



# **Peace Airshed Zone Association**

## **Ambient Air Monitoring Network Summary**

**Continuous Ambient Air Quality Monitoring Program**  
**Monthly Report**  
**November 2016**

December 30, 2016

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

**RE: Peace Airshed Zone Association (PAZA) – November 2016 Ambient Air Report**

Enclosed is the PAZA Ambient Monitoring Network Report for the month of November 2016.

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
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
	Gold Creek	13-26-067-05-W6	00010446-02-00

<b>Company</b>	<b>Facility</b>	<b>LSD</b>	<b>EPEA Approval Number</b>
	Teepee Creek	SE-2-074-04-W6	00001635-02-00
	Sturgeon/Valleyview	02-02-069-22-W5	1633-02-00
Canfor Forest Products	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
Exshaw Oil Corporation	Spirit River	03-10-077-07-W6	344521-00-00
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
Longview Oil Corp.	Sunset House	06-22-070-20-W5	138884-01-00
Penn West Petroleum Ltd.	Tangent	13-29-080-23-W5	00001746-02-00

Company	Facility	LSD	EPEA Approval Number
	Pouce Coupe	16-07-078-11-W6	00000614-01-00
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: Six (6) Stations including Henry Pirker (Grande Prairie), Evergreen Park, Smoky Heights, Beaverlodge, Valleyview, and Rycroft-Portable.**

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, with the exception of one 1-hour exceedance for PM<sub>2.5</sub> on November 15, 2016 for the hour ending at 18:00 MST. The concentration recorded was 90 µg/m<sup>3</sup>, above the 1-hour guideline of 80 µg/m<sup>3</sup>. Refer to the attached non-compliance report for details (AEP #318301).
- ◆ All analyzers and sensors at the Henry Pirker station had an operational uptime greater than 90% for the month of November.

**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, with the exception of two 1-hour exceedances for PM<sub>2.5</sub>. These occurred November 22, 2016 01:00 MST, and November 24, 2016 19:00 MST. The concentrations recorded were 89 µg/m<sup>3</sup> (Nov 22) and 84 µg/m<sup>3</sup> (Nov 24), above the 1-hour guideline of 80 µg/m<sup>3</sup>. Refer to the attached non-compliance reports for details (AEP #318463 and 318606).
- ◆ 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, with the exception of one 1-hour exceedance for PM<sub>2.5</sub> on November 29, 2016 for the hour ending at 14:00 MST. The concentration recorded was 200 µg/m<sup>3</sup>, above the 1-hour guideline of 80 µg/m<sup>3</sup>. Refer to the attached non-compliance report for details (AEP #318746).
- ◆ 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, with the exception of the H<sub>2</sub>S analyzer (87.1%). The convertor for the H<sub>2</sub>S analyzer was malfunctioning November 26-30, 2016.

**Donnelly Station:**

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

**Rycroft-Portable Station:**

- ◆ The measured ambient air quality was within the AAAQO for the Rycroft-Portable station.
- ◆ All analyzers and sensors at the Rycroft-Portable 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: Sylvester, Wanham, Crooked Creek, East Prairie, and Girouxville 4 (H<sub>2</sub>S). The passive sample analyses were performed by MAXXAM Analytics Inc.

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

- Monthly average concentrations for SO<sub>2</sub> passives ranged from 0.0 ppb to 0.3 ppb, with a mean of 0.1 ppb.
- Monthly average concentrations for NO<sub>2</sub> passives ranged from 0.8 ppb to 10.2 ppb, with a mean of 2.5 ppb.
- Monthly average concentrations for O<sub>3</sub> passives ranged from 10.6 ppb to 33.0 ppb, with a mean of 20.9 ppb.
- Monthly average concentrations for H<sub>2</sub>S passives ranged from 0.1 ppb to 0.4 ppb, with a mean of 0.2 ppb.

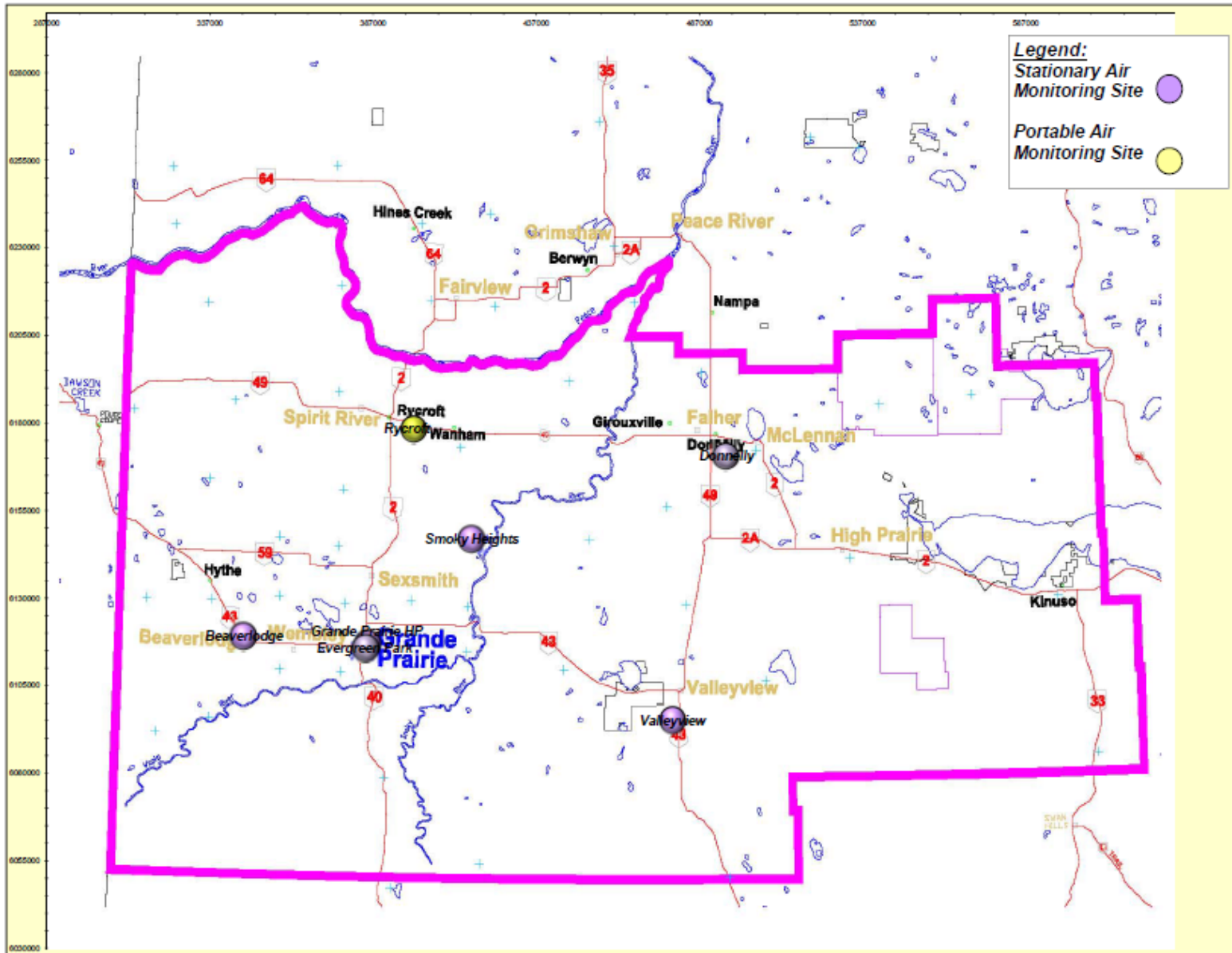
If you have any questions or concerns, please contact Patrick Andersen at 403.505.1041 or the PAZA office at 780.833.4343.

On Behalf of the  
Peace Airshed Zone Association



Patrick Andersen, B.Sc.  
Program Manager

# Location of PAZA Continuous Monitoring Stations



## PAZA Monthly Continuous Data Summary

Nov-2016 Peace Airshed Zone Association							Maximum Recorded Values					
Pollutant (units)	Objectives		Station	Monthly Average	Exceedence		1-hr		24-hr / 8-hr		Operational Time (%)	Calibration Date
	1-hr	24-hr			1-hr	24-hr	Conc	Day	Conc	Day		
SO <sub>2</sub> (ppb)	172	48	Henry Pirker	0.1	0	0	1.1	Nov-28 14:00	0.5	Nov-28	100.0%	Nov-07
SO <sub>2</sub> (ppb)	172	48	Evergreen Park	0.1	0	0	2.3	Nov-27 12:00	0.5	Nov-27	99.7%	Nov-09
SO <sub>2</sub> (ppb)	172	48	Smoky Heights	0.3	0	0	18.9	Nov-09 11:00	1.9	Nov-09	100.0%	Nov-18
SO <sub>2</sub> (ppb)	172	48	Beaverlodge	0.2	0	0	3.1	Nov-08 15:00	0.7	Nov-08	100.0%	Nov-16
SO <sub>2</sub> (ppb)	172	48	Valleyview	0.2	0	0	7.5	Nov-14 11:00	1.1	Nov-14	100.0%	Nov-25
SO <sub>2</sub> (ppb)	172	48	Donnelly	0.2	0	0	1.8	Nov-23 12:00	0.6	Nov-23	99.9%	Nov-22
SO <sub>2</sub> (ppb)	172	48	Rycroft-Portable	0.2	0	0	3.5	Nov-09 16:00	0.6	Nov-08	100.0%	Nov-01
NO (ppb)			Henry Pirker	13.5	-	-	146.6	Nov-29 00:00	44.8	Nov-29	100.0%	Nov-07
NO <sub>2</sub> (ppb)	159	106	Henry Pirker	13.9	0	0	53.0	Nov-29 15:00	24.0	Nov-04	100.0%	Nov-07
NO <sub>x</sub> (ppb)			Henry Pirker	27.4	-	-	174.7	Nov-29 15:00	65.5	Nov-29	100.0%	Nov-07
NO (ppb)			Beaverlodge	2.3	-	-	28.9	Nov-28 12:00	11.9	Nov-24	100.0%	Nov-16
NO <sub>2</sub> (ppb)	159	106	Beaverlodge	6.7	0	0	27.0	Nov-28 18:00	16.4	Nov-30	100.0%	Nov-16
NO <sub>x</sub> (ppb)			Beaverlodge	9.1	-	-	47.5	Nov-28 12:00	25.4	Nov-24	100.0%	Nov-16
NO (ppb)			Rycroft-Portable	1.0	-	-	32.7	Nov-29 21:00	7.4	Nov-29	100.0%	Nov-01
NO <sub>2</sub> (ppb)	159	106	Rycroft-Portable	3.5	0	0	20.1	Nov-29 21:00	10.6	Nov-29	100.0%	Nov-01
NO <sub>x</sub> (ppb)			Rycroft-Portable	4.4	-	-	53.0	Nov-29 21:00	18.1	Nov-29	100.0%	Nov-01
O <sub>3</sub> (ppb)	82		Henry Pirker	9.4	0	-	34.6	Nov-14 14:00	28.0	Nov-14	100.0%	Nov-07
O <sub>3</sub> (ppb) - 8-hr			Henry Pirker		0				32.7	Nov-14		-
O <sub>3</sub> (ppb)	82		Beaverlodge	17.0	0	-	38.8	Nov-03 16:00	32.1	Nov-14	100.0%	Nov-16
O <sub>3</sub> (ppb) - 8-hr			Beaverlodge		0				35.0	Nov-14		-
O <sub>3</sub> (ppb)	82		Rycroft-Portable	18.7	0	-	38.5	Nov-03 17:00	30.8	Nov-14	100.0%	Nov-01
O <sub>3</sub> (ppb) - 8-hr			Rycroft-Portable		0				34.7	Nov-03		-
CO (ppm)	13		Henry Pirker	0.30	0	-	1.3	Nov-15 10:00	0.5	Nov-03	100.0%	Nov-03
CO (ppm) - 8-hr		5	Henry Pirker		0				0.7	Nov-03		-



## PAZA Monthly Continuous Data Summary – continued

Nov-2016 Peace Airshed Zone Association							Maximum Recorded Values					
							1-hr		24-hr / 8-hr			
THC (ppm)			Henry Pirker	2.2	-	-	4.7	Nov-24 20:00	2.6	Nov-24	97.4%	Nov-03
CH <sub>4</sub> (ppm)			Henry Pirker	2.2	-	-	4.7	Nov-24 20:00	2.6	Nov-24	97.4%	Nov-03
NMHC (ppm)			Henry Pirker	0.0	-	-	0.0	Nov-19 09:00	0.0	Nov-06	97.4%	Nov-03
THC (ppm)			Rycroft-Portable	1.9	-	-	2.2	Nov-24 01:00	2.1	Nov-24	100.0%	Nov-02
CH <sub>4</sub> (ppm)			Rycroft-Portable	1.9	-	-	2.2	Nov-24 01:00	2.1	Nov-24	100.0%	Nov-02
NMHC (ppm)			Rycroft-Portable	0.0	-	-	0.0	Nov-26 08:00	0.0	Nov-26	100.0%	Nov-02
TRS (ppb)			Henry Pirker	0.4	-	-	1.8	Nov-29 22:00	0.8	Nov-29	100.0%	Nov-03
TRS (ppb)			Evergreen Park	0.4	-	-	3.8	Nov-03 10:00	1.3	Nov-08	99.7%	Nov-09
TRS (ppb)			Smoky Heights	0.2	-	-	1.2	Nov-28 00:00	0.4	Nov-28	100.0%	Nov-18
TRS (ppb)			Rycroft-Portable	0.3	-	-	0.7	Nov-02 16:00	0.5	Nov-25	100.0%	Nov-02
H <sub>2</sub> S (ppb)	10	3	Valleyview	0.2	0	0	3.4	Nov-08 04:00	0.5	Nov-08	87.1%	Nov-30
H <sub>2</sub> S (ppb)	10	3	Donnelly	0.1	0	0	5.2	Nov-28 03:00	0.4	Nov-28	100.0%	Nov-22
PM <sub>2.5</sub> (µg/m <sup>3</sup> )	80	30	Henry Pirker	8.2	1	0	90.4	Nov-15 18:00	17.7	Nov-29	100.0%	Sep-07
PM <sub>2.5</sub> (µg/m <sup>3</sup> )	80	30	Evergreen Park	5.4	0	0	33.8	Nov-28 19:00	16.6	Nov-28	99.0%	Sep-06
PM <sub>2.5</sub> (µg/m <sup>3</sup> )	80	30	Smoky Heights	6.0	2	0	88.9	Nov-22 01:00	13.9	Nov-24	99.9%	Sep-09
PM <sub>2.5</sub> (µg/m <sup>3</sup> )	80	30	Beaverlodge	6.5	1	0	200.1	Nov-29 14:00	17.3	Nov-29	100.0%	Sep-13
PM <sub>2.5</sub> (µg/m <sup>3</sup> )	80	30	Rycroft-Portable	3.9	0	0	25.5	Nov-04 17:00	10.1	Nov-29	91.8%	Nov-04
RH (%)			Henry Pirker	76.2	-	-	90.2	Nov-13 05:00	86.0	Nov-12	100.0%	-
RH (%)			Evergreen Park	84.9	-	-	99.8	Nov-13 01:00	95.5	Nov-12	100.0%	-
RH (%)			Beaverlodge	86.3	-	-	100.0	Nov-01 01:00	99.4	Nov-23	100.0%	-
RH (%)			Valleyview	73.3	-	-	100.0	Nov-02 20:00	93.5	Nov-01	100.0%	-
SR (W/m <sup>2</sup> )			Henry Pirker	27.9	-	-	295.1	Nov-03 13:00	59.9	Nov-03	100.0%	-
Temp (°C)			Henry Pirker	-2.3	-	-	18.0	Nov-08 16:00	9.1	Nov-08	100.0%	-
Temp (°C)			Evergreen Park	-2.4	-	-	17.4	Nov-08 16:00	9.0	Nov-08	100.0%	-
Temp (°C)			Smoky Heights	-2.2	-	-	17.8	Nov-08 13:00	9.9	Nov-08	100.0%	-
Temp (°C)			Beaverlodge	-1.8	-	-	15.0	Nov-08 15:00	8.7	Nov-08	100.0%	-
Temp (°C)			Valleyview	0.4	-	-	23.6	Nov-08 16:00	13.5	Nov-08	100.0%	-
Temp (°C)			Donnelly	-0.6	-	-	18.2	Nov-08 13:00	12.0	Nov-08	99.9%	-
Temp (°C)			Rycroft-Portable	-2.6	-	-	17.2	Nov-08 14:00	8.7	Nov-08	100.0%	-

## PAZA Monthly Continuous Data Summary – continued

Nov-2016		Peace Airshed Zone Association					Maximum Recorded Values					
							1-hr		24-hr / 8-hr			
WSPD s (km/hr)		Henry Pirker	4.9	-	-	24.0	Nov-14 14:00	14.9	Nov-14	100.0%	-	
WSPD s (km/hr)		Evergreen Park	5.4	-	-	41.0	Nov-14 14:00	23.0	Nov-14	99.7%	-	
WSPD s (km/hr)		Smoky Heights	8.7	-	-	34.0	Nov-09 14:00	19.6	Nov-14	100.0%	-	
WSPD s (km/hr)		Beaverlodge	6.7	-	-	36.0	Nov-14 14:00	18.0	Nov-14	100.0%	-	
WSPD s (km/hr)		Valleyview	3.5	-	-	18.0	Nov-14 13:00	8.4	Nov-30	100.0%	-	
WSPD s (km/hr)		Donnelly	9.4	-	-	32.0	Nov-09 15:00	20.1	Nov-14	99.9%	-	
WSPD s (km/hr)		Rycroft-Portable	7.2	-	-	33.0	Nov-14 14:00	14.5	Nov-14	100.0%	-	
WSPD v (km/hr)		Henry Pirker	0.4	-	-	24.0	Nov-14 14:00	14.4	Nov-14	100.0%	-	
WSPD v (km/hr)		Evergreen Park	1.0	-	-	41.0	Nov-14 14:00	22.2	Nov-14	99.7%	-	
WSPD v (km/hr)		Smoky Heights	2.4	-	-	34.0	Nov-09 14:00	19.3	Nov-14	100.0%	-	
WSPD v (km/hr)		Beaverlodge	1.0	-	-	36.0	Nov-14 14:00	17.3	Nov-14	100.0%	-	
WSPD v (km/hr)		Valleyview	0.9	-	-	17.0	Nov-14 13:00	8.3	Nov-30	100.0%	-	
WSPD v (km/hr)		Donnelly	4.4	-	-	32.0	Nov-09 15:00	18.2	Nov-14	99.9%	-	
WSPD v (km/hr)		Rycroft-Portable	1.9	-	-	32.0	Nov-14 14:00	13.4	Nov-14	100.0%	-	
WDIR		Henry Pirker	W	-	-	-	-	-	-	100.0%	-	
WDIR		Evergreen Park	WSW	-	-	-	-	-	-	99.7%	-	
WDIR		Smoky Heights	WSW	-	-	-	-	-	-	100.0%	-	
WDIR		Beaverlodge	NNW	-	-	-	-	-	-	100.0%	-	
WDIR		Valleyview	S	-	-	-	-	-	-	100.0%	-	
WDIR		Donnelly	SSE	-	-	-	-	-	-	99.9%	-	
WDIR		Rycroft-Portable	S	-	-	-	-	-	-	100.0%	-	

# Continuous Network Equipment Summary

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## PAZA – Henry Pirker Station

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### General Station Issues:

None.

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Parameter	Make	Model	Notes
SO <sub>2</sub>	TEI	43i	No operational issues observed.
NO <sub>x</sub> /NO/NO <sub>2</sub>	TEI	42i	No operational issues observed.
O <sub>3</sub>	TEI	49i	No operational issues observed.
CO	TEI	48C	No operational issues observed.
THC/CH <sub>4</sub> /NMHC	TEI	55I	Instrument malfunctioning resulted in an uptime of 97.4%.
TRS	TEI	45C/43C	No operational issues observed.
PM <sub>2.5</sub>	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.

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**PAZA – Evergreen Park Station**

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**General Station Issues**

Power disruption on November 4.

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<b>Parameter</b>	<b>Make</b>	<b>Model</b>	<b>Notes</b>
SO <sub>2</sub>	TEI	43i	A power disruption at the station resulted in an uptime of 99.7%.
TRS	TEI	43C	A power disruption at the station resulted in an uptime of 99.7%.
PM <sub>2.5</sub>	Sharp	5030	A power disruption at the station, analyzer maintenance, and instrument malfunctioning resulted in an uptime of 99.0%.
ET	Met One/Gill	083D	No operational issues observed.
RH	Met One/Gill		No operational issues observed.
WS / WD	Met One/ Gill		A power disruption at the station resulted in an uptime of 99.7%.

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**PAZA – Smoky Heights Station**

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**General Station Issues**

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<b>Parameter</b>	<b>Make</b>	<b>Model</b>	<b>Notes</b>
SO <sub>2</sub>	TEI	43C	No operational issues observed.
TRS	TEI	43i	No operational issues observed.
PM <sub>2.5</sub>	Sharp	5030	Analyzer maintenance resulted in an uptime of 99.9%.
ET	Met One	083D	No operational issues observed.
WS / WD	Met One	010C/020C	No operational issues observed.

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**PAZA – Beaverlodge Station**

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**General Station Issues**

<b>Parameter</b>	<b>Make</b>	<b>Model</b>	<b>Notes</b>
SO <sub>2</sub>	TEI	43CTL	No operational issues observed.
NO <sub>x</sub> /NO/NO <sub>2</sub>	TEI	42C	No operational issues observed.
O <sub>3</sub>	TEI	49C	No operational issues observed.
PM <sub>2.5</sub>	Sharp	5030	No operational issues observed.
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.

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**PAZA – Valleyview Station**

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**General Station Issues**

<b>Parameter</b>	<b>Make</b>	<b>Model</b>	<b>Notes</b>
SO <sub>2</sub>	TEI	43i	No operational issues observed.
H <sub>2</sub> S	TEI	43A	The converter for the H <sub>2</sub> S analyzer was malfunctioning Nov 26-30. Due to instrument malfunctioning and the associated maintenance, the analyzer did not maintain >90% operational uptime for the month of November (87.1%). AEP reference number: 319324
ET	Gill	Met Pak 3	No operational issues observed.
RH	Gill	Met Pak 3	No operational issues observed.
WS / WD	Gill	Met Pak 3	No operational issues observed.

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**PAZA – Donnelly Station**

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**General Station Issues**

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<b>Parameter</b>	<b>Make</b>	<b>Model</b>	<b>Notes</b>
SO <sub>2</sub>	TEI	43i	Data logger malfunctioning resulted in an uptime of 99.9%
H <sub>2</sub> S	Thermo	450i	No operational issues observed.
ET	Gill	RM Young 5103	Data logger malfunctioning resulted in an uptime of 99.9%
WS / WD	Gill	RM Young 5103	Data logger malfunctioning resulted in an uptime of 99.9%

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**PAZA – Portable-Rycroft**

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**General Station Issues**

<b>Parameter</b>	<b>Make</b>	<b>Model</b>	<b>Notes</b>
SO <sub>2</sub>	TEI	43i	No operational issues observed.
NO <sub>x</sub>	TEI	42i	No operational issues observed.
O <sub>3</sub>	TEI	49i	No operational issues observed.
TRS	TEI	39C	No operational issues observed.
THC/CH <sub>4</sub> /NMHC	TEI	55i	No operational issues observed.
PM <sub>2.5</sub>	Sharp	5030	Instrument malfunctioning November 2-4 and analyzer maintenance resulted in an uptime of 91.8% for the month of November.
ET	Gill	Met Pak 3	No operational issues observed.
WS / WD	Gill	Met Pak 3	No operational issues observed.

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PAZA

Henry Pirker Station

Monthly Summary Tables, Graphs and  
Roses

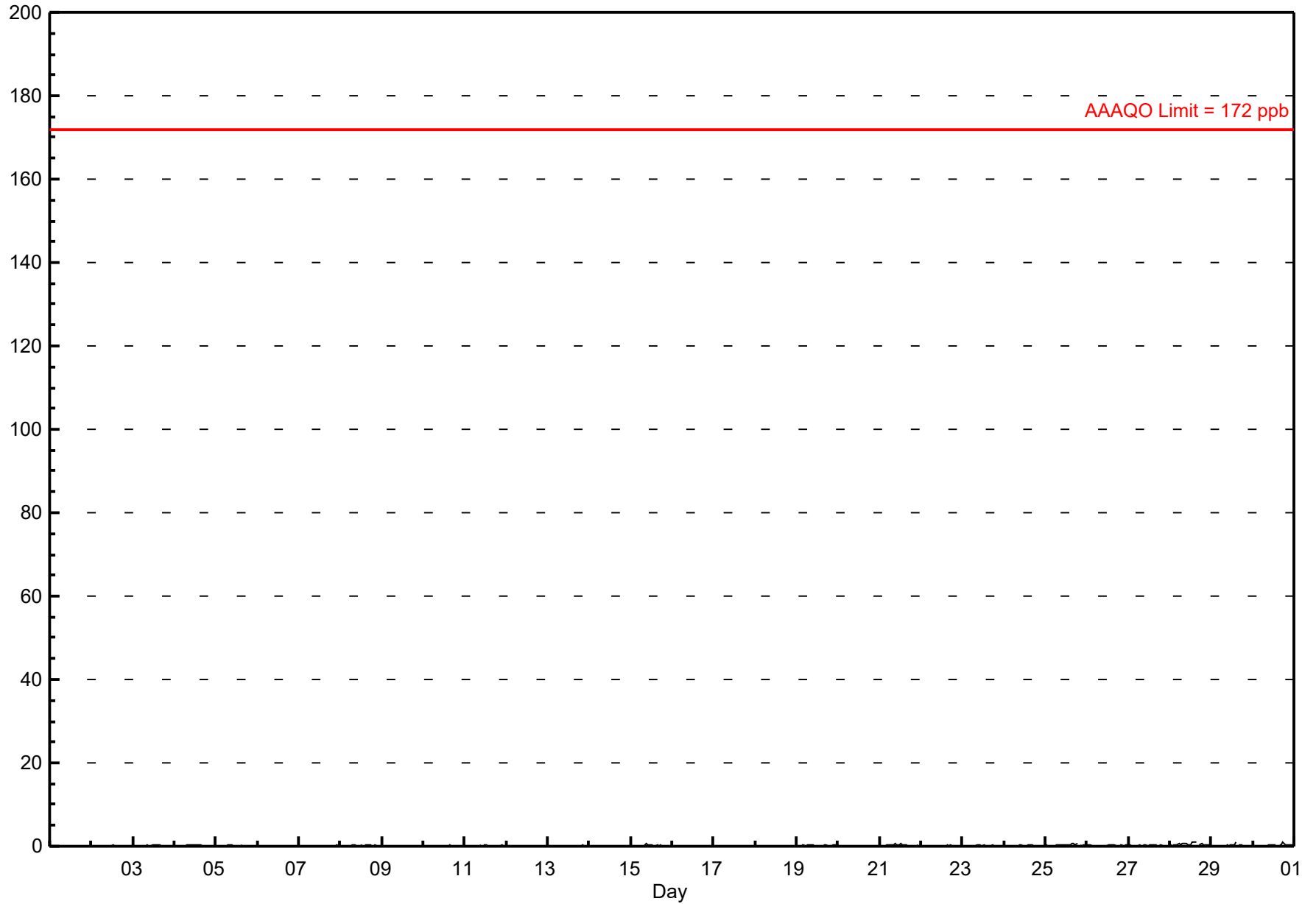
## Hourly Averages

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Henry Pirker - November 2016**

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 1.1 ppb on Nov 28 14:00      Maximum Daily Average: 0.5 ppb on Nov 28		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 1 03:00 Maximum Diurnal Average: 0.2 ppb at hour 15 Monthly Average: 0.12 ppb		Minimum Daily Average: 0.0 ppb on Nov 1 Minimum Diurnal Average: 0.1 ppb at hour 3 Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.1 Q <sub>3</sub> = 0.2 P <sub>90</sub> = 0.3 P <sub>99</sub> = 0.7																								
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	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-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		
3-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		
4-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		
5-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		
6-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		
7-Nov	0	0	0	0	0	0	0	0	0	C	C	C	0	0	A	0	0	0	0	0	0	0	0	0		
8-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		
9-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		
10-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		
11-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		
12-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		
13-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		
14-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		
15-Nov	0	0	0	0	0	0	A	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
16-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		
17-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		
18-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		
19-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		
20-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		
21-Nov	A	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	A		
22-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		
23-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		
24-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		
25-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	A	0	0	0	0	0		
26-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		
27-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		
28-Nov	0	0	0	0	0	1	0	1	1	1	0	0	1	1	1	A	1	1	0	0	0	0	0	0		
29-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	1	A	0	0	0	0	0	0	0	0	0		
30-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	1	1	0	0	0	0	0	0		
0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.2 0.2 0.1 0.1 0.2 0.2 0.2 0.1 0.2 0.1 0.1 0.1 0.1 0.1 0.1 0.1																								Diurnal Average		
0.4 0.3 0.3 0.3 0.5 0.5 0.5 0.6 0.8 0.6 0.4 0.4 0.5 1.1 1.0 0.9 0.8 0.9 0.6 0.5 0.5 0.5 0.4 0.3																								Diurnal Maximum		
C - Calibration      A - Automated Daily Zero Span Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb    24-hr 48 ppb    30-day 11 ppb																										

### Hourly Averages

Sulphur Dioxide (SO<sub>2</sub>) - ppb  
Henry Pirker - November 2016



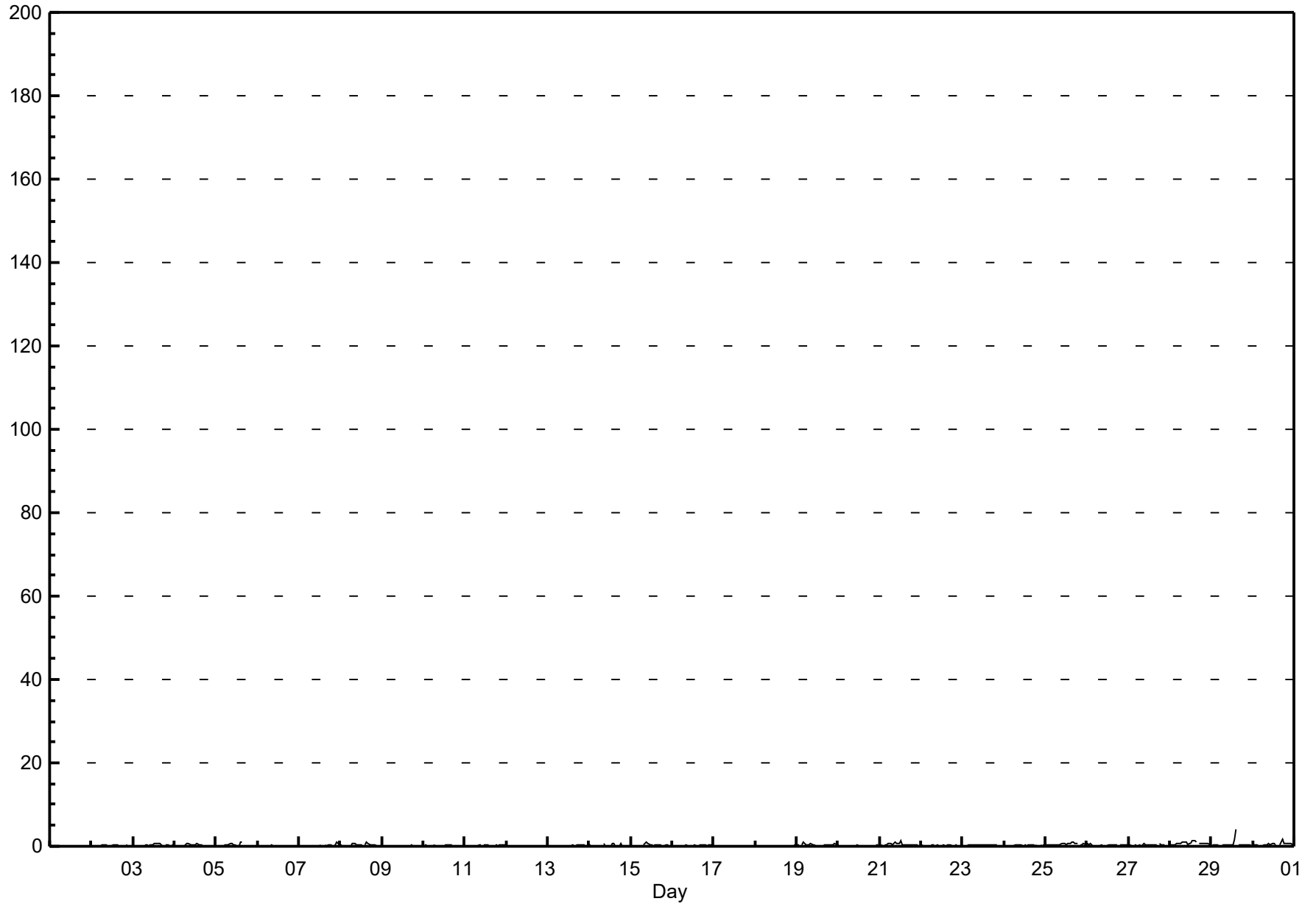
## Hourly Maximums

Sulphur Dioxide (SO<sub>2</sub>) - ppb  
Henry Pirker - November 2016

Maximum Value: 4.1 ppb on Nov 29 15:00		Maximum Daily Average: 0.7 ppb on Nov 28		Hours in Service: 720																							
Minimum Value: 0 ppb on Nov 1 23:00		Minimum Daily Average: 0.0 ppb on Nov 1		Hours of Data: 686																							
Maximum Diurnal Average: 0.5 ppb at hour 15		Minimum Diurnal Average: 0.1 ppb at hour 3		Hours of Missing Data: 34																							
Monthly Average: 0.23 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.1 Median = 0.2 Q <sub>3</sub> = 0.3 P <sub>90</sub> = 0.5 P <sub>99</sub> = 0.9		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	0	0	0	0	0	0	0	0	A	0	0	0	0.0	0.1	
2-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	
3-Nov	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	A	0	0	0	0	0	0.2	0.7	
4-Nov	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	A	0	0	0	0	0	0	0.3	0.6	
5-Nov	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1	A	0	0	0	0	0	0	0	0.2	1.0	
6-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	
7-Nov	0	0	0	0	0	0	0	0	0	0	C	C	C	0	0	A	0	0	0	0	0	0	1	0	0.2	1.0	
8-Nov	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	A	1	1	0	0	0	0	0	0	0.3	0.9	
9-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	0.1	0.3	
10-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	0.3	
11-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	
12-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	
13-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	0.4	
14-Nov	0	0	0	0	0	0	0	0	A	1	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0.2	0.8	
15-Nov	0	0	0	0	0	0	0	A	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.9	
16-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	
17-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	0.0	
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	0.0	0.3	
19-Nov	0	0	A	A	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0.3	0.9	
20-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	0.3	
21-Nov	A	0	0	0	0	1	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0.4	1.3	
22-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	0.4	
23-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	
24-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	0.4	
25-Nov	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	1	1	1	1	1	A	0	0	1	0	0.5	1.0
26-Nov	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.3	0.8	
27-Nov	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	A	1	0	0	0	0	0	0.3	0.6	
28-Nov	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	0	0.7	1.4	
29-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	A	0	0	0	0	0	0	0	0	0.5	4.1	
30-Nov	0	0	0	0	0	0	0	0	0	1	0	1	1	0	A	0	1	2	1	1	1	1	1	0	0.5	1.7	
		0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.2	0.2	0.3	0.3	0.5	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	Diurnal Average	
		0.8	0.4	0.6	0.4	0.9	0.6	0.7	1.0	0.9	1.0	0.7	0.6	1.3	1.8	4.1	1.0	1.0	1.7	0.8	0.6	0.7	0.7	1.0	0.4	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									

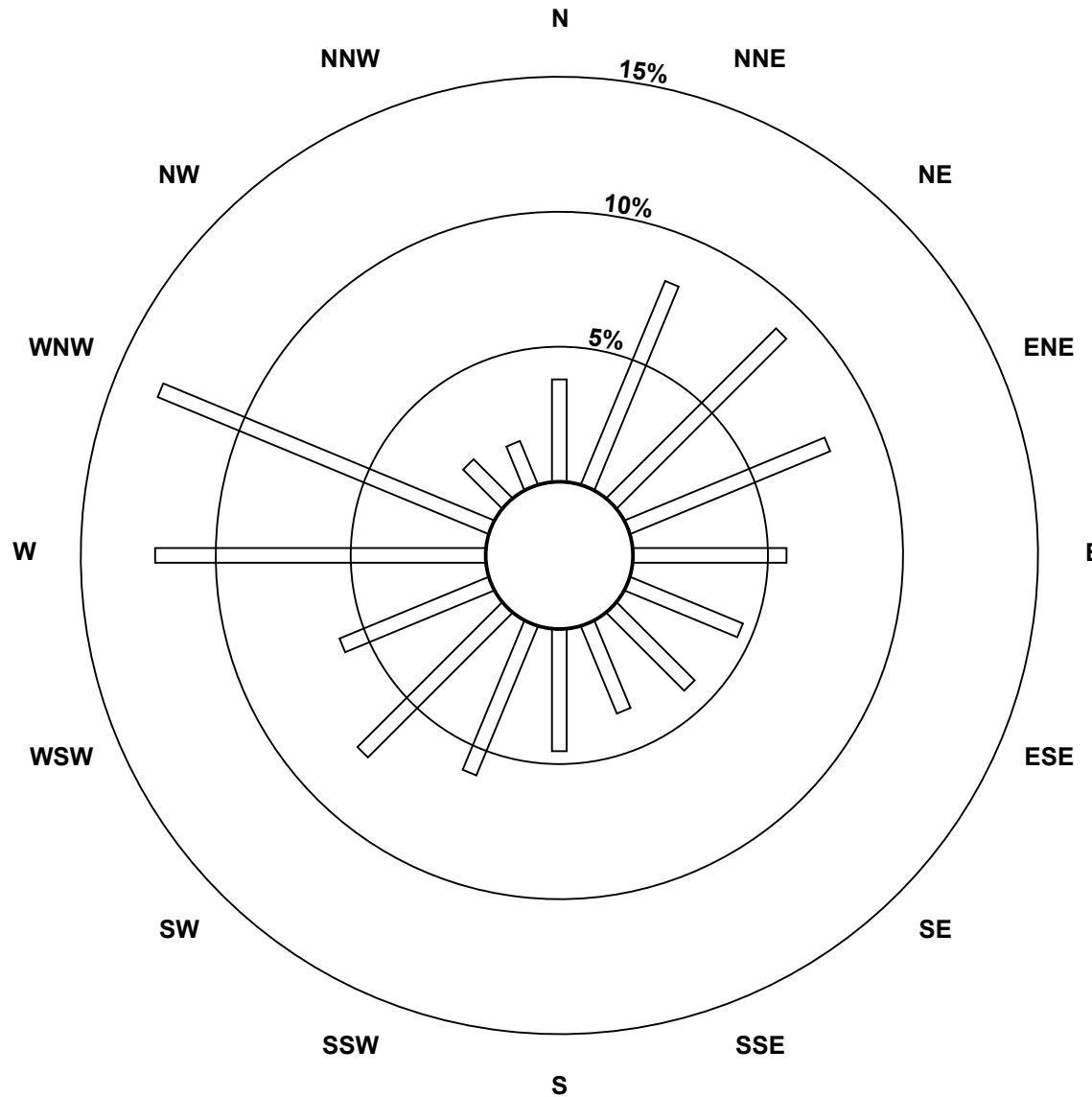
**Hourly Maximums**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Henry Pirker - November 2016**

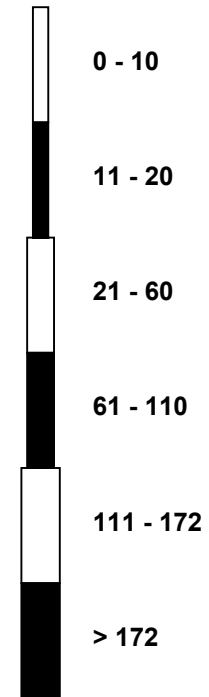


**Pollutant Rose**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Henry Pirker - November 2016**

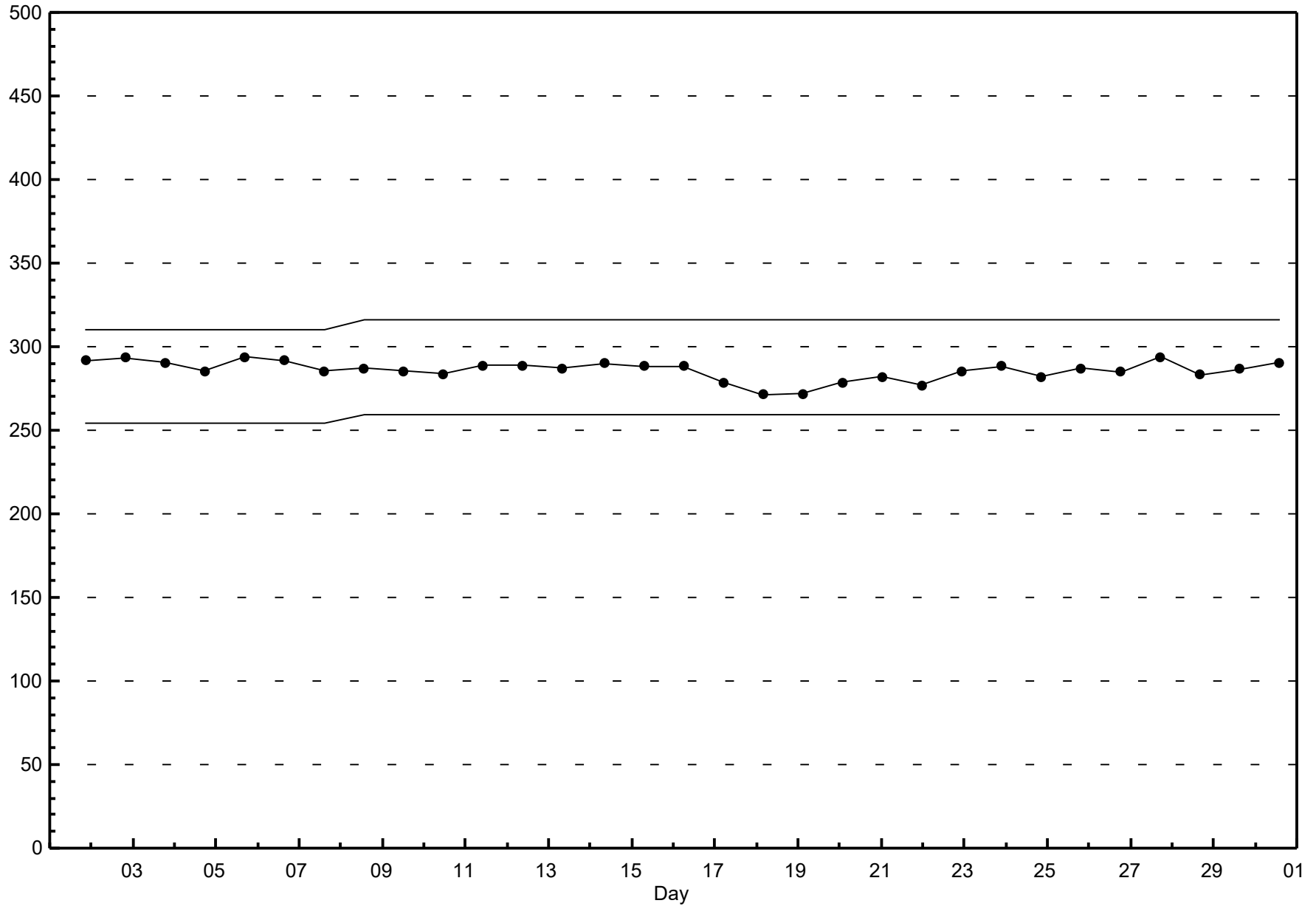


**Pollutant Classes (ppb)**



### Span Responses

Sulphur Dioxide (SO<sub>2</sub>)  
Henry Pirker - November 2016



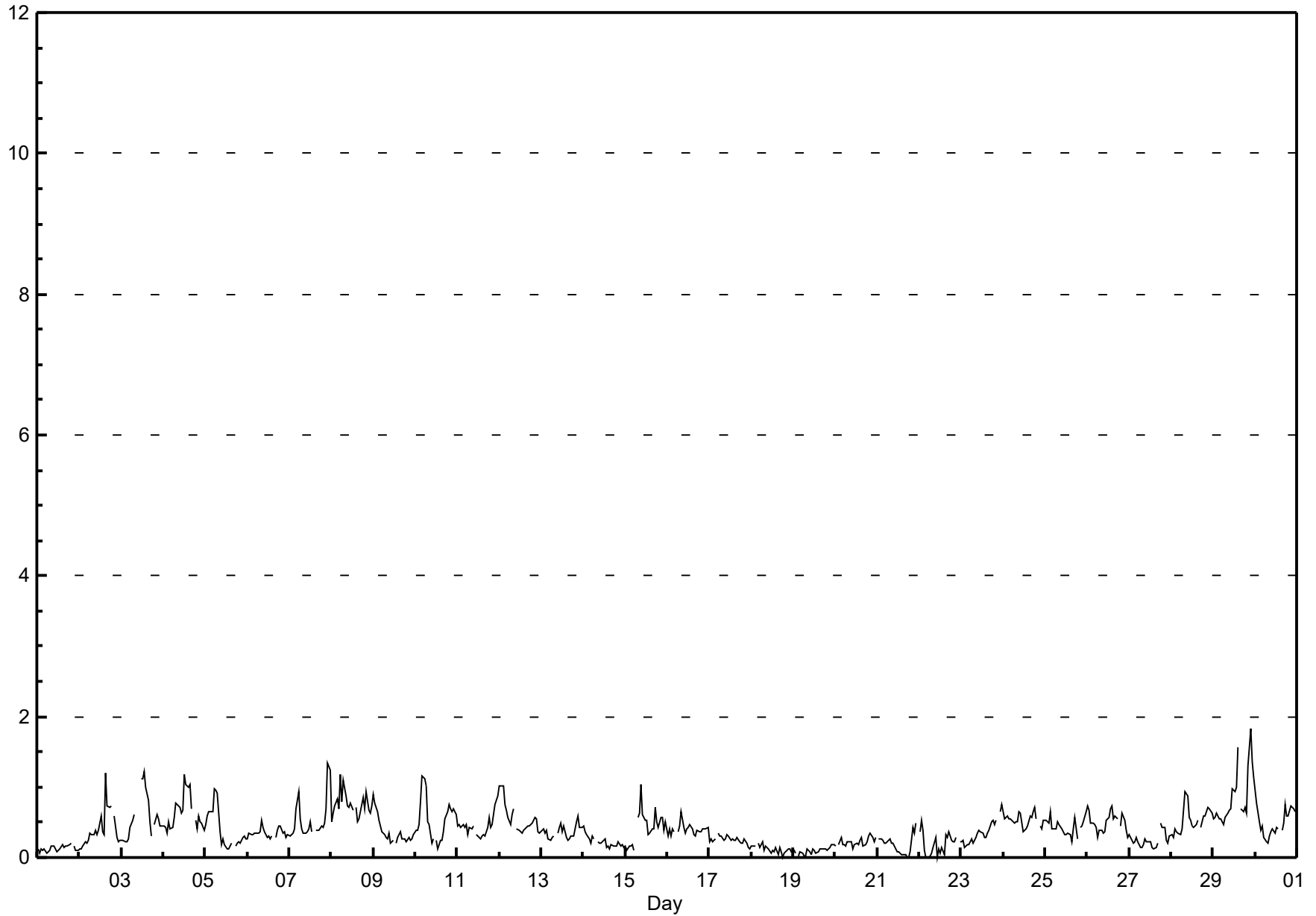


## Hourly Averages

Total Reduced Sulphur (TRS) - ppb

Henry Pirker - November 2016

Maximum Value: 1.8 ppb on Nov 29 22:00 Minimum Value: 0 ppb on Nov 18 19:00 Maximum Diurnal Average: 0.5 ppb at hour 21 Monthly Average: 0.40 ppb		Maximum Daily Average: 0.8 ppb on Nov 29 Minimum Daily Average: 0.1 ppb on Nov 19 Minimum Diurnal Average: 0.3 ppb at hour 11 Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.1 Q <sub>1</sub> = 0.2 Median = 0.4 Q <sub>3</sub> = 0.5 P <sub>90</sub> = 0.7 P <sub>99</sub> = 1.2		Hours in Service: 720 Hours of Data: 686 Hours of Missing Data: 34 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	0	0	0	0	0	0	0	0	A	0	0	0	0.1	0.2	
2-Nov	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	A	1	0	0	0	0.4	1.2	
3-Nov	0	0	0	0	0	0	1	1	C	C	C	1	1	1	1	1	1	0	A	0	1	1	0	0	0.6	1.2	
4-Nov	0	0	0	1	0	0	1	1	1	1	1	1	1	1	1	1	1	A	1	0	1	1	0	0	0.6	1.2	
5-Nov	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.4	1.0	
6-Nov	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.3	0.5	
7-Nov	0	0	0	0	1	1	1	0	0	0	0	0	1	0	A	0	0	0	0	0	0	1	1	1	0.5	1.3	
8-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	1.2	
9-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	0.4	0.9	
10-Nov	0	0	0	1	1	1	1	1	0	0	0	A	0	0	0	0	0	0	1	1	1	1	1	1	0.5	1.2	
11-Nov	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	1	0	0	1	1	1	0.5	0.9	
12-Nov	1	1	1	1	1	1	0	1	1	A	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0.6	1.0	
13-Nov	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0.4	0.6	
14-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	0.4	
15-Nov	0	0	0	0	0	0	A	1	1	1	1	1	1	0	0	0	0	1	1	0	1	1	0	1	0.4	1.0	
16-Nov	0	0	0	0	0	A	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.6	
17-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	
18-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	
19-Nov	0	0	A	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	
20-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	0.2	0.3	
21-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	0.2	0.5	
22-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	0.2	0.5	
23-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	A	1	1	0.4	0.8	
24-Nov	1	1	1	1	1	1	0	1	1	1	1	0	0	0	0	1	1	1	1	1	A	0	0	1	0.5	0.7	
25-Nov	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	A	0	0	1	1	0.4	0.6	
26-Nov	1	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	A	0	1	1	1	0	0	0.5	0.7	
27-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	0.5	
28-Nov	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	1	A	0	1	1	1	1	1	1	0.5	0.9	
29-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	A	1	1	1	1	1	2	1	1	0.8	1.8	
30-Nov	1	1	1	0	0	0	0	0	0	0	0	0	0	0	A	0	0	1	1	1	1	1	1	1	0.5	1.0	
	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	Diurnal Average		
	1.0	1.0	1.0	0.8	1.2	1.2	1.0	1.1	0.9	1.0	0.7	1.1	1.2	1.2	1.6	1.2	0.7	0.8	0.9	0.7	1.3	1.8	1.4	1.2	Diurnal Maximum		
C - Calibration		A - Automated Daily Zero Span																									

