



Peace Airshed Zone Association

Ambient Air Monitoring Network Summary

**Continuous Ambient Air Quality Monitoring Program
Monthly Report
November 2013**

Operations and Reporting



December 31st, 2013

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

RE: Peace Airshed Zone Association (PAZA) – November 2013 Ambient Air Report

Enclosed is the PAZA Ambient Monitoring Network Report for the month of **November 2013**.

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	EPEA Approval Number
Advantage Oil & Gas Ltd.	Glacier	05-02-076-13-W6	262479-00-00
Alberta Power (2000) Ltd. (an ATCO company)	Sturgeon	SW-06-069-21-W5	10283-02-02
ATCO Power Canada	Poplar Hill	11-19-073-08-W6	67774-01-01
ATCO Power Canada	Valleyview	SW-06-069-21-W5	147709-01-01
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
Apache Canada Ltd.	House Mountain	01-08-070-10-W5	10137-02-02
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
Canadian Natural Resources Limited	Bonanza	11-25-081-11-W6	00000029-01-00
	Progress/Gordondale	01-01-077-10-W6	00010036-02-00

Company	Facility	LSD	EPEA Approval Number
Canfor Forest Products	Gold Creek	13-26-067-05-W6	00010446-02-00
	Teepee Creek	SE-2-074-04-W6	00001635-02-00
	Grande Prairie	SW-23-071-06-W6	152645-01-00
Conocophillips Canada Energy Partnership	Wembley	06-19-073-08-W6	00000212-01-00
Devon Canada	NW Belloy (Dunvegan)	16-36-079-03-W6	00009810-02-00
	Eaglesham (South)	02-14-077-25-W5	00047669-01-00
	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	Sexsmith	04-08-075-07-W6	00010002-01-00
Enerplus Resources	Pouce Coupe	SW-06-069-21-W5	1464-02-03
Grande Prairie Generation Inc.	Northern Prairie Power Project	04-19-073-08-W6	00238762-00-00
Long Run Exploration	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
	Puskwaskau	03-26-074-01-W6	00017524-01-00
	Sunset House	06-22-070-20-W5	138884-01-00
Penn West Petroleum Ltd.	Tangent	13-29-080-23-W5	00001746-02-00
	Pouce Coupe	16-07-078-11-W6	00000614-01-00

Company	Facility	LSD	EPEA Approval Number
Petrus Resources	Rycroft	08-25-077-06-W6	11351-02-00
	Spirit River	08-34-077-06-W6	11096-02-00
Spectra Energy Midstream Corporation	Fourth Creek	16-11-082-09-W6	00000263-01-00
	Gordondale	11-26-079-09-W6	00011495-01-01
	Pouce Coupe/Bonanza	3-23-080-13-W6	00070203-01-01
Suncor Energy Inc.	Progress	07-22-078-09-W6	00011428-02-00
TAQA North Ltd.	Valhalla	13-21-076-09-W6	00017620-01-00
Veresen Energy	Hythe Brainard	11-18-074-12-W6	00010910-02-00
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: Seven (7) Stations including Henry Pirker (Grande Prairie), Evergreen Park, Smoky Heights, Beaverlodge, Valleyview, Falher and Portable-Reno.

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

Henry Pirker Station:

- ◆ The measured ambient air quality was within the 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 November.
- ◆ The station was audited on November 9th.

Evergreen Park Station:

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

Smoky Heights Station:

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

Beaverlodge Station:

- ◆ The measured ambient air quality was within the AAAQO for the Beaverlodge station except for PM_{2.5}, which had two (2) 1-hour exceedences and one (1) 24-hour exceedence of the AAAQO guideline:
 - o Nov 7 05:00 94.0 µg/m³ Alberta Environment Reference # 277334
 - o Nov 7 06:00 107.8 µg/m³ Alberta Environment Reference # 277334
 - o Nov 7 24h 36.3 µg/m³ Alberta Environment Reference # 277334
- ◆ All analyzers and sensors at the Beaverlodge station had an operational uptime greater than 90% for the month of November.

Valleyview Station:

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

Reno Station:

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

Falher Station:

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

Passive Monitoring - 46 Stations throughout the PAZA zone:

There were five duplicate sites sampled in the month of November: Silver Valley, Poplar, Saddle Hills, Kinuso, and Girouxville 3. 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 0.4 ppb, with a mean of 0.2 ppb.
- Monthly average concentrations for NO₂ passives ranged from 0.6 ppb to 10.3 ppb, with a mean of 2.1 ppb.
- Monthly average concentrations for O₃ passives ranged from 19.2 ppb to 35.0 ppb, with a mean of 26.0 ppb.
- Monthly average concentrations for H₂S were between 0.2 And 0.3 pbb, with a mean of 0.2 ppb.

If you have any questions or concerns, please contact Patrick Andersen at 403.505.1041 or the PAZA office at 780.833.4343.

On Behalf of the
Peace Airshed Zone Association

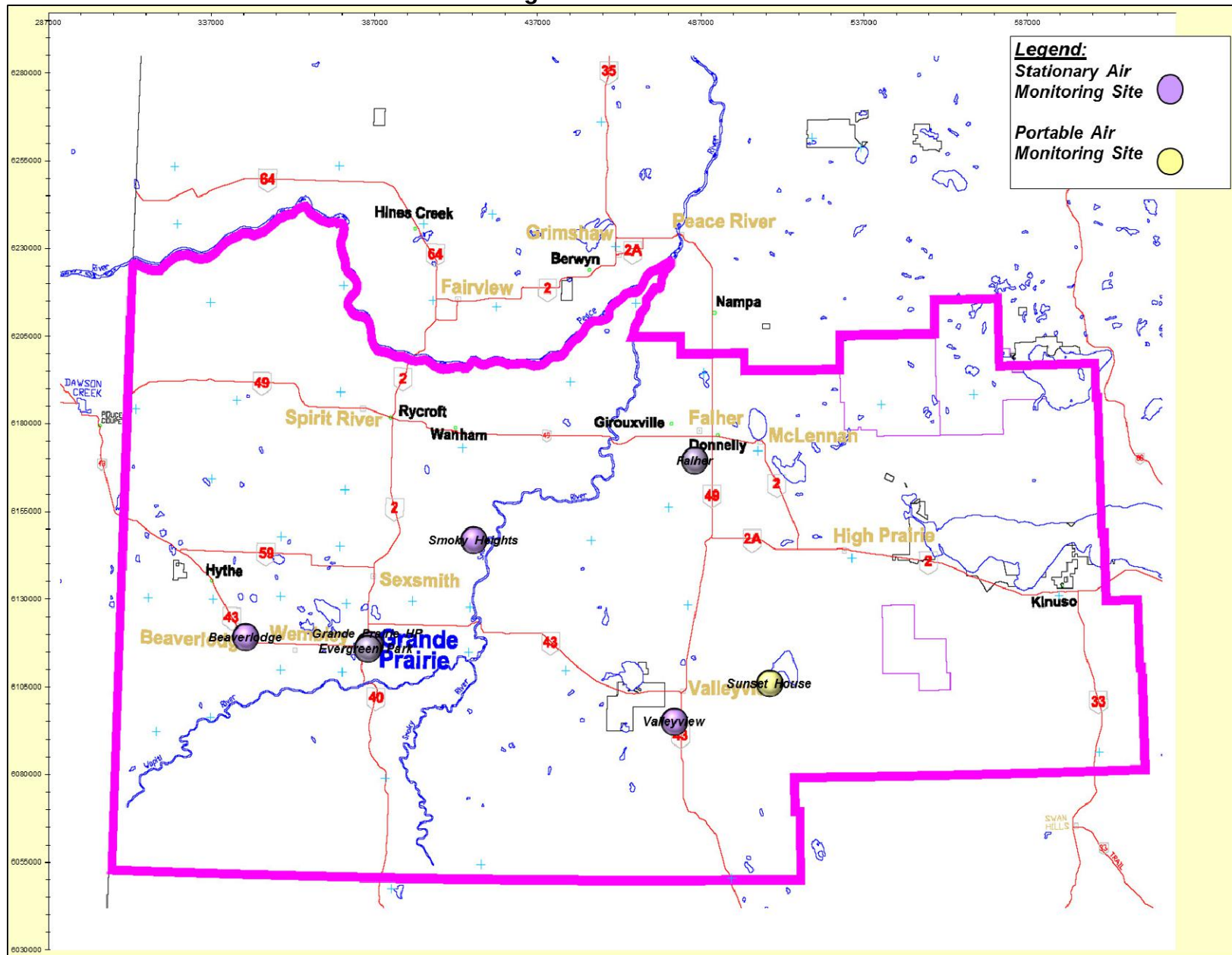


Patrick Andersen, B.Sc.
Program Manager



Jeff Cooper, C.Tech.
AQM Operations Manager

Location of PAZA Continuous Monitoring Stations



PAZA Monthly Continuous Data Summary

Nov-2013 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	5.0	Nov-19 16:00	1.2	Nov-19	100%
SO ₂ (ppb)	172	48	Evergreen Park	0.2	0	0	3.6	Nov-19 17:00	1.0	Nov-19	100%
SO ₂ (ppb)	172	48	Smoky Heights	0.5	0	0	3.7	Nov-05 21:00	1.4	Nov-16	100%
SO ₂ (ppb)	172	48	Beaverlodge	0.3	0	0	4.2	Nov-21 22:00	1.4	Nov-22	100%
SO ₂ (ppb)	172	48	Valleyview	0.4	0	0	11.1	Nov-14 09:00	3.6	Nov-14	100%
SO ₂ (ppb)	172	48	Reno	0.3	0	0	3.4	Nov-01 05:00	1.6	Nov-01	99%
SO ₂ (ppb)	172	48	Falher	0.1	0	0	1.8	Nov-04 17:00	0.3	Nov-23	99%
NO (ppb)			Henry Pirker	12.1	0	0	135.0	Nov-11 10:00	52.9	Nov-26	100%
NO ₂ (ppb)	159	106	Henry Pirker	16.2	0	0	55.0	Nov-29 10:00	31.5	Nov-26	100%
NO _x (ppb)			Henry Pirker	28.4	0	0	166.8	Nov-11 10:00	84.6	Nov-26	100%
NO (ppb)			Beaverlodge	1.2	0	0	32.6	Nov-20 14:00	8.7	Nov-20	100%
NO ₂ (ppb)	159	106	Beaverlodge	5.6	0	0	26.2	Nov-20 18:00	14.8	Nov-25	100%
NO _x (ppb)			Beaverlodge	6.7	0	0	49.3	Nov-20 14:00	22.4	Nov-20	100%
NO (ppb)			Reno	0.4	0	0	9.5	Nov-21 04:00	1.4	Nov-21	99%
NO ₂ (ppb)	159	106	Reno	3.4	0	0	18.0	Nov-21 05:00	7.3	Nov-21	99%
NO _x (ppb)			Reno	3.8	0	0	27.4	Nov-21 04:00	8.7	Nov-21	99%
O ₃ (ppb)	82		Henry Pirker	14.9	0	-	40.1	Nov-24 05:00	27.1	Nov-01	100%
O ₃ (ppb) - 8-hr			Henry Pirker		0				39.5	Nov-24	
O ₃ (ppb)	82		Beaverlodge	25.9	0	-	45.3	Nov-23 14:00	40.0	Nov-29	100%
O ₃ (ppb) - 8-hr			Beaverlodge		0				44.2	Nov-23	
O ₃ (ppb)	82		Reno	24.9	0	-	43.6	Nov-23 18:00	38.5	Nov-24	99%
O ₃ (ppb) - 8-hr			Reno		0				42.0	Nov-23	
CO (ppm)	13		Henry Pirker	0.24	0	-	1.1	Nov-29 10:00	0.5	Nov-26	100%
CO (ppm) - 8-hr	5		Henry Pirker		0				0.7	Nov-27	

PAZA Monthly Continuous Data Summary – continued

Nov-2013Peace Airshed Zone Association							Maximum Recorded Values				
							1-hr		24-hr / 8-hr		
THC (ppm)			Henry Pirker	2.1	-	-	3.2	Nov-27 02:00	2.5	Nov-11	100%
CH ₄ (ppm)			Henry Pirker	2.1	-	-	3.2	Nov-27 02:00	2.5	Nov-11	100%
NMHC (ppm)			Henry Pirker	0.0	-	-	0.6	Nov-25 11:00	0.0	Nov-25	100%
THC (ppm)			Reno	-	-	-	-	-	-	-	-
TRS (ppb)			Henry Pirker	0.6	-	-	7.9	Nov-16 15:00	0.9	Nov-30	100%
TRS (ppb)			Evergreen Park	0.4	-	-	1.7	Nov-30 20:00	0.8	Nov-30	100%
TRS (ppb)			Smoky Heights	0.1	-	-	0.7	Nov-22 19:00	0.4	Nov-26	100%
TRS (ppb)			Reno	0.2	-	-	0.8	Nov-27 06:00	0.4	Nov-27	99%
H ₂ S (ppb)	10	3	Valleyview	0.2	0	0	4.2	Nov-14 14:00	0.5	Nov-14	100%
H ₂ S (ppb)	10	3	Falher	0.1	0	0	0.8	Nov-04 02:00	0.3	Nov-04	99%
PM _{2.5} (µg/m3)	80	30	Henry Pirker	10.2	0	0	38.5	Nov-26 20:00	231.0	Nov-20	100%
PM _{2.5} (µg/m3)	80	30	Evergreen Park	5.6	0	0	33.7	Nov-01 16:00	14.3	Nov-03	100%
PM _{2.5} (µg/m3)	80	30	Smoky Heights	6.4	0	0	47.8	Nov-21 19:00	16.0	Nov-21	100%
PM _{2.5} (µg/m3)	80	30	Beaverlodge	18.4	2	1	107.8	Nov-07 06:00	36.3	Nov-07	99%
PM _{2.5} (µg/m3)	80	30	Reno	5.9	0	0	65.0	Nov-21 08:00	15.6	Nov-21	99%
RH (%)			Henry Pirker	71.3	-	-	87.6	Nov-15 10:00	82.3	Nov-13	100%
RH (%)			Evergreen Park	77.2	-	-	95.7	Nov-15 15:00	91.4	Nov-13	100%
RH (%)			Beaverlodge	83.0	-	-	100.0	Nov-07 16:00	98.4	Nov-08	100%
RH (%)			Valleyview	80.3	-	-	98.1	Nov-30 23:00	93.7	Nov-13	100%
SR (W/m ²)			Henry Pirker	28.7	-	-	296.5	Nov-11 14:00	62.9	Nov-04	100%
Temp (°C)			Henry Pirker	-6.7	-	-	8.4	Nov-01 14:00	3.9	Nov-01	100%
Temp (°C)			Evergreen Park	-6.3	-	-	8.1	Nov-01 15:00	5.1	Nov-01	100%
Temp (°C)			Smoky Heights	-7.8	-	-	8.4	Nov-01 15:00	2.9	Nov-01	100%
Temp (°C)			Beaverlodge	-5.4	-	-	7.6	Nov-01 14:00	3.1	Nov-01	100%
Temp (°C)			Valleyview	-5.7	-	-	8.9	Nov-01 14:00	5.0	Nov-01	100%
Temp (°C)			Reno	-7.7	-	-	7.3	Nov-01 15:00	21.0	Nov-01	99%
Temp (°C)			Falher	-8.4	-	-	9.0	Nov-01 15:00	2.4	Nov-01	100%

PAZA Monthly Continuous Data Summary – continued

Nov-2013Peace Airshed Zone Association							Maximum Recorded Values				
							1-hr		24-hr / 8-hr		
WSPD s (km/hr)			Henry Pirker	7.9	-	-	40.0	Nov-14 21:00	20.6	Nov-14	100%
WSPD s (km/hr)			Evergreen Park	8.7	-	-	52.0	Nov-14 23:00	30.0	Nov-14	100%
WSPD s (km/hr)			Smoky Heights	12.3	-	-	47.0	Nov-01 14:00	34.9	Nov-01	96%
WSPD s (km/hr)			Beaverlodge	9.4	-	-	40.0	Nov-28 17:00	26.5	Nov-14	100%
WSPD s (km/hr)			Valleyview	4.1	-	-	20.0	Nov-14 23:00	10.1	Nov-15	100%
WSPD s (km/hr)			Reno	13.6	-	-	38.0	Nov-14 23:00	26.1	Nov-23	99%
WSPD s (km/hr)			Falher	12.4	-	-	31.0	Nov-15 20:00	21.3	Nov-28	100%
WSPD v (km/hr)			Henry Pirker	2.8	-	-	39.0	Nov-14 21:00	18.9	Nov-14	100%
WSPD v (km/hr)			Evergreen Park	3.3	-	-	52.0	Nov-14 23:00	29.1	Nov-14	100%
WSPD v (km/hr)			Smoky Heights	6.7	-	-	46.0	Nov-01 14:00	34.4	Nov-01	96%
WSPD v (km/hr)			Beaverlodge	3.3	-	-	40.0	Nov-28 17:00	26.1	Nov-14	100%
WSPD v (km/hr)			Valleyview	0.9	-	-	20.0	Nov-14 23:00	8.5	Nov-15	100%
WSPD v (km/hr)			Reno	4.3	-	-	38.0	Nov-14 23:00	20.4	Nov-23	99%
WSPD v (km/hr)			Falher	0.5	-	-	31.0	Nov-15 20:00	15.2	Nov-28	100%
WDIR			Henry Pirker	WNW	-	-	-	-	-	-	100%
WDIR			Evergreen Park	WNW	-	-	-	-	-	-	100%
WDIR			Smoky Heights	W	-	-	-	-	-	-	96%
WDIR			Beaverlodge	WNW	-	-	-	-	-	-	100%
WDIR			Valleyview	NW	-	-	-	-	-	-	100%
WDIR			Reno	SSE	-	-	-	-	-	-	99%
WDIR			Falher	WSW	-	-	-	-	-	-	99%

Continuous Network Equipment Summary

PAZA – Henry Pirker Station

General Station Issues

Routine monthly calibrations were performed on November 6th (CO, TRS, THC) and 7th (SO₂, NO_x, O₃).

Parameter	Make	Model	Notes
SO ₂	TEI	43C	No operational issues observed.
NOx/NO/NO ₂	TEI	42C	No operational issues observed..
O ₃	TEI	49C	No operational issues observed.
CO	TEI	48C	No operational issues observed.
THC/CH ₄ /NMHC	TEI	55I	No operational issues observed.
TRS	TEI	45C/43C	No operational issues observed.
PM _{2.5}	Sharp	5030	No operational issues observed.
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	No operational issues observed.

PAZA – Evergreen Park Station

General Station Issues

Routine monthly calibration performed on November 13th (SO₂, TRS). Glassware cleaned during calibration.

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	No operational issues observed.
ET	Met One/Gill	083D	No operational issues observed.
RH	Met One/Gill		No operational issues observed.
WS / WD	Met One/ Gill		No operational issues observed.

PAZA – Smoky Heights Station

General Station Issues

Routine monthly calibration performed on November 15th (SO₂, TRS). Glassware cleaned during calibration

Parameter	Make	Model	Notes
SO ₂	TEI	43C	No operational issues observed.
TRS	TEI	43C	No operational issues observed.
PM _{2.5}	R&P	1400AB	No operational issues observed.
ET	Met One	083D	No operational issues observed.
WS / WD	Met One	010C/020C	Wind head froze up November 13 th -14 th .

PAZA – Beaverlodge Station

General Station Issues

Routine monthly calibrations performed on November 12th (NO_x , O₃, SO₂).

Parameter	Make	Model	Notes
SO ₂	TEI	43CTL	No operational issues observed.
NOx/NO/NO ₂	TEI	42C	No operational issues observed.
O ₃	TEI	49C	No operational issues observed.
PM _{2.5}	R&P	1400AB	Analyzer sensor unit and control board replaced with spare on November 12 th , AESRD replacement parts installed November 25. 2 1-hour exceedences and 1 24-hour exceedence recorded November 7 th AE Reference #277334.
ET	n/a	n/a	No operational issues observed.
RH	n/a	n/a	No operational issues observed.
WS / WD	Blue Sky	857	No operational issues observed.

PAZA – Valleyview Station

General Station Issues

Routine monthly calibrations were performed on November 19th (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 – Portable-Reno

General Station Issues

Station put into service October 31st. Datalogger failed to collect 5 hours of data on November 5th. Routine calibrations performed November 27th (NO_x, O₃, SO₂) and 28th (TRS). THC analyzer installed November 26th, work done rearranging equipment in the trailer at that time. THC analyzer to report in December.

Parameter	Make	Model	Notes
SO ₂	TEI	43i	No operational issues observed.
NO _x	TEI	42i	No operational issues observed.
O ₃	TEI	49C	No operational issues observed.
TRS	TEI	39C	No operational issues observed.
PM _{2.5}	R&P	1400AB	No operational issues observed.
ET	Gill	Met Pak 3	No operational issues observed.
WS / WD	Gill	Met Pak 3	No operational issues observed.

PAZA – Falher Station

General Station Issues

Routine monthly calibrations were performed on November 30th (SO₂ & H₂S). Datalogger failed to collect 5 hours of data on November 5th.

Parameter	Make	Model	Notes
SO ₂	TEI	43i	No operational issues observed.
H ₂ S	Thermo	450i	No operational issues observed.
ET	Gill	RM Young 5103	No operational issues observed.
WS / WD	Gill	RM Young 5103	No operational issues observed.

PAZA

Henry Pirker Station

Monthly Summary Tables, Graphs and
Roses

Hourly Averages

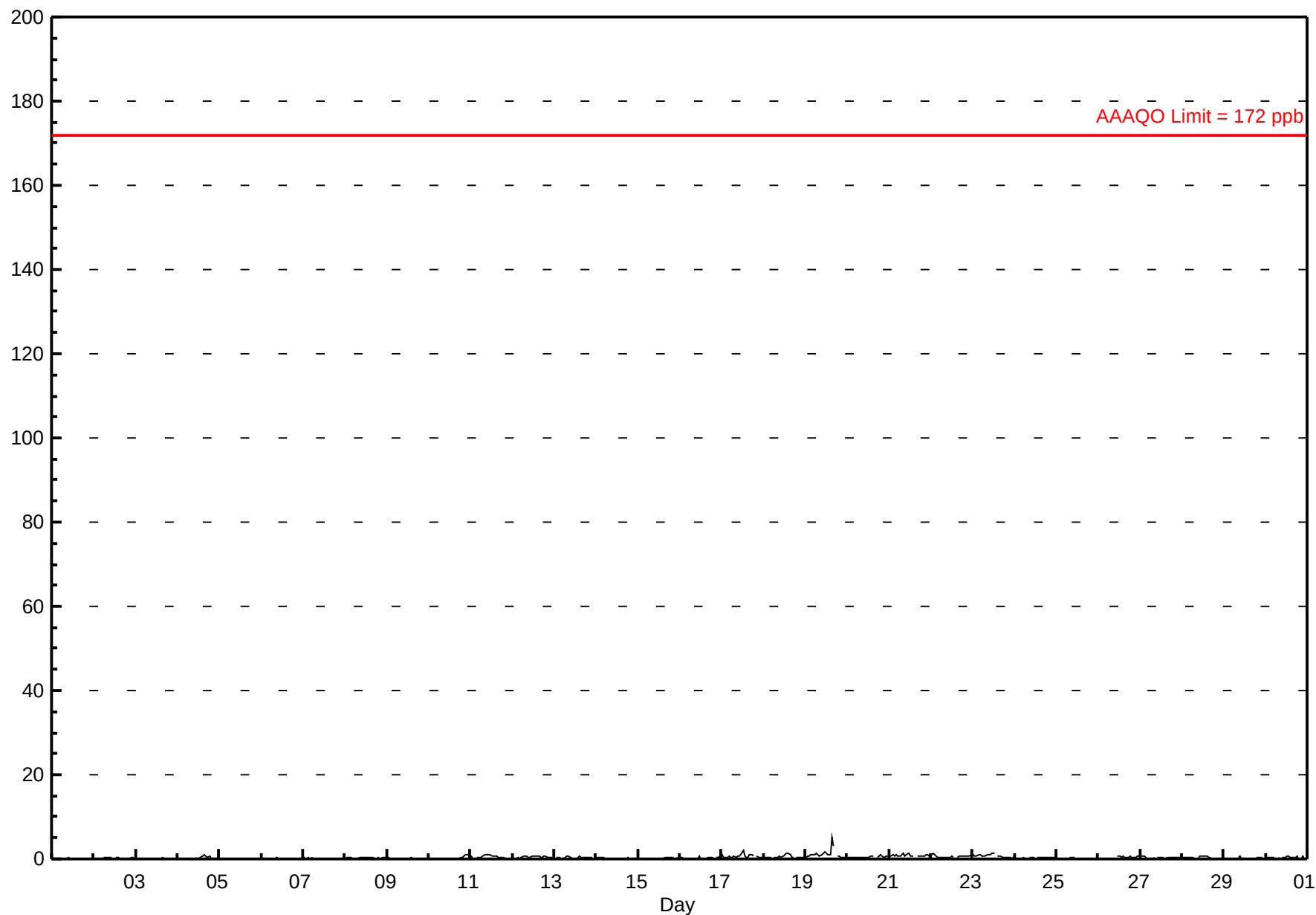
Sulphur Dioxide (SO₂) - ppb

Henry Pirker - November 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 5.0 ppb on Nov 19 16:00 Maximum Daily Average: 1.2 ppb on Nov 19																				Hours in Service: 720 Hours of Data: 684 Hours of Missing Data: 36 Hours of Calibration: 36 Percent Operational Time: 100.0						
Minimum Value: 0 ppb on Nov 1 15:00 Maximum Diurnal Average: 0.5 ppb at hour 16 Monthly Average: 0.32 ppb										Minimum Daily Average: 0.0 ppb on Nov 5 Minimum Diurnal Average: 0.2 ppb at hour 3 Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.1 Median = 0.2 Q ₃ = 0.5 P ₉₀ = 0.8 P ₉₉ = 1.3																
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-Nov	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	0.3
2-Nov	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
3-Nov	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
4-Nov	0	0	0	0	0	0	0	0	0	A	0	0	0	0	1	1	1	0	1	0	0	0	0	0	0.2	1.0
5-Nov	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
6-Nov	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	0.4
7-Nov	0	0	0	0	0	0	A	0	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
8-Nov	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5
9-Nov	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
10-Nov	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0.2	1.2
11-Nov	1	0	A	0	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0.5	1.1
12-Nov	0	A	0	0	0	0	1	1	1	0	0	1	1	1	1	1	1	0	1	1	0	0	0	0	0.4	0.8
13-Nov	A	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	A	0.3	0.6
14-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.1	0.3
15-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.2	0.4
16-Nov	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	A	0	0	1	0.2	0.5
17-Nov	1	0	0	0	1	0	0	1	0	1	1	1	2	1	0	0	1	1	1	A	1	1	0	0	0.6	1.9
18-Nov	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	0	0	A	0	0	0	0	0	0.5	1.2
19-Nov	0	1	1	1	1	1	1	1	1	1	1	2	1	1	1	5	3	A	1	1	0	0	0	0	1.2	5.0
20-Nov	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	A	0	1	1	1	0	1	1	0.5	0.9
21-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	0.8	1.3
22-Nov	1	1	1	1	1	0	0	0	0	0	0	1	1	0	A	0	1	1	1	1	1	1	1	1	0.6	1.3
23-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	0	0	0	0	0	0	0	0.7	1.3
24-Nov	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
25-Nov	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
26-Nov	0	0	0	0	0	0	0	0	0	0	A	1	1	0	1	0	0	0	1	0	0	0	1	1	0.3	0.7
27-Nov	1	1	1	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5
28-Nov	0	0	0	0	0	0	0	0	A	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0.3	0.8
29-Nov	0	0	0	0	0	0	0	A	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.8
30-Nov	0	0	0	0	0	0	A	0	0	0	0	0	1	1	0	0	0	0	1	0	0	1	0	0	0.3	0.8
0.3 0.3 0.2 0.3 0.2 0.2 0.2 0.2 0.3 0.3 0.4 0.4 0.5 0.5 0.3 0.4 0.5 0.4 0.3 0.3 0.3 0.3 0.3 0.3 0.3																								Diurnal Average		
1.0 1.3 1.0 1.1 1.2 1.1 1.4 1.2 1.3 1.3 1.1 1.4 1.7 1.9 1.2 1.2 5.0 3.0 0.9 0.8 0.9 0.8 1.1 1.2 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 - November 2013



Hourly Maximums

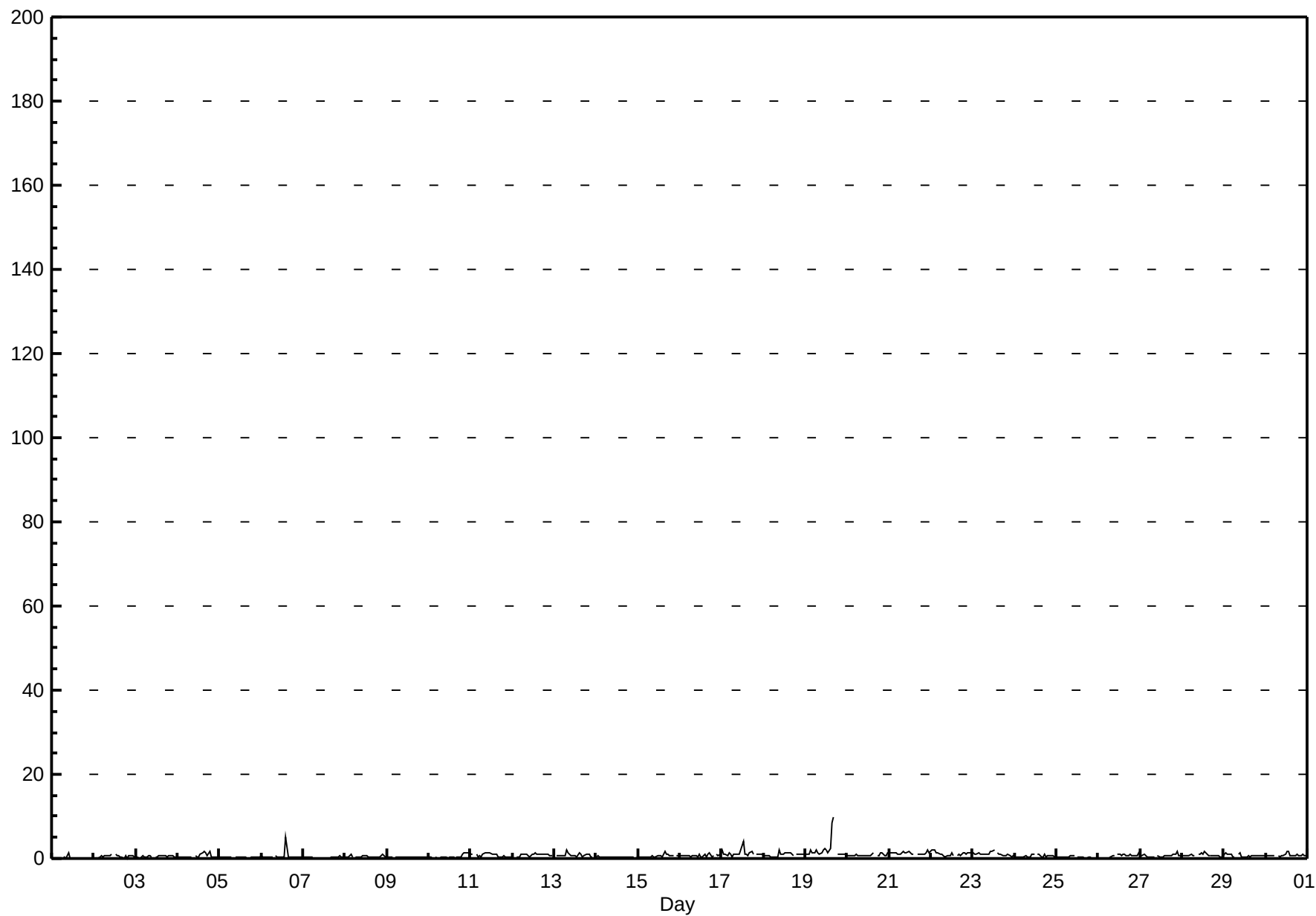
Sulphur Dioxide (SO₂) - ppb

Henry Pirker - November 2013

Maximum Value: 9.7 ppb on Nov 19 17:00																				Maximum Daily Average: 2.0 ppb on Nov 19										Hours in Service: 720	
Minimum Value: 0 ppb on Nov 5 17:00																				Minimum Daily Average: 0.2 ppb on Nov 1										Hours of Data: 684	
Maximum Diurnal Average: 1.0 ppb at hour 17																				Minimum Diurnal Average: 0.6 ppb at hour 7										Hours of Missing Data: 36	
Monthly Average: 0.71 ppb																				Percentiles: P ₁ = 0.1 P ₁₀ = 0.2 Q ₁ = 0.4 Median = 0.5 Q ₃ = 0.9 P ₉₀ = 1.3 P ₉₉ = 2.2										Hours of Calibration: 36	
																				Percent Operational Time: 100.0											
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24							
1-Nov	0	0	0	0	0	0	0	0	0	1	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.2	1.4					
2-Nov	0	0	0	0	1	0	1	1	1	1	1	A	1	1	1	0	0	0	1	0	1	1	1	0	0.5	1.1					
3-Nov	0	0	0	0	1	0	0	1	1	0	A	0	1	1	1	1	1	1	0	1	1	1	0	0	0.4	0.6					
4-Nov	0	0	0	0	0	0	0	0	0	A	1	0	0	1	1	2	1	1	2	0	0	0	0	0	0.6	1.8					
5-Nov	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	0.3					
6-Nov	1	0	0	0	0	0	0	A	1	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0.6	5.1					
7-Nov	0	0	0	0	0	0	A	0	C	C	C	C	C	0	0	0	0	0	0	0	0	1	0	0	0.3	0.8					
8-Nov	0	1	0	1	0	A	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	1	0	0.5	1.0					
9-Nov	0	0	0	0	A	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0.5					
10-Nov	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0.6	1.5					
11-Nov	1	1	A	1	0	1	0	1	1	1	1	1	1	1	1	1	0	0	0	1	0	0	0	0	0.8	1.5					
12-Nov	0	A	0	0	0	1	1	1	1	1	0	1	1	2	1	1	1	1	1	1	1	1	1	1	0.8	1.5					
13-Nov	A	1	1	1	1	1	1	2	2	1	1	1	1	0	2	1	1	1	1	1	1	0	0	A	0.8	2.0					
14-Nov	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.4	0.6					
15-Nov	0	0	0	0	0	0	0	0	1	1	0	1	1	1	0	2	1	1	1	1	1	A	1	1	0.6	1.6					
16-Nov	1	1	1	1	1	1	0	1	1	1	1	1	0	0	1	0	1	1	0	1	A	1	1	1	0.7	1.2					
17-Nov	2	1	1	1	1	1	0	1	1	1	1	2	4	1	1	1	2	2	1	A	1	1	1	1	1.2	4.0					
18-Nov	1	1	1	1	0	0	0	0	0	2	1	1	1	1	1	1	1	1	A	1	1	1	1	1	0.9	2.0					
19-Nov	1	1	1	2	2	1	2	1	1	1	2	2	2	1	2	9	10	A	1	1	1	1	1	1	2.0	9.7					
20-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	0.9	1.3					
21-Nov	1	1	1	1	1	1	1	1	2	1	1	2	1	1	1	A	1	1	1	1	1	1	2	1	1.3	1.9					
22-Nov	2	2	2	1	1	1	1	1	0	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1.1	1.9					
23-Nov	1	1	1	1	1	1	1	1	1	1	2	2	2	A	1	1	1	1	1	1	1	1	1	1	1.1	1.9					
24-Nov	0	0	0	0	0	0	1	0	0	0	1	1	A	1	1	0	0	1	0	1	1	1	1	0	0.6	0.9					
25-Nov	0	0	0	0	0	0	0	0	1	1	1	A	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.7					
26-Nov	0	0	0	0	0	0	0	0	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	1.2					
27-Nov	1	1	1	1	0	0	0	0	0	A	1	1	1	1	1	1	1	1	1	1	1	2	1	1	0.7	1.5					
28-Nov	1	1	1	1	1	1	1	1	A	1	1	1	1	2	1	1	1	1	1	1	1	1	0	1	0.7	1.6					
29-Nov	1	1	1	1	1	0	0	A	1	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0.7	1.5					
30-Nov	1	1	1	1	1	1	A	1	0	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	0.7	1.6					
0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.7 0.7 0.8 0.8 0.9 1.0 0.7 0.9 0.9 1.0 0.6 0.7 0.7 0.7 0.7 0.6 0.6																									Diurnal Average						
1.9 1.9 1.9 2.2 1.5 1.4 1.9 2.0 1.8 2.0 1.9 2.4 4.0 1.6 5.1 8.6 9.7 1.5 1.8 1.3 1.4 1.5 1.9 1.5																									Diurnal Maximum						
C - Calibration																									A - Automated Daily Zero Span						

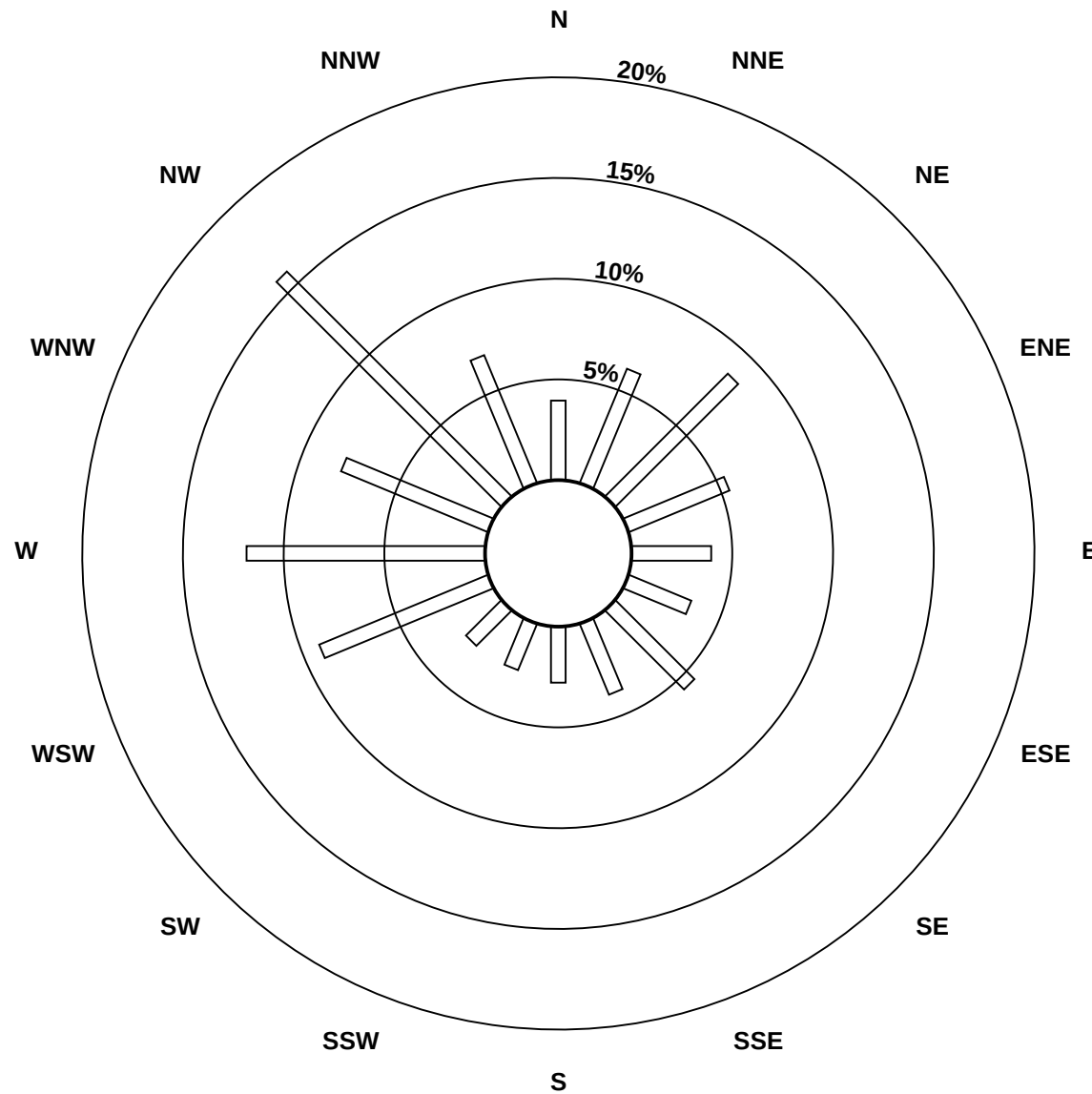
Hourly Maximums

Sulphur Dioxide (SO₂) - ppb
Henry Pirker - November 2013

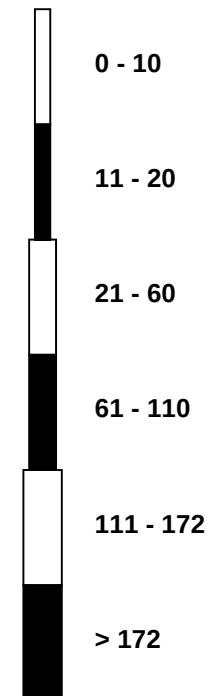


Pollutant Rose

Sulphur Dioxide (SO₂) - ppb
Henry Pirker - November 2013

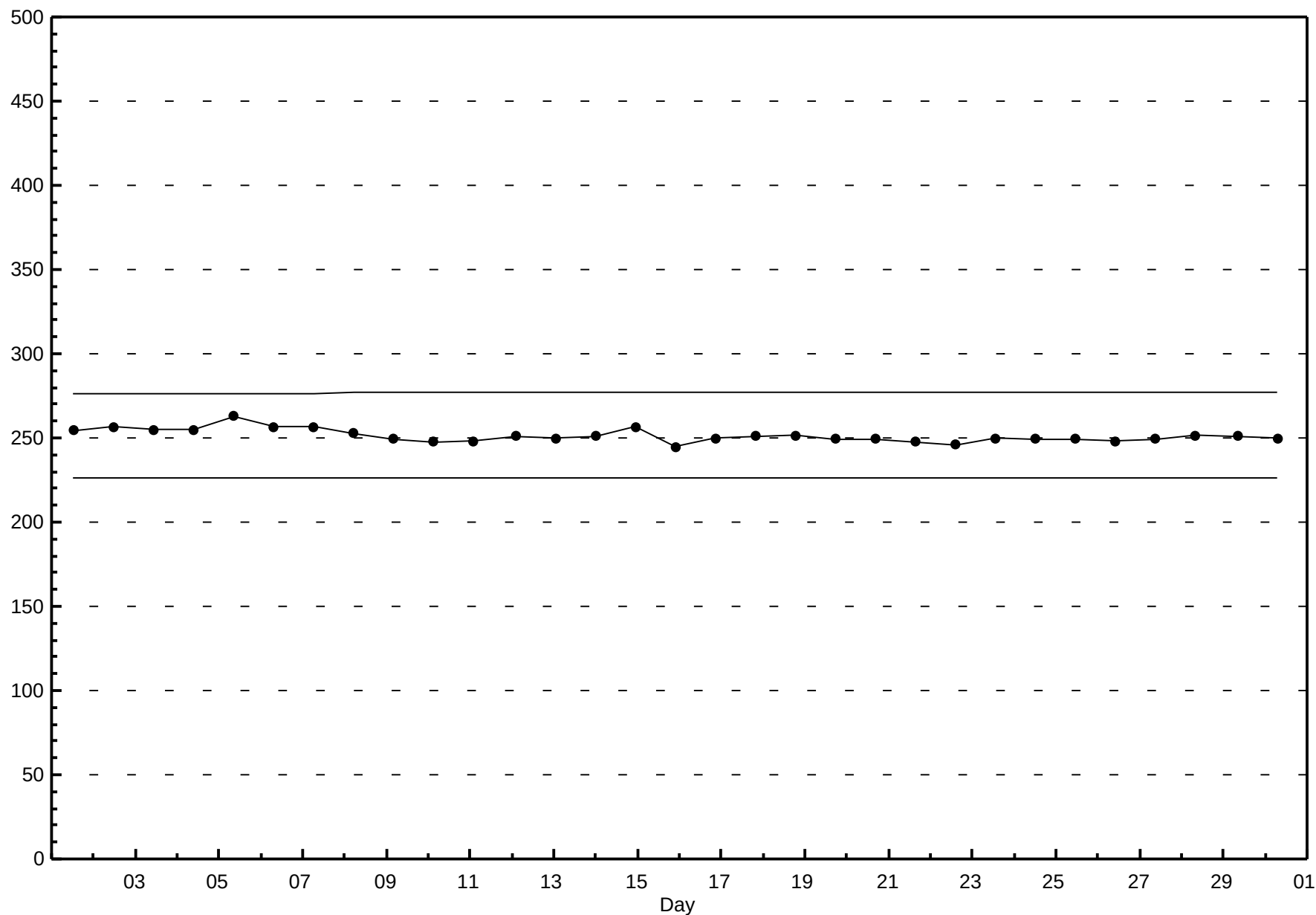


Pollutant Classes (ppb)



Span Responses

Sulphur Dioxide (SO₂)
Henry Pirker - November 2013



Hourly Averages

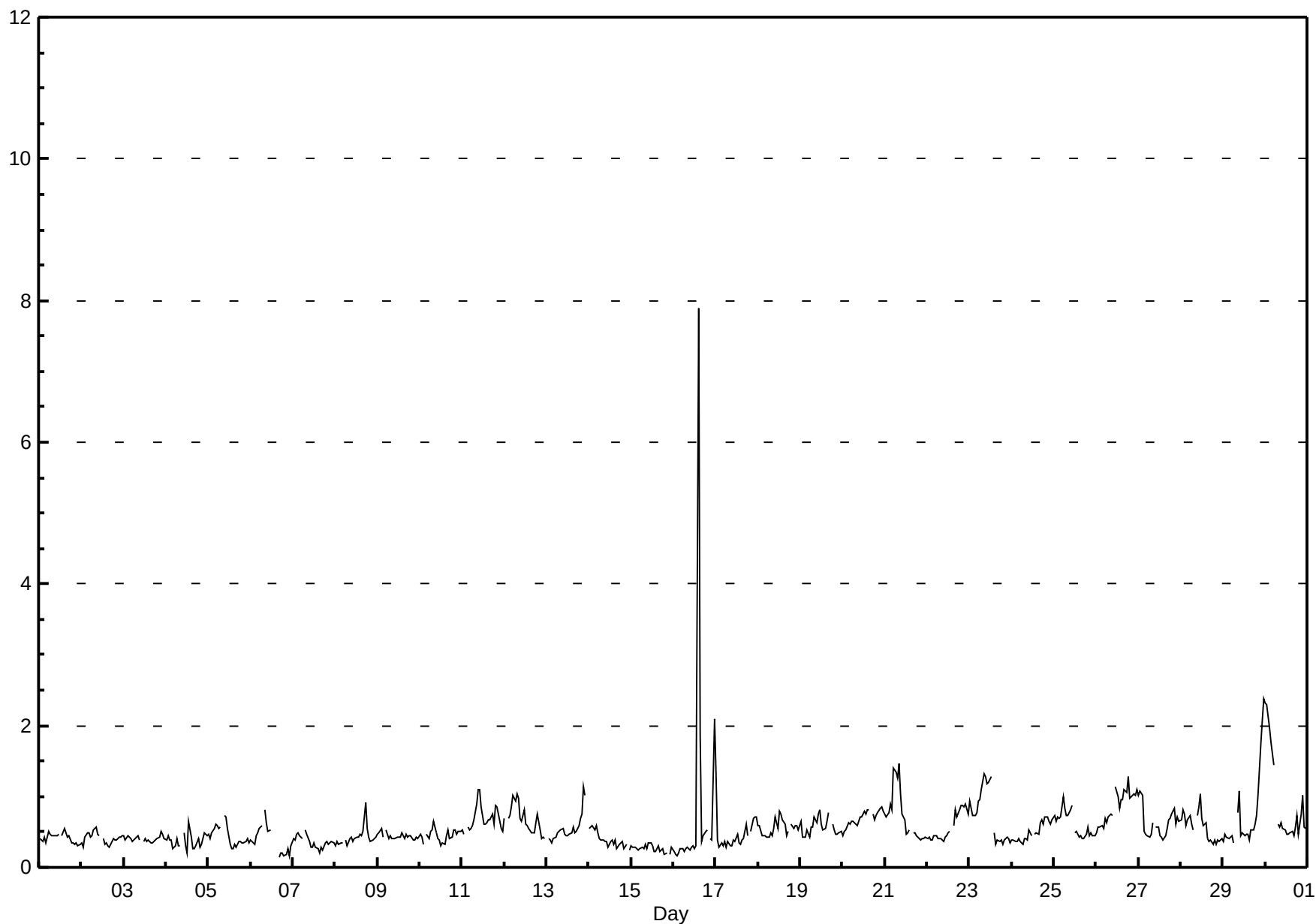
Total Reduced Sulphur (TRS) - ppb

Henry Pirker - November 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0																				Hours in Service: 720						
Maximum Value: 7.9 ppb on Nov 16 15:00																				Maximum Daily Average: 0.9 ppb on Nov 30		Hours of Data: 685				
Minimum Value: 0 ppb on Nov 6 17:00																				Minimum Daily Average: 0.3 ppb on Nov 15		Hours of Missing Data: 35				
Maximum Diurnal Average: 0.7 ppb at hour 15																				Minimum Diurnal Average: 0.5 ppb at hour 17		Hours of Calibration: 35				
Monthly Average: 0.56 ppb																				Percentiles: P ₁ = 0.2 P ₁₀ = 0.3 Q ₁ = 0.4 Median = 0.5 Q ₃ = 0.6 P ₉₀ = 0.8 P ₉₉ = 1.9		Percent Operational Time: 100.0				
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Nov	0	0	0	0	0	1	0	0	0	0	0	0	A	0	1	0	0	0	0	0	0	0	0	0	0.4	0.5
2-Nov	0	0	0	0	0	0	0	1	1	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.6
3-Nov	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	1	0	0	0.4	0.5
4-Nov	0	0	0	0	0	0	0	0	0	A	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0.4	0.7
5-Nov	0	0	0	1	1	1	1	1	A	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.7
6-Nov	0	0	0	0	0	1	1	A	1	1	1	1	C	C	C	C	0	0	0	0	0	0	0	0	0.4	0.8
7-Nov	0	0	0	0	0	0	A	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.5
8-Nov	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0.4	0.9
9-Nov	0	0	1	0	A	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.5
10-Nov	0	0	0	A	0	0	1	1	1	0	0	0	0	0	0	0	1	0	0	1	1	0	1	1	0.5	0.7
11-Nov	1	0	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.1
12-Nov	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	1	0	0	0	0.7	1.0
13-Nov	A	0	0	0	0	0	0	1	1	1	0	0	0	0	0	1	0	1	1	1	1	1	1	A	0.6	1.1
14-Nov	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.4	0.6
15-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.3	0.3
16-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	2	0	0	1	1	A	0	0	2	0.8	7.9
17-Nov	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	A	1	1	1	1	0.5	1.3
18-Nov	1	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	1	A	1	1	1	1	1	0.6	0.8
19-Nov	1	0	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	A	1	1	0	0	0	0	0.6	0.8
20-Nov	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	0.7	0.8
21-Nov	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	A	0	0	0	0	0	0	0	0	0.7	1.5
22-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	1	A	1	1	1	1	1	1	1	1	1	0.6	0.9
23-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	A	0	0	0	0	0	0	0	0	0	0	0.7	1.3
24-Nov	0	0	0	0	0	0	0	0	0	0	1	0	A	0	0	0	1	1	1	1	1	1	1	1	0.5	0.7
25-Nov	1	1	1	1	1	1	1	1	1	1	1	A	0	1	0	0	0	0	0	1	0	0	0	0	0.6	1.0
26-Nov	0	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.3
27-Nov	1	1	1	1	0	0	0	0	1	A	1	1	0	0	0	0	1	1	1	1	1	1	1	1	0.6	1.1
28-Nov	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0.6	1.0
29-Nov	0	0	0	0	0	0	0	A	1	1	0	0	0	0	0	0	1	1	1	1	1	2	2	2	0.7	2.4
30-Nov	2	2	2	2	2	1	A	1	1	1	1	1	0	0	0	1	0	1	1	1	0	1	1	1	0.9	2.3
																								Diurnal Average		
																								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 - November 2013



Hourly Maximums

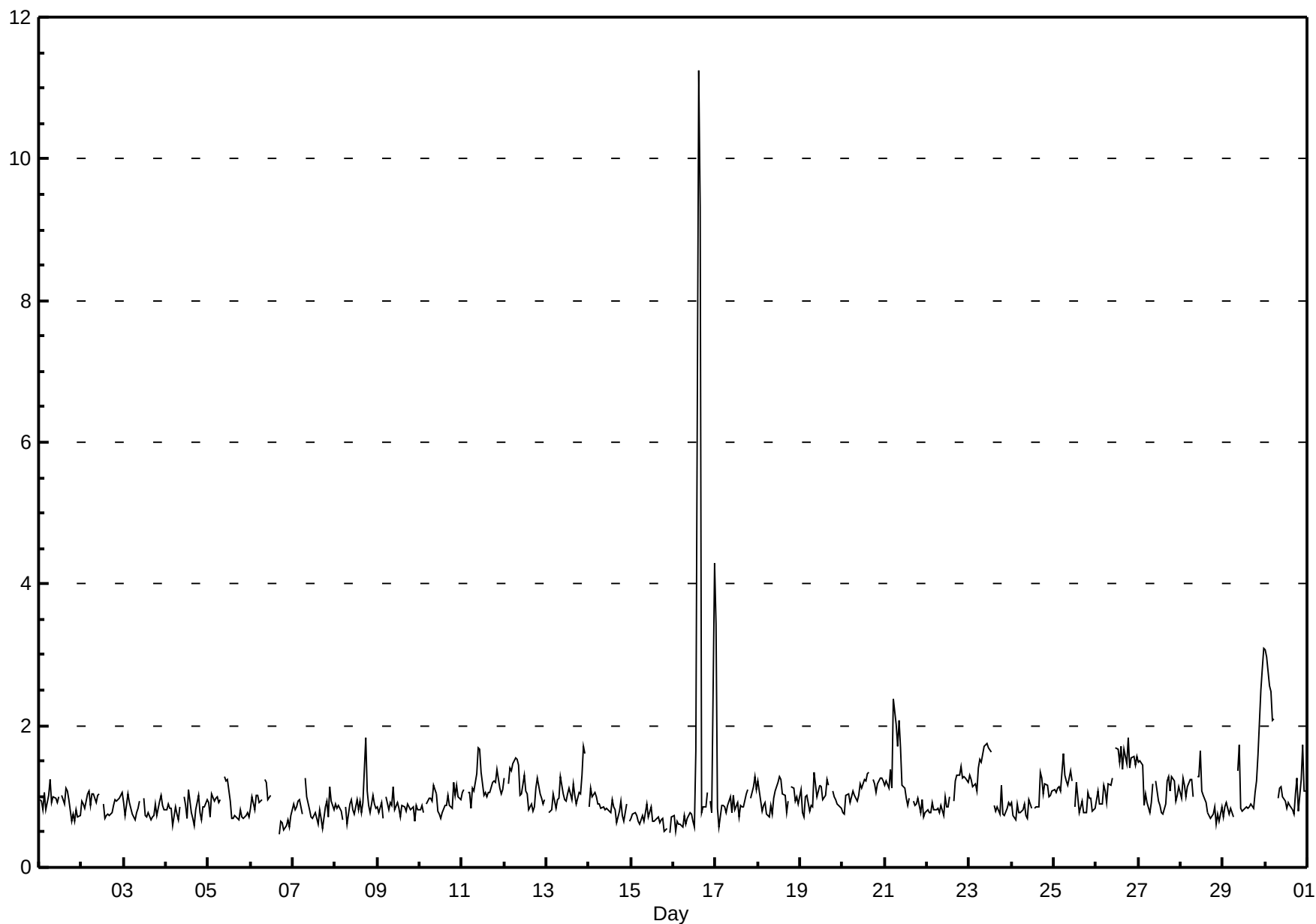
Total Reduced Sulphur (TRS) - ppb

Henry Pirker - November 2013

Maximum Value: 11.2 ppb on Nov 16 15:00																				Maximum Daily Average: 1.7 ppb on Nov 16					Hours in Service: 720		
Minimum Value: 0 ppb on Nov 6 17:00																				Minimum Daily Average: 0.7 ppb on Nov 15					Hours of Data: 685		
Maximum Diurnal Average: 1.3 ppb at hour 15																				Minimum Diurnal Average: 0.9 ppb at hour 17					Hours of Missing Data: 35		
Monthly Average: 1.03 ppb																				Percentiles: P ₁ = 0.6 P ₁₀ = 0.7 Q ₁ = 0.8 Median = 0.9 Q ₃ = 1.1 P ₉₀ = 1.3 P ₉₉ = 2.9					Hours of Calibration: 35		
																				Percent Operational Time: 100.0							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Nov	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0.9	1.2	
2-Nov	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.1	
3-Nov	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	1.0	
4-Nov	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.1	
5-Nov	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	1.3	
6-Nov	1	1	1	1	1	1	1	A	1	1	1	1	C	C	C	C	0	1	1	1	1	1	1	1	0.8	1.2	
7-Nov	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.3	
8-Nov	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	0.9	1.8	
9-Nov	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	1.1	
10-Nov	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.2	
11-Nov	1	1	A	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1.2	1.7	
12-Nov	1	A	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.1	1.6	
13-Nov	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	A	1.1	1.7	
14-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	0.9	1.1	
15-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	0	1	0.7	0.9	
16-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	2	11	9	1	1	1	1	A	1	1	4	1.7	11.2	
17-Nov	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1.0	3.4	
18-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1.0	1.3	
19-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1.0	1.3	
20-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1.1	1.3	
21-Nov	1	1	1	1	1	2	2	2	2	2	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1.2	2.4	
22-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1.0	1.4	
23-Nov	1	1	1	1	1	1	2	1	2	2	2	2	2	A	1	1	1	1	1	1	1	1	1	1	1.2	1.8	
24-Nov	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0.9	1.3	
25-Nov	1	1	1	1	1	2	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1.0	1.6	
26-Nov	1	1	1	1	1	1	1	1	1	1	A	2	2	1	2	1	2	1	2	1	2	2	1	2	1.3	1.8	
27-Nov	1	2	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.1	1.5	
28-Nov	1	1	1	1	1	1	1	1	A	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1.0	1.6	
29-Nov	1	1	1	1	1	1	1	A	1	2	1	1	1	1	1	1	1	1	1	1	2	3	3	3	1.2	3.1	
30-Nov	3	3	3	2	2	2	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1.4	3.1	
1.1 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.1 1.1 1.1 1.0 1.0 1.0 1.0 1.3 1.2 0.9 0.9 1.0 1.0 1.0 1.1 1.0 1.1																									Diurnal Average		
3.4 3.0 2.6 2.5 2.1 2.4 2.0 1.7 2.1 2.1 1.7 1.8 1.7 1.7 1.7 11.2 9.3 1.7 1.8 1.8 1.4 1.6 2.5 2.8 4.3																									Diurnal Maximum		
C - Calibration A - Automated Daily Zero Span																											

Hourly Maximums

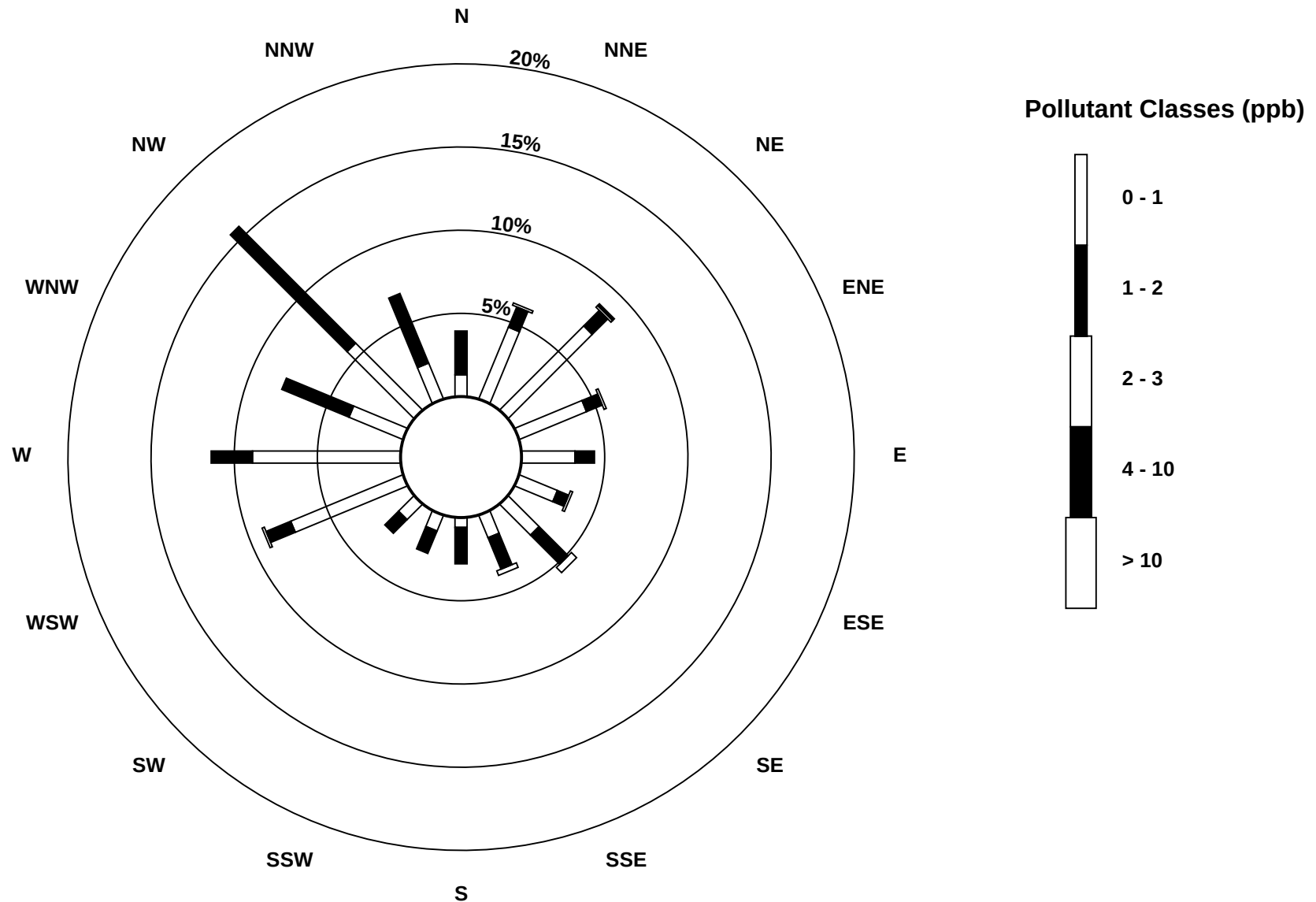
Total Reduced Sulphur (TRS) - ppb
Henry Pirker - November 2013



Pollutant Rose

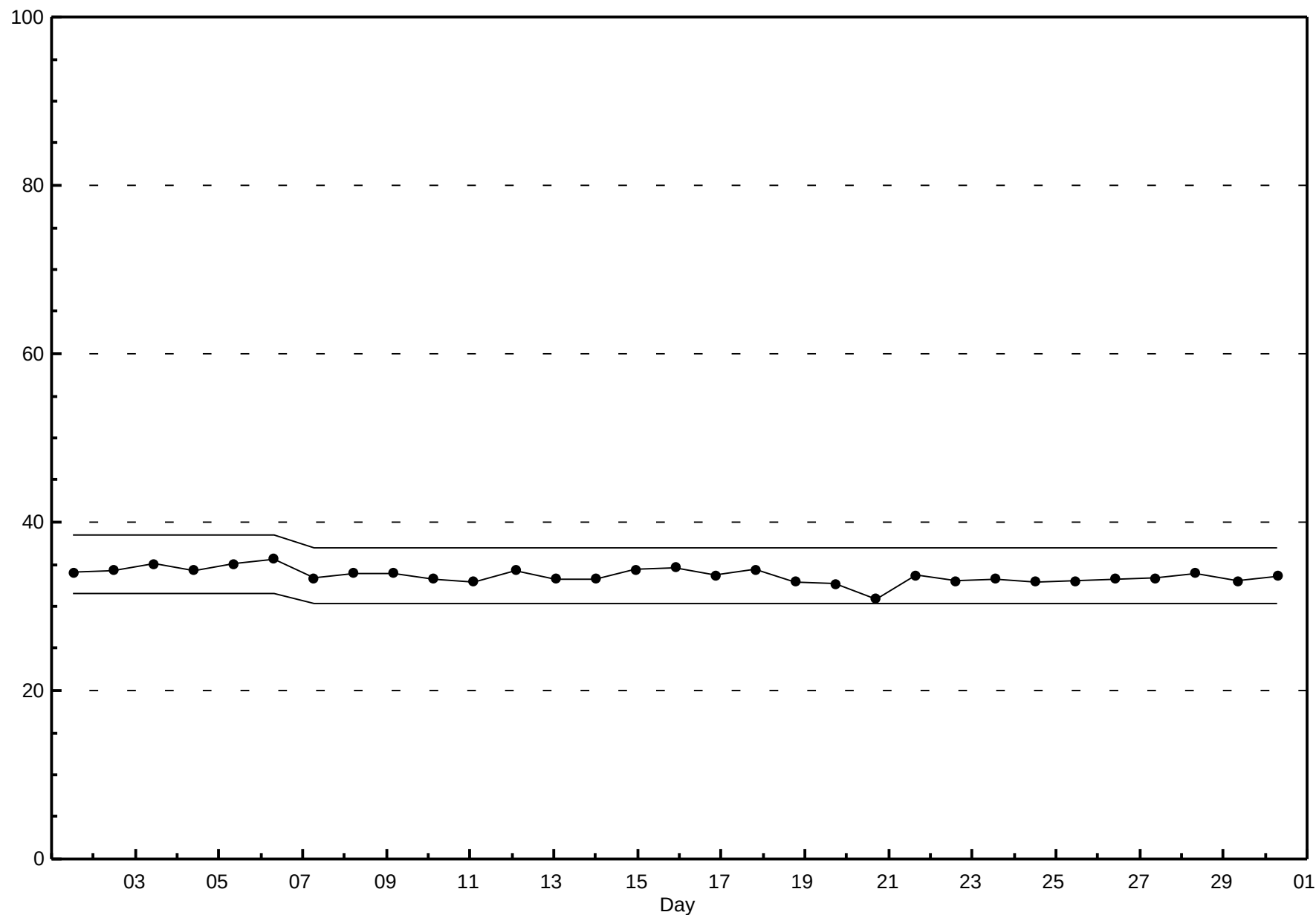
Total Reduced Sulphur (TRS) - ppb

Henry Pirker - November 2013



Span Responses

Total Reduced Sulphur (TRS)
Henry Pirker - November 2013



Hourly Averages

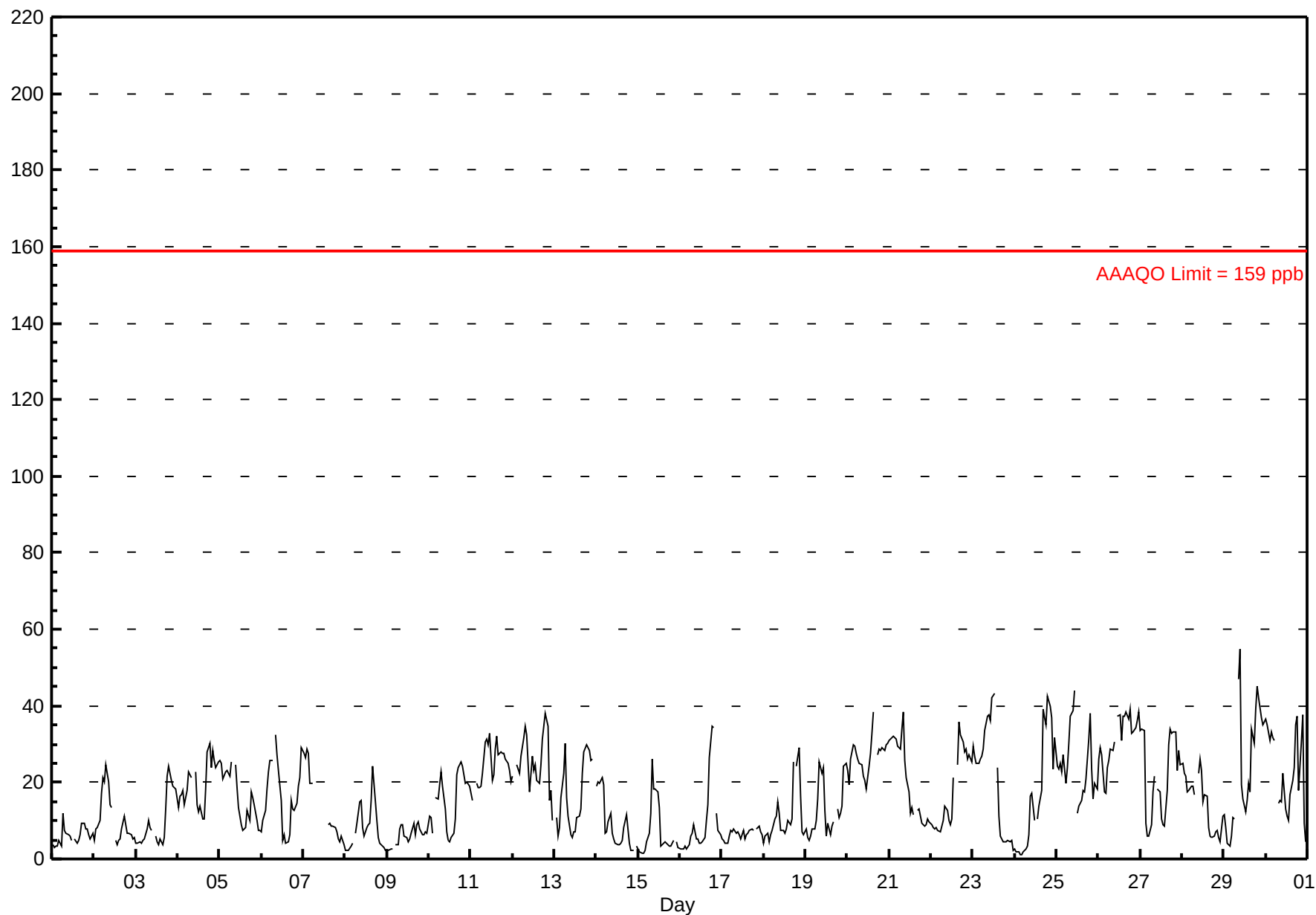
Nitrogen Dioxide (NO₂) - ppb

Henry Pirker - November 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 55.0 ppb on Nov 29 10:00 Maximum Daily Average: 31.5 ppb on Nov 26																								Hours in Service: 720 Hours of Data: 683 Hours of Missing Data: 37 Hours of Calibration: 37 Percent Operational Time: 100.0		
Minimum Value: 1 ppb on Nov 24 04:00 Maximum Diurnal Average: 21.1 ppb at hour 9 Monthly Average: 16.23 ppb												Minimum Daily Average: 6.0 ppb on Nov 1 Minimum Diurnal Average: 11.4 ppb at hour 14 Percentiles: P ₁ = 1.9 P ₁₀ = 4.2 Q ₁ = 6.7 Median = 13.9 Q ₃ = 24.8 P ₉₀ = 31.8 P ₉₉ = 42.0														
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-Nov	4	3	3	4	5	3	12	8	7	6	6	5	A	5	4	5	6	9	9	8	8	6	5	7	6.0	12.0
2-Nov	5	8	8	10	17	21	20	25	20	14	13	A	5	4	5	5	8	11	9	7	7	6	5	6	10.4	24.6
3-Nov	4	4	4	4	5	5	8	10	8	8	A	6	5	4	5	4	5	13	21	24	20	19	19	18	9.8	24.1
4-Nov	13	17	17	18	14	18	23	22	21	A	23	14	12	14	10	10	18	28	30	24	28	26	24	25	19.6	30.0
5-Nov	26	25	21	23	23	22	22	25	A	25	19	13	9	7	8	8	13	10	18	16	14	10	8	7	16.2	25.6
6-Nov	7	10	13	18	23	26	26	A	33	27	23	15	5	6	4	4	6	15	13	13	15	19	21	29	16.1	32.6
7-Nov	28	26	29	28	20	20	A	25	C	C	C	C	C	C	9	9	9	8	8	7	5	4	6	4	--	28.9
8-Nov	2	2	2	3	4	A	7	9	15	15	8	6	8	9	9	15	24	15	10	6	4	3	3	2	7.9	24.2
9-Nov	2	2	3	2	A	4	4	8	9	9	6	5	4	5	7	9	6	9	10	8	6	6	7	7	6.1	9.7
10-Nov	11	11	7	A	16	16	19	23	19	13	7	5	4	5	7	10	22	24	25	24	22	20	20	19	15.2	25.3
11-Nov	17	15	A	20	18	19	19	23	31	31	30	33	20	22	29	32	27	28	27	28	26	25	23	20	24.5	32.9
12-Nov	22	A	24	24	22	27	32	35	32	25	18	27	23	24	20	20	25	31	35	38	35	15	18	10	25.2	37.9
13-Nov	A	11	6	8	16	22	30	16	11	6	6	7	7	11	11	13	22	28	30	29	28	26	26	A	16.9	30.3
14-Nov	19	20	20	21	19	7	7	10	12	7	5	4	4	4	4	5	8	12	8	4	2	2	A	3	9.0	21.1
15-Nov	3	2	2	2	2	4	7	12	26	18	18	18	14	4	4	4	4	4	3	3	5	A	4	3	7.2	26.2
16-Nov	2	3	3	3	3	4	6	7	9	5	5	4	4	4	5	10	14	26	35	34	A	12	7	6	9.2	34.6
17-Nov	5	5	4	4	6	8	7	8	7	7	6	5	8	5	6	7	8	8	7	A	8	9	7	6	6.5	8.7
18-Nov	4	6	7	4	6	7	10	11	15	12	8	7	7	8	10	9	11	25	A	24	29	16	7	6	10.9	29.3
19-Nov	8	6	5	6	8	8	10	16	25	22	24	13	6	9	6	9	10	A	13	11	12	14	24	25	12.5	25.2
20-Nov	23	20	26	30	29	27	26	25	25	22	20	18	24	28	33	38	A	27	29	29	29	28	30	30	26.8	38.3
21-Nov	31	31	32	32	31	29	29	34	38	26	21	18	12	13	12	A	13	13	11	9	9	9	10	10	20.6	38.5
22-Nov	9	8	8	8	8	7	8	10	14	13	10	9	11	21	A	25	36	32	31	28	29	26	27	25	17.5	36.0
23-Nov	30	27	25	25	26	27	29	34	37	38	36	42	43	A	24	11	6	5	5	5	5	5	5	2	21.3	43.1
24-Nov	3	2	2	1	1	2	3	3	6	16	17	10	A	10	14	18	39	37	35	43	40	37	23	32	17.2	42.5
25-Nov	24	23	25	23	27	20	24	30	37	39	44	A	12	14	15	18	17	21	31	38	23	16	20	18	24.4	43.8
26-Nov	26	29	27	17	17	24	26	29	29	30	A	37	38	31	37	37	39	37	39	33	33	34	36	39	31.5	39.3
27-Nov	34	34	34	9	6	6	9	18	22	A	18	17	11	9	9	18	30	34	33	33	33	23	28	25	21.4	34.1
28-Nov	25	23	22	17	18	19	19	17	A	22	26	23	15	17	17	8	6	6	6	7	7	6	4	11	14.8	26.0
29-Nov	12	8	4	3	6	11	11	A	47	55	20	16	12	15	20	17	34	30	39	45	42	37	35	36	24.1	55.0
30-Nov	36	35	31	33	32	31	A	15	15	15	22	13	11	10	17	20	24	35	37	18	31	38	9	4	23.2	37.7
15.0 14.3 14.2 13.8 14.8 15.3 16.1 18.0 21.1 19.5 17.0 14.5 12.4 11.4 12.4 13.8 16.9 20.1 21.0 20.5 19.2 17.2 16.0 15.0																								Diurnal Average		
36.4 35.0 33.6 33.3 31.7 30.9 31.6 34.7 47.2 55.0 43.8 42.0 43.1 31.1 37.2 38.3 39.1 37.0 39.3 45.2 42.2 37.7 36.4 38.5																								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
Henry Pirker - November 2013



Hourly Maximums

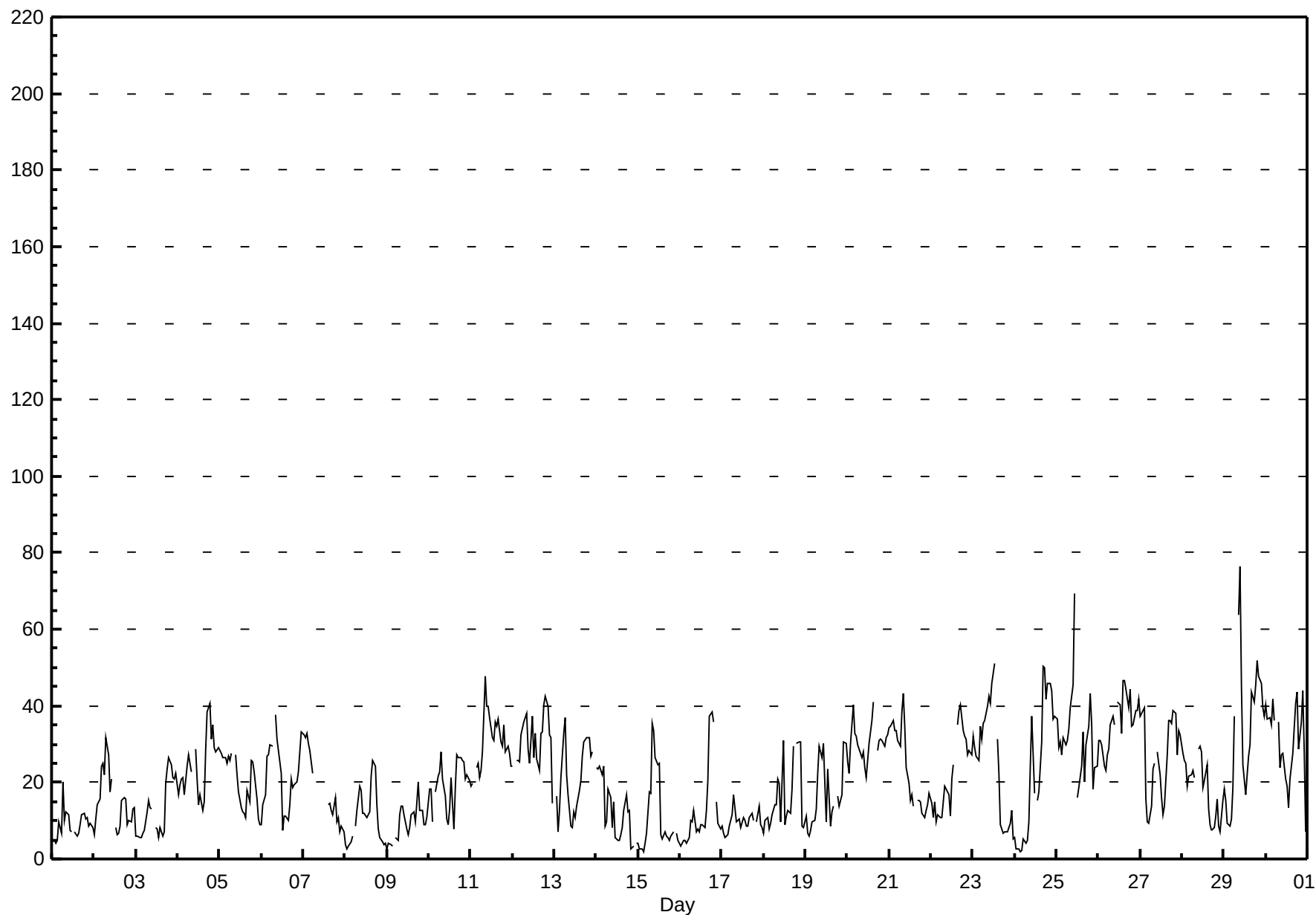
Nitrogen Dioxide (NO₂) - ppb

Henry Pirker - November 2013

Maximum Value: 76.6 ppb on Nov 29 10:00																								Maximum Daily Average: 36.0 ppb on Nov 26												Hours in Service: 720	
Minimum Value: 2 ppb on Nov 24 04:00																								Minimum Daily Average: 8.8 ppb on Nov 1												Hours of Data: 683	
Maximum Diurnal Average: 26.7 ppb at hour 9																								Minimum Diurnal Average: 16.1 ppb at hour 14												Hours of Missing Data: 37	
Monthly Average: 20.84 ppb																								Percentiles: P ₁ = 2.7 P ₁₀ = 6.7 Q ₁ = 10.2 Median = 19.9 Q ₃ = 29.9 P ₉₀ = 37.1 P ₉₉ = 49.7												Hours of Calibration: 37	
																								Percent Operational Time: 100.0													
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum											
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24													
1-Nov	5	5	4	5	10	7	20	10	12	12	7	7	A	7	6	7	9	11	12	10	11	8	9	8	8.8	20.0											
2-Nov	6	10	14	16	24	25	22	32	27	17	21	A	8	6	7	9	15	16	16	9	10	10	13	13	15.1	31.9											
3-Nov	6	6	6	5	7	7	12	15	13	13	A	8	8	5	8	6	7	20	23	26	25	21	21	22	12.7	26.4											
4-Nov	17	19	21	21	17	24	27	25	23	A	29	21	14	17	13	15	28	39	41	31	35	29	28	29	24.5	40.7											
5-Nov	28	27	27	27	25	27	26	28	A	27	22	18	13	12	12	11	18	15	26	25	23	16	10	9	20.5	28.2											
6-Nov	9	14	17	27	27	30	30	A	38	31	28	22	7	11	11	10	14	21	19	19	20	23	28	33	21.3	37.6											
7-Nov	32	32	33	30	28	22	A	29	C	C	C	C	C	C	14	14	13	12	16	10	11	7	9	7	--	32.7											
8-Nov	4	3	3	4	6	A	8	13	19	18	12	12	11	11	12	22	26	24	14	8	5	4	4	4	10.8	25.8											
9-Nov	2	4	4	3	A	5	5	11	14	14	12	8	6	8	12	12	10	14	20	13	13	9	9	11	9.6	20.0											
10-Nov	18	18	10	A	18	22	23	28	21	16	11	9	13	21	8	18	27	26	26	26	25	21	22	20	19.5	28.0											
11-Nov	19	20	A	24	25	21	23	28	48	40	40	37	32	31	36	35	36	30	29	35	28	29	28	24	30.3	47.7											
12-Nov	24	A	26	26	25	32	36	37	38	29	25	37	26	33	26	23	33	33	40	43	40	32	32	14	31.0	42.5											
13-Nov	A	16	7	13	21	33	37	22	17	9	8	12	11	14	18	21	27	31	32	32	32	27	28	A	21.1	37.0											
14-Nov	24	24	24	22	24	9	10	18	16	8	15	6	5	5	6	8	13	17	12	13	3	3	A	4	12.5	24.3											
15-Nov	4	3	3	2	4	7	18	17	35	34	26	25	25	6	5	7	6	6	5	6	7	A	7	5	11.4	35.4											
16-Nov	4	4	5	5	4	6	10	10	13	7	8	7	9	9	8	13	20	37	38	36	A	15	9	8	12.4	38.3											
17-Nov	8	7	6	6	9	10	12	17	10	10	11	8	11	10	9	9	11	12	10	A	10	14	9	8	9.8	16.7											
18-Nov	7	10	11	8	9	12	14	14	21	20	10	31	9	11	13	12	18	29	A	30	30	30	9	8	15.9	30.8											
19-Nov	11	7	6	7	10	10	13	22	29	26	30	20	10	23	9	12	14	A	16	14	15	17	31	30	16.7	30.7											
20-Nov	25	22	30	40	33	32	30	29	26	28	24	21	30	33	36	41	A	28	31	31	31	29	32	32	30.3	41.0											
21-Nov	34	35	36	33	34	31	29	38	43	35	24	20	15	17	14	A	15	15	15	12	11	13	14	17	23.9	43.1											
22-Nov	14	11	15	10	12	11	11	15	19	17	17	11	21	25	A	35	39	40	33	32	31	27	28	27	21.8	40.1											
23-Nov	32	29	27	26	35	31	36	36	40	42	41	46	51	A	31	22	9	7	7	7	7	9	13	5	25.7	51.2											
24-Nov	6	3	3	2	2	5	4	5	10	24	37	17	A	15	17	31	50	50	42	46	46	44	37	37	23.1	50.3											
25-Nov	37	29	31	27	32	30	31	34	40	45	70	A	16	19	24	33	20	30	35	43	36	18	24	24	31.6	69.5											
26-Nov	31	31	30	24	23	27	29	35	37	35	A	41	40	33	47	47	44	39	44	35	35	39	39	42	36.0	46.8											
27-Nov	37	38	39	16	10	9	14	23	25	A	28	22	16	12	14	27	36	36	35	39	38	27	34	33	26.4	39.5											
28-Nov	28	26	25	19	22	22	23	21	A	29	30	28	19	21	24	13	9	8	8	11	16	9	7	15	18.7	29.5											
29-Nov	18	15	9	8	10	19	37	A	64	77	45	25	17	22	27	30	44	41	45	52	48	46	39	37	33.7	76.6											
30-Nov	40	37	37	35	42	36	A	36	24	27	28	21	19	13	21	27	34	41	44	29	36	44	28	7	30.7	44.0											
18.3 17.4 17.5 17.0 18.9 19.4 21.0 23.1 26.7 25.6 24.3 20.0 17.2 16.1 16.8 19.6 22.3 25.1 25.4 24.9 23.3 21.5 20.7 18.6																								Diurnal Average													
40.2 38.1 39.5 40.3 41.8 36.2 37.1 38.3 63.8 76.6 69.5 46.0 51.2 33.3 46.8 46.8 50.3 49.9 45.4 51.8 47.8 45.8 39.4 41.8																								Diurnal Maximum													
C - Calibration A - Automated Daily Zero Span																																					

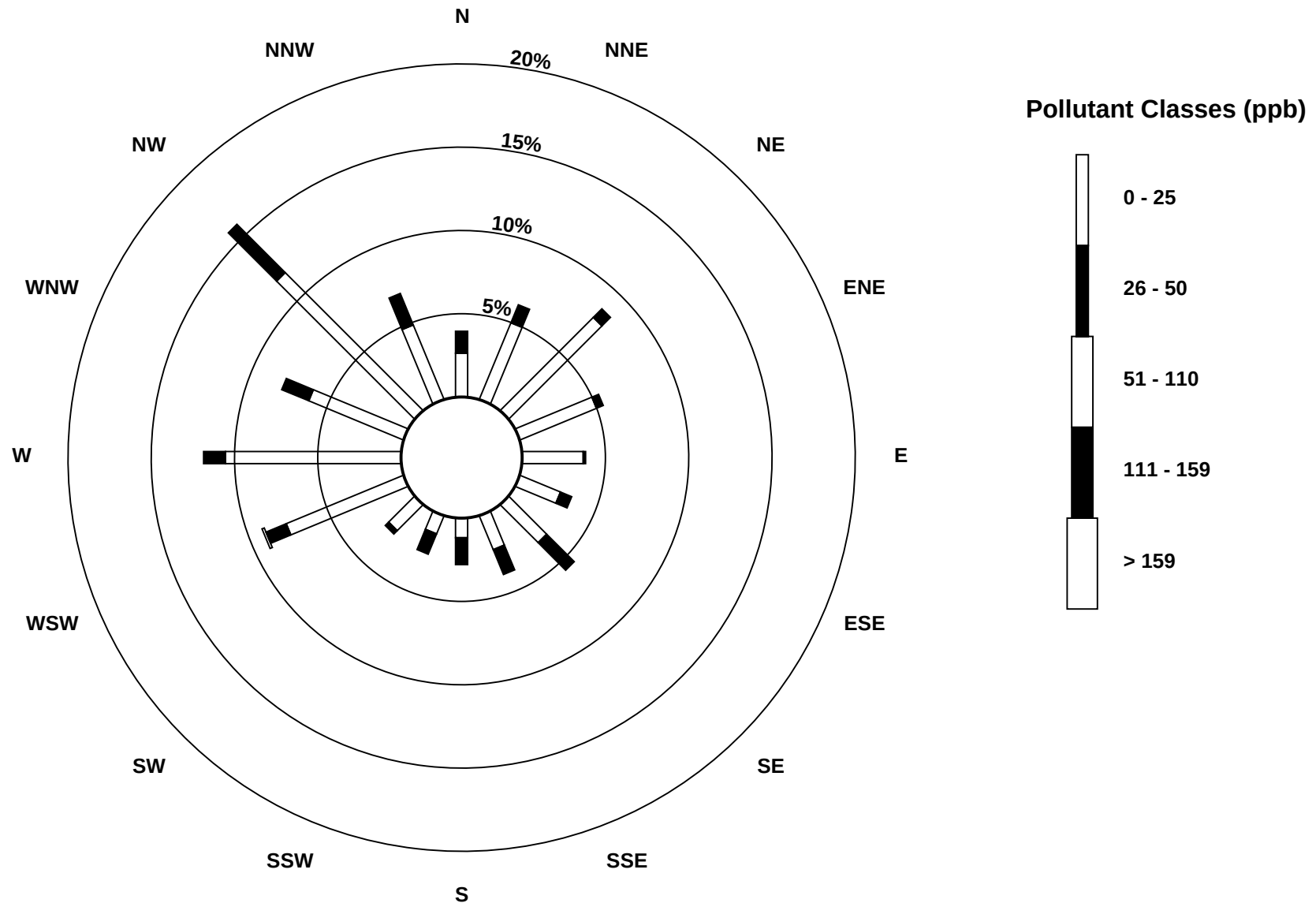
Hourly Maximums

Nitrogen Dioxide (NO₂) - ppb
Henry Pirker - November 2013



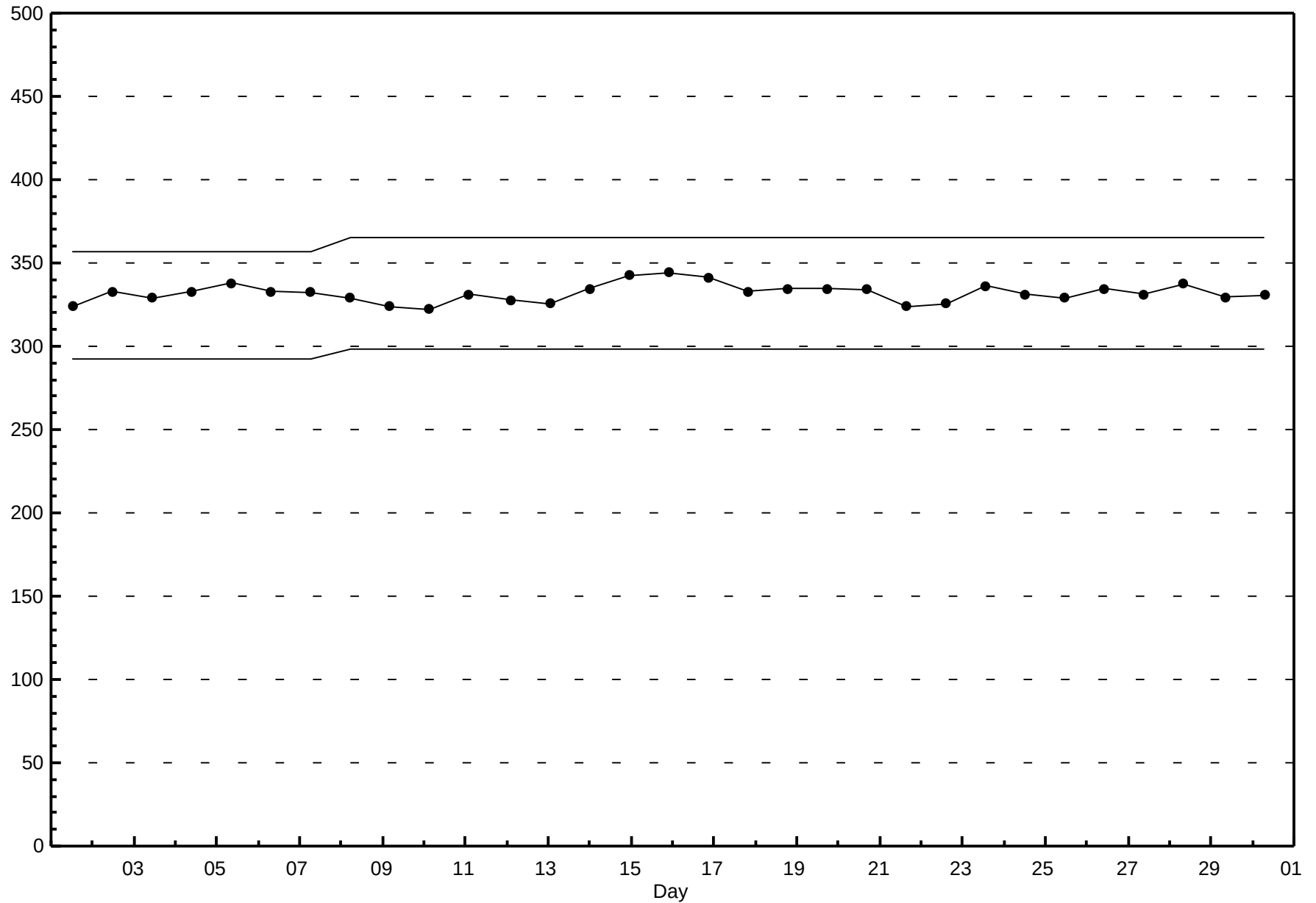
Pollutant Rose

Nitrogen Dioxide (NO₂) - ppb
Henry Pirker - November 2013



Span Responses

Nitrogen Dioxide (NO₂)
Henry Pirker - November 2013



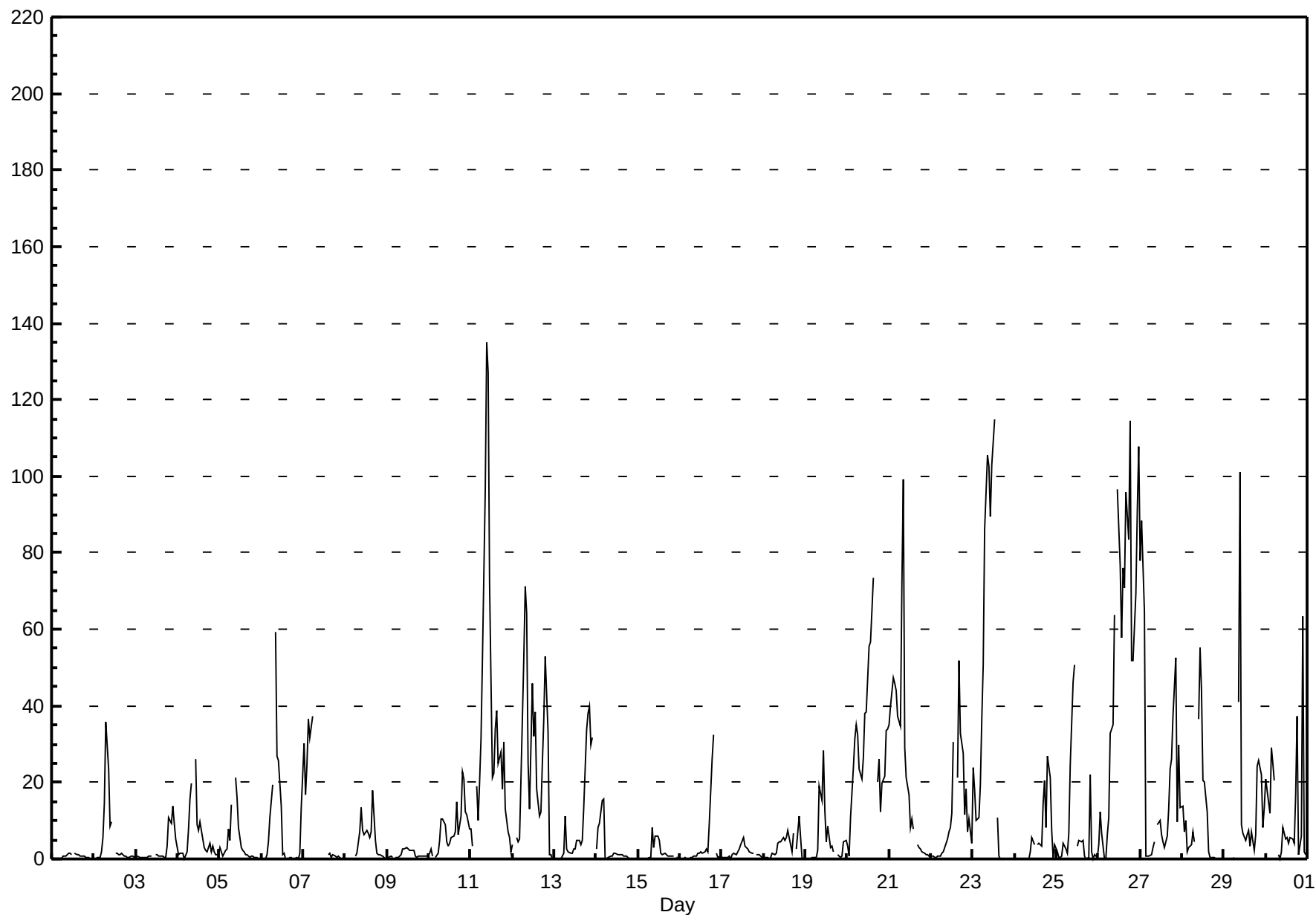
Hourly Averages

Nitrogen Oxide (NO) - ppb
Henry Pirker - November 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 135.0 ppb on Nov 11 10:00 Maximum Daily Average: 52.9 ppb on Nov 26																							Hours in Service: 720 Hours of Data: 683 Hours of Missing Data: 37 Hours of Calibration: 37 Percent Operational Time: 100.0			
Minimum Value: 0 ppb on Nov 1 01:00 Minimum Daily Average: 0.6 ppb on Nov 1 Maximum Diurnal Average: 25.4 ppb at hour 10 Minimum Diurnal Average: 6.7 ppb at hour 4 Monthly Average: 12.09 ppb Percentiles: P ₁ = 0.0 P ₁₀ = 0.1 Q ₁ = 0.6 Median = 2.8 Q ₃ = 13.0 P ₉₀ = 36.3 P ₉₉ = 102.1																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Nov	0	0	0	0	0	0	1	1	1	2	2	1	A	1	1	1	1	1	1	0	0	0	0	0	0.6	1.6
2-Nov	0	0	0	0	2	6	14	36	24	9	10	A	2	1	1	1	2	1	1	0	0	1	1	1	4.9	35.9
3-Nov	1	1	1	0	0	0	1	1	1	1	A	1	1	1	1	1	0	0	3	11	9	14	9	5	2.7	13.8
4-Nov	1	2	1	2	0	2	8	16	20	A	26	9	8	10	5	3	2	2	4	2	3	2	1	1	5.6	26.2
5-Nov	3	2	1	2	3	8	5	14	A	21	16	8	3	2	2	1	1	0	1	1	0	0	0	0	4.1	21.1
6-Nov	0	0	0	1	4	11	19	A	59	27	26	14	1	1	0	0	0	0	0	0	0	0	1	13	7.8	59.2
7-Nov	30	17	24	37	32	37	A	5	C	C	C	C	C	C	1	2	0	1	1	0	1	0	0	0	--	37.2
8-Nov	0	0	0	0	0	A	1	2	7	13	7	6	7	7	6	7	18	5	1	1	1	1	0	0	3.9	17.7
9-Nov	0	0	1	0	A	0	0	1	1	3	3	3	3	2	2	2	1	0	1	1	1	1	1	1	1.2	2.9
10-Nov	2	2	1	A	0	1	5	11	10	9	4	3	4	6	6	7	15	6	11	23	21	12	11	8	7.8	22.9
11-Nov	8	3	A	19	10	20	31	52	97	135	127	72	21	22	34	39	25	28	18	30	13	7	6	2	35.7	135.0
12-Nov	4	A	6	5	5	21	52	71	64	25	13	46	32	38	18	11	12	25	36	53	33	1	1	0	25.0	71.1
13-Nov	A	0	0	0	0	1	11	3	2	1	1	3	3	5	5	4	5	14	33	38	40	30	32	A	10.5	39.9
14-Nov	3	8	9	15	16	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0	A	0	2.7	15.5
15-Nov	0	0	0	0	0	0	0	0	8	3	6	6	5	1	1	1	1	1	1	1	1	A	0	0	1.6	8.3
16-Nov	0	0	0	0	0	0	0	0	1	1	1	2	2	2	2	3	2	9	26	33	A	2	1	1	3.7	32.6
17-Nov	0	0	1	0	1	0	1	2	1	2	3	4	6	4	3	2	2	2	1	A	1	1	1	0	1.6	5.5
18-Nov	0	0	1	0	0	1	1	2	4	4	4	6	5	6	7	4	2	7	A	3	11	6	0	0	3.2	11.2
19-Nov	0	0	0	0	0	0	0	2	19	15	28	13	4	8	3	3	2	A	1	1	0	1	5	5	4.9	28.2
20-Nov	3	1	11	24	31	35	32	23	21	26	38	39	55	57	65	73	A	20	26	12	20	22	34	34	30.5	73.5
21-Nov	35	40	48	46	44	37	35	72	99	29	21	17	8	10	8	A	4	3	3	2	1	1	1	1	24.6	99.2
22-Nov	1	1	0	0	1	1	2	2	3	5	7	8	12	31	A	21	52	33	28	12	18	7	11	4	11.2	51.9
23-Nov	24	18	10	11	20	37	51	86	106	103	89	103	115	A	11	1	0	0	0	0	0	0	0	0	34.0	114.8
24-Nov	0	0	0	0	0	0	0	0	0	2	5	4	A	4	4	3	15	21	8	27	21	7	0	4	5.4	26.7
25-Nov	2	0	0	1	4	3	2	7	25	46	51	A	3	5	4	5	1	0	0	22	2	0	1	0	8.0	50.8
26-Nov	4	12	7	0	1	6	11	33	35	64	A	97	77	58	76	71	96	83	114	52	52	69	91	108	52.9	114.4
27-Nov	78	89	64	1	1	1	1	3	4	A	9	10	6	4	3	6	13	24	26	37	52	10	30	13	21.1	88.5
28-Nov	14	7	10	2	3	4	7	5	A	36	55	44	21	20	12	2	0	0	0	0	0	0	0	0	10.5	55.0
29-Nov	0	0	0	0	0	0	0	A	41	101	9	7	5	6	8	3	7	2	6	24	26	22	8	14	12.6	101.0
30-Nov	21	18	12	29	25	21	A	1	0	2	8	5	5	4	6	5	4	17	37	1	6	63	2	1	12.8	63.5
																									Diurnal Average	
																									Diurnal Maximum	
C - Calibration A - Automated Daily Zero Span																										

Hourly Averages

Nitrogen Oxide (NO) - ppb
Henry Pirker - November 2013



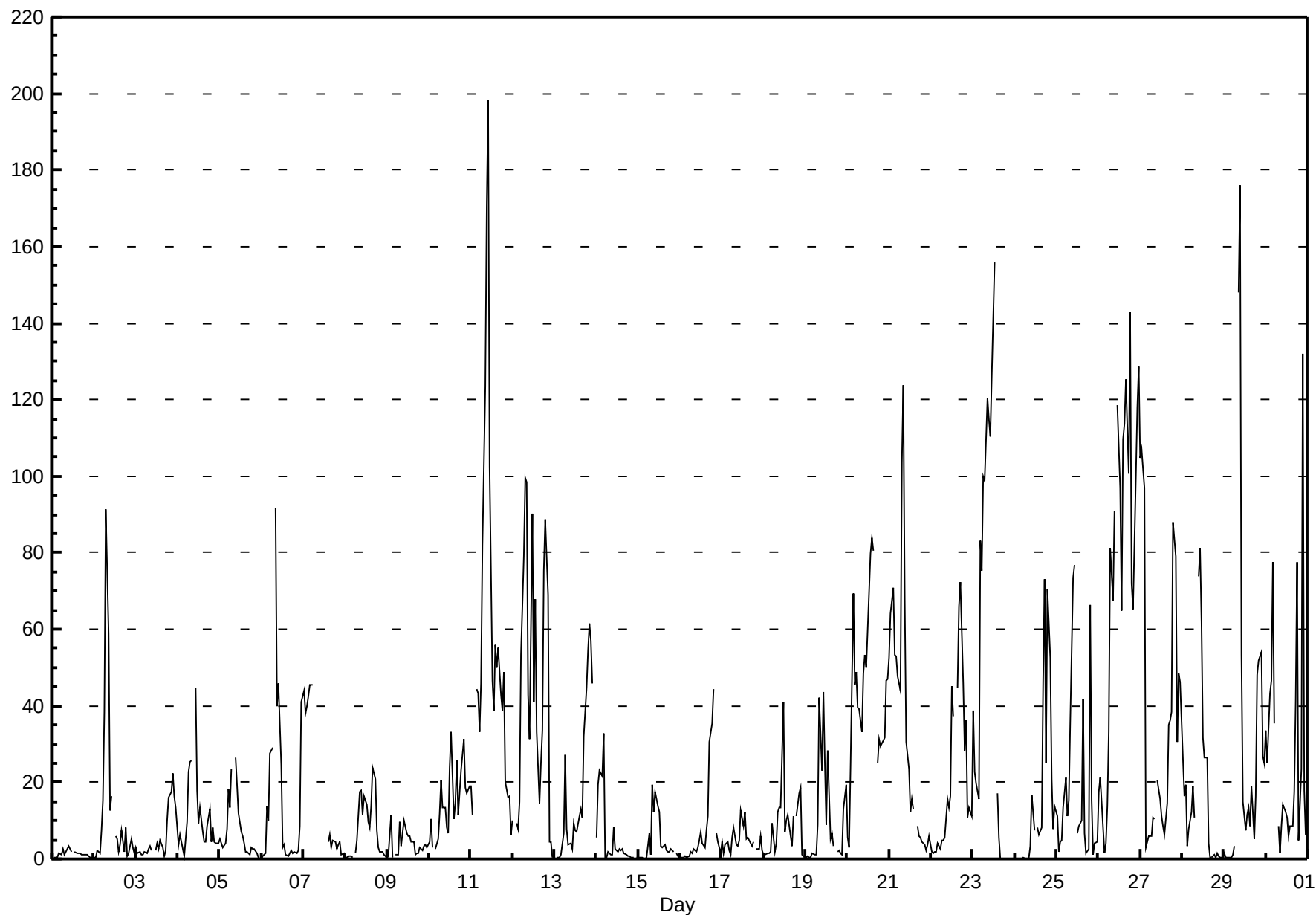
Hourly Maximums

Nitrogen Oxide (NO) - ppb
Henry Pirker - November 2013

Maximum Value: 198.5 ppb on Nov 11 11:00																					Maximum Daily Average: 74.0 ppb on Nov 26										Hours in Service: 720	
Minimum Value: 0 ppb on Nov 23 17:00																					Minimum Daily Average: 1.3 ppb on Nov 1										Hours of Data: 683	
Maximum Diurnal Average: 39.6 ppb at hour 9																					Minimum Diurnal Average: 12.0 ppb at hour 4										Hours of Missing Data: 37	
Monthly Average: 21.04 ppb																					Percentiles: P ₁ = 0.0 P ₁₀ = 0.6 Q ₁ = 2.1 Median = 7.9 Q ₃ = 26.3 P ₉₀ = 64.6 P ₉₉ = 128.2										Hours of Calibration: 37	
																					Percent Operational Time: 100.0											
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24								
1-Nov	0	0	1	0	1	1	2	1	2	3	2	A	A	2	2	2	1	1	1	1	1	1	1	1	1.3	3.5						
2-Nov	1	0	2	2	7	15	38	91	59	13	16	A	6	5	2	4	7	2	8	1	2	5	3	2	12.7	91.3						
3-Nov	3	1	2	1	1	2	1	2	3	2	A	2	4	3	5	3	1	2	10	16	17	23	16	13	5.9	22.5						
4-Nov	4	6	5	3	1	10	23	25	26	A	45	18	9	14	7	4	4	8	13	4	8	4	4	4	10.9	44.8						
5-Nov	5	4	3	4	8	18	13	23	A	26	20	12	7	6	4	2	2	1	3	2	3	1	0	0	7.3	26.3						
6-Nov	0	1	1	14	10	28	29	A	92	40	46	25	3	4	1	1	1	2	1	2	1	2	9	41	15.4	91.9						
7-Nov	44	38	40	43	45	46	A	12	C	C	C	C	C	C	5	6	3	5	4	3	4	4	1	1	--	45.6						
8-Nov	0	0	1	1	1	A	1	5	18	18	12	16	14	10	8	14	24	21	7	3	2	2	1	1	7.8	23.9						
9-Nov	1	1	11	1	A	1	1	10	4	7	10	7	6	6	4	4	1	1	3	2	3	4	4	3	4.0	11.5						
10-Nov	4	10	3	A	3	5	12	20	14	14	8	7	24	33	10	14	26	12	23	27	31	18	17	19	15.4	33.2						
11-Nov	19	11	A	44	43	33	46	82	123	170	198	103	47	39	56	50	55	43	39	49	20	16	16	6	56.9	198.5						
12-Nov	10	A	9	8	15	53	79	99	98	43	31	90	41	68	33	15	25	34	75	89	69	4	4	1	43.2	99.4						
13-Nov	A	0	0	0	1	7	27	8	4	4	3	9	7	7	11	13	11	32	45	54	61	57	46	A	18.6	61.4						
14-Nov	5	19	23	22	33	0	0	2	1	1	8	3	2	3	2	3	1	1	1	1	1	0	A	0	5.7	32.7						
15-Nov	0	0	1	0	0	0	7	1	20	12	17	14	12	4	3	4	2	2	2	2	2	A	1	1	4.7	19.6						
16-Nov	0	0	0	1	0	1	2	2	3	2	3	5	7	4	3	8	11	31	35	44	A	7	5	1	7.6	44.4						
17-Nov	4	2	4	4	2	1	6	8	4	3	5	13	9	12	5	6	5	3	4	A	2	2	6	2	5.0	12.7						
18-Nov	1	1	2	1	2	9	2	4	12	13	14	41	7	10	12	6	4	11	A	11	17	19	1	1	8.7	41.2						
19-Nov	1	1	1	1	1	1	1	9	42	23	44	25	9	28	5	7	4	A	2	2	1	1	13	19	10.4	43.7						
20-Nov	6	3	24	69	45	49	40	39	33	48	53	50	70	80	84	81	A	25	31	29	30	32	47	47	44.1	83.8						
21-Nov	52	64	71	53	53	48	44	104	124	68	31	24	12	16	13	A	9	6	6	4	4	2	4	6	35.5	123.7						
22-Nov	2	2	2	2	4	3	5	5	6	16	14	16	45	37	A	45	66	72	46	28	36	11	14	11	21.1	72.2						
23-Nov	39	23	20	16	83	75	100	99	121	115	110	126	156	A	17	6	0	0	0	0	0	0	0	0	48.0	155.9						
24-Nov	0	0	0	0	0	0	0	0	0	3	17	7	A	8	6	8	46	73	25	71	53	21	8	14	15.7	73.0						
25-Nov	11	2	5	5	13	21	11	15	36	73	77	A	7	8	10	42	7	2	3	67	15	1	4	4	19.0	76.7						
26-Nov	17	21	15	1	4	14	33	81	67	91	A	119	97	65	110	114	125	101	143	72	65	100	118	129	74.0	142.7						
27-Nov	105	107	97	3	4	6	6	11	10	A	21	15	11	9	6	15	35	36	38	88	79	31	48	46	36.0	107.0						
28-Nov	26	16	19	4	8	12	19	11	A	74	81	62	32	26	26	4	1	1	1	1	1	1	1	0	18.5	81.2						
29-Nov	1	0	0	0	1	1	3	A	148	176	53	15	8	11	14	8	19	5	16	48	52	54	27	25	29.9	176.0						
30-Nov	34	25	43	46	78	36	A	8	1	8	14	12	11	6	8	8	17	41	77	5	24	132	18	6	28.7	131.8						
13.7 12.5 14.0 12.0 16.1 17.1 19.8 27.8 39.6 39.6 35.3 31.0 24.5 18.7 16.3 17.1 17.7 19.8 22.9 25.1 20.8 19.2 15.0 14.0																									Diurnal Average							
104.9 107.0 96.8 69.2 83.1 75.4 100.0 103.7 148.0 176.0 198.5 126.3 155.9 79.8 109.5 113.7 125.4 100.6 142.7 88.9 79.1 131.8 118.0 128.7																									Diurnal Maximum							
C - Calibration																									A - Automated Daily Zero Span							

Hourly Maximums

Nitrogen Oxide (NO) - ppb
Henry Pirker - November 2013



Hourly Averages

Oxides of Nitrogen (NO_x) - ppb

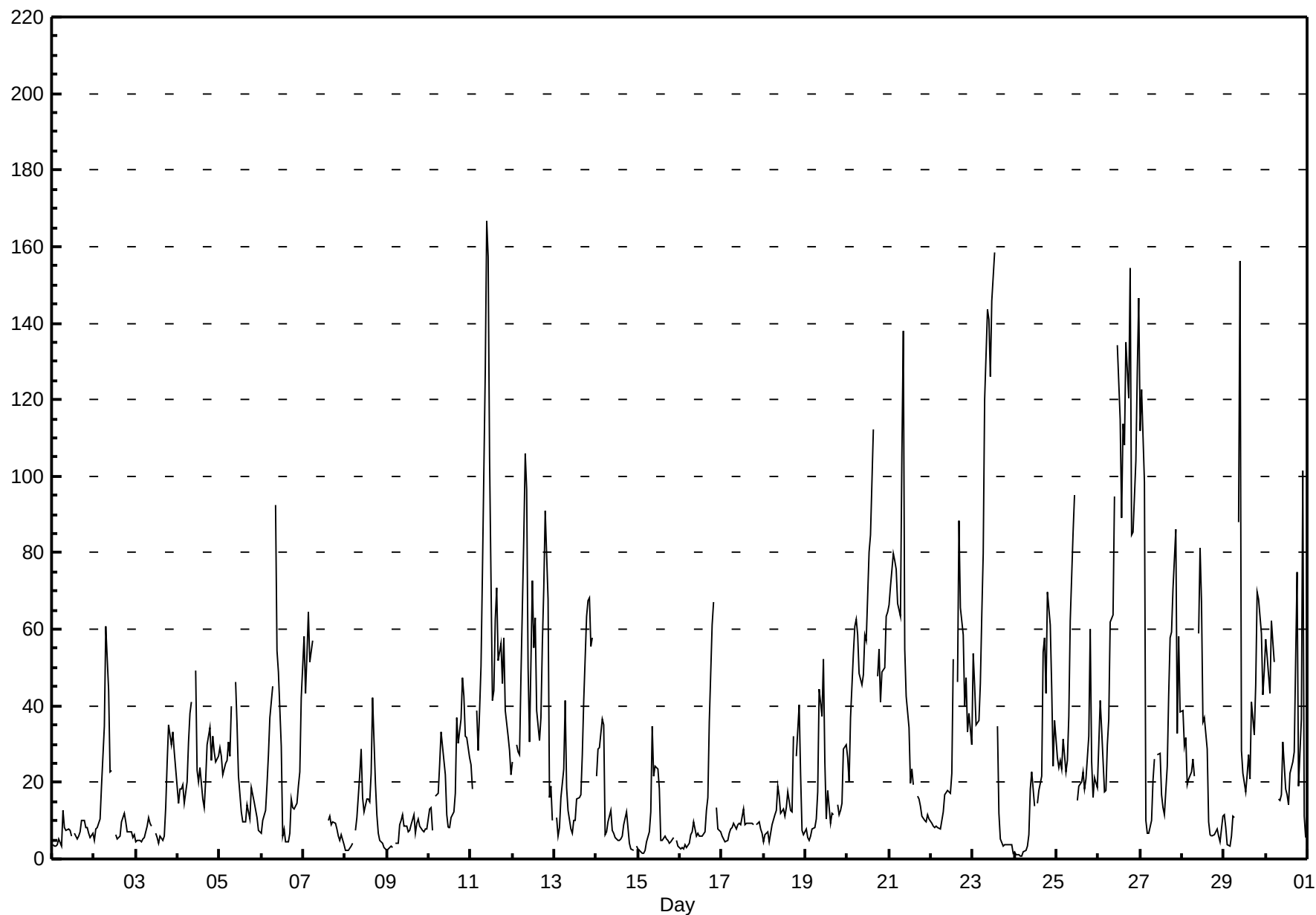
Henry Pirker - November 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 166.8 ppb on Nov 11 10:00 Maximum Daily Average: 84.6 ppb on Nov 26																								Hours in Service: 720 Hours of Data: 683 Hours of Missing Data: 37 Hours of Calibration: 37 Percent Operational Time: 100.0		
Minimum Value: 1 ppb on Nov 24 04:00 Minimum Daily Average: 6.7 ppb on Nov 1 Maximum Diurnal Average: 45.4 ppb at hour 9 Minimum Diurnal Average: 20.6 ppb at hour 4 Monthly Average: 28.38 ppb Percentiles: P ₁ = 1.6 P ₁₀ = 4.8 Q ₁ = 7.8 Median = 17.4 Q ₃ = 38.0 P ₉₀ = 64.8 P ₉₉ = 145.3																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
1-Nov	4	3	3	4	5	4	13	8	7	8	7	6	A	7	5	6	7	10	10	8	8	7	5	7	6.7	12.7
2-Nov	5	8	8	10	19	27	35	61	44	23	23	A	7	5	6	6	10	12	10	7	7	7	6	6	15.2	60.7
3-Nov	4	5	5	5	5	5	8	11	9	9	A	7	6	4	6	5	6	14	25	35	30	33	28	23	12.5	35.1
4-Nov	14	18	18	19	14	20	31	38	41	A	49	23	20	24	16	13	21	30	34	26	32	28	25	27	25.3	49.2
5-Nov	29	27	22	25	26	31	27	40	A	46	35	22	12	10	10	10	14	11	18	17	15	11	8	7	20.5	46.2
6-Nov	7	10	13	19	27	37	45	A	92	54	49	29	6	8	4	4	7	16	13	13	15	19	23	42	24.1	92.3
7-Nov	58	43	53	64	51	57	A	30	C	C	C	C	C	C	10	11	9	10	9	8	6	5	6	4	--	64.4
8-Nov	2	2	2	3	4	A	7	11	22	29	16	12	16	16	15	22	42	20	12	7	5	4	3	3	12.0	42.1
9-Nov	2	3	3	3	A	4	4	9	10	12	9	8	7	8	9	12	7	9	10	8	7	7	8	8	7.3	11.7
10-Nov	13	13	8	A	16	17	24	33	29	22	12	8	8	11	12	17	37	30	37	47	43	32	32	26	23.0	47.2
11-Nov	25	18	A	39	28	39	50	75	128	167	157	105	42	44	63	71	52	56	46	58	39	32	28	22	60.1	166.8
12-Nov	25	A	30	28	27	48	84	106	97	50	30	73	55	63	39	31	37	56	71	91	68	16	19	10	50.1	106.0
13-Nov	A	11	6	8	16	24	41	19	13	8	7	10	10	16	16	17	27	41	63	67	68	56	58	A	27.4	68.3
14-Nov	21	29	29	36	35	6	7	10	13	7	7	6	5	5	5	6	9	12	8	4	2	2	A	3	11.7	36.4
15-Nov	3	2	2	2	2	4	7	12	35	22	24	24	18	5	5	6	5	5	4	4	6	A	5	3	8.9	34.6
16-Nov	3	3	3	4	3	4	6	7	10	6	7	6	6	6	7	13	16	36	61	67	A	14	8	7	13.1	67.1
17-Nov	6	5	5	5	7	8	8	9	8	9	9	9	13	9	9	9	9	9	9	A	9	10	8	7	8.2	13.2
18-Nov	4	6	7	5	7	9	12	13	19	16	12	13	11	14	17	13	12	32	A	27	40	22	7	6	14.1	40.4
19-Nov	8	6	5	6	8	8	10	18	44	37	52	25	10	18	9	12	12	A	14	11	13	14	29	30	17.4	52.2
20-Nov	26	20	37	54	61	63	59	49	45	48	59	57	80	85	98	112	A	48	55	41	49	50	64	64	57.5	112.2
21-Nov	66	71	80	78	76	67	63	106	138	55	42	34	20	24	20	A	17	16	14	11	10	10	12	11	45.2	138.1
22-Nov	9	9	8	8	8	8	10	12	17	18	17	17	23	52	A	46	88	66	59	40	47	33	38	30	28.9	88.2
23-Nov	54	45	35	36	46	64	80	120	143	141	126	146	159	A	35	12	5	3	4	4	4	4	4	1	55.2	158.6
24-Nov	2	1	1	1	1	2	2	3	6	18	23	14	A	14	18	22	54	58	43	70	61	45	24	36	22.6	69.6
25-Nov	26	24	26	24	31	23	26	37	62	85	95	A	15	19	20	23	18	21	32	60	25	16	21	19	32.6	95.1
26-Nov	30	42	34	17	18	30	37	62	64	95	A	134	115	89	114	108	135	120	154	85	85	104	128	147	84.6	154.2
27-Nov	112	123	98	10	7	7	10	21	26	A	27	28	17	13	12	24	43	58	59	71	86	33	58	38	42.6	122.8
28-Nov	39	29	32	19	21	23	26	21	A	59	81	67	36	37	29	10	6	6	7	7	8	6	4	11	25.4	81.3
29-Nov	12	8	4	3	6	11	11	A	88	156	28	22	17	22	27	21	41	32	45	70	68	59	43	49	36.7	156.4
30-Nov	57	53	43	62	57	52	A	16	15	17	31	18	17	14	22	25	28	52	75	19	37	101	11	6	36.0	101.5
23.0 22.0 21.4 20.6 21.8 24.1 26.6 34.2 45.4 45.1 38.4 34.2 27.8 22.9 22.7 23.7 26.7 30.6 34.6 33.9 30.8 26.9 24.6 22.5																								Diurnal Average		
111.9 122.8 98.3 77.8 75.8 66.7 84.1 120.2 143.5 166.8 157.4 145.6 158.6 89.2 113.6 112.2 134.9 120.4 154.2 91.0 86.0 104.1 127.6 146.7																								Diurnal Maximum		
C - Calibration A - Automated Daily Zero Span																										

Hourly Averages

Oxides of Nitrogen (NO_x) - ppb

Henry Pirker - November 2013



Hourly Maximums

Oxides of Nitrogen (NO_x) - ppb

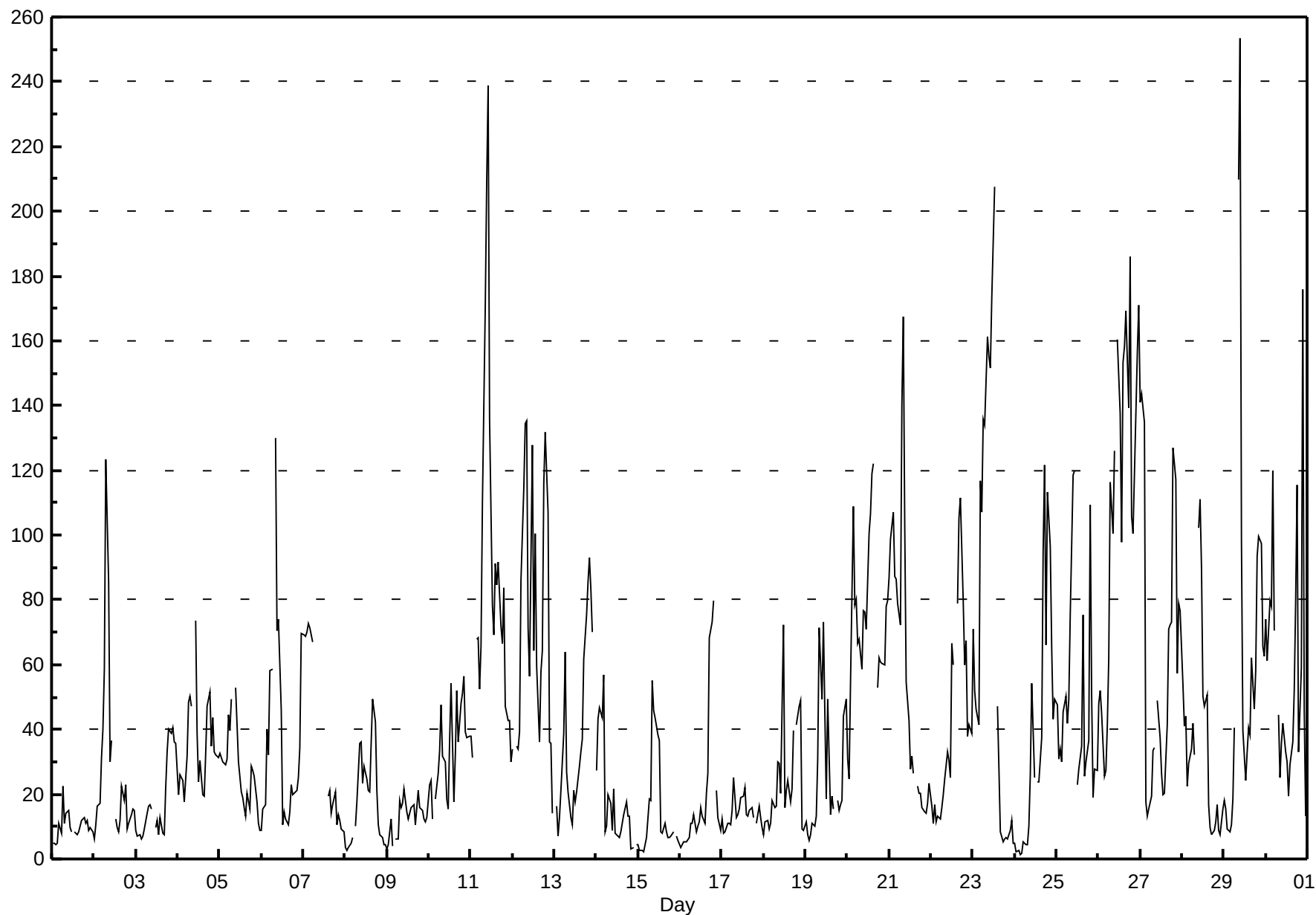
Henry Pirker - November 2013

Maximum Value: 253.3 ppb on Nov 29 10:00																				Maximum Daily Average: 109.4 ppb on Nov 26										Hours in Service: 720	
Minimum Value: 1 ppb on Nov 24 04:00																				Minimum Daily Average: 9.9 ppb on Nov 1										Hours of Data: 683	
Maximum Diurnal Average: 65.6 ppb at hour 9																				Minimum Diurnal Average: 28.5 ppb at hour 4										Hours of Missing Data: 37	
Monthly Average: 41.26 ppb																				Percentiles: P ₁ = 2.6 P ₁₀ = 7.7 Q ₁ = 13.0 Median = 27.3 Q ₃ = 56.2 P ₉₀ = 99.0 P ₉₉ = 172.4										Hours of Calibration: 37	
																				Percent Operational Time: 100.0											
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24							
1-Nov	5	5	5	5	11	8	22	11	14	15	10	8	A	8	7	8	10	12	13	11	12	9	10	8	9.9	22.3					
2-Nov	6	10	16	17	31	40	58	123	86	30	37	A	12	10	8	12	22	18	23	9	11	14	16	15	27.2	123.5					
3-Nov	9	7	7	6	7	9	14	16	17	15	A	10	12	7	13	8	7	22	33	40	39	41	36	36	17.9	40.7					
4-Nov	20	26	25	24	18	32	48	50	47	A	73	39	24	30	20	20	32	47	52	35	44	33	32	31	34.9	73.4					
5-Nov	32	31	30	29	31	45	40	49	A	53	41	30	21	19	16	13	20	15	29	27	25	17	11	9	27.6	52.9					
6-Nov	9	15	17	40	32	58	59	A	130	70	74	46	10	14	12	11	15	23	20	20	21	25	35	70	35.9	130.0					
7-Nov	69	69	70	73	71	67	A	40	C	C	C	C	C	C	19	21	14	17	21	11	14	12	9	8	--	72.5					
8-Nov	4	3	4	5	6	A	10	17	36	36	24	28	25	21	21	36	49	42	21	10	7	7	4	4	18.3	49.2					
9-Nov	3	4	13	4	A	6	6	18	16	17	22	14	12	14	16	17	11	16	21	16	15	12	12	13	12.9	21.7					
10-Nov	23	24	12	A	18	26	33	48	32	30	19	15	37	54	18	32	52	36	48	51	56	39	37	38	33.9	56.3					
11-Nov	38	31	A	68	68	52	66	110	171	209	239	136	78	69	91	84	92	72	67	84	47	43	43	30	86.4	239.0					
12-Nov	34	A	35	34	39	86	115	135	135	72	56	128	64	100	59	36	58	64	116	132	107	36	36	14	73.5	135.4					
13-Nov	A	16	7	13	21	39	64	27	21	13	11	21	18	21	29	33	37	62	75	85	93	83	70	A	39.0	92.8					
14-Nov	27	43	47	44	57	8	10	20	17	9	22	8	7	6	8	11	14	17	13	13	3	3	A	4	18.0	57.0					
15-Nov	4	3	3	2	4	7	18	18	55	46	44	38	37	8	8	11	8	7	7	7	8	A	7	6	15.5	55.2					
16-Nov	4	4	5	5	5	7	11	11	14	8	10	11	16	13	11	20	27	68	73	80	A	21	13	9	19.4	79.8					
17-Nov	12	8	8	11	11	11	15	25	13	14	15	19	19	22	14	13	15	16	13	A	11	16	13	10	14.1	25.2					
18-Nov	8	11	12	9	11	18	16	16	30	29	20	72	16	21	24	18	22	40	A	41	47	49	9	9	23.8	72.2					
19-Nov	11	7	6	7	11	10	13	31	71	50	73	45	19	49	14	19	15	A	18	15	17	18	44	50	26.7	73.2					
20-Nov	31	25	55	109	78	80	67	68	59	77	76	71	101	107	119	122	A	53	62	61	61	60	78	80	73.8	122.2					
21-Nov	87	99	107	87	86	79	72	141	168	103	55	43	28	32	26	A	22	20	20	16	15	14	17	23	59.1	167.5					
22-Nov	17	11	17	11	13	12	16	20	25	33	30	25	66	60	A	79	105	111	79	60	67	38	42	39	42.4	111.4					
23-Nov	71	52	46	41	117	107	136	134	161	155	151	173	208	A	47	28	8	5	6	6	6	9	12	5	73.3	207.6					
24-Nov	5	2	2	1	2	5	4	5	10	26	54	25	A	24	24	37	95	122	66	113	97	65	43	49	38.1	121.8					
25-Nov	48	31	34	30	45	50	42	49	75	119	120	A	23	28	35	75	26	30	36	109	51	19	28	27	49.1	119.8					
26-Nov	48	52	45	25	27	41	62	116	101	126	A	160	137	98	153	158	169	139	186	106	100	138	156	171	109.4	186.0					
27-Nov	141	144	135	18	13	15	20	34	34	A	49	38	26	20	20	42	71	72	73	127	117	57	79	77	61.8	143.6					
28-Nov	54	41	44	23	29	34	42	32	A	102	111	90	50	47	51	17	10	8	9	12	17	9	7	15	37.1	111.2					
29-Nov	18	15	9	8	11	19	41	A	210	253	99	40	24	33	41	38	62	46	58	93	100	98	65	62	62.8	253.3					
30-Nov	74	61	80	78	120	70	A	45	25	36	42	33	30	19	29	36	52	80	116	33	59	176	46	13	58.8	175.8					
31.4 29.3 30.9 28.5 34.3 36.0 40.0 50.4 65.6 64.7 58.4 50.6 41.5 34.1 32.8 36.4 39.3 44.2 47.4 49.1 43.7 40.0 34.8 31.9																									Diurnal Average						
141.0 143.6 134.9 108.9 119.7 106.9 135.5 140.5 210.0 253.3 239.0 173.3 207.6 106.5 153.2 158.0 169.3 139.4 186.0 131.7 117.2 175.8 156.2 171.0																									Diurnal Maximum						
C - Calibration																									A - Automated Daily Zero Span						

Hourly Maximums

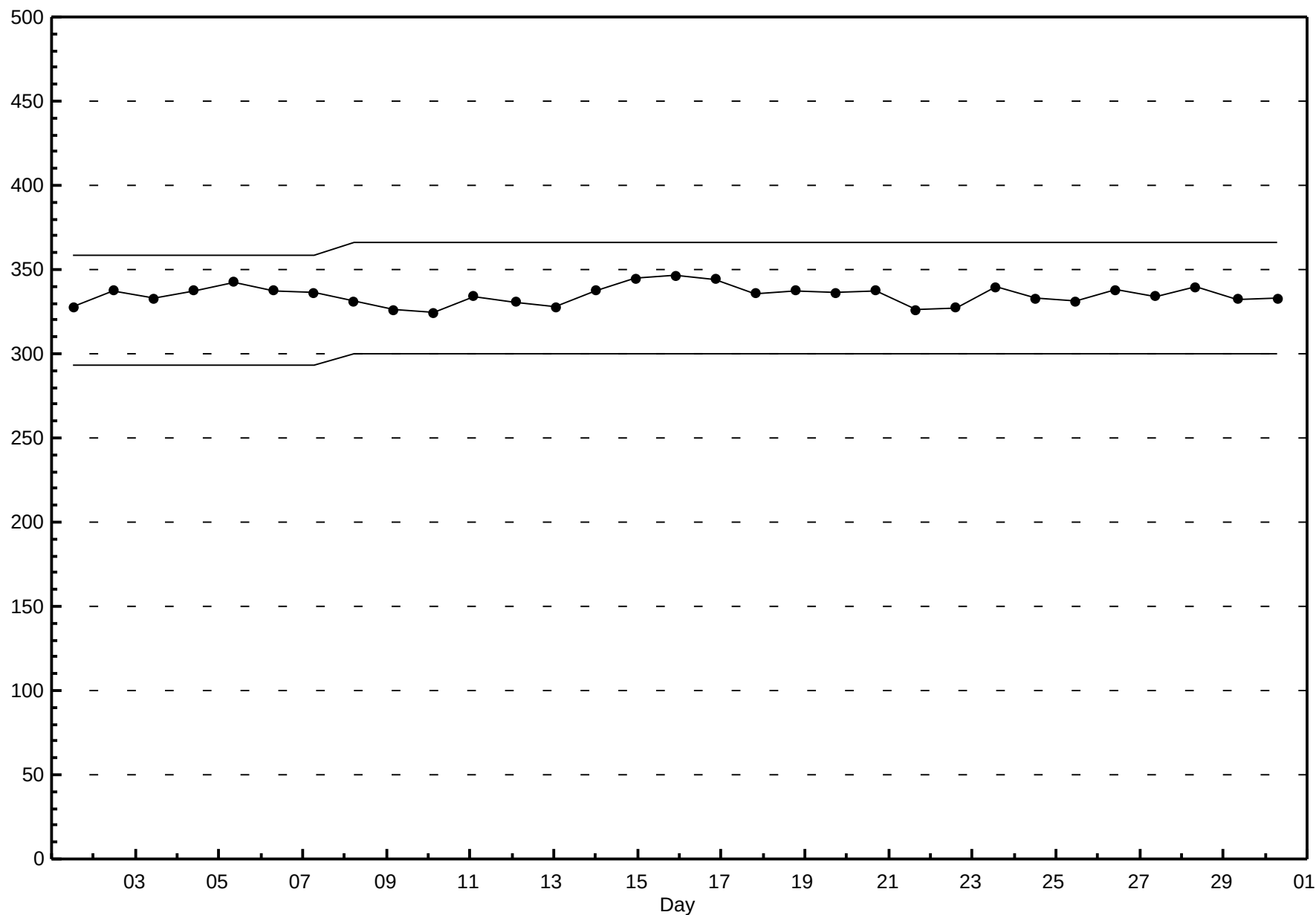
Oxides of Nitrogen (NO_x) - ppb

Henry Pirker - November 2013



Span Responses

Oxides of Nitrogen (NO_x)
Henry Pirker - November 2013



Hourly Averages

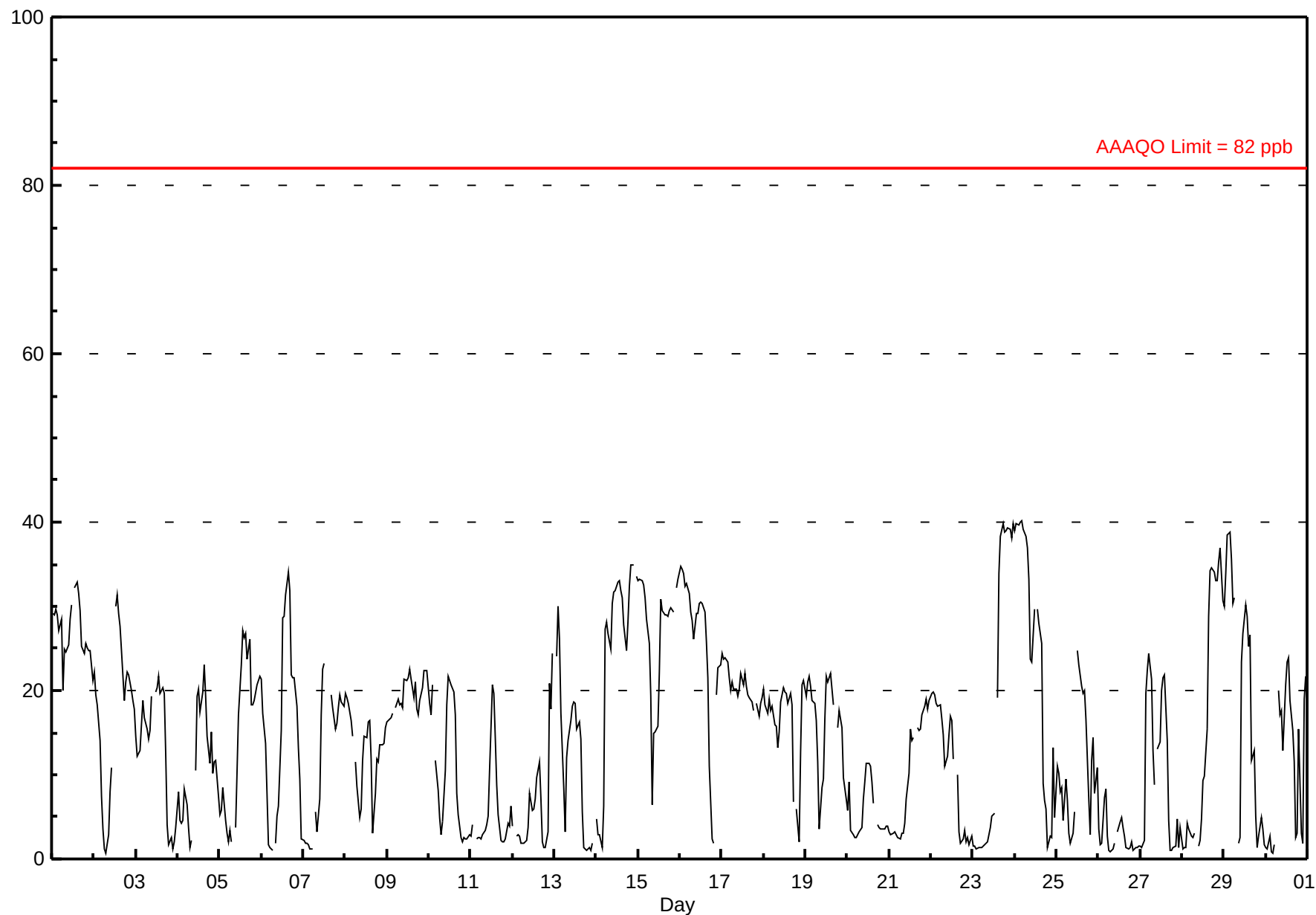
Ozone (O₃) - ppb

Henry Pirker - November 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 40.1 ppb on Nov 24 05:00 Maximum Daily Average: 27.1 ppb on Nov 1																								Hours in Service: 720 Hours of Data: 686 Hours of Missing Data: 34 Hours of Calibration: 34 Percent Operational Time: 100.0		
Minimum Value: 1 ppb on Nov 2 08:00 Maximum Diurnal Average: 21.3 ppb at hour 14 Monthly Average: 14.88 ppb												Minimum Daily Average: 2.6 ppb on Nov 26 Minimum Diurnal Average: 9.8 ppb at hour 9 Percentiles: P ₁ = 1.1 P ₁₀ = 1.9 Q ₁ = 3.8 Median = 15.4 Q ₃ = 21.6 P ₉₀ = 30.1 P ₉₉ = 39.2														
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
1-Nov	29	29	30	29	27	28	20	25	25	25	28	30	A	32	33	32	29	25	24	26	25	25	25	21	27.1	32.9
2-Nov	22	19	18	14	7	4	1	1	3	8	11	A	30	31	29	28	25	19	21	22	22	20	19	18	17.0	31.3
3-Nov	15	12	13	16	19	17	15	14	15	19	A	20	20	22	20	20	20	13	4	2	2	1	2	4	13.2	21.7
4-Nov	8	5	4	5	8	6	4	1	2	A	10	19	20	17	20	23	19	14	11	15	10	11	12	7	11.1	23.1
5-Nov	5	6	8	5	3	2	3	2	A	4	10	17	23	27	26	27	24	26	18	18	19	21	21	22	14.7	27.1
6-Nov	21	17	14	8	2	1	1	A	2	5	6	15	29	29	31	34	32	22	22	22	18	13	9	2	15.5	34.1
7-Nov	2	2	2	2	1	1	A	6	3	7	17	22	23	C	C	C	19	18	15	16	18	19	19	18	11.6	23.2
8-Nov	20	19	18	16	15	A	11	9	5	6	12	15	14	16	16	12	3	8	12	11	14	14	14	16	12.8	19.6
9-Nov	16	17	17	17	A	18	19	18	19	18	21	21	22	22	21	19	21	18	17	19	20	22	22	22	19.5	22.5
10-Nov	19	17	21	A	12	8	5	3	4	11	18	22	21	21	20	17	8	5	3	2	3	2	2	3	10.7	21.8
11-Nov	3	4	A	2	3	2	2	3	3	4	5	10	21	20	14	9	5	2	2	2	2	4	4	6	5.8	20.7
12-Nov	4	A	3	3	3	2	2	2	2	4	8	6	6	7	10	12	7	2	1	1	3	21	18	24	6.5	24.4
13-Nov	A	24	30	26	17	9	3	12	14	16	18	19	18	15	16	14	6	1	1	1	1	1	2	A	12.1	30.0
14-Nov	5	3	3	1	6	27	28	27	25	30	32	32	33	33	32	31	28	25	28	32	35	35	A	34	24.6	35.0
15-Nov	33	33	33	33	31	28	26	19	6	15	15	16	22	31	29	29	29	29	29	30	29	A	32	33	26.6	33.3
16-Nov	35	34	34	32	33	31	29	28	26	29	29	30	30	30	29	26	21	11	2	2	A	19	23	23	25.6	34.8
17-Nov	24	24	24	23	22	20	21	20	20	19	20	22	21	22	20	20	19	19	18	A	19	17	19	19	20.5	24.4
18-Nov	20	18	17	19	18	18	16	16	13	15	19	20	20	19	20	18	7	A	A	6	2	13	21	21	16.3	21.2
19-Nov	19	21	22	20	19	18	16	12	4	8	10	17	22	21	22	20	18	A	16	18	17	16	10	7	16.1	22.0
20-Nov	6	9	3	3	3	3	3	3	4	7	9	11	11	11	9	7	A	4	4	4	4	4	4	4	5.6	11.3
21-Nov	3	3	3	3	3	3	2	3	3	4	7	10	15	14	14	A	16	15	15	17	18	19	18	19	10.0	19.0
22-Nov	20	20	20	19	18	18	17	15	11	12	15	17	16	12	A	10	3	2	2	3	2	3	2	3	11.2	19.8
23-Nov	2	2	1	1	1	1	2	2	2	3	4	5	5	A	19	34	38	40	39	39	39	39	38	40	17.2	39.8
24-Nov	39	40	40	40	40	39	38	37	33	24	23	30	A	30	28	26	9	7	6	1	3	2	13	5	24.0	40.1
25-Nov	11	10	8	9	5	10	7	3	2	3	6	A	25	23	20	20	20	17	7	3	12	14	8	11	10.9	24.8
26-Nov	4	2	2	7	8	3	1	1	1	2	A	3	4	5	4	3	1	1	1	2	1	1	1	1	2.6	8.2
27-Nov	1	1	2	20	22	24	21	13	9	A	13	14	20	22	22	14	5	1	1	1	2	5	1	4	10.4	24.3
28-Nov	1	1	1	4	4	3	3	3	A	1	2	5	9	10	15	29	34	35	34	33	33	35	37	31	15.8	36.9
29-Nov	30	34	38	39	36	30	31	A	2	2	23	27	30	29	25	27	12	13	5	1	3	5	4	2	19.5	38.8
30-Nov	1	1	3	1	1	2	A	20	17	18	13	21	23	24	19	15	12	3	3	15	3	2	19	22	11.2	23.8
14.4 14.7 14.9 14.4 13.3 13.0 12.5 11.3 9.8 11.5 14.5 17.7 19.9 21.3 20.9 20.5 17.3 13.8 12.5 12.6 13.0 13.9 14.4 15.2 39.0 39.8 39.7 40.0 40.1 39.1 38.3 36.9 33.2 30.4 31.7 31.9 32.8 33.1 32.9 34.1 38.3 39.8 38.8 39.0 39.3 39.1 38.1 39.8																								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 - November 2013



Hourly Maximums

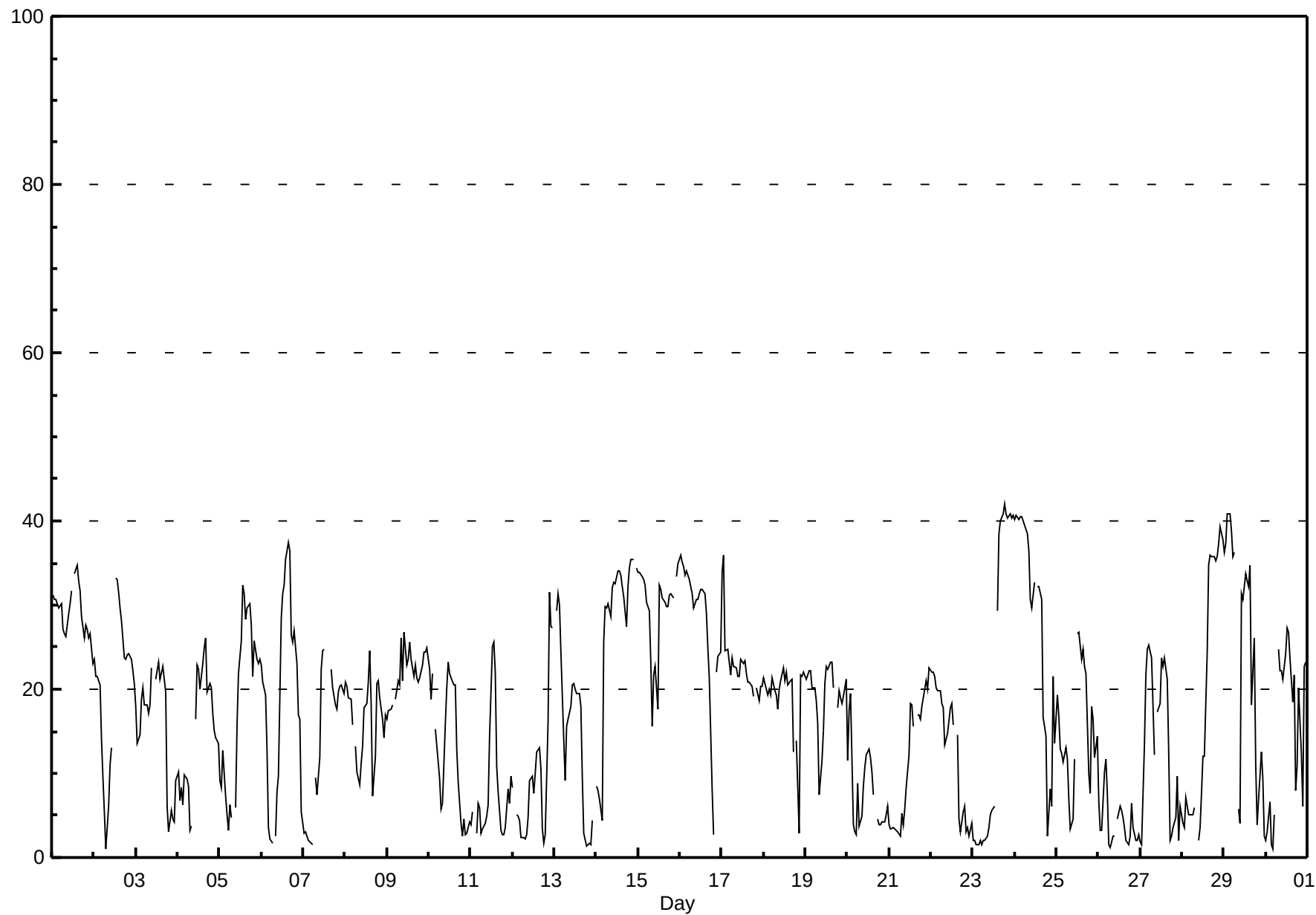
Ozone (O₃) - ppb

Henry Pirker - November 2013

Maximum Value: 42.1 ppb on Nov 23 19:00																								Maximum Daily Average: 29.3 ppb on Nov 15										Hours in Service: 720	
Minimum Value: 1 ppb on Nov 2 08:00																								Minimum Daily Average: 4.3 ppb on Nov 26										Hours of Data: 686	
Maximum Diurnal Average: 24.3 ppb at hour 15																								Minimum Diurnal Average: 12.8 ppb at hour 9										Hours of Missing Data: 34	
Monthly Average: 17.78 ppb																								Percentiles: P ₁ = 1.5 P ₁₀ = 3.2 Q ₁ = 7.3 Median = 19.2 Q ₃ = 24.7 P ₉₀ = 32.6 P ₉₉ = 40.7										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-Nov	31	31	31	30	30	30	27	27	26	29	30	32	A	34	35	33	32	29	26	28	27	26	27	23	29.2	34.7									
2-Nov	24	22	22	21	14	10	5	1	6	11	13	A	33	33	32	30	28	24	24	24	24	22	21	20.2	33.2										
3-Nov	18	14	15	19	20	18	18	17	18	23	A	21	22	23	21	23	21	20	6	3	6	5	4	9	15.8	23.2									
4-Nov	10	7	8	6	10	9	8	3	4	A	16	23	22	20	23	25	26	20	21	20	17	15	14	14	14.9	26.1									
5-Nov	9	8	13	7	5	3	6	5	A	6	16	22	26	32	31	28	30	30	28	22	26	24	23	23	18.4	32.3									
6-Nov	23	21	19	13	4	2	2	A	3	8	10	29	31	32	35	37	36	26	26	27	23	17	16	5	19.4	37.5									
7-Nov	3	3	2	2	2	2	A	10	7	12	22	25	25	C	C	C	22	20	18	18	20	20	21	19	13.6	24.7									
8-Nov	21	20	19	19	16	A	13	10	9	11	13	18	18	21	25	18	7	12	21	21	19	16	14	17	16.5	24.5									
9-Nov	17	18	18	18	A	19	21	21	26	21	27	23	24	26	24	21	23	21	21	21	23	24	24	25	21.9	26.8									
10-Nov	22	19	22	A	15	11	9	6	6	16	20	23	22	21	20	21	13	9	4	3	5	3	3	4	12.9	23.2									
11-Nov	4	5	A	3	6	6	3	3	4	5	6	14	25	26	22	11	8	3	3	3	4	8	6	10	8.2	25.5									
12-Nov	8	A	5	5	4	2	2	2	3	5	9	10	8	10	13	13	10	3	2	3	16	31	27	27	9.6	31.5									
13-Nov	A	29	31	30	24	14	9	16	16	18	20	21	20	19	20	18	9	3	1	2	2	1	4	A	15.0	31.4									
14-Nov	9	8	7	4	26	30	30	30	29	32	33	33	34	34	34	32	31	27	32	34	35	35	A	34	27.5	35.5									
15-Nov	34	34	33	33	32	30	29	23	16	22	23	18	32	32	31	30	30	30	31	31	31	A	33	35	29.3	35.0									
16-Nov	36	35	35	34	34	33	32	31	30	31	31	31	32	32	31	29	25	21	8	3	A	22	24	24	28.0	36.0									
17-Nov	34	36	25	25	23	22	24	23	23	22	22	24	23	23	22	21	21	20	19	A	20	19	20	20	23.0	35.9									
18-Nov	21	21	19	20	19	21	20	19	18	20	21	22	21	22	21	21	21	13	A	14	3	22	22	22	19.2	22.5									
19-Nov	21	22	22	22	20	20	19	16	7	12	15	21	23	22	23	23	20	A	18	20	19	18	19	21	19.3	23.2									
20-Nov	12	17	19	4	3	3	9	4	5	9	11	12	13	12	10	8	A	5	4	4	4	4	5	6	7.9	19.4									
21-Nov	4	3	4	3	3	3	3	5	4	6	8	12	18	18	16	A	17	17	16	18	20	21	20	22	11.4	22.5									
22-Nov	22	22	21	20	20	20	18	18	13	15	16	18	18	16	A	15	5	3	5	6	3	4	3	4	13.3	22.0									
23-Nov	2	2	2	2	2	2	2	2	3	4	5	6	6	A	29	38	40	41	42	41	40	41	40	41	18.8	42.1									
24-Nov	40	41	40	41	41	40	39	38	37	31	30	33	A	32	32	31	17	16	14	3	8	6	22	14	27.9	40.6									
25-Nov	19	17	13	12	11	13	12	7	3	4	12	A	27	27	24	25	23	22	10	8	18	16	12	14	15.2	26.8									
26-Nov	7	3	3	10	12	8	2	1	3	3	A	5	6	6	5	4	2	2	3	6	4	2	2	3	4.3	11.8									
27-Nov	2	2	13	22	25	25	24	18	12	A	17	18	24	23	24	21	13	2	3	4	5	10	2	6	13.6	25.3									
28-Nov	4	4	7	6	5	5	5	6	A	2	4	8	12	12	24	35	36	36	36	35	36	37	39	38	18.8	39.3									
29-Nov	36	37	41	41	39	36	36	A	6	4	31	31	34	33	32	35	18	26	11	4	7	13	9	2	24.4	40.8									
30-Nov	2	3	7	1	1	5	A	25	22	22	21	24	27	27	24	18	22	8	11	20	12	6	23	23	15.4	27.3									
17.1 17.3 17.8 16.3 16.1 15.3 15.3 13.8 12.8 14.3 17.9 20.5 22.4 23.9 24.3 23.7 20.9 17.5 16.0 15.3 16.4 16.9 17.3 18.2																									Diurnal Average										
40.1 40.6 40.8 40.8 40.5 40.0 38.9 38.4 36.5 32.0 32.6 32.7 34.1 34.1 35.5 38.4 39.9 40.9 42.1 40.8 40.4 40.8 40.4 40.7																									Diurnal Maximum										
C - Calibration A - Automated Daily Zero Span																																			

Hourly Maximums

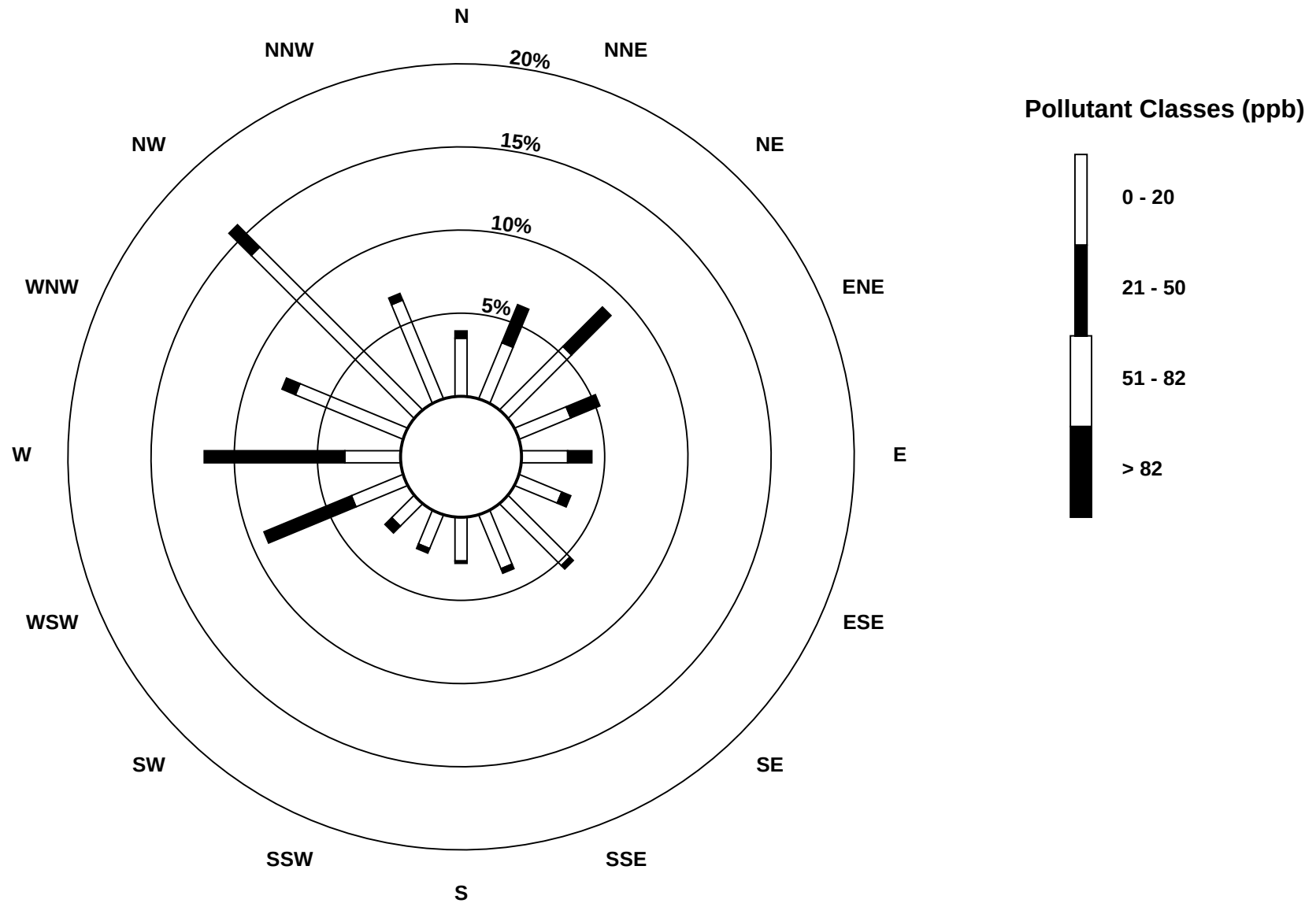
Ozone (O₃) - ppb
Henry Pirker - November 2013



Pollutant Rose

Ozone (O₃) - ppb

Henry Pirker - November 2013



Eight Hour Running Averages

Ozone (O₃) - ppb

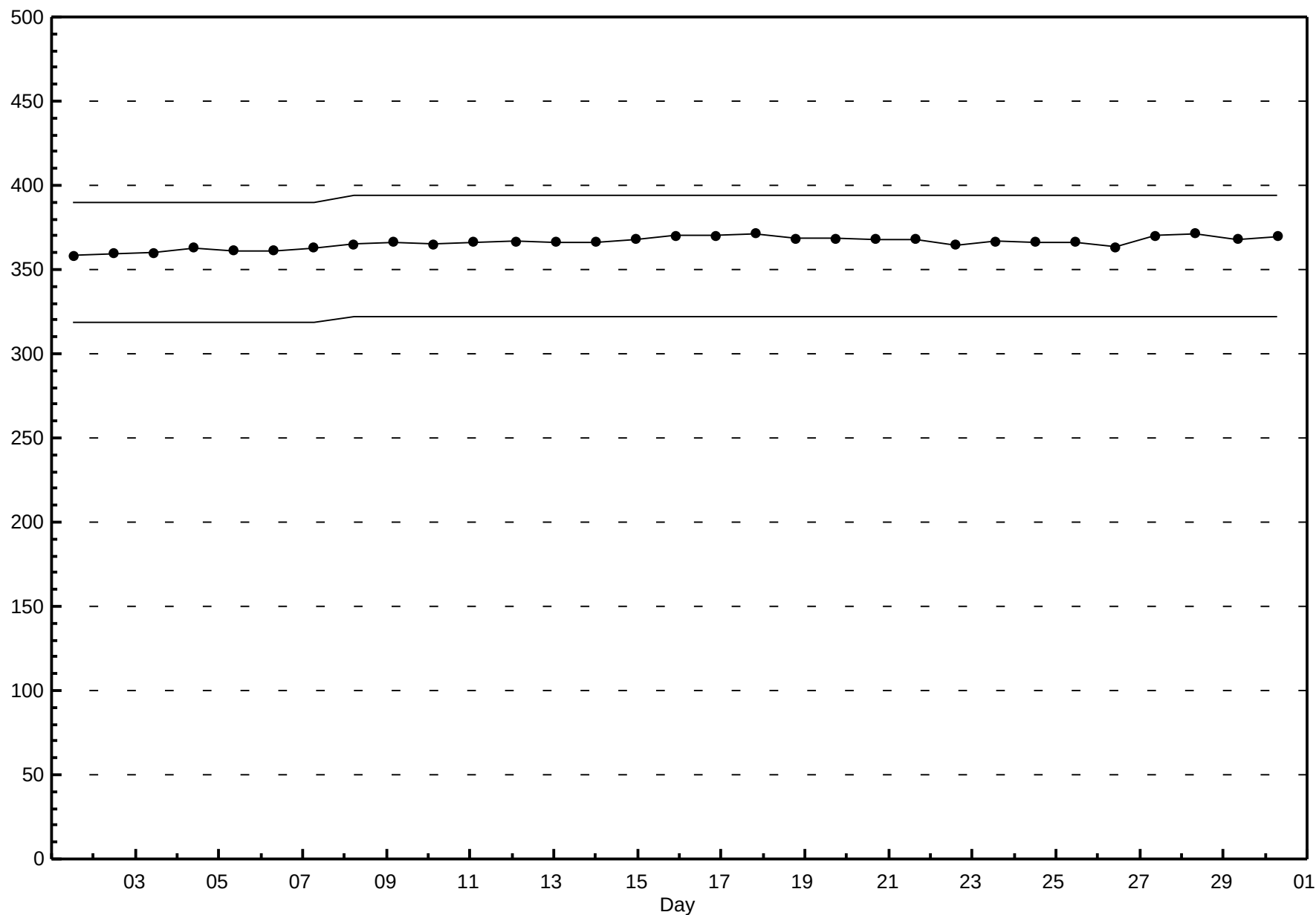
Henry Pirker - November 2013

Maximum Value: 39.5 ppb on Nov 24 07:00																								Hours in Service: 720	
Minimum Value: 1.4 ppb on Nov 27 00:00																								Hours of Data: 714	
Percentiles: P ₁ = 1.5 P ₁₀ = 3.0 Q ₁ = 6.6 Median = 15.0 Q ₃ = 20.2 P ₉₀ = 29.3 P ₉₉ = 39.1																								Hours of Missing Data: 6	
																								Hours of Calibration: 6	
																								Percent Operational Time: 100.0	
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Nov	30	29	29	29	29	29	28	27	27	26	26	26	27	28	29	30	30	29	29	28	27	26	25		30.0
2-Nov	24	23	23	21	19	16	13	11	8	7	6	5	8	12	16	20	23	25	26	26	25	23	22	21	26.1
3-Nov	19	19	18	17	16	16	16	15	15	16	17	17	17	18	19	20	20	19	17	15	13	10	8	6	20.1
4-Nov	4	3	3	4	5	5	5	5	4	4	5	7	9	11	13	16	19	18	18	18	16	16	15	13	18.5
5-Nov	11	10	9	8	7	6	5	4	4	4	4	6	9	12	16	19	20	23	24	24	23	22	22	21	23.7
6-Nov	21	20	19	18	16	13	11	9	6	5	4	5	8	12	17	19	23	25	27	27	26	24	21	17	27.5
7-Nov	14	11	9	6	4	3	2	2	2	3	5	8	11	13	13	N	N	N	N	N	N	18	18	18	17.9
8-Nov	18	18	18	18	18	18	17	15	13	11	11	10	10	11	12	12	12	12	12	12	12	11	11	11	18.5
9-Nov	13	14	15	15	16	16	17	17	18	18	19	19	19	20	20	20	21	21	20	20	20	20	20	20	20.8
10-Nov	20	20	20	21	19	17	15	12	10	9	9	10	12	13	15	17	17	16	15	12	10	7	5	3	20.5
11-Nov	3	3	3	3	3	3	3	3	3	3	3	4	6	9	10	11	11	11	10	9	7	5	4	4	11.0
12-Nov	3	4	4	4	4	3	3	3	2	2	3	3	4	5	6	7	7	7	6	6	5	7	8	10	9.8
13-Nov	10	13	17	21	23	21	19	17	17	16	14	14	14	15	16	16	15	14	11	9	7	5	3	2	23.0
14-Nov	2	2	2	2	3	7	11	13	15	19	22	26	29	30	30	31	31	31	30	30	31	31	31	31	31.3
15-Nov	32	33	34	34	33	32	31	30	26	24	22	20	18	19	19	20	23	25	27	29	29	29	30	30	33.6
16-Nov	31	32	33	33	33	33	33	32	31	30	30	30	29	29	29	29	28	26	23	19	17	16	15	15	33.4
17-Nov	15	17	20	23	23	23	23	22	22	21	21	21	20	21	21	21	20	20	20	20	19	19	18	18	22.9
18-Nov	19	18	18	18	18	19	18	18	17	17	17	17	17	18	18	18	19	18	18	16	13	12	12	13	18.8
19-Nov	13	15	16	17	19	20	20	18	16	15	13	13	13	14	14	15	17	18	19	19	19	18	16	14	20.2
20-Nov	13	12	11	9	7	5	5	4	4	4	4	5	6	7	8	9	9	9	8	7	6	5	4	4	12.6
21-Nov	4	4	3	3	3	3	3	3	3	3	4	4	6	7	9	10	12	13	14	15	16	16	17	17	17.2
22-Nov	18	18	19	19	19	19	19	18	17	16	16	15	15	14	14	13	12	11	9	7	5	4	3	2	18.9
23-Nov	2	2	2	2	2	2	2	1	2	2	2	2	3	3	6	10	16	21	26	31	35	36	38	39	39.0
24-Nov	39	39	39	39	39	39	39	39	38	36	34	33	32	31	29	28	24	22	19	15	14	10	8	6	39.5
25-Nov	6	6	7	8	8	9	8	8	7	6	5	5	8	10	12	14	17	19	19	17	15	14	13	11	18.8
26-Nov	9	7	7	7	7	6	5	3	3	3	3	2	3	3	3	3	3	3	3	2	2	2	1	9.3	
27-Nov	1	1	2	4	6	9	12	13	14	16	18	17	16	16	16	16	16	14	12	11	8	6	4	2	17.5
28-Nov	2	2	2	2	3	2	3	3	3	3	3	4	5	7	10	13	17	21	25	28	31	34	34	34.0	
29-Nov	33	33	34	35	35	34	34	34	30	25	23	22	21	21	20	21	22	23	21	18	14	11	9	6	35.0
30-Nov	4	3	2	2	2	2	1	4	6	9	10	13	16	19	19	19	18	16	15	14	12	9	9	10	19.4
39.1 39.1 39.2 39.3 39.4 39.4 39.5 39.1 38.4 36.4 34.4 33.1 32.1 30.7 30.4 31.0 31.3 30.6 30.2 30.6 35.5 35.9 38.3 39.0																									Diurnal Maximums
N - Not Valid																									

Span Responses

Ozone (O₃)

Henry Pirker - November 2013



Hourly Averages

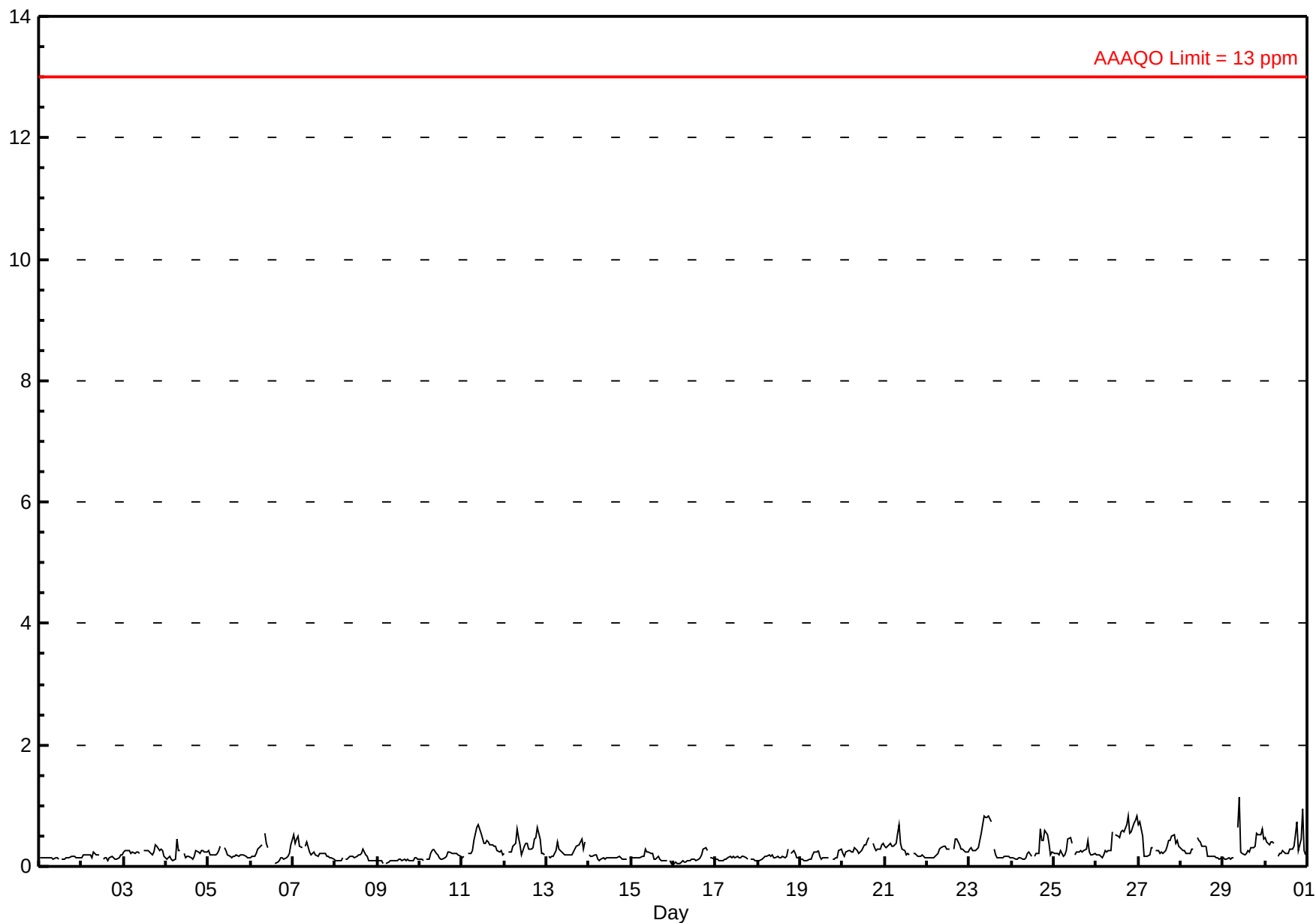
Carbon Monoxide (CO) - ppm

Henry Pirker - November 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 1.13 ppm on Nov 29 10:00 Maximum Daily Average: 0.46 ppm on Nov 26																								Hours in Service: 720 Hours of Data: 686 Hours of Missing Data: 34 Hours of Calibration: 34 Percent Operational Time: 100.0		
Minimum Value: 0.1 ppm on Nov 16 03:00 Maximum Diurnal Average: 0.32 ppm at hour 10 Monthly Average: 0.239 ppm												Minimum Daily Average: 0.10 ppm on Nov 9 Minimum Diurnal Average: 0.19 ppm at hour 4 Percentiles: P ₁ = 0.06 P ₁₀ = 0.11 Q ₁ = 0.14 Median = 0.20 Q ₃ = 0.28 P ₉₀ = 0.42 P ₉₉ = 0.81														
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-Nov	0.1	0.2	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	A	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.14	0.16
2-Nov	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	A	A	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.17	0.23
3-Nov	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	A	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.4	0.3	0.3	0.3	0.3	0.2	0.25	0.35
4-Nov	0.1	0.1	0.2	0.1	0.1	0.1	0.4	0.3	0.3	A	0.2	0.1	0.2	0.2	0.1	0.1	0.2	0.3	0.2	0.2	0.3	0.3	0.2	0.2	0.20	0.45
5-Nov	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	A	0.3	0.3	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	0.20	0.34
6-Nov	0.1	0.2	0.2	0.2	0.3	0.3	0.4	A	0.6	0.4	0.3	C	C	C	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.22	0.56
7-Nov	0.5	0.4	0.5	0.5	0.3	0.3	A	0.3	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.26	0.53
8-Nov	0.1	0.1	0.1	0.1	0.1	A	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.15	0.28
9-Nov	0.1	0.1	0.1	0.1	A	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	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
10-Nov	0.1	0.1	0.1	A	0.1	0.1	0.2	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.18	0.29
11-Nov	0.1	0.2	A	0.2	0.2	0.2	0.3	0.4	0.6	0.7	0.6	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.2	0.3	0.2	0.35	0.68
12-Nov	0.2	A	0.2	0.2	0.2	0.3	0.4	0.6	0.5	0.4	0.2	0.3	0.4	0.4	0.3	0.3	0.3	0.4	0.5	0.6	0.4	0.2	0.2	0.2	0.34	0.63
13-Nov	A	0.2	0.1	0.2	0.2	0.3	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.3	0.4	A	0.26	0.45
14-Nov	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	0.2	0.2	0.2	0.1	0.1	0.1	A	0.1	0.15	0.20
15-Nov	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	A	0.1	0.1	0.15	0.29
16-Nov	0.1	0.1	0.1	0.1	0.1	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	0.3	0.3	A	0.1	0.1	0.1	0.12	0.30
17-Nov	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.1	A	0.1	0.1	0.1	0.1	0.13	0.17
18-Nov	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.3	A	0.2	0.3	0.2	0.1	0.1	0.17	0.29
19-Nov	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.2	0.1	0.1	0.1	0.1	0.1	A	0.1	0.1	0.1	0.1	0.3	0.3	0.16	0.28
20-Nov	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.3	0.3	0.2	0.2	0.3	0.4	0.4	0.4	0.5	A	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.30	0.48
21-Nov	0.3	0.3	0.4	0.4	0.3	0.3	0.4	0.6	0.7	0.4	0.3	0.3	0.2	0.2	0.2	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.29	0.69
22-Nov	0.1	0.2	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	A	0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.27	0.44
23-Nov	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.5	0.8	0.8	0.8	0.8	0.7	A	0.3	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.36	0.83
24-Nov	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	A	0.2	0.2	0.2	0.6	0.4	0.4	0.6	0.5	0.4	0.2	0.2	0.25	0.61
25-Nov	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.3	0.5	0.5	0.4	A	0.2	0.2	0.2	0.3	0.2	0.3	0.3	0.4	0.2	0.2	0.2	0.2	0.26	0.48
26-Nov	0.2	0.2	0.2	0.1	0.2	0.3	0.2	0.3	0.3	0.6	A	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.8	0.6	0.6	0.7	0.8	0.8	0.46	0.83
27-Nov	0.7	0.7	0.5	0.2	0.2	0.2	0.2	0.3	0.3	A	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.4	0.4	0.3	0.35	0.74
28-Nov	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.3	A	0.5	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.25	0.48
29-Nov	0.2	0.1	0.1	0.1	0.1	0.1	0.1	A	0.6	1.1	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.3	0.3	0.6	0.5	0.5	0.6	0.5	0.33	1.13
30-Nov	0.5	0.4	0.3	0.4	0.4	0.4	A	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.5	0.7	0.3	0.4	1.0	0.3	0.2	0.35	0.96
																								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 - November 2013



