



Peace AirShed Zone Association

Ambient Air Monitoring Network Summary

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

Operations and Reporting



August 29, 2011

Alberta Environment
11th Floor, Oxbridge Place
9820-106 Street
Edmonton Alberta T5K 2J6

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

Enclosed is the PAZA Ambient Monitoring Network Report for the month of **July 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	00000029-01-00	
	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: Five (5) Stations including Henry Pirker (Grande Prairie), Evergreen Park, Smoky Heights, Beaverlodge and Valleyview.

The portable continuous monitoring station concluded one year of monitoring in Bonanza, Alberta June 30, 2011. The station is currently and will remain out of service until a suitable location has been determined.

During the month of **July** 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.
- ◆ All analyzers and sensors at the Henry Pirker station had an operational uptime greater than 90% for the month of July; except the PM_{2.5} TEOM. The TEOM was less than 90% operational due to baseline drift caused by case, cap and air temperature swings within the unit – **Alberta Environment Reference #250952.**

Evergreen Park Station:

- ◆ The measured ambient air quality was within the AAAQO for the Evergreen Park station.
- ◆ All analyzers / sensors at the Evergreen Park station had an operational uptime greater than 90% for the month of July; except the external temperature and relative humidity sensors. Due to a technical error the wiring of the external temperature and relative humidity sensors resulted in many hours of invalid data – **Alberta Environment Reference #250953.**

Smoky Heights Station:

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

Beaverlodge Station:

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

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 of 100% for the month of July.

Passive Monitoring - 43 Stations throughout the PAZA zone:

There were four duplicate sites sampled in the month of July: Gordondale, Boone Creek, Fitzsimmons and McLennan. 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 SO₂ passives ranged from 0.1 ppb to 0.5 ppb, with a mean of 0.1 ppb.
- Monthly average concentrations for NO₂ passives ranged from 0.1 ppb to 1.2 ppb, with a mean of 0.3 ppb.
- Monthly average concentrations for O₃ passives ranged from 13.4 ppb to 27.8 ppb, with a mean of 19.4 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

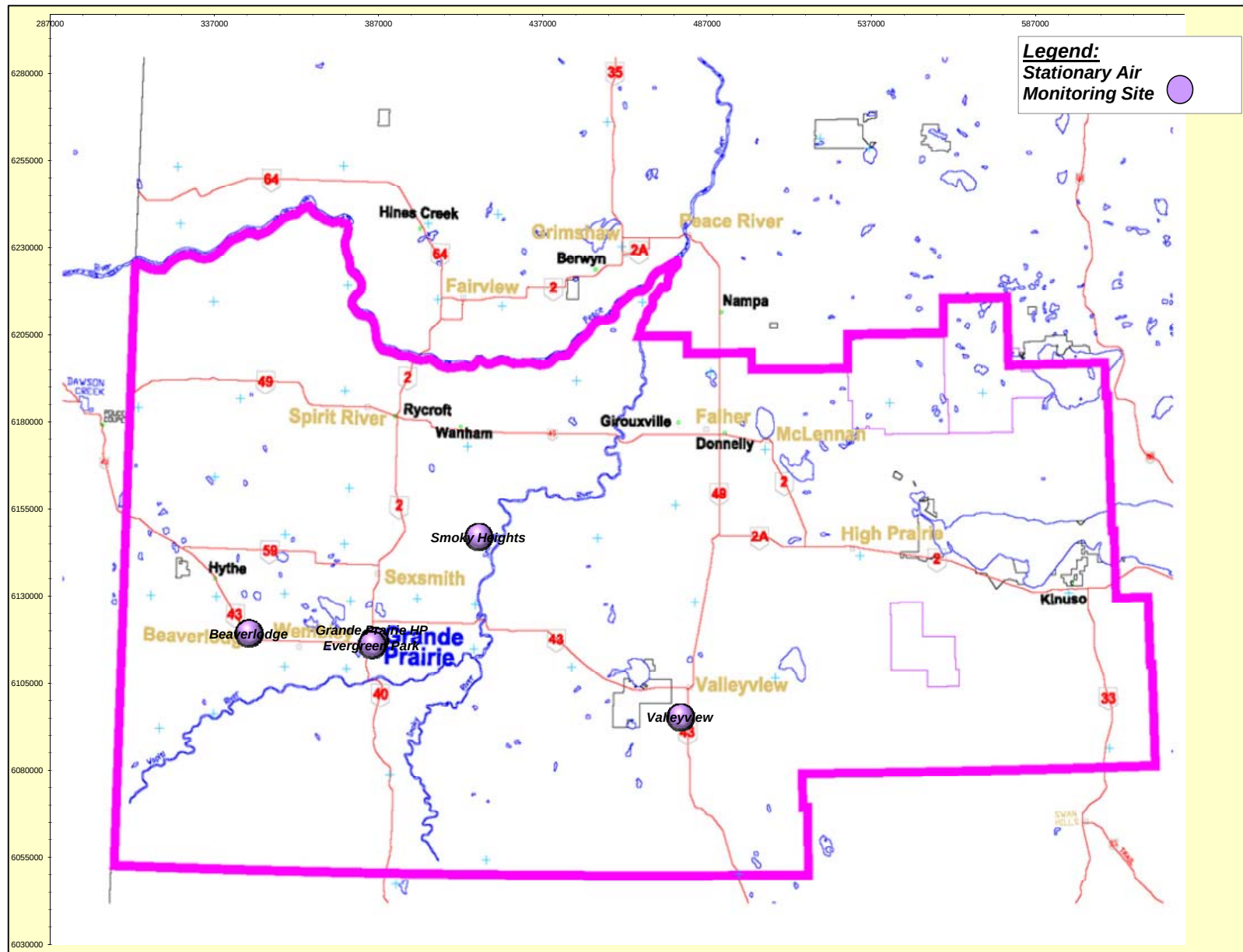


Shelly Pruden
Program Manager



Sharon Whiteley, B.Sc.
FOCUS AQM Data Specialist

Location of PAZA Continuous Monitoring Stations



PAZA Monthly Continuous Data Summary

Jul-2011 Peace Airshed Zone Association							Maximum Recorded Values				
							1-hr		24-hr / 8-hr		
Pollutant (units)	Objectives		Station	Monthly Average	Exceedence		Conc	Day	Conc	Day	Operational Time (%)
	1-hr	24-hr			1-hr	24-hr					
SO ₂ (ppb)	172	48	Henry Pirker	0.3	0	0	3.3	Jul-02 12:00	0.6	Jul-30	100.0%
SO ₂ (ppb)	172	48	Evergreen Park	0.5	0	0	11.9	Jul-26 19:00	2.2	Jul-27	100.0%
SO ₂ (ppb)	172	48	Smoky Heights	0.1	0	0	6.4	Jul-27 01:00	1.2	Jul-27	99.6%
SO ₂ (ppb)	172	48	Beaverlodge	0.1	0	0	5.5	Jul-15 06:00	0.5	Jul-17	100.0%
SO ₂ (ppb)	172	48	Valleyview	0.8	0	0	16.7	Jul-01 10:00	3.2	Jul-04	100.0%
NO (ppb)			Henry Pirker	0.7	0	0	17.0	Jul-05 08:00	2.4	Jul-05	99.7%
NO ₂ (ppb)	159	106	Henry Pirker	3.0	0	0	14.6	Jul-18 00:00	4.8	Jul-05	99.7%
NO _x (ppb)			Henry Pirker	3.8	0	0	30.1	Jul-05 08:00	7.3	Jul-05	99.7%
NO (ppb)			Beaverlodge	0.2	0	0	6.0	Jul-06 09:00	0.7	Jul-06	100.0%
NO ₂ (ppb)	159	106	Beaverlodge	1.4	0	0	9.6	Jul-06 09:00	2.4	Jul-06	100.0%
NO _x (ppb)			Beaverlodge	1.6	0	0	15.2	Jul-06 09:00	3.1	Jul-06	100.0%
O ₃ (ppb)	82		Henry Pirker	20.3	0	-	43.8	Jul-17 13:00	27.9	Jul-03	100.0%
O ₃ (ppb) - 8-hr			Henry Pirker		0				39.9	Jul-17	
O ₃ (ppb)	82		Beaverlodge	21.4	0	-	41.1	Jul-02 18:00	28.4	Jul-02	100.0%
O ₃ (ppb) - 8-hr			Beaverlodge		0				38.8	Jul-02	
CO (ppm)	13		Henry Pirker	0.13	0	-	0.5	Jul-18 12:00	0.2	Jul-13	100.0%
CO (ppm) - 8-hr	5		Henry Pirker		0				0.3	Jul-18	
THC (ppm)			Henry Pirker	2.02	-	-	3.2	Jul-18 00:00	2.2	Jul-18	100.0%
TRS (ppb)			Henry Pirker	0.4	-	-	4.7	Jul-02 05:00	0.7	Jul-05	100.0%
TRS (ppb)			Evergreen Park	0.8	-	-	7.8	Jul-15 15:00	1.5	Jul-15	100.0%
TRS (ppb)			Smoky Heights	0.2	-	-	1.0	Jul-26 06:00	0.4	Jul-28	99.6%
H ₂ S (ppb)	10	3	Valleyview	0.1	0	0	2.5	Jul-16 23:00	0.3	Jul-17	100.0%
PM2.5 (µg/m3)	80	30	Henry Pirker	4.7	0	0	68.3	Jul-18 13:00	9.4	Jul-13	77.2%
PM2.5 (µg/m3)	80	30	Evergreen Park	2.8	0	0	32.6	Jul-29 12:00	7.8	Jul-29	99.2%
PM2.5 (µg/m3)	80	30	Smoky Heights	2.3	0	0	31.8	Jul-02 22:00	6.4	Jul-05	99.5%
PM2.5 (µg/m3)	80	30	Beaverlodge	4.5	0	0	17.5	Jul-05 09:00	10.2	Jul-13	100.0%

PAZA Monthly Continuous Data Summary – continued

Jul-2011Peace Airshed Zone Association							Maximum Recorded Values				
							1-hr		24-hr / 8-hr		
RH (%)			Henry Pirker	66.4	-	-	91.4	Jul-13 06:00	88.5	Jul-08	100.0%
RH (%)			Evergreen Park	70.2	-	-	98.7	Jul-13 09:00	94.6	Jul-10	77.8%
RH (%)			Beaverlodge	66.4	-	-	94.8	Jul-09 23:00	84.6	Jul-23	92.5%
RH (%)			Valleyview	73.9	-	-	99.4	Jul-13 07:00	96.0	Jul-08	100.0%
SR (W/m ²)			Henry Pirker	179.4	-	-	792.8	Jul-04 13:00	277.0	Jul-04	100.0%
Temp (°C)			Henry Pirker	15.3	-	-	24.3	Jul-25 17:00	18.6	Jul-17	100.0%
Temp (°C)			Evergreen Park	15.4	-	-	24.1	Jul-25 18:00	18.2	Jul-17	77.8%
Temp (°C)			Smoky Heights	14.9	-	-	24.3	Jul-17 19:00	18.2	Jul-17	99.6%
Temp (°C)			Beaverlodge	14.9	-	-	23.9	Jul-17 17:00	18.6	Jul-17	92.5%
Temp (°C)			Valleyview	15.6	-	-	25.3	Jul-17 18:00	18.7	Jul-25	100.0%
WSPD s (km/hr)			Henry Pirker	12.7	-	-	36.0	Jul-08 20:00	21.8	Jul-08	98.5%
WSPD s (km/hr)			Evergreen Park	8.0	-	-	23.0	Jul-01 11:00	14.9	Jul-27	96.8%
WSPD s (km/hr)			Smoky Heights	14.2	-	-	40.0	Jul-15 16:00	26.1	Jul-01	99.6%
WSPD s (km/hr)			Beaverlodge	14.2	-	-	41.0	Jul-01 11:00	22.5	Jul-08	100.0%
WSPD s (km/hr)			Valleyview	5.2	-	-	19.0	Jul-01 10:00	11.8	Jul-08	100.0%
WSPD v (km/hr)			Henry Pirker	8.6	-	-	35.0	Jul-08 20:00	21.4	Jul-08	98.5%
WSPD v (km/hr)			Evergreen Park	5.6	-	-	22.0	Jul-01 11:00	14.2	Jul-27	96.8%
WSPD v (km/hr)			Smoky Heights	9.7	-	-	40.0	Jul-15 16:00	25.6	Jul-01	99.6%
WSPD v (km/hr)			Beaverlodge	9.4	-	-	40.0	Jul-01 11:00	22.1	Jul-08	100.0%
WSPD v (km/hr)			Valleyview	2.9	-	-	19.0	Jul-01 10:00	10.8	Jul-01	100.0%
WDIR			Henry Pirker	W	-	-	-	-	-	-	98.5%
WDIR			Evergreen Park	W	-	-	-	-	-	-	96.8%
WDIR			Smoky Heights	WSW	-	-	-	-	-	-	99.6%
WDIR			Beaverlodge	W	-	-	-	-	-	-	100.0%
WDIR			Valleyview	WNW	-	-	-	-	-	-	100.0%

Continuous Network Equipment Summary

PAZA – Henry Pirker Station

General Station Issues

Routine monthly calibrations were performed on July 6th (TRS, NO_x, O₃ & THC) and July 15th (SO₂, CO).

Parameter	Make	Model	Notes
SO ₂	TEI	43C	The calibration on July 6 th was deemed a failure (technical error) and a second calibration was performed on July 15 th to address monthly calibration obligation. No operational issues observed.
NO _x /NO/NO ₂	TEI	42C	Two (2) hours were flagged for maintenance (update data to server). No operational issues observed.
O ₃	TEI	49C	No operational issues observed.
CO	TEI	48C	No operational issues observed.
THC	TEI	51-CLT	No operational issues observed.
TRS	TEI	45C/43C	No operational issues observed.
PM _{2.5}	R&P	1400AB	One hundred and seventy (170) hours were flagged invalid due to baseline drift caused by the swinging case, cap and air temperatures within the sensor unit – AE Reference #250952 . A request has been made to Alberta Environment for a new mass transducer.
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	Eleven (11) hours were flagged invalid due to flatlining – suspect shaft needs to be replaced.

PAZA – Evergreen Park Station

General Station Issues

Routine monthly calibrations were performed on July 18th (TRS & PM_{2.5}) and July 19th (SO₂).

Parameter	Make	Model	Notes
SO ₂	TEI	43i	No operational issues observed.
TRS	TEI	43C	No operational issues observed.
PM _{2.5}	R&P	1400AB	Six (6) hours were flagged invalid due to baseline drift.
ET	Met One/Gill	083D	Due to a wiring issue (replaced ground jumpers & rewired input wires) one hundred and sixty-six (166) hours were flagged invalid – AE Reference # 250953 .
RH	Met One/Gill		Due to a wiring issue (replaced ground jumpers & rewired input wires) one hundred and sixty-six (166) hours were flagged invalid – AE Reference # 250953 .
WS / WD	Met One/ Gill		Due to a wiring issue (input wires) twenty-four (24) hours were flagged invalid.

PAZA – Smoky Heights Station

General Station Issues

Routine monthly calibrations were performed on July 27th (SO₂, TRS & PM_{2.5}). A power failure on July 8th resulted in several hours of invalid data for all parameters.

Parameter	Make	Model	Notes
SO ₂	TEI	43C	Three (3) hours invalid due to above noted power failure. No other operational issues observed.
TRS	TEI	43C	Three (3) hours invalid due to above noted power failure. No other operational issues observed.
PM _{2.5}	R&P	1400AB	Four (4) hours invalid due to above noted power failure. No other operational issues observed.
ET	Met One	083D	Three (3) hours invalid due to above noted power failure. No other operational issues observed.
WS / WD	Met One	010C/020C	Three (3) hours invalid due to above noted power failure. No other operational issues observed.

PAZA – Beaverlodge Station

General Station Issues

Routine monthly calibrations were performed on July 4th (SO₂), July 5th (NO_x), July 7th (O₃), July 11th (SO₂) and July 14th (PM_{2.5}).

Parameter	Make	Model	Notes
SO ₂	TEI	43CTL	Spans from July 5 th to 11 th were outside the target range due to a technician error during the calibration on July 4 th . The calibration on July 4 th was deemed a failure (technician error in set-up) and a second calibration was performed on July 11 th to address monthly calibration obligation and correct span issue.
NO _x /NO/NO ₂	TEI	42C	Span outside target range on July 28 th – suspect perm tube starting to fail.
O ₃	TEI	49C	No operational issues observed.
PM _{2.5}	R&P	1400AB	No operational issues observed.
ET	n/a	n/a	Fifty-six (56) hours were flagged invalid due to power / signal interference.
RH	n/a	n/a	Fifty-six (56) hours were flagged invalid due to power / signal interference.
WS / WD	Blue Sky	857	No operational issues observed.

PAZA – Valleyview Station

General Station Issues

Routine monthly calibrations were performed on July 30th (SO₂ & H₂S).

Parameter	Make	Model	Notes
SO ₂	TEI	43i	No operational issues observed.
H ₂ 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.

PAZA
Henry Pirker Station
Monthly Summary Tables, Graphs and
Roses

Hourly Averages

Sulphur Dioxide (SO₂) - ppb

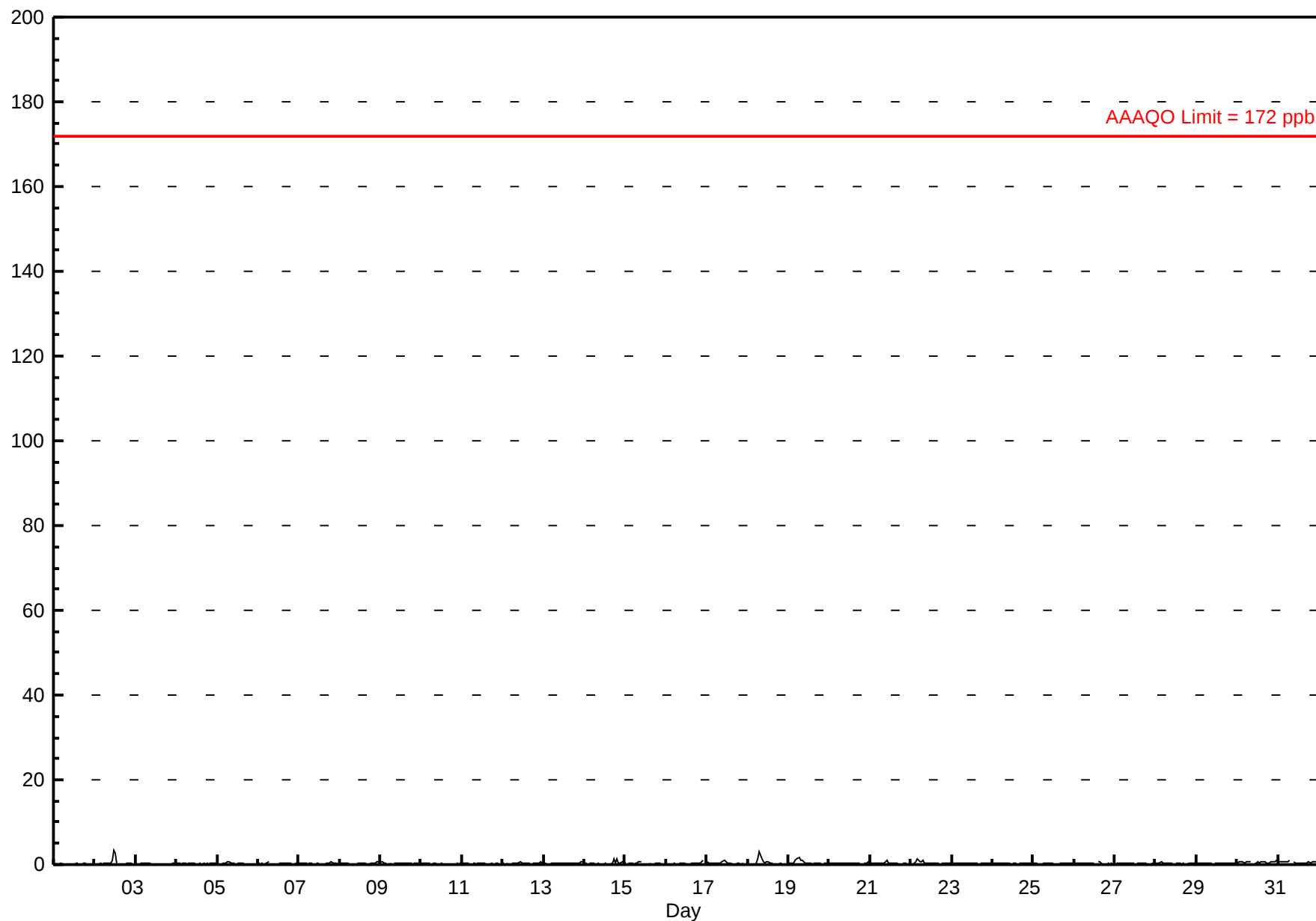
Henry Pirker - July 2011

Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0	Hours in Service: 744																							
Maximum Value: 3.3 ppb on Jul 2 12:00		Maximum Daily Average: 0.6 ppb on Jul 30		Hours of Data: 704																							
Minimum Value: 0 ppb on Jul 17 16:00		Minimum Daily Average: 0.1 ppb on Jul 1		Hours of Missing Data: 40																							
Maximum Diurnal Average: 0.5 ppb at hour 8		Minimum Diurnal Average: 0.2 ppb at hour 16		Hours of Calibration: 40																							
Monthly Average: 0.31 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.1 Q ₁ = 0.2 Median = 0.3 Q ₃ = 0.4 P ₉₀ = 0.5 P ₉₉ = 1.2		Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
1-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3	
2-Jul	0	0	0	0	0	0	0	0	0	0	1	3	3	0	A	0	0	0	0	0	0	0	0	0	0.5	3.3	
3-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.2	0.3	
4-Jul	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4	
5-Jul	0	0	0	0	0	0	1	1	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.8	
6-Jul	0	0	0	0	0	0	1	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5	
7-Jul	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0.2	0.5	
8-Jul	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.3	0.6		
9-Jul	1	1	0	0	0	0	1	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.6	
10-Jul	0	0	1	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5	
11-Jul	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	
12-Jul	0	0	0	0	A	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0.3	0.7	
13-Jul	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.4	0.8		
14-Jul	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	1	0.3	1.2		
15-Jul	0	A	0	0	0	0	0	0	1	1	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0.3	0.7	
16-Jul	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	A	0.3	1.0		
17-Jul	1	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.9	
18-Jul	0	0	0	0	0	0	1	3	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0.4	3.0	
19-Jul	0	0	0	0	1	1	2	1	1	1	1	0	0	0	0	0	0	0	0	0	A	A	0	0	0.5	1.8	
20-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	1	0.3	0.5		
21-Jul	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	A	0	0	0	0	0	0	0.3	0.9	
22-Jul	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.4	1.4	
23-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.3	0.4	
24-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.3	0.5	
25-Jul	0	0	0	0	0	0	0	0	1	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.3	0.5	
26-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	A	1	1	0	0	0	0	0	0	0	0	0.3	0.6	
27-Jul	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5	
28-Jul	0	0	0	1	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.6	
29-Jul	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.4	
30-Jul	0	1	1	1	0	1	1	1	1	A	1	1	1	0	1	1	1	0	0	1	1	1	1	1	0.6	1.1	
31-Jul	1	1	1	1	1	1	1	1	A	1	0	0	0	0	0	0	0	1	1	0	1	1	1	1	0.6	0.9	
0.3 0.3 0.3 0.3 0.3 0.3 0.4 0.5 0.4 0.3 0.3 0.4 0.4 0.3 0.3 0.2 0.2 0.3 0.3 0.3 0.3 0.3 0.3 0.3																								Diurnal Average			
0.8 0.8 0.8 0.6 1.4 1.3 1.8 3.0 1.2 0.7 0.9 3.3 2.9 0.5 0.6 0.6 0.5 1.2 0.6 1.2 0.6 0.6 1.0 1.1																								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 Averages

Sulphur Dioxide (SO₂) - ppb

Henry Pirker - July 2011



Hourly Maximums

Sulphur Dioxide (SO₂) - ppb

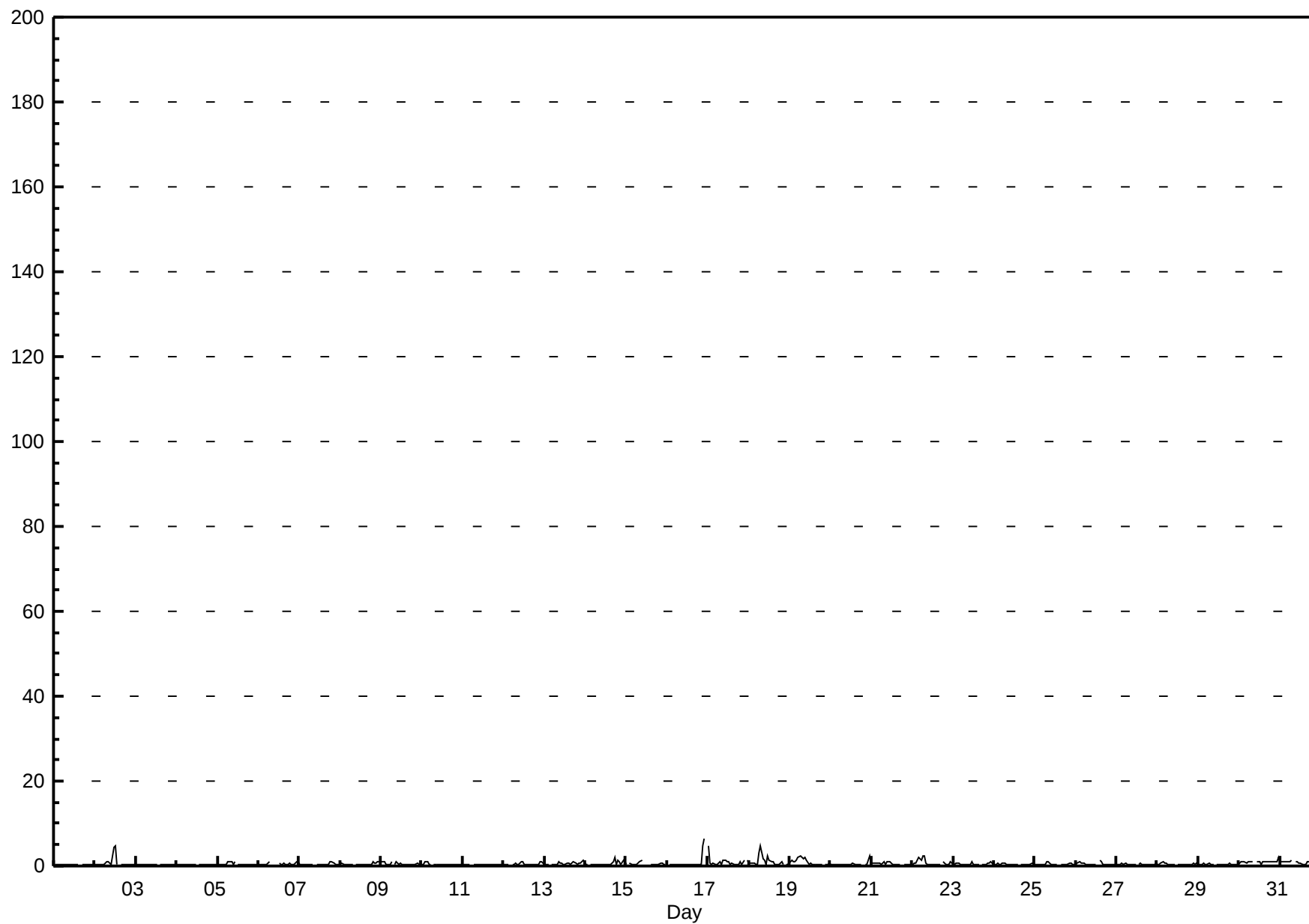
Henry Pirker - July 2011

Maximum Value: 6.3 ppb on Jul 16 23:00										Maximum Daily Average: 1.1 ppb on Jul 18										Hours in Service: 744						
Minimum Value: 0 ppb on Jul 1 02:00										Minimum Daily Average: 0.5 ppb on Jul 1										Hours of Data: 704						
Maximum Diurnal Average: 0.9 ppb at hour 8										Minimum Diurnal Average: 0.5 ppb at hour 14										Hours of Missing Data: 40						
Monthly Average: 0.67 ppb										Percentiles: P ₁ = 0.5 P ₁₀ = 0.5 Q ₁ = 0.5 Median = 0.5 Q ₃ = 0.5 P ₉₀ = 1.0 P ₉₉ = 2.2											Hours of Calibration: 40					
																				Percent Operational Time: 100.0						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
1-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0.5
2-Jul	0	0	0	0	0	0	1	1	1	0	2	4	5	0	A	0	0	0	0	0	0	0	0	0	1.0	4.6
3-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.5	0.5
4-Jul	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.5	0.5
5-Jul	0	0	0	0	0	0	1	1	1	0	1	A	0	0	0	0	0	0	0	0	0	0	0	0	0.6	1.0
6-Jul	0	0	0	0	0	0	1	C	C	C	C	C	1	0	0	1	0	0	1	0	0	0	1	1	0.6	1.0
7-Jul	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0.5	1.1
8-Jul	0	1	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0.6	1.0
9-Jul	1	1	1	0	0	0	1	A	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0.6	1.0
10-Jul	0	0	1	1	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	1.0
11-Jul	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
12-Jul	0	0	0	0	A	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	1	1	1	0.6	1.2
13-Jul	0	0	0	A	0	0	0	0	1	1	1	0	0	1	1	0	1	1	1	0	1	1	1	1	0.7	1.5
14-Jul	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	1	1	0	1	1	0.7	2.0
15-Jul	0	A	1	0	0	0	0	1	1	1	C	C	C	C	0	0	0	0	0	1	1	1	1	0	0.6	1.5
16-Jul	A	0	0	0	1	1	1	0	0	0	0	0	1	0	1	1	0	0	0	0	1	5	6	A	1.0	6.3
17-Jul	5	1	1	1	0	1	1	1	0	2	2	1	1	0	1	0	0	1	1	1	1	1	A	1	1.0	4.7
18-Jul	1	1	1	1	1	0	3	5	2	1	0	2	2	1	1	0	0	0	0	1	1	A	0	0	1.1	4.7
19-Jul	1	1	1	1	2	2	2	2	2	2	1	0	1	0	0	0	0	0	1	1	A	1	1	1	1.0	2.5
20-Jul	1	1	0	0	0	0	1	1	1	0	0	0	0	1	1	0	1	1	0	A	1	1	1	2	0.6	2.2
21-Jul	1	1	1	1	1	1	1	1	0	1	1	1	0	0	0	0	1	1	A	1	1	1	1	1	0.6	1.0
22-Jul	1	1	1	2	2	2	2	2	1	1	1	0	0	0	0	0	1	A	1	1	1	0	1	1	0.9	2.5
23-Jul	1	1	1	1	1	1	1	1	1	0	0	1	0	0	0	0	A	0	0	1	1	1	1	1	0.5	1.0
24-Jul	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	A	1	0	0	0	1	1	1	1	0.5	0.5
25-Jul	1	0	0	0	0	0	1	1	1	0	0	0	0	0	A	0	0	0	0	1	1	1	0	0	0.6	1.0
26-Jul	1	1	1	1	1	1	1	0	0	0	1	1	0	A	2	1	0	0	1	0	0	0	0	1	0.6	1.5
27-Jul	1	1	1	1	1	1	1	1	1	0	0	0	A	0	1	0	0	1	1	1	1	0	1	1	0.5	0.8
28-Jul	1	1	1	1	1	1	1	1	0	1	0	A	1	0	0	0	0	1	1	1	1	1	1	1	0.5	1.0
29-Jul	1	1	0	1	1	1	1	0	1	0	A	0	0	0	0	0	0	1	1	1	1	0	1	1	0.5	0.8
30-Jul	1	1	1	1	1	1	1	1	1	A	1	1	1	0	1	1	1	1	1	1	1	1	1	2	1.0	2.0
31-Jul	1	1	1	1	1	1	1	1	A	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	0.9	1.3
0.7		0.6	0.6	0.6	0.6	0.6	0.8	0.9	0.7	0.7	0.7	0.8	0.7	0.5	0.6	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.9	0.7	Diurnal Average	
4.7		1.3	1.0	1.5	2.0	2.0	3.0	4.7	1.7	2.0	2.5	4.5	4.6	1.0	1.5	1.0	1.0	2.0	1.0	1.5	1.0	4.8	6.3	2.2	Diurnal Maximum	
C - Calibration																										
A - Automated Daily Zero Span																										

Hourly Maximums

Sulphur Dioxide (SO₂) - ppb

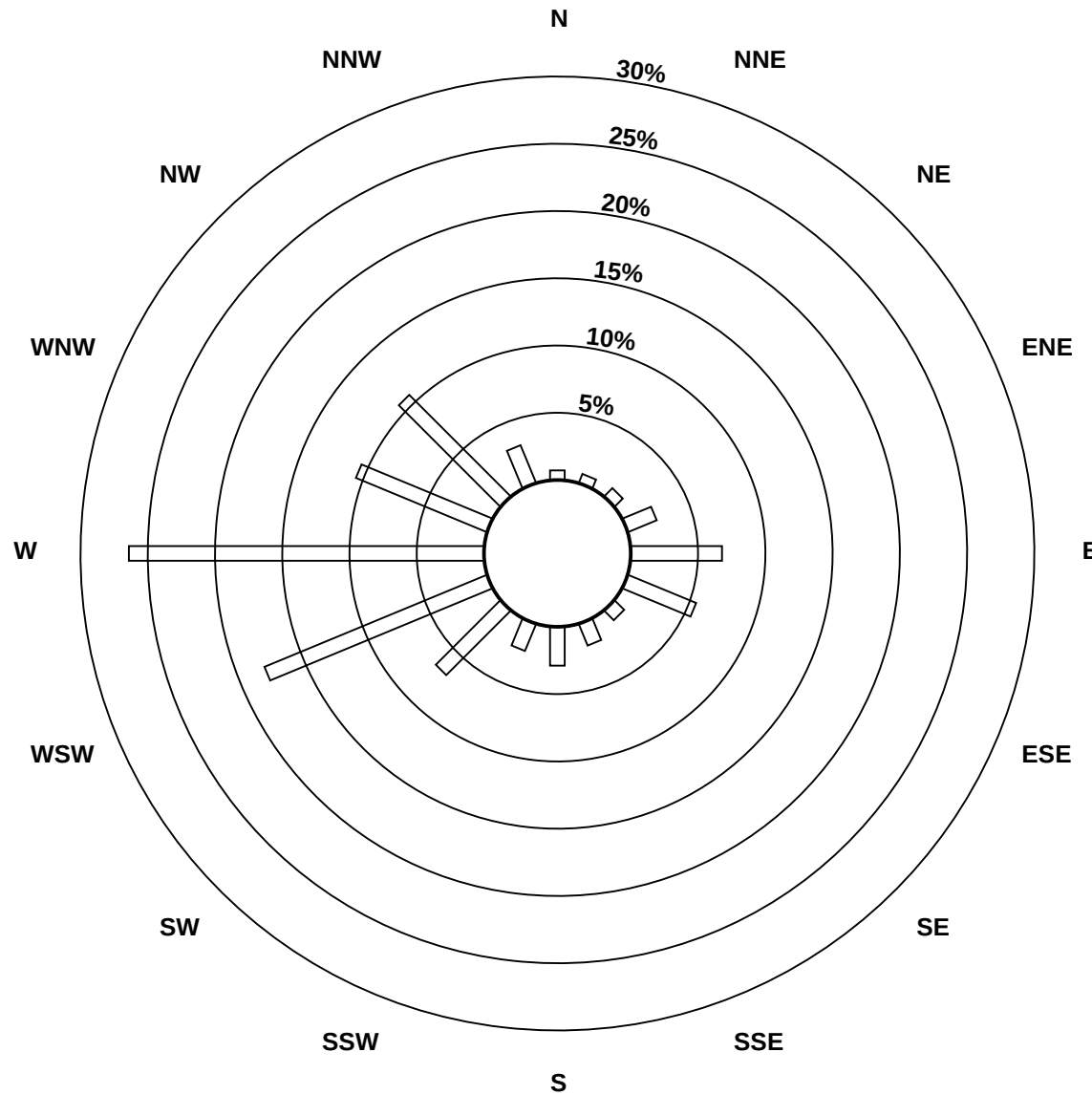
Henry Pirker - July 2011



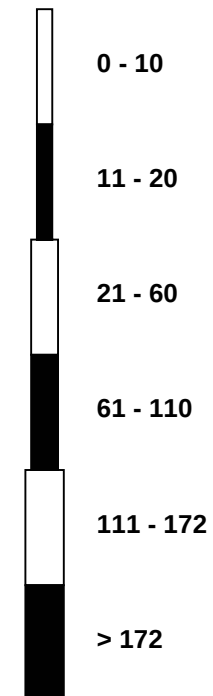
Pollutant Rose

Sulphur Dioxide (SO₂) - ppb

Henry Pirker - July 2011

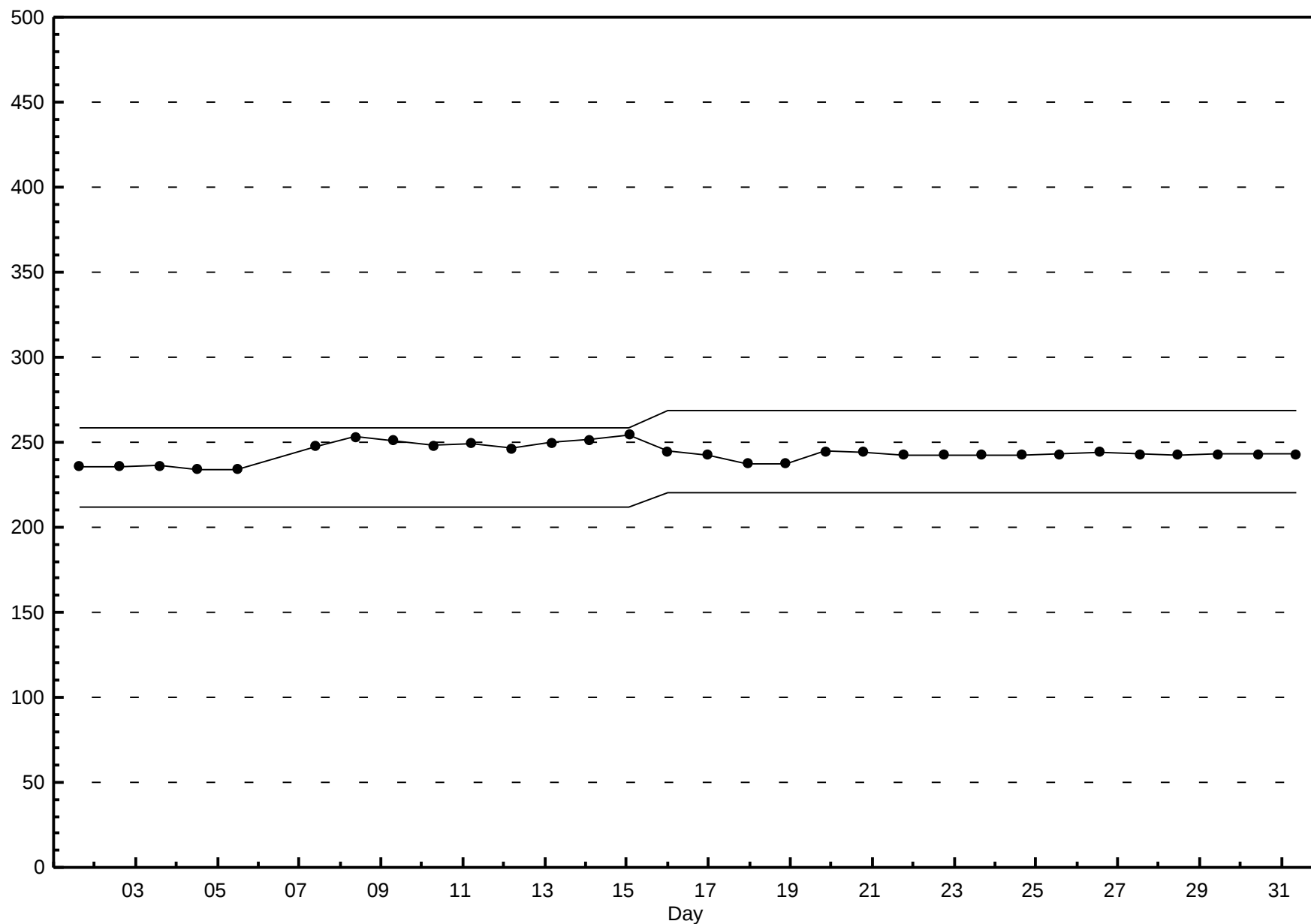


Pollutant Classes (ppb)



Span Responses

Sulphur Dioxide (SO₂)
Henry Pirker - July 2011



Hourly Averages

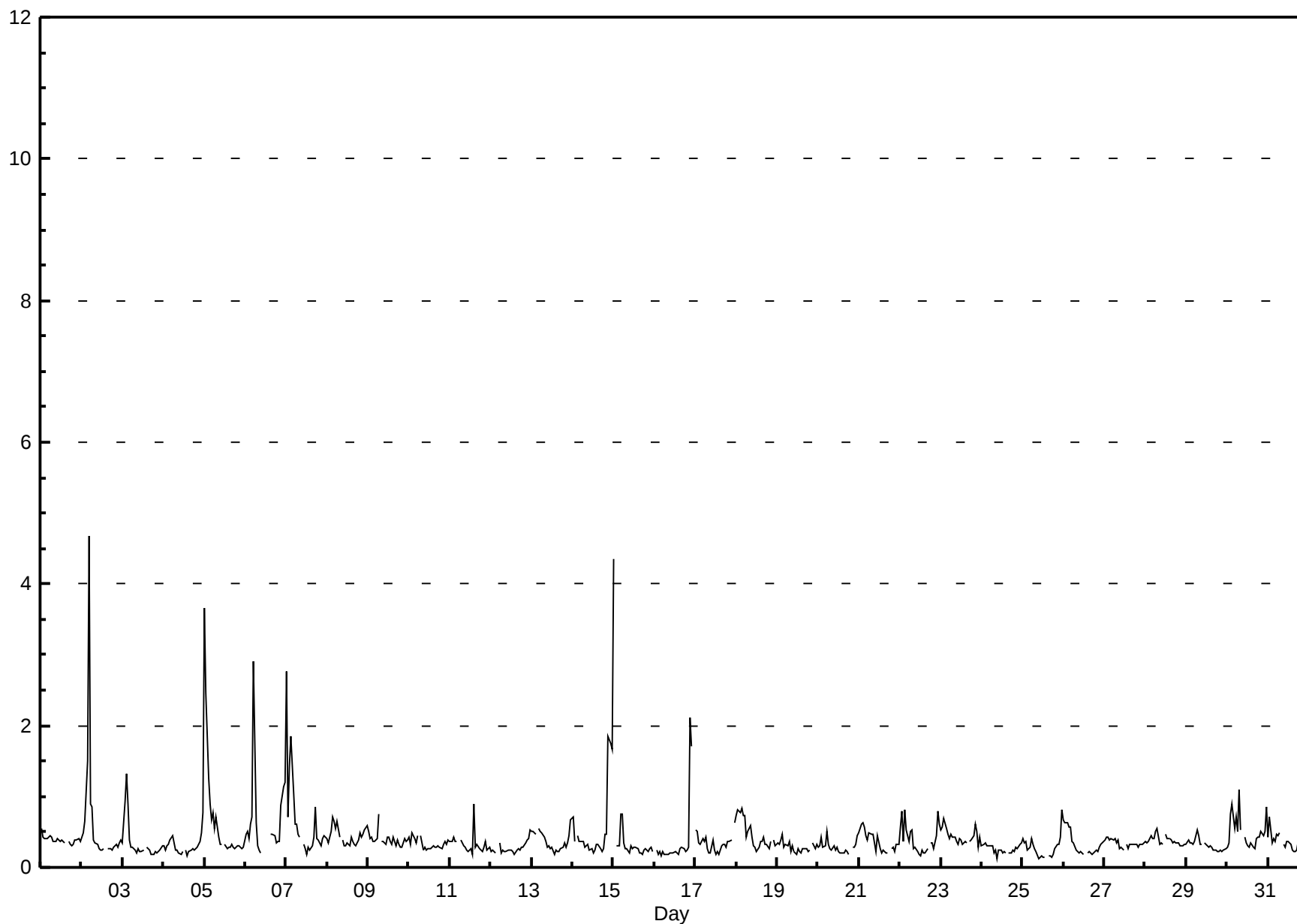
Total Reduced Sulphur (TRS) - ppb

Henry Pirker - July 2011

Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0	Hours in Service: 744																						
Maximum Value: 4.7 ppb on Jul 2 05:00		Maximum Daily Average: 0.7 ppb on Jul 5		Hours of Data: 709																						
Minimum Value: 0 ppb on Jul 25 10:00		Minimum Daily Average: 0.3 ppb on Jul 24		Hours of Missing Data: 35																						
Maximum Diurnal Average: 0.8 ppb at hour 1		Minimum Diurnal Average: 0.3 ppb at hour 14		Hours of Calibration: 35																						
Monthly Average: 0.40 ppb		Percentiles: P ₁ = 0.2 P ₁₀ = 0.2 Q ₁ = 0.3 Median = 0.3 Q ₃ = 0.4 P ₉₀ = 0.6 P ₉₉ = 1.9		Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
1-Jul	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.4	0.5
2-Jul	0	0	1	2	5	1	1	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.6	4.7
3-Jul	0	1	1	1	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.4	1.3
4-Jul	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	0.8
5-Jul	4	2	1	1	1	1	1	1	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.7	3.7
6-Jul	0	1	0	1	1	3	1	0	0	0	A	0	C	C	C	0	0	0	0	0	0	1	1	1	0.7	2.9
7-Jul	3	1	1	2	1	1	1	0	0	A	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0.7	2.8
8-Jul	0	0	1	1	1	1	1	0	A	A	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.4	0.7
9-Jul	1	0	0	0	0	0	1	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.8
10-Jul	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
11-Jul	0	0	0	0	0	A	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0.3	0.9
12-Jul	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	0.5
13-Jul	1	1	0	A	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.4	0.7
14-Jul	1	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	0.5	1.8
15-Jul	4	A	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	4.3
16-Jul	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	A	0.4	2.1
17-Jul	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	1	0.3	0.6
18-Jul	1	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.5	0.8
19-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.3	0.5
20-Jul	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0.3	0.5
21-Jul	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.4	0.6
22-Jul	1	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0	A	0	0	0	0	0	1	1	0.4	0.8
23-Jul	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	1	1	0	0	0.4	0.7
24-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.3	0.4
25-Jul	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	0.8
26-Jul	1	1	1	1	1	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.3	0.7
27-Jul	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.3	0.4
28-Jul	0	0	0	0	0	0	1	1	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.5
29-Jul	0	0	0	0	0	0	1	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5
30-Jul	0	0	1	1	1	1	1	1	1	A	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0.5	1.1
31-Jul	0	1	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.7
0.8		0.5	0.5	0.6	0.6	0.5	0.4	0.4	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	0.5	0.5	0.5	Diurnal Average	
4.3		2.5	1.4	1.9	4.7	2.9	0.9	1.1	0.6	0.4	0.4	0.5	0.5	0.4	0.9	0.5	0.5	0.8	0.4	0.5	0.6	2.1	1.7	1.7	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span		Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb																						

Hourly Averages

Total Reduced Sulphur (TRS) - ppb
Henry Pirker - July 2011



Hourly Maximums

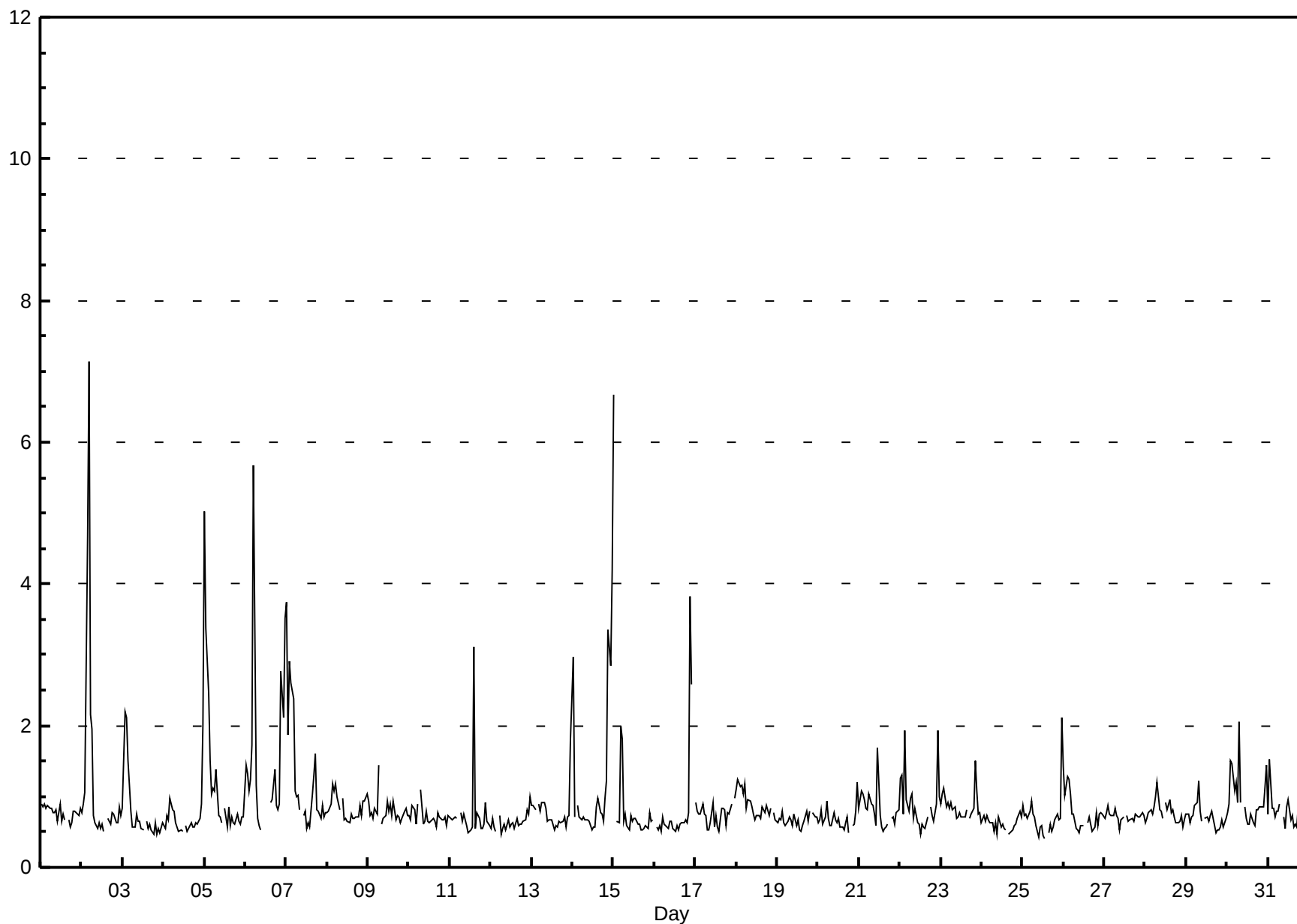
Total Reduced Sulphur (TRS) - ppb

Henry Pirker - July 2011

Maximum Value: 7.1 ppb on Jul 2 05:00																		Hours in Service: 744								
Maximum Daily Average: 1.6 ppb on Jul 6																		Hours of Data: 709								
Minimum Value: 0 ppb on Jul 25 14:00																		Hours of Missing Data: 35								
Maximum Diurnal Average: 1.3 ppb at hour 1																		Hours of Calibration: 35								
Monthly Average: 0.86 ppb																		Percent Operational Time: 100.0								
Minimum Daily Average: 0.6 ppb on Jul 24																										
Minimum Diurnal Average: 0.6 ppb at hour 14																										
Percentiles: P ₁ = 0.5 P ₁₀ = 0.6 Q ₁ = 0.6 Median = 0.7 Q ₃ = 0.8 P ₉₀ = 1.1 P ₉₉ = 3.6																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
1-Jul	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	0.9
2-Jul	1	1	1	5	7	2	2	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1.3	7.1
3-Jul	1	2	2	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	0	1	0	1	0	1	0.8	2.2
4-Jul	1	1	1	1	1	1	1	1	1	0	1	1	A	1	0	1	1	1	1	1	1	1	1	2	0.7	2.0
5-Jul	5	3	2	2	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1.2	5.0
6-Jul	1	1	1	1	2	6	1	1	1	1	A	1	C	C	C	1	1	1	1	1	1	3	2	4	1.6	5.7
7-Jul	4	2	3	3	2	1	1	1	1	A	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1.3	3.7
8-Jul	1	1	1	1	1	1	1	1	A	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.2
9-Jul	1	1	1	1	1	1	1	A	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.4
10-Jul	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.1
11-Jul	1	1	1	1	1	A	1	1	1	1	1	0	1	1	3	1	1	1	1	1	1	1	1	1	0.8	3.1
12-Jul	1	1	1	1	A	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	1.0
13-Jul	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	0.8	1.8
14-Jul	3	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	4	1.2	4.2
15-Jul	7	A	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	6.7
16-Jul	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	3	A	0.8	3.8
17-Jul	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	0.7	1.0
18-Jul	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	0.9	1.2
19-Jul	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	0.8
20-Jul	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	A	1	1	1	1	0.7	1.2
21-Jul	1	1	1	1	1	1	1	1	1	1	1	2	1	1	0	1	1	1	A	1	1	1	1	1	0.8	1.7
22-Jul	1	1	1	2	1	1	1	1	1	1	1	1	0	1	1	1	1	A	1	1	1	1	2	1	0.9	1.9
23-Jul	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	2	1	1	1	0.9	1.5
24-Jul	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	A	0	1	1	1	1	1	1	1	0.6	0.8
25-Jul	1	1	1	1	1	1	1	1	1	0	1	1	0	0	A	0	1	1	1	1	1	1	1	2	0.7	2.1
26-Jul	1	1	1	1	1	1	1	1	1	0	1	1	1	A	1	1	1	1	1	1	1	1	1	1	0.8	1.4
27-Jul	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	0.9
28-Jul	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0.8	1.2
29-Jul	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	0	1	1	1	1	1	1	0.7	1.2
30-Jul	1	1	2	1	1	1	1	2	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	2.1
31-Jul	1	2	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.5
		1.3	1.0	1.0	1.1	1.2	1.1	0.9	0.8	0.7	0.7	0.7	0.7	0.7	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	Diurnal Average	
		6.7	3.4	2.9	4.7	7.1	5.7	2.0	2.1	0.9	1.0	0.9	1.7	1.0	0.9	3.1	1.0	1.3	1.6	0.9	1.0	1.5	3.8	2.8	4.2	Diurnal Maximum
C - Calibration		A - Automated Daily Zero Span																								

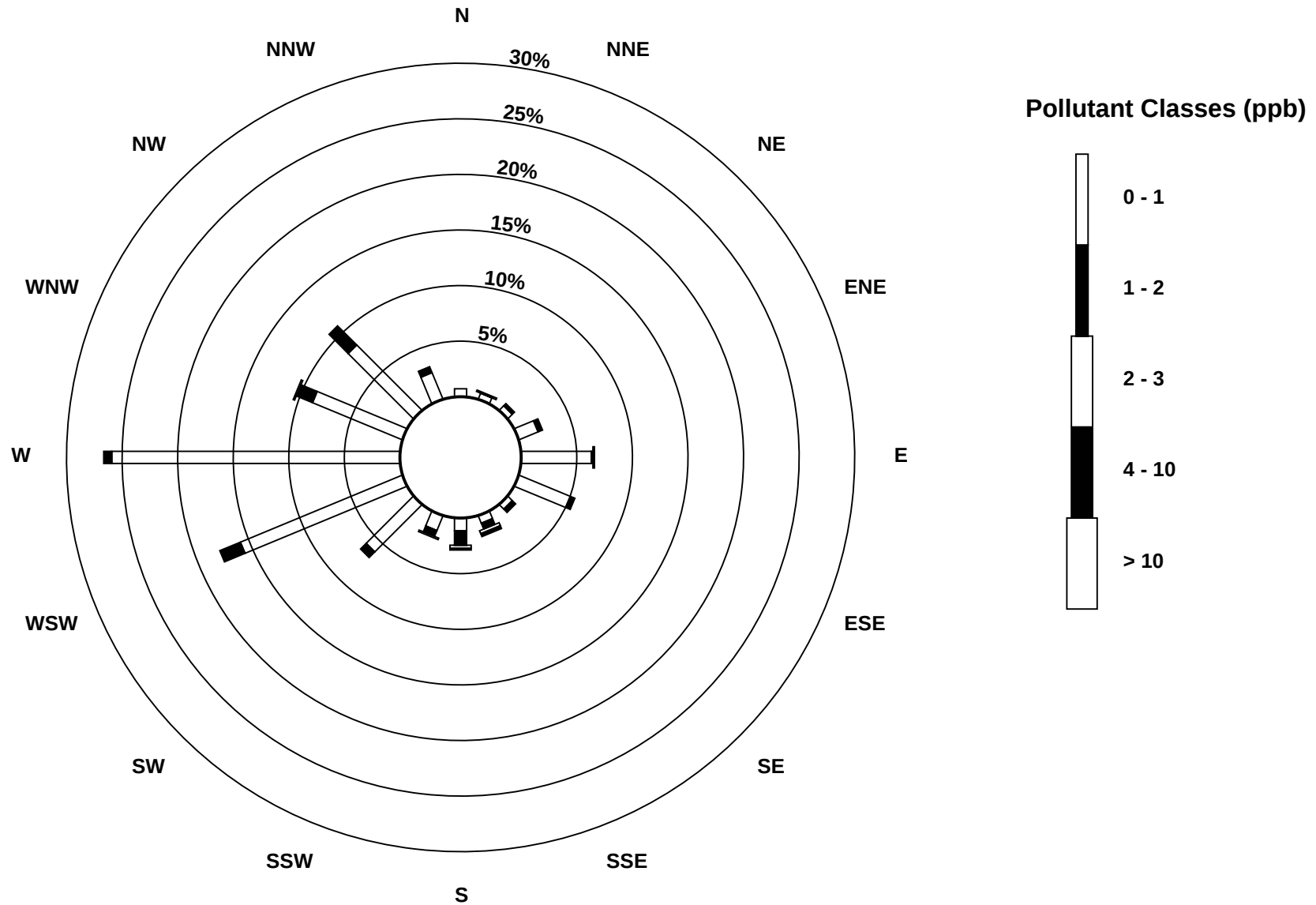
Hourly Maximums

Total Reduced Sulphur (TRS) - ppb
Henry Pirker - July 2011



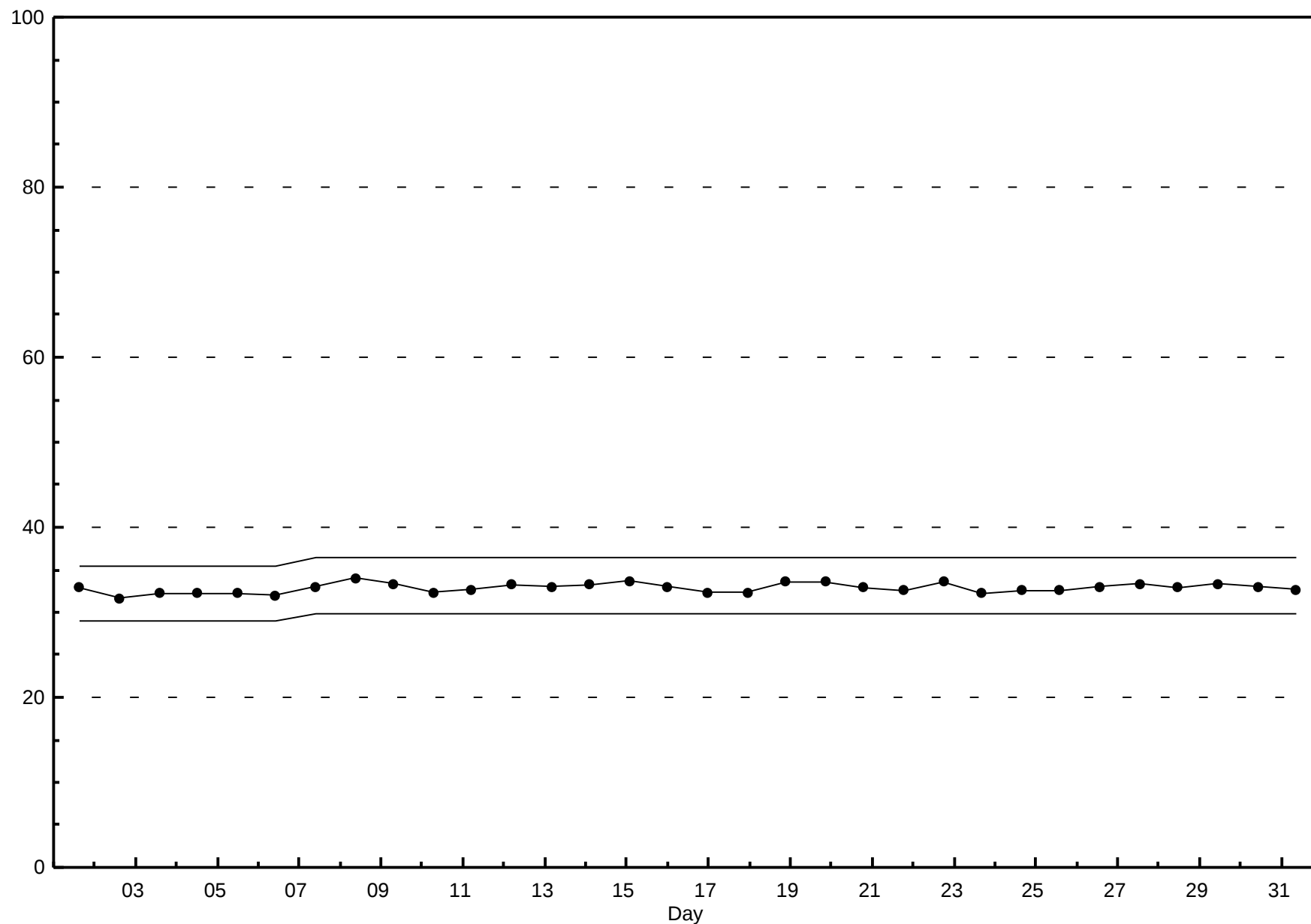
Pollutant Rose

Total Reduced Sulphur (TRS) - ppb
Henry Pirker - July 2011



Span Responses

Total Reduced Sulphur (TRS)
Henry Pirker - July 2011



Hourly Averages

Nitrogen Dioxide (NO₂) - ppb

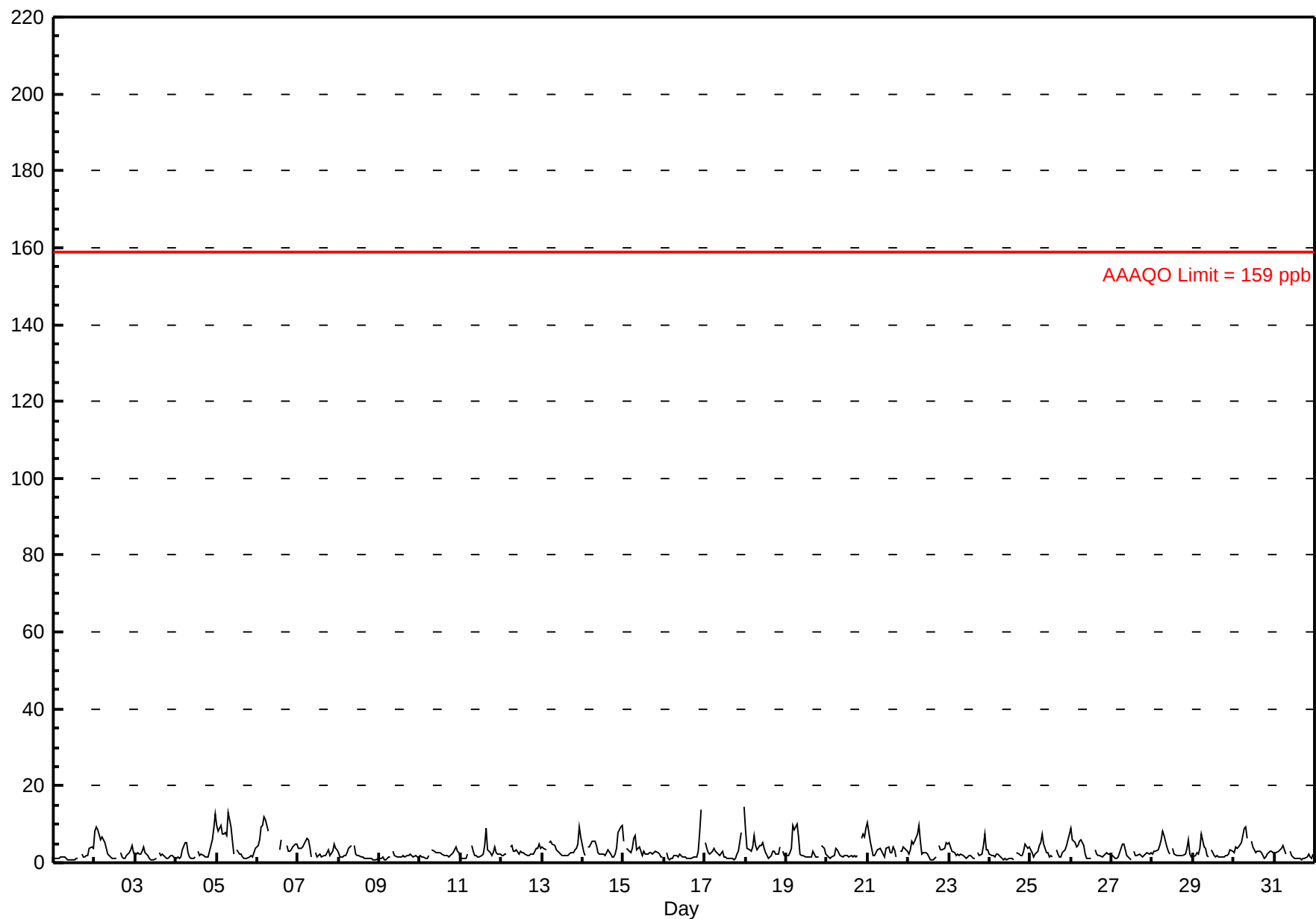
Henry Pirker - July 2011

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 14.6 ppb on Jul 18 00:00 Maximum Daily Average: 4.8 ppb on Jul 5																								Hours in Service: 744 Hours of Data: 705 Hours of Missing Data: 39 Hours of Calibration: 37 Percent Operational Time: 99.7		
Minimum Value: 1 ppb on Jul 3 11:00 Minimum Daily Average: 1.6 ppb on Jul 9 Maximum Diurnal Average: 4.9 ppb at hour 7 Minimum Diurnal Average: 1.8 ppb at hour 19 Monthly Average: 3.00 ppb Percentiles: P ₁ = 0.8 P ₁₀ = 1.2 Q ₁ = 1.6 Median = 2.3 Q ₃ = 3.7 P ₉₀ = 5.7 P ₉₉ = 9.7																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
1-Jul	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	A	2	1	1	2	2	4	4	4	1.6	4.1
2-Jul	8	9	8	6	7	6	5	4	2	2	1	1	1	1	A	2	1	1	1	2	3	3	5	3	3.6	9.2
3-Jul	2	3	2	2	3	4	2	2	1	1	1	1	1	A	3	2	2	2	1	1	1	2	2	1	1.8	4.0
4-Jul	1	1	1	2	3	5	5	3	1	1	1	2	A	3	2	2	2	1	2	2	3	6	9	13	3.1	12.7
5-Jul	10	8	10	8	7	8	7	13	9	6	2	A	3	2	2	2	1	1	1	1	2	1	3	4	4.8	13.1
6-Jul	4	6	9	10	12	11	8	C	C	C	C	C	C	3	6	M	M	5	3	3	3	4	5	5	--	11.8
7-Jul	4	4	4	4	6	6	6	4	2	A	3	2	2	2	2	2	2	3	3	2	3	5	4	3	3.3	6.3
8-Jul	3	2	2	2	2	3	4	4	A	5	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1.9	4.5
9-Jul	1	1	1	1	1	1	1	A	3	2	2	2	2	1	1	2	2	2	2	2	2	2	1	2	1.6	2.8
10-Jul	2	2	1	1	1	2	A	3	3	3	3	3	3	3	2	2	2	2	2	3	3	4	3	2	2.3	4.1
11-Jul	1	1	1	1	2	A	4	3	2	2	2	1	2	2	5	9	3	3	2	2	4	3	2	2	2.6	8.8
12-Jul	2	2	2	2	A	4	4	3	3	3	2	3	3	3	2	2	2	2	2	2	4	4	5	4	2.9	4.8
13-Jul	4	4	4	A	5	6	5	4	3	3	2	2	2	2	2	2	2	3	3	4	4	5	9	7	3.7	9.2
14-Jul	3	2	A	4	4	5	6	6	4	3	2	2	2	2	3	3	2	1	1	2	4	8	9	10	3.9	9.9
15-Jul	6	A	4	3	3	4	7	7	3	4	3	2	3	2	2	2	3	2	2	3	3	2	2	2	3.2	7.2
16-Jul	A	3	1	1	1	1	2	2	2	2	2	2	2	1	1	1	1	2	1	1	3	8	14	A	2.4	13.9
17-Jul	5	4	3	2	3	4	3	3	2	2	3	2	1	1	1	1	1	1	1	2	3	8	A	15	3.0	14.6
18-Jul	9	4	3	3	4	7	5	4	4	5	5	4	3	1	1	2	3	3	2	2	4	A	3	2	3.6	8.5
19-Jul	2	2	3	4	10	9	10	7	2	2	2	2	1	2	2	2	3	2	2	2	A	4	4	2	3.3	10.1
20-Jul	2	2	1	2	2	4	4	3	2	2	2	2	2	1	2	2	2	2	2	A	6	7	7	9	2.9	9.1
21-Jul	10	6	4	2	2	3	3	4	3	2	1	4	4	3	3	4	3	2	A	3	3	4	4	3	3.4	10.3
22-Jul	2	3	6	5	6	7	10	5	2	3	3	2	1	1	1	1	2	A	4	3	3	4	5	5	3.7	9.6
23-Jul	5	4	3	3	2	2	2	2	2	2	1	2	2	2	1	1	A	3	2	2	4	7	3	3	2.6	7.3
24-Jul	2	2	2	1	2	2	1	1	1	1	1	1	1	1	1	A	3	2	2	2	3	5	4	4	2.0	4.9
25-Jul	3	3	1	2	3	4	5	7	5	2	2	2	2	1	A	3	2	1	1	3	3	4	6	7	3.3	7.5
26-Jul	9	6	5	4	5	5	6	4	2	1	1	1	1	A	3	2	2	2	2	2	2	3	2	2	3.2	8.8
27-Jul	2	2	1	1	2	4	5	5	3	2	1	1	A	3	2	2	2	2	2	2	2	3	2	3	2.3	4.9
28-Jul	2	3	3	3	4	6	8	7	4	3	2	A	4	2	2	2	2	2	2	2	4	6	2	2	3.3	8.1
29-Jul	2	2	3	2	4	8	4	4	2	2	A	3	2	2	2	1	1	2	2	2	2	3	3	3	2.5	7.5
30-Jul	2	4	4	4	5	7	9	9	6	A	6	4	3	3	3	3	2	2	1	2	2	3	3	3	3.9	9.2
31-Jul	2	2	3	3	4	5	4	2	A	3	2	1	1	1	1	1	1	1	1	1	2	2	1	2	2.1	4.6
3.7 3.1 3.2 3.0 3.8 4.8 4.9 4.4 2.9 2.4 2.1 2.0 2.0 1.8 2.1 2.2 2.0 1.8 1.8 2.1 3.0 4.1 4.2 4.2 10.3 9.2 9.7 9.8 11.8 11.2 10.1 13.1 9.2 5.7 5.6 4.2 4.0 3.4 6.0 8.8 3.3 4.6 4.5 3.5 6.2 8.0 13.9 14.6																								Diurnal Average	Diurnal Maximum	
C - Calibration M - Maintenance A - Automated Daily Zero Span Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb 24-hr 106 ppb																										

Hourly Averages

Nitrogen Dioxide (NO₂) - ppb

Henry Pirker - July 2011



Hourly Maximums

Nitrogen Dioxide (NO₂) - ppb

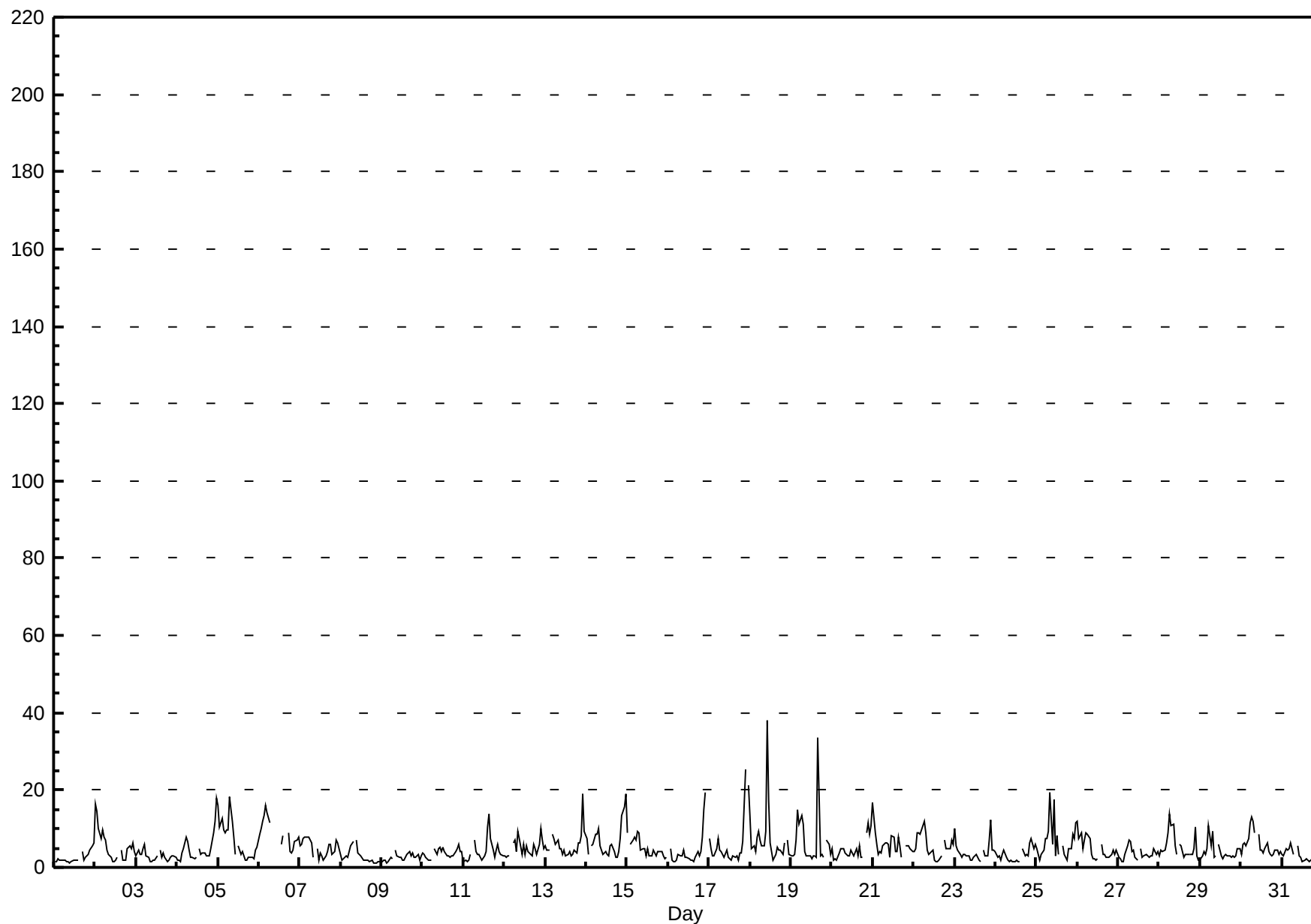
Henry Pirker - July 2011

Maximum Value: 38.0 ppb on Jul 18 11:00																				Maximum Daily Average: 7.7 ppb on Jul 18					Hours in Service: 744	
Minimum Value: 1 ppb on Jul 8 21:00																				Minimum Daily Average: 2.5 ppb on Jul 1					Hours of Data: 705	
Maximum Diurnal Average: 7.1 ppb at hour 22																				Minimum Diurnal Average: 3.2 ppb at hour 14					Hours of Missing Data: 39	
Monthly Average: 4.93 ppb																				Percentiles: P ₁ = 1.5 P ₁₀ = 2.0 Q ₁ = 2.7 Median = 3.9 Q ₃ = 6.0 P ₉₀ = 8.9 P ₉₉ = 18.7					Hours of Calibration: 37	
																				Percent Operational Time: 99.7						
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-Jul	2	1	2	2	2	2	2	1	1	1	1	2	2	2	2	A	4	2	3	3	3	4	6	6	2.5	6.4
2-Jul	16	15	10	8	10	8	7	4	3	3	1	1	2	2	A	4	2	2	2	5	6	5	6	4	5.5	16.3
3-Jul	3	4	3	3	5	6	3	3	1	1	2	2	3	A	4	2	4	2	1	2	2	3	3	2	3.0	6.0
4-Jul	2	2	1	4	5	8	7	4	2	2	2	2	A	5	3	4	4	3	3	3	5	9	12	18	4.8	18.0
5-Jul	16	10	13	10	9	10	10	18	12	8	4	A	6	4	4	3	2	2	3	3	3	2	4	5	6.9	18.5
6-Jul	9	10	12	13	16	14	12	C	C	C	C	C	C	6	8	M	M	9	4	4	4	7	7	8	--	16.1
7-Jul	5	6	7	8	8	8	7	6	2	A	5	2	4	3	2	3	4	6	6	3	4	7	6	5	5.2	7.9
8-Jul	3	2	2	3	2	4	5	7	A	7	4	3	3	2	2	2	2	1	2	1	1	1	1	1	2.8	6.9
9-Jul	1	2	2	1	1	2	2	A	4	3	2	3	2	2	2	3	4	3	4	2	2	3	2	3	2.6	4.5
10-Jul	4	3	2	2	2	2	A	5	3	5	5	4	5	4	3	3	3	3	3	4	5	6	4	4	3.7	5.9
11-Jul	1	2	1	2	3	A	7	4	3	3	2	2	3	4	11	14	7	4	2	4	6	4	3	3	4.3	13.9
12-Jul	3	2	3	3	A	6	7	4	9	7	3	6	3	5	4	3	3	6	5	3	6	10	7	5	5.1	9.9
13-Jul	5	4	4	A	8	7	6	7	5	5	3	4	3	3	4	3	3	4	4	6	6	8	19	9	5.9	18.9
14-Jul	7	3	A	6	6	8	9	10	5	4	3	4	3	3	5	6	4	2	2	4	7	13	16	19	6.6	18.9
15-Jul	9	A	6	7	8	7	9	9	4	5	5	3	5	3	3	4	4	3	4	4	4	3	2	2	4.9	9.4
16-Jul	A	5	2	1	1	2	3	3	3	4	2	2	2	2	2	1	3	4	3	4	8	15	19	A	4.3	19.5
17-Jul	8	5	3	3	5	7	4	4	3	2	4	2	2	2	3	2	3	2	4	4	7	26	A	21	5.5	25.5
18-Jul	13	5	5	4	8	9	7	5	6	9	38	17	6	2	2	3	5	5	4	3	6	A	7	3	7.7	38.0
19-Jul	3	3	3	7	15	11	13	11	4	3	3	3	2	3	3	2	34	3	3	2	A	7	6	3	6.5	33.6
20-Jul	5	2	2	2	4	5	5	5	4	3	3	4	4	3	5	3	6	3	2	A	9	11	8	11	4.8	11.4
21-Jul	17	9	6	3	4	4	6	6	6	6	3	8	8	4	4	8	6	3	A	5	5	5	5	4	5.9	16.7
22-Jul	4	5	9	9	8	11	12	9	5	3	4	4	2	1	1	2	3	A	7	5	5	5	7	6	5.5	11.9
23-Jul	10	5	4	3	2	3	3	3	3	2	2	2	3	3	2	1	A	4	3	3	7	12	4	4	4.1	12.3
24-Jul	4	2	3	2	3	4	2	2	1	2	1	2	2	1	1	A	5	3	3	3	6	7	5	6	3.2	7.5
25-Jul	5	3	2	3	4	7	7	9	19	6	18	3	8	3	A	5	3	2	2	5	5	8	7	12	6.6	19.2
26-Jul	12	7	9	5	7	9	8	7	3	2	2	2	2	A	6	3	3	3	2	3	3	4	3	4	4.9	11.9
27-Jul	2	2	1	1	3	5	7	7	4	4	2	2	A	5	3	3	3	3	2	3	3	5	3	4	3.5	6.9
28-Jul	3	4	4	4	6	9	14	11	11	5	3	A	6	6	3	3	3	3	3	3	5	10	3	2	5.6	13.9
29-Jul	2	3	4	3	5	11	5	9	3	3	A	6	3	2	3	3	3	3	2	3	2	3	5	5	4.0	10.9
30-Jul	3	6	6	5	7	11	13	12	9	A	8	4	4	4	5	6	4	3	3	3	4	5	3	4	5.9	13.1
31-Jul	3	3	5	4	5	6	5	3	A	5	3	2	2	2	2	2	1	2	2	2	4	2	2	3	3.3	6.5
6.1 4.6 4.7 4.5 5.9 7.0 7.0 6.6 5.1 4.2 4.9 3.8 3.6 3.2 3.6 3.8 4.7 3.3 3.2 3.5 4.9 7.1 6.3 6.3																									Diurnal Average	
16.7 14.5 12.5 13.4 16.1 14.0 13.9 18.5 19.2 9.3 38.0 17.2 8.1 5.9 10.5 13.9 33.6 8.9 6.9 6.4 8.9 25.5 19.5 21.1																									Diurnal Maximum	
C - Calibration M - Maintenance A - Automated Daily Zero Span																										

Hourly Maximums

Nitrogen Dioxide (NO₂) - ppb

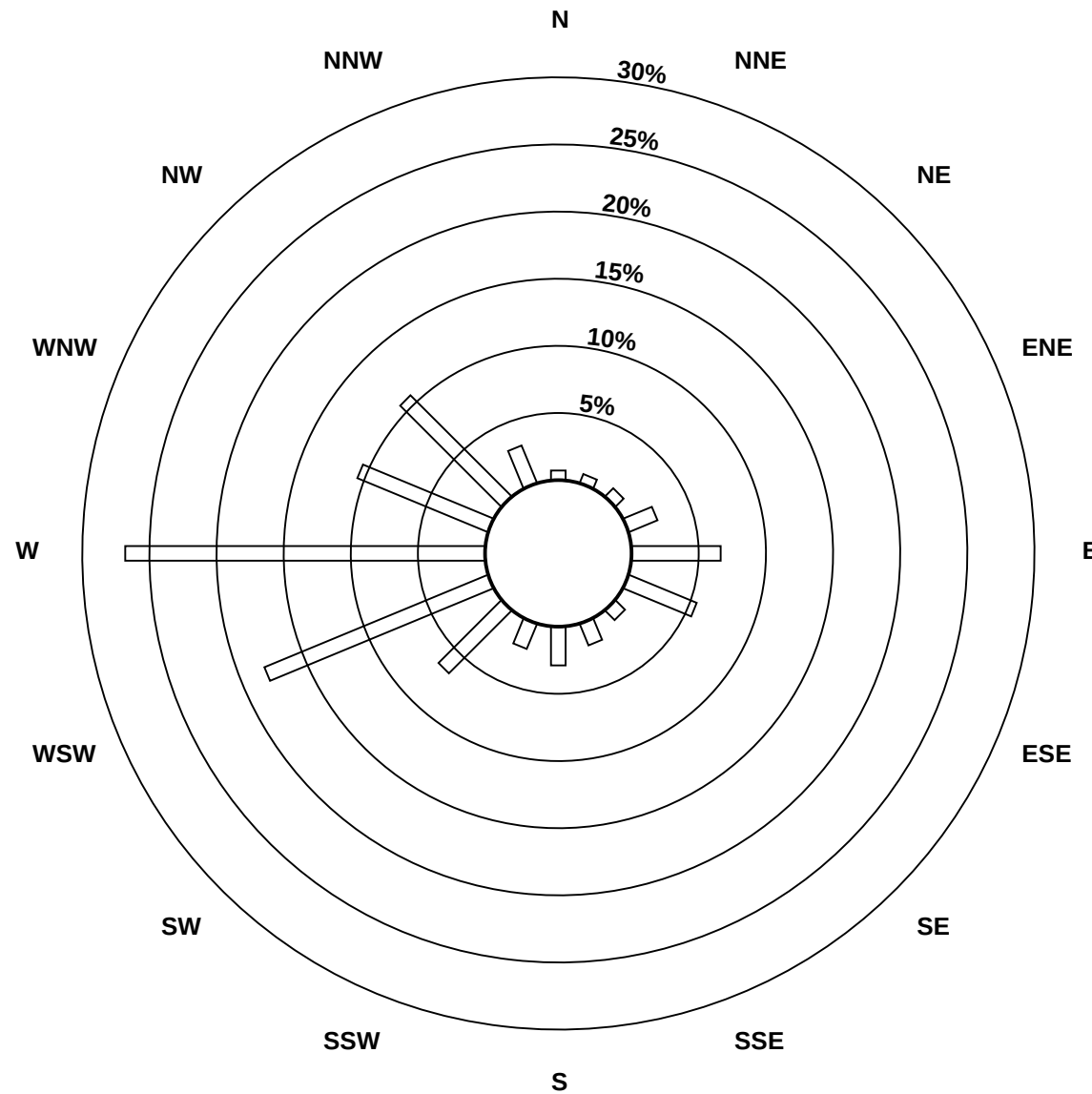
Henry Pirker - July 2011



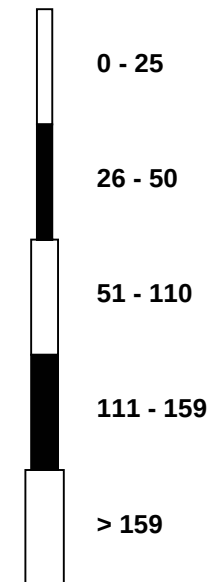
Pollutant Rose

Nitrogen Dioxide (NO₂) - ppb

Henry Pirkner - July 2011



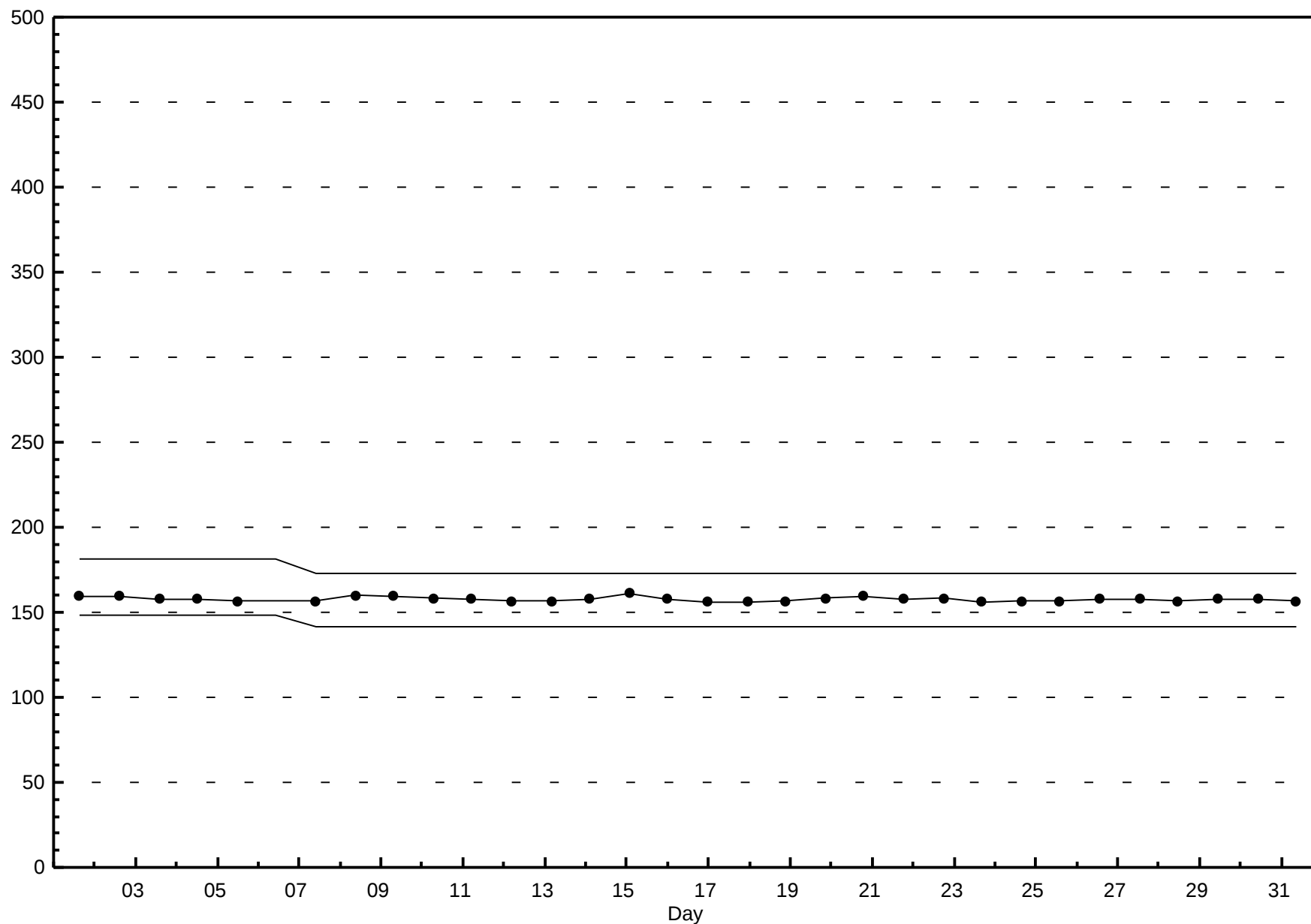
Pollutant Classes (ppb)



Span Responses

Nitrogen Dioxide (NO₂)

Henry Pirker - July 2011



Hourly Averages

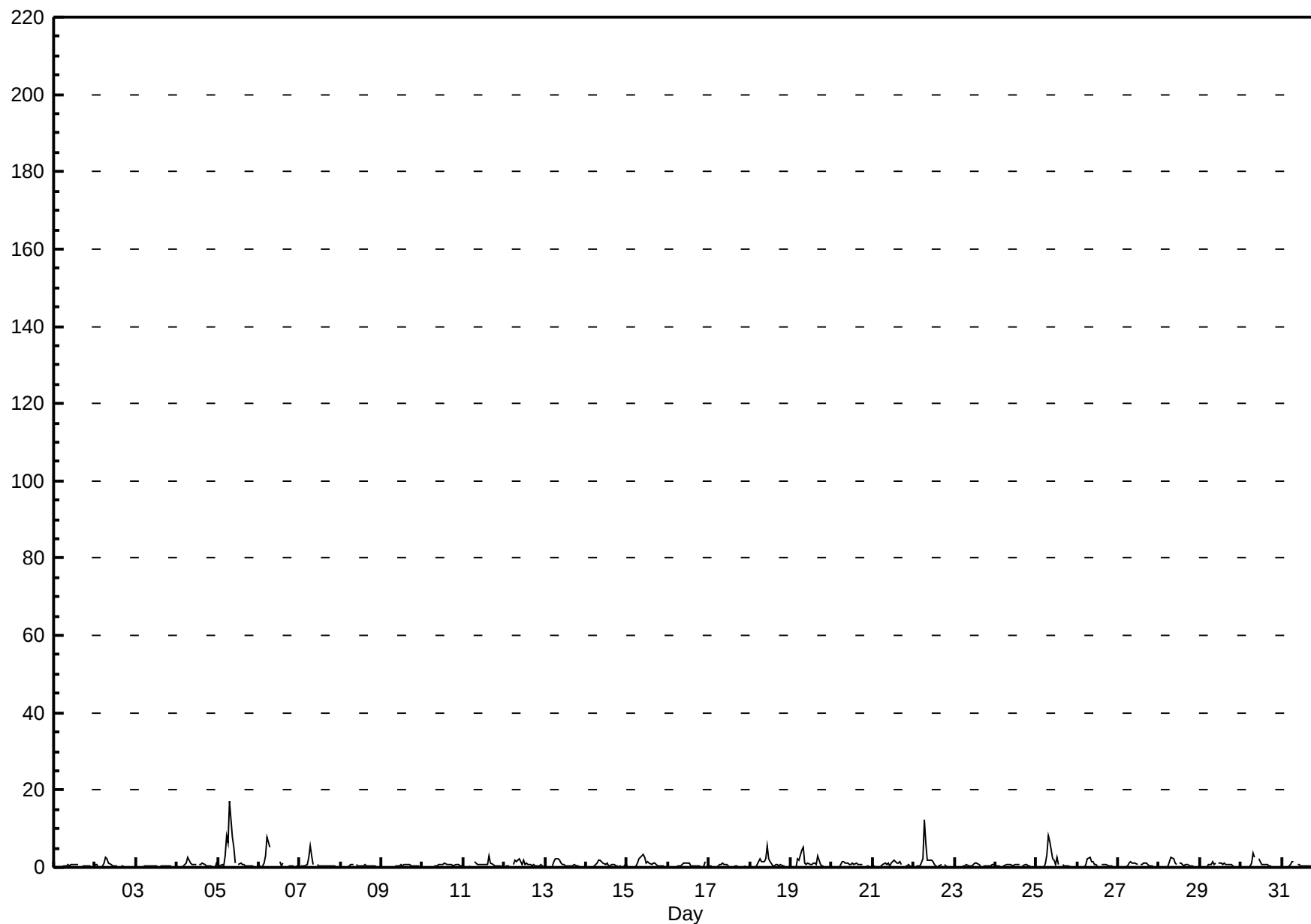
Nitrogen Oxide (NO) - ppb

Henry Pirker - July 2011

Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0	Hours in Service: 744																							
Maximum Value: 17.0 ppb on Jul 5 08:00		Maximum Daily Average: 2.4 ppb on Jul 5																			Hours of Data: 706						
Minimum Value: 0 ppb on Jul 16 02:00		Minimum Daily Average: 0.3 ppb on Jul 3																			Hours of Missing Data: 38						
Maximum Diurnal Average: 2.6 ppb at hour 8		Minimum Diurnal Average: 0.1 ppb at hour 2																			Hours of Calibration: 36						
Monthly Average: 0.73 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.1 Median = 0.5 Q ₃ = 0.8 P ₉₀ = 1.5 P ₉₉ = 6.0																			Percent Operational Time: 99.7						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
1-Jul	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0.4	0.7	
2-Jul	1	1	0	0	0	1	3	2	1	1	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.5	2.5	
3-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	1	1	0	0	0	0	0	0.3	0.5	
4-Jul	0	0	0	0	0	1	2	2	1	1	1	1	A	1	1	1	1	1	0	0	0	0	0	1	0.7	2.4	
5-Jul	1	0	1	1	3	8	6	17	8	5	1	A	1	1	1	1	1	1	0	0	0	0	0	0	2.4	17.0	
6-Jul	0	0	0	1	3	8	5	C	C	C	C	C	2	1	1	M	M	1	0	0	0	0	0	0	--	7.7	
7-Jul	0	0	0	0	1	3	6	3	1	A	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.8	5.6	
8-Jul	0	0	0	0	0	0	1	1	A	1	1	0	1	0	1	1	1	0	0	0	0	0	0	0	0.3	0.9	
9-Jul	0	0	0	0	0	0	0	A	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0.4	0.8	
10-Jul	0	0	0	0	0	0	A	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0.5	0.9	
11-Jul	0	0	0	0	0	A	1	1	1	1	1	1	1	1	1	3	1	1	0	0	0	0	0	0	0.7	3.0	
12-Jul	0	0	0	0	A	1	2	2	2	2	1	2	1	1	1	1	0	1	1	0	0	1	0	0	0.8	2.1	
13-Jul	0	0	0	A	0	1	2	2	2	1	1	1	0	0	0	1	1	1	0	0	0	0	0	0	0.7	2.2	
14-Jul	0	0	A	0	0	1	1	2	2	1	1	1	1	1	0	1	1	0	0	0	0	0	0	1	0.7	1.9	
15-Jul	0	A	0	0	0	0	1	2	2	3	3	1	2	1	1	1	1	1	0	0	0	0	0	0	0.9	3.2	
16-Jul	A	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	2	0.5	1.7	
17-Jul	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	A	0.3	1.3	
18-Jul	0	0	0	0	1	2	2	1	2	2	5	2	2	0	1	1	1	1	1	1	1	0	0	0	1.0	5.4	
19-Jul	0	0	0	0	2	2	5	5	1	1	1	1	1	1	1	1	3	1	1	1	0	A	0	0	1.1	5.2	
20-Jul	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	0	0	0	0.6	1.4	
21-Jul	1	0	0	0	0	0	1	1	1	1	0	1	2	2	1	1	1	1	A	1	1	1	1	0	0.7	1.8	
22-Jul	0	0	1	0	1	2	12	6	2	2	2	1	1	0	0	0	1	A	1	0	0	0	0	0	1.4	12.2	
23-Jul	0	0	0	0	0	0	0	1	1	0	0	1	1	1	1	0	A	0	0	0	0	0	1	1	0.5	1.2	
24-Jul	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	A	1	1	1	0	0	0	0	0	0.5	0.9	
25-Jul	0	0	0	0	0	1	3	8	7	2	2	1	3	1	A	1	1	0	0	0	0	0	0	0	1.3	8.3	
26-Jul	0	0	0	0	0	1	2	3	2	2	1	1	1	A	1	1	1	1	0	0	0	0	0	0	0.7	2.6	
27-Jul	0	0	0	0	0	0	1	2	1	1	1	1	A	1	1	1	1	1	1	0	0	0	0	0	0.5	1.6	
28-Jul	0	0	0	0	0	0	1	3	2	1	1	A	1	1	1	1	1	1	0	0	0	0	0	0	0.6	2.5	
29-Jul	0	0	0	0	0	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	0	0	0	0	0.5	1.4	
30-Jul	0	0	0	0	0	0	1	4	3	A	2	2	1	1	1	1	1	1	0	0	0	0	0	0	0.7	3.8	
31-Jul	0	0	0	0	0	1	1	1	A	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	1.5	
		0.2	0.1	0.1	0.1	0.4	1.3	2.2	2.6	1.7	1.3	1.1	0.9	0.9	0.7	0.7	0.7	0.7	0.5	0.4	0.4	0.3	0.2	0.2	0.2	Diurnal Average	
		0.8	0.6	0.7	0.9	3.1	8.0	12.2	17.0	7.9	5.1	5.4	2.1	2.5	1.5	1.1	3.0	2.9	0.9	0.7	0.6	0.6	0.6	1.7	1.1	Diurnal Maximum	
C - Calibration		M - Maintenance						A - Automated Daily Zero Span																			

Hourly Averages

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



Hourly Maximums

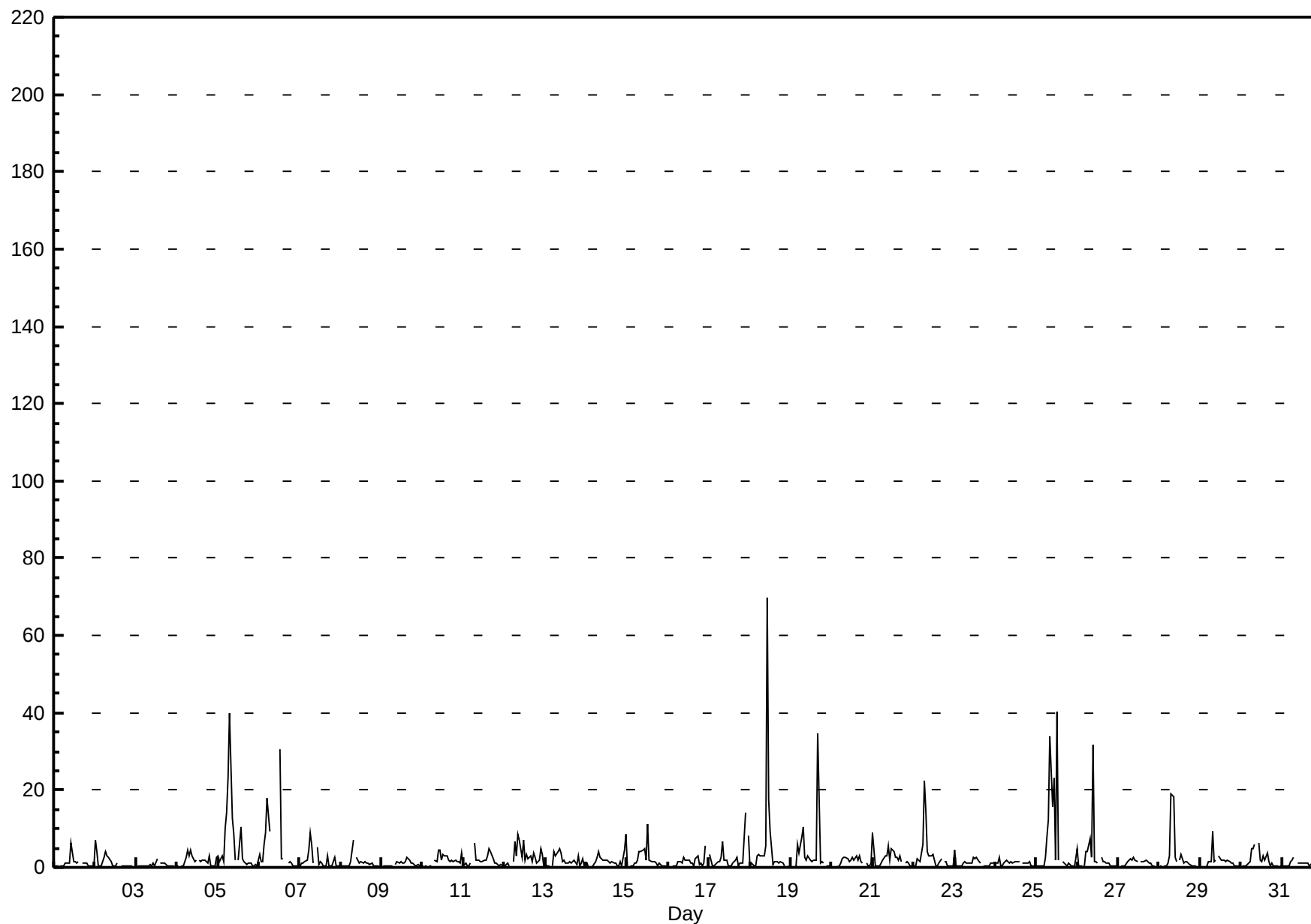
Nitrogen Oxide (NO) - ppb

Henry Pirker - July 2011

Maximum Value: 69.8 ppb on Jul 18 11:00																								Hours in Service: 744		
Maximum Daily Average: 6.5 ppb on Jul 25																								Hours of Data: 706		
Minimum Value: 0 ppb on Jul 20 03:00																								Hours of Missing Data: 38		
Maximum Diurnal Average: 6.1 ppb at hour 8																								Hours of Calibration: 36		
Monthly Average: 2.31 ppb																								Percent Operational Time: 99.7		
Minimum Daily Average: 0.6 ppb on Jul 3																										
Minimum Diurnal Average: 0.7 ppb at hour 4																										
Percentiles: P ₁ = 0.0 P ₁₀ = 0.5 Q ₁ = 0.5 Median = 1.0 Q ₃ = 2.0 P ₉₀ = 4.3 P ₉₉ = 30.2																										
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-Jul	0	0	0	0	0	1	1	1	1	1	6	1	1	1	1	A	1	1	1	1	0	1	0	0	1.1	6.2
2-Jul	7	4	0	0	2	2	4	3	2	1	0	0	0	1	A	0	0	0	0	1	1	0	0	0	1.4	7.1
3-Jul	0	0	0	0	0	0	0	0	1	0	1	0	2	A	1	1	1	1	0	1	0	0	0	0	0.6	2.3
4-Jul	0	0	0	0	0	2	4	3	4	3	1	2	A	2	1	2	2	1	1	3	0	0	0	3	1.7	4.5
5-Jul	3	1	3	1	10	14	23	40	13	9	2	A	2	10	2	1	1	1	1	1	0	0	1	0	6.2	40.0
6-Jul	3	1	1	6	9	18	9	C	C	C	C	C	31	2	2	M	M	1	1	1	0	0	0	1	--	30.7
7-Jul	0	1	1	1	2	4	9	6	1	A	5	1	1	1	0	0	3	1	1	1	3	1	1	1	1.9	9.0
8-Jul	1	0	0	0	0	1	1	7	A	2	2	1	1	1	1	1	1	1	1	0	1	0	0	0	1.2	7.2
9-Jul	0	0	0	0	1	1	1	A	1	1	1	2	1	1	1	2	2	1	1	1	1	0	1	1	0.9	2.5
10-Jul	0	0	0	0	0	0	A	2	1	4	4	2	3	3	3	2	1	2	1	2	1	2	1	4	1.8	4.5
11-Jul	0	1	0	0	1	A	6	2	2	2	1	1	2	2	3	5	4	2	1	1	1	0	1	1	1.8	6.2
12-Jul	1	1	1	1	A	1	7	3	9	7	2	7	2	3	2	3	1	4	2	1	2	5	3	1	3.0	8.8
13-Jul	1	0	0	A	1	4	3	4	5	4	1	2	1	1	1	1	1	2	1	3	0	1	2	0	1.8	4.7
14-Jul	1	0	A	0	0	1	2	4	3	2	2	2	2	1	1	1	1	1	0	0	1	0	4	9	1.8	8.5
15-Jul	0	A	0	0	1	1	2	4	4	4	5	2	11	2	1	1	1	1	0	1	1	1	1	0	2.0	11.1
16-Jul	A	0	0	0	0	1	1	1	1	2	2	2	2	1	1	1	2	3	1	1	1	1	6	A	1.4	5.8
17-Jul	3	2	0	0	1	1	1	2	7	2	2	0	0	0	1	2	2	0	1	1	1	14	A	8	2.4	14.0
18-Jul	0	1	0	0	3	3	3	3	6	70	17	9	1	1	1	1	1	1	1	1	0	A	0	0	5.6	69.8
19-Jul	0	0	0	0	6	4	8	10	3	2	3	2	1	2	2	2	35	1	1	1	A	0	0	0	3.7	34.6
20-Jul	0	0	0	0	0	1	2	3	2	2	1	2	2	2	3	2	3	1	1	A	1	1	1	1	1.4	2.9
21-Jul	9	0	0	1	0	1	2	3	3	6	2	5	4	3	2	2	3	1	A	1	1	1	1	1	2.3	8.8
22-Jul	0	0	2	2	1	6	22	15	4	3	3	3	2	0	0	1	2	A	1	1	1	0	0	0	3.2	22.4
23-Jul	4	1	0	0	0	1	1	1	1	1	1	2	2	2	1	1	A	0	1	1	1	1	1	1	1.2	4.3
24-Jul	1	1	3	1	1	1	2	2	1	2	1	1	1	1	1	A	1	1	1	1	1	0	1	1	1.1	2.5
25-Jul	0	0	0	0	0	2	8	12	34	16	23	2	40	2	A	1	1	1	0	1	0	0	0	2	6.5	40.1
26-Jul	5	1	1	0	1	4	4	8	2	32	1	1	1	A	3	2	2	1	1	1	1	0	0	1	3.0	31.6
27-Jul	0	0	0	0	1	1	2	2	2	2	2	1	A	1	1	1	2	1	1	1	1	0	0	0	1.1	2.5
28-Jul	0	0	0	0	0	1	3	19	18	2	1	A	2	3	1	1	1	1	1	1	0	1	0	0	2.6	19.1
29-Jul	0	0	0	0	0	1	2	9	1	2	A	3	2	2	2	2	2	1	1	1	1	0	0	0	1.5	9.4
30-Jul	0	0	0	0	1	1	5	5	6	A	7	2	1	3	2	4	1	0	1	1	0	0	0	1	1.9	6.5
31-Jul	0	0	0	1	1	1	2	3	A	1	1	1	1	1	1	1	0	1	1	1	0	1	0	0	0.9	2.5
1.5 0.7 0.7 0.7 1.5 2.8 4.8 6.1 4.8 4.4 5.4 2.5 4.6 2.0 1.7 1.7 2.8 1.2 1.0 1.0 0.8 1.2 0.9 1.2																								Diurnal Average		
8.8 4.2 3.0 5.8 10.0 18.0 23.0 40.0 33.9 31.6 69.8 17.3 40.1 10.3 3.2 5.0 34.6 3.8 2.5 3.0 2.5 14.0 5.8 8.5																								Diurnal Maximum		
C - Calibration M - Maintenance A - Automated Daily Zero Span																										

Hourly Maximums

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



Hourly Averages

Oxides of Nitrogen (NO_x) - ppb

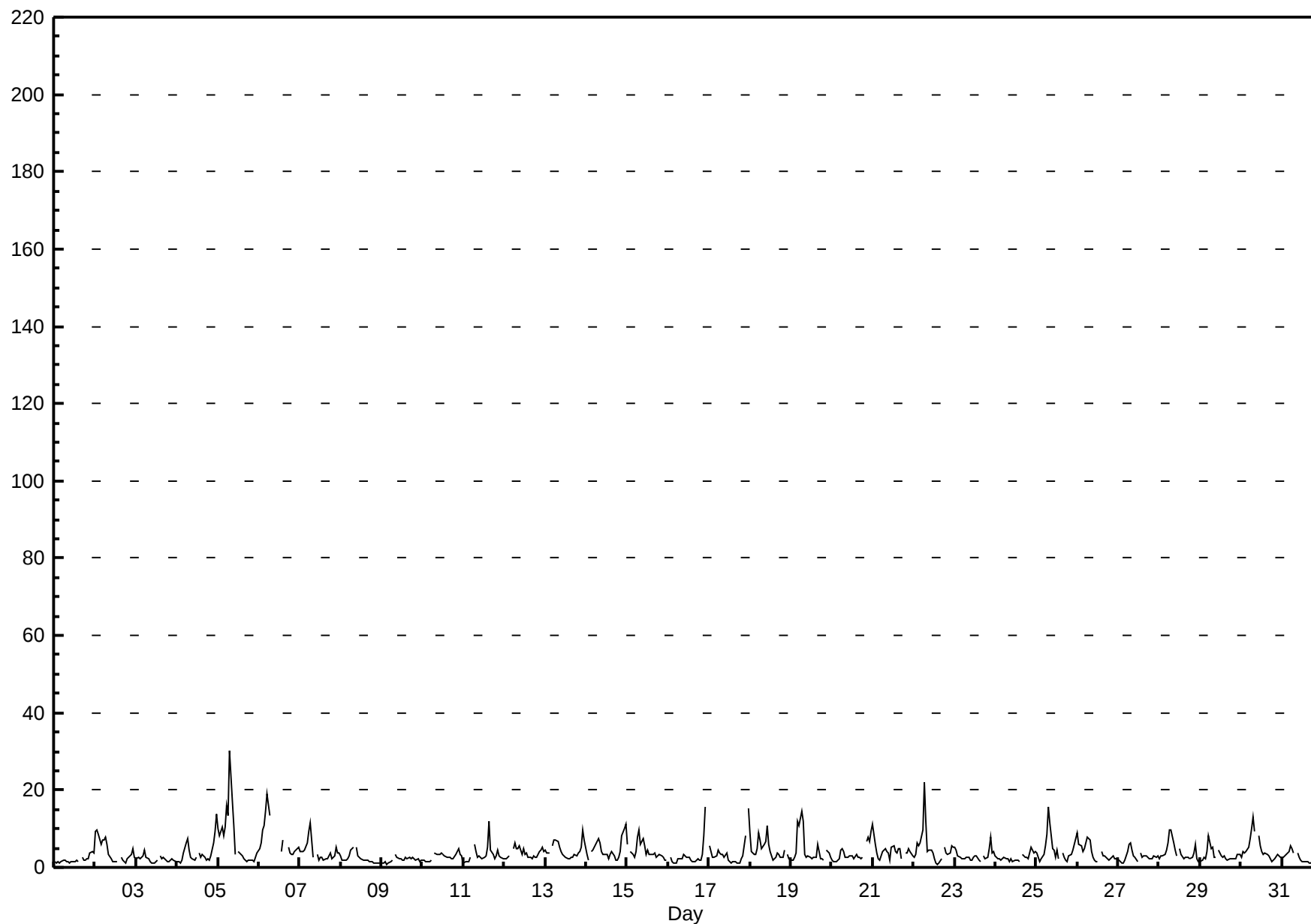
Henry Pirker - July 2011

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0																				Hours in Service: 744						
Maximum Value: 30.1 ppb on Jul 5 08:00 Maximum Daily Average: 7.3 ppb on Jul 5																				Hours of Data: 705						
Minimum Value: 1 ppb on Jul 9 04:00 Minimum Daily Average: 2.0 ppb on Jul 9																				Hours of Missing Data: 39						
Maximum Diurnal Average: 7.1 ppb at hour 7 Minimum Diurnal Average: 2.3 ppb at hour 19																				Hours of Calibration: 37						
Monthly Average: 3.78 ppb Percentiles: P ₁ = 1.1 P ₁₀ = 1.5 Q ₁ = 2.1 Median = 2.9 Q ₃ = 4.3 P ₉₀ = 7.1 P ₉₉ = 15.6																				Percent Operational Time: 99.7						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
1-Jul	1	1	1	1	2	2	2	2	2	1	1	2	2	2	A	A	3	2	2	2	4	4	4	4	2.0	4.2
2-Jul	9	10	9	6	7	7	8	6	3	2	1	1	1	1	A	3	2	1	1	2	3	3	5	3	4.2	9.8
3-Jul	2	3	2	3	3	4	3	2	2	1	1	1	2	A	3	2	3	2	1	1	2	2	2	1	2.1	4.3
4-Jul	1	2	1	2	4	6	8	4	2	2	2	2	A	4	3	3	3	2	2	2	3	6	9	14	3.8	13.7
5-Jul	10	8	10	8	11	16	13	30	17	11	3	A	4	3	3	2	2	1	2	2	2	2	3	4	7.3	30.1
6-Jul	5	6	10	11	15	19	13	C	C	C	C	C	C	4	7	M	M	5	4	3	3	4	5	5	--	19.0
7-Jul	4	4	4	4	6	9	11	7	2	A	3	2	2	3	2	2	2	3	4	2	3	5	4	4	4.1	11.5
8-Jul	3	2	2	2	2	3	5	5	A	5	3	3	2	2	2	2	2	1	1	1	1	1	1	1	2.3	5.3
9-Jul	1	1	1	1	1	2	2	A	3	2	2	2	2	2	3	2	3	2	3	2	2	2	2	2	2.0	3.2
10-Jul	2	2	2	1	2	2	A	4	3	3	3	4	3	3	3	3	3	2	2	3	4	5	3	3	2.8	4.7
11-Jul	1	1	1	2	2	A	6	4	3	3	3	2	3	3	5	12	5	3	2	3	5	3	3	2	3.3	11.9
12-Jul	2	2	3	3	A	5	6	5	5	6	3	5	3	4	3	3	2	3	3	3	4	4	5	4	3.7	6.4
13-Jul	4	4	4	A	6	7	7	7	5	4	3	3	3	2	2	3	3	3	3	4	4	5	10	7	4.4	9.5
14-Jul	3	2	A	4	4	6	7	8	6	4	3	3	3	2	3	4	3	2	2	3	4	8	10	11	4.6	11.1
15-Jul	6	A	4	3	3	4	8	10	6	7	6	3	5	3	3	3	4	3	3	3	3	3	2	2	4.2	9.7
16-Jul	A	3	1	1	1	1	2	2	2	3	3	3	3	2	1	1	1	2	2	2	3	8	16	A	2.9	15.7
17-Jul	6	4	3	2	3	4	4	4	3	3	4	2	2	1	1	2	1	1	1	2	3	8	A	15	3.5	15.2
18-Jul	9	4	3	3	5	9	7	5	6	7	11	6	4	2	2	2	4	3	3	3	4	A	3	2	4.7	10.7
19-Jul	2	2	3	4	12	11	15	12	3	3	3	3	2	3	3	2	6	2	2	2	A	5	4	3	4.5	14.7
20-Jul	2	2	1	2	2	5	5	4	3	3	3	3	3	2	3	2	3	2	2	A	7	8	7	9	3.6	9.4
21-Jul	11	6	4	2	2	3	4	5	4	4	2	5	6	4	4	5	5	2	A	4	4	5	4	3	4.2	11.0
22-Jul	2	3	6	6	6	10	22	12	4	5	4	4	2	1	1	1	2	A	5	4	3	4	6	5	5.2	21.9
23-Jul	5	4	3	3	2	2	2	3	3	2	2	2	3	3	2	2	A	3	2	2	5	8	4	4	3.1	7.9
24-Jul	3	2	2	2	2	2	2	2	2	2	2	2	2	2	1	A	3	3	3	2	4	5	4	4	2.5	5.1
25-Jul	4	3	1	2	3	5	9	16	11	5	4	3	4	2	A	4	3	2	2	3	3	5	6	8	4.7	15.8
26-Jul	9	6	6	4	5	6	8	7	4	3	2	2	2	A	4	3	3	3	2	2	3	3	2	2	3.9	9.1
27-Jul	2	2	1	1	2	4	6	6	4	3	3	2	A	4	3	3	3	2	2	2	2	3	2	3	2.8	6.3
28-Jul	2	3	3	3	5	6	10	10	6	4	3	A	5	3	2	3	3	2	2	3	4	6	2	2	4.0	9.8
29-Jul	2	2	3	2	4	8	5	5	3	3	A	4	3	2	3	2	2	2	2	2	2	2	3	3	3.1	8.3
30-Jul	3	4	4	4	5	8	10	13	9	A	8	6	4	3	4	4	3	2	2	2	2	3	3	3	4.7	13.0
31-Jul	3	3	3	4	4	5	5	4	A	4	3	2	2	1	2	1	1	1	1	2	3	2	1	2	2.5	5.4
4.0 3.3 3.4 3.2 4.4 6.1 7.1 7.0 4.6 3.7 3.2 2.9 2.9 2.6 2.7 2.9 2.7 2.4 2.3 2.5 3.3 4.4 4.5 4.5																									Diurnal Average	
11.0 9.8 10.4 10.8 14.7 19.0 21.9 30.1 17.0 10.9 10.7 6.0 5.7 4.3 7.1 11.9 5.9 5.1 5.1 3.9 6.8 8.3 15.7 15.2																									Diurnal Maximum	
C - Calibration M - Maintenance A - Automated Daily Zero Span																										