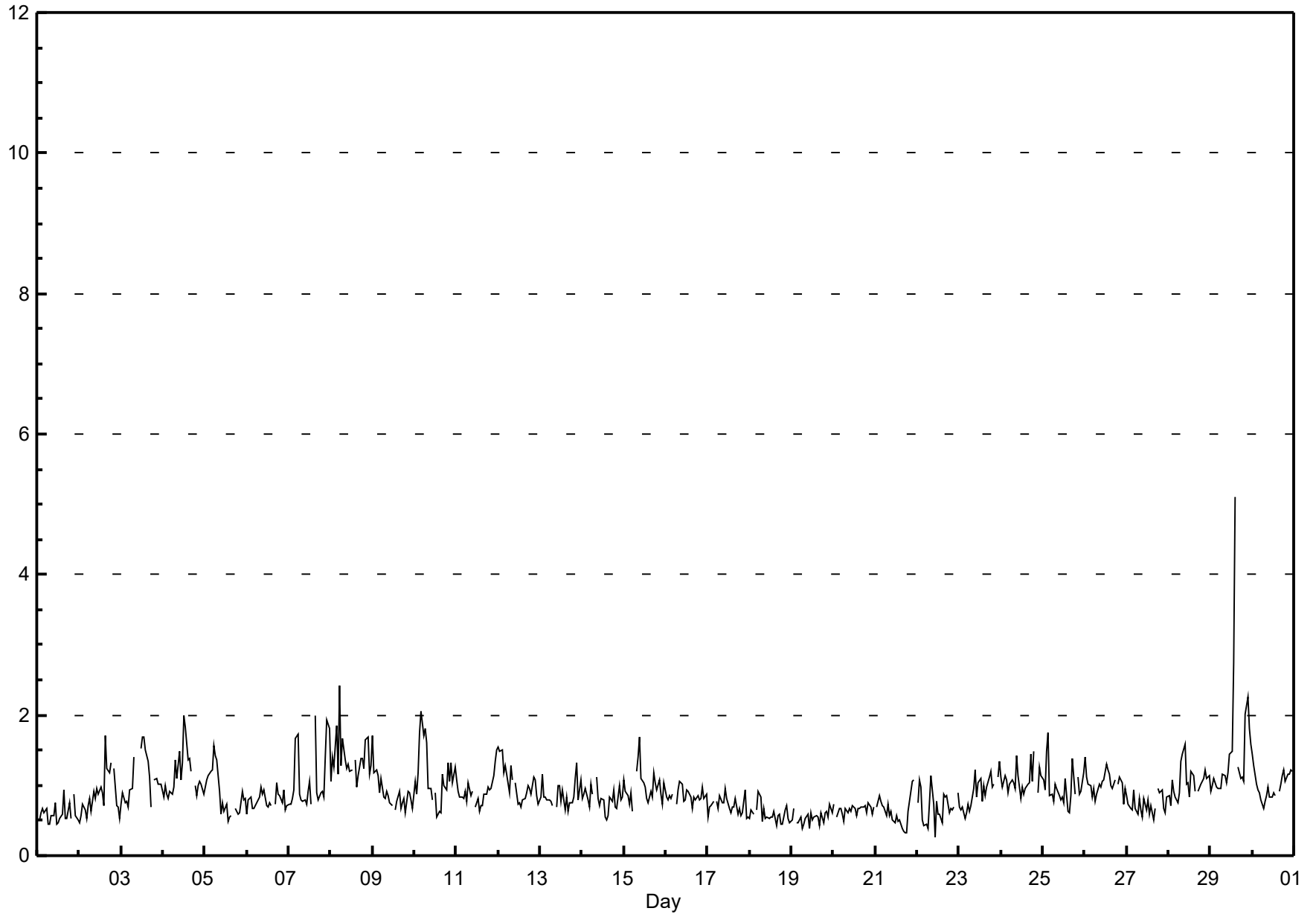


## Hourly Maximums

Total Reduced Sulphur (TRS) - ppb

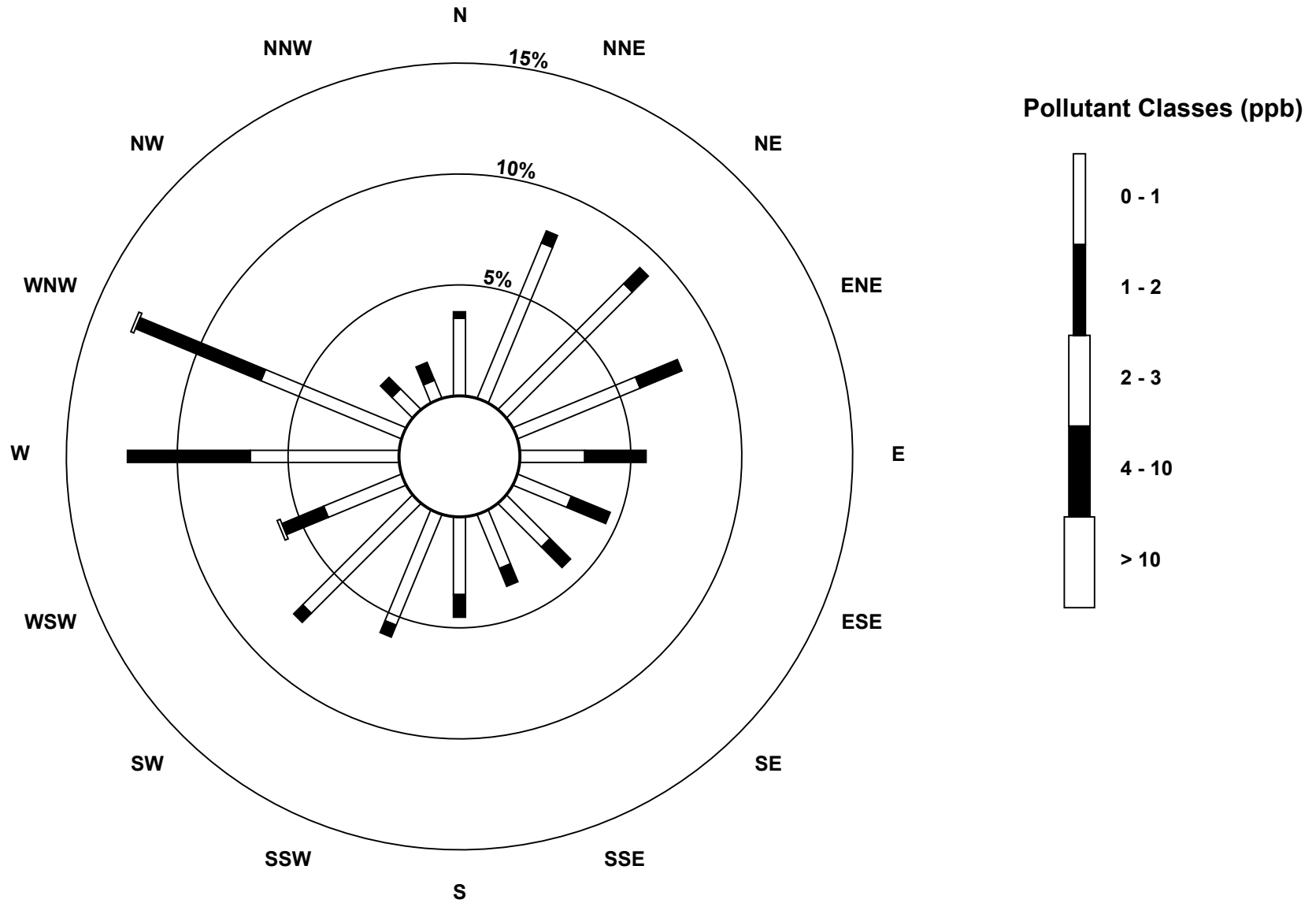
Henry Pirker - November 2016

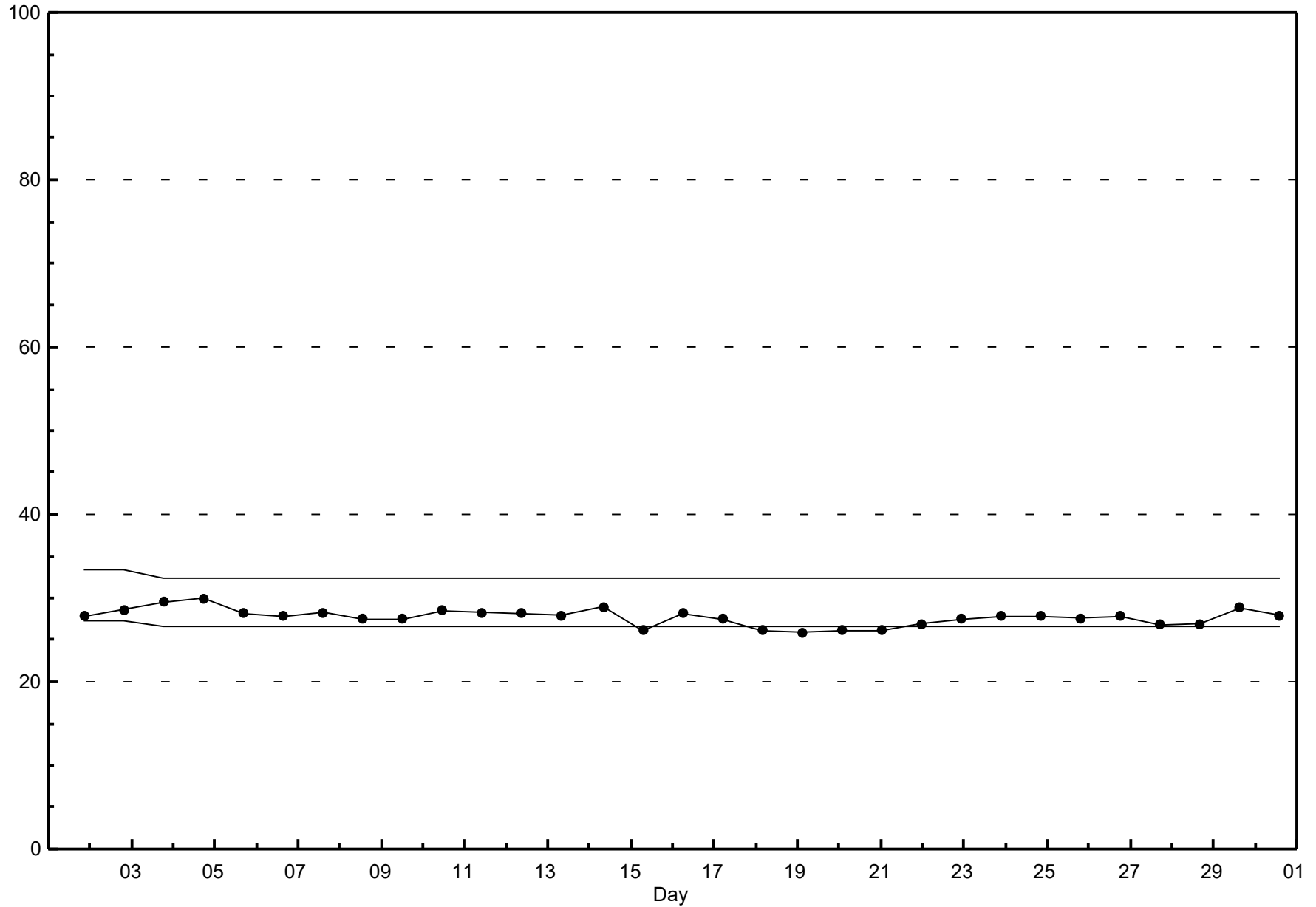
Maximum Value: 5.1 ppb on Nov 29 15:00		Maximum Daily Average: 1.5 ppb on Nov 29		Hours in Service: 720																							
Minimum Value: 0 ppb on Nov 22 11:00		Minimum Daily Average: 0.5 ppb on Nov 19		Hours of Data: 686																							
Maximum Diurnal Average: 1.0 ppb at hour 22		Minimum Diurnal Average: 0.8 ppb at hour 7		Hours of Missing Data: 34																							
Monthly Average: 0.91 ppb		Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 0.6 Q <sub>1</sub> = 0.7 Median = 0.9 Q <sub>3</sub> = 1.1 P <sub>90</sub> = 1.3 P <sub>99</sub> = 2.0		Hours of Calibration: 34																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Nov	1	1	1	1	1	1	0	0	1	1	1	0	0	1	1	1	1	1	1	1	A	1	1	0	0.6	0.9	
2-Nov	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	A	1	1	1	0.9	1.7	
3-Nov	1	1	1	1	1	1	1	1	C	C	C	2	2	2	2	1	1	1	1	A	1	1	1	1	1.1	1.7	
4-Nov	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	A	1	1	1	1	1	1.1	2.0	
5-Nov	1	1	1	1	1	2	1	1	1	1	1	1	1	0	1	1	A	1	1	1	1	1	1	1	0.9	1.6	
6-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	
7-Nov	1	1	1	1	2	2	1	1	1	1	1	1	1	1	A	2	1	1	1	1	1	1	2	2	1.1	2.0	
8-Nov	1	1	1	2	1	2	1	2	1	1	1	1	1	A	1	1	1	1	1	1	1	2	2	1	1	1.4	2.4
9-Nov	2	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	1.7	
10-Nov	1	1	1	2	2	2	2	2	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1.2	2.0	
11-Nov	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	2	0.9	1.5	
12-Nov	2	1	2	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	1.5	
13-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	
14-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	
15-Nov	1	1	1	1	1	1	1	A	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	1.7	
16-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	1.1	
17-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	
18-Nov	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	0	0	1	1	0	0.6	0.9	
19-Nov	1	1	1	A	0	0	1	0	1	1	0	1	1	1	1	1	0	1	0	1	1	1	1	1	0.5	0.7	
20-Nov	1	A	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	0.8	
21-Nov	A	1	1	1	1	1	1	1	1	1	1	0	1	0	1	0	0	0	0	0	1	1	1	1	0.6	1.1	
22-Nov	1	1	1	1	0	0	0	1	1	1	0	1	1	1	0	1	1	1	1	1	1	1	1	1	0.7	1.1	
23-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	1.3	
24-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	1.1	1.5	
25-Nov	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1.0	1.8	
26-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	1.0	1.4	
27-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	0.7	1.0	
28-Nov	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	A	1	1	1	1	1	1	1	1.1	1.6	
29-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	3	5	A	1	1	1	1	2	2	2	2	1.5	5.1	
30-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	
		0.9	0.9	0.9	0.9	0.9	1.0	0.8	1.0	0.9	0.9	0.8	0.9	0.9	0.9	1.0	0.9	0.9	0.9	0.9	0.9	1.0	1.0	0.9	1.0	Diurnal Average	
		1.7	1.5	1.5	1.9	2.0	2.4	1.8	1.7	1.4	1.7	1.3	1.5	2.0	2.7	5.1	2.0	1.3	1.4	1.4	1.5	2.0	2.3	1.9	1.8	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									



**Pollutant Rose**

**Total Reduced Sulphur (TRS) - ppb**  
**Henry Pirker - November 2016**





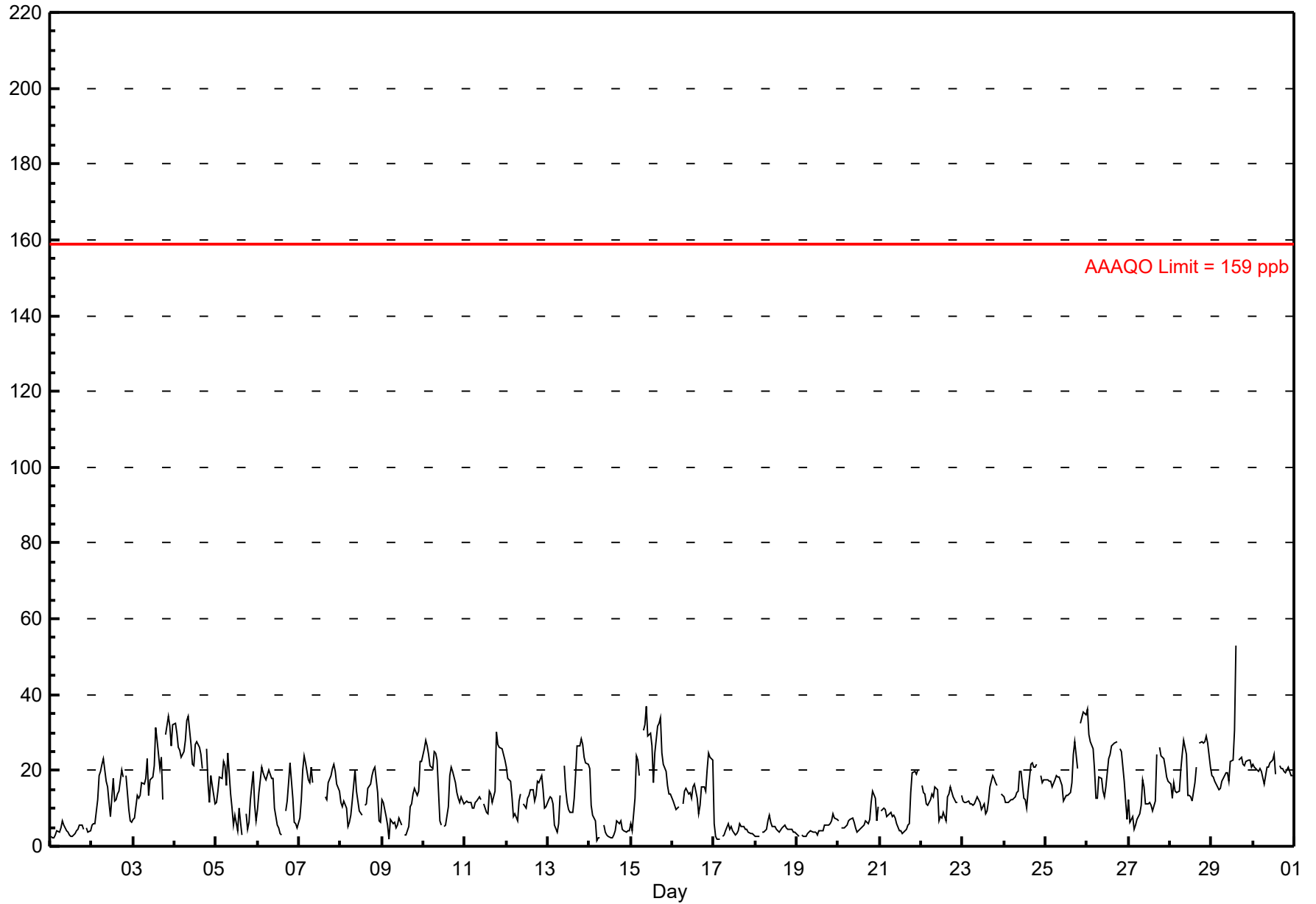
# Hourly Averages

## Nitrogen Dioxide (NO<sub>2</sub>) - ppb Henry Pirker - November 2016

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 53.0 ppb on Nov 29 15:00 Maximum Daily Average: 24.0 ppb on Nov 4		Hours in Service: 720 Hours of Data: 684 Hours of Missing Data: 36 Hours of Calibration: 36 Percent Operational Time: 100.0																								
Minimum Value: 1 ppb on Nov 14 05:00 Maximum Diurnal Average: 18.0 ppb at hour 21 Monthly Average: 13.88 ppb		Minimum Daily Average: 4.0 ppb on Nov 17 Minimum Diurnal Average: 10.9 ppb at hour 12 Percentiles: P <sub>1</sub> = 2.4 P <sub>10</sub> = 4.1 Q <sub>1</sub> = 6.7 Median = 12.8 Q <sub>3</sub> = 19.7 P <sub>90</sub> = 24.5 P <sub>99</sub> = 34.0																								
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	2	2	3	4	4	5	7	6	4	4	3	3	3	4	4	5	6	6	5	A	5	4	4	4.0	6.7
2-Nov	5	6	6	12	19	20	21	23	17	16	11	8	18	12	12	14	14	20	18	A	18	10	7	6	13.7	23.2
3-Nov	7	7	14	13	14	17	16	18	23	13	18	18	21	31	28	21	23	12	A	29	34	32	27	32	20.4	34.1
4-Nov	33	30	26	25	24	25	28	33	34	27	22	21	27	28	26	24	21	A	26	17	12	19	16	11	24.0	34.4
5-Nov	12	15	18	18	22	21	16	24	14	10	6	8	4	10	6	3	A	8	5	6	12	20	11	7	12.0	24.5
6-Nov	10	14	21	19	18	18	20	19	18	18	10	6	5	3	3	A	9	12	17	22	13	6	6	5	12.7	22.0
7-Nov	8	12	20	24	22	17	17	21	17	C	C	C	C	C	C	13	12	17	19	20	22	20	16	15	17.3	23.9
8-Nov	12	10	12	10	5	6	8	12	20	14	12	9	8	A	11	11	15	16	19	20	21	14	7	6	12.2	20.9
9-Nov	12	12	8	6	2	7	6	6	5	6	7	6	A	3	3	5	11	11	14	15	13	14	22	22	9.4	22.5
10-Nov	26	28	26	24	21	20	25	25	23	7	6	A	5	6	11	19	21	20	17	14	13	12	13	11	17.0	28.0
11-Nov	11	12	12	12	10	10	11	12	13	12	A	11	9	9	15	14	11	15	30	27	26	26	24	23	15.4	30.2
12-Nov	21	18	17	13	8	8	7	12	14	A	11	10	13	14	15	15	12	13	17	17	19	15	10	10	13.4	20.7
13-Nov	12	13	13	11	6	4	6	13	A	21	15	12	10	9	9	13	19	26	27	28	27	23	22	22	15.7	28.3
14-Nov	20	11	8	7	1	2	2	A	6	4	3	3	2	2	3	4	7	6	7	4	4	4	4	4	5.2	20.4
15-Nov	6	4	13	24	23	19	A	31	32	37	29	30	26	17	25	32	33	34	25	22	20	16	14	14	22.7	37.0
16-Nov	12	11	10	10	11	A	11	15	15	14	14	13	16	16	13	9	11	16	16	15	20	24	23	23	14.6	24.4
17-Nov	6	3	2	2	A	3	3	4	6	5	5	4	3	3	4	6	5	5	5	4	4	4	3	3	4.0	6.1
18-Nov	2	3	3	A	4	4	5	7	8	6	5	5	4	4	4	5	5	6	5	4	5	4	4	4	4.6	8.2
19-Nov	3	3	A	3	3	3	3	4	4	4	4	3	4	4	4	4	5	6	6	6	7	9	8	7	4.6	8.7
20-Nov	7	A	5	5	5	6	7	7	7	6	5	4	4	5	5	6	7	6	7	11	15	13	7	10	6.9	14.7
21-Nov	A	9	10	10	8	8	9	8	8	7	6	4	4	3	4	4	6	6	14	19	20	19	20	A	9.4	20.0
22-Nov	16	14	14	11	11	12	14	13	16	15	7	8	8	9	7	13	14	16	13	12	12	12	A	13	12.1	16.2
23-Nov	12	11	12	12	11	11	11	11	13	12	11	10	11	9	9	12	16	19	18	17	16	A	14	13	12.7	18.7
24-Nov	13	11	12	12	12	12	13	14	15	20	20	13	12	10	15	22	22	21	21	22	A	19	17	18	15.8	22.0
25-Nov	18	18	17	17	16	17	19	18	18	16	12	13	13	13	14	17	24	28	20	A	33	34	35	35	20.2	35.3
26-Nov	36	30	28	26	20	13	13	18	18	15	13	16	23	24	26	27	27	28	A	26	25	17	12	7	21.1	36.3
27-Nov	12	7	8	4	6	7	8	11	17	16	11	11	11	11	9	12	24	A	26	24	23	21	18	17	13.7	26.0
28-Nov	16	13	17	15	14	14	20	24	28	24	13	13	12	17	21	A	27	27	27	28	29	27	21	21	20.1	29.2
29-Nov	19	18	17	16	15	15	17	18	20	19	17	22	23	30	53	A	23	23	22	21	22	23	23	21	21.6	53.0
30-Nov	22	21	20	20	20	20	16	19	21	21	22	23	24	19	A	21	21	21	20	20	21	20	19	18	20.3	24.3
13.5 12.6 13.4 13.2 12.2 11.9 12.3 15.4 15.7 13.9 11.4 10.9 11.6 11.4 12.6 13.2 15.1 15.8 16.6 17.0 18.0 16.6 14.9 13.9																								Diurnal Average		
36.3 29.9 27.7 25.7 23.6 25.1 27.8 33.1 34.4 37.0 28.9 30.0 26.9 31.2 53.0 31.8 32.6 33.9 30.2 29.5 34.1 33.9 35.3 34.7																								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 (NO<sub>2</sub>) - ppb**  
**Henry Pirker - November 2016**





# Hourly Maximums

## Nitrogen Dioxide (NO<sub>2</sub>) - ppb Henry Pirker - November 2016

Maximum Value: 266.1 ppb on Nov 29 15:00		Maximum Daily Average: 38.3 ppb on Nov 29		Hours in Service: 720																																													
Minimum Value: 2 ppb on Nov 14 05:00		Minimum Daily Average: 6.4 ppb on Nov 1		Hours of Data: 684																																													
Maximum Diurnal Average: 23.8 ppb at hour 15		Minimum Diurnal Average: 14.9 ppb at hour 5		Hours of Missing Data: 36																																													
Monthly Average: 18.22 ppb		Percentiles: P <sub>1</sub> = 3.4 P <sub>10</sub> = 6.1 Q <sub>1</sub> = 10.3 Median = 16.8 Q <sub>3</sub> = 23.8 P <sub>90</sub> = 29.8 P <sub>99</sub> = 45.4		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	5	4	3	5	6	6	8	10	10	7	6	5	5	4	7	6	7	8	10	7	A	7	5	5	6.4	10.4																							
2-Nov	10	10	7	18	21	23	25	41	25	20	16	13	22	17	17	18	23	23	22	A	26	16	9	8	18.6	40.7																							
3-Nov	9	9	17	17	16	21	22	21	27	18	23	20	33	38	36	31	31	17	A	38	37	36	34	37	25.5	38.1																							
4-Nov	34	34	31	30	28	30	32	38	56	36	24	26	30	36	31	28	27	A	35	23	18	28	20	16	30.2	56.1																							
5-Nov	14	20	20	23	26	24	20	31	19	13	8	11	6	22	12	6	A	15	7	13	22	25	20	11	17.0	31.1																							
6-Nov	18	22	26	21	22	20	24	25	24	21	19	8	7	5	4	A	14	19	36	35	29	9	8	8	18.5	35.6																							
7-Nov	11	18	25	28	30	23	22	27	26	C	C	C	C	C	C	16	16	20	24	25	24	25	21	19	22.2	30.4																							
8-Nov	15	18	20	22	9	10	11	14	49	27	16	11	10	A	14	14	23	20	22	24	25	20	9	8	17.8	49.5																							
9-Nov	18	14	12	10	3	10	9	10	6	8	11	11	A	4	4	12	19	18	18	24	22	20	26	27	13.8	26.5																							
10-Nov	31	34	32	29	25	26	29	28	28	9	7	A	6	10	16	26	27	33	19	17	15	13	15	13	21.1	34.0																							
11-Nov	13	13	14	14	12	12	12	13	15	15	A	15	12	11	18	19	19	23	34	29	28	28	28	27	18.4	33.9																							
12-Nov	25	22	20	18	10	14	12	17	15	A	21	13	18	17	18	17	16	21	22	19	22	20	14	12	17.5	24.9																							
13-Nov	15	15	15	13	12	7	11	24	A	26	23	16	15	11	10	20	24	31	30	30	31	26	25	25	19.7	31.3																							
14-Nov	25	19	12	16	2	3	4	A	8	6	4	3	4	3	4	6	9	8	9	8	6	5	8	7	7.9	25.0																							
15-Nov	11	6	22	28	25	26	A	33	46	47	35	36	33	21	30	35	40	38	30	24	23	18	17	15	27.8	46.6																							
16-Nov	15	12	11	12	13	A	15	19	19	15	18	16	27	20	18	16	14	22	21	19	25	27	25	27	18.4	27.1																							
17-Nov	18	4	3	3	A	4	5	8	10	9	10	8	5	7	8	12	8	9	7	8	6	7	5	5	7.4	17.5																							
18-Nov	4	4	4	A	8	7	8	12	15	10	11	9	8	6	5	8	8	9	7	6	7	7	6	7	7.6	14.7																							
19-Nov	5	5	A	5	4	4	5	5	6	6	6	5	6	6	6	6	7	8	9	9	8	13	10	10	6.6	12.7																							
20-Nov	10	A	7	7	6	10	11	10	11	9	6	7	7	7	6	7	9	8	9	16	16	15	11	12	9.4	15.9																							
21-Nov	A	12	12	11	9	9	11	9	10	9	8	6	6	5	6	7	8	9	20	24	25	21	23	A	11.8	24.9																							
22-Nov	20	16	16	14	12	17	18	19	21	18	12	15	13	15	8	16	16	19	14	14	13	13	A	14	15.3	20.8																							
23-Nov	13	12	12	13	12	12	12	13	15	15	13	12	14	10	14	15	19	21	19	19	17	A	15	15	14.3	21.4																							
24-Nov	15	13	12	13	14	14	15	18	17	24	25	18	16	12	24	25	26	22	22	25	A	20	18	18	18.6	25.6																							
25-Nov	19	20	22	22	19	19	20	20	43	19	14	15	15	16	20	21	28	30	31	A	35	36	41	40	24.5	43.1																							
26-Nov	56	37	33	30	25	15	17	23	39	19	17	21	27	26	28	28	29	29	A	29	26	27	16	15	26.6	55.8																							
27-Nov	20	12	14	6	10	10	14	20	24	20	17	14	14	12	13	18	28	A	29	27	26	22	20	19	17.8	29.3																							
28-Nov	24	16	20	19	15	16	24	30	32	35	16	33	15	14	23	26	A	29	30	29	31	32	30	26	24.4	35.4																							
29-Nov	20	20	21	18	16	17	19	22	21	23	20	26	27	150	266	A	27	26	24	22	24	25	25	22	38.3	266.1																							
30-Nov	25	24	23	21	22	23	27	22	24	30	27	34	30	22	A	22	23	22	21	21	24	22	20	20	23.8	34.4																							
																								17.8	16.0	16.7	16.7	14.9	14.9	15.9	20.1	22.8	18.4	15.4	15.2	15.4	18.9	23.8	17.2	19.3	19.8	20.7	20.8	21.8	20.2	18.1	16.7	Diurnal Average	
																								55.8	37.1	33.3	30.0	30.4	30.5	32.1	40.7	56.1	46.6	35.3	36.1	33.4	149.7	266.1	35.1	39.7	38.3	35.6	38.1	36.8	35.8	40.6	40.0	Diurnal Maximum	
C - Calibration																								A - Automated Daily Zero Span																									

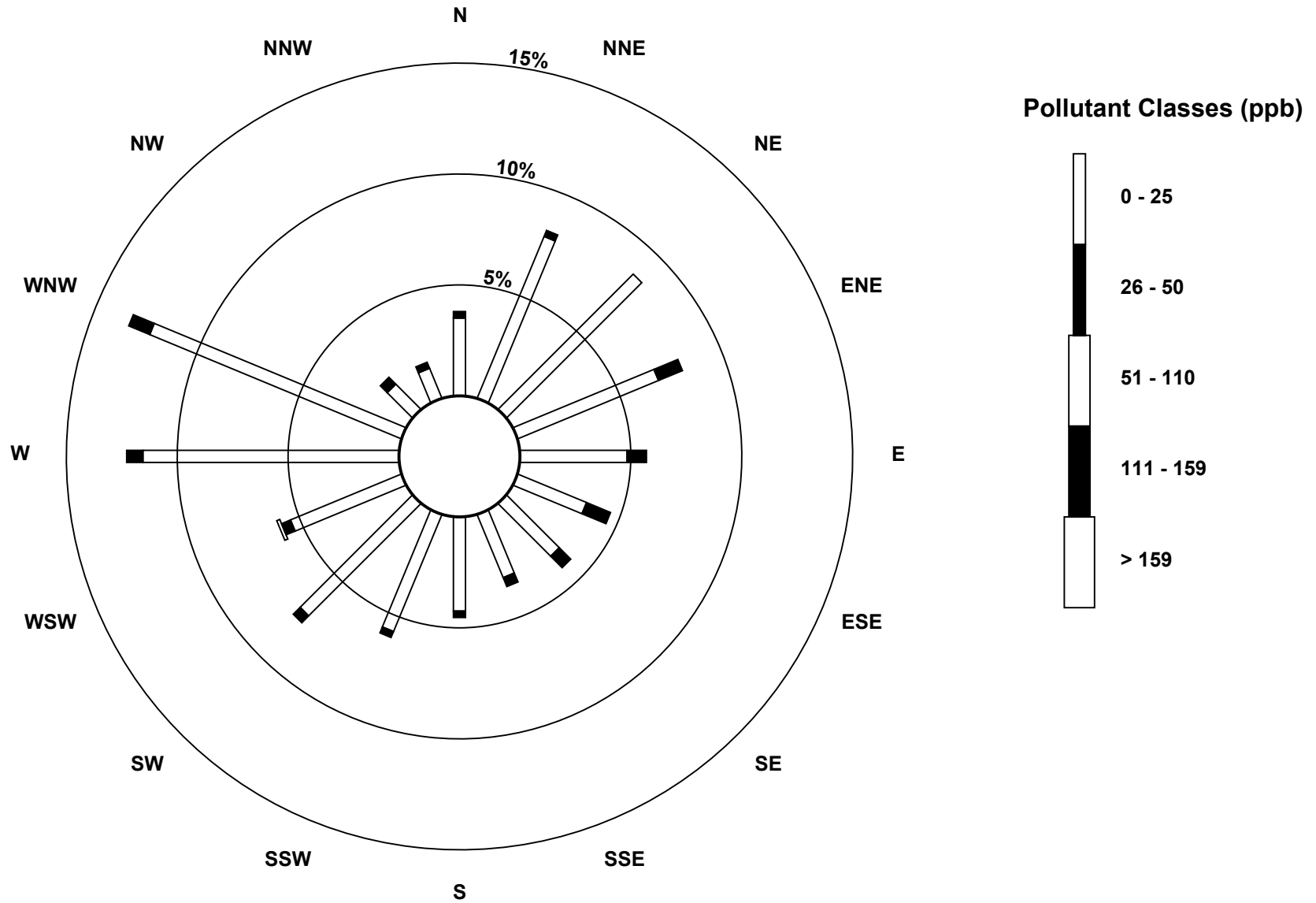
**Hourly Maximums**

**Nitrogen Dioxide (NO<sub>2</sub>) - ppb**  
**Henry Pirker - November 2016**



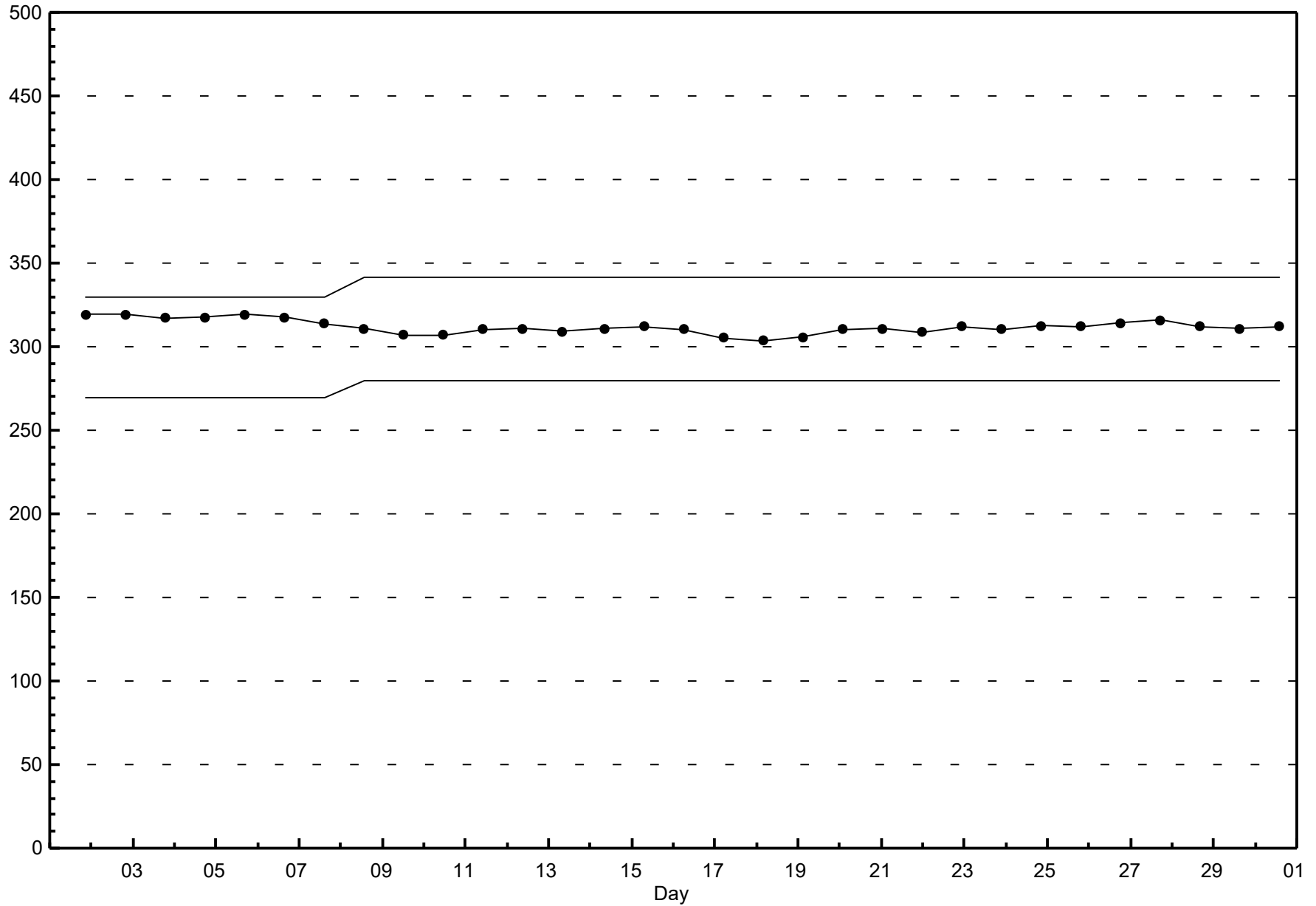
**Pollutant Rose**

**Nitrogen Dioxide (NO<sub>2</sub>) - ppb**  
**Henry Pirker - November 2016**



### Span Responses

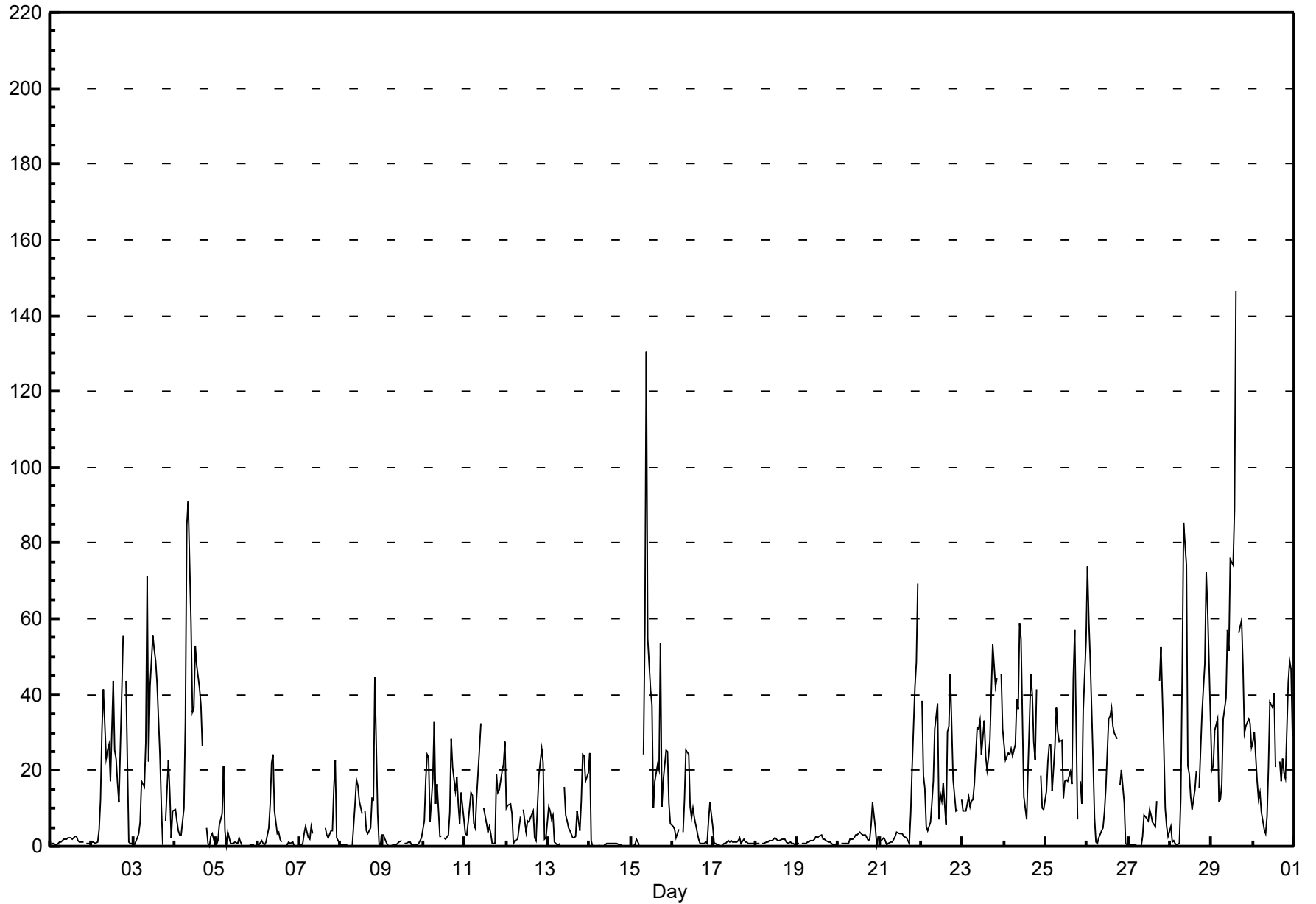
Nitrogen Dioxide (NO<sub>2</sub>)  
Henry Pirker - November 2016



# Hourly Averages

## Nitrogen Oxide (NO) - ppb Henry Pirker - November 2016

Maximum Value: 146.6 ppb on Nov 29 15:00		Maximum Daily Average: 44.8 ppb on Nov 29		Hours in Service: 720																							
Minimum Value: 0 ppb on Nov 15 00:00		Minimum Daily Average: 1.0 ppb on Nov 9		Hours of Data: 684																							
Maximum Diurnal Average: 24.5 ppb at hour 10		Minimum Diurnal Average: 5.5 ppb at hour 5		Hours of Missing Data: 36																							
Monthly Average: 13.46 ppb		Percentiles: P <sub>1</sub> = 0.1 P <sub>10</sub> = 0.5 Q <sub>1</sub> = 1.0 Median = 5.3 Q <sub>3</sub> = 20.7 P <sub>90</sub> = 38.1 P <sub>99</sub> = 72.8		Hours of Calibration: 36																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Nov	1	1	1	1	0	1	1	2	2	2	2	2	2	3	3	2	1	1	1	A	1	1	1	1	1.4	2.6	
2-Nov	1	1	1	1	4	12	31	42	23	25	27	17	44	25	23	17	12	40	55	A	44	1	1	1	19.5	55.4	
3-Nov	1	0	2	4	6	17	16	27	71	22	42	56	52	49	43	24	11	0	A	7	23	14	2	9	21.7	71.1	
4-Nov	10	7	4	3	3	10	33	85	91	59	35	37	53	48	42	37	26	A	5	1	0	2	3	1	25.8	91.1	
5-Nov	0	2	6	9	21	4	1	4	1	1	1	1	2	1	0	A	0	0	0	0	1	0	0	0	2.4	21.4	
6-Nov	0	0	1	1	0	1	5	11	22	24	10	3	4	2	1	A	1	0	1	1	1	0	0	0	3.9	24.1	
7-Nov	0	0	1	3	5	2	2	5	3	C	C	C	C	C	C	5	3	2	4	4	15	23	2	1	4.5	22.8	
8-Nov	0	0	0	0	0	0	0	0	11	18	16	12	9	A	9	4	3	5	13	12	45	9	1	0	7.3	44.6	
9-Nov	3	3	1	0	0	0	0	1	0	1	1	2	A	1	1	1	1	0	0	1	1	1	1	2	1.0	3.1	
10-Nov	7	18	24	23	6	18	33	11	16	2	3	A	2	2	3	9	28	21	14	18	11	6	14	7	12.9	32.6	
11-Nov	3	3	6	14	13	6	5	13	26	32	A	10	6	4	5	3	1	1	19	14	15	20	21	28	11.7	32.4	
12-Nov	10	11	11	9	1	2	2	5	8	A	10	4	7	6	8	9	2	1	10	19	26	22	2	2	8.1	25.9	
13-Nov	10	9	7	8	1	0	0	1	A	16	8	7	5	4	2	2	3	9	4	12	24	24	17	19	8.4	24.3	
14-Nov	24	1	0	0	0	0	0	A	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	1.5	24.4	
15-Nov	0	0	0	2	1	0	A	24	58	130	55	41	37	10	17	21	20	54	10	17	25	25	11	6	24.7	130.4	
16-Nov	5	4	2	3	5	A	4	12	25	24	10	7	10	8	4	2	1	1	1	1	1	7	12	5	6.7	25.2	
17-Nov	1	1	0	0	A	1	1	1	2	1	2	1	1	1	2	2	1	2	1	1	1	1	1	1	1.0	2.3	
18-Nov	1	1	1	A	1	1	1	1	1	1	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1.2	2.1	
19-Nov	1	1	A	1	1	1	1	1	1	2	2	3	2	3	3	2	2	1	1	1	1	0	0	1	1.3	2.8	
20-Nov	1	A	1	1	1	1	1	2	2	2	3	3	4	3	3	3	3	2	2	6	11	5	0	3	2.6	11.5	
21-Nov	A	2	2	2	0	1	1	1	2	3	4	3	3	3	3	2	1	1	8	21	42	48	70	A	10.2	69.5	
22-Nov	38	19	15	5	4	6	12	17	31	38	7	14	12	17	5	30	32	46	18	13	9	10	A	12	17.8	45.6	
23-Nov	9	9	9	13	11	12	12	17	31	31	33	24	33	24	20	24	28	53	48	42	44	A	45	31	26.3	53.2	
24-Nov	27	23	25	24	26	24	27	39	36	59	55	13	10	7	21	46	40	28	23	41	A	19	10	10	27.4	59.0	
25-Nov	15	22	27	27	14	27	36	30	28	28	13	17	18	17	20	16	45	57	7	A	17	11	36	54	25.3	57.1	
26-Nov	74	59	49	22	7	1	1	2	4	5	9	15	33	34	37	32	30	28	A	16	20	12	1	1	21.4	73.7	
27-Nov	0	0	0	0	0	0	0	0	3	8	8	7	10	8	6	5	12	A	44	53	27	10	5	3	9.1	52.7	
28-Nov	5	1	1	1	1	1	13	45	86	74	21	19	13	10	15	20	A	15	35	42	48	72	62	34	27.5	85.6	
29-Nov	20	21	31	34	12	12	16	33	39	57	51	76	74	89	147	A	56	59	47	30	32	34	32	26	44.8	146.6	
30-Nov	28	30	17	12	14	9	4	3	8	21	38	37	40	21	A	22	17	23	19	18	43	49	46	29	23.9	49.0	
		10.2	8.6	8.5	7.7	5.5	5.9	8.9	15.0	21.8	24.5	16.7	15.5	17.4	14.3	15.9	12.3	13.6	16.2	14.1	14.0	18.9	14.7	13.8	9.9	Diurnal Average	
		73.7	59.2	48.8	33.7	25.9	26.5	36.4	84.5	91.1	130.4	55.0	75.8	74.1	88.9	146.6	45.6	56.3	59.5	55.4	52.7	48.3	72.4	69.5	54.2	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									



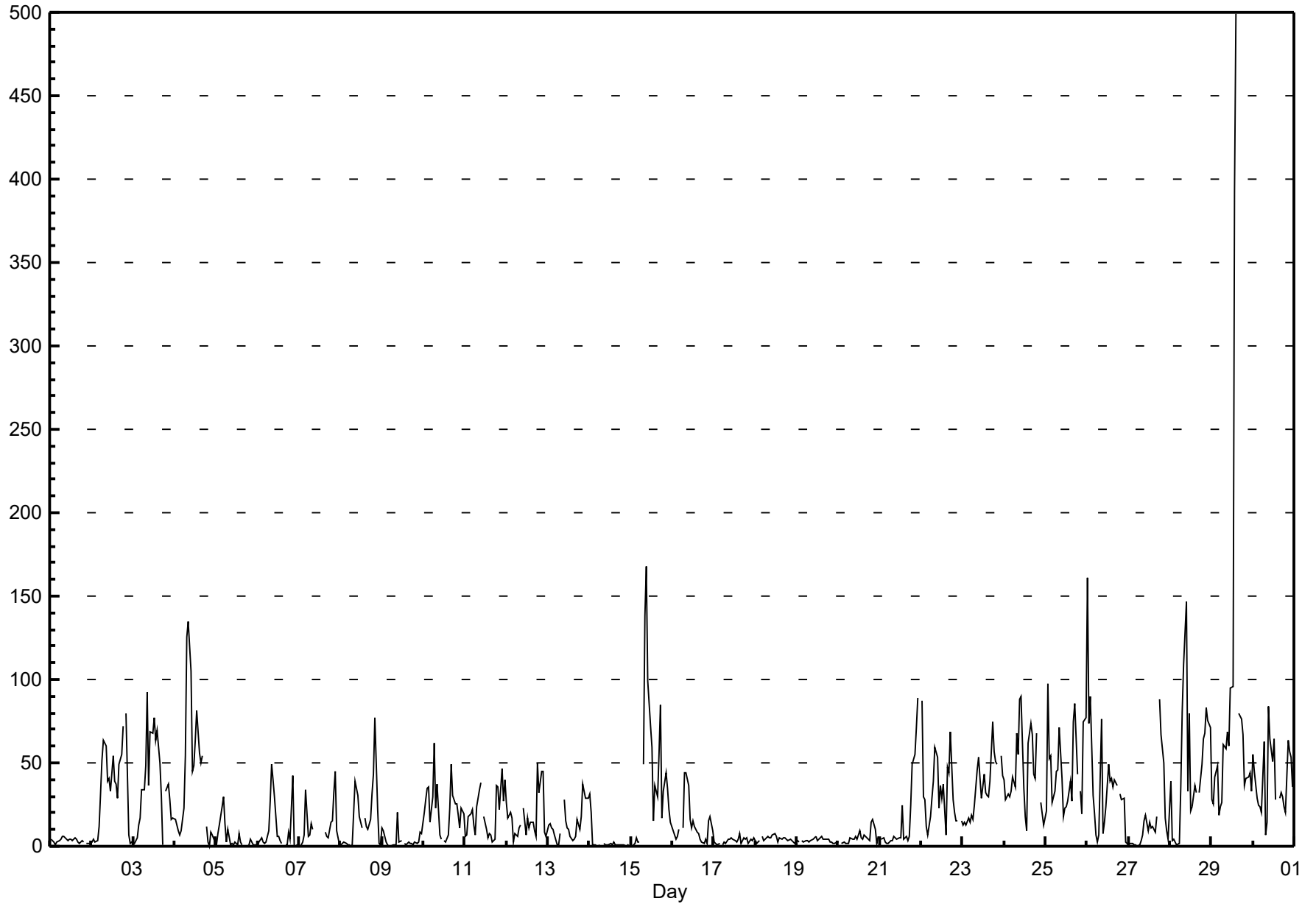
# Hourly Maximums

## Nitrogen Oxide (NO) - ppb Henry Pirker - November 2016

Maximum Value: 499.1 ppb on Nov 29 15:00		Maximum Daily Average: 85.3 ppb on Nov 29		Hours in Service: 720																							
Minimum Value: 0 ppb on Nov 15 00:00		Minimum Daily Average: 3.1 ppb on Nov 14		Hours of Data: 684																							
Maximum Diurnal Average: 40.8 ppb at hour 9		Minimum Diurnal Average: 11.1 ppb at hour 5		Hours of Missing Data: 36																							
Monthly Average: 23.83 ppb		Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 1.3 Q <sub>1</sub> = 3.4 Median = 11.8 Q <sub>3</sub> = 34.4 P <sub>90</sub> = 59.7 P <sub>99</sub> = 133.3		Hours of Calibration: 36																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Nov	4	3	3	1	3	3	5	6	6	4	4	5	4	4	5	4	2	2	3	2	A	2	2	2	3.4	6.0	
2-Nov	3	4	2	3	12	31	52	64	60	39	41	33	55	39	37	29	49	55	72	A	80	6	1	2	33.4	79.5	
3-Nov	2	2	5	13	17	34	34	48	92	37	68	68	77	64	70	50	31	1	A	33	37	28	16	17	36.7	92.4	
4-Nov	16	12	9	6	9	23	55	125	135	105	45	48	64	81	56	50	54	A	12	2	0	8	7	3	40.3	134.6	
5-Nov	1	8	12	24	30	14	2	11	1	1	1	2	1	8	3	1	A	0	0	1	4	1	1	1	5.6	29.7	
6-Nov	0	2	5	2	2	3	10	27	49	40	30	6	6	3	2	A	1	1	9	5	43	0	0	1	10.7	49.4	
7-Nov	0	1	3	6	34	6	7	13	11	C	C	C	C	C	C	8	6	5	15	16	32	45	10	1	12.1	44.8	
8-Nov	1	2	3	2	0	1	0	0	39	35	31	18	11	A	17	12	10	16	31	43	77	22	2	1	16.2	76.9	
9-Nov	11	9	3	1	0	0	1	1	1	1	20	2	3	A	1	1	2	2	2	1	3	2	3	8	7	3.7	20.0
10-Nov	21	28	35	35	15	30	62	23	38	7	4	A	3	2	7	23	50	31	26	25	18	11	23	20	23.3	62.1	
11-Nov	6	7	18	20	22	13	6	24	33	38	A	18	10	5	8	7	2	4	36	35	22	46	27	39	19.4	46.3	
12-Nov	26	17	20	17	3	8	6	11	13	A	23	7	17	11	15	14	10	6	50	33	45	45	9	6	17.9	50.3	
13-Nov	13	14	11	10	7	1	1	8	A	28	15	11	10	6	3	4	6	16	10	18	37	33	29	29	13.9	37.4	
14-Nov	31	21	1	1	0	0	0	A	2	1	1	1	2	1	2	1	1	1	1	0	0	0	1	0	3.1	31.3	
15-Nov	0	0	1	5	2	3	A	49	138	167	99	72	59	16	36	29	56	85	17	33	44	35	22	14	42.8	167.5	
16-Nov	9	7	4	6	10	A	11	44	44	37	16	11	15	12	9	7	4	2	2	4	2	16	17	9	13.1	44.1	
17-Nov	3	2	1	1	A	1	2	2	4	4	5	4	3	3	4	7	2	5	4	5	2	4	3	5	3.4	7.3	
18-Nov	3	1	3	A	6	3	5	6	5	5	7	8	6	3	5	4	5	6	5	3	4	3	3	1	4.4	8.0	
19-Nov	4	3	A	3	2	3	3	3	3	3	4	5	6	4	4	6	4	4	4	2	2	2	2	3	3.6	6.0	
20-Nov	2	A	2	2	2	2	2	5	5	4	6	5	9	5	5	6	6	4	4	14	16	10	2	6	5.4	15.8	
21-Nov	A	5	5	3	1	1	4	3	6	5	5	5	5	25	4	6	3	6	24	49	55	71	89	A	17.3	89.4	
22-Nov	88	30	28	12	7	17	28	39	59	53	23	37	29	37	7	47	44	69	28	20	16	15	A	16	32.6	87.7	
23-Nov	13	14	13	17	14	18	16	25	46	53	41	29	43	32	30	29	39	75	56	51	49	A	55	42	34.8	74.8	
24-Nov	40	28	31	30	33	42	35	68	55	88	90	35	17	10	62	74	67	43	41	68	A	26	19	12	44.1	90.0	
25-Nov	21	97	52	55	26	33	45	46	71	41	18	23	24	27	39	27	74	86	43	A	33	19	75	77	45.8	97.4	
26-Nov	161	74	90	31	19	7	3	7	76	7	15	24	49	39	41	35	40	36	A	31	28	28	2	2	36.7	160.8	
27-Nov	1	2	1	1	1	0	0	4	7	15	19	9	15	11	12	9	18	A	88	67	50	17	9	4	15.7	87.9	
28-Nov	39	3	4	3	1	2	36	81	109	147	33	79	21	24	36	32	A	32	50	64	68	83	75	71	47.5	146.9	
29-Nov	28	25	41	48	19	24	27	61	59	68	60	95	96	393	499	A	79	76	67	37	41	41	44	33	85.3	499.1	
30-Nov	55	45	29	25	23	21	63	6	15	84	65	51	65	28	A	29	32	30	24	20	64	56	53	36	39.9	84.2	
20.7		16.1	15.0	13.2	11.1	11.8	17.9	27.9	40.8	40.7	27.5	25.5	25.7	31.8	36.5	19.7	25.0	25.0	25.8	24.5	31.1	23.4	20.9	16.0	Diurnal Average		
160.8		97.4	90.0	54.6	34.2	41.7	62.5	125.5	138.5	167.5	98.9	95.2	96.2	392.6	499.1	73.7	79.5	85.7	87.9	67.6	79.5	82.6	89.4	77.4	Diurnal Maximum		
C - Calibration		A - Automated Daily Zero Span																									