Hourly Maximums

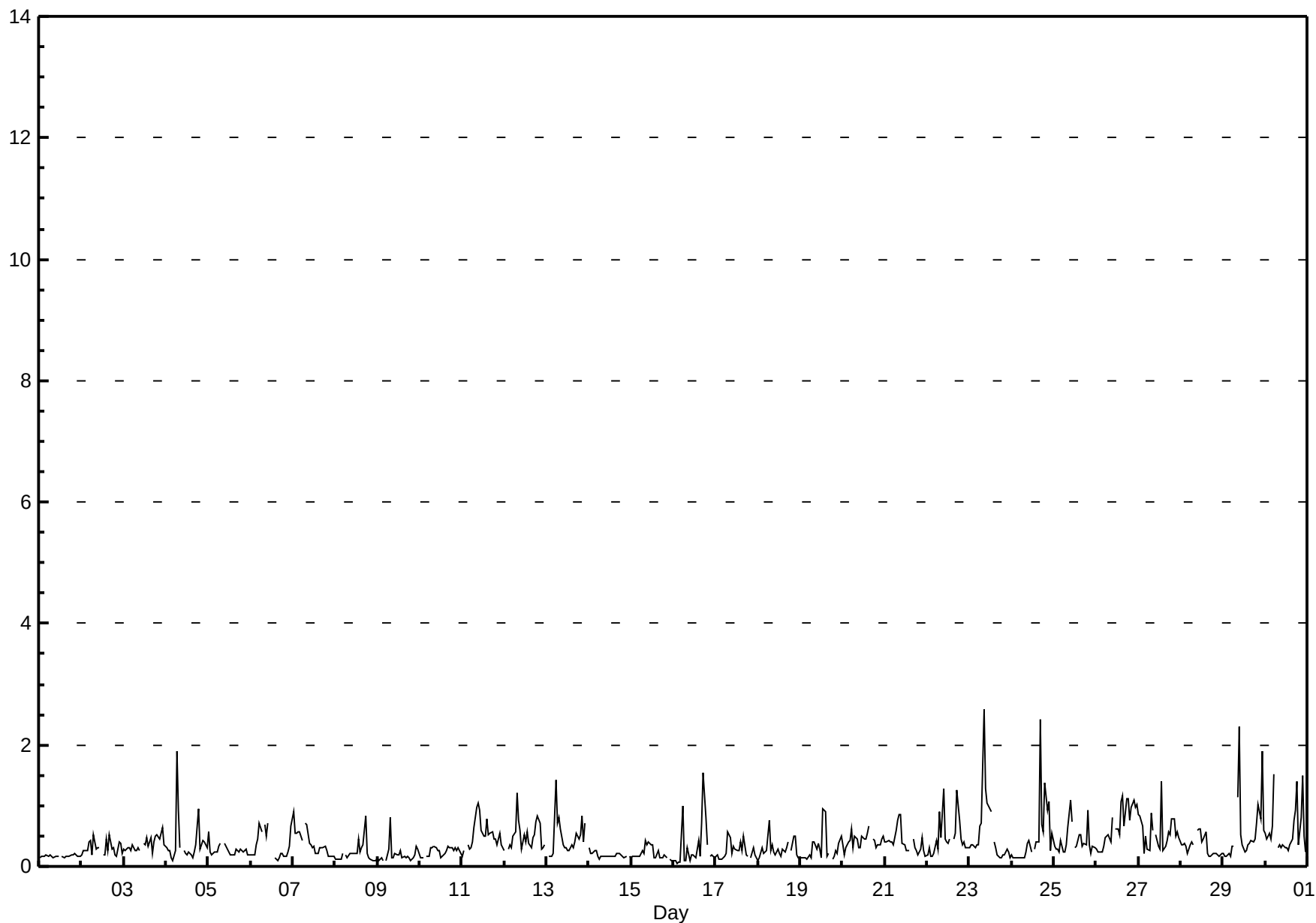
Carbon Monoxide (CO) - ppm

Henry Pirker - November 2013

Maximum Value: 2.60 ppm on Nov 23 09:00																					Maximum Daily Average: 0.68 ppm on Nov 26				Hours in Service: 720	
Minimum Value: 0.1 ppm on Nov 16 03:00																					Minimum Daily Average: 0.17 ppm on Nov 1				Hours of Data: 686	
Maximum Diurnal Average: 0.55 ppm at hour 9																					Minimum Diurnal Average: 0.25 ppm at hour 4				Hours of Missing Data: 34	
Monthly Average: 0.381 ppm																					Percentiles: P ₁ = 0.10 P ₁₀ = 0.15 Q ₁ = 0.20 Median = 0.30 Q ₃ = 0.45 P ₉₀ = 0.73 P ₉₉ = 1.51				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-Nov	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.17	0.20
2-Nov	0.2	0.3	0.3	0.3	0.4	0.4	0.2	0.5	0.3	0.3	0.3	A	0.2	0.2	0.5	0.3	0.5	0.3	0.3	0.2	0.2	0.4	0.4	0.2	0.30	0.52
3-Nov	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.2	A	0.4	0.4	0.5	0.3	0.5	0.2	0.4	0.5	0.5	0.5	0.6	0.6	0.4	0.37	0.64
4-Nov	0.3	0.3	0.3	0.2	0.1	0.3	1.9	0.9	0.3	A	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.9	0.3	0.3	0.4	0.4	0.3	0.39	1.91
5-Nov	0.6	0.2	0.2	0.2	0.2	0.2	0.3	0.4	A	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.3	0.2	0.3	0.2	0.2	0.27	0.56
6-Nov	0.2	0.2	0.2	0.4	0.4	0.7	0.6	A	0.7	0.5	0.7	C	C	C	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.7	0.35	0.71
7-Nov	0.9	0.5	0.6	0.6	0.6	0.4	A	0.7	0.7	0.4	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.39	0.89
8-Nov	0.1	0.1	0.1	0.1	0.2	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.5	0.2	0.3	0.4	0.8	0.2	0.2	0.1	0.1	0.1	0.1	0.22	0.84
9-Nov	0.1	0.1	0.2	0.1	A	0.1	0.3	0.8	0.2	0.2	0.2	0.2	0.2	0.3	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.3	0.3	0.20	0.81
10-Nov	0.1	0.2	0.1	A	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.2	0.24	0.33
11-Nov	0.2	0.2	A	0.3	0.3	0.3	0.4	0.6	1.0	1.1	0.9	0.6	0.5	0.5	0.8	0.5	0.6	0.6	0.5	0.5	0.3	0.5	0.4	0.3	0.52	1.05
12-Nov	0.2	A	0.3	0.4	0.3	0.5	0.6	1.2	0.8	0.6	0.3	0.5	0.4	0.6	0.4	0.3	0.5	0.5	0.7	0.8	0.7	0.3	0.3	0.4	0.50	1.21
13-Nov	A	0.2	0.2	0.2	0.2	1.4	0.7	0.8	0.6	0.4	0.3	0.3	0.3	0.3	0.4	0.3	0.4	0.5	0.4	0.5	0.8	0.4	0.7	A	0.47	1.42
14-Nov	0.3	0.2	0.2	0.3	0.3	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	A	0.2	0.18	0.30
15-Nov	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.4	0.4	0.4	0.4	0.4	0.2	0.2	0.3	0.2	0.1	0.1	0.2	0.1	A	0.1	0.1	0.21	0.43
16-Nov	0.1	0.1	0.1	0.1	0.1	1.0	0.1	0.1	0.3	0.1	0.2	0.2	0.2	0.2	0.4	0.2	0.7	1.5	0.8	0.4	A	0.2	0.2	0.2	0.31	1.54
17-Nov	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.6	0.5	0.2	0.3	0.3	0.3	0.3	0.4	0.3	0.5	0.2	0.2	A	0.2	0.3	0.2	0.2	0.25	0.57
18-Nov	0.1	0.1	0.3	0.2	0.2	0.3	0.8	0.3	0.4	0.2	0.2	0.3	0.2	0.2	0.3	0.2	0.3	0.4	A	0.2	0.5	0.5	0.2	0.1	0.29	0.77
19-Nov	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.4	0.4	0.3	0.4	0.3	0.1	1.0	0.9	0.2	0.2	A	0.1	0.2	0.3	0.2	0.4	0.5	0.29	0.96
20-Nov	0.3	0.2	0.3	0.4	0.4	0.6	0.3	0.5	0.5	0.3	0.3	0.5	0.5	0.5	0.6	0.7	A	0.5	0.4	0.3	0.4	0.4	0.5	0.5	0.42	0.66
21-Nov	0.4	0.4	0.4	0.4	0.4	0.4	0.6	0.8	0.9	0.9	0.4	0.4	0.3	0.3	0.2	A	0.5	0.3	0.3	0.2	0.3	0.5	0.2	0.2	0.41	0.85
22-Nov	0.2	0.3	0.2	0.2	0.2	0.4	0.3	0.9	0.5	1.3	0.4	0.4	0.4	0.5	A	0.5	0.5	1.3	0.8	0.5	0.4	0.4	0.3	0.3	0.47	1.28
23-Nov	0.3	0.4	0.3	0.3	0.4	0.4	0.7	0.7	2.6	1.3	1.1	1.0	0.9	A	0.4	0.3	0.2	0.2	0.1	0.2	0.2	0.3	0.2	0.1	0.54	2.60
24-Nov	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.4	0.4	0.2	A	0.3	0.4	0.4	2.4	0.7	0.6	1.4	0.9	1.1	0.3	0.5	0.49	2.43
25-Nov	0.3	0.3	0.3	0.2	0.4	0.2	0.2	0.3	0.6	1.1	0.7	A	0.3	0.3	0.5	0.5	0.3	0.4	0.4	0.9	0.4	0.2	0.3	0.3	0.43	1.10
26-Nov	0.3	0.2	0.2	0.2	0.3	0.5	0.5	0.5	0.4	0.8	A	0.6	0.6	0.5	1.1	1.2	0.7	1.1	1.1	0.8	1.0	1.1	1.0	1.0	0.68	1.17
27-Nov	0.8	0.8	0.7	0.2	0.5	0.3	0.3	0.9	0.6	A	0.5	0.3	0.3	1.4	0.3	0.3	0.4	0.6	0.5	0.8	0.8	0.5	0.6	0.5	0.56	1.40
28-Nov	0.4	0.4	0.4	0.3	0.2	0.4	0.4	0.4	A	0.6	0.6	0.6	0.4	0.4	0.6	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.34	0.61
29-Nov	0.2	0.2	0.2	0.2	0.2	0.3	0.3	A	1.1	2.3	0.5	0.4	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.7	1.0	0.8	1.9	0.6	0.58	2.29
30-Nov	0.6	0.5	0.6	0.5	0.7	1.5	A	0.3	0.4	0.3	0.4	0.3	0.3	0.3	0.4	0.4	0.8	0.9	1.4	0.4	0.8	1.5	0.5	0.2	0.59	1.52
																									Diurnal Average	
																									Diurnal Maximum	
C - Calibration A - Automated Daily Zero Span																										

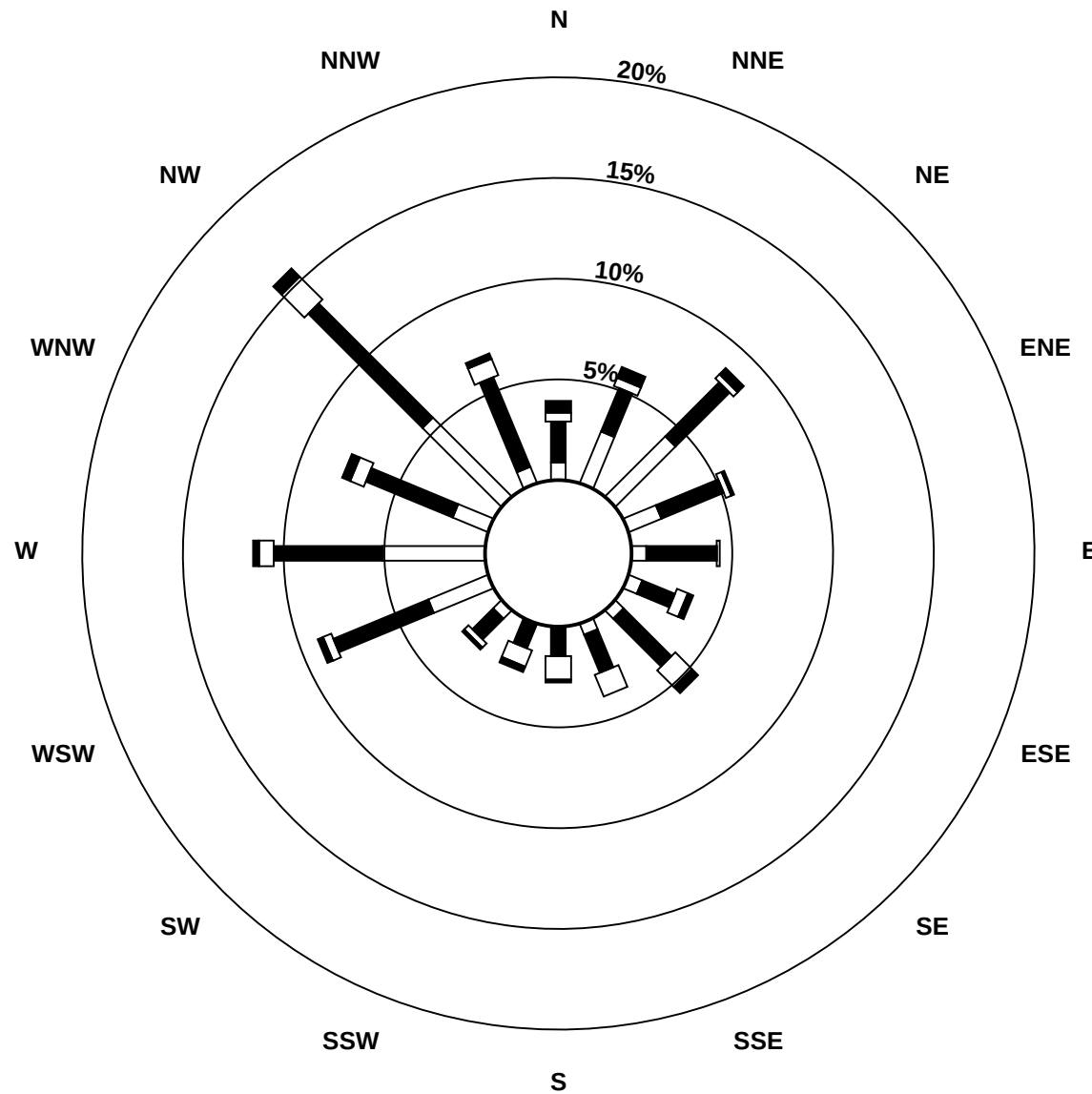
Hourly Maximums

Carbon Monoxide (CO) - ppm
Henry Pirker - November 2013

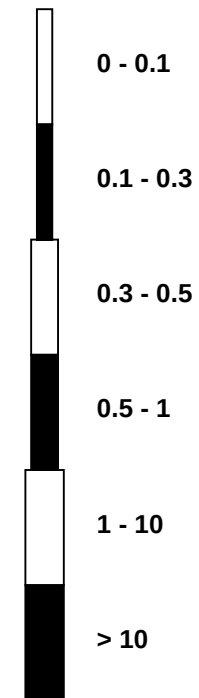


Pollutant Rose

Carbon Monoxide (CO) - ppm
Henry Pirker - November 2013



Pollutant Classes (ppm)



Eight Hour Running Averages

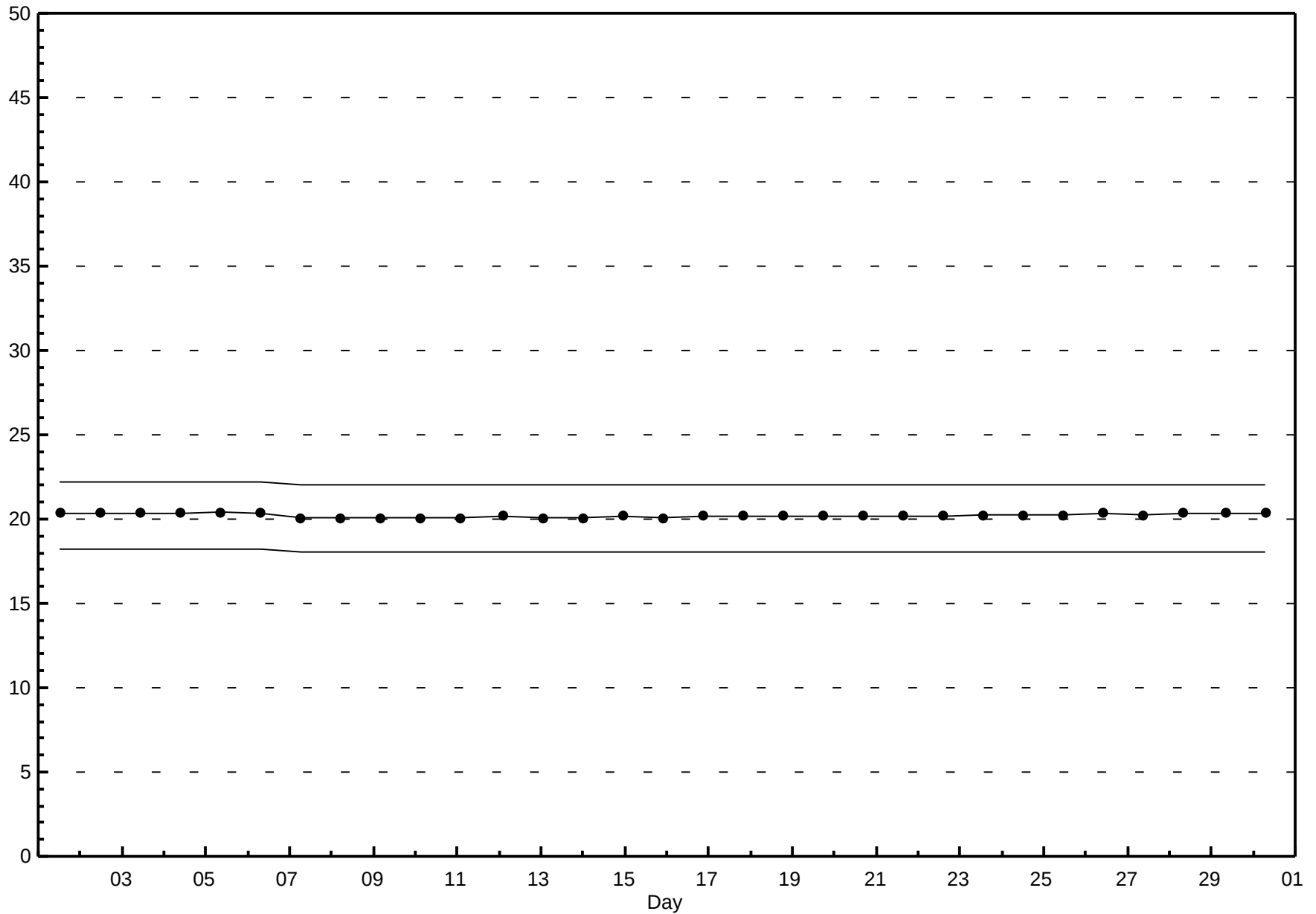
Carbon Monoxide (CO) - ppm

Henry Pirker - November 2013

Number of Exceedences (AAAQO): 8-hr: 0 Maximum Value: 0.71 ppm on Nov 27 02:00																								Hours in Service: 720		
Minimum Value: 0.06 ppm on Nov 16 05:00																								Hours of Data: 713		
Percentiles: P ₁ = 0.07 P ₁₀ = 0.12 Q ₁ = 0.15 Median = 0.21 Q ₃ = 0.30 P ₉₀ = 0.38 P ₉₉ = 0.65																								Hours of Missing Data: 7		
																								Hours of Calibration: 7		
																								Percent Operational Time: 100.0		
Day	Hourly Period Ending At (MST)																								Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Nov	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	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	0.15
2-Nov	0.2	0.2	0.2	0.2	0.2	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	0.1	0.1	0.2	0.19
3-Nov	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.27
4-Nov	0.3	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	0.2	0.2	0.2	0.2	0.2	0.25
5-Nov	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.25
6-Nov	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4	N	N	N	N	N	N	N	0.1	0.1	0.1	0.1	0.2	0.37	
7-Nov	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.41
8-Nov	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.20	
9-Nov	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.12
10-Nov	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	0.2	0.2	0.2	0.21
11-Nov	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.51
12-Nov	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.41
13-Nov	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.37
14-Nov	0.3	0.3	0.3	0.3	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	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.35
15-Nov	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.21
16-Nov	0.1	0.1	0.1	0.1	0.1	0.1	0.1	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	0.20
17-Nov	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.19
18-Nov	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	0.2	0.2	0.2	0.2	0.2	0.2	0.21
19-Nov	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.20
20-Nov	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.37
21-Nov	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.43
22-Nov	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	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.34
23-Nov	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.5	0.5	0.6	0.7	0.7	0.7	0.6	0.5	0.4	0.4	0.3	0.2	0.2	0.2	0.2	0.71
24-Nov	0.2	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	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.42
25-Nov	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.37
26-Nov	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.69
27-Nov	0.7	0.7	0.7	0.6	0.6	0.5	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.71
28-Nov	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.41
29-Nov	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.2	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.45
30-Nov	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.49
0.70 0.71 0.67 0.62 0.57 0.50 0.43 0.40 0.42 0.47 0.53 0.60 0.66 0.71 0.69 0.64 0.54 0.56 0.59 0.60 0.60 0.64 0.66 0.69																										
Diurnal Maximums																										
N - Not Valid																										
Alberta Ambient Air Quality Objectives (AAAQO): 8-hr 5 ppm																										

Span Responses

Carbon Monoxide (CO)
Henry Pirker - November 2013



Hourly Averages

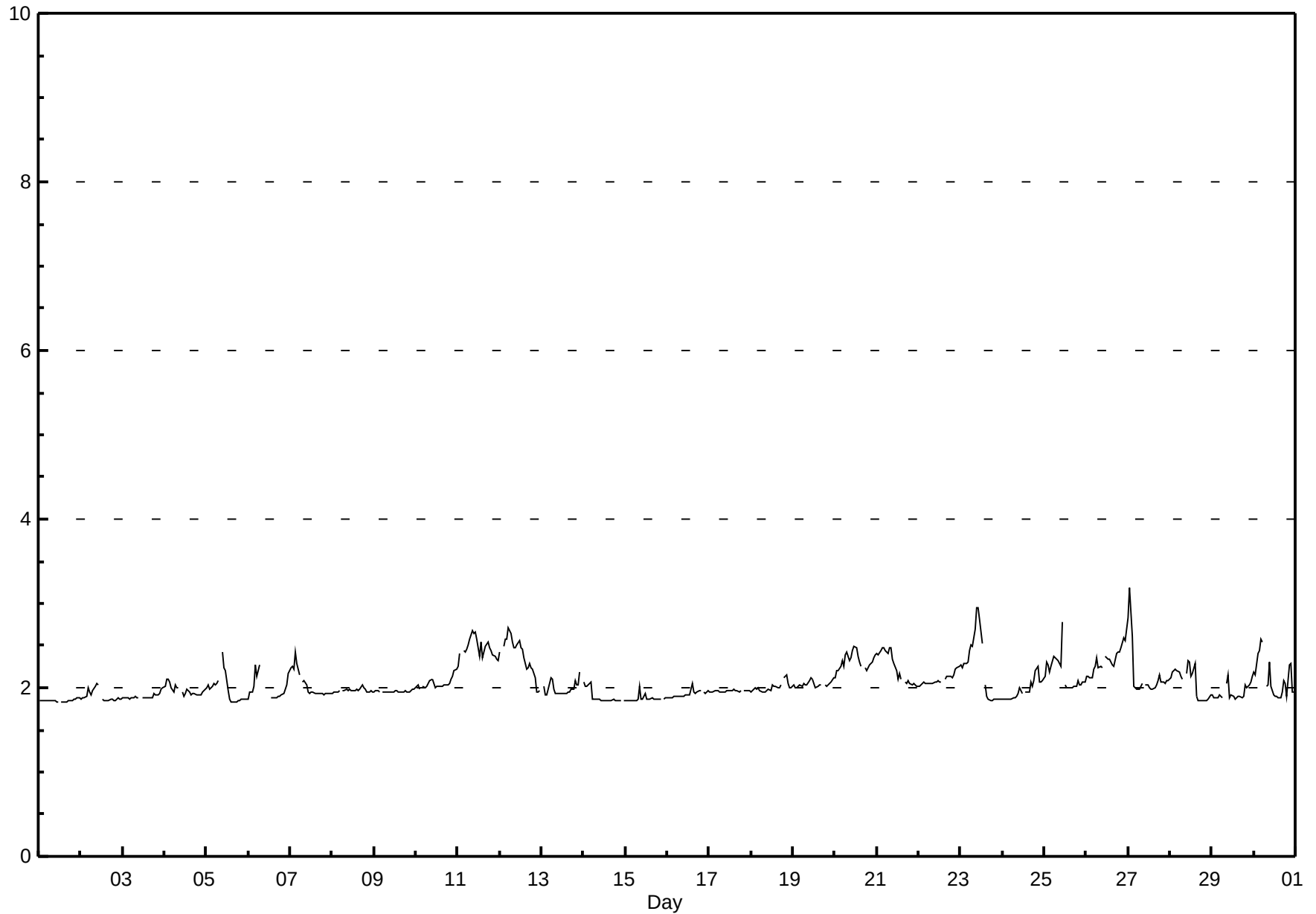
Total Hydrocarbons (THC) - ppm

Henry Pirker - November 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 3.18 ppm on Nov 27 02:00 Maximum Daily Average: 2.46 ppm on Nov 11																								Hours in Service: 720 Hours of Data: 685 Hours of Missing Data: 35 Hours of Calibration: 35 Percent Operational Time: 100.0		
Minimum Value: 1.8 ppm on Nov 5 18:00 Maximum Diurnal Average: 2.14 ppm at hour 10 Monthly Average: 2.059 ppm												Minimum Daily Average: 1.85 ppm on Nov 1 Minimum Diurnal Average: 1.98 ppm at hour 16 Percentiles: P ₁ = 1.83 P ₁₀ = 1.86 Q ₁ = 1.91 Median = 2.00 Q ₃ = 2.13 P ₉₀ = 2.39 P ₉₉ = 2.68														
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-Nov	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	A	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.85	1.89
2-Nov	1.9	1.9	1.9	1.9	2.0	1.9	1.9	2.0	2.0	2.1	2.0	A	1.9	1.9	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.90	2.06
3-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	1.90	2.01
4-Nov	2.0	2.1	2.1	2.1	2.0	1.9	2.0	2.0	2.0	A	2.0	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.97	2.10
5-Nov	2.0	2.0	2.0	2.0	2.1	2.0	2.1	2.1	A	2.4	2.2	2.2	2.0	1.9	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.97	2.43
6-Nov	1.9	1.9	1.9	2.0	2.3	2.1	2.3	A	2.1	C	C	C	C	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.2	2.00	2.27
7-Nov	2.2	2.3	2.2	2.4	2.3	2.2	A	2.1	2.1	2.0	2.0	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.04	2.42
8-Nov	1.9	1.9	1.9	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.97	2.03
9-Nov	2.0	2.0	2.0	2.0	A	1.9	2.0	2.0	1.9	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.96	1.98
10-Nov	2.0	2.0	2.0	A	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.05	2.23
11-Nov	2.3	2.4	A	2.4	2.4	2.5	2.5	2.6	2.7	2.6	2.7	2.6	2.4	2.5	2.4	2.4	2.5	2.5	2.5	2.4	2.4	2.4	2.3	2.3	2.46	2.68
12-Nov	2.4	A	2.5	2.6	2.6	2.7	2.6	2.5	2.5	2.5	2.5	2.6	2.5	2.5	2.4	2.2	2.2	2.3	2.2	2.2	2.1	1.9	1.9	2.0	2.37	2.71
13-Nov	A	2.0	1.9	1.9	2.0	2.1	2.1	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.1	2.0	2.0	2.2	A	1.99	2.19
14-Nov	2.1	2.0	2.0	2.1	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.9	1.8	1.8	1.8	1.8	A	1.8	1.89	2.07
15-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.87	2.01
16-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.9	2.0	2.0	A	2.0	1.9	2.0	1.92	2.04
17-Nov	2.0	1.9	2.0	2.0	2.0	2.0	2.0	1.9	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	2.0	2.0	2.0	1.96	1.98
18-Nov	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	2.1	2.2	2.1	2.0	2.0	2.00	2.16
19-Nov	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.1	2.1	2.04	2.11
20-Nov	2.1	2.2	2.2	2.3	2.3	2.3	2.4	2.4	2.3	2.3	2.4	2.5	2.5	2.4	2.3	2.3	A	2.2	2.2	2.2	2.3	2.3	2.4	2.4	2.31	2.48
21-Nov	2.4	2.4	2.4	2.5	2.5	2.4	2.4	2.5	2.5	2.3	2.3	2.2	2.1	2.2	2.1	A	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.24	2.47
22-Nov	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	A	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.10	2.26
23-Nov	2.3	2.2	2.3	2.3	2.3	2.4	2.5	2.5	2.7	3.0	2.9	2.8	2.5	A	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.24	2.95
24-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	A	2.0	2.0	1.9	2.1	2.0	2.1	2.2	2.2	2.1	2.1	2.1	1.97	2.25
25-Nov	2.1	2.3	2.3	2.2	2.3	2.4	2.3	2.3	2.3	2.3	2.8	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.1	2.17	2.79
26-Nov	2.1	2.1	2.1	2.1	2.2	2.3	2.4	2.2	2.3	2.2	A	2.4	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.5	2.6	2.6	2.7	2.33	2.69
27-Nov	2.8	3.2	2.6	2.0	2.0	2.0	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.15	3.18
28-Nov	2.1	2.2	2.2	2.2	2.2	2.2	2.1	2.1	A	2.2	2.3	2.3	2.1	2.2	2.3	1.9	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	2.07	2.33
29-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	2.0	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.1	2.1	1.95	2.15
30-Nov	2.2	2.2	2.4	2.4	2.6	2.5	A	2.0	2.0	2.3	2.0	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.0	1.9	2.3	2.3	2.0	2.0	2.11	2.57
2.07 2.09 2.07 2.09 2.11 2.11 2.10 2.09 2.10 2.14 2.13 2.09 2.06 2.02 2.01 1.98 1.98 2.01 2.01 2.02 2.03 2.03 2.04 2.05																								Diurnal Average		
2.83 3.18 2.62 2.57 2.58 2.71 2.64 2.57 2.69 2.95 2.94 2.82 2.53 2.55 2.36 2.42 2.49 2.54 2.47 2.45 2.47 2.60 2.56 2.69																								Diurnal Maximum		
C - Calibration A - Automated Daily Zero Span																										

Hourly Averages

Total Hydrocarbons (THC) - ppm
Henry Pirker - November 2013



Hourly Maximums

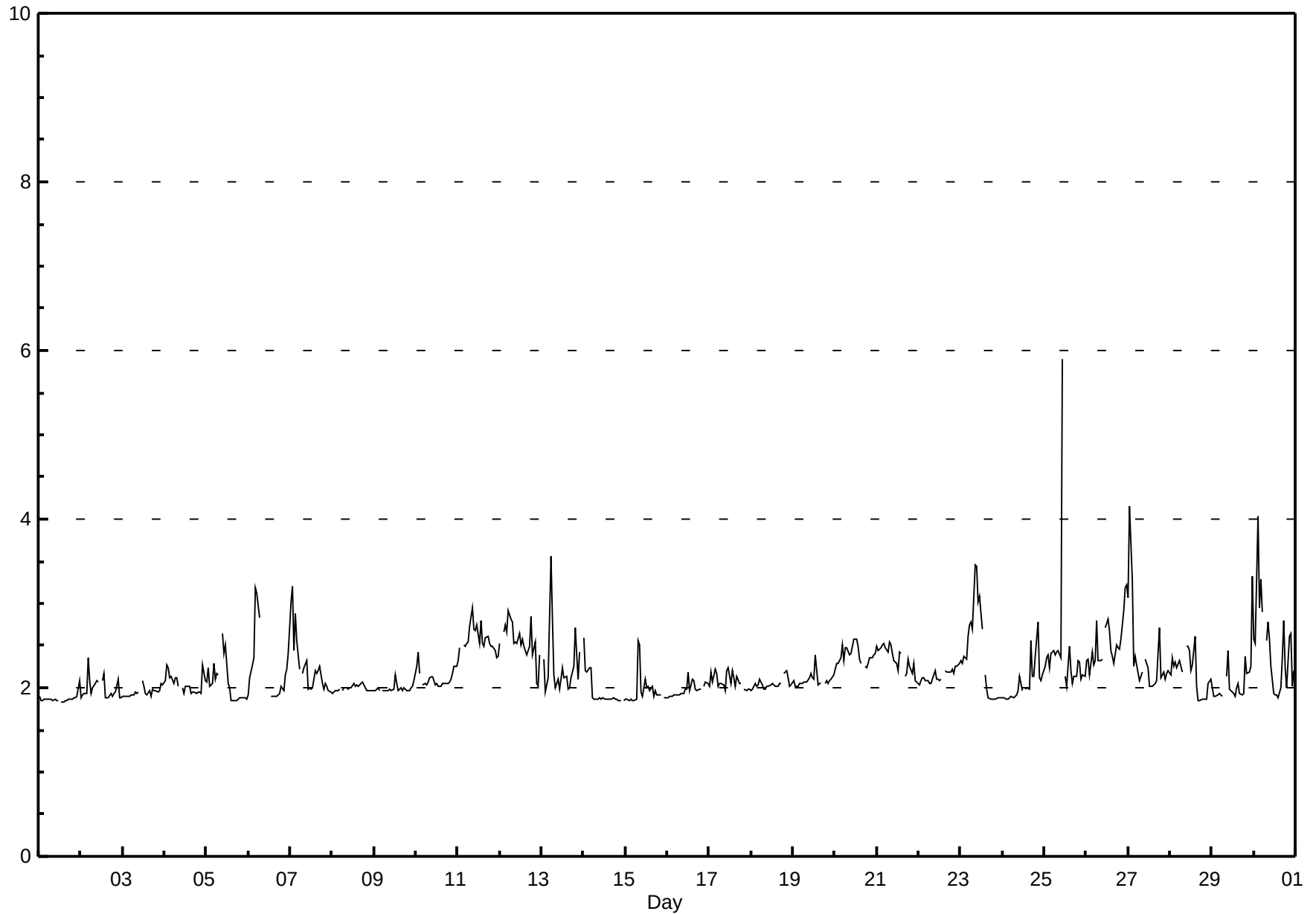
Total Hydrocarbons (THC) - ppm

Henry Pirker - November 2013

Maximum Value: 5.89 ppm on Nov 25 11:00																								Maximum Daily Average: 2.56 ppm on Nov 11																								Hours in Service:		720
Minimum Value: 1.8 ppm on Nov 1 15:00																								Minimum Daily Average: 1.87 ppm on Nov 1																								Hours of Data:		685
Maximum Diurnal Average: 2.32 ppm at hour 11																								Minimum Diurnal Average: 2.06 ppm at hour 16																								Hours of Missing Data:		35
Monthly Average: 2.178 ppm																								Percentiles: P ₁ = 1.84 P ₁₀ = 1.88 Q ₁ = 1.97 Median = 2.07 Q ₃ = 2.32 P ₉₀ = 2.56 P ₉₉ = 3.28																								Hours of Calibration:		35
																																																Percent Operational Time:		100.0
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																										
1-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	A	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.87	2.08																								
2-Nov	1.9	1.9	1.9	1.9	2.4	2.1	1.9	2.0	2.1	2.1	2.1	A	2.1	2.2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	1.9	1.9	1.99	2.36																								
3-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	A	2.1	2.0	1.9	1.9	2.0	1.9	2.0	2.0	2.0	1.9	2.0	2.0	2.0	1.95	2.09																								
4-Nov	2.1	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.0	A	2.0	1.9	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.3	2.1	2.05	2.28																								
5-Nov	2.1	2.2	2.0	2.0	2.3	2.1	2.2	2.2	A	2.6	2.4	2.5	2.0	2.0	1.9	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	2.06	2.65																								
6-Nov	1.9	2.1	2.3	2.4	3.2	3.1	2.8	A	2.3	C	C	C	C	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.2	2.2	2.4	2.22	3.19																								
7-Nov	3.0	3.2	2.4	2.9	2.6	2.2	A	2.2	2.2	2.3	2.0	2.0	2.0	2.0	2.2	2.2	2.2	2.3	2.1	2.0	2.0	2.0	2.0	1.9	2.26	3.21																								
8-Nov	1.9	1.9	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	1.99	2.07																								
9-Nov	2.0	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.00	2.15																								
10-Nov	2.2	2.4	2.2	A	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.1	2.0	2.0	2.0	2.1	2.1	2.0	2.1	2.1	2.2	2.2	2.3	2.11	2.42																								
11-Nov	2.3	2.5	A	2.5	2.5	2.5	2.5	2.7	3.0	2.7	2.7	2.7	2.5	2.8	2.5	2.5	2.6	2.6	2.5	2.5	2.5	2.4	2.4	2.4	2.56	2.95																								
12-Nov	2.5	A	2.7	2.7	2.7	2.9	2.8	2.8	2.5	2.5	2.5	2.7	2.5	2.6	2.5	2.4	2.4	2.5	2.8	2.4	2.5	2.0	2.0	2.4	2.54	2.91																								
13-Nov	A	2.3	1.9	2.0	2.1	3.6	2.8	2.1	2.0	2.1	2.0	2.1	2.2	2.1	2.1	2.0	2.0	2.1	2.3	2.7	2.4	2.1	2.4	A	2.26	3.56																								
14-Nov	2.6	2.2	2.2	2.2	2.2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.96	2.60																								
15-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.6	2.5	1.9	1.9	2.1	2.0	2.0	2.0	2.0	1.9	2.0	1.9	1.9	1.9	A	1.9	1.9	1.97	2.56																								
16-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.2	2.0	2.1	2.1	2.0	2.0	2.0	2.0	A	2.0	2.1	2.0	1.98	2.19																								
17-Nov	2.0	2.2	2.1	2.2	2.2	2.0	2.1	2.1	2.0	2.0	2.2	2.2	2.0	2.2	2.1	2.0	2.1	2.0	2.1	A	2.0	2.0	2.0	2.0	2.08	2.24																								
18-Nov	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	A	A	2.2	2.2	2.1	2.0	2.0	2.04	2.21																								
19-Nov	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.4	2.0	2.0	2.1	A	2.0	2.1	2.0	2.1	2.1	2.2	2.09	2.39																								
20-Nov	2.2	2.3	2.3	2.4	2.5	2.3	2.5	2.5	2.4	2.4	2.5	2.6	2.6	2.5	2.3	2.3	A	2.3	2.2	2.3	2.4	2.4	2.4	2.4	2.38	2.58																								
21-Nov	2.5	2.4	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.4	2.3	2.3	2.2	2.4	2.4	A	2.1	2.2	2.3	2.3	2.2	2.3	2.1	2.1	2.35	2.54																								
22-Nov	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	A	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.14	2.29																								
23-Nov	2.3	2.3	2.4	2.3	2.6	2.7	2.8	2.7	3.5	3.4	3.0	3.1	2.7	A	2.2	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.39	3.46																								
24-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.1	2.0	A	2.0	2.0	2.0	2.6	2.1	2.1	2.4	2.8	2.1	2.1	2.2	2.06	2.78																								
25-Nov	2.3	2.4	2.4	2.2	2.4	2.4	2.4	2.4	2.4	2.4	5.9	A	2.1	2.0	2.5	2.2	2.1	2.1	2.1	2.3	2.3	2.1	2.2	2.1	2.43	5.89																								
26-Nov	2.3	2.3	2.2	2.4	2.3	2.3	2.8	2.3	2.3	2.3	A	2.7	2.8	2.7	2.4	2.4	2.3	2.5	2.5	2.5	2.6	2.9	3.2	3.2	2.53	3.22																								
27-Nov	3.1	4.1	3.3	2.3	2.4	2.3	2.1	2.1	2.2	A	2.3	2.2	2.0	2.0	2.0	2.0	2.1	2.4	2.7	2.1	2.2	2.1	2.2	2.2	2.37	4.15																								
28-Nov	2.2	2.4	2.2	2.3	2.2	2.3	2.3	2.2	A	2.5	2.5	2.4	2.2	2.3	2.6	2.0	1.8	1.9	1.9	1.9	1.9	1.9	2.1	2.1	2.17	2.61																								
29-Nov	2.0	1.9	1.9	1.9	1.9	1.9	1.9	A	2.1	2.4	2.0	2.0	1.9	1.9	2.0	2.0	1.9	1.9	1.9	2.4	2.2	2.2	2.2	3.3	2.08	3.32																								
30-Nov	2.6	2.5	4.0	2.9	3.3	2.9	A	2.6	2.8	2.6	2.3	1.9	1.9	1.9	1.9	2.0	2.4	2.8	2.2	2.0	2.6	2.6	2.0	2.2	2.48	4.03																								
2.19 2.26 2.23 2.20 2.28 2.27 2.21 2.20 2.24 2.25 2.32 2.21 2.17 2.13 2.11 2.06 2.07 2.11 2.11 2.12 2.14 2.12 2.13 2.18																								Diurnal Average																										
3.07 4.15 4.03 2.94 3.29 3.56 2.83 2.78 3.46 3.44 5.89 3.08 2.81 2.79 2.61 2.48 2.59 2.80 2.85 2.72 2.78 2.92 3.18 3.32																								Diurnal Maximum																										
C - Calibration A - Automated Daily Zero Span																																																		

Hourly Maximums

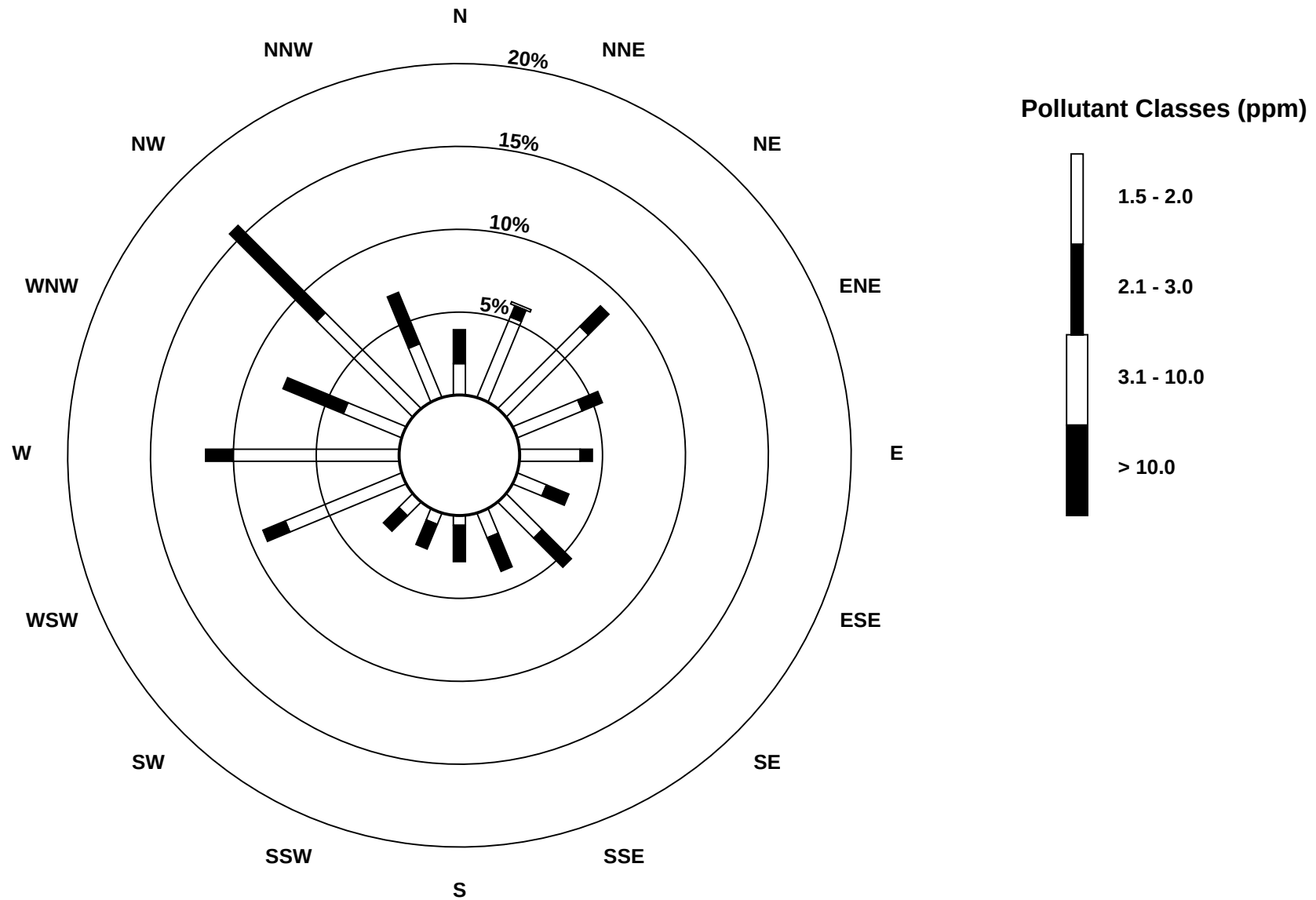
Total Hydrocarbons (THC) - ppm
Henry Pirker - November 2013



Pollutant Rose

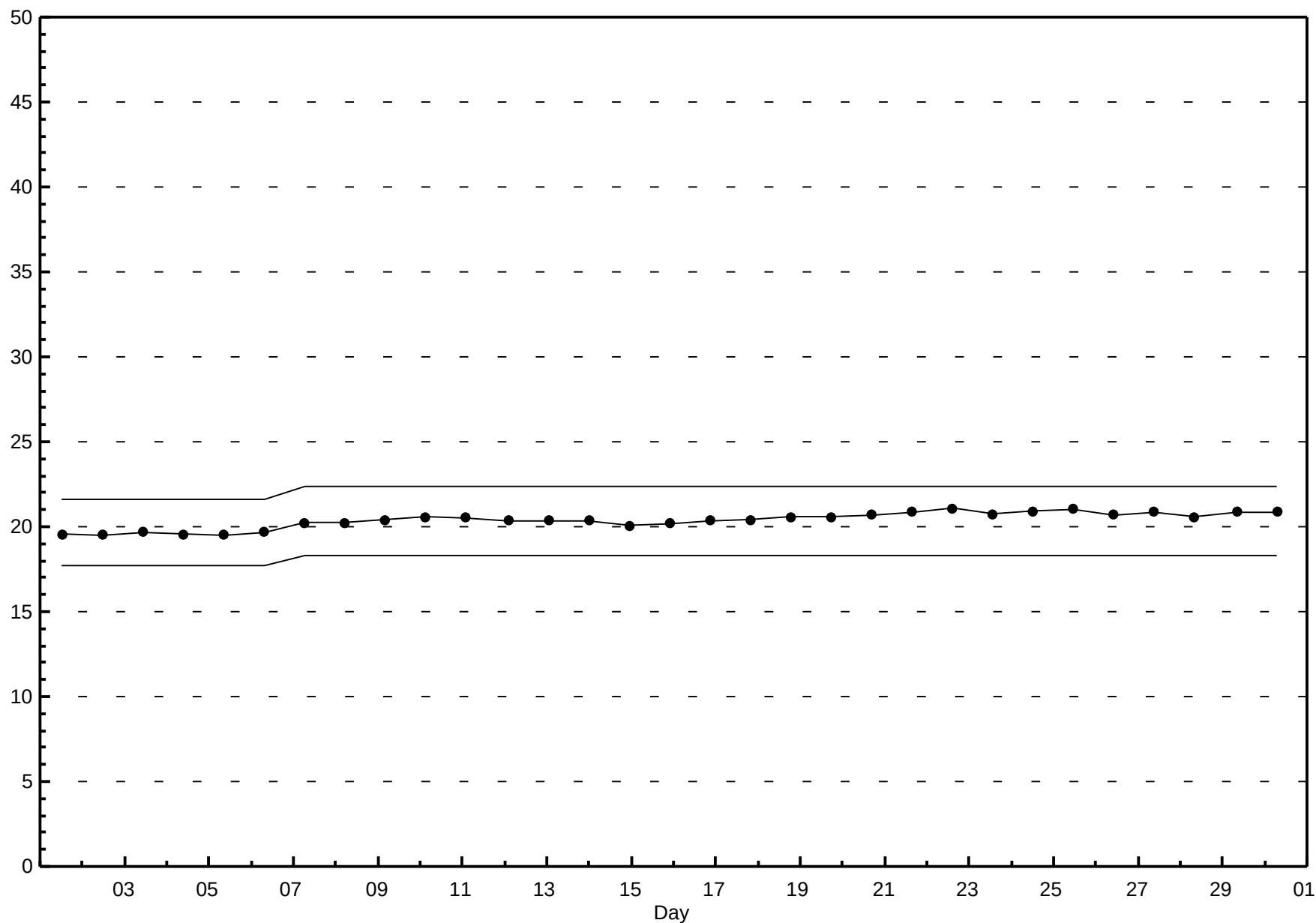
Total Hydrocarbons (THC) - ppm

Henry Pirker - November 2013



Span Responses

Total Hydrocarbons (THC)
Henry Pirker - November 2013



Hourly Averages

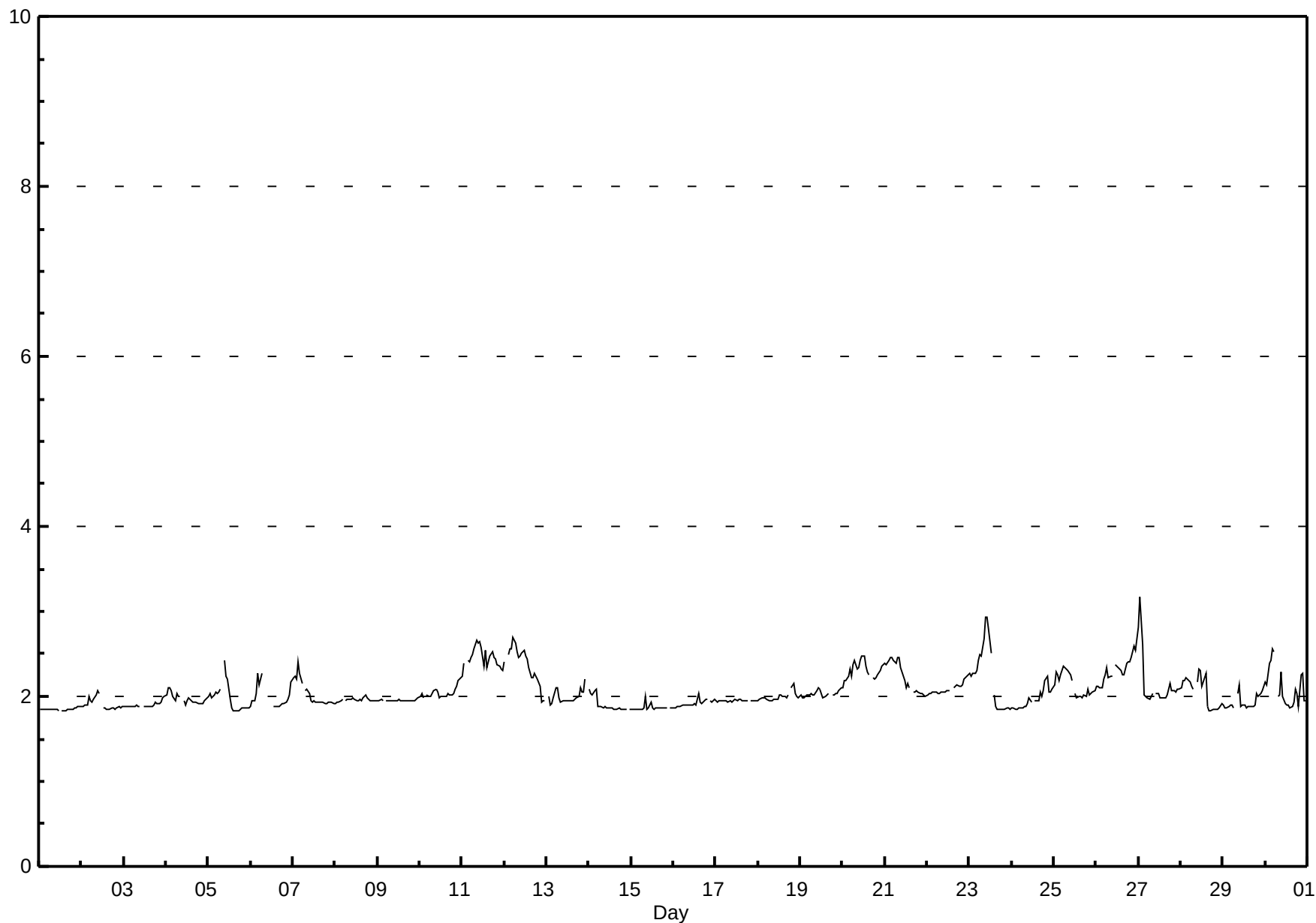
Methane (CH₄) - ppm

Henry Pirker - November 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 3.17 ppm on Nov 27 02:00 Maximum Daily Average: 2.45 ppm on Nov 11																								Hours in Service: 720 Hours of Data: 685 Hours of Missing Data: 35 Hours of Calibration: 35 Percent Operational Time: 100.0		
Minimum Value: 1.8 ppm on Nov 1 14:00 Maximum Diurnal Average: 2.13 ppm at hour 10 Monthly Average: 2.052 ppm												Minimum Daily Average: 1.85 ppm on Nov 1 Minimum Diurnal Average: 1.98 ppm at hour 16 Percentiles: P ₁ = 1.83 P ₁₀ = 1.86 Q ₁ = 1.91 Median = 1.99 Q ₃ = 2.12 P ₉₀ = 2.37 P ₉₉ = 2.67														
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-Nov	1.9	1.8	1.8	1.8	1.8	1.8	1.9	1.8	1.8	1.8	1.8	1.8	A	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.85	1.89
2-Nov	1.9	1.9	1.9	1.9	2.0	2.0	1.9	2.0	2.0	2.1	2.0	A	1.9	1.9	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.91	2.06
3-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	1.90	2.01
4-Nov	2.0	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	A	2.0	1.9	1.9	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	1.97	2.10
5-Nov	2.0	2.0	2.0	2.0	2.1	2.0	2.1	2.1	A	2.4	2.2	2.2	2.0	1.9	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.98	2.43
6-Nov	1.9	2.0	2.0	2.0	2.3	2.1	2.3	A	2.1	C	C	C	C	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.2	2.00	2.27
7-Nov	2.2	2.2	2.2	2.4	2.3	2.1	A	2.1	2.1	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.03	2.41
8-Nov	1.9	1.9	1.9	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.96	2.02
9-Nov	1.9	2.0	2.0	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	1.9	1.9	1.9	1.9	2.0	1.9	1.9	2.0	2.0	2.0	1.95	1.98
10-Nov	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.04	2.22
11-Nov	2.2	2.4	A	2.4	2.4	2.5	2.5	2.6	2.7	2.6	2.6	2.6	2.4	2.5	2.3	2.4	2.5	2.5	2.5	2.4	2.4	2.4	2.3	2.3	2.45	2.66
12-Nov	2.4	A	2.5	2.6	2.6	2.7	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.3	2.2	2.2	2.3	2.2	2.2	2.1	1.9	1.9	2.0	2.36	2.70
13-Nov	A	2.0	1.9	1.9	2.0	2.1	2.1	2.0	1.9	1.9	1.9	1.9	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.2	A	2.00	2.21
14-Nov	2.1	2.0	2.0	2.1	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	A	1.8	1.90	2.09
15-Nov	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.87	2.00
16-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.9	2.0	2.0	A	1.9	1.9	2.0	1.92	2.03
17-Nov	1.9	1.9	1.9	2.0	2.0	2.0	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	A	2.0	2.0	2.0	2.0	1.95	1.97
18-Nov	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	2.1	2.1	2.0	2.0	2.0	1.99	2.15
19-Nov	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.1	2.1	2.03	2.10
20-Nov	2.1	2.2	2.2	2.2	2.3	2.2	2.4	2.4	2.3	2.3	2.4	2.5	2.5	2.4	2.3	2.2	A	2.2	2.2	2.2	2.3	2.3	2.4	2.4	2.30	2.47
21-Nov	2.4	2.4	2.4	2.5	2.5	2.4	2.4	2.5	2.5	2.3	2.3	2.2	2.1	2.2	2.1	A	2.1	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.23	2.46
22-Nov	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	A	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.09	2.25
23-Nov	2.3	2.2	2.3	2.3	2.3	2.4	2.5	2.5	2.7	2.9	2.9	2.8	2.5	A	2.0	1.9	1.9	1.8	1.8	1.8	1.9	1.9	1.9	1.9	2.23	2.94
24-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	A	1.9	1.9	1.9	2.1	2.0	2.1	2.2	2.2	2.0	2.1	2.1	1.96	2.23
25-Nov	2.1	2.3	2.3	2.2	2.3	2.4	2.3	2.3	2.3	2.2	2.2	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.1	2.1	2.14	2.36
26-Nov	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.2	2.2	2.2	A	2.4	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.5	2.6	2.5	2.7	2.32	2.68
27-Nov	2.8	3.2	2.6	2.0	2.0	2.0	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.1	2.1	2.0	2.1	2.1	2.14	3.17
28-Nov	2.1	2.2	2.2	2.2	2.2	2.2	2.1	2.1	A	2.2	2.3	2.3	2.1	2.2	2.3	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	2.06	2.31
29-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	2.0	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.1	2.1	1.94	2.14
30-Nov	2.2	2.1	2.4	2.4	2.6	2.5	A	2.0	2.0	2.3	2.0	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.0	1.9	2.3	2.3	1.9	1.9	2.10	2.56
2.06 2.08 2.07 2.08 2.11 2.10 2.09 2.08 2.10 2.13 2.10 2.09 2.05 2.01 2.00 1.98 1.98 2.00 2.01 2.02 2.03 2.03 2.03 2.04																								Diurnal Average		
2.82 3.17 2.61 2.56 2.57 2.70 2.63 2.56 2.68 2.94 2.93 2.80 2.52 2.54 2.35 2.41 2.48 2.53 2.46 2.44 2.46 2.59 2.54 2.68																								Diurnal Maximum		
C - Calibration A - Automated Daily Zero Span																										

Hourly Averages

Methane (CH₄) - ppm
Henry Pirker - November 2013



Hourly Maximums

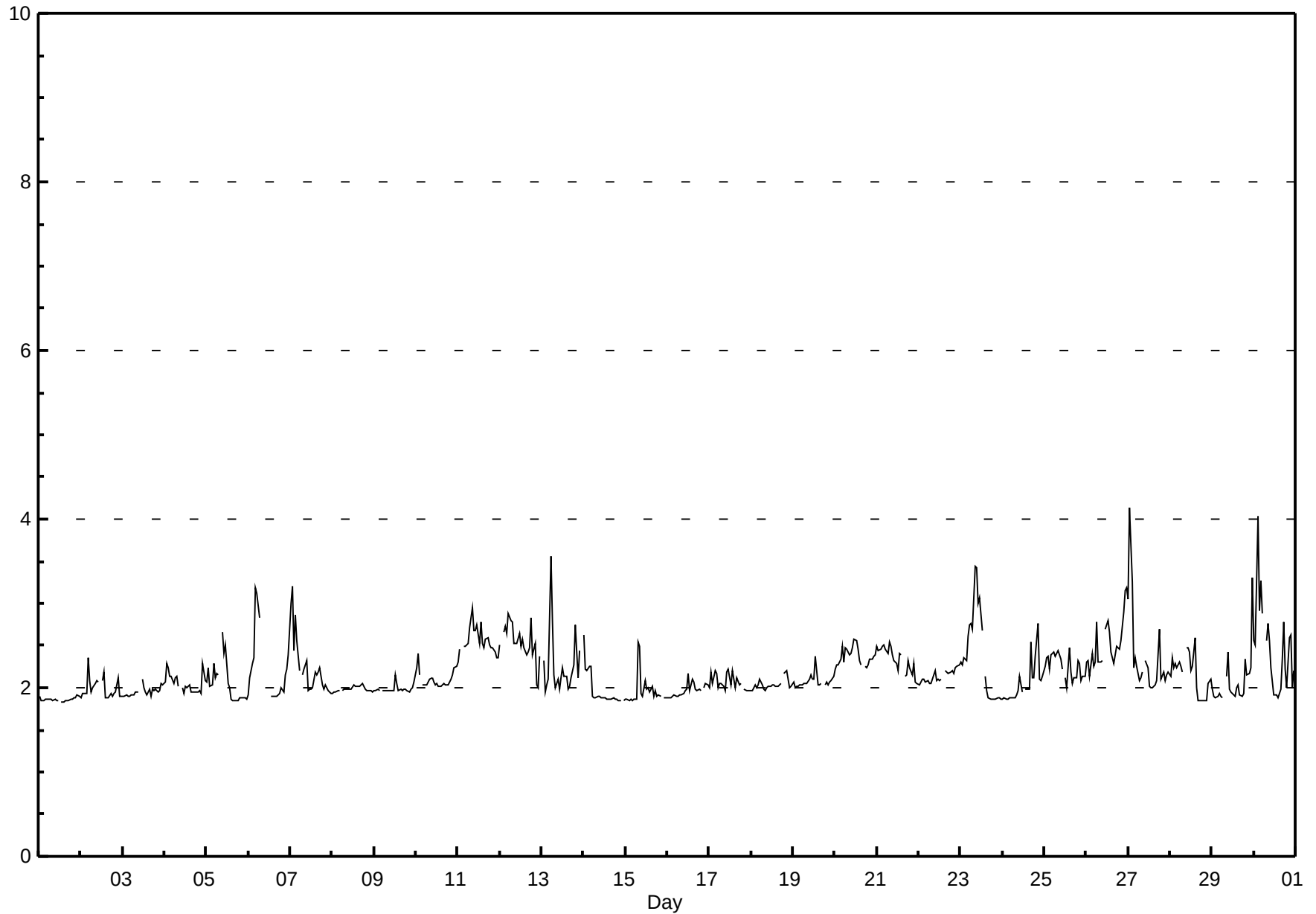
Methane (CH₄) - ppm

Henry Pirker - November 2013

Maximum Value: 4.13 ppm on Nov 27 02:00																								Maximum Daily Average: 2.55 ppm on Nov 11										Hours in Service: 720	
Minimum Value: 1.8 ppm on Nov 1 14:00																								Minimum Daily Average: 1.86 ppm on Nov 1										Hours of Data: 685	
Maximum Diurnal Average: 2.27 ppm at hour 5																								Minimum Diurnal Average: 2.05 ppm at hour 16										Hours of Missing Data: 35	
Monthly Average: 2.165 ppm																								Percentiles: P ₁ = 1.85 P ₁₀ = 1.88 Q ₁ = 1.96 Median = 2.06 Q ₃ = 2.30 P ₉₀ = 2.54 P ₉₉ = 3.25										Hours of Calibration: 35	
																								Percent Operational Time: 100.0											
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24											
1-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	A	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.86	1.91									
2-Nov	1.9	1.9	1.9	1.9	2.4	2.1	1.9	2.0	2.1	2.1	2.1	A	2.1	2.2	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.1	1.9	1.9	1.99	2.36									
3-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	2.1	2.0	1.9	1.9	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.95	2.09									
4-Nov	2.1	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.0	A	2.0	1.9	2.0	2.0	2.0	1.9	2.0	1.9	1.9	1.9	2.0	1.9	2.3	2.1	2.05	2.28									
5-Nov	2.1	2.2	2.0	2.0	2.3	2.1	2.2	2.1	A	2.7	2.4	2.5	2.0	2.0	1.9	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	2.06	2.65									
6-Nov	1.9	2.1	2.3	2.4	3.2	3.1	2.8	A	2.3	C	C	C	C	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.1	2.2	2.4	2.23	3.18									
7-Nov	3.0	3.2	2.4	2.9	2.6	2.2	A	2.2	2.2	2.3	2.0	2.0	2.0	2.0	2.2	2.2	2.2	2.2	2.0	2.0	2.0	2.0	2.0	1.9	2.24	3.20									
8-Nov	1.9	1.9	1.9	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	1.99	2.05									
9-Nov	2.0	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	1.99	2.15									
10-Nov	2.2	2.4	2.2	A	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.3	2.10	2.41									
11-Nov	2.3	2.5	A	2.5	2.5	2.5	2.5	2.7	2.9	2.7	2.7	2.7	2.5	2.8	2.5	2.5	2.6	2.6	2.5	2.5	2.5	2.4	2.3	2.4	2.55	2.95									
12-Nov	2.5	A	2.7	2.7	2.6	2.9	2.8	2.8	2.5	2.5	2.5	2.6	2.5	2.6	2.5	2.4	2.4	2.5	2.8	2.4	2.5	2.0	2.0	2.4	2.53	2.89									
13-Nov	A	2.3	1.9	2.0	2.1	3.6	2.8	2.1	2.0	2.1	2.0	2.1	2.2	2.1	2.1	2.0	2.0	2.1	2.3	2.7	2.4	2.1	2.4	A	2.26	3.56									
14-Nov	2.6	2.2	2.2	2.3	2.2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.97	2.62									
15-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.5	2.5	1.9	1.9	2.1	2.0	2.0	2.0	2.0	1.9	2.0	1.9	1.9	1.9	A	1.9	1.9	1.97	2.54									
16-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.2	2.0	2.1	2.1	2.0	2.0	2.0	2.0	A	2.0	2.1	2.0	1.97	2.17									
17-Nov	2.0	2.2	2.1	2.2	2.2	2.0	2.1	2.0	2.0	2.0	2.2	2.2	2.0	2.2	2.1	2.0	2.1	2.0	2.0	A	2.0	2.0	2.0	2.0	2.07	2.23									
18-Nov	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	2.2	2.2	2.1	2.0	2.0	2.03	2.20									
19-Nov	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.1	2.2	2.1	2.1	2.4	2.0	2.0	2.0	A	2.0	2.1	2.0	2.1	2.1	2.1	2.07	2.38									
20-Nov	2.2	2.3	2.3	2.3	2.5	2.3	2.5	2.5	2.4	2.4	2.5	2.6	2.6	2.5	2.3	2.3	A	2.2	2.2	2.3	2.3	2.3	2.4	2.4	2.37	2.57									
21-Nov	2.5	2.4	2.5	2.5	2.5	2.5	2.4	2.5	2.5	2.4	2.3	2.3	2.2	2.4	2.4	A	2.1	2.2	2.3	2.2	2.2	2.3	2.1	2.1	2.34	2.54									
22-Nov	2.0	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.2	2.1	2.1	2.1	2.1	A	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.13	2.28									
23-Nov	2.3	2.3	2.4	2.3	2.6	2.7	2.8	2.7	3.4	3.4	3.0	3.1	2.7	A	2.1	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.38	3.44									
24-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.1	1.9	A	2.0	2.0	2.0	2.5	2.1	2.1	2.4	2.8	2.1	2.1	2.1	2.05	2.77									
25-Nov	2.3	2.3	2.4	2.2	2.4	2.4	2.4	2.4	2.4	2.3	2.2	A	2.1	2.0	2.5	2.2	2.0	2.1	2.1	2.3	2.3	2.1	2.1	2.1	2.26	2.47									
26-Nov	2.3	2.3	2.1	2.4	2.3	2.3	2.8	2.3	2.3	2.3	A	2.7	2.8	2.7	2.4	2.4	2.3	2.5	2.5	2.5	2.6	2.9	3.2	3.2	2.52	3.19									
27-Nov	3.1	4.1	3.3	2.2	2.4	2.3	2.1	2.1	2.2	A	2.3	2.2	2.0	2.0	2.0	2.0	2.1	2.4	2.7	2.1	2.2	2.1	2.2	2.2	2.36	4.13									
28-Nov	2.1	2.4	2.2	2.3	2.2	2.3	2.2	2.2	A	2.5	2.5	2.4	2.2	2.3	2.6	2.0	1.8	1.8	1.8	1.9	1.9	1.9	2.0	2.1	2.16	2.60									
29-Nov	2.0	1.9	1.9	1.9	1.9	1.9	1.9	A	2.1	2.4	2.0	2.0	1.9	1.9	2.0	2.0	1.9	1.9	1.9	2.3	2.2	2.2	2.2	3.3	2.07	3.30									
30-Nov	2.6	2.5	4.0	2.9	3.3	2.9	A	2.6	2.8	2.6	2.2	1.9	1.9	1.9	1.9	2.0	2.3	2.8	2.2	2.0	2.6	2.6	2.0	2.2	2.46	4.03									
2.18 2.25 2.22 2.19 2.27 2.26 2.20 2.20 2.23 2.24 2.18 2.20 2.16 2.12 2.10 2.05 2.06 2.10 2.10 2.11 2.14 2.11 2.12 2.17																								Diurnal Average											
3.06 4.13 4.03 2.92 3.27 3.56 2.84 2.77 3.44 3.42 3.00 3.07 2.80 2.78 2.60 2.47 2.58 2.79 2.83 2.74 2.77 2.91 3.16 3.30																								Diurnal Maximum											
C - Calibration A - Automated Daily Zero Span																																			

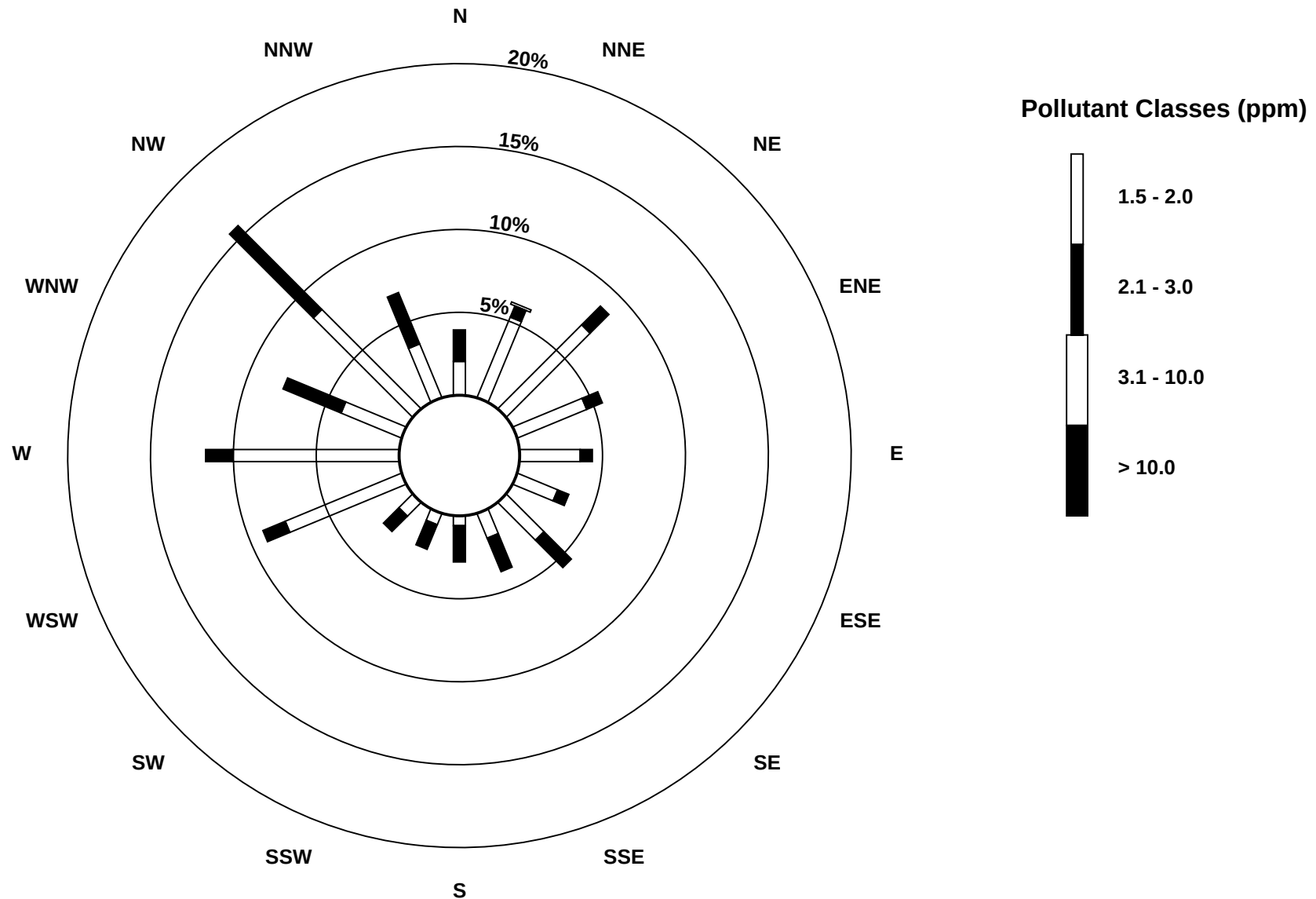
Hourly Maximums

Methane (CH₄) - ppm
Henry Pirker - November 2013



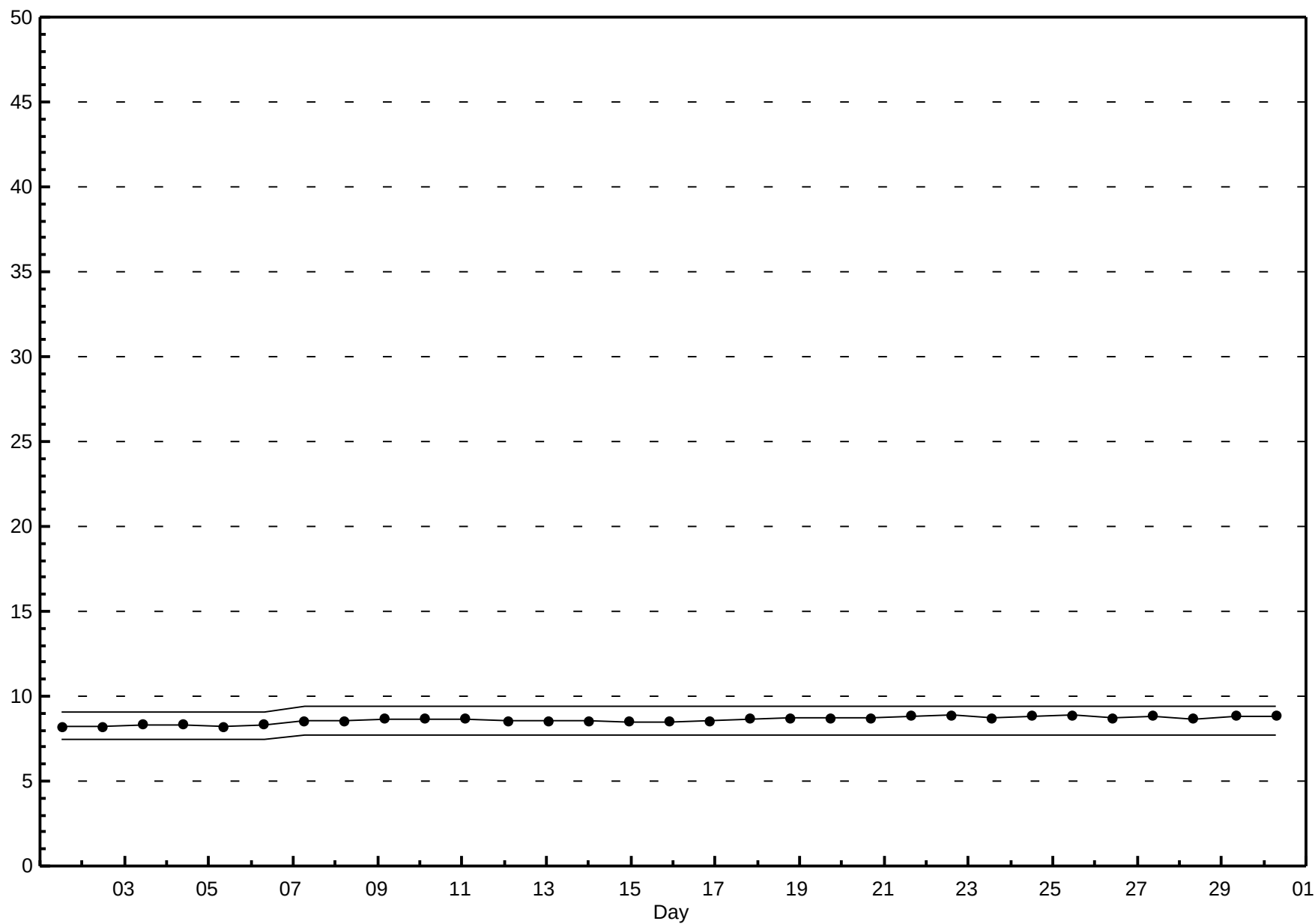
Pollutant Rose

Methane (CH₄) - ppm
Henry Pirker - November 2013



Span Responses

Methane (CH₄)
Henry Pirker - November 2013

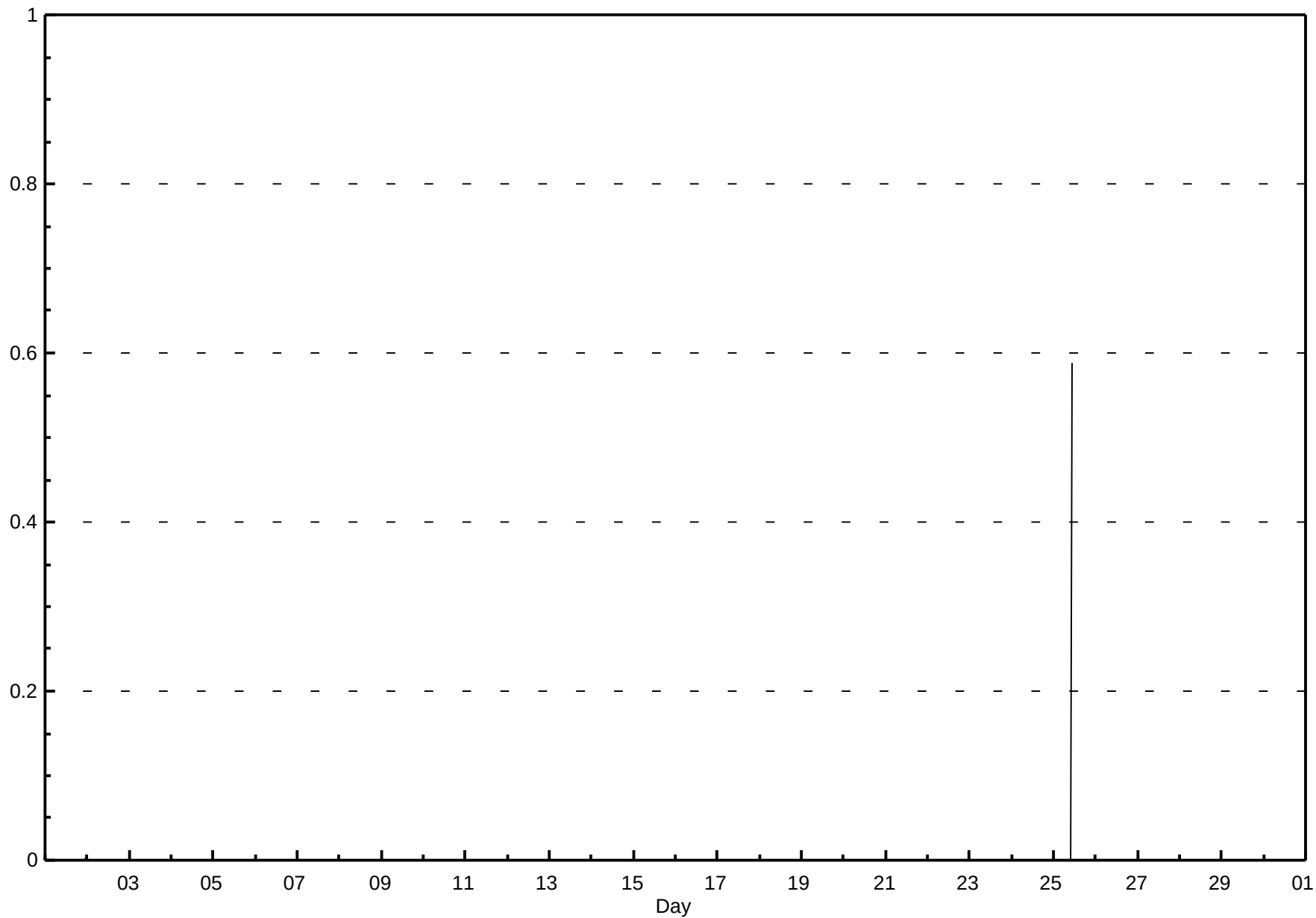


Hourly Averages

Non Methane Hydrocarbon (NMHC) - ppm

Henry Pirker - November 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 0.59 ppm on Nov 25 11:00 Maximum Daily Average: 0.03 ppm on Nov 25																								Hours in Service: 720 Hours of Data: 685 Hours of Missing Data: 35 Hours of Calibration: 35 Percent Operational Time: 100.0		
Minimum Value: 0.0 ppm on Nov 1 01:00 Maximum Diurnal Average: 0.02 ppm at hour 11 Monthly Average: 0.001 ppm												Minimum Daily Average: 0.00 ppm on Nov 2 Minimum Diurnal Average: 0.00 ppm at hour 15 Percentiles: P ₁ = 0.00 P ₁₀ = 0.00 Q ₁ = 0.00 Median = 0.00 Q ₃ = 0.00 P ₉₀ = 0.00 P ₉₉ = 0.00														
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-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
2-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
3-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
4-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
5-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
6-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	C	C	C	C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
7-Nov	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
8-Nov	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
9-Nov	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
10-Nov	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
11-Nov	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
12-Nov	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
13-Nov	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.00	0.00
14-Nov	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.00	0.00
15-Nov	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.00	0.00
16-Nov	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	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.00	0.00
17-Nov	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	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.00	0.00
18-Nov	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	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.00	0.00
19-Nov	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	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
20-Nov	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	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
21-Nov	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	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
22-Nov	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	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
23-Nov	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	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
24-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
25-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.03	0.59
26-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
27-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
28-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
29-Nov	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
30-Nov	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00																								Diurnal Average		
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.59 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00																								Diurnal Maximum		
C - Calibration A - Automated Daily Zero Span																										



Hourly Maximums

Non Methane Hydrocarbon (NMHC) - ppm

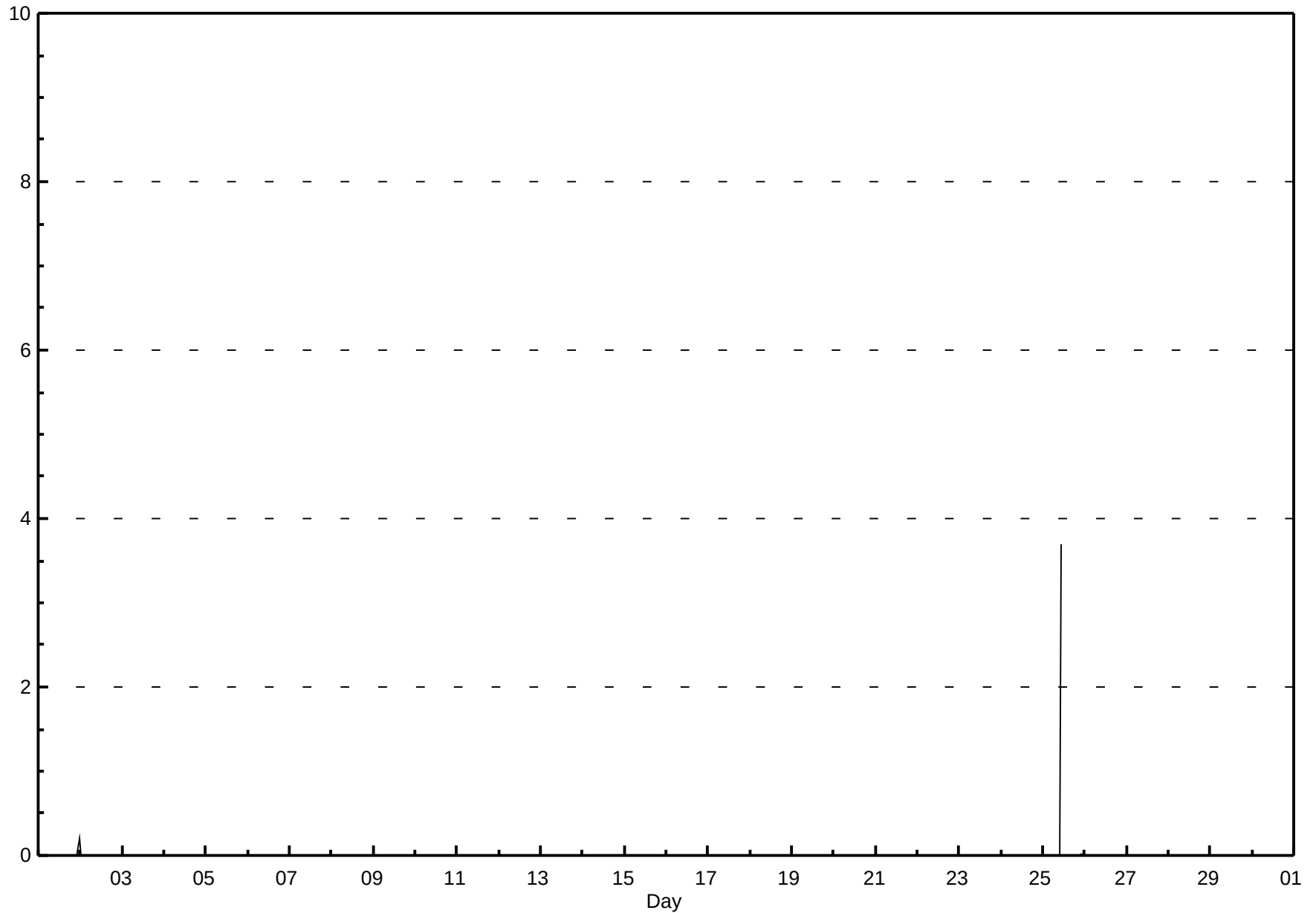
Henry Pirker - November 2013

Maximum Value: 3.69 ppm on Nov 25 11:00																					Maximum Daily Average: 0.16 ppm on Nov 25					Hours in Service: 720	
Minimum Value: 0.0 ppm on Nov 4 04:00																					Minimum Daily Average: 0.00 ppm on Nov 6					Hours of Data: 685	
Maximum Diurnal Average: 0.14 ppm at hour 11																					Minimum Diurnal Average: 0.00 ppm at hour 4					Hours of Missing Data: 35	
Monthly Average: 0.007 ppm																					Percentiles: P ₁ = 0.00 P ₁₀ = 0.00 Q ₁ = 0.00 Median = 0.00 Q ₃ = 0.00 P ₉₀ = 0.00 P ₉₉ = 0.00					Hours of Calibration: 35	
																										Percent Operational Time: 100.0	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.01	0.20	
2-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
3-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
4-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
5-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
6-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	C	C	C	C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
7-Nov	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
8-Nov	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
9-Nov	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
10-Nov	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
11-Nov	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
12-Nov	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
13-Nov	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.00	0.00	
14-Nov	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.00	0.00	
15-Nov	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.00	0.00	
16-Nov	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	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.00	0.00	
17-Nov	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	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.00	0.00	
18-Nov	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	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
19-Nov	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	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
20-Nov	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	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
21-Nov	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	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
22-Nov	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	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
23-Nov	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	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
24-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
25-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.7	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.16	3.69	
26-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
27-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
28-Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
29-Nov	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
30-Nov	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.14 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.01																									Diurnal Average		
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 3.69 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.20																									Diurnal Maximum		
C - Calibration A - Automated Daily Zero Span																											

Hourly Maximums

Non Methane Hydrocarbon (NMHC) - ppm

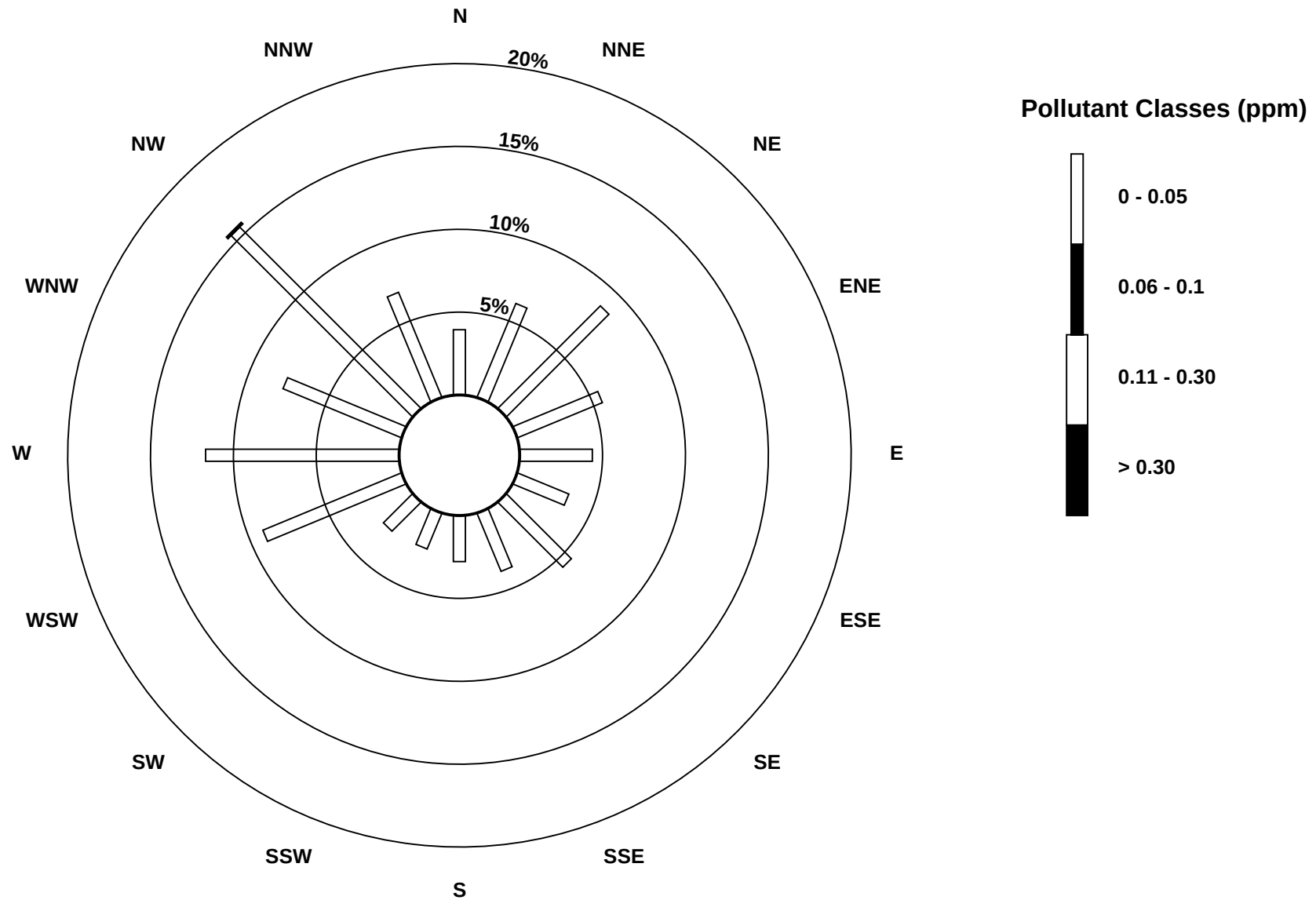
Henry Pirker - November 2013

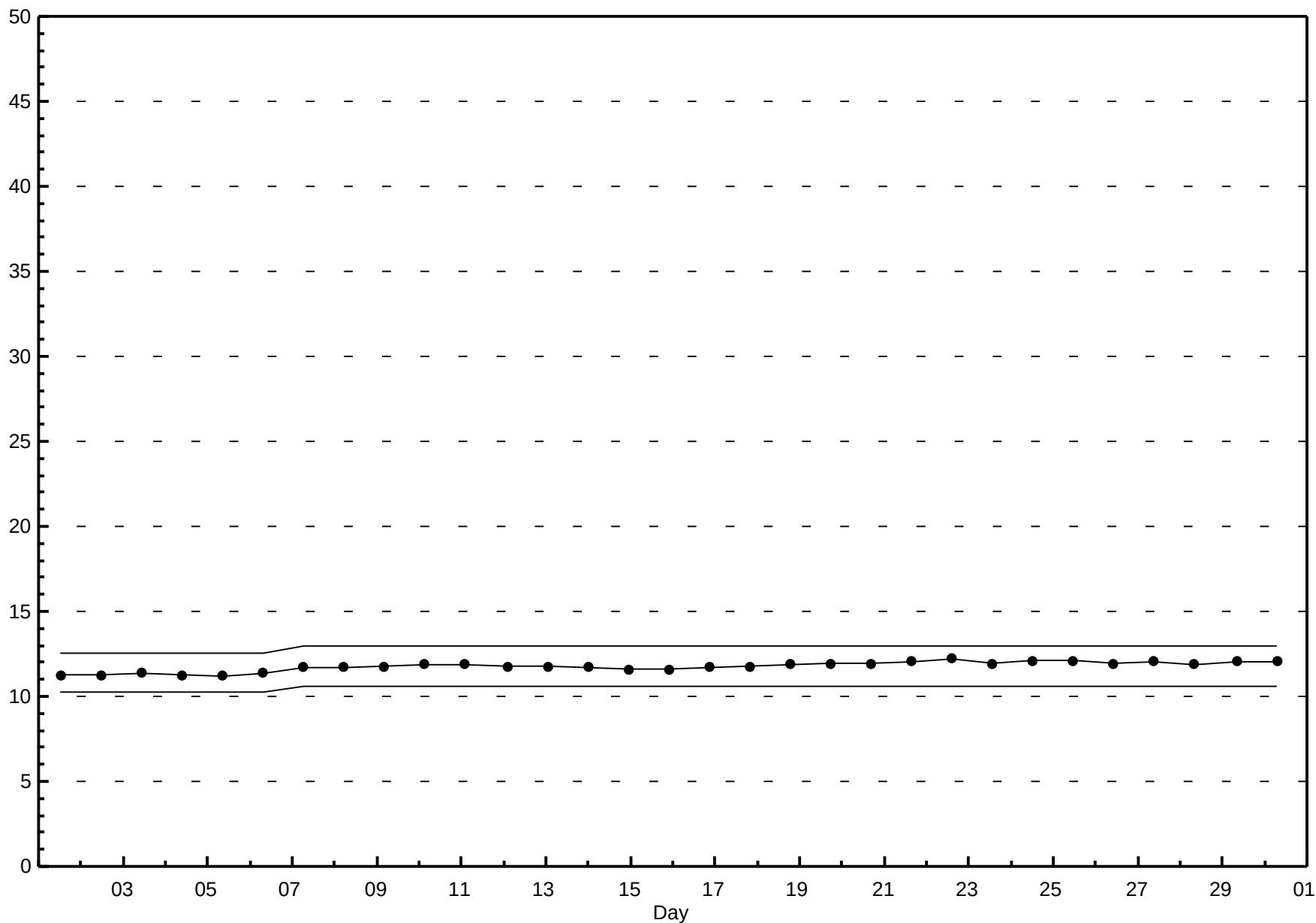


Pollutant Rose

Non Methane Hydrocarbon (NMHC) - ppm

Henry Pirker - November 2013



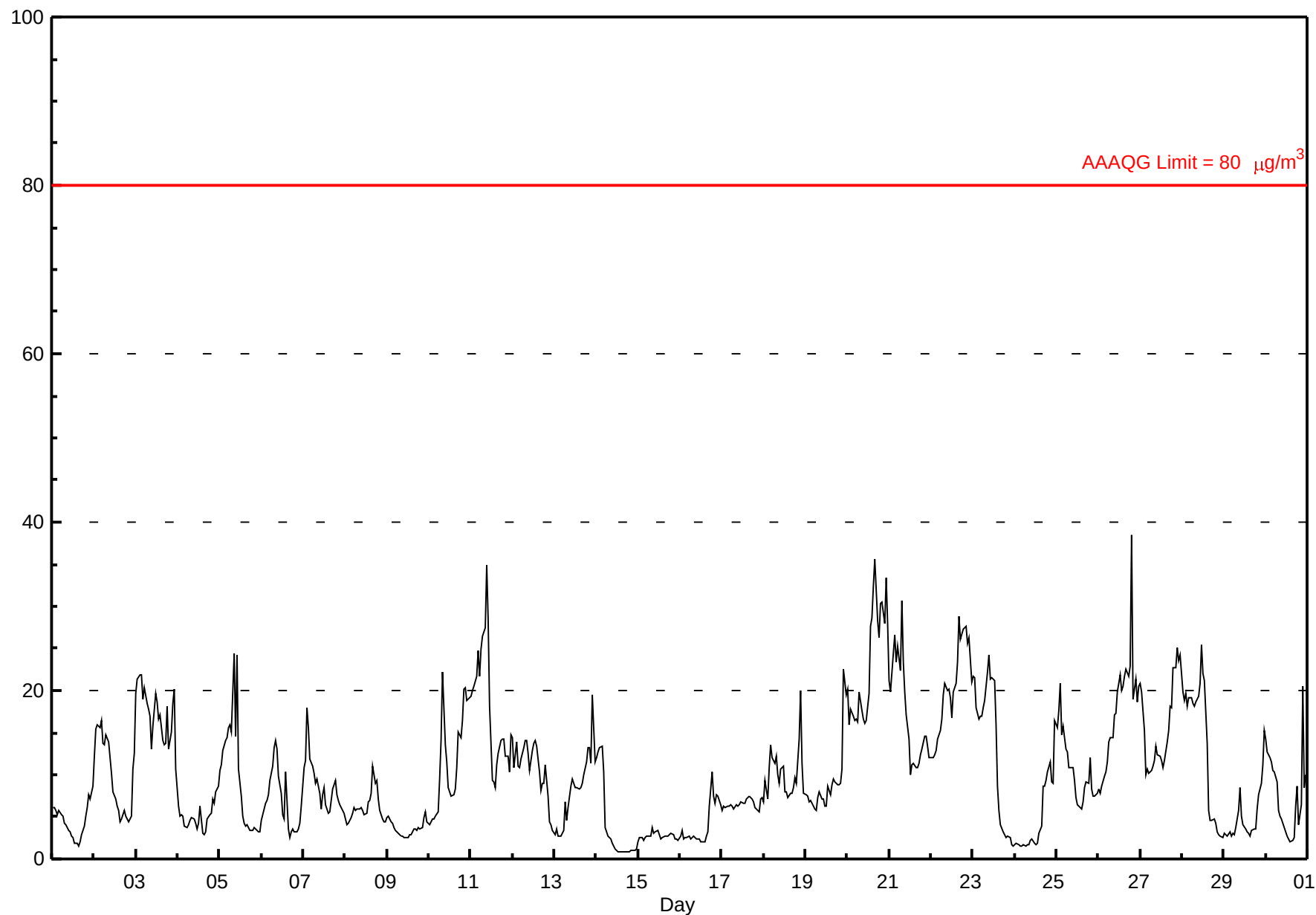


Hourly Averages

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

Henry Pirker - November 2013

Number of Exceedences: 1-hr: 0 24-hr: 0 Maximum Value: 38.5 µg/m ³ on Nov 26 20:00																								Maximum Daily Average: 23.1 µg/m ³ on Nov 20				Hours in Service: 720 Hours of Data: 720 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0			
Minimum Value: 1 µg/m ³ on Nov 14 15:00 Maximum Diurnal Average: 11.7 µg/m ³ at hour 9 Monthly Average: 10.15 µg/m ³												Minimum Daily Average: 2.7 µg/m ³ on Nov 15 Minimum Diurnal Average: 8.2 µg/m ³ at hour 16 Percentiles: P ₁ = 0.9 P ₁₀ = 2.7 Q ₁ = 4.3 Median = 8.4 Q ₃ = 14.3 P ₉₀ = 20.5 P ₉₉ = 30.4																			
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-Nov	6	6	6	5	6	5	5	4	4	3	3	3	3	2	2	2	2	3	4	5	6	8	7	9	4.5	8.7					
2-Nov	12	15	16	16	16	14	14	15	14	12	10	8	7	6	6	4	5	6	5	5	4	5	11	13	9.9	16.4					
3-Nov	20	21	22	22	19	20	18	18	17	13	16	20	19	17	17	14	14	14	18	13	15	18	20	11	17.3	21.9					
4-Nov	6	5	5	5	4	4	4	4	5	5	4	4	4	6	3	3	3	5	5	5	7	7	8	9	5.0	8.6					
5-Nov	10	11	13	14	14	16	16	15	24	15	24	11	7	5	4	4	4	3	3	3	4	3	3	3	9.7	24.3					
6-Nov	5	5	7	7	8	9	11	13	14	13	10	8	5	5	10	4	3	3	3	3	3	4	4	6	6.8	14.0					
7-Nov	11	12	18	16	12	11	10	9	10	8	6	8	8	6	5	6	7	8	9	8	7	6	6	5	8.8	18.0					
8-Nov	5	4	4	5	5	6	6	6	6	6	5	5	7	7	8	11	9	9	7	6	5	4	4	4	6.1	11.0					
9-Nov	5	5	4	4	4	3	3	3	3	3	2	3	3	3	3	4	4	3	4	3	4	5	6	4	3.6	5.5					
10-Nov	4	4	5	5	5	6	9	14	22	14	11	8	8	7	8	8	11	15	14	16	20	20	19	19	11.4	22.3					
11-Nov	19	20	20	22	25	22	25	26	27	35	29	18	9	9	8	11	12	14	14	14	12	12	10	15	18.0	35.0					
12-Nov	14	11	14	11	11	12	13	14	14	13	11	13	14	14	13	10	8	9	9	11	7	4	4	3	10.8	14.3					
13-Nov	3	3	3	3	3	3	7	5	6	9	10	9	8	9	8	8	9	10	11	13	13	11	19	12	8.1	19.5					
14-Nov	12	13	13	13	10	4	3	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3.7	13.4					
15-Nov	2	3	2	2	3	3	3	3	4	3	3	3	3	2	3	3	3	3	3	3	3	2	2	2	2.7	3.7					
16-Nov	3	3	2	3	3	3	2	3	3	2	2	2	2	2	2	3	3	6	10	8	7	8	7	6	4.0	10.3					
17-Nov	6	6	6	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7	6	6	6	7	7	6.5	7.5					
18-Nov	7	9	7	11	14	12	11	12	10	9	11	11	8	8	7	8	8	9	10	9	14	20	11	8	10.1	20.0					
19-Nov	8	8	7	7	7	6	6	7	8	7	7	6	6	9	8	9	10	9	9	9	11	23	20	8	8.8	22.5					
20-Nov	20	16	18	17	16	17	16	20	18	17	16	16	20	28	29	32	36	28	26	30	31	28	33	28	23.1	35.6					
21-Nov	21	20	24	27	23	25	22	31	23	20	17	14	10	11	11	11	11	11	12	13	15	15	13	12	17.2	30.7					
22-Nov	12	12	12	13	14	15	17	19	21	20	20	19	17	20	21	23	29	26	27	27	28	26	26	21	20.3	28.9					
23-Nov	22	21	18	17	17	17	18	19	22	24	21	22	21	16	9	6	4	3	3	3	3	3	2	1	12.9	24.2					
24-Nov	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	4	9	9	9	10	12	9	9	17	4.8	16.5					
25-Nov	16	18	21	15	16	13	13	11	11	11	9	7	6	6	6	7	8	9	9	12	8	7	7	8	10.6	20.8					
26-Nov	8	8	9	10	10	11	14	14	14	17	17	20	22	20	21	22	23	22	23	38	19	21	19	20	17.6	38.5					
27-Nov	21	20	15	10	11	10	11	11	12	13	12	12	12	11	12	14	15	18	18	23	23	25	24	24	15.7	25.2					
28-Nov	20	19	20	18	19	19	19	18	19	19	21	25	22	21	14	6	5	5	5	4	3	3	3	2	13.7	25.4					
29-Nov	3	3	3	3	3	3	3	4	6	8	5	4	3	3	3	3	3	4	4	6	8	9	11	15	5.0	15.2					
30-Nov	14	13	12	11	10	10	9	6	5	5	4	3	3	2	2	2	3	6	9	4	6	21	8	10	7.5	20.5					
10.5 10.6 10.9 10.6 10.5 10.3 10.5 11.1 11.7 11.1 10.6 9.7 8.8 8.8 8.4 8.2 8.9 9.3 9.8 10.5 10.1 10.8 11.0 10.5																								Diurnal Average							
21.6 21.4 24.4 26.7 24.7 25.2 24.9 30.7 27.4 35.0 28.5 25.4 22.1 27.6 28.7 32.3 35.6 28.2 27.3 38.5 30.5 28.0 33.3 28.0																								Diurnal Maximum							
Alberta Ambient Air Quality Guideline (AAAQG): 1-hr 80 µg/m ³ Alberta Ambient Air Quality Objective (AAAQO): 24-hr 30 µg/m ³																															

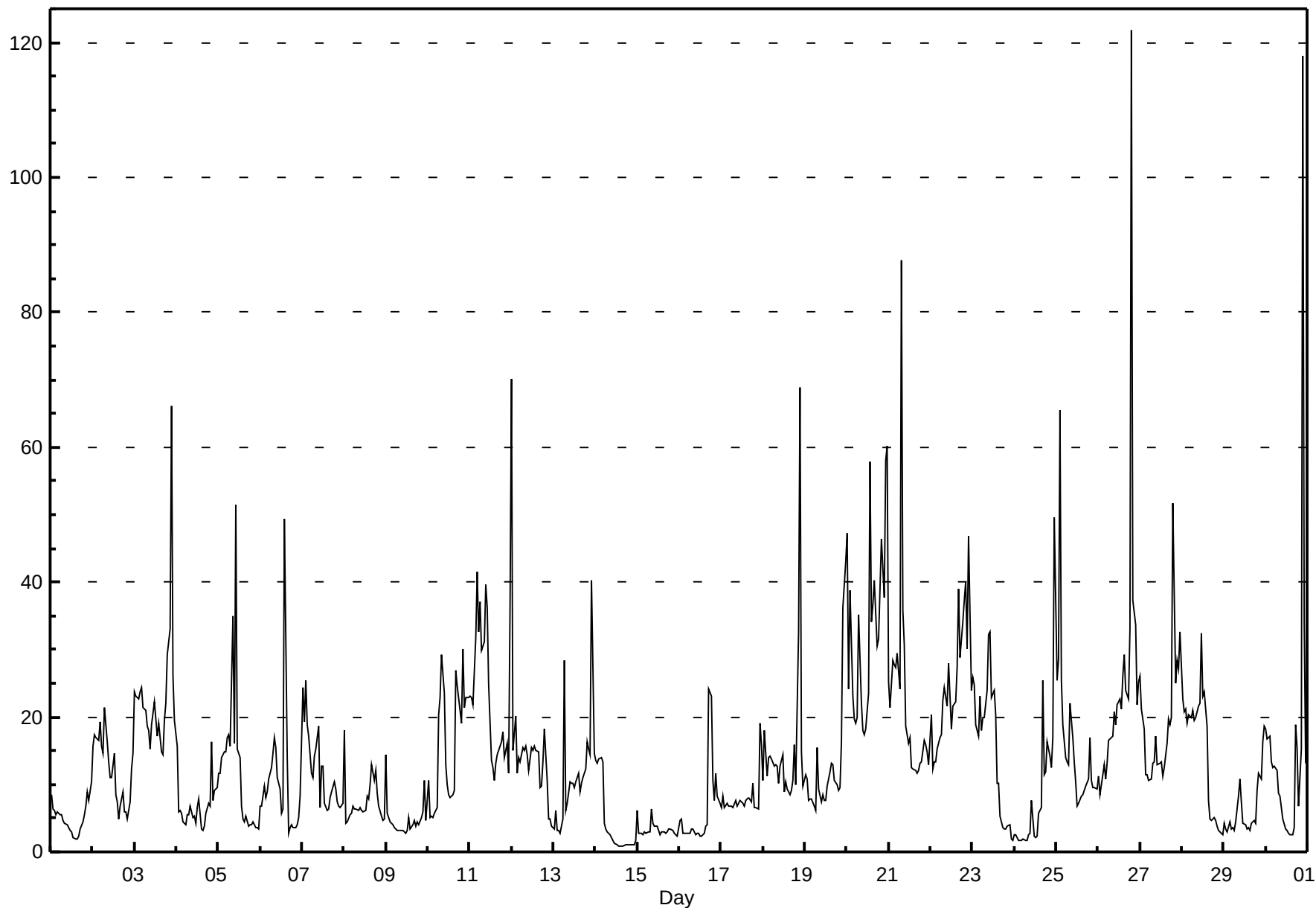


Hourly Maximums

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

Henry Pirker - November 2013

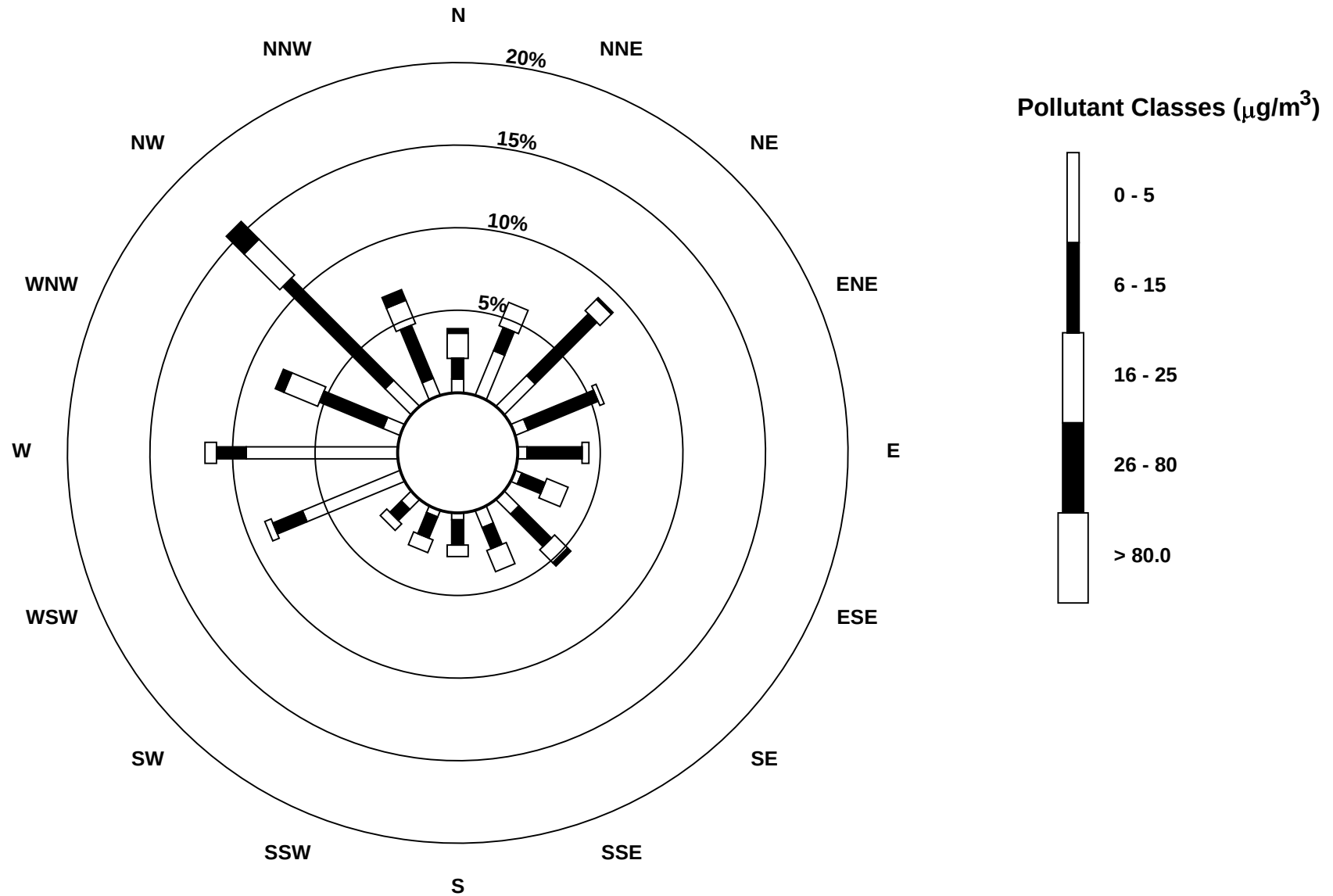
Maximum Value: 121.8 µg/m ³ on Nov 26 20:00																				Maximum Daily Average: 33.3 µg/m ³ on Nov 20					Hours in Service: 720	
Minimum Value: 1 µg/m ³ on Nov 14 16:00																				Minimum Daily Average: 3.3 µg/m ³ on Nov 15					Hours of Data: 720	
Maximum Diurnal Average: 19.5 µg/m ³ at hour 22																				Minimum Diurnal Average: 10.2 µg/m ³ at hour 16					Hours of Missing Data: 0	
Monthly Average: 13.69 µg/m ³																				Percentiles: P ₁ = 1.0 P ₁₀ = 3.1 Q ₁ = 5.3 Median = 10.6 Q ₃ = 18.3 P ₉₀ = 26.8 P ₉₉ = 65.0					Hours of Calibration: 0	
																									Percent Operational Time: 100.0	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Nov	9	6	6	6	6	6	6	5	4	4	4	3	3	2	2	2	2	3	5	6	7	9	8	10	5.1	10.3
2-Nov	16	17	17	17	19	16	15	21	16	13	11	11	15	9	7	5	7	9	6	6	5	7	12	15	12.2	21.5
3-Nov	24	23	23	24	24	21	21	19	18	15	19	22	20	17	19	15	14	19	22	29	33	66	26	19	23.1	66.1
4-Nov	16	6	6	6	5	4	6	6	7	5	5	4	6	8	3	3	4	6	7	7	16	8	9	10	6.7	16.2
5-Nov	12	12	14	15	15	17	17	16	35	16	51	15	14	7	5	4	5	4	4	4	4	4	4	3	12.4	51.4
6-Nov	7	7	10	8	9	11	12	15	17	15	11	9	6	6	49	14	3	4	4	4	4	4	5	8	10.0	49.4
7-Nov	24	19	25	19	17	12	11	14	15	19	7	13	13	7	6	6	8	9	10	9	7	7	7	7	12.2	25.5
8-Nov	18	4	4	6	6	7	6	6	6	6	6	6	6	8	8	10	13	11	12	9	7	5	5	5	7.5	18.1
9-Nov	14	6	5	4	4	4	3	3	3	3	3	3	3	5	3	4	5	4	4	4	5	6	11	5	4.8	14.4
10-Nov	11	5	5	5	6	7	20	23	29	23	13	10	9	8	9	9	27	25	21	19	30	21	23	23	15.8	30.1
11-Nov	23	23	22	32	41	33	37	30	31	40	36	25	14	12	11	13	14	16	16	18	14	16	12	37	23.5	41.5
12-Nov	70	15	20	12	14	13	15	15	16	14	12	15	15	16	15	15	9	10	13	18	11	5	5	4	15.3	70.2
13-Nov	3	6	3	3	3	5	28	6	7	10	10	10	10	10	12	9	10	11	12	16	15	14	40	15	11.3	40.4
14-Nov	13	13	14	14	13	4	3	3	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	4.1	13.9
15-Nov	6	3	3	2	3	3	3	3	6	4	4	4	3	3	3	3	3	3	3	3	3	3	3	2	3.3	6.3
16-Nov	5	5	3	3	3	3	3	3	3	3	3	3	2	2	3	4	4	24	23	11	8	12	8	7	6.1	24.2
17-Nov	7	8	6	7	7	7	7	7	8	7	7	8	7	7	8	8	8	7	10	7	7	6	19	16	8.1	19.2
18-Nov	11	18	11	14	14	14	13	13	13	10	13	14	9	10	9	9	9	11	16	10	33	69	15	10	15.2	69.0
19-Nov	11	11	8	8	8	7	6	15	9	7	9	8	8	10	12	13	13	11	10	9	9	16	36	43	12.4	42.9
20-Nov	47	24	39	23	20	19	20	35	22	18	17	18	24	58	34	37	40	31	32	39	46	38	58	60	33.3	60.1
21-Nov	25	21	28	28	27	29	24	88	36	31	19	16	17	13	12	12	12	12	13	13	17	16	15	13	22.4	87.8
22-Nov	20	12	13	13	15	17	17	22	24	22	28	23	18	22	22	27	39	29	34	37	40	30	47	24	24.9	46.8
23-Nov	26	25	19	17	23	18	20	20	24	32	33	23	24	20	10	10	5	4	3	3	4	4	2	2	15.5	32.7
24-Nov	3	2	2	2	2	2	2	2	2	3	8	2	2	2	6	7	25	11	12	16	14	12	17	50	8.6	49.6
25-Nov	25	29	65	25	19	14	13	13	22	17	13	10	7	7	8	9	9	10	11	17	11	10	10	9	16.0	65.4
26-Nov	11	9	10	13	11	13	16	17	17	21	19	22	23	21	26	29	24	23	33	122	37	34	22	25	24.9	121.8
27-Nov	26	21	18	11	11	11	11	13	13	17	13	13	13	11	13	16	20	19	20	52	25	28	27	33	19.0	51.8
28-Nov	23	21	21	19	20	20	21	20	20	22	22	32	23	24	19	8	5	5	5	5	4	3	3	3	15.2	32.4
29-Nov	4	3	3	4	3	4	3	5	8	11	7	4	4	3	4	3	4	5	4	9	12	11	16	19	6.4	18.6
30-Nov	18	17	17	13	12	13	12	9	8	7	5	3	3	3	2	3	4	19	15	7	15	118	34	13	15.4	118.1
17.6 13.1 14.7 12.4 12.7 11.7 13.1 15.5 14.8 13.9 13.6 11.8 10.7 11.1 11.4 10.2 11.6 11.7 12.8 17.0 14.8 19.5 16.6 16.3																									Diurnal Average	
70.2 28.7 65.4 31.7 41.5 32.6 37.2 87.8 35.8 39.6 51.4 32.4 23.9 57.9 49.4 36.7 40.4 30.6 34.1 121.8 46.4 118.1 58.0 60.1																									Diurnal Maximum	



Pollutant Rose

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

Henry Pirker - November 2013



Hourly Averages

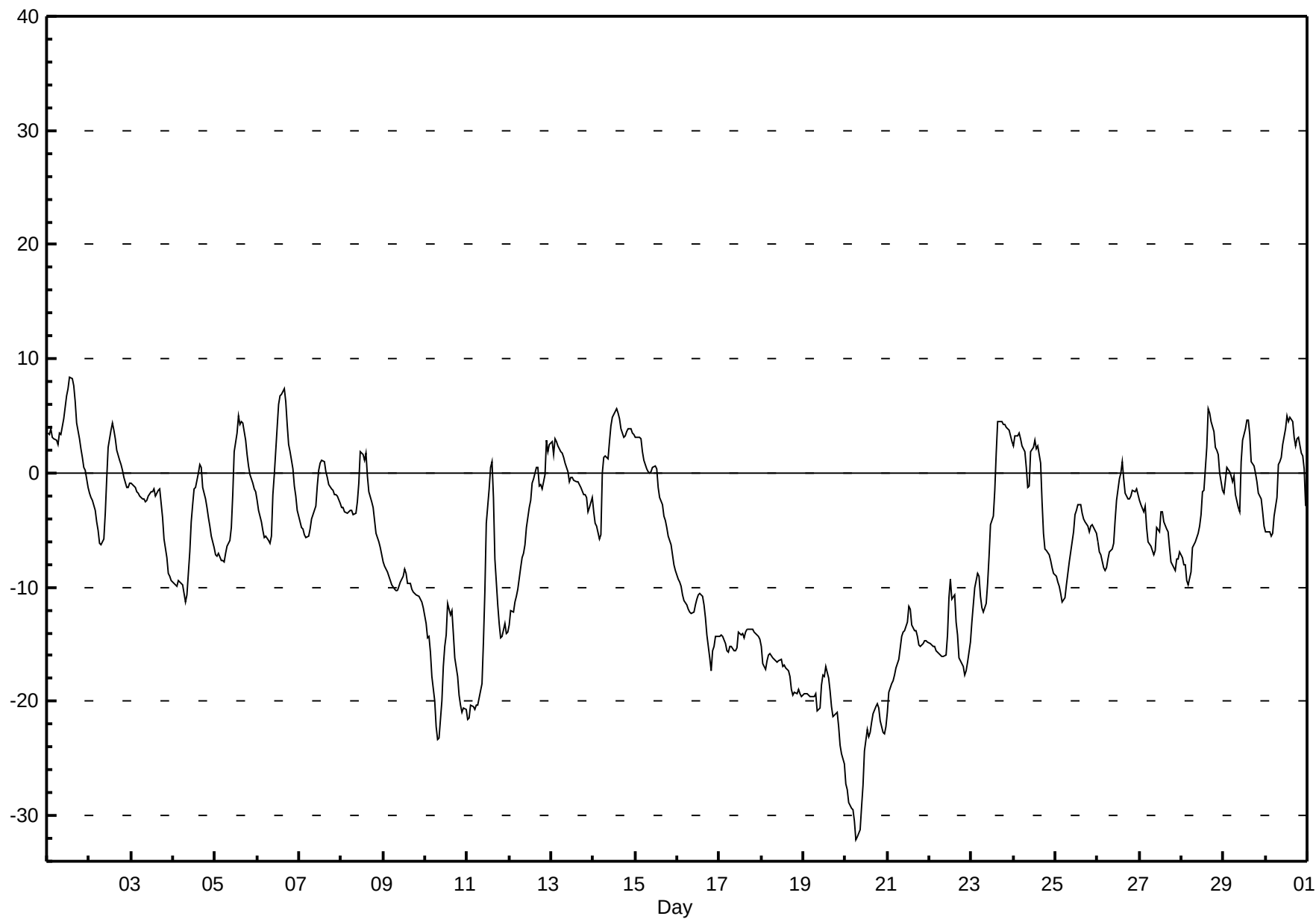
External Temperature (ET) - °C

Henry Pirker - November 2013

Number of Exceedences (AAAQO): Maximum Value: 8.4 °C on Nov 1 14:00																					1-hr: 0 24-hr: 0 Maximum Daily Average: 3.9 °C on Nov 1					Hours in Service: 720 Hours of Data: 720 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0			
Minimum Value: -32 °C on Nov 20 07:00 Maximum Diurnal Average: -3.1 °C at hour 15 Monthly Average: -6.68 °C																					Minimum Daily Average: -25.5 °C on Nov 20 Minimum Diurnal Average: -8.9 °C at hour 6 Percentiles: P ₁ = -29.1 P ₁₀ = -18.5 Q ₁ = -13.2 Median = -5.1 Q ₃ = -0.2 P ₉₀ = 3.1 P ₉₉ = 6.6								
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-Nov	3	3	4	3	3	3	2	4	3	5	6	7	7	8	8	8	6	4	3	2	1	0	0	-1	3.9	8.4			
2-Nov	-2	-2	-2	-3	-4	-5	-6	-6	-6	-4	-1	2	4	4	4	3	2	1	1	0	0	-1	-1	-1	-1.0	4.4			
3-Nov	-1	-1	-1	-2	-2	-2	-2	-2	-3	-2	-2	-2	-2	-1	-2	-2	-1	-3	-4	-6	-7	-9	-9	-9	-3.2	-0.9			
4-Nov	-10	-10	-10	-9	-10	-10	-11	-11	-11	-7	-4	-3	-1	-1	0	1	1	-1	-2	-3	-4	-5	-6	-7	-5.6	0.7			
5-Nov	-7	-7	-7	-8	-8	-8	-7	-6	-6	-5	-2	2	4	5	4	5	4	3	2	1	0	-1	-1	-2	-1.9	5.0			
6-Nov	-2	-3	-4	-5	-6	-6	-6	-6	-6	-2	0	4	6	7	7	7	6	4	3	2	0	-1	-2	-3	-0.2	7.4			
7-Nov	-4	-5	-5	-5	-6	-6	-5	-4	-4	-3	-1	0	1	1	1	0	0	-1	-1	-2	-2	-2	-2	-3	-2.4	1.1			
8-Nov	-3	-3	-3	-4	-3	-3	-3	-4	-4	-2	-1	2	2	1	2	0	-2	-3	-3	-4	-5	-6	-7	-7	-2.6	1.9			
9-Nov	-8	-8	-9	-9	-9	-10	-10	-10	-10	-10	-9	-9	-8	-9	-10	-10	-10	-10	-10	-11	-11	-11	-11	-12	-9.8	-7.8			
10-Nov	-13	-14	-14	-16	-18	-20	-22	-23	-23	-20	-17	-15	-14	-11	-12	-12	-14	-16	-18	-19	-20	-21	-21	-21	-17.3	-11.4			
11-Nov	-22	-21	-20	-20	-21	-20	-20	-20	-18	-15	-10	-4	-1	0	1	-2	-8	-12	-13	-14	-14	-13	-14	-14	-13.2	1.0			
12-Nov	-13	-12	-12	-11	-11	-10	-8	-7	-7	-6	-5	-3	-2	-1	-1	0	1	-1	-1	-1	0	3	2	2	-4.4	2.9			
13-Nov	3	2	3	3	2	2	2	1	1	0	-1	0	0	-1	-1	-1	-1	-1	-2	-2	-2	-3	-3	-2	-0.1	3.0			
14-Nov	-3	-4	-5	-6	-5	0	1	2	1	3	4	5	5	6	5	5	4	3	3	4	4	4	3	3	1.7	5.6			
15-Nov	3	3	3	3	2	1	0	0	0	0	0	1	0	-1	-2	-3	-4	-4	-5	-6	-6	-7	-8	-9	-1.5	3.2			
16-Nov	-9	-10	-10	-11	-11	-12	-12	-12	-12	-12	-12	-11	-11	-11	-11	-12	-13	-14	-16	-17	-16	-15	-14	-14	-12.4	-9.3			
17-Nov	-14	-14	-14	-15	-16	-16	-15	-15	-16	-16	-15	-14	-14	-14	-14	-14	-14	-14	-14	-14	-14	-14	-14	-15	-14.5	-13.6			
18-Nov	-15	-17	-17	-16	-16	-16	-16	-16	-16	-17	-16	-16	-17	-17	-17	-17	-18	-19	-20	-19	-19	-19	-19	-20	-17.4	-15.2			
19-Nov	-19	-19	-19	-19	-20	-20	-20	-19	-21	-21	-19	-18	-18	-17	-18	-19	-20	-21	-21	-21	-22	-24	-25	-26	-20.2	-17.0			
20-Nov	-27	-28	-29	-29	-30	-30	-32	-32	-31	-29	-27	-24	-22	-23	-23	-22	-21	-21	-20	-21	-22	-23	-23	-22	-25.5	-20.2			
21-Nov	-21	-19	-18	-18	-18	-17	-16	-15	-14	-14	-14	-13	-12	-12	-13	-14	-14	-14	-15	-15	-15	-15	-15	-15	-15.3	-11.7			
22-Nov	-15	-15	-15	-15	-16	-16	-16	-16	-16	-16	-14	-11	-9	-11	-11	-13	-14	-16	-17	-17	-18	-17	-17	-15	-14.8	-9.3			
23-Nov	-13	-12	-10	-9	-9	-11	-12	-12	-11	-10	-7	-5	-4	-2	2	5	4	5	4	4	4	4	3	3	-3.7	4.5			
24-Nov	2	3	3	3	3	2	2	1	-1	-1	2	2	3	2	2	1	-2	-5	-7	-7	-7	-8	-8	-9	-1.0	3.5			
25-Nov	-9	-10	-10	-10	-11	-11	-10	-9	-8	-6	-5	-4	-3	-3	-3	-3	-4	-4	-5	-5	-5	-5	-5	-5	-6.3	-2.7			
26-Nov	-6	-7	-7	-8	-9	-8	-8	-7	-7	-6	-4	-2	0	0	1	-1	-2	-2	-2	-2	-2	-2	-1	-2	-3.9	1.0			
27-Nov	-2	-3	-3	-3	-5	-6	-6	-7	-7	-7	-5	-5	-3	-3	-4	-5	-5	-7	-8	-8	-9	-8	-8	-7	-5.6	-2.4			
28-Nov	-7	-8	-8	-9	-10	-9	-7	-6	-6	-5	-5	-4	-2	-2	2	6	5	5	4	2	2	2	0	-2	-2.6	5.6			
29-Nov	-2	-1	1	0	0	-1	0	-2	-3	-3	1	3	4	5	5	3	1	1	0	-1	-2	-2	-3	-5	-0.1	4.6			
30-Nov	-5	-5	-5	-6	-5	-4	-2	1	1	1	2	4	5	4	5	4	3	2	3	3	2	1	0	-3	0.4	5.0			
																									Diurnal Average				
																									Diurnal Maximum				

Hourly Averages

External Temperature (ET) - °C
Henry Pirker - November 2013



Hourly Averages

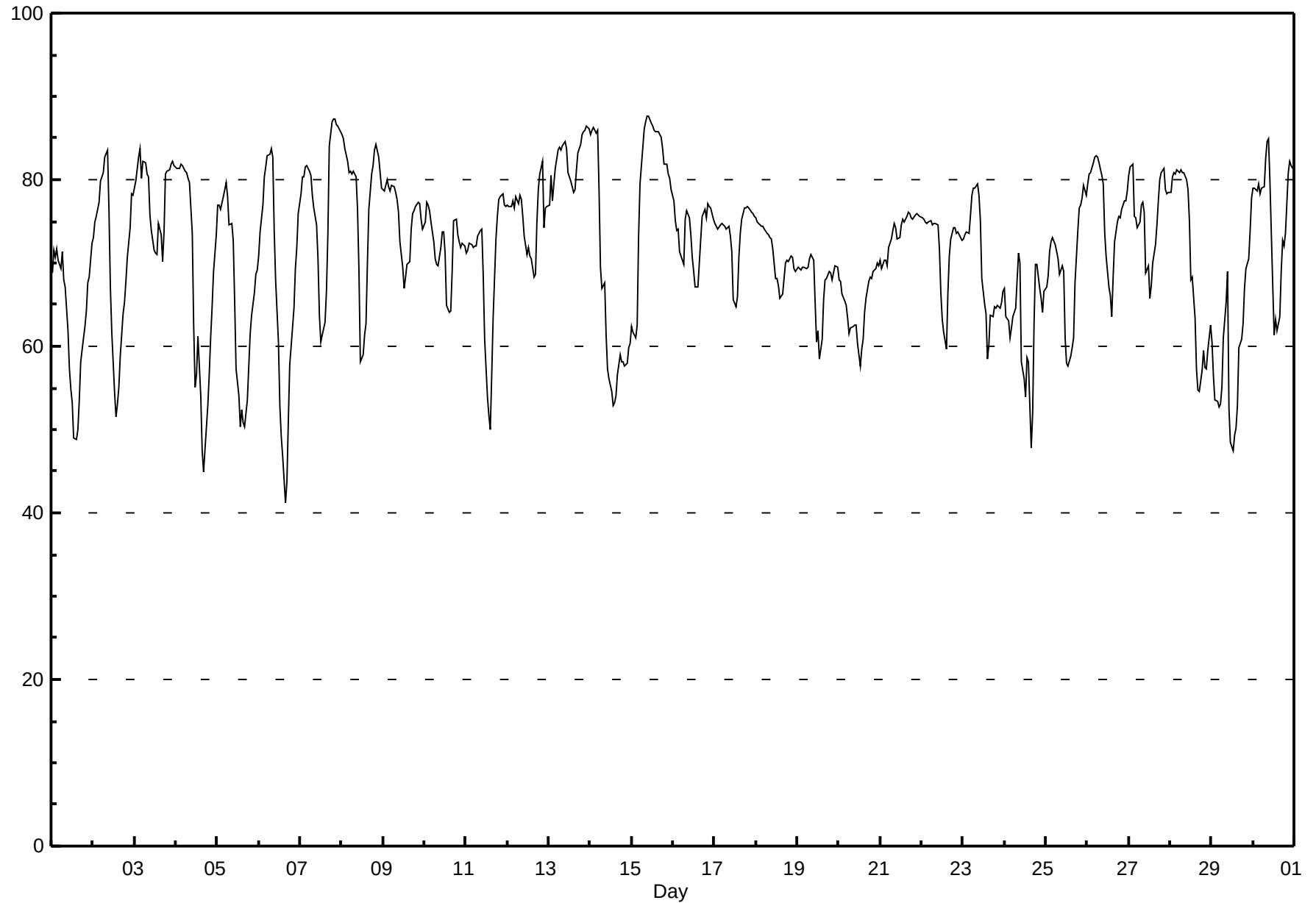
Relative Humidity (RH) - %

Henry Pirker - November 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 87.6 % on Nov 15 10:00 Maximum Daily Average: 82.3 % on Nov 13																								Hours in Service: 720 Hours of Data: 720 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0		
Minimum Value: 41 % on Nov 6 16:00 Maximum Diurnal Average: 75.9 % at hour 9 Monthly Average: 71.34 %												Minimum Daily Average: 59.3 % on Nov 29 Minimum Diurnal Average: 62.4 % at hour 15 Percentiles: P ₁ = 47.5 P ₁₀ = 58.0 Q ₁ = 65.8 Median = 73.0 Q ₃ = 78.1 P ₉₀ = 81.7 P ₉₉ = 86.7														
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-Nov	69	72	71	72	70	69	71	68	67	62	57	55	53	49	49	50	54	58	61	62	64	68	68	72	63.0	72.4
2-Nov	73	75	76	77	80	80	81	83	83	76	67	62	54	51	53	55	59	64	65	68	71	74	78	78	70.2	83.5
3-Nov	79	80	83	84	80	82	82	81	80	76	74	72	71	71	75	73	70	74	81	81	81	82	82	82	78.1	83.8
4-Nov	81	81	81	82	82	81	81	80	80	74	62	55	57	61	54	47	45	48	53	57	61	65	69	73	67.1	81.9
5-Nov	77	77	77	78	79	80	78	75	75	73	66	57	54	50	52	51	50	54	58	62	64	67	69	69	66.2	79.6
6-Nov	71	74	77	80	81	83	83	84	83	74	68	61	53	49	47	41	44	51	58	60	65	69	72	76	66.8	83.7
7-Nov	78	80	80	82	82	81	80	78	77	75	70	64	61	61	63	67	73	84	87	87	87	87	86	86	77.4	87.4
8-Nov	85	85	84	82	81	81	81	81	80	76	69	58	59	61	63	70	76	81	82	84	84	83	81	79	76.9	85.4
9-Nov	79	79	80	79	79	79	79	79	78	76	72	70	67	68	70	70	74	76	76	77	77	77	75	74	75.4	80.0
10-Nov	75	77	77	76	75	73	71	70	70	72	74	74	71	65	64	64	69	75	75	73	73	72	72	72	72.0	77.2
11-Nov	71	72	72	72	72	72	72	73	74	74	68	61	54	52	50	56	63	73	76	78	78	78	77	77	69.4	78.3
12-Nov	77	77	77	78	77	78	77	78	78	76	73	71	72	71	70	68	69	75	79	81	82	74	77	77	75.4	82.3
13-Nov	77	81	77	79	81	84	84	84	84	85	84	81	80	80	78	79	81	83	84	85	86	86	87	86	82.3	86.5
14-Nov	85	86	86	86	86	79	70	67	68	61	57	56	55	53	53	54	57	59	58	58	58	60	60	60	65.4	86.4
15-Nov	62	62	61	63	73	79	84	86	87	88	88	87	86	86	86	86	85	85	84	82	82	81	80	79	80.0	87.6
16-Nov	77	75	74	74	71	70	70	75	76	75	73	71	69	67	67	70	73	76	76	75	77	77	77	75	73.4	77.4
17-Nov	75	74	74	75	75	75	74	74	74	73	71	66	65	66	71	74	75	77	77	77	77	76	76	76	73.5	76.8
18-Nov	75	75	75	74	74	74	74	73	73	73	72	68	68	67	66	66	68	70	70	70	71	71	69	69	71.1	75.5
19-Nov	70	69	69	69	69	69	69	71	71	70	65	60	62	58	61	66	68	68	69	69	68	69	70	70	67.5	71.0
20-Nov	68	68	66	65	65	63	62	62	62	63	62	60	58	60	61	64	66	68	68	68	69	69	70	70	64.9	70.0
21-Nov	70	69	70	70	70	72	73	74	75	74	73	73	75	75	75	76	76	76	75	75	76	76	76	76	73.7	76.1
22-Nov	75	75	75	75	75	75	75	75	75	75	72	67	63	62	60	66	71	73	74	74	74	74	73	73	71.8	75.5
23-Nov	73	73	74	74	76	78	79	79	79	78	75	68	65	64	58	60	64	64	65	64	65	65	65	67	69.7	79.4
24-Nov	67	63	63	61	62	64	65	68	71	70	58	56	54	59	58	48	52	63	70	70	67	66	64	67	62.7	71.1
25-Nov	67	68	71	72	73	72	71	70	69	70	69	61	58	58	59	60	61	68	74	77	77	78	79	78	69.2	79.4
26-Nov	80	81	81	82	83	83	83	82	81	79	74	71	67	66	63	68	73	75	76	75	76	78	77	79	76.3	82.9
27-Nov	80	82	82	76	75	74	75	77	77	76	69	70	66	67	70	72	75	77	80	81	81	79	78	79	75.8	81.9
28-Nov	78	80	81	81	81	81	81	81	81	80	79	75	68	68	63	57	55	55	57	60	57	57	59	63	69.9	81.2
29-Nov	61	56	54	53	53	53	55	61	65	69	53	49	47	49	50	53	60	61	63	67	69	70	74	78	59.3	77.7
30-Nov	79	79	79	79	78	79	79	83	85	85	80	67	61	63	62	64	69	73	72	74	81	82	82	81	75.6	85.0
	74.6	74.8	74.9	75.0	75.3	75.5	75.3	75.7	75.9	74.2	69.8	65.4	63.1	62.6	62.4	63.2	65.8	69.3	71.4	72.4	73.2	73.5	74.1	74.6	Diurnal Average	
	85.5	85.9	86.4	85.6	85.9	83.5	84.0	86.1	87.0	87.6	87.6	86.8	86.4	86.0	85.7	85.7	85.5	85.1	87.0	87.4	87.2	86.7	86.5	86.2	Diurnal Maximum	

Hourly Averages

Relative Humidity (RH) - %
Henry Pirker - November 2013



Hourly Averages

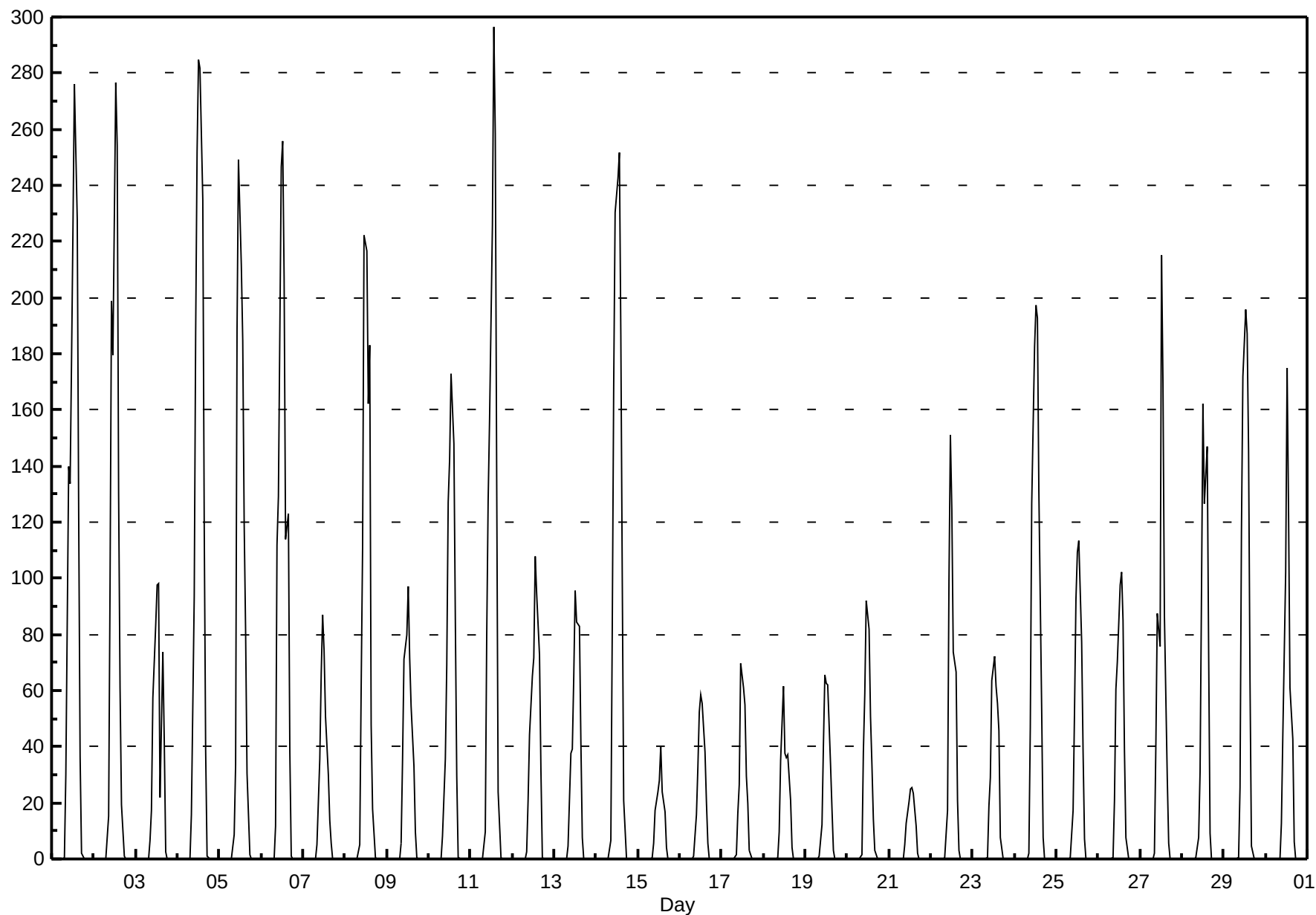
Solar Radiation (SR) - W/m²

Henry Pirker - November 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 296.5 W/m ² on Nov 11 14:00 Maximum Daily Average: 62.9 W/m ² on Nov 4																								Hours in Service: 720 Hours of Data: 720 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0		
Minimum Value: 0 W/m ² on Nov 1 01:00 Maximum Diurnal Average: 140.7 W/m ² at hour 13 Monthly Average: 28.69 W/m ² Minimum Daily Average: 5.2 W/m ² on Nov 21 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 = 0.0 Q ₃ = 29.5 P ₉₀ = 106.9 P ₉₉ = 253.6																										
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-Nov	0	0	0	0	0	0	0	0	30	140	134	177	225	276	228	123	36	2	0	0	0	0	0	0	57.2	276.3
2-Nov	0	0	0	0	0	0	0	0	15	99	199	179	276	254	130	61	19	1	0	0	0	0	0	0	51.4	276.5
3-Nov	0	0	0	0	0	0	0	0	7	17	57	83	98	98	22	74	41	2	0	0	0	0	0	0	20.8	97.9
4-Nov	0	0	0	0	0	0	0	0	16	93	188	252	285	282	235	119	39	1	0	0	0	0	0	0	62.9	284.8
5-Nov	0	0	0	0	0	0	0	0	8	34	189	249	212	185	119	81	31	1	0	0	0	0	0	0	46.2	249.1
6-Nov	0	0	0	0	0	0	0	0	12	112	129	247	256	207	114	123	38	1	0	0	0	0	0	0	51.6	255.5
7-Nov	0	0	0	0	0	0	0	0	5	36	66	87	74	51	30	14	6	0	0	0	0	0	0	0	15.3	87.1
8-Nov	0	0	0	0	0	0	0	0	5	61	111	222	217	162	183	48	18	0	0	0	0	0	0	0	42.8	222.4
9-Nov	0	0	0	0	0	0	0	0	5	35	71	80	97	72	55	33	10	0	0	0	0	0	0	0	19.1	97.3
10-Nov	0	0	0	0	0	0	0	0	8	36	69	127	143	173	148	85	30	1	0	0	0	0	0	0	34.1	172.9
11-Nov	0	0	0	0	0	0	0	0	10	79	128	156	226	297	258	135	24	0	0	0	0	0	0	0	54.7	296.5
12-Nov	0	0	0	0	0	0	0	0	3	21	44	65	72	108	95	73	32	0	0	0	0	0	0	0	21.3	107.7
13-Nov	0	0	0	0	0	0	0	0	4	37	39	64	96	84	83	42	8	0	0	0	0	0	0	0	19.1	95.6
14-Nov	0	0	0	0	0	0	0	0	6	82	168	230	242	252	187	101	21	0	0	0	0	0	0	0	53.7	251.7
15-Nov	0	0	0	0	0	0	0	0	0	6	17	24	28	40	24	17	4	0	0	0	0	0	0	0	6.7	40.3
16-Nov	0	0	0	0	0	0	0	0	1	16	33	52	59	55	38	20	6	0	0	0	0	0	0	0	11.6	58.7
17-Nov	0	0	0	0	0	0	0	0	2	16	26	70	61	55	29	20	3	0	0	0	0	0	0	0	11.8	69.8
18-Nov	0	0	0	0	0	0	0	0	1	10	35	62	37	36	37	21	4	0	0	0	0	0	0	0	10.1	61.6
19-Nov	0	0	0	0	0	0	0	0	1	12	41	66	62	62	34	18	3	0	0	0	0	0	0	0	12.4	65.8
20-Nov	0	0	0	0	0	0	0	0	1	38	59	92	82	51	33	14	3	0	0	0	0	0	0	0	15.6	92.1
21-Nov	0	0	0	0	0	0	0	0	0	5	13	20	25	26	23	12	2	0	0	0	0	0	0	0	5.2	25.6
22-Nov	0	0	0	0	0	0	0	0	1	17	99	151	124	74	67	21	3	0	0	0	0	0	0	0	23.2	151.0
23-Nov	0	0	0	0	0	0	0	0	1	19	29	64	72	61	56	46	7	0	0	0	0	0	0	0	14.8	72.4
24-Nov	0	0	0	0	0	0	0	0	2	47	127	183	198	193	131	52	8	0	0	0	0	0	0	0	39.1	197.5
25-Nov	0	0	0	0	0	0	0	0	1	17	53	92	109	114	77	38	7	0	0	0	0	0	0	0	21.2	113.6
26-Nov	0	0	0	0	0	0	0	0	0	21	61	70	98	102	85	39	8	0	0	0	0	0	0	0	20.1	102.2
27-Nov	0	0	0	0	0	0	0	0	2	40	87	76	215	170	87	29	6	0	0	0	0	0	0	0	29.6	214.9
28-Nov	0	0	0	0	0	0	0	0	0	7	31	95	162	127	147	74	9	0	0	0	0	0	0	0	27.2	162.1
29-Nov	0	0	0	0	0	0	0	0	1	25	116	172	196	187	146	64	5	0	0	0	0	0	0	0	38.0	195.9
30-Nov	0	0	0	0	0	0	0	0	0	13	44	102	175	125	61	43	6	0	0	0	0	0	0	0	23.7	175.0
																								Diurnal Average		
																								Diurnal Maximum		

Hourly Averages

Solar Radiation (SR) - W/m^2
Henry Pirker - November 2013



Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Henry Pirker - November 2013

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	8	11	15	8	3	3	8	18	14	18	22	21	22	24	27	22	22	16	15	15	14	13	10	7	14.6	26.5
Dir	234	246	239	241	261	279	260	247	277	268	261	265	263	262	261	260	256	250	246	248	247	241	265	298	257.0	260.7
2 Spd	7	6	7	3	3	4	3	3	5	4	4	6	9	10	10	10	9	5	8	6	5	6	9	8	4.4	10.4
Dir	300	285	282	289	342	323	326	304	334	331	327	46	66	70	42	40	34	24	17	42	50	43	39	28	16.9	41.8
3 Spd	8	9	10	9	8	7	7	6	5	6	4	5	5	4	3	4	2	2	0	3	5	3	5	3	4.1	10.2
Dir	25	24	13	32	33	0	12	9	352	14	35	34	45	73	20	82	188	273	111	309	305	299	328	316	14.0	12.9
4 Spd	4	3	3	3	4	3	1	5	4	2	3	5	4	7	9	10	7	8	9	8	6	7	5	4	3.5	9.6
Dir	322	309	265	237	233	290	20	160	157	136	183	216	158	132	126	133	143	135	132	126	125	126	121	128	145.2	132.8
5 Spd	5	4	4	5	3	3	5	5	6	5	7	7	7	15	17	16	14	15	10	13	11	13	11	9	6.3	16.6
Dir	134	146	138	148	138	148	156	144	165	166	179	168	210	257	260	253	257	266	264	245	246	248	242	244	229.4	260.3
6 Spd	5	6	4	3	1	2	3	3	6	2	4	8	17	13	13	24	21	15	13	12	9	4	4	2	6.9	23.7
Dir	279	337	312	286	211	159	185	192	171	206	326	288	280	275	305	276	276	259	255	254	248	236	262	309	269.9	275.8
7 Spd	2	5	2	2	2	1	3	4	4	4	8	12	12	10	9	8	6	7	7	8	9	10	9	11	4.8	12.3
Dir	174	169	131	139	291	302	106	69	55	68	90	98	100	86	57	76	61	73	50	44	54	45	23	315	67.8	99.9
8 Spd	14	14	13	10	11	10	9	8	7	7	6	5	4	3	3	1	6	8	9	14	15	14	11	13	8.1	14.9
Dir	317	316	315	310	298	297	290	291	280	277	284	277	247	236	127	145	339	351	324	319	325	319	312	313	308.6	324.6
9 Spd	11	10	10	9	10	10	10	8	7	6	7	6	4	4	5	5	6	4	6	7	8	8	8	8	3.1	11.5
Dir	317	323	356	346	342	348	357	8	16	11	14	23	50	109	149	161	160	153	126	127	117	116	109	88	34.1	316.5
10 Spd	5	6	8	5	3	3	4	3	4	3	4	6	5	3	6	3	4	4	4	4	4	4	3	5	2.8	7.8
Dir	78	72	87	59	29	335	312	315	321	313	299	304	312	305	336	288	323	339	312	315	313	328	321	329	337.9	86.7
11 Spd	4	1	3	2	3	2	1	1	0	1	1	4	4	4	3	5	6	4	4	5	5	5	5	4	2.0	5.5
Dir	301	301	11	6	271	334	294	143	52	292	340	173	180	175	293	331	303	338	323	327	319	341	305	312	311.0	302.6
12 Spd	3	3	3	2	2	2	2	0	5	3	3	3	4	5	6	6	5	6	4	5	8	11	9	4	3.4	11.5
Dir	326	327	359	286	327	213	243	353	315	305	311	220	266	217	221	232	214	206	243	256	274	274	257	222	258.2	273.6
13 Spd	4	10	10	6	3	2	4	7	8	10	10	6	4	6	4	1	1	1	2	2	3	3	4	1	1.1	10.4
Dir	273	211	227	245	230	149	77	87	93	91	100	65	51	30	50	93	311	180	269	171	325	340	29	74	97.3	211.1
14 Spd	5	4	5	3	5	14	17	18	17	22	24	26	31	31	28	27	17	16	13	28	39	39	31	27	18.9	39.3
Dir	131	138	130	136	226	241	252	252	246	259	260	259	257	258	269	274	258	254	276	270	266	262	267	264	259.1	266.5
15 Spd	22	23	25	28	22	13	10	5	2	6	4	4	6	13	14	14	17	18	18	18	17	19	18	17	4.6	27.9
Dir	261	260	260	258	267	264	273	282	196	267	254	205	89	66	60	56	51	48	51	41	35	28	25	21	342.7	258.1
16 Spd	17	16	17	14	15	14	12	11	10	11	7	8	7	8	7	6	5	4	4	4	6	6	7	7	8.9	17.4
Dir	23	21	24	27	23	21	23	21	32	40	47	48	52	39	41	31	47	9	334	340	54	56	51	53	30.1	24.3
17 Spd	8	6	7	6	5	4	5	5	7	6	4	6	7	6	7	7	8	8	10	9	10	10	10	9	6.2	10.5
Dir	89	92	77	56	74	86	57	64	93	109	80	59	41	71	71	54	50	50	48	50	37	22	8	345	55.0	22.2
18 Spd	8	7	6	6	6	5	6	7	8	7	7	9	7	8	9	9	9	7	5	3	4	8	9	9	5.9	8.9
Dir	320	323	324	320	348	45	43	39	17	324	329	328	304	298	299	307	291	289	310	289	300	316	314	318	322.9	306.9
19 Spd	8	9	8	8	8	7	5	4	4	6	3	7	8	5	7	10	10	8	8	9	8	8	6	5	6.7	9.9
Dir	319	322	312	308	317	307	307	332	273	286	271	295	314	9	308	306	308	312	309	295	293	296	305	318	307.8	307.8
20 Spd	4	2	4	3	2	3	5	5	4	3	4	4	4	5	5	4	2	1	6	6	6	5	5	4	3.8	6.3
Dir	353	351	292	356	34	304	308	328	323	306	308	296	307	309	292	306	313	343	311	308	322	325	302	302	314.7	322.5
21 Spd	3	0	3	3	5	3	1	3	1	5	6	7	8	8	8	8	10	9	11	11	9	7	7	6	4.9	11.1
Dir	238	19	167	134	158	124	155	356	21	101	94	90	86	69	56	61	66	63	61	61	52	47	45	39	70.3	60.7
22 Spd	5	4	5	4	6	7	7	7	6	6	6	4	3	7	5	6	2	5	5	6	4	5	4	4	1.9	7.5
Dir	36	34	40	52	114	108	117	107	110	108	99	107	161	294	299	357	10	312	332	336	318	323	329	304	39.6	106.8

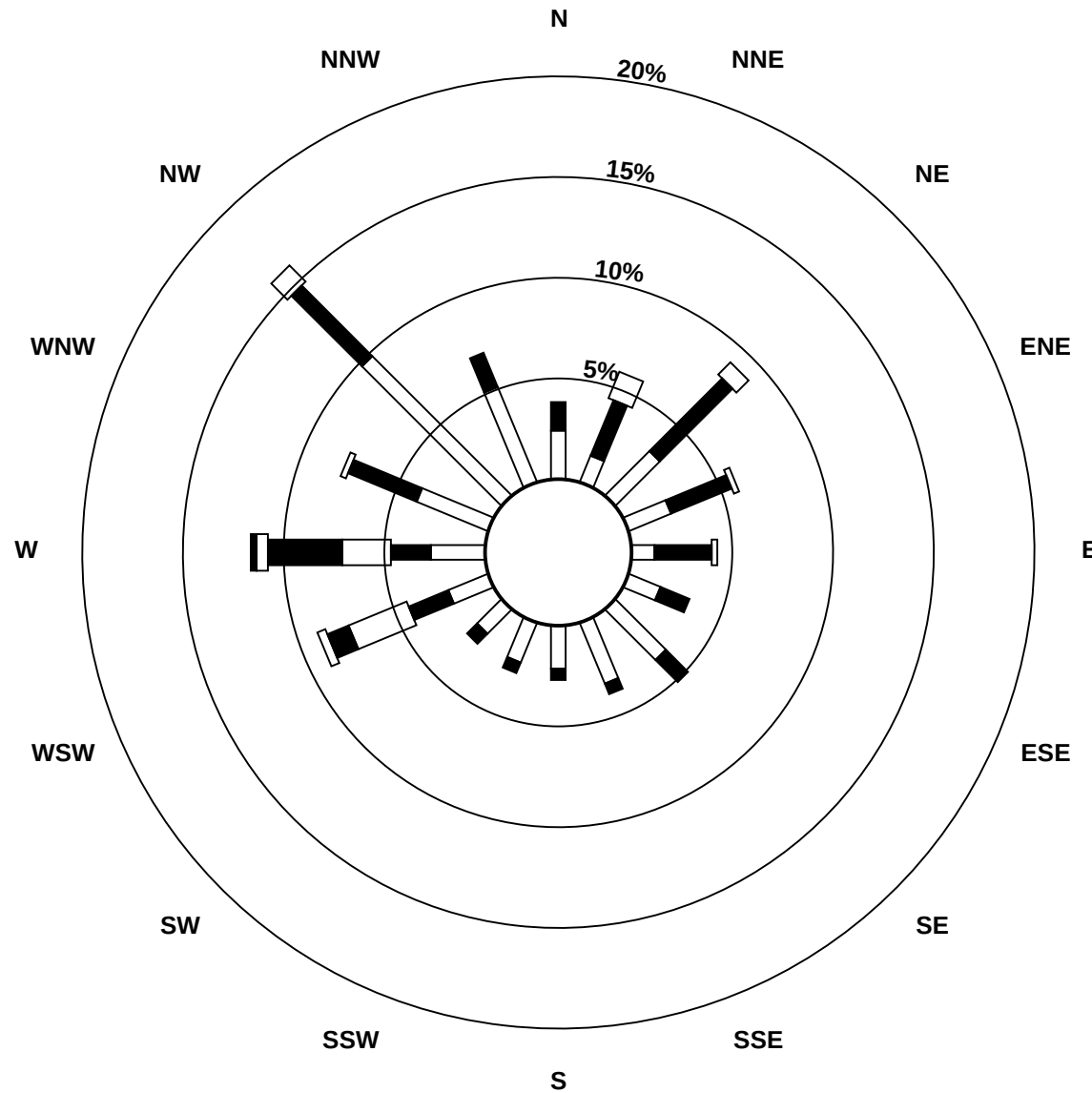
Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Henry Pirker - November 2013

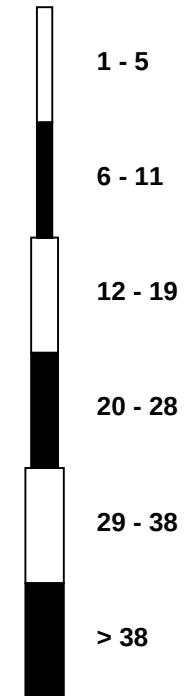
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
23 Spd	3	2	3	2	2	3	2	3	3	3	1	3	2	4	8	20	28	31	26	25	21	22	16	19	9.2	30.7
Dir	283	172	207	217	243	171	276	115	112	137	107	299	233	239	244	242	243	246	249	268	270	275	270	280	254.6	245.7
24 Spd	19	25	31	33	28	26	26	12	6	3	3	5	5	8	7	6	4	5	4	3	3	4	1	2	9.7	33.4
Dir	278	269	276	278	279	277	279	283	307	315	356	330	305	353	15	18	33	304	307	0	327	352	314	309	290.4	277.8
25 Spd	4	3	3	4	4	4	3	3	3	2	3	4	5	4	4	4	7	4	2	2	5	5	4	4	1.7	6.5
Dir	318	314	337	338	306	327	312	320	355	307	319	83	93	130	84	73	89	104	147	15	101	97	39	53	41.3	89.3
26 Spd	2	2	4	4	6	2	1	1	3	2	2	1	1	2	1	3	4	3	4	4	1	3	1	2	1.5	5.7
Dir	253	261	326	304	302	174	172	288	276	340	302	192	146	167	9	296	305	313	315	314	34	209	269	44	295.8	302.3
27 Spd	1	2	4	8	8	9	7	5	5	3	2	2	6	7	4	3	3	3	3	2	1	2	2	3	3.1	8.8
Dir	209	19	44	72	73	78	80	74	65	49	70	115	94	100	112	342	33	102	170	194	129	144	327	50	78.2	78.0
28 Spd	4	2	2	3	5	3	5	4	1	2	4	4	4	7	16	26	31	27	25	16	18	18	11	5	8.7	30.8
Dir	305	11	297	344	326	332	127	153	158	205	281	224	259	234	252	259	266	267	279	281	275	279	289	220	269.6	266.3
29 Spd	5	9	12	12	8	8	8	7	1	3	12	8	8	11	10	11	9	8	5	4	4	6	4	5	5.2	12.2
Dir	245	274	272	299	330	328	315	286	279	254	279	275	290	267	256	261	244	256	263	128	147	120	127	155	271.9	272.4
30 Spd	6	4	5	1	2	4	5	7	7	6	5	6	11	13	10	6	4	2	5	6	1	4	10	11	2.0	13.5
Dir	153	138	144	68	241	162	205	211	177	188	248	260	240	241	244	254	332	196	22	323	151	63	61	71	211.5	240.6
Spd	3.3	3.1	3.4	3.3	3.1	2.3	2.2	1.5	0.9	1.3	1.9	1.8	2.0	2.1	3.0	4.1	3.8	3.4	3.3	3.7	3.7	3.7	3.6	3.3	Diurnal Average	
Dir	305.0	299.4	298.9	306.0	309.5	307.5	303.1	302.4	323.4	297.2	292.8	284.7	276.9	273.1	291.0	283.3	282.6	277.9	297.6	299.6	299.3	305.1	319.5	322.2	Diurnal Maximum	
Spd	21.6	24.8	30.6	33.4	27.6	25.8	25.5	18.3	17.2	21.9	24.4	26.3	31.0	31.2	28.4	26.7	30.8	30.7	26.4	28.2	39.3	38.8	30.8	26.7	Diurnal Maximum	
Dir	260.7	269.5	275.6	277.8	279.1	276.8	278.9	246.8	245.9	258.6	259.6	258.7	257.0	258.0	268.7	273.7	266.3	245.7	248.7	270.3	266.5	261.6	267.0	263.6		
Maximum Speed Value: 39 km/h on Nov 14 21:00							Minimum Speed Value: 0 km/h on Nov 3 19:00													Hours in Service:				720		
Maximum Daily Speed Average: 18.9 km/h on Nov 14							Minimum Daily Speed Average: 1.1 km/h on Nov 26													Hours of Data:				720		
Maximum Diurnal Speed Average: 4.1 km/h at hour 16							Minimum Diurnal Speed Average: 0.9 km/h at hour 9													Hours of Missing Data:				0		
Monthly Average Velocity: 2.75 km/h 298.14 deg							Speed Percentiles: P ₁ = 0.6 P ₁₀ = 2.1 Q ₁ = 3.6 Median = 5.6 Q ₃ = 8.8 P ₉₀ = 15.5 P ₉₉ = 30.8													Percent Operational Time:				100.0		
All monthly, daily, and diurnal averages have been calculated using vector methods																										
Frequency Distribution																										
Speed Range (km/h)																										
Direction	0 to 5		5 to 11		11 to 19		19 to 28		28 to 38		> 38		Total													
North	36		27		4		0		0		0		67													
NorthEast	30		58		16		1		0		0		105													
East	26		42		2		0		0		0		70													
SouthEast	36		25		0		0		0		0		61													
South	30		8		0		0		0		0		38													
SouthWest	30		17		13		2		1		0		63													
West	36		32		33		30		8		2		141													
NorthWest	100		63		12		0		0		0		175													
Total	324		272		80		33		9		2		720													

Wind Rose

Wind Speed (WS) (km/h)
Henry Pirker - November 2013



Wind Speed Classes (km/h)



Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Henry Pirker - November 2013

Maximum Speed: 40 km/h on Nov 14 21:00																				Maximum Daily Speed Average: 20.6 km/h on Nov 14										Hours in Service: 720	
Minimum Speed: 1 km/h on Nov 27 21:00																				Minimum Daily Speed Average: 3.5 km/h on Nov 26										Hours of Data: 720	
Maximum Diurnal Speed Average: 10.0 km/h at hour 16																				Minimum Diurnal Speed Average: 5.9 km/h at hour 9										Hours of Missing Data: 0	
Monthly Average Speed: 7.90 km/h																				Percentiles: P ₁ = 1.9 P ₁₀ = 3.2 Q ₁ = 4.1 Median = 6.0 Q ₃ = 9.1 P ₉₀ = 15.8 P ₉₉ = 30.9										Percent Operational Time: 100.0	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24							
1-Nov	8	11	15	8	5	6	9	18	16	19	22	21	22	24	27	22	22	16	16	15	14	13	11	7	15.4	26.9					
2-Nov	7	6	7	4	4	4	3	4	5	4	4	6	10	10	11	10	9	5	8	6	6	7	9	8	6.5	10.8					
3-Nov	8	9	10	9	8	7	7	6	5	6	5	5	5	5	4	4	2	2	1	4	5	4	5	4	5.4	10.4					
4-Nov	5	4	3	4	4	4	2	5	4	2	4	5	5	8	9	10	8	8	9	8	6	7	5	4	5.5	9.9					
5-Nov	6	5	4	5	3	3	5	5	7	5	7	7	7	16	17	16	14	16	10	13	12	13	11	9	9.0	16.9					
6-Nov	6	6	5	4	3	3	3	4	6	4	4	9	17	14	13	24	22	15	13	12	9	4	5	2	8.5	24.0					
7-Nov	2	5	2	3	2	2	4	4	4	5	8	12	12	11	9	9	7	7	8	8	10	10	9	12	6.9	12.5					
8-Nov	14	14	13	10	11	10	9	8	7	7	6	5	4	3	4	5	6	9	9	14	15	14	11	13	9.3	15.0					
9-Nov	12	10	10	9	10	10	10	8	7	7	7	6	5	4	5	5	6	5	6	8	8	9	9	8	7.6	11.5					
10-Nov	5	6	8	5	3	4	4	3	4	4	4	6	5	3	6	3	5	4	4	4	4	4	3	5	4.5	7.9					
11-Nov	4	3	3	2	3	3	2	2	2	2	2	5	4	4	4	5	6	5	4	6	5	5	5	5	3.8	5.9					
12-Nov	4	5	4	3	4	4	4	4	6	4	3	4	5	5	7	7	6	7	7	7	9	12	10	6	5.6	11.9					
13-Nov	5	11	10	6	4	4	5	7	8	10	10	6	6	6	5	2	3	4	2	3	4	4	4	3	5.5	10.7					
14-Nov	5	5	5	3	6	14	17	18	17	22	25	26	31	31	29	27	17	16	14	29	40	39	31	27	20.6	39.6					
15-Nov	22	23	26	28	23	14	11	5	2	6	4	4	8	13	14	14	17	19	19	19	17	20	19	17	15.1	28.0					
16-Nov	17	17	18	15	15	14	12	11	11	11	7	8	7	8	7	6	5	4	4	4	6	6	7	7	9.5	17.6					
17-Nov	8	6	7	6	5	4	5	5	7	6	5	6	8	7	8	7	9	8	10	9	11	11	10	9	7.3	10.7					
18-Nov	8	7	6	6	6	6	6	7	8	8	7	9	7	8	9	9	9	7	5	3	4	8	9	9	7.1	9.0					
19-Nov	8	9	8	8	8	7	5	5	4	6	3	7	9	5	7	10	10	8	8	9	8	8	6	5	7.1	9.9					
20-Nov	4	3	5	4	2	3	5	5	5	3	4	4	4	5	5	4	3	3	6	6	7	6	5	4	4.4	6.9					
21-Nov	4	3	4	4	5	4	2	3	3	6	6	7	8	8	9	8	10	9	11	11	10	7	7	7	6.5	11.3					
22-Nov	5	5	5	4	6	7	7	8	7	6	6	4	4	7	6	7	4	5	5	6	4	5	4	5	5.5	7.6					
23-Nov	3	3	4	3	5	4	4	4	3	4	4	4	4	6	9	20	28	31	27	25	21	22	17	19	11.3	30.9					
24-Nov	19	25	31	34	28	26	26	13	7	3	4	6	6	9	7	6	4	5	4	3	4	4	2	3	11.6	33.6					
25-Nov	4	3	3	4	4	4	4	4	4	3	3	5	5	5	4	4	7	5	3	3	6	5	5	4	4.3	6.6					
26-Nov	4	4	4	5	6	3	2	2	4	3	3	3	2	3	2	5	4	4	4	5	3	3	3	4	3.5	6.0					
27-Nov	2	3	5	8	9	9	8	5	5	3	2	2	6	7	5	5	4	4	3	2	1	2	3	4	4.4	8.9					
28-Nov	4	3	3	4	6	4	6	5	1	3	4	5	6	9	16	26	31	27	25	16	18	18	12	5	10.8	31.0					
29-Nov	7	10	12	12	9	8	8	7	3	4	12	8	8	11	10	12	9	8	5	5	5	6	4	5	7.9	12.4					
30-Nov	6	5	5	4	3	5	6	8	7	6	6	7	11	14	10	8	5	3	6	6	2	4	11	11	6.6	13.6					
7.3 7.6 8.1 7.5 6.9 6.7 6.7 6.5 5.9 6.1 6.4 7.2 8.1 9.0 9.3 10.0 9.7 9.0 8.6 8.9 9.1 9.2 8.4 7.7																									Diurnal Average						
21.7 25.0 30.9 33.6 27.8 25.9 25.6 18.4 17.4 22.0 24.5 26.4 31.1 31.4 28.7 27.1 31.0 30.9 26.7 28.8 39.6 39.0 31.1 26.9																									Diurnal Maximum						
All monthly, daily, and diurnal averages have been calculated using scalar methods																															

Hourly Standard Deviations

Wind Direction (WD) - deg

Henry Pirker - November 2013

Maximum Value: 92.0 deg on Nov 21 02:00																			Hours in Service: 720						
Minimum Value: 4.7 deg on Nov 24 07:00																			Hours of Data: 720						
																			Hours of Missing Data: 0						
Percentiles: P ₁ = 5.3 P ₁₀ = 7.2 Q ₁ = 10.9 Median = 17.6 Q ₃ = 30.6 P ₉₀ = 59.1 P ₉₉ = 82.1																			Hours of Calibration: 0						
																			Percent Operational Time: 100.0						
Day	Hourly Period Ending At (MST)																							Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Nov	15	9	7	14	68	65	41	7	26	12	8	9	9	8	10	7	7	7	6	7	7	7	24	20	67.8
2-Nov	17	12	12	22	55	33	45	18	11	32	18	24	18	18	15	18	13	21	11	26	19	19	12	16	55.2
3-Nov	14	12	12	13	14	13	15	13	16	16	35	28	29	41	43	36	65	75	77	56	21	43	12	31	77.3
4-Nov	25	34	20	26	14	30	42	7	11	26	43	24	40	22	17	14	11	7	6	6	9	5	10	16	43.5
5-Nov	13	16	12	12	23	18	15	20	8	12	10	22	20	17	12	8	9	13	12	6	9	7	6	7	23.3
6-Nov	28	21	29	42	64	59	19	29	7	71	24	19	7	15	11	11	5	7	8	15	10	28	27	50	70.7
7-Nov	53	15	31	31	58	79	25	23	21	25	11	9	10	10	17	26	27	16	17	16	16	15	19	12	79.2
8-Nov	5	5	6	6	9	8	6	11	12	10	23	23	21	26	64	88	15	11	14	6	6	6	7	6	88.0
9-Nov	6	10	9	8	7	9	11	13	15	20	19	17	30	41	15	18	8	19	14	13	10	11	14	11	41.1
10-Nov	11	10	8	22	29	28	7	10	18	24	13	18	18	20	17	42	15	16	17	10	10	12	25	15	41.7
11-Nov	16	76	44	26	41	55	59	70	81	83	77	16	13	15	38	16	21	29	21	27	15	24	30	50	82.6
12-Nov	49	60	49	68	79	72	80	90	31	46	49	39	22	24	29	28	59	18	66	51	26	16	19	74	89.9
13-Nov	39	13	11	19	38	61	36	16	28	12	9	25	44	23	27	82	88	76	47	46	50	18	18	78	88.4
14-Nov	17	17	17	19	46	6	6	8	8	6	6	5	5	7	9	10	10	10	18	16	7	7	8	7	46.2
15-Nov	7	7	6	6	8	9	8	20	16	12	21	13	75	12	11	12	11	11	13	12	10	10	10	9	75.2
16-Nov	9	8	9	10	10	9	12	9	13	14	25	17	24	24	18	17	16	29	15	12	15	16	19	17	28.6
17-Nov	15	20	16	19	16	20	28	27	17	16	27	28	25	18	16	20	16	14	14	14	13	11	14	16	28.1
18-Nov	7	6	9	11	19	22	24	15	14	23	17	14	13	9	9	7	9	8	14	12	23	9	7	6	23.7
19-Nov	7	8	10	7	7	11	11	34	25	12	38	10	23	29	18	7	5	5	6	8	5	6	5	11	38.3
20-Nov	19	67	33	29	40	60	18	11	17	20	15	15	13	14	15	23	56	81	16	11	24	23	23	25	81.1
21-Nov	49	92	45	52	24	29	77	33	79	14	10	8	10	15	14	12	13	23	10	15	16	19	17	18	92.0
22-Nov	21	23	18	21	20	16	10	11	11	15	14	37	58	16	16	15	71	14	20	17	13	22	19	39	70.6
23-Nov	41	79	43	68	61	75	54	52	41	48	71	37	73	67	21	8	9	6	10	10	10	8	12	9	78.9
24-Nov	7	6	7	6	6	5	5	11	26	50	29	16	23	31	14	13	27	21	23	26	30	19	83	52	83.4
25-Nov	21	48	24	13	15	17	25	34	28	66	23	64	20	25	32	25	12	40	34	59	32	30	32	55	66.2
26-Nov	77	74	17	33	21	67	61	80	48	53	60	71	62	30	78	46	25	38	20	28	61	23	71	78	79.8
27-Nov	76	61	25	9	11	9	11	23	10	27	36	42	19	14	26	76	39	33	20	41	34	43	65	45	76.3
28-Nov	12	59	58	45	21	50	49	50	84	68	37	37	40	45	12	9	6	7	6	12	7	6	34	21	84.4
29-Nov	45	15	12	14	11	14	10	10	82	54	10	20	9	12	13	18	14	10	39	33	26	12	26	18	81.6
30-Nov	15	32	16	77	62	51	25	32	17	19	31	25	6	7	7	44	35	62	37	35	48	23	23	10	76.6
	76.8	92.0	58.0	76.6	78.9	79.2	79.8	89.9	84.4	82.6	76.9	71.4	75.2	66.8	78.0	88.0	88.4	81.1	77.3	59.3	60.7	43.4	83.4	78.1	