Hourly Averages

Oxides of Nitrogen (NO_x) - ppb

Henry Pirker - July 2011



Hourly Maximums

Oxides of Nitrogen (NO_x) - ppb

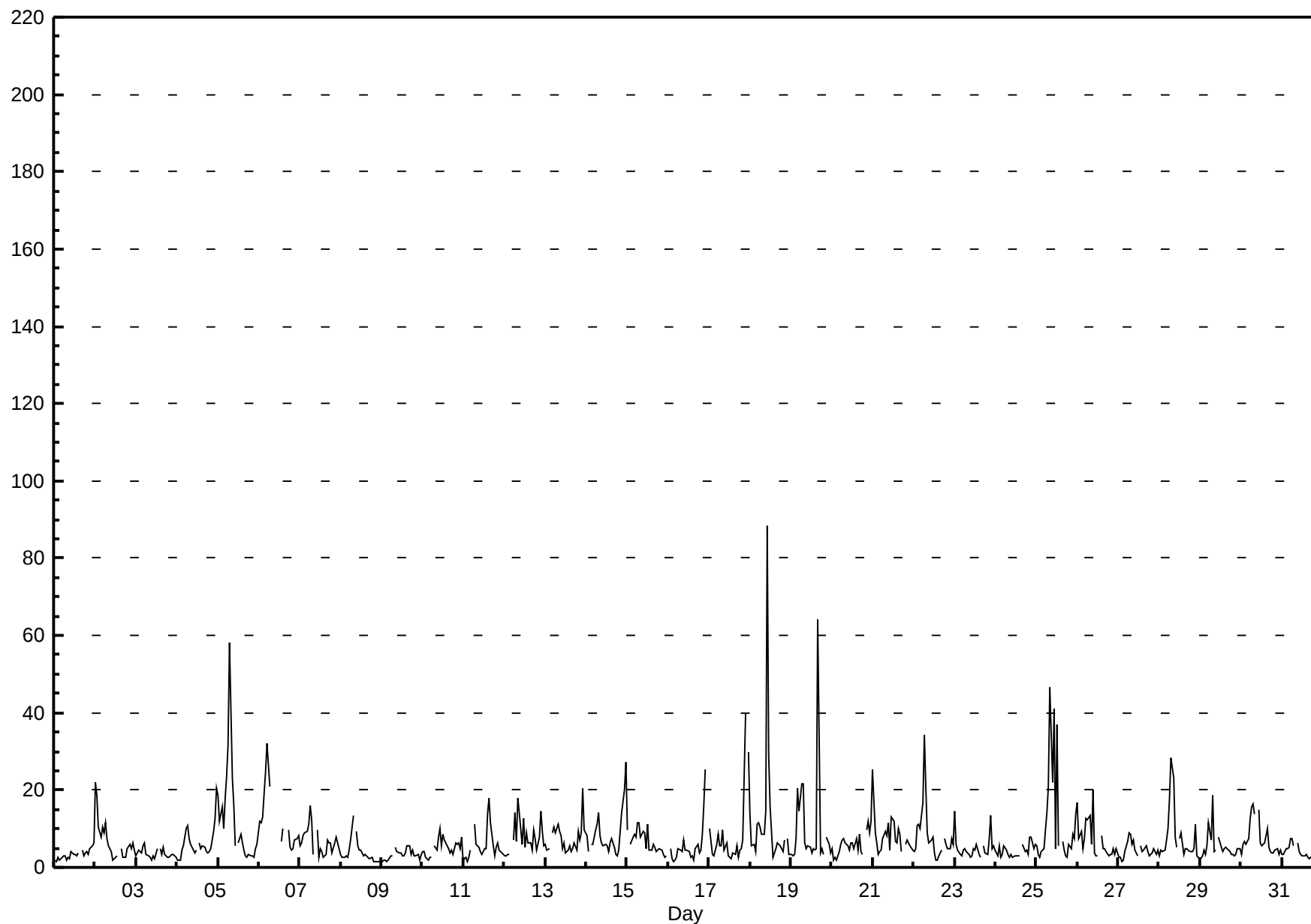
Henry Pirker - July 2011

Maximum Value: 88.3 ppb on Jul 18 11:00																				Maximum Daily Average: 12.5 ppb on Jul 5					Hours in Service: 744	
Minimum Value: 1 ppb on Jul 9 04:00																				Minimum Daily Average: 3.3 ppb on Jul 9					Hours of Data: 705	
Maximum Diurnal Average: 12.3 ppb at hour 8																				Minimum Diurnal Average: 4.1 ppb at hour 19					Hours of Missing Data: 39	
Monthly Average: 6.93 ppb																				Percentiles: P ₁ = 1.5 P ₁₀ = 2.5 Q ₁ = 3.5 Median = 5.0 Q ₃ = 7.5 P ₉₀ = 12.5 P ₉₉ = 35.3					Hours of Calibration: 37	
																				Percent Operational Time: 99.7						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
1-Jul	2	1	3	2	2	3	3	2	3	2	4	3	3	4	A	4	3	4	4	3	5	5	7	3.3	6.5	
2-Jul	22	19	11	8	11	9	11	8	5	4	2	2	2	3	A	5	2	3	3	5	6	5	7	4	6.8	21.9
3-Jul	3	5	4	4	5	6	3	3	3	2	3	2	5	A	5	3	5	3	2	3	3	3	3	3	3.6	6.5
4-Jul	2	2	2	4	5	10	11	7	6	5	4	4	A	6	5	5	5	4	4	4	5	9	12	21	6.3	20.5
5-Jul	19	12	16	10	18	24	32	58	23	16	6	A	6	9	6	4	3	3	4	3	3	3	5	6	12.5	58.2
6-Jul	12	12	13	19	25	32	21	C	C	C	C	C	C	7	10	M	M	10	5	4	5	7	7	8	--	31.9
7-Jul	5	6	8	9	10	11	16	12	3	A	10	3	5	4	2	3	7	7	6	4	6	8	7	5	6.9	16.0
8-Jul	4	3	3	3	3	4	7	14	A	9	6	4	4	3	3	3	3	2	3	1	1	1	1	2	3.8	13.6
9-Jul	2	2	2	1	2	3	3	A	5	4	4	4	3	3	4	5	6	3	4	3	3	3	2	3	3.3	5.7
10-Jul	4	4	3	2	3	2	A	6	5	8	10	5	8	7	6	5	4	5	3	6	6	7	5	8	5.3	10.0
11-Jul	2	3	2	3	4	A	11	6	5	5	4	3	5	5	14	18	12	6	3	5	7	4	4	3	5.8	18.0
12-Jul	3	3	3	3	A	7	14	7	18	14	6	13	5	9	6	6	4	10	7	4	8	15	9	6	7.9	18.0
13-Jul	6	4	5	A	9	10	9	11	9	8	5	6	4	4	6	4	5	6	4	9	7	9	20	10	7.5	20.4
14-Jul	8	4	A	6	6	10	11	14	8	7	5	6	5	4	7	8	5	3	3	4	9	14	20	27	8.5	27.4
15-Jul	10	A	6	8	9	8	12	12	8	10	9	5	11	4	4	6	5	4	4	5	4	4	3	3	6.6	11.5
16-Jul	A	5	2	1	2	3	5	4	4	7	4	4	4	3	3	2	5	6	4	5	9	16	25	A	5.6	25.3
17-Jul	10	7	4	3	6	9	5	6	10	4	6	3	3	2	4	3	5	2	5	5	7	40	A	30	7.8	39.7
18-Jul	14	5	6	4	11	12	10	9	8	15	88	29	16	2	4	5	7	6	5	4	7	A	8	4	12.1	88.3
19-Jul	3	3	4	8	21	15	22	22	7	5	5	5	4	5	4	5	64	4	5	3	A	8	6	4	9.9	64.0
20-Jul	5	2	3	2	4	6	7	8	6	5	4	6	6	5	7	4	9	4	3	A	10	12	9	12	6.1	12.0
21-Jul	25	9	7	4	4	5	8	9	8	12	5	13	12	7	6	10	8	4	A	6	7	7	6	4	8.0	25.2
22-Jul	4	5	11	11	10	17	34	21	9	6	7	8	4	2	2	3	4	A	8	6	5	5	8	6	8.5	34.2
23-Jul	15	6	4	4	3	4	5	4	4	3	3	5	5	6	3	2	A	5	4	4	8	13	5	6	5.2	14.6
24-Jul	5	3	6	3	4	6	4	3	3	3	3	3	3	3	3	A	6	4	4	3	8	8	5	6	4.3	8.0
25-Jul	6	3	3	4	5	10	14	21	47	22	41	5	37	5	A	7	4	3	3	6	5	9	8	14	12.2	46.8
26-Jul	17	8	9	5	8	13	12	14	6	20	4	3	3	A	8	5	5	4	3	3	4	5	4	5	7.2	20.0
27-Jul	3	3	2	2	4	7	9	9	6	7	4	3	A	6	4	4	6	4	3	3	4	5	4	5	4.5	9.0
28-Jul	3	4	4	5	7	10	17	28	23	8	5	A	8	9	3	5	5	4	4	4	5	11	3	3	7.8	28.4
29-Jul	2	3	4	4	6	12	7	19	4	5	A	8	5	4	5	5	5	4	3	4	3	3	5	5	5.4	18.7
30-Jul	4	6	7	6	8	13	16	16	14	A	15	7	6	6	6	10	5	4	4	4	4	5	3	5	7.5	16.4
31-Jul	4	4	5	5	5	8	8	6	A	6	4	3	3	3	3	2	2	2	3	3	5	3	3	4	4.0	7.5
7.3 5.2 5.3 5.0 7.2 9.5 11.6 12.3 9.3 8.0 9.5 6.0 6.6 4.8 5.2 5.4 7.3 4.4 4.1 4.3 5.6 8.2 7.0 7.5																									Diurnal Average	
25.2 18.8 15.5 19.0 24.6 31.9 34.2 58.2 46.8 22.0 88.3 29.0 36.9 9.1 13.8 18.0 64.0 9.8 7.5 9.3 9.7 39.7 25.3 29.7																									Diurnal Maximum	
C - Calibration M - Maintenance A - Automated Daily Zero Span																										

Hourly Maximums

Oxides of Nitrogen (NO_x) - ppb

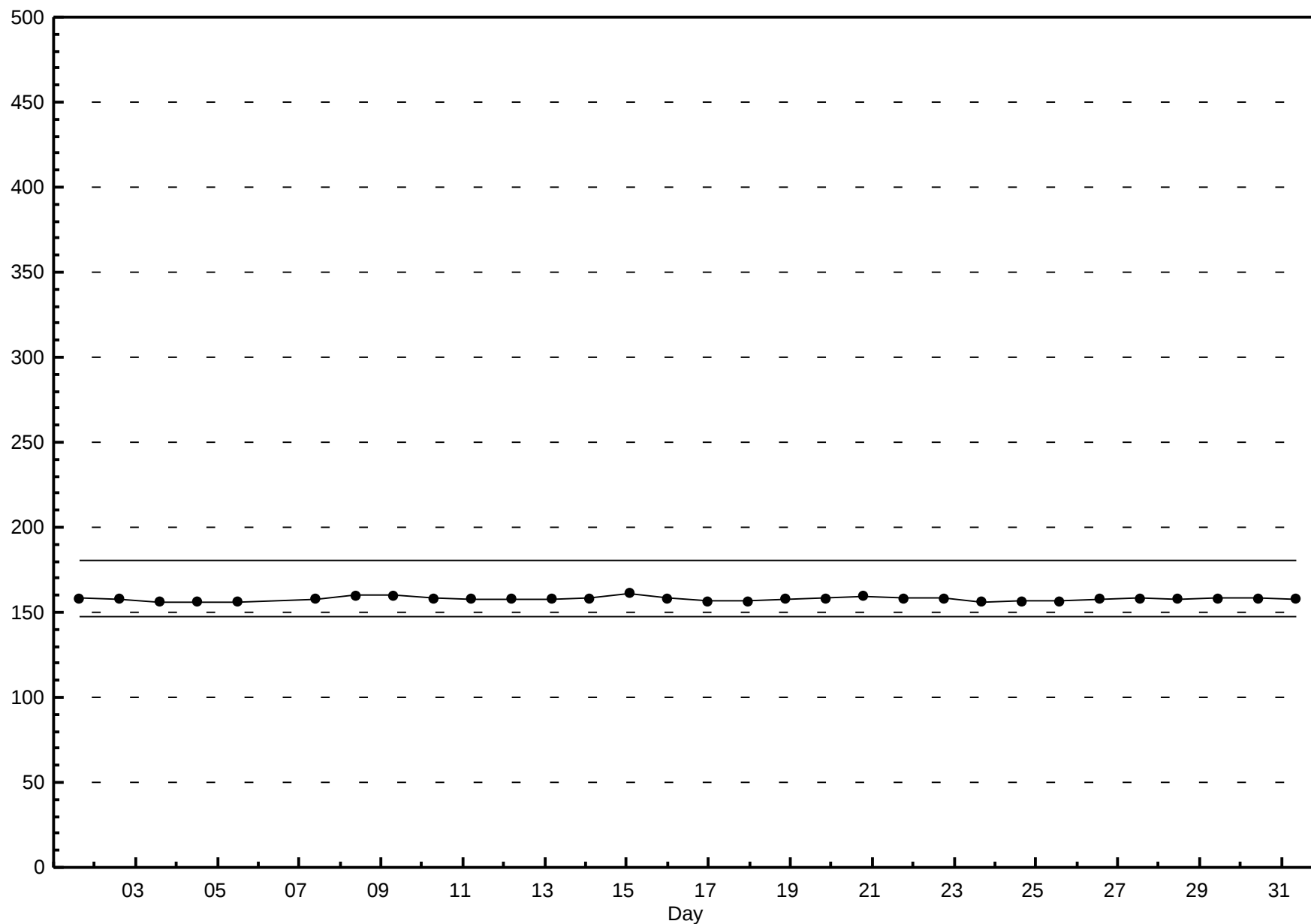
Henry Pirker - July 2011



Span Responses

Oxides of Nitrogen (NO_x)

Henry Pirker - July 2011



Hourly Averages

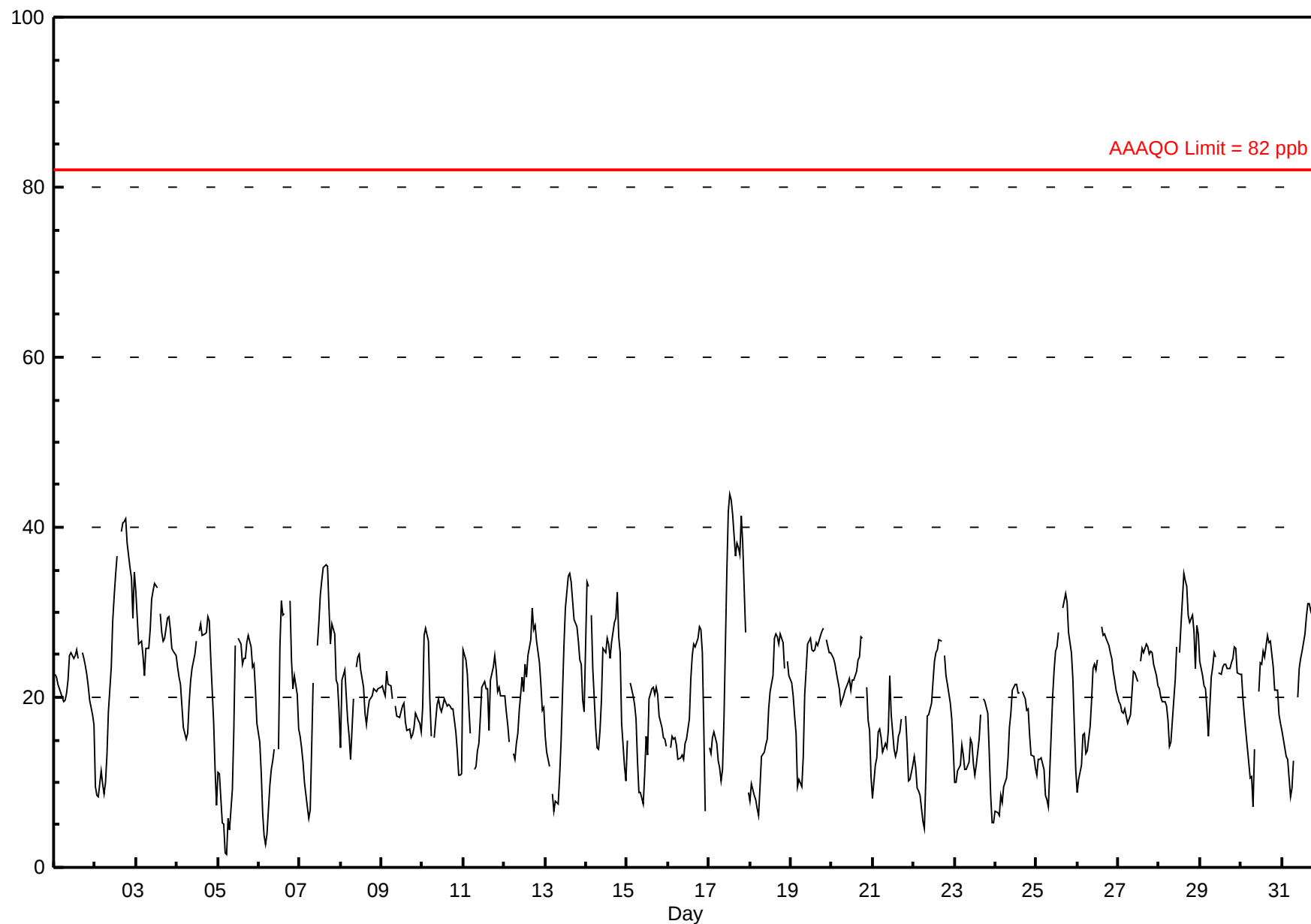
Ozone (O₃) - ppb

Henry Pirker - July 2011

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 43.8 ppb on Jul 17 13:00 Maximum Daily Average: 27.9 ppb on Jul 3																								Hours in Service: 744 Hours of Data: 710 Hours of Missing Data: 34 Hours of Calibration: 34 Percent Operational Time: 100.0		
Minimum Value: 1 ppb on Jul 5 06:00 Minimum Daily Average: 12.8 ppb on Jul 23 Maximum Diurnal Average: 26.6 ppb at hour 19 Minimum Diurnal Average: 12.6 ppb at hour 6 Monthly Average: 20.26 ppb Percentiles: P ₁ = 5.0 P ₁₀ = 10.4 Q ₁ = 14.8 Median = 20.7 Q ₃ = 25.3 P ₉₀ = 28.9 P ₉₉ = 40.4																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
1-Jul	23	22	21	21	21	19	20	21	22	25	25	25	26	25	A	25	25	24	23	21	20	18	17	22.3	25.7	
2-Jul	9	9	8	11	10	9	10	13	18	24	29	32	34	37	A	40	40	41	41	38	35	34	29	35	25.5	41.1
3-Jul	33	26	26	27	25	23	26	26	28	32	33	33	33	A	30	28	27	27	29	29	28	26	25	25	27.9	33.4
4-Jul	24	22	22	19	16	15	16	19	22	23	25	27	A	28	29	27	27	28	30	29	25	17	11	7	22.1	29.5
5-Jul	11	11	5	5	2	1	6	4	9	16	26	A	27	26	24	25	25	26	27	26	24	24	21	17	16.9	27.2
6-Jul	15	11	6	4	3	4	10	12	13	14	A	14	26	31	30	30	C	C	31	24	21	22	20	16	17.0	31.3
7-Jul	15	14	12	10	7	6	7	14	22	A	26	29	32	34	35	36	35	31	26	29	27	22	22	18	22.1	35.5
8-Jul	14	22	23	20	17	15	13	20	A	24	25	25	23	21	18	17	18	20	20	21	21	21	21	21	20.0	25.0
9-Jul	21	21	20	23	22	21	20	A	19	18	18	18	19	19	17	16	16	15	16	16	18	17	17	16	18.4	23.0
10-Jul	19	27	28	27	20	15	A	15	19	20	19	18	19	20	19	19	19	19	19	16	14	11	11	11	18.4	28.2
11-Jul	26	24	23	19	16	A	11	12	14	15	18	21	22	21	21	16	22	24	25	23	21	21	20	20	19.7	25.7
12-Jul	20	18	17	15	A	13	13	15	16	18	22	21	24	22	25	27	31	28	28	27	24	22	18	19	21.0	30.5
13-Jul	15	14	12	A	9	7	8	7	11	15	21	26	30	34	35	34	31	29	28	27	24	24	20	18	20.8	34.6
14-Jul	34	33	A	30	23	16	14	14	16	20	26	25	27	26	25	26	29	29	32	27	25	17	12	10	23.3	33.6
15-Jul	15	A	22	20	19	17	12	9	9	7	11	15	13	20	21	21	20	21	20	18	16	15	15	14	16.2	21.7
16-Jul	A	14	15	15	15	14	13	13	13	13	15	15	17	22	25	26	26	27	28	28	25	16	7	A	18.4	28.4
17-Jul	14	13	15	16	15	13	12	10	11	17	35	42	44	43	42	37	38	38	37	41	38	28	A	9	26.4	43.8
18-Jul	8	10	9	8	7	6	9	13	14	14	15	19	21	22	27	27	27	26	28	27	23	A	24	23	17.7	27.5
19-Jul	22	20	18	16	9	10	9	13	20	23	26	27	26	25	26	26	26	27	28	28	A	27	25	25	21.9	28.2
20-Jul	25	25	24	23	21	19	20	20	21	22	22	21	22	22	23	24	25	27	27	A	21	17	16	11	21.6	27.1
21-Jul	8	12	13	16	16	15	14	15	14	16	23	18	14	13	14	15	16	17	A	18	14	10	10	12	14.5	22.6
22-Jul	13	12	9	9	8	5	5	10	18	18	19	22	24	25	26	27	27	A	25	22	22	19	17	14	17.3	26.8
23-Jul	10	10	11	12	14	13	11	12	12	15	15	12	11	12	15	18	A	20	19	18	14	8	5	5	12.8	19.8
24-Jul	7	6	6	8	8	9	10	13	16	18	21	22	21	21	20	A	21	20	19	19	16	13	13	12	14.7	21.5
25-Jul	11	13	13	13	12	9	8	7	11	20	23	25	26	28	A	30	31	32	31	28	25	22	17	12	19.4	32.1
26-Jul	9	10	12	16	16	13	14	17	20	23	24	23	24	A	28	27	27	27	26	25	25	23	22	21	20.6	28.3
27-Jul	19	19	18	18	19	17	18	18	21	23	23	22	A	24	26	25	26	26	25	25	25	24	23	21	22.0	26.3
28-Jul	21	20	20	20	19	17	14	15	20	22	26	A	25	29	35	34	33	30	29	30	28	23	29	27	24.5	34.5
29-Jul	24	23	21	21	19	15	22	24	25	25	A	23	23	24	24	24	23	23	24	25	26	26	23	23	23.0	25.9
30-Jul	23	20	18	16	12	10	11	7	14	A	21	24	24	25	25	27	26	27	25	24	21	21	18	17	19.8	27.3
31-Jul	16	15	13	13	10	8	9	13	A	20	23	25	25	27	29	31	31	30	31	29	24	24	25	22	21.5	31.0
17.4 17.2 16.1 16.3 14.3 12.6 12.8 14.0 16.8 19.3 22.5 23.0 24.2 25.1 25.4 26.2 26.6 26.2 26.6 25.3 23.1 20.5 18.5 17.3 33.6 33.1 28.2 29.6 25.0 22.5 25.7 25.8 27.9 31.5 34.9 41.9 43.8 43.2 41.6 39.6 40.5 40.6 41.1 41.3 38.2 34.1 29.4 34.7																								Diurnal Average	Diurnal Maximum	
C - Calibration A - Automated Daily Zero Span Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 82 ppb 24-hr na																										

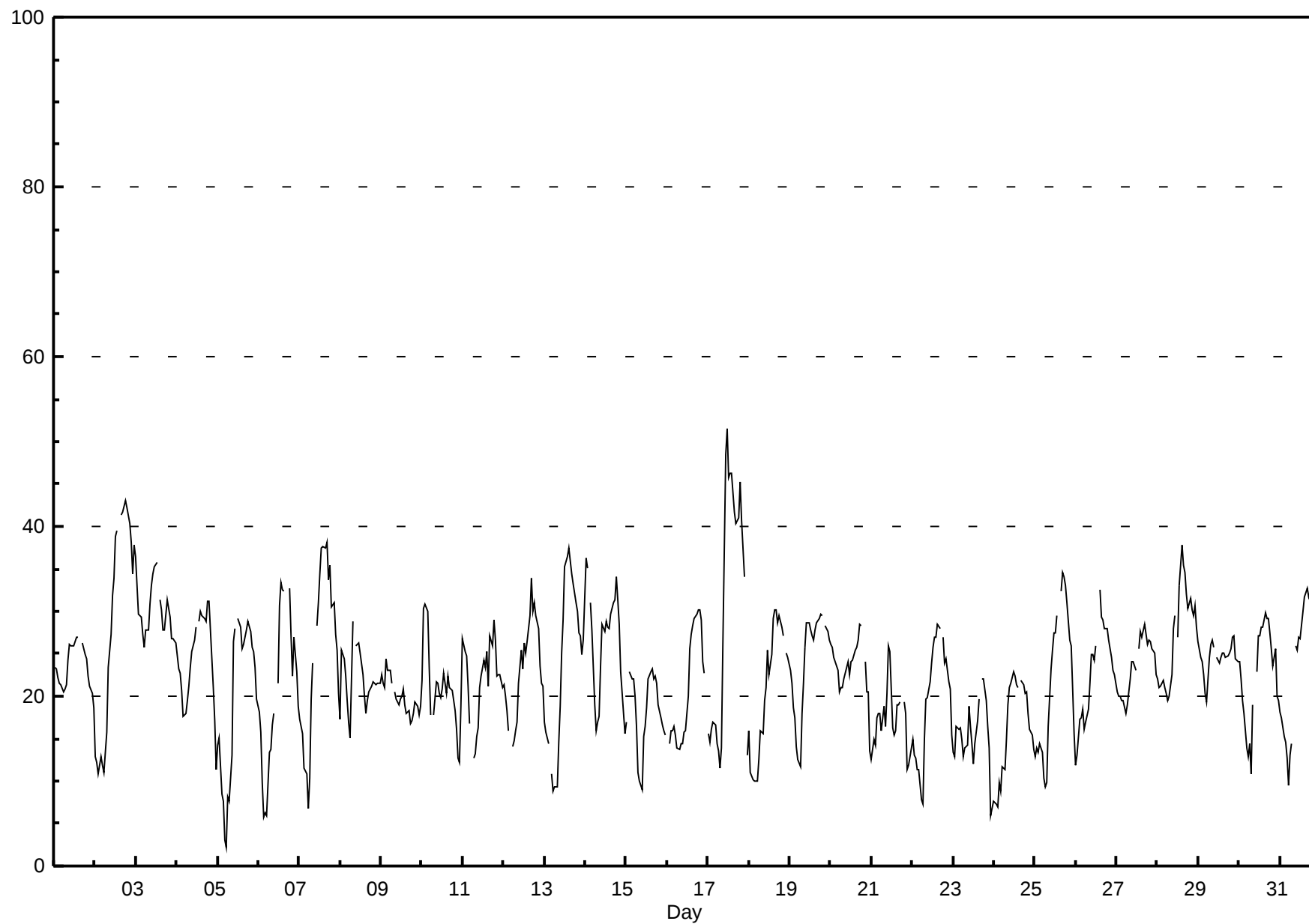
Hourly Averages

Ozone (O₃) - ppb
Henry Pirker - July 2011



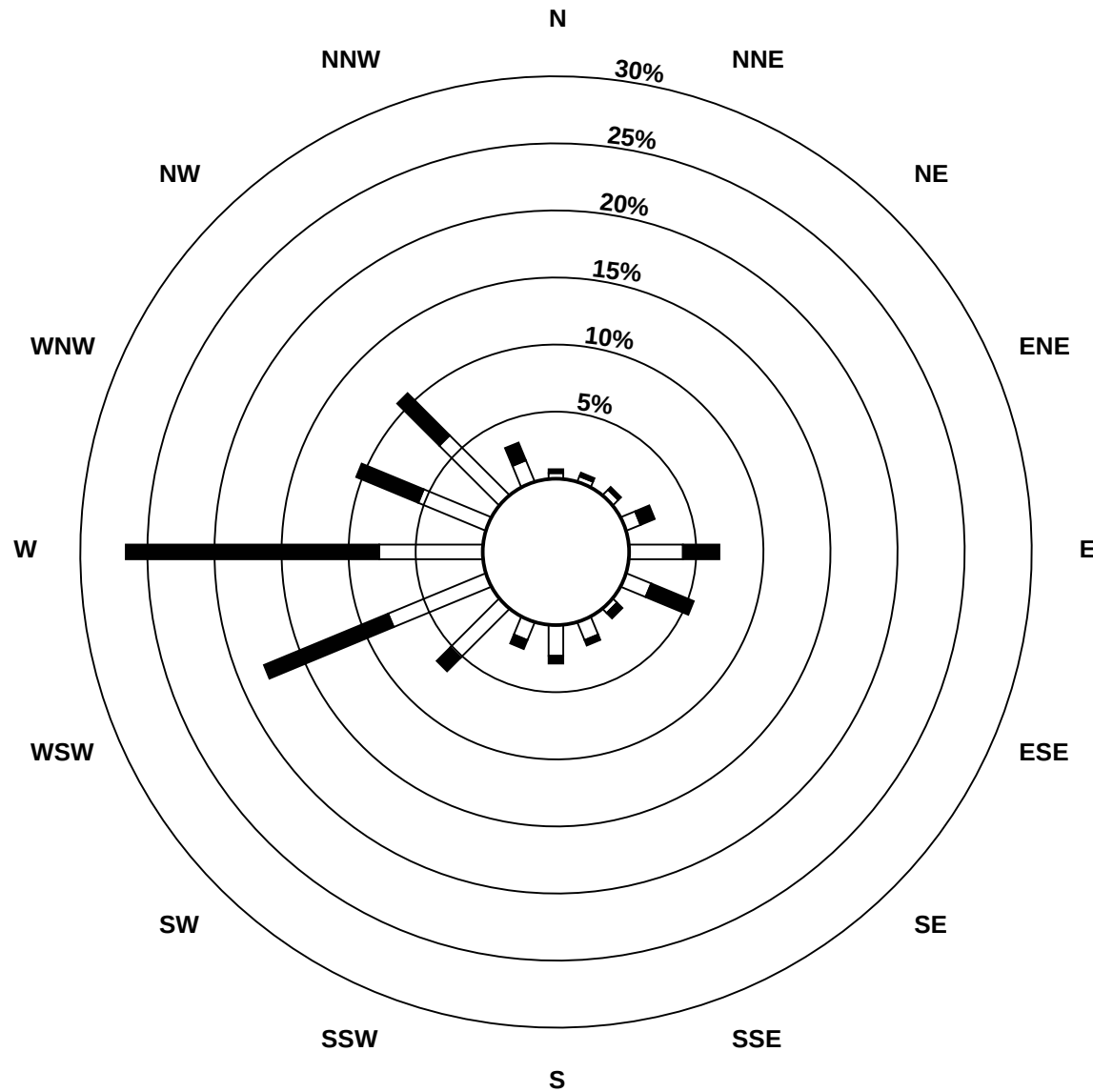
Hourly Maximums

Ozone (O₃) - ppb
Henry Pirker - July 2011

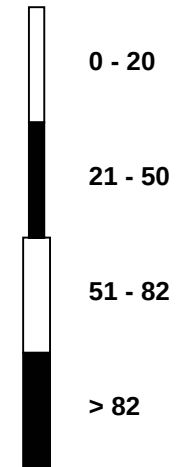


Pollutant Rose

Ozone (O₃) - ppb
Henry Pirker - July 2011



Pollutant Classes (ppb)



Eight Hour Running Averages

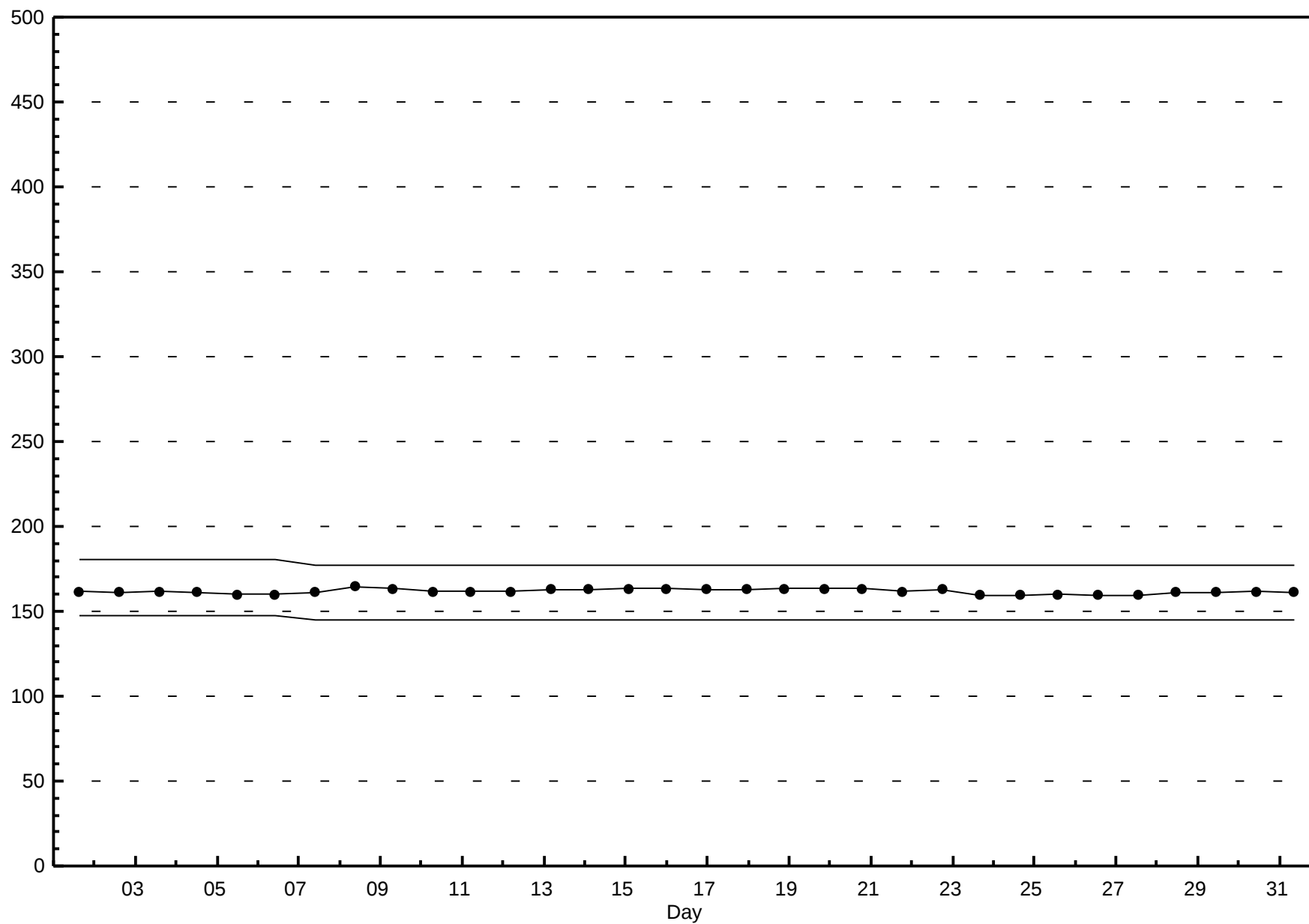
Ozone (O₃) - ppb

Henry Pirker - July 2011

Maximum Value: 39.9 ppb on Jul 17 19:00																								Hours in Service: 744	
Minimum Value: 5.5 ppb on Jul 5 09:00																								Hours of Data: 743	
Percentiles: P ₁ = 7.5 P ₁₀ = 12.7 Q ₁ = 15.8 Median = 20.4 Q ₃ = 24.5 P ₉₀ = 27.8 P ₉₉ = 38.2																								Hours of Missing Data: 1	
																								Hours of Calibration: 1	
																								Percent Operational Time: 100.0	
Day	Hourly Period Ending At (MST)																							Daily Maximum	
1-Jul	25	25	23	23	22	21	21	21	21	21	22	22	23	23	24	25	25	25	25	24	24	23	22	22	25.5
2-Jul	20	18	16	14	13	11	10	10	11	13	16	18	21	25	27	30	34	36	38	39	39	38	37	37	38.8
3-Jul	36	34	32	31	29	28	27	26	26	26	27	28	29	30	31	31	31	30	30	29	28	28	27	27	35.7
4-Jul	27	26	25	24	22	21	20	19	19	19	19	20	21	23	25	26	27	27	28	28	28	26	24	22	28.2
5-Jul	20	18	15	12	9	7	6	6	5	6	9	9	13	16	19	22	24	26	26	26	25	25	25	24	25.7
6-Jul	22	21	18	15	13	10	9	8	8	8	8	10	13	17	20	22	24	N	27	29	28	26	25	23	28.8
7-Jul	22	21	18	16	15	13	11	11	11	11	13	16	19	23	27	30	32	32	32	32	32	30	28	26	32.4
8-Jul	24	23	22	21	20	19	18	18	19	19	19	20	21	21	22	22	21	21	20	20	19	20	20	20	23.6
9-Jul	21	21	21	21	21	21	21	21	21	20	20	19	19	19	18	18	18	17	17	17	17	17	17	16	21.3
10-Jul	17	18	20	21	21	21	22	22	22	21	19	18	18	19	19	19	19	19	19	19	18	17	16	15	21.7
11-Jul	16	16	17	17	18	18	19	19	17	16	15	15	16	17	18	18	19	21	21	22	22	22	21	22	22.0
12-Jul	22	21	20	19	19	18	17	16	15	15	16	17	18	19	20	22	24	25	26	26	26	26	26	25	26.5
13-Jul	23	21	19	18	16	13	12	10	10	10	11	13	16	19	22	26	28	30	31	31	30	29	27	25	31.0
14-Jul	25	26	26	26	26	25	24	23	21	19	20	19	20	21	22	24	25	27	28	28	28	26	25	23	27.7
15-Jul	21	20	18	17	16	16	17	16	16	15	13	13	12	12	13	15	16	18	19	19	20	19	18	18	21.0
16-Jul	17	16	15	15	15	15	14	14	14	14	14	14	14	15	17	18	20	22	23	25	26	25	23	23	26.0
17-Jul	21	19	17	15	14	13	14	13	13	14	16	19	23	27	31	34	37	40	40	40	39	37	37	33	39.9
18-Jul	28	24	20	16	11	8	8	9	9	10	11	12	14	16	18	20	22	23	25	26	26	26	26	25	28.3
19-Jul	25	24	22	21	19	18	16	15	15	15	16	17	19	21	23	25	26	26	26	27	27	27	27	27	26.9
20-Jul	27	26	26	25	24	23	23	22	22	21	21	21	21	21	22	22	23	23	24	24	24	24	23	21	26.5
21-Jul	18	16	14	14	14	13	13	14	14	15	16	16	16	16	16	16	16	16	15	15	15	15	14	14	18.2
22-Jul	14	13	12	11	11	10	9	9	10	10	12	13	15	18	20	22	23	24	25	25	25	24	23	21	25.1
23-Jul	19	17	16	14	14	13	12	12	12	13	13	13	13	13	13	14	14	15	15	16	17	16	15	13	18.5
24-Jul	12	10	9	8	7	7	8	9	10	11	13	15	16	18	19	20	21	21	20	20	19	18	17	16	20.8
25-Jul	15	14	14	13	12	12	11	11	11	12	13	14	16	19	20	23	26	28	29	29	29	29	27	25	29.5
26-Jul	22	19	17	15	14	13	13	13	15	16	18	19	20	21	23	24	25	26	26	27	27	26	25	25	26.6
27-Jul	24	23	22	21	20	19	19	18	18	19	19	20	20	21	22	23	24	25	25	25	25	25	25	24	25.4
28-Jul	24	23	22	22	21	20	19	18	18	18	19	19	20	21	24	27	29	30	30	30	31	30	29	29	30.7
29-Jul	27	27	26	25	23	22	22	21	21	22	22	22	22	24	24	24	24	23	23	24	24	24	24	24	27.4
30-Jul	24	24	23	22	20	18	17	15	13	13	13	14	16	18	20	23	25	25	25	25	25	24	24	22	25.4
31-Jul	21	20	18	17	15	14	13	12	12	12	14	16	18	20	23	26	27	28	29	29	29	29	28	27	29.3
35.7 33.9 32.1 30.7 29.4 27.9 27.5 26.3 25.8 26.4 27.2 28.0 29.0 30.0 30.6 33.9 37.2 39.7 39.9 39.9 39.9 39.2 38.5 37.3 36.7																									
Diurnal Maximums																									
N - Not Valid																									

Span Responses

Ozone (O₃)
Henry Pirker - July 2011



Hourly Averages

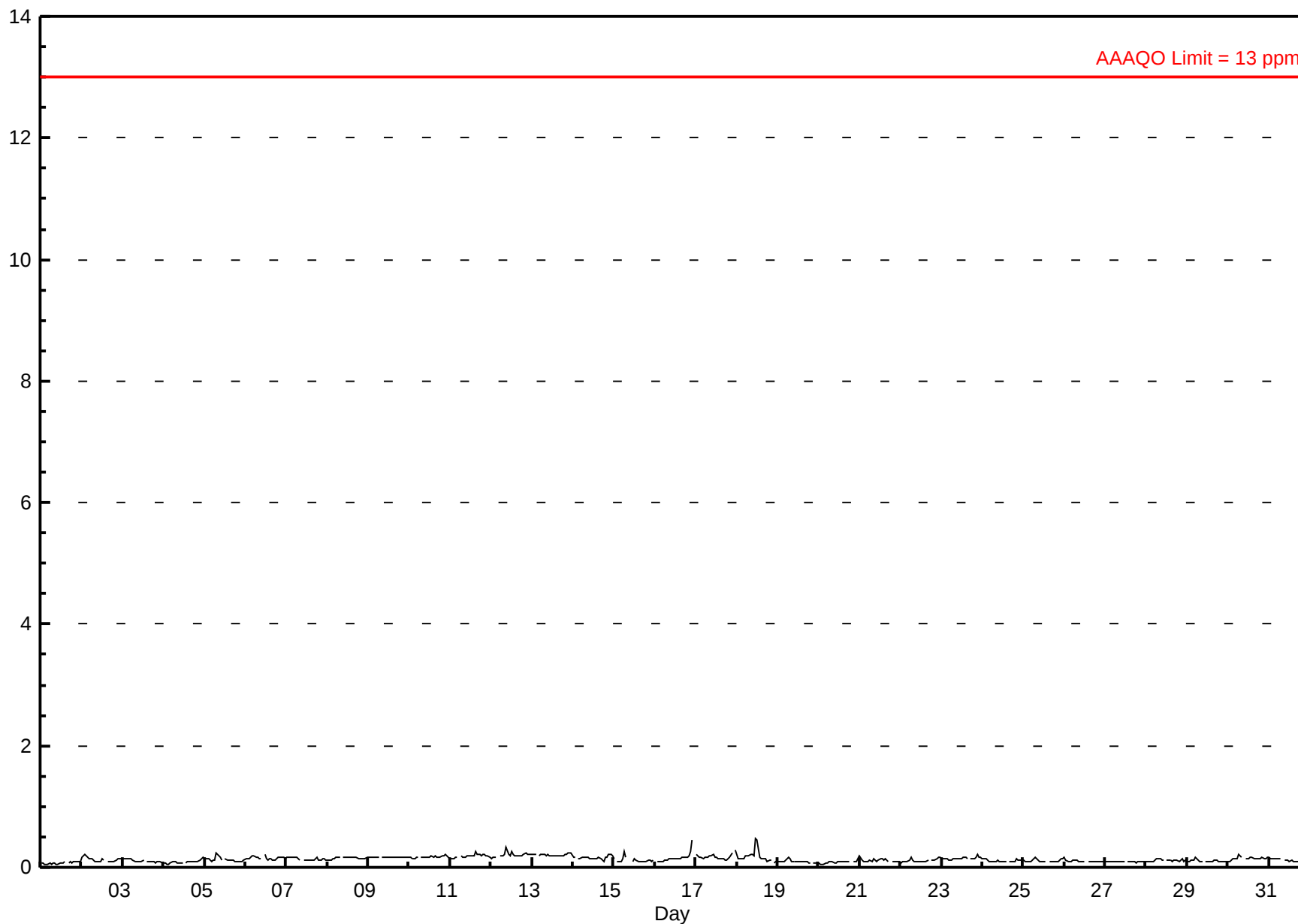
Carbon Monoxide (CO) - ppm

Henry Pirker - July 2011

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 0.48 ppm on Jul 18 12:00 Maximum Daily Average: 0.21 ppm on Jul 13																								Hours in Service: 744 Hours of Data: 709 Hours of Missing Data: 35 Hours of Calibration: 35 Percent Operational Time: 100.0		
Minimum Value: 0.1 ppm on Jul 20 04:00 Minimum Daily Average: 0.07 ppm on Jul 1 Maximum Diurnal Average: 0.15 ppm at hour 7 Minimum Diurnal Average: 0.12 ppm at hour 4 Monthly Average: 0.134 ppm Percentiles: P ₁ = 0.06 P ₁₀ = 0.09 Q ₁ = 0.10 Median = 0.13 Q ₃ = 0.16 P ₉₀ = 0.19 P ₉₉ = 0.26																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
1-Jul	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.07	0.10
2-Jul	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	0.1	0.1	0.2	0.1	0.13	0.20
3-Jul	0.1	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.11	0.15
4-Jul	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.09	0.17	
5-Jul	0.2	0.1	0.1	0.1	0.1	0.1	0.1	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	0.13	0.23	
6-Jul	0.1	0.1	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	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.15	0.21
7-Jul	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	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.14	0.17	
8-Jul	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.15	0.17	
9-Jul	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	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.17	0.18	
10-Jul	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	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.17	0.20	
11-Jul	0.1	0.1	0.2	0.2	0.2	0.1	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	0.2	0.18	0.26	
12-Jul	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	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	0.21	0.33	
13-Jul	0.2	0.2	0.2	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	0.21	0.24	
14-Jul	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.16	0.21	
15-Jul	0.2	0.1	0.1	0.1	0.1	0.1	0.3	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	0.1	0.12	0.26	
16-Jul	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	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.16	0.44	
17-Jul	0.2	0.2	0.2	0.2	0.2	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	0.3	0.17	0.27	
18-Jul	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.5	0.5	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.18	0.48	
19-Jul	0.1	0.1	0.1	0.1	0.1	0.1	0.1	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	0.10	0.16	
20-Jul	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.08	0.14	
21-Jul	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.12	0.18	
22-Jul	0.1	0.1	0.1	0.1	0.1	0.1	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	0.11	0.17	
23-Jul	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	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.15	0.21	
24-Jul	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.11	0.15	
25-Jul	0.1	0.1	0.1	0.1	0.1	0.1	0.1	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	0.11	0.16	
26-Jul	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.10	0.15	
27-Jul	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.09	0.10	
28-Jul	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.11	0.15	
29-Jul	0.1	0.1	0.1	0.1	0.1	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	0.1	0.1	0.1	0.11	0.16	
30-Jul	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.15	0.22	
31-Jul	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.12	0.16	
0.14 0.13 0.13 0.12 0.12 0.14 0.15 0.14 0.14 0.14 0.13 0.14 0.15 0.13 0.13 0.13 0.13 0.13 0.13 0.12 0.13 0.14 0.15 0.15 0.14 0.21 0.21 0.22 0.17 0.19 0.20 0.26 0.23 0.22 0.33 0.21 0.48 0.46 0.22 0.19 0.26 0.21 0.20 0.20 0.21 0.24 0.26 0.44 0.27																								Diurnal Average		
																								Diurnal Maximum		
C - Calibration A - Automated Daily Zero Span Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 13 ppm 24-hr na																										

Hourly Averages

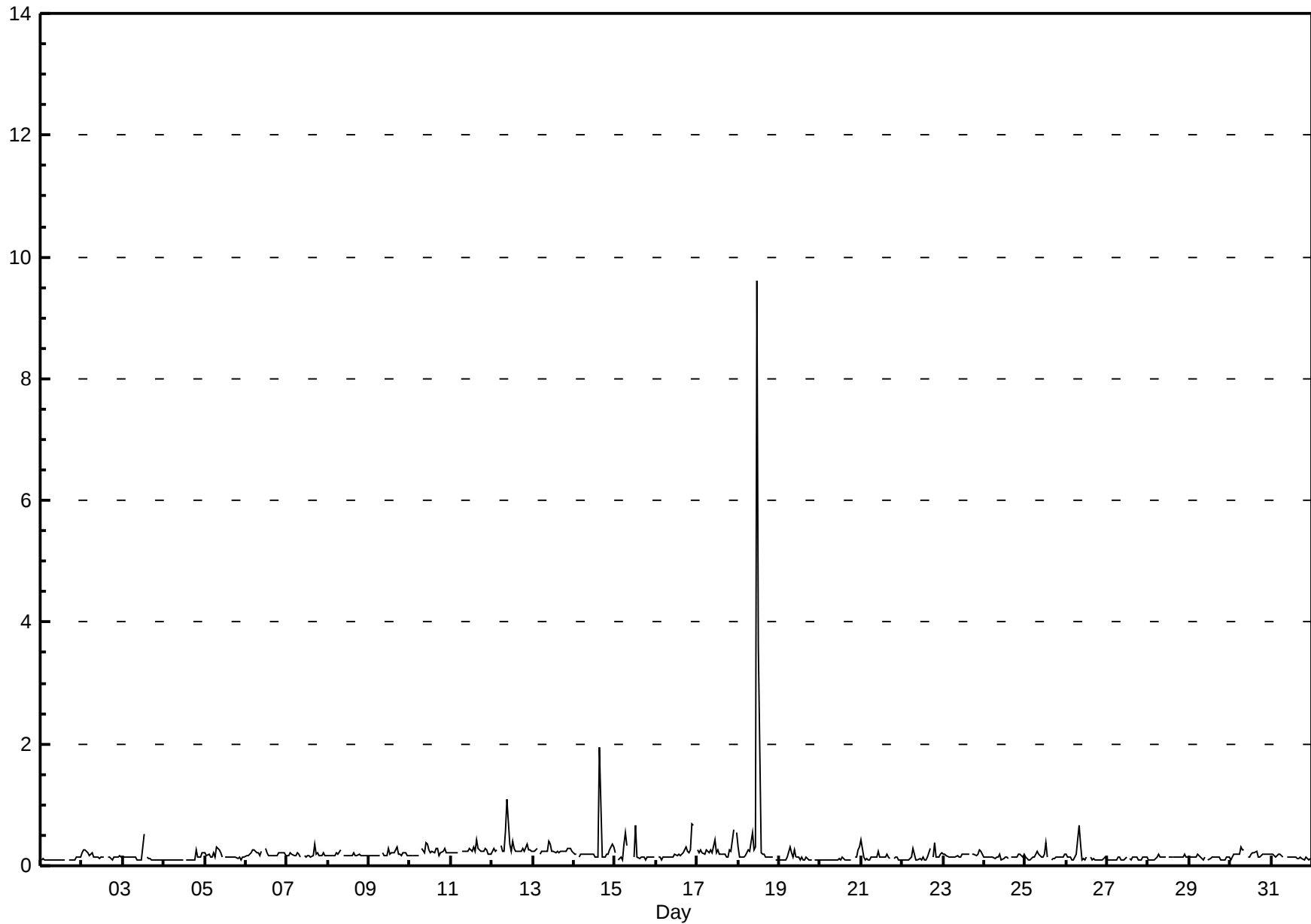
Carbon Monoxide (CO) - ppm
Henry Pirker - July 2011



Hourly Maximums

Carbon Monoxide (CO) - ppm

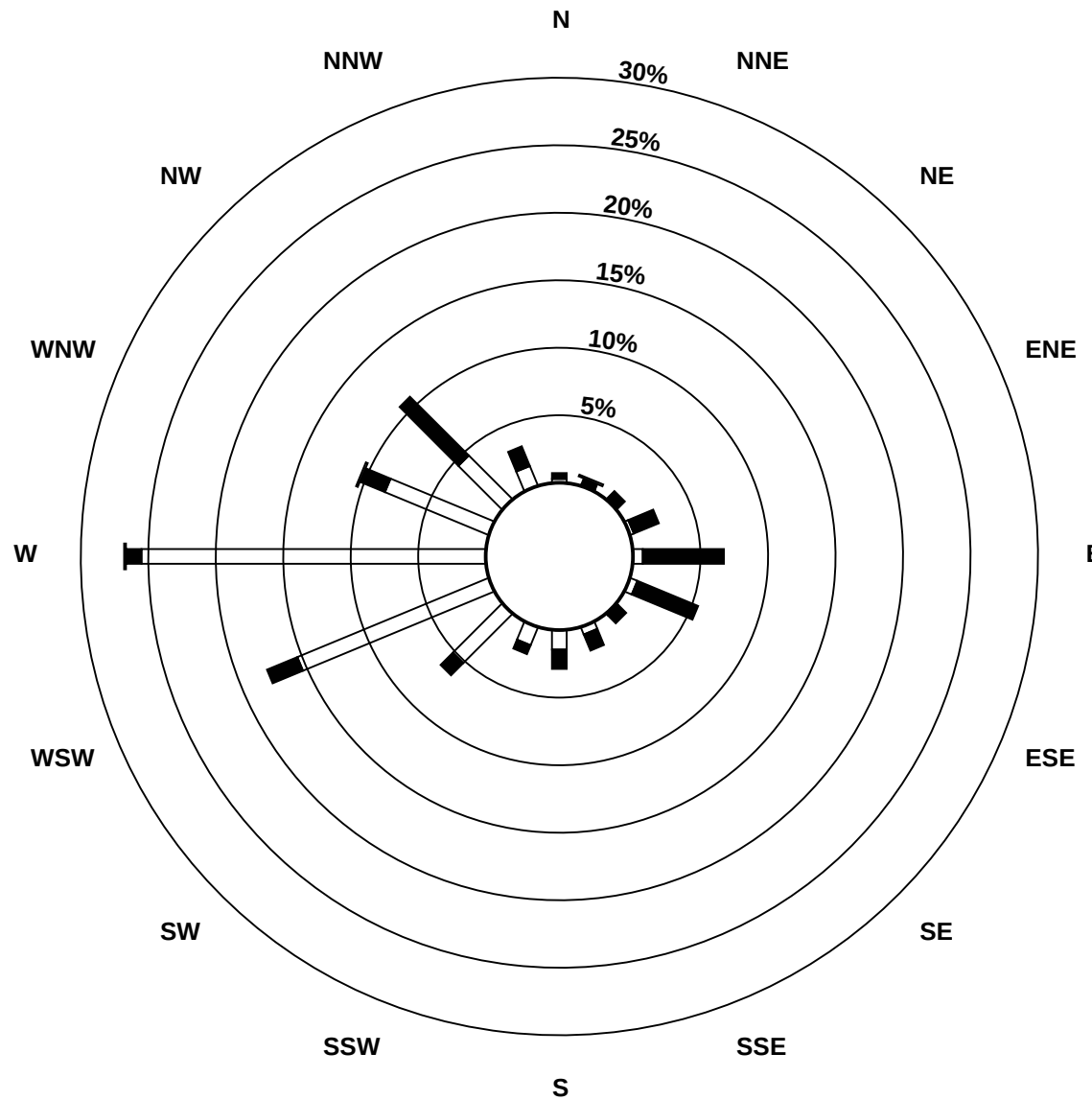
Henry Pirker - July 2011



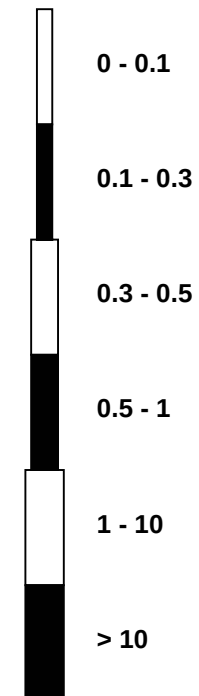
Pollutant Rose

Carbon Monoxide (CO) - ppm

Henry Pirker - July 2011



Pollutant Classes (ppm)



Eight Hour Running Averages

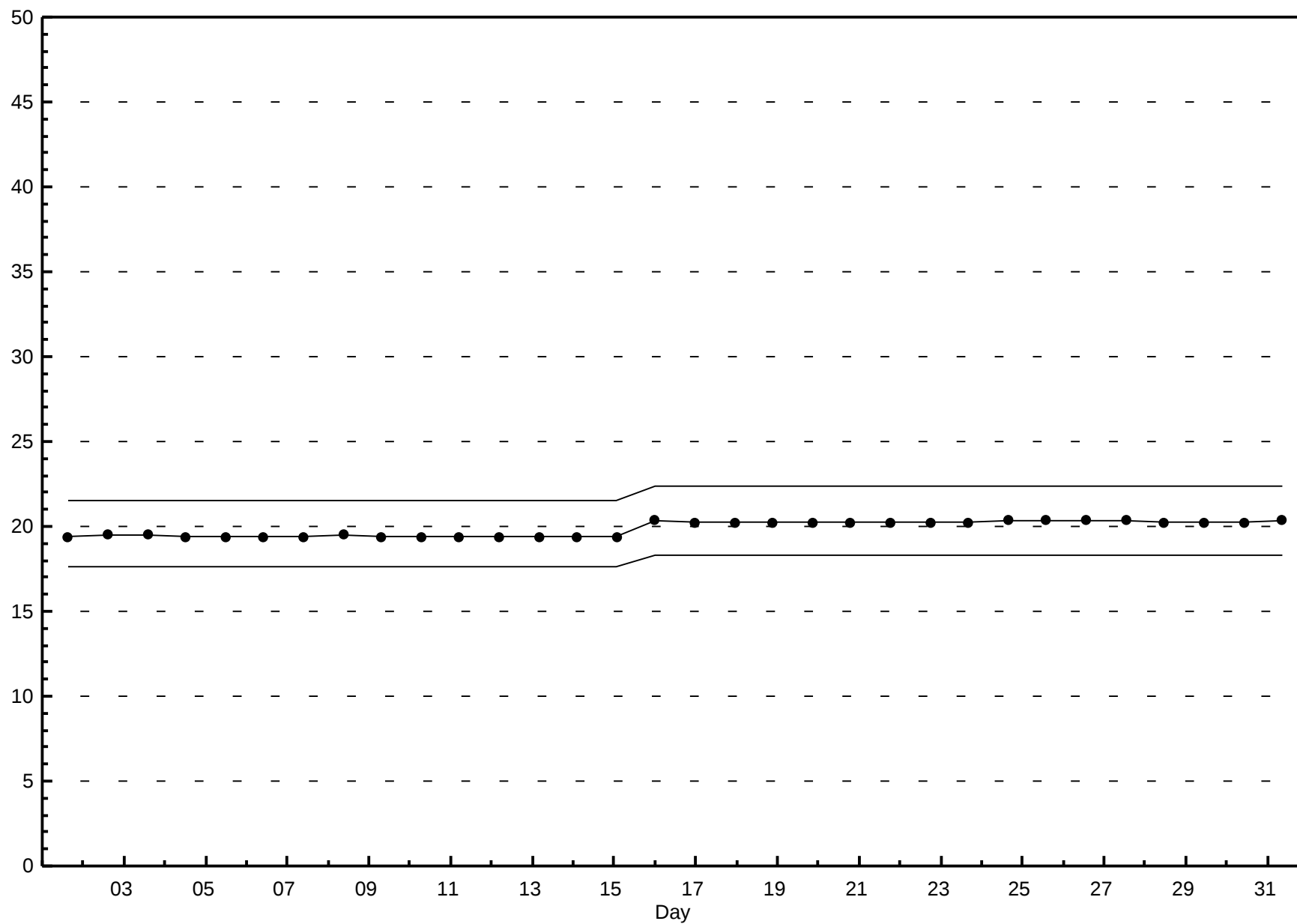
Carbon Monoxide (CO) - ppm

Henry Pirker - July 2011

Number of Exceedences (AAAQO): 8-hr: 0 Maximum Value: 0.26 ppm on Jul 18 13:00 Minimum Value: 0.06 ppm on Jul 1 11:00 Percentiles: P ₁ = 0.06 P ₁₀ = 0.09 Q ₁ = 0.10 Median = 0.13 Q ₃ = 0.16 P ₉₀ = 0.19 P ₉₉ = 0.23																									Hours in Service: 744 Hours of Data: 738 Hours of Missing Data: 6 Hours of Calibration: 6 Percent Operational Time: 100.0
Day	Hourly Period Ending At (MST)																								Daily Maximum
1-Jul	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.09
2-Jul	0.1	0.1	0.1	0.1	0.1	0.1	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	0.1	0.16
3-Jul	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.14
4-Jul	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.12
5-Jul	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.15
6-Jul	0.1	0.1	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.17
7-Jul	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.16
8-Jul	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	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.17
9-Jul	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	0.2	0.2	0.2	0.17
10-Jul	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.19
11-Jul	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.21
12-Jul	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.23
13-Jul	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.22
14-Jul	0.2	0.2	0.2	0.2	0.2	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	0.21
15-Jul	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	N	N	N	N	N	N	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.17
16-Jul	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	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.22
17-Jul	0.2	0.2	0.2	0.2	0.2	0.2	0.2	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	0.23
18-Jul	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	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.26
19-Jul	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.12
20-Jul	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.10
21-Jul	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.13
22-Jul	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.14
23-Jul	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	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.16
24-Jul	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	0.1	0.1	0.1	0.1	0.1	0.1	0.16
25-Jul	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.12
26-Jul	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.12
27-Jul	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.10
28-Jul	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.13
29-Jul	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.12
30-Jul	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	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.17
31-Jul	0.1	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	0.1	0.1	0.1	0.1	0.1	0.1	0.15
0.23 0.23 0.23 0.23 0.23 0.21 0.20 0.21 0.21 0.21 0.21 0.22 0.26 0.26 0.26 0.25 0.24 0.23 0.22 0.21 0.21 0.21 0.21 0.22 Diurnal Maximums																									
N - Not Valid Alberta Ambient Air Quality Objectives (AAAQO): 8-hr 5 ppm																									

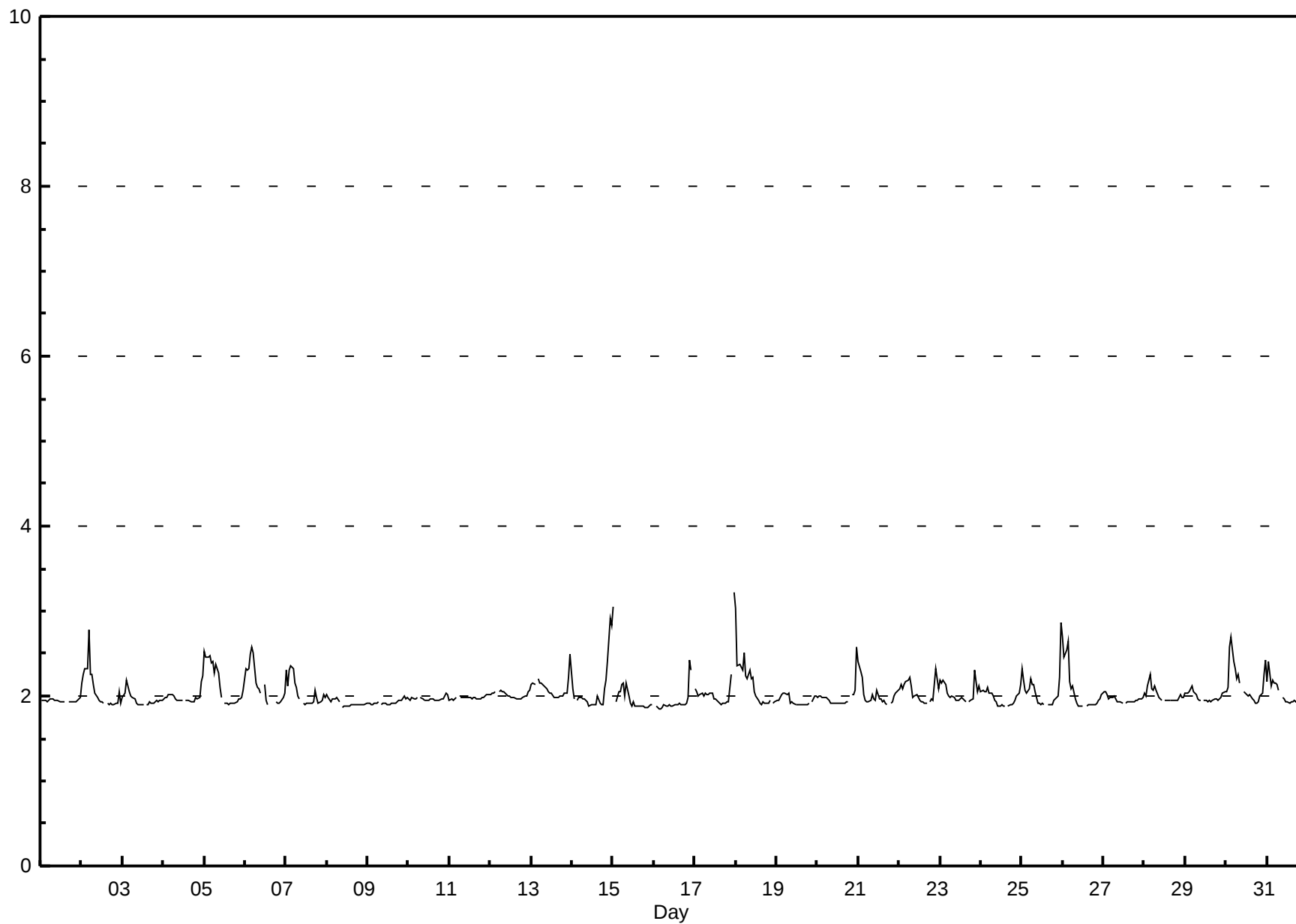
Span Responses

Carbon Monoxide (CO)
Henry Pirker - July 2011



Hourly Averages

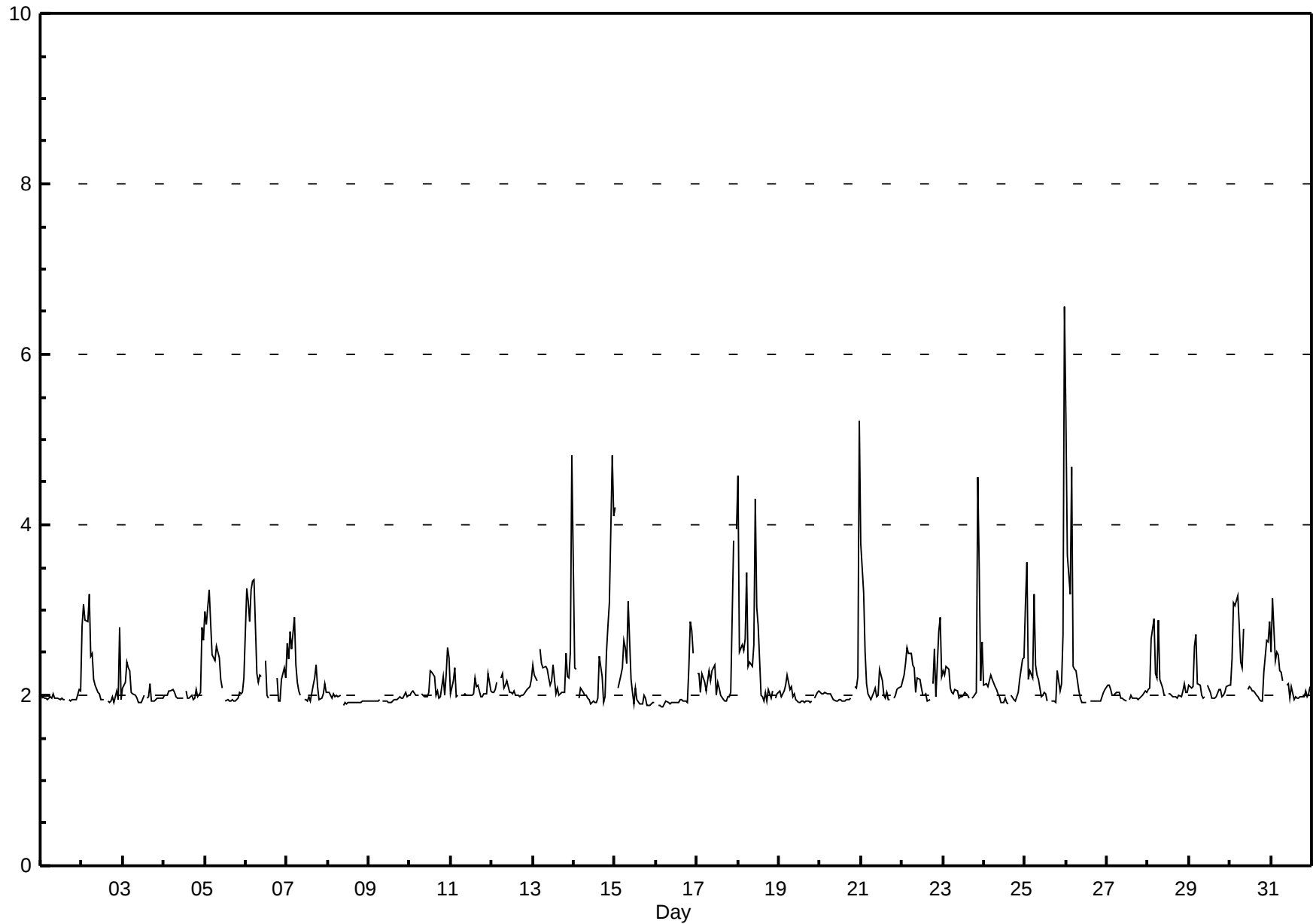
Total Hydrocarbons (THC) - ppm
Henry Pirker - July 2011



Hourly Maximums

Total Hydrocarbons (THC) - ppm

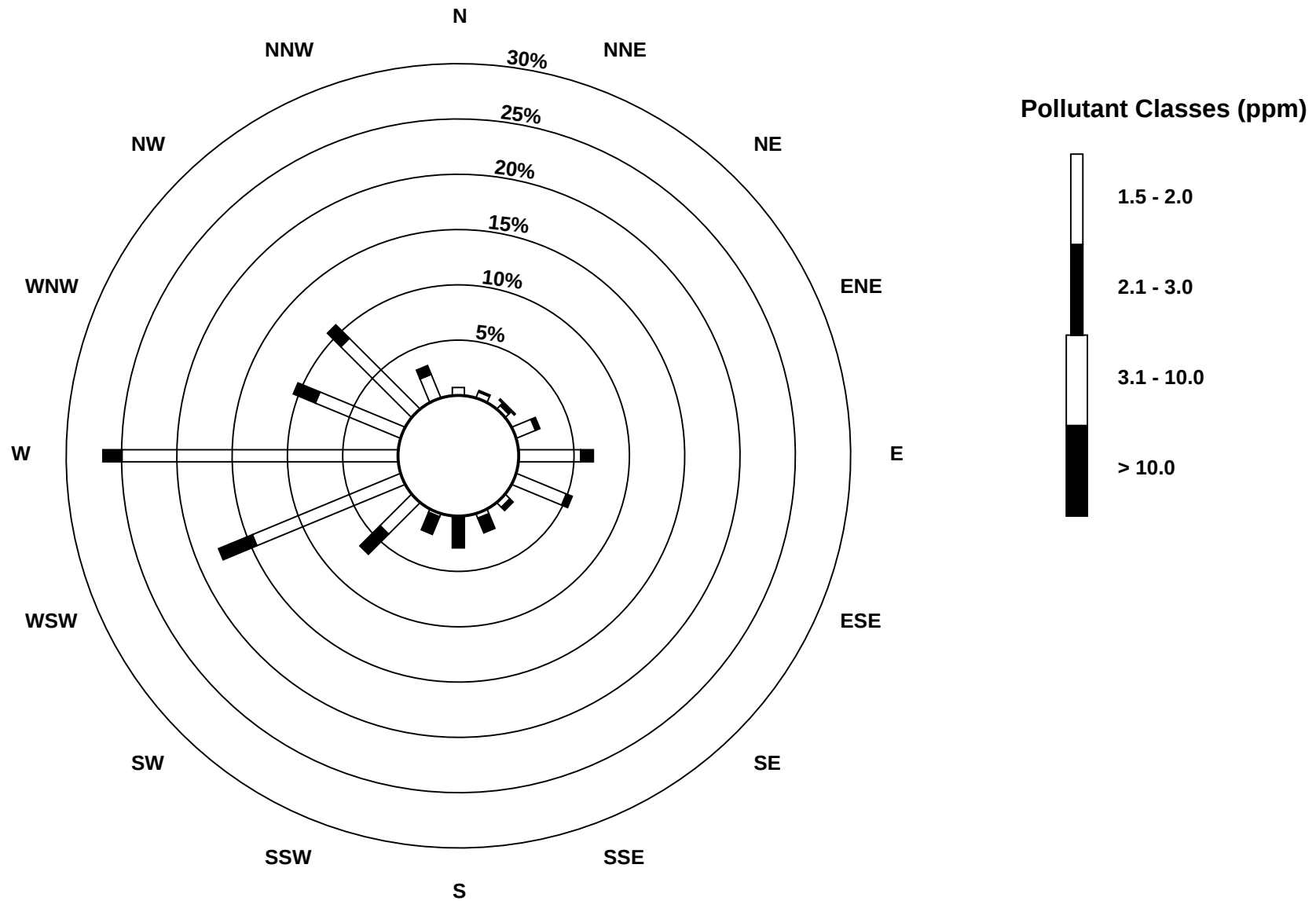
Henry Pirker - July 2011



Pollutant Rose

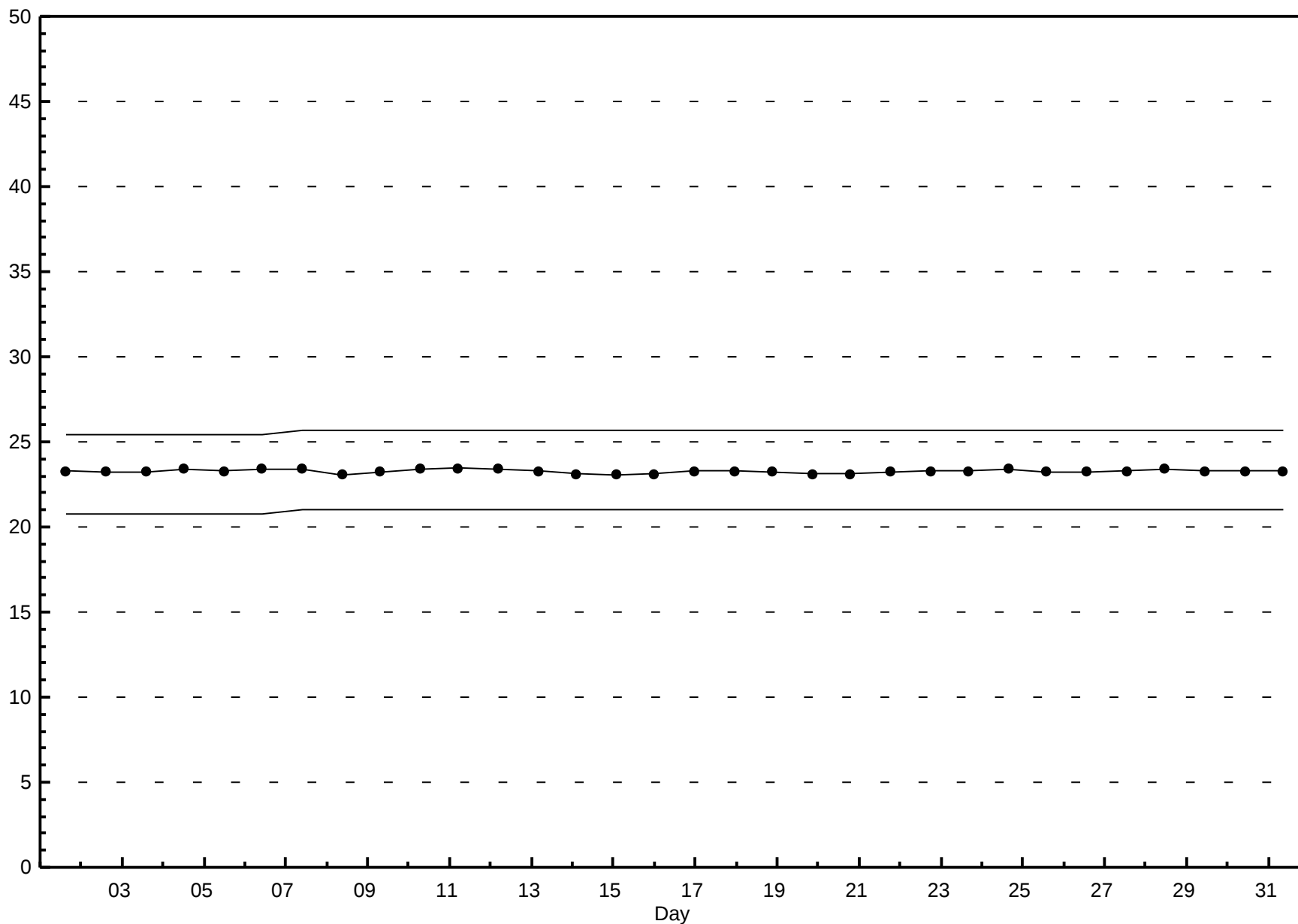
Total Hydrocarbons (THC) - ppm

Henry Pirker - July 2011



Span Responses

Total Hydrocarbons (THC)
Henry Pirker - July 2011

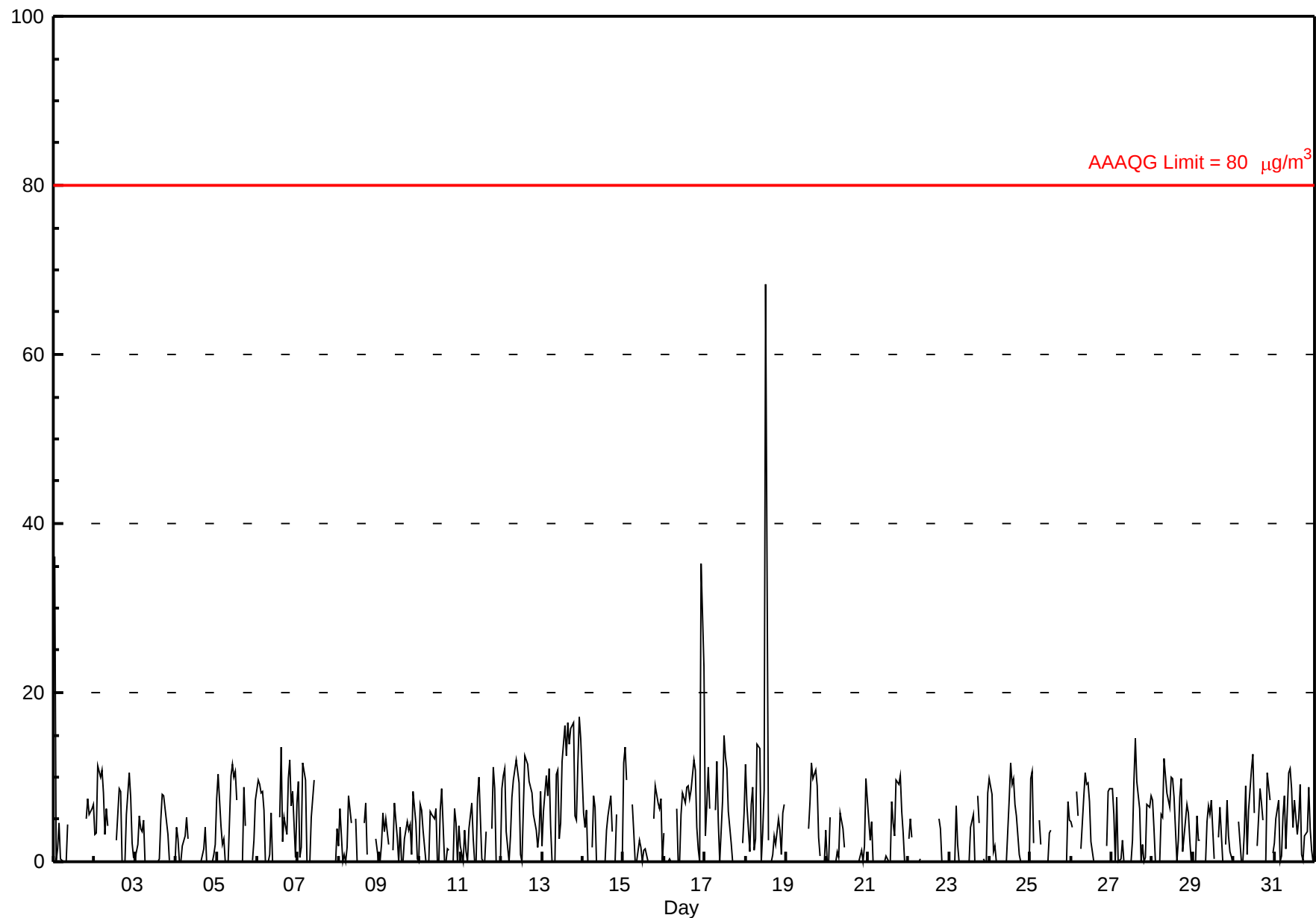


Hourly Averages

Particulate Matter 2.5 (PM_{2.5}) - µg/m³

Henry Pirker - July 2011

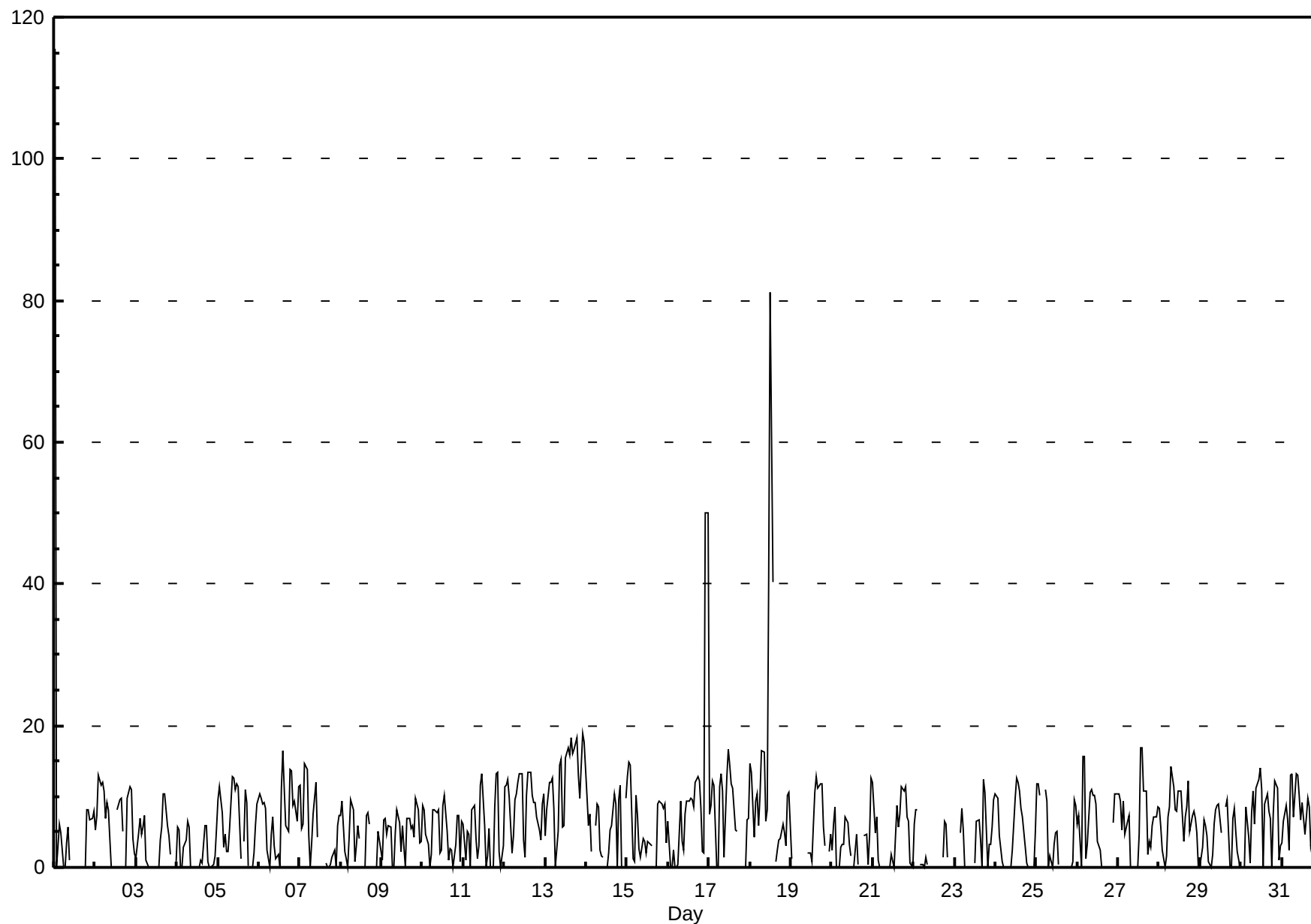
Number of Exceedences: 1-hr: 0 24-hr: 0 Maximum Value: 68.3 µg/m ³ on Jul 18 13:00 Minimum Value: 0 µg/m ³ on Jul 1 02:00 Maximum Diurnal Average: 7.7 µg/m ³ at hour 13 Monthly Average: 4.65 µg/m ³																										
Maximum Daily Average: 9.4 µg/m ³ on Jul 13 Minimum Daily Average: 2.7 µg/m ³ on Jul 3 Minimum Diurnal Average: 2.3 µg/m ³ at hour 6 Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.2 Median = 3.9 Q ₃ = 7.4 P ₉₀ = 10.2 P ₉₉ = 16.4																										
Hours in Service: 744 Hours of Data: 574 Hours of Missing Data: 170 Hours of Calibration: 0 Percent Operational Time: 77.2																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
1-Jul	36	0	2	5	0	0	0	0	4	BD	BD	BD	BD	BD	BD	BD	BD	BD	5	7	6	6	7	--	36.1	
2-Jul	3	3	11	10	11	8	3	6	4	BD	BD	BD	BD	3	9	8	0	BD	0	6	10	8	2	0	5.6	11.4
3-Jul	0	2	5	4	4	5	0	BD	BD	BD	BD	0	0	0	0	5	8	8	5	3	0	BD	BD	0	2.7	8.0
4-Jul	4	3	0	0	2	3	5	3	BD	BD	BD	BD	BD	BD	0	0	2	4	0	BD	0	0	1	2	--	5.2
5-Jul	8	10	4	2	3	0	0	0	10	12	10	11	7	BD	BD	0	9	4	BD	BD	BD	0	3	7	5.2	11.6
6-Jul	10	9	8	8	6	0	0	1	6	0	BD	1	BD	5	14	2	5	3	10	12	7	8	1	7	5.6	13.6
7-Jul	9	1	2	12	10	0	BD	0	5	10	BD	BD	BD	BD	BD	0	BD	BD	0	0	0	BD	0	4	--	11.7
8-Jul	2	6	0	1	0	2	8	5	BD	BD	5	0	BD	BD	BD	5	7	1	BD	BD	BD	BD	3	0	--	7.8
9-Jul	0	2	6	4	5	2	BD	BD	1	7	3	0	4	0	0	3	5	4	4	1	8	5	0	0	2.9	8.3
10-Jul	7	6	4	0	0	0	6	6	5	6	0	0	6	9	0	0	2	1	BD	0	6	5	0	4	3.1	8.7
11-Jul	2	0	4	1	0	4	7	3	0	0	8	10	0	0	0	4	BD	BD	4	11	9	0	BD	0	3.1	11.2
12-Jul	9	10	11	4	0	3	8	10	11	12	9	1	0	7	12	11	10	9	8	6	4	2	4	8	6.9	12.5
13-Jul	2	6	10	8	11	4	0	0	10	11	3	5	12	16	13	17	14	16	16	5	5	12	17	15	9.4	17.1
14-Jul	6	4	6	0	BD	2	8	6	0	0	0	BD	BD	0	4	5	8	4	BD	0	6	BD	BD	0	3.2	7.8
15-Jul	12	14	10	BD	BD	7	4	0	0	3	2	0	1	1	0	BD	BD	BD	5	9	7	6	8	0	4.6	13.5
16-Jul	3	BD	0	0	0	BD	BD	6	0	0	6	8	7	9	9	7	8	12	11	4	1	0	35	23	7.2	35.3
17-Jul	3	7	11	6	BD	BD	6	12	5	0	7	15	12	11	6	2	0	BD	BD	BD	BD	BD	2	6	--	14.9
18-Jul	11	7	1	7	9	1	3	14	13	0	4	9	68	3	BD	0	1	3	2	5	4	1	6	7	7.7	68.3
19-Jul	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	0	BD	4	7	12	10	11	9	3	1	BD	0	4	--	11.7	
20-Jul	0	0	5	BD	BD	0	1	1	6	4	2	BD	BD	BD	2	BD	BD	BD	BD	0	1	0	2	10	--	9.9
21-Jul	7	3	5	0	BD	0	BD	BD	BD	BD	0	1	0	0	7	5	3	10	9	10	6	3	0	BD	3.8	10.2
22-Jul	3	5	3	BD	0	0	0	0	BD	BD	BD	BD	BD	BD	BD	BD	BD	BD	5	4	0	BD	BD	BD	--	5.2
23-Jul	BD	BD	BD	0	7	2	0	0	0	BD	BD	BD	0	4	6	0	BD	8	5	BD	0	0	0	8	--	8.1
24-Jul	10	8	1	2	0	0	BD	BD	BD	BD	0	7	12	9	10	7	5	1	0	0	0	0	BD	0	3.8	11.7
25-Jul	10	11	2	BD	BD	5	2	BD	0	BD	0	3	4	BD	BD	BD	BD	BD	BD	BD	BD	0	7	5	--	10.6
26-Jul	5	4	BD	8	6	BD	2	8	10	9	9	7	2	0	0	BD	BD	BD	BD	BD	BD	2	8	9	--	10.4
27-Jul	9	6	0	8	0	0	2	0	BD	BD	BD	0	2	10	15	10	6	0	2	0	1	7	6	8	4.3	14.6
28-Jul	7	4	0	0	0	6	5	12	8	7	6	10	10	8	0	2	8	10	1	5	7	6	3	0	5.2	12.2
29-Jul	BD	0	5	3	3	BD	0	0	5	7	6	7	0	BD	BD	3	6	0	BD	2	7	3	1	0	3.0	7.3
30-Jul	BD	BD	BD	5	0	0	3	9	1	6	11	13	6	BD	2	9	7	5	BD	0	11	7	BD	1	5.2	12.7
31-Jul	2	5	7	0	1	5	8	1	10	11	9	4	7	3	5	9	1	0	3	3	9	4	1	0	4.6	11.0
6.6 5.0 4.6 3.7 3.1 2.3 3.2 4.1 5.0 5.5 4.7 4.8 7.7 4.8 5.2 5.0 5.6 5.4 5.0 4.0 4.5 3.5 4.6 4.6 Diurnal Average 36.1 13.5 11.4 11.7 10.9 8.2 7.8 13.9 13.4 12.0 10.8 14.9 68.3 16.1 14.6 16.5 13.9 15.8 16.4 12.1 10.5 11.6 35.3 23.0 Diurnal Maximum																										
BD - Baseline Drift Alberta Ambient Air Quality Guideline (AAAQG): 1-hr 80 µg/m ³ Alberta Ambient Air Quality Objective (AAAQO): 24-hr 30 µg/m ³																										



Hourly Maximums

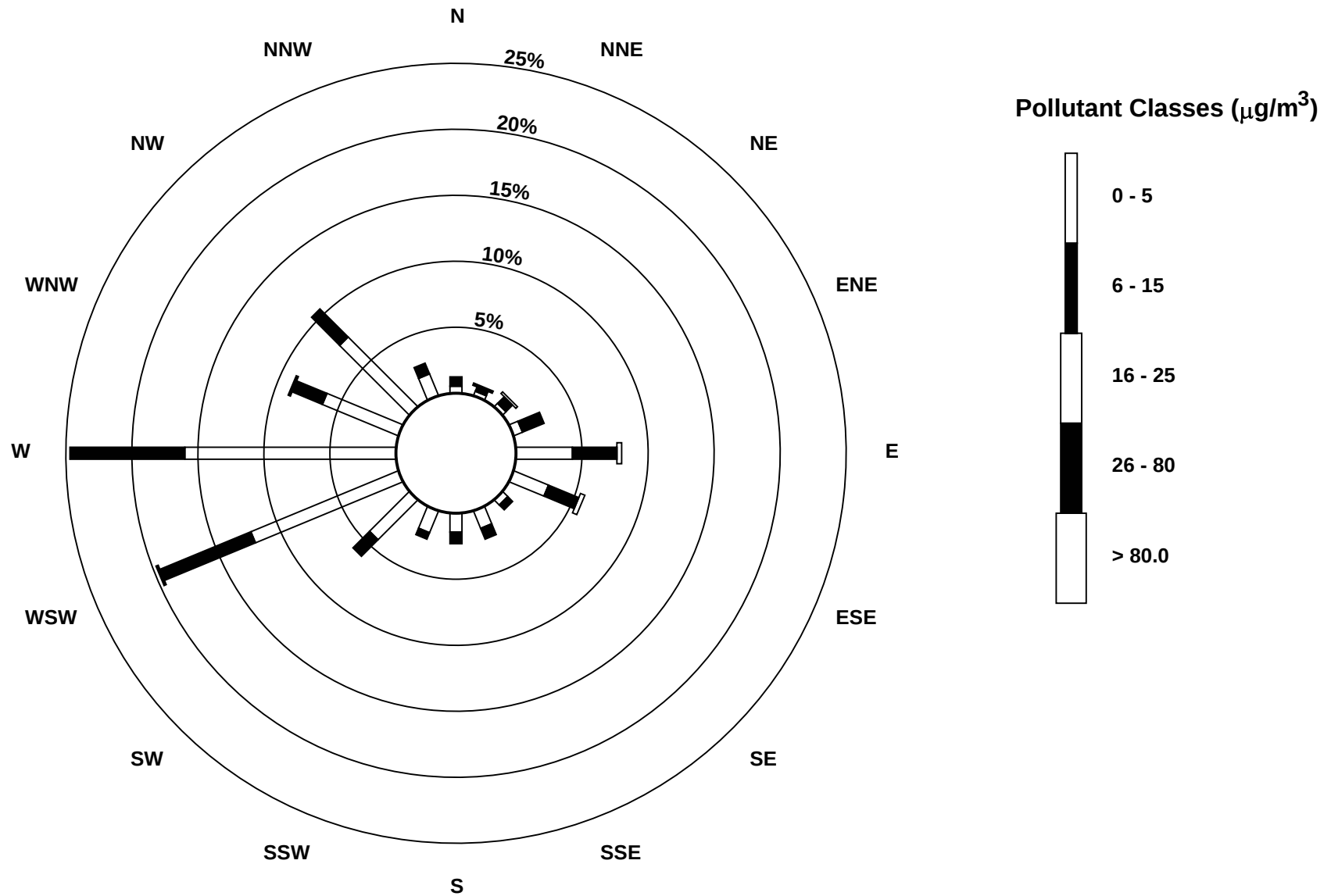
Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$

Henry Pirker - July 2011



Pollutant Rose

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Henry Pirker - July 2011



Hourly Averages

External Temperature (ET) - °C

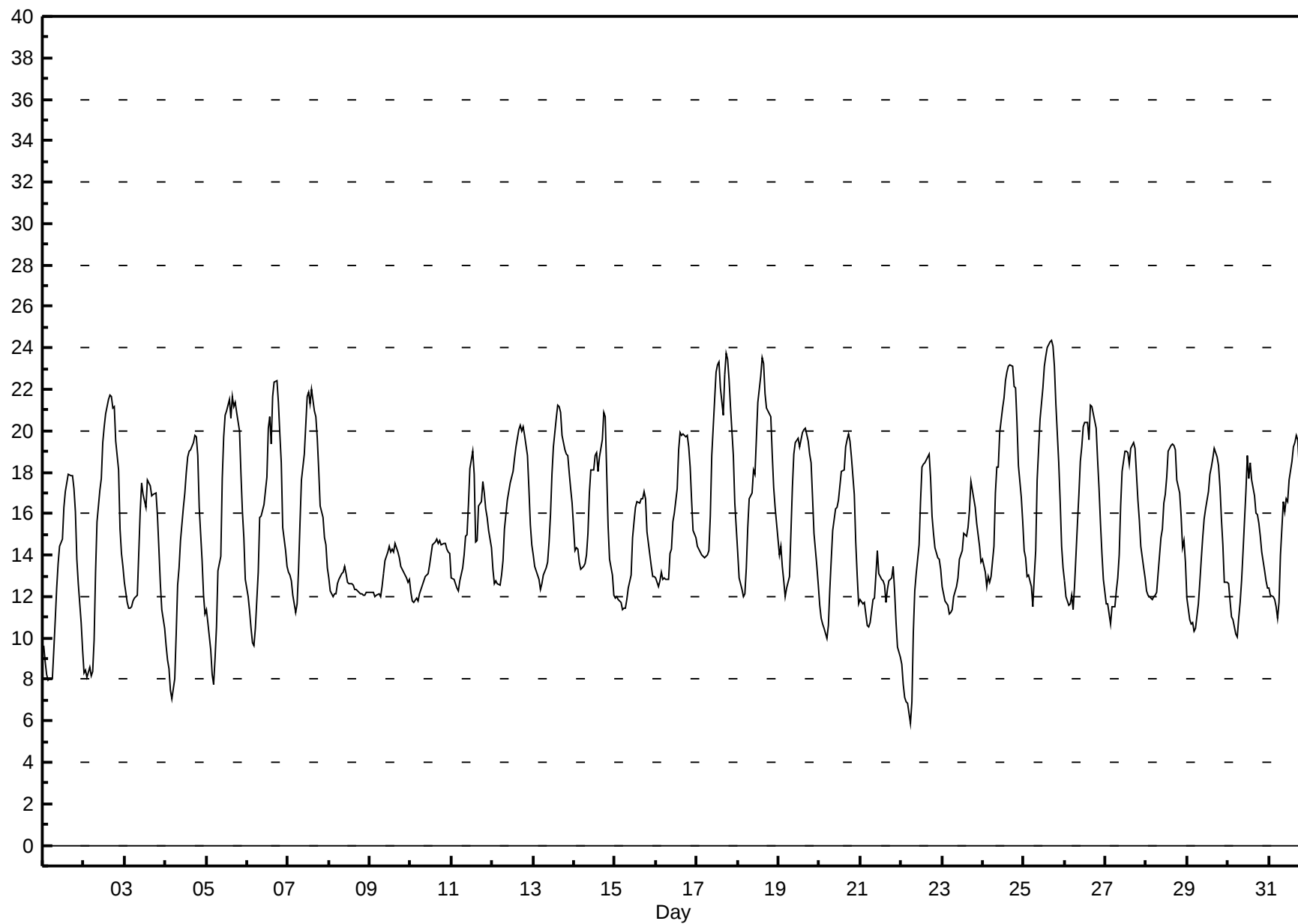
Henry Pirker - July 2011

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 24.3 °C on Jul 25 17:00 Maximum Daily Average: 18.6 °C on Jul 17																									Hours in Service: 744 Hours of Data: 744 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0	
Minimum Value: 6 °C on Jul 22 06:00 Minimum Daily Average: 11.9 °C on Jul 21 Maximum Diurnal Average: 19.0 °C at hour 17 Minimum Diurnal Average: 11.1 °C at hour 5 Monthly Average: 15.26 °C Percentiles: P ₁ = 7.7 P ₁₀ = 11.4 Q ₁ = 12.5 Median = 14.5 Q ₃ = 18.1 P ₉₀ = 20.3 P ₉₉ = 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-Jul	10	9	8	8	8	8	9	11	12	14	14	15	16	17	18	18	18	18	17	16	14	13	11	9	12.9	17.9
2-Jul	8	8	8	9	8	8	10	13	16	17	18	19	20	21	21	22	22	21	21	19	18	15	14	13	15.5	21.7
3-Jul	13	12	11	11	12	12	10	12	14	16	17	17	16	18	17	17	17	17	17	16	14	13	11	10	14.3	17.6
4-Jul	10	9	9	7	7	8	10	13	13	15	16	17	18	19	19	19	19	20	20	19	16	14	12	11	14.2	19.8
5-Jul	11	11	9	8	8	9	11	13	14	18	20	21	21	21	21	22	21	21	21	20	18	16	15	13	15.9	21.7
6-Jul	12	11	10	10	10	10	13	16	16	16	16	18	20	21	19	22	22	22	21	20	18	15	14	13	16.2	22.4
7-Jul	13	13	13	12	11	12	13	16	18	19	20	22	22	21	22	21	21	20	18	16	16	15	14	13	16.7	22.0
8-Jul	13	12	12	12	12	13	13	13	13	13	13	13	13	13	13	12	12	12	12	12	12	12	12	12	12.5	13.4
9-Jul	12	12	12	12	12	12	12	12	13	14	14	14	14	14	14	15	14	14	13	13	13	13	13	13	13.2	14.6
10-Jul	12	12	12	12	12	12	12	13	13	13	13	14	14	15	15	15	15	15	15	15	15	14	14	14	13.4	14.8
11-Jul	13	13	13	12	12	13	13	14	15	15	16	18	19	18	15	15	16	17	18	17	16	16	15	14	15.1	19.0
12-Jul	13	13	13	13	13	13	14	15	16	17	17	18	18	19	19	20	20	20	20	20	19	17	15	14	16.5	20.3
13-Jul	14	13	13	13	12	13	13	13	14	15	16	18	19	21	21	21	21	20	19	19	19	18	17	17	16.6	21.3
14-Jul	14	14	14	14	13	13	14	14	15	17	18	18	19	19	18	19	20	21	21	18	15	14	13	12	16.1	20.9
15-Jul	12	12	12	12	11	11	11	12	12	13	15	16	16	17	17	17	17	17	17	15	14	13	13	13	13.9	17.1
16-Jul	13	12	13	13	13	13	13	13	14	14	16	16	17	19	20	20	20	20	20	19	18	17	15	15	15.9	19.9
17-Jul	14	14	14	14	14	14	14	14	16	19	21	23	23	23	22	21	23	24	23	22	21	19	17	15	18.6	23.8
18-Jul	14	13	12	12	12	13	15	17	17	18	18	20	21	23	24	23	22	21	21	21	19	17	16	16	17.7	23.5
19-Jul	14	14	13	13	12	12	13	15	17	19	19	20	19	20	20	20	20	20	19	18	17	15	13	13	16.5	20.1
20-Jul	12	11	11	10	10	11	12	14	15	16	16	17	17	18	18	19	20	20	20	19	17	15	13	12	15.1	19.9
21-Jul	12	12	12	11	11	11	11	12	12	13	14	13	13	13	13	12	12	13	13	13	12	11	10	9	11.9	14.2
22-Jul	9	8	7	7	7	6	7	10	12	13	15	17	18	18	18	19	19	18	16	15	14	14	14	13	13.1	18.9
23-Jul	13	12	12	12	11	11	11	12	12	13	14	14	14	15	15	15	16	18	17	16	16	15	14	14	13.8	17.6
24-Jul	14	13	12	13	13	13	14	17	18	18	20	21	22	22	23	23	23	23	22	22	20	18	17	16	18.3	23.2
25-Jul	14	14	13	13	12	12	13	14	18	21	21	22	23	24	24	24	24	24	23	21	18	17	14	13	18.2	24.3
26-Jul	13	12	12	12	12	11	13	16	17	19	19	20	20	20	20	21	21	21	20	19	17	16	14	13	16.5	21.3
27-Jul	12	12	11	11	12	12	12	13	14	16	18	19	19	19	18	19	19	19	18	17	16	14	13	13	15.2	19.5
28-Jul	12	12	12	12	12	12	12	13	15	15	16	17	18	19	19	19	19	19	18	17	16	14	15	14	15.3	19.4
29-Jul	12	11	11	11	10	10	12	13	14	15	16	16	17	18	18	19	19	19	18	17	16	14	13	13	14.6	19.1
30-Jul	13	12	11	11	10	10	11	12	13	14	17	19	18	18	18	17	16	16	16	15	14	13	13	12	14.1	18.8
31-Jul	12	12	12	12	11	11	12	14	17	16	17	17	18	19	19	19	20	20	18	17	15	14	13	11	15.2	19.8
																									Diurnal Average	
																									Diurnal Maximum	

Hourly Averages

External Temperature (ET) - °C

Henry Pirker - July 2011



Hourly Averages

Relative Humidity (RH) - %

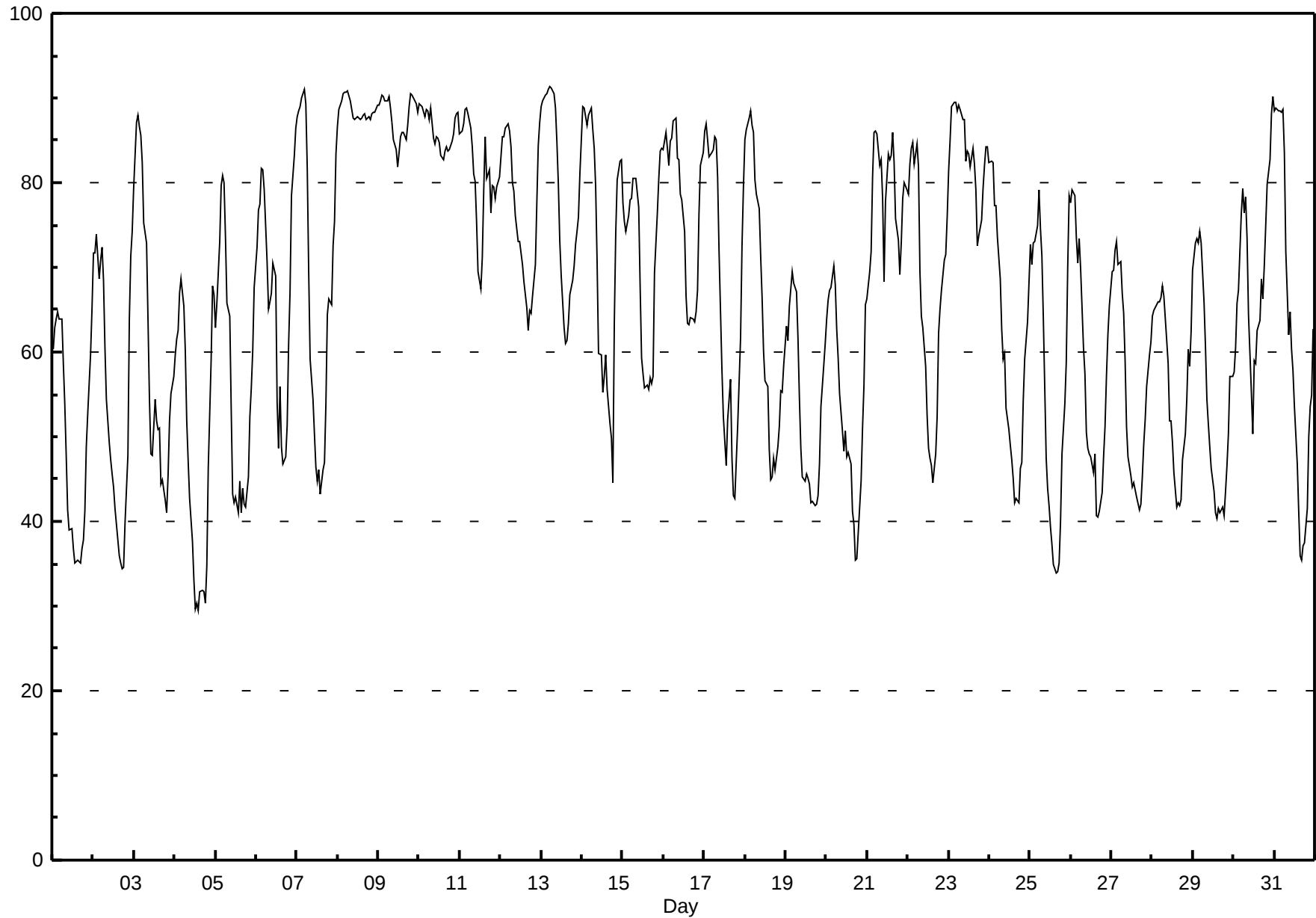
Henry Pirker - July 2011

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 91.4 % on Jul 13 06:00 Maximum Daily Average: 88.5 % on Jul 8																				Hours in Service: 744 Hours of Data: 744 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0						
Minimum Value: 29 % on Jul 4 15:00 Maximum Diurnal Average: 80.5 % at hour 5 Monthly Average: 66.39 %										Minimum Daily Average: 47.8 % on Jul 4 Minimum Diurnal Average: 53.2 % at hour 18 Percentiles: P ₁ = 33.0 P ₁₀ = 42.5 Q ₁ = 51.4 Median = 67.3 Q ₃ = 82.3 P ₉₀ = 87.9 P ₉₉ = 90.7																
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-Jul	60	63	64	65	64	64	59	54	48	41	39	39	37	35	35	35	37	38	41	49	53	60	65	49.1	65.3	
2-Jul	72	72	74	69	71	72	68	61	54	49	47	46	44	42	38	36	35	34	35	40	48	64	71	74	54.8	74.3
3-Jul	79	87	88	87	86	82	75	73	64	55	48	48	54	52	51	51	44	45	43	41	45	52	55	57	60.9	87.9
4-Jul	60	61	63	67	69	65	60	52	47	43	38	33	30	30	29	32	32	32	30	35	46	59	68	67	47.8	68.7
5-Jul	63	66	73	80	81	80	74	66	64	53	43	42	43	41	45	41	44	42	42	45	52	56	60	68	56.8	80.8
6-Jul	72	77	78	82	81	79	71	65	66	67	71	69	54	49	56	49	47	48	51	61	67	79	83	86	67.0	86.5
7-Jul	88	88	89	90	91	89	82	70	59	54	50	46	45	46	43	46	47	54	64	66	66	72	75	83	66.9	91.1
8-Jul	87	89	90	91	91	91	91	90	89	88	87	88	88	88	88	88	88	87	88	87	88	88	88	89	88.5	90.8
9-Jul	89	90	90	90	90	90	90	89	87	85	84	82	84	85	86	86	85	87	89	91	90	90	89	88	87.7	90.6
10-Jul	89	89	89	88	89	88	87	89	85	85	85	85	85	83	83	84	84	84	84	85	86	88	88	88	86.3	89.2
11-Jul	86	86	87	89	89	88	86	84	81	80	75	69	68	71	79	85	80	82	77	80	80	78	79	81	80.9	88.9
12-Jul	83	85	85	86	87	86	84	80	79	76	73	73	72	70	68	65	62	65	65	67	70	78	84	87	76.3	87.1
13-Jul	89	90	90	90	91	91	91	90	89	85	80	73	69	63	61	61	63	67	68	70	73	74	76	81	78.2	91.4
14-Jul	89	89	88	87	88	89	86	84	80	71	60	60	55	57	60	56	51	50	45	63	74	80	83	83	71.9	89.1
15-Jul	78	75	74	76	78	78	80	81	80	77	68	59	57	56	56	56	57	56	57	69	76	81	84	84	70.6	84.1
16-Jul	84	86	84	82	85	85	87	88	83	83	79	78	74	67	63	63	64	64	63	65	67	76	82	84	76.5	87.7
17-Jul	86	87	85	83	84	84	85	85	81	72	58	52	50	47	52	57	47	43	43	47	51	62	73	79	66.3	86.9
18-Jul	85	86	88	88	87	86	80	79	77	71	67	60	57	56	48	45	45	48	46	49	51	55	55	58	65.3	88.4
19-Jul	63	61	65	67	70	68	67	62	55	49	45	45	46	45	44	42	42	42	42	43	47	54	58	61	53.5	69.5
20-Jul	64	66	67	68	70	68	63	59	55	51	48	51	48	48	47	41	40	35	36	39	45	51	56	66	53.3	70.2
21-Jul	66	69	72	81	86	86	86	82	83	78	68	78	83	83	83	86	82	76	73	69	73	78	80	79	78.4	86.1
22-Jul	79	82	84	85	82	85	82	69	64	63	58	53	49	47	47	45	48	52	62	65	67	71	72	76	66.1	84.7
23-Jul	81	85	89	89	89	88	89	89	87	88	83	84	83	82	84	82	79	73	74	76	79	82	84	84	83.5	89.5
24-Jul	82	83	82	77	77	74	69	63	59	60	53	51	49	47	45	42	43	42	46	47	54	59	63	68	59.9	82.5
25-Jul	73	70	73	73	75	79	75	71	64	48	44	42	39	37	35	34	34	35	40	48	54	59	70	78	56.3	79.1
26-Jul	78	79	78	74	71	73	70	60	57	51	49	48	48	46	48	41	41	41	43	48	51	57	62	65	57.4	79.1
27-Jul	69	70	72	73	70	71	67	65	59	51	48	45	44	45	44	43	41	42	45	49	52	56	60	61	55.9	73.1
28-Jul	64	65	65	66	66	66	68	67	61	59	52	52	49	46	42	42	42	43	47	50	54	60	58	62	56.1	67.8
29-Jul	70	73	73	73	74	73	66	61	54	52	49	46	44	41	40	41	41	42	41	44	47	50	57	57	54.5	74.3
30-Jul	58	61	66	67	76	79	76	78	73	64	55	50	59	59	63	64	69	66	70	75	80	83	88	90	69.6	90.1
31-Jul	88	89	88	89	88	89	84	72	62	65	60	58	53	47	41	36	35	37	37	41	50	54	55	63	61.7	88.8
76.6 78.0 79.2 79.7 80.5 80.3 77.4 73.4 69.3 64.9 60.1 58.2 56.7 55.1 55.0 54.0 53.2 53.2 54.3 57.9 62.4 67.7 71.6 74.7																								Diurnal Average		
89.2 89.7 90.4 90.5 91.1 91.4 91.2 90.5 88.8 87.7 87.4 87.6 87.9 87.5 87.6 87.9 88.1 87.5 89.0 90.6 90.3 89.7 89.2 90.1																								Diurnal Maximum		

Hourly Averages

Relative Humidity (RH) - %

Henry Pirker - July 2011



Hourly Averages

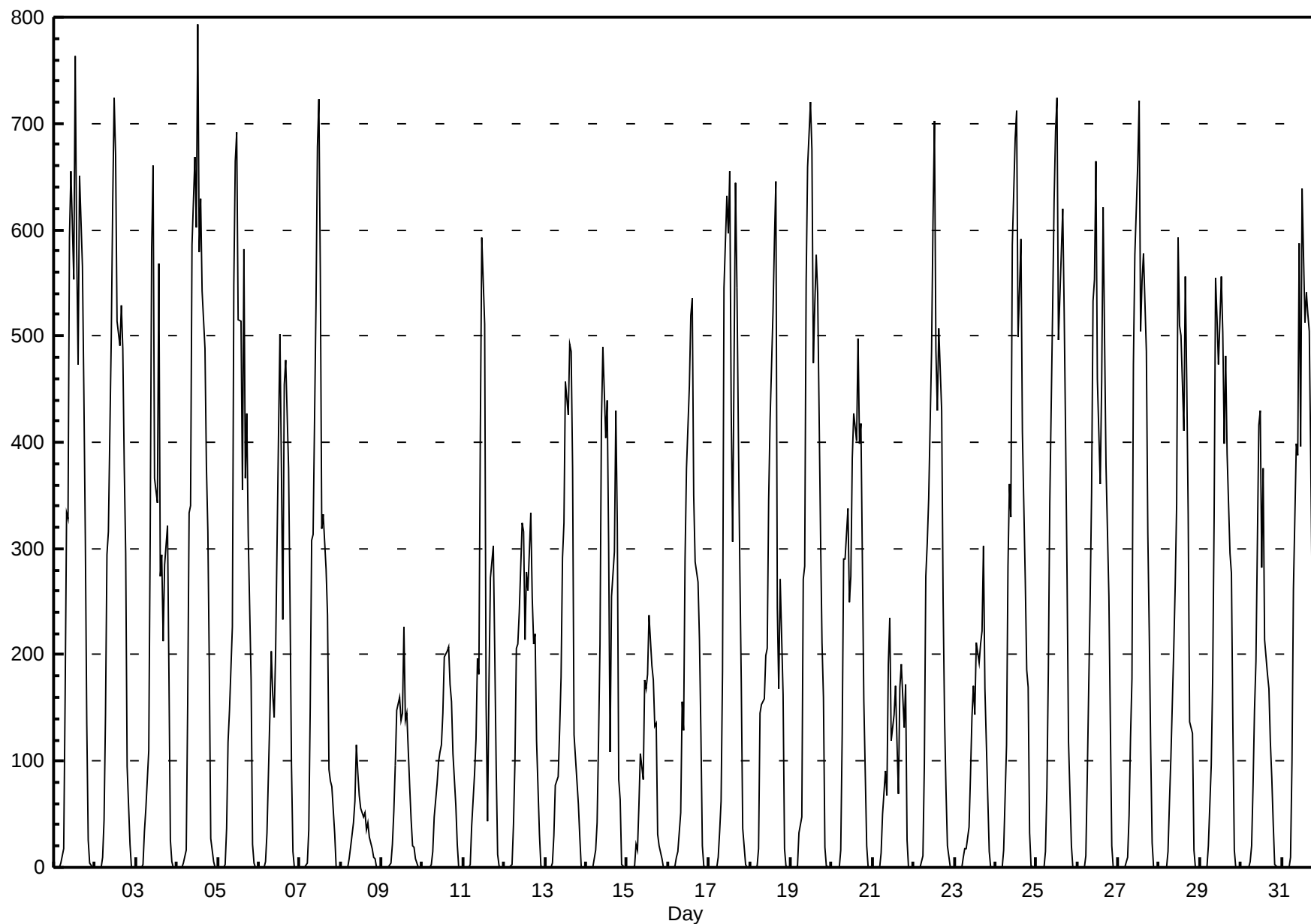
Solar Radiation (SR) - W/m²

Henry Pirker - July 2011

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 792.8 W/m ² on Jul 4 13:00 Maximum Daily Average: 277.0 W/m ² on Jul 4																								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 ² on Jul 1 01:00 Maximum Diurnal Average: 467.0 W/m ² at hour 13 Monthly Average: 179.35 W/m ²												Minimum Daily Average: 29.2 W/m ² on Jul 8 Minimum Diurnal Average: 0.0 W/m ² at hour 1 Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 91.8 Q ₃ = 315.3 P ₉₀ = 528.4 P ₉₉ = 717.4														
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-Jul	0	0	0	0	4	17	161	334	328	593	655	553	764	580	474	651	566	445	309	136	25	4	0	0	274.9	763.8
2-Jul	0	0	0	0	9	44	144	294	315	499	625	724	670	514	490	529	488	376	295	96	21	0	0	0	255.7	723.7
3-Jul	0	0	0	0	2	34	56	110	312	580	661	366	343	568	274	294	213	284	322	182	26	5	0	0	193.0	660.8
4-Jul	0	0	0	0	4	16	153	333	341	586	669	602	793	578	629	542	488	376	316	188	28	6	0	0	277.0	792.8
5-Jul	0	0	0	0	3	36	118	148	226	547	664	692	515	514	355	581	366	427	312	176	22	4	0	0	237.8	692.0
6-Jul	0	0	0	0	5	33	143	203	163	142	203	407	502	378	233	454	477	375	247	96	15	0	0	0	169.8	502.2
7-Jul	0	0	0	0	4	35	151	308	313	529	678	723	559	319	332	280	237	92	81	76	31	0	0	0	197.9	722.9
8-Jul	0	0	0	0	0	9	19	41	63	115	90	68	56	47	51	35	42	29	18	9	8	0	0	0	29.2	115.0
9-Jul	0	0	0	0	0	4	21	52	96	147	160	139	146	227	138	145	76	45	20	19	8	0	0	0	60.1	226.8
10-Jul	0	0	0	0	0	2	15	48	79	99	109	115	145	198	203	207	173	156	107	59	22	0	0	0	72.4	207.4
11-Jul	0	0	0	0	3	40	87	121	197	182	409	592	511	154	43	173	273	302	203	94	13	1	0	0	141.6	592.4
12-Jul	0	0	0	0	3	40	99	206	211	240	325	316	214	278	261	333	253	210	220	119	32	2	0	0	140.0	333.0
13-Jul	0	0	0	0	4	30	77	85	129	179	291	324	457	425	493	486	376	125	81	60	28	0	0	0	152.1	492.6
14-Jul	0	0	0	0	0	16	42	119	210	419	490	404	440	304	109	255	298	429	323	83	64	3	0	0	167.0	490.0
15-Jul	0	0	0	0	1	21	16	59	107	82	176	169	182	237	190	177	132	135	32	21	8	0	0	0	72.7	237.4
16-Jul	0	0	0	0	1	9	15	51	157	128	290	375	452	520	535	350	287	269	214	126	21	2	0	0	158.5	535.2
17-Jul	0	0	0	0	1	9	34	62	184	545	632	597	655	433	306	644	545	407	281	173	37	2	0	0	231.1	654.5
18-Jul	0	0	0	0	1	17	145	153	158	199	205	346	422	522	590	645	244	168	272	163	17	1	0	0	177.9	645.5
19-Jul	0	0	0	0	2	32	48	272	284	550	660	720	675	474	530	576	540	312	211	160	19	1	0	0	252.8	719.5
20-Jul	0	0	0	0	0	17	124	291	290	338	249	274	385	427	401	497	399	418	289	157	20	1	0	0	190.7	497.5
21-Jul	0	0	0	0	0	14	50	90	68	191	234	119	144	170	117	69	169	192	132	172	26	0	0	0	81.6	234.0
22-Jul	0	0	0	0	0	12	98	274	306	347	485	609	702	487	430	507	430	253	141	73	21	0	0	0	215.5	702.0
23-Jul	0	0	0	0	0	10	17	17	37	87	141	171	143	212	193	210	223	303	168	64	14	0	0	0	83.8	302.9
24-Jul	0	0	0	0	0	16	116	284	360	329	586	686	712	500	544	591	409	270	186	170	33	2	0	0	241.3	711.6
25-Jul	0	0	0	0	0	15	75	185	344	528	627	693	724	496	537	619	521	403	271	118	21	0	0	0	257.4	724.2
26-Jul	0	0	0	0	0	11	85	253	353	532	553	664	460	360	457	621	497	378	255	136	21	0	0	0	234.9	663.9
27-Jul	0	0	0	0	0	10	49	122	177	473	576	662	722	505	551	577	485	314	221	111	24	0	0	0	232.5	721.8
28-Jul	0	0	0	0	0	15	61	103	205	266	341	592	510	501	411	556	457	332	136	126	16	0	0	0	193.0	592.1
29-Jul	0	0	0	0	0	20	96	179	331	555	517	473	556	503	398	481	389	296	276	132	16	0	0	0	217.5	555.9
30-Jul	0	0	0	0	0	6	21	78	147	193	417	430	283	376	214	182	168	118	84	40	3	0	0	0	115.0	430.0
31-Jul	0	0	0	0	0	9	99	262	399	387	587	396	639	512	542	521	504	385	251	139	20	0	0	0	235.5	638.5
Diurnal Average																										
Diurnal Maximum																										

