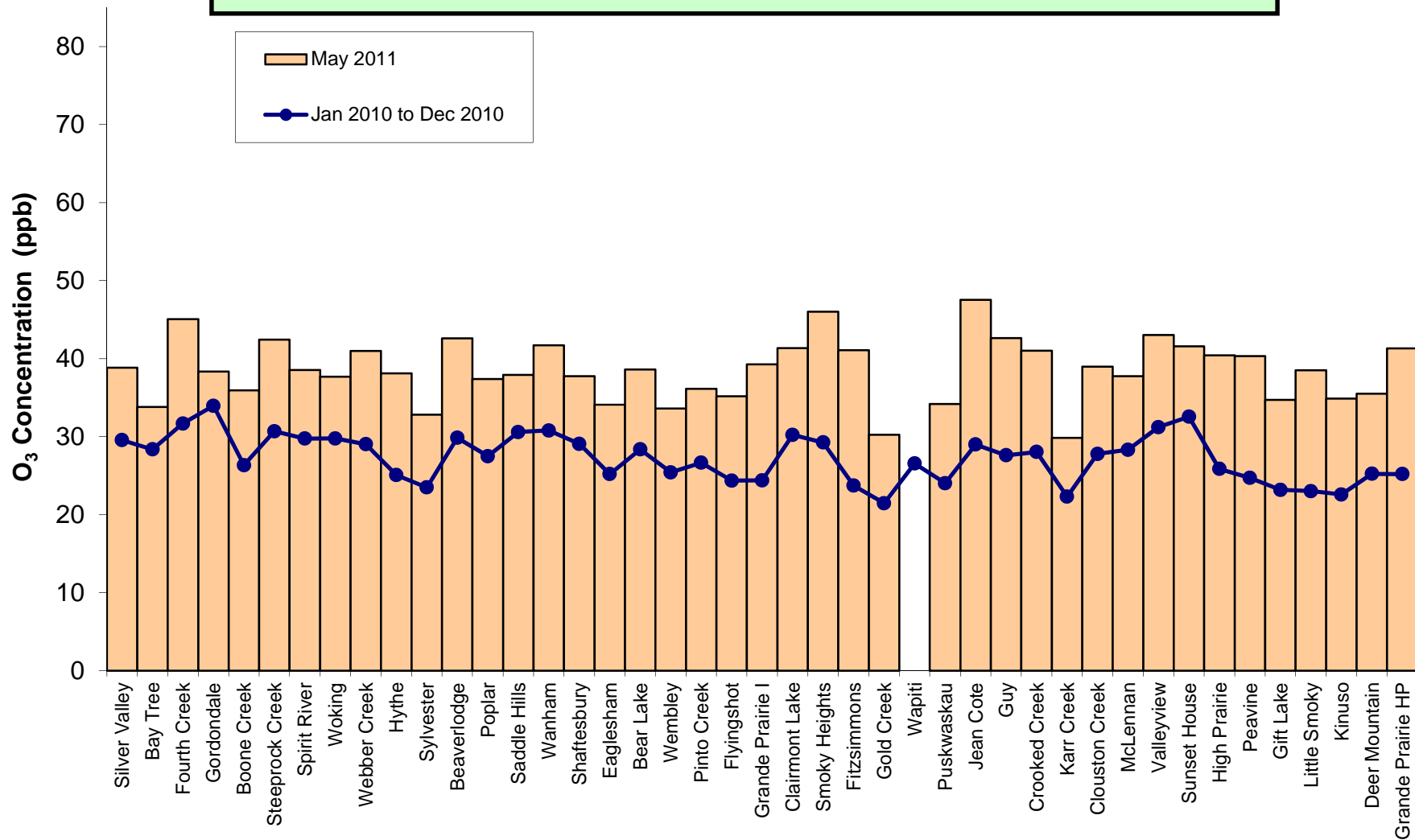


**SO<sub>2</sub> Summary Chart**



**O<sub>3</sub> Bubble Chart**

## Alberta Ambient Air Quality Objective - No Annual O<sub>3</sub> Objective

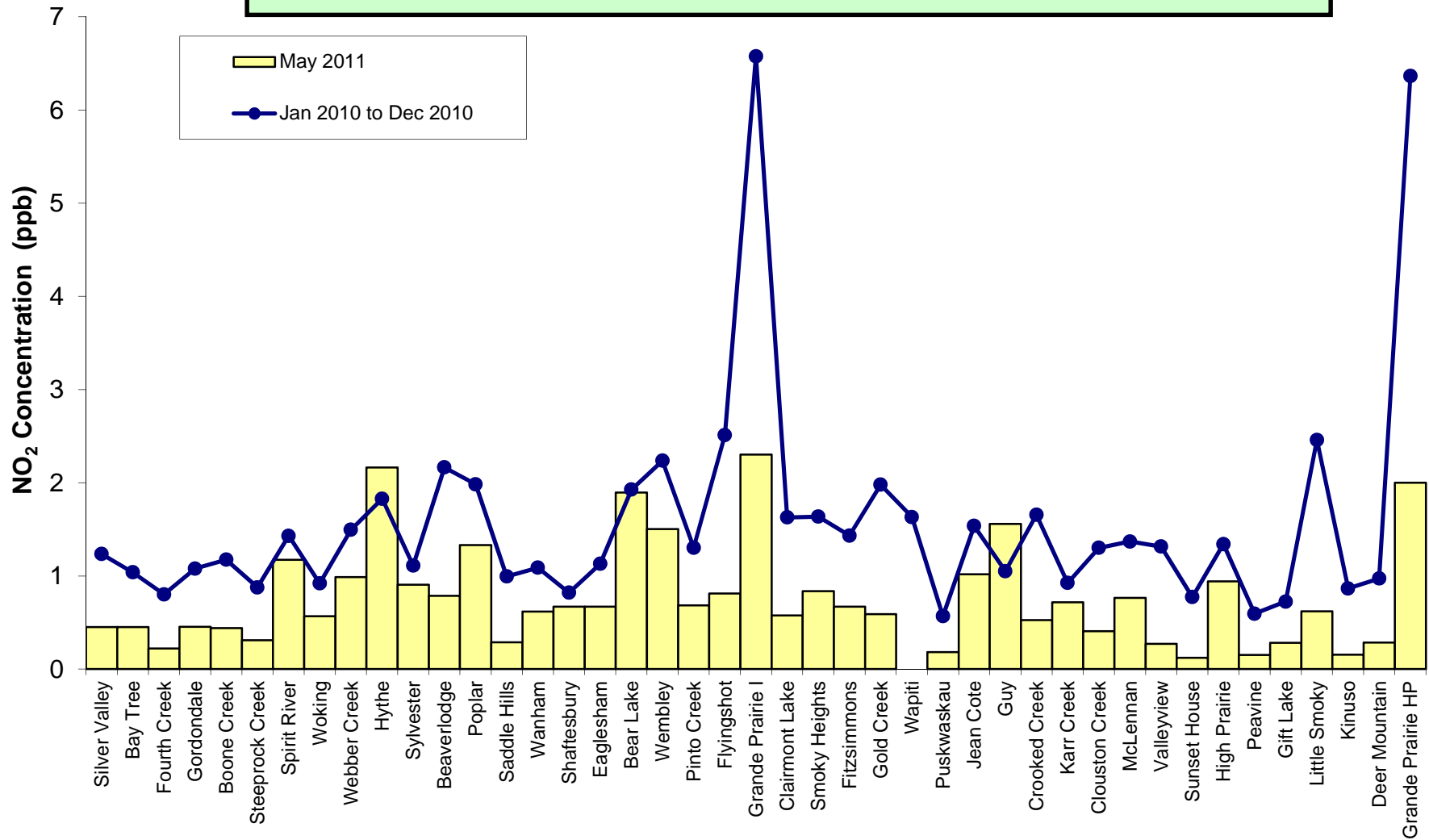


**O<sub>3</sub> Summary Chart**





**Alberta Ambient Air Quality Objective - Annual NO<sub>2</sub> Objective is 32 ppb**



**NO<sub>2</sub> Summary Chart**

# PAZA

## **ALBERTA ENVIRONMENT INCIDENCE REPORTS**

### **May 2011**

## *Air Monitoring Directive Exceedence Report*

Alberta Environment  
 Environmental Service Response Centre  
 111 Twin Atria Building  
 4999 – 98<sup>th</sup> Avenue  
 Edmonton, Alberta T6B 2X3  
 Phone: (780) 422-4505  
 Fax: (780) 427-1044

<b>Reference Number:</b>	246796	<b>Reported To (AENV Contact):</b>	Karla
<b>Date &amp; Time Incident Reported to AENV:</b>	May 5, 2011 @ 9:25 MST	<b>Reported By:</b>	Steve P.
<b>Reported on Behalf of:</b>	PAZA	<b>Approval Number (if applicable):</b>	
<b>Location(s) of Incident:</b>	Evergreen Park		
<b>Start Date &amp; Time of Incident:</b>	May 3, 2011 @9:00	<b>End Date &amp; Time of Incident:</b>	May 3, 2011 @15:00
<b>Details of Exceedence:</b>			
PM2.5 Hourly Exceedence 9:00-10:00 – 141.0 ug/m3 avg WS 23.8 km/h avg WD 274.9 deg PM2.5 Hourly Exceedence 10:00-11:00 – 295.6ug/m3 avg WS 29.7 km/h avg WD 269.7deg PM2.5 Hourly Exceedence 11:00-12:00 – 336.7 ug/m3 avg WS 30.8 km/h avg WD 270.2 deg PM2.5 Hourly Exceedence 12:00-13:00 – 130.2.0 ug/m3 avg WS 27.2 km/h avg WD 274.8 deg PM2.5 Hourly Exceedence 14:00-15:00 – 89.2.0 ug/m3 avg WS 24.6 km/h avg WD 276.0 deg  PM2.5 24 Exceedence May 3 0:00-24:00 –60.2 ug/m3 avg WS 20.1km/h avg WD 275.1 deg			
<b>Immediate Actions Taken:</b>			
Called in as soon as alarms came in. Alarms came in 2 days later due to datalogger alarming troubles...issue to be looked in to.			
<b>Follow-up Details:</b>			
<b>Actions Taken to Prevent Reoccurrence (if any):</b>			
Not Applicable			
<b>Additional Actions Required (if any):</b>			
Not applicable			
<b>Report Completed By:</b>	May 5, 2011	<b>Date Report Submitted:</b>	
<b>7-Day Letter Due Date:</b>	May 10,2011		

## *Air Monitoring Directive Exceedence Report*

Alberta Environment  
 Environmental Service Response Centre  
 111 Twin Atria Building  
 4999 – 98<sup>th</sup> Avenue  
 Edmonton, Alberta T6B 2X3  
 Phone: (780) 422-4505  
 Fax: (780) 427-1044

<b>Reference Number:</b>	247449	<b>Reported To (AENV Contact):</b>	Karla
<b>Date &amp; Time Incident Reported to AENV:</b>	May 23, 2011 @ 5:20 MST	<b>Reported By:</b>	Steve P.
<b>Reported on Behalf of:</b>	PAZA	<b>Approval Number (if applicable):</b>	
<b>Location(s) of Incident:</b>	Beaverlodge		
<b>Start Date &amp; Time of Incident:</b>	May 23, 2011 @5:00	<b>End Date &amp; Time of Incident:</b>	May 23, 2011 @11:00
<b>Details of Exceedence:</b>			
PM2.5 Hourly Exceedence 5:00-6:00 – 118.6 ug/m3 avg WS 8.9 km/h avg WD 40 deg PM2.5 Hourly Exceedence 6:00-7:00 – 148.5 ug/m3 avg WS 9.5 km/h avg WD 40.6 deg PM2.5 Hourly Exceedence 7:00-8:00 – 133.8 ug/m3 avg WS 13.2 km/h avg WD 53.9 deg PM2.5 Hourly Exceedence 8:00-9:00 – 113.8 ug/m3 avg WS 19.1 km/h avg WD 58.7 deg PM2.5 Hourly Exceedence 9:00-10:00 – 92.0 ug/m3 avg WS 17.1 km/h avg WD 51.6 deg PM2.5 Hourly Exceedence 10:00-11:00 – 83.3 ug/m3 avg WS 14.9 km/h avg WD 40.9 deg  PM2.5 24hr Exceedence 0:00-24:00– 50.7 ug/m3 avg WS 10.3 km/h avg WD 75.1 deg			
<b>Immediate Actions Taken:</b>			
Called in to AENV. Weather report states lots of smoke in the area			
<b>Follow-up Details:</b>			
<b>Actions Taken to Prevent Reoccurrence (if any):</b>			
Not Applicable			
<b>Additional Actions Required (if any):</b>			
Not applicable			
Report Completed By:	May 23, 2011	Date Report Submitted:	
<b>7-Day Letter Due Date:</b>	May 30,2011		

## *Air Monitoring Directive Exceedence Report*

Alberta Environment  
 Environmental Service Response Centre  
 111 Twin Atria Building  
 4999 – 98<sup>th</sup> Avenue  
 Edmonton, Alberta T6B 2X3  
 Phone: (780) 422-4505  
 Fax: (780) 427-1044

<b>Reference Number:</b>	247453	<b>Reported To (AENV Contact):</b>	Steven
<b>Date &amp; Time Incident Reported to AENV:</b>	May 23, 2011 @ 10:00 MST	<b>Reported By:</b>	Steve P.
<b>Reported on Behalf of:</b>	PAZA	<b>Approval Number (if applicable):</b>	
<b>Location(s) of Incident:</b>	Evergreen Park		
<b>Start Date &amp; Time of Incident:</b>	May 23, 2011 @5:00	<b>End Date &amp; Time of Incident:</b>	May 23, 2011 @8:00
<b>Details of Exceedence:</b>			
<p>PM2.5 Hourly Exceedence 5:00-6:00 – 84.5 ug/m3 avg WS 7.2 km/h avg WD 73.8 deg          PM2.5 Hourly Exceedence 6:00-7:00 – 111.0 ug/m3 avg WS 7.3 km/h avg WD 72.2 deg          PM2.5 Hourly Exceedence 7:00-8:00 – 87.5 ug/m3 avg WS 6.2 km/h avg WD 72.9 deg</p>			
<b>Immediate Actions Taken:</b>			
Called in to AENV. Weather report states lots of smoke in the area			
<b>Follow-up Details:</b>			
<b>Actions Taken to Prevent Reoccurrence (if any):</b>			
Not Applicable			
<b>Additional Actions Required (if any):</b>			
Not applicable			
<b>Report Completed By:</b>	May 23, 2011	<b>Date Report Submitted:</b>	
<b>7-Day Letter Due Date:</b>	May 30,2011		

## *Air Monitoring Directive Exceedence Report*

Alberta Environment  
 Environmental Service Response Centre  
 111 Twin Atria Building  
 4999 – 98<sup>th</sup> Avenue  
 Edmonton, Alberta T6B 2X3  
 Phone: (780) 422-4505  
 Fax: (780) 427-1044

<b>Reference Number:</b>	247452	<b>Reported To (AENV Contact):</b>	Steven
<b>Date &amp; Time Incident Reported to AENV:</b>	May 23, 2011 @ 5:20 MST	<b>Reported By:</b>	Steve P.
<b>Reported on Behalf of:</b>	PAZA	<b>Approval Number (if applicable):</b>	
<b>Location(s) of Incident:</b>	Henry Pirker		
<b>Start Date &amp; Time of Incident:</b>	May 23, 2011 @5:00	<b>End Date &amp; Time of Incident:</b>	May 23, 2011 @9:00
<b>Details of Exceedence:</b>			
PM2.5 Hourly Exceedence 5:00-6:00 – 88.8 ug/m3 avg WS 14.1 km/h avg WD 68.5 deg PM2.5 Hourly Exceedence 6:00-7:00 – 131.8 ug/m3 avg WS 15.4 km/h avg WD 67.5 deg PM2.5 Hourly Exceedence 7:00-8:00 – 108.1 ug/m3 avg WS 13.2 km/h avg WD 67.2 deg PM2.5 Hourly Exceedence 8:00-9:00 – 83.6 ug/m3 avg WS 12.2 km/h avg WD 64.4 deg  PM2.5 24hour Exceedence 0:00-24:00 – 37.3 ug/m3 avg WS 7.2 km/h avg WD 116.8 deg			
<b>Immediate Actions Taken:</b>			
Called in to AENV. Weather report states lots of smoke in the area.			
<b>Follow-up Details:</b>			
<b>Actions Taken to Prevent Reoccurrence (if any):</b>			
Not Applicable			
<b>Additional Actions Required (if any):</b>			
Not applicable			
<b>Report Completed By:</b>	May 23, 2011	<b>Date Report Submitted:</b>	
<b>7-Day Letter Due Date:</b>	May 30,2011		

## *Air Monitoring Directive Exceedence Report*

Alberta Environment  
 Environmental Service Response Centre  
 111 Twin Atria Building  
 4999 – 98<sup>th</sup> Avenue  
 Edmonton, Alberta T6B 2X3  
 Phone: (780) 422-4505  
 Fax: (780) 427-1044

<b>Reference Number:</b>	247448	<b>Reported To (AENV Contact):</b>	Karla
<b>Date &amp; Time Incident Reported to AENV:</b>	May 23, 2011 @ 5:20 MST	<b>Reported By:</b>	Steve P.
<b>Reported on Behalf of:</b>	PAZA	<b>Approval Number (if applicable):</b>	
<b>Location(s) of Incident:</b>	Smoky Heights		
<b>Start Date &amp; Time of Incident:</b>	May 23, 2011 @4:00	<b>End Date &amp; Time of Incident:</b>	May 23, 2011 @6:00
<b>Details of Exceedence:</b>			
<p>PM2.5 Hourly Exceedence 4:00-5:00 – 124.0 ug/m3 avg WS 19.7 km/h avg WD 48.1 deg          PM2.5 Hourly Exceedence 5:00-6:00 – 95.6.0 ug/m3 avg WS 19.3 km/h avg WD 44.8 deg</p>			
<b>Immediate Actions Taken:</b>			
<p>Called in to AENV. Weather report states lots of smoke in the area.</p>			
<b>Follow-up Details:</b>			
<p></p>			
<b>Actions Taken to Prevent Reoccurrence (if any):</b>			
<p>Not Applicable</p>			
<b>Additional Actions Required (if any):</b>			
<p>Not applicable</p>			
<b>Report Completed By:</b>	May 23, 2011	<b>Date Report Submitted:</b>	
<b>7-Day Letter Due Date:</b>	May 30,2011		



## *Air Monitoring Directive Exceedence Report*

Alberta Environment  
 Environmental Service Response Centre  
 111 Twin Atria Building  
 4999 – 98<sup>th</sup> Avenue  
 Edmonton, Alberta T6B 2X3  
 Phone: (780) 422-4505  
 Fax: (780) 427-1044

<b>Reference Number:</b>	247726	<b>Reported To (AENV Contact):</b>	Kristi
<b>Date &amp; Time Incident Reported to AENV:</b>	May 28, 2011 @ 12:00	<b>Reported By:</b>	Steve P.
<b>Reported on Behalf of:</b>	PAZA	<b>Approval Number (if applicable):</b>	
<b>Location(s) of Incident:</b>	Beaverlodge		
<b>Start Date &amp; Time of Incident:</b>	May 28, 2011 @7:00	<b>End Date &amp; Time of Incident:</b>	May 28, 2011 @15:00
<b>Details of Exceedence:</b>			
PM 2.5 Hourly Exceedence 7:00-8:00= 119.0 ug/m3,WS 8.2km/h, WD 71.4 degrees PM 2.5 Hourly Exceedence 8:00-9:00= 161.9 ug/m3,WS 4.9 km/h, WD 118.5 degrees PM 2.5 Hourly Exceedence 9:00-10:00= 179.0 ug/m3,WS 5.0 km/h, WD 155.7 degrees PM 2.5 Hourly Exceedence 10:00-11:00= 181.3 ug/m3,WS 3.6 km/h, WD 251.8 degrees PM 2.5 Hourly Exceedence 11:00-12:00= 163.1 ug/m3,WS 3.6 km/h, WD 10.0 degrees PM 2.5 Hourly Exceedence 12:00-13:00= 132.0 ug/m3,WS 7.7 km/h, WD 55.8 degrees PM 2.5 Hourly Exceedence 14:00-15:00= 87.3 ug/m3,WS 10.3km/h, WD 177.2 degrees  PM 2.5 24Hr Exceedence 0:00-24:00= 87.3 ug/m3,WS 10.3 km/h, WD 57.6 degrees			
<b>Immediate Actions Taken:</b>			
Called in to AENV and made a reference number. All parameter and hourly exceedences will be placed into this 7-day letter and updated by AENV			
<b>Follow-up Details:</b>			
<b>Actions Taken to Prevent Reoccurrence (if any):</b>			
Not Applicable			
<b>Additional Actions Required (if any):</b>			
Not applicable			
Report Completed By:	May 28, 2011	Date Report Submitted:	
<b>7-Day Letter Due Date:</b>	June 4,2011		

## *Air Monitoring Directive Exceedence Report*

Alberta Environment  
 Environmental Service Response Centre  
 111 Twin Atria Building  
 4999 – 98<sup>th</sup> Avenue  
 Edmonton, Alberta T6B 2X3  
 Phone: (780) 422-4505  
 Fax: (780) 427-1044

<b>Reference Number:</b>	247727	<b>Reported To (AENV Contact):</b>	Kristi
<b>Date &amp; Time Incident Reported to AENV:</b>	May 28, 2011 @ 12:00	<b>Reported By:</b>	Steve P.
<b>Reported on Behalf of:</b>	PAZA	<b>Approval Number (if applicable):</b>	
<b>Location(s) of Incident:</b>	Evergreen Park		
<b>Start Date &amp; Time of Incident:</b>	May 28, 2011 @6:00	<b>End Date &amp; Time of Incident:</b>	May 28, 2011 @23:00
<b>Details of Exceedence:</b>			
PM 2.5 Hourly Exceedence 6:00-7:00= 85.6ug/m3,WS 4.2km/h, WD 87.0 degrees PM 2.5 Hourly Exceedence 7:00-8:00= 140.8 ug/m3,WS 3.8 km/h, WD 69.9 degrees PM 2.5 Hourly Exceedence 8:00-9:00= 166.3 ug/m3,WS 2.0 km/h, WD 74.5 degrees PM 2.5 Hourly Exceedence 9:00-10:00= 145.8 ug/m3,WS 1.7 km/h, WD 65.7 degrees PM 2.5 Hourly Exceedence 10:00-11:00= 159.1 ug/m3,WS 5.5 km/h, WD 59.5 degrees PM 2.5 Hourly Exceedence 11:00-12:00= 115.7 ug/m3,WS 6.2 km/h, WD 73.3 degrees PM 2.5 Hourly Exceedence 13:00-14:00= 83.2 ug/m3,WS 7.2 km/h, WD 52.9 degrees PM 2.5 Hourly Exceedence 23:00-0:00= 113.1 ug/m3,WS 0.8 km/h, WD 265.1 degrees  PM 2.5 24 Hr Exceedence 0:00-24:00= 67.6 ug/m3,WS 3.9 km/h, WD 100.3 degrees			
<b>Immediate Actions Taken:</b>			
Called in to AENV. Weather report states lots of smoke in the area			
<b>Follow-up Details:</b>			
<b>Actions Taken to Prevent Reoccurrence (if any):</b>			
Not Applicable			
<b>Additional Actions Required (if any):</b>			
Not applicable			
Report Completed By:	May 28, 2011	Date Report Submitted:	
<b>7-Day Letter Due Date:</b>	June 4,2011		

## *Air Monitoring Directive Exceedence Report*

Alberta Environment  
 Environmental Service Response Centre  
 111 Twin Atria Building  
 4999 – 98<sup>th</sup> Avenue  
 Edmonton, Alberta T6B 2X3  
 Phone: (780) 422-4505  
 Fax: (780) 427-1044

<b>Reference Number:</b>	247728	<b>Reported To (AENV Contact):</b>	Kristi
<b>Date &amp; Time Incident Reported to AENV:</b>	May 28, 2011 @ 12:00	<b>Reported By:</b>	Steve P.
<b>Reported on Behalf of:</b>	PAZA	<b>Approval Number (if applicable):</b>	
<b>Location(s) of Incident:</b>	Henry Pirker		
<b>Start Date &amp; Time of Incident:</b>	May 28, 2011 @6:00	<b>End Date &amp; Time of Incident:</b>	May 28, 2011 @16:00
<b>Details of Exceedence:</b>			
PM 2.5 Hourly Exceedence 6:00-7:00= 126.5 ug/m3,WS 5.2 km/h, WD 77.6 degrees PM 2.5 Hourly Exceedence 7:00-8:00= 185.4 ug/m3,WS 2.3 km/h, WD 71.5 degrees PM 2.5 Hourly Exceedence 8:00-9:00= 231.1 ug/m3,WS 0.9 km/h, WD 86.2 degrees PM 2.5 Hourly Exceedence 9:00-10:00= 247.1 ug/m3,WS 0.9 km/h, WD 89.5 degrees PM 2.5 Hourly Exceedence 10:00-11:00= 234.9 ug/m3,WS 3.8 km/h, WD 97.6degrees PM 2.5 Hourly Exceedence 11:00-12:00= 197.2 ug/m3,WS 3.9 km/h, WD 87.5 degrees PM 2.5 Hourly Exceedence 14:00-15:00= 110.1 ug/m3,WS 8.4 km/h, WD 75.8degrees PM 2.5 Hourly Exceedence 15:00-16:00= 82.1 ug/m3,WS 4.6 km/h, WD 89.6 degrees  PM 2.5 24 Hr Exceedence 0:00-24:00= 90.6 ug/m3,WS 4.2 km/h, WD 82.2 degrees			
<b>Immediate Actions Taken:</b>			
Called in to AENV and made a reference number. All data to be inputted on 7-day letter. Forrest fires in the area the cause for the exceedences			
<b>Follow-up Details:</b>			
<b>Actions Taken to Prevent Reoccurrence (if any):</b>			
Not Applicable			
<b>Additional Actions Required (if any):</b>			
Not applicable			
Report Completed By:	May 28, 2011	Date Report Submitted:	
<b>7-Day Letter Due Date:</b>	June 4,2011		

## *Air Monitoring Directive Exceedence Report*

Alberta Environment  
 Environmental Service Response Centre  
 111 Twin Atria Building  
 4999 – 98<sup>th</sup> Avenue  
 Edmonton, Alberta T6B 2X3  
 Phone: (780) 422-4505  
 Fax: (780) 427-1044

<b>Reference Number:</b>	247729	<b>Reported To (AENV Contact):</b>	Kristi
<b>Date &amp; Time Incident Reported to AENV:</b>	May 28, 2011 @ 12:00	<b>Reported By:</b>	Steve P.
<b>Reported on Behalf of:</b>	PAZA	<b>Approval Number (if applicable):</b>	
<b>Location(s) of Incident:</b>	Smoky heights		
<b>Start Date &amp; Time of Incident:</b>	May 28, 2011 @5:00	<b>End Date &amp; Time of Incident:</b>	May 28, 2011 @13:00
<b>Details of Exceedence:</b>			
PM 2.5 Hourly Exceedence 5:00-6:00= 139.5 ug/m3,WS 6.0 km/h, WD 24.2 degrees PM 2.5 Hourly Exceedence 6:00-7:00= 117.2 ug/m3,WS 6.0 km/h, WD 2.5 degrees PM 2.5 Hourly Exceedence 7:00-8:00= 115.8 ug/m3,WS 7.4 km/h, WD 8.6 degrees PM 2.5 Hourly Exceedence 8:00-9:00= 113.8 ug/m3,WS 10.0 km/h, WD 22.4 degrees PM 2.5 Hourly Exceedence 9:00-10:00= 137.6 ug/m3,WS 10.3 km/h, WD 26.8 degrees PM 2.5 Hourly Exceedence 10:00-11:00= 153.5 ug/m3,WS 10.7 km/h, WD 32.6 degrees PM 2.5 Hourly Exceedence 11:00-12:00= 115.3 ug/m3,WS 11.9 km/h, WD 38.3 degrees PM 2.5 Hourly Exceedence 12:00-13:00= 83.7 ug/m3,WS 11.5 km/h, WD 61.2 degrees  PM 2.5 24 Hr Exceedence 0:00-24:00= 58.3 ug/m3,WS 9.2 km/h, WD 28.0 degrees			
<b>Immediate Actions Taken:</b>			
Called in to AENV. Weather report states lots of smoke in the area			
<b>Follow-up Details:</b>			
<b>Actions Taken to Prevent Reoccurrence (if any):</b>			
Not Applicable			
<b>Additional Actions Required (if any):</b>			
Not applicable			
Report Completed By:	May 28, 2011	Date Report Submitted:	
<b>7-Day Letter Due Date:</b>	June 4,2011		

# May 2011 Calibration Reports

**PAZA - Henry Pirker Station with the following calibrations:  
SO<sub>2</sub>, NO, NO<sub>2</sub>, NO<sub>x</sub>, O<sub>3</sub>, CO, THC, TRS**

**PAZA – Evergreen Park Station with the following calibrations:  
SO<sub>2</sub>, TRS**

**PAZA – Smoky Heights Station with the following calibrations:  
SO<sub>2</sub>, TRS**

**PAZA – Beaverlodge Station with the following calibrations:  
SO<sub>2</sub>, NO, NO<sub>2</sub>, NO<sub>x</sub>, O<sub>3</sub>**

**PAZA – Kinuso (Portable) Station with the following calibrations:  
SO<sub>2</sub>, TRS, NO, NO<sub>2</sub>, NO<sub>x</sub> & O<sub>3</sub>,**

**PAZA – Valleyview Station with the following calibrations:  
SO<sub>2</sub> & H<sub>2</sub>S**

# Calibration Report



Parameter SO2

Air Monitoring Network PAZA

## Station Information

Calibration Date	May 19, 2011	Previous Calibration	April 21, 2011
Station Number	1	Station Location	Henry Pirker
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
			<input type="checkbox"/> Other:
Start Time (MST)	8:35	End Time (MST)	10:30
Barometric Pressure	0.935 ATM	Station Temperature	20.0 Deg C
Calibrator	EnviroNics 6100	Serial Number	3474
Cal Gas Conc	50.6 ppb	Cal Gas Cert Date	4/6/2012
		Cal Gas Cylinder #	LL34002
DACS make	Focus AP1000	DACS serial No.	1
DACS voltage range	0 - 1 volt	DACS channel #	10
	Before		After
Calculated slope	1.000862	Calculated slope	0.994761
Calculated intercept	0.287816	Calculated intercept	1.222116
Analyzer make	TEI 43C	Analyzer serial #	610816292

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Background	8.6		8.5	
Coefficient	.809		.800	
Pressure	649.3	mm Hg	646.2	mm Hg
Flow	0.479	lpm	0.477	lpm
Lamp Voltage	44391	Hz	43721	Hz

## Calibration Data

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
4989	0.00	0.0	0.1	N/A
4989	39.83	400.8	402.6	0.9955
4989	19.90	201.0	199.3	1.0089
4989	9.93	100.5	99.2	1.0133
4989	0.00	0.0	0.1	As Found Zero
4989	39.83	400.8	400.4	As Found Span
Average Correction Factor				1.0059

Calculated value of As Found Response: 401.0 ppb      Percent Change of As Found: **-0.1%**

	before calibration		after calibration	
Auto zero	0.1	ppb	0.1	ppb
Auto span	241.8	ppb	234.7	ppb