PAZA

Evergreen Park Station

Monthly Summary Tables, Graphs and
Roses

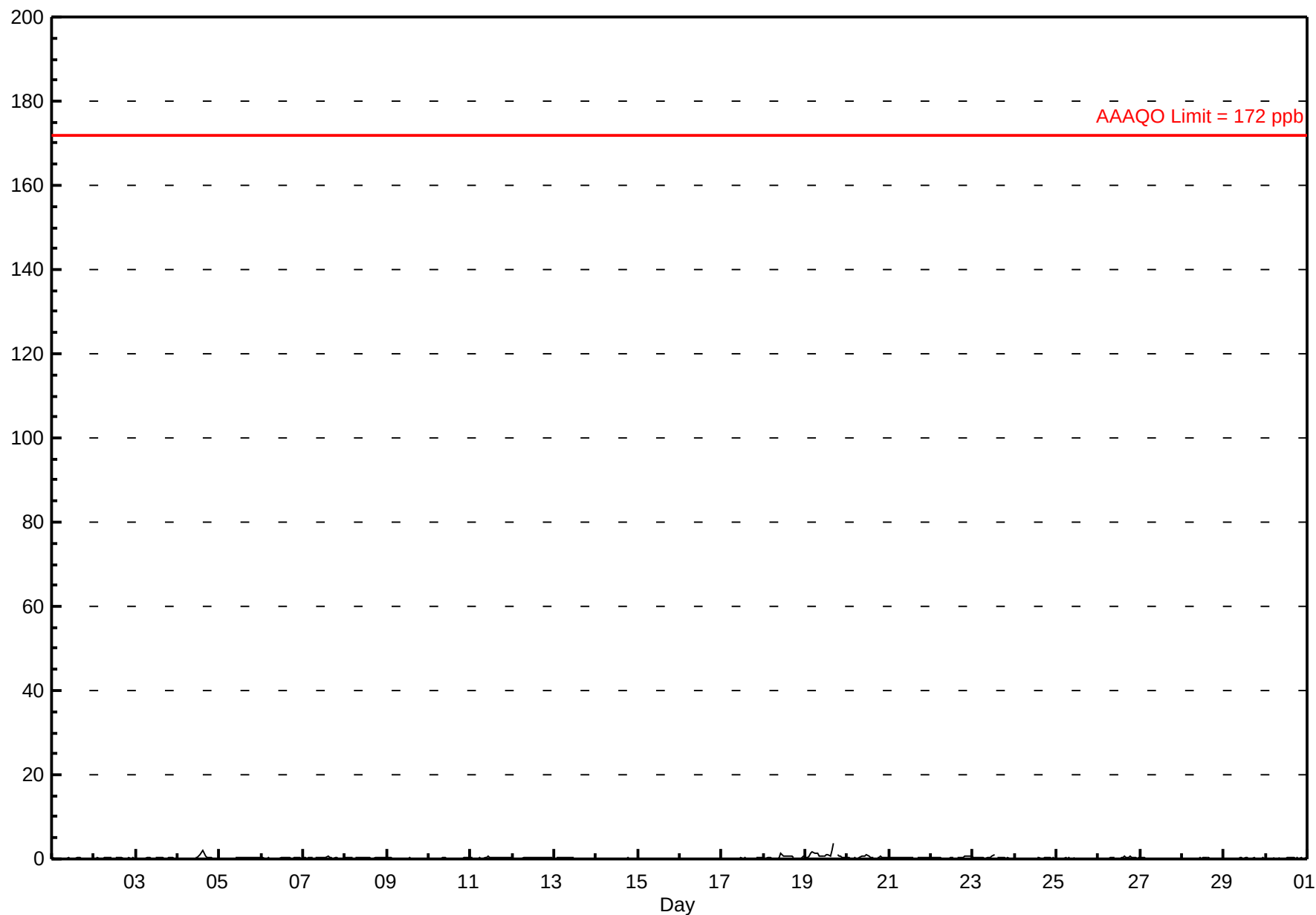
Hourly Averages

Sulphur Dioxide (SO₂) - ppb Evergreen Park - November 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 3.6 ppb on Nov 19 17:00 Maximum Daily Average: 1.0 ppb on Nov 19																				Hours in Service: 720 Hours of Data: 686 Hours of Missing Data: 34 Hours of Calibration: 34 Percent Operational Time: 100.0						
Minimum Value: 0 ppb on Nov 13 16:00 Maximum Diurnal Average: 0.3 ppb at hour 16 Monthly Average: 0.23 ppb																				Minimum Daily Average: 0.0 ppb on Nov 16 Minimum Diurnal Average: 0.2 ppb at hour 2 Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.1 Median = 0.2 Q ₃ = 0.3 P ₉₀ = 0.4 P ₉₉ = 1.2						
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-Nov	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
2-Nov	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
3-Nov	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
4-Nov	0	0	0	0	0	0	0	0	0	A	0	0	1	1	2	1	1	0	0	0	0	0	0	0	0.4	1.9
5-Nov	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	0.5
6-Nov	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
7-Nov	0	0	0	0	0	0	A	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0.2	0.5
8-Nov	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5
9-Nov	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-Nov	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	0.4
11-Nov	0	0	A	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.6
12-Nov	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5
13-Nov	A	0	0	0	0	0	0	0	0	0	0	0	C	C	C	0	0	0	0	0	0	0	0	A	0.2	0.4
14-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.1	0.2
15-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.0	0.1
16-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.0	0.1
17-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0.1	0.4
18-Nov	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	A	0	0	0	0	1	0.4	1.2
19-Nov	0	1	1	1	2	1	1	1	1	1	1	1	1	1	1	2	4	A	1	1	1	0	0	0	1.0	3.6
20-Nov	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	A	0	0	1	0	0	0	0	0.4	0.9
21-Nov	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
22-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	1	1	1	1	1	0.3	0.6
23-Nov	0	0	0	0	0	0	0	0	0	0	0	1	1	A	0	0	0	0	0	0	0	0	0	0	0.3	1.0
24-Nov	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	0.5
25-Nov	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
26-Nov	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	1	0	0	1	0	0	0	0	0	0.2	0.8
27-Nov	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
28-Nov	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.5
29-Nov	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	0.4
30-Nov	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
																									Diurnal Average	
																									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 - November 2013



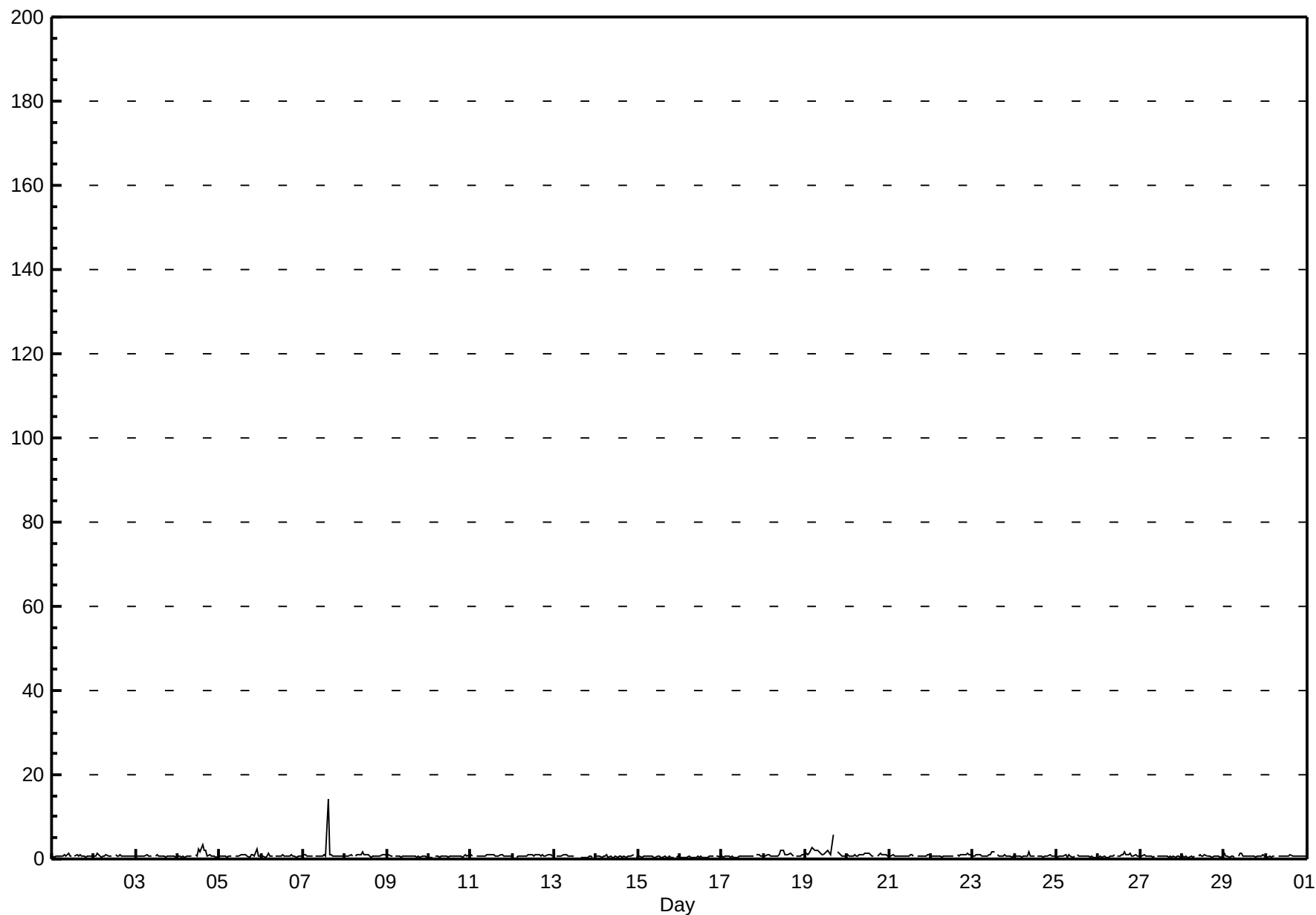
Hourly Maximums

Sulphur Dioxide (SO₂) - ppb Evergreen Park - November 2013

Maximum Value: 14.4 ppb on Nov 7 15:00																				Maximum Daily Average: 1.7 ppb on Nov 19										Hours in Service: 720	
Minimum Value: 0 ppb on Nov 28 05:00																				Minimum Daily Average: 0.5 ppb on Nov 16										Hours of Data: 686	
Maximum Diurnal Average: 1.4 ppb at hour 15																				Minimum Diurnal Average: 0.7 ppb at hour 2										Hours of Missing Data: 34	
Monthly Average: 0.78 ppb																				Percentiles: P ₁ = 0.4 P ₁₀ = 0.5 Q ₁ = 0.6 Median = 0.7 Q ₃ = 0.8 P ₉₀ = 1.1 P ₉₉ = 2.3										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-Nov	1	0	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	0	1	1	1	1	0.7	1.3					
2-Nov	1	1	1	1	0	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0.7	1.2					
3-Nov	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	0	1	1	1	1	1	0	0.7	1.0					
4-Nov	1	1	0	1	1	1	1	1	1	A	1	1	2	2	3	2	2	1	1	1	1	1	0	1	1.0	3.4					
5-Nov	1	1	1	1	0	1	1	1	A	1	1	1	1	1	1	1	1	0	1	1	1	2	1	1	0.8	2.3					
6-Nov	1	1	0	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.2					
7-Nov	1	1	1	1	1	1	A	1	1	1	1	1	1	1	14	1	1	1	1	1	1	1	1	1	1.3	14.4					
8-Nov	1	1	1	1	1	A	1	1	1	1	2	1	1	1	1	0	1	1	1	1	1	1	1	1	0.9	1.6					
9-Nov	1	1	1	1	A	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	0.6	0.9					
10-Nov	0	0	0	A	1	1	0	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	0.6	1.1					
11-Nov	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.1					
12-Nov	1	A	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.1					
13-Nov	A	1	1	1	1	1	1	1	1	1	1	1	C	C	C	0	0	0	0	0	1	1	0	A	0.7	1.0					
14-Nov	1	1	1	0	1	1	1	0	1	0	0	1	0	1	1	0	1	1	1	1	1	1	A	0	0.6	1.1					
15-Nov	1	1	0	1	1	1	1	1	1	0	1	1	1	0	0	1	0	1	1	0	0	A	0	1	0.5	0.7					
16-Nov	1	0	0	0	0	1	0	0	0	1	1	0	1	0	0	0	0	1	1	1	A	1	1	0	0.5	0.7					
17-Nov	1	0	1	1	1	0	1	0	0	0	1	1	1	1	1	1	1	1	1	A	1	1	1	1	0.6	1.1					
18-Nov	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	A	1	1	1	1	1	1.0	2.1					
19-Nov	1	1	1	2	3	2	2	2	2	1	1	1	2	2	1	3	6	A	2	1	1	1	1	1	1.7	5.7					
20-Nov	1	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	1.5					
21-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	0.8	1.0					
22-Nov	1	1	1	1	1	1	0	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	0.8	1.2					
23-Nov	1	1	1	1	1	1	1	1	1	1	1	2	2	A	1	1	1	1	1	1	1	1	0	1	0.9	1.7					
24-Nov	1	1	1	1	0	1	1	1	2	1	1	1	A	1	1	1	0	1	1	1	1	1	1	1	0.7	1.7					
25-Nov	0	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	0	1	0	0	0	0.6	0.9					
26-Nov	0	1	0	1	0	0	0	1	1	1	A	1	1	1	1	2	1	1	1	1	1	1	1	1	0.8	1.8					
27-Nov	1	1	1	1	1	1	1	0	1	A	1	1	1	1	1	1	0	1	0	1	0	1	0	0	0.6	0.9					
28-Nov	1	0	1	0	0	1	0	1	A	1	1	1	1	1	1	1	0	1	1	1	1	1	0	1	0.6	1.1					
29-Nov	1	1	1	0	1	1	1	A	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	0.7	1.5					
30-Nov	1	1	1	0	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	0.9					
0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.8 0.8 0.8 0.8 0.9 0.9 0.9 1.4 0.9 0.9 0.7 0.8 0.7 0.7 0.7 0.7																									Diurnal Average						
1.5 1.2 1.2 1.9 2.8 1.9 2.1 1.9 1.7 1.3 2.0 2.1 2.3 2.2 14.4 3.4 5.7 1.1 1.7 1.4 1.1 2.3 1.1 1.2																									Diurnal Maximum						
C - Calibration																									A - Automated Daily Zero Span						

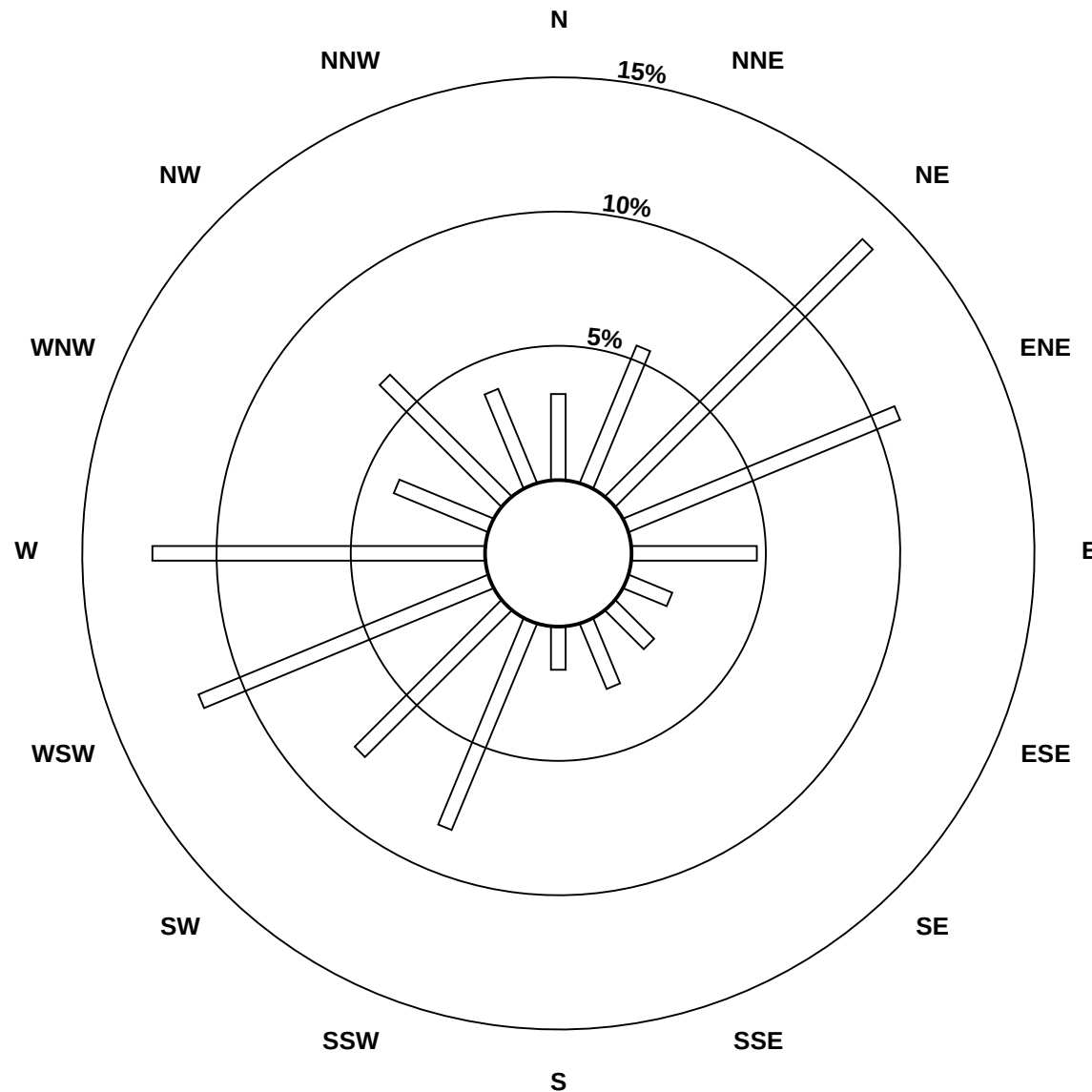
Hourly Maximums

Sulphur Dioxide (SO₂) - ppb
Evergreen Park - November 2013

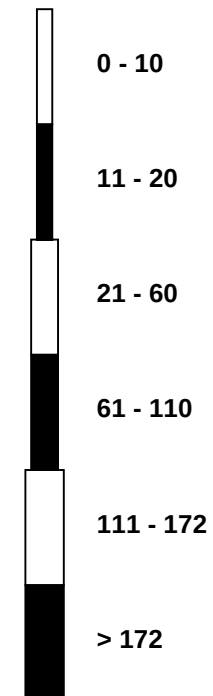


Pollutant Rose

Sulphur Dioxide (SO₂) - ppb
Evergreen Park - November 2013

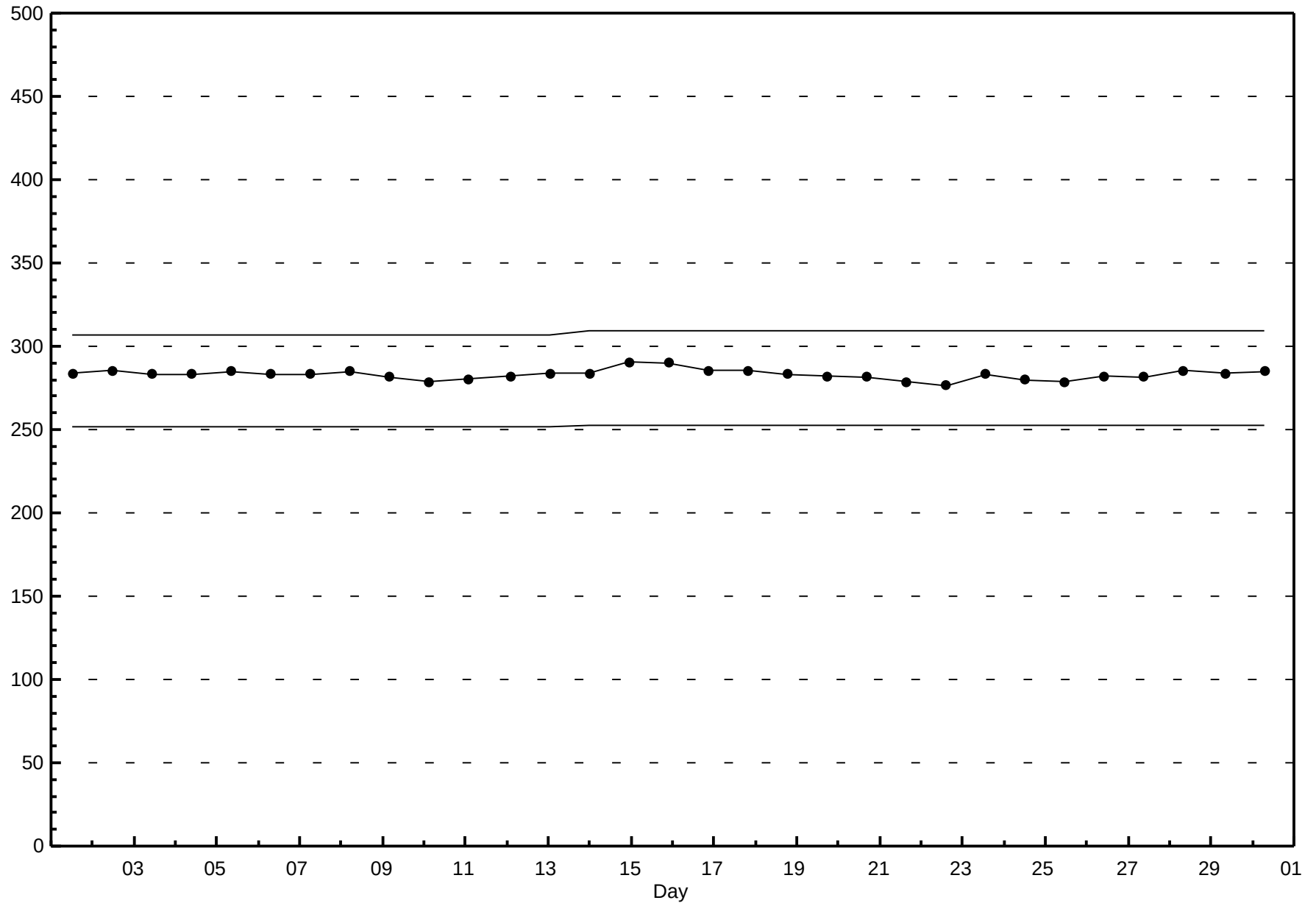


Pollutant Classes (ppb)



Span Responses

Sulphur Dioxide (SO₂)
Evergreen Park - November 2013



Hourly Averages

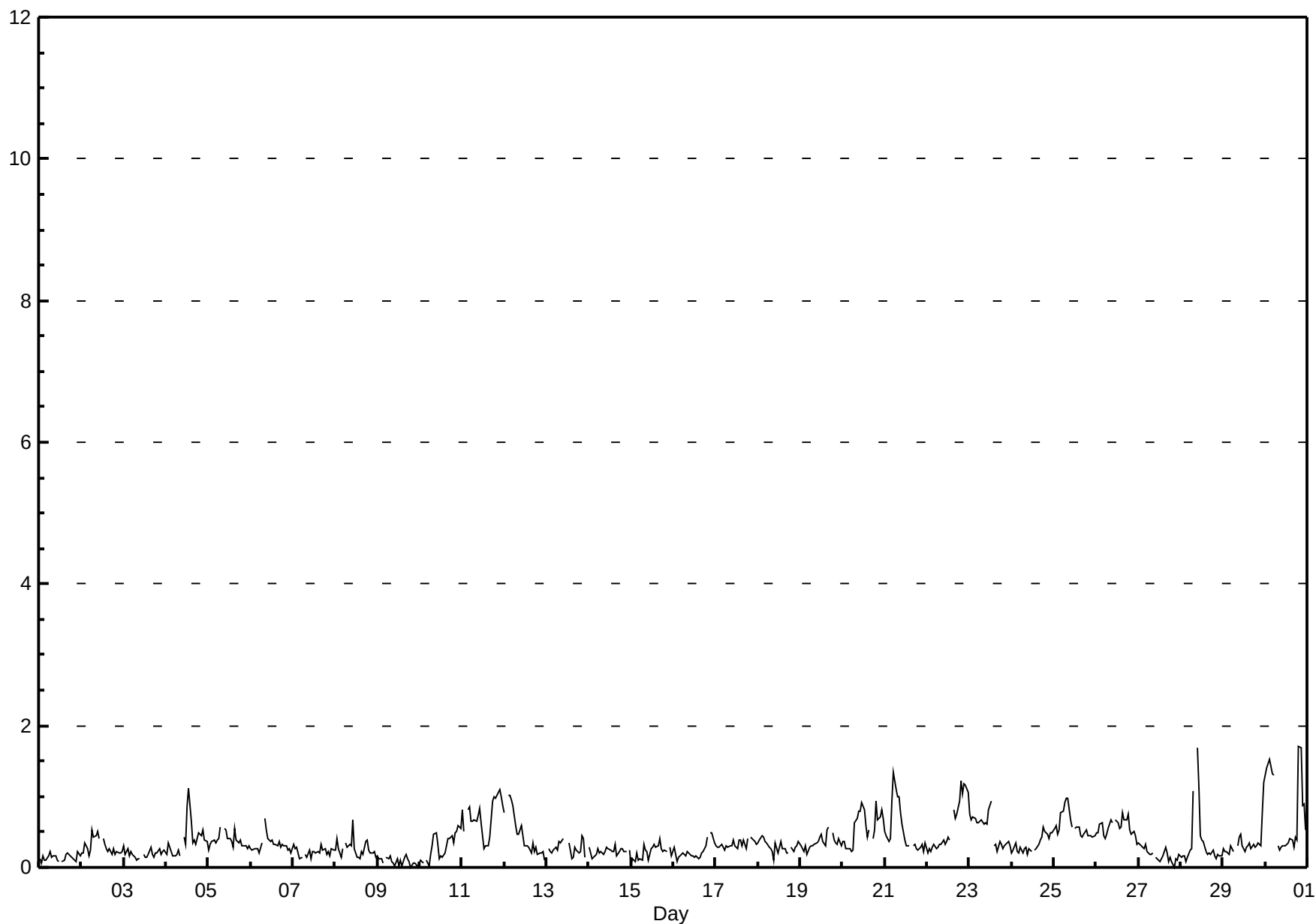
Total Reduced Sulphur (TRS) - ppb

Evergreen Park - November 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 1.7 ppb on Nov 30 20:00 Maximum Daily Average: 0.8 ppb on Nov 30																				Hours in Service: 720 Hours of Data: 686 Hours of Missing Data: 34 Hours of Calibration: 34 Percent Operational Time: 100.0						
Minimum Value: 0 ppb on Nov 9 20:00 Maximum Diurnal Average: 0.4 ppb at hour 10 Monthly Average: 0.37 ppb																				Minimum Daily Average: 0.1 ppb on Nov 9 Minimum Diurnal Average: 0.3 ppb at hour 15 Percentiles: P ₁ = 0.0 P ₁₀ = 0.1 Q ₁ = 0.2 Median = 0.3 Q ₃ = 0.4 P ₉₀ = 0.7 P ₉₉ = 1.3						
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-Nov	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
2-Nov	0	0	0	0	0	0	1	0	0	1	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5
3-Nov	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
4-Nov	0	0	0	0	0	0	0	0	0	A	0	0	1	1	1	0	0	0	0	0	0	1	0	0	0.4	1.1
5-Nov	0	0	0	0	0	0	0	1	A	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0.4	0.6
6-Nov	0	0	0	0	0	0	0	A	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.7
7-Nov	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
8-Nov	0	0	0	0	0	A	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.7
9-Nov	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
10-Nov	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.3	0.6
11-Nov	1	1	A	1	1	1	1	1	1	1	1	1	0	0	0	0	0	1	1	1	1	1	1	1	0.7	1.1
12-Nov	1	A	1	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	1.0
13-Nov	A	0	0	0	0	0	0	0	0	0	C	C	C	0	0	0	0	0	0	0	0	0	0	A	0.3	0.5
14-Nov	0	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	0.3
15-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.2	0.4
16-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.2	0.5
17-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0.3	0.4
18-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.3	0.5
19-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	A	0	0	0	0	0	0	0	0.4	0.6
20-Nov	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	1	A	0	1	1	1	1	1	1	0.6	0.9
21-Nov	1	0	0	0	1	1	1	1	1	1	1	0	0	0	0	A	0	0	0	0	0	0	0	0	0.5	1.3
22-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	1	1	1	1	1	1	1	1	1	0.6	1.2
23-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	A	0	0	0	0	0	0	0	0	0	0	0.5	0.9
24-Nov	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	1	1	0	0	0	0	0.3	0.6
25-Nov	1	1	0	1	1	1	1	1	1	1	1	A	1	1	1	0	0	0	1	0	0	0	0	0	0.6	1.0
26-Nov	0	0	1	1	0	0	0	1	1	1	A	1	1	1	1	1	1	1	1	1	0	1	0	0	0.6	0.8
27-Nov	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
28-Nov	0	0	0	0	0	0	0	1	A	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	1.7
29-Nov	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.4	1.2
30-Nov	1	1	2	1	1	1	A	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1	1	1	0.8	1.7
0.4 1.3 0.3 1.4 0.3 1.5 0.4 1.4 0.4 1.3 0.4 1.3 0.4 1.1 0.4 1.1 0.4 1.0 0.4 1.7 0.4 1.1 0.3 0.9 0.4 0.9 0.3 1.1 0.3 0.6 0.3 0.8 0.3 0.7 0.3 0.9 0.4 1.0 0.4 1.7 0.4 1.7 0.4 1.2 0.4 1.2																									Diurnal Average	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 - November 2013



Hourly Maximums

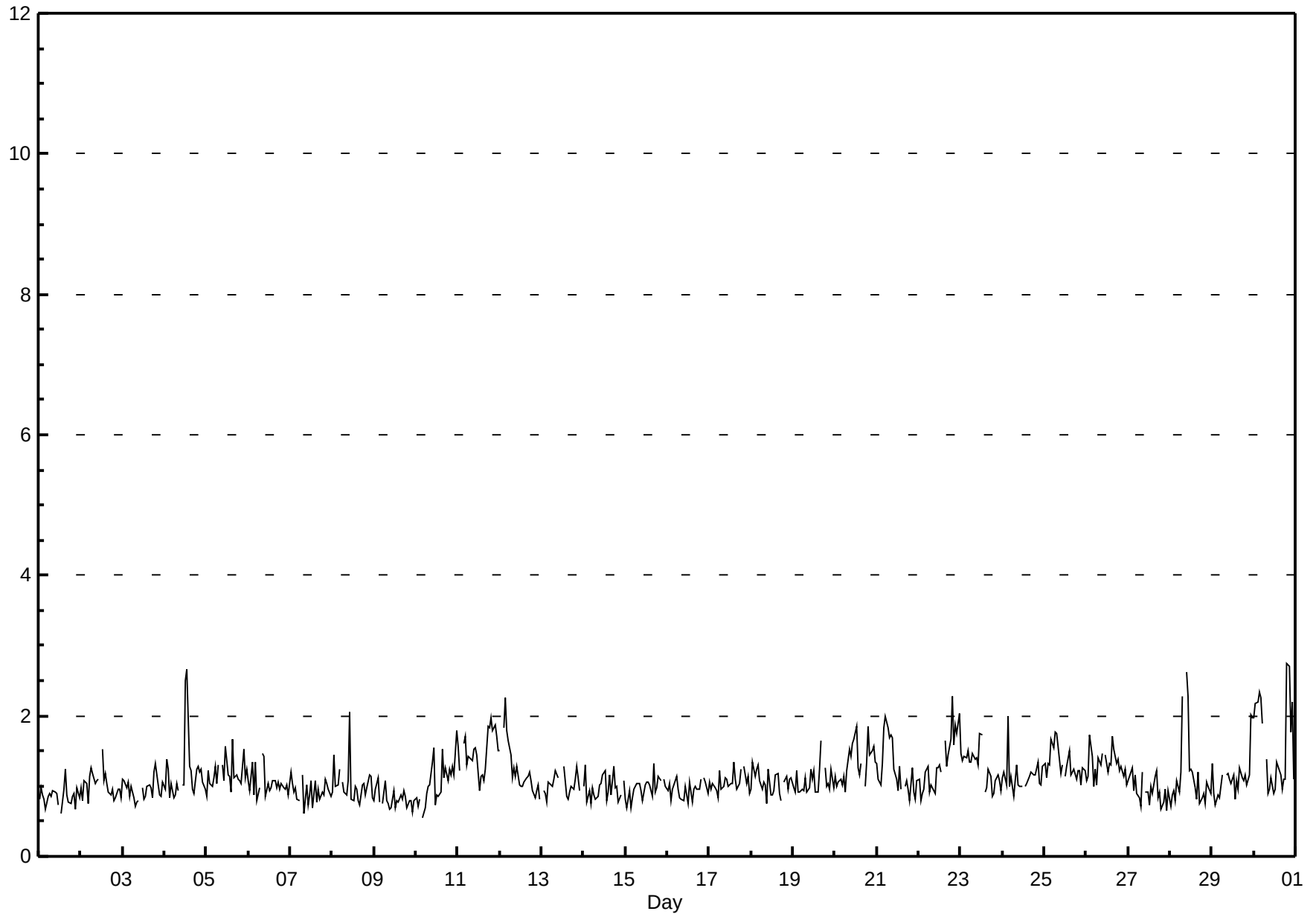
Total Reduced Sulphur (TRS) - ppb

Evergreen Park - November 2013

Maximum Value: 2.7 ppb on Nov 30 20:00																				Maximum Daily Average: 1.6 ppb on Nov 30										Hours in Service: 720	
Minimum Value: 1 ppb on Nov 10 05:00																				Minimum Daily Average: 0.8 ppb on Nov 9										Hours of Data: 686	
Maximum Diurnal Average: 1.2 ppb at hour 11																				Minimum Diurnal Average: 1.1 ppb at hour 15										Hours of Missing Data: 34	
Monthly Average: 1.12 ppb																				Percentiles: P ₁ = 0.7 P ₁₀ = 0.8 Q ₁ = 0.9 Median = 1.0 Q ₃ = 1.2 P ₉₀ = 1.5 P ₉₉ = 2.3										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-Nov	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0.9	1.2					
2-Nov	1	1	1	1	1	1	1	1	1	1	1	A	2	1	1	1	1	1	1	1	1	1	1	1	1.0	1.5					
3-Nov	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	1.3					
4-Nov	1	1	1	1	1	1	1	1	1	A	1	1	2	3	1	1	1	1	1	1	1	1	1	1	1.2	2.7					
5-Nov	1	1	1	1	1	1	1	1	A	1	1	2	1	1	1	2	1	1	1	1	1	2	1	1	1.2	1.7					
6-Nov	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	1.5					
7-Nov	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.2					
8-Nov	1	1	1	1	1	A	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	2.0					
9-Nov	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	1.1					
10-Nov	1	1	1	A	1	1	1	1	1	1	2	1	1	1	1	2	1	1	1	1	1	1	1	2	1.1	1.8					
11-Nov	2	1	A	2	2	1	1	1	1	2	2	1	1	1	1	1	1	2	2	2	2	2	2	2	1.5	2.0					
12-Nov	1	A	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.2	2.3					
13-Nov	A	1	1	1	1	1	1	1	1	1	C	C	C	1	1	1	1	1	1	1	1	1	1	A	1.0	1.3					
14-Nov	1	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	1.3					
15-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1.0	1.3					
16-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	0.9	1.1					
17-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1.1	1.3					
18-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1.0	1.3					
19-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	A	1	1	1	1	1	1	1	1.1	1.6					
20-Nov	1	1	1	1	1	1	1	1	2	1	2	2	2	1	1	1	A	1	1	2	1	2	2	1	1.3	1.9					
21-Nov	1	1	1	1	2	2	2	2	2	2	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1.3	2.0					
22-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	2	1	1	2	2	2	2	2	2	1.3	2.3					
23-Nov	1	1	1	1	1	1	1	1	1	1	1	2	2	A	1	1	1	1	1	1	1	1	1	1	1.3	1.7					
24-Nov	1	1	1	2	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1.1	2.0					
25-Nov	1	1	1	1	2	2	2	2	2	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1.3	1.8					
26-Nov	1	1	2	1	1	1	1	1	1	1	A	1	1	1	1	2	2	1	1	1	1	1	1	1	1.3	1.7					
27-Nov	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.3					
28-Nov	1	1	1	1	1	1	1	2	A	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1.2	2.6					
29-Nov	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	1.1	2.0					
30-Nov	2	2	2	2	2	2	A	1	1	1	1	1	1	1	1	1	1	1	1	3	3	2	2	1	1.6	2.7					
1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.2 1.1 1.2 1.2 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.2 1.2 1.1 1.2 1.1																								Diurnal Average							
2.0 2.2 2.2 2.3 2.3 2.0 1.8 2.3 1.7 2.6 2.3 1.7 2.5 2.7 1.5 1.7 1.6 1.8 1.8 2.7 2.7 1.9 2.2 2.0																								Diurnal Maximum							
C - Calibration A - Automated Daily Zero Span																															

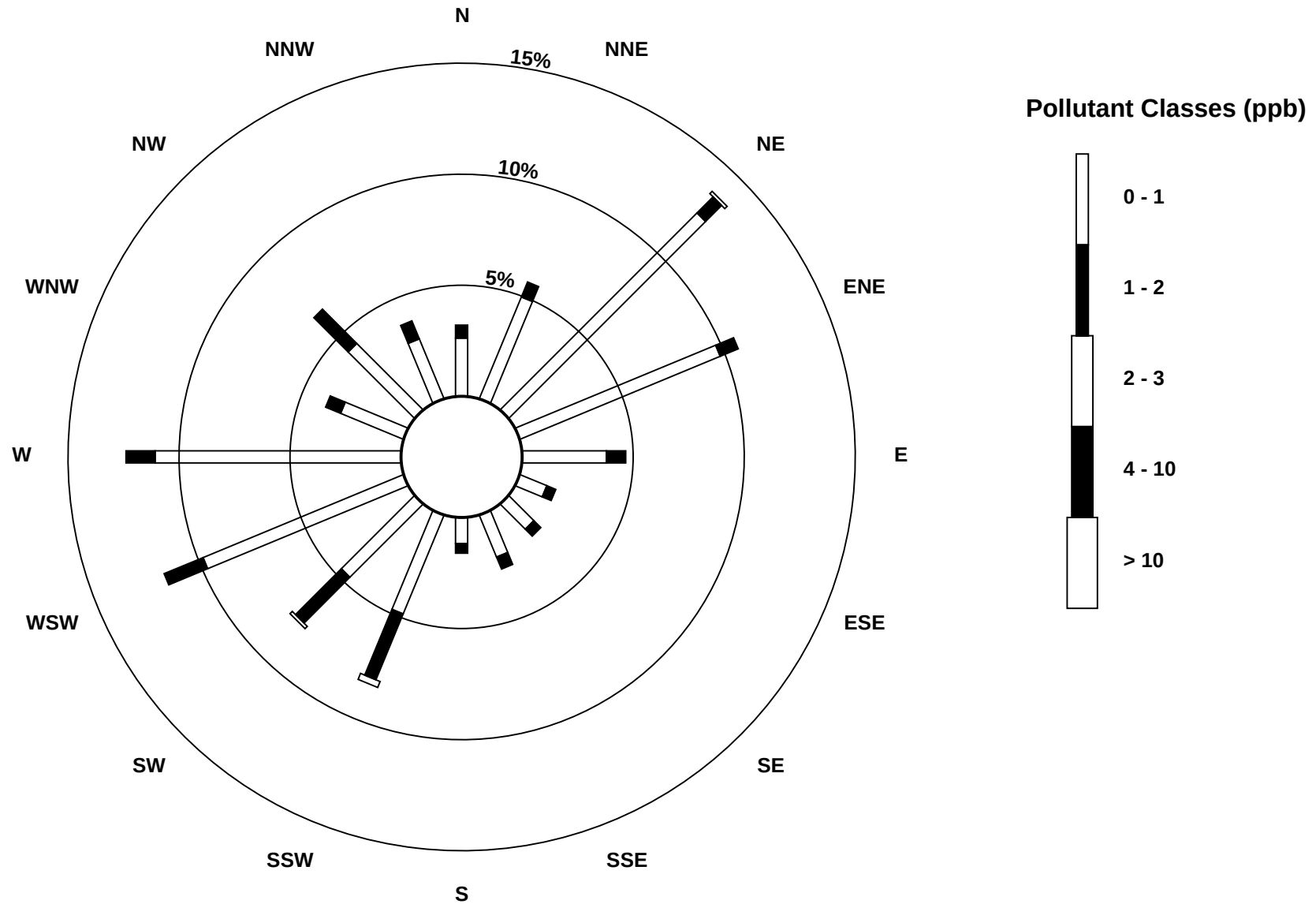
Hourly Maximums

Total Reduced Sulphur (TRS) - ppb
Evergreen Park - November 2013



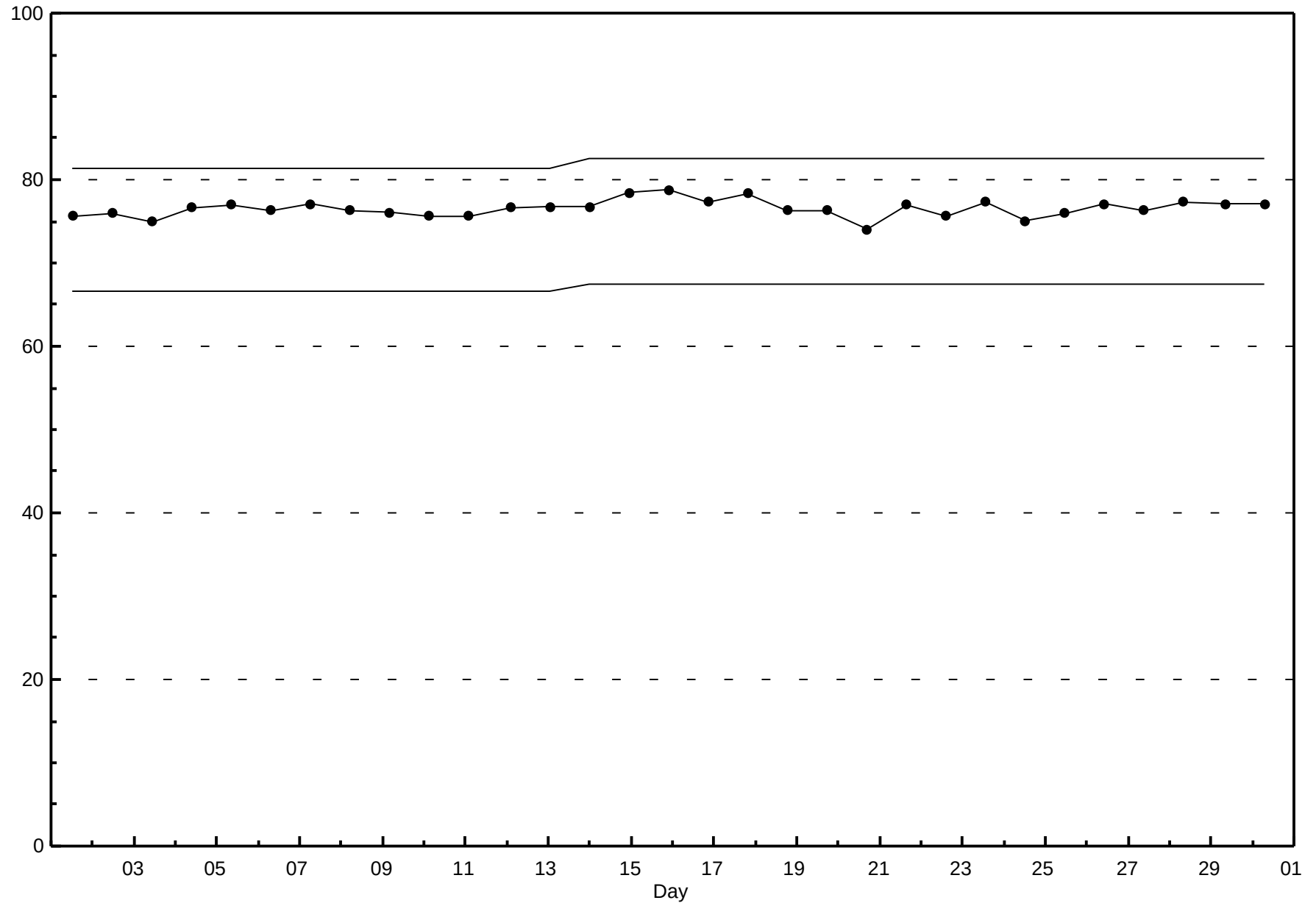
Pollutant Rose

Total Reduced Sulphur (TRS) - ppb
Evergreen Park - November 2013



Span Responses

Total Reduced Sulphur (TRS)
Evergreen Park - November 2013

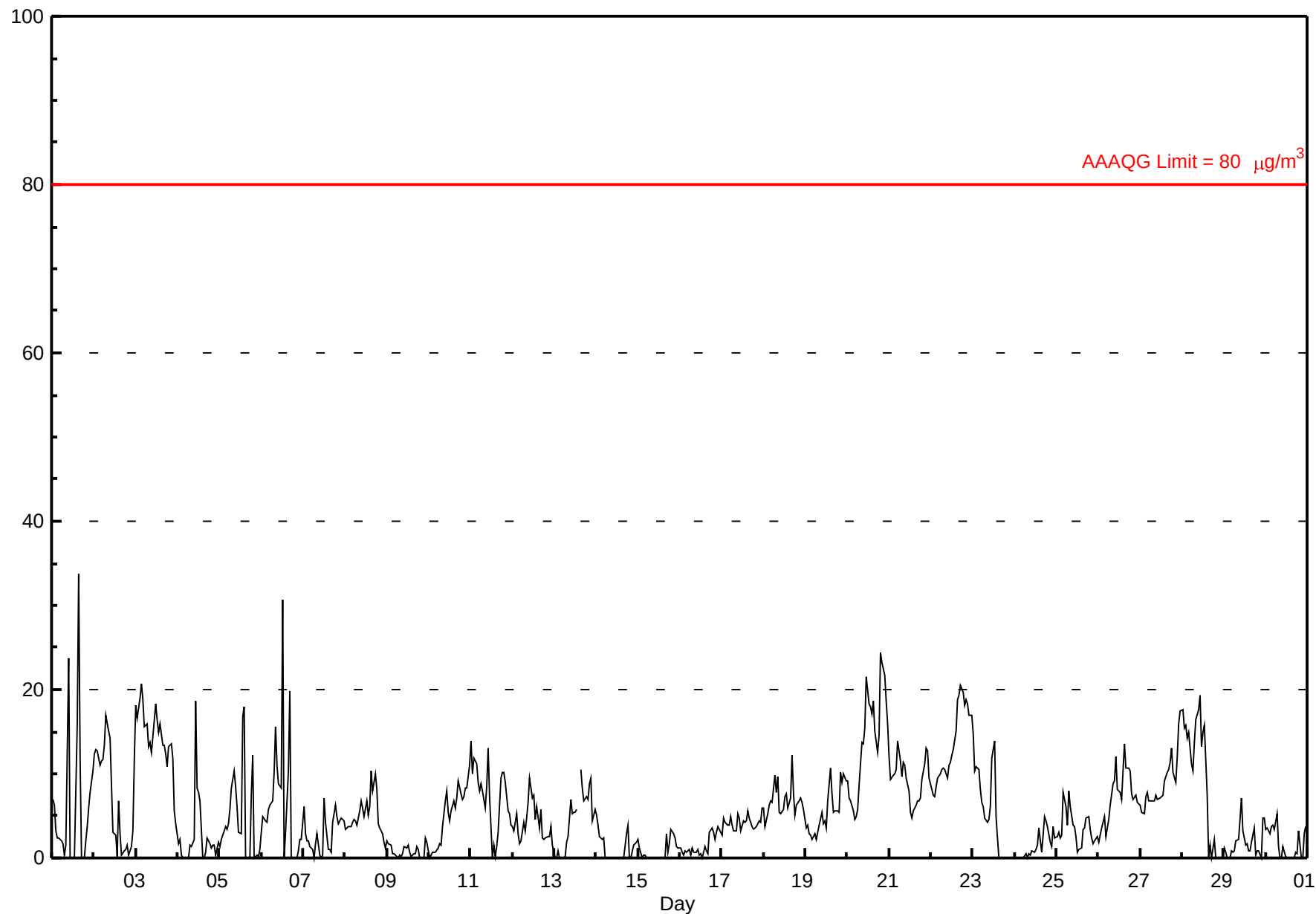


Hourly Averages

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

Evergreen Park - November 2013

Number of Exceedences: 1-hr: 0 24-hr: 0 Maximum Value: 33.7 µg/m³ on Nov 1 16:00 Maximum Daily Average: 14.3 µg/m³ on Nov 3																								Hours in Service: 720 Hours of Data: 719 Hours of Missing Data: 1 Hours of Calibration: 0 Percent Operational Time: 99.9		
Minimum Value: 0 µg/m³ on Nov 1 11:00 Maximum Diurnal Average: 6.9 µg/m³ at hour 11 Monthly Average: 5.56 µg/m³ Minimum Daily Average: 0.8 µg/m³ on Nov 9 Minimum Diurnal Average: 4.6 µg/m³ at hour 6 Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 1.3 Median = 4.1 Q ₃ = 8.1 P ₉₀ = 13.3 P ₉₉ = 21.5																										
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-Nov	7	6	3	2	2	2	2	0	2	24	0	0	0	0	16	34	12	0	0	2	4	6	8	10	5.9	33.7
2-Nov	12	13	13	11	12	12	13	17	15	14	9	3	3	0	7	3	0	1	1	2	0	1	3	12	7.4	17.0
3-Nov	18	17	19	21	19	16	16	13	14	12	14	18	16	15	16	13	13	12	11	13	14	12	6	4	14.3	20.7
4-Nov	2	2	0	0	0	0	0	2	1	2	19	8	8	7	0	0	1	2	2	1	2	1	0	2	2.6	18.6
5-Nov	1	2	3	4	3	4	6	8	10	8	6	3	3	17	18	0	0	0	7	12	0	0	0	1	4.9	17.9
6-Nov	3	5	4	4	6	6	7	10	16	11	9	8	31	0	3	10	20	0	0	0	0	1	2	2	6.6	30.7
7-Nov	6	3	2	2	1	1	0	2	3	0	0	0	7	4	1	1	1	4	6	5	4	4	5	4	2.8	7.1
8-Nov	3	4	4	4	4	5	4	4	6	7	6	5	7	5	6	10	8	10	8	4	3	3	2	1	5.1	10.3
9-Nov	2	2	1	1	1	0	0	0	0	0	1	1	2	1	0	1	0	1	1	0	0	0	2	2	0.8	2.3
10-Nov	0	0	1	1	1	1	2	2	4	7	8	5	4	6	7	6	7	9	8	7	7	8	8	11	5.0	11.1
11-Nov	14	10	12	11	9	8	9	8	6	9	13	7	0	2	0	1	3	9	10	10	9	6	5	4	7.3	13.9
12-Nov	4	3	5	3	2	2	4	3	5	7	10	7	7	5	6	4	6	2	2	2	3	3	4	2	4.1	9.6
13-Nov	0	0	1	0	0	0	0	2	3	7	5	5	5	6	M	11	8	7	7	7	9	10	4	6	4.5	10.5
14-Nov	5	4	3	2	2	0	0	0	0	0	0	0	0	0	0	0	0	3	4	0	0	2	2	2	1.2	5.1
15-Nov	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	2	3	3	2	1	1	0.9	3.4
16-Nov	1	1	0	1	1	1	0	1	1	1	1	0	0	0	1	1	1	3	4	3	2	3	4	3	1.4	3.7
17-Nov	3	5	4	4	4	5	4	3	3	5	5	3	4	4	4	6	5	4	3	4	4	4	4	6	4.2	5.9
18-Nov	6	4	5	6	7	7	10	8	10	5	5	6	7	8	6	7	12	8	5	6	7	7	7	6	6.8	12.2
19-Nov	4	4	3	3	2	3	2	3	4	5	4	4	4	7	11	8	5	6	6	5	10	9	10	9	5.4	10.7
20-Nov	9	7	7	6	5	5	6	9	14	14	15	22	18	18	17	19	15	13	15	24	23	22	19	16	14.0	24.3
21-Nov	12	9	10	10	10	14	12	10	11	11	10	8	5	5	6	6	7	7	7	9	11	13	13	9	9.4	13.9
22-Nov	8	7	7	8	10	10	11	11	10	10	11	11	12	13	15	19	19	21	20	18	19	18	17	17	13.4	20.5
23-Nov	15	10	11	11	8	7	6	5	4	5	6	12	14	5	2	0	0	0	0	0	0	0	0	0	5.0	14.8
24-Nov	0	0	0	0	0	0	0	0	1	0	1	1	1	2	4	1	3	5	4	4	2	1	4	2	1.5	4.8
25-Nov	3	3	2	3	8	6	4	8	6	4	4	2	1	1	1	3	4	5	5	3	2	2	2	3	3.5	7.9
26-Nov	2	3	4	5	3	4	5	6	9	9	12	8	8	7	10	13	11	11	10	8	7	7	7	6	7.2	13.5
27-Nov	6	5	5	7	8	7	7	7	7	7	7	7	7	7	9	10	11	11	13	10	9	12	16	17	8.9	17.4
28-Nov	18	15	16	14	15	11	10	14	16	18	19	13	15	16	7	0	1	0	2	0	0	0	0	0	9.2	19.3
29-Nov	1	1	0	0	1	1	1	2	2	5	7	3	1	2	1	1	2	4	0	1	1	0	5	5	1.9	7.1
30-Nov	3	4	3	4	4	3	5	1	0	0	1	0	0	0	0	0	0	1	0	3	0	0	3	4	1.7	5.2
5.7 5.0 4.9 4.9 4.9 4.6 4.8 5.3 6.0 6.9 6.9 5.8 6.4 5.3 6.0 6.2 5.9 5.3 5.4 5.6 5.1 5.3 5.4 5.6																								Diurnal Average		
18.1 16.7 18.9 20.7 18.9 15.6 15.9 17.0 16.4 23.7 19.3 21.6 30.7 17.9 17.9 33.7 19.9 20.5 19.6 24.3 23.1 21.7 18.6 17.4																								Diurnal Maximum		
M - Maintenance																										
Alberta Ambient Air Quality Guideline (AAAQG): 1-hr 80 µg/m³ Alberta Ambient Air Quality Objective (AAAQO): 24-hr 30 µg/m³																										



Hourly Maximums

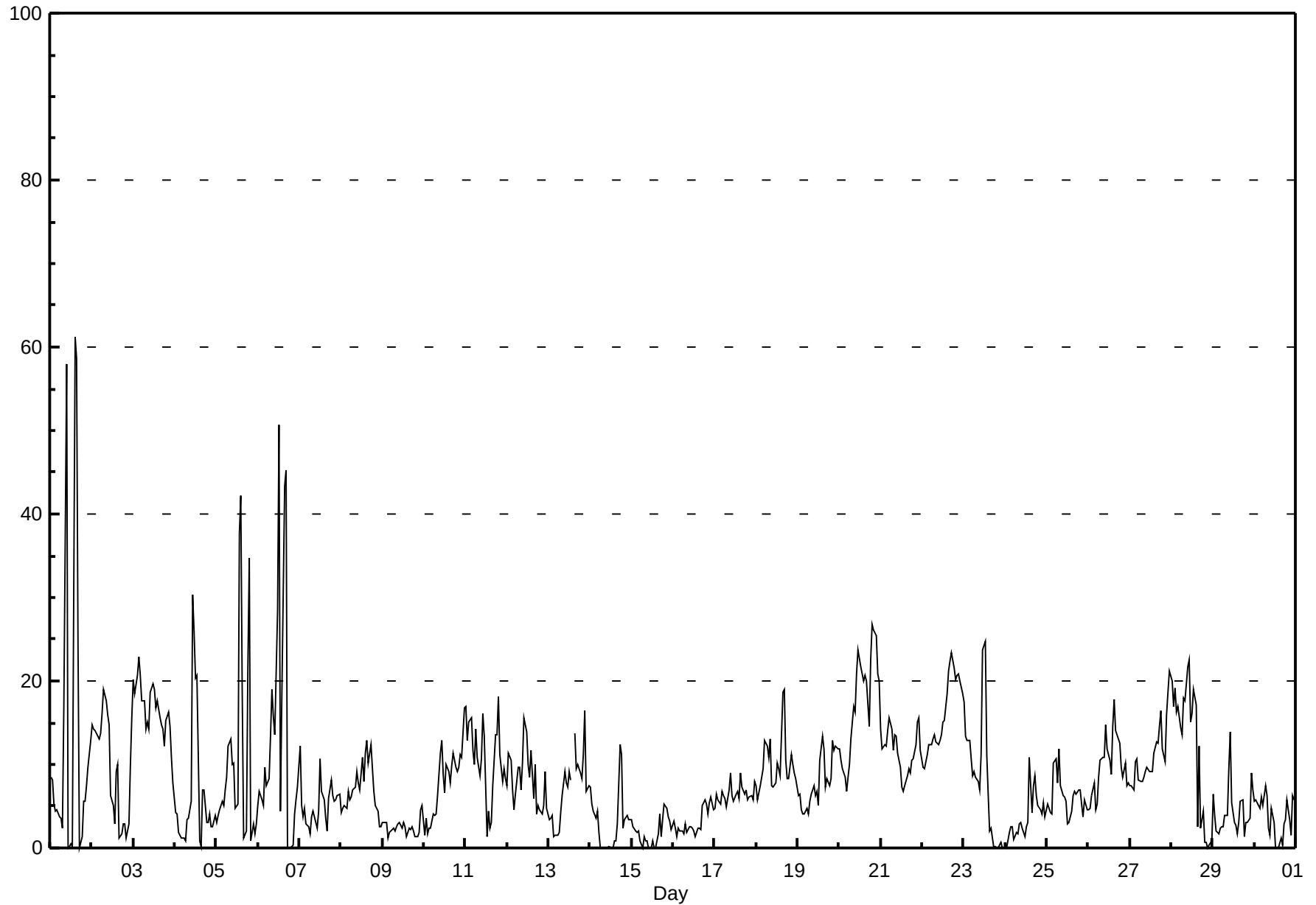
Particulate Matter 2.5 (PM_{2.5}) - µg/m³

Evergreen Park - November 2013

Maximum Value: 61.1 μg/m³ on Nov 1 15:00																								Maximum Daily Average: 17.3 μg/m³ on Nov 20										Hours in Service: 720	
Minimum Value: 0 μg/m³ on Nov 1 11:00																								Minimum Daily Average: 1.9 μg/m³ on Nov 15										Hours of Data: 719	
Maximum Diurnal Average: 11.5 μg/m³ at hour 15																								Minimum Diurnal Average: 6.8 μg/m³ at hour 6										Hours of Missing Data: 1	
Monthly Average: 8.47 μg/m³																								Percentiles: P ₁ = 0.0 P ₁₀ = 1.6 Q ₁ = 3.3 Median = 6.8 Q ₃ = 11.6 P ₉₀ = 17.1 P ₉₉ = 41.3										Hours of Calibration: 0	
																								Percent Operational Time: 99.9											
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24											
1-Nov	8	8	5	4	5	4	4	2	17	58	0	0	0	0	61	59	25	0	1	6	6	7	10	13	12.6	61.1									
2-Nov	15	14	14	13	13	14	16	19	18	16	15	6	5	3	9	10	1	2	3	3	1	3	10	16	9.9	18.9									
3-Nov	20	18	21	23	21	18	18	14	15	14	19	20	19	17	18	16	15	14	12	15	16	15	11	8	16.4	22.8									
4-Nov	4	4	2	2	1	1	1	3	4	6	30	26	20	21	1	0	7	7	3	3	4	3	3	4	6.6	30.4									
5-Nov	3	4	5	6	5	7	8	12	13	10	10	5	5	38	42	19	1	2	22	35	1	3	2	3	10.8	42.1									
6-Nov	5	7	6	5	10	7	8	13	19	16	14	28	51	4	18	43	45	0	0	0	0	4	6	7	13.2	50.6									
7-Nov	12	5	4	5	3	3	2	4	4	3	2	4	11	7	6	4	2	6	8	6	6	6	6	7	5.2	12.1									
8-Nov	4	5	5	5	7	6	6	7	7	9	8	7	11	8	11	13	10	12	9	7	5	4	3	3	7.2	12.9									
9-Nov	3	3	3	1	2	2	2	2	3	3	3	2	3	3	1	2	2	3	2	1	1	2	5	5	2.5	5.1									
10-Nov	2	4	2	2	2	4	4	4	6	11	13	9	7	10	9	8	10	11	10	9	10	11	11	17	7.7	16.8									
11-Nov	17	13	15	16	12	10	14	11	9	11	16	13	1	4	2	3	7	14	14	18	11	8	9	8	10.7	18.2									
12-Nov	7	11	10	7	5	6	10	10	7	10	16	14	10	8	12	6	10	4	5	5	4	5	9	5	8.2	15.5									
13-Nov	3	4	4	1	2	2	2	4	6	9	8	7	9	8	M	14	9	10	9	8	11	16	7	7	7.0	16.5									
14-Nov	7	5	4	4	4	2	0	0	0	0	0	0	0	0	1	1	3	12	11	2	3	4	3	3	3.0	12.4									
15-Nov	3	3	2	2	2	1	0	1	1	1	0	0	1	0	0	2	4	1	3	5	5	4	3	2	1.9	5.3									
16-Nov	3	2	1	2	2	2	2	3	2	3	3	2	2	1	2	2	2	5	6	5	4	5	6	5	3.1	6.0									
17-Nov	5	6	6	5	7	6	6	5	7	9	6	6	7	7	6	9	7	7	7	6	6	6	6	8	6.5	9.0									
18-Nov	7	6	7	8	9	13	12	11	13	7	7	8	10	9	9	19	19	10	8	8	11	10	9	8	10.1	19.0									
19-Nov	6	7	5	4	4	5	4	6	6	7	6	7	5	10	13	12	7	8	7	8	13	12	12	12	7.8	13.4									
20-Nov	12	10	9	9	7	8	10	13	17	16	21	24	22	21	20	21	20	15	23	27	26	26	21	20	17.3	26.7									
21-Nov	14	12	12	12	14	16	14	12	14	13	11	10	7	7	7	9	9	9	10	11	12	15	16	12	11.6	15.5									
22-Nov	10	9	10	11	12	12	13	14	13	12	13	14	15	15	18	21	22	23	22	20	21	21	20	18	15.9	23.3									
23-Nov	17	13	13	13	11	9	9	9	8	7	11	24	25	11	7	2	2	0	0	0	0	1	0	0	8.0	24.8									
24-Nov	0	0	2	3	3	1	2	2	3	3	2	1	3	3	11	4	7	9	6	5	5	4	5	4	3.6	10.9									
25-Nov	5	5	4	4	10	11	8	12	7	6	6	6	3	3	4	6	7	6	7	7	5	4	6	5	6.1	11.9									
26-Nov	5	5	6	8	5	5	8	10	11	11	15	12	10	9	15	18	14	13	13	10	8	10	7	8	9.8	17.7									
27-Nov	7	7	7	10	11	8	8	8	8	9	10	9	9	9	11	13	13	15	16	12	10	16	19	21	11.2	21.1									
28-Nov	20	17	19	16	17	14	14	18	18	22	23	15	16	19	17	3	12	2	4	1	1	0	0	1	12.0	22.6									
29-Nov	6	4	2	2	2	3	3	4	4	9	14	5	3	3	2	3	6	6	1	3	3	4	9	7	4.4	13.8									
30-Nov	6	6	5	5	6	5	7	6	2	2	5	3	0	0	0	1	0	3	3	6	3	2	6	6	3.7	7.5									
																								Diurnal Average											
																								Diurnal Maximum											
M - Maintenance																																			

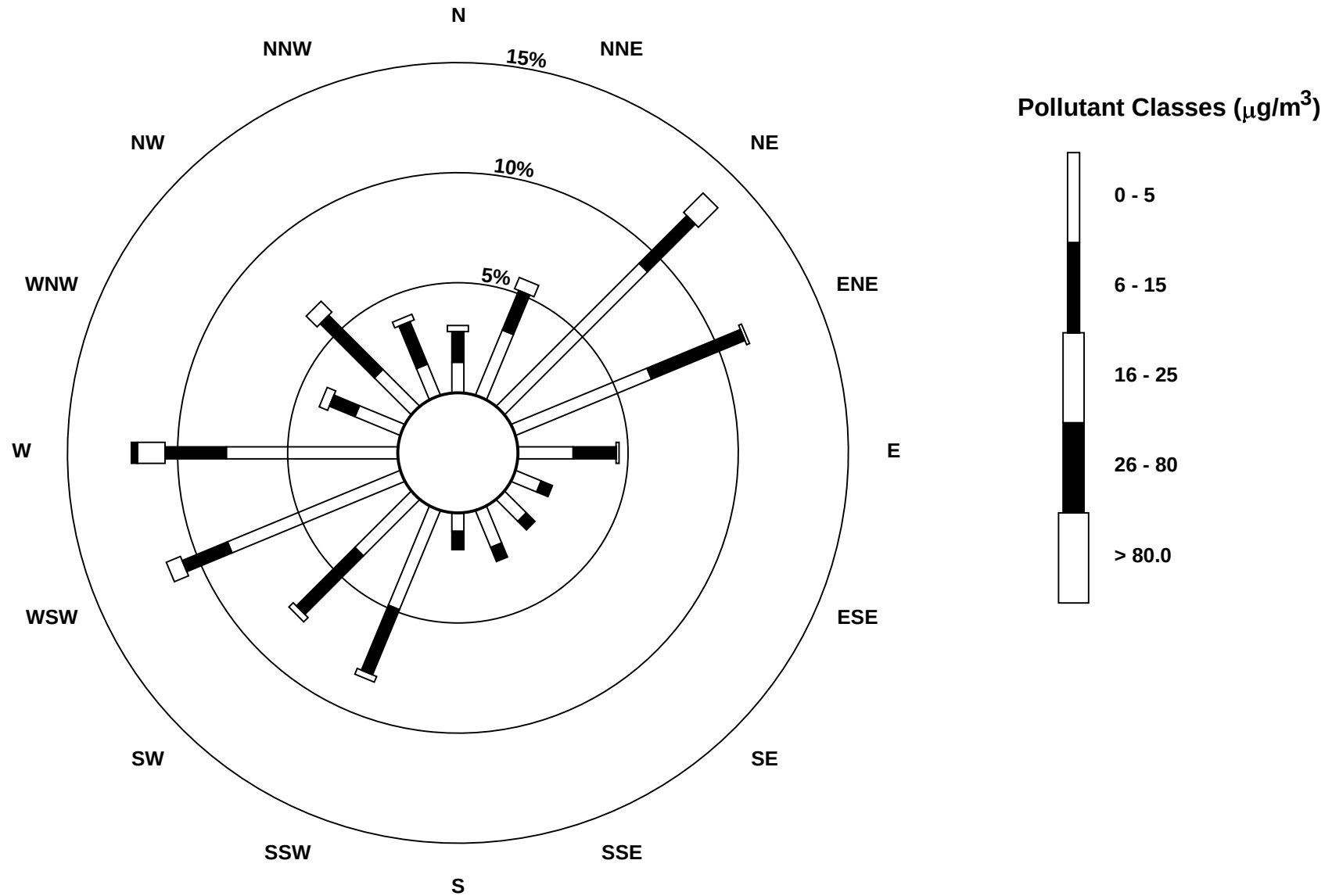
Hourly Maximums

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Evergreen Park - November 2013



Pollutant Rose

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Evergreen Park - November 2013



Hourly Averages

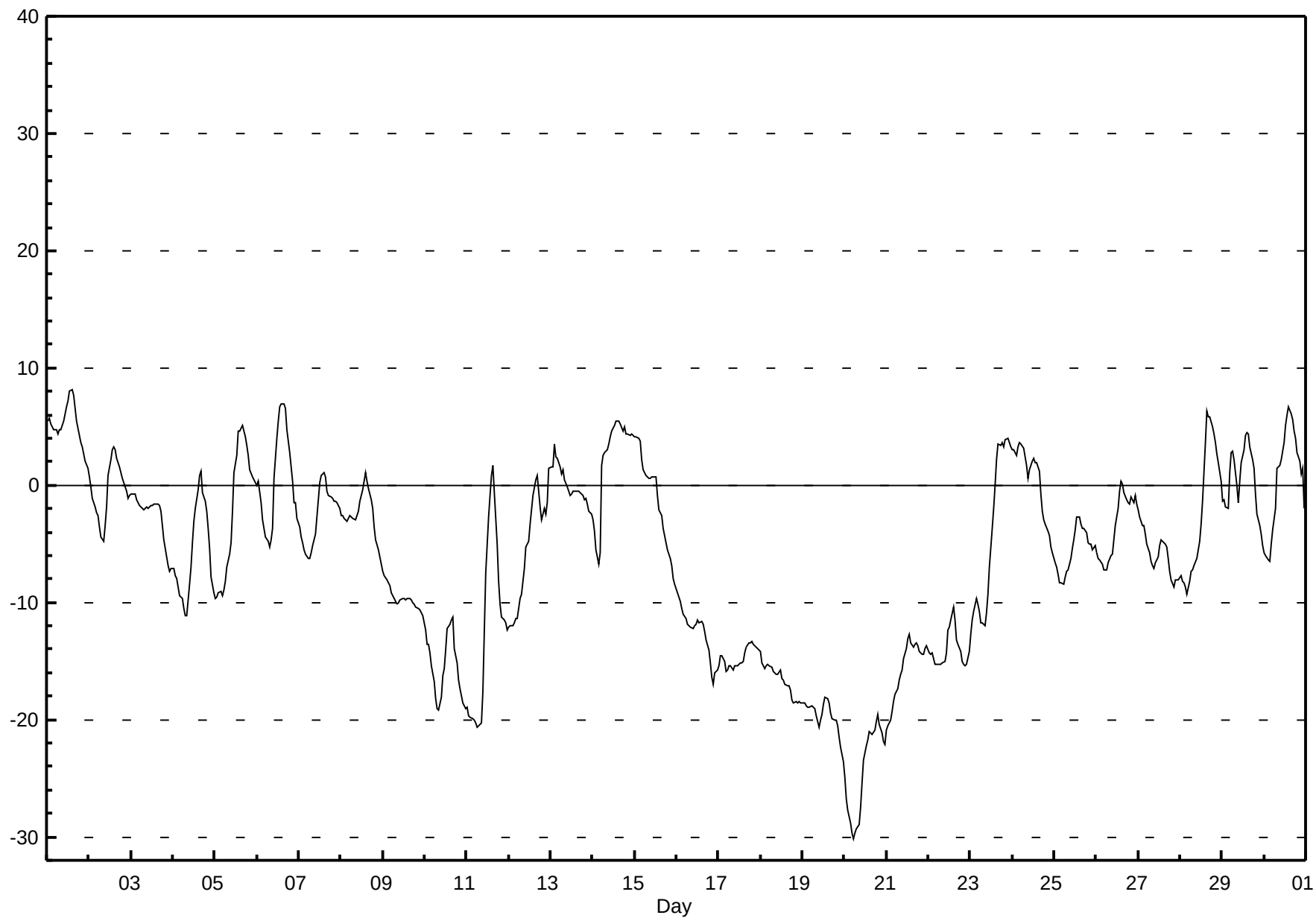
External Temperature (ET) - °C

Evergreen Park - November 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 8.1 °C on Nov 1 15:00 Maximum Daily Average: 5.1 °C on Nov 1																								Hours in Service: 720 Hours of Data: 720 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0		
Minimum Value: -30 °C on Nov 20 06:00 Maximum Diurnal Average: -3.0 °C at hour 16 Monthly Average: -6.31 °C												Minimum Daily Average: -24.4 °C on Nov 20 Minimum Diurnal Average: -8.4 °C at hour 5 Percentiles: P ₁ = -27.8 P ₁₀ = -18.1 Q ₁ = -12.3 Median = -5.1 Q ₃ = 0.2 P ₉₀ = 3.6 P ₉₉ = 6.6														
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-Nov	5	6	5	5	5	5	4	5	5	6	6	7	7	8	8	8	7	5	4	4	3	3	2	1	5.1	8.1
2-Nov	1	0	-1	-2	-2	-3	-4	-4	-5	-3	-2	1	2	3	3	3	2	2	1	1	0	-1	-1	-1	-0.4	3.3
3-Nov	-1	-1	-1	-1	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-3	-5	-6	-7	-7	-7	-2.7	-0.7
4-Nov	-7	-8	-8	-9	-9	-10	-11	-11	-11	-8	-7	-5	-3	-2	0	1	1	-1	-1	-2	-4	-5	-8	-9	-5.7	1.1
5-Nov	-10	-10	-9	-9	-9	-9	-8	-7	-6	-5	-2	1	3	5	5	5	5	4	3	3	1	1	0	0	-2.0	5.1
6-Nov	0	0	-2	-3	-4	-4	-5	-5	-5	-4	1	4	5	7	7	7	7	5	4	3	0	-2	-2	-3	0.5	6.9
7-Nov	-4	-4	-5	-6	-6	-6	-6	-6	-5	-4	-3	-1	0	1	1	1	-1	-1	-1	-1	-1	-1	-2	-2	-2.6	1.1
8-Nov	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-2	-1	0	0	1	0	0	-1	-2	-4	-5	-6	-6	-7	-2.5	1.0
9-Nov	-7	-8	-8	-8	-9	-9	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-11	-11	-11	-11	-9.6	-7.4
10-Nov	-12	-14	-14	-14	-15	-17	-18	-19	-19	-18	-16	-16	-14	-12	-12	-12	-11	-14	-15	-17	-17	-18	-19	-19	-15.5	-11.3
11-Nov	-19	-20	-20	-20	-20	-20	-21	-20	-20	-18	-12	-8	-3	-1	1	2	-1	-5	-8	-10	-11	-12	-12	-12	-12.1	1.7
12-Nov	-12	-12	-12	-12	-11	-11	-10	-9	-8	-7	-5	-5	-3	-2	-1	0	1	-1	-2	-3	-2	-2	-1	1	-5.4	1.4
13-Nov	2	2	4	2	2	2	1	1	0	0	-1	-1	-1	-1	0	-1	-1	-1	-1	-1	-1	-2	-2	-2	0.0	3.5
14-Nov	-3	-4	-6	-7	-6	2	3	3	3	4	4	5	5	5	5	5	5	5	5	4	4	4	4	4	2.3	5.5
15-Nov	4	4	4	4	2	1	1	1	1	1	1	1	1	-1	-2	-3	-4	-4	-5	-5	-6	-7	-8	-8	-1.2	4.1
16-Nov	-9	-10	-10	-11	-11	-11	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12	-13	-14	-15	-16	-17	-16	-16	-12.5	-9.1
17-Nov	-15	-15	-15	-15	-16	-16	-15	-15	-16	-15	-15	-15	-15	-15	-15	-14	-14	-13	-13	-13	-14	-14	-14	-14	-14.7	-13.4
18-Nov	-14	-15	-16	-15	-15	-15	-16	-16	-16	-16	-16	-17	-17	-17	-17	-17	-17	-18	-19	-18	-19	-18	-19	-19	-16.6	-14.2
19-Nov	-19	-19	-19	-19	-19	-19	-19	-19	-19	-20	-21	-20	-19	-18	-18	-19	-19	-20	-20	-20	-21	-22	-22	-24	-19.6	-18.1
20-Nov	-25	-27	-28	-29	-30	-30	-30	-29	-29	-28	-25	-23	-22	-22	-21	-21	-21	-21	-20	-19	-20	-21	-22	-22	-24.4	-19.5
21-Nov	-21	-20	-20	-19	-18	-18	-17	-17	-16	-16	-15	-14	-13	-13	-13	-14	-14	-13	-14	-14	-14	-14	-14	-14	-15.7	-12.7
22-Nov	-14	-14	-14	-15	-15	-15	-15	-15	-15	-15	-14	-12	-12	-12	-10	-11	-13	-14	-14	-15	-15	-15	-15	-14	-14.1	-10.3
23-Nov	-13	-11	-11	-10	-10	-11	-12	-12	-12	-11	-9	-7	-4	-2	0	2	4	3	4	3	4	4	4	3	-4.3	4.1
24-Nov	3	3	3	3	4	3	3	2	2	1	1	2	2	2	2	1	-1	-2	-3	-3	-4	-4	-5	-6	0.4	3.6
25-Nov	-7	-7	-8	-8	-8	-8	-8	-7	-7	-6	-5	-5	-4	-3	-3	-3	-4	-4	-4	-5	-5	-5	-5	-5	-5.6	-2.7
26-Nov	-6	-6	-6	-7	-7	-7	-7	-7	-6	-6	-5	-3	-2	-1	0	0	-1	-1	-2	-2	-1	-1	-1	-2	-3.6	0.4
27-Nov	-2	-3	-3	-3	-4	-5	-6	-7	-7	-7	-7	-6	-5	-5	-5	-5	-5	-6	-7	-8	-9	-8	-8	-8	-5.8	-2.2
28-Nov	-8	-8	-8	-9	-9	-8	-7	-7	-7	-6	-6	-5	-3	-1	4	6	6	6	5	4	4	3	2	0	-2.2	6.3
29-Nov	-1	-1	-2	-2	1	3	3	2	0	-2	0	2	3	4	4	4	3	2	1	-1	-2	-3	-4	-5	0.4	4.5
30-Nov	-6	-6	-6	-6	-5	-4	-2	1	2	2	2	4	5	6	7	6	6	5	4	3	2	1	1	-2	0.8	6.7
-7.4 -7.7 -7.9 -8.2 -8.4 -8.2 -8.2 -8.2 -8.2 -8.2 -7.7 -6.6 -5.4 -4.3 -3.6 -3.1 -3.0 -3.5 -4.3 -4.9 -5.6 -6.2 -6.7 -7.0 -7.4																									Diurnal Average	
5.4 5.7 5.2 5.0 4.7 4.8 4.4 4.7 4.7 4.7 5.5 6.1 6.6 7.2 8.0 8.1 7.7 6.6 5.8 4.9 4.3 4.3 4.2 4.4 4.2																									Diurnal Maximum	

Hourly Averages

External Temperature (ET) - °C
Evergreen Park - November 2013



Hourly Averages

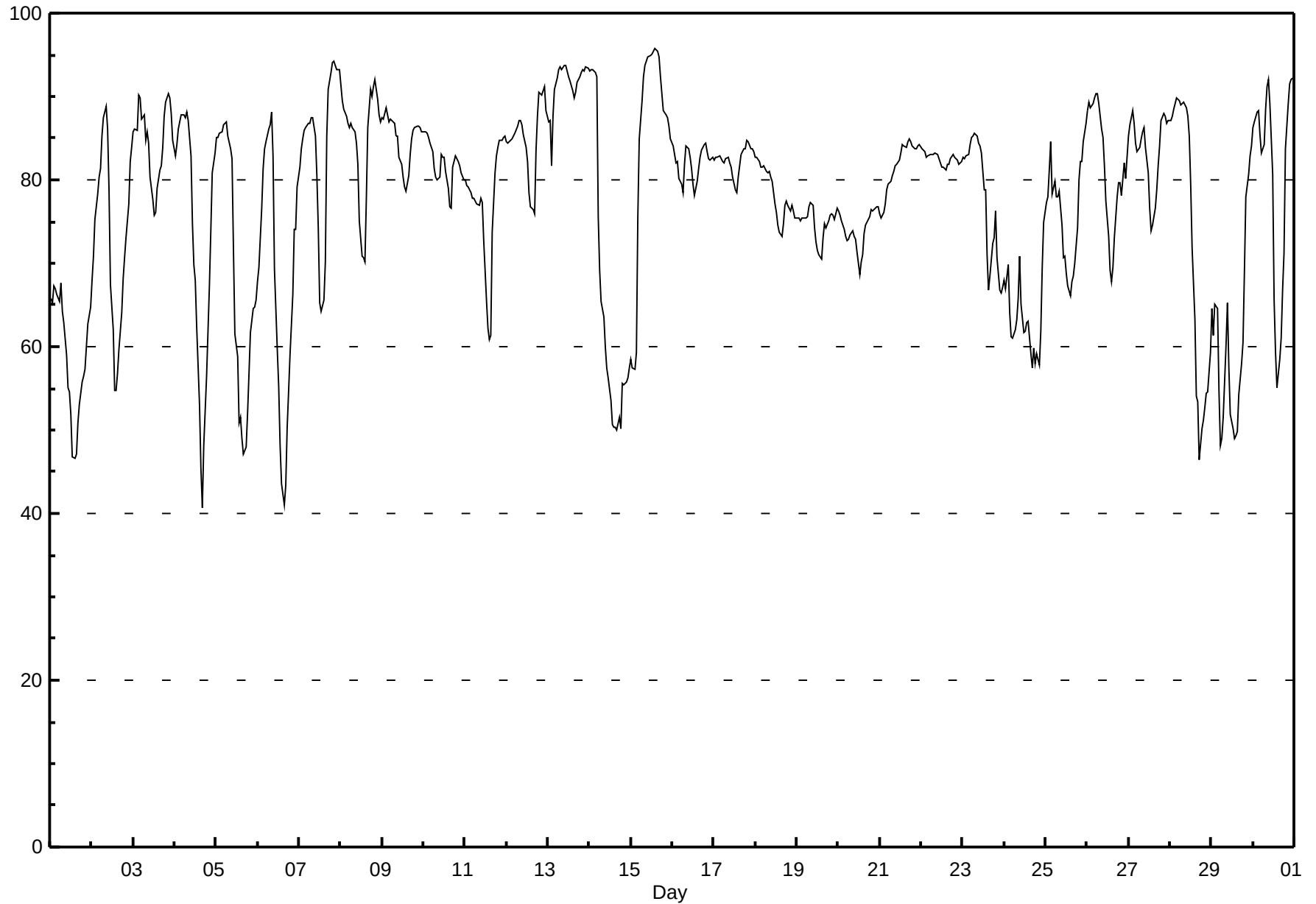
Relative Humidity (RH) - %

Evergreen Park - November 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0																				Hours in Service: 720						
Maximum Value: 95.7 % on Nov 15 15:00																				Maximum Daily Average: 91.4 % on Nov 13		Hours of Data: 720				
Minimum Value: 41 % on Nov 4 17:00																				Minimum Daily Average: 58.9 % on Nov 1		Hours of Missing Data: 0				
Maximum Diurnal Average: 81.8 % at hour 9																				Minimum Diurnal Average: 68.3 % at hour 15		Hours of Calibration: 0				
Monthly Average: 77.24 %																				Percentiles: P ₁ = 46.8 P ₁₀ = 57.7 Q ₁ = 70.8 Median = 81.2 Q ₃ = 85.5 P ₉₀ = 89.4 P ₉₉ = 94.6		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-Nov	66	65	67	67	66	66	68	64	63	59	55	54	52	47	47	47	51	53	56	56	57	60	63	65	58.9	67.6
2-Nov	68	71	75	78	80	81	85	88	89	86	79	67	62	55	55	57	60	64	68	71	73	77	82	84	73.1	88.8
3-Nov	86	86	86	90	90	87	88	85	86	84	80	78	76	76	79	81	82	84	88	89	90	90	88	85	84.7	90.3
4-Nov	83	84	86	87	88	88	88	88	87	83	75	70	68	62	53	45	41	48	56	62	67	74	81	83	72.8	88.1
5-Nov	85	85	86	86	87	87	87	85	84	82	72	62	59	51	52	49	47	48	52	57	62	65	65	66	69.0	86.9
6-Nov	68	69	77	81	84	85	86	87	88	83	69	60	55	48	44	41	43	50	55	59	66	74	74	79	67.7	88.1
7-Nov	82	84	85	86	86	87	87	88	87	85	80	74	65	64	66	70	85	91	93	94	94	94	93	93	83.9	94.3
8-Nov	91	90	88	88	87	86	87	86	86	84	82	75	71	71	70	78	86	91	90	91	92	90	88	87	84.8	92.0
9-Nov	88	87	89	88	87	87	87	87	85	85	83	82	80	79	79	81	83	85	86	86	86	86	86	86	84.9	88.7
10-Nov	86	86	86	85	84	83	81	80	80	80	83	83	83	81	79	77	77	82	83	83	82	82	81	80	81.9	85.8
11-Nov	80	79	79	78	78	78	77	77	77	78	77	73	65	62	61	61	74	81	83	84	85	85	85	85	76.8	85.2
12-Nov	85	84	85	85	85	86	86	87	87	87	85	84	82	78	77	76	76	84	88	90	90	91	91	88	84.9	91.1
13-Nov	87	87	82	88	91	92	93	94	93	94	94	93	92	92	91	90	91	92	92	93	93	93	94	93	91.4	93.8
14-Nov	93	93	93	93	92	76	69	65	64	60	57	56	54	51	50	50	50	51	50	56	55	56	56	57	64.6	93.3
15-Nov	59	57	57	59	76	85	89	92	94	94	95	95	95	95	96	95	95	92	90	88	88	87	86	85	85.3	95.7
16-Nov	84	83	82	82	80	79	78	82	84	84	83	81	80	78	80	81	83	84	84	84	83	82	82	83	82.0	84.4
17-Nov	82	83	83	83	83	82	82	83	83	82	81	80	79	79	80	82	83	84	84	85	85	84	84	83	82.4	84.8
18-Nov	83	83	82	82	81	82	81	81	80	80	77	76	75	74	73	75	77	77	77	76	77	76	76	75	78.4	82.8
19-Nov	75	75	75	75	75	75	76	77	77	77	74	73	72	71	71	73	75	74	75	76	76	76	75	77	74.8	77.3
20-Nov	76	76	75	74	73	73	73	73	74	73	73	71	69	70	71	74	75	75	76	76	76	77	77	77	74.0	76.8
21-Nov	76	75	76	77	79	80	80	80	81	82	82	82	83	84	84	84	85	85	85	84	84	84	84	84	81.6	84.8
22-Nov	84	84	83	83	83	83	83	83	83	83	83	82	82	82	81	82	82	83	83	83	83	82	82	82	82.6	83.8
23-Nov	83	83	83	83	84	85	85	86	85	84	84	83	79	79	71	67	69	72	73	76	71	67	67	67	77.7	85.6
24-Nov	68	67	70	64	61	61	62	63	66	71	65	62	62	63	63	59	57	60	58	59	58	62	70	75	63.5	74.9
25-Nov	77	78	81	85	78	80	78	78	79	75	71	71	69	67	66	68	68	70	74	80	82	82	85	87	76.2	86.8
26-Nov	88	89	89	89	90	90	90	89	86	85	82	77	73	69	68	69	73	78	80	80	78	82	80	83	81.6	90.4
27-Nov	85	87	88	87	84	83	84	85	86	86	84	81	77	74	74	77	79	82	84	87	88	88	87	87	83.5	88.3
28-Nov	87	88	88	89	90	89	89	89	89	89	88	85	80	72	63	54	53	47	50	51	53	54	55	59	73.0	89.8
29-Nov	65	61	65	65	55	48	49	52	60	65	57	52	50	49	49	50	54	58	60	69	78	81	83	84	60.8	84.1
30-Nov	86	87	88	88	85	83	84	88	91	92	89	81	66	59	55	59	61	67	71	84	89	92	92	92	80.4	92.2
80.2		80.2	81.0	81.5	81.5	80.9	81.1	81.4	81.8	81.1	78.1	74.8	71.8	69.5	68.3	68.3	70.4	73.0	74.8	77.0	78.1	79.0	79.7	80.4	Diurnal Average	
93.1		93.3	93.3	92.9	92.3	92.2	93.2	93.6	93.7	94.2	94.8	95.0	95.0	95.5	95.7	95.5	94.7	92.3	92.9	94.0	94.3	93.7	93.6	93.4	Diurnal Maximum	

Hourly Averages

Relative Humidity (RH) - %
Evergreen Park - November 2013



Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Evergreen Park - November 2013

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	18	32	29	16	13	25	9	27	24	25	28	31	35	37	39	32	32	20	16	18	18	17	13	23.6	39.5	
Dir	245	248	240	240	244	255	266	247	257	269	268	262	267	266	262	269	260	252	254	254	250	252	248	245	256.5	261.9
2 Spd	7	8	3	2	2	1	1	1	2	1	4	6	13	15	17	15	10	9	3	6	7	7	9	10	4.9	16.8
Dir	273	280	312	324	320	307	279	215	358	341	341	64	59	63	54	45	52	42	22	38	51	40	37	42	36.2	53.7
3 Spd	11	11	10	12	10	8	8	7	2	2	5	7	6	5	2	4	2	0	1	1	2	2	4	4	4.2	12.0
Dir	37	35	37	43	44	35	33	38	45	48	31	34	37	38	10	55	152	140	159	222	229	216	255	300	35.1	43.1
4 Spd	6	2	6	4	4	6	2	6	2	4	6	3	4	8	8	9	6	5	4	3	2	1	1	1	2.9	8.7
Dir	258	323	237	221	212	223	190	206	208	202	255	221	158	150	134	138	165	155	158	154	92	132	67	54	184.4	138.4
5 Spd	0	0	1	1	0	0	2	3	2	1	5	9	11	22	13	25	19	27	17	16	10	13	17	16	8.6	27.2
Dir	99	134	23	76	47	129	96	169	195	141	207	199	218	263	266	257	266	270	274	268	261	248	247	240	253.6	269.5
6 Spd	16	9	3	0	1	3	2	4	4	2	5	20	22	17	19	28	23	18	17	7	1	3	5	1	8.5	28.3
Dir	235	247	51	49	205	205	218	214	201	68	304	267	268	287	281	276	263	253	258	244	196	223	212	41	261.1	276.3
7 Spd	1	1	0	0	0	2	1	2	3	4	7	8	8	10	12	9	3	4	8	7	9	6	6	14	4.3	14.2
Dir	191	185	150	71	192	55	62	39	47	66	80	78	81	71	59	82	65	48	65	53	58	50	11	331	55.9	330.8
8 Spd	16	14	16	14	8	7	8	7	5	5	6	6	3	3	2	1	1	6	8	22	23	23	18	15	8.5	23.3
Dir	329	320	328	320	306	287	299	299	253	248	259	250	268	209	138	142	26	345	352	336	340	334	330	324	319.8	339.6
9 Spd	13	16	8	7	5	7	9	9	7	6	8	7	8	6	4	4	4	2	3	3	4	3	4	5	4.2	16.3
Dir	323	336	356	353	24	30	30	30	44	35	33	26	50	91	122	147	152	104	118	118	105	105	92	76	34.6	335.8
10 Spd	4	5	6	4	2	2	1	1	1	2	5	7	5	3	7	3	3	2	1	1	2	2	2	2	1.2	7.2
Dir	71	70	75	60	38	18	270	265	286	311	298	271	268	260	337	289	345	359	348	29	219	265	219	339	331.3	270.7
11 Spd	1	3	1	0	1	1	1	0	0	1	0	1	1	3	4	1	1	3	2	2	3	2	3	3	1.1	4.4
Dir	221	226	340	123	230	210	38	200	315	233	311	228	214	216	213	151	266	321	317	319	254	352	238	240	249.0	213.1
12 Spd	2	1	1	1	2	1	1	1	0	0	2	6	5	7	7	6	3	1	1	1	2	2	4	4	2.0	7.0
Dir	217	116	33	236	165	242	98	89	46	159	191	205	267	245	235	228	226	211	125	186	202	209	208	194	218.0	244.6
13 Spd	3	10	8	3	2	4	3	5	10	9	8	8	6	5	5	2	1	2	1	1	3	0	7	5	1.8	10.1
Dir	190	219	234	226	211	209	85	100	73	71	67	59	49	46	26	39	360	195	197	50	271	191	59	61	79.4	72.6
14 Spd	1	1	1	1	4	24	29	30	31	36	47	49	50	48	35	24	30	31	37	20	43	42	52	45	29.1	51.5
Dir	134	58	58	42	238	240	244	247	249	256	258	261	261	263	269	267	245	241	263	269	261	258	264	261	257.4	263.6
15 Spd	47	43	40	44	38	21	16	3	2	5	6	7	2	16	17	19	26	31	27	28	24	24	21	21	5.2	46.7
Dir	263	264	264	264	265	259	260	198	263	215	209	202	98	61	64	61	57	53	55	51	49	42	40	39	330.6	262.5
16 Spd	19	17	16	18	17	16	16	11	11	11	10	10	9	9	6	5	4	2	1	2	0	1	1	3	8.5	19.0
Dir	37	38	42	41	37	35	35	38	44	47	47	48	55	49	15	31	38	15	357	5	326	329	277	215	39.1	36.8
17 Spd	2	1	2	2	1	0	1	2	3	2	6	8	5	9	10	6	5	12	11	10	13	11	9	6	5.2	13.0
Dir	197	202	65	68	60	13	93	92	102	73	62	61	28	52	61	54	41	52	45	42	44	33	24	13	48.7	43.6
18 Spd	8	6	2	2	1	3	4	5	5	5	6	6	13	12	12	10	8	4	3	3	4	5	7	7	4.7	13.4
Dir	340	345	312	302	25	60	51	43	29	26	322	346	335	333	323	285	278	267	243	315	252	309	315	317	328.0	334.7
19 Spd	7	7	9	8	7	6	6	6	8	8	7	5	9	6	5	10	11	9	8	7	8	5	3	1	6.4	10.7
Dir	317	299	305	304	307	301	304	293	266	274	278	297	280	9	352	315	319	318	305	290	291	310	283	289	302.4	319.0
20 Spd	0	1	1	0	1	2	1	3	2	0	0	1	2	4	3	5	4	3	4	4	5	2	2	5	1.4	5.4
Dir	263	216	211	182	70	40	59	342	320	215	209	275	306	347	7	16	20	29	327	286	305	322	244	206	329.6	16.3
21 Spd	6	2	2	3	1	2	2	1	3	4	4	5	7	11	12	14	13	12	11	8	7	6	3	3	5.2	14.2
Dir	217	94	79	54	110	62	75	81	82	79	76	60	67	65	67	71	69	70	69	46	30	26	31	13	63.7	70.6
22 Spd	5	4	2	5	6	4	4	4	4	3	3	2	5	3	2	5	3	1	1	2	2	3	2	4	1.8	6.2
Dir	32	39	84	89	81	89	86	104	95	75	63	338	354	356	319	27	33	250	309	294	331	266	326	266	40.6	81.4

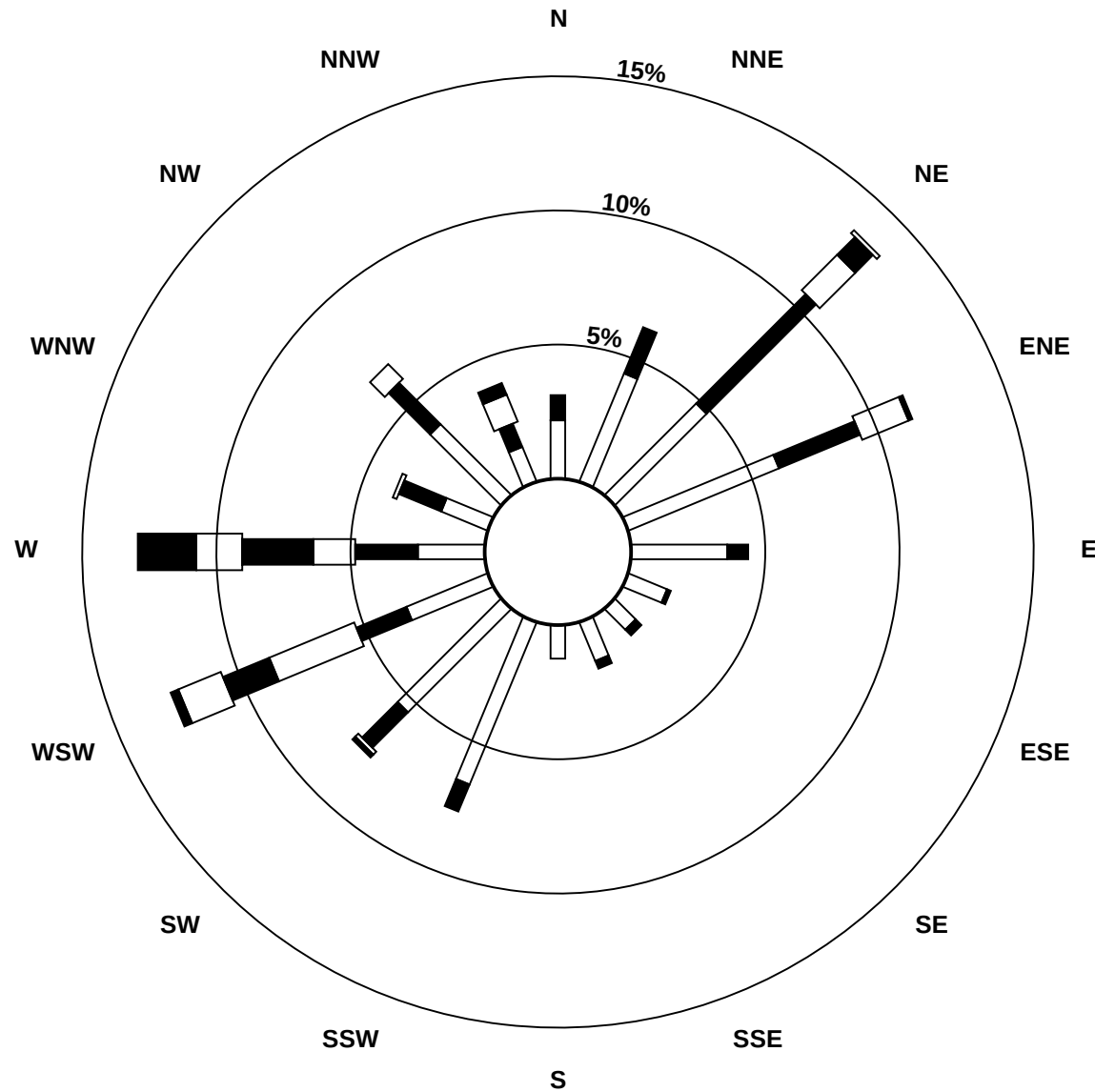
Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Evergreen Park - November 2013

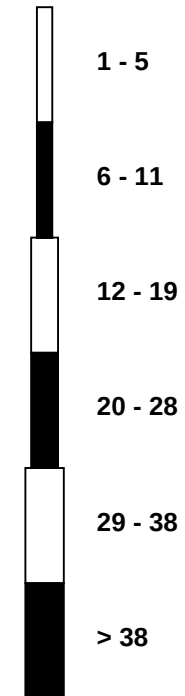
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
23 Spd	5	7	2	2	5	1	2	1	1	1	1	1	2	5	11	21	37	38	29	15	23	15	16	15	10.2	37.8	
Dir	251	227	326	251	208	183	221	94	170	212	63	256	243	211	232	234	247	242	244	244	254	265	252	264	244.5	241.5	
24 Spd	15	28	27	25	29	35	26	23	11	3	8	8	9	11	11	8	3	3	5	5	6	0	2	0	10.1	35.2	
Dir	275	256	252	272	274	266	264	268	280	19	316	256	327	358	38	35	37	238	277	275	266	40	29	234	276.9	265.8	
25 Spd	3	1	1	3	1	1	1	1	3	1	1	4	4	1	4	4	5	1	1	3	2	1	4	1	1.4	4.7	
Dir	211	355	57	30	236	277	299	298	54	81	53	73	46	351	358	31	78	74	203	53	91	74	27	61	44.6	77.6	
26 Spd	4	5	3	5	4	1	2	1	4	2	1	8	5	2	0	3	3	2	2	6	1	3	1	2	2.3	7.8	
Dir	223	242	320	258	222	94	196	295	234	223	250	202	199	208	192	207	216	205	206	209	68	216	216	71	219.0	202.4	
27 Spd	1	2	2	12	10	8	8	4	3	2	5	6	7	7	4	4	4	2	1	1	1	1	3	4	3.9	11.6	
Dir	190	54	59	66	64	72	71	70	78	63	66	60	35	39	26	9	46	116	56	47	61	69	36	67	58.5	65.7	
28 Spd	1	1	1	1	1	1	2	3	0	1	5	5	6	8	26	39	39	48	31	28	23	22	8	5	12.2	48.1	
Dir	285	83	254	58	305	326	173	223	93	227	248	208	264	266	260	262	267	264	275	272	270	256	254	231	263.2	264.4	
29 Spd	6	2	1	2	7	9	9	5	1	2	8	13	14	18	17	16	8	3	3	1	1	1	1	2	5.1	17.8	
Dir	228	83	126	158	255	291	298	299	165	206	256	252	256	261	257	254	254	288	144	131	79	70	39	204	258.0	261.1	
30 Spd	1	2	3	0	2	2	2	10	3	3	8	0	18	27	24	13	11	3	1	2	0	4	6	17	4.1	26.7	
Dir	201	192	209	35	228	214	234	224	187	198	215	167	250	249	251	253	255	359	166	197	39	48	103	63	238.0	248.6	
Spd	4.2	4.3	3.2	2.6	2.6	3.2	2.1	2.4	1.4	1.4	3.0	3.5	4.4	4.1	4.2	4.5	4.9	4.3	3.6	3.2	3.6	3.4	3.2	2.8	Diurnal Average		
Dir	277.3	279.0	284.4	300.0	282.5	273.4	286.8	262.5	268.3	275.2	280.2	264.7	282.7	289.9	290.8	280.8	270.0	270.8	279.6	298.7	292.7	293.9	290.3	300.1	Diurnal Maximum		
Spd	46.7	43.3	40.3	44.1	38.1	35.2	29.2	30.5	31.4	36.4	46.6	49.1	49.7	48.0	39.5	38.8	39.3	48.1	37.1	28.3	43.1	42.1	51.5	45.5	Diurnal Maximum		
Dir	262.5	264.5	264.2	264.3	264.6	265.8	244.5	247.1	249.1	255.5	258.5	261.4	260.8	262.7	261.9	262.5	267.5	264.4	262.9	271.6	260.9	258.2	263.6	260.9			
Maximum Speed Value: 52 km/h on Nov 14 23:00							Minimum Speed Value: 0 km/h on Nov 17 06:00													Hours in Service:				720			
Maximum Daily Speed Average: 29.1 km/h on Nov 14							Minimum Daily Speed Average: 1.1 km/h on Nov 11													Hours of Data:				720			
Maximum Diurnal Speed Average: 4.9 km/h at hour 17							Minimum Diurnal Speed Average: 1.4 km/h at hour 9													Hours of Missing Data:				0			
Monthly Average Velocity: 3.28 km/h 282.30 deg							Speed Percentiles: P ₁ = 0.2 P ₁₀ = 0.9 Q ₁ = 2.0 Median = 4.6 Q ₃ = 9.5 P ₉₀ = 21.6 P ₉₉ = 46.5													Percent Operational Time:				100.0			
All monthly, daily, and diurnal averages have been calculated using vector methods																											
Frequency Distribution																											
Speed Range (km/h)																											
Direction	0 to 5		5 to 11		11 to 19		19 to 28		28 to 38		> 38		Total														
North	32		12		1		1		0		0		46														
NorthEast	77		66		25		8		1		0		177														
East	55		15		4		0		0		0		74														
SouthEast	24		4		0		0		0		0		28														
South	42		5		0		0		0		0		47														
SouthWest	75		25		9		3		8		0		120														
West	37		30		26		25		17		17		152														
NorthWest	36		26		12		2		0		0		76														
Total	378		183		77		39		26		17		720														

Wind Rose

Wind Speed (WS) (km/h)
Evergreen Park - November 2013



Wind Speed Classes (km/h)



Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Evergreen Park - November 2013

Maximum Speed: 52 km/h on Nov 14 23:00																								Maximum Daily Speed Average: 30.0 km/h on Nov 14										Hours in Service: 720	
Minimum Speed: 0 km/h on Nov 7 04:00																								Minimum Daily Speed Average: 2.4 km/h on Nov 11										Hours of Data: 720	
Maximum Diurnal Speed Average: 12.0 km/h at hour 16																								Minimum Diurnal Speed Average: 5.8 km/h at hour 10										Hours of Missing Data: 0	
Monthly Average Speed: 8.65 km/h																								Percentiles: P ₁ = 0.5 P ₁₀ = 1.6 Q ₁ = 2.8 Median = 5.2 Q ₃ = 10.0 P ₉₀ = 21.7 P ₉₉ = 46.8										Percent Operational Time: 100.0	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24											
1-Nov	19	32	29	17	14	26	9	27	25	25	29	31	36	38	40	32	32	20	17	18	18	18	17	13	24.2	39.8									
2-Nov	8	9	4	3	3	2	2	2	2	2	5	6	13	15	17	16	11	9	3	6	7	7	9	11	7.1	17.3									
3-Nov	11	11	10	12	10	8	9	7	2	3	6	8	7	6	3	4	2	1	2	1	2	2	5	5	5.7	12.2									
4-Nov	6	3	6	4	4	6	3	6	2	4	6	4	5	8	9	10	6	6	4	4	2	1	1	1	4.6	9.5									
5-Nov	1	1	1	1	1	1	3	4	3	2	5	9	11	22	14	25	20	28	17	16	10	13	17	16	10.0	27.6									
6-Nov	16	11	3	1	1	3	2	4	4	4	7	21	23	18	20	29	23	18	17	7	1	3	5	1	10.2	28.6									
7-Nov	1	1	0	0	1	2	1	2	3	5	7	9	8	10	13	10	3	4	9	7	9	6	6	15	5.5	14.6									
8-Nov	16	15	16	14	8	8	9	8	5	5	6	7	3	4	2	2	2	7	8	22	24	23	18	15	10.3	23.5									
9-Nov	13	17	9	7	6	8	10	9	7	6	9	7	9	6	5	4	4	2	3	4	4	3	5	5	6.8	16.5									
10-Nov	4	6	7	5	2	2	1	1	1	3	6	8	5	4	7	4	3	3	1	1	3	3	2	2	3.5	7.7									
11-Nov	2	3	3	1	1	2	1	1	1	2	1	3	2	4	5	2	2	3	3	4	4	2	4	4	2.4	4.6									
12-Nov	5	4	3	3	3	3	4	5	3	2	2	6	6	8	8	6	5	5	4	7	4	4	4	4	4.4	8.1									
13-Nov	4	10	9	5	2	4	5	6	10	10	9	8	8	6	5	2	1	4	2	1	3	1	7	5	5.3	10.3									
14-Nov	2	1	1	1	5	24	29	31	32	37	47	50	50	48	35	24	30	32	38	22	43	42	52	46	30.0	51.8									
15-Nov	47	44	40	44	38	21	17	3	4	6	6	7	5	16	17	19	26	32	28	28	25	24	21	21	22.6	46.9									
16-Nov	19	17	16	18	17	16	16	11	11	12	10	10	10	10	6	6	4	2	1	2	1	1	2	3	9.2	19.3									
17-Nov	2	1	2	2	2	0	1	2	4	3	7	9	6	10	10	7	5	12	12	10	13	11	9	7	6.1	13.3									
18-Nov	8	7	2	2	2	3	4	6	6	6	6	8	14	13	13	10	8	4	3	3	4	5	7	7	6.4	13.6									
19-Nov	7	7	9	8	7	6	7	7	8	8	8	6	9	8	5	11	11	9	9	7	8	5	4	1	7.3	11.0									
20-Nov	1	1	1	1	1	2	1	3	3	0	1	2	3	4	3	6	5	4	5	5	6	4	3	5	3.0	6.3									
21-Nov	6	2	3	5	4	3	2	1	3	4	4	5	7	11	13	15	14	13	12	9	7	7	4	3	6.5	14.7									
22-Nov	6	5	3	5	7	5	5	5	5	3	4	2	5	3	3	6	3	1	2	3	3	4	3	4	3.9	6.7									
23-Nov	5	7	3	3	7	2	4	3	3	2	4	4	3	7	13	22	37	38	30	17	24	15	17	15	11.8	37.9									
24-Nov	16	29	27	26	30	35	26	23	12	4	9	9	11	13	11	8	3	4	5	5	6	1	2	1	13.1	35.4									
25-Nov	3	2	2	3	2	3	1	2	3	1	2	4	4	2	4	5	5	2	3	3	4	2	4	2	2.9	5.4									
26-Nov	4	5	3	6	4	2	3	2	5	4	5	8	6	2	2	3	3	2	3	7	2	4	1	3	3.8	7.9									
27-Nov	3	2	2	12	10	8	9	5	3	2	6	6	7	8	5	5	4	2	2	1	1	2	3	4	4.7	11.7									
28-Nov	1	2	3	3	3	2	3	6	2	3	6	6	6	9	26	39	40	48	31	29	24	22	9	6	13.7	48.3									
29-Nov	7	4	4	5	8	10	9	6	2	4	8	13	14	18	17	16	8	3	3	2	2	2	2	3	7.1	17.9									
30-Nov	2	3	3	1	2	3	5	11	4	4	8	3	18	27	24	13	12	3	3	4	1	4	7	18	7.6	26.8									
8.1 8.7 7.5 7.3 6.9 7.3 6.7 6.9 5.9 5.8 7.9 9.2 10.5 11.9 11.9 12.0 11.2 10.7 9.2 8.5 8.8 8.1 8.4 8.3																								Diurnal Average											
46.9 43.6 40.5 44.3 38.4 35.4 29.3 30.6 31.6 36.7 46.8 49.5 49.9 48.3 39.8 39.0 39.6 48.3 38.0 28.5 43.3 42.3 51.8 45.8																								Diurnal Maximum											
All monthly, daily, and diurnal averages have been calculated using scalar methods																																			

Hourly Standard Deviations

Wind Direction (WD) - deg
Evergreen Park - November 2013

Maximum Value: 96.2 deg on Nov 11 07:00																				Hours in Service: 720					
Minimum Value: 4.7 deg on Nov 14 06:00																				Hours of Data: 720					
																				Hours of Missing Data: 0					
Percentiles: P ₁ = 5.0 P ₁₀ = 9.2 Q ₁ = 15.1 Median = 27.4 Q ₃ = 58.4 P ₉₀ = 78.9 P ₉₉ = 92.4																				Hours of Calibration: 0					
																				Percent Operational Time: 100.0					
Day	Hourly Period Ending At (MST)																							Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Nov	8	6	5	40	28	8	26	8	11	8	10	9	9	8	7	9	8	7	8	9	6	9	6	8	40.5
2-Nov	21	17	72	78	54	86	67	54	27	60	39	23	20	15	15	12	17	14	15	11	12	14	10	13	85.9
3-Nov	12	13	14	13	13	12	12	13	24	28	29	19	32	57	55	29	55	68	87	78	66	63	40	19	87.1
4-Nov	32	43	15	25	9	27	28	9	38	34	23	49	48	26	24	26	21	16	43	29	55	71	63	68	70.9
5-Nov	91	89	67	73	79	89	73	40	30	72	19	18	16	14	17	9	13	9	14	9	13	7	5	5	91.0
6-Nov	6	62	37	86	60	37	10	31	13	68	55	11	13	19	15	8	10	5	6	10	60	44	61	78	85.9
7-Nov	80	62	85	51	85	37	56	9	19	11	20	18	22	15	14	25	48	24	19	17	16	25	25	15	85.0
8-Nov	10	13	11	16	19	17	15	19	21	13	14	19	36	57	53	81	61	21	26	8	8	8	10	13	81.0
9-Nov	13	10	29	23	25	20	16	21	24	27	26	27	27	31	30	32	20	22	20	31	23	30	19	19	32.3
10-Nov	22	14	17	25	24	44	68	54	44	53	43	22	23	33	28	42	26	47	49	47	67	56	29	50	67.8
11-Nov	56	29	79	95	81	87	96	93	88	63	76	84	66	37	35	93	69	50	58	57	61	62	77	65	96.2
12-Nov	91	80	87	79	71	89	80	92	86	95	56	20	43	23	35	39	69	90	78	92	80	78	40	40	95.1
13-Nov	52	26	46	69	58	45	60	23	14	19	22	24	42	32	26	37	49	84	66	90	49	75	7	21	89.8
14-Nov	71	80	72	47	87	5	6	6	6	7	6	7	6	6	9	12	9	10	13	23	6	6	6	7	87.0
15-Nov	6	7	6	6	7	8	10	42	62	29	10	9	64	13	14	13	10	9	10	11	11	10	10	11	64.2
16-Nov	11	12	12	9	12	11	11	17	13	17	19	18	25	20	20	18	18	16	28	15	44	58	64	24	63.7
17-Nov	23	70	28	67	80	82	61	23	37	79	34	18	41	24	20	23	24	15	12	15	15	15	16	28	81.8
18-Nov	18	17	40	36	51	36	26	25	23	33	31	51	12	14	22	15	15	30	15	25	24	19	13	13	51.2
19-Nov	20	17	15	16	12	20	17	25	13	12	23	26	21	43	24	25	12	16	19	19	19	34	35	46	46.4
20-Nov	74	73	80	88	64	34	57	29	64	80	84	59	42	35	26	32	32	33	59	36	35	74	61	19	87.9
21-Nov	35	68	61	62	80	36	19	19	19	22	24	23	20	16	17	16	22	17	18	24	23	25	35	31	79.6
22-Nov	23	31	41	24	25	30	34	38	25	27	28	48	25	26	48	29	52	76	61	41	37	29	51	54	76.2
23-Nov	25	23	76	49	67	91	70	70	84	81	87	91	55	59	29	13	6	5	10	42	20	21	21	10	91.3
24-Nov	18	7	9	13	10	6	7	7	33	34	24	12	34	32	13	11	60	25	22	15	16	80	53	91	91.4
25-Nov	45	75	59	23	82	72	52	67	29	84	51	23	24	56	24	29	36	82	81	22	58	63	19	75	83.9
26-Nov	61	48	26	23	29	61	71	80	35	94	77	19	49	70	93	23	49	61	41	85	60	59	61	61	94.0
27-Nov	82	40	57	10	15	15	16	27	20	64	17	18	28	30	29	37	26	46	88	72	30	75	32	41	87.9
28-Nov	77	64	81	88	70	88	59	81	87	73	50	28	35	31	11	7	7	6	9	8	15	7	39	68	88.5
29-Nov	69	74	74	67	26	20	24	65	95	68	11	8	8	6	7	9	13	41	37	81	77	76	71	87	94.8
30-Nov	82	75	45	87	54	63	91	27	71	56	15	88	10	5	5	7	43	44	74	65	74	33	39	13	91.1
91.0 88.8 86.7 94.7 87.0 90.6 96.2 92.5 94.8 95.1 87.2 91.3 66.3 69.6 93.2 92.7 68.9 89.7 87.9 91.7 80.3 79.6 76.8 91.4																									

PAZA
Smoky Heights Station
Monthly Summary Tables, Graphs and
Roses

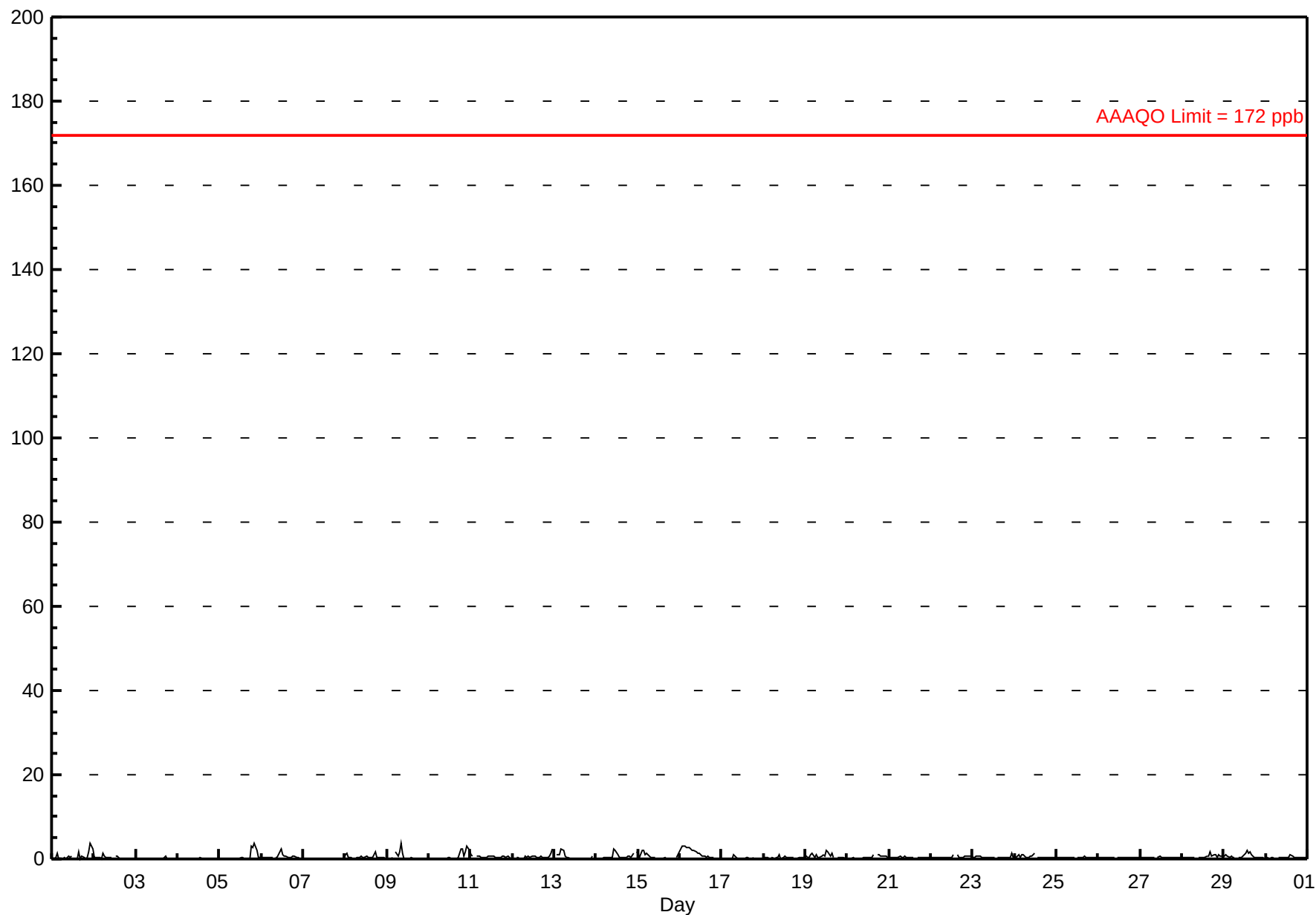
Hourly Averages

Sulphur Dioxide (SO₂) - ppb Smoky Heights - November 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 3.7 ppb on Nov 5 21:00 Maximum Daily Average: 1.4 ppb on Nov 16																				Hours in Service: 720 Hours of Data: 686 Hours of Missing Data: 34 Hours of Calibration: 34 Percent Operational Time: 100.0						
Minimum Value: 0 ppb on Nov 3 12:00 Maximum Diurnal Average: 0.6 ppb at hour 23 Monthly Average: 0.46 ppb																				Minimum Daily Average: 0.1 ppb on Nov 4 Minimum Diurnal Average: 0.4 ppb at hour 17 Percentiles: P ₁ = 0.0 P ₁₀ = 0.1 Q ₁ = 0.1 Median = 0.3 Q ₃ = 0.5 P ₉₀ = 1.0 P ₉₉ = 3.0						
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-Nov	0	0	0	1	0	0	0	0	0	1	0	1	A	0	0	2	0	1	0	0	0	2	4	2	0.7	3.6
2-Nov	0	0	0	0	0	1	1	0	0	0	0	A	1	1	0	0	0	0	0	0	0	0	0	0	0.3	1.3
3-Nov	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	1	0	0	0	0	0	0	0.1	0.8
4-Nov	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
5-Nov	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	3	3	4	2	0	0	0.6	3.7
6-Nov	0	0	0	0	0	0	0	A	0	0	1	2	1	1	1	0	0	1	1	1	0	0	0	0	0.5	2.2
7-Nov	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
8-Nov	1	1	0	0	0	A	0	0	0	1	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0.5	1.8
9-Nov	0	0	0	0	A	2	1	2	4	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0.5	3.6
10-Nov	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	1	2	3	2	0.7	3.1
11-Nov	1	1	A	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	0	1	0	0	0.5	0.9
12-Nov	0	A	0	0	0	0	0	1	0	1	1	1	1	1	0	0	1	0	0	0	0	1	1	2	0.5	2.4
13-Nov	A	1	1	1	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	A	0.5	2.2
14-Nov	0	0	0	0	0	0	0	0	0	0	2	2	1	0	0	0	0	0	1	1	0	1	A	2	0.6	2.4
15-Nov	1	0	2	2	1	1	1	0	0	0	0	C	C	C	0	0	0	0	0	0	0	A	1	1	0.6	2.1
16-Nov	2	3	3	3	3	3	2	2	2	2	1	1	1	1	1	0	1	0	0	0	A	0	0	0	1.4	3.1
17-Nov	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0.1	1.1
18-Nov	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	A	0	0	0	0	0	0.3	1.2
19-Nov	1	0	0	1	1	0	1	0	0	1	1	1	2	2	1	1	0	A	0	0	0	0	0	0	0.7	2.2
20-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	A	1	1	1	1	1	1	0	0.4	1.1
21-Nov	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.4	0.6
22-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	1	A	1	0	0	0	1	1	1	1	1	0.5	1.2
23-Nov	0	0	1	1	1	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	1	0	0.4	1.4
24-Nov	1	0	1	0	1	1	0	0	0	1	1	1	A	0	0	0	0	0	0	0	0	0	0	0	0.5	1.4
25-Nov	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	1	0	0	0	0	0	0	0	0.4	0.5
26-Nov	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
27-Nov	0	0	0	0	0	0	0	0	0	0	A	0	1	0	0	0	0	0	0	0	0	0	0	0	0.3	0.6
28-Nov	0	0	0	0	0	0	0	0	A	0	0	0	0	0	1	1	2	1	1	1	0	1	1	1	0.5	1.6
29-Nov	1	1	1	0	1	0	0	A	0	0	0	1	2	2	1	2	1	0	0	0	0	0	0	0	0.7	2.1
30-Nov	0	0	0	0	0	0	A	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0.3	0.9
0.4 0.4 0.4 0.5 0.5 0.5 0.4 0.4 0.5 0.4 0.5 0.5 0.5 0.5 0.4 0.5 0.4 0.4 0.5 0.5 0.4 0.5 0.6 0.5																								Diurnal Average		
2.3 3.1 3.1 3.0 2.7 2.6 2.5 2.2 3.6 1.7 2.4 2.2 2.2 2.1 1.2 1.7 1.6 1.8 3.0 2.8 3.7 2.0 3.6 2.4																								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
Smoky Heights - November 2013



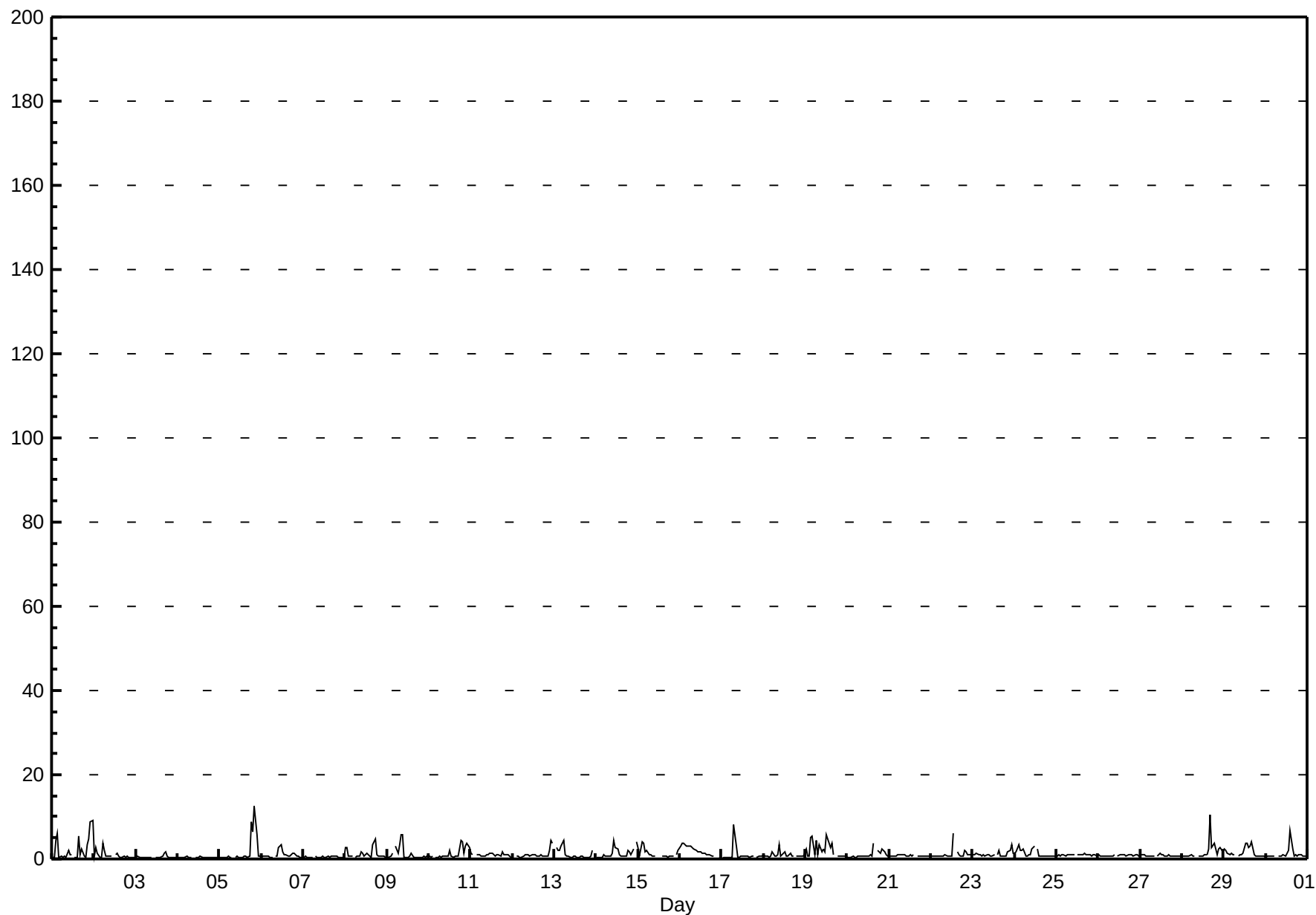
Hourly Maximums

Sulphur Dioxide (SO₂) - ppb Smoky Heights - November 2013

Maximum Value: 12.4 ppb on Nov 5 21:00																				Maximum Daily Average: 2.4 ppb on Nov 1										Hours in Service: 720	
Minimum Value: 0 ppb on Nov 17 01:00																				Minimum Daily Average: 0.4 ppb on Nov 4										Hours of Data: 686	
Maximum Diurnal Average: 1.4 ppb at hour 23																				Minimum Diurnal Average: 0.9 ppb at hour 7										Hours of Missing Data: 34	
Monthly Average: 1.19 ppb																				Percentiles: P ₁ = 0.2 P ₁₀ = 0.4 Q ₁ = 0.5 Median = 0.8 Q ₃ = 1.1 P ₉₀ = 2.7 P ₉₉ = 6.4										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-Nov	0	0	5	6	0	1	0	1	0	2	1	1	A	1	0	5	1	2	1	0	3	5	9	9	2.4	9.3					
2-Nov	1	3	1	0	0	4	2	1	1	1	1	A	1	1	1	0	0	1	0	1	0	0	0	1	0.9	3.9					
3-Nov	0	1	0	0	0	0	0	0	0	0	A	0	0	0	0	1	1	2	1	0	0	0	0	0	0.5	1.7					
4-Nov	0	0	0	0	0	1	0	0	0	A	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0.4	0.6					
5-Nov	0	0	0	0	0	1	0	0	A	0	1	0	0	0	1	1	0	1	9	7	12	6	1	1	1.9	12.4					
6-Nov	0	1	1	1	1	0	0	A	1	1	3	3	2	1	1	1	1	1	1	1	1	0	0	1.0	3.5						
7-Nov	0	1	0	0	0	0	A	1	0	0	0	1	0	0	1	0	1	1	1	1	0	1	0	0	0.5	0.6					
8-Nov	3	3	1	1	1	A	0	1	1	2	1	1	1	1	1	0	3	5	1	1	1	1	1	1	1.2	4.8					
9-Nov	0	0	1	1	A	3	1	3	6	6	0	0	0	1	1	0	0	0	0	0	0	1	0	1	1.3	5.8					
10-Nov	1	0	1	A	0	0	1	0	1	1	1	1	2	1	1	1	1	1	4	4	1	3	4	3	1.3	4.4					
11-Nov	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	0	1.0	1.6					
12-Nov	0	A	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	4	4	1.1	4.2					
13-Nov	A	3	2	2	3	5	1	1	1	0	0	1	1	0	0	1	1	0	0	0	0	1	2	A	1.1	4.6					
14-Nov	0	0	0	0	1	1	1	1	1	1	5	3	2	1	1	1	1	1	2	2	1	2	A	4	1.3	4.6					
15-Nov	3	1	4	4	2	2	1	1	1	1	1	C	C	C	1	1	1	0	1	1	1	A	1	2	1.3	4.0					
16-Nov	3	4	4	4	3	3	3	3	2	2	2	2	2	1	1	1	1	1	1	1	A	0	0	0	1.9	3.6					
17-Nov	0	0	0	0	0	0	0	8	3	0	0	1	1	1	1	1	0	1	1	A	0	1	1	1	0.9	8.2					
18-Nov	1	1	1	0	1	2	1	1	1	4	1	1	2	1	1	1	1	1	A	1	1	1	1	1	0.9	3.5					
19-Nov	2	1	1	5	6	1	4	1	3	2	2	2	6	5	3	4	1	A	1	1	1	1	1	1	2.3	5.7					
20-Nov	0	0	0	1	0	0	1	1	1	1	1	1	1	1	1	4	A	2	2	2	2	2	1	1	1.0	3.6					
21-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	0.8	1.0					
22-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	6	A	2	1	1	1	2	2	1	1	1	1.2	6.1					
23-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	2	1	1	1	1	2	2	4	1	1.1	3.5					
24-Nov	1	2	3	2	2	2	1	1	1	1	3	3	A	2	1	1	1	1	1	1	1	1	1	1	1.4	3.4					
25-Nov	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.2					
26-Nov	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.2					
27-Nov	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.2					
28-Nov	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	3	11	3	4	2	1	2	3	2	1.8	10.6					
29-Nov	3	2	1	1	1	1	1	A	1	1	1	1	4	4	3	3	4	1	1	1	1	1	1	1	1.6	4.2					
30-Nov	0	1	1	1	1	1	A	1	1	1	1	1	1	2	7	3	1	1	1	1	1	1	1	1	1.2	6.9					
1.0		1.0	1.2	1.3	1.1	1.2	0.9	1.1	1.1	1.2	1.1	1.1	1.3	1.3	1.1	1.3	1.3	1.0	1.3	1.2	1.3	1.3	1.4	1.3	Diurnal Average						
3.1		3.6	4.5	6.2	5.5	4.6	4.3	8.2	5.8	5.8	4.6	3.5	5.7	6.1	6.9	5.3	10.6	4.8	8.7	6.5	12.4	5.9	9.0	9.3	Diurnal Maximum						
C - Calibration		A - Automated Daily Zero Span																													

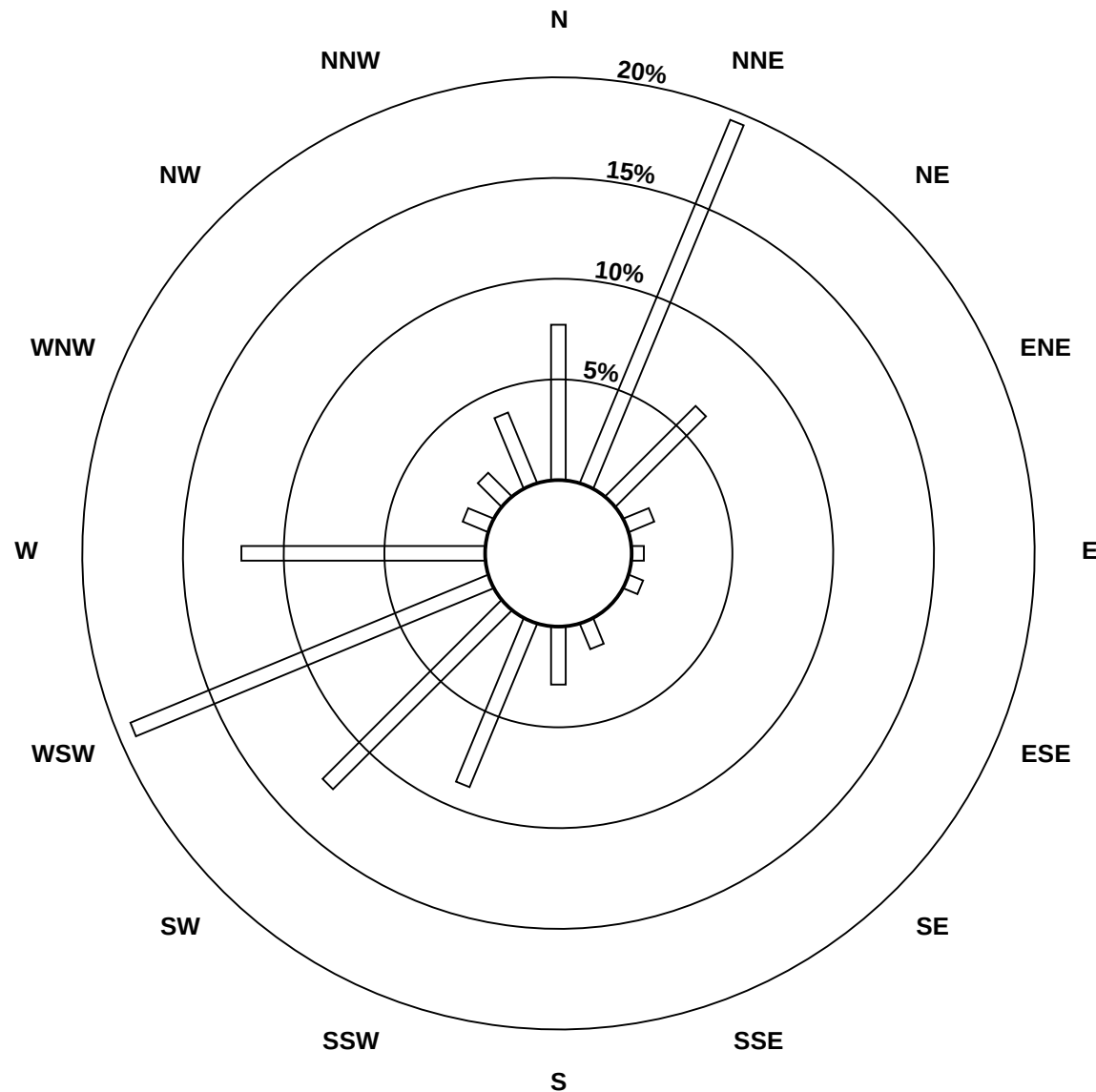
Hourly Maximums

Sulphur Dioxide (SO₂) - ppb
Smoky Heights - November 2013

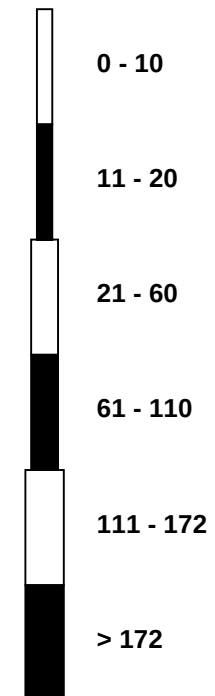


Pollutant Rose

Sulphur Dioxide (SO₂) - ppb
Smoky Heights - November 2013

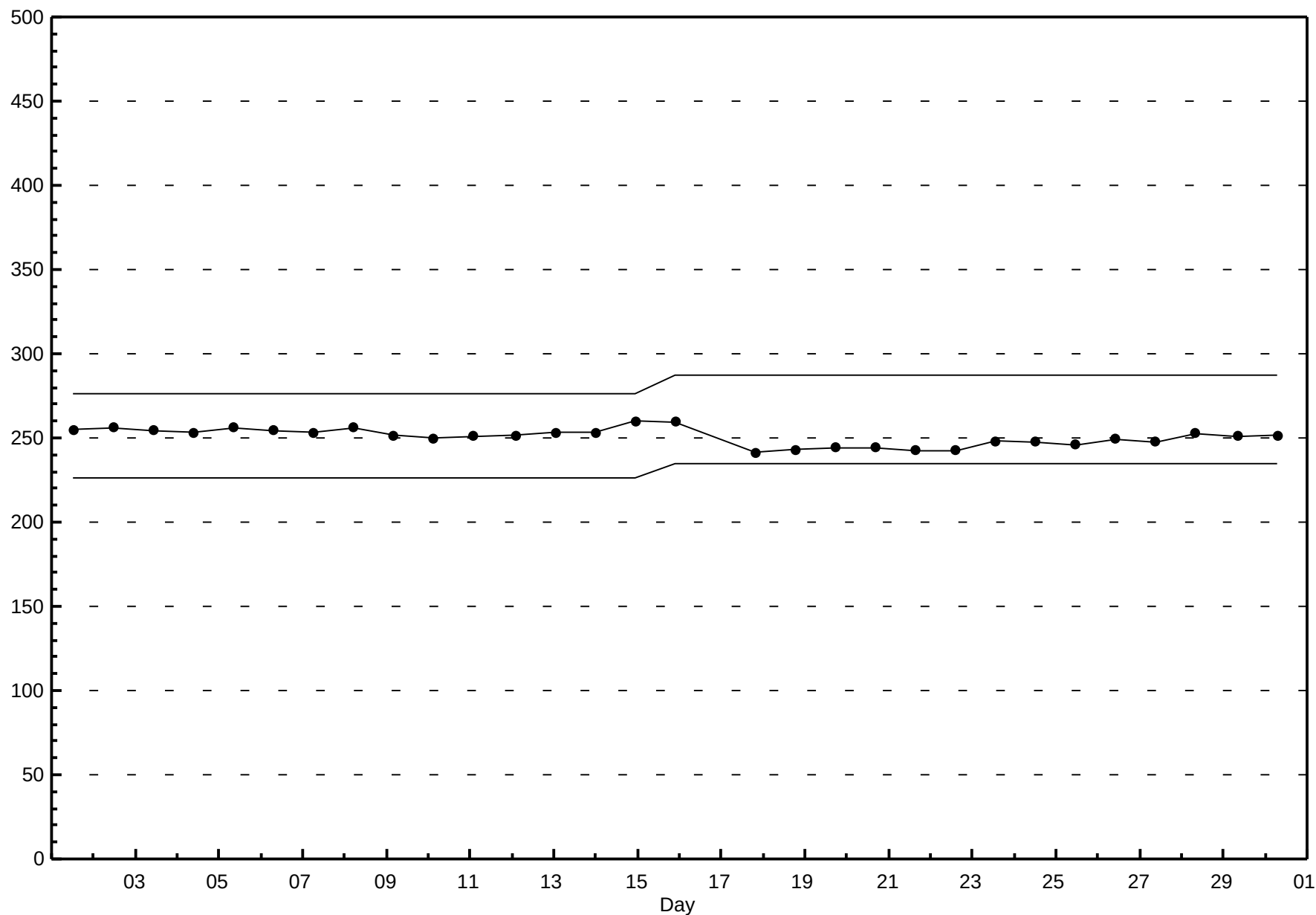


Pollutant Classes (ppb)



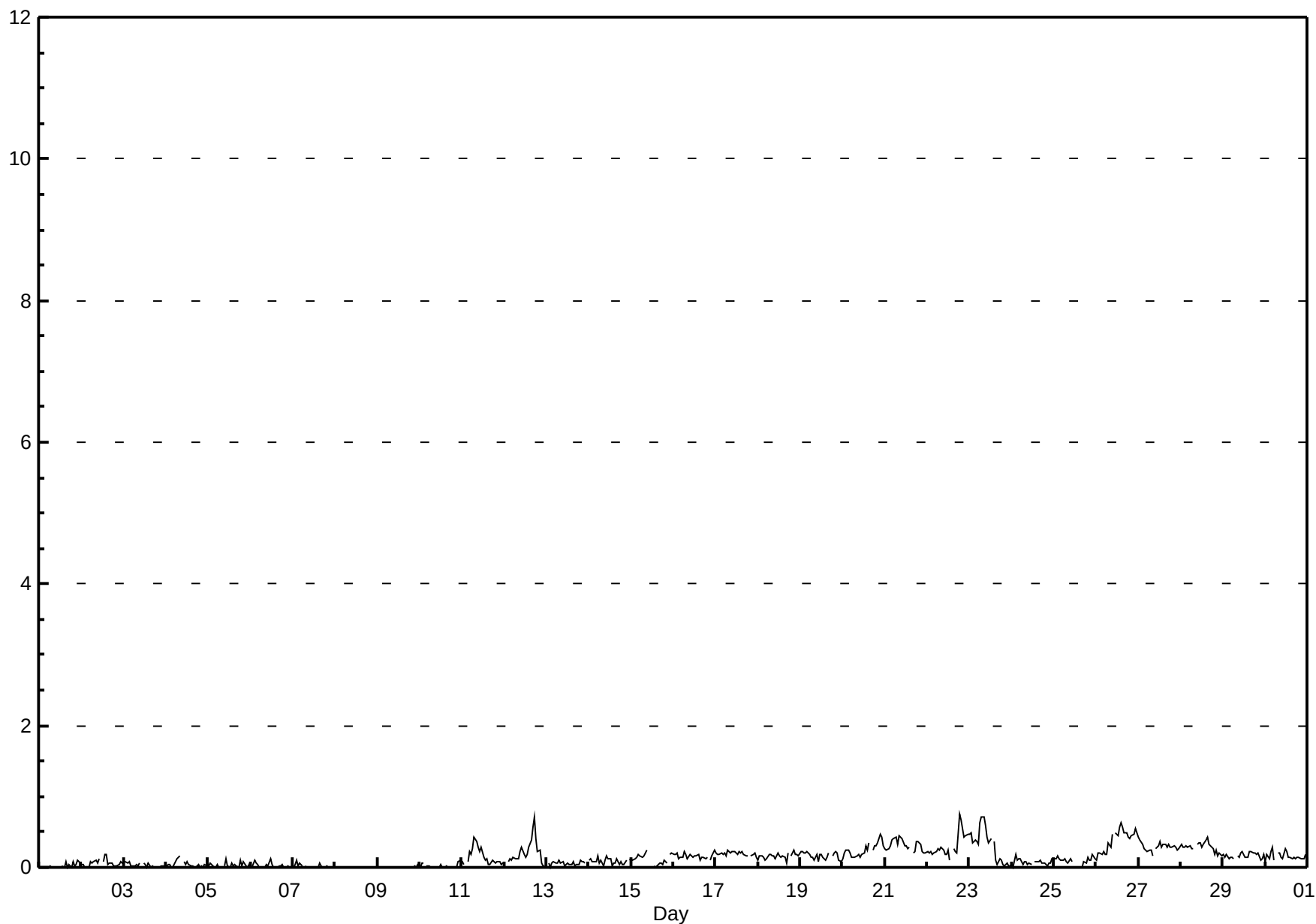
Span Responses

Sulphur Dioxide (SO₂)
Smoky Heights - November 2013



Hourly Averages

Total Reduced Sulphur (TRS) - ppb
Smoky Heights - November 2013



Hourly Maximums

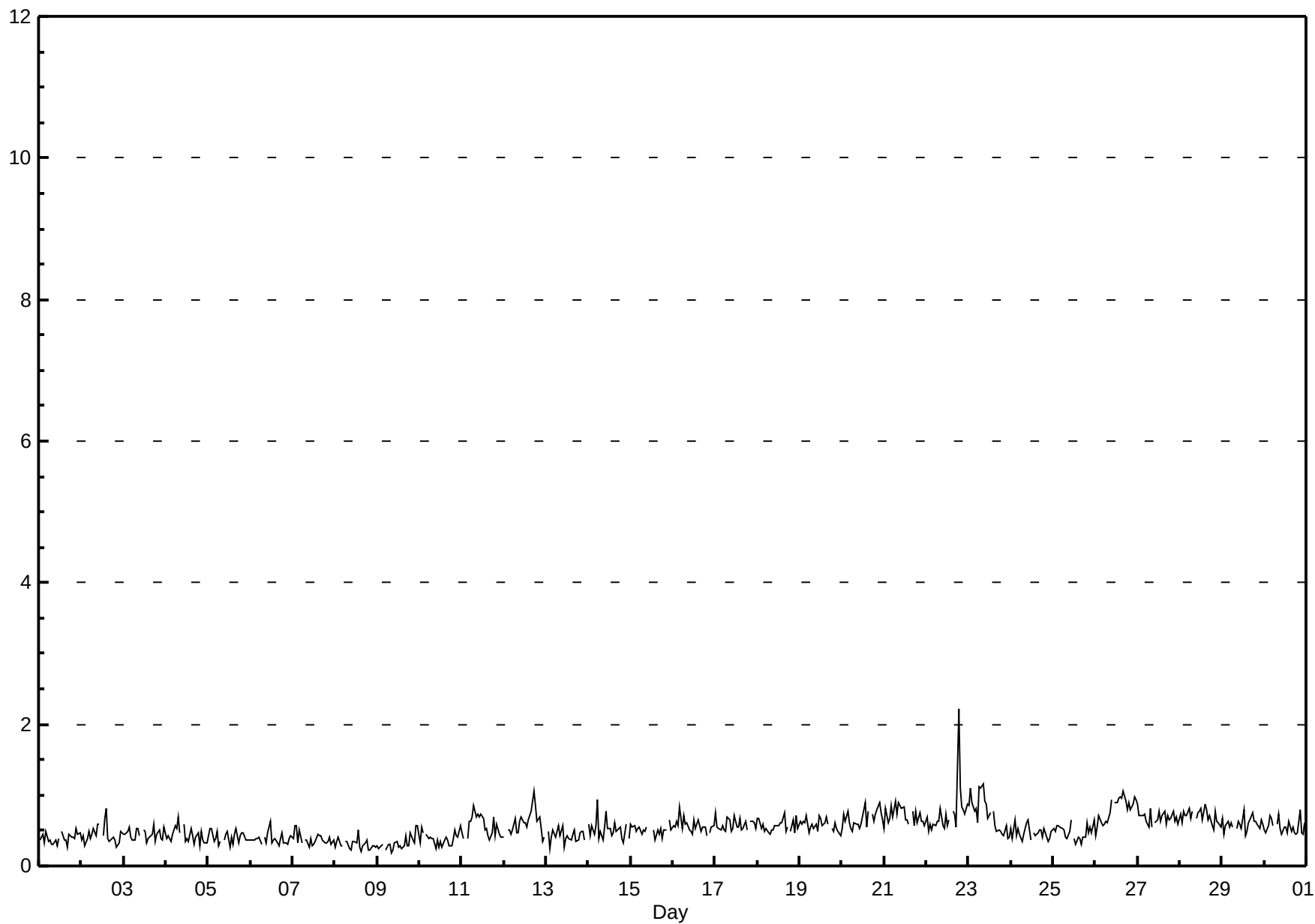
Total Reduced Sulphur (TRS) - ppb

Smoky Heights - November 2013

Maximum Value: 2.2 ppb on Nov 22 19:00																				Maximum Daily Average: 0.8 ppb on Nov 26										Hours in Service: 720	
Minimum Value: 0 ppb on Nov 9 09:00																				Minimum Daily Average: 0.3 ppb on Nov 8										Hours of Data: 686	
Maximum Diurnal Average: 0.6 ppb at hour 8																				Minimum Diurnal Average: 0.5 ppb at hour 22										Hours of Missing Data: 34	
Monthly Average: 0.53 ppb																				Percentiles: P ₁ = 0.2 P ₁₀ = 0.3 Q ₁ = 0.4 Median = 0.5 Q ₃ = 0.6 P ₉₀ = 0.8 P ₉₉ = 1.1										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-Nov	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	1	0	0	0.4	0.5					
2-Nov	0	0	0	0	0	0	0	1	0	1	1	A	0	1	1	0	0	0	0	0	0	0	0	0	0.4	0.8					
3-Nov	0	0	0	1	0	0	0	1	1	0	A	0	0	0	0	0	0	1	0	0	1	0	0	1	0.4	0.6					
4-Nov	0	0	0	0	0	1	1	1	0	A	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0.4	0.7					
5-Nov	0	1	1	0	0	0	0	0	A	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0.4	0.5					
6-Nov	0	0	0	0	0	0	0	A	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.6					
7-Nov	0	1	1	0	1	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.6					
8-Nov	0	0	0	0	0	A	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0.3	0.5					
9-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.3	0.6					
10-Nov	0	1	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0.4	0.6					
11-Nov	0	0	A	0	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	0	1	0	0	0	0.6	0.9					
12-Nov	0	A	1	1	0	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0.6	1.1					
13-Nov	A	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	A	0.4	0.6					
14-Nov	1	0	1	0	1	1	0	0	0	1	1	1	1	0	0	1	0	1	1	0	0	1	A	0	0.5	0.9					
15-Nov	1	1	1	0	1	1	0	1	0	1	C	C	C	1	0	0	0	1	0	1	1	A	1	1	0.5	0.7					
16-Nov	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	0	1	1	0	A	0	1	1	0.6	0.8					
17-Nov	1	1	1	1	1	0	0	1	1	0	1	1	1	1	1	1	1	1	1	A	1	1	1	1	0.6	0.7					
18-Nov	1	1	1	1	0	1	0	0	1	1	1	1	1	1	1	1	0	1	A	1	0	1	0	1	0.6	0.8					
19-Nov	1	1	1	1	1	0	1	1	1	1	0	1	1	1	1	1	1	A	1	0	1	1	0	0	0.6	0.7					
20-Nov	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	0.7	0.9					
21-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	0.7	0.9					
22-Nov	1	0	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	2	1	1	1	1	1	0.7	2.2					
23-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	0	1	0	0	0	1	0	0	0.7	1.2					
24-Nov	1	0	1	0	1	0	0	0	1	1	1	0	A	0	0	0	1	1	0	1	0	0	0	0	0.5	0.7					
25-Nov	1	0	1	1	1	1	1	0	0	0	1	A	0	0	0	0	0	0	0	1	0	1	0	1	0.5	0.7					
26-Nov	0	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.1					
27-Nov	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	0.9					
28-Nov	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	0.9					
29-Nov	1	0	1	1	1	1	1	A	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	0.6	0.8					
30-Nov	1	0	1	1	1	1	A	1	1	1	0	1	1	0	1	0	1	0	0	0	1	0	0	1	0.6	0.8					
																									Diurnal Average						
																									Diurnal Maximum						
C - Calibration																									A - Automated Daily Zero Span						

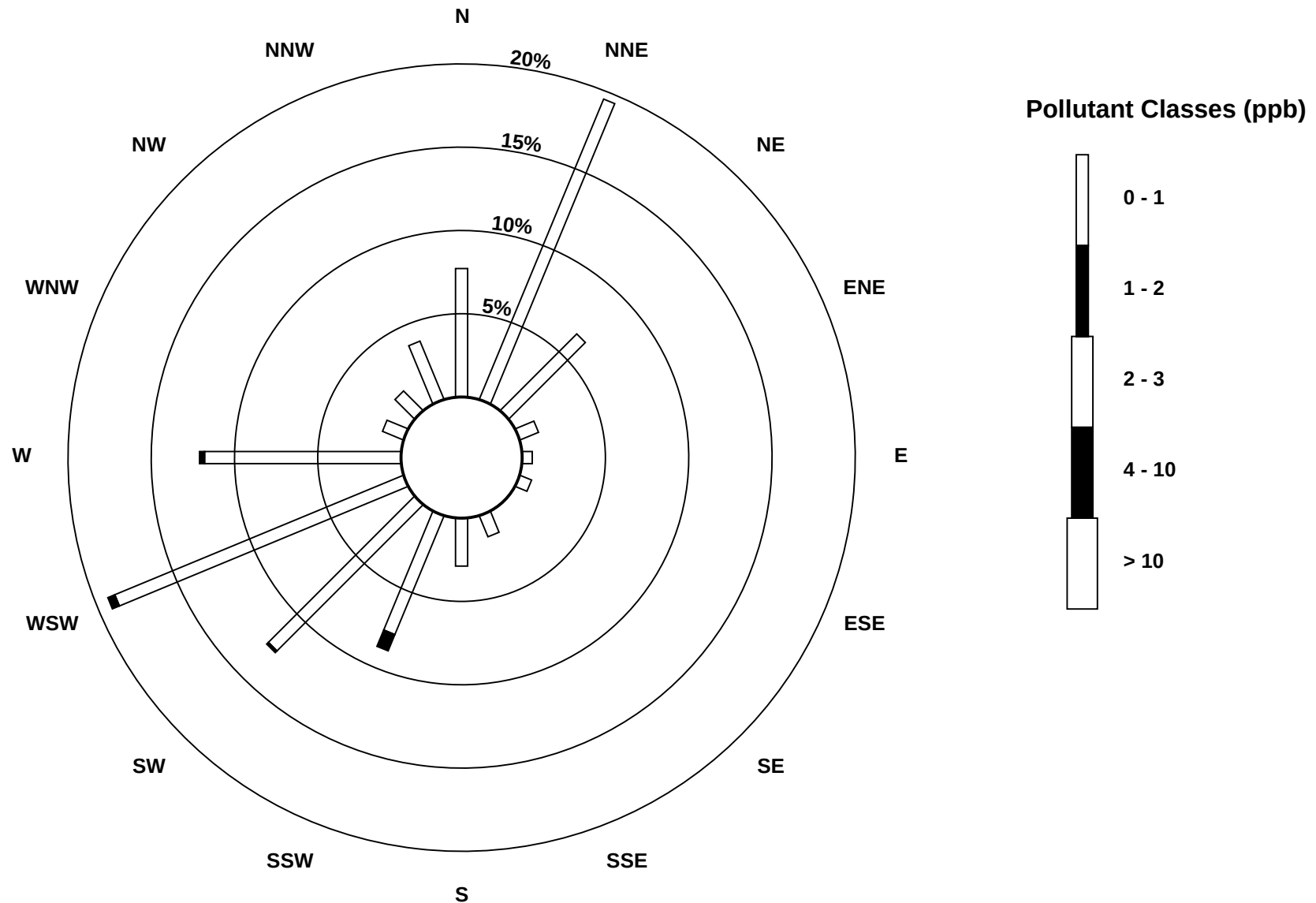
Hourly Maximums

Total Reduced Sulphur (TRS) - ppb
Smoky Heights - November 2013



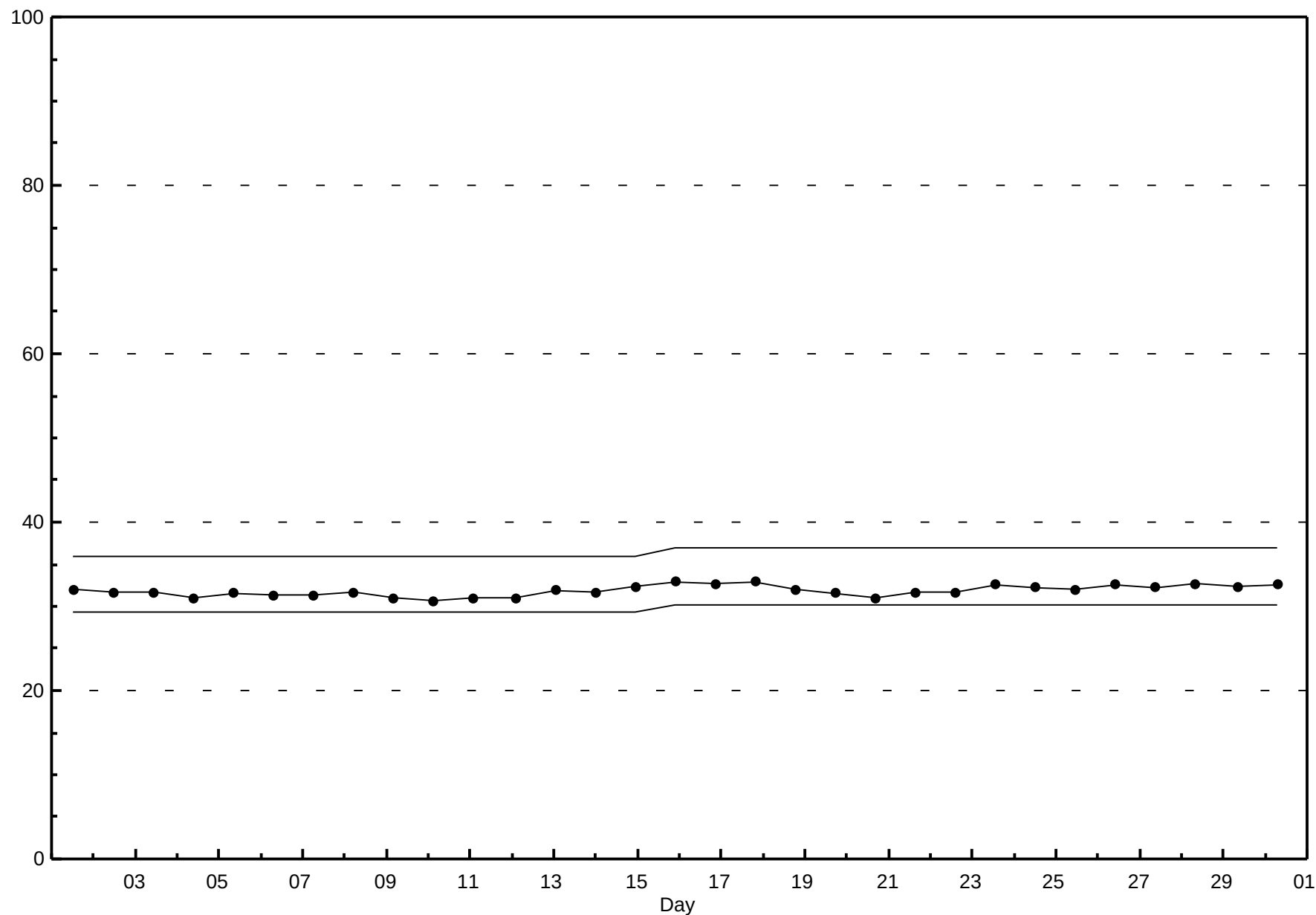
Pollutant Rose

Total Reduced Sulphur (TRS) - ppb
Smoky Heights - November 2013



Span Responses

Total Reduced Sulphur (TRS)
Smoky Heights - November 2013

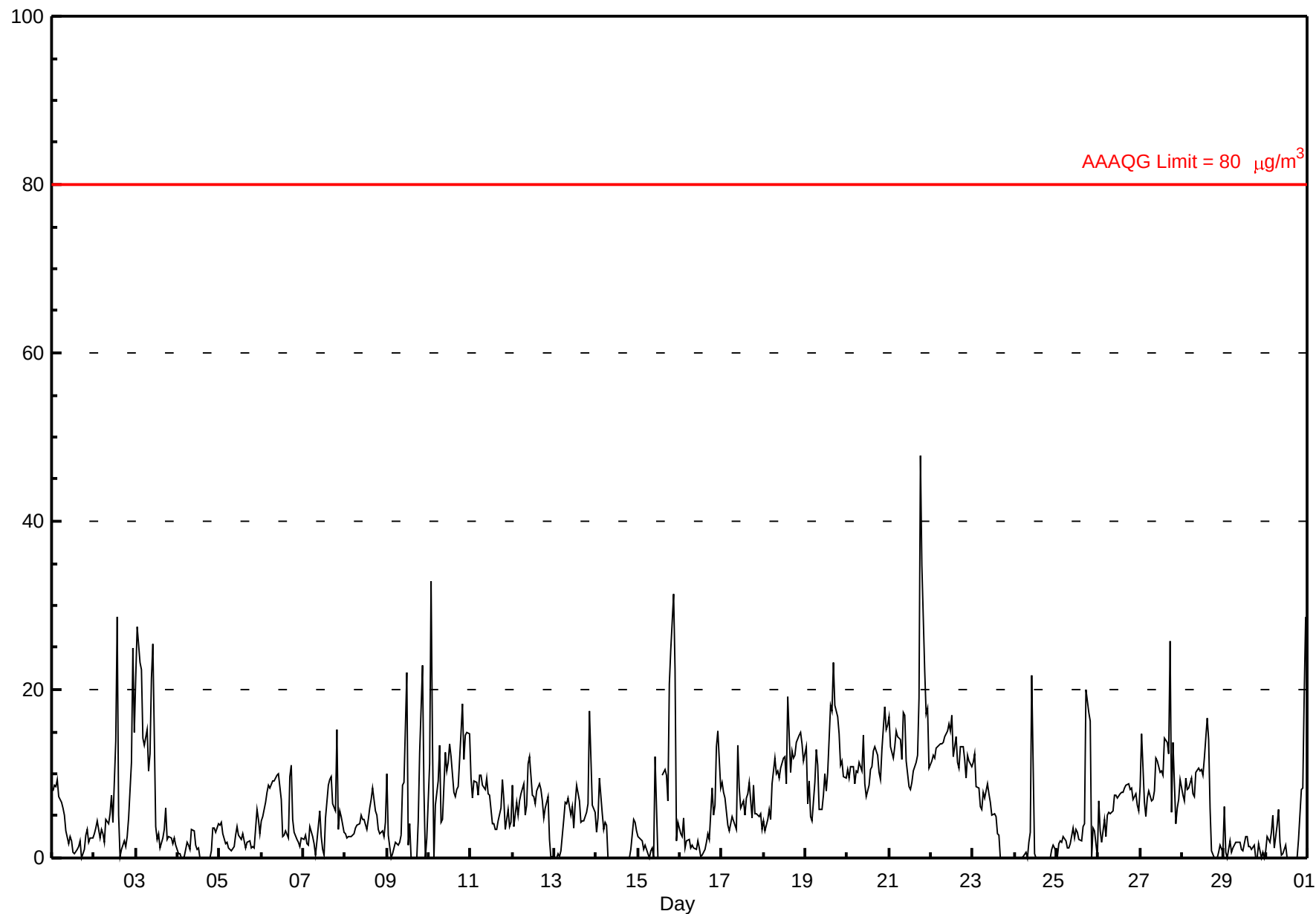


Hourly Averages

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

Smoky Heights - November 2013

Number of Exceedences: 1-hr: 0 24-hr: 0 Maximum Value: 47.8 µg/m³ on Nov 21 19:00 Minimum Value: 0 µg/m³ on Nov 1 18:00 Maximum Diurnal Average: 8.1 µg/m³ at hour 20 Monthly Average: 6.44 µg/m³																					Maximum Daily Average: 16.0 µg/m³ on Nov 21 Minimum Daily Average: 1.3 µg/m³ on Nov 4 Minimum Diurnal Average: 5.1 µg/m³ at hour 5 Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 1.9 Median = 5.0 Q ₃ = 9.6 P ₉₀ = 13.7 P ₉₉ = 26.8					Hours in Service: 720 Hours of Data: 719 Hours of Missing Data: 1 Hours of Calibration: 0 Percent Operational Time: 99.9	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Nov	8	9	9	9	7	7	6	5	3	2	3	2	1	1	1	1	2	0	1	3	3	2	2	2	3.7	9.3	
2-Nov	3	4	4	2	3	3	2	4	4	5	7	4	14	29	5	0	1	2	1	3	5	11	25	15	6.6	28.7	
3-Nov	22	28	23	22	14	13	15	10	12	21	25	4	2	3	1	2	3	6	2	3	2	2	2	2	10.1	27.5	
4-Nov	0	1	0	0	0	2	2	1	3	3	2	1	1	0	0	0	0	0	0	1	4	3	3	4	1.3	4.1	
5-Nov	4	4	3	2	2	1	1	1	1	3	4	3	2	3	2	1	2	2	1	1	1	6	5	3	2.4	5.7	
6-Nov	4	5	7	8	9	8	9	9	9	10	10	7	3	3	3	2	10	11	5	3	2	2	1	2	5.9	11.0	
7-Nov	2	3	2	1	4	3	2	0	2	6	2	1	0	5	9	9	10	7	6	15	3	6	5	3	4.4	15.3	
8-Nov	3	2	3	3	3	3	4	4	4	5	5	5	3	5	6	7	8	6	5	3	3	3	3	4	4.1	8.3	
9-Nov	10	3	0	0	1	2	2	2	3	9	9	22	1	4	0	0	0	0	4	13	23	8	0	2	4.9	22.8	
10-Nov	11	33	14	0	6	9	13	4	5	13	10	11	14	12	8	7	8	8	15	18	12	15	15	15	11.5	32.9	
11-Nov	9	7	9	9	8	10	10	9	8	10	8	7	4	4	3	3	4	6	9	7	3	6	4	4	6.8	9.9	
12-Nov	9	4	7	5	7	8	9	5	6	11	12	7	7	6	8	9	8	7	5	6	7	2	0	0	6.5	12.1	
13-Nov	0	0	0	0	1	5	7	6	7	5	6	4	6	9	7	4	4	4	5	6	18	12	6	5	5.4	17.5	
14-Nov	3	5	9	5	3	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	4	3	2.0	9.4	
15-Nov	2	2	2	1	2	1	0	1	1	0	12	0	0	M	10	11	10	7	21	25	31	22	2	4	7.3	31.3	
16-Nov	3	3	5	1	2	2	1	1	1	1	2	1	0	0	1	2	3	2	8	5	6	13	15	8	3.7	15.1	
17-Nov	9	8	7	4	3	4	5	4	3	13	8	6	7	5	7	8	9	5	9	5	5	5	5	3	6.2	13.4	
18-Nov	4	3	5	6	5	9	12	10	10	10	11	12	12	9	19	10	13	12	12	14	15	15	13	12	10.5	19.1	
19-Nov	13	6	9	5	4	9	13	11	6	6	7	10	8	10	18	17	23	18	17	15	11	12	10	10	11.2	23.3	
20-Nov	11	10	11	11	9	10	10	11	10	15	9	7	9	10	11	13	13	12	10	9	13	18	15	16	11.4	17.9	
21-Nov	17	13	12	13	15	14	14	12	17	17	12	9	8	9	10	11	12	19	48	35	22	17	18	11	16.0	47.8	
22-Nov	11	12	12	13	13	14	14	14	14	15	16	15	17	12	14	11	11	13	13	12	9	12	12	11	13.0	17.0	
23-Nov	11	12	9	8	6	6	8	7	9	8	7	5	5	5	3	3	0	0	0	0	0	0	0	0	4.6	12.3	
24-Nov	0	0	0	0	0	0	1	0	2	3	22	1	0	0	0	0	0	0	0	0	0	1	1	1	1.3	21.7	
25-Nov	0	2	2	2	2	2	1	1	2	4	2	3	3	2	2	4	4	20	17	16	0	4	3	0	4.1	19.9	
26-Nov	7	3	2	4	3	5	5	5	6	7	7	7	8	8	8	8	9	9	8	8	7	8	6	6	6.4	8.8	
27-Nov	9	15	7	5	7	8	7	7	8	12	12	10	10	10	14	14	12	26	5	14	4	6	7	9	9.9	25.8	
28-Nov	8	7	10	8	8	10	8	7	10	11	10	11	10	12	17	14	6	1	0	0	0	1	2	1	7.0	16.5	
29-Nov	6	1	0	2	1	1	1	2	2	2	1	1	3	3	1	1	1	2	0	0	2	0	1	0	1.3	6.1	
30-Nov	1	3	2	3	5	1	4	6	2	0	1	2	0	0	0	0	0	0	0	2	8	8	20	29	4.0	28.6	
6.7 6.8 6.1 5.2 5.1 5.8 6.3 5.4 5.8 7.5 8.0 5.9 5.3 6.1 6.3 5.8 6.2 6.8 7.6 8.1 7.4 7.5 6.8 6.2																									Diurnal Average		
21.5 32.9 23.2 22.4 15.1 14.3 15.2 13.7 17.3 21.4 25.4 22.0 17.0 28.7 19.1 17.4 23.3 25.8 47.8 34.8 31.3 22.4 25.0 28.6																									Diurnal Maximum		
M - Maintenance																											
Alberta Ambient Air Quality Guideline (AAQG): 1-hr 80 µg/m³ Alberta Ambient Air Quality Objective (AAQO): 24-hr 30 µg/m³																											



Hourly Maximums

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

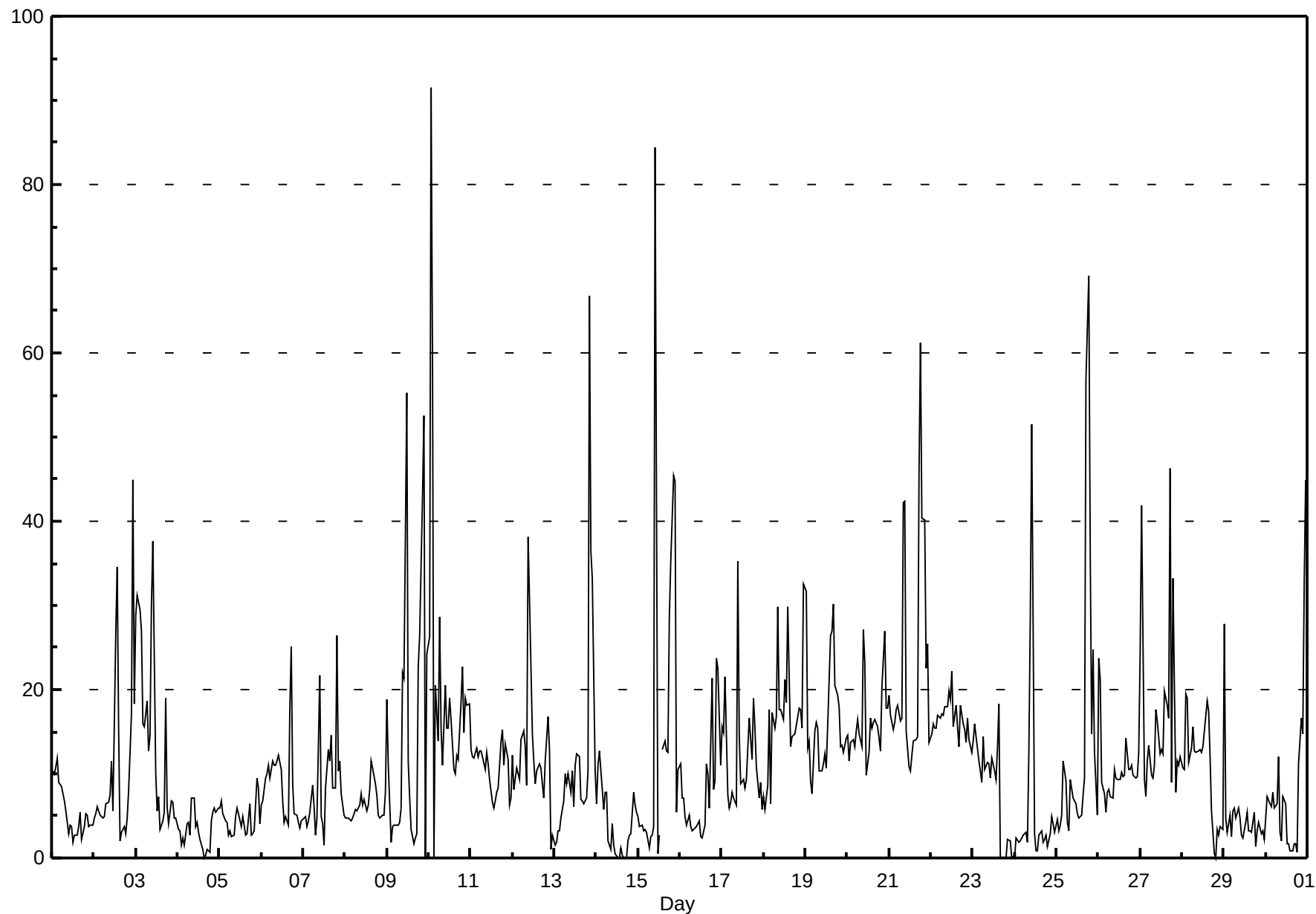
Smoky Heights - November 2013

Maximum Value: 91.6 μg/m ³ on Nov 10 02:00																								Maximum Daily Average: 23.3 μg/m ³ on Nov 21								Hours in Service: 720	
Minimum Value: 0 μg/m ³ on Nov 9 23:00																								Minimum Daily Average: 3.4 μg/m ³ on Nov 4								Hours of Data: 719	
Maximum Diurnal Average: 16.1 μg/m ³ at hour 11																								Minimum Diurnal Average: 8.4 μg/m ³ at hour 5								Hours of Missing Data: 1	
Monthly Average: 11.36 μg/m ³																								Percentiles: P ₁ = 0.0 P ₁₀ = 2.7 Q ₁ = 4.7 Median = 9.3 Q ₃ = 14.7 P ₉₀ = 21.2 P ₉₉ = 54.9								Hours of Calibration: 0	
																								Percent Operational Time: 99.9									
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24									
1-Nov	10	10	11	12	9	8	8	7	6	3	4	4	2	3	3	4	5	2	4	5	5	4	4	4	5.6	11.8							
2-Nov	5	5	6	5	5	5	5	6	7	7	12	6	27	35	15	2	3	4	3	5	8	17	45	18	10.6	44.9							
3-Nov	29	31	30	27	16	16	19	13	15	30	38	10	6	7	3	4	5	19	6	4	7	7	5	5	14.6	37.7							
4-Nov	3	3	2	2	1	4	4	3	7	7	4	4	3	2	1	0	0	1	1	4	5	6	5	6	3.4	7.1							
5-Nov	6	7	5	4	4	3	3	3	3	5	6	5	4	5	4	3	3	6	3	3	3	10	8	4	4.6	9.5							
6-Nov	6	7	10	10	11	10	12	11	11	12	12	10	7	4	5	4	18	25	9	5	5	4	3	4	9.0	25.2							
7-Nov	5	5	4	4	5	9	6	3	5	22	5	4	1	8	13	12	15	8	8	26	10	12	8	5	8.4	26.4							
8-Nov	5	5	5	4	5	5	6	6	6	8	6	7	6	6	8	12	11	9	7	5	5	5	5	8	6.4	11.5							
9-Nov	19	11	2	4	4	4	4	4	6	22	21	55	11	7	3	2	2	3	23	26	43	53	0	24	14.7	55.2							
10-Nov	26	92	59	0	20	14	29	15	11	21	15	15	19	16	11	10	12	12	18	23	15	19	18	18	21.2	91.6							
11-Nov	13	12	12	13	12	13	13	12	11	13	11	9	7	6	7	8	8	14	15	11	13	12	6	7	10.7	15.2							
12-Nov	12	8	11	10	9	14	15	13	9	38	31	15	12	9	10	11	11	9	7	12	17	13	1	3	12.4	38.2							
13-Nov	2	2	3	3	5	7	10	9	10	8	10	6	11	12	12	7	7	6	7	10	67	36	33	10	12.3	66.7							
14-Nov	6	11	13	8	6	8	8	2	1	4	1	0	0	0	1	0	0	0	2	3	3	8	6	5	4.1	12.7							
15-Nov	5	4	4	3	3	3	1	3	3	4	84	1	3	M	13	14	13	13	29	35	45	45	5	11	14.9	84.4							
16-Nov	11	7	7	5	4	5	4	3	3	4	4	4	3	2	4	11	10	6	21	8	9	24	22	11	8.1	23.7							
17-Nov	16	15	22	7	6	7	8	7	6	35	15	9	9	8	9	13	17	12	19	15	11	7	9	6	12.0	35.2							
18-Nov	7	6	9	18	6	17	15	17	30	18	18	16	21	18	30	13	14	15	15	16	18	18	15	32	16.7	32.5							
19-Nov	32	13	14	9	8	15	16	15	10	10	11	12	11	16	26	27	30	21	19	18	13	13	13	14	16.1	31.7							
20-Nov	15	12	14	14	13	15	16	15	13	27	23	10	13	17	15	16	16	16	14	13	20	27	18	18	16.2	27.1							
21-Nov	19	17	15	16	18	18	16	17	42	42	15	11	10	12	14	14	14	45	61	40	40	22	25	14	23.3	61.1							
22-Nov	15	16	15	16	17	17	17	17	18	18	20	19	22	16	18	16	13	18	16	15	14	17	14	13	16.4	22.2							
23-Nov	14	16	14	12	10	9	14	11	11	11	10	12	10	9	13	18	0	0	0	0	2	2	0	0	8.3	18.3							
24-Nov	0	2	2	2	2	3	3	2	13	29	52	3	1	1	3	3	2	2	3	1	3	5	4	3	5.9	51.6							
25-Nov	4	3	4	5	12	9	4	3	9	7	7	6	5	5	5	7	10	57	69	37	15	25	13	5	13.6	69.2							
26-Nov	24	21	9	8	5	8	8	7	7	11	10	9	9	10	10	10	14	11	11	11	10	10	10	13	10.6	23.7							
27-Nov	24	42	9	7	12	13	10	10	11	18	16	12	13	12	20	18	17	46	9	33	8	12	11	12	16.5	46.2							
28-Nov	11	11	20	19	11	13	16	13	13	13	13	13	13	15	19	17	12	6	1	0	3	3	4	3	10.8	19.5							
29-Nov	28	5	3	5	3	6	6	5	6	5	3	2	4	5	3	3	3	5	1	3	4	3	3	2	4.9	27.9							
30-Nov	5	7	6	6	8	6	6	12	3	2	7	6	2	2	1	1	2	2	1	11	17	15	33	45	8.6	45.0							
12.5 13.5 11.3 8.7 8.4 9.4 10.1 8.7 10.2 15.0 16.1 9.9 8.8 9.3 10.0 9.3 9.6 13.0 13.4 13.3 14.6 15.0 11.6 10.8																								Diurnal Average									
31.7 91.6 59.4 27.0 20.5 18.2 28.6 16.9 42.3 42.3 84.4 55.2 26.6 34.6 29.8 26.9 30.1 56.8 69.2 40.3 66.7 52.5 44.9 45.0																								Diurnal Maximum									
M - Maintenance																																	