**Hourly Maximums**

**Nitrogen Oxide (NO) - ppb**  
**Henry Pirker - November 2016**



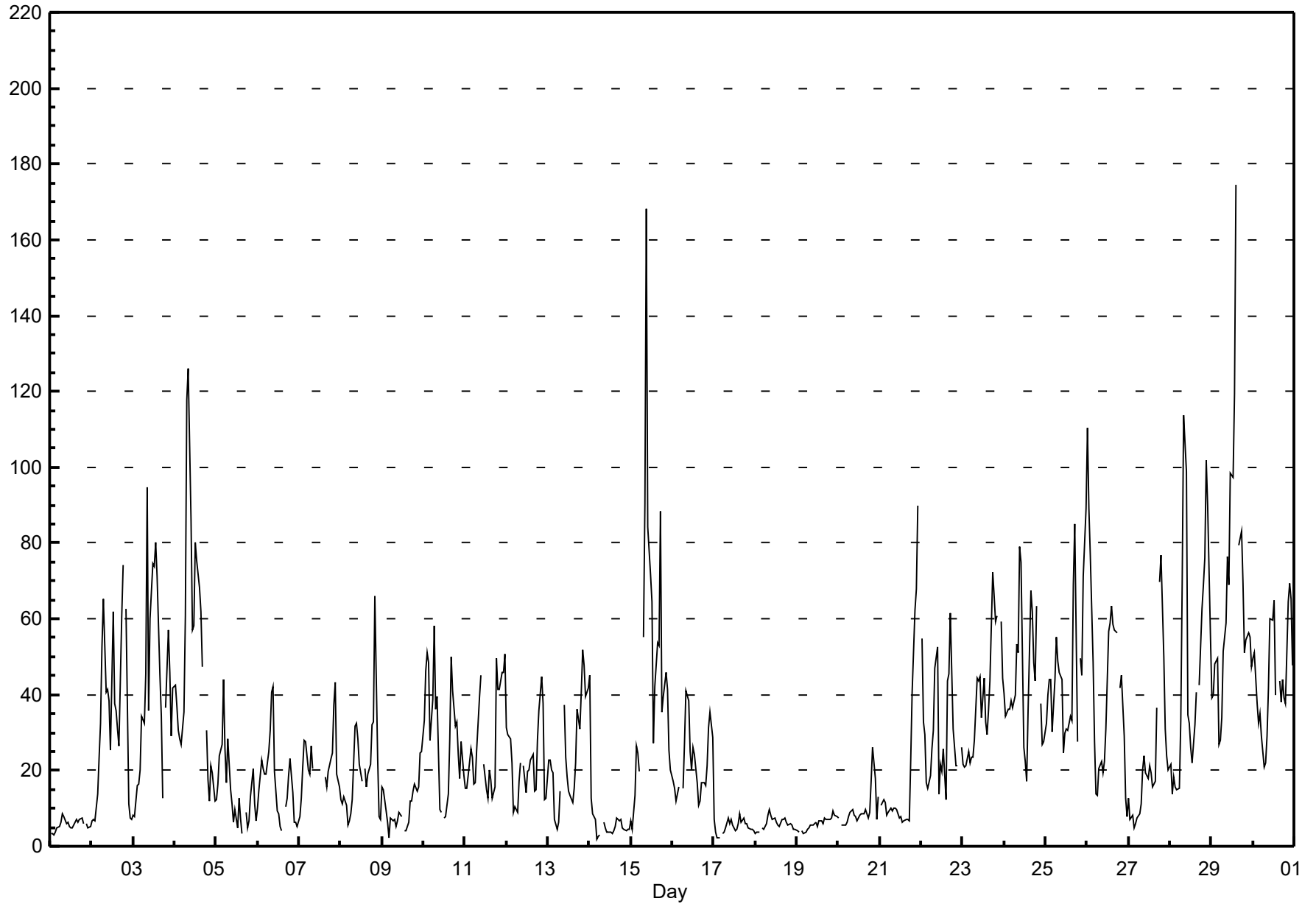


# Hourly Averages

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

Henry Pirker - November 2016

Maximum Value: 174.7 ppb on Nov 29 15:00		Maximum Daily Average: 65.5 ppb on Nov 29		Hours in Service: 720																						
Minimum Value: 2 ppb on Nov 14 05:00		Minimum Daily Average: 5.2 ppb on Nov 17		Hours of Data: 684																						
Maximum Diurnal Average: 38.7 ppb at hour 10		Minimum Diurnal Average: 18.0 ppb at hour 5		Hours of Missing Data: 36																						
Monthly Average: 27.54 ppb		Percentiles: P <sub>1</sub> = 3.2 P <sub>10</sub> = 5.5 Q <sub>1</sub> = 8.2 Median = 20.9 Q <sub>3</sub> = 39.7 P <sub>90</sub> = 60.5 P <sub>99</sub> = 109.1		Hours of Calibration: 36																						
				Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Nov	3	3	3	4	5	5	6	9	8	6	6	5	5	6	7	6	7	7	6	A	6	5	5	5.6	8.7	
2-Nov	7	7	7	14	23	32	53	65	41	41	39	25	62	38	36	31	26	61	74	A	63	11	8	7	33.5	74.1
3-Nov	8	8	16	17	20	34	32	45	95	36	60	74	74	80	71	45	34	13	A	36	57	46	29	42	42.3	94.7
4-Nov	43	37	30	28	27	35	61	118	126	86	57	58	80	75	68	62	47	A	30	17	12	21	19	12	50.1	125.9
5-Nov	12	16	24	27	44	26	17	28	15	11	6	10	5	13	7	3	A	9	5	7	13	21	11	7	14.6	43.9
6-Nov	10	15	23	20	19	19	25	31	40	42	20	9	9	5	4	A	10	13	18	23	14	7	6	5	16.9	42.1
7-Nov	8	13	21	28	28	20	19	26	20	C	C	C	C	C	C	18	15	20	23	25	37	43	19	16	22.2	43.1
8-Nov	12	11	13	11	6	7	9	12	32	32	28	22	17	A	20	15	19	22	32	33	66	23	8	7	19.9	65.9
9-Nov	16	15	9	6	2	7	7	7	5	7	9	8	A	4	4	6	12	12	15	16	14	16	24	25	10.8	25.0
10-Nov	33	46	51	48	28	39	58	36	40	10	9	A	8	8	14	28	50	41	32	33	24	18	28	19	30.4	58.2
11-Nov	15	15	18	26	24	16	17	25	39	45	A	22	15	13	20	18	13	15	50	41	42	46	46	51	27.4	50.9
12-Nov	31	29	28	22	9	10	9	17	22	A	21	14	20	20	23	24	15	15	28	36	45	37	12	13	21.8	44.8
13-Nov	23	23	20	20	7	4	6	14	A	37	23	18	15	13	12	15	22	36	31	41	52	48	39	42	24.4	51.8
14-Nov	45	12	9	7	2	2	3	A	6	5	4	4	4	3	4	5	8	7	7	5	5	4	5	5	6.9	45.3
15-Nov	7	5	13	26	25	20	A	55	90	168	84	72	64	27	42	54	53	88	35	40	46	41	25	20	47.9	168.3
16-Nov	17	15	12	14	15	A	15	27	41	39	25	20	26	24	17	11	12	17	17	16	21	31	35	29	21.6	40.9
17-Nov	7	4	2	2	A	3	4	5	8	6	7	5	4	5	6	9	6	7	6	6	5	5	5	4	5.2	8.6
18-Nov	3	4	4	A	5	5	6	8	10	8	7	7	6	6	5	7	7	8	6	6	6	4	5	5	6.0	9.9
19-Nov	4	4	A	4	3	4	4	5	6	6	6	5	7	7	6	7	7	7	7	7	8	9	8	8	6.0	9.4
20-Nov	7	A	6	6	6	6	8	9	10	8	8	7	8	8	9	9	10	8	9	17	26	18	7	13	9.6	26.3
21-Nov	A	11	12	12	8	9	10	9	10	10	10	7	8	7	7	7	7	7	23	40	62	68	90	A	19.7	89.9
22-Nov	55	33	29	17	15	19	26	31	47	53	14	22	20	26	12	44	46	62	31	26	21	21	A	26	30.1	61.6
23-Nov	21	21	21	25	22	23	23	28	44	43	45	34	44	33	30	36	44	72	66	59	61	A	59	44	39.1	72.2
24-Nov	40	34	36	36	38	36	40	53	51	79	75	26	23	17	36	68	62	49	44	63	A	38	27	27	43.4	78.9
25-Nov	32	40	44	44	30	44	55	49	46	44	25	30	31	31	34	33	69	85	28	A	50	45	71	89	45.6	89.2
26-Nov	110	89	77	48	28	14	13	21	22	20	22	31	57	59	63	59	57	56	A	42	45	29	13	8	42.7	110.3
27-Nov	13	7	8	5	6	7	9	11	20	24	19	18	21	19	16	17	36	A	70	77	50	31	24	20	23.0	76.8
28-Nov	22	14	18	16	15	15	33	70	114	99	35	32	26	22	32	41	A	43	63	69	76	102	90	55	47.8	113.8
29-Nov	39	40	48	50	27	28	34	52	59	77	69	98	97	119	175	A	79	83	69	51	54	56	55	47	65.5	174.7
30-Nov	50	51	38	32	35	29	21	22	29	42	60	60	65	40	A	44	38	44	39	38	64	69	65	48	44.4	69.2
24.0		21.4	22.1	21.2	18.0	18.0	21.5	30.7	37.8	38.7	28.3	26.6	29.2	26.0	27.8	25.7	29.0	32.3	30.9	31.3	37.1	31.6	28.9	24.0	Diurnal Average	
110.3		89.1	76.8	49.8	43.9	44.1	60.8	117.9	125.9	168.3	84.3	98.3	97.1	119.3	174.7	67.6	79.5	88.2	74.1	76.8	76.2	101.9	89.9	89.2	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																								



# Hourly Maximums

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

Henry Pirker - November 2016

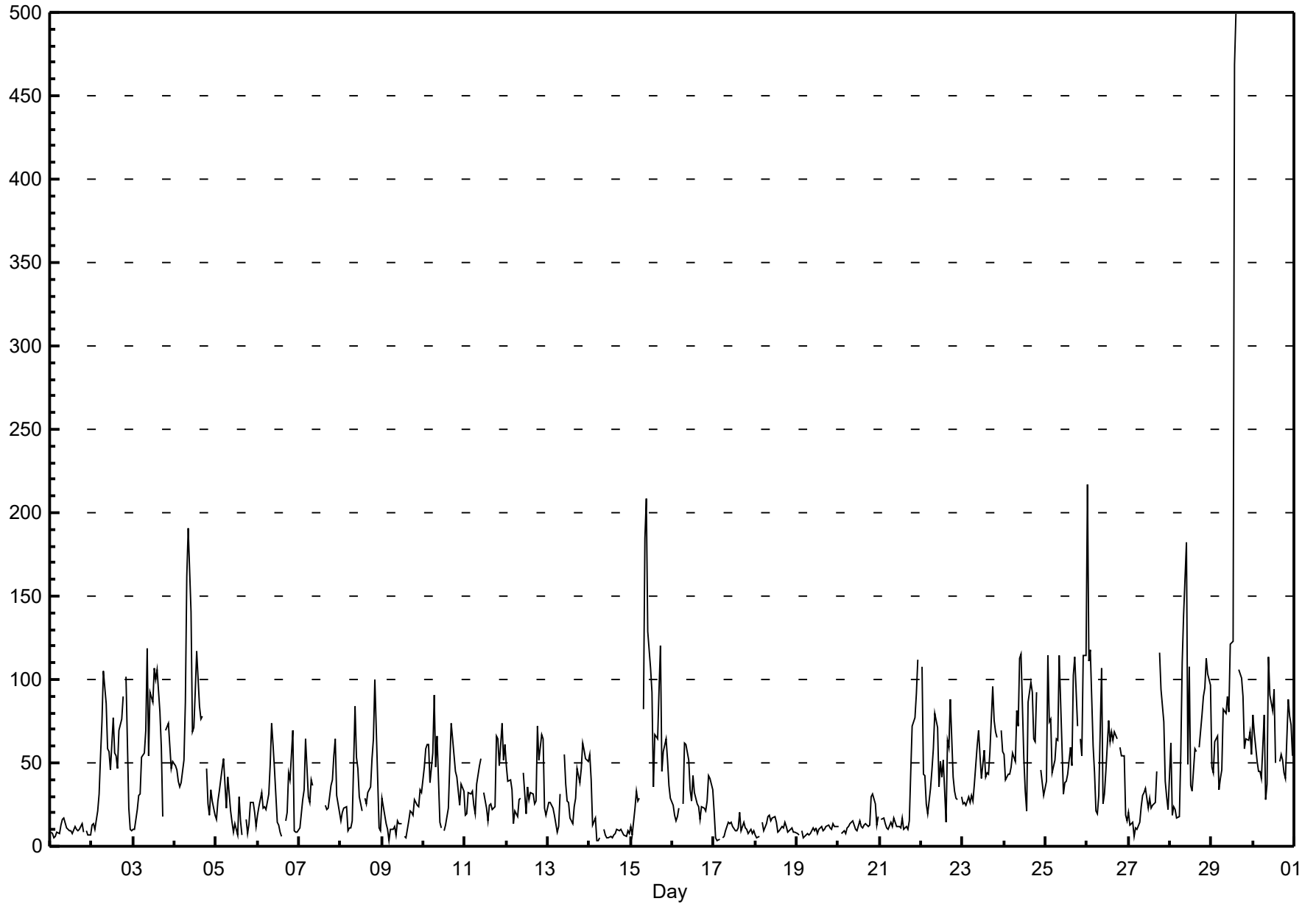
Maximum Value: 498.8 ppb on Nov 29 15:00		Maximum Daily Average: 108.4 ppb on Nov 29		Hours in Service: 720																						
Minimum Value: 3 ppb on Nov 14 05:00		Minimum Daily Average: 9.6 ppb on Nov 19		Hours of Data: 684																						
Maximum Diurnal Average: 62.9 ppb at hour 9		Minimum Diurnal Average: 25.7 ppb at hour 5		Hours of Missing Data: 36																						
Monthly Average: 40.93 ppb		Percentiles: P <sub>1</sub> = 4.8 P <sub>10</sub> = 9.1 Q <sub>1</sub> = 13.7 Median = 30.1 Q <sub>3</sub> = 56.4 P <sub>90</sub> = 86.1 P <sub>99</sub> = 180.9		Hours of Calibration: 36																						
				Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Nov	9	8	5	6	9	8	12	16	17	11	10	9	9	8	12	10	9	10	14	9	A	9	7	7	9.7	16.7
2-Nov	13	14	10	21	31	54	75	105	86	58	57	46	77	56	54	47	70	76	90	A	102	23	10	10	51.4	105.0
3-Nov	11	10	22	31	31	53	56	69	119	54	92	87	106	100	106	81	59	18	A	70	73	61	47	51	61.1	119.0
4-Nov	49	46	39	36	38	52	86	162	191	141	69	72	93	117	84	76	78	A	47	26	19	34	27	19	69.5	191.1
5-Nov	16	27	33	47	53	38	23	42	21	15	9	13	7	30	16	7	A	16	8	14	26	26	21	12	22.5	52.9
6-Nov	19	24	32	23	24	22	31	49	74	61	47	15	13	9	6	A	15	20	44	40	69	10	9	8	28.8	73.7
7-Nov	11	19	28	34	64	30	26	40	36	C	C	C	C	C	C	24	22	23	36	40	54	64	30	20	33.5	64.5
8-Nov	15	20	23	24	9	11	11	15	84	53	46	29	21	A	28	25	32	35	52	65	100	41	11	9	33.1	99.7
9-Nov	28	24	14	10	3	10	10	12	7	15	14	14	A	6	5	15	21	20	19	28	24	23	34	32	16.9	34.0
10-Nov	48	59	61	61	38	56	91	48	66	15	11	A	9	12	23	49	73	64	45	42	33	25	37	33	43.4	90.6
11-Nov	18	19	32	32	33	24	19	38	48	53	A	32	23	15	25	26	22	23	66	64	49	74	51	61	36.9	73.9
12-Nov	49	39	40	34	13	21	18	28	28	A	44	19	35	28	32	31	26	27	72	51	67	64	23	18	35.2	72.4
13-Nov	26	27	24	23	18	8	12	31	A	55	37	27	26	17	14	24	29	47	38	47	62	58	53	51	32.8	61.9
14-Nov	55	40	13	17	3	4	5	A	10	6	5	5	6	5	7	8	10	9	10	8	7	6	9	8	11.1	55.2
15-Nov	12	6	23	33	27	29	A	82	185	208	128	107	92	35	67	64	94	120	45	57	64	52	36	29	69.5	208.5
16-Nov	24	19	15	18	23	A	26	62	61	52	34	27	42	32	25	24	16	24	23	21	27	42	41	34	31.0	62.0
17-Nov	20	5	4	5	A	5	6	9	15	13	15	12	9	9	11	20	10	14	11	10	8	10	8	9	10.4	20.1
18-Nov	7	5	6	A	14	9	13	18	19	15	17	17	14	9	9	12	11	14	11	8	10	11	9	8	11.7	18.8
19-Nov	8	7	A	9	5	6	7	7	8	11	9	11	8	10	12	9	11	12	13	11	11	14	12	12	9.6	13.8
20-Nov	12	A	8	10	8	11	12	14	15	13	10	9	16	12	11	12	13	12	13	30	32	25	13	18	14.2	31.8
21-Nov	A	16	17	13	11	10	14	12	17	14	12	12	11	17	11	12	10	15	44	72	77	91	112	A	28.2	111.9
22-Nov	107	43	42	26	19	34	46	58	79	71	36	50	42	52	14	64	60	88	42	33	28	28	A	30	47.5	107.4
23-Nov	25	26	25	30	26	31	27	38	60	69	54	41	57	42	44	43	57	96	76	69	66	A	69	56	49.0	96.0
24-Nov	55	40	44	43	47	56	51	81	72	112	115	52	33	21	86	99	93	65	63	93	A	46	38	31	62.4	115.0
25-Nov	39	114	74	76	44	51	64	64	114	59	31	38	39	43	59	48	102	114	72	A	65	54	115	114	69.4	114.7
26-Nov	217	111	117	60	44	21	20	30	107	25	31	45	76	63	69	63	69	65	A	59	54	54	18	16	62.4	217.2
27-Nov	20	13	14	6	11	10	14	24	31	32	35	23	29	23	25	27	45	A	116	94	75	39	30	22	33.0	116.3
28-Nov	62	18	24	22	17	18	56	110	139	182	49	107	37	33	58	57	A	60	79	90	95	113	104	96	70.6	181.9
29-Nov	47	44	63	66	34	41	45	82	80	90	80	121	123	469	499	A	106	101	90	59	64	64	69	55	108.4	498.8
30-Nov	79	68	51	45	45	41	79	28	37	113	91	81	94	50	A	51	55	52	44	40	88	78	73	54	62.5	113.4
																								Diurnal Average	Diurnal Maximum	
																								38.0	114.5	
																								217.2	498.8	

C - Calibration

A - Automated Daily Zero Span

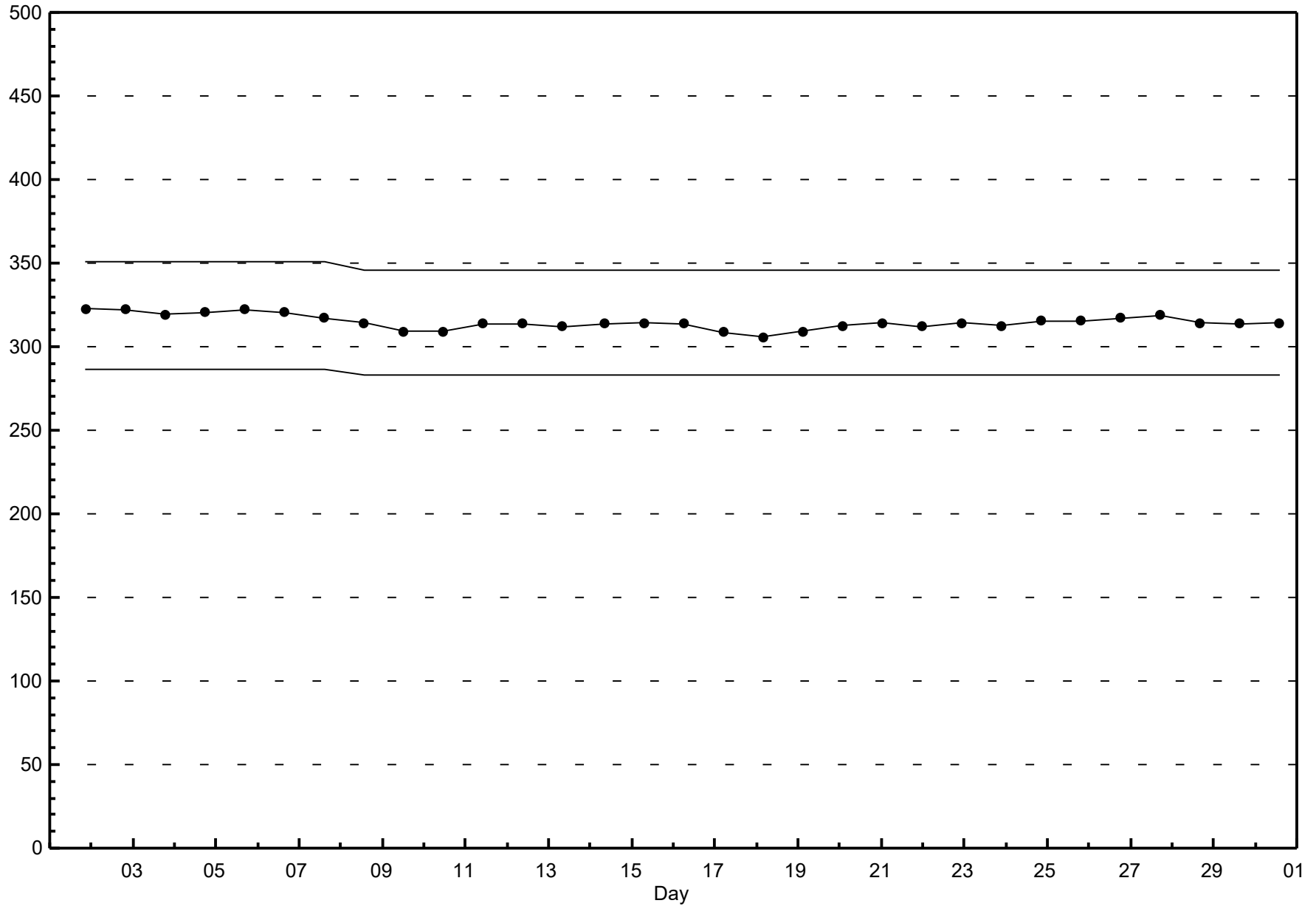
### Hourly Maximums

Oxides of Nitrogen (NO<sub>x</sub>) - ppb  
Henry Pirker - November 2016



### Span Responses

Oxides of Nitrogen (NO<sub>x</sub>)  
Henry Pirker - November 2016



## Hourly Averages

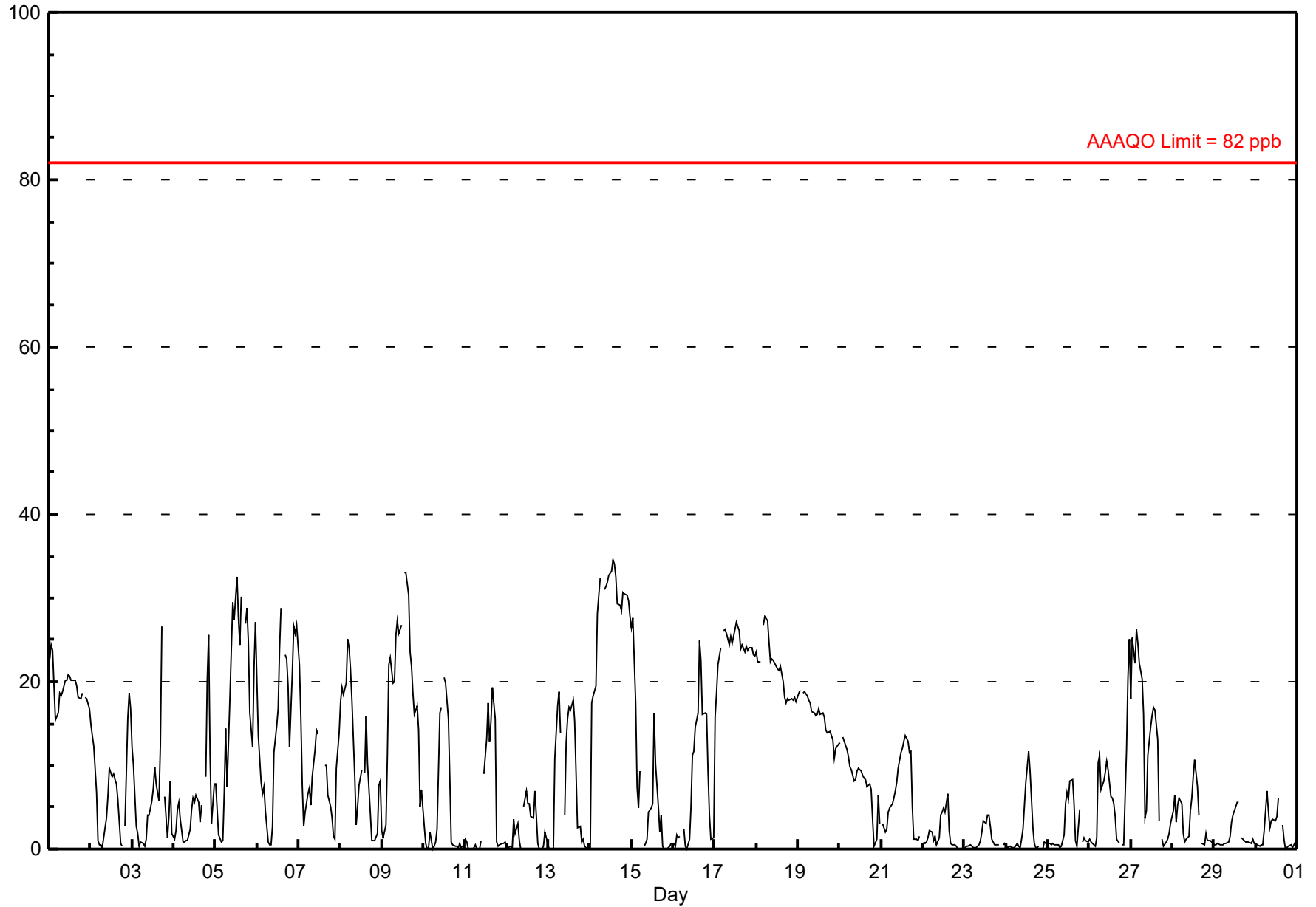
Ozone (O<sub>3</sub>) - ppb

Henry Pirker - November 2016

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0	Hours in Service: 720
Maximum Value: 34.6 ppb on Nov 14 14:00	Maximum Daily Average: 28.0 ppb on Nov 14
Minimum Value: 0 ppb on Nov 10 06:00	Hours of Data: 687
Maximum Diurnal Average: 14.8 ppb at hour 14	Hours of Missing Data: 33
Monthly Average: 9.40 ppb	Hours of Calibration: 33
Minimum Daily Average: 1.2 ppb on Nov 23	Percent Operational Time: 100.0
Minimum Diurnal Average: 6.8 ppb at hour 4	
Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.4 Q <sub>1</sub> = 1.0 Median = 6.0 Q <sub>3</sub> = 16.7 P <sub>90</sub> = 24.1 P <sub>99</sub> = 32.5	

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	23	24	24	20	15	16	19	18	19	20	20	21	21	20	20	20	20	18	18	19	A	18	18	17	19.5	24.4																						
2-Nov	15	14	12	7	1	0	0	0	3	4	6	10	9	9	8	8	6	1	0	A	3	16	19	17	7.2	18.7																						
3-Nov	12	10	3	2	0	1	1	0	1	4	4	6	7	10	8	6	13	27	A	6	1	4	8	2	5.9	26.6																						
4-Nov	1	2	5	6	4	1	1	1	1	2	5	6	6	6	6	3	5	A	9	20	26	11	3	8	5.9	25.7																						
5-Nov	8	5	2	1	1	7	14	7	18	24	30	28	32	28	24	30	A	27	29	25	16	12	22	27	18.1	32.5																						
6-Nov	20	14	8	7	7	5	1	0	1	3	12	15	17	24	29	A	23	23	20	12	21	27	26	27	14.7	28.9																						
7-Nov	22	16	8	3	4	7	7	5	9	12	14	14	C	C	C	10	10	6	5	4	1	1	10	14	8.7	22.1																						
8-Nov	18	19	19	20	25	24	22	18	9	3	5	8	10	A	9	16	10	4	1	1	1	2	8	8	11.2	25.1																						
9-Nov	2	1	3	11	22	23	20	20	26	27	26	27	A	33	33	30	24	22	19	16	17	14	5	7	18.6	33.1																						
10-Nov	3	1	0	0	2	0	0	1	2	16	17	A	21	20	16	8	1	1	0	0	0	1	0	1	4.8	20.6																						
11-Nov	1	1	0	0	0	0	0	0	0	1	A	9	13	17	13	15	19	16	1	0	0	1	1	1	4.8	19.3																						
12-Nov	0	0	0	0	4	2	3	1	0	A	5	7	5	6	4	4	7	4	1	0	0	0	2	1	2.4	7.0																						
13-Nov	0	0	0	0	11	17	19	14	A	4	13	16	17	17	18	15	9	3	3	1	1	0	0	0	7.7	18.8																						
14-Nov	0	17	18	20	28	30	32	A	31	31	32	33	33	35	34	33	29	29	28	31	31	30	30	28	28.0	34.6																						
15-Nov	26	28	17	7	5	9	A	0	1	1	4	5	5	16	10	5	2	4	0	0	0	0	0	1	6.5	27.6																						
16-Nov	1	0	2	1	2	A	2	0	0	1	5	11	12	15	16	25	22	16	16	16	9	4	1	1	7.8	25.0																						
17-Nov	16	19	22	24	A	26	26	26	24	25	25	25	27	27	26	24	24	24	24	24	24	24	23	23	24.0	27.2																						
18-Nov	24	22	22	A	27	28	27	25	22	23	23	22	21	21	22	20	18	17	18	18	18	18	18	18	21.4	27.9																						
19-Nov	19	19	A	19	19	18	18	17	16	16	16	16	17	16	16	16	14	14	14	13	13	11	12	13	15.8	18.9																						
20-Nov	13	A	13	12	12	11	10	9	8	8	9	10	9	9	8	8	8	8	7	4	0	1	7	3	8.2	13.4																						
21-Nov	A	3	2	2	4	5	5	6	7	8	10	12	12	13	14	13	11	12	5	1	1	1	2	A	6.8	13.5																						
22-Nov	1	1	1	1	2	2	1	1	1	1	4	4	5	4	7	2	1	1	1	0	0	0	A	0	1.8	6.6																						
23-Nov	0	0	0	0	0	0	0	0	0	1	2	3	3	4	4	3	1	1	1	0	1	A	1	1	1.2	4.0																						
24-Nov	0	0	0	0	0	0	1	0	0	1	2	8	10	12	9	3	1	0	0	0	A	0	1	1	2.2	11.7																						
25-Nov	1	1	1	1	0	0	0	0	0	2	6	7	6	8	8	5	1	0	5	A	1	1	1	1	2.4	8.3																						
26-Nov	1	1	1	0	1	10	11	7	8	9	11	9	6	6	5	4	1	1	A	1	1	12	21	25	6.6	25.1																						
27-Nov	18	25	22	26	25	22	20	16	4	5	11	15	16	17	17	13	3	A	1	0	1	1	2	3	12.3	26.2																						
28-Nov	5	7	3	5	6	5	2	1	1	2	5	6	9	11	7	4	A	1	1	2	1	1	1	1	3.7	10.7																						
29-Nov	0	1	1	1	1	1	1	1	1	2	3	4	5	6	6	A	1	1	1	1	1	1	1	1	1.7	5.6																						
30-Nov	1	1	0	0	0	2	7	5	3	3	4	3	4	6	A	3	1	0	0	0	0	0	0	1	2.0	7.0																						
																								8.6	8.6	7.2	6.8	7.9	9.4	9.4	7.0	7.4	9.0	11.3	12.4	12.8	14.8	14.2	12.4	10.2	9.9	8.1	7.7	6.8	7.3	8.3	8.5	Diurnal Average
																								26.4	27.6	23.7	26.2	28.2	30.3	32.4	25.8	30.9	31.3	31.9	32.8	33.3	34.6	34.0	32.6	29.3	29.2	28.9	30.6	30.5	30.4	29.7	27.8	Diurnal Maximum

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



# Hourly Maximums

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

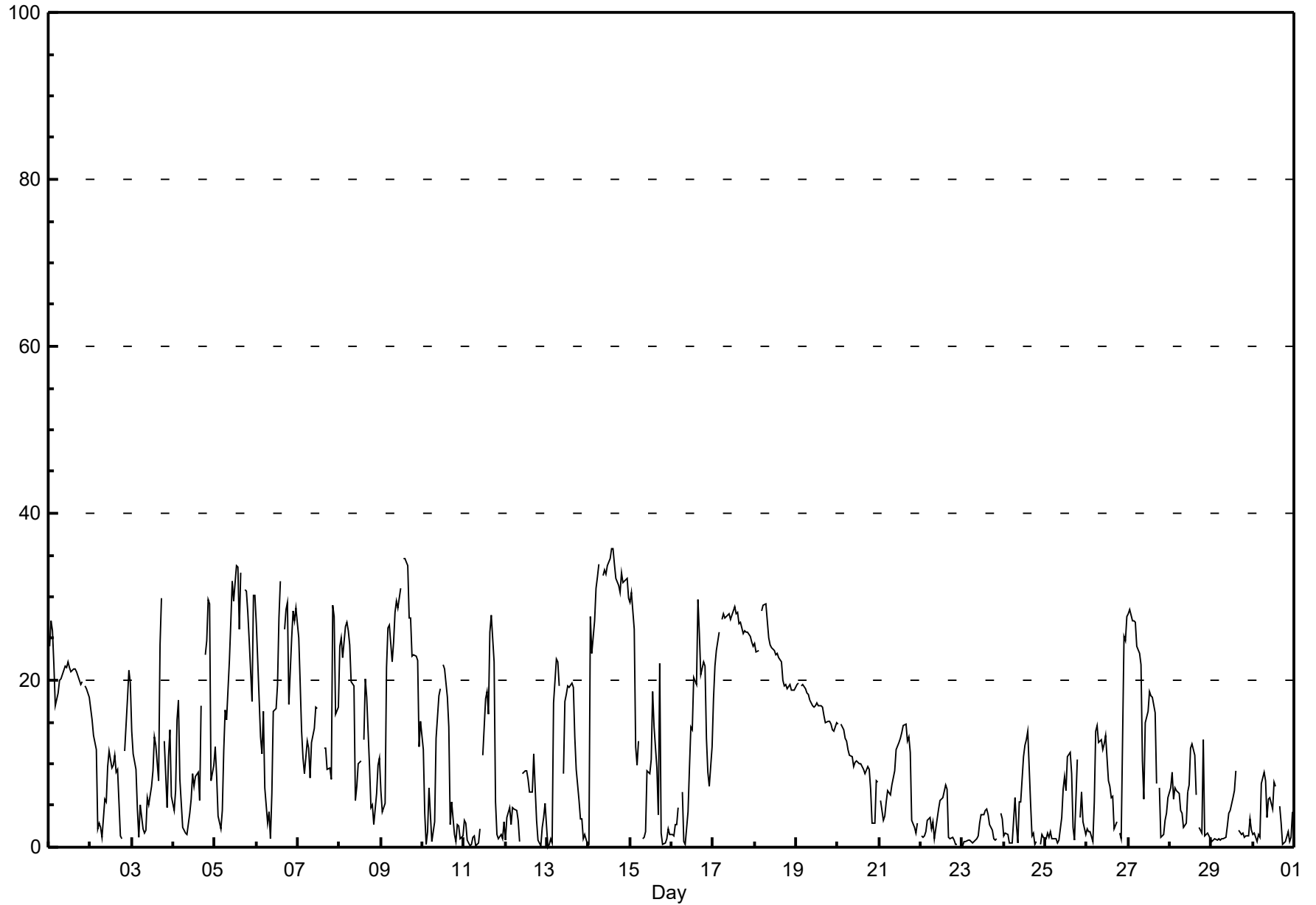
Henry Pirker - November 2016

Maximum Value: 35.8 ppb on Nov 14 15:00		Maximum Daily Average: 30.5 ppb on Nov 14		Hours in Service: 720																							
Minimum Value: 0 ppb on Nov 13 01:00		Minimum Daily Average: 2.0 ppb on Nov 23		Hours of Data: 687																							
Maximum Diurnal Average: 16.7 ppb at hour 14		Minimum Diurnal Average: 9.3 ppb at hour 8		Hours of Missing Data: 33																							
Monthly Average: 12.00 ppb		Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 1.0 Q <sub>1</sub> = 2.9 Median = 9.4 Q <sub>3</sub> = 19.5 P <sub>90</sub> = 27.3 P <sub>99</sub> = 33.8		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	24	27	26	22	17	18	20	20	21	22	21	22	22	21	21	21	21	21	19	20	A	19	19	18	21.0	27.1	
2-Nov	17	15	13	12	2	3	2	1	6	5	10	12	9	10	11	9	9	1	1	A	12	18	21	20	9.5	21.1	
3-Nov	14	11	9	5	1	5	2	2	2	6	5	7	9	13	12	8	24	30	A	13	5	11	14	6	9.3	29.9	
4-Nov	4	7	15	18	8	2	2	2	2	4	6	9	7	8	9	6	17	A	23	25	30	29	8	10	10.9	29.7	
5-Nov	12	8	4	2	4	12	16	15	22	27	32	30	34	34	26	33	A	31	31	28	25	18	30	30	21.9	33.7	
6-Nov	27	22	13	11	16	7	3	4	1	7	16	17	19	28	32	A	26	28	29	17	25	28	27	29	18.9	31.9	
7-Nov	25	20	14	11	9	13	12	8	13	14	17	17	C	C	C	12	12	9	9	8	29	28	16	17	14.8	29.0	
8-Nov	24	25	23	26	27	26	24	20	19	6	7	10	A	13	20	18	10	5	5	3	6	10	11	15.1	26.9		
9-Nov	7	4	5	22	26	27	22	25	28	29	29	31	A	35	35	34	28	27	23	23	23	12	15	23.1	34.6		
10-Nov	12	4	0	2	7	1	2	3	13	18	19	A	22	21	18	14	3	5	2	1	3	2	1	1	7.6	21.9	
11-Nov	3	3	1	0	0	1	1	0	1	2	A	11	18	19	16	26	28	22	5	2	1	1	3	7.2	27.8		
12-Nov	1	4	5	3	5	5	4	3	1	A	9	9	9	8	7	7	11	7	3	1	0	2	4	5	4.9	11.2	
13-Nov	0	0	1	1	17	22	22	19	A	9	18	18	19	19	20	19	13	9	6	3	3	1	1	0	10.6	22.5	
14-Nov	0	28	23	27	31	32	34	A	32	33	33	34	35	36	36	34	32	31	31	33	32	32	32	30	30.5	35.8	
15-Nov	29	31	26	12	10	13	A	1	1	2	9	9	10	19	14	9	4	22	2	0	0	1	2	2	9.9	30.5	
16-Nov	1	1	3	3	5	A	7	1	0	4	9	14	14	20	19	30	26	21	22	22	13	9	7	12	11.5	29.7	
17-Nov	18	22	23	26	A	27	28	27	28	28	27	28	29	28	28	27	27	26	26	26	26	25	25	24	26.0	28.8	
18-Nov	24	23	24	A	28	29	29	27	25	24	24	23	23	23	22	20	19	19	19	19	19	19	19	19	22.9	29.1	
19-Nov	20	20	A	19	19	19	18	18	18	17	17	17	17	17	17	16	15	15	15	15	15	14	14	15	16.9	19.6	
20-Nov	15	A	15	14	13	13	12	11	11	10	10	10	10	10	10	9	9	10	9	7	3	3	8	8	9.9	14.7	
21-Nov	A	6	3	4	6	7	6	7	8	9	12	12	13	14	15	15	13	13	11	3	2	2	3	A	8.4	14.8	
22-Nov	1	1	1	2	3	4	2	3	1	3	5	6	6	6	7	7	1	1	1	1	0	0	A	0	2.8	7.5	
23-Nov	0	1	1	1	1	1	0	1	1	1	3	4	4	4	5	4	3	2	1	1	1	A	4	3	2.0	4.6	
24-Nov	1	2	1	0	0	1	6	3	0	5	5	11	12	13	14	5	1	2	0	1	A	0	2	1	3.8	13.9	
25-Nov	1	2	1	2	1	1	1	1	1	4	7	9	7	11	11	9	2	1	11	A	4	7	3	1	4.2	11.4	
26-Nov	2	2	2	1	5	14	15	13	13	12	12	13	8	7	6	6	2	3	A	2	1	25	25	28	9.4	27.7	
27-Nov	28	28	27	27	27	24	23	22	10	6	15	16	19	18	18	16	8	A	7	1	2	3	4	6	15.5	28.4	
28-Nov	7	9	6	7	7	7	4	4	2	3	7	8	12	12	11	6	A	2	2	13	1	2	2	1	5.8	12.8	
29-Nov	1	1	1	1	1	1	1	1	1	2	4	4	6	7	9	A	2	1	2	1	1	1	3	2	2.4	9.2	
30-Nov	2	2	1	2	1	8	9	8	4	6	6	5	8	7	A	5	3	0	0	1	2	1	1	4	3.6	9.0	
11.1		11.3	9.9	9.7	10.3	11.7	11.4	9.3	9.8	11.0	13.6	14.3	14.7	16.7	16.5	15.3	13.5	13.3	11.3	10.4	10.0	11.4	11.0	11.1	Diurnal Average		
29.3		30.5	27.0	27.2	31.0	32.3	33.9	27.5	32.5	33.2	32.7	33.7	34.6	35.7	35.8	33.9	32.2	31.3	30.7	32.9	31.7	32.0	32.2	30.1	Diurnal Maximum		
C - Calibration		A - Automated Daily Zero Span																									