Notes: Adjusted span

Calibration Performed By: Grover Christiansen

# Calibration Summary

Parameter SO2  
 Air Monitoring Network PAZA



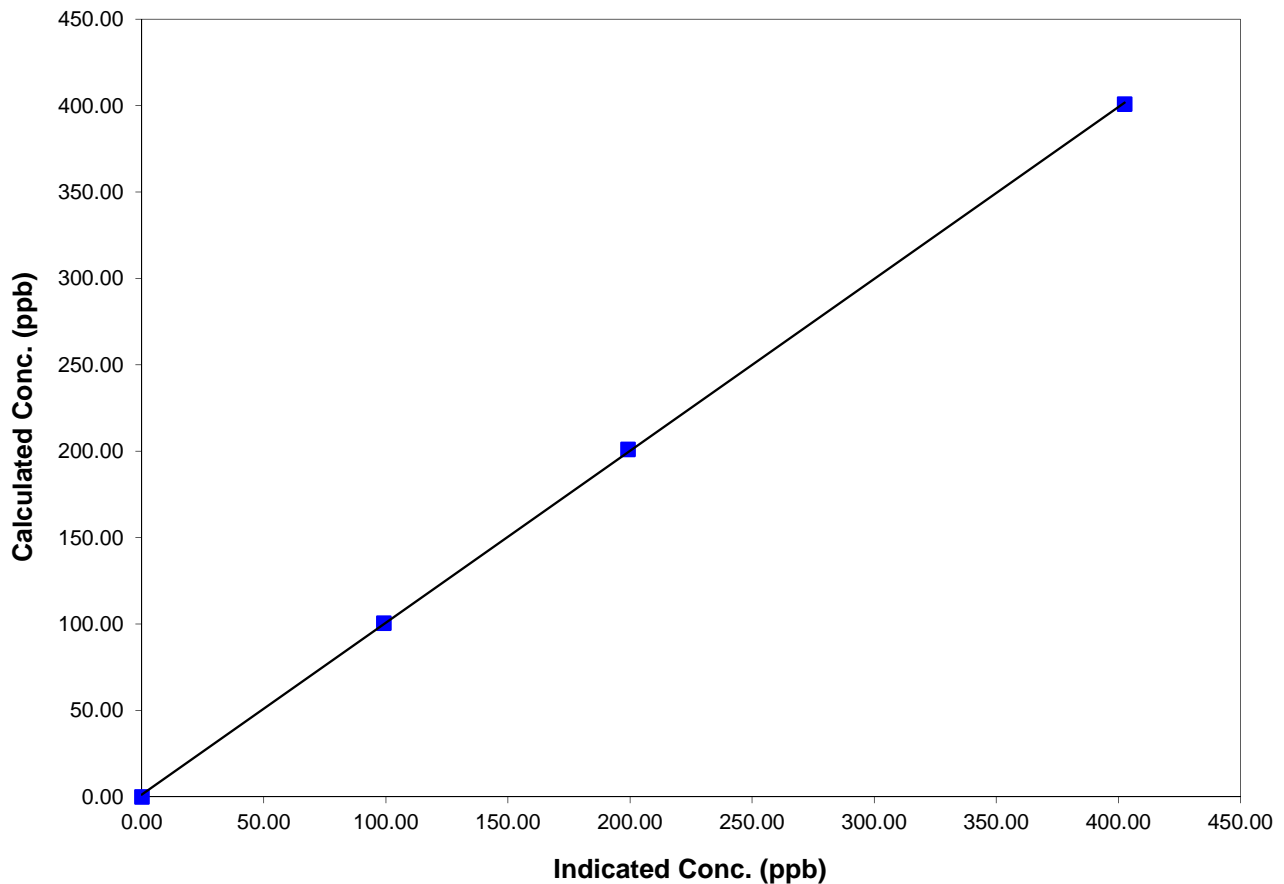
## Station Information

Calibration Date	May 19, 2011	Previous Calibration	April 21, 2011
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	8:35	End Time (MST)	10:30
Analyzer make/model	TEI 43C	Analyzer serial #	610816292

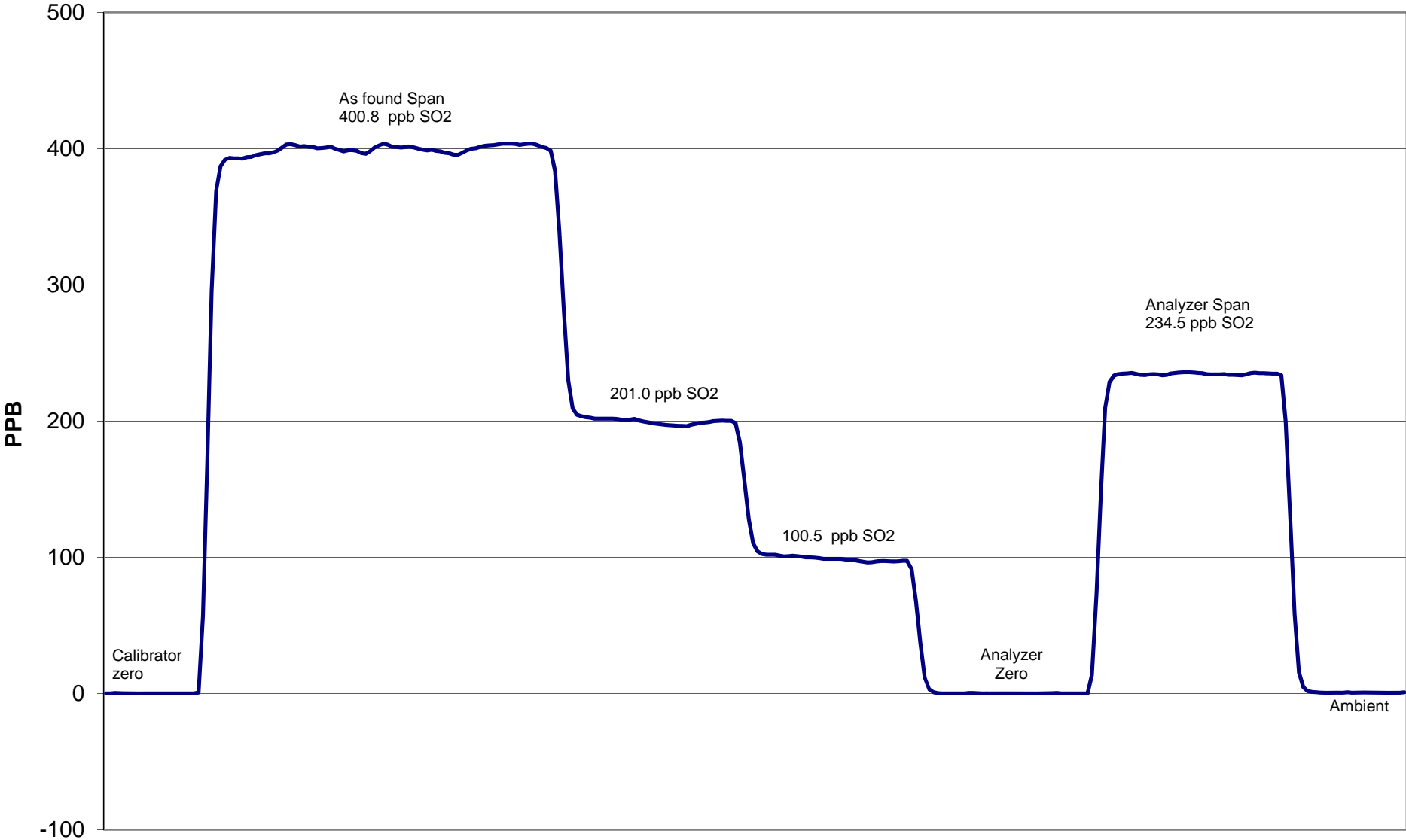
## Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.1	N/A	Correlation Coefficient	0.999938
400.8	402.6	0.9955		
201.0	199.3	1.0089	Slope	0.994761
100.5	99.2	1.0133		
			Intercept	1.222116

### SO2 Calibration Curve



# Henry Pirker SO<sub>2</sub> Calibration



May 19, 2011



# Calibration Report



Parameter TR3  
Air Monitoring Network

PAZA

## Station Information

Calibration Date	May 18, 2011	Previous Calibration	April 20, 2011
Station Number	1	Station Location	Henry Pirker
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
		<input type="checkbox"/> Other:	
Start Time (MST)	11:00	End Time (MST)	14:48
Barometric Pressure	0.925 ATM	Station Temperature	20.0 Deg C
Calibrator	EnviroNics 6100	Serial Number	3474
Cal Gas Conc	5.77 ppb	Cal Gas Expiry Date	9/3/2011
		Cal Gas Cylinder #	BLM001434
DACS make	Focus AP1000	DACS serial No.	1
DACS voltage range	0 - 1 volt	DACS channel #	9
	Before		After
Calculated slope	0.995695	Calculated slope	1.002645
Calculated intercept	0.216689	Calculated intercept	-0.054387
Analyzer make	TEI 45C	Analyzer serial #	630718528

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Coefficient	1.076		1.054	
Background	11.2		10.7	
Pressure	656.4	mm Hg	654.5	mm Hg
Flow	0.457	ccm	0.456	ccm
Lamp Voltage	823	v	823	v

## Calibration Data

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
4988	0.00	0.00	-0.04	N/A
4989	69.77	79.58	79.49	1.0012
4989	34.88	40.06	39.83	1.0058
4989	8.96	10.34	10.58	0.9779
4989	0.00	0.00	-0.04	As Found Zero
4989	69.77	79.58	81.11	As Found Span
Average Correction Factor				0.9950

Calculated value of As Found Response: 81.0 ppb      Percent Change of As Found: -1.8%

	before calibration		after calibration	
Auto zero	-0.29	ppb	-0.02	ppb
Auto span	33.60	ppb	31.90	ppb

Notes: Last point interrupted by daily span.  
Slow response first point. Drop to zero & re-do.

Calibration Performed By: Grover Christiansen

# Calibration Summary

Parameter                      **TRS**  
 Air Monitoring Network                      **PAZA**

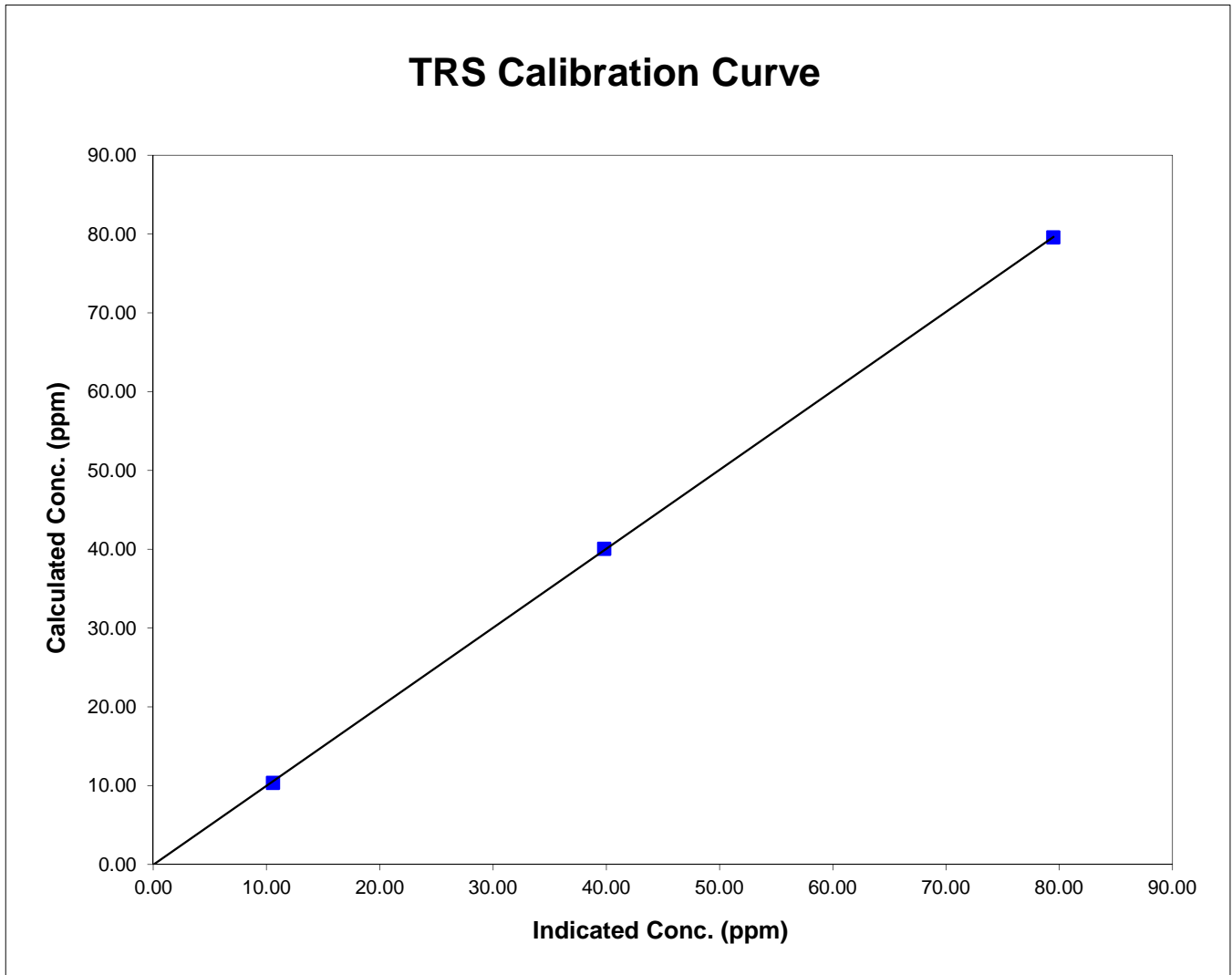


### Station Information

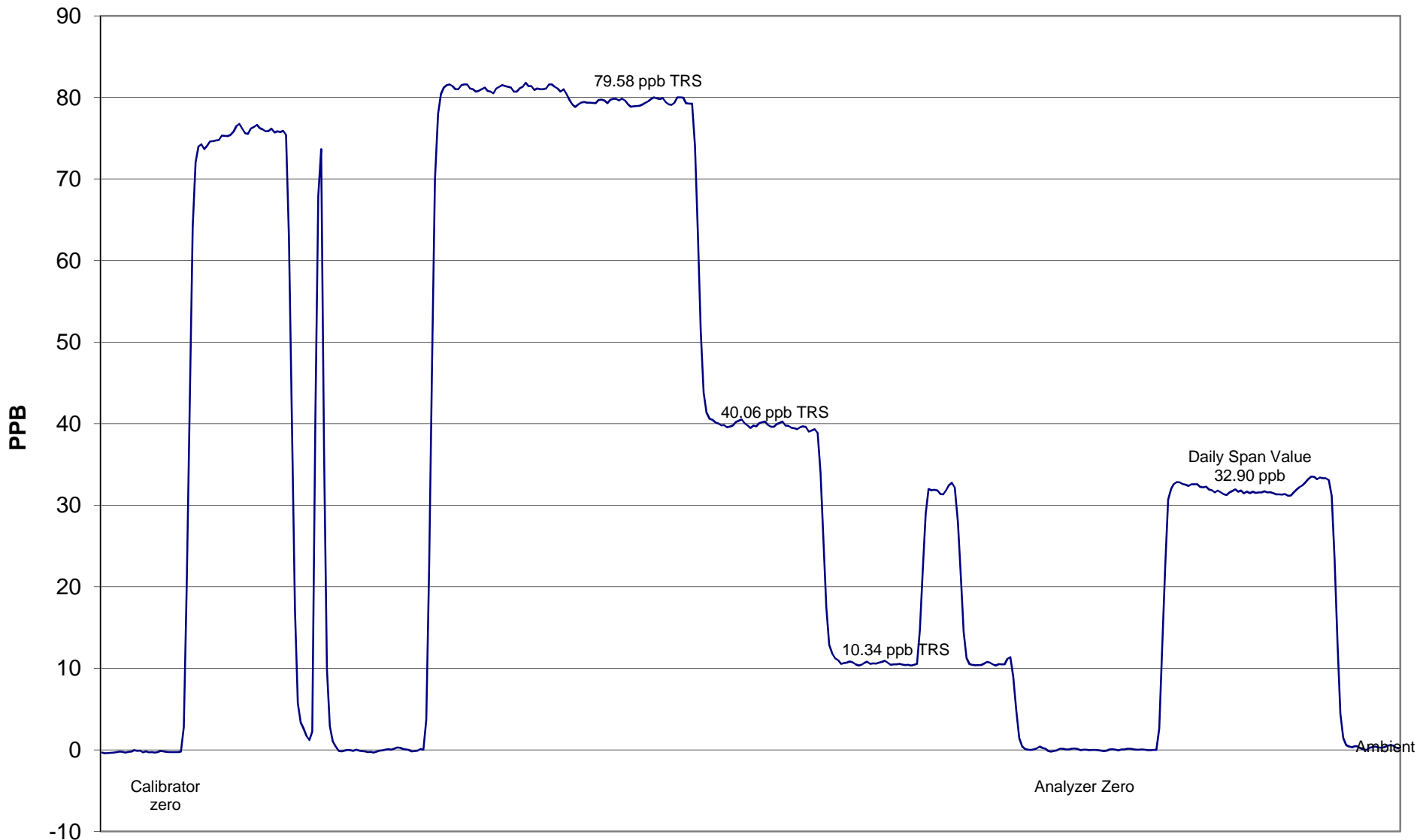
Calibration Date	<u>                    </u> May 18, 2011	Previous Calibration	<u>                    </u> April 20, 2011
Station Number	<u>                    </u> 1	Station Location	<u>                    </u> Henry Pirker
Start Time (MST)	<u>                    </u> 11:00	End Time (MST)	<u>                    </u> 14:48
Analyzer make/model	<u>                    </u> TEI 45C	Analyzer serial #	<u>                    </u> 630718528

### Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	-0.035	N/A		
79.579	79.486	1.0012	Correlation Coefficient	0.999977
40.060	39.829	1.0058		
10.344	10.578	0.9779	Slope	1.002645
			Intercept	-0.054387



# Henry Pirker TRS Calibration



May 18, 2011

# Calibration Report

Parameter

NO<sub>x</sub>-NO-NO<sub>2</sub>

Air Monitoring Network

PAZA



## Station Information

Calibration Date	May 19, 2011	Previous Calibration	April 21, 2011
Station Number	1	Station Location	Henry Pirker
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Installation	<input type="checkbox"/> Removal
Start Time (MST)	8:45	End Time (MST)	11:50
Barometric Pressure	0.935 Atm	Station Temperature	20.0 Deg C
Calibrator	EnviroNics	Serial Number	3474
NO Cal Gas Conc	51.4 ppm	Cal Gas Expiry Date	April 6, 2012
NOx Cal Gas Conc	51.4 ppm	Cal Gas Serial #	LL34002

## DACS Information

DACS make Focus AP1000 DACS serial No. \_\_\_\_\_

Parameter		NO2	NOx	NO
Before	Data Slope	1.000724	1.003147	1.003435
	Data Offset	-0.376700	-2.275240	-2.475293
After	Data Slope	1.001883	1.004320	1.002970
	Data Offset	0.119096	-2.501050	-2.477180
Channel #		8	6	7
Voltage Range		0 - 5 VDC	0 - 5 VDC	0 - 5 VDC

## Analyzer Information

Analyzer make/model TEI 42C Analyzer serial # 508011073

Test Point	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
NO offset	10.2	mV	9.9	mV
NOx bkgnd	10.3	mV	10.1	mV
NO coefficient	0.759		0.739	
NOx coefficient	0.998		0.998	
NO2 conv temp	318.0	Deg C	318.0	Deg C
PMT Temp	-2.5	Deg C	-2.5	Deg C
PMT Volt	-786.0	mV	-786.0	mV
R Cell Press	174.7	in Hg	175.2	in Hg
Sample Flow	0.764	ccm	0.768	ccm

Notes: Slight span adjustment made.

# Calibration Report

Parameter **NOx-NO-NO<sub>2</sub>**  
 Air Monitoring Network **PAZA**



## Station Information

Calibration Date: **May 19, 2011** Station Location: **Henry Pirker**

## Calibration Data

	Dilution flow rate (ccm)	Source gas flow rate (ccm)	Calculated NOx conc (ppb)	Calculated NO conc (ppb)	Calculated NO2 conc (ppb)	Indicated NOx conc (ppb)	Indicated NO conc (ppb)	Indicated NO2 conc (ppb)	NOx Correction factor	NO Correction factor
zero	4989	0.00	0.0	0.0	0.0	0.2	0.0	0.1	N/A	N/A
1	4989	39.83	407.1	407.1	0.0	406.7	407.1	-0.4	1.0011	1.0001
2	4989	19.90	204.2	204.2	0.0	206.9	207.3	-0.5	0.9870	0.9850
3	4989	9.93	102.1	102.1	0.0	106.6	106.8	-0.3	0.9581	0.9559
AFZ	4989	0.00	0.0	0.0	0.0	0.2	0.0	0.1	0.0000	0.0000
AFS	4989	39.83	407.1	407.1	0.0	417.5	417.7	-0.2	0.9750	0.9745
Average Correction Factor									0.9821	0.9803

As Found Concentrations: **NO<sub>x</sub>= 415.1** **NO= 415.3** As Found Percent Change **NO<sub>x</sub>= 2.0%** **NO= 2.0%**

## GPT Calibration Data

Dilution Flow 4989 ccm Source Gas Flow 39.85 ccm

O3 Setpoint (ppb)	Indicated NO high point (ppb)	Indicated NO drop conc (ppb)	Calculated NO2 conc (ppb)	Indicated NOx conc (ppb)	Indicated NO conc (ppb)	Indicated NO2 conc (ppb)	NOx Correction factor	NO Correction factor	NO2 Correction factor	Converter Efficiency
0	0.0	0.0	0.0	0.2	0.0	0.1	N/A	N/A	N/A	N/A
NO point	407.4	407.4	0.0	406.7	407.4	-0.8	1.0019	1.0000	N/A	N/A
300	407.4	184.2	223.2	406.8	184.2	222.8	1.0015	1.0000	1.0019	99.8%
200	407.4	257.4	150.1	406.9	257.4	149.7	1.0012	1.0000	1.0026	99.7%
100	407.4	328.6	78.8	406.8	328.6	78.2	1.0016	1.0000	1.0077	99.2%
Average Correction Factor							1.0014	1.0000	1.0041	99.6%

## AIC Data

Parameter	Previous calibration				Current calibration			
	NOx	NO2	NO		NOx	NO2	NO	
Auto zero	-0.1	0.0	0.0	ppb	0.1	0.1	0.0	ppb
Auto span	168.4	169.5	1.2	ppb	160.5	159.6	1.0	ppb

Calibration Performed By: Grover Christiansen

# Calibration Summary

Parameter NO<sub>2</sub>

Air Monitoring Network PAZA



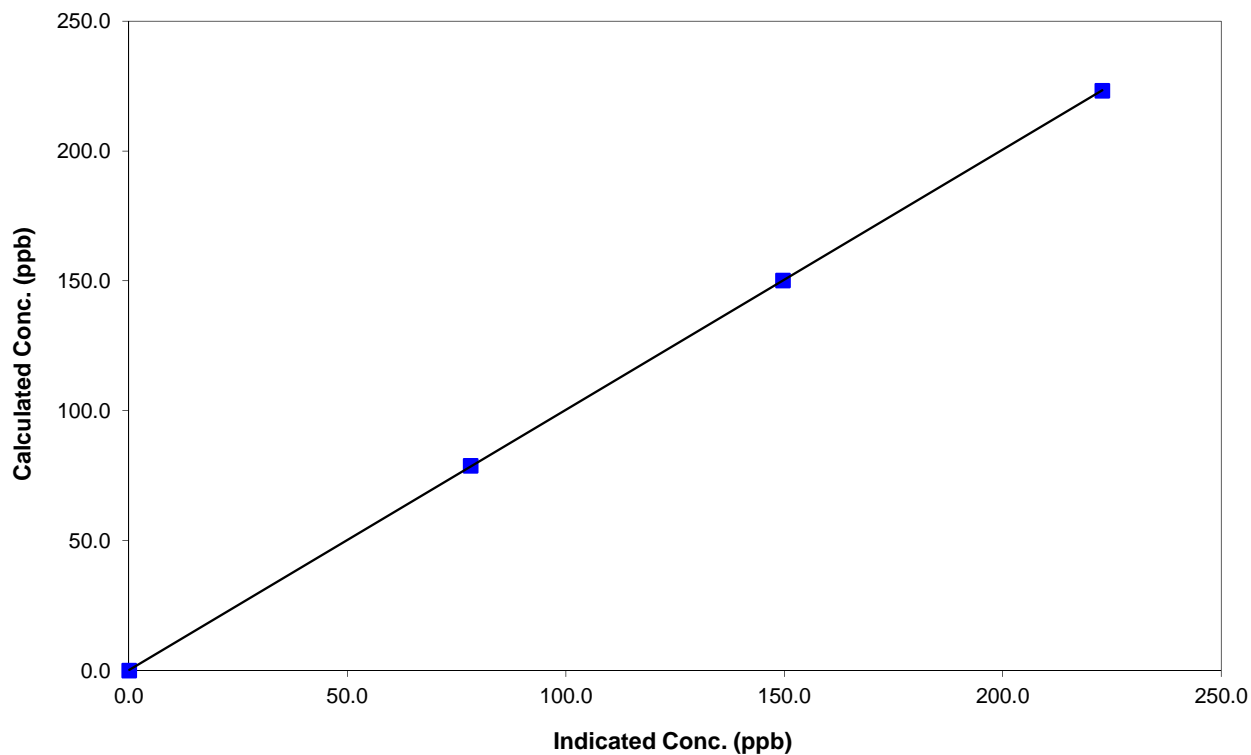
## Station Information

Calibration Date	May 19, 2011	Previous Calibration	April 21, 2011
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	8:45	End Time (MST)	11:50
Analyzer make	TEI 42C	Analyzer serial #	508011073

## Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.1	N/A	Correlation Coefficient	0.999994
223.2	222.8	1.0019		
150.1	149.7	1.0026	Slope	1.001883
78.8	78.2	1.0077		
			Intercept	0.119096

### NO<sub>2</sub> Calibration Curve



# Calibration Summary



Parameter NO<sub>x</sub>

Air Monitoring Network PAZA

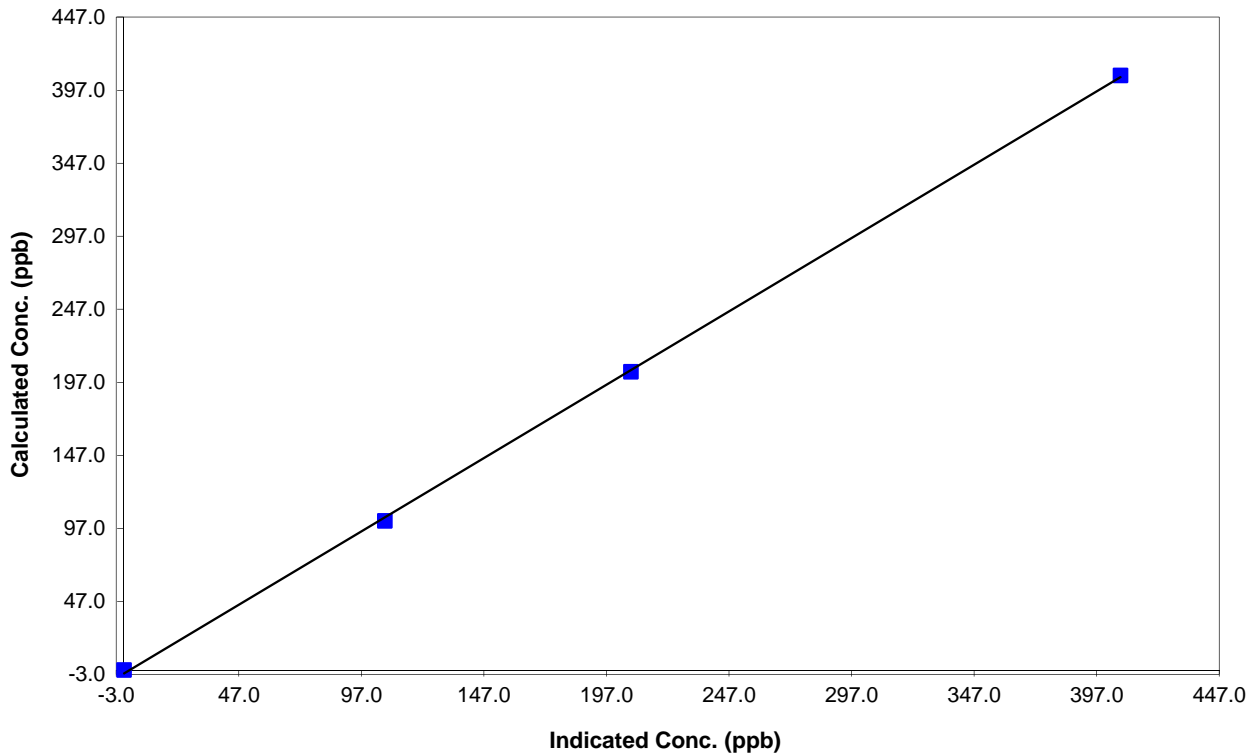
## Station Information

Calibration Date	May 19, 2011	Previous Calibration	April 21, 2011
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	8:45	End Time (MST)	11:50
Analyzer make	TEI 42C	Analyzer serial #	508011073

## Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.2	N/A	Correlation Coefficient	0.999847
407.1	406.7	1.0011		
204.2	206.9	0.9870		
102.1	106.6	0.9581	Slope	1.004320
			Intercept	-2.501050

## NO<sub>x</sub> Calibration Curve



# Calibration Summary



Parameter NO

Air Monitoring Network PAZA

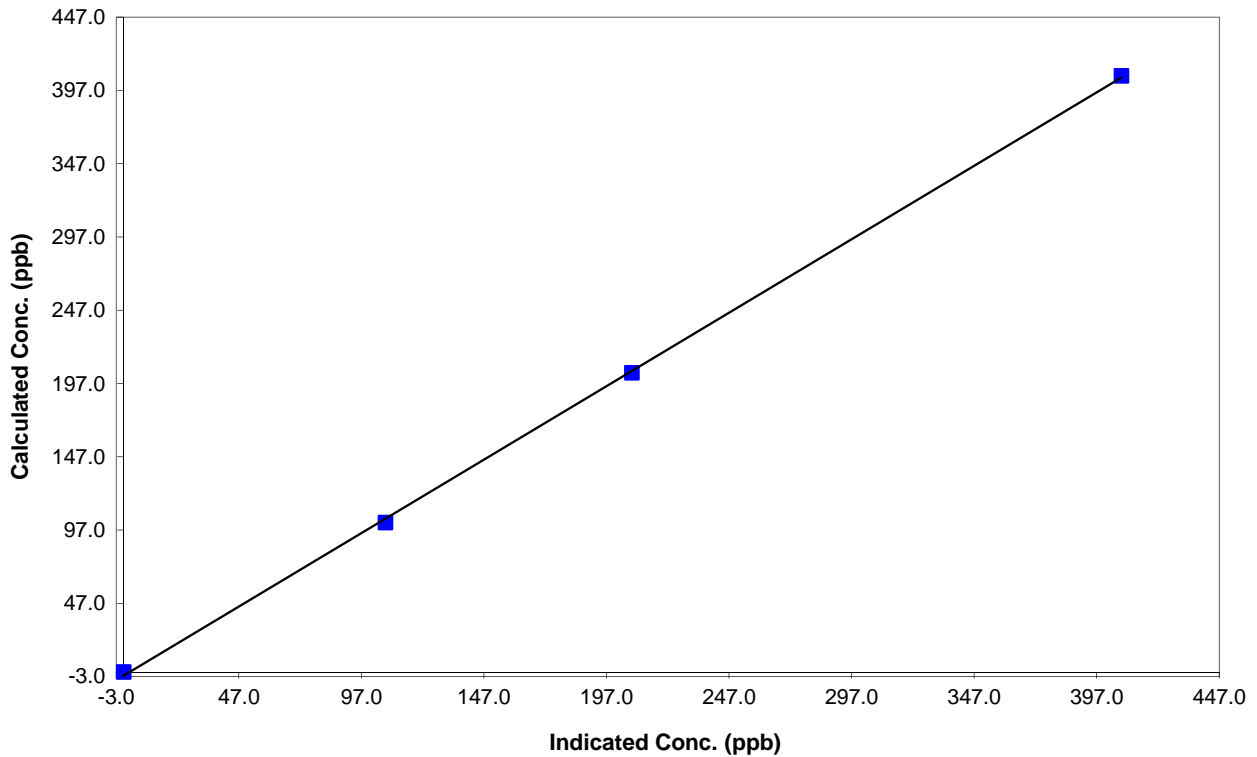
## Station Information

Calibration Date	May 19, 2011	Previous Calibration	April 21, 2011
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	8:45	End Time (MST)	11:50
Analyzer make	TEI 42C	Analyzer serial #	508011073