Hourly Maximums

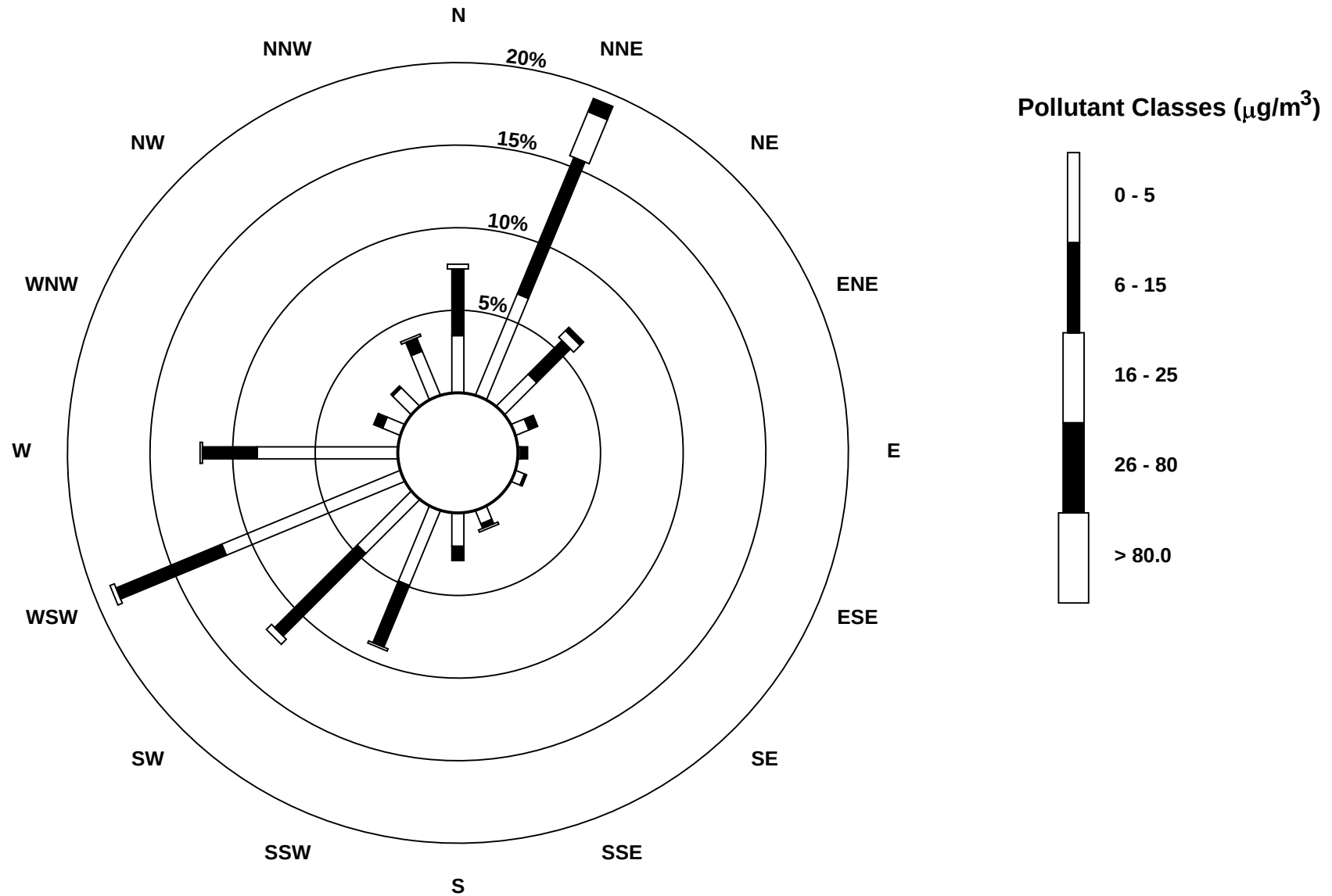
Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$

Smoky Heights - November 2013



Pollutant Rose

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Smoky Heights - November 2013



Hourly Averages

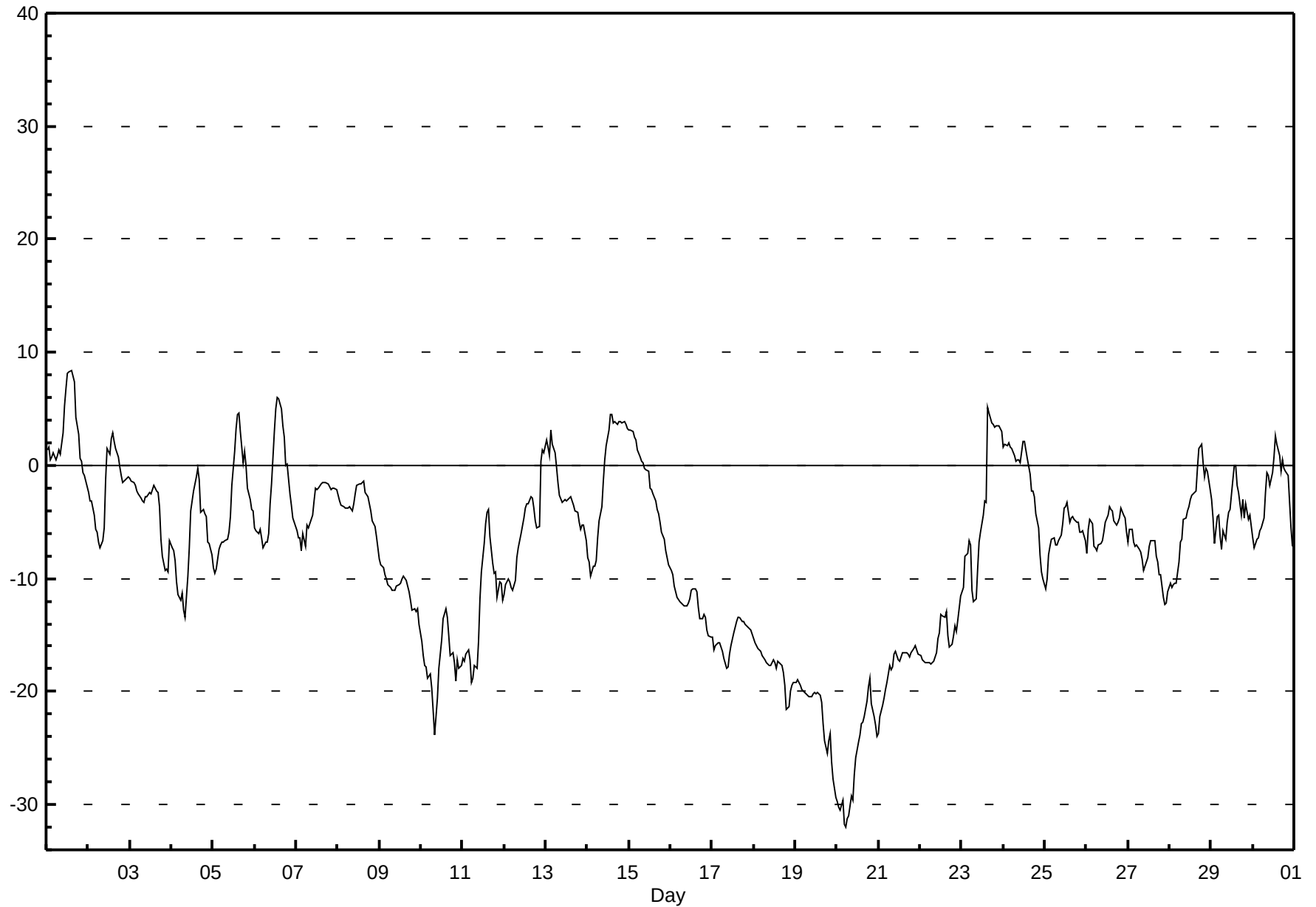
External Temperature (ET) - °C

Smoky Heights - November 2013

Number of Exceedences (AAQO): Maximum Value: 8.4 °C on Nov 1 15:00																				1-hr: 0 24-hr: 0 Maximum Daily Average: 2.9 °C on Nov 1					Hours in Service: 720 Hours of Data: 720 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0				
Minimum Value: -32 °C on Nov 20 06:00 Maximum Diurnal Average: -4.9 °C at hour 16 Monthly Average: -7.84 °C										Minimum Daily Average: -26.0 °C on Nov 20 Minimum Diurnal Average: -9.7 °C at hour 7 Percentiles: P ₁ = -29.7 P ₁₀ = -18.0 Q ₁ = -13.4 Median = -6.5 Q ₃ = -2.3 P ₉₀ = 1.4 P ₉₉ = 5.4																			
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-Nov	1	2	1	1	1	1	1	1	1	3	5	7	8	8	8	8	7	4	3	1	0	-1	-1	-2	2.9	8.4			
2-Nov	-2	-3	-3	-4	-6	-6	-7	-7	-7	-6	-1	1	1	2	3	2	1	1	0	-1	-1	-1	-1	-1	-1.9	2.9			
3-Nov	-1	-1	-2	-2	-2	-3	-3	-3	-3	-3	-3	-2	-3	-2	-2	-2	-2	-4	-7	-8	-9	-9	-9	-7	-3.8	-1.1			
4-Nov	-7	-8	-8	-10	-11	-12	-11	-13	-13	-10	-7	-4	-3	-2	-1	0	-1	-4	-4	-4	-5	-7	-7	-8	-6.8	-0.3			
5-Nov	-9	-10	-9	-7	-7	-7	-7	-7	-6	-6	-5	-2	1	3	5	5	3	0	1	0	-2	-3	-4	-4	-3.2	4.7			
6-Nov	-6	-6	-6	-6	-6	-7	-7	-7	-6	-3	-2	3	5	6	6	5	4	3	0	0	-3	-4	-5	-5	-1.9	6.0			
7-Nov	-6	-6	-6	-7	-6	-7	-5	-6	-5	-4	-3	-2	-2	-2	-2	-1	-2	-2	-2	-2	-2	-2	-2	-2	-3.6	-1.5			
8-Nov	-3	-3	-4	-4	-4	-4	-4	-4	-4	-3	-2	-2	-2	-2	-1	-1	-2	-3	-3	-4	-5	-5	-6	-7	-3.4	-1.4			
9-Nov	-8	-9	-9	-10	-10	-11	-11	-11	-11	-11	-11	-10	-10	-10	-10	-10	-11	-11	-12	-13	-13	-13	-13	-14	-10.9	-8.3			
10-Nov	-16	-17	-18	-18	-19	-19	-20	-22	-24	-21	-18	-17	-15	-14	-13	-13	-15	-17	-17	-17	-19	-17	-18	-18	-17.4	-12.7			
11-Nov	-17	-17	-17	-16	-17	-19	-19	-18	-18	-16	-12	-9	-7	-5	-4	-4	-6	-9	-10	-9	-12	-10	-10	-12	-12.2	-3.8			
12-Nov	-11	-11	-10	-10	-11	-11	-10	-8	-7	-7	-6	-5	-4	-3	-3	-3	-3	-4	-5	-6	-5	0	1	1	-5.8	1.3			
13-Nov	2	2	1	3	2	1	0	-2	-3	-3	-3	-3	-3	-3	-3	-3	-4	-4	-4	-5	-6	-5	-5	-7	-2.3	3.1			
14-Nov	-8	-9	-10	-9	-9	-8	-6	-5	-4	-1	1	2	3	5	4	4	4	4	4	4	4	4	4	3	-0.9	4.5			
15-Nov	3	3	3	3	2	1	1	0	0	0	0	0	-2	-2	-2	-3	-4	-4	-5	-6	-7	-7	-8	-9	-1.9	3.1			
16-Nov	-9	-10	-11	-11	-12	-12	-12	-12	-12	-12	-12	-12	-11	-11	-11	-11	-13	-14	-14	-13	-13	-15	-15	-15	-12.2	-9.3			
17-Nov	-15	-16	-16	-16	-16	-16	-16	-17	-18	-18	-17	-16	-15	-14	-14	-13	-13	-14	-14	-14	-14	-14	-15	-15	-15.3	-13.4			
18-Nov	-15	-16	-16	-16	-16	-17	-17	-17	-18	-18	-18	-17	-17	-18	-17	-18	-18	-18	-19	-22	-21	-20	-19	-19	-17.9	-15.3			
19-Nov	-19	-19	-19	-19	-20	-20	-20	-20	-20	-21	-20	-20	-20	-20	-20	-21	-23	-24	-25	-24	-24	-26	-28	-29	-21.8	-19.0			
20-Nov	-30	-30	-31	-30	-32	-32	-31	-31	-29	-30	-27	-26	-25	-24	-23	-23	-22	-21	-20	-19	-21	-22	-23	-24	-26.0	-18.8			
21-Nov	-24	-22	-21	-21	-20	-19	-18	-18	-18	-17	-16	-17	-17	-17	-17	-17	-17	-17	-17	-17	-16	-16	-16	-17	-17.9	-16.0			
22-Nov	-17	-17	-17	-17	-17	-17	-18	-18	-17	-17	-15	-15	-13	-13	-13	-13	-15	-16	-16	-15	-14	-15	-14	-12	-15.5	-11.6			
23-Nov	-11	-11	-8	-8	-7	-7	-11	-12	-12	-9	-7	-6	-4	-3	-3	5	5	4	4	3	3	4	3	3	-3.5	5.1			
24-Nov	2	2	2	2	2	1	1	0	0	0	0	2	2	1	1	-1	-2	-2	-3	-4	-6	-8	-9	-10	-1.1	2.1			
25-Nov	-11	-10	-8	-7	-7	-6	-7	-7	-7	-6	-5	-4	-4	-3	-5	-5	-5	-5	-5	-5	-6	-6	-6	-7	-6.0	-3.3			
26-Nov	-8	-6	-5	-5	-7	-7	-8	-7	-7	-7	-6	-5	-4	-4	-4	-4	-5	-5	-5	-5	-4	-4	-5	-6	-5.5	-3.6			
27-Nov	-7	-6	-6	-7	-7	-7	-7	-8	-8	-9	-9	-8	-7	-7	-7	-7	-8	-9	-10	-10	-12	-12	-12	-11	-8.3	-5.7			
28-Nov	-10	-11	-10	-10	-10	-9	-7	-6	-5	-5	-4	-4	-3	-3	-2	-2	0	1	2	0	-1	0	0	-2	-4.3	1.9			
29-Nov	-3	-5	-7	-4	-4	-6	-7	-6	-7	-5	-4	-4	-1	0	0	-2	-2	-4	-3	-5	-3	-5	-4	-5	-4.1	0.0			
30-Nov	-6	-7	-6	-6	-6	-5	-5	-2	-1	-1	-2	-1	1	3	2	1	-1	0	0	-1	-1	-3	-6	-7	-2.5	2.7			
																									Diurnal Average				
																									Diurnal Maximum				

Hourly Averages

External Temperature (ET) - °C
Smoky Heights - November 2013



Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Smoky Heights - November 2013

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	37	37	33	34	32	32	32	35	34	37	39	44	46	46	44	30	24	24	34	33	35	35	34	21	34.4	46.2
Dir	252	253	265	259	256	254	247	244	246	244	250	255	265	265	263	258	250	252	248	257	259	259	259	264	255.5	265.3
2 Spd	21	13	10	7	22	23	13	17	17	12	19	29	26	29	30	19	11	11	12	14	11	11	11	12	8.1	29.9
Dir	267	255	215	240	250	289	340	174	275	77	33	35	48	32	30	19	11	11	23	29	25	30	26	20	6.5	30.2
3 Spd	13	13	10	11	11	10	11	12	12	11	12	13	13	10	7	4	4	3	6	7	8	9	8	11	7.2	13.4
Dir	27	24	13	4	11	21	359	10	8	20	22	28	36	23	44	29	18	10	275	279	281	272	270	271	3.1	36.1
4 Spd	10	5	3	8	18	22	24	20	17	18	23	15	11	13	13	15	13	10	12	13	15	10	8	10	11.9	23.6
Dir	273	282	234	226	198	199	205	236	236	212	212	182	183	179	164	166	158	167	162	170	177	179	199	215	197.5	204.5
5 Spd	10	12	12	12	12	10	11	10	10	10	6	10	9	11	23	23	15	9	15	16	13	13	16	16	11.5	23.4
Dir	214	224	218	206	198	203	207	204	205	207	203	198	181	211	229	240	241	232	251	259	270	267	263	259	229.0	229.5
6 Spd	12	14	13	14	11	9	11	8	12	13	10	14	21	22	16	6	3	6	9	9	9	13	13	10	11.5	22.0
Dir	255	264	266	257	252	252	256	251	233	250	256	237	242	255	265	255	240	255	242	263	265	271	267	263	255.0	255.3
7 Spd	9	11	9	6	5	3	3	3	3	7	10	13	15	15	16	20	18	16	15	15	14	12	11	12	7.7	19.9
Dir	254	258	254	246	246	244	293	325	342	32	31	28	32	23	21	30	26	32	31	24	27	22	11	5	13.2	30.3
8 Spd	12	15	15	13	10	5	3	1	1	2	4	5	6	7	7	5	6	9	11	14	10	12	17	23	6.1	23.0
Dir	355	348	343	329	325	308	280	111	120	186	180	191	206	206	214	213	263	328	341	331	337	333	328	321	320.4	321.2
9 Spd	6	6	14	14	10	11	14	13	10	10	11	9	8	3	3	3	3	2	2	4	5	4	8	7	6.3	14.4
Dir	355	343	330	346	351	346	349	351	2	11	12	31	37	35	53	78	93	116	54	58	32	59	65	57	10.3	330.1
10 Spd	7	6	6	6	6	6	5	1	0	0	10	7	9	7	10	11	13	11	11	10	9	13	11	8	4.4	13.2
Dir	31	36	19	7	17	18	23	15	328	230	214	229	233	220	224	225	257	252	252	248	240	257	259	243	256.2	257.1
11 Spd	10	7	9	6	10	9	9	9	8	7	7	10	13	14	10	9	9	11	8	10	3	8	5	7	7.7	13.5
Dir	218	194	204	209	215	204	192	198	220	196	186	189	196	189	189	221	243	261	268	273	233	256	228	216	214.5	188.8
12 Spd	6	5	6	5	4	4	5	6	3	1	3	3	3	6	9	13	14	12	9	9	5	15	16	14	6.2	16.0
Dir	219	233	226	225	211	189	238	239	234	81	41	165	230	179	190	196	203	201	185	226	246	259	264	256	222.2	264.3
13 Spd	11	11	12	9	11	7	10	14	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	13.6
Dir	241	255	223	267	351	14	36	38	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	38.1
14 Spd	N	N	N	N	N	N	N	N	N	N	23	25	26	32	31	29	34	37	37	37	44	46	37	32	--	45.9
Dir	N	N	N	N	N	N	N	N	N	N	252	245	248	247	248	246	248	244	252	254	251	255	255	260	--	255.1
15 Spd	29	32	28	20	27	28	20	14	10	1	3	11	18	15	18	22	27	31	32	34	33	29	26	22	8.9	33.8
Dir	255	267	261	257	252	256	255	247	245	319	62	61	56	40	34	34	35	36	35	33	34	32	28	24	355.5	33.2
16 Spd	21	21	17	17	17	13	13	14	14	17	14	13	13	11	9	7	8	7	8	10	11	12	12	13	12.8	21.1
Dir	25	22	14	10	16	14	12	18	27	33	37	37	39	33	40	42	42	31	12	26	27	23	16	20	24.5	25.5
17 Spd	13	11	10	12	12	9	6	8	8	7	6	9	10	11	9	13	13	17	16	18	16	13	13	15	11.3	18.1
Dir	22	21	29	32	38	39	33	10	31	24	13	33	25	30	21	31	31	33	26	29	25	14	9	8	25.4	28.7
18 Spd	14	12	12	9	8	10	9	8	9	10	11	9	12	9	6	8	7	4	1	5	5	1	1	3	7.1	14.2
Dir	3	357	356	6	355	10	357	3	351	355	2	356	357	357	4	13	352	346	284	277	272	290	276	356	355.0	2.7
19 Spd	2	5	6	7	8	7	5	6	8	10	8	9	8	8	7	7	4	3	5	4	5	4	9	9	5.0	10.5
Dir	34	5	359	354	356	348	342	336	349	340	354	8	7	355	19	27	21	341	259	278	270	237	277	279	341.7	339.7
20 Spd	9	12	12	10	14	11	9	8	4	7	9	11	12	15	8	9	11	13	8	9	5	10	4	7	8.8	14.8
Dir	253	245	235	221	253	250	206	218	225	227	230	231	232	231	222	265	286	266	257	223	234	250	192	212	238.8	231.2
21 Spd	3	2	3	3	5	8	5	4	2	3	10	16	19	16	15	18	17	18	19	18	18	19	19	15	9.3	18.9
Dir	219	222	256	249	211	254	275	79	40	35	31	33	35	32	31	34	32	27	23	23	26	26	28	30	26.2	26.0
22 Spd	16	12	12	12	9	8	6	5	3	1	1	1	0	7	6	6	8	11	17	15	15	11	12	15	2.0	17.3
Dir	33	34	36	39	41	43	44	43	57	100	218	313	149	233	277	230	240	241	266	255	243	208	217	214	274.2	266.2

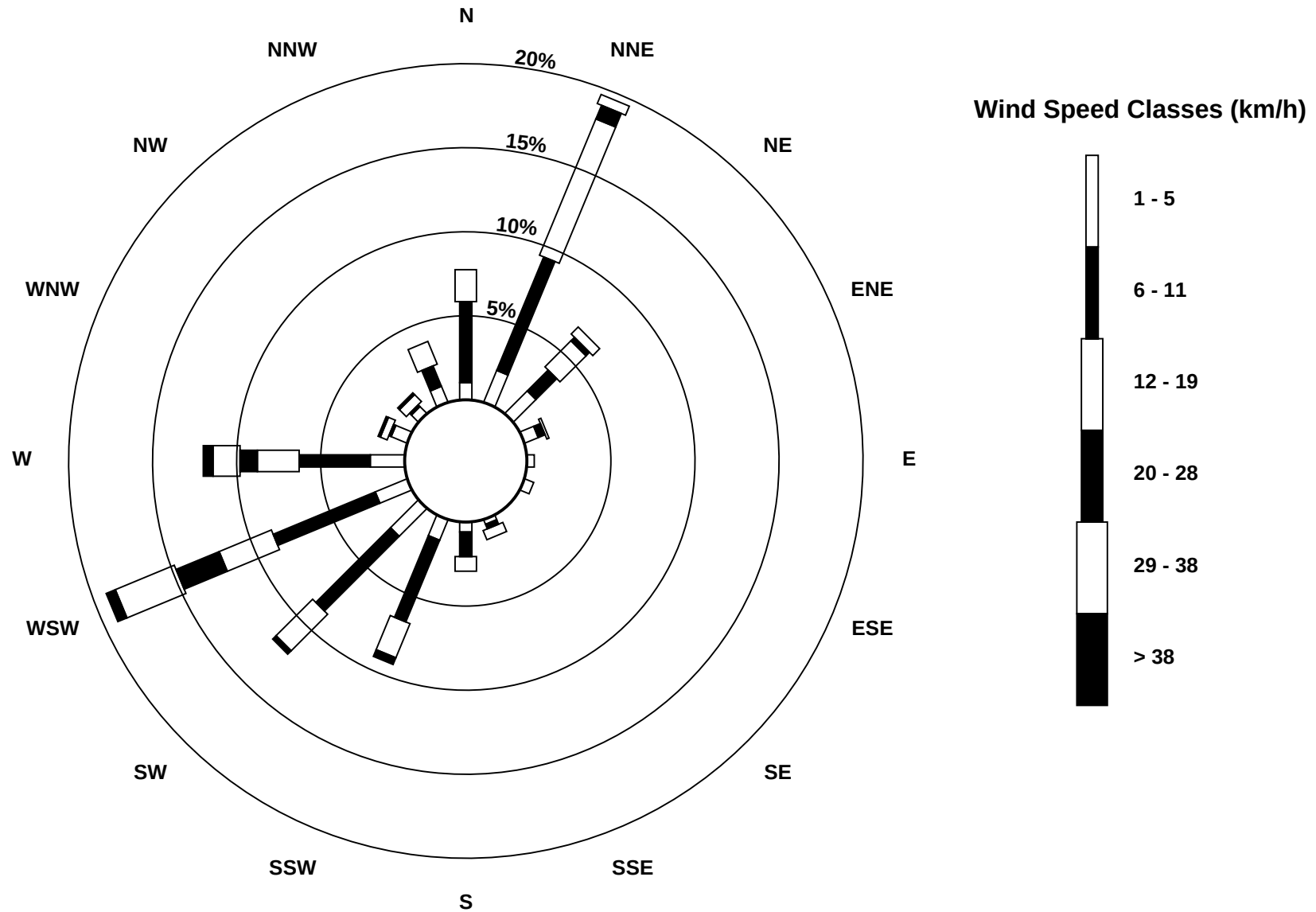
Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Smoky Heights - November 2013

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	9	12	18	17	17	20	12	10	8	12	7	11	16	13	9	36	35	34	31	28	25	22	33	36	18.0	36.3
Dir	191	197	224	232	243	221	191	193	208	195	219	197	197	200	167	245	238	242	240	243	252	258	254	259	232.3	259.3
24 Spd	35	42	33	36	32	28	22	22	15	8	3	3	10	16	12	15	13	15	16	5	2	8	11	5	14.8	42.4
Dir	260	261	259	259	255	254	262	268	291	2	49	331	347	331	312	303	306	314	308	294	288	263	274	255	276.8	260.7
25 Spd	2	4	5	4	2	3	2	1	3	3	4	1	2	2	6	7	8	8	6	4	2	5	5	3	2.4	7.9
Dir	263	225	238	274	13	41	68	307	317	39	9	357	272	48	30	17	25	24	17	12	27	19	341	266	2.3	23.8
26 Spd	1	8	12	13	12	8	6	10	8	6	4	5	6	4	4	6	7	7	4	5	5	2	2	3	5.7	13.0
Dir	246	241	237	234	217	199	251	215	217	192	191	153	197	191	223	244	225	205	209	192	216	219	266	295	219.1	234.2
27 Spd	5	6	14	14	11	13	13	12	13	11	12	11	10	9	9	8	6	9	5	4	3	3	3	4	7.8	14.3
Dir	20	32	37	32	24	30	27	28	32	26	27	36	30	31	25	20	12	15	6	4	343	272	253	255	24.1	32.2
28 Spd	1	3	3	4	2	4	2	2	9	11	8	11	13	14	11	17	19	21	22	20	15	18	12	18	9.2	21.9
Dir	352	39	20	15	11	247	114	269	249	232	221	215	232	231	222	247	256	268	249	259	283	267	243	213	248.2	248.7
29 Spd	7	10	5	6	6	7	8	10	9	10	9	9	10	13	10	10	9	7	6	6	10	12	11	13	8.4	13.2
Dir	240	231	224	252	275	245	260	270	272	253	264	259	209	233	246	244	239	193	230	233	251	215	225	216	240.1	216.1
30 Spd	10	10	13	13	5	8	6	10	8	7	9	10	13	15	14	13	12	10	7	2	12	18	18	19	4.7	19.5
Dir	239	231	216	208	207	209	212	228	197	188	200	216	226	247	249	271	269	278	279	106	32	34	26	30	245.4	29.7
Spd	5.9	6.6	6.2	6.0	5.9	5.4	4.1	3.8	4.3	1.8	2.4	1.7	2.3	4.0	3.6	4.7	4.9	5.0	5.9	5.6	5.3	6.3	6.7	6.3	Diurnal Average	
Dir	276.6	274.6	272.6	275.6	270.2	266.6	272.8	262.4	271.3	271.8	280.1	278.1	277.1	273.5	277.0	275.4	277.7	285.0	280.6	285.3	291.2	285.9	286.5	283.4	Diurnal Maximum	
Spd	37.1	42.4	33.4	35.6	32.1	32.4	31.8	34.7	33.7	37.0	39.2	44.0	45.8	46.2	43.7	35.5	35.4	36.7	37.3	37.2	43.9	45.9	37.1	36.3	Diurnal Maximum	
Dir	252.2	260.7	259.3	259.3	256.4	253.9	247.4	243.8	245.9	244.3	250.5	254.8	264.7	265.3	262.7	244.9	237.6	243.7	252.2	253.9	251.4	255.1	254.6	259.3		
Maximum Speed Value: 46 km/h on Nov 1 14:00																								Hours in Service: 720		
Maximum Daily Speed Average: 34.4 km/h on Nov 1																								Hours of Data: 694		
Maximum Diurnal Speed Average: 6.7 km/h at hour 23																								Hours of Missing Data: 26		
Minimum Speed Value: 0 km/h on Nov 10 09:00																								Percent Operational Time: 96.4		
Minimum Daily Speed Average: 2.0 km/h on Nov 25																										
Minimum Diurnal Speed Average: 1.7 km/h at hour 12																										
Monthly Average Velocity: 4.74 km/h 277.69 deg																										
Speed Percentiles: P ₁ = 0.9 P ₁₀ = 3.3 Q ₁ = 6.5 Median = 10.2 Q ₃ = 14.4 P ₉₀ = 23.3 P ₉₉ = 41.8																										
All monthly, daily, and diurnal averages have been calculated using vector methods																										
N - Not Valid																										
Frequency Distribution																										
Speed Range (km/h)																										
Direction	0 to 5		5 to 11		11 to 19		19 to 28		28 to 38		> 38		Total													
North	22		57		35		1		0		0		115													
NorthEast	20		40		65		9		8		0		142													
East	8		0		1		0		0		0		9													
SouthEast	5		0		0		0		0		0		5													
South	9		27		20		1		0		0		57													
SouthWest	24		86		41		8		12		0		171													
West	24		53		35		22		26		8		168													
NorthWest	10		5		11		1		0		0		27													
Total	122		268		208		42		46		8		694													

Wind Rose

Wind Speed (WS) (km/h)
Smoky Heights - November 2013



Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Smoky Heights - November 2013

Maximum Speed: 47 km/h on Nov 1 14:00																				Maximum Daily Speed Average: 34.9 km/h on Nov 1					Hours in Service: 720	
Minimum Speed: 0 km/h on Nov 10 09:00																				Minimum Daily Speed Average: 4.1 km/h on Nov 25					Hours of Data: 694	
Maximum Diurnal Speed Average: 13.7 km/h at hour 14																				Minimum Diurnal Speed Average: 9.6 km/h at hour 10					Hours of Missing Data: 26	
Monthly Average Speed: 12.34 km/h																				Percentiles: P ₁ = 1.0 P ₁₀ = 4.0 Q ₁ = 6.8 Median = 10.5 Q ₃ = 14.7 P ₉₀ = 23.8 P ₉₉ = 41.9					Percent Operational Time: 96.4	
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-Nov	37	37	34	35	32	33	32	35	34	37	39	44	46	47	44	30	24	25	34	33	35	35	34	21	34.9	46.5
2-Nov	21	16	11	8	23	24	20	20	20	20	21	29	26	30	30	19	11	11	12	14	11	11	11	12	18.0	30.1
3-Nov	13	13	10	11	11	10	11	12	12	12	12	13	14	10	7	5	5	3	6	7	8	9	8	11	9.8	13.5
4-Nov	10	5	4	8	18	22	24	20	18	18	23	16	11	13	13	16	13	10	12	13	15	10	8	10	13.7	24.3
5-Nov	10	12	12	12	13	10	11	10	10	10	7	10	9	11	24	23	15	9	15	16	13	13	16	16	12.8	23.9
6-Nov	12	14	13	14	11	9	11	8	12	13	10	14	21	22	16	6	3	6	9	10	9	13	13	10	11.8	22.2
7-Nov	10	11	9	6	5	3	3	3	4	7	10	13	15	15	17	20	18	16	15	15	14	12	11	12	10.9	20.0
8-Nov	12	15	15	13	10	5	3	1	2	2	4	5	6	7	7	6	6	9	11	14	11	12	17	23	9.0	23.2
9-Nov	8	6	15	14	10	11	14	13	10	11	11	9	8	4	3	3	3	2	2	4	5	4	8	7	7.7	14.8
10-Nov	7	6	6	6	6	6	5	1	0	0	10	7	9	7	10	11	13	11	11	10	9	13	12	9	7.7	13.2
11-Nov	10	8	10	7	10	9	9	9	9	7	7	10	13	14	10	9	9	11	8	10	4	8	5	7	8.8	13.5
12-Nov	7	6	6	6	5	5	6	6	4	3	3	4	4	6	9	13	14	12	9	9	6	15	17	14	7.9	16.6
13-Nov	12	11	12	13	11	7	10	14	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	13.7
14-Nov	N	N	N	N	N	N	N	N	N	N	23	25	26	32	31	29	34	37	37	37	44	46	37	32	--	46.0
15-Nov	29	32	28	20	27	28	20	14	10	3	3	11	18	15	18	22	27	31	32	34	33	29	26	22	22.3	33.8
16-Nov	21	21	17	17	17	13	13	14	14	17	14	13	13	11	9	7	8	7	8	10	11	12	12	13	13.1	21.2
17-Nov	13	11	10	12	12	9	6	8	8	7	6	9	10	11	9	13	13	17	16	18	16	13	13	15	11.5	18.1
18-Nov	14	12	12	10	8	10	10	8	9	10	11	10	12	9	6	8	7	4	1	5	5	1	1	3	7.7	14.3
19-Nov	2	5	6	7	8	7	5	6	8	11	8	9	8	8	8	7	5	3	5	4	5	5	9	9	6.6	10.6
20-Nov	10	12	12	11	14	11	9	8	4	7	9	11	12	15	9	10	11	13	8	10	7	11	5	7	9.8	14.9
21-Nov	4	3	3	4	5	8	5	4	3	3	10	16	19	16	15	18	17	18	19	18	18	19	19	15	11.7	19.0
22-Nov	16	12	12	12	9	8	6	5	3	1	1	1	1	8	6	6	8	11	17	15	15	11	12	15	8.8	17.3
23-Nov	9	12	18	17	17	20	12	10	8	12	7	11	16	13	11	36	36	34	31	28	25	23	33	36	19.8	36.5
24-Nov	35	42	33	36	32	28	22	22	16	8	8	5	11	16	12	16	13	15	16	10	4	8	11	6	17.7	42.5
25-Nov	4	4	5	5	2	3	2	2	3	3	4	1	2	3	6	7	8	8	7	4	3	5	5	3	4.1	7.9
26-Nov	1	9	13	13	12	8	7	11	8	6	5	5	6	4	4	7	8	8	5	5	5	4	3	4	6.7	13.0
27-Nov	6	6	14	14	11	13	13	12	13	11	12	11	10	9	9	8	7	9	5	4	3	3	3	4	8.7	14.3
28-Nov	2	3	3	6	3	4	4	5	9	12	9	11	13	14	12	17	19	21	23	20	16	18	13	18	11.4	22.6
29-Nov	10	10	6	7	6	7	8	10	10	10	9	10	10	13	10	11	9	7	7	6	11	13	11	13	9.3	13.5
30-Nov	10	10	13	13	5	8	6	10	9	7	9	10	13	15	15	13	12	10	8	4	13	18	18	20	11.3	19.5
12.3 12.7 12.5 12.2 12.2 11.7 10.6 10.4 9.6 9.6 10.5 11.8 13.1 13.7 13.1 13.6 12.9 13.1 13.3 13.4 12.9 13.6 13.5 13.4																									Diurnal Average	
37.4 42.5 33.7 35.6 32.4 32.9 32.0 34.9 33.9 37.1 39.4 44.3 46.0 46.5 43.9 35.9 35.5 36.8 37.4 37.4 44.1 46.0 37.2 36.5																									Diurnal Maximum	
N - Not Valid																										
All monthly, daily, and diurnal averages have been calculated using scalar methods																										

Hourly Standard Deviations

Wind Direction (WD) - deg
Smoky Heights - November 2013

Maximum Value: 92.8 deg on Nov 10 10:00																									Hours in Service: 720
Minimum Value: 2.3 deg on Nov 24 07:00																									Hours of Data: 694
Percentiles: P ₁ = 3.0 P ₁₀ = 4.5 Q ₁ = 5.8 Median = 9.0 Q ₃ = 16.9 P ₉₀ = 31.0 P ₉₉ = 72.1																									Hours of Missing Data: 26
																									Hours of Calibration: 0
																									Percent Operational Time: 96.4
Day	Hourly Period Ending At (MST)																								Daily Maximum
1-Nov	7	5	10	5	7	10	5	6	7	5	6	6	6	7	6	9	9	9	6	7	4	3	3	3	10.0
2-Nov	3	55	33	35	18	13	67	35	30	56	23	7	13	6	7	8	6	6	5	7	7	6	8	7	67.0
3-Nov	7	6	9	11	8	6	11	7	8	8	6	7	7	9	14	17	18	32	9	4	6	4	6	5	32.4
4-Nov	5	29	73	24	5	10	13	5	8	9	7	10	11	15	10	9	8	6	7	4	4	9	21	11	73.1
5-Nov	17	7	11	5	9	10	6	6	11	8	23	8	14	22	12	5	5	6	5	8	7	6	3	4	22.6
6-Nov	9	4	3	5	4	6	6	19	10	6	9	6	10	7	5	12	9	10	8	8	12	4	7	13	18.9
7-Nov	11	7	6	16	23	22	16	10	20	7	8	5	4	7	7	6	6	5	6	5	5	7	6	9	22.6
8-Nov	9	8	8	7	9	24	16	46	59	65	11	14	17	8	9	17	21	22	9	7	12	11	7	6	65.1
9-Nov	47	28	16	7	10	10	7	9	11	11	9	10	7	25	14	26	21	22	20	34	4	15	10	12	46.9
10-Nov	5	7	5	5	7	4	6	39	77	93	9	10	5	11	16	5	10	7	7	10	9	4	11	19	92.8
11-Nov	6	18	29	23	8	9	5	6	9	13	5	3	7	3	5	16	7	6	8	10	67	12	14	16	67.3
12-Nov	21	23	18	28	27	52	28	31	48	72	25	55	37	11	5	6	6	8	8	26	49	6	17	16	72.0
13-Nov	22	20	14	47	8	17	7	5	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	47.1
14-Nov	N	N	N	N	N	N	N	N	N	N	5	3	3	5	5	4	6	5	5	5	5	4	4	4	5.8
15-Nov	4	4	3	4	5	4	4	5	3	67	6	8	8	7	4	4	4	4	3	4	5	5	5	6	67.5
16-Nov	7	9	6	7	6	7	7	7	6	4	6	6	8	6	8	8	6	11	7	5	5	4	7	6	11.2
17-Nov	7	7	6	7	4	4	9	10	9	21	24	4	6	6	7	8	10	6	5	5	6	6	9	8	24.3
18-Nov	8	10	10	9	10	13	14	12	11	10	9	19	11	12	16	9	13	10	27	14	20	19	55	54	55.1
19-Nov	23	14	14	16	10	10	11	9	10	8	15	9	10	14	7	5	62	27	13	13	33	19	12	11	61.5
20-Nov	24	10	15	16	9	19	10	7	18	11	5	9	6	7	32	13	7	5	11	29	64	47	55	22	64.1
21-Nov	36	22	19	33	27	9	41	19	49	20	5	4	4	6	5	3	4	5	6	5	6	5	5	6	49.0
22-Nov	5	5	4	4	5	8	10	13	21	52	50	28	53	20	18	11	7	11	4	6	10	13	9	5	52.9
23-Nov	9	14	4	5	6	14	7	11	15	6	24	12	8	21	34	8	5	2	3	4	7	8	5	6	34.4
24-Nov	6	4	3	4	4	4	2	3	34	9	72	64	13	9	17	8	10	6	4	73	78	23	8	37	77.9
25-Nov	77	14	13	17	23	28	32	34	42	9	24	47	24	57	6	9	5	8	16	16	38	23	28	66	77.3
26-Nov	76	28	12	5	10	22	43	10	7	18	23	25	8	14	19	19	26	12	28	18	20	61	45	39	75.6
27-Nov	66	48	5	5	7	5	5	4	4	4	5	4	5	4	5	8	11	9	14	18	19	11	20	13	65.9
28-Nov	51	19	23	47	54	33	62	62	13	8	11	11	9	6	11	10	11	7	14	6	12	5	22	6	61.7
29-Nov	57	9	24	32	17	10	14	8	12	17	14	30	7	7	13	12	6	15	17	13	16	14	13	12	56.7
30-Nov	8	12	10	8	22	18	11	17	23	9	14	8	10	5	8	7	7	7	22	76	20	4	8	6	76.1
	77.3	54.7	73.1	47.1	53.5	52.4	67.0	61.7	77.0	92.8	71.5	64.3	52.9	57.3	34.4	26.4	61.5	32.4	27.8	76.1	77.9	61.2	55.1	65.5	
N - Not Valid																									

PAZA
Beaverlodge Station
Monthly Summary Tables, Graphs and
Roses

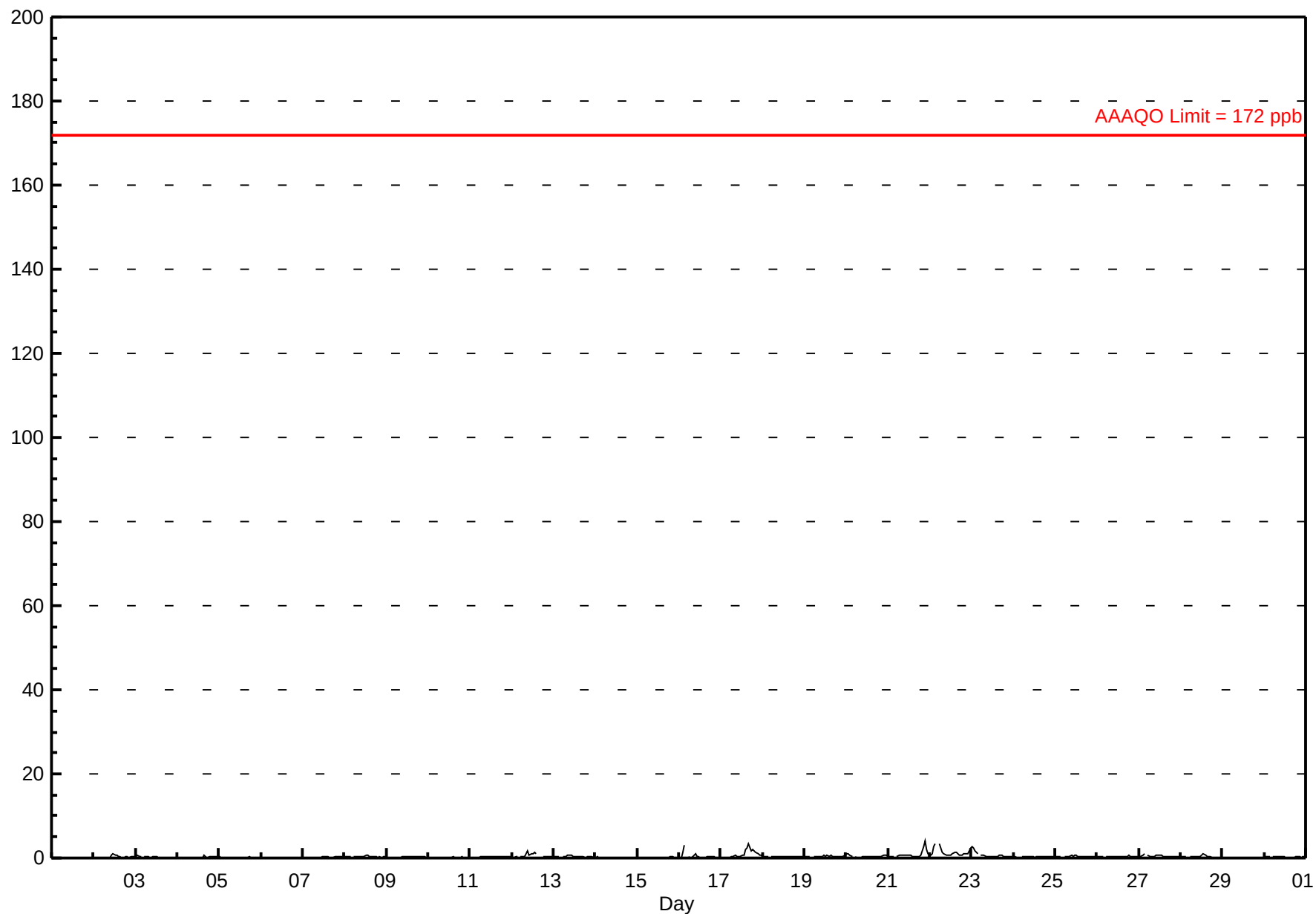
Hourly Averages

Sulphur Dioxide (SO₂) - ppb Beaverlodge - November 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 4.2 ppb on Nov 21 22:00 Maximum Daily Average: 1.4 ppb on Nov 22																				Hours in Service: 720 Hours of Data: 687 Hours of Missing Data: 33 Hours of Calibration: 33 Percent Operational Time: 100.0						
Minimum Value: 0 ppb on Nov 15 18:00 Maximum Diurnal Average: 0.4 ppb at hour 4 Monthly Average: 0.34 ppb										Minimum Daily Average: 0.0 ppb on Nov 1 Minimum Diurnal Average: 0.3 ppb at hour 8 Percentiles: P ₁ = 0.0 P ₁₀ = 0.1 Q ₁ = 0.1 Median = 0.2 Q ₃ = 0.4 P ₉₀ = 0.6 P ₉₉ = 2.8																
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Nov	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
2-Nov	0	0	0	0	A	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0.2	1.0
3-Nov	0	1	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.6
4-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0.2	0.6
5-Nov	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
6-Nov	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
7-Nov	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
8-Nov	0	0	0	0	A	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0.3	0.5
9-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
10-Nov	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
11-Nov	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
12-Nov	0	0	0	0	A	0	0	0	1	2	1	1	1	1	1	C	C	C	0	0	0	0	0	0	0.6	1.7
13-Nov	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	0.7
14-Nov	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
15-Nov	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
16-Nov	0	0	1	3	A	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	3.2
17-Nov	0	0	0	0	A	0	0	0	1	0	0	0	1	1	2	2	3	2	2	2	1	1	1	1	0.9	3.4
18-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5
19-Nov	0	0	0	0	A	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	1	0.4	0.8
20-Nov	1	1	1	0	A	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0.4	1.0
21-Nov	0	0	0	0	A	0	1	1	1	1	1	1	1	1	0	0	0	0	0	1	3	4	2	1	0.9	4.2
22-Nov	1	1	3	3	A	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	0	1.4	3.5
23-Nov	3	2	2	1	A	1	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0.6	2.8
24-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
25-Nov	0	0	0	0	A	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0.3	0.6
26-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0.3	0.6
27-Nov	0	1	1	1	A	1	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0.5	0.9
28-Nov	0	0	0	0	A	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0.3	0.9
29-Nov	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-Nov	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
																									Diurnal Average	
																									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 - November 2013



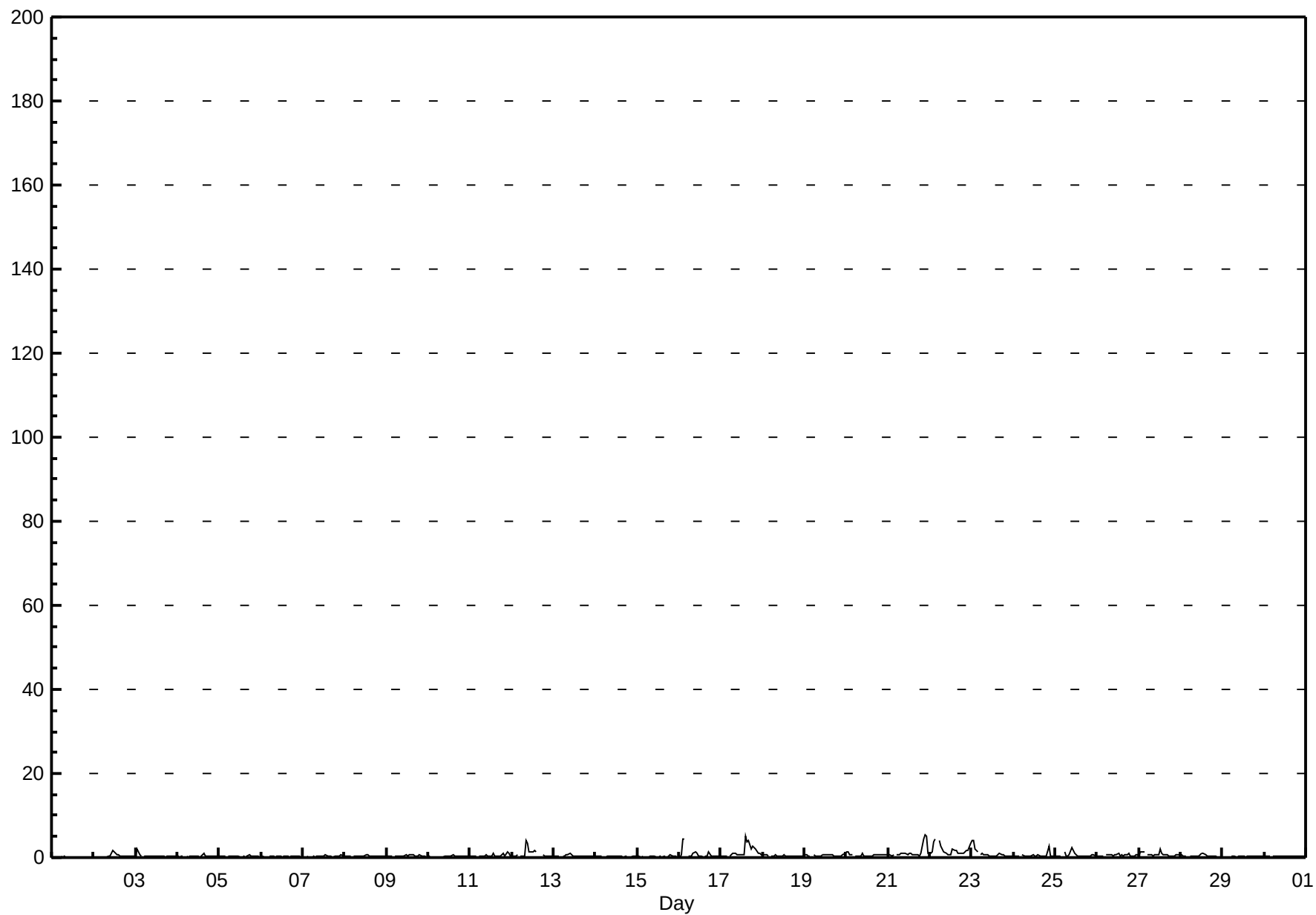
Hourly Maximums

Sulphur Dioxide (SO₂) - ppb Beaverlodge - November 2013

Maximum Value: 5.4 ppb on Nov 21 22:00																				Maximum Daily Average: 1.8 ppb on Nov 22										Hours in Service: 720	
Minimum Value: 0 ppb on Nov 1 21:00																				Minimum Daily Average: 0.1 ppb on Nov 1										Hours of Data: 687	
Maximum Diurnal Average: 0.6 ppb at hour 21																				Minimum Diurnal Average: 0.4 ppb at hour 8										Hours of Missing Data: 33	
Monthly Average: 0.54 ppb																				Percentiles: P ₁ = 0.1 P ₁₀ = 0.2 Q ₁ = 0.2 Median = 0.3 Q ₃ = 0.6 P ₉₀ = 0.9 P ₉₉ = 4.3										Hours of Calibration: 33	
																				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-Nov	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-Nov	0	0	0	0	A	0	0	0	0	0	1	2	1	1	1	0	0	0	0	0	0	0	0	0	0.4	1.7					
3-Nov	0	2	1	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	2.1					
4-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0.3	1.1					
5-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0.2	0.5					
6-Nov	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					
7-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	0	0.3	0.5					
8-Nov	0	0	0	0	A	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0.4	0.7					
9-Nov	0	0	0	0	A	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	0	0	0	0.4	0.7					
10-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0.2	0.6					
11-Nov	0	0	0	0	A	0	0	0	0	1	0	0	0	1	0	0	0	0	1	1	0	1	1	0	0.5	1.4					
12-Nov	0	0	0	1	A	0	0	0	4	3	1	1	1	2	1	C	C	C	1	0	0	0	0	0	1.0	4.1					
13-Nov	0	0	0	0	A	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.9					
14-Nov	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					
15-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0.2	0.6					
16-Nov	0	1	5	4	A	0	0	0	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0.8	4.5					
17-Nov	0	0	0	0	A	0	1	1	1	1	1	1	1	1	5	4	4	2	3	2	2	1	1	1	1.4	5.1					
18-Nov	1	1	1	0	A	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0.4	0.8					
19-Nov	1	1	0	0	A	1	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	1	1	0.5	1.2					
20-Nov	1	1	1	1	A	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0.6	1.4					
21-Nov	1	1	0	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	5	5	5	1	1.3	5.4					
22-Nov	1	1	4	4	A	4	3	2	1	1	1	1	1	2	2	2	1	1	1	1	1	2	2	3	1.8	4.3					
23-Nov	4	4	2	1	A	1	1	1	1	1	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0.9	4.0					
24-Nov	0	0	0	0	A	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3	0	0	0	0.5	2.8					
25-Nov	0	0	0	0	A	1	1	0	1	2	2	1	1	0	0	0	0	0	0	0	0	1	1	0	0.7	2.5					
26-Nov	0	0	0	0	A	1	1	1	1	0	1	1	1	0	1	0	1	1	1	0	0	1	1	1	0.5	1.1					
27-Nov	0	1	1	1	A	1	1	1	0	1	1	1	2	1	1	1	1	0	0	0	0	1	1	1	0.7	2.1					
28-Nov	1	0	0	0	A	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0.4	1.2					
29-Nov	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					
30-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.4					
0.5 0.6 0.6 0.6 -- 0.5 0.4 0.4 0.6 0.6 0.5 0.5 0.6 0.6 0.6 0.5 0.5 0.5 0.5 0.5 0.6 0.6 0.6 0.5 Diurnal Average																															
4.0 3.9 4.5 4.4 -- 3.9 2.8 2.1 4.1 3.2 1.7 1.7 2.1 1.9 5.1 3.7 4.1 2.2 2.7 2.4 4.5 5.4 5.0 3.4 Diurnal Maximum																															
C - Calibration A - Automated Daily Zero Span																															

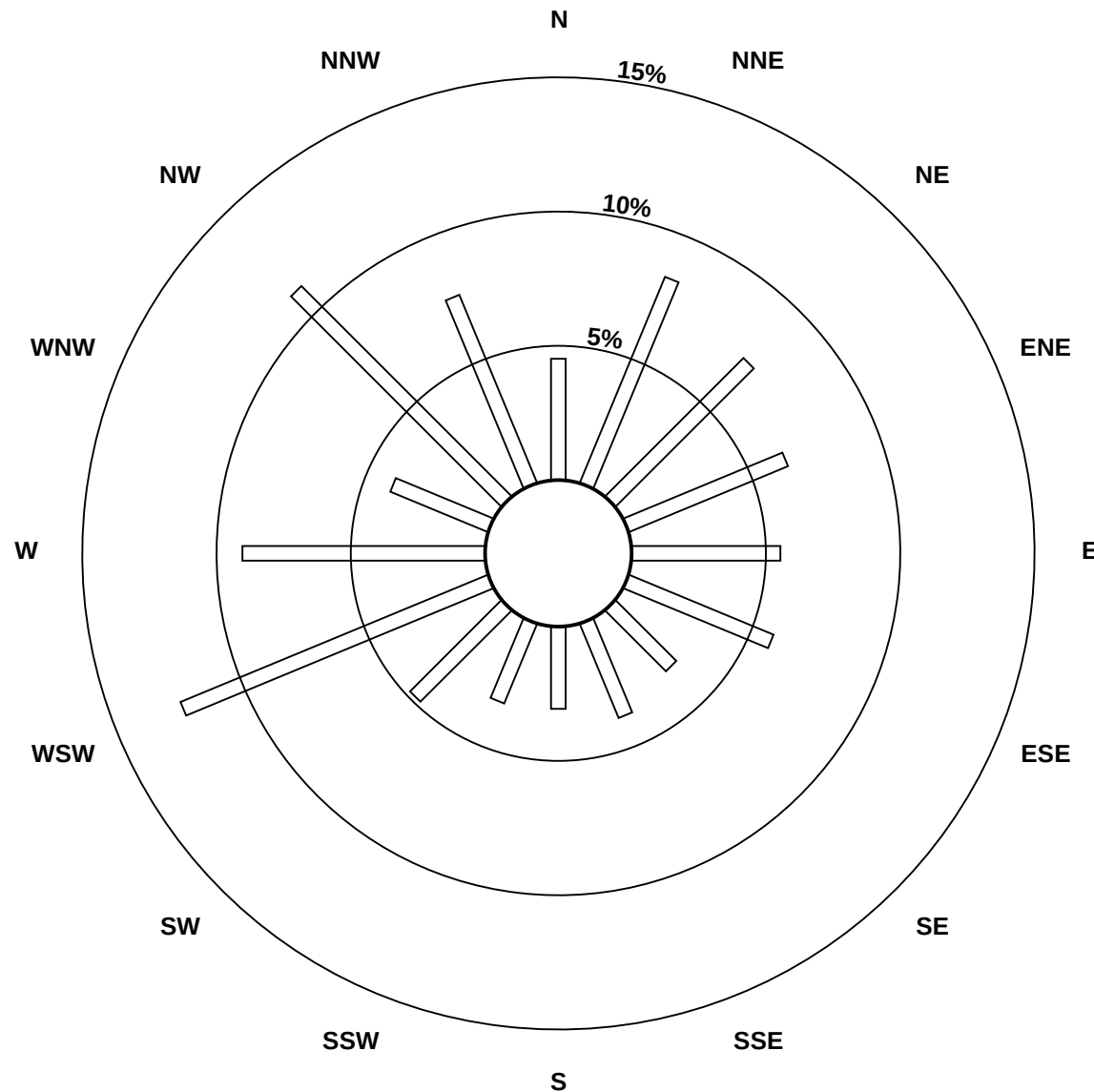
Hourly Maximums

Sulphur Dioxide (SO₂) - ppb
Beaverlodge - November 2013

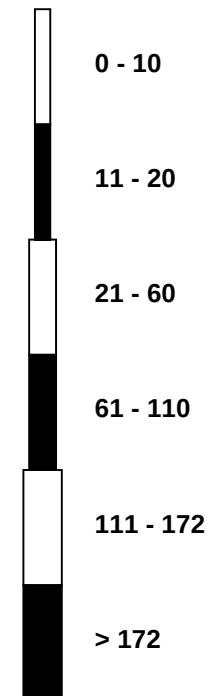


Pollutant Rose

Sulphur Dioxide (SO₂) - ppb
Beaverlodge - November 2013

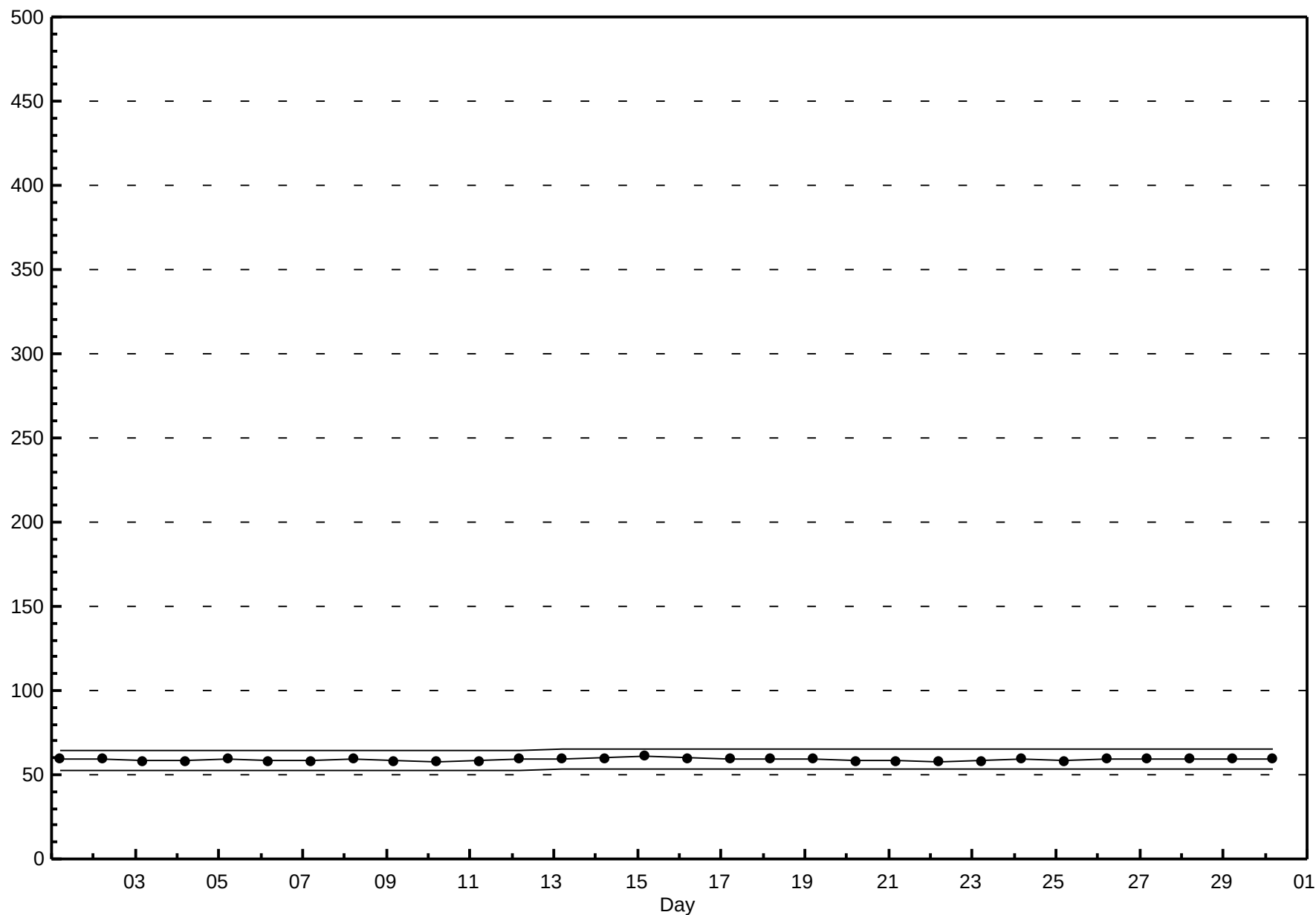


Pollutant Classes (ppb)



Span Responses

Sulphur Dioxide (SO₂)
Beaverlodge - November 2013



Hourly Averages

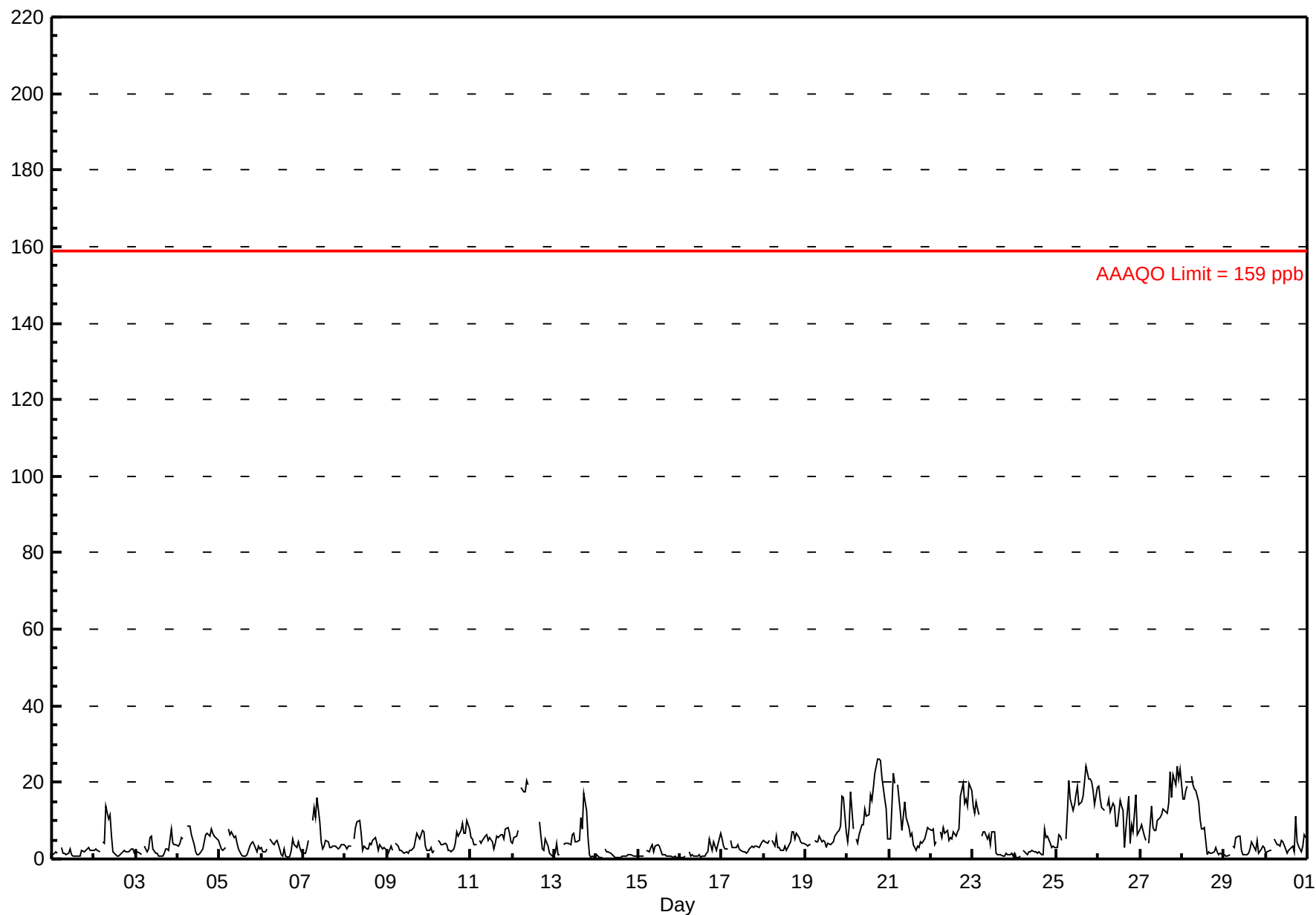
Nitrogen Dioxide (NO₂) - ppb

Beaverlodge - November 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 26.2 ppb on Nov 20 18:00 Maximum Daily Average: 14.8 ppb on Nov 25																				Hours in Service: 720 Hours of Data: 685						
Minimum Value: 0 ppb on Nov 14 04:00 Maximum Diurnal Average: 7.5 ppb at hour 18 Monthly Average: 5.55 ppb																				Minimum Daily Average: 1.0 ppb on Nov 14 Minimum Diurnal Average: 3.9 ppb at hour 15 Percentiles: P ₁ = 0.5 P ₁₀ = 0.9 Q ₁ = 2.0 Median = 3.8 Q ₃ = 6.9 P ₉₀ = 14.1 P ₉₉ = 22.3		Hours of Missing Data: 35 Hours of Calibration: 35 Percent Operational Time: 100.0				
Day	Hourly Period Ending At (MST)																							Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Nov	1	1	2	2	A	3	1	1	1	1	2	1	1	1	1	1	1	2	2	2	3	3	2	2	1.6	3.1
2-Nov	2	3	2	2	A	4	4	14	10	12	6	2	1	1	1	1	1	2	2	2	2	3	3	2	3.5	13.7
3-Nov	1	2	1	1	A	3	2	3	6	6	3	2	1	1	1	1	1	2	2	2	8	4	4	4	2.7	7.9
4-Nov	3	4	6	5	A	8	8	9	6	4	2	1	1	1	3	5	6	7	6	8	7	6	6	5	5.1	8.6
5-Nov	4	3	2	3	A	8	6	7	6	6	4	3	1	1	1	1	1	3	4	5	4	2	3	3	3.5	7.8
6-Nov	3	2	2	3	A	5	4	4	4	5	4	1	1	3	1	1	1	2	5	4	3	4	3	2	2.8	5.4
7-Nov	2	2	3	5	A	10	14	11	16	10	5	2	3	5	4	3	3	3	3	3	3	3	4	4	5.2	15.9
8-Nov	3	3	3	4	A	5	8	10	10	7	2	3	2	3	4	4	5	6	4	2	4	3	3	3	4.3	10.2
9-Nov	2	2	3	2	A	4	3	2	2	2	2	2	1	2	2	3	5	7	6	5	7	7	3	2	3.4	7.3
10-Nov	2	3	2	2	A	5	5	4	4	4	4	2	2	2	3	4	7	6	7	9	7	7	10	8	4.7	9.9
11-Nov	6	5	4	4	A	5	4	5	6	6	5	6	5	3	4	6	6	6	6	5	8	8	7	4	5.3	8.2
12-Nov	4	6	6	7	A	18	18	18	21	19	C	C	C	C	C	10	6	3	2	5	3	1	1	1	8.3	20.6
13-Nov	1	4	1	1	A	4	4	4	4	4	6	7	4	4	5	11	8	17	13	6	1	1	1	1	4.8	17.1
14-Nov	1	1	0	0	A	3	2	2	2	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1.0	2.7
15-Nov	1	1	1	1	A	2	2	3	4	2	3	4	3	2	1	1	1	1	1	1	0	1	0	1	1.5	3.8
16-Nov	0	0	1	1	A	2	1	1	1	1	1	1	0	1	1	1	2	5	2	5	3	2	4	7	1.8	6.8
17-Nov	5	3	3	3	A	5	3	3	3	4	3	2	2	2	1	2	2	4	3	3	3	3	4	5	3.0	5.1
18-Nov	5	5	4	5	A	5	3	6	3	3	2	2	3	2	3	4	7	7	5	7	6	4	4	4	4.3	7.1
19-Nov	4	3	4	4	A	5	5	4	6	4	5	4	3	4	4	4	4	6	7	8	8	17	16	7	5.9	16.5
20-Nov	4	8	18	8	A	5	4	6	9	9	13	11	11	17	15	19	22	26	26	26	21	16	13	5	13.7	26.2
21-Nov	5	5	22	20	A	19	12	7	11	15	11	8	6	7	4	2	3	3	4	4	5	7	8	8	8.6	22.4
22-Nov	7	8	4	4	A	7	6	8	7	7	5	5	5	7	6	7	8	17	20	15	16	14	20	18	9.6	19.9
23-Nov	14	12	15	12	A	6	7	7	5	6	4	7	7	1	1	1	1	1	1	2	1	1	1	1	5.0	15.1
24-Nov	2	0	1	1	A	2	2	1	2	2	2	2	2	2	2	1	1	8	5	6	4	3	3	3	2.5	7.7
25-Nov	3	6	6	5	A	5	12	21	16	13	14	17	19	14	15	16	20	24	21	21	20	18	14	18	14.8	24.3
26-Nov	19	16	14	13	A	14	16	12	15	14	8	9	15	14	13	3	8	16	4	9	7	17	6	7	11.6	19.1
27-Nov	8	9	6	5	A	4	14	8	7	7	10	11	11	13	13	12	14	23	16	22	19	24	21	24	13.1	24.1
28-Nov	16	16	18	19	A	22	19	18	18	15	10	8	8	8	1	2	2	2	2	3	2	1	1	1	9.2	21.5
29-Nov	1	1	1	1	A	3	3	5	6	6	2	1	1	1	1	3	4	3	2	5	2	3	3	3	2.7	5.9
30-Nov	1	2	2	2	A	5	4	4	3	5	4	3	2	2	3	3	2	11	5	3	2	3	6	6	3.6	11.3
																								Diurnal Average		
																								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 - November 2013



Hourly Maximums

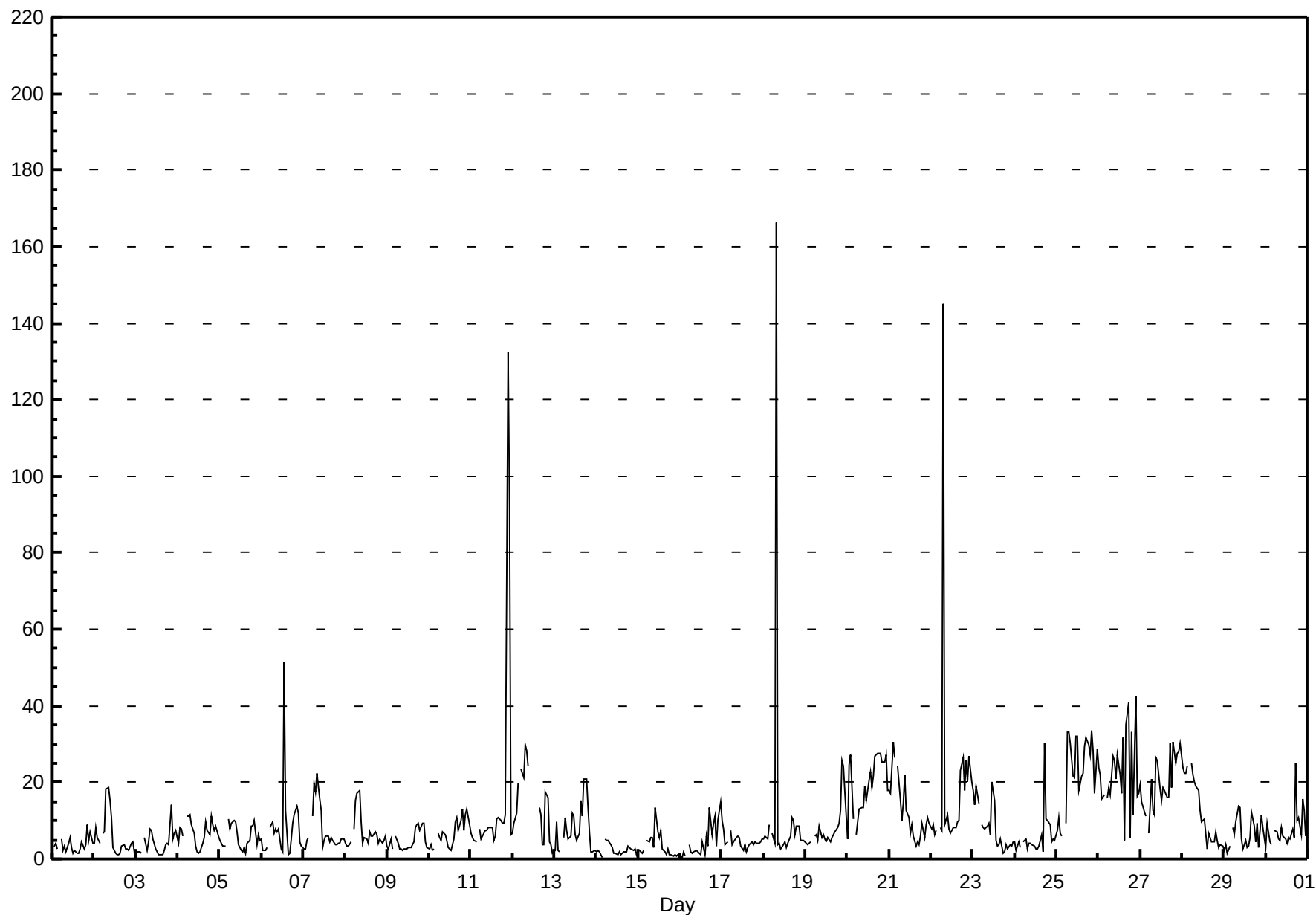
Nitrogen Dioxide (NO₂) - ppb

Beaverlodge - November 2013

Maximum Value: 166.2 ppb on Nov 18 08:00																					Maximum Daily Average: 23.1 ppb on Nov 25										Hours in Service: 720	
Minimum Value: 0 ppb on Nov 14 04:00																					Minimum Daily Average: 2.4 ppb on Nov 14										Hours of Data: 685	
Maximum Diurnal Average: 20.1 ppb at hour 8																					Minimum Diurnal Average: 6.7 ppb at hour 15										Hours of Missing Data: 35	
Monthly Average: 9.67 ppb																					Percentiles: P ₁ = 1.0 P ₁₀ = 2.1 Q ₁ = 3.7 Median = 6.1 Q ₃ = 11.2 P ₉₀ = 21.9 P ₉₉ = 40.4										Hours of Calibration: 35	
																					Percent Operational Time: 100.0											
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24								
1-Nov	3	3	4	3	A	5	2	3	2	4	6	3	1	2	1	2	3	5	3	4	9	5	7	4	3.6	9.1						
2-Nov	4	8	5	4	A	7	7	18	19	15	11	3	1	1	1	1	3	4	2	3	2	4	4	2	5.7	18.7						
3-Nov	2	2	2	2	A	6	2	5	8	7	5	3	2	1	1	1	2	4	4	4	14	5	7	7	4.2	14.0						
4-Nov	4	8	8	6	A	11	11	11	9	7	3	2	2	2	4	5	10	7	6	11	9	8	9	6	6.9	11.4						
5-Nov	5	4	3	3	A	10	8	9	10	10	7	4	2	2	3	1	4	5	9	9	10	4	6	5	5.8	10.4						
6-Nov	5	2	2	3	A	8	10	7	8	7	8	2	2	52	13	1	1	5	9	11	14	12	4	3	8.3	51.6						
7-Nov	3	3	5	6	A	11	20	18	22	16	13	3	5	6	6	4	6	5	4	4	4	4	5	5	7.6	22.2						
8-Nov	4	3	3	4	A	8	15	17	18	10	4	6	5	4	7	6	6	7	6	4	5	4	5	6	6.9	17.9						
9-Nov	3	3	5	3	A	6	4	3	3	2	2	3	3	3	3	4	8	9	9	8	9	9	4	3	4.8	9.4						
10-Nov	2	4	2	3	A	7	6	5	7	6	5	3	3	2	5	10	11	8	10	13	8	11	13	9	6.6	13.1						
11-Nov	7	5	5	4	A	8	5	6	7	7	8	8	8	5	6	11	11	10	9	9	12	133	91	6	16.7	132.5						
12-Nov	7	9	12	20	A	23	21	30	28	24	C	C	C	C	C	13	11	4	4	18	16	4	4	2	13.9	29.8						
13-Nov	2	10	2	2	A	5	11	7	5	6	12	11	6	5	7	15	11	21	21	13	7	2	2	2	8.1	20.9						
14-Nov	2	2	2	0	A	5	5	5	4	3	2	1	1	2	1	1	2	2	3	3	2	2	3	1	2.4	5.1						
15-Nov	2	2	2	2	A	5	5	6	6	3	13	7	6	8	3	2	1	3	1	1	1	1	1	1	3.5	13.4						
16-Nov	1	1	2	1	A	4	2	2	2	2	2	2	1	4	1	6	3	13	6	9	11	4	10	15	4.5	15.0						
17-Nov	10	8	4	4	A	8	4	4	6	6	5	3	2	4	2	3	4	4	4	4	4	4	4	5	4.7	10.2						
18-Nov	5	6	5	9	A	7	4	166	4	4	3	4	4	3	4	6	11	10	6	9	8	5	5	5	12.8	166.2						
19-Nov	4	4	4	4	A	6	6	5	9	5	6	5	4	6	4	6	6	7	8	9	13	26	24	11	8.0	25.9						
20-Nov	5	25	27	11	A	6	10	13	14	13	19	15	20	23	19	22	27	28	28	27	25	25	27	18	19.5	27.7						
21-Nov	18	17	31	26	A	24	15	10	14	22	13	11	7	9	6	3	4	4	6	9	6	9	11	9	12.4	30.7						
22-Nov	8	9	7	8	A	8	8	145	9	12	8	7	7	8	8	10	10	23	27	18	26	20	27	20	18.8	145.2						
23-Nov	18	14	19	14	A	9	8	8	8	9	6	20	15	5	4	4	5	2	2	4	3	4	3	4	8.2	20.0						
24-Nov	4	2	5	3	A	5	5	3	4	4	4	3	3	3	3	6	2	30	10	10	9	4	5	5	5.7	30.1						
25-Nov	7	11	7	6	A	9	33	33	30	21	21	32	32	18	22	22	29	32	30	27	33	28	17	29	23.1	33.4						
26-Nov	24	22	16	17	A	16	19	17	27	26	21	27	22	17	32	5	35	41	6	33	12	43	17	17	22.1	42.5						
27-Nov	19	15	12	11	A	7	21	13	11	27	26	18	15	19	18	16	16	30	19	30	25	27	28	30	19.7	30.5						
28-Nov	24	22	22	24	A	25	22	20	19	18	13	10	10	11	3	7	6	4	4	7	5	3	4	3	12.4	24.8						
29-Nov	2	4	2	3	A	8	6	10	14	13	5	3	5	3	3	6	12	8	4	9	3	11	8	5	6.5	13.8						
30-Nov	3	9	5	4	A	7	7	5	5	8	6	5	4	6	5	8	5	25	10	11	6	16	13	6	7.8	25.0						
7.0 7.9 7.7 7.0 -- 9.2 10.0 20.1 11.0 10.6 8.8 7.7 6.9 8.0 6.7 6.9 8.9 12.0 9.0 11.1 10.4 14.6 12.3 8.3																									Diurnal Average							
24.0 24.7 30.7 26.3 -- 24.8 33.1 166.2 30.1 26.5 25.7 32.1 32.1 51.6 31.8 22.3 35.2 40.9 29.7 33.2 33.4 132.5 91.4 30.0																									Diurnal Maximum							
C - Calibration					A - Automated Daily Zero Span																											

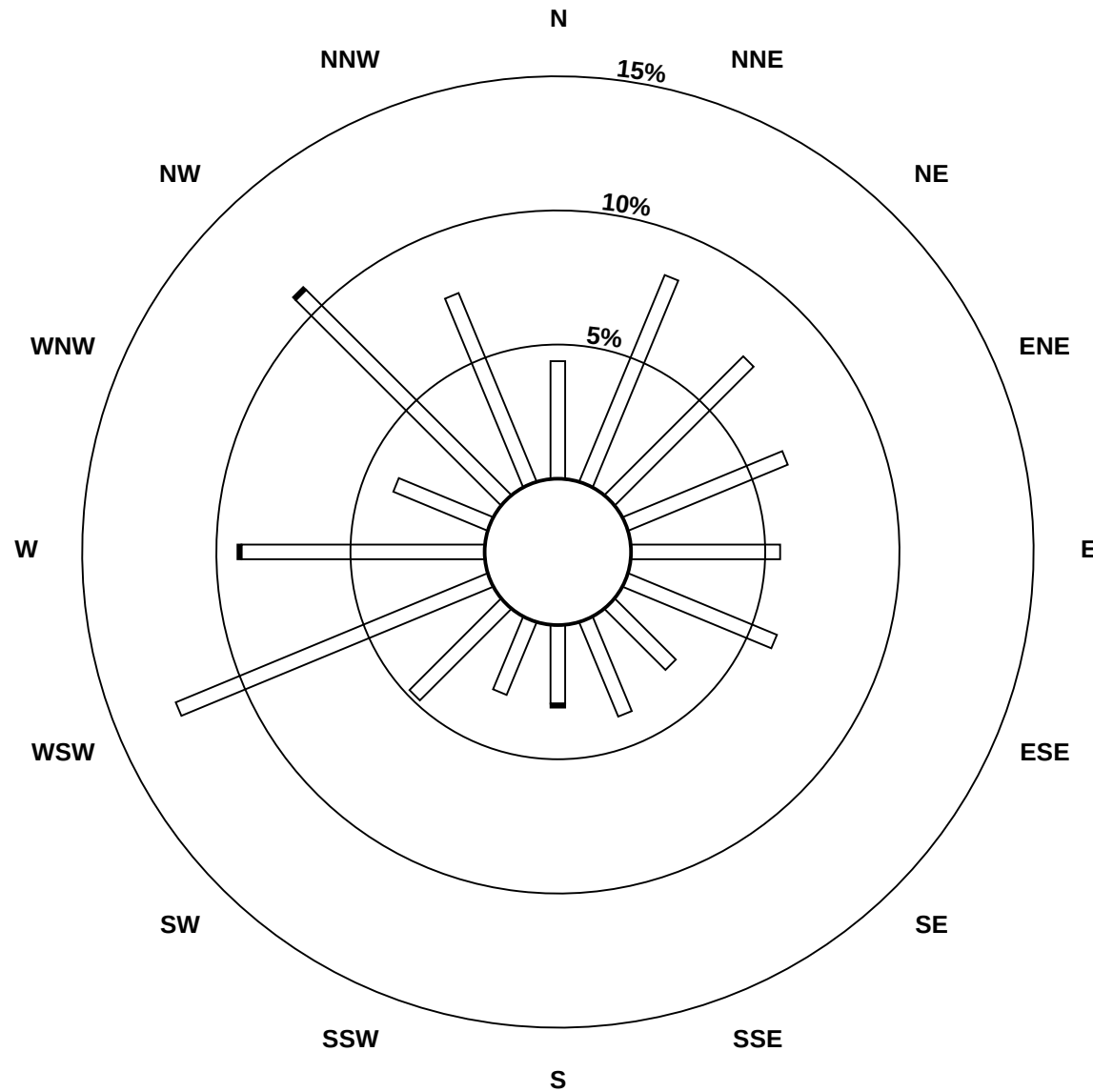
Hourly Maximums

Nitrogen Dioxide (NO₂) - ppb
Beaverlodge - November 2013

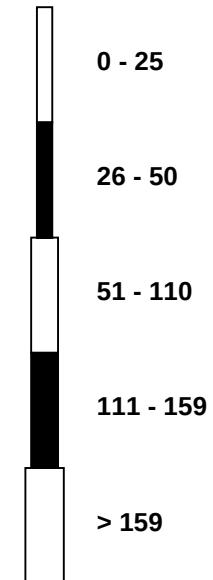


Pollutant Rose

Nitrogen Dioxide (NO₂) - ppb
Beaverlodge - November 2013

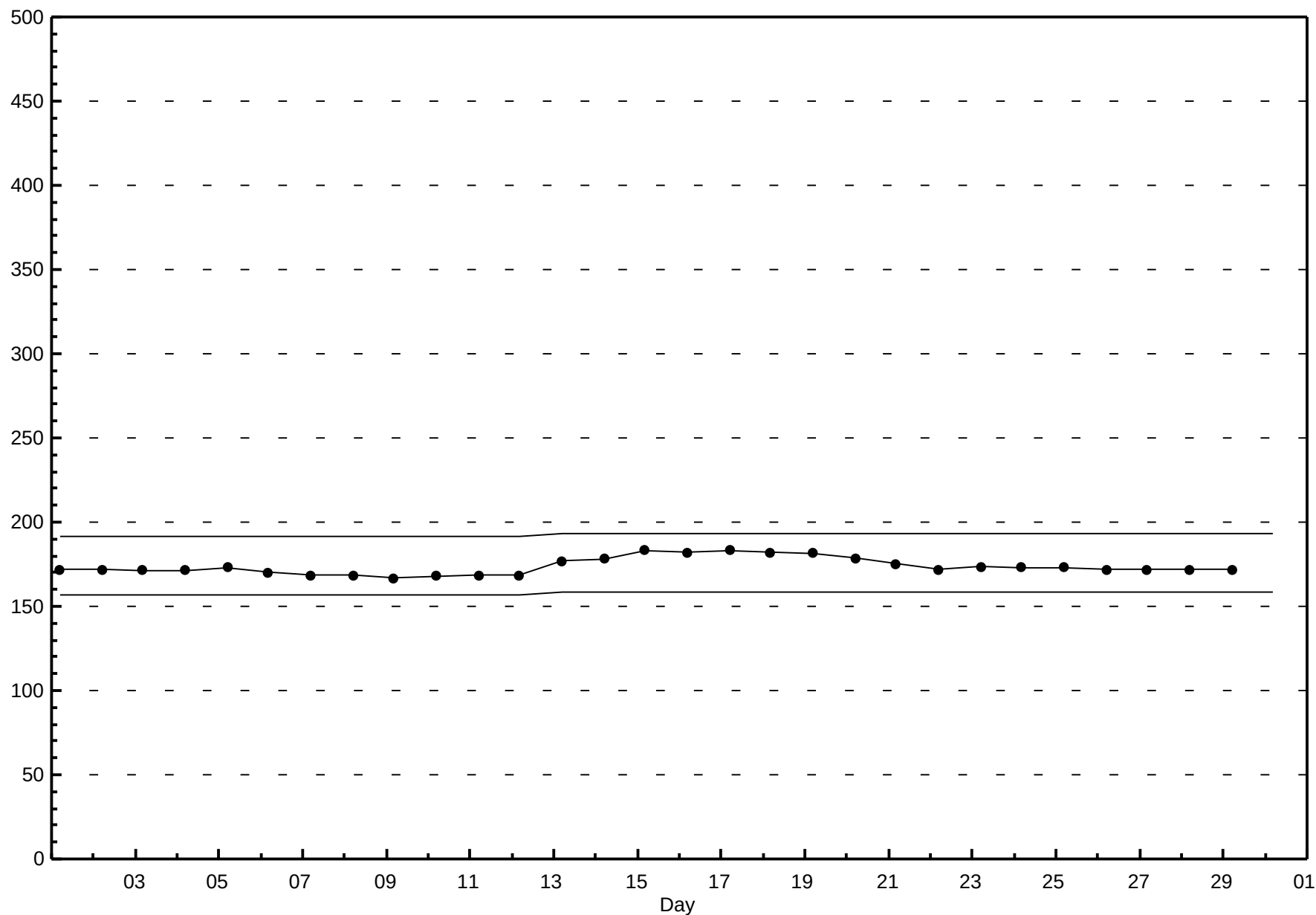


Pollutant Classes (ppb)



Span Responses

Nitrogen Dioxide (NO₂)
Beaverlodge - November 2013



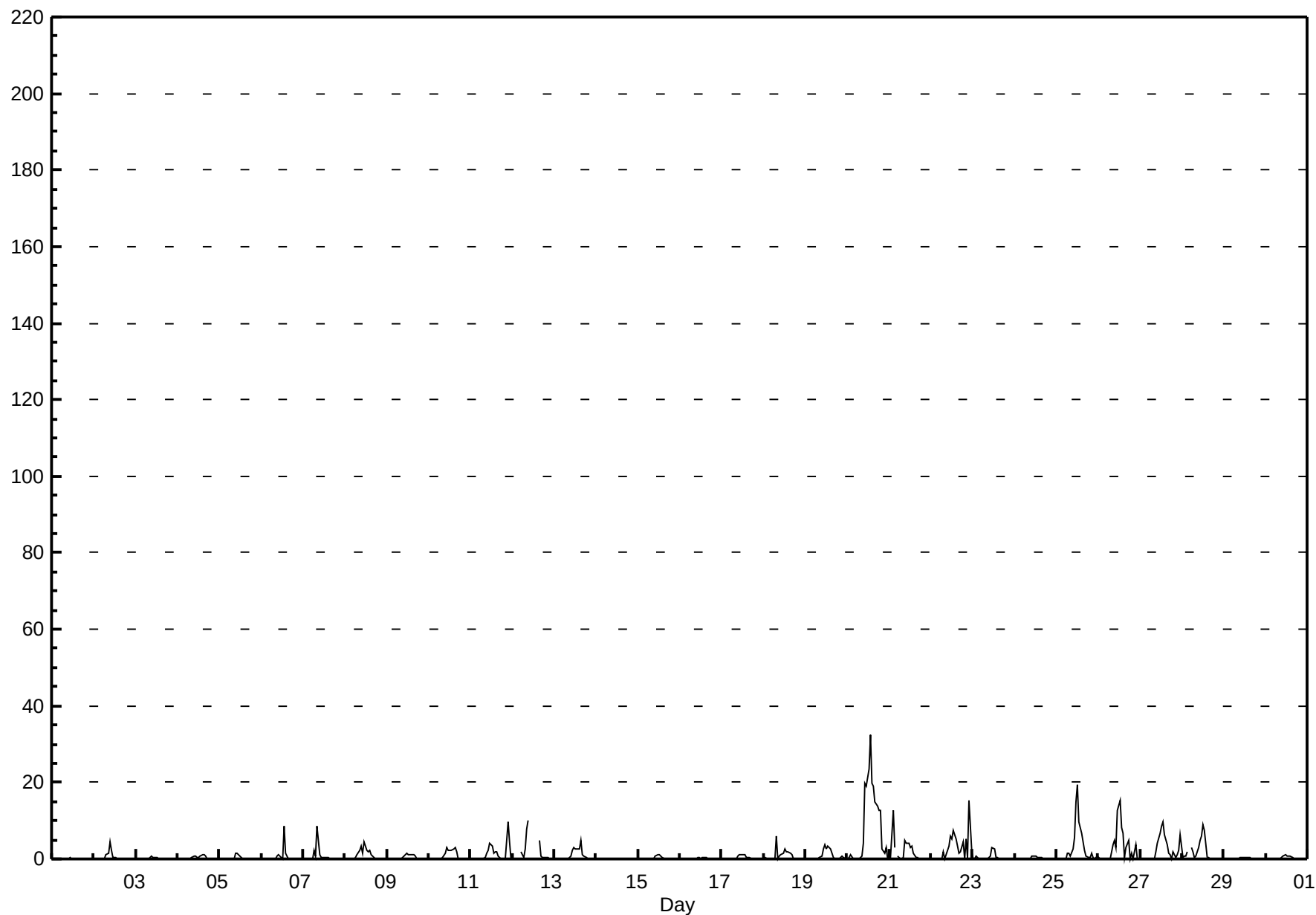
Hourly Averages

Nitrogen Oxide (NO) - ppb Beaverlodge - November 2013

Number of Exceedences (AAQO): 1-hr: 0 24-hr: 0 Maximum Value: 32.6 ppb on Nov 20 14:00 Maximum Daily Average: 8.7 ppb on Nov 20																					Hours in Service: 720 Hours of Data: 685 Hours of Missing Data: 35 Hours of Calibration: 35 Percent Operational Time: 100.0					
Minimum Value: 0 ppb on Nov 1 03:00 Maximum Diurnal Average: 3.8 ppb at hour 13 Monthly Average: 1.18 ppb										Minimum Daily Average: 0.1 ppb on Nov 14 Minimum Diurnal Average: 0.0 ppb at hour 1 Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.1 Q ₃ = 0.8 P ₉₀ = 3.1 P ₉₉ = 18.9																
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-Nov	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
2-Nov	0	0	0	0	A	0	0	1	1	4	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0.5	4.5
3-Nov	0	0	0	0	A	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.7
4-Nov	0	0	0	0	A	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0.3	1.2
5-Nov	0	0	0	0	A	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1.5
6-Nov	0	0	0	0	A	0	0	0	0	1	1	0	0	9	2	0	0	0	0	0	0	0	0	0	0.6	8.7
7-Nov	0	0	0	0	A	0	2	1	9	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.7	8.8
8-Nov	0	0	0	0	A	0	0	1	2	3	1	4	2	2	2	1	1	0	0	0	0	0	0	0	0.9	4.3
9-Nov	0	0	0	0	A	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0.4	1.5
10-Nov	0	0	0	0	A	0	0	0	0	1	3	2	2	2	3	3	2	0	0	0	0	0	0	0	0.8	3.2
11-Nov	0	0	0	0	A	0	0	0	0	2	2	4	3	1	2	2	1	0	0	0	0	10	4	0	1.4	9.6
12-Nov	0	0	0	0	A	2	0	3	8	10	C	C	C	C	C	5	1	0	0	0	0	0	0	0	1.6	9.9
13-Nov	0	0	0	0	A	0	0	0	0	1	2	3	2	3	2	5	1	1	1	0	0	0	0	0	0.9	4.9
14-Nov	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
15-Nov	0	0	0	0	A	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0.2	1.3
16-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0.1	0.5
17-Nov	0	0	0	0	A	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0.3	1.3
18-Nov	0	0	0	0	A	0	0	6	0	1	1	2	3	2	2	2	1	0	0	0	0	0	0	0	0.8	5.9
19-Nov	0	0	0	0	A	0	0	0	0	1	3	4	3	4	2	2	1	0	0	0	0	1	0	0	0.9	3.6
20-Nov	0	0	1	0	A	0	0	0	1	4	20	19	23	33	20	19	15	14	13	13	3	1	3	0	8.7	32.6
21-Nov	0	0	13	3	A	1	0	0	0	5	4	4	3	3	1	0	0	0	0	0	0	0	0	0	1.7	12.6
22-Nov	0	0	0	0	A	0	0	2	0	2	4	6	5	7	5	3	1	2	5	0	5	0	15	2	2.9	15.3
23-Nov	0	0	1	0	A	0	0	0	0	0	1	3	3	0	0	0	0	0	0	0	0	0	0	0	0.4	2.9
24-Nov	0	0	0	0	A	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0.2	0.7
25-Nov	0	0	0	0	A	0	1	1	1	3	5	15	19	10	7	4	2	1	0	0	1	1	0	1	3.2	19.3
26-Nov	0	0	0	0	A	0	0	0	4	5	3	13	15	8	7	0	3	5	0	1	0	4	0	0	3.0	15.1
27-Nov	0	0	0	0	A	0	0	0	0	2	4	7	9	10	6	4	1	1	0	2	0	1	2	6	2.4	9.5
28-Nov	0	1	1	2	A	3	2	0	1	3	5	6	9	7	0	0	0	0	0	0	0	0	0	0	1.8	8.8
29-Nov	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
30-Nov	0	0	0	0	A	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0.2	1.1
0.0 0.1 0.5 0.2 -- 0.2 0.2 0.5 1.0 1.8 2.4 3.5 3.8 3.7 2.3 1.9 1.1 0.8 0.6 0.6 0.4 0.6 0.9 0.3																								Diurnal Average		
0.4 0.8 12.6 2.8 -- 2.8 2.3 5.9 8.8 9.9 19.8 19.0 23.5 32.6 19.6 18.9 14.9 13.9 12.6 12.7 5.1 9.6 15.3 6.3																								Diurnal Maximum		
C - Calibration A - Automated Daily Zero Span																										

Hourly Averages

Nitrogen Oxide (NO) - ppb
Beaverlodge - November 2013



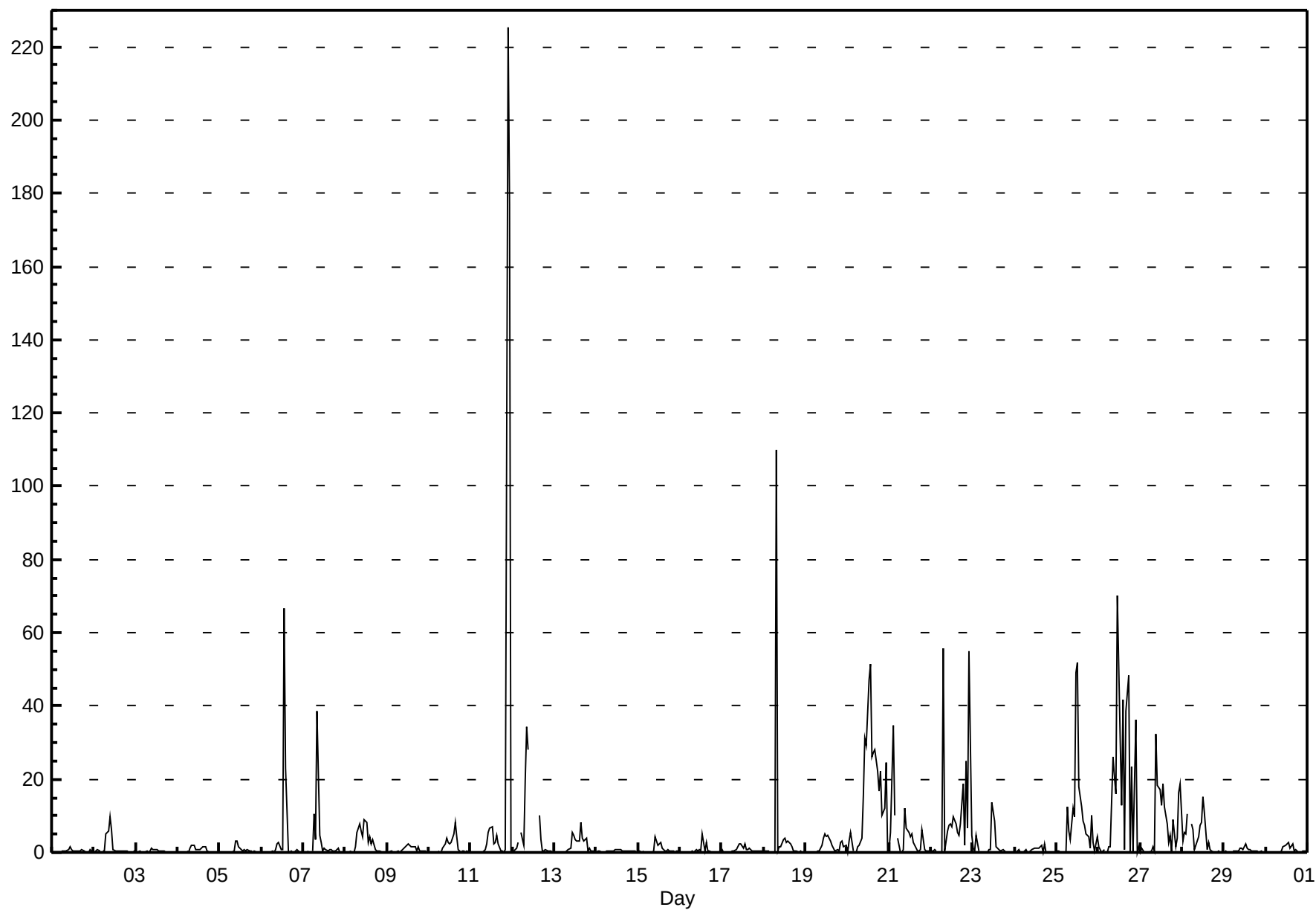
Hourly Maximums

Nitrogen Oxide (NO) - ppb Beaverlodge - November 2013

Maximum Value: 225.4 ppb on Nov 11 22:00																				Maximum Daily Average: 19.1 ppb on Nov 11					Hours in Service: 720	
Minimum Value: 0 ppb on Nov 17 04:00																				Minimum Daily Average: 0.3 ppb on Nov 3					Hours of Data: 685	
Maximum Diurnal Average: 9.9 ppb at hour 22																				Minimum Diurnal Average: 0.4 ppb at hour 1					Hours of Missing Data: 35	
Monthly Average: 4.16 ppb																				Percentiles: P ₁ = 0.1 P ₁₀ = 0.1 Q ₁ = 0.2 Median = 0.5 Q ₃ = 2.4 P ₉₀ = 8.6 P ₉₉ = 54.7					Hours of Calibration: 35	
																				Percent Operational Time: 100.0						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Nov	0	0	0	0	A	0	0	0	0	1	2	1	0	0	1	1	1	1	0	0	0	0	1	0	0.4	1.7
2-Nov	0	1	1	0	A	0	0	5	6	10	6	1	1	0	0	0	1	0	0	0	0	0	0	0	1.5	9.6
3-Nov	0	0	1	0	A	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0.3	1.0
4-Nov	0	0	0	0	A	0	0	1	2	2	1	1	1	1	2	1	1	0	0	0	0	0	0	0	0.6	2.0
5-Nov	0	0	0	0	A	0	0	0	0	3	3	2	1	0	1	0	1	0	0	0	0	0	0	0	0.6	3.3
6-Nov	0	0	0	0	A	0	1	0	1	2	3	1	1	67	23	0	0	0	0	0	1	0	0	0	4.4	66.5
7-Nov	0	0	0	0	A	0	10	4	39	5	3	0	1	1	1	1	1	0	0	1	1	0	0	0	3.0	38.7
8-Nov	0	0	0	0	A	0	2	5	8	6	4	9	8	3	4	2	4	1	1	0	0	0	0	0	2.5	8.9
9-Nov	0	0	0	0	A	0	0	0	0	1	1	2	2	2	2	2	1	0	1	0	0	1	0	0	0.8	2.3
10-Nov	0	0	0	0	A	0	0	0	1	2	4	3	2	3	5	8	4	1	0	0	0	0	0	0	1.6	8.2
11-Nov	0	0	0	0	A	0	0	0	1	2	6	7	7	2	3	5	2	0	0	0	1	225	177	0	19.1	225.4
12-Nov	0	0	1	3	A	5	2	20	34	28	C	C	C	C	C	10	3	0	0	1	1	0	0	0	6.1	34.4
13-Nov	0	0	0	0	A	0	0	0	1	1	5	5	4	3	3	8	4	3	4	0	1	0	0	0	1.9	8.3
14-Nov	0	0	0	0	A	0	0	0	1	0	1	1	1	1	1	1	1	0	1	0	0	1	1	0	0.5	0.9
15-Nov	0	0	0	0	A	0	0	0	0	0	4	2	2	3	1	0	0	1	0	0	0	0	0	1	0.8	4.1
16-Nov	0	0	0	0	A	0	0	0	0	1	0	1	0	5	1	3	0	1	0	0	0	0	0	0	0.6	5.2
17-Nov	1	0	0	0	A	0	0	1	1	2	2	2	1	2	1	1	1	0	0	0	0	0	0	0	0.8	2.4
18-Nov	0	1	0	0	A	0	0	110	0	2	2	3	4	3	3	2	2	1	0	0	0	0	0	0	5.8	110.1
19-Nov	0	0	0	0	A	0	0	0	0	2	4	5	4	5	3	2	1	0	1	0	3	3	1	2	1.7	5.0
20-Nov	0	3	5	0	A	0	1	2	4	15	31	29	47	51	26	27	28	22	17	22	10	12	24	0	16.5	51.3
21-Nov	1	6	35	10	A	4	0	0	1	12	7	5	4	5	3	1	0	0	1	6	1	0	0	0	4.5	34.8
22-Nov	0	0	1	0	A	0	0	56	1	6	7	8	7	10	8	5	5	8	19	2	25	7	55	5	10.2	55.8
23-Nov	1	0	5	0	A	0	0	0	0	1	1	14	9	2	1	1	0	1	0	0	0	0	0	0	1.6	13.6
24-Nov	0	0	1	0	A	0	1	0	0	0	1	1	1	1	1	2	0	2	0	0	0	0	0	0	0.6	2.3
25-Nov	0	0	0	0	A	0	13	6	3	12	10	49	52	18	12	9	7	5	4	1	10	3	1	4	9.6	51.8
26-Nov	2	1	0	1	A	0	2	2	26	21	16	70	31	13	42	1	39	48	0	23	0	36	0	2	16.3	70.2
27-Nov	0	1	0	0	A	0	0	2	0	32	18	17	13	19	13	8	3	5	0	9	1	4	16	19	7.9	32.4
28-Nov	3	6	5	10	A	8	6	1	2	4	7	8	15	11	1	3	1	0	0	0	0	0	0	0	4.0	15.2
29-Nov	0	0	0	0	A	0	0	0	0	1	1	1	2	1	1	1	0	0	0	0	0	0	0	0	0.5	2.4
30-Nov	0	0	0	0	A	0	0	0	0	1	2	2	2	3	1	2	1	1	0	0	0	0	0	0	0.7	2.9
0.4 0.7 1.9 0.9 -- 0.7 1.4 7.2 4.4 5.9 5.3 8.6 7.8 8.1 5.6 3.6 3.8 3.5 1.8 2.3 1.9 9.9 9.3 1.2																									Diurnal Average	
3.0 5.6 34.8 10.5 -- 7.8 12.5 110.1 38.7 32.4 31.3 70.2 51.8 66.5 41.7 27.2 38.6 48.3 18.8 23.4 25.0 225.4 176.9 18.9																									Diurnal Maximum	
C - Calibration																									A - Automated Daily Zero Span	

Hourly Maximums

Nitrogen Oxide (NO) - ppb
Beaverlodge - November 2013



Hourly Averages

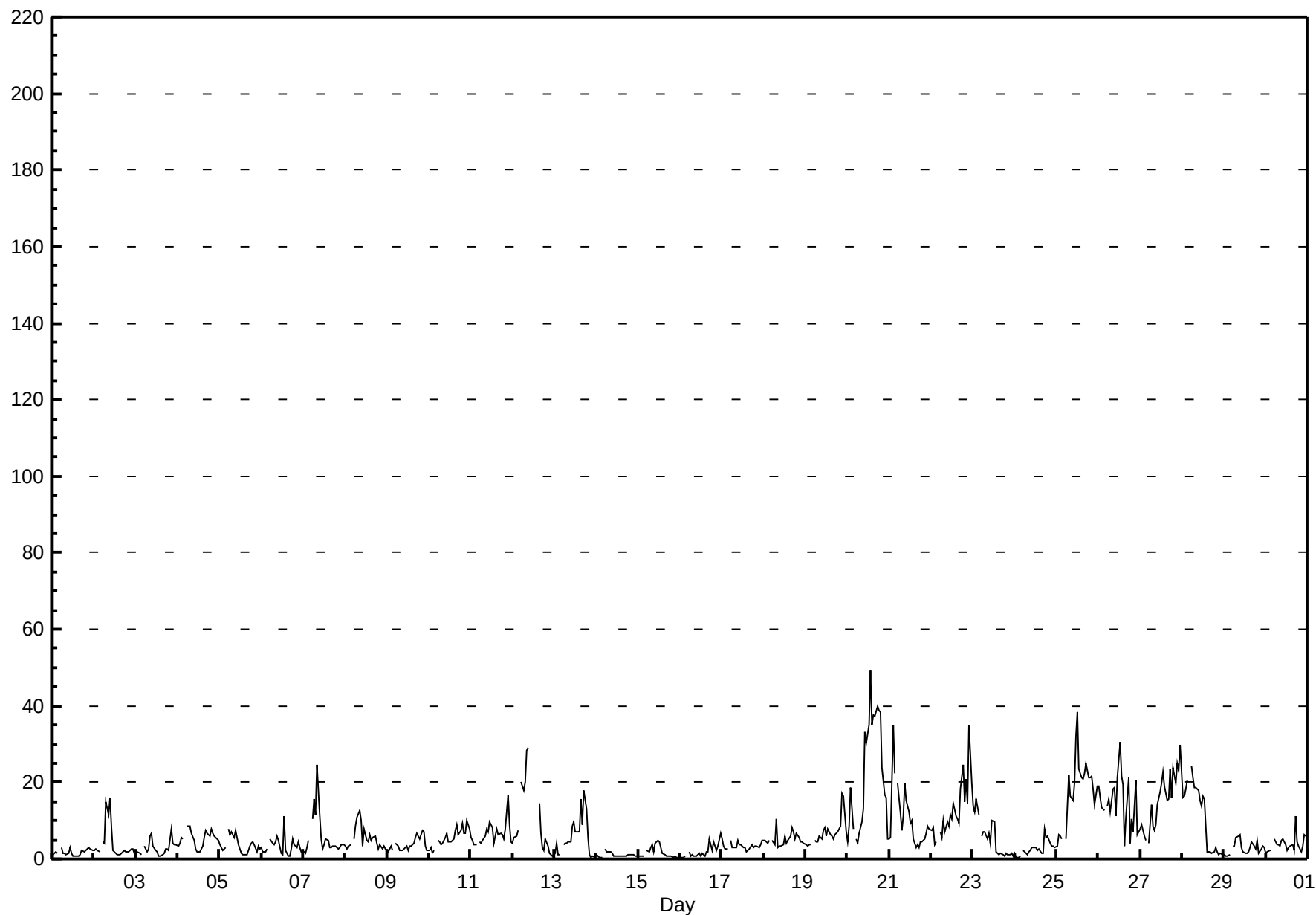
Oxides of Nitrogen (NO_x) - ppb

Beaverlodge - November 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 49.3 ppb on Nov 20 14:00 Maximum Daily Average: 22.4 ppb on Nov 20																								Hours in Service: 720 Hours of Data: 685			
Minimum Value: 0 ppb on Nov 14 04:00 Maximum Diurnal Average: 8.5 ppb at hour 10 Monthly Average: 6.73 ppb																								Minimum Daily Average: 1.0 ppb on Nov 14 Minimum Diurnal Average: 4.4 ppb at hour 1 Percentiles: P ₁ = 0.5 P ₁₀ = 1.1 Q ₁ = 2.2 Median = 4.2 Q ₃ = 7.7 P ₉₀ = 17.2 P ₉₉ = 37.2		Hours of Missing Data: 35 Hours of Calibration: 35 Percent Operational Time: 100.0	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Nov	1	1	2	2	A	3	1	2	1	1	3	1	1	1	1	1	1	2	2	2	3	3	2	2	1.7	3.1	
2-Nov	2	3	2	2	A	4	4	15	12	16	8	2	1	1	1	1	1	2	2	2	2	3	3	2	4.0	16.0	
3-Nov	1	2	1	1	A	3	2	3	6	7	3	2	2	1	1	1	1	2	2	2	8	4	4	4	2.8	7.9	
4-Nov	3	4	6	5	A	8	8	9	7	5	2	2	2	2	4	6	7	7	6	8	7	6	6	5	5.4	8.7	
5-Nov	4	3	2	3	A	8	6	7	6	7	6	4	1	1	1	1	1	3	4	5	4	2	3	3	3.7	7.7	
6-Nov	3	2	2	3	A	5	4	4	5	6	5	1	1	11	2	1	1	2	5	4	3	5	3	2	3.4	11.2	
7-Nov	2	2	3	5	A	10	16	12	25	11	5	3	4	5	5	3	3	3	4	3	3	3	4	4	5.9	24.6	
8-Nov	3	3	3	4	A	5	8	11	13	10	3	8	5	5	6	5	6	6	4	2	4	3	3	3	5.3	12.5	
9-Nov	2	2	3	2	A	4	3	2	2	2	2	4	2	4	4	4	6	7	6	5	7	7	3	2	3.8	7.3	
10-Nov	2	3	2	2	A	5	5	4	4	5	7	5	4	4	5	7	9	6	7	9	7	7	10	8	5.6	9.9	
11-Nov	6	5	4	4	A	5	4	5	6	8	7	10	8	4	6	8	6	7	6	5	8	17	9	4	6.6	16.9	
12-Nov	4	6	6	7	A	20	18	20	28	29	C	C	C	C	C	14	7	3	2	5	3	1	1	1	9.9	29.2	
13-Nov	1	4	1	1	A	4	4	4	4	4	9	10	7	7	7	16	9	18	13	6	1	1	1	1	5.8	17.8	
14-Nov	1	1	0	0	A	3	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	2.8	
15-Nov	1	1	1	1	A	2	2	3	4	2	4	5	5	3	1	1	1	1	1	1	0	1	0	1	1.7	4.7	
16-Nov	0	0	1	1	A	2	1	1	1	1	1	1	1	1	1	2	2	5	2	5	3	2	4	7	1.9	6.8	
17-Nov	5	3	3	3	A	5	3	3	3	5	4	4	3	3	2	2	3	4	3	4	3	3	4	5	3.4	5.1	
18-Nov	5	5	4	5	A	5	4	10	3	3	3	4	6	4	5	6	8	7	5	7	6	4	4	4	5.1	10.3	
19-Nov	4	3	4	4	A	5	5	4	6	5	8	8	6	8	6	6	5	6	7	8	9	17	16	7	6.8	17.2	
20-Nov	4	8	19	8	A	5	4	7	10	13	33	30	35	49	35	38	37	40	39	38	24	17	16	5	22.4	49.3	
21-Nov	5	6	35	23	A	20	12	7	11	20	15	12	9	10	5	3	4	3	4	4	5	7	8	8	10.3	35.0	
22-Nov	7	8	4	4	A	7	6	10	7	10	9	11	11	14	11	10	9	18	24	15	21	14	35	20	12.5	35.1	
23-Nov	14	12	16	12	A	6	7	7	5	7	4	10	10	2	2	1	1	1	1	2	1	1	1	1	5.4	15.7	
24-Nov	2	1	1	1	A	2	2	1	2	2	3	3	3	2	2	1	1	8	6	6	4	3	3	3	2.7	7.9	
25-Nov	3	6	6	5	A	5	14	22	16	15	20	32	38	24	21	21	22	25	21	21	22	18	14	19	17.9	38.4	
26-Nov	19	16	14	13	A	14	16	12	18	19	11	21	30	22	19	3	11	21	4	10	7	21	6	7	14.6	30.5	
27-Nov	8	9	6	5	A	4	14	8	7	9	14	18	20	23	19	15	16	24	16	24	20	25	23	30	15.5	29.8	
28-Nov	16	16	18	21	A	24	21	18	19	18	15	14	17	16	2	2	2	2	2	3	2	1	1	1	10.9	24.3	
29-Nov	1	1	1	1	A	3	3	6	6	6	3	2	2	1	2	3	4	3	2	5	2	3	3	3	2.9	6.3	
30-Nov	1	2	2	2	A	5	4	4	3	5	5	4	2	3	3	4	2	11	5	3	2	3	6	6	3.9	11.4	
4.4 4.6 5.7 4.9 -- 6.8 6.7 7.4 8.1 8.5 7.4 7.9 8.1 8.0 6.2 6.3 6.3 8.3 6.9 7.2 6.3 6.7 6.7 5.6																								Diurnal Average			
19.2 16.4 35.0 22.5 -- 24.3 21.2 22.1 28.3 29.2 33.1 31.9 38.4 49.3 35.0 37.5 37.3 40.1 38.7 38.4 23.8 24.9 35.1 29.8																								Diurnal Maximum			
C - Calibration A - Automated Daily Zero Span																											

Hourly Averages

Oxides of Nitrogen (NO_x) - ppb
Beaverlodge - November 2013



Hourly Maximums

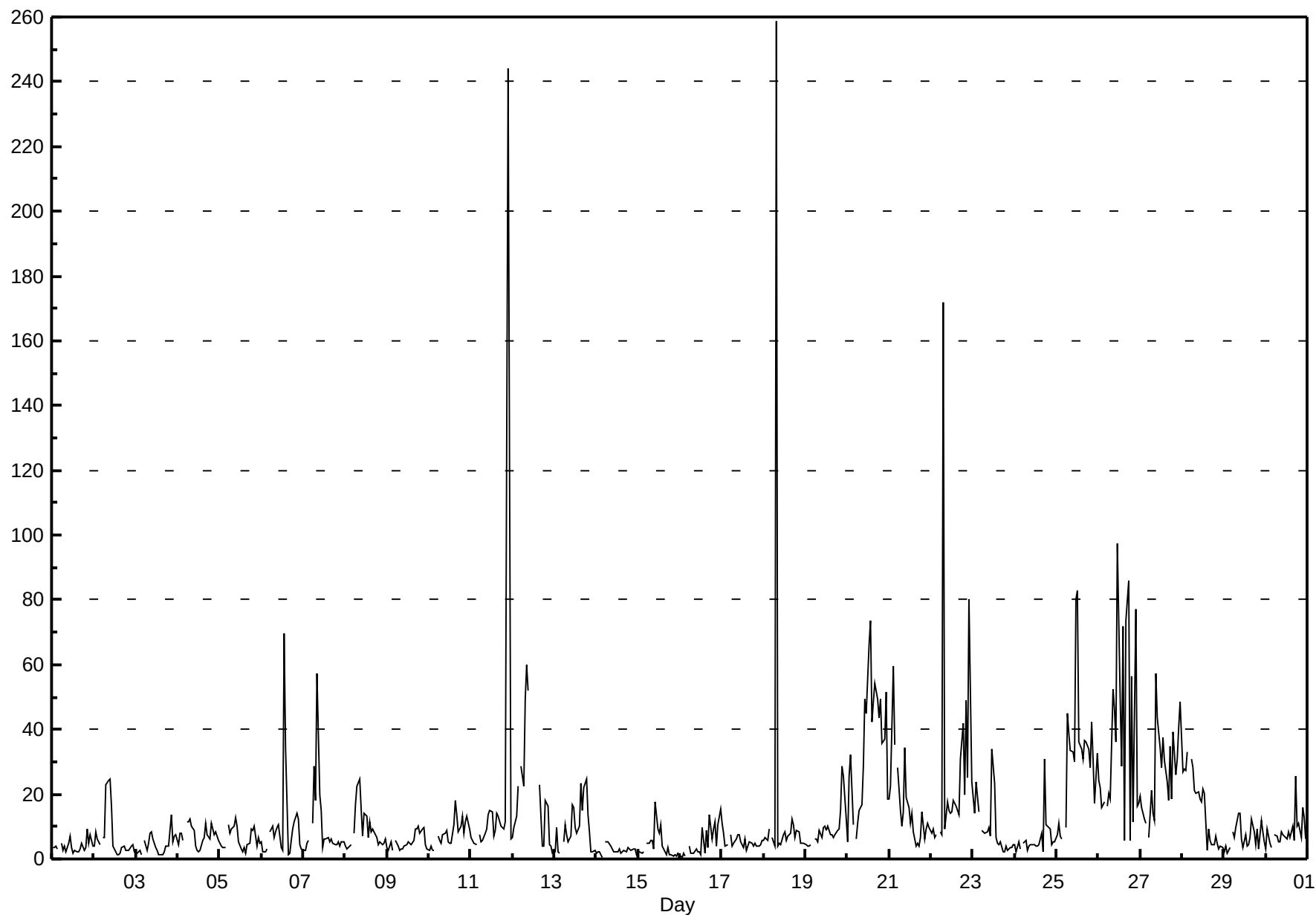
Oxides of Nitrogen (NO_x) - ppb

Beaverlodge - November 2013

Maximum Value: 258.8 ppb on Nov 18 08:00																					Maximum Daily Average: 37.7 ppb on Nov 26					Hours in Service: 720	
Minimum Value: 1 ppb on Nov 14 04:00																					Minimum Daily Average: 2.8 ppb on Nov 14					Hours of Data: 685	
Maximum Diurnal Average: 25.6 ppb at hour 8																					Minimum Diurnal Average: 7.2 ppb at hour 1					Hours of Missing Data: 35	
Monthly Average: 13.08 ppb																					Percentiles: P ₁ = 1.3 P ₁₀ = 2.4 Q ₁ = 4.1 Median = 7.0 Q ₃ = 13.9 P ₉₀ = 30.7 P ₉₉ = 81.8					Hours of Calibration: 35	
																					Percent Operational Time: 100.0						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Nov	3	4	4	3	A	5	2	4	2	5	7	4	2	2	2	2	3	5	3	4	9	5	8	4	4.0	9.3	
2-Nov	4	9	6	4	A	7	7	23	24	25	16	4	2	1	1	2	4	4	3	3	2	4	5	2	7.0	24.5	
3-Nov	2	2	2	1	A	6	3	5	8	8	6	3	3	1	1	1	2	4	4	4	14	5	7	8	4.4	13.9	
4-Nov	4	8	8	6	A	11	11	13	10	9	4	3	2	3	6	7	11	8	6	11	9	8	8	6	7.5	12.6	
5-Nov	5	4	3	3	A	11	8	9	10	13	10	5	3	2	3	2	5	5	9	9	10	4	6	5	6.3	12.7	
6-Nov	5	2	2	3	A	8	10	7	8	10	10	3	3	70	34	1	2	6	9	11	14	12	5	3	10.4	69.7	
7-Nov	3	3	5	6	A	11	29	18	57	20	15	4	6	6	7	5	6	5	4	4	5	4	5	5	10.1	57.1	
8-Nov	4	3	4	5	A	8	17	22	25	15	7	14	13	7	11	8	9	7	7	4	5	4	5	6	9.2	24.5	
9-Nov	3	3	5	3	A	6	4	3	3	3	4	4	5	5	5	6	9	9	10	8	9	9	5	3	5.4	10.0	
10-Nov	3	4	2	3	A	7	6	5	8	8	9	6	5	5	10	18	14	9	10	13	8	11	13	9	8.0	18.1	
11-Nov	7	6	5	4	A	8	5	6	8	9	14	15	15	7	9	14	13	10	9	9	12	244	122	6	24.2	244.3	
12-Nov	7	10	13	22	A	28	23	49	60	52	C	C	C	C	C	23	13	4	4	18	16	5	4	2	19.6	59.9	
13-Nov	2	10	2	2	A	5	11	7	5	7	17	16	10	8	10	23	15	22	25	14	8	2	2	3	9.8	24.6	
14-Nov	2	2	2	1	A	5	5	5	4	3	2	2	2	3	2	2	2	2	3	3	3	3	3	1	2.8	5.4	
15-Nov	2	2	2	2	A	5	5	6	6	3	17	9	8	11	4	2	1	3	1	1	1	1	1	2	4.2	17.5	
16-Nov	1	1	2	1	A	4	2	2	2	3	2	2	1	10	2	9	4	13	6	9	11	4	10	15	5.0	15.4	
17-Nov	11	8	4	4	A	8	4	5	6	8	8	5	4	6	3	4	5	5	4	5	4	4	5	6	5.4	10.9	
18-Nov	6	6	6	9	A	7	4	259	4	5	4	7	8	6	7	8	12	11	6	9	8	5	5	5	17.7	258.8	
19-Nov	4	4	4	4	A	6	6	5	9	7	10	10	9	10	8	7	7	7	9	9	15	29	25	12	9.5	28.7	
20-Nov	5	26	32	11	A	6	11	15	17	29	50	45	66	74	42	49	54	49	44	49	35	37	51	18	35.4	73.6	
21-Nov	19	23	60	35	A	28	15	10	15	34	19	16	11	14	9	4	5	4	6	15	6	9	11	10	16.4	59.6	
22-Nov	8	9	6	8	A	8	8	172	9	18	15	14	15	18	16	15	14	31	42	20	49	25	80	24	27.2	172.1	
23-Nov	19	14	24	15	A	9	8	8	9	10	7	34	23	7	5	4	5	2	2	4	3	4	3	4	9.7	33.8	
24-Nov	5	2	5	3	A	5	6	3	4	4	4	5	4	4	4	8	2	31	11	10	9	4	5	5	6.2	30.7	
25-Nov	8	11	7	6	A	10	45	39	33	33	30	80	83	36	34	31	37	36	34	28	42	31	17	33	32.3	82.9	
26-Nov	24	22	16	17	A	16	20	18	53	46	36	97	50	29	72	6	74	86	6	56	12	77	16	17	37.7	97.3	
27-Nov	19	16	13	11	A	7	21	14	12	57	44	34	28	37	31	24	18	35	19	39	26	31	41	48	27.1	57.5	
28-Nov	27	28	27	33	A	31	28	21	20	21	18	18	22	20	3	9	6	4	4	7	5	3	4	4	15.8	33.1	
29-Nov	2	4	2	3	A	9	7	10	14	14	6	4	7	4	5	7	12	8	5	9	3	12	8	5	7.0	14.2	
30-Nov	3	9	5	4	A	7	7	5	5	9	7	7	6	9	6	10	6	26	10	11	6	16	13	6	8.4	25.5	
7.2 8.5 9.3 7.8 -- 9.7 11.2 25.6 15.0 16.2 13.8 16.2 14.3 14.3 12.1 10.4 12.4 15.0 10.5 13.3 12.1 20.4 16.5 9.3																									Diurnal Average		
26.7 27.9 59.6 35.2 -- 31.0 44.9 258.8 59.9 57.5 49.6 97.3 82.9 73.6 72.0 48.7 73.6 86.0 43.8 56.3 49.1 244.3 121.8 48.3																									Diurnal Maximum		
C - Calibration A - Automated Daily Zero Span																											

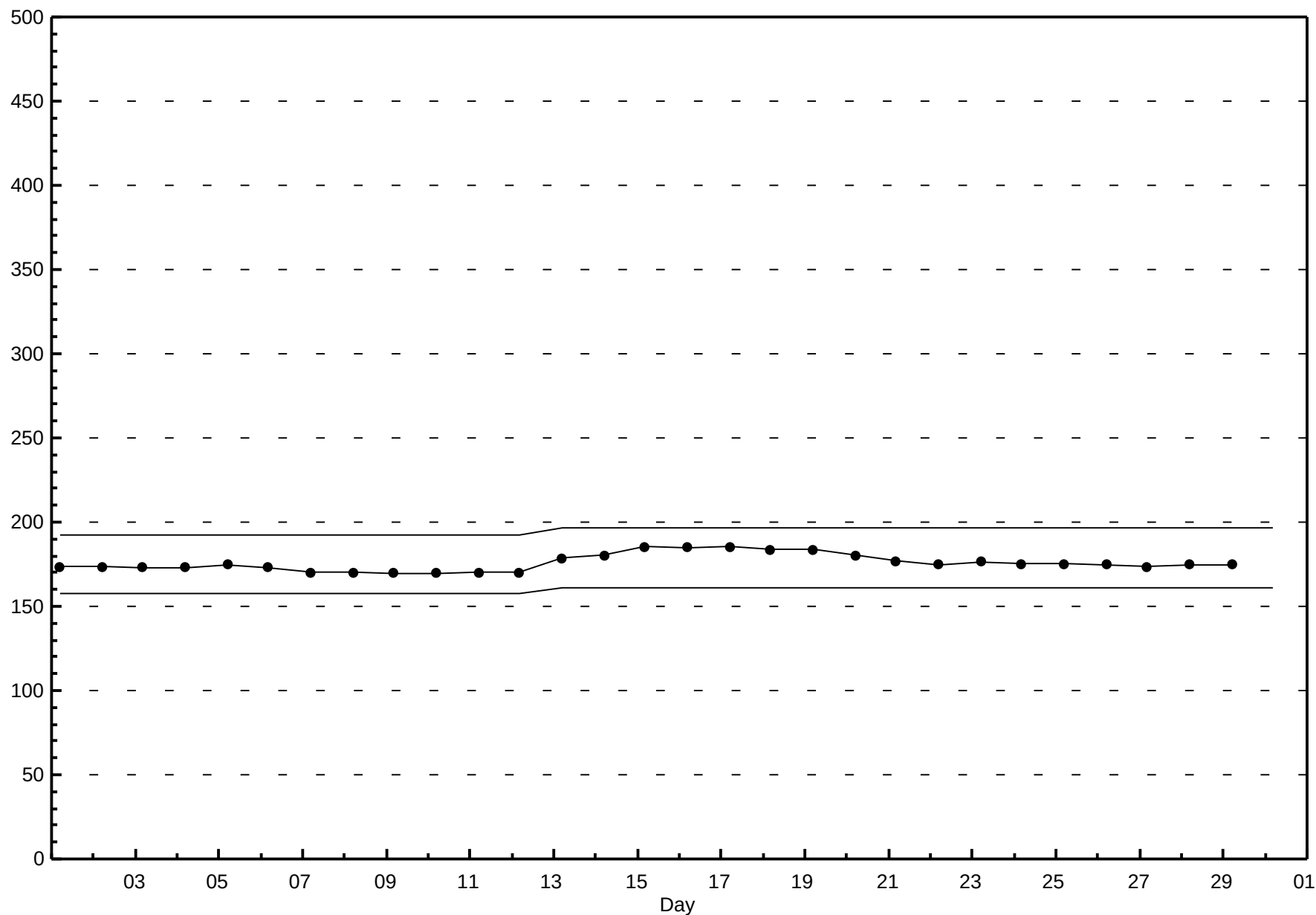
Hourly Maximums

Oxides of Nitrogen (NO_x) - ppb
Beaverlodge - November 2013



Span Responses

Oxides of Nitrogen (NO_x)
Beaverlodge - November 2013



Hourly Averages

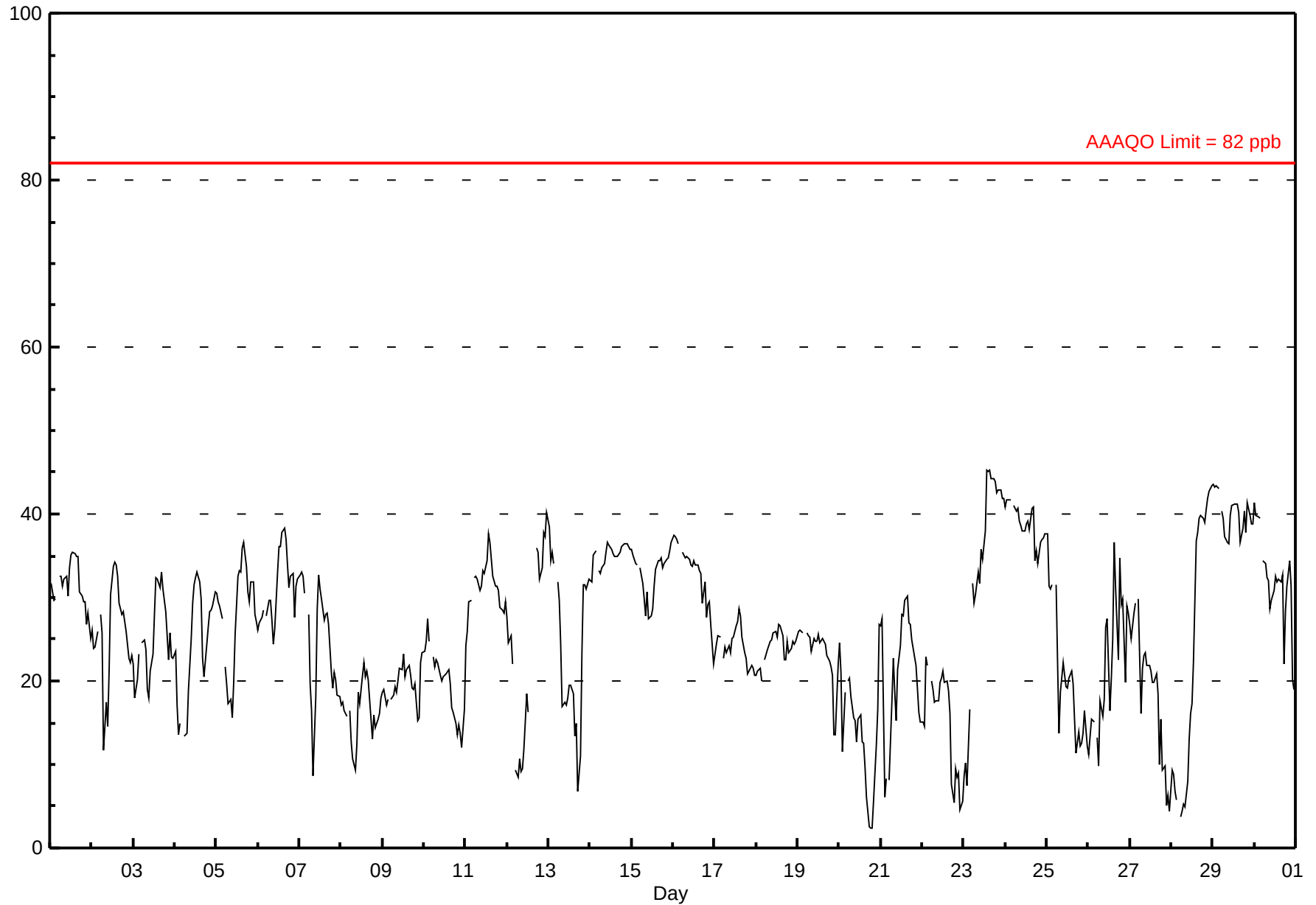
Ozone (O₃) - ppb

Beaverlodge - November 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 45.3 ppb on Nov 23 14:00 Maximum Daily Average: 40.0 ppb on Nov 29																								Hours in Service: 720 Hours of Data: 686 Hours of Missing Data: 34 Hours of Calibration: 34 Percent Operational Time: 100.0		
Minimum Value: 2 ppb on Nov 20 19:00 Maximum Diurnal Average: 29.5 ppb at hour 15 Monthly Average: 25.85 ppb												Minimum Daily Average: 13.9 ppb on Nov 20 Minimum Diurnal Average: 22.4 ppb at hour 9 Percentiles: P ₁ = 4.8 P ₁₀ = 13.6 Q ₁ = 19.6 Median = 25.9 Q ₃ = 32.9 P ₉₀ = 37.5 P ₉₉ = 43.6														
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-Nov	32	31	30	30	A	33	33	31	32	33	30	34	35	35	35	35	35	31	30	30	29	27	28	25	31.4	35.4
2-Nov	26	24	24	26	A	28	26	12	17	15	21	30	34	34	34	33	29	28	28	27	26	23	22	23	25.7	34.2
3-Nov	22	18	20	23	A	25	25	24	19	18	21	23	28	32	32	31	33	31	30	28	23	26	23	23	25.1	33.0
4-Nov	24	17	14	15	A	13	14	14	19	25	29	32	32	33	32	30	23	21	24	27	28	29	29	31	24.0	33.1
5-Nov	31	30	29	28	A	22	20	17	18	16	20	26	33	33	33	36	37	34	31	30	32	32	28	27	27.8	36.5
6-Nov	26	27	28	29	A	28	30	30	27	24	26	33	36	36	38	38	37	34	31	32	33	28	31	32	31.1	38.4
7-Nov	33	33	33	30	A	28	20	16	9	18	29	33	31	30	27	28	28	27	21	19	21	20	18	18	24.8	33.1
8-Nov	17	17	16	16	A	16	13	11	9	12	19	17	21	22	21	21	20	15	13	16	14	15	16	18	16.4	22.2
9-Nov	19	19	17	18	A	18	18	19	19	20	22	21	23	20	21	22	21	19	19	20	15	16	22	23	19.6	23.4
10-Nov	24	25	27	25	A	23	22	23	22	21	20	21	21	21	21	20	17	16	15	14	15	14	12	17	19.7	27.4
11-Nov	24	26	29	30	A	32	33	32	31	31	33	33	34	38	37	35	32	31	31	31	29	28	28	30	31.2	37.6
12-Nov	28	25	25	22	A	9	8	11	9	10	12	18	16	C	C	C	C	36	35	32	34	38	37	40	23.5	40.2
13-Nov	38	34	35	34	A	32	30	24	17	17	17	18	19	20	19	13	15	7	11	23	31	31	31	32	23.9	38.5
14-Nov	32	32	35	36	A	33	33	34	34	35	37	36	36	35	35	35	35	35	36	36	36	36	36	36	35.0	36.7
15-Nov	36	35	34	34	A	34	32	30	28	31	27	28	29	31	33	34	34	35	33	34	35	35	36	37	32.8	36.6
16-Nov	37	37	37	37	A	35	35	35	35	35	34	34	34	34	34	33	33	29	32	28	29	30	27	22	32.9	37.5
17-Nov	23	24	25	25	A	23	24	23	24	23	25	25	27	27	29	28	25	23	23	21	21	22	22	21	24.1	28.7
18-Nov	21	21	21	20	A	23	24	24	25	25	26	26	25	27	27	25	23	23	25	23	24	25	24	25	23.9	26.8
19-Nov	26	26	26	26	A	26	25	25	24	25	25	25	26	25	25	25	24	23	22	22	21	14	14	22	23.5	26.0
20-Nov	25	21	12	19	A	20	20	18	16	15	13	15	16	13	12	10	6	2	2	2	6	12	17	27	13.9	26.8
21-Nov	27	27	6	8	A	8	18	23	19	15	21	24	28	28	30	30	27	27	25	24	22	19	16	15	21.2	30.2
22-Nov	15	15	23	22	A	20	19	18	18	18	20	20	21	20	20	19	16	8	5	9	8	9	5	6	15.3	22.9
23-Nov	9	10	7	17	A	32	29	30	33	32	36	35	38	45	45	45	44	44	44	43	43	43	42	42	34.2	45.3
24-Nov	41	42	42	42	A	41	40	41	39	39	38	38	39	39	38	41	41	34	36	34	37	37	37	38	38.8	41.7
25-Nov	38	31	31	32	A	32	22	14	19	22	21	19	19	20	21	20	15	11	14	12	13	14	16	12	20.4	37.6
26-Nov	11	13	15	15	A	13	10	18	16	18	26	27	16	20	25	37	31	23	35	29	30	20	29	28	22.0	36.5
27-Nov	27	25	28	29	A	30	16	22	23	23	22	22	21	20	20	21	19	10	15	9	10	5	6	4	18.6	29.8
28-Nov	9	9	7	6	A	4	4	5	5	8	13	16	17	22	37	38	39	40	40	39	40	42	43	43	22.9	43.5
29-Nov	44	43	43	43	A	40	39	37	37	36	40	41	41	41	41	40	37	38	40	38	41	40	39	39	40.0	43.6
30-Nov	41	40	40	40	A	34	34	32	32	29	30	31	32	32	32	32	33	22	28	31	34	31	20	19	31.7	41.4
26.8 25.9 25.4 25.8 -- 25.1 23.8 23.1 22.4 23.0 25.1 26.7 27.6 28.8 29.5 29.4 27.9 25.3 25.9 25.5 26.0 25.3 25.2 25.8																								Diurnal Average		
43.6 43.3 43.4 43.1 -- 41.1 40.3 40.7 39.1 38.6 39.8 41.0 41.2 45.3 45.1 45.3 44.3 44.3 43.8 42.6 42.9 42.8 42.7 43.5																								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 - November 2013



Hourly Maximums

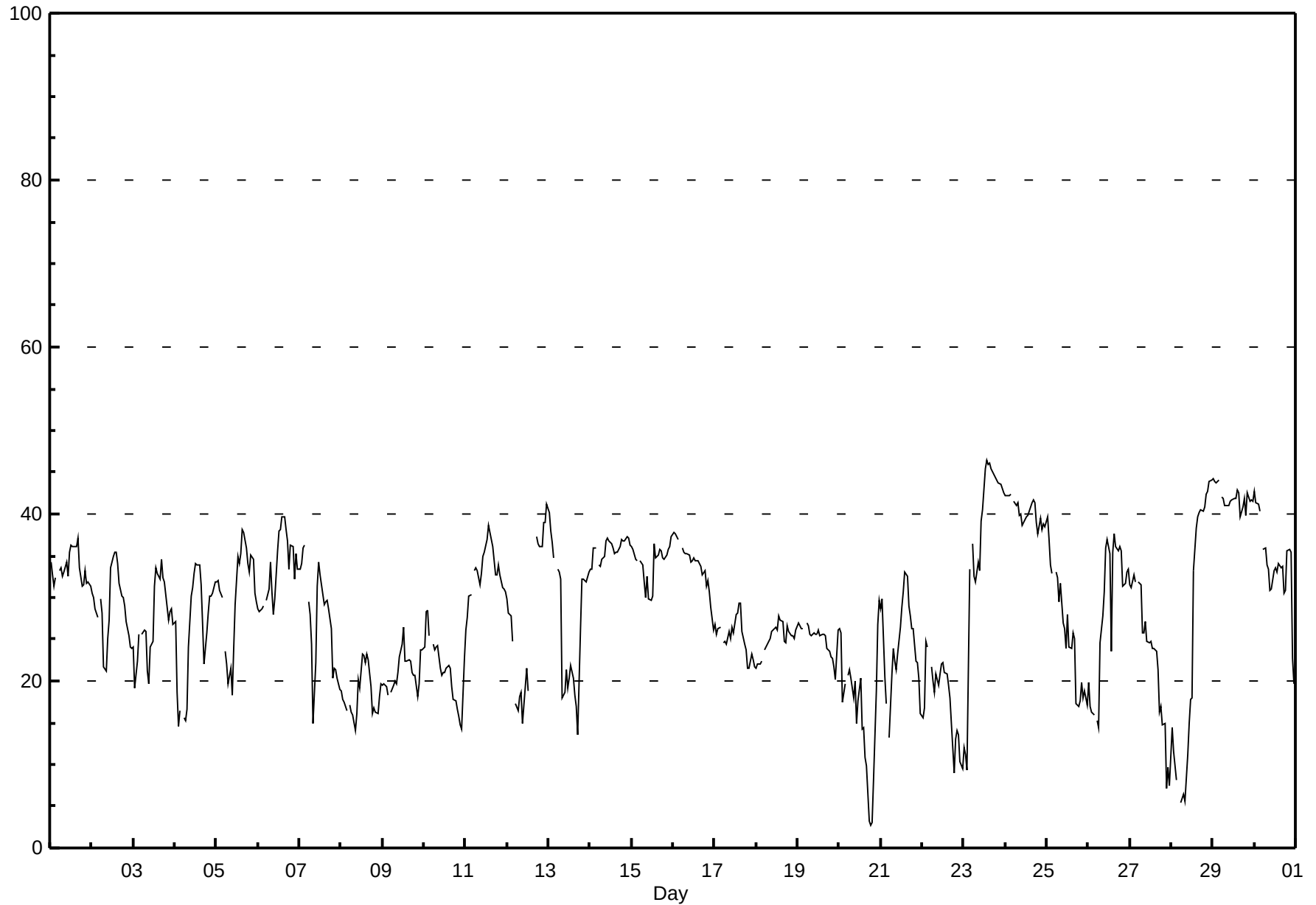
Ozone (O₃) - ppb

Beaverlodge - November 2013

Maximum Value: 46.4 ppb on Nov 23 14:00																				Maximum Daily Average: 41.9 ppb on Nov 29					Hours in Service: 720		
Minimum Value: 3 ppb on Nov 20 19:00																				Minimum Daily Average: 16.7 ppb on Nov 20					Hours of Data: 686		
Maximum Diurnal Average: 31.3 ppb at hour 15																				Minimum Diurnal Average: 25.7 ppb at hour 9					Hours of Missing Data: 34		
Monthly Average: 28.32 ppb																				Percentiles: P ₁ = 6.8 P ₁₀ = 17.1 Q ₁ = 21.9 Median = 29.0 Q ₃ = 34.9 P ₉₀ = 39.6 P ₉₉ = 44.2					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-Nov	34	33	31	32	A	33	34	33	33	34	33	35	36	36	36	36	37	33	31	32	33	32	32	31	33.6	37.2	
2-Nov	30	30	29	28	A	30	28	22	21	25	27	33	35	35	35	34	32	30	30	29	27	25	24	24	28.9	35.4	
3-Nov	24	19	22	26	A	26	26	26	21	20	24	25	31	34	33	32	35	32	32	30	27	28	29	27	27.3	34.5	
4-Nov	27	19	15	16	A	16	15	17	24	30	31	33	34	34	34	32	27	22	26	28	30	30	30	32	26.2	34.1	
5-Nov	32	32	31	30	A	24	22	20	22	18	24	29	35	34	35	38	38	36	34	33	35	35	31	30	30.3	38.2	
6-Nov	29	28	29	29	A	30	31	34	31	28	30	36	38	38	40	40	38	37	33	36	36	32	35	33	33.5	39.6	
7-Nov	33	34	36	36	A	30	28	24	15	22	31	34	33	32	29	29	30	29	26	20	22	21	20	19	27.6	36.2	
8-Nov	19	18	17	16	A	17	16	16	14	16	20	19	23	23	22	23	22	19	16	17	16	16	18	20	18.5	23.2	
9-Nov	20	20	19	18	A	19	20	20	20	21	23	24	26	22	22	23	22	21	21	21	18	20	24	24	21.2	26.4	
10-Nov	24	28	28	25	A	24	24	24	24	21	21	21	21	22	22	22	19	18	18	17	16	15	14	23	21.3	28.5	
11-Nov	26	28	30	30	A	33	34	33	31	33	35	35	37	39	38	37	36	33	33	34	33	31	31	31	33.1	38.6	
12-Nov	30	28	28	25	A	17	16	18	19	15	17	22	19	C	C	C	C	37	37	36	36	39	39	41	27.3	41.1	
13-Nov	40	38	37	35	A	33	33	32	18	19	21	19	20	22	20	18	17	14	26	32	32	32	32	33	27.1	40.2	
14-Nov	33	33	36	36	A	34	34	35	35	37	37	37	36	36	35	35	35	36	37	37	37	37	37	36	35.8	37.2	
15-Nov	36	36	35	34	A	34	34	32	30	32	30	30	30	37	35	35	36	36	35	35	35	36	36	37	34.1	37.3	
16-Nov	38	38	37	37	A	36	35	35	35	35	34	34	35	34	34	34	34	33	33	31	32	31	29	26	34.0	37.8	
17-Nov	27	26	26	26	A	25	25	24	26	25	26	26	28	28	29	29	26	24	24	22	22	23	23	22	25.3	29.4	
18-Nov	21	22	22	22	A	24	24	25	25	26	26	27	26	28	27	27	25	25	27	26	25	25	25	26	25.1	27.8	
19-Nov	27	27	26	26	A	27	27	26	25	26	26	26	26	25	26	26	25	24	23	23	23	22	20	26	25.1	26.9	
20-Nov	26	26	18	20	A	21	21	20	18	20	15	18	20	14	14	11	10	3	3	3	8	19	27	30	16.7	29.7	
21-Nov	29	30	21	17	A	13	21	24	22	21	23	26	29	31	33	33	29	28	26	26	22	22	20	16	24.5	33.0	
22-Nov	16	17	25	24	A	22	20	19	21	19	21	22	22	21	21	19	18	15	9	13	14	14	10	10	17.8	24.7	
23-Nov	12	11	9	33	A	36	32	32	34	33	39	40	45	46	46	46	45	45	44	44	44	44	43	43	36.9	46.4	
24-Nov	42	42	42	42	A	41	41	41	40	40	39	39	40	40	40	41	42	41	39	38	40	38	39	38	40.3	42.3	
25-Nov	40	37	34	33	A	33	32	29	32	27	26	24	28	24	24	26	25	17	17	18	20	18	19	17	26.1	39.6	
26-Nov	20	17	16	16	A	15	14	25	28	31	36	37	35	24	35	38	36	36	36	36	31	32	33	33	28.7	37.7	
27-Nov	31	31	33	32	A	32	32	26	26	27	25	25	25	24	24	23	21	16	17	15	15	7	10	8	22.7	32.7	
28-Nov	14	12	10	8	A	5	6	6	6	11	15	18	18	33	38	40	40	40	40	41	42	43	44	44	25.0	44.2	
29-Nov	44	44	44	44	A	42	42	41	41	41	41	42	42	42	43	42	40	41	42	40	42	42	42	41	41.9	44.2	
30-Nov	43	41	41	40	A	36	36	34	33	31	31	33	34	33	34	34	34	31	31	36	36	35	23	20	33.8	42.6	
		28.9	28.1	27.6	28.0	--	26.9	26.8	26.4	25.7	26.2	27.6	29.0	30.3	30.7	31.3	31.2	30.1	28.4	28.2	28.2	28.3	28.1	27.9	28.0	Diurnal Average	
		44.2	43.8	43.8	44.0	--	42.1	41.9	41.3	41.1	40.9	41.5	41.7	45.4	46.4	46.0	46.0	45.4	44.8	44.3	44.1	43.8	43.6	43.9	44.2	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									

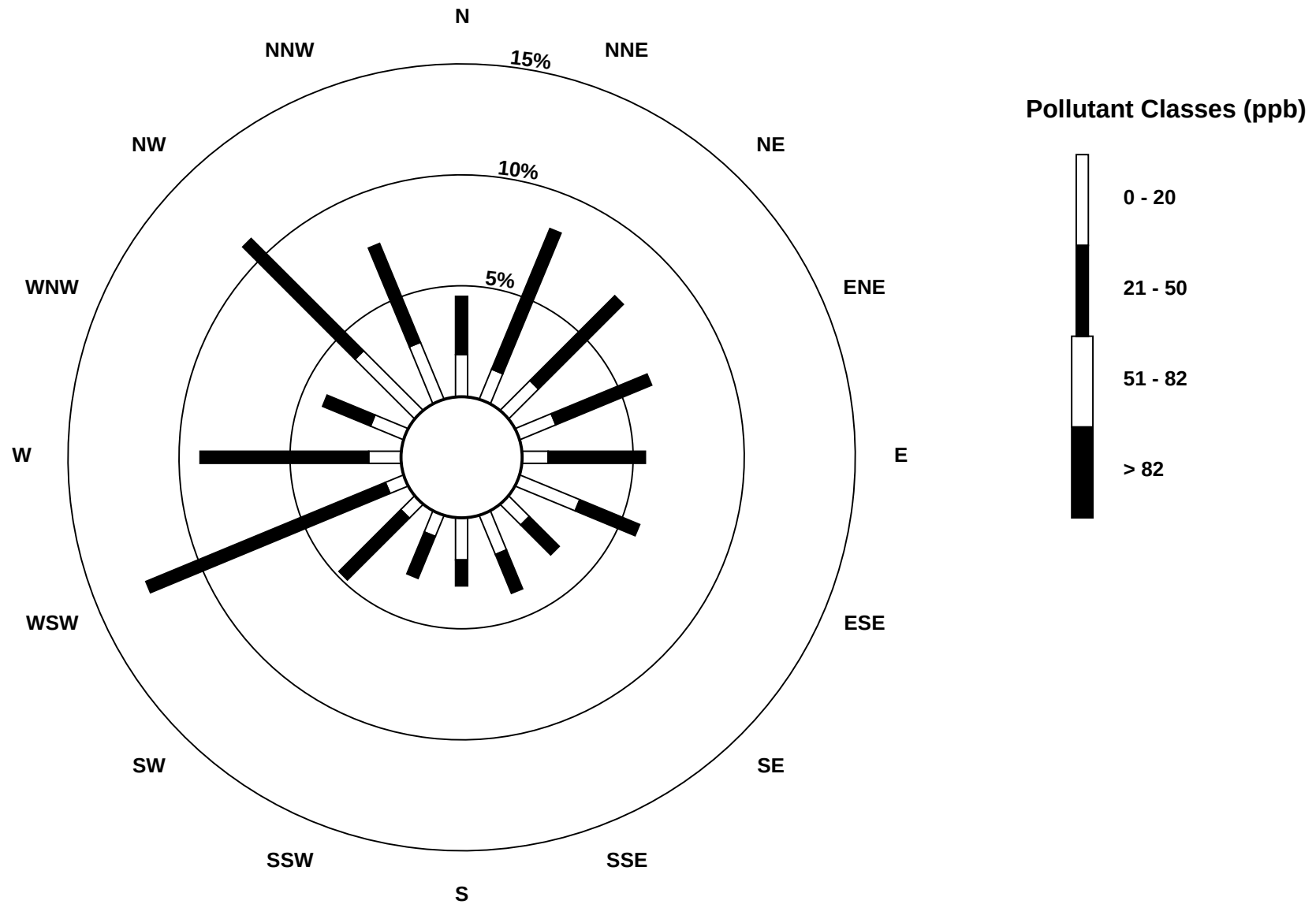
Hourly Maximums

Ozone (O₃) - ppb
Beaverlodge - November 2013



Pollutant Rose

Ozone (O₃) - ppb
Beaverlodge - November 2013



Eight Hour Running Averages

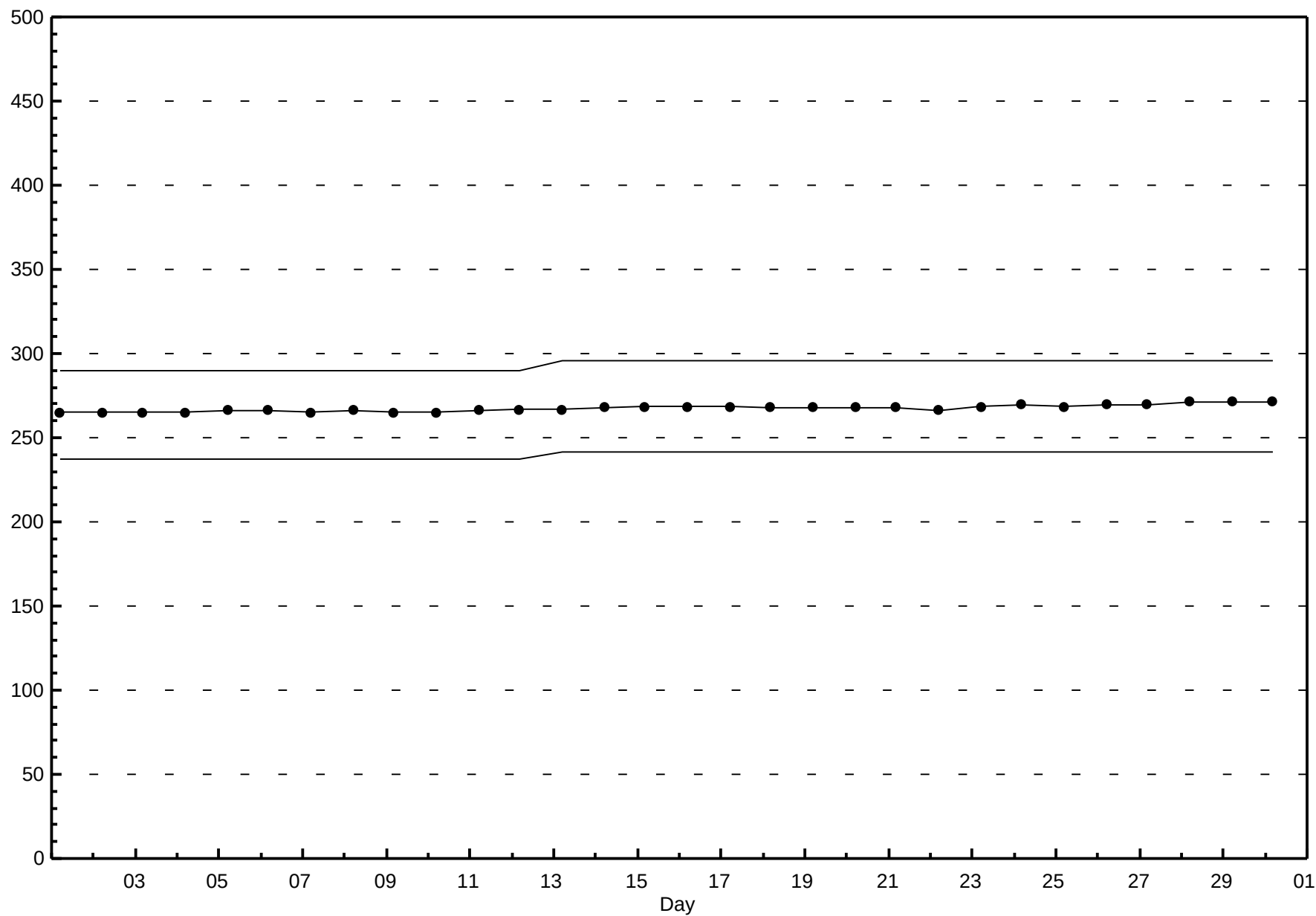
Ozone (O₃) - ppb

Beaverlodge - November 2013

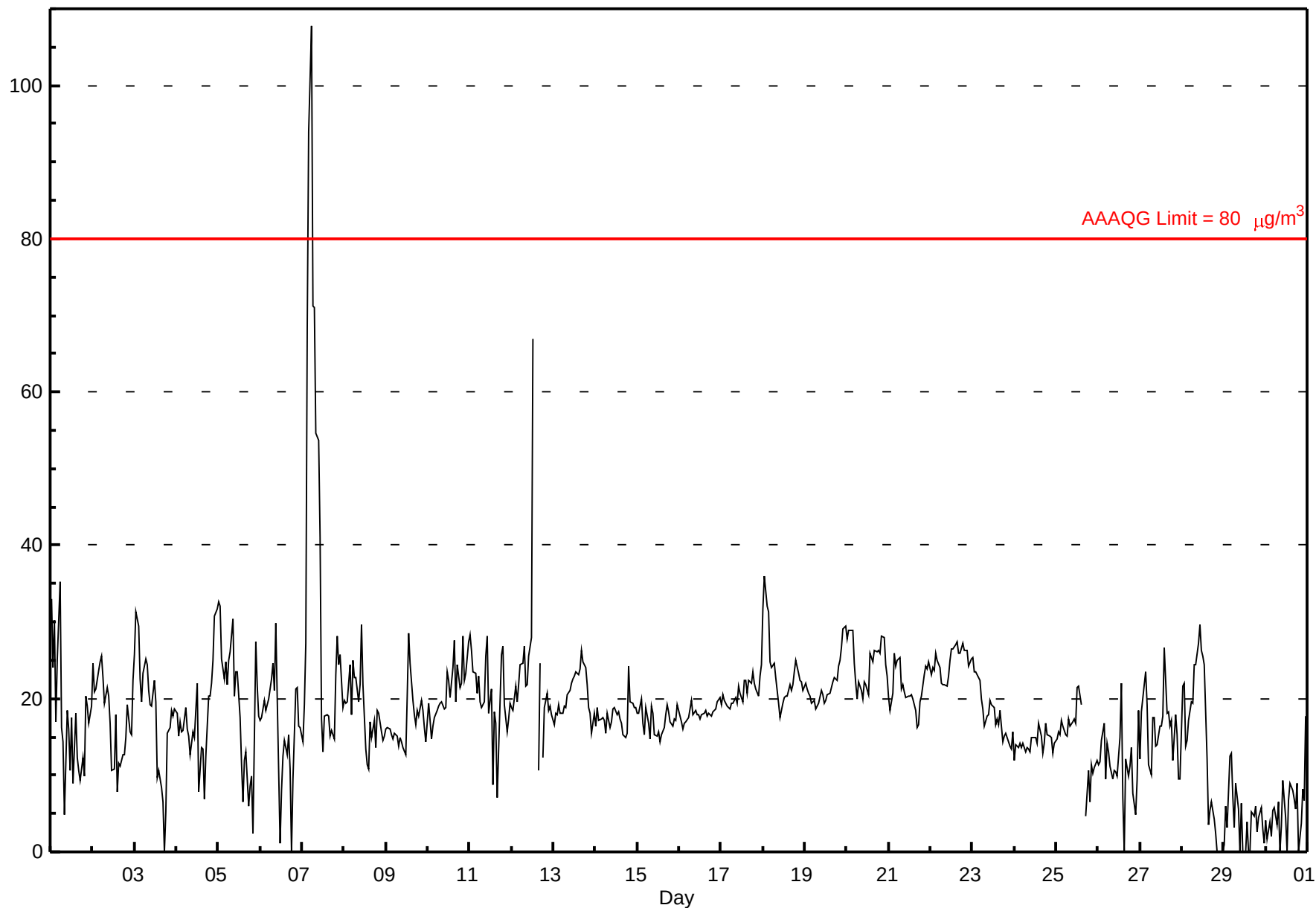
Maximum Value: 44.2 ppb on Nov 23 21:00																								Hours in Service: 720
Minimum Value: 5.6 ppb on Nov 28 10:00																								Hours of Data: 713
Percentiles: P ₁ = 6.7 P ₁₀ = 15.5 Q ₁ = 19.5 Median = 25.4 Q ₃ = 32.2 P ₉₀ = 36.6 P ₉₉ = 42.7																								Hours of Missing Data: 7
																								Hours of Calibration: 7
																								Percent Operational Time: 100.0
Day	Hourly Period Ending At (MST)																							Daily Maximum
1-Nov	32	31	31	31	31	31	31	31	31	32	32	33	33	33	34	34	34	34	33	33	31	31	29	34.0
2-Nov	28	27	27	26	26	26	26	24	22	21	21	23	24	25	27	29	30	31	31	30	28	27	26	31.3
3-Nov	25	24	23	22	22	22	22	22	22	22	22	23	24	25	26	27	29	30	31	30	29	28	27	30.7
4-Nov	26	24	22	20	20	18	17	16	15	16	18	21	22	25	27	29	29	29	28	28	27	27	26	29.5
5-Nov	27	28	29	29	29	28	27	25	23	21	20	20	21	23	24	27	29	31	33	33	33	32	31	33.2
6-Nov	30	29	29	28	28	27	28	28	28	28	28	29	30	31	32	34	35	35	35	35	34	33	32	35.5
7-Nov	32	32	32	32	31	31	30	28	24	22	21	22	23	24	26	28	29	28	26	25	24	23	22	31.9
8-Nov	20	19	18	18	18	17	16	15	14	13	14	14	15	16	18	19	20	19	19	18	17	16	16	20.2
9-Nov	16	16	17	17	17	18	18	18	18	18	19	20	20	21	21	21	21	21	21	20	19	19	19	21.3
10-Nov	20	20	21	22	23	24	24	24	24	23	22	22	21	21	21	21	20	20	19	18	17	16	15	24.1
11-Nov	16	17	19	21	22	24	27	29	30	31	32	32	32	33	34	34	34	34	34	33	32	31	30	34.1
12-Nov	29	29	28	27	27	24	21	18	16	14	12	11	12	12	13	N	N	N	N	N	N	N	35	36.1
13-Nov	36	36	36	36	37	36	35	33	30	27	24	22	22	20	19	18	17	16	15	16	17	19	20	36.8
14-Nov	25	28	31	33	33	33	33	33	34	34	34	35	35	35	35	35	36	36	35	35	36	36	36	35.9
15-Nov	36	36	36	35	35	35	34	33	32	32	31	30	30	29	30	30	31	32	32	33	34	34	35	36.0
16-Nov	35	35	36	36	36	37	36	36	36	35	35	35	35	34	34	34	34	33	33	32	32	31	30	36.6
17-Nov	27	27	26	26	25	24	24	24	24	24	24	24	24	25	25	26	26	26	26	25	25	24	23	27.5
18-Nov	22	21	21	21	21	21	21	22	23	23	24	25	25	25	26	26	25	25	25	25	24	24	24	25.7
19-Nov	24	25	25	25	25	26	26	26	25	25	25	25	25	25	25	25	25	25	24	23	22	21	20	25.8
20-Nov	20	20	19	18	18	19	20	19	18	17	17	17	17	16	15	14	13	11	10	8	7	7	9	20.2
21-Nov	12	15	15	16	18	17	17	17	16	14	16	18	19	22	23	24	25	27	27	27	25	24	22	27.3
22-Nov	20	19	19	18	18	18	18	19	19	19	19	19	19	19	19	19	19	18	16	15	13	12	8	20.4
23-Nov	7	8	8	9	9	12	16	19	23	26	30	32	33	35	37	39	40	42	43	44	44	44	43	44.2
24-Nov	43	42	42	42	42	42	41	41	41	40	40	39	39	39	39	39	39	39	38	38	37	37	37	42.6
25-Nov	36	36	35	35	35	34	32	28	26	24	23	21	21	20	19	20	20	18	18	17	16	15	14	36.2
26-Nov	13	13	13	14	14	14	13	14	14	15	17	18	18	19	21	23	25	26	27	27	29	29	28	29.1
27-Nov	28	28	27	27	27	28	26	25	25	24	24	23	22	21	22	22	21	19	18	17	15	14	10	28.0
28-Nov	9	9	7	7	7	6	6	6	6	6	6	8	9	11	15	20	24	28	31	34	37	39	41	40.8
29-Nov	41	42	42	43	43	43	42	41	40	40	39	39	39	39	39	40	40	40	40	40	39	39	39	43.1
30-Nov	40	40	40	40	40	39	38	37	36	34	33	32	32	32	31	31	31	30	30	30	31	31	29	39.9
Diurnal Maximums																								
N - Not Valid																								

Span Responses

Ozone (O₃)
Beaverlodge - November 2013



Number of Exceedences: 1-hr: 2 24-hr: 1 Maximum Value: 107.8 µg/m³ on Nov 7 06:00																					Maximum Daily Average: 36.3 µg/m³ on Nov 7				Hours in Service: 720	
Minimum Value: 0 µg/m³ on Nov 3 18:00 Maximum Diurnal Average: 22.4 µg/m³ at hour 6 Monthly Average: 18.39 µg/m³																					Minimum Daily Average: 4.3 µg/m³ on Nov 29 Minimum Diurnal Average: 14.9 µg/m³ at hour 18 Percentiles: P ₁ = 0.0 P ₁₀ = 8.6 Q ₁ = 14.8 Median = 18.5 Q ₃ = 22.1 P ₉₀ = 25.7 P ₉₉ = 46.5				Hours of Data: 715 Hours of Missing Data: 5 Hours of Calibration: 0 Percent Operational Time: 99.3	
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-Nov	33	24	30	17	25	35	16	14	5	18	16	11	18	9	18	12	11	9	12	10	20	19	17	19	17.5	35.3
2-Nov	25	21	21	24	25	26	23	19	21	20	17	11	11	18	8	12	11	13	13	15	19	16	15	22	17.7	25.5
3-Nov	26	31	29	22	20	23	25	24	21	19	19	22	19	10	11	8	6	0	5	16	16	18	18	19	17.9	31.4
4-Nov	18	15	17	16	16	19	16	15	13	16	15	18	22	8	14	13	7	12	20	20	22	25	31	32	17.5	31.7
5-Nov	33	32	25	23	25	22	25	26	30	20	24	23	18	12	7	12	13	6	9	10	2	27	22	18	19.3	32.6
6-Nov	17	18	20	18	19	20	23	25	21	30	20	1	8	12	15	13	15	11	0	9	21	21	16	16	16.2	29.9
7-Nov	14	19	27	68	94	108	71	71	55	54	41	17	13	18	18	18	15	16	15	23	28	24	26	19	36.3	107.8
8-Nov	20	19	20	25	18	25	23	23	20	22	30	22	13	11	11	17	15	17	14	18	18	16	15	15	18.5	29.7
9-Nov	16	16	16	15	15	16	15	14	15	14	14	13	20	28	25	20	18	17	18	18	20	18	16	14	17.1	28.4
10-Nov	19	17	15	16	17	19	19	19	20	19	19	24	22	20	24	28	19	24	21	22	28	22	23	27	21.1	28.2
11-Nov	28	26	23	23	21	23	20	19	19	26	28	18	21	9	18	17	7	20	26	27	19	16	17	19	20.4	28.3
12-Nov	19	18	22	20	22	24	25	27	22	22	26	28	67	M	M	11	25	M	12	19	21	18	19	18	23.0	66.9
13-Nov	17	18	18	19	18	18	19	19	20	21	22	23	23	23	23	24	26	25	24	22	19	18	15	18	20.5	26.2
14-Nov	16	19	17	17	18	17	15	18	16	17	19	19	18	18	17	17	15	15	16	24	20	19	19	19	17.7	24.2
15-Nov	18	18	20	17	15	19	17	15	19	18	15	15	16	14	15	16	18	19	18	17	16	17	17	19	17.1	19.9
16-Nov	18	17	16	17	17	18	19	20	18	18	18	17	18	18	18	18	18	18	18	18	19	20	20	18.0	20.1	
17-Nov	19	20	20	19	19	19	19	19	20	19	22	21	20	22	22	21	22	22	23	22	21	20	23	24	20.9	24.4
18-Nov	32	36	32	31	25	24	25	23	21	19	18	19	20	20	20	22	21	22	23	25	23	22	22	21	23.6	35.9
19-Nov	22	21	21	20	19	20	19	19	19	21	20	19	20	20	21	22	22	23	22	24	25	27	29	29	21.9	29.4
20-Nov	28	29	29	29	25	22	20	22	21	20	22	22	20	26	25	25	26	26	26	26	28	28	24	23	24.7	29.0
21-Nov	20	19	21	26	24	25	25	21	22	21	20	20	20	21	20	18	16	17	20	20	23	24	24	25	21.4	26.0
22-Nov	23	24	24	26	25	24	22	22	22	22	23	25	27	26	27	27	26	26	27	26	26	26	24	25	24.8	27.4
23-Nov	25	24	23	23	22	20	19	16	18	18	20	19	19	17	17	17	18	14	15	15	15	14	13	16	18.2	25.3
24-Nov	12	14	14	14	14	14	13	14	13	13	15	15	15	14	17	15	13	14	17	15	15	15	13	14	14.2	16.8
25-Nov	15	16	15	17	16	15	15	17	16	17	17	17	21	22	19	M	M	5	11	7	11	10	11	12	14.7	21.7
26-Nov	11	12	14	17	10	14	13	11	9	11	10	10	15	22	7	0	12	10	11	14	8	5	9	18	11.4	21.9
27-Nov	12	18	22	23	19	11	10	18	17	14	14	16	16	18	27	18	18	16	17	12	18	15	9	9	16.3	29.7
28-Nov	22	22	14	15	17	20	19	24	25	27	30	26	26	24	12	4	5	6	4	2	0	0	0	0	14.3	26.6
29-Nov	1	6	3	12	13	7	3	9	6	0	6	0	0	4	0	0	5	5	6	3	5	6	3	1	4.3	12.9
30-Nov	4	2	4	2	5	6	4	7	0	3	9	5	0	7	9	8	7	6	9	0	4	8	7	18	5.5	17.7
																									Diurnal Average	
																									Diurnal Maximum	
M - Maintenance																										
Alberta Ambient Air Quality Guideline (AAAQG): 1-hr 80 µg/m³ Alberta Ambient Air Quality Objective (AAAQO): 24-hr 30 µg/m³																										