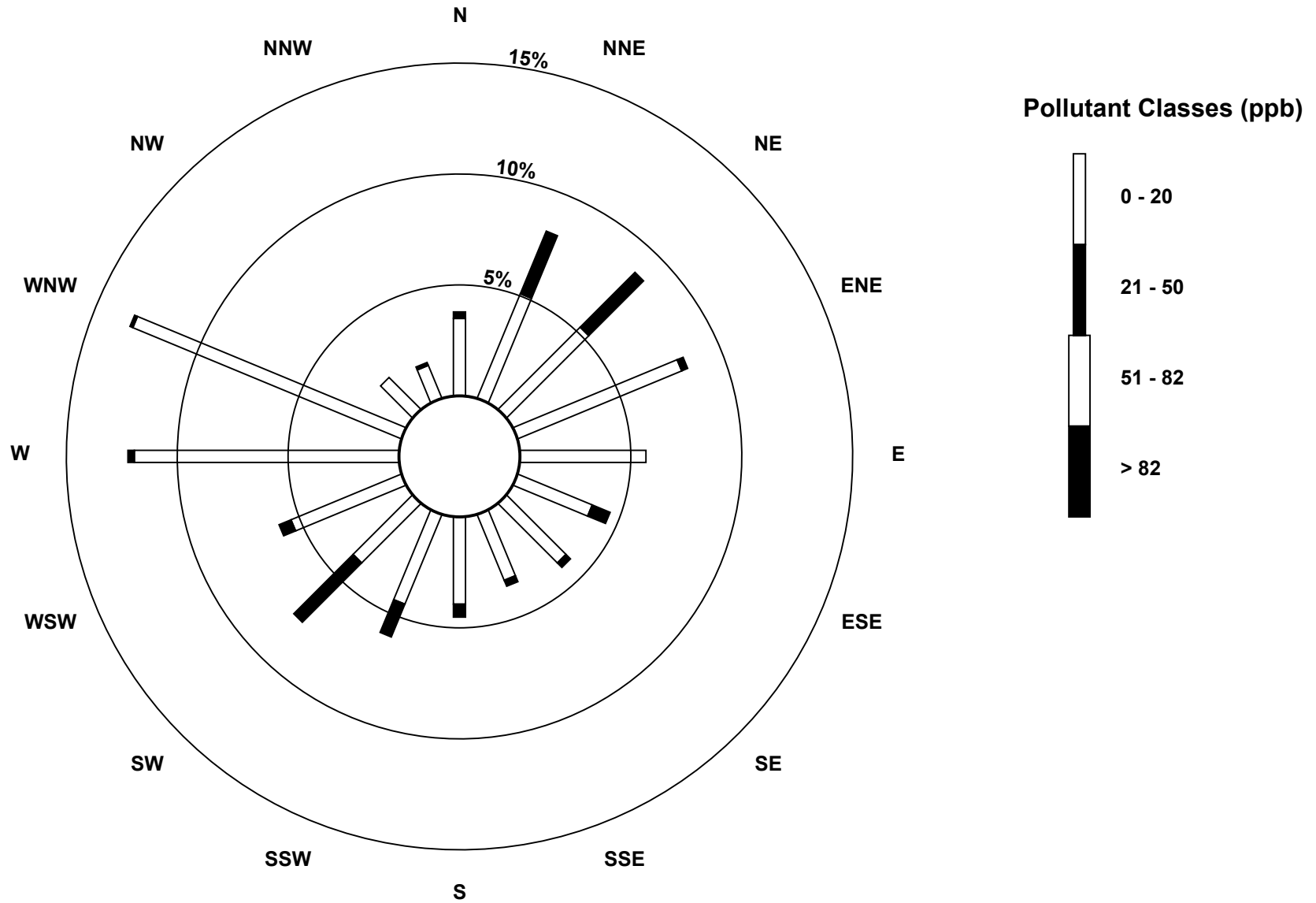
### Hourly Maximums

Ozone (O<sub>3</sub>) - ppb  
Henry Pirker - November 2016



**Pollutant Rose**

Ozone (O<sub>3</sub>) - ppb  
Henry Pirker - November 2016



# Eight Hour Running Averages

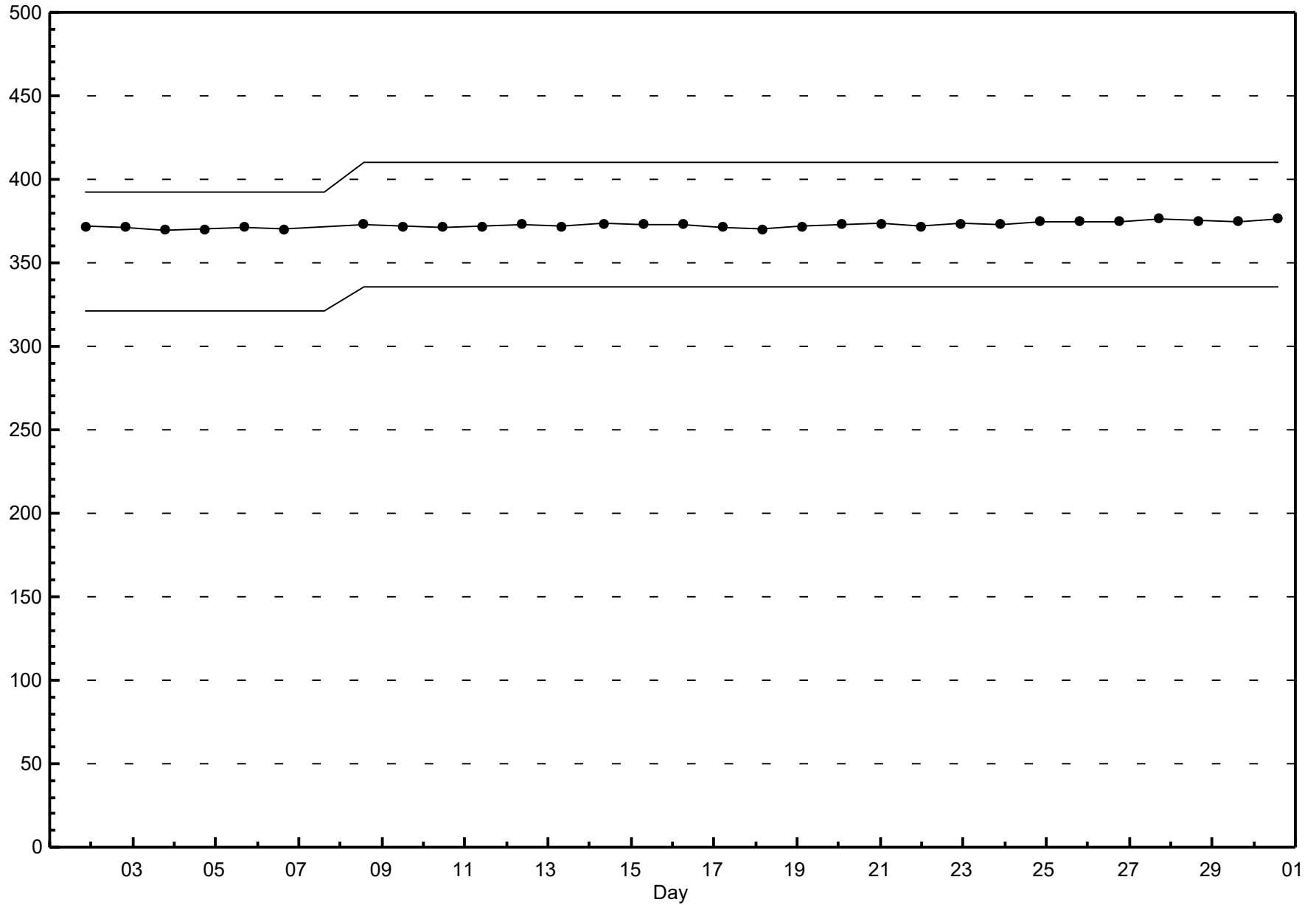
Ozone (O<sub>3</sub>) - ppb

Henry Pirker - November 2016

<b>Maximum Value: 32.7 ppb on Nov 14 15:00</b>																					Hours in Service: 720				
<b>Minimum Value: 0.1 ppb on Nov 11 09:00</b>																					Hours of Data: 714				
Percentiles: P <sub>1</sub> = 0.2 P <sub>10</sub> = 0.8 Q <sub>1</sub> = 2.7 Median = 6.5 Q <sub>3</sub> = 15.5 P <sub>90</sub> = 23.0 P <sub>99</sub> = 31.7																					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	17	19	20	21	21	21	20	20	19	19	18	19	19	20	20	20	20	20	20	19	19	19	19	18	21.2
2-Nov	18	17	16	14	13	10	8	6	5	3	3	3	4	5	6	7	7	7	6	6	5	6	7	9	17.5
3-Nov	10	11	11	10	10	8	6	4	2	2	2	3	4	5	6	7	10	11	11	10	9	9	9	11.3	
4-Nov	7	4	4	4	4	4	3	3	2	3	2	3	3	3	4	4	5	5	6	8	11	11	11	12	11.7
5-Nov	12	11	10	8	5	4	6	6	7	9	13	16	20	23	24	27	28	28	28	28	26	23	23	23	28.4
6-Nov	22	21	18	16	15	14	11	8	5	4	4	5	7	9	12	14	17	20	21	21	22	22	22	22	22.2
7-Nov	22	21	20	19	16	14	12	9	7	7	8	9	10	10	N	N	N	N	N	N	6	5	6	6	22.1
8-Nov	7	9	11	13	16	19	20	20	19	17	16	14	12	10	9	8	9	9	8	7	6	6	5	4	20.5
9-Nov	3	3	3	5	7	10	11	13	16	19	22	24	24	25	27	29	29	28	27	25	24	22	18	15	28.9
10-Nov	13	10	8	6	4	2	2	1	1	3	5	6	8	11	13	14	14	12	9	8	6	3	1	0	14.3
11-Nov	0	1	0	0	0	0	0	0	0	0	0	1	3	6	8	10	13	15	13	12	10	8	7	5	14.6
12-Nov	2	1	0	0	1	1	1	1	1	1	2	3	3	4	4	4	5	5	5	4	3	2	2	2	5.4
13-Nov	1	0	0	0	2	4	6	7	9	9	11	13	14	14	14	14	13	13	12	10	8	6	4	2	14.2
14-Nov	1	3	5	7	10	14	18	21	25	27	29	31	32	32	33	33	32	32	32	31	31	31	30	30	32.7
15-Nov	29	29	28	25	21	19	17	13	10	6	4	4	4	5	5	6	6	7	6	5	5	3	2	1	29.1
16-Nov	1	0	0	1	1	1	1	1	1	1	2	3	5	6	8	11	13	15	17	17	17	16	14	11	17.3
17-Nov	10	10	11	12	12	16	19	23	24	25	25	25	26	26	26	25	25	25	25	25	25	24	24	24	25.7
18-Nov	24	24	23	23	24	24	25	25	25	25	25	24	23	22	22	21	21	20	20	19	19	18	18	18	25.0
19-Nov	18	18	18	18	18	18	18	18	18	18	17	17	17	17	16	16	16	16	15	15	15	14	13	13	18.5
20-Nov	13	13	13	12	12	12	12	12	11	11	10	10	9	9	9	9	9	9	8	8	6	6	5	5	12.8
21-Nov	4	4	3	3	3	4	4	4	4	5	6	7	8	9	10	11	11	12	11	10	9	7	6	5	11.9
22-Nov	3	2	1	1	1	1	1	1	1	1	2	2	2	3	3	4	4	3	3	3	2	1	1	0	3.6
23-Nov	0	0	0	0	0	0	0	0	0	0	1	1	1	2	2	3	3	3	2	2	2	1	1	1	2.7
24-Nov	1	0	0	0	0	0	0	0	0	0	1	2	3	4	5	6	6	6	5	4	4	2	1	0	5.7
25-Nov	0	0	1	1	1	1	1	1	0	1	1	2	3	4	5	5	5	5	5	5	4	3	2	1	5.3
26-Nov	1	2	1	1	1	2	3	4	5	6	7	8	9	9	8	7	7	5	5	3	3	3	6	9	9.0
27-Nov	11	15	15	19	22	23	23	22	20	17	16	15	14	13	12	12	12	13	12	10	7	5	3	2	23.0
28-Nov	2	2	3	3	4	5	5	4	4	3	3	3	4	4	5	6	6	6	5	5	4	2	1	1	6.2
29-Nov	1	1	1	1	1	1	1	1	1	1	1	2	2	3	3	4	4	4	3	3	2	2	1	1	3.8
30-Nov	1	1	1	1	1	1	2	2	2	3	3	3	4	4	4	4	3	3	3	2	2	1	1	0	4.3
29.1 28.9 27.6 24.7 23.6 24.2 24.8 25.0 25.3 27.3 29.2 31.1 31.8 32.5 32.7 32.7 32.5 32.2 31.8 31.5 31.2 30.6 30.1 29.5																									
Diurnal Maximums																									
N - Not Valid																									

### Span Responses

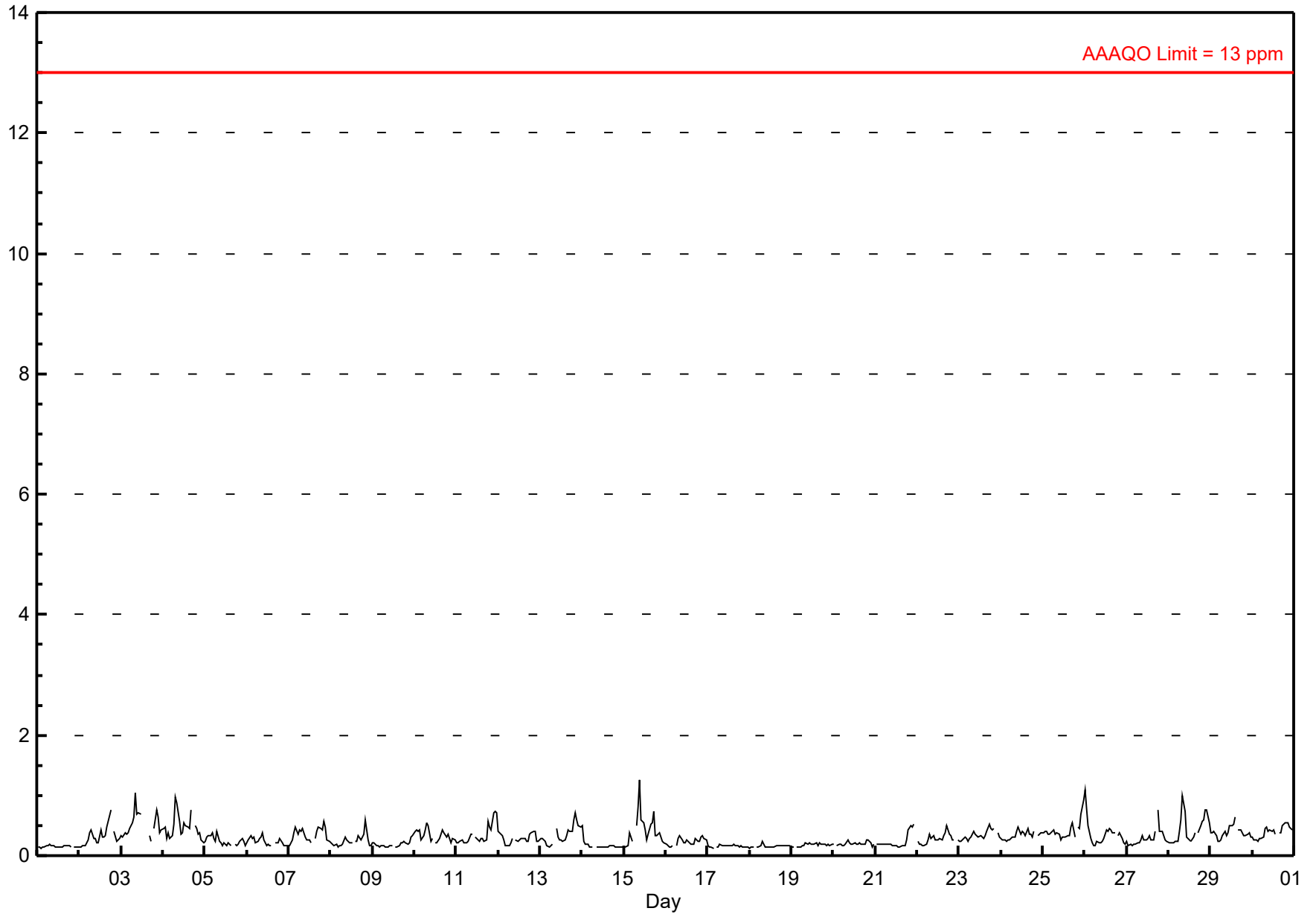
Ozone (O<sub>3</sub>)  
Henry Pirker - November 2016



## Hourly Averages

## Carbon Monoxide (CO) - ppm Henry Pirker - November 2016

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 1.26 ppm on Nov 15 10:00      Maximum Daily Average: 0.51 ppm on Nov 3		Hours in Service: 720 Hours of Data: 685 Hours of Missing Data: 35 Hours of Calibration: 35 Percent Operational Time: 100.0																									
Minimum Value: 0.1 ppm on Nov 18 01:00 Maximum Diurnal Average: 0.38 ppm at hour 21 Monthly Average: 0.299 ppm		Minimum Daily Average: 0.15 ppm on Nov 1 Minimum Diurnal Average: 0.23 ppm at hour 6 Percentiles: P <sub>1</sub> = 0.13 P <sub>10</sub> = 0.15 Q <sub>1</sub> = 0.18 Median = 0.26 Q <sub>3</sub> = 0.37 P <sub>90</sub> = 0.49 P <sub>99</sub> = 0.86																									
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	0.1	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	0.2	0.2	0.2	0.2	0.2	0.1	A	0.1	0.1	0.1	0.15	0.19
2-Nov	0.1	0.2	0.2	0.2	0.2	0.3	0.4	0.4	0.3	0.3	0.2	0.2	0.4	0.3	0.3	0.3	0.5	0.7	0.8	A	0.4	0.2	0.3	0.3	0.32	0.76	
3-Nov	0.3	0.3	0.4	0.4	0.4	0.5	0.6	0.6	1.0	0.7	0.7	0.7	C	C	C	C	0.3	0.2	A	0.5	0.8	0.6	0.4	0.4	0.51	1.03	
4-Nov	0.5	0.5	0.3	0.4	0.3	0.3	0.5	1.0	0.9	0.6	0.3	0.4	0.5	0.5	0.5	0.5	0.8	A	0.5	0.5	0.4	0.4	0.3	0.2	0.47	0.98	
5-Nov	0.2	0.3	0.3	0.3	0.4	0.3	0.2	0.4	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	0.3	0.2	0.2	0.24	0.39	
6-Nov	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.4	0.3	0.2	0.2	0.2	0.2	A	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.24	0.37	
7-Nov	0.2	0.2	0.3	0.4	0.5	0.4	0.4	0.4	0.5	0.3	0.3	0.3	0.2	0.2	A	0.3	0.4	0.5	0.5	0.4	0.6	0.5	0.3	0.2	0.35	0.56	
8-Nov	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	A	0.2	0.2	0.3	0.3	0.3	0.4	0.6	0.3	0.2	0.2	0.24	0.60	
9-Nov	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	A	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.19	0.33	
10-Nov	0.4	0.4	0.4	0.4	0.3	0.3	0.4	0.6	0.5	0.2	0.3	A	0.2	0.2	0.3	0.4	0.4	0.4	0.3	0.4	0.3	0.2	0.3	0.3	0.34	0.56	
11-Nov	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.4	0.3	A	0.3	0.3	0.2	0.3	0.3	0.2	0.3	0.6	0.5	0.4	0.7	0.7	0.7	0.35	0.74	
12-Nov	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.3	A	0.3	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.4	0.4	0.4	0.4	0.2	0.2	0.28	0.41	
13-Nov	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	A	0.4	0.3	0.3	0.3	0.2	0.3	0.3	0.4	0.4	0.4	0.6	0.7	0.6	0.5	0.5	0.34	0.71	
14-Nov	0.5	0.2	0.2	0.2	0.1	0.1	0.1	A	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.17	0.51	
15-Nov	0.1	0.1	0.2	0.4	0.3	0.2	A	0.5	0.8	1.3	0.6	0.6	0.4	0.3	0.4	0.5	0.5	0.7	0.3	0.3	0.4	0.3	0.2	0.2	0.42	1.26	
16-Nov	0.2	0.2	0.1	0.2	0.2	A	0.2	0.3	0.3	0.3	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.23	0.34	
17-Nov	0.2	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	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.16	0.20	
18-Nov	0.1	0.1	0.1	A	0.1	0.1	0.2	0.2	0.2	0.2	0.1	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	0.16	0.24	
19-Nov	0.2	0.1	A	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.18	0.21	
20-Nov	0.2	A	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	0.3	0.3	0.2	0.2	0.20	0.27	
21-Nov	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.5	0.5	0.5	A	0.23	0.51	
22-Nov	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.5	0.3	0.3	0.3	0.3	A	0.3	0.28	0.51	
23-Nov	0.2	0.2	0.3	0.3	0.3	0.2	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.5	0.5	0.4	0.5	A	0.4	0.3	0.34	0.52	
24-Nov	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.5	0.3	0.4	0.4	0.3	0.4	0.4	0.3	0.3	0.4	A	0.3	0.4	0.4	0.34	0.47	
25-Nov	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.5	0.5	0.3	A	0.5	0.5	0.7	0.9	0.42	0.92	
26-Nov	1.1	0.8	0.5	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.4	A	0.3	0.4	0.3	0.2	0.2	0.36	1.09	
27-Nov	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	A	0.8	0.4	0.4	0.3	0.3	0.2	0.29	0.75	
28-Nov	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.6	1.0	0.7	0.3	0.3	0.3	0.2	0.3	0.4	A	0.4	0.5	0.6	0.6	0.8	0.8	0.5	0.43	1.00	
29-Nov	0.4	0.4	0.4	0.3	0.2	0.2	0.3	0.3	0.4	0.3	0.4	0.5	0.5	0.5	0.6	A	0.4	0.4	0.4	0.3	0.3	0.3	0.4	0.3	0.38	0.63	
30-Nov	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.5	0.5	0.4	0.4	0.4	0.4	0.4	A	0.4	0.4	0.5	0.5	0.5	0.6	0.5	0.4	0.4	0.40	0.55	
																								Diurnal Average			
																								Diurnal Maximum			
C - Calibration      A - Automated Daily Zero Span Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 13 ppm 24-hr na																											



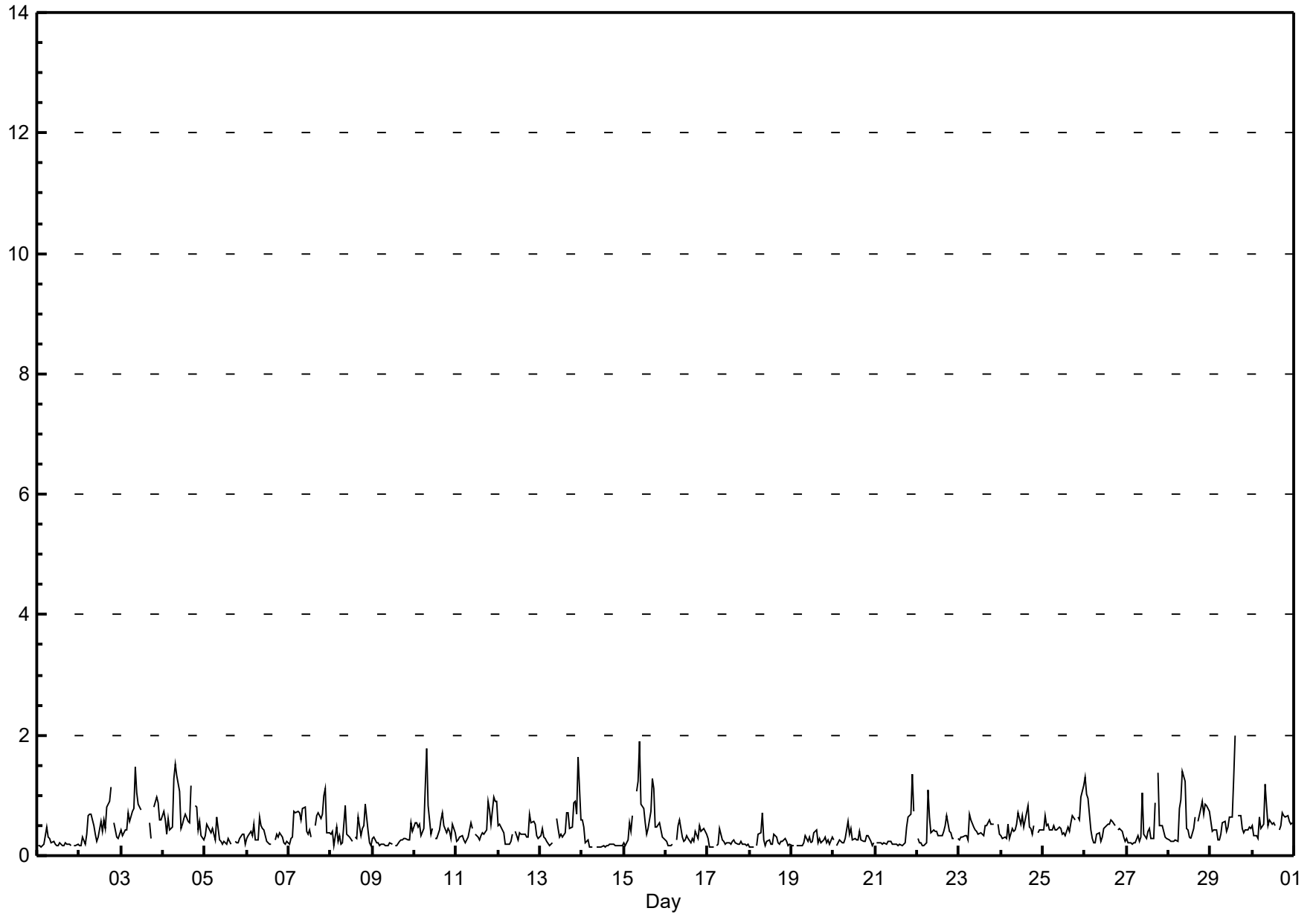
# Hourly Maximums

**Carbon Monoxide (CO) - ppm**  
**Henry Pirker - November 2016**

Maximum Value: 2.00 ppm on Nov 29 15:00      Maximum Daily Average: 0.70 ppm on Nov 4 Minimum Value: 0.1 ppm on Nov 18 01:00      Minimum Daily Average: 0.20 ppm on Nov 14 Maximum Diurnal Average: 0.58 ppm at hour 8      Minimum Diurnal Average: 0.31 ppm at hour 3 Monthly Average: 0.424 ppm      Percentiles: P <sub>1</sub> = 0.15 P <sub>10</sub> = 0.18 Q <sub>1</sub> = 0.23 Median = 0.35 Q <sub>3</sub> = 0.52 P <sub>90</sub> = 0.74 P <sub>99</sub> = 1.39																								Hours in Service:	720	
																								Hours of Data:	685	
																								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	0.2	0.2	0.1	0.2	0.2	0.5	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	A	0.2	0.2	0.2	0.21	0.49
2-Nov	0.2	0.2	0.3	0.2	0.4	0.7	0.7	0.7	0.5	0.4	0.2	0.3	0.6	0.4	0.6	0.5	0.8	0.9	1.1	A	0.6	0.3	0.3	0.4	0.48	1.13
3-Nov	0.4	0.3	0.4	0.4	0.7	0.6	0.7	0.8	1.5	1.0	0.8	0.8	C	C	C	C	0.5	0.3	A	0.8	1.0	0.9	0.6	0.6	0.69	1.46
4-Nov	0.7	0.6	0.4	0.6	0.4	0.5	1.3	1.5	1.3	1.1	0.4	0.5	0.6	0.7	0.6	0.5	1.2	A	0.8	0.8	0.4	0.6	0.3	0.3	0.70	1.51
5-Nov	0.3	0.5	0.5	0.4	0.4	0.4	0.3	0.6	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.2	A	0.2	0.2	0.2	0.3	0.4	0.4	0.2	0.31	0.64
6-Nov	0.3	0.3	0.4	0.3	0.5	0.3	0.3	0.6	0.5	0.4	0.4	0.2	0.2	0.2	0.2	A	0.3	0.4	0.3	0.4	0.3	0.2	0.2	0.2	0.32	0.65
7-Nov	0.2	0.3	0.3	0.7	0.7	0.7	0.7	0.6	0.8	0.8	0.4	0.4	0.4	0.3	A	0.5	0.7	0.7	0.6	0.7	1.0	1.1	0.4	0.4	0.58	1.13
8-Nov	0.3	0.4	0.2	0.5	0.2	0.3	0.2	0.2	0.8	0.4	0.3	0.2	A	0.3	0.3	0.6	0.3	0.5	0.5	0.9	0.4	0.2	0.2	0.2	0.37	0.85
9-Nov	0.3	0.3	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	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.5	0.4	0.24	0.55
10-Nov	0.5	0.6	0.5	0.5	0.3	0.5	1.1	1.8	0.8	0.3	0.4	A	0.3	0.3	0.4	0.6	0.7	0.5	0.4	0.5	0.4	0.3	0.5	0.4	0.55	1.78
11-Nov	0.2	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.5	0.4	A	0.4	0.3	0.3	0.3	0.4	0.4	0.4	0.9	0.8	0.5	1.0	0.9	0.9	0.46	0.97
12-Nov	0.5	0.5	0.4	0.4	0.2	0.2	0.2	0.2	0.3	A	0.4	0.3	0.4	0.4	0.4	0.4	0.3	0.3	0.7	0.6	0.6	0.5	0.3	0.3	0.38	0.68
13-Nov	0.3	0.4	0.3	0.3	0.2	0.2	0.2	0.2	A	0.6	0.4	0.3	0.4	0.3	0.4	0.7	0.7	0.5	0.5	0.9	0.9	0.7	1.6	0.6	0.51	1.64
14-Nov	0.6	0.5	0.2	0.3	0.2	0.1	0.1	A	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	0.20	0.59
15-Nov	0.2	0.2	0.3	0.5	0.4	0.7	A	1.1	1.2	1.9	0.9	0.8	0.6	0.4	0.4	0.7	1.3	1.1	0.5	0.5	0.5	0.4	0.3	0.3	0.66	1.91
16-Nov	0.2	0.2	0.2	0.2	0.2	A	0.3	0.5	0.6	0.3	0.2	0.3	0.3	0.3	0.2	0.3	0.2	0.4	0.3	0.5	0.4	0.4	0.5	0.4	0.32	0.59
17-Nov	0.3	0.1	0.1	0.1	A	0.2	0.2	0.5	0.3	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	0.21	0.46
18-Nov	0.1	0.2	0.1	A	0.2	0.4	0.4	0.7	0.3	0.2	0.2	0.3	0.2	0.2	0.4	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.25	0.70
19-Nov	0.2	0.2	A	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.2	0.2	0.4	0.4	0.2	0.3	0.2	0.3	0.3	0.2	0.3	0.2	0.3	0.25	0.42
20-Nov	0.3	A	0.2	0.3	0.2	0.2	0.2	0.3	0.6	0.4	0.5	0.3	0.3	0.3	0.3	0.4	0.3	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.28	0.58
21-Nov	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.5	0.7	0.7	1.3	0.7	A	0.33	1.35
22-Nov	0.3	0.2	0.2	0.2	0.2	0.2	1.1	0.6	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.4	0.5	0.7	0.4	0.4	0.3	0.3	A	0.3	0.39	1.09
23-Nov	0.3	0.3	0.3	0.3	0.3	0.3	0.7	0.6	0.5	0.4	0.4	0.4	0.4	0.4	0.3	0.5	0.5	0.6	0.5	0.5	0.5	A	0.5	0.4	0.43	0.69
24-Nov	0.3	0.3	0.3	0.3	0.5	0.3	0.5	0.4	0.4	0.5	0.7	0.5	0.7	0.5	0.6	0.8	0.5	0.5	0.4	0.5	A	0.4	0.4	0.4	0.46	0.83
25-Nov	0.4	0.7	0.5	0.5	0.4	0.4	0.5	0.4	0.4	0.5	0.5	0.4	0.4	0.3	0.5	0.4	0.5	0.7	0.6	A	0.6	0.6	1.0	1.2	0.54	1.17
26-Nov	1.3	1.0	1.0	0.4	0.3	0.2	0.2	0.4	0.4	0.2	0.3	0.4	0.5	0.5	0.5	0.6	0.6	0.5	A	0.4	0.5	0.4	0.3	0.2	0.48	1.30
27-Nov	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.3	1.0	0.4	0.3	0.4	0.4	0.3	0.3	0.9	A	1.4	0.5	0.5	0.4	0.3	0.3	0.42	1.37
28-Nov	0.3	0.2	0.2	0.2	0.3	0.2	0.8	0.9	1.4	1.2	0.4	0.4	0.3	0.3	0.5	0.6	A	0.6	0.8	0.9	0.7	0.8	0.8	0.7	0.60	1.41
29-Nov	0.6	0.4	0.4	0.4	0.3	0.3	0.3	0.5	0.6	0.4	0.5	0.6	0.7	1.3	2.0	A	0.7	0.7	0.4	0.4	0.4	0.4	0.5	0.5	0.57	2.00
30-Nov	0.5	0.3	0.3	0.3	0.6	0.4	0.5	1.2	0.8	0.5	0.6	0.5	0.5	A	0.4	0.5	0.7	0.7	0.6	0.7	0.6	0.5	0.5	0.5	0.56	1.18
0.37 0.35 0.31 0.33 0.32 0.33 0.44 0.58 0.57 0.52 0.39 0.36 0.36 0.36 0.41 0.41 0.51 0.45 0.50 0.49 0.50 0.48 0.46 0.39																								Diurnal Average		
1.30 1.02 0.96 0.73 0.70 0.73 1.27 1.78 1.46 1.91 0.86 0.79 0.66 1.28 2.00 0.83 1.29 1.11 1.37 0.90 1.00 1.35 1.64 1.17																								Diurnal Maximum		
C - Calibration      A - Automated Daily Zero Span																										

**Hourly Maximums**

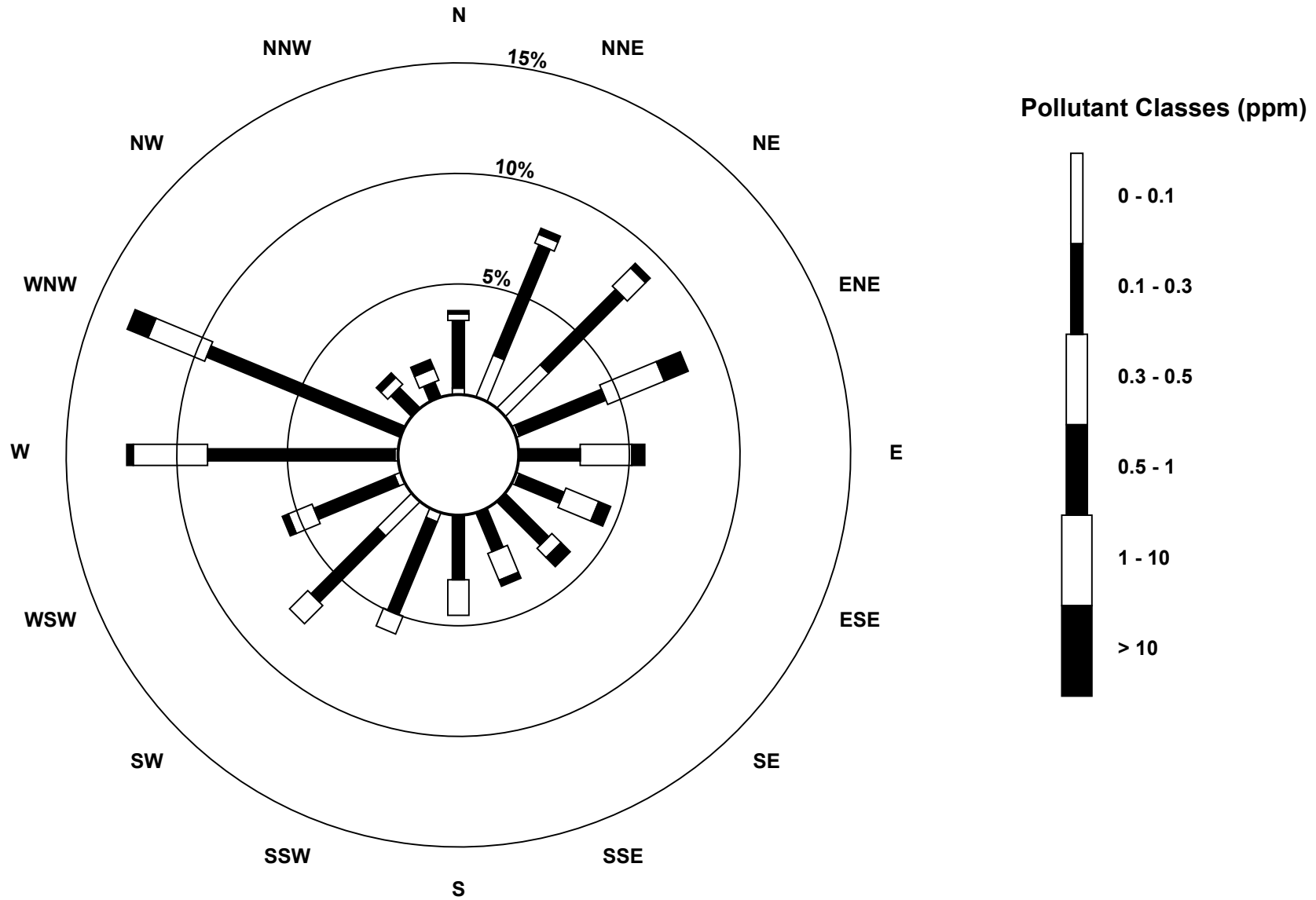
**Carbon Monoxide (CO) - ppm**  
**Henry Pirker - November 2016**





**Pollutant Rose**

**Carbon Monoxide (CO) - ppm**  
**Henry Pirker - November 2016**



## Eight Hour Running Averages

Carbon Monoxide (CO) - ppm

Henry Pirker - November 2016

Number of Exceedences (AAAQO): 8-hr: 0	Hours in Service: 720
Maximum Value: 0.72 ppm on Nov 3 14:00	Hours of Data: 712
Minimum Value: 0.13 ppm on Nov 18 05:00	Hours of Missing Data: 8
	Hours of Calibration: 8
	Percent Operational Time: 100.0
Percentiles: P <sub>1</sub> = 0.14 P <sub>10</sub> = 0.16 Q <sub>1</sub> = 0.20 Median = 0.28 Q <sub>3</sub> = 0.37 P <sub>90</sub> = 0.47 P <sub>99</sub> = 0.64	

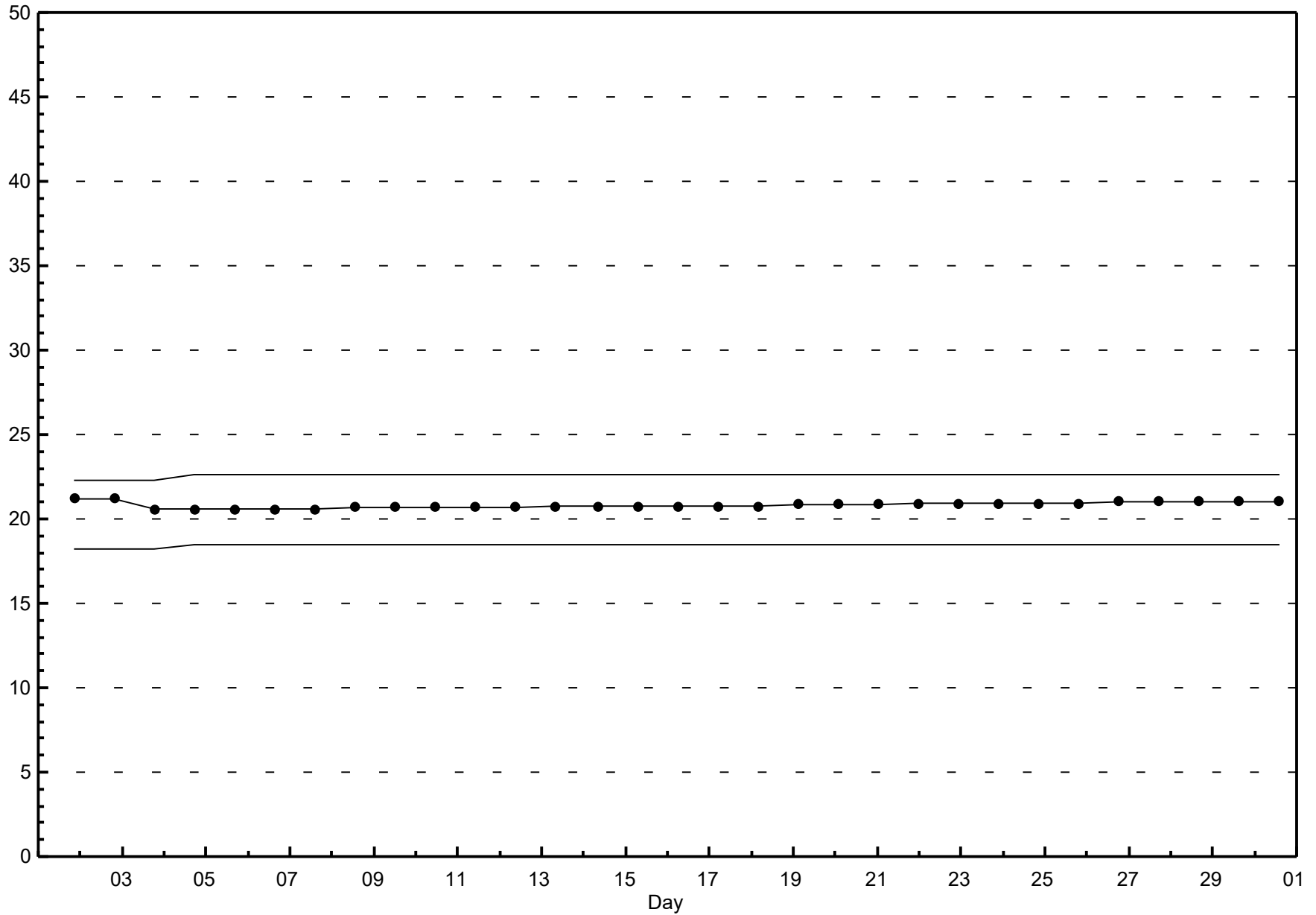
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Nov	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.17
2-Nov	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.4	0.4	0.47
3-Nov	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.6	0.6	0.6	0.7	0.7	N	N	N	N	N	N	N	N	0.5	0.5	0.72
4-Nov	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.59
5-Nov	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.34
6-Nov	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	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.29
7-Nov	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.45
8-Nov	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	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.39
9-Nov	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.29
10-Nov	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.42
11-Nov	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.5	0.5	0.52
12-Nov	0.5	0.6	0.5	0.5	0.5	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.55
13-Nov	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.51
14-Nov	0.5	0.5	0.5	0.4	0.4	0.3	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	0.2	0.2	0.2	0.2	0.2	0.52
15-Nov	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.4	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.63
16-Nov	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.34
17-Nov	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.26
18-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	0.17
19-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	0.2	0.2	0.2	0.2	0.2	0.2	0.19
20-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	0.2	0.2	0.2	0.2	0.2	0.2	0.21
21-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	0.2	0.2	0.2	0.3	0.3	0.4	0.36
22-Nov	0.4	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.37
23-Nov	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.42
24-Nov	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.40
25-Nov	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.6	0.55
26-Nov	0.6	0.7	0.7	0.7	0.6	0.6	0.5	0.4	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.70
27-Nov	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.40
28-Nov	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.3	0.3	0.4	0.4	0.5	0.6	0.6	0.58
29-Nov	0.6	0.6	0.5	0.5	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.56
30-Nov	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.48
	0.64	0.67	0.70	0.65	0.62	0.58	0.52	0.46	0.52	0.56	0.60	0.65	0.68	0.72	0.59	0.60	0.56	0.50	0.51	0.52	0.50	0.50	0.56	0.58	

Diurnal Maximums

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

### Span Responses

**Carbon Monoxide (CO)**  
**Henry Pirker - November 2016**



# Hourly Averages

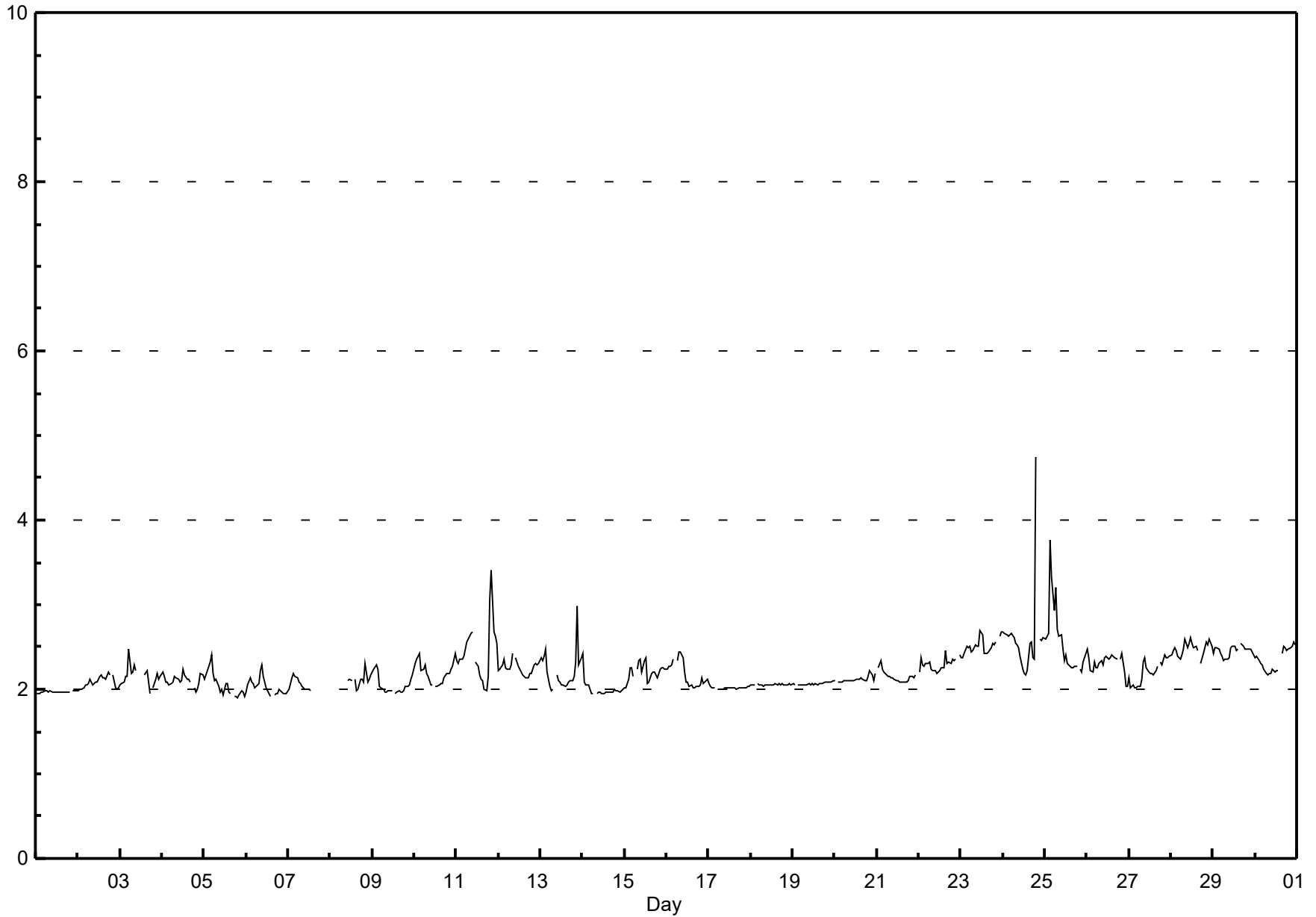
Total Hydrocarbons (THC) - ppm

Henry Pirker - November 2016

Maximum Value: 4.74 ppm on Nov 24 20:00		Maximum Daily Average: 2.59 ppm on Nov 24		Hours in Service: 720																																												
Minimum Value: 1.9 ppm on Nov 5 20:00		Minimum Daily Average: 1.97 ppm on Nov 1		Hours of Data: 666																																												
Maximum Diurnal Average: 2.30 ppm at hour 4		Minimum Diurnal Average: 2.14 ppm at hour 15		Hours of Missing Data: 54																																												
Monthly Average: 2.212 ppm		Percentiles: P <sub>1</sub> = 1.94 P <sub>10</sub> = 1.98 Q <sub>1</sub> = 2.05 Median = 2.15 Q <sub>3</sub> = 2.35 P <sub>90</sub> = 2.50 P <sub>99</sub> = 2.98		Hours of Calibration: 35																																												
				Percent Operational Time: 97.4																																												
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	2.0	1.9	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	2.0	2.0	2.0	2.0	A	2.0	2.0	2.0	1.97	1.98																						
2-Nov	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.2	2.2	A	2.2	2.0	2.0	2.0	2.08	2.20																						
3-Nov	2.1	2.1	2.1	2.1	2.2	2.5	2.2	2.2	2.3	2.2	C	C	C	C	2.2	2.2	2.1	1.9	A	2.0	2.1	2.2	2.1	2.2	2.15	2.48																						
4-Nov	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	A	2.0	2.0	2.0	2.1	2.2	2.2	2.11	2.24																						
5-Nov	2.1	2.2	2.2	2.3	2.4	2.2	2.1	2.1	2.0	2.0	2.0	1.9	2.1	2.1	2.0	2.0	A	1.9	1.9	1.9	1.9	2.0	2.0	1.9	2.05	2.41																						
6-Nov	2.0	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.2	2.3	2.1	2.0	2.0	1.9	1.9	A	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.03	2.29																						
7-Nov	2.0	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	A	N	N	N	N	N	N	N	N	N	N	--	2.18																						
8-Nov	N	N	N	N	N	N	N	N	N	N	N	2.1	2.1	A	2.1	2.0	2.0	2.1	2.1	2.1	2.3	2.1	2.1	2.2	--	2.31																						
9-Nov	2.2	2.2	2.3	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.05	2.29																						
10-Nov	2.3	2.4	2.4	2.4	2.2	2.2	2.3	2.2	2.2	2.0	2.0	A	2.0	2.0	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.4	2.20	2.43																						
11-Nov	2.3	2.3	2.4	2.4	2.4	2.5	2.6	2.6	2.7	2.7	A	2.3	2.3	2.2	2.1	2.1	2.0	2.0	2.2	3.1	3.4	2.7	2.6	2.6	2.44	3.41																						
12-Nov	2.2	2.2	2.3	2.4	2.2	2.2	2.2	2.3	2.4	A	2.4	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.2	2.3	2.3	2.3	2.3	2.25	2.42																						
13-Nov	2.4	2.3	2.4	2.5	2.2	2.0	2.0	2.0	A	2.2	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.2	2.3	3.0	2.3	2.4	2.21	2.99																						
14-Nov	2.4	2.1	2.1	2.0	2.0	1.9	1.9	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	2.00	2.42																						
15-Nov	2.0	2.0	2.1	2.3	2.3	2.1	A	2.2	2.3	2.4	2.2	2.3	2.4	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.2	2.3	2.2	2.2	2.20	2.38																						
16-Nov	2.2	2.3	2.3	2.3	2.4	A	2.3	2.4	2.4	2.4	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.18	2.45																						
17-Nov	2.1	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.02	2.06																						
18-Nov	2.0	2.1	2.0	A	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.05	2.07																						
19-Nov	2.1	2.1	A	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.07	2.10																						
20-Nov	2.1	A	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.2	2.12	2.22																						
21-Nov	A	2.3	2.3	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.2	A	2.15	2.33																						
22-Nov	2.2	2.4	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.5	2.3	2.3	2.3	2.4	2.3	2.4	A	2.4	2.29	2.46																						
23-Nov	2.4	2.4	2.4	2.5	2.5	2.5	2.4	2.5	2.5	2.5	2.5	2.7	2.6	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.6	A	2.6	2.7	2.50	2.69																						
24-Nov	2.7	2.7	2.6	2.6	2.6	2.7	2.6	2.6	2.5	2.5	2.4	2.2	2.2	2.2	2.2	2.5	2.6	2.4	2.4	4.7	A	2.6	2.6	2.6	2.59	4.74																						
25-Nov	2.6	2.6	2.7	3.8	3.3	2.9	3.2	2.7	2.6	2.6	2.5	2.3	2.4	2.3	2.3	2.3	2.2	2.3	2.3	A	2.2	2.2	2.3	2.4	2.57	3.77																						
26-Nov	2.5	2.4	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	A	2.4	2.4	2.2	2.0	2.0	2.31	2.48																						
27-Nov	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.3	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.3	A	2.3	2.3	2.4	2.4	2.4	2.21	2.40																						
28-Nov	2.4	2.5	2.5	2.5	2.4	2.4	2.4	2.5	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	A	2.3	2.4	2.5	2.6	2.5	2.5	2.48	2.60																						
29-Nov	2.4	2.5	2.5	2.5	2.4	2.4	2.3	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.5	A	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.45	2.54																						
30-Nov	2.4	2.4	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	A	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.5	2.35	2.57																						
																								2.23	2.23	2.25	2.30	2.26	2.22	2.22	2.22	2.24	2.22	2.18	2.18	2.18	2.14	2.14	2.15	2.15	2.15	2.17	2.29	2.26	2.23	2.22	2.25	Diurnal Average
																								2.67	2.66	2.67	3.77	3.32	2.93	3.21	2.72	2.66	2.68	2.54	2.69	2.64	2.49	2.50	2.55	2.56	2.51	2.55	4.74	3.41	2.99	2.64	2.68	Diurnal Maximum
C - Calibration																								N - Not Valid				A - Automated Daily Zero Span																				