## Calibration Data

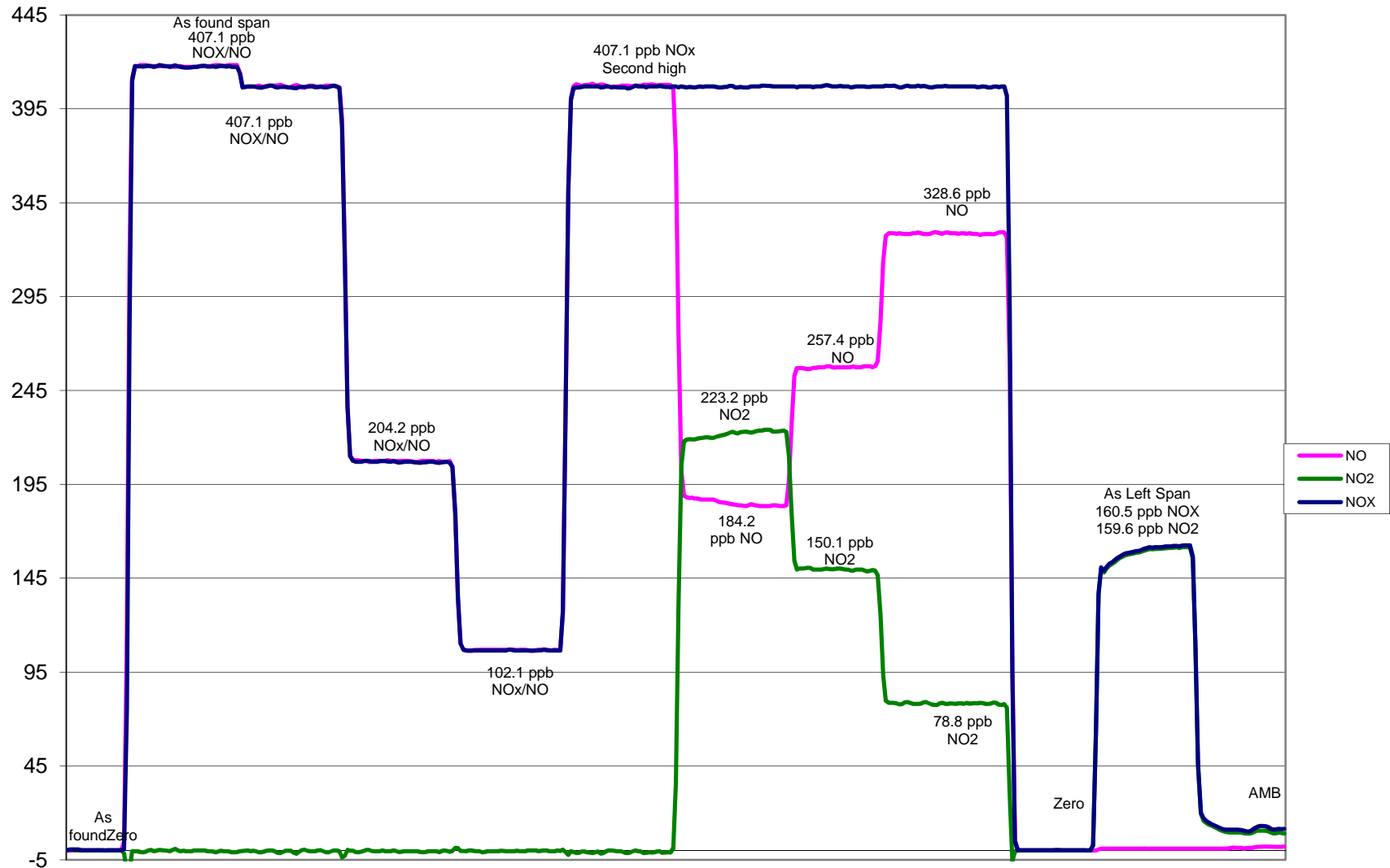
Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.0	N/A	Correlation Coefficient	0.999824
407.1	407.1	1.0001		
204.2	207.3	0.9850		
102.1	106.8	0.9559	Slope	1.002970
			Intercept	-2.477180

## NO Calibration Curve





# Henry Pirker NO<sub>x</sub> Calibration



May 19, 2011

# Calibration Report



Parameter 03

Air Monitoring Network PAZA

## Station Information

Calibration Date	<u>May 19, 2011</u>	Previous Calibration	<u>April 21, 2011</u>
Station Number	<u>1</u>	Station Location	<u>Henry Pirker</u>
Reason:	<u>Routine</u>	<u>Install</u>	<u>Removal</u>
		<u>Other:</u>	
Start Time (MST)	<u>10:30</u>	End Time (MST)	<u>12:50</u>
Barometric Pressure	<u>0.935 atm</u>	Station Temperature	<u>20.0 Deg C</u>
Calibrator	<u>Envionics 6100</u>	Serial Number	<u>3474</u>
Cal Gas Concentration	<u>NA</u>	Cal Gas Expiry Date	<u>NA</u>
DACS make	<u>Focus AP1000</u>	DACS serial No.	<u>45269</u>
DACS voltage range	<u>0 - 1 volt</u>	DACS channel #	<u>5</u>
	<u>Before</u>		<u>After</u>
Calculated slope	<u>0.995187</u>	Calculated slope	<u>1.007170</u>
Calculated intercept	<u>-0.127780</u>	Calculated intercept	<u>-0.547157</u>
Analyzer make	<u>TECO 49C</u>	Analyzer serial #	<u>607415761</u>

	before		after	
Concentration range	<u>500</u>	<u>ppb</u>	<u>500</u>	<u>ppb</u>
offset	<u>-0.6</u>	<u>ppb</u>	<u>-0.6</u>	<u>ppb</u>
slope	<u>1.011</u>		<u>1.011</u>	
O3 Lamp temp	<u>71.1</u>	<u>Deg C</u>	<u>71.1</u>	<u>Deg C</u>
Intensities	<u>83702/73235</u>	<u>mV</u>	<u>83134/73092</u>	<u>mV</u>
Pressure	<u>706.1</u>	<u>inches Hg</u>	<u>706.3</u>	<u>inches Hg</u>
Flow A	<u>0.731</u>	<u>ccm</u>	<u>0.731</u>	<u>ccm</u>
Flow B	<u>0.747</u>	<u>ccm</u>	<u>0.747</u>	<u>ccm</u>

## Calibration Data

Referenced concentration (ppb)	Dilution air flow rate (cc/min)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
0	4989	0.0	0.2	N/A
300	4989	223.2	222.0	1.0055
200	4989	150.1	149.6	1.0032
100	4989	78.8	79.2	0.9946
0	4989	0.0	0.2	As found zero
300	4989	223.2	221.7	As found span
Average Correction Factor				1.0011

Calculated value of As Found Response: 220.3 ppm      Percent Change of As Found: -1.3%

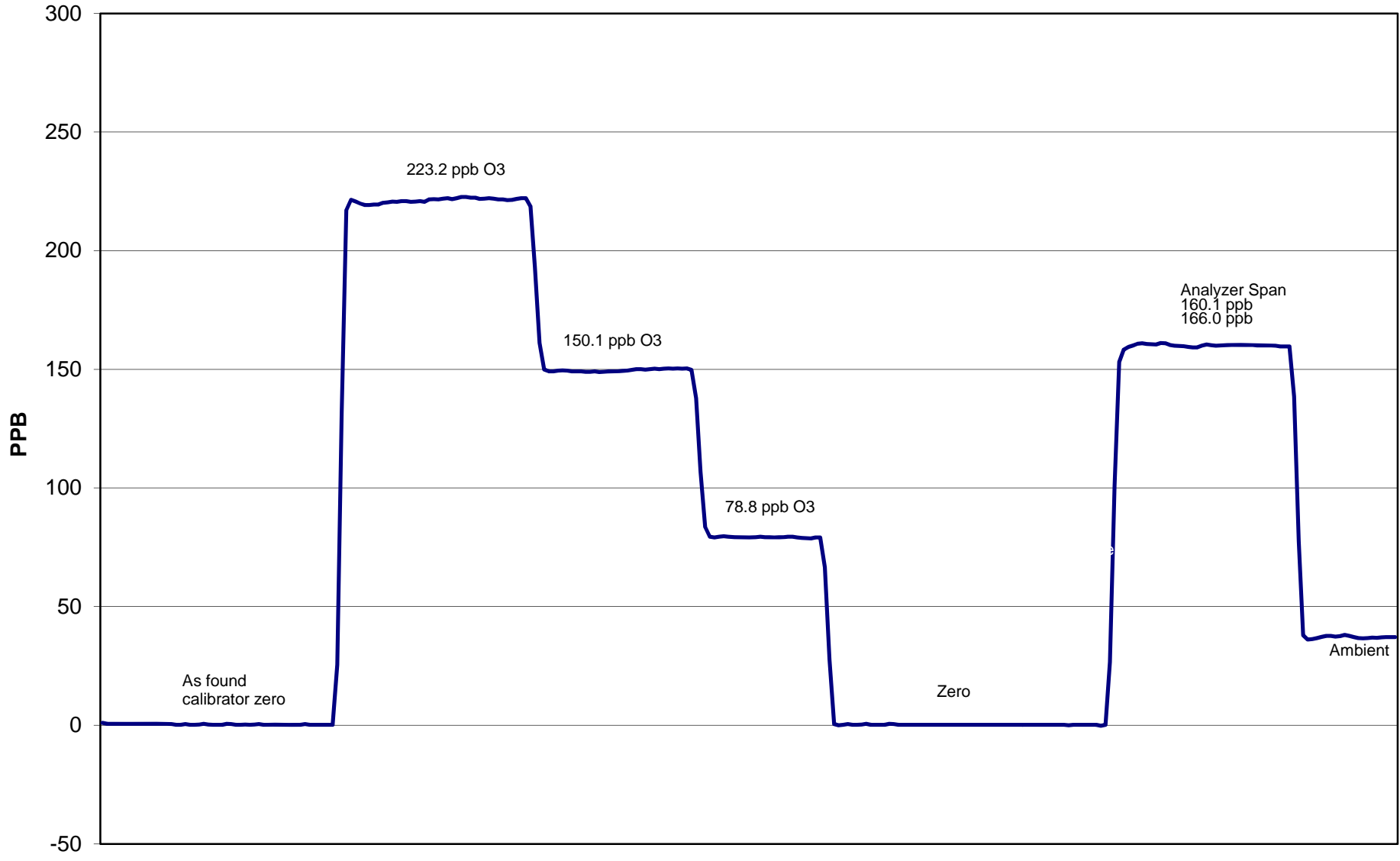
	before calibration		after calibration	
Auto zero	<u>0.3</u>	<u>ppb</u>	<u>0.3</u>	<u>ppb</u>
Auto span	<u>163.8</u>	<u>ppb</u>	<u>160.1</u>	<u>ppb</u>

Notes: \_\_\_\_\_  
\_\_\_\_\_

Calibration Performed By: Grover Christiansen



# Henry Pirker O<sub>3</sub> Calibration



May 19, 2011

# Calibration Report



Parameter CO

Air Monitoring Network PAZA

## Station Information

Calibration Date	May 18, 2011	Previous Calibration	April 20, 2011
Station Number	1	Station Location	Henry Pirker
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
		<input type="checkbox"/> Other:	
Start Time (MST)	8:00	End Time (MST)	10:30
Barometric Pressure	0.925 ATM	Station Temperature	20.0 Deg C
Calibrator	EnviroNics 6100	Serial Number	3474
Cal Gas Conc	3000 ppm	Cal Gas Expiry Date	AUG 28/05
		Cal Gas Cylinder #	AAL20565
DACS make	Focus AP1000	DACS serial No.	1
DACS voltage range	0 - 1 volt	DACS channel #	9
	Before		After
Calculated slope	1.009126	Calculated slope	1.007291
Calculated intercept	-0.547081	Calculated intercept	-0.595508
Analyzer make	TEI Model 48C	Analyzer serial #	508011062

	before		after	
Concentration range	0 - 50	ppm	0 - 50	ppm
CO span setting	1.077		1.077	
CO zero setting	0.884		0.884	
Sample pressure	683.6	mm Hg	683.5	mm Hg
Sample Flow	1.140	LPM	1.140	LPM

## Calibration Data

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4988	0.00	0.00	0.51	N/A
4988	39.84	23.77	24.15	0.9844
4988	19.90	11.92	12.47	0.9561
4988	9.93	5.96	6.59	0.9047
4988	0.00	0.00	0.51	As Found Zero
4988	39.84	23.77	24.15	As Found Span
Average Correction Factor				0.9484

Calculated value of As Found Response: 23.306 ppm      Percent Change of As Found: 2.0%

	before calibration		after calibration	
Auto zero	0.03	ppm	0.03	ppm
Auto span	19.47	ppm	19.36	ppm

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Calibration Performed By: Grover Christiansen

# Calibration Summary



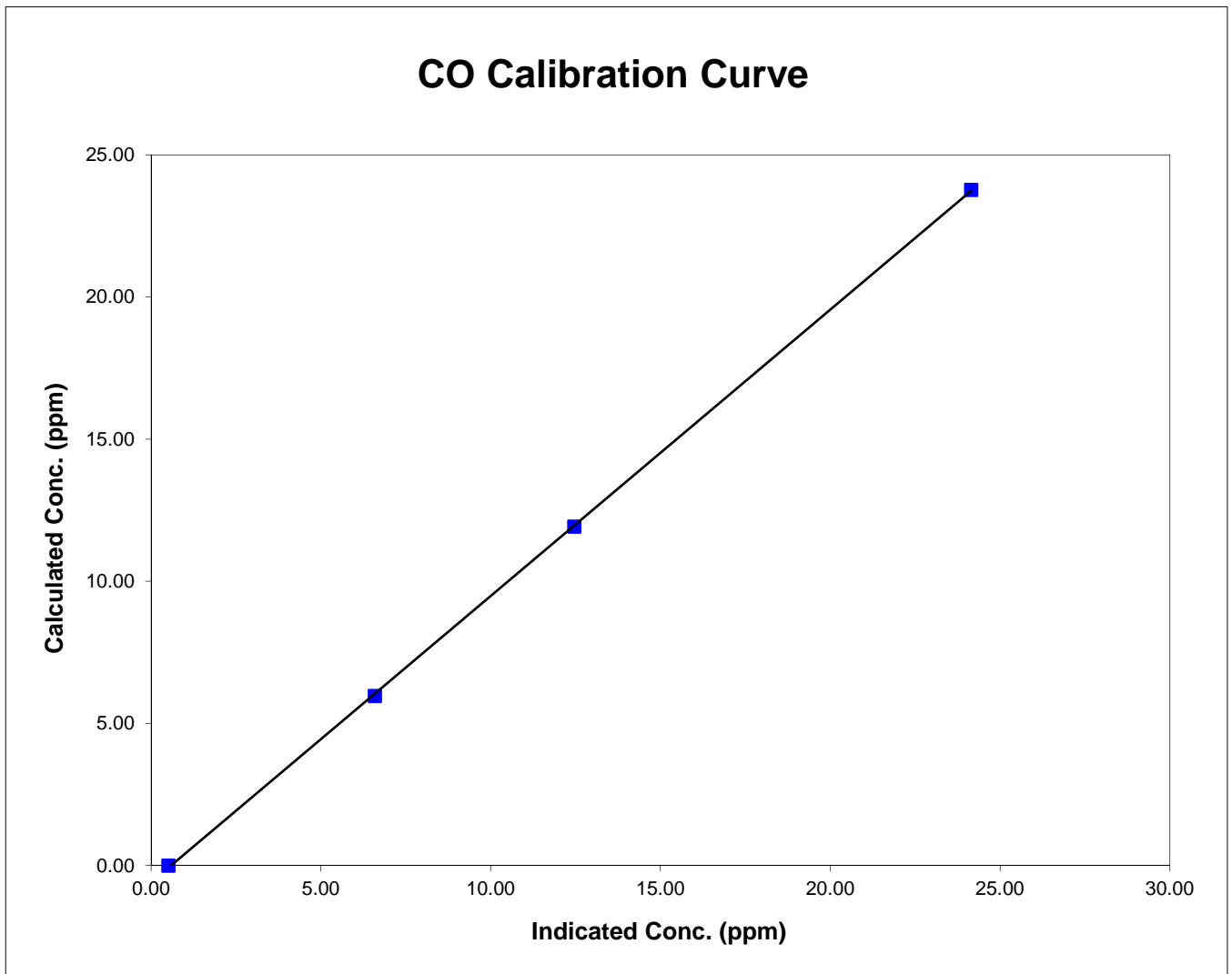
Parameter CO  
 Air Monitoring Network PAZA

### Station Information

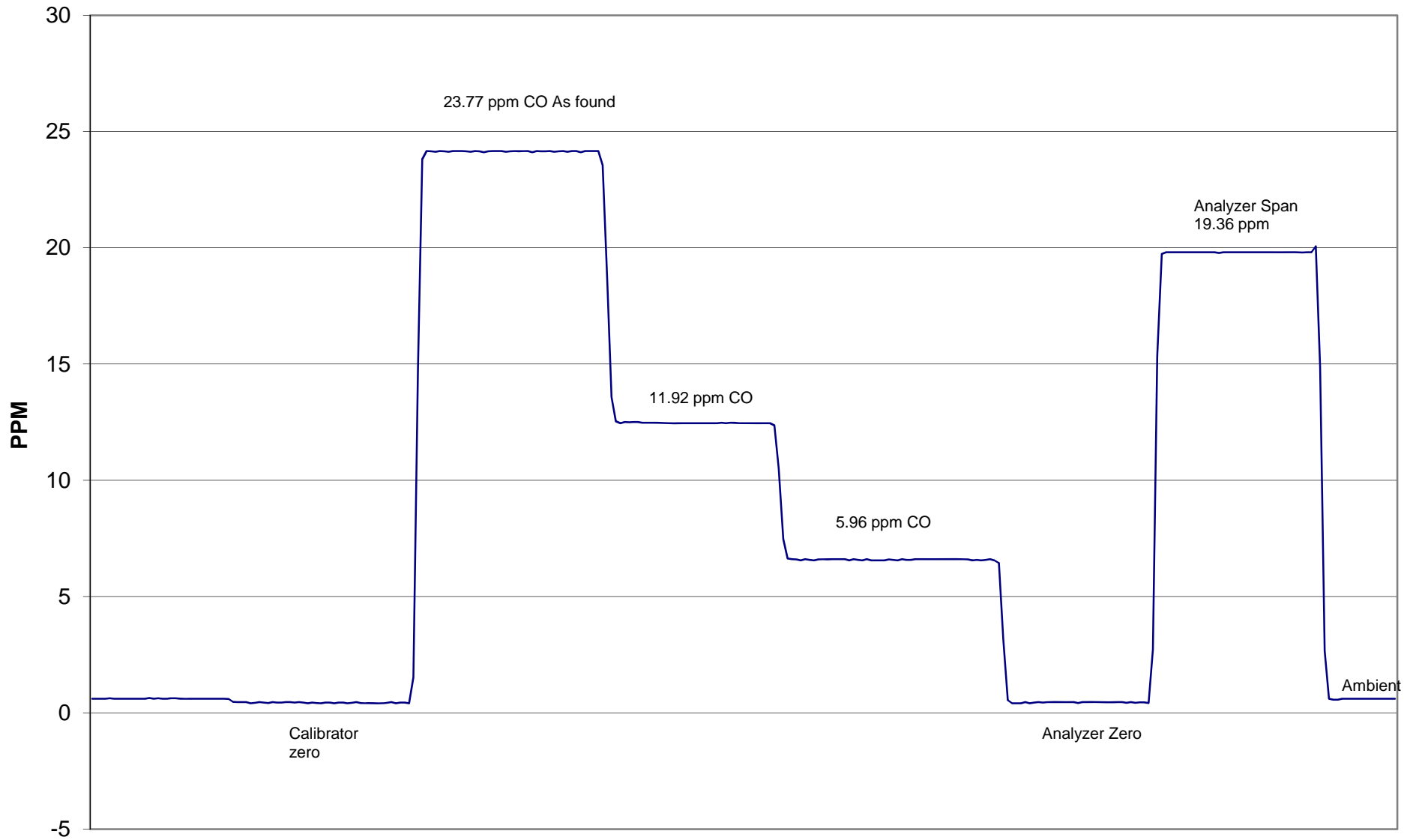
Calibration Date	May 18, 2011	Previous Calibration	April 20, 2011
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	8:00	End Time (MST)	10:30
Analyzer make/model	TEI Model 48C	Analyzer serial #	508011062

### Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	0.511	N/A		
23.772	24.149	0.9844	Correlation Coefficient	0.999947
11.921	12.468	0.9561		
5.960	6.588	0.9047	Slope	1.007291
			Intercept	-0.595508



# Henry Pirker CO Calibration



May 18, 2011

# Calibration Report



Parameter THC  
 Air Monitoring Network PAZA

## Station Information

Calibration Date	May 18, 2011	Previous Calibration	April 20, 2011
Station Number	1	Station Location	Henry Pirker
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
			<input type="checkbox"/> Other:
Start Time (MST)	9:45	End Time (MST)	11:40
Barometric Pressure	0.923 ATM	Station Temperature	20.0 Deg C
Calibrator	EnviroNics 6100	Serial Number	3474
Cal Gas Concentration	701 ppm CH4/ 299 ppm C3H8	Cal Gas Expiry Date	2/4/2010
Cal Gas CH4 equiv	1523.25 ppm	Cal Gas Cylinder #	ALM 004476
DACS make	Focus AP1000	DACS serial No.	1
DACS voltage range	0 - 1 volt	DACS channel #	9
	<u>Before</u>		<u>After</u>
Calculated slope	1.058697	Calculated slope	1.053992
Calculated intercept	0.152195	Calculated intercept	0.142356
Analyzer make	TEI Model 51C-LT	Analyzer serial #	51CLT-79009-390

	before		after	
Concentration range	0 - 25	ppm	0 - 25	ppm
THC sample pressure	6.50	psi	6.50	psi
THC span counts	9617	capture	9616	capture
THC zero counts	448	capture	447	capture

## Calibration Data

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4988	0.00	0.00	-0.14	N/A
4988	69.75	21.01	19.82	1.0601
4988	29.87	9.07	8.40	1.0792
4988	9.92	3.02	2.78	1.0861
4988	0.00	0.00	-0.14	As Found Zero
4988	69.75	21.01	19.82	As Found Span
Average Correction Factor				1.0751

Calculated value of As Found Response: 21.280 ppm      Percent Change of As Found: **-1.3%**

	before calibration		after calibration	
Auto zero	0.10	ppm	0.00	ppm
Auto span	22.27	ppm	23.13	ppm

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Calibration Performed By: Grover Christiansen



# Calibration Summary



Parameter THC  
 Air Monitoring Network PAZA

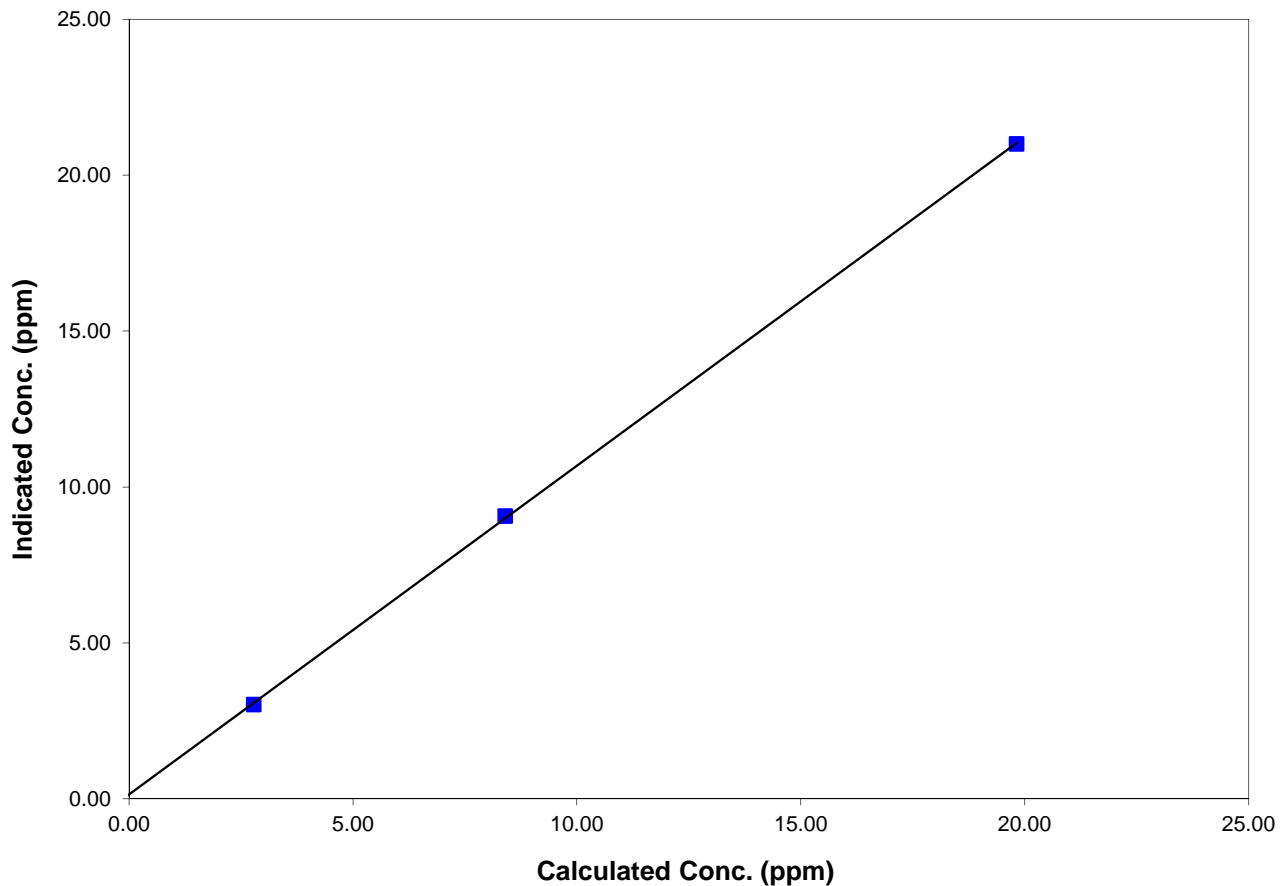
### Station Information

Calibration Date	<u>May 18, 2011</u>	Previous Calibration	<u>April 20, 2011</u>
Station Number	<u>1</u>	Station Location	<u>Henry Pirker</u>
Start Time (MST)	<u>9:45</u>	End Time (MST)	<u>11:40</u>
Analyzer make/model	<u>TEI Model 51C-LT</u>	Analyzer serial #	<u>51CLT-79009-390</u>

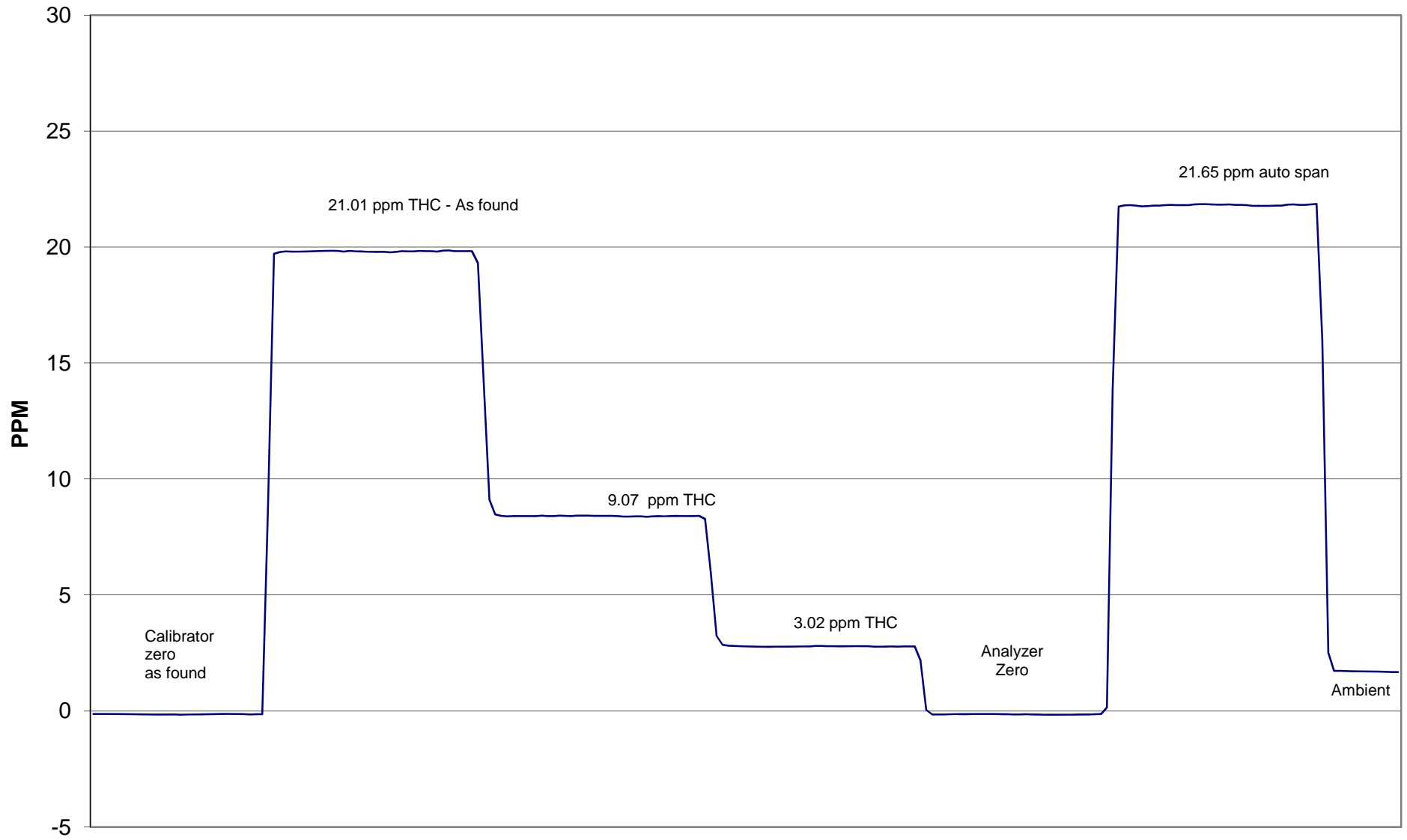
### Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	-0.140	N/A	Correlation Coefficient	0.999969
21.007	19.816	1.0601		
9.067	8.402	1.0792		
3.023	2.784	1.0861		
			Slope	1.053992
			Intercept	0.142356