Hourly Maximums

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

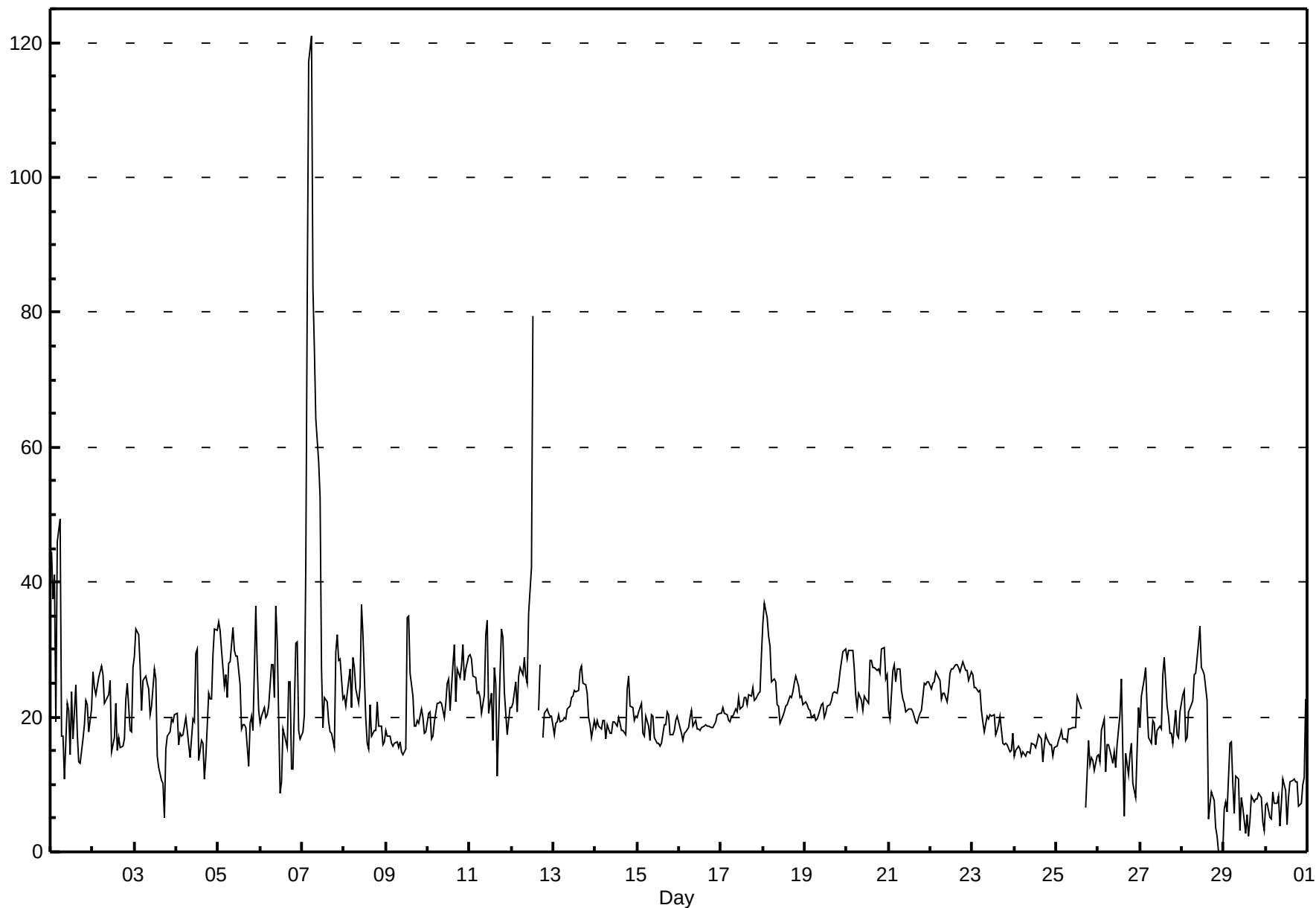
Beaverlodge - November 2013

Maximum Value: 120.9 µg/m³ on Nov 7 06:00																								Hours in Service: 720		
Maximum Daily Average: 43.2 µg/m³ on Nov 7																								Hours of Data: 715		
Minimum Value: 0 µg/m³ on Nov 28 22:00																								Hours of Missing Data: 5		
Maximum Diurnal Average: 24.9 µg/m³ at hour 6																								Hours of Calibration: 0		
Monthly Average: 21.18 µg/m³																								Percent Operational Time: 99.3		
Minimum Daily Average: 7.5 µg/m³ on Nov 29																										
Minimum Diurnal Average: 17.7 µg/m³ at hour 18																										
Percentiles: P ₁ = 3.2 P ₁₀ = 12.5 Q ₁ = 16.9 Median = 20.4 Q ₃ = 24.8 P ₉₀ = 28.6 P ₉₉ = 57.3																										
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-Nov	44	37	41	19	46	49	17	17	11	22	21	14	24	17	25	18	13	13	17	19	22	22	18	21	23.7	49.3
2-Nov	27	24	23	26	27	28	26	22	23	23	25	15	17	22	15	17	16	16	17	23	25	18	18	27	21.6	27.6
3-Nov	29	33	32	28	21	25	26	25	24	20	22	27	26	14	12	11	10	5	15	17	18	20	19	20	20.8	33.1
4-Nov	20	16	18	17	17	20	18	16	14	20	19	29	30	14	16	16	11	14	24	23	23	29	33	33	20.4	33.1
5-Nov	34	33	30	24	26	23	28	28	33	30	29	29	25	18	19	19	19	13	19	20	18	36	28	21	25.1	36.4
6-Nov	19	20	21	20	20	22	28	28	23	36	31	9	10	18	17	15	25	25	12	12	31	31	18	17	21.3	36.5
7-Nov	18	20	43	82	117	121	83	75	64	58	53	27	19	23	22	19	18	18	16	30	32	28	29	23	43.2	120.9
8-Nov	23	22	23	27	21	29	27	24	22	25	37	32	20	16	15	22	17	18	18	22	19	19	16	16	22.1	36.6
9-Nov	18	17	17	16	16	16	16	16	16	15	15	15	35	35	27	23	19	19	19	19	21	20	18	18	19.4	35.0
10-Nov	21	21	17	17	19	22	22	22	22	20	22	25	26	21	28	31	22	27	26	27	31	26	27	29	23.8	30.7
11-Nov	29	29	26	26	23	24	23	21	23	32	34	21	24	17	27	25	11	27	33	32	24	17	19	22	24.5	34.3
12-Nov	21	22	25	21	26	27	26	29	26	25	35	42	79	M	M	21	28	M	17	21	21	21	20	20	27.3	79.4
13-Nov	17	19	19	20	19	19	20	20	21	22	23	23	24	24	24	27	27	25	25	23	20	19	17	19	21.6	27.5
14-Nov	18	19	19	18	20	19	17	19	17	18	19	19	19	20	19	18	18	17	24	26	22	22	19	20	19.5	26.1
15-Nov	20	21	22	18	17	20	19	16	20	20	17	16	16	16	16	19	19	21	20	17	17	18	20	20	18.6	22.1
16-Nov	18	18	17	18	18	19	20	21	19	19	18	18	18	19	19	19	19	19	19	19	19	19	20	21	18.7	20.9
17-Nov	21	21	21	20	20	19	20	20	21	21	23	21	22	23	23	22	23	23	24	22	23	23	24	29	22.1	29.3
18-Nov	34	37	35	32	31	25	26	25	22	22	19	20	21	22	22	23	23	24	25	26	24	23	23	22	25.2	36.9
19-Nov	22	22	21	21	20	20	20	20	20	22	22	20	20	22	22	22	24	24	23	25	27	28	30	30	22.8	30.2
20-Nov	29	30	30	30	27	23	21	24	23	21	23	23	22	28	28	27	27	27	27	27	30	30	26	26	26.2	30.2
21-Nov	21	20	27	28	25	27	27	24	23	22	21	21	21	21	21	19	19	20	21	21	25	25	25	25	22.9	27.8
22-Nov	24	25	25	27	26	26	23	24	24	22	24	27	27	27	28	28	27	27	28	28	27	27	26	27	25.9	28.1
23-Nov	26	24	24	24	24	21	19	18	20	20	20	20	20	17	18	19	20	16	16	16	16	15	15	17	19.5	26.3
24-Nov	14	15	16	15	14	15	14	15	15	15	16	16	15	16	17	17	13	16	17	17	16	16	14	15	15.4	17.5
25-Nov	16	16	17	18	17	17	16	18	18	18	18	18	23	22	21	M	M	7	17	13	14	14	12	14	16.6	23.0
26-Nov	14	13	18	20	12	16	16	15	13	15	12	16	20	26	15	5	15	12	14	16	10	8	15	21	14.9	25.7
27-Nov	18	23	26	27	21	17	16	19	19	16	18	19	18	26	29	22	20	17	18	16	21	17	17	21	20.1	28.9
28-Nov	23	24	17	17	21	22	22	26	26	31	34	27	27	26	22	5	7	9	8	4	2	0	0	0	16.7	33.6
29-Nov	6	7	6	16	16	10	6	11	11	3	8	7	3	6	2	5	8	7	8	8	9	8	4	3	7.5	16.3
30-Nov	7	7	5	5	9	7	7	8	4	7	11	9	4	8	10	11	11	10	10	7	7	10	11	23	8.7	22.6
21.8 21.9 22.7 23.2 24.6 24.9 22.3 22.2 21.3 22.0 23.0 20.9 22.5 20.1 20.0 18.7 18.2 17.7 19.2 19.8 20.4 20.3 19.3 20.7																								Diurnal Average		
44.5 37.5 42.8 81.9 117.2 120.9 83.4 74.7 64.1 57.8 52.6 42.2 79.4 35.0 28.9 30.7 27.7 27.2 33.1 31.8 32.3 36.4 33.1 32.9																								Diurnal Maximum		
M - Maintenance																										

Hourly Maximums

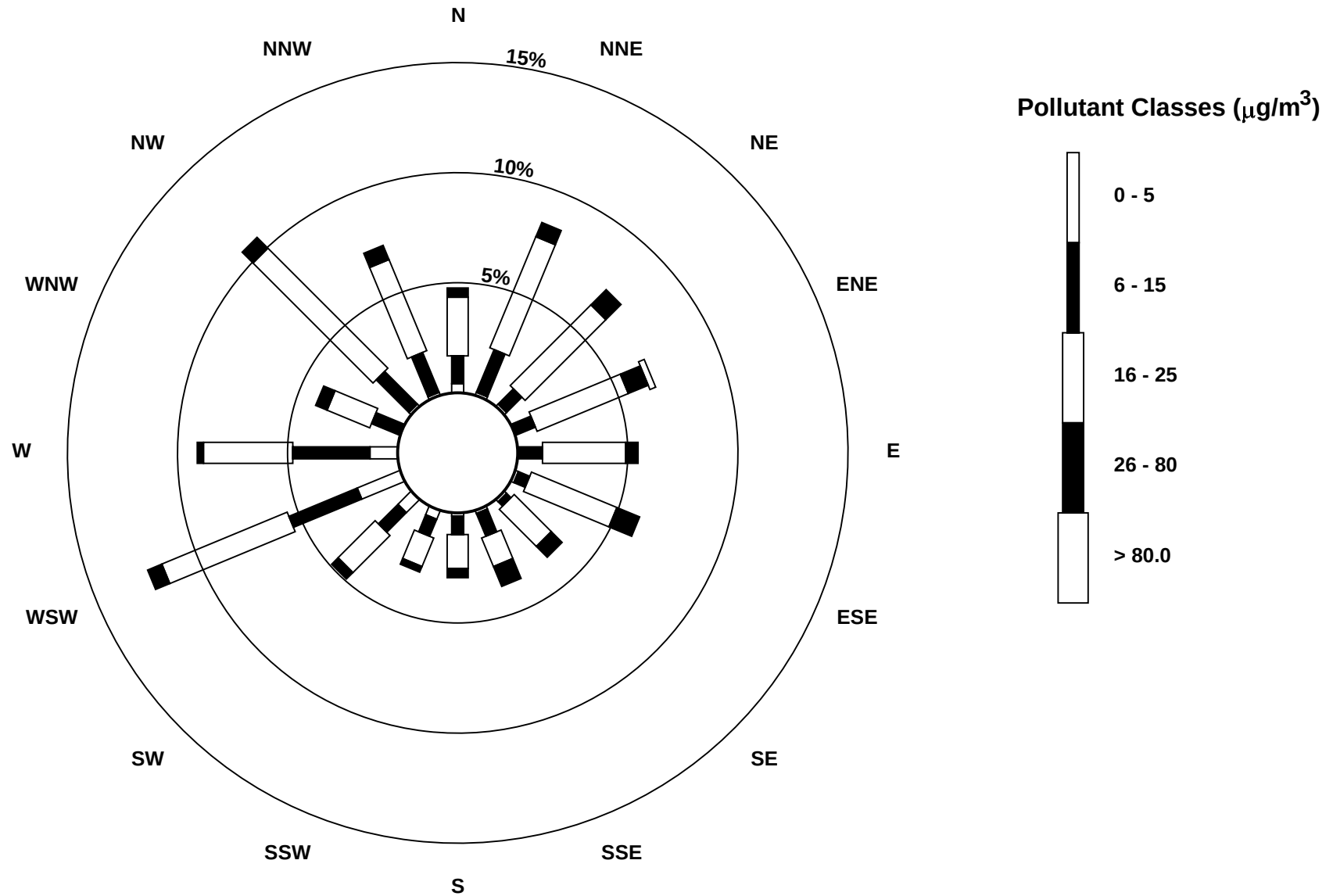
Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$

Beaverlodge - November 2013



Pollutant Rose

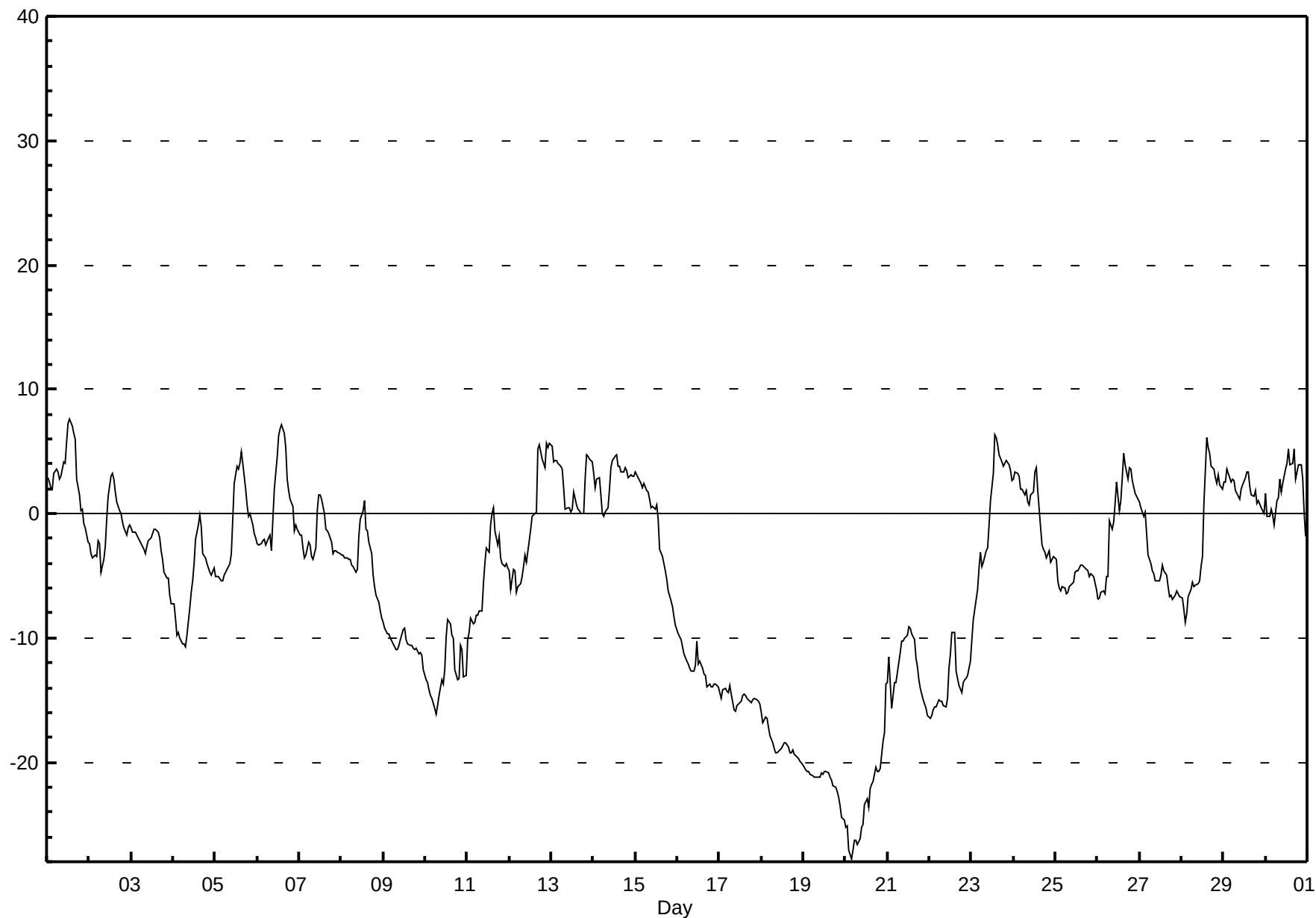
Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Beaverlodge - November 2013



Number of Exceedences (AAAQO): Maximum Value: 7.6 °C on Nov 1 14:00																				1-hr: 0 24-hr: 0 Maximum Daily Average: 3.1 °C on Nov 1					Hours in Service: 720 Hours of Data: 720 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0				
Minimum Value: -28 °C on Nov 20 04:00 Maximum Diurnal Average: -3.0 °C at hour 14 Monthly Average: -5.40 °C																				Minimum Daily Average: -23.1 °C on Nov 20 Minimum Diurnal Average: -6.7 °C at hour 8 Percentiles: P ₁ = -25.3 P ₁₀ = -16.2 Q ₁ = -10.8 Median = -3.7 Q ₃ = 1.0 P ₉₀ = 3.6 P ₉₉ = 6.4									
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-Nov	3	3	2	2	3	4	3	3	3	4	4	6	7	8	7	6	6	3	1	0	0	-1	-1	-2	-1	3.1	7.6		
2-Nov	-2	-3	-4	-3	-3	-2	-2	-5	-4	-3	0	1	3	3	3	2	1	0	0	-1	-1	-2	-1	-1	-1	-1.0	3.2		
3-Nov	-1	-1	-2	-2	-2	-2	-3	-3	-3	-3	-2	-2	-2	-1	-1	-1	-2	-3	-4	-5	-5	-5	-7	-7	-2.9	-1.1			
4-Nov	-7	-8	-10	-10	-10	-10	-11	-11	-10	-8	-6	-5	-4	-2	-1	0	-1	-3	-4	-4	-4	-5	-5	-4	-4	-6.0	-0.1		
5-Nov	-5	-5	-5	-5	-5	-5	-5	-4	-4	-3	-1	2	4	4	4	5	4	2	1	0	0	-1	-2	-2	-2	-1.1	5.0		
6-Nov	-2	-3	-2	-2	-2	-3	-2	-2	-3	0	2	5	6	7	7	6	5	3	2	1	1	-1	-1	-1	-1	0.8	7.1		
7-Nov	-2	-2	-3	-4	-3	-2	-3	-3	-4	-3	0	1	1	1	0	-1	-1	-2	-2	-3	-3	-3	-3	-3	-3	-1.9	1.5		
8-Nov	-3	-3	-4	-4	-4	-4	-4	-4	-5	-4	-2	0	0	1	-1	-1	-2	-3	-5	-6	-7	-7	-8	-8	-8	-3.7	1.1		
9-Nov	-9	-9	-10	-10	-10	-10	-11	-11	-11	-11	-10	-9	-9	-10	-10	-11	-11	-11	-11	-11	-11	-11	-11	-13	-13	-10.4	-8.8		
10-Nov	-13	-14	-14	-15	-15	-16	-16	-15	-15	-13	-14	-13	-10	-8	-9	-10	-10	-13	-13	-13	-11	-11	-11	-13	-13	-12.7	-8.5		
11-Nov	-10	-10	-8	-9	-9	-8	-8	-8	-8	-6	-4	-3	-3	-1	0	0	-1	-3	-2	-4	-4	-4	-4	-4	-4	-5.0	0.5		
12-Nov	-5	-6	-4	-5	-6	-6	-6	-5	-4	-3	-4	-2	-1	0	0	0	5	6	5	4	4	6	5	6	6	-0.7	5.7		
13-Nov	5	4	4	4	4	4	4	2	0	0	0	0	0	2	1	0	0	0	0	3	5	5	4	4	4	2.4	5.4		
14-Nov	3	2	3	3	2	0	0	0	0	2	4	4	5	5	4	4	3	3	4	3	3	3	3	3	3	2.7	4.7		
15-Nov	3	3	3	2	2	2	2	2	1	0	1	0	1	0	-3	-3	-4	-5	-5	-6	-7	-8	-8	-9	-9	-1.5	3.4		
16-Nov	-10	-10	-10	-11	-11	-12	-12	-12	-13	-13	-12	-10	-12	-12	-12	-13	-13	-14	-14	-14	-14	-14	-14	-14	-14	-12.3	-9.7		
17-Nov	-14	-15	-14	-14	-14	-14	-14	-15	-16	-16	-15	-15	-15	-15	-14	-15	-15	-15	-15	-15	-15	-15	-15	-15	-15	-14.8	-13.8		
18-Nov	-16	-17	-16	-16	-17	-18	-18	-19	-19	-19	-19	-19	-19	-18	-18	-19	-19	-19	-19	-19	-20	-20	-20	-20	-20	-18.5	-16.0		
19-Nov	-20	-21	-21	-21	-21	-21	-21	-21	-21	-21	-21	-21	-21	-21	-21	-21	-21	-22	-22	-22	-23	-24	-24	-25	-25	-21.6	-20.4		
20-Nov	-25	-25	-27	-28	-27	-26	-26	-27	-26	-25	-25	-23	-23	-24	-22	-22	-22	-20	-21	-21	-21	-18	-18	-14	-14	-23.1	-13.7		
21-Nov	-14	-12	-16	-15	-14	-14	-12	-11	-10	-10	-10	-10	-9	-9	-10	-10	-12	-12	-13	-14	-15	-15	-16	-16	-16	-12.4	-9.1		
22-Nov	-16	-16	-16	-16	-16	-15	-15	-15	-15	-16	-15	-12	-11	-10	-10	-13	-13	-14	-14	-14	-13	-13	-13	-12	-12	-13.9	-9.6		
23-Nov	-10	-8	-8	-6	-4	-3	-4	-4	-3	-3	-1	1	3	6	6	6	5	4	4	4	4	4	3	3	3	-0.1	6.4		
24-Nov	3	3	3	3	2	2	2	2	1	1	1	2	3	4	2	-1	-3	-3	-3	-4	-3	-4	-4	-4	-4	0.3	3.7		
25-Nov	-4	-5	-6	-6	-6	-6	-6	-6	-6	-6	-6	-5	-5	-5	-4	-4	-4	-4	-5	-5	-5	-5	-5	-6	-6	-5.2	-3.7		
26-Nov	-7	-7	-6	-6	-7	-5	-5	-1	-1	-1	1	3	0	1	3	5	4	3	4	4	3	2	1	1	1	-0.5	4.8		
27-Nov	1	0	0	0	-2	-3	-4	-5	-5	-5	-5	-5	-5	-4	-5	-5	-6	-7	-7	-7	-7	-6	-6	-7	-7	-4.3	0.9		
28-Nov	-7	-8	-9	-8	-7	-6	-6	-6	-6	-6	-5	-4	-3	1	6	5	5	4	4	3	2	3	2	2	2	-1.8	6.2		
29-Nov	3	3	4	3	3	3	3	2	1	1	2	2	3	3	3	2	2	1	2	1	1	0	0	0	0	2.0	3.6		
30-Nov	2	0	0	0	0	-1	1	1	3	2	2	4	4	5	4	4	5	3	3	4	4	3	0	-2	-2	2.1	5.2		
																									Diurnal Average				
																									Diurnal Maximum				

Hourly Averages

External Temperature (ET) - °C
Beaverlodge - November 2013



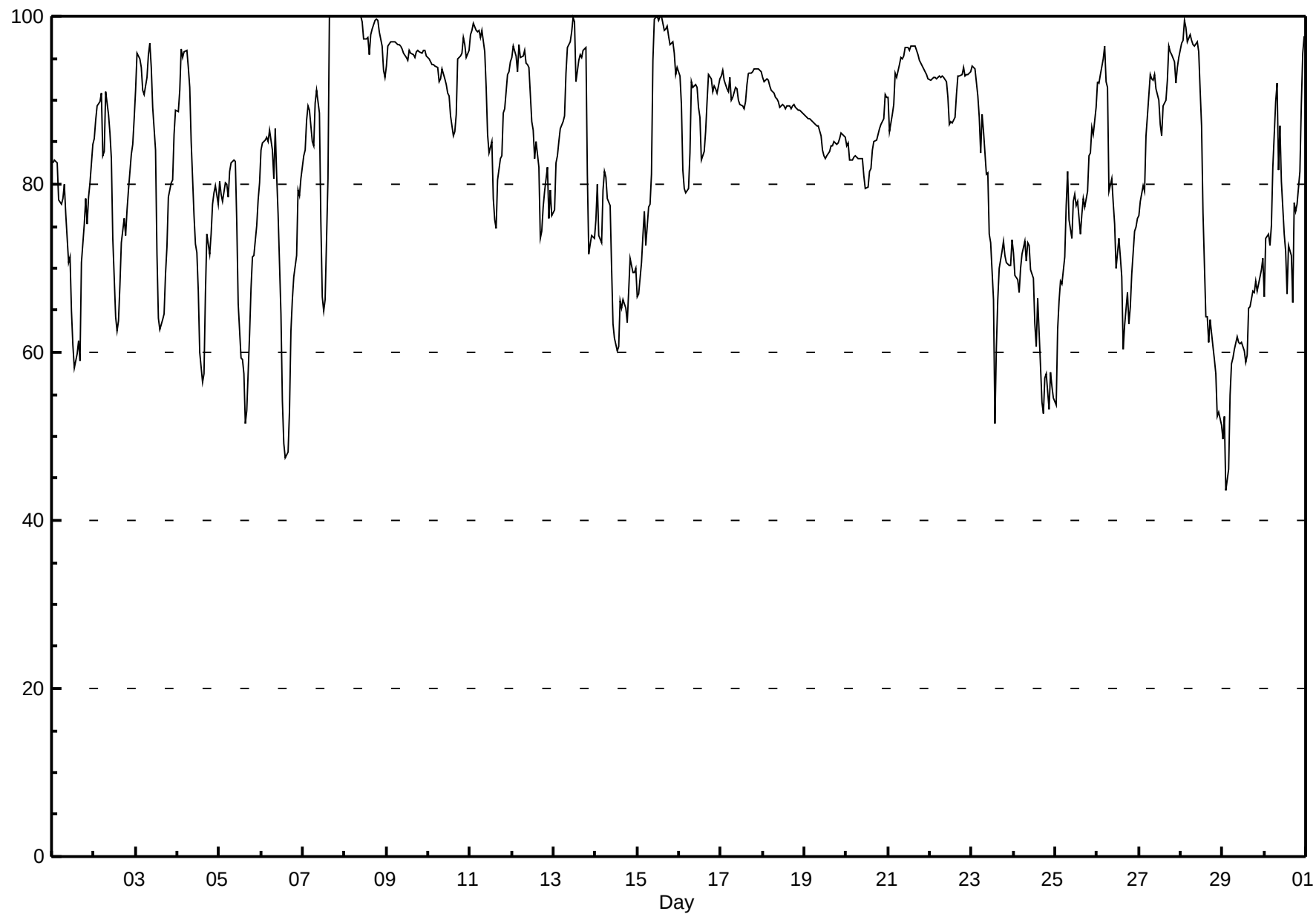
Hourly Averages

Relative Humidity (RH) - %
Beaverlodge - November 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 100.0 % on Nov 7 16:00 Maximum Daily Average: 98.4 % on Nov 8																								Hours in Service: 720 Hours of Data: 720 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0		
Minimum Value: 44 % on Nov 29 03:00 Maximum Diurnal Average: 87.8 % at hour 8 Monthly Average: 83.00 %												Minimum Daily Average: 60.8 % on Nov 29 Minimum Diurnal Average: 75.8 % at hour 14 Percentiles: P ₁ = 51.5 P ₁₀ = 64.2 Q ₁ = 74.1 Median = 85.9 Q ₃ = 93.1 P ₉₀ = 96.5 P ₉₉ = 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-Nov	83	83	83	83	78	78	78	80	76	71	71	65	61	58	60	61	59	71	75	78	75	79	80	85	73.8	84.8
2-Nov	85	88	89	90	91	83	84	91	88	86	83	74	64	63	64	68	73	76	74	77	79	84	85	88	80.3	91.1
3-Nov	91	96	95	94	91	91	93	95	97	94	89	84	72	64	63	64	65	69	73	78	80	80	86	89	83.0	96.8
4-Nov	89	91	96	95	96	96	94	92	85	76	73	72	67	60	57	58	67	74	72	74	78	79	80	78	79.0	96.0
5-Nov	80	79	78	80	80	78	82	82	83	83	75	66	59	59	57	52	53	62	68	71	71	75	78	80	72.2	82.8
6-Nov	84	85	85	86	85	86	84	81	87	81	76	65	54	49	47	48	53	63	66	69	72	79	79	81	72.7	86.7
7-Nov	83	84	88	89	89	85	85	90	91	88	76	67	65	66	81	100	100	100	100	100	100	100	100	100	88.6	100.0
8-Nov	100	100	100	100	100	100	100	100	100	100	99	97	97	97	95	98	98	100	100	100	98	96	94	93	98.4	100.0
9-Nov	94	96	97	97	97	97	97	97	96	96	96	95	95	96	96	95	95	96	96	96	96	96	96	95	95.9	97.0
10-Nov	95	94	94	94	94	94	92	93	94	93	92	91	90	88	86	86	88	95	95	96	98	97	95	96	92.9	97.5
11-Nov	98	98	99	98	98	98	97	98	96	92	86	84	85	78	76	75	81	83	83	88	89	93	93	95	90.1	99.2
12-Nov	95	96	95	93	97	95	95	96	94	94	94	87	86	83	85	82	74	74	77	79	82	76	79	76	87.0	96.6
13-Nov	77	83	83	85	87	88	88	93	96	97	98	100	99	92	95	95	95	96	96	81	72	73	74	74	88.2	99.8
14-Nov	76	80	74	73	79	82	81	78	77	70	63	62	60	61	66	65	66	65	64	67	71	69	69	70	70.4	81.6
15-Nov	67	67	71	74	77	73	77	78	81	95	100	100	99	100	100	98	98	99	98	97	97	96	93	94	88.6	100.0
16-Nov	93	90	82	80	79	80	84	92	92	92	92	89	88	83	84	86	90	93	93	91	92	91	91	93	88.2	93.0
17-Nov	93	94	92	91	91	93	90	90	91	91	90	90	89	89	90	92	93	93	93	94	94	94	94	93	91.9	93.8
18-Nov	93	92	93	92	92	91	91	90	90	90	89	89	89	89	89	89	89	89	89	89	89	89	89	89	90.1	92.8
19-Nov	88	88	88	88	88	87	87	87	87	86	84	83	83	83	84	85	85	85	85	85	85	86	86	86	85.7	88.1
20-Nov	85	85	83	83	83	83	83	83	83	83	81	79	80	81	82	84	85	85	86	87	87	88	91	90	84.2	90.7
21-Nov	90	86	88	89	93	93	94	95	95	95	96	96	96	96	96	96	96	95	95	94	94	93	93	93	93.8	96.4
22-Nov	92	93	93	93	93	93	93	93	93	92	90	87	88	87	88	91	93	93	93	94	93	93	93	93	91.8	93.9
23-Nov	94	94	94	90	88	84	88	86	81	81	74	73	66	52	60	66	70	72	73	72	71	70	70	73	76.8	94.0
24-Nov	72	69	69	67	70	72	73	71	73	73	70	69	63	61	66	58	54	53	57	57	53	58	56	54	64.1	73.2
25-Nov	54	63	66	69	68	71	77	82	76	74	78	79	77	78	74	76	78	77	79	83	84	87	86	89	76.0	89.1
26-Nov	92	92	93	95	96	92	91	79	81	78	75	70	73	71	69	60	63	67	63	65	69	74	75	76	77.6	96.4
27-Nov	76	78	80	79	86	88	93	93	92	93	91	90	87	86	89	90	92	96	96	95	95	92	94	95	89.5	96.4
28-Nov	97	97	100	99	97	98	97	97	96	97	96	91	87	77	64	64	61	64	61	59	57	52	53	51	79.7	99.5
29-Nov	50	52	44	46	55	59	59	60	62	61	61	61	60	59	60	65	65	67	67	68	67	69	70	71	60.8	71.3
30-Nov	67	74	74	73	75	82	90	92	82	87	80	74	72	67	73	71	66	78	77	78	81	89	96	98	78.9	97.7
84.4 85.5 85.5 85.5 86.4 86.3 87.3 87.8 87.2 86.3 84.0 81.0 78.5 75.8 76.5 77.4 78.2 81.0 81.4 82.1 82.3 83.3 83.9 84.6																								Diurnal Average		
100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 99.7 100.0 99.4 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0																								Diurnal Maximum		

Hourly Averages

Relative Humidity (RH) - %
Beaverlodge - November 2013



Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Beaverlodge - November 2013

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	14	10	6	6	12	22	24	18	22	14	7	1	9	21	27	26	22	14	13	7	3	2	4	2	12.5	27.4
Dir	244	232	224	190	244	243	242	241	240	240	218	202	248	249	241	244	250	245	239	235	260	230	242	96	241	241
2 Spd	2	2	1	4	2	6	10	6	7	3	8	12	13	11	16	15	12	12	14	10	6	5	7	10	6.9	15.6
Dir	83	147	108	54	40	350	331	308	340	327	342	36	53	57	32	28	27	19	7	5	359	340	9	37	18	32
3 Spd	14	17	14	12	11	10	10	9	8	7	9	11	12	14	15	11	10	6	6	5	4	5	5	3	7.6	17.1
Dir	39	34	28	26	16	3	3	345	326	334	344	331	318	313	302	311	310	333	359	25	272	283	264	27	346	34
4 Spd	2	4	2	2	2	3	4	4	4	4	6	8	9	10	11	10	9	8	8	6	5	8	5	2	4.7	10.7
Dir	107	176	90	151	136	103	108	121	148	168	172	184	183	168	155	161	116	88	84	95	94	118	130	136	137	155
5 Spd	2	4	4	3	4	4	4	4	2	2	3	6	19	20	18	22	26	14	5	4	8	4	7	3	5.9	26.2
Dir	106	110	140	105	115	170	73	166	163	136	153	197	236	243	244	263	259	250	240	209	245	200	228	228	232	259
6 Spd	5	3	1	0	1	3	5	0	1	8	9	14	21	27	33	31	24	15	11	6	3	3	3	4	7.9	33.3
Dir	223	241	45	192	60	58	43	296	224	252	244	255	274	266	259	265	268	261	272	246	258	67	55	58	264	259
7 Spd	3	4	3	3	4	4	2	1	1	2	11	22	23	16	18	14	10	6	9	N	13	11	12	13	6.1	22.5
Dir	42	52	107	78	64	56	56	102	250	296	89	87	92	80	60	59	66	20	335	N	12	331	322	322	50	92
8 Spd	14	13	12	13	11	5	6	8	6	1	1	3	4	1	4	2	5	11	13	11	13	12	11	11	6.4	13.6
Dir	316	315	311	299	299	305	312	296	268	112	63	77	98	115	155	68	354	4	356	342	333	328	329	325	325	316
9 Spd	9	10	9	5	8	10	14	12	9	6	6	5	5	9	10	9	5	3	3	2	3	5	7	6	5.2	13.6
Dir	322	326	333	343	2	6	11	7	359	338	333	336	342	310	305	302	303	344	36	51	94	128	123	92	348	11
10 Spd	8	8	10	11	6	5	3	2	2	2	4	3	1	2	4	4	3	3	4	3	3	2	1	2	2.5	10.7
Dir	79	85	76	76	76	292	347	59	212	79	211	206	133	68	49	138	128	109	140	92	62	127	146	44	89	76
11 Spd	2	3	3	2	4	3	3	4	4	3	5	4	6	4	4	4	2	6	4	3	3	1	4	3	2.9	5.6
Dir	96	165	142	124	101	116	114	147	182	149	157	123	98	82	97	106	142	68	64	52	131	89	75	95	112	98
12 Spd	3	0	3	2	1	2	2	5	4	2	6	5	1	3	3	2	9	10	13	7	12	21	20	16	4.4	21.4
Dir	78	257	23	76	10	221	43	317	3	56	299	4	199	320	201	109	268	250	246	244	249	253	242	263	262	253
13 Spd	9	4	7	6	4	2	4	5	12	5	5	8	5	0	4	3	3	1	1	9	21	22	20	19	5.1	21.9
Dir	299	231	245	266	234	297	259	16	359	346	169	149	117	6	314	285	303	251	353	259	269	264	264	267	272	264
14 Spd	13	15	22	22	16	16	15	18	20	21	28	32	34	32	33	30	32	34	33	39	36	31	28	31	26.1	39.2
Dir	273	256	256	252	237	235	238	244	243	248	253	256	254	249	242	248	250	252	262	254	244	245	250	259	250	254
15 Spd	35	25	17	31	24	22	10	2	4	5	2	6	7	17	29	34	34	34	27	22	24	23	26	22	7.0	34.9
Dir	263	256	250	260	265	264	249	219	72	320	163	158	143	89	66	58	48	43	38	30	28	28	30	33	14	263
16 Spd	24	22	23	23	19	17	16	15	15	11	7	3	8	7	6	5	3	2	2	3	5	5	5	2	10.1	24.0
Dir	34	33	34	37	29	28	31	26	33	32	58	70	39	58	31	26	7	47	43	39	44	54	56	256	35	34
17 Spd	3	4	0	2	2	3	1	2	4	2	5	9	10	6	8	9	9	10	10	9	11	10	11	10	5.1	11.4
Dir	217	252	279	350	29	223	83	43	55	282	26	23	33	33	27	20	22	10	14	349	353	345	336	334	5	353
18 Spd	9	11	9	10	12	15	14	14	15	13	14	13	11	11	11	10	9	9	11	11	11	10	11	10	11.2	14.6
Dir	333	340	336	328	326	317	316	316	319	327	325	327	319	312	308	307	308	315	324	329	325	320	316	317	321	317
19 Spd	14	13	13	8	10	9	12	13	12	9	8	11	11	10	10	11	13	11	9	6	4	4	2	4	9.2	13.7
Dir	317	322	319	319	314	310	314	324	314	321	329	324	330	324	321	317	315	316	320	320	330	300	359	31	320	317
20 Spd	3	1	3	3	4	2	2	2	2	2	2	2	1	4	1	2	1	2	3	4	5	7	4	1	0.3	6.7
Dir	38	99	168	118	132	165	273	33	43	78	121	93	281	260	235	201	189	188	270	308	18	319	32	15	19	319
21 Spd	4	7	3	1	4	3	3	3	3	6	8	11	13	17	18	12	12	10	14	13	13	11	8	12	5.0	18.3
Dir	63	35	244	50	63	149	102	77	89	119	119	112	104	92	86	67	49	38	15	355	331	324	322	319	51	86
22 Spd	11	7	5	3	5	1	5	8	7	8	8	5	3	3	2	5	3	4	2	2	1	1	1	3	1.2	10.9
Dir	324	335	3	327	299	228	178	151	121	119	117	126	135	138	119	40	62	170	115	65	231	98	185	21	98	324

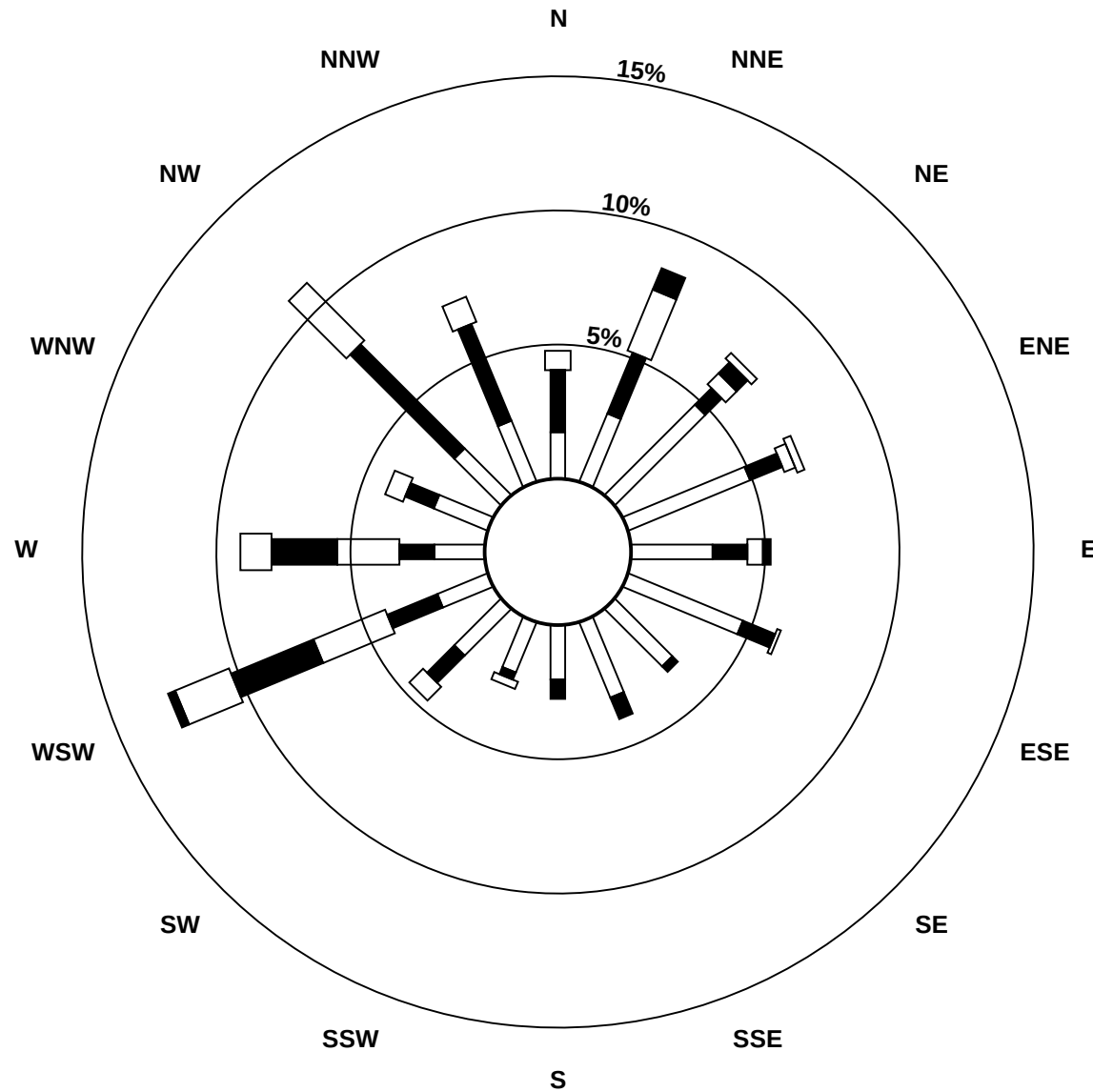
Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Beaverlodge - November 2013

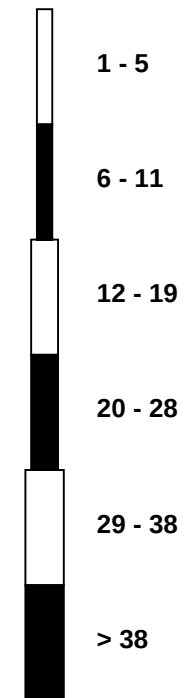
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
23 Spd	4	2	3	4	3	0	4	3	3	2	1	8	19	22	16	29	37	34	27	14	23	30	18	23	11.3	36.6
Dir	67	112	79	36	111	141	136	127	76	95	20	264	281	280	263	243	244	246	249	266	268	264	276	266	259	244
24 Spd	18	23	23	16	22	23	22	21	10	11	9	4	8	8	12	16	9	5	4	1	4	2	4	6	8.5	23.0
Dir	277	257	255	267	259	262	262	273	307	291	287	334	291	328	13	32	24	318	268	322	288	51	42	25	286	262
25 Spd	8	3	3	4	2	2	4	7	3	1	1	2	7	1	3	2	2	3	2	2	1	0	5	2	0.8	8.1
Dir	23	67	152	46	46	68	326	48	253	203	346	4	269	174	230	324	154	229	203	73	176	318	323	304	359	23
26 Spd	2	4	4	6	1	3	4	2	2	3	6	5	1	1	2	6	5	4	6	3	3	4	3	0	2.0	6.2
Dir	298	176	275	22	218	140	56	330	34	292	27	335	260	89	348	350	342	18	16	317	318	315	10	320	351	27
27 Spd	1	1	6	3	10	9	3	3	3	4	3	4	3	3	3	3	3	3	1	1	3	1	3	2	0.9	9.8
Dir	226	16	40	85	134	100	278	322	124	87	232	241	328	282	219	204	177	108	54	176	115	202	75	335	118	134
28 Spd	2	1	3	3	2	5	3	2	2	3	4	4	6	4	34	32	40	31	16	9	5	17	21	17	9.3	39.8
Dir	71	197	19	295	10	275	199	187	239	242	168	113	57	273	252	253	250	248	265	231	211	253	254	266	251	250
29 Spd	11	17	9	11	19	17	17	13	14	16	19	21	22	29	17	17	10	11	13	12	12	8	8	4	13.7	29.2
Dir	258	254	280	268	269	279	276	286	285	280	273	262	262	262	252	245	240	240	224	224	232	232	226	237	259	262
30 Spd	8	2	1	0	3	5	9	6	13	4	12	1	11	7	6	4	6	2	2	6	3	2	14	15	2.2	14.9
Dir	244	187	119	223	158	202	213	190	206	136	212	47	242	219	235	306	326	32	68	350	32	47	341	343	249	343
Spd	3.9	2.9	2.5	2.6	2.4	3.3	3.3	2.8	2.5	2.3	1.9	1.2	2.9	3.9	4.1	4.4	5.2	4.0	4.0	3.5	4.1	4.7	4.3	4.7	Diurnal Average	
Dir	311	299	308	313	296	283	294	303	299	292	266	290	276	275	274	285	283	288	305	304	299	287	298	308	Diurnal Maximum	
Spd	34.9	24.8	23.0	31.1	23.7	23.0	23.9	20.6	21.6	21.0	27.9	31.7	34.1	32.4	33.5	33.7	39.8	34.4	33.1	39.2	35.8	31.5	27.6	31.3	Diurnal Maximum	
Dir	263	256	34	260	265	262	242	273	240	248	253	256	254	249	252	58	250	43	262	254	244	245	250	259		
Maximum Speed Value: 40 km/h on Nov 28 17:00																								Hours in Service: 720		
Maximum Daily Speed Average: 26.1 km/h on Nov 14																								Hours of Data: 719		
Maximum Diurnal Speed Average: 5.2 km/h at hour 17																								Hours of Missing Data: 1		
Monthly Average Velocity: 3.33 km/h 293.1 deg Speed Percentiles: P ₁ = 0.4 P ₁₀ = 1.8 Q ₁ = 3.0 Median = 5.9 Q ₃ = 12.0 P ₉₀ = 21.1 P ₉₉ = 34.3																								Percent Operational Time: 99.9		
All monthly, daily, and diurnal averages have been calculated using vector methods																										
N - Not Valid																										
Frequency Distribution																										
		Speed Range (km/h)																								
Direction	0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total																			
North	24	36	13	0	0	0	73																			
NorthEast	58	25	20	11	4	0	118																			
East	58	14	6	2	0	0	80																			
SouthEast	46	18	0	0	0	0	64																			
South	34	10	0	0	0	0	44																			
SouthWest	34	22	19	8	6	0	89																			
West	27	17	26	35	17	2	124																			
NorthWest	33	57	37	0	0	0	127																			
Total	314	199	121	56	27	2	719																			

Wind Rose

Wind Speed (WS) (km/h)
Beaverlodge - November 2013



Wind Speed Classes (km/h)



Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Beaverlodge - November 2013

Maximum Speed: 40 km/h on Nov 28 17:00																				Maximum Daily Speed Average: 26.5 km/h on Nov 14										Hours in Service: 720	
Minimum Speed: 1 km/h on Nov 27 19:00																				Minimum Daily Speed Average: 3.5 km/h on Nov 20										Hours of Data: 719	
Maximum Diurnal Speed Average: 13.2 km/h at hour 16																				Minimum Diurnal Speed Average: 6.7 km/h at hour 10										Hours of Missing Data: 1	
Monthly Average Speed: 9.41 km/h																				Percentiles: P ₁ = 1.6 P ₁₀ = 2.8 Q ₁ = 3.8 Median = 6.6 Q ₃ = 12.2 P ₉₀ = 21.6 P ₉₉ = 34.4										Percent Operational Time: 99.9	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24							
1-Nov	14	10	8	7	12	23	24	18	22	14	8	4	12	22	27	26	22	14	14	7	6	6	5	3	13.6	27.4					
2-Nov	3	4	4	4	3	6	10	7	7	4	8	12	13	11	16	16	12	12	14	10	6	6	7	10	8.6	15.9					
3-Nov	15	17	14	12	11	10	10	9	8	7	10	11	12	14	15	11	10	6	6	5	4	5	5	5	9.7	17.1					
4-Nov	3	4	2	3	3	3	4	4	4	4	6	8	9	10	11	11	9	8	8	6	6	8	5	3	5.9	11.0					
5-Nov	2	4	5	3	5	4	4	4	3	3	3	8	20	21	19	22	26	15	6	5	9	5	7	6	8.6	26.5					
6-Nov	5	5	2	1	2	3	5	1	3	8	9	14	22	28	34	31	24	15	11	6	4	3	4	4	10.2	33.5					
7-Nov	4	4	4	3	4	4	2	2	2	3	12	22	23	16	18	14	13	9	14	N	13	11	12	13	9.7	22.7					
8-Nov	14	13	12	13	11	5	7	8	7	3	1	3	4	2	5	3	5	11	13	11	14	12	11	11	8.3	13.6					
9-Nov	9	10	9	6	8	10	14	13	9	7	6	6	6	9	10	9	6	4	3	2	3	6	7	6	7.4	13.7					
10-Nov	8	8	10	11	7	5	6	2	3	2	4	3	1	2	4	5	4	4	4	4	3	2	2	2	4.5	10.8					
11-Nov	3	3	4	3	4	3	4	4	5	3	5	5	6	4	4	5	3	6	4	5	3	3	4	4	4.0	5.7					
12-Nov	3	3	3	3	4	3	5	6	6	3	9	7	3	5	4	6	11	10	13	8	12	22	20	17	7.7	21.6					
13-Nov	9	4	7	6	4	3	5	8	13	7	6	8	6	2	4	4	4	2	5	10	21	22	20	19	8.2	21.9					
14-Nov	14	15	22	22	16	16	15	18	20	21	28	32	34	33	33	30	32	34	34	39	36	32	28	31	26.5	39.3					
15-Nov	35	25	17	31	24	22	10	3	5	6	3	6	7	18	29	34	34	34	27	22	24	23	26	22	20.3	35.0					
16-Nov	24	22	23	24	19	17	16	15	15	11	7	4	8	8	6	5	3	3	3	4	5	5	5	2	10.5	24.0					
17-Nov	3	4	1	2	3	3	1	3	5	3	5	9	11	6	8	9	9	10	10	9	12	10	11	10	6.6	11.6					
18-Nov	9	11	9	10	12	15	14	14	15	13	14	13	11	11	11	10	9	9	11	11	11	10	11	10	11.4	14.7					
19-Nov	14	13	13	8	10	9	12	13	12	9	8	11	11	10	10	11	13	11	9	6	4	4	3	4	9.5	13.7					
20-Nov	4	3	3	3	5	3	3	3	3	2	3	2	2	4	2	4	2	2	4	4	6	8	5	4	3.5	7.6					
21-Nov	4	7	5	5	4	3	3	4	3	6	8	11	13	17	18	13	12	10	14	14	13	11	8	12	9.1	18.3					
22-Nov	11	8	6	3	5	2	5	8	8	8	8	6	3	3	2	5	5	4	3	3	2	2	3	5	4.8	10.9					
23-Nov	5	3	4	6	4	5	5	4	5	4	3	8	19	22	17	30	37	34	28	15	23	30	18	23	14.7	36.7					
24-Nov	19	23	23	16	22	23	22	21	10	11	9	7	8	8	13	16	10	6	5	3	5	3	4	6	12.2	23.1					
25-Nov	8	7	3	4	3	3	9	7	4	3	3	4	8	5	4	4	2	3	3	3	5	3	5	6	4.5	8.8					
26-Nov	3	4	4	6	4	3	5	3	3	5	7	7	4	2	3	6	5	4	6	3	4	5	3	3	4.4	6.6					
27-Nov	2	4	6	6	11	9	4	5	4	5	4	6	4	4	3	4	3	4	1	3	3	2	5	5	4.4	10.5					
28-Nov	3	6	6	5	4	6	5	3	3	3	5	5	6	9	34	32	40	31	16	10	7	17	21	17	12.2	39.9					
29-Nov	12	17	9	11	19	17	17	13	14	16	20	21	23	29	17	17	10	12	14	12	12	8	8	6	14.7	29.2					
30-Nov	8	2	2	2	3	6	10	6	13	6	12	5	11	7	6	5	6	4	3	7	4	3	14	15	6.8	15.1					
9.0 8.8 8.1 8.0 8.3 8.1 8.5 7.7 7.7 6.7 7.8 8.9 10.6 11.4 12.9 13.2 12.7 11.1 10.1 8.5 9.3 9.6 9.6 9.5																									Diurnal Average						
35.0 24.9 23.1 31.4 23.7 23.1 23.9 20.7 21.7 21.1 28.0 31.8 34.3 32.8 33.6 33.8 39.9 34.4 33.5 39.3 35.8 31.8 27.7 31.5																									Diurnal Maximum						
N - Not Valid																															
All monthly, daily, and diurnal averages have been calculated using scalar methods																															

Hourly Standard Deviations

Wind Direction (WD) - deg
Beaverlodge - November 2013

Maximum Value: 97.9 deg on Nov 26 00:00																		Hours in Service: 720							
Minimum Value: 2.2 deg on Nov 14 04:00																		Hours of Data: 719							
Percentiles: P ₁ = 2.9 P ₁₀ = 4.7 Q ₁ = 7.3 Median = 15.6 Q ₃ = 43.6 P ₉₀ = 69.5 P ₉₉ = 90.8																		Hours of Missing Data: 1							
																		Hours of Calibration: 0							
																		Percent Operational Time: 99.9							
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-Nov	8	11	43	46	10	4	4	4	5	5	19	92	85	17	4	6	7	7	7	29	83	89	64	56	92.0
2-Nov	70	61	88	30	56	12	8	50	45	69	14	10	16	11	12	4	3	10	3	10	15	33	15	8	87.7
3-Nov	6	4	4	4	7	6	8	12	4	7	11	14	10	16	14	10	7	9	14	5	25	17	33	57	56.6
4-Nov	43	16	24	38	39	30	21	18	17	26	16	12	16	13	13	12	15	6	5	14	18	11	8	34	43.2
5-Nov	43	28	13	27	28	15	55	16	43	39	33	48	18	6	9	10	10	9	68	24	19	35	13	78	77.8
6-Nov	20	84	88	78	78	63	6	80	88	8	8	7	9	8	7	5	5	6	9	24	55	33	36	16	88.2
7-Nov	16	8	25	29	10	8	35	59	70	52	20	6	6	14	7	5	52	44	41	N	11	12	4	4	69.6
8-Nov	5	6	6	8	6	44	12	18	53	64	59	26	36	46	40	66	17	10	14	8	8	7	9	8	65.6
9-Nov	9	9	8	14	15	12	5	7	13	14	11	18	25	8	6	4	15	28	19	24	17	15	11	9	28.1
10-Nov	5	6	6	4	66	42	57	44	67	38	40	32	63	59	9	30	40	40	9	32	20	21	49	73	72.8
11-Nov	43	27	24	37	28	36	43	22	14	25	14	21	14	32	21	32	50	10	21	82	32	80	19	37	82.0
12-Nov	47	97	47	52	90	64	89	42	44	45	78	64	65	70	63	77	43	10	11	16	8	7	11	18	97.3
13-Nov	17	30	13	8	16	36	33	73	13	47	45	8	26	85	23	33	36	66	79	35	3	3	3	5	85.1
14-Nov	18	7	2	2	8	3	4	3	2	5	3	4	5	8	4	6	5	5	11	5	4	8	4	5	17.6
15-Nov	3	5	6	10	4	6	9	72	29	15	72	4	4	18	6	4	4	3	5	7	4	6	4	5	71.7
16-Nov	4	4	3	4	5	4	3	3	3	4	19	48	6	16	8	8	27	15	27	16	8	10	25	19	47.7
17-Nov	24	29	97	32	72	30	71	61	60	59	10	6	8	9	10	9	7	11	9	6	9	8	5	7	97.2
18-Nov	7	5	6	8	7	6	6	6	5	4	7	6	8	8	7	6	3	4	6	5	6	7	5	8	8.4
19-Nov	5	6	6	10	5	6	8	6	7	7	10	7	11	8	8	5	5	5	8	9	13	7	53	27	52.7
20-Nov	42	68	28	24	29	47	45	63	73	37	47	36	88	43	69	59	92	69	22	35	38	52	34	83	91.7
21-Nov	25	19	70	91	29	24	13	14	11	13	6	5	4	5	5	12	10	13	9	14	4	7	7	4	91.2
22-Nov	5	12	13	28	19	56	18	6	9	10	9	10	10	14	30	18	45	31	50	51	65	76	85	68	85.2
23-Nov	41	61	35	60	35	86	49	48	67	73	94	21	12	7	14	9	4	4	9	18	5	6	6	7	93.7
24-Nov	10	6	4	8	3	5	6	6	13	4	5	52	13	20	19	3	13	46	34	68	59	60	8	6	68.3
25-Nov	7	62	41	34	28	42	60	29	77	75	81	52	18	78	77	72	31	45	41	72	73	95	60	98	97.9
26-Nov	77	35	41	26	90	36	53	67	71	61	49	48	91	72	54	16	9	56	28	13	31	42	40	96	95.6
27-Nov	86	74	11	55	25	13	57	78	43	54	47	54	61	35	32	21	22	27	68	77	39	66	68	65	85.7
28-Nov	51	77	56	81	87	57	44	74	75	30	36	41	15	84	4	5	4	6	5	28	50	11	6	5	86.5
29-Nov	16	6	14	13	6	5	7	6	9	4	9	3	4	4	6	5	14	27	7	6	8	27	15	66	65.5
30-Nov	16	56	54	89	44	30	18	13	13	57	6	89	10	11	19	45	13	82	68	33	37	60	12	10	88.8
85.7 97.3 97.2 91.2 90.0 86.3 89.2 80.4 87.5 75.3 93.7 92.0 90.6 85.1 76.8 77.3 91.7 82.3 78.8 82.0 82.7 94.9 85.2 97.9																									
N - Not Valid																									

PAZA
Valleyview Station
Monthly Summary Tables, Graphs and
Roses

Hourly Averages

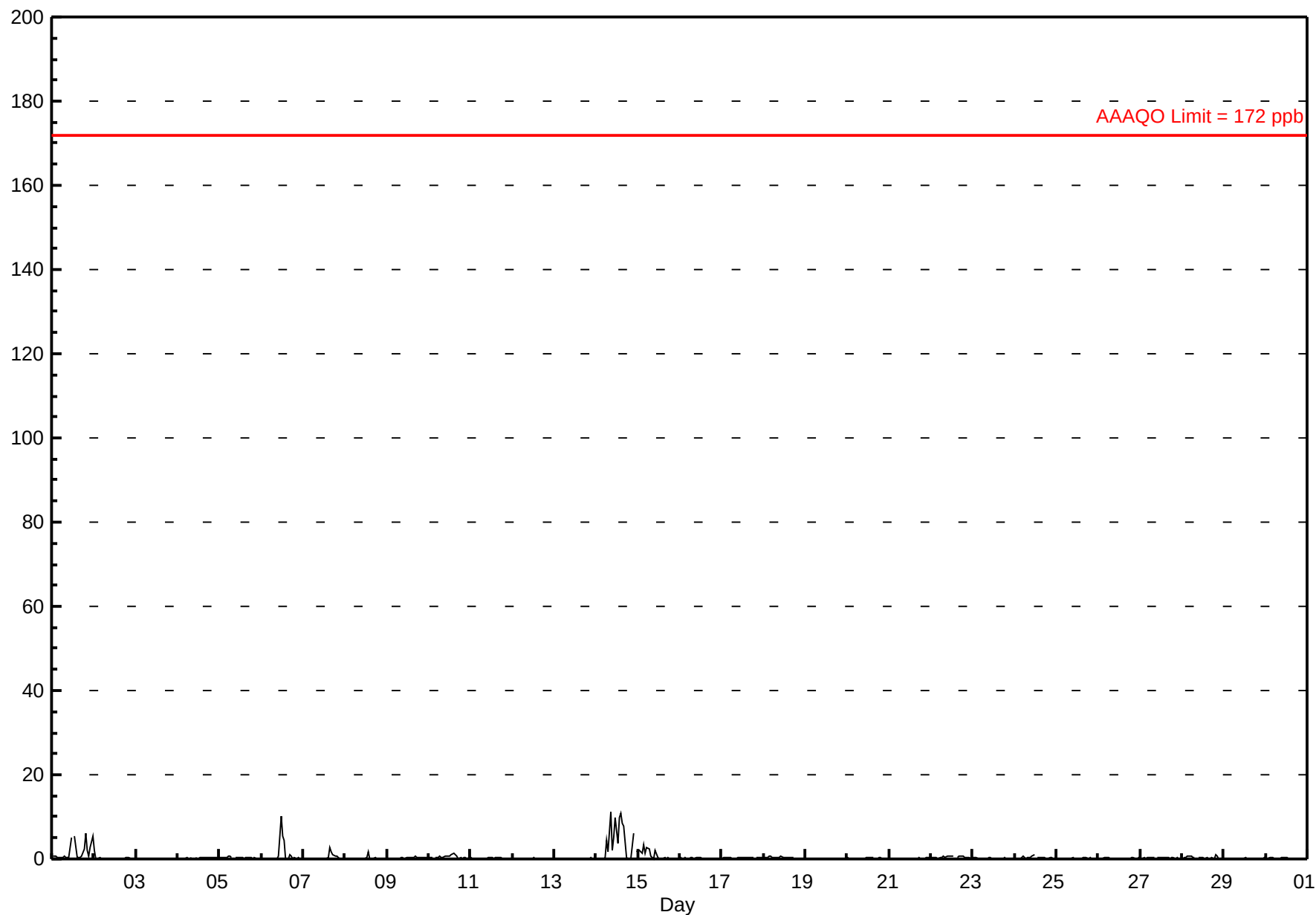
Sulphur Dioxide (SO₂) - ppb

Valleyview - November 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0																				Hours in Service: 720						
Maximum Value: 11.1 ppb on Nov 14 09:00																				Maximum Daily Average: 3.6 ppb on Nov 14		Hours of Data: 687				
Minimum Value: 0 ppb on Nov 2 05:00																				Minimum Daily Average: 0.0 ppb on Nov 3		Hours of Missing Data: 33				
Maximum Diurnal Average: 1.1 ppb at hour 12																				Minimum Diurnal Average: 0.2 ppb at hour 3		Hours of Calibration: 33				
Monthly Average: 0.40 ppb																				Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.1 Q ₃ = 0.3 P ₉₀ = 0.6 P ₉₉ = 7.6		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-Nov	1	1	1	0	0	0	0	1	0	0	3	5	A	5	0	0	0	1	2	6	2	1	3	5	1.7	6.2
2-Nov	2	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	2.0
3-Nov	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.2
4-Nov	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
5-Nov	0	0	0	0	0	1	1	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.6
6-Nov	0	0	0	0	0	0	0	A	0	0	1	10	5	4	0	0	1	1	0	0	0	0	0	0	1.0	10.3
7-Nov	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	3	2	1	1	1	0	0	0	0	0.3	2.7
8-Nov	0	0	0	0	0	A	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0.1	1.8
9-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0.2	0.7
10-Nov	1	0	0	A	0	0	1	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0.5	1.2
11-Nov	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
12-Nov	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.2
13-Nov	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.0	0.3
14-Nov	0	0	0	0	0	0	4	2	11	2	5	10	4	10	11	8	8	0	0	0	0	6	A	2	3.6	11.1
15-Nov	2	2	1	4	1	3	2	1	0	0	2	1	0	0	0	0	0	0	0	0	0	A	0	0	0.9	3.5
16-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.1	0.3
17-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0.3	0.5
18-Nov	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	A	0	0	0	0	0	0.3	0.7
19-Nov	0	0	0	0	0	0	0	0	0	0	0	0	C	C	0	0	0	0	A	0	0	0	0	0	0.0	0.2
20-Nov	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
21-Nov	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
22-Nov	0	0	0	0	0	0	0	1	0	1	1	1	1	1	A	0	1	1	1	0	0	0	0	0	0.4	0.8
23-Nov	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	0.3
24-Nov	0	0	0	0	0	1	0	0	0	0	1	1	A	0	0	0	0	0	0	0	0	0	0	0	0.3	1.0
25-Nov	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
26-Nov	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
27-Nov	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
28-Nov	0	0	0	1	1	1	0	0	A	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0.3	0.9
29-Nov	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
30-Nov	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
0.3		0.2	0.2	0.3	0.2	0.3	0.4	0.2	0.5	0.2	0.6	1.1	0.5	0.9	0.6	0.6	0.6	0.2	0.2	0.4	0.2	0.4	0.2	0.4	Diurnal Average	
2.0		2.1	1.4	3.5	1.5	2.8	4.4	1.7	11.1	2.0	5.1	10.3	5.4	9.9	10.7	8.5	7.8	1.1	2.3	6.2	2.0	6.0	2.7	5.5	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 - November 2013



Hourly Maximums

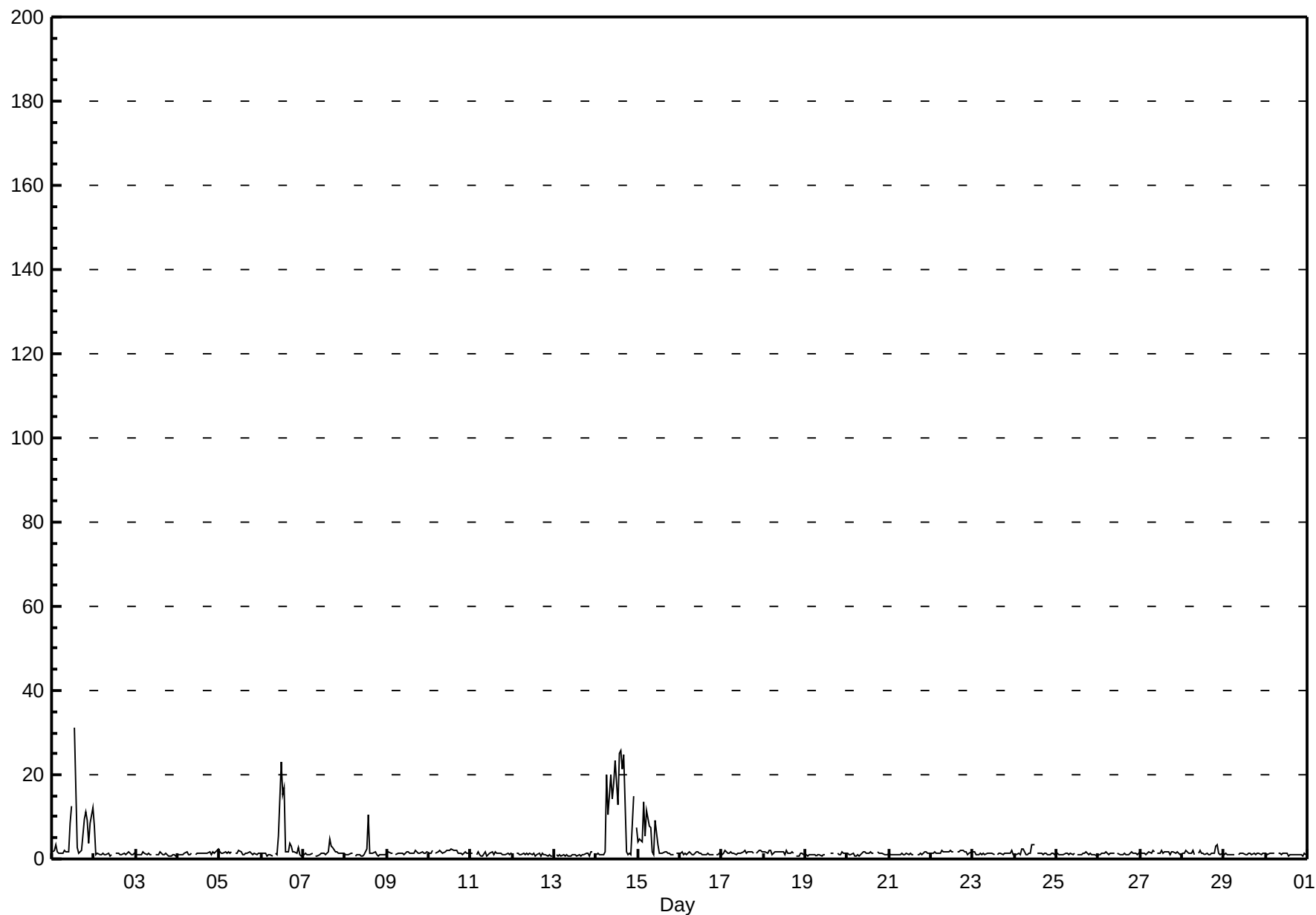
Sulphur Dioxide (SO₂) - ppb

Valleyview - November 2013

Maximum Value: 31.1 ppb on Nov 1 14:00																				Maximum Daily Average: 10.9 ppb on Nov 14										Hours in Service: 720	
Minimum Value: 1 ppb on Nov 3 20:00																				Minimum Daily Average: 1.0 ppb on Nov 13										Hours of Data: 687	
Maximum Diurnal Average: 4.1 ppb at hour 14																				Minimum Diurnal Average: 1.4 ppb at hour 2										Hours of Missing Data: 33	
Monthly Average: 1.97 ppb																				Percentiles: P ₁ = 0.7 P ₁₀ = 0.9 Q ₁ = 1.1 Median = 1.3 Q ₃ = 1.6 P ₉₀ = 2.0 P ₉₉ = 20.9										Hours of Calibration: 33	
																				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-Nov	2	2	3	2	1	1	1	2	2	2	9	13	A	31	3	1	2	2	9	11	9	4	9	12	5.8	31.1					
2-Nov	8	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	2	1	1	1	1.5	7.9					
3-Nov	1	1	1	1	2	1	1	1	1	1	A	1	1	1	2	1	1	1	1	1	1	1	1	1	1.1	1.7					
4-Nov	1	1	1	1	1	2	1	1	1	A	1	1	1	1	1	1	1	1	2	1	2	1	2	2	1.4	2.4					
5-Nov	2	1	1	2	1	2	1	2	A	1	2	2	2	1	1	1	1	2	1	1	1	1	1	1	1.4	2.1					
6-Nov	1	1	1	1	1	1	1	A	1	1	6	23	15	17	2	2	4	3	2	2	1	3	1	1	3.9	23.0					
7-Nov	1	1	1	1	1	1	A	1	1	1	1	1	1	1	2	5	3	3	2	2	1	1	1	1	1.5	4.6					
8-Nov	1	1	1	1	1	A	1	1	1	1	1	1	2	11	1	1	1	2	1	1	1	1	1	1	1.5	10.7					
9-Nov	1	2	1	1	A	1	1	1	1	1	1	2	2	1	1	1	2	2	1	1	2	1	1	2	1.4	2.0					
10-Nov	1	1	2	A	1	2	2	2	1	2	2	2	2	2	2	2	2	1	1	1	1	2	1	1	1.7	2.3					
11-Nov	1	1	A	1	2	1	1	1	2	1	1	1	2	1	2	1	1	1	1	1	1	1	1	1	1.2	1.7					
12-Nov	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.1	1.5					
13-Nov	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	2	2	A	1.0	1.6					
14-Nov	1	1	1	1	1	2	20	10	20	14	18	23	13	25	26	21	25	2	1	1	1	15	A	7	10.9	25.7					
15-Nov	4	5	4	14	5	11	8	7	2	1	9	3	1	1	1	2	2	1	1	1	1	A	1	2	3.8	13.5					
16-Nov	1	2	1	1	1	2	1	1	1	2	2	1	1	1	1	1	1	1	1	1	A	1	1	2	1.3	1.8					
17-Nov	1	1	2	1	1	2	1	1	1	1	1	1	2	2	1	2	2	2	1	A	1	2	2	2	1.5	2.0					
18-Nov	2	2	1	2	2	1	2	2	2	2	2	2	1	2	1	1	2	1	A	1	1	1	1	1	1.5	2.2					
19-Nov	1	1	1	1	1	1	1	1	1	1	1	1	C	C	2	1	1	A	1	1	1	2	1	1	1.1	1.7					
20-Nov	1	1	1	1	1	1	1	1	1	2	2	1	1	2	1	1	A	1	2	1	1	1	1	1	1.2	1.7					
21-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	2	2	1	1	1.2	1.6					
22-Nov	1	1	2	1	1	1	2	2	2	2	2	2	2	2	A	2	2	2	2	2	2	1	1	2	1.6	2.1					
23-Nov	2	2	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	2	1	1.3	2.0					
24-Nov	1	1	1	1	2	2	1	1	1	1	4	3	A	1	1	1	1	1	1	1	1	2	1	1	1.5	3.5					
25-Nov	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	2	1	1	1	1	1	1	1.2	1.6					
26-Nov	1	1	1	1	2	1	1	1	1	1	A	1	1	1	1	1	1	1	1	2	1	1	1	1	1.2	1.6					
27-Nov	2	1	1	1	1	2	1	2	1	A	1	1	2	1	2	2	2	1	2	2	1	2	1	1	1.5	2.0					
28-Nov	1	1	2	2	2	1	2	1	A	1	2	1	2	1	1	1	1	1	1	3	3	1	1	1	1.6	3.4					
29-Nov	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.1	1.5					
30-Nov	1	1	1	1	1	1	A	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	2	1	1.2	1.5					
																									Diurnal Average						
																									Diurnal Maximum						
C - Calibration A - Automated Daily Zero Span																															

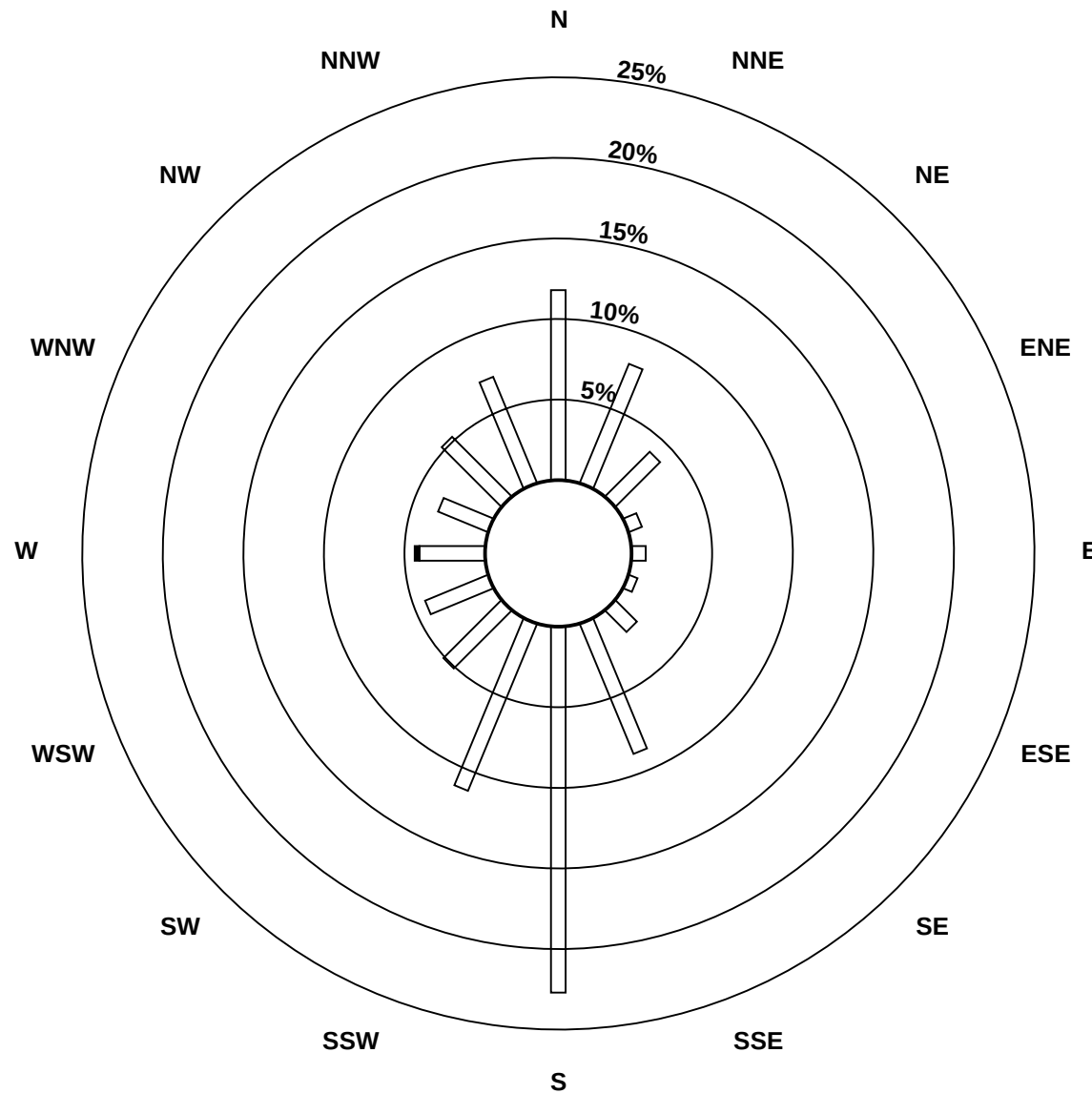
Hourly Maximums

Sulphur Dioxide (SO₂) - ppb
Valleyview - November 2013

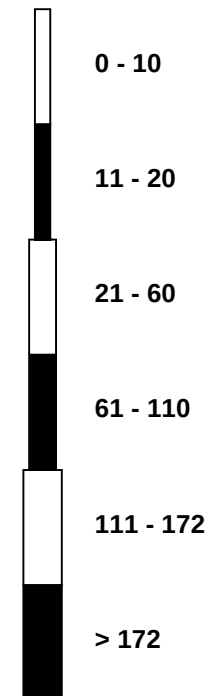


Pollutant Rose

Sulphur Dioxide (SO₂) - ppb
Valleyview - November 2013

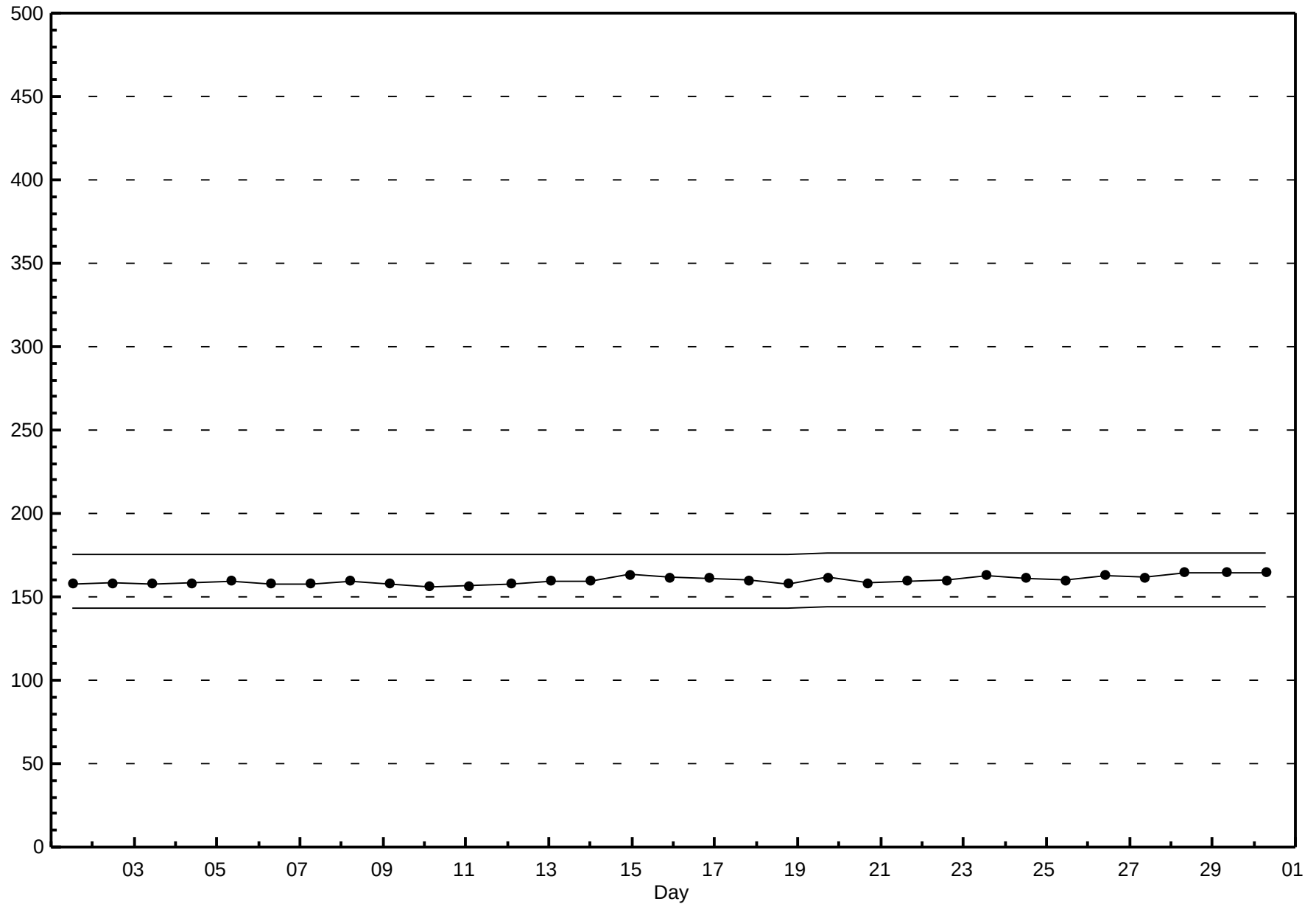


Pollutant Classes (ppb)



Span Responses

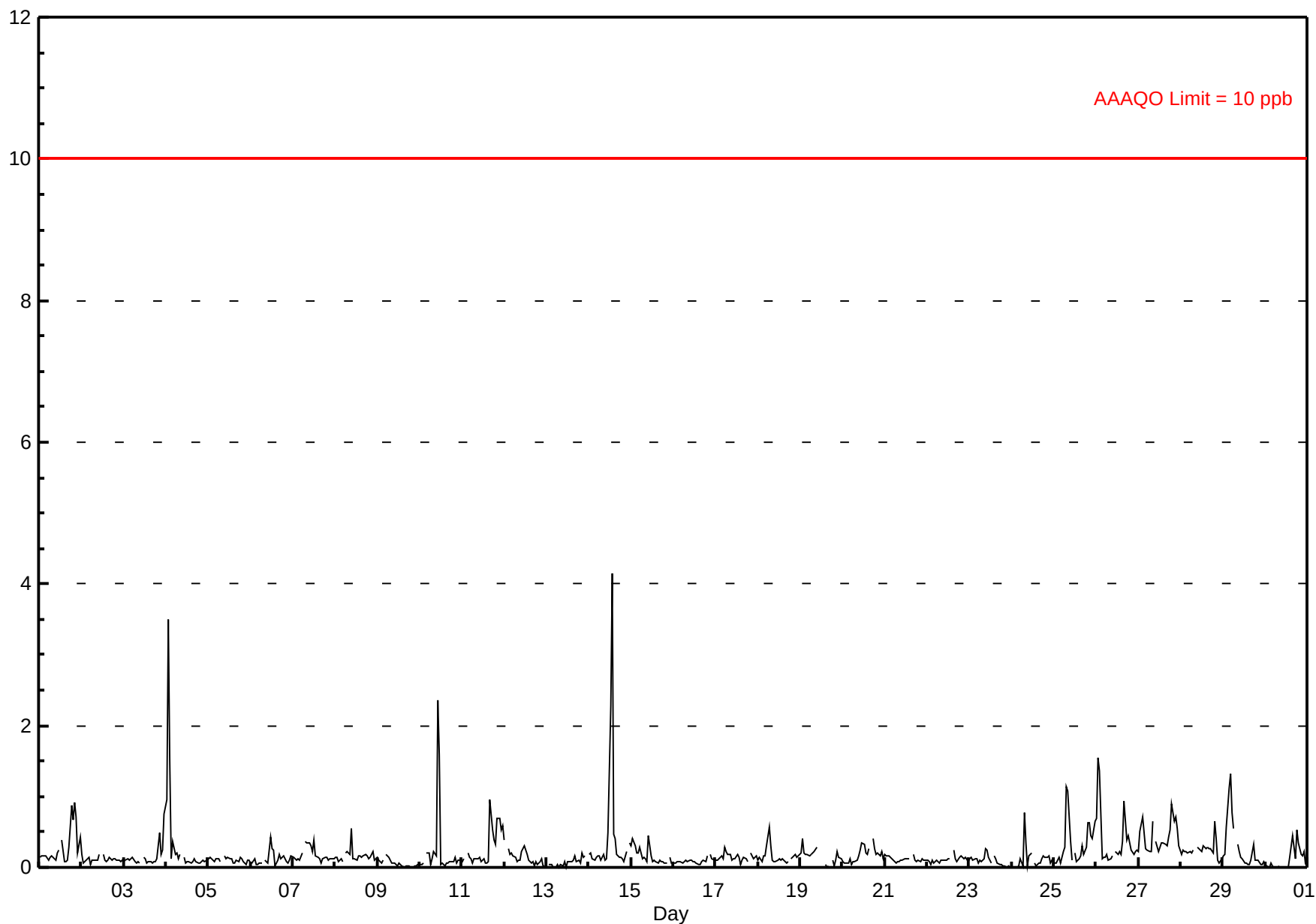
Sulphur Dioxide (SO₂)
Valleyview - November 2013



[illegible]

Hourly Averages

Hydrogen Sulphide (H₂S) - ppb
Valleyview - November 2013



Hourly Maximums

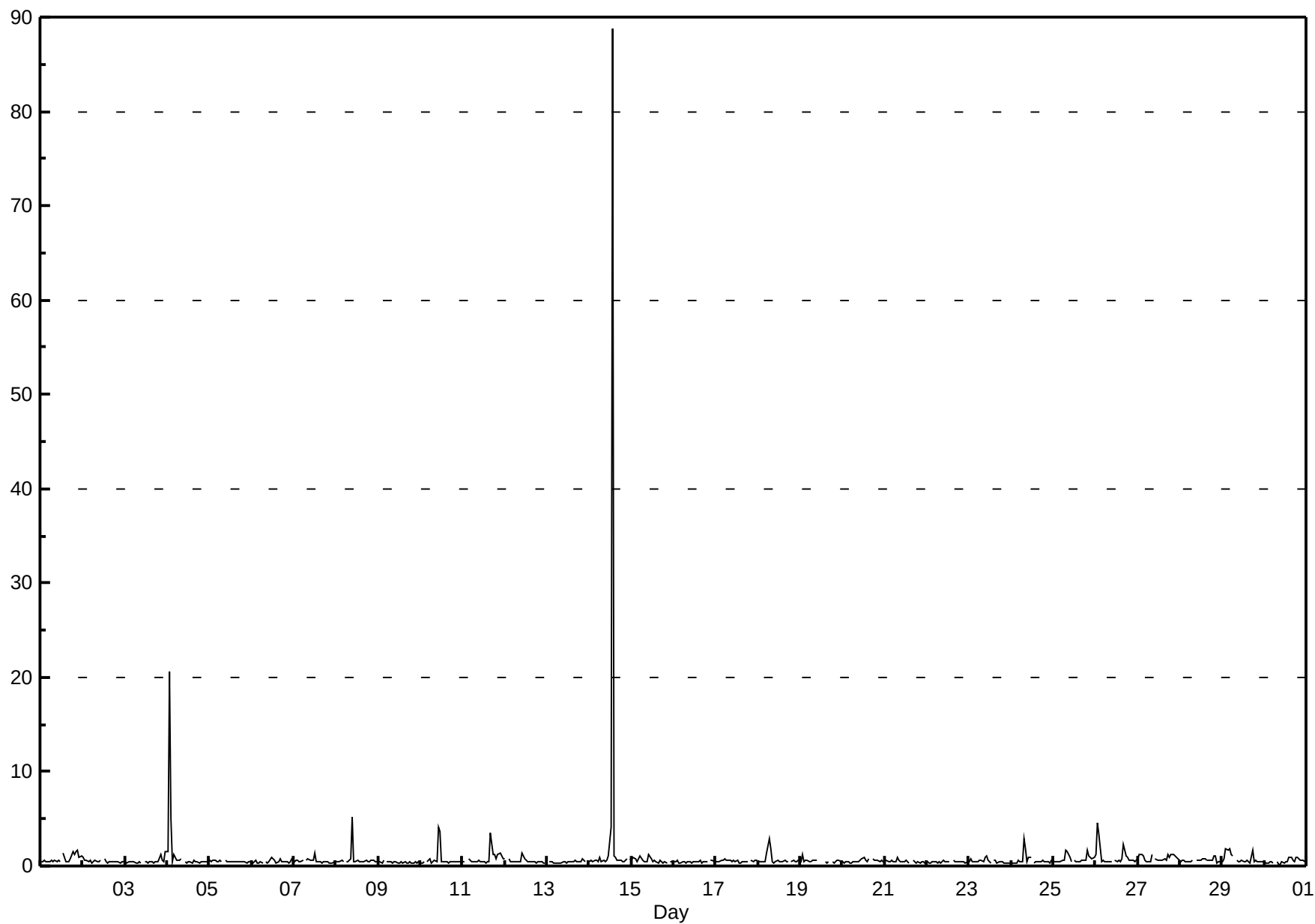
Hydrogen Sulphide (H₂S) - ppb

Valleyview - November 2013

Maximum Value: 88.7 ppb on Nov 14 14:00																				Maximum Daily Average: 4.6 ppb on Nov 14					Hours in Service: 720		
Minimum Value: 0 ppb on Nov 30 10:00																				Minimum Daily Average: 0.4 ppb on Nov 9					Hours of Data: 685		
Maximum Diurnal Average: 3.7 ppb at hour 14																				Minimum Diurnal Average: 0.5 ppb at hour 15					Hours of Missing Data: 35		
Monthly Average: 0.77 ppb																				Percentiles: P ₁ = 0.3 P ₁₀ = 0.4 Q ₁ = 0.4 Median = 0.5 Q ₃ = 0.6 P ₉₀ = 0.9 P ₉₉ = 4.1					Hours of Calibration: 35		
																				Percent Operational Time: 100.0							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Nov	1	1	1	0	0	0	1	1	1	1	1	A	1	0	0	1	1	2	1	1	2	1	1	0.8	1.7		
2-Nov	1	1	1	0	1	0	0	1	1	1	1	A	1	0	0	0	0	0	1	1	0	0	0	0.5	0.9		
3-Nov	0	0	0	0	1	0	0	0	0	0	A	0	0	0	0	1	0	0	0	0	1	1	1	0.5	1.4		
4-Nov	2	21	5	0	1	1	1	1	1	A	1	0	0	0	0	1	0	1	0	1	0	0	0	1.6	20.7		
5-Nov	1	0	1	1	0	0	1	0	A	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0.5	0.6		
6-Nov	0	0	1	0	0	0	0	A	0	0	0	1	1	1	0	1	1	0	1	0	0	0	1	0.5	0.9		
7-Nov	0	1	1	0	0	1	A	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0.5	1.4		
8-Nov	0	0	0	1	0	A	1	1	1	5	0	0	1	0	0	0	1	1	0	0	1	1	0	0.7	5.1		
9-Nov	0	0	0	1	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.5		
10-Nov	0	0	0	A	1	1	0	0	1	1	4	4	0	0	0	0	0	1	0	0	1	0	0	1	0.8	4.1	
11-Nov	0	0	A	1	1	0	0	0	0	1	0	0	0	0	0	0	4	1	1	1	1	1	1	0.8	3.6		
12-Nov	1	A	1	0	1	0	1	0	0	0	1	1	1	1	0	0	1	0	0	0	0	0	0	0.5	1.4		
13-Nov	A	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	1	1	A	0.4	0.7	
14-Nov	0	1	0	1	1	0	1	0	1	0	1	1	4	89	1	1	1	1	1	1	1	0	1	A	1	4.6	88.7
15-Nov	1	1	1	1	1	1	1	0	1	0	1	1	0	1	0	0	1	0	0	0	0	A	0	0	0.6	1.2	
16-Nov	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	A	1	1	0	0.4	0.6	
17-Nov	1	0	0	1	1	1	1	1	1	0	1	1	1	0	0	0	0	0	0	A	1	1	1	1	0.5	0.7	
18-Nov	0	0	0	0	0	1	3	2	0	0	0	1	0	1	0	1	0	0	A	0	1	0	0	1	0.7	3.0	
19-Nov	1	1	1	1	1	1	1	1	1	1	C	C	C	C	0	0	1	A	0	0	0	1	1	0	0.5	1.1	
20-Nov	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	0	0.5	0.9	
21-Nov	1	1	0	1	1	0	0	1	1	1	0	0	1	0	0	A	1	0	0	0	0	0	0	0	0.5	0.9	
22-Nov	0	0	0	0	0	0	0	0	0	1	0	0	0	1	A	1	0	0	0	0	0	0	0	0	0.4	0.6	
23-Nov	0	1	0	1	1	0	1	1	0	1	1	1	0	A	1	1	0	0	0	0	0	0	0	0	0.5	1.0	
24-Nov	0	0	0	0	1	0	0	3	2	0	1	1	A	0	0	0	0	0	1	0	0	1	0	1	0.6	2.9	
25-Nov	0	0	0	0	0	1	1	2	2	1	0	A	1	0	0	0	1	1	1	2	1	1	1	1	0.8	1.7	
26-Nov	1	5	3	0	1	0	1	0	0	1	A	1	0	1	1	1	2	1	1	1	1	1	1	1	1.0	4.5	
27-Nov	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.3	
28-Nov	0	1	1	0	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0.6	1.1	
29-Nov	1	1	2	2	2	1	1	A	1	0	0	1	0	0	1	1	0	2	0	1	0	0	0	1	0.8	1.8	
30-Nov	0	0	0	0	0	0	A	0	0	0	0	0	0	0	1	1	1	0	1	1	1	1	1	1	0.5	0.9	
0.6 1.4 0.8 0.5 0.6 0.6 0.6 0.7 0.6 0.7 0.7 0.7 0.7 3.7 0.5 0.5 0.7 0.6 0.6 0.6 0.6 0.6 0.5 0.6																								Diurnal Average	Diurnal Maximum		
1.6 20.7 5.0 1.7 1.8 1.3 3.0 2.9 1.8 5.1 4.1 3.7 4.2 88.7 1.0 1.0 3.6 1.6 1.6 1.7 1.5 1.7 1.0 1.4																											
C - Calibration A - Automated Daily Zero Span																											

Hourly Maximums

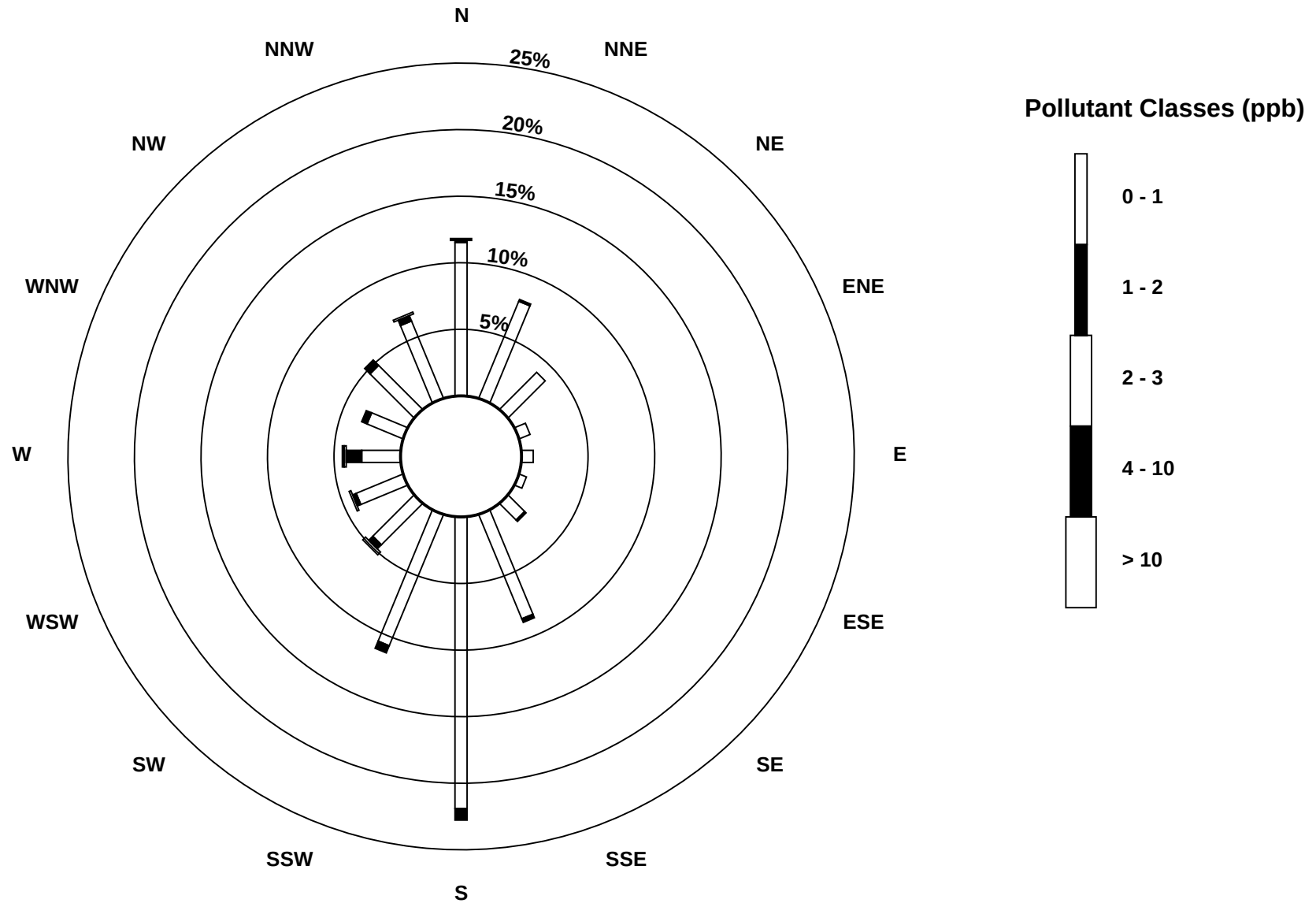
Hydrogen Sulphide (H₂S) - ppb
Valleyview - November 2013



Pollutant Rose

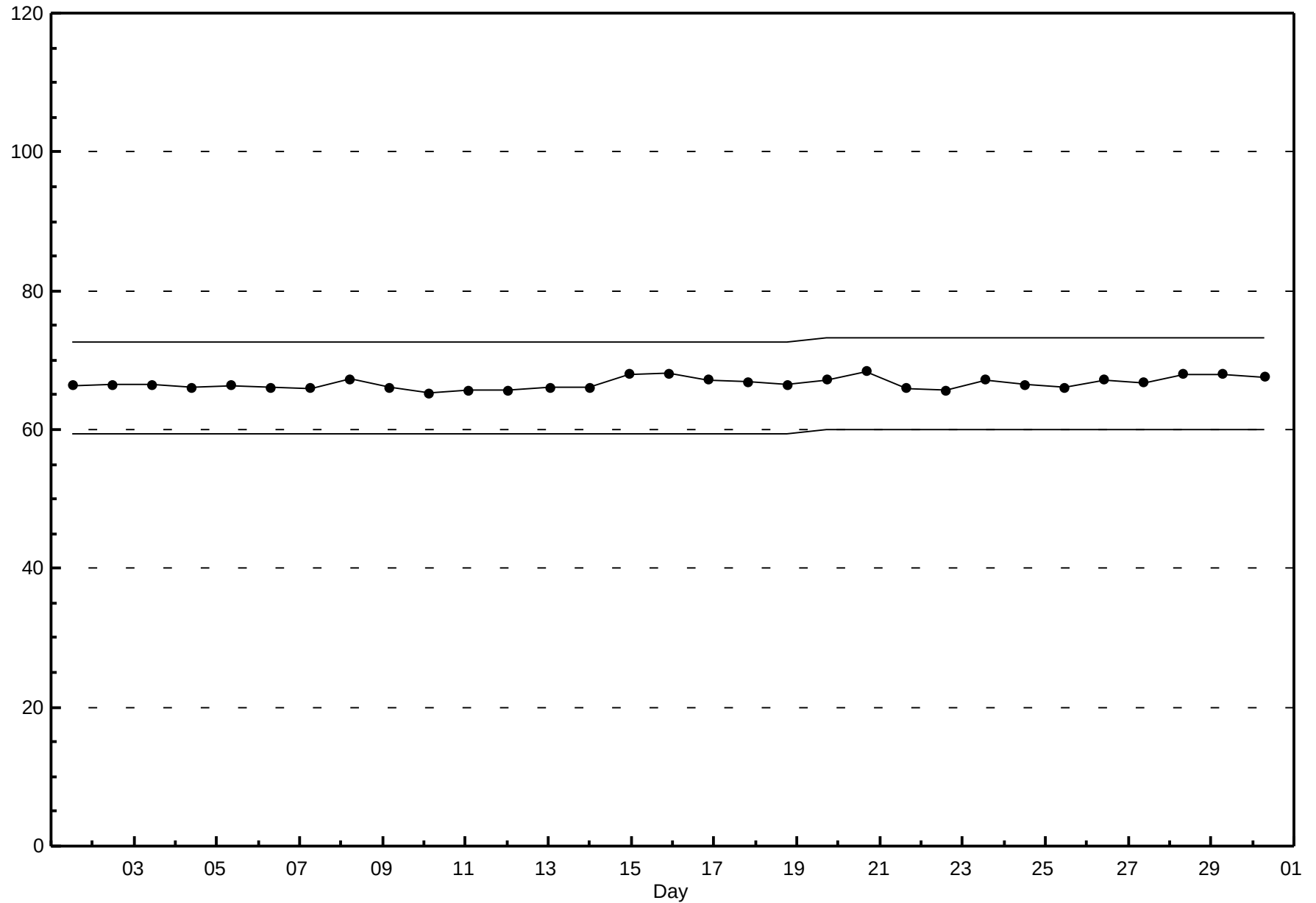
Hydrogen Sulphide (H₂S) - ppb

Valleyview - November 2013



Span Responses

Hydrogen Sulphide (H₂S)
Valleyview - November 2013



Hourly Averages

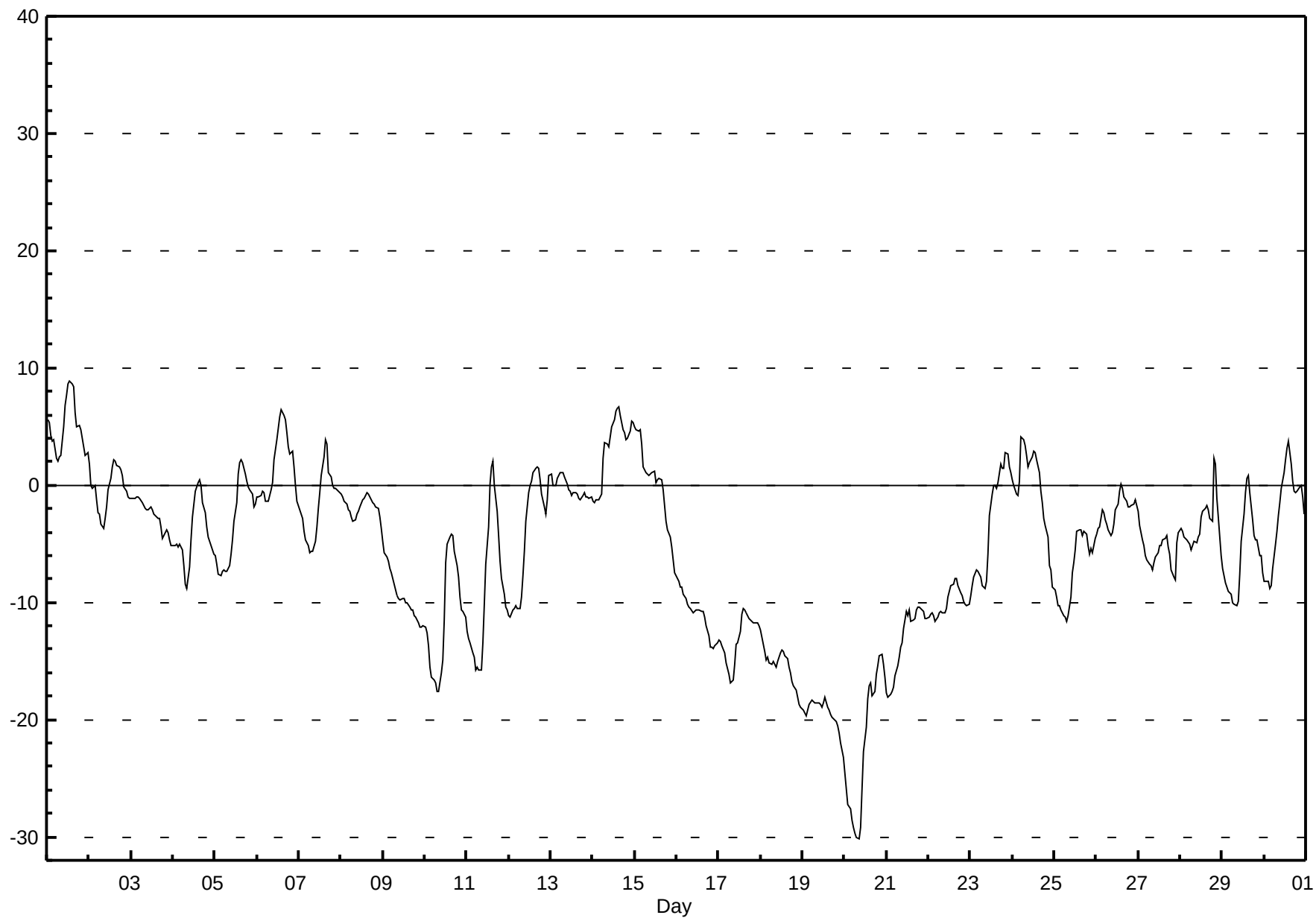
External Temperature (ET) - °C

Valleyview - November 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 8.9 °C on Nov 1 14:00 Maximum Daily Average: 5.0 °C on Nov 1																									Hours in Service: 720 Hours of Data: 720 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0	
Minimum Value: -30 °C on Nov 20 09:00 Minimum Daily Average: -22.2 °C on Nov 20 Maximum Diurnal Average: -2.8 °C at hour 15 Minimum Diurnal Average: -7.9 °C at hour 8 Monthly Average: -5.73 °C Percentiles: P ₁ = -27.6 P ₁₀ = -15.5 Q ₁ = -10.6 Median = -4.6 Q ₃ = -0.6 P ₉₀ = 2.2 P ₉₉ = 6.7																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
1-Nov	6	5	4	4	4	2	2	2	3	5	7	8	9	9	9	8	6	5	5	5	4	3	3	3	5.0	8.9
2-Nov	2	0	0	0	-1	-2	-3	-3	-4	-3	-2	0	1	2	2	2	2	2	1	1	0	-1	-1	-1	-0.3	2.1
3-Nov	-1	-1	-1	-1	-1	-1	-1	-2	-2	-2	-2	-2	-2	-2	-3	-3	-3	-4	-5	-4	-4	-4	-5	-5	-2.5	-1.0
4-Nov	-5	-5	-5	-5	-5	-6	-7	-8	-9	-7	-5	-3	-2	-1	0	0	0	-1	-2	-4	-4	-5	-5	-6	-4.1	0.4
5-Nov	-6	-7	-8	-8	-7	-7	-7	-7	-7	-6	-5	-3	-1	1	2	2	2	1	0	0	0	-1	-2	-2	-3.2	2.2
6-Nov	-1	-1	-1	0	-1	-1	-1	-1	0	0	2	4	5	6	6	6	6	4	3	3	3	2	0	-1	1.7	6.4
7-Nov	-2	-2	-3	-4	-5	-5	-6	-6	-6	-5	-4	-2	-1	1	2	4	4	1	1	0	0	0	0	-1	-1.6	3.9
8-Nov	-1	-1	-1	-2	-2	-2	-3	-3	-3	-2	-2	-2	-1	-1	-1	-1	-1	-1	-2	-2	-2	-2	-3	-4	-1.8	-0.6
9-Nov	-5	-6	-6	-7	-7	-7	-8	-9	-9	-10	-10	-10	-10	-10	-10	-10	-11	-11	-11	-11	-12	-12	-12	-12	-9.4	-4.8
10-Nov	-12	-13	-14	-15	-16	-17	-17	-18	-18	-16	-15	-12	-7	-5	-4	-4	-4	-6	-7	-8	-10	-11	-11	-11	-11.2	-4.2
11-Nov	-12	-13	-13	-14	-15	-16	-15	-16	-16	-13	-10	-7	-4	0	2	2	0	-2	-4	-7	-8	-9	-10	-11	-8.8	2.1
12-Nov	-11	-11	-11	-10	-10	-10	-11	-10	-8	-6	-3	-1	0	0	1	1	2	1	0	-1	-2	-2	-1	1	-4.2	1.5
13-Nov	1	0	0	0	1	1	1	1	1	0	0	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-0.3	1.1
14-Nov	-1	-1	-1	-1	-1	-1	2	4	4	3	4	5	6	6	7	7	6	5	4	4	4	5	5	5	3.3	6.7
15-Nov	5	5	5	5	4	2	1	1	1	1	1	1	0	0	1	0	0	-2	-3	-4	-4	-5	-6	-7	0.0	5.0
16-Nov	-8	-8	-9	-9	-9	-10	-10	-10	-11	-11	-11	-11	-11	-11	-11	-11	-11	-12	-13	-14	-14	-14	-14	-13	-11.0	-8.0
17-Nov	-13	-13	-14	-14	-15	-16	-16	-17	-17	-15	-14	-14	-12	-11	-11	-11	-11	-11	-12	-12	-12	-12	-12	-12	-13.1	-10.6
18-Nov	-12	-13	-14	-15	-15	-15	-15	-15	-15	-15	-15	-14	-14	-15	-15	-16	-16	-16	-17	-17	-18	-18	-19	-19	-15.5	-12.4
19-Nov	-19	-19	-20	-19	-19	-18	-18	-19	-19	-19	-19	-19	-19	-19	-19	-20	-20	-20	-20	-20	-20	-21	-22	-23	-19.5	-18.1
20-Nov	-25	-26	-27	-28	-29	-29	-30	-30	-30	-29	-26	-23	-21	-18	-17	-17	-18	-18	-16	-15	-15	-14	-15	-16	-22.2	-14.4
21-Nov	-18	-18	-18	-18	-17	-16	-15	-15	-14	-13	-12	-11	-11	-11	-12	-12	-11	-11	-10	-10	-11	-11	-11	-11	-13.2	-10.4
22-Nov	-11	-11	-11	-11	-12	-11	-11	-11	-11	-11	-11	-10	-9	-9	-8	-8	-8	-9	-9	-9	-10	-10	-10	-10	-10.0	-8.0
23-Nov	-9	-9	-8	-7	-7	-8	-8	-9	-9	-8	-6	-3	-1	0	0	0	0	2	1	1	3	3	2	1	-3.3	2.7
24-Nov	0	0	-1	-1	0	4	4	3	3	2	2	2	3	3	2	1	0	-1	-3	-3	-4	-7	-7	-9	-0.3	4.1
25-Nov	-9	-10	-10	-10	-11	-11	-11	-12	-11	-10	-8	-7	-6	-4	-4	-4	-4	-4	-4	-5	-6	-5	-6	-5	-7.3	-3.8
26-Nov	-4	-4	-4	-2	-2	-3	-3	-4	-4	-4	-3	-2	-2	-1	0	0	-1	-1	-2	-2	-2	-2	-1	-2	-2.3	0.0
27-Nov	-2	-3	-5	-5	-6	-6	-7	-7	-7	-7	-6	-6	-5	-5	-5	-5	-4	-5	-6	-7	-8	-8	-5	-4	-5.6	-2.3
28-Nov	-4	-4	-4	-5	-5	-5	-5	-5	-5	-5	-4	-4	-3	-2	-2	-2	-2	-3	-3	2	2	-1	-3	-6	-3.2	2.3
29-Nov	-7	-8	-8	-9	-9	-9	-10	-10	-10	-10	-8	-5	-2	-1	1	1	-1	-3	-4	-5	-5	-6	-6	-7	-5.9	0.9
30-Nov	-8	-8	-8	-9	-9	-7	-5	-4	-3	-2	0	1	2	3	4	2	0	-1	-1	0	0	0	-1	-2	-2.3	3.7
-6.5 -6.9 -7.2 -7.4 -7.6 -7.7 -7.8 -7.9 -7.9 -7.2 -6.1 -4.9 -3.9 -3.1 -2.8 -2.8 -3.4 -4.0 -4.6 -4.8 -5.2 -5.7 -6.0 -6.4																									Diurnal Average	
5.5 5.4 4.6 4.7 3.8 4.1 3.9 3.6 3.5 5.0 6.8 7.7 8.6 8.9 8.6 8.4 6.2 4.9 5.1 4.8 4.0 4.6 5.4 5.3																									Diurnal Maximum	

Hourly Averages

External Temperature (ET) - °C
Valleyview - November 2013



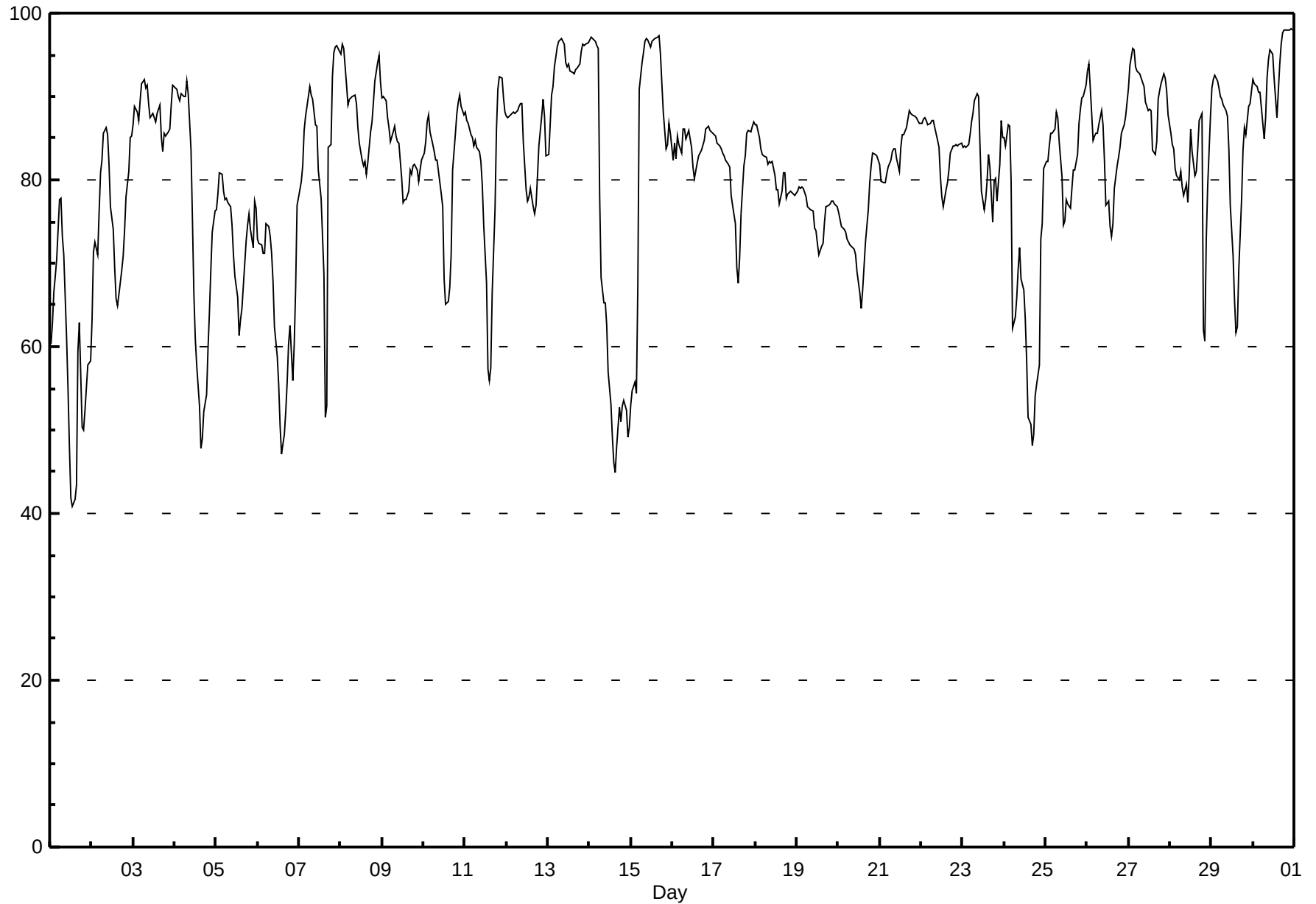
Hourly Averages

Relative Humidity (RH) - %
Valleyview - November 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 98.1 % on Nov 30 23:00 Maximum Daily Average: 93.7 % on Nov 13																								Hours in Service: 720 Hours of Data: 720 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0		
Minimum Value: 41 % on Nov 1 14:00 Maximum Diurnal Average: 84.5 % at hour 6 Monthly Average: 80.27 %												Minimum Daily Average: 58.6 % on Nov 1 Minimum Diurnal Average: 71.6 % at hour 15 Percentiles: P ₁ = 47.8 P ₁₀ = 62.9 Q ₁ = 76.1 Median = 83.1 Q ₃ = 87.8 P ₉₀ = 92.3 P ₉₉ = 97.5														
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-Nov	60	63	67	68	71	78	78	73	71	61	55	48	42	41	42	43	60	63	50	50	52	55	58	58	58.6	77.7
2-Nov	63	71	73	71	76	81	82	86	86	85	82	77	74	69	66	65	66	69	71	74	78	81	85	85	75.7	86.3
3-Nov	87	89	88	87	90	92	92	91	91	89	87	88	87	87	88	89	85	83	86	85	86	86	89	91	88.1	92.0
4-Nov	91	91	90	90	90	90	90	92	90	84	75	66	61	58	53	48	49	52	54	60	64	69	74	76	73.2	91.9
5-Nov	76	78	81	81	79	78	78	77	77	75	71	68	66	61	63	65	67	73	75	76	74	72	78	77	73.5	80.8
6-Nov	73	72	72	71	71	75	74	73	71	68	62	59	55	51	47	49	52	56	60	63	56	60	67	77	64.0	76.9
7-Nov	79	80	82	86	88	90	91	90	90	87	86	81	80	78	69	52	53	84	84	92	95	96	96	95	83.5	96.1
8-Nov	95	96	96	91	89	90	90	90	90	89	86	84	82	82	81	82	86	87	89	92	94	95	92	92	88.8	96.3
9-Nov	90	90	89	87	86	85	86	86	85	85	84	80	77	78	78	79	81	81	82	82	81	80	81	82	83.1	90.0
10-Nov	83	85	87	88	86	84	83	82	82	80	78	77	68	65	65	67	71	81	86	88	89	90	89	88	81.0	90.3
11-Nov	88	87	87	85	85	84	85	84	83	82	79	75	68	57	56	57	66	76	86	91	92	92	90	88	80.2	92.3
12-Nov	88	87	88	88	88	88	88	89	89	89	85	79	77	78	79	77	76	77	80	84	88	90	88	83	84.2	89.7
13-Nov	83	87	90	91	94	96	97	97	97	96	94	94	94	93	93	93	93	93	94	95	96	96	96	96	93.7	97.0
14-Nov	97	97	97	97	96	96	78	68	65	65	63	57	53	49	46	45	48	53	51	53	54	52	49	50	65.8	97.1
15-Nov	53	55	56	54	67	91	94	95	97	97	97	96	97	97	97	97	97	95	92	88	84	84	87	86	85.5	97.3
16-Nov	82	84	82	85	84	83	86	86	85	86	85	84	82	80	82	83	83	84	85	86	86	86	86	86	84.3	86.4
17-Nov	85	85	84	84	84	83	83	82	82	81	78	77	75	69	68	71	76	82	83	86	86	86	87	87	81.0	86.9
18-Nov	87	87	85	84	83	83	83	82	82	82	81	79	79	77	79	81	81	78	78	79	78	78	78	78	81.0	86.6
19-Nov	79	79	79	79	79	78	77	77	76	76	74	74	72	71	72	72	75	77	77	77	77	77	77	77	76.2	79.2
20-Nov	76	75	74	74	74	73	73	72	72	72	71	69	66	65	67	70	73	76	80	82	83	83	83	82	74.3	83.1
21-Nov	82	80	80	80	81	82	82	83	84	84	82	81	84	85	85	86	87	88	88	88	88	87	87	87	84.2	88.3
22-Nov	87	87	87	87	87	87	87	87	86	85	84	80	78	77	79	80	81	83	84	84	84	84	84	84	83.9	87.5
23-Nov	84	84	84	84	85	87	88	90	90	90	84	79	76	78	80	83	81	75	80	80	77	82	87	85	83.1	90.4
24-Nov	85	84	87	86	80	62	64	66	69	72	68	67	63	58	52	51	48	49	54	55	58	73	75	81	67.0	86.6
25-Nov	82	82	84	86	86	86	88	87	85	80	75	75	78	77	77	79	81	81	83	87	88	90	90	91	83.3	91.3
26-Nov	93	94	91	85	85	86	86	87	88	87	82	77	77	74	73	75	79	82	83	84	86	87	88	89	84.0	94.0
27-Nov	91	94	96	96	94	93	93	92	92	91	89	88	88	88	84	83	85	90	91	92	93	92	91	88	90.5	95.7
28-Nov	86	84	84	81	81	80	81	79	78	80	77	81	86	83	80	81	84	87	88	62	61	73	79	88	80.2	88.0
29-Nov	91	92	92	92	91	90	90	89	88	88	84	77	71	66	62	62	69	78	84	86	85	89	89	91	83.1	92.5
30-Nov	92	92	91	91	91	89	85	88	92	94	96	95	92	90	87	94	96	98	98	98	98	98	98	98	93.3	98.1
82.9 83.7 84.1 83.6 83.9 84.5 84.3 84.0 83.9 82.6 79.9 77.1 75.0 72.8 71.6 71.8 74.2 77.7 79.0 79.8 80.4 82.1 83.3 83.9																								Diurnal Average		
96.7 97.1 97.0 96.6 96.2 95.9 96.6 96.8 97.0 96.9 96.8 96.0 96.6 96.8 97.0 97.1 97.3 97.6 97.9 98.0 98.0 98.0 98.1 97.9																								Diurnal Maximum		

Hourly Averages

Relative Humidity (RH) - %
Valleyview - November 2013



Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Valleyview - November 2013

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	8	9	2	4	4	2	2	6	4	3	6	15	16	16	15	15	3	1	9	9	8	9	6	6	6.8	16.2
Dir	247	250	231	240	240	197	205	242	224	210	276	269	283	280	300	296	316	202	272	267	269	264	252	259	268	283
2 Spd	2	2	1	0	1	2	0	0	0	0	3	2	5	5	8	7	7	5	8	8	11	8	8	9	3.6	11.0
Dir	195	175	137	165	177	161	164	254	185	67	349	23	23	25	14	11	4	359	7	8	1	6	4	9	10	1
3 Spd	9	8	7	9	8	9	10	10	9	8	8	8	10	9	10	9	8	4	2	2	0	1	0	1	6.5	10.3
Dir	11	6	1	3	357	357	347	353	1	359	353	358	3	359	354	360	358	342	332	291	298	287	202	285	357	3
4 Spd	0	0	0	1	1	2	0	1	0	1	2	2	3	3	3	4	4	3	2	2	2	3	7	6	1.9	6.6
Dir	161	4	218	227	244	295	227	187	235	164	159	175	189	177	161	164	165	156	165	155	167	180	173	172	174	173
5 Spd	6	5	4	5	7	6	5	5	4	5	5	5	5	5	5	4	2	1	2	2	3	2	2	3	4.1	7.0
Dir	176	177	174	173	175	172	175	172	176	172	173	172	170	172	168	174	180	186	199	199	214	211	135	161	176	175
6 Spd	3	3	3	3	2	2	1	2	3	3	4	9	8	11	12	7	1	1	2	3	7	2	1	1	2.7	11.7
Dir	182	175	176	186	173	185	190	178	190	211	237	267	262	280	297	312	232	202	204	225	249	230	181	172	247	297
7 Spd	1	1	0	0	0	1	2	0	0	1	2	2	3	2	2	4	6	3	4	2	3	4	1	3	0.7	5.6
Dir	177	172	195	207	350	354	351	272	224	335	4	359	356	332	26	113	149	168	146	79	38	27	24	1	57	149
8 Spd	3	3	6	11	12	10	9	12	5	3	4	3	2	2	2	2	1	1	2	1	0	4	10	10	4.0	11.5
Dir	345	332	315	332	337	316	312	334	322	312	296	296	235	252	222	167	146	159	175	187	4	345	336	333	322	334
9 Spd	9	8	7	6	4	6	8	8	9	8	9	8	10	8	6	7	4	3	4	4	5	4	3	1	6.1	10.0
Dir	353	359	7	11	35	4	4	5	7	2	7	16	20	11	8	17	19	34	35	16	33	39	27	37	12	20
10 Spd	1	1	1	2	2	2	2	1	0	0	1	1	3	3	3	3	2	4	4	3	1	2	3	1	0.8	3.9
Dir	34	32	329	350	342	344	347	306	163	341	343	240	179	175	156	167	171	177	177	178	165	187	190	208	183	177
11 Spd	2	1	1	1	1	1	0	0	0	0	0	1	2	3	2	2	2	1	1	1	1	0	1	0	0.7	3.0
Dir	212	217	236	208	276	192	213	207	175	146	337	192	212	181	178	179	311	227	344	200	286	279	124	245	210	181
12 Spd	1	0	0	1	0	1	1	0	1	1	2	0	0	1	1	1	2	2	1	0	1	2	3	3	0.9	2.8
Dir	161	151	193	157	23	165	174	145	227	197	304	87	143	169	156	182	172	181	190	178	198	205	187	219	187	187
13 Spd	2	1	1	1	1	2	1	3	7	7	5	5	5	3	4	5	5	2	0	0	3	1	2	3	2.2	7.2
Dir	225	163	105	174	166	160	194	13	19	13	12	351	346	356	349	13	3	341	97	202	8	19	13	359	6	13
14 Spd	0	2	1	2	2	2	9	14	13	10	9	12	13	16	16	15	9	2	3	1	2	9	20	18	7.8	19.8
Dir	253	195	196	168	183	186	260	258	265	255	259	271	276	271	272	271	261	207	215	190	195	264	275	281	264	275
15 Spd	14	11	9	12	17	9	8	4	5	1	3	1	7	5	4	6	10	15	15	15	15	17	17	16	4.7	17.2
Dir	279	280	283	286	283	263	255	241	242	209	257	43	51	45	63	54	37	45	47	42	36	36	26	29	360	36
16 Spd	16	14	14	12	12	10	11	9	9	8	8	8	9	9	9	8	8	7	6	5	5	4	3	1	8.5	15.5
Dir	23	18	18	12	23	20	12	10	12	10	13	9	24	25	20	13	8	11	1	345	356	3	23	39	15	23
17 Spd	0	1	1	0	0	0	0	0	0	1	1	3	2	4	4	3	5	4	4	4	4	4	5	6	2.0	5.9
Dir	47	54	84	204	251	257	171	160	187	141	209	328	30	63	59	44	32	47	59	50	54	38	7	10	39	10
18 Spd	3	3	6	4	6	1	2	3	3	4	2	1	2	4	6	5	7	6	8	4	3	4	3	2	3.6	8.0
Dir	7	355	347	303	334	326	266	315	356	2	355	16	334	348	347	350	346	340	340	319	312	320	301	324	337	340
19 Spd	0	1	1	0	2	3	4	5	4	4	9	7	4	6	9	4	3	3	3	1	0	1	1	1	2.7	9.3
Dir	216	332	161	185	326	312	305	313	307	307	333	345	347	350	343	356	355	333	351	8	239	220	228	161	332	343
20 Spd	1	1	1	1	1	0	0	0	1	0	0	0	3	5	4	1	1	0	0	1	3	2	2	1	1.0	5.1
Dir	167	171	183	196	185	197	207	226	285	171	162	242	172	170	171	192	327	187	172	162	178	185	202	203	182	170
21 Spd	1	0	0	0	1	2	1	2	1	1	0	0	3	5	7	5	6	6	7	7	7	7	7	6	2.8	7.5
Dir	197	187	39	236	182	178	151	163	34	5	357	354	356	2	7	15	6	24	39	34	31	22	18	24	22	18
22 Spd	5	1	0	1	1	0	2	2	3	3	3	5	5	7	8	6	6	5	6	6	6	6	5	5	3.4	7.8
Dir	30	32	17	347	346	144	159	159	162	163	158	164	169	168	164	158	166	174	170	170	174	172	178	176	165	164

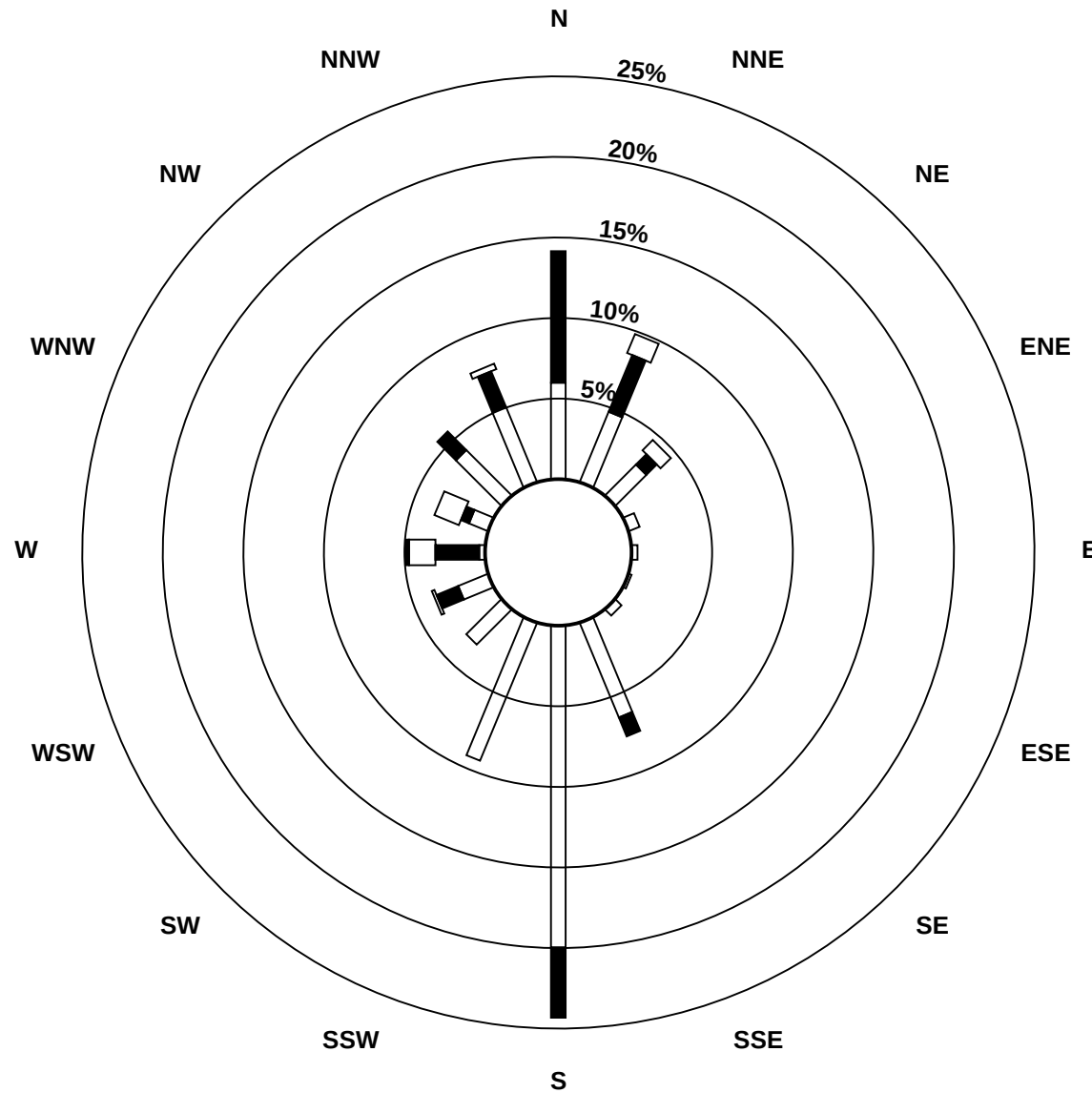
Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Valleyview - November 2013

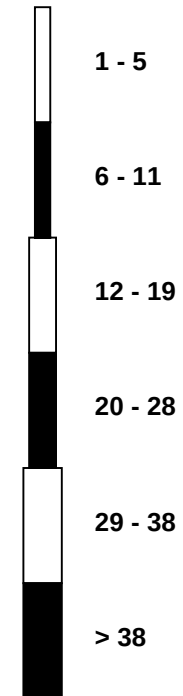
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
23 Spd	3	4	5	3	3	3	2	1	1	1	1	0	2	2	1	2	2	2	1	3	3	1	2	3	2.0	4.7
Dir	177	181	185	190	193	224	199	192	202	216	211	254	196	259	202	195	177	179	172	170	199	181	149	190	191	185
24 Spd	3	3	4	4	2	15	13	10	4	6	5	6	8	11	7	6	5	1	0	1	1	1	1	1	3.4	14.7
Dir	177	189	161	155	186	283	290	282	312	315	287	285	316	326	314	311	311	260	145	110	215	190	196	176	289	283
25 Spd	0	0	0	0	0	1	1	0	1	0	0	2	1	1	3	3	3	1	1	1	1	0	1	1	0.4	3.0
Dir	190	191	185	134	89	350	308	239	211	141	189	253	150	87	355	344	324	357	345	277	154	66	325	3	330	355
26 Spd	1	1	4	7	5	5	5	2	2	3	3	4	2	0	0	1	0	1	1	1	1	1	1	0	2.0	7.2
Dir	348	230	182	176	179	179	182	198	196	183	191	188	184	203	148	335	208	196	212	194	177	172	235	174	186	176
27 Spd	0	1	2	4	5	3	1	1	0	0	1	0	2	2	3	2	1	1	2	1	1	1	3	6	0.8	5.5
Dir	56	342	12	354	349	348	15	31	312	191	162	130	339	318	327	334	310	325	328	227	324	189	176	179	334	179
28 Spd	6	9	7	9	9	10	8	9	8	8	9	8	5	8	7	4	3	3	2	8	4	3	3	2	5.8	9.5
Dir	174	174	173	170	173	175	176	173	172	169	174	169	177	167	169	178	178	196	220	272	247	161	189	202	179	175
29 Spd	2	2	2	2	3	3	3	2	2	3	2	3	2	2	3	3	1	1	1	2	2	2	1	2	2.1	3.3
Dir	198	193	187	185	200	189	196	190	190	194	182	186	180	182	163	162	181	239	214	181	225	176	202	225	191	196
30 Spd	2	2	2	1	2	2	5	6	3	3	3	2	1	1	0	0	2	0	1	1	0	0	3	6	1.1	6.0
Dir	207	210	206	213	199	188	177	176	173	175	172	193	185	178	236	309	342	206	215	190	216	115	12	12	186	176
Spd	0.5	0.6	0.3	0.6	0.9	1.1	1.4	1.4	0.9	0.6	1.1	1.5	1.5	1.6	2.0	1.5	1.4	0.8	0.8	0.5	0.8	0.7	1.0	1.1	Diurnal Average	
Dir	298	283	295	288	294	275	278	282	292	290	297	291	314	311	329	336	355	28	16	344	344	350	325	328	Diurnal Maximum	
Spd	15.5	14.1	13.5	12.1	17.2	14.7	12.8	13.6	13.3	10.2	8.8	15.5	16.2	16.4	15.9	15.0	10.2	15.4	14.7	15.0	15.2	17.2	19.8	18.2	Diurnal Maximum	
Dir	23	18	18	286	283	283	290	258	265	255	174	269	283	271	272	296	37	45	47	42	36	36	275	281		
Maximum Speed Value: 20 km/h on Nov 14 23:00																									Hours in Service: 720	
Maximum Daily Speed Average: 8.5 km/h on Nov 15																									Hours of Data: 720	
Maximum Diurnal Speed Average: 2.0 km/h at hour 15																									Hours of Missing Data: 0	
Minimum Speed Value: 0 km/h on Nov 20 19:00																									Percent Operational Time: 100.0	
Minimum Daily Speed Average: 0.4 km/h on Nov 25																										
Minimum Diurnal Speed Average: 0.3 km/h at hour 3																										
Monthly Average Velocity: 0.90 km/h 314.2 deg																										
Speed Percentiles: P ₁ = 0.1 P ₁₀ = 0.5 Q ₁ = 1.1 Median = 2.6 Q ₃ = 5.6 P ₉₀ = 8.9 P ₉₉ = 16.1																										
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	71		74		5		0		0		0		150													
NorthEast	42		10		9		0		0		0		61													
East	8		0		0		0		0		0		8													
SouthEast	28		1		0		0		0		0		29													
South	217		42		0		0		0		0		259													
SouthWest	80		2		0		0		0		0		82													
West	20		24		17		1		0		0		62													
NorthWest	48		15		6		0		0		0		69													
Total	514		168		37		1		0		0		720													

Wind Rose

Wind Speed (WS) (km/h)
Valleyview - November 2013



Wind Speed Classes (km/h)



Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Valleyview - November 2013

Maximum Speed: 20 km/h on Nov 14 23:00																				Maximum Daily Speed Average: 10.1 km/h on Nov 15										Hours in Service: 720	
Minimum Speed: 0 km/h on Nov 7 04:00																				Minimum Daily Speed Average: 1.2 km/h on Nov 11										Hours of Data: 720	
Maximum Diurnal Speed Average: 5.7 km/h at hour 15																				Minimum Diurnal Speed Average: 3.1 km/h at hour 18										Hours of Missing Data: 0	
Monthly Average Speed: 4.05 km/h																				Percentiles: P ₁ = 0.1 P ₁₀ = 0.6 Q ₁ = 1.3 Median = 2.8 Q ₃ = 5.7 P ₉₀ = 9.0 P ₉₉ = 16.4										Percent Operational Time: 100.0	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24							
1-Nov	8	9	2	4	4	2	2	6	4	3	6	16	16	16	15	16	3	1	9	9	8	9	6	7	7.6	16.5					
2-Nov	2	2	2	2	2	2	1	0	0	1	3	2	5	5	8	8	7	5	9	8	11	8	8	9	4.5	11.1					
3-Nov	9	8	7	9	8	9	10	10	9	8	8	8	10	9	10	9	8	4	2	2	0	1	0	1	6.7	10.4					
4-Nov	0	1	0	1	1	2	0	1	0	1	2	3	3	3	4	4	4	3	2	2	2	3	7	6	2.2	6.7					
5-Nov	7	5	5	5	7	6	5	5	5	5	5	5	5	5	5	4	2	2	2	2	3	3	2	4	4.3	7.1					
6-Nov	3	3	3	3	2	2	1	2	3	3	4	9	8	11	12	7	1	1	2	3	7	2	1	1	3.9	12.0					
7-Nov	1	1	0	0	0	1	2	0	1	1	2	2	3	2	2	5	6	3	4	2	3	4	2	3	2.1	6.1					
8-Nov	3	4	6	11	12	11	9	12	6	3	4	3	2	2	2	2	1	1	2	1	1	4	10	10	5.0	11.7					
9-Nov	10	9	7	6	4	6	8	8	9	8	9	8	10	8	6	7	4	3	4	4	5	4	3	1	6.4	10.3					
10-Nov	1	1	1	3	2	2	2	1	0	1	1	2	4	3	3	3	2	4	4	3	1	2	3	1	2.1	3.9					
11-Nov	2	1	1	1	1	1	1	0	1	0	1	1	3	3	2	2	2	1	1	1	2	1	1	0	1.2	3.1					
12-Nov	1	0	1	1	1	1	1	1	1	2	2	1	1	1	2	1	2	2	2	1	1	2	3	4	1.4	3.7					
13-Nov	2	2	1	1	1	2	1	3	7	7	6	5	6	4	5	5	5	2	1	1	3	1	2	3	3.2	7.3					
14-Nov	2	2	1	2	2	2	10	14	13	10	9	12	13	17	16	15	9	2	3	2	3	9	20	18	8.6	20.0					
15-Nov	14	12	9	12	17	9	8	5	5	1	3	2	7	5	4	6	10	16	15	15	15	17	17	16	10.1	17.4					
16-Nov	16	14	14	12	12	10	12	9	9	8	8	9	9	9	9	9	9	7	6	5	5	4	3	1	8.7	15.7					
17-Nov	0	1	1	0	0	0	0	0	0	1	2	3	4	4	4	3	5	4	4	4	4	5	5	6	2.6	5.9					
18-Nov	3	3	6	4	6	2	2	3	3	4	3	2	2	4	6	5	8	7	8	4	3	4	3	2	4.0	8.1					
19-Nov	0	1	1	1	2	3	4	5	4	4	9	7	4	6	9	4	3	3	3	1	0	1	1	1	3.2	9.3					
20-Nov	1	1	1	1	1	0	0	0	1	0	1	1	4	5	4	2	1	0	0	1	3	2	2	1	1.4	5.2					
21-Nov	2	0	0	1	1	2	1	2	1	1	0	0	3	5	7	5	6	6	7	7	7	7	8	7	3.6	7.5					
22-Nov	5	1	0	1	1	0	2	2	3	3	4	5	5	7	8	6	6	5	6	6	6	6	5	5	4.1	7.9					
23-Nov	3	4	5	3	3	3	2	1	1	2	2	1	2	2	2	2	4	2	2	3	3	2	2	3	2.4	4.8					
24-Nov	3	4	4	5	4	15	13	10	4	6	5	6	8	11	7	6	6	1	1	1	1	1	1	1	5.2	15.2					
25-Nov	0	0	0	0	1	1	1	1	1	1	0	2	1	2	3	3	3	1	1	2	1	0	1	1	1.2	3.2					
26-Nov	1	2	5	7	5	5	5	2	2	3	3	4	2	1	0	1	0	1	1	1	1	1	1	0	2.4	7.3					
27-Nov	1	2	2	4	5	3	1	1	1	0	1	1	2	3	3	2	1	1	2	1	1	1	3	6	2.0	5.6					
28-Nov	7	9	8	9	9	10	8	9	9	9	9	8	6	8	7	4	3	3	2	8	6	3	4	3	6.6	9.6					
29-Nov	2	2	3	3	3	3	3	3	3	3	2	3	2	2	3	3	1	2	2	2	2	2	2	2	2.4	3.3					
30-Nov	2	2	2	2	2	2	5	6	3	3	3	2	1	1	1	1	2	1	1	1	1	1	3	6	2.3	6.0					
3.7 3.5 3.2 3.7 4.0 3.9 4.0 4.0 3.7 3.4 3.9 4.4 5.1 5.6 5.7 5.0 4.1 3.1 3.6 3.5 3.6 3.7 4.3 4.3																									Diurnal Average						
15.7 14.3 13.7 12.3 17.4 15.2 13.0 13.8 13.4 10.3 9.0 15.9 16.5 16.5 16.1 15.8 10.4 15.7 15.0 15.3 15.4 17.4 20.0 18.4																									Diurnal Maximum						
All monthly, daily, and diurnal averages have been calculated using scalar methods																															

Hourly Standard Deviations

Wind Direction (WD) - deg
Valleyview - November 2013

Maximum Value: 95.1 deg on Nov 20 19:00																				Hours in Service: 720					
Minimum Value: 4.0 deg on Nov 16 21:00																				Hours of Data: 720					
																				Hours of Missing Data: 0					
Percentiles: P ₁ = 6.1 P ₁₀ = 8.3 Q ₁ = 10.2 Median = 17.0 Q ₃ = 36.6 P ₉₀ = 65.2 P ₉₉ = 88.4																				Hours of Calibration: 0					
																				Percent Operational Time: 100.0					
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Nov	9	9	21	17	25	12	10	13	15	19	28	13	11	13	14	17	60	28	12	8	8	7	17	13	60.0
2-Nov	49	20	32	86	54	44	78	53	68	66	10	30	14	17	10	10	8	8	10	8	6	9	6	9	85.7
3-Nov	10	8	7	7	10	8	7	6	10	9	9	11	10	10	9	10	8	24	38	36	64	21	57	87	86.6
4-Nov	51	95	56	45	58	42	31	26	35	71	26	30	26	22	18	11	9	9	21	18	14	11	9	7	94.7
5-Nov	7	7	8	8	8	11	7	13	8	9	10	13	10	10	10	8	39	59	8	9	11	19	33	12	59.3
6-Nov	9	10	9	7	9	10	9	12	6	8	18	10	13	18	13	14	40	12	6	15	8	7	11	21	39.9
7-Nov	9	10	26	81	93	59	14	87	62	33	16	26	16	19	37	25	27	19	30	35	16	11	55	24	92.6
8-Nov	24	19	9	11	8	16	11	10	15	16	16	21	36	41	29	23	26	59	8	26	86	21	9	8	85.5
9-Nov	22	9	10	12	18	14	11	9	9	10	12	11	14	16	16	12	14	25	10	14	21	14	16	25	24.6
10-Nov	27	20	58	12	52	31	23	16	74	89	41	74	14	16	16	11	8	6	5	6	47	14	9	19	89.1
11-Nov	15	25	44	27	61	19	39	20	26	82	87	63	34	11	13	25	36	80	63	55	87	70	63	63	87.2
12-Nov	60	45	74	68	86	28	66	79	48	35	57	62	84	58	62	18	21	33	26	78	23	49	26	41	85.9
13-Nov	34	73	65	46	32	17	27	29	8	11	15	16	13	27	37	24	16	52	67	78	29	44	15	18	78.2
14-Nov	72	18	14	12	10	8	32	8	7	9	15	11	11	8	10	11	10	28	21	20	25	15	9	9	72.1
15-Nov	8	10	11	11	8	14	10	25	19	25	39	78	10	12	17	12	10	10	12	12	8	8	9	10	77.9
16-Nov	9	10	8	10	13	13	8	8	11	9	9	11	10	11	10	11	8	8	15	8	4	6	15	12	15.4
17-Nov	66	19	24	44	83	82	42	44	37	33	66	9	65	20	15	23	20	21	16	12	17	16	9	9	82.8
18-Nov	12	14	9	15	27	65	46	17	26	17	26	44	30	23	12	18	9	10	10	12	9	8	15	26	65.0
19-Nov	61	67	27	37	37	23	18	10	11	13	10	9	7	8	5	12	15	9	17	32	32	34	24	16	66.9
20-Nov	30	28	21	18	13	21	86	52	62	56	72	88	78	8	11	50	50	63	95	27	10	13	33	40	95.1
21-Nov	25	85	90	60	18	26	15	15	52	24	56	47	10	16	9	10	9	13	11	10	9	10	7	9	90.0
22-Nov	11	14	33	17	21	78	16	15	17	10	12	10	10	9	10	14	9	8	7	9	8	9	9	8	78.4
23-Nov	11	11	9	10	13	12	19	19	38	34	50	68	11	45	57	39	56	18	35	28	22	49	42	17	68.5
24-Nov	14	16	16	16	63	20	11	10	23	17	11	12	10	7	9	11	15	72	83	70	29	20	24	14	83.3
25-Nov	20	25	16	86	68	61	71	79	58	72	81	70	33	52	24	12	24	43	75	57	50	94	93	51	93.6
26-Nov	84	54	36	7	7	7	9	18	13	12	9	10	13	42	62	58	35	32	30	18	28	15	45	60	84.1
27-Nov	87	44	23	20	11	19	47	46	78	67	18	72	20	10	9	14	24	67	53	52	71	71	23	8	87.3
28-Nov	9	8	7	7	7	8	7	8	12	18	13	10	9	8	8	13	28	24	24	11	60	40	42	44	60.4
29-Nov	31	15	20	60	14	11	10	38	15	6	8	6	13	10	17	11	59	78	32	16	23	19	23	24	77.5
30-Nov	24	24	22	30	14	34	8	6	8	10	20	22	32	56	70	87	57	73	69	47	54	36	31	8	87.3
87.3 94.7 90.0 86.3 92.6 82.3 86.5 86.8 78.1 89.1 86.9 88.4 83.7 58.5 69.6 87.3 60.0 80.4 95.1 78.4 87.2 93.6 93.0 86.6																									

PAZA

Portable – Reno Station

Monthly Summary Tables, Graphs and
Roses

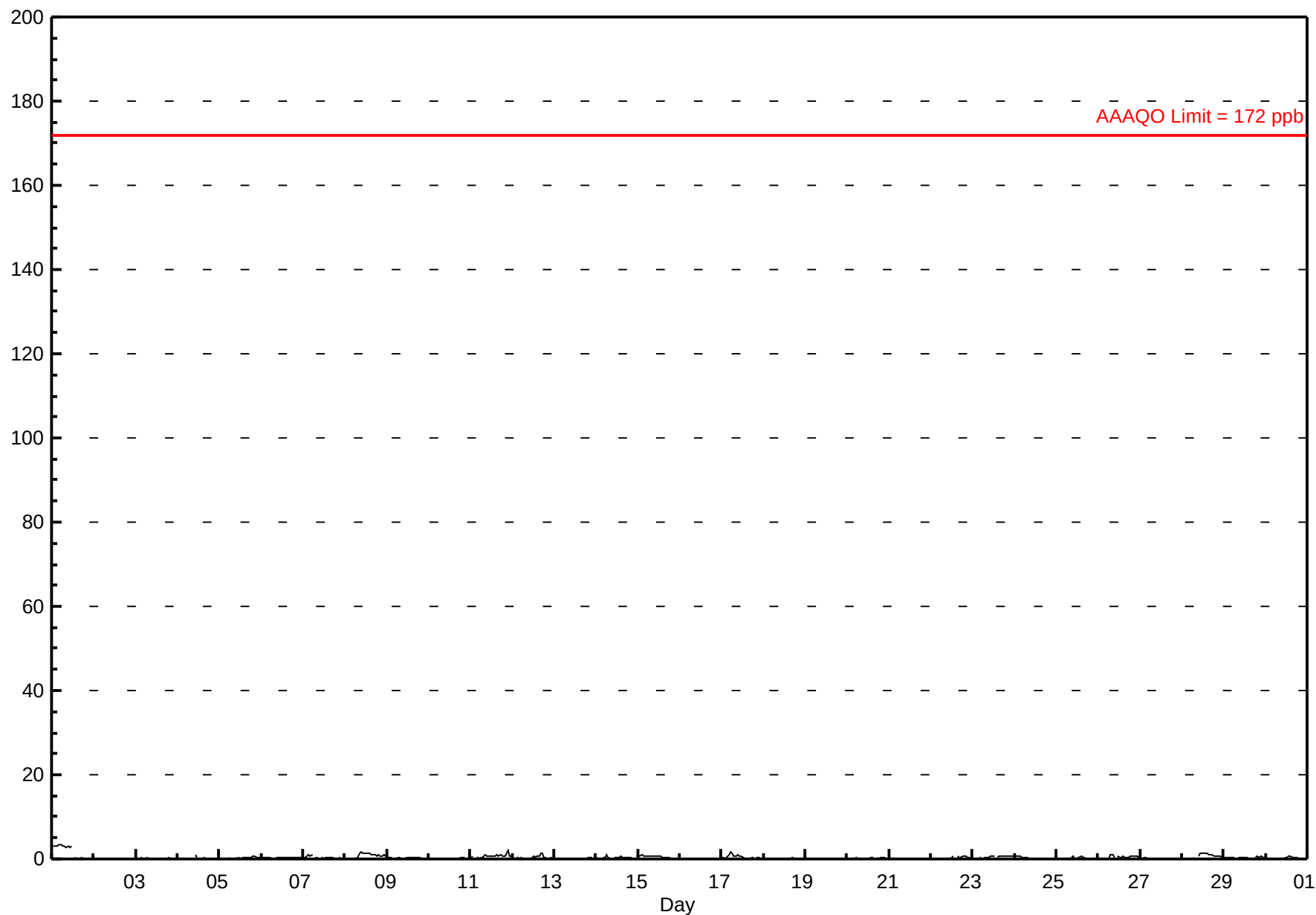
Hourly Averages

Sulphur Dioxide (SO₂) - ppb Portable Reno - November 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 3.4 ppb on Nov 1 05:00 Maximum Daily Average: 1.6 ppb on Nov 1																				Hours in Service: 720 Hours of Data: 676 Hours of Missing Data: 44 Hours of Calibration: 39 Percent Operational Time: 99.3						
Minimum Value: 0 ppb on Nov 1 23:00 Maximum Diurnal Average: 0.4 ppb at hour 12 Monthly Average: 0.30 ppb																				Minimum Daily Average: 0.0 ppb on Nov 19 Minimum Diurnal Average: 0.2 ppb at hour 24 Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.1 Q ₃ = 0.4 P ₉₀ = 0.7 P ₉₉ = 3.0						
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-Nov	3	3	3	3	3	3	3	3	3	3	3	A	0	0	0	0	0	0	0	0	0	0	0	0	1.6	3.4
2-Nov	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
3-Nov	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
4-Nov	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	1.2
5-Nov	D	D	D	D	D	0	0	0	A	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0.3	0.6
6-Nov	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5
7-Nov	0	0	1	1	1	1	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	1.1
8-Nov	0	0	0	0	0	A	0	0	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.6
9-Nov	1	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.7
10-Nov	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
11-Nov	0	1	A	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	0.6	1.9
12-Nov	0	A	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	0	0	0	0	0	0	0.4	1.3
13-Nov	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.1	0.4
14-Nov	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	A	1	0.3	1.1
15-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	A	0	0	0.4	0.9
16-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.0	0.1
17-Nov	0	0	0	1	1	2	1	1	1	1	1	1	0	0	0	0	0	0	0	A	0	0	0	0	0.4	1.6
18-Nov	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
19-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.0	0.0
20-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.1	0.3
21-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.0	0.1
22-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	1	A	1	0	0	1	1	1	0	0	0	0.2	0.8
23-Nov	0	0	0	0	0	0	0	0	0	0	1	1	1	A	1	1	1	1	1	1	1	1	1	1	0.4	0.8
24-Nov	1	1	1	1	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.2	0.7
25-Nov	0	0	0	0	0	0	0	0	0	1	0	A	0	0	1	0	0	0	0	0	0	0	0	0	0.1	0.8
26-Nov	0	0	0	0	0	0	0	1	1	0	A	1	0	0	1	0	0	0	1	1	1	1	1	0	0.4	1.1
27-Nov	0	0	0	0	0	0	0	0	0	A	C	C	C	C	C	C	C	C	0	0	0	0	0	0	--	0.2
28-Nov	0	0	0	0	0	0	0	0	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0.6	1.5
29-Nov	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0.3	0.7
30-Nov	0	0	0	0	0	0	A	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0.2	0.8
0.3 0.3 0.2 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.4 0.4 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.2 0.2																									Diurnal Average	
3.0 3.0 3.0 3.0 3.4 3.3 3.0 3.1 2.8 3.0 2.9 2.9 1.5 1.5 1.3 1.1 1.2 1.3 0.8 0.9 0.8 1.9 0.9 0.7																									Diurnal Maximum	
C - Calibration D - DAS 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
Portable Reno - November 2013



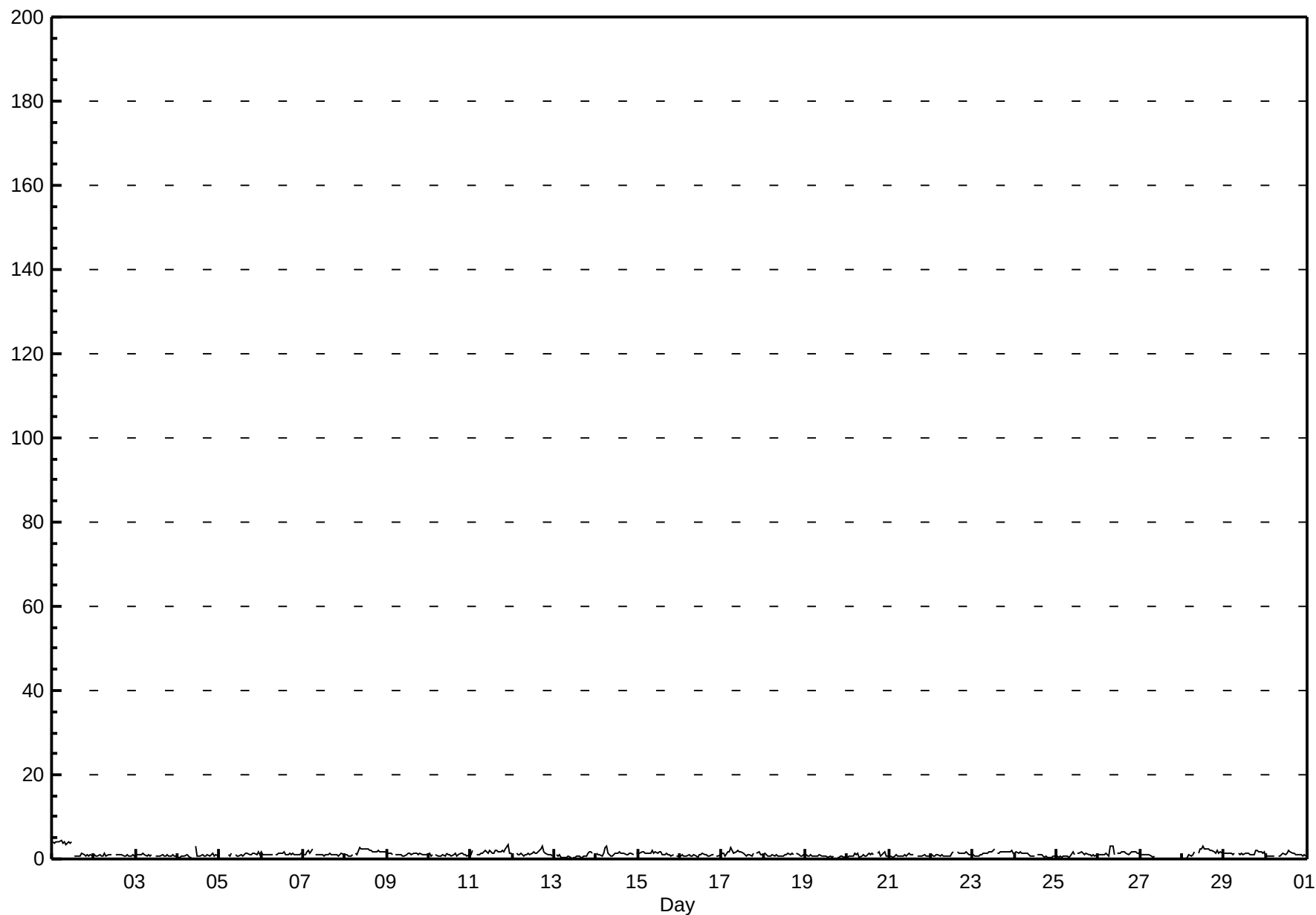
Hourly Maximums

Sulphur Dioxide (SO₂) - ppb Portable Reno - November 2013

Maximum Value: 4.2 ppb on Nov 1 06:00																				Maximum Daily Average: 2.5 ppb on Nov 1										Hours in Service: 720									
Minimum Value: 0 ppb on Nov 27 19:00																				Minimum Daily Average: 0.7 ppb on Nov 19										Hours of Data: 676									
Maximum Diurnal Average: 1.3 ppb at hour 11																				Minimum Diurnal Average: 1.0 ppb at hour 24										Hours of Missing Data: 44									
Monthly Average: 1.15 ppb																				Percentiles: P ₁ = -0.1 P ₁₀ = 0.6 Q ₁ = 0.8 Median = 1.0 Q ₃ = 1.4 P ₉₀ = 1.8 P ₉₉ = 4.0										Hours of Calibration: 39									
																				Percent Operational Time: 99.3																			
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-Nov	4	4	4	4	4	4	4	4	3	4	4	4	A	1	1	1	1	1	1	1	1	1	1	1	2.5	4.2													
2-Nov	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.4													
3-Nov	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.5													
4-Nov	0	0	1	1	1	1	1	0	0	A	3	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	3.2													
5-Nov	D	D	D	D	D	1	1	1	A	1	1	1	1	1	1	1	2	1	1	1	1	1	2	1	1.1	1.5													
6-Nov	2	1	1	1	1	1	1	A	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1.2	1.7													
7-Nov	1	1	2	2	1	2	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.1	2.4													
8-Nov	1	1	1	1	1	A	1	1	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1.7	2.6													
9-Nov	2	1	1	1	A	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1.1	1.5													
10-Nov	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	1.4													
11-Nov	1	2	A	1	1	1	1	1	2	2	1	2	1	1	2	2	2	2	2	2	2	3	2	1	1.7	3.4													
12-Nov	1	A	1	1	1	1	1	1	1	1	1	1	2	1	1	2	3	3	2	1	1	1	1	1	1.3	3.1													
13-Nov	A	1	1	1	0	0	0	0	1	0	0	0	0	1	1	1	0	1	1	1	2	2	1	A	0.7	1.6													
14-Nov	1	1	1	1	1	3	3	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	A	2	1.3	3.0													
15-Nov	1	1	2	2	1	1	1	1	2	1	2	1	2	2	1	1	1	1	1	1	1	A	1	1	1.3	2.0													
16-Nov	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	A	1	1	0.8	1.2													
17-Nov	1	1	1	2	2	3	2	1	2	2	2	2	1	1	1	1	1	1	1	A	1	2	1	1	1.4	2.6													
18-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	0.9	1.3													
19-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	A	1	0	1	1	0	1	0.7	1.1													
20-Nov	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	A	1	2	1	1	2	1	1	0.9	1.8													
21-Nov	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	0.8	1.4													
22-Nov	1	1	1	1	1	1	1	1	1	1	1	1	2	2	A	2	1	1	2	2	2	1	1	1	1.1	1.8													
23-Nov	1	1	1	1	1	1	1	2	1	2	2	2	3	A	1	2	2	2	2	2	2	2	2	2	1.4	2.5													
24-Nov	1	2	1	2	1	1	1	1	1	1	1	1	A	1	1	1	1	0	1	0	0	0	1	1	0.9	1.7													
25-Nov	1	0	1	0	1	1	1	0	1	2	1	A	1	1	2	1	1	2	1	1	1	1	1	1	0.9	1.9													
26-Nov	1	1	1	1	1	1	1	3	3	1	A	1	1	2	2	2	1	1	1	2	2	2	1	1	1.4	2.9													
27-Nov	1	1	1	1	1	1	1	0	1	A	C	C	C	C	C	C	C	C	0	0	0	0	0	0	--	1.0													
28-Nov	0	0	0	0	1	1	1	2	A	1	2	3	3	2	2	2	2	2	2	1	2	2	2	1	1.5	3.0													
29-Nov	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1	2	1.4	1.9													
30-Nov	1	1	1	1	1	1	A	1	1	1	2	1	1	2	2	1	1	1	1	1	1	1	1	1	1.0	2.1													
1.1		1.0	1.0	1.1	1.1	1.2	1.2	1.1	1.2	1.2	1.3	1.2	1.3	1.2	1.2	1.3	1.2	1.2	1.1	1.1	1.2	1.1	1.0	1.0	Diurnal Average														
4.1		3.8	4.2	4.0	4.2	4.2	3.8	4.0	3.5	4.0	3.7	4.0	3.0	2.5	2.3	2.2	2.5	3.1	2.1	2.0	2.2	3.4	2.0	1.8	Diurnal Maximum														
C - Calibration				D - DAS Failure				A - Automated Daily Zero Span																															

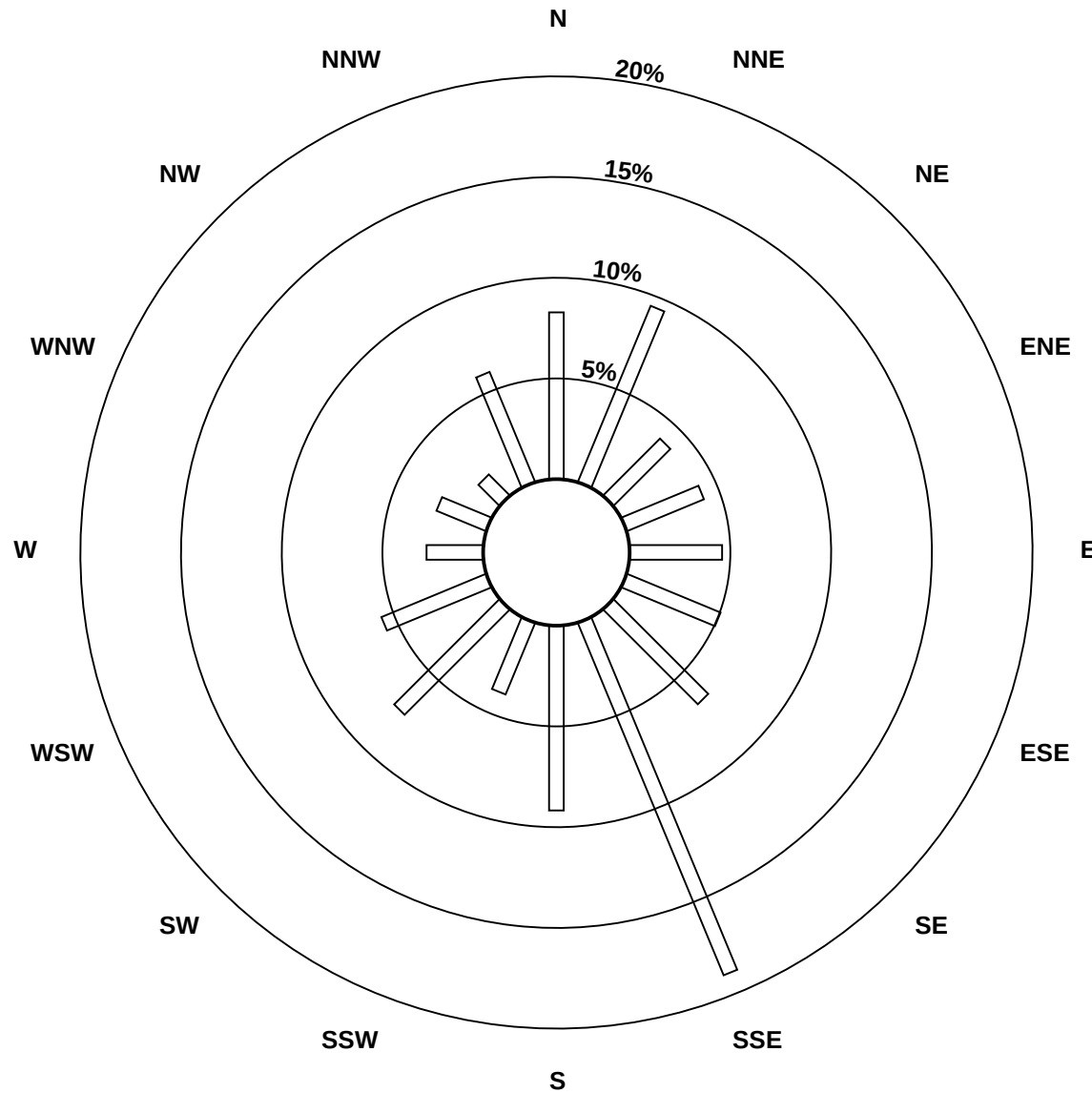
Hourly Maximums

Sulphur Dioxide (SO₂) - ppb
Portable Reno - November 2013

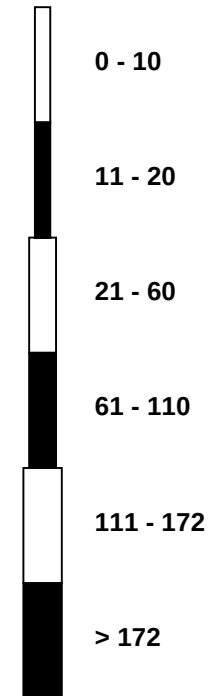


Pollutant Rose

Sulphur Dioxide (SO₂) - ppb
Portable Reno - November 2013

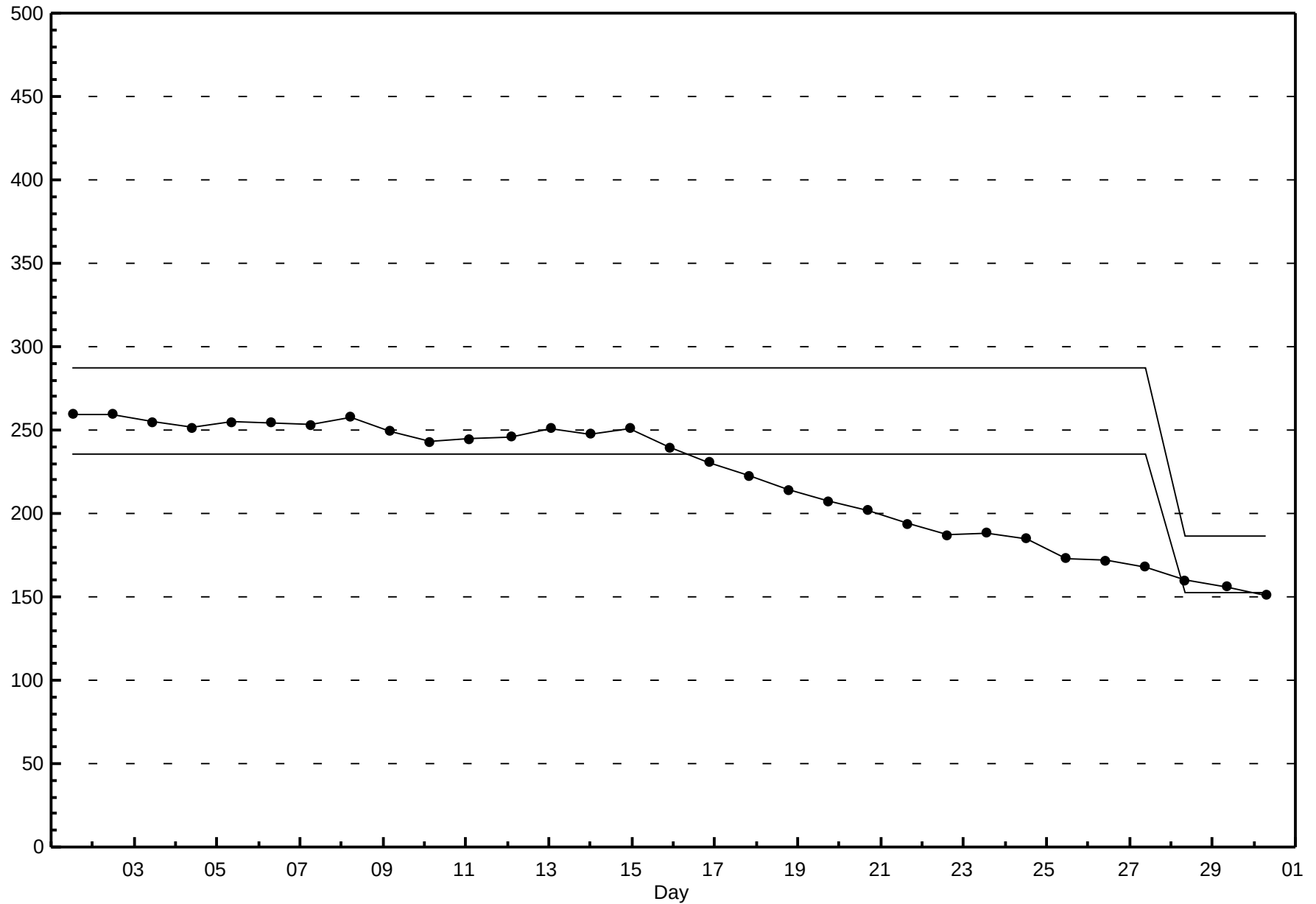


Pollutant Classes (ppb)



Span Responses

Sulphur Dioxide (SO₂)
Portable Reno - November 2013



Hourly Averages

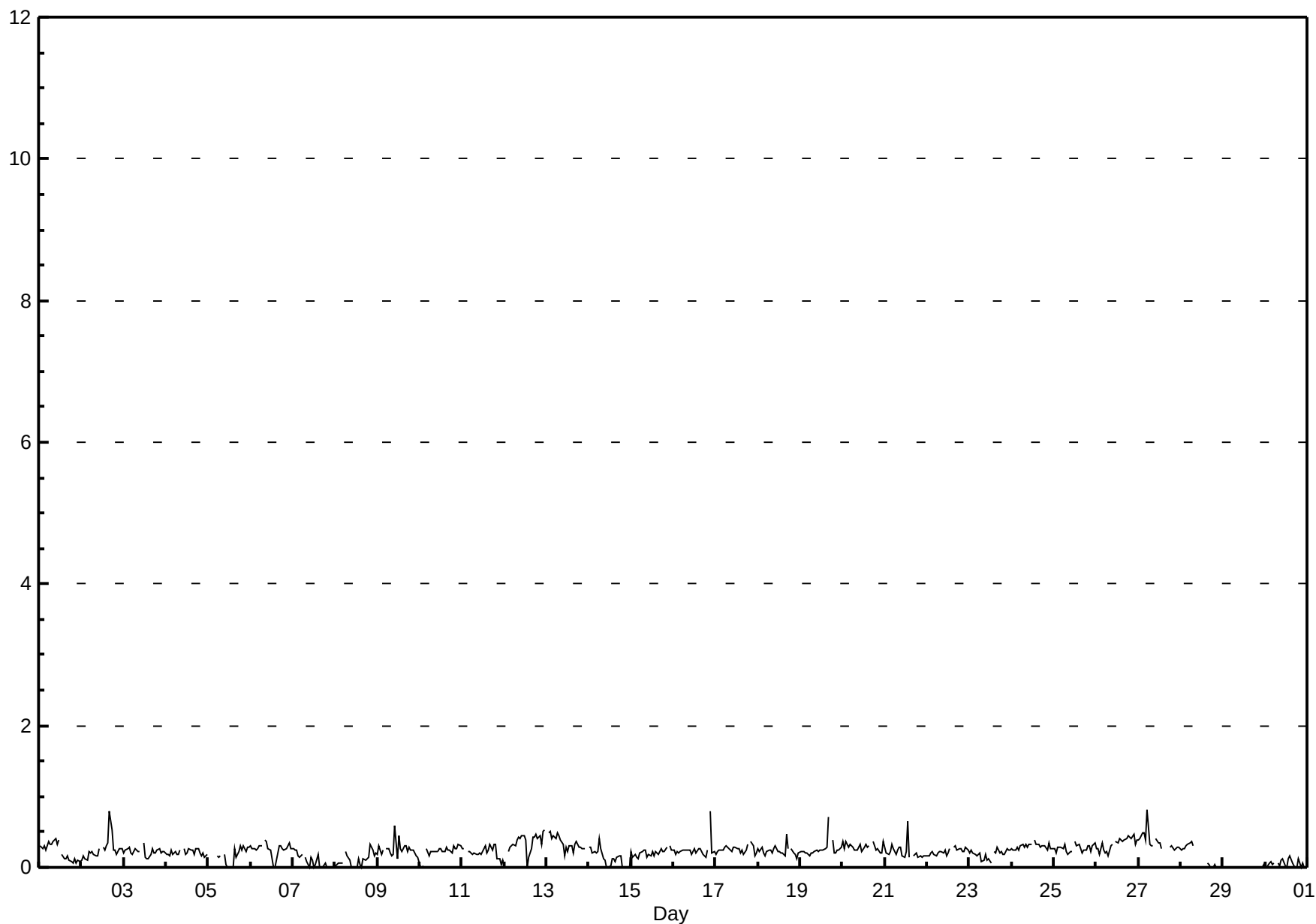
Total Reduced Sulphur (TRS) - ppb

Portable Reno - November 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0																				Hours in Service: 720						
Maximum Value: 0.8 ppb on Nov 27 06:00																				Maximum Daily Average: 0.4 ppb on Nov 27		Hours of Data: 675				
Minimum Value: 0 ppb on Nov 5 12:00																				Minimum Daily Average: 0.0 ppb on Nov 29		Hours of Missing Data: 45				
Maximum Diurnal Average: 0.3 ppb at hour 17																				Minimum Diurnal Average: 0.2 ppb at hour 15		Hours of Calibration: 37				
Monthly Average: 0.22 ppb																				Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.2 Median = 0.2 Q ₃ = 0.3 P ₉₀ = 0.4 P ₉₉ = 0.5		Percent Operational Time: 98.9				
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-Nov	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
2-Nov	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	1	1	0	0	0	0	0	0	0.3	0.8
3-Nov	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
4-Nov	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
5-Nov	D	D	D	D	D	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
6-Nov	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.4
7-Nov	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
8-Nov	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
9-Nov	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	0.6
10-Nov	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
11-Nov	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	0.3
12-Nov	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.3	0.5
13-Nov	A	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.3	0.5
14-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.1	0.4
15-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.2	0.3
16-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	1	0	0	0.2	0.8
17-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0.3	0.4
18-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.2	0.5
19-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	A	0	0	0	0	0	0	0.3	0.7
20-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.3	0.4
21-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	A	0	0	0	0	0	0	0	0	0.2	0.6
22-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.2	0.3
23-Nov	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
24-Nov	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
25-Nov	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	0.4
26-Nov	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	0.5
27-Nov	0	0	0	0	0	1	0	0	0	A	0	0	0	0	M	0	M	M	0	0	0	0	0	0	0.4	0.8
28-Nov	0	0	0	0	0	0	0	0	A	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	--	0.4
29-Nov	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
30-Nov	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	0.2
0.2 0.2 0.2 0.2 0.2 0.3 0.3 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.3 0.2 0.2 0.2 0.2 0.2 0.2 0.2																									Diurnal Average	
0.4 0.5 0.5 0.5 0.4 0.8 0.5 0.4 0.4 0.4 0.6 0.5 0.4 0.6 0.4 0.4 0.8 0.5 0.5 0.4 0.5 0.8 0.5 0.5																									Diurnal Maximum	
C - Calibration D - DAS Failure M - Maintenance 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
Portable Reno - November 2013