Hourly Averages

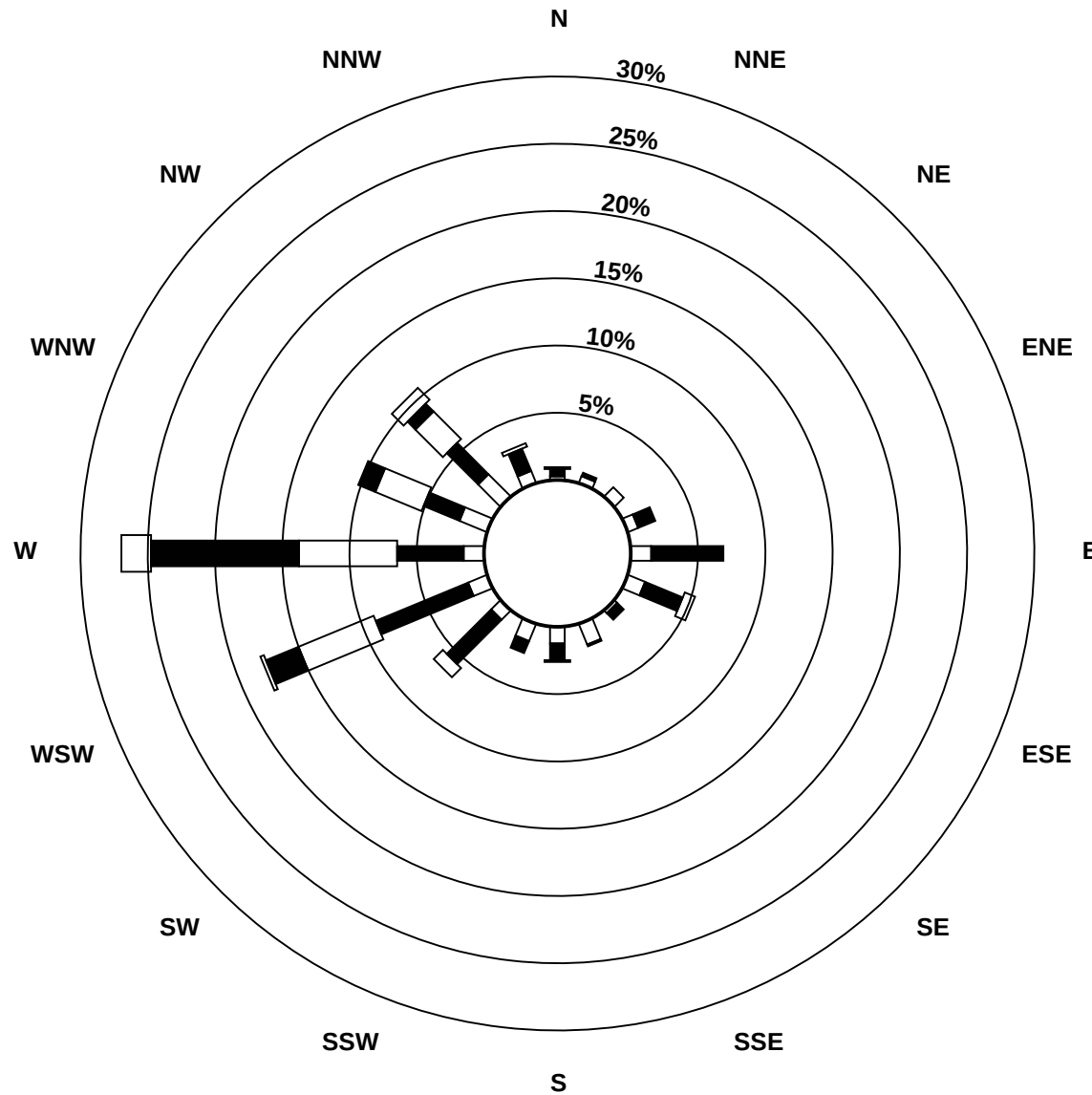
Solar Radiation (SR) - W/m²
Henry Pirker - July 2011



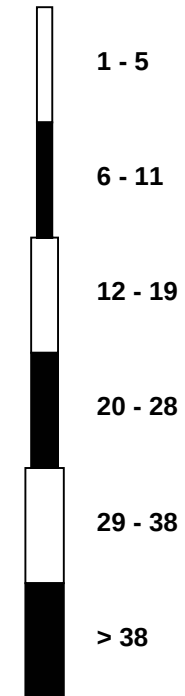
Wind Rose

Wind Speed (WS) (km/h)

Henry Pirker - July 2011



Wind Speed Classes (km/h)



Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Henry Pirker - July 2011

Maximum Speed: 36 km/h on Jul 8 20:00																				Maximum Daily Speed Average: 21.8 km/h on Jul 8					Hours in Service: 744	
Minimum Speed: 3 km/h on Jul 30 06:00																				Minimum Daily Speed Average: 5.2 km/h on Jul 6					Hours of Data: 733	
Maximum Diurnal Speed Average: 17.2 km/h at hour 16																				Minimum Diurnal Speed Average: 8.5 km/h at hour 5					Hours of Missing Data: 11	
Monthly Average Speed: 12.73 km/h																				Percentiles: P ₁ = 3.0 P ₁₀ = 4.7 Q ₁ = 6.6 Median = 10.5 Q ₃ = 17.7 P ₉₀ = 25.1 P ₉₉ = 32.9					Percent Operational Time: 98.5	
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-Jul	18	16	13	13	14	13	17	23	27	35	35	33	28	24	24	23	23	20	20	20	16	13	7	3	19.9	35.1
2-Jul	3	4	4	5	5	4	3	4	5	5	10	11	13	13	12	12	14	12	7	5	8	9	5	8	7.6	13.6
3-Jul	7	6	4	5	6	8	11	10	13	13	13	12	10	14	15	12	23	21	29	28	25	17	15	15	13.8	28.7
4-Jul	15	15	13	11	11	8	12	23	29	26	25	29	30	27	27	19	15	13	16	14	9	5	3	5	16.7	29.8
5-Jul	4	3	3	4	3	3	4	4	5	8	11	18	22	24	26	27	22	23	23	19	13	14	10	6	12.5	27.1
6-Jul	4	3	3	3	3	4	4	5	6	3	5	4	5	5	5	4	6	4	6	11	9	12	N	N	5.2	11.7
7-Jul	N	N	N	N	N	6	7	9	7	9	8	6	5	6	4	6	7	6	15	16	8	6	7	7	7.6	15.7
8-Jul	7	12	12	11	10	11	8	12	11	15	19	22	25	26	29	31	32	34	33	36	34	34	32	26	21.8	35.6
9-Jul	26	21	18	16	17	16	13	13	15	16	19	19	18	19	15	14	15	12	10	9	12	11	11	11	15.3	26.5
10-Jul	10	10	11	14	11	10	4	7	9	10	9	7	7	9	10	10	11	10	9	7	6	5	6	8	8.8	14.2
11-Jul	10	9	10	10	10	11	12	10	12	13	13	13	12	11	8	5	10	11	10	12	9	11	9	11	10.6	13.5
12-Jul	10	10	12	10	7	9	9	10	9	9	11	8	9	8	8	9	8	8	7	5	3	3	4	N	8.1	11.7
13-Jul	N	4	5	4	3	3	5	7	8	9	8	7	7	8	12	12	13	11	10	6	5	5	N	N	7.3	13.2
14-Jul	14	12	12	8	6	10	11	12	13	15	19	15	17	12	6	6	6	8	10	10	10	6	4	5	10.3	18.7
15-Jul	4	7	10	11	9	9	11	9	17	14	24	31	30	32	29	29	26	26	24	20	17	14	15	14	18.0	31.9
16-Jul	14	11	20	19	17	13	10	13	12	12	14	15	13	10	10	7	7	8	7	6	5	4	4	5	10.7	20.1
17-Jul	5	7	7	5	5	8	7	6	7	6	6	6	5	6	12	15	10	6	6	8	7	3	3	3	6.5	15.1
18-Jul	4	4	4	4	5	6	6	6	6	6	9	8	10	8	14	20	18	18	21	14	11	11	21	17	10.3	20.9
19-Jul	10	12	11	10	10	9	10	13	20	19	25	28	31	28	26	28	26	26	26	24	21	16	10	11	18.8	31.3
20-Jul	11	11	12	11	13	17	19	21	24	25	25	16	22	19	22	25	19	25	21	18	9	8	5	3	16.7	25.1
21-Jul	3	4	7	9	8	7	6	6	8	7	5	7	8	12	10	11	10	16	10	13	11	8	7	8	8.5	15.8
22-Jul	8	6	5	6	7	3	4	7	8	7	6	5	6	6	5	7	7	9	11	8	7	6	5	5	6.5	11.1
23-Jul	5	5	9	11	13	15	15	14	13	13	17	14	15	17	18	18	16	15	13	9	4	5	6	6	11.9	17.9
24-Jul	10	9	6	7	5	10	10	9	14	17	25	26	28	25	26	25	19	18	16	14	10	8	7	6	14.7	27.8
25-Jul	6	8	8	7	8	6	8	8	12	21	22	20	18	18	21	21	20	18	13	9	8	6	3	3	12.2	22.4
26-Jul	4	4	4	4	10	8	10	17	21	26	24	20	18	19	21	26	27	27	27	24	21	16	14	11	16.7	26.6
27-Jul	9	10	9	11	12	11	14	16	19	24	25	27	28	27	31	25	25	27	29	25	23	14	11	10	19.2	30.6
28-Jul	9	9	8	8	8	8	6	11	19	20	25	25	22	22	26	28	28	25	20	18	11	7	14	16	16.5	28.3
29-Jul	10	9	8	8	9	9	18	22	29	29	28	29	29	29	27	26	23	25	30	25	24	18	9	10	20.1	29.7
30-Jul	8	6	5	6	5	3	3	4	6	5	4	4	8	9	9	10	8	8	6	5	4	5	6	7	5.9	9.5
31-Jul	8	7	6	6	5	6	5	6	6	13	16	19	20	20	20	21	19	21	26	20	13	16	16	9	13.4	25.6
8.9 8.5 8.7 8.6 8.5 8.6 9.1 11.0 13.3 14.6 16.3 16.2 16.7 16.6 17.0 17.2 16.5 16.4 16.4 16.4 14.7 12.0 10.2 9.3 8.9																								Diurnal Average		
26.5 21.3 20.1 19.4 17.3 17.3 19.3 23.4 29.1 34.9 35.1 32.8 31.3 31.9 30.6 31.1 32.4 34.1 33.5 35.6 34.2 34.3 31.6 26.4																								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 - July 2011

Maximum Value: 91.9 deg on Jul 6 03:00																		Hours in Service: 744							
Minimum Value: 5.1 deg on Jul 8 22:00																		Hours of Data: 733							
Percentiles: P ₁ = 6.0 P ₁₀ = 7.6 Q ₁ = 9.6 Median = 12.8 Q ₃ = 20.7 P ₉₀ = 39.6 P ₉₉ = 83.7																		Hours of Missing Data: 11							
																		Hours of Calibration: 0							
																		Percent Operational Time: 98.5							
Day	Hourly Period Ending At (MST)																								Daily Maximum
1-Jul	8	9	10	9	10	11	11	7	11	10	8	11	13	13	14	15	15	12	11	8	9	10	21	45	44.7
2-Jul	36	14	19	9	16	13	84	43	30	53	28	22	21	18	25	22	17	17	25	59	51	16	40	24	83.5
3-Jul	25	19	25	23	19	12	10	13	13	20	18	16	55	18	48	28	8	11	10	7	7	11	9	9	54.9
4-Jul	8	8	9	9	10	20	26	12	8	10	11	9	12	13	13	18	25	19	16	9	11	15	52	9	52.2
5-Jul	24	86	77	51	22	34	43	36	31	15	18	13	13	13	8	12	8	7	8	7	6	7	14	29	86.2
6-Jul	84	64	92	69	38	84	26	26	34	58	23	62	74	73	42	63	46	82	39	13	10	25	N	N	91.9
7-Jul	N	N	N	N	N	19	15	17	26	18	44	65	79	86	51	29	37	29	15	12	22	21	32	11	85.6
8-Jul	11	8	7	12	14	9	9	20	9	8	7	7	6	6	5	6	6	6	6	6	6	5	6	6	19.9
9-Jul	7	6	7	6	6	8	10	7	7	8	8	8	7	7	9	13	11	8	9	6	7	9	8	14	13.6
10-Jul	8	9	10	7	9	12	78	25	10	10	11	22	18	19	12	17	13	12	11	14	9	10	10	11	77.9
11-Jul	8	9	8	8	6	7	9	10	12	10	11	13	18	23	34	27	17	15	13	13	9	9	11	8	34.1
12-Jul	6	7	7	7	12	10	10	15	17	17	16	18	17	21	23	20	25	19	17	16	15	18	16	N	24.9
13-Jul	N	20	24	73	43	31	52	23	17	20	25	36	43	23	22	17	16	15	13	22	18	19	N	N	72.6
14-Jul	16	16	11	13	20	10	14	10	11	11	10	16	11	20	30	30	29	33	22	32	18	15	43	15	43.2
15-Jul	24	31	11	11	12	12	15	20	9	10	12	7	8	7	7	8	8	7	6	6	6	7	6	11	31.4
16-Jul	8	13	7	7	6	8	10	8	10	14	13	14	11	22	27	28	32	58	23	27	16	40	8	10	57.6
17-Jul	12	15	8	18	23	13	50	36	28	51	29	36	78	50	73	20	25	36	79	19	12	38	83	30	83.2
18-Jul	71	18	17	42	21	36	21	22	23	36	21	17	14	20	17	12	13	19	10	14	12	17	7	14	71.4
19-Jul	12	11	11	11	9	9	11	14	9	12	11	10	12	15	12	11	11	11	9	8	9	8	12	11	14.6
20-Jul	12	9	9	10	9	9	8	8	9	9	9	8	13	15	11	11	11	10	10	7	12	11	38	58	58.3
21-Jul	65	47	32	18	15	22	11	21	22	27	62	26	16	15	15	18	21	11	11	13	12	12	11	14	64.5
22-Jul	13	12	25	44	20	84	35	21	17	26	29	65	58	48	62	31	53	22	13	16	16	13	68	17	83.9
23-Jul	21	14	10	12	11	7	6	11	13	8	7	8	10	14	8	8	8	10	8	8	41	12	10	10	40.9
24-Jul	13	10	19	18	17	16	11	12	14	11	9	11	9	12	11	11	12	12	10	10	21	19	17	17	21.0
25-Jul	13	10	16	12	16	43	24	14	10	12	13	13	17	11	14	14	11	9	12	10	7	19	28	34	43.2
26-Jul	54	71	24	40	12	22	17	9	10	11	10	13	11	12	19	12	11	9	8	7	7	5	7	10	70.7
27-Jul	9	13	17	13	10	10	8	10	9	10	10	11	12	12	8	13	11	9	8	7	6	13	10	8	16.8
28-Jul	10	9	10	20	16	22	21	13	10	10	9	10	15	16	10	11	10	9	10	10	8	19	8	7	22.0
29-Jul	11	16	14	13	17	11	8	8	8	9	10	11	10	10	11	10	9	15	8	9	7	10	11	8	17.3
30-Jul	10	36	14	37	40	62	31	28	45	43	77	91	25	20	18	15	16	19	19	16	60	35	10	13	91.4
31-Jul	16	20	32	14	22	15	53	36	44	17	19	12	14	14	13	15	14	11	9	7	11	8	13	13	52.8
84.3 86.2 91.9 72.6 43.5 84.5 83.5 43.3 45.1 58.4 77.4 91.4 79.5 85.6 73.1 63.5 53.4 81.6 79.1 59.0 59.6 39.6 83.2 58.3																									
N - Not Valid																									

PAZA
Evergreen Park Station
Monthly Summary Tables, Graphs and
Roses

Hourly Averages

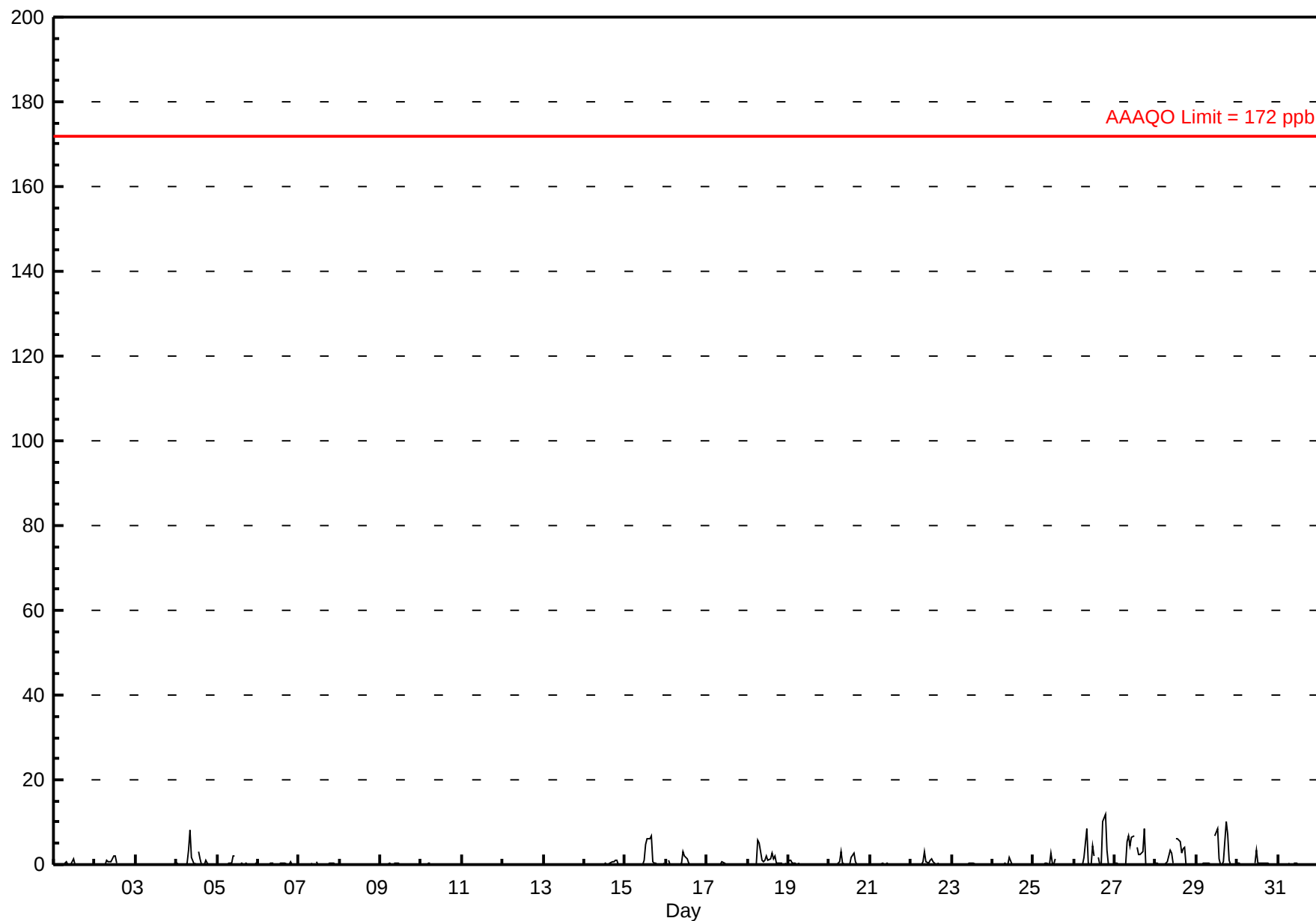
Sulphur Dioxide (SO₂) - ppb

Evergreen Park - July 2011

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 11.9 ppb on Jul 26 19:00 Maximum Daily Average: 2.2 ppb on Jul 27																				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 Jul 1 02:00 Maximum Diurnal Average: 1.2 ppb at hour 18 Monthly Average: 0.48 ppb										Minimum Daily Average: 0.0 ppb on Jul 11 Minimum Diurnal Average: 0.1 ppb at hour 23 Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.1 Q ₃ = 0.2 P ₉₀ = 1.0 P ₉₉ = 8.3																
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-Jul	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	A	0	0	0	0	0	0	0	0	0.1	1.4
2-Jul	0	0	0	0	0	0	0	1	1	1	2	2	2	0	A	0	0	0	0	0	0	0	0	0	0.4	2.1
3-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.0	0.3
4-Jul	0	0	0	0	0	0	0	3	8	2	0	0	A	3	1	0	0	1	0	0	0	0	0	0	0.9	8.3
5-Jul	0	0	0	0	0	0	0	0	0	2	2	A	0	0	1	0	0	0	0	0	0	0	0	0	0.3	2.1
6-Jul	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	1	0	0	0	0	0.2	0.6
7-Jul	0	0	0	0	0	0	0	0	0	A	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.6
8-Jul	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	0.1
9-Jul	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
10-Jul	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	0.3
11-Jul	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
12-Jul	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
13-Jul	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	0.1
14-Jul	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0.2	1.0
15-Jul	0	A	0	0	0	0	0	0	0	0	0	1	5	6	6	7	1	0	0	0	0	0	0	0	1.2	6.9
16-Jul	A	1	0	0	0	0	0	0	0	0	3	2	1	0	0	0	0	0	0	0	0	0	0	A	0.4	3.0
17-Jul	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.8
18-Jul	0	0	0	0	0	0	6	5	1	1	1	2	1	1	3	1	2	0	0	0	0	A	0	0	1.1	5.7
19-Jul	1	1	0	0	0	0	0	C	C	C	C	0	0	0	0	0	0	0	0	0	A	0	0	0	0.2	1.0
20-Jul	0	0	0	0	0	0	1	3	0	0	0	0	0	2	3	1	0	0	0	A	0	0	0	0	0.4	3.2
21-Jul	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
22-Jul	0	0	0	0	0	0	0	1	3	1	0	1	1	1	0	0	0	A	0	0	0	0	0	0	0.4	2.9
23-Jul	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	0.4
24-Jul	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	A	0	0	0	0	0	0	0	0	0.1	1.8
25-Jul	0	0	0	0	0	0	0	0	0	0	3	0	0	1	A	0	0	0	0	0	0	0	0	0	0.2	2.6
26-Jul	0	0	0	0	0	0	2	8	0	0	0	4	2	A	2	0	0	10	12	3	0	0	0	0	1.9	11.9
27-Jul	0	0	0	0	0	0	0	5	7	4	6	7	A	4	2	2	3	8	0	0	0	0	0	0	2.2	8.4
28-Jul	0	0	0	0	0	0	0	1	3	3	0	A	6	6	5	3	4	4	0	0	0	0	0	0	1.6	6.1
29-Jul	0	0	0	0	0	0	0	0	0	0	0	A	7	8	1	0	0	1	10	7	1	0	0	0	1.6	10.0
30-Jul	0	0	0	0	0	0	0	0	0	A	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0.3	3.5
31-Jul	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
0.1 0.1 0.1 0.1 0.1 0.1 0.4 1.1 0.9 0.6 0.8 1.2 1.0 0.9 0.8 0.6 0.4 1.2 0.7 0.3 0.1 0.1 0.1 0.1 Diurnal Average																										
1.0 0.9 0.3 0.2 0.3 0.4 5.7 8.3 8.3 4.4 6.5 6.8 8.5 6.0 6.3 6.9 3.9 10.1 11.9 3.4 0.3 0.1 0.3 0.3 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 Averages

Sulphur Dioxide (SO₂) - ppb
Evergreen Park - July 2011



Hourly Maximums

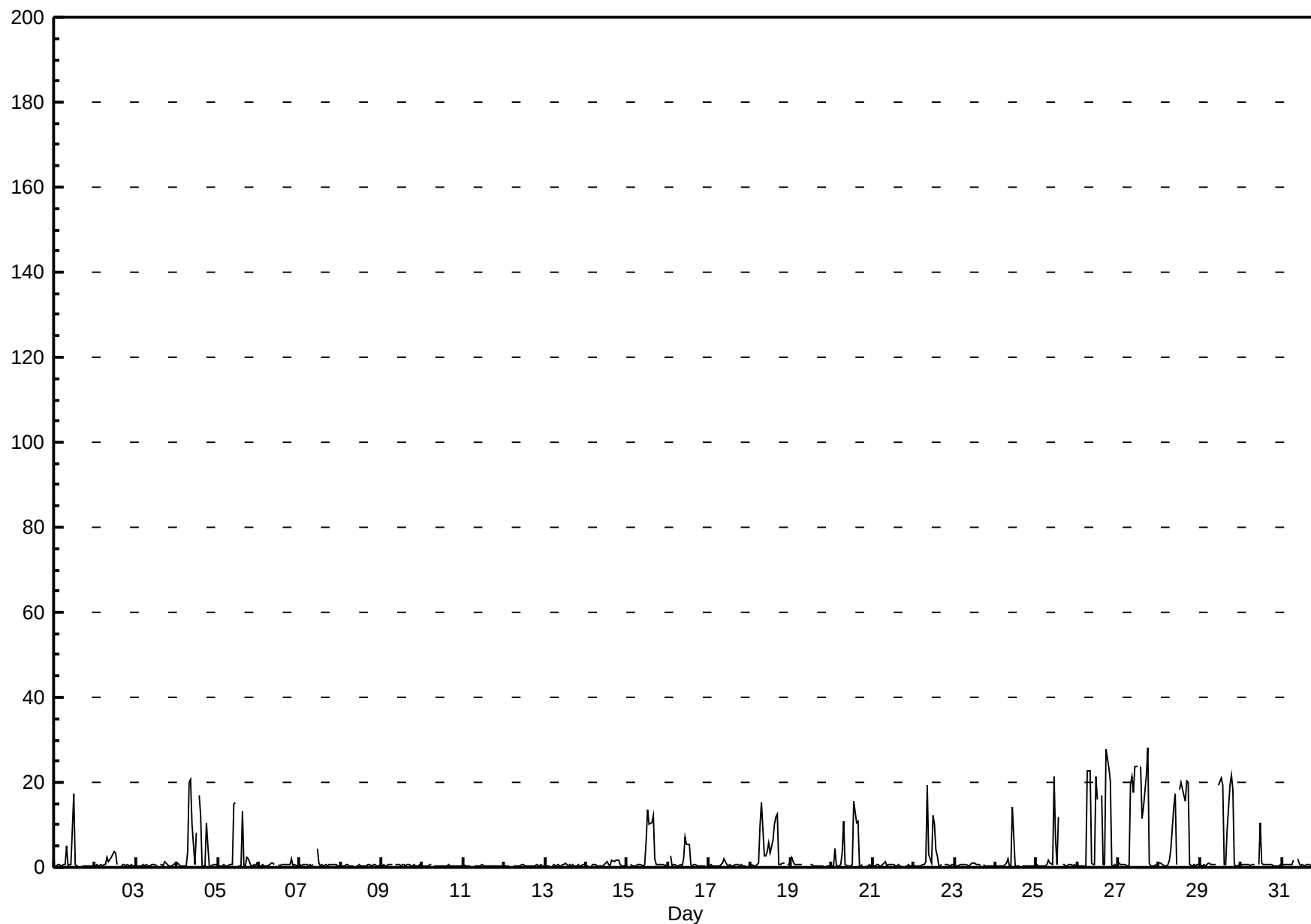
Sulphur Dioxide (SO₂) - ppb

Evergreen Park - July 2011

Maximum Value: 28.2 ppb on Jul 27 18:00																								Maximum Daily Average: 9.3 ppb on Jul 27										Hours in Service: 744	
Minimum Value: 0 ppb on Jul 11 09:00																								Minimum Daily Average: 0.4 ppb on Jul 11										Hours of Data: 708	
Maximum Diurnal Average: 5.2 ppb at hour 12																								Minimum Diurnal Average: 0.5 ppb at hour 22										Hours of Missing Data: 36	
Monthly Average: 2.15 ppb																								Percentiles: P ₁ = 0.3 P ₁₀ = 0.4 Q ₁ = 0.4 Median = 0.5 Q ₃ = 0.7 P ₉₀ = 5.3 P ₉₉ = 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-Jul	0	0	1	1	0	1	1	5	0	1	1	17	1	0	0	A	0	0	0	0	0	0	0	0	1.4	17.2									
2-Jul	0	1	0	1	0	1	1	2	1	2	3	4	3	1	A	1	1	1	0	1	0	1	0	0	1.1	3.7									
3-Jul	0	0	0	0	1	0	1	0	0	1	1	1	0	A	1	1	0	1	1	0	0	0	1	1	0.6	1.5									
4-Jul	1	1	1	1	0	0	4	20	21	10	1	8	A	17	12	0	0	11	5	0	0	1	1	1	5.0	20.7									
5-Jul	0	0	0	1	0	0	0	1	1	15	15	A	0	0	13	0	0	2	2	0	0	1	0	1	2.5	15.3									
6-Jul	0	0	1	0	0	0	1	1	1	1	A	1	0	1	1	1	1	1	1	2	0	1	0	0	0.6	1.9									
7-Jul	1	0	1	1	1	0	1	0	1	A	4	1	0	1	0	1	1	1	1	1	1	1	0	0	0.7	4.3									
8-Jul	1	0	0	1	1	0	0	0	A	0	0	1	0	0	0	0	1	1	0	1	1	1	1	1	0.5	0.7									
9-Jul	0	1	0	0	1	1	1	A	1	1	1	0	1	1	0	1	1	0	1	1	0	0	1	0	0.5	0.7									
10-Jul	0	0	0	1	1	1	A	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0.4	0.6									
11-Jul	1	0	1	0	0	A	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.6									
12-Jul	0	0	1	0	A	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	1	0	0	0.4	0.6									
13-Jul	0	0	0	A	0	1	0	1	0	0	1	1	1	0	1	0	1	0	0	1	0	0	1	1	0.5	0.9									
14-Jul	0	0	A	0	1	1	0	0	1	1	0	1	1	1	0	2	1	2	2	2	1	0	0	1	0.8	1.7									
15-Jul	1	A	1	1	0	0	1	1	1	0	1	6	14	10	10	12	2	1	1	1	1	1	0	1	2.8	13.6									
16-Jul	A	3	0	1	1	1	0	1	0	2	7	5	5	1	0	1	1	0	0	0	0	0	0	A	1.4	7.0									
17-Jul	0	1	0	0	0	0	0	1	1	2	1	0	1	0	0	1	1	1	0	1	0	1	A	1	0.6	2.1									
18-Jul	0	1	0	0	1	1	10	15	3	3	4	6	3	7	10	12	13	1	1	1	1	A	1	1	4.0	15.1									
19-Jul	2	1	1	1	1	1	1	C	C	C	C	1	1	0	0	0	0	0	0	0	A	0	0	0	0.6	2.4									
20-Jul	0	0	4	0	0	1	3	11	1	1	0	0	1	15	11	11	0	0	1	A	0	0	1	0	2.8	15.5									
21-Jul	0	1	1	1	0	1	1	1	0	1	1	1	1	0	0	1	0	0	A	0	0	1	0	0	0.5	1.3									
22-Jul	0	0	0	0	0	1	1	1	19	3	1	12	10	4	3	0	1	A	1	1	1	1	1	1	2.6	19.3									
23-Jul	0	0	0	1	1	1	1	1	0	1	1	1	1	1	1	0	A	1	0	0	0	0	0	0	0.6	0.9									
24-Jul	0	0	0	0	0	0	1	2	0	0	14	1	0	0	0	A	0	0	0	1	0	0	0	1	1.1	14.3									
25-Jul	1	0	0	0	0	0	1	2	1	1	21	6	1	12	A	1	1	0	0	1	1	0	1	0	2.2	21.3									
26-Jul	0	0	0	0	0	0	23	23	1	1	1	21	16	A	17	1	1	28	23	20	0	1	1	0	7.8	27.9									
27-Jul	1	1	1	1	1	1	0	20	21	18	24	24	A	24	11	14	22	28	1	0	0	1	1	1	9.3	28.2									
28-Jul	1	1	1	0	0	1	2	4	14	17	1	A	18	20	17	15	20	20	1	0	1	0	1	1	6.8	20.2									
29-Jul	1	0	1	0	1	1	1	1	1	1	A	19	21	19	1	1	9	19	22	18	1	0	0	1	6.0	21.6									
30-Jul	1	1	1	1	1	0	1	1	1	A	1	11	1	1	1	1	1	1	1	0	0	0	0	1	1.0	10.6									
31-Jul	1	1	1	1	1	1	1	2	A	2	1	0	1	0	1	1	1	0	1	1	0	0	0	1	0.7	2.0									
0.6 0.6 0.6 0.5 0.5 0.5 1.8 4.0 3.3 3.0 3.8 5.2 3.6 4.8 3.9 2.7 2.7 4.1 2.2 1.9 0.5 0.5 0.5 0.5																								Diurnal Average	Diurnal Maximum										
2.4 2.7 4.4 0.7 0.7 1.1 22.6 22.5 21.2 17.6 23.8 23.8 20.9 23.7 17.0 15.5 21.5 28.2 23.2 20.4 0.9 0.8 0.7 1.0																																			
C - Calibration A - Automated Daily Zero Span																																			

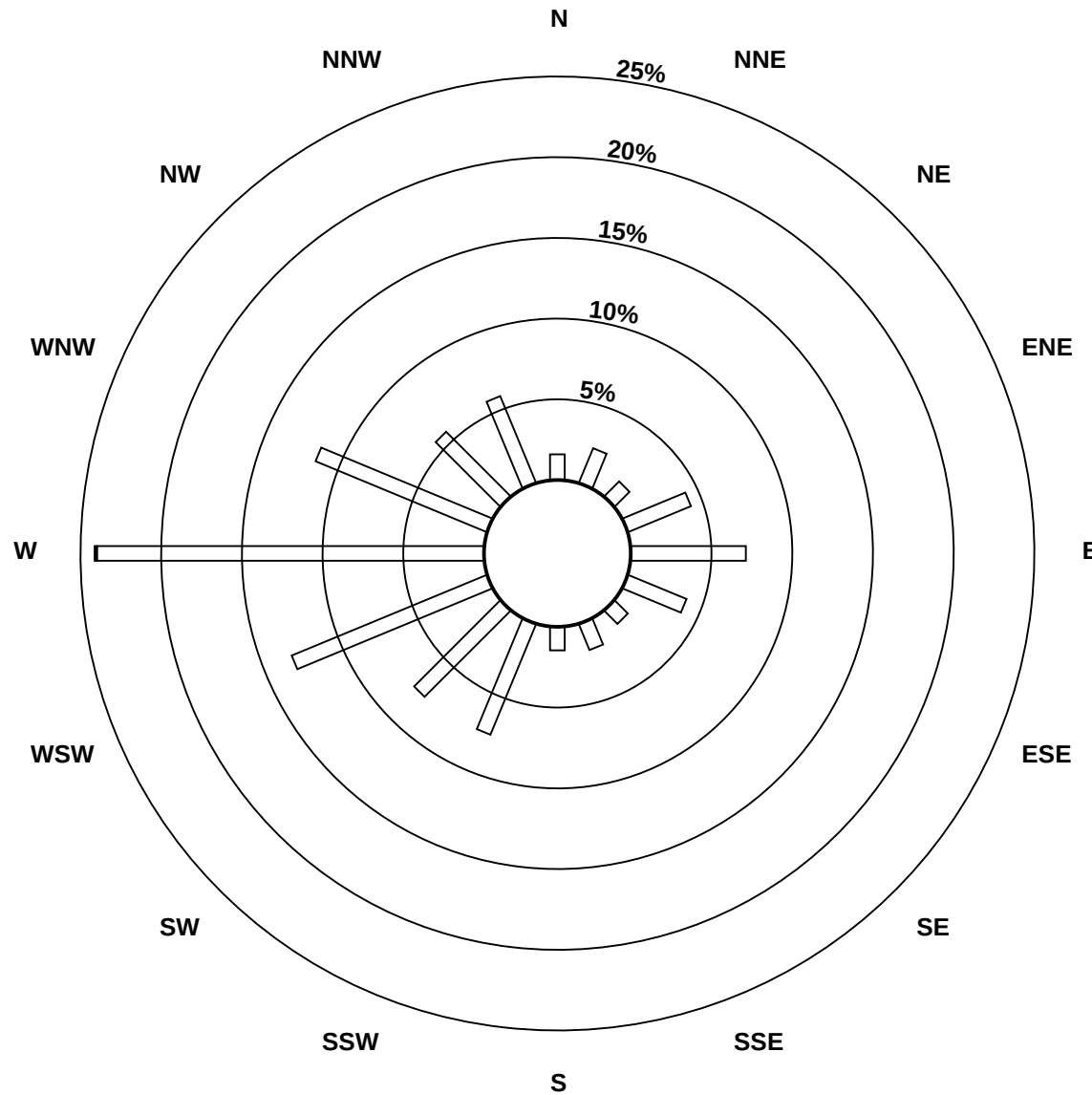
Hourly Maximums

Sulphur Dioxide (SO₂) - ppb
Evergreen Park - July 2011

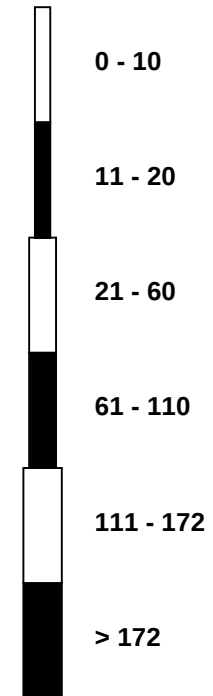


Pollutant Rose

Sulphur Dioxide (SO₂) - ppb
Evergreen Park - July 2011

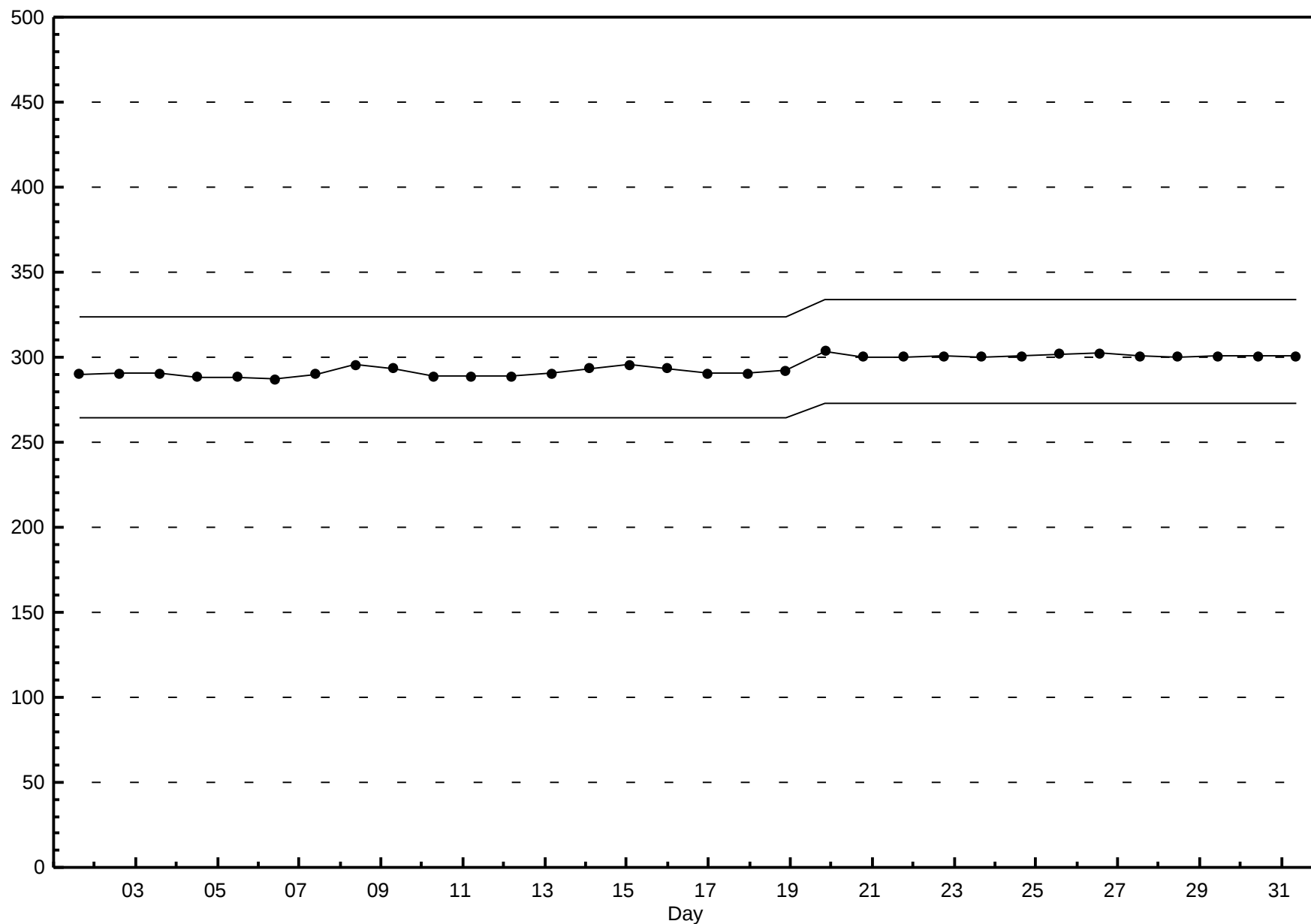


Pollutant Classes (ppb)



Span Responses

Sulphur Dioxide (SO₂)
Evergreen Park - July 2011



Hourly Averages

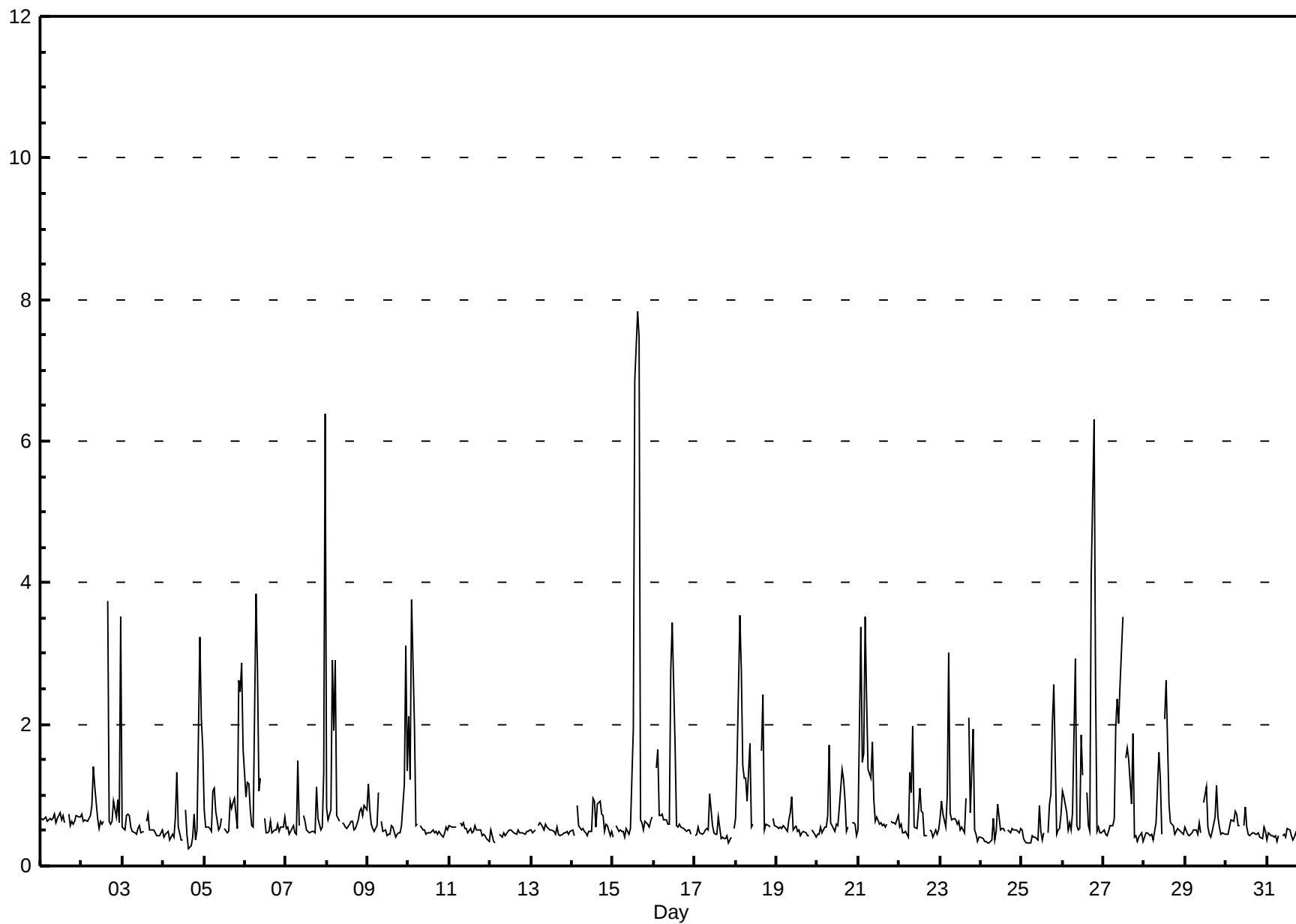
Total Reduced Sulphur (TRS) - ppb

Evergreen Park - July 2011

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0																			Hours in Service: 744								
Maximum Value: 7.8 ppb on Jul 15 15:00																			Maximum Daily Average: 1.5 ppb on Jul 15		Hours of Data: 708						
Minimum Value: 0 ppb on Jul 4 16:00																			Minimum Daily Average: 0.4 ppb on Jul 31		Hours of Missing Data: 36						
Maximum Diurnal Average: 1.0 ppb at hour 16																			Minimum Diurnal Average: 0.6 ppb at hour 21		Hours of Calibration: 36						
Monthly Average: 0.78 ppb																			Percentiles: P ₁ = 0.3 P ₁₀ = 0.4 Q ₁ = 0.5 Median = 0.5 Q ₃ = 0.7 P ₉₀ = 1.3 P ₉₉ = 3.7		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-Jul	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	0.8	
2-Jul	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	4	1	1	1	1	1	1	1	4	1.0	3.7	
3-Jul	1	1	1	1	1	1	0	0	0	1	1	0	0	A	1	1	0	1	1	0	0	0	0	1	0.5	0.7	
4-Jul	0	0	0	0	0	0	0	1	1	1	0	0	A	1	0	0	0	0	1	0	1	3	2	2	0.7	3.2	
5-Jul	1	1	1	1	0	1	1	1	0	1	1	A	1	0	0	1	1	1	1	1	3	2	3	2	1.0	2.9	
6-Jul	1	1	1	1	1	1	4	3	1	1	A	1	0	0	0	1	0	1	0	1	0	1	1	1	0.9	3.8	
7-Jul	1	1	0	0	1	0	0	1	1	A	1	1	1	0	0	0	0	0	1	1	1	1	1	6	0.9	6.4	
8-Jul	1	1	1	3	2	3	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	2.9	
9-Jul	1	1	1	1	0	1	1	A	1	0	0	0	0	0	1	1	0	0	0	0	1	1	3	1	1	0.7	3.1
10-Jul	2	1	4	2	1	1	A	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0.8	3.8	
11-Jul	1	1	1	1	1	A	1	1	1	1	1	0	1	0	0	1	1	1	1	0	0	0	0	0	0.5	0.6	
12-Jul	1	0	0	0	A	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	1	0.5	0.5	
13-Jul	1	0	1	A	1	1	1	0	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0.5	0.6	
14-Jul	1	0	A	1	1	1	1	0	0	0	0	0	1	1	1	1	1	1	1	0	1	1	0	0	0.6	1.0	
15-Jul	0	A	1	0	1	0	0	0	1	0	1	1	2	7	8	7	1	1	1	1	1	1	1	1	1.5	7.8	
16-Jul	A	1	2	1	1	1	1	1	1	1	3	3	2	1	1	1	1	1	1	0	1	1	0	A	0.9	3.4	
17-Jul	0	0	1	0	0	0	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	A	1	0.5	1.0	
18-Jul	1	1	4	3	1	1	1	1	2	1	1	C	C	C	C	2	2	1	1	1	1	A	1	1	1.2	3.5	
19-Jul	1	1	1	1	1	1	0	1	1	1	1	1	0	1	0	0	0	0	0	0	A	1	0	0	0.5	1.0	
20-Jul	0	0	1	0	1	1	1	2	1	1	0	1	1	1	1	1	1	0	1	A	1	1	1	0	0.7	1.7	
21-Jul	1	3	1	2	4	2	1	1	2	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1.1	3.5	
22-Jul	1	1	0	0	0	0	1	1	2	1	1	1	1	1	0	0	A	1	0	0	1	0	1	0.7	2.0		
23-Jul	1	1	1	1	1	3	1	1	1	1	1	1	1	1	0	1	A	2	1	2	1	0	0	0	0.9	3.0	
24-Jul	0	0	0	0	0	0	0	1	0	0	1	0	1	1	0	A	1	0	1	1	1	1	0	1	0.5	0.9	
25-Jul	1	0	0	0	0	0	0	0	0	0	1	0	0	0	A	0	1	1	2	3	0	1	1	1	0.7	2.6	
26-Jul	1	1	1	0	1	0	1	3	1	1	1	2	1	A	1	1	0	4	6	3	0	1	0	0	1.3	6.3	
27-Jul	1	0	0	0	1	1	1	2	2	2	3	4	A	2	2	1	1	2	0	0	0	0	0	0	1.1	3.5	
28-Jul	0	0	0	0	0	0	0	1	2	1	0	A	2	3	1	1	1	1	0	1	1	0	0	0	0.7	2.6	
29-Jul	1	0	0	0	0	1	1	0	1	0	A	1	1	1	0	0	0	1	1	1	1	0	0	0	0.6	1.1	
30-Jul	0	0	1	1	1	1	1	1	1	A	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0.5	0.8	
31-Jul	0	0	0	0	0	0	0	0	A	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0.4	0.7	
		0.6	0.7	0.8	0.8	0.7	0.8	0.8	0.9	0.8	0.7	0.7	0.9	0.7	0.9	0.9	1.0	0.6	0.8	0.8	0.7	0.6	0.7	0.8	0.9	Diurnal Average	
		2.1	3.4	3.8	2.9	3.5	3.0	3.8	2.9	2.4	2.0	2.8	3.5	2.1	6.9	7.8	7.5	2.4	4.1	6.3	2.6	2.6	3.2	3.1	6.4	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr 10 ppb		24-hr 3 ppb																							

Hourly Averages

Total Reduced Sulphur (TRS) - ppb
Evergreen Park - July 2011



Hourly Maximums

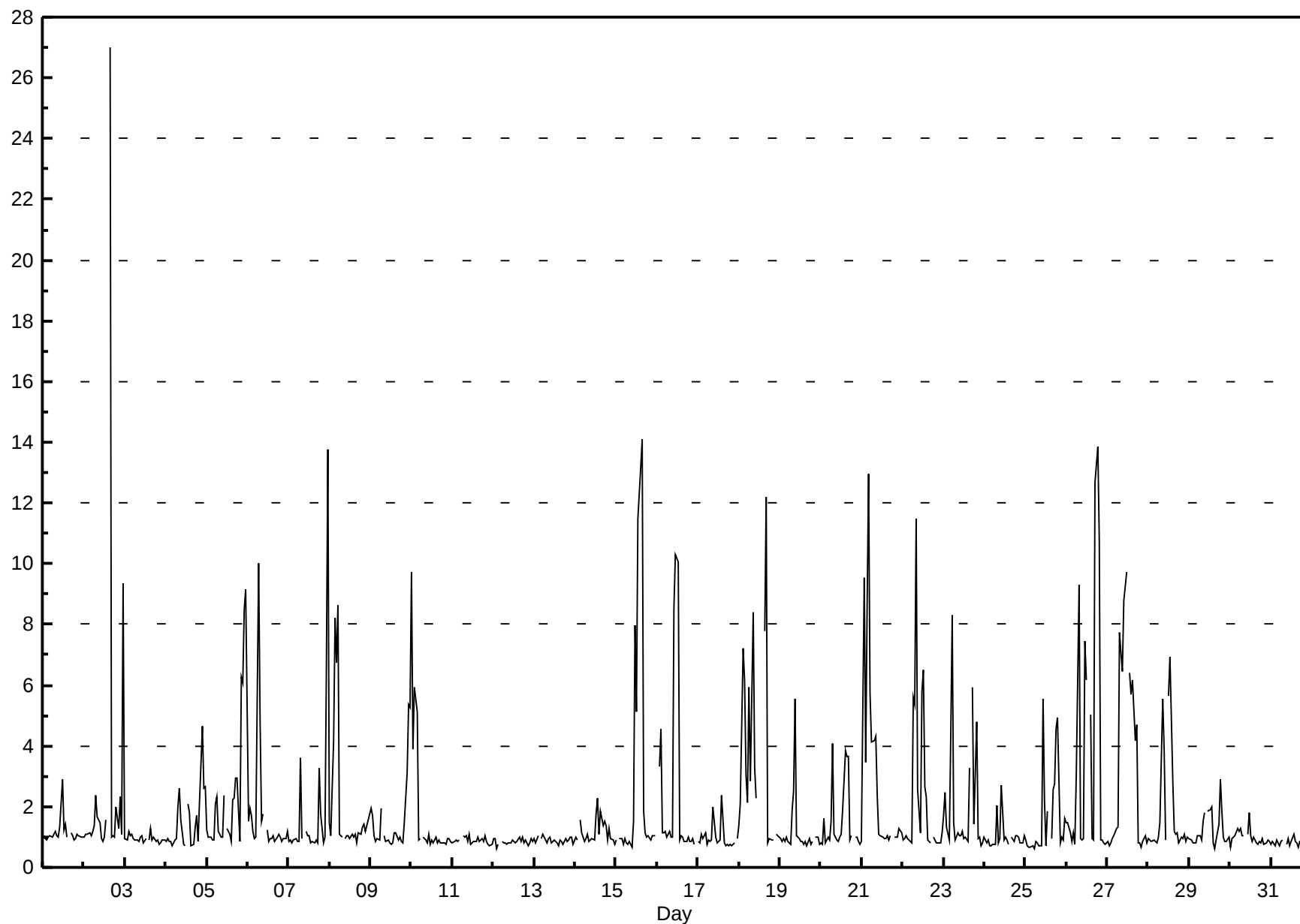
Total Reduced Sulphur (TRS) - ppb

Evergreen Park - July 2011

Maximum Value: 27.0 ppb on Jul 2 16:00																				Maximum Daily Average: 3.7 ppb on Jul 18										Hours in Service: 744	
Minimum Value: 1 ppb on Jul 25 06:00																				Minimum Daily Average: 0.8 ppb on Jul 12										Hours of Data: 708	
Maximum Diurnal Average: 3.0 ppb at hour 16																				Minimum Diurnal Average: 1.2 ppb at hour 21										Hours of Missing Data: 36	
Monthly Average: 1.83 ppb																				Percentiles: P ₁ = 0.7 P ₁₀ = 0.8 Q ₁ = 0.9 Median = 1.0 Q ₃ = 1.4 P ₉₀ = 4.3 P ₉₉ = 12.5										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-Jul	1	1	1	1	1	1	1	1	1	1	1	3	1	1	1	A	1	1	1	1	1	1	1	1	1.1	2.9					
2-Jul	1	1	1	1	1	1	1	2	2	1	1	1	1	2	A	27	1	1	1	2	1	2	1	9	2.8	27.0					
3-Jul	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	0.9	1.3					
4-Jul	1	1	1	1	1	1	1	2	3	2	1	1	A	2	2	1	1	1	2	1	2	5	3	3	1.5	4.6					
5-Jul	1	1	1	1	1	2	2	1	1	1	2	A	1	1	1	2	2	3	3	1	6	6	9	9	2.6	9.2					
6-Jul	1	2	2	1	1	1	10	5	2	2	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1.7	10.0					
7-Jul	1	1	1	1	1	1	1	4	1	A	1	1	1	1	1	1	1	1	3	2	1	1	7	14	2.0	13.8					
8-Jul	1	1	4	8	7	9	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2.2	8.6					
9-Jul	2	2	1	1	1	1	2	A	1	1	1	1	1	1	1	1	1	1	1	1	1	3	5	5	1.5	5.4					
10-Jul	10	4	6	5	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.8	9.7					
11-Jul	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					
12-Jul	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					
13-Jul	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					
14-Jul	1	1	A	2	1	1	1	1	1	1	1	1	2	2	1	2	1	2	1	1	1	1	1	1	1.2	2.3					
15-Jul	1	A	1	1	1	1	1	1	1	1	2	8	5	11	13	14	2	1	1	1	1	1	1	1	3.0	14.1					
16-Jul	A	3	5	1	1	1	1	1	1	1	9	10	10	1	1	1	1	1	1	1	1	1	1	A	2.4	10.3					
17-Jul	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2	1	1	1	1	1	1	1	A	1	1.0	2.4					
18-Jul	1	2	7	6	3	2	6	3	8	3	2	C	C	C	C	8	12	1	1	1	1	A	1	1	3.7	12.2					
19-Jul	1	1	1	1	1	1	1	2	3	6	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1.2	5.5					
20-Jul	1	1	2	1	1	1	2	4	1	1	1	1	1	2	4	4	4	1	1	A	1	1	1	1	1.5	4.1					
21-Jul	1	10	3	9	13	6	4	4	4	2	1	1	1	1	1	1	1	1	A	1	1	1	1	1	3.0	12.9					
22-Jul	1	1	1	1	1	1	6	5	11	3	1	6	7	3	2	1	1	A	1	1	1	1	1	1	2.4	11.5					
23-Jul	2	2	1	1	4	8	1	1	1	1	1	1	1	1	1	3	A	6	1	5	1	1	1	1	2.1	8.3					
24-Jul	1	1	1	1	1	1	1	2	1	1	3	1	1	1	1	A	1	1	1	1	1	1	1	1	1.0	2.7					
25-Jul	1	1	1	1	1	1	1	1	1	1	6	2	1	2	A	1	3	3	5	5	1	1	1	2	1.6	5.5					
26-Jul	1	1	1	1	1	1	3	9	1	1	1	7	6	A	5	1	1	13	14	11	1	1	1	1	3.6	13.9					
27-Jul	1	1	1	1	1	1	1	8	7	6	9	10	A	6	6	6	4	5	1	1	1	1	1	1	3.4	9.7					
28-Jul	1	1	1	1	1	1	1	1	6	4	1	A	6	7	3	1	1	1	1	1	1	1	1	1	1.9	6.9					
29-Jul	1	1	1	1	1	1	1	1	2	2	A	2	2	2	1	1	1	1	3	2	1	1	1	1	1.2	2.9					
30-Jul	1	1	1	1	1	1	1	1	1	A	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1.0	1.8					
31-Jul	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					
1.3		1.5	1.7	1.8	1.7	1.7	1.9	2.3	2.2	1.7	1.9	2.4	2.0	2.0	2.0	3.0	1.6	1.8	1.7	1.6	1.2	1.4	1.6	2.2	Diurnal Average						
9.7		9.5	7.2	8.6	12.9	8.6	10.0	9.3	11.5	6.4	8.8	10.3	10.0	11.5	13.2	27.0	12.2	12.7	13.9	10.7	6.2	6.1	8.5	13.8	Diurnal Maximum						
C - Calibration		A - Automated Daily Zero Span																													

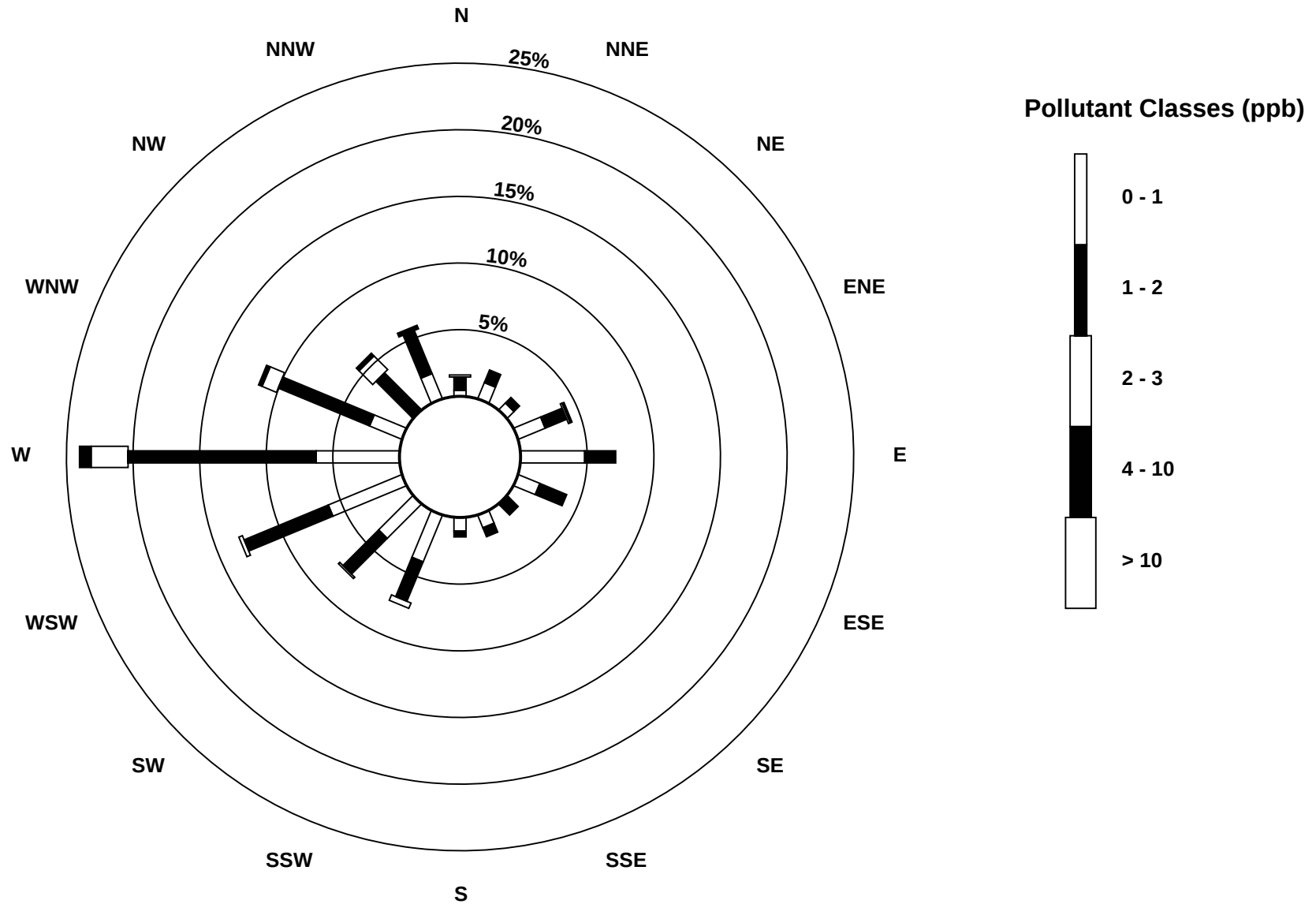
Hourly Maximums

Total Reduced Sulphur (TRS) - ppb
Evergreen Park - July 2011



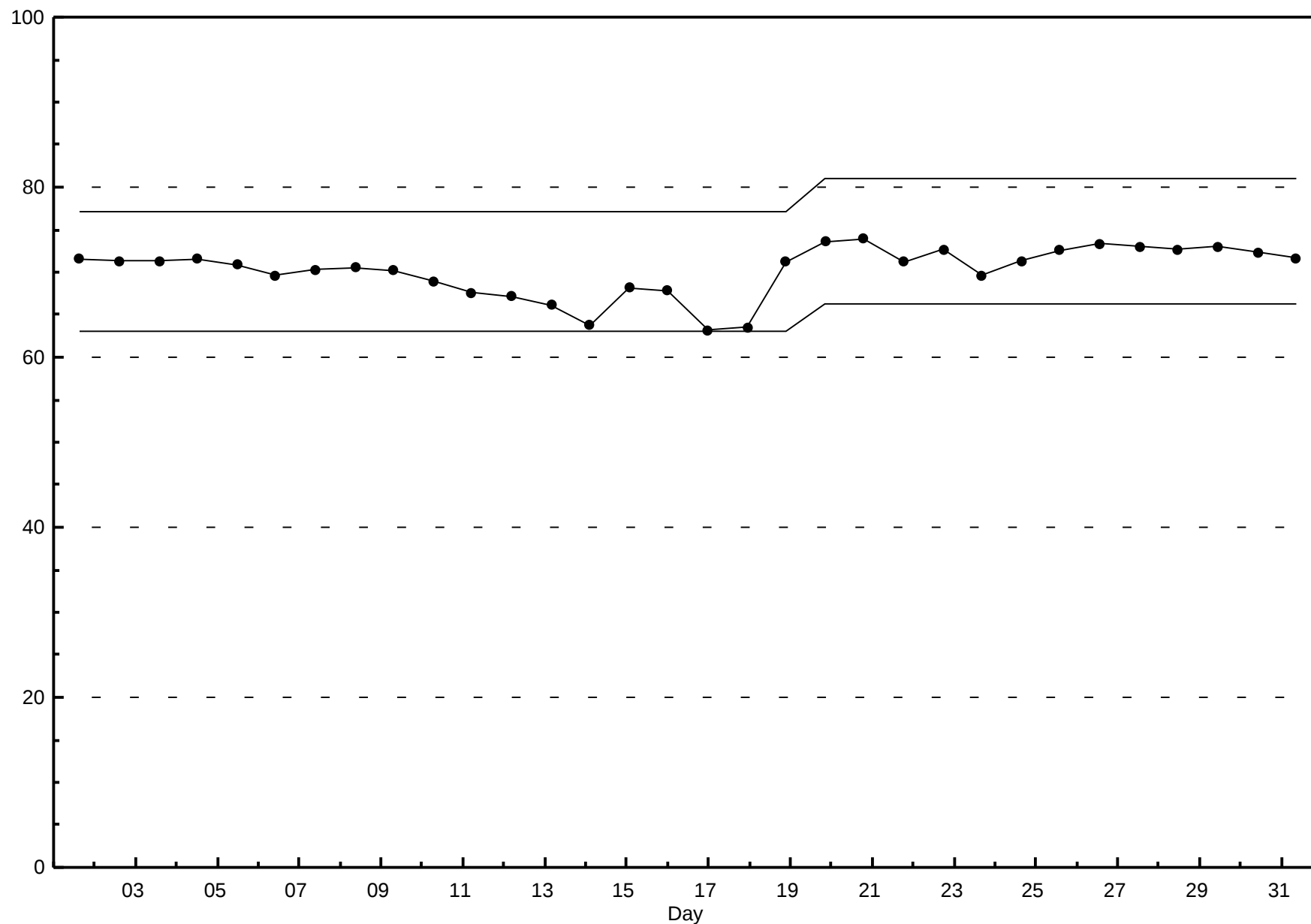
Pollutant Rose

Total Reduced Sulphur (TRS) - ppb
Evergreen Park - July 2011



Span Responses

Total Reduced Sulphur (TRS)
Evergreen Park - July 2011

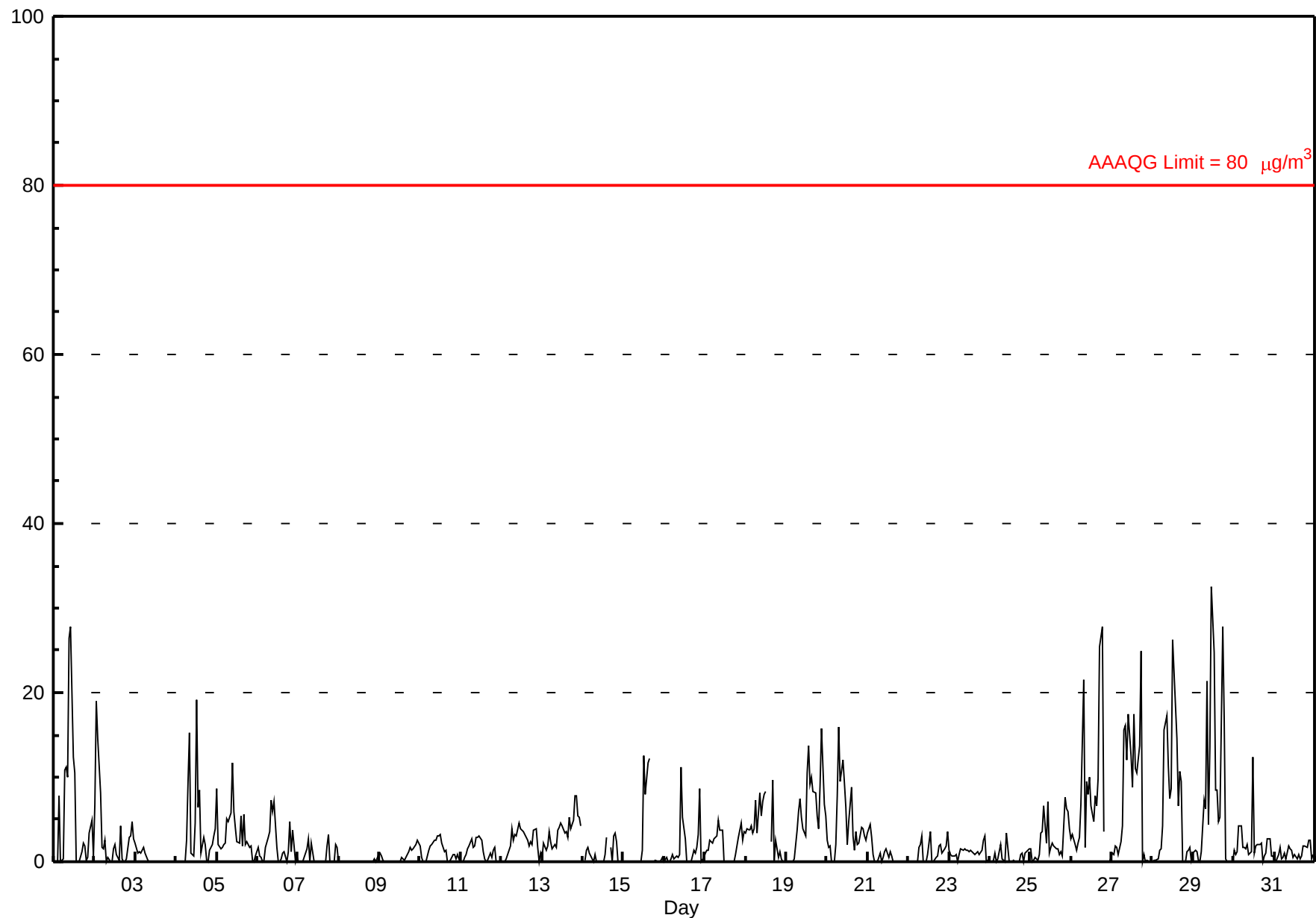


Hourly Averages

Particulate Matter 2.5 (PM_{2.5}) - µg/m³

Evergreen Park - July 2011

Number of Exceedences: 1-hr: 0 24-hr: 0 Maximum Value: 32.6 µg/m ³ on Jul 29 12:00																								Hours in Service: 744 Hours of Data: 736 Hours of Missing Data: 8 Hours of Calibration: 2 Percent Operational Time: 99.2			
Minimum Value: 0 µg/m ³ on Jul 1 01:00 Maximum Diurnal Average: 5.3 µg/m ³ at hour 13 Monthly Average: 2.80 µg/m ³												Minimum Daily Average: 0.1 µg/m ³ on Jul 8 Minimum Diurnal Average: 1.0 µg/m ³ at hour 5 Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 1.3 Q ₃ = 3.3 P ₉₀ = 7.9 P ₉₉ = 24.7															
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
1-Jul	0	0	0	8	0	0	11	11	10	26	11	12	13	14	0	0	0	1	2	2	0	1	3	5	1	5.5	27.7
2-Jul	7	19	15	8	2	2	2	0	1	0	0	2	2	1	0	4	0	0	0	0	0	3	3	5	3	3.2	19.1
3-Jul	2	1	1	1	1	2	1	0	0	BD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	2.2
4-Jul	0	0	0	0	0	0	3	9	15	1	1	5	19	6	9	1	3	2	0	0	1	2	3	4	3.5	19.2	
5-Jul	9	2	2	2	2	2	5	5	6	12	6	4	2	2	5	2	6	2	2	2	2	0	0	1	3.4	11.7	
6-Jul	2	1	1	0	0	2	3	4	7	6	7	2	0	0	0	1	1	0	1	5	1	4	0	1	2.0	7.3	
7-Jul	0	0	0	0	1	2	3	0	2	0	0	0	BD	0	0	0	0	2	3	0	0	0	2	2	0.7	3.2	
8-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	0.8	
9-Jul	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2	1	2	2	3	2	2	0.7	2.6	
10-Jul	2	0	0	0	1	1	2	2	2	2	3	3	3	2	1	1	0	0	0	1	1	0	1	0	1.3	3.2	
11-Jul	0	0	1	1	1	2	3	2	2	3	3	3	2	1	0	0	0	1	0	1	2	0	0	0	1.2	3.1	
12-Jul	0	0	0	0	1	2	4	3	3	3	5	4	4	4	3	3	2	2	2	4	4	2	0	1	2.3	4.5	
13-Jul	0	2	1	2	3	2	2	2	2	4	4	5	4	3	4	3	5	4	5	8	8	5	5	4	3.7	7.8	
14-Jul	BD	0	1	2	1	0	0	1	0	0	0	0	0	1	3	BD	2	0	3	3	2	0	0	0	0.9	3.5	
15-Jul	0	0	0	0	0	0	0	0	0	0	0	1	13	8	12	12	BD	0	0	0	0	0	0	0	2.0	12.6	
16-Jul	0	0	0	0	0	1	0	1	0	1	11	5	3	0	0	0	0	1	1	2	3	9	0	1	1.7	11.1	
17-Jul	1	1	1	2	2	3	3	3	5	4	4	0	0	0	0	0	0	0	1	2	3	5	3	4	1.9	5.0	
18-Jul	3	4	4	4	3	4	7	3	8	5	7	8	8	C	C	2	10	0	3	1	1	0	0	0	4.0	9.6	
19-Jul	0	0	0	0	0	0	4	6	7	5	4	3	11	14	9	10	8	8	5	4	9	16	7	5	5.7	15.7	
20-Jul	3	2	2	0	0	2	8	16	9	12	9	6	2	5	9	3	1	4	2	2	4	4	3	2	4.6	16.0	
21-Jul	3	4	3	1	0	0	0	1	0	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0.8	4.5	
22-Jul	0	0	0	0	0	0	2	2	3	0	0	1	2	4	0	0	1	1	2	2	1	1	2	3	1.1	3.6	
23-Jul	1	1	1	1	1	0	1	2	1	2	1	1	1	1	1	1	1	1	1	1	2	3	0	0	1.1	3.1	
24-Jul	0	0	0	1	0	0	2	0	0	0	3	0	0	0	0	0	0	0	1	1	0	1	1	2	0.6	3.4	
25-Jul	2	0	0	1	0	1	3	4	7	2	7	1	2	2	2	2	2	1	1	1	8	6	6	4	2.6	7.6	
26-Jul	3	3	2	1	2	3	7	22	2	9	8	10	7	5	8	7	10	25	28	4	BD	0	0	0	7.1	27.9	
27-Jul	1	1	2	2	1	2	4	16	16	12	17	13	9	17	11	11	14	25	0	1	0	0	0	0	7.3	24.8	
28-Jul	0	0	0	0	1	1	4	16	17	11	8	9	26	22	15	7	11	10	0	0	1	1	2	0	6.8	26.2	
29-Jul	1	1	1	0	0	1	7	6	21	4	14	33	25	8	9	5	5	28	17	0	0	0	0	0	7.8	32.6	
30-Jul	1	1	1	4	4	2	2	2	2	1	1	12	1	2	2	2	2	0	1	1	3	3	1	1	2.1	12.3	
31-Jul	0	0	1	2	0	1	1	0	2	2	1	0	1	0	1	0	1	2	2	2	3	3	0	1	1.0	2.6	
1.4 1.5 1.3 1.4 1.0 1.2 3.0 4.4 4.9 4.3 4.9 4.7 5.3 3.7 3.5 2.5 2.9 3.9 2.7 1.5 2.1 2.4 1.5 1.4 8.7 19.1 14.6 8.2 4.2 3.9 10.9 21.6 21.4 26.4 27.7 32.6 26.2 22.3 14.5 12.1 13.7 27.7 27.9 7.7 9.1 15.7 6.8 5.5																								Diurnal Average			
																								Diurnal Maximum			
C - Calibration BD - Baseline Drift Alberta Ambient Air Quality Guideline (AAAQG): 1-hr 80 µg/m ³ Alberta Ambient Air Quality Objective (AAAQO): 24-hr 30 µg/m ³																											

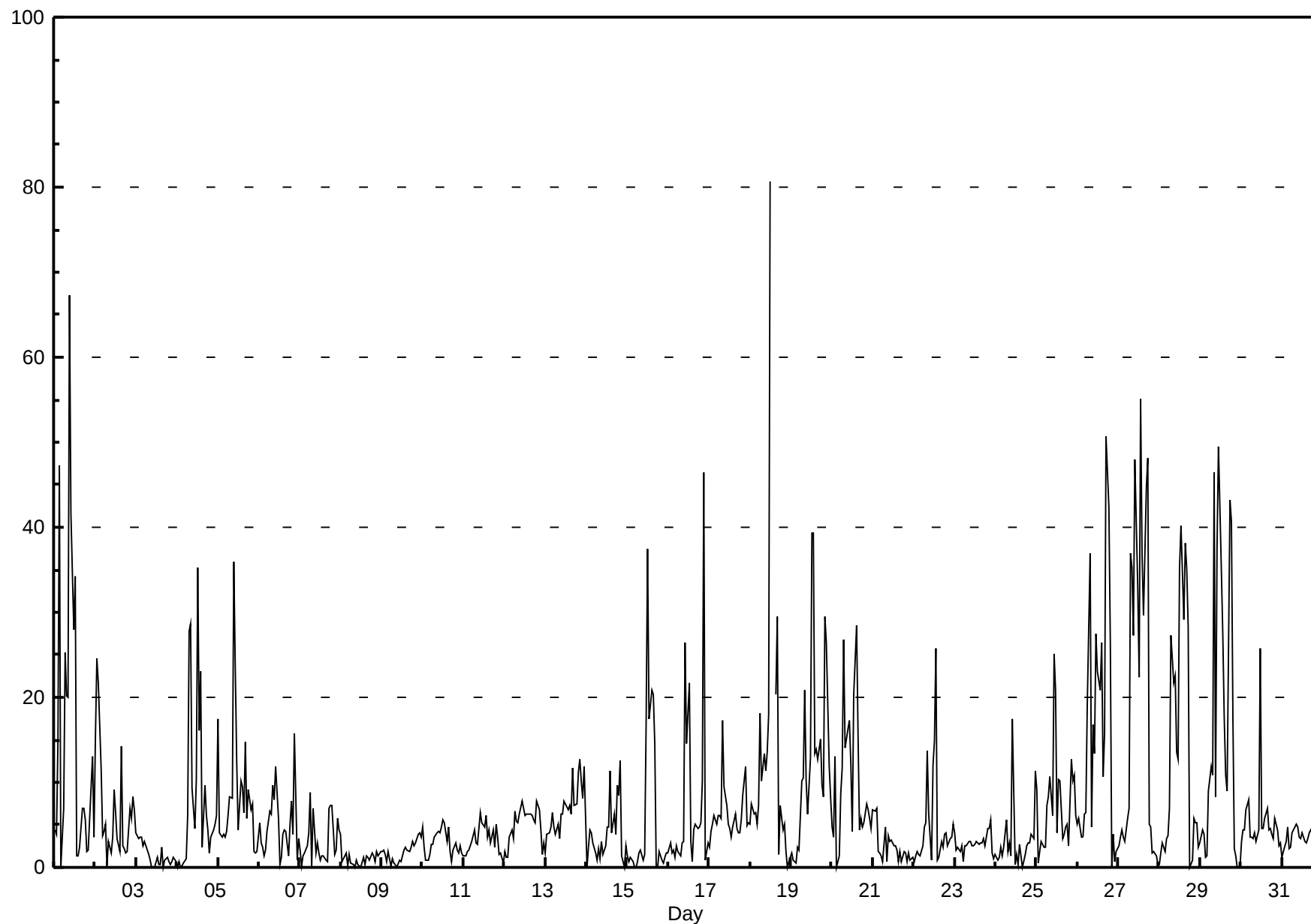


Hourly Maximums

Particulate Matter 2.5 (PM_{2.5}) - µg/m³

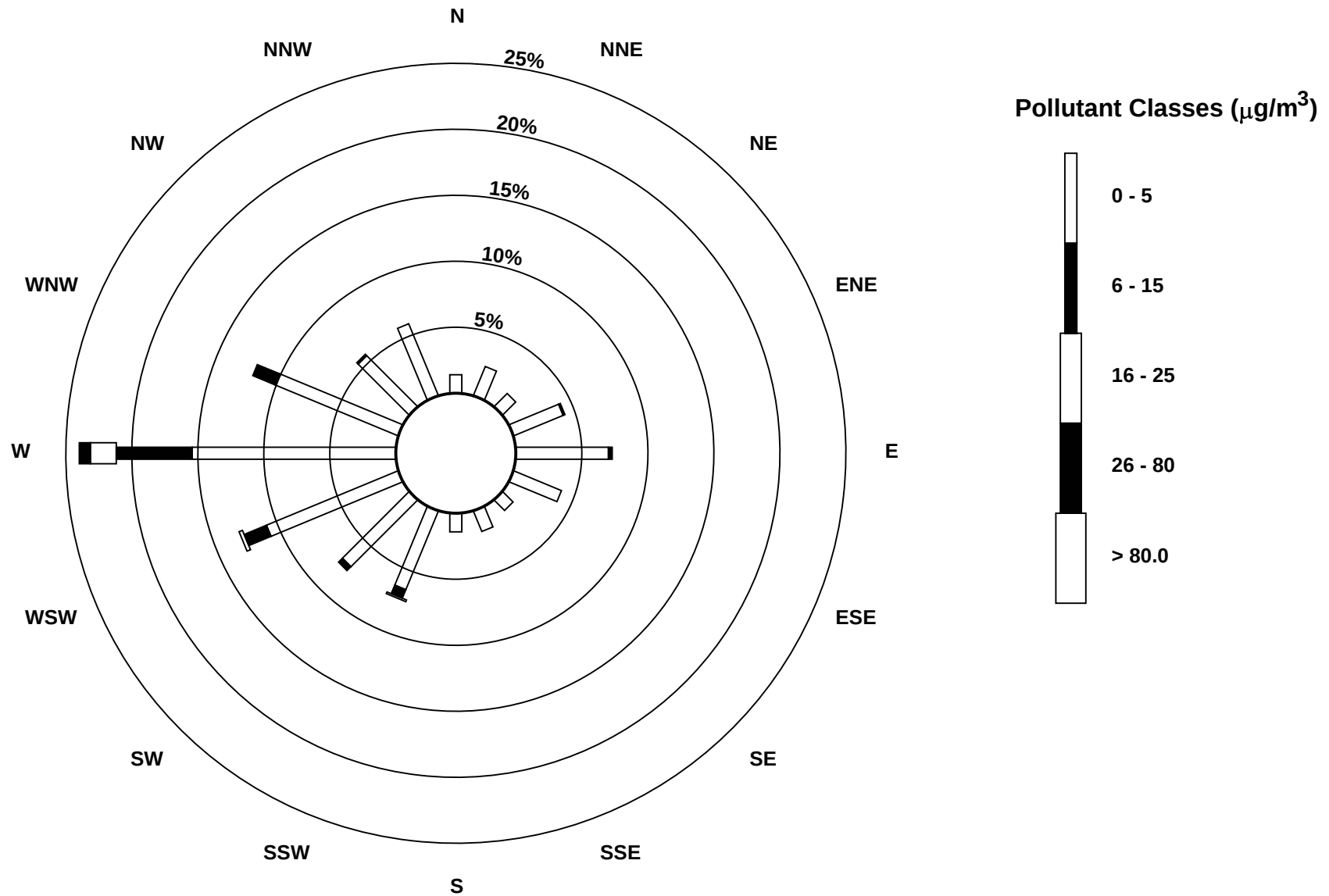
Evergreen Park - July 2011

Maximum Value: 80.7 μg/m³ on Jul 18 13:00																								Maximum Daily Average: 19.3 μg/m³ on Jul 27						Hours in Service: 744	
Minimum Value: 0 μg/m³ on Jul 1 05:00																								Minimum Daily Average: 1.1 μg/m³ on Jul 8						Hours of Data: 742	
Maximum Diurnal Average: 14.6 μg/m³ at hour 13																								Minimum Diurnal Average: 2.7 μg/m³ at hour 5						Hours of Missing Data: 2	
Monthly Average: 7.21 μg/m³																								Percentiles: P ₁ = 0.0 P ₁₀ = 0.8 Q ₁ = 1.9 Median = 3.8 Q ₃ = 7.2 P ₉₀ = 17.5 P ₉₉ = 47.8						Hours of Calibration: 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-Jul	4	4	15	47	0	7	25	20	20	67	42	28	34	1	1	2	7	7	6	2	2	6	13	4	15.2	67.3					
2-Jul	15	25	22	12	4	4	5	0	3	2	4	9	7	3	2	14	3	2	2	2	7	6	8	7	6.9	24.6					
3-Jul	4	3	4	4	3	3	3	2	1	0	0	0	1	0	0	2	0	1	1	1	0	1	1	1	1.5	4.1					
4-Jul	0	1	0	0	1	1	6	28	29	9	5	10	35	16	23	2	10	6	4	2	4	4	5	6	8.6	35.3					
5-Jul	17	4	4	4	4	4	6	8	8	36	24	13	4	10	9	7	15	6	9	7	7	2	2	2	8.8	36.0					
6-Jul	5	3	2	1	2	4	7	6	10	8	12	6	0	1	4	4	4	1	5	8	4	16	1	3	4.9	15.8					
7-Jul	2	0	1	2	3	4	9	0	7	2	3	2	1	1	1	1	1	7	7	7	2	2	6	4	3.1	8.9					
8-Jul	4	1	1	2	0	2	1	0	0	1	0	0	0	1	0	1	1	1	2	1	1	2	1	2	1.1	3.8					
9-Jul	2	2	2	1	2	0	1	1	0	0	1	1	1	2	2	2	2	2	3	3	3	4	4	4	1.8	4.1					
10-Jul	5	2	1	1	2	3	3	3	4	4	4	5	6	5	3	5	2	1	2	3	2	2	3	2	2.9	5.5					
11-Jul	1	1	2	2	3	3	4	3	3	5	6	5	5	6	4	4	3	4	2	5	4	2	2	0	3.3	6.4					
12-Jul	2	1	1	4	4	3	7	5	5	6	8	7	6	6	6	6	6	6	5	8	7	4	2	3	4.9	7.8					
13-Jul	2	4	4	5	7	5	4	5	3	6	6	8	8	7	7	6	12	7	7	11	13	10	8	12	6.9	12.6					
14-Jul	0	2	4	4	3	2	1	2	1	3	2	3	5	5	11	4	6	4	10	8	13	1	0	3	4.0	12.6					
15-Jul	1	1	1	1	0	0	1	2	2	1	2	17	37	17	21	20	15	0	0	2	1	0	1	2	6.0	37.5					
16-Jul	2	3	2	2	1	3	2	1	3	3	27	15	22	3	1	4	5	5	5	5	10	47	1	3	7.2	46.5					
17-Jul	2	4	5	6	5	6	6	6	17	9	7	5	5	4	5	6	5	4	4	6	8	12	5	5	6.2	17.2					
18-Jul	5	8	6	7	5	7	18	10	13	11	14	18	81	C	C	20	29	2	7	4	5	2	0	1	12.4	80.7					
19-Jul	2	1	1	0	2	2	10	10	21	10	6	13	39	39	13	14	13	15	10	8	29	26	12	8	12.8	39.4					
20-Jul	5	4	13	0	1	9	12	27	14	16	17	12	4	20	28	16	4	6	5	5	7	7	6	5	10.1	28.5					
21-Jul	7	7	7	2	2	1	1	5	1	4	3	3	3	3	2	1	2	1	2	2	1	2	1	1	2.5	7.0					
22-Jul	1	1	2	2	1	3	5	5	14	6	1	12	15	26	1	1	3	2	4	4	3	3	4	5	5.1	25.7					
23-Jul	4	2	2	2	3	1	3	3	3	3	3	3	3	3	3	3	3	3	3	5	5	6	2	1	2.8	5.5					
24-Jul	2	1	1	2	1	2	6	2	3	1	17	0	2	0	3	1	0	2	3	3	3	4	3	11	3.1	17.5					
25-Jul	9	0	2	3	2	2	7	8	11	6	25	21	4	10	10	3	4	5	5	3	13	10	11	6	7.6	25.0					
26-Jul	5	6	4	4	6	7	19	37	5	17	13	28	23	21	26	11	16	51	42	26	0	4	1	2	15.5	50.7					
27-Jul	3	4	4	4	3	6	7	37	35	27	48	33	22	55	37	30	45	48	5	5	2	2	1	0	19.3	55.1					
28-Jul	0	2	3	2	3	4	7	27	22	23	14	13	35	40	29	38	35	28	0	1	6	5	5	2	14.3	40.2					
29-Jul	3	4	4	1	1	9	12	11	47	8	37	49	35	28	18	11	9	43	41	18	2	1	0	0	16.4	49.4					
30-Jul	3	4	4	7	8	4	3	3	4	3	4	26	5	5	6	7	4	5	4	3	6	4	3	3	5.3	25.8					
31-Jul	1	2	3	5	2	2	4	4	5	5	4	3	4	3	3	3	4	4	4	3	4	5	3	3	3.5	5.1					
3.8 3.4 4.1 4.4 2.7 3.6 6.5 9.1 10.1 9.8 11.5 11.8 14.6 11.4 9.4 8.1 8.6 9.0 6.7 5.5 5.5 6.5 3.6 3.5																									Diurnal Average						
17.5 24.6 21.6 47.2 8.0 9.0 25.3 37.0 46.5 67.3 48.0 49.4 80.7 55.1 36.8 38.2 44.8 50.7 42.4 26.3 29.4 46.5 13.1 11.9																									Diurnal Maximum						
C - Calibration																															



Pollutant Rose

Particulate Matter 2.5 (PM_{2.5}) - µg/m³
Evergreen Park - July 2011



Hourly Averages

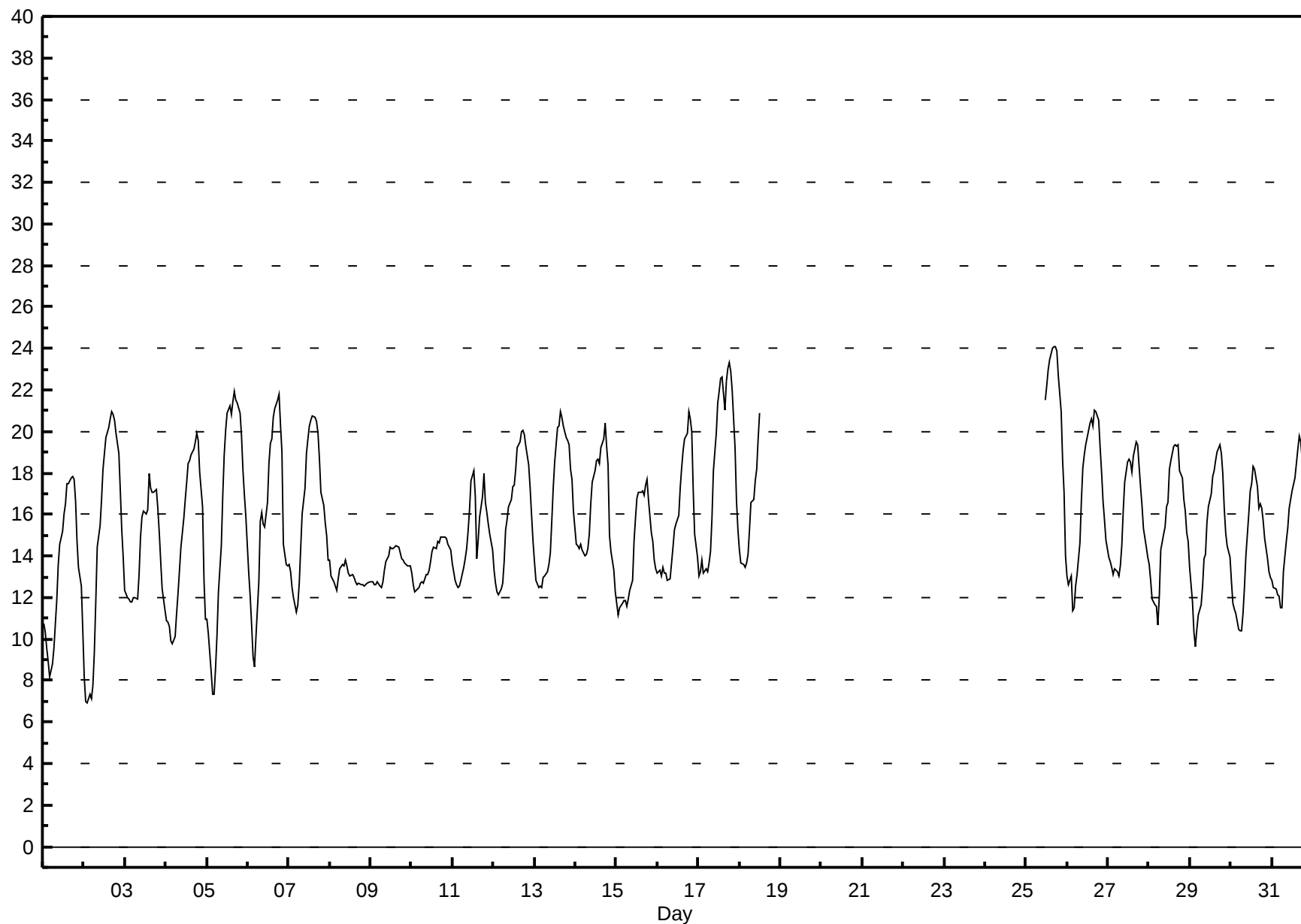
External Temperature (ET) - °C

Evergreen Park - July 2011

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 24.1 °C on Jul 25 18:00 Maximum Daily Average: 18.2 °C on Jul 17																								Hours in Service: 744 Hours of Data: 578 Hours of Missing Data: 166 Hours of Calibration: 1 Percent Operational Time: 77.8			
Minimum Value: 7 °C on Jul 2 03:00 Maximum Diurnal Average: 19.0 °C at hour 18 Monthly Average: 15.41 °C												Minimum Daily Average: 13.0 °C on Jul 8 Minimum Diurnal Average: 11.5 °C at hour 5 Percentiles: P ₁ = 7.5 P ₁₀ = 11.7 Q ₁ = 12.9 Median = 14.7 Q ₃ = 18.1 P ₉₀ = 20.2 P ₉₉ = 23.3															
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
1-Jul	11	10	10	9	8	9	10	11	12	14	15	15	16	16	17	17	18	18	18	17	15	13	13	10	13.4	17.8	
2-Jul	8	7	7	7	7	8	9	12	14	15	17	18	19	20	20	21	21	21	20	19	17	15	14	14	14.9	20.9	
3-Jul	12	12	12	12	12	12	12	12	13	15	16	16	16	16	18	17	17	17	17	16	15	14	12	11	14.3	17.9	
4-Jul	11	11	11	10	10	10	11	12	13	14	16	17	18	18	19	19	19	20	20	20	18	16	13	11	14.8	19.9	
5-Jul	11	10	8	7	7	9	10	12	15	17	19	20	21	21	21	21	22	22	21	21	20	18	17	16	16.1	21.9	
6-Jul	13	12	11	9	9	10	13	16	16	16	15	17	18	19	20	21	21	22	22	20	19	15	14	14	15.8	21.8	
7-Jul	14	13	12	12	11	12	13	14	16	17	19	20	20	21	21	21	20	20	19	17	16	16	15	14	16.3	20.7	
8-Jul	14	13	13	13	12	13	13	14	13	14	14	13	13	13	13	13	13	13	13	13	13	13	13	13	13.0	13.8	
9-Jul	13	13	13	13	13	13	13	12	13	13	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13.5	14.5	
10-Jul	13	13	12	12	12	13	13	13	13	13	13	14	14	14	14	15	15	15	15	15	15	15	14	14	13.7	14.9	
11-Jul	14	13	13	12	13	13	13	14	14	15	16	18	18	17	14	15	16	17	18	17	16	16	15	14	15.0	18.1	
12-Jul	13	13	12	12	12	13	14	15	16	16	17	17	17	18	19	20	20	20	20	19	18	17	16	15	16.3	20.0	
13-Jul	14	13	12	13	13	13	13	13	14	14	16	17	19	20	20	21	21	20	20	20	19	18	18	16	16.5	21.0	
14-Jul	15	15	14	15	14	14	14	14	15	17	18	18	19	19	18	19	20	20	19	18	15	14	13	12	16.2	20.4	
15-Jul	12	11	12	12	12	12	12	12	12	13	15	16	17	17	17	17	17	17	18	17	15	15	14	13	14.3	17.7	
16-Jul	13	13	13	13	13	13	13	13	14	14	15	16	16	17	18	19	20	20	21	21	20	17	15	14	15.9	21.0	
17-Jul	13	13	14	13	13	13	14	14	16	18	20	21	22	23	23	21	22	23	23	23	22	19	17	15	18.2	23.4	
18-Jul	14	14	14	13	14	14	15	17	17	18	18	20	21	N	N	N	N	N	N	N	N	N	N	N	--	20.9	
19-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--	
20-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--	
21-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--	
22-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--	
23-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--	
24-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--	
25-Jul	N	N	N	N	N	N	N	N	N	N	N	N	22	22	23	23	24	24	24	24	23	21	19	17	14	--	24.1
26-Jul	13	13	13	11	12	13	13	15	17	18	19	19	20	20	21	20	21	21	21	19	18	17	16	15	16.8	21.0	
27-Jul	14	14	13	13	13	13	13	14	15	16	18	19	19	19	18	19	19	19	18	17	16	15	14	14	16.0	19.5	
28-Jul	14	13	12	12	12	11	12	14	15	15	16	17	18	19	19	19	19	19	18	17	16	15	15	15	15.6	19.4	
29-Jul	13	12	10	10	10	11	12	13	14	14	16	16	17	18	18	19	19	19	19	18	16	15	15	14	14.9	19.3	
30-Jul	13	12	11	11	10	10	10	11	12	14	16	17	17	18	18	17	16	17	16	16	15	14	13	13	14.2	18.3	
31-Jul	13	13	12	12	12	12	12	13	15	15	16	17	17	18	18	19	20	19	19	18	16	15	14	13	15.3	19.8	
12.8 12.2 11.8 11.5 11.5 11.7 12.3 13.3 14.3 15.3 16.3 17.3 17.9 18.3 18.5 18.7 18.9 19.0 18.8 18.1 17.0 15.7 14.6 13.6																								Diurnal Average			
14.5 14.5 14.3 14.6 14.3 14.1 15.3 16.6 16.7 18.2 19.9 21.5 22.2 23.0 23.5 24.0 24.1 24.1 23.9 22.9 22.0 19.2 17.7 16.1																								Diurnal Maximum			
C - Calibration N - Not Valid																											

Hourly Averages

External Temperature (ET) - °C
Evergreen Park - July 2011



Hourly Averages

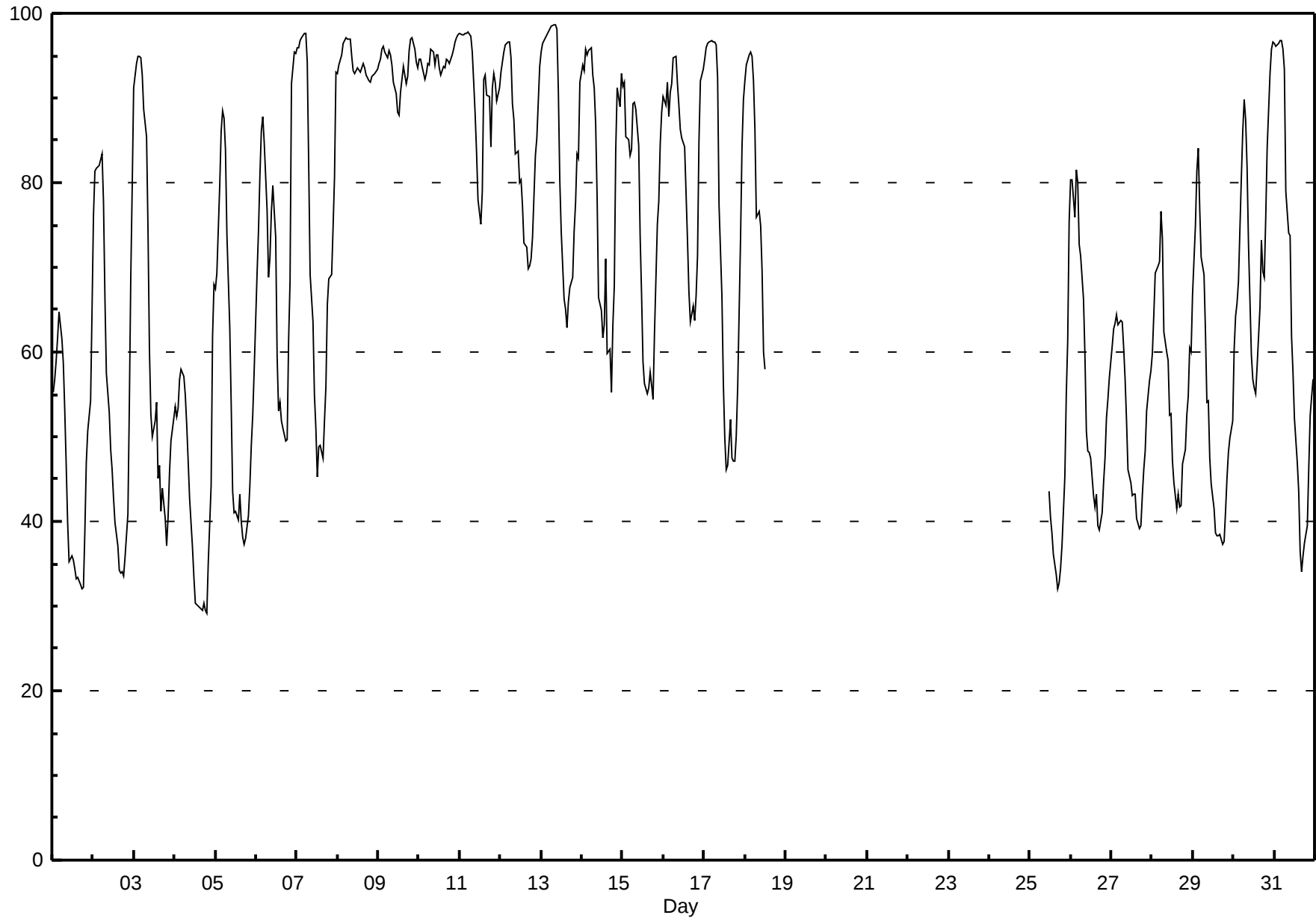
Relative Humidity (RH) - %

Evergreen Park - July 2011

Number of Exceedences (AAQO): 1-hr: 0 24-hr: 0 Maximum Value: 98.7 % on Jul 13 09:00 Maximum Daily Average: 94.6 % on Jul 10																								Hours in Service: 744 Hours of Data: 578 Hours of Missing Data: 166 Hours of Calibration: 1 Percent Operational Time: 77.8			
Minimum Value: 29 % on Jul 4 20:00 Maximum Diurnal Average: 86.7 % at hour 5 Monthly Average: 70.15 %												Minimum Daily Average: 43.5 % on Jul 4 Minimum Diurnal Average: 54.6 % at hour 18 Percentiles: P ₁ = 30.2 P ₁₀ = 40.2 Q ₁ = 52.0 Median = 71.2 Q ₃ = 92.0 P ₉₀ = 95.6 P ₉₉ = 97.7															
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
1-Jul	55	57	59	62	65	62	59	53	47	40	35	36	35	34	33	33	33	32	32	39	47	51	54	65	46.6	64.9	
2-Jul	76	81	82	82	83	83	78	66	58	53	48	46	43	40	37	34	34	34	34	36	41	54	69	80	57.1	83.4	
3-Jul	91	94	95	95	95	93	89	85	75	60	53	50	52	54	45	47	41	44	40	37	40	46	50	52	63.4	94.9	
4-Jul	54	52	53	57	58	57	55	51	47	43	37	33	30	30	30	30	29	30	30	29	35	44	62	68	43.5	67.9	
5-Jul	67	69	80	86	88	88	84	74	63	54	43	41	41	40	43	40	38	37	38	41	44	49	53	58	56.7	88.5	
6-Jul	69	74	81	86	88	85	77	69	71	77	80	73	59	53	54	52	51	49	50	61	68	92	95	95	71.3	95.4	
7-Jul	96	96	97	97	98	98	94	82	69	64	55	51	45	49	49	48	52	56	66	69	69	75	81	93	72.8	97.7	
8-Jul	93	94	95	96	97	97	97	97	95	93	93	93	94	93	94	94	94	93	92	92	93	93	93	93	93	94.0	97.1
9-Jul	94	95	96	96	95	95	96	95	94	92	90	88	88	91	92	94	92	93	96	97	97	96	94	94	94	93.7	97.1
10-Jul	95	95	94	92	93	94	94	96	95	94	95	95	94	93	94	94	95	94	94	95	96	97	97	97	97	94.6	97.5
11-Jul	98	97	97	98	98	98	97	95	92	88	84	78	75	79	92	93	90	90	84	91	93	92	90	91	90.8	97.8	
12-Jul	93	94	95	96	97	97	95	89	87	83	84	80	80	77	73	72	70	70	71	74	83	85	90	94	84.6	96.6	
13-Jul	95	96	97	98	98	98	98	99	99	98	91	80	74	66	65	63	66	68	69	74	78	83	83	92	84.5	98.7	
14-Jul	94	93	96	95	96	96	93	91	87	78	66	65	62	63	71	60	60	55	63	68	84	91	89	93	79.6	95.9	
15-Jul	91	92	85	85	83	84	89	90	89	84	74	67	59	56	55	56	58	56	54	62	75	78	85	88	74.8	91.8	
16-Jul	90	89	92	88	91	92	95	95	92	89	86	85	84	79	73	67	63	65	64	67	71	85	92	93	82.8	94.9	
17-Jul	95	96	96	97	97	97	97	96	92	77	67	56	50	46	47	52	47	47	47	50	56	73	84	90	73.0	96.7	
18-Jul	92	94	95	95	95	92	86	76	77	75	69	60	58	N	N	N	N	N	N	N	N	N	N	N	--	95.4	
19-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--	
20-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--	
21-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--	
22-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--	
23-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--	
24-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--	
25-Jul	N	N	N	N	N	N	N	N	N	N	N	44	41	39	36	34	32	33	34	37	45	55	61	75	--	75.4	
26-Jul	80	80	76	82	80	73	71	66	60	51	48	48	47	43	42	43	40	39	41	45	48	52	54	57	56.9	81.6	
27-Jul	61	63	63	64	63	64	64	61	57	52	46	45	43	43	43	40	39	39	43	46	48	53	57	58	52.3	64.4	
28-Jul	60	64	69	70	71	77	73	62	60	59	53	53	47	45	41	43	42	42	47	49	52	55	61	60	56.4	76.6	
29-Jul	67	75	81	84	77	71	69	62	54	54	47	44	41	39	38	38	38	37	38	41	45	48	50	52	53.9	84.0	
30-Jul	60	64	66	68	80	86	90	88	82	73	60	57	56	55	58	65	73	70	69	76	84	93	96	97	73.5	96.7	
31-Jul	96	96	96	97	97	96	93	79	74	74	62	58	52	47	44	36	34	36	37	39	46	52	55	57	64.8	96.9	
81.8 83.4 84.9 86.1 86.7 86.2 84.7 79.9 75.6 71.1 65.3 61.1 58.0 56.4 56.2 55.3 54.6 54.6 55.5 58.9 64.1 70.5 74.7 78.8																									Diurnal Average		
97.6 97.5 97.4 97.6 97.8 98.2 98.5 98.6 98.7 98.2 95.0 95.0 93.5 93.1 93.8 94.0 94.6 94.4 95.6 96.9 97.1 96.6 97.2 97.5																									Diurnal Maximum		
C - Calibration N - Not Valid																											

Hourly Averages

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



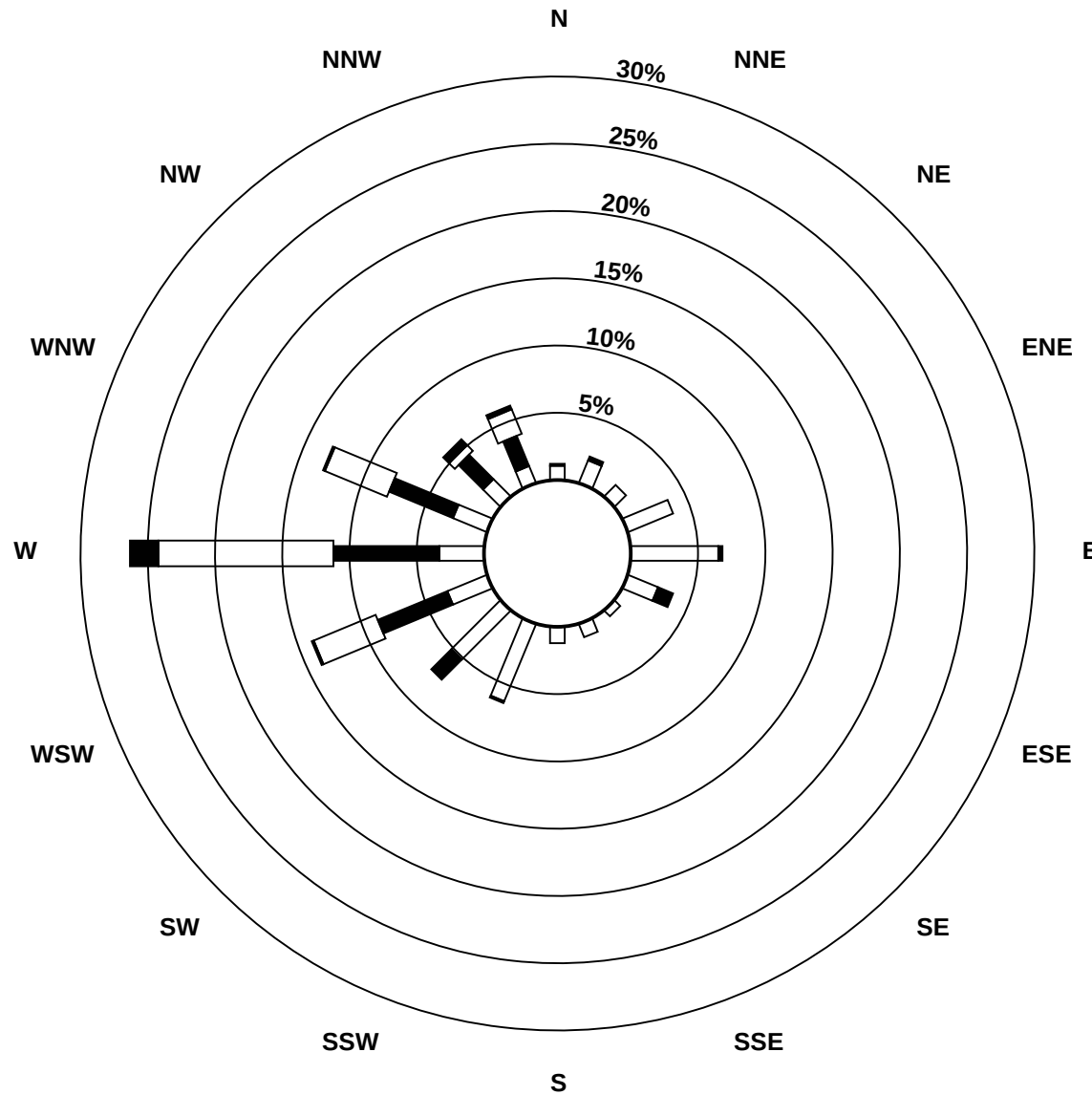
Hourly Averages

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

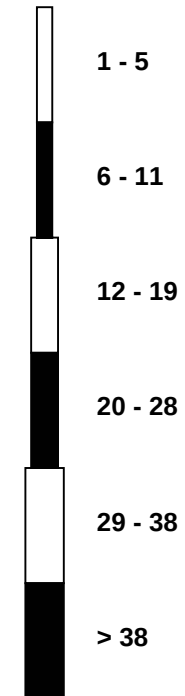
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																																																																																										
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																																																																																												
23 Spd	4	5	8	8	6	7	11	8	7	9	9	11	10	12	10	9	9	6	7	4	2	4	5	3	6.8	11.5																																																																																										
Dir	272	282	260	256	275	282	271	274	286	270	271	265	263	271	286	293	294	305	286	298	195	217	219	210	272.4	271.3																																																																																										
24 Spd	4	2	1	0	2	0	1	10	12	15	16	19	19	18	18	15	11	9	9	5	7	4	2	2	8.0	19.2																																																																																										
Dir	227	224	62	120	182	45	209	249	253	259	268	262	263	269	269	277	280	285	269	263	240	238	224	207	262.1	263.2																																																																																										
25 Spd	3	1	1	1	1	1	1	0	9	14	13	12	12	11	12	13	11	8	7	2	2	1	2	5.6	13.7																																																																																											
Dir	220	156	200	120	126	173	188	195	249	258	266	287	274	284	282	281	287	291	298	299	268	257	231	45	275.4	257.8																																																																																										
26 Spd	2	3	2	0	3	6	9	12	14	20	17	15	14	13	15	16	18	18	18	14	13	10	11	8	11.0	19.6																																																																																										
Dir	208	224	227	163	265	221	257	262	260	267	270	276	278	278	274	250	263	265	267	270	265	257	257	246	263.6	267.5																																																																																										
27 Spd	10	10	13	12	13	13	15	16	16	15	17	18	17	19	18	17	17	18	15	16	15	10	9	9	14.2	18.5																																																																																										
Dir	249	250	255	256	255	257	259	259	261	269	272	275	284	277	283	275	271	267	275	264	260	241	238	232	264.5	277.4																																																																																										
28 Spd	9	6	3	4	2	1	3	13	17	15	19	18	17	17	15	15	13	10	8	6	5	4	10	9.7	19.4																																																																																											
Dir	227	225	211	218	204	202	202	251	257	253	255	261	266	262	277	280	285	278	291	278	277	252	261	254	261.6	255.0																																																																																										
29 Spd	6	4	1	3	6	7	12	18	22	17	22	20	20	20	20	16	15	20	16	14	11	10	8	7	12.6	22.1																																																																																										
Dir	250	217	199	208	219	234	250	252	261	254	259	276	270	274	269	283	280	268	277	274	273	252	239	233	262.9	261.1																																																																																										
30 Spd	3	2	3	4	2	0	1	0	1	1	1	2	3	4	4	5	3	3	3	2	1	2	3	3	0.2	4.7																																																																																										
Dir	207	173	191	195	278	149	136	140	52	84	220	311	329	59	44	26	26	14	344	26	166	195	194	199	61.1	25.6																																																																																										
31 Spd	3	2	2	2	2	3	4	5	5	8	12	12	16	14	11	11	11	11	13	9	8	8	9	8	7.4	15.9																																																																																										
Dir	197	196	215	202	232	215	224	248	234	229	251	254	258	270	262	276	271	289	280	289	279	273	259	238	259.6	257.9																																																																																										
Spd	3.4	2.7	3.1	2.9	3.0	3.1	4.1	5.7	6.7	7.1	8.1	8.4	9.1	8.8	8.8	8.2	7.3	7.2	7.0	6.3	4.9	4.2	3.4	3.1	Diurnal Average																																																																																											
Dir	253.8	259.1	258.7	264.6	263.3	260.7	263.4	265.2	268.8	269.5	272.2	277.0	281.3	283.2	283.9	291.1	288.5	289.2	285.2	285.8	277.4	264.9	261.1	256.3	Diurnal Maximum																																																																																											
Spd	15.7	14.9	15.4	12.4	14.2	13.2	18.5	17.9	22.1	20.8	22.1	20.2	20.3	19.6	20.2	19.0	20.7	21.0	21.2	21.9	20.2	20.4	19.3	17.5	Diurnal Maximum																																																																																											
Dir	319.7	251.2	258.0	338.6	256.9	257.1	260.9	251.9	261.1	274.4	280.2	282.4	270.0	274.5	269.5	334.0	334.6	333.0	323.9	269.4	319.5	319.9	318.8	319.9																																																																																												
Maximum Speed Value: 22 km/h on Jul 1 11:00																		Minimum Speed Value: 0 km/h on Jul 26 04:00																																																																																																		
Maximum Daily Speed Average: 14.2 km/h on Jul 27																		Minimum Daily Speed Average: 0.2 km/h on Jul 6																																																																																																		
Maximum Diurnal Speed Average: 9.1 km/h at hour 13																		Minimum Diurnal Speed Average: 2.7 km/h at hour 2																																																																																																		
Monthly Average Velocity: 5.59 km/h 275.57 deg																		Speed Percentiles: P ₁ = 0.3 P ₁₀ = 1.1 Q ₁ = 2.6 Median = 5.7 Q ₃ = 11.9 P ₉₀ = 16.4 P ₉₉ = 20.8																																																																																																		
All monthly, daily, and diurnal averages have been calculated using vector methods																		Percent Operational Time: 96.8																																																																																																		
C - Calibration N - Not Valid																																																																																																																				
Frequency Distribution																																																																																																																				
<table> <tr> <th rowspan="2">Direction</th><th colspan="7">Speed Range (km/h)</th><th>Total</th></tr> <tr> <th>0 to 5</th><th>5 to 11</th><th>11 to 19</th><th>19 to 28</th><th>28 to 38</th><th>> 38</th></tr> <tr> <td>North</td><td>20</td><td>8</td><td>6</td><td>0</td><td>0</td><td>0</td><td>34</td></tr> <tr> <td>NorthEast</td><td>35</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>36</td></tr> <tr> <td>East</td><td>72</td><td>7</td><td>0</td><td>0</td><td>0</td><td>0</td><td>79</td></tr> <tr> <td>SouthEast</td><td>19</td><td>7</td><td>0</td><td>0</td><td>0</td><td>0</td><td>26</td></tr> <tr> <td>South</td><td>48</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>49</td></tr> <tr> <td>SouthWest</td><td>72</td><td>28</td><td>6</td><td>0</td><td>0</td><td>0</td><td>106</td></tr> <tr> <td>West</td><td>35</td><td>93</td><td>147</td><td>20</td><td>0</td><td>0</td><td>295</td></tr> <tr> <td>NorthWest</td><td>29</td><td>38</td><td>19</td><td>8</td><td>0</td><td>0</td><td>94</td></tr> <tr> <td>Total</td><td>330</td><td>183</td><td>178</td><td>28</td><td>0</td><td>0</td><td>719</td></tr> </table>																														Direction	Speed Range (km/h)							Total	0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	North	20	8	6	0	0	0	34	NorthEast	35	1	0	0	0	0	36	East	72	7	0	0	0	0	79	SouthEast	19	7	0	0	0	0	26	South	48	1	0	0	0	0	49	SouthWest	72	28	6	0	0	0	106	West	35	93	147	20	0	0	295	NorthWest	29	38	19	8	0	0	94	Total	330	183	178	28	0	0	719
Direction	Speed Range (km/h)							Total																																																																																																												
	0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38																																																																																																														
North	20	8	6	0	0	0	34																																																																																																													
NorthEast	35	1	0	0	0	0	36																																																																																																													
East	72	7	0	0	0	0	79																																																																																																													
SouthEast	19	7	0	0	0	0	26																																																																																																													
South	48	1	0	0	0	0	49																																																																																																													
SouthWest	72	28	6	0	0	0	106																																																																																																													
West	35	93	147	20	0	0	295																																																																																																													
NorthWest	29	38	19	8	0	0	94																																																																																																													
Total	330	183	178	28	0	0	719																																																																																																													

Wind Rose

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



Wind Speed Classes (km/h)



Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Evergreen Park - July 2011

Maximum Speed: 23 km/h on Jul 1 11:00		Maximum Daily Speed Average: 14.9 km/h on Jul 27		Hours in Service: 744																								
Minimum Speed: 1 km/h on Jul 5 05:00		Minimum Daily Speed Average: 2.9 km/h on Jul 30		Hours of Data: 719																								
Maximum Diurnal Speed Average: 11.6 km/h at hour 13		Minimum Diurnal Speed Average: 4.9 km/h at hour 4		Hours of Missing Data: 25																								
Monthly Average Speed: 7.98 km/h		Percentiles: P ₁ = 1.1 P ₁₀ = 1.9 Q ₁ = 3.2 Median = 6.1 Q ₃ = 12.2 P ₉₀ = 16.7 P ₉₉ = 21.2		Percent Operational Time: 96.8																								
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum		
1-Jul	15	14	13	12	11	11	11	15	19	21	23	21	18	14	14	16	16	16	16	11	9	6	5	1	13.6	22.6		
2-Jul	1	1	1	1	1	2	2	3	3	4	6	9	12	10	10	10	9	9	6	3	7	5	3	6	5.2	11.7		
3-Jul	4	3	3	2	3	3	5	5	8	10	10	10	11	12	14	11	16	14	19	22	18	14	13	12	10.1	22.1		
4-Jul	12	15	15	10	8	10	11	17	17	14	15	16	17	16	17	15	13	10	9	10	6	2	1	1	11.5	17.4		
5-Jul	2	3	1	1	1	2	3	3	3	4	8	11	14	16	16	16	15	17	15	12	8	5	5	4	7.7	17.1		
6-Jul	2	2	2	2	2	1	1	1	2	3	3	3	4	4	3	3	5	4	3	5	4	7	2	3	3.0	6.8		
7-Jul	2	2	2	2	4	3	4	5	6	5	4	5	4	4	4	3	3	5	8	12	6	3	3	3	4.2	11.8		
8-Jul	5	9	7	6	6	4	6	7	8	12	15	16	17	18	19	19	21	21	22	22	20	21	20	18	14.1	22.3		
9-Jul	16	14	12	13	11	11	8	8	9	12	12	13	13	14	9	10	10	9	7	6	7	6	6	6	10.1	16.0		
10-Jul	7	6	6	7	7	5	5	2	4	4	3	2	3	4	4	4	4	4	3	2	2	2	2	2	4.0	7.1		
11-Jul	4	3	3	4	3	4	4	5	7	6	7	7	6	6	3	4	5	4	6	3	3	4	3	4	4.6	7.5		
12-Jul	4	4	3	3	2	3	3	3	4	5	4	5	5	4	5	5	5	6	4	2	1	3	2	2	3.6	5.6		
13-Jul	1	1	2	2	2	1	2	3	4	4	3	4	4	5	6	7	7	7	4	1	1	2	2	6	3.4	7.3		
14-Jul	7	6	7	4	3	6	7	7	8	10	11	8	8	5	2	3	2	3	5	4	5	2	2	3	5.3	10.6		
15-Jul	3	1	6	6	4	5	7	7	12	10	16	18	21	20	20	18	15	15	17	15	11	14	12	8	11.6	20.6		
16-Jul	8	6	8	12	13	11	13	11	10	10	12	12	10	8	7	5	3	4	3	3	2	2	2	1	7.3	13.2		
17-Jul	1	3	2	1	2	2	3	2	3	3	5	5	5	6	8	14	7	5	4	4	2	1	1	1	3.7	13.7		
18-Jul	1	1	1	2	3	6	5	7	6	5	5	6	N	N	N	N	N	N	N	N	N	N	N	N	--	7.1		
19-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	20	19	19	16	18	16	15	11	11	12	11	--	20.4		
20-Jul	14	11	10	11	14	13	19	17	17	21	16	14	14	17	18	16	13	17	14	11	7	7	3	1	13.1	21.3		
21-Jul	1	2	4	4	4	4	4	5	4	3	3	5	6	7	6	7	7	8	6	8	7	5	3	4	4.9	8.0		
22-Jul	2	3	2	2	2	1	2	5	5	4	3	4	4	5	C	5	5	5	6	4	2	2	3	1	3.3	5.7		
23-Jul	4	5	8	9	7	8	11	9	7	10	9	11	11	12	11	10	9	6	7	4	3	4	5	3	7.6	11.9		
24-Jul	4	3	2	2	2	1	3	11	12	15	17	20	20	19	18	16	11	9	9	6	8	5	2	2	9.0	19.6		
25-Jul	3	2	1	1	1	2	2	2	9	14	13	13	13	12	13	12	14	11	8	7	3	2	2	2	6.8	14.0		
26-Jul	2	3	2	1	4	6	9	12	14	20	18	16	14	14	16	17	19	18	19	14	13	10	11	8	11.6	19.9		
27-Jul	10	10	13	12	13	13	15	17	17	16	18	18	18	19	19	17	18	18	15	16	15	10	9	9	14.9	19.1		
28-Jul	9	6	4	4	3	2	3	13	17	15	20	18	18	18	16	16	15	13	10	9	7	6	4	10	10.6	19.6		
29-Jul	6	4	2	3	6	7	12	18	22	17	22	20	21	20	21	17	16	20	16	14	12	10	8	7	13.4	22.4		
30-Jul	3	3	3	4	3	1	2	2	2	2	3	3	4	4	4	5	3	4	4	2	2	2	3	3	2.9	5.0		
31-Jul	4	2	3	3	2	3	5	5	5	8	13	13	16	15	12	12	12	12	14	10	8	9	9	8	8.4	16.2		
5.3		5.0	4.9	4.9	4.9	5.0	6.2	7.5	8.9	9.6	10.5	10.9	11.6	11.5	11.5	11.0	10.5	10.4	9.8	8.5	6.9	6.0	5.2	5.0	Diurnal Average			
16.0		15.0	15.5	12.6	14.3	13.2	18.6	18.0	22.4	21.3	22.6	20.8	21.0	20.4	20.5	19.4	21.1	21.4	21.6	22.3	20.5	20.7	19.6	17.8	Diurnal Maximum			
C - Calibration		N - Not Valid																										
All monthly, daily, and diurnal averages have been calculated using scalar methods																												

Hourly Standard Deviations

Wind Direction (WD) - deg

Evergreen Park - July 2011

Maximum Value: 96.0 deg on Jul 13 01:00																		Hours in Service: 744								
Minimum Value: 4.8 deg on Jul 28 01:00																		Hours of Data: 719								
Percentiles: P ₁ = 6.3 P ₁₀ = 9.2 Q ₁ = 12.6 Median = 18.9 Q ₃ = 37.3 P ₉₀ = 69.2 P ₉₉ = 89.8																		Hours of Missing Data: 25								
																		Hours of Calibration: 1								
																		Percent Operational Time: 96.8								
Day	Hourly Period Ending At (MST)																								Daily Maximum	
1-Jul	10	7	8	8	7	10	11	10	10	11	12	14	19	27	17	17	19	14	15	15	13	15	11	94	94.4	
2-Jul	72	90	52	92	75	69	57	37	60	50	40	36	19	28	31	19	27	25	28	14	29	41	81	33	91.9	
3-Jul	42	36	24	60	23	27	15	16	19	24	28	21	24	18	16	27	10	12	12	8	8	8	9	9	60.0	
4-Jul	8	7	6	10	9	9	9	9	12	16	18	14	15	21	19	16	16	24	19	16	16	60	39	79	79.1	
5-Jul	26	84	72	58	91	82	40	28	84	35	35	20	17	16	14	18	17	13	16	12	19	19	24	28	90.6	
6-Jul	53	79	76	77	87	89	68	71	56	20	56	48	29	82	80	61	83	60	58	34	20	55	42	44	89.5	
7-Jul	31	88	59	48	12	35	71	29	27	38	68	67	80	84	39	44	30	15	21	19	22	56	67	35	87.6	
8-Jul	16	14	14	16	18	41	13	27	14	10	9	11	14	9	10	11	11	11	11	10	10	10	10	11	41.3	
9-Jul	13	13	15	11	10	12	13	13	13	13	14	13	12	12	15	16	14	10	12	14	14	16	17	18	17.7	
10-Jul	21	16	14	13	13	19	21	70	35	19	24	33	40	24	22	28	28	23	30	20	16	12	16	13	69.9	
11-Jul	18	19	16	14	18	19	25	18	16	22	20	24	27	71	76	21	23	28	34	23	14	13	17	17	75.6	
12-Jul	14	11	10	11	38	16	23	48	25	32	32	28	29	32	42	39	27	31	25	34	28	13	26	22	47.6	
13-Jul	96	95	61	76	84	43	68	39	33	33	60	63	62	43	30	26	26	20	24	72	58	89	50	27	96.0	
14-Jul	31	18	15	23	25	10	10	13	10	15	15	21	25	43	86	47	62	69	43	21	78	55	84	20	86.0	
15-Jul	16	80	14	14	11	17	10	10	8	7	8	8	12	9	9	8	8	7	8	10	9	6	6	7	80.3	
16-Jul	8	22	20	12	12	13	13	13	15	13	13	14	14	16	34	40	74	37	58	50	87	90	36	74	90.2	
17-Jul	89	15	38	42	66	39	79	68	64	41	54	67	57	44	46	13	32	31	30	26	39	84	84	64	89.3	
18-Jul	56	83	67	50	19	27	19	20	16	27	29	22	N	N	N	N	N	N	N	N	N	N	N	N	82.6	
19-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	13	14	15	11	15	15	10	10	11	7	7	8	14.9
20-Jul	7	8	8	7	7	10	6	9	11	12	13	16	15	15	18	19	19	12	14	10	12	8	60	77	77.3	
21-Jul	75	67	27	14	24	24	17	28	26	56	74	16	20	20	31	19	15	24	26	15	13	11	19	19	75.0	
22-Jul	45	12	31	74	54	55	37	19	19	27	67	65	69	72	C	52	41	25	19	25	20	56	86	77	85.7	
23-Jul	29	21	12	7	32	22	10	13	18	11	13	9	11	16	15	15	17	19	20	32	73	10	12	14	72.8	
24-Jul	26	76	70	83	33	72	72	9	11	11	13	11	11	14	13	16	17	15	13	13	15	19	35	35	82.8	
25-Jul	19	63	62	59	71	75	77	92	11	11	16	21	19	19	19	21	17	18	20	17	31	46	65	41	92.3	
26-Jul	58	26	27	93	60	10	16	8	10	10	14	16	16	16	15	11	13	10	10	11	7	6	8	12	93.4	
27-Jul	6	8	6	7	6	6	6	8	9	14	13	14	16	14	12	12	15	11	11	8	7	15	8	8	16.1	
28-Jul	5	7	14	44	66	88	47	8	7	8	9	9	14	13	20	15	16	14	16	18	15	18	31	7	88.5	
29-Jul	12	32	81	59	9	12	8	8	10	9	11	11	15	16	11	15	16	11	13	11	13	11	11	7	81.1	
30-Jul	14	43	17	10	61	77	37	77	52	77	83	66	45	32	25	21	25	31	41	29	50	22	23	14	82.8	
31-Jul	24	28	23	19	39	23	22	15	23	23	15	12	11	15	21	24	22	20	13	14	15	13	16	10	39.0	
96.0 94.6 81.1 93.4 90.6 89.5 79.1 92.3 83.8 76.7 82.8 67.2 80.3 83.8 86.0 61.0 83.3 68.9 58.3 72.4 86.9 90.2 85.7 94.4																										
C - Calibration N - Not Valid																										

PAZA
Smoky Heights Station
Monthly Summary Tables, Graphs and
Roses

Hourly Averages

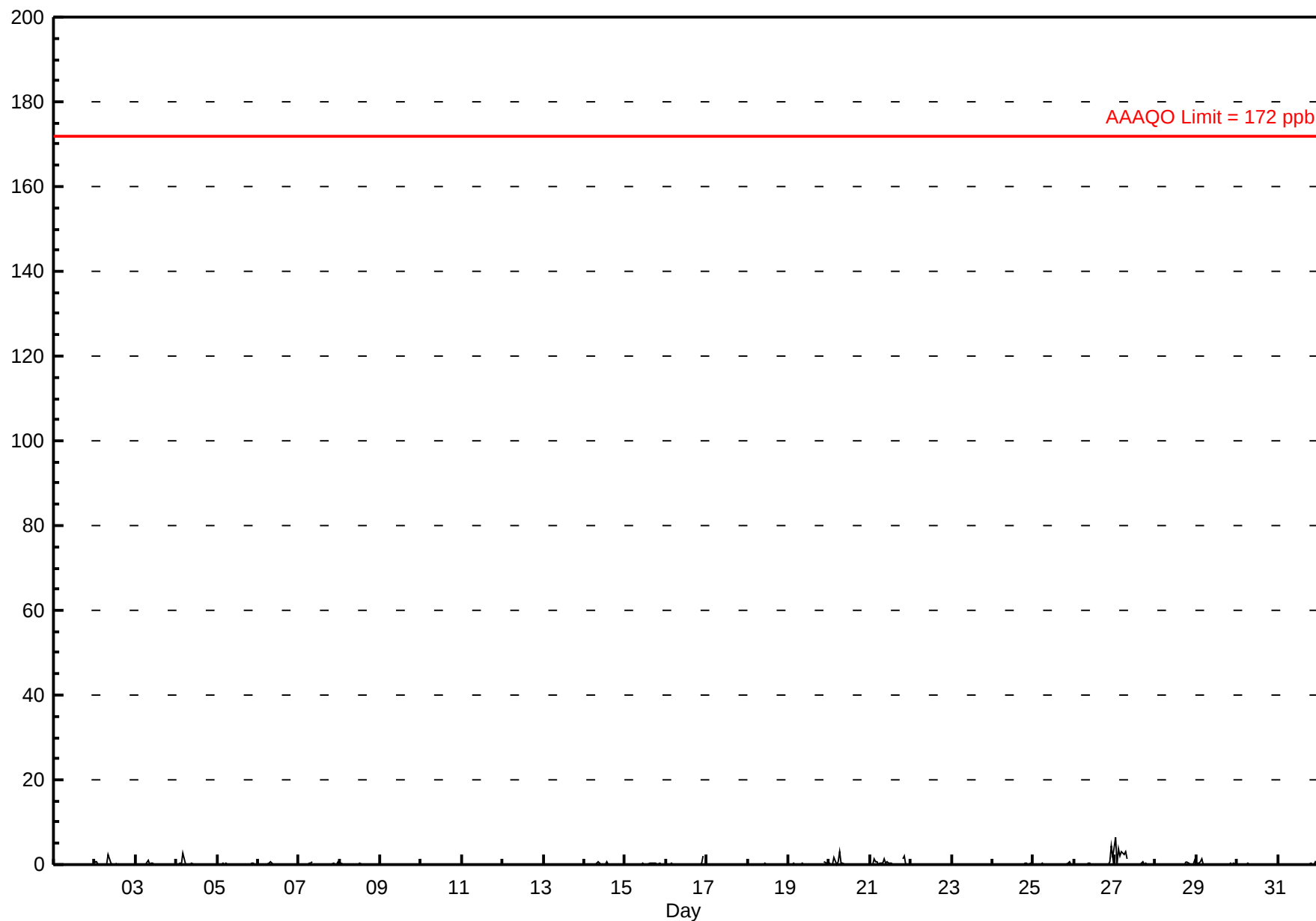
Sulphur Dioxide (SO₂) - ppb

Smoky Heights - July 2011

Number of Exceedences (AAAQO):		1-hr: 0	24-hr: 0	Hours in Service: 744																							
Maximum Value: 6.4 ppb on Jul 27 01:00		Maximum Daily Average: 1.2 ppb on Jul 27		Hours of Data: 705																							
Minimum Value: 0 ppb on Jul 13 15:00		Minimum Daily Average: 0.0 ppb on Jul 13		Hours of Missing Data: 39																							
Maximum Diurnal Average: 0.3 ppb at hour 1		Minimum Diurnal Average: 0.0 ppb at hour 18		Hours of Calibration: 36																							
Monthly Average: 0.14 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.0 P ₉₀ = 0.3 P ₉₉ = 2.8		Percent Operational Time: 99.6																							
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-Jul	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	0.1		
2-Jul	1	1	0	0	0	0	0	0	2	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.2	2.5		
3-Jul	0	0	0	0	0	0	0	1	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.1	0.9		
4-Jul	0	0	0	0	3	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.2	2.8		
5-Jul	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		
6-Jul	0	0	0	0	0	0	0	1	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.6		
7-Jul	0	0	0	0	0	0	0	0	1	A	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	0.5		
8-Jul	0	0	0	0	0	0	0	0	A	A	0	0	0	0	0	0	0	0	P	P	P	0	0	0.1	0.5		
9-Jul	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	0.1		
10-Jul	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		
11-Jul	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		
12-Jul	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		
13-Jul	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		
14-Jul	0	0	A	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0.1	0.7		
15-Jul	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	0.5		
16-Jul	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	A	0.1	2.0		
17-Jul	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	0.1		
18-Jul	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		
19-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	1	0	0	0.1	0.8		
20-Jul	0	0	0	2	0	1	3	0	1	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0.3	2.9		
21-Jul	0	0	1	1	1	0	0	0	1	0	1	0	0	0	0	0	0	A	2	0	0	0	0	0.4	2.0		
22-Jul	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		
23-Jul	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	0.1		
24-Jul	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	0.4		
25-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	1	0	0	0.1	0.7		
26-Jul	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	1	4	2	0.4	4.3		
27-Jul	6	0	4	2	3	2	3	1	C	C	C	C	C	0	0	0	1	0	0	0	0	0	0	1.2	6.4		
28-Jul	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	1	0	0	0	0	1	0.1	1.1		
29-Jul	0	0	1	1	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1.3		
30-Jul	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	0.2		
31-Jul	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0.1	0.5		
0.3 0.1 0.2 0.2 0.2 0.2 0.3 0.2 0.2 0.1 0.1 0.0 0.0 0.1 0.0 0.0 0.1 0.0 0.1 0.1 0.1 0.1 0.3 0.2																								Diurnal Average			
6.4 0.5 3.6 2.0 2.9 2.5 3.0 1.2 2.5 0.3 0.7 0.4 0.2 0.7 0.5 0.4 0.6 0.2 0.8 1.5 2.0 0.8 4.3 1.7																								Diurnal Maximum			
C - Calibration P - Power Failure A - Automated Daily Zero Span																											
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb 30-day 11 ppb																											

Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Smoky Heights - July 2011



Hourly Maximums

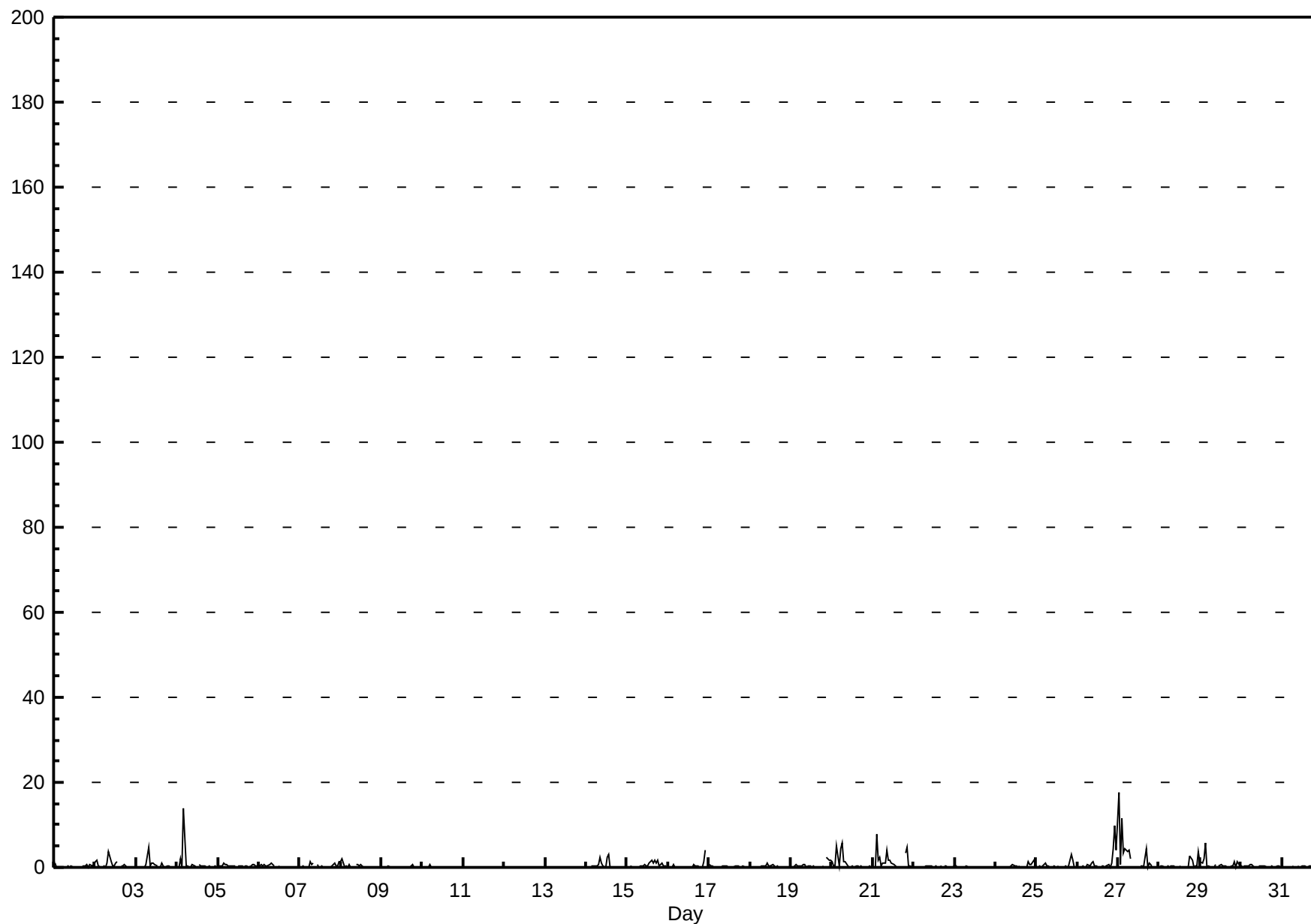
Sulphur Dioxide (SO₂) - ppb

Smoky Heights - July 2011

Maximum Value: 17.6 ppb on Jul 27 01:00																				Maximum Daily Average: 2.9 ppb on Jul 27										Hours in Service: 744									
Minimum Value: 0 ppb on Jul 13 15:00																				Minimum Daily Average: 0.0 ppb on Jul 12										Hours of Data: 705									
Maximum Diurnal Average: 0.9 ppb at hour 3																				Minimum Diurnal Average: 0.2 ppb at hour 18										Hours of Missing Data: 39									
Monthly Average: 0.49 ppb																				Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.1 Q ₃ = 0.4 P ₉₀ = 1.0 P ₉₉ = 5.5										Hours of Calibration: 36									
																				Percent Operational Time: 99.6																			
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-Jul	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	1	0	1	0	1	0.2	1.0													
2-Jul	1	2	0	0	0	0	0	1	4	1	0	0	1	1	A	0	0	1	0	0	0	0	0	0	0.6	3.8													
3-Jul	0	0	0	0	0	0	1	5	0	1	1	1	0	A	0	1	0	0	0	0	0	0	0	0	0.5	4.9													
4-Jul	0	0	2	0	14	0	0	0	0	1	0	0	A	1	0	0	0	0	0	0	0	0	0	0	0.9	14.1													
5-Jul	0	0	0	1	1	1	0	0	0	0	0	A	0	0	0	0	0	0	0	0	1	1	0	0	0.4	1.0													
6-Jul	0	1	0	1	0	0	1	1	1	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	1.2													
7-Jul	0	0	0	0	0	0	1	1	1	A	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0.4	1.3													
8-Jul	1	2	0	0	0	1	0	0	A	A	1	1	0	1	0	0	0	0	0	P	P	P	0	0	0.4	2.0													
9-Jul	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0.1	0.7													
10-Jul	0	0	0	0	1	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.5													
11-Jul	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													
12-Jul	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													
13-Jul	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	0.2													
14-Jul	0	0	A	0	0	0	0	1	2	1	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0.5	3.0													
15-Jul	0	A	0	0	0	0	0	0	0	0	1	0	0	1	2	1	2	1	2	0	1	0	0	0	0.6	1.7													
16-Jul	A	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	4	A	0.4	3.9													
17-Jul	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.2	0.6													
18-Jul	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	A	0	0	0.2	1.0													
19-Jul	0	0	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	A	2	2	2	0.5	2.3													
20-Jul	1	0	0	5	0	4	6	1	1	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	1.0	5.9													
21-Jul	0	0	8	2	2	0	1	1	4	2	2	1	1	0	0	0	0	0	A	3	5	0	0	0	1.5	7.9													
22-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.2	0.4													
23-Jul	1	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	0.6													
24-Jul	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	A	0	0	0	1	1	1	2	1	0.3	1.7													
25-Jul	0	0	0	0	1	1	0	0	0	0	0	0	0	0	A	0	0	0	0	0	3	2	0	0	0.4	3.1													
26-Jul	0	0	0	0	0	0	1	0	1	1	0	0	0	A	0	0	0	0	1	0	1	5	10	4	1.2	9.7													
27-Jul	18	1	11	3	4	4	4	2	C	C	C	C	C	0	0	0	4	0	1	1	0	0	0	0	2.9	17.6													
28-Jul	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	3	2	0	0	4	0.5	3.8														
29-Jul	1	1	2	6	0	0	0	0	0	1	A	0	1	0	0	0	0	0	0	0	1	0	2	0	0.7	5.6													
30-Jul	0	0	0	0	0	1	1	0	0	A	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.3	0.8													
31-Jul	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	1	0	0	2	1	0.3	2.1													
0.9		0.3	0.9	0.7	0.9	0.5	0.6	0.6	0.6	0.4	0.4	0.2	0.3	0.4	0.2	0.2	0.3	0.2	0.3	0.4	0.5	0.5	0.8	0.5	Diurnal Average														
17.6		2.0	11.4	5.6	14.1	4.3	5.9	4.9	4.0	1.9	1.6	0.9	2.5	3.0	1.7	1.1	4.4	0.9	2.6	3.3	4.6	4.5	9.7	4.2	Diurnal Maximum														
C - Calibration		P - Power Failure						A - Automated Daily Zero Span																															

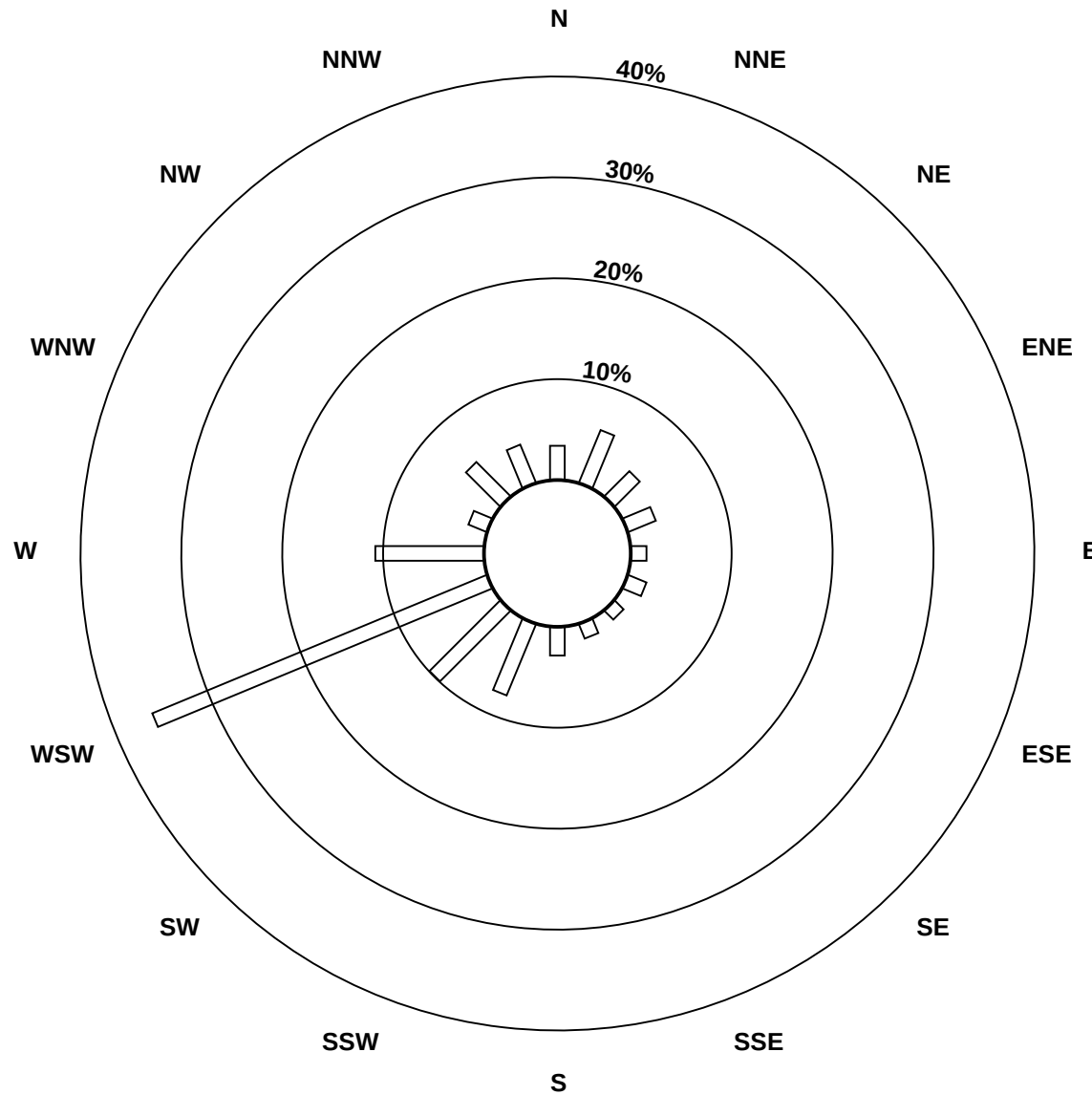
Hourly Maximums

Sulphur Dioxide (SO₂) - ppb
Smoky Heights - July 2011

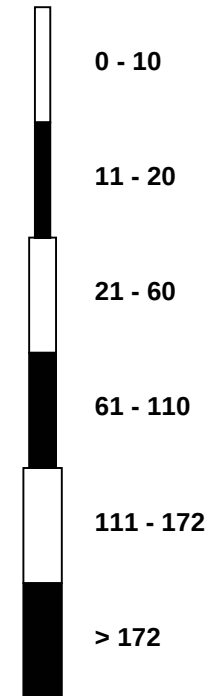


Pollutant Rose

Sulphur Dioxide (SO₂) - ppb
Smoky Heights - July 2011

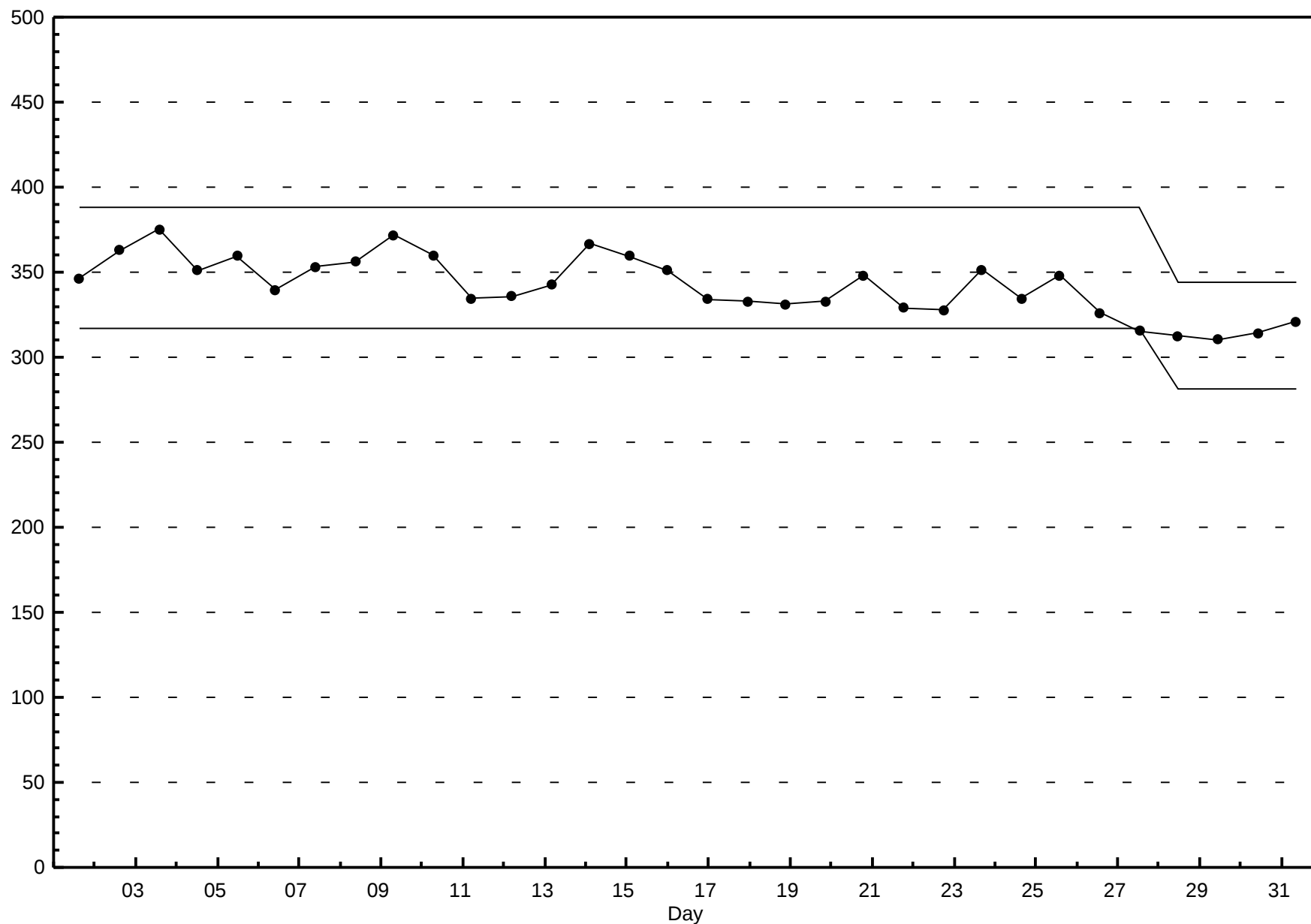


Pollutant Classes (ppb)



Span Responses

Sulphur Dioxide (SO₂)
Smoky Heights - July 2011



Hourly Averages

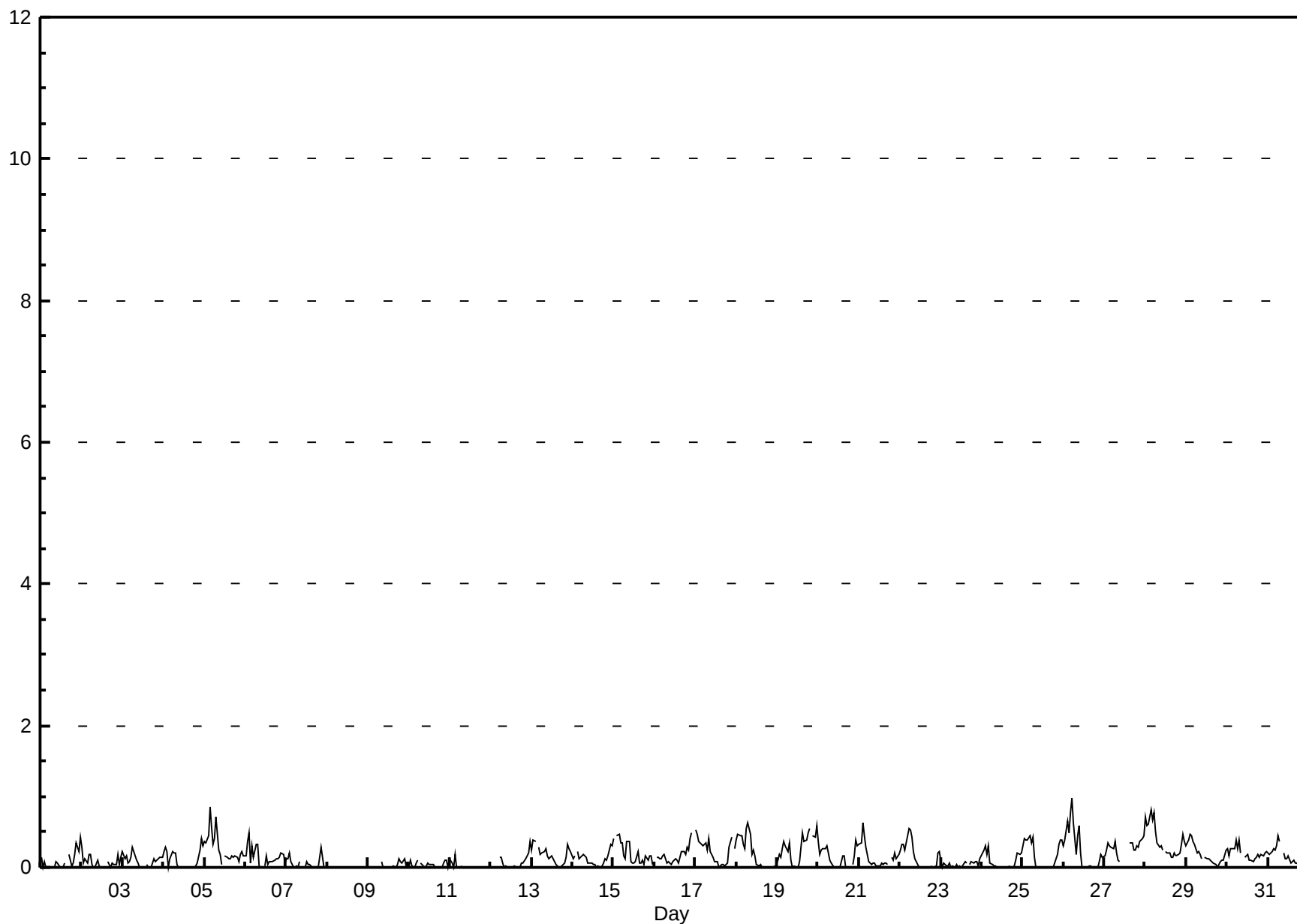
Total Reduced Sulphur (TRS) - ppb

Smoky Heights - July 2011

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0		Maximum Value: 1.0 ppb on Jul 26 06:00		Maximum Daily Average: 0.4 ppb on Jul 28		Hours in Service: 744		Hours of Data: 705		Hours of Missing Data: 39		Hours of Calibration: 36		Percent Operational Time: 99.6												
Minimum Value: 0 ppb on Jul 1 02:00		Minimum Daily Average: 0.0 ppb on Jul 8		Minimum Diurnal Average: 0.0 ppb at hour 12																						
Maximum Diurnal Average: 0.3 ppb at hour 3		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.1 Q ₃ = 0.2 P ₉₀ = 0.4 P ₉₉ = 0.7																								
Monthly Average: 0.15 ppb																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
1-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
2-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
3-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
4-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
5-Jul	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.9
6-Jul	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	0.5
7-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
8-Jul	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	0.0
9-Jul	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	0.1
10-Jul	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	0.1
11-Jul	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
12-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
13-Jul	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	0.4
14-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
15-Jul	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	0.5
16-Jul	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	0.5
17-Jul	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	0.5
18-Jul	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	0.6
19-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.6
20-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
21-Jul	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	0.6
22-Jul	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	0.5
23-Jul	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	0.1
24-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
25-Jul	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	0.5
26-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	1.0
27-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5
28-Jul	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.8
29-Jul	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	0.5
30-Jul	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	0.4
31-Jul	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	0.5
		0.2	0.2	0.3	0.2	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	Diurnal Average
		0.7	0.6	0.7	0.9	0.8	1.0	0.6	0.7	0.5	0.6	0.2	0.2	0.2	0.2	0.3	0.5	0.4	0.4	0.5	0.6	0.3	0.4	0.5	0.6	Diurnal Maximum
C - Calibration		P - Power Failure										A - Automated Daily Zero Span														
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr 10 ppb					24-hr 3 ppb																			

Hourly Averages

Total Reduced Sulphur (TRS) - ppb
Smoky Heights - July 2011



Hourly Maximums

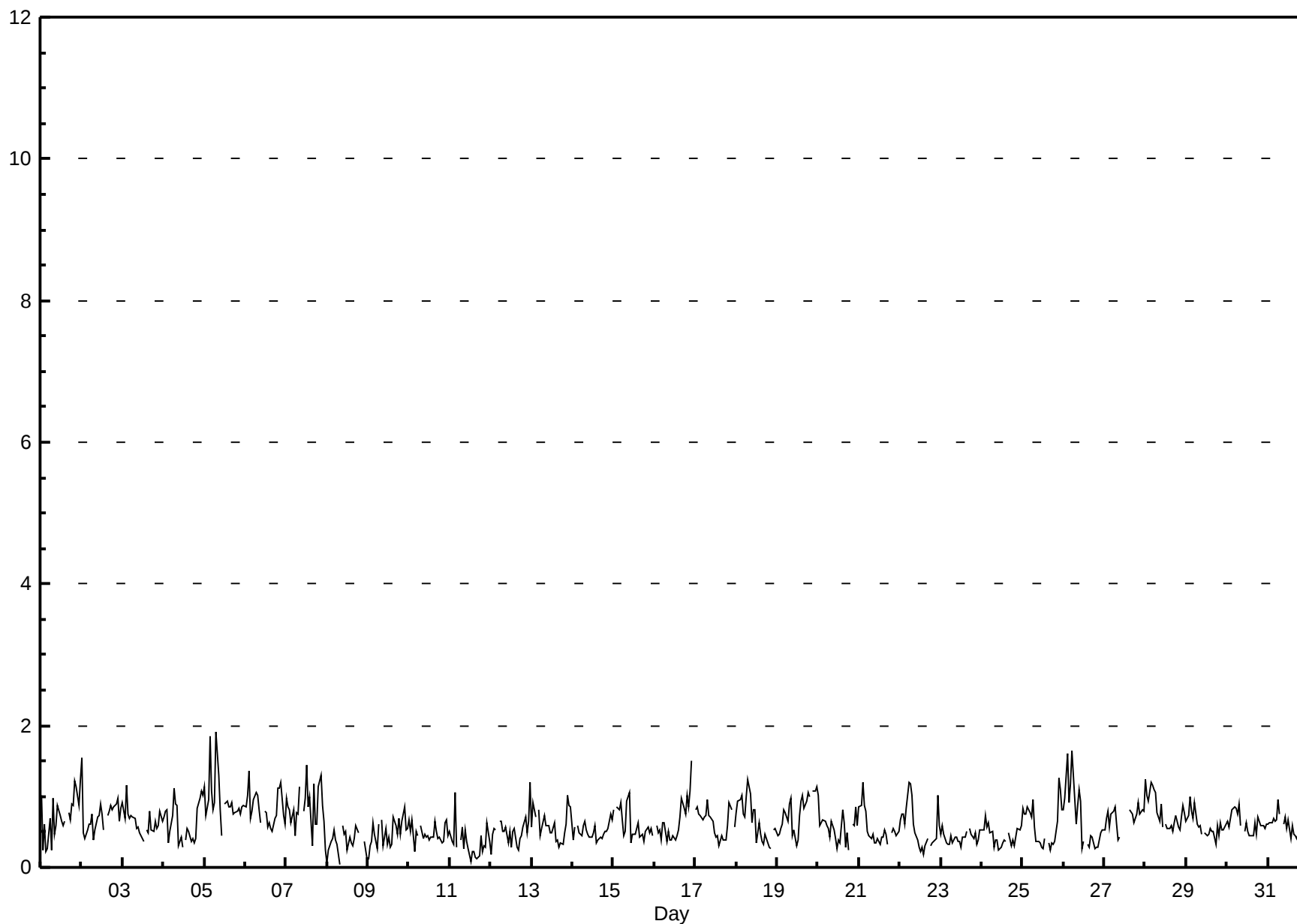
Total Reduced Sulphur (TRS) - ppb

Smoky Heights - July 2011

Maximum Value: 1.9 ppb on Jul 5 08:00																								Hours in Service: 744		
Maximum Daily Average: 1.0 ppb on Jul 5																								Hours of Data: 705		
Minimum Value: 0 ppb on Jul 8 08:00																								Hours of Missing Data: 39		
Maximum Diurnal Average: 0.8 ppb at hour 3																								Hours of Calibration: 36		
Monthly Average: 0.62 ppb																								Percent Operational Time: 99.6		
Minimum Daily Average: 0.4 ppb on Jul 11																										
Minimum Diurnal Average: 0.5 ppb at hour 13																										
Percentiles: P ₁ = 0.2 P ₁₀ = 0.3 Q ₁ = 0.4 Median = 0.6 Q ₃ = 0.8 P ₉₀ = 1.0 P ₉₉ = 1.4																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
1-Jul	1	0	1	0	0	1	0	1	0	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	0.7	1.2
2-Jul	2	0	0	1	1	1	1	0	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	0.7	1.5
3-Jul	1	1	1	1	1	1	1	1	1	1	0	0	0	A	1	0	1	1	0	1	1	1	1	1	0.6	1.2
4-Jul	1	1	1	0	1	1	1	1	1	0	0	0	A	0	1	1	0	0	0	0	1	1	1	1	0.6	1.1
5-Jul	1	1	1	2	1	1	1	2	1	1	0	A	1	1	1	1	1	1	1	1	1	1	1	1	1.0	1.9
6-Jul	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	1.4
7-Jul	1	1	1	1	1	0	1	1	1	A	1	1	1	1	1	0	1	1	1	1	1	1	0	0	0.8	1.4
8-Jul	0	0	0	0	1	0	0	0	A	1	0	0	0	0	0	0	0	1	0	P	P	P	0	0	0.4	0.6
9-Jul	0	0	0	1	0	0	1	A	1	0	1	0	0	0	0	1	1	0	1	0	1	1	1	1	0.5	0.9
10-Jul	1	1	1	0	0	0	A	1	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0.5	0.7
11-Jul	1	0	0	1	0	A	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0.4	1.0
12-Jul	0	0	1	1	A	1	1	1	0	1	0	1	0	1	1	0	0	0	0	1	1	0	1	1	0.5	1.2
13-Jul	1	1	1	A	1	0	1	1	1	1	1	0	0	1	0	0	0	0	0	0	1	1	1	1	0.6	1.0
14-Jul	0	1	A	1	0	0	1	1	1	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	0.5	0.8
15-Jul	1	A	1	1	1	1	0	1	1	1	0	0	0	0	1	0	0	0	0	1	1	0	1	0	0.6	1.1
16-Jul	A	1	0	1	0	1	1	0	1	0	0	0	0	0	1	1	1	1	1	1	1	1	1	A	0.7	1.5
17-Jul	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	A	1	0.6	1.0
18-Jul	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	A	1	1	0.7	1.2
19-Jul	0	0	1	1	1	1	1	1	1	0	1	0	0	1	1	1	1	1	1	1	A	1	1	1	0.8	1.1
20-Jul	1	1	1	1	1	1	1	0	1	1	0	0	0	0	1	1	0	0	0	A	1	1	1	1	0.6	1.0
21-Jul	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	A	0	1	1	0	1	0.5	1.2
22-Jul	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	A	1	0	0	0	0	1	1	0.6	1.2
23-Jul	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	A	1	0	0	0	0	0	0	1	0.4	0.6
24-Jul	1	1	1	1	1	0	1	0	0	0	0	0	0	0	A	0	0	0	0	0	0	1	1	1	0.4	0.7
25-Jul	1	1	1	1	1	1	1	1	0	0	0	0	0	0	A	0	0	0	0	0	1	1	1	1	0.6	1.3
26-Jul	1	1	2	1	1	2	1	1	1	1	0	0	A	0	0	0	0	0	0	0	0	0	0	1	0.7	1.6
27-Jul	1	1	1	1	1	1	1	1	0	0	C	C	C	C	C	1	1	1	1	1	1	1	1	1	0.7	0.9
28-Jul	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	0	1	1	1	1	1	1	1	0.8	1.2
29-Jul	1	1	1	1	1	1	1	1	1	1	0	A	0	0	0	1	1	1	0	1	1	1	1	1	0.6	1.0
30-Jul	1	1	1	1	1	1	1	1	1	A	1	1	1	0	0	0	1	0	1	1	1	1	1	1	0.6	0.9
31-Jul	1	1	1	1	1	1	1	1	A	1	1	1	1	0	1	0	0	0	0	0	1	0	1	1	0.6	1.0
0.7 0.7 0.8 0.7 0.7 0.7 0.7 0.7 0.7 0.6 0.6 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.6 0.7 0.7 0.7 0.7																									Diurnal Average	
1.5 1.0 1.6 1.8 1.2 1.6 1.3 1.9 1.3 1.1 0.9 1.0 1.4 0.9 1.0 1.0 1.2 0.9 1.1 1.1 1.3 1.3 1.5 1.2																									Diurnal Maximum	
C - Calibration P - Power Failure A - Automated Daily Zero Span																										

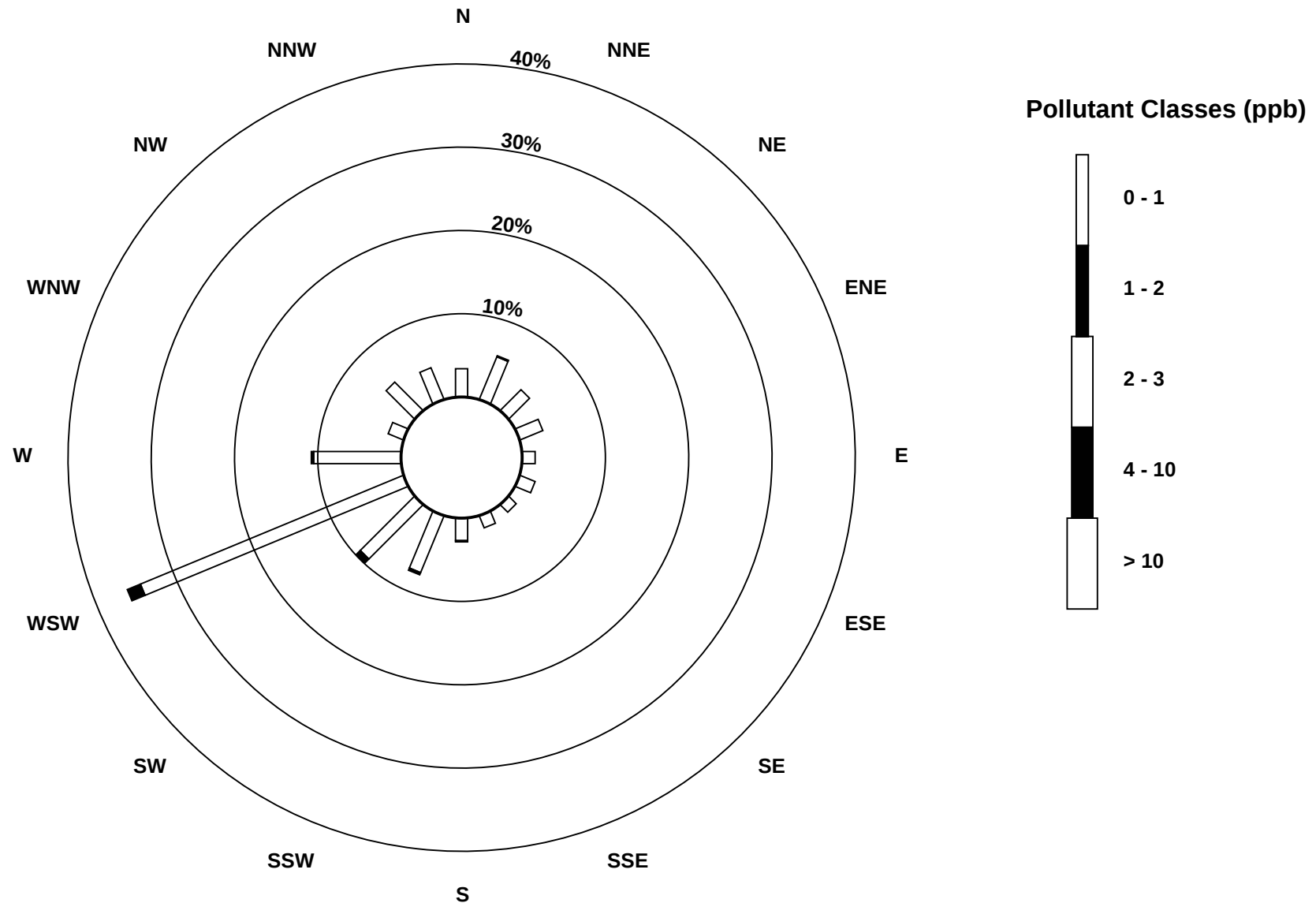
Hourly Maximums

Total Reduced Sulphur (TRS) - ppb
Smoky Heights - July 2011



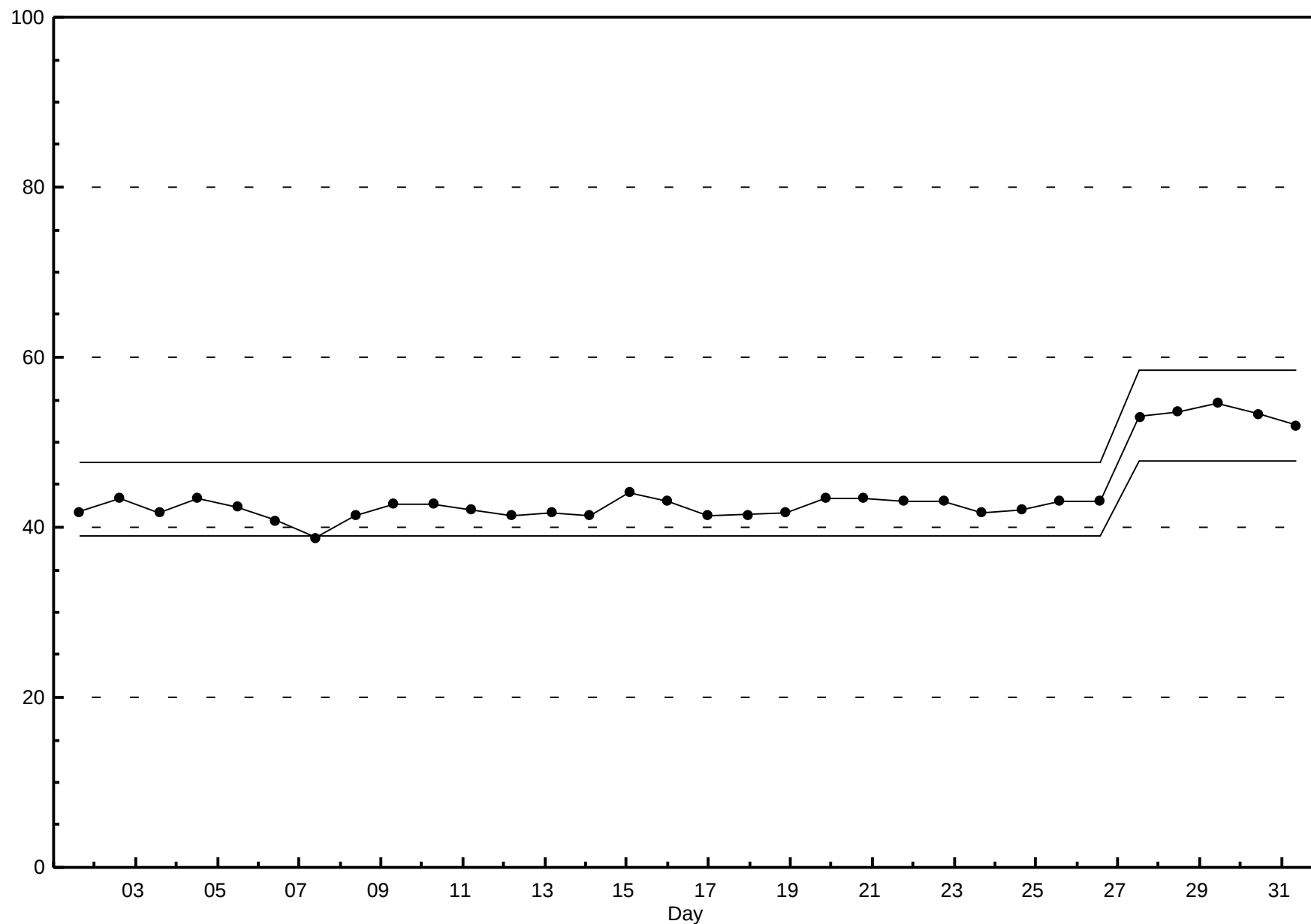
Pollutant Rose

Total Reduced Sulphur (TRS) - ppb
Smoky Heights - July 2011



Span Responses

Total Reduced Sulphur (TRS)
Smoky Heights - July 2011

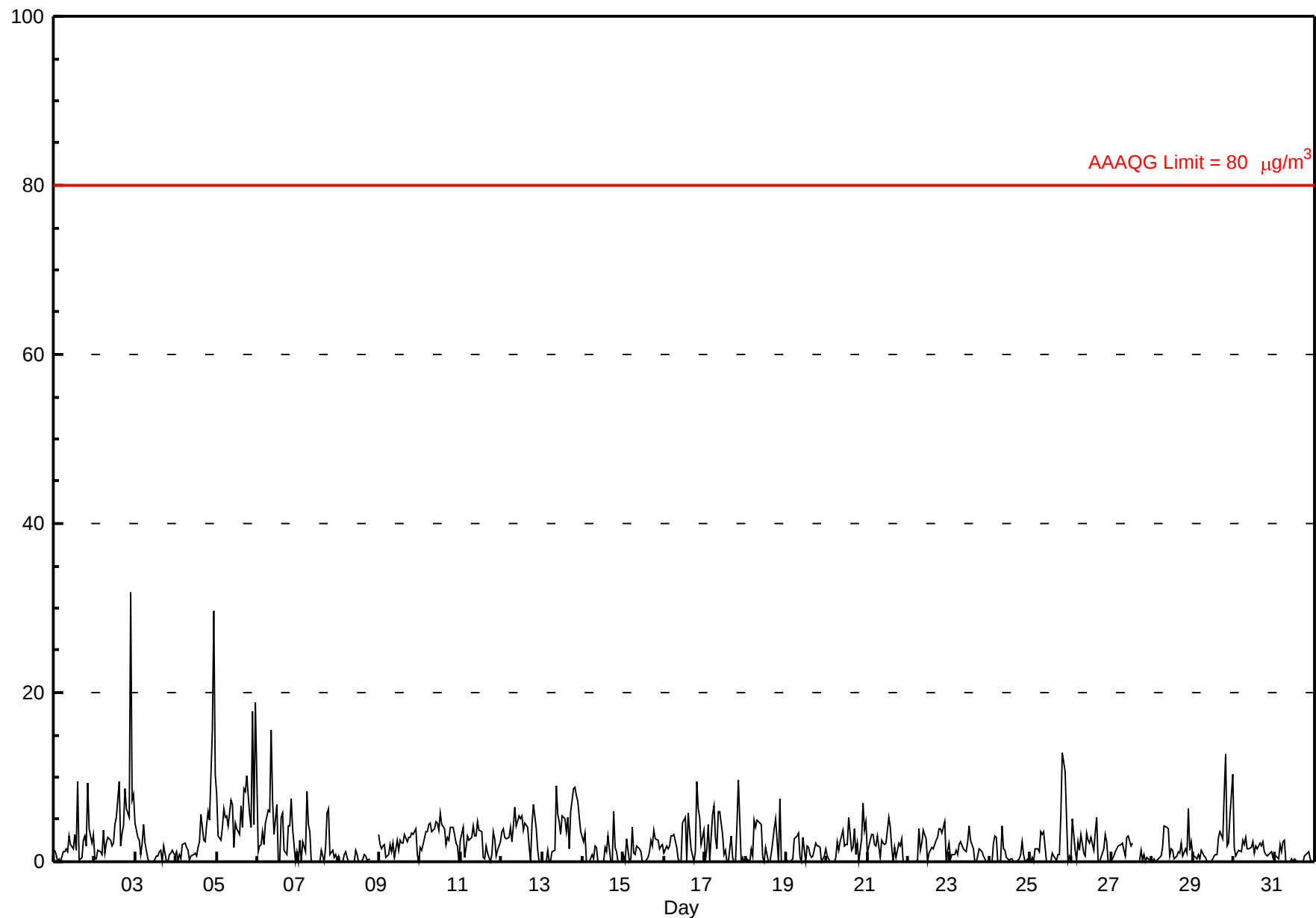


Hourly Averages

Particulate Matter 2.5 (PM_{2.5}) - µg/m³

Smoky Heights - July 2011

Number of Exceedences: 1-hr: 0 24-hr: 0 Maximum Value: 31.8 µg/m ³ on Jul 2 22:00 Maximum Daily Average: 6.4 µg/m ³ on Jul 5																								Hours in Service: 744 Hours of Data: 737 Hours of Missing Data: 7 Hours of Calibration: 3 Percent Operational Time: 99.5		
Minimum Value: 0 µg/m ³ on Jul 1 03:00 Maximum Diurnal Average: 4.2 µg/m ³ at hour 22 Monthly Average: 2.28 µg/m ³												Minimum Daily Average: 0.5 µg/m ³ on Jul 8 Minimum Diurnal Average: 1.2 µg/m ³ at hour 3 Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.4 Median = 1.5 Q ₃ = 3.2 P ₉₀ = 5.3 P ₉₉ = 10.7														
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
1-Jul	1	1	0	0	0	1	1	1	1	3	2	1	3	1	10	0	1	3	3	2	9	4	2	3	2.3	9.5
2-Jul	0	0	1	1	1	4	1	2	3	3	2	2	4	5	9	2	3	4	9	6	5	32	7	8	4.9	31.8
3-Jul	5	3	3	1	2	4	2	0	0	0	0	0	1	1	1	1	0	2	0	0	1	1	1	1	1.2	4.6
4-Jul	1	0	1	0	2	2	2	1	0	1	1	1	1	2	2	6	3	2	4	6	5	16	30	10	4.1	29.7
5-Jul	8	3	3	4	6	5	5	4	7	7	2	5	4	3	7	4	9	8	10	6	4	18	4	19	6.4	18.8
6-Jul	1	2	2	4	2	5	6	6	16	7	3	7	0	0	5	6	1	1	4	4	7	4	0	1	3.9	15.5
7-Jul	0	3	0	2	1	8	4	4	0	0	0	0	0	0	1	0	2	6	6	1	1	1	1	0	1.7	8.4
8-Jul	1	0	0	1	1	1	0	0	0	0	1	1	0	0	0	1	1	0	0	P	P	P	P	3	0.5	3.2
9-Jul	2	1	2	2	1	1	2	1	2	0	2	1	3	2	2	3	2	3	3	3	3	4	1	0	2.0	4.0
10-Jul	2	1	2	4	4	4	5	4	4	5	5	4	6	4	4	2	3	3	4	4	3	2	2	0	3.3	5.8
11-Jul	3	4	0	2	3	3	3	4	3	3	5	4	4	1	0	2	1	0	1	4	3	1	1	2	2.3	4.7
12-Jul	4	4	3	3	3	4	2	4	6	4	5	5	5	4	5	4	2	0	4	7	4	1	0	0	3.5	6.8
13-Jul	0	0	0	1	0	0	1	1	9	6	5	3	5	5	3	5	2	6	9	9	8	7	5	4	3.9	9.0
14-Jul	2	3	0	0	0	1	0	2	2	0	0	0	0	2	1	3	0	0	6	2	1	0	0	0	1.1	6.0
15-Jul	1	0	3	0	0	4	1	1	2	2	1	0	0	0	1	1	2	2	4	3	2	1	2	2	1.4	4.1
16-Jul	1	2	2	2	3	3	3	2	0	0	0	5	5	0	6	4	2	0	1	10	6	5	2	4	2.8	9.5
17-Jul	0	2	4	0	6	7	3	2	6	6	3	1	1	0	0	3	0	0	0	4	10	0	0	0	2.4	9.6
18-Jul	0	0	0	2	1	5	4	5	5	4	0	0	2	0	0	1	2	4	5	0	8	0	0	0	2.0	7.5
19-Jul	0	0	0	0	0	3	3	3	1	0	3	0	2	2	1	1	1	2	2	2	2	0	1	1	1.2	3.4
20-Jul	1	0	0	0	0	0	2	1	2	4	2	2	2	5	1	2	4	1	2	0	3	7	4	5	2.1	7.0
21-Jul	1	3	3	3	2	2	3	0	3	2	2	2	5	4	2	0	2	0	2	2	3	0	0	0	1.9	5.2
22-Jul	0	0	0	0	0	0	4	1	2	4	3	0	1	1	2	2	3	3	4	4	3	5	0	1	1.8	4.7
23-Jul	2	0	1	1	1	1	2	2	2	1	1	2	4	2	2	0	0	1	2	1	1	0	0	0	1.3	4.2
24-Jul	0	0	2	3	3	0	0	4	1	1	1	0	0	0	0	0	0	0	1	2	1	0	0	0	0.9	4.2
25-Jul	0	1	0	2	2	1	4	3	4	0	0	0	0	1	1	0	1	1	5	13	11	5	0	1	2.2	12.9
26-Jul	0	5	1	0	2	1	3	1	1	3	2	2	3	1	3	5	0	0	1	2	3	2	0	0	1.9	5.3
27-Jul	0	1	1	2	2	2	2	1	1	3	3	2	2	C	C	C	0	1	0	1	0	0	0	0	1.2	3.0
28-Jul	0	0	0	0	0	1	2	4	4	4	1	2	1	0	1	1	1	2	1	1	1	6	1	2	1.6	6.3
29-Jul	1	1	0	1	0	1	1	0	0	0	0	0	1	1	1	3	4	3	8	13	2	2	5	10	2.4	12.7
30-Jul	2	1	1	1	1	2	2	3	1	2	2	2	1	2	1	2	2	2	1	1	1	1	1	0	1.5	2.8
31-Jul	1	1	0	2	1	2	2	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0.6	2.5
1.3 1.3 1.2 1.4 1.7 2.6 2.5 2.3 2.8 2.4 1.9 1.7 2.2 1.7 2.4 2.1 1.7 1.9 3.3 3.7 3.7 4.2 2.4 2.6 8.0 5.1 4.3 4.1 6.3 8.4 6.1 5.9 15.5 7.2 5.5 6.7 5.8 5.3 9.5 5.7 8.6 8.3 10.1 12.9 10.7 31.8 29.7 18.8																								Diurnal Average	Diurnal Maximum	
C - Calibration P - Power Failure Alberta Ambient Air Quality Guideline (AAAQG): 1-hr 80 µg/m ³ Alberta Ambient Air Quality Objective (AAAQO): 24-hr 30 µg/m ³																										

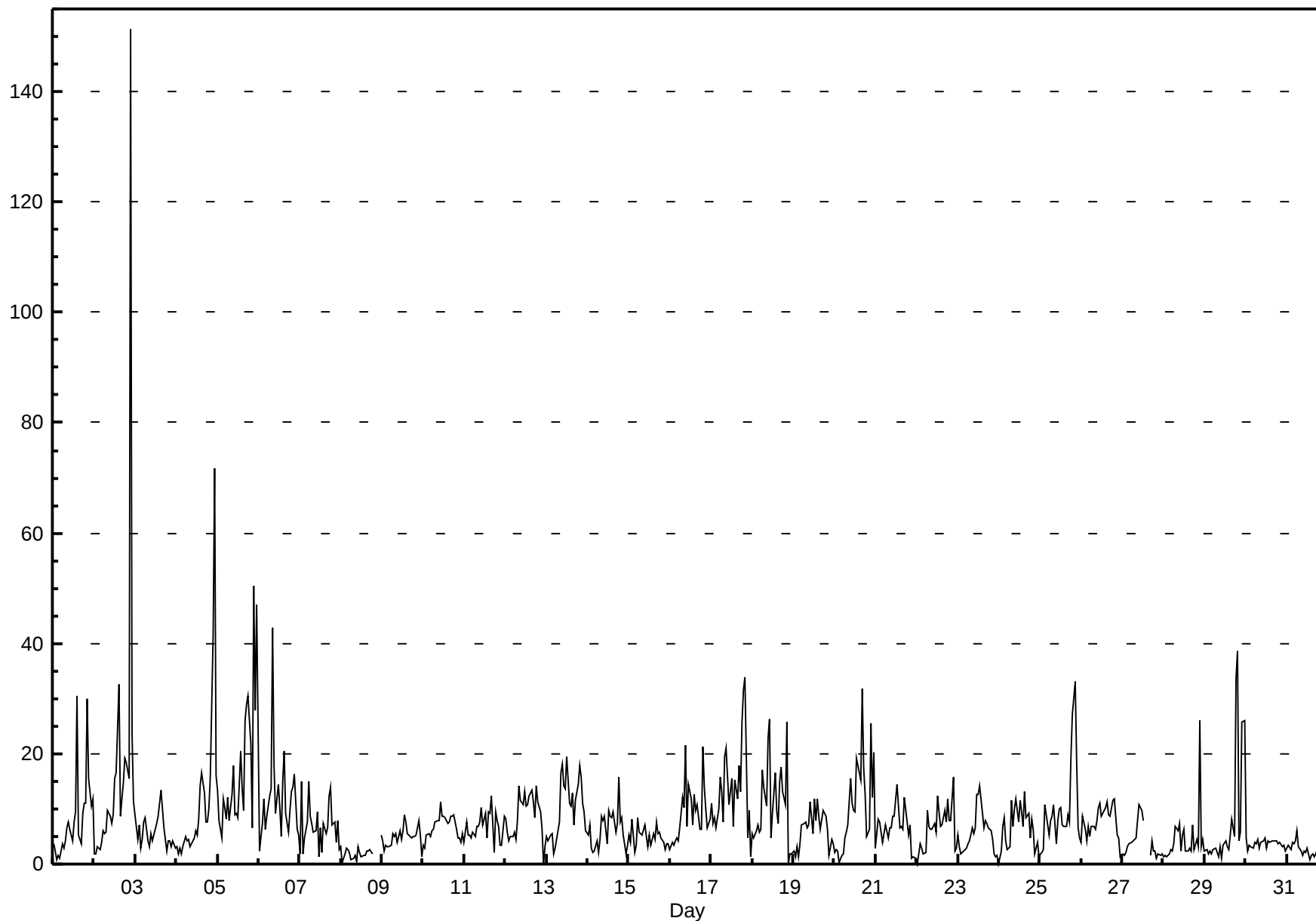


Hourly Maximums

Particulate Matter 2.5 (PM_{2.5}) - µg/m³

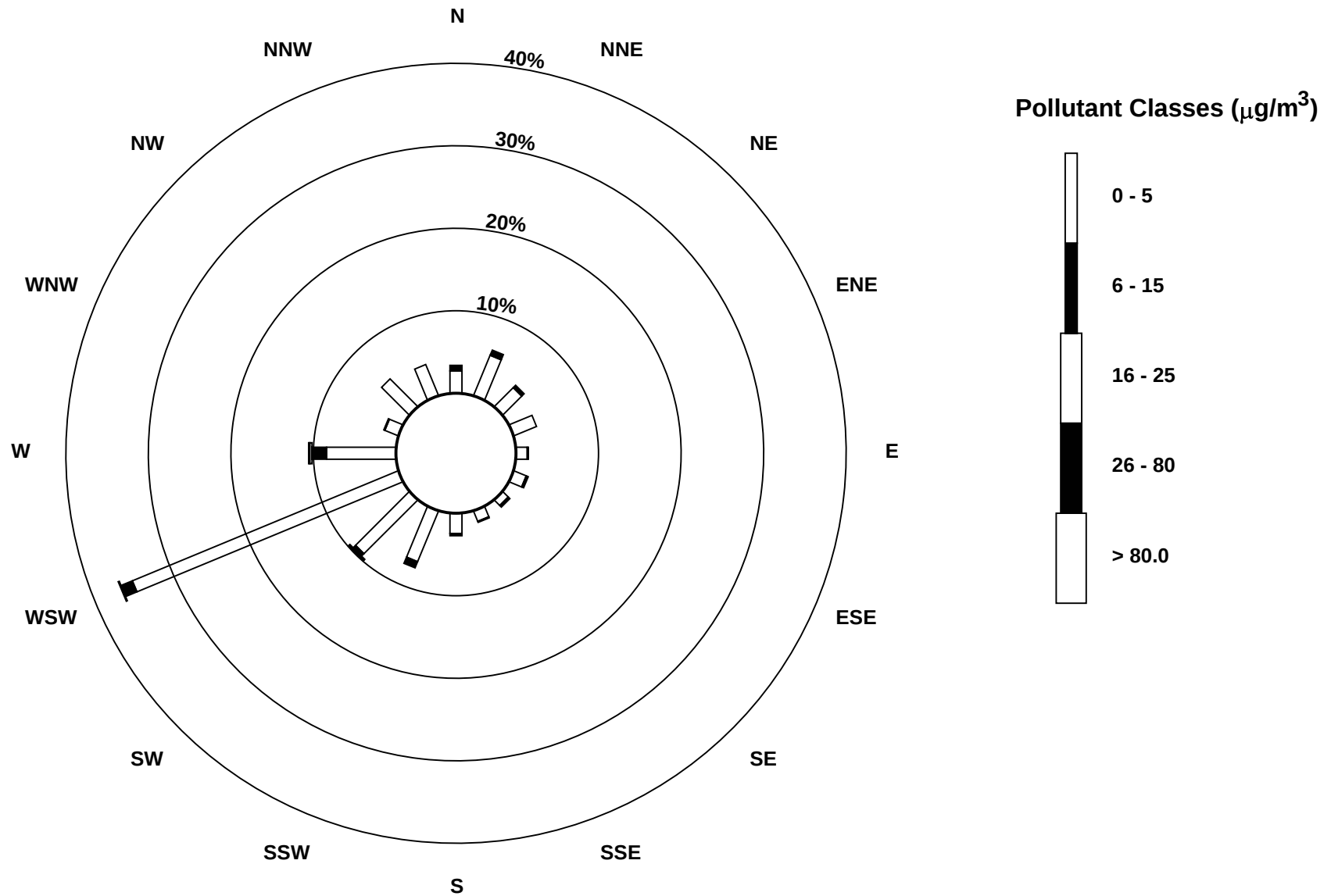
Smoky Heights - July 2011

Maximum Value: 151.2 μg/m³ on Jul 2 22:00																					Maximum Daily Average: 17.3 μg/m³ on Jul 5					Hours in Service: 744	
Minimum Value: 0 μg/m³ on Jul 12 23:00																					Minimum Daily Average: 2.1 μg/m³ on Jul 8					Hours of Data: 737	
Maximum Diurnal Average: 15.0 μg/m³ at hour 22																					Minimum Diurnal Average: 4.0 μg/m³ at hour 1					Hours of Missing Data: 7	
Monthly Average: 7.98 μg/m³																					Percentiles: P ₁ = 0.7 P ₁₀ = 2.0 Q ₁ = 3.5 Median = 6.3 Q ₃ = 9.6 P ₉₀ = 14.8 P ₉₉ = 35.8					Hours of Calibration: 3	
																										Percent Operational Time: 99.5	
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-Jul	4	2	1	2	1	4	3	4	7	8	6	4	8	9	30	5	4	9	11	11	30	15	11	12	8.3	30.5	
2-Jul	2	2	3	3	4	6	5	6	10	9	7	9	16	17	33	9	12	15	19	18	16	151	24	11	16.8	151.2	
3-Jul	9	4	7	3	4	8	8	4	3	5	4	5	7	9	11	13	10	7	2	4	4	3	4	3	6.0	13.5	
4-Jul	3	2	3	2	3	5	4	4	3	4	5	6	5	8	14	17	13	8	8	10	16	42	72	16	11.3	71.8	
5-Jul	13	8	5	12	10	8	12	8	13	18	9	9	8	21	14	10	26	29	31	22	6	51	28	47	17.3	50.6	
6-Jul	2	5	7	12	6	9	12	14	43	18	9	14	10	5	15	20	9	6	10	13	14	16	6	5	11.8	42.7	
7-Jul	2	15	2	5	8	15	9	7	6	6	9	1	7	2	7	6	7	12	14	7	8	4	8	3	7.0	14.9	
8-Jul	3	0	2	3	3	2	1	1	2	0	3	2	1	2	2	2	2	3	2	P	P	P	P	5	2.1	5.1	
9-Jul	4	2	3	3	3	3	5	5	5	4	6	4	6	9	8	6	5	5	5	5	5	8	5	1	4.9	8.9	
10-Jul	3	3	5	5	5	6	6	8	8	8	11	9	9	8	7	8	9	9	9	6	5	5	4	5	6.7	11.3	
11-Jul	4	8	5	5	5	6	5	7	7	8	10	7	9	5	9	9	12	2	10	8	7	4	3	9	6.8	12.3	
12-Jul	8	6	4	5	5	6	4	8	14	12	11	13	11	11	12	13	11	8	14	11	9	6	0	3	8.6	14.2	
13-Jul	5	4	5	6	2	3	4	8	16	18	14	14	19	11	11	13	7	12	14	18	16	11	9	6	10.2	19.4	
14-Jul	5	7	3	2	2	4	2	4	9	8	9	4	10	9	8	9	6	7	16	8	8	5	2	4	6.3	15.9	
15-Jul	5	4	8	2	3	8	6	6	5	7	5	3	5	3	5	5	8	5	6	5	4	3	4	4	5.0	8.4	
16-Jul	3	4	3	4	5	4	7	12	10	21	7	14	12	7	13	10	11	6	6	21	14	10	7	8	9.2	21.5	
17-Jul	11	7	8	7	10	16	13	8	20	21	11	13	16	7	15	12	18	13	26	32	34	5	10	1	13.8	33.9	
18-Jul	5	5	6	7	6	6	17	14	11	23	26	5	9	17	9	7	15	18	13	11	26	0	2	2	10.8	26.1	
19-Jul	2	1	3	1	4	7	7	8	7	7	11	5	12	8	12	9	6	10	9	9	6	1	4	4	6.4	11.8	
20-Jul	2	3	2	0	2	2	5	6	7	16	11	10	9	19	17	15	32	17	13	5	6	25	12	20	10.7	31.8	
21-Jul	3	8	8	6	4	6	7	5	7	7	9	9	15	10	7	7	6	12	8	5	7	1	1	1	6.5	14.5	
22-Jul	0	2	4	3	2	2	10	7	6	6	7	6	12	10	7	7	10	8	12	8	8	16	2	3	6.5	15.9	
23-Jul	5	3	2	2	3	3	4	4	7	6	7	12	13	14	9	7	8	7	7	6	4	2	1	1	5.7	14.2	
24-Jul	0	2	7	8	4	3	3	11	7	10	12	8	12	10	7	13	8	9	5	8	6	2	4	1	6.7	13.2	
25-Jul	2	2	3	11	7	5	8	9	11	4	8	10	10	7	7	7	9	8	19	27	33	18	7	5	9.8	33.0	
26-Jul	4	9	6	4	7	5	7	7	6	8	10	11	9	10	10	11	9	9	11	12	8	5	5	1	7.7	11.9	
27-Jul	2	2	2	3	4	4	4	4	5	8	11	10	8	C	C	C	1	4	2	2	1	2	1	2	3.9	10.8	
28-Jul	1	2	1	2	3	2	4	7	6	7	2	5	6	2	2	3	2	7	3	4	3	26	3	4	4.6	25.9	
29-Jul	2	3	2	2	2	3	3	2	1	3	1	3	4	3	3	5	8	5	34	39	4	6	26	26	7.9	38.7	
30-Jul	5	2	3	3	3	4	4	4	3	4	4	5	3	4	4	4	4	4	4	4	4	3	3	2	3.7	4.7	
31-Jul	3	4	3	4	4	4	6	3	2	2	2	2	3	1	2	2	1	2	3	3	3	2	2	2	2.7	5.9	
4.0 4.2 4.1 4.4 4.3 5.4 6.3 6.6 8.5 9.2 8.4 7.5 9.2 8.5 10.3 8.8 9.3 8.9 11.1 11.4 10.5 15.0 9.0 7.1																										Diurnal Average	
13.5 14.9 8.3 11.8 10.3 15.8 17.1 14.0 42.7 23.0 26.1 14.4 19.4 20.6 32.5 20.4 31.8 28.9 33.7 38.7 33.9 151.2 71.8 46.9																										Diurnal Maximum	
C - Calibration P - Power Failure																											



Pollutant Rose

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Smoky Heights - July 2011



Hourly Averages

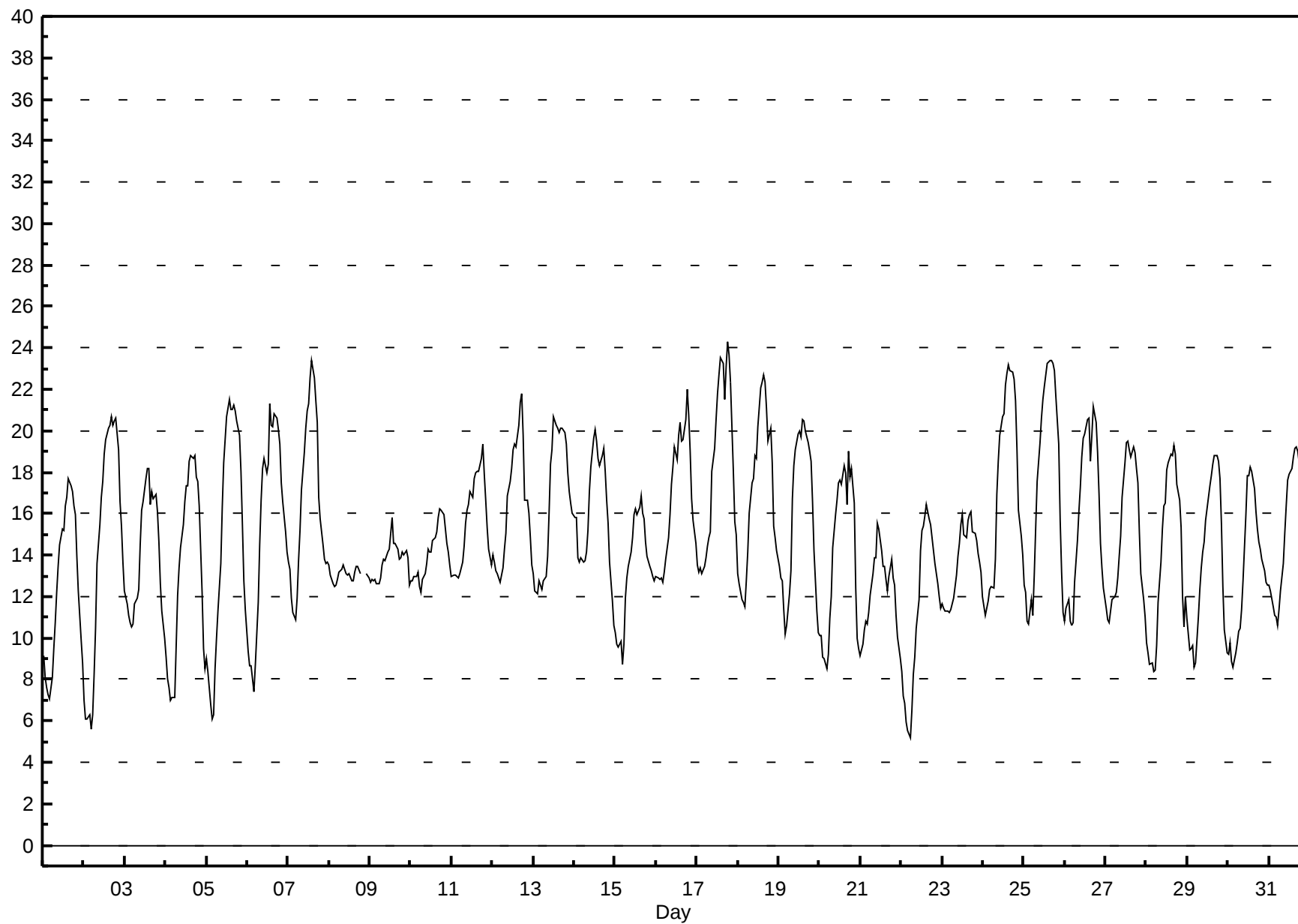
External Temperature (ET) - °C

Smoky Heights - July 2011

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 24.3 °C on Jul 17 19:00 Maximum Daily Average: 18.2 °C on Jul 17																								Hours in Service: 744 Hours of Data: 741 Hours of Missing Data: 3 Hours of Calibration: 0 Percent Operational Time: 99.6		
Minimum Value: 5 °C on Jul 22 06:00 Maximum Diurnal Average: 18.8 °C at hour 15 Monthly Average: 14.86 °C												Minimum Daily Average: 11.3 °C on Jul 22 Minimum Diurnal Average: 10.4 °C at hour 5 Percentiles: P ₁ = 6.3 P ₁₀ = 9.8 Q ₁ = 12.3 Median = 14.3 Q ₃ = 18.0 P ₉₀ = 20.2 P ₉₉ = 23.2														
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
1-Jul	9	8	8	7	7	8	10	11	12	13	14	15	16	17	18	17	17	16	16	14	12	10	9	12.5	17.7	
2-Jul	7	6	6	6	6	6	8	10	14	15	17	18	19	20	20	20	21	20	21	19	17	15	14	14.4	20.7	
3-Jul	12	12	11	11	11	11	12	12	12	14	16	17	18	18	18	16	17	17	17	16	15	13	11	10	14.0	18.2
4-Jul	9	8	8	7	7	7	10	12	13	14	15	17	17	17	19	19	19	19	18	18	16	12	10	8	13.3	18.8
5-Jul	9	8	7	6	6	9	10	11	14	16	18	20	21	22	21	21	21	21	20	20	18	15	13	11	14.9	21.5
6-Jul	9	9	9	8	7	9	12	15	17	18	19	18	18	21	20	20	21	21	20	19	18	17	15	14	15.5	21.3
7-Jul	14	13	12	11	11	12	14	15	17	19	20	21	21	23	23	23	21	20	17	16	14	14	14	14	16.6	23.4
8-Jul	14	13	13	12	13	13	13	13	14	13	13	13	13	13	13	13	13	13	13	P	P	P	13	13	13.1	13.5
9-Jul	13	13	13	13	13	13	13	13	14	14	14	14	15	16	15	15	14	14	14	14	14	14	14	13	13.7	15.8
10-Jul	13	13	13	13	13	12	12	13	13	14	14	14	14	15	15	15	16	16	16	16	15	15	14	14	14.1	16.2
11-Jul	13	13	13	13	13	13	14	14	16	16	16	17	17	18	18	18	19	19	18	17	15	14	14	14	15.7	19.4
12-Jul	14	14	13	13	13	13	13	14	15	17	18	18	19	19	19	20	21	22	20	17	17	16	15	14	16.4	21.8
13-Jul	13	12	12	13	13	12	13	13	14	16	18	19	21	20	20	20	20	20	20	19	18	17	17	16	16.5	20.7
14-Jul	16	16	14	14	14	14	14	14	15	17	18	20	20	19	19	18	19	19	18	17	16	14	12	11	16.1	20.0
15-Jul	10	10	10	10	9	10	12	13	13	14	15	16	16	16	16	17	16	16	15	14	13	13	13	13	13.3	16.9
16-Jul	13	13	13	13	13	13	14	15	16	17	18	19	19	20	20	20	20	21	22	21	19	17	16	15	16.8	22.0
17-Jul	14	13	13	13	13	14	14	15	15	18	19	21	22	23	24	23	22	23	24	24	22	18	16	15	18.2	24.3
18-Jul	13	13	12	12	12	13	14	16	17	18	19	19	20	22	22	23	22	21	20	20	18	15	15	14	17.1	22.7
19-Jul	13	13	13	11	10	11	12	13	17	18	19	20	20	20	21	20	20	19	19	19	17	14	11	10	15.9	20.6
20-Jul	10	10	9	9	9	9	11	12	14	16	17	18	18	17	18	18	16	19	18	18	17	12	10	9	13.9	19.0
21-Jul	9	10	10	11	11	11	12	13	14	14	16	15	14	13	13	13	12	13	14	13	13	11	10	9	12.3	15.5
22-Jul	8	7	7	6	6	5	7	8	9	10	12	14	15	15	16	16	16	15	15	14	14	13	12	11	11.3	16.4
23-Jul	12	11	11	11	11	11	12	12	13	14	15	16	16	15	15	16	16	16	15	15	15	14	14	13	13.7	16.1
24-Jul	12	11	11	12	12	13	12	14	17	18	20	21	21	22	23	23	23	23	23	21	19	16	15	14	17.3	23.2
25-Jul	13	12	11	11	12	11	13	15	18	19	21	21	22	23	23	23	23	23	23	22	19	16	13	11	17.5	23.4
26-Jul	11	11	12	11	11	11	13	15	16	17	19	20	20	21	21	19	20	21	20	19	17	15	13	12	15.9	21.1
27-Jul	11	11	11	11	12	12	12	13	14	15	17	18	19	19	19	19	19	19	18	17	15	13	12	11	15.0	19.5
28-Jul	10	9	9	9	8	8	10	12	14	15	16	17	18	18	19	19	19	19	17	17	15	12	11	12	13.9	19.3
29-Jul	11	9	9	10	9	9	11	12	13	14	15	16	17	17	18	18	19	19	19	18	16	13	10	9	13.8	18.8
30-Jul	9	10	9	9	9	10	10	10	11	13	16	18	18	18	18	17	16	15	15	14	14	13	13	13	13.3	18.3
31-Jul	13	12	12	11	11	11	11	12	14	15	16	18	18	18	19	19	19	19	18	17	15	13	12	10	14.7	19.2
11.5 11.1 10.7 10.5 10.4 10.7 11.8 13.0 14.3 15.7 16.8 17.6 18.1 18.6 18.8 18.7 18.6 18.7 18.2 17.6 16.2 14.3 12.9 12.1																								Diurnal Average		
15.8 15.8 13.9 13.6 13.9 13.9 14.4 16.0 17.5 19.4 20.6 21.5 22.2 22.7 23.5 23.4 23.4 23.3 24.3 23.7 22.3 18.0 16.5 16.0																								Diurnal Maximum		
P - Power Failure																										

Hourly Averages

External Temperature (ET) - °C
Smoky Heights - July 2011



Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Smoky Heights - July 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	23	20	20	21	19	23	30	33	35	34	36	38	35	34	27	31	30	26	24	21	18	18	12	13	25.6	37.6
Dir	247	241	242	237	234	232	236	241	249	248	253	251	252	256	263	253	253	254	252	258	257	255	254	259	249.1	251.0
2 Spd	8	8	4	5	4	3	5	6	5	11	14	17	18	23	18	17	16	13	13	8	5	11	10	7	9.9	22.6
Dir	255	250	202	239	258	189	198	204	208	245	226	237	246	246	255	258	246	257	263	274	268	235	234	241	244.1	245.9
3 Spd	7	7	7	6	8	6	8	12	14	15	16	16	20	17	16	17	20	24	26	30	24	23	22	20	15.4	29.5
Dir	227	206	185	185	237	204	210	210	224	246	242	241	243	240	232	245	244	242	243	248	241	240	236	235	236.0	248.0
4 Spd	19	18	18	17	19	14	19	27	32	36	33	29	26	26	29	29	30	23	15	9	8	6	8	8	20.6	35.6
Dir	237	242	255	255	249	250	242	241	247	254	258	257	247	239	245	256	247	247	234	247	255	269	259	261	248.8	254.4
5 Spd	8	7	6	5	6	5	6	7	8	10	20	20	22	27	29	31	27	29	26	22	12	7	12	7	13.8	30.7
Dir	251	278	232	234	245	234	185	178	199	200	242	237	240	256	260	266	267	265	265	266	268	279	285	251	253.2	266.3
6 Spd	7	8	11	7	6	8	7	9	8	6	5	10	8	2	5	5	10	11	12	12	9	8	17	10	6.6	16.5
Dir	230	266	269	215	233	212	231	211	222	200	224	172	156	231	245	251	141	143	157	162	149	161	187	205	195.4	186.6
7 Spd	8	8	9	12	8	7	9	7	5	5	6	6	7	3	5	5	8	7	9	7	7	5	6	5	3.2	11.7
Dir	259	213	251	252	225	220	240	202	215	210	214	232	206	220	96	110	185	211	33	341	21	69	9	327	231.0	252.1
8 Spd	6	12	14	10	11	11	14	15	21	23	22	23	20	23	23	26	27	28	35	P	P	P	30	27	19.8	34.9
Dir	339	341	338	339	345	348	347	350	340	334	337	338	336	330	330	323	322	318	310	P	P	P	320	324	330.4	309.5
9 Spd	20	17	11	9	9	10	12	13	14	14	16	14	15	15	13	11	11	12	14	17	18	12	13	13.1	20.0	
Dir	329	330	342	345	333	324	316	317	316	312	311	317	317	325	350	354	349	341	327	306	299	315	322	300	323.6	329.0
10 Spd	20	17	16	15	12	11	6	11	11	9	11	11	9	10	10	8	6	5	4	5	5	5	5	5	6.8	19.9
Dir	307	305	317	317	335	1	15	7	18	24	33	47	46	52	52	57	76	27	21	22	33	35	30	152	6.4	306.7
11 Spd	4	5	4	9	9	7	6	7	7	11	15	15	9	19	19	19	12	16	17	10	8	10	7	8	9.6	19.5
Dir	316	72	112	58	63	66	65	59	76	128	119	111	79	105	97	85	79	103	116	110	92	102	90	103	94.3	105.5
12 Spd	7	6	6	7	6	8	8	7	8	8	8	9	10	10	8	8	7	6	8	8	4	4	5	6	6.8	9.6
Dir	91	51	38	29	26	32	26	40	26	40	33	33	29	50	60	45	44	62	67	44	10	11	360	13	39.1	28.8
13 Spd	4	5	4	7	7	7	6	4	3	2	3	6	6	7	9	9	12	11	8	5	3	3	4	5	4.6	12.2
Dir	13	21	22	19	37	28	24	75	6	351	66	96	74	54	67	74	118	126	107	95	26	2	6	32	60.1	118.3
14 Spd	5	2	10	9	14	13	16	14	10	17	20	24	22	20	16	9	11	12	9	10	11	11	8	5	10.8	23.8
Dir	31	137	279	209	230	230	240	249	243	253	256	250	256	250	238	200	215	214	175	176	192	212	259	199	234.4	249.5
15 Spd	7	7	9	9	6	6	11	15	17	21	21	27	36	37	38	40	33	32	22	20	22	27	29	26	20.7	39.8
Dir	214	252	230	209	171	198	190	214	226	237	239	247	255	255	251	253	254	251	253	247	249	245	248	252	244.3	252.6
16 Spd	27	25	23	22	13	9	6	6	7	1	5	6	9	8	13	14	11	8	3	5	4	5	5	6	7.8	27.0
Dir	257	255	254	261	270	287	285	299	257	316	262	256	206	195	241	248	281	266	16	32	18	6	1	7	265.3	256.9
17 Spd	5	6	7	5	6	3	0	9	4	10	10	8	8	6	6	11	18	7	1	2	2	4	4	5	0.8	18.0
Dir	18	28	26	16	40	3	107	135	113	124	159	181	229	260	266	267	272	279	278	4	353	30	18	356	299.2	272.4
18 Spd	2	2	4	3	4	4	7	5	5	7	10	14	17	14	20	22	22	20	17	13	8	11	17	17	9.6	22.1
Dir	3	349	341	358	242	222	195	192	178	176	192	224	242	255	237	247	241	220	202	214	194	217	237	246	228.1	246.7
19 Spd	14	14	15	9	10	10	10	13	26	31	28	28	25	24	28	28	27	30	26	20	17	19	13	15	19.5	31.0
Dir	240	236	240	235	223	206	189	210	238	248	242	245	252	250	243	249	248	261	249	250	247	255	246	254	243.9	247.5
20 Spd	20	19	15	17	15	21	22	21	25	29	28	29	26	21	18	13	9	3	6	14	11	10	11	12	16.1	28.9
Dir	256	251	245	242	244	242	246	242	256	265	265	262	272	276	274	273	312	326	76	254	238	249	262	274	258.9	261.8
21 Spd	13	8	13	15	11	8	6	9	11	10	9	6	7	10	9	6	4	6	7	8	6	8	9	9	6.2	15.1
Dir	272	264	249	263	260	277	14	344	359	356	358	307	267	258	267	337	320	276	263	262	208	215	234	244	278.8	263.3
22 Spd	10	4	6	6	7	7	9	8	7	7	6	5	4	6	5	5	6	5	7	5	4	2	5	3	1.5	9.6
Dir	258	256	206	240	207	227	247	214	178	156	167	225	260	124	90	45	55	42	51	64	88	38	313	330	200.8	258.2

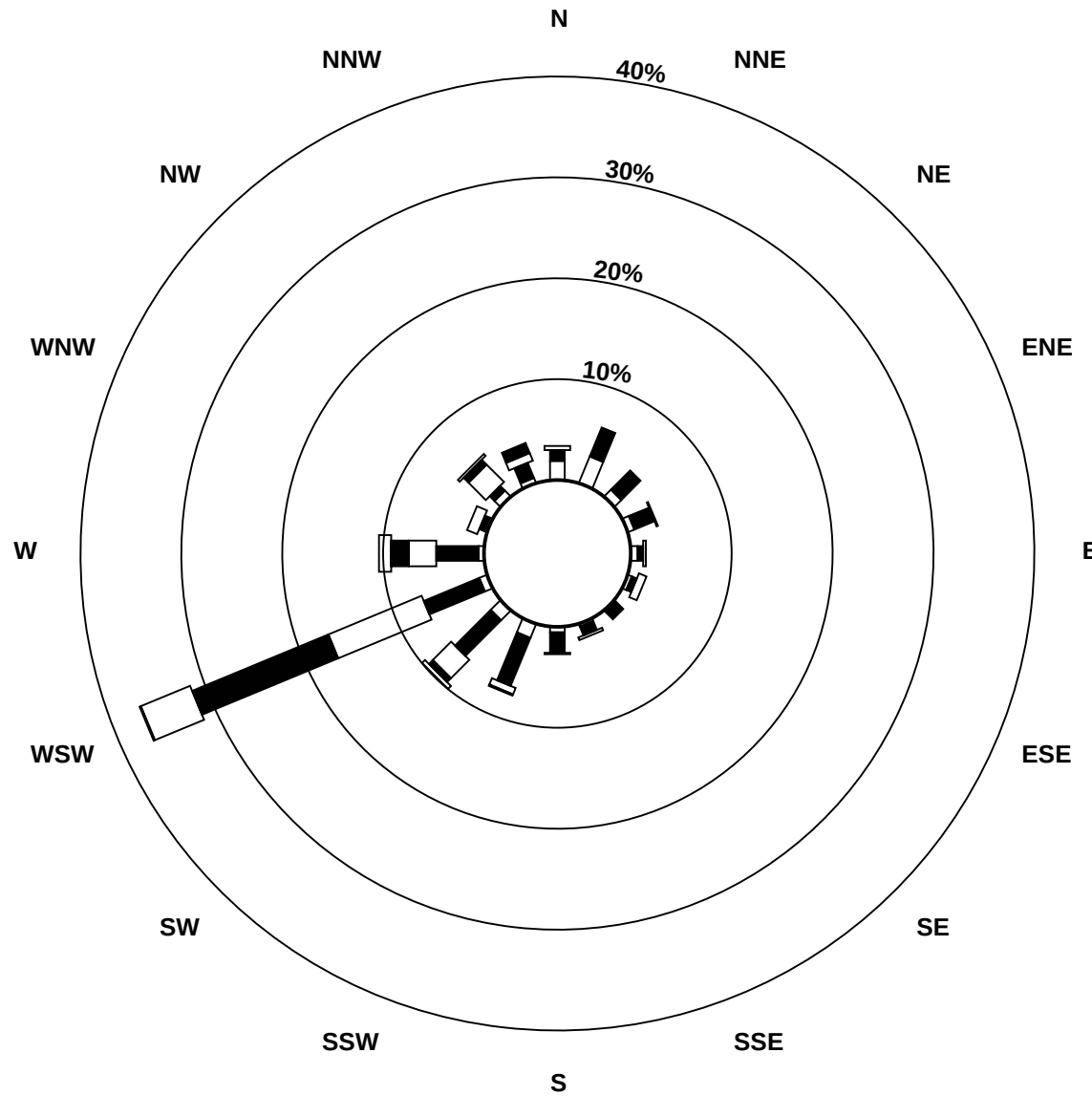
Hourly Averages

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

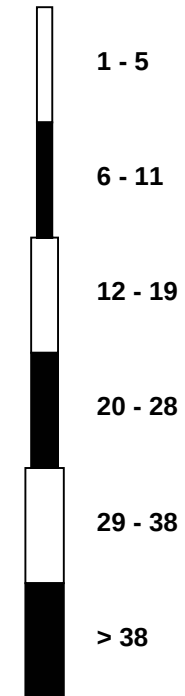
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
23 Spd	4	9	10	12	13	14	14	14	13	13	13	13	7	8	10	13	11	13	11	5	3	3	6	6	8.4	14.5
Dir	312	256	268	253	270	281	303	314	312	312	304	293	344	12	306	303	317	294	292	288	193	213	204	211	292.3	314.2
24 Spd	4	7	8	10	10	12	13	15	21	23	26	26	28	27	29	28	28	22	18	16	10	10	14	14	17.1	29.1
Dir	196	223	222	230	240	232	227	223	239	251	253	254	250	248	253	246	250	251	244	252	246	253	235	240	244.4	252.6
25 Spd	13	11	10	11	14	11	10	11	15	26	30	31	30	26	24	25	23	22	15	10	2	3	8	7	15.9	31.1
Dir	251	244	256	236	241	257	233	245	248	246	244	250	247	252	247	253	257	256	261	274	294	269	274	253	250.6	250.1
26 Spd	3	5	7	10	7	9	12	15	28	25	22	25	30	25	24	18	18	26	25	20	15	16	20	20	17.2	29.6
Dir	235	226	248	232	259	248	220	232	251	255	254	240	246	253	264	292	273	249	256	268	260	250	254	258	253.3	246.3
27 Spd	18	19	20	21	22	19	19	23	29	26	23	24	28	33	34	30	25	24	23	24	19	15	15	14	22.7	33.6
Dir	257	259	262	254	252	247	246	248	251	256	258	252	254	245	252	251	251	254	252	248	243	242	245	246	251.4	251.8
28 Spd	14	12	10	7	9	7	7	8	20	24	28	29	34	32	27	26	25	25	18	12	15	10	8	12	17.1	33.6
Dir	257	261	253	246	219	242	236	209	214	238	239	237	236	234	244	244	242	243	246	242	239	259	258	247	240.3	236.2
29 Spd	11	13	15	15	11	13	19	22	26	29	29	32	32	30	32	29	29	27	21	17	19	14	14	12	20.9	32.0
Dir	265	255	249	238	229	230	232	238	245	247	256	265	254	252	252	259	263	266	275	248	249	248	261	264	252.7	253.6
30 Spd	11	9	6	6	7	9	5	7	6	4	8	6	3	6	6	5	5	3	4	3	3	6	9	6	1.3	11.0
Dir	250	240	224	217	215	250	198	160	134	53	28	38	36	46	43	35	13	12	100	159	175	215	211	193	203.0	249.9
31 Spd	8	5	7	7	5	10	8	10	11	16	20	21	24	27	26	26	26	25	24	20	17	17	19	12	15.6	27.2
Dir	199	173	212	207	195	191	236	246	223	241	240	246	243	242	243	240	249	251	256	253	260	256	248	243	241.4	241.6
Spd	8.0	7.3	7.7	7.2	6.7	6.4	7.0	7.8	10.0	11.6	12.6	13.8	14.6	13.5	13.4	13.0	12.6	12.2	9.3	8.7	7.0	7.3	8.4	7.7	Diurnal Average	
Dir	262.2	259.5	258.4	252.7	250.3	248.6	243.4	240.6	249.1	253.1	253.6	252.3	253.5	254.0	256.4	261.3	259.1	255.8	256.1	253.2	248.5	249.7	259.0	258.6	Diurnal Maximum	
Spd	27.0	24.8	22.8	21.5	21.6	22.8	29.6	33.0	35.3	35.6	35.6	37.6	36.0	37.1	37.7	39.8	33.4	31.7	34.9	29.5	24.3	26.7	30.3	26.9	Diurnal Maximum	
Dir	256.9	255.4	253.8	261.2	252.4	232.5	235.6	240.5	249.4	254.4	252.7	251.0	255.0	255.0	251.3	252.6	253.7	251.0	309.5	248.0	241.1	244.5	320.0	324.3		
Maximum Speed Value: 40 km/h on Jul 15 16:00																								Hours in Service: 744		
Maximum Daily Speed Average: 25.6 km/h on Jul 1																								Hours of Data: 741		
Maximum Diurnal Speed Average: 14.6 km/h at hour 13																								Hours of Missing Data: 3		
Minimum Speed Value: 0 km/h on Jul 17 07:00																								Percent Operational Time: 99.6		
Minimum Daily Speed Average: 0.8 km/h on Jul 22																										
Minimum Diurnal Speed Average: 6.4 km/h at hour 6																										
Monthly Average Velocity: 9.71 km/h 254.14 deg																										
Speed Percentiles: P ₁ = 2.1 P ₁₀ = 4.9 Q ₁ = 6.9 Median = 11.2 Q ₃ = 19.9 P ₉₀ = 27.1 P ₉₉ = 35.6																										
All monthly, daily, and diurnal averages have been calculated using vector methods																										
P - Power Failure																										
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	25	23	12	2	0	0	62																			
NorthEast	13	49	1	0	0	0	63																			
East	8	17	5	1	0	0	31																			
SouthEast	3	8	7	0	0	0	18																			
South	10	34	4	0	0	0	48																			
SouthWest	10	82	65	56	18	0	231																			
West	6	59	55	70	40	1	231																			
NorthWest	9	7	28	10	3	0	57																			
Total	84	279	177	139	61	1	741																			

Wind Rose

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



Wind Speed Classes (km/h)



Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Smoky Heights - July 2011

Maximum Speed: 40 km/h on Jul 15 16:00		Maximum Daily Speed Average: 26.1 km/h on Jul 1		Hours in Service: 744																						
Minimum Speed: 3 km/h on Jul 17 21:00		Minimum Daily Speed Average: 6.4 km/h on Jul 30		Hours of Data: 741																						
Maximum Diurnal Speed Average: 19.3 km/h at hour 14		Minimum Diurnal Speed Average: 10.1 km/h at hour 6		Hours of Missing Data: 3																						
Monthly Average Speed: 14.17 km/h		Percentiles: P ₁ = 3.5 P ₁₀ = 5.4 Q ₁ = 7.4 Median = 11.5 Q ₃ = 20.1 P ₉₀ = 27.5 P ₉₉ = 35.7		Percent Operational Time: 99.6																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
1-Jul	23	20	21	21	19	23	30	33	36	34	36	38	36	34	28	31	30	27	24	21	18	19	12	13	26.1	38.1
2-Jul	9	8	5	5	4	4	5	6	6	11	15	18	19	23	19	18	16	14	13	8	5	11	10	8	10.9	23.1
3-Jul	7	7	8	6	8	7	8	12	14	15	17	17	21	18	17	18	20	24	26	30	24	23	22	20	16.2	29.8
4-Jul	19	19	18	17	19	14	19	28	32	36	33	30	26	27	30	30	30	23	15	9	8	7	8	8	21.0	35.8
5-Jul	8	7	6	5	7	6	6	8	9	12	21	20	23	27	29	31	28	29	26	22	12	8	12	8	15.3	31.1
6-Jul	7	8	11	8	6	8	7	9	8	7	6	10	9	5	6	7	11	11	13	12	9	8	17	11	9.0	17.3
7-Jul	8	9	9	12	9	7	10	8	6	6	7	8	8	6	8	6	8	8	9	7	8	7	6	6	7.9	11.8
8-Jul	7	12	14	11	12	12	14	16	21	23	22	23	21	23	23	26	28	29	35	P	P	P	31	27	20.4	35.1
9-Jul	20	17	11	9	9	10	12	13	14	15	16	14	16	15	15	13	12	11	12	14	17	19	12	13	13.7	20.2
10-Jul	20	17	16	15	12	11	6	11	11	9	11	12	9	11	10	8	6	6	4	5	5	5	5	7	9.6	20.0
11-Jul	5	6	7	9	9	7	6	7	8	12	15	15	9	20	19	19	13	16	17	10	8	10	8	8	10.9	20.1
12-Jul	8	7	6	7	7	8	9	7	8	8	8	9	10	10	8	9	8	7	9	8	5	4	5	6	7.5	10.0
13-Jul	4	5	4	7	7	7	7	5	4	5	5	8	7	8	9	10	12	12	8	6	4	4	4	6	6.5	12.5
14-Jul	5	8	11	10	15	13	16	14	10	17	20	24	23	21	17	10	11	12	9	10	12	13	8	5	13.1	24.0
15-Jul	7	7	9	10	6	6	11	15	17	21	21	28	36	37	38	40	34	32	22	20	22	27	29	26	21.7	39.9
16-Jul	27	25	23	22	13	10	6	7	8	3	6	7	9	9	13	14	11	8	5	5	4	5	5	6	10.5	27.0
17-Jul	5	6	7	6	6	4	4	10	6	11	11	9	8	7	7	11	18	8	4	4	3	4	4	5	7.0	18.2
18-Jul	3	4	4	5	5	5	9	5	6	8	11	15	17	15	20	22	22	22	17	13	8	11	17	17	11.7	22.5
19-Jul	14	14	15	9	10	10	10	14	26	31	28	28	26	25	29	29	27	31	26	20	18	19	13	15	20.3	31.2
20-Jul	20	19	15	17	15	21	22	21	26	29	28	29	27	21	21	18	10	5	7	14	11	10	11	12	17.8	29.2
21-Jul	13	10	13	15	11	9	7	9	12	10	9	7	7	10	9	6	5	6	7	8	6	8	9	9	9.1	15.2
22-Jul	10	7	7	6	7	7	9	9	7	7	6	6	6	7	6	6	7	5	7	5	4	3	5	3	6.4	10.1
23-Jul	5	9	11	12	13	14	15	15	14	13	13	14	10	8	11	13	11	13	11	6	4	4	6	6	10.4	14.6
24-Jul	4	8	8	11	11	12	13	15	21	24	26	26	28	27	29	29	28	22	18	16	10	10	14	14	17.6	29.3
25-Jul	13	11	10	11	14	11	10	11	15	27	30	31	31	27	24	25	23	22	16	10	3	4	8	7	16.4	31.4
26-Jul	4	6	8	10	7	9	12	16	28	25	22	25	30	25	25	19	19	26	25	21	15	16	20	20	18.0	30.0
27-Jul	18	20	20	21	22	20	19	23	29	26	23	24	28	33	34	30	26	25	23	24	19	15	15	14	22.9	34.0
28-Jul	14	12	10	7	9	8	7	8	20	24	29	29	34	33	27	26	25	25	18	12	15	10	9	12	17.6	34.1
29-Jul	11	13	15	15	11	13	19	22	27	30	30	32	32	31	32	30	29	27	22	17	19	14	15	12	21.6	32.3
30-Jul	11	9	6	6	7	10	6	7	7	5	8	6	5	6	6	5	5	4	4	3	4	7	9	6	6.4	11.0
31-Jul	8	5	7	7	6	10	8	11	11	16	20	22	24	28	26	26	27	25	25	20	17	17	19	12	16.5	27.6
10.9		10.7	10.7	10.7	10.2	10.1	11.1	12.6	14.9	16.7	17.9	18.9	19.2	19.3	19.2	18.8	18.1	17.2	15.4	12.7	10.6	10.8	11.9	11.1	Diurnal Average	
27.0		24.9	22.8	21.7	21.6	22.9	29.7	33.2	35.5	35.8	36.0	38.1	36.1	37.3	37.9	39.9	33.6	31.8	35.1	29.8	24.4	26.8	30.5	27.1	Diurnal Maximum	
P - Power Failure		All monthly, daily, and diurnal averages have been calculated using scalar methods																								

Hourly Standard Deviations

Wind Direction (WD) - deg

Smoky Heights - July 2011

Maximum Value: 94.5 deg on Jul 17 07:00																			Hours in Service: 744						
Minimum Value: 3.0 deg on Jul 27 02:00																			Hours of Data: 741						
																			Hours of Missing Data: 3						
Percentiles: P ₁ = 3.5 P ₁₀ = 5.6 Q ₁ = 7.9 Median = 11.0 Q ₃ = 18.3 P ₉₀ = 32.8 P ₉₉ = 70.6																			Hours of Calibration: 0						
																			Percent Operational Time: 99.6						
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-Jul	6	5	4	4	5	5	5	6	6	8	8	10	7	8	14	9	9	11	9	5	6	14	10	6	14.3
2-Jul	13	25	34	16	31	40	19	18	41	15	17	17	15	11	15	15	15	13	11	13	14	9	8	28	41.5
3-Jul	9	16	20	24	9	25	15	9	13	11	15	11	9	16	15	12	8	6	7	8	5	6	8	5	25.1
4-Jul	4	7	6	4	7	8	6	6	6	7	7	8	11	12	9	10	10	10	7	15	9	16	10	11	16.2
5-Jul	21	6	22	25	12	33	20	12	14	27	10	10	11	9	8	10	9	9	7	5	15	14	7	28	32.7
6-Jul	18	18	17	25	17	10	10	9	12	24	26	12	16	75	50	38	15	14	9	10	7	18	18	27	74.6
7-Jul	15	18	11	5	25	16	15	21	39	42	38	50	41	74	65	59	17	46	15	26	33	49	25	46	74.1
8-Jul	36	9	8	13	10	9	10	10	7	9	9	8	8	8	8	7	8	8	5	P	P	P	7	8	35.7
9-Jul	8	9	19	11	14	11	11	11	10	8	7	8	10	16	12	12	12	10	9	6	6	14	12	5	18.8
10-Jul	4	5	8	6	9	20	18	14	8	9	11	10	10	10	12	14	22	22	16	11	5	6	7	65	65.5
11-Jul	33	38	52	11	9	10	10	10	20	10	12	9	19	14	12	13	16	7	10	15	8	9	19	12	51.9
12-Jul	22	13	9	8	10	7	8	13	10	10	14	15	16	10	14	21	27	39	16	17	34	19	17	15	38.9
13-Jul	17	14	17	13	13	14	20	42	40	79	68	39	41	20	16	17	13	17	14	29	30	33	27	8	78.5
14-Jul	11	72	24	28	13	13	10	7	10	10	10	8	9	12	11	20	16	10	18	3	19	27	8	19	72.0
15-Jul	13	9	15	15	9	12	13	13	7	7	6	6	6	6	5	5	6	4	5	4	4	3	4	4	15.1
16-Jul	4	4	3	7	5	7	21	21	31	76	45	43	29	25	18	12	21	22	48	17	17	10	13	8	75.8
17-Jul	21	18	11	25	17	42	94	49	56	20	22	28	30	48	54	23	8	26	93	52	38	17	21	18	94.5
18-Jul	57	71	15	43	42	44	42	25	34	12	20	12	10	13	13	9	11	19	8	12	16	9	4	5	70.5
19-Jul	11	10	7	9	6	11	10	17	11	6	8	8	12	11	10	12	10	7	7	6	10	5	15	11	16.6
20-Jul	3	6	5	4	5	4	6	8	8	8	8	8	11	18	30	51	32	52	42	19	4	7	3	9	51.7
21-Jul	11	42	20	7	7	23	37	13	15	15	20	42	15	10	14	18	24	22	18	12	21	13	14	6	42.0
22-Jul	21	57	22	40	12	22	7	30	20	18	34	37	72	55	32	41	17	15	9	16	9	46	14	20	72.2
23-Jul	24	8	7	4	7	6	10	7	9	12	12	13	49	23	13	11	13	12	7	34	44	22	13	18	49.2
24-Jul	19	13	14	17	9	8	5	6	7	8	9	12	8	9	8	10	9	9	7	5	7	14	5	11	18.8
25-Jul	8	10	10	10	10	12	13	10	12	7	7	7	12	11	13	9	9	7	7	9	51	46	14	17	51.3
26-Jul	41	20	23	18	21	19	7	18	6	7	12	8	10	10	9	21	20	8	6	18	8	5	5	3	41.4
27-Jul	3	3	4	4	4	5	5	5	4	5	8	9	10	8	9	9	12	9	6	6	4	4	4	6	12.1
28-Jul	3	6	9	9	9	21	18	11	5	7	6	8	9	9	10	8	9	9	7	7	6	10	14	8	21.1
29-Jul	12	9	8	10	5	6	6	6	7	9	10	8	8	8	8	10	9	10	8	13	5	8	6	5	13.2
30-Jul	5	14	7	11	17	11	32	10	20	32	16	17	56	23	25	16	23	30	31	31	48	23	10	22	56.1
31-Jul	10	23	8	7	24	9	21	16	14	9	11	12	12	10	9	9	10	8	7	5	5	4	5	7	24.0
56.5 72.0 51.9 43.3 42.1 43.6 94.5 49.3 55.8 78.5 67.8 49.6 72.2 74.6 64.9 58.7 31.6 51.7 92.5 52.1 51.3 49.4 26.5 65.5																									
P - Power Failure																									

PAZA
Beaverlodge Station
Monthly Summary Tables, Graphs and
Roses

Hourly Averages

Sulphur Dioxide (SO₂) - ppb

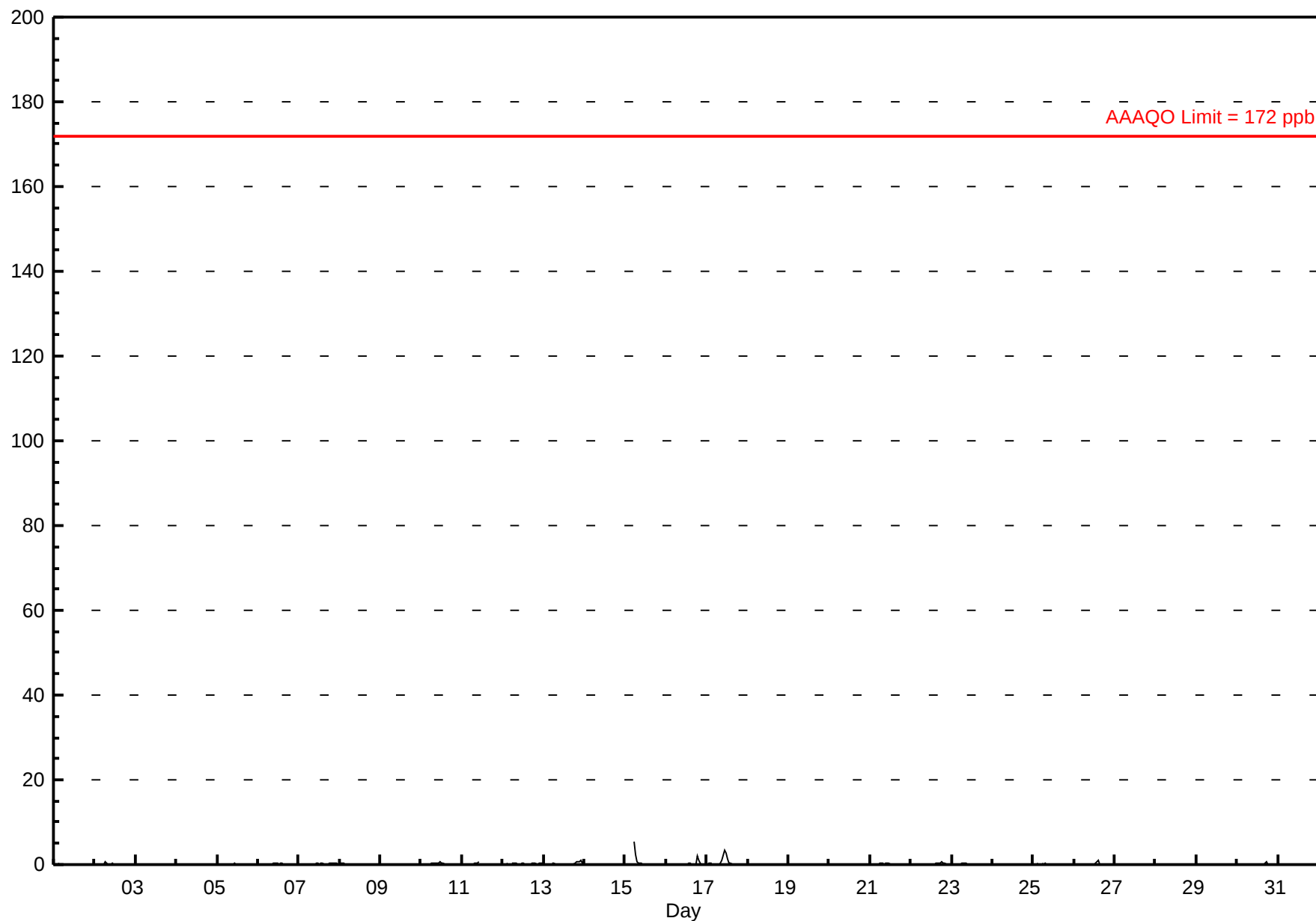
Beaverlodge - July 2011

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 5.5 ppb on Jul 15 06:00 Maximum Daily Average: 0.5 ppb on Jul 17																			Hours in Service: 744 Hours of Data: 704								
Minimum Value: 0 ppb on Jul 3 22:00 Minimum Daily Average: 0.0 ppb on Jul 27 Maximum Diurnal Average: 0.2 ppb at hour 6 Minimum Diurnal Average: 0.1 ppb at hour 1 Monthly Average: 0.11 ppb Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.1 Q ₃ = 0.1 P ₉₀ = 0.2 P ₉₉ = 0.9																			Hours of Missing Data: 40 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-Jul	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	
2-Jul	0	0	0	0	A	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.6	
3-Jul	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	
4-Jul	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	C	C	C	C	C	0	0	0	0	0.1	0.1	
5-Jul	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	
6-Jul	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	
7-Jul	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	0.5	
8-Jul	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	
9-Jul	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	
10-Jul	0	0	0	0	A	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.6	
11-Jul	0	0	0	0	A	0	0	0	0	0	1	C	C	C	C	0	0	0	0	0	0	0	0	0	0.1	0.7	
12-Jul	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	
13-Jul	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0.2	0.9	
14-Jul	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	0.2	
15-Jul	0	0	0	0	A	5	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	5.5	
16-Jul	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0.2	2.1	
17-Jul	0	0	0	0	A	0	0	0	0	1	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0.5	3.5	
18-Jul	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	
19-Jul	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	
20-Jul	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	
21-Jul	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	
22-Jul	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0.1	0.5	
23-Jul	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	
24-Jul	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	
25-Jul	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	
26-Jul	0	0	0	0	A	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0.1	1.1	
27-Jul	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	
28-Jul	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	
29-Jul	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	
30-Jul	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0.1	0.6	
31-Jul	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	
0.1 0.1 0.1 0.1 -- 0.2 0.2 0.1 0.1 0.1 0.2 0.2 0.1 0.1 0.1 0.1 0.1 0.1 0.2 0.1 0.1 0.1 0.1 0.1																									Diurnal Average		
0.2 0.2 0.3 0.3 -- 5.5 2.3 0.7 0.4 1.1 3.5 2.6 1.5 0.6 1.1 0.3 0.3 0.6 2.1 1.0 0.5 0.7 0.9 0.3																									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 Averages