### THC Calibration Curve



# Henry Pirker THC Calibration



May 18, 2011

# Calibration Report



Parameter SO<sub>2</sub>

Air Monitoring Network PAZA

## Station Information

Calibration Date	May 24, 2011	Previous Calibration	April 13, 2011
Station Number	2	Station Location	Evergreen Park
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
		<input type="checkbox"/> Other:	
Start Time (MST)	9:05	End Time (MST)	11:42
Barometric Pressure	0.932 ATM	Station Temperature	20.0 Deg C
Calibrator	EnviroNics 6100	Serial Number	3474
Cal Gas Concentration	50.6 ppm	Cal Gas Expiry Date	4/6/2012
Correction factor	0.031681	Cal Gas Cylinder #	SGAL3245
DACS make	Focus AP1000	DACS serial No.	52620
DACS voltage range	0 - 5 volt	DACS channel #	6
	<u>Before</u>		<u>After</u>
Calculated slope	1.002660	Calculated slope	0.991592
Calculated intercept	0.161642	Calculated intercept	1.499893
Analyzer make	Teco 43i	Analyzer serial #	701120008

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Background	11.2		11.2	
coefficient	1.09		1.09	
Lamp Voltage	828	volts	831	volts
Chamber Temp	45.1	Deg C	45.2	Deg C
Perm Gas Temp	45	Deg C	45	Deg C
Pressure	673.1	mm Hg	676.2	mm Hg
Sample Flow	0.458	ccm	0.461	ccm
Lamp Intensity	89	%	90	%

Dilution air flow rate (cc/min)	Corrected gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4989	0.0	0.00	0.4	N/A
4989	39.83	400.8	403.5	0.9933
4989	19.91	201.1	200.8	1.0018
4989	9.96	100.8	98.0	1.0292
	0.0			
4989	0.0	0.0	0.4	As Found Zero
4989	39.83	400.8	403.5	As Found Span
Average Correction Factor				1.0081

Calculated value of As Found Response: 404.260 ppm      Percent Change of As Found: **-0.9%**

	before calibration		after calibration	
Auto zero	0.7	ppm	0.6	ppm
Auto span	286.9	ppm	292.7	ppm

Notes:

Calibration Performed By: Grover Christiansen

# Calibration Summary



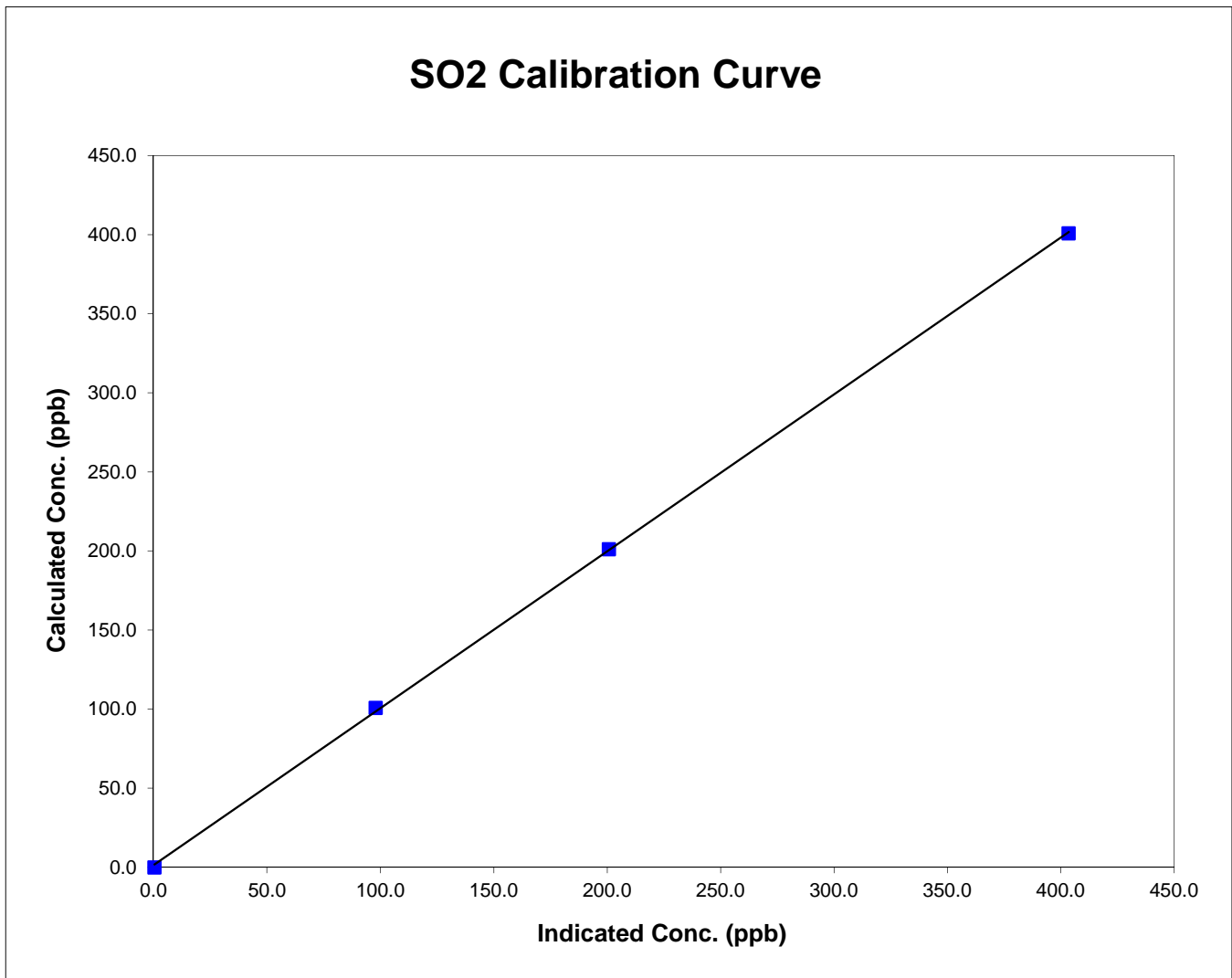
Parameter SO2  
 Air Monitoring Network PAZA

### Station Information

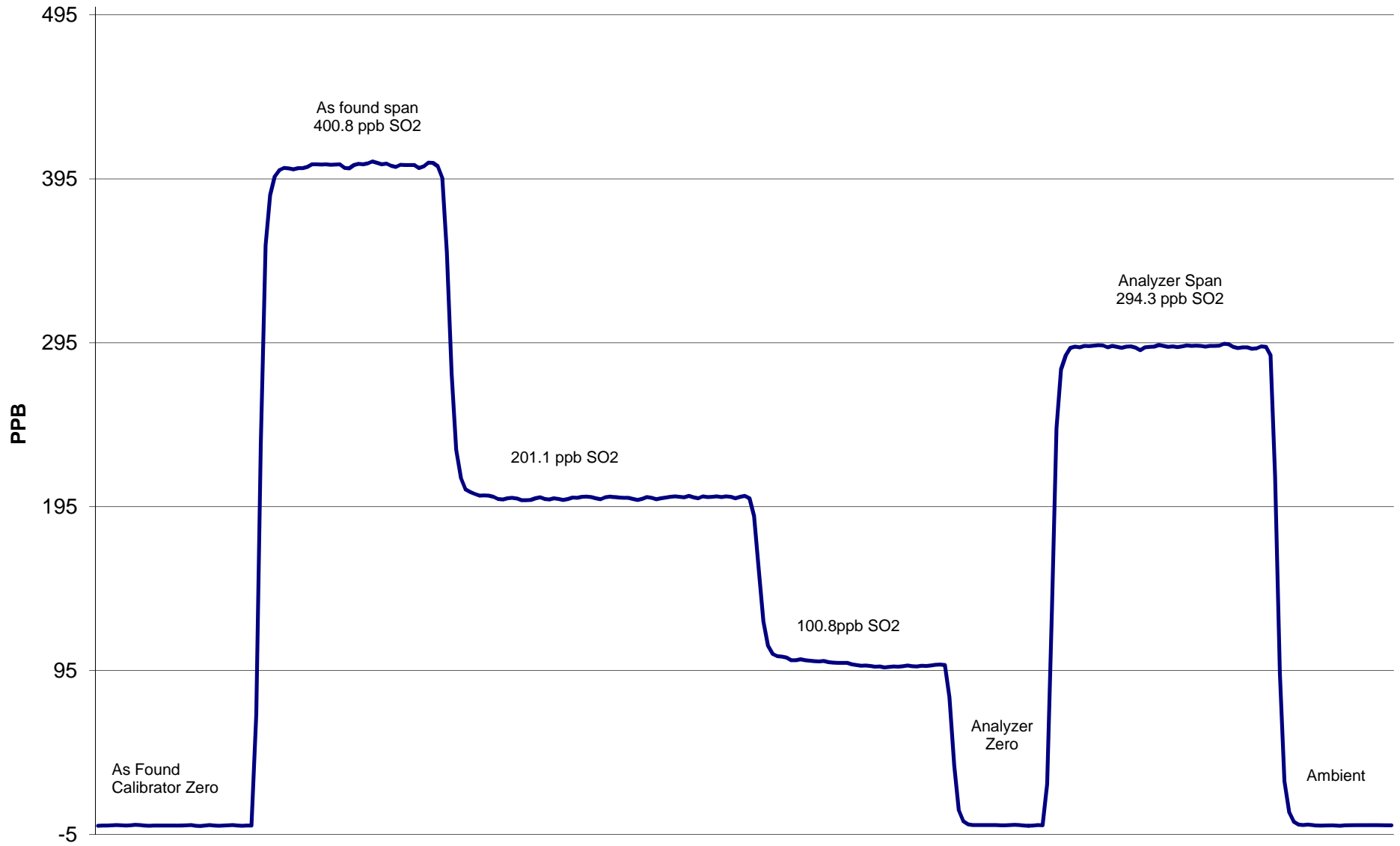
Calibration Date	May 24, 2011	Previous Calibration	April 13, 2011
Station Number	2	Station Location	Evergreen Park
Start Time (MST)	9:05	End Time (MST)	11:42
Analyzer make/model	Teco 43i	Analyzer serial #	701120008

### Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.4	N/A	Correlation Coefficient	0.999893
400.8	403.5	0.9933		
201.1	200.8	1.0018	Slope	0.991592
100.8	98.0	1.0292		
			Intercept	1.499893



# Evergreen Park SO<sub>2</sub> Calibration



May 24, 2011



## Calibration Summary



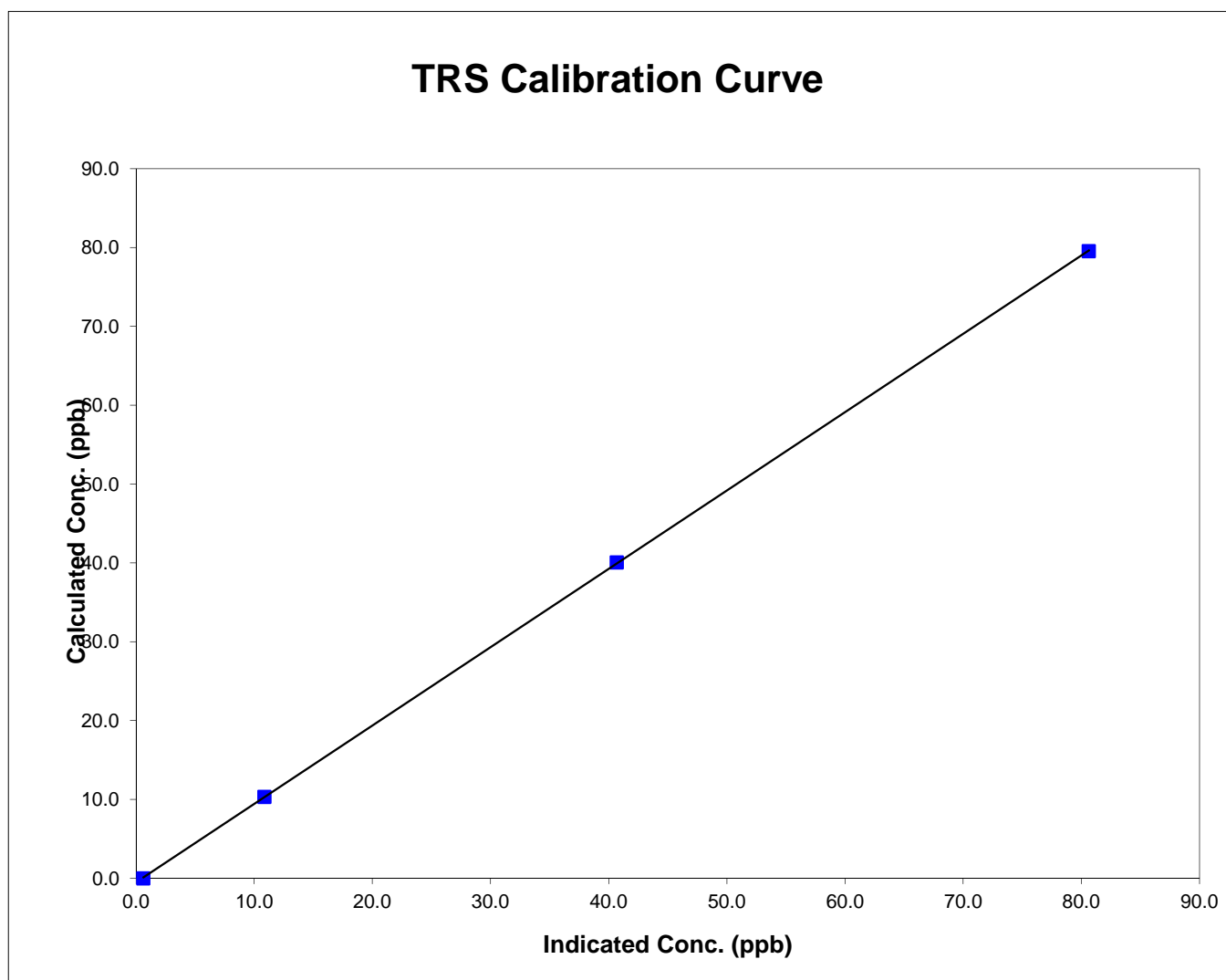
Parameter TRS  
Air Monitoring Network PAZA

### Station Information

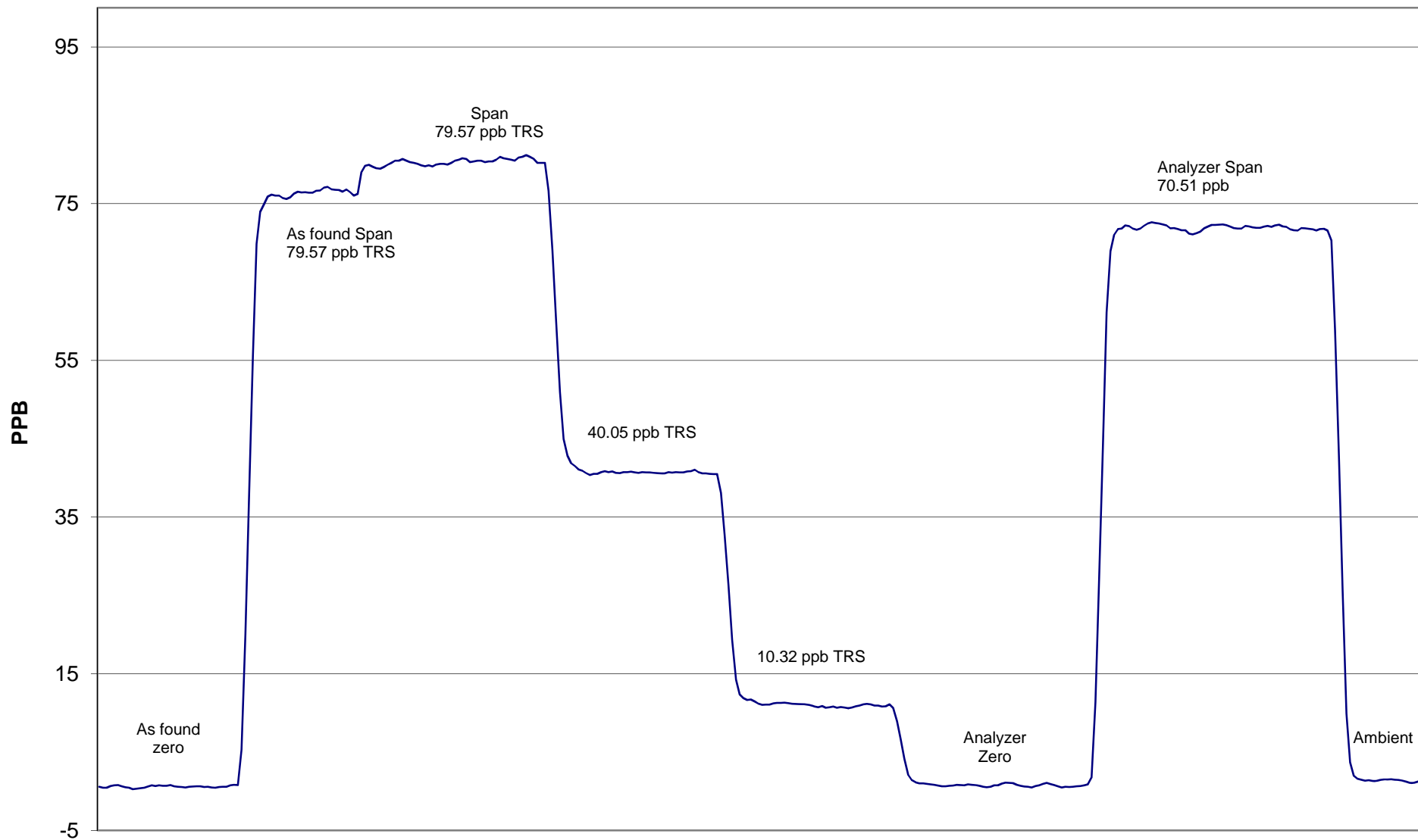
Calibration Date	May 24, 2011	Previous Calibration	April 13, 2011
Station Number	2	Station Location	Evergreen Park
Start Time (MST)	10:30	End Time (MST)	13:30
Analyzer make/model	TEI Model 43C	Analyzer serial #	436610005

### Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.6	N/A	Correlation Coefficient	0.999990
79.6	80.6	0.9867		
40.1	40.7	0.9848		
10.3	10.9	0.9506	Slope	0.994003
			Intercept	-0.511403



# Evergreen Park TRS Calibration



May 24, 2011



# Calibration Report



Parameter SO<sub>2</sub>  
 Air Monitoring Network PAZA

## Station Information

Calibration Date	May 9, 2011	Previous Calibration	April 14, 2011
Station Number	3	Station Location	Smokey Heights
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
			<input type="checkbox"/> Other:
Start Time (MST)	9:53	End Time (MST)	12:40
Barometric Pressure	0.924 ATM	Station Temperature	20.0 Deg C
Calibrator	EnviroNics 6100	Serial Number	3474
Cal Gas Concentration	50.6 ppm	Cal Gas Cert Date	11/29/2010
Correction factor	0.031409	Cal Gas Cylinder #	LL34002
DACS make	CR3000	DACS serial No.	45272
DACS voltage range	0 - 5 volt	DACS channel #	6
	Before		After
Calculated slope	0.999384	Calculated slope	0.996864
Calculated intercept	0.582956	Calculated intercept	0.343489
Analyzer make	Teco 43i	Analyzer serial #	701120009

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Background	9.7		9.6	
coefficient	1.008		0.994	
Lamp Voltage	923	volts	923	volts
Chamber Temp	45	Deg C	45.01	Deg C
Perm Gas Temp	45	Deg C	45	Deg C
Pressure	668.7	mm Hg	668.6	mm Hg
Sample Flow	0.442	ccm	0.441	ccm
Lamp Intensity	87	%	88	%

## Calibration Data

Dilution air flow rate (cc/min)	Corrected gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4989	0.0	0.00	0.3	N/A
4989	39.84	400.87	402.3	0.9965
4989	19.91	201.13	200.6	1.0024
4989	9.95	100.72	100.3	1.0040
4989	0.0	0.00	0.3	As Found Zero
4989	39.84	400.87	404.1	As Found Span
Average Correction Factor				1.0010

Calculated value of As Found Response: 404.091 ppm      Percent Change of As Found: -0.8%

	before calibration		after calibration	
Auto zero	0.4	ppb	0.3	ppb
Auto span	306.6	ppb	305.8	ppb

Notes: \_\_\_\_\_

Calibration Performed By: Grover Christiansen

# Calibration Summary



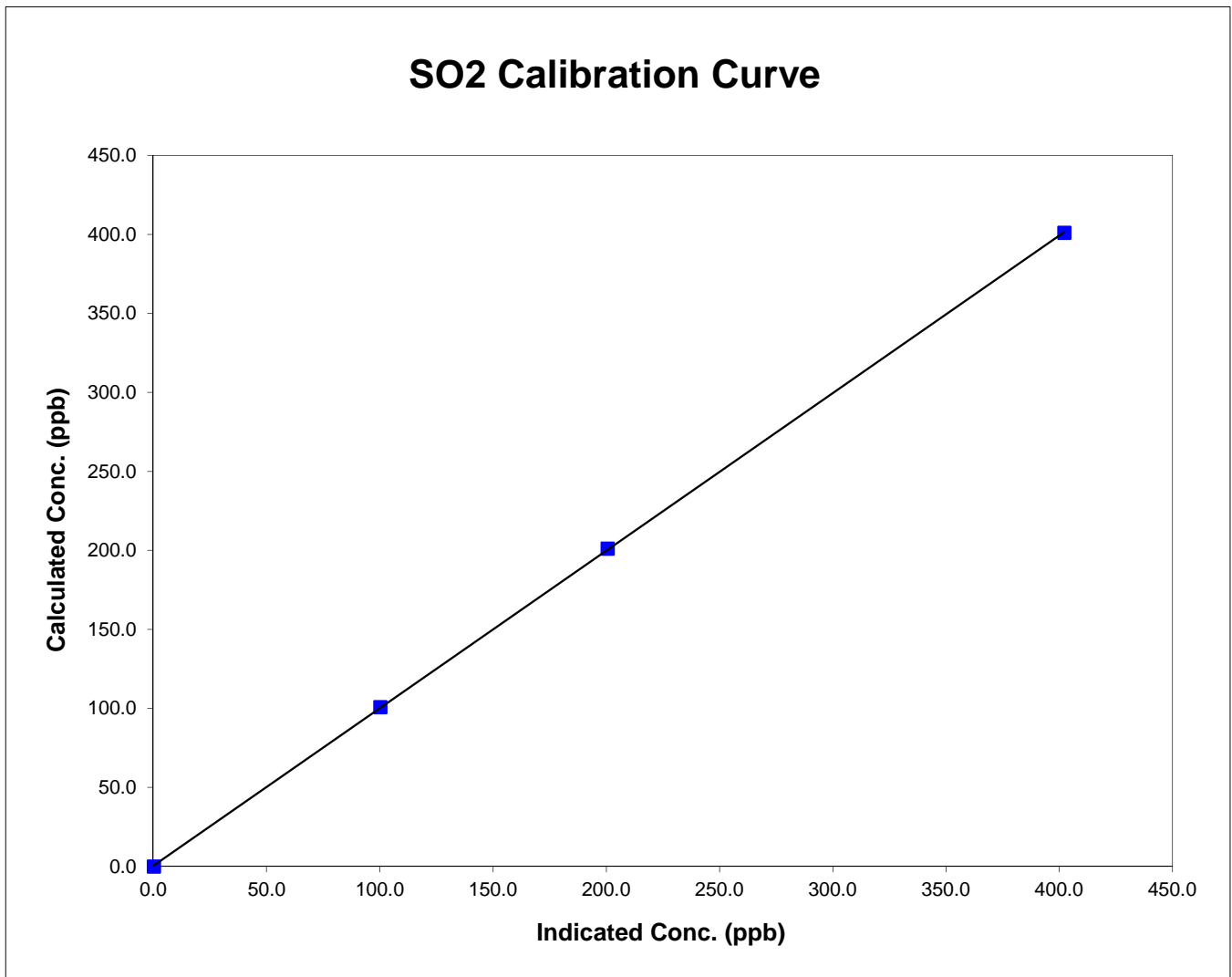
Parameter SO2  
 Air Monitoring Network PAZA

### Station Information

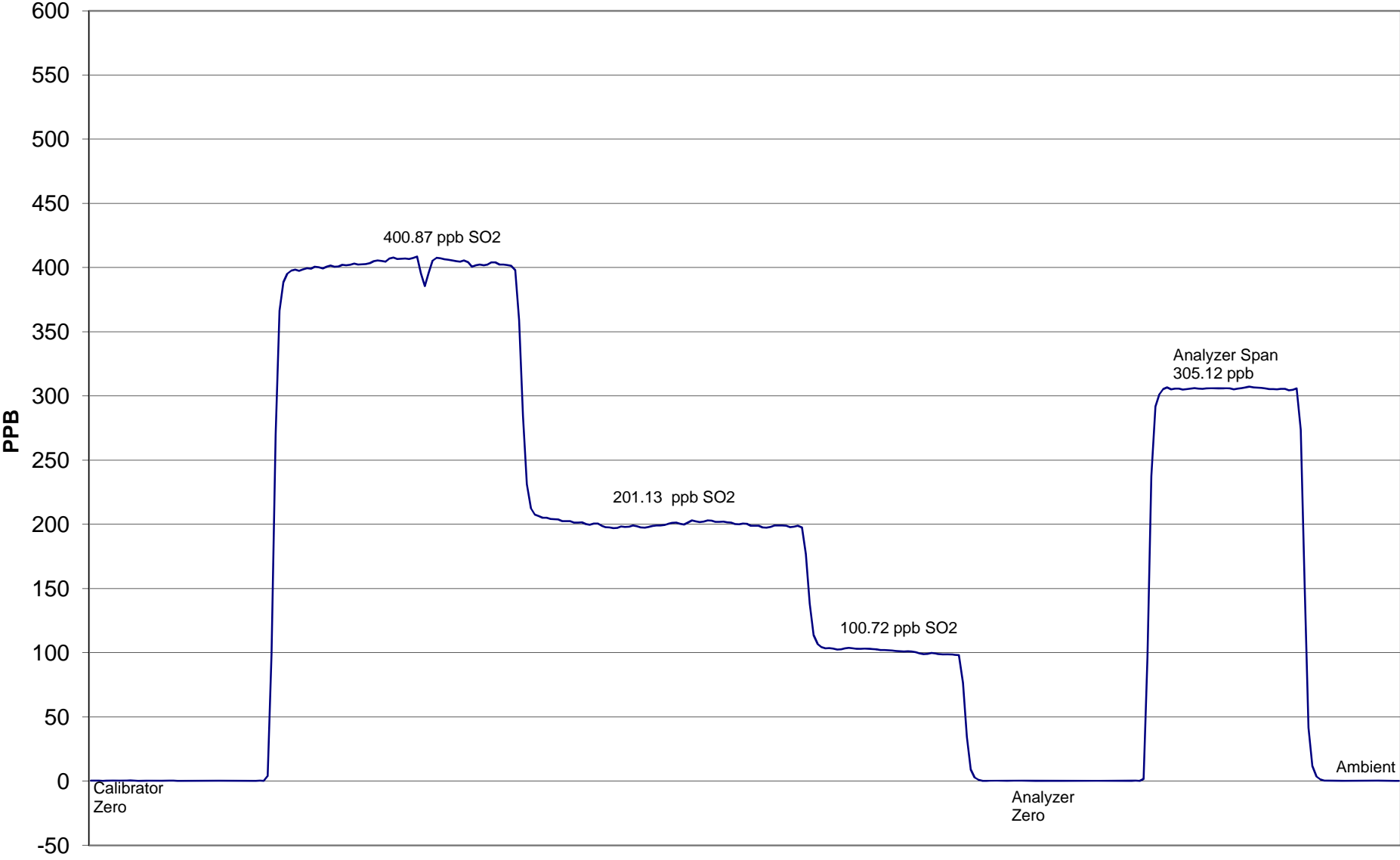
Calibration Date	May 9, 2011	Previous Calibration	April 14, 2011
Station Number	3	Station Location	Smokey Heights
Start Time (MST)	9:53	End Time (MST)	12:40
Analyzer make/model	Teco 43i	Analyzer serial #	701120009

### Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.3	N/A	Correlation Coefficient	0.999984
400.9	402.3	0.9965		
201.1	200.6	1.0024	Slope	0.996864
100.7	100.3	1.0040		
			Intercept	0.343489



# Smoky Heights SO<sub>2</sub> Calibration



May 9, 2011

# Calibration Report



Parameter                                                                 
 Air Monitoring Network                                                                 
 TRS                                                                 
 PAZA                                                               

## Station Information

Calibration Date	<u>                    </u> <u>                    </u> <u>                    </u>		Previous Calibration	<u>                    </u> <u>                    </u> <u>                    </u>	
Station Number	<u>                    </u> <u>                    </u> <u>                    </u>		Station Location	<u>                    </u> <u>                    </u> <u>                    </u>	
Reason:	<input checked="" type="checkbox"/> <b>Routine</b>	<input type="checkbox"/> Install	<input type="checkbox"/> Removal	<input type="checkbox"/> Other: <u>                    </u> <u>                    </u>	
Start Time (MST)	<u>                    </u> <u>                    </u> <u>                    </u>		End Time (MST)	<u>                    </u> <u>                    </u> <u>                    </u>	
Barometric Pressure	<u>                    </u> <u>                    </u> <u>                    </u>	ATM	Station Temperature	<u>                    </u> <u>                    </u> <u>                    </u>	Deg C
Calibrator	<u>                    </u> <u>                    </u> <u>                    </u>		Serial Number	<u>                    </u> <u>                    </u> <u>                    </u>	
Cal Gas Conc	<u>                    </u> <u>                    </u> <u>                    </u>	ppm	Cal Gas Expiry Date	<u>                    </u> <u>                    </u> <u>                    </u>	
Correction factor	<u>                    </u> <u>                    </u> <u>                    </u>		Cal Gas Cylinder #	<u>                    </u> <u>                    </u> <u>                    </u>	
DACS make	<u>                    </u> <u>                    </u> <u>                    </u>		DACS serial No.	<u>                    </u> <u>                    </u> <u>                    </u>	
DACS voltage range	<u>                    </u> <u>                    </u> <u>                    </u>		DACS channel #	<u>                    </u> <u>                    </u> <u>                    </u>	
	<u>                    </u> <u>                    </u> <u>                    </u>			<u>                    </u> <u>                    </u> <u>                    </u>	
Calculated slope	<u>                    </u> <u>                    </u> <u>                    </u>		Calculated slope	<u>                    </u> <u>                    </u> <u>                    </u>	
Calculated intercept	<u>                    </u> <u>                    </u> <u>                    </u>		Calculated intercept	<u>                    </u> <u>                    </u> <u>                    </u>	
	<u>                    </u> <u>                    </u> <u>                    </u>			<u>                    </u> <u>                    </u> <u>                    </u>	
Analyzer make	<u>                    </u> <u>                    </u> <u>                    </u>		Analyzer serial #	<u>                    </u> <u>                    </u> <u>                    </u>	

	before		after	
Concentration range	100	ppb	100	ppb
Background coefficient	15.6	ppb	15.1	ppb
Lamp Voltage	1.088		1.088	
Chamber Temp	768	volts	769	volts
Perm Gas Temp	44	Deg C	44.99	Deg C
Pressure	45	Deg C	45	Deg C
Sample Flow	503.9	mm Hg	503.2	mm Hg
Lamp Intensity	0.743	ccm	0.742	ccm
	32,431	mv	32,325	mv

Dilution air flow rate (cc/min)	Corrected gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4989	0.0	0.00	0.1	N/A
4989	69.77	79.58	79.9	0.9957
4989	34.88	40.06	39.9	1.0050
4989	8.96	10.34	10.0	1.0364
				As Found Zero
				As Found Span
Average Correction Factor				1.0124

Calculated value of As Found Response: NA ppm      Percent Change of As Found: NA

	before calibration		after calibration	
Auto zero	0.0	ppm	0.4	ppm
Auto span	41.9	ppm	44.5	ppm

Notes:                                                                 
                                                              

Calibration Performed By:

# Calibration Summary



Parameter TRS

Air Monitoring Network PAZA

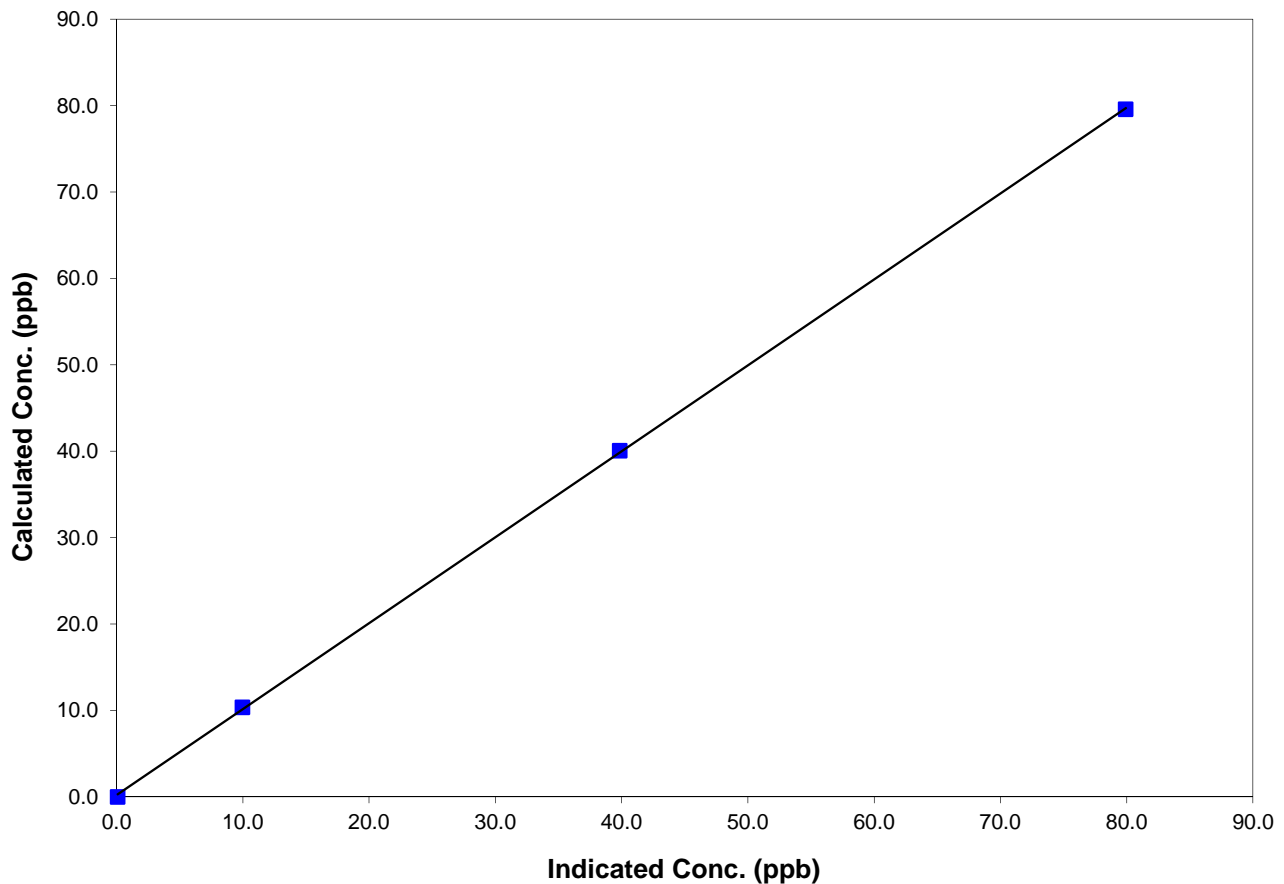
### Station Information

Calibration Date	May 9, 2011	Previous Calibration	April 14, 2011
Station Number	3	Station Location	Smoky Heights
Start Time (MST)	12:05	End Time (MST)	14:30
Analyzer make/model	TEI Model 43C	Analyzer serial #	0436610005

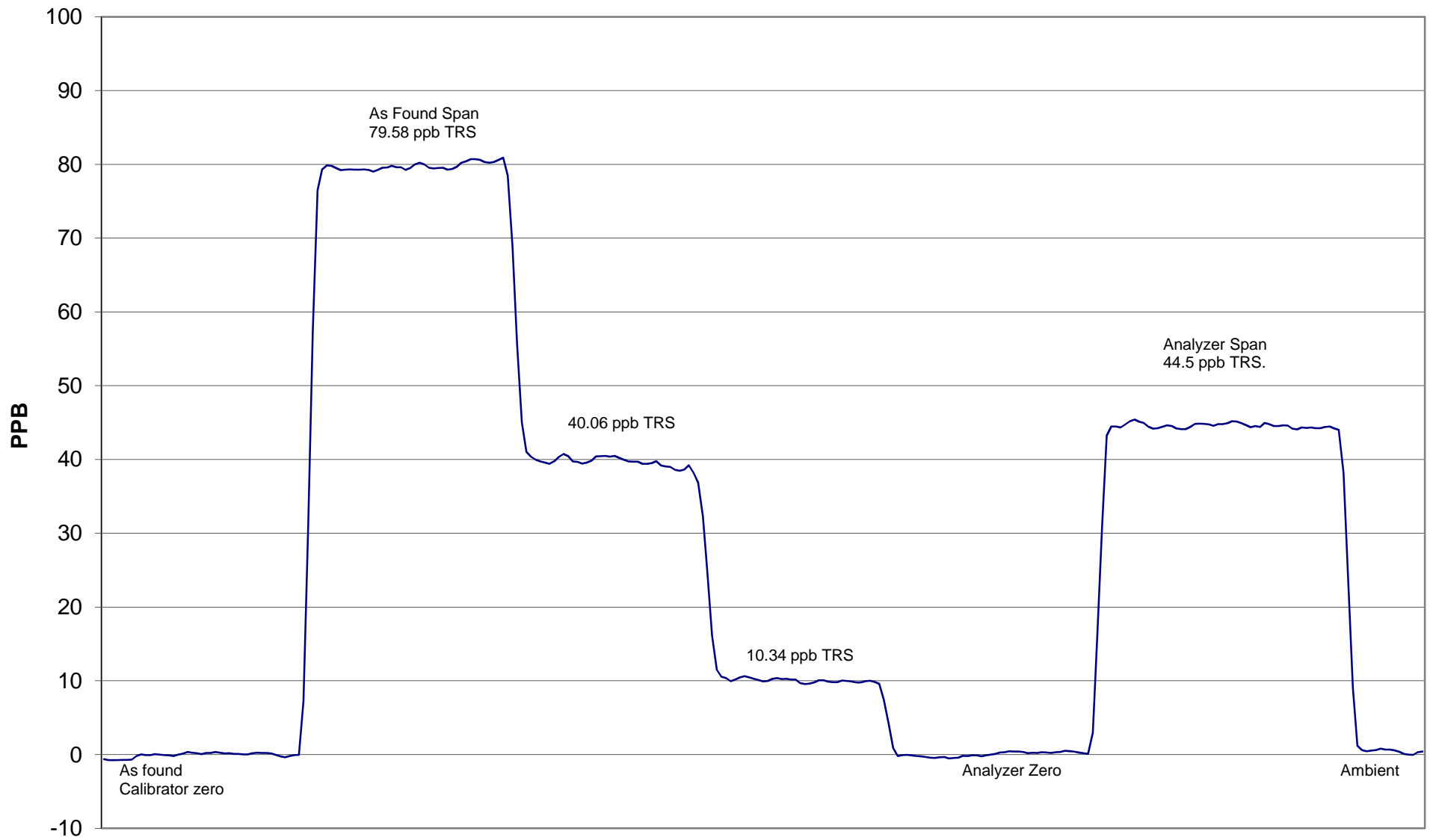
### Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.1	N/A	Correlation Coefficient	0.999950
79.6	79.9	0.9957		
40.1	39.9	1.0050	Slope	0.994776
10.3	10.0	1.0364		
			Intercept	0.200663

**TRS Calibration Curve**



# Smoky Heights TRS Calibration



May 9, 2011

# Calibration Report



Parameter TRS

Air Monitoring Network PAZA

## Station Information

Calibration Date	May 9, 2011	Previous Calibration	April 14, 2011
Station Number	3	Station Location	Smoky Heights
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
			<input type="checkbox"/> Other:
Start Time (MST)	8:15	End Time (MST)	10:08
Barometric Pressure	0.923 ATM	Station Temperature	20.0 Deg C
Calibrator	Enviroics 6100	Serial Number	3474
Cal Gas Conc	5.77 ppm	Cal Gas Expiry Date	9/3/2011
Correction factor	0.031375	Cal Gas Cylinder #	BLM001434
DACS make	CR3000	DACS serial No.	52620
DACS voltage range	0 - 5 volt	DACS channel #	5
	<u>Before</u>		<u>After</u>
Calculated slope	1.002429	Calculated slope	0.995827
Calculated intercept	0.041791	Calculated intercept	-0.198453

Analyzer make TEI Model 43C Analyzer serial # 0436610005

	before		after	
Concentration range	100	ppb	100	ppb
Background	15.6	ppb	15.1	ppb
coefficient	1.088		1.088	
Lamp Voltage	768	volts	769	volts
Chamber Temp	44	Deg C	44.99	Deg C
Perm Gas Temp	45	Deg C	45	Deg C
Pressure	503.9	mm Hg	503.2	mm Hg
Sample Flow	0.743	ccm	0.742	ccm
Lamp Intensity	32,431	mv	32,325	mv

Dilution air flow rate (cc/min)	Corrected gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4989	0.0	0.00	0.0	N/A
4989	69.77	79.58	79.9	0.9957
4989	34.88	40.06	40.8	0.9816
4989	8.96	10.34	10.5	0.9811
4989	0.0	0.00	0.0	As Found Zero
4989	69.77	79.58	79.8	As Found Span
Average Correction Factor				0.9861

Calculated value of As Found Response: 79.99 ppm Percent Change of As Found: -0.5%

	before calibration		after calibration	
Auto zero	0.0	ppm	0.2	ppm
Auto span	41.9	ppm	NA	ppm

Notes: Thermal oxidizer was rebuilt with new quartz tube & temp probe.

Calibration Performed By: Grover Christiansen

# Calibration Summary



Parameter TRS  
Air Monitoring Network PAZA

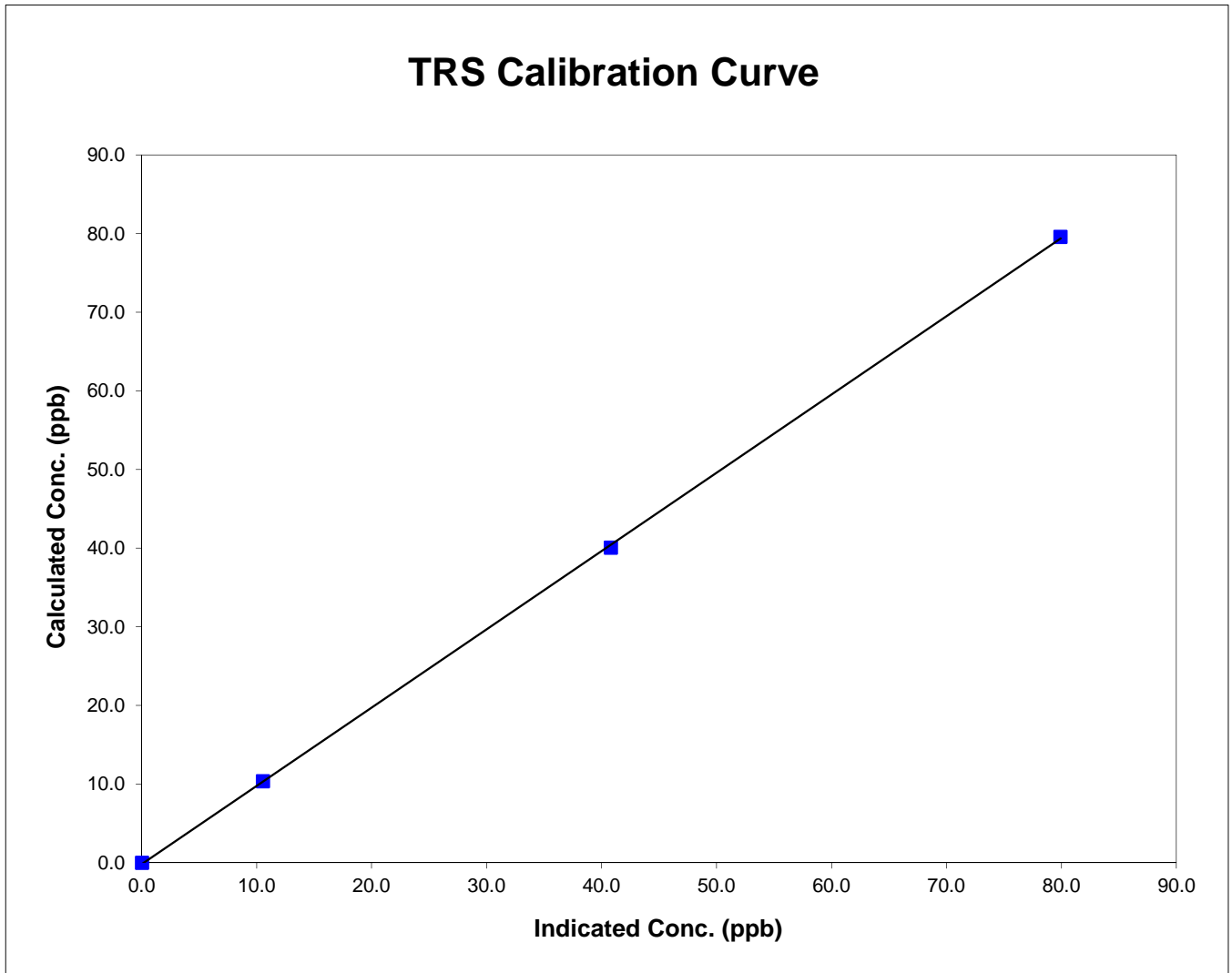
### Station Information

Calibration Date	May 9, 2011	Previous Calibration	April 14, 2011
Station Number	3	Station Location	Smoky Heights
Start Time (MST)	8:15	End Time (MST)	10:08
Analyzer make/model	TEI Model 43C	Analyzer serial #	0436610005

### Calibration Data

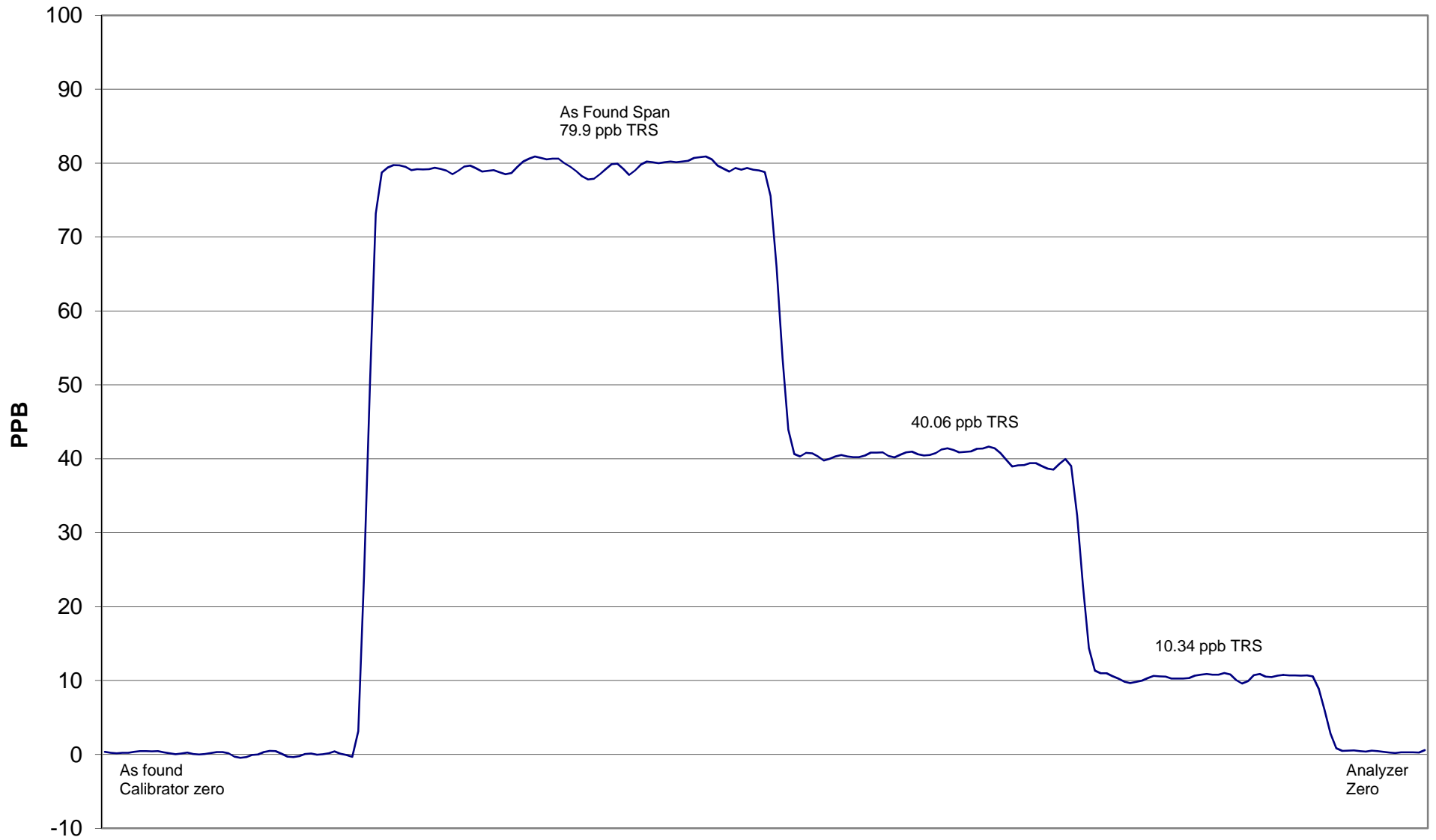
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.0	N/A	Correlation Coefficient	0.999946
79.6	79.9	0.9957		
40.1	40.8	0.9816		
10.3	10.5	0.9811	Slope	0.995827
			Intercept	-0.198453

### TRS Calibration Curve





# Smoky Heights TRS Calibration



# AB TEOM PM2.5 Calibration



STATION: Smoky Heights  
 LOCATION: PAZA - Grande Prairie

OPERATOR: Grover Christansen  
 DATE: 9-May-11

MONITOR INFO / PARAMETER VALUES:

Make/Model	TEOM AB
Configuration	PM2.5
Serial Number	24634
Site Number	3
Inlet Type	PM 10 / SCC
FAdj. Main Setting	1.000
FAdj. Aux. Setting	1.000
T-Case Indicated / Set Point	40/40
T-Air Indicated / Set Point	40/40
T-Cap Indicated / Set Point	40/40
Splitter Assembly Alignment (cm)	15.5
( vs. specified depth of 15.5 cm from top of flow tube to top of concentric 1/2 in. tube )	

RECENT CALIBRATION AND AUDIT HISTORY

Previous Audit	21-Dec-10
Previous Calibration	NA

PUMP CAPACITY CHECK *	PASS
-----------------------	------

\* capacity test or pump on timed test utilized to verify pump integrity  
 "FAIL" indicates that pump requires service.

LEAK CHECK	Indicated Flow (lpm)	
	Main	Auxiliary
PUMP ON	0.000	0.108
PUMP OFF	-0.020	0.080
NET	0.020	0.028
<b>LIMITS</b>	<b>&lt;0.15</b>	<b>&lt;0.60</b>

	Ambient Temp. (°C)	Ambient Pres. (atm)	Ko *	Bypass flow (lpm)	Sample flow (lpm)
SET POINT ( S )	na	na	12122	13.67	3.000
INDICATED ( I )	18.2	0.923	<del>12122</del>	13.59	2.990
MEASURED ( AF )	17.3	0.924	<del>12122</del>	13.59	3.010
MEASURED ( M )	17.3	0.924	12220	13.59	3.010
DIFFERENCE (M-I)	-0.9	0.001	0.8%	-0.59	0.01
<b>LIMITS</b>	<b>± 2 ° C</b>	<b>± 0.005 atm</b>	<b>± 2.5 %</b>	<b>± 1.0 L/min</b>	<b>± 0.2 L/min</b>

As Found Data  
 Adjusted Data

Ko Audit Filter data      Weight: 0.10814      Serial #: CVK 3831

COMMENTS:      PASS  
 Heads cleaned.      Water noted on top surface of sensor unit. Will caulck next visit.

Sample Head Inspection/Cleaning:      Large In Line Filter Inspection & Or Replacement:

# Calibration Report



Parameter SO2

Air Monitoring Network PAZA

## Station Information

Calibration Date	May 3, 2011	Previous Calibration	April 6, 2011
Station Number	4	Station Location	Beaverlodge
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
		<input type="checkbox"/> Other:	
Start Time (MST)	9:50	End Time (MST)	14:20
Barometric Pressure	0.912 atm	Station Temperature	23.0 Deg C
Calibrator	EnviroNics 6100	Serial Number	3474
Cal Gas Concentration	10.06 ppm	Cal Gas Expiry Date	7/27/2009
Gas Cert Reference	CC 114395		
DACS make	Focus AP1000	DACS serial No.	45269
DACS voltage range	0 - 10 volt	DACS channel #	5
	<u>Before</u>		<u>After</u>
DACS Scale High	100	DACS slope	100
DACS Scale Low	0	DACS intercept	0
Calculated slope	1.010092	Calculated slope	0.997711
Calculated intercept	0.195843	Calculated intercept	0.416334
Analyzer make	TEI Model 43i-TLE	Analyzer serial #	713021137

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Background	2.67		2.58	
Coefficient	0.988		0.958	
PMT	-787.7	V	-787.7	V
UV Lamp Voltage	1148	V	1142	V
Chamber Temp	45	Deg C	45.2	Deg C
Pressure	656.8	mm Hg	657.1	mm Hg
Sample Flow	0.52	LPM	0.521	LPM
Lamp Intensity	79% to 99%	%	96%	%

## Calibration Data

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4989	0.00	0.0	-0.1	N/A
4989	39.83	79.7	79.8	0.9987
4989	19.90	40.0	39.0	1.0260
4989	9.93	20.0	19.6	1.0186
4989	0.00	0.0	-0.1	As found zero
4989	39.83	79.7	81.7	As found span
Average Correction Factor				1.0145

Calculated value of As Found Response: 82.808 ppm      Percent Change of As Found: -3.9%

	before calibration		after calibration	
Auto zero	-0.3	ppb	0.5	ppb
Auto span	59.7	ppb	57.9	ppb

Notes: Lamp Voltage & lamp intensity readings are not stable. Optics were checked & pictures were sent to Al Clarke

Calibration Performed By: Grover Christiansen

# Calibration Summary

Parameter SO2  
 Air Monitoring Network PAZA



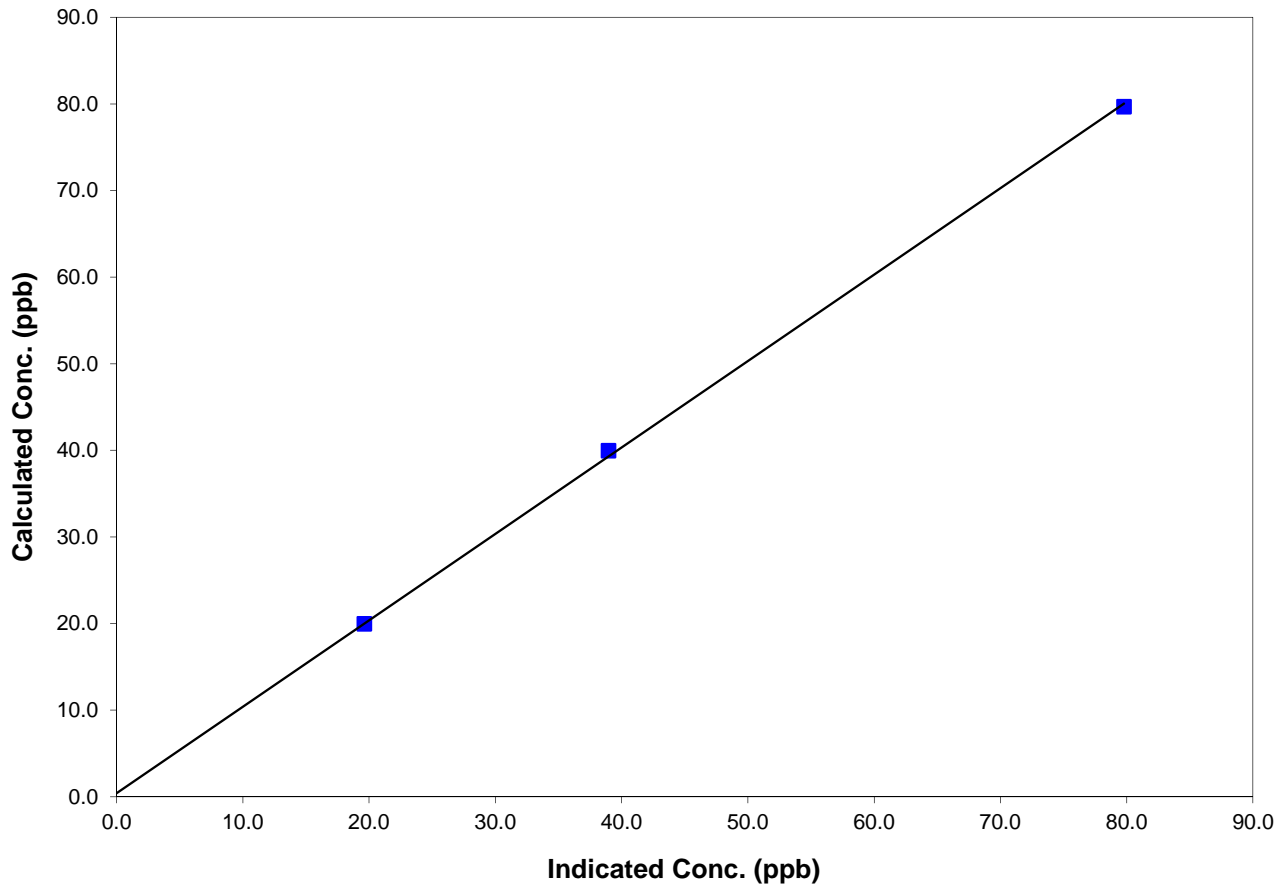
### Station Information

Calibration Date	May 3, 2011	Previous Calibration	April 6, 2011
Station Number	4	Station Location	Beaverlodge
Start Time (MST)	9:50	End Time (MST)	14:20
Analyzer make/model	TEI Model 43i-TLE	Analyzer serial #	713021137

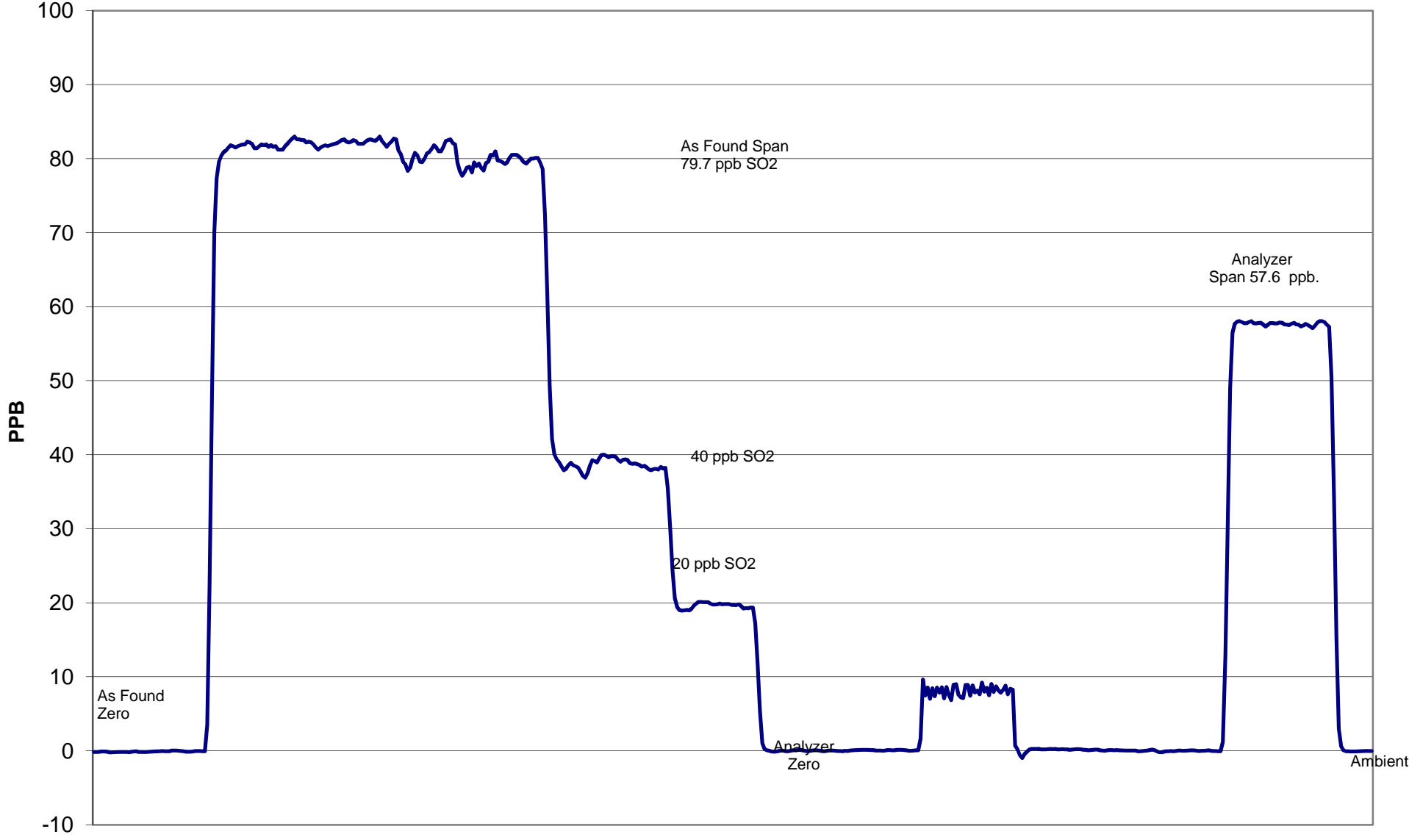
### Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.1	N/A		
79.7	79.8	0.9987	Correlation Coefficient	0.999797
40.0	39.0	1.0260		
20.0	19.6	1.0186	Slope	0.997711
			Intercept	0.416334

## SO2 Calibration Curve



# Beaverlodge SO<sub>2</sub> Calibration



May 3, 2011

# Calibration Report

Parameter

NO<sub>x</sub>-NO-NO<sub>2</sub>

Air Monitoring Network

PAZA



## Station Information

Calibration Date	May 3, 2011	Previous Calibration	April 6, 2011
Station Number	4	Station Location	BeaverLodge
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Installation	<input type="checkbox"/> Removal
Start Time (MST)	9:50	End Time (MST)	14:25
Barometric Pressure	0.912 Atm	Station Temperature	23.0 Deg C
Calibrator	EnviroNics	Serial Number	2844
NO Cal Gas Conc	50.1 ppm	Cal Gas Expiry Date	
NOx Cal Gas Conc	50.2 ppm	Cal Gas Serial #	CC-114395

## DACS Information

DACS make AP1000 DACS serial No. \_\_\_\_\_

Parameter		NO2	NOx	NO
Before	Data Slope	0.991112	1.006595	1.002428
	Data Offset	0.391741	-2.378625	-2.183490
After	Data Slope	0.998269	1.008443	1.005078
	Data Offset	1.124071	-2.355078	-1.991995
Channel #		8	6	7
Voltage Range		0 - 5 VDC	0 - 5 VDC	0 - 5 VDC