Hourly Maximums

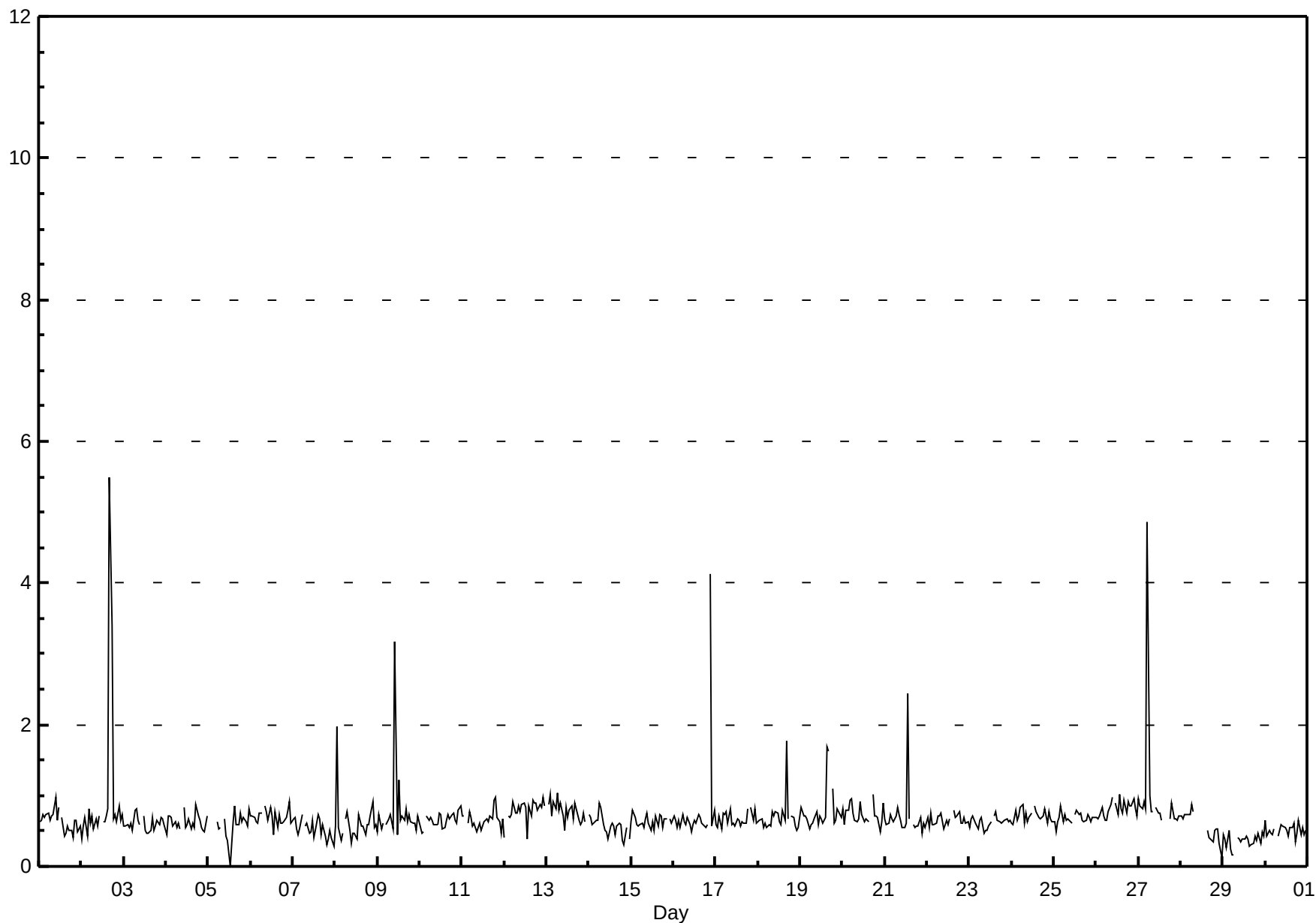
Total Reduced Sulphur (TRS) - ppb

Portable Reno - November 2013

Maximum Value: 5.5 ppb on Nov 2 17:00		Maximum Daily Average: 1.0 ppb on Nov 27		Hours in Service: 720																						
Minimum Value: 0 ppb on Nov 5 13:00		Minimum Daily Average: 0.4 ppb on Nov 29		Hours of Data: 675																						
Maximum Diurnal Average: 0.9 ppb at hour 17		Minimum Diurnal Average: 0.6 ppb at hour 13		Hours of Missing Data: 45																						
Monthly Average: 0.68 ppb		Percentiles: P ₁ = 0.3 P ₁₀ = 0.5 Q ₁ = 0.6 Median = 0.6 Q ₃ = 0.7 P ₉₀ = 0.8 P ₉₉ = 1.8		Hours of Calibration: 37																						
				Percent Operational Time: 98.9																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
1-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	0	1	1	0	1	0.6	1.0
2-Nov	0	1	1	0	1	1	1	1	1	1	1	A	1	1	1	1	5	3	1	1	1	1	1	1	1.0	5.5
3-Nov	1	1	1	1	1	1	1	1	1	1	A	1	1	0	0	0	1	1	1	1	1	1	1	1	0.6	0.8
4-Nov	0	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0.6	0.9
5-Nov	D	D	D	D	D	1	1	1	A	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0.6	0.8
6-Nov	1	1	1	1	1	1	1	A	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	0.7	0.9
7-Nov	1	1	1	0	1	1	A	1	1	0	0	1	0	1	1	1	0	1	0	0	0	1	0	0	0.5	0.7
8-Nov	1	2	1	0	0	A	1	1	1	0	0	0	0	1	1	1	1	0	1	1	1	1	1	1	0.6	2.0
9-Nov	0	1	1	1	A	1	1	1	1	1	3	0	1	1	1	1	1	1	1	1	1	1	1	1	0.8	3.2
10-Nov	1	0	0	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	0.9
11-Nov	1	1	A	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0.7	1.0
12-Nov	0	A	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	0.8	1.0
13-Nov	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	0.8	1.0
14-Nov	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	0	1	1	1	0	0	1	A	0	0.6	0.9
15-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	0.6	0.8
16-Nov	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	A	4	1	1	0.8	4.1
17-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	0.7	0.8
18-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	A	1	1	1	1	1	0.7	1.8
19-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	A	1	1	1	1	1	1	0.8	1.7
20-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	0	1	1	0.7	1.0
21-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	A	1	1	1	1	1	0	1	1	0.7	2.4
22-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	0.7	0.8
23-Nov	1	1	1	1	1	1	1	1	0	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	0.6	0.8
24-Nov	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
25-Nov	1	0	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0.7	0.9
26-Nov	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	1.0
27-Nov	1	1	1	1	1	5	1	1	1	A	1	1	1	1	M	1	M	M	1	1	1	1	1	1	1.0	4.9
28-Nov	1	1	1	1	1	1	1	1	A	C	C	C	C	C	C	1	0	0	0	0	1	1	0	0	--	0.9
29-Nov	0	0	0	1	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.5
30-Nov	1	0	1	0	0	1	A	0	1	1	1	1	0	1	1	1	0	0	0	1	0	1	0	0	0.5	0.7
																								Diurnal Average		
																								Diurnal Maximum		
C - Calibration																										
D - DAS Failure																										
M - Maintenance																										
A - Automated Daily Zero Span																										

Hourly Maximums

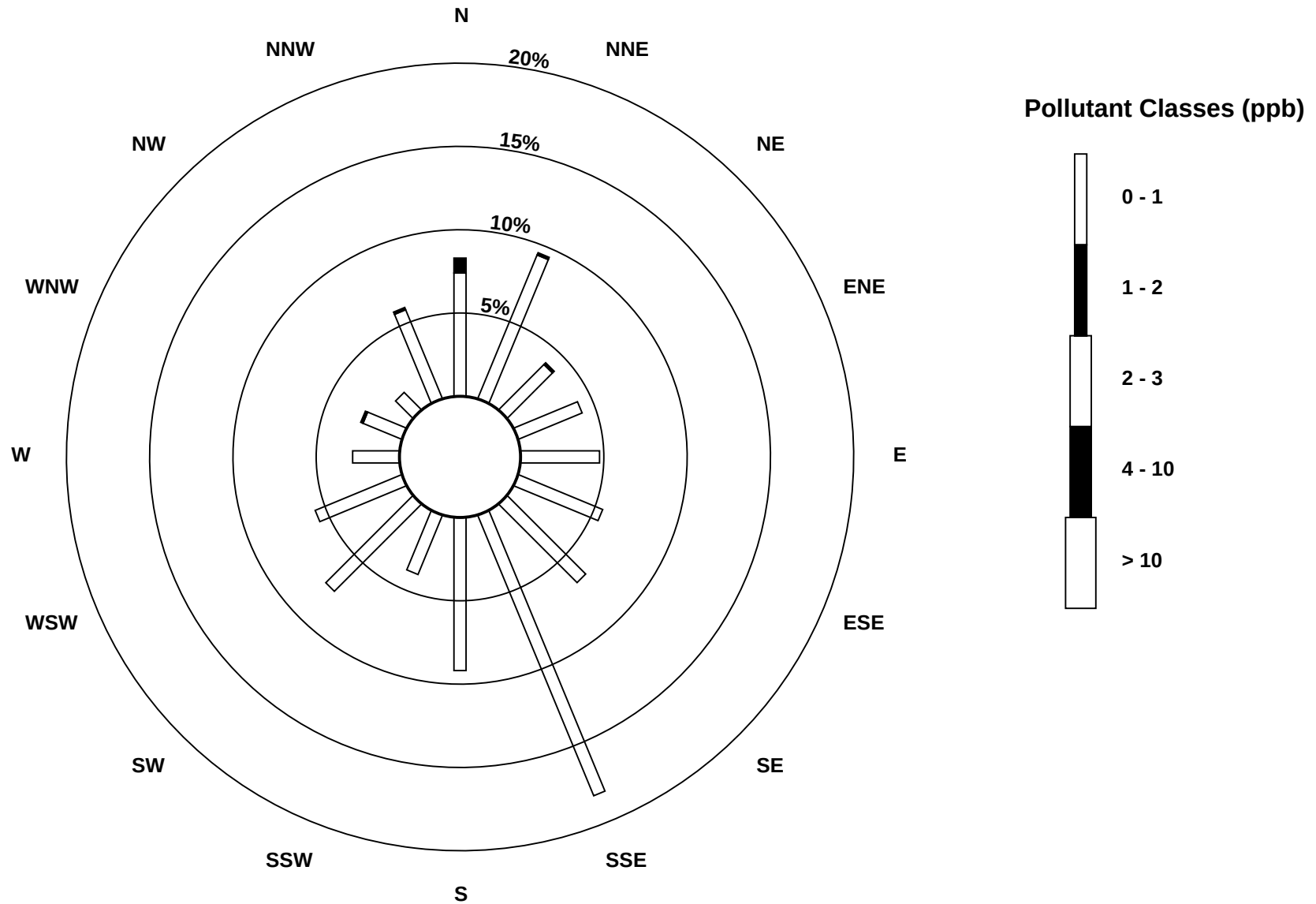
Total Reduced Sulphur (TRS) - ppb
Portable Reno - November 2013



Pollutant Rose

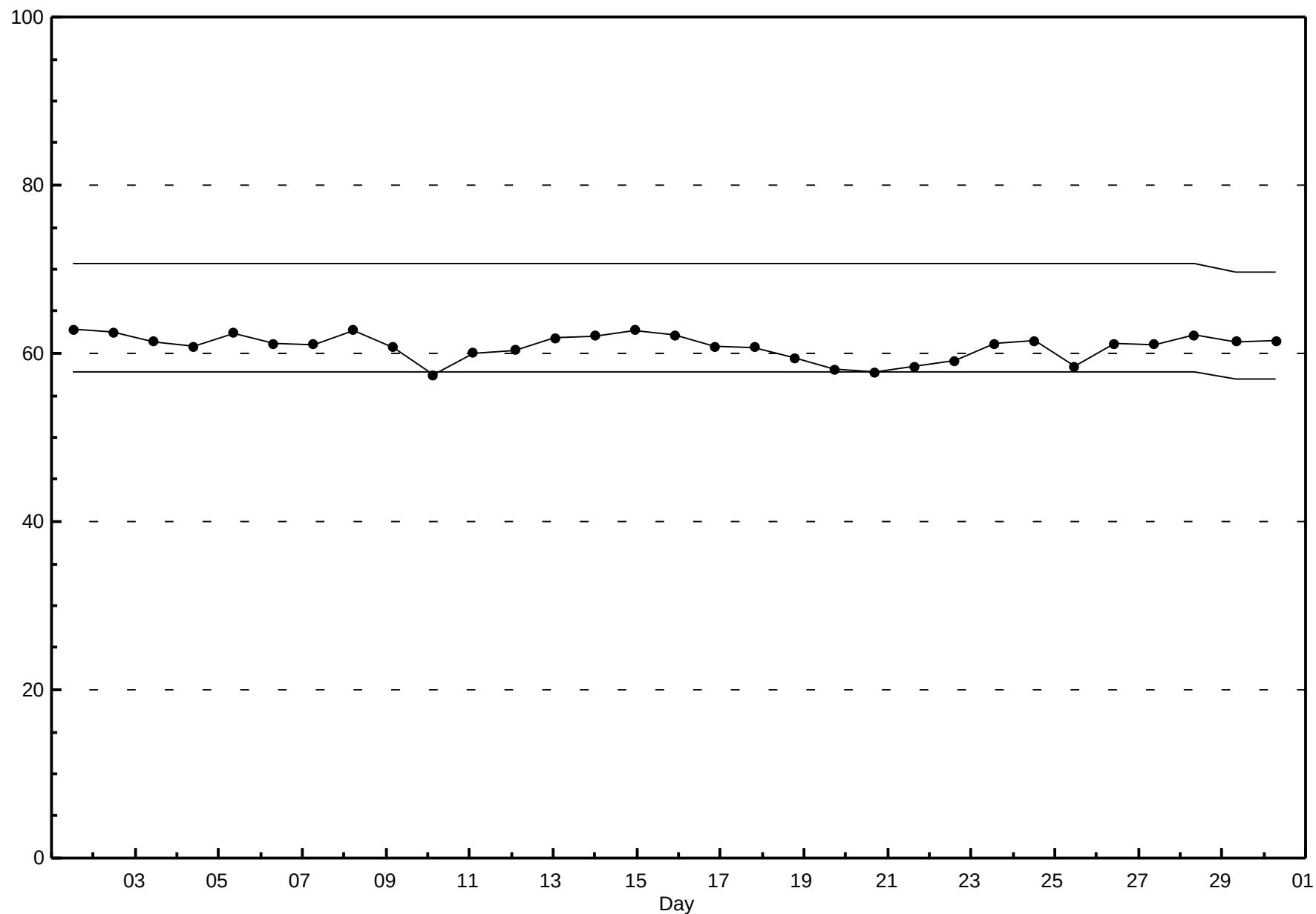
Total Reduced Sulphur (TRS) - ppb

Portable Reno - November 2013



Span Responses

Total Reduced Sulphur (TRS)
Portable Reno - November 2013



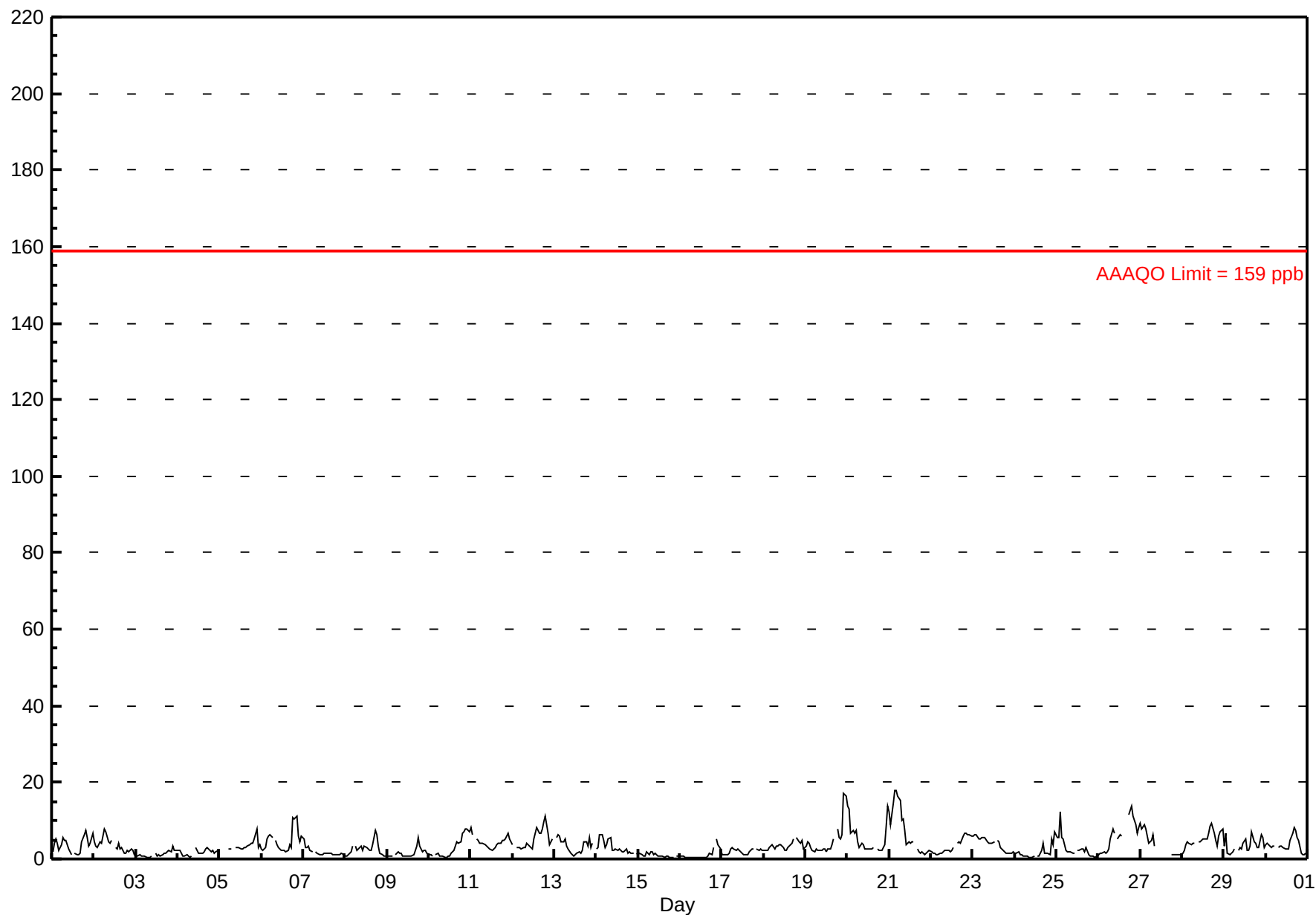
Hourly Averages

Nitrogen Dioxide (NO₂) - ppb Portable Reno - November 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 18.0 ppb on Nov 21 05:00 Maximum Daily Average: 7.3 ppb on Nov 21																				Hours in Service: 720 Hours of Data: 673 Hours of Missing Data: 47 Hours of Calibration: 39 Percent Operational Time: 98.9						
Minimum Value: 0 ppb on Nov 16 14:00 Minimum Daily Average: 1.0 ppb on Nov 15 Maximum Diurnal Average: 4.2 ppb at hour 19 Minimum Diurnal Average: 2.4 ppb at hour 12 Monthly Average: 3.39 ppb Percentiles: P ₁ = 0.3 P ₁₀ = 0.8 Q ₁ = 1.5 Median = 2.6 Q ₃ = 4.5 P ₉₀ = 6.7 P ₉₉ = 14.2																										
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-Nov	2	4	5	4	2	4	6	5	5	2	2	1	A	1	1	1	2	5	7	7	5	3	4	7	3.7	7.4
2-Nov	5	3	3	4	4	6	8	7	4	4	5	A	3	2	4	3	3	2	2	2	2	3	2	1	3.5	7.7
3-Nov	1	1	1	1	1	1	0	0	0	1	A	1	1	1	1	1	1	2	2	2	2	3	2	2	1.3	3.3
4-Nov	2	2	1	1	1	1	1	1	1	A	3	2	2	2	1	2	3	3	2	2	2	2	2	2	1.7	3.0
5-Nov	D	D	D	D	D	3	3	3	A	3	3	3	3	2	3	3	3	4	4	4	5	8	3	4	3.5	7.7
6-Nov	3	2	3	5	6	6	5	A	5	4	3	2	2	2	2	4	3	11	10	11	6	5	6	4.7	11.2	
7-Nov	5	3	3	3	2	2	A	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.8	5.3
8-Nov	1	1	1	2	3	A	3	2	3	3	2	4	3	3	2	2	4	7	6	3	2	1	1	1	2.7	7.4
9-Nov	1	1	1	1	A	1	2	2	2	1	1	1	1	1	1	1	2	3	6	3	2	2	2	1	1.6	5.7
10-Nov	1	1	1	A	1	2	1	1	1	0	0	1	1	1	1	2	3	5	4	5	7	8	8	7	2.9	7.8
11-Nov	8	6	A	5	5	4	4	4	4	3	3	2	2	3	3	4	4	4	5	5	5	7	5	4	4.4	8.3
12-Nov	4	A	3	3	3	3	3	3	4	4	4	3	5	7	8	7	7	8	10	11	7	4	4	5	5.1	11.2
13-Nov	A	6	6	6	4	4	5	3	2	2	1	1	1	2	2	2	2	5	4	3	5	3	4	A	3.4	6.2
14-Nov	3	3	6	6	5	3	4	5	6	2	2	3	2	3	2	2	2	3	2	2	2	2	A	2	3.0	6.4
15-Nov	1	1	1	1	1	2	1	2	2	1	2	1	1	1	1	0	1	1	1	0	1	A	1	1	1.0	2.0
16-Nov	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	3	A	5	4	2	1.0	5.3
17-Nov	1	1	1	1	2	3	3	3	2	3	2	2	1	1	1	1	2	3	3	A	3	2	2	2	1.9	3.0
18-Nov	2	2	2	3	3	4	3	3	3	4	4	3	2	2	3	4	4	5	A	5	5	4	5	3	3.4	5.5
19-Nov	4	5	4	3	2	2	3	2	2	2	3	3	2	3	3	4	5	A	8	6	5	6	17	16	4.7	17.1
20-Nov	14	13	7	7	7	7	4	3	4	4	3	3	3	3	3	3	A	3	2	2	2	4	9	14	5.3	14.0
21-Nov	12	9	14	18	18	16	15	10	10	7	4	4	4	4	5	A	3	2	1	2	1	2	2	2	7.3	18.0
22-Nov	2	1	1	1	1	1	2	2	2	2	2	2	2	3	A	4	4	4	6	7	7	6	6	6	3.3	6.8
23-Nov	6	6	6	5	5	5	6	6	4	4	4	4	4	A	5	4	3	2	2	2	2	2	2	2	4.0	6.4
24-Nov	1	2	2	1	1	1	1	1	1	1	1	1	A	1	1	2	4	2	2	2	1	5	4	7	1.8	7.2
25-Nov	6	5	12	6	5	2	2	2	2	1	1	A	2	2	3	2	2	3	1	1	1	1	1	1	2.8	12.2
26-Nov	1	1	2	2	2	2	3	5	8	7	A	5	6	6	M	M	M	12	13	14	11	9	7	8	6.1	13.9
27-Nov	9	8	9	8	6	4	5	6	3	A	C	C	C	C	C	C	C	C	1	1	1	1	1	1	--	9.2
28-Nov	1	2	4	4	4	4	4	4	A	4	5	5	5	5	5	7	9	9	7	5	4	6	7	8	5.1	9.2
29-Nov	3	7	1	1	2	2	3	A	2	3	3	4	5	2	2	4	7	4	4	3	3	6	6	3	3.5	6.9
30-Nov	4	4	3	3	3	3	A	3	3	3	3	3	3	3	5	7	8	8	6	5	1	1	1	1	3.7	8.2
																									Diurnal Average	
																									Diurnal Maximum	
C - Calibration D - DAS Failure 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
Portable Reno - November 2013



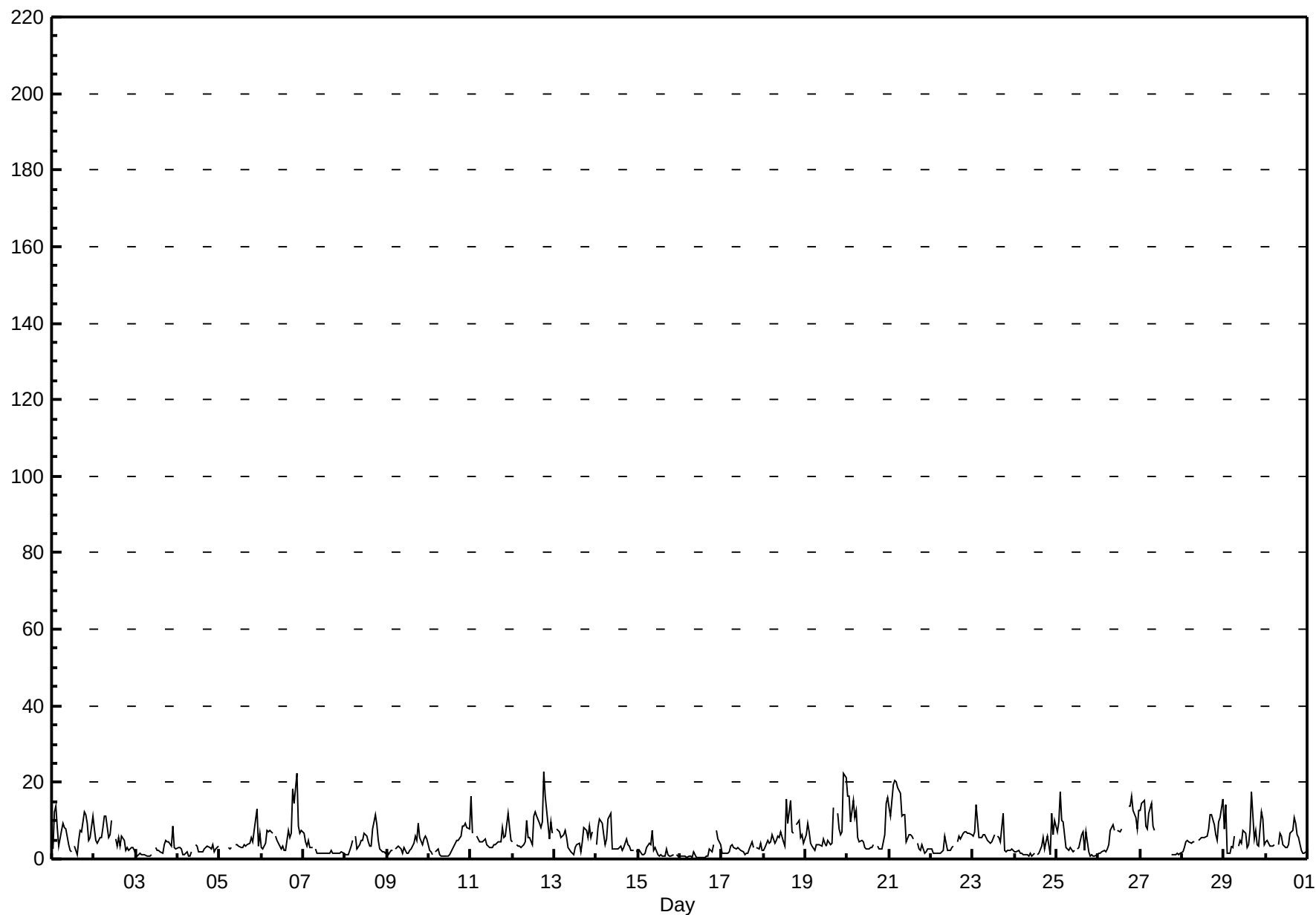
Hourly Maximums

Nitrogen Dioxide (NO₂) - ppb Portable Reno - November 2013

Maximum Value: 22.9 ppb on Nov 12 19:00																				Maximum Daily Average: 8.9 ppb on Nov 21					Hours in Service: 720	
Minimum Value: 0 ppb on Nov 16 14:00																				Minimum Daily Average: 1.6 ppb on Nov 16					Hours of Data: 673	
Maximum Diurnal Average: 6.5 ppb at hour 19																				Minimum Diurnal Average: 3.3 ppb at hour 12					Hours of Missing Data: 47	
Monthly Average: 4.99 ppb																				Percentiles: P ₁ = 0.5 P ₁₀ = 1.2 Q ₁ = 2.2 Median = 3.8 Q ₃ = 6.6 P ₉₀ = 10.5 P ₉₉ = 19.3					Hours of Calibration: 39	
																									Percent Operational Time: 98.9	
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-Nov	3	12	14	8	3	7	9	8	8	4	2	2	A	3	1	5	7	7	12	12	9	5	5	11	7.0	13.6
2-Nov	8	5	4	6	5	8	11	11	6	6	10	A	5	3	6	3	6	5	2	3	2	3	3	2	5.4	11.1
3-Nov	1	1	2	1	1	1	1	1	1	1	A	3	2	2	2	1	4	5	4	4	3	9	3	3	2.4	8.7
4-Nov	3	3	3	1	1	2	1	1	2	A	4	3	2	2	2	3	3	3	3	2	4	2	2	4	2.4	3.7
5-Nov	D	D	D	D	D	3	3	3	A	4	4	3	3	3	4	4	4	4	6	4	7	13	3	7	4.5	13.2
6-Nov	3	3	4	8	7	7	7	A	6	5	4	3	3	2	2	7	6	7	18	15	22	9	7	7	7.0	22.5
7-Nov	7	5	3	5	3	3	A	2	2	1	1	2	2	2	2	2	2	1	2	1	1	1	2	2	2.3	6.8
8-Nov	1	1	1	3	5	A	6	3	4	5	5	7	6	5	3	3	8	12	9	5	3	2	2	2	4.3	11.6
9-Nov	2	1	2	2	A	3	4	3	3	2	3	2	1	2	3	4	6	5	9	6	4	5	6	5	3.6	9.4
10-Nov	2	2	1	A	2	3	1	1	1	1	1	1	1	2	3	4	5	5	6	8	8	9	8	8	3.6	9.3
11-Nov	16	7	A	6	5	4	4	5	5	4	3	3	3	4	4	4	4	5	8	6	6	12	8	5	5.7	16.4
12-Nov	4	A	4	4	3	3	4	4	10	6	5	4	11	12	11	9	8	10	23	16	9	5	10	7	7.9	22.9
13-Nov	A	8	8	7	6	6	7	6	3	2	2	1	3	4	4	2	4	8	8	6	9	6	7	A	5.2	8.7
14-Nov	4	8	11	9	6	4	5	11	12	3	3	3	3	3	3	2	3	5	4	3	2	2	A	2	4.8	12.0
15-Nov	2	2	1	1	1	3	4	4	7	2	3	1	1	1	1	1	2	1	1	1	1	A	1	1	1.9	7.4
16-Nov	1	1	1	1	1	1	1	1	2	1	1	1	0	0	1	1	1	3	2	4	A	7	5	4	1.6	7.3
17-Nov	2	2	1	2	2	3	4	3	3	3	3	2	2	1	1	2	3	4	3	A	3	2	4	2	2.4	4.5
18-Nov	2	3	5	4	4	6	4	5	6	5	7	5	3	16	9	15	7	7	A	9	10	6	6	4	6.5	15.6
19-Nov	6	9	7	4	3	2	4	4	4	3	5	4	3	5	4	4	13	A	12	8	6	7	22	21	7.1	22.2
20-Nov	17	16	10	15	11	13	6	5	5	5	3	3	3	3	3	4	A	3	3	2	2	6	14	16	7.3	16.5
21-Nov	14	11	19	21	20	19	17	11	11	11	4	6	6	6	5	A	4	3	2	4	2	2	3	3	8.9	20.6
22-Nov	3	2	2	1	2	2	2	2	6	2	2	2	3	3	A	4	6	5	7	7	7	7	7	6	3.9	7.1
23-Nov	6	7	14	6	6	6	6	6	5	5	4	5	6	A	6	6	5	12	2	2	2	2	3	2	5.4	14.3
24-Nov	2	2	2	2	2	1	1	1	1	1	1	1	A	1	2	3	6	3	4	6	1	12	6	10	3.1	12.0
25-Nov	7	10	18	10	10	3	3	2	3	2	2	A	3	3	7	7	2	7	2	1	1	1	1	1	4.5	17.5
26-Nov	1	2	2	2	2	3	4	7	9	8	A	8	7	8	M	M	M	14	14	17	13	11	8	13	7.5	16.5
27-Nov	13	15	15	8	8	12	15	8	8	A	C	C	C	C	C	C	C	C	1	1	1	1	1	1	--	15.4
28-Nov	2	3	4	5	4	4	4	4	A	5	5	5	5	6	6	8	12	12	9	6	5	10	11	16	6.5	15.8
29-Nov	8	14	2	2	3	3	6	A	3	5	4	7	7	3	4	7	18	5	7	4	3	12	10	4	6.1	17.5
30-Nov	4	5	4	3	3	4	A	4	7	6	4	3	3	4	7	8	11	9	6	6	2	1	2	2	4.6	10.8
																								Diurnal Average		
																								Diurnal Maximum		
C - Calibration																										
D - DAS Failure																										
M - Maintenance																										
A - Automated Daily Zero Span																										

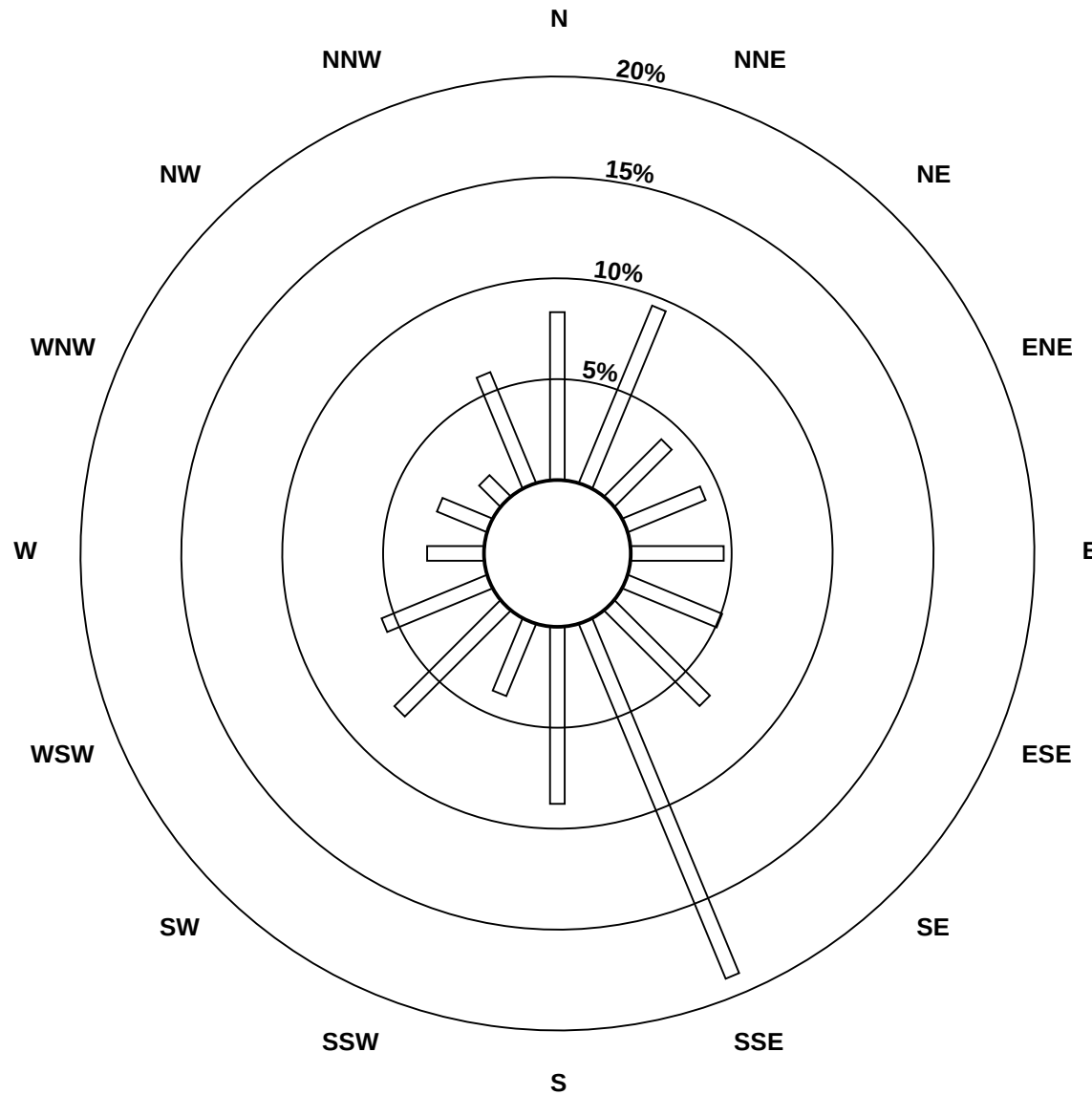
Hourly Maximums

Nitrogen Dioxide (NO₂) - ppb
Portable Reno - November 2013

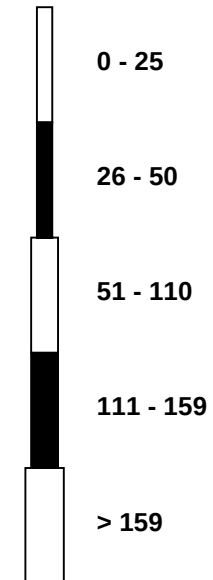


Pollutant Rose

Nitrogen Dioxide (NO₂) - ppb
Portable Reno - November 2013

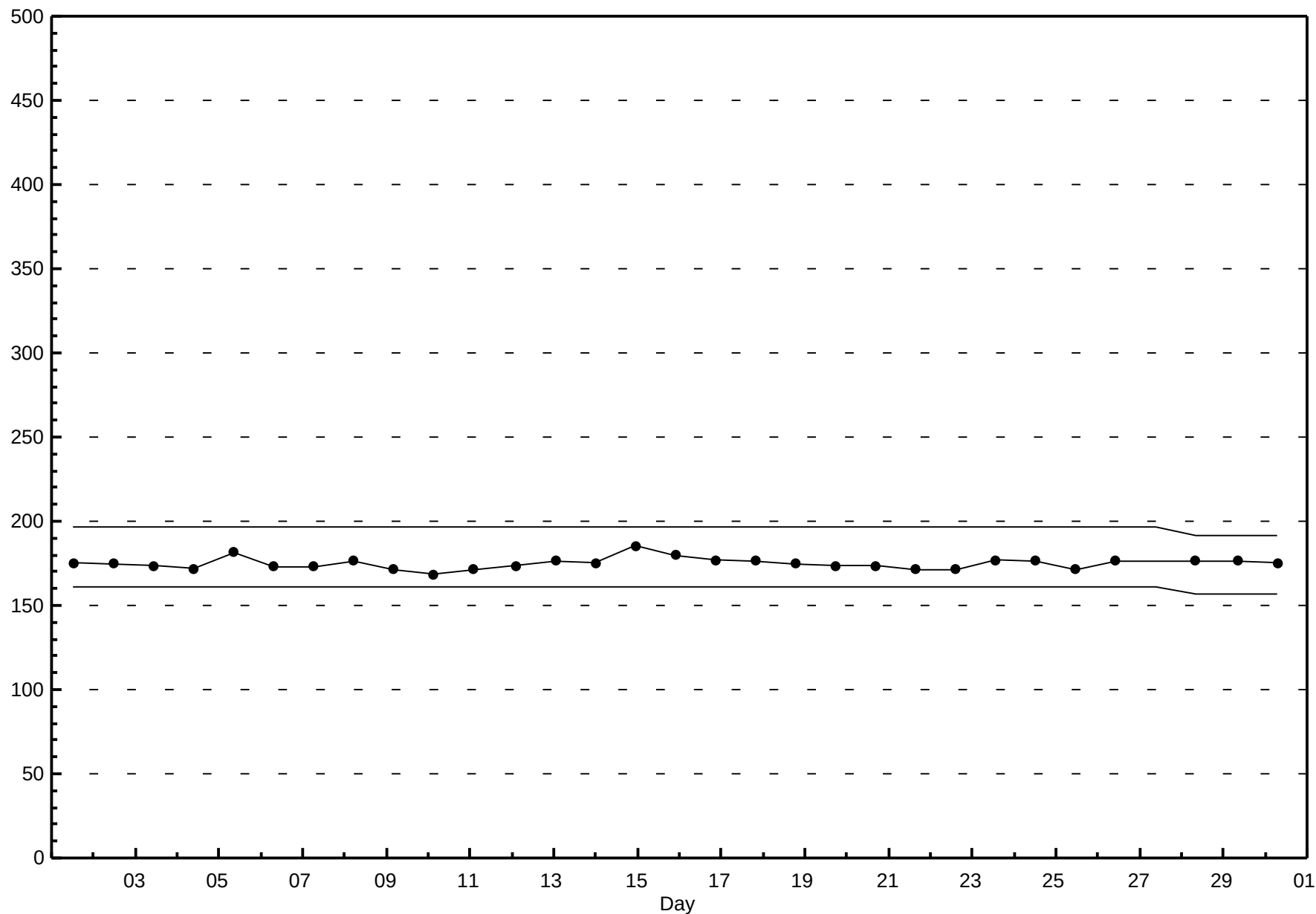


Pollutant Classes (ppb)



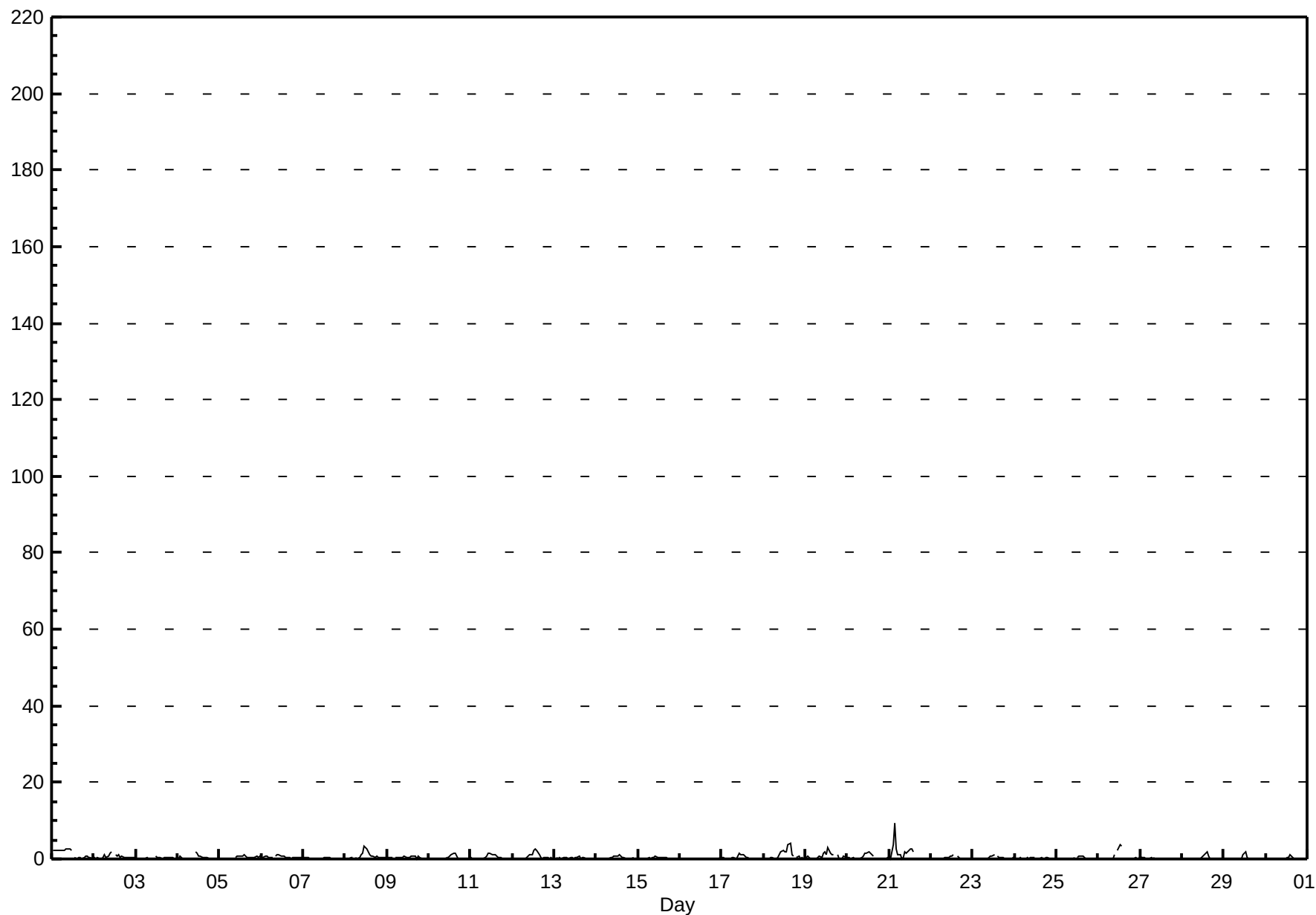
Span Responses

Nitrogen Dioxide (NO₂)
Portable Reno - November 2013



Hourly Averages

Nitrogen Oxide (NO) - ppb
Portable Reno - November 2013



Hourly Maximums

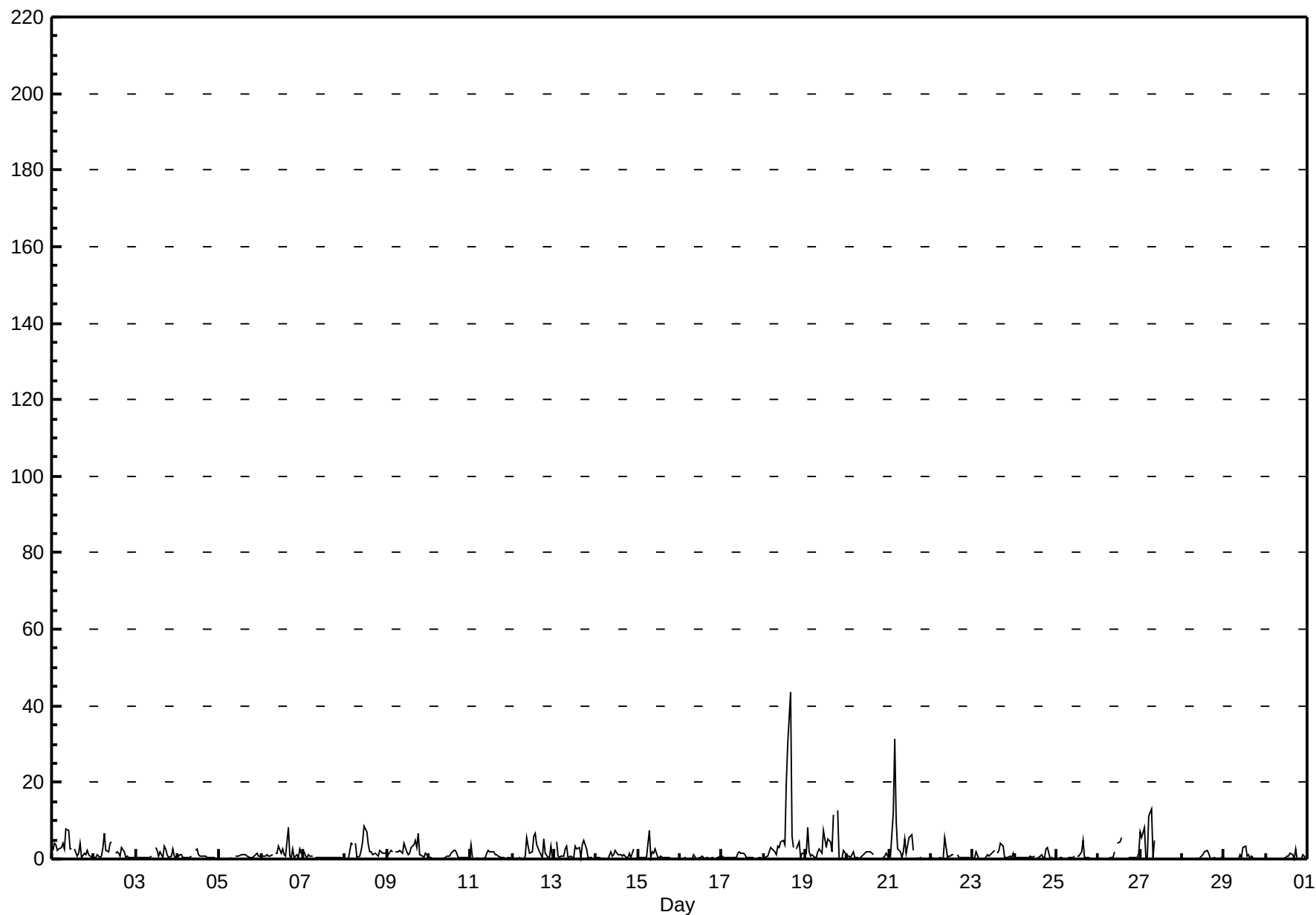
Nitrogen Oxide (NO) - ppb

Portable Reno - November 2013

Maximum Value: 43.8 ppb on Nov 18 16:00		Maximum Daily Average: 6.3 ppb on Nov 18		Hours in Service: 720																						
Minimum Value: 0 ppb on Nov 14 06:00		Minimum Daily Average: 0.3 ppb on Nov 16		Hours of Data: 673																						
Maximum Diurnal Average: 3.1 ppb at hour 16		Minimum Diurnal Average: 0.6 ppb at hour 21		Hours of Missing Data: 47																						
Monthly Average: 1.45 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.1 Q ₁ = 0.2 Median = 0.5 Q ₃ = 1.6 P ₉₀ = 3.4 P ₉₉ = 12.4		Hours of Calibration: 39																						
				Percent Operational Time: 98.9																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
1-Nov	2	4	4	2	3	3	4	3	8	7	3	3	A	3	1	2	4	1	1	1	2	1	1	0	2.7	7.8
2-Nov	1	0	1	1	1	3	7	2	2	4	5	A	2	2	1	1	3	2	0	1	0	0	0	1.7	6.8	
3-Nov	0	0	0	0	0	0	0	0	0	1	A	3	2	1	2	0	3	3	1	1	1	3	1	1.0	3.3	
4-Nov	1	1	1	0	1	0	1	0	1	A	2	3	1	1	1	1	1	0	0	0	0	0	0	0.7	2.5	
5-Nov	D	D	D	D	D	0	0	0	A	1	1	1	1	1	1	1	1	0	0	0	1	2	1	0.8	1.6	
6-Nov	1	1	1	1	1	1	1	A	2	1	3	1	2	1	1	8	1	1	3	0	1	1	3	1.5	8.0	
7-Nov	2	1	0	1	1	1	A	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0.5	1.7	
8-Nov	0	0	0	4	4	A	4	0	1	2	5	9	7	4	2	2	1	1	1	1	2	1	1	2.4	8.7	
9-Nov	2	1	2	2	A	2	2	2	2	1	4	2	1	1	3	4	5	3	7	1	1	0	2	2.2	6.7	
10-Nov	0	0	0	A	0	0	0	0	0	0	1	1	1	2	2	2	1	0	0	0	0	0	0	0.6	2.1	
11-Nov	4	0	A	0	0	0	0	0	0	1	2	2	2	2	1	1	1	0	0	0	0	0	0	0.9	3.7	
12-Nov	0	A	0	0	0	0	0	1	6	3	2	2	6	7	4	2	1	0	5	2	0	0	3	2.0	6.9	
13-Nov	A	5	1	0	1	1	3	3	0	1	1	0	3	3	3	1	4	5	3	0	0	0	0	1.7	4.9	
14-Nov	0	0	0	0	0	0	0	0	2	1	1	2	1	1	1	1	1	0	0	1	0	3	A	0.8	2.7	
15-Nov	0	0	0	0	0	0	8	0	2	1	2	1	0	1	0	0	0	0	0	0	0	A	0	0.8	7.5	
16-Nov	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	A	0	1	0.3	1.2	
17-Nov	1	0	0	0	0	0	0	0	0	1	2	2	1	1	0	0	0	0	0	A	0	0	0	0.6	1.8	
18-Nov	0	0	1	2	3	2	2	1	3	3	4	5	4	20	30	44	6	3	A	3	4	0	2	6.3	43.8	
19-Nov	2	8	2	1	1	0	0	2	3	1	7	5	3	5	4	2	12	A	13	0	0	0	2	3.3	12.6	
20-Nov	1	1	0	2	0	0	0	0	1	1	2	2	2	2	1	1	A	0	0	0	0	1	1	0.8	1.8	
21-Nov	1	1	12	31	10	2	2	0	2	5	2	6	6	6	2	A	0	0	0	0	0	0	0	3.9	31.2	
22-Nov	0	0	0	0	0	0	0	0	6	0	1	1	1	1	A	1	0	0	0	0	0	0	0	0.6	5.7	
23-Nov	0	0	2	0	0	0	0	0	1	1	1	1	2	A	1	2	4	3	0	0	0	1	0	1.0	4.2	
24-Nov	0	0	0	0	0	0	0	0	0	1	0	1	A	0	0	1	0	1	3	3	0	0	0	0.6	2.9	
25-Nov	0	0	1	0	0	0	0	0	0	0	1	A	1	1	2	5	0	0	0	0	0	0	0	0.6	4.7	
26-Nov	0	0	0	0	0	0	0	0	1	2	A	4	4	6	M	M	M	0	0	0	0	0	1	1.1	5.5	
27-Nov	7	6	8	0	0	11	13	0	5	A	C	C	C	C	C	C	C	C	0	0	0	0	0	--	12.9	
28-Nov	0	0	0	0	0	0	0	0	A	A	0	0	1	1	2	1	0	0	0	0	0	0	1	0.4	2.2	
29-Nov	0	0	0	0	0	0	0	0	A	0	1	0	3	3	1	1	0	1	0	0	0	0	0	0.5	3.3	
30-Nov	0	0	0	0	0	0	A	0	0	0	0	0	1	1	1	1	1	0	2	0	0	1	1	0.4	2.5	
0.9		1.1	1.4	1.8	1.0	1.0	1.7	0.7	1.7	1.5	1.9	2.2	2.2	2.7	2.6	3.1	1.9	1.0	1.4	0.6	0.6	0.6	0.7	0.6	Diurnal Average	
6.9		8.1	12.4	31.2	10.2	11.1	12.9	3.4	7.8	7.4	7.5	8.7	7.0	20.0	30.2	43.8	11.5	4.9	12.6	2.9	4.3	2.7	3.4	1.6	Diurnal Maximum	
C - Calibration		D - DAS Failure						M - Maintenance						A - Automated Daily Zero Span												

Hourly Maximums

Nitrogen Oxide (NO) - ppb
Portable Reno - November 2013



Hourly Averages

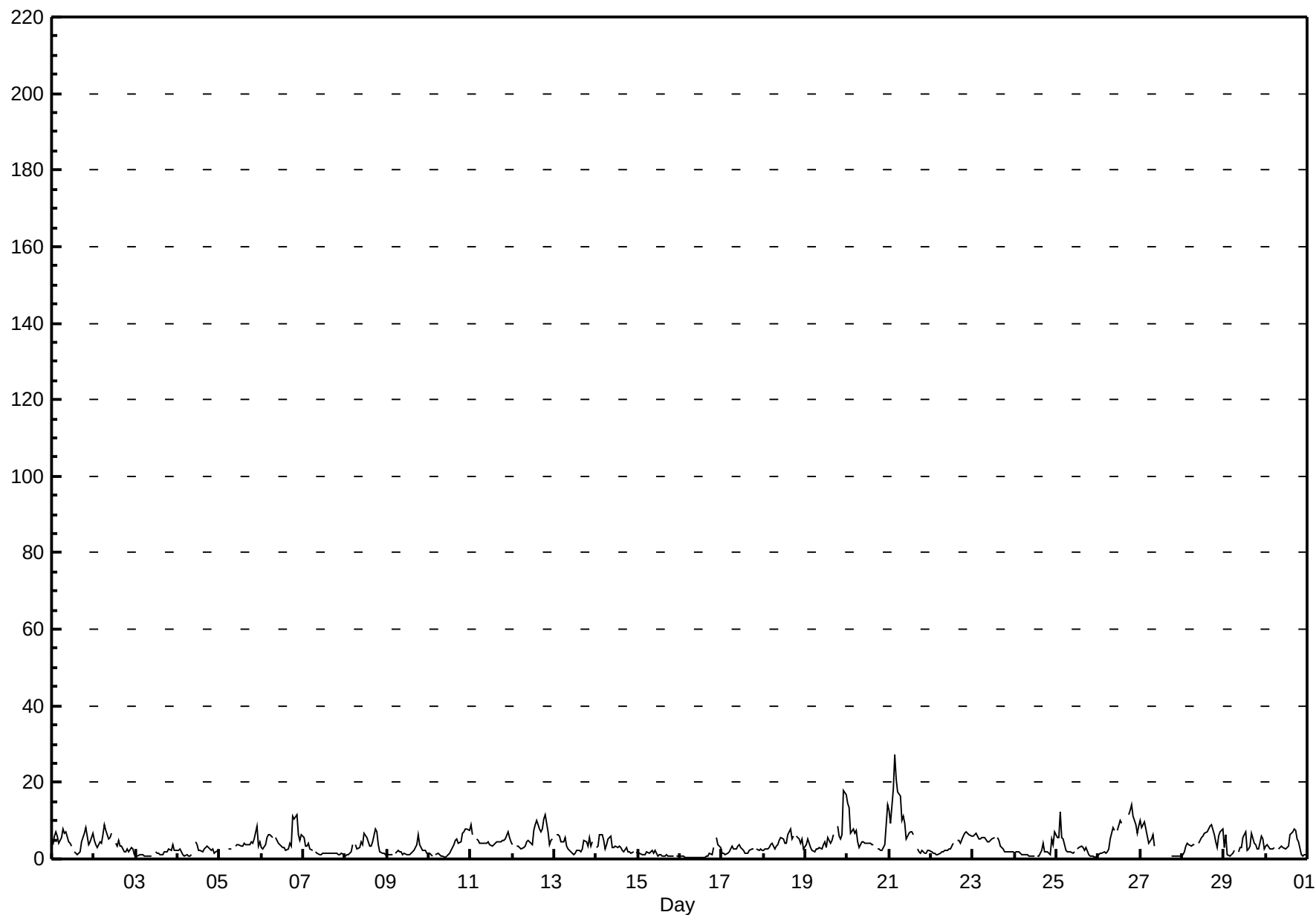
Oxides of Nitrogen (NO_x) - ppb

Portable Reno - November 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 27.4 ppb on Nov 21 04:00 Maximum Daily Average: 8.7 ppb on Nov 21																				Hours in Service: 720 Hours of Data: 673 Hours of Missing Data: 47 Hours of Calibration: 39 Percent Operational Time: 98.9							
Minimum Value: 0 ppb on Nov 16 14:00 Maximum Diurnal Average: 4.4 ppb at hour 19 Monthly Average: 3.80 ppb																				Minimum Daily Average: 1.1 ppb on Nov 16 Minimum Diurnal Average: 3.3 ppb at hour 11 Percentiles: P ₁ = 0.4 P ₁₀ = 1.0 Q ₁ = 1.7 Median = 3.1 Q ₃ = 5.1 P ₉₀ = 7.1 P ₉₉ = 16.2							
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-Nov	4	6	7	6	4	6	8	7	7	5	4	3	A	2	1	1	2	5	7	8	6	4	4	7	4.9	8.0	
2-Nov	5	4	3	5	4	6	9	8	5	5	7	A	4	3	5	3	3	2	2	2	2	3	3	1	4.1	8.9	
3-Nov	1	1	1	1	1	1	1	1	1	1	A	2	1	1	1	1	2	2	2	3	2	4	2	2	1.5	3.7	
4-Nov	2	3	2	1	1	1	1	1	1	A	4	4	2	2	2	2	3	3	3	2	2	2	2	2	2.1	4.5	
5-Nov	D	D	D	D	D	3	3	3	A	4	4	4	3	3	4	4	4	4	4	4	5	8	3	4	3.9	8.4	
6-Nov	3	3	4	6	6	6	6	A	6	5	4	3	3	3	2	3	4	3	11	11	12	6	5	6	5.2	11.5	
7-Nov	6	3	3	4	3	2	A	2	1	1	1	1	2	2	2	2	2	1	1	1	1	1	1	1	2.0	5.8	
8-Nov	1	1	1	2	4	A	4	2	3	4	4	7	6	5	3	3	4	8	7	4	2	1	1	1	3.4	8.0	
9-Nov	1	1	1	1	A	1	2	2	2	1	2	1	1	1	1	2	3	4	6	4	2	2	2	2	2.0	6.4	
10-Nov	1	1	1	A	1	2	1	1	1	0	1	1	1	1	2	4	5	5	4	5	7	7	8	8	7	3.2	7.9
11-Nov	9	6	A	5	5	4	4	4	4	4	5	4	3	4	4	5	5	4	5	5	5	7	5	5	4.8	8.9	
12-Nov	4	A	3	3	3	3	3	3	5	5	4	4	7	9	10	8	7	8	10	12	7	4	5	5	5.7	11.6	
13-Nov	A	6	6	6	5	4	6	3	3	2	1	1	2	2	2	2	3	5	4	3	6	3	4	A	3.6	6.4	
14-Nov	3	3	6	6	5	3	4	5	6	3	3	3	3	3	3	2	2	3	2	2	2	2	A	2	3.3	6.4	
15-Nov	1	1	1	1	1	2	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	A	1	1	1.2	2.3	
16-Nov	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	1	1	2	1	3	A	5	4	3	1.1	5.4	
17-Nov	1	1	1	1	2	3	3	3	3	3	4	3	2	2	1	1	2	3	3	A	3	2	3	2	2.3	3.6	
18-Nov	2	2	2	3	4	4	3	3	4	5	6	5	4	4	6	8	5	6	A	6	5	4	5	3	4.3	7.8	
19-Nov	4	5	4	3	2	2	3	3	3	3	4	4	3	6	4	5	6	A	9	6	5	6	18	17	5.4	17.9	
20-Nov	14	14	7	8	7	7	5	3	4	5	4	4	4	4	4	4	A	3	2	2	2	4	9	14	5.8	14.4	
21-Nov	13	9	18	27	21	18	16	10	11	9	5	7	7	7	7	A	3	2	1	2	1	2	2	2	8.7	27.4	
22-Nov	2	2	1	1	1	1	2	2	2	2	3	3	3	4	A	5	5	4	6	7	7	7	6	6	3.6	6.9	
23-Nov	6	6	7	5	5	5	6	6	5	4	5	5	6	A	6	5	3	2	2	2	2	2	2	2	4.2	6.5	
24-Nov	2	2	2	1	1	1	1	1	1	1	1	1	A	1	1	2	4	2	2	2	1	5	4	7	2.0	7.2	
25-Nov	6	5	12	6	5	2	2	2	2	2	2	A	3	3	3	3	2	3	1	1	1	1	1	1	2.9	12.3	
26-Nov	1	1	2	2	1	2	3	5	8	8	A	7	10	9	M	M	M	12	13	14	11	9	7	9	6.7	14.2	
27-Nov	10	8	10	8	6	4	5	7	3	A	C	C	C	C	C	C	C	C	1	1	1	1	1	1	--	9.9	
28-Nov	1	2	3	4	4	3	4	4	A	4	5	6	6	7	7	8	8	9	6	5	3	6	7	8	5.1	8.9	
29-Nov	3	7	1	1	1	1	2	A	2	3	3	5	7	2	3	4	7	4	4	2	2	6	5	3	3.4	7.1	
30-Nov	3	4	3	3	3	3	A	3	3	3	3	3	3	3	6	7	8	8	5	4	1	1	1	1	3.5	8.0	
																									Diurnal Average		
																									Diurnal Maximum		
C - Calibration D - DAS Failure M - Maintenance A - Automated Daily Zero Span																											

Hourly Averages

Oxides of Nitrogen (NO_x) - ppb
Portable Reno - November 2013



Hourly Maximums

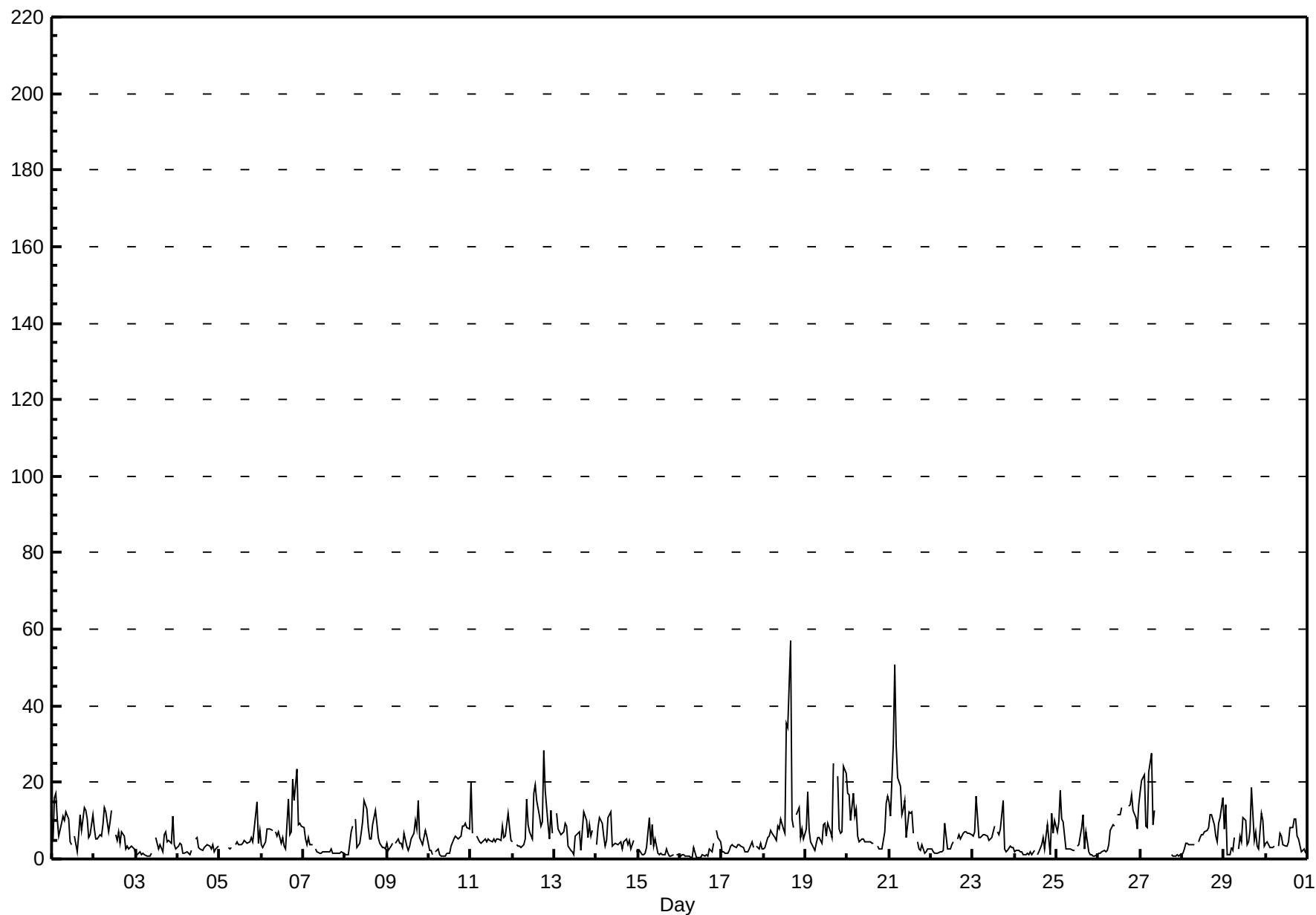
Oxides of Nitrogen (NO_x) - ppb

Portable Reno - November 2013

Maximum Value: 57.0 ppb on Nov 18 16:00																				Maximum Daily Average: 12.5 ppb on Nov 21					Hours in Service: 720		
Minimum Value: 1 ppb on Nov 16 08:00																				Minimum Daily Average: 1.8 ppb on Nov 16					Hours of Data: 673		
Maximum Diurnal Average: 7.6 ppb at hour 19																				Minimum Diurnal Average: 4.9 ppb at hour 8					Hours of Missing Data: 47		
Monthly Average: 6.15 ppb																				Percentiles: P ₁ = 0.6 P ₁₀ = 1.4 Q ₁ = 2.5 Median = 4.6 Q ₃ = 7.9 P ₉₀ = 12.3 P ₉₉ = 28.1					Hours of Calibration: 39		
																				Percent Operational Time: 98.9							
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-Nov	5	16	17	10	6	9	11	10	12	11	5	4	A	6	5	2	6	12	7	13	13	10	6	6	12	9.1	17.3
2-Nov	8	5	5	6	6	9	14	12	7	10	13	A	6	5	7	4	7	6	3	3	3	3	3	3	3	6.4	13.6
3-Nov	1	1	2	1	1	1	1	1	1	2	A	6	4	2	4	2	6	7	5	5	4	11	4	3	3	3.2	11.2
4-Nov	3	4	4	1	2	2	1	1	2	A	5	6	3	3	2	3	4	4	3	2	4	2	2	4	2.9	5.7	
5-Nov	D	D	D	D	D	3	3	3	A	4	4	4	4	4	5	4	4	4	6	5	8	15	4	8	5.0	14.8	
6-Nov	4	3	5	8	8	8	7	A	7	6	7	4	6	3	2	16	6	7	21	15	24	9	9	9	8.4	23.7	
7-Nov	8	5	4	6	4	4	A	3	2	1	2	2	2	2	2	2	2	2	2	2	2	1	2	1	2.6	8.3	
8-Nov	1	1	1	7	9	A	10	3	4	7	10	15	13	8	5	5	9	13	9	6	4	3	3	3	6.5	15.4	
9-Nov	4	2	4	4	A	4	5	4	4	3	7	3	2	4	5	7	10	8	15	6	4	6	8	6	5.4	15.3	
10-Nov	2	2	1	A	2	3	1	1	1	1	1	1	2	3	5	6	6	5	6	9	8	10	8	8	4.0	9.5	
11-Nov	20	7	A	6	5	4	4	5	5	5	5	5	5	5	5	5	5	5	9	6	6	12	8	5	6.4	20.1	
12-Nov	4	A	4	4	3	3	4	5	16	9	7	5	17	19	15	11	9	10	28	18	9	5	13	7	9.8	28.4	
13-Nov	A	12	8	7	6	7	9	8	3	2	2	1	6	6	7	2	7	12	10	6	9	6	7	A	6.6	12.5	
14-Nov	4	8	11	9	6	3	5	11	12	3	4	4	4	4	5	3	4	5	4	5	3	5	A	2	5.4	12.3	
15-Nov	2	2	1	1	1	3	11	4	9	3	5	2	1	2	1	1	3	1	1	1	1	A	1	1	2.6	11.0	
16-Nov	1	1	1	1	1	1	1	1	3	1	1	1	1	1	1	1	1	3	2	4	A	7	6	4	1.8	7.4	
17-Nov	2	2	2	2	2	3	4	3	3	4	4	4	3	2	2	2	3	4	3	A	3	3	4	2	2.8	4.5	
18-Nov	2	3	6	6	7	7	6	5	8	8	11	8	7	35	34	57	10	8	A	11	14	6	8	5	11.9	57.0	
19-Nov	8	17	8	4	4	2	4	6	6	4	9	9	6	9	7	6	25	A	21	8	7	7	24	22	9.7	25.0	
20-Nov	17	17	10	17	11	13	6	5	5	5	4	4	4	4	4	4	A	3	3	2	2	7	15	16	7.9	17.2	
21-Nov	15	11	30	51	30	21	19	11	13	15	6	12	12	12	7	A	5	3	2	4	2	2	3	3	12.5	50.6	
22-Nov	3	2	2	2	1	2	2	2	9	3	3	3	4	4	A	5	6	5	7	7	7	7	7	6	4.3	9.5	
23-Nov	6	7	16	6	6	6	6	6	6	5	5	6	8	A	7	6	8	15	2	2	2	3	3	3	6.1	16.3	
24-Nov	2	2	2	2	2	1	1	2	1	2	1	2	A	1	2	4	6	3	6	9	1	12	7	10	3.5	12.1	
25-Nov	7	10	18	10	10	3	2	2	3	2	2	A	3	4	8	11	3	7	2	1	1	1	1	1	4.9	17.9	
26-Nov	2	2	2	2	2	2	4	7	9	9	A	11	11	13	M	M	M	14	14	17	13	11	8	14	8.3	16.8	
27-Nov	18	20	22	9	8	23	28	9	13	A	C	C	C	C	C	C	C	C	1	1	1	1	1	1	--	27.5	
28-Nov	2	3	4	4	4	4	4	4	A	5	6	6	6	7	8	8	11	12	9	6	4	9	11	16	6.6	16.1	
29-Nov	8	14	1	1	3	2	6	A	3	6	4	11	10	4	4	7	19	5	7	3	3	12	10	3	6.4	18.8	
30-Nov	4	4	3	3	3	3	A	3	7	6	4	3	3	4	8	8	11	10	6	5	2	2	3	1	4.7	10.6	
5.8		6.6	6.9	6.8	5.4	5.4	6.4	4.9	6.3	5.0	5.0	5.3	5.7	6.4	6.1	7.3	7.5	6.8	7.6	6.2	5.5	6.3	6.4	6.2	Diurnal Average		
20.1		20.5	30.3	50.6	30.0	22.9	27.5	12.2	15.8	15.2	12.7	15.4	17.2	35.4	34.2	57.0	25.0	15.3	28.4	17.9	23.7	14.8	24.4	22.4	Diurnal Maximum		
C - Calibration		D - DAS Failure						M - Maintenance						A - Automated Daily Zero Span													

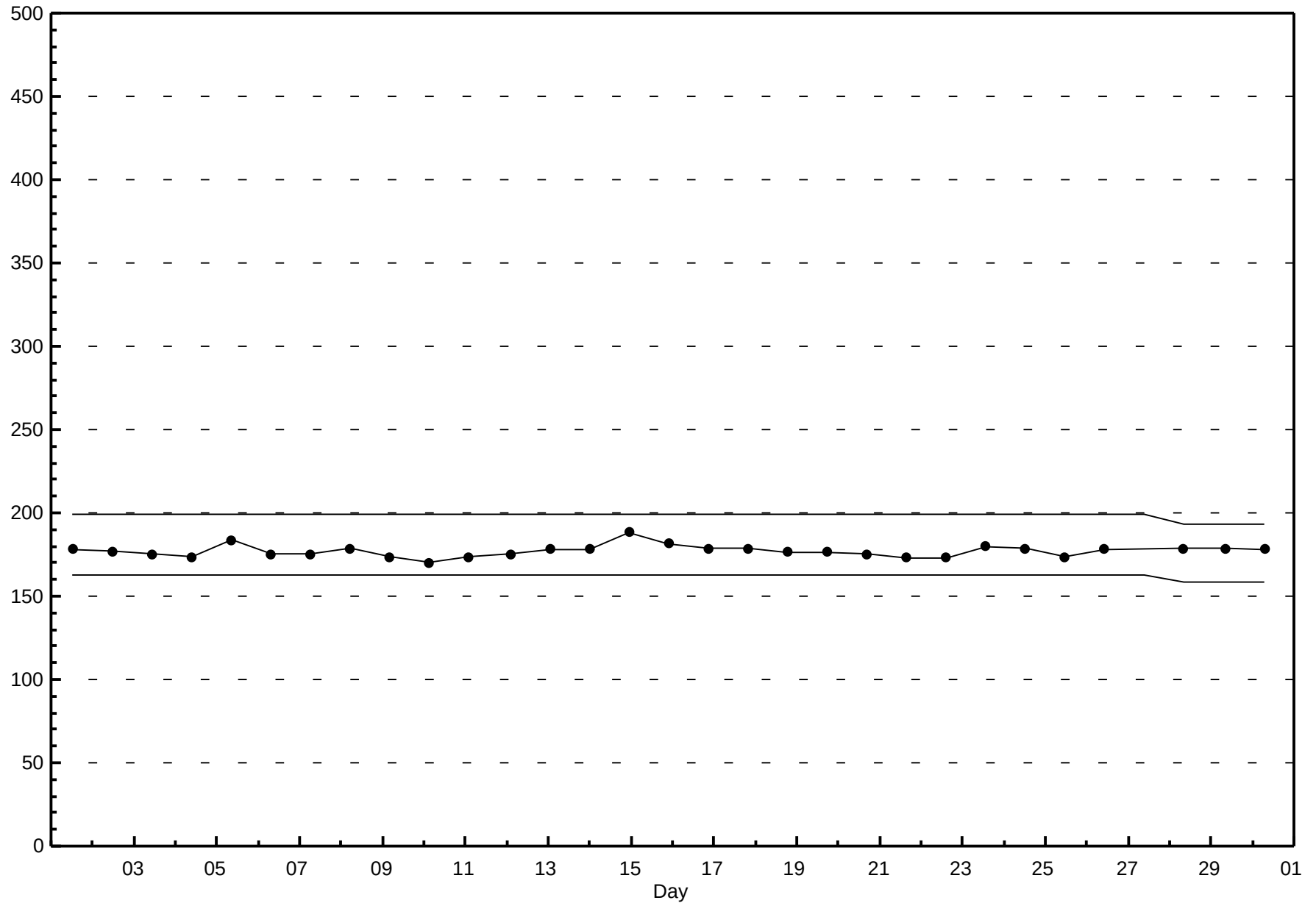
Hourly Maximums

Oxides of Nitrogen (NO_x) - ppb
Portable Reno - November 2013



Span Responses

Oxides of Nitrogen (NO_x)
Portable Reno - November 2013



Hourly Averages

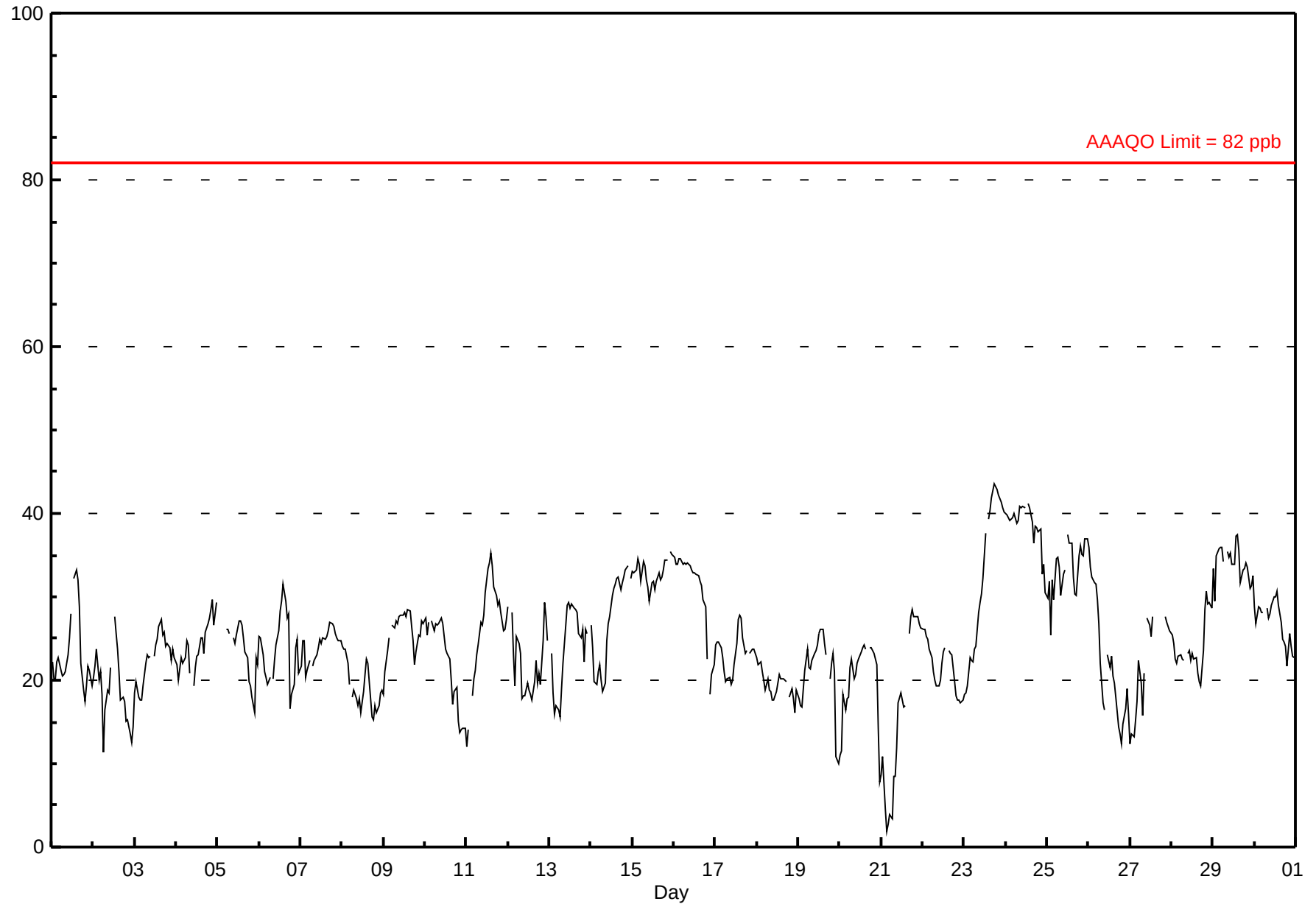
Ozone (O₃) - ppb

Portable Reno - November 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 43.6 ppb on Nov 23 18:00 Maximum Daily Average: 38.5 ppb on Nov 24																								Hours in Service: 720 Hours of Data: 679 Hours of Missing Data: 41 Hours of Calibration: 35 Percent Operational Time: 99.2																								
Minimum Value: 2 ppb on Nov 21 04:00 Minimum Daily Average: 16.1 ppb on Nov 21 Maximum Diurnal Average: 28.0 ppb at hour 15 Minimum Diurnal Average: 23.3 ppb at hour 4 Monthly Average: 24.86 ppb Percentiles: P ₁ = 8.3 P ₁₀ = 17.5 Q ₁ = 20.1 Median = 24.1 Q ₃ = 28.9 P ₉₀ = 34.0 P ₉₉ = 41.0																																																
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-Nov	22	20	20	22	23	21	20	21	21	23	25	28	A	32	33	32	29	22	19	17	19	22	21	19	23.2	33.3																						
2-Nov	20	22	24	20	21	18	11	16	19	18	21	A	28	26	24	21	18	18	17	15	15	14	13	14	18.8	27.6																						
3-Nov	18	20	18	18	18	19	22	23	23	23	A	23	24	25	26	27	25	26	24	24	24	22	24	23	22.6	27.3																						
4-Nov	22	20	21	23	22	23	25	24	21	A	19	22	23	23	25	25	23	26	27	27	29	30	27	29	24.1	29.7																						
5-Nov	D	D	D	D	D	26	26	26	A	25	24	25	27	27	27	25	23	23	20	19	18	16	23	22	23.5	27.1																						
6-Nov	25	25	23	21	20	19	20	A	20	22	24	26	28	30	31	29	28	28	17	18	19	24	25	21	23.7	31.5																						
7-Nov	22	25	25	20	21	22	A	22	22	23	24	25	24	25	25	25	26	27	27	26	26	25	25	25	24.2	26.9																						
8-Nov	24	24	24	22	20	A	18	19	18	17	18	16	19	21	23	22	20	16	15	17	16	17	19	19	19.1	24.1																						
9-Nov	18	21	24	25	A	27	26	27	27	28	28	28	28	28	29	28	26	25	22	23	25	25	27	27	25.7	28.5																						
10-Nov	27	25	27	A	27	26	27	27	27	27	27	25	24	23	23	20	17	19	19	15	14	14	14	14	22.1	27.5																						
11-Nov	12	14	A	18	20	21	23	24	27	27	28	30	33	34	35	34	31	30	29	30	28	26	26	27	26.5	35.3																						
12-Nov	29	A	28	23	19	25	24	23	18	18	18	20	19	18	18	20	22	20	21	20	25	29	28	25	22.2	29.3																						
13-Nov	A	23	18	16	17	16	16	19	22	27	29	29	29	29	29	29	28	26	25	26	22	26	26	A	23.9	29.3																						
14-Nov	27	24	20	20	21	22	20	19	20	25	27	28	30	31	32	32	32	31	32	32	33	34	A	32	27.0	33.6																						
15-Nov	33	33	33	35	34	32	34	34	32	31	30	32	32	31	32	33	32	32	33	34	34	A	35	35	32.9	35.4																						
16-Nov	35	34	34	35	35	34	34	34	34	34	33	33	33	33	33	32	31	30	29	22	A	18	21	22	30.9	34.7																						
17-Nov	24	25	25	24	23	21	20	20	20	19	20	22	24	27	28	27	25	23	24	A	23	24	24	23	23.3	27.7																						
18-Nov	23	22	22	21	20	19	20	19	19	18	18	19	20	21	20	20	20	20	A	18	19	18	16	19	19.5	22.7																						
19-Nov	18	17	17	19	21	24	22	21	22	23	24	24	26	26	26	24	23	A	20	22	23	21	11	10	21.1	26.1																						
20-Nov	11	12	18	16	18	18	21	23	20	21	22	23	23	24	24	24	A	24	24	24	23	22	14	8	19.8	24.3																						
21-Nov	9	11	5	2	3	4	3	8	8	12	17	18	18	17	17	A	26	28	28	28	28	28	27	26	16.1	28.4																						
22-Nov	26	26	25	25	24	23	21	20	19	19	20	22	23	24	A	24	23	23	20	18	18	18	17	18	21.6	26.1																						
23-Nov	18	18	19	23	22	22	24	24	28	29	30	32	38	A	39	40	42	44	43	43	42	41	41	40	32.4	43.6																						
24-Nov	40	40	39	39	40	40	39	39	41	41	41	41	A	41	41	39	36	38	38	38	38	33	34	31	38.5	41.1																						
25-Nov	30	32	25	32	30	35	35	34	30	33	33	A	37	36	36	32	30	30	35	36	35	35	37	37	33.3	37.4																						
26-Nov	36	34	32	32	32	30	27	22	17	16	A	23	22	23	20	20	18	14	14	12	15	17	19	16	22.1	35.9																						
27-Nov	12	14	13	15	17	22	20	16	21	A	28	27	25	28	N	28	C	C	C	C	28	27	26	26	21.8	28.3																						
28-Nov	25	24	23	22	23	23	22	A	23	24	22	23	23	23	23	21	20	19	24	28	31	29	29	29	24.0	30.7																						
29-Nov	33	29	35	36	36	36	34	A	35	35	35	34	34	37	37	36	32	33	33	34	34	31	31	32	34.1	37.4																						
30-Nov	29	27	29	29	28	28	A	29	28	28	29	30	30	31	29	27	25	25	24	22	26	24	23	23	26.9	30.6																						
																								23.9	23.6	23.8	23.3	23.3	24.0	23.4	23.4	23.6	24.5	25.6	25.9	26.6	27.3	28.0	27.5	26.2	25.6	25.1	24.7	25.1	24.4	24.2	23.8	Diurnal Average
																								40.0	39.8	39.2	39.4	39.5	39.9	38.9	39.1	40.8	40.7	40.8	40.6	37.6	41.1	40.6	40.3	41.9	43.6	43.2	42.9	42.2	41.4	40.8	40.1	Diurnal Maximum
C - Calibration D - DAS Failure N - Not Valid A - Automated Daily Zero Span																																																
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 82 ppb 24-hr na																																																

Hourly Averages

Ozone (O₃) - ppb
Portable Reno - November 2013



Hourly Maximums

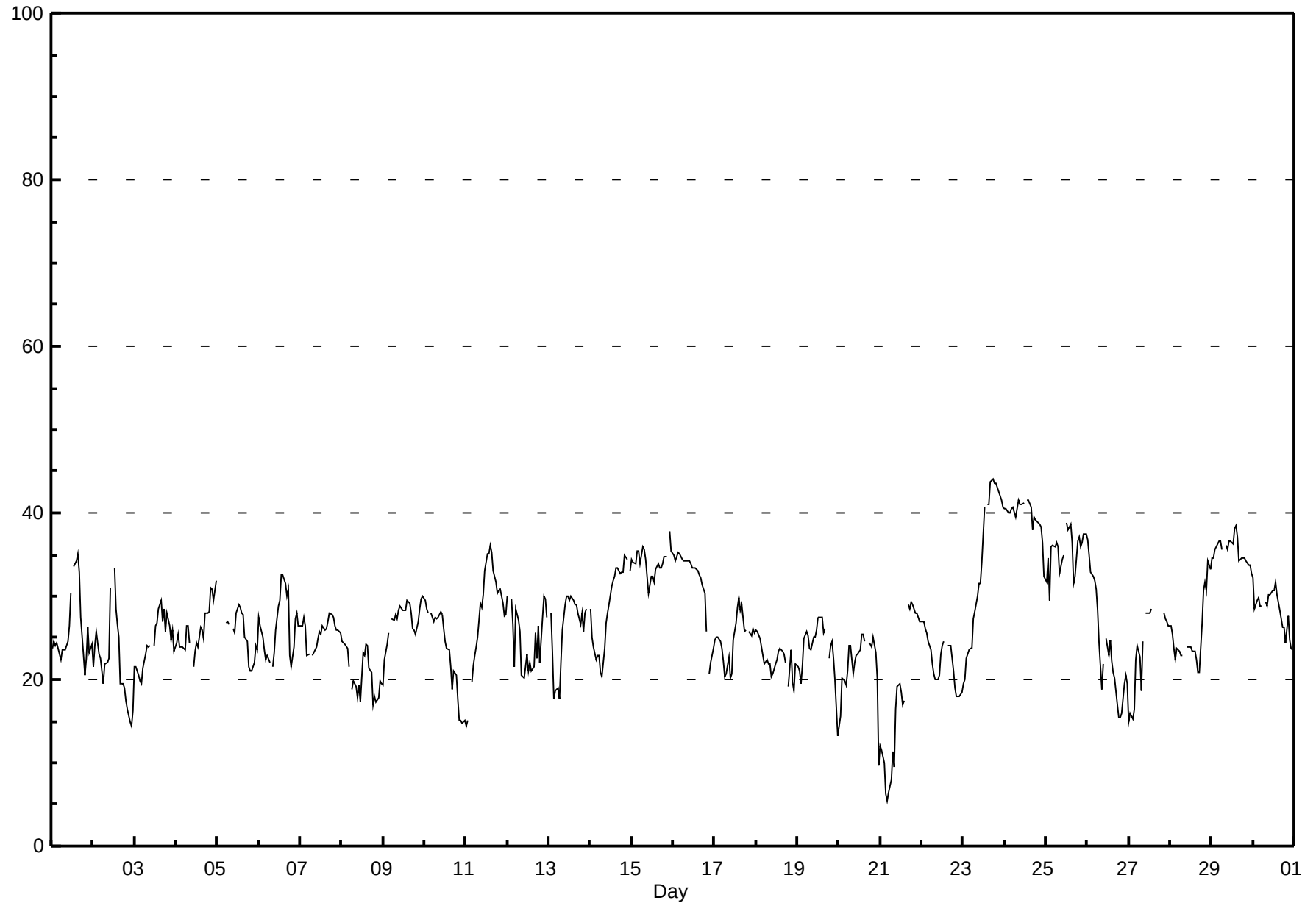
Ozone (O₃) - ppb

Portable Reno - November 2013

Maximum Value: 44.1 ppb on Nov 23 18:00																					Maximum Daily Average: 39.6 ppb on Nov 24					Hours in Service: 720	
Minimum Value: 5 ppb on Nov 21 05:00																					Minimum Daily Average: 18.0 ppb on Nov 21					Hours of Data: 679	
Maximum Diurnal Average: 29.4 ppb at hour 15																					Minimum Diurnal Average: 25.1 ppb at hour 5					Hours of Missing Data: 41	
Monthly Average: 26.67 ppb																					Percentiles: P ₁ = 11.2 P ₁₀ = 19.5 Q ₁ = 22.6 Median = 26.0 Q ₃ = 30.6 P ₉₀ = 35.3 P ₉₉ = 41.4					Hours of Calibration: 35	
																					Percent Operational Time: 99.2						
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-Nov	24	25	24	24	24	22	24	24	24	25	26	30	A	34	34	35	33	27	23	21	23	26	23	24	26.0	35.1	
2-Nov	22	24	26	23	23	21	20	22	22	23	31	A	33	29	27	25	20	20	19	18	17	15	14	16	22.0	33.4	
3-Nov	22	22	21	20	19	21	23	24	24	24	A	24	26	27	28	29	27	29	26	28	26	25	26	23	24.5	29.5	
4-Nov	24	25	24	24	24	23	26	26	24	A	22	23	24	24	26	26	25	28	28	28	31	31	29	32	26.1	31.8	
5-Nov	D	D	D	D	D	27	27	27	A	26	26	28	29	29	28	28	25	25	22	21	21	22	24	24	25.3	29.0	
6-Nov	28	27	25	23	22	23	22	A	21	23	26	29	30	33	33	32	30	31	23	21	24	27	28	26	26.4	32.5	
7-Nov	26	26	27	26	23	23	A	23	23	24	25	26	25	26	26	26	27	28	28	27	27	26	26	26	25.7	27.9	
8-Nov	25	24	24	24	21	A	19	20	19	18	19	17	23	23	24	24	21	21	17	18	17	18	20	20	20.7	24.6	
9-Nov	19	22	24	26	A	27	27	28	27	28	29	28	28	28	29	29	28	26	26	25	27	28	30	30	27.1	30.0	
10-Nov	29	28	28	A	28	27	28	27	28	28	28	26	25	24	24	22	19	21	21	18	15	15	15	15	23.3	29.5	
11-Nov	14	15	A	20	22	23	24	25	29	29	30	33	35	35	36	35	33	32	30	31	31	29	28	28	28.1	36.2	
12-Nov	30	A	30	27	22	29	27	26	21	20	20	23	21	22	21	22	26	22	27	22	28	30	30	27	24.8	30.1	
13-Nov	A	28	23	18	19	19	18	22	26	29	30	30	29	30	29	29	29	28	27	28	26	28	28	A	26.0	30.0	
14-Nov	28	25	24	22	23	23	21	20	24	27	28	29	31	32	32	33	33	33	33	33	35	34	A	33	28.6	34.9	
15-Nov	34	34	34	35	35	34	36	36	34	32	30	32	32	32	33	34	33	33	34	35	35	A	38	35	34.0	37.8	
16-Nov	35	34	35	35	35	34	34	34	34	34	34	33	33	33	33	32	32	31	30	26	A	21	22	24	31.8	35.3	
17-Nov	25	25	25	25	24	22	20	21	23	20	21	25	27	29	30	28	29	26	26	A	26	25	26	26	24.9	29.8	
18-Nov	26	26	25	24	23	22	22	22	22	20	21	22	22	23	24	23	23	22	A	19	24	20	19	22	22.4	25.9	
19-Nov	22	21	19	22	25	26	25	24	24	25	25	26	27	27	27	26	26	A	23	24	25	23	20	13	23.6	27.5	
20-Nov	14	16	20	20	19	21	24	24	21	22	23	23	24	25	25	25	A	24	24	24	25	23	20	10	21.6	25.5	
21-Nov	12	11	10	6	5	6	8	11	9	16	19	19	18	17	18	A	29	29	29	29	28	28	28	27	18.0	29.3	
22-Nov	27	27	26	26	25	24	22	21	20	20	21	23	24	25	A	24	24	24	21	19	18	18	18	19	22.3	27.0	
23-Nov	20	20	23	24	24	24	27	28	30	32	32	34	41	A	41	41	44	44	44	44	43	42	42	41	33.9	44.1	
24-Nov	41	41	40	40	40	41	39	40	41	41	41	41	A	41	41	41	38	39	39	39	39	38	36	32	39.6	41.5	
25-Nov	32	35	29	36	36	36	36	36	33	34	35	A	39	38	39	36	32	32	37	37	36	36	37	37	35.4	38.8	
26-Nov	37	35	33	32	32	31	28	24	19	22	A	25	23	25	22	21	20	17	15	15	16	19	20	19	24.0	36.8	
27-Nov	15	16	15	16	22	24	23	19	25	A	28	28	28	28	N	29	C	C	C	C	28	27	27	26	23.6	28.7	
28-Nov	26	25	24	22	24	23	23	23	A	24	24	24	24	23	23	22	21	21	27	31	32	31	34	33	25.4	34.2	
29-Nov	35	35	36	36	37	37	36	A	36	36	37	37	36	38	38	37	34	35	35	35	34	34	34	33	35.5	38.4	
30-Nov	32	28	29	30	29	29	A	29	29	30	30	31	31	32	30	28	27	26	26	24	28	25	24	24	28.3	32.2	
25.8 25.7 25.8 25.2 25.1 25.6 25.3 25.2 25.4 26.2 27.1 27.5 28.2 28.7 29.4 29.1 28.1 27.6 27.0 26.4 26.9 26.4 26.4 25.7																									Diurnal Average		
40.5 40.5 40.0 40.0 40.5 40.7 39.5 40.5 41.5 41.0 41.0 41.1 40.6 41.5 41.5 41.1 43.8 44.1 43.6 43.6 43.1 42.1 41.5 40.7																									Diurnal Maximum		
C - Calibration D - DAS Failure N - Not Valid A - Automated Daily Zero Span																											

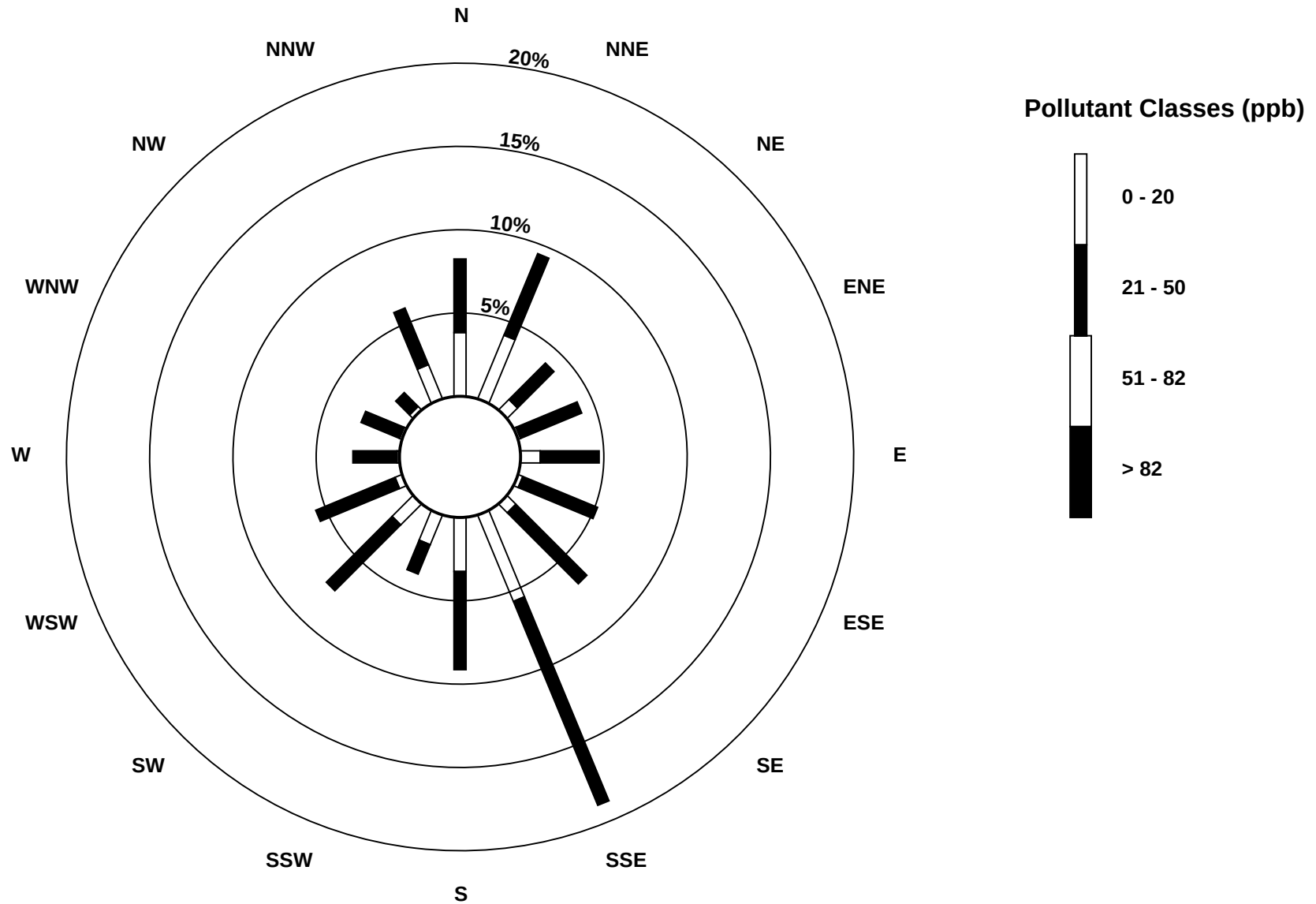
Hourly Maximums

Ozone (O₃) - ppb
Portable Reno - November 2013



Pollutant Rose

Ozone (O₃) - ppb
Portable Reno - November 2013



Eight Hour Running Averages

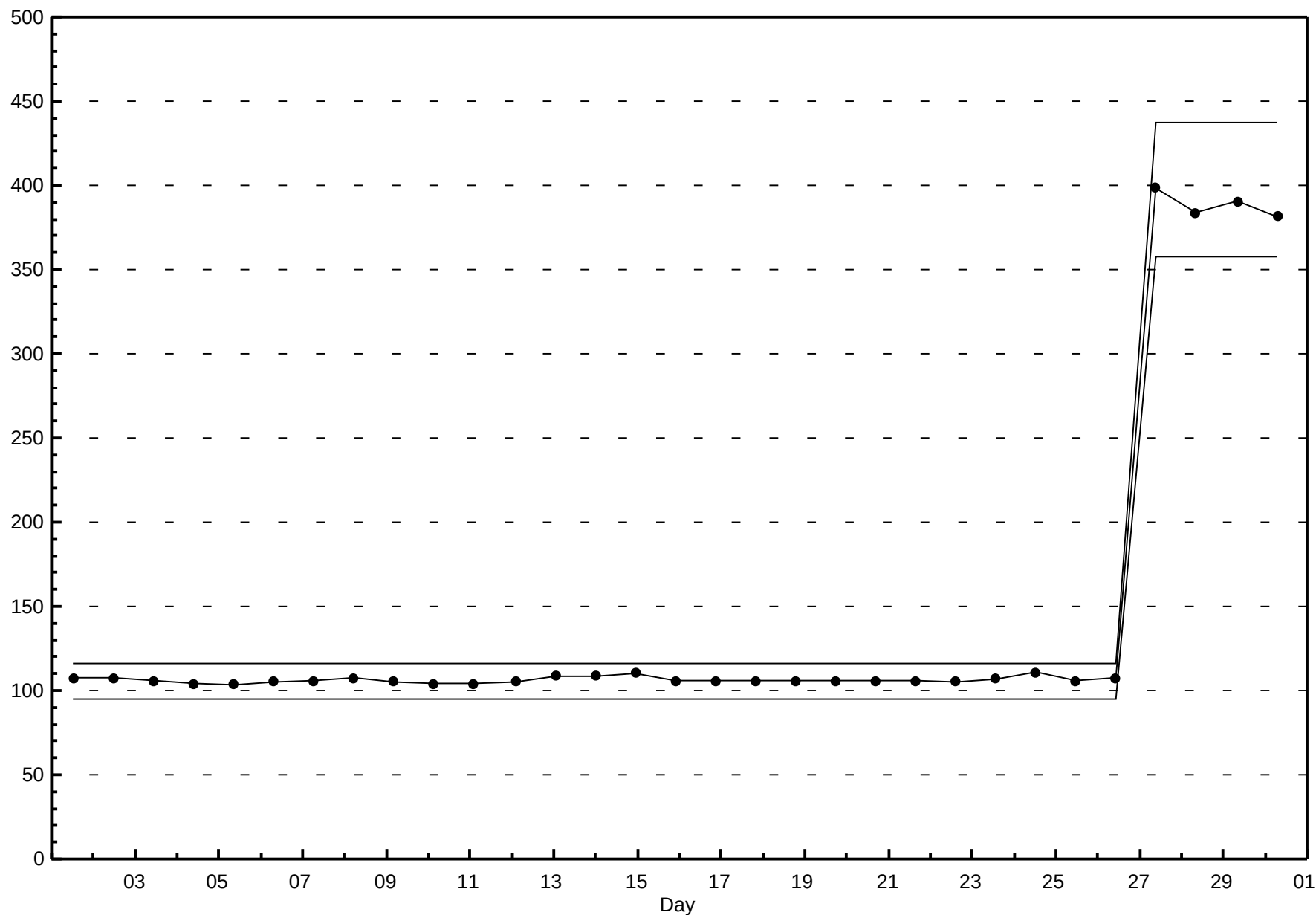
Ozone (O₃) - ppb

Portable Reno - November 2013

Maximum Value: 42.0 ppb on Nov 23 23:00																							Hours in Service: 720		
Minimum Value: 5.4 ppb on Nov 21 07:00																							Hours of Data: 697		
																							Hours of Missing Data: 23		
Percentiles: P ₁ = 8.3 P ₁₀ = 18.0 Q ₁ = 20.9 Median = 23.7 Q ₃ = 28.3 P ₉₀ = 34.0 P ₉₉ = 41.3																							Hours of Calibration: 4		
																							Percent Operational Time: 97.4		
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-Nov	MS	MS	MS	MS	MS	21	21	21	21	21	22	23	23	24	26	28	29	29	28	26	25	24	23	21	28.9
2-Nov	20	20	21	21	21	21	19	19	19	18	18	18	19	20	22	22	22	22	22	21	19	18	16	15	22.4
3-Nov	16	16	16	16	16	17	18	19	20	20	21	22	22	23	24	24	25	25	25	25	25	25	25	24	25.3
4-Nov	24	23	23	22	22	22	22	22	22	23	22	22	22	22	22	23	23	23	24	25	26	26	27	27	27.2
5-Nov	28	28	N	N	N	N	N	N	N	N	N	25	26	26	26	26	26	25	25	24	23	21	21	20	28.0
6-Nov	21	21	21	22	22	22	22	22	21	21	21	22	23	24	26	26	27	28	27	26	25	24	24	22	28.1
7-Nov	22	21	22	23	23	23	22	22	22	22	22	23	23	24	24	24	25	25	26	26	26	26	26	26	25.9
8-Nov	26	25	25	24	23	23	22	21	21	20	19	18	18	18	19	19	19	19	19	19	18	18	17	25.5	
9-Nov	17	18	19	20	20	22	23	24	25	26	27	27	27	27	28	28	28	27	27	26	26	25	25	25	27.8
10-Nov	25	25	26	26	27	27	27	27	27	27	27	27	26	26	25	24	23	22	21	20	19	18	16	16	26.8
11-Nov	15	15	14	14	15	16	18	19	21	23	24	25	27	28	30	31	32	32	32	32	31	30	29	28	32.2
12-Nov	28	28	28	27	26	25	25	25	23	22	21	21	21	20	19	19	19	19	20	20	20	22	23	24	28.1
13-Nov	24	24	24	23	22	20	19	18	18	19	20	22	23	25	27	28	29	28	28	28	27	26	26	26	28.5
14-Nov	25	25	24	23	23	23	22	21	21	21	22	23	24	25	26	28	30	30	31	32	32	32	32	32	32.3
15-Nov	32	33	33	33	33	33	33	33	33	33	33	32	32	32	32	32	32	32	32	32	33	33	34	34	33.9
16-Nov	34	34	35	35	35	35	34	34	34	34	34	34	34	33	33	33	33	32	32	30	30	28	26	25	34.6
17-Nov	24	23	22	23	23	23	23	23	22	21	21	21	21	22	23	24	24	25	25	26	25	25	24	24	25.5
18-Nov	23	23	23	23	22	22	21	21	20	20	19	19	19	19	19	19	19	20	20	20	19	19	18	18	23.3
19-Nov	18	18	18	18	18	19	19	20	20	21	22	23	23	23	24	24	25	25	24	24	24	23	21	19	24.7
20-Nov	17	16	16	15	15	14	16	17	18	19	20	21	21	22	22	23	23	23	24	24	24	23	22	20	23.8
21-Nov	18	17	14	12	9	7	5	6	6	6	7	9	11	13	14	15	18	20	22	23	24	26	27	27	27.3
22-Nov	27	27	27	26	26	25	25	24	23	22	21	21	21	21	21	22	22	23	23	22	21	20	20	19	27.2
23-Nov	19	18	18	19	19	20	21	21	23	24	25	27	28	29	32	34	36	38	40	41	42	42	42	42	42.0
24-Nov	42	41	41	40	40	40	40	39	40	40	40	40	40	40	41	41	40	40	39	39	39	38	37	36	41.8
25-Nov	35	34	33	32	31	31	31	31	32	32	33	33	34	34	34	34	34	34	34	34	34	34	34	34	35.0
26-Nov	35	36	35	35	34	34	32	30	28	26	25	24	22	21	21	20	20	19	18	17	16	16	16	16	35.6
27-Nov	15	15	15	15	15	16	16	16	17	18	20	21	23	23	24	26	N	N	N	N	N	N	N	N	26.0
28-Nov	N	26	26	25	25	24	24	23	23	23	23	23	23	23	23	23	22	22	22	23	24	24	25	26	26.2
29-Nov	28	29	31	31	32	33	34	34	35	35	35	35	35	35	35	35	35	35	35	35	34	33	33	33	35.5
30-Nov	32	31	31	30	29	29	29	28	28	28	28	28	29	29	29	29	29	28	28	26	26	25	24	24	32.2
Diurnal Maximums																									
N - Not Valid MS - Missing																									

Span Responses

Ozone (O₃)
Portable Reno - November 2013



Hourly Averages

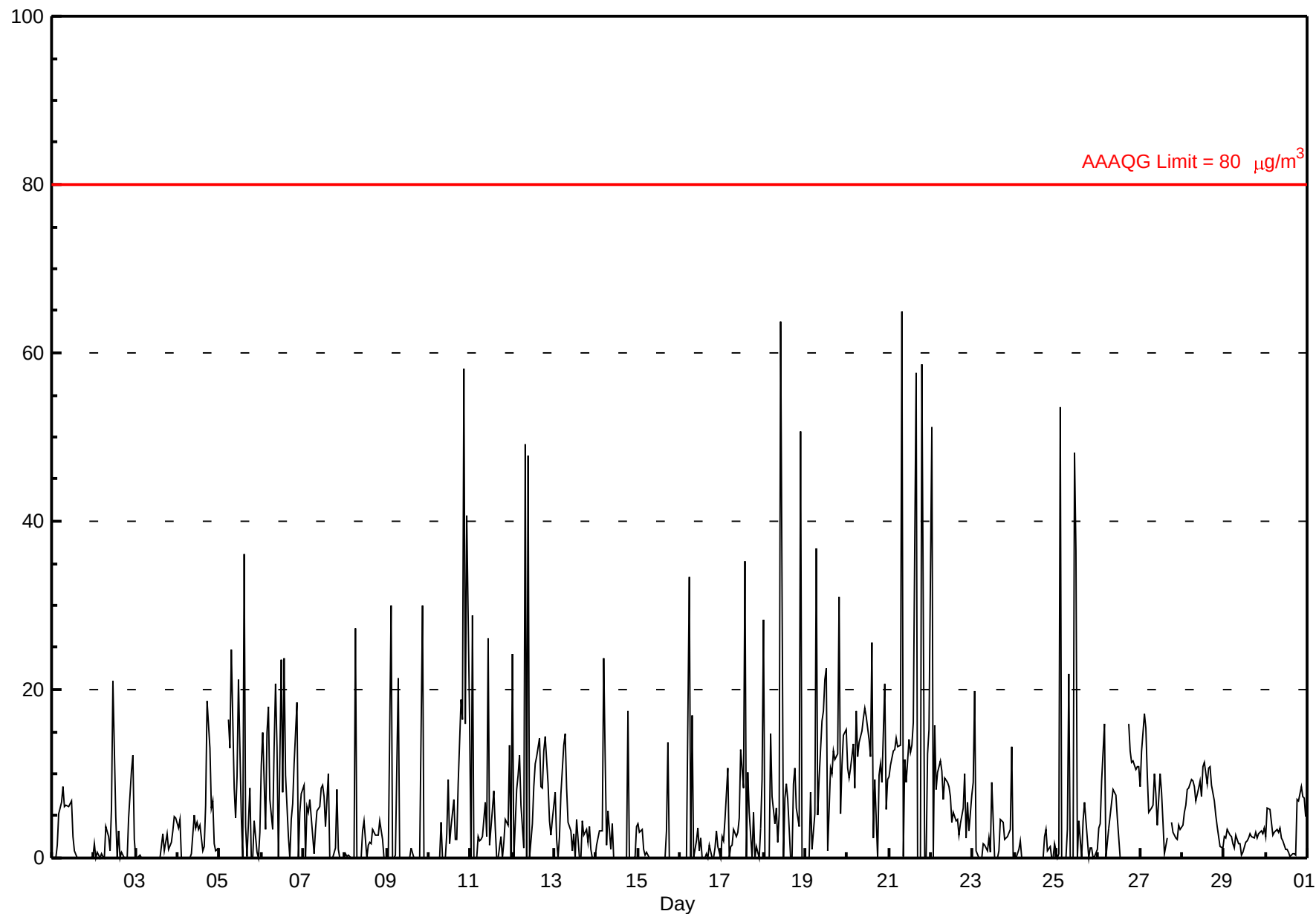
PM2.5 (PM_{2.5}) - µg/m³

Portable Reno - November 2013

Number of Exceedences: 1-hr: 0 24-hr: 0 Maximum Value: 65.0 µg/m³ on Nov 21 08:00 Minimum Value: 0 µg/m³ on Nov 1 01:00 Maximum Diurnal Average: 9.6 µg/m³ at hour 8 Monthly Average: 5.86 µg/m³																								Hours in Service: 720 Hours of Data: 709 Hours of Missing Data: 11 Hours of Calibration: 0 Percent Operational Time: 98.5		
Maximum Daily Average: 15.6 µg/m³ on Nov 21 Minimum Daily Average: 0.5 µg/m³ on Nov 24 Minimum Diurnal Average: 3.0 µg/m³ at hour 17 Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 2.8 Q ₃ = 8.3 P ₉₀ = 14.2 P ₉₉ = 49.9																										
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-Nov	0	0	0	1	5	7	8	6	6	6	6	7	3	1	0	0	0	0	0	0	0	0	0	0	2.4	8.5
2-Nov	2	0	1	0	0	0	0	4	2	1	6	21	5	0	3	0	1	0	0	0	5	10	12	2	3.1	21.0
3-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	2	3	1	2	3	5	5	1.0	4.9
4-Nov	4	5	0	0	0	0	0	0	1	5	3	4	3	4	1	1	6	19	13	6	7	2	1	1	3.6	18.6
5-Nov	D	D	D	D	D	16	13	25	8	5	10	21	5	0	36	4	0	8	0	0	4	1	0	3	8.4	36.2
6-Nov	11	15	3	15	18	7	3	13	21	13	0	24	8	24	10	3	0	5	6	11	18	0	5	8	10.0	23.7
7-Nov	9	0	6	5	7	3	1	3	6	6	8	9	7	4	10	0	0	0	1	8	1	0	0	0	3.9	9.9
8-Nov	1	0	0	0	0	0	27	0	0	0	3	4	0	1	2	2	3	3	3	3	4	2	0	0	2.5	27.2
9-Nov	0	0	30	0	0	0	21	0	0	0	0	0	0	0	1	0	0	0	0	0	30	0	0	0	3.4	29.9
10-Nov	0	0	0	0	0	0	0	4	0	0	3	9	2	4	7	2	2	9	19	16	58	16	41	16	8.7	58.1
11-Nov	0	29	0	0	3	2	2	2	7	3	26	2	6	8	4	0	0	2	0	2	5	4	13	0	4.9	28.9
12-Nov	24	0	8	10	12	6	1	49	0	48	0	4	9	11	12	14	8	8	13	14	9	4	3	5	11.4	49.1
13-Nov	8	2	0	3	8	13	15	8	4	3	1	3	0	5	0	0	4	3	3	2	4	1	0	0	3.7	14.7
14-Nov	2	2	3	3	24	12	1	6	1	4	0	0	0	0	0	0	0	0	18	0	0	0	0	4	3.3	23.6
15-Nov	4	3	3	1	0	1	0	0	0	0	0	0	0	0	0	0	3	14	0	0	0	0	0	0	1.2	13.8
16-Nov	0	0	0	0	0	33	0	17	0	2	4	1	2	0	0	1	0	1	0	0	1	3	1	0	2.8	33.3
17-Nov	3	2	5	11	0	1	2	3	3	3	5	13	8	35	0	10	5	0	5	0	1	0	4	9	5.3	35.3
18-Nov	28	0	0	0	15	7	4	6	2	5	64	0	7	9	7	0	0	9	11	6	4	51	0	0	9.8	63.7
19-Nov	0	0	0	8	1	5	37	5	9	16	18	21	23	1	11	10	13	12	12	31	5	11	15	15	11.6	36.7
20-Nov	11	9	11	14	8	18	12	14	15	17	18	17	14	12	26	2	9	0	10	11	9	21	6	9	12.1	25.6
21-Nov	10	11	13	13	14	13	13	65	0	12	9	14	12	13	16	58	0	0	0	59	0	0	12	15	15.6	65.0
22-Nov	51	0	16	8	10	11	10	7	10	9	9	7	4	5	4	5	3	4	6	10	2	7	3	7	8.7	51.2
23-Nov	9	20	1	0	0	0	2	2	1	2	1	9	0	0	0	1	5	4	2	2	3	3	13	0	3.3	19.8
24-Nov	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	1	1	0	0	2	0.5	3.4
25-Nov	0	0	54	0	0	0	3	22	0	0	48	36	0	4	0	4	7	4	0	1	1	0	0	1	7.8	53.5
26-Nov	4	4	9	16	0	2	4	5	8	8	8	5	0	M	M	M	M	16	13	11	12	11	11	11	7.8	15.9
27-Nov	8	13	17	15	10	5	6	6	10	8	4	10	8	4	1	2	N	N	4	3	2	2	4	3	6.7	17.2
28-Nov	4	5	6	8	8	9	9	8	7	8	9	7	11	11	9	11	11	9	7	5	4	3	1	1	7.2	11.4
29-Nov	2	2	3	3	2	2	1	3	2	2	0	1	2	2	2	3	3	2	3	2	3	3	3	4	2.3	3.6
30-Nov	2	6	6	4	3	3	3	3	4	2	2	1	1	1	0	1	1	0	7	7	9	7	7	5	3.5	8.5
6.7 4.5 6.8 4.8 5.1 6.0 6.7 9.6 4.2 6.3 8.8 8.3 4.7 5.5 5.6 4.7 3.0 4.7 5.4 7.1 6.8 5.5 5.4 4.2																								Diurnal Average		
51.2 28.9 53.5 15.9 23.6 33.3 36.7 65.0 20.8 47.8 63.7 36.4 22.6 35.3 36.2 57.7 12.7 18.6 18.8 58.7 58.1 50.7 40.8 16.4																								Diurnal Maximum		
D - DAS Failure M - Maintenance N - Not Valid																										
Alberta Ambient Air Quality Guideline (AAQG): 1-hr 80 µg/m³ Alberta Ambient Air Quality Objective (AAQO): 24-hr 30 µg/m³																										

Hourly Averages

PM_{2.5} (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Portable Reno - November 2013



Hourly Maximums

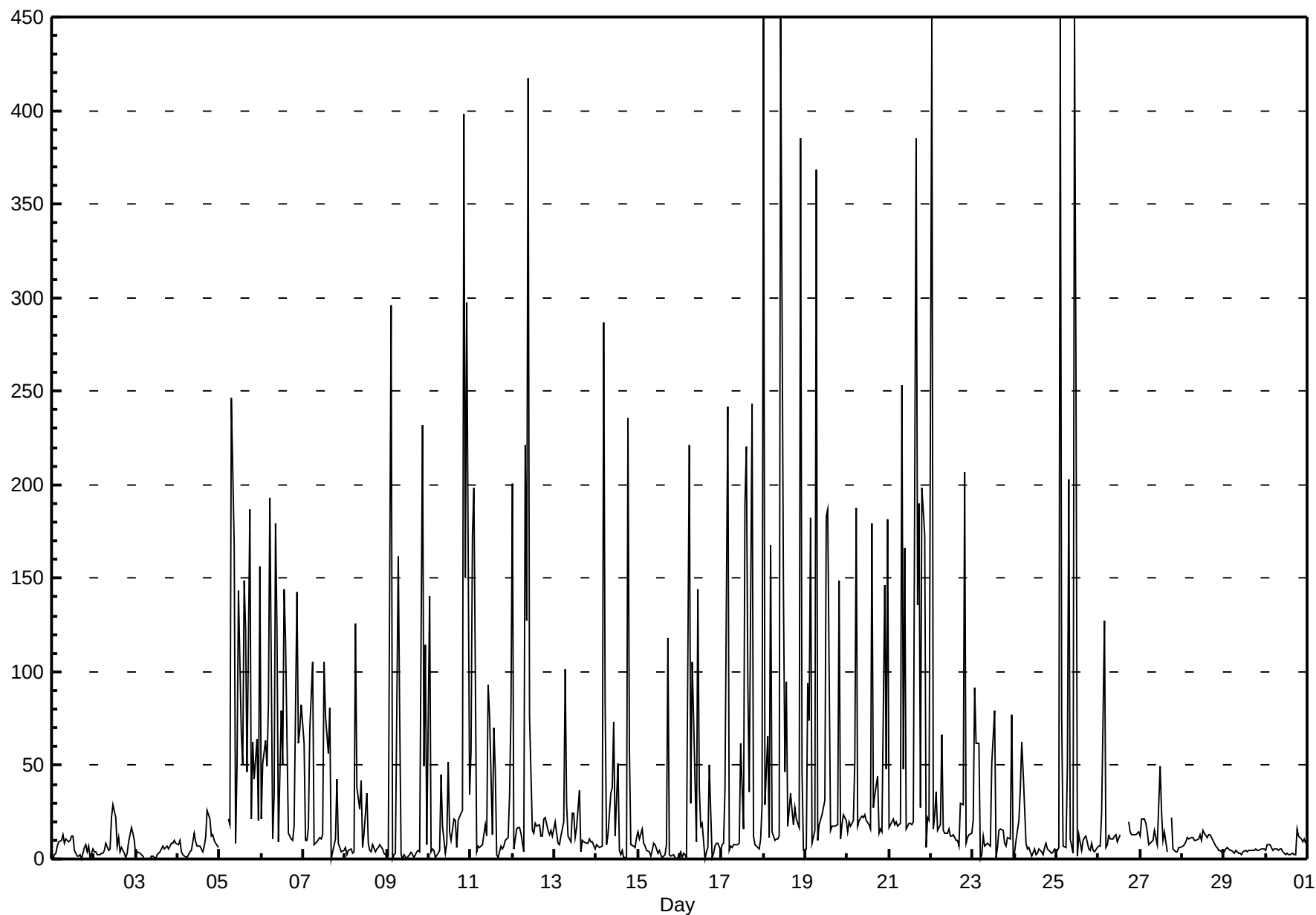
PM2.5 (PM_{2.5}) - µg/m³

Portable Reno - November 2013

Maximum Value: 449.7 μg/m ³ on Nov 18 01:00																								Maximum Daily Average: 88.0 μg/m ³ on Nov 18						Hours in Service: 720	
Minimum Value: 0 μg/m ³ on Nov 1 18:00																								Minimum Daily Average: 3.8 μg/m ³ on Nov 3						Hours of Data: 709	
Maximum Diurnal Average: 53.6 μg/m ³ at hour 1																								Minimum Diurnal Average: 15.8 μg/m ³ at hour 17						Hours of Missing Data: 11	
Monthly Average: 34.65 μg/m ³																								Percentiles: P ₁ = 0.0 P ₁₀ = 2.6 Q ₁ = 5.0 Median = 10.4 Q ₃ = 21.8 P ₉₀ = 94.0 P ₉₉ = 386.6						Hours of Calibration: 0	
																								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-Nov	0	2	3	7	9	10	13	8	10	9	10	12	12	5	2	1	2	0	6	8	4	7	1	5	6.1	12.8					
2-Nov	4	4	2	2	3	3	4	8	4	6	22	29	22	7	11	4	6	3	1	3	9	17	14	10	8.2	29.3					
3-Nov	1	3	3	3	2	0	0	0	0	1	1	0	2	3	4	7	5	6	7	6	8	9	10	8	3.8	10.0					
4-Nov	7	10	4	2	1	1	2	4	5	14	9	7	7	7	4	7	11	26	21	12	13	10	8	6	8.2	25.7					
5-Nov	D	D	D	D	D	21	18	247	168	8	50	144	67	50	148	123	47	187	21	62	43	64	21	156	86.6	246.5					
6-Nov	21	51	63	49	83	193	11	34	180	123	9	79	50	144	117	14	12	10	10	18	143	61	69	82	67.8	193.0					
7-Nov	62	10	10	17	69	106	8	9	9	11	11	13	105	77	56	81	0	4	11	42	8	6	4	5	30.5	105.6					
8-Nov	6	2	5	6	3	4	126	38	27	42	6	13	35	8	5	4	8	4	5	6	7	5	3	2	15.4	126.2					
9-Nov	2	2	296	0	2	3	162	76	2	0	2	0	2	2	3	1	3	4	5	4	232	49	114	8	40.5	295.6					
10-Nov	141	4	5	5	0	3	5	45	17	3	8	52	15	10	21	21	6	21	24	26	398	151	298	34	54.7	398.0					
11-Nov	57	173	199	4	7	6	7	7	18	12	93	77	13	70	47	2	1	7	6	7	10	12	34	79	39.4	198.5					
12-Nov	201	5	16	17	16	14	4	221	127	417	76	15	14	19	18	18	12	12	22	22	15	13	16	12	55.2	417.4					
13-Nov	20	14	9	7	13	20	101	29	12	9	25	25	11	17	36	4	10	9	9	8	10	9	9	6	17.6	101.1					
14-Nov	7	7	6	7	286	83	7	13	35	38	73	12	51	5	2	4	0	1	236	59	8	7	6	12	40.3	286.4					
15-Nov	14	11	16	8	7	4	4	2	5	9	7	3	4	3	1	2	8	119	2	2	2	1	0	1	9.7	118.5					
16-Nov	4	1	3	3	1	221	29	105	75	9	144	38	18	19	0	4	6	50	1	3	7	9	9	5	31.7	221.0					
17-Nov	8	9	37	242	5	7	6	7	8	7	8	62	16	190	220	95	36	243	12	8	7	6	11	29	53.2	243.1					
18-Nov	450	29	66	12	168	15	10	11	11	12	450	141	47	94	17	35	26	18	28	21	17	385	47	4	88.0	449.7					
19-Nov	6	94	74	182	8	15	368	10	18	24	27	31	183	187	16	17	17	18	18	149	11	19	23	21	64.0	368.2					
20-Nov	14	19	18	21	52	187	17	21	23	22	24	21	18	16	180	28	34	44	14	16	14	146	48	182	49.1	187.3					
21-Nov	17	18	21	18	20	18	19	253	48	166	16	19	19	19	20	385	136	190	27	198	174	6	22	20	77.0	385.2					
22-Nov	450	16	24	36	15	19	66	15	14	14	16	12	12	13	10	10	7	30	29	207	8	11	13	14	44.2	449.7					
23-Nov	21	92	62	62	0	2	12	7	8	8	7	51	79	1	6	15	16	15	8	7	12	11	77	2	24.2	91.7					
24-Nov	4	10	20	37	63	47	9	5	6	4	2	5	3	3	6	4	2	6	8	5	4	3	4	6	11.0	62.8					
25-Nov	5	6	450	76	7	6	49	203	10	3	450	263	1	13	4	10	12	12	5	5	9	5	4	6	67.2	449.7					
26-Nov	7	7	24	128	6	7	13	10	11	12	13	9	13	M	M	M	M	20	14	13	13	13	14	15	18.1	127.6					
27-Nov	12	22	22	19	14	7	9	10	15	12	7	50	25	10	15	4	N	N	22	5	4	4	6	6	13.7	49.7					
28-Nov	7	8	9	12	11	12	12	10	10	11	13	10	15	13	11	13	13	11	8	7	6	5	5	3	9.7	14.9					
29-Nov	4	5	6	5	5	4	3	5	3	3	3	4	4	4	5	4	5	5	6	4	5	6	5	6	4.4	6.1					
30-Nov	4	8	8	6	5	5	6	5	5	6	4	2	3	3	2	3	2	2	16	12	11	9	11	9	6.0	16.2					
53.6 22.0 51.0 34.1 30.4 34.7 36.7 47.3 29.5 33.8 52.9 40.0 29.0 34.8 34.0 31.7 15.8 37.1 20.0 31.5 40.3 35.2 30.1 25.1																								Diurnal Average							
449.7 172.7 449.6 241.8 286.4 221.0 368.2 252.9 179.6 417.4 449.7 263.4 183.1 189.9 220.2 385.2 135.5 243.1 235.7 206.8 398.0 385.3 297.6 181.7																								Diurnal Maximum							
D - DAS Failure M - Maintenance N - Not Valid																															

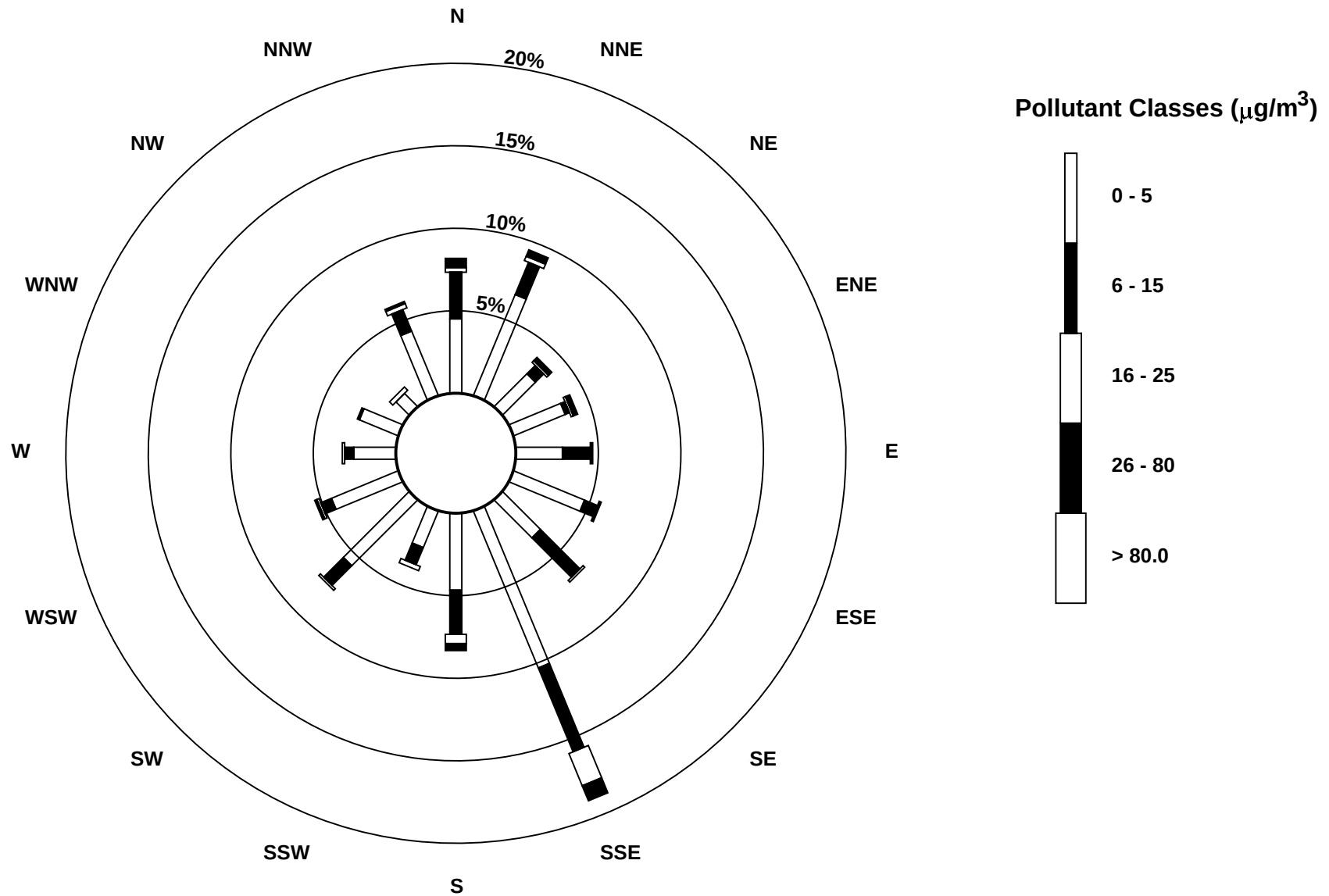
Hourly Maximums

PM2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Portable Reno - November 2013



Pollutant Rose

PM_{2.5} (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Portable Reno - November 2013



Hourly Averages

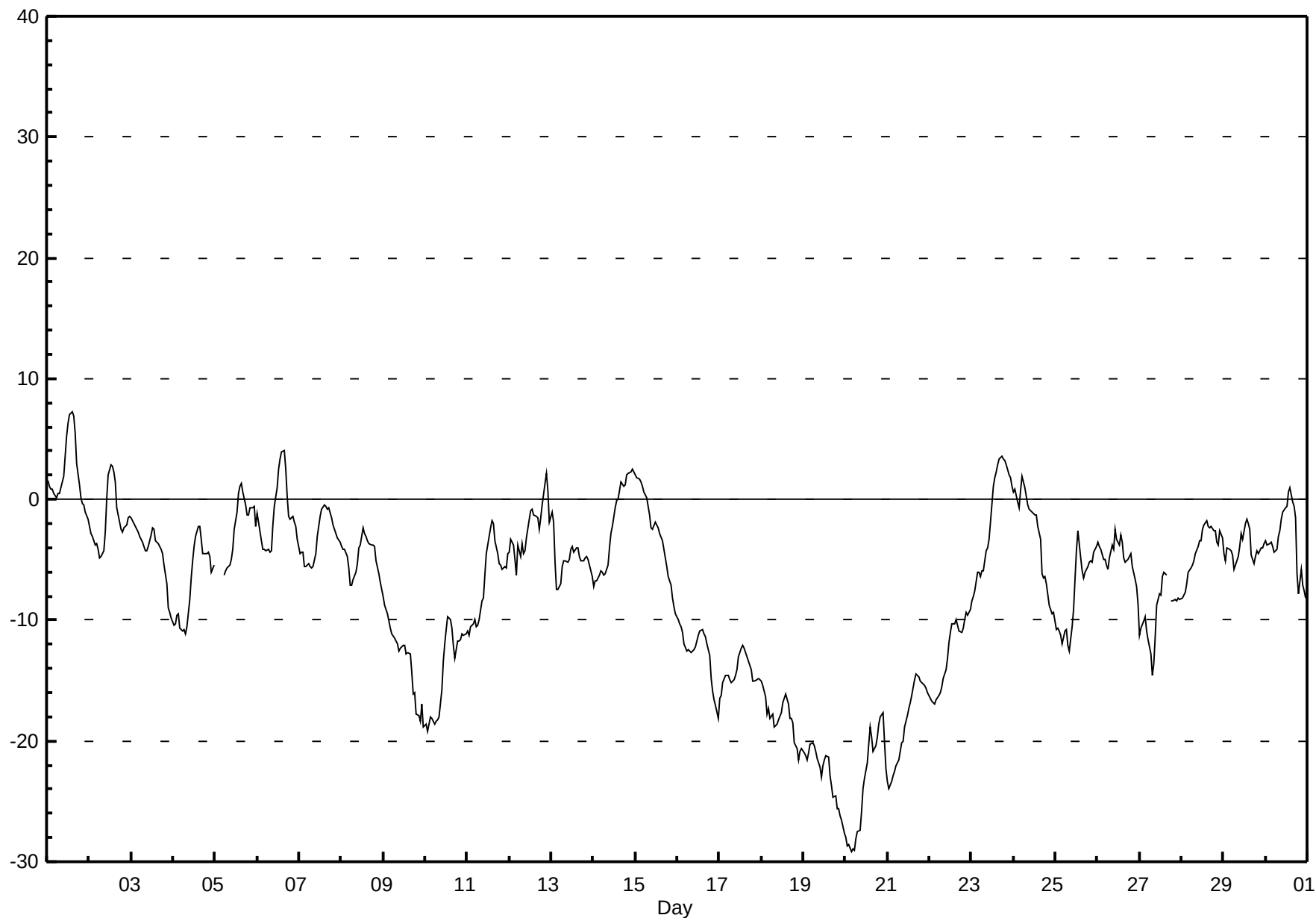
External Temperature (ET) - °C

Portable Reno - November 2013

Number of Exceedences (AAAQO): Maximum Value: 7.3 °C on Nov 1 15:00																				1-hr: 0 24-hr: 0 Maximum Daily Average: 2.1 °C on Nov 1		Hours in Service: 720 Hours of Data: 713 Hours of Missing Data: 7 Hours of Calibration: 0 Percent Operational Time: 99.0				
Minimum Value: -29 °C on Nov 20 04:00 Maximum Diurnal Average: -5.0 °C at hour 15 Monthly Average: -7.67 °C																				Minimum Daily Average: -23.6 °C on Nov 20 Minimum Diurnal Average: -9.3 °C at hour 8 Percentiles: P ₁ = -27.6 P ₁₀ = -18.4 Q ₁ = -12.0 Median = -5.5 Q ₃ = -2.5 P ₉₀ = 0.2 P ₉₉ = 3.2						
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-Nov	2	1	1	1	0	0	1	0	1	2	4	5	6	7	7	7	5	3	1	0	0	0	-1	-2	2.1	7.3
2-Nov	-2	-3	-3	-4	-4	-4	-5	-5	-4	-3	0	2	3	3	2	1	-1	-2	-3	-3	-2	-2	-2	-1	-1.7	2.9
3-Nov	-2	-2	-2	-2	-3	-3	-4	-4	-4	-4	-4	-3	-2	-2	-3	-4	-4	-4	-5	-5	-7	-9	-9	-10	-4.2	-1.6
4-Nov	-10	-10	-10	-9	-11	-11	-11	-11	-10	-8	-6	-5	-4	-3	-2	-2	-3	-4	-4	-5	-4	-5	-6	-5	-6.8	-2.2
5-Nov	D	D	D	D	D	-6	-6	-6	-5	-5	-4	-2	-1	0	1	1	1	0	-1	-1	-1	-1	-1	-2	-2.1	1.4
6-Nov	-1	-2	-3	-4	-4	-4	-4	-4	-4	-2	-1	1	2	3	4	4	3	0	-1	-2	-1	-2	-2	-3	-1.2	4.0
7-Nov	-4	-4	-4	-6	-6	-5	-6	-6	-6	-5	-3	-2	-1	-1	-1	-1	-1	-1	-1	-2	-2	-3	-3	-4	-3.2	-0.5
8-Nov	-4	-4	-4	-5	-6	-7	-7	-7	-6	-5	-4	-4	-2	-3	-3	-3	-4	-4	-4	-4	-5	-6	-7	-7	-4.8	-2.4
9-Nov	-8	-9	-9	-10	-11	-11	-11	-12	-12	-13	-12	-12	-12	-13	-13	-13	-14	-16	-16	-18	-18	-18	-17	-19	-13.2	-8.0
10-Nov	-19	-19	-19	-18	-18	-19	-18	-18	-18	-16	-13	-12	-11	-10	-10	-11	-12	-13	-12	-12	-12	-11	-11	-11	-14.2	-9.8
11-Nov	-11	-11	-11	-10	-10	-11	-10	-10	-8	-8	-6	-5	-3	-2	-2	-2	-3	-5	-5	-5	-6	-6	-6	-4	-6.7	-1.8
12-Nov	-4	-3	-4	-5	-6	-4	-5	-4	-4	-4	-3	-2	-1	-1	-1	-1	-2	-2	-1	0	1	2	1	-2	-2.4	2.2
13-Nov	-1	-2	-5	-7	-7	-7	-6	-5	-5	-5	-5	-4	-4	-4	-4	-4	-5	-5	-5	-5	-5	-5	-5	-6	-4.9	-1.1
14-Nov	-7	-7	-7	-6	-6	-6	-6	-6	-5	-4	-3	-2	-1	0	0	1	1	1	1	2	2	2	2	2	-2.1	2.4
15-Nov	2	2	2	1	1	1	0	-1	-1	-2	-2	-2	-2	-2	-3	-3	-4	-5	-6	-6	-7	-8	-9	-10	-2.7	2.1
16-Nov	-10	-10	-11	-11	-12	-13	-12	-13	-13	-12	-12	-12	-11	-11	-11	-11	-11	-12	-13	-15	-16	-17	-17	-18	-12.6	-10.0
17-Nov	-16	-16	-15	-15	-15	-15	-15	-15	-15	-15	-14	-13	-12	-12	-12	-13	-13	-14	-14	-15	-15	-15	-15	-15	-14.3	-12.1
18-Nov	-15	-15	-16	-18	-17	-18	-18	-19	-19	-19	-18	-18	-17	-16	-16	-17	-18	-18	-18	-20	-21	-22	-21	-21	-18.1	-15.1
19-Nov	-21	-21	-22	-21	-20	-20	-20	-21	-21	-22	-23	-22	-22	-21	-21	-23	-24	-25	-25	-26	-26	-26	-27	-28	-22.8	-20.1
20-Nov	-28	-29	-29	-29	-29	-29	-28	-28	-27	-26	-24	-23	-22	-20	-19	-20	-21	-20	-20	-19	-18	-18	-20	-22	-23.6	-17.7
21-Nov	-23	-24	-23	-23	-23	-22	-22	-21	-20	-20	-19	-18	-17	-17	-16	-15	-14	-15	-15	-15	-15	-15	-16	-16	-18.5	-14.5
22-Nov	-16	-17	-17	-17	-17	-16	-16	-16	-15	-14	-13	-12	-11	-10	-10	-10	-10	-11	-11	-11	-10	-9	-10	-9	-12.8	-9.1
23-Nov	-8	-8	-8	-6	-6	-6	-6	-6	-4	-4	-3	-2	1	2	2	3	3	4	3	3	3	2	2	1	-1.6	3.6
24-Nov	1	1	0	-1	1	2	1	0	0	-1	-1	-1	-1	-1	-2	-3	-6	-6	-6	-7	-9	-9	-9	-9	-2.9	1.9
25-Nov	-11	-11	-11	-11	-12	-11	-11	-12	-13	-11	-9	-7	-4	-3	-5	-6	-6	-6	-6	-5	-5	-5	-4	-4	-7.8	-2.6
26-Nov	-4	-4	-4	-5	-5	-5	-6	-5	-4	-4	-2	-3	-4	-3	-4	-5	-5	-5	-5	-5	-6	-7	-7	-9	-4.8	-2.5
27-Nov	-11	-11	-10	-10	-11	-12	-13	-15	-14	-11	-9	-8	-8	-6	-6	-6	N	N	-8	-8	-8	-8	-8	-8	-9.5	-6.0
28-Nov	-8	-8	-8	-7	-6	-6	-5	-5	-4	-4	-3	-3	-2	-2	-2	-2	-2	-2	-3	-3	-3	-4	-3	-3	-4.1	-1.8
29-Nov	-4	-5	-4	-4	-4	-5	-6	-5	-5	-4	-3	-3	-2	-2	-2	-2	-5	-5	-5	-4	-4	-4	-4	-4	-4.0	-1.6
30-Nov	-3	-4	-4	-4	-4	-4	-4	-3	-3	-2	-1	-1	-1	1	1	0	-1	-2	-6	-8	-6	-7	-8	-8	-3.3	0.9
																									Diurnal Average	Diurnal Maximum
D - DAS Failure N - Not Valid																										

Hourly Averages

External Temperature (ET) - °C
Portable Reno - November 2013



Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Portable Reno - November 2013

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	17	17	16	16	15	18	17	19	20	22	24	29	28	28	19	11	7	7	11	12	8	8	8	15.0	29.2
Dir	239	224	219	227	230	217	218	217	224	235	246	258	272	272	272	275	280	260	212	215	231	234	217	193	242.1	271.9
2 Spd	6	3	4	5	5	4	1	2	4	3	6	8	10	8	7	6	6	5	5	5	8	6	7	10	3.2	9.9
Dir	229	220	167	183	170	163	167	28	23	36	14	12	337	349	5	356	356	9	4	3	18	20	22	33	8.9	33.2
3 Spd	12	12	9	8	6	10	14	14	12	7	6	6	7	8	10	8	4	5	5	7	3	1	1	3	6.8	14.5
Dir	22	25	21	20	14	22	33	37	35	16	7	346	356	356	20	13	351	347	4	25	346	265	160	172	17.6	36.5
4 Spd	2	7	9	10	11	11	10	10	12	12	13	15	16	15	14	16	17	19	19	19	21	20	20	24	13.7	24.2
Dir	140	88	105	109	120	125	133	150	158	173	166	163	167	160	163	158	157	149	150	146	148	143	158	151	149.0	151.4
5 Spd	D	D	D	D	26	26	25	26	26	24	21	18	17	17	17	16	15	16	16	12	9	11	16	15	17.4	26.5
Dir	D	D	D	D	163	163	163	164	161	165	164	172	176	166	169	170	163	161	162	166	173	215	233	221	171.1	162.7
6 Spd	19	16	12	11	11	13	11	12	10	12	16	9	13	14	15	10	8	5	10	7	6	7	6	8	8.9	19.4
Dir	231	237	222	198	199	196	193	197	209	233	244	273	259	255	274	272	258	202	184	195	161	165	164	141	222.1	231.3
7 Spd	6	10	9	9	12	13	12	16	16	17	18	20	21	23	24	25	26	25	25	22	21	21	20	19	17.0	25.9
Dir	136	140	152	118	124	123	113	112	104	104	100	98	94	92	86	86	85	84	81	84	84	79	73	65	94.2	85.3
8 Spd	17	15	10	5	4	4	3	3	2	3	2	3	6	9	9	10	7	5	7	11	11	11	10	10	1.9	17.5
Dir	66	58	38	7	355	5	353	333	356	19	84	246	194	223	221	227	200	196	219	264	330	347	348	351	336.7	66.2
9 Spd	10	12	9	9	9	13	14	10	7	7	8	7	7	10	12	10	6	4	3	9	8	4	5	4	7.1	14.0
Dir	342	341	1	347	341	331	332	340	348	351	354	353	1	334	330	332	329	328	353	32	50	79	72	108	349.9	332.3
10 Spd	5	7	9	11	11	10	12	13	12	12	12	14	15	14	13	14	17	16	19	19	22	23	22	19	13.2	23.1
Dir	114	121	118	115	115	109	113	119	120	134	146	159	166	180	178	169	168	160	162	163	167	165	164	166	151.7	165.2
11 Spd	18	17	19	19	20	18	17	18	18	15	15	16	17	18	17	15	17	18	19	18	17	16	19	17	17.4	20.3
Dir	168	170	167	168	168	167	172	171	182	172	176	178	180	176	180	170	163	160	161	157	160	150	162	154	167.9	168.1
12 Spd	19	17	18	18	15	16	11	13	5	5	5	1	5	12	12	15	19	20	18	24	26	23	9	4	10.4	25.9
Dir	152	153	158	161	165	145	145	151	146	0	63	254	169	176	188	176	170	161	189	227	229	241	291	55	178.7	229.1
13 Spd	3	7	6	3	4	2	4	5	8	10	10	6	4	8	4	2	7	4	2	4	5	7	7	10	3.2	10.1
Dir	269	339	1	11	13	31	0	15	21	22	23	27	358	331	357	282	321	339	297	208	233	280	253	228	338.3	22.3
14 Spd	10	7	10	10	12	14	16	12	15	18	21	21	24	21	18	20	25	24	23	27	28	29	38	30	17.1	37.8
Dir	251	225	178	182	182	170	159	165	219	234	236	237	240	246	240	234	229	221	234	243	249	251	271	285	234.3	270.5
15 Spd	27	32	30	23	15	11	10	10	7	6	8	15	14	18	24	25	26	26	30	31	26	16	16	19	12.8	31.8
Dir	295	278	278	282	290	266	282	292	354	3	18	49	29	24	31	34	35	28	27	26	23	17	17	22	356.6	277.6
16 Spd	16	14	16	18	16	15	21	18	18	16	20	23	25	23	19	12	11	13	13	7	10	7	12	11	15.1	25.3
Dir	20	19	27	40	44	29	41	52	56	51	58	59	61	60	59	41	27	34	32	18	27	4	28	59	43.1	60.7
17 Spd	13	13	16	14	16	16	15	15	15	18	16	12	16	16	15	18	16	17	18	17	19	21	15	10	15.2	21.2
Dir	79	80	81	88	80	78	82	89	95	92	93	109	97	101	94	84	71	55	57	57	65	71	63	44	79.1	71.2
18 Spd	10	8	6	5	5	5	8	5	5	4	8	8	5	5	5	12	14	7	8	5	6	8	9	7	6.3	13.9
Dir	33	19	12	10	5	355	12	9	5	341	327	333	352	2	353	316	331	344	334	8	3	31	42	38	358.9	330.5
19 Spd	6	4	4	5	5	6	4	7	6	5	5	5	7	8	7	4	4	3	2	2	1	4	5	7	3.1	8.3
Dir	43	343	12	7	10	10	352	340	342	353	354	342	325	333	334	359	340	332	291	256	269	196	176	169	344.4	333.2
20 Spd	6	7	8	10	10	10	11	12	14	13	13	14	16	15	13	12	12	15	13	11	5	6	6	4	9.6	15.7
Dir	176	171	165	162	151	150	144	145	157	149	156	165	163	153	153	153	136	136	131	127	151	186	340	345	151.6	163.2
21 Spd	1	4	4	4	3	4	4	2	1	4	5	5	5	6	6	8	13	13	15	13	13	12	12	11	5.4	14.5
Dir	33	164	183	196	158	81	49	103	171	24	17	5	348	2	12	55	74	70	75	59	53	43	47	51	56.6	75.1
22 Spd	9	11	9	8	6	6	7	7	12	15	12	13	16	14	16	16	16	19	21	24	26	31	31	31	13.9	31.1
Dir	60	66	68	62	79	111	123	127	135	130	128	133	138	147	160	151	146	144	151	147	152	157	164	164	140.5	163.9

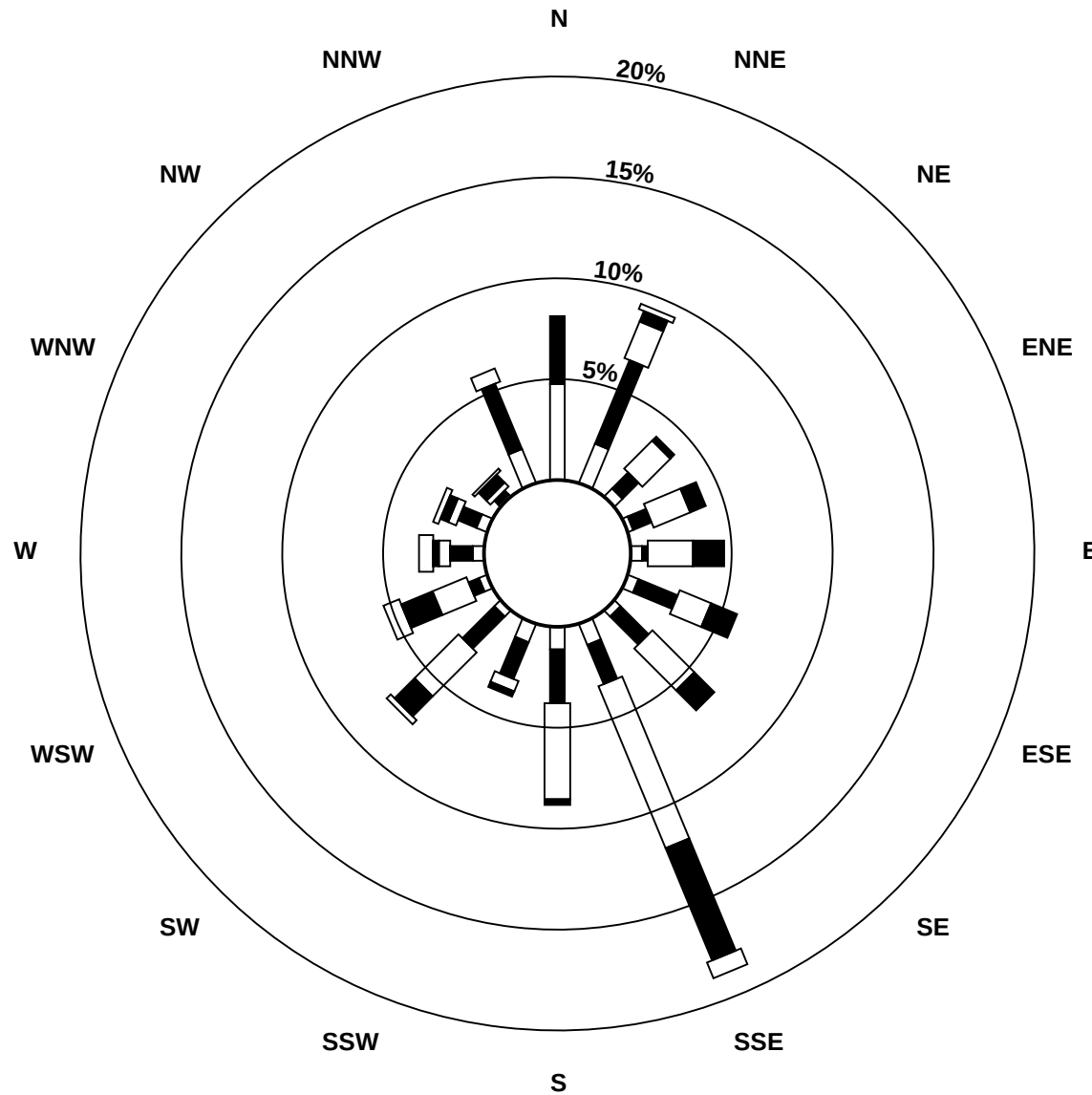
Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Portable Reno - November 2013

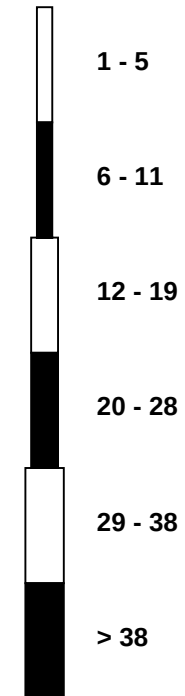
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24									
23 Spd	30	30	30	27	25	25	23	23	22	21	20	22	24	29	28	30	36	37	29	22	11	15	33	31	20.4	36.9							
Dir	161	156	159	162	164	163	174	166	167	166	164	170	202	223	223	224	240	246	242	242	236	267	251	248	201.6	246.1							
24 Spd	24	28	15	19	31	33	26	27	30	23	20	19	18	21	14	10	10	6	8	3	3	5	4	6	14.3	32.6							
Dir	243	245	238	233	269	295	306	311	304	319	308	308	298	295	290	286	283	294	300	292	212	205	177	166	283.4	295.4							
25 Spd	10	7	5	3	10	10	8	7	9	9	12	10	6	5	1	6	12	10	15	20	21	24	23	20	10.2	24.5							
Dir	165	172	164	142	160	158	140	127	135	142	149	152	166	180	107	72	90	117	116	115	120	118	128	131	132.1	118.4							
26 Spd	19	20	23	14	27	27	17	15	15	12	8	9	11	10	11	10	12	11	8	6	5	4	7	4	10.1	26.8							
Dir	136	139	138	157	163	168	171	184	210	231	260	210	169	174	180	176	175	177	177	199	223	32	20	9	170.9	163.3							
27 Spd	4	3	2	5	6	4	5	2	3	10	12	8	5	9	10	11	N	12	24	25	24	27	22	25	9.6	26.7							
Dir	5	343	312	15	19	12	50	355	31	100	105	128	82	108	119	116	N	117	105	107	107	113	116	113	102.0	113.1							
28 Spd	19	14	19	24	24	20	19	20	24	25	22	28	28	26	25	23	18	20	20	17	9	19	19	21	16.6	28.3							
Dir	127	136	128	124	124	134	135	142	129	133	147	154	157	158	160	164	188	239	235	242	220	222	210	212	161.5	156.6							
29 Spd	16	18	18	17	18	17	14	7	6	6	11	11	11	15	15	11	11	15	18	19	17	16	16	20	12.1	20.3							
Dir	220	223	237	241	245	244	226	236	210	215	235	200	207	242	242	221	172	166	163	162	167	183	176	163	207.0	163.0							
30 Spd	22	22	21	21	24	25	24	25	22	19	19	17	15	13	10	8	6	4	7	6	9	9	9	11	11.0	25.5							
Dir	166	164	161	159	163	164	164	158	167	171	161	166	166	176	179	173	190	260	352	356	8	5	8	14	162.5	158.1							
Spd	3.7	4.0	4.8	4.8	6.0	5.6	4.9	5.1	4.9	4.3	4.1	4.5	4.4	4.0	3.6	3.7	3.9	4.4	4.8	4.3	4.0	4.0	3.2	4.2	Diurnal Average								
Dir	170.1	174.2	158.6	158.5	162.2	158.3	148.7	148.5	153.2	149.7	154.6	163.2	175.1	190.3	187.3	170.3	166.7	154.8	148.7	150.3	143.4	155.2	166.3	149.0	Diurnal Maximum								
Spd	29.6	31.8	30.2	26.9	30.7	32.6	26.0	27.0	29.6	25.2	22.5	28.2	29.2	29.1	28.2	29.6	35.9	36.9	29.7	31.5	27.9	30.8	37.8	31.0									
Dir	161.4	277.6	277.6	162.5	268.8	295.4	306.0	310.8	304.1	133.4	147.4	154.5	271.9	222.8	272.2	224.1	239.7	246.1	26.5	25.8	249.5	157.4	270.5	164.1									
Maximum Speed Value: 38 km/h on Nov 14 23:00																		Minimum Speed Value: 1 km/h on Nov 2 07:00														Hours in Service: 720	
Maximum Daily Speed Average: 20.4 km/h on Nov 23																		Minimum Daily Speed Average: 1.9 km/h on Nov 19														Hours of Data: 715	
Maximum Diurnal Speed Average: 6.0 km/h at hour 5																		Minimum Diurnal Speed Average: 3.2 km/h at hour 23														Hours of Missing Data: 5	
Monthly Average Velocity: 4.29 km/h 159.94 deg																		Speed Percentiles: P ₁ = 1.3 P ₁₀ = 4.4 Q ₁ = 7.0 Median = 12.2 Q ₃ = 18.5 P ₉₀ = 24.1 P ₉₉ = 31.3														Percent Operational Time: 99.3	
All monthly, daily, and diurnal averages have been calculated using vector methods																																	
D - DAS Failure N - Not Valid																																	
Frequency Distribution																																	
Speed Range (km/h)																																	
Direction	0 to 5		5 to 11		11 to 19		19 to 28		28 to 38		> 38		Total																				
North	41		72		6		1		0		0		120																				
NorthEast	11		20		32		11		2		0		76																				
East	7		11		26		16		0		0		60																				
SouthEast	3		25		48		28		4		0		108																				
South	16		37		79		43		4		0		179																				
SouthWest	6		20		34		25		6		0		91																				
West	9		15		7		4		11		0		46																				
NorthWest	5		14		7		7		2		0		35																				
Total	98		214		239		135		29		0		715																				

Wind Rose

Wind Speed (WS) (km/h)
Portable Reno - November 2013



Wind Speed Classes (km/h)



Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Portable Reno - November 2013

Maximum Speed: 38 km/h on Nov 14 23:00																				Maximum Daily Speed Average: 26.1 km/h on Nov 23										Hours in Service: 720			
Minimum Speed: 2 km/h on Nov 3 23:00																				Minimum Daily Speed Average: 5.1 km/h on Nov 19										Hours of Data: 715			
Maximum Diurnal Speed Average: 14.8 km/h at hour 14																				Minimum Diurnal Speed Average: 12.4 km/h at hour 4										Hours of Missing Data: 5			
Monthly Average Speed: 13.59 km/h																				Percentiles: P ₁ = 2.7 P ₁₀ = 4.8 Q ₁ = 7.4 Median = 12.4 Q ₃ = 18.5 P ₉₀ = 24.2 P ₉₉ = 31.3										Percent Operational Time: 99.3			
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-Nov	17	18	17	16	16	15	18	17	19	20	22	24	29	29	28	20	11	7	8	11	12	10	8	8	16.6	29.3							
2-Nov	6	4	4	5	5	4	5	3	5	3	6	8	10	8	7	6	6	5	5	5	8	6	7	10	5.9	10.0							
3-Nov	12	12	9	8	6	10	14	15	12	7	6	6	7	8	10	9	5	6	5	7	5	2	2	3	7.7	14.5							
4-Nov	3	7	9	10	11	11	10	10	12	13	13	15	16	15	14	16	17	19	19	20	21	20	20	24	14.5	24.2							
5-Nov	D	D	D	D	26	27	25	26	26	24	21	18	17	17	17	16	15	16	16	12	9	12	16	15	18.5	26.5							
6-Nov	19	16	12	11	11	13	12	12	10	12	16	9	13	14	15	10	9	6	10	7	6	7	6	10	11.1	19.4							
7-Nov	6	10	9	10	12	13	12	16	16	17	18	20	21	23	24	25	26	25	25	22	21	21	20	19	18.0	26.0							
8-Nov	18	15	11	5	4	4	4	4	2	3	4	4	6	10	10	10	7	5	7	11	12	11	10	11	7.8	17.5							
9-Nov	10	12	9	10	9	13	14	10	7	8	8	7	7	10	12	10	6	4	3	9	8	5	5	5	8.3	14.0							
10-Nov	6	7	9	11	11	10	12	13	12	12	12	14	15	14	13	14	17	16	19	19	22	23	22	19	14.3	23.1							
11-Nov	18	17	19	19	20	18	17	18	18	15	16	16	17	18	17	15	17	18	19	18	18	16	19	17	17.6	20.3							
12-Nov	19	17	18	18	16	16	12	13	8	5	5	8	6	12	13	16	19	20	19	25	26	23	10	5	14.6	25.9							
13-Nov	5	7	6	3	4	2	4	5	8	10	10	6	6	8	4	3	7	4	3	4	5	7	7	10	5.8	10.2							
14-Nov	11	8	10	10	12	15	16	12	16	18	21	21	24	21	19	20	25	24	23	27	28	29	38	30	19.9	38.2							
15-Nov	27	32	30	24	15	11	10	10	7	6	9	15	15	18	24	25	26	26	30	32	26	16	16	19	19.6	32.0							
16-Nov	16	14	16	19	16	16	21	18	18	17	20	23	26	24	19	13	11	13	13	7	10	7	12	11	15.8	25.5							
17-Nov	13	13	16	14	16	16	15	15	15	18	17	13	17	16	15	18	17	17	19	17	19	21	15	10	15.8	21.2							
18-Nov	10	8	6	5	5	5	8	5	5	5	8	8	5	6	6	12	14	7	8	5	6	8	9	7	7.1	14.1							
19-Nov	6	4	4	5	5	6	5	7	6	5	5	5	7	8	7	4	4	3	4	3	3	4	5	7	5.1	8.3							
20-Nov	6	7	8	10	10	10	11	12	14	13	13	14	16	15	13	12	12	15	13	11	5	7	6	4	10.8	15.8							
21-Nov	3	4	5	5	4	5	4	3	2	5	5	5	5	6	6	9	13	13	15	14	13	12	12	11	7.4	14.6							
22-Nov	9	11	9	8	7	6	7	7	12	15	12	13	16	14	16	16	16	20	21	24	26	31	31	31	15.8	31.1							
23-Nov	30	30	30	27	25	25	23	23	22	22	20	22	25	29	28	30	36	37	29	22	11	16	33	31	26.1	36.9							
24-Nov	24	28	15	20	31	34	26	27	30	23	20	19	18	22	14	11	10	8	8	5	4	5	4	6	17.1	33.5							
25-Nov	10	7	5	4	10	10	8	7	9	10	13	10	7	5	4	7	12	10	15	20	21	25	23	20	11.3	24.5							
26-Nov	19	20	23	15	27	27	17	15	16	12	10	10	11	11	11	10	12	11	9	7	5	4	7	5	13.0	27.0							
27-Nov	5	4	3	5	6	5	6	4	4	10	13	9	8	10	10	11	N	13	24	25	24	27	22	25	11.7	26.8							
28-Nov	19	14	19	24	24	20	19	20	25	25	23	28	28	27	25	23	20	20	20	17	9	19	19	21	21.2	28.4							
29-Nov	16	18	18	17	18	17	14	7	6	6	12	14	11	16	15	12	11	15	18	19	17	16	16	20	14.5	20.3							
30-Nov	22	22	21	22	24	25	24	25	22	19	19	17	15	13	10	9	6	7	7	6	10	9	9	11	15.5	25.5							
13.3 13.4 12.8 12.4 13.5 13.5 13.0 12.6 12.8 12.6 13.2 13.3 14.2 14.8 14.3 13.7 14.1 13.6 14.4 14.4 13.6 14.0 14.4 14.2																								Diurnal Average									
29.7 32.0 30.3 26.9 30.9 33.5 26.0 27.2 29.7 25.2 23.2 28.3 29.3 29.3 28.3 29.6 36.0 36.9 29.8 31.5 28.0 30.8 38.2 31.0																								Diurnal Maximum									
D - DAS Failure N - Not Valid																																	
All monthly, daily, and diurnal averages have been calculated using scalar methods																																	

Hourly Standard Deviations

Wind Direction (WD) - deg

Portable Reno - November 2013

Maximum Value: 90.8 deg on Nov 2 07:00																								Hours in Service: 720	
Minimum Value: 1.8 deg on Nov 11 00:00																								Hours of Data: 713	
Percentiles: P ₁ = 1.9 P ₁₀ = 3.1 Q ₁ = 4.4 Median = 7.3 Q ₃ = 13.4 P ₉₀ = 22.7 P ₉₉ = 69.4																								Hours of Missing Data: 7	
																								Hours of Calibration: 0	
																								Percent Operational Time: 99.0	
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Nov	5	13	9	5	6	4	6	9	3	5	3	6	6	7	5	5	6	14	30	17	5	48	16	12	48.1
2-Nov	10	33	14	25	25	20	91	35	13	17	20	12	13	19	14	14	14	8	8	9	8	5	7	10	90.8
3-Nov	7	5	13	10	7	7	6	5	6	8	10	14	14	17	14	23	17	19	13	10	40	67	77	13	76.7
4-Nov	47	18	4	3	3	4	3	8	9	22	7	6	6	6	6	4	5	3	3	4	3	7	7	3	47.1
5-Nov	D	D	D	D	D	3	3	3	3	3	4	7	11	8	7	6	6	4	4	8	10	17	4	4	17.0
6-Nov	5	4	15	15	5	5	9	3	10	7	6	20	9	10	8	11	12	17	8	11	14	14	20	32	32.2
7-Nov	24	7	8	27	7	6	4	6	4	5	4	3	4	4	4	4	4	5	5	5	4	5	5	4	26.9
8-Nov	5	5	18	9	13	13	24	27	33	19	70	23	20	9	11	4	22	11	11	19	20	15	12	12	70.2
9-Nov	12	9	13	15	11	9	4	8	13	12	13	15	11	6	4	5	4	20	32	12	11	32	9	33	32.7
10-Nov	19	14	8	4	3	5	4	3	9	5	10	4	3	11	6	9	3	3	2	2	2	2	2	2	19.1
11-Nov	3	2	2	2	3	4	3	3	4	4	6	5	5	5	3	7	4	4	3	4	8	8	4	5	7.8
12-Nov	3	8	5	6	7	10	18	18	56	24	33	86	23	18	21	22	7	5	16	7	3	4	33	51	86.3
13-Nov	53	14	10	42	16	41	17	11	6	7	7	19	44	8	14	61	13	19	43	9	21	14	18	13	61.3
14-Nov	15	22	6	8	7	9	4	6	19	4	5	3	3	2	5	3	3	7	4	5	5	6	8	4	21.7
15-Nov	7	5	3	8	8	9	6	12	17	9	13	13	7	5	4	5	6	4	4	3	6	7	6	5	17.1
16-Nov	6	5	4	15	10	7	7	6	5	5	5	5	7	7	7	12	3	4	5	4	8	20	13	11	19.6
17-Nov	2	3	3	4	4	3	4	5	3	4	6	10	9	11	12	7	14	4	4	4	3	3	8	9	13.8
18-Nov	9	9	8	9	9	13	8	8	18	22	11	11	13	11	24	7	7	14	8	12	20	14	12	10	24.3
19-Nov	13	19	14	9	9	8	16	11	9	14	12	13	8	5	7	10	29	33	57	32	69	13	5	4	68.7
20-Nov	7	8	4	5	5	5	7	3	3	8	9	3	2	5	6	8	5	6	4	7	21	34	24	33	33.8
21-Nov	81	23	32	29	40	13	31	48	50	38	15	15	15	10	9	16	6	4	6	8	5	6	5	5	81.4
22-Nov	11	6	9	7	17	15	10	8	6	5	6	5	8	11	6	6	6	8	4	4	5	3	3	3	17.1
23-Nov	5	3	3	3	3	5	8	4	5	8	3	3	16	6	5	3	5	2	3	5	19	19	3	3	19.1
24-Nov	3	2	9	7	8	13	4	6	5	6	7	4	9	9	11	57	5	44	15	71	18	10	18	8	71.5
25-Nov	4	7	23	20	5	6	10	6	7	12	17	8	10	8	85	42	5	7	4	4	5	3	5	7	85.0
26-Nov	3	6	3	20	6	2	6	8	19	10	41	24	4	9	11	7	5	3	11	14	21	23	5	27	41.5
27-Nov	36	36	49	10	7	22	19	70	54	33	13	21	67	9	18	11	N	N	4	4	4	3	4	3	69.6
28-Nov	9	5	6	4	5	5	3	5	7	4	17	5	6	7	4	4	23	5	7	4	39	2	6	3	39.0
29-Nov	3	4	7	3	3	3	8	40	16	13	6	34	20	5	4	11	5	4	2	2	4	9	12	3	39.9
30-Nov	4	3	2	5	2	2	3	3	4	9	3	3	4	4	7	13	11	56	9	10	10	9	10	8	56.0
81.4 36.3 48.7 42.4 40.2 41.1 90.8 69.6 56.1 38.2 70.2 86.3 67.2 19.1 85.0 61.3 28.5 56.0 57.3 71.5 68.7 66.6 76.7 50.7																									
D - DAS Failure N - Not Valid																									

PAZA
Falher Station
Monthly Summary Tables, Graphs and
Roses

Hourly Averages

Sulphur Dioxide (SO₂) - ppb

Falher - November 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 1.8 ppb on Nov 4 17:00 Maximum Daily Average: 0.3 ppb on Nov 23																			Hours in Service: 720							
Minimum Value: 0 ppb on Nov 1 02:00 Minimum Daily Average: 0.0 ppb on Nov 27 Maximum Diurnal Average: 0.2 ppb at hour 17 Minimum Diurnal Average: 0.1 ppb at hour 3 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 = 0.4																			Hours of Data: 681							
																			Hours of Missing Data: 39							
																			Hours of Calibration: 34							
																			Percent Operational Time: 99.3							
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-Nov	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	0.1
2-Nov	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
3-Nov	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.3
4-Nov	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0.2	1.8
5-Nov	N	N	N	N	N	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
6-Nov	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
7-Nov	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	0.1
8-Nov	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
9-Nov	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
10-Nov	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
11-Nov	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
12-Nov	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.2
13-Nov	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.0	0.1
14-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.1	0.4
15-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.1	0.2
16-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.1	0.1
17-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0.2	0.4
18-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.2	0.3
19-Nov	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	0.2
20-Nov	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	0.2
21-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.2	0.4
22-Nov	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	0.9
23-Nov	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
24-Nov	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
25-Nov	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
26-Nov	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
27-Nov	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
28-Nov	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
29-Nov	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
30-Nov	0	0	0	0	0	0	A	0	0	0	0	0	C	C	C	0	0	0	0	0	0	0	0	0	0.1	0.5
																								Diurnal Average	Diurnal Maximum	
																								0.1	0.3	
																								0.3	0.4	