Sulphur Dioxide (SO₂) - ppb

Beaverlodge - July 2011



Hourly Maximums

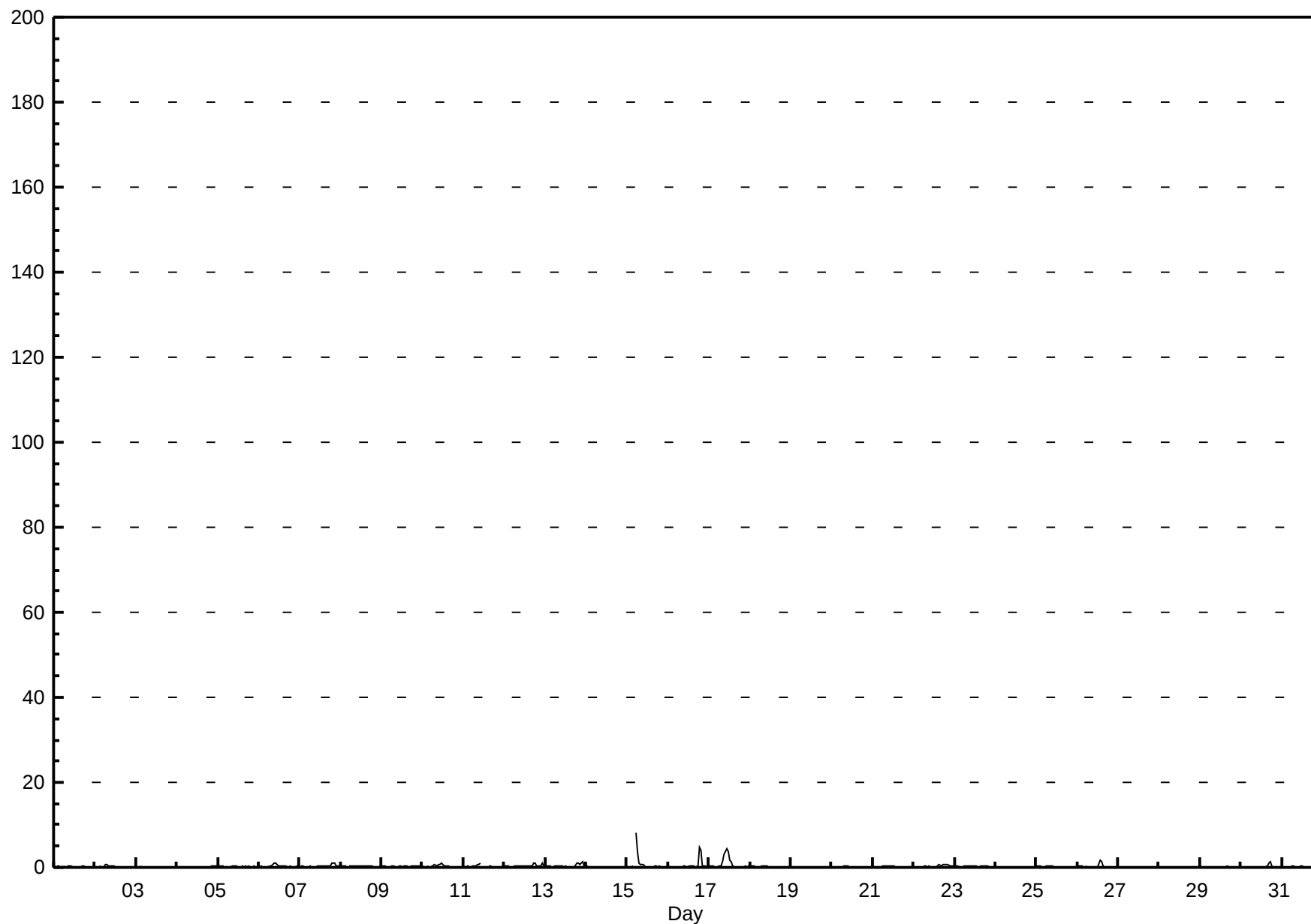
Sulphur Dioxide (SO₂) - ppb

Beaverlodge - July 2011

Maximum Value: 8.1 ppb on Jul 15 06:00		Maximum Daily Average: 0.9 ppb on Jul 17		Hours in Service: 744																							
Minimum Value: 0 ppb on Jul 27 04:00		Minimum Daily Average: 0.1 ppb on Jul 27		Hours of Data: 704																							
Maximum Diurnal Average: 0.4 ppb at hour 6		Minimum Diurnal Average: 0.2 ppb at hour 1		Hours of Missing Data: 40																							
Monthly Average: 0.25 ppb		Percentiles: P ₁ = 0.1 P ₁₀ = 0.1 Q ₁ = 0.1 Median = 0.1 Q ₃ = 0.2 P ₉₀ = 0.4 P ₉₉ = 3.0		Hours of Calibration: 40																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
1-Jul	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	
2-Jul	0	0	0	0	A	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.8	
3-Jul	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	
4-Jul	0	0	0	0	A	0	0	0	0	0	0	0	0	0	C	C	C	C	C	0	0	0	0	0	0.2	0.3	
5-Jul	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	0.5	
6-Jul	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	1.0	
7-Jul	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0.3	1.0	
8-Jul	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	
9-Jul	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	0.2	
10-Jul	0	0	0	0	A	0	0	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0.3	1.0	
11-Jul	0	0	0	0	A	0	0	0	1	1	1	C	C	C	C	0	0	0	0	0	0	0	0	0	0.3	1.0	
12-Jul	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0.4	1.0	
13-Jul	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0.4	1.4	
14-Jul	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	
15-Jul	0	0	0	0	A	8	4	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.7	8.1	
16-Jul	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	5	4	0	0	0	0	0	0.6	4.6	
17-Jul	0	0	0	0	A	0	0	0	1	3	5	4	2	1	0	0	0	0	0	0	0	0	0	0	0.9	4.5	
18-Jul	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	
19-Jul	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	
20-Jul	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	
21-Jul	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	
22-Jul	0	0	0	0	A	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	0	0	0	0.3	0.8	
23-Jul	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	
24-Jul	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	
25-Jul	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	
26-Jul	0	0	0	0	A	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0.3	1.5	
27-Jul	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	
28-Jul	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	
29-Jul	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	
30-Jul	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	1.5	
31-Jul	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	
0.2		0.2	0.2	0.2	--	0.4	0.3	0.2	0.3	0.3	0.4	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.4	0.3	0.2	0.2	0.2	0.2	Diurnal Average		
0.3		0.5	0.5	0.4	--	8.1	3.8	1.1	1.2	3.2	4.5	3.6	1.8	1.5	1.5	0.6	1.0	1.5	4.6	4.0	1.0	1.0	1.4	0.5	Diurnal Maximum		
C - Calibration		A - Automated Daily Zero Span																									

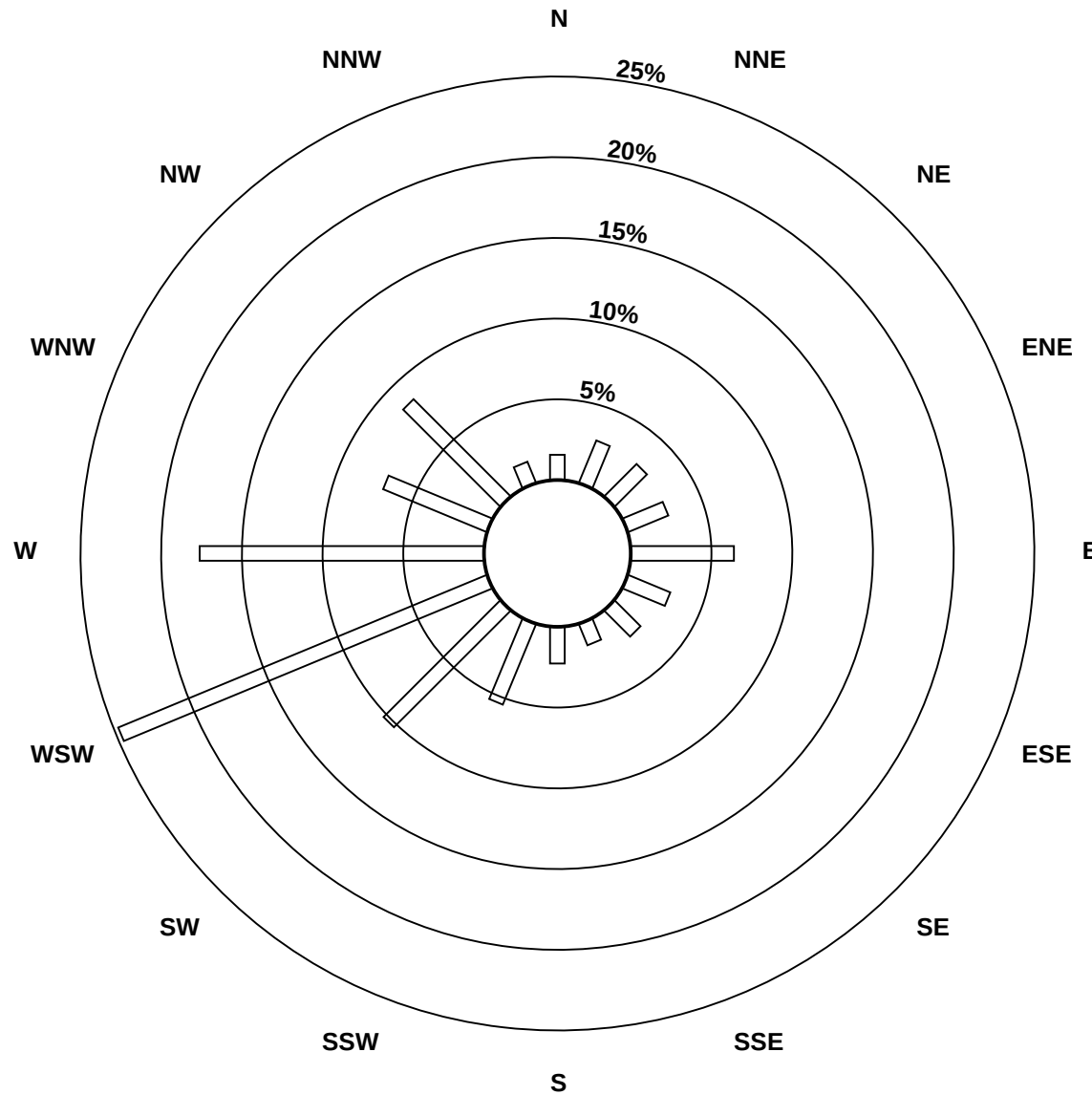
Hourly Maximums

Sulphur Dioxide (SO₂) - ppb
Beaverlodge - July 2011

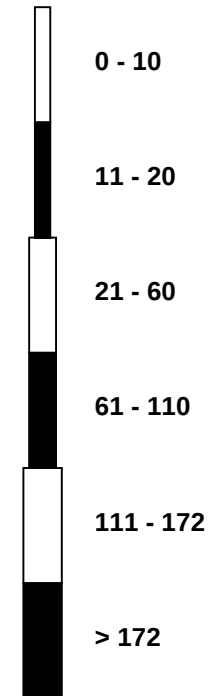


Pollutant Rose

Sulphur Dioxide (SO₂) - ppb
Beaverlodge - July 2011

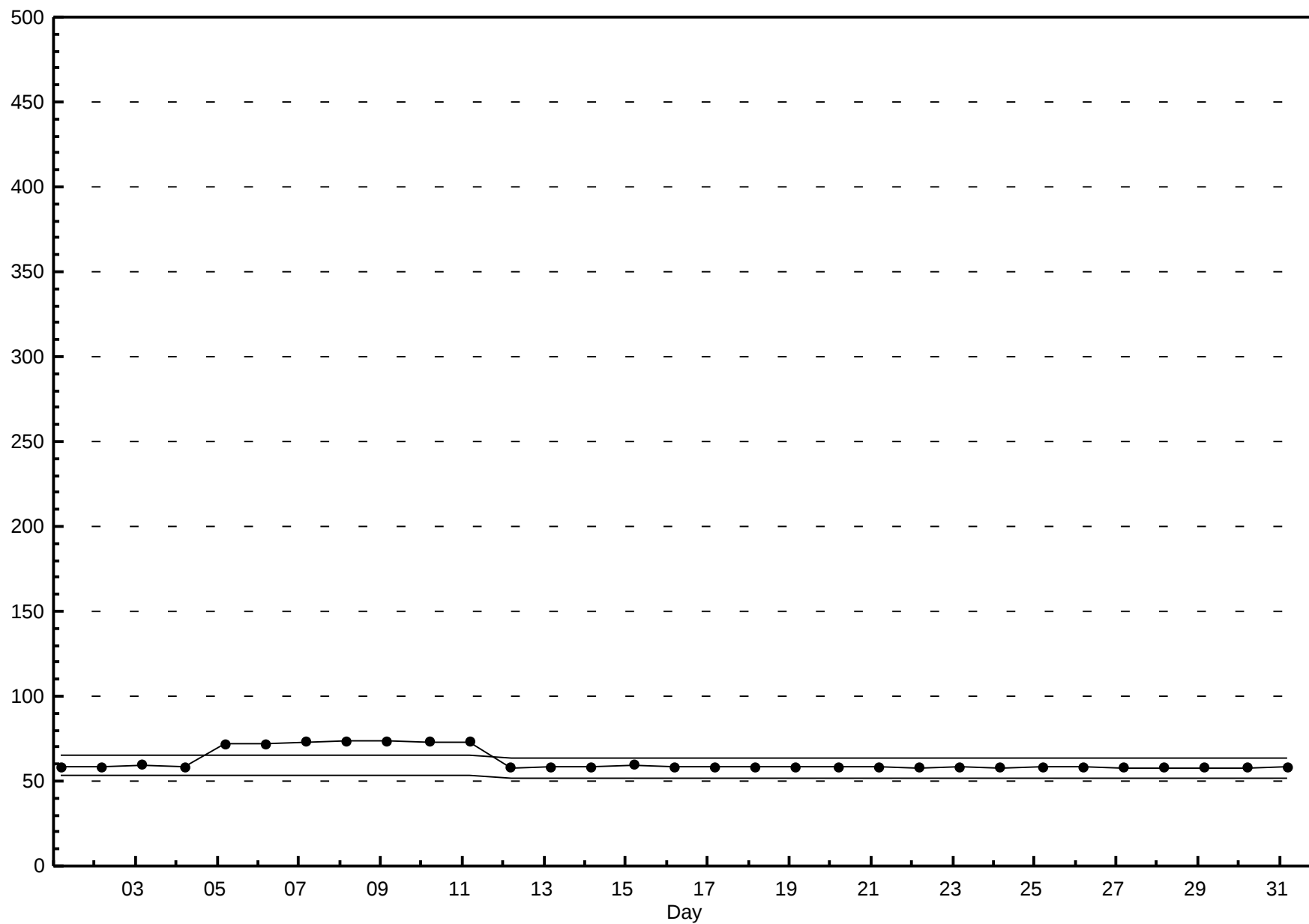


Pollutant Classes (ppb)



Span Responses

Sulphur Dioxide (SO₂)
Beaverlodge - July 2011



Hourly Averages

Nitrogen Dioxide (NO₂) - ppb

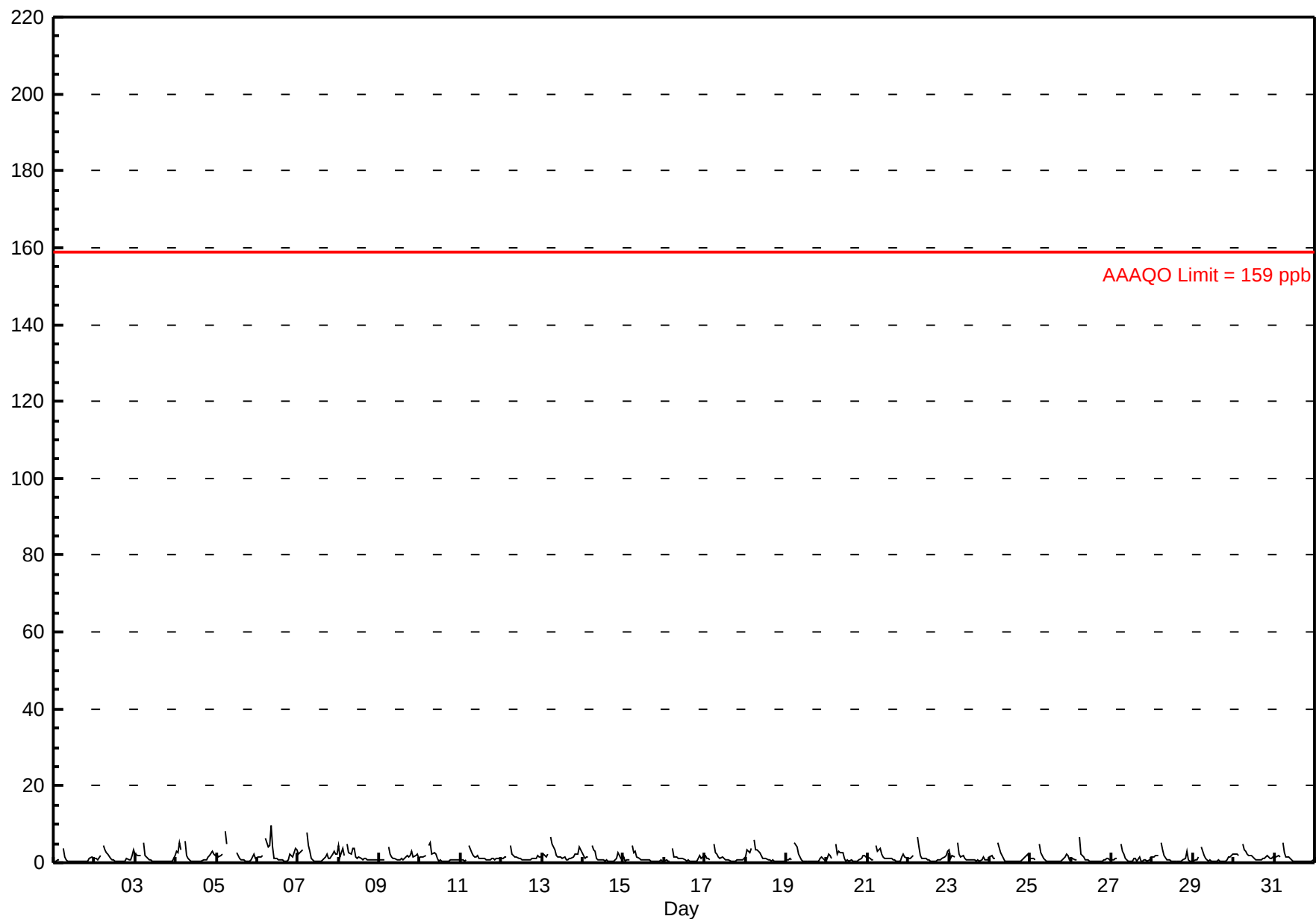
Beaverlodge - July 2011

Number of Exceedences (AAAQO):		1-hr: 0 24-hr: 0		Hours in Service: 744																								
Maximum Value: 9.6 ppb on Jul 6 09:00		Maximum Daily Average: 2.4 ppb on Jul 6		Hours of Data: 708																								
Minimum Value: 0 ppb on Jul 24 17:00		Minimum Daily Average: 0.7 ppb on Jul 1		Hours of Missing Data: 36																								
Maximum Diurnal Average: 5.2 ppb at hour 6		Minimum Diurnal Average: 0.6 ppb at hour 16		Hours of Calibration: 36																								
Monthly Average: 1.38 ppb		Percentiles: P ₁ = 0.3 P ₁₀ = 0.4 Q ₁ = 0.5 Median = 1.0 Q ₃ = 1.7 P ₉₀ = 2.9 P ₉₉ = 6.4		Percent Operational Time: 100.0																								
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum		
1-Jul	0	1	1	1	A	4	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	0.7	3.7		
2-Jul	1	1	1	2	A	5	3	3	2	1	1	1	0	0	0	0	0	0	0	0	1	1	1	2	3	1.3	4.6	
3-Jul	2	2	2	2	A	5	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	1.1	5.1	
4-Jul	3	3	5	3	A	5	2	1	1	0	0	0	0	0	0	0	1	1	1	1	2	3	2	2	2	1.6	5.5	
5-Jul	2	2	2	2	A	8	5	C	C	C	C	C	2	1	1	1	1	0	0	1	1	2	2	1	1.9	8.2		
6-Jul	1	1	1	2	A	6	4	5	10	4	1	1	1	1	1	1	0	1	2	2	2	2	4	3	2.4	9.6		
7-Jul	2	3	3	3	A	8	4	3	1	0	1	0	1	0	0	1	1	2	1	1	2	3	2	2	2	2.0	7.7	
8-Jul	5	1	4	2	A	5	3	2	4	4	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.8	5.0	
9-Jul	1	1	1	1	A	4	2	2	1	1	1	1	1	1	1	1	2	3	1	2	2	2	1	1	1	1.5	4.1	
10-Jul	2	2	1	2	A	4	5	2	3	2	1	1	1	0	0	0	0	0	1	1	1	1	1	1	1	1.4	5.2	
11-Jul	1	1	0	1	A	4	3	2	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.3	4.4	
12-Jul	1	1	1	1	A	4	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1.3	4.4	
13-Jul	2	2	1	2	A	7	5	3	2	1	1	1	1	1	1	1	1	2	2	2	2	2	4	3	2.2	6.8		
14-Jul	2	1	2	1	A	4	3	3	1	1	1	1	1	1	1	0	1	0	0	1	1	2	1	1	1	1.3	4.4	
15-Jul	2	0	1	1	A	4	3	3	2	1	1	1	1	1	1	1	1	0	0	0	0	0	1	0	0	1.0	4.4	
16-Jul	0	1	0	0	A	4	2	1	1	1	1	1	1	0	1	1	0	0	0	0	1	2	1	2	2	1.0	3.7	
17-Jul	2	1	1	1	A	5	3	2	2	1	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	1.2	4.8	
18-Jul	1	3	3	4	A	6	3	3	3	2	1	1	1	1	1	0	1	1	0	0	1	0	1	0	0	1.6	6.0	
19-Jul	1	1	1	1	A	5	4	2	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1.1	5.1	
20-Jul	1	2	2	1	A	5	2	3	3	3	1	1	1	0	1	0	0	0	0	1	1	2	2	2	2	1.5	4.8	
21-Jul	2	1	1	1	A	4	3	4	2	1	1	1	1	1	1	1	0	0	0	1	2	1	1	1	1	1.5	4.4	
22-Jul	1	1	1	2	A	7	4	2	1	1	1	1	1	1	0	0	1	1	1	1	1	2	2	3	3	1.5	6.5	
23-Jul	3	1	2	2	A	5	2	2	2	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1.3	5.1	
24-Jul	1	2	1	1	A	5	2	2	1	1	0	0	0	0	0	0	0	0	0	1	1	1	2	1	1	1.1	5.3	
25-Jul	1	1	1	1	A	5	3	2	1	1	0	0	0	0	0	0	0	0	0	1	1	2	2	1	1	1.1	4.9	
26-Jul	1	1	1	1	A	7	2	1	1	1	1	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1.1	6.6	
27-Jul	1	1	1	1	A	5	3	2	1	1	0	0	0	1	1	0	1	0	0	1	1	1	1	2	2	1.1	4.8	
28-Jul	1	2	2	2	A	5	3	2	1	1	1	0	0	0	0	0	0	1	1	1	3	1	1	1	1	1.2	5.1	
29-Jul	1	1	1	1	A	4	2	1	1	0	1	0	0	0	0	1	0	0	0	0	1	2	2	2	2	0.9	4.0	
30-Jul	2	2	2	2	A	5	3	3	2	2	2	1	1	1	1	1	1	1	1	2	2	1	1	2	2	1.7	4.9	
31-Jul	1	2	2	2	A	5	2	2	1	1	1	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1.0	5.2	
1.5		1.4	1.5	1.6	--	5.2	3.0	2.2	1.8	1.2	0.9	0.8	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.9	1.1	1.4	1.4	1.4	Diurnal Average			
4.6		3.2	5.0	3.6	--	8.2	5.2	4.5	9.6	4.2	1.9	1.5	2.4	1.3	1.2	1.1	2.0	2.2	1.8	2.9	2.9	3.0	4.1	3.3	Diurnal Maximum			
C - Calibration		A - Automated Daily Zero Span																										
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr 159 ppb		24-hr 106 ppb																								

Hourly Averages

Nitrogen Dioxide (NO₂) - ppb

Beaverlodge - July 2011



Hourly Maximums

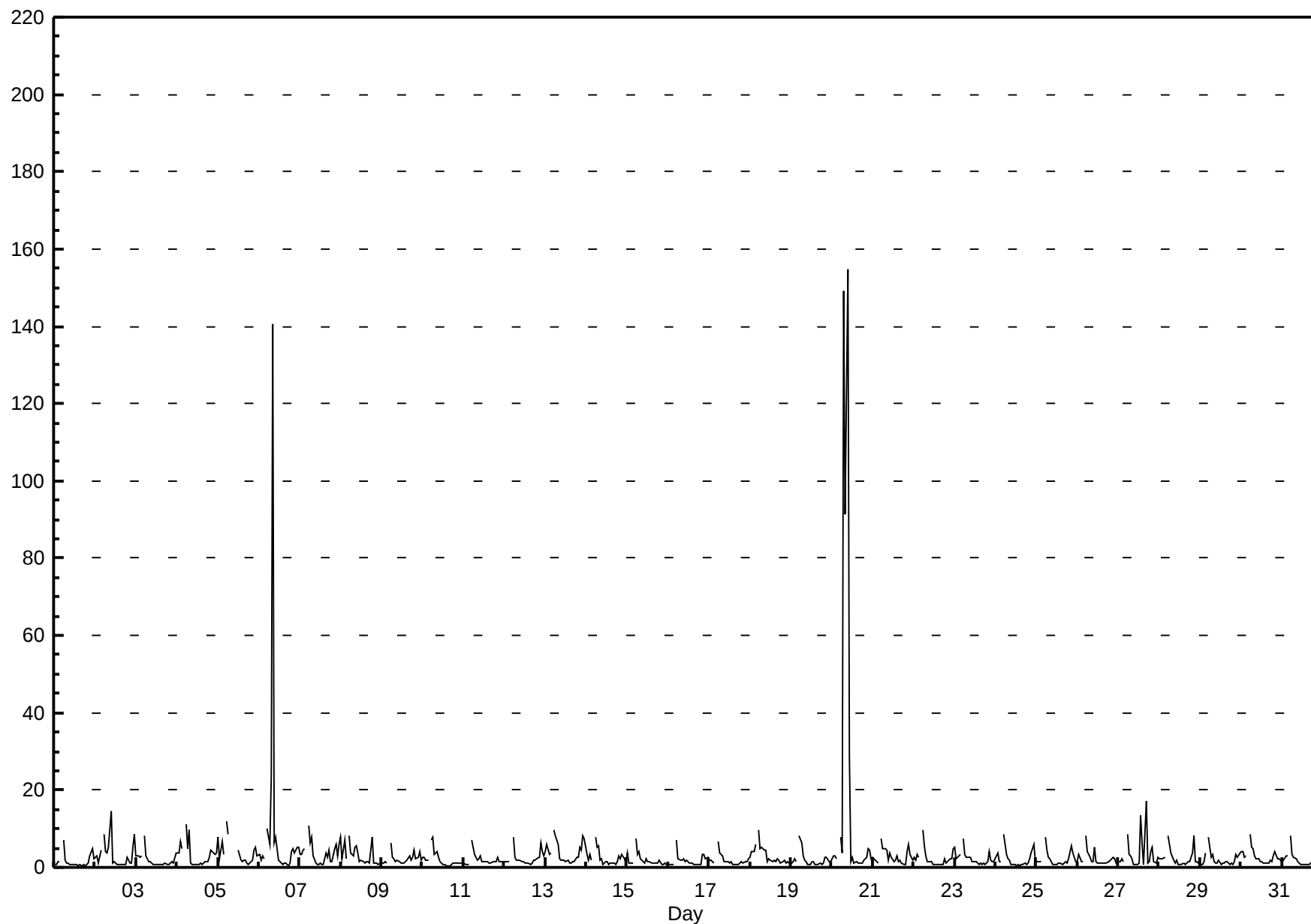
Nitrogen Dioxide (NO₂) - ppb

Beaverlodge - July 2011

Maximum Value: 154.6 ppb on Jul 20 10:00																								Hours in Service: 744	
Maximum Daily Average: 20.6 ppb on Jul 20																								Hours of Data: 708	
Minimum Value: 0 ppb on Jul 1 17:00																								Hours of Missing Data: 36	
Maximum Diurnal Average: 10.0 ppb at hour 9																								Hours of Calibration: 36	
Monthly Average: 3.31 ppb																								Percent Operational Time: 100.0	
Minimum Daily Average: 1.5 ppb on Jul 1																								Daily Average	
Minimum Diurnal Average: 1.1 ppb at hour 16																									
Percentiles: P ₁ = 0.5 P ₁₀ = 0.8 Q ₁ = 1.1 Median = 1.6 Q ₃ = 3.1 P ₉₀ = 5.7 P ₉₉ = 13.6																								Daily Maximum	
Day	Hourly Period Ending At (MST)																								
	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-Jul	1	1	1	2	A	7	2	1	1	1	1	1	1	1	1	1	0	1	1	1	1	3	5	2	1.5
2-Jul	3	3	1	4	A	9	4	4	5	14	1	2	1	1	1	1	1	1	1	3	1	1	5	8	3.2
3-Jul	3	3	3	3	A	8	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	1.8
4-Jul	4	4	7	5	A	11	5	10	1	1	1	1	1	1	1	1	1	1	1	2	4	4	3	4	3.2
5-Jul	8	2	7	3	A	12	8	C	C	C	C	C	4	2	1	2	2	1	1	2	2	5	5	3	3.9
6-Jul	4	2	3	2	A	10	6	24	141	6	8	2	1	1	1	1	1	1	1	4	5	4	5	5	10.3
7-Jul	3	3	4	5	A	11	6	8	3	1	1	1	1	1	1	4	3	5	2	1	5	6	3	6	3.6
8-Jul	8	2	7	2	A	8	4	3	5	6	4	2	2	2	1	1	1	1	8	1	1	1	1	1	3.1
9-Jul	1	1	1	1	A	6	3	2	2	2	1	1	1	1	1	2	3	2	3	4	2	3	4	2	2.2
10-Jul	3	3	2	2	A	7	8	3	4	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2.1
11-Jul	1	1	1	1	A	7	3	3	2	2	3	2	2	1	2	1	1	2	2	1	3	1	1	1	1.9
12-Jul	1	2	1	2	A	8	3	2	2	2	1	2	1	1	1	1	1	2	2	2	3	6	4	3	2.3
13-Jul	4	6	3	4	A	10	8	6	2	2	2	2	1	2	1	1	1	1	3	3	5	4	8	7	3.8
14-Jul	3	2	3	2	A	8	5	6	2	2	1	2	2	1	1	1	1	1	1	3	2	3	2	1	2.4
15-Jul	4	1	1	1	A	7	3	4	2	1	1	2	2	1	1	1	1	1	1	2	1	1	1	1	1.8
16-Jul	1	1	1	1	A	7	2	2	2	2	2	2	1	1	1	1	1	1	1	1	3	3	2	2	1.7
17-Jul	2	2	1	1	A	7	4	3	3	1	2	1	1	1	1	1	1	1	1	1	1	2	1	2	1.8
18-Jul	3	4	4	6	A	10	5	5	5	4	1	2	2	1	2	1	2	2	1	1	2	1	1	1	2.9
19-Jul	1	1	2	2	A	8	6	3	2	1	1	1	1	2	1	1	1	1	1	1	3	3	1	1	2.0
20-Jul	2	3	3	2	A	8	4	149	91	155	29	1	3	1	1	1	1	1	1	2	3	5	5	2	20.6
21-Jul	3	2	1	1	A	7	5	5	4	2	4	3	2	2	3	2	2	1	1	1	4	6	3	2	2.8
22-Jul	3	2	3	3	A	10	6	3	2	1	2	1	1	1	1	1	1	1	2	1	1	2	2	5	2.3
23-Jul	5	2	3	3	A	7	3	3	3	2	1	1	2	2	1	1	1	1	1	2	4	2	2	1	2.3
24-Jul	2	4	1	2	A	9	3	2	2	1	1	1	0	1	0	1	1	1	1	1	2	4	6	2	2.0
25-Jul	1	1	2	1	A	8	4	3	2	1	1	1	1	1	1	1	1	2	1	2	5	4	3	2	2.1
26-Jul	1	3	2	1	A	8	4	2	1	1	5	1	1	1	1	1	1	1	1	2	2	3	2	1	2.2
27-Jul	2	2	2	2	A	9	4	3	2	1	1	1	1	14	6	1	17	1	1	4	5	1	1	3	3.6
28-Jul	2	2	2	2	A	8	6	4	2	1	2	1	1	1	1	1	1	1	2	4	8	2	1	1	2.5
29-Jul	1	1	1	4	A	8	3	3	1	1	1	2	1	1	1	2	1	1	1	1	2	3	3	4	2.0
30-Jul	4	4	3	3	A	9	5	5	3	2	2	2	1	1	1	1	1	2	1	3	4	2	2	2	2.8
31-Jul	2	2	3	3	A	8	4	2	2	1	1	1	1	1	1	1	1	1	2	1	1	2	1	5	2.0
2.7 2.3 2.6 2.4 -- 8.4 4.5 9.2 10.0 7.4 2.7 1.3 1.3 1.6 1.2 1.1 1.7 1.3 1.5 1.9 2.9 2.9 2.8 2.8																									Diurnal Average
8.0 6.0 7.1 6.0 -- 11.9 8.5 149.3 140.7 154.6 28.7 2.5 4.4 13.6 6.4 3.9 17.3 4.6 7.7 4.3 8.4 6.4 8.2 8.4																									Diurnal Maximum
C - Calibration A - Automated Daily Zero Span																									

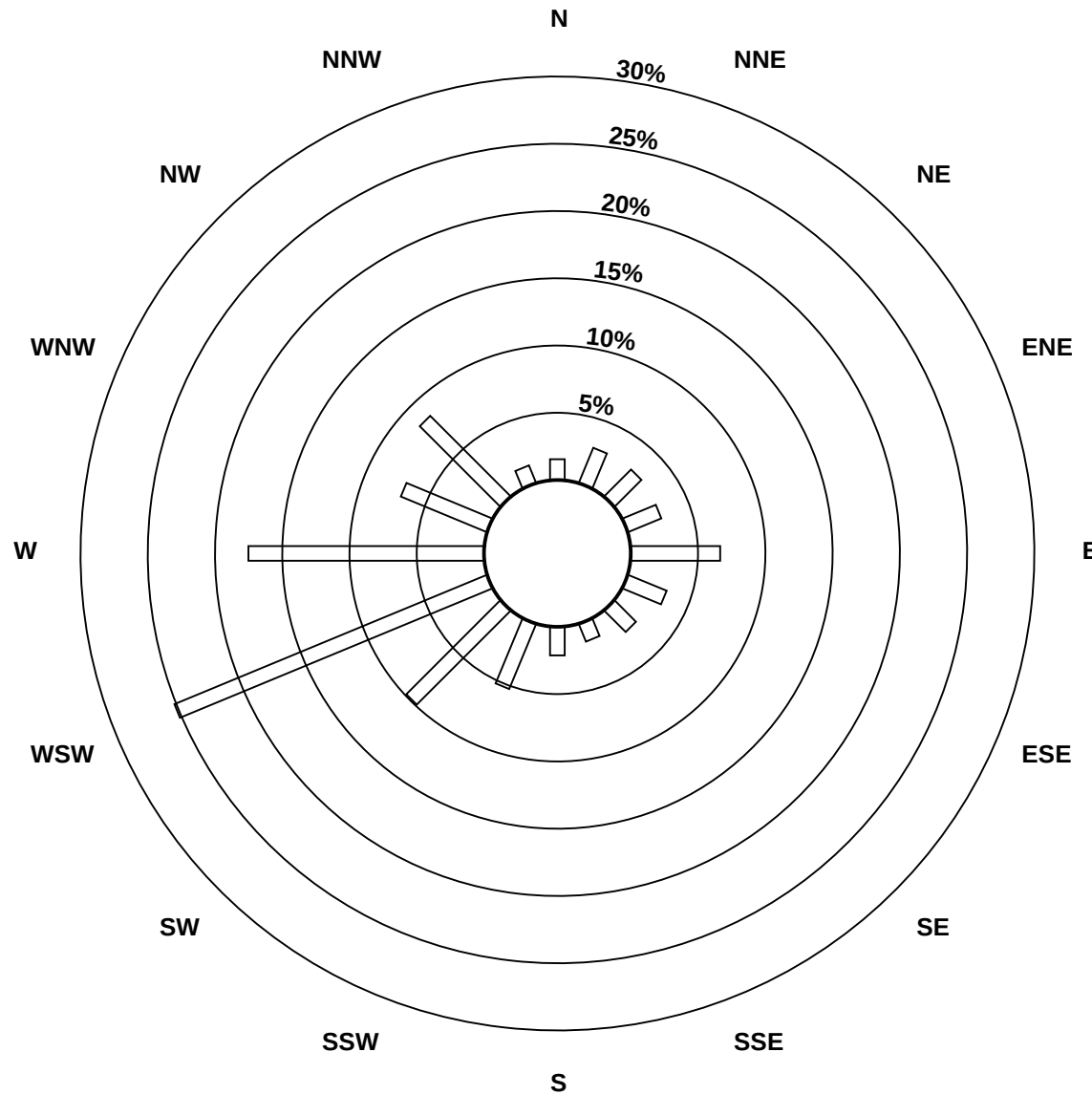
Hourly Maximums

Nitrogen Dioxide (NO₂) - ppb
Beaverlodge - July 2011

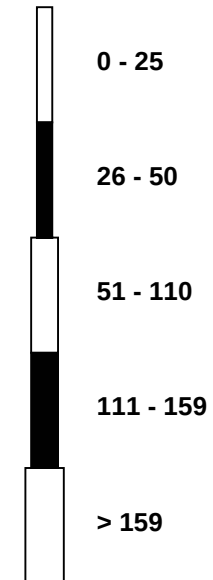


Pollutant Rose

Nitrogen Dioxide (NO₂) - ppb
Beaverlodge - July 2011

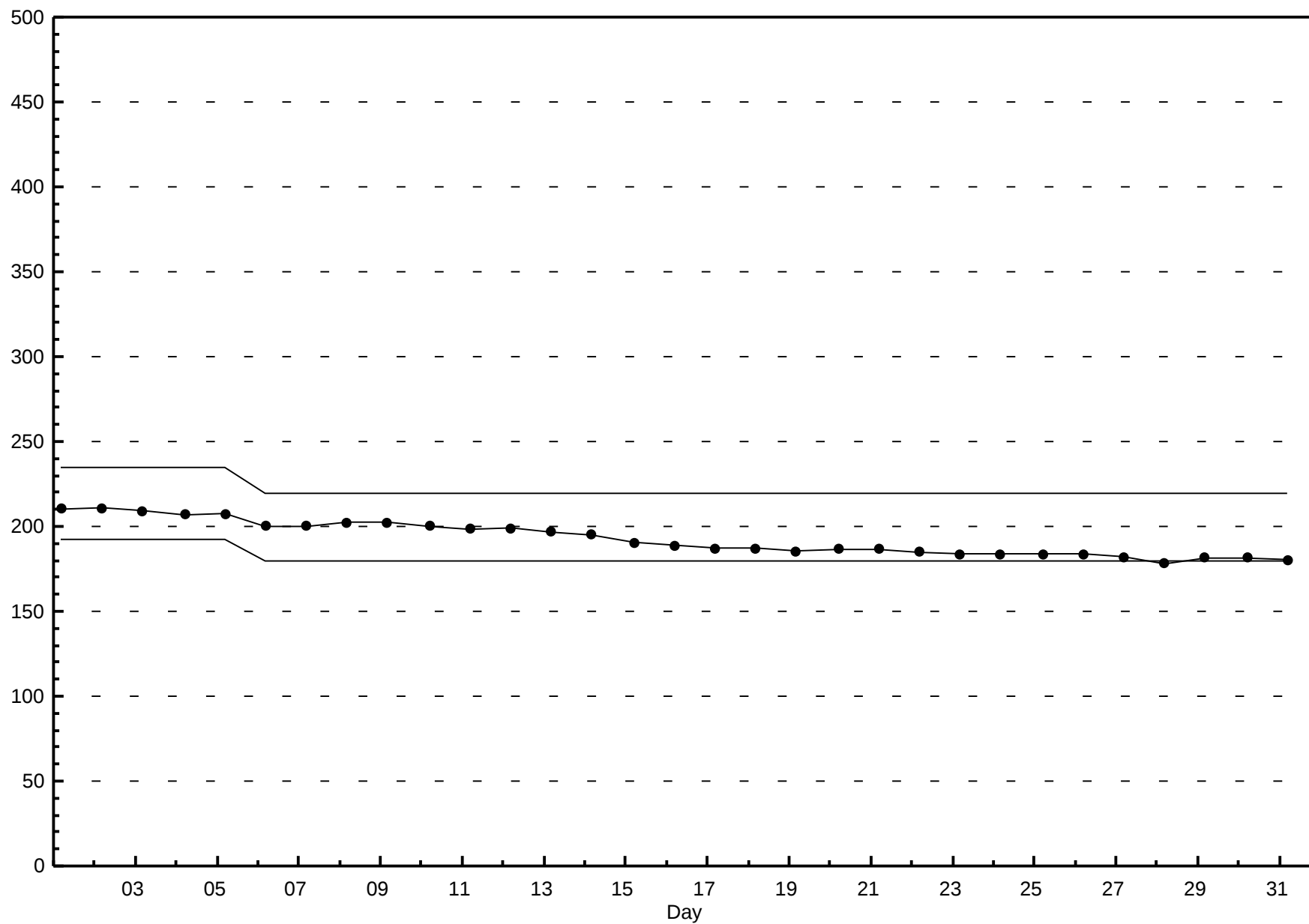


Pollutant Classes (ppb)



Span Responses

Nitrogen Dioxide (NO₂)
Beaverlodge - July 2011



Hourly Averages

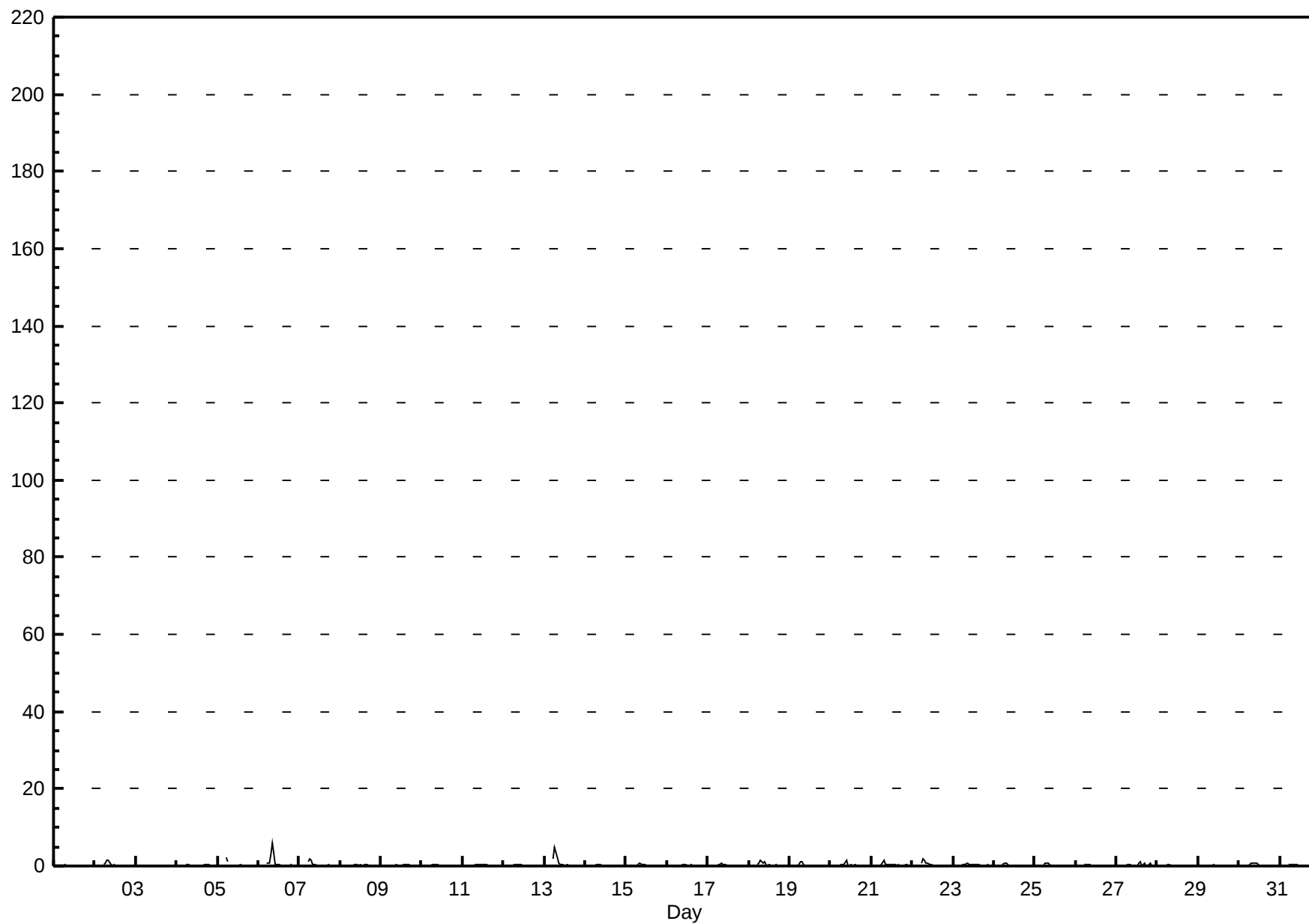
Nitrogen Oxide (NO) - ppb

Beaverlodge - July 2011

Number of Exceedences (AAAQO):		1-hr: 0 24-hr: 0		Hours in Service: 744																									
Maximum Value: 6.0 ppb on Jul 6 09:00		Maximum Daily Average: 0.7 ppb on Jul 6		Hours of Data: 708																									
Minimum Value: 0 ppb on Jul 1 03:00		Minimum Daily Average: 0.1 ppb on Jul 3		Hours of Missing Data: 36																									
Maximum Diurnal Average: 0.7 ppb at hour 8		Minimum Diurnal Average: 0.0 ppb at hour 2		Hours of Calibration: 36																									
Monthly Average: 0.18 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.1 Q ₃ = 0.2 P ₉₀ = 0.4 P ₉₉ = 1.8		Percent Operational Time: 100.0																									
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum			
1-Jul	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-Jul	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	1.4			
3-Jul	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			
4-Jul	0	0	0	0	A	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0.2	0.6			
5-Jul	0	0	0	0	A	2	1	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0	0.3	2.3			
6-Jul	0	0	0	0	A	1	1	3	6	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.7	6.0			
7-Jul	0	0	0	0	A	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	1.9			
8-Jul	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			
9-Jul	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			
10-Jul	0	0	0	0	A	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.5			
11-Jul	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	0.5			
12-Jul	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-Jul	0	0	0	0	A	2	5	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	4.8			
14-Jul	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	0.5			
15-Jul	0	0	0	0	A	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.6			
16-Jul	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			
17-Jul	0	0	0	0	A	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.7			
18-Jul	0	0	0	0	A	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	1.4			
19-Jul	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	1.2			
20-Jul	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	1.4			
21-Jul	0	0	0	0	A	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1.3			
22-Jul	0	0	0	0	A	1	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	2.0			
23-Jul	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	0.6			
24-Jul	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	0.9			
25-Jul	0	0	0	0	A	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.9			
26-Jul	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			
27-Jul	0	0	0	0	A	0	0	1	0	0	0	0	0	1	1	0	1	0	0	0	1	0	0	0	0.2	0.9			
28-Jul	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			
29-Jul	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	0.5			
30-Jul	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	0.7			
31-Jul	0	0	0	0	A	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.5			
0.0 0.0 0.0 0.0 -- 0.3 0.6 0.7 0.6 0.5 0.2 0.2 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.0 0.0 0.0		Diurnal Average																								0.1 0.0 0.1 0.1 -- 2.3 4.8 2.8 6.0 3.4 0.6 0.4 0.4 0.8 0.9 0.2 0.8 0.4 0.6 0.4 0.7 0.2 0.1 0.1		Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																											

Hourly Averages

Nitrogen Oxide (NO) - ppb
Beaverlodge - July 2011



Hourly Maximums

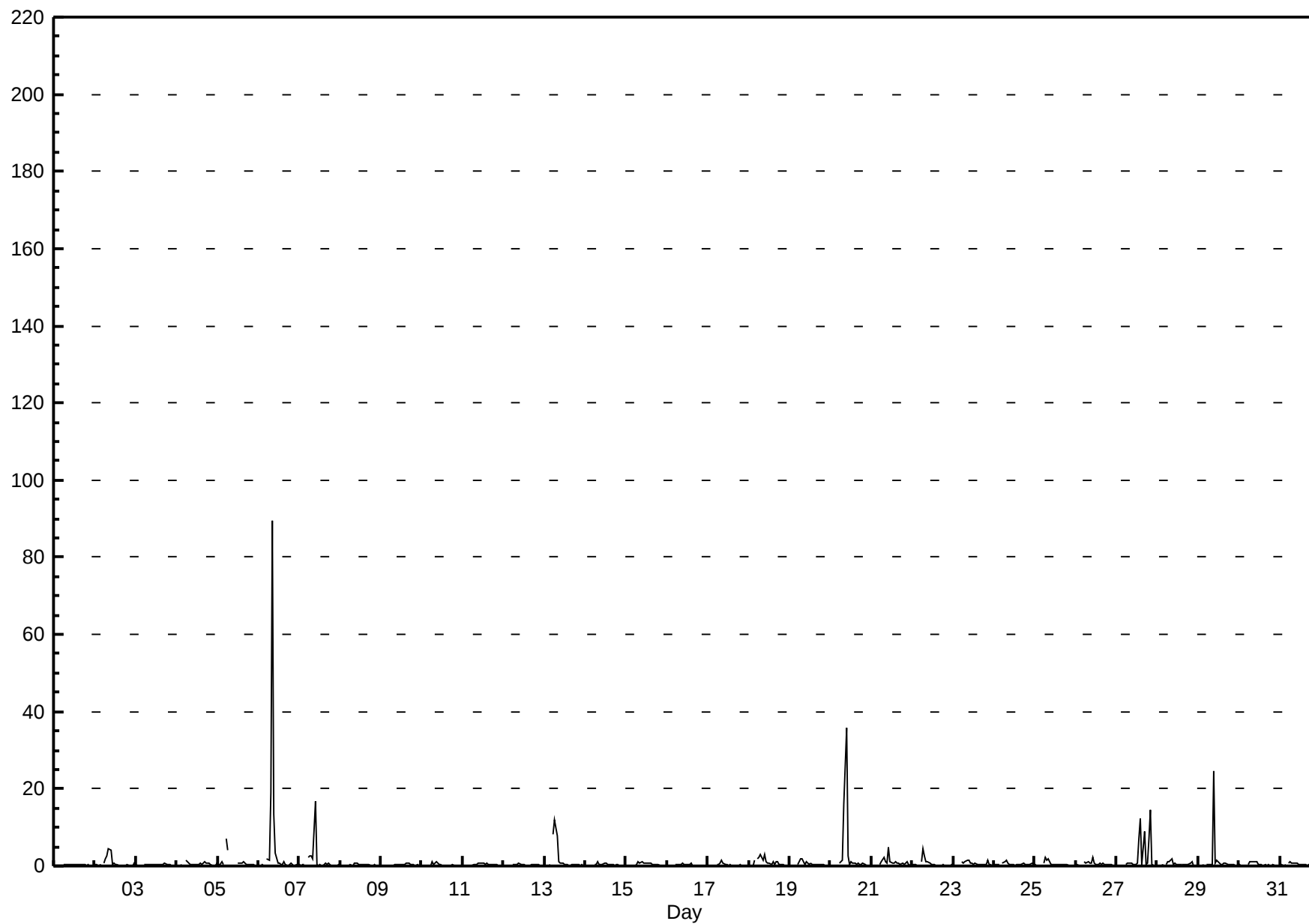
Nitrogen Oxide (NO) - ppb

Beaverlodge - July 2011

Maximum Value: 89.4 ppb on Jul 6 09:00																				Maximum Daily Average: 5.8 ppb on Jul 6					Hours in Service: 744	
Minimum Value: 0 ppb on Jul 26 03:00																				Minimum Daily Average: 0.2 ppb on Jul 16					Hours of Data: 708	
Maximum Diurnal Average: 4.5 ppb at hour 9																				Minimum Diurnal Average: 0.1 ppb at hour 24					Hours of Missing Data: 36	
Monthly Average: 0.88 ppb																				Percentiles: P ₁ = 0.0 P ₁₀ = 0.1 Q ₁ = 0.2 Median = 0.3 Q ₃ = 0.6 P ₉₀ = 1.1 P ₉₉ = 13.8					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-Jul	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0.3	0.5
2-Jul	0	0	0	0	A	1	2	3	4	4	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0.8	4.4
3-Jul	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0.3	0.8
4-Jul	0	0	0	0	A	1	1	1	0	1	0	0	1	0	1	0	1	1	1	1	0	0	0	0	0.5	1.4
5-Jul	1	0	1	0	A	7	4	C	C	C	C	C	1	1	1	1	1	1	0	0	0	0	0	0	1.1	7.2
6-Jul	0	0	0	0	A	2	1	19	89	13	3	1	1	0	0	1	0	0	0	1	0	0	0	0	5.8	89.4
7-Jul	0	0	0	0	A	2	3	3	2	17	0	0	1	0	0	1	1	1	0	0	0	0	0	0	1.4	16.9
8-Jul	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
9-Jul	0	0	0	0	A	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0.3	0.7
10-Jul	0	0	0	0	A	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	1.0
11-Jul	0	0	0	0	A	0	0	0	0	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0.3	0.9
12-Jul	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	0.6
13-Jul	0	0	0	0	A	8	12	8	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	1.5	12.0
14-Jul	0	0	0	0	A	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0.3	1.1
15-Jul	0	0	0	0	A	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0.4	1.3
16-Jul	0	0	0	0	A	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0.2	0.7
17-Jul	0	0	0	0	A	1	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	1.5
18-Jul	0	0	0	2	A	2	2	3	1	3	1	1	1	0	1	0	1	1	0	0	0	0	0	0	0.9	3.1
19-Jul	0	0	0	0	A	0	2	2	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0.5	2.0
20-Jul	0	0	0	0	A	1	1	1	16	36	2	0	1	1	1	0	1	0	1	1	0	0	0	0	2.8	35.7
21-Jul	0	0	0	0	A	0	1	2	1	1	5	1	1	1	1	1	1	1	1	0	1	1	0	0	0.8	4.8
22-Jul	0	0	0	0	A	1	5	3	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.7	4.6
23-Jul	0	0	0	0	A	1	1	1	1	2	1	1	0	1	0	0	0	0	0	0	1	0	0	0	0.6	1.6
24-Jul	0	0	0	0	A	1	1	1	1	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0.4	1.4
25-Jul	0	0	0	0	A	1	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	2.1
26-Jul	0	0	0	0	A	1	1	1	1	1	2	1	0	0	1	1	1	0	1	0	0	0	0	0	0.5	2.3
27-Jul	0	0	0	0	A	0	1	1	1	1	0	0	1	7	12	0	9	0	1	7	15	0	0	0	2.5	14.7
28-Jul	0	0	0	0	A	0	1	1	2	0	1	0	0	0	1	0	0	0	1	1	1	0	0	0	0.5	2.0
29-Jul	0	0	0	0	A	0	0	0	0	24	1	2	1	0	0	1	1	0	0	0	0	0	0	0	1.4	24.5
30-Jul	0	0	0	0	A	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	1.1
31-Jul	0	0	0	0	A	1	1	1	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0.4	1.0
0.2 0.2 0.2 0.2 -- 1.1 1.5 2.0 4.5 3.8 0.9 0.5 0.5 0.6 0.8 0.4 0.7 0.4 0.3 0.6 0.8 0.2 0.2 0.1																									Diurnal Average	
1.2 0.4 1.2 1.6 -- 8.4 12.0 18.9 89.4 35.7 4.8 1.6 1.1 7.0 12.5 1.2 9.0 1.0 0.8 7.3 14.7 1.1 0.7 0.7																									Diurnal Maximum	
C - Calibration A - Automated Daily Zero Span																										

Hourly Maximums

Nitrogen Oxide (NO) - ppb
Beaverlodge - July 2011



Hourly Averages

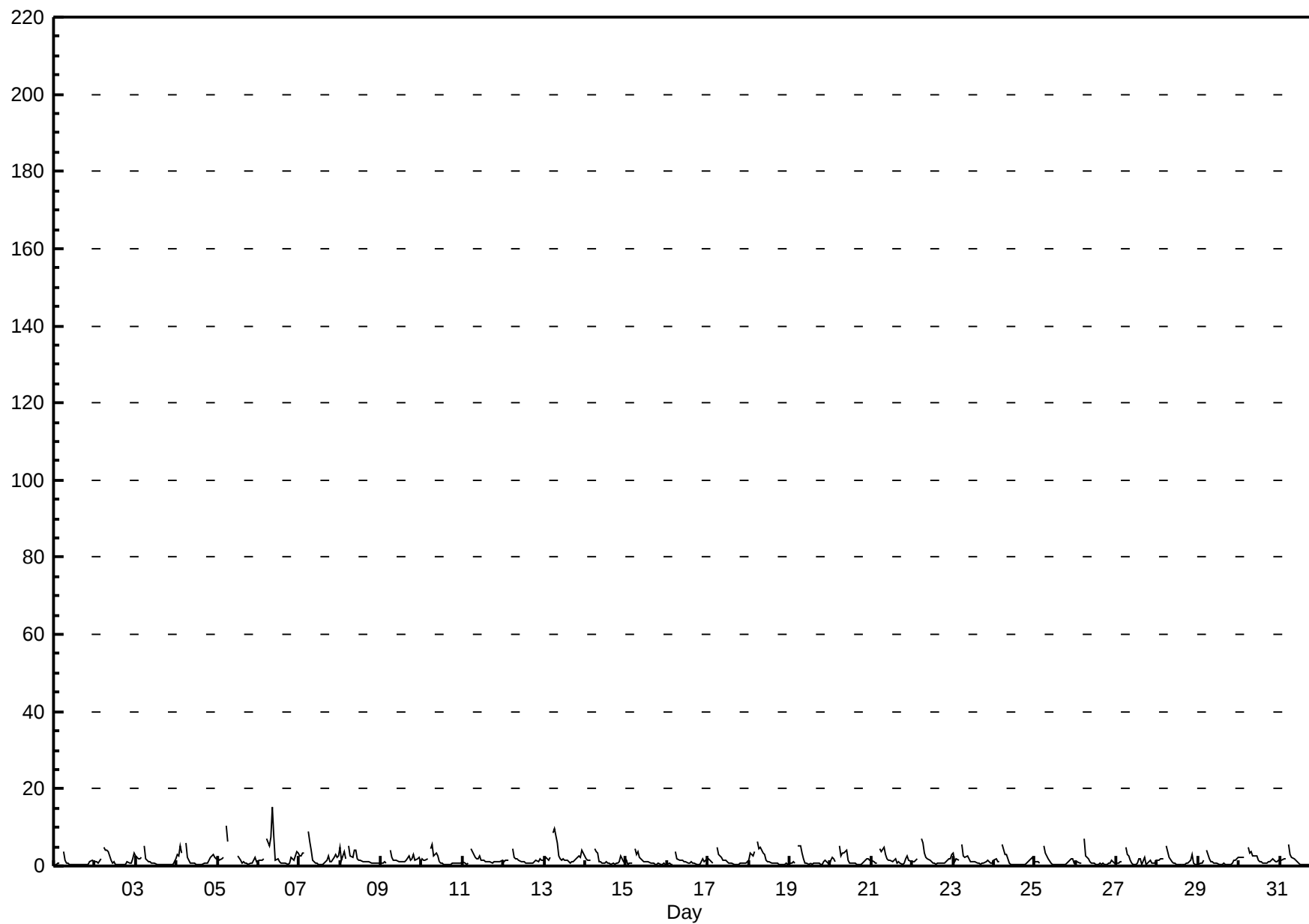
Oxides of Nitrogen (NO_x) - ppb

Beaverlodge - July 2011

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 15.2 ppb on Jul 6 09:00 Maximum Daily Average: 3.1 ppb on Jul 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 Jul 24 15:00 Maximum Diurnal Average: 5.6 ppb at hour 6 Monthly Average: 1.59 ppb										Minimum Daily Average: 0.8 ppb on Jul 1 Minimum Diurnal Average: 0.7 ppb at hour 16 Percentiles: P ₁ = 0.3 P ₁₀ = 0.5 Q ₁ = 0.6 Median = 1.1 Q ₃ = 1.9 P ₉₀ = 3.3 P ₉₉ = 7.3																
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-Jul	0	1	1	1	A	4	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	0.8	3.8
2-Jul	1	1	1	2	A	5	4	4	4	2	1	1	1	0	0	0	0	0	0	1	1	1	2	3	1.6	4.9
3-Jul	2	2	2	2	A	5	2	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	1	2	1.1	5.2
4-Jul	3	3	5	3	A	6	2	1	1	1	1	1	0	0	0	0	1	1	1	1	2	3	2	2	1.7	6.0
5-Jul	2	2	2	2	A	11	6	C	C	C	C	C	3	1	1	1	1	1	1	1	1	2	2	1	2.2	10.5
6-Jul	1	1	2	2	A	7	5	7	15	8	2	2	1	1	1	1	1	0	1	2	2	2	4	3	3.1	15.2
7-Jul	3	3	3	3	A	9	6	4	1	1	1	1	1	0	0	1	2	3	1	1	2	3	2	3	2.3	9.1
8-Jul	5	1	4	2	A	5	3	2	4	4	2	1	2	1	1	1	1	1	1	1	1	1	1	1	2.0	5.1
9-Jul	1	1	1	1	A	4	2	2	1	1	1	1	1	1	1	1	3	2	2	3	1	2	2	1	1.6	4.2
10-Jul	2	2	2	2	A	4	6	3	3	3	1	1	1	0	0	0	0	0	1	1	1	1	1	1	1.5	5.8
11-Jul	1	1	0	1	A	5	3	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1.4	4.5
12-Jul	1	1	1	1	A	5	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	2	2	2	1.5	4.5
13-Jul	2	2	1	2	A	9	10	6	3	2	2	2	1	2	1	1	1	1	2	2	2	2	4	3	2.7	9.7
14-Jul	2	1	2	1	A	5	4	3	1	1	1	1	1	1	1	1	1	0	1	1	1	3	1	1	1.4	4.5
15-Jul	2	1	1	1	A	5	3	4	2	2	1	1	1	1	1	1	1	1	0	1	0	0	1	0	1.2	4.5
16-Jul	0	1	1	0	A	4	2	1	2	1	1	1	1	1	1	1	1	0	0	0	1	2	1	2	1.1	3.8
17-Jul	2	1	1	1	A	5	3	3	2	2	2	1	1	1	1	0	0	0	0	1	1	1	1	1	1.3	5.0
18-Jul	1	3	3	4	A	6	4	5	3	3	1	1	1	1	1	1	1	1	1	0	1	0	1	0	1.9	6.4
19-Jul	1	1	1	1	A	5	5	3	2	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1.3	5.3
20-Jul	1	2	2	1	A	5	3	3	3	4	1	1	1	1	1	1	1	1	0	1	1	2	2	2	1.7	5.1
21-Jul	2	1	1	1	A	5	4	5	3	2	2	1	1	2	2	1	1	1	1	1	2	3	1	1	1.7	5.0
22-Jul	1	1	2	2	A	7	6	4	2	2	2	1	1	1	1	1	1	1	1	1	1	2	2	3	1.8	7.2
23-Jul	3	1	2	2	A	5	3	2	2	2	1	1	1	1	1	1	0	1	1	1	2	1	1	1	1.5	5.4
24-Jul	1	2	1	1	A	6	3	3	2	1	0	0	0	0	0	0	0	0	0	1	1	1	2	1	1.3	5.7
25-Jul	1	1	1	1	A	5	3	3	2	1	0	0	0	0	0	0	0	1	0	1	1	2	2	1	1.2	5.1
26-Jul	1	1	1	1	A	7	3	2	1	1	1	1	1	0	1	0	1	0	0	1	1	1	1	1	1.2	6.9
27-Jul	1	1	1	1	A	5	3	3	2	1	1	1	1	2	2	1	2	1	1	1	1	1	1	2	1.3	4.9
28-Jul	1	2	2	2	A	5	4	2	1	1	1	1	0	0	0	1	1	1	1	1	3	1	1	1	1.4	5.2
29-Jul	0	1	1	1	A	4	2	1	1	1	1	1	0	1	1	1	0	0	0	1	1	2	2	2	1.0	4.1
30-Jul	2	2	2	2	A	5	4	4	3	3	2	2	1	1	1	1	1	1	1	2	2	1	1	2	2.0	5.0
31-Jul	1	2	2	2	A	6	3	2	2	1	1	1	0	0	0	0	0	0	0	0	1	0	0	1	1.2	5.5
1.6 1.4 1.6 1.6 -- 5.6 3.7 3.0 2.5 1.7 1.1 0.9 0.9 0.8 0.7 0.7 0.8 0.7 0.7 1.0 1.2 1.4 1.5 1.5																									Diurnal Average	
4.8 3.2 5.0 3.7 -- 10.5 9.7 7.4 15.2 7.7 2.5 1.9 2.7 1.8 2.0 1.4 2.5 2.5 2.0 3.2 3.1 3.1 4.1 3.4																									Diurnal Maximum	
C - Calibration																									A - Automated Daily Zero Span	

Hourly Averages

Oxides of Nitrogen (NO_x) - ppb
Beaverlodge - July 2011



Hourly Maximums

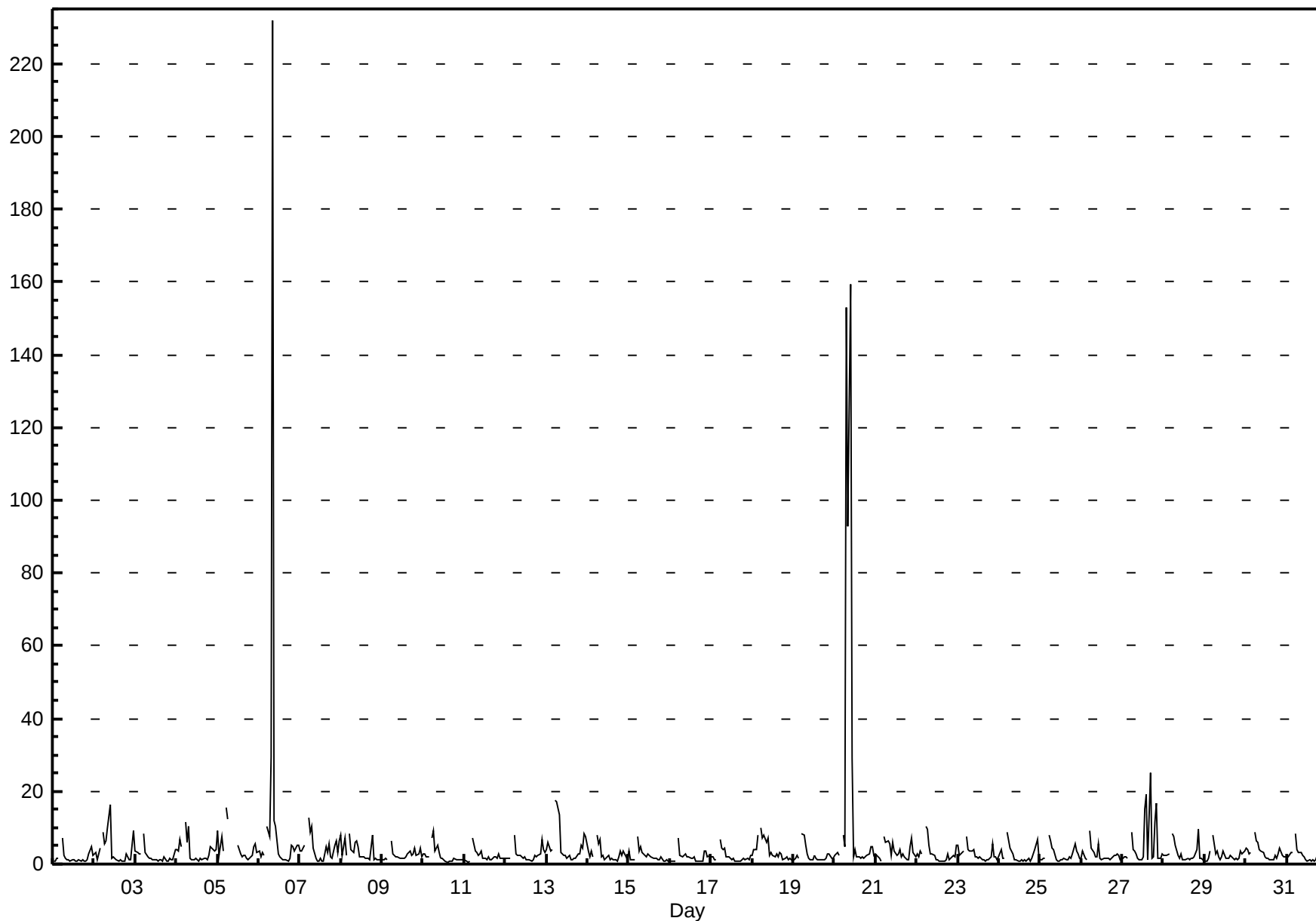
Oxides of Nitrogen (NO_x) - ppb

Beaverlodge - July 2011

Maximum Value: 232.0 ppb on Jul 6 09:00																				Maximum Daily Average: 21.4 ppb on Jul 20					Hours in Service: 744	
Minimum Value: 1 ppb on Jul 11 03:00																				Minimum Daily Average: 1.7 ppb on Jul 1					Hours of Data: 708	
Maximum Diurnal Average: 14.0 ppb at hour 9																				Minimum Diurnal Average: 1.5 ppb at hour 16					Hours of Missing Data: 36	
Monthly Average: 3.95 ppb																				Percentiles: P ₁ = 0.7 P ₁₀ = 1.0 Q ₁ = 1.3 Median = 2.1 Q ₃ = 3.6 P ₉₀ = 6.9 P ₉₉ = 22.6					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-Jul	1	1	1	2	A	7	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	3	5	2	1.7	7.2
2-Jul	3	3	1	5	A	9	6	6	10	16	1	2	1	1	1	1	1	1	1	3	1	1	5	9	3.9	16.4
3-Jul	3	3	3	3	A	8	3	2	2	1	1	1	1	1	1	1	1	2	1	1	1	1	1	4	2.1	8.3
4-Jul	4	4	7	5	A	12	6	11	1	1	1	1	1	1	1	1	2	2	1	3	5	4	4	4	3.5	11.6
5-Jul	9	2	7	4	A	16	12	C	C	C	C	C	5	3	2	2	2	2	1	2	2	5	6	3	4.8	15.6
6-Jul	4	2	3	2	A	10	7	29	232	12	10	3	2	1	1	1	1	1	1	5	5	4	5	5	15.2	232.0
7-Jul	3	3	5	5	A	13	9	10	4	1	1	1	2	1	1	5	3	6	2	1	5	6	3	6	4.2	12.8
8-Jul	8	2	7	2	A	8	4	3	6	6	5	2	2	2	1	2	2	1	8	1	2	1	1	1	3.4	8.3
9-Jul	1	1	1	1	A	6	3	2	2	2	2	1	2	2	2	3	4	2	3	5	2	3	4	2	2.4	6.4
10-Jul	3	3	2	2	A	7	9	4	5	3	2	2	1	1	1	1	1	1	2	1	1	1	1	1	2.3	9.1
11-Jul	1	1	1	1	A	7	3	3	2	3	4	2	2	1	2	1	1	2	2	2	3	1	1	1	2.1	7.2
12-Jul	1	2	2	2	A	8	3	2	2	2	2	2	1	1	1	1	1	2	2	2	3	7	4	3	2.5	7.8
13-Jul	4	6	3	4	A	17	17	14	3	3	2	2	2	2	1	1	1	1	3	3	5	4	8	8	5.1	17.5
14-Jul	4	2	3	2	A	8	6	7	2	2	1	2	2	1	1	1	1	1	2	3	2	4	2	1	2.7	7.8
15-Jul	4	1	1	1	A	8	4	5	3	3	2	3	2	2	2	1	2	1	1	2	1	1	1	1	2.2	7.5
16-Jul	1	1	1	1	A	7	2	2	2	3	2	2	2	2	2	1	1	1	1	1	3	3	2	3	1.9	7.1
17-Jul	2	2	1	1	A	7	4	4	4	2	2	2	1	2	1	1	1	1	1	2	1	2	1	2	2.1	6.9
18-Jul	3	4	4	8	A	10	7	8	6	7	2	3	2	2	3	2	3	3	1	2	2	1	2	1	3.8	9.8
19-Jul	1	2	2	2	A	8	8	5	3	2	1	1	2	2	1	1	1	1	1	1	3	3	1	2	2.4	8.4
20-Jul	2	3	3	2	A	8	5	153	93	159	29	2	4	2	2	2	2	2	2	2	3	5	5	2	21.4	159.2
21-Jul	3	2	1	1	A	8	6	6	6	2	6	4	2	3	4	2	3	2	1	1	5	7	3	2	3.5	7.6
22-Jul	3	2	3	3	A	10	10	5	3	3	3	1	1	1	1	1	1	1	3	1	1	2	2	5	2.9	10.5
23-Jul	5	2	3	3	A	8	4	4	4	4	2	2	2	2	1	1	1	1	1	2	6	2	2	1	2.8	7.6
24-Jul	2	4	1	2	A	9	4	4	3	1	1	1	1	1	1	1	1	2	1	2	3	4	7	2	2.4	8.6
25-Jul	1	1	2	1	A	8	6	4	4	1	1	1	1	1	1	1	1	2	2	3	6	4	3	2	2.5	8.1
26-Jul	1	3	2	1	A	9	4	3	2	2	6	2	1	1	2	1	2	1	2	2	2	3	2	1	2.5	9.2
27-Jul	1	2	2	1	A	9	4	4	3	2	1	1	2	15	19	1	25	1	2	11	17	2	1	3	5.6	25.0
28-Jul	2	2	2	3	A	8	7	5	2	2	3	1	1	1	2	1	1	2	2	4	9	2	1	1	2.9	9.4
29-Jul	1	1	2	4	A	8	3	4	2	1	2	4	1	1	1	2	2	1	1	1	2	4	3	4	2.4	8.1
30-Jul	5	4	3	3	A	9	6	6	4	4	3	2	2	1	1	1	1	2	2	3	4	2	2	2	3.2	8.9
31-Jul	2	2	3	3	A	8	4	3	3	2	2	1	1	1	1	1	1	1	2	1	1	2	1	5	2.3	8.3
2.9 2.4 2.7 2.6 -- 9.0 5.8 10.7 14.0 8.5 3.4 1.8 1.7 1.9 2.0 1.5 2.3 1.6 1.8 2.4 3.5 3.0 3.0 2.9																									Diurnal Average	
9.3 6.0 7.5 7.8 -- 17.5 17.3 152.9 232.0 159.2 29.2 3.7 5.0 15.3 19.0 4.6 25.0 5.5 7.9 11.4 16.5 7.2 8.4 9.2																									Diurnal Maximum	
C - Calibration A - Automated Daily Zero Span																										

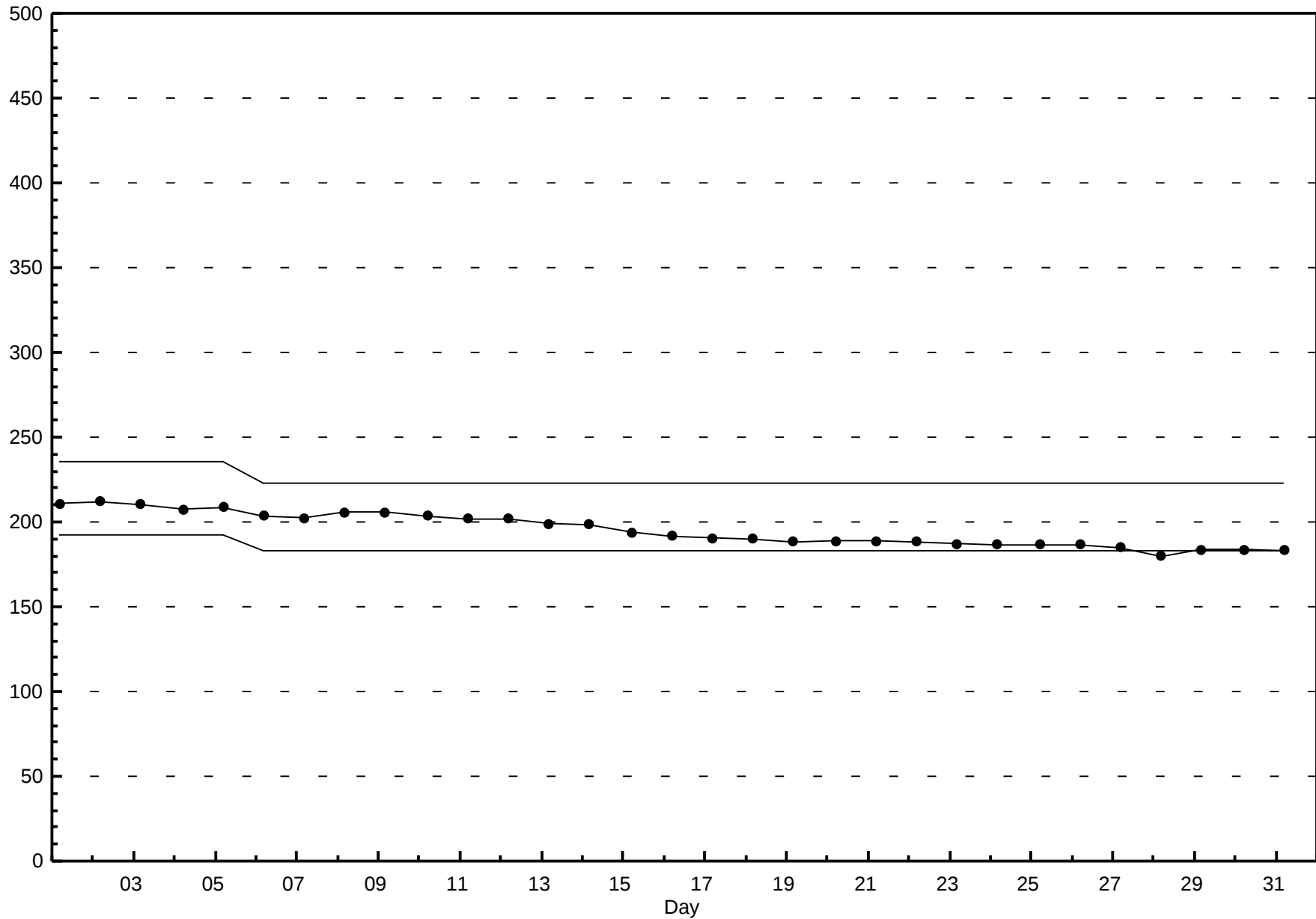
Hourly Maximums

Oxides of Nitrogen (NO_x) - ppb
Beaverlodge - July 2011



Span Responses

Oxides of Nitrogen (NO_x)
Beaverlodge - July 2011



Hourly Averages

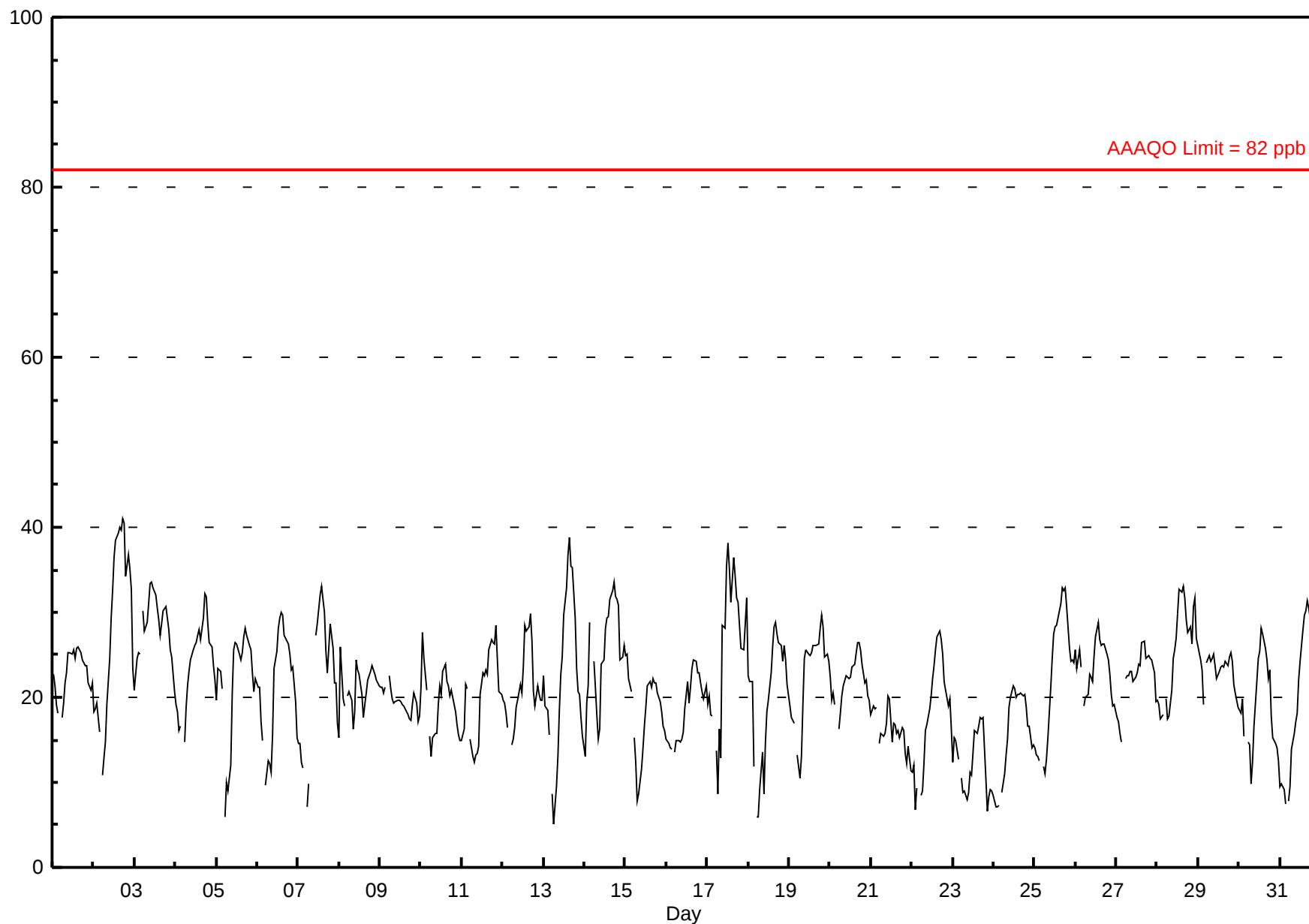
Ozone (O₃) - ppb

Beaverlodge - July 2011

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0																				Hours in Service: 744																												
Maximum Value: 41.1 ppb on Jul 2 18:00																				Maximum Daily Average: 28.4 ppb on Jul 2		Hours of Data: 710																										
Minimum Value: 5 ppb on Jul 13 07:00																				Minimum Daily Average: 12.2 ppb on Jul 23		Hours of Missing Data: 34																										
Maximum Diurnal Average: 26.7 ppb at hour 17																				Minimum Diurnal Average: 14.7 ppb at hour 7		Hours of Calibration: 34																										
Monthly Average: 21.40 ppb																				Percentiles: P ₁ = 7.1 P ₁₀ = 12.8 Q ₁ = 16.9 Median = 21.6 Q ₃ = 25.5 P ₉₀ = 29.4 P ₉₉ = 38.1		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-Jul	23	21	19	18	A	18	19	22	23	25	25	25	26	25	26	26	25	24	24	24	24	22	21	22	22.9	25.9																						
2-Jul	18	19	19	16	A	11	13	15	19	25	29	33	36	38	39	40	40	41	41	34	37	35	33	23	28.4	41.1																						
3-Jul	21	25	25	25	A	30	28	29	31	33	34	33	32	30	29	27	29	30	31	29	28	26	25	21	28.3	33.5																						
4-Jul	19	18	16	17	A	15	19	21	23	24	26	26	27	27	28	27	29	32	32	29	27	26	24	22	24.0	32.1																						
5-Jul	20	23	23	21	A	6	10	9	12	20	26	26	26	25	24	25	27	28	27	26	26	23	21	22	21.6	28.1																						
6-Jul	21	21	17	15	A	10	13	12	11	16	23	25	28	29	30	30	27	27	26	25	23	24	19	15	21.2	30.0																						
7-Jul	15	15	12	12	A	7	10	C	C	C	27	29	30	32	33	30	25	23	26	29	26	22	22	17	22.0	33.0																						
8-Jul	15	26	20	19	A	20	21	20	16	18	24	23	23	20	18	19	20	22	23	24	23	23	22	21	20.9	26.0																						
9-Jul	21	21	21	21	A	23	21	20	19	19	20	20	20	19	19	19	18	17	17	19	21	19	17	18	19.5	22.6																						
10-Jul	21	28	25	21	A	15	13	15	16	16	19	21	20	23	24	22	21	20	21	19	18	17	16	15	19.4	27.6																						
11-Jul	15	16	22	21	A	15	13	12	13	13	14	20	23	23	23	23	26	27	26	26	28	24	21	20	20.3	28.4																						
12-Jul	20	19	18	16	A	14	15	16	19	20	22	21	24	28	28	28	30	27	21	19	21	20	20	20	21.1	29.9																						
13-Jul	23	19	19	16	A	9	5	10	13	19	23	25	30	33	37	39	35	35	29	23	21	20	18	15	22.3	38.9																						
14-Jul	13	19	21	29	A	24	21	18	15	16	24	24	28	29	30	31	33	34	32	32	31	24	25	26	25.2	33.6																						
15-Jul	25	25	22	21	A	15	12	8	9	11	14	17	19	21	22	21	22	22	22	20	19	18	17	16	18.2	25.0																						
16-Jul	15	15	14	14	A	13	15	15	15	15	16	19	22	19	21	23	24	24	23	23	22	21	20	21	18.7	24.3																						
17-Jul	19	20	18	18	A	14	9	16	13	29	28	35	38	35	31	36	34	32	31	28	26	26	29	32	26.0	38.1																						
18-Jul	22	22	22	12	A	6	6	9	14	9	15	18	20	23	26	28	29	27	26	26	24	26	24	22	19.8	28.8																						
19-Jul	19	18	17	17	A	13	11	13	19	25	26	25	25	25	26	26	26	26	28	30	28	25	25	24	22.5	29.6																						
20-Jul	22	20	20	19	A	16	18	20	21	22	22	22	22	24	24	25	26	27	26	24	22	22	20	20	22.0	26.5																						
21-Jul	18	19	19	19	A	14	16	15	16	17	20	20	15	17	17	16	16	15	16	16	13	12	14	11	16.2	20.2																						
22-Jul	11	12	7	9	A	8	9	12	16	17	19	20	22	24	26	27	28	27	25	22	21	19	20	16	18.1	27.8																						
23-Jul	12	15	15	13	A	11	9	9	8	9	11	11	13	16	16	17	18	17	18	10	7	8	9	9	12.2	17.7																						
24-Jul	9	7	7	7	A	9	11	13	15	19	20	21	21	20	20	20	21	20	20	19	17	17	14	14	15.7	21.4																						
25-Jul	14	13	13	13	A	12	11	13	15	21	25	27	28	28	29	31	33	33	33	31	26	24	24	24	22.7	32.9																						
26-Jul	26	23	26	24	A	19	20	20	23	22	22	25	27	29	27	26	26	26	25	24	23	20	19	19	23.5	28.8																						
27-Jul	18	17	16	15	A	22	23	23	23	23	22	22	23	24	24	26	27	25	25	25	25	24	23	20	22.3	26.7																						
28-Jul	20	19	18	18	A	20	17	18	21	25	26	27	30	33	32	33	32	29	28	28	26	31	32	27	25.6	33.0																						
29-Jul	26	24	23	19	A	24	25	24	25	25	24	22	23	24	24	24	24	24	25	25	24	21	21	19	23.4	26.1																						
30-Jul	19	18	20	15	A	15	14	10	12	17	22	25	25	28	27	26	24	22	23	18	15	15	14	13	19.0	28.1																						
31-Jul	10	10	9	7	A	8	10	14	16	17	18	22	24	28	30	30	31	31	29	26	25	27	25	22	20.4	31.4																						
																								18.3	19.0	18.1	17.0	--	14.7	14.7	15.7	17.0	19.6	22.1	23.5	24.8	25.8	26.1	26.5	26.7	26.3	25.8	24.3	23.1	22.0	21.0	19.6	Diurnal Average
																								26.1	27.6	25.6	28.8	--	30.2	27.8	28.8	31.0	33.4	33.5	35.4	38.1	38.4	39.3	40.0	39.7	41.1	40.6	34.3	36.8	35.1	32.7	31.7	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 (O₃) - ppb
Beaverlodge - July 2011



Hourly Maximums

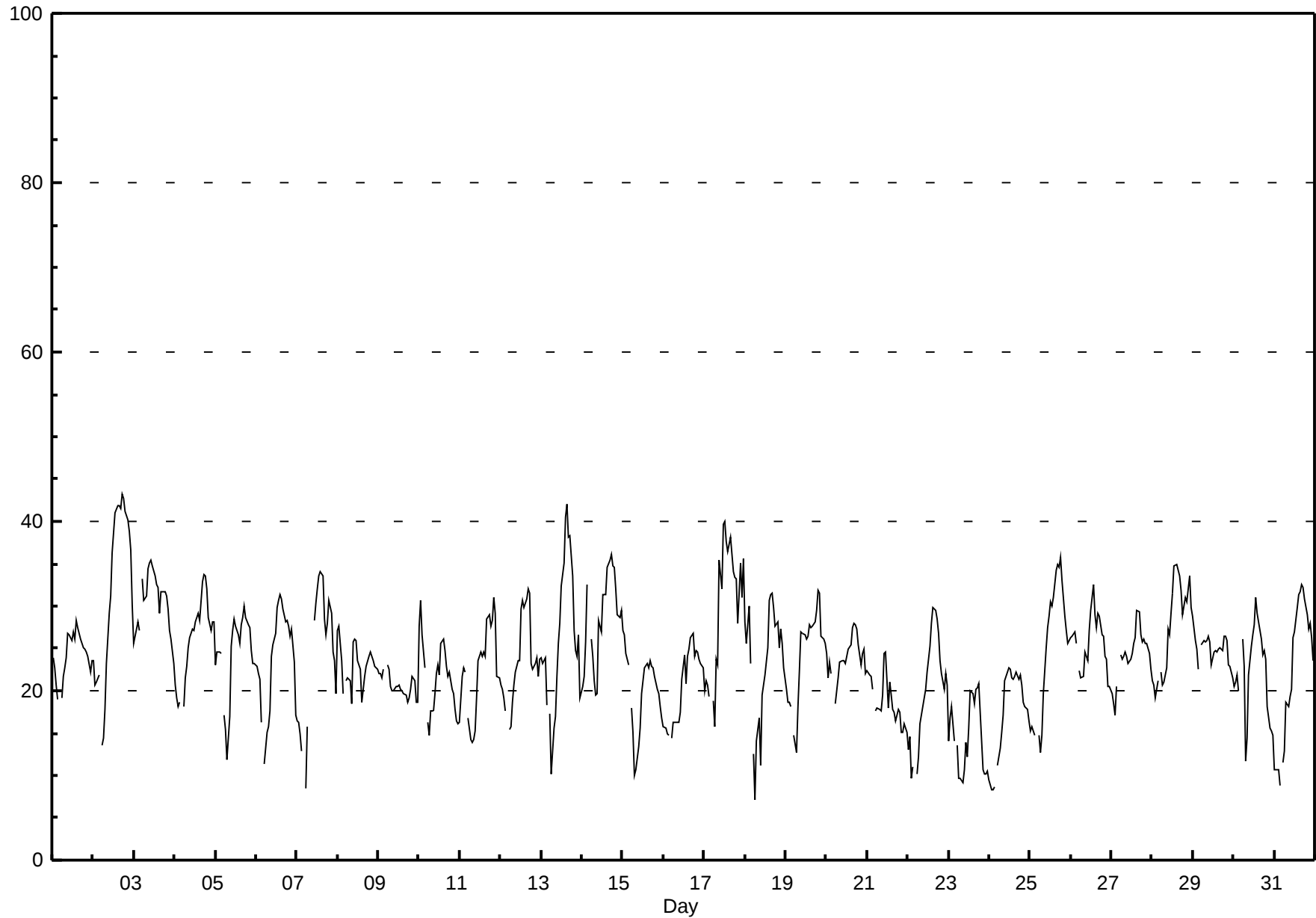
Ozone (O₃) - ppb

Beaverlodge - July 2011

Maximum Value: 43.2 ppb on Jul 2 18:00																					Maximum Daily Average: 31.8 ppb on Jul 2					Hours in Service: 744	
Minimum Value: 7 ppb on Jul 18 07:00																					Minimum Daily Average: 14.5 ppb on Jul 23					Hours of Data: 710	
Maximum Diurnal Average: 28.7 ppb at hour 17																					Minimum Diurnal Average: 17.4 ppb at hour 7					Hours of Missing Data: 34	
Monthly Average: 23.74 ppb																					Percentiles: P ₁ = 9.4 P ₁₀ = 15.2 Q ₁ = 19.7 Median = 23.6 Q ₃ = 27.6 P ₉₀ = 31.8 P ₉₉ = 41.0					Hours of Calibration: 34	
																					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-Jul	24	23	21	19	A	19	22	23	24	27	27	26	27	26	28	27	26	26	25	25	25	24	22	24	24.3	28.3	
2-Jul	24	21	21	22	A	14	14	18	23	29	31	36	39	41	42	42	42	43	43	41	40	39	37	30	31.8	43.2	
3-Jul	26	27	28	27	A	33	31	31	34	35	35	35	34	33	32	29	32	32	32	31	30	27	26	23	30.6	35.4	
4-Jul	21	19	18	19	A	18	22	23	25	26	27	27	28	29	29	28	33	34	34	32	29	27	28	28	26.2	33.7	
5-Jul	23	25	25	24	A	17	15	12	17	25	27	29	28	27	26	28	29	30	29	28	27	25	23	23	24.4	30.0	
6-Jul	23	22	21	16	A	11	15	16	18	24	25	27	30	31	31	31	30	28	28	28	26	27	23	17	23.9	31.4	
7-Jul	16	16	15	13	A	9	16	C	C	C	28	30	32	34	34	34	29	27	28	31	29	25	24	20	24.4	34.1	
8-Jul	27	28	24	20	A	21	22	21	19	26	26	26	24	22	19	20	22	23	24	25	24	24	23	23	23.0	27.6	
9-Jul	22	22	21	23	A	23	23	21	20	20	21	21	21	20	20	20	19	19	19	20	22	21	19	19	20.6	23.1	
10-Jul	28	31	27	23	A	16	15	18	18	20	22	23	22	26	26	25	23	22	22	20	20	18	16	16	21.5	30.6	
11-Jul	16	22	23	22	A	17	14	14	14	15	19	23	25	24	25	24	28	29	28	28	31	29	22	21	22.3	31.0	
12-Jul	21	20	19	18	A	15	16	19	21	22	24	24	30	31	30	31	32	32	23	23	23	24	22	24	23.5	32.0	
13-Jul	24	23	24	18	A	17	10	16	17	22	26	28	32	35	41	42	38	38	34	27	25	24	27	19	26.4	42.0	
14-Jul	21	22	26	33	A	26	24	21	19	20	28	27	31	31	31	35	35	36	35	35	32	29	29	29	28.5	36.2	
15-Jul	27	27	24	23	A	18	15	10	11	13	16	20	21	23	23	23	24	23	23	22	20	20	18	17	19.9	27.1	
16-Jul	16	16	15	15	A	14	16	16	16	16	18	21	24	21	24	25	26	27	24	25	25	24	23	23	20.4	26.7	
17-Jul	20	21	21	19	A	19	16	24	23	35	32	40	40	38	36	38	36	34	33	33	28	35	31	36	29.9	39.9	
18-Jul	28	26	30	23	A	12	7	14	17	11	19	21	22	25	31	31	32	30	28	28	25	27	26	23	23.3	31.5	
19-Jul	20	19	19	18	A	15	13	18	22	27	27	27	26	26	28	27	28	28	29	32	32	27	26	26	24.3	31.9	
20-Jul	24	22	23	22	A	19	20	22	23	24	24	23	24	25	25	27	28	28	27	25	23	24	25	22	23.9	28.0	
21-Jul	22	22	22	20	A	18	18	18	18	20	24	25	18	21	20	18	17	16	18	17	15	15	16	15	18.8	24.5	
22-Jul	13	14	10	11	A	10	12	16	17	18	20	22	24	25	28	30	30	29	27	24	22	20	22	21	20.2	29.8	
23-Jul	14	17	18	14	A	14	10	10	9	11	14	12	16	20	20	18	20	20	21	14	11	10	10	11	14.5	20.9	
24-Jul	9	8	8	9	A	11	13	15	17	21	22	23	23	22	21	22	22	21	22	21	19	18	18	16	17.4	22.7	
25-Jul	15	16	15	15	A	15	13	15	20	25	27	29	31	30	31	34	35	35	36	33	29	27	26	26	25.0	35.7	
26-Jul	26	26	27	26	A	22	22	22	25	24	24	27	30	33	29	27	29	29	27	26	24	24	21	21	25.6	32.5	
27-Jul	20	19	17	21	A	24	24	24	25	24	23	24	24	26	26	29	29	27	26	26	26	26	24	22	24.1	29.4	
28-Jul	21	21	19	21	A	22	21	21	23	27	27	29	32	35	35	34	34	32	29	31	30	32	33	30	27.8	34.8	
29-Jul	29	26	25	22	A	25	26	26	26	26	26	23	25	25	25	25	25	25	27	26	26	23	23	22	25.0	28.9	
30-Jul	21	21	22	20	A	26	23	12	14	22	25	27	28	31	29	27	26	24	25	24	18	16	15	15	22.2	30.9	
31-Jul	11	11	11	9	A	12	13	19	18	19	20	26	27	30	31	32	33	32	31	29	27	28	26	23	22.5	32.6	
21.0 20.9 20.6 19.5 -- 17.8 17.4 18.4 19.8 22.5 24.3 25.8 26.9 27.8 28.3 28.5 28.7 28.3 27.5 26.8 25.2 24.4 23.3 22.0																									Diurnal Average		
28.9 30.6 30.0 32.6 -- 33.2 30.7 31.2 34.4 35.5 35.4 39.6 39.9 41.0 41.8 42.0 41.6 43.2 42.7 41.2 40.2 38.9 36.7 35.6																									Diurnal Maximum		
C - Calibration A - Automated Daily Zero Span																											

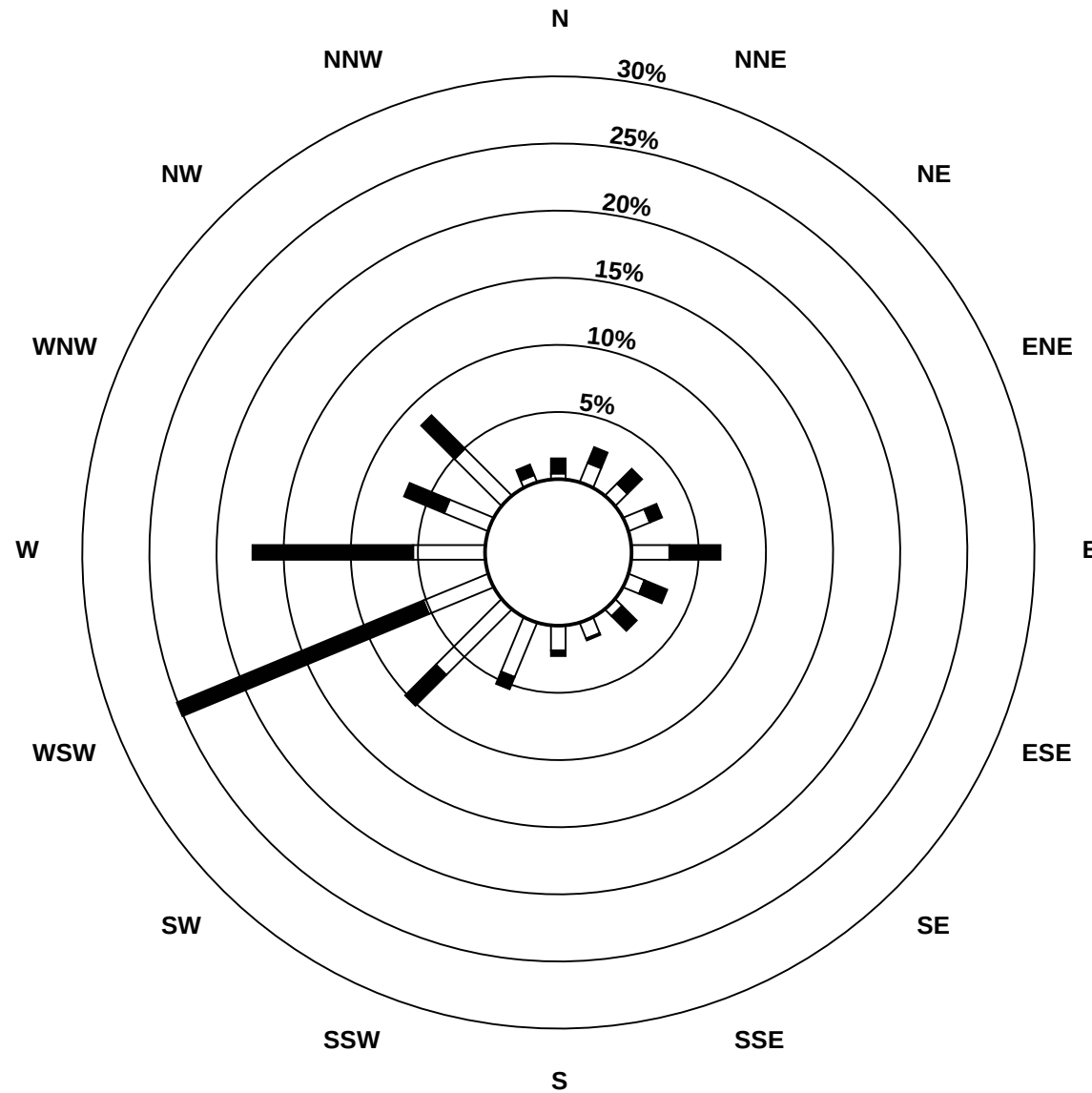
Hourly Maximums

Ozone (O₃) - ppb
Beaverlodge - July 2011

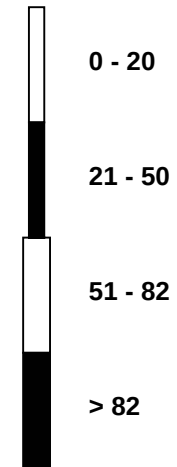


Pollutant Rose

Ozone (O₃) - ppb
Beaverlodge - July 2011



Pollutant Classes (ppb)



Eight Hour Running Averages

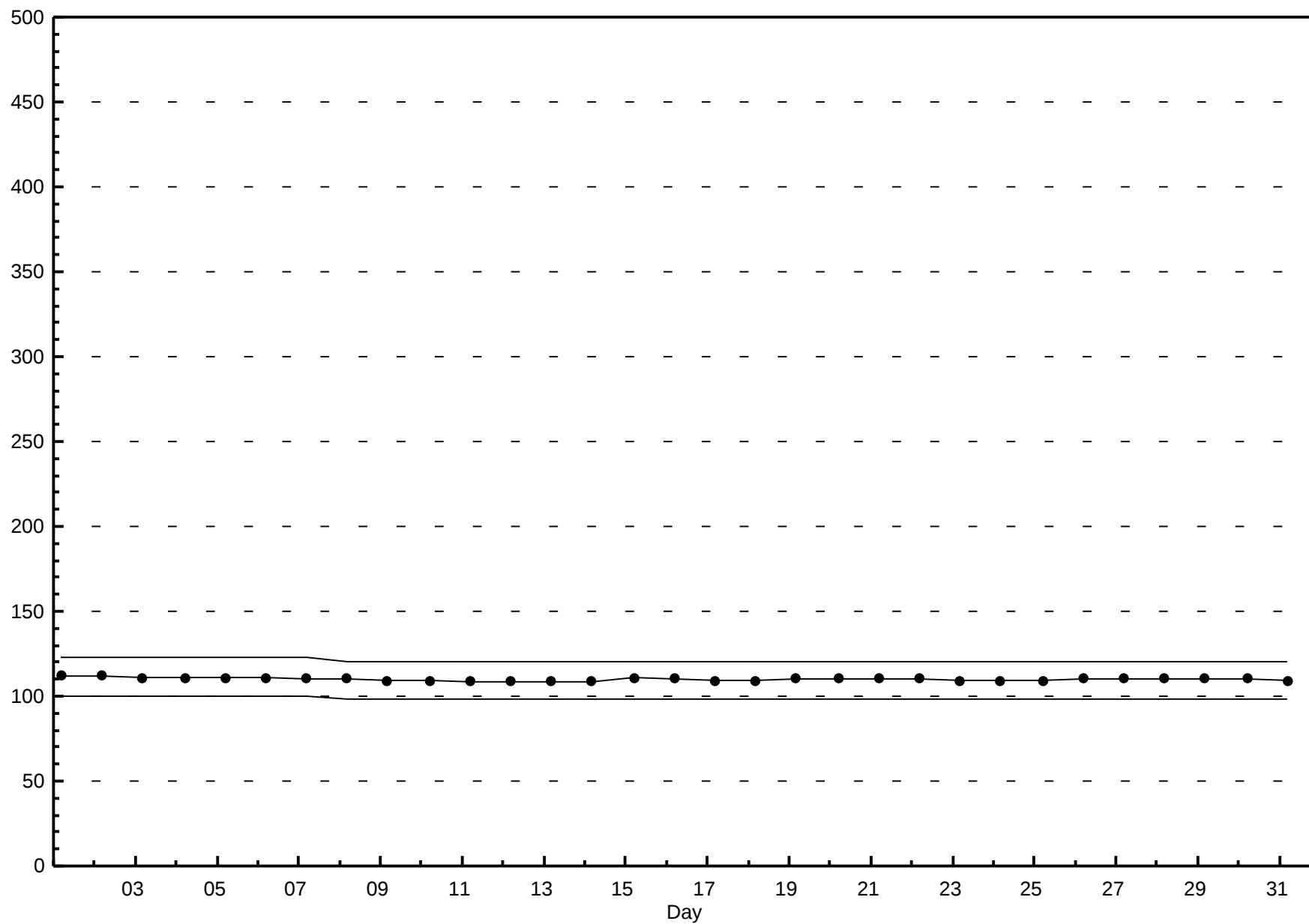
Ozone (O₃) - ppb

Beaverlodge - July 2011

Maximum Value: 38.8 ppb on Jul 2 21:00																								Hours in Service: 744
Minimum Value: 7.9 ppb on Jul 24 04:00																								Hours of Data: 737
Percentiles: P ₁ = 9.6 P ₁₀ = 14.3 Q ₁ = 17.6 Median = 21.1 Q ₃ = 24.9 P ₉₀ = 28.5 P ₉₉ = 34.0																								Hours of Missing Data: 7
																								Hours of Calibration: 7
																								Percent Operational Time: 100.0
Day	Hourly Period Ending At (MST)																							Daily Maximum
1-Jul	26	25	24	23	22	21	20	20	20	21	21	22	23	24	25	25	25	25	25	25	24	24	23	26.3
2-Jul	22	22	21	20	20	18	17	16	16	17	18	21	23	26	29	32	35	37	39	39	39	38	35	38.8
3-Jul	33	31	29	28	27	26	25	26	28	29	30	31	31	31	31	31	31	31	30	30	29	29	27	33.1
4-Jul	26	25	23	21	20	19	18	18	18	19	21	22	23	24	25	26	27	28	28	29	29	28	28	28.8
5-Jul	26	25	24	23	23	20	18	16	15	14	15	16	17	19	21	23	25	26	26	26	26	25	25	26.3
6-Jul	24	23	22	21	20	18	17	16	14	13	14	16	17	20	22	24	26	27	28	28	27	26	23	27.8
7-Jul	22	20	19	17	16	14	12	12	N	N	N	N	N	N	N	30	30	29	28	29	28	27	24	30.2
8-Jul	22	23	22	21	20	20	20	20	20	19	20	20	21	21	20	20	21	21	21	21	21	22	22	22.7
9-Jul	22	22	22	22	21	21	21	21	21	21	20	20	20	20	19	19	19	19	19	19	19	18	18	22.4
10-Jul	19	20	21	21	21	21	20	20	19	17	16	17	17	18	19	20	21	21	22	21	21	20	18	21.6
11-Jul	18	17	17	17	17	17	17	16	16	16	15	15	16	17	18	19	21	22	24	25	25	25	25	25.5
12-Jul	24	23	22	21	20	18	18	17	17	17	17	18	19	21	22	24	25	26	26	26	25	24	22	25.9
13-Jul	21	20	20	20	19	18	16	14	13	13	13	15	16	20	23	27	30	32	33	33	32	30	25	32.9
14-Jul	22	20	19	20	19	20	21	21	21	21	21	20	21	22	23	25	27	29	30	31	31	30	29	31.4
15-Jul	28	27	26	25	24	23	21	18	16	14	13	12	13	14	15	17	18	20	21	21	21	20	20	28.5
16-Jul	19	18	17	16	16	15	15	14	14	14	15	15	16	17	18	19	20	21	22	22	22	22	22	22.6
17-Jul	22	21	20	20	20	19	17	16	15	17	18	21	23	25	28	31	33	34	34	33	32	31	30	34.2
18-Jul	28	27	26	24	23	21	17	14	13	11	10	11	12	14	17	19	21	23	25	26	26	27	26	28.2
19-Jul	24	23	22	21	20	19	17	15	15	16	18	19	20	21	23	25	25	26	26	27	27	27	27	27.0
20-Jul	26	25	24	23	22	21	20	19	19	20	20	20	21	22	22	23	24	24	24	25	25	24	23	26.1
21-Jul	22	21	20	20	19	18	18	17	17	17	17	17	17	17	17	17	17	17	16	16	16	15	14	22.2
22-Jul	14	13	12	11	11	10	10	10	11	11	13	14	15	17	19	21	23	24	25	25	25	24	22	25.0
23-Jul	20	19	18	16	16	15	13	12	11	10	10	10	10	11	12	13	14	15	16	16	15	14	12	20.2
24-Jul	11	10	8	8	8	8	8	9	10	12	13	15	16	18	19	20	20	20	21	20	20	19	18	20.5
25-Jul	17	16	15	14	14	13	13	13	13	14	16	18	19	21	23	26	28	29	30	31	30	30	29	30.8
26-Jul	28	26	25	25	24	24	23	22	22	22	21	22	22	23	24	25	26	26	26	26	26	25	24	27.5
27-Jul	22	21	20	18	18	18	18	19	20	21	21	23	23	23	23	23	24	24	24	25	25	25	24	25.0
28-Jul	23	23	22	21	20	20	19	18	19	19	21	22	23	24	26	28	30	30	30	31	30	30	29	30.6
29-Jul	28	28	27	26	26	25	24	24	24	24	24	24	24	24	24	24	24	23	24	24	24	23	23	28.4
30-Jul	22	21	21	20	19	18	17	16	15	15	15	16	17	19	21	23	24	25	25	24	23	21	18	25.1
31-Jul	16	15	13	12	11	10	9	10	10	12	13	15	16	19	21	23	25	27	28	29	29	29	27	28.9
33.1 31.0 29.1 28.0 26.7 26.0 25.3 26.1 27.5 28.8 30.0 31.1 31.2 31.2 31.4 32.5 35.0 37.1 38.5 38.7 38.8 38.4 37.5 35.5																								
Diurnal Maximums																								
N - Not Valid																								

Span Responses

Ozone (O₃)
Beaverlodge - July 2011

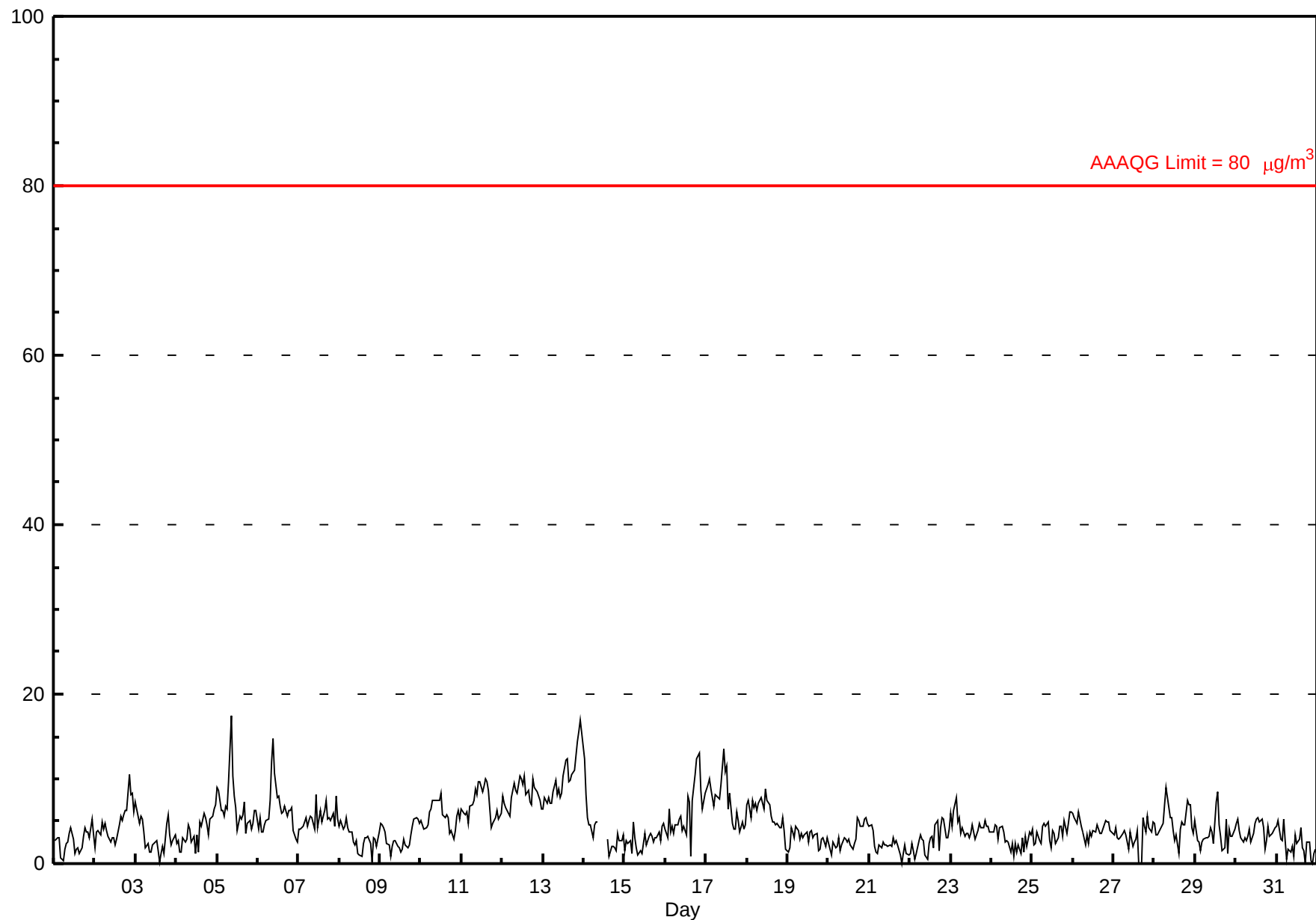


Hourly Averages

Particulate Matter 2.5 (PM_{2.5}) - µg/m³

Beaverlodge - July 2011

Number of Exceedences: 1-hr: 0 24-hr: 0 Maximum Value: 17.5 µg/m ³ on Jul 5 09:00 Maximum Daily Average: 10.2 µg/m ³ on Jul 13																								Hours in Service: 744 Hours of Data: 739 Hours of Missing Data: 5 Hours of Calibration: 5 Percent Operational Time: 100.0		
Minimum Value: 0 µg/m ³ on Jul 21 20:00 Maximum Diurnal Average: 5.1 µg/m ³ at hour 21 Monthly Average: 4.54 µg/m ³												Minimum Daily Average: 2.2 µg/m ³ on Jul 21 Minimum Diurnal Average: 4.0 µg/m ³ at hour 16 Percentiles: P ₁ = 0.4 P ₁₀ = 1.8 Q ₁ = 2.8 Median = 4.1 Q ₃ = 5.6 P ₉₀ = 8.0 P ₉₉ = 12.8														
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
1-Jul	3	3	3	3	1	0	2	2	3	4	4	3	1	2	2	1	2	3	4	4	3	5	3	2.7	5.3	
2-Jul	2	4	4	3	5	4	5	4	3	2	3	3	2	3	5	6	5	6	6	6	10	8	8	6	4.8	10.5
3-Jul	7	6	5	6	5	4	2	2	1	1	2	2	3	1	0	1	2	1	5	6	3	2	3	3	3.1	7.3
4-Jul	2	3	1	1	3	3	3	5	4	3	3	1	3	1	5	4	6	5	5	3	5	6	6	7	3.7	6.9
5-Jul	9	9	6	6	6	7	7	10	18	10	8	7	4	6	5	6	7	4	5	5	4	5	6	6	6.8	17.5
6-Jul	4	5	4	4	5	5	5	7	12	15	11	8	8	7	6	6	7	6	6	6	7	4	3	3	6.4	14.7
7-Jul	4	4	4	4	5	4	5	6	5	4	8	4	5	6	5	6	7	5	5	5	6	4	8	5	5.4	8.2
8-Jul	4	5	4	4	5	4	4	4	3	2	3	1	1	1	2	3	3	3	2	0	3	3	2	4	3.0	5.4
9-Jul	5	5	4	4	2	2	1	2	3	3	2	2	1	2	3	2	2	2	3	4	5	5	5	5	3.1	5.4
10-Jul	5	5	4	4	5	6	6	7	7	7	7	7	8	6	5	6	5	4	4	3	4	6	6	5	5.6	8.4
11-Jul	6	6	6	6	5	7	7	7	9	8	10	10	9	9	10	10	9	4	5	5	5	6	5	6	7.1	10.1
12-Jul	8	7	7	6	6	8	9	9	9	8	10	10	9	10	8	9	7	7	10	9	8	8	7	6	8.2	10.4
13-Jul	6	8	7	8	7	7	8	10	8	9	8	8	10	12	12	10	10	11	11	13	14	16	17	15	10.2	17.0
14-Jul	12	8	5	5	5	3	5	5	5	C	C	C	C	C	3	1	2	2	2	2	3	3	3	3	4.0	12.4
15-Jul	1	3	2	3	1	5	3	2	1	1	1	2	4	2	3	4	3	3	3	3	4	3	4	5	2.8	5.0
16-Jul	4	3	6	4	4	4	5	5	5	6	4	4	3	8	7	1	8	11	12	13	13	9	7	8	6.3	13.0
17-Jul	9	9	10	9	7	8	8	8	8	9	14	11	12	6	8	5	4	4	6	5	4	5	4	5	7.4	13.5
18-Jul	7	8	5	7	7	7	6	7	8	7	6	9	7	7	6	5	5	5	5	4	4	5	4	2	6.0	8.8
19-Jul	1	2	4	4	3	4	4	3	4	3	3	4	3	4	4	3	3	4	1	2	3	3	2	3	3.1	4.5
20-Jul	2	2	1	3	2	2	3	1	2	3	3	2	3	2	2	2	3	5	5	4	4	5	5	5	3.1	5.4
21-Jul	4	5	4	2	1	1	2	2	3	2	2	2	2	2	3	2	3	2	1	0	1	2	1	1	2.2	4.5
22-Jul	1	2	2	0	1	3	3	3	3	1	0	2	3	3	2	5	5	2	4	5	5	3	3	4	2.8	5.5
23-Jul	6	4	6	8	5	5	4	4	3	4	4	3	4	5	3	3	4	5	4	4	5	4	4	4	4.4	7.9
24-Jul	4	4	5	4	3	4	4	4	2	3	3	1	2	1	2	1	2	1	3	1	3	2	4	3	2.8	4.5
25-Jul	4	2	2	4	3	2	4	5	4	5	3	2	4	4	2	3	4	4	3	5	4	5	6	6	3.8	6.1
26-Jul	6	5	5	6	5	4	4	2	3	2	4	3	4	4	5	4	3	4	5	5	5	5	4	4	4.2	6.1
27-Jul	3	4	3	3	3	4	4	3	3	2	4	2	3	3	4	0	0	5	4	4	6	4	4	5	3.3	5.7
28-Jul	5	3	3	4	4	5	7	9	7	5	5	4	3	3	1	4	5	5	5	7	7	7	4	4	4.9	9.0
29-Jul	5	3	3	2	3	3	3	3	3	4	4	2	7	8	5	3	2	2	5	1	4	3	3	4	3.5	8.4
30-Jul	5	5	4	3	3	3	3	3	4	3	4	5	5	5	5	5	4	2	3	4	3	4	4	4	3.9	5.4
31-Jul	4	5	3	3	5	3	0	2	1	2	1	3	2	3	4	2	2	0	3	3	0	0	1	2	2.3	5.3
4.9 4.7 4.3 4.3 4.0 4.3 4.4 4.7 5.0 4.6 4.8 4.3 4.6 4.6 4.4 4.0 4.3 4.0 4.7 4.6 5.1 4.8 4.9 4.7 12.4 9.4 10.0 8.8 7.1 8.2 8.7 9.8 17.5 14.7 13.5 10.9 11.6 12.2 12.5 9.6 9.9 10.6 12.3 12.8 14.3 15.6 17.0 15.5																								Diurnal Average	Diurnal Maximum	
C - Calibration Alberta Ambient Air Quality Guideline (AAAQG): 1-hr 80 µg/m ³ Alberta Ambient Air Quality Objective (AAAQO): 24-hr 30 µg/m ³																										