**Hourly Averages**

**Total Hydrocarbons (THC) - ppm**  
**Henry Pirker - November 2016**



# Hourly Maximums

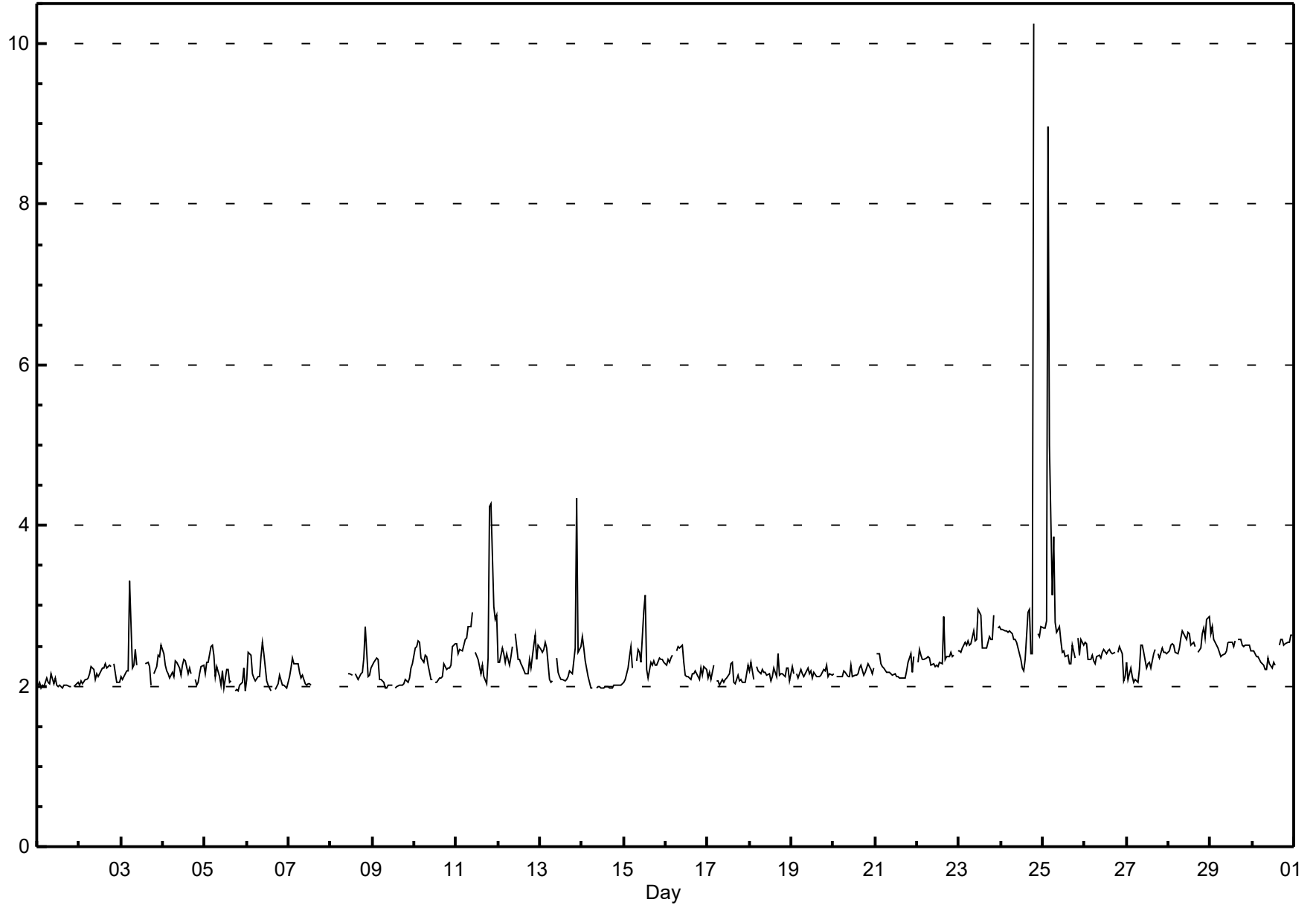
Total Hydrocarbons (THC) - ppm

Henry Pirker - November 2016

Maximum Value: 10.26 ppm on Nov 24 20:00		Maximum Daily Average: 3.00 ppm on Nov 25		Hours in Service: 720																							
Minimum Value: 1.9 ppm on Nov 5 20:00		Minimum Daily Average: 2.02 ppm on Nov 1		Hours of Data: 666																							
Maximum Diurnal Average: 2.62 ppm at hour 20		Minimum Diurnal Average: 2.20 ppm at hour 15		Hours of Missing Data: 54																							
Monthly Average: 2.322 ppm		Percentiles: P <sub>1</sub> = 1.97 P <sub>10</sub> = 2.03 Q <sub>1</sub> = 2.11 Median = 2.25 Q <sub>3</sub> = 2.43 P <sub>90</sub> = 2.58 P <sub>99</sub> = 3.79		Hours of Calibration: 35																							
Percent Operational Time: 97.4																											
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	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.2	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	2.0	2.0	2.1	2.02	2.16	
2-Nov	2.0	2.1	2.0	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.2	2.3	2.2	A	2.3	2.0	2.0	2.1	2.15	2.28	
3-Nov	2.1	2.1	2.1	2.2	2.2	3.3	2.2	2.3	2.5	2.3	C	C	C	C	2.3	2.3	2.2	2.0	A	2.1	2.2	2.4	2.4	2.5	2.30	3.30	
4-Nov	2.4	2.3	2.2	2.2	2.1	2.2	2.1	2.3	2.3	2.2	2.1	2.3	2.3	2.3	2.1	2.2	2.1	A	2.1	2.0	2.1	2.2	2.2	2.3	2.20	2.41	
5-Nov	2.2	2.3	2.3	2.5	2.5	2.4	2.1	2.2	2.1	2.0	2.2	2.0	2.2	2.2	2.0	2.1	A	1.9	2.0	1.9	2.0	2.0	2.2	1.9	2.15	2.50	
6-Nov	2.1	2.4	2.4	2.2	2.1	2.1	2.1	2.1	2.4	2.5	2.4	2.1	2.0	2.0	1.9	A	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.12	2.54	
7-Nov	2.1	2.2	2.3	2.3	2.3	2.3	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	A	N	N	N	N	N	N	N	N	N	--	2.35	
8-Nov	N	N	N	N	N	N	N	N	N	N	N	2.1	2.1	2.1	A	2.1	2.1	2.1	2.2	2.2	2.3	2.7	2.1	2.1	2.2	--	2.74
9-Nov	2.3	2.3	2.3	2.3	2.1	2.1	2.1	2.0	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.3	2.3	2.09	2.35	
10-Nov	2.5	2.5	2.6	2.5	2.3	2.3	2.4	2.4	2.3	2.1	2.1	A	2.1	2.1	2.1	2.1	2.1	2.3	2.2	2.2	2.2	2.3	2.5	2.5	2.28	2.56	
11-Nov	2.5	2.4	2.5	2.4	2.5	2.6	2.6	2.7	2.7	2.9	A	2.4	2.3	2.2	2.2	2.3	2.1	2.0	2.3	4.2	4.3	3.0	2.8	2.9	2.65	4.27	
12-Nov	2.3	2.3	2.5	2.4	2.3	2.4	2.3	2.4	2.5	A	2.7	2.3	2.3	2.3	2.2	2.2	2.1	2.2	2.3	2.2	2.5	2.6	2.3	2.5	2.35	2.66	
13-Nov	2.5	2.4	2.5	2.6	2.5	2.1	2.0	2.1	A	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.3	2.5	4.3	2.4	2.5	2.35	4.34	
14-Nov	2.6	2.5	2.3	2.1	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.06	2.62	
15-Nov	2.1	2.1	2.2	2.4	2.5	2.2	A	2.3	2.5	2.4	2.3	2.9	3.1	2.2	2.1	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.35	3.14	
16-Nov	2.3	2.3	2.3	2.3	2.4	A	2.4	2.5	2.5	2.5	2.3	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.2	2.1	2.2	2.2	2.25	2.50	
17-Nov	2.1	2.2	2.1	2.3	A	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.3	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.12	2.30	
18-Nov	2.2	2.3	2.1	A	2.2	2.2	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.1	2.4	2.1	2.1	2.2	2.1	2.2	2.2	2.1	2.17	2.40	
19-Nov	2.2	2.1	A	2.1	2.1	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.1	2.1	2.1	2.16	2.27	
20-Nov	2.1	A	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.3	2.1	2.1	2.1	2.1	2.2	2.3	2.1	2.2	2.2	2.3	2.2	2.2	2.2	2.17	2.28	
21-Nov	A	2.4	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.4	2.2	2.4	A	2.21	2.41	
22-Nov	2.3	2.5	2.4	2.3	2.3	2.4	2.4	2.3	2.3	2.3	2.2	2.3	2.2	2.3	2.3	2.9	2.3	2.4	2.4	2.4	2.4	2.4	A	2.4	2.36	2.87	
23-Nov	2.4	2.4	2.5	2.6	2.5	2.6	2.5	2.5	2.7	2.6	2.6	3.0	2.9	2.5	2.5	2.5	2.5	2.6	2.6	2.6	2.9	A	2.7	2.7	2.59	2.96	
24-Nov	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.5	2.5	2.3	2.2	2.2	2.3	2.9	2.9	2.4	2.4	10.3	A	2.6	2.6	2.7	2.91	10.26	
25-Nov	2.7	2.7	2.8	9.0	5.0	3.1	3.9	2.8	2.7	2.7	2.6	2.4	2.4	2.4	2.4	2.3	2.3	2.5	2.3	A	2.6	2.4	2.6	2.5	3.00	8.97	
26-Nov	2.6	2.5	2.3	2.3	2.4	2.3	2.3	2.4	2.4	2.3	2.4	2.5	2.4	2.4	2.5	2.4	2.4	2.4	A	2.4	2.5	2.4	2.1	2.1	2.38	2.55	
27-Nov	2.3	2.1	2.2	2.1	2.1	2.1	2.1	2.2	2.5	2.5	2.4	2.2	2.3	2.3	2.2	2.4	2.5	A	2.4	2.4	2.5	2.4	2.4	2.4	2.30	2.52	
28-Nov	2.4	2.5	2.5	2.5	2.4	2.4	2.5	2.6	2.7	2.6	2.7	2.7	2.5	2.5	2.5	2.5	A	2.4	2.5	2.6	2.7	2.6	2.8	2.9	2.57	2.87	
29-Nov	2.6	2.7	2.6	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.5	2.6	2.6	2.5	2.6	A	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.4	2.51	2.74	
30-Nov	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.2	2.2	2.3	2.3	2.2	2.3	2.3	A	2.5	2.6	2.6	2.5	2.5	2.6	2.5	2.6	2.6	2.41	2.63	
2.32		2.35	2.34	2.56	2.38	2.32	2.29	2.30	2.33	2.31	2.27	2.26	2.27	2.21	2.20	2.26	2.24	2.22	2.23	2.62	2.41	2.36	2.33	2.35	Diurnal Average		
2.73		2.74	2.82	8.97	5.00	3.30	3.85	2.80	2.74	2.91	2.66	2.96	3.14	2.52	2.56	2.91	2.95	2.62	2.58	10.26	4.27	4.34	2.83	2.88	Diurnal Maximum		
C - Calibration		N - Not Valid					A - Automated Daily Zero Span																				

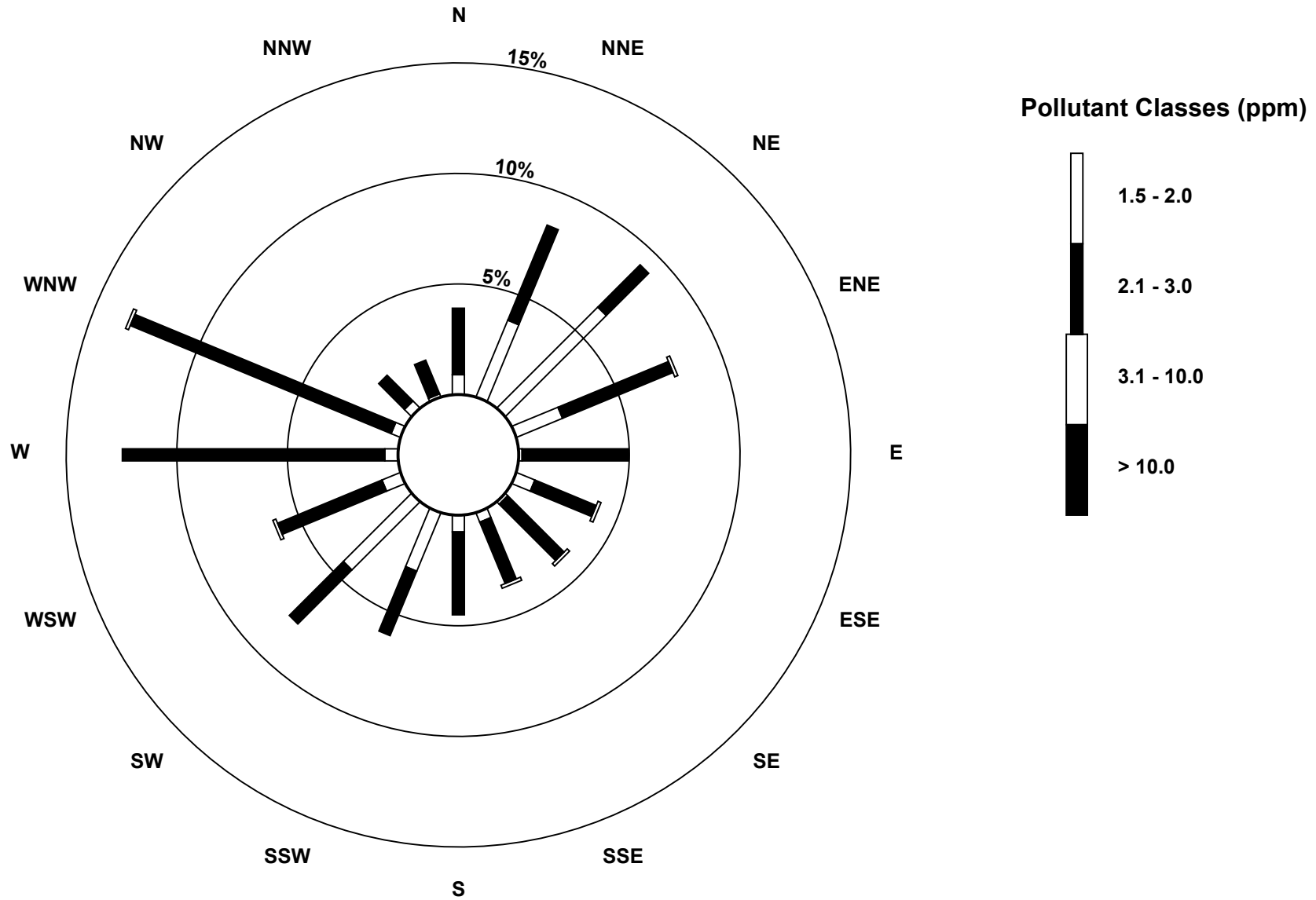
**Hourly Maximums**

**Total Hydrocarbons (THC) - ppm**  
**Henry Pirker - November 2016**



**Pollutant Rose**

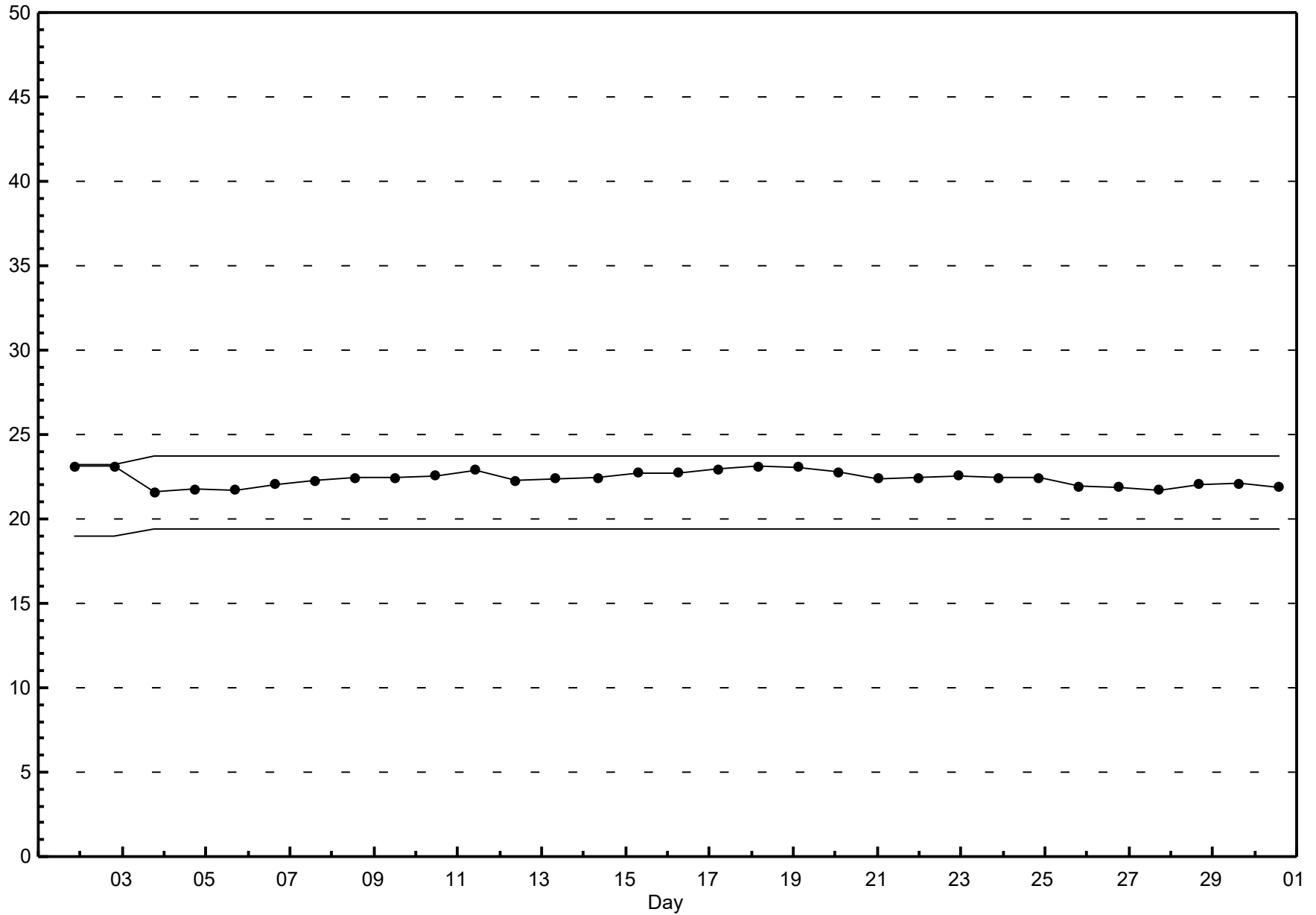
**Total Hydrocarbons (THC) - ppm**  
**Henry Pirker - November 2016**





### Span Responses

Total Hydrocarbons (THC)  
Henry Pirker - November 2016

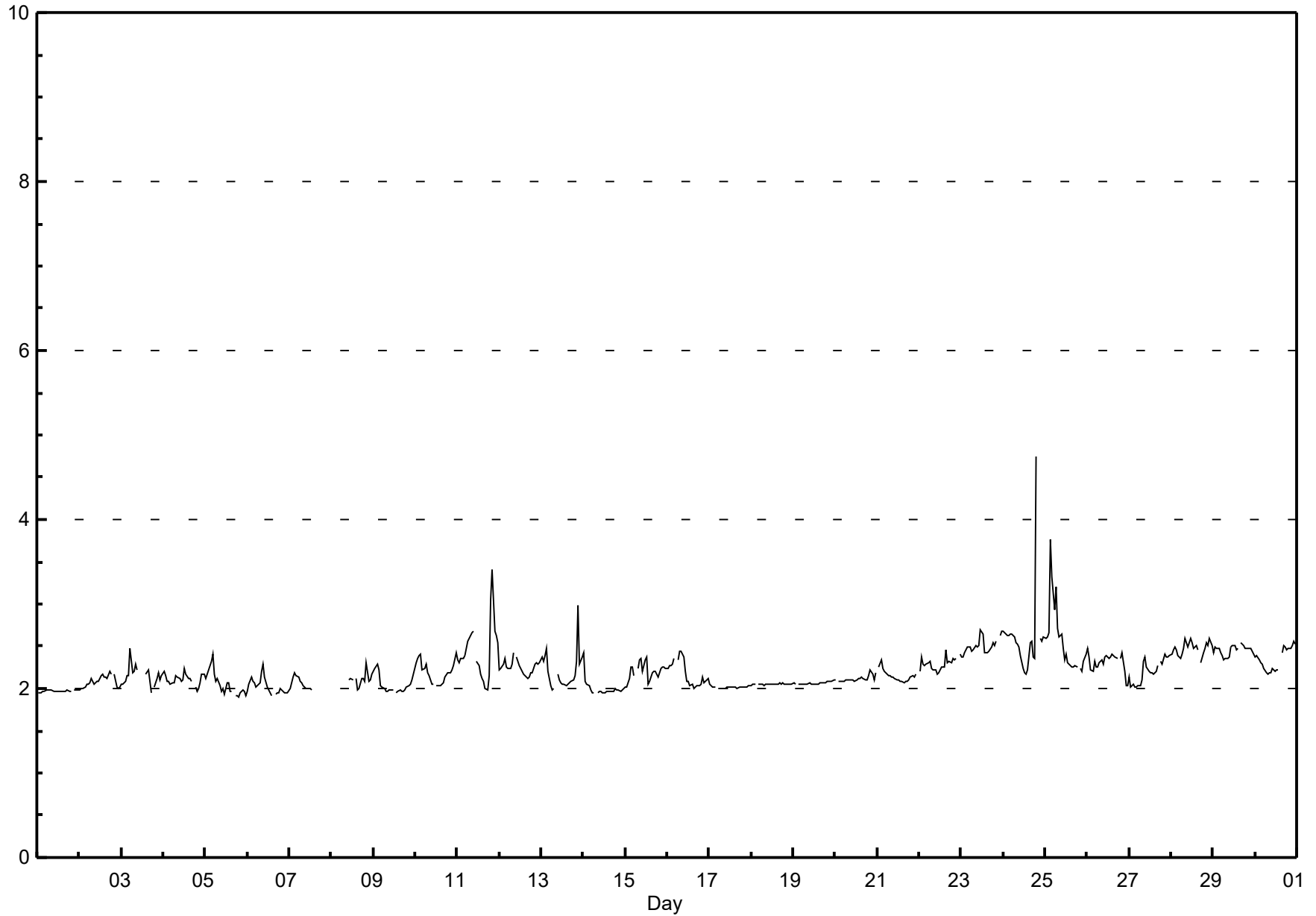


# Hourly Averages

Methane (CH<sub>4</sub>) - ppm

Henry Pirker - November 2016

Maximum Value: 4.75 ppm on Nov 24 20:00 Minimum Value: 1.9 ppm on Nov 5 20:00 Maximum Diurnal Average: 2.29 ppm at hour 4 Monthly Average: 2.211 ppm		Maximum Daily Average: 2.59 ppm on Nov 24 Minimum Daily Average: 1.97 ppm on Nov 1 Minimum Diurnal Average: 2.14 ppm at hour 15 Percentiles: P <sub>1</sub> = 1.94 P <sub>10</sub> = 1.98 Q <sub>1</sub> = 2.05 Median = 2.15 Q <sub>3</sub> = 2.35 P <sub>90</sub> = 2.50 P <sub>99</sub> = 2.98		Hours in Service: 720 Hours of Data: 666 Hours of Missing Data: 54 Hours of Calibration: 35 Percent Operational Time: 97.4																																												
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	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	2.0	2.0	2.0	1.97	1.98																						
2-Nov	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.2	2.2	A	2.2	2.0	2.0	2.0	2.08	2.20																						
3-Nov	2.1	2.1	2.1	2.1	2.2	2.5	2.2	2.2	2.3	2.2	C	C	C	C	2.2	2.2	2.1	1.9	A	2.0	2.1	2.2	2.1	2.2	2.15	2.47																						
4-Nov	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	A	2.0	2.0	2.0	2.1	2.2	2.2	2.11	2.24																						
5-Nov	2.1	2.2	2.2	2.3	2.4	2.2	2.1	2.1	2.0	2.0	2.0	1.9	2.1	2.1	2.0	2.0	A	1.9	1.9	1.9	1.9	2.0	2.0	1.9	2.05	2.41																						
6-Nov	2.0	2.0	2.1	2.1	2.1	2.0	2.1	2.1	2.2	2.3	2.1	2.0	2.0	1.9	1.9	A	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.03	2.28																						
7-Nov	2.0	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	A	N	N	N	N	N	N	N	N	N	--	2.18																						
8-Nov	N	N	N	N	N	N	N	N	N	N	2.1	2.1	2.1	A	2.1	2.0	2.0	2.1	2.1	2.1	2.3	2.1	2.1	2.2	--	2.31																						
9-Nov	2.2	2.2	2.3	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.05	2.29																						
10-Nov	2.3	2.4	2.4	2.4	2.2	2.2	2.3	2.2	2.2	2.0	2.0	A	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.4	2.20	2.43																						
11-Nov	2.3	2.3	2.4	2.4	2.4	2.5	2.6	2.6	2.7	2.7	A	2.3	2.3	2.2	2.1	2.1	2.0	2.0	2.2	3.1	3.4	2.7	2.6	2.5	2.44	3.41																						
12-Nov	2.2	2.2	2.3	2.4	2.2	2.2	2.2	2.3	2.4	A	2.4	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.2	2.3	2.3	2.3	2.3	2.25	2.42																						
13-Nov	2.4	2.3	2.4	2.5	2.2	2.0	2.0	2.0	A	2.2	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.2	2.3	3.0	2.3	2.4	2.20	2.99																						
14-Nov	2.4	2.1	2.1	2.0	2.0	1.9	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	2.00	2.42																						
15-Nov	2.0	2.0	2.1	2.3	2.3	2.1	A	2.2	2.3	2.4	2.2	2.3	2.4	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.20	2.38																						
16-Nov	2.2	2.3	2.3	2.3	2.4	A	2.3	2.4	2.4	2.4	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.17	2.45																						
17-Nov	2.1	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.02	2.06																						
18-Nov	2.0	2.1	2.0	A	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.05	2.06																						
19-Nov	2.1	2.0	A	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.06	2.09																						
20-Nov	2.1	A	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.12	2.22																						
21-Nov	A	2.3	2.3	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	A	2.15	2.33																						
22-Nov	2.2	2.4	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.5	2.3	2.3	2.3	2.4	2.3	2.4	A	2.4	2.29	2.46																						
23-Nov	2.4	2.4	2.4	2.5	2.5	2.5	2.4	2.5	2.5	2.5	2.5	2.7	2.6	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.6	A	2.6	2.7	2.50	2.69																						
24-Nov	2.7	2.7	2.6	2.6	2.6	2.7	2.6	2.5	2.5	2.5	2.4	2.2	2.2	2.2	2.2	2.5	2.6	2.4	2.3	4.7	A	2.6	2.6	2.6	2.59	4.75																						
25-Nov	2.6	2.6	2.7	3.8	3.3	2.9	3.2	2.7	2.6	2.6	2.5	2.3	2.4	2.3	2.3	2.3	2.2	2.3	2.3	A	2.2	2.2	2.3	2.4	2.57	3.77																						
26-Nov	2.5	2.4	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	A	2.4	2.4	2.2	2.0	2.0	2.31	2.48																						
27-Nov	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.3	2.4	2.2	2.2	2.2	2.2	2.2	2.2	2.3	A	2.3	2.3	2.4	2.4	2.4	2.4	2.20	2.40																						
28-Nov	2.4	2.5	2.5	2.5	2.4	2.4	2.4	2.5	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	A	2.3	2.4	2.5	2.5	2.5	2.6	2.5	2.48	2.60																						
29-Nov	2.4	2.5	2.5	2.5	2.4	2.4	2.3	2.4	2.4	2.4	2.5	2.5	2.5	2.4	2.5	A	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.45	2.54																						
30-Nov	2.4	2.4	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	A	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.5	2.35	2.56																						
																								2.23	2.23	2.24	2.29	2.25	2.22	2.21	2.22	2.24	2.22	2.18	2.18	2.18	2.14	2.14	2.16	2.15	2.15	2.16	2.29	2.26	2.23	2.22	2.25	Diurnal Average
																								2.67	2.66	2.67	3.77	3.32	2.93	3.21	2.72	2.66	2.68	2.54	2.69	2.64	2.48	2.50	2.54	2.56	2.51	2.55	4.75	3.41	2.99	2.63	2.68	Diurnal Maximum
C - Calibration																								N - Not Valid						A - Automated Daily Zero Span																		



# Hourly Maximums

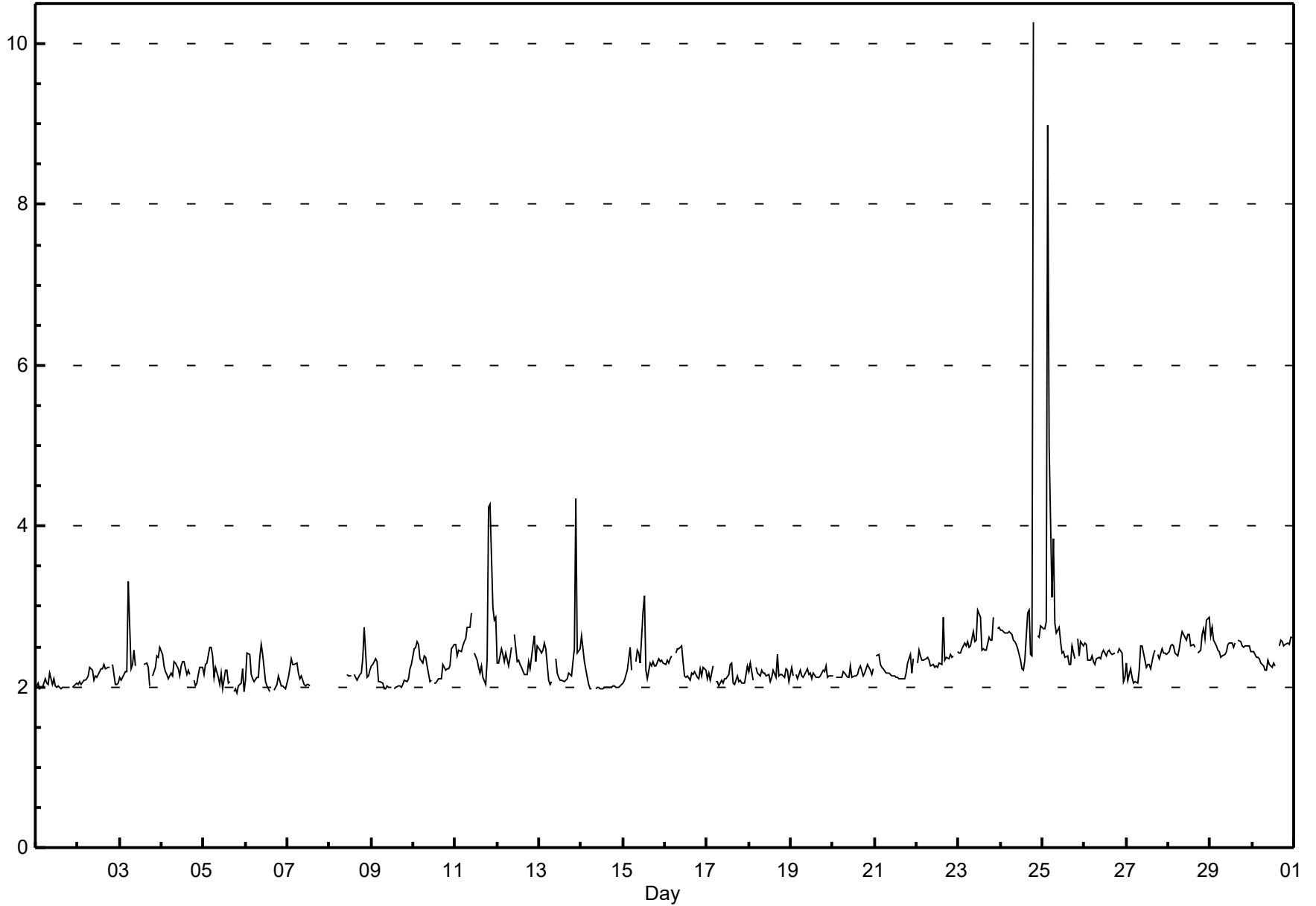
Methane (CH<sub>4</sub>) - ppm

Henry Pirker - November 2016

Maximum Value: 10.27 ppm on Nov 24 20:00		Maximum Daily Average: 3.00 ppm on Nov 25		Hours in Service: 720																																												
Minimum Value: 1.9 ppm on Nov 5 20:00		Minimum Daily Average: 2.02 ppm on Nov 1		Hours of Data: 666																																												
Maximum Diurnal Average: 2.62 ppm at hour 20		Minimum Diurnal Average: 2.20 ppm at hour 15		Hours of Missing Data: 54																																												
Monthly Average: 2.321 ppm		Percentiles: P <sub>1</sub> = 1.97 P <sub>10</sub> = 2.02 Q <sub>1</sub> = 2.11 Median = 2.25 Q <sub>3</sub> = 2.43 P <sub>90</sub> = 2.58 P <sub>99</sub> = 3.79		Hours of Calibration: 35																																												
Percent Operational Time: 97.4																						Daily Average	Daily Maximum																									
Day	Hourly Period Ending At (MST)																																															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Nov	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.2	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.02	2.16																					
2-Nov	2.0	2.1	2.0	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.2	2.2	2.2	A	2.3	2.0	2.0	2.0	2.0	2.14	2.27																					
3-Nov	2.1	2.1	2.1	2.2	2.2	3.3	2.2	2.3	2.5	2.3	C	C	C	C	2.3	2.3	2.2	2.0	A	2.1	2.2	2.4	2.4	2.5	2.30	3.30																						
4-Nov	2.4	2.3	2.2	2.2	2.1	2.2	2.1	2.3	2.3	2.2	2.1	2.3	2.3	2.3	2.1	2.2	2.1	A	2.1	2.0	2.0	2.2	2.2	2.2	2.20	2.40																						
5-Nov	2.2	2.3	2.3	2.5	2.5	2.4	2.1	2.2	2.1	2.0	2.2	2.0	2.2	2.2	2.0	2.1	A	1.9	2.0	1.9	2.0	2.0	2.2	1.9	2.14	2.50																						
6-Nov	2.1	2.4	2.4	2.2	2.1	2.1	2.1	2.1	2.4	2.5	2.4	2.1	2.0	2.0	1.9	A	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.12	2.53																						
7-Nov	2.1	2.2	2.3	2.3	2.3	2.3	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	A	N	N	N	N	N	N	N	N	N	--	2.35																						
8-Nov	N	N	N	N	N	N	N	N	N	N	2.1	2.1	2.1	A	2.1	2.1	2.1	2.2	2.2	2.3	2.7	2.1	2.1	2.2	--	2.74																						
9-Nov	2.3	2.3	2.3	2.3	2.1	2.1	2.1	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.3	2.09	2.34																							
10-Nov	2.5	2.5	2.6	2.5	2.3	2.3	2.4	2.4	2.3	2.1	2.1	A	2.1	2.1	2.1	2.1	2.1	2.3	2.2	2.2	2.2	2.3	2.5	2.5	2.28	2.56																						
11-Nov	2.5	2.4	2.5	2.4	2.5	2.6	2.6	2.7	2.7	2.9	A	2.4	2.3	2.2	2.2	2.3	2.1	2.0	2.3	4.2	4.3	3.0	2.8	2.9	2.65	4.27																						
12-Nov	2.3	2.3	2.5	2.4	2.3	2.4	2.3	2.4	2.5	A	2.7	2.3	2.3	2.3	2.2	2.2	2.1	2.2	2.3	2.2	2.5	2.6	2.3	2.5	2.35	2.65																						
13-Nov	2.5	2.4	2.5	2.6	2.5	2.1	2.0	2.1	A	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.3	2.5	4.3	2.4	2.5	2.35	4.34																						
14-Nov	2.6	2.5	2.3	2.1	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.06	2.63																						
15-Nov	2.1	2.1	2.2	2.4	2.5	2.2	A	2.3	2.4	2.4	2.3	2.9	3.1	2.2	2.1	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.34	3.13																						
16-Nov	2.3	2.3	2.3	2.3	2.4	A	2.4	2.5	2.5	2.5	2.3	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.2	2.1	2.2	2.2	2.25	2.51																						
17-Nov	2.1	2.2	2.1	2.3	A	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.3	2.3	2.0	2.0	2.1	2.1	2.1	2.1	2.0	2.2	2.3	2.12	2.30																						
18-Nov	2.2	2.3	2.1	A	2.2	2.2	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.1	2.4	2.1	2.1	2.2	2.1	2.2	2.1	2.1	2.17	2.41																						
19-Nov	2.2	2.1	A	2.1	2.1	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.1	2.1	2.1	2.16	2.26																						
20-Nov	2.1	A	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.3	2.1	2.1	2.1	2.1	2.2	2.3	2.1	2.2	2.2	2.3	2.2	2.2	2.2	2.17	2.28																						
21-Nov	A	2.4	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.4	2.2	2.4	A	2.21	2.41																						
22-Nov	2.3	2.5	2.4	2.3	2.3	2.4	2.4	2.3	2.3	2.3	2.2	2.3	2.2	2.3	2.3	2.9	2.3	2.4	2.4	2.4	2.4	2.4	A	2.4	2.36	2.87																						
23-Nov	2.4	2.4	2.5	2.5	2.5	2.6	2.5	2.5	2.7	2.6	2.6	3.0	2.9	2.5	2.5	2.5	2.5	2.6	2.6	2.6	2.9	A	2.7	2.7	2.59	2.95																						
24-Nov	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.5	2.5	2.3	2.2	2.2	2.3	2.9	3.0	2.4	2.4	10.3	A	2.6	2.6	2.7	2.91	10.27																						
25-Nov	2.7	2.7	2.8	9.0	5.0	3.1	3.9	2.8	2.7	2.7	2.6	2.4	2.4	2.4	2.4	2.3	2.3	2.5	2.3	A	2.6	2.4	2.6	2.5	3.00	8.99																						
26-Nov	2.5	2.5	2.3	2.3	2.4	2.3	2.3	2.4	2.4	2.3	2.4	2.4	2.4	2.4	2.5	2.4	2.4	2.4	A	2.4	2.5	2.4	2.1	2.1	2.38	2.54																						
27-Nov	2.3	2.1	2.2	2.1	2.0	2.1	2.1	2.2	2.5	2.5	2.4	2.2	2.3	2.3	2.2	2.4	2.5	A	2.4	2.4	2.5	2.4	2.4	2.4	2.30	2.51																						
28-Nov	2.4	2.5	2.5	2.5	2.4	2.4	2.5	2.6	2.7	2.6	2.7	2.7	2.5	2.5	2.5	2.5	A	2.4	2.5	2.6	2.7	2.6	2.8	2.9	2.57	2.87																						
29-Nov	2.6	2.7	2.6	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.5	2.5	2.6	2.5	2.6	A	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.4	2.51	2.74																						
30-Nov	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.2	2.2	2.3	2.3	2.2	2.3	2.3	A	2.5	2.6	2.6	2.5	2.5	2.5	2.5	2.6	2.6	2.40	2.62																						
																								2.32	2.35	2.34	2.56	2.38	2.32	2.29	2.30	2.33	2.30	2.27	2.26	2.26	2.21	2.20	2.26	2.24	2.22	2.23	2.62	2.41	2.36	2.33	2.35	Diurnal Average
																								2.73	2.74	2.82	8.99	5.01	3.30	3.85	2.80	2.73	2.91	2.65	2.95	3.13	2.51	2.55	2.91	2.95	2.61	2.58	10.27	4.27	4.34	2.83	2.87	Diurnal Maximum
C - Calibration																								N - Not Valid				A - Automated Daily Zero Span																				

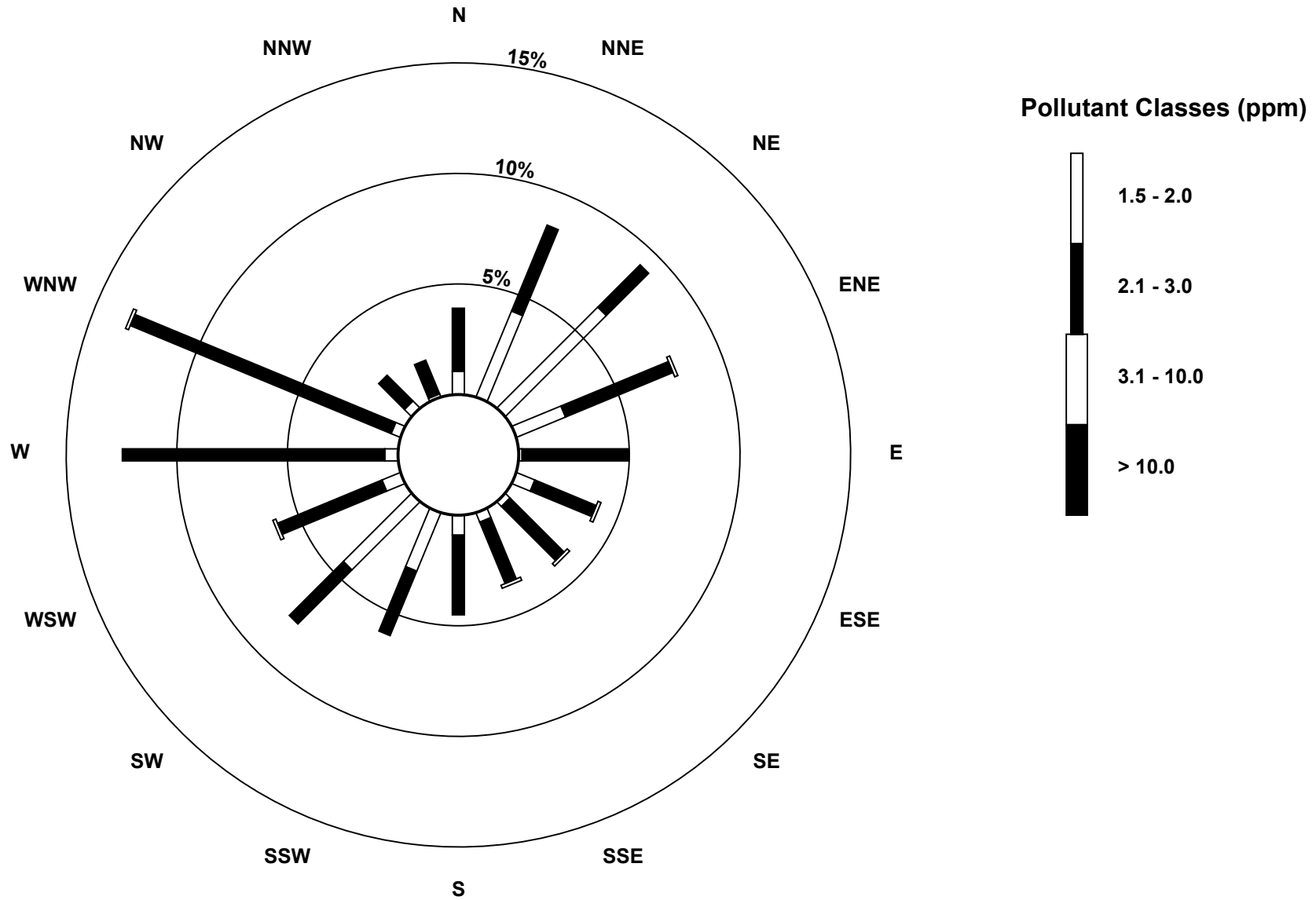
**Hourly Maximums**

**Methane (CH<sub>4</sub>) - ppm**  
**Henry Pirker - November 2016**



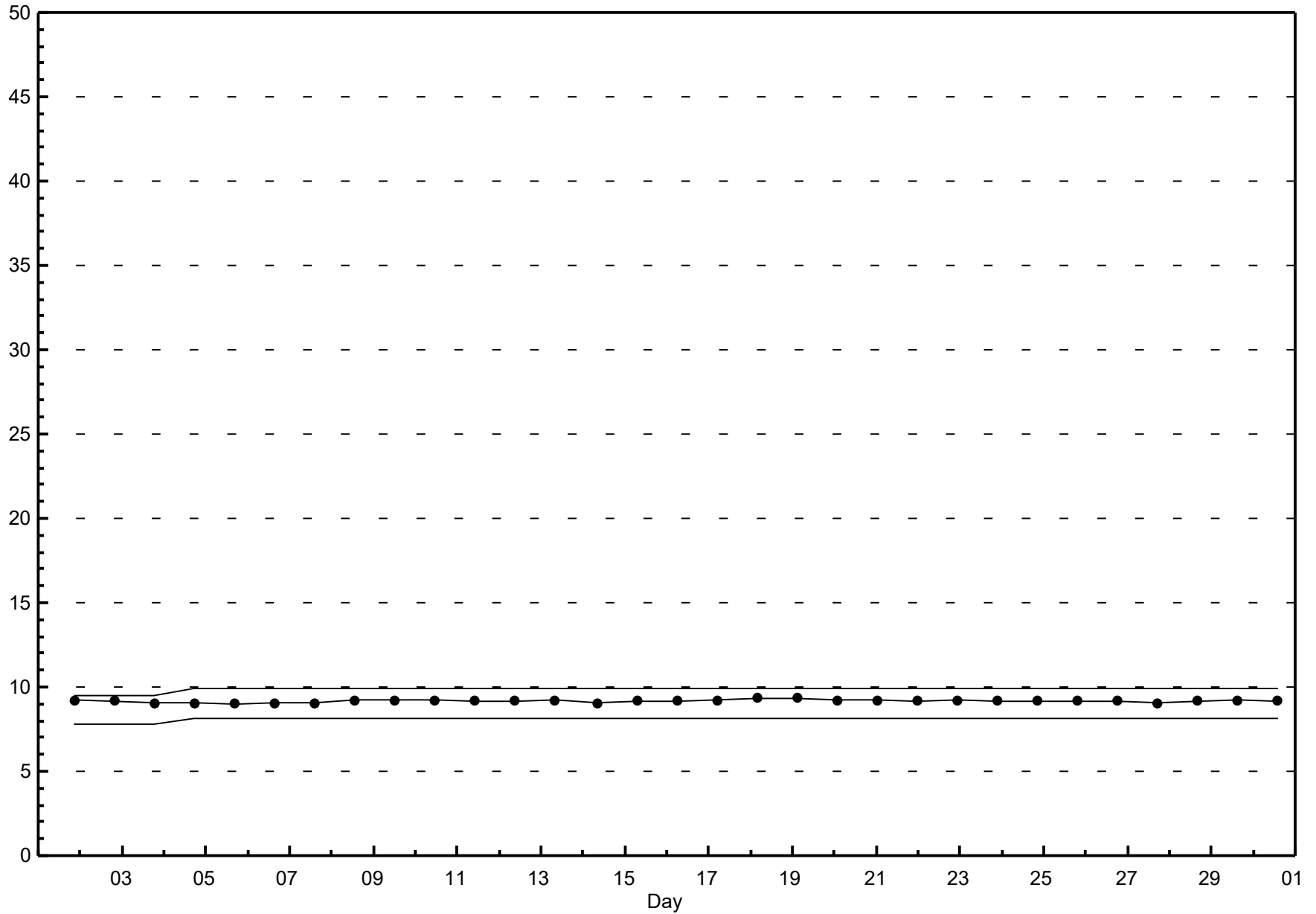
**Pollutant Rose**

**Methane (CH<sub>4</sub>) - ppm**  
**Henry Pirker - November 2016**



**Span Responses**

**Methane (CH<sub>4</sub>)**  
**Henry Pirker - November 2016**



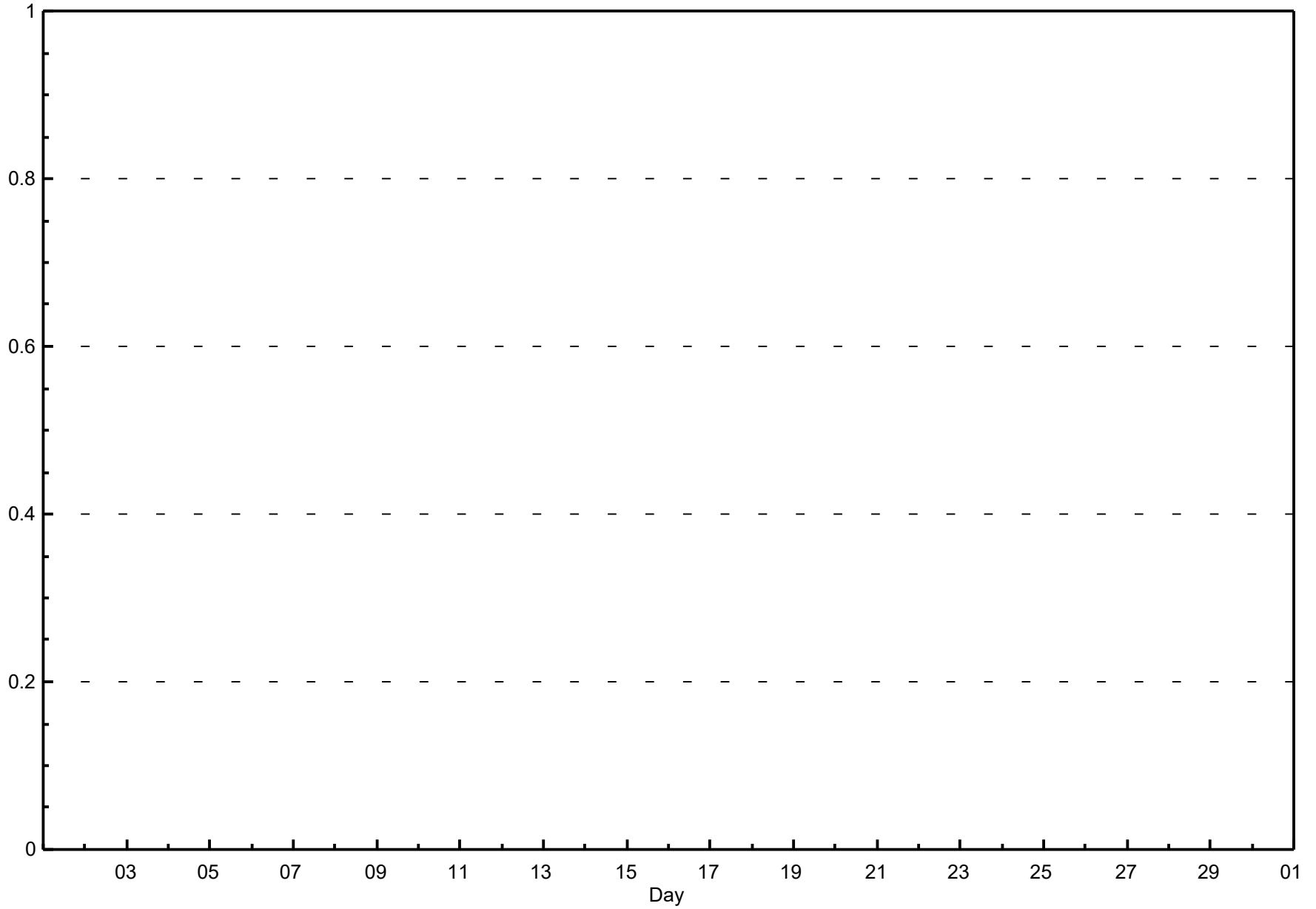
# Hourly Averages

Non Methane Hydrocarbon (NMHC) - ppm

Henry Pirker - November 2016

Maximum Value: 0.00 ppm on Nov 19 09:00      Maximum Daily Average: 0.00 ppm on Nov 6 Minimum Value: 0.0 ppm on Nov 1 01:00      Minimum Daily Average: 0.00 ppm on Nov 9 Maximum Diurnal Average: 0.00 ppm at hour 9      Minimum Diurnal Average: 0.00 ppm at hour 14 Monthly Average: 0.000 ppm      Percentiles: P <sub>1</sub> = 0.00 P <sub>10</sub> = 0.00 Q <sub>1</sub> = 0.00 Median = 0.00 Q <sub>3</sub> = 0.00 P <sub>90</sub> = 0.00 P <sub>99</sub> = 0.00																								Hours in Service:	720						
																								Hours of Data:	666						
																								Hours of Missing Data:	54						
																								Hours of Calibration:	35						
																								Percent Operational Time:	97.4						
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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				
2-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	0.0	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	C	C	C	C	0.0	0.0	0.0	0.0	0.0	A	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	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					
5-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					
6-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					
7-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	N	N	N	N	N	N	N	N	N	N	--	0.00				
8-Nov	N	N	N	N	N	N	N	N	N	N	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				
9-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					
10-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					
11-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					
12-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					
13-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					
14-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					
15-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					
16-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					
17-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					
18-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					
19-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					
20-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					
21-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					
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	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	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					
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	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					
25-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					
26-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					
27-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					
28-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					
29-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					
30-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					
0.00																								Diurnal Average							
0.00																								Diurnal Maximum							
C - Calibration																								N - Not Valid				A - Automated Daily Zero Span			