C - Calibration N - Not Valid A - Automated Daily Zero Span

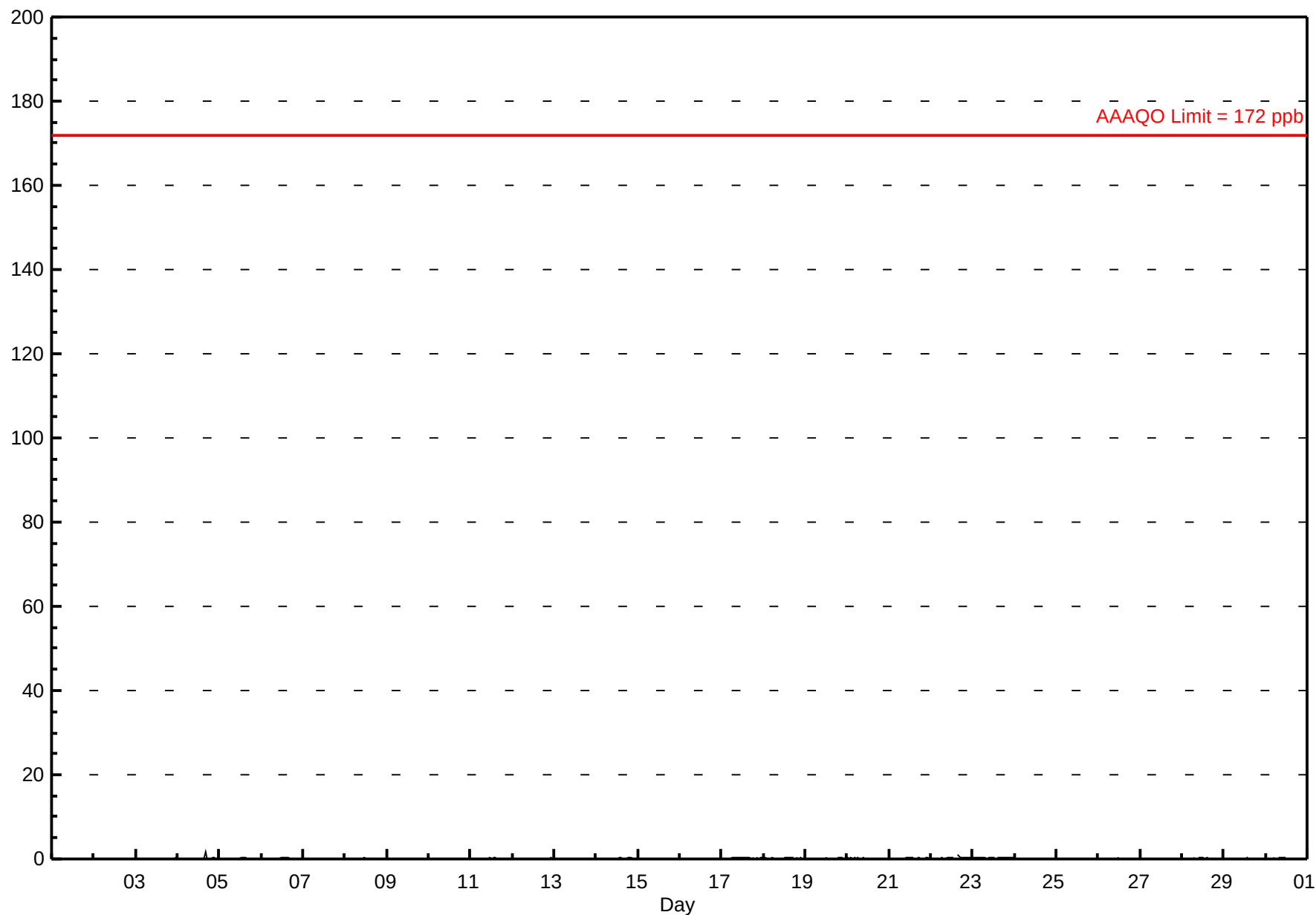
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb 30-day 11 ppb

C - Calibration N - Not Valid 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

Falher - November 2013



Hourly Maximums

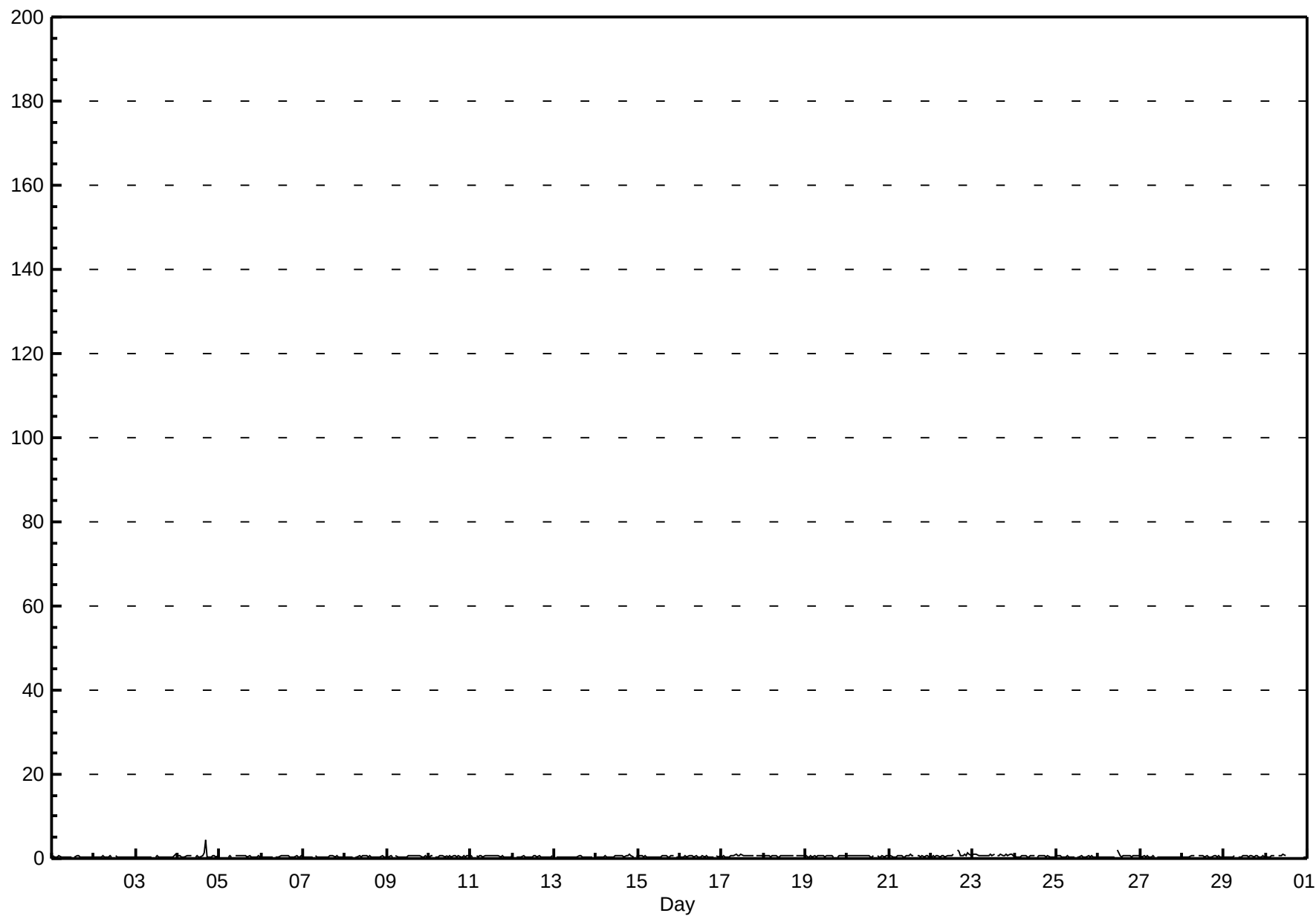
Sulphur Dioxide (SO₂) - ppb

Falher - November 2013

Maximum Value: 4.5 ppb on Nov 4 17:00																			Maximum Daily Average: 0.8 ppb on Nov 22						Hours in Service: 720	
Minimum Value: 0 ppb on Nov 30 16:00																			Minimum Daily Average: 0.4 ppb on Nov 1						Hours of Data: 681	
Maximum Diurnal Average: 0.7 ppb at hour 17																			Minimum Diurnal Average: 0.5 ppb at hour 4						Hours of Missing Data: 39	
Monthly Average: 0.53 ppb																			Percentiles: P ₁ = 0.2 P ₁₀ = 0.3 Q ₁ = 0.4 Median = 0.5 Q ₃ = 0.6 P ₉₀ = 0.7 P ₉₉ = 1.1						Hours of Calibration: 34	
																									Percent Operational Time: 99.3	
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-Nov	1	0	0	0	1	0	0	0	0	0	0	0	A	0	1	1	0	0	0	0	0	0	0	0	0.4	0.6
2-Nov	0	0	0	0	0	1	0	0	0	1	0	A	1	0	0	0	0	0	0	0	0	0	0	0	0.4	0.7
3-Nov	0	0	0	0	0	0	0	0	0	0	A	0	1	0	0	0	0	0	0	0	0	0	1	1	0.4	0.9
4-Nov	1	1	0	0	1	1	1	1	1	A	0	1	0	0	1	1	5	0	0	0	1	1	1	1	0.7	4.5
5-Nov	N	N	N	N	N	1	1	0	A	1	1	1	1	1	1	1	0	1	0	1	0	0	1	0	0.6	0.8
6-Nov	0	0	0	0	0	0	0	A	0	0	1	1	1	1	1	1	0	0	0	0	1	0	0	1	0.5	0.8
7-Nov	0	0	0	0	0	0	A	1	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0.5	0.6
8-Nov	0	0	0	0	0	A	0	0	1	0	1	1	1	1	1	0	0	0	0	0	0	1	0	0	0.5	0.8
9-Nov	0	0	1	0	A	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	1	1	0.5	0.7
10-Nov	0	1	1	A	0	0	1	1	1	0	1	0	1	0	1	1	0	1	0	0	1	0	1	1	0.6	0.8
11-Nov	1	0	A	1	0	1	1	0	1	1	1	1	1	1	1	1	1	0	1	1	0	0	0	0	0.5	0.7
12-Nov	1	A	0	0	0	0	1	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	0	1	0.5	0.8
13-Nov	A	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	A	0.4	0.6
14-Nov	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	A	1	0.5	0.9
15-Nov	0	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	1	A	0	0	0.5	0.7
16-Nov	0	0	0	1	0	1	1	1	0	1	0	0	0	1	0	1	0	1	0	0	A	1	0	1	0.5	0.6
17-Nov	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	0.6	1.1
18-Nov	0	1	1	1	0	1	1	1	0	0	1	1	1	1	1	1	1	1	A	1	1	1	1	1	0.6	0.8
19-Nov	1	0	0	1	0	1	0	1	1	1	1	1	1	1	1	1	0	A	1	1	1	1	1	1	0.6	0.7
20-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	A	1	0	0	1	1	1	1	0.6	0.8
21-Nov	1	1	0	0	0	1	1	1	0	0	1	1	1	1	1	A	1	1	0	1	0	1	1	0	0.6	0.9
22-Nov	0	1	0	1	1	0	1	1	1	1	1	1	1	1	A	2	2	1	1	1	1	1	1	1	0.8	1.9
23-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	0.8	1.1
24-Nov	1	0	0	0	1	1	1	0	0	1	1	1	A	1	1	1	1	1	1	1	0	0	0	0	0.5	0.7
25-Nov	1	1	1	0	0	0	1	0	1	0	0	A	0	0	1	0	0	0	1	0	1	0	0	0	0.5	0.6
26-Nov	0	0	0	0	0	0	0	0	0	0	A	2	1	0	1	1	1	1	1	0	1	1	1	1	0.6	2.1
27-Nov	1	0	1	0	1	0	0	1	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.6
28-Nov	0	0	0	0	0	1	1	1	A	1	1	1	1	0	1	0	0	0	1	1	0	1	0	0	0.5	0.8
29-Nov	0	0	0	0	0	0	1	A	0	0	0	1	1	1	0	1	1	0	1	1	0	0	1	0	0.5	0.7
30-Nov	1	0	0	1	1	1	A	1	1	1	1	1	C	C	C	0	0	0	0	0	0	0	0	0	0.4	1.0
																								Diurnal Average		
																								Diurnal Maximum		
C - Calibration				N - Not Valid				A - Automated Daily Zero Span																		

Hourly Maximums

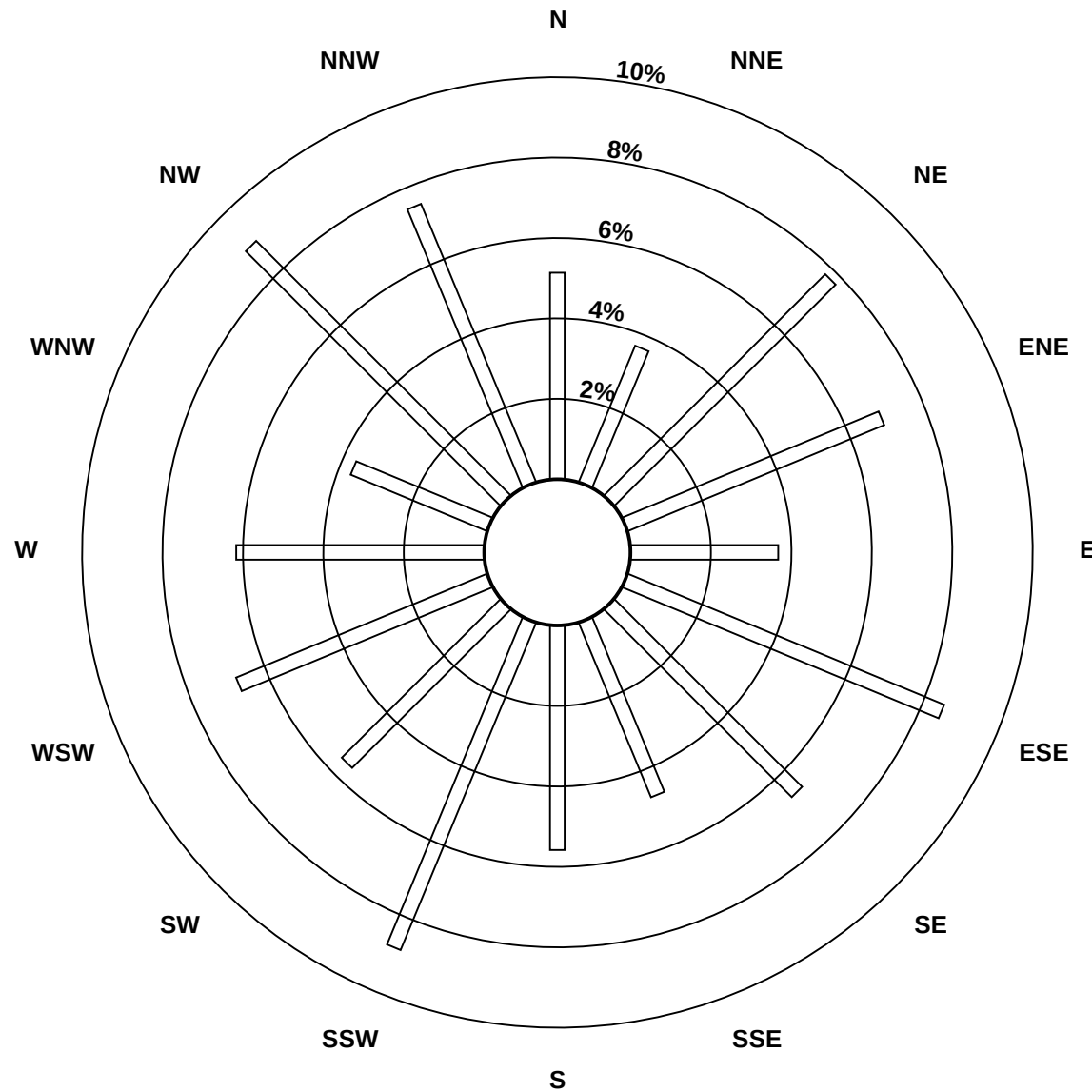
Sulphur Dioxide (SO₂) - ppb
Falher - November 2013



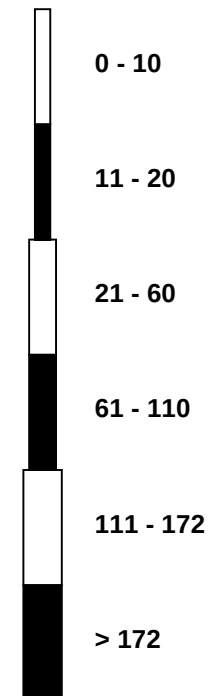
Pollutant Rose

Sulphur Dioxide (SO₂) - ppb

Falher - November 2013

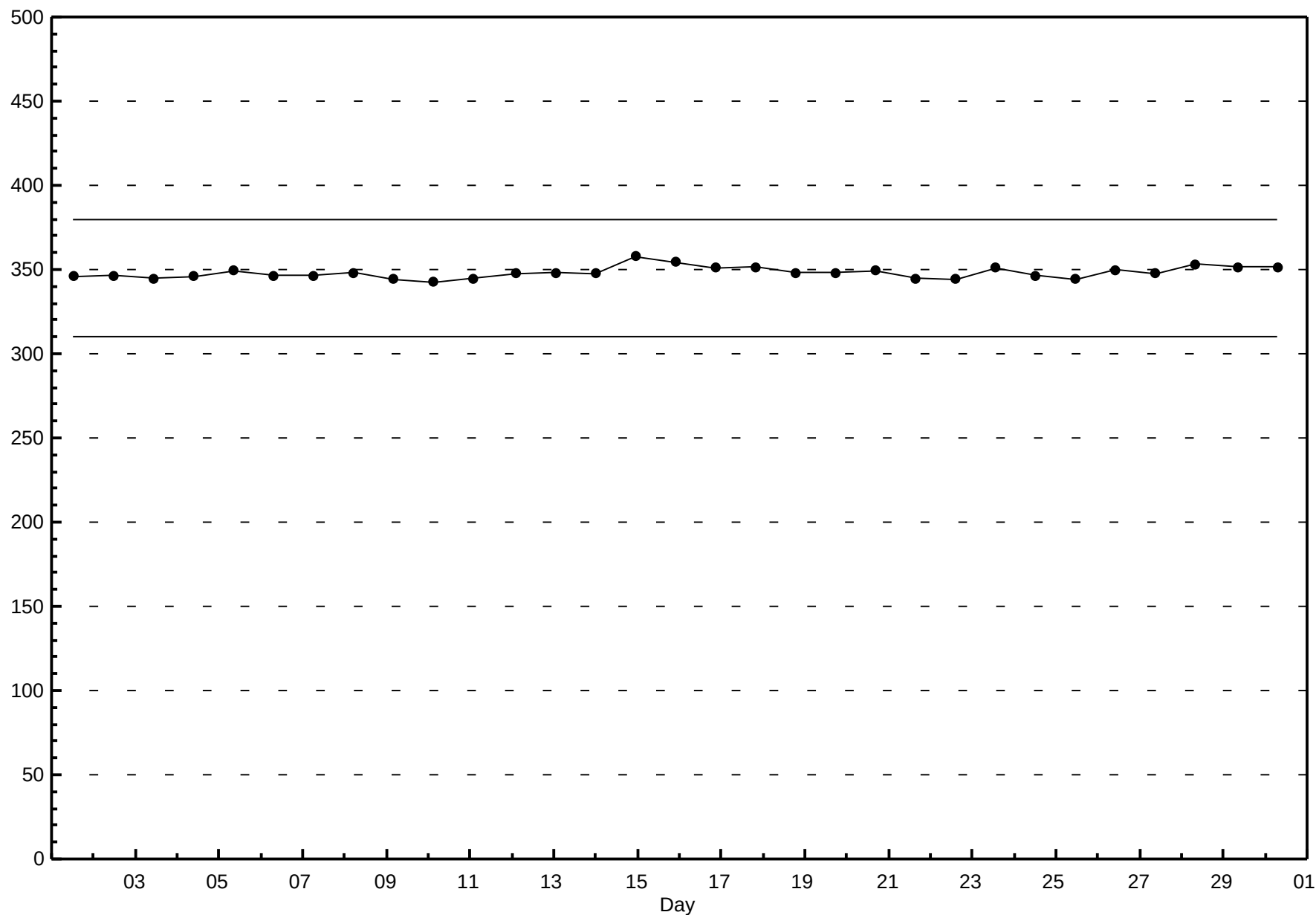


Pollutant Classes (ppb)



Span Responses

Sulphur Dioxide (SO₂)
Falher - November 2013



Hourly Averages

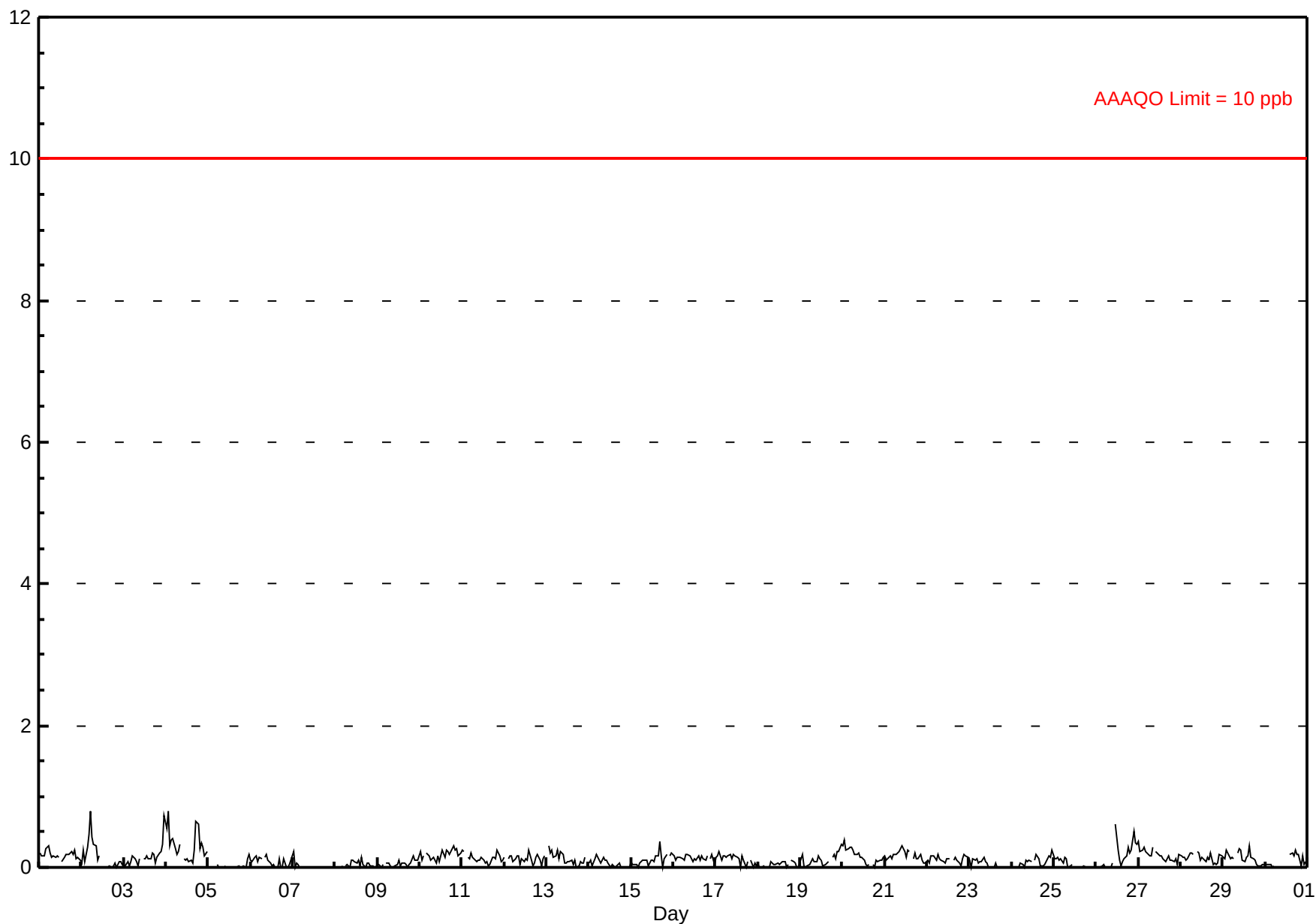
Hydrogen Sulphide (H₂S) - ppb

Falher - November 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0																			Hours in Service: 720									
Maximum Value: 0.8 ppb on Nov 4 02:00																			Maximum Daily Average: 0.3 ppb on Nov 4					Hours of Data: 680				
Minimum Value: 0 ppb on Nov 2 14:00																			Minimum Daily Average: 0.0 ppb on Nov 7					Hours of Missing Data: 40				
Maximum Diurnal Average: 0.1 ppb at hour 6																			Minimum Diurnal Average: 0.1 ppb at hour 15					Hours of Calibration: 35				
Monthly Average: 0.11 ppb																			Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.1 Q ₃ = 0.2 P ₉₀ = 0.2 P ₉₉ = 0.5					Percent Operational Time: 99.3				
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-Nov	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	0.3		
2-Nov	0	0	0	0	0	1	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.8		
3-Nov	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	0.7		
4-Nov	1	1	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0.3	0.8		
5-Nov	N	N	N	N	N	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.2		
6-Nov	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		
7-Nov	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	0.2		
8-Nov	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		
9-Nov	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		
10-Nov	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3		
11-Nov	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2		
12-Nov	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2		
13-Nov	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.1	0.3		
14-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.1	0.2		
15-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.1	0.4		
16-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.1	0.2		
17-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0.1	0.2		
18-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.0	0.1		
19-Nov	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		
20-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.2	0.4		
21-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.2	0.3		
22-Nov	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	0.2		
23-Nov	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	0.1		
24-Nov	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2		
25-Nov	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1		
26-Nov	0	0	0	0	0	0	0	0	0	0	A	1	0	0	0	0	0	0	0	0	0	1	0	0	0.1	0.6		
27-Nov	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4		
28-Nov	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	0.2		
29-Nov	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3		
30-Nov	0	0	0	0	0	0	A	0	0	0	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0.1	0.2		
0.1 0.1																									Diurnal Average			
0.5 0.8 0.3 0.4 0.5 0.8 0.4 0.3 0.3 0.3 0.3 0.6 0.3 0.2 0.2 0.3 0.4 0.7 0.6 0.3 0.3 0.5 0.4 0.7																									Diurnal Maximum			
C - Calibration N - Not Valid 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
Falher - November 2013



Hourly Maximums

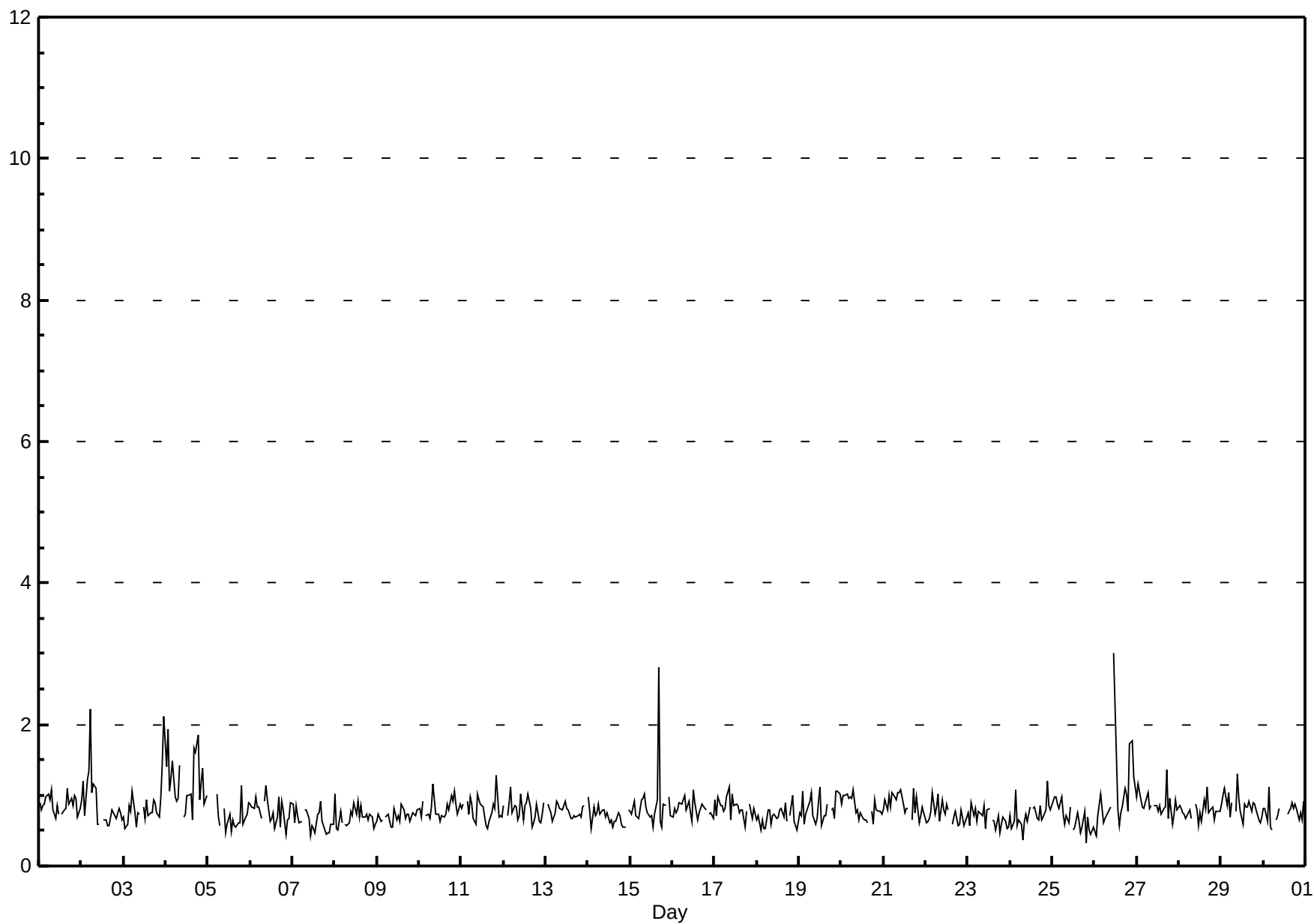
Hydrogen Sulphide (H₂S) - ppb

Falher - November 2013

Maximum Value: 3.0 ppb on Nov 26 12:00																				Maximum Daily Average: 1.2 ppb on Nov 4										Hours in Service: 720	
Minimum Value: 0 ppb on Nov 25 20:00																				Minimum Daily Average: 0.6 ppb on Nov 7										Hours of Data: 680	
Maximum Diurnal Average: 0.9 ppb at hour 4																				Minimum Diurnal Average: 0.7 ppb at hour 16										Hours of Missing Data: 40	
Monthly Average: 0.80 ppb																				Percentiles: P ₁ = 0.5 P ₁₀ = 0.6 Q ₁ = 0.7 Median = 0.8 Q ₃ = 0.9 P ₉₀ = 1.0 P ₉₉ = 1.8										Hours of Calibration: 35	
																				Percent Operational Time: 99.3											
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-Nov	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0.9	1.1					
2-Nov	1	1	1	1	1	2	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0.9	2.2					
3-Nov	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	2	0.9	2.1					
4-Nov	1	2	1	1	1	1	1	1	1	A	1	1	1	1	1	1	2	2	2	1	1	1	1	1	1.2	1.9					
5-Nov	N	N	N	N	N	1	1	1	A	1	0	1	1	0	1	1	1	1	1	1	1	1	1	1	0.7	1.1					
6-Nov	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0.8	1.1					
7-Nov	1	1	1	1	1	1	A	1	1	1	0	1	1	0	1	1	1	1	1	0	0	0	1	1	0.6	0.9					
8-Nov	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.0					
9-Nov	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	0.9					
10-Nov	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.2					
11-Nov	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.3					
12-Nov	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.1					
13-Nov	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	0.8	0.9					
14-Nov	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					
15-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1	1	1	1	A	1	1	0.9	2.8					
16-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	0.8	1.1					
17-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	0.8	1.1					
18-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	0.7	1.0					
19-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	0.8	1.1					
20-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	0.8	1.1					
21-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	0.9	1.1					
22-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	0.7	1.0					
23-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	0	1	1	1	1	1	0.7	0.9					
24-Nov	1	1	1	1	1	1	1	0	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0.7	1.2					
25-Nov	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	0	1	1	0	1	0	0	1	0.7	1.0					
26-Nov	0	0	1	1	1	1	1	1	1	1	A	3	2	1	1	1	1	1	1	1	2	2	1	1	1.0	3.0					
27-Nov	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.4					
28-Nov	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.1					
29-Nov	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.3					
30-Nov	1	1	1	1	1	1	A	1	1	1	C	C	C	C	1	1	1	1	1	1	1	1	1	1	0.8	1.1					
0.8		0.8	0.8	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.8	Diurnal Average						
1.4		1.9	1.1	1.2	1.5	2.2	1.0	1.2	1.4	1.3	1.1	3.0	1.5	1.0	1.0	0.9	2.8	1.6	1.9	1.1	1.7	1.8	1.5	2.1	Diurnal Maximum						
C - Calibration				N - Not Valid				A - Automated Daily Zero Span																							

Hourly Maximums

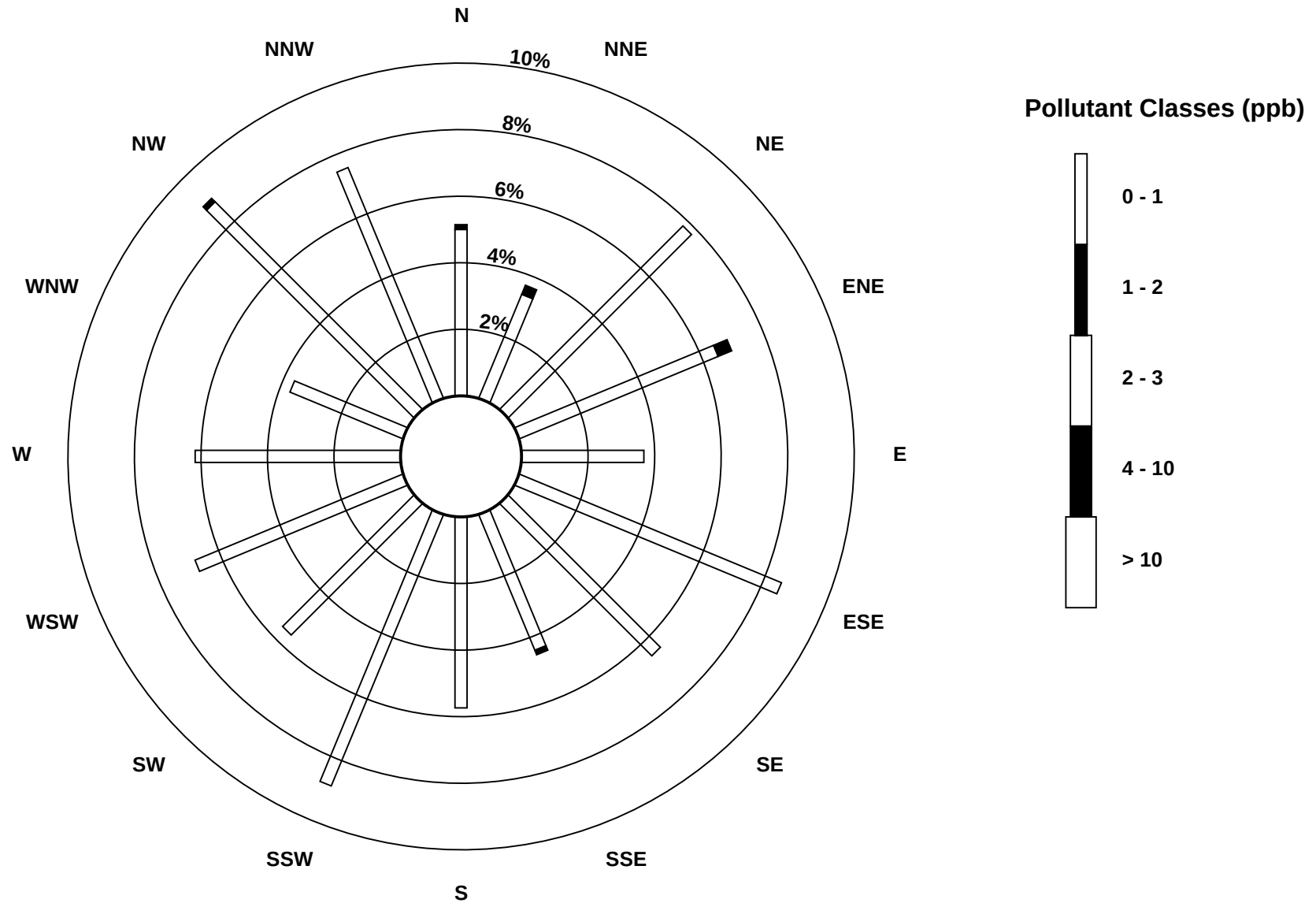
Hydrogen Sulphide (H₂S) - ppb
Falher - November 2013



Pollutant Rose

Hydrogen Sulphide (H₂S) - ppb

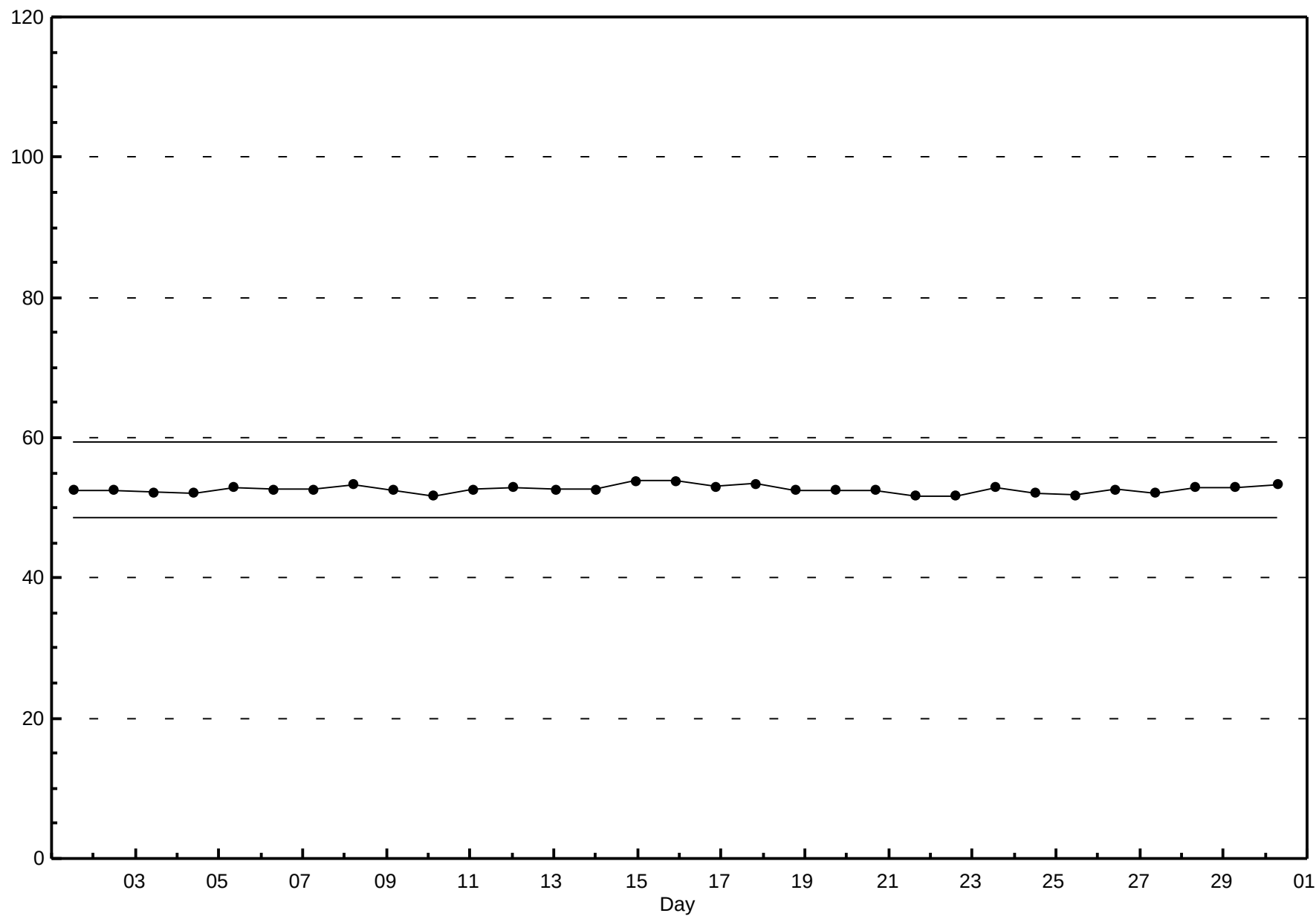
Falher - November 2013



Span Responses

Hydrogen Sulphide (H_2S)

Falher - November 2013

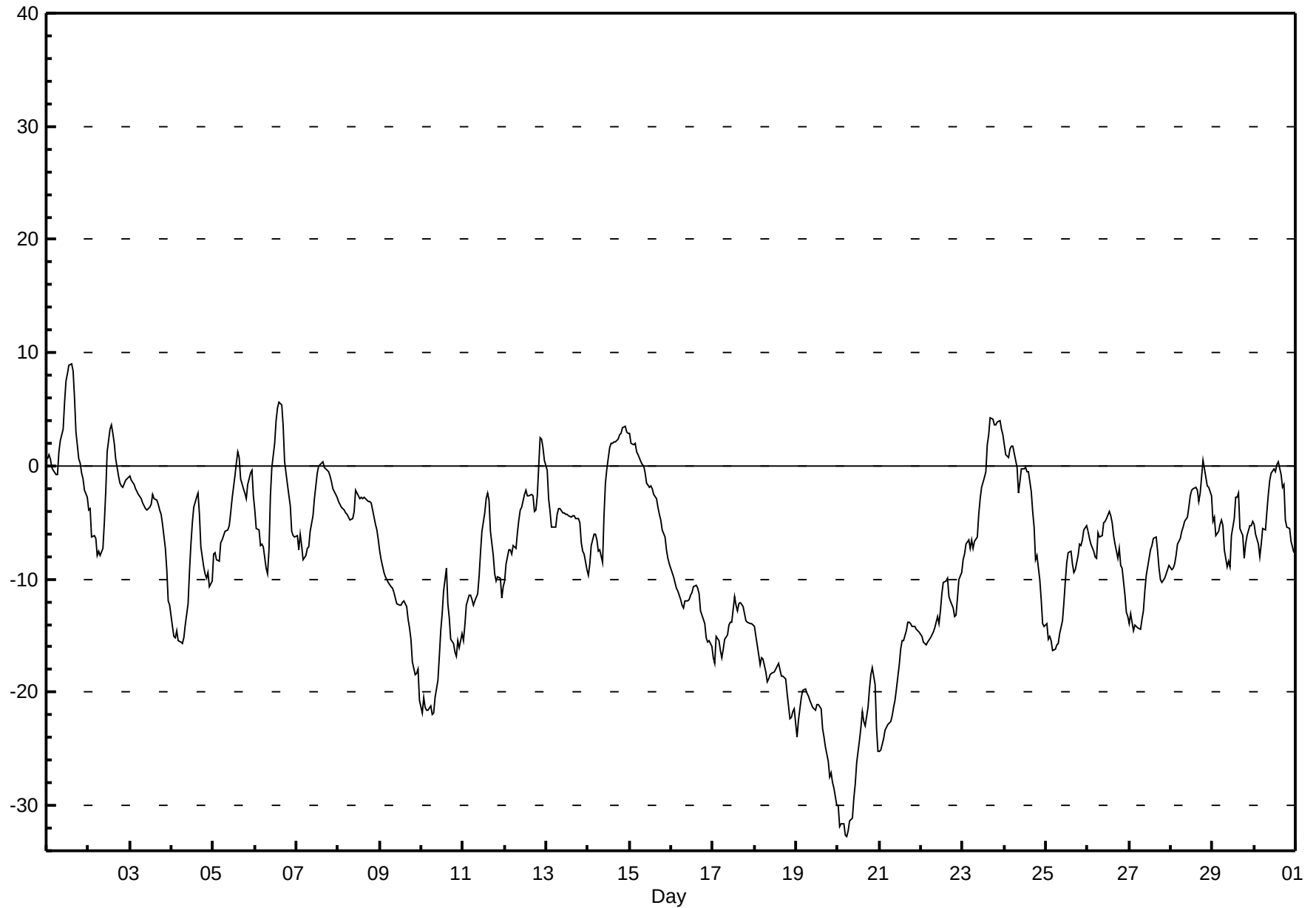


Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 9.0 °C on Nov 1 15:00 Maximum Daily Average: 2.4 °C on Nov 1																						Hours in Service: 720 Hours of Data: 720 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0				
Minimum Value: -33 °C on Nov 20 06:00 Maximum Diurnal Average: -5.1 °C at hour 15 Monthly Average: -8.44 °C											Minimum Daily Average: -26.2 °C on Nov 20 Minimum Diurnal Average: -10.5 °C at hour 7 Percentiles: P ₁ = -31.5 P ₁₀ = -19.2 Q ₁ = -13.8 Median = -7.2 Q ₃ = -2.8 P ₉₀ = 0.3 P ₉₉ = 5.5															
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-Nov	1	1	1	0	0	-1	-1	1	2	3	6	7	8	9	9	8	6	3	1	0	-1	-1	-2	-3	2.4	9.0
2-Nov	-4	-4	-6	-6	-6	-8	-7	-8	-7	-5	-2	1	3	4	3	2	1	-1	-2	-2	-2	-1	-1	-1	-2.5	3.6
3-Nov	-1	-1	-2	-2	-2	-3	-3	-3	-4	-4	-4	-4	-3	-3	-3	-3	-3	-4	-4	-5	-7	-9	-12	-12	-4.2	-0.9
4-Nov	-14	-15	-15	-15	-15	-16	-16	-15	-14	-12	-9	-7	-5	-4	-3	-2	-4	-7	-9	-10	-10	-9	-11	-10	-10.3	-2.4
5-Nov	-8	-8	-8	-8	-7	-7	-6	-6	-6	-5	-4	-3	-1	0	1	1	-1	-2	-2	-3	-2	-1	0	-3	-3.7	1.2
6-Nov	-4	-6	-6	-7	-7	-7	-9	-10	-7	-3	0	2	4	5	6	5	3	0	-1	-2	-4	-6	-6	-6	-2.6	5.7
7-Nov	-6	-7	-6	-7	-8	-8	-7	-7	-6	-4	-3	-2	-1	0	0	0	0	0	0	-1	-1	-2	-2	-3	-3.4	0.3
8-Nov	-3	-3	-4	-4	-4	-4	-5	-5	-5	-4	-2	-2	-3	-3	-3	-3	-3	-3	-3	-3	-4	-5	-6	-6	-3.7	-2.1
9-Nov	-8	-8	-9	-10	-10	-10	-11	-11	-11	-12	-12	-12	-12	-12	-12	-12	-14	-14	-15	-17	-18	-18	-18	-21	-12.9	-7.6
10-Nov	-22	-20	-21	-22	-22	-21	-22	-22	-20	-19	-17	-15	-13	-11	-9	-12	-13	-15	-16	-16	-17	-15	-16	-15	-17.1	-9.0
11-Nov	-15	-14	-12	-11	-11	-12	-12	-12	-11	-10	-8	-6	-4	-3	-2	-3	-6	-8	-9	-10	-10	-10	-12	-11	-9.3	-2.3
12-Nov	-10	-9	-7	-7	-8	-7	-7	-6	-5	-4	-4	-2	-2	-3	-3	-3	-3	-4	-4	-3	2	2	2	1	-3.9	2.4
13-Nov	0	-3	-4	-5	-5	-5	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-5	-5	-5	-7	-7	-8	-9	-4.8	-0.4
14-Nov	-10	-9	-7	-6	-6	-7	-8	-7	-9	-4	-2	0	2	2	2	2	2	2	3	3	3	3	3	3	-1.8	3.5
15-Nov	3	2	2	2	1	1	0	0	0	-1	-2	-2	-2	-2	-2	-3	-4	-4	-5	-6	-6	-7	-8	-9	-2.1	2.9
16-Nov	-9	-10	-10	-11	-11	-12	-12	-12	-12	-12	-12	-11	-11	-11	-11	-11	-11	-13	-14	-14	-15	-16	-15	-16	-12.2	-9.4
17-Nov	-17	-17	-15	-15	-16	-17	-16	-15	-15	-14	-14	-14	-12	-12	-13	-12	-12	-12	-13	-14	-14	-14	-14	-14	-14.3	-11.6
18-Nov	-14	-15	-17	-18	-17	-17	-18	-19	-19	-18	-18	-18	-18	-18	-17	-19	-19	-19	-19	-20	-22	-22	-22	-21	-18.5	-14.2
19-Nov	-24	-22	-21	-21	-20	-20	-20	-20	-21	-21	-21	-22	-21	-21	-21	-23	-24	-25	-26	-27	-27	-28	-29	-30	-23.2	-19.7
20-Nov	-30	-32	-32	-32	-33	-33	-32	-31	-31	-29	-28	-26	-24	-23	-22	-23	-23	-21	-20	-18	-18	-19	-23	-25	-26.2	-17.9
21-Nov	-25	-25	-24	-23	-23	-23	-23	-22	-21	-21	-20	-18	-16	-15	-15	-15	-14	-14	-14	-14	-14	-14	-15	-15	-18.5	-13.8
22-Nov	-15	-16	-16	-16	-16	-15	-15	-15	-14	-13	-14	-13	-11	-10	-10	-10	-12	-12	-13	-13	-13	-12	-10	-9	-13.0	-9.4
23-Nov	-8	-8	-7	-7	-7	-6	-7	-7	-6	-4	-3	-2	-1	-1	2	3	4	4	4	4	4	4	3	3	-1.7	4.3
24-Nov	2	1	1	1	2	2	0	0	-2	-1	0	0	0	0	0	-2	-4	-5	-8	-8	-10	-12	-14	-14	-3.1	1.9
25-Nov	-14	-15	-15	-15	-16	-16	-16	-16	-15	-14	-12	-10	-9	-8	-8	-9	-9	-9	-8	-7	-7	-7	-6	-5	-11.0	-5.2
26-Nov	-6	-6	-7	-8	-8	-8	-6	-6	-6	-5	-5	-5	-4	-4	-5	-6	-7	-8	-7	-9	-9	-11	-13	-13	-7.2	-4.0
27-Nov	-14	-13	-15	-14	-14	-14	-13	-13	-11	-10	-8	-7	-7	-6	-6	-6	-8	-9	-10	-10	-10	-10	-9	-9	-10.6	-6.2
28-Nov	-9	-9	-9	-8	-7	-6	-6	-5	-5	-4	-3	-2	-2	-2	-2	-2	-3	-2	1	0	-1	-2	-2	-3	-4.0	0.5
29-Nov	-5	-5	-6	-6	-5	-5	-5	-7	-9	-8	-9	-6	-5	-3	-3	-2	-5	-6	-8	-7	-6	-5	-5	-5	-5.7	-2.4
30-Nov	-5	-6	-7	-8	-7	-6	-6	-4	-3	-1	-1	0	0	0	0	-1	-2	-2	-5	-5	-6	-7	-7	-8	-3.9	0.4
																									Diurnal Average	
																									Diurnal Maximum	

Hourly Averages

External Temperature (ET) - °C

Falher - November 2013



Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Falher - November 2013

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	14	16	15	12	8	10	11	17	20	19	18	23	28	26	24	14	11	7	11	14	16	12	14	11	13.8	28.0
Dir	201	199	194	192	197	196	189	202	208	217	233	248	250	257	269	258	230	231	202	205	195	193	203	212	221	250
2 Spd	10	6	4	3	5	4	5	4	5	1	3	8	10	13	14	15	15	15	14	17	14	13	10	7	6.2	16.5
Dir	219	217	160	126	76	78	24	47	110	229	330	347	340	338	330	331	320	323	322	319	322	325	323	327	329	319
3 Spd	13	16	15	14	14	13	14	14	13	14	16	13	13	11	11	10	8	9	8	8	2	5	1	3	10.4	16.0
Dir	313	321	323	311	315	311	313	321	321	312	315	320	318	314	325	323	317	319	333	323	269	212	254	323	316	321
4 Spd	2	3	3	2	1	3	5	2	2	1	7	9	12	13	13	12	13	15	15	17	16	13	15	17	7.7	17.2
Dir	8	18	15	8	44	27	16	20	36	87	122	107	107	113	120	107	90	73	74	72	74	79	64	60	80	60
5 Spd	19	18	16	15	17	17	16	16	16	16	17	18	17	16	16	14	13	14	17	12	5	11	14	15	12.7	19.1
Dir	79	81	84	78	107	105	104	110	104	108	126	135	138	134	142	135	127	136	152	158	184	204	190	182	124	79
6 Spd	13	7	11	10	7	8	7	5	3	3	6	13	14	17	16	14	5	6	5	11	13	6	3	6	6.2	17.1
Dir	181	179	178	175	160	165	149	124	138	189	218	231	243	249	250	256	228	195	164	170	154	144	100	28	197	249
7 Spd	11	11	5	5	7	10	12	10	13	12	16	16	18	19	21	22	24	19	22	21	22	22	21	21	14.9	23.7
Dir	106	113	72	46	47	34	57	35	53	50	55	63	57	52	51	46	44	50	44	48	43	32	24	10	48	44
8 Spd	18	15	12	10	11	9	8	8	8	7	5	2	5	7	7	6	4	1	5	14	15	17	14	15	6.2	18.3
Dir	4	345	326	308	285	273	273	265	260	262	278	211	200	197	182	165	112	162	224	242	257	290	285	281	278	4
9 Spd	18	17	16	12	11	15	14	12	14	17	21	19	14	11	12	9	9	6	5	7	8	8	8	5	11.4	20.6
Dir	263	261	265	250	243	264	272	263	253	266	273	271	260	250	237	234	241	226	253	279	294	303	303	331	263	273
10 Spd	7	8	5	5	5	4	11	10	10	11	9	11	3	2	4	9	9	2	5	8	12	8	4	3	4.8	12.4
Dir	355	1	336	329	342	348	355	348	350	13	27	43	128	175	120	98	96	103	28	40	56	83	104	127	31	56
11 Spd	2	8	12	15	14	12	15	14	15	15	10	11	11	12	12	15	13	13	11	12	8	14	9	10	11.0	15.4
Dir	81	87	96	103	100	105	103	106	109	120	114	111	119	127	142	126	104	90	88	88	99	63	49	46	101	120
12 Spd	8	11	12	11	7	12	13	12	12	5	5	2	3	8	7	9	12	10	9	5	19	16	5	2	4.4	19.2
Dir	39	46	47	57	58	54	56	59	55	43	358	83	160	168	147	112	120	104	141	201	204	198	201	328	94	204
13 Spd	4	4	7	11	4	8	9	10	13	13	10	8	6	9	12	6	4	5	4	4	4	3	3	3	5.3	12.8
Dir	340	5	325	327	303	298	307	321	333	343	356	343	331	313	307	327	269	264	256	195	203	233	221	173	316	333
14 Spd	4	2	3	6	8	9	11	10	5	5	8	12	21	21	19	21	21	25	25	24	25	29	29	27	13.1	29.2
Dir	163	149	135	126	126	105	121	151	159	208	225	217	213	209	206	204	197	200	209	208	213	223	234	248	205	234
15 Spd	27	21	31	18	12	12	6	9	8	15	18	15	12	17	18	19	24	26	30	31	28	28	28	27	15.0	31.4
Dir	256	253	237	232	212	219	245	239	239	334	339	346	347	340	339	342	336	334	328	325	316	306	302	301	303	325
16 Spd	24	21	19	18	18	13	18	16	18	20	16	17	16	13	16	11	7	11	14	12	12	12	13	11	13.4	24.2
Dir	296	290	279	276	281	284	270	276	312	316	318	336	353	356	355	348	309	278	281	274	269	269	272	285	298	296
17 Spd	10	5	11	13	14	10	14	12	12	16	12	7	3	7	10	9	12	16	19	14	16	17	13	10	10.3	18.8
Dir	280	252	325	324	316	327	339	353	355	7	15	76	43	330	346	332	338	334	320	305	306	311	306	296	329	320
18 Spd	11	12	11	10	12	15	15	11	9	12	12	13	13	13	8	12	13	11	11	10	10	11	8	8	9.9	15.0
Dir	279	266	250	240	242	246	258	260	248	245	244	250	253	260	221	189	194	196	195	194	182	183	229	234	233	246
19 Spd	6	1	6	7	9	8	10	10	12	14	11	11	11	15	12	9	6	6	9	8	4	4	2	2	6.1	14.7
Dir	348	135	236	238	247	238	231	232	232	229	223	226	201	193	204	189	168	151	138	144	156	128	127	26	208	193
20 Spd	4	5	7	7	9	7	9	9	8	10	12	10	8	8	9	10	14	16	15	11	3	5	7	6	6.9	16.2
Dir	33	58	5	353	359	333	334	332	328	337	346	0	357	9	15	3	349	350	353	5	354	186	170	166	354	350
21 Spd	7	6	7	3	1	3	4	3	1	9	15	9	7	8	10	12	16	14	16	16	17	14	11	12	6.6	16.8
Dir	175	147	124	151	19	355	20	59	84	282	287	314	347	322	308	323	354	345	332	331	319	316	313	310	324	319
22 Spd	14	15	12	8	6	4	10	10	11	10	5	1	11	13	12	14	15	15	16	17	16	17	22	20	8.4	22.0
Dir	311	311	316	303	305	349	8	7	18	58	113	127	75	88	84	79	53	48	41	35	49	67	87	86	45	87

Hourly Averages

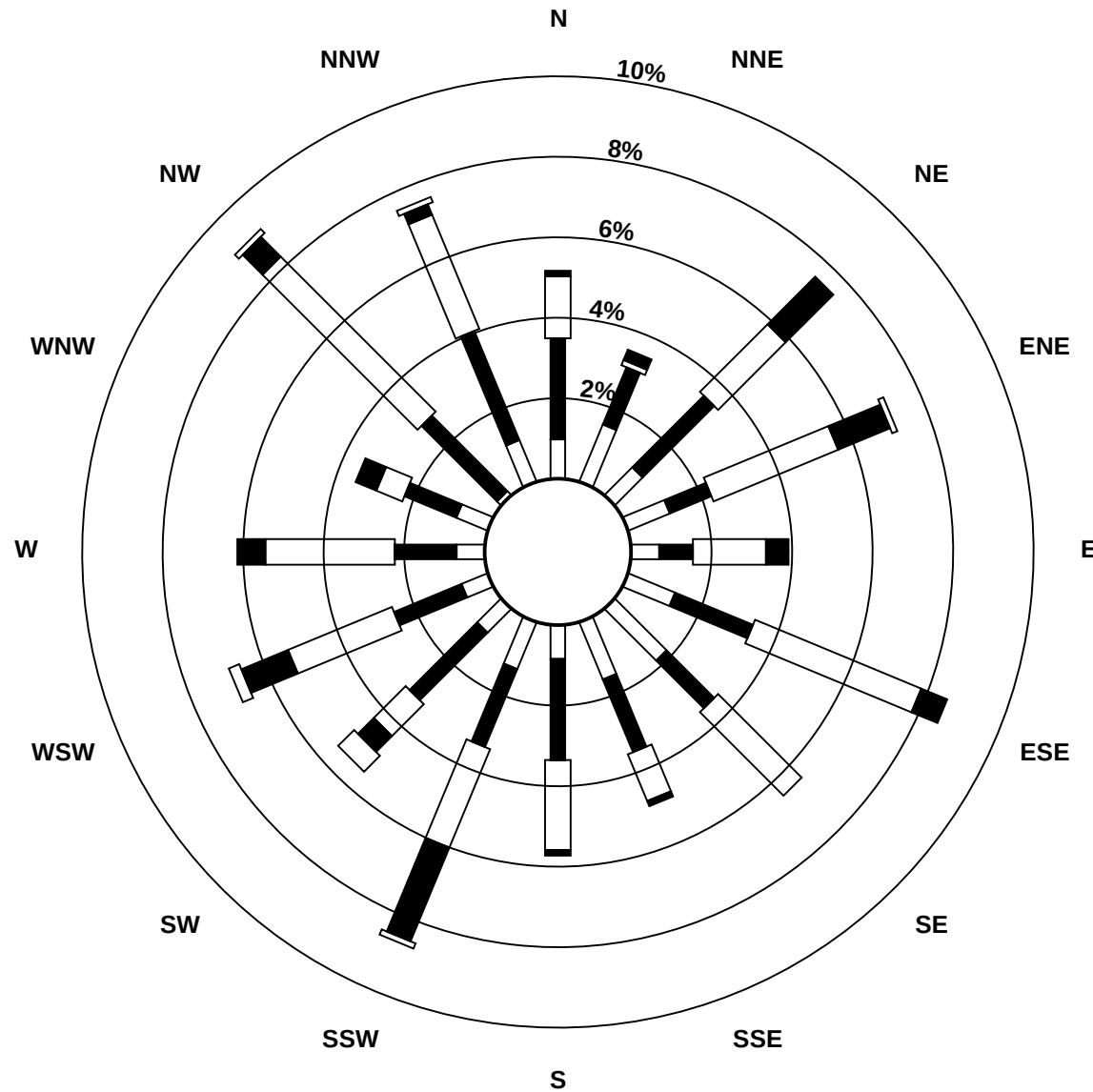
Wind Speed (km/h)
Wind Direction (deg)
Falher - November 2013

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
23 Spd	21	27	24	11	14	14	14	16	14	18	15	19	22	15	20	24	22	24	19	19	24	30	21	25	13.4	30.0
Dir	96	108	115	105	104	104	110	121	110	130	149	151	159	176	205	204	220	212	191	194	217	227	227	212	168	227
24 Spd	29	24	21	26	30	30	26	23	17	21	15	21	23	22	13	11	17	10	7	8	8	3	4	5	15.2	30.3
Dir	206	201	198	229	231	242	267	259	253	249	247	248	257	260	241	279	263	229	205	190	200	230	117	72	237	242
25 Spd	6	3	7	7	7	8	7	7	7	8	10	8	8	9	8	8	7	6	11	18	18	20	22	22	9.3	22.3
Dir	106	37	35	34	20	12	26	4	354	12	38	31	32	58	54	38	66	68	51	58	63	68	66	72	49	72
26 Spd	22	24	22	15	16	10	11	4	5	7	9	9	6	9	10	10	5	5	5	5	0	2	3	2	6.2	24.2
Dir	69	65	64	60	76	116	138	195	175	230	194	164	132	117	136	146	134	127	114	153	101	17	58	148	104	65
27 Spd	7	5	4	5	4	4	5	8	5	6	2	2	9	13	15	16	14	10	13	7	12	19	21	26	6.5	26.0
Dir	202	241	274	287	296	294	285	297	299	4	108	66	48	57	65	57	57	41	48	52	36	49	49	46	39	46
28 Spd	23	22	23	24	26	22	20	23	29	26	17	27	21	20	19	13	17	17	24	21	20	18	20	17	12.0	29.0
Dir	50	49	47	54	63	69	70	72	74	80	106	109	113	120	121	138	174	213	206	197	198	189	186	189	109	74
29 Spd	11	12	17	18	16	16	14	2	4	5	8	13	12	11	12	11	7	14	15	17	18	18	16	19	11.4	19.0
Dir	171	178	169	174	189	188	196	217	86	131	139	168	152	175	181	182	138	122	126	127	134	137	125	127	155	127
30 Spd	17	17	16	15	17	18	17	19	17	12	13	15	12	11	12	9	8	10	15	20	20	19	19	19	4.7	20.0
Dir	109	101	105	73	100	115	110	123	142	122	135	150	148	160	175	174	169	180	321	311	313	306	301	307	125	311
Spd	0.4	0.6	0.4	0.5	0.4	0.7	0.8	0.7	0.9	1.4	1.1	1.0	1.5	1.7	1.6	1.0	0.4	0.2	0.6	0.9	1.7	1.9	1.4	1.4	Diurnal Average	
Dir	250	85	137	294	170	203	352	331	19	329	287	201	192	207	203	154	102	195	322	263	246	256	275	312	Diurnal Maximum	
Spd	29.0	26.9	31.0	26.2	30.2	30.3	25.6	22.9	29.0	25.6	20.6	26.9	28.0	25.7	24.2	24.1	24.0	26.0	29.9	31.4	27.7	30.0	29.2	26.9	Diurnal Maximum	
Dir	206	108	237	229	231	242	267	259	74	80	273	109	250	257	269	204	336	334	328	325	316	227	234	248		
Maximum Speed Value: 31 km/h on Nov 15 20:00																								Hours in Service: 720		
Maximum Daily Speed Average: 15.2 km/h on Nov 28																								Hours of Data: 720		
Maximum Diurnal Speed Average: 1.9 km/h at hour 22																								Hours of Missing Data: 0		
Minimum Speed Value: 0 km/h on Nov 26 21:00																								Percent Operational Time: 100.0		
Minimum Daily Speed Average: 4.4 km/h on Nov 13																										
Minimum Diurnal Speed Average: 0.2 km/h at hour 18																										
Monthly Average Velocity: 0.46 km/h 250.2 deg																										
Speed Percentiles: P ₁ = 1.4 P ₁₀ = 4.2 Q ₁ = 7.5 Median = 11.8 Q ₃ = 16.1 P ₉₀ = 21.2 P ₉₉ = 28.7																										
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	16		30		27		2		0		0		75													
NorthEast	13		30		32		20		0		0		95													
East	13		19		43		13		1		0		89													
SouthEast	18		29		36		5		0		0		88													
South	15		33		37		8		0		0		93													
SouthWest	8		31		25		18		7		0		89													
West	8		16		40		17		0		0		81													
NorthWest	7		39		49		13		2		0		110													
Total	98		227		289		96		10		0		720													

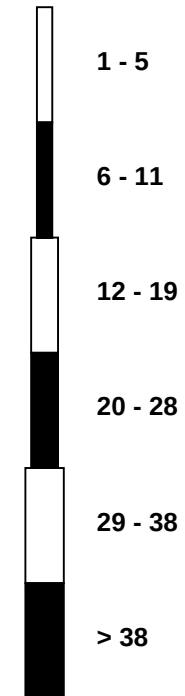
Wind Rose

Wind Speed (WS) (km/h)

Falher - November 2013



Wind Speed Classes (km/h)



Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Falher - November 2013

Maximum Speed: 31 km/h on Nov 15 20:00																				Maximum Daily Speed Average: 21.3 km/h on Nov 28										Hours in Service: 720	
Minimum Speed: 1 km/h on Nov 2 10:00																				Minimum Daily Speed Average: 7.1 km/h on Nov 10										Hours of Data: 720	
Maximum Diurnal Speed Average: 14.0 km/h at hour 22																				Minimum Diurnal Speed Average: 11.0 km/h at hour 8										Hours of Missing Data: 0	
Monthly Average Speed: 12.41 km/h																				Percentiles: P ₁ = 1.7 P ₁₀ = 4.7 Q ₁ = 7.8 Median = 11.9 Q ₃ = 16.2 P ₉₀ = 21.3 P ₉₉ = 28.8										Percent Operational Time: 100.0	
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24							
1-Nov	14	16	15	12	8	10	11	17	20	19	18	23	28	26	24	15	11	7	11	14	16	12	14	12	15.5	28.1					
2-Nov	10	7	4	5	5	6	5	6	7	1	3	8	10	13	14	15	15	15	14	17	14	13	10	7	9.4	16.6					
3-Nov	13	16	15	14	14	13	14	14	13	14	16	14	13	12	11	10	8	9	8	8	3	5	2	3	10.9	16.0					
4-Nov	2	3	3	2	1	3	5	2	2	1	7	9	13	13	13	12	13	15	16	17	17	13	15	17	8.8	17.3					
5-Nov	19	18	16	15	17	17	16	16	16	16	17	18	17	16	16	14	13	14	17	12	5	11	14	15	15.1	19.1					
6-Nov	13	7	11	11	7	8	7	5	3	3	6	13	14	17	16	14	7	6	5	11	14	6	6	7	9.1	17.2					
7-Nov	11	11	6	5	7	10	12	10	13	12	16	16	18	19	21	22	24	19	22	21	22	22	21	21	15.9	23.8					
8-Nov	18	15	12	10	11	9	8	8	8	7	6	2	5	7	7	6	4	2	5	14	16	17	14	15	9.5	18.4					
9-Nov	18	17	16	12	11	15	14	12	14	17	21	19	14	11	12	9	9	6	5	7	8	8	8	6	12.1	20.7					
10-Nov	7	8	5	5	5	4	11	10	10	11	9	11	5	3	4	9	9	3	6	9	12	8	4	3	7.1	12.4					
11-Nov	2	8	13	15	14	12	15	14	15	15	10	11	11	12	12	15	14	13	11	12	9	14	9	10	11.9	15.4					
12-Nov	8	11	12	11	7	12	13	12	12	6	5	4	4	8	8	9	12	10	9	6	19	16	8	5	9.6	19.3					
13-Nov	6	5	7	11	6	8	9	10	13	13	10	9	7	9	12	6	4	5	4	4	4	4	3	3	7.1	12.8					
14-Nov	4	3	3	6	8	9	11	10	5	5	8	12	21	21	19	21	21	25	25	24	25	29	29	27	15.5	29.3					
15-Nov	27	21	31	18	13	13	7	10	9	15	18	16	12	17	18	19	24	26	30	31	28	28	28	27	20.2	31.4					
16-Nov	24	21	19	18	18	14	18	16	18	20	16	17	16	13	16	11	8	11	14	12	12	12	13	12	15.4	24.3					
17-Nov	10	5	11	14	14	10	14	12	12	16	13	8	4	7	10	9	12	17	19	14	16	17	13	10	11.9	18.9					
18-Nov	11	12	11	10	13	15	15	11	9	12	12	13	13	13	10	12	13	11	11	10	11	11	8	8	11.5	15.0					
19-Nov	6	3	6	7	9	8	10	10	12	14	11	11	11	15	13	9	6	6	9	8	4	5	2	2	8.2	14.8					
20-Nov	4	5	7	7	9	7	9	9	8	10	12	11	9	8	9	10	14	16	15	11	3	5	7	7	8.8	16.2					
21-Nov	7	6	7	3	1	3	4	4	3	9	15	9	8	8	10	13	17	14	16	16	17	15	11	12	9.5	16.8					
22-Nov	14	15	12	8	6	5	10	10	11	12	5	1	11	13	12	14	15	15	16	17	16	17	22	20	12.5	22.1					
23-Nov	22	27	24	11	14	14	14	16	14	19	16	19	22	15	20	24	22	24	19	19	24	30	21	25	19.9	30.0					
24-Nov	29	25	22	26	30	30	26	23	17	21	15	22	23	22	13	11	17	11	8	8	8	6	4	5	17.6	30.4					
25-Nov	6	4	7	7	7	8	7	8	7	8	10	8	8	9	9	8	7	7	11	18	18	20	22	22	10.3	22.4					
26-Nov	22	24	22	16	16	11	11	5	5	8	9	9	6	9	10	10	5	5	6	6	3	3	3	2	9.4	24.2					
27-Nov	8	5	5	5	5	4	6	8	6	6	3	2	9	13	15	16	14	10	13	7	12	19	21	26	10.0	26.0					
28-Nov	23	22	23	24	26	22	20	23	29	26	18	27	21	20	19	13	17	17	24	22	20	19	20	17	21.3	29.1					
29-Nov	11	12	17	18	16	17	14	2	4	5	8	13	12	11	13	11	8	14	15	18	18	18	16	19	12.9	19.1					
30-Nov	17	17	16	15	17	19	17	19	17	12	13	15	12	11	12	9	8	10	15	20	20	20	19	20	15.4	20.1					
12.9 12.3 12.6 11.4 11.2 11.2 11.7 11.0 11.0 11.8 11.5 12.3 12.6 13.0 13.3 12.6 12.4 12.2 13.3 13.8 13.7 14.0 13.0 12.9																								Diurnal Average							
29.1 26.9 31.1 26.3 30.3 30.4 25.7 22.9 29.1 25.7 20.7 27.0 28.1 25.9 24.3 24.1 24.0 26.0 29.9 31.4 27.9 30.0 29.3 27.0																								Diurnal Maximum							
All monthly, daily, and diurnal averages have been calculated using scalar methods																															

Hourly Standard Deviations

Wind Direction (WD) - deg

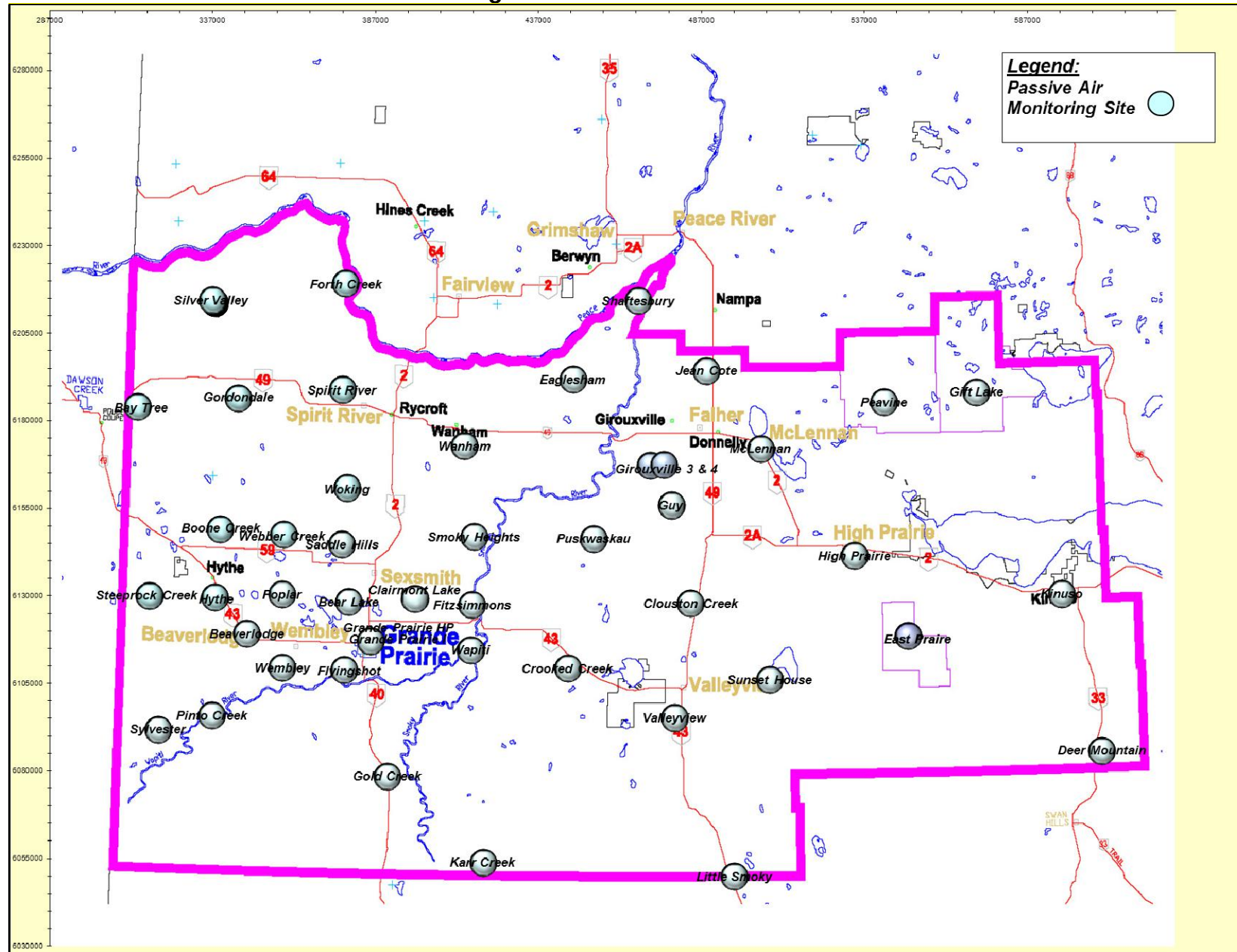
Falher - November 2013

Maximum Value: 87.6 deg on Nov 26 21:00																			Hours in Service: 720						
Minimum Value: 1.5 deg on Nov 28 23:00																			Hours of Data: 720						
																			Hours of Missing Data: 0						
Percentiles: P ₁ = 1.8 P ₁₀ = 3.0 Q ₁ = 4.1 Median = 6.6 Q ₃ = 11.4 P ₉₀ = 24.2 P ₉₉ = 68.4																			Hours of Calibration: 0						
																			Percent Operational Time: 100.0						
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Nov	7	4	4	7	5	5	8	2	3	5	5	7	6	7	5	18	5	21	11	10	5	10	8	8	21.4
2-Nov	13	44	20	49	14	42	23	48	61	55	16	15	15	10	9	5	3	3	3	2	4	4	5	7	60.9
3-Nov	5	4	5	4	4	3	5	4	6	3	4	6	8	11	10	8	7	7	4	6	47	7	24	12	47.0
4-Nov	34	10	4	12	39	3	5	11	23	19	7	14	6	6	4	4	8	4	2	3	4	6	4	4	38.7
5-Nov	4	4	4	10	6	4	3	3	3	5	12	5	9	6	8	6	5	4	3	5	27	3	6	2	27.5
6-Nov	2	5	5	7	5	7	9	14	27	11	9	8	6	5	5	3	39	8	13	3	8	13	58	27	57.9
7-Nov	10	8	23	11	10	11	8	5	4	4	2	4	5	3	2	4	3	4	9	4	3	4	4	5	22.6
8-Nov	5	5	6	6	7	5	9	8	6	3	18	59	9	10	7	18	13	43	17	5	22	5	6	8	58.8
9-Nov	4	8	8	4	7	10	5	8	5	5	4	5	5	10	7	5	5	15	9	5	7	8	6	23	22.5
10-Nov	6	6	3	5	10	12	9	5	4	10	9	12	41	29	20	5	8	38	13	10	5	21	11	21	41.4
11-Nov	32	2	6	3	3	5	3	2	5	3	11	4	4	5	2	5	11	7	9	8	20	7	6	8	32.5
12-Nov	8	6	6	8	8	5	5	12	10	32	34	67	42	13	30	12	8	11	40	64	5	4	81	80	80.8
13-Nov	58	34	14	3	67	17	7	7	5	8	8	10	17	5	3	13	24	7	10	18	16	20	25	22	66.9
14-Nov	27	21	46	6	5	7	10	11	15	12	10	8	2	5	4	2	3	3	4	4	4	3	5	4	45.8
15-Nov	3	14	4	11	7	11	24	17	22	8	4	4	3	4	3	3	3	3	3	3	5	3	3	3	24.3
16-Nov	3	3	5	4	11	12	3	9	4	3	4	6	6	6	4	8	19	5	2	8	3	6	2	4	19.0
17-Nov	5	13	14	4	4	6	3	5	7	5	19	27	54	14	10	9	5	7	6	4	3	3	4	11	54.3
18-Nov	8	4	8	5	6	3	6	4	7	7	7	5	4	4	29	6	4	6	7	13	10	10	9	30	30.1
19-Nov	16	75	9	9	5	8	4	5	4	4	5	5	13	3	6	9	15	5	6	8	11	11	32	25	74.7
20-Nov	17	13	9	4	7	6	3	6	5	5	4	7	4	5	7	14	3	4	3	3	43	47	9	18	46.5
21-Nov	8	7	14	27	66	23	14	26	71	7	8	13	8	17	5	18	3	7	3	5	6	3	3	4	70.9
22-Nov	3	4	5	4	6	31	7	4	7	33	6	20	17	9	6	7	4	3	3	3	8	9	3	3	32.9
23-Nov	6	3	5	9	4	3	8	5	7	15	7	4	7	5	11	3	4	5	9	14	4	3	6	3	14.9
24-Nov	5	6	10	3	6	3	6	4	4	5	6	9	2	3	22	16	7	32	21	9	10	79	25	15	79.0
25-Nov	16	43	11	24	15	10	10	13	10	11	6	10	8	3	10	8	20	31	7	6	7	7	4	4	43.1
26-Nov	3	2	4	8	6	21	15	31	10	25	20	11	16	12	7	14	21	30	35	36	88	26	20	31	87.6
27-Nov	25	8	21	6	29	58	9	6	11	15	49	74	17	6	4	4	4	15	9	10	5	3	3	2	74.4
28-Nov	2	2	2	3	4	2	2	2	5	2	16	5	7	5	4	9	17	9	3	4	4	5	1	2	17.4
29-Nov	9	7	2	5	7	4	6	44	42	16	19	3	9	6	9	10	25	8	5	3	7	3	5	6	43.8
30-Nov	3	4	9	8	9	2	3	8	3	6	10	2	4	2	6	6	7	17	24	6	5	4	3	4	24.2
	57.7	74.7	45.8	49.2	66.9	57.6	24.3	48.0	70.9	55.1	48.7	74.4	54.3	28.6	29.8	18.2	38.5	43.0	39.6	64.4	87.6	79.0	80.8	79.7	

PAZA

Monthly Passive Data Summary

Location of PAZA Passive Monitoring Stations



PAZA Passive Results for November 2013

Station Number	Station Name	SO2 ppb	O3 ppb	NO2 ppb	H2S ppb	Site Legal
Duplicates						
1a	Silver Valley	0.3	28.0	1.3		
1b	Silver Valley	0.3	28.8	1.3		
17a	Poplar	0.4	24.6	2.4		
17b	Poplar	0.3	24.2	2.3		
18a	Saddle Hills	0.2	30.4	1.1		
18b	Saddle Hills	0.2	28.3	1.0		
47a	Kinuso	0.2	24.5	1.3		
47b	Kinuso	0.1	21.3	0.9		
63a	Girouxville 3				0.2	
63b	Girouxville 3				0.3	

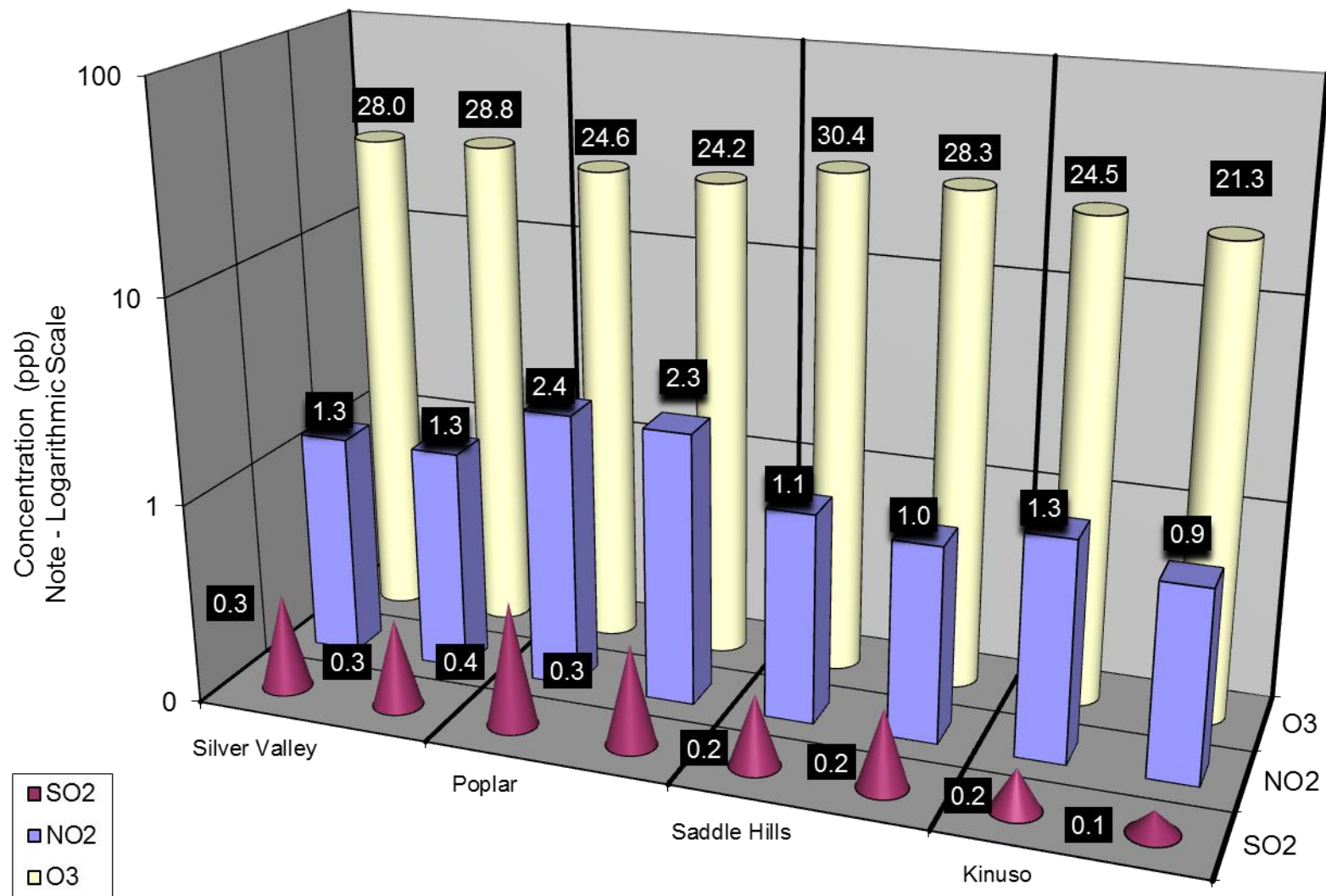
1	Silver Valley	0.3	28.4	1.3		08-27-081-11 W6M
2	Bay Tree	0.2	31.1	1.4		13-16-078-13 W6M
3	Fourth Creek	0.2	28.3	0.9		04-13-082-07 W6M
4	Gordondale	0.4	30.0	1.5		04-34-078-10 W6M
5	Boone Creek	0.2	28.6	1.4		16-36-074-11 W6M
7	Steeprock Creek	0.2	31.7	1.0		09-35-072-13 W6M
9	Spirit River	0.3	28.2	2.0		08-12-079-07 W6M
10	Woking	0.4	29.7	0.9		01-13-076-07 W6M
11	Webber Creek	0.4	23.6	2.8		09-36-074-09 W6M
12	Hythe	0.3	29.2	3.3		14-36-072-11 W6M
14	Sylvester	0.1	23.6	1.6		08-06-069-12 W6M
16	Beaverlodge	0.4	29.5	2.8		15-36-071-10 W6M
17	Poplar	0.4	24.4	2.3		13-06-073-08 W6M
18	Saddle Hills	0.2	29.4	1.0		04-25-074-07 W6M
19	Wanham	0.3	26.9	1.1		16-22-077-03 W6M
20	Shaftesbury	0.2	24.7	1.0		04-03-082-23 W5M
21	Eaglesham	0.1	22.9	1.0		16-21-079-25 W5M
23	Bear Lake	0.4	27.8	3.6		15-31-072-06 W6M
24	Wembley	0.2	BDL	3.2		12-31-070-08 W6M
25	Pinto Creek	0.1	24.5	1.7		04-24-069-11 W6M
26	Flyingshot	0.3	25.0	2.9		15-36-070-07 W6M
27	Grande Prairie I	0.4	20.5	10.3		08-15-071-06 W6M

PAZA Passive Results for November 2013 (Continued)

28	Clairmont Lake	0.4	28.1	2.0	09-06-073-04 W6M
29	Smoky Heights	0.4	26.8	2.4	04-06-075-02 W6M
30	Fitzsimmons	0.2	23.2	2.0	15-36-072-03 W6M
32	Gold Creek	0.3	21.8	3.3	06-33-067-05 W6M
33	Wapiti	0.2	26.5	2.2	02-25-071-03 W6M
34	Puskwaskau	0.1	24.5	0.6	15-35-074-25 W5M
35	Jean Cote	0.2	25.0	1.9	12-35-079-21 W5M
36	Guy	0.2	30.3	1.3	03-04-076-22 W5M
37	Crooked Creek	0.1	24.4	2.1	16-01-071-26 W5M
38	Karr Creek	0.1	19.2	0.9	10-16-065-02 W6M
39	Clouston Creek	0.2	26.9	1.7	12-01-073-22 W5M
40	McLennan	0.3	25.2	1.3	03-29-077-19 W5M
41	Valleyview	0.2	27.8	1.9	09-30-069-22 W5M
42	Sunset House	0.2	35.0	1.4	05-32-070-19 W5M
43	High Prairie	0.1	24.3	2.1	16-13-074-17 W5M
44	Peavine	0.2	25.6	0.6	03-05-079-15 W5M
45	Gift Lake	0.2	22.6	0.9	BDL 10-07-079-12 W5M
46	Little Smoky	0.1	20.5	4.0	12-01-065-21 W5M
47	Kinuso	0.1	22.9	1.1	12-10-073-10 W5M
48	Deer Mountain	0.2	24.4	0.8	15-22-068-09 W5M
49	Grande Prairie HP	0.3	21.5	9.4	17-26-071-06 W6M
50	East Prairie	0.1	23.4	0.6	13-02-072-15 W5M
63	Girouxville 3			0.3	14-02-077-23 W5M
64	Girouxville 4			0.2	4-08-077-22 W5M

*BDL = Below Detection Level

*N/S - No sample



Duplicate Summary Chart

Passive Summary for November 2013

Stats	Sulphur Dioxide SO ₂	Ozone O ₃	Nitrogen Dioxide NO ₂	Hydrogen Sulphide H ₂ S
	ppb	ppb	ppb	ppb

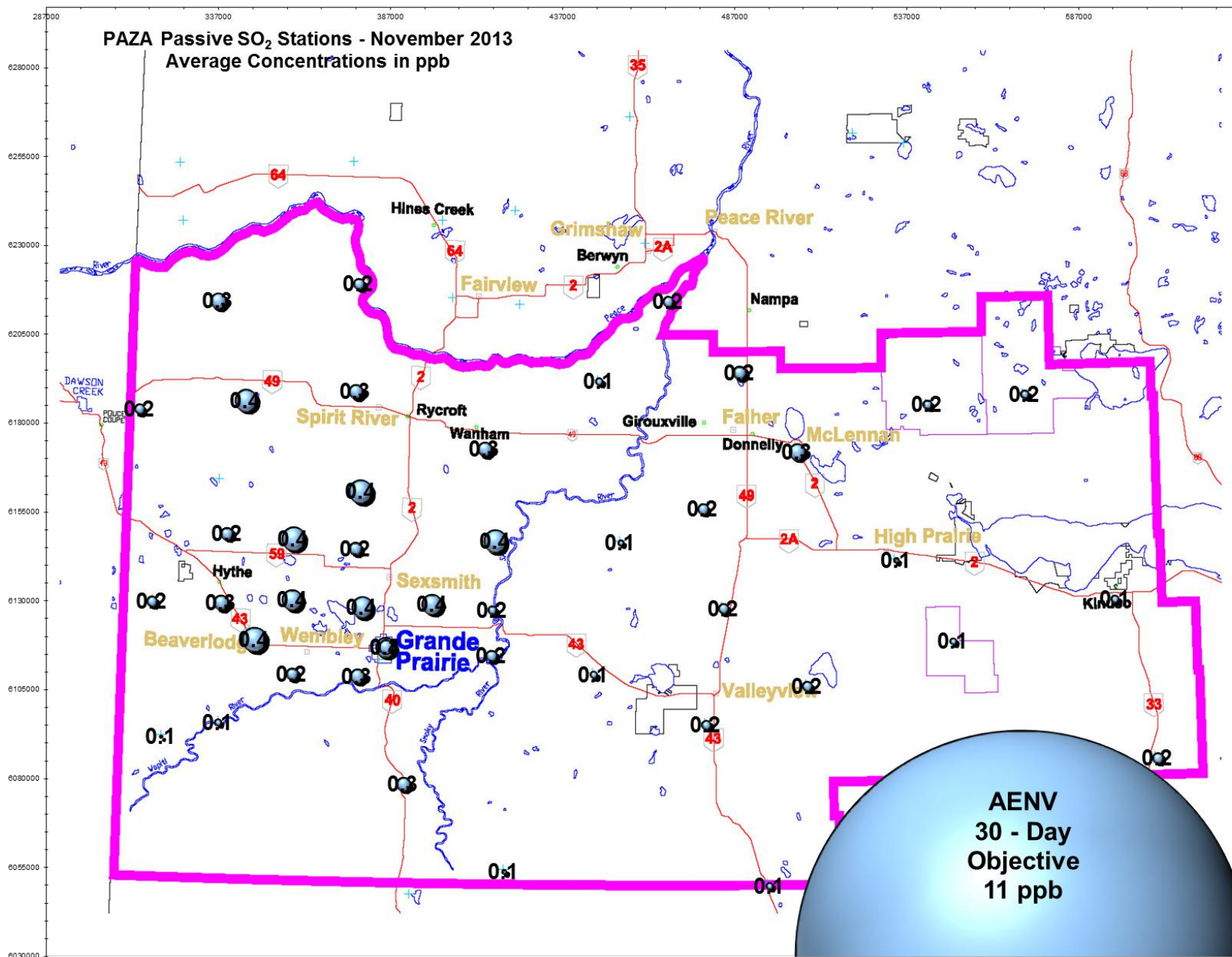
Passive Summary for October 2013 (PAZA Zone)				
Mean	0.2	26.0	2.1	0.2
Standard Deviation	0.1	3.4	1.9	0.1
Minimum	0.1	19.2	0.6	0.2
Minimum At	Sylvester (#14)	Karr Creek (#38)	East Prairie (#50)	Girouxville 4 (#64)
Maximum	0.4	35.0	10.3	0.3
Maximum At	Beaverlodge (#16)	Sunset House (#42)	Grande Prairie I (#27)	Girouxville 3 (#63)

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

	SO ₂	O ₃	NO ₂
PAZA Beaverlodge station	0.2	25.2	2.8
PAZA Beaverlodge passive	0.4	29.5	2.8

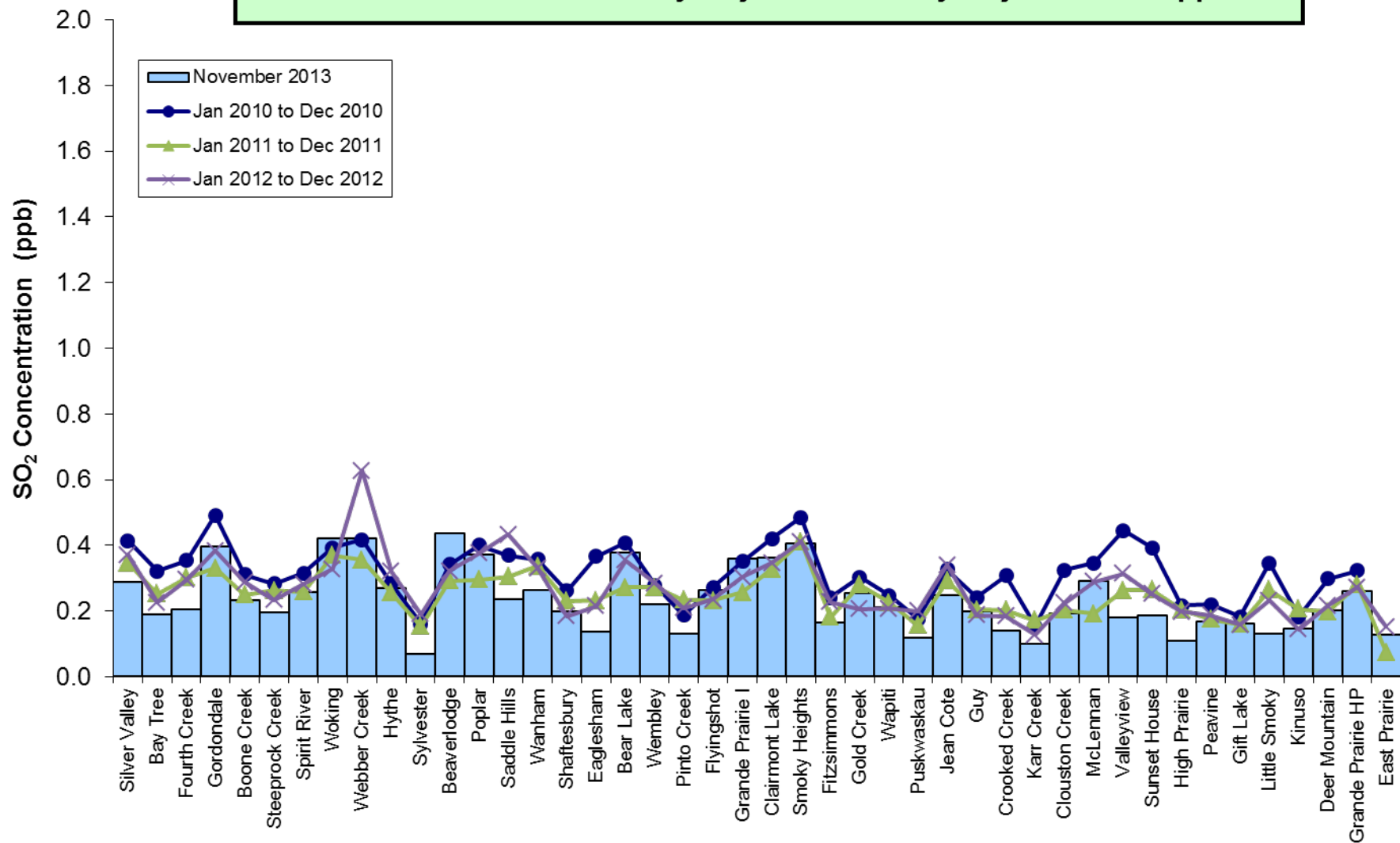
Comparison between Continuous and Passive monitoring at Henry Pirker (passive #49 Grande Prairie HP)

	SO ₂	O ₃	NO ₂
PAZA Henry Pirker station	0.1	17.4	9.3
PAZA Grande Prairie passive	0.3	21.5	9.4

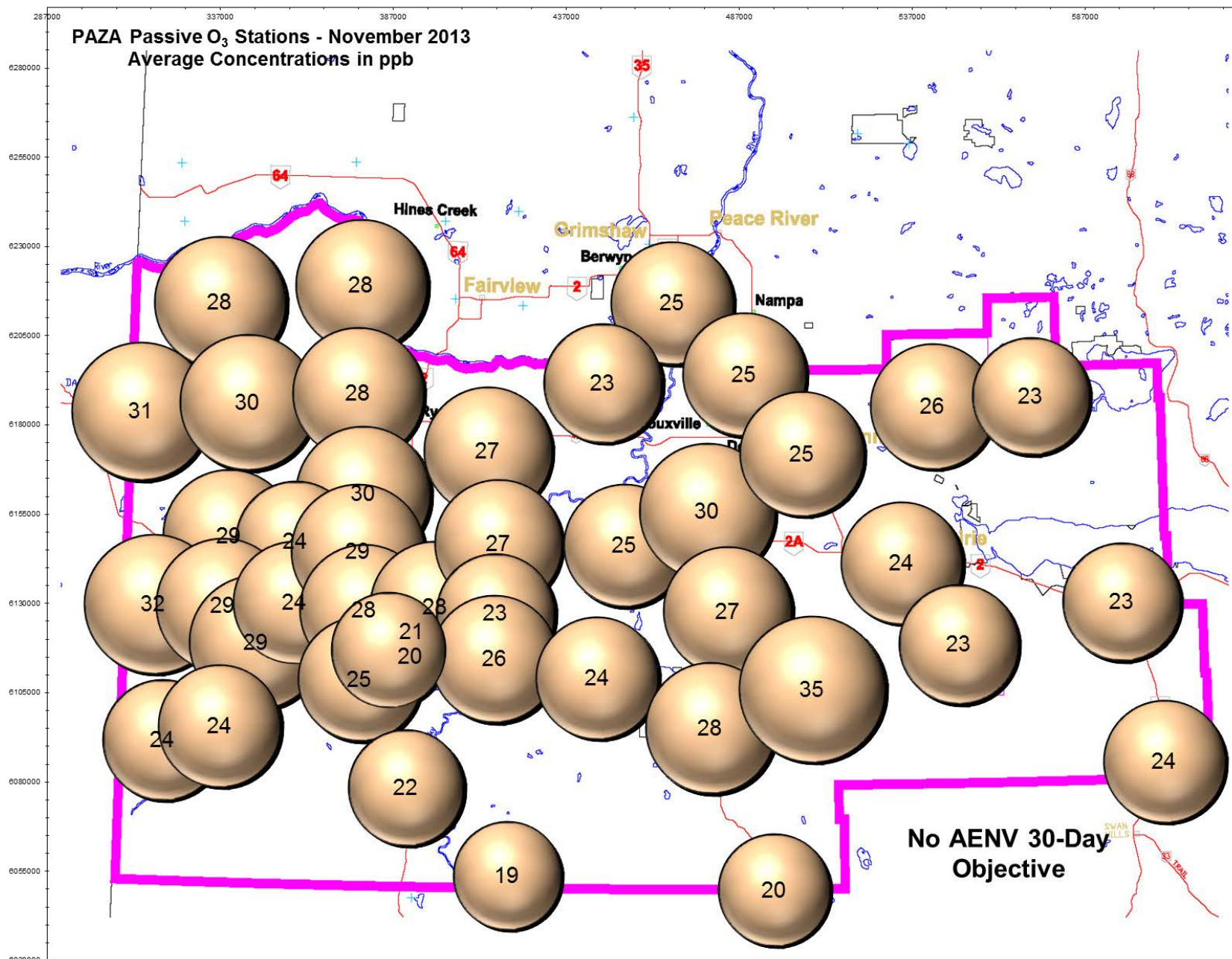


SO₂ Bubble Chart

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

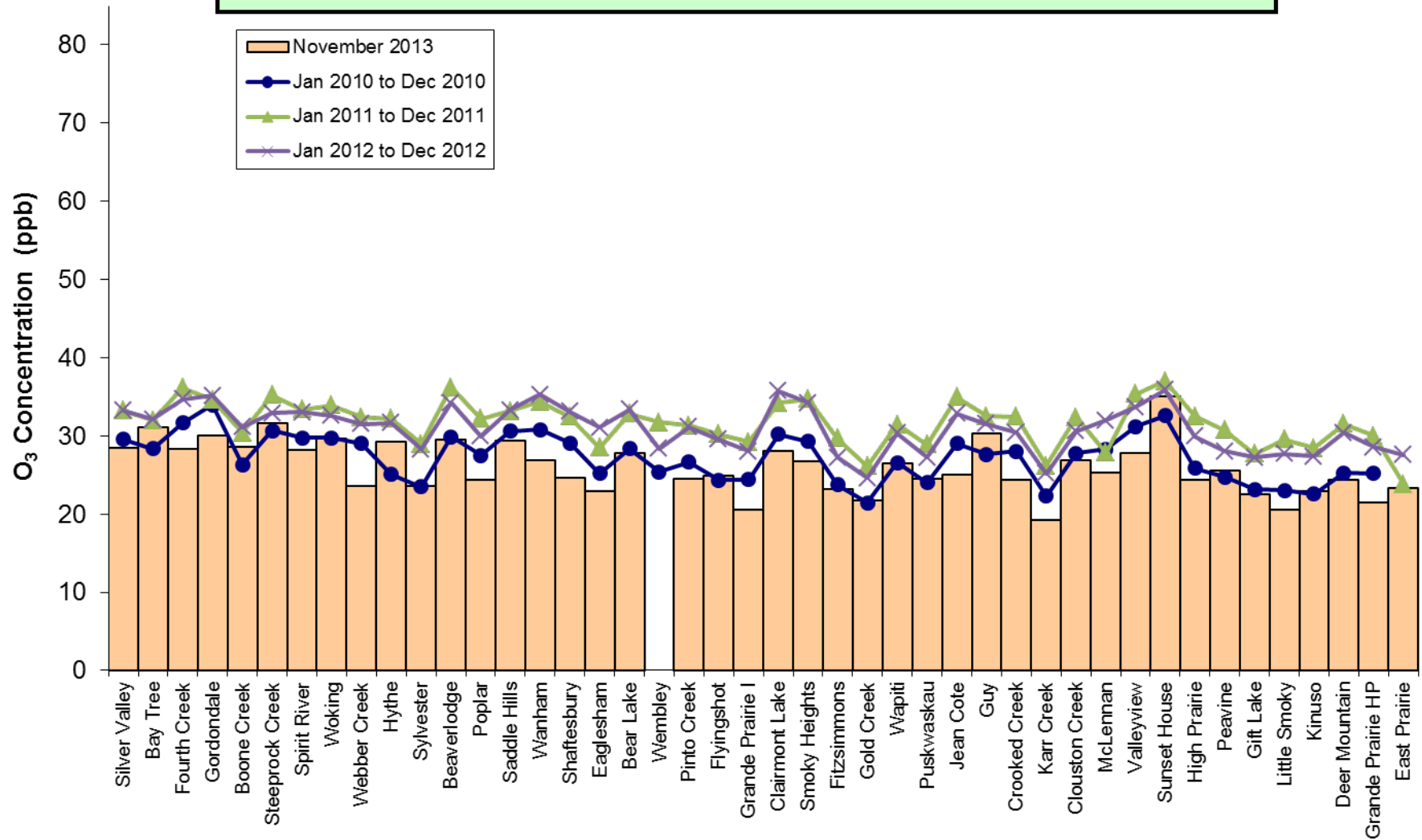


SO₂ Summary Chart

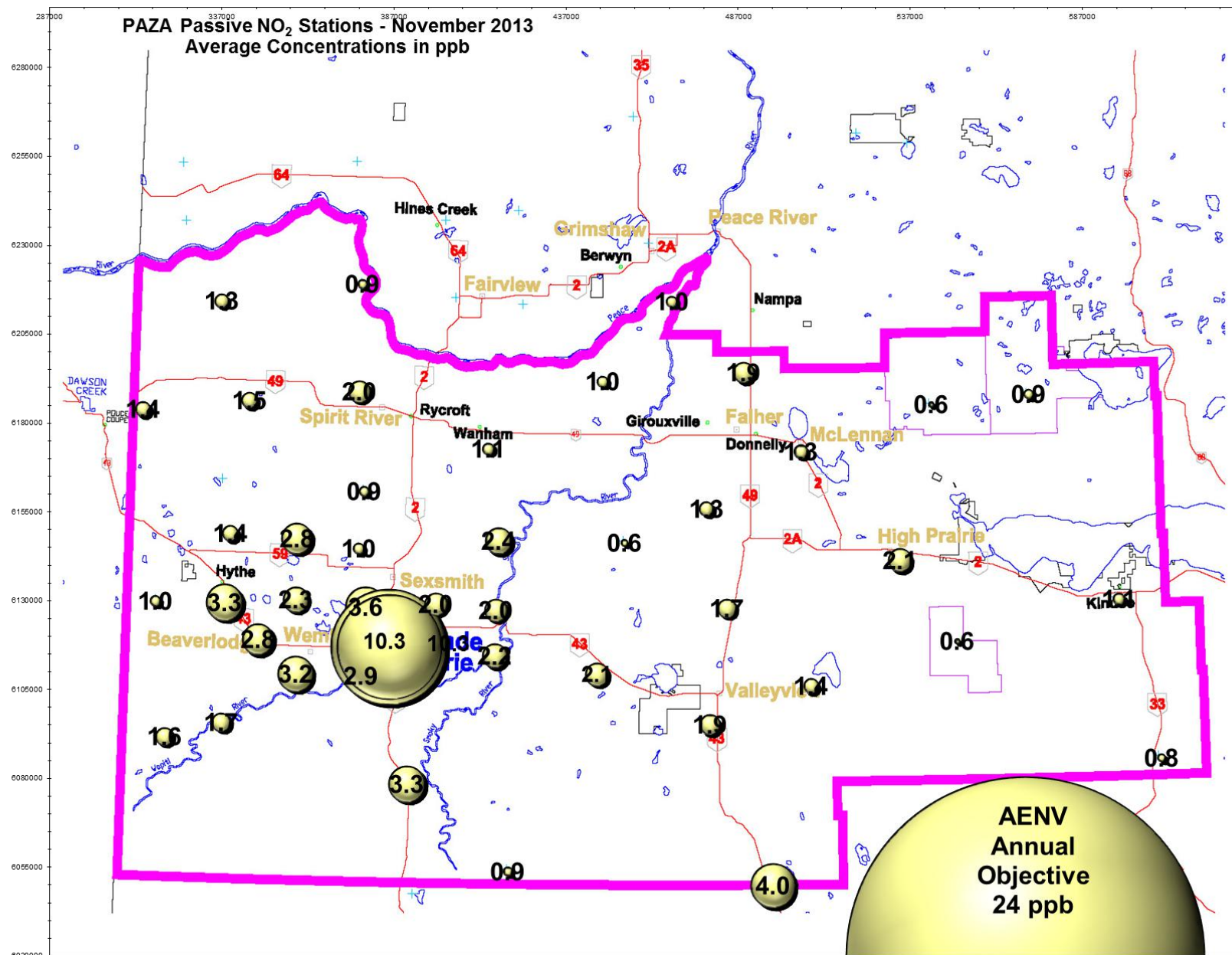


O₃ Bubble Chart

Alberta Ambient Air Quality Objective - No Annual O₃ Objective

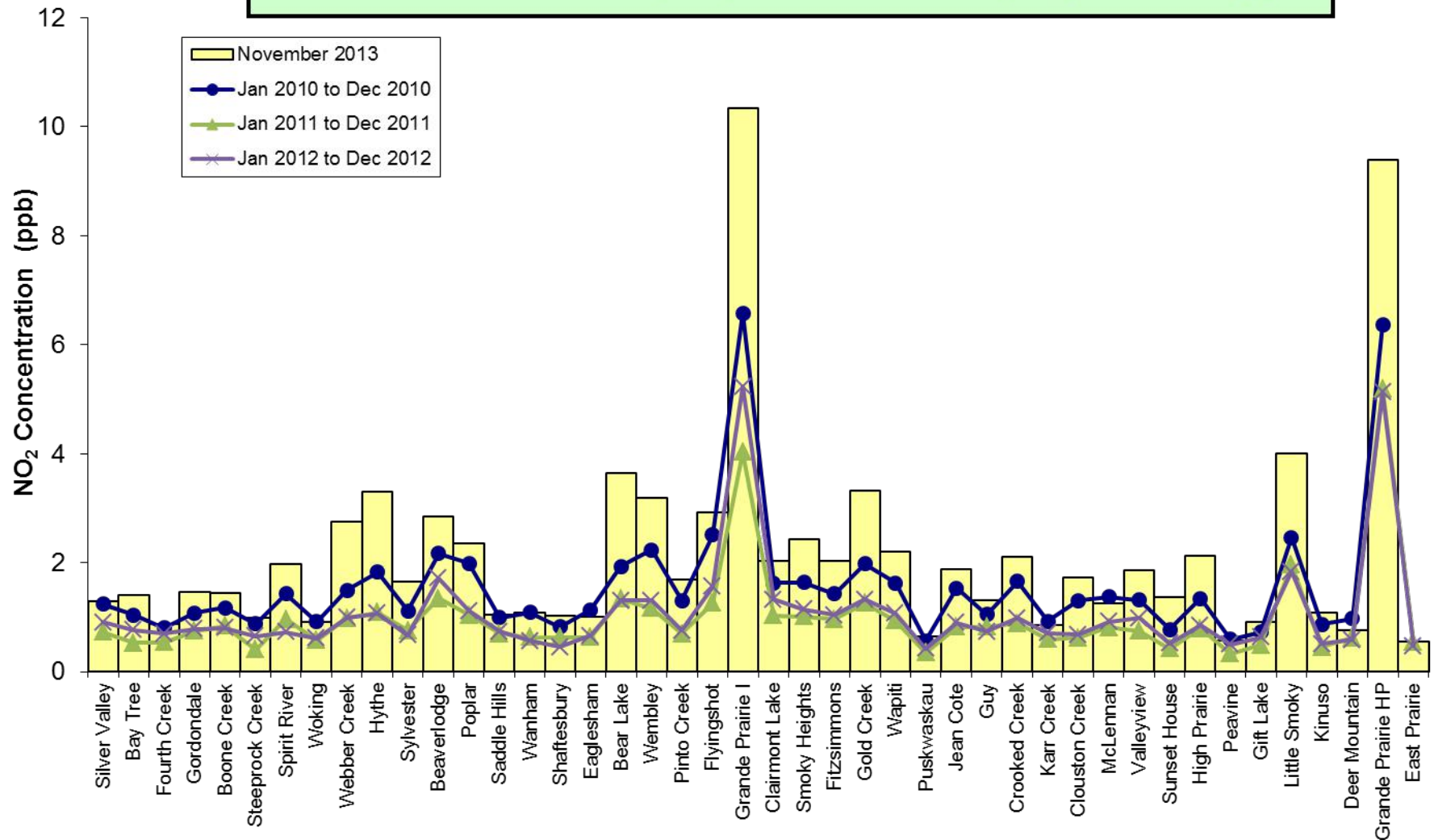


O₃ Summary Chart



NO₂ Bubble Chart

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



NO₂ Summary Chart

November 2013 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

PAZA – Smoky Heights Station with the following calibrations:

SO₂, TRS

PAZA – Beaverlodge Station with the following calibrations:

SO₂, NO, NO₂, NO_x, O₃

PAZA – Valleyview Station with the following calibrations:

SO₂ & H₂S

PAZA – Reno Station with the following calibrations:

SO₂, NO, NO₂, NO_x, O₃, TRS

PAZA – Falher Station with the following calibrations:

SO₂ & H₂S

Calibration Report

Parameter SO2

Air Monitoring Network PAZA



Station Information

Calibration Date	November 7, 2013		Previous Calibration	October 21, 2013	
Station Number	1		Station Location	Henry Pirker	
Reason:	Routine	☐ Install	☐ Removal	☐ Other:	
Start Time (MST)	8:30		End Time (MST)	12:36	
Barometric Pressure	NA	ATM	Station Temperature	20.5	Deg C
Calibrator	EnviroNics		Serial Number	3016	
Cal Gas Conc	51.5	ppm	Cal Gas Cert Date	March 12, 2014	
			Cal Gas Cylinder #	LL105159	
DACS make	CR3000		DACS serial No.	5408	
DACS voltage range	0 - 1 volt		DACS channel #	10	
	Before			After	
Calculated slope	0.998002		Calculated slope	1.003289	
Calculated intercept	3.033141		Calculated intercept	2.092414	
Analyzer make	TEI 43C		Analyzer serial #	610816292	

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Background	9.4		9.3	
Coefficient	0.787		0.769	
Pressure	644.1	mm Hg	637.4	mm Hg
Flow	0.484	lpm	0.480	lpm
Lamp Voltage	44106	Hz	44063	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)
4995	0.00	0.0	0.1	N/A
4995	39.93	408.4	406.2	1.0055
4995	19.97	205.1	200.9	1.0210
4995	9.97	102.6	98.3	1.0438
4995	0.00	0.0	0.1	As Found Zero
4995	39.93	408.4	416.5	As Found Span
Average Correction Factor				1.0235

Calculated value of As Found Response: 418.6 ppb Percent Change of As Found: -2.5%

	before calibration		after calibration	
Auto zero	0.1	ppb	0.1	ppb
Auto span	250.7	ppb	251.8	ppb

Notes: Slight span adjust 80% point.lamp intensity is moving around.Will need new lamp and soket soon.

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter SO2

Air Monitoring Network PAZA



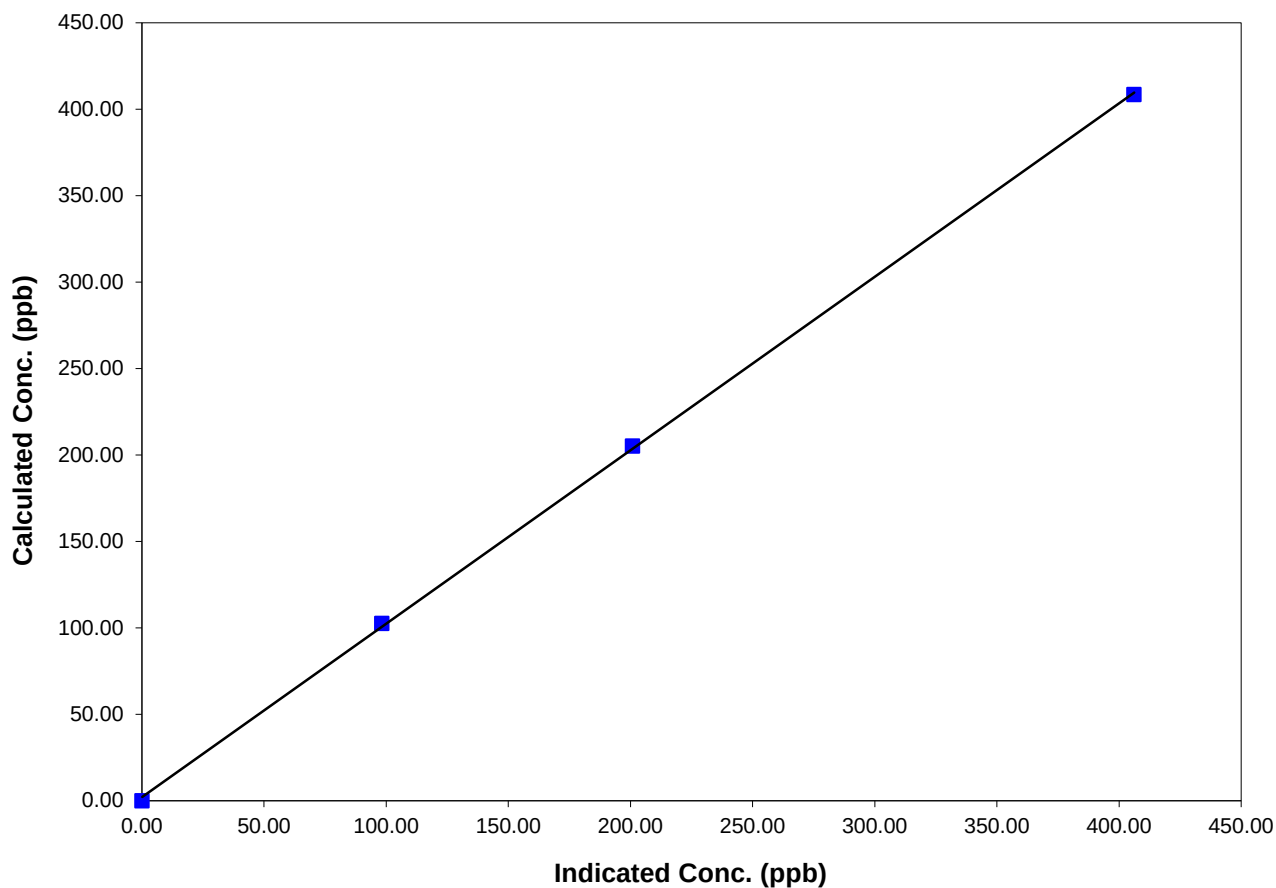
Station Information

Calibration Date	November 7, 2013	Previous Calibration	October 21, 2013
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	8:30	End Time (MST)	12:36
Analyzer make/model	TEI 43C	Analyzer serial #	610816292

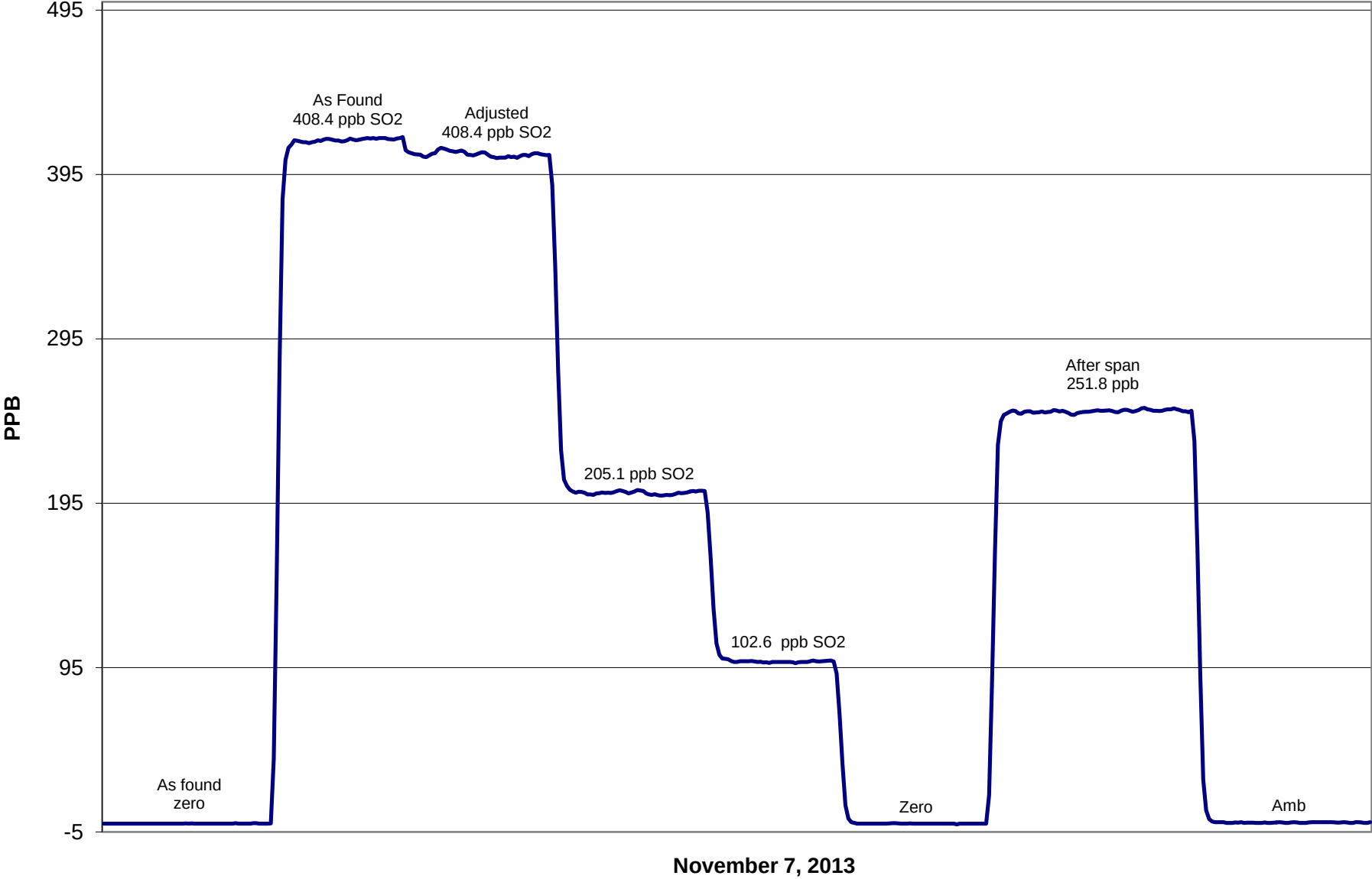
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.1	N/A		
408.4	406.2	1.0055	Correlation Coefficient	0.999870
205.1	200.9	1.0210		
102.6	98.3	1.0438	Slope	1.003289
			Intercept	2.092414

SO2 Calibration Curve



SO2 Calibration



Calibration Report

Parameter

NO_x-NO-NO₂

Air Monitoring Network

PAZA



Station Information

Calibration Date	November 7, 2013		Previous Calibration	October 24, 2013	
Station Number	1		Station Location	Henry Pirker	
Reason:	Routine	Installation	Removal	Other:	
Start Time (MST)	8:30		End Time (MST)	13:48	
Barometric Pressure	na	Atm	Station Temperature	20.5	Deg C
Calibrator	EnviroNics		Serial Number	3016	
NO Cal Gas Conc	51.3	ppm	Cal Gas Expiry Date	March 12, 2014	
NOx Cal Gas Conc	51.4	ppm	Cal Gas Serial #	LL105159	

DACS Information

DACS make	CR3000		DACS serial No.	5408	
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	Parameter	NO2	NOx	NO
Before	Data Slope	0.995505	1.000050	0.995764
	Data Offset	1.129801	2.223812	2.518279
After	Data Slope	1.004574	1.005732	1.001331
	Data Offset	0.351218	1.161118	1.755908
	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	13.9	mV	13.7	mV
NOx bkgnd	13.9	mV	13.8	mV
NO coefficient	1.086		1.070	
NOx coefficient	0.994		0.996	
NO2 conv temp	318.0	Deg C	318.0	Deg C
PMT Temp	-2.4	Deg C	-2.4	Deg C
PMT Volt	-774.0	mV	-774.0	mV
R Cell Press	190.4	in Hg	189.1	in Hg
Sample Flow	0.724	ccm	0.723	ccm

Notes: Slight span adjust 80% point. Run adjustment point.

Calibration Report

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



Calibration Date: November 7, 2013 Station Location: Henry Pirker

	Dilution flow rate (ccm)	Source gas flow rate (ccm)	Calculated NO _x conc (ppb)	Calculated NO conc (ppb)	Calculated NO ₂ conc (ppb)	Indicated NO _x conc (ppb)	Indicated NO conc (ppb)	Indicated NO ₂ conc (ppb)	NO _x Correction factor	NO Correction factor
zero	4995	0.00	0.0	0.0	0.0	0.2	-0.1	0.5	N/A	N/A
1	4995	39.93	407.6	406.8	0.8	404.8	405.3	-0.6	1.0071	1.0039
2	4995	19.97	204.7	204.3	0.4	201.8	201.7	0.0	1.0141	1.0128
3	4995	9.97	102.4	102.2	0.2	99.3	98.6	0.6	1.0315	1.0369
AFZ	4995	0.00	0.0	0.0	0.0	0.2	-0.1	0.5	0.0000	0.0000
AFS	4995	39.93	407.6	406.8	0.8	412.7	412.9	-0.3	0.9877	0.9854
Average Correction Factor									1.0175	1.0179

As Found Concentrations: NO_x= 414.8 NO= 415.5 As Found Percent Change NO_x= 1.8% NO= 2.1%

Dilution Flow 4995 ccm Source Gas Flow 39.93 ccm

O ₃ Setpoint (ppb)	Indicated NO high point (ppb)	Indicated NO drop conc (ppb)	Calculated NO ₂ conc (ppb)	Indicated NO _x conc (ppb)	Indicated NO conc (ppb)	Indicated NO ₂ conc (ppb)	NO _x Correction factor	NO Correction factor	NO ₂ Correction factor	Converter Efficiency
0	-0.1	-0.1	0.0	0.2	-0.1	0.5	N/A	N/A	N/A	N/A
NO point	407.3	407.3	0.0	406.8	407.3	-0.6	1.0011	1.0000	N/A	N/A
300	407.3	95.8	311.4	405.7	95.8	310.0	1.0039	1.0000	1.0045	99.6%
200	407.3	196.4	210.9	406.0	196.4	209.7	1.0032	1.0000	1.0057	99.4%
100	407.3	297.0	110.3	405.0	297.0	108.1	1.0055	1.0000	1.0198	98.1%
Average Correction Factor							1.0042	1.0000	1.0100	99.0%

	Previous calibration				Current calibration			
Parameter	NO _x	NO ₂	NO		NO _x	NO ₂	NO	
Auto zero	0.0	0.0	-0.1	ppb	-0.4	0.1	-0.6	ppb
Auto span	329.9	327.5	2.4	ppb	333.2	331.9	1.4	ppb

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter NO₂

Air Monitoring Network PAZA



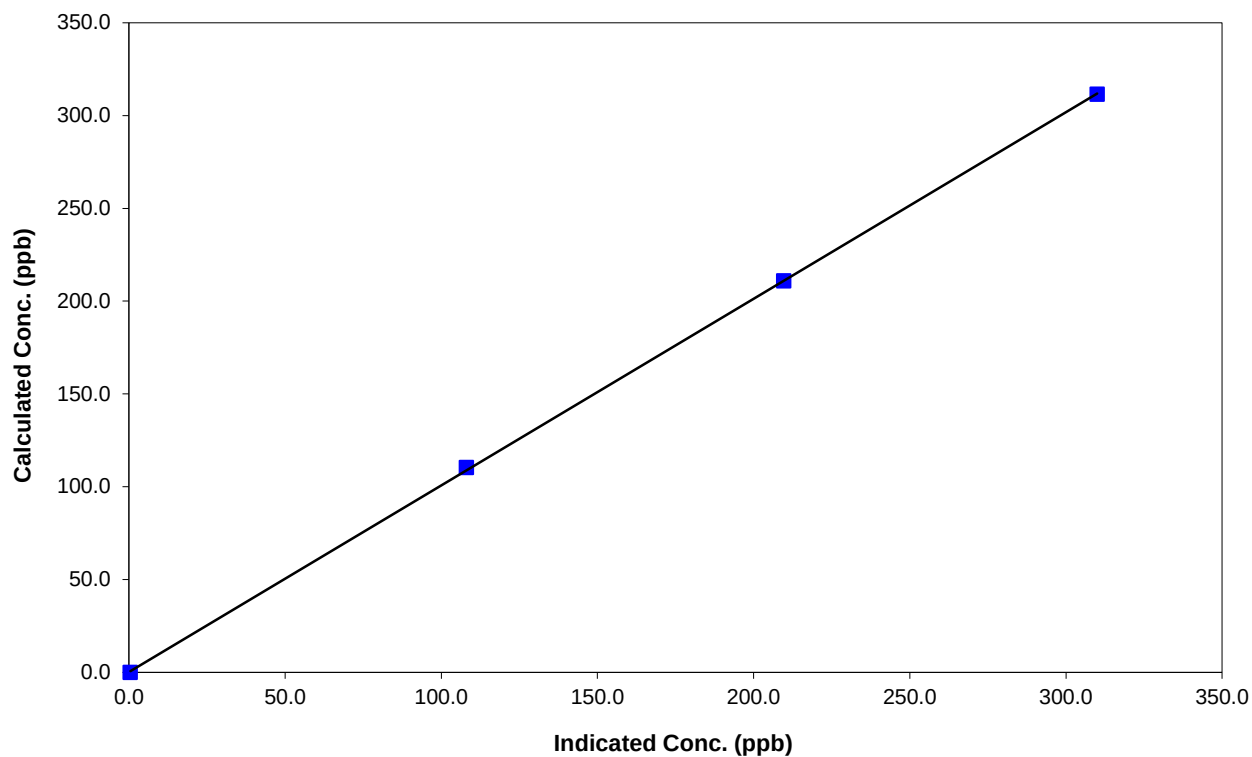
Station Information

Calibration Date	November 7, 2013	Previous Calibration	October 24, 2013
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	8:30	End Time (MST)	13:48
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	0.5	N/A	Correlation Coefficient	0.999954
311.4	310.0	1.0045		
210.9	209.7	1.0057		
110.3	108.1	1.0198	Slope	1.004574
			Intercept	0.351218

NO₂ Calibration Curve



Calibration Summary

Parameter NO_x

Air Monitoring Network PAZA



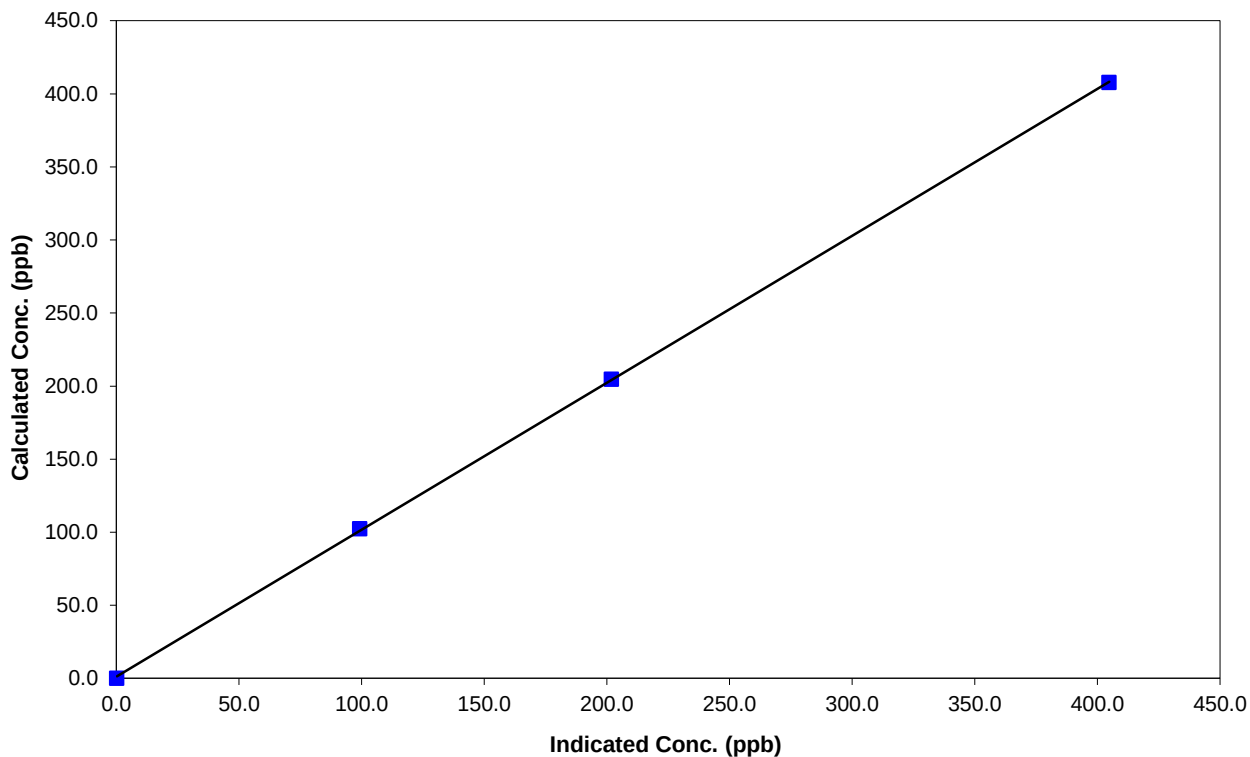
Station Information

Calibration Date	November 7, 2013	Previous Calibration	October 24, 2013
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	8:30	End Time (MST)	13:48
Analyzer make	TEI 42C	Analyzer serial #	508011073

Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.2	N/A	Correlation Coefficient	0.999953
407.6	404.8	1.0071		
204.7	201.8	1.0141		
102.4	99.3	1.0315	Slope	1.005732
			Intercept	1.161118

NO_x Calibration Curve



Calibration Summary

Parameter NO

Air Monitoring Network PAZA



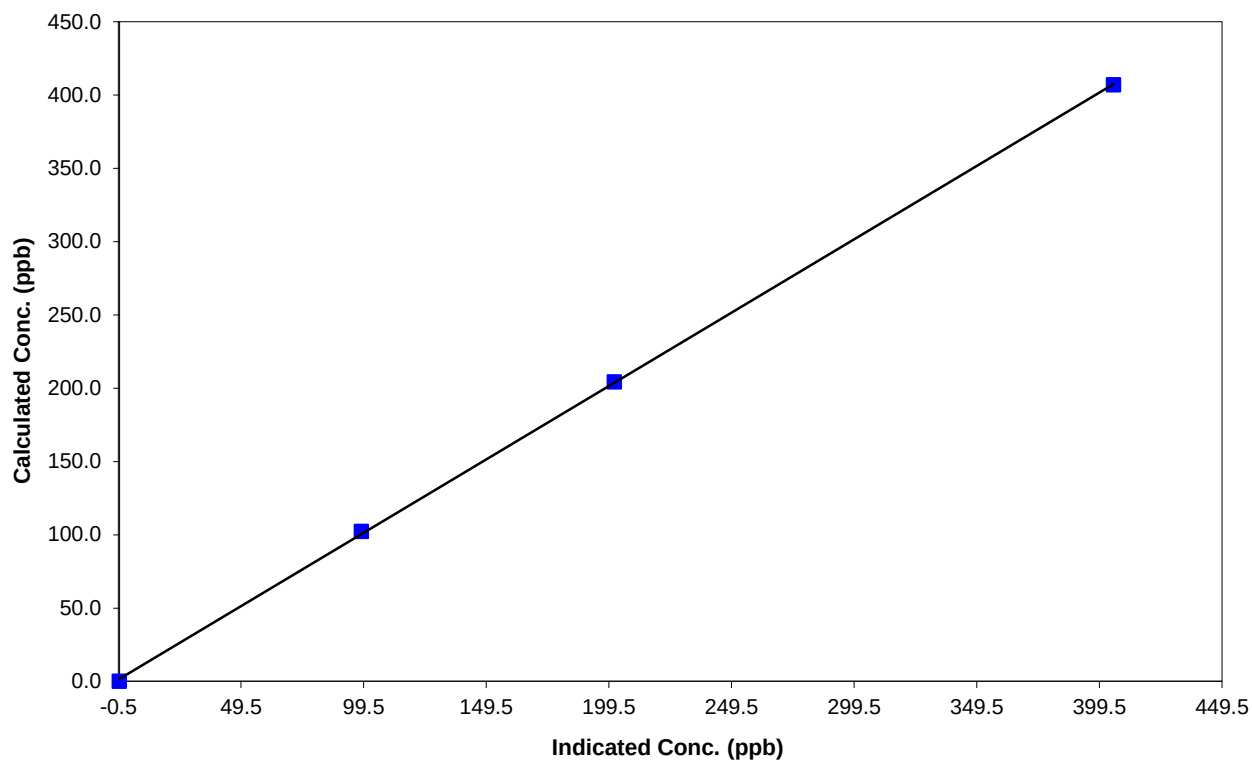
Station Information

Calibration Date	November 7, 2013	Previous Calibration	October 24, 2013
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	8:30	End Time (MST)	13:48
Analyzer make	TEI 42C	Analyzer serial #	508011073

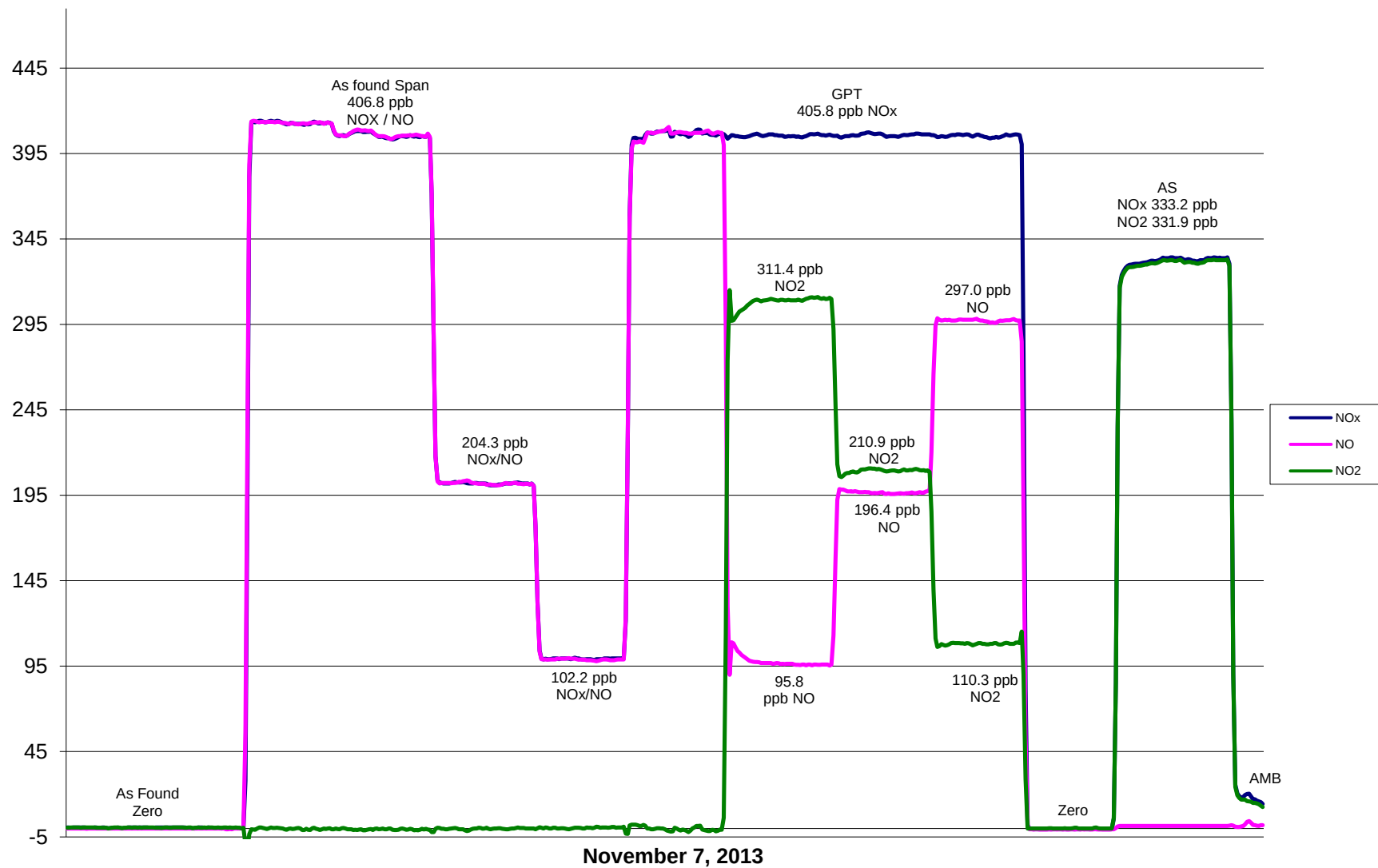
Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.1	N/A	Correlation Coefficient	0.999929
406.8	405.3	1.0039		
204.3	201.7	1.0128		
102.2	98.6	1.0369	Slope	1.001331
			Intercept	1.755908

NO Calibration Curve



PAZA NO_x Calibration



Calibration Report

Parameter 03

Air Monitoring Network PAZA



Station Information

Calibration Date	November 7, 2013	Previous Calibration	October 24, 2013
Station Number	1	Station Location	Henry Pirker
Reason:	Routine	Install	Removal
		Other:	
Start Time (MST)	12:45	End Time (MST)	15:50
Barometric Pressure	0.923 atm	Station Temperature	23.0 Deg C
Calibrator	Envionics	Serial Number	3016
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	1.006152	Calculated slope	1.012733
Calculated intercept	0.937785	Calculated intercept	1.414004
Analyzer make	Teco 49C	Analyzer serial #	607415761

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
offset	-0.20	ppb	-0.20	ppb
slope	0.994		0.994	
Lamp temp	56.9	mV	56.9	mV
Lamp Intensity A/B	108045/96906	mV	108054/96892	mV
Pressure	676.2	mm Hg	676.8	mm Hg
Flow A	0.719	ccm	0.719	ccm
Flow B	0.723	ccm	0.724	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)
4995	0.0	0.0	-0.6	N/A
4995	0.3	311.4	306.7	1.0154
4995	0.2	210.9	206.5	1.0211
4995	0.1	110.3	106.4	1.0367
4995	0.0	0.0	-0.6	As found zero
4995	0.3	311.4	306.7	As found span
Average Correction Factor				1.0244

Calculated value of As Found Response: 310.1 ppm Percent Change of As Found: -0.4%

	before calibration		after calibration	
Auto zero	1.0	ppb	1.3	ppb
Auto span	355.0	ppb	358.0	ppb

Notes: No adjustment made.

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter O3

Air Monitoring Network PAZA



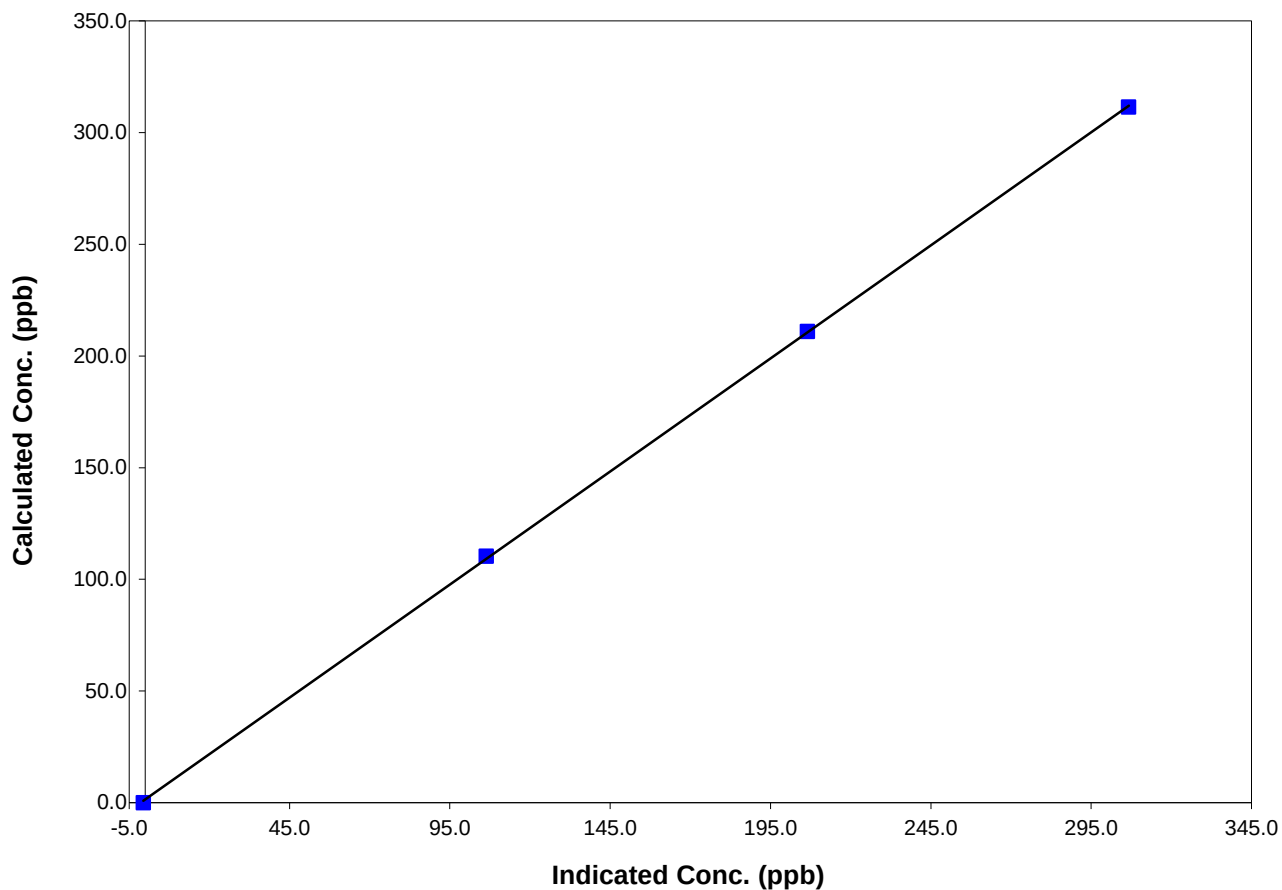
Station Information

Calibration Date	November 7, 2013	Previous Calibration	October 24, 2013
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	12:45	End Time (MST)	15:50
Analyzer make/model	Teco 49C	Analyzer serial #	607415761

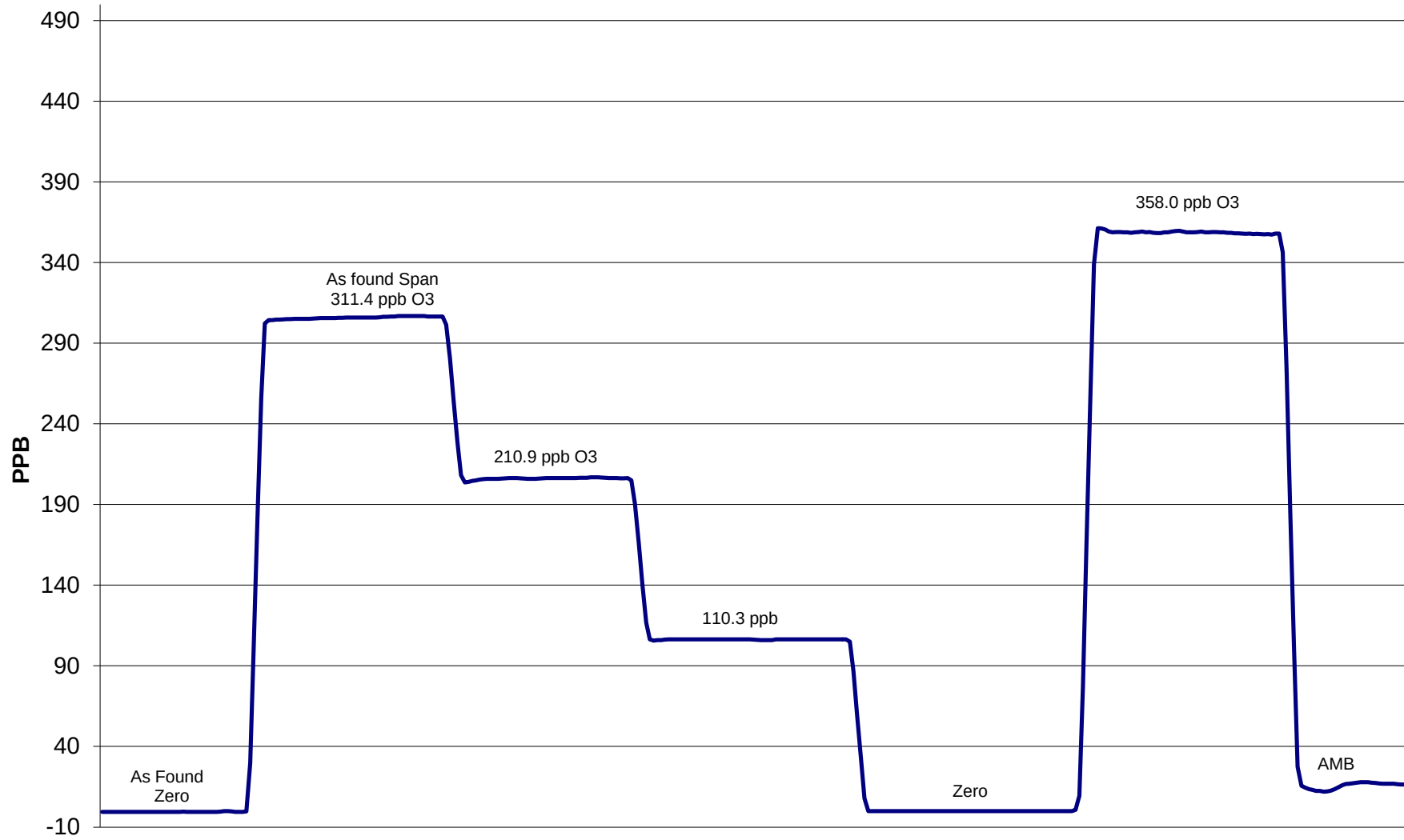
Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.6	NA		
311.4	306.7	1.0154	Correlation Coefficient	0.999954
210.9	206.5	1.0211		
110.3	106.4	1.0367	Slope	1.012733
			Intercept	1.414004

O3 Calibration Curve



O3 Calibration



November 7, 2013

Calibration Report

Parameter CO

Air Monitoring Network PAZA



Station Information

Calibration Date	November 6, 2013	Previous Calibration	October 17, 2013
Station Number	1	Station Location	Henry Pirker
Reason:	Routine	Install	Removal
		Other:	
Start Time (MST)	11:10	End Time (MST)	13:50
Barometric Pressure	704.0 mm/hg	Station Temperature	21.0 Deg C
Calibrator	EnviroNics 6100	Serial Number	3016
Cal Gas Conc	2898 ppm	Cal Gas Expiry Date	04/02/2013
		Cal Gas Cylinder #	LL83909
DACS make	CR3000	DACS serial No.	5408
DACS voltage range	0 - 1 volt	DACS channel #	9
	Before		After
Calculated slope	1.002977	Calculated slope	1.001644
Calculated intercept	0.205006	Calculated intercept	0.081368
Analyzer make	TEI Model 48C	Analyzer serial #	508011062

	before		after	
Concentration range	0 - 50	ppm	0 - 50	ppm
CO span setting	1.005		1.005	
CO zero setting	-0.548		-0.544	
Sample pressure	683.1	mm Hg	689.3	mm Hg
Sample Flow	1.120	LPM	1.124	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)
4995	0.00	0.00	0.11	N/A
4995	69.94	40.02	39.98	1.0009
4995	34.96	20.14	19.89	1.0126
4995	17.96	10.38	10.12	1.0262
4995	0.00	0.00	0.11	As Found Zero
4995	69.94	40.02	39.98	As Found Span
Average Correction Factor				1.0133

Calculated value of As Found Response: 40.191 ppm Percent Change of As Found: -0.4%

	before calibration		after calibration	
Auto zero	0.03	ppm	0.03	ppm
Auto span	19.81	ppm	20.01	ppm

Notes: No adjustment made

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter CO
Air Monitoring Network PAZA



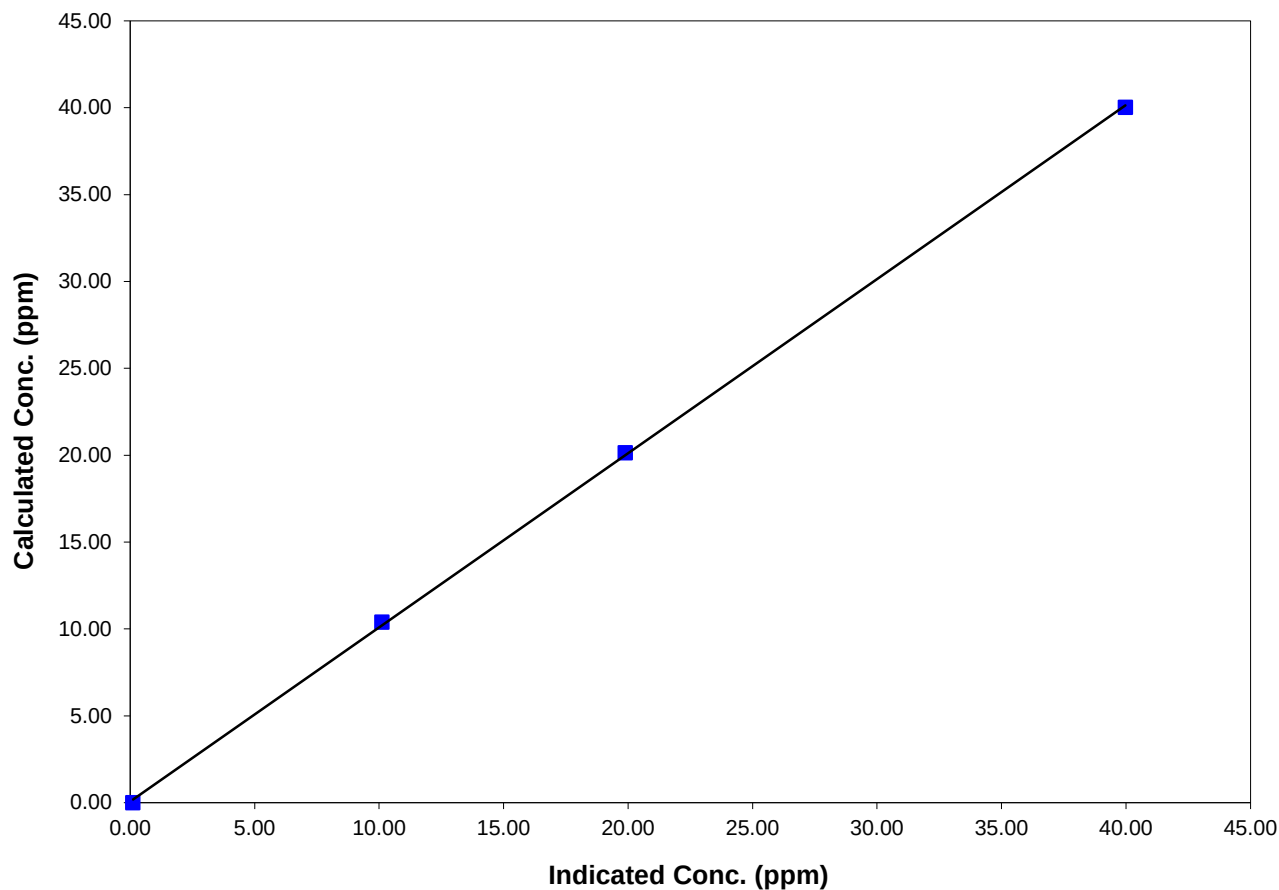
Station Information

Calibration Date	November 6, 2013	Previous Calibration	October 17, 2013
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	11:10	End Time (MST)	13:50
Analyzer make/model	TEI Model 48C	Analyzer serial #	508011062

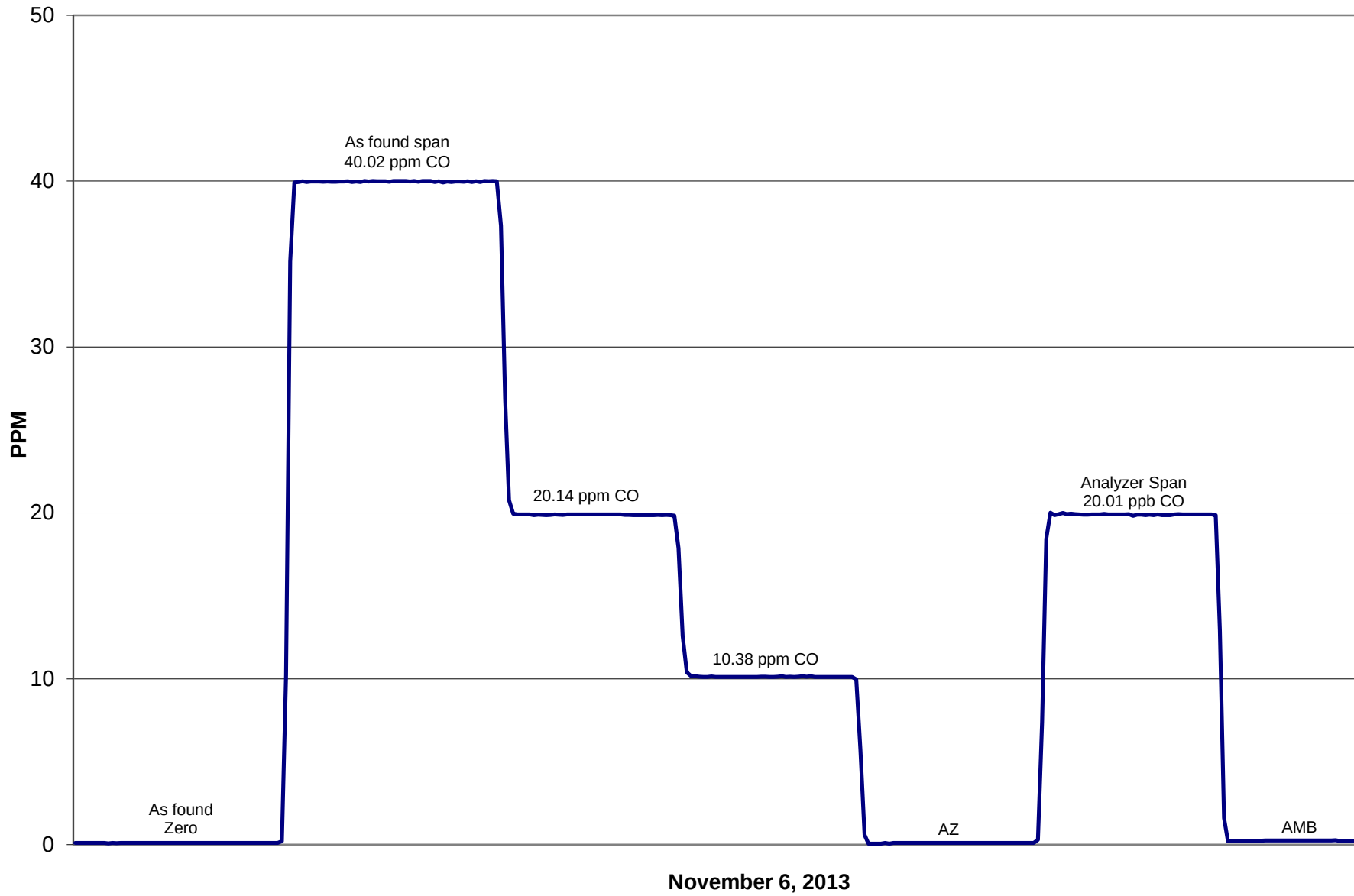
Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	0.113	N/A	Correlation Coefficient	0.999889
40.017	39.980	1.0009		
20.142	19.891	1.0126		
10.383	10.118	1.0262	Slope	1.001644
			Intercept	0.081368

CO Calibration Curve



CO Calibration



Calibration Report

Parameter CH4 / NMHC / THC

Air Monitoring Network

PAZA



Station Information

Calibration Date	November 6, 2013	Previous Calibration	October 17, 2013
Station Number	1	Station Location	Henry Pirker
Reason:	☐ Routine	☐ Install	☐ Removal
			☐ Other:

Start Time (MST)	9:00	End Time (MST)	12:37
Barometric Pressure	NA inches Hg	Station Temperature	20.0 Deg C
Calibrator	EnviroNics	Serial Number	3016
Cal Gas CH4 Conc	404 ppm CH4	Cal Gas Expiry Date	28/03/2014
Cal Gas C3H8 Conc	201 552.75 ppm CH4	Cal Gas Cylinder #	LL34989
DACS make	CR3000	DACS serial No.	5408
DACS voltage range	0 - 5 volt	DACS channel #	SE 11,12,13

Analyzer make	TEI 55I	Analyzer serial #	1134650658
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	before		after	
Concentration range	0-20 (CH4, NMHC); 0-40 (THC)	ppm	0-20 (CH4, NMHC); 0-40 (THC)	ppm
Air pressure	27.8	PSI	28	PSI
Fuel pressure	42.1	PSI	42.5	PSI
Carrier pressure	30.3	PSI	30.5	PSI
CH4 cal factor	5.68		5.68	E ⁻⁴
NMHC cal factor	1.64		1.64	E ⁻⁴
Rt	12.60	Sec	12.60	Sec
Pk Index	23.00		23.00	

CH4 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)
1996	0.00	0.00	0.02	N/A
1996	64.93	12.73	12.76	0.9976
1996	39.93	7.92	7.89	1.0038
1996	14.95	3.00	2.97	1.0124
1996	0.00	0.00	0.02	As Found Zero
1996	64.93	12.73	12.43	As Found Span
Average Correction Factor				1.0046

Calculated value of As Found Response: 12.406 ppm Percent Change of As Found: 2.5%

	Before		After
Calculated slope	0.997676	Calculated slope	0.998398
Calculated intercept	0.022699	Calculated intercept	0.013550

Final Zero/Span Data

	before calibration		after calibration	
Auto zero	0.03	ppm	0.03	ppm
Auto span	9.01	ppm	8.57	ppm

NMHC 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)
1996	0.00	0.00	0.02	N/A
1996	64.93	17.41	17.36	1.0033
1996	39.93	10.84	10.93	0.9922
1996	14.95	4.11	4.19	0.9798
1996	0.00	0.00	0.02	As Found Zero
1996	64.93	17.41	16.94	As Found Span
Average Correction Factor				0.9917

Calculated value of As Found Response: 16.788 ppm Percent Change of As Found: 3.6%

	<u>Before</u>		<u>After</u>
Calculated slope	0.994672	Calculated slope	1.004419
Calculated intercept	-0.047997	Calculated intercept	-0.068983

Final Zero/Span Data

	before calibration		after calibration	
Auto zero	0.02	ppm	0.02	ppm
Auto span	12.54	ppm	11.75	ppm

THC 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)
1996	0.00	0.00	0.03	N/A
1996	64.93	30.14	30.10	1.0016
1996	39.93	18.76	18.80	0.9982
1996	14.95	7.11	7.15	0.9946
1996	0.00	0.00	0.03	As Found Zero
1996	64.93	30.14	29.36	As Found Span
Average Correction Factor				0.9981

Calculated value of As Found Response: 29.204 ppm Percent Change of As Found: 3.1%

	<u>Before</u>		<u>After</u>
Calculated slope	0.996580	Calculated slope	1.002488
Calculated intercept	-0.021522	Calculated intercept	-0.048971

Final Zero/Span Data

	before calibration		after calibration	
Auto zero	0.02	ppm	0.02	ppm
Auto span	21.54	ppm	20.31	ppm

Notes: Run as found span. Run adjustment point.

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter CH4

Air Monitoring Network PAZA



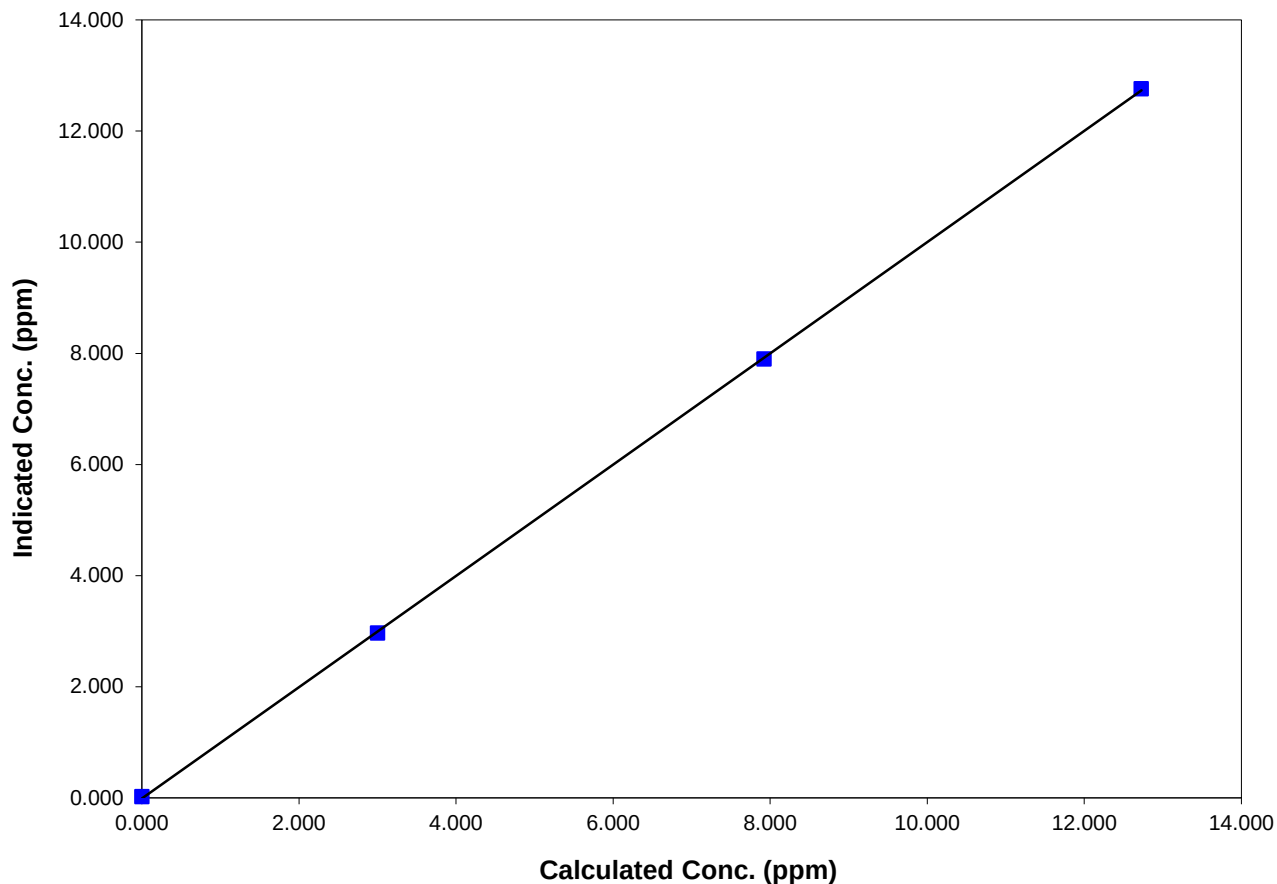
Station Information

Calibration Date	November 6, 2013	Previous Calibration	October 17, 2013
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	9:00	End Time (MST)	12:37
Analyzer make/model	TEI 55I	Analyzer serial #	1134650658

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	0.019	N/A		
12.728	12.759	0.9976	Correlation Coefficient	0.999965
7.924	7.894	1.0038		
3.003	2.967	1.0124	Slope	0.998398
			Intercept	0.013550

CH4 Calibration Data



Calibration Summary

Parameter NMHC

Air Monitoring Network PAZA



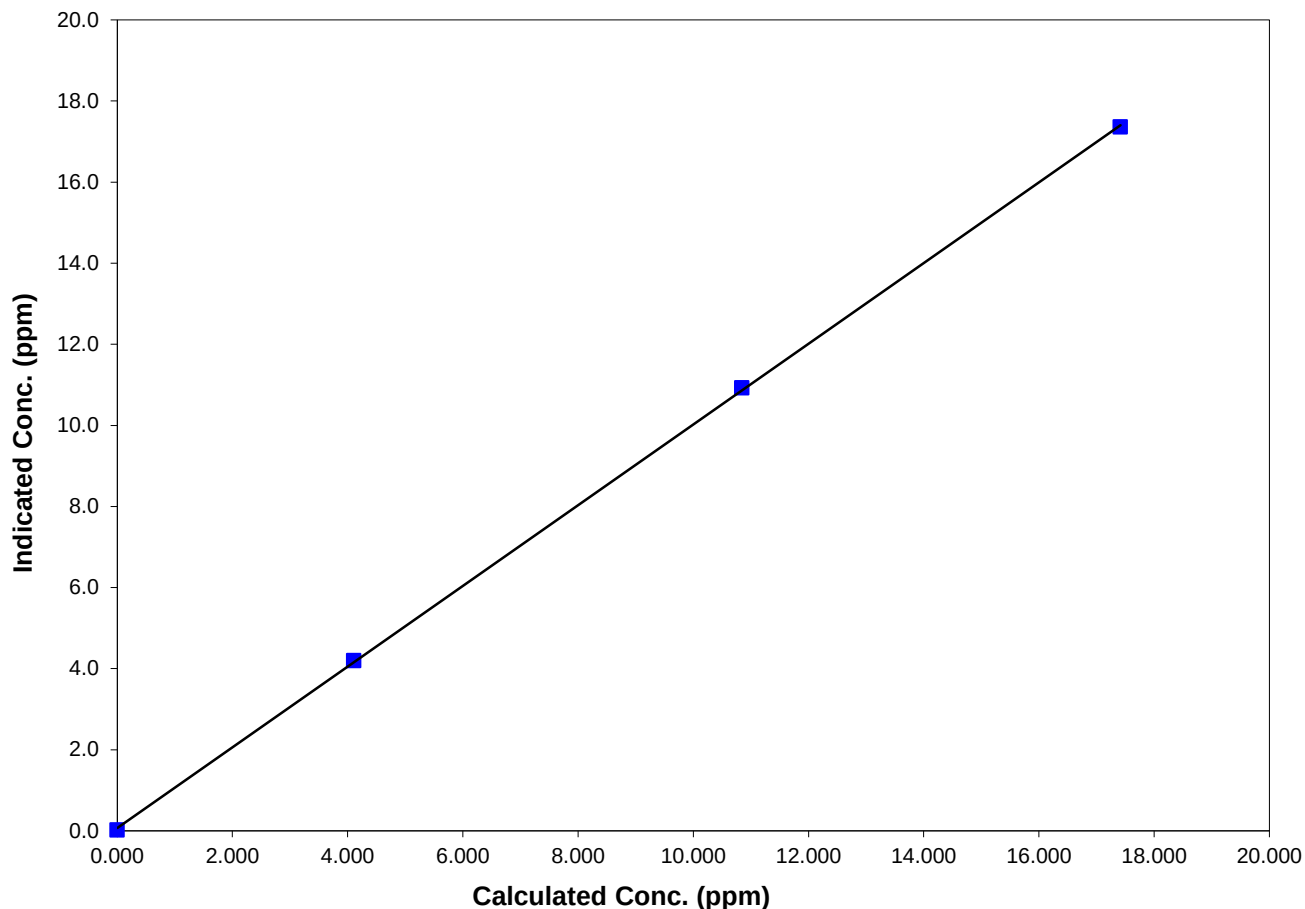
Station Information

Calibration Date	November 6, 2013	Previous Calibration	October 17, 2013
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	9:00	End Time (MST)	12:37
Analyzer make/model	TEI 55I	Analyzer serial #	1134650658

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	0.019	N/A		
17.414	17.358	1.0033	Correlation Coefficient	0.999941
10.841	10.927	0.9922		
4.109	4.194	0.9798	Slope	1.004419
			Intercept	-0.068983

NMHC Calibration Data



Calibration Summary

Parameter THC

Air Monitoring Network PAZA



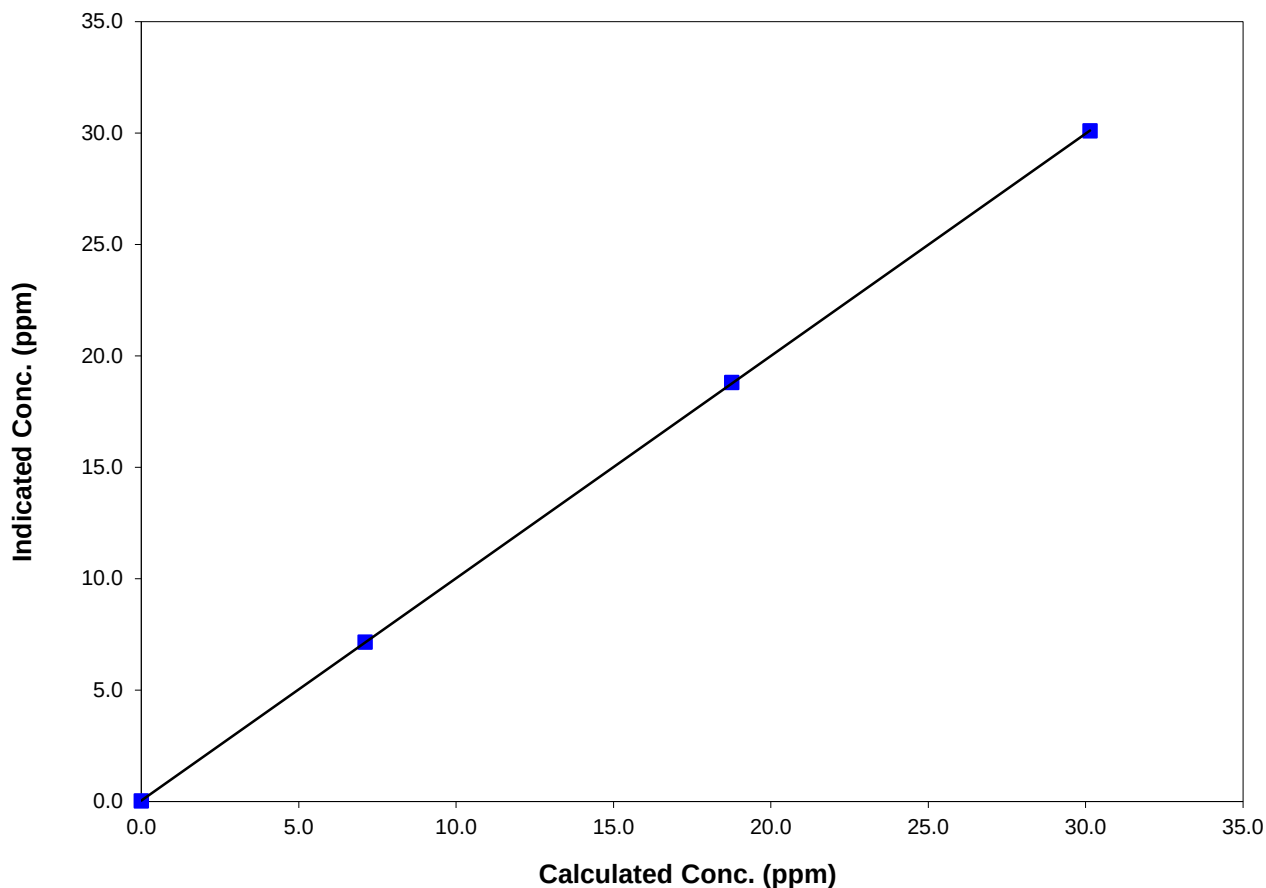
Station Information

Calibration Date	November 6, 2013	Previous Calibration	October 17, 2013
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	9:00	End Time (MST)	12:37
Analyzer make/model	TEI 55I	Analyzer serial #	1134650658

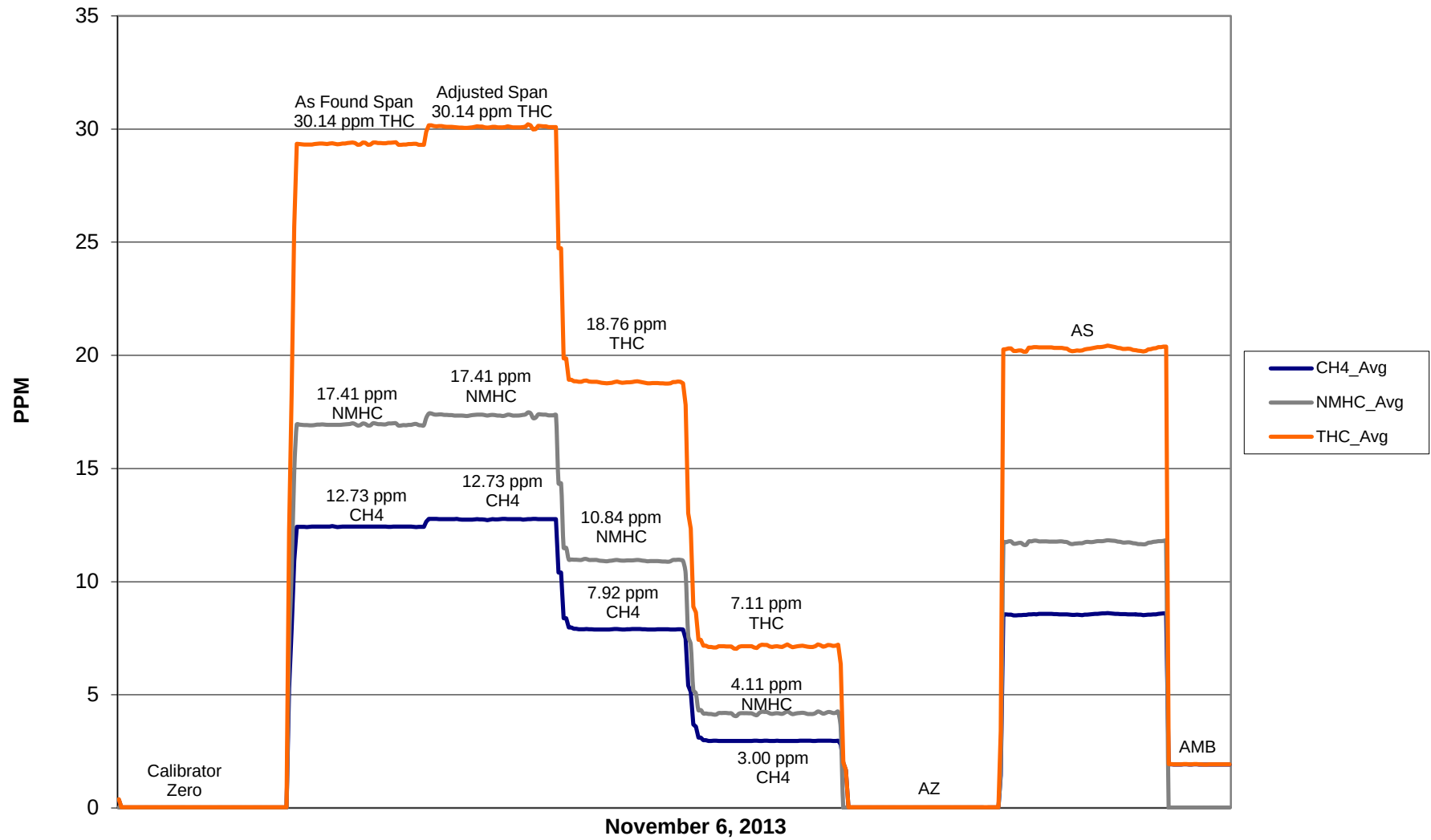
Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	0.032	N/A		
30.143	30.096	1.0016	Correlation Coefficient	0.999997
18.764	18.797	0.9982		
7.113	7.151	0.9946	Slope	1.002488
			Intercept	-0.048971

THC Calibration Data



THC/CH₄/NMHC Calibration



Calibration Report

Parameter TR5

Air Monitoring Network PAZA



Station Information

Calibration Date	November 6, 2013	Previous Calibration	October 17, 2013
Station Number	1	Station Location	Henry Pirker
Reason:	☒ Routine	☐ Install	☐ Removal
		☐ Other:	
Start Time (MST)	12:40	End Time (MST)	15:29
Barometric Pressure	704.000 mm/Hg	Station Temperature	20.0 Deg C
Calibrator	EnviroNics 6100	Serial Number	3474
Cal Gas Conc	10.4 ppb	Cal Gas Expiry Date	08/07/2016
		Cal Gas Cylinder #	LL110781
DACS make	CR3000	DACS serial No.	5408
DACS voltage range	0 - 1 volt	DACS channel #	9
	Before		After
Calculated slope	1.005561	Calculated slope	0.989114
Calculated intercept	0.224980	Calculated intercept	-0.156304
Analyzer make	TEI 45C	Analyzer serial #	630718528

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Coefficient	1.145		1.145	
Background	11.5		11.5	
Pressure	665.8	mm Hg	668.3	mm Hg
Flow	0.454	ccm	0.455	ccm
Lamp Voltage	825	V	825	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)
4995	0.00	0.00	0.39	N/A
4995	39.93	82.48	83.65	0.9860
4995	19.95	41.37	41.82	0.9894
8995	8.95	10.34	10.45	0.9896
4995	0.00	0.00	0.39	As Found Zero
4995	39.93	82.48	83.65	As Found Span
Average Correction Factor				0.9883

Calculated value of As Found Response: 84.0 ppb Percent Change of As Found: -1.8%

	before calibration		after calibration	
Auto zero	-0.92	ppb	0.29	ppb
Auto span	33.06	ppb	33.63	ppb

Notes: No adjustment.