Hourly Maximums

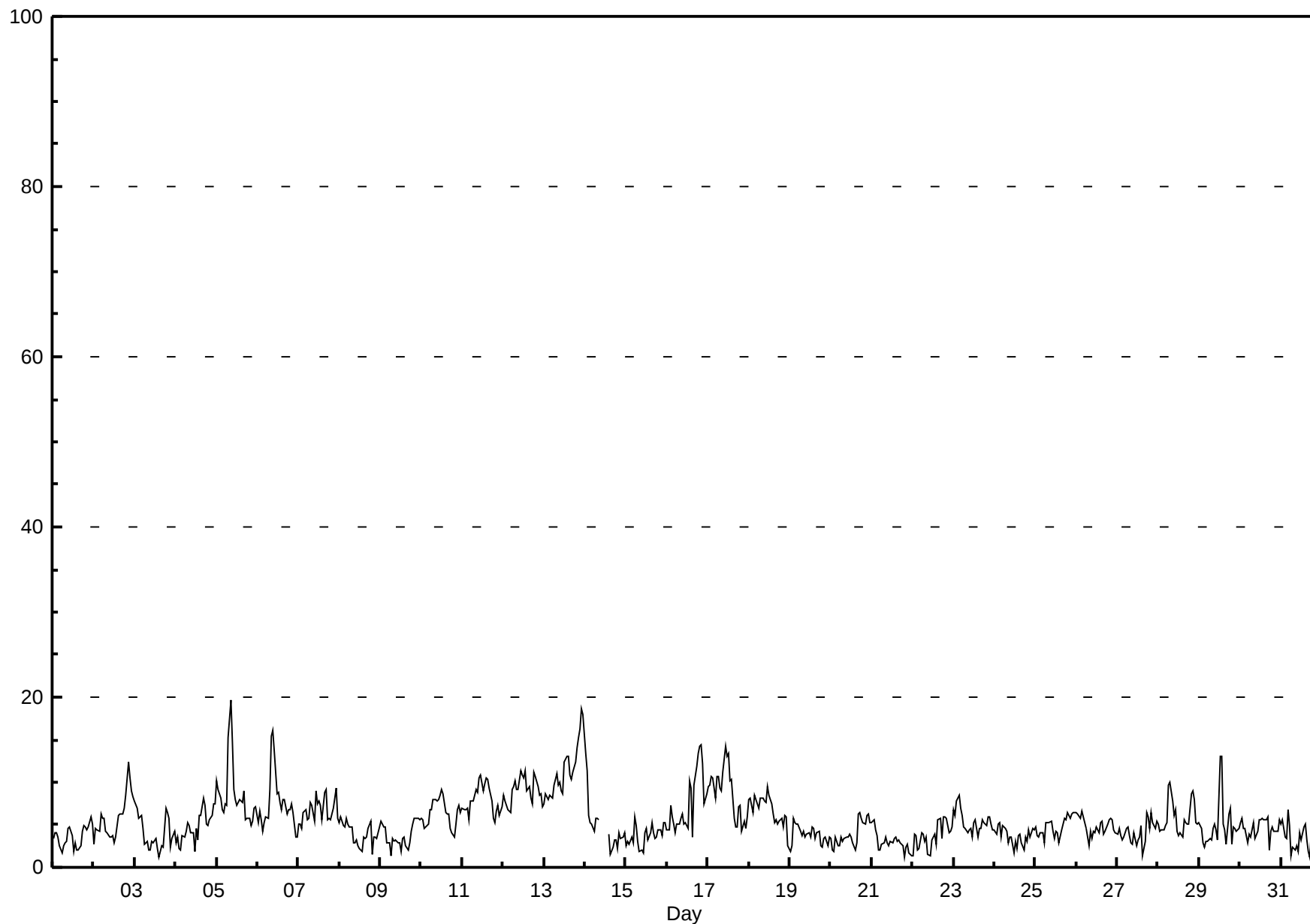
Particulate Matter 2.5 (PM_{2.5}) - µg/m³

Beaverlodge - July 2011

Maximum Value: 19.7 µg/m ³ on Jul 5 09:00																								Hours in Service: 744		
Maximum Daily Average: 11.3 µg/m ³ on Jul 13																								Hours of Data: 739		
Minimum Value: 1 µg/m ³ on Jul 21 20:00																								Hours of Missing Data: 5		
Maximum Diurnal Average: 6.1 µg/m ³ at hour 21																								Hours of Calibration: 5		
Monthly Average: 5.53 µg/m ³																								Percent Operational Time: 100.0		
Minimum Daily Average: 3.0 µg/m ³ on Jul 21																										
Minimum Diurnal Average: 5.0 µg/m ³ at hour 5																										
Percentiles: P ₁ = 1.4 P ₁₀ = 2.6 Q ₁ = 3.6 Median = 5.0 Q ₃ = 6.7 P ₉₀ = 9.2 P ₉₉ = 15.1																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
1-Jul	3	4	4	4	3	2	3	3	3	5	5	4	2	3	2	2	3	4	5	5	4	5	6	5	3.6	6.0
2-Jul	3	5	4	4	6	6	6	4	4	4	4	4	3	4	6	6	6	6	7	8	12	10	9	8	5.8	12.4
3-Jul	8	7	6	6	6	5	3	3	2	2	3	3	3	2	1	2	3	2	7	6	6	2	3	4	4.0	7.7
4-Jul	3	4	2	2	4	4	4	5	5	4	4	2	5	3	6	6	8	7	5	5	6	6	8	7	4.8	8.1
5-Jul	10	9	8	7	7	7	7	15	20	15	9	8	7	8	8	8	9	6	6	6	5	5	7	7	8.5	19.7
6-Jul	5	7	6	4	5	6	6	9	15	16	14	9	9	8	7	8	8	6	7	7	8	6	4	3	7.6	16.0
7-Jul	5	5	5	6	7	6	6	8	7	5	9	8	8	7	6	9	9	6	6	6	7	8	9	6	6.8	9.4
8-Jul	5	6	5	5	6	5	5	5	3	3	3	3	2	2	4	3	4	4	6	2	4	4	3	5	3.9	6.0
9-Jul	5	5	5	5	3	3	1	3	3	3	3	3	2	3	4	3	2	3	4	5	6	6	6	6	3.8	5.8
10-Jul	6	6	5	5	5	7	7	8	8	8	8	8	9	9	6	6	6	5	4	4	5	7	7	6	6.4	9.2
11-Jul	7	7	7	7	6	8	8	8	9	9	11	11	9	10	11	10	9	8	6	5	7	7	6	7	8.0	10.9
12-Jul	8	8	7	7	6	9	9	10	9	9	11	11	10	11	9	9	8	7	11	11	9	9	9	7	9.1	11.4
13-Jul	7	9	8	8	8	8	10	11	10	10	9	9	12	13	13	11	10	11	12	14	15	16	19	18	11.3	18.7
14-Jul	13	11	6	5	5	4	6	6	6	C	C	C	C	C	4	2	2	3	3	2	4	3	4	4	4.9	13.4
15-Jul	3	3	3	4	3	6	5	3	2	2	2	4	5	3	4	5	4	3	4	4	4	4	5	5	3.7	6.0
16-Jul	4	4	7	6	5	4	5	5	6	6	5	5	5	10	9	3	10	12	13	14	14	12	7	9	7.6	14.3
17-Jul	9	10	11	11	8	11	11	9	9	11	14	13	13	10	10	6	5	5	7	7	4	5	5	6	8.8	14.3
18-Jul	8	8	6	8	8	8	7	8	8	8	8	9	8	7	6	5	6	5	5	6	5	6	6	3	6.8	9.4
19-Jul	2	3	6	5	5	5	4	4	4	4	4	4	4	5	5	3	4	4	2	2	3	4	3	4	3.8	5.8
20-Jul	3	2	2	4	3	3	4	3	3	4	4	4	4	3	2	3	6	6	6	5	5	6	6	5	3.9	6.5
21-Jul	5	6	4	4	2	2	3	3	4	3	3	3	3	3	4	3	3	3	3	1	2	3	2	1	3.0	5.5
22-Jul	1	4	4	2	2	4	4	3	4	2	1	3	4	4	3	6	6	3	6	6	6	4	4	5	3.7	6.0
23-Jul	7	6	8	8	7	6	5	5	4	4	5	4	5	6	4	5	5	6	5	5	6	6	5	4	5.4	8.5
24-Jul	4	4	5	5	4	5	5	4	3	4	4	2	3	2	4	4	3	2	4	3	4	4	5	4	3.7	5.3
25-Jul	5	4	4	4	4	3	5	5	5	5	4	3	4	4	3	4	5	6	6	6	6	6	6	6	4.8	6.5
26-Jul	7	6	6	7	6	5	5	3	4	3	4	4	5	4	5	5	4	4	5	6	6	6	4	4	4.9	6.6
27-Jul	4	5	4	3	4	5	5	4	3	3	4	3	3	4	5	1	3	7	6	5	6	5	5	5	4.1	6.5
28-Jul	5	4	4	4	5	5	10	10	8	6	7	4	4	4	4	6	5	5	5	9	9	8	5	5	5.9	9.9
29-Jul	5	5	3	2	3	3	3	3	5	5	4	3	13	13	5	4	3	6	7	3	5	5	4	5	4.9	13.1
30-Jul	5	6	5	4	3	4	4	4	5	3	4	6	6	6	6	6	6	6	2	4	5	4	4	4	4.6	6.0
31-Jul	5	6	4	3	7	5	1	2	2	3	2	4	3	5	5	3	2	1	4	3	2	1	2	3	3.2	6.8
5.6 5.6 5.2 5.2 5.0 5.2 5.3 5.7 5.9 5.6 5.7 5.3 5.7 5.9 5.4 5.1 5.4 5.1 5.8 5.7 6.1 5.9 5.7 5.6																									Diurnal Average	
13.4 11.4 10.6 10.6 8.4 10.7 10.6 15.3 19.7 16.0 14.3 13.0 13.3 13.1 13.1 10.8 10.4 11.9 13.3 14.3 15.2 16.3 18.7 17.9																									Diurnal Maximum	
C - Calibration																										

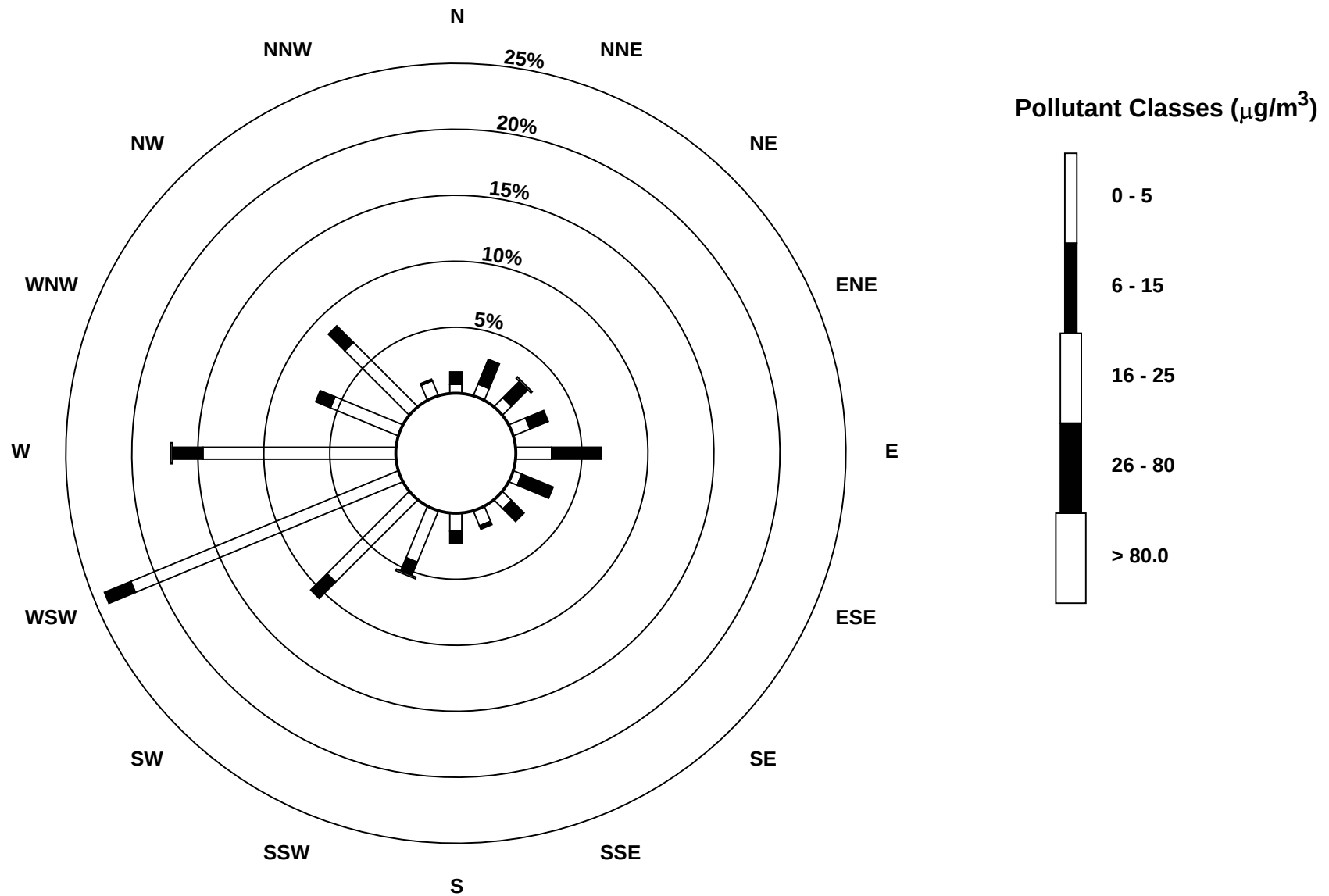
Hourly Maximums

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Beaverlodge - July 2011



Pollutant Rose

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Beaverlodge - July 2011



Hourly Averages

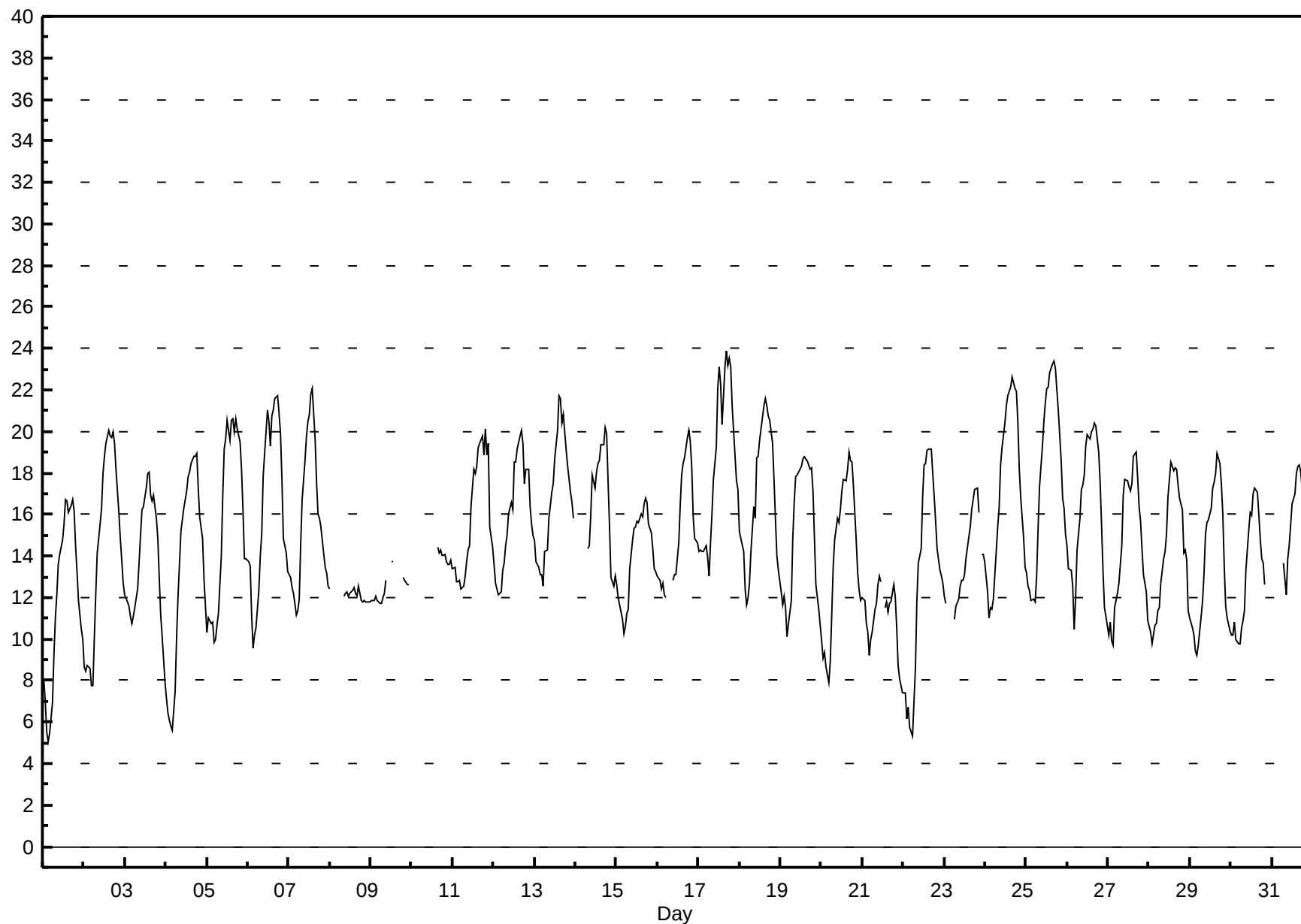
External Temperature (ET) - °C

Beaverlodge - July 2011

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 23.9 °C on Jul 17 17:00 Maximum Daily Average: 18.6 °C on Jul 17																								Hours in Service: 744 Hours of Data: 688 Hours of Missing Data: 56 Hours of Calibration: 0 Percent Operational Time: 92.5			
Minimum Value: 5 °C on Jul 1 04:00 Minimum Daily Average: 11.0 °C on Jul 21 Maximum Diurnal Average: 18.6 °C at hour 17 Minimum Diurnal Average: 10.3 °C at hour 5 Monthly Average: 14.87 °C Percentiles: P ₁ = 6.0 P ₁₀ = 10.5 Q ₁ = 12.1 Median = 14.5 Q ₃ = 17.9 P ₉₀ = 19.9 P ₉₉ = 23.1																											
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
1-Jul	8	7	6	5	5	7	9	11	12	14	14	15	16	17	17	16	16	17	16	15	13	12	10	10	12.0	16.8	
2-Jul	9	8	9	9	8	8	10	12	14	16	16	18	19	19	20	20	20	20	19	18	16	15	14	13	14.5	20.1	
3-Jul	12	12	12	11	11	11	11	12	14	15	16	16	17	18	18	17	17	17	16	15	13	11	10	8	13.8	18.0	
4-Jul	7	6	6	6	6	7	10	12	14	15	16	17	17	18	18	18	19	19	19	17	16	15	13	12	13.5	18.9	
5-Jul	10	11	11	11	10	10	11	11	14	17	19	20	21	20	21	21	20	21	20	19	18	16	14	14	15.8	20.6	
6-Jul	14	14	11	10	10	11	12	14	15	18	19	21	20	19	21	21	22	22	21	20	18	15	14	13	16.4	21.8	
7-Jul	13	13	12	12	11	11	12	15	17	19	20	20	21	22	22	20	18	16	16	15	14	13	13	13	15.7	22.1	
8-Jul	12	N	N	N	N	N	N	N	12	12	12	12	12	12	12	12	12	13	12	12	12	12	12	12	--	12.6	
9-Jul	12	12	12	12	12	12	12	12	12	13	N	N	14	14	N	N	N	N	N	13	13	13	13	N	--	13.7	
10-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	14	14	14	14	14	14	14	14	14	--	14.4	
11-Jul	13	13	13	13	13	12	13	13	14	14	15	16	18	18	19	19	20	19	20	19	19	15	14	14	15.9	20.1	
12-Jul	14	13	12	12	12	13	14	15	15	16	17	16	19	19	19	20	20	19	17	18	18	16	16	15	16.0	20.0	
13-Jul	15	14	13	13	13	13	14	14	16	16	17	18	19	20	22	22	20	21	19	18	18	17	17	16	16.8	21.7	
14-Jul	N	N	N	N	N	N	N	N	14	15	16	18	17	18	18	19	19	19	20	20	18	15	13	13	13	--	20.2
15-Jul	13	12	12	11	10	11	11	11	13	15	15	15	16	16	16	16	17	17	17	16	15	14	13	13	13.9	16.8	
16-Jul	13	13	12	13	12	12	N	N	N	13	13	13	15	16	18	18	19	20	20	20	18	16	15	15	15.4	20.1	
17-Jul	14	14	14	14	14	14	13	15	16	18	19	22	23	22	20	23	24	23	24	23	21	19	18	17	18.6	23.9	
18-Jul	15	15	14	12	12	12	13	14	16	16	19	19	20	21	21	22	21	21	21	19	18	16	14	13	16.8	21.6	
19-Jul	12	12	12	12	10	11	12	15	17	18	18	18	19	19	19	19	19	18	18	17	15	13	11	11	15.1	18.8	
20-Jul	10	9	9	9	8	9	11	13	15	16	16	16	17	18	18	18	19	19	19	17	15	13	12	12	14.0	19.0	
21-Jul	12	12	11	10	9	10	10	11	12	13	13	13	N	12	12	11	12	12	13	12	11	9	8	7	11.0	13.0	
22-Jul	7	7	6	7	6	5	7	9	12	14	14	17	18	18	19	19	19	18	17	16	14	13	13	13	12.9	19.2	
23-Jul	12	12	N	N	N	N	11	12	12	13	13	13	13	14	15	15	16	17	17	17	16	N	14	14	14.0	17.3	
24-Jul	14	12	11	12	11	12	14	15	16	18	19	20	21	22	22	22	23	22	22	20	18	17	15	13	17.2	22.6	
25-Jul	13	13	12	12	12	12	13	15	17	19	20	21	22	22	23	23	23	23	22	21	19	17	16	15	17.8	23.4	
26-Jul	15	13	13	13	10	12	14	16	17	17	18	19	20	20	20	20	20	20	19	18	15	13	12	11	16.1	20.4	
27-Jul	10	11	10	10	11	12	13	14	15	17	18	18	17	17	18	19	19	18	16	16	14	13	12	11	14.5	19.0	
28-Jul	11	10	10	11	11	11	11	13	14	14	15	17	18	19	18	18	18	17	17	16	14	14	14	11	14.3	18.5	
29-Jul	11	11	10	9	9	10	11	12	13	15	16	16	16	17	18	18	19	18	18	16	14	12	11	10	13.7	19.0	
30-Jul	10	10	11	10	10	10	11	11	11	13	15	16	16	17	17	17	16	15	14	14	13	N	N	N	13.2	17.3	
31-Jul	N	N	N	N	N	N	N	14	12	14	14	15	16	17	18	18	18	18	17	16	13	12	10	9	--	18.4	
11.8 11.4 11.0 10.6 10.3 10.7 11.7 13.0 14.2 15.4 16.4 17.1 17.8 18.0 18.5 18.6 18.6 18.5 17.9 17.0 15.5 14.2 13.2 12.5																										Diurnal Average	
15.2 14.9 14.2 14.2 14.5 13.9 14.3 15.9 17.4 19.3 20.5 22.1 23.1 22.3 22.8 23.2 23.9 23.2 23.5 23.1 21.2 19.4 17.6 17.2																										Diurnal Maximum	
N - Not Valid																											

Hourly Averages

External Temperature (ET) - °C
Beaverlodge - July 2011



Hourly Averages

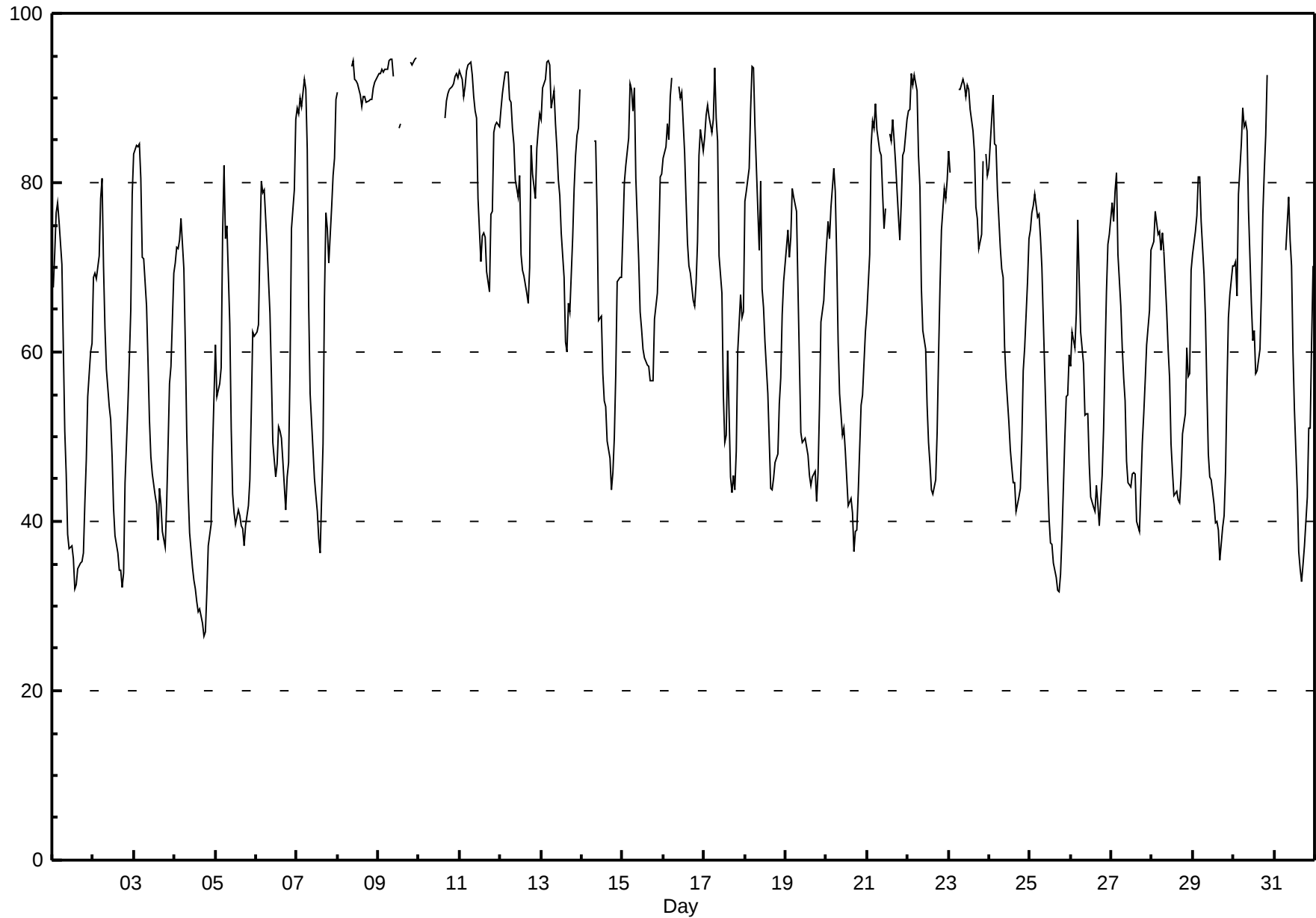
Relative Humidity (RH) - %

Beaverlodge - July 2011

Number of Exceedences (AAAQO):		1-hr: 0 24-hr: 0		Hours in Service: 744																						
Maximum Value: 94.8 % on Jul 9 23:00		Maximum Daily Average: 84.6 % on Jul 23		Hours of Data: 688																						
Minimum Value: 26 % on Jul 4 18:00		Minimum Daily Average: 46.2 % on Jul 4		Hours of Missing Data: 56																						
Maximum Diurnal Average: 83.8 % at hour 5		Minimum Diurnal Average: 51.7 % at hour 15		Hours of Calibration: 0																						
Monthly Average: 66.35 %		Percentiles: P ₁ = 31.7 P ₁₀ = 41.2 Q ₁ = 49.4 Median = 68.8 Q ₃ = 83.1 P ₉₀ = 90.6 P ₉₉ = 94.3		Percent Operational Time: 92.5																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
1-Jul	68	72	76	78	75	70	61	51	46	38	37	37	36	32	33	34	35	35	36	42	47	55	60	61	50.6	77.7
2-Jul	69	69	69	71	78	81	70	63	58	54	52	48	41	38	36	34	34	32	34	45	54	59	65	79	55.5	80.6
3-Jul	83	84	84	85	81	71	71	65	59	52	48	46	43	42	38	44	42	39	37	42	49	56	58	69	57.9	84.6
4-Jul	70	72	72	73	76	70	61	50	43	39	34	33	32	30	29	30	28	26	27	32	37	40	48	55	46.2	75.7
5-Jul	61	55	56	58	74	82	73	75	63	51	43	41	40	41	41	39	39	37	40	42	45	53	62	62	53.1	82.0
6-Jul	62	63	73	80	79	79	73	68	65	57	49	45	47	51	51	50	47	41	45	47	58	75	79	87	61.3	87.4
7-Jul	89	88	90	89	92	91	84	65	55	48	45	43	41	38	36	49	66	76	75	70	77	81	83	90	69.3	92.2
8-Jul	91	N	N	N	N	N	N	N	94	94	92	92	92	90	89	90	90	89	90	90	90	91	92	93	--	94.4
9-Jul	93	93	93	93	93	93	94	95	95	93	N	N	86	87	N	N	N	N	N	94	94	95	95	N	--	94.8
10-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	88	90	91	91	91	92	93	93	92	--	92.9
11-Jul	93	92	90	91	93	94	94	93	90	88	88	78	71	74	74	74	69	67	76	77	86	87	87	87	83.9	94.2
12-Jul	89	90	92	93	93	90	89	86	85	80	78	81	71	70	69	67	66	70	84	81	78	84	86	88	81.7	93.1
13-Jul	88	91	92	94	94	94	89	91	87	84	80	79	74	69	61	60	66	65	74	79	83	86	86	91	81.5	94.5
14-Jul	N	N	N	N	N	N	N	85	85	76	64	64	57	54	54	50	48	44	46	50	57	68	69	69	--	85.0
15-Jul	74	80	82	85	92	91	88	91	81	71	65	63	60	59	58	58	57	57	57	64	67	73	81	81	72.3	91.7
16-Jul	83	84	87	85	90	92	N	N	N	91	90	91	84	78	73	70	69	66	65	68	73	83	86	84	80.6	92.4
17-Jul	85	88	89	88	86	88	94	88	85	71	67	55	49	50	60	45	43	45	44	48	60	67	64	65	67.7	93.6
18-Jul	78	79	82	89	94	93	87	82	72	80	68	65	61	55	50	44	44	45	47	48	54	57	64	68	66.9	93.7
19-Jul	72	74	71	74	79	78	77	68	59	51	49	50	49	48	45	44	45	46	42	46	54	64	66	70	59.2	79.4
20-Jul	73	75	73	77	82	79	71	61	55	50	51	48	45	42	43	41	36	39	39	43	54	55	59	62	56.5	81.8
21-Jul	65	72	84	87	87	89	86	84	83	79	75	77	N	86	85	88	85	82	76	73	78	83	84	87	81.5	89.2
22-Jul	89	89	93	92	93	91	83	79	68	62	60	54	49	47	44	43	45	51	60	68	74	79	78	80	69.6	92.9
23-Jul	84	81	N	N	N	N	91	91	92	92	90	91	91	89	86	84	77	76	72	74	83	N	83	81	84.6	92.3
24-Jul	82	87	90	85	84	79	72	70	69	61	57	52	48	46	45	45	41	43	44	49	58	60	68	73	62.9	90.3
25-Jul	74	77	77	79	76	76	74	70	64	51	45	40	37	37	35	33	32	32	34	38	50	55	55	60	54.2	78.6
26-Jul	58	62	60	64	76	69	62	59	53	53	53	47	43	42	41	44	42	40	45	51	59	67	73	74	55.7	75.5
27-Jul	78	75	79	81	72	65	60	57	54	47	44	44	46	46	46	40	39	44	49	53	57	61	65	72	57.2	81.1
28-Jul	72	73	77	74	74	72	74	72	65	60	57	49	46	43	43	43	42	45	50	53	60	57	57	70	59.6	76.5
29-Jul	72	74	76	81	81	75	69	64	56	48	45	45	42	40	40	39	35	39	41	46	56	64	67	70	56.9	80.8
30-Jul	70	71	67	79	85	89	87	87	86	77	66	61	62	57	58	60	67	76	81	86	93	N	N	N	74.5	92.7
31-Jul	N	N	N	N	N	N	N	72	78	73	70	60	53	44	36	34	33	35	37	43	51	51	61	70	--	78.3
77.3		78.3	79.8	81.7	83.8	82.4	78.3	74.4	70.4	65.8	60.8	57.9	55.1	54.2	51.7	52.2	51.8	52.5	54.6	59.1	65.4	68.9	72.5	75.5	Diurnal Average	
93.2		92.8	93.4	94.2	94.5	94.0	94.5	94.5	94.7	94.4	92.2	92.1	91.7	90.3	89.0	90.1	90.1	90.6	91.0	94.3	93.9	94.5	94.8	92.5	Diurnal Maximum	
N - Not Valid																										

Hourly Averages

Relative Humidity (RH) - %
Beaverlodge - July 2011



Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Beaverlodge - July 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	17	13	5	8	5	6	13	21	31	35	40	35	33	37	34	31	27	26	27	27	24	8	8	4	21.2	40.5
Dir	243	237	227	209	221	225	238	244	244	257	260	255	253	261	257	262	261	254	252	257	265	272	270	255	254	260
2 Spd	3	4	5	0	1	3	2	3	4	7	13	17	21	20	16	21	19	16	6	6	15	11	2	3	6.9	20.8
Dir	61	73	63	169	136	84	110	184	255	204	201	232	252	248	249	257	271	267	251	242	231	252	279	68	245	257
3 Spd	3	3	2	3	9	10	12	12	13	15	18	21	15	22	22	25	29	34	37	29	28	20	17	6	15.9	37.1
Dir	101	154	132	215	252	266	257	264	273	275	273	276	234	260	262	240	239	246	256	243	242	242	235	214	251	256
4 Spd	7	8	5	10	10	5	14	18	19	25	24	28	32	31	31	28	29	32	28	16	10	7	2	1	16.8	32.2
Dir	228	234	226	233	226	226	243	248	250	257	253	235	241	241	252	257	255	253	258	273	291	323	333	144	250	241
5 Spd	2	2	2	1	3	1	3	5	4	13	21	27	30	32	31	29	30	32	28	23	18	15	6	6	13.7	32.4
Dir	78	89	48	264	37	61	182	180	206	229	234	264	262	265	253	274	272	269	265	271	273	273	266	295	263	265
6 Spd	8	6	1	3	2	2	2	2	4	1	3	3	4	7	8	9	11	14	9	7	11	7	3	6	2.8	13.9
Dir	291	319	353	67	69	99	251	13	309	230	3	121	175	198	171	220	234	263	286	283	223	219	158	147	239	263
7 Spd	7	3	4	5	1	3	6	7	11	8	6	7	7	8	5	8	12	13	13	11	7	5	8	9	3.4	13.0
Dir	148	162	186	228	224	205	257	280	277	293	297	341	21	51	48	134	203	271	310	325	287	296	323	328	289	271
8 Spd	10	10	11	15	17	16	16	14	13	14	18	20	19	24	30	32	35	37	35	34	32	30	29	26	22.1	37.1
Dir	327	331	298	305	310	316	314	327	331	324	325	318	321	315	310	307	304	305	304	302	301	303	302	305	310	305
9 Spd	24	24	20	21	18	18	16	16	18	20	21	21	20	16	16	14	12	9	9	11	9	12	12	11	16.2	24.0
Dir	302	303	305	311	308	306	309	307	310	310	311	310	309	314	313	323	321	319	324	313	312	308	298	314	310	302
10 Spd	12	11	12	12	14	12	9	10	11	10	11	12	9	11	13	14	14	14	14	12	11	10	10	14	5.4	13.8
Dir	315	303	316	312	310	307	324	320	307	321	22	36	46	68	64	81	93	96	95	97	94	90	85	92	32	96
11 Spd	11	9	11	13	11	12	10	9	10	12	12	11	10	14	18	17	19	19	18	13	11	12	15	17	12.8	19.4
Dir	95	86	83	89	111	115	114	115	104	117	118	113	110	98	98	89	91	95	94	88	90	80	89	92	98	95
12 Spd	15	11	11	9	8	7	9	9	11	6	9	7	4	9	7	7	9	7	7	3	4	7	10	9	7.2	15.3
Dir	90	71	72	79	73	75	85	89	93	75	81	119	83	99	106	101	100	71	16	21	10	22	25	27	74	90
13 Spd	8	4	6	4	8	3	1	4	3	7	8	11	11	10	15	17	14	14	11	7	1	2	3	4	5.0	17.0
Dir	30	21	30	358	20	6	139	192	189	134	110	127	101	121	107	95	126	112	125	132	44	42	265	284	103	95
14 Spd	4	9	12	7	6	11	5	6	11	11	16	16	17	13	10	13	11	11	17	18	12	5	4	6	10.0	17.7
Dir	211	235	285	299	261	263	271	241	233	226	254	246	258	263	251	257	240	238	250	255	259	223	229	224	251	255
15 Spd	12	12	10	10	9	6	6	4	11	24	29	29	29	33	31	34	35	32	31	23	21	21	14	16	18.8	35.4
Dir	221	215	209	202	178	176	203	189	246	256	256	266	260	256	258	263	261	259	263	269	267	273	278	268	255	261
16 Spd	10	9	11	13	19	18	19	13	12	11	11	10	12	9	9	9	8	6	6	7	6	4	8	8	6.5	18.6
Dir	274	291	288	296	283	286	292	293	276	281	277	284	304	325	359	13	31	54	40	96	120	75	29	41	309	292
17 Spd	9	9	2	4	4	5	5	5	8	10	4	4	3	8	6	8	7	6	5	5	5	4	5	5	2.4	9.5
Dir	43	43	82	114	86	164	53	54	196	211	218	140	129	254	8	85	118	145	172	129	103	90	69	6	107	211
18 Spd	6	6	2	2	3	3	4	6	2	7	6	9	11	15	24	27	30	27	23	21	20	21	16	16	11.1	30.2
Dir	356	29	14	240	20	202	269	325	268	176	202	235	255	241	252	260	258	248	252	242	244	246	244	243	251	258
19 Spd	9	11	14	12	8	4	5	6	15	27	33	32	31	30	32	26	26	26	28	27	18	12	11	12	18.8	32.6
Dir	233	247	241	256	232	231	204	214	221	244	246	244	257	254	256	253	248	247	249	246	254	245	247	241	247	246
20 Spd	8	10	12	10	9	5	16	22	27	30	24	25	26	28	26	26	28	25	25	17	11	9	2	3	16.7	29.5
Dir	236	226	223	228	226	223	242	257	265	267	269	269	274	267	277	266	255	239	241	238	242	265	277	51	256	267
21 Spd	3	10	6	4	3	6	4	8	6	7	8	6	12	9	8	12	12	12	16	15	8	8	6	3	6.7	15.9
Dir	210	294	259	272	1	25	317	291	276	269	309	267	216	230	240	237	248	235	257	274	275	247	229	248	260	257
22 Spd	4	3	4	5	7	1	4	9	5	4	5	2	1	5	4	7	9	10	10	12	8	6	5	5	1.4	12.1
Dir	236	259	90	172	229	144	205	214	202	203	200	254	90	40	10	12	27	42	55	73	93	80	39	314	70	73

Hourly Averages

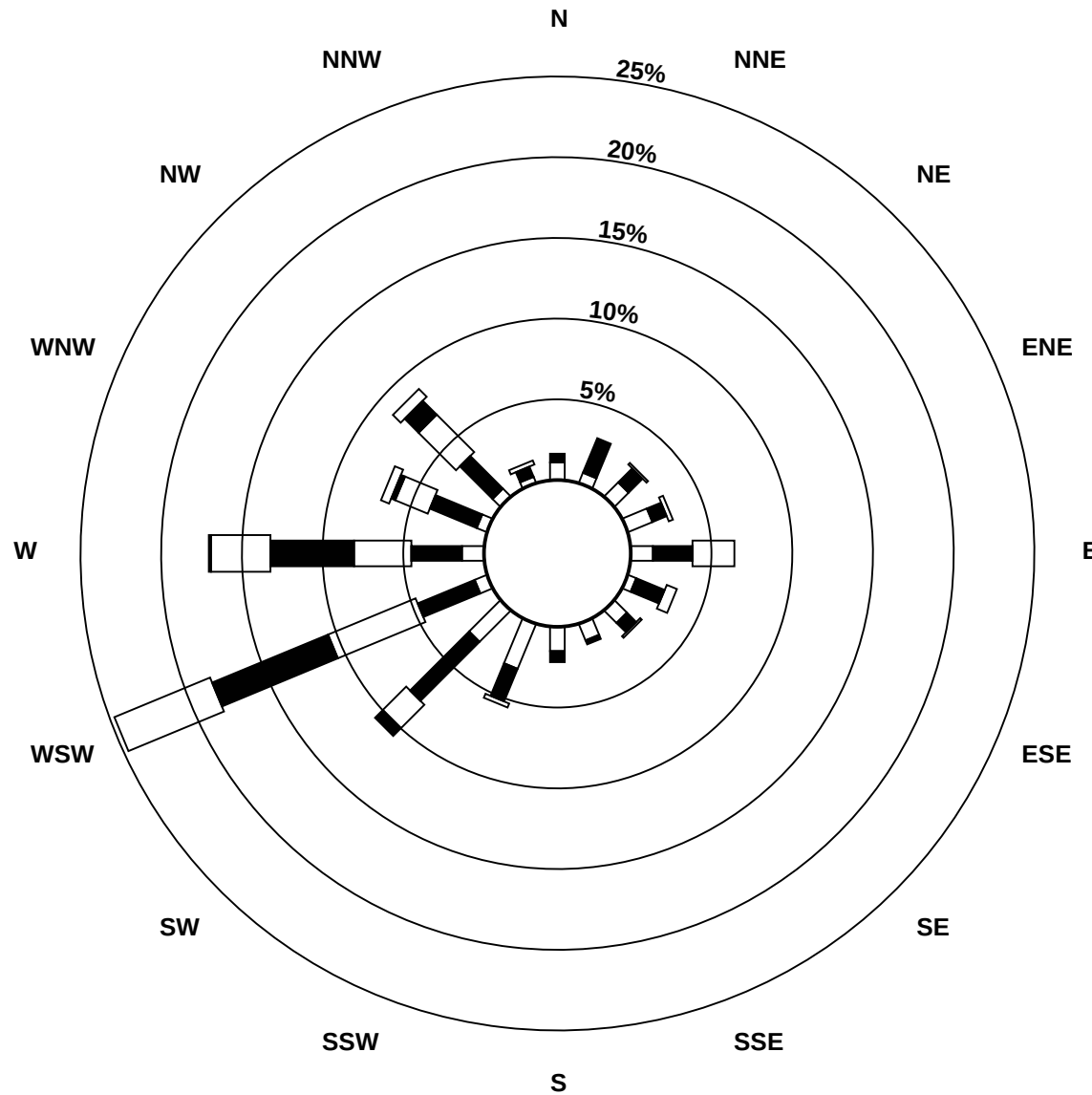
Wind Speed (km/h)
Wind Direction (deg)
Beaverlodge - July 2011

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	8	8	11	14	13	12	14	14	17	19	17	17	19	17	18	20	12	7	6	6	9	11	6	12.1	20.0
Dir	285	322	323	261	269	282	286	288	288	281	281	280	289	293	293	287	273	292	289	281	216	246	236	267	281	273
24 Spd	4	3	3	3	1	6	8	10	11	18	25	32	32	33	32	22	28	28	22	17	11	7	6	2	14.2	32.6
Dir	267	194	139	200	120	212	199	210	216	252	258	263	258	250	252	266	256	259	253	266	283	278	227	229	252	250
25 Spd	5	3	5	7	8	5	6	10	19	22	23	26	29	26	27	27	27	27	26	20	13	6	6	8	14.7	29.4
Dir	218	202	209	210	236	198	204	220	221	235	247	260	258	251	247	254	264	270	275	275	263	258	273	309	252	258
26 Spd	8	5	5	8	2	9	17	20	33	27	23	23	26	29	27	28	28	29	28	23	16	11	10	10	17.9	33.3
Dir	311	314	296	293	212	278	264	255	260	266	266	273	260	264	255	240	245	264	249	243	244	245	247	244	259	260
27 Spd	7	8	4	1	11	13	17	20	21	28	34	33	31	30	25	28	31	32	29	26	25	21	16	8	20.4	34.2
Dir	223	240	224	279	246	259	264	262	261	266	268	270	261	255	250	258	253	248	247	244	240	240	241	233	254	268
28 Spd	10	3	1	2	0	8	10	14	23	27	27	36	32	32	32	32	30	27	20	16	13	21	21	13	18.5	35.5
Dir	228	195	175	205	158	242	242	233	234	236	238	240	238	240	247	246	255	258	248	247	248	256	260	246	244	240
29 Spd	9	12	12	7	12	15	14	18	25	29	32	31	32	32	32	25	32	32	32	25	19	13	6	3	20.3	32.5
Dir	260	266	237	216	232	243	236	244	255	256	259	260	272	262	265	276	264	246	250	242	240	245	226	195	254	246
30 Spd	2	3	2	1	3	6	2	2	4	3	4	4	7	6	4	3	6	8	6	3	6	8	5	5	1.2	8.3
Dir	161	57	60	47	324	33	83	201	231	269	294	334	336	349	331	290	284	297	319	163	203	183	164	171	288	183
31 Spd	5	4	5	7	6	4	3	3	9	11	16	22	19	27	31	32	36	32	29	25	21	26	13	13	15.8	35.7
Dir	213	220	224	223	208	219	142	154	229	215	240	249	246	255	252	250	258	253	255	263	272	258	249	242	249	258
Spd	3.1	3.1	2.6	3.5	3.7	3.9	5.4	7.0	10.2	12.5	13.6	14.6	14.8	15.3	14.5	14.4	15.8	15.4	14.4	11.6	9.8	7.7	5.1	3.4	Diurnal Average	
Dir	265	277	270	261	264	265	259	257	254	256	260	261	261	260	261	262	258	258	261	260	257	261	264	272	Diurnal Maximum	
Spd	24.0	23.7	20.2	21.2	18.5	17.7	18.6	22.0	33.3	35.3	40.5	35.5	32.9	36.6	34.3	34.0	35.7	37.1	37.1	33.6	32.1	29.9	28.9	26.3	Diurnal Maximum	
Dir	302	303	305	311	283	306	292	257	260	257	260	240	253	261	257	263	258	305	256	302	301	303	302	305		
Maximum Speed Value: 40 km/h on Jul 1 11:00 Minimum Speed Value: 0 km/h on Jul 2 04:00																								Hours in Service: 744		
Maximum Daily Speed Average: 22.1 km/h on Jul 8 Minimum Daily Speed Average: 1.2 km/h on Jul 30																								Hours of Data: 744		
Maximum Diurnal Speed Average: 15.8 km/h at hour 17 Minimum Diurnal Speed Average: 2.6 km/h at hour 3																								Hours of Missing Data: 0		
Monthly Average Velocity: 9.38 km/h 260.3 deg Speed Percentiles: P ₁ = 0.7 P ₁₀ = 3.3 Q ₁ = 6.1 Median = 11.0 Q ₃ = 20.1 P ₉₀ = 29.4 P ₉₉ = 35.3																								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	13	12	0	0	0	0	25																			
NorthEast	13	23	2	0	0	0	38																			
East	17	31	24	1	0	0	73																			
SouthEast	15	13	6	0	0	0	34																			
South	27	14	1	0	0	0	42																			
SouthWest	23	70	48	26	18	0	185																			
West	18	41	57	69	65	1	251																			
NorthWest	9	32	34	12	9	0	96																			
Total	135	236	172	108	92	1	744																			

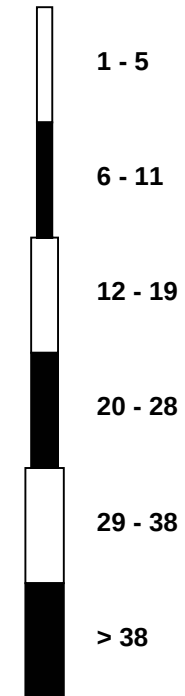
Wind Rose

Wind Speed (WS) (km/h)

Beaverlodge - July 2011



Wind Speed Classes (km/h)



Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Beaverlodge - July 2011

Maximum Speed: 41 km/h on Jul 1 11:00																								Hours in Service: 744			
Maximum Daily Speed Average: 22.5 km/h on Jul 8																								Hours of Data: 744			
Minimum Speed: 1 km/h on Jul 5 00:00																								Hours of Missing Data: 0			
Minimum Daily Speed Average: 4.9 km/h on Jul 30																								Percent Operational Time: 100.0			
Maximum Diurnal Speed Average: 21.8 km/h at hour 17																											
Monthly Average Speed: 14.15 km/h																											
Percentiles: P ₁ = 2.4 P ₁₀ = 4.2 Q ₁ = 6.7 Median = 11.3 Q ₃ = 20.3 P ₉₀ = 29.6 P ₉₉ = 35.7																											
Day	Hourly Period Ending At (MST)																							Daily Average	Daily Maximum		
1-Jul	17	13	5	8	6	6	13	21	31	36	41	35	34	37	35	32	28	26	27	27	24	8	9	5	21.8	40.8	
2-Jul	4	4	5	3	2	3	2	3	4	8	13	17	21	21	17	21	19	16	7	6	15	11	3	3	9.7	21.3	
3-Jul	4	4	2	4	9	10	12	12	13	16	19	22	16	23	23	26	29	34	37	29	28	20	17	6	17.2	37.4	
4-Jul	7	8	5	10	11	6	14	19	19	25	25	29	33	31	31	29	30	32	28	16	11	7	3	1	17.9	32.7	
5-Jul	3	3	3	2	4	3	3	5	5	14	21	27	30	33	32	30	31	32	29	24	18	15	8	7	15.8	32.8	
6-Jul	8	6	4	4	6	3	4	4	4	4	5	5	6	7	8	9	12	14	10	7	13	7	4	6	6.7	14.4	
7-Jul	7	4	4	5	2	4	7	7	11	9	8	8	9	8	7	9	14	14	13	11	8	6	9	9	8.1	13.7	
8-Jul	11	10	11	15	18	17	16	15	13	14	18	20	19	24	30	32	35	37	35	34	32	30	29	26	22.5	37.2	
9-Jul	24	24	20	21	18	18	16	16	18	20	21	21	20	16	16	14	12	9	9	12	9	12	12	12	12	16.3	24.0
10-Jul	12	11	12	12	14	12	9	10	11	11	12	12	10	11	13	14	14	14	14	13	11	10	10	14	11.8	13.9	
11-Jul	11	9	11	13	11	12	10	9	10	13	12	11	10	14	18	17	19	20	18	14	12	12	15	17	13.3	19.8	
12-Jul	15	12	11	9	8	7	9	10	11	7	10	7	5	9	7	8	9	8	7	3	4	7	10	9	8.4	15.3	
13-Jul	8	5	6	5	8	6	3	4	3	8	9	11	11	11	16	18	14	14	11	7	1	2	4	6	8.0	17.6	
14-Jul	8	9	12	8	7	11	6	7	11	12	17	16	17	13	10	13	12	11	18	18	12	5	5	6	10.9	17.8	
15-Jul	12	12	10	11	9	7	6	4	11	25	29	29	29	33	31	34	36	32	31	23	21	21	14	16	20.3	35.6	
16-Jul	10	9	11	13	19	18	19	13	12	11	12	12	13	10	9	10	9	7	6	8	6	5	8	8	10.7	18.7	
17-Jul	9	9	3	4	5	6	8	5	9	10	5	5	5	9	11	8	7	7	5	5	5	4	5	7	6.6	10.8	
18-Jul	8	6	3	4	4	5	5	7	3	7	7	9	11	15	25	28	30	27	23	21	20	21	16	16	13.4	30.4	
19-Jul	9	11	14	12	8	5	5	7	16	27	33	32	31	31	31	32	26	26	28	28	18	12	11	12	19.3	32.9	
20-Jul	8	10	12	11	9	8	16	22	27	30	24	26	26	28	27	26	28	25	25	17	11	9	5	3	18.0	29.8	
21-Jul	5	10	7	4	4	6	6	8	6	8	9	8	12	10	9	12	12	12	16	15	8	8	6	4	8.5	16.2	
22-Jul	4	3	5	5	7	3	4	9	6	5	6	4	4	7	7	9	9	11	10	12	8	7	6	6	6.5	12.4	
23-Jul	8	10	9	11	14	13	12	15	14	17	19	17	17	19	18	18	20	12	8	7	7	9	11	7	13.0	20.2	
24-Jul	5	3	3	4	3	6	8	10	11	18	25	32	33	33	32	23	28	28	22	18	11	8	7	3	15.6	32.9	
25-Jul	5	4	5	7	8	5	6	11	19	22	23	27	30	27	27	27	27	27	27	20	13	6	6	8	16.1	29.8	
26-Jul	8	5	5	8	5	10	17	20	33	27	23	24	27	29	27	28	29	30	28	23	16	11	10	10	18.9	33.4	
27-Jul	7	8	4	4	11	14	17	20	21	28	34	33	31	30	25	29	32	32	29	26	25	21	16	8	21.1	34.4	
28-Jul	11	4	3	4	5	8	11	14	23	27	28	36	33	33	32	32	30	27	20	16	13	21	21	13	19.3	35.7	
29-Jul	9	12	12	7	12	15	14	18	25	29	33	32	32	33	32	25	33	33	33	25	19	13	7	4	21.1	32.8	
30-Jul	2	4	3	3	5	7	3	2	5	3	4	4	7	7	5	4	6	8	6	4	6	8	6	5	4.9	8.3	
31-Jul	5	4	5	7	6	5	4	4	9	11	16	22	19	27	31	32	36	33	29	25	21	26	13	13	16.9	36.0	
8.5 7.9 7.3 7.7 8.3 8.3 9.3 10.7 13.4 16.1 18.0 19.2 19.3 20.6 20.7 21.0 21.8 21.3 19.6 16.6 13.8 11.8 9.8 8.8																								Diurnal Average			
24.0 23.7 20.3 21.3 18.6 18.4 18.7 22.2 33.4 35.7 40.8 35.7 33.6 37.1 34.7 34.1 36.0 37.2 37.4 33.7 32.2 29.9 29.0 26.4																								Diurnal Maximum			
All monthly, daily, and diurnal averages have been calculated using scalar methods																											

Hourly Standard Deviations

Wind Direction (WD) - deg

Beaverlodge - July 2011

Maximum Value: 97.5 deg on Jul 6 03:00																		Hours in Service: 744							
Minimum Value: 2.4 deg on Jul 20 20:00																		Hours of Data: 744							
Percentiles: P ₁ = 3.2 P ₁₀ = 5.0 Q ₁ = 7.1 Median = 11.0 Q ₃ = 23.2 P ₉₀ = 45.3 P ₉₉ = 86.2																		Hours of Missing Data: 0							
																		Hours of Calibration: 0							
																		Percent Operational Time: 100.0							
Day	Hourly Period Ending At (MST)																								Daily Maximum
1-Jul	4	10	17	7	38	15	5	6	5	9	7	9	11	10	9	10	14	9	7	5	5	18	28	34	37.6
2-Jul	75	16	15	87	79	15	39	48	31	26	16	13	11	13	21	12	8	12	17	13	10	19	79	16	87.1
3-Jul	26	45	44	27	9	11	8	8	11	15	13	13	23	14	18	14	5	6	7	5	5	3	5	13	44.5
4-Jul	8	12	13	14	11	41	9	8	11	10	15	15	9	9	12	12	11	8	7	11	13	6	69	73	72.8
5-Jul	45	35	51	87	28	71	16	36	60	13	12	10	11	9	11	8	7	7	6	8	9	8	70	43	86.6
6-Jul	13	16	98	43	68	44	80	65	40	83	69	61	57	15	26	27	24	16	23	7	33	26	41	23	97.5
7-Jul	13	26	14	12	78	57	12	13	13	31	42	46	42	31	48	36	26	19	9	12	46	32	24	20	78.5
8-Jul	16	11	8	6	6	12	7	18	12	9	18	7	9	6	4	4	5	4	4	4	5	4	4	3	18.4
9-Jul	4	4	7	4	4	4	6	5	5	4	5	5	6	7	7	9	8	8	7	6	5	6	3	12	12.4
10-Jul	11	7	8	6	5	11	11	7	9	12	25	7	11	13	9	7	8	9	6	4	5	4	5	5	25.5
11-Jul	5	7	5	5	10	8	6	9	10	11	10	13	16	9	8	11	9	12	7	9	25	12	3	6	24.6
12-Jul	5	6	5	7	13	11	12	13	10	23	17	14	39	14	24	18	14	35	10	24	23	5	4	4	38.9
13-Jul	7	37	18	49	47	83	81	23	35	19	16	14	12	23	13	15	11	11	7	6	72	32	41	63	82.7
14-Jul	70	11	10	23	27	12	19	30	13	11	15	11	10	12	10	15	13	14	12	7	5	13	52	41	69.9
15-Jul	8	6	8	14	12	15	17	19	19	6	6	7	7	5	8	4	5	5	4	6	4	4	4	3	19.3
16-Jul	6	15	8	9	7	28	5	9	7	22	10	39	12	17	17	18	19	26	23	22	13	21	6	7	39.1
17-Jul	8	13	69	28	23	38	66	25	21	15	35	55	80	44	70	20	22	25	19	32	14	11	14	41	79.5
18-Jul	41	18	49	84	55	66	28	56	60	11	25	8	11	9	10	9	7	7	7	5	5	4	5	9	83.6
19-Jul	15	6	6	10	42	47	27	43	8	11	8	8	8	12	9	8	8	8	7	7	7	4	6	4	47.2
20-Jul	12	9	11	10	18	73	4	8	6	8	8	9	9	9	11	9	9	6	6	2	4	13	90	18	89.5
21-Jul	65	14	29	14	35	9	42	8	16	24	15	37	6	11	17	14	16	6	12	9	21	8	18	64	65.3
22-Jul	69	53	24	24	19	73	45	10	31	29	29	87	90	54	65	33	24	17	7	13	10	23	17	27	90.5
23-Jul	8	31	27	7	4	7	5	5	4	8	6	6	6	6	9	9	8	9	15	16	27	14	5	39	39.4
24-Jul	30	31	19	37	82	24	11	6	9	13	8	6	7	7	9	15	10	5	10	10	7	22	20	60	82.1
25-Jul	40	71	32	19	22	30	24	10	9	6	13	15	9	13	8	12	9	10	5	6	9	22	19	8	71.4
26-Jul	7	19	8	24	78	27	4	8	4	6	8	11	14	6	10	7	9	10	10	4	7	6	6	16	78.1
27-Jul	45	9	48	77	4	8	5	6	7	8	6	8	8	9	9	12	9	6	7	3	3	3	3	7	77.1
28-Jul	6	45	63	75	91	13	8	3	6	5	7	6	9	9	9	8	9	7	8	7	4	7	8	4	91.1
29-Jul	17	8	6	15	9	4	4	7	7	10	9	9	9	8	9	7	11	8	8	5	3	3	21	39	39.4
30-Jul	52	33	60	81	48	27	67	42	38	44	47	38	19	23	40	50	13	11	8	59	16	5	24	35	80.6
31-Jul	11	18	13	11	16	45	48	58	20	9	8	8	12	10	9	9	8	7	5	8	8	7	9	6	57.9
	74.7	71.4	97.5	87.1	91.1	82.7	80.7	65.1	60.1	82.8	68.8	87.0	90.5	53.5	69.7	50.0	26.1	34.7	23.2	59.4	72.1	32.4	89.5	72.8	

PAZA
Valleyview Station
Monthly Summary Tables, Graphs and
Roses

Hourly Averages

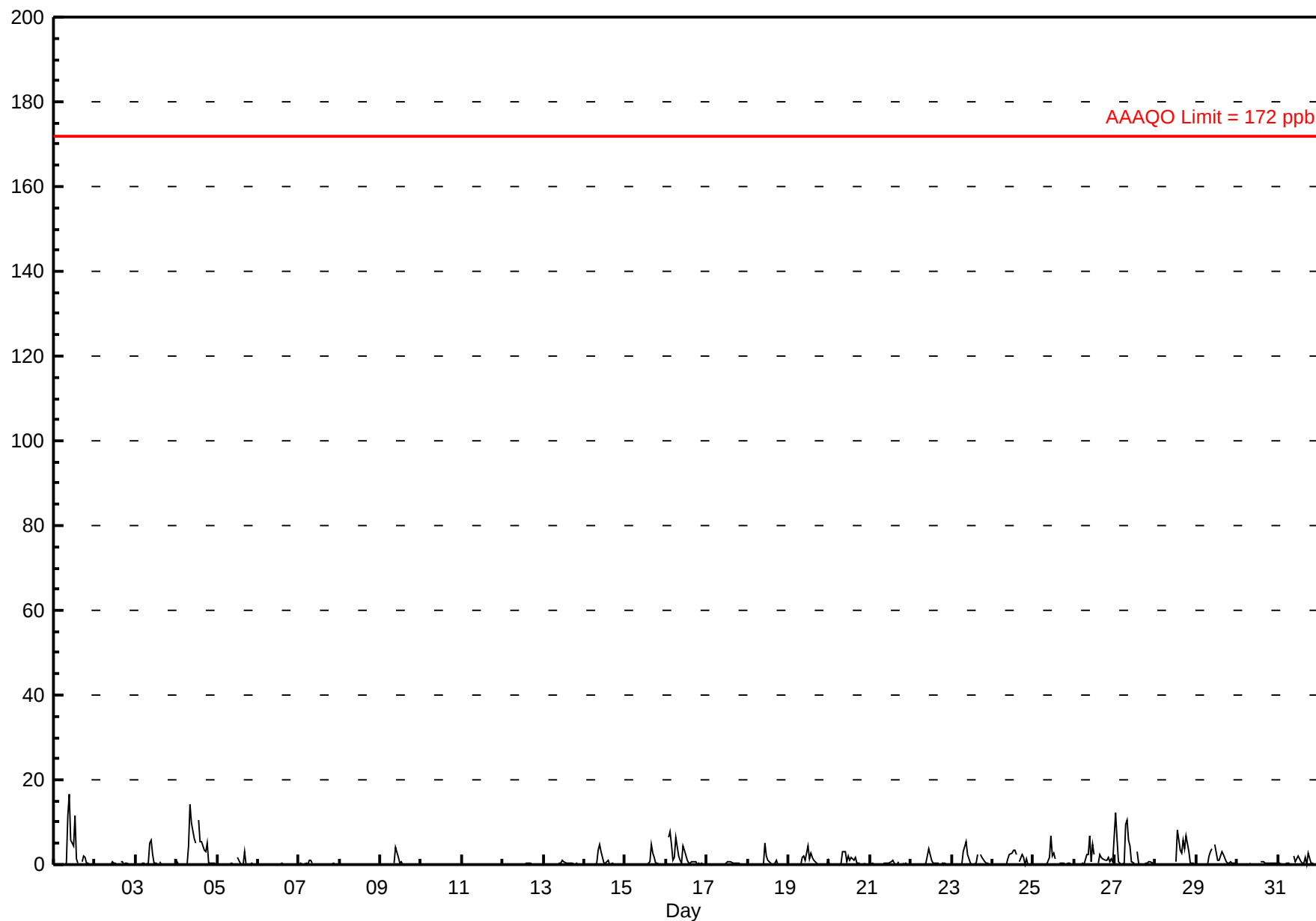
Sulphur Dioxide (SO₂) - ppb

Valleyview - July 2011

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0		Maximum Value: 16.7 ppb on Jul 1 10:00		Maximum Daily Average: 3.2 ppb on Jul 4		Hours in Service: 744		Hours of Data: 709		Hours of Missing Data: 35		Hours of Calibration: 35		Percent Operational Time: 100.0													
Minimum Value: 0 ppb on Jul 1 01:00		Minimum Daily Average: 0.0 ppb on Jul 10		Minimum Diurnal Average: 0.1 ppb at hour 5		Monthly Average: 0.77 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.1 Q ₃ = 0.4 P ₉₀ = 2.4 P ₉₉ = 10.3																			
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
1-Jul	0	0	0	0	0	0	0	0	11	17	6	5	12	1	0	A	1	2	2	0	0	0	0	0	2.5	16.7	
2-Jul	0	0	0	0	0	0	0	0	0	0	1	0	0	0	A	1	1	0	0	0	0	0	0	0	0.2	0.8	
3-Jul	0	0	0	0	0	0	0	0	5	6	2	0	0	A	1	0	0	0	0	0	0	0	0	0	0.7	5.8	
4-Jul	1	0	0	0	0	0	0	4	14	10	6	5	A	11	5	5	3	3	5	0	0	0	0	0	3.2	14.3	
5-Jul	0	0	0	0	0	0	0	0	0	0	0	A	2	0	0	0	3	0	0	0	0	0	0	0	0.3	2.9	
6-Jul	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	
7-Jul	0	0	0	0	0	0	1	1	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1.2	
8-Jul	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1	
9-Jul	0	0	0	0	0	0	0	A	0	4	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0.3	4.1	
10-Jul	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	0.0	
11-Jul	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	
12-Jul	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-Jul	0	0	0	A	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0.2	0.9	
14-Jul	0	0	A	0	0	0	0	0	3	5	3	0	0	1	1	0	0	0	0	0	0	0	0	0	0.6	4.7	
15-Jul	0	A	0	0	0	0	0	0	0	0	0	0	0	0	1	5	3	2	0	0	0	0	0	0	0.5	4.8	
16-Jul	A	6	8	5	1	2	6	2	1	0	4	3	1	0	0	1	1	1	0	0	0	0	0	A	2.0	7.7	
17-Jul	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	A	0	0.2	0.7	
18-Jul	0	0	0	0	0	0	0	0	0	0	5	2	1	0	0	0	1	0	0	0	0	0	0	0	0.5	5.2	
19-Jul	0	0	0	0	0	0	0	0	2	2	1	4	1	3	2	1	1	0	0	0	A	0	0	1	0.7	4.2	
20-Jul	0	0	0	0	0	0	0	0	3	3	1	2	1	2	1	2	0	0	0	A	0	0	0	0	0.7	3.1	
21-Jul	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	A	0	0	0	0	0	0.3	1.1	
22-Jul	0	0	0	0	0	0	0	0	0	0	4	2	1	0	0	0	0	A	0	0	0	0	0	0	0.5	3.7	
23-Jul	0	0	0	0	0	0	0	3	5	2	1	0	0	0	0	2	A	2	2	1	0	0	0	0	0.9	5.3	
24-Jul	0	0	0	0	0	0	0	0	0	1	2	3	3	3	3	A	1	2	2	0	1	0	0	0	1.0	3.4	
25-Jul	0	0	0	0	0	0	0	0	0	2	7	2	3	1	A	0	0	0	0	0	0	0	0	0	0.7	6.9	
26-Jul	0	0	0	0	0	0	0	3	2	7	1	5	2	A	0	2	2	1	1	1	2	1	1	1	1.4	6.9	
27-Jul	12	6	1	0	0	1	10	10	6	4	1	0	A	3	0	0	0	0	1	0	1	1	0	0	2.5	12.2	
28-Jul	0	0	0	0	0	0	0	0	0	0	0	0	A	1	8	3	3	6	4	7	3	0	0	0	1.6	8.1	
29-Jul	0	0	0	0	0	0	0	2	3	4	A	5	1	1	2	3	2	1	0	0	1	0	0	0	1.1	4.7	
30-Jul	0	0	0	0	0	0	0	0	0	A	0	C	C	C	1	1	0	0	0	0	0	0	0	0	0.2	0.6	
31-Jul	0	0	0	0	0	0	0	0	A	2	1	1	2	1	0	0	2	0	3	0	0	0	0	0	0.6	2.5	
		0.5	0.5	0.3	0.2	0.1	0.1	0.6	0.9	2.0	2.5	1.7	1.6	1.2	1.4	0.8	1.0	0.9	0.7	0.8	0.3	0.3	0.1	0.1	0.1	Diurnal Average	
		12.2	6.5	7.7	4.8	1.1	1.7	9.6	10.4	14.3	16.7	6.9	5.2	11.7	10.6	5.4	5.5	5.6	3.8	6.8	3.1	1.7	0.6	1.2	1.0	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 Averages

Sulphur Dioxide (SO₂) - ppb
Valleyview - July 2011



Hourly Maximums

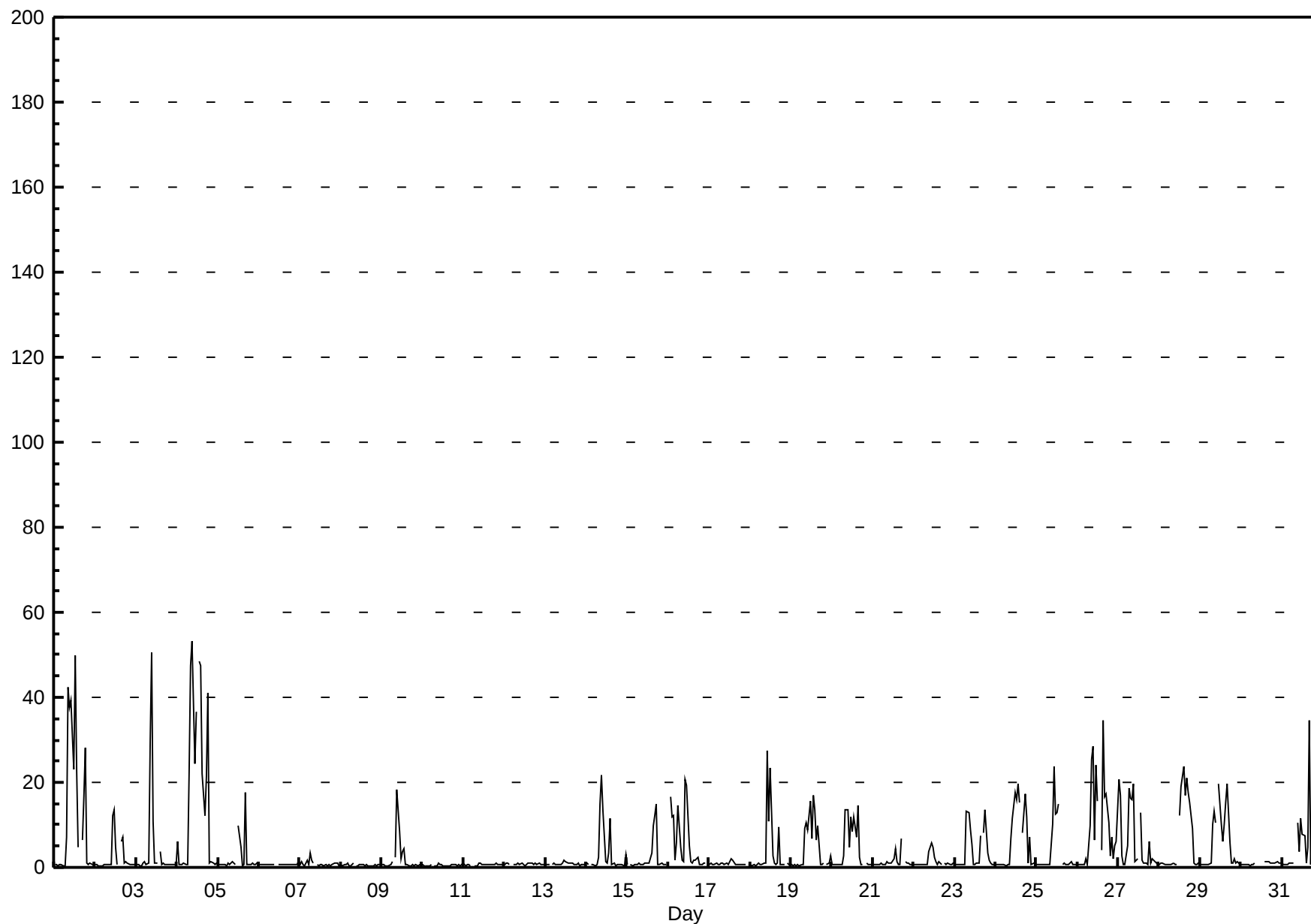
Sulphur Dioxide (SO₂) - ppb

Valleyview - July 2011

Maximum Value: 53.3 ppb on Jul 4 10:00		Maximum Daily Average: 17.0 ppb on Jul 4		Hours in Service: 744																						
Minimum Value: 0 ppb on Jul 10 09:00		Minimum Daily Average: 0.5 ppb on Jul 10		Hours of Data: 709																						
Maximum Diurnal Average: 10.9 ppb at hour 10		Minimum Diurnal Average: 0.7 ppb at hour 5		Hours of Missing Data: 35																						
Monthly Average: 3.93 ppb		Percentiles: P ₁ = 0.4 P ₁₀ = 0.5 Q ₁ = 0.6 Median = 0.8 Q ₃ = 1.8 P ₉₀ = 13.4 P ₉₉ = 39.6		Hours of Calibration: 35																						
				Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
1-Jul	1	1	0	1	1	0	0	7	42	37	39	23	50	23	5	A	6	17	28	1	1	1	1	1	12.4	49.8
2-Jul	1	1	0	0	0	1	1	1	1	1	12	13	5	1	A	6	7	1	1	1	1	1	1	1	2.4	13.4
3-Jul	1	1	0	0	1	1	1	1	29	51	11	1	1	A	4	1	1	1	1	1	1	1	1	1	4.8	50.7
4-Jul	6	1	1	1	1	1	1	22	47	53	24	36	A	49	47	22	12	21	41	1	1	1	1	1	17.0	53.3
5-Jul	1	1	1	1	1	1	1	1	1	1	1	A	10	5	1	1	17	1	1	1	1	1	1	1	2.0	17.5
6-Jul	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	2	0.7	1.7
7-Jul	1	1	1	0	2	1	3	2	1	A	1	0	1	1	0	1	0	1	1	1	1	1	1	0	0.9	3.3
8-Jul	1	0	1	1	1	0	0	1	A	A	0	0	1	1	0	1	0	0	0	0	1	0	1	1	0.5	0.9
9-Jul	1	1	0	0	0	1	1	A	A	2	18	9	2	4	4	1	1	0	0	1	0	1	0	1	2.1	18.3
10-Jul	1	0	0	0	0	1	A	0	0	1	1	1	0	0	0	0	0	1	1	1	0	1	0	1	0.5	0.9
11-Jul	1	0	1	1	0	A	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.1
12-Jul	1	1	1	1	A	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0.8	1.1
13-Jul	1	1	1	A	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	0	1	1	1	0.8	1.7
14-Jul	1	1	A	1	1	0	1	2	15	22	13	1	1	3	11	1	1	0	1	1	1	1	0	3	3.6	21.7
15-Jul	1	A	1	0	1	1	1	1	1	1	1	1	1	1	3	10	12	15	1	1	1	1	1	1	2.4	14.9
16-Jul	A	17	12	12	2	6	15	5	2	1	21	19	5	1	1	2	2	2	1	1	1	1	1	A	5.8	20.8
17-Jul	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	A	1	0.9	2.2
18-Jul	1	0	1	0	1	1	1	1	1	1	27	11	23	3	1	1	1	9	1	1	1	1	A	1	3.8	27.5
19-Jul	1	0	1	0	1	0	1	1	9	10	9	16	7	17	14	6	10	1	1	1	A	1	1	3	4.7	17.0
20-Jul	1	1	1	1	1	1	1	3	14	14	5	12	9	12	7	14	3	1	1	A	1	1	1	1	4.3	14.4
21-Jul	1	1	1	1	1	1	1	1	1	1	1	1	2	4	1	1	1	7	A	1	1	1	1	1	1.3	6.7
22-Jul	1	1	1	1	1	1	1	1	1	4	6	5	2	1	1	1	1	A	1	1	1	1	1	1	1.4	5.7
23-Jul	1	1	1	1	1	1	1	13	13	9	5	1	1	1	8	A	8	13	3	2	1	1	1	1	3.7	13.4
24-Jul	1	1	1	1	1	1	0	1	1	7	11	18	16	20	15	A	8	17	12	1	7	1	1	1	6.1	19.6
25-Jul	1	1	1	1	1	1	1	1	1	10	24	12	13	15	A	1	1	1	1	1	1	1	1	1	3.8	23.6
26-Jul	1	1	1	1	1	2	1	10	26	28	7	24	16	A	4	35	17	17	11	3	7	2	5	6	9.7	34.7
27-Jul	21	17	3	1	1	5	19	16	16	20	1	2	A	13	2	1	1	1	6	1	2	2	1	1	6.5	20.8
28-Jul	1	1	1	1	1	1	1	1	1	1	1	A	12	19	24	17	21	18	15	9	1	1	1	1	6.4	23.7
29-Jul	1	1	1	1	1	1	1	10	13	11	A	20	10	6	10	15	20	6	1	2	1	1	1	1	5.8	19.7
30-Jul	1	1	1	1	1	0	1	1	1	A	1	C	C	C	1	1	1	1	1	1	1	1	1	1	0.9	1.4
31-Jul	1	1	1	1	1	1	1	1	A	10	4	12	8	7	1	5	35	1	14	2	1	1	1	1	4.7	34.6
1.5		1.7	1.1	1.0	0.7	1.0	1.8	3.5	8.4	10.9	8.2	8.4	7.2	7.6	5.6	5.3	6.1	5.0	5.2	1.3	1.4	0.8	0.9	1.1	Diurnal Average	
20.8		17.0	11.7	12.3	1.8	5.7	18.6	22.4	47.4	53.3	39.2	36.5	49.8	48.5	47.5	34.7	34.6	21.5	40.9	9.0	7.2	2.0	4.9	6.2	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																								

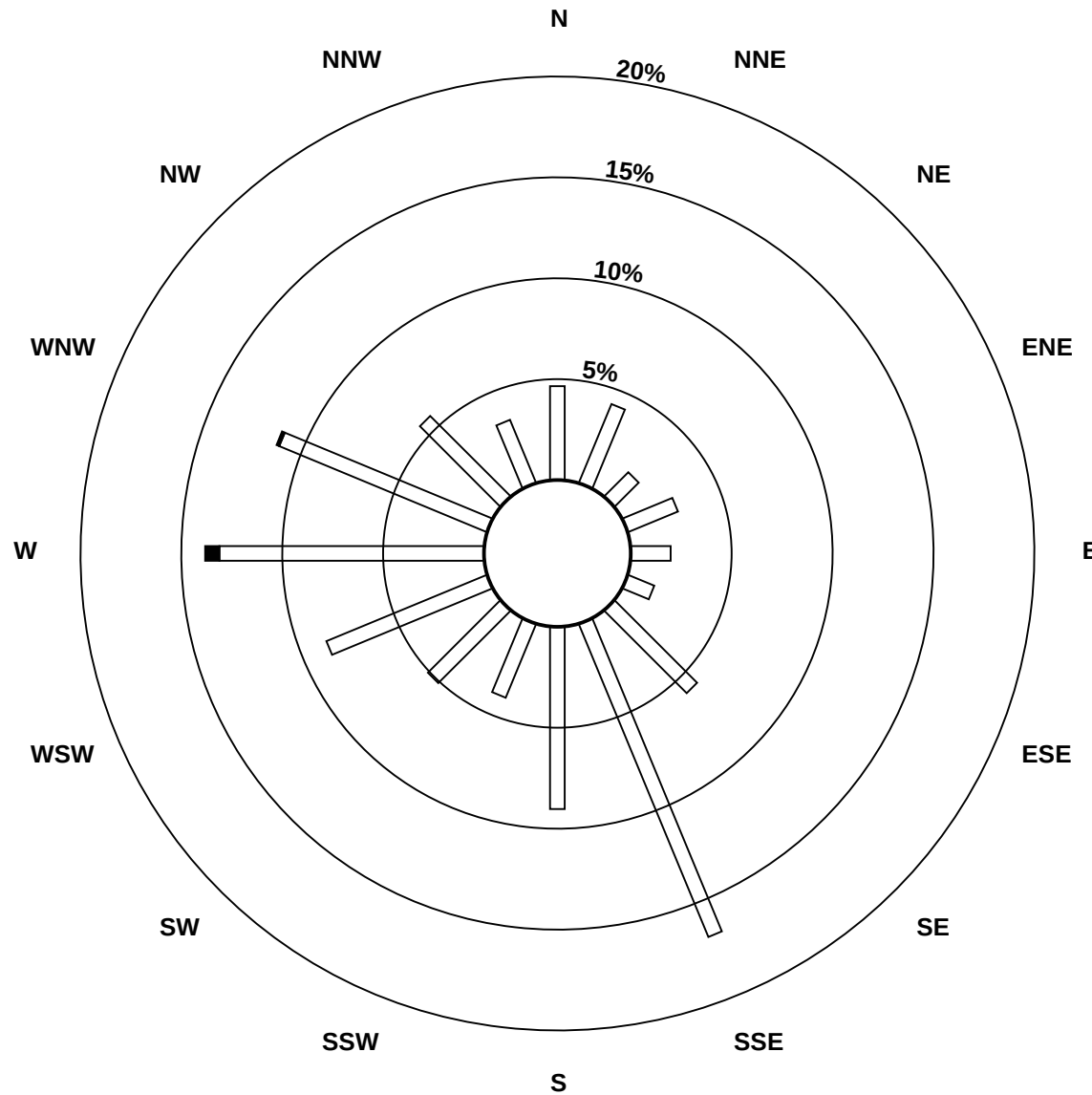
Hourly Maximums

Sulphur Dioxide (SO₂) - ppb
Valleyview - July 2011

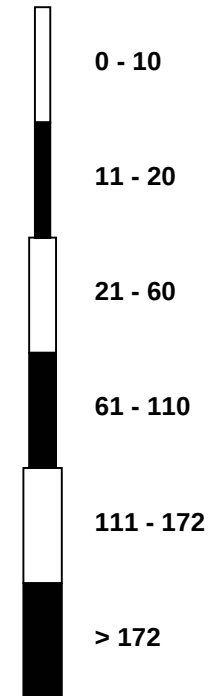


Pollutant Rose

Sulphur Dioxide (SO₂) - ppb
Valleyview - July 2011

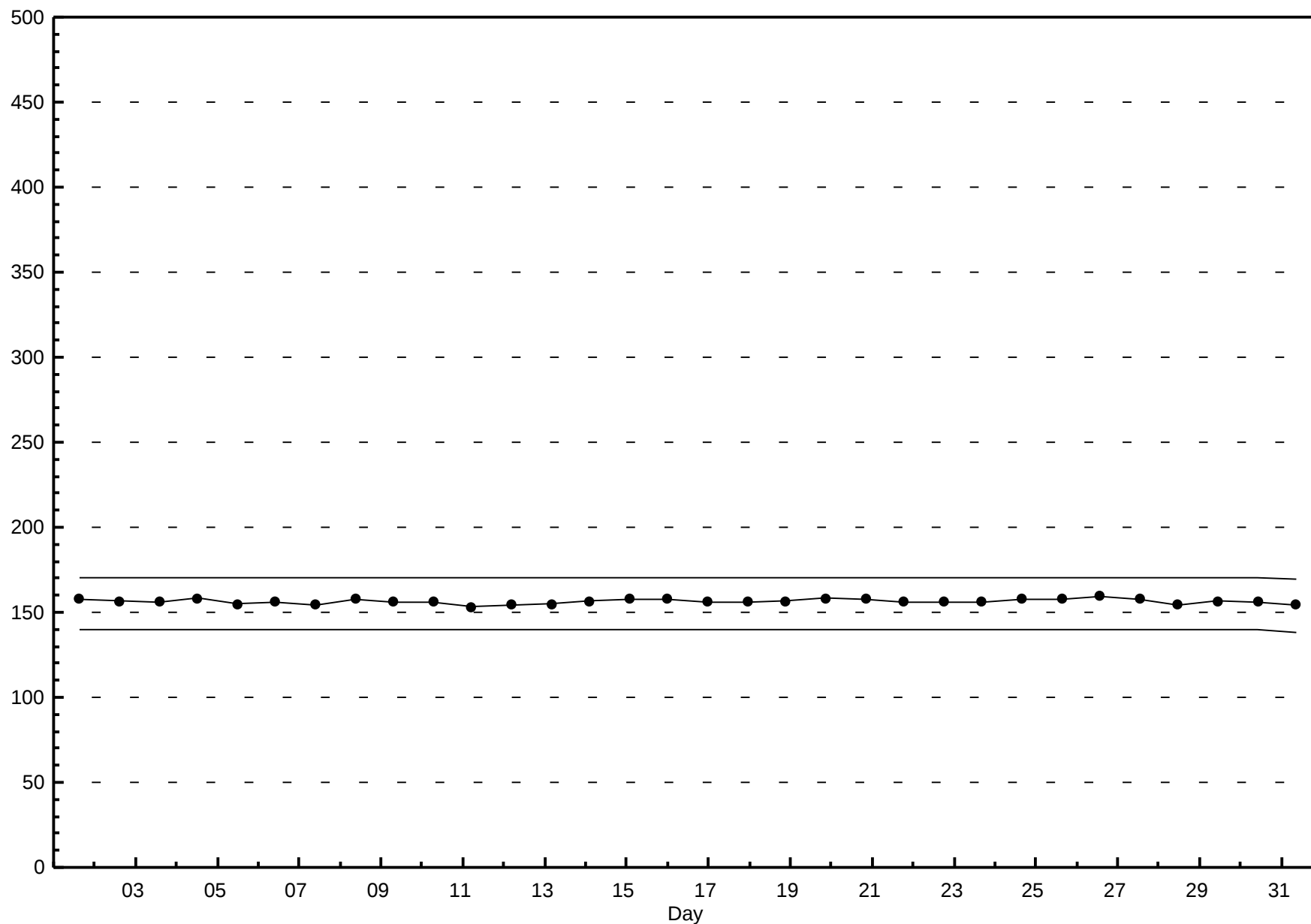


Pollutant Classes (ppb)



Span Responses

Sulphur Dioxide (SO₂)
Valleyview - July 2011



Hourly Averages

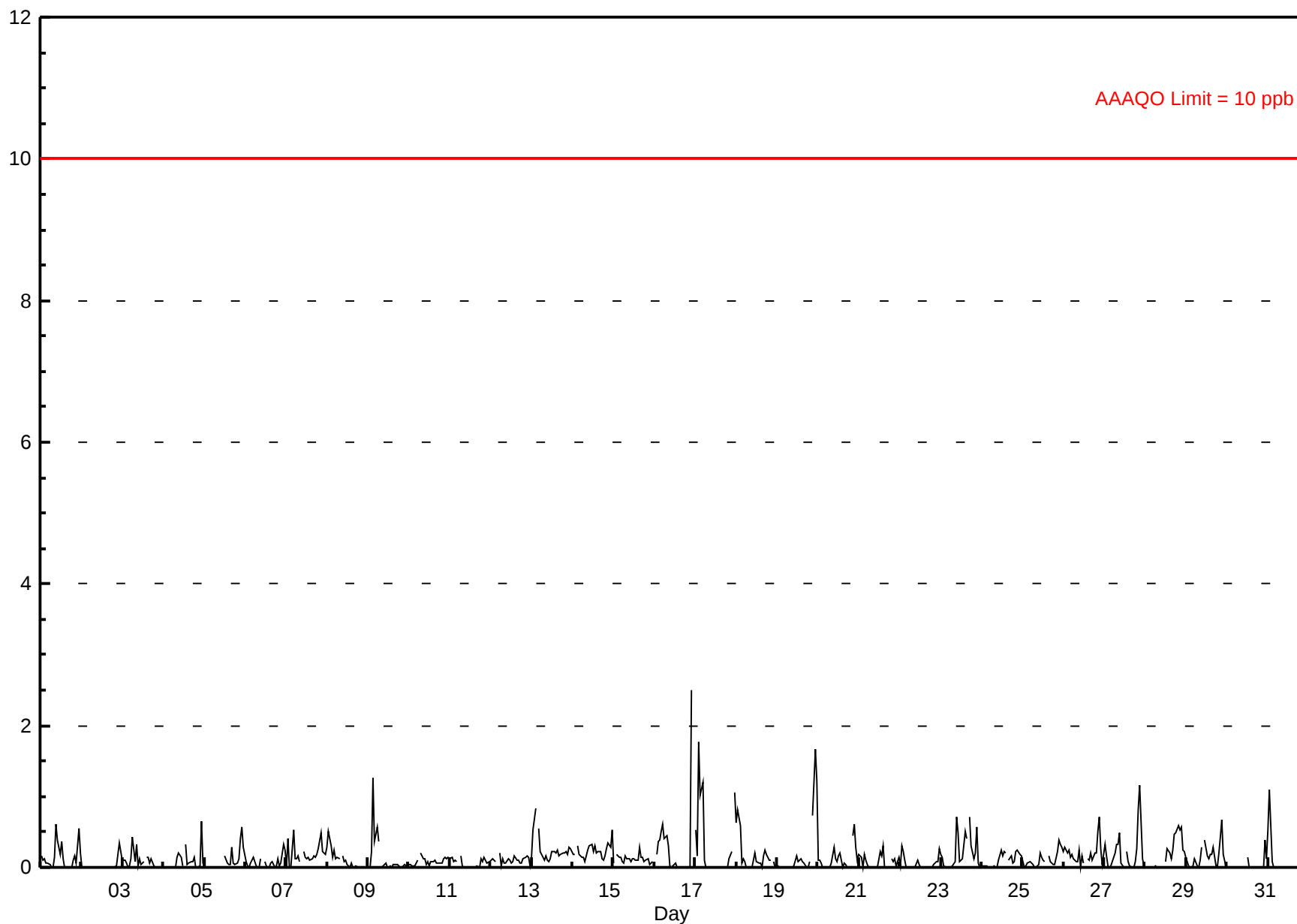
Hydrogen Sulphide (H₂S) - ppb

Valleyview - July 2011

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0																		Hours in Service: 744								
Maximum Value: 2.5 ppb on Jul 16 23:00																		Maximum Daily Average: 0.3 ppb on Jul 17		Hours of Data: 710						
Minimum Value: 0 ppb on Jul 1 07:00																		Minimum Daily Average: 0.0 ppb on Jul 30		Hours of Missing Data: 34						
Maximum Diurnal Average: 0.4 ppb at hour 23																		Minimum Diurnal Average: 0.1 ppb at hour 8		Hours of Calibration: 34						
Monthly Average: 0.14 ppb																		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.1 Q ₃ = 0.2 P ₉₀ = 0.3 P ₉₉ = 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-Jul	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	A	0	0	0	0	0	0	1	0	0.2	0.6
2-Jul	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	0.4
3-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.1	0.4
4-Jul	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	1	0	0.1	0.7
5-Jul	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	1	0	0.1	0.6
6-Jul	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	0.3
7-Jul	0	0	0	0	1	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5
8-Jul	0	1	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
9-Jul	0	0	0	1	0	1	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1.3
10-Jul	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
11-Jul	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
12-Jul	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
13-Jul	0	1	1	A	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.8
14-Jul	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	0.5
15-Jul	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
16-Jul	A	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	A	0.3	2.5
17-Jul	1	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	1	0.3	1.8
18-Jul	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.2	0.8
19-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	1	2	1	0.2	1.7
20-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	1	0	0	0.1	0.6
21-Jul	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	0.3
22-Jul	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
23-Jul	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	A	1	0	0	0	1	0	0	0.2	0.7
24-Jul	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	0.3
25-Jul	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	0.4
26-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	1	1	0	0	0.2	0.7
27-Jul	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	1	1	0	0	0.2	1.2
28-Jul	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	1	1	1	0	0	0.2	0.6
29-Jul	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	1	0	0	0.2	0.7
30-Jul	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	0.4
31-Jul	1	1	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0.2	1.1
		0.1	0.2	0.2	0.1	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	0.3	0.4	0.2	Diurnal Average	
		0.6	1.1	1.8	1.3	1.2	0.6	0.4	0.4	0.3	0.7	0.5	0.4	0.4	0.3	0.5	0.4	0.3	0.7	0.5	0.6	1.1	1.2	2.5	1.2	Diurnal Maximum
C - Calibration		A - Automated Daily Zero Span																								
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr 10 ppb		24-hr 3 ppb																						

Hourly Averages

Hydrogen Sulphide (H₂S) - ppb
Valleyview - July 2011



Hourly Maximums

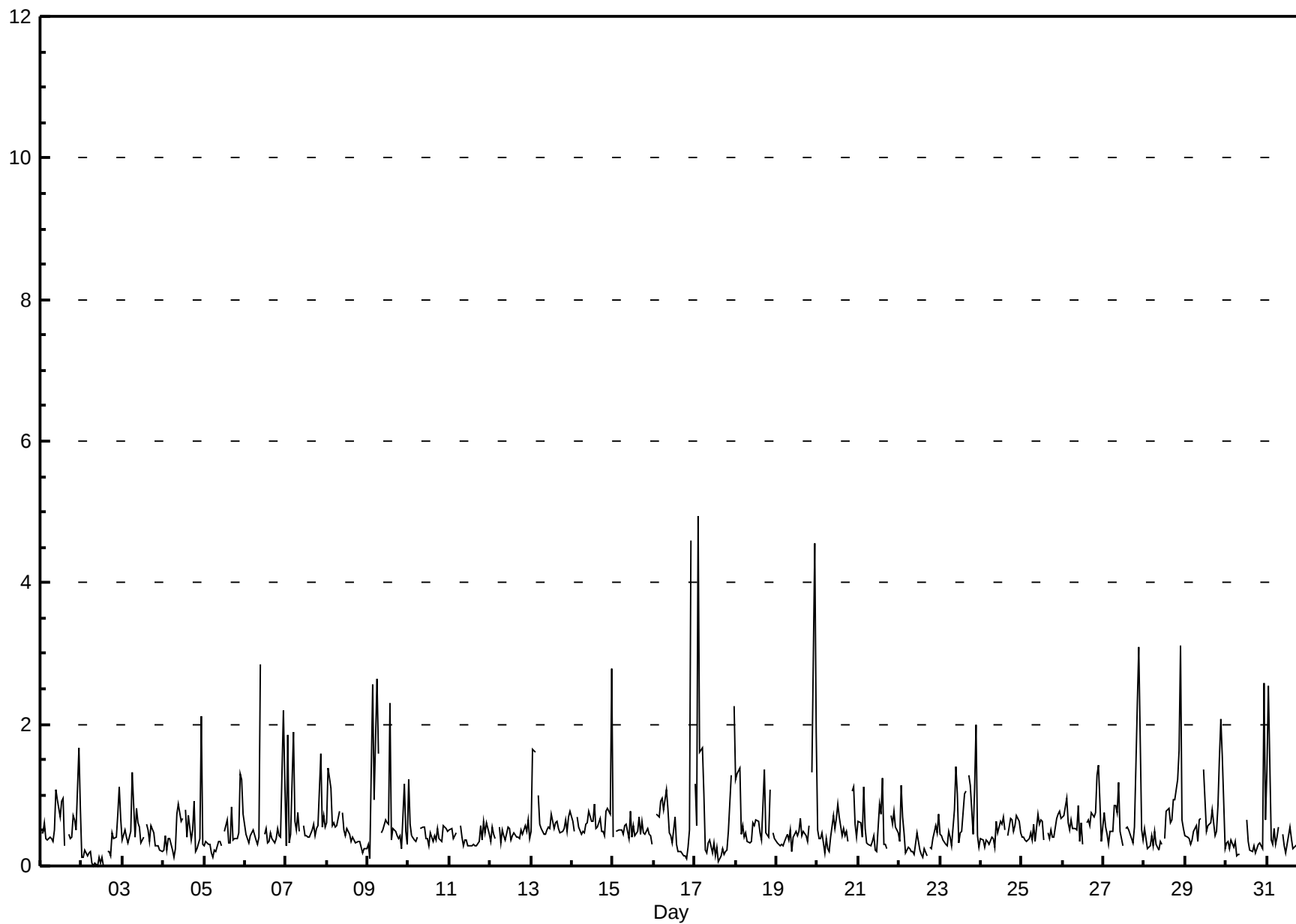
Hydrogen Sulphide (H₂S) - ppb

Valleyview - July 2011

Maximum Value: 4.9 ppb on Jul 17 03:00																				Maximum Daily Average: 0.8 ppb on Jul 9					Hours in Service: 744	
Minimum Value: 0 ppb on Jul 2 08:00																				Minimum Daily Average: 0.2 ppb on Jul 2					Hours of Data: 710	
Maximum Diurnal Average: 1.2 ppb at hour 23																				Minimum Diurnal Average: 0.4 ppb at hour 8					Hours of Missing Data: 34	
Monthly Average: 0.59 ppb																				Percentiles: P ₁ = 0.1 P ₁₀ = 0.2 Q ₁ = 0.3 Median = 0.5 Q ₃ = 0.6 P ₉₀ = 1.1 P ₉₉ = 2.7					Hours of Calibration: 34	
																				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-Jul	0	0	1	0	0	0	0	0	1	1	1	1	1	1	0	A	0	0	0	1	1	1	2	1	0.6	1.7
2-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	1	1	1	0.2	1.1
3-Jul	0	1	0	0	0	0	1	0	1	1	1	0	0	A	1	1	0	1	0	0	0	0	0	0	0.5	1.3
4-Jul	0	0	0	0	0	0	0	0	1	1	1	1	A	1	0	1	0	1	1	0	0	0	2	0	0.5	2.1
5-Jul	0	0	0	0	0	0	0	0	0	0	A	0	0	1	0	0	1	0	0	0	0	1	1	1	0.5	1.3
6-Jul	0	0	0	0	0	1	0	0	0	3	A	0	1	0	0	0	0	0	0	1	0	0	2	1	0.6	2.8
7-Jul	0	2	0	0	2	1	1	1	0	A	1	0	0	0	0	1	1	0	1	1	2	1	1	1	0.7	1.9
8-Jul	1	1	1	1	1	1	1	1	A	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0.5	1.4
9-Jul	0	0	1	3	1	3	2	A	0	1	1	1	1	2	0	1	0	0	0	0	0	1	0	0	0.8	2.6
10-Jul	1	1	0	0	0	0	A	1	1	1	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0.5	1.2
11-Jul	1	1	0	0	0	A	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0.4	0.6
12-Jul	0	1	0	0	A	1	0	1	0	0	1	1	0	0	0	0	0	0	1	0	1	0	1	0	0.5	0.7
13-Jul	0	2	2	A	1	1	1	0	0	1	1	1	1	1	1	1	1	0	0	1	1	0	1	1	0.7	1.6
14-Jul	1	0	A	1	1	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	1	1	1	3	0.7	2.8
15-Jul	0	A	0	1	1	1	0	1	1	0	1	0	1	0	0	1	0	1	0	0	1	0	0	0	0.5	0.8
16-Jul	A	1	1	1	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	1	5	A	0.7	4.6
17-Jul	1	1	5	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	A	2	0.8	4.9
18-Jul	1	1	1	0	1	0	0	0	0	0	1	1	1	1	0	0	1	1	0	0	1	A	0	0	0.7	1.4
19-Jul	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	A	1	5	2	0.7	4.6
20-Jul	1	0	0	0	0	0	0	0	0	1	1	1	1	1	0	1	0	0	0	A	1	1	1	0	0.5	1.1
21-Jul	1	1	0	1	1	0	0	0	0	0	0	0	1	1	1	0	0	0	A	1	1	1	1	0	0.5	1.2
22-Jul	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	1	0	1	0.4	1.1
23-Jul	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	1	A	1	1	0	1	2	0	0	0.7	2.0
24-Jul	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	A	0	1	1	0	1	1	1	0	0.5	0.7
25-Jul	0	0	0	0	0	0	0	1	0	1	1	1	1	0	A	0	0	1	0	0	1	1	1	1	0.5	0.8
26-Jul	1	1	1	1	1	1	1	1	1	1	0	1	0	A	1	1	1	1	1	1	1	1	1	0	0.7	1.4
27-Jul	1	1	0	0	0	0	1	1	1	1	0	0	A	1	1	1	0	0	1	1	2	3	1	0	0.8	3.1
28-Jul	1	0	0	0	0	0	0	0	0	0	0	A	0	1	1	1	1	1	1	1	2	3	1	1	0.7	3.1
29-Jul	0	0	0	0	0	0	1	0	1	1	A	1	0	1	1	1	1	0	0	1	2	2	2	0	0.7	2.1
30-Jul	0	0	0	0	0	0	0	0	0	C	C	C	1	0	0	0	0	0	0	0	0	0	3	1	0.4	2.6
31-Jul	1	3	0	0	1	0	0	1	A	0	0	0	0	1	0	0	0	0	0	1	3	3	2	0	0.8	3.1
0.5 0.7 0.7 0.5 0.5 0.5 0.5 0.4 0.5 0.6 0.5 0.5 0.5 0.6 0.5 0.5 0.4 0.5 0.5 0.5 0.8 1.0 1.2 0.7																								Diurnal Average		
1.3 2.5 4.9 2.6 1.9 2.6 1.6 1.1 0.8 2.8 1.0 1.4 0.9 2.3 1.2 1.1 0.9 1.4 1.1 1.4 2.7 3.1 4.6 2.8																								Diurnal Maximum		
C - Calibration A - Automated Daily Zero Span																										

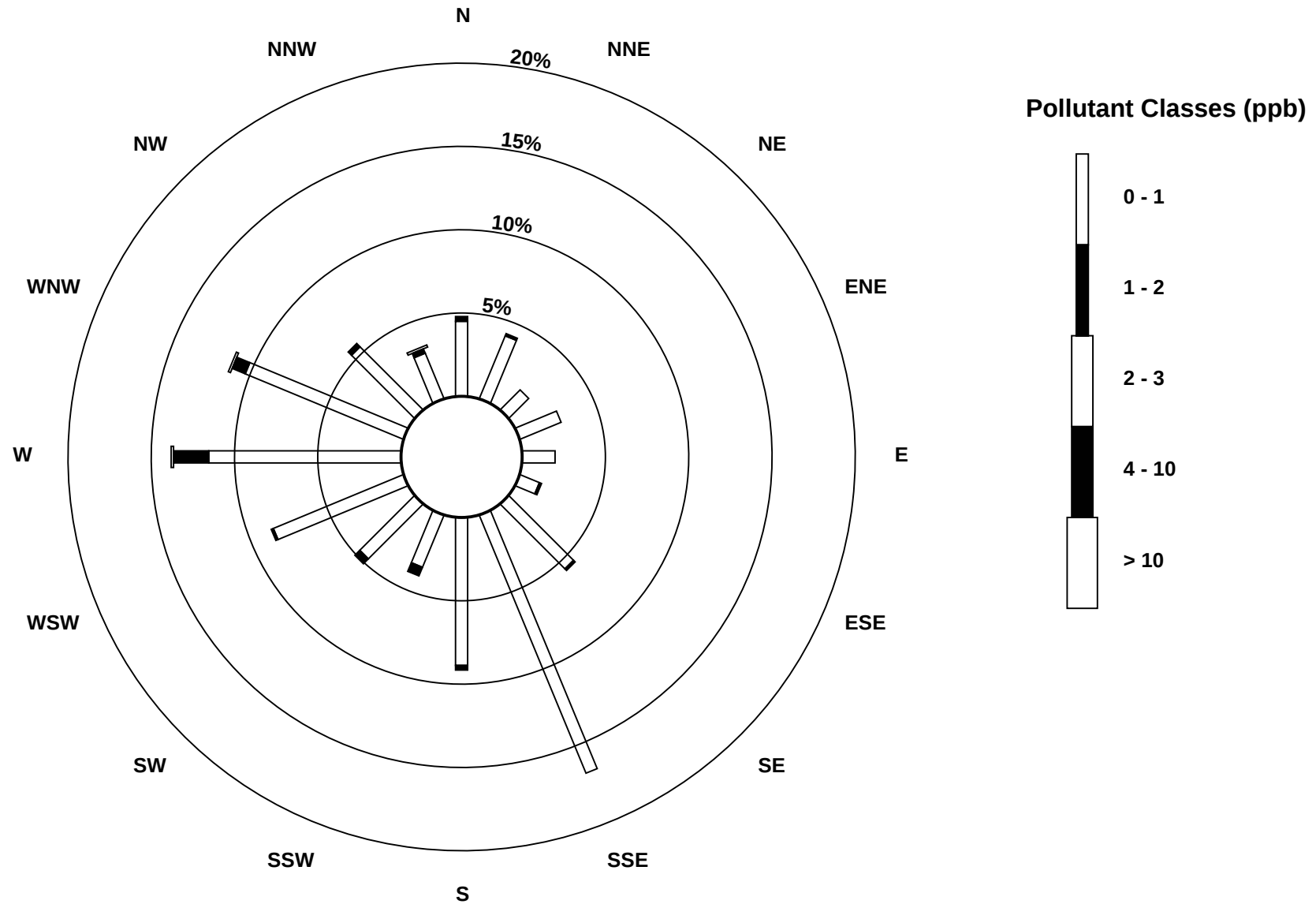
Hourly Maximums

Hydrogen Sulphide (H₂S) - ppb
Valleyview - July 2011



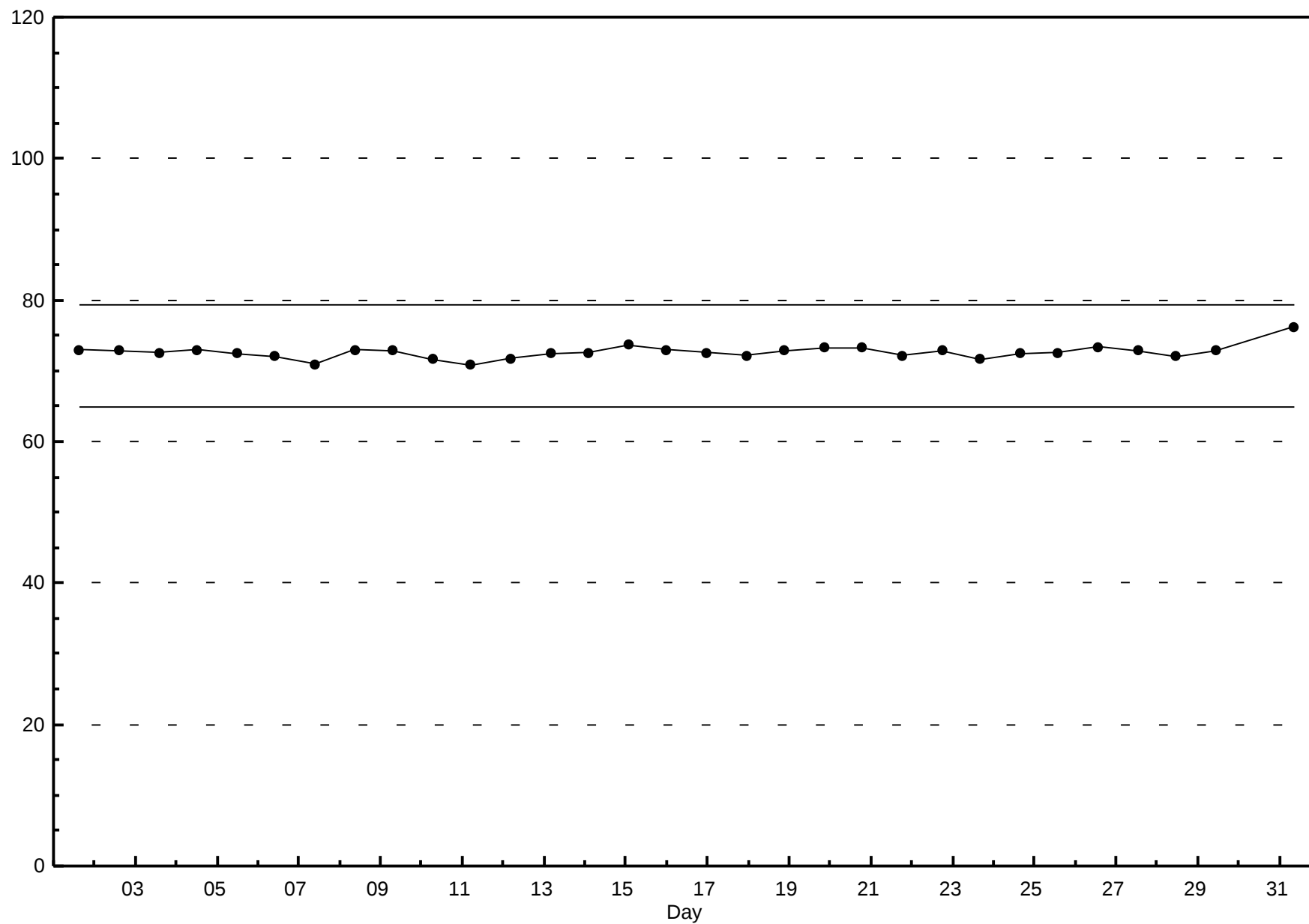
Pollutant Rose

Hydrogen Sulphide (H₂S) - ppb
Valleyview - July 2011



Span Responses

Hydrogen Sulphide (H₂S)
Valleyview - July 2011



Hourly Averages

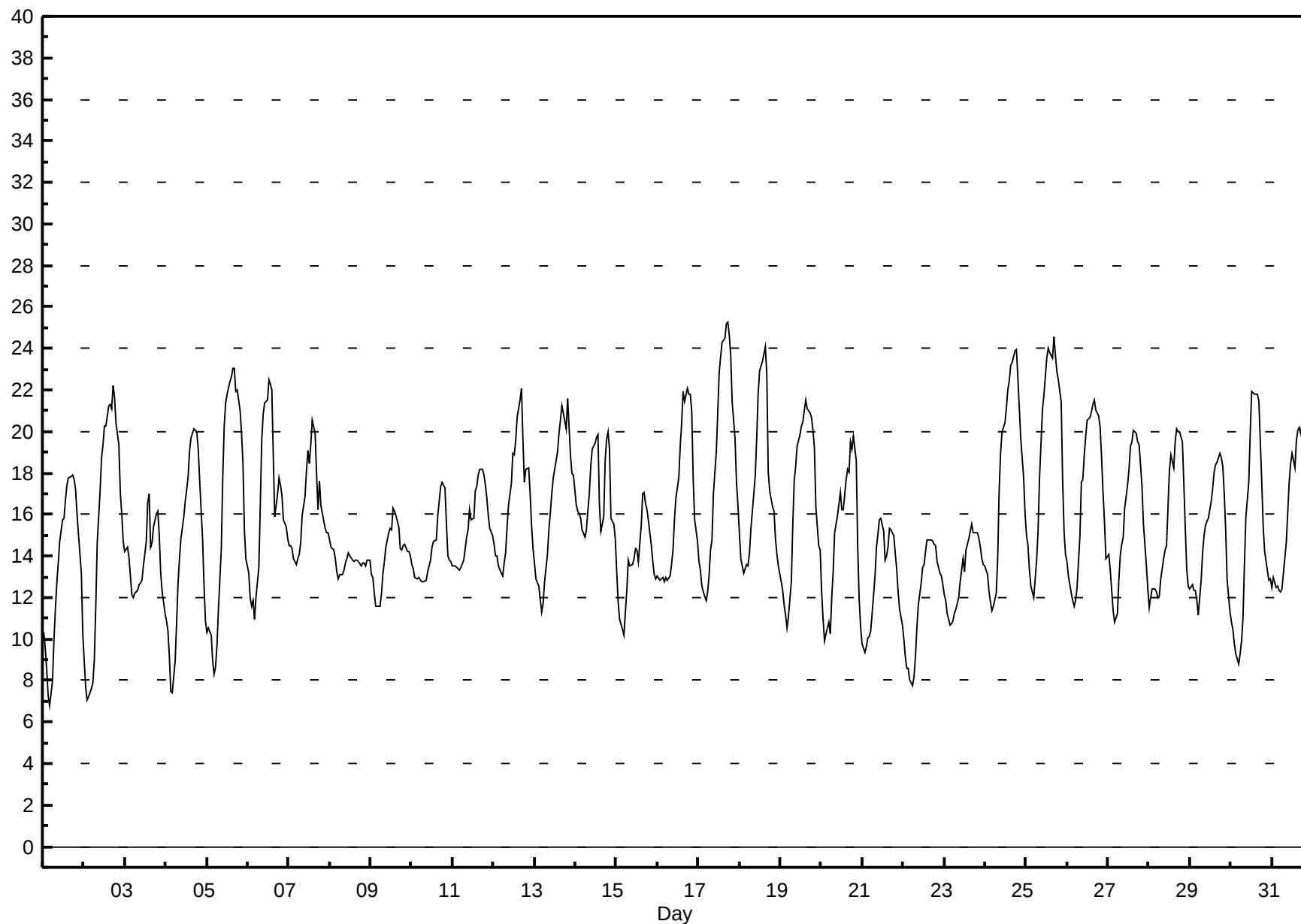
External Temperature (ET) - °C

Valleyview - July 2011

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 25.3 °C on Jul 17 18:00 Maximum Daily Average: 18.7 °C on Jul 25																								Hours in Service: 744 Hours of Data: 744 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0		
Minimum Value: 7 °C on Jul 1 05:00 Maximum Diurnal Average: 19.2 °C at hour 16 Monthly Average: 15.55 °C												Minimum Daily Average: 11.9 °C on Jul 22 Minimum Diurnal Average: 11.2 °C at hour 5 Percentiles: P ₁ = 7.7 P ₁₀ = 11.2 Q ₁ = 13.0 Median = 14.9 Q ₃ = 18.2 P ₉₀ = 21.0 P ₉₉ = 23.9														
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-Jul	10	10	8	7	7	8	10	11	13	14	15	16	16	17	17	18	18	18	18	17	16	15	13	10	13.4	17.9
2-Jul	9	8	7	7	8	8	9	12	15	17	19	19	20	20	21	21	21	22	22	20	19	17	16	15	15.5	22.2
3-Jul	14	14	14	13	12	12	12	12	13	13	13	14	15	17	17	14	15	15	16	16	15	13	12	11	13.9	17.0
4-Jul	11	10	9	8	7	9	11	13	14	15	16	17	17	18	19	20	20	20	20	19	18	15	13	11	14.5	20.1
5-Jul	10	11	10	9	8	9	10	11	14	18	20	21	22	22	23	23	23	22	22	21	20	18	15	14	16.5	23.0
6-Jul	13	12	12	12	11	12	13	16	20	21	21	22	23	22	22	19	16	17	18	17	17	16	15	15	16.7	22.5
7-Jul	15	15	14	14	14	14	14	15	16	17	18	19	18	19	21	20	18	16	18	16	16	15	15	15	16.3	20.6
8-Jul	15	14	14	14	13	13	13	13	13	14	14	14	14	14	14	14	14	14	14	14	14	13	14	14	13.7	14.8
9-Jul	13	13	12	12	12	12	12	13	14	14	15	15	15	16	16	16	15	14	14	14	15	14	14	14	14.0	16.3
10-Jul	14	13	13	13	13	13	13	13	13	13	13	14	14	15	15	16	17	17	18	17	16	14	14	14	14.3	17.6
11-Jul	14	14	13	13	13	13	14	14	15	15	16	16	16	17	17	18	18	18	18	17	17	16	15	15	15.6	18.2
12-Jul	15	14	14	14	13	13	14	14	15	16	17	19	19	20	21	22	22	20	18	18	18	17	15	14	16.7	22.0
13-Jul	14	13	13	12	11	12	13	14	15	16	17	18	18	19	20	21	21	21	20	22	20	19	18	18	16.8	21.6
14-Jul	16	16	16	16	15	15	15	16	17	18	19	19	20	20	16	15	16	19	20	20	19	16	16	15	17.1	20.0
15-Jul	13	12	11	10	10	11	12	14	14	14	14	14	14	14	15	17	17	17	16	16	15	14	13	13	13.7	17.0
16-Jul	13	13	13	13	13	13	13	13	14	14	16	17	18	19	20	22	21	22	22	22	21	18	16	15	16.6	22.0
17-Jul	14	13	13	12	12	12	13	14	15	17	19	21	23	24	24	25	25	25	25	24	21	20	18	16	18.5	25.3
18-Jul	15	14	13	13	14	14	14	15	17	18	20	22	23	23	24	24	23	18	17	16	16	15	14	14	17.3	24.1
19-Jul	13	12	12	11	11	11	13	15	18	18	19	20	20	20	21	22	21	21	21	20	19	16	14	14	16.8	21.5
20-Jul	12	11	10	10	11	10	12	13	15	16	17	17	16	16	18	18	18	20	19	20	19	14	12	11	14.8	19.8
21-Jul	10	9	10	10	10	10	11	13	14	15	16	16	15	14	14	14	15	15	15	14	13	12	11	11	12.9	15.8
22-Jul	10	9	9	9	8	8	8	9	11	12	13	13	14	14	15	15	15	15	15	15	14	13	13	13	11.9	14.8
23-Jul	12	12	11	11	11	11	11	11	12	13	13	14	13	14	15	15	16	15	15	15	15	14	14	14	13.2	15.5
24-Jul	14	13	12	12	11	12	12	14	17	19	20	20	21	22	22	23	23	24	24	23	21	20	18	16	18.0	24.0
25-Jul	15	14	13	13	12	13	14	15	18	21	22	23	24	24	24	23	25	24	23	22	21	18	15	14	18.7	24.5
26-Jul	14	13	12	12	12	12	12	15	18	18	19	20	21	21	21	21	22	21	21	20	19	17	16	14	17.0	21.5
27-Jul	14	13	12	11	11	11	13	14	15	15	16	17	18	19	19	20	20	20	19	18	17	16	14	12	15.7	20.0
28-Jul	12	12	12	12	12	12	12	13	14	14	15	16	18	19	18	20	20	20	20	19	17	15	13	13	15.4	20.1
29-Jul	12	13	12	12	12	11	13	14	15	15	16	16	17	17	18	18	19	19	19	18	17	15	13	11	15.1	18.9
30-Jul	11	10	10	9	9	9	10	11	14	16	18	20	22	22	22	22	21	19	18	15	14	13	13	13	15.0	21.9
31-Jul	12	13	12	13	12	12	12	13	15	16	18	18	19	18	20	20	20	20	20	20	18	16	14	12	16.0	20.4
																								Diurnal Average		
																								Diurnal Maximum		