## Analyzer Information

Analyzer make/model TEI 42i Analyzer serial # 906535068

Test Point	before		after	
Concentration range	0-500	ppb	0-500	ppb
NO offset	2.3	mV	2.4	mV
NOx bkgnd	2.6	mV	2.5	mV
NO coefficient	1.468		1.499	
NOx coefficient	1.001		1.003	
NO2 conv temp	326.8	Deg C	326.2	Deg C
PMT Temp	-3.1	Deg C	-3.0	Deg C
PMT Volt	-676.0	mV	-676.7	mV
R Cell Press	181.6	in Hg	184.3	in Hg
Sample Flow	0.698	ccm	0.689	ccm

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# Calibration Report

Parameter **NOX-NO-NO2**  
 Air Monitoring Network **PAZA**



## Station Information

Calibration Date: **May 3, 2011** Station Location: **BeaverLodge**

## Calibration Data

	Dilution flow rate (ccm)	Source gas flow rate (ccm)	Calculated NOx conc (ppb)	Calculated NO conc (ppb)	Calculated NO2 conc (ppb)	Indicated NOx conc (ppb)	Indicated NO conc (ppb)	Indicated NO2 conc (ppb)	NOx Correction factor	NO Correction factor
zero	4989	0.00	0.0	0.0	0.0	-0.1	-0.1	-0.2	N/A	N/A
1	4989	39.83	397.6	396.8	0.8	395.3	395.9	-0.6	1.0059	1.0023
2	4989	19.90	199.4	199.0	0.4	201.6	200.6	0.5	0.9895	0.9924
3	4989	9.93	99.7	99.5	0.2	103.5	103.4	0.3	0.9632	0.9624
AFZ	4989	0.00	0.0	0.0	0.0	-0.1	-0.1	-0.2	0.0000	0.0000
AFS	4989	39.83	397.6	396.8	0.8	388.9	388.2	0.6	1.0225	1.0222
Average Correction Factor									0.9862	0.9857

As Found Concentrations: **NO<sub>x</sub>= 386.6** **NO= 386.1** As Found Percent Change **NO<sub>x</sub>= -2.8%** **NO= -2.7%**

## GPT Calibration Data

Dilution Flow 4989 ccm Source Gas Flow 39.84 ccm

O3 Setpoint (ppb)	Indicated NO high point (ppb)	Indicated NO drop conc (ppb)	Calculated NO2 conc (ppb)	Indicated NOx conc (ppb)	Indicated NO conc (ppb)	Indicated NO2 conc (ppb)	NOx Correction factor	NO Correction factor	NO2 Correction factor	Converter Efficiency
0	-0.1	-0.1	0.0	-0.1	-0.1	-0.2	N/A	N/A	N/A	N/A
NO point	398.2	398.2	0.0	399.5	398.2	1.3	0.9969	1.0000	N/A	N/A
300	398.2	138.9	259.3	398.0	138.9	259.4	1.0004	1.0000	0.9997	100.0%
200	398.2	219.5	178.7	396.6	219.5	177.4	1.0042	1.0000	1.0072	99.3%
100	398.2	298.6	99.6	395.4	298.6	97.5	1.0070	1.0000	1.0218	97.9%
Average Correction Factor							1.0039	1.0000	1.0096	99.1%

## AIC Data

Parameter	Previous calibration				Current calibration			
	NOx	NO2	NO		NOx	NO2	NO	
Auto zero	-0.2	-0.3	-0.2	ppb	0.1	0.1	0.0	ppb
Auto span	238.0	235.5	1.6	ppb	224.3	222.2	1.3	ppb

Calibration Performed By: Grover Christiansen

# Calibration Summary

Parameter NO<sub>2</sub>

Air Monitoring Network PAZA



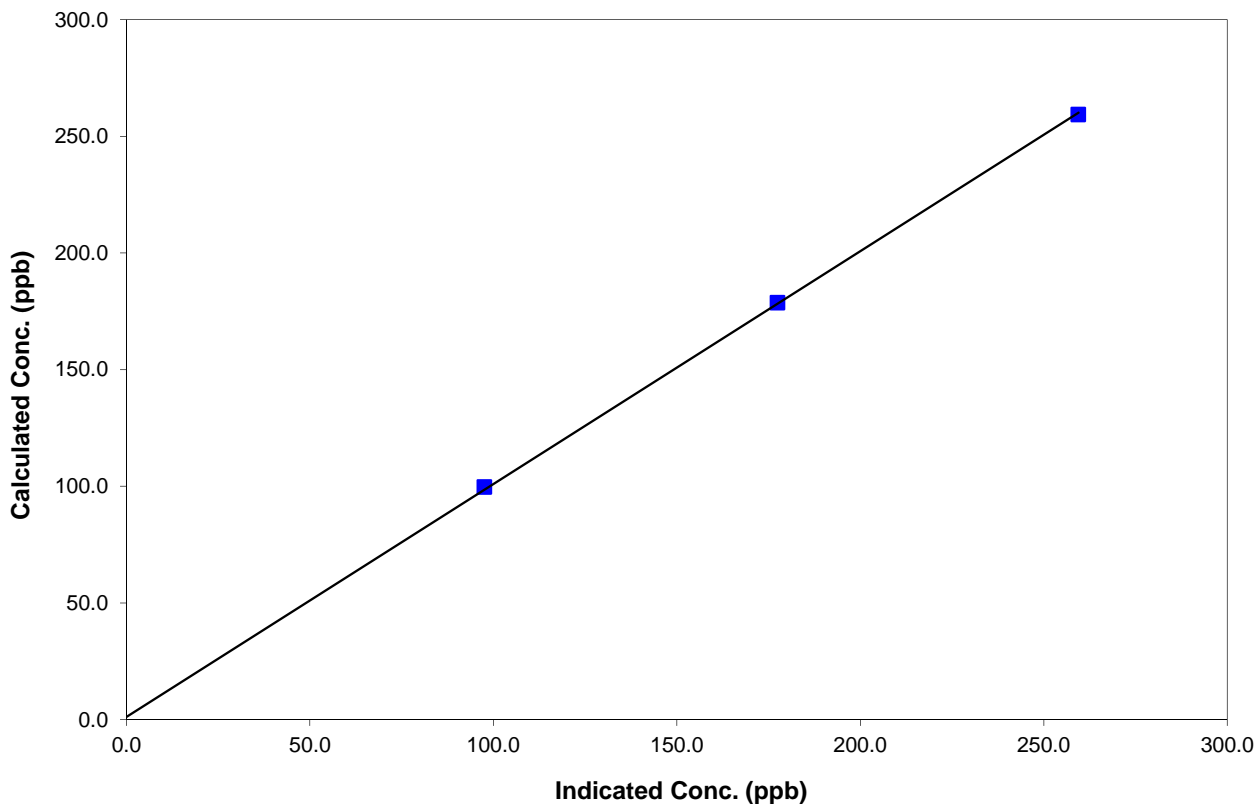
## Station Information

Calibration Date	<u>May 3, 2011</u>	Previous Calibration	<u>April 6, 2011</u>
Station Number	<u>4</u>	Station Location	<u>BeaverLodge</u>
Start Time (MST)	<u>9:50</u>	End Time (MST)	<u>14:25</u>
Analyzer make	<u>TEI 42i</u>	Analyzer serial #	<u>906535068</u>

## Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.2	N/A	Correlation Coefficient	0.999920
259.3	259.4	0.9997		
178.7	177.4	1.0072	Slope	0.998269
99.6	97.5	1.0218		
			Intercept	1.124071

### NO<sub>2</sub> Calibration Curve





# Calibration Summary

Parameter NO<sub>x</sub>

Air Monitoring Network PAZA



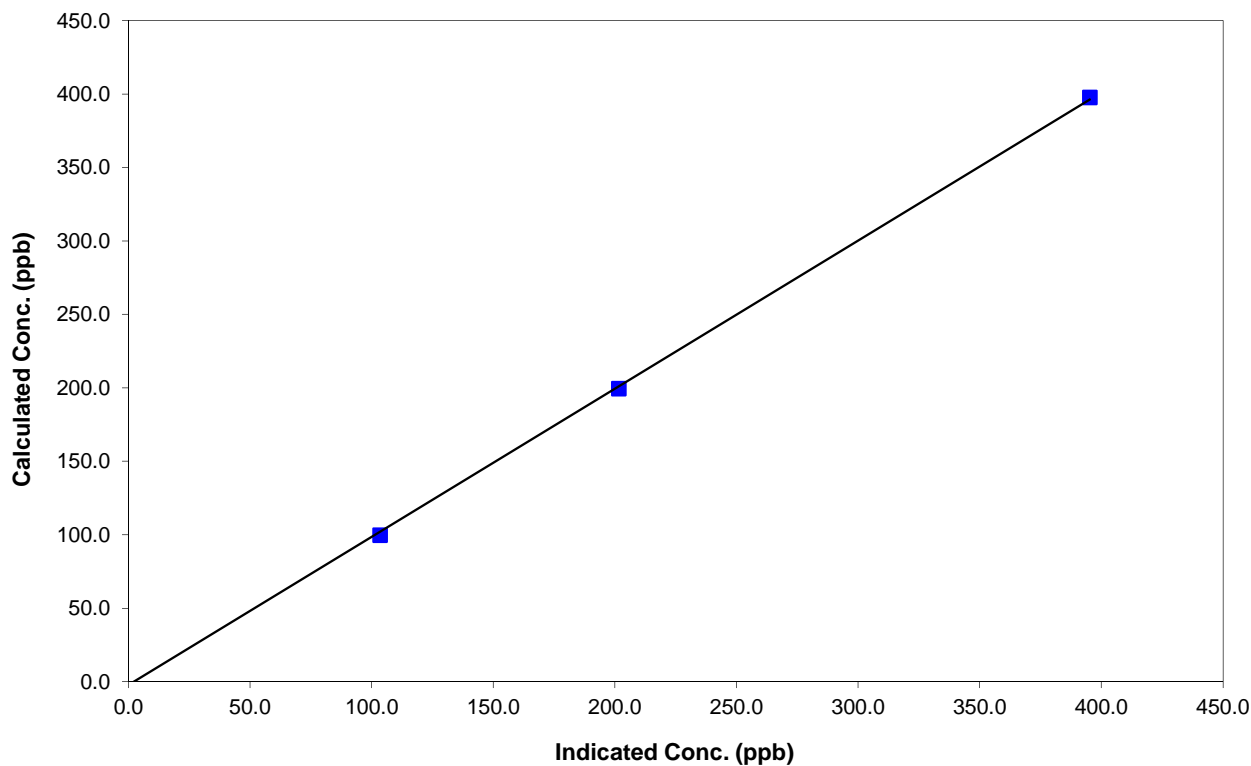
## Station Information

Calibration Date	May 3, 2011	Previous Calibration	April 6, 2011
Station Number	4	Station Location	BeaverLodge
Start Time (MST)	9:50	End Time (MST)	14:25
Analyzer make	TEI 42i	Analyzer serial #	906535068

## Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.1	N/A		
397.6	395.3	1.0059	Correlation Coefficient	0.999822
199.4	201.6	0.9895		
99.7	103.5	0.9632	Slope	1.008443
			Intercept	-2.355078

### NO<sub>x</sub> Calibration Curve



# Calibration Summary

Parameter NO

Air Monitoring Network PAZA



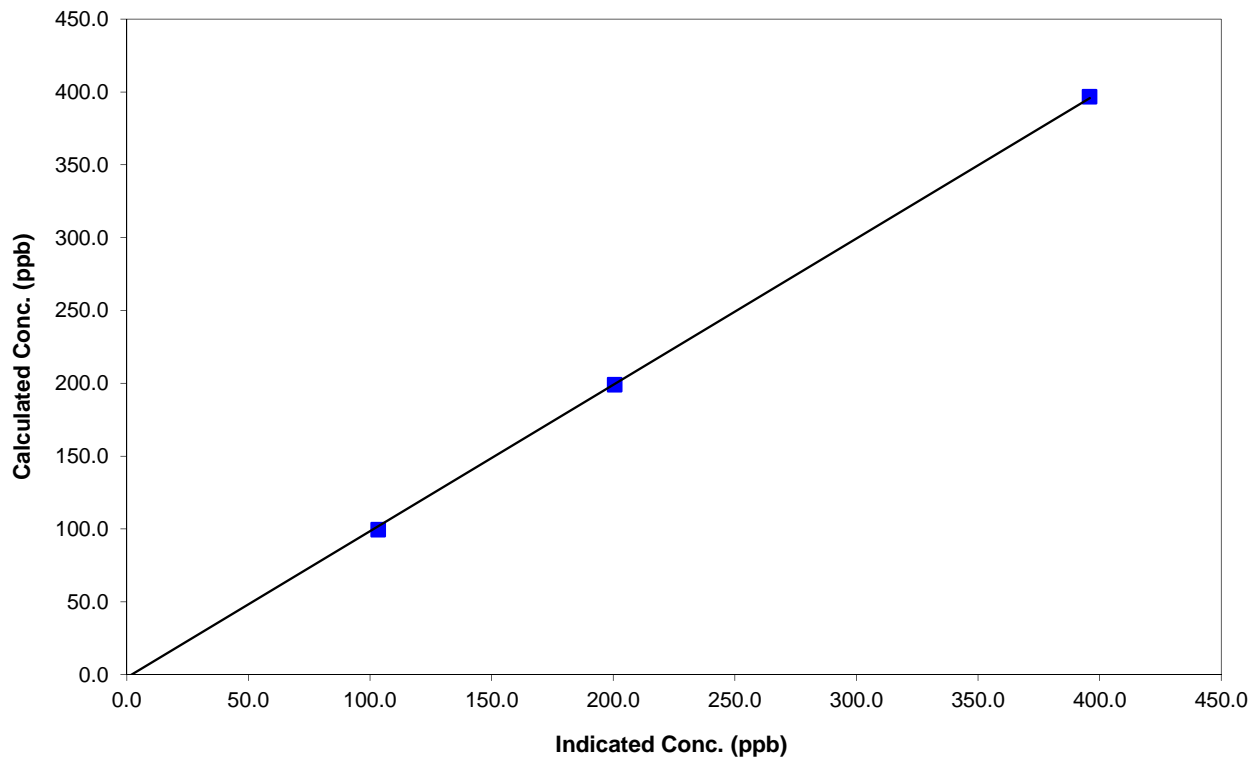
## Station Information

Calibration Date	May 3, 2011	Previous Calibration	April 6, 2011
Station Number	4	Station Location	BeaverLodge
Start Time (MST)	9:50	End Time (MST)	14:25
Analyzer make	TEI 42i	Analyzer serial #	906535068

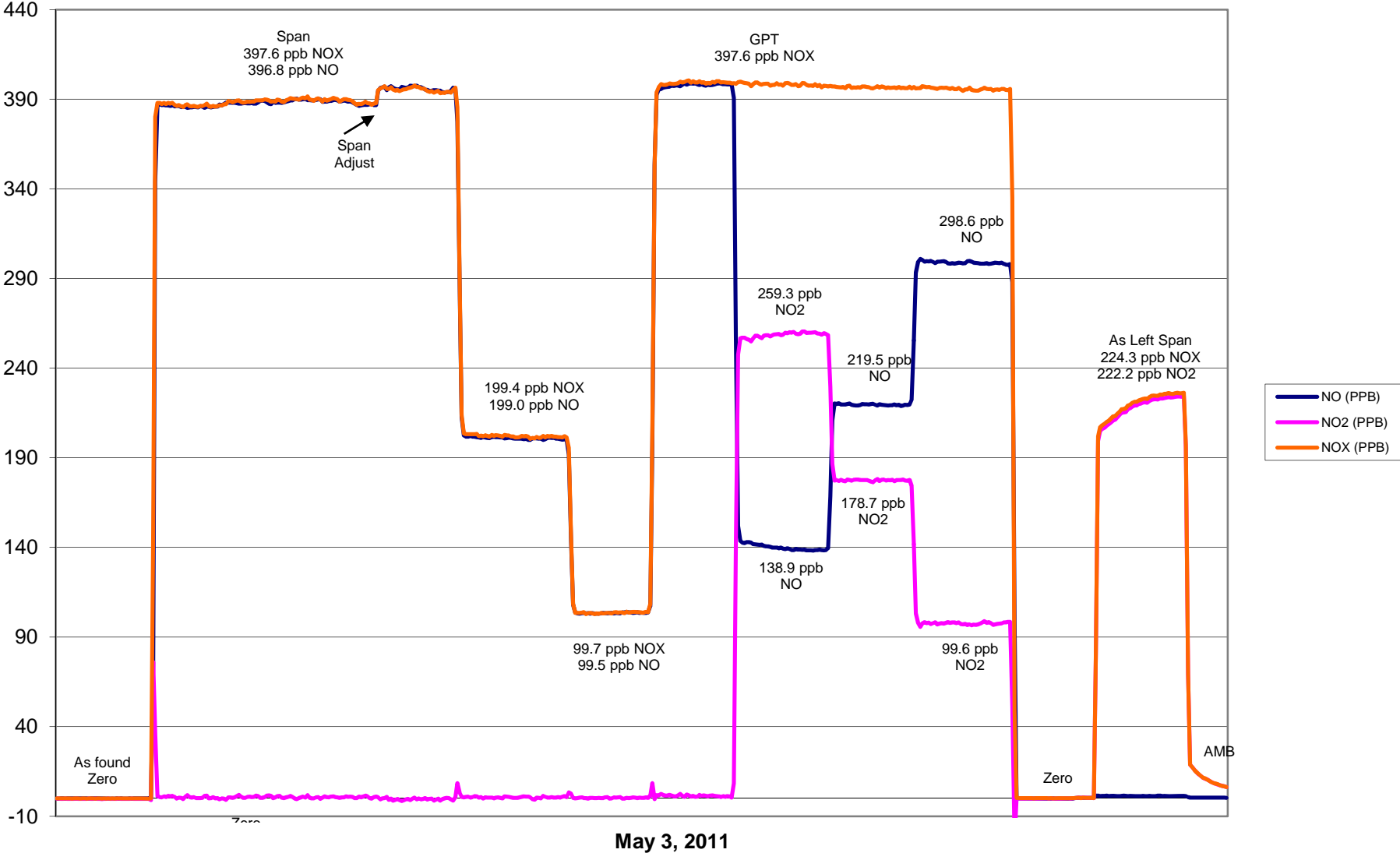
## Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.1	N/A	Correlation Coefficient	0.999870
396.8	395.9	1.0023		
199.0	200.6	0.9924	Slope	1.005078
99.5	103.4	0.9624		
			Intercept	-1.991995

### NO Calibration Curve



# Beaverlodge NO<sub>x</sub> Calibration



# Calibration Report



Parameter 03

Air Monitoring Network PAZA

## Station Information

Calibration Date	<u>May 3, 2011</u>	Previous Calibration	<u>April 6, 2011</u>
Station Number	<u>4</u>	Station Location	<u>Beaverlodge</u>
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
		<input type="checkbox"/> Other:	
Start Time (MST)	<u>13:40</u>	End Time (MST)	<u>16:20</u>
Barometric Pressure	<u>0.912</u> atm	Station Temperature	<u>23.0</u> Deg C
Calibrator	<u>Enviroics 6100</u>	Serial Number	<u>3474</u>
Cal Gas Concentration	<u>NA</u>	Cal Gas Expiry Date	<u>NA</u>
DACS make	<u>Focus AP1000</u>	DACS serial No.	<u>45269</u>
DACS voltage range	<u>0 - 1 volt</u>	DACS channel #	<u>9</u>
	<u>Before</u>		<u>After</u>
Calculated slope	<u>0.990936</u>	Calculated slope	<u>0.997676</u>
Calculated intercept	<u>0.217131</u>	Calculated intercept	<u>1.274052</u>
Analyzer make	<u>Teco 49C</u>	Analyzer serial #	<u>49C-76443-383</u>

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
offset	-1.40	ppb	-1.10	ppb
slope	1.044		1.019	
Lamp temp	56.3	mV	56.5	mV
Lamp Intensity A/B	61809/64244	mV	61657/64437	mV
Pressure	498.6	mm Hg	499.3	mm Hg
Flow A	0.644	ccm	0.634	ccm
Flow B	0.585	ccm	0.589	ccm

## Calibration Data

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4989	0.00	0.0	0.4	N/A
4989	0.00	259.3	259.9	0.9975
4989	0.00	178.7	177.2	1.0084
4989	0.00	99.6	96.1	1.0360
4989	0.00	0.0	0.3	As found zero
4989	0.00	259.3	265.1	As found span
Average Correction Factor				1.0140

Calculated value of As Found Response: 262.7 ppm      Percent Change of As Found: 1.3%

	before calibration		after calibration	
Auto zero	0.1	ppb	1.7	ppb
Auto span	114.3	ppb	109.7	ppb

Notes: Sample pump siezed upon arrival. Replace carbon scrubber before pump & replace pump with used rebuilt.

Calibration Performed By: Grover Christiansen

## Calibration Summary

Parameter           O3            
 Air Monitoring Network   PAZA  

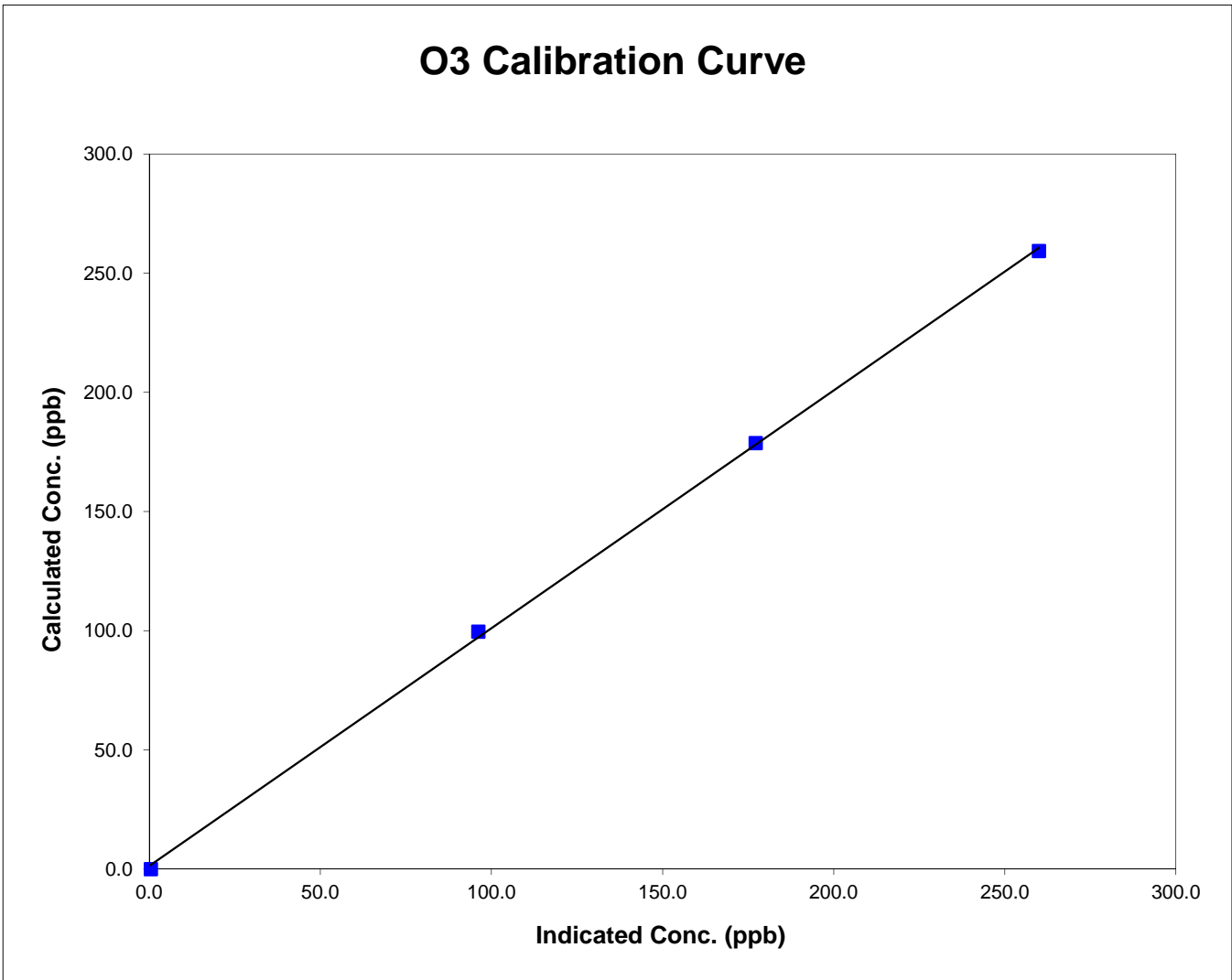


### Station Information

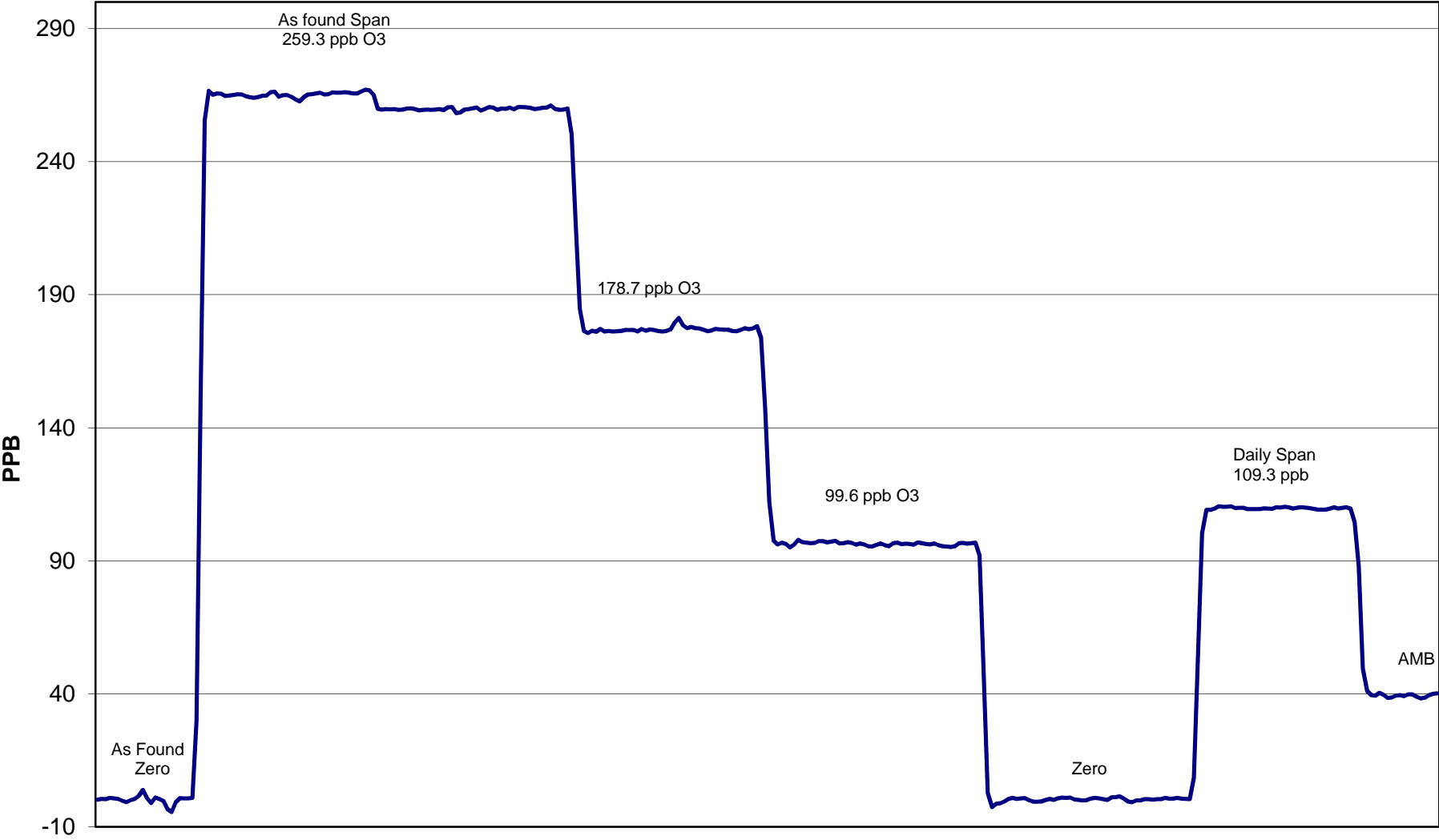
Calibration Date	<u>          May 3, 2011          </u>	Previous Calibration	<u>          April 6, 2011          </u>
Station Number	<u>          4          </u>	Station Location	<u>          Beaverlodge          </u>
Start Time (MST)	<u>          13:40          </u>	End Time (MST)	<u>          16:20          </u>
Analyzer make/model	<u>          Teco 49C          </u>	Analyzer serial #	<u>          49C-76443-383          </u>

### Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.4	NA		
259.3	259.9	0.9975	Correlation Coefficient	0.999705
178.7	177.2	1.0084		
99.6	96.1	1.0360	Slope	0.997676
			Intercept	1.274052



# Beaverlodge O<sub>3</sub> Calibration



May 3, 2011

# Calibration Report

Parameter SO2  
 Air Monitoring Network PAZA



## Station Information

Calibration Date	May 29, 2011	Previous Calibration	April 26, 2011
Station Number	9	Station Location	Rover - Bonanza
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
		<input type="checkbox"/> Other:	
Start Time (MST)	10:20	End Time (MST)	12:30
Barometric Pressure	31.70 inches Hg	Station Temperature	15.7 Deg C
Calibrator	EnviroNics 6100	Serial Number	3474
Cal Gas Concentration	50.6 ppm	Cal Gas Expiry Date	4/6/2012
Gas Cert Reference	SGAL3245		
DACS make	CR3000	DACS serial No.	5407
DACS voltage range	0 - 5 Volt	DACS channel #	2
	<u>Before</u>		<u>After</u>
DACS Scale High	500	DACS slope	500
DACS Scale Low	0	DACS intercept	0
Calculated slope	0.999554	Calculated slope	1.002894
Calculated intercept	0.765053	Calculated intercept	-0.107955
Analyzer make	TEI 43C	Analyzer serial #	609716238

	before		after	
Concentration range	0-500	ppb	0-500	ppb
Background	9.5		9.4	
Coefficient	0.994		0.994	
UV Lamp Voltage	795	V	793	V
Chamber Temp	44.3	C	44.2	C
Perm Gas Temp	45	C	45	C
Pressure	666.7	mm Hg	672.1	mm Hg
Sample Flow	0.484	LPM	0.487	LPM
Lamp Intesity	47793	Hz	48323	Hz

## Calibration Data

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4989	0.00	0.0	0.0	N/A
4989	39.83	400.8	399.6	1.0028
4989	19.90	201.0	200.7	1.0018
4989	9.93	100.5	100.5	1.0006
4989	0.00	0.0	0.0	As found zero
4989	39.83	400.8	399.7	As found span
Average Correction Factor				1.0018

Calculated value of As Found Response: 400.322 ppm      Percent Change of As Found: 0.1%

	before calibration		after calibration	
Auto zero	0.3	ppm	0.3	ppm
Auto span	264.0	ppm	262.2	ppm