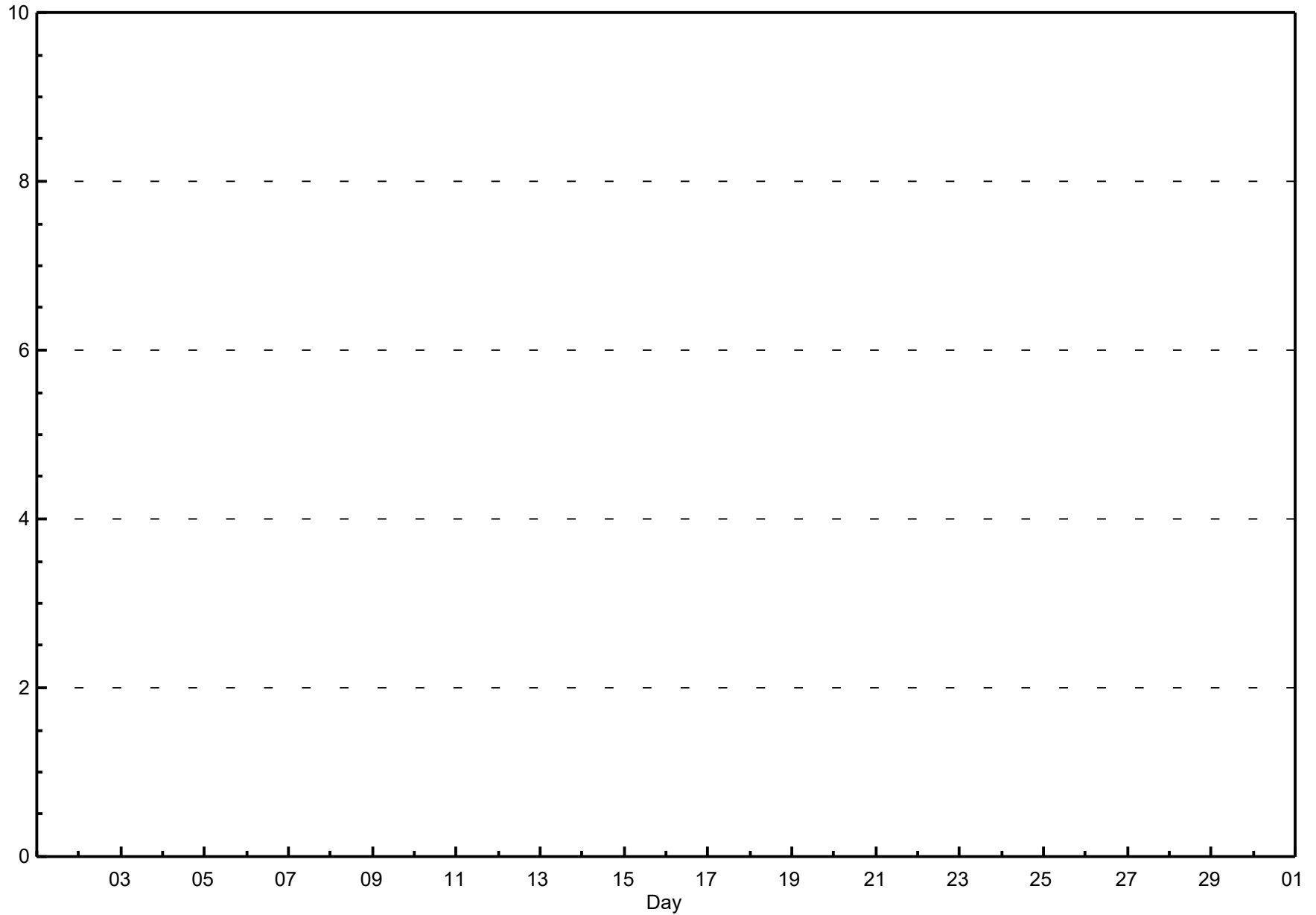


# Hourly Maximums

# Non Methane Hydrocarbon (NMHC) - ppm

## Henry Pirker - November 2016

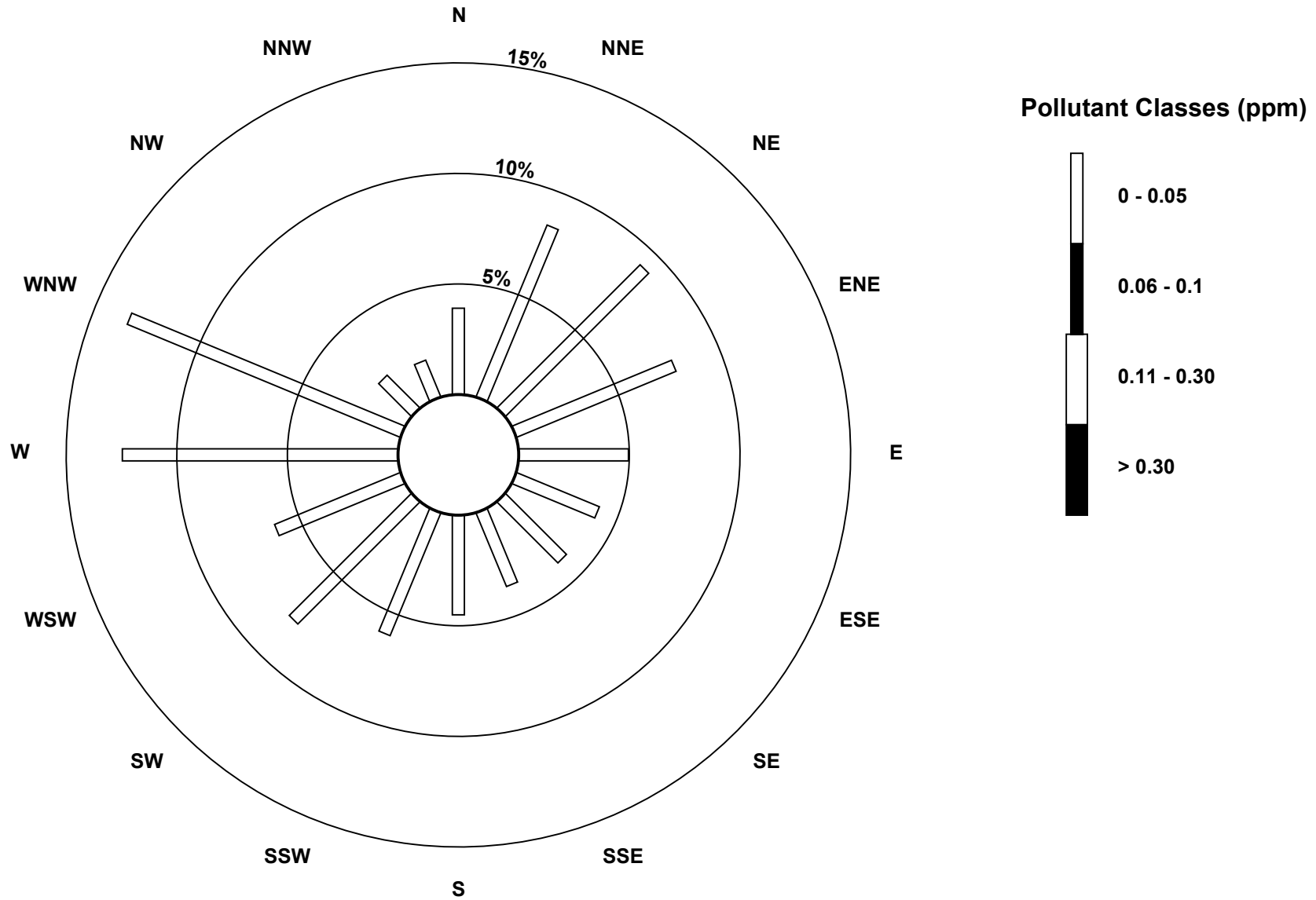
Maximum Value: 0.00 ppm on Nov 6 02:00      Maximum Daily Average: 0.00 ppm on Nov 11 Minimum Value: 0.0 ppm on Nov 22 17:00      Minimum Daily Average: 0.00 ppm on Nov 22 Maximum Diurnal Average: 0.00 ppm at hour 22      Minimum Diurnal Average: 0.00 ppm at hour 10 Monthly Average: 0.001 ppm      Percentiles: P <sub>1</sub> = 0.00 P <sub>10</sub> = 0.00 Q <sub>1</sub> = 0.00 Median = 0.00 Q <sub>3</sub> = 0.00 P <sub>90</sub> = 0.00 P <sub>99</sub> = 0.00																								Hours in Service: 720 Hours of Data: 666 Hours of Missing Data: 54 Hours of Calibration: 35 Percent Operational Time: 97.4			
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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
2-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	0.0	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	C	C	C	C	0.0	0.0	0.0	0.0	A	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	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
5-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	0.0	0.00	0.00
6-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	0.0	0.00	0.00
7-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	N	N	N	N	N	N	N	N	N	--	0.00
8-Nov	N	N	N	N	N	N	N	N	N	N	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
9-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	0.0	0.00	0.00
10-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	0.0	0.00	0.00
11-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	0.0	0.00	0.00
12-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	0.0	0.0	0.0	0.00	0.00
13-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	0.0	0.0	0.0	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	0.0	0.0	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	0.0	0.0	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	0.0	0.0	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	0.0	0.0	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	0.0	0.0	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	0.0	0.0	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	0.0	0.0	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	0.0	0.0	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	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
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	0.0	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
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	0.0	0.0	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
25-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	0.0	0.0	0.0	0.00	0.00
26-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	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	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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																								Diurnal Average			
0.00 0.00																								Diurnal Maximum			
C - Calibration      N - Not Valid      A - Automated Daily Zero Span																											

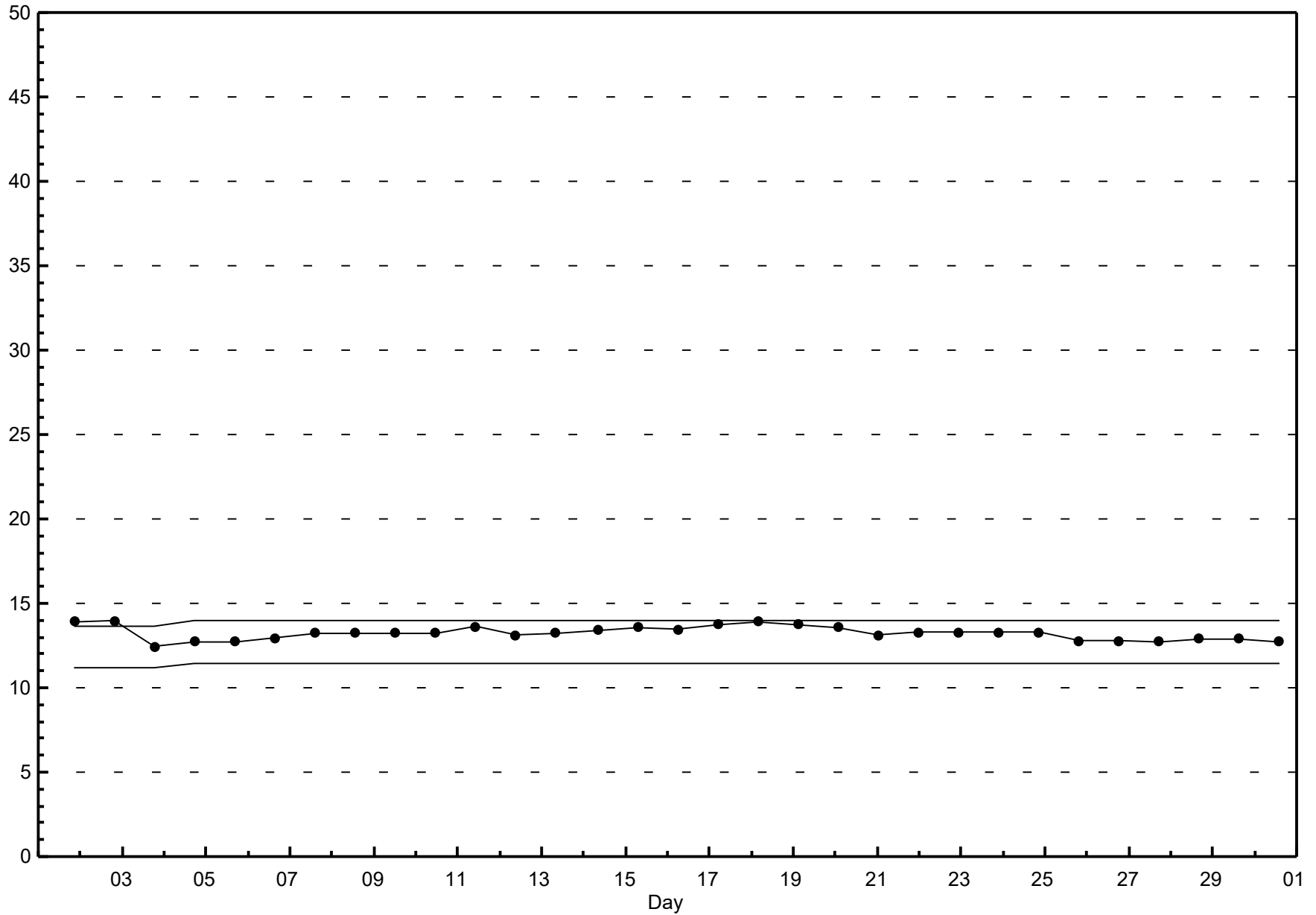


**Pollutant Rose**

**Non Methane Hydrocarbon (NMHC) - ppm**

**Henry Pirker - November 2016**







Peace Airshed Zone Association

# Hourly Averages

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

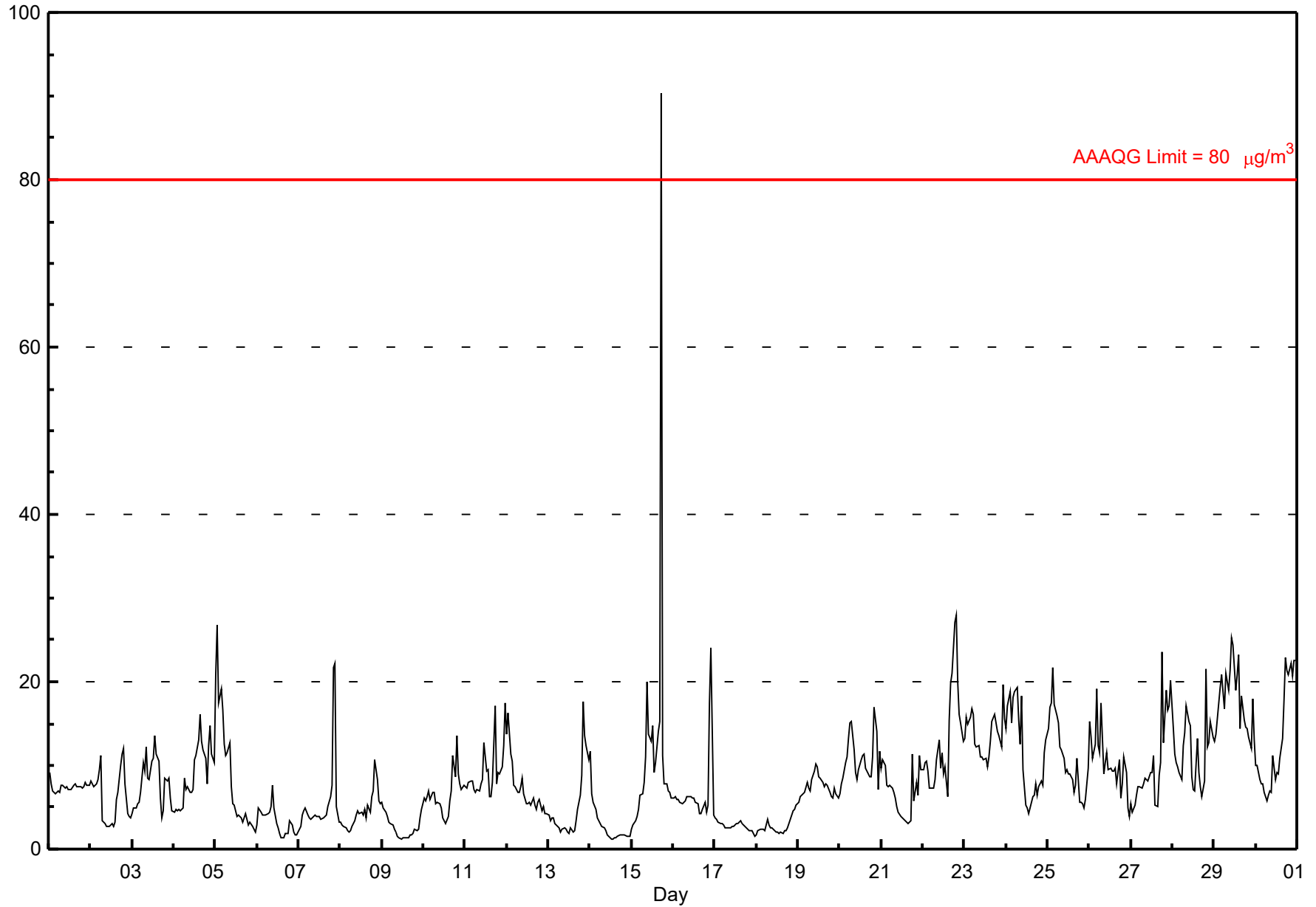
Henry Pirker - November 2016

Number of Exceedences: 1-hr: 1 24-hr: 0	Hours in Service: 720
Maximum Value: 90.4 µg/m <sup>3</sup> on Nov 15 18:00	Maximum Daily Average: 17.7 µg/m <sup>3</sup> on Nov 29
Minimum Value: 1 µg/m <sup>3</sup> on Nov 14 13:00	Hours of Data: 720
Maximum Diurnal Average: 11.0 µg/m <sup>3</sup> at hour 18	Hours of Missing Data: 0
Monthly Average: 8.23 µg/m <sup>3</sup>	Hours of Calibration: 0
Minimum Daily Average: 2.6 µg/m <sup>3</sup> on Nov 9	Percent Operational Time: 100.0
Minimum Diurnal Average: 6.8 µg/m <sup>3</sup> at hour 14	
Percentiles: P <sub>1</sub> = 1.3 P <sub>10</sub> = 2.5 Q <sub>1</sub> = 4.1 Median = 7.1 Q <sub>3</sub> = 10.9 P <sub>90</sub> = 15.6 P <sub>99</sub> = 23.8	

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	9	8	7	7	7	7	7	8	8	7	7	7	7	8	8	8	7	7	7	7	8	8	8	8	7.4	9.2
2-Nov	8	8	8	8	8	10	11	3	3	3	3	3	3	3	3	6	7	10	11	12	8	4	4	4	6.2	12.0
3-Nov	4	5	5	5	6	7	10	9	12	8	8	11	11	14	11	11	6	4	5	9	8	8	6	5	7.8	13.6
4-Nov	4	5	5	5	5	5	8	7	7	7	7	7	11	11	13	16	13	12	11	8	12	15	11	10	9.0	16.1
5-Nov	21	27	17	19	17	13	11	12	13	7	5	5	4	4	4	4	3	4	4	3	3	3	2	2	8.6	26.8
6-Nov	3	5	4	4	4	4	4	4	5	8	5	3	3	2	1	1	2	2	2	3	3	2	2	2	3.3	7.6
7-Nov	2	3	4	5	5	4	4	4	4	4	4	4	4	4	4	4	4	5	6	8	22	22	5	3	5.7	22.3
8-Nov	3	3	3	3	2	2	2	3	3	4	5	4	4	4	5	4	5	4	6	7	11	8	6	5	4.5	10.6
9-Nov	6	5	4	4	3	3	3	2	2	2	1	1	1	1	1	1	2	2	2	2	2	2	4	5	2.6	5.6
10-Nov	6	6	6	7	6	7	7	5	6	5	5	4	3	3	4	6	7	11	9	14	9	8	7	8	6.6	13.6
11-Nov	7	7	8	8	8	7	7	7	7	8	8	13	9	9	6	6	8	17	8	9	9	10	12	17	9.1	17.4
12-Nov	14	16	11	10	8	7	7	7	8	8	7	5	5	6	5	6	5	5	6	6	5	5	4	4	7.1	16.3
13-Nov	4	3	4	4	3	3	2	2	2	2	2	2	2	3	2	2	3	5	7	9	18	14	12	11	5.0	17.7
14-Nov	12	7	6	5	4	3	3	3	2	2	2	1	1	1	1	1	2	2	2	2	2	1	2	2	2.8	11.7
15-Nov	2	3	3	4	5	6	7	8	11	20	14	13	15	9	10	14	15	90	11	8	8	7	7	6	12.4	90.4
16-Nov	6	6	6	6	6	5	6	6	6	6	6	6	6	5	4	4	5	6	4	5	17	24	4	4	6.8	24.0
17-Nov	4	4	3	3	3	3	3	3	2	2	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2.8	3.7
18-Nov	2	2	2	2	2	2	4	3	3	3	2	2	2	2	2	2	2	3	3	4	5	5	5	5	2.7	5.3
19-Nov	6	6	6	7	7	8	7	7	8	9	10	10	9	8	8	7	8	8	7	6	6	7	7	6	7.4	10.1
20-Nov	7	8	8	10	11	13	15	15	12	9	8	9	11	11	11	10	9	9	9	11	17	14	7	12	10.7	17.0
21-Nov	10	11	10	8	8	8	7	7	6	5	4	4	4	3	3	3	3	3	11	6	8	7	11	10	6.6	11.3
22-Nov	9	10	11	9	7	7	7	8	11	13	10	11	9	10	6	15	20	21	27	28	20	16	15	13	13.1	28.0
23-Nov	13	16	15	16	17	16	13	12	12	11	11	11	11	10	11	13	15	16	15	14	13	12	20	16	13.7	19.6
24-Nov	14	17	19	15	18	19	19	15	13	18	10	5	5	4	5	6	6	8	6	7	8	8	12	13	11.3	19.4
25-Nov	14	17	17	22	17	16	15	12	12	11	9	10	9	9	8	7	8	11	6	6	5	5	6	10	10.9	21.6
26-Nov	15	13	11	12	19	12	11	18	9	10	12	10	10	9	9	10	8	11	6	8	11	9	5	4	10.5	19.1
27-Nov	5	4	5	6	7	7	7	8	8	8	8	9	9	11	5	5	9	10	24	13	19	17	17	20	10.2	23.5
28-Nov	14	11	10	10	9	8	12	14	17	15	15	9	7	7	13	9	8	6	8	22	12	13	15	13	11.6	21.5
29-Nov	13	14	16	19	21	19	17	21	19	21	25	24	19	21	23	14	18	15	15	14	13	12	18	13	17.7	25.2
30-Nov	10	10	8	8	8	7	6	6	7	7	11	8	9	9	11	13	18	23	21	21	22	21	23	23	12.9	22.9

8.3	8.6	8.1	8.3	8.3	8.0	8.1	8.0	7.9	8.2	7.6	7.1	6.9	6.8	6.8	7.1	7.6	11.0	8.7	9.0	9.8	9.4	9.2	8.4		Diurnal Average
20.8	26.8	18.8	21.6	20.9	18.8	19.4	21.0	19.0	21.3	25.2	24.3	19.1	20.9	23.2	16.1	19.8	90.4	27.2	28.0	22.2	22.3	24.0	22.6		Diurnal Maximum

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



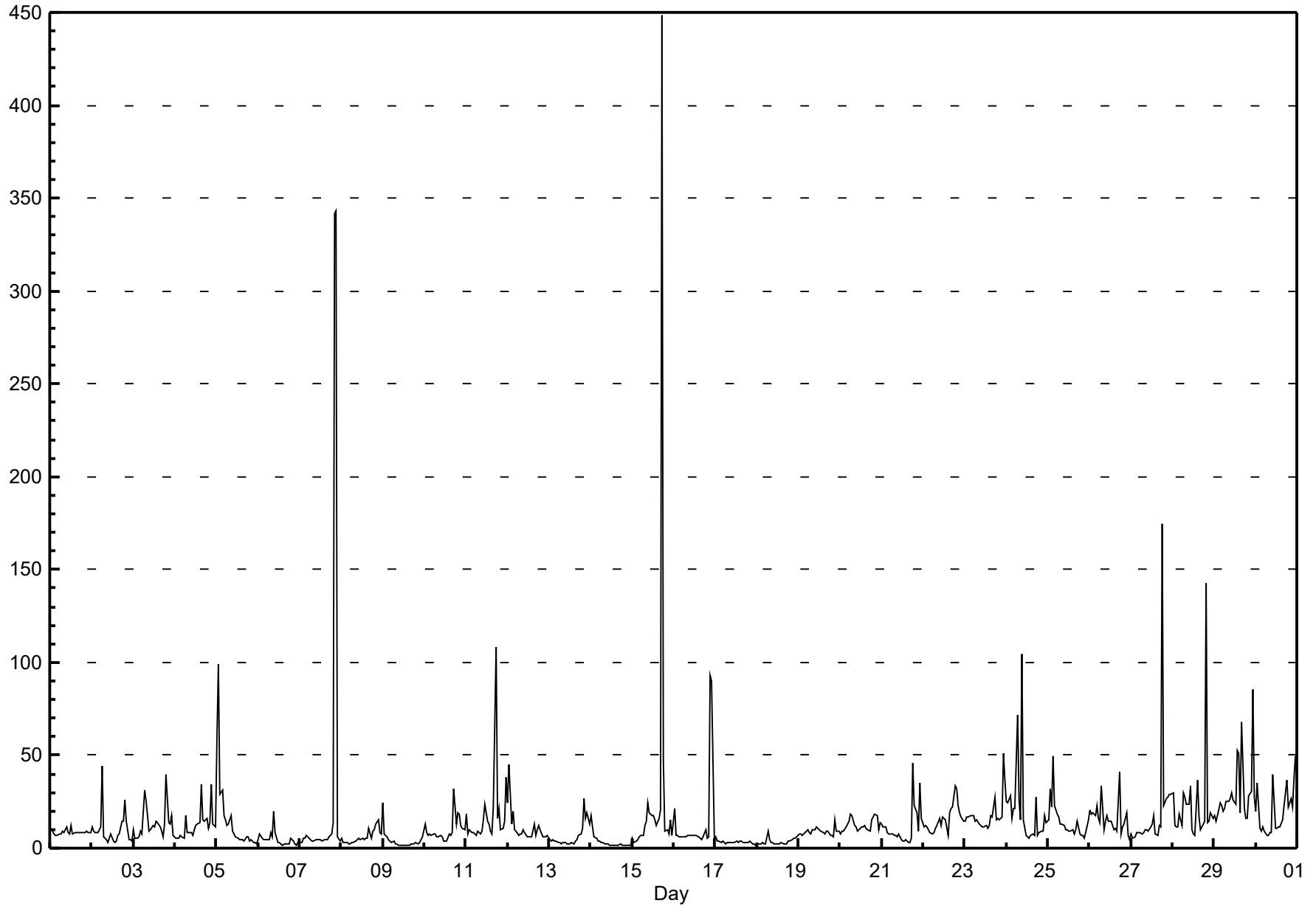
# Hourly Maximums

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

Henry Pirker - November 2016

Maximum Value: 448.4 µg/m <sup>3</sup> on Nov 15 18:00		Maximum Daily Average: 33.3 µg/m <sup>3</sup> on Nov 7		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 <sup>3</sup> on Nov 9 12:00 Maximum Diurnal Average: 30.4 µg/m <sup>3</sup> at hour 18 Monthly Average: 13.88 µg/m <sup>3</sup>		Minimum Daily Average: 3.2 µg/m <sup>3</sup> on Nov 17 Minimum Diurnal Average: 8.5 µg/m <sup>3</sup> at hour 13 Percentiles: P <sub>1</sub> = 1.5 P <sub>10</sub> = 2.9 Q <sub>1</sub> = 5.2 Median = 8.6 Q <sub>3</sub> = 14.8 P <sub>90</sub> = 24.0 P <sub>99</sub> = 101.6																								
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	11	9	7	7	7	7	7	9	8	11	8	8	12	8	9	8	8	8	8	8	8	9	8	8	8.5	11.9
2-Nov	12	9	8	8	10	12	44	6	5	3	5	7	4	3	4	7	8	14	14	26	15	5	5	4	9.9	44.4
3-Nov	10	6	5	6	9	8	31	25	18	9	10	12	12	15	14	11	9	6	13	39	14	13	17	7	13.3	39.5
4-Nov	5	5	6	6	6	5	18	8	8	8	7	10	12	13	14	34	15	15	16	11	13	35	13	12	12.3	34.6
5-Nov	59	99	29	31	17	15	12	13	18	9	7	6	5	5	4	4	3	6	6	4	4	3	3	2	15.3	98.9
6-Nov	4	7	6	4	4	4	4	9	6	20	8	3	3	2	2	2	2	2	2	6	4	3	2	3	4.8	20.1
7-Nov	3	3	5	6	6	5	4	4	4	5	4	5	4	4	4	5	4	6	7	14	342	344	6	3	33.3	343.5
8-Nov	5	3	3	3	2	2	3	3	4	5	5	5	5	5	5	11	5	9	10	13	15	8	7	5.9	15.4	
9-Nov	24	7	6	4	4	3	4	3	2	2	2	1	2	1	2	2	2	2	3	3	3	4	6	3.9	24.0	
10-Nov	13	8	7	7	7	7	7	6	6	7	6	4	4	3	8	7	9	32	13	19	18	12	11	10	9.7	31.7
11-Nov	18	8	10	8	9	8	7	9	7	9	15	24	15	13	9	8	22	108	16	21	10	11	14	38	17.4	108.2
12-Nov	24	45	13	20	10	9	7	7	8	10	9	6	6	6	6	13	7	10	12	10	6	6	6	7	10.9	45.0
13-Nov	5	4	5	4	4	3	3	2	3	3	2	2	2	3	2	4	4	7	7	11	27	16	19	13	6.5	26.7
14-Nov	17	12	6	6	4	4	3	3	3	2	2	2	1	1	1	1	2	2	2	2	2	2	2	2	3.5	17.3
15-Nov	6	3	4	4	6	7	7	12	14	24	19	17	18	15	12	16	21	448	47	9	10	8	15	7	31.3	448.4
16-Nov	21	7	7	6	6	6	6	6	7	7	7	7	7	7	6	6	5	6	10	6	6	93	90	4	14.0	92.8
17-Nov	6	4	3	3	3	3	3	3	3	3	3	3	3	3	4	4	3	3	3	3	4	2	2	2	3.2	5.8
18-Nov	2	2	3	3	3	2	9	5	3	3	2	2	2	2	3	2	2	3	4	4	5	5	5	6	3.4	8.8
19-Nov	8	8	7	7	8	10	9	8	10	10	11	11	10	9	8	8	9	9	7	7	6	15	9	9	8.9	14.9
20-Nov	7	9	9	12	13	14	18	18	12	11	9	10	11	12	12	11	10	9	15	17	18	18	10	14	12.5	18.0
21-Nov	13	12	12	8	8	8	8	7	6	6	8	4	4	4	4	3	3	5	45	23	19	10	35	16	11.3	45.5
22-Nov	11	12	11	10	8	8	8	11	12	16	12	17	16	15	7	19	22	22	33	32	23	19	17	15	15.7	33.3
23-Nov	14	17	17	17	18	17	15	15	13	12	12	12	12	11	12	17	17	27	15	16	16	17	51	36	17.7	51.3
24-Nov	25	25	28	16	21	21	72	26	15	104	15	7	6	5	7	8	7	28	7	8	9	9	18	14	20.9	104.3
25-Nov	15	32	22	50	23	18	17	13	13	12	10	10	10	9	10	7	10	14	8	7	7	6	8	15	14.4	49.9
26-Nov	20	18	19	17	23	16	14	33	10	15	18	14	15	12	10	11	9	41	7	12	13	19	7	5	15.8	41.1
27-Nov	8	5	6	8	9	8	8	8	10	10	9	11	13	18	8	7	12	11	175	23	27	28	29	29	20.0	174.9
28-Nov	30	13	12	11	18	12	30	27	24	24	34	10	8	7	37	17	10	12	15	143	13	15	19	16	23.1	143.0
29-Nov	18	15	17	24	23	20	21	25	25	27	30	26	24	53	51	19	68	21	16	16	28	30	86	27	29.5	85.8
30-Nov	20	35	11	9	11	9	7	7	9	8	39	10	11	11	11	16	23	30	36	22	27	22	37	49	19.6	49.2
14.5		14.7	10.1	11.0	10.0	9.1	13.5	11.1	9.5	13.2	11.0	8.9	8.5	9.2	9.6	9.4	11.2	30.4	19.1	17.6	23.6	26.4	18.6	12.9	Diurnal Average	
59.2		98.9	29.2	49.9	23.0	21.2	71.8	33.3	24.9	104.3	39.5	25.9	23.8	52.6	50.8	34.4	67.5	448.4	174.9	143.0	341.9	343.5	90.3	49.2	Diurnal Maximum	

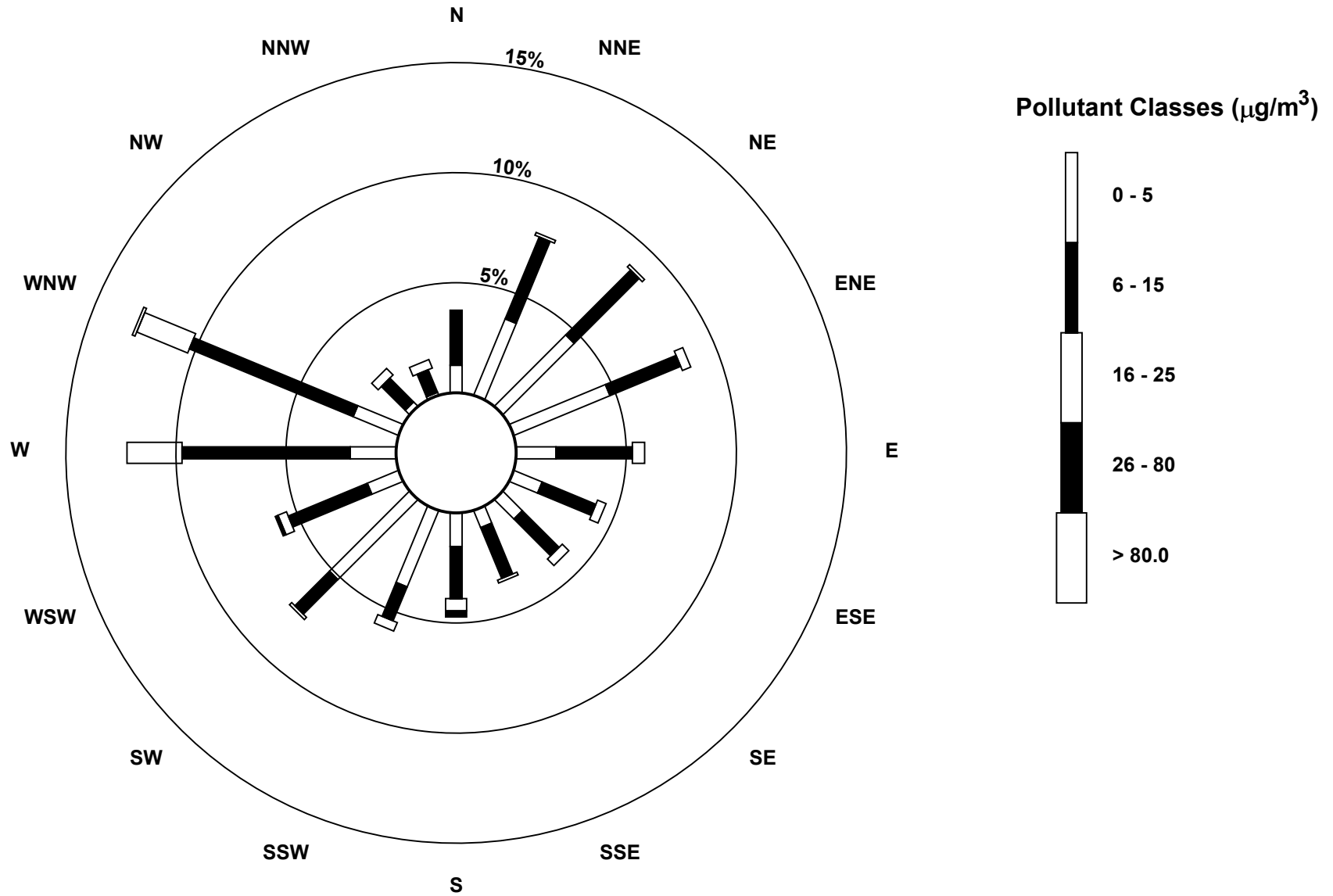




**Pollutant Rose**

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

**Henry Pirker - November 2016**

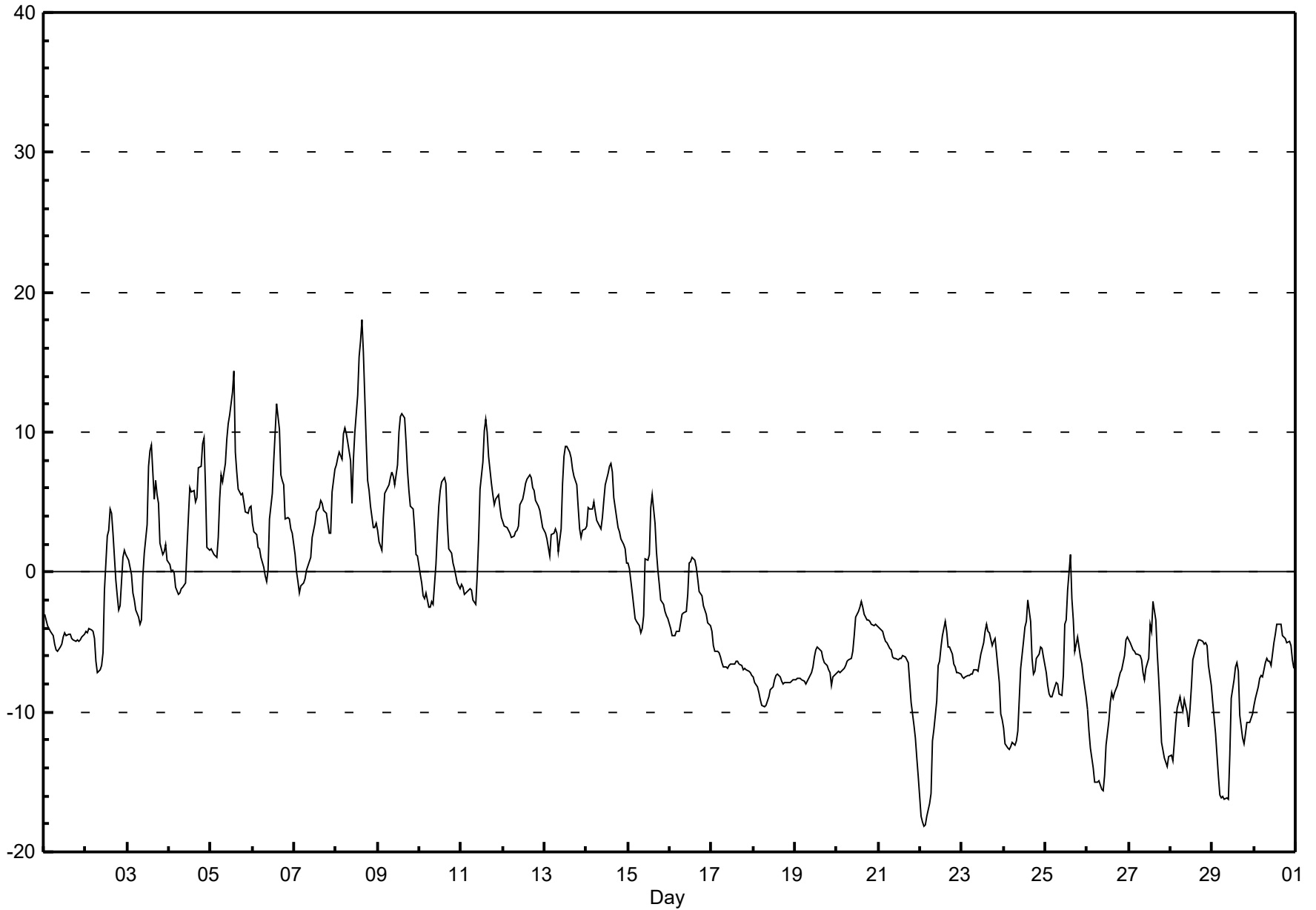


# Hourly Averages

External Temperature (ET) - °C

Henry Pirker - November 2016

<b>Maximum Value: 18.0 °C on Nov 8 16:00</b>		<b>Maximum Daily Average: 9.1 °C on Nov 8</b>		Hours in Service: 720 Hours of Data: 720 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																						
<b>Minimum Value: -18 °C on Nov 22 03:00</b> <b>Maximum Diurnal Average: 1.8 °C at hour 15</b> <b>Monthly Average: -2.25 °C</b>		<b>Minimum Daily Average: -11.7 °C on Nov 29</b> <b>Minimum Diurnal Average: -4.4 °C at hour 4</b> Percentiles: P <sub>1</sub> = -16.2 P <sub>10</sub> = -9.5 Q <sub>1</sub> = -6.9 Median = -3.7 Q <sub>3</sub> = 3.1 P <sub>90</sub> = 6.5 P <sub>99</sub> = 12.4																								
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	-4	-4	-4	-5	-5	-6	-6	-5	-5	-5	-4	-4	-4	-4	-5	-5	-5	-5	-5	-5	-5	-4	-4.6	-3.0
2-Nov	-4	-4	-4	-4	-4	-5	-6	-7	-7	-7	-6	-1	3	3	5	4	3	-1	-2	-3	-2	1	2	1	-1.9	4.6
3-Nov	1	1	0	-1	-2	-3	-3	-4	-3	0	1	3	8	9	9	5	6	6	5	2	1	1	2	1	1.9	9.1
4-Nov	1	0	0	0	-1	-2	-1	-1	-1	-1	2	4	6	6	6	5	5	7	8	9	10	6	2	2	2.9	9.6
5-Nov	2	1	1	1	2	5	7	6	8	9	11	11	13	14	9	7	6	5	6	5	4	4	5	5	6.2	14.4
6-Nov	4	3	3	2	2	1	0	0	-1	0	4	6	8	10	12	10	7	7	6	4	4	4	3	3	4.2	12.0
7-Nov	1	0	-1	-1	-1	-1	-1	0	0	1	2	3	4	4	5	5	5	4	4	3	3	3	6	7	2.4	7.3
8-Nov	8	8	9	8	10	10	10	9	8	5	8	10	13	15	17	18	16	9	7	6	5	3	3	4	9.1	18.0
9-Nov	3	2	2	4	6	6	6	7	7	7	6	8	10	11	11	11	9	7	6	5	3	1	1	1	6.0	11.4
10-Nov	0	-1	-2	-2	-2	-2	-3	-2	-2	1	3	5	6	6	7	6	4	2	1	1	0	0	-1	-1	1.0	6.7
11-Nov	-1	-1	-2	-1	-1	-1	-1	-2	-2	0	2	6	8	10	11	10	8	6	5	5	5	6	5	4	3.3	10.9
12-Nov	4	3	3	3	3	3	3	3	3	3	3	5	5	6	6	7	7	7	6	6	5	5	4	4	4.4	6.9
13-Nov	3	2	2	1	3	3	3	3	1	3	6	8	9	9	9	8	7	7	6	5	3	3	3	3	4.6	9.0
14-Nov	3	5	4	4	5	4	4	4	3	4	5	6	7	8	8	7	5	4	3	3	2	2	2	1	4.3	7.8
15-Nov	1	0	-2	-2	-3	-4	-4	-4	-4	-3	1	1	1	5	5	4	1	0	-1	-2	-2	-3	-3	-3	-0.9	5.5
16-Nov	-4	-5	-5	-5	-4	-4	-4	-3	-3	-3	-2	1	1	1	1	0	0	-1	-2	-2	-3	-3	-4	-4	-2.3	1.0
17-Nov	-4	-5	-6	-6	-6	-6	-7	-7	-7	-7	-7	-7	-7	-7	-6	-6	-7	-7	-7	-7	-7	-7	-7	-7	-6.4	-4.2
18-Nov	-8	-8	-8	-9	-9	-9	-10	-9	-9	-9	-8	-8	-8	-7	-7	-7	-8	-8	-8	-8	-8	-8	-8	-8	-8.2	-7.3
19-Nov	-8	-8	-8	-8	-8	-8	-8	-8	-8	-7	-7	-6	-6	-5	-6	-6	-6	-7	-7	-7	-7	-8	-7	-7	-7.0	-5.4
20-Nov	-7	-7	-7	-7	-7	-7	-6	-6	-6	-6	-5	-3	-3	-3	-2	-2	-3	-3	-3	-4	-4	-4	-4	-4	-4.7	-2.1
21-Nov	-4	-4	-4	-5	-5	-5	-5	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-8	-9	-11	-12	-13	-15	-7.0	-3.9
22-Nov	-17	-18	-18	-18	-17	-17	-16	-12	-11	-9	-7	-6	-5	-5	-4	-4	-5	-5	-6	-7	-7	-7	-7	-7	-9.8	-3.6
23-Nov	-8	-8	-8	-7	-7	-7	-7	-7	-7	-7	-6	-6	-5	-4	-4	-4	-4	-5	-5	-5	-6	-8	-10	-11	-6.5	-3.7
24-Nov	-11	-12	-13	-13	-13	-12	-12	-12	-11	-9	-7	-5	-4	-4	-2	-4	-6	-7	-7	-6	-6	-5	-5	-6	-8.0	-2.0
25-Nov	-7	-8	-9	-9	-9	-8	-8	-8	-9	-9	-7	-4	-3	-1	1	-2	-3	-6	-5	-5	-6	-7	-7	-9	-6.2	1.3
26-Nov	-10	-11	-13	-14	-15	-15	-15	-15	-16	-16	-14	-12	-11	-9	-9	-9	-9	-8	-8	-7	-7	-6	-5	-5	-10.7	-4.6
27-Nov	-5	-5	-6	-6	-6	-6	-6	-6	-7	-8	-7	-6	-4	-4	-2	-3	-6	-8	-10	-12	-13	-14	-14	-13	-7.3	-2.1
28-Nov	-13	-13	-12	-11	-10	-9	-9	-10	-9	-10	-11	-10	-8	-6	-5	-5	-5	-5	-5	-5	-5	-5	-7	-8	-8.2	-4.8
29-Nov	-9	-10	-12	-15	-16	-16	-16	-16	-16	-16	-13	-9	-8	-7	-6	-7	-10	-12	-12	-12	-11	-11	-10	-10	-11.7	-6.4
30-Nov	-10	-9	-8	-8	-7	-8	-6	-6	-6	-6	-7	-5	-4	-4	-4	-4	-5	-5	-5	-5	-5	-5	-6	-7	-6.0	-3.7
		-3.5	-3.8	-4.1	-4.4	-4.2	-4.2	-4.2	-4.2	-4.2	-3.7	-2.3	-0.8	0.5	1.4	1.8	1.1	0.1	-0.9	-1.4	-1.9	-2.3	-2.6	-2.9	-3.2	Diurnal Average
		7.6	8.2	8.5	8.0	9.9	10.3	9.9	9.2	8.0	9.5	10.6	11.2	12.9	15.4	16.5	18.0	15.7	9.3	7.5	9.1	9.6	6.2	5.7	7.3	Diurnal Maximum



# Hourly Averages

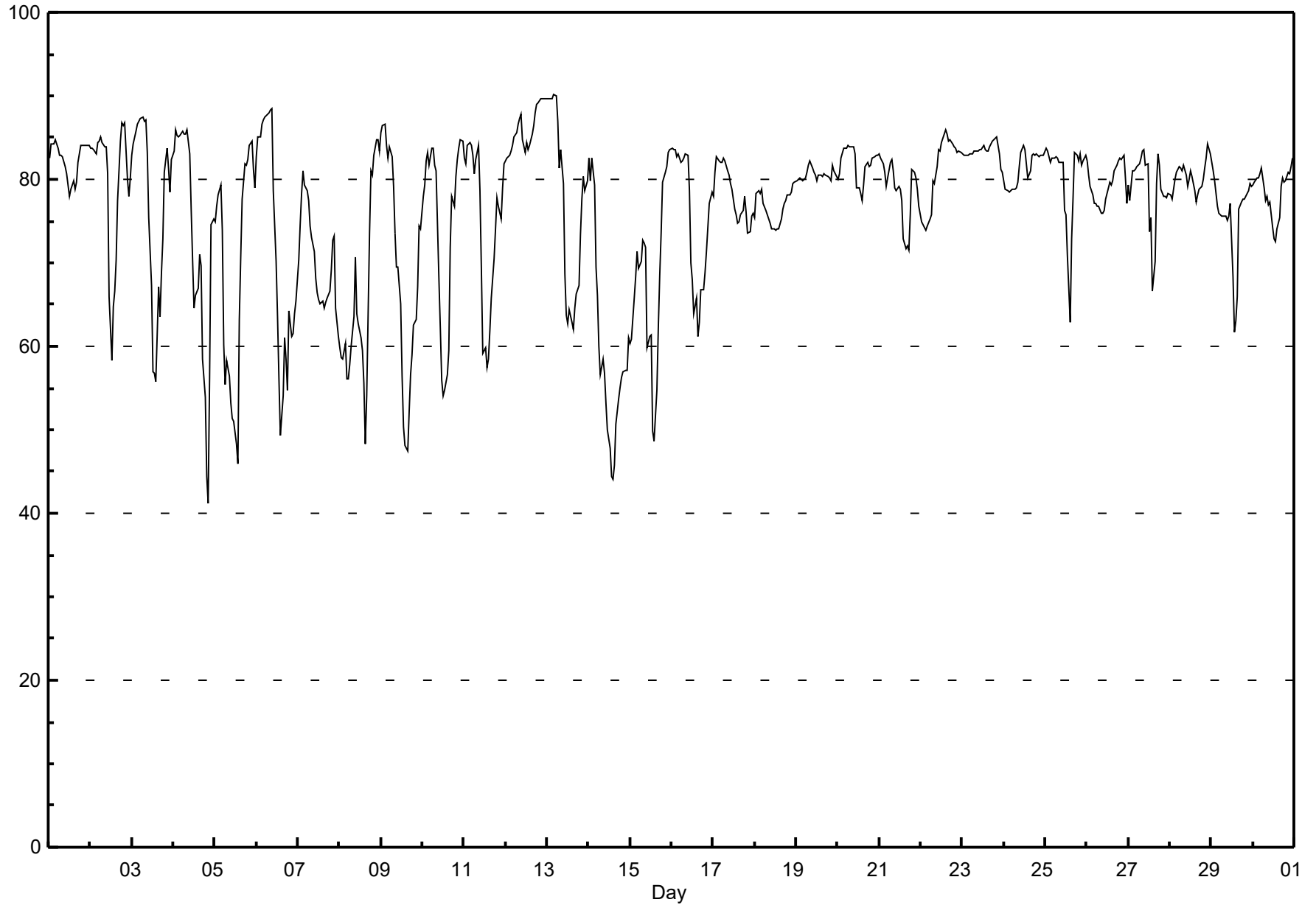
Relative Humidity (RH) - %

Henry Pirker - November 2016

Maximum Value: 90.2 % on Nov 13 05:00		Maximum Daily Average: 86.0 % on Nov 12		Hours in Service: 720																							
Minimum Value: 41 % on Nov 4 21:00		Minimum Daily Average: 59.4 % on Nov 14		Hours of Data: 720																							
Maximum Diurnal Average: 80.7 % at hour 4		Minimum Diurnal Average: 67.5 % at hour 15		Hours of Missing Data: 0																							
Monthly Average: 76.20 %		Percentiles: P <sub>1</sub> = 47.7 P <sub>10</sub> = 60.2 Q <sub>1</sub> = 72.9 Median = 79.4 Q <sub>3</sub> = 82.9 P <sub>90</sub> = 84.4 P <sub>99</sub> = 89.7		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	83	84	84	84	85	84	83	83	83	82	81	79	78	79	80	79	80	82	84	84	84	84	84	84	82.3	84.8	
2-Nov	84	84	84	83	84	85	85	84	84	84	81	66	58	65	67	70	77	85	87	86	87	80	78	80	79.5	86.9	
3-Nov	83	84	86	87	87	87	87	87	87	83	75	67	57	57	56	67	64	69	73	81	84	81	78	82	77.1	87.4	
4-Nov	83	86	85	85	85	86	85	85	86	83	76	70	65	66	67	71	70	59	54	44	41	56	75	75	72.5	86.0	
5-Nov	75	77	78	79	74	60	55	58	56	53	51	51	48	46	63	71	78	82	82	82	84	85	81	79	68.7	84.6	
6-Nov	83	85	85	87	87	87	88	88	88	89	79	70	64	56	49	54	61	59	55	64	61	61	64	65	72.0	88.5	
7-Nov	70	75	78	81	79	79	77	74	73	71	68	66	66	65	65	65	66	67	69	73	73	65	61	70.5	81.0		
8-Nov	60	59	59	60	56	56	58	60	64	71	64	63	61	60	56	48	54	74	81	81	83	85	85	83	65.7	84.8	
9-Nov	86	86	87	84	83	84	83	79	74	69	70	65	56	50	48	48	52	57	59	63	63	67	74	74	69.2	86.6	
10-Nov	78	79	82	83	82	84	84	82	81	68	62	56	54	55	57	60	72	78	77	80	82	84	85	85	74.5	84.8	
11-Nov	83	82	84	84	84	83	81	82	84	79	69	59	60	58	58	62	66	70	74	78	77	75	79	82	74.7	84.4	
12-Nov	82	82	83	83	84	85	86	87	87	88	85	83	84	84	84	85	86	88	89	89	90	90	90	90	86.0	89.7	
13-Nov	90	90	90	90	90	90	87	81	84	80	69	64	63	64	63	62	65	66	67	73	78	80	79	80	76.8	90.2	
14-Nov	83	80	83	79	70	66	60	57	58	57	53	50	48	44	44	46	51	54	55	56	57	57	57	61	59.4	82.6	
15-Nov	60	61	66	68	71	69	70	73	72	72	60	61	61	50	49	55	62	68	74	80	81	82	83	84	68.0	83.6	
16-Nov	84	84	84	83	83	82	82	83	83	83	79	70	68	64	66	61	63	67	67	69	71	74	77	79	75.1	83.7	
17-Nov	78	81	83	82	82	82	83	82	81	81	79	79	76	76	75	75	76	76	78	76	74	74	76	76	78.3	82.7	
18-Nov	75	78	79	78	79	77	76	76	75	75	74	74	74	74	75	77	77	77	78	78	79	79	80	80	76.6	79.7	
19-Nov	80	80	80	80	80	80	81	82	82	81	81	81	80	80	81	80	81	81	80	80	80	82	81	80	80.5	82.3	
20-Nov	80	81	83	84	84	84	84	84	84	84	83	79	79	78	77	79	82	82	81	82	83	83	83	83	81.8	84.0	
21-Nov	83	83	82	81	79	80	82	82	81	79	79	79	79	78	73	72	72	72	76	81	81	80	79	77	78.7	83.1	
22-Nov	75	75	74	74	74	75	76	80	79	82	84	83	84	85	86	85	85	85	84	84	84	83	83	83	80.9	85.9	
23-Nov	83	83	83	83	83	83	83	83	83	83	83	84	84	84	83	83	84	85	85	85	85	83	81	81	83.4	85.1	
24-Nov	80	79	79	79	79	79	79	79	80	82	83	84	84	82	80	81	83	83	83	83	83	83	83	83	81.2	84.1	
25-Nov	84	83	83	82	82	83	83	82	82	82	82	76	76	71	63	73	78	83	83	82	83	82	82	83	80.1	83.7	
26-Nov	82	81	79	78	77	77	77	77	76	76	76	78	79	80	79	80	81	82	82	83	82	83	80	77	79.2	82.9	
27-Nov	79	77	81	81	81	81	82	83	83	84	82	82	74	75	67	70	79	83	82	79	78	78	78	78	79.0	83.6	
28-Nov	78	78	79	80	81	81	81	81	82	81	79	80	81	80	79	77	78	79	79	80	81	83	84	83	80.2	84.2	
29-Nov	82	81	80	77	76	76	76	76	76	75	76	77	68	62	63	66	77	77	78	78	78	79	79	79	75.4	82.1	
30-Nov	79	80	80	80	81	81	79	77	78	77	77	74	73	73	74	75	79	80	80	80	81	81	81	83	78.5	82.5	
		79.5	79.9	80.7	80.7	80.1	79.6	79.1	78.9	78.9	77.7	74.7	71.7	69.4	68.0	67.5	69.2	72.5	74.9	75.7	77.0	77.5	78.2	78.8	79.0	Diurnal Average	
		89.7	89.7	89.7	89.7	90.2	90.1	87.7	88.0	88.3	88.5	84.7	84.1	84.4	85.0	85.9	85.4	86.4	88.0	89.0	89.2	89.6	89.7	89.6	89.6	Diurnal Maximum	