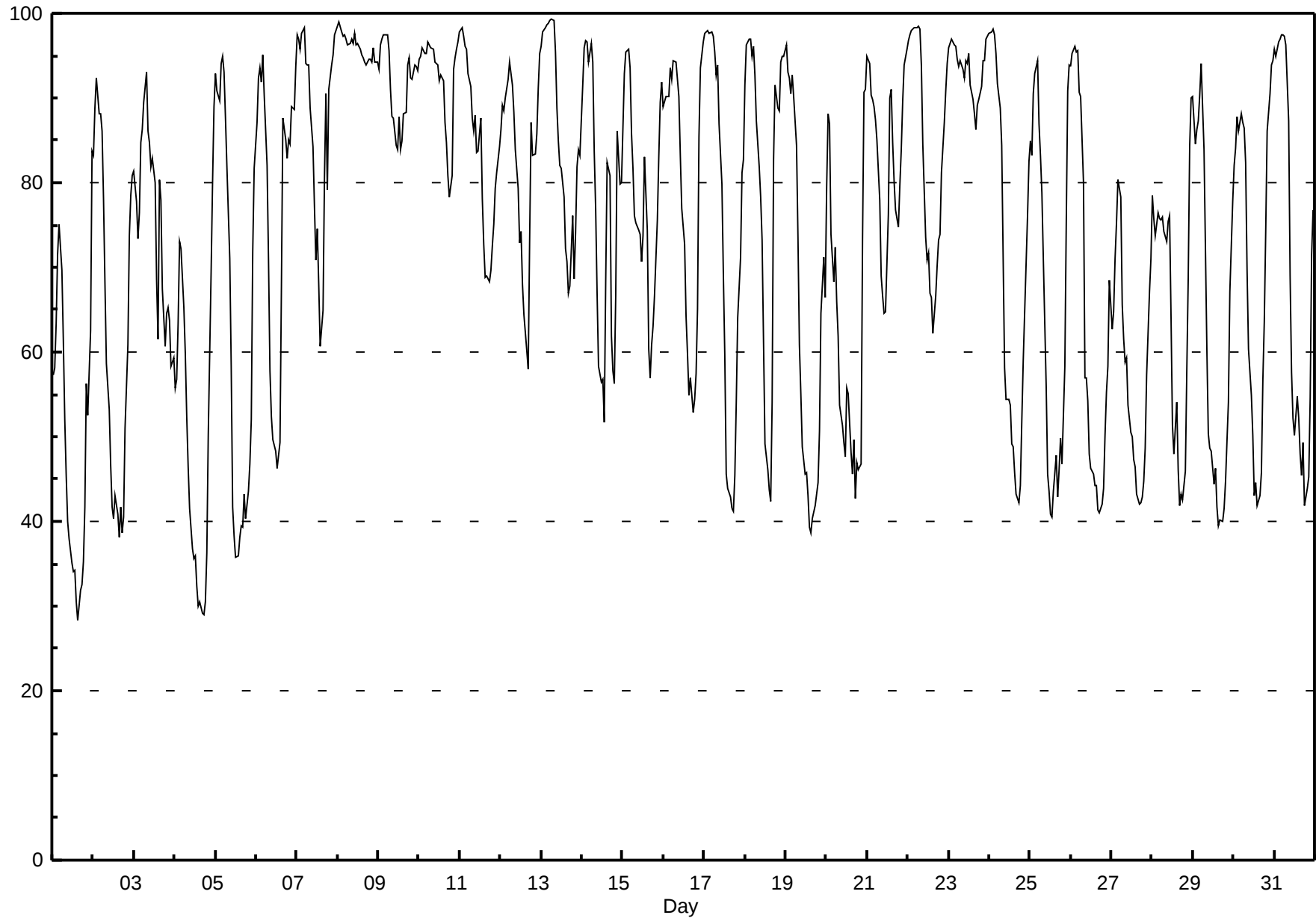
Hourly Averages

External Temperature (ET) - °C
Valleyview - July 2011



Hourly Averages

Relative Humidity (RH) - %
Valleyview - July 2011



Hourly Averages

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

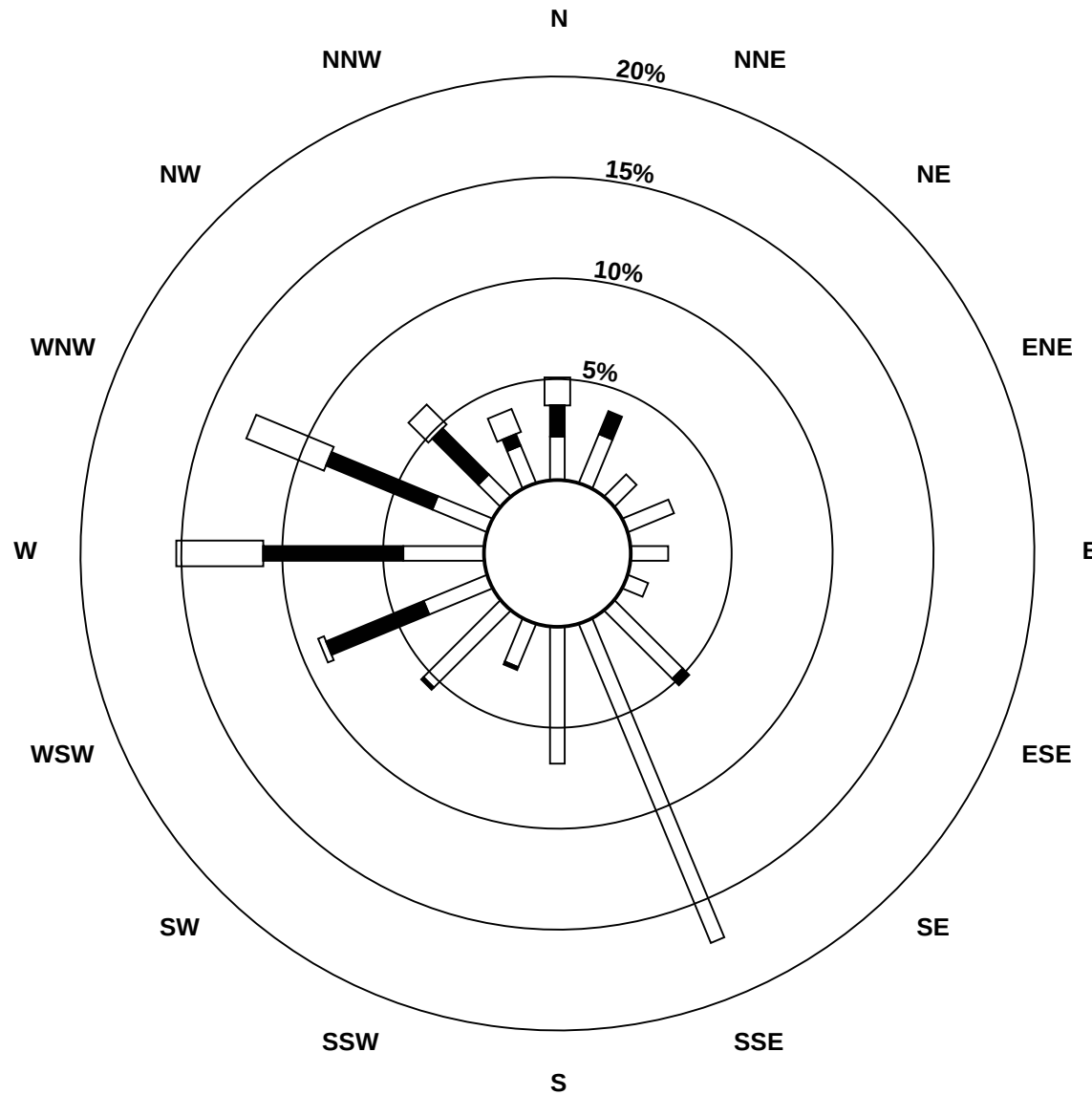
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1 Spd	2	4	3	2	2	2	5	12	15	19	17	13	12	12	14	11	9	9	4	1	1	3	1	1	6.4	18.7
Dir	214	231	194	176	166	165	230	251	263	269	278	275	282	298	294	284	251	262	243	279	313	301	270	173	267	269
2 Spd	1	2	1	2	1	2	4	3	2	2	3	3	2	2	2	3	1	1	1	2	0	1	1	2	1.1	3.7
Dir	196	173	170	157	190	157	162	163	162	142	229	229	230	147	146	250	221	202	197	72	21	319	327	331	185	162
3 Spd	0	2	4	1	2	1	1	2	4	2	3	2	3	3	2	3	4	5	10	5	6	7	8	6	2.8	10.2
Dir	251	296	316	344	152	242	202	176	271	252	247	170	166	196	237	166	172	215	238	228	239	252	250	242	234	238
4 Spd	8	7	5	2	2	5	5	10	12	13	16	13	10	11	9	9	11	11	8	5	0	1	1	0	6.9	16.0
Dir	251	250	236	220	193	228	234	258	268	273	278	276	263	270	278	274	272	279	289	312	268	174	177	180	267	278
5 Spd	1	1	1	1	1	1	1	1	1	2	2	5	9	10	9	10	12	16	12	12	6	2	1	1	3.7	16.4
Dir	170	166	175	175	166	167	181	172	19	146	177	253	294	302	312	324	288	330	299	329	319	290	141	170	303	330
6 Spd	1	1	1	1	1	0	1	2	2	2	1	3	3	9	6	8	6	2	1	1	1	1	3	2	0.8	8.9
Dir	171	175	168	185	176	170	152	162	168	168	142	19	31	15	26	349	20	93	156	171	160	206	277	271	28	15
7 Spd	1	4	1	2	4	1	1	2	2	3	3	3	4	4	3	2	2	2	2	2	3	3	3	1	0.7	4.0
Dir	155	297	109	163	268	291	59	136	158	167	158	137	150	139	126	138	163	87	26	252	302	8	11	256	153	297
8 Spd	1	3	3	4	8	8	9	11	10	12	15	14	15	18	17	13	14	16	17	17	15	15	12	10	10.8	18.1
Dir	357	289	17	348	358	325	285	287	310	330	346	351	352	349	334	324	312	311	307	308	303	314	319	339	324	349
9 Spd	8	6	1	2	1	3	5	7	4	4	7	9	9	11	12	13	16	14	12	11	8	8	8	9	6.9	16.1
Dir	4	5	320	294	254	283	279	283	289	262	298	290	287	304	320	340	349	350	337	329	317	304	311	304	319	349
10 Spd	9	10	10	8	7	7	8	8	7	7	6	6	6	5	4	1	2	1	1	1	1	2	1	0	3.8	9.9
Dir	308	307	323	314	308	325	346	353	5	12	13	14	20	41	35	69	25	140	118	171	106	342	80	71	347	323
11 Spd	2	1	2	2	2	2	1	3	4	3	2	5	5	7	7	7	5	5	5	5	4	2	3	1	3.2	7.1
Dir	33	38	73	65	66	97	107	133	135	134	155	147	131	129	135	134	142	145	143	137	139	134	133	82	129	135
12 Spd	2	1	1	3	1	2	2	2	2	2	2	1	1	3	1	2	2	2	3	2	1	2	1	1	1.3	3.0
Dir	98	81	68	65	45	352	46	48	41	67	72	96	100	95	113	45	28	104	1	130	146	164	152	165	73	1
13 Spd	0	1	1	1	1	2	1	1	2	2	1	2	3	3	1	1	1	2	3	0	1	1	2	0	0.5	3.1
Dir	11	329	313	350	11	350	142	146	133	133	131	14	25	8	36	172	200	110	16	85	123	148	165	186	63	8
14 Spd	2	1	1	2	2	1	2	7	7	8	10	8	5	4	8	1	2	2	2	2	1	2	4	3	2.2	10.4
Dir	160	196	183	230	223	175	174	249	257	275	274	311	332	306	284	296	162	150	143	153	155	166	159	304	262	274
15 Spd	1	1	2	2	1	3	4	3	6	6	10	14	11	6	6	12	13	9	7	9	8	7	5	4	5.5	13.7
Dir	160	188	163	165	158	162	163	188	217	213	239	245	246	238	260	268	260	248	240	251	248	240	224	215	237	245
16 Spd	11	15	14	14	13	11	10	10	10	9	9	7	5	2	2	2	2	2	1	1	1	0	1	1	5.6	14.6
Dir	254	266	272	276	279	276	273	279	282	285	261	273	289	346	325	175	46	12	66	97	77	142	346	352	277	266
17 Spd	2	0	0	0	1	1	2	0	1	0	1	3	2	1	1	2	2	3	4	3	2	1	2	2	0.4	3.8
Dir	357	191	297	28	281	174	134	176	296	258	161	150	147	216	177	121	90	7	14	10	83	63	339	345	54	14
18 Spd	0	1	1	2	1	1	2	2	2	4	5	8	9	7	7	3	1	2	2	4	3	3	3	2	1.4	8.6
Dir	205	170	197	197	199	139	165	173	177	231	262	280	297	299	317	339	210	229	143	162	165	163	163	165	246	297
19 Spd	3	2	2	2	2	2	2	3	6	9	9	11	7	9	11	10	12	11	9	7	4	1	4	4	4.7	11.6
Dir	161	162	166	165	168	165	162	222	257	254	258	270	264	278	283	291	303	303	309	296	305	226	279	269	274	303
20 Spd	2	1	1	5	7	5	6	7	14	16	17	14	11	9	13	13	8	8	6	2	2	1	1	1	6.1	16.6
Dir	160	174	178	238	244	243	239	245	275	277	287	289	297	275	295	290	301	302	339	312	276	104	178	168	279	287
21 Spd	1	1	2	1	1	2	1	0	5	6	2	3	4	6	3	3	0	4	7	7	3	1	2	2	1.3	7.2
Dir	165	167	164	173	86	158	156	53	28	15	22	2	284	265	304	5	137	284	293	291	275	232	230	236	301	291
22 Spd	1	1	1	1	1	1	2	1	1	1	2	2	2	1	3	3	2	2	1	1	1	0	0	0	0.4	3.1
Dir	154	237	172	159	191	181	162	164	174	289	10	42	67	69	27	15	64	73	60	26	249	211	136	28	75	15

FOCUS
AIR QUALITY MONITORING

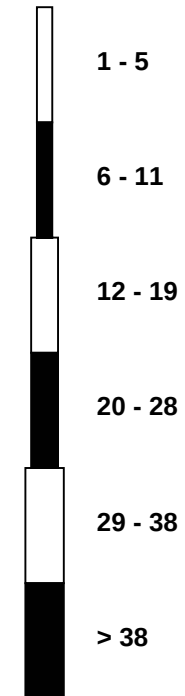
Wind Rose

Wind Speed (WS) (km/h)

Valleyview - July 2011



Wind Speed Classes (km/h)



Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Valleyview - July 2011

Maximum Speed: 19 km/h on Jul 1 10:00																								Maximum Daily Speed Average: 11.8 km/h on Jul 8										Hours in Service: 744			
Minimum Speed: 1 km/h on Jul 22 23:00																								Minimum Daily Speed Average: 1.6 km/h on Jul 22										Hours of Data: 744			
Maximum Diurnal Speed Average: 8.3 km/h at hour 15																								Minimum Diurnal Speed Average: 2.6 km/h at hour 4										Hours of Missing Data: 0			
Monthly Average Speed: 5.21 km/h																								Percentiles: P ₁ = 0.8 P ₁₀ = 1.2 Q ₁ = 1.8 Median = 3.3 Q ₃ = 7.9 P ₉₀ = 12.4 P ₉₉ = 16.6										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-Jul	3	4	3	2	2	2	6	12	15	19	17	14	13	13	15	12	9	9	4	2	2	3	2	1	7.6	19.2											
2-Jul	2	2	1	2	1	2	4	3	3	2	5	4	3	2	2	4	2	2	2	2	1	1	2	2	2.3	4.6											
3-Jul	1	3	4	2	2	2	2	2	5	3	3	2	3	4	4	3	4	5	11	6	6	7	8	6	4.1	10.6											
4-Jul	8	8	5	2	3	5	6	10	13	14	17	14	10	12	10	10	12	12	9	5	1	1	2	1	7.8	16.6											
5-Jul	1	1	1	1	1	1	1	2	2	2	2	7	11	11	10	11	13	17	13	13	6	3	2	1	5.5	16.7											
6-Jul	1	1	2	1	1	1	1	2	2	3	3	4	4	9	7	9	7	3	2	1	1	2	4	4	3.1	9.3											
7-Jul	2	5	2	2	5	2	2	2	2	3	3	4	4	4	4	2	2	4	5	3	4	3	3	2	3.0	4.8											
8-Jul	2	4	3	4	8	9	10	11	10	12	15	14	16	18	17	13	14	16	17	18	16	15	12	10	11.8	18.3											
9-Jul	8	6	3	2	1	3	5	7	4	4	7	9	9	11	12	13	16	14	12	11	8	9	9	10	8.0	16.4											
10-Jul	10	10	10	8	7	7	8	8	7	7	6	6	6	5	4	2	2	1	1	1	2	2	1	1	5.1	10.0											
11-Jul	2	2	2	2	2	2	1	3	4	3	2	5	5	7	7	7	5	6	5	5	4	2	3	1	3.6	7.2											
12-Jul	2	2	2	3	2	2	2	2	2	2	2	2	2	4	2	3	4	3	4	2	1	2	1	1	2.3	3.9											
13-Jul	1	2	1	1	1	2	1	1	2	2	2	3	3	4	2	1	2	2	3	1	1	1	2	1	1.8	3.6											
14-Jul	2	1	1	3	3	1	2	7	8	8	11	9	6	5	11	2	2	2	2	2	1	2	4	4	4.0	11.0											
15-Jul	2	1	2	2	2	3	4	4	6	6	10	14	12	6	6	12	13	9	7	9	8	7	6	4	6.4	14.0											
16-Jul	11	15	15	14	14	11	10	10	11	9	9	7	6	4	3	2	3	3	2	1	1	1	1	1	6.8	14.8											
17-Jul	2	1	1	1	1	1	2	2	2	1	2	3	3	3	3	3	3	3	4	3	2	2	2	3	2.2	3.9											
18-Jul	1	1	1	2	2	2	2	2	3	4	6	8	9	8	7	4	2	4	2	4	3	3	3	2	3.5	9.1											
19-Jul	3	2	2	2	2	2	2	4	6	9	10	11	8	10	12	11	12	11	10	7	4	1	4	5	6.3	12.3											
20-Jul	2	1	2	6	7	6	6	7	14	16	17	15	11	10	14	13	8	9	7	3	2	2	1	1	7.5	17.0											
21-Jul	2	1	2	1	2	2	1	1	5	7	3	3	4	7	3	3	1	5	7	7	3	2	2	2	3.2	7.4											
22-Jul	2	2	1	1	1	1	2	1	1	1	2	2	2	2	3	3	2	2	1	1	1	1	1	1	1.6	3.3											
23-Jul	2	1	2	3	2	6	9	9	10	10	7	11	9	8	10	9	11	8	5	3	3	2	2	2	5.9	10.6											
24-Jul	2	3	3	3	2	2	2	2	4	10	12	14	13	12	11	12	10	7	4	3	3	2	2	1	5.8	13.7											
25-Jul	2	2	1	1	1	3	3	3	3	5	11	10	8	7	5	3	5	9	5	6	1	1	1	2	4.1	10.7											
26-Jul	1	1	2	1	2	2	2	2	9	7	7	13	13	15	16	14	16	16	13	10	5	6	6	5	7.6	16.3											
27-Jul	8	7	3	2	2	2	7	7	12	9	11	15	12	13	15	15	14	14	11	7	7	5	4	4	8.6	14.7											
28-Jul	2	2	2	2	2	3	2	3	2	2	2	4	11	12	10	11	11	8	9	5	3	2	1	1	4.6	11.8											
29-Jul	1	2	2	2	1	1	2	3	10	14	15	13	16	15	15	18	15	13	11	8	5	5	3	2	8.0	17.8											
30-Jul	2	1	2	2	2	3	2	2	3	4	3	2	2	8	12	15	16	16	15	12	9	4	3	1	5.8	16.3											
31-Jul	1	1	1	1	1	1	1	2	3	5	3	6	6	8	5	6	5	3	6	4	5	3	1	2	3.4	8.3											
2.9 3.0 2.6 2.6 2.7 3.0 3.5 4.4 5.9 6.7 7.3 8.0 7.7 8.2 8.3 8.0 7.8 7.6 6.6 5.3 3.9 3.3 3.0 2.7																								Diurnal Average													
11.5 14.8 14.5 13.8 13.6 10.7 10.4 12.4 15.0 19.2 17.3 14.9 16.0 18.3 16.8 17.8 16.4 16.7 16.8 17.6 15.5 15.2 11.8 10.5																								Diurnal Maximum													
All monthly, daily, and diurnal averages have been calculated using scalar methods																																					

Hourly Standard Deviations

Wind Direction (WD) - deg

Valleyview - July 2011

Maximum Value: 94.0 deg on Jul 31 00:00																			Hours in Service: 744						
Minimum Value: 6.4 deg on Jul 30 20:00																			Hours of Data: 744						
																			Hours of Missing Data: 0						
																			Hours of Calibration: 0						
Percentiles: P ₁ = 7.1 P ₁₀ = 10.2 Q ₁ = 14.9 Median = 23.4 Q ₃ = 43.7 P ₉₀ = 64.1 P ₉₉ = 87.4																			Percent Operational Time: 100.0						
Day	Hourly Period Ending At (MST)																								Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Maximum
1-Jul	28	19	18	13	13	12	24	15	13	13	15	19	19	19	16	21	20	21	34	52	67	11	78	41	77.7
2-Jul	40	20	10	9	53	13	8	18	30	38	60	50	71	30	41	58	54	38	66	26	81	77	59	40	81.1
3-Jul	87	40	14	80	19	54	81	31	29	44	50	21	19	39	73	25	16	28	17	27	25	8	8	23	86.9
4-Jul	17	10	18	27	21	25	19	14	16	20	16	18	20	17	38	20	22	19	23	13	79	65	59	69	79.4
5-Jul	51	27	29	25	17	15	38	52	62	44	46	67	33	19	20	25	21	11	14	8	10	37	67	45	67.0
6-Jul	27	16	26	60	56	68	18	36	30	56	63	44	65	19	27	28	35	46	30	55	50	66	45	65	67.9
7-Jul	55	39	46	10	43	44	83	16	21	23	39	30	15	14	44	35	11	64	73	75	40	63	50	52	82.9
8-Jul	87	37	38	29	9	18	11	9	14	8	9	8	8	9	7	10	8	10	8	7	9	11	8	22	86.8
9-Jul	7	7	64	37	71	31	12	15	34	22	18	14	15	14	13	20	9	9	7	7	11	11	34	11	71.4
10-Jul	15	9	9	11	9	10	10	9	9	11	12	13	18	21	21	54	61	33	31	50	55	39	63	84	83.9
11-Jul	32	31	14	13	18	17	38	15	12	15	33	14	19	12	10	10	11	12	9	9	10	12	10	37	38.3
12-Jul	19	42	35	23	59	40	26	24	41	40	60	58	60	46	84	65	71	43	45	19	28	46	45	24	83.7
13-Jul	93	49	50	38	75	42	66	60	22	19	53	46	30	46	74	41	49	38	44	88	27	35	14	88	93.3
14-Jul	15	51	42	40	45	51	34	17	24	26	20	18	37	43	43	81	23	20	30	18	38	23	12	59	80.9
15-Jul	59	29	13	10	30	9	8	27	30	24	29	14	19	37	26	11	10	13	13	19	11	14	25	34	58.6
16-Jul	18	9	9	10	9	9	11	12	12	13	17	21	30	65	58	44	54	76	56	36	76	91	38	51	90.9
17-Jul	50	86	78	87	47	30	18	90	64	90	64	39	67	76	72	44	68	48	14	16	37	50	19	31	89.8
18-Jul	83	47	53	35	75	67	29	20	21	35	36	20	21	34	23	48	70	83	51	9	8	7	10	14	82.8
19-Jul	7	16	15	19	13	29	11	39	31	16	19	17	34	24	15	24	20	15	18	15	12	44	35	40	44.2
20-Jul	35	38	15	29	15	21	13	20	16	12	14	21	22	21	20	18	18	20	35	74	39	75	22	57	75.1
21-Jul	30	25	11	86	78	40	62	75	31	15	38	34	20	14	52	29	75	53	18	16	27	37	21	30	85.9
22-Jul	73	53	46	18	32	22	18	18	52	80	61	44	44	66	41	22	38	41	38	47	28	54	86	82	85.9
23-Jul	81	44	32	33	26	23	12	10	12	12	17	21	20	12	14	14	15	15	17	31	33	45	16	17	80.5
24-Jul	14	7	17	8	9	12	8	9	43	14	16	13	18	16	20	20	15	28	36	18	30	14	21	13	42.6
25-Jul	15	9	14	15	41	7	8	10	12	65	17	22	29	53	71	16	83	16	45	29	51	33	15	73	83.4
26-Jul	30	41	24	30	33	52	24	43	20	22	28	16	20	18	17	18	16	15	15	10	16	11	10	38	51.6
27-Jul	9	8	17	30	31	45	16	18	12	17	15	15	16	17	14	15	13	15	15	10	13	22	19	36	44.5
28-Jul	13	17	14	10	8	19	17	10	21	16	13	44	24	18	23	22	20	19	15	19	25	44	49	62	61.7
29-Jul	40	27	15	10	42	57	33	50	23	14	16	16	14	17	14	16	13	16	14	14	17	21	35	28	56.6
30-Jul	31	13	9	12	9	9	37	44	17	17	20	88	74	33	17	10	11	8	9	6	14	22	35	94	94.0
31-Jul	62	71	41	52	26	39	57	40	54	29	59	38	35	28	45	48	45	41	38	30	13	20	64	20	71.0
93.3 86.0 77.8 86.9 77.8 67.9 82.9 89.7 63.9 89.8 64.3 87.6 74.0 76.3 83.7 80.9 83.4 82.8 73.1 88.2 81.1 90.9 85.9 94.0																									

PAZA

Monthly Passive Data Summary

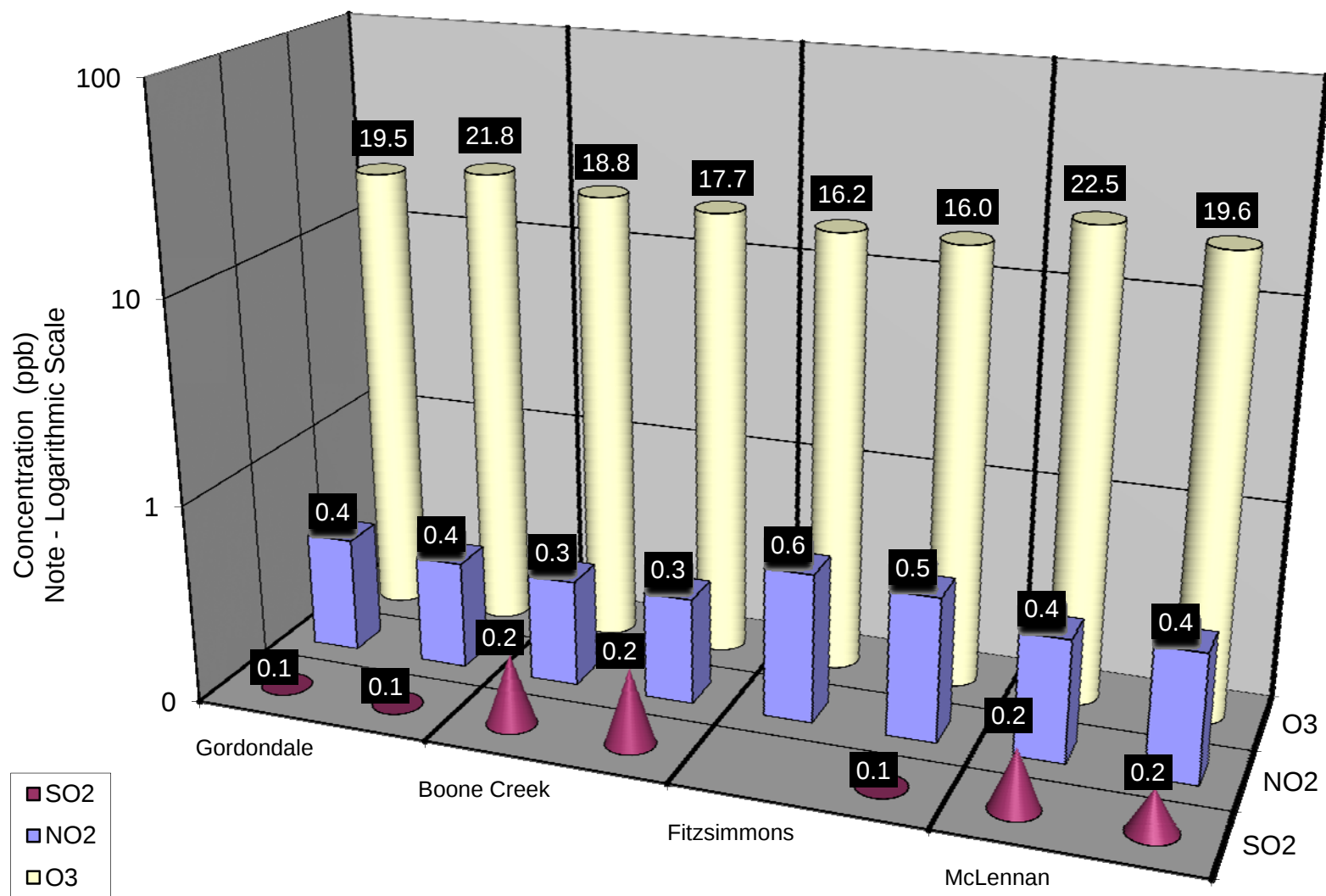
PAZA Passive Results for July 2011

Station Number	Station Name	SO2 ppb	O3 ppb	NO2 ppb	Site Legal
Duplicates					
4a	Gordondale	0.1	19.5	0.4	
4b	Gordondale	0.1	21.8	0.4	
5a	Boone Creek	0.2	18.8	0.3	
5b	Boone Creek	0.2	17.7	0.3	
30a	Fitzsimmons	BDL	16.2	0.6	
30b	Fitzsimmons	0.1	16.0	0.5	
40a	McLennan	0.2	22.5	0.4	
40b	McLennan	0.2	19.6	0.4	
1	Silver Valley	0.2	17.9	0.3	08-27-081-11 W6M
2	Bay Tree	0.1	21.0	0.3	13-16-078-13 W6M
3	Fourth Creek	0.1	22.4	0.2	04-13-082-07 W6M
4	Gordondale	0.1	20.6	0.4	04-34-078-10 W6M
5	Boone Creek	0.2	18.3	0.3	16-36-074-11 W6M
7	Steepprock Creek	BDL	23.5	0.1	09-35-072-13 W6M
9	Spirit River	0.1	21.6	0.4	08-12-079-07 W6M
10	Woking	0.1	20.9	0.3	01-13-076-07 W6M
11	Webber Creek	0.1	20.8	0.3	09-36-074-09 W6M
12	Hythe	0.1	20.3	0.4	14-36-072-11 W6M
14	Sylvester	0.1	16.7	0.4	08-06-069-12 W6M
16	Beaverlodge	0.1	27.8	0.5	15-36-071-10 W6M
17	Poplar	0.1	19.8	0.3	13-06-073-08 W6M
18	Saddle Hills	0.1	19.2	0.3	04-25-074-07 W6M
19	Wanham	0.2	20.5	0.2	16-22-077-03 W6M
20	Shaftesbury	0.1	20.6	0.2	04-03-082-23 W5M
21	Eaglesham	0.1	15.8	0.3	16-21-079-25 W5M
23	Bear Lake	0.1	19.1	0.3	15-31-072-06 W6M

PAZA Passive Results for July 2011 (Continued)

Station Number	Station Name	SO2 ppb	O3 ppb	NO2 ppb	Site Legal
24	Wembley	0.4	19.8	0.3	12-31-070-08 W6M
25	Pinto Creek	0.5	17.6	0.3	04-24-069-11 W6M
26	Flyingshot	0.1	19.1	0.3	15-36-070-07 W6M
27	Grande Prairie I	0.1	20.4	1.0	08-15-071-06 W6M
28	Clairmont Lake	0.1	22.2	0.4	09-06-073-04 W6M
29	Smoky Heights	0.2	26.2	0.3	04-06-075-02 W6M
30	Fitzsimmons	0.1	16.1	0.5	15-36-072-03 W6M
32	Gold Creek	0.1	14.3	0.4	06-33-067-05 W6M
33	Wapiti	0.1	17.0	0.3	02-25-071-03 W6M
34	Puskwaskau	BDL	16.4	0.1	15-35-074-25 W5M
35	Jean Cote	0.1	18.7	0.3	12-35-079-21 W5M
36	Guy	0.1	22.5	0.4	03-04-076-22 W5M
37	Crooked Creek	0.1	18.1	0.3	16-01-071-26 W5M
38	Karr Creek	0.1	13.4	0.3	10-16-065-02 W6M
39	Clouston Creek	0.1	19.5	0.2	12-01-073-22 W5M
40	McLennan	0.2	21.1	0.4	03-29-077-19 W5M
41	Valleyview	0.1	20.9	0.3	09-30-069-22 W5M
42	Sunset House	0.1	22.4	0.2	05-32-070-19 W5M
43	High Prairie	0.1	17.4	0.2	16-13-074-17 W5M
44	Peavine	0.1	16.0	0.1	03-05-079-15 W5M
45	Gift Lake	BDL	14.8	0.2	10-07-079-12 W5M
46	Little Smoky	BDL	16.4	0.4	12-01-065-21 W5M
47	Kinuso	BDL	16.2	0.2	12-10-073-10 W5M
48	Deer Mountain	BDL	16.4	0.9	15-22-068-09 W5M
49	Grande Prairie HP	0.2	25.7	1.2	17-26-071-06 W6M

*BDL = Below Detection Level



Duplicate Summary Chart

Passive Summary for July 2011

Stats	Sulphur Dioxide SO ₂	Ozone O ₃	Nitrogen Dioxide NO ₂
	ppb	ppb	ppb

Passive Summary for July 2011 (PAZA Zone)			
Mean	0.1	19.4	0.3
Standard Deviation	0.1	3.1	0.2
Minimum	0.1	13.4	0.1
Minimum At	Bay Tree (#2)	Karr Creek (#38)	Peavine (#44)
Maximum	0.5	27.8	1.2
Maximum At	Pinto Creek (#25)	Beaverlodge (#16)	Grande Prairie HP

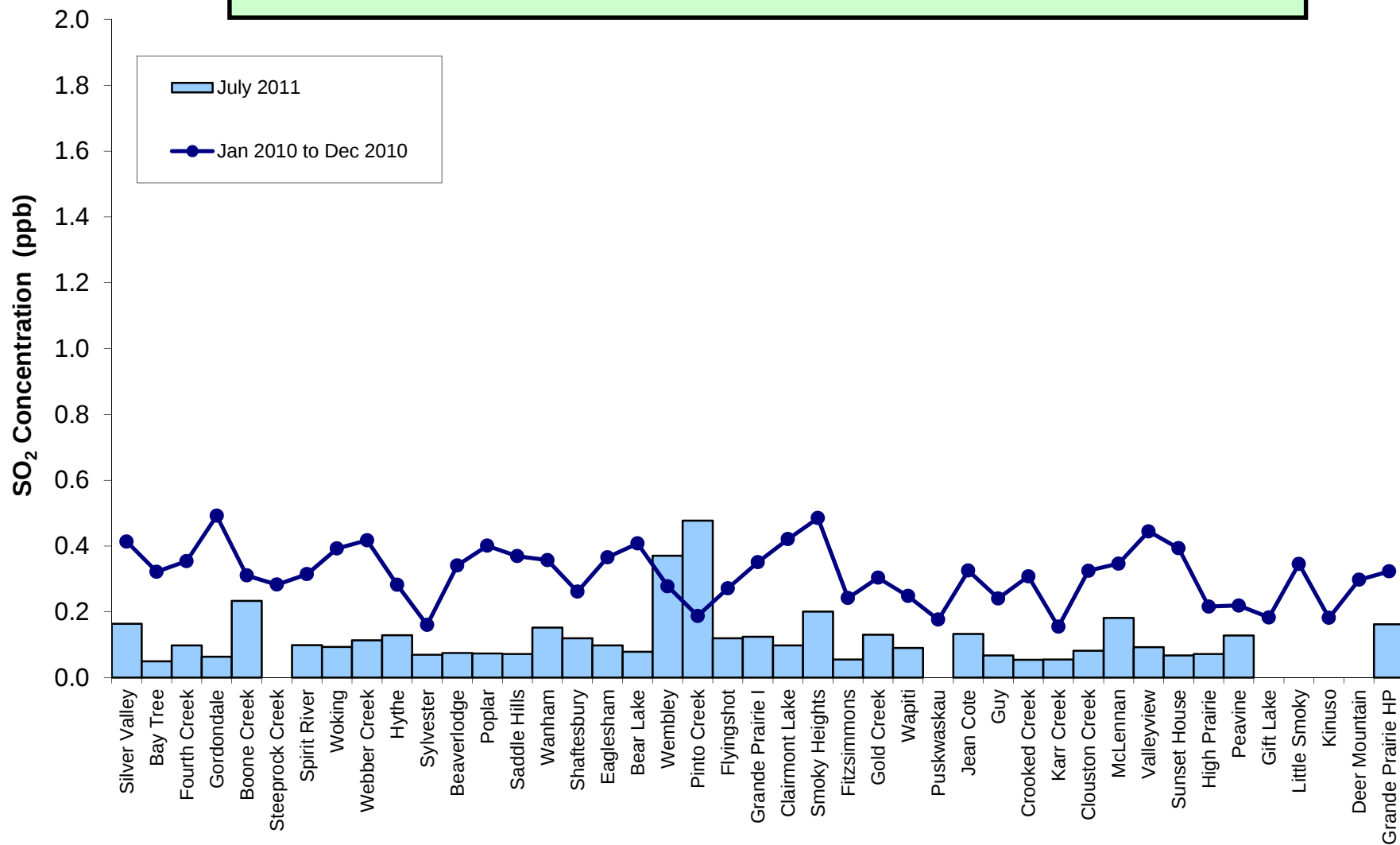
Comparison between Continuous and Passive monitoring at Beaverlodge (passive #16 Beaverlodge)

	SO ₂	O ₃	NO ₂
PAZA Beaverlodge station	0.1	21.4	1.4
PAZA Beaverlodge passive	0.1	27.8	0.5

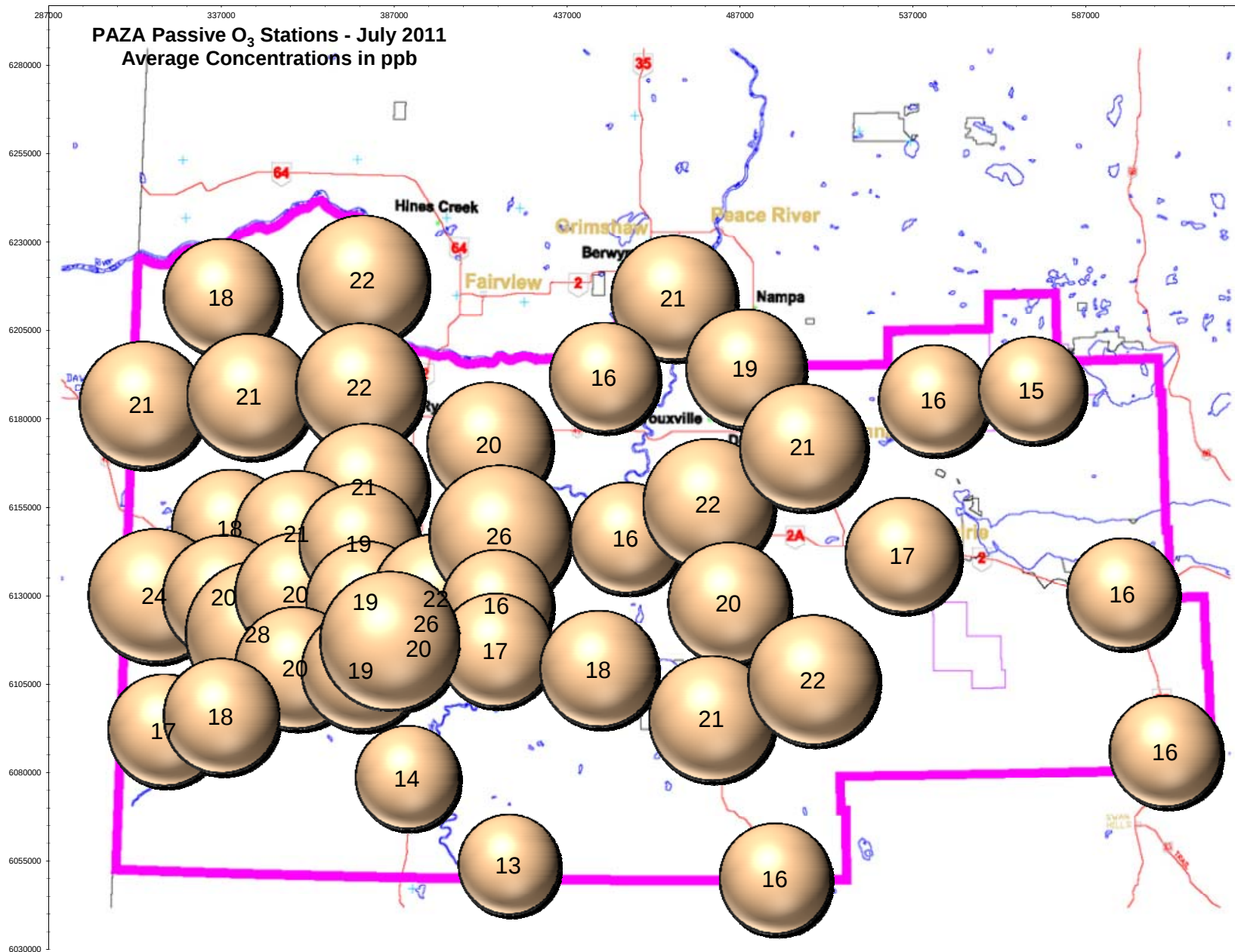
Comparison between Continuous and Passive monitoring at Henry Pirker (passive #49 Grande Prairie HP)

	SO ₂	O ₃	NO ₂
PAZA Henry Pirker station	0.3	20.3	3.0
PAZA Grande Prairie passive	0.2	25.7	1.2

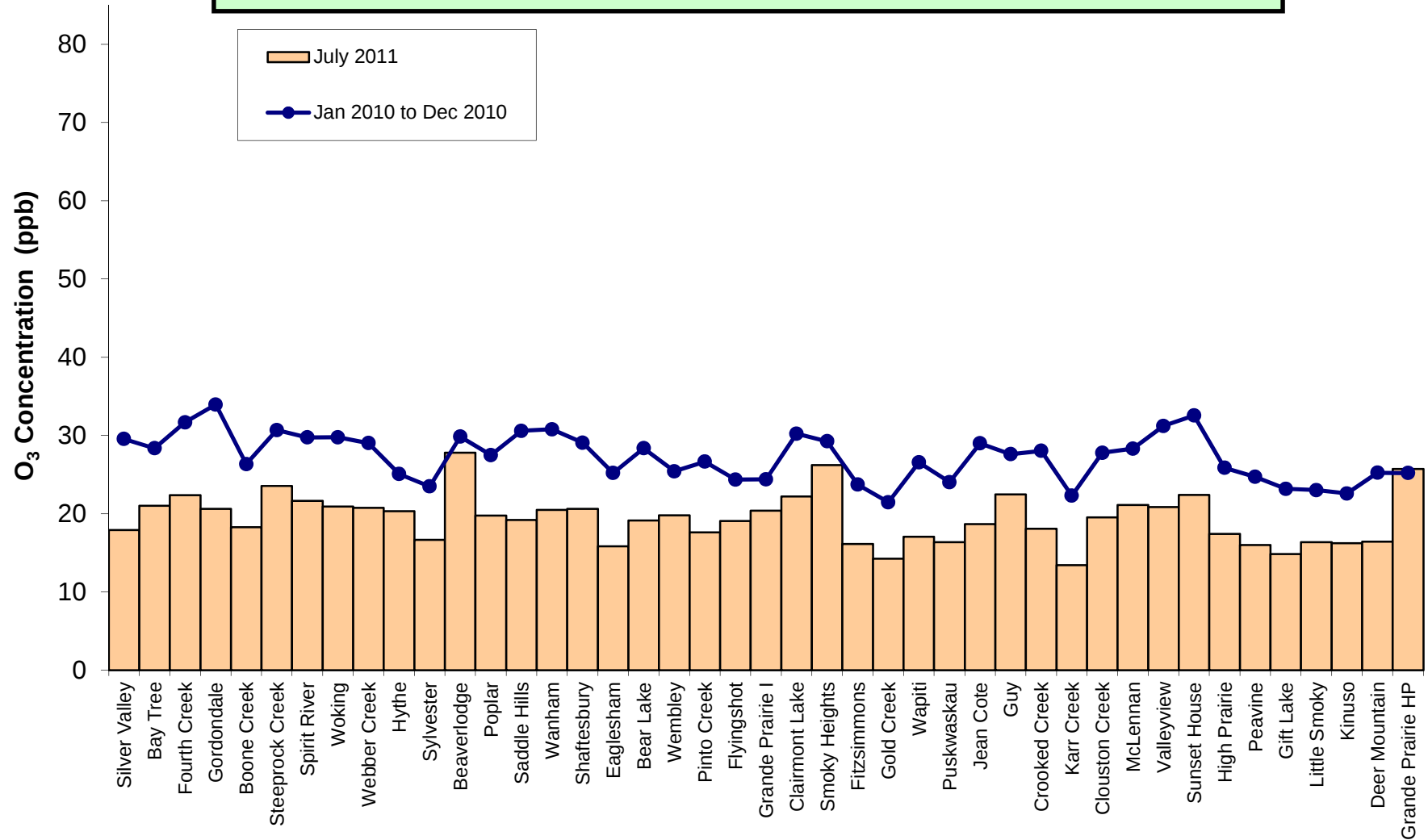
Alberta Ambient Air Quality Objective - 30-day Objective is 11 ppb



SO₂ Summary Chart

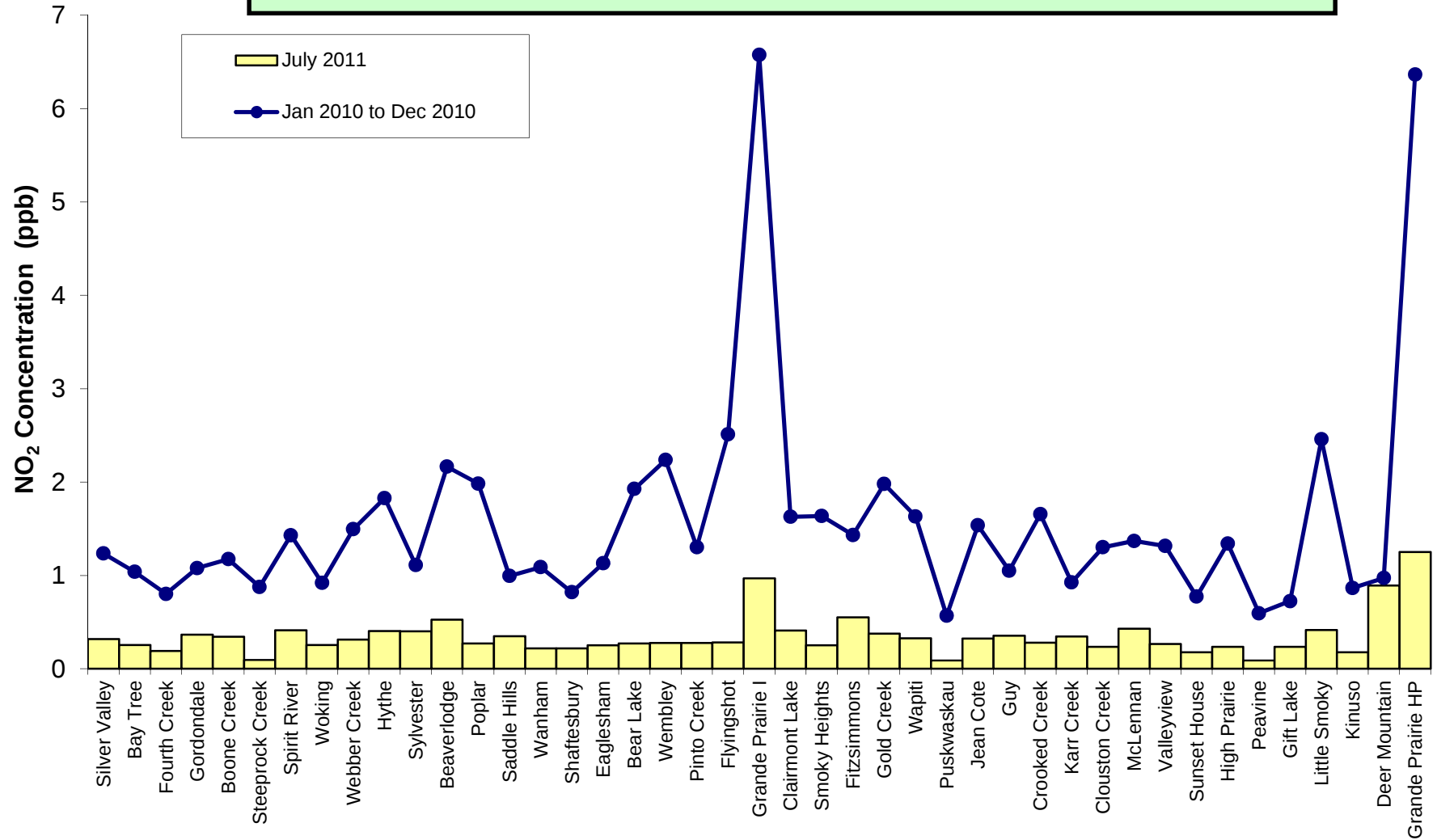


Alberta Ambient Air Quality Objective - No Annual O₃ Objective



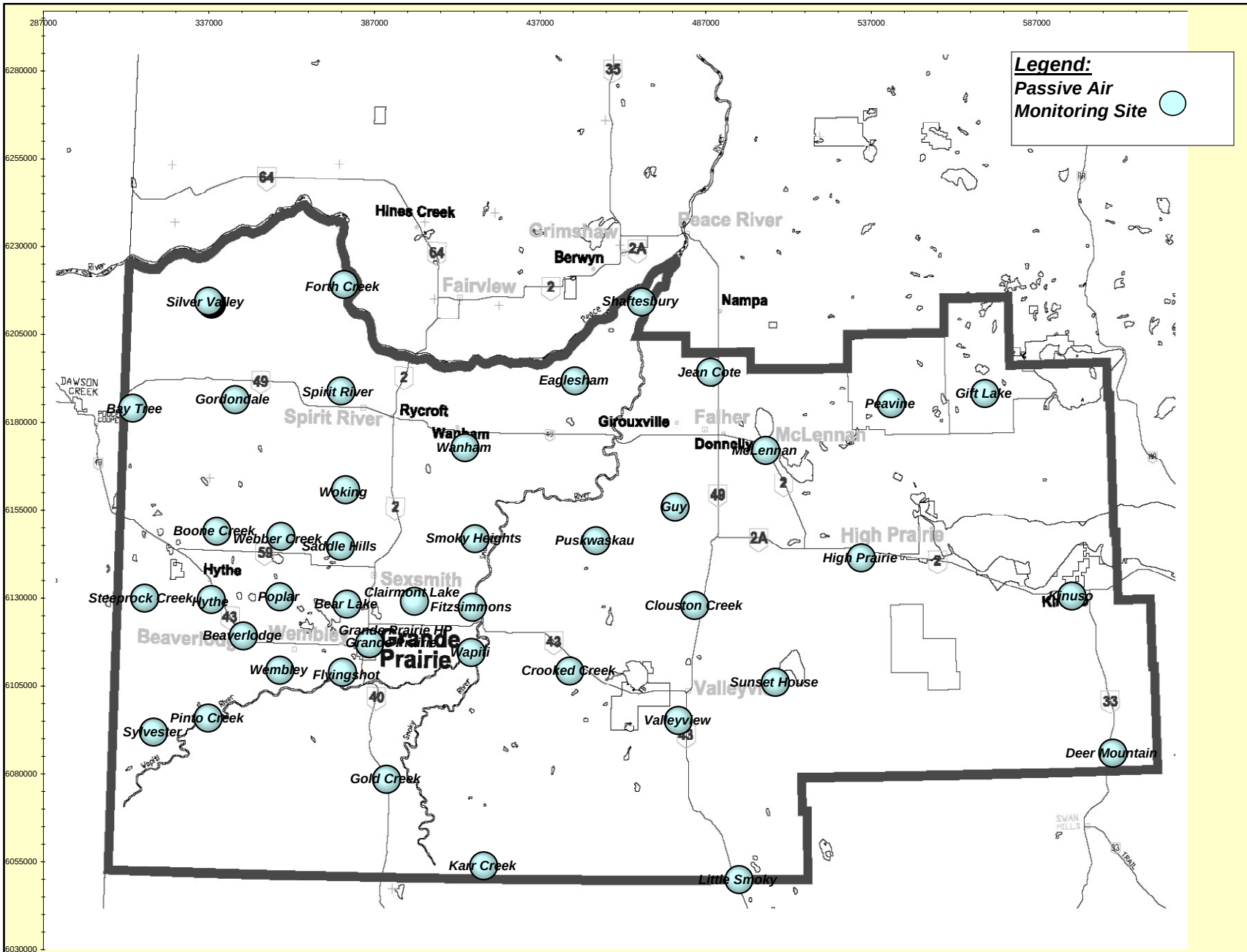
O₃ Summary Chart

Alberta Ambient Air Quality Objective - Annual NO₂ Objective is 24 ppb



NO₂ Summary Chart

Location of PAZA Passive Monitoring Stations



July 2011 Calibration Reports

PAZA - Henry Pirker Station with the following calibrations:

SO₂, NO, NO₂, NO_x, O₃, CO, THC, TRS

PAZA – Evergreen Park Station with the following calibrations:

SO₂, TRS, PM2.5

PAZA – Smoky Heights Station with the following calibrations:

SO₂, TRS, PM2.5

PAZA – Beaverlodge Station with the following calibrations:

SO₂, NO, NO₂, NO_x, O₃, PM2.5

PAZA – Valleyview Station with the following calibrations:

SO₂ & H₂S

Calibration Report

Parameter SO2

Air Monitoring Network PAZA



Station Information

Calibration Date	July 6, 2011	Previous Calibration	June 11, 2011
Station Number	1	Station Location	Henry Pirker
Reason:	☒ Routine	☐ Install	☐ Removal
		☐ Other:	
Start Time (MST)	7:01	End Time (MST)	11:26
Barometric Pressure	0.922 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	CR3000	DACS serial No.	5408
DACS voltage range	0 - 1 volt	DACS channel #	10
	Before		After
Calculated slope	0.995098	Calculated slope	0.999252
Calculated intercept	0.306029	Calculated intercept	1.504207
Analyzer make	TEI 43C	Analyzer serial #	610816292

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Background	9.0		8.8	
Coefficient	.787		0.831	
Pressure	641.8	mm Hg	644.5	mm Hg
Flow	0.475	lpm	0.478	lpm
Lamp Voltage	43987	Hz	43771	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	0.2	N/A
4989	39.84	400.9	400.1	1.0018
4989	19.91	201.1	200.0	1.0055
4989	9.94	100.6	96.7	1.0404
4989	0.00	0.0	0.2	As Found Zero
4989	39.83	400.8	372.0	As Found Span
Average Correction Factor				1.0159

Calculated value of As Found Response: 370.3 ppb Percent Change of As Found: 7.6%

	before calibration		after calibration	
Auto zero	0.1	ppb	0.1	ppb
Auto span	241.8	ppb	248.1	ppb

Notes: Invalid calibration.

Calibration Performed By: Virginia McKergow

Calibration Summary

Parameter SO2

Air Monitoring Network PAZA



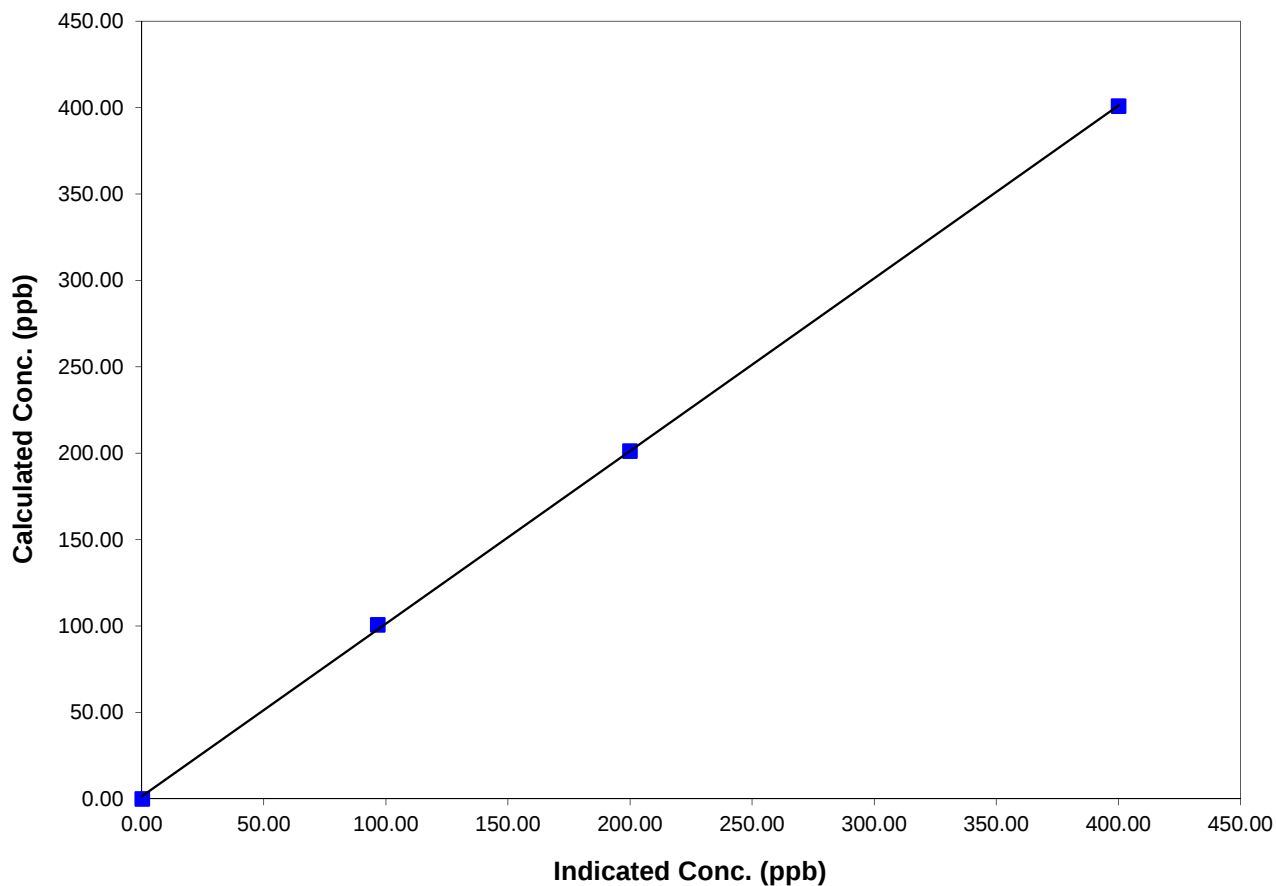
Station Information

Calibration Date	July 6, 2011	Previous Calibration	June 11, 2011
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	7:01	End Time (MST)	11:26
Analyzer make/model	TEI 43C	Analyzer serial #	610816292

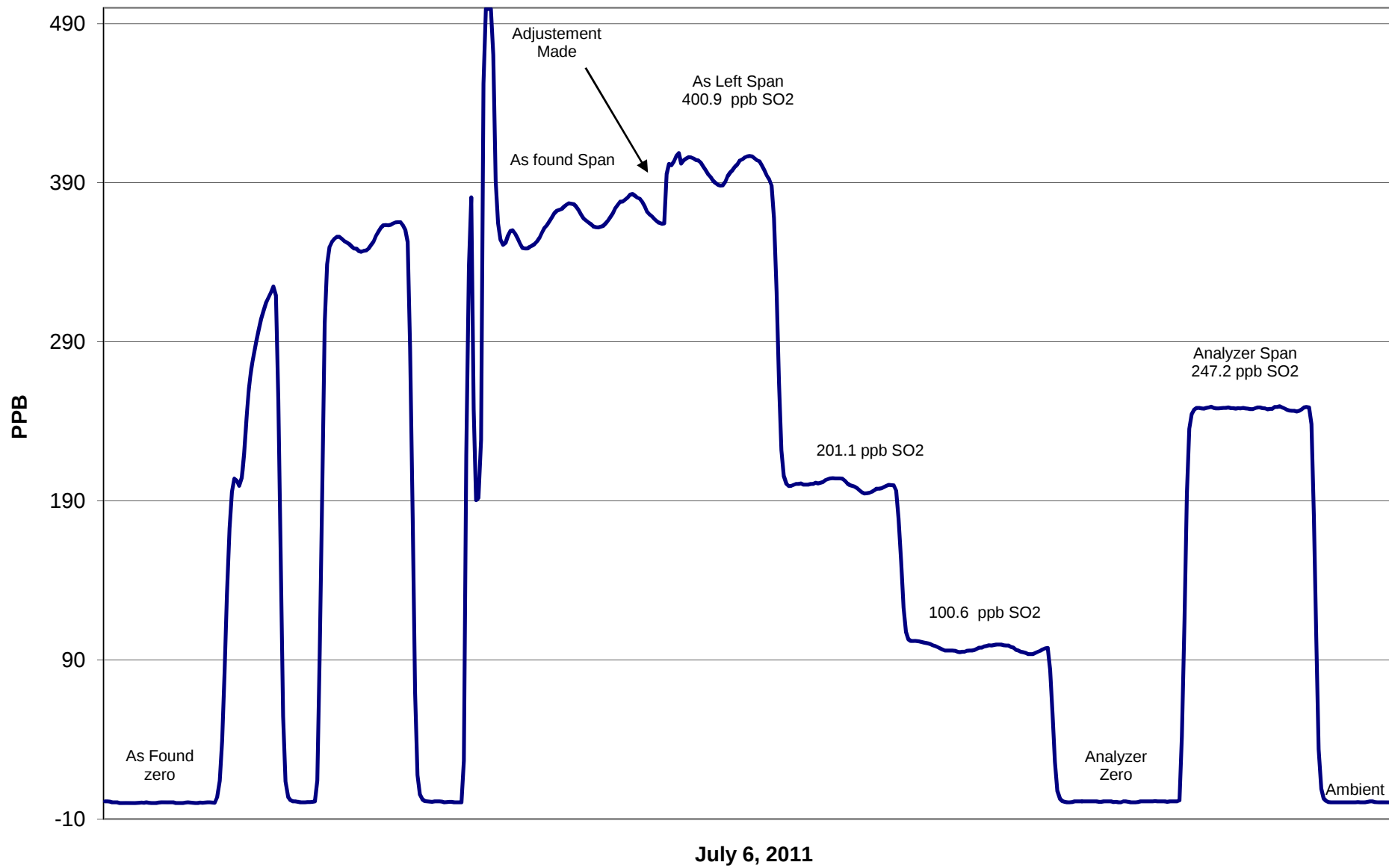
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.2	N/A	Correlation Coefficient	0.999892
400.9	400.1	1.0018		
201.1	200.0	1.0055		
100.6	96.7	1.0404	Slope	0.999252
			Intercept	1.504207

SO2 Calibration Curve



Henry Pirker - SO₂ Calibration



Calibration Report

Parameter SO2

Air Monitoring Network PAZA



Station Information

Calibration Date	July 15, 2011	Previous Calibration	July 6, 2011
Station Number	1	Station Location	Henry Pirker
Reason:	☒ Routine	☐ Install	☐ Removal
		☐ Other:	
Start Time (MST)	10:25	End Time (MST)	13:25
Barometric Pressure	0.922 ATM	Station Temperature	20.0 Deg C
Calibrator	SABIO	Serial Number	3970108
Cal Gas Conc	49.8 ppb	Cal Gas Cert Date	3/28/2013
		Cal Gas Cylinder #	LL34002
DACS make	CR3000	DACS serial No.	5408
DACS voltage range	0 - 1 volt	DACS channel #	10
	Before		After
Calculated slope	0.999252	Calculated slope	0.996991
Calculated intercept	1.504207	Calculated intercept	2.328572
Analyzer make	TEI 43C	Analyzer serial #	610816292

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Background	8.8		8.5	
Coefficient	0.831		0.799	
Pressure	644.5	mm Hg	635.7	mm Hg
Flow	0.478	lpm	0.472	lpm
Lamp Voltage	43771	Hz	44819	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)
5018	0.00	0.0	0.1	N/A
5018	40.20	395.8	395.9	0.9996
5018	20.20	199.7	196.4	1.0168
5018	10.15	100.5	96.3	1.0434
5018	0.00	0.0	0.1	As Found Zero
5018	40.20	395.8	407.7	As Found Span
Average Correction Factor				1.0200

Calculated value of As Found Response: 408.8 ppb Percent Change of As Found: -3.3%

	before calibration		after calibration	
Auto zero	0.1	ppb	0.1	ppb
Auto span	248.1	ppb	244.9	ppb

Notes:

Calibration Performed By: Brad Moyles

Calibration Summary

Parameter SO2

Air Monitoring Network PAZA



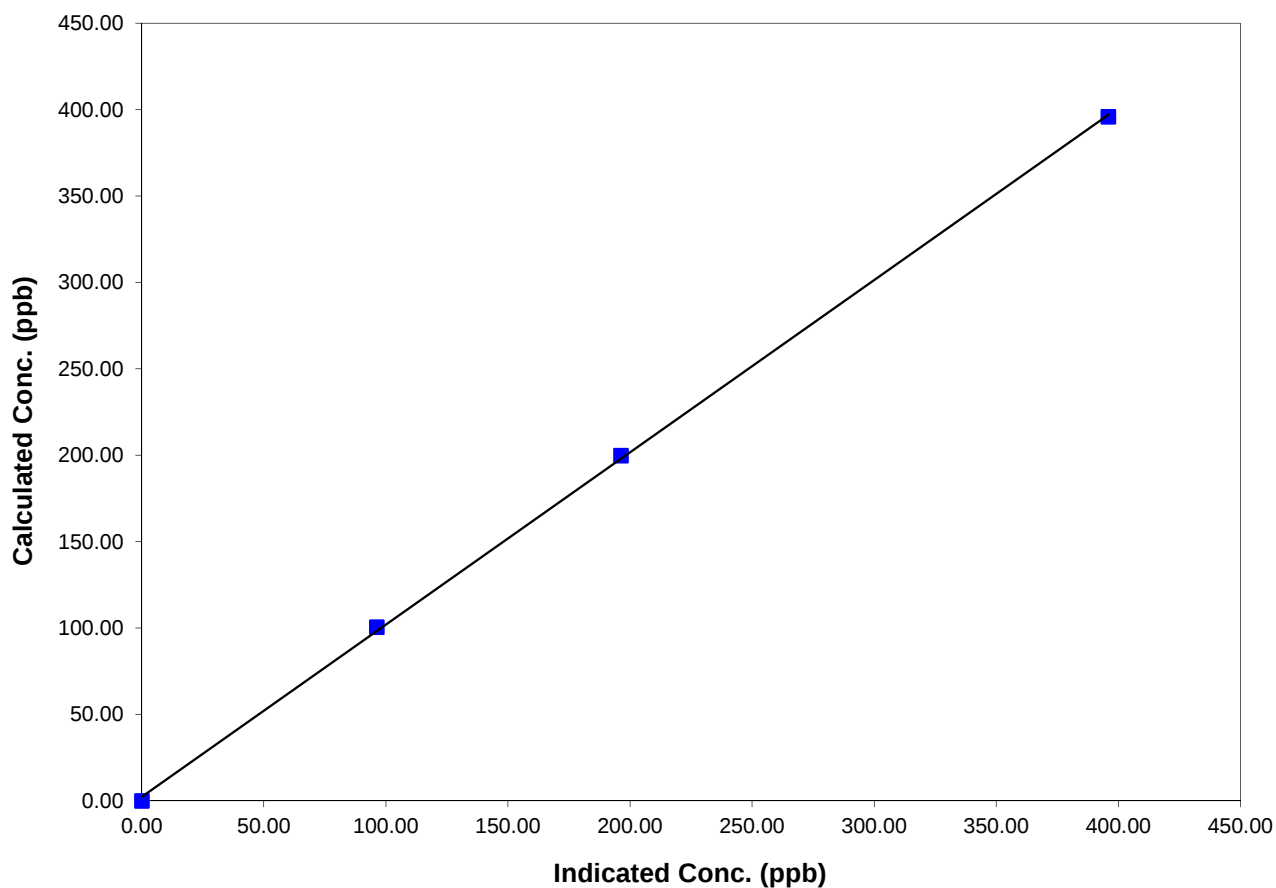
Station Information

Calibration Date	July 15, 2011	Previous Calibration	July 6, 2011
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	10:25	End Time (MST)	13:25
Analyzer make/model	TEI 43C	Analyzer serial #	610816292

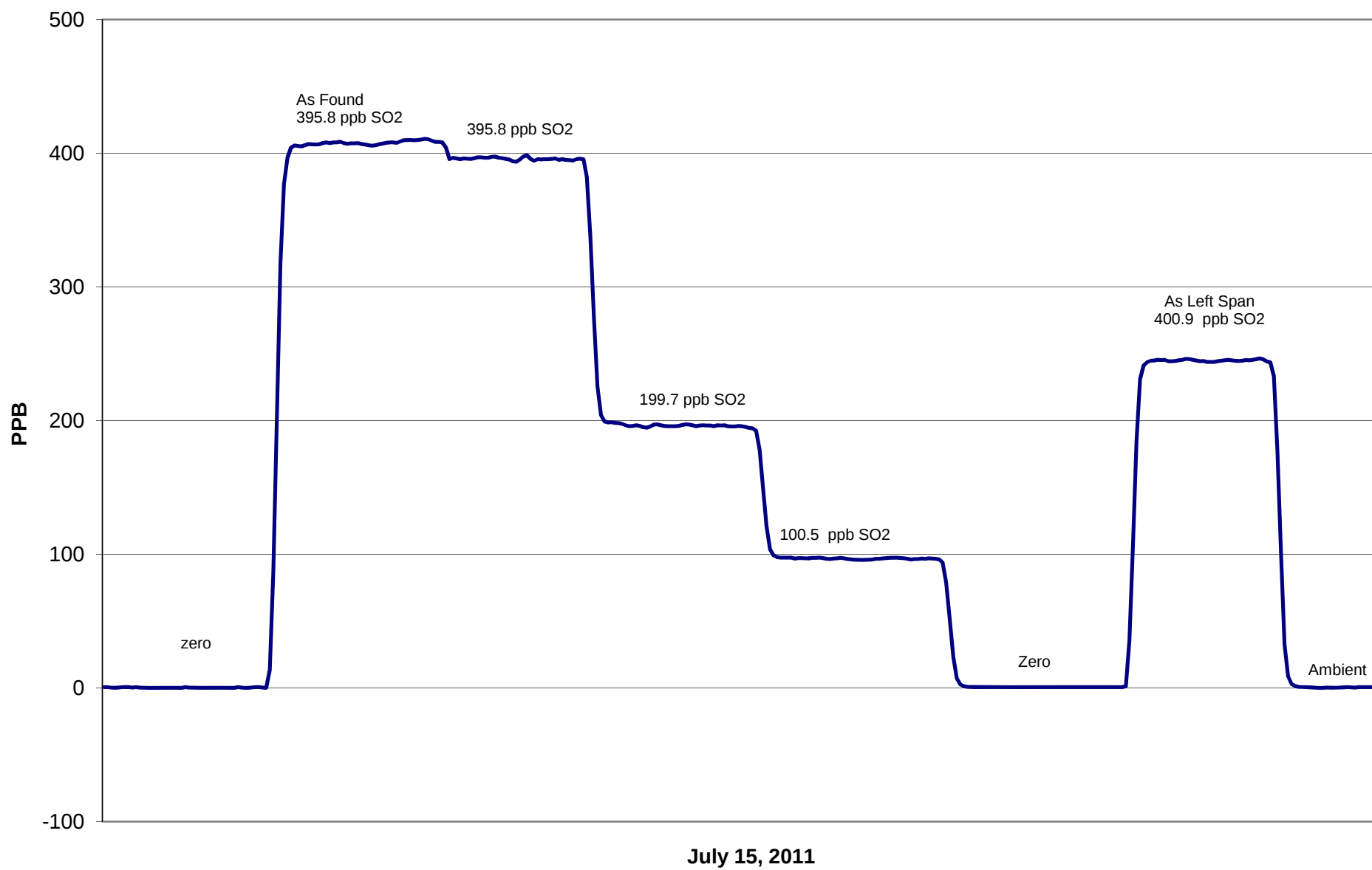
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.1	N/A	Correlation Coefficient	0.999830
395.8	395.9	0.9996		
199.7	196.4	1.0168		
100.5	96.3	1.0434	Slope	0.996991
			Intercept	2.328572

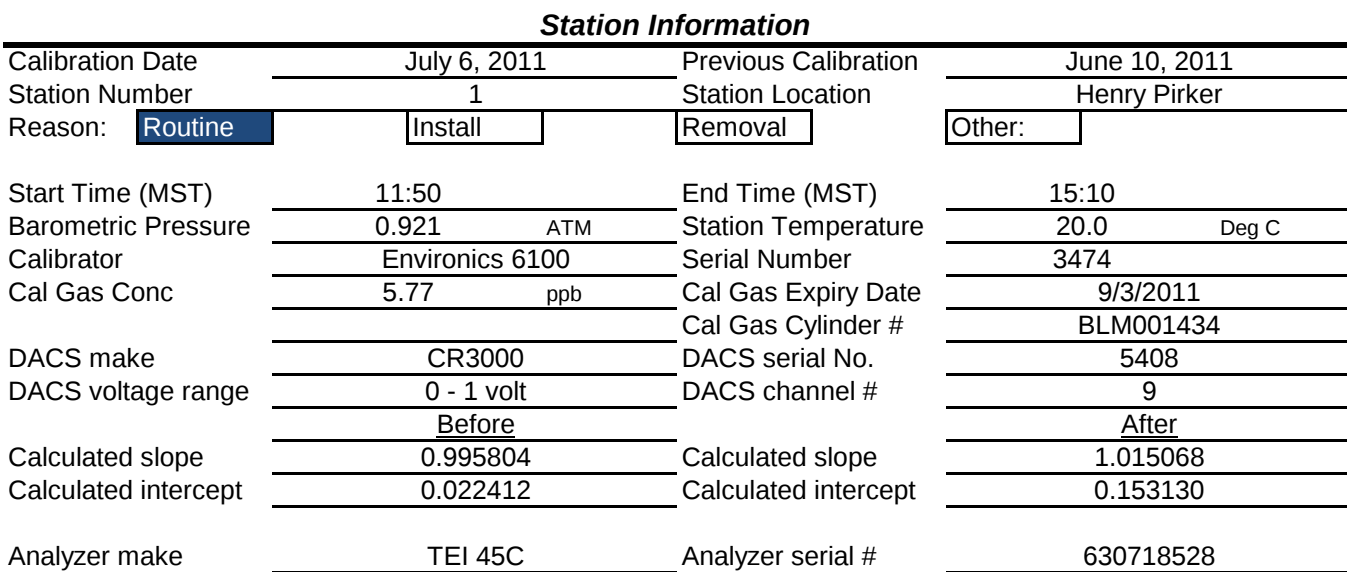
SO2 Calibration Curve



Henry Pirker - SO₂ Calibration



Parameter	TRS
Air Monitoring Network	



Concentration range Coefficient Background Pressure Flow Lamp Voltage	before		after	
	0 - 100	ppb	0 - 100	ppb
	1.081		1.081	
	10.9		11.0	
	664.4	mm Hg	657.3	mm Hg
	0.46	ccm	0.456	ccm
	822	v	821	v

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	-0.32	N/A
4989	69.78	79.59	78.22	1.0175
4989	34.88	40.06	39.34	1.0184
4989	8.96	10.34	10.22	1.0123
4989	0.00	0.00	-0.32	As Found Zero
4989	69.77	79.58	78.24	As Found Span
Average Correction Factor				1.0161

Calculated value of As Found Response: 78.3 ppb Percent Change of As Found: 1.7%

	before calibration		after calibration	
Auto zero	-0.29	ppb	-0.16	ppb
Auto span	33.60	ppb	33.76	ppb

Notes: Cal went well, slow start to the high point. But no adjustments were required

Calibration Performed By: Virginia McKergow

Calibration Summary

Parameter TRS

Air Monitoring Network PAZA



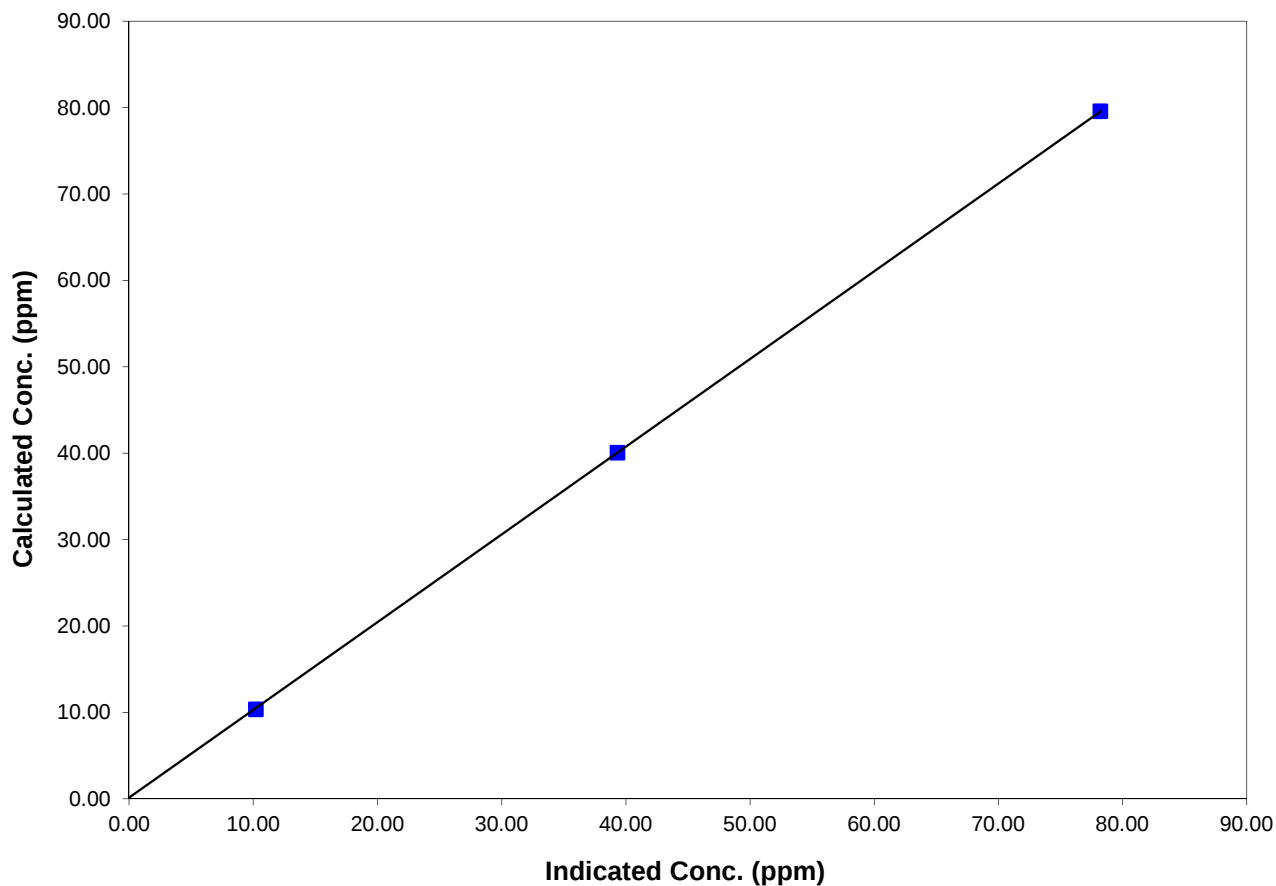
Station Information

Calibration Date	July 6, 2011	Previous Calibration	June 10, 2011
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	11:50	End Time (MST)	15:10
Analyzer make/model	TEI 45C	Analyzer serial #	630718528

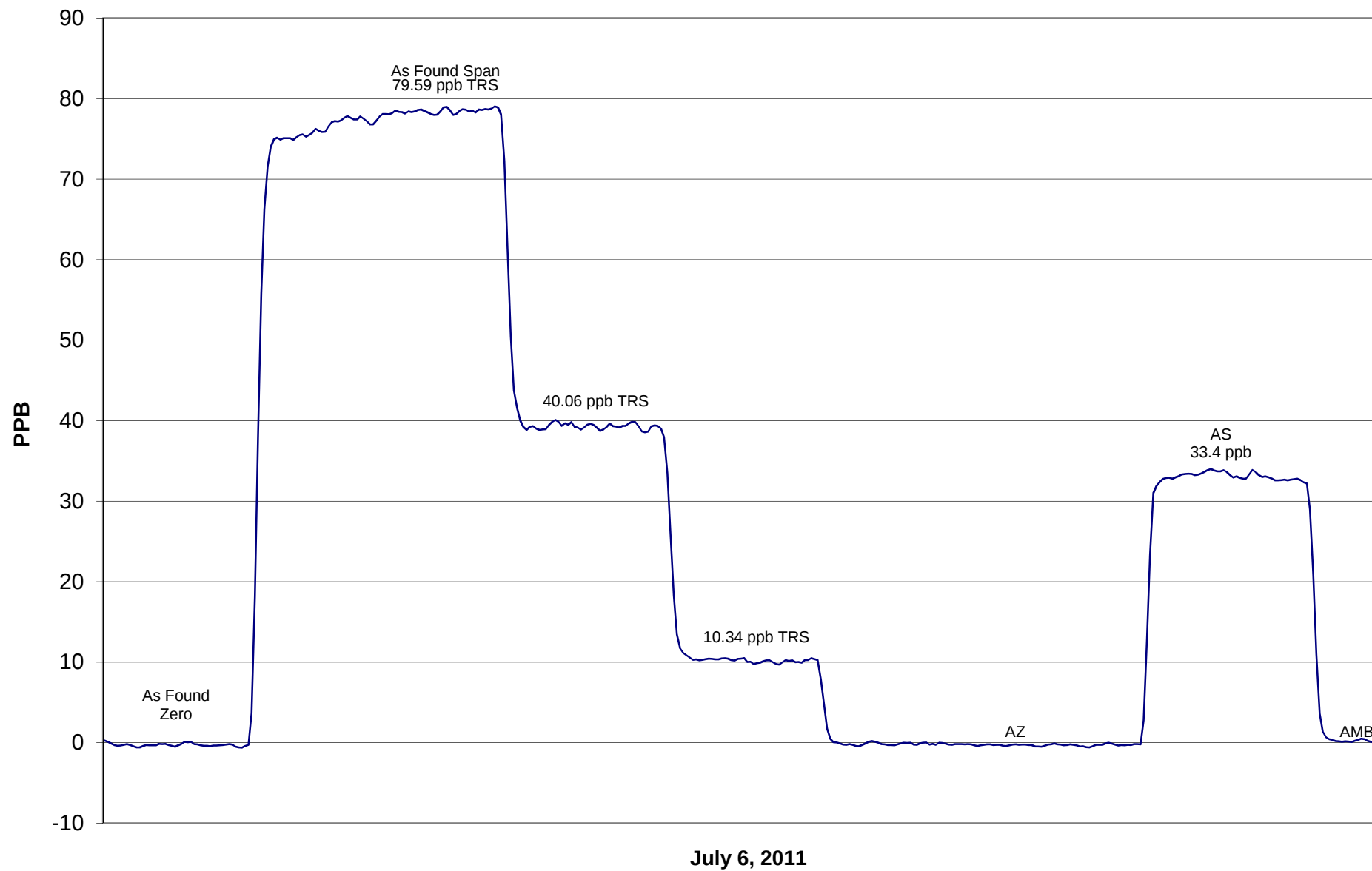
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	-0.316	N/A		
79.590	78.223	1.0175	Correlation Coefficient	0.999984
40.060	39.336	1.0184		
10.344	10.219	1.0123	Slope	1.015068
			Intercept	0.153130

TRS Calibration Curve



Henry Pirker - TRS Calibration



Calibration Report

Parameter

NO_x-NO-NO₂

Air Monitoring Network

PAZA



Station Information

Calibration Date	July 6, 2011	Previous Calibration	June 11, 2011
Station Number	1	Station Location	Henry Pirker
Reason:	☒ Routine	☐ Installation	☐ Removal
Start Time (MST)	7:02	End Time (MST)	12:45
Barometric Pressure	0.922	Station Temperature	20.0
Calibrator	Envionics	Serial Number	3474
NO Cal Gas Conc	51.4	Cal Gas Expiry Date	April 6, 2012
NOx Cal Gas Conc	51.4	Cal Gas Serial #	LL34002

DACS Information

DACS make	CR3000	DACS serial No.	5408
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Parameter	NO2	NOx	NO
Before			
Data Slope	1.001981	1.001760	1.000043
Data Offset	-0.022708	-2.203828	-1.999568
After			
Data Slope	0.994397	1.002504	1.002615
Data Offset	-0.492272	-2.294268	-2.249594
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
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Test Point	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
NO offset	9.8	mV	10.0	mV
NOx bkgnd	10.1	mV	10.3	mV
NO coefficient	0.736		0.752	
NOx coefficient	0.999		1.000	
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	173.2	in Hg	170.8	in Hg
Sample Flow	0.763	ccm	0.737	ccm

Notes: Cal went well, minor adjustment made to span only

Calibration Report

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



Station Information

Calibration Date: July 6, 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	0.1	0.0	0.0	N/A	N/A
1	4989	39.84	407.2	407.2	0.0	407.3	407.2	0.1	0.9998	1.0001
2	4989	19.91	204.3	204.3	0.0	207.3	207.3	0.0	0.9858	0.9858
3	4989	9.94	102.2	102.2	0.0	106.4	106.4	0.0	0.9601	0.9605
AFZ	4989	0.00	0.0	0.0	0.0	0.1	0.0	0.0	0.0000	0.0000
AFS	4989	39.83	407.1	407.1	0.0	398.3	398.1	0.1	1.0222	1.0225
Average Correction Factor									0.9819	0.9821

As Found Concentrations: NO_x= 396.0 NO= 396.2 As Found Percent Change NO_x= -2.7% NO= -2.7%

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	0.1	0.0	0.0	N/A	N/A	N/A	N/A
NO point	406.9	406.9	0.0	406.6	406.9	-0.3	1.0007	1.0000	N/A	N/A
300	406.9	197.0	210.0	408.2	197.0	211.3	0.9970	1.0000	0.9936	100.6%
200	406.9	267.5	139.5	408.3	267.5	140.9	0.9966	1.0000	0.9896	101.1%
100	406.9	336.2	70.7	408.5	336.2	72.2	0.9963	1.0000	0.9794	102.1%
Average Correction Factor							0.9966	1.0000	0.9875	101.3%

AIC Data

	Previous calibration				Current calibration			
Parameter	NOx	NO2	NO		NOx	NO2	NO	
Auto zero	-0.1	0.0	0.0	ppb	0.1	0.0	0.0	ppb
Auto span	168.4	169.5	1.2	ppb	157.7	156.6	1.1	ppb

Calibration Performed By: Virginia McKergow

Calibration Summary

Parameter NO₂

Air Monitoring Network PAZA



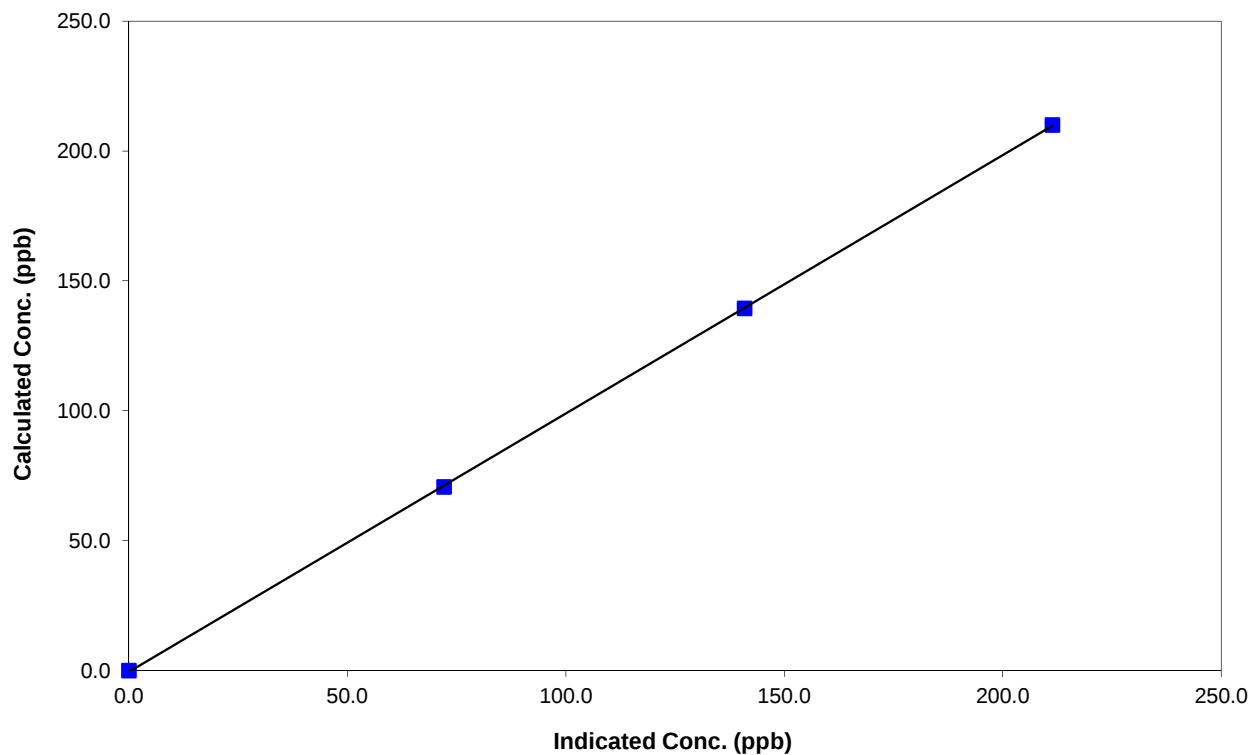
Station Information

Calibration Date	July 6, 2011	Previous Calibration	June 11, 2011
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	7:02	End Time (MST)	12:45
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	0.999972
210.0	211.3	0.9936		
139.5	140.9	0.9896		
70.7	72.2	0.9794	Slope	0.994397
			Intercept	-0.492272

NO₂ Calibration Curve



Calibration Summary

Parameter NO_x

Air Monitoring Network PAZA



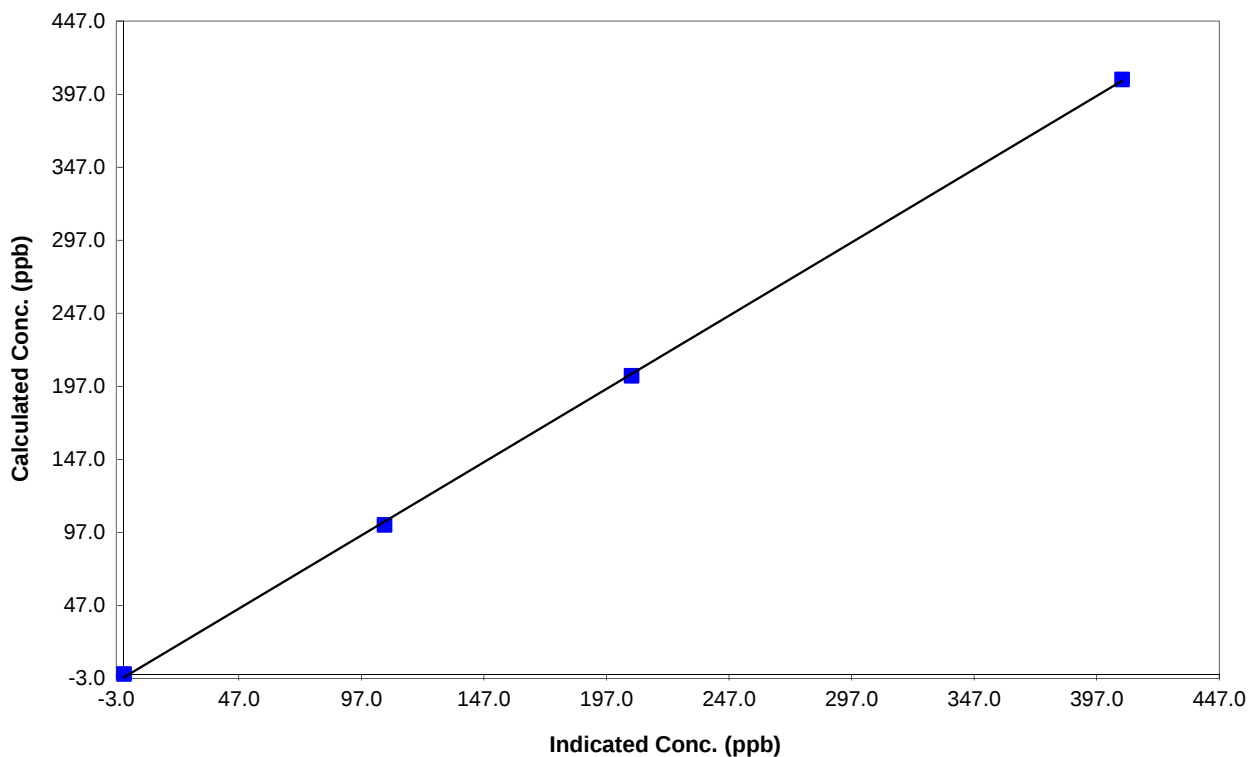
Station Information

Calibration Date	July 6, 2011	Previous Calibration	June 11, 2011
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	7:02	End Time (MST)	12:45
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	0.999862
407.2	407.3	0.9998		
204.3	207.3	0.9858		
102.2	106.4	0.9601	Slope	1.002504
			Intercept	-2.294268

NO_x Calibration Curve



Calibration Summary

Parameter NO

Air Monitoring Network PAZA



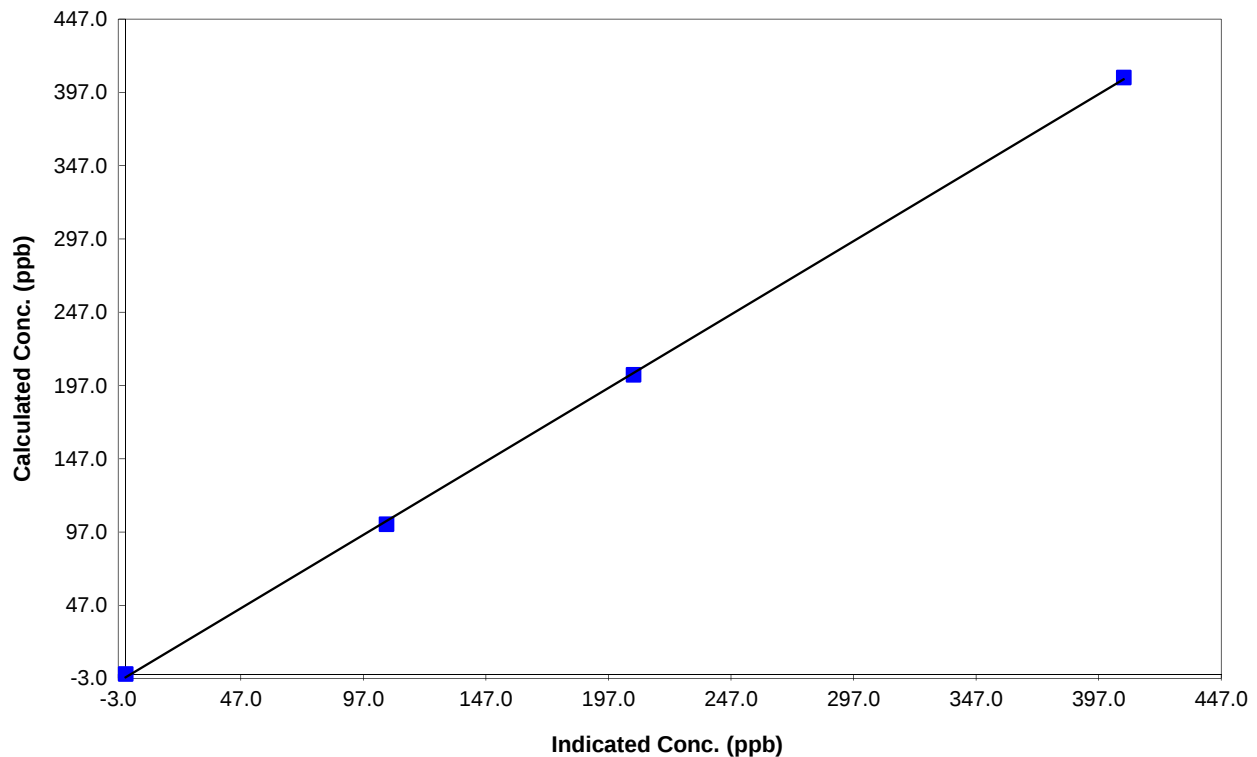
Station Information

Calibration Date	July 6, 2011	Previous Calibration	June 11, 2011
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	7:02	End Time (MST)	12:45
Analyzer make	TEI 42C	Analyzer serial #	508011073

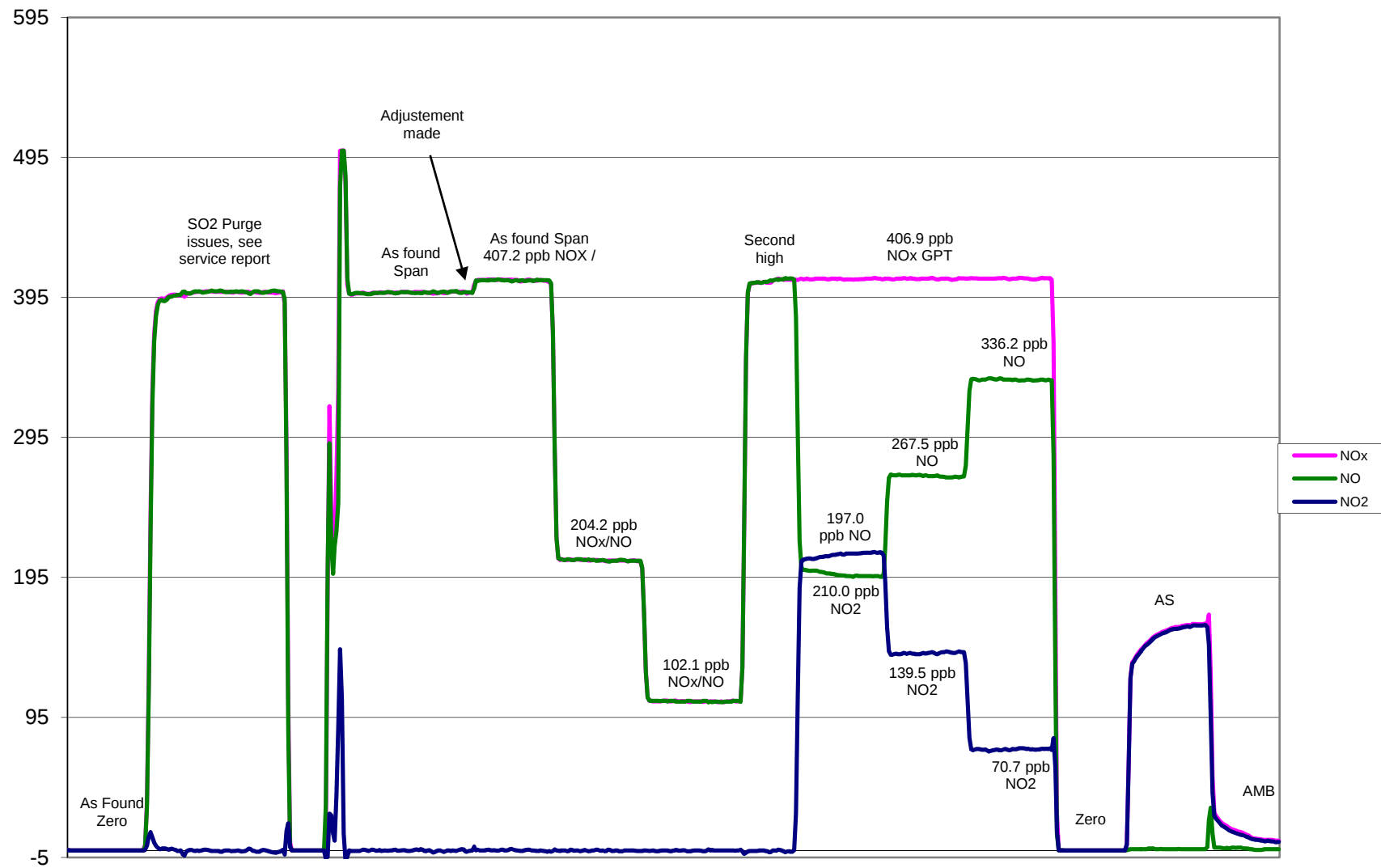
Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.0	N/A	Correlation Coefficient	0.999855
407.2	407.2	1.0001		
204.3	207.3	0.9858		
102.2	106.4	0.9605	Slope	1.002615
			Intercept	-2.249594

NO Calibration Curve



Henry Pirker - NO_x Calibration



July 6, 2011

Calibration Report



Parameter 03

Air Monitoring Network PAZA

Station Information

Calibration Date	July 6, 2011	Previous Calibration	June 11, 2011
Station Number	1	Station Location	Henry Pirker
Reason:	☒ Routine	☐ Install	☐ Removal
		Other:	
Start Time (MST)	16:12	End Time (MST)	17:59
Barometric Pressure	0.922 atm	Station Temperature	20.0 Deg C
Calibrator	Environics 6100	Serial Number	3474
Cal Gas Concentration	NA	Cal Gas Expiry Date	NA
DACS make	CR3000	DACS serial No.	5408
DACS voltage range	0 - 1 volt	DACS channel #	5
	Before		After
Calculated slope	1.002846	Calculated slope	1.007003
Calculated intercept	-0.402501	Calculated intercept	-0.684368
Analyzer make	TECO 49C	Analyzer serial #	607415761

	before		after	
Concentration range	500	ppb	500	ppb
offset	-0.6	ppb	-0.6	ppb
slope	1.011		1.011	
O3 Lamp temp	71.1	Deg C	71.1	Deg C
Intensities	83134/73092	mV	82733/72438	mV
Pressure	693.9	inches Hg	691.9	inches Hg
Flow A	0.723	ccm	0.722	ccm
Flow B	0.739	ccm	0.739	ccm

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	0.6	N/A
300	4989	210.0	209.3	1.0033
200	4989	139.5	138.9	1.0041
100	4989	70.7	71.2	0.9935
0	4989	0.0	0.6	As found zero
300	4989	223.3	209.3	As found span
Average Correction Factor				1.0003

Calculated value of As Found Response: 208.9 ppm Percent Change of As Found: -6.4%

	before calibration		after calibration	
Auto zero	0.3	ppb	0.3	ppb
Auto span	163.8	ppb	160.8	ppb

Notes:

Calibration Performed By: Virginia McKergow

Calibration Summary

Parameter 03

Air Monitoring Network PAZA



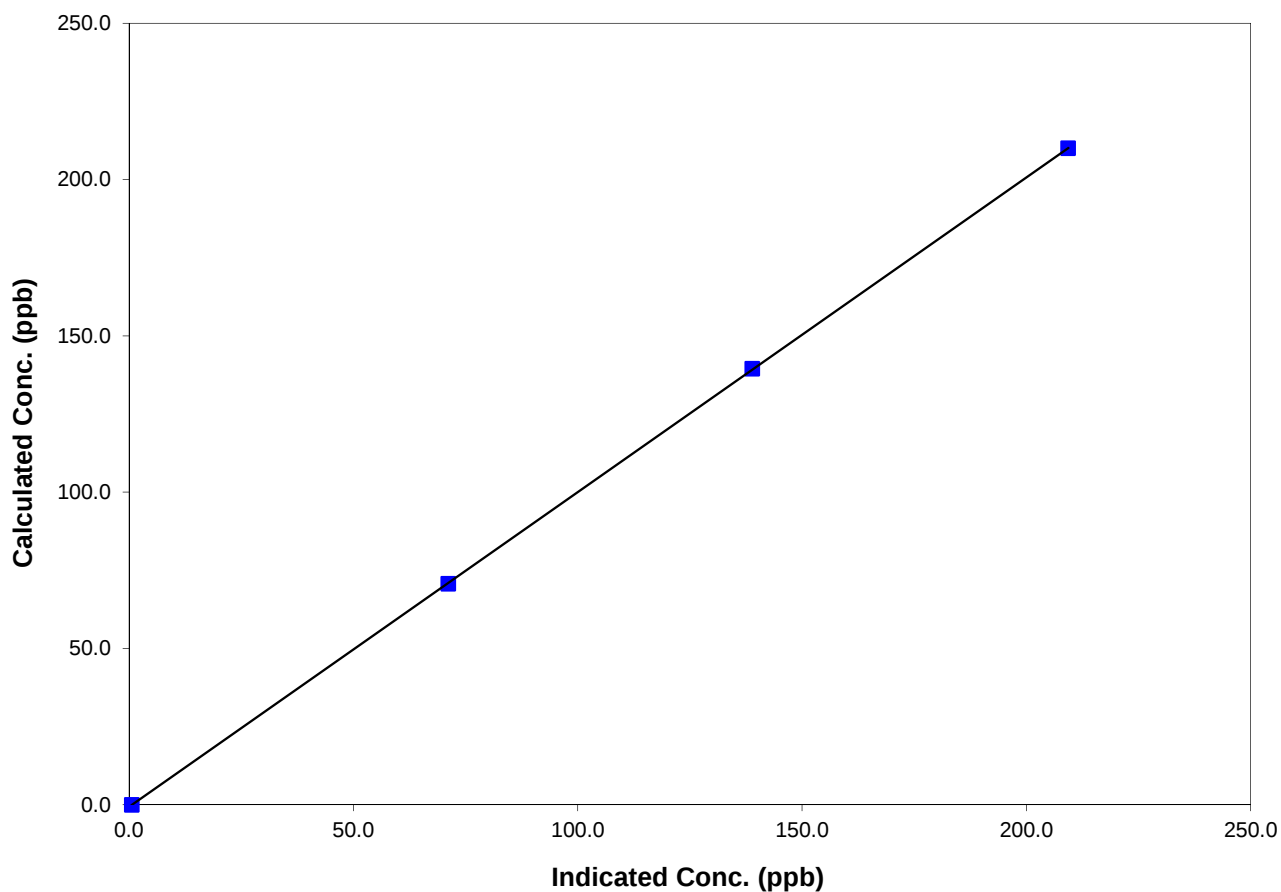
Station Information

Calibration Date	July 6, 2011	Previous Calibration	June 11, 2011
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	16:12	End Time (MST)	17:59
Analyzer make/model	TECO 49C	Analyzer serial #	607415761

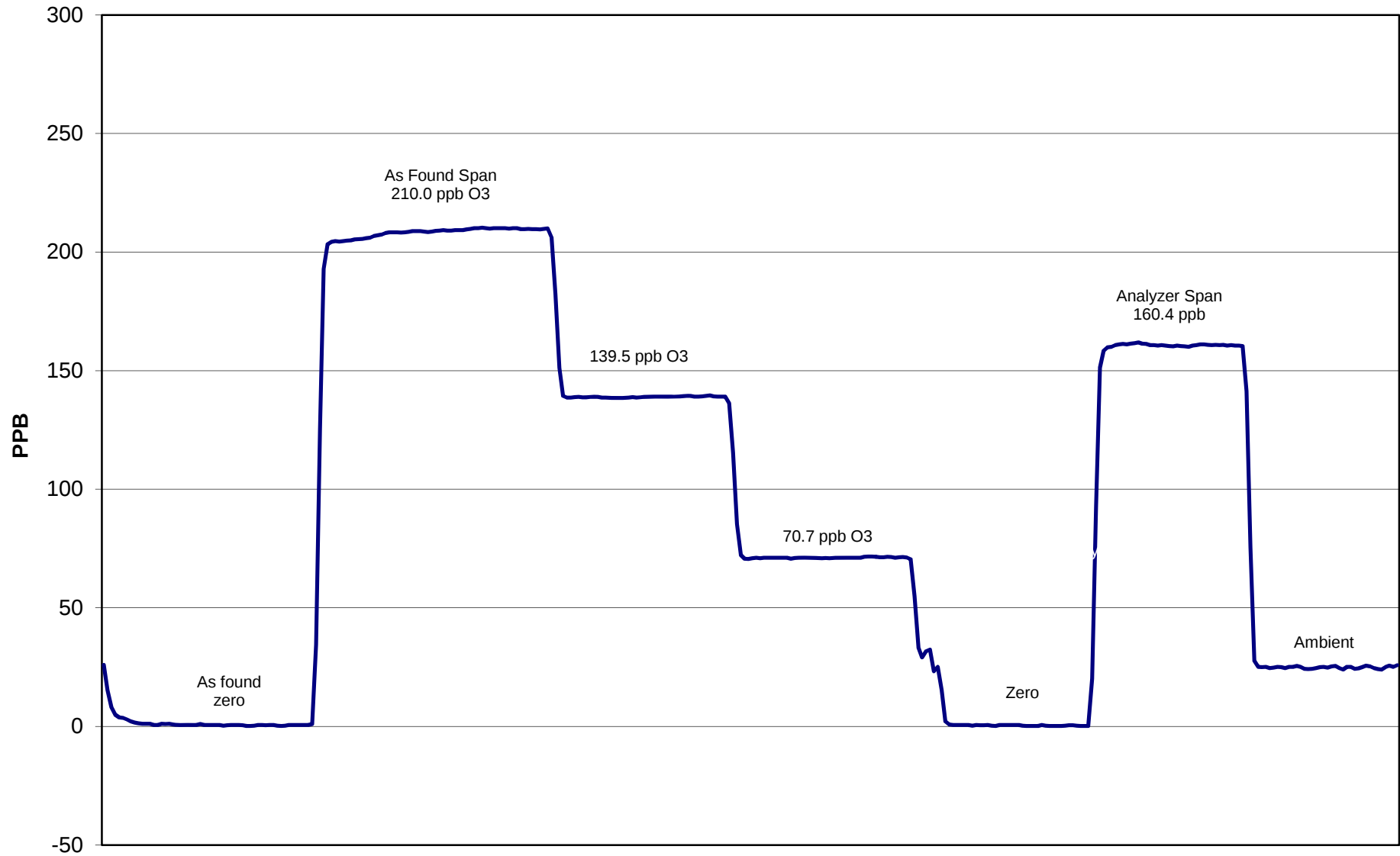
Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.6	NA	Correlation Coefficient	0.999993
210.0	209.3	1.0033		
139.5	138.9	1.0041		
70.7	71.2	0.9935	Slope	1.007003
			Intercept	-0.684368

O3 Calibration Curve



Henry Pirker - O₃ Calibration



July 6, 2011

Calibration Report

Parameter CO

Air Monitoring Network PAZA



Station Information

Calibration Date	July 15, 2011	Previous Calibration	June 10, 2011
Station Number	1	Station Location	Henry Pirker
Reason:	☒ Routine	☐ Install	☐ Removal
		☐ Other:	
Start Time (MST)	8:04	End Time (MST)	11:05
Barometric Pressure	0.923 ATM	Station Temperature	20.0 Deg C
Calibrator	SABIO	Serial Number	3970108
Cal Gas Conc	3000 ppm	Cal Gas Expiry Date	AUG 28/05
		Cal Gas Cylinder #	AAL20565
DACS make	CR3000	DACS serial No.	5408
DACS voltage range	0 - 1 volt	DACS channel #	9
	Before		After
Calculated slope	1.009309	Calculated slope	1.005526
Calculated intercept	-0.500423	Calculated intercept	-0.199148
Analyzer make	TEI Model 48C	Analyzer serial #	508011062

	before		after	
Concentration range	0 - 50	ppm	0 - 50	ppm
CO span setting	1.077		1.105	
CO zero setting	0.946		0.980	
Sample pressure	678.5	mm Hg	668.9	mm Hg
Sample Flow	1.136	LPM	1.130	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)
3012	0.00	0.00	0.36	N/A
3012	40.15	39.46	39.52	0.9985
3012	20.15	19.94	19.95	0.9991
3012	10.10	10.03	10.00	1.0022
3012	0.00	0.00	0.36	As Found Zero
3012	40.15	39.46	38.36	As Found Span
Average Correction Factor				1.0000

Calculated value of As Found Response: 37.859 ppm Percent Change of As Found: 4.1%

	before calibration		after calibration	
Auto zero	0.03	ppm	0.03	ppm
Auto span	19.56	ppm	20.36	ppm

Notes:

Calibration Performed By: Brad Moyles

Calibration Summary

Parameter CO

Air Monitoring Network PAZA



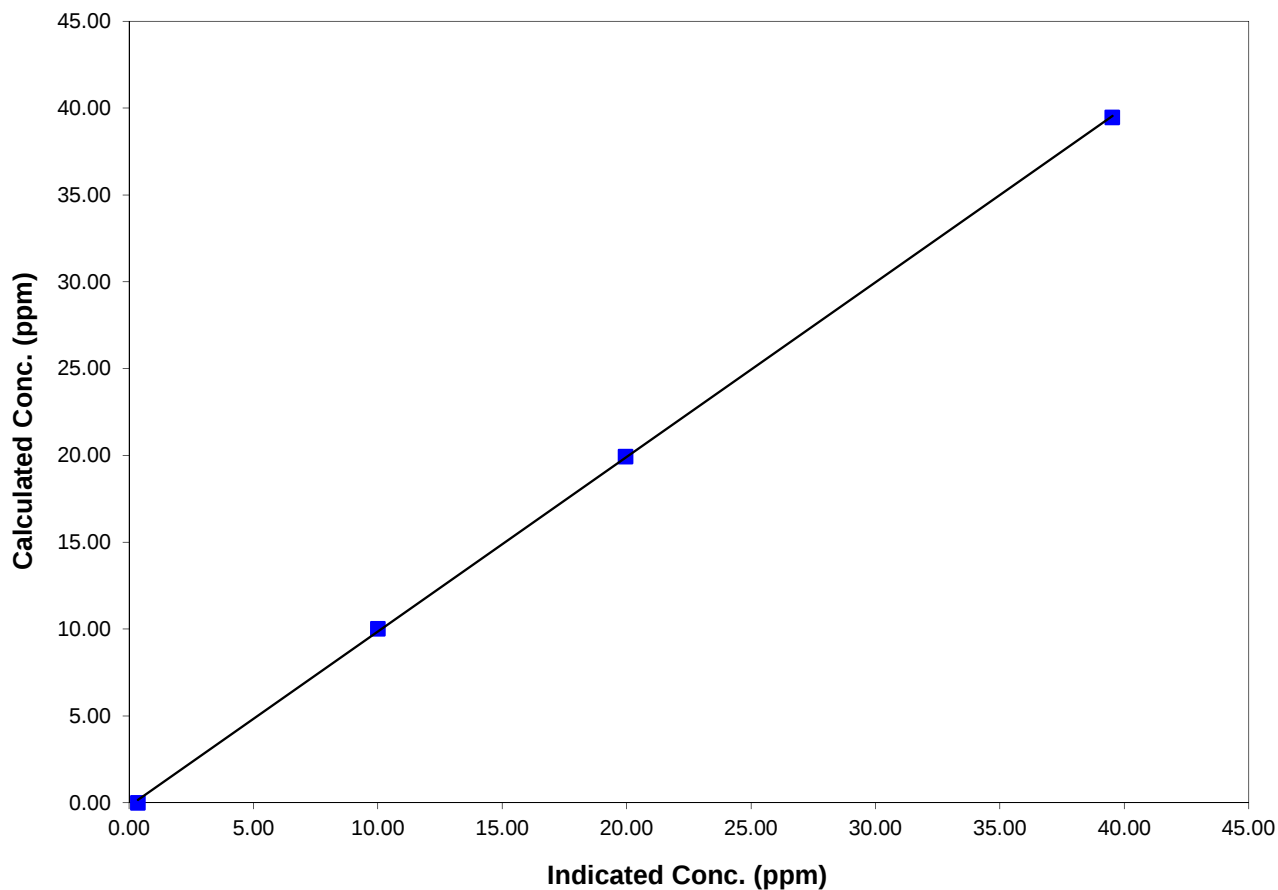
Station Information

Calibration Date	July 15, 2011	Previous Calibration	June 10, 2011
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	8:04	End Time (MST)	11:05
Analyzer make/model	TEI Model 48C	Analyzer serial #	508011062

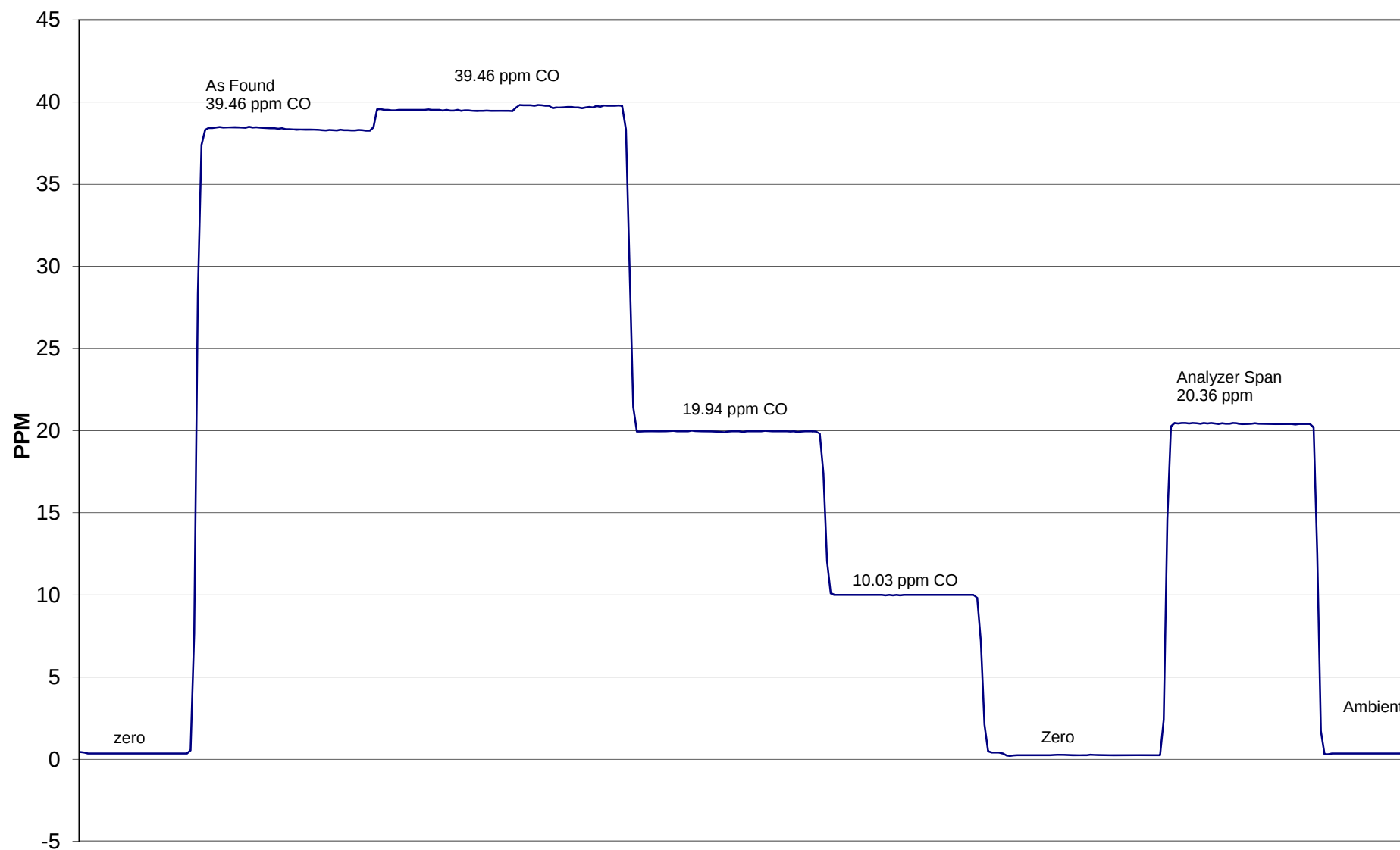
Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	0.358	N/A	Correlation Coefficient	0.999924
39.464	39.522	0.9985		
19.936	19.953	0.9991		
10.026	10.004	1.0022	Slope	1.005526
			Intercept	-0.199148

CO Calibration Curve



Henry Pirker - CO Calibration



July 15, 2011

Calibration Report

Parameter THC

Air Monitoring Network PAZA



Station Information

Calibration Date	July 6, 2011	Previous Calibration	June 10, 2011
Station Number	1	Station Location	Henry Pirker
Reason:	☒ Routine	☐ Install	☐ Removal
		☐ Other:	
Start Time (MST)	13:48	End Time (MST)	17:30
Barometric Pressure	0.921 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	CR3000	DACS serial No.	5408
DACS voltage range	0 - 1 volt	DACS channel #	9
	<u>Before</u>		<u>After</u>
Calculated slope	1.062127	Calculated slope	1.064470
Calculated intercept	-0.026314	Calculated intercept	-0.041168
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	9616	capture	9616	capture
THC zero counts	447	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	0.04	N/A
4988	69.75	21.01	19.79	1.0613
4988	29.87	9.07	8.50	1.0673
4988	9.92	3.02	2.92	1.0353
4988	0.00	0.00	0.04	As Found Zero
4988	69.75	21.01	19.79	As Found Span
Average Correction Factor				1.0546

Calculated value of As Found Response: 20.956 ppm Percent Change of As Found: 0.3%

	before calibration		after calibration	
Auto zero	0.10	ppm	1.91	ppm
Auto span	22.27	ppm	23.34	ppm

Notes: Cal went well, no adjustment required

Calibration Performed By: Virginia McKergow

Calibration Summary

Parameter THC

Air Monitoring Network PAZA



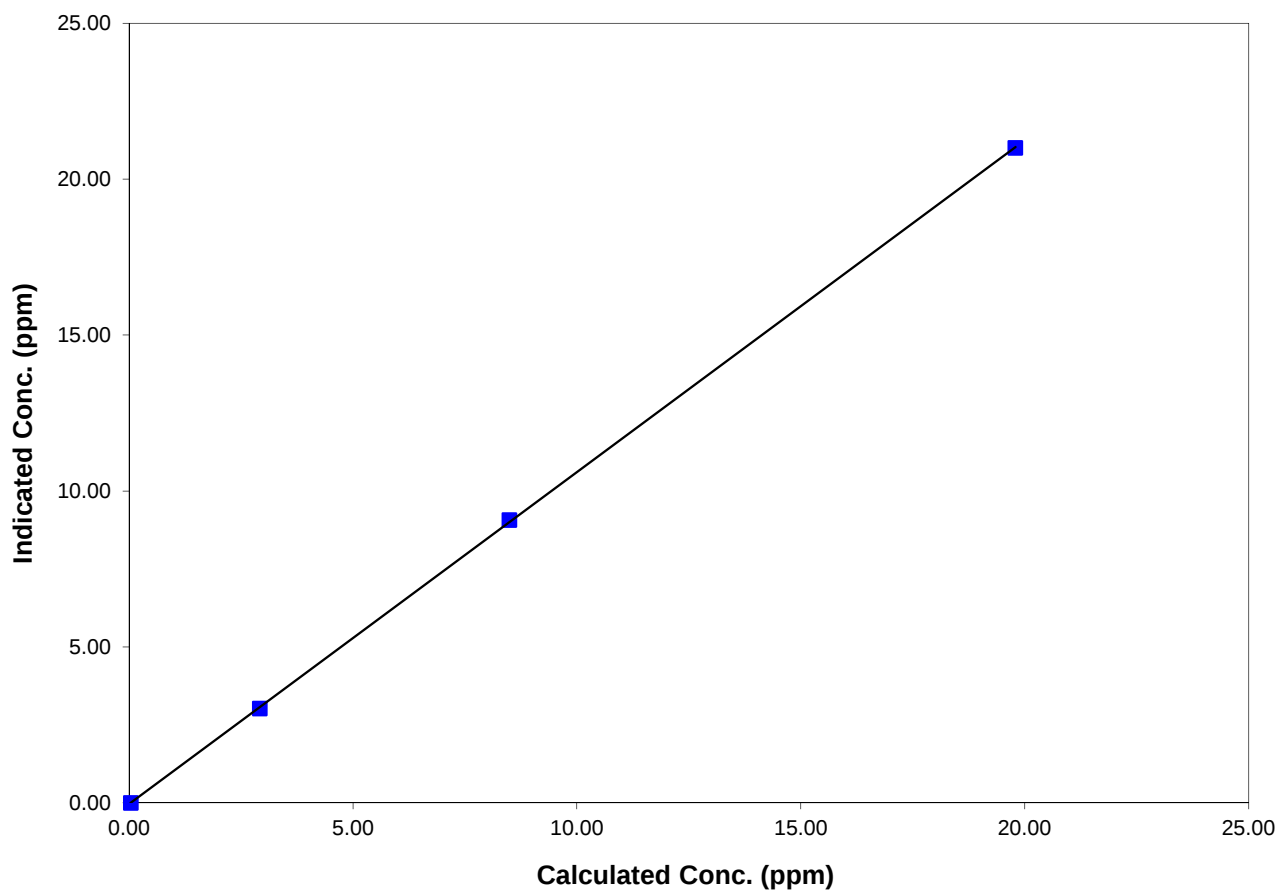
Station Information

Calibration Date	July 6, 2011	Previous Calibration	June 10, 2011
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	13:48	End Time (MST)	17:30
Analyzer make/model	TEI Model 51C-LT	Analyzer serial #	51CLT-79009-390