Notes: \_\_\_\_\_

Calibration Performed By: Grover Christiansen

# Calibration Summary

Parameter SO2  
 Air Monitoring Network PAZA



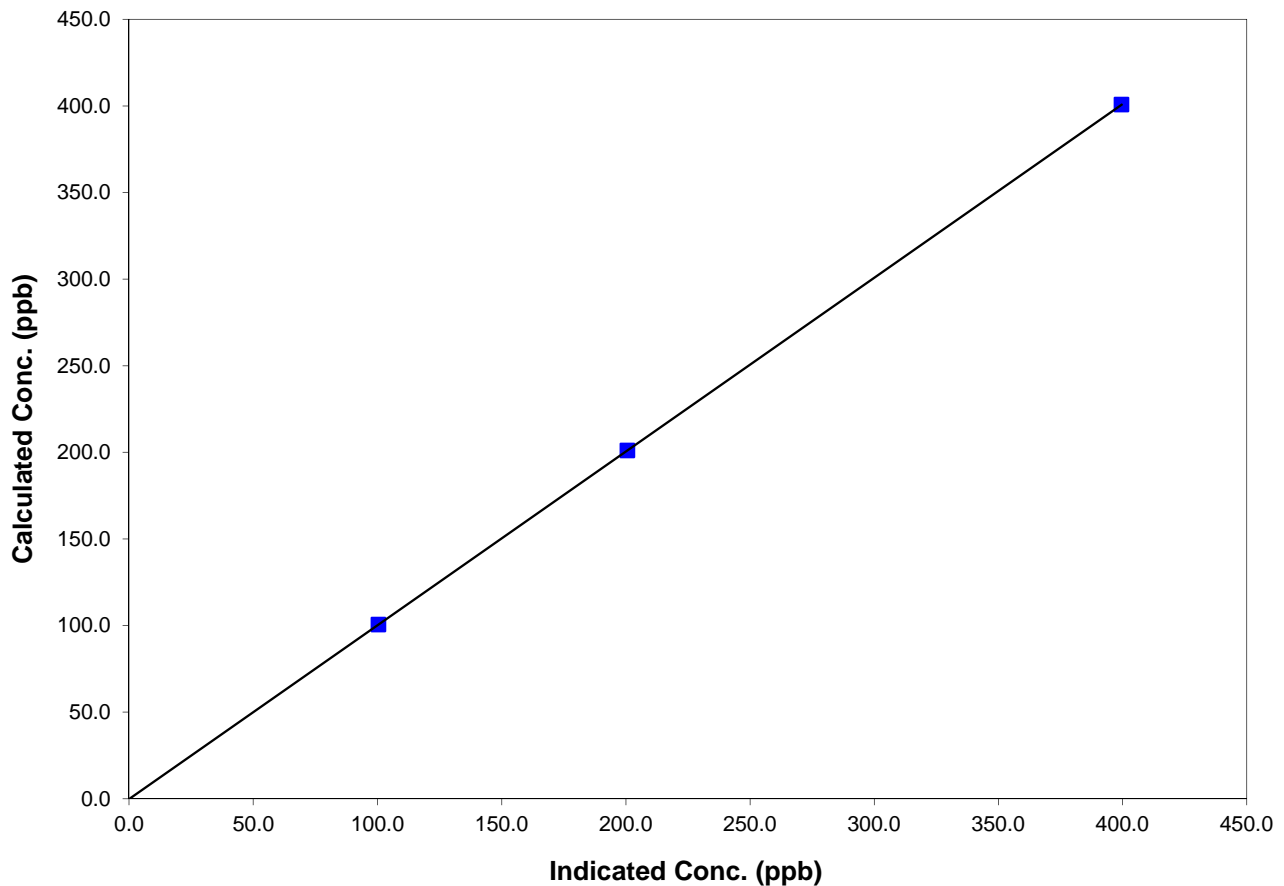
## Station Information

Calibration Date	May 29, 2011	Previous Calibration	April 26, 2011
Station Number	9	Station Location	Rover - Bonanza
Start Time (MST)	10:20	End Time (MST)	12:30
Analyzer make/model	TEI 43C	Analyzer serial #	609716238

## Calibration Data

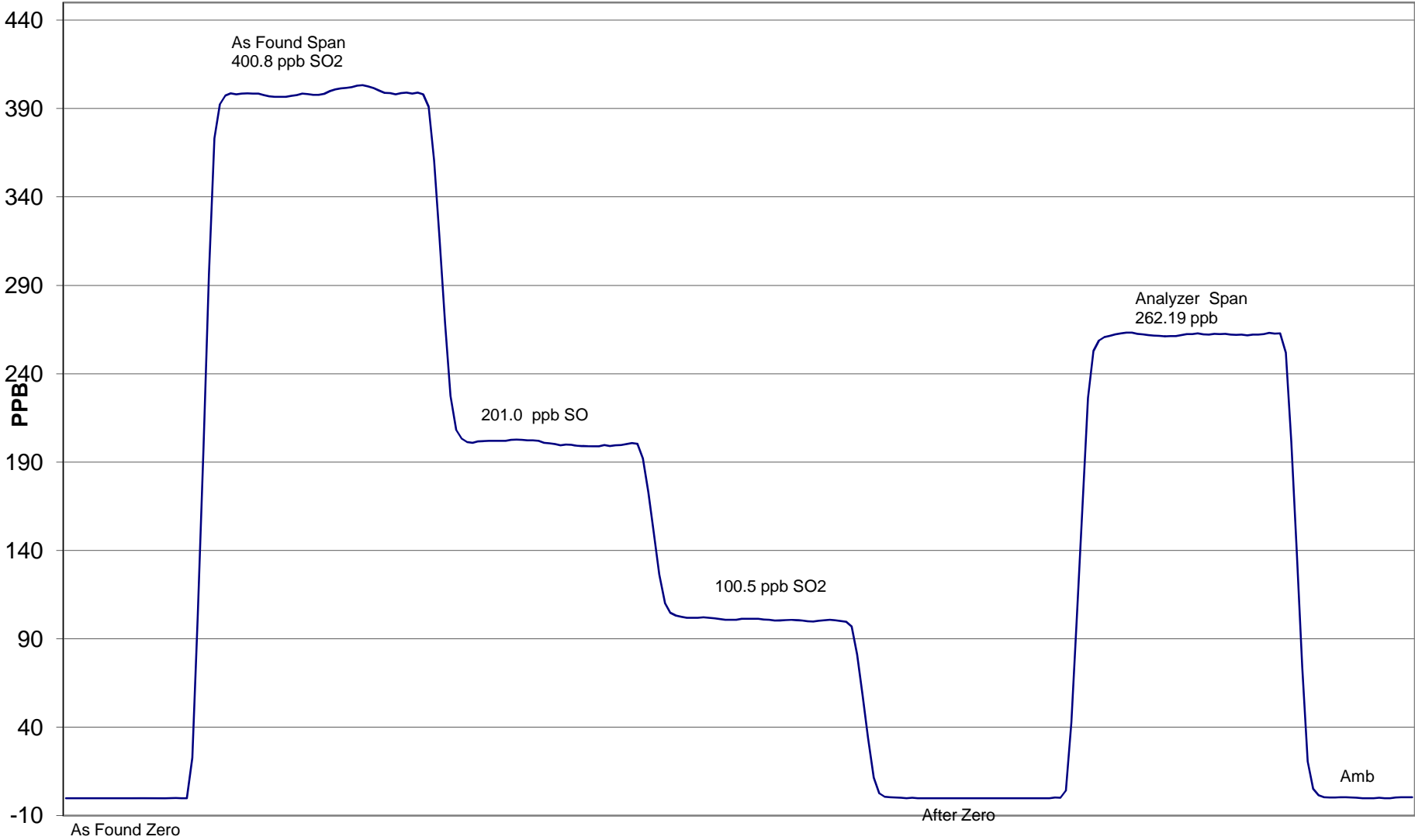
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.0	N/A	Correlation Coefficient	0.999999
400.8	399.6	1.0028		
201.0	200.7	1.0018	Slope	1.002894
100.5	100.5	1.0006		
			Intercept	-0.107955

### SO2 Calibration Curve





# Bonanza SO<sub>2</sub> Calibration



May 29, 2011

# Calibration Report



Parameter TRS  
Air Monitoring Network \_\_\_\_\_

PAZA

## Station Information

Calibration Date	<u>May 29, 2011</u>	Previous Calibration	<u>April 26, 2011</u>
Station Number	<u>9</u>	Station Location	<u>Rover-Bonanza</u>
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
			<input type="checkbox"/> Other:
Start Time (MST)	<u>7:15</u>	End Time (MST)	<u>10:59</u>
Barometric Pressure	<u>27.5</u> inches Hg	Station Temperature	<u>20.0</u> Deg C
Calibrator	<u>EnviroNics 6100</u>	Serial Number	<u>3474</u>
Cal Gas Concentration	<u>5.77</u> ppm	Cal Gas Expiry Date	<u>9/13/2011</u>
Gas Cert Reference	<u>BLM001434</u>		
DACS make	<u>CR3000</u>	DACS serial No.	<u>5407</u>
DACS voltage range	<u>0 - 5 Volt</u>	DACS channel #	<u>1</u>
	<u>Before</u>		<u>After</u>
DACS Scale High	<u>100</u>	DACS slope	<u>100</u>
DACS Scale Low	<u>0</u>	DACS intercept	<u>0</u>
Calculated slope	<u>0.995562</u>	Calculated slope	<u>1.010218</u>
Calculated intercept	<u>0.319001</u>	Calculated intercept	<u>0.069717</u>
Analyzer make	<u>TEI 43C</u>	Analyzer serial #	<u>609716238</u>

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Background	11.4	ppb	11.0	ppb
Coefficient	1.490		1.444	
Lamp Voltage	788	V	789	V
Chamber Temp	44.2	C	43.9	C
Perm gas Temp	45.0	C	45.0	C
Pressure	657.3	mmHg	656.8	mmHg
Sample Flow	.438	ccm	.437	ccm
Lamp Intensity	39233.0	Hz	39034.0	Hz

## Calibration Data

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4988	0.0	0.0	0.1	N/A
4988	69.72	79.5	78.7	1.0107
4988	34.83	40.0	39.5	1.0123
4988	8.93	10.3	9.9	1.0371
4988	0.00	0.0	-0.8	As found zero
4988	69.72	79.5	76.4	As found span
Average Correction Factor				1.0200

Calculated value of As Found Response: 77.20 ppm Percent Change of As Found: 2.9%

	before calibration		after calibration	
Auto zero	-0.6	ppm	-0.3	ppm
Auto span	69.6	ppm	68.4	ppm

Notes: Near end of first point oxidizer packed it in. Rebuild oxidizer.

Calibration Performed By: Grover Christiansen

# Calibration Summary

Parameter TRS

Air Monitoring Network PAZA

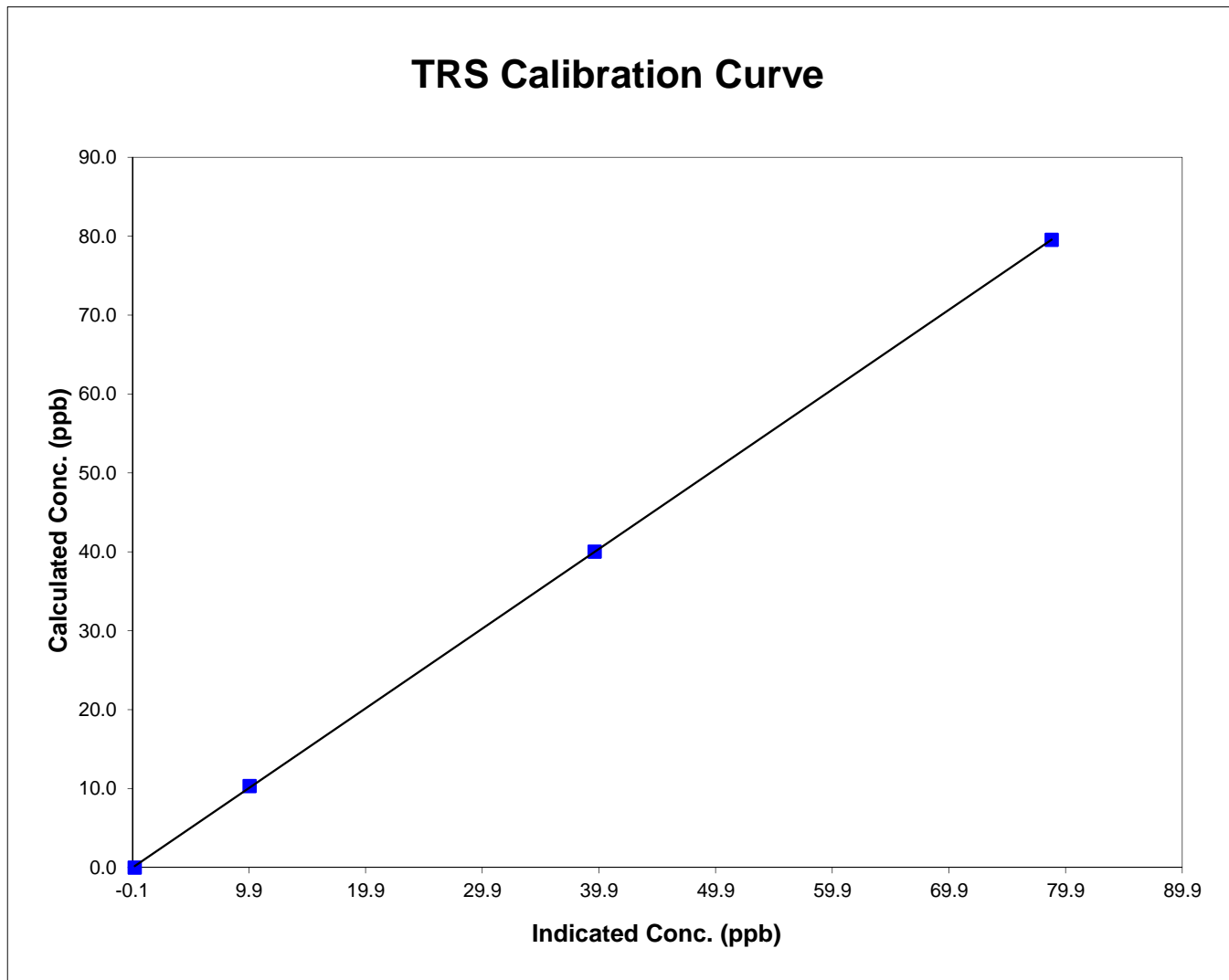


## Station Information

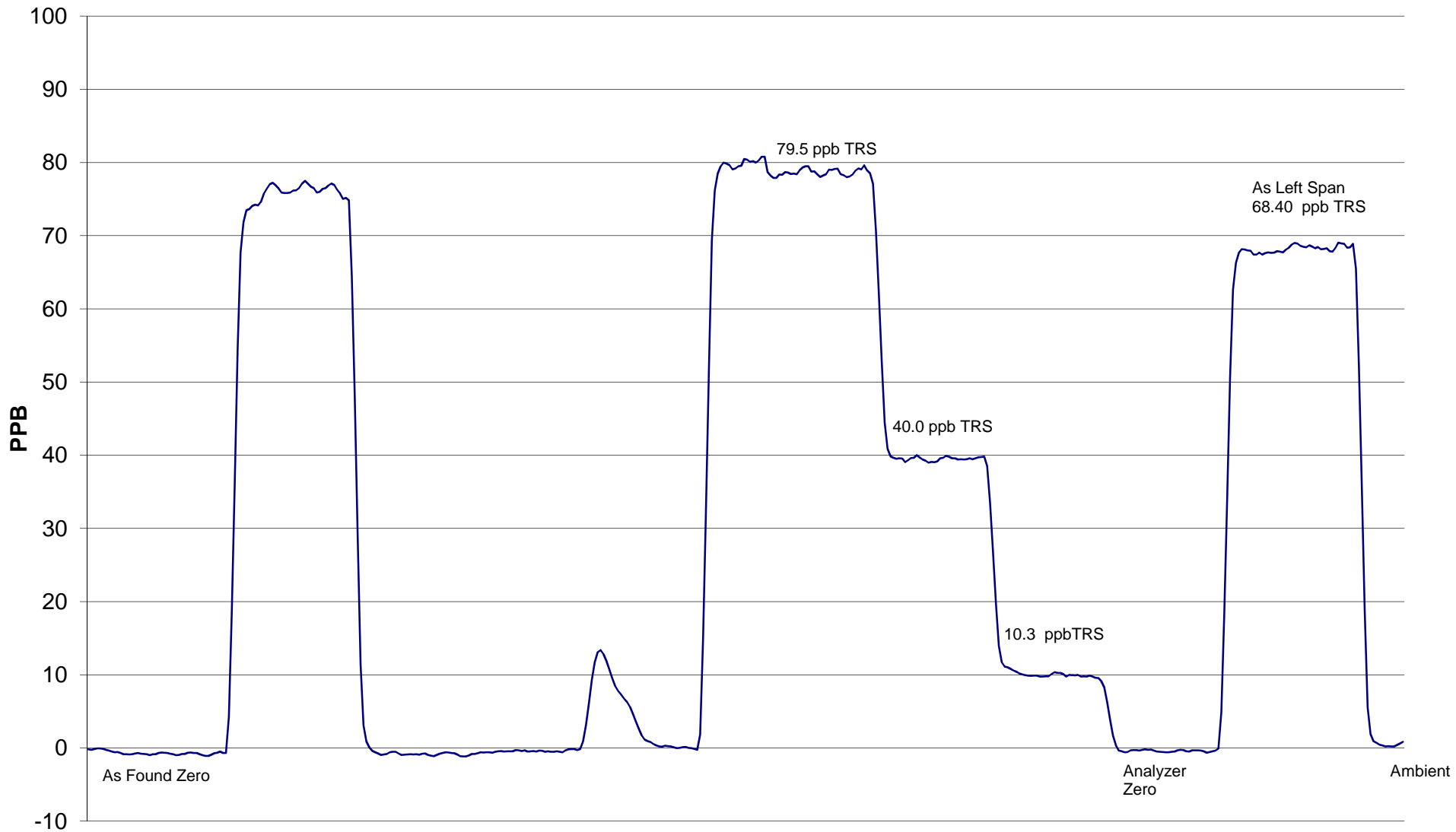
Calibration Date	<u>May 29, 2011</u>	Previous Calibration	<u>April 26, 2011</u>
Station Number	<u>9</u>	Station Location	<u>Rover-Bonanza</u>
Start Time (MST)	<u>7:15</u>	End Time (MST)	<u>10:59</u>
Analyzer make/model	<u>TEI 43C</u>	Analyzer serial #	<u>609716238</u>

## Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.1	N/A	Correlation Coefficient	0.999981
79.5	78.7	1.0107		
40.0	39.5	1.0123	Slope	1.010218
10.3	9.9	1.0371		
			Intercept	0.069717



# Bonanza TRS Calibration



May 29, 2011

# Calibration Report

Parameter

NO<sub>x</sub>-NO-NO<sub>2</sub>

Air Monitoring Network

PAZA



## Station Information

Calibration Date May 29, 2011 Previous Calibration April 26, 2011  
 Station Number 9 Station Location Rover-Bonanza

Reason:  Routine  Installation  Removal  Other: \_\_\_\_\_

Start Time (MST) 10:15 End Time (MST) 13:52  
 Barometric Pressure 0.927 Atm Station Temperature 20.0 Deg C  
 Calibrator EnviroNics Serial Number 3474  
 NO Cal Gas Conc 51.4 ppm Cal Gas Expiry Date April 6th, 2012  
 NOx Cal Gas Conc 51.4 ppm Cal Gas Serial # SGAL 3245

## DACS Information

DACS make CR3000 DACS serial No. 5407

Parameter		NO2	NOx	NO
Before	Data Slope	0.999137	1.000094	1.003935
	Data Offset	0.035438	-3.113156	-3.239469
After	Data Slope	0.996306	0.997313	1.001680
	Data Offset	-0.961540	-2.698564	-2.790452
Channel #		5	3	4
Voltage Range		0 - 5 VDC	0 - 5 VDC	0 - 5 VDC

## Analyzer Information

Analyzer make/model TEI 42i Analyzer serial # 0701120011

Test Point	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
NO offset	4.1	mV	4.1	mV
NOx bkgnd	4.2	mV	4.5	mV
NO coefficient	1.108		1.103	
NOx coefficient	1.000		1.003	
NO2 conv temp	324.2	Deg C	325.3	Deg C
PMT Temp	-3.1	Deg C	-2.7	Deg C
PMT Volt	-773.7	mV	-773.3	mV
R Cell Press	151.2	in Hg	147.2	in Hg
Sample Flow	0.901	ccm	0.937	ccm

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 \_\_\_\_\_

# Calibration Report



Parameter **NOX-NO-NO2**  
 Air Monitoring Network **PAZA**

## Station Information

Calibration Date: **May 29, 2011** Station Location: **Rover-Bonanza**

## Calibration Data

	Dilution flow rate (ccm)	Source gas flow rate (ccm)	Calculated NOx conc (ppb)	Calculated NO conc (ppb)	Calculated NO2 conc (ppb)	Indicated NOx conc (ppb)	Indicated NO conc (ppb)	Indicated NO2 conc (ppb)	NOx Correction factor	NO Correction factor
zero	4989	0.00	0.0	0.0	0.0	0.7	0.7	0.2	N/A	N/A
1	4989	39.83	407.1	407.1	0.0	409.9	408.3	0.3	0.9932	0.9971
2	4989	19.90	204.2	204.2	0.0	208.5	207.2	0.5	0.9796	0.9854
3	4989	9.93	102.1	102.1	0.0	107.1	107.1	0.0	0.9533	0.9529
AFZ	4989	0.00	0.0	0.0	0.0	0.7	0.7	0.2	0.0000	0.0000
AFS	4989	39.83	407.1	407.1	0.8	409.8	408.1	0.4	0.9934	0.9975
Average Correction Factor									0.9754	0.9785

As Found Concentrations: **NO<sub>x</sub>= 406.0** **NO= 404.2** As Found Percent Change **NO<sub>x</sub>= -0.3%** **NO= -0.7%**

## GPT Calibration Data

Dilution Flow 4989 ccm Source Gas Flow 39.84 ccm

O3 Setpoint (ppb)	Indicated NO high point (ppb)	Indicated NO drop conc (ppb)	Calculated NO2 conc (ppb)	Indicated NOx conc (ppb)	Indicated NO conc (ppb)	Indicated NO2 conc (ppb)	NOx Correction factor	NO Correction factor	NO2 Correction factor	Converter Efficiency
0	0.7	0.7	0.0	0.7	0.7	0.2	N/A	N/A	N/A	N/A
NO point	407.9	407.9	0.0	408.8	407.9	-0.3	0.9978	1.0000	N/A	N/A
300	407.9	185.8	222.1	410.8	185.8	223.5	0.9929	1.0000	0.9939	100.6%
200	407.9	259.9	148.1	411.0	259.9	149.6	0.9926	1.0000	0.9895	101.1%
100	407.9	330.6	77.4	411.5	330.6	79.7	0.9914	1.0000	0.9706	103.0%
Average Correction Factor							0.9923	1.0000	0.9847	101.6%

## AIC Data

Parameter	Previous calibration				Current calibration			
	NOx	NO2	NO		NOx	NO2	NO	
Auto zero	-0.2	-0.3	-0.2	ppb	0.7	0.7	0.7	ppb
Auto span	200.0	197.1	1.6	ppb	196.1	193.2	2.1	ppb

Calibration Performed By: Grover Christiansen

# Calibration Summary

Parameter NO<sub>2</sub>

Air Monitoring Network PAZA



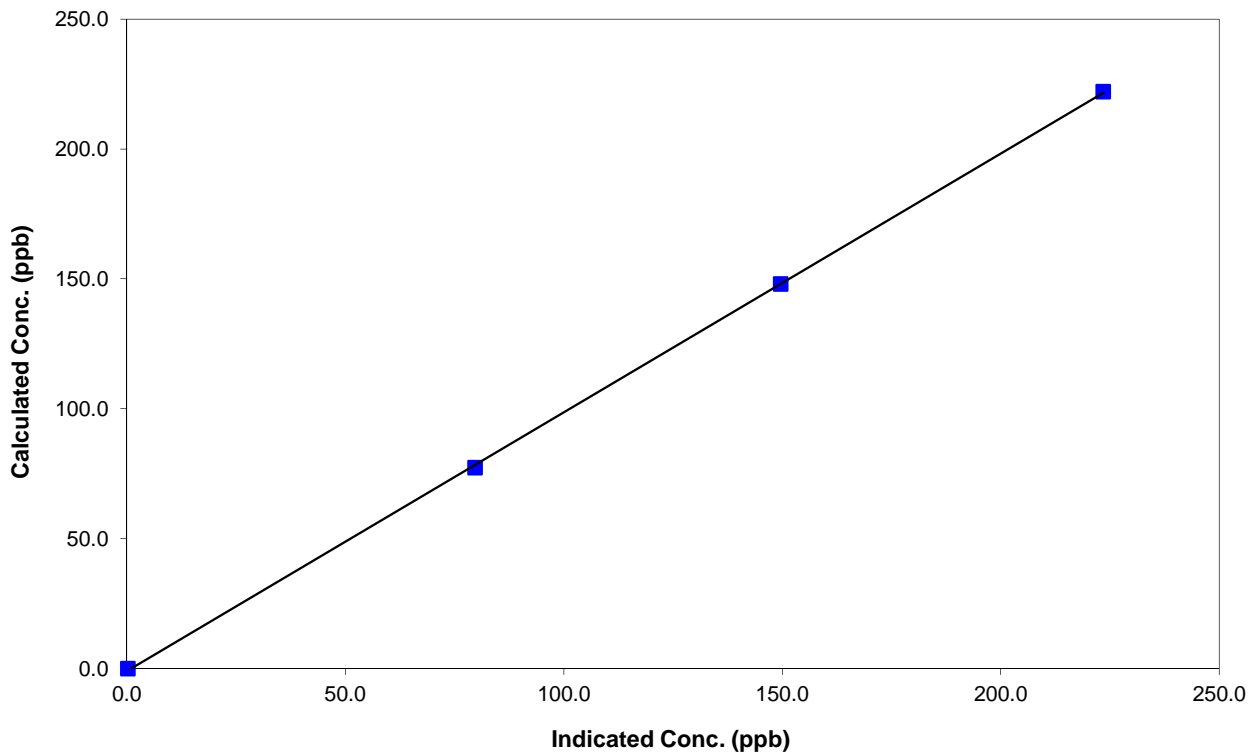
## Station Information

Calibration Date	May 29, 2011	Previous Calibration	April 26, 2011
Station Number	9	Station Location	Rover-Bonanza
Start Time (MST)	10:15	End Time (MST)	13:52
Analyzer make	TEI 42i	Analyzer serial #	0701120011

## Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.2	N/A	Correlation Coefficient	0.999931
222.1	223.5	0.9939		
148.1	149.6	0.9895	Slope	0.996306
77.4	79.7	0.9706		
			Intercept	-0.961540

### NO<sub>2</sub> Calibration Curve



# Calibration Summary



Parameter NO<sub>x</sub>

Air Monitoring Network PAZA

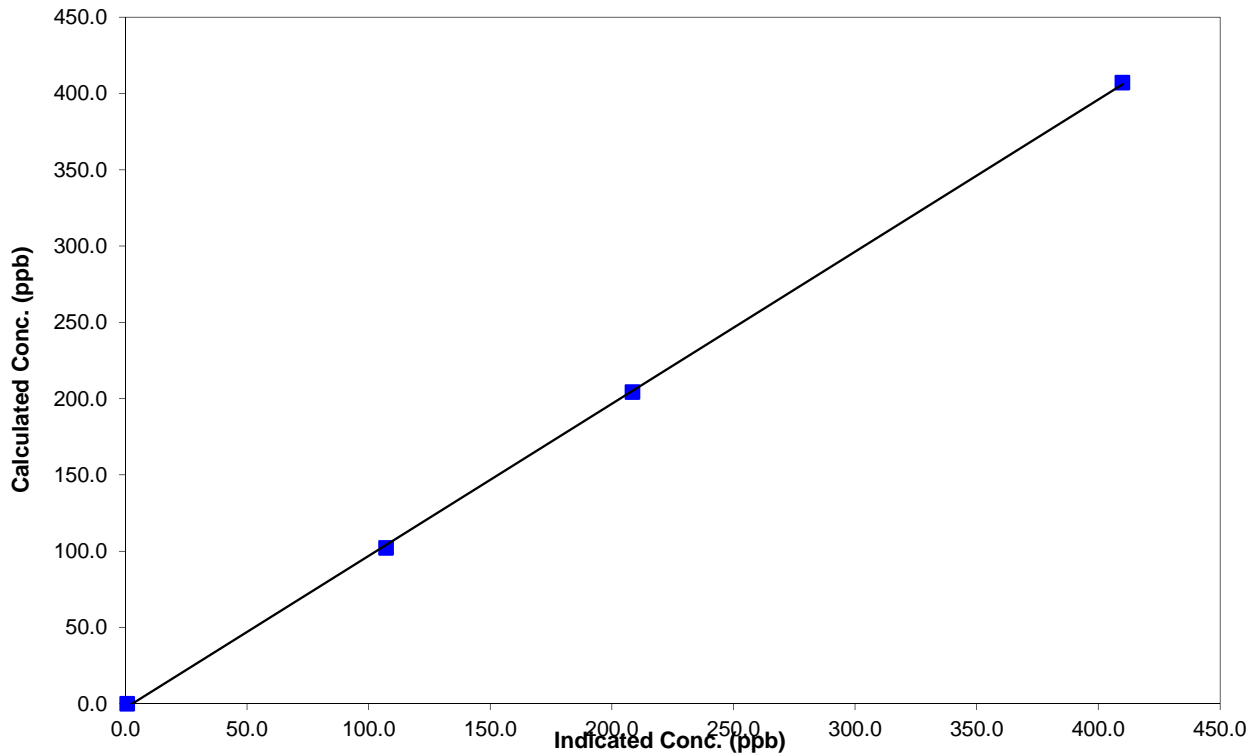
## Station Information

Calibration Date	May 29, 2011	Previous Calibration	April 26, 2011
Station Number	9	Station Location	Rover-Bonanza
Start Time (MST)	10:15	End Time (MST)	13:52
Analyzer make	TEI 42i	Analyzer serial #	0701120011

## Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.7	N/A	Correlation Coefficient	0.999889
407.1	409.9	0.9932		
204.2	208.5	0.9796	Slope	0.997313
102.1	107.1	0.9533		
			Intercept	-2.698564

### NO<sub>x</sub> Calibration Curve





# Calibration Summary



Parameter NO

Air Monitoring Network PAZA

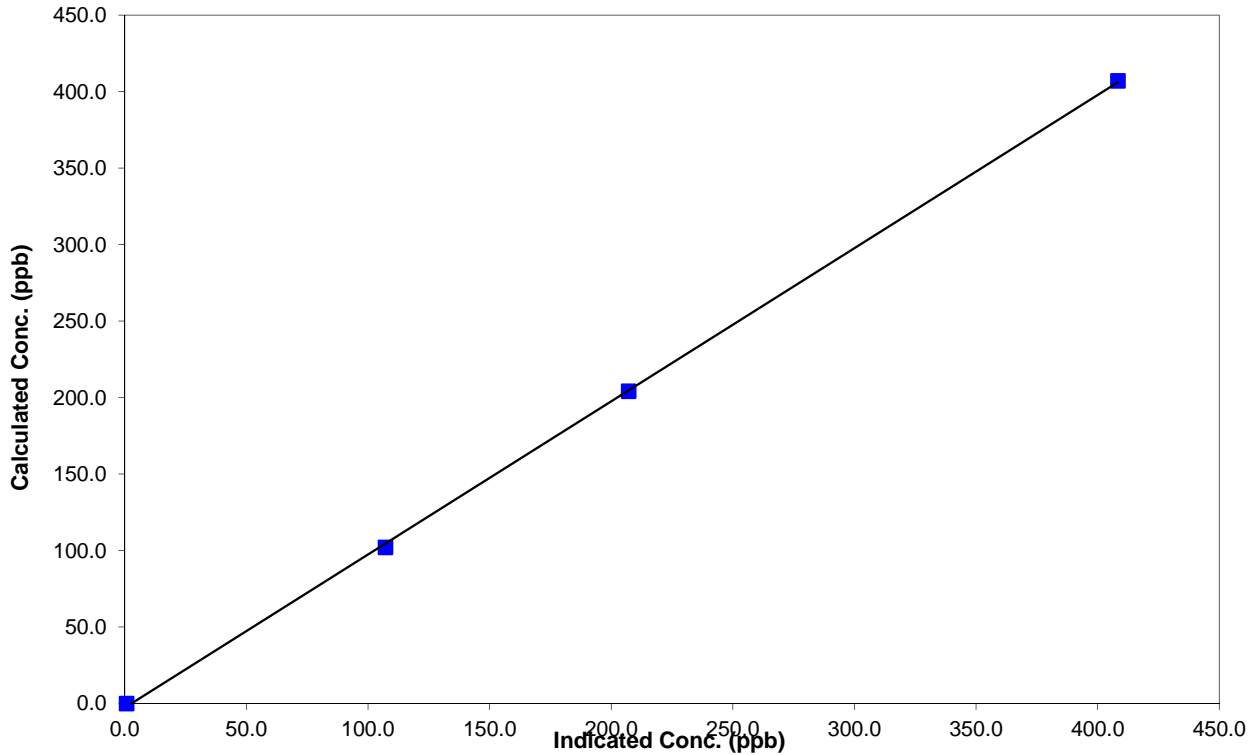
## Station Information

Calibration Date	May 29, 2011	Previous Calibration	April 26, 2011
Station Number	9	Station Location	Rover-Bonanza
Start Time (MST)	10:15	End Time (MST)	13:52
Analyzer make	TEI 42i	Analyzer serial #	0701120011