**Hourly Averages**

**Relative Humidity (RH) - %**  
**Henry Pirker - November 2016**

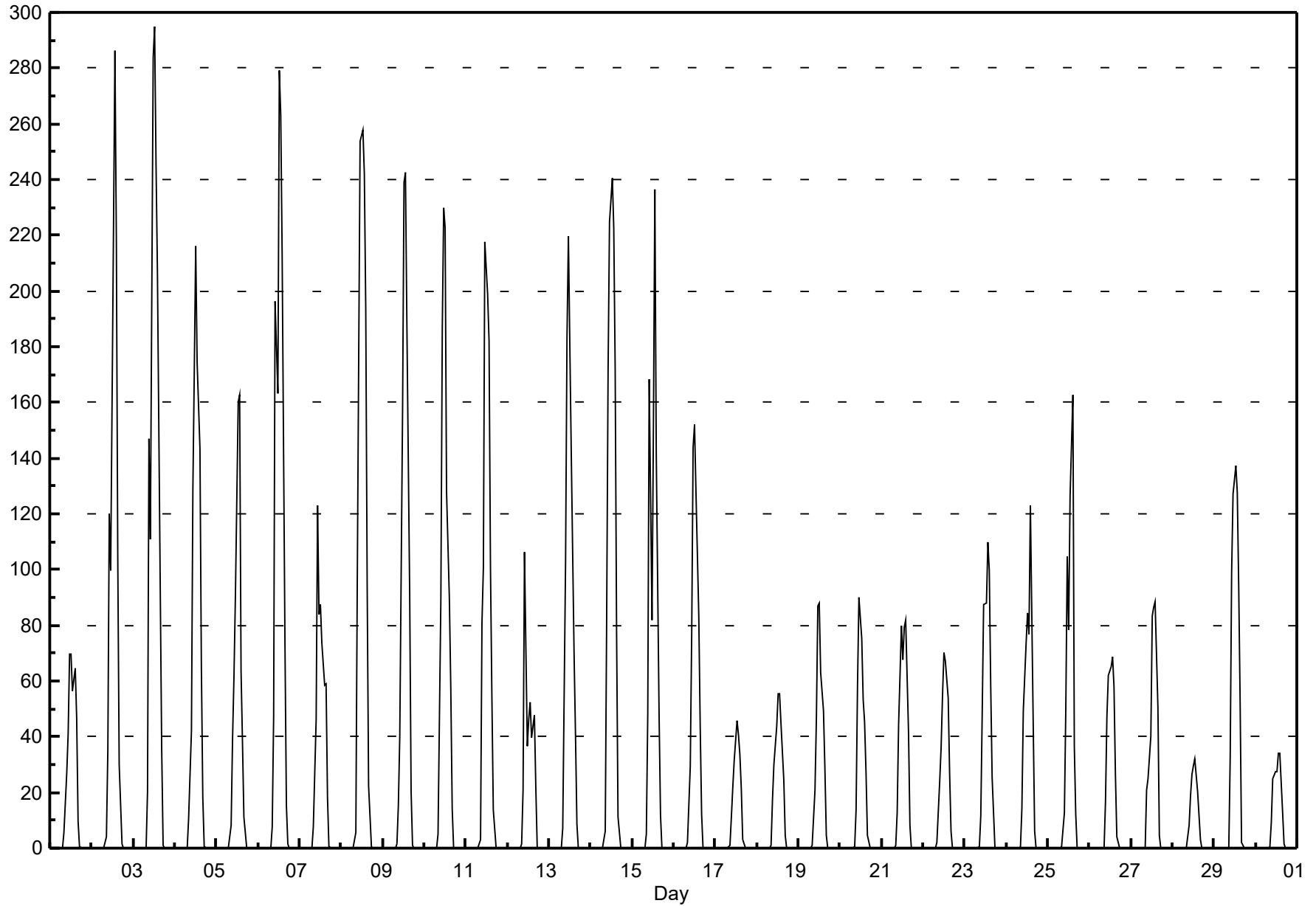


# Hourly Averages

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

Henry Pirker - November 2016

<b>Maximum Value: 295.1 W/m<sup>2</sup> on Nov 3 13:00</b>		<b>Maximum Daily Average: 59.9 W/m<sup>2</sup> on Nov 3</b>		Hours in Service: 720 Hours of Data: 720 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																						
<b>Minimum Value: 0 W/m<sup>2</sup> on Nov 1 01:00</b> <b>Maximum Diurnal Average: 133.9 W/m<sup>2</sup> at hour 13</b> <b>Monthly Average: 27.94 W/m<sup>2</sup></b>		<b>Minimum Daily Average: 6.3 W/m<sup>2</sup> on Nov 28</b> <b>Minimum Diurnal Average: 0.0 W/m<sup>2</sup> at hour 1</b> Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.0 Q <sub>3</sub> = 29.3 P <sub>90</sub> = 92.2 P <sub>99</sub> = 250.5																								
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	0	0	0	0	0	0	0	6	27	41	70	56	65	47	10	1	0	0	0	0	0	0	0	16.3	69.6
2-Nov	0	0	0	0	0	0	0	0	4	35	120	99	223	286	219	104	30	1	0	0	0	0	0	0	46.7	286.3
3-Nov	0	0	0	0	0	0	0	0	21	147	111	284	295	246	206	92	35	1	0	0	0	0	0	0	59.9	295.1
4-Nov	0	0	0	0	0	0	0	0	11	42	128	171	216	174	143	65	18	1	0	0	0	0	0	0	40.4	216.3
5-Nov	0	0	0	0	0	0	0	0	8	39	62	90	160	163	64	38	11	0	0	0	0	0	0	0	26.4	162.6
6-Nov	0	0	0	0	0	0	0	0	8	47	196	163	279	264	213	72	15	2	0	0	0	0	0	0	52.5	279.2
7-Nov	0	0	0	0	0	0	0	0	8	46	123	84	88	74	58	59	18	0	0	0	0	0	0	0	23.3	123.2
8-Nov	0	0	0	0	0	0	0	0	6	94	174	254	258	242	193	94	23	1	0	0	0	0	0	0	55.8	257.9
9-Nov	0	0	0	0	0	0	0	0	2	15	40	158	239	242	189	91	20	1	0	0	0	0	0	0	41.6	242.4
10-Nov	0	0	0	0	0	0	0	0	5	90	186	230	223	128	89	57	14	0	0	0	0	0	0	0	42.6	230.1
11-Nov	0	0	0	0	0	0	0	0	3	81	101	217	199	182	101	54	14	0	0	0	0	0	0	0	39.7	217.5
12-Nov	0	0	0	0	0	0	0	0	1	21	106	36	46	52	40	48	22	0	0	0	0	0	0	0	15.5	106.5
13-Nov	0	0	0	0	0	0	0	0	7	103	183	220	180	143	70	41	8	0	0	0	0	0	0	0	39.8	219.8
14-Nov	0	0	0	0	0	0	0	0	6	83	172	225	240	223	172	77	11	0	0	0	0	0	0	0	50.4	240.5
15-Nov	0	0	0	0	0	0	0	0	5	48	168	82	152	236	142	47	12	0	0	0	0	0	0	0	37.2	236.3
16-Nov	0	0	0	0	0	0	0	0	2	29	77	144	152	128	84	44	12	0	0	0	0	0	0	0	28.0	152.0
17-Nov	0	0	0	0	0	0	0	0	1	11	22	32	46	40	33	22	3	0	0	0	0	0	0	0	8.8	45.8
18-Nov	0	0	0	0	0	0	0	0	1	17	30	44	55	55	45	25	5	0	0	0	0	0	0	0	11.5	55.4
19-Nov	0	0	0	0	0	0	0	0	1	21	47	87	88	63	50	28	4	0	0	0	0	0	0	0	16.2	87.8
20-Nov	0	0	0	0	0	0	0	0	0	14	58	90	75	54	45	27	5	0	0	0	0	0	0	0	15.3	89.9
21-Nov	0	0	0	0	0	0	0	0	1	13	44	80	68	79	82	42	8	0	0	0	0	0	0	0	17.4	81.7
22-Nov	0	0	0	0	0	0	0	0	2	24	36	55	70	67	54	27	6	0	0	0	0	0	0	0	14.2	70.3
23-Nov	0	0	0	0	0	0	0	0	1	12	49	87	88	110	99	58	25	0	0	0	0	0	0	0	22.1	109.9
24-Nov	0	0	0	0	0	0	0	0	1	14	49	73	84	77	123	44	6	0	0	0	0	0	0	0	19.7	123.2
25-Nov	0	0	0	0	0	0	0	0	1	13	50	105	78	126	162	36	12	0	0	0	0	0	0	0	24.3	162.5
26-Nov	0	0	0	0	0	0	0	0	0	17	47	62	65	69	58	26	4	0	0	0	0	0	0	0	14.5	68.6
27-Nov	0	0	0	0	0	0	0	0	0	21	25	40	83	87	89	51	5	0	0	0	0	0	0	0	16.6	88.5
28-Nov	0	0	0	0	0	0	0	0	0	8	19	27	30	32	20	12	3	0	0	0	0	0	0	0	6.3	32.0
29-Nov	0	0	0	0	0	0	0	0	0	32	99	127	137	128	94	53	2	0	0	0	0	0	0	0	28.0	137.5
30-Nov	0	0	0	0	0	0	0	0	0	9	25	27	28	34	34	13	2	0	0	0	0	0	0	0	7.2	34.2
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.7	39.1	86.3	115.4	133.9	128.7	101.2	49.8	12.1	0.3	0.0	0.0	0.0	0.0	0.0	Diurnal Average	
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	20.5	147.1	196.1	283.6	295.1	286.3	218.9	104.1	35.4	1.7	0.0	0.0	0.0	0.0	0.0	Diurnal Maximum	





# Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Henry Pirker - November 2016

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	5	6	5	6	2	5	5	5	6	8	7	9	9	9	10	8	10	9	11	10	9	7	8	6	7.2	10.6
Dir	33	30	26	49	53	25	14	14	29	34	37	44	52	46	44	43	48	46	54	57	52	56	54	50	43.0	53.7
2 Spd	5	4	3	2	1	1	3	1	4	3	5	2	1	5	4	3	3	1	0	1	3	7	8	9	1.5	8.9
Dir	46	44	56	311	186	238	277	236	195	208	272	258	160	107	95	90	67	35	97	272	39	53	61	57	61.8	57.5
3 Spd	5	1	1	2	2	5	3	4	2	3	3	3	1	4	4	2	5	7	4	2	3	4	3	2	0.9	6.9
Dir	59	25	228	290	261	248	299	123	63	70	283	281	209	141	243	256	217	180	172	351	62	150	214	184	198.6	180.2
4 Spd	2	3	3	1	2	0	3	2	2	4	1	1	1	4	2	1	4	6	5	5	9	2	3	3	0.8	9.0
Dir	60	73	88	34	305	154	309	345	137	301	286	198	176	274	283	52	66	91	69	82	118	293	291	276	59.2	117.9
5 Spd	2	1	2	2	6	7	6	4	11	10	12	9	10	3	14	18	9	6	5	3	1	2	2	3	2.0	18.0
Dir	276	257	300	84	96	95	103	80	111	118	125	120	130	188	282	266	265	178	161	265	320	187	227	252	158.2	266.1
6 Spd	2	1	2	1	0	2	1	3	2	3	3	5	7	9	8	8	5	10	6	5	3	7	7	5	3.5	9.6
Dir	121	133	22	6	244	282	5	267	100	129	156	209	206	207	199	213	210	202	201	152	156	196	194	202	195.9	201.8
7 Spd	3	2	3	3	2	4	3	4	4	6	4	5	4	6	5	5	6	4	4	2	1	4	8	5	3.6	7.5
Dir	219	139	112	66	68	62	52	47	66	55	58	66	54	54	61	53	75	76	83	89	57	104	101	79	72.3	101.0
8 Spd	8	9	10	10	12	13	12	10	3	4	4	5	5	6	4	3	1	5	2	0	1	3	4	3	1.6	12.9
Dir	76	83	96	83	101	111	116	124	174	288	281	290	297	296	289	27	64	286	335	298	258	281	290	281	87.9	111.2
9 Spd	3	2	5	17	9	7	8	11	16	13	10	10	17	20	18	13	10	10	7	8	9	3	3	4	8.4	19.8
Dir	291	286	286	277	257	173	181	200	216	238	207	230	219	223	233	231	220	218	217	232	235	265	126	102	226.5	222.6
10 Spd	2	2	1	2	2	3	3	2	4	11	8	9	10	7	3	1	3	2	2	2	4	3	1	2	1.8	10.9
Dir	97	81	88	79	94	296	21	46	53	63	65	59	70	70	62	340	251	213	250	249	260	259	243	189	61.9	62.8
11 Spd	2	0	0	2	2	2	3	1	1	1	4	3	5	3	3	2	3	2	1	5	2	2	1	2	1.2	4.9
Dir	184	310	243	276	211	207	200	243	173	184	130	164	161	162	232	303	265	258	123	141	105	64	85	285	178.5	141.2
12 Spd	1	1	2	3	2	1	4	3	1	0	4	5	1	2	1	2	2	1	0	1	1	3	1	1	1.2	4.6
Dir	358	284	137	288	287	242	283	236	140	83	193	210	207	146	234	271	292	225	87	269	170	194	215	212	228.9	209.7
13 Spd	1	1	3	1	7	6	8	5	3	3	4	3	5	6	5	5	4	5	3	3	1	3	2	1	1.5	8.2
Dir	284	146	242	142	216	240	201	210	66	97	98	97	81	69	58	73	78	107	122	134	123	145	341	106	126.2	200.9
14 Spd	0	4	2	9	16	17	20	19	17	20	20	20	20	24	22	20	16	16	13	13	12	9	11	10	14.4	23.6
Dir	23	218	237	207	220	225	208	225	220	217	220	230	236	220	216	217	214	215	215	219	214	220	227	226	219.9	219.7
15 Spd	9	8	3	3	4	4	4	2	1	2	2	4	3	2	1	3	1	4	2	1	2	3	4	3	0.7	8.5
Dir	215	199	114	59	101	114	101	106	61	309	304	143	166	233	266	68	104	297	296	294	225	279	286	288	201.2	214.8
16 Spd	4	3	3	3	3	3	3	3	3	4	2	2	4	3	4	4	3	2	3	3	1	2	1	2	2.0	4.2
Dir	282	287	264	294	304	282	266	277	274	290	262	273	311	311	290	3	18	23	33	5	64	290	285	89	303.2	3.2
17 Spd	6	6	7	7	7	8	8	8	6	7	6	5	6	7	7	8	8	7	6	6	7	7	5	6	6.7	8.3
Dir	58	33	39	33	39	46	54	52	45	52	36	40	28	40	30	42	50	41	36	33	42	41	28	26	40.8	51.6
18 Spd	7	6	6	6	6	6	5	5	4	3	4	5	6	6	5	5	6	6	6	5	5	6	5	6	5.3	7.3
Dir	26	27	31	27	21	22	29	36	25	30	20	35	49	39	16	23	20	26	22	2	7	2	1	355	22.4	26.2
19 Spd	5	7	7	7	10	9	8	8	7	8	8	8	9	7	8	7	5	6	5	3	3	1	3	3	6.3	9.6
Dir	9	15	6	8	6	6	10	15	14	25	25	21	18	18	18	13	11	8	6	360	6	332	323	349	11.5	5.7
20 Spd	3	4	4	4	5	2	3	3	4	4	5	6	6	4	3	4	4	4	3	0	4	3	4	4	2.4	6.1
Dir	5	61	54	65	77	27	18	29	63	42	37	57	68	83	64	24	25	45	38	247	190	228	260	238	48.7	67.6
21 Spd	4	4	3	5	6	5	6	6	7	10	10	11	10	10	10	10	8	5	3	2	2	1	1	2	5.6	11.1
Dir	245	233	203	222	257	246	244	268	272	269	263	263	259	262	259	255	261	271	271	284	298	319	107	305	259.5	262.9
22 Spd	4	5	5	5	5	4	4	2	3	1	6	2	6	5	9	3	2	2	4	4	4	4	3	3	0.5	9.1
Dir	278	287	290	282	291	291	293	45	256	101	73	63	63	80	67	171	169	197	186	175	188	200	185	172	220.7	66.8

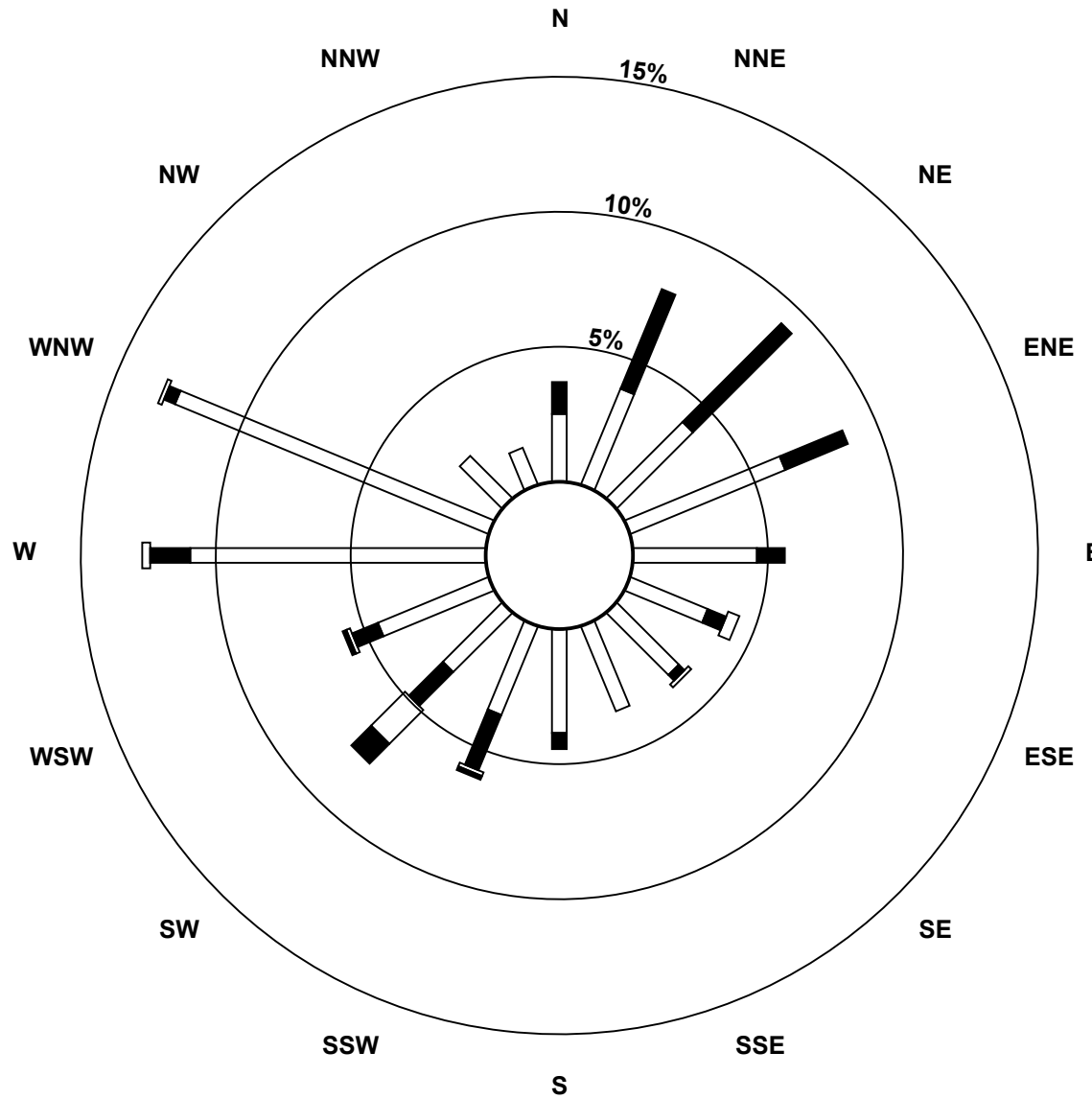
# Hourly Averages

**Wind Speed (km/h)**  
**Wind Direction (deg)**  
**Henry Pirker - November 2016**

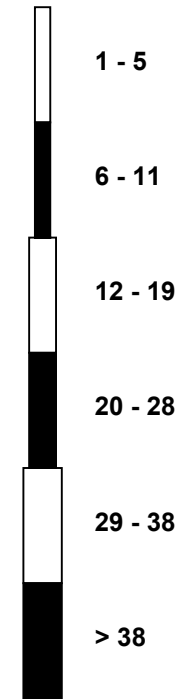
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
23 Spd	3	3	3	2	2	4	2	0	3	3	3	3	2	3	1	3	2	2	2	1	1	3	2	3	1.3	3.8	
Dir	141	138	197	178	192	139	184	127	150	185	119	132	153	264	273	294	231	224	152	178	173	269	278	306	185.7	139.5	
24 Spd	3	3	3	3	2	3	2	3	4	2	1	2	3	3	1	0	5	5	2	3	2	4	5	3	1.4	4.7	
Dir	280	277	287	290	286	280	291	262	282	307	73	52	73	73	299	265	265	270	255	254	149	286	147	160	271.9	270.1	
25 Spd	2	1	1	4	2	3	4	5	6	6	6	7	6	4	4	4	3	3	6	3	4	3	2	2	2.8	7.4	
Dir	191	334	190	284	58	280	166	252	260	283	264	226	213	243	234	220	235	233	210	190	209	205	350	77	235.2	225.6	
26 Spd	1	1	3	3	4	4	2	3	4	5	5	0	5	2	3	4	3	1	3	1	2	3	3	4	2.2	5.1	
Dir	28	153	297	277	286	297	281	299	289	291	290	145	302	172	284	284	238	263	254	226	262	335	332	40	289.3	291.0	
27 Spd	2	5	3	2	2	0	1	1	3	3	3	2	2	3	3	2	3	3	2	4	4	5	4	4	0.1	5.2	
Dir	36	58	46	14	6	56	115	148	151	119	196	164	153	136	180	132	79	71	292	285	283	286	285	298	91.9	58.1	
28 Spd	6	5	5	4	3	3	2	2	1	4	5	4	5	3	3	2	2	2	3	1	2	3	3	4	2.1	5.7	
Dir	284	279	285	276	262	263	281	342	26	282	285	281	277	274	296	303	322	254	280	332	100	106	88	84	286.7	284.4	
29 Spd	3	3	1	4	3	2	2	2	3	3	3	2	4	4	3	4	1	5	5	4	4	4	3	2	2.4	4.9	
Dir	83	103	118	270	281	268	276	276	286	277	280	241	270	276	254	269	341	274	276	284	273	291	293	273	276.5	274.0	
30 Spd	3	3	2	1	2	2	2	2	2	1	3	0	2	1	3	4	4	4	3	1	3	3	2	3	0.4	4.5	
Dir	276	292	297	288	341	9	30	56	15	175	295	264	147	144	113	91	93	79	62	132	262	278	272	268	355.5	92.5	
Spd	0.8	0.8	0.8	1.2	0.5	0.4	0.5	0.4	0.4	0.5	0.5	0.5	0.6	0.9	1.3	1.2	0.4	0.8	0.4	0.5	0.5	0.7	0.4	0.3	Diurnal Average		
Dir	15.6	34.0	18.1	323.0	291.9	260.8	207.1	244.2	205.5	294.7	240.1	213.2	190.8	208.7	264.0	275.1	265.1	219.2	193.5	239.0	197.2	256.4	278.9	325.1			
Spd	8.5	8.9	9.8	16.6	15.7	16.8	19.8	19.2	16.8	19.9	20.1	19.8	20.3	23.6	21.6	19.8	15.6	15.9	13.1	13.0	12.2	9.4	11.0	9.8	Diurnal Maximum		
Dir	214.8	82.8	95.6	277.2	220.3	224.7	207.7	224.5	219.6	217.3	220.3	230.0	236.5	219.7	216.2	216.9	213.8	214.5	215.3	218.8	213.7	219.8	226.9	225.8			
Maximum Speed Value: 24 km/h on Nov 14 14:00																		Minimum Speed Value: 0 km/h on Nov 8 20:00						Hours in Service:		720	
Maximum Daily Speed Average: 14.4 km/h on Nov 14																		Minimum Daily Speed Average: 0.1 km/h on Nov 12						Hours of Data:		720	
Maximum Diurnal Speed Average: 1.3 km/h at hour 15																		Minimum Diurnal Speed Average: 0.3 km/h at hour 24						Hours of Missing Data:		0	
Monthly Average Velocity: 0.36 km/h 261.52 deg																		Speed Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 1.3 Q <sub>1</sub> = 2.3 Median = 3.5 Q <sub>3</sub> = 5.5 P <sub>90</sub> = 8.9 P <sub>99</sub> = 19.8						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	29	26	0	0	0	0	55																				
NorthEast	67	71	0	0	0	0	138																				
East	61	18	2	0	0	0	81																				
SouthEast	53	5	2	0	0	0	60																				
South	49	13	1	0	0	0	63																				
SouthWest	53	21	14	10	0	0	98																				
West	147	25	4	0	0	0	176																				
NorthWest	46	3	0	0	0	0	49																				
Total	505	182	23	10	0	0	720																				

**Wind Rose**

**Wind Speed (WS) (km/h)**  
**Henry Pirker - November 2016**



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



# Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Henry Pirker - November 2016

Maximum Speed: 24 km/h on Nov 14 14:00	Maximum Daily Speed Average: 14.9 km/h on Nov 14	Hours in Service: 720
Minimum Speed: 1 km/h on Nov 27 06:00	Minimum Daily Speed Average: 2.5 km/h on Nov 12	Hours of Data: 720
Maximum Diurnal Speed Average: 6.2 km/h at hour 14	Minimum Diurnal Speed Average: 4.0 km/h at hour 3	Hours of Missing Data: 0
Monthly Average Speed: 4.94 km/h	Percentiles: P <sub>1</sub> = 1.3 P <sub>10</sub> = 2.2 Q <sub>1</sub> = 2.9 Median = 3.9 Q <sub>3</sub> = 5.9 P <sub>90</sub> = 9.0 P <sub>99</sub> = 20.0	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	5	6	6	6	2	5	5	6	7	8	7	9	9	9	10	9	10	9	11	10	9	8	8	6	7.5	10.7
2-Nov	6	4	3	3	3	3	4	3	5	4	5	2	2	5	5	4	3	2	1	2	4	7	8	9	4.0	9.0
3-Nov	5	3	2	3	3	5	3	5	3	3	3	4	2	4	5	4	5	7	5	4	4	5	4	3	3.9	6.9
4-Nov	2	4	4	3	3	2	3	3	2	4	2	2	2	4	3	3	5	6	6	5	9	4	4	3	3.7	9.2
5-Nov	3	2	3	4	6	7	7	5	11	10	12	9	10	6	14	18	9	7	7	3	3	3	4	4	6.9	18.2
6-Nov	3	2	2	2	2	3	2	3	3	4	5	5	7	9	8	9	6	10	6	5	3	8	7	7	5.0	9.7
7-Nov	4	3	4	3	2	4	3	4	4	6	5	5	5	6	5	5	6	4	4	3	3	5	8	5	4.3	7.7
8-Nov	8	9	10	11	12	13	12	10	7	4	4	6	5	6	4	4	5	5	3	3	3	3	5	4	6.5	13.1
9-Nov	3	3	5	17	9	7	9	12	16	13	11	11	18	20	19	13	10	10	7	8	9	4	4	4	10.1	20.0
10-Nov	2	2	2	2	2	3	3	2	4	11	9	9	10	7	4	2	4	3	3	3	4	4	3	3	4.2	11.1
11-Nov	3	2	2	3	2	4	4	3	2	2	4	4	5	3	3	3	4	2	3	5	3	2	1	3	2.9	5.0
12-Nov	3	2	3	3	3	2	5	4	2	2	5	5	2	2	2	2	2	1	1	2	2	3	2	2	2.5	5.0
13-Nov	2	2	4	2	7	7	8	5	3	3	4	3	5	6	5	5	4	5	3	3	2	5	2	2	4.1	8.2
14-Nov	2	5	3	10	16	17	20	19	17	20	20	20	20	24	22	20	16	16	13	13	12	10	11	10	14.9	23.8
15-Nov	9	8	4	3	4	4	4	3	2	2	3	4	3	3	2	3	3	5	3	2	2	4	4	3	3.5	8.7
16-Nov	4	3	3	3	3	4	3	3	3	4	3	2	4	4	4	4	3	2	3	3	1	2	2	2	2.9	4.5
17-Nov	7	6	7	7	7	8	8	8	7	8	6	6	7	7	7	8	8	7	6	6	7	7	5	6	7.0	8.5
18-Nov	7	6	6	6	6	6	5	5	4	3	4	6	6	7	5	6	6	6	6	5	5	6	5	6	5.6	7.4
19-Nov	5	8	8	7	10	9	9	8	8	8	8	8	9	8	8	7	6	6	5	4	3	2	3	3	6.6	9.8
20-Nov	3	4	5	5	5	2	3	4	4	4	5	6	6	5	4	5	4	4	3	2	4	4	4	4	4.1	6.3
21-Nov	4	4	4	5	6	5	6	7	7	10	10	11	10	11	10	10	9	5	3	3	5	2	2	2	6.3	11.2
22-Nov	7	5	5	5	5	4	4	3	4	3	6	5	6	5	9	5	3	3	4	4	4	4	3	3	4.6	9.5
23-Nov	4	3	3	2	3	4	3	2	3	3	3	4	3	3	2	3	2	2	2	1	2	3	3	3	2.8	4.1
24-Nov	3	4	3	3	3	3	3	3	4	3	2	3	3	4	2	2	5	5	2	4	4	5	8	4	3.5	8.3
25-Nov	4	2	2	5	3	4	5	5	6	6	7	8	6	4	4	4	3	4	6	4	4	3	3	3	4.4	7.7
26-Nov	1	1	3	4	4	4	3	4	4	5	5	2	6	3	3	4	3	2	3	2	2	3	3	4	3.2	5.6
27-Nov	3	5	4	2	2	1	2	2	3	3	3	3	3	3	3	2	4	3	3	4	5	5	5	4	3.1	5.4
28-Nov	6	5	5	4	3	3	3	2	1	4	5	4	5	4	3	2	2	3	3	2	2	3	3	5	3.5	5.8
29-Nov	3	3	3	4	3	2	2	2	3	3	3	2	4	4	3	4	2	6	6	5	5	4	4	3	3.6	6.1
30-Nov	3	4	3	3	3	2	3	2	2	2	4	2	3	2	3	4	5	4	4	1	3	3	2	4	3.0	4.6
	4.2	4.0	4.0	4.6	4.8	4.9	5.2	4.9	5.1	5.6	5.7	5.6	6.2	6.2	6.0	5.7	5.2	5.1	4.5	4.0	4.3	4.3	4.4	4.1	Diurnal Average	
	8.7	9.2	10.0	16.7	15.8	17.2	20.2	19.3	16.9	20.0	20.3	20.1	20.5	23.8	21.7	19.9	15.7	16.0	13.2	13.2	12.3	9.5	11.1	10.0	Diurnal Maximum	

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

# Hourly Standard Deviations

Wind Direction (WD) - deg  
Henry Pirker - November 2016

Maximum Value: 99.0 deg on Nov 8 20:00		Hours in Service: 720																							
Minimum Value: 4.0 deg on Nov 8 07:00		Hours of Data: 720																							
Percentiles: P <sub>1</sub> = 6.4 P <sub>10</sub> = 9.8 Q <sub>1</sub> = 14.8 Median = 24.1 Q <sub>3</sub> = 45.5 P <sub>90</sub> = 68.2 P <sub>99</sub> = 92.3		Hours of Missing Data: 0																							
		Hours of Calibration: 0																							
		Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Nov	14	15	14	18	51	20	17	19	13	12	14	10	8	10	9	11	9	8	8	8	7	10	13	12	51.3
2-Nov	15	15	48	43	86	63	44	87	40	42	15	35	67	47	26	31	31	49	79	68	24	10	11	9	86.7
3-Nov	21	89	80	76	67	23	64	38	55	64	60	17	66	20	46	72	24	7	56	57	31	49	55	40	88.6
4-Nov	53	20	38	86	62	91	65	65	51	36	81	63	62	23	82	83	59	23	35	30	12	82	56	44	91.2
5-Nov	45	89	47	66	10	9	24	23	8	6	6	6	10	52	7	6	12	29	53	66	85	66	72	47	89.1
6-Nov	56	70	21	72	89	28	80	42	45	56	56	24	15	14	15	26	52	10	14	20	38	10	11	53	89.5
7-Nov	50	43	25	38	17	16	25	9	13	11	20	16	18	14	19	16	9	15	27	70	65	21	14	11	70.1
8-Nov	10	18	9	17	11	8	4	7	69	16	19	18	13	13	24	33	87	13	58	99	76	23	26	23	99.0
9-Nov	35	37	16	5	17	16	23	10	8	13	12	33	8	9	7	7	13	13	22	16	9	80	29	14	80.2
10-Nov	16	40	59	33	30	34	26	49	21	9	13	11	9	26	32	54	38	55	45	56	32	32	85	47	85.5
11-Nov	58	96	93	70	57	72	41	67	43	58	22	27	19	30	18	85	58	39	54	12	39	15	35	67	96.5
12-Nov	70	95	41	24	29	72	42	43	81	77	25	25	56	39	51	32	21	38	88	53	47	39	64	48	95.0
13-Nov	58	83	36	79	10	24	6	68	21	28	22	23	16	15	13	11	16	12	47	29	78	60	44	79	83.3
14-Nov	88	39	74	26	7	12	12	7	7	7	7	9	8	7	7	6	8	7	8	9	7	9	7	13	88.4
15-Nov	12	11	44	12	26	16	21	39	96	40	55	33	24	57	76	36	81	13	56	49	33	19	25	34	96.4
16-Nov	13	21	21	18	23	10	33	23	20	16	35	26	14	21	15	23	20	19	21	21	61	43	60	54	60.9
17-Nov	15	13	19	17	18	14	11	10	15	17	19	27	21	19	18	14	10	14	13	18	17	11	16	14	26.5
18-Nov	11	14	12	14	14	13	14	16	16	17	20	16	14	20	18	19	14	15	17	20	20	22	22	18	22.3
19-Nov	18	20	17	17	14	13	14	12	15	14	14	13	12	14	14	15	19	16	28	28	35	76	24	23	75.6
20-Nov	31	18	14	21	15	53	22	24	19	21	14	24	16	24	33	15	16	16	28	77	42	26	16	14	76.7
21-Nov	11	25	15	21	12	14	10	9	9	8	8	9	10	9	9	7	12	16	27	60	57	43	79	46	78.8
22-Nov	42	20	10	12	9	16	24	73	41	82	22	87	52	23	16	41	28	50	15	18	21	24	23	26	87.4
23-Nov	32	31	26	69	42	23	63	95	33	24	38	15	35	31	53	31	62	39	50	75	57	41	39	48	94.5
24-Nov	28	23	20	26	31	25	26	26	18	48	80	68	45	17	75	93	17	18	22	41	89	58	77	58	93.3
25-Nov	63	91	76	27	45	59	38	12	10	10	12	17	19	13	18	15	20	46	17	38	24	36	61	58	91.5
26-Nov	68	63	36	39	19	12	28	10	8	8	8	87	29	40	28	41	23	52	20	47	42	34	26	26	87.1
27-Nov	49	14	41	39	34	89	53	33	18	28	29	34	56	23	28	20	15	25	80	44	30	15	18	9	88.7
28-Nov	7	9	9	10	22	19	33	41	53	23	13	11	14	25	19	19	41	39	40	72	47	38	26	20	71.8
29-Nov	21	24	76	27	19	37	14	21	13	14	20	34	17	18	24	22	56	33	27	29	41	22	38	57	75.7
30-Nov	31	36	39	65	42	19	19	33	24	81	38	77	39	75	45	26	16	35	55	71	21	30	51	37	81.5
	88.4	96.5	92.7	85.8	89.5	91.2	80.2	94.5	96.4	81.7	81.4	87.4	66.6	75.2	82.0	93.3	87.2	54.5	87.6	99.0	89.4	81.8	85.5	78.9	

PAZA

Evergreen Park Station

Monthly Summary Tables, Graphs and  
Roses

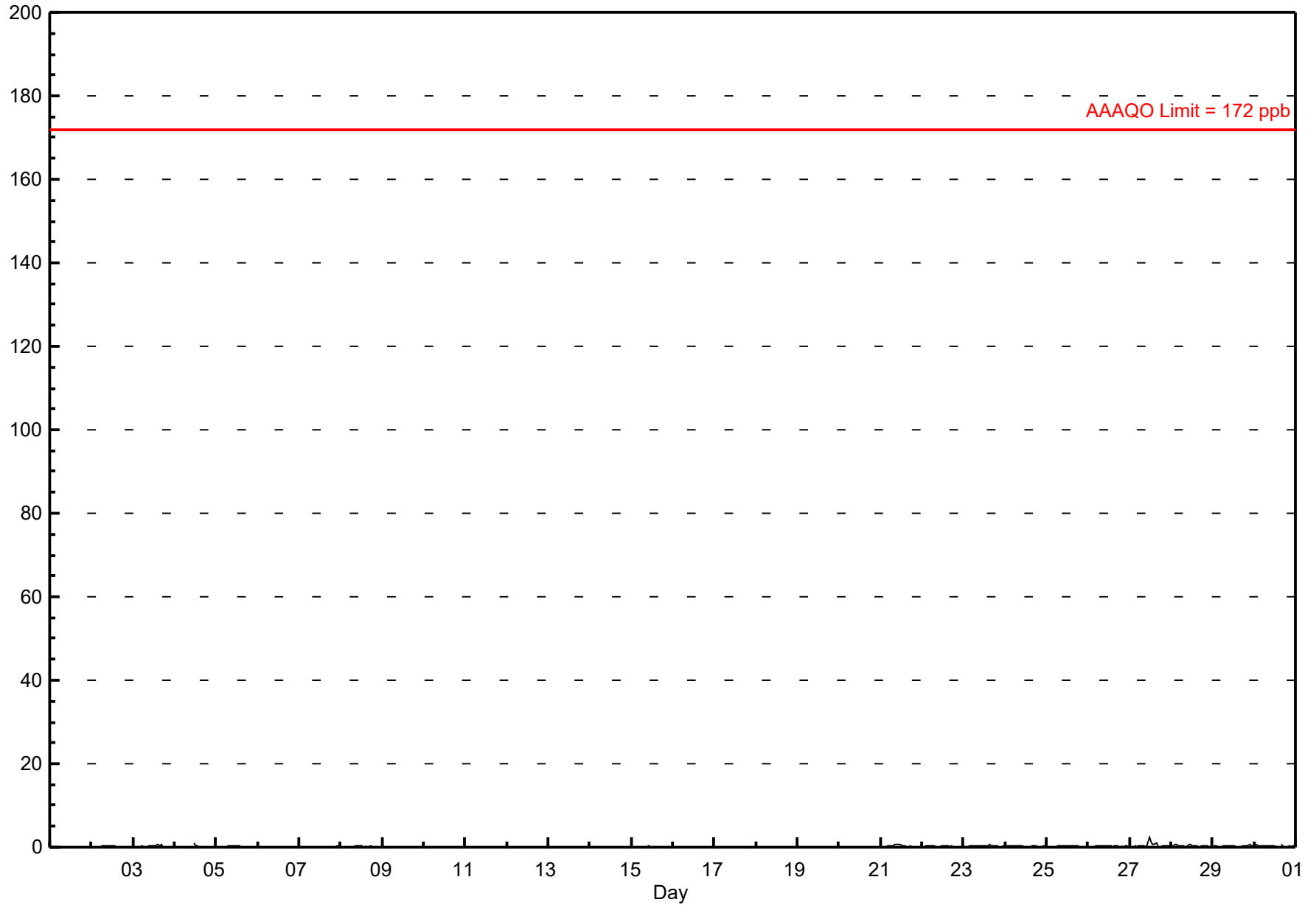
## Hourly Averages

## Sulphur Dioxide (SO<sub>2</sub>) - ppb Evergreen Park - November 2016

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 2.3 ppb on Nov 27 12:00 Maximum Daily Average: 0.5 ppb on Nov 27											Hours in Service: 720 Hours of Data: 686 Hours of Missing Data: 34 Hours of Calibration: 32 Percent Operational Time: 99.7																										
Minimum Value: 0 ppb on Nov 1 01:00 Minimum Daily Average: 0.0 ppb on Nov 17 Maximum Diurnal Average: 0.3 ppb at hour 12 Minimum Diurnal Average: 0.1 ppb at hour 1 Monthly Average: 0.14 ppb Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.1 Q <sub>3</sub> = 0.2 P <sub>90</sub> = 0.4 P <sub>99</sub> = 0.7																																					
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	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											
2-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											
3-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	A	0	0	0	0	0.2	0.7											
4-Nov	0	0	0	0	0	0	0	0	0	P	P	1	0	0	0	0	0	A	0	0	0	0	0	0	0.1	1.1											
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	0.1	0.4											
6-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											
7-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	0.3											
8-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											
9-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	0.1											
10-Nov	0	0	0	0	0	0	0	0	0	0	0	0	A	C	C	0	0	0	0	0	0	0	0	0	0.0	0.1											
11-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	0.1											
12-Nov	0	0	0	0	0	0	0	0	0	0	A	A	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1											
13-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	0.1											
14-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0											
15-Nov	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	0.2											
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	0.2											
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											
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	0.1											
19-Nov	0	0	A	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1											
20-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	0.1											
21-Nov	A	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0.3	0.7											
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	0.2	0.3											
23-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0.3	0.6											
24-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	0.5											
25-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	0.5											
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	0.2	0.4											
27-Nov	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	0	A	0	0	0	0	0	0.5	2.3											
28-Nov	0	0	1	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0.3	0.7											
29-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	1	0	0	0.2	0.5										
30-Nov	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	A	1	0	0	0	0	0	0	0	0.3	0.6											
											0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	Diurnal Average	
											0.5	0.5	0.6	0.5	0.5	0.4	0.5	0.5	0.6	0.7	0.7	2.3	1.5	0.7	0.7	1.1	0.5	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.4	Diurnal Maximum	
C - Calibration P - Power Failure A - Automated Daily Zero Span Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb 30-day 11 ppb																																					

### Hourly Averages

Sulphur Dioxide (SO<sub>2</sub>) - ppb  
Evergreen Park - November 2016





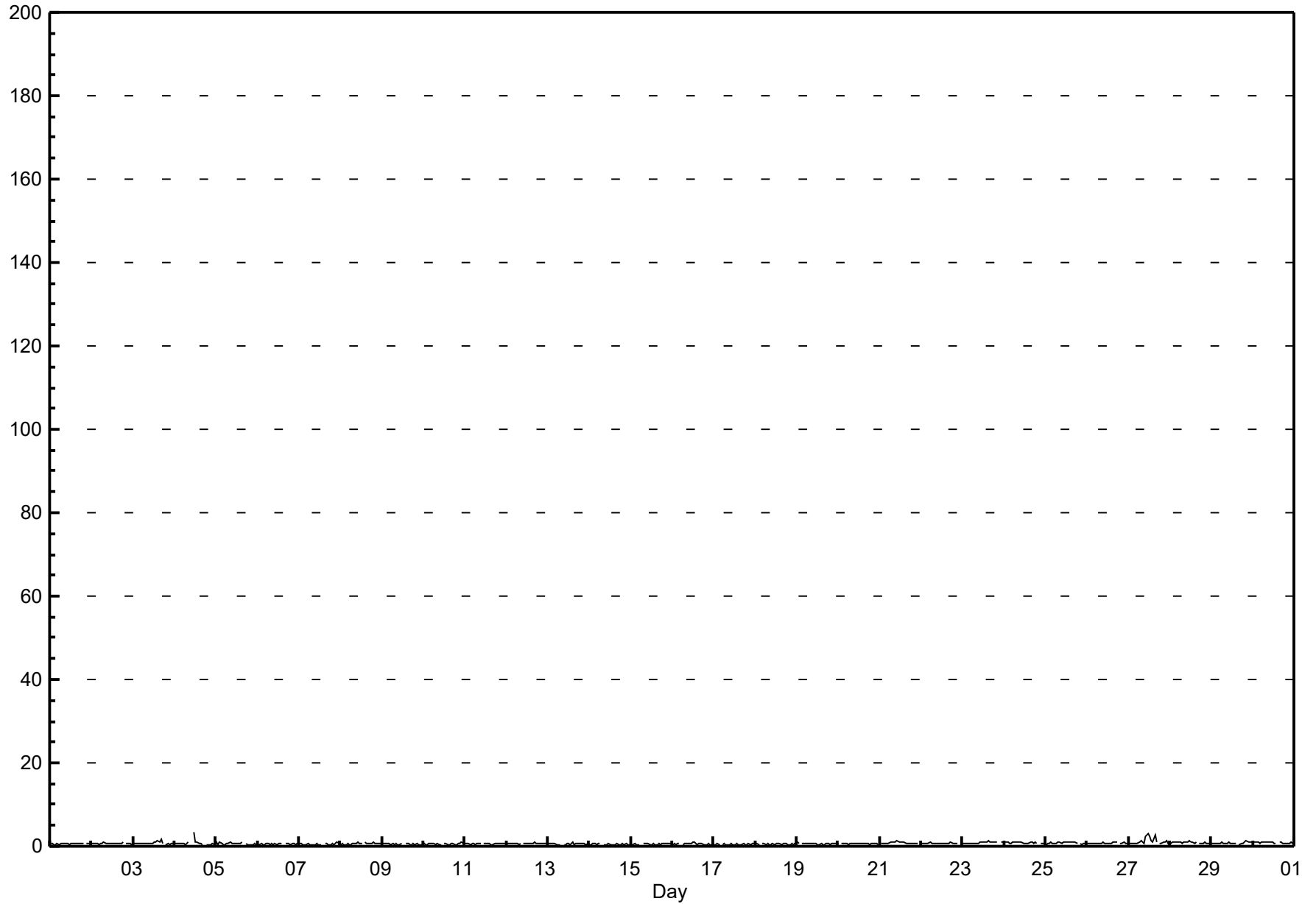
## Hourly Maximums

## Sulphur Dioxide (SO<sub>2</sub>) - ppb Evergreen Park - November 2016

Maximum Value: 3.2 ppb on Nov 4 12:00		Maximum Daily Average: 1.2 ppb on Nov 27		Hours in Service: 720																						
Minimum Value: 0 ppb on Nov 17 13:00		Minimum Daily Average: 0.4 ppb on Nov 17		Hours of Data: 686																						
Maximum Diurnal Average: 0.9 ppb at hour 12		Minimum Diurnal Average: 0.6 ppb at hour 24		Hours of Missing Data: 34																						
Monthly Average: 0.68 ppb		Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 0.4 Q <sub>1</sub> = 0.5 Median = 0.6 Q <sub>3</sub> = 0.8 P <sub>90</sub> = 1.0 P <sub>99</sub> = 1.2		Hours of Calibration: 32																						
Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 0.4 Q <sub>1</sub> = 0.5 Median = 0.6 Q <sub>3</sub> = 0.8 P <sub>90</sub> = 1.0 P <sub>99</sub> = 1.2		Percent Operational Time: 99.7																								
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Nov	1	1	1	1	1	0	1	1	1	1	1	0	1	1	1	1	1	1	1	1	A	1	1	1	0.6	0.8
2-Nov	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	0.7	1.0
3-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	A	0	1	1	1	1	0.8	1.7
4-Nov	1	1	1	1	1	1	0	1	1	P	P	3	1	1	1	1	0	A	0	0	0	0	1	0	0.7	3.2
5-Nov	1	0	1	1	0	0	1	1	1	1	1	1	1	1	1	1	A	1	0	0	0	0	1	0	0.6	1.1
6-Nov	0	0	1	0	0	1	1	0	1	0	1	0	1	1	1	A	1	1	1	0	1	1	0	1	0.5	0.7
7-Nov	1	1	0	0	0	1	0	0	0	0	1	0	0	0	A	1	1	0	0	1	0	1	1	1	0.5	1.1
8-Nov	0	1	0	0	1	0	0	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	0.7	1.1
9-Nov	1	1	1	1	1	0	1	0	1	0	0	1	C	C	1	1	0	0	1	1	1	0	0	0	0.5	0.7
10-Nov	1	0	0	1	1	1	1	0	1	0	0	A	1	1	1	1	1	1	0	0	1	1	1	1	0.6	0.9
11-Nov	1	1	1	0	1	1	1	1	1	1	A	1	1	1	1	0	0	1	1	1	1	1	1	1	0.6	0.8
12-Nov	1	1	1	1	1	1	1	0	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	0.9
13-Nov	1	1	1	1	1	0	0	1	A	0	0	1	1	0	1	0	1	1	1	1	1	1	0	1	0.6	0.9
14-Nov	0	1	1	1	0	1	1	A	0	0	1	1	0	0	0	0	1	0	1	1	0	1	0	0	0.5	0.8
15-Nov	0	0	1	0	0	0	A	1	1	1	1	1	1	1	0	0	1	0	1	1	1	1	1	1	0.6	0.8
16-Nov	0	1	0	1	1	A	0	1	1	1	1	1	1	1	0	1	1	1	0	0	0	1	0	0	0.6	0.9
17-Nov	0	0	1	1	A	0	1	0	0	0	1	0	0	1	0	0	0	1	0	0	1	0	1	1	0.4	0.7
18-Nov	1	1	0	A	1	1	1	1	0	0	1	0	1	1	0	1	1	1	1	0	0	1	0	1	0.5	0.8
19-Nov	1	1	A	1	1	1	1	1	1	1	1	0	0	1	0	0	1	1	1	0	1	1	1	1	0.6	1.1
20-Nov	1	A	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	0	0.6	0.7
21-Nov	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.2
22-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	0.9
23-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	0.9	1.3
24-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
25-Nov	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	0	1	1	0.8	1.1
26-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
27-Nov	1	1	1	1	1	1	1	1	1	1	2	3	2	1	1	3	1	A	1	1	1	1	1	1	1.2	3.2
28-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
29-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	0	1	1	1	1	1	1	1	0.8	1.2
30-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	0.9	1.2
		0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.8	0.9	0.7	0.7	0.8	0.7	0.6	0.6	0.6	0.7	0.6	0.7	0.6	0.6	Diurnal Average
		1.1	1.1	1.1	1.1	1.0	1.0	1.1	1.4	1.2	1.1	2.3	3.2	2.4	1.3	1.3	2.7	1.7	1.0	1.1	1.1	1.2	1.1	1.2	0.9	Diurnal Maximum
C - Calibration		P - Power Failure						A - Automated Daily Zero Span																		