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter TRS

Air Monitoring Network PAZA



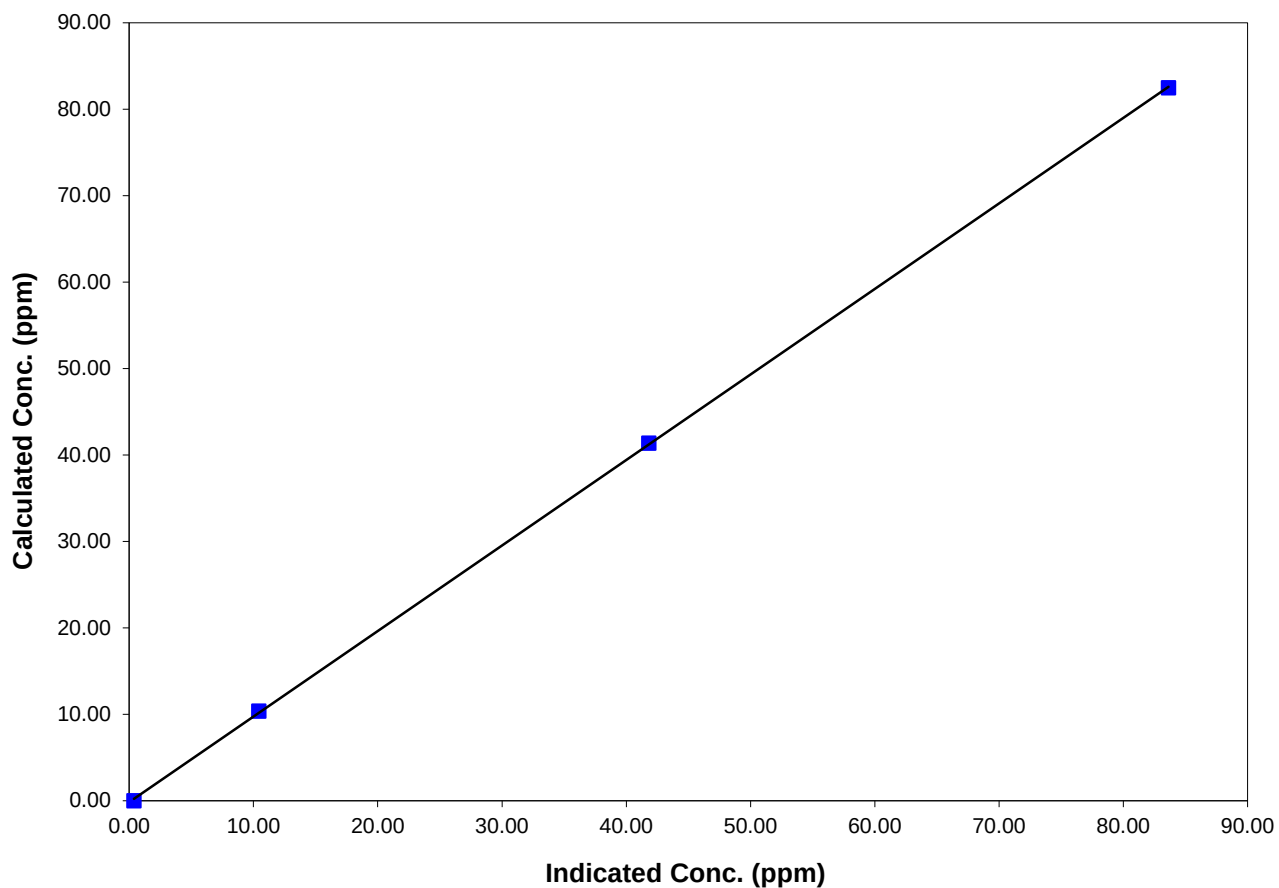
Station Information

Calibration Date	November 6, 2013	Previous Calibration	October 17, 2013
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	12:40	End Time (MST)	15:29
Analyzer make/model	TEI 45C	Analyzer serial #	630718528

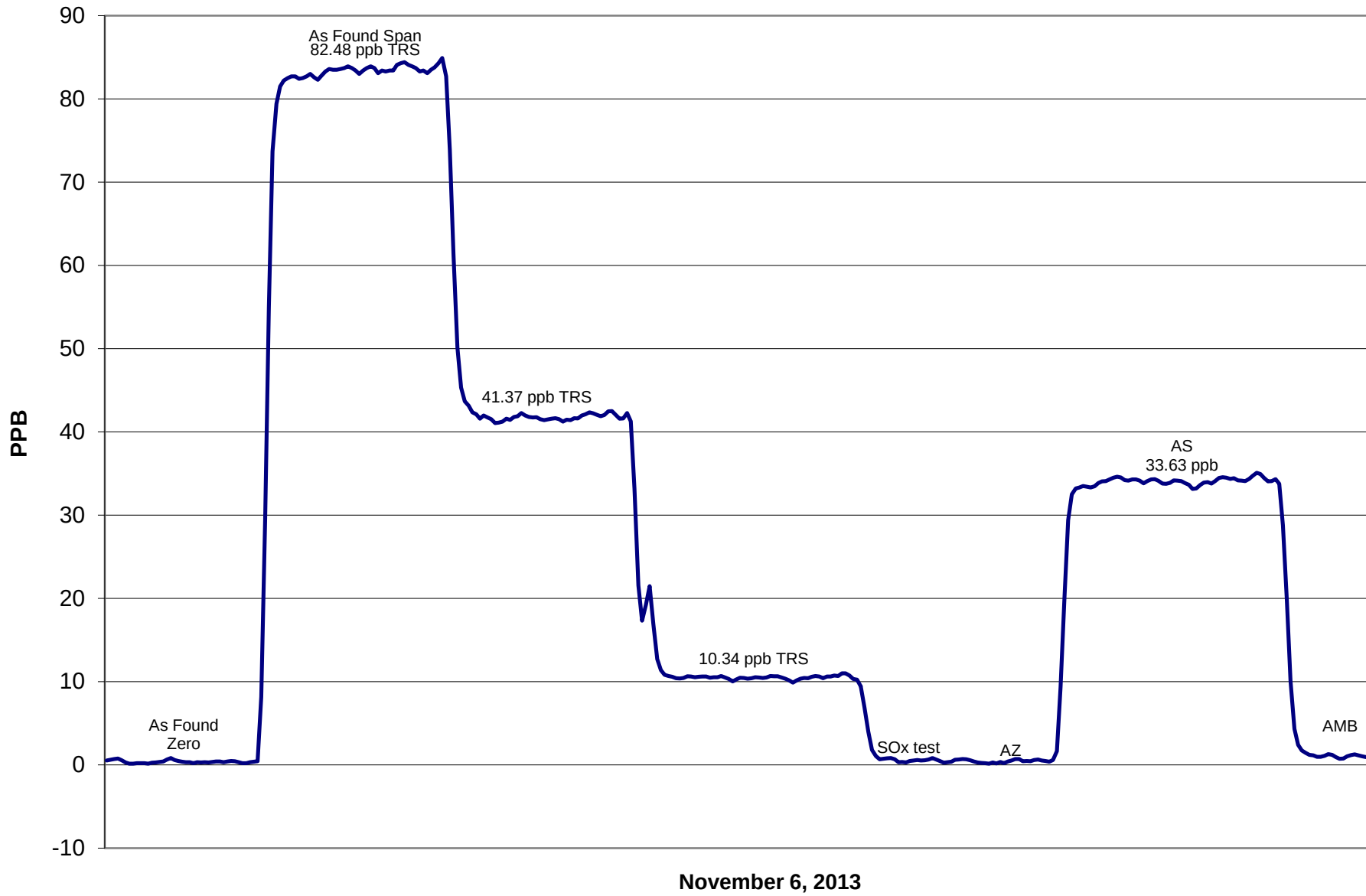
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	0.387	N/A		
82.478	83.648	0.9860	Correlation Coefficient	0.999972
41.372	41.816	0.9894		
10.338	10.446	0.9896	Slope	0.989114
			Intercept	-0.156304

TRS Calibration Curve



TRS Calibration



Calibration Report



Parameter SO₂

Air Monitoring Network PAZA

Station Information

Calibration Date	November 13, 2013	Previous Calibration	October 28, 2013
Station Number	2	Station Location	Evergreen Park
Reason:	Routine	Install	Removal
		Other:	
Start Time (MST)	12:01	End Time (MST)	14:34
Barometric Pressure	0.924 ATM	Station Temperature	20.0 Deg C
Calibrator	Envionics	Serial Number	3016
Cal Gas Concentration	51.5 ppm	Cal Gas Expiry Date	25/02/2025
Correction factor	0.031409	Cal Gas Cylinder #	LL105159
DACS make	CR3000	DACS serial No.	5236
DACS voltage range	0 - 5 volt	DACS channel #	6
	<u>Before</u>		<u>After</u>
Calculated slope	0.999173	Calculated slope	1.003471
Calculated intercept	1.901352	Calculated intercept	1.376699
Analyzer make	Teco 43i	Analyzer serial #	701120008

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Background	11.3		11.3	
coefficient	1.203		1.203	
Lamp Voltage	828	volts	830	volts
Chamber Temp	44.8	Deg C	45.2	Deg C
Perm Gas Temp	44.99	Deg C	45	Deg C
Pressure	667.7	mm Hg	669.8	mm Hg
Sample Flow	0.451	ccm	0.483	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)
4995	0.0	0.00	0.5	N/A
4995	39.93	408.4	406.7	1.0042
4995	19.97	205.1	201.5	1.0178
4995	9.97	102.6	99.4	1.0318
4995	0.0	0.0	0.5	As Found Zero
4995	39.93	408.4	406.7	As Found Span
Average Correction Factor				1.0179

Calculated value of As Found Response: 407.826 ppm Percent Change of As Found: 0.1%

	before calibration		after calibration	
Auto zero	0.2	ppm	0.4	ppm
Auto span	277.4	ppm	280.9	ppm

Notes: No adjustment made.

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter SO2

Air Monitoring Network PAZA



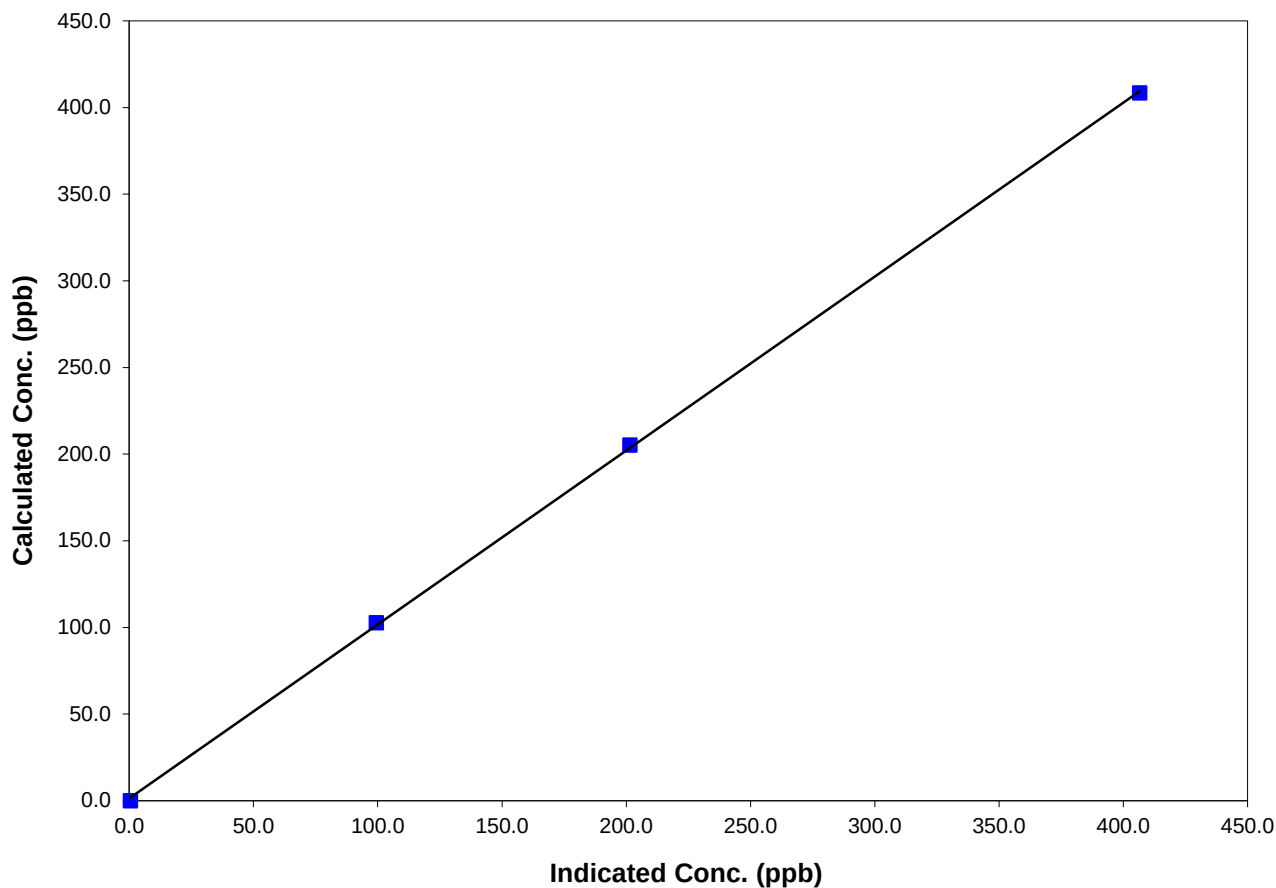
Station Information

Calibration Date	November 13, 2013	Previous Calibration	October 28, 2013
Station Number	2	Station Location	Evergreen Park
Start Time (MST)	12:01	End Time (MST)	14:34
Analyzer make/model	Teco 43i	Analyzer serial #	701120008

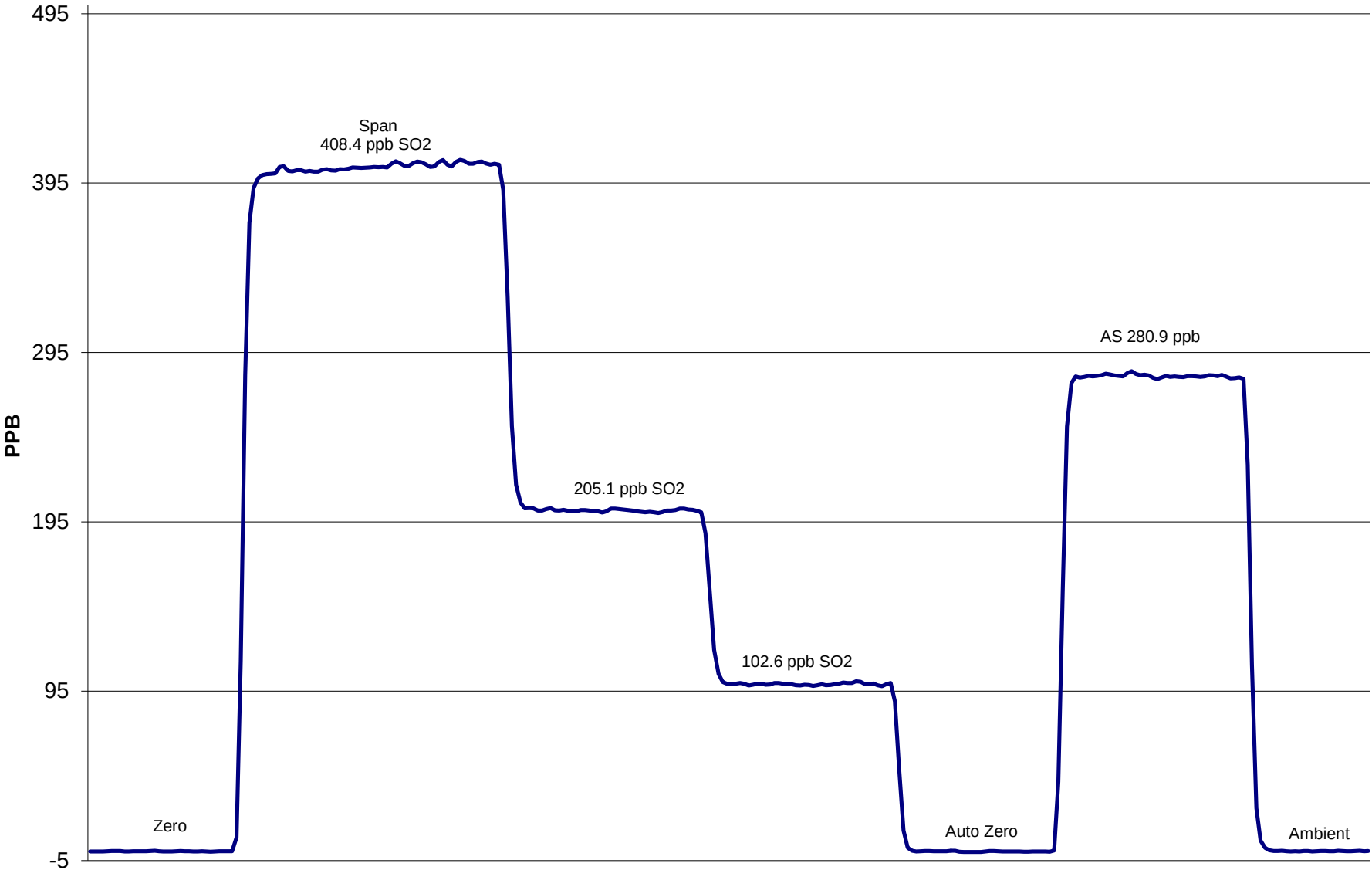
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.5	N/A		
408.4	406.7	1.0042	Correlation Coefficient	0.999902
205.1	201.5	1.0178		
102.6	99.4	1.0318	Slope	1.003471
			Intercept	1.376699

SO2 Calibration Curve



SO2 Calibration



November 13, 2013

Calibration Report



Parameter TR5

Air Monitoring Network PAZA

Station Information

Calibration Date	November 13, 2013	Previous Calibration	October 28, 2013
Station Number	2	Station Location	Evergreen Park
Reason:	Routine	Install	Removal
			Other:
Start Time (MST)	10:10	End Time (MST)	13:29
Barometric Pressure	0.924 ATM	Station Temperature	22.0 Deg C
Calibrator	Envionics	Serial Number	3016
Cal Gas Conc	10.4 ppm	Cal Gas Expiry Date	08/07/2016
Correction factor	0.031196	Cal Gas Cylinder #	LL110781
DACS make	CR3000	DACS serial No.	5236
DACS voltage range	0 - 5 volt	DACS channel #	5
	Before		After
Calculated slope	1.011108	Calculated slope	1.020247
Calculated intercept	0.128339	Calculated intercept	-0.373881

Analyzer make TEI Model 43C Analyzer serial # 3.199E+13

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Background	36.1	ppb	36.1	ppb
coefficient	1.014		1.014	
Lamp Voltage	1029	volts	1027	volts
Chamber Temp	44.2	Deg C	44.2	Deg C
Perm Gas Temp	45	Deg C	45	Deg C
Pressure	638.6	mm Hg	637.7	mm Hg
Sample Flow	0.624	ccm	0.632	ccm
Lamp Intensity	31,631	mv	31,571	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)
4995	0.00	0.00	0.5	N/A
4995	39.93	82.48	81.3	1.0145
4995	19.97	41.41	40.8	1.0157
8995	8.97	10.36	10.5	0.9852
4995	9.97	102.79	1.1	Sox Test
4995	0.00	0.00	0.5	As Found Zero
4995	39.93	82.48	81.3	As Found Span
Average Correction Factor				1.0051

Calculated value of As Found Response: 81.86 ppm Percent Change of As Found: 0.7%

	before calibration		after calibration	
Auto zero	0.4	ppm	0.1	ppm
Auto span	76.8	ppm	75.0	ppm

Notes: **No adjustment made.**

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter TRS

Air Monitoring Network PAZA



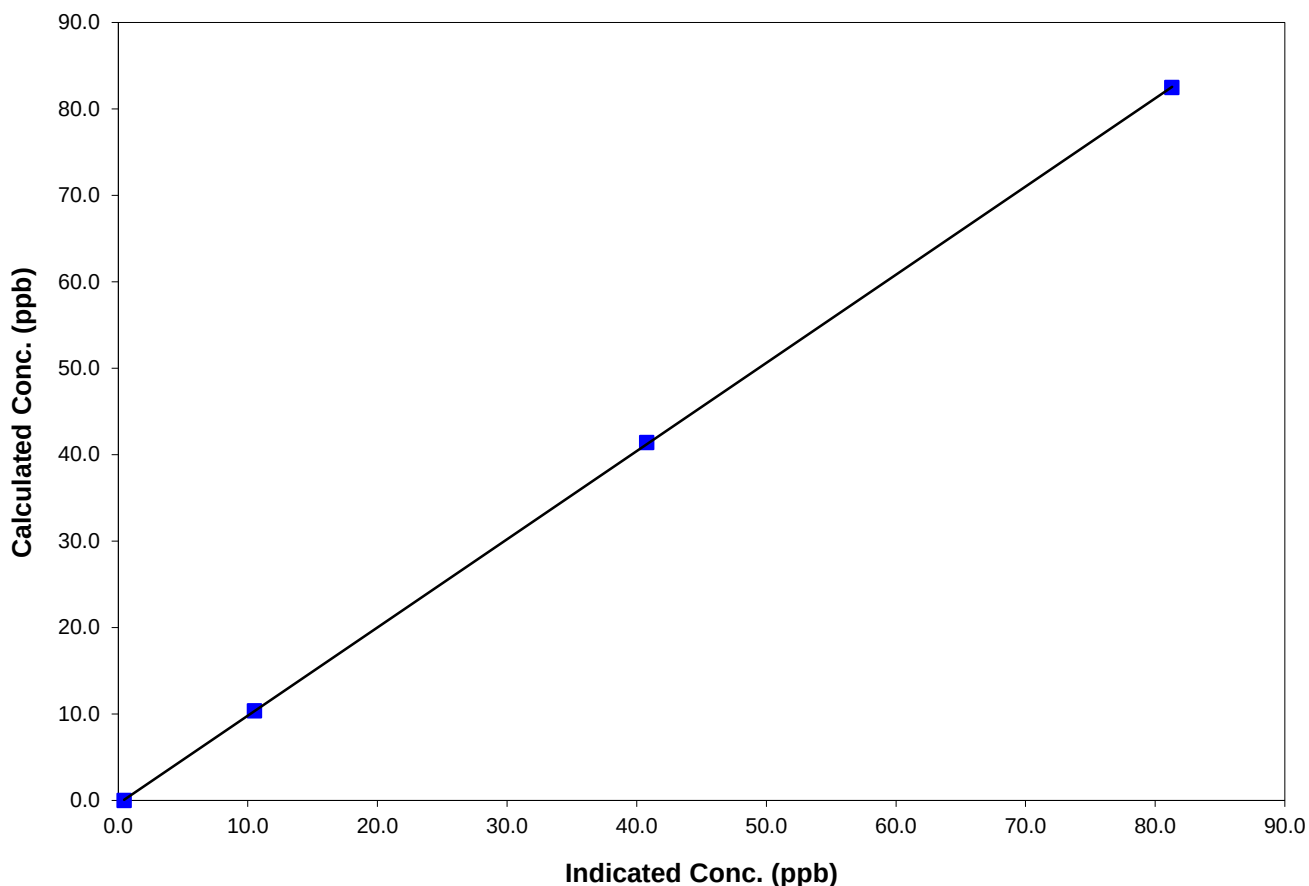
Station Information

Calibration Date	November 13, 2013	Previous Calibration	October 28, 2013
Station Number	2	Station Location	Evergreen Park
Start Time (MST)	10:10	End Time (MST)	13:29
Analyzer make/model	TEI Model 43C	Analyzer serial #	31990000000491

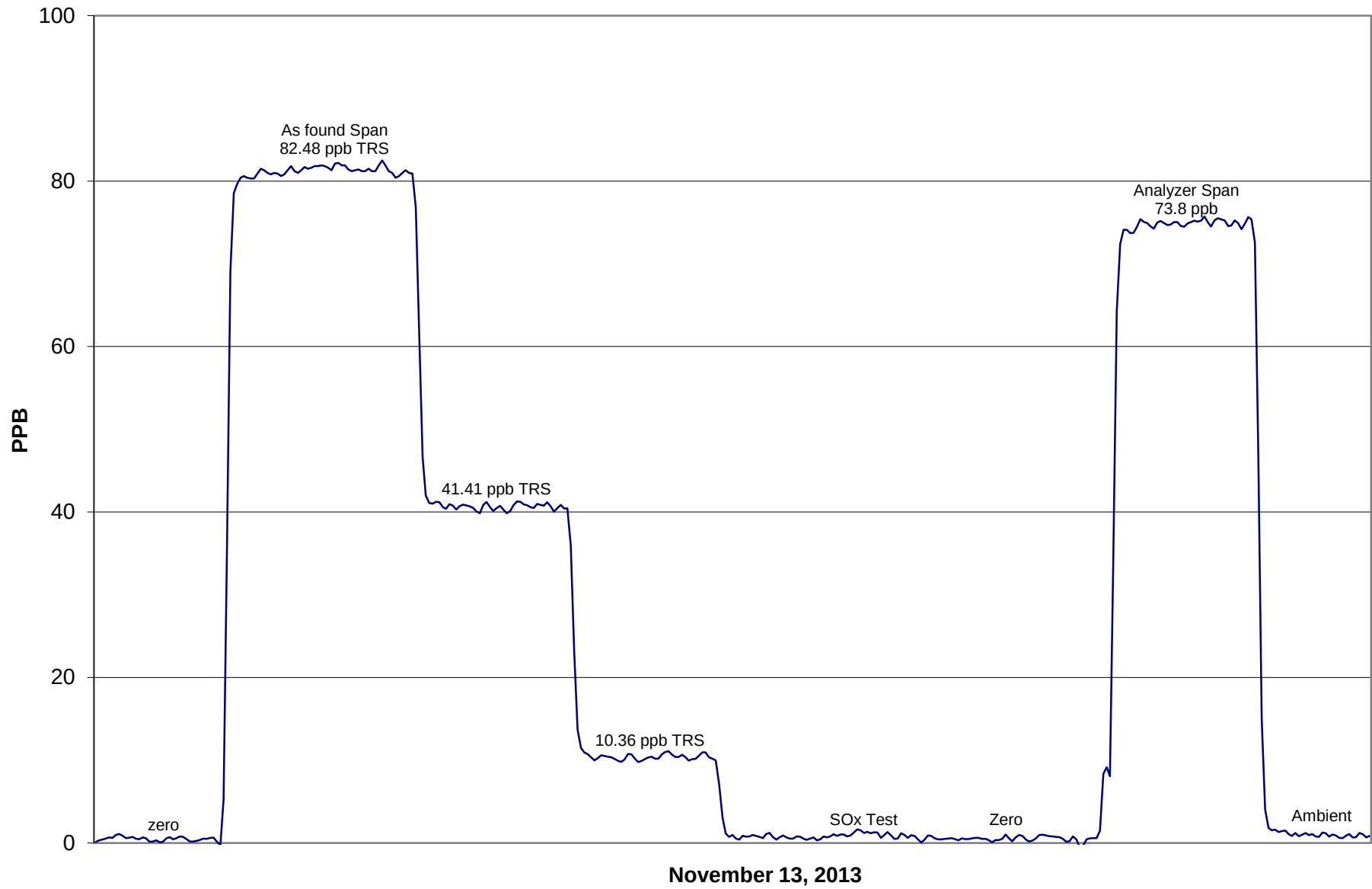
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.5	N/A	Correlation Coefficient	0.999987
82.5	81.3	1.0145		
41.4	40.8	1.0157		
10.4	10.5	0.9852	Slope	1.020247
			Intercept	-0.373881

TRS Calibration Curve



TRS Calibration



Calibration Report



Parameter SO₂

Air Monitoring Network PAZA

Station Information

Calibration Date	November 15, 2013	Previous Calibration	October 25, 2013
Station Number	3	Station Location	Smokey Heights
Reason:	☒ Routine	☐ Install	☐ Removal
		☐ Other:	
Start Time (MST)	11:30	End Time (MST)	14:18
Barometric Pressure	0.934 ATM	Station Temperature	20.0 Deg C
Calibrator	EnviroNics	Serial Number	3016
Cal Gas Concentration	51.5 ppm	Cal Gas Cert Date	20/01/2016
Correction factor	0.031749	Cal Gas Cylinder #	LL1105159
DACS make	CR3000	DACS serial No.	5238
DACS voltage range	0 - 5 volt	DACS channel #	6
	Before		After
Calculated slope	0.999611	Calculated slope	1.001564
Calculated intercept	1.337279	Calculated intercept	1.131803
Analyzer make	Teco 43i	Analyzer serial #	701120009

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Background	11.4		11.3	
coefficient	0.952		0.952	
Lamp Voltage	926	volts	924	volts
Chamber Temp	45	Deg C	44.9	Deg C
Perm Gas Temp	45	Deg C	45	Deg C
Pressure	650.6	mm Hg	653.9	mm Hg
Sample Flow	0.435	ccm	0.437	ccm
Lamp Intensity	89	%	88	%

Calibration Data

Dilution air flow rate (cc/min)	Corrected gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4995	0.0	0.00	0.4	N/A
4995	39.93	408.43	407.4	1.0026
4995	19.97	205.08	202.9	1.0106
4995	9.97	102.59	99.7	1.0286
4995	0.0	0.00	0.4	As Found Zero
4995	39.93	408.43	407.4	As Found Span
Average Correction Factor				1.0139

Calculated value of As Found Response: 408.166 ppm Percent Change of As Found: 0.1%

	before calibration		after calibration	
Auto zero	0.2	ppb	0.4	ppb
Auto span	253.7	ppb	261.0	ppb

Notes: No adjustment made.

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter SO2

Air Monitoring Network PAZA



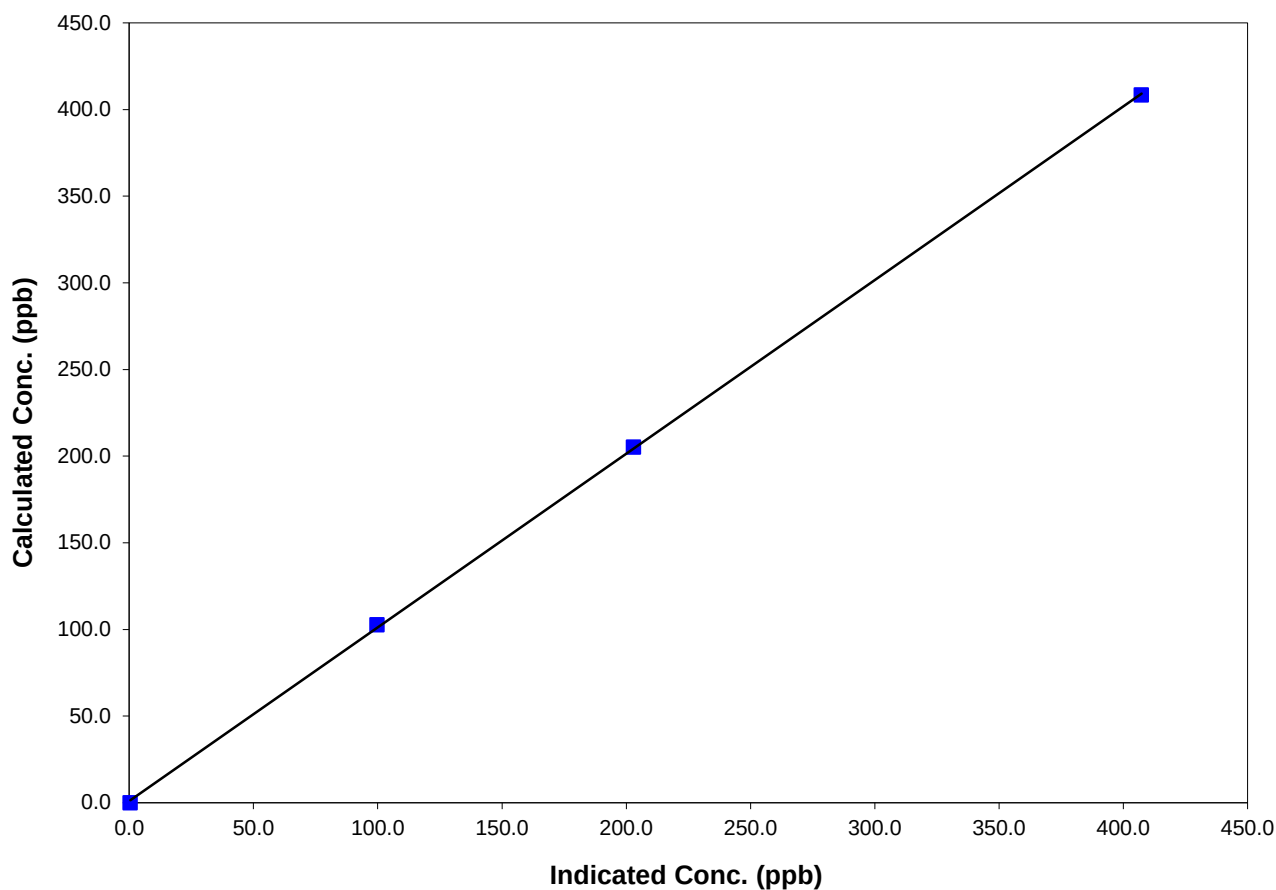
Station Information

Calibration Date	November 15, 2013	Previous Calibration	October 25, 2013
Station Number	3	Station Location	Smokey Heights
Start Time (MST)	11:30	End Time (MST)	14:18
Analyzer make/model	Teco 43i	Analyzer serial #	701120009

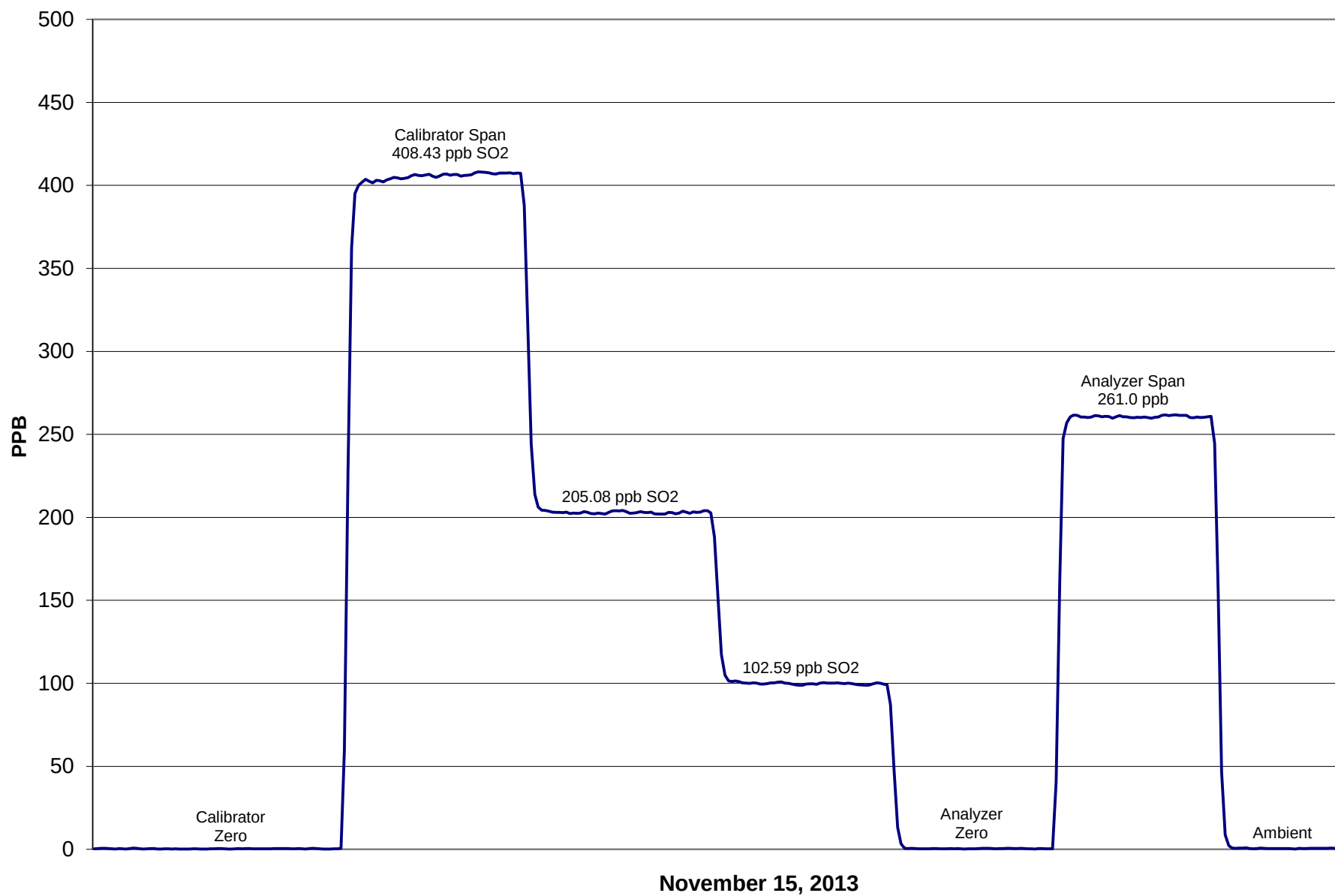
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.4	N/A	Correlation Coefficient	0.999936
408.4	407.4	1.0026		
205.1	202.9	1.0106		
102.6	99.7	1.0286	Slope	1.001564
			Intercept	1.131803

SO2 Calibration Curve



Smokey Heights SO₂ Calibration



Calibration Report

Parameter TRS

Air Monitoring Network PAZA



Station Information

Calibration Date	November 15, 2013	Previous Calibration	October 25, 2013
Station Number	3	Station Location	Smokey Heights
Reason:	Routine	Install	Removal
			Other:
Start Time (MST)	9:40	End Time (MST)	12:36
Barometric Pressure	0.934 ATM	Station Temperature	20.0 Deg C
Calibrator	EnviroNics	Serial Number	3016
Cal Gas Conc	10.4 ppm	Cal Gas Expiry Date	08/07/2016
Correction factor	0.031749	Cal Gas Cylinder #	LL110781
DACS make	CR3000	DACS serial No.	5238
DACS voltage range	0 - 5 volt	DACS channel #	5
	Before		After
Calculated slope	0.996652	Calculated slope	1.014016
Calculated intercept	0.509498	Calculated intercept	0.165521

Analyzer make TEI Model 43C Analyzer serial # 0436610005

	before		after	
Concentration range	100	ppb	100	ppb
Background	17.5	ppb	17.6	ppb
coefficient	0.956		0.956	
Lamp Voltage	826	volts	826	volts
Chamber Temp	43.7	Deg C	43.7	Deg C
Perm Gas Temp	45	Deg C	44.99	Deg C
Pressure	590.7	mm Hg	590.2	mm Hg
Sample Flow	0.633	ccm	0.635	ccm
Lamp Intensity	35,182	mv	34,756	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)
4995	0.0	0.00	0.3	N/A
4995	39.93	82.48	81.4	1.0129
4995	19.97	41.41	40.4	1.0262
4995	9.97	20.72	19.9	1.0421
4995	0.0	0.00	0.3	As Found Zero
4995	39.93	82.48	81.4	As Found Span
Average Correction Factor				1.0271

Calculated value of As Found Response: 81.37 ppm Percent Change of As Found: 1.3%

	before calibration		after calibration	
Auto zero	1.2	ppm	0.4	ppm
Auto span	31.0	ppm	33.6	ppm

Notes: No adjustment made. Flow error made when submitting last point from calibrator. Dilution air should have been 8995 ccm & gas flow 8.97 ccm, which would have created a concentration of 10.38 ppb.

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter TRS

Air Monitoring Network PAZA



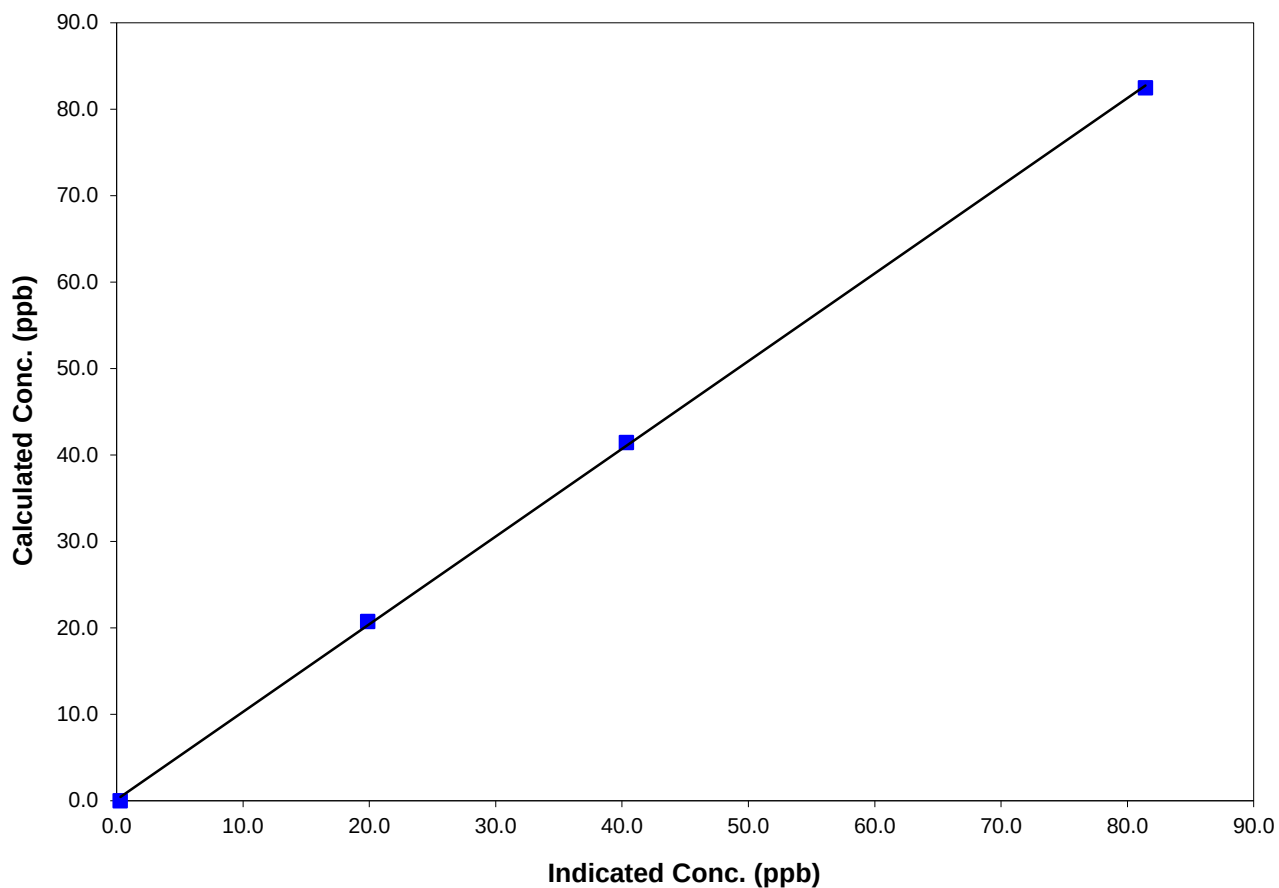
Station Information

Calibration Date	November 15, 2013	Previous Calibration	October 25, 2013
Station Number	3	Station Location	Smokey Heights
Start Time (MST)	9:40	End Time (MST)	12:36
Analyzer make/model	TEI Model 43C	Analyzer serial #	0436610005

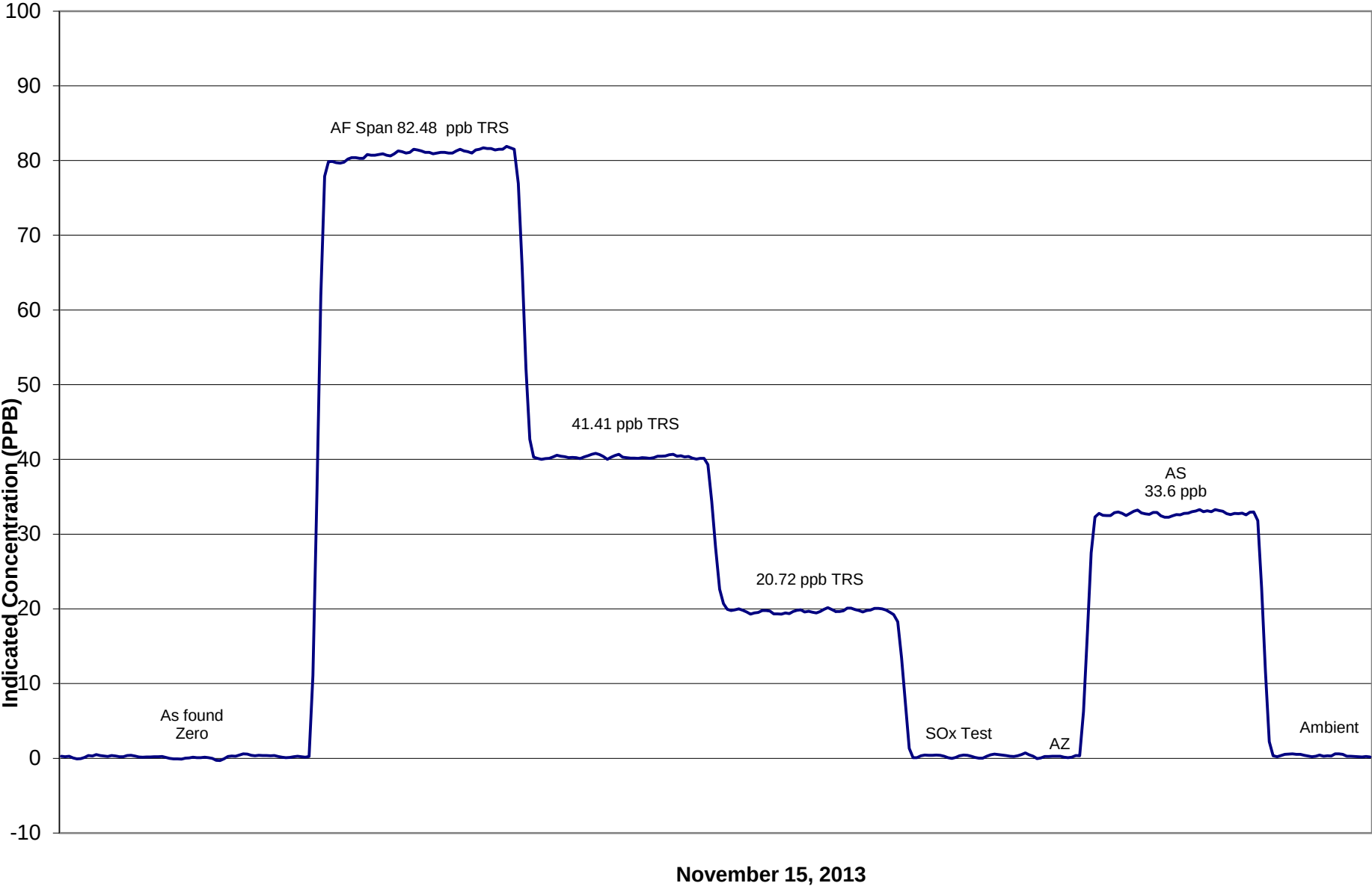
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.3	N/A	Correlation Coefficient	0.999855
82.5	81.4	1.0129		
41.4	40.4	1.0262		
20.7	19.9	1.0421	Slope	1.014016
			Intercept	0.165521

TRS Calibration Curve



Smokey Heights TRS Calibration



Calibration Report

Parameter SO2
Air Monitoring Network PAZA



Station Information

Calibration Date	November 12, 2013	Previous Calibration	October 23, 2013
Station Number	4	Station Location	Beaverlodge
Reason:	Routine	Install	Removal Other:
Start Time (MST)	15:15:00 PM	End Time (MST)	18:04:00 PM
Barometric Pressure	0.905 atm	Station Temperature	20.0 Deg C
Calibrator	EnviroNics	Serial Number	3016
Cal Gas Concentration	10.8 ppm	Cal Gas Expiry Date	28/09/2012
Gas Cert Reference	FF14871		
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	1.000817	Calculated slope	1.004489
Calculated intercept	-0.388219	Calculated intercept	-0.352225
Analyzer make	TEI Model 43i-TLE	Analyzer serial #	713021137

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Background	2.35		2.35	
Coefficient	1.042		1.042	
PMT	-768.5	V	-768.5	V
UV Lamp Voltage	1063	V	1063	V
Chamber Temp	45	Deg C	45	Deg C
Pressure	663.4	mm Hg	659.8	mm Hg
Sample Flow	0.481	LPM	0.479	LPM
Lamp Intesity	95	%	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)
4995	0.00	0.0	0.4	N/A
4995	39.93	85.7	85.6	1.0006
4995	19.97	43.0	43.3	0.9938
4995	9.97	21.5	21.6	0.9952
4995	0.00	0.0	0.4	As found zero
4995	39.93	85.7	85.6	As found span
Average Correction Factor				0.9965

Calculated value of As Found Response: 84.872 ppm Percent Change of As Found: 0.9%

	before calibration		after calibration	
Auto zero	0.2	ppb	0.0	ppb
Auto span	59.9	ppb	59.7	ppb

Notes: No adjustment made.

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter SO2

Air Monitoring Network PAZA



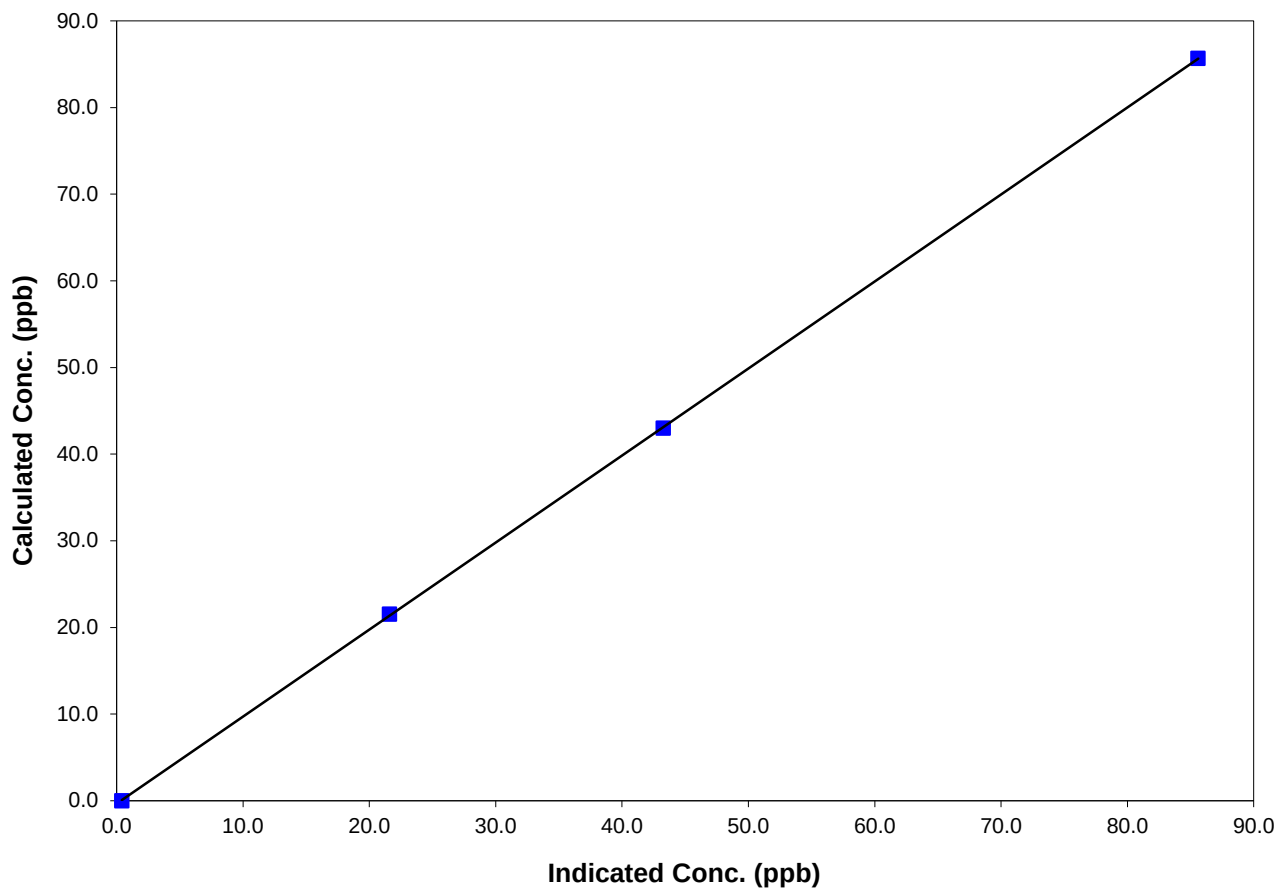
Station Information

Calibration Date	November 12, 2013	Previous Calibration	October 23, 2013
Station Number	4	Station Location	Beaverlodge
Start Time (MST)	15:15:00 PM	End Time (MST)	18:04:00 PM
Analyzer make/model	TEI Model 43i-TLE	Analyzer serial #	713021137

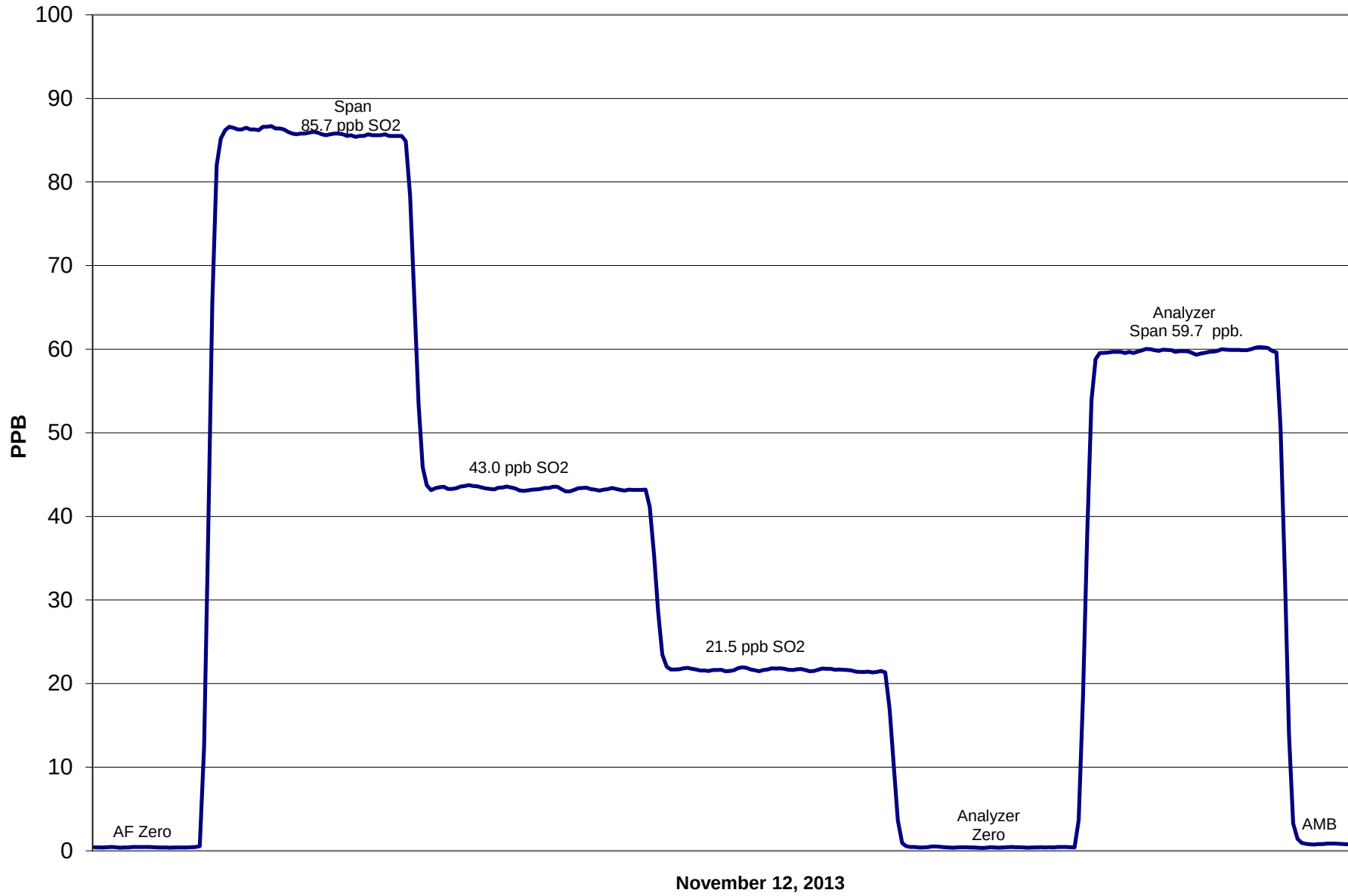
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.4	N/A		
85.7	85.6	1.0006	Correlation Coefficient	0.999990
43.0	43.3	0.9938		
21.5	21.6	0.9952	Slope	1.004489
			Intercept	-0.352225

SO2 Calibration Curve



SO2 Calibration



Parameter
Air Monitoring Network

NO_x-NO-NO₂
PAZA



Station Information

Station Information				
Calibration Date	November 12, 2013		Previous Calibration	October 23, 2013
Station Number	4		Station Location	Beaverlodge
Reason:	☒ Routine	☐ Installation	☐ Removal	Other: _____
Start Time (MST)	9:45		End Time (MST)	14:44
Barometric Pressure	0.905	Atm	Station Temperature	20.0 Deg C
Calibrator	EnviroNics		Serial Number	3016
NO Cal Gas Conc	51.3	ppm	Cal Gas Expiry Date	February 25, 2021
NOx Cal Gas Conc	51.4	ppm	Cal Gas Serial #	LL105159

DACS Information

DACS make				
CR3000		DACS serial No.		
		5237		
	Parameter	NO2	NOx	NO
Before	Data Slope	1.000351	0.996495	0.995954
	Data Offset	-0.091886	0.906868	1.065539
After	Data Slope	1.002324	1.000038	0.997017
	Data Offset	-0.172702	1.169174	1.638567
Channel #		8	6	7
Voltage Range		0 - 5 VDC	0 - 5 VDC	0 - 5 VDC

Analyzer Information

Analyzer make/model	TEI 42i	Analyzer serial #	906535068	
Test Point	before		after	
Concentration range	0-500	ppb	0-500	ppb
NO offset	2.3	mV	2.5	mV
NOx bkgnd	2.8	mV	2.8	mV
NO coefficient	1.198		1.207	
NOx coefficient	0.999		0.995	
NO2 conv temp	322.1	Deg C	326.8	Deg C
PMT Temp	-2.9	Deg C	-3.0	Deg C
PMT Volt	-709.3	mV	-716.3	mV
R Cell Press	193.3	in Hg	193.9	in Hg
Sample Flow	0.665	LPM	0.667	LPM

Notes: Slight span adjust up 80% point.

Calibration Report

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



Station Information

Calibration Date: November 12, 2013 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	4995	0.00	0.0	0.0	0.0	0.2	-0.1	0.2	N/A	N/A
1	4995	39.93	407.6	406.8	0.8	407.0	407.1	-1.0	1.0016	0.9993
2	4995	19.97	204.7	204.3	0.4	203.3	202.7	-0.1	1.0069	1.0080
3	4995	9.97	102.4	102.2	0.2	99.5	99.2	0.2	1.0290	1.0304
AFZ	4995	0.00	0.0	0.0	0.0	0.2	-0.1	0.2	0.0000	0.0000
AFS	4995	39.93	407.6	406.8	0.8	375.4	374.1	0.5	1.0858	1.0876
Average Correction Factor									1.0125	1.0126

As Found Concentrations: NO_x= 376.1 NO= 375.2 As Found Percent Change NO_x= -7.7% NO= -7.8%

GPT Calibration Data

Dilution Flow 4995 ccm Source Gas Flow 39.93 ccm

O3 Setpoint (ppb)	Indicated NO high point (ppb)	Indicated NO drop conc (ppb)	Calculated NO2 conc (ppb)	Indicated NOx conc (ppb)	Indicated NO conc (ppb)	Indicated NO2 conc (ppb)	NOx Correction factor	NO Correction factor	NO2 Correction factor	Converter Efficiency
0	-0.1	-0.1	0.0	0.2	-0.1	0.2	N/A	N/A	N/A	N/A
NO point	405.0	405.0	0.0	405.5	405.0	-0.2	0.9986	1.0000	N/A	N/A
300	405.0	97.1	307.9	405.6	97.1	307.8	0.9985	1.0000	1.0004	100.0%
200	405.0	197.2	207.8	404.7	197.2	206.6	1.0008	1.0000	1.0056	99.4%
100	405.0	300.0	104.9	405.9	300.0	105.3	0.9977	1.0000	0.9965	100.3%
Average Correction Factor							0.9990	1.0000	1.0009	99.9%

AIC Data

	Previous calibration				Current calibration			
Parameter	NOx	NO2	NO		NOx	NO2	NO	
Auto zero	-0.1	-0.1	-0.1	ppb	0.0	0.0	-0.1	ppb
Auto span	168.3	166.9	1.1	ppb	191.9	190.1	1.2	ppb

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter NO₂

Air Monitoring Network PAZA



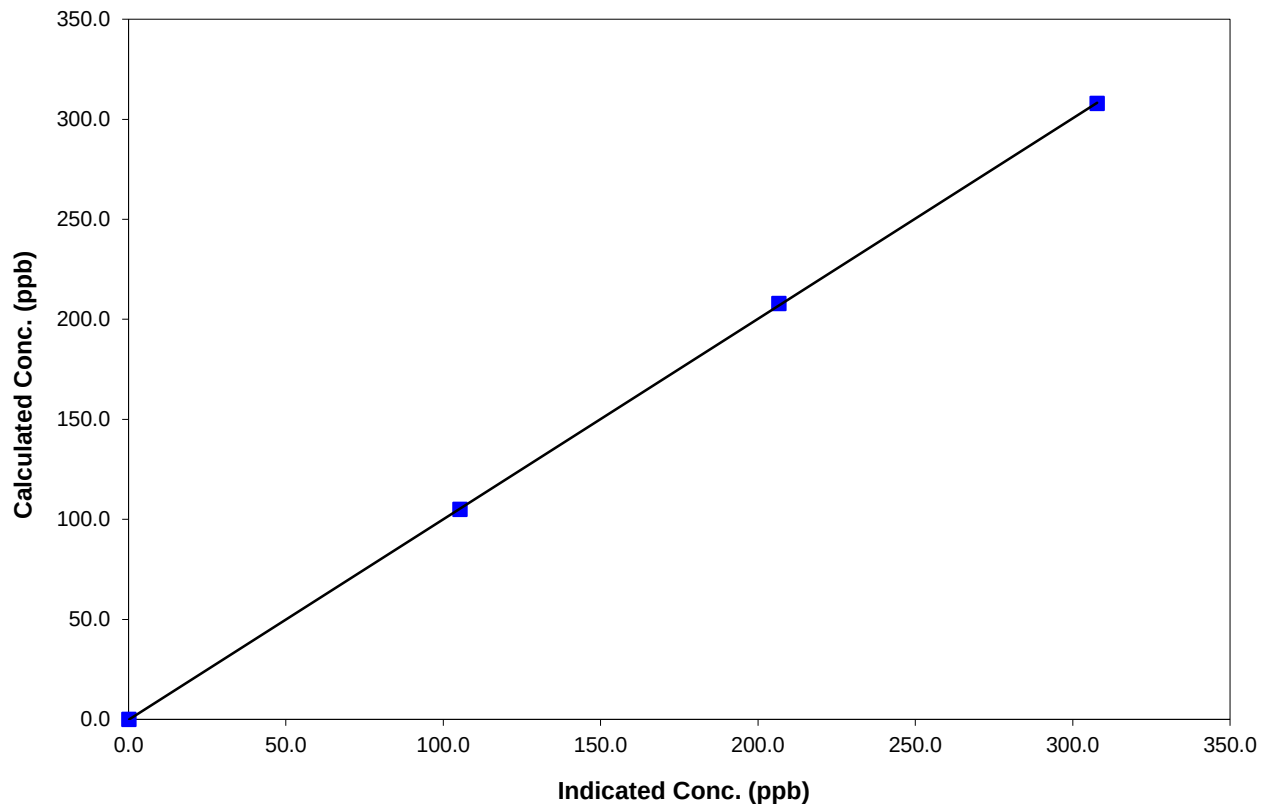
Station Information

Calibration Date	November 12, 2013	Previous Calibration	October 23, 2013
Station Number	4	Station Location	Beaverlodge
Start Time (MST)	9:45	End Time (MST)	14:44
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	0.999979
307.9	307.8	1.0004		
207.8	206.6	1.0056		
104.9	105.3	0.9965	Slope	1.002324
			Intercept	-0.172702

NO₂ Calibration Curve



Calibration Summary

Parameter NO_x

Air Monitoring Network PAZA



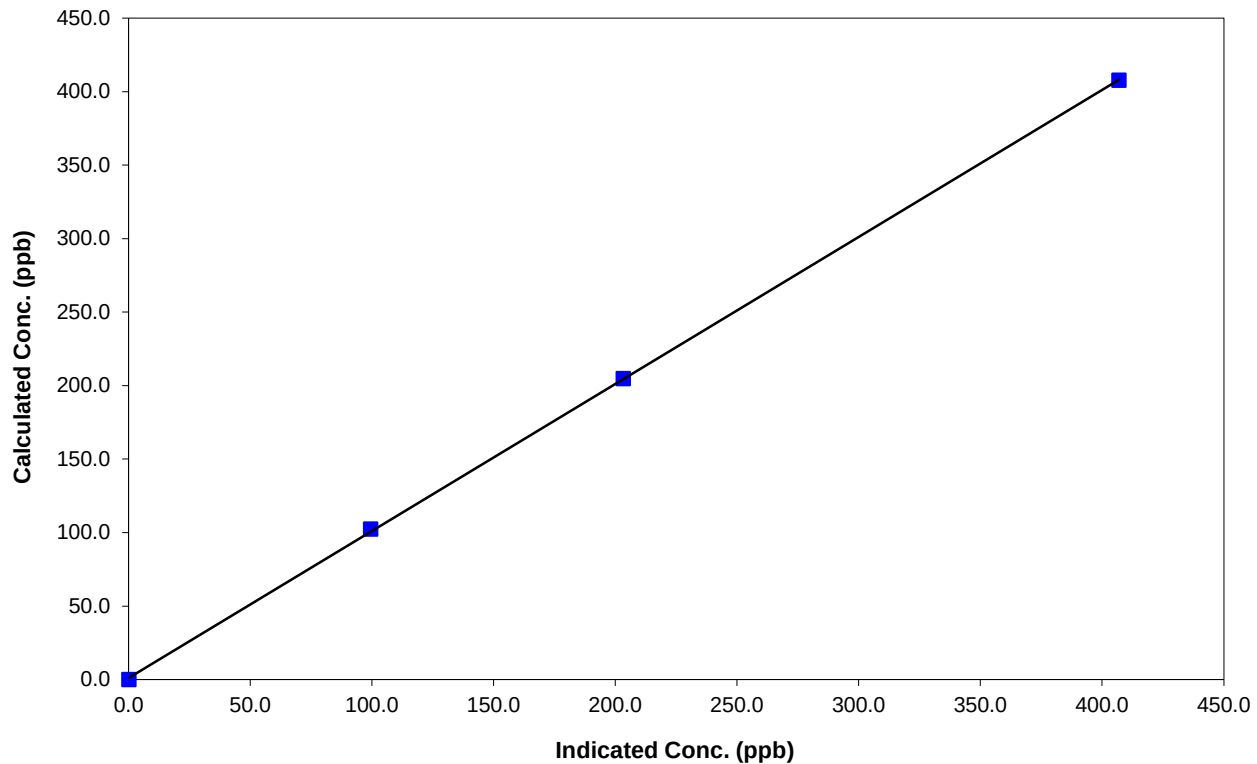
Station Information

Calibration Date	November 12, 2013	Previous Calibration	October 23, 2013
Station Number	4	Station Location	Beaverlodge
Start Time (MST)	9:45	End Time (MST)	14:44
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	0.999942
407.6	407.0	1.0016		
204.7	203.3	1.0069		
102.4	99.5	1.0290	Slope	1.000038
			Intercept	1.169174

NO_x Calibration Curve



Calibration Summary

Parameter NO

Air Monitoring Network PAZA



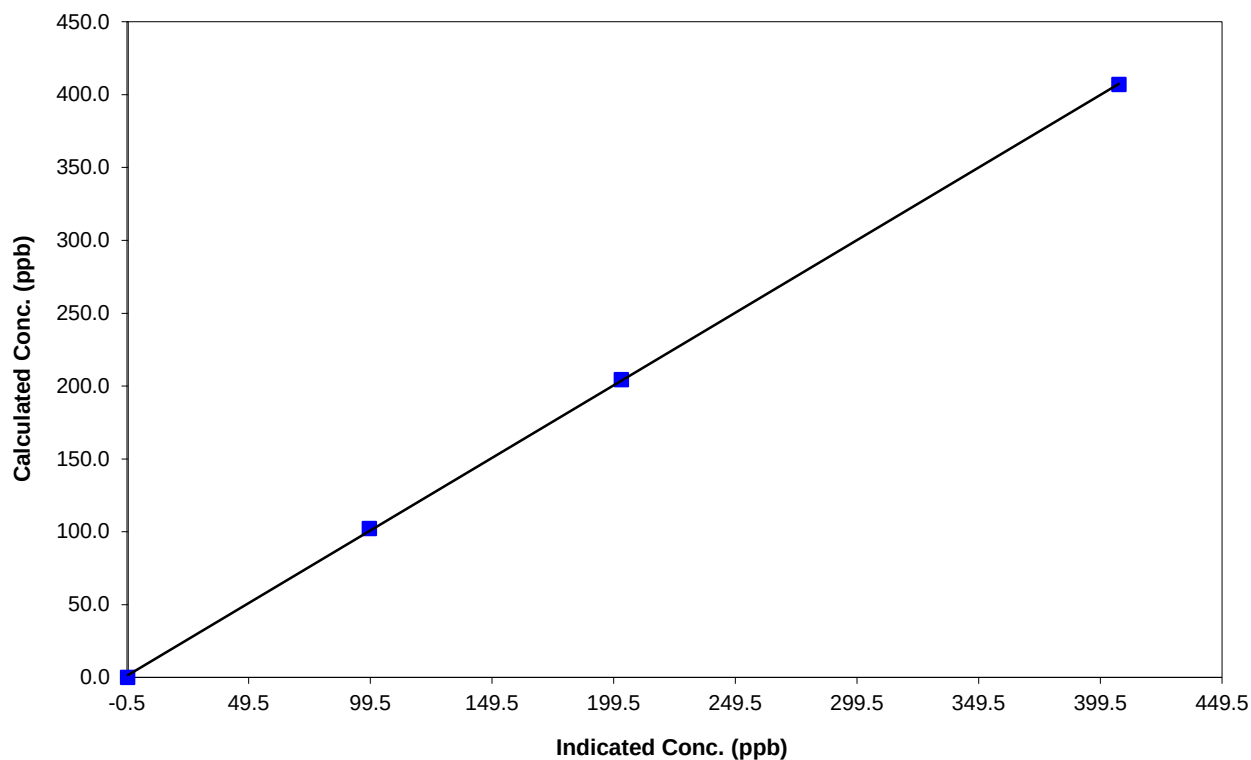
Station Information

Calibration Date	November 12, 2013	Previous Calibration	October 23, 2013
Station Number	4	Station Location	Beaverlodge
Start Time (MST)	9:45	End Time (MST)	14:44
Analyzer make	TEI 42i	Analyzer serial #	906535068

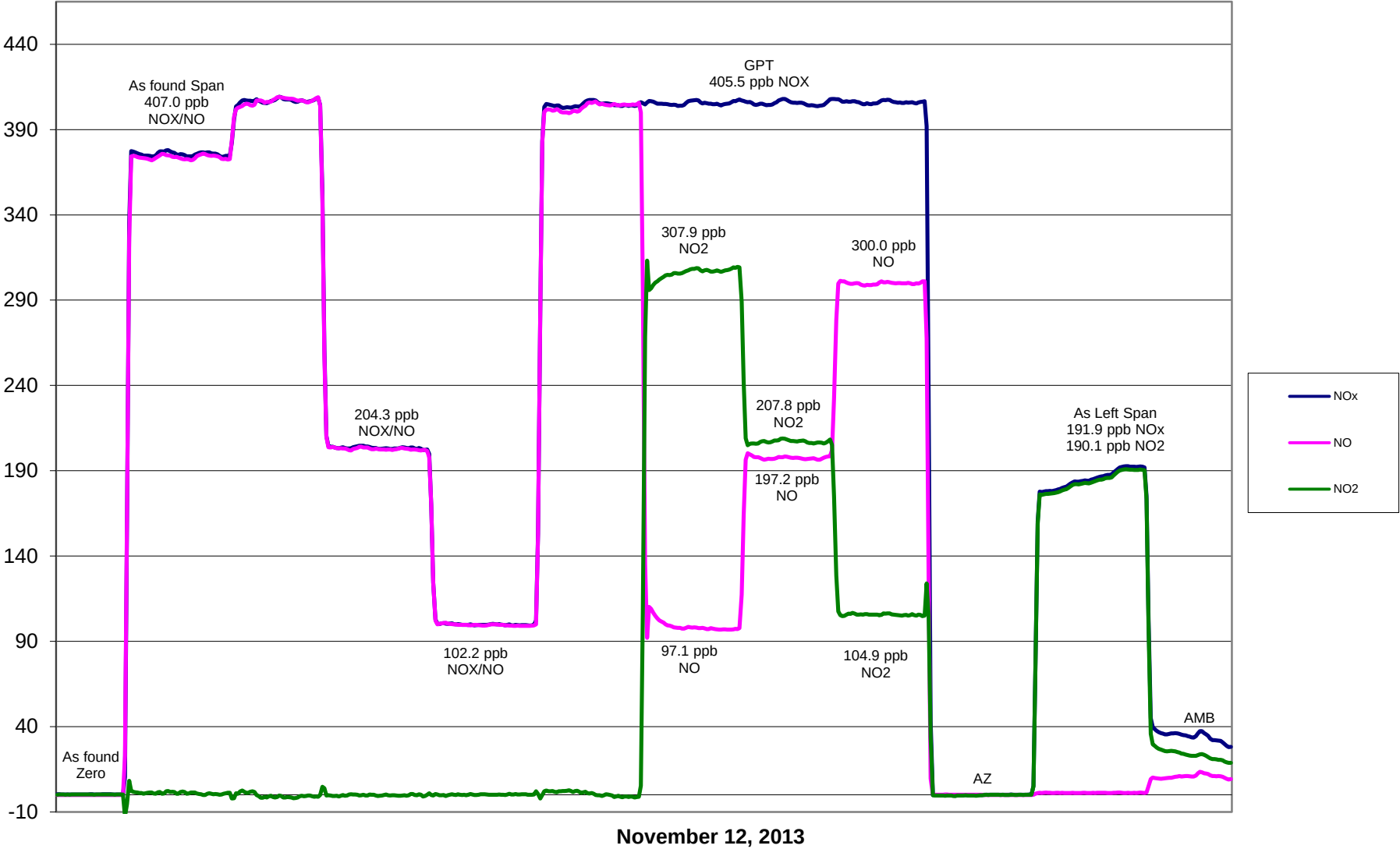
Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.1	N/A	Correlation Coefficient	0.999933
406.8	407.1	0.9993		
204.3	202.7	1.0080		
102.2	99.2	1.0304	Slope	0.997017
			Intercept	1.638567

NO Calibration Curve



PAZA Beaverlodge NO_x Calibration



Calibration Report

Parameter 03

Air Monitoring Network PAZA



Station Information

Calibration Date	November 12, 2013	Previous Calibration	October 23, 2013
Station Number	4	Station Location	Beaverlodge
Reason:	Routine	Install	Removal
		Other:	

Start Time (MST)	13:30 PM	End Time (MST)	16:35
Barometric Pressure	0.905 atm	Station Temperature	20.0 Deg C
Calibrator	EnviroNics	Serial Number	3016
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	1.008342	Calculated slope	1.007881
Calculated intercept	-0.493365	Calculated intercept	-1.506238

Analyzer make	Teco 49i	Analyzer serial #	1136451236 (AMU 1879)
---------------	----------	-------------------	-----------------------

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
offset	-1.20	ppb	-1.20	ppb
slope	1.012		1.012	
Lamp temp	53.9	mV	53.8	mV
Lamp Intensity A/B	70519/75005	mV	69212/73533	mV
Pressure	681.4	mm Hg	681.4	mm Hg
Flow A	0.757	LPM	0.757	LPM
Flow B	0.744	LPM	0.746	LPM

Calibration Data

Dilution air flow rate (cc/min)	Calibrator Setting	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
5035	0.00	0.0	0.7	N/A
5035	0.30	307.9	307.0	1.0030
5035	0.20	207.8	206.9	1.0045
5035	0.10	104.9	107.1	0.9791
5035	0.00	0.0	0.7	As found zero
5035	0.30	307.9	307.0	As found span
Average Correction Factor				0.9955

Calculated value of As Found Response: 308.3 ppm Percent Change of As Found: 0.1%

	before calibration		after calibration	
Auto zero	1.0	ppb	-0.8	ppb
Auto span	268.4	ppb	268.7	ppb

Notes: No adjustment.

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter 03

Air Monitoring Network PAZA



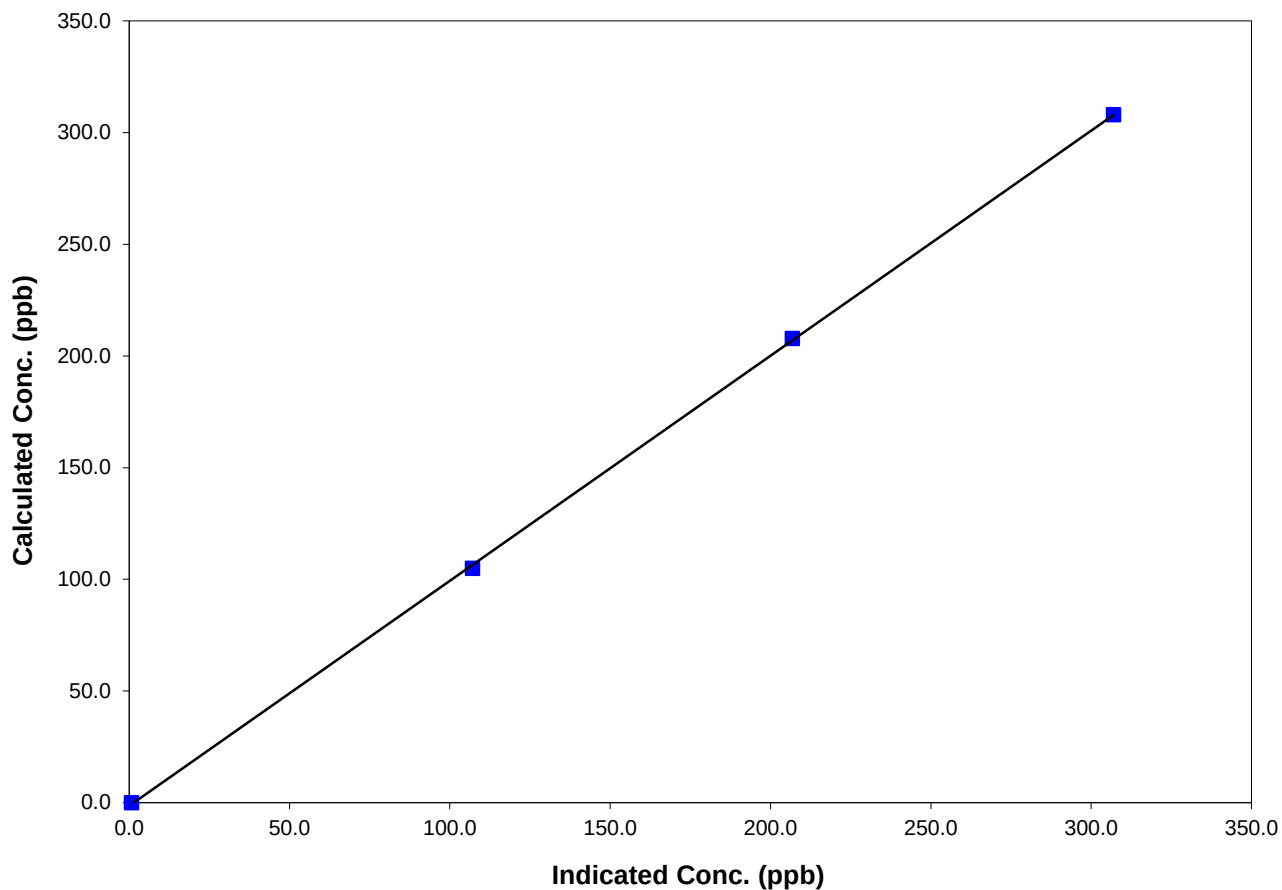
Station Information

Calibration Date	November 12, 2013	Previous Calibration	October 23, 2013
Station Number	4	Station Location	Beaverlodge
Start Time (MST)	13:30 PM	End Time (MST)	16:35
Analyzer make/model	Teco 49i	Analyzer serial #	1136451236 (AMU 1879)

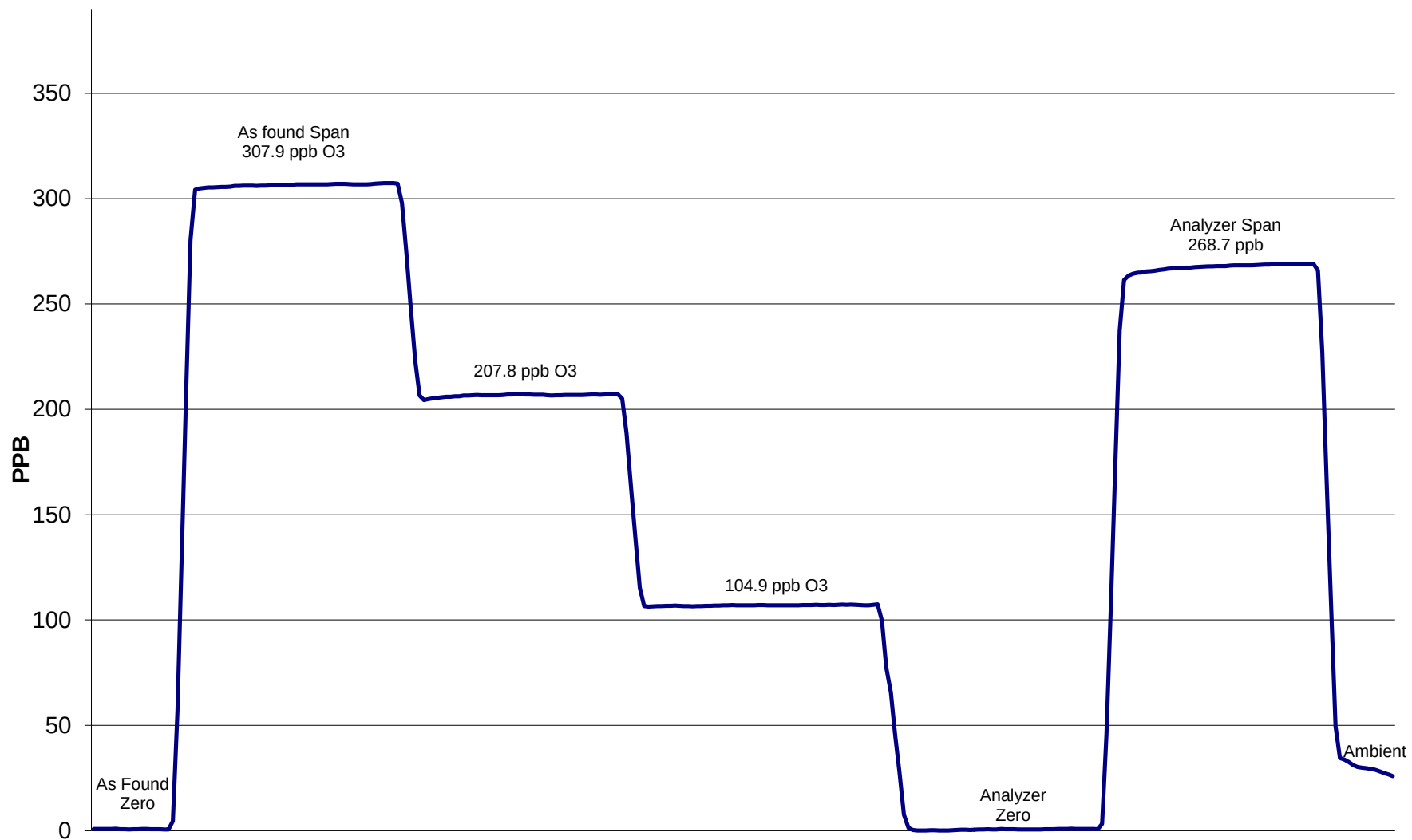
Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.7	NA		
307.9	307.0	1.0030	Correlation Coefficient	0.999930
207.8	206.9	1.0045		
104.9	107.1	0.9791	Slope	1.007881
			Intercept	-1.506238

O3 Calibration Curve



O3 Calibration



November 12, 2013

Calibration Report

Parameter SO2
Air Monitoring Network PAZA



Station Information

Calibration Date	November 19, 2013	Previous Calibration	October 30, 2013
Station Number	6	Station Location	Valleyview
Reason:	Routine	Install	Removal
Start Time (MST)	11:45	End Time (MST)	14:10
Barometric Pressure	702.00 mmHg	Station Temperature	20.0 Deg C
Calibrator	EnviroNics	Serial Number	3016
Cal Gas Concentration	51.5 ppm	Cal Gas Exp Date	February 25, 2021
Gas Cylinder Num.	LL105159		
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	1.002519	Calculated slope	0.998634
Calculated intercept	0.868415	Calculated intercept	1.576326
Analyzer make	TEI 45C	Analyzer serial #	45C-57531-313

	before		after	
Concentration range	0-500	ppb	0-500	ppb
Background	58		59.1	
Coefficient	1.017		1.038	
UV Lamp Voltage	831	LPM	830	LPM
Chamber Temp	44.6	V	44.6	V
Perm Gas Temp	na	C	na	C
Pressure	602.5	in Hg	603	in Hg
Sample Flow	0.549	LPM	0.548	LPM
Lamp Intensity	41875	Hz	41839	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)
4995	0.00	0.0	0.4	N/A
4995	39.93	408.4	408.3	1.0003
4995	19.97	205.1	203.0	1.0104
4995	9.97	102.6	99.1	1.0356
4995	0.00	0.0	0.4	As found zero
4995	39.93	408.4	398.9	As found span
Average Correction Factor				1.0154

Calculated value of As Found Response: 400.4 ppm Percent Change of As Found: 2.0%

	before calibration		after calibration	
Auto zero	0.0	ppm	0.0	ppm
Auto span	150.2	ppm	160.3	ppm

Notes: Slight adjustment 80% point.

Calibration Performed By: Grover Christiansen, Dmytro Dolotii.

Calibration Summary

Parameter SO2

Air Monitoring Network PAZA



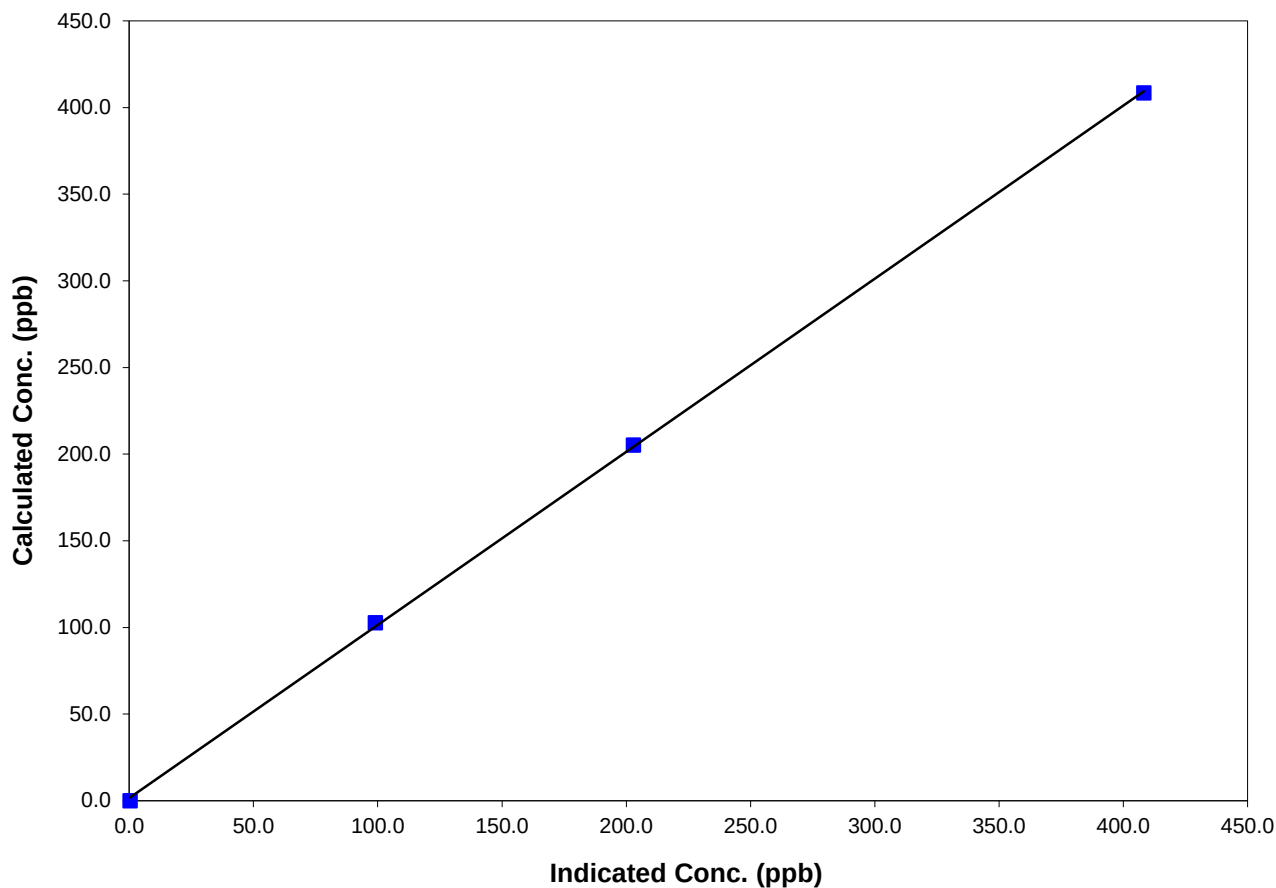
Station Information

Calibration Date	November 19, 2013	Previous Calibration	October 30, 2013
Station Number	6	Station Location	Valleyview
Start Time (MST)	11:45	End Time (MST)	14:10
Analyzer make/model	TEI 45C	Analyzer serial #	45C-57531-313

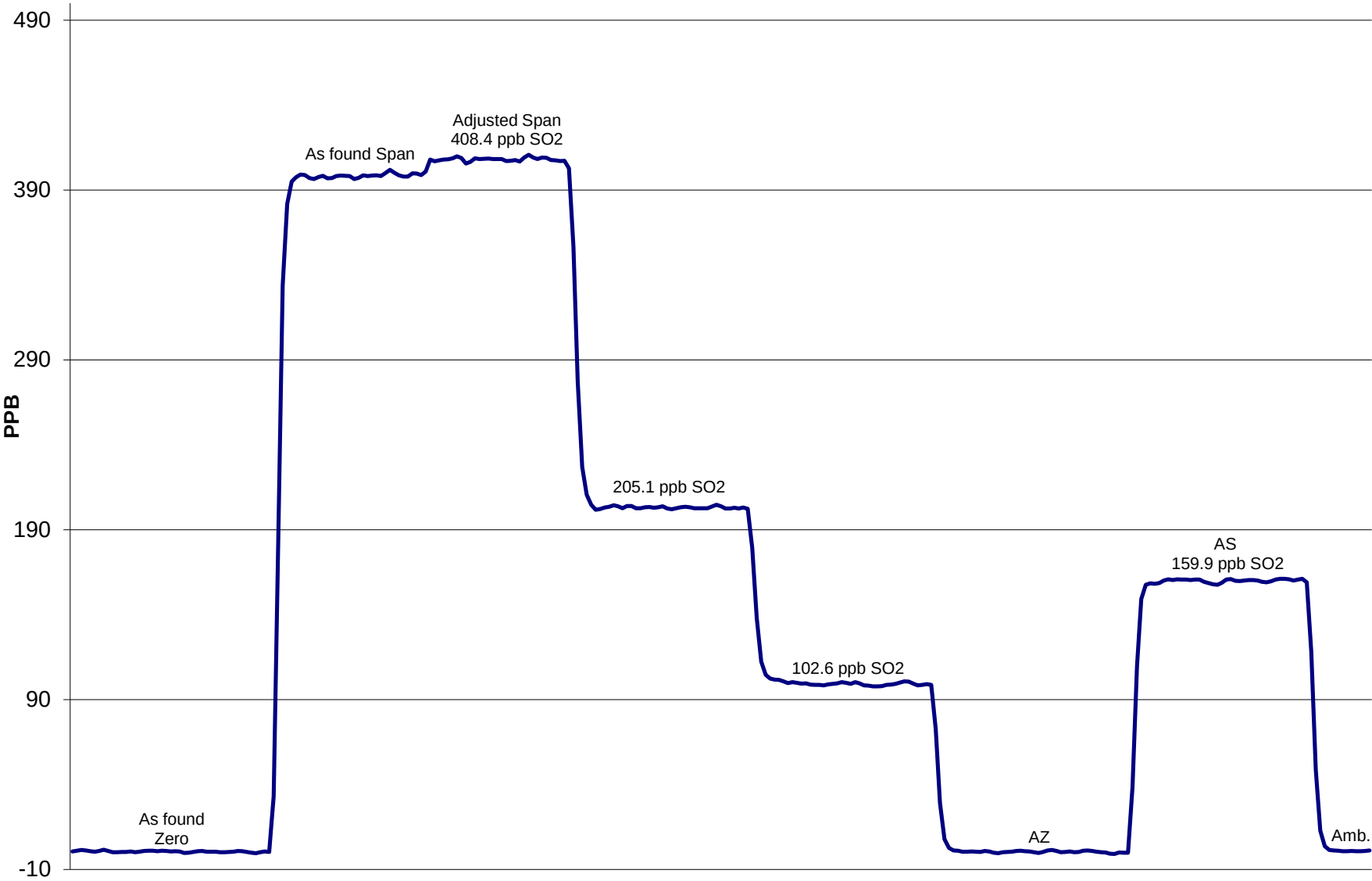
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.4	N/A		
408.4	408.3	1.0003	Correlation Coefficient	0.999893
205.1	203.0	1.0104		
102.6	99.1	1.0356	Slope	0.998634
			Intercept	1.576326

SO2 Calibration Curve



SO2 Calibration



November 19, 2013

Calibration Report

Parameter H2S
Air Monitoring Network PAZA



Station Information

Calibration Date	November 19, 2013	Previous Calibration	October 7, 2013
Station Number	6	Station Location	Valleyview
Reason:	Routine	Install	Removal
Start Time (MST)	10:10	End Time (MST)	13:30:00 PM
Barometric Pressure	702.00 mm	Station Temperature	20.0 Deg C
Calibrator	EnviroNics	Serial Number	3016
Cal Gas Concentration	10.4 ppm	Cal Gas Expiry Date	July 03 2016
Gas Cert Reference	LL110781		
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	0.988841	Calculated slope	1.014476
Calculated intercept	0.122380	Calculated intercept	-0.080979
Analyzer make	TEI Model 43i - APSCB	Analyzer serial #	701120010

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Back Ground	7.0	ppb	7.0	ppb
Coefficient	0.915		0.915	
Lamp Voltage	787	v	788	v
Chamber Temp	44.8	c	44.9	c
Perm Oven Temp	44.98	c	45	c
Pressure	591.40	mm Hg	591.10	mm Hg
Sample Flow	0.403	ccm	0.403	lpm
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)
4995	0.00	0.0	0.4	N/A
4995	39.93	82.5	81.6	1.0102
4995	19.97	41.4	40.4	1.0260
8995	8.97	10.4	10.3	1.0077
				Sox Test
4995	0.00	0.0	0.4	As found zero
4995	39.93	82.5	81.6	As found span
Average Correction Factor				1.0146

Calculated value of As Found Response: 80.50 ppm Percent Change of As Found: 2.4%

	before calibration		after calibration	
Auto zero	0.5	ppm	0.4	ppm
Auto span	67.3	ppm	66.6	ppm

Notes: No span adjustment made.
Additional spans run to trouble shoot spike at begin of internal span. Found potential solenoid issue and orifice that may need replacement in the future.

Calibration Performed By: Grover Christiansen, Dmytro Dolotii

Calibration Summary

Parameter H2S

Air Monitoring Network PAZA



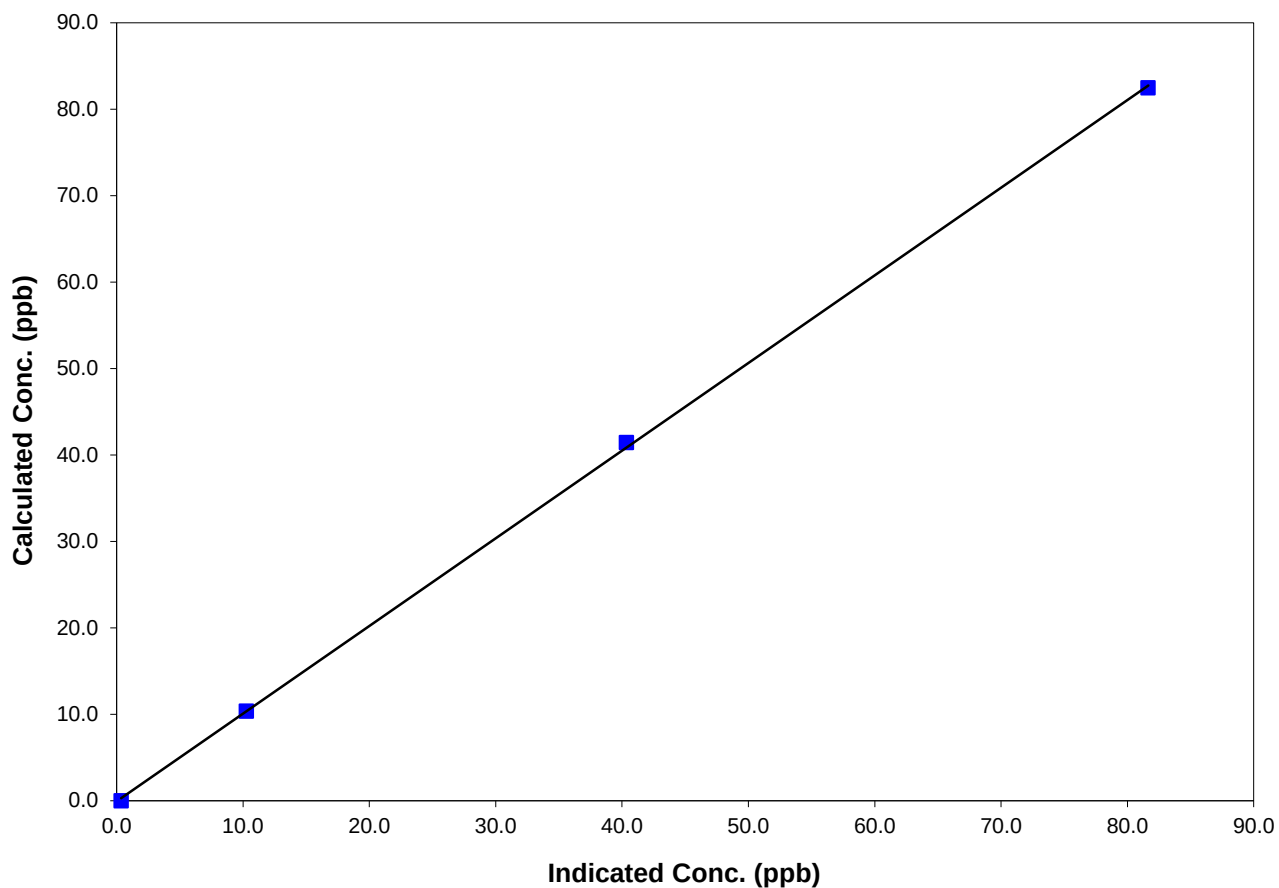
Station Information

Calibration Date	November 19, 2013	Previous Calibration	October 7, 2013
Station Number	6	Station Location	Valleyview
Start Time (MST)	10:10	End Time (MST)	13:30:00 PM
Analyzer make/model	TEI Model 43i - APSCB	Analyzer serial #	701120010

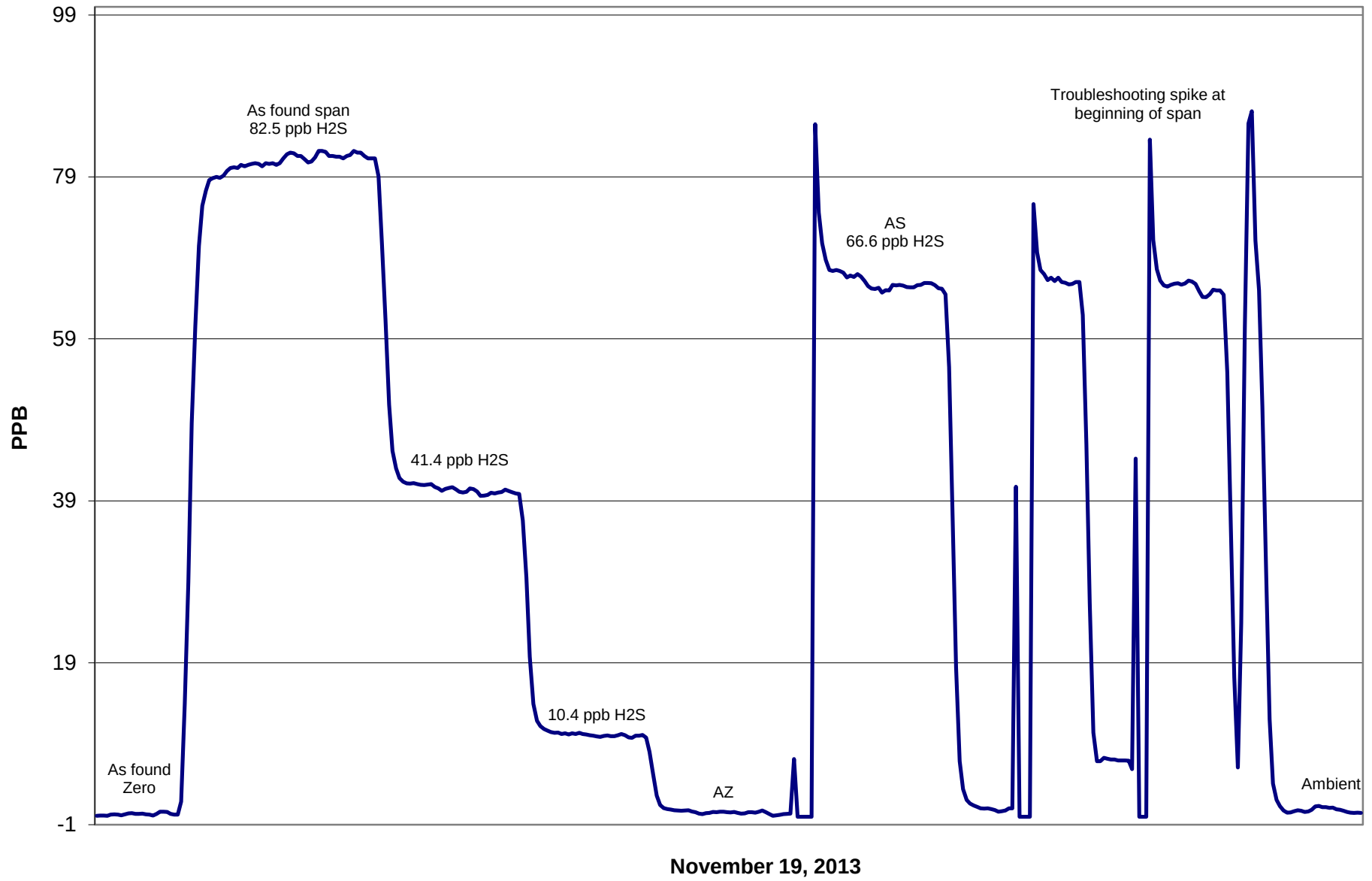
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.4	N/A		
82.5	81.6	1.0102	Correlation Coefficient	0.999890
41.4	40.4	1.0260		
10.4	10.3	1.0077	Slope	1.014476
			Intercept	-0.080979

H2S Calibration Curve



H2S Calibration



Calibration Report

Parameter SO2
Air Monitoring Network PAZA



Station Information

Calibration Date	November 27, 2013	Previous Calibration	October 31, 2013
Station Number	10	Station Location	Reno
Reason:	Routine	Install	Removal
Start Time (MST)	10:05	End Time (MST)	15:33
Barometric Pressure	0.935 Atm	Station Temperature	20.0 Deg C
Calibrator	EnviroNics 6100	Serial Number	3016
Cal Gas Concentration	51.5 ppm	Cal Gas Expiry Date	12/03/2014
Gas Cert Reference	LL105159		
DACS make	CR3000	DACS serial No.	5407
DACS voltage range	0 - 5 Volt	DACS channel #	2
	Before		After
DACS Scale High	500	DACS slope	500
DACS Scale Low	0	DACS intercept	0
Calculated slope	1.002845	Calculated slope	0.994183
Calculated intercept	2.199596	Calculated intercept	1.848951
Analyzer make	TEI 43C	Analyzer serial #	609716238

	before		after	
Concentration range	0-500	ppb	0-500	ppb
Background	33.6		52.2	
Coefficient	1.040		1.002	
UV Lamp Voltage	957	V	840	V
Chamber Temp	44.4	C	45.3	C
Perm Gas Temp	45	C	45	C
Pressure	679.9	mm Hg	676.3	mm Hg
Sample Flow	0.489	LPM	0.489	LPM
Lamp Intesity	36461	Hz	37205	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)
4995	0.00	0.0	-0.1	N/A
4995	39.93	408.4	409.9	0.9964
4995	19.97	205.1	203.3	1.0087
4995	9.97	102.6	99.8	1.0282
4995	0.00	0.0	-0.1	As found zero
4995	39.93	408.4	383.5	As found span
Average Correction Factor				1.0111

Calculated value of As Found Response: 386.847 ppm Percent Change of As Found: 5.3%

	before calibration		after calibration	
Auto zero	0.3	ppm	0.3	ppm
Auto span	259.1	ppm	169.3	ppm

Notes: Complete as found span.Lamp voltage drifting,install new lamp and socket.

Replace internal sample pump diaphragm & flappers.

Spiking due to DAS grounding issues while installing THC analyzer.

Calibration Performed By: Grover Christiansen,Dmytro Dolotii.

Calibration Summary

Parameter SO2

Air Monitoring Network PAZA



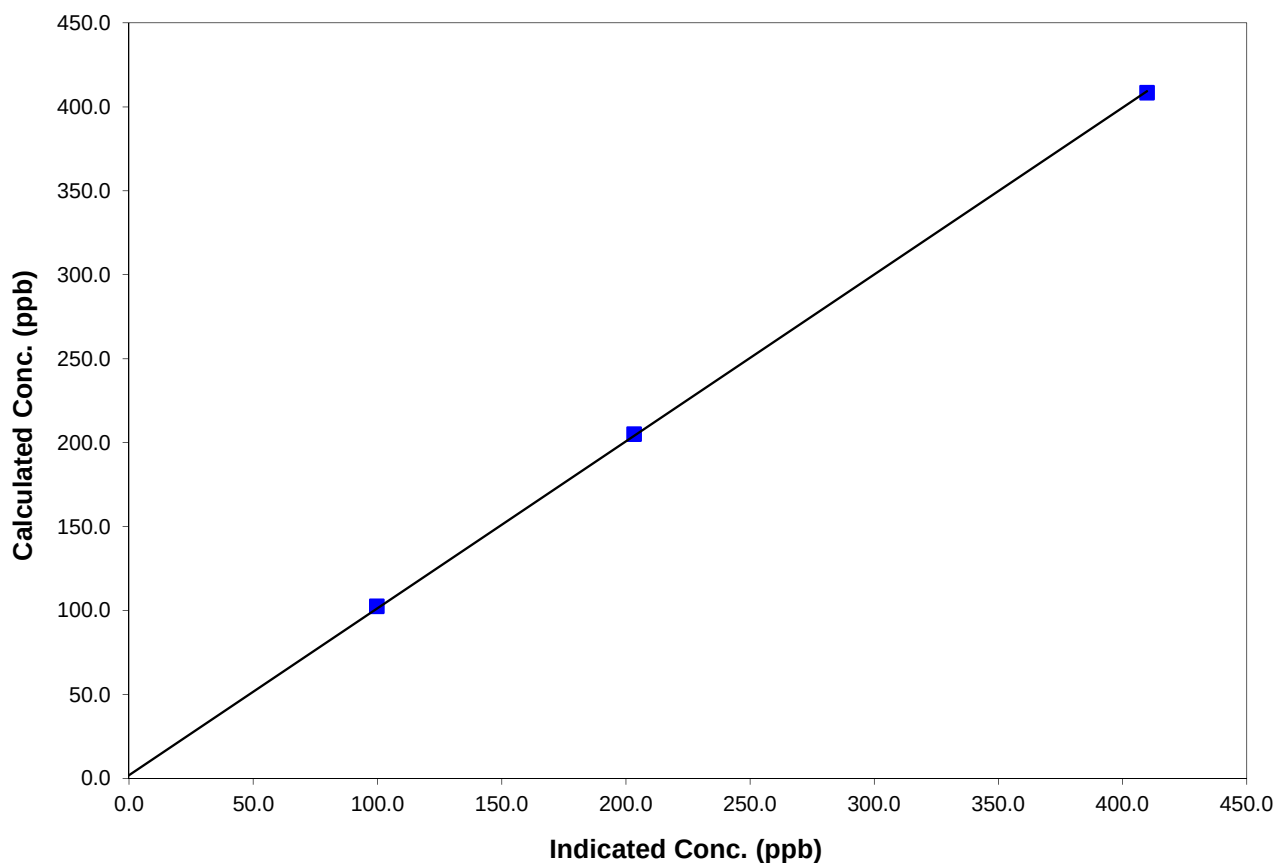
Station Information

Calibration Date	November 27, 2013	Previous Calibration	October 31, 2013
Station Number	10	Station Location	Reno
Start Time (MST)	10:05	End Time (MST)	15:33
Analyzer make/model	TEI 43C	Analyzer serial #	609716238

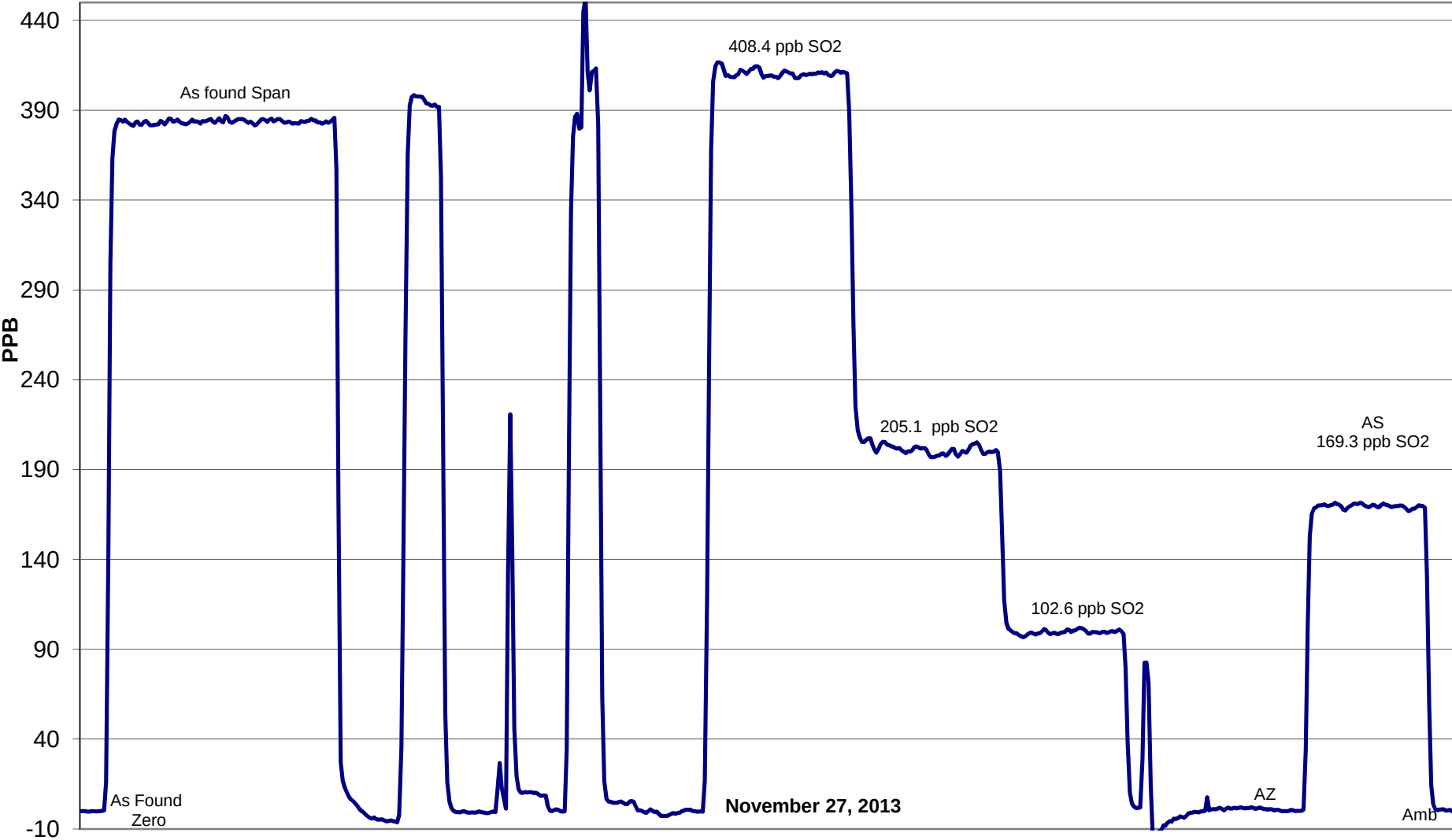
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.1	N/A	Correlation Coefficient	0.999918
408.4	409.9	0.9964		
205.1	203.3	1.0087		
102.6	99.8	1.0282	Slope	0.994183
			Intercept	1.848951

SO2 Calibration Curve



SO2 Calibration



Calibration Report

Parameter

NO_x-NO-NO₂

Air Monitoring Network

PAZA



Station Information

Calibration Date	November 27, 2013		Previous Calibration	October 31, 2013	
Station Number	10		Station Location	Reno	
Reason:	Routine	Install	Removal	Other:	
Start Time (MST)	9:30		End Time (MST)	16:50	
Barometric Pressure	0.935	Atm	Station Temperature	20.0	Deg C
Calibrator	EnviroNics		Serial Number	3016	
NO Cal Gas Conc	51.3	ppm	Cal Gas Expiry Date	March 12, 2014	
NOx Cal Gas Conc	51.4	ppm	Cal Gas Serial #	LL105159	

DACS Information

DACS make	CR3000		DACS serial No.	5407	
	Parameter	NO2	NOx	NO	
Before	Data Slope	1.002898	0.995986	1.000560	
	Data Offset	0.369559	2.055413	1.898082	
After	Data Slope	1.000175	0.997437	0.999531	
	Data Offset	0.016602	1.232623	1.305065	
	Channel #	5	3	4	
	Voltage Range	0 - 5 VDC	0 - 5 VDC	0 - 5 VDC	

Analyzer Information

Analyzer make/model	TEI 42i		Analyzer serial #	0701120011	
Test Point	before		after		
Concentration range	0 - 500	ppb	0 - 500	ppb	
NO offset	5.6	mV	5.8	mV	
NOx bkgnd	6.1	mV	5.9	mV	
NO coefficient	1.174		1.167		
NOx coefficient	0.992		0.998		
NO2 conv temp	324.7	Deg C	324.2	Deg C	
Cooler Temp	-2.7	Deg C	-2.7	Deg C	
PMT Volt	-818.4	mV	-828.8	mV	
R Cell Press	208.5	in Hg	211.3	in Hg	
Sample Flow	0.712	ccm	0.691	ccm	

NOTES: Analyser came in low in as found, adjust PMT, slight span adjust. Finish cal.

Analyzer was stable through all points however DAS was acting up due to THC install.

Calibration Report

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



Station Information

Calibration Date: November 27, 2013 Station Location: Reno

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	4995	0.00	0.0	0.0	0.0	0.0	0.1	0.1	N/A	N/A
1	4995	39.93	407.6	406.8	0.8	408.1	406.5	0.0	0.9989	1.0009
2	4995	19.97	204.7	204.3	0.4	203.3	202.1	0.4	1.0067	1.0106
3	4995	9.97	102.4	102.2	0.2	100.2	99.7	0.7	1.0222	1.0247
AFZ	4995	0.00	0.0	0.0	0.0	-0.6	0.1	-0.6	0.0000	0.0000
AFS	4995	39.93	407.6	406.8	0.8	373.5	374.5	-2.6	1.0913	1.0865
Average Correction Factor									1.0093	1.0121

As Found Concentrations: NO_x= 376.1 NO= 376.2 As Found Percent Change NO_x= -7.7% NO= -7.5%

GPT Calibration Data

Dilution Flow 4995 ccm Source Gas Flow 39.93 ccm

O3 Setpoint (ppb)	Indicated NO high point (ppb)	Indicated NO drop conc (ppb)	Calculated NO2 conc (ppb)	Indicated NOx conc (ppb)	Indicated NO conc (ppb)	Indicated NO2 conc (ppb)	NOx Correction factor	NO Correction factor	NO2 Correction factor	Converter Efficiency
0	0.1	0.1	0.0	0.0	0.1	0.1	N/A	N/A	N/A	N/A
NO point	405.7	405.7	0.0	407.5	405.7	-0.5	0.9956	1.0000	N/A	N/A
300	405.7	100.8	304.9	407.3	100.8	305.0	0.9960	1.0000	0.9998	100.0%
200	405.7	199.2	206.4	407.3	199.2	206.3	0.9959	1.0000	1.0008	99.9%
100	405.7	298.9	106.7	407.5	298.9	106.6	0.9955	1.0000	1.0016	99.8%
Average Correction Factor							0.9958	1.0000	1.0008	99.9%

AIC Data

	Previous calibration				Current calibration			
Parameter	NOx	NO2	NO		NOx	NO2	NO	
Auto zero	0.8	0.9	0.0	ppb	0.1	0.1	0.2	ppb
Auto span	166.3	164.3	1.4	ppb	175.9	173.8	1.3	ppb

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter NO₂

Air Monitoring Network PAZA



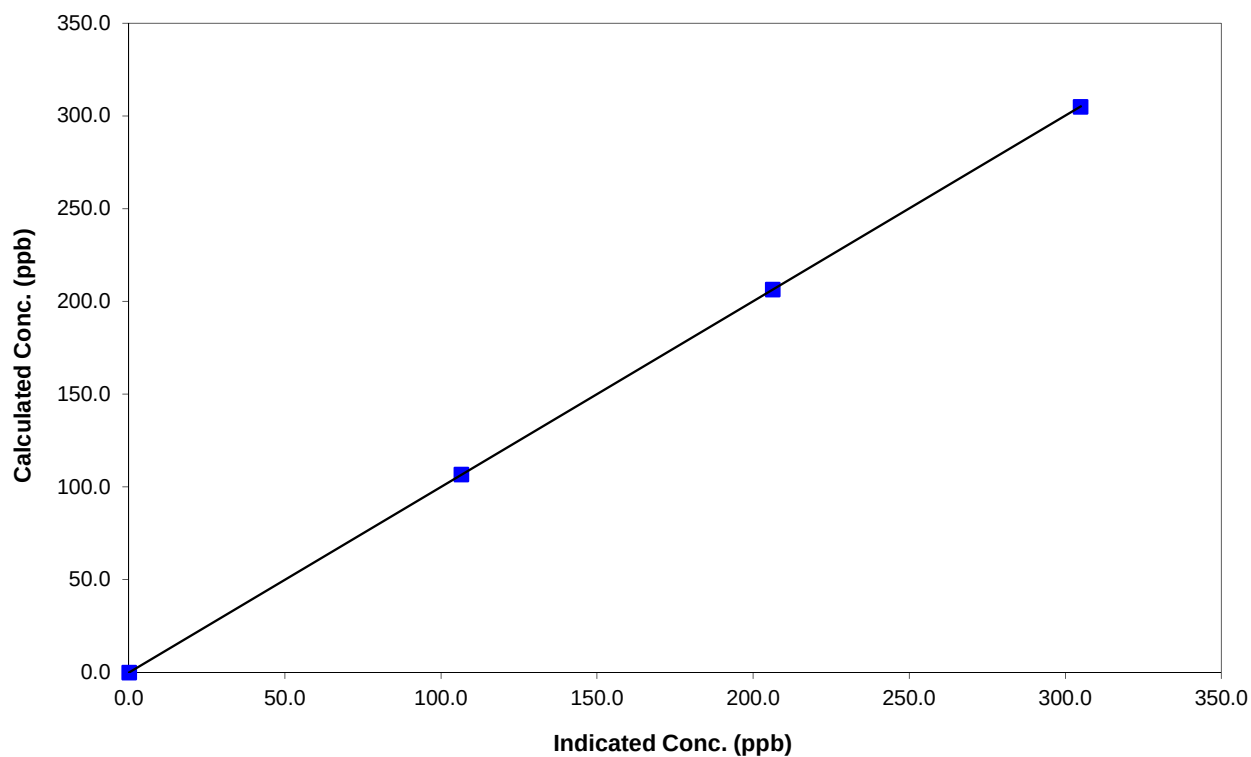
Station Information

Calibration Date	November 27, 2013	Previous Calibration	October 31, 2013
Station Number	10	Station Location	Reno
Start Time (MST)	9:30	End Time (MST)	16:50
Analyzer make	TEI 42i	Analyzer serial #	0701120011

Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.1	N/A	Correlation Coefficient	0.999999
304.9	305.0	0.9998		
206.4	206.3	1.0008		
106.7	106.6	1.0016	Slope	1.000175
			Intercept	0.016602

NO₂ Calibration Curve



Calibration Summary

Parameter NO_x

Air Monitoring Network PAZA



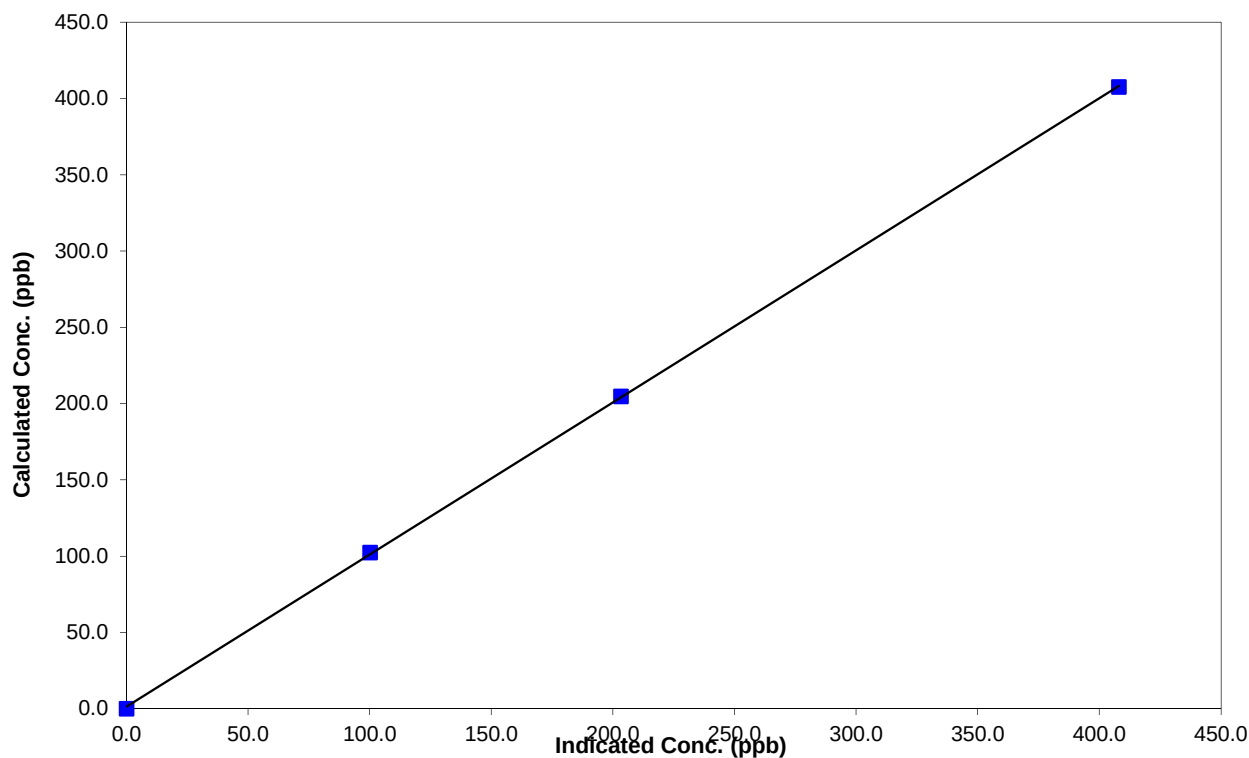
Station Information

Calibration Date	November 27, 2013	Previous Calibration	October 31, 2013
Station Number	10	Station Location	Reno
Start Time (MST)	9:30	End Time (MST)	16:50
Analyzer make	TEI 42i	Analyzer serial #	0701120011

Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.0	N/A	Correlation Coefficient	0.999956
407.6	408.1	0.9989		
204.7	203.3	1.0067		
102.4	100.2	1.0222	Slope	0.997437
			Intercept	1.232623

NO_x Calibration Curve



Calibration Summary

Parameter NO

Air Monitoring Network PAZA



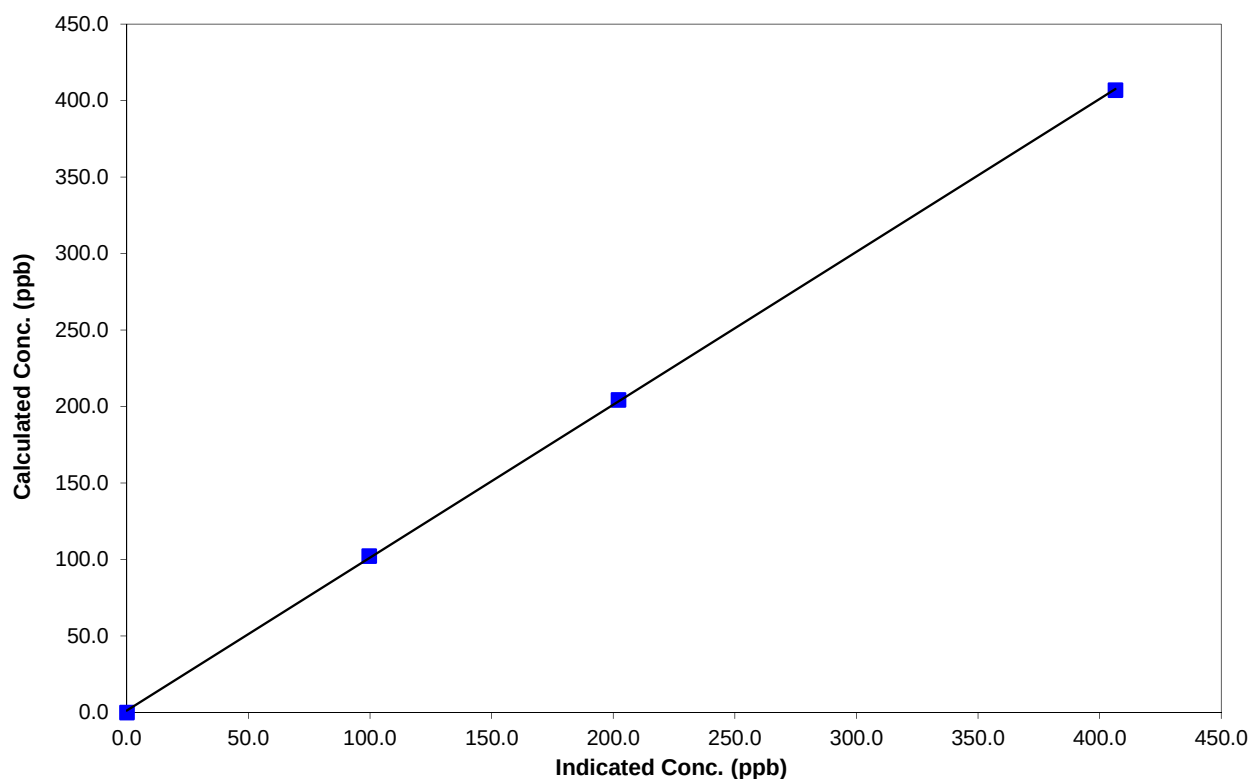
Station Information

Calibration Date	November 27, 2013	Previous Calibration	October 31, 2013
Station Number	10	Station Location	Reno
Start Time (MST)	9:30	End Time (MST)	16:50
Analyzer make	TEI 42i	Analyzer serial #	0701120011

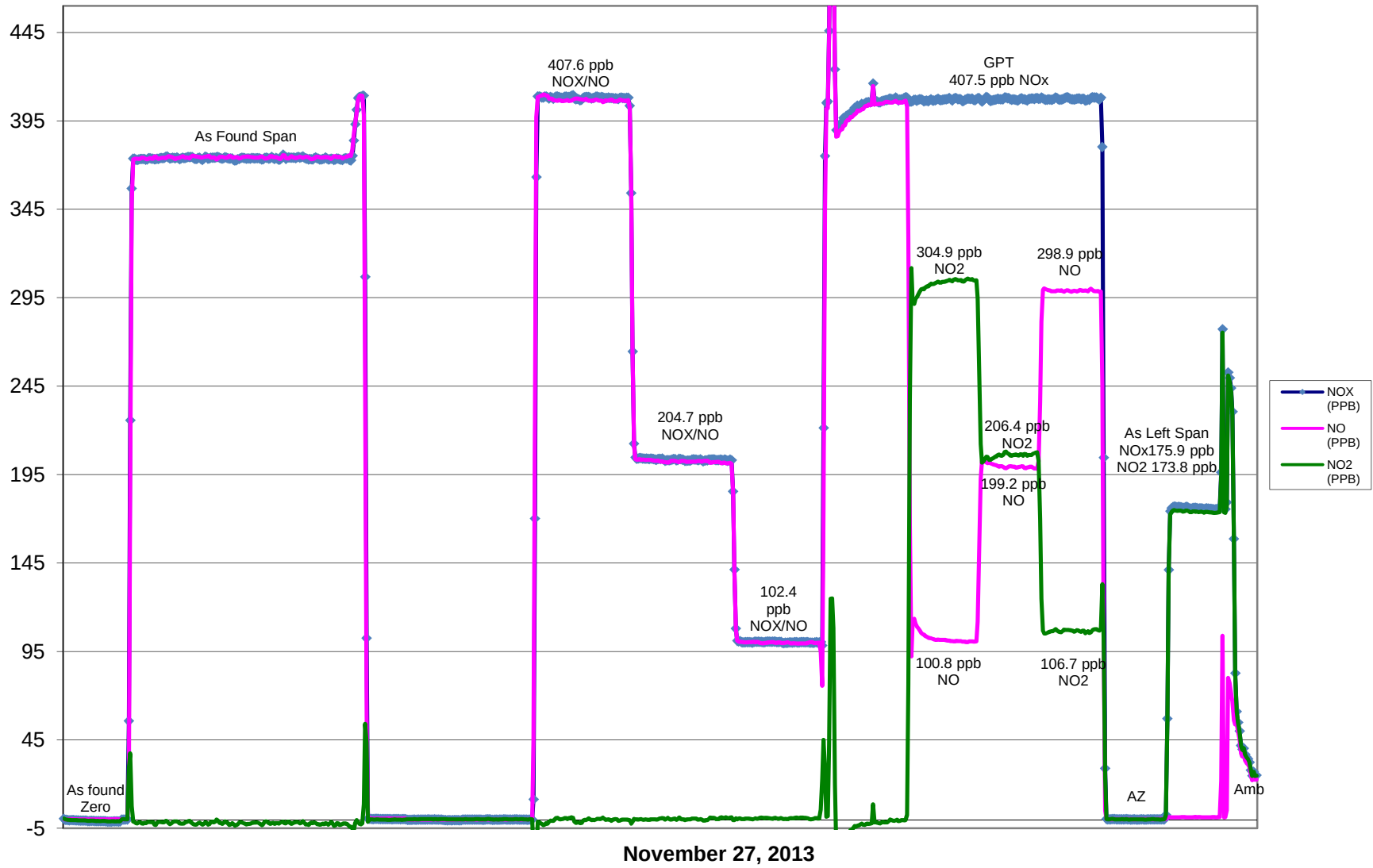
Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.1	N/A	Correlation Coefficient	0.999947
406.8	406.5	1.0009		
204.3	202.1	1.0106		
102.2	99.7	1.0247	Slope	0.999531
			Intercept	1.305065

NO Calibration Curve



PASZA Sunset House NO_x Calibration



Calibration Report



Parameter 03

Air Monitoring Network PAZA

Station Information

Calibration Date	November 27 2013	Previous Calibration	October 31 2013
Station Number	10	Station Location	Reno
Reason:	Routine	☐ Install	☐ Removal remove ☐ Other:
Start Time (MST)	15:55:00 PM	End Time (MST)	19:19
Barometric Pressure	0.935 atm	Station Temperature	15.7 Deg C
Calibrator	Envionics 6100	Serial Number	3016
DACS make	CR3000	DACS serial No.	5407
DACS voltage range	0 - 5 Volts	DACS channel #	6
	Before		After
Calculated slope	1.004312	Calculated slope	0.990932
Calculated intercept	-0.016977	Calculated intercept	0.679621
Analyzer make	TEI Model 49C	Analyzer serial #	49C-0609716240

	before		after	
Concentration range	0-500	ppb	0-500	ppb
Offset	0	ppb	0	ppb
Span	1.019		0.988	
Cell A intensity	132109	Hz	132084	Hz
Cell B intensity	127210	Hz	127175	Hz
Pressure	673.00	in Hg	668.60	in Hg
CellA Flow	0.710	ccm	0.706	ccm
Cell B Flow	0.705	cmm	0.702	cmm

Calibration Data

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
5035	0.00	0.0	0.1	N/A
5035	0.30	304.9	307.9	0.9904
5035	0.20	206.4	206.7	0.9986
5035	0.10	106.7	106.3	1.0038
5035	0.00	0.0	0.1	As found zero
5035	0.30	304.9	314.3	As found span
Average Correction Factor				0.9976

Calculated value of As Found Response: 315.6 ppm Percent Change of As Found: 3.5%

	before calibration		after calibration	
Auto zero	0.6	ppb	0.7	ppb
Auto span	226.5	ppb	397.2	ppb

Notes: Slight span adjust. Also adjust Level1 span setting close to 400 ppb.
Analyzer stable through all points. DAS spikes caused by THC install.

Calibration Performed By: Grover Christiansen, Dmytro Dolotii.

Calibration Summary

Parameter 03

Air Monitoring Network PAZA



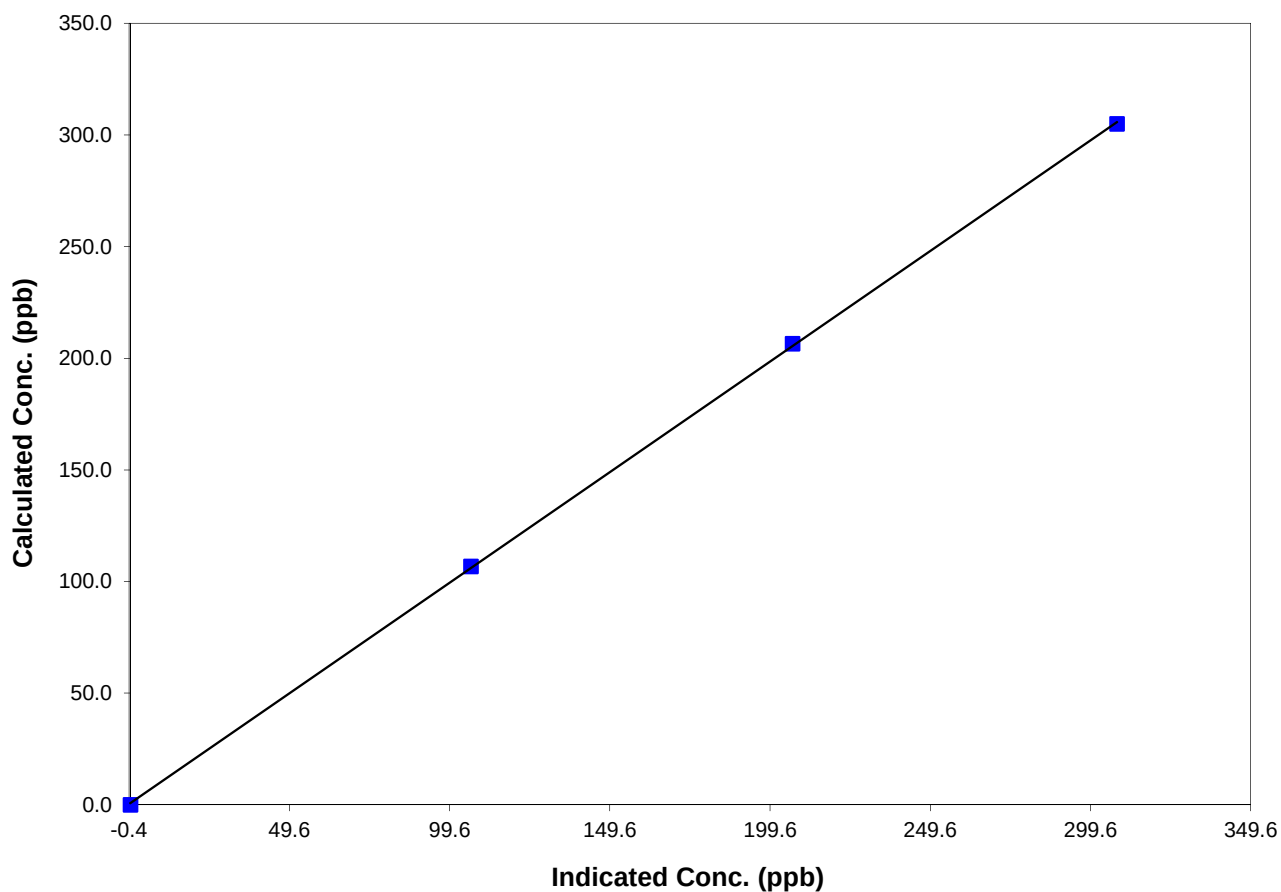
Station Information

Calibration Date	November 27 2013	Previous Calibration	October 31 2013
Station Number	10	Station Location	Reno
Start Time (MST)	15:55:00 PM	End Time (MST)	19:19
Analyzer make/model	TEI Model 49C	Analyzer serial #	49C-0609716240

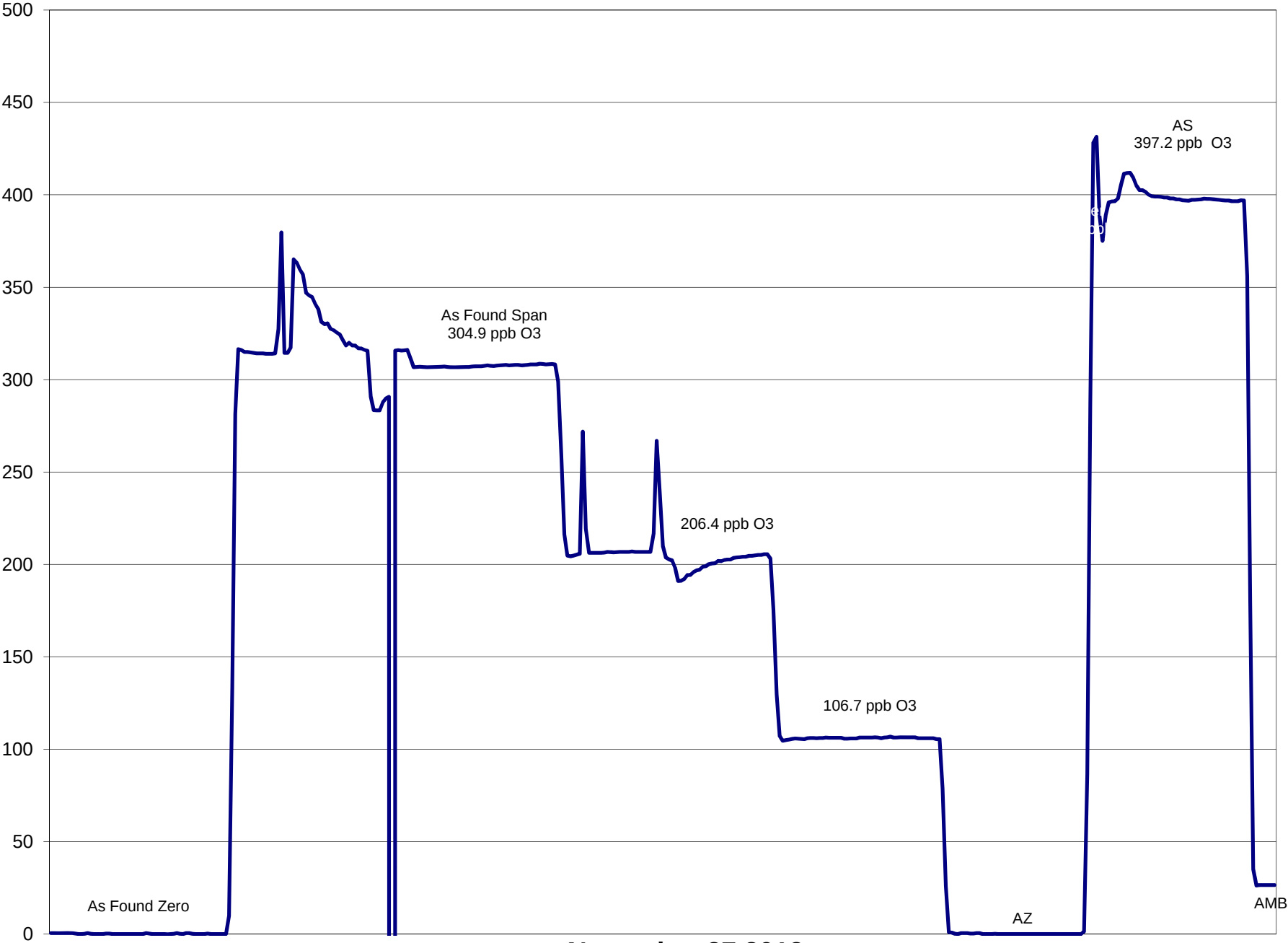
Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.1	NA	Correlation Coefficient	0.999951
304.9	307.9	0.9904		
206.4	206.7	0.9986		
106.7	106.3	1.0038	Slope	0.990932
			Intercept	0.679621

O3 Calibration Curve



O3 (PPB)



November 27 2013

FOCUS
AIR QUALITY MONITORING

Air Monitoring Network **PAZA**

Calibration Date	November 28 2013	Previous Calibration	October 31 2013
Station Name	PAZA Rover	Station Location	Reno
Reason:	Routine	Install	Removal Other:
Start Time (MST)	9:20 AM	End Time (MST)	12:10
Barometric Pressure	0.921 Atm	Station Temperature	20.0 Deg C
Calibrator	EnviroNics	Serial Number	3016
Cal Gas Concentration	10.44 ppm	Cal Gas Expiry Date	July/08/2016
Gas Cert Reference	LL110781		
DACS make	CR3000	DACS serial No.	5407
DACS voltage range	0 - 5 Volt	DACS channel #	1
	<u>Before</u>		<u>After</u>
DACS Scale High	100	DACS slope	100
DACS Scale Low	0	DACS intercept	0
Calculated slope	0.997500	Calculated slope	1.003699
Calculated intercept	0.061400	Calculated intercept	-0.278286
Analyzer make	TEI 43C	Analyzer serial #	609716238

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Background	15,7	ppb	15,7	ppb
Coefficient	1.015		1.015	
Lamp Voltage	775	V	776	V
Chamber Temp	43.8	C	44	C
Perm gas Temp	45.01	C	45	C
Pressure	653.6	mmHg	650.9	mmHg
Sample Flow	0.443	lpm	0.442	lpm
Lamp Intensity	39007	Hz	39548	Hz

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4995	0.0	0.0	0.4	N/A
4995	39.93	82.8	82.9	0.9982
4995	19.97	41.6	41.3	1.0059
8995	8.97	10.4	10.7	0.9730
4995	9.97	102.8	0.9	Sox Test
4995	0.00	0.0	0.4	As found zero
4995	39.93	82.8	82.9	As found span
Average Correction Factor				0.9924

	before calibration		after calibration	
Auto zero	0.1	ppm	0.1	ppm
Auto span	65.4	ppm	63.3	ppm

Used flashlamp running well, left spare new flashlamp at site.

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter TRS

Air Monitoring Network PAZA



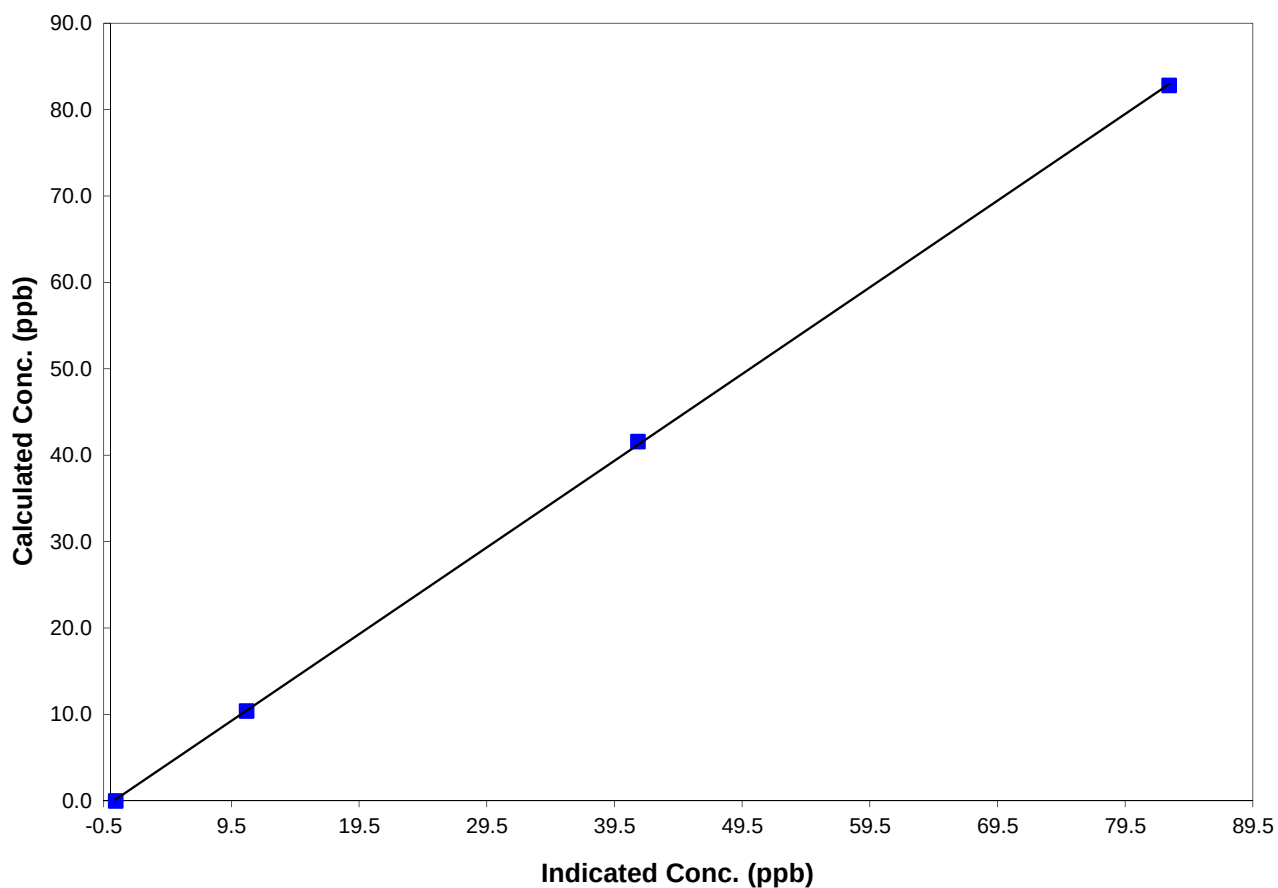
Station Information

Calibration Date	November 28 2013	Previous Calibration	October 31 2013
Station Number	PAZA Rover	Station Location	Reno
Start Time (MST)	9:20	End Time (MST)	12:10
Analyzer make/model	TEI 43C	Analyzer serial #	609716238

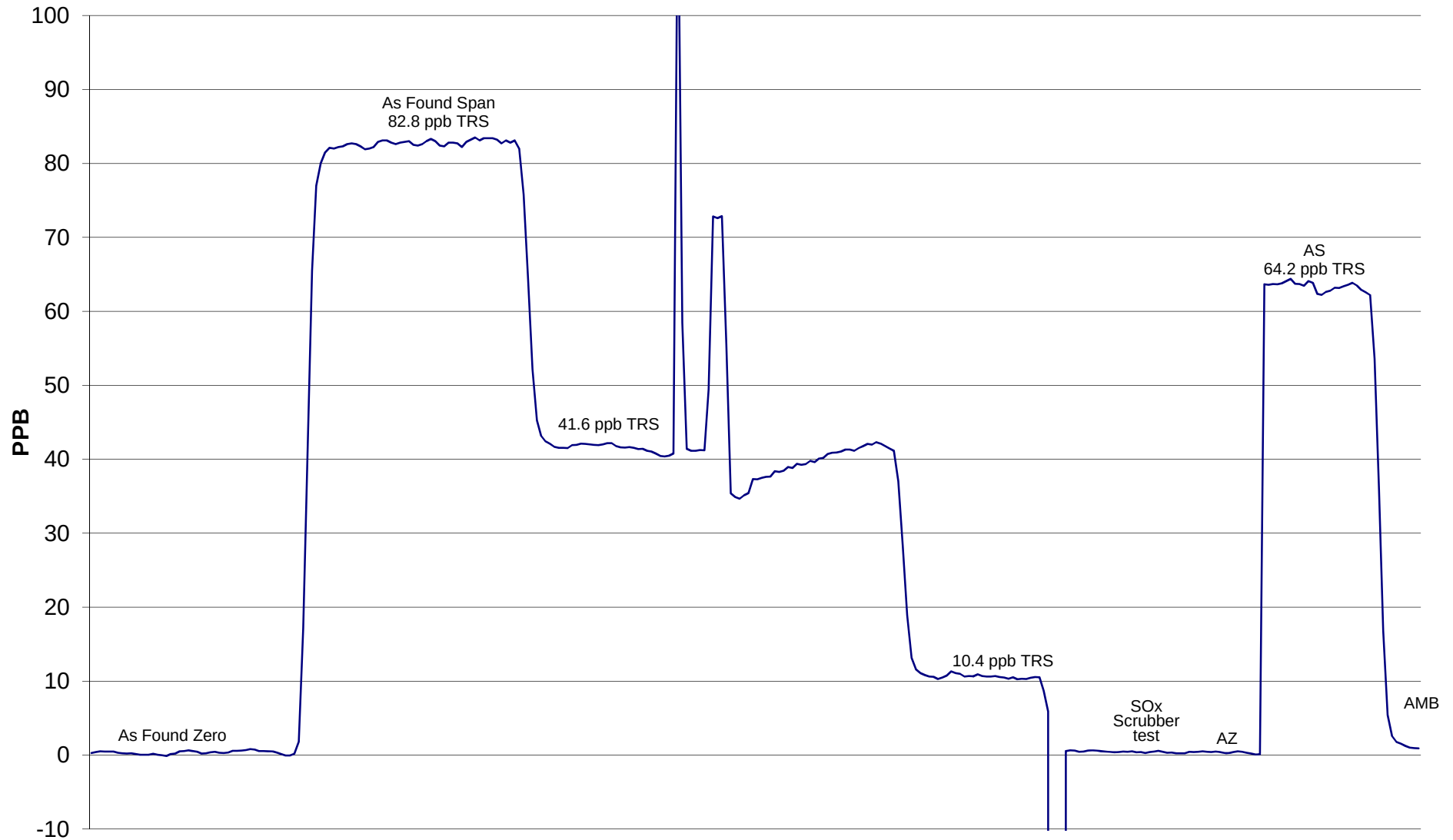
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.4	N/A	Correlation Coefficient	0.999954
82.8	82.9	0.9982		
41.6	41.3	1.0059		
10.4	10.7	0.9730	Slope	1.003699
			Intercept	-0.278286

TRS Calibration Curve



TRS Calibration



November 28 2013

Calibration Report



Parameter SO₂

Air Monitoring Network PAZA

Station Information

Calibration Date	November 30, 2013	Previous Calibration	October 26, 2013
Station Number	1	Station Location	Falher
Reason:	Routine	Install	Removal
		Other:	
Start Time (MST)	12:10	End Time (MST)	14:28
Barometric Pressure	0.931 ATM	Station Temperature	20.0 Deg C
Calibrator	EnviroNics	Serial Number	3474
Cal Gas Concentration	51.5 ppm	Cal Gas Expiry Date	25/02/2025
Correction factor	0.031647	Cal Gas Cylinder #	LL105159
DACS make	CR1000	DACS serial No.	3980
DACS voltage range	0 - 5 volt	DACS channel #	6
	Before		After
Calculated slope	0.998241	Calculated slope	1.000446
Calculated intercept	0.496766	Calculated intercept	0.146119
Analyzer make	Teco 43i	Analyzer serial #	1207452008

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Background	6.3		7.3	
coefficient	0.903		0.903	
Lamp Voltage	856	volts	854	volts
Chamber Temp	45.1	Deg C	45	Deg C
Perm Gas Temp	45	Deg C	45	Deg C
Pressure	676.1	mm Hg	678.5	mm Hg
Sample Flow	0.415	ccm	0.417	ccm
Lamp Intensity	97	%	97	%

Dilution air flow rate (cc/min)	Corrected gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4995	0.0	0.00	0.8	N/A
4995	39.93	408.4	408.4	1.0002
4995	19.96	205.0	204.9	1.0004
4995	9.97	102.6	101.0	1.0157
4995	0.0	0.0	0.8	As Found Zero
4995	39.93	408.4	408.4	As Found Span
Average Correction Factor				1.0054

Calculated value of As Found Response: 407.313 ppm Percent Change of As Found: **0.3%**

	before calibration		after calibration	
Auto zero	0.5	ppm	-0.1	ppm
Auto span	359.4	ppm	350.4	ppm

Notes: No adjustment made.

Calibration Performed By: Grover Christiansen, Dmytro Dolotii

Calibration Summary

Parameter SO2

Air Monitoring Network PAZA



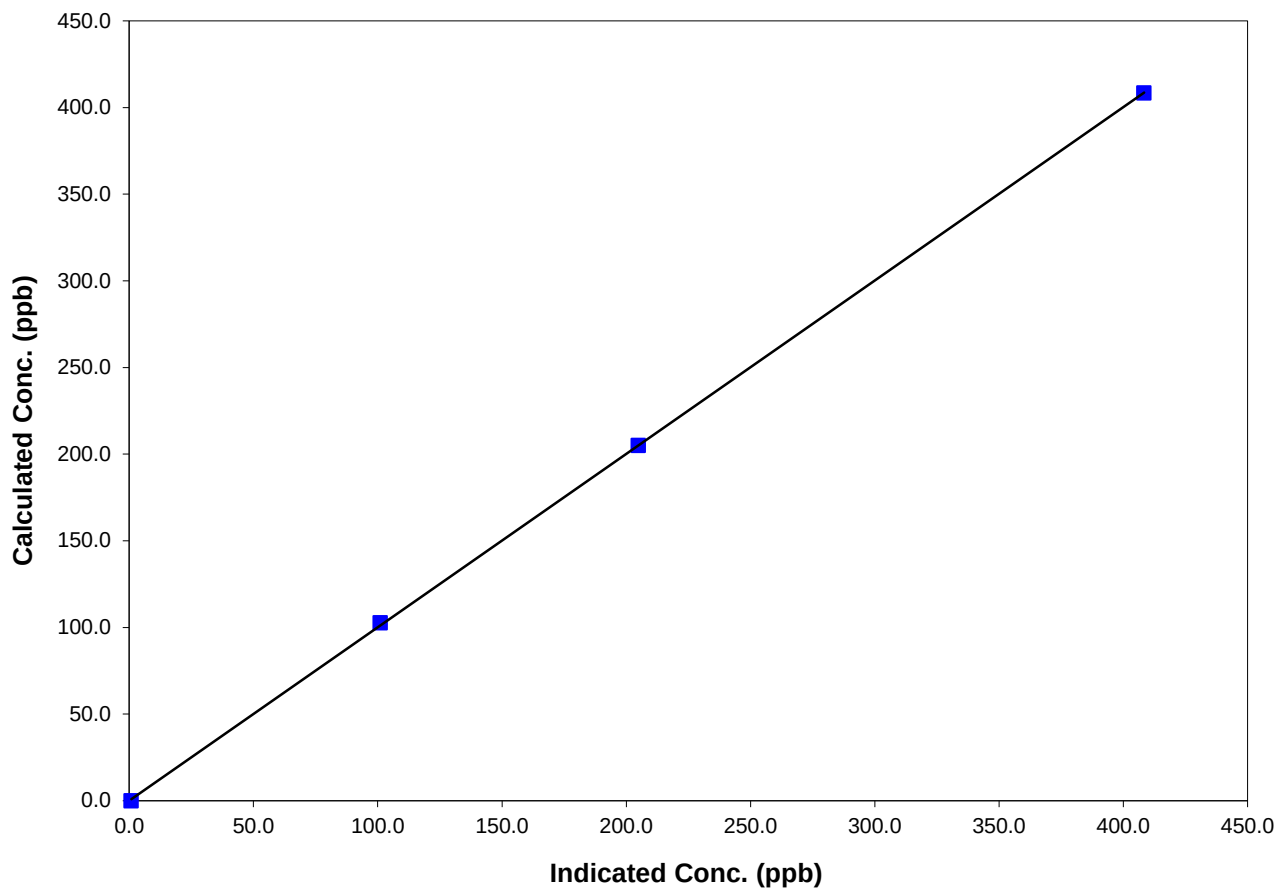
Station Information

Calibration Date	November 30, 2013	Previous Calibration	October 26, 2013
Station Number	1	Station Location	Falher
Start Time (MST)	12:10	End Time (MST)	14:28
Analyzer make/model	Teco 43i	Analyzer serial #	1207452008

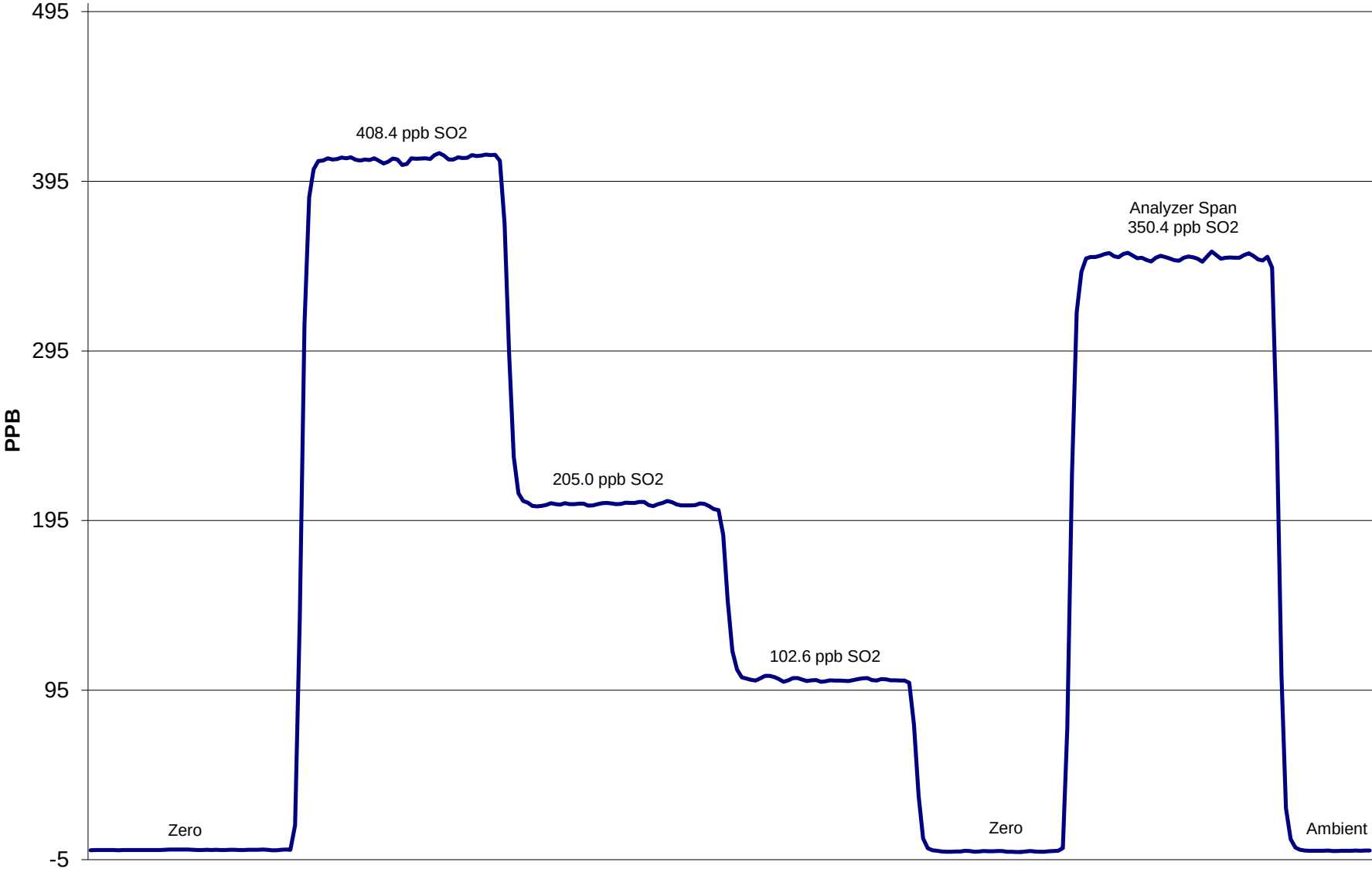
Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.8	N/A	Correlation Coefficient	0.999967
408.4	408.4	1.0002		
205.0	204.9	1.0004		
102.6	101.0	1.0157	Slope	1.000446
			Intercept	0.146119

SO2 Calibration Curve



SO2 Calibration



November 30, 2013

Calibration Report



Parameter H2S

Air Monitoring Network PAZA

Station Information

Calibration Date	November 30, 2013	Previous Calibration	October 26, 2013
Station Number	1	Station Location	Falher
Reason:	Routine	Install	Removal
		Other:	
Start Time (MST)	10:30	End Time (MST)	13:08
Barometric Pressure	0.931 ATM	Station Temperature	20.0 Deg C
Calibrator	EnviroNics	Serial Number	3016
Cal Gas Conc	10.4 ppm	Cal Gas Expiry Date	08/07/2016
Correction factor	0.031647	Cal Gas Cylinder #	LL110781
DACS make	CR1000	DACS serial No.	3980
DACS voltage range	0 - 5 volt	DACS channel #	5
	<u>Before</u>		<u>After</u>
Calculated slope	0.978289	Calculated slope	0.966541
Calculated intercept	-0.545598	Calculated intercept	-0.152629
Analyzer make	Thermo 450i	Analyzer serial #	1207452006

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Background	13	ppb	13.1	ppb
coefficient	1.169		1.169	
Lamp Voltage	801	volts	802	volts
Chamber Temp	44.9	Deg C	45	Deg C
Perm Gas Temp	45	Deg C	45	Deg C
Pressure	567	mm Hg	561.9	mm Hg
Sample Flow	0.92	ccm	0.911	ccm
Lamp Intensity	90	mv	90	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)
4995	0.00	0.00	0.1	N/A
4995	39.93	82.48	85.6	0.9639
4995	19.96	41.39	42.8	0.9671
8994	8.97	10.36	11.0	0.9418
4995	0.00	0.00	0.1	As Found Zero
4995	39.93	82.48	85.6	As Found Span
Average Correction Factor				0.9576

Calculated value of As Found Response: 83.02 ppm Percent Change of As Found: **-0.7%**

	before calibration		after calibration	
Auto zero	0.0	ppm	0.4	ppm
Auto span	51.2	ppm	54.8	ppm

Notes: **No span adjust.**

Calibration Performed By: Grover Christiansen, Dmytro Dolotii

Calibration Summary

Parameter H2S

Air Monitoring Network PAZA



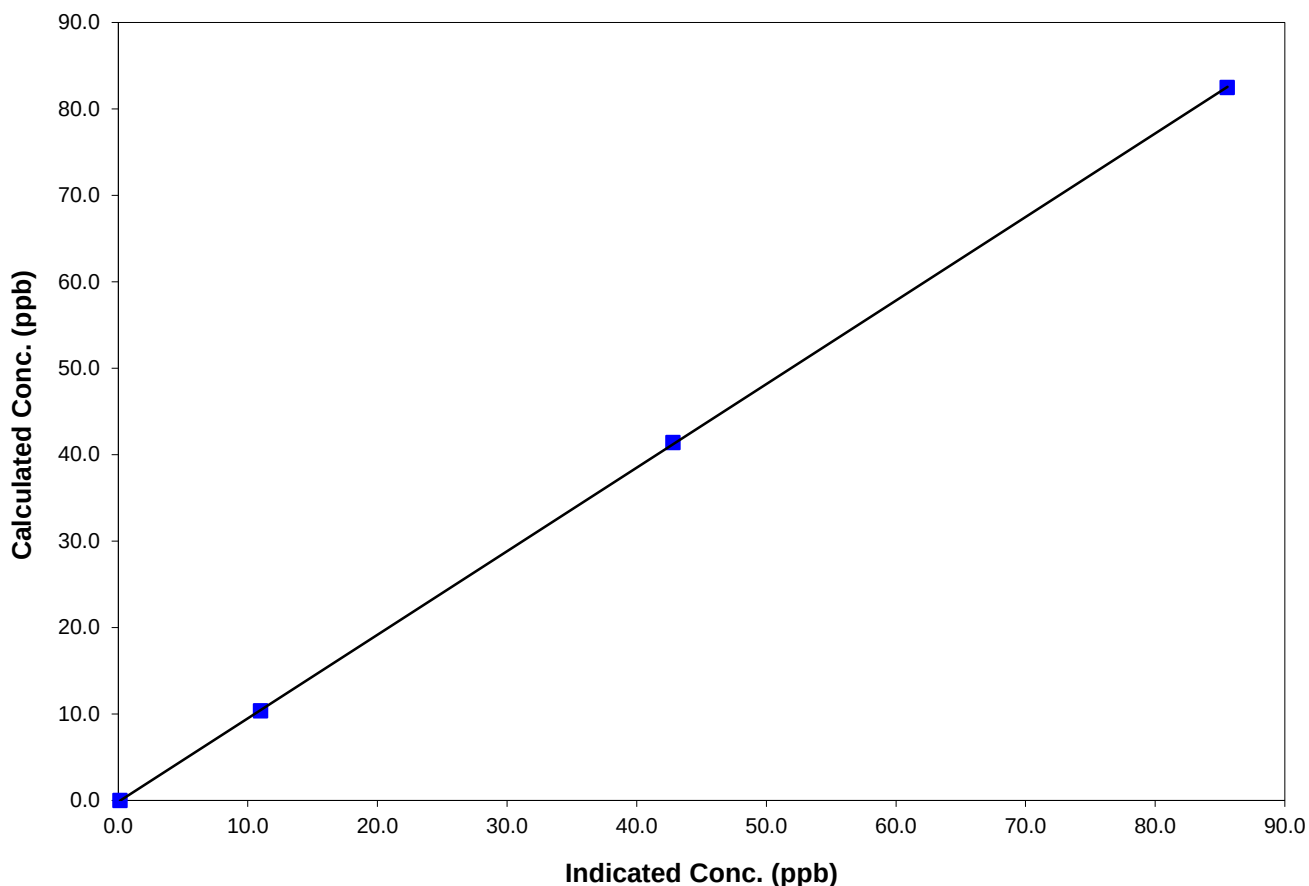
Station Information

Calibration Date	November 30, 2013	Previous Calibration	October 26, 2013
Station Number	1	Station Location	Falher
Start Time (MST)	10:30	End Time (MST)	13:08
Analyzer make/model	Thermo 450i	Analyzer serial #	1207452006

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.1	N/A	Correlation Coefficient	0.999988
82.5	85.6	0.9639		
41.4	42.8	0.9671		
10.4	11.0	0.9418	Slope	0.966541
			Intercept	-0.152629

TRS Calibration Curve



H2S Calibration