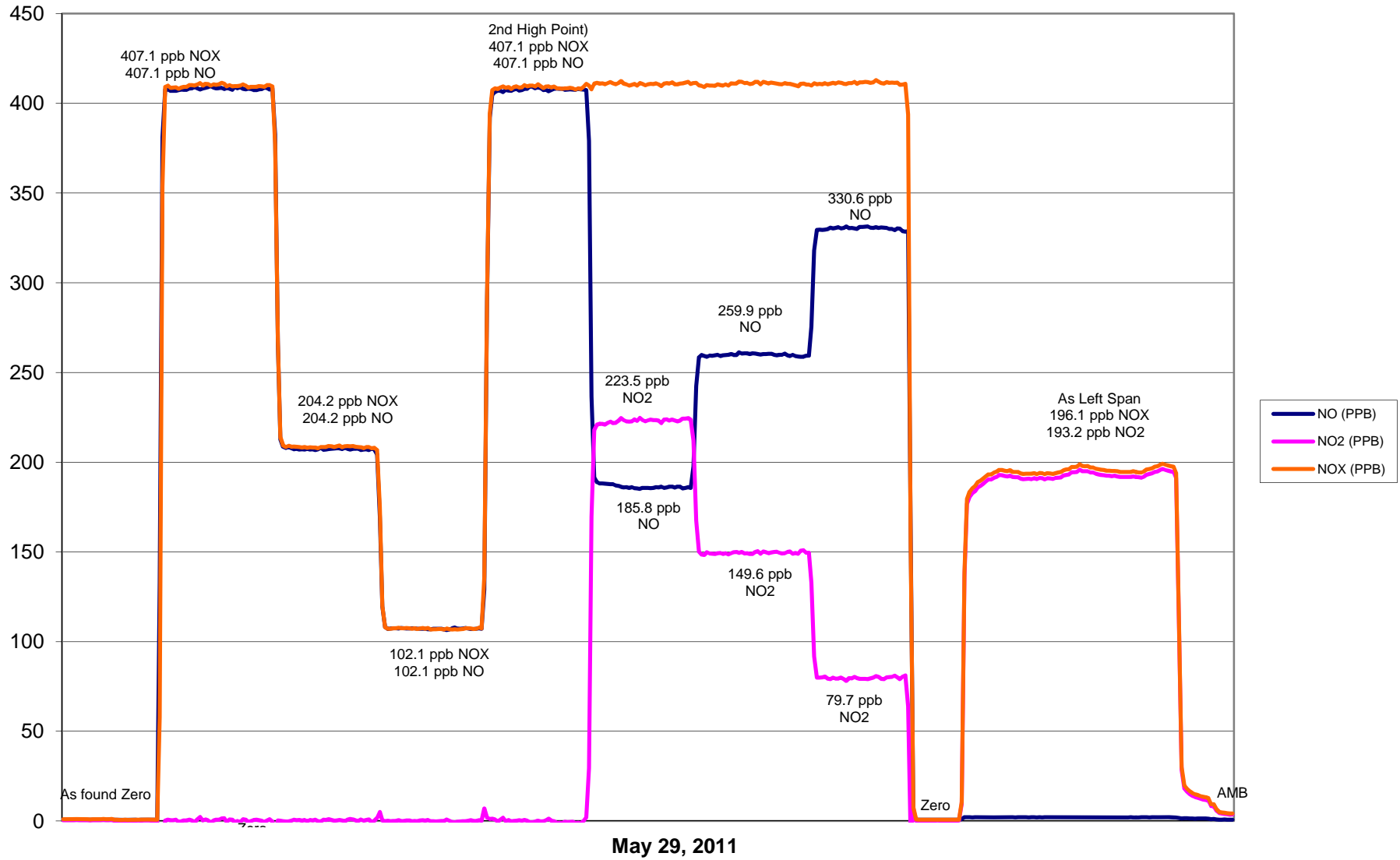
## Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.7	N/A	Correlation Coefficient	0.999873
407.1	408.3	0.9971		
204.2	207.2	0.9854		
102.1	107.1	0.9529	Slope	1.001680
			Intercept	-2.790452

### NO Calibration Curve



# Bonanza NO<sub>x</sub> Calibration



# Calibration Report



Parameter 03  
 Air Monitoring Network PAZA

## Station Information

Calibration Date	May 29, 2011	Previous Calibration	April 26, 2011
Station Number	9	Station Location	Rover - Bonanza
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal remove
			<input type="checkbox"/> Other:
Start Time (MST)	12:35	End Time (MST)	15:06
Barometric Pressure	0.927 atm	Station Temperature	15.7 Deg C
Calibrator	Environics 6100	Serial Number	3474
DACS make	CR3000	DACS serial No.	5407
DACS voltage range	0 - 5 Volts	DACS channel #	6
	Before		After
Calculated slope	0.997033	Calculated slope	0.991329
Calculated intercept	0.721428	Calculated intercept	-0.087642
Analyzer make	TEI Model 49C	Analyzer serial #	49C-71577-369

	before		after	
Concentration range	0-500	ppb	0-500	ppb
Offset	0.3	ppb	0.3	ppb
Span	1.019		1.041	
Cell A intensity	80197	Hz	80814	Hz
Cell B intensity	83425	Hz	83731	Hz
Pressure	687.40	in Hg	697.60	in Hg
CellA Flow	0.776	ccm	0.775	ccm
Cell B Flow	0.686	cmm	0.683	cmm

## Calibration Data

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4990	0.00	0.0	0.1	N/A
4989	0.30	222.1	224.3	0.9903
4989	0.20	148.1	149.2	0.9924
4989	0.10	77.4	78.3	0.9891
4989	0.00	0.0	0.1	As found zero
4989	0.30	222.1	224.3	As found span
Average Correction Factor				0.9906

Calculated value of As Found Response: 224.2 ppm Percent Change of As Found: 1.0%

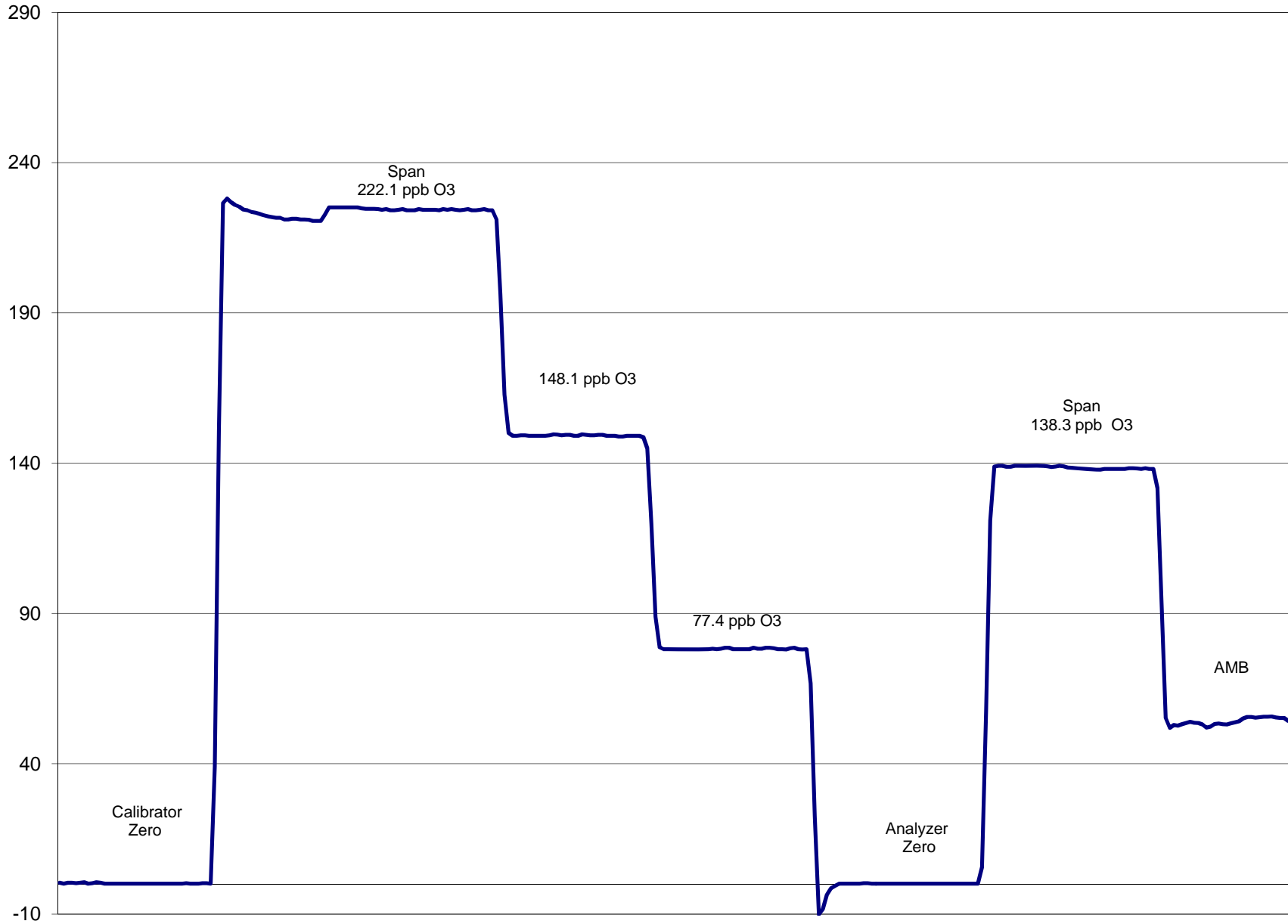
	before calibration		after calibration	
Auto zero	0.6	ppb	0.0	ppb
Auto span	137.7	ppb	138.3	ppb

Notes: \_\_\_\_\_  
 \_\_\_\_\_

Calibration Performed By: Grover Christiansen



# Bonanza O<sub>3</sub> Calibration



May 29, 2011

# Calibration Report



Parameter SO2

Air Monitoring Network PAZA

## Station Information

Calibration Date	May 6, 2011	Previous Calibration	April 15, 2011
Station Number	6	Station Location	Valleyview
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
		<input type="checkbox"/> Other:	
Start Time (MST)	8:15	End Time (MST)	11:00
Barometric Pressure	702.00 mm	Station Temperature	14.7 Deg C
Calibrator	EnviroNics 6100	Serial Number	3474
Cal Gas Concentration	50.6 ppm	Cal Gas Cert Date	7/23/2010
Gas Cert Reference	SGAL3245		
DACS make	CR3000	DACS serial No.	5409
DACS voltage range	0 - 5 volt	DACS channel #	4
	<u>Before</u>		<u>After</u>
DACS Scale High	500	DACS slope	500
DACS Scale Low	0	DACS intercept	0
Calculated slope	1.001170	Calculated slope	1.001462
Calculated intercept	0.555384	Calculated intercept	0.630624
Analyzer make	TEI 45C	Analyzer serial #	45C-57531-313

	before		after	
Concentration range	0 - 1000	ppb	0 - 1000	ppb
Background	28.7		28.4	
Coefficient	0.882		0.873	
UV Lamp Voltage	952	LPM	951	LPM
Chamber Temp	44.4	V	44.5	V
Perm Gas Temp	35.1	C	35.1	C
Pressure	609	in Hg	609.1	in Hg
Sample Flow	0.562	LPM	0.563	LPM
Lamp Intensity	48437	Hz	48352	Hz

## Calibration Data

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4989	0.00	0.0	-0.2	N/A
4989	39.84	400.9	400.1	1.0019
4989	19.89	200.9	199.1	1.0094
4989	9.94	100.6	99.9	1.0070
4989	0.00	0.0	-0.2	As found zero
4989	39.84	400.9	403.0	As found span
Average Correction Factor				1.0061

Calculated value of As Found Response: 404.262 ppm      Percent Change of As Found: -0.8%

	before calibration		after calibration	
Auto zero	0.0	ppm	0.0	ppm
Auto span	155.5	ppm	159.6	ppm

Notes: \_\_\_\_\_

Calibration Performed By: Grover Christiansen

# Calibration Summary

Parameter SO2  
 Air Monitoring Network PAZA



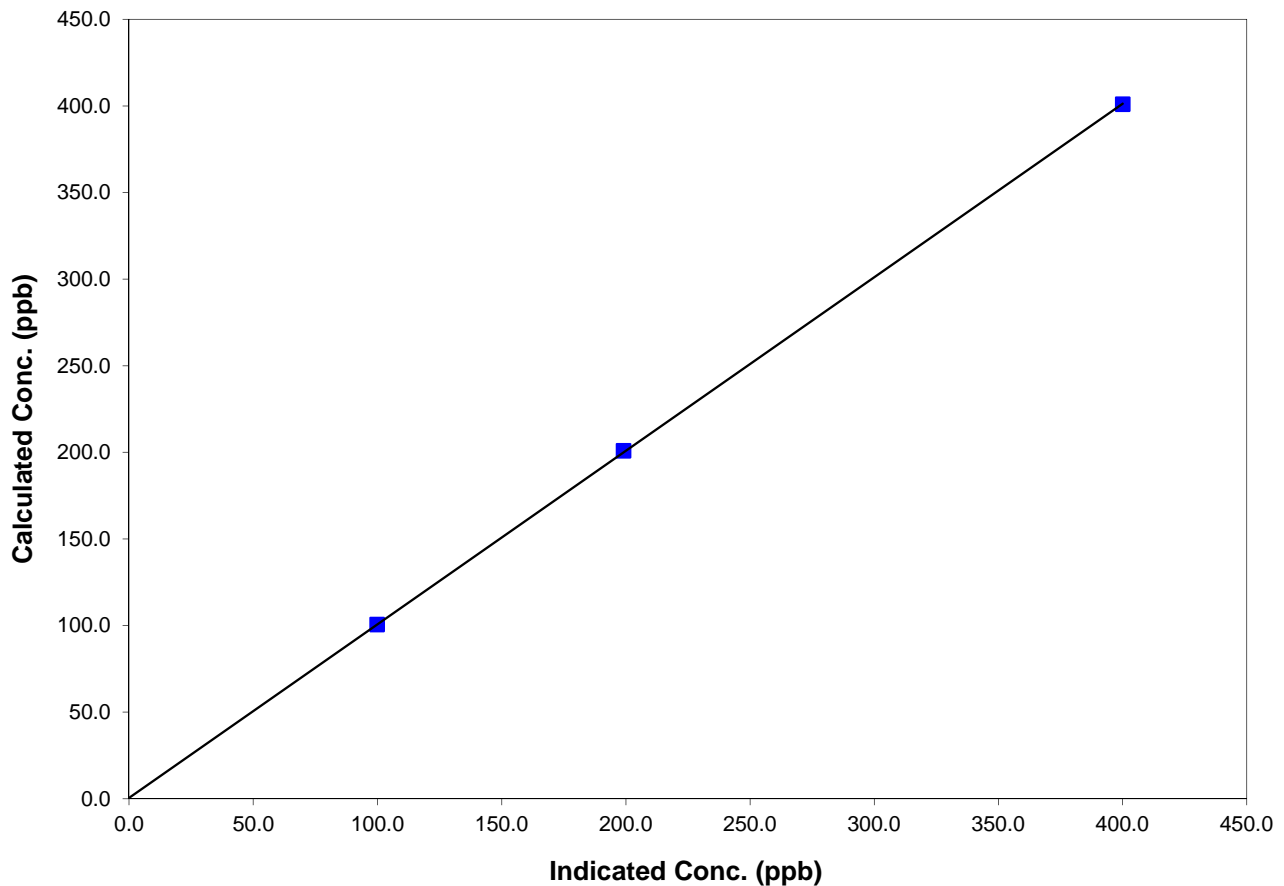
### Station Information

Calibration Date	May 6, 2011	Previous Calibration	April 15, 2011
Station Number	6	Station Location	Valleyview
Start Time (MST)	8:15	End Time (MST)	14:42
Analyzer make/model	TEI 45C	Analyzer serial #	45C-57531-313

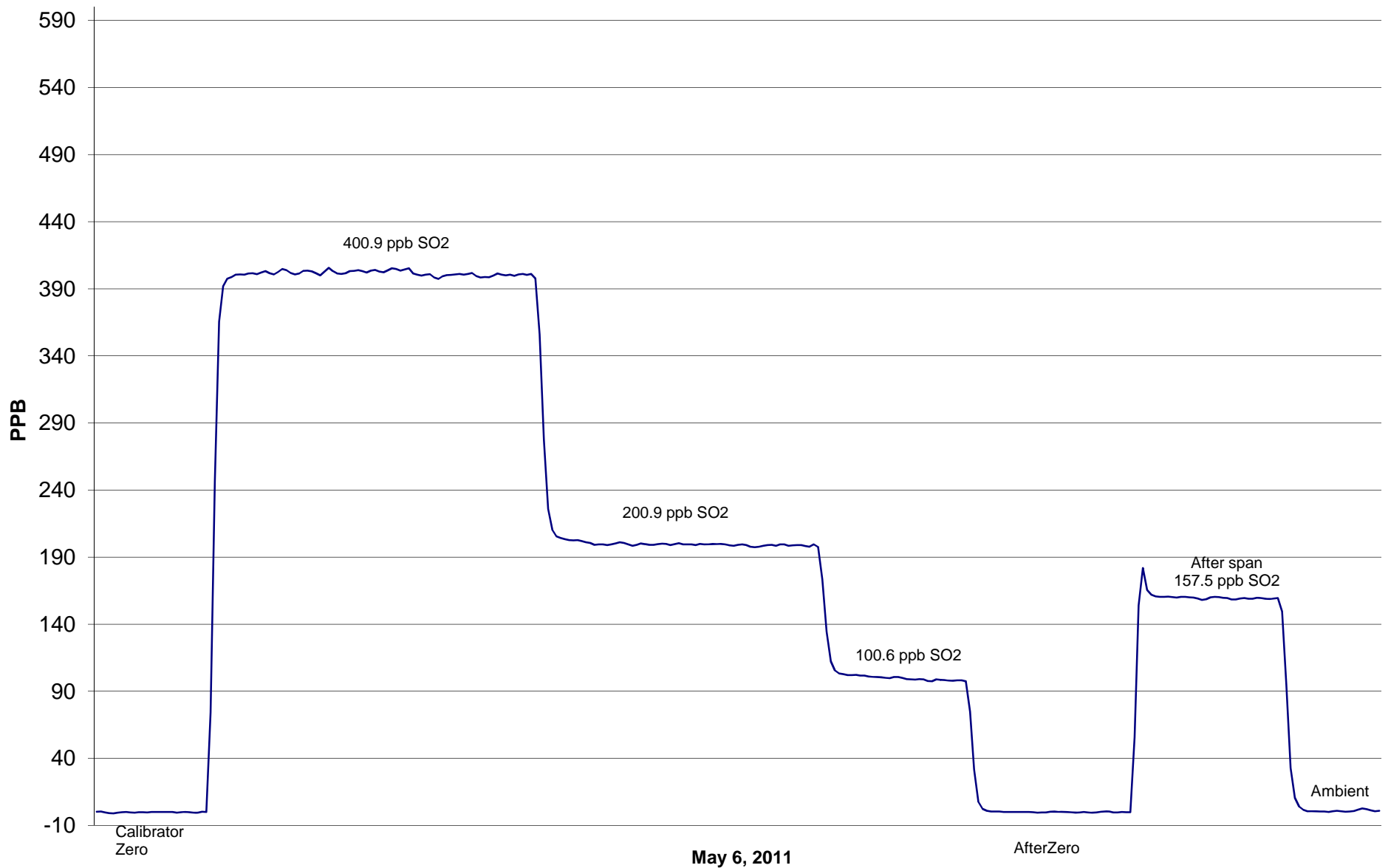
### Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.2	N/A		
400.9	400.1	1.0019	Correlation Coefficient	0.999986
200.9	199.1	1.0094		
100.6	99.9	1.0070	Slope	1.001462
			Intercept	0.630624

## SO2 Calibration Curve



# Valleyview SO<sub>2</sub> Calibration





# Calibration Report



Parameter H2S

Air Monitoring Network PAZA

### Station Information

Calibration Date	<u>May 6, 2011</u>	Previous Calibration	<u>April 15, 2011</u>
Station Number	<u>5</u>	Station Location	<u>Valleyview</u>
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
		<input type="checkbox"/> Other:	
Start Time (MST)	<u>10:00</u>	End Time (MST)	<u>12:46</u>
Barometric Pressure	<u>702.00 mm</u>	Station Temperature	<u>21.0 Deg C</u>
Calibrator	<u>Enviroics 6100</u>	Serial Number	<u>3474</u>
Cal Gas Concentration	<u>5.77 ppm</u>	Cal Gas Expiry Date	<u>9/3/2012</u>
Gas Cert Reference	<u>BLM001434</u>		
DACS make	<u>CR3000</u>	DACS serial No.	<u>5409</u>
DACS voltage range	<u>0 - 5 volt</u>	DACS channel #	<u>9</u>
	<u>Before</u>		<u>After</u>
DACS Scale High	<u>100</u>	DACS slope	<u>100</u>
DACS Scale Low	<u>0</u>	DACS intercept	<u>0</u>
Calculated slope	<u>0.987503</u>	Calculated slope	<u>0.995595</u>
Calculated intercept	<u>0.508040</u>	Calculated intercept	<u>-0.069924</u>
Analyzer make	<u>TEI Model 43i - APSCB</u>	Analyzer serial #	<u>701120010</u>

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Back Ground	9.5	ppb	7.3	ppb
Coefficient	1.530		1.430	
Lamp Voltage	786	v	786	v
Chamber Temp	45.01	c	44.9	c
Perm Oven Temp	45.01	c	45.00	c
Pressure	629.50	mm Hg	633.50	mm Hg
Sample Flow	.426	ccm	.429	ccm
Lamp Intensity	90.0	%	90.0	%

### Calibration Data

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4988	0.00	0.0	0.1	N/A
4987	69.71	79.5	80.0	0.9942
4987	34.83	40.0	40.2	0.9955
4987	8.91	10.3	10.4	0.9920
4987	0.00	0.0	-1.4	As found zero
4987	69.71	79.5	84.7	As found span
Average Correction Factor				0.9939

Calculated value of As Found Response: 85.47 ppm      Percent Change of As Found: -7.5%

	before calibration		after calibration	
Auto zero	0.0	ppm	0.1	ppm
Auto span	70.6	ppm	76.4	ppm

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Calibration Performed By: Grover Christiansen

# Calibration Summary

Parameter                         H2S                          
 Air Monitoring Network   PAZA  



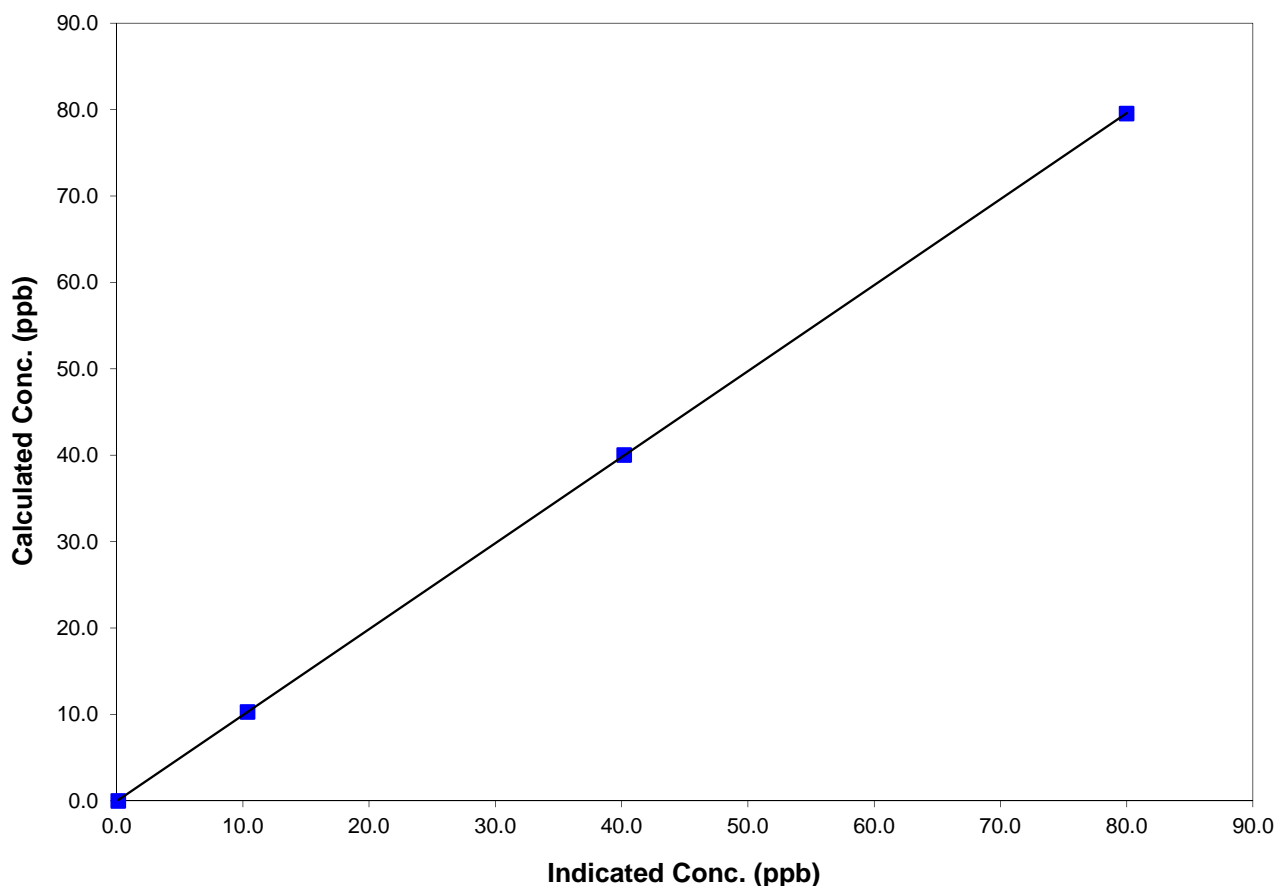
## Station Information

Calibration Date	<u>                        May 6, 2011                        </u>	Previous Calibration	<u>                        April 15, 2011                        </u>
Station Number	<u>                        5                        </u>	Station Location	<u>                        Valleyview                        </u>
Start Time (MST)	<u>                        10:00                        </u>	End Time (MST)	<u>                        12:46                        </u>
Analyzer make/model	<u>                        TEI Model 43i - APSCB                        </u>	Analyzer serial #	<u>                        701120010                        </u>

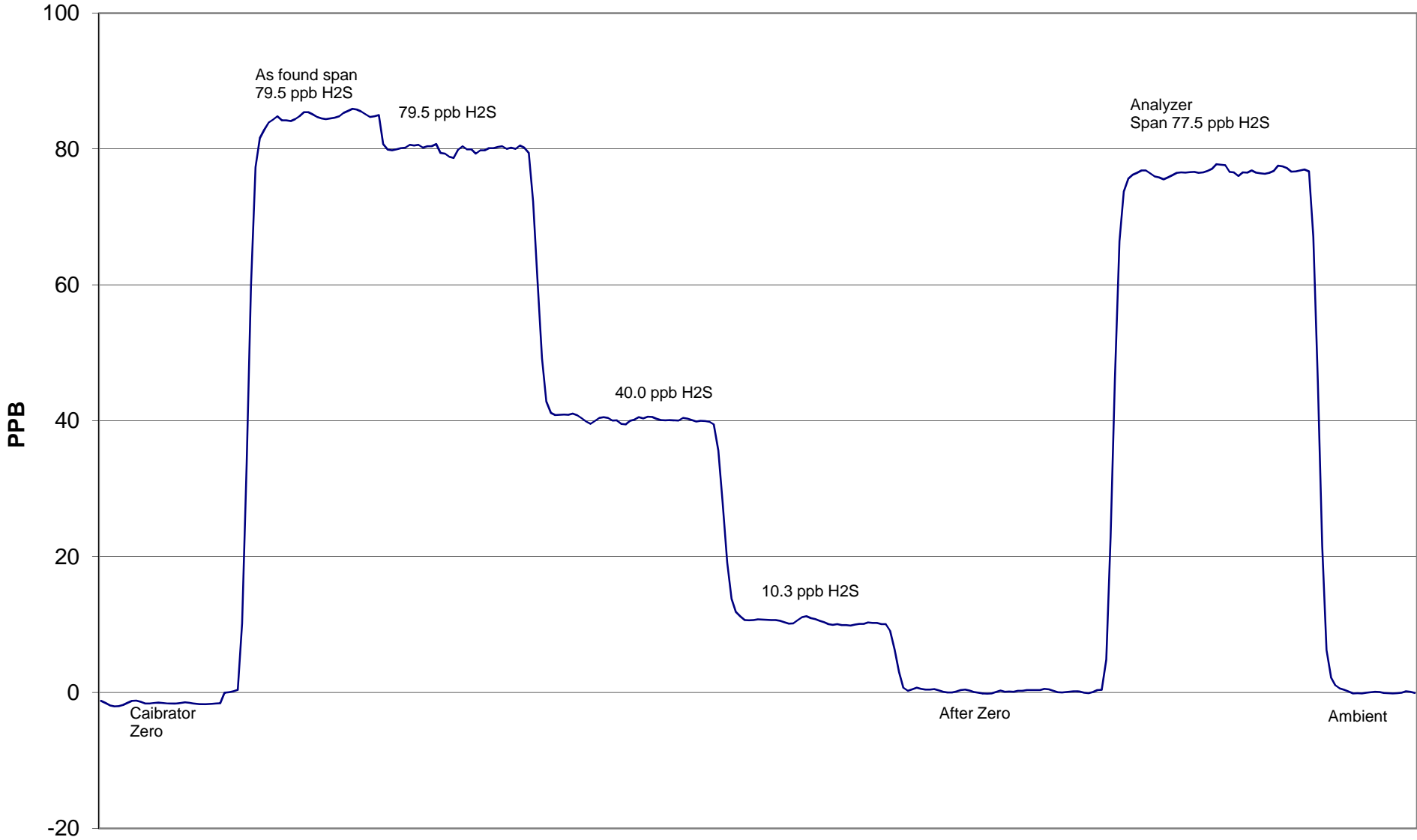
## Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.1	N/A		
79.5	80.0	0.9942	Correlation Coefficient	0.999997
40.0	40.2	0.9955		
10.3	10.4	0.9920	Slope	0.995595
			Intercept	-0.069924

### H2S Calibration Curve



# Valleyview H<sub>2</sub>S Calibration



May 6, 2011