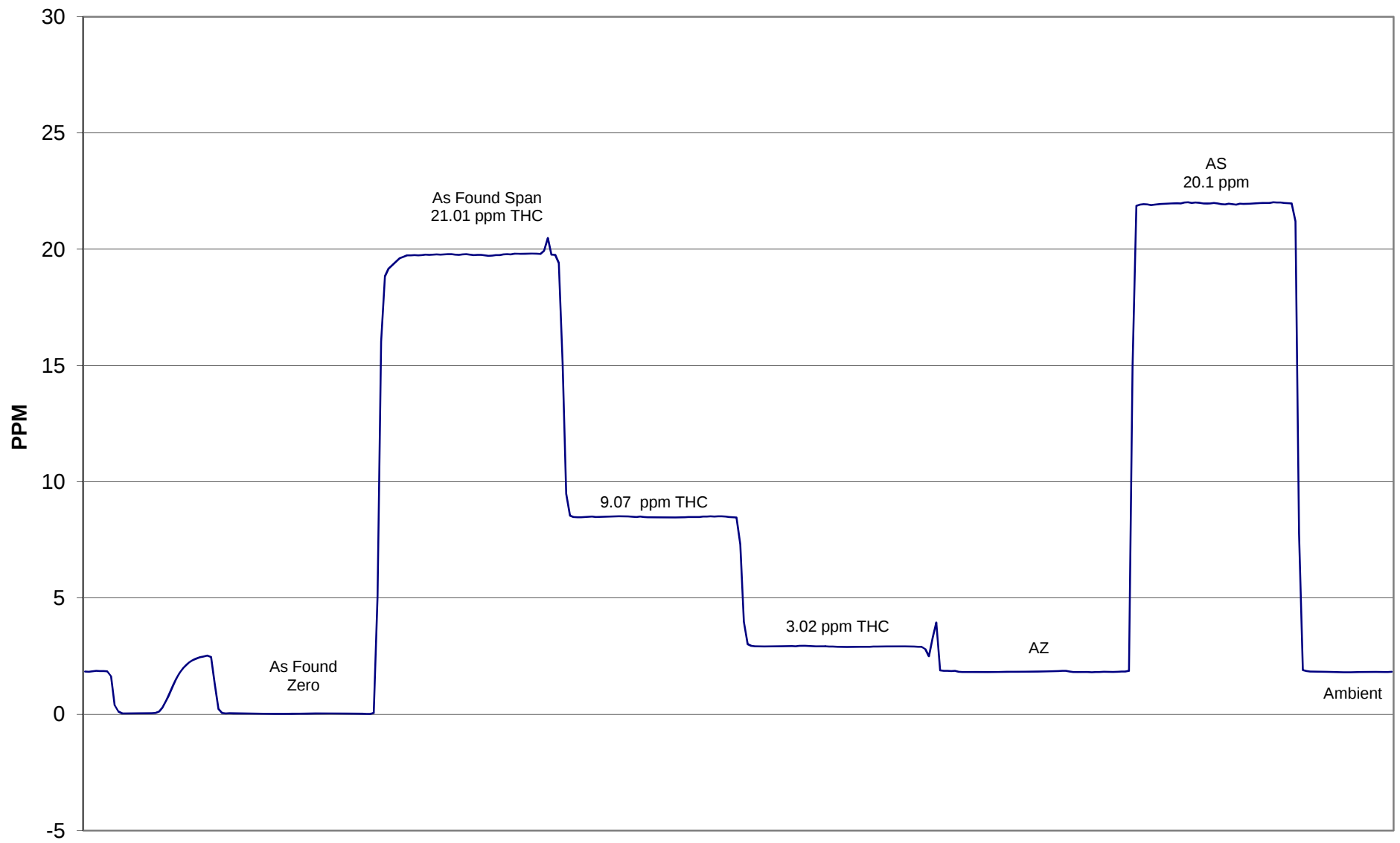
Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	0.038	N/A	Correlation Coefficient	0.999974
21.007	19.793	1.0613		
9.067	8.496	1.0673		
3.023	2.920	1.0353	Slope	1.064470
			Intercept	-0.041168

THC Calibration Curve



Henry Pirker - THC Calibration



July 6, 2011

Calibration Report



Parameter SO₂

Air Monitoring Network PAZA

Station Information

Calibration Date	July 19, 2011	Previous Calibration	June 29, 2011
Station Number	2	Station Location	Evergreen Park
Reason:	☒ Routine	☐ Install	☐ Removal
		☐ Other:	
Start Time (MST)	7:13	End Time (MST)	10:55
Barometric Pressure	0.907 ATM	Station Temperature	20.0 Deg C
Calibrator	SABIO	Serial Number	3970108
Cal Gas Concentration	49.8 ppm	Cal Gas Expiry Date	3/28/2013
Correction factor	0.030831	Cal Gas Cylinder #	SGAL3245
DACS make	CR3000	DACS serial No.	5236
DACS voltage range	0 - 5 volt	DACS channel #	6
	<u>Before</u>		<u>After</u>
Calculated slope	0.990692	Calculated slope	1.005853
Calculated intercept	0.900917	Calculated intercept	2.040540
Analyzer make	Teco 43i	Analyzer serial #	701120008

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Background	11.3		11.4	
coefficient	1.075		1.094	
Lamp Voltage	826	volts	826	volts
Chamber Temp	45.2	Deg C	45.2	Deg C
Perm Gas Temp	45	Deg C	45	Deg C
Pressure	655.6	mm Hg	655.6	mm Hg
Sample Flow	0.445	ccm	0.45	ccm
Lamp Intensity	90	%	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)
5018	0.0	0.00	-0.5	N/A
5018	40.20	395.8	392.4	1.0086
5018	20.15	199.2	194.6	1.0233
5018	10.10	100.0	96.3	1.0385
5018	0.0	0.0	-0.6	As Found Zero
5018	40.20	395.8	387.2	As Found Span
Average Correction Factor				1.0235

Calculated value of As Found Response: 385.106 ppm Percent Change of As Found: 2.7%

	before calibration		after calibration	
Auto zero	0.6	ppm	-0.1	ppm
Auto span	292.7	ppm	296.8	ppm

Notes:

Calibration Performed By: Brad Moyles

Calibration Summary

Parameter SO2

Air Monitoring Network PAZA



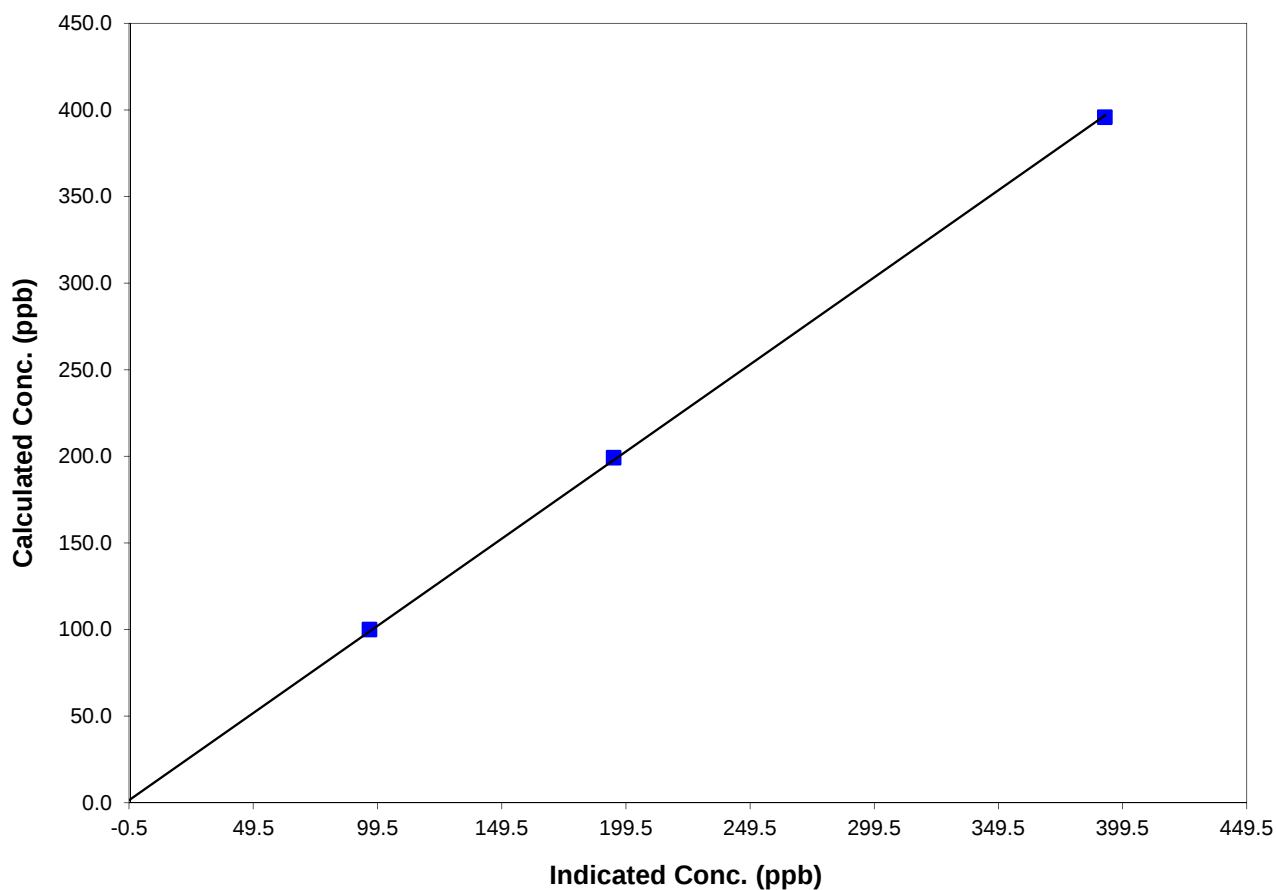
Station Information

Calibration Date	July 19, 2011	Previous Calibration	June 29, 2011
Station Number	2	Station Location	Evergreen Park
Start Time (MST)	7:13	End Time (MST)	10:55
Analyzer make/model	Teco 43i	Analyzer serial #	701120008

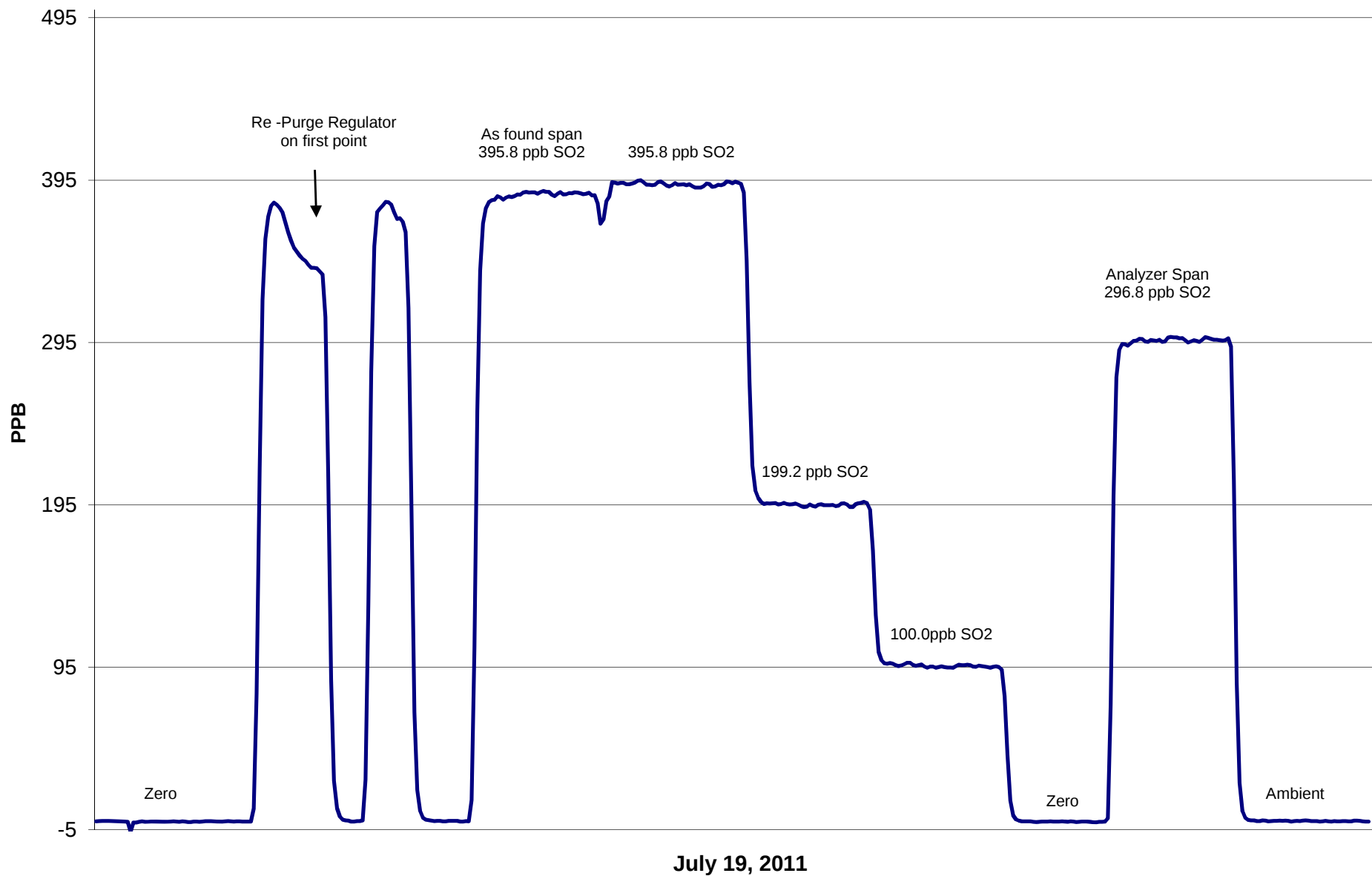
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.5	N/A	Correlation Coefficient	0.999927
395.8	392.4	1.0086		
199.2	194.6	1.0233		
100.0	96.3	1.0385	Slope	1.005853
			Intercept	2.040540

SO2 Calibration Curve



Evergreen Park - SO₂ Calibration



Calibration Report



Parameter TRS

Air Monitoring Network PAZA

Station Information

Calibration Date	July 18, 2011	Previous Calibration	June 29, 2011
Station Number	2	Station Location	Evergreen Park
Reason:	☒ Routine	☐ Install	☐ Removal
		☐ Other:	
Start Time (MST)	10:55	End Time (MST)	15:15
Barometric Pressure	0.907 ATM	Station Temperature	20.0 Deg C
Calibrator	SABIO	Serial Number	3970108
Cal Gas Conc	5.77 ppm	Cal Gas Expiry Date	9/3/2011
Correction factor	0.030831	Cal Gas Cylinder #	BLM001434
DACS make	CR3000	DACS serial No.	5236
DACS voltage range	0 - 5 volt	DACS channel #	5
	Before		After
Calculated slope	1.027993	Calculated slope	0.986986
Calculated intercept	-0.394724	Calculated intercept	0.757573
Analyzer make	TEI Model 43C	Analyzer serial #	436610005

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Background	18.8	ppb	19.7	ppb
coefficient	0.941		0.991	
Lamp Voltage	803	volts	803	volts
Chamber Temp	45	Deg C	45	Deg C
Perm Gas Temp	45.01	Deg C	45.01	Deg C
Pressure	636.4	mm Hg	636.4	mm Hg
Sample Flow	0.474	ccm	0.477	ccm
Lamp Intensity	45,412	mv	45,573	mv

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)
5018	0.00	0.00	-0.3	N/A
5018	70.20	79.61	80.1	0.9943
5018	35.20	40.19	39.8	1.0096
5018	15.10	17.31	16.3	1.0637
5018	0.00	0.00	-0.1	As Found Zero
5018	70.20	79.61	73.6	As Found Span
Average Correction Factor				1.0225

Calculated value of As Found Response: 75.36 ppm Percent Change of As Found: 5.3%

	before calibration		after calibration	
Auto zero	0.2	ppm	0.3	ppm
Auto span	71.9	ppm	74.8	ppm

Notes: _____

Calibration Performed By: Brad Moyles

Calibration Summary

Parameter TRS

Air Monitoring Network PAZA



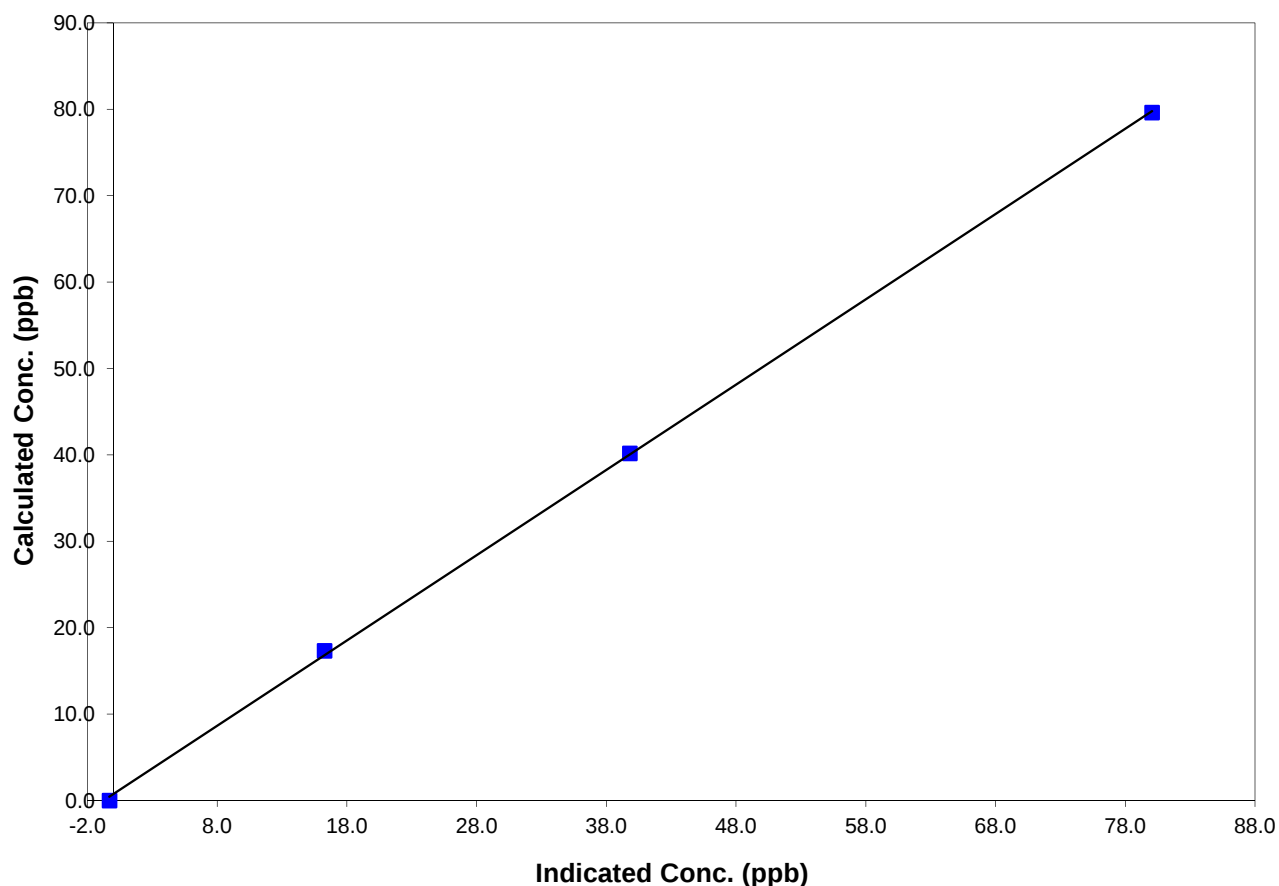
Station Information

Calibration Date	July 18, 2011	Previous Calibration	June 29, 2011
Station Number	2	Station Location	Evergreen Park
Start Time (MST)	10:55	End Time (MST)	15:15
Analyzer make/model	TEI Model 43C	Analyzer serial #	436610005

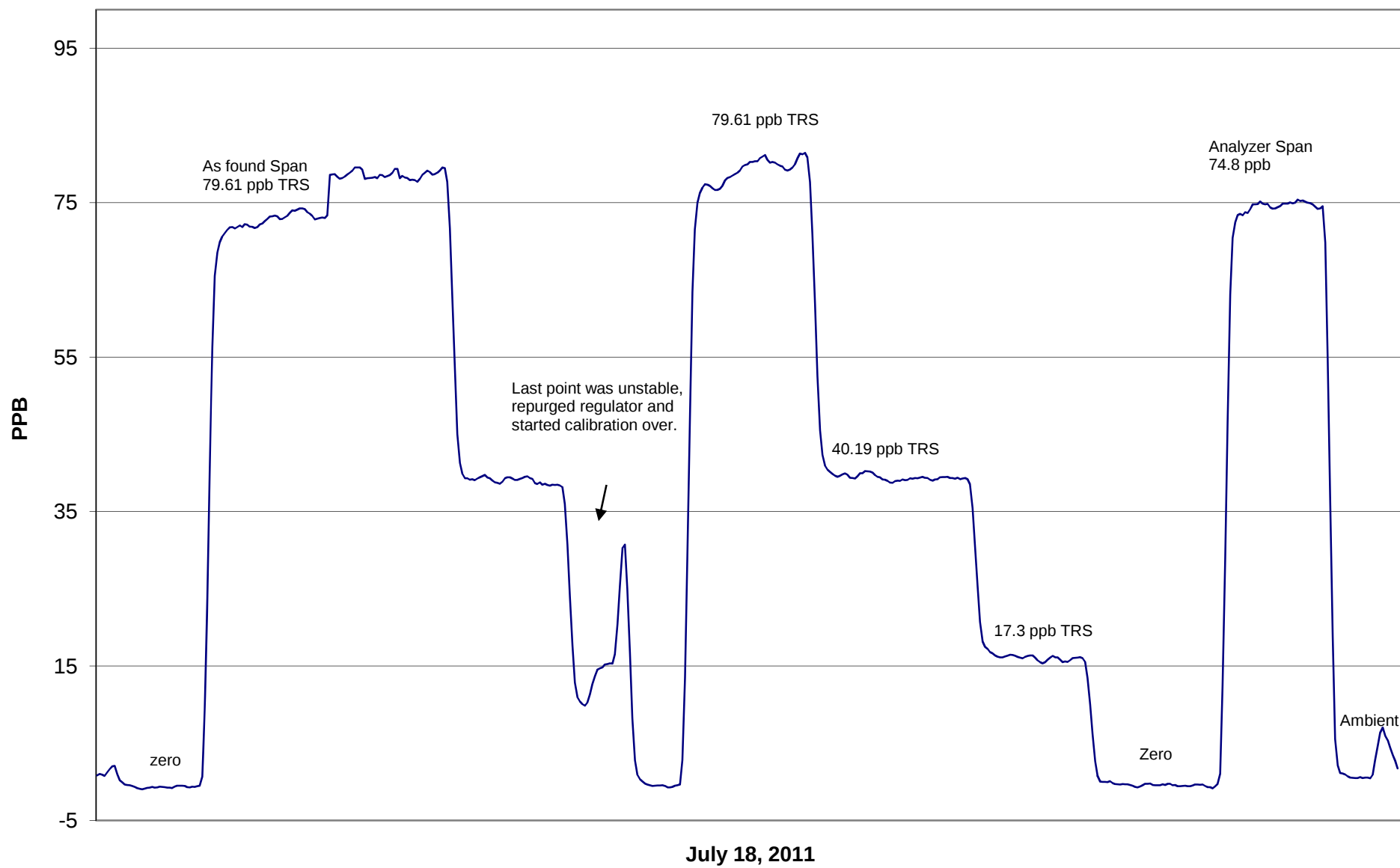
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.3	N/A	Correlation Coefficient	0.999858
79.6	80.1	0.9943		
40.2	39.8	1.0096		
17.3	16.3	1.0637	Slope	0.986986
			Intercept	0.757573

TRS Calibration Curve



Evergreen Park - TRS Calibration



AB TEOM PM2.5 Calibration



STATION: Evergreen Park
LOCATION: PAZA - Grande Prairie

OPERATOR: Brad Moyles
DATE: 18-Jul-11

MONITOR INFO / PARAMETER VALUES:

Make/Model	TEOM AB
Configuration	PM2.5
Serial Number	21554
Site Number	2
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	18-Jul-11
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	0.040	0.050
PUMP OFF	0.020	0.020
NET	0.020	0.030
LIMITS	<0.15	<0.60

	Ambient Temp. (^o C)	Ambient Pres. (atm)	Ko *	Bypass flow (lpm)	Sample flow (lpm)
SET POINT (S)	na	na	16147	13.67	3.000
INDICATED (I)	22.1	0.909		13.67	3.000
MEASURED (AF)	22.3	0.912		13.24	2.870
MEASURED (M)	22.3	0.912	16242	13.65	2.930
DIFFERENCE (M-I)	0.2	0.003	0.6%	-0.15	0.13
LIMITS	± 2 ^o C	± 0.005 atm	± 2.5 %	± 1.0 L/min	± 0.2 L/min

As Found Data
Adjusted Data

Ko Audit Filter data Weight: 0.11251 Serial #: CVK 3316

COMMENTS: PASS.

Sample filter changed & allowed to stabilize.

O'Rings in Sample head need to be replaced and have been ordered.

Adjustments made to flows.

Cleaned Sample Head

Sample Head Inspection/Cleaning:

Large In Line Filter Inspection & Or Cleaning:

Calibration Report



Parameter SO₂

Air Monitoring Network PAZA

Station Information

Calibration Date	July 27, 2011	Previous Calibration	June 21, 2011
Station Number	3	Station Location	Smoky Heights
Reason:	☒ Routine	☐ Install	☐ Removal
		☐ Other:	
Start Time (MST)	8:30	End Time (MST)	13:00
Barometric Pressure	0.920 ATM	Station Temperature	20.0 Deg C
Calibrator	Enviroics 6100	Serial Number	3474
Cal Gas Concentration	49.8 ppm	Cal Gas Cert Date	3/28/2011
Correction factor	0.031273	Cal Gas Cylinder #	LL85275
DACS make	CR3000	DACS serial No.	5238
DACS voltage range	0 - 5 volt	DACS channel #	6
	Before		After
Calculated slope	0.986105	Calculated slope	0.997012
Calculated intercept	0.996893	Calculated intercept	-0.984123
Analyzer make	Teco 43i	Analyzer serial #	701120009

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Background	10		9.8	
coefficient	0.984		0.964	
Lamp Voltage	921	volts	921	volts
Chamber Temp	45	Deg C	45.01	Deg C
Perm Gas Temp	45	Deg C	45	Deg C
Pressure	667.8	mm Hg	668.1	mm Hg
Sample Flow	0.440	ccm	0.440	ccm
Lamp Intensity	87	%	87	%

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	0.2	N/A
4989	39.85	394.63	396.5	0.9953
4989	19.91	197.95	199.6	0.9917
4989	9.95	99.12	101.4	0.9775
4989	0.0	0.00	0.2	As Found Zero
4989	39.84	394.53	399.6	As Found Span
Average Correction Factor				0.9882

Calculated value of As Found Response: 394.875 ppm Percent Change of As Found: -0.1%

	before calibration		after calibration	
Auto zero	0.4	ppb	0.2	ppb
Auto span	326.7	ppb	313.6	ppb

Notes: _____

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter SO2

Air Monitoring Network PAZA



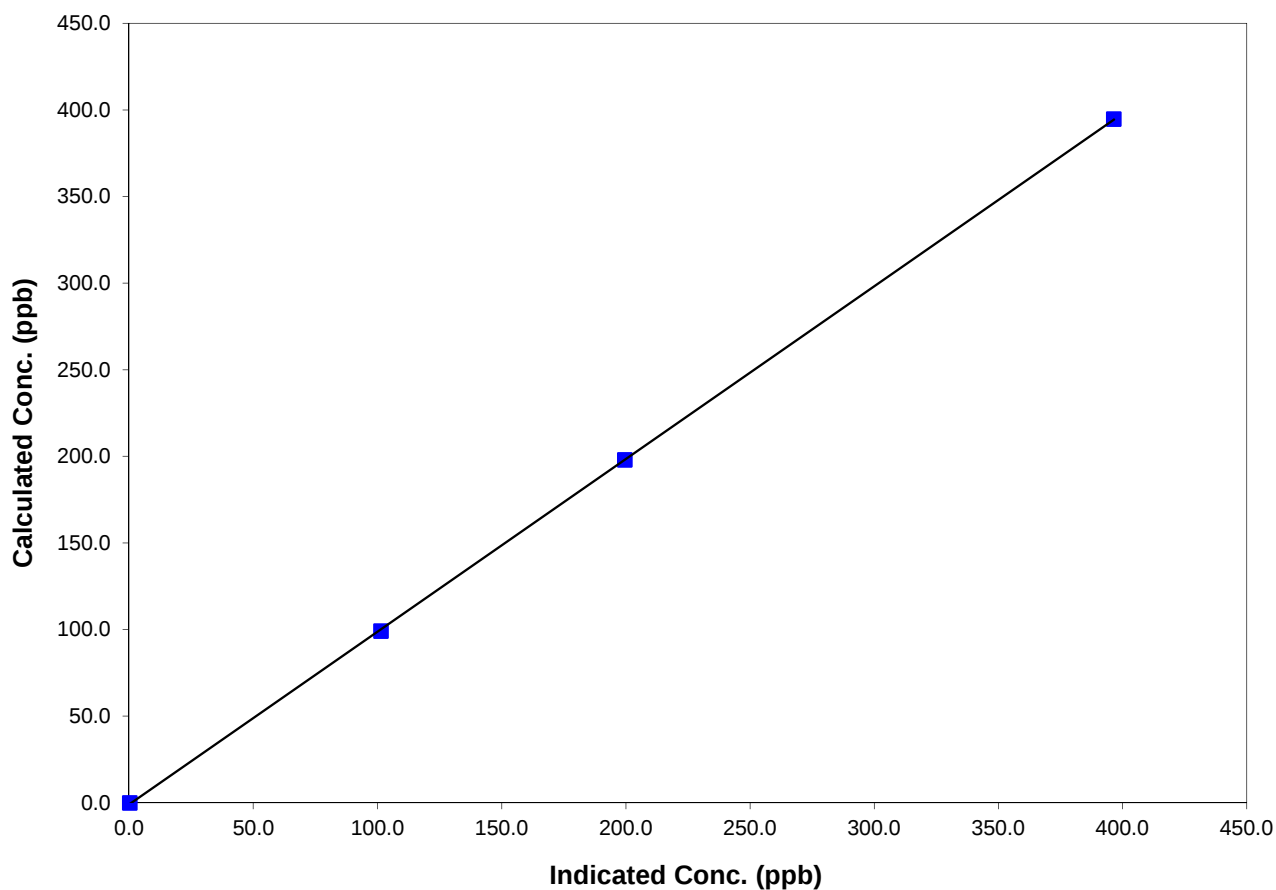
Station Information

Calibration Date	July 27, 2011	Previous Calibration	June 21, 2011
Station Number	3	Station Location	Smoky Heights
Start Time (MST)	8:30	End Time (MST)	13:00
Analyzer make/model	Teco 43i	Analyzer serial #	701120009

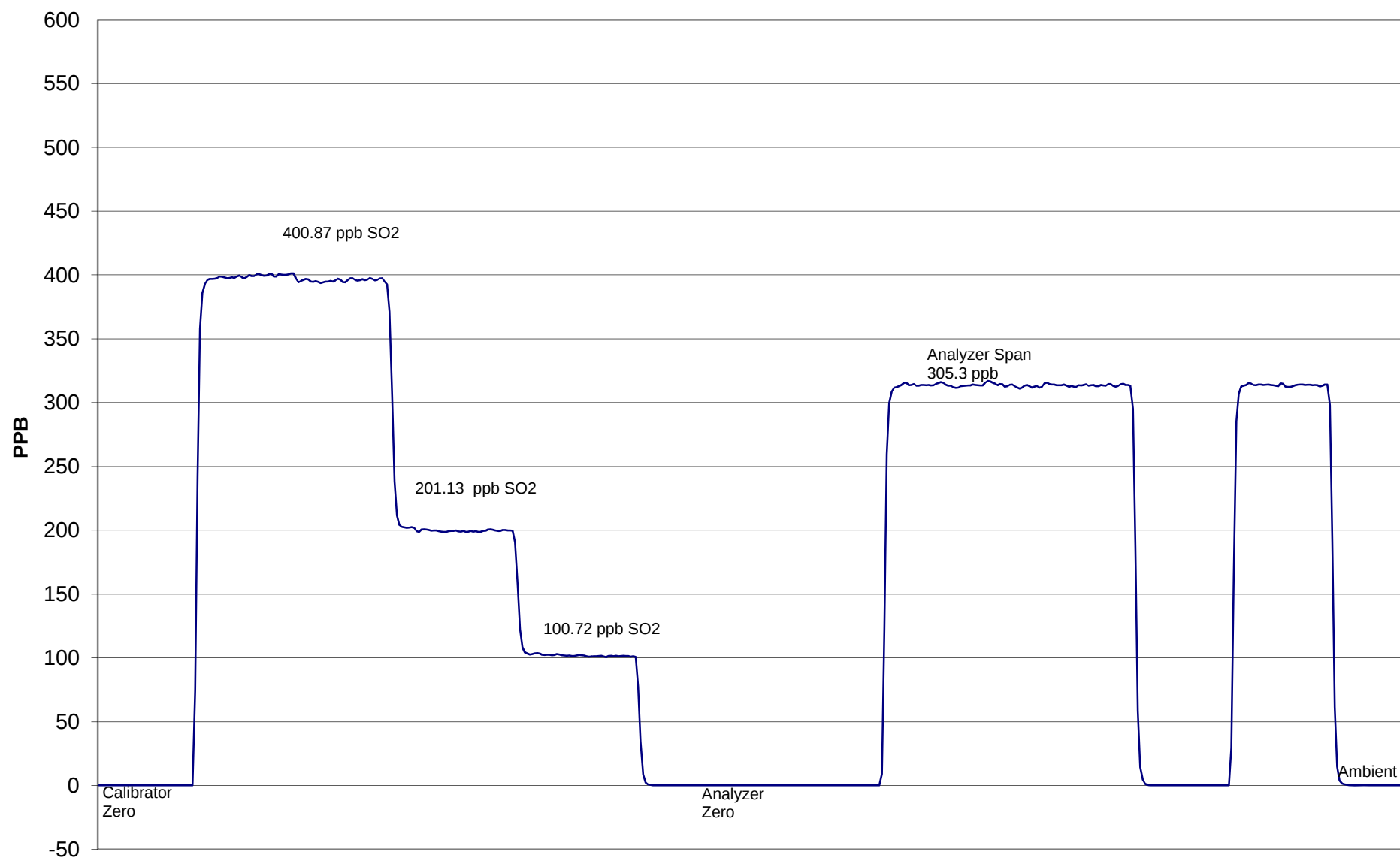
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.2	N/A	Correlation Coefficient	0.999980
394.6	396.5	0.9953		
198.0	199.6	0.9917		
99.1	101.4	0.9775	Slope	0.997012
			Intercept	-0.984123

SO2 Calibration Curve



Smoky Heights - SO₂ Calibration



July 27, 2011

Calibration Report



Parameter TRS

Air Monitoring Network PAZA

Station Information

Calibration Date	July 27, 2011	Previous Calibration	June 21, 2011
Station Number	3	Station Location	Smoky Heights
Reason:	☐ Routine	☐ Install	☐ Removal
			☒ Other: Maintenance
Start Time (MST)	10:20	End Time (MST)	14:50
Barometric Pressure	0.920 ATM	Station Temperature	20.0 Deg C
Calibrator	EnviroNics 6100	Serial Number	3474
Cal Gas Conc	5.77 ppm	Cal Gas Expiry Date	9/3/2011
Correction factor	0.031273	Cal Gas Cylinder #	BLM001434
DACS make	CR3000	DACS serial No.	5238
DACS voltage range	0 - 5 volt	DACS channel #	5
	Before		After
Calculated slope	0.992392	Calculated slope	0.995254
Calculated intercept	0.317034	Calculated intercept	0.740477
Analyzer make	TEI Model 43C	Analyzer serial #	0436610005

	before		after	
Concentration range	100	ppb	100	ppb
Background	17.2	ppb	17.5	ppb
coefficient	0.960		0.968	
Lamp Voltage	847	volts	796	volts
Chamber Temp	44	Deg C	44.99	Deg C
Perm Gas Temp	45	Deg C	45	Deg C
Pressure	510.5	mm Hg	535.6	mm Hg
Sample Flow	0.716	ccm	0.580	ccm
Lamp Intensity	42,710	mv	35,400	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	69.79	79.60	79.5	1.0008
4989	34.88	40.06	39.0	1.0261
4989	8.96	10.34	9.0	1.1510
4989	0.0	0.00	-0.2	As Found Zero
4989	69.79	79.60	72.5	As Found Span
Average Correction Factor				1.0593

Calculated value of As Found Response: 72.45 ppm Percent Change of As Found: 9.0%

	before calibration		after calibration	
Auto zero	0.0	ppm	0.9	ppm
Auto span	41.9	ppm	55.9	ppm

Notes: _____

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter TRS

Air Monitoring Network PAZA



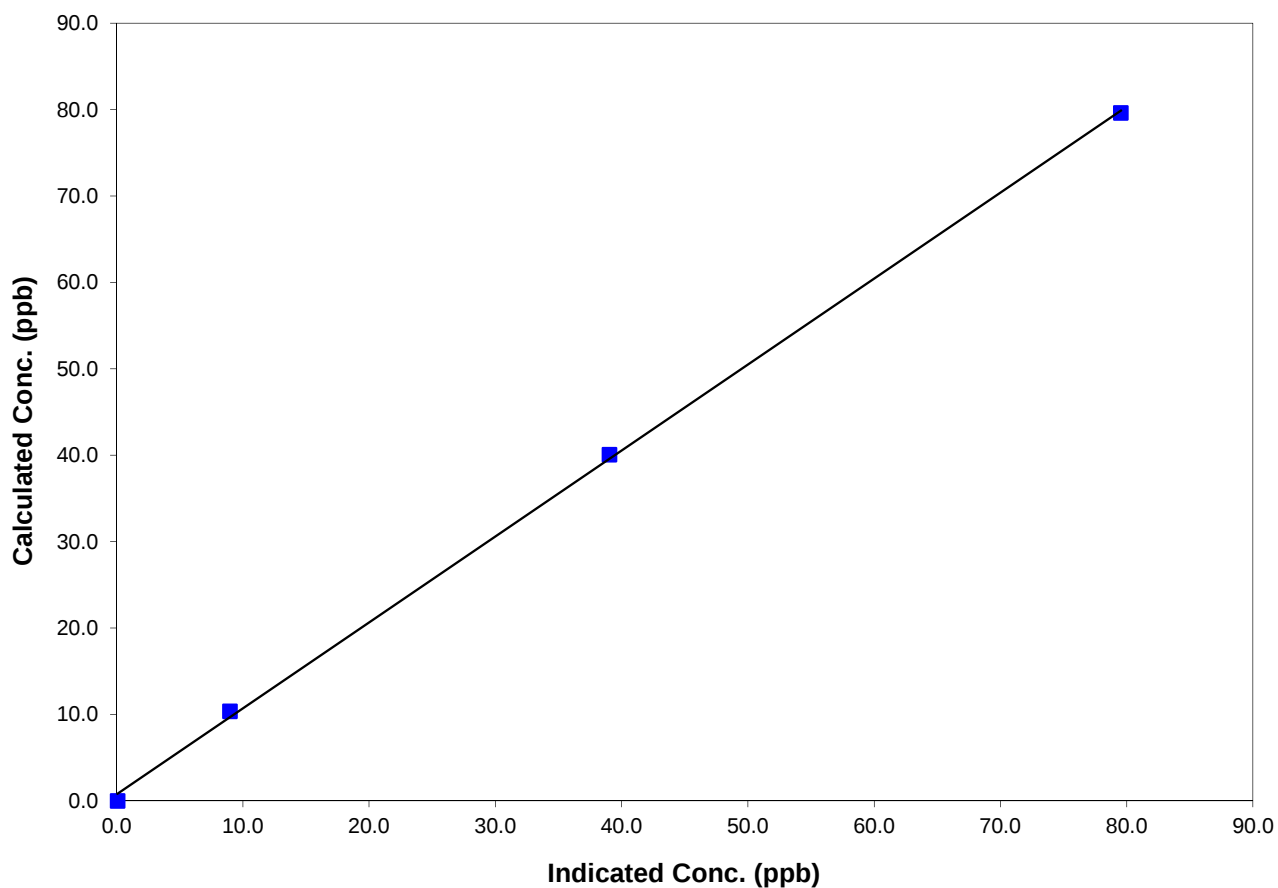
Station Information

Calibration Date	July 27, 2011	Previous Calibration	June 21, 2011
Station Number	3	Station Location	Smoky Heights
Start Time (MST)	10:20	End Time (MST)	14:50
Analyzer make/model	TEI Model 43C	Analyzer serial #	0436610005

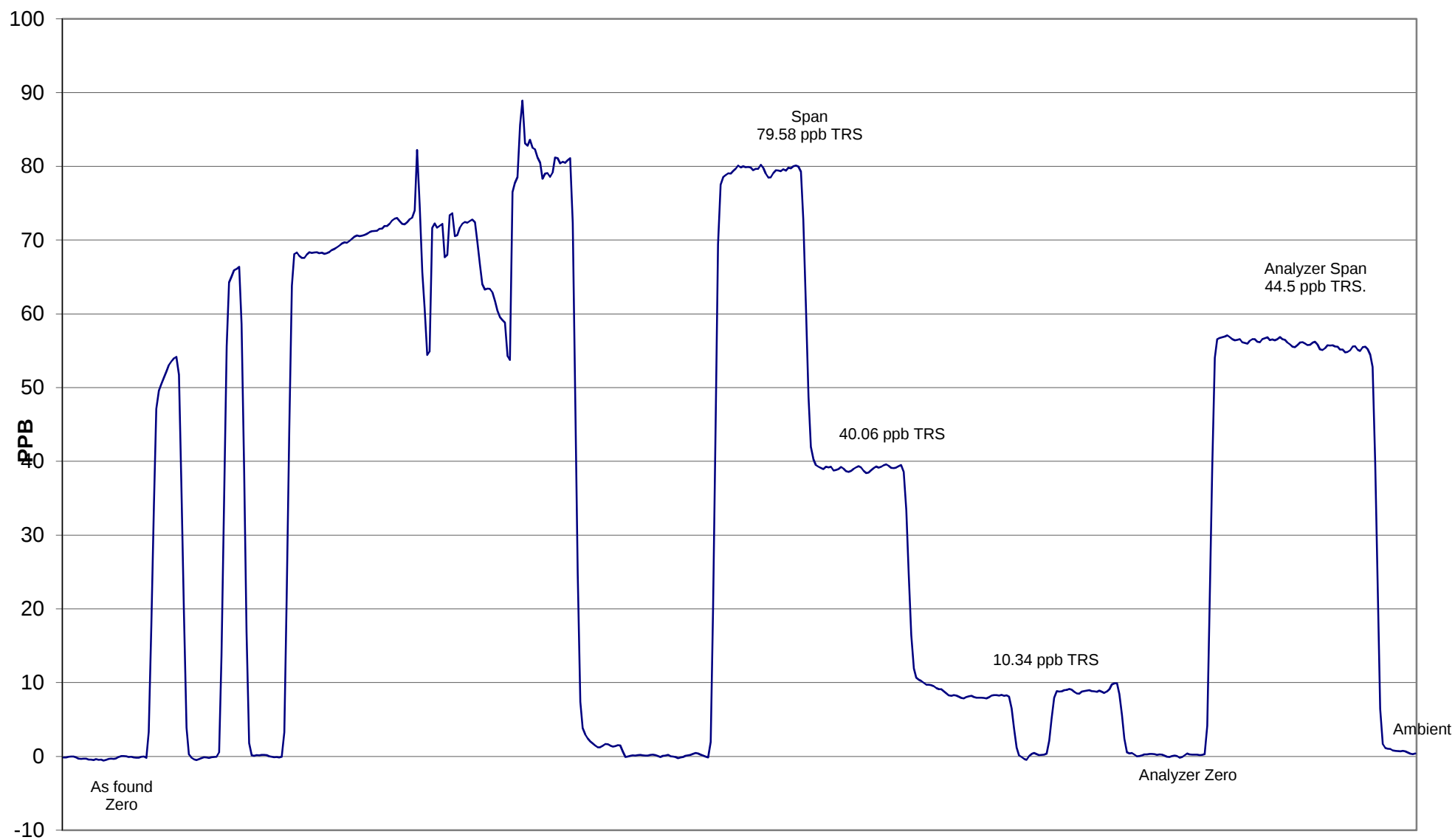
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.1	N/A	Correlation Coefficient	0.999629
79.6	79.5	1.0008		
40.1	39.0	1.0261		
10.3	9.0	1.1510	Slope	0.995254
			Intercept	0.740477

TRS Calibration Curve



Smoky Heights TRS Calibration



July 27, 2011

AB TEOM PM2.5 Calibration



STATION: Smoky Heights
 LOCATION: PAZA - Grande Prairie

OPERATOR: Grover Christansen
 DATE: 27-Jul-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	9-May-11
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	0.010	0.120
PUMP OFF	-0.020	0.080
NET	0.030	0.040
LIMITS	<0.15	<0.60

	Ambient Temp. (^o C)	Ambient Pres. (atm)	Ko *	Bypass flow (lpm)	Sample flow (lpm)
SET POINT (S)	na	na	12122	13.67	3.000
INDICATED (I)	19.6	0.922	12122	13.68	3.000
MEASURED (AF)	18.6	0.923	12122	13.60	3.040
MEASURED (M)	18.6	0.923	12211	13.60	3.040
DIFFERENCE (M-I)	-1.0	0.001	0.7%	-0.51	0.04
LIMITS	± 2 ^o C	± 0.005 atm	± 2.5 %	± 1.0 L/min	± 0.2 L/min

As Found Data
 Adjusted Data

Ko Audit Filter data Weight: 0.11251 Serial #: CVK 3316

COMMENTS: PASS

Heads cleaned.

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

Calibration Report

Parameter SO2
Air Monitoring Network PAZA



Station Information

Calibration Date	July 4, 2011	Previous Calibration	June 27, 2011
Station Number	4	Station Location	Beaverlodge
Reason:	☒ Routine	☐ Install	☐ Removal
		☐ Other:	
Start Time (MST)	15:37	End Time (MST)	19:43
Barometric Pressure	0.910 atm	Station Temperature	23.0 Deg C
Calibrator	EnviroNics 6100	Serial Number	3474
Cal Gas Concentration	10.1 ppm	Cal Gas Expiry Date	1/25/2010
Gas Cert Reference	SAGL 671		
DACS make	CR3000	DACS serial No.	5237
DACS voltage range	0 - 5 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	1.008248	Calculated slope	0.945289
Calculated intercept	-0.336944	Calculated intercept	0.446800
Analyzer make	TEI Model 43i-TLE	Analyzer serial #	713021137

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Background	2.44		2.94	
Coefficient	0.902		1.094	
PMT	-788.5	V	-790.7	V
UV Lamp Voltage	1047	V	1047	V
Chamber Temp	45.2	Deg C	44.8	Deg C
Pressure	661.9	mm Hg	663.1	mm Hg
Sample Flow	0.506	LPM	0.506	LPM
Lamp Intesity	98%	%	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	0.2	N/A
4989	39.85	80.0	84.4	0.9486
4989	19.90	40.1	42.0	0.9544
4989	9.93	20.1	19.8	1.0118
4989	0.00	0.0	-0.4	As found zero
4989	39.83	80.0	72.1	As found span
Average Correction Factor				0.9716

Calculated value of As Found Response: 72.805 ppm Percent Change of As Found: 9.0%

	before calibration		after calibration	
Auto zero	-0.3	ppb	0.7	ppb
Auto span	53.8	ppb	68.3	ppb

Notes: in valid calibration, will have to be redone. Wrong cal line was used.

Adjustment was made to span only

Calibration Performed By: Virginia McKergow

Calibration Summary

Parameter SO2

Air Monitoring Network PAZA



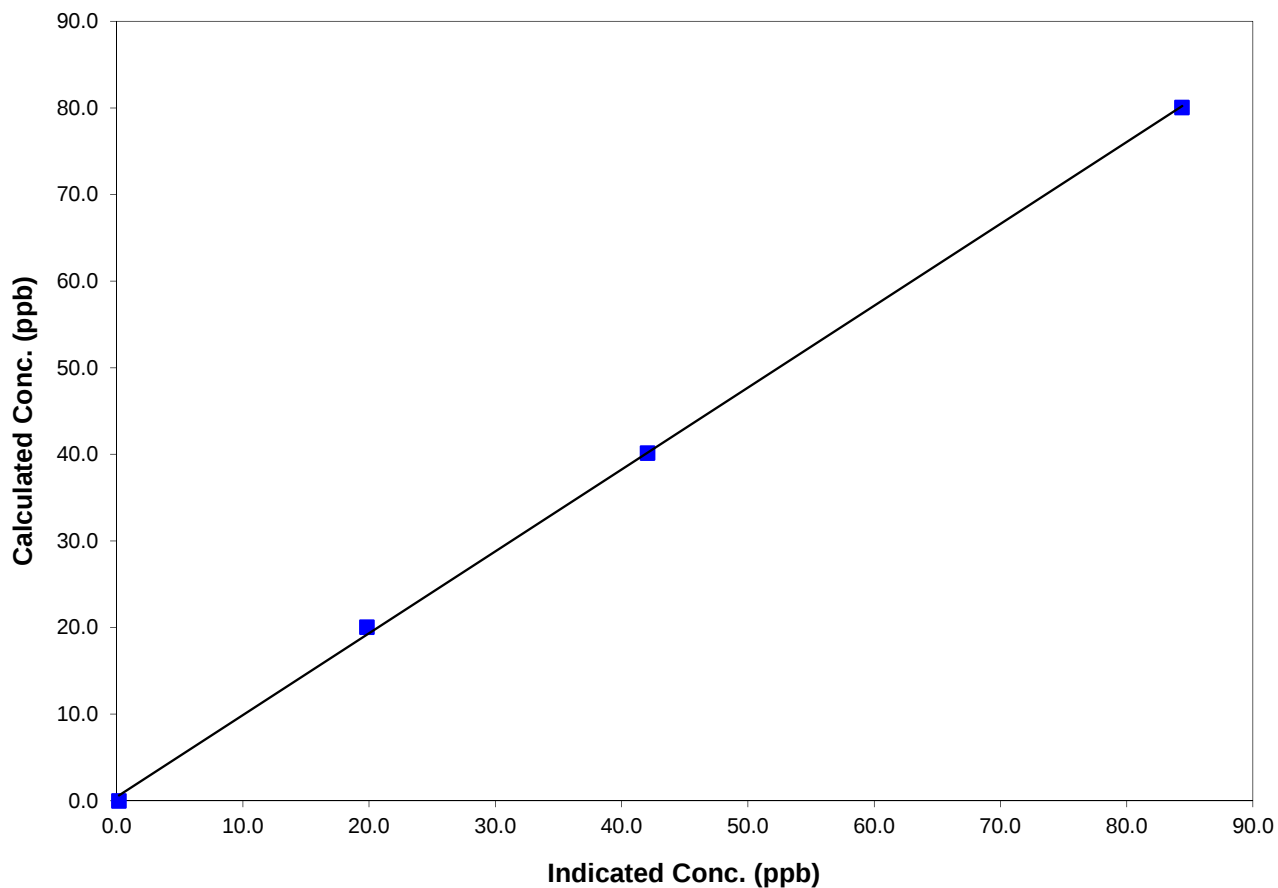
Station Information

Calibration Date	July 4, 2011	Previous Calibration	June 27, 2011
Station Number	4	Station Location	Beaverlodge
Start Time (MST)	15:37	End Time (MST)	19:43
Analyzer make/model	TEI Model 43i-TLE	Analyzer serial #	713021137

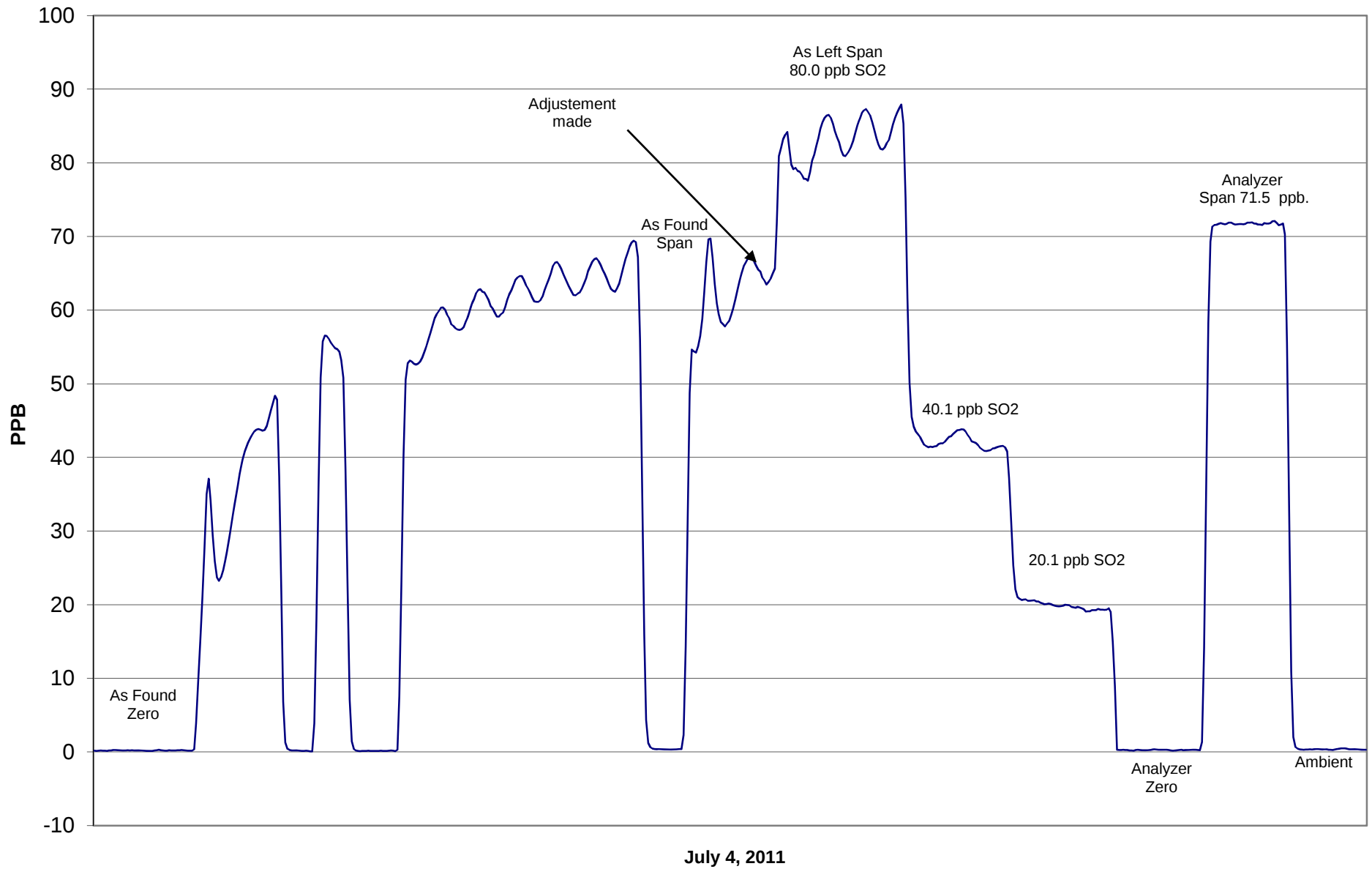
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.2	N/A	Correlation Coefficient	0.999658
80.0	84.4	0.9486		
40.1	42.0	0.9544		
20.1	19.8	1.0118	Slope	0.945289
			Intercept	0.446800

SO2 Calibration Curve



Beaverlodge - SO₂ Calibration



Calibration Report

Parameter SO2

Air Monitoring Network PAZA



Station Information

Calibration Date	July 11, 2011	Previous Calibration	June 27, 2011
Station Number	4	Station Location	Beaverlodge
Reason:	☒ Routine	☐ Install	☐ Removal
		☐ Other:	
Start Time (MST)	11:40	End Time (MST)	14:42
Barometric Pressure	0.915 atm	Station Temperature	23.0 Deg C
Calibrator	EnviroNics 6100	Serial Number	3474
Cal Gas Concentration	10.1 ppm	Cal Gas Expiry Date	1/25/2010
Gas Cert Reference	SAGL 671		
DACS make	CR3000	DACS serial No.	5237
DACS voltage range	0 - 5 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	1.008248	Calculated slope	1.000592
Calculated intercept	-0.336944	Calculated intercept	-0.198331
Analyzer make	TEI Model 43i-TLE	Analyzer serial #	713021137

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Background	2.95		2.44	
Coefficient	1.090		1.082	
PMT	-791.1	V	-768.1	V
UV Lamp Voltage	1045	V	1041	V
Chamber Temp	45.2	Deg C	45.2	Deg C
Pressure	660.7	mm Hg	666.4	mm Hg
Sample Flow	0.505	LPM	0.507	LPM
Lamp Intesity	98%	%	98%	%

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	39.85	80.0	80.0	1.0008
4989	19.90	40.1	40.6	0.9886
4989	9.93	20.1	20.5	0.9775
4989	0.00	0.0	0.2	As found zero
4989	39.83	80.0	98.4	As found span
Average Correction Factor				0.9890

Calculated value of As Found Response: 98.701 ppm Percent Change of As Found: -23.4%

	before calibration		after calibration	
Auto zero	-0.3	ppb	-0.1	ppb
Auto span	72.9	ppb	57.9	ppb

Notes: Virginia's cal was ignored. Before info used my cal on June 27th.

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter SO2

Air Monitoring Network PAZA



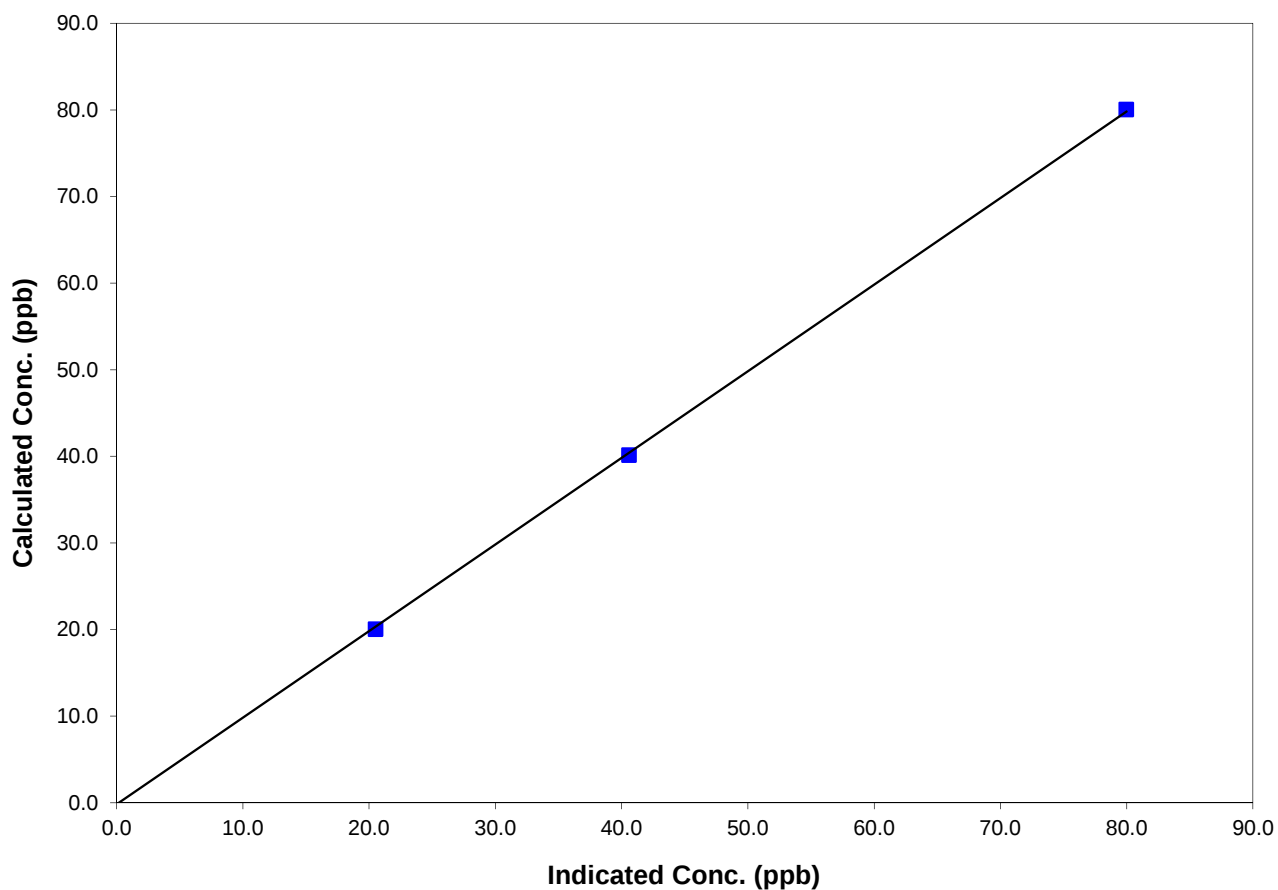
Station Information

Calibration Date	July 11, 2011	Previous Calibration	June 27, 2011
Station Number	4	Station Location	Beaverlodge
Start Time (MST)	11:40	End Time (MST)	14:42
Analyzer make/model	TEI Model 43i-TLE	Analyzer serial #	713021137

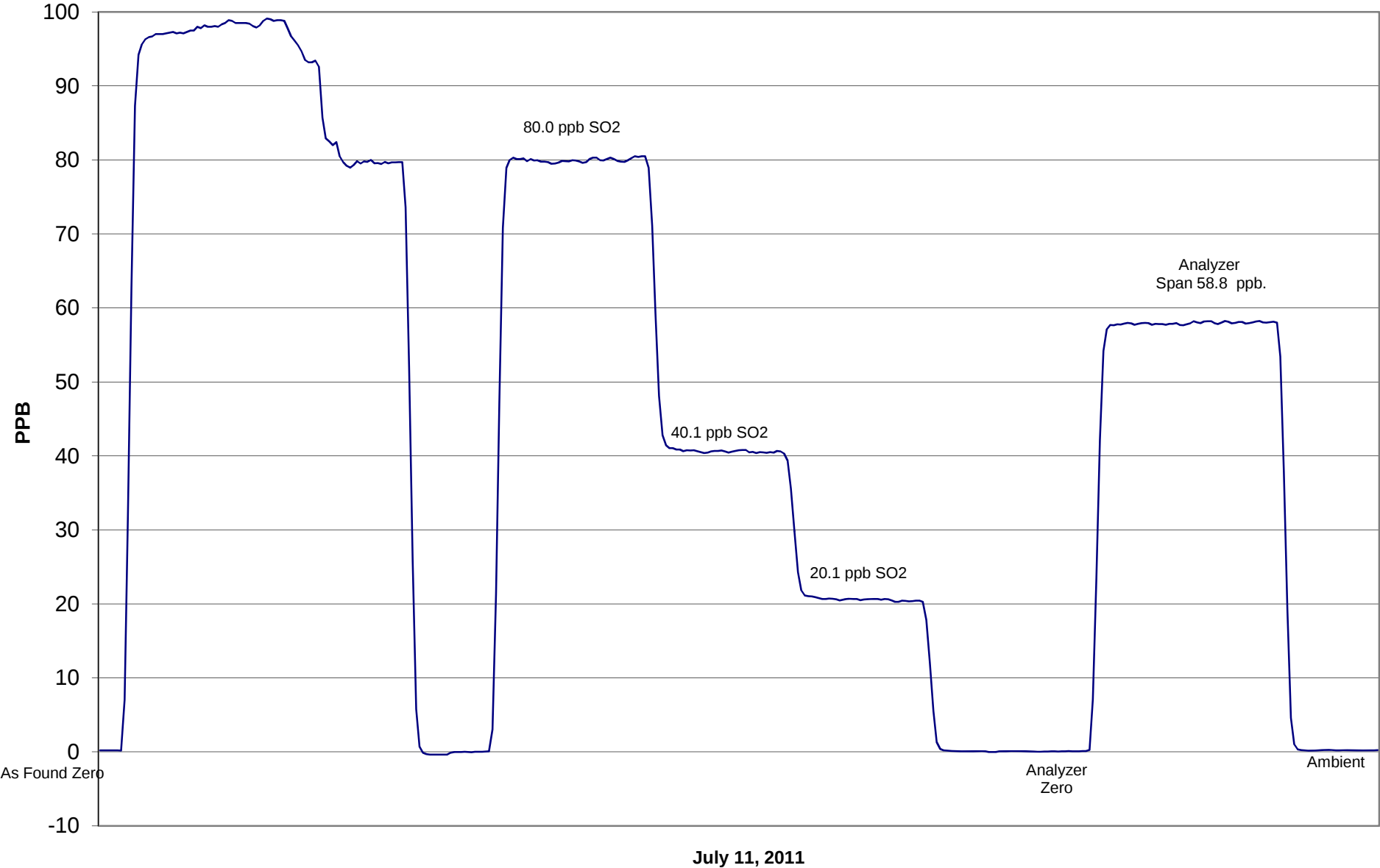
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.1	N/A	Correlation Coefficient	0.999906
80.0	80.0	1.0008		
40.1	40.6	0.9886		
20.1	20.5	0.9775	Slope	1.000592
			Intercept	-0.198331

SO2 Calibration Curve



Beaverlodge - SO₂ Calibration



Calibration Report

Parameter SO2

Air Monitoring Network PAZA



Station Information

Calibration Date	July 11, 2011	Previous Calibration	June 27, 2011
Station Number	4	Station Location	Beaverlodge
Reason:	☒ Routine	☐ Install	☐ Removal
		☐ Other:	
Start Time (MST)	11:40	End Time (MST)	14:42
Barometric Pressure	0.915 atm	Station Temperature	23.0 Deg C
Calibrator	EnviroNics 6100	Serial Number	3474
Cal Gas Concentration	10.1 ppm	Cal Gas Expiry Date	1/25/2010
Gas Cert Reference	SAGL 671		
DACS make	CR3000	DACS serial No.	5237
DACS voltage range	0 - 5 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	1.008248	Calculated slope	1.000592
Calculated intercept	-0.336944	Calculated intercept	-0.198331
Analyzer make	TEI Model 43i-TLE	Analyzer serial #	713021137

	<u>before</u>		<u>after</u>	
Concentration range	0 - 100	ppb	0 - 100	ppb
Background	2.95		2.44	
Coefficient	1.090		1.082	
PMT	-791.1	V	-768.1	V
UV Lamp Voltage	1045	V	1041	V
Chamber Temp	45.2	Deg C	45.2	Deg C
Pressure	660.7	mm Hg	666.4	mm Hg
Sample Flow	0.505	LPM	0.507	LPM
Lamp Intesity	98%	%	98%	%

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	39.85	80.0	80.0	1.0008
4989	19.90	40.1	40.6	0.9886
4989	9.93	20.1	20.5	0.9775
4989	0.00	0.0	0.2	As found zero
4989	39.83	80.0	98.4	As found span
Average Correction Factor				0.9890

Calculated value of As Found Response: 98.701 ppm Percent Change of As Found: -23.4%

	<u>before calibration</u>		<u>after calibration</u>	
Auto zero	-0.3	ppb	-0.1	ppb
Auto span	72.9	ppb	57.9	ppb

Notes: Virginia's cal was ignored. Before info used my cal on June 27th.

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter SO2

Air Monitoring Network PAZA



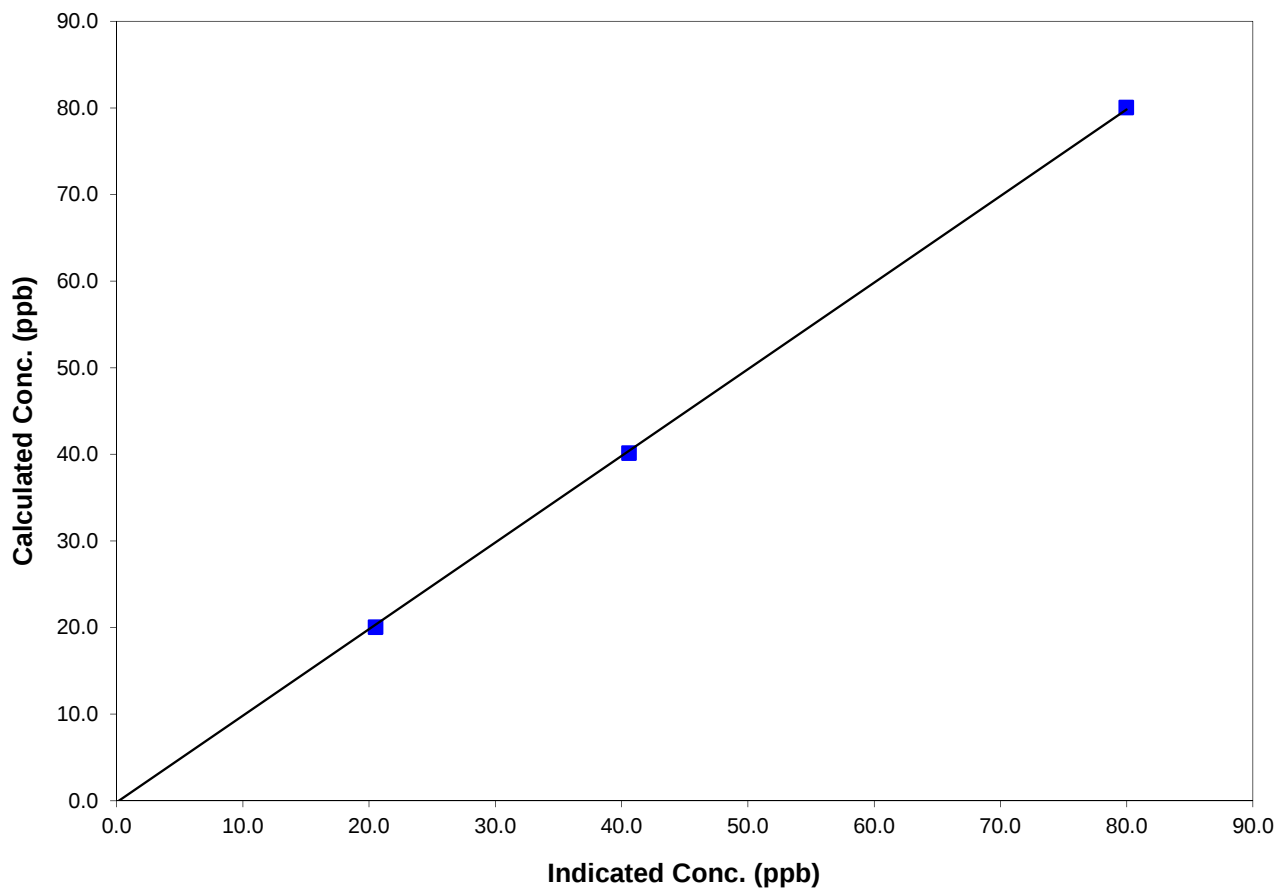
Station Information

Calibration Date	July 11, 2011	Previous Calibration	June 27, 2011
Station Number	4	Station Location	Beaverlodge
Start Time (MST)	11:40	End Time (MST)	14:42
Analyzer make/model	TEI Model 43i-TLE	Analyzer serial #	713021137

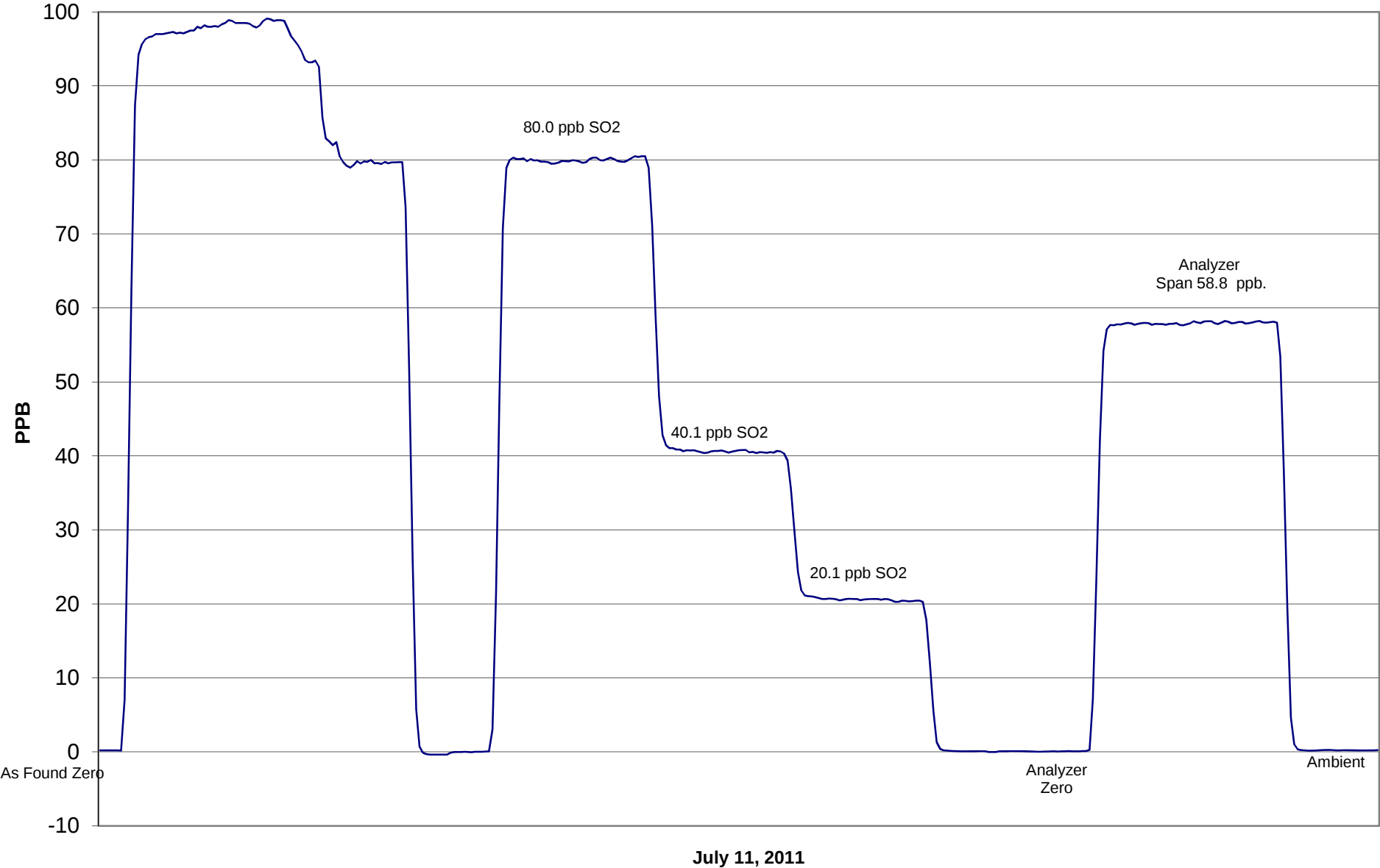
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.1	N/A	Correlation Coefficient	0.999906
80.0	80.0	1.0008		
40.1	40.6	0.9886		
20.1	20.5	0.9775	Slope	1.000592
			Intercept	-0.198331

SO2 Calibration Curve



Beaverlodge - SO₂ Calibration



Calibration Report

Parameter

NO_x-NO-NO₂

Air Monitoring Network

PAZA



Station Information

Calibration Date	July 5, 2011	Previous Calibration	June 22, 2011
Station Number	4	Station Location	BeaverLodge
Reason:	☒ Routine ☐ Installation ☐ Removal ☐ Other:		
Start Time (MST)	7:47	End Time (MST)	12:12
Barometric Pressure	0.909	Station Temperature	23.0
Calibrator	EnviroNics	Serial Number	2844
NO Cal Gas Conc	51.4	Cal Gas Expiry Date	
NOx Cal Gas Conc	51.4	Cal Gas Serial #	CC-114395

DACS Information

DACS make AP1000 DACS serial No.

Parameter	NO2	NOx	NO
Before			
Data Slope	0.999449	1.004135	1.005126
Data Offset	0.011104	-2.519029	-2.397382
After			
Data Slope	0.988406	1.001201	1.004006
Data Offset	-0.771913	-2.495263	-2.446451
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	2.2	mV	2.2	mV
NOx bkgnd	2.5	mV	2.4	mV
NO coefficient	1.499		1.499	
NOx coefficient	1.002		0.997	
NO2 conv temp	326.2	Deg C	324.5	Deg C
PMT Temp	-3.0	Deg C	-2.9	Deg C
PMT Volt	-663.4	mV	-664.2	mV
R Cell Press	157.9	in Hg	163.6	in Hg
Sample Flow	0.690	ccm	0.721	ccm

Calibration Report

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



Station Information

Calibration Date: July 5, 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	0.0	-0.2	-0.1	N/A	N/A
1	4989	39.83	407.1	407.1	0.0	407.6	406.5	1.0	0.9988	1.0016
2	4989	19.90	204.2	204.2	0.0	208.2	207.4	0.3	0.9807	0.9848
3	4989	9.93	102.1	102.1	0.0	106.7	106.7	0.0	0.9569	0.9570
AFZ	4989	0.00	0.0	0.0	0.0	0.0	-0.2	-0.1	0.0000	0.0000
AFS	4989	39.83	407.1	407.1	0.8	407.6	406.5	1.0	0.9988	1.0016
Average Correction Factor									0.9788	0.9811

As Found Concentrations: NO_x= 405.1 NO= 404.3 As Found Percent Change NO_x= -0.5% 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	-0.2	-0.2	0.0	0.0	-0.2	-0.1	N/A	N/A	N/A	N/A
NO point	406.9	406.9	0.0	407.7	406.9	0.7	0.9981	1.0000	N/A	N/A
300	406.9	188.4	218.5	409.0	188.4	221.0	0.9951	1.0000	0.9884	101.2%
200	406.9	261.6	145.4	409.3	261.6	148.5	0.9941	1.0000	0.9788	102.2%
100	406.9	332.0	75.0	408.8	332.0	77.6	0.9954	1.0000	0.9660	103.5%
Average Correction Factor							0.9949	1.0000	0.9777	102.3%

AIC Data

	Previous calibration				Current calibration			
Parameter	NOx	NO2	NO		NOx	NO2	NO	
Auto zero	-0.2	-0.3	-0.2	ppb	0.1	0.0	-0.2	ppb
Auto span	238.0	235.5	1.6	ppb	207.3	205.0	1.4	ppb

Calibration Performed By: Virginia McKergow

Calibration Summary

Parameter NO₂

Air Monitoring Network PAZA



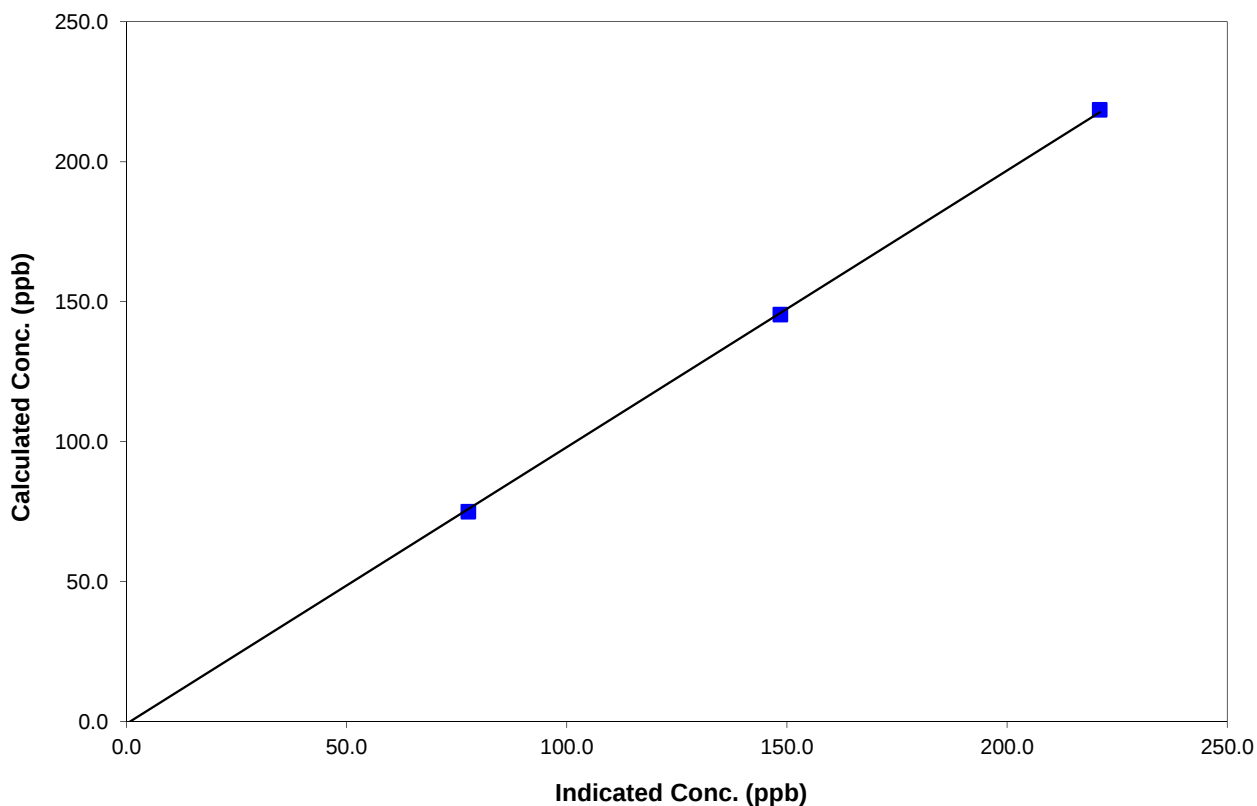
Station Information

Calibration Date	July 5, 2011	Previous Calibration	June 22, 2011
Station Number	4	Station Location	BeaverLodge
Start Time (MST)	7:47	End Time (MST)	12:12
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	0.999898
218.5	221.0	0.9884		
145.4	148.5	0.9788		
75.0	77.6	0.9660	Slope	0.988406
			Intercept	-0.771913

NO₂ Calibration Curve



Calibration Summary

Parameter NO_x

Air Monitoring Network PAZA



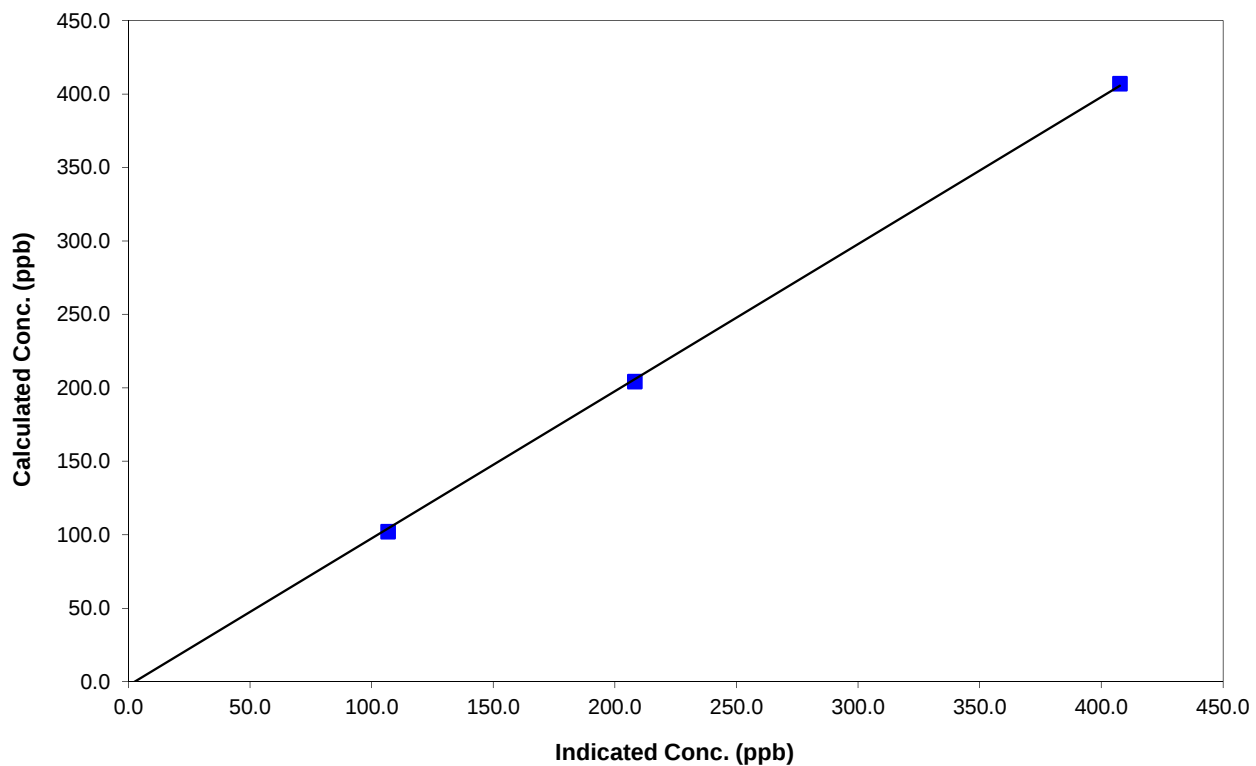
Station Information

Calibration Date	July 5, 2011	Previous Calibration	June 22, 2011
Station Number	4	Station Location	BeaverLodge
Start Time (MST)	7:47	End Time (MST)	12:12
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	0.0	N/A	Correlation Coefficient	0.999815
407.1	407.6	0.9988		
204.2	208.2	0.9807		
102.1	106.7	0.9569	Slope	1.001201
			Intercept	-2.495263

NO_x Calibration Curve



Calibration Summary

Parameter NO

Air Monitoring Network PAZA



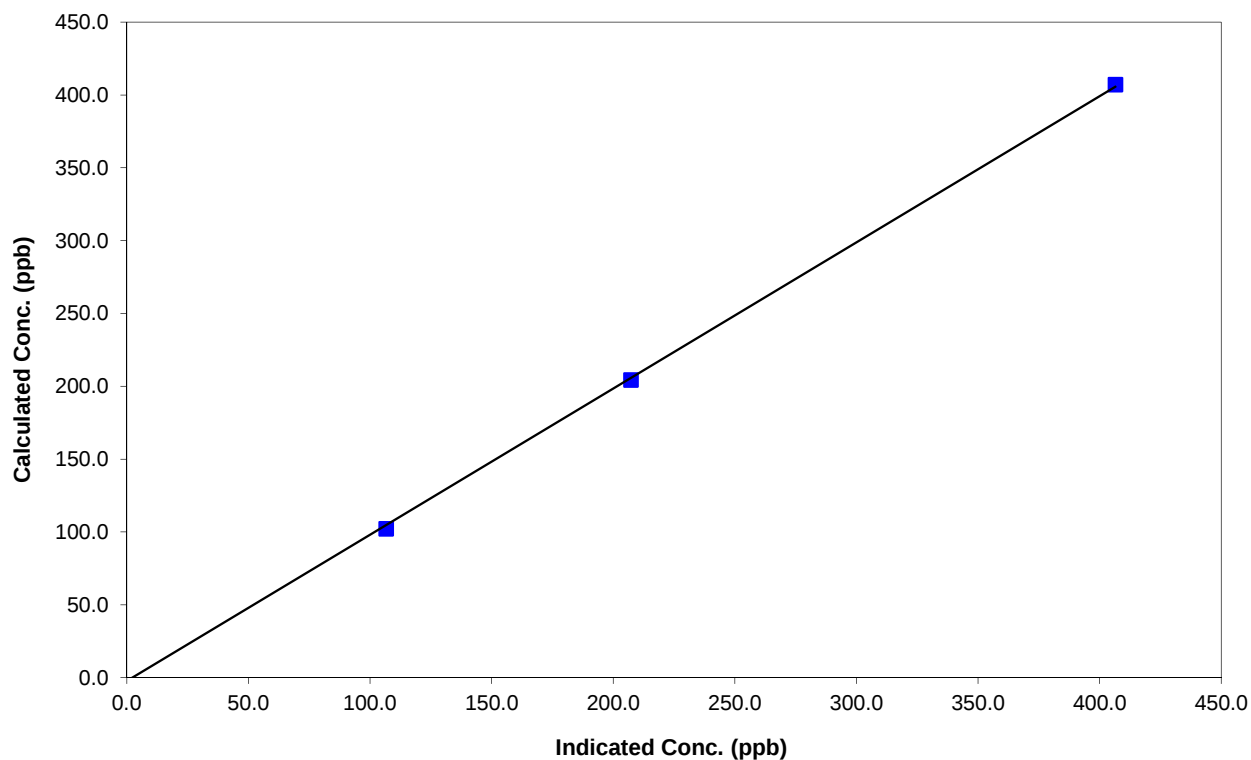
Station Information

Calibration Date	July 5, 2011	Previous Calibration	June 22, 2011
Station Number	4	Station Location	BeaverLodge
Start Time (MST)	7:47	End Time (MST)	12:12
Analyzer make	TEI 42i	Analyzer serial #	906535068

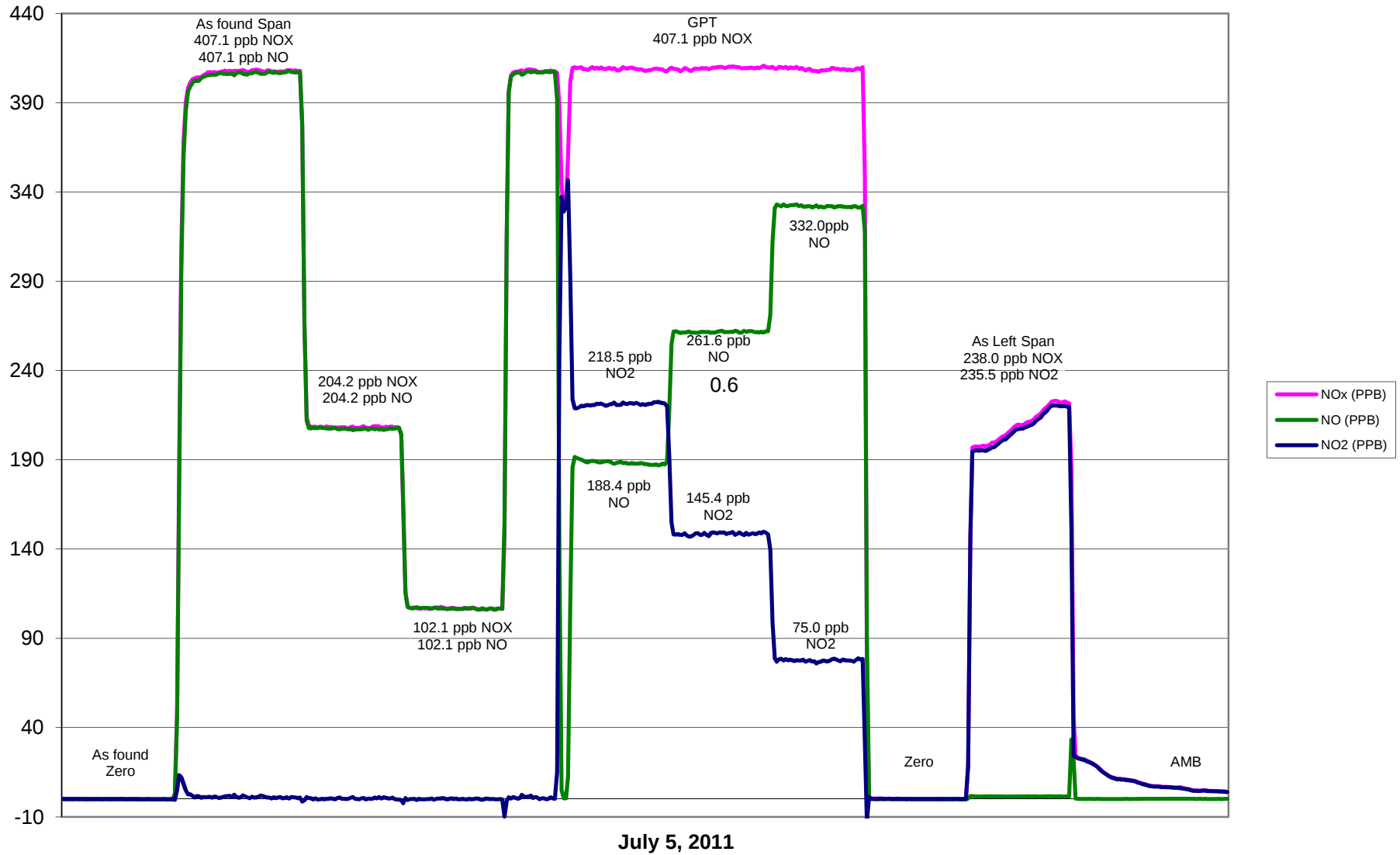
Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.2	N/A	Correlation Coefficient	0.999800
407.1	406.5	1.0016		
204.2	207.4	0.9848		
102.1	106.7	0.9570	Slope	1.004006
			Intercept	-2.446451

NO Calibration Curve



Beaverlodge - NO_x Calibration



Calibration Report

Parameter 03

Air Monitoring Network PAZA



Station Information

Calibration Date	July 7, 2011	Previous Calibration	June 22, 2011
Station Number	4	Station Location	Beaverlodge
Reason:	☒ Routine	☐ Install	☐ Removal
		☐ Other:	

Start Time (MST)	7:00	End Time (MST)	10:09
Barometric Pressure	0.909 atm	Station Temperature	23.0 Deg C
Calibrator	EnviroNics 6100	Serial Number	3474
Cal Gas Concentration	NA	Cal Gas Expiry Date	NA

DACS make	CR3000	DACS serial No.	5237
DACS voltage range	0 - 5 volt	DACS channel #	9
	Before		After
Calculated slope	1.002513	Calculated slope	0.994929
Calculated intercept	0.701442	Calculated intercept	0.113831

Analyzer make	Teco 49C	Analyzer serial #	49C-76443-383
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	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
offset	-2.70	ppb	-1.60	ppb
slope	1.019		1.019	
Lamp temp	56.5	mV	56.3	mV
Lamp Intensity A/B	61657/64437	mV	58758/60388	mV
Pressure	688.2	mm Hg	686	mm Hg
Flow A	0.765	ccm	0.764	ccm
Flow B	0.714	ccm	0.712	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	0.9	N/A
4989	250.00	218.5	221.0	0.9888
4989	150.00	145.4	144.0	1.0096
4989	85.00	75.0	74.8	1.0032
4989	0.00	0.0	0.9	As found zero
4989	250.00	218.5	221.0	As found span
Average Correction Factor				1.0005

Calculated value of As Found Response: 221.3 ppm Percent Change of As Found: 1.3%

	before calibration		after calibration	
Auto zero	0.1	ppb	0.3	ppb
Auto span	114.3	ppb	108.9	ppb

Notes: Cal went well, no adjustments required

Calibration Performed By: Virginia McKergow

Calibration Summary

Parameter 03

Air Monitoring Network PAZA



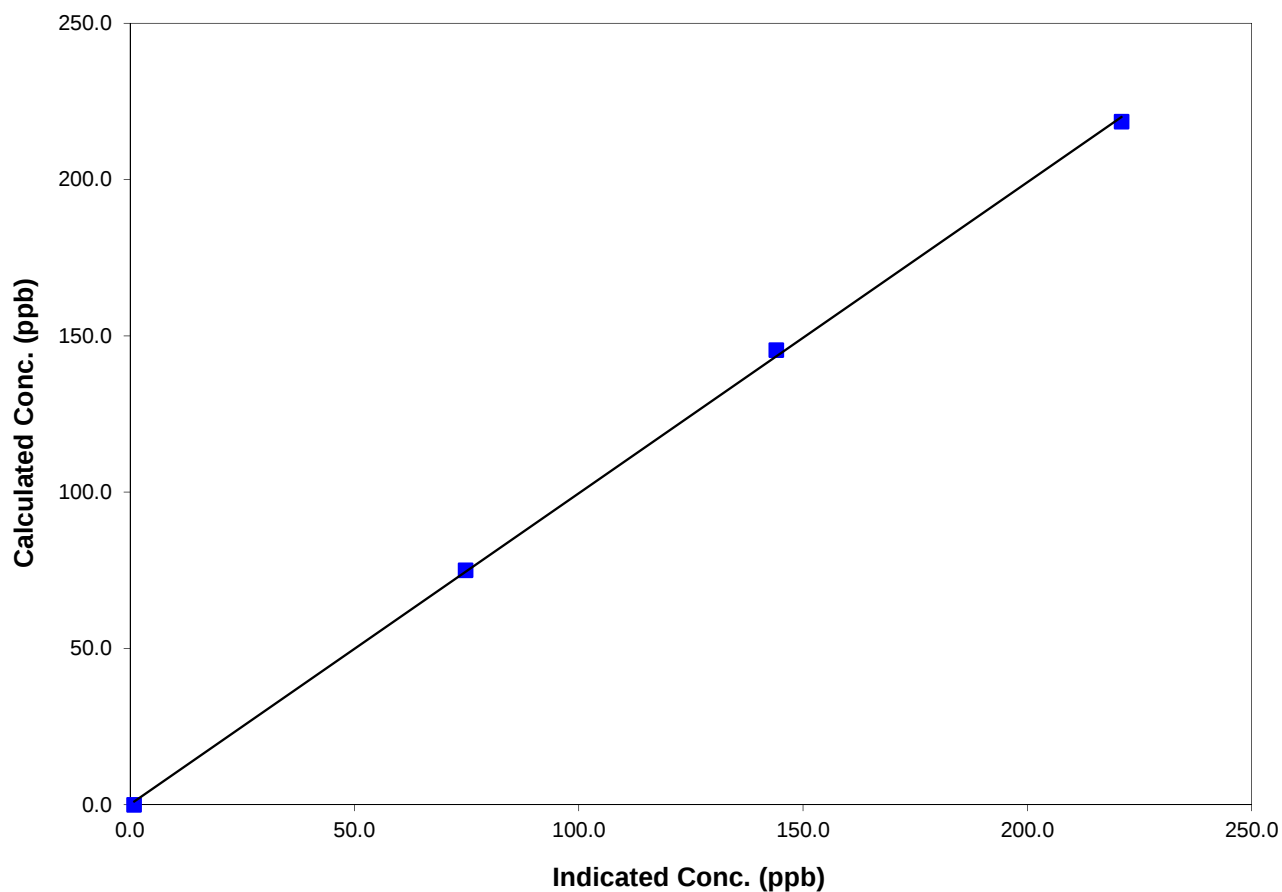
Station Information

Calibration Date	July 7, 2011	Previous Calibration	June 22, 2011
Station Number	4	Station Location	Beaverlodge
Start Time (MST)	7:00	End Time (MST)	10:09
Analyzer make/model	Teco 49C	Analyzer serial #	49C-76443-383

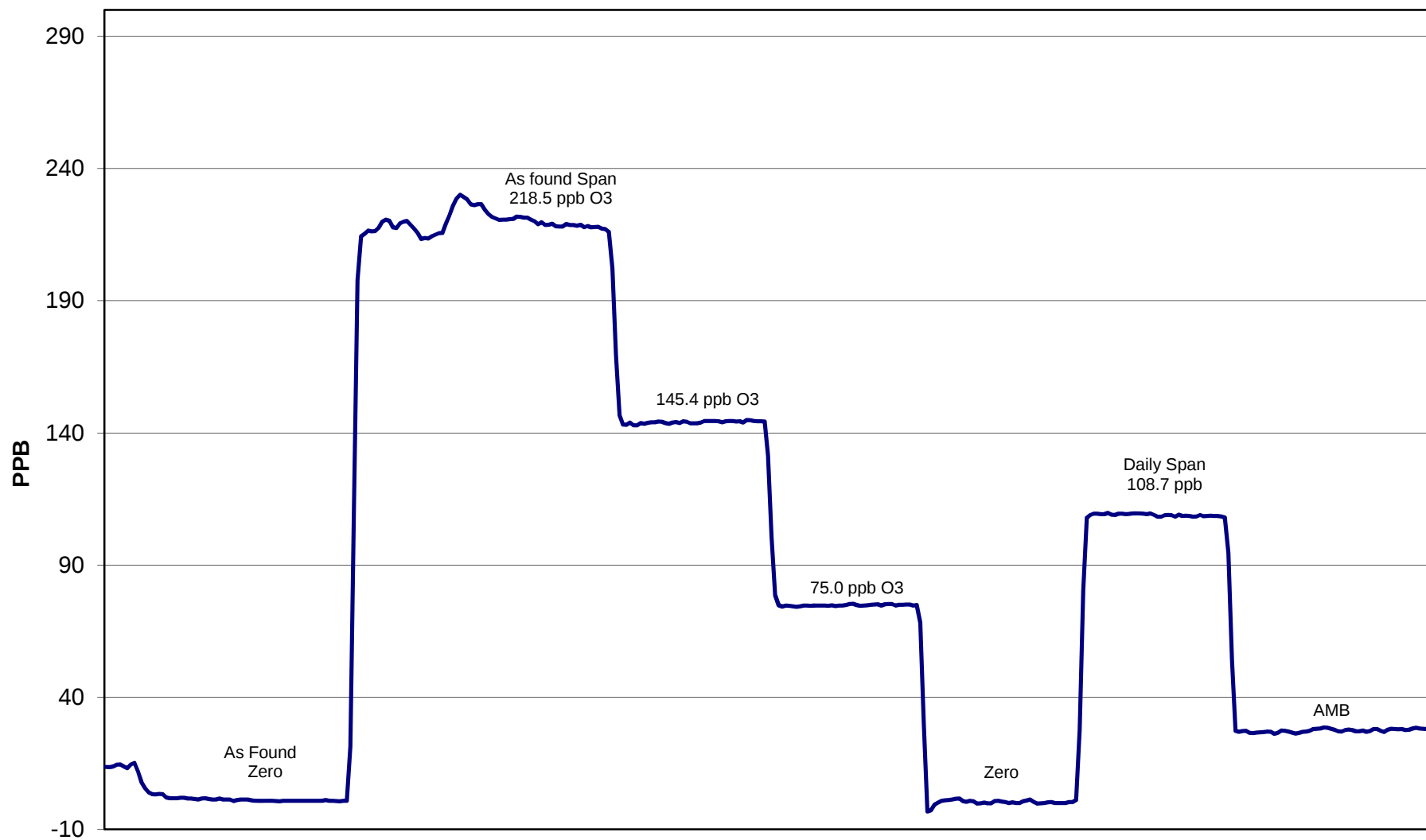
Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.9	NA	Correlation Coefficient	0.999715
218.5	221.0	0.9888		
145.4	144.0	1.0096		
75.0	74.8	1.0032	Slope	0.994929
			Intercept	0.113831

O3 Calibration Curve



Beaverlodge - O₃ Calibration



July 7, 2011

FDMS TEOM PM2.5 AUDIT



STATION: **BeaverLodge**
 LOCATION: **PAZA - Grande Prairie**

OPERATOR: **Brad Moyles**
 DATE: **14-Jul-11**

MONITOR INFO / PARAMETER VALUES:

Make/Model	TEOM AB
Configuration	PM2.5
Serial Number	AMU1649
Site Number	4
Inlet Type	PM 10 / SCC
FAdj. Main Setting	1.000
FAdj. Aux. Setting	1.000
T-Case Indicated / Set Point	30/30
T-Air Indicated / Set Point	30/30
T-Cap Indicated / Set Point	30/30
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	1-Mar-11
Previous Calibration	

PUMP CAPACITY CHECK *	PASS
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* 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	-0.040	-0.590
PUMP OFF	0.000	0.000
NET	-0.040	-0.590
LIMITS	<0.15	<0.60

	Ambient Temp. (^o C)	Ambient Pres. (atm)	Ko *	Bypass flow (lpm)	Sample flow (lpm)
SET POINT (S)	na	na	14287	13.67	3.000
INDICATED (I)	15.9	0.909		13.67	3.000
MEASURED (AF)	15.4	0.914		16.41	3.060
MEASURED (M)	15.4	0.914	14179	16.56	3.050
DIFFERENCE (M-I)	-0.5	0.005	-0.8%	21.14	1.67
LIMITS	± 2^o C	± 0.005 atm	± 2.5 %	± 1.0 L/min	± 0.2 L/min

As Found Data
 Adjusted Data

Ko Audit Filter data Weight: **0.11477** Serial #: **CVK 3532**

COMMENTS: **PASS**

Sample Head was cleaned.

8500FDMS. Both Reference and Base valve position were leak checked. There was a leak found in the Base position. Checked and tight and leak checked for Base position passed. Refer to service report.

PASS

Sample Head Inspection Or Cleaning: **TEOM / FDMS IN LINE FILTER INSPECTION OR REPLACEMENT**

Calibration Report

Parameter SO2
Air Monitoring Network PAZA



Station Information

Calibration Date	July 30, 2011	Previous Calibration	June 14, 2011
Station Number	6	Station Location	Valleyview
Reason:	☒ Routine	☐ Install	☐ Removal
		☐ Other:	
Start Time (MST)	10:54	End Time (MST)	13:35
Barometric Pressure	702.00 mm	Station Temperature	14.7 Deg C
Calibrator	EnviroNics 6100	Serial Number	3474
Cal Gas Concentration	49.8 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
	Before		After
DACS Scale High	500	DACS slope	500
DACS Scale Low	0	DACS intercept	0
Calculated slope	0.981748	Calculated slope	0.996192
Calculated intercept	0.020885	Calculated intercept	-0.552912
Analyzer make	TEI 45C	Analyzer serial #	45C-57531-313

	before		after	
Concentration range	0 - 1000	ppb	0 - 1000	ppb
Background	28		28.1	
Coefficient	0.865		0.865	
UV Lamp Voltage	948	LPM	946	LPM
Chamber Temp	44.4	V	44.5	V
Perm Gas Temp	35.1	C	35.1	C
Pressure	613.3	in Hg	607.7	in Hg
Sample Flow	0.571	LPM	0.562	LPM
Lamp Intensity	48450	Hz	48452	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	394.5	396.1	0.9961
4989	19.89	197.8	199.9	0.9894
4989	9.94	99.0	100.4	0.9863
4989	0.00	0.0	-0.2	As found zero
4989	39.84	394.5	396.1	As found span
Average Correction Factor				0.9906

Calculated value of As Found Response: 389.039 ppm Percent Change of As Found: 1.4%

	before calibration		after calibration	
Auto zero	0.0	ppm	0.0	ppm
Auto span	155.5	ppm	153.1	ppm

Notes: _____

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter SO2

Air Monitoring Network PAZA



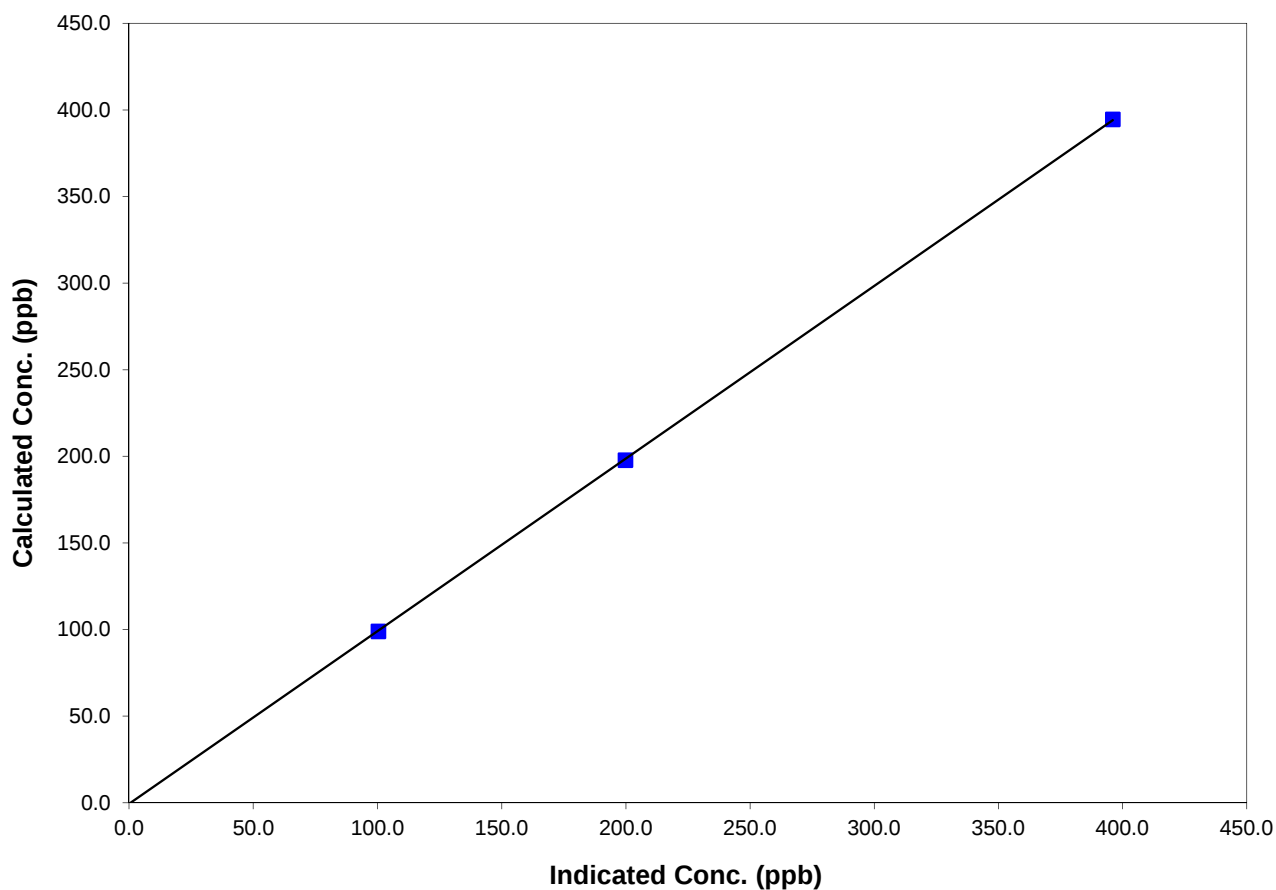
Station Information

Calibration Date	July 30, 2011	Previous Calibration	June 14, 2011
Station Number	6	Station Location	Valleyview
Start Time (MST)	10:54	End Time (MST)	14:42
Analyzer make/model	TEI 45C	Analyzer serial #	45C-57531-313

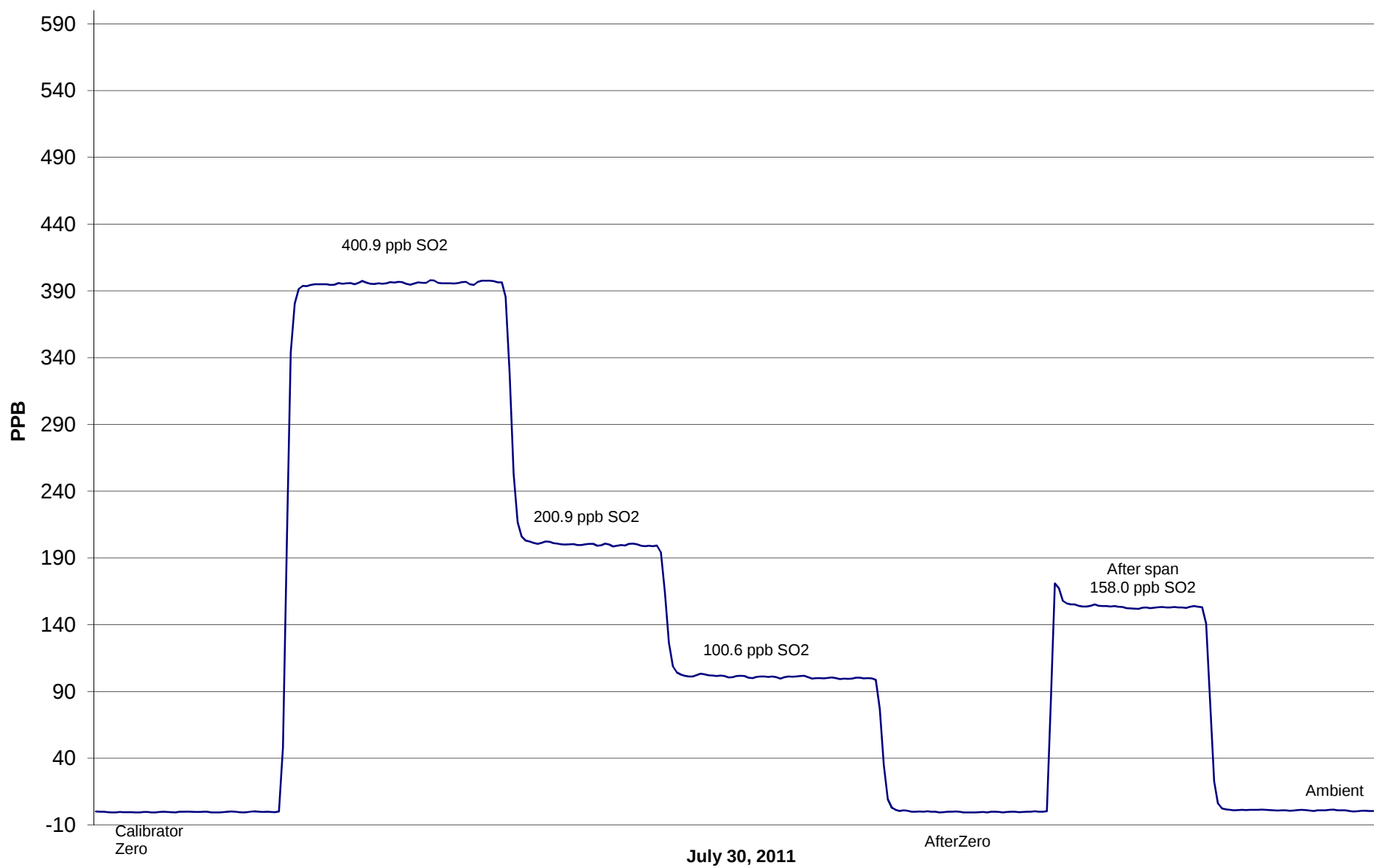
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.2	N/A	Correlation Coefficient	0.999981
394.5	396.1	0.9961		
197.8	199.9	0.9894		
99.0	100.4	0.9863	Slope	0.996192
			Intercept	-0.552912

SO2 Calibration Curve



Valleyview - SO₂ Calibration



Calibration Report

Parameter H2S

Air Monitoring Network PAZA



Station Information

Calibration Date	July 30, 2011	Previous Calibration	June 14, 2011
Station Number	5	Station Location	Valleyview
Reason:	☒ Routine	☐ Install	☐ Removal
		☐ Other:	
Start Time (MST)	8:56	End Time (MST)	12:09
Barometric Pressure	702.00 mm	Station Temperature	21.0 Deg C
Calibrator	EnviroNics 6100	Serial Number	3474
Cal Gas Concentration	5.77 ppm	Cal Gas Expiry Date	9/3/2012
Gas Cert Reference	BLM001434		
DACS make	CR3000	DACS serial No.	5409
DACS voltage range	0 - 5 volt	DACS channel #	9
	<u>Before</u>		<u>After</u>
DACS Scale High	100	DACS slope	100
DACS Scale Low	0	DACS intercept	0
Calculated slope	0.982862	Calculated slope	0.995665
Calculated intercept	0.636755	Calculated intercept	0.828453
Analyzer make	TEI Model 43i - APSCB	Analyzer serial #	701120010

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Back Ground	7.1	ppb	7.4	ppb
Coefficient	1.390		1.460	
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	630.40	mm Hg
Sample Flow	.426	ccm	.429	ccm
Lamp Intensity	91.0	%	91.0	%

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)
4989	0.00	0.0	0.0	N/A
4989	69.79	79.6	79.4	1.0024
4989	34.83	40.0	38.9	1.0286
4989	8.91	10.3	8.8	1.1624
4989	0.00	0.0	0.0	As found zero
4989	69.79	79.6	74.6	As found span
Average Correction Factor				1.0645

Calculated value of As Found Response: 73.99 ppm Percent Change of As Found: 7.1%

	before calibration		after calibration	
Auto zero	0.0	ppm	0.9	ppm
Auto span	70.6	ppm	78.3	ppm

Notes:

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter H2S

Air Monitoring Network PAZA



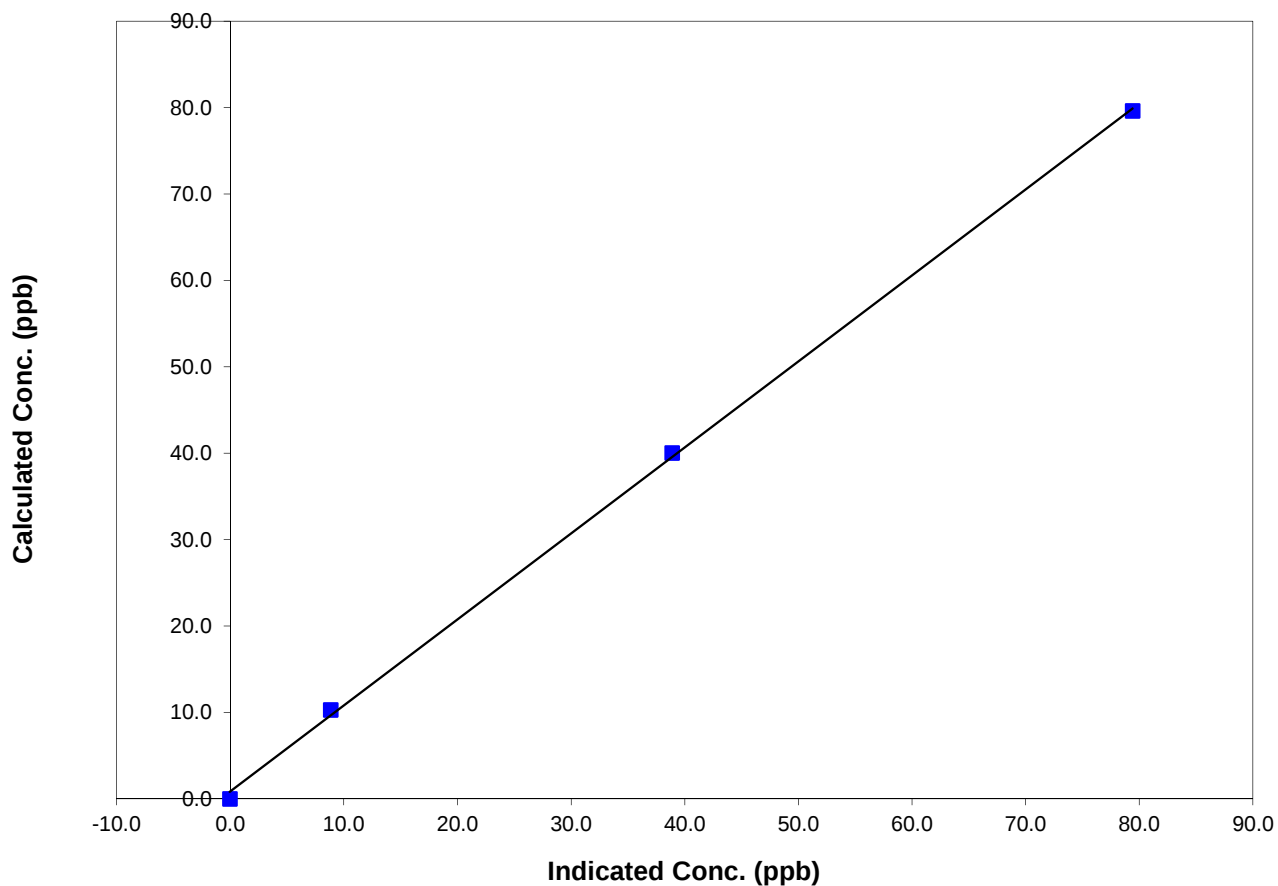
Station Information

Calibration Date	July 30, 2011	Previous Calibration	June 14, 2011
Station Number	5	Station Location	Valleyview
Start Time (MST)	8:56	End Time (MST)	12:09
Analyzer make/model	TEI Model 43i - APSCB	Analyzer serial #	701120010

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.0	N/A		
79.6	79.4	1.0024	Correlation Coefficient	0.999645
40.0	38.9	1.0286		
10.3	8.8	1.1624	Slope	0.995665
			Intercept	0.828453

H2S Calibration Curve



Valleyview - H₂S Calibration