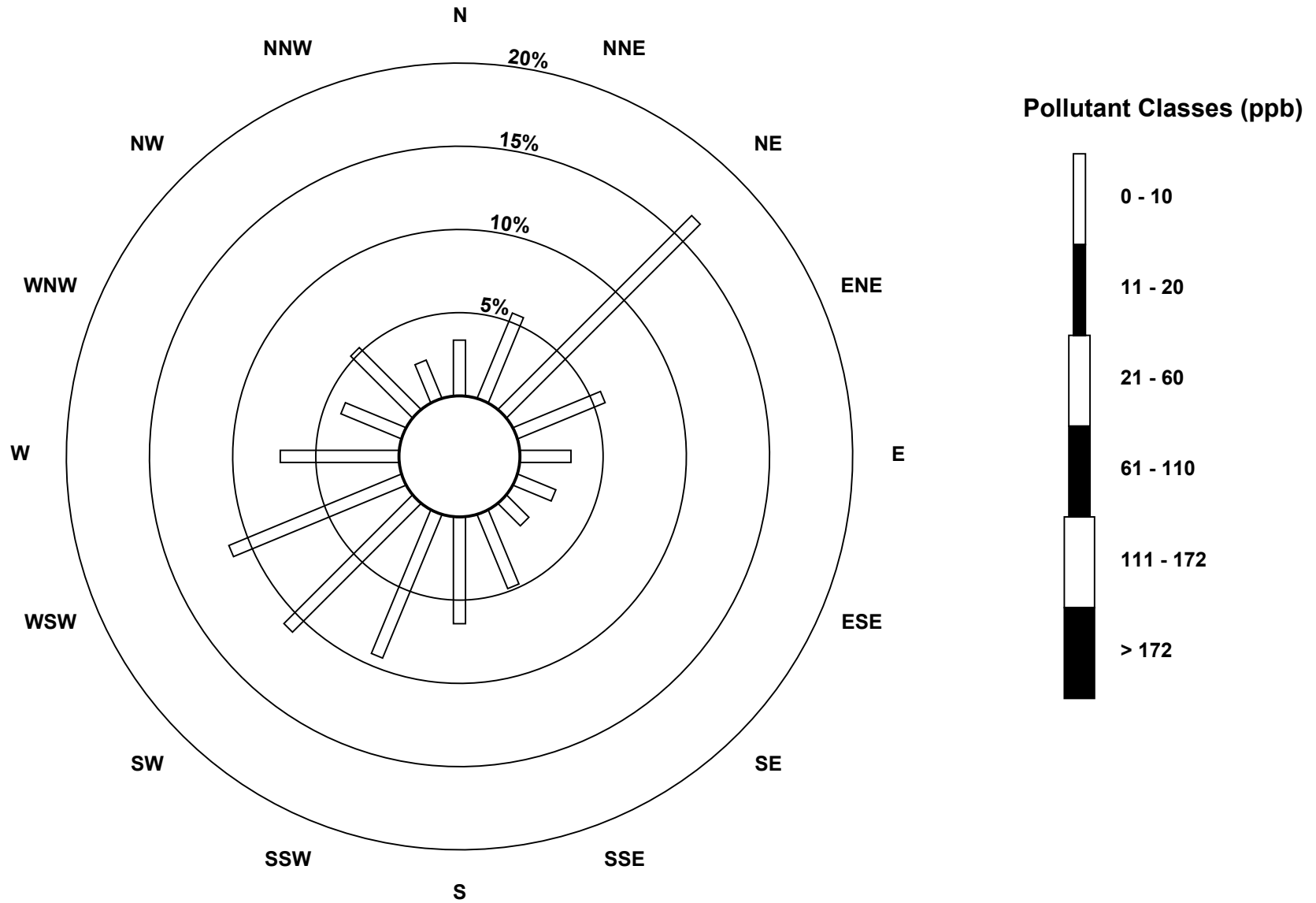
### Hourly Maximums

Sulphur Dioxide (SO<sub>2</sub>) - ppb  
Evergreen Park - November 2016



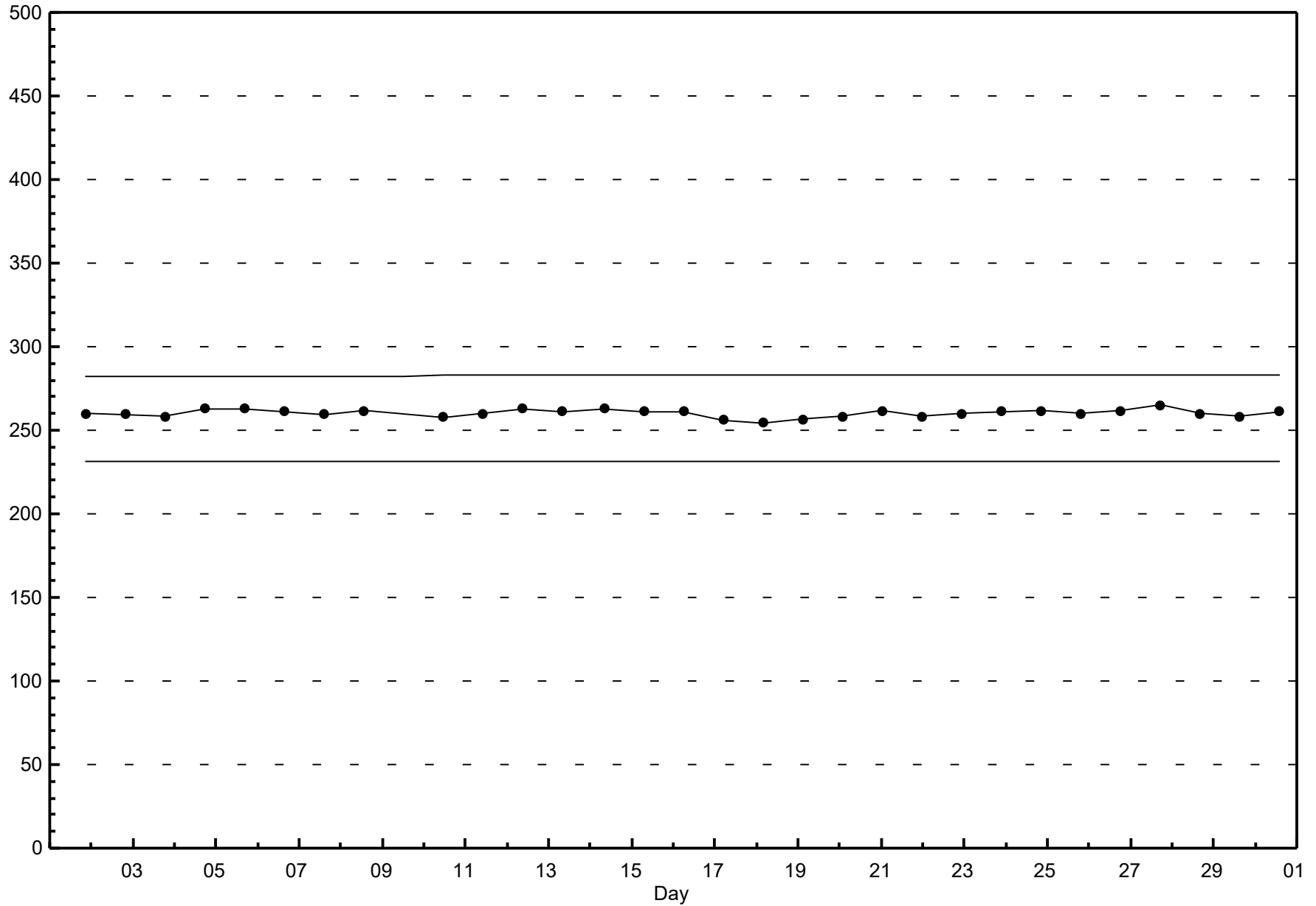
**Pollutant Rose**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Evergreen Park - November 2016**



### Span Responses

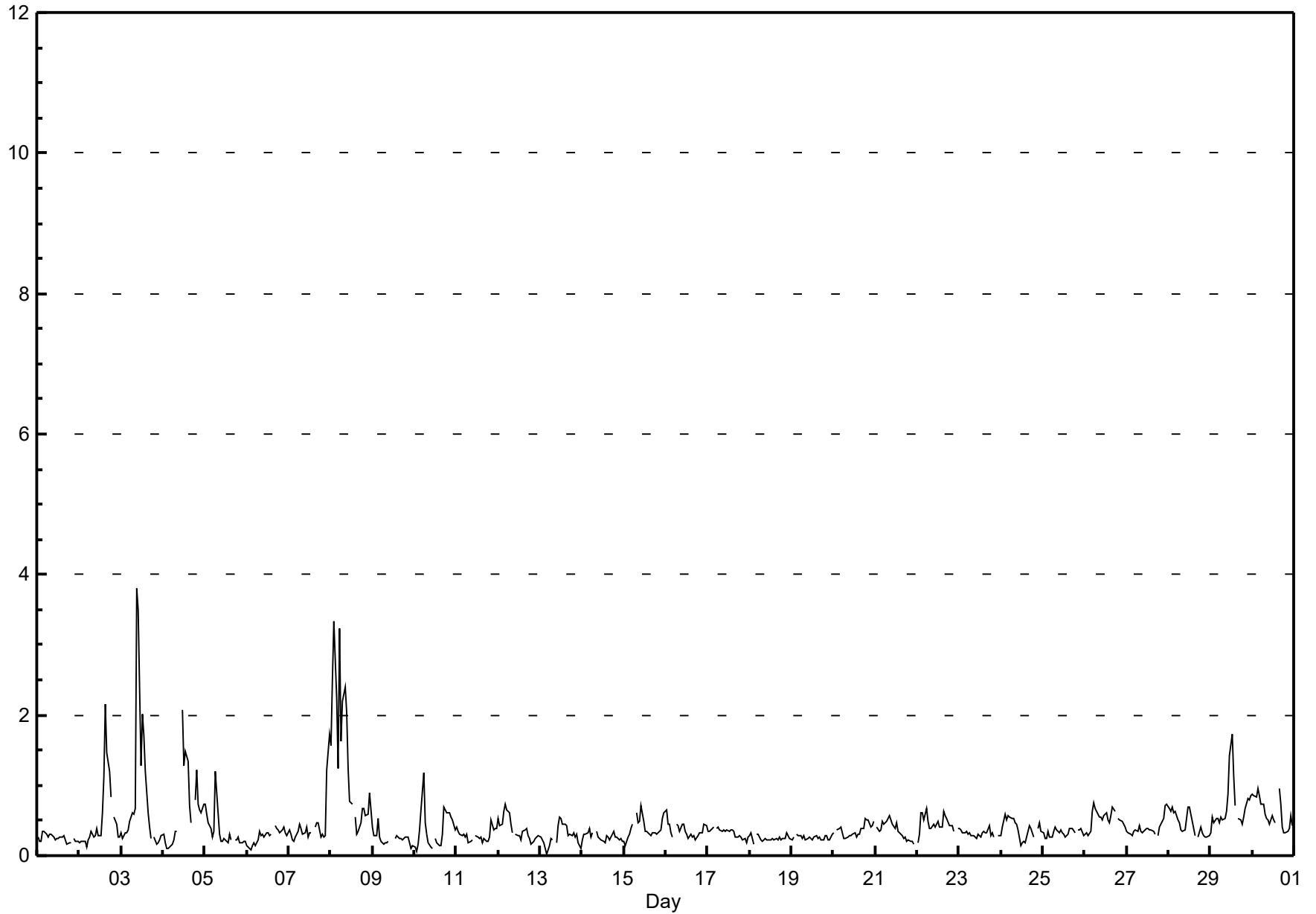
Sulphur Dioxide (SO<sub>2</sub>)  
Evergreen Park - November 2016



## Hourly Averages

**Total Reduced Sulphur (TRS) - ppb**  
**Evergreen Park - November 2016**

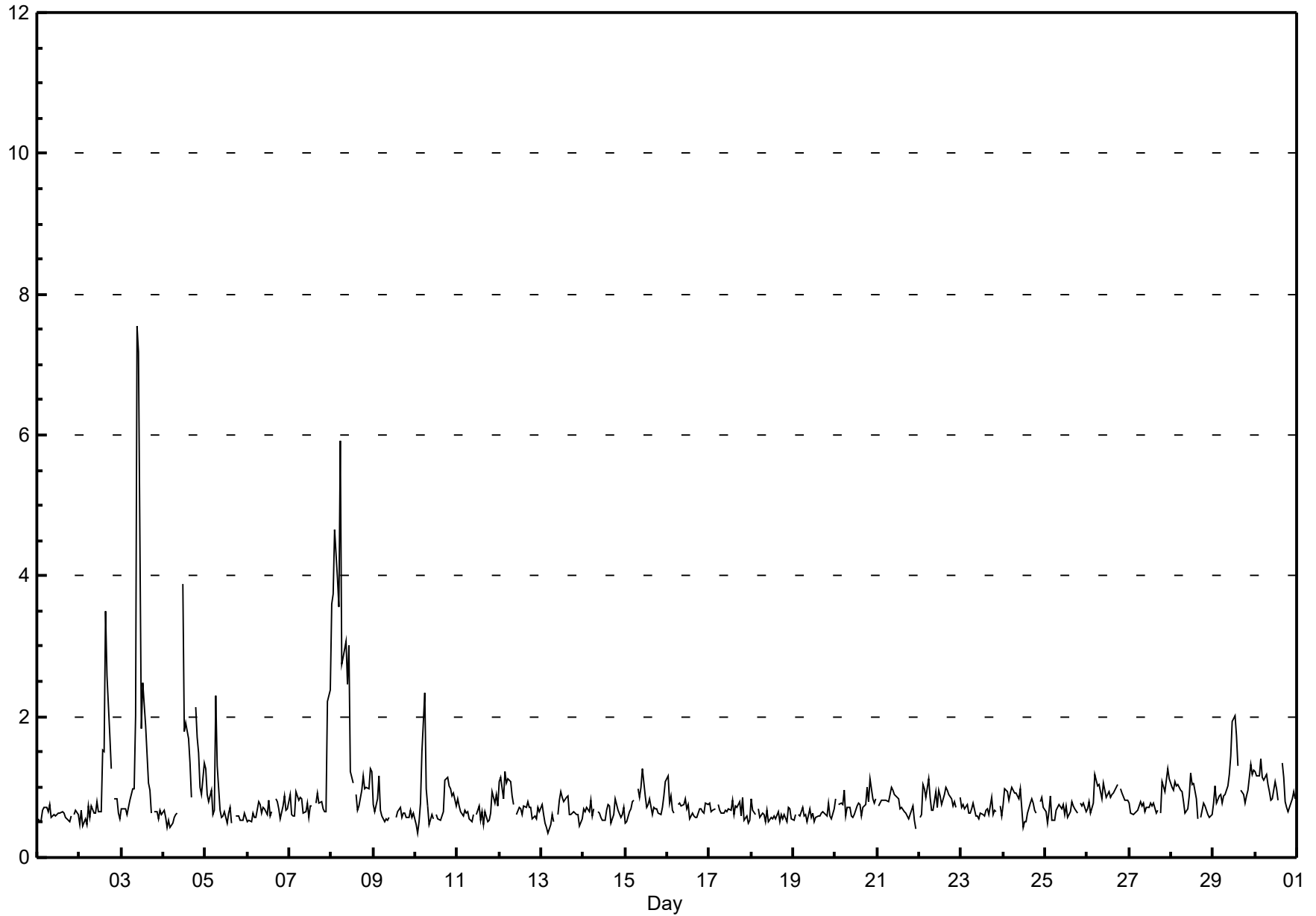
Maximum Value: 3.8 ppb on Nov 3 10:00		Maximum Daily Average: 1.3 ppb on Nov 8		Hours in Service: 720																							
Minimum Value: 0 ppb on Nov 13 05:00		Minimum Daily Average: 0.2 ppb on Nov 9		Hours of Data: 685																							
Maximum Diurnal Average: 0.5 ppb at hour 11		Minimum Diurnal Average: 0.4 ppb at hour 19		Hours of Missing Data: 35																							
Monthly Average: 0.43 ppb		Percentiles: P <sub>1</sub> = 0.1 P <sub>10</sub> = 0.2 Q <sub>1</sub> = 0.3 Median = 0.3 Q <sub>3</sub> = 0.5 P <sub>90</sub> = 0.7 P <sub>99</sub> = 2.2		Hours of Calibration: 33																							
				Percent Operational Time: 99.7																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-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	0.3	
2-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	1	1	A	1	0	0	0	0.5	2.2	
3-Nov	0	0	0	0	0	0	1	1	1	4	4	1	2	2	1	1	0	0	A	0	0	0	0	0	0.9	3.8	
4-Nov	0	0	0	0	0	0	0	0	0	P	P	2	1	1	1	1	0	A	1	1	1	1	1	1	0.7	2.1	
5-Nov	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.4	1.2	
6-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	
7-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	1	2	0.4	1.7
8-Nov	2	2	3	2	1	3	2	2	2	2	1	1	1	A	1	0	0	0	0	1	1	1	1	1	1.3	3.3	
9-Nov	0	0	0	1	0	0	0	0	0	0	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5	
10-Nov	0	0	0	0	1	1	0	0	0	0	0	A	0	0	0	0	0	0	1	1	1	1	1	0	0.4	1.2	
11-Nov	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	1	0	0	0	0.3	0.5	
12-Nov	1	0	0	1	1	1	1	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.7	
13-Nov	0	0	0	0	0	0	0	0	0	A	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0.3	0.5	
14-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	
15-Nov	0	0	0	0	0	0	A	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0.4	0.7	
16-Nov	1	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.7	
17-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	
18-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	
19-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	0.3	0.3	
20-Nov	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0.4	0.5	
21-Nov	A	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.6	
22-Nov	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	A	0	0.5	0.7	
23-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	0.4	
24-Nov	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.4	0.6	
25-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	
26-Nov	0	0	0	0	1	1	1	1	1	1	0	1	1	1	0	1	1	1	A	1	1	0	0	0	0.5	0.7	
27-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	1	1	1	0.4	0.7	
28-Nov	1	1	1	1	1	1	0	0	0	0	1	1	1	1	0	0	A	0	0	0	0	0	0	0	0.5	0.7	
29-Nov	0	1	0	1	1	1	1	1	1	1	1	1	2	1	1	A	1	0	0	1	1	1	1	1	0.7	1.7	
30-Nov	1	1	1	1	1	1	1	1	1	1	0	1	1	0	A	1	1	0	0	0	0	0	0	0	0.6	1.0	
		0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	Diurnal Average	
		1.6	2.5	3.3	2.2	1.2	3.2	1.6	2.2	2.4	3.8	3.5	2.1	2.0	1.7	1.3	2.2	1.5	1.2	0.8	1.2	0.7	0.8	1.2	1.7	Diurnal Maximum	
C - Calibration		P - Power Failure						A - Automated Daily Zero Span																			



## Hourly Maximums

## Total Reduced Sulphur (TRS) - ppb Evergreen Park - November 2016

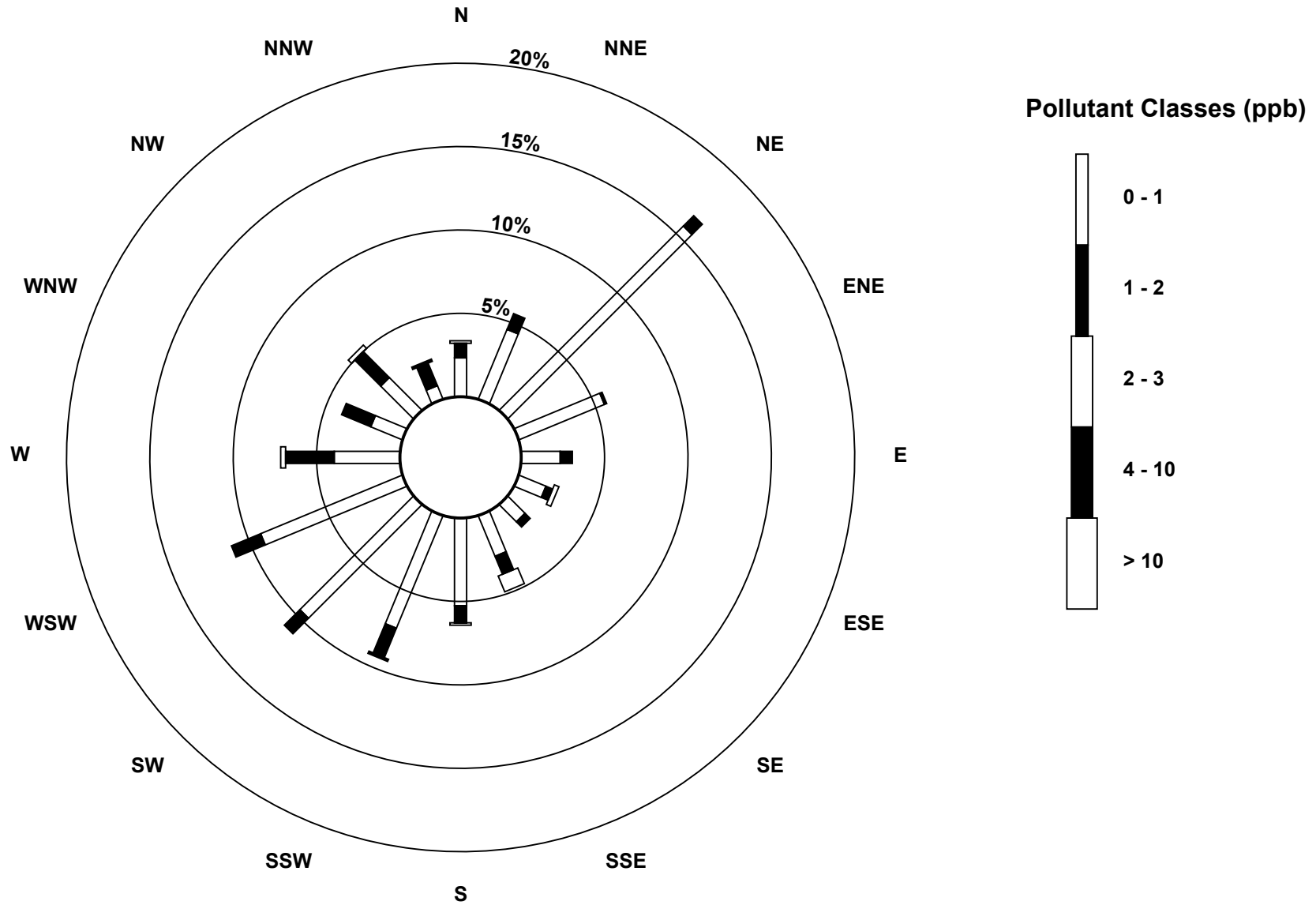
Maximum Value: 7.6 ppb on Nov 3 10:00		Maximum Daily Average: 2.2 ppb on Nov 8		Hours in Service: 720																							
Minimum Value: 0 ppb on Nov 10 02:00		Minimum Daily Average: 0.6 ppb on Nov 18		Hours of Data: 685																							
Maximum Diurnal Average: 1.1 ppb at hour 11		Minimum Diurnal Average: 0.7 ppb at hour 22		Hours of Missing Data: 35																							
Monthly Average: 0.86 ppb		Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 0.6 Q <sub>1</sub> = 0.6 Median = 0.7 Q <sub>3</sub> = 0.9 P <sub>90</sub> = 1.1 P <sub>99</sub> = 3.7		Hours of Calibration: 33																							
Percent Operational Time: 99.7																											
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-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	0.6	0.7	
2-Nov	0	1	0	1	0	1	1	1	1	1	1	1	1	2	1	3	3	2	1	A	1	1	1	1	1.0	3.5	
3-Nov	1	1	1	1	1	1	1	1	2	8	7	2	2	2	2	1	1	1	A	1	1	1	1	1	1.6	7.6	
4-Nov	1	1	0	1	0	0	1	1	1	P	P	4	2	2	2	1	1	A	2	2	1	1	1	1	1.2	3.9	
5-Nov	1	1	1	1	1	1	2	1	1	1	1	1	0	1	1	0	A	1	1	1	1	1	1	1	0.8	2.3	
6-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	
7-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	2	0.9	2.4	
8-Nov	4	4	5	4	4	6	3	3	3	2	3	1	1	A	1	1	1	1	1	1	1	1	1	1	2.2	5.9	
9-Nov	1	1	1	1	1	1	1	1	1	1	C	C	C	1	1	1	1	1	1	1	1	1	1	1	0.6	1.2	
10-Nov	0	0	1	1	2	2	1	1	0	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0.8	2.3	
11-Nov	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	0	1	1	1	1	1	1	1	1	0.7	0.9	
12-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	1.2	
13-Nov	1	1	0	0	0	0	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0.6	0.9	
14-Nov	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0.7	0.8	
15-Nov	0	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	
16-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	1.2	
17-Nov	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0.7	0.9	
18-Nov	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0.6	0.8	
19-Nov	1	1	A	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0.6	0.8	
20-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	
21-Nov	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	A	0.7	1.0	
22-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	0.8	1.1	
23-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	0.7	0.8	
24-Nov	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	A	1	1	1	0.8	1.0	
25-Nov	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	0.7	0.9	
26-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	1.2	
27-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	1.3	
28-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	1.2	
29-Nov	1	1	1	1	1	1	1	1	1	1	1	2	2	2	1	A	1	1	1	1	1	1	1	1	1.1	2.0	
30-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	
		0.9	0.8	0.8	0.9	0.9	1.0	0.9	0.9	0.8	1.0	1.1	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.8	0.8	Diurnal Average	
		3.6	3.7	4.7	4.0	3.6	5.9	2.7	2.9	3.1	7.6	7.2	3.9	2.5	2.2	1.9	3.5	2.6	1.7	2.1	1.7	1.5	1.3	2.2	2.4	Diurnal Maximum	
C - Calibration		P - Power Failure						A - Automated Daily Zero Span																			





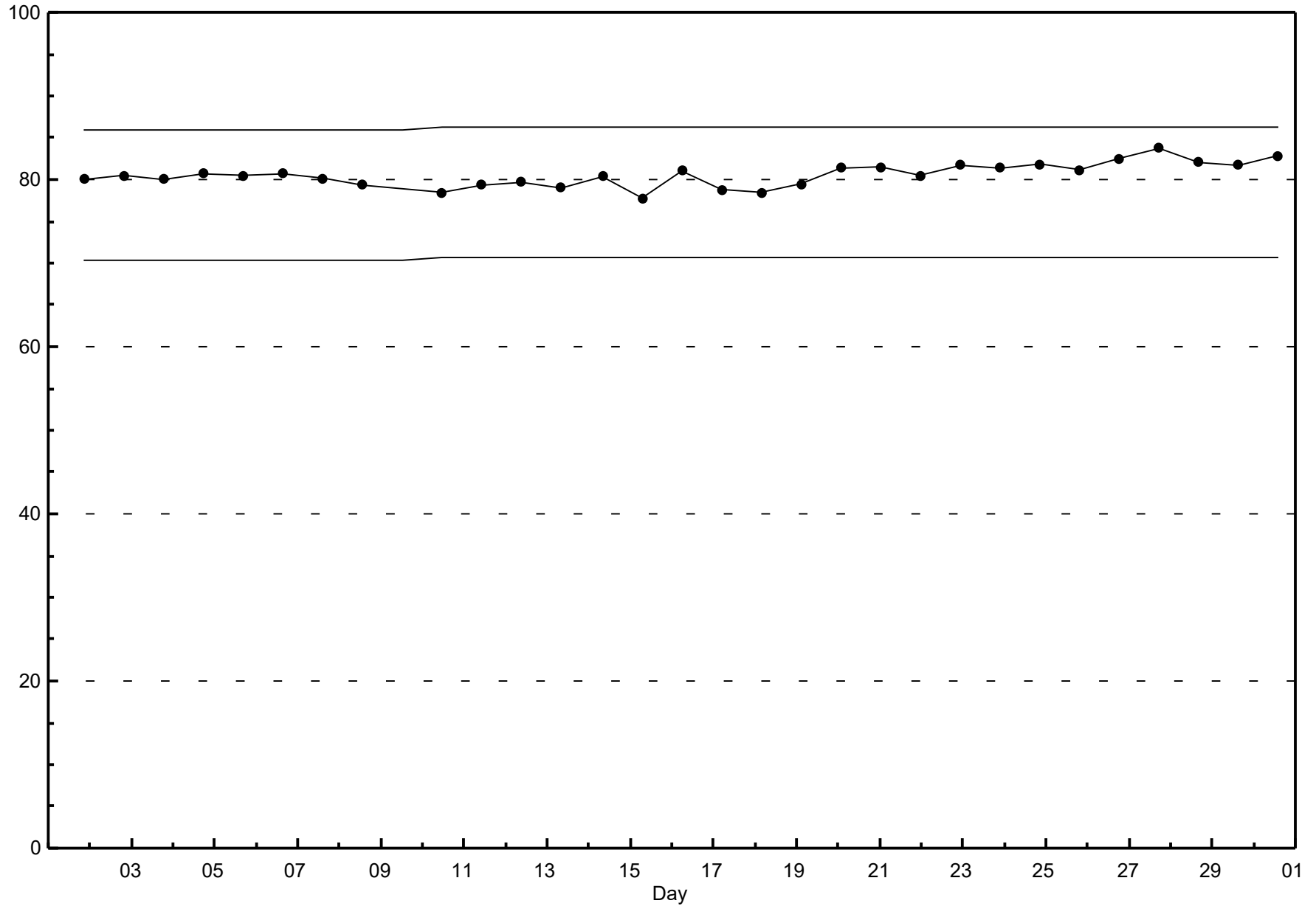
**Pollutant Rose**

**Total Reduced Sulphur (TRS) - ppb**  
**Evergreen Park - November 2016**



### Span Responses

**Total Reduced Sulphur (TRS)**  
**Evergreen Park - November 2016**



## Hourly Averages

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

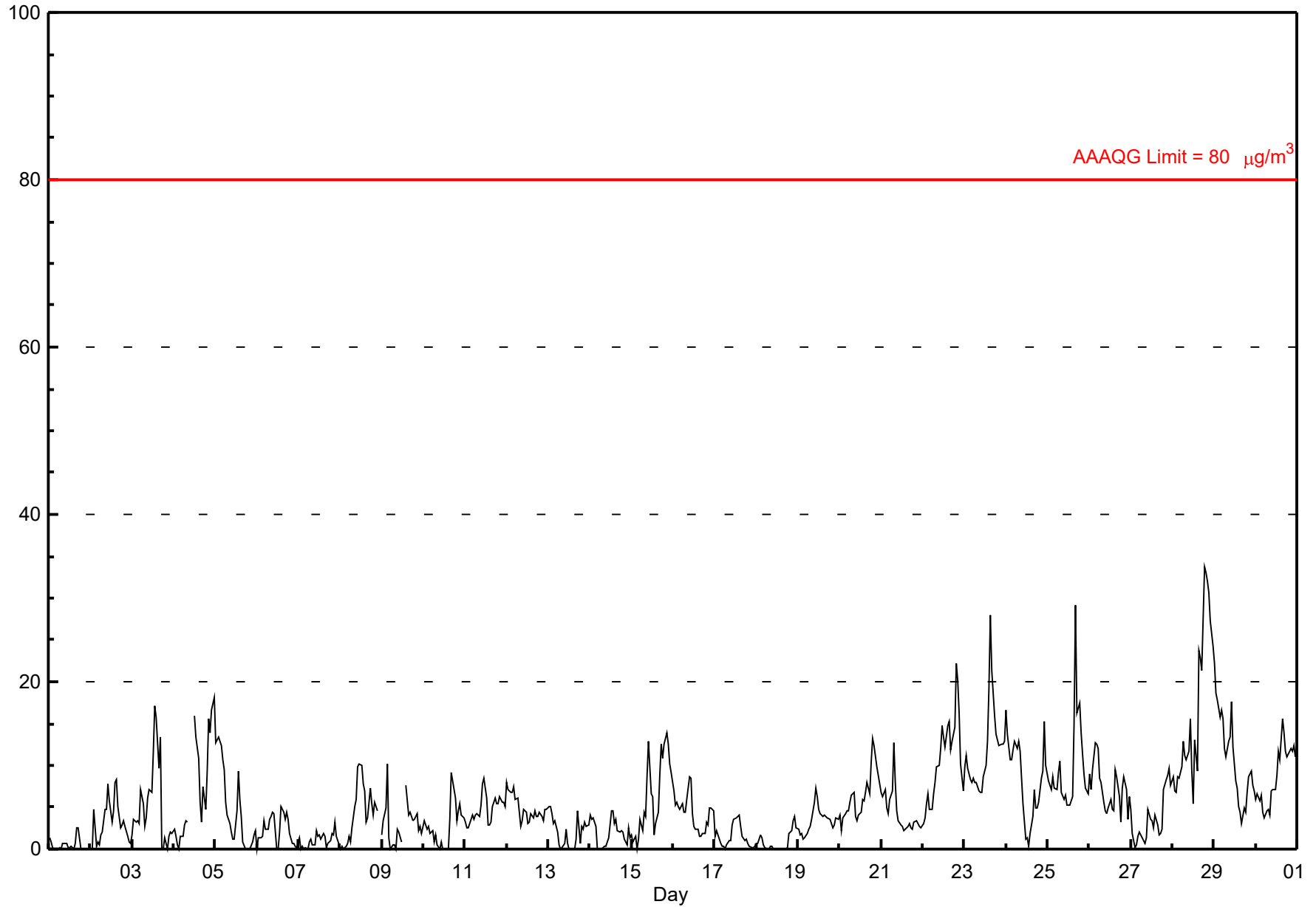
### Evergreen Park - November 2016

Number of Exceedences: 1-hr: 0 24-hr: 0	Hours in Service: 720
Maximum Value: 33.8 µg/m <sup>3</sup> on Nov 28 19:00	Maximum Daily Average: 16.6 µg/m <sup>3</sup> on Nov 28
Minimum Value: 0 µg/m <sup>3</sup> on Nov 1 04:00	Hours of Data: 713
Maximum Diurnal Average: 6.9 µg/m <sup>3</sup> at hour 21	Hours of Missing Data: 7
Monthly Average: 5.44 µg/m <sup>3</sup>	Hours of Calibration: 0
Minimum Daily Average: 0.5 µg/m <sup>3</sup> on Nov 1	Percent Operational Time: 99.0
Minimum Diurnal Average: 4.3 µg/m <sup>3</sup> at hour 7	
Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.3 Q <sub>1</sub> = 1.7 Median = 4.0 Q <sub>3</sub> = 7.6 P <sub>90</sub> = 12.5 P <sub>99</sub> = 26.9	

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	1	1	0	0	0	0	0	0	1	1	1	0	0	0	0	1	3	3	0	0	0	0	0	0	0.5	2.6
2-Nov	0	0	5	0	1	1	2	2	5	5	8	6	3	5	8	8	5	3	3	3	3	1	1	1	3.2	8.4
3-Nov	2	4	3	3	3	7	5	3	4	6	7	7	11	17	16	10	13	0	0	1	0	2	2	2	5.3	17.1
4-Nov	2	1	1	0	2	1	3	3	3	P	P	P	16	13	11	6	3	7	5	9	16	14	17	18	7.2	18.1
5-Nov	13	13	13	12	11	9	6	4	3	2	1	1	5	9	6	4	1	0	0	0	0	1	2	2	4.9	13.4
6-Nov	0	1	1	2	3	2	2	4	4	4	4	0	0	2	5	4	3	4	4	2	1	1	0	0	2.3	5.0
7-Nov	1	0	0	0	0	0	1	1	0	1	2	2	2	1	2	2	0	1	1	2	2	3	2	0	1.1	3.2
8-Nov	0	0	0	0	1	1	1	3	5	6	10	10	10	8	7	3	4	7	5	4	6	5	N	N	4.4	10.2
9-Nov	2	3	5	10	1	0	1	0	0	2	2	1	M	M	8	4	4	4	3	4	4	2	3	2	3.0	10.2
10-Nov	3	3	2	3	2	2	1	2	1	0	1	0	0	0	0	4	9	8	6	3	5	5	4	4	2.8	9.2
11-Nov	3	3	3	3	4	3	4	4	4	5	8	8	6	3	3	3	5	6	5	5	6	6	6	5	4.7	8.5
12-Nov	8	7	7	7	7	6	6	4	3	3	5	4	3	3	4	4	5	4	4	4	4	3	5	5	4.8	8.0
13-Nov	5	5	4	3	3	2	1	0	0	1	2	1	0	0	0	0	1	5	1	3	2	3	3	3	2.0	5.1
14-Nov	4	4	4	3	0	0	0	0	0	0	1	1	5	5	3	4	2	2	2	2	1	1	3	1	1.9	4.7
15-Nov	2	1	2	0	1	3	2	4	4	9	13	7	6	2	3	4	9	13	11	13	14	13	10	9	6.4	13.9
16-Nov	7	5	6	5	5	5	4	4	6	9	9	4	3	2	2	2	2	2	2	3	3	5	5	5	4.3	8.6
17-Nov	1	2	2	1	0	0	0	1	1	1	3	4	4	4	4	3	2	1	1	1	0	0	0	0	1.5	4.1
18-Nov	1	1	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	3	4	3	0.8	3.8
19-Nov	2	2	2	1	1	2	2	3	4	6	7	6	5	4	4	4	4	4	4	3	2	3	4	4	3.4	7.3
20-Nov	4	2	4	4	5	5	6	6	7	4	3	4	4	6	6	7	8	7	10	13	12	10	9	8	6.4	13.2
21-Nov	7	6	7	5	4	6	7	13	8	5	3	3	3	2	2	3	3	3	2	3	3	3	3	3	4.5	12.8
22-Nov	3	4	5	7	5	5	7	8	10	10	12	15	13	12	15	15	12	13	15	22	20	16	10	7	10.8	22.3
23-Nov	10	11	10	8	8	9	8	8	7	7	7	9	10	13	19	28	21	16	14	13	12	13	12	13	11.9	28.0
24-Nov	17	14	11	11	12	13	12	13	12	8	5	1	1	0	2	4	7	5	5	6	9	9	15	10	8.4	16.6
25-Nov	8	8	7	9	7	7	9	11	7	6	7	5	5	5	6	15	29	16	17	14	11	9	7	7	9.7	29.2
26-Nov	9	7	9	13	13	12	8	8	6	5	4	5	6	5	5	9	9	6	3	7	9	7	4	6	7.3	12.6
27-Nov	5	2	0	1	1	2	1	1	1	1	5	3	3	3	4	3	2	2	2	7	8	9	10	8	3.5	9.7
28-Nov	9	7	7	9	8	10	13	11	11	12	16	9	5	13	9	24	23	21	34	33	32	31	27	24	16.6	33.8
29-Nov	22	19	18	16	17	16	12	11	13	13	18	12	8	7	5	4	3	5	4	7	9	9	8	7	10.9	22.1
30-Nov	6	7	6	6	4	4	5	5	4	7	7	7	9	12	11	16	14	12	11	11	12	12	12	11	8.7	15.6

5.2	4.7	4.8	4.7	4.4	4.5	4.3	4.6	4.4	4.8	5.9	4.7	5.1	5.4	5.7	6.5	6.9	5.9	5.8	6.7	6.9	6.6	6.4	5.7		Diurnal Average
22.1	18.6	17.8	15.7	16.7	15.6	12.8	12.8	12.9	13.5	17.6	14.7	15.9	17.1	19.1	28.0	29.2	21.3	33.8	33.0	32.0	30.7	27.3	24.2		Diurnal Maximum

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

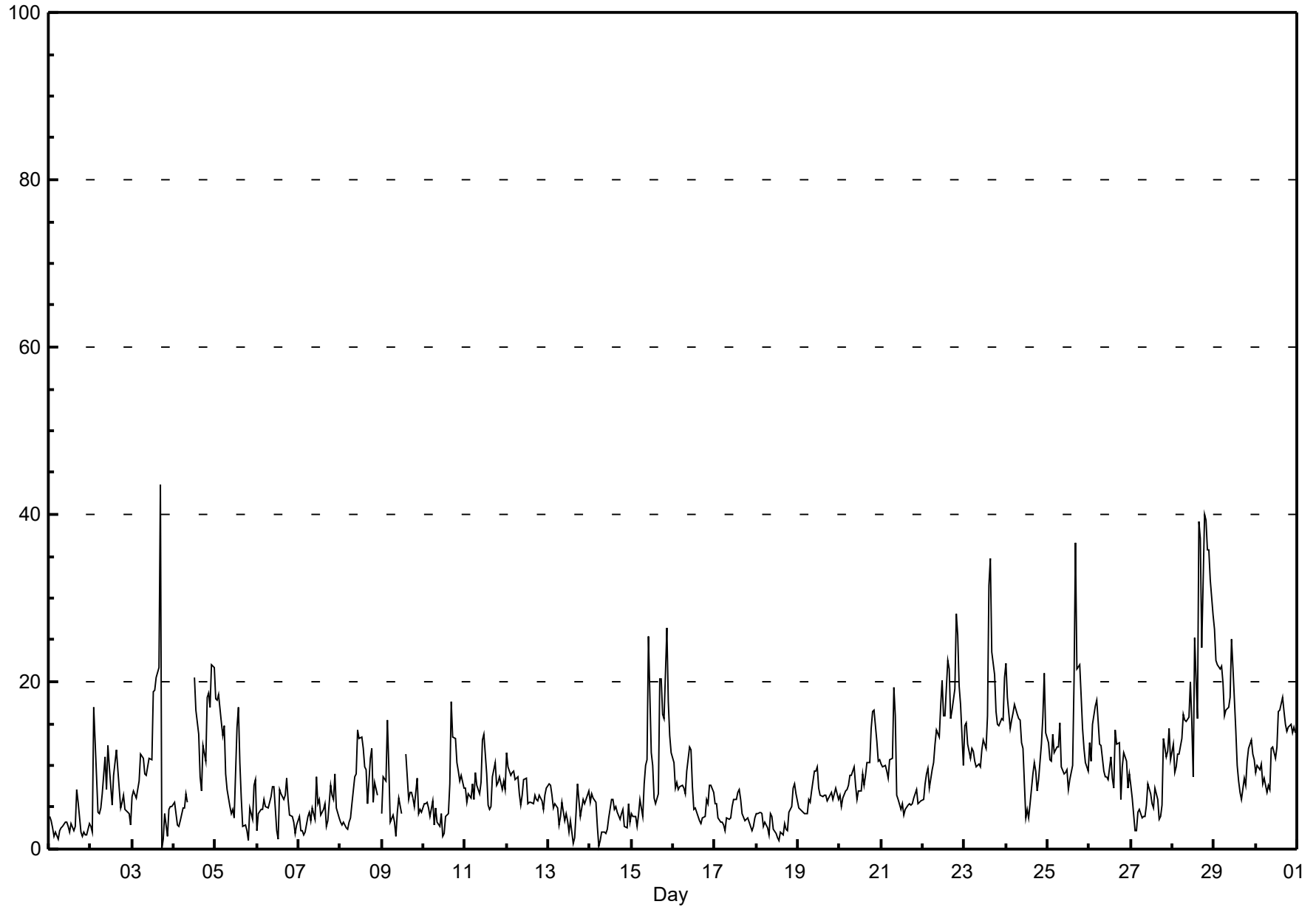


## Hourly Maximums

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

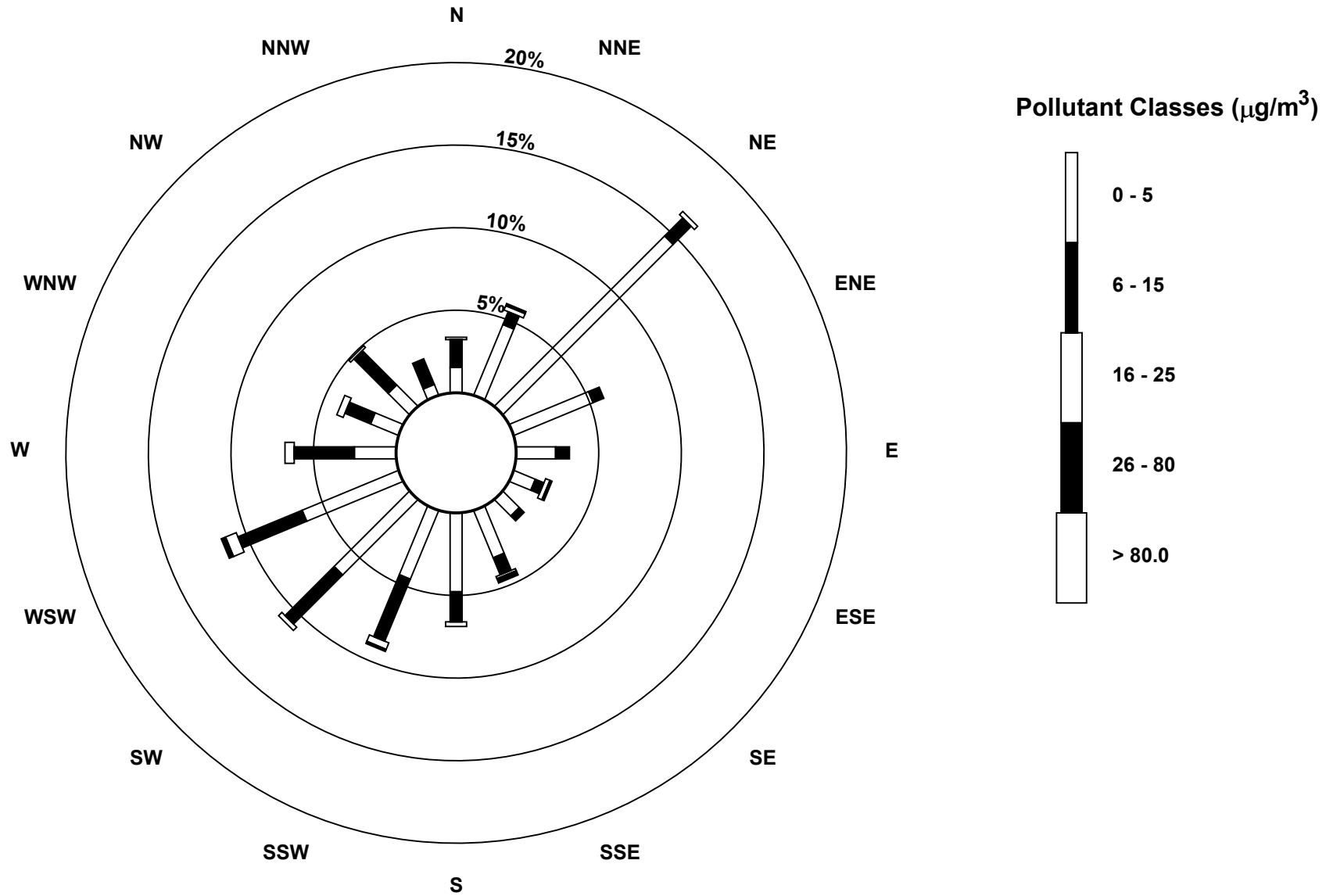
### Evergreen Park - November 2016

Maximum Value: 43.5 µg/m <sup>3</sup> on Nov 3 17:00		Maximum Daily Average: 21.9 µg/m <sup>3</sup> on Nov 28		Hours in Service: 720																									
Minimum Value: 0 µg/m <sup>3</sup> on Nov 3 18:00		Minimum Daily Average: 2.7 µg/m <sup>3</sup> on Nov 1		Hours of Data: 713																									
Maximum Diurnal Average: 11.6 µg/m <sup>3</sup> at hour 17		Minimum Diurnal Average: 7.3 µg/m <sup>3</sup> at hour 7		Hours of Missing Data: 7																									
Monthly Average: 8.88 µg/m <sup>3</sup>		Percentiles: P <sub>1</sub> = 1.2 P <sub>10</sub> = 2.8 Q <sub>1</sub> = 4.7 Median = 7.1 Q <sub>3</sub> = 11.5 P <sub>90</sub> = 16.5 P <sub>99</sub> = 35.1		Hours of Calibration: 0																									
				Percent Operational Time: 99.0																									
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	1	2	1	2	3	3	3	3	2	3	2	3	7	6	2	1	2	2	2	3	2.7	7.1				
2-Nov	3	2	17	9	4	4	5	7	11	7	12	10	5	9	10	12	10	5	6	6	5	4	4	3	7.1	16.9			
3-Nov	6	7	6	7	8	11	11	9	9	10	11	11	19	19	21	22	44	0	1	4	1	5	5	5	10.5	43.5			
4-Nov	6	4	3	3	3	5	5	7	6	P	P	P	21	17	14	9	7	12	11	18	19	17	22	22	10.8	22.0			
5-Nov	18	18	18	15	14	15	9	7	5	4	5	4	15	17	10	6	3	3	2	1	5	4	8	8	8.8	18.4			
6-Nov	2	4	5	5	6	5	5	6	6	7	7	2	1	7	7	6	6	8	6	4	4	3	2	3	4.9	8.4			
7-Nov	4	2	2	2	2	4	4	3	5	4	9	5	6	4	5	5	3	3	8	6	6	9	5	4	4.6	9.0			
8-Nov	3	3	3	2	3	4	5	9	9	14	13	13	12	10	10	5	11	12	6	8	6	N	N	7.5	14.2				
9-Nov	4	9	8	15	10	3	4	3	2	4	6	4	M	M	11	6	7	7	6	5	8	4	5	4	6.2	15.4			
10-Nov	5	5	6	5	4	6	3	5	3	3	4	1	2	4	4	8	18	13	13	10	9	8	9	7	6.5	17.7			
11-Nov	7	6	7	6	8	6	9	8	7	8	13	14	9	5	5	5	9	10	8	8	9	7	8	7	7.8	13.8			
12-Nov	12	10	9	9	9	8	9	7	5	6	8	8	5	6	6	5	6	6	6	6	6	5	6	7	7.1	11.5			
13-Nov	8	8	7	5	5	5	3	4	6	3	4	3	2	3	1	1	4	8	4	5	6	5	6	7	4.7	7.9			
14-Nov	6	7	6	6	3	0	1	2	2	2	2	4	6	6	5	5	4	4	4	5	3	2	5	3	3.9	6.7			
15-Nov	4	4	4	3	4	6	4	8	10	11	25	12	10	6	5	7	20	20	16	16	26	18	14	12	11.0	26.5			
16-Nov	10	7	8	7	7	8	7	7	9	12	12	7	5	5	4	3	3	4	4	6	5	8	8	7	6.8	12.3			
17-Nov	5	5	4	3	3	3	2	4	4	4	4	5	6	6	7	7	6	4	3	4	4	3	2	3	4	4.2	7.1		
18-Nov	4	4	4	4	3	3	2	2	4	4	2	2	1	1	2	2	3	2	2	4	5	7	8	7	3.5	7.8			
19-Nov	5	5	5	4	4	4	6	6	7	9	9	10	7	6	6	6	6	6	6	7	6	7	7	6	6.3	9.9			
20-Nov	6	5	6	7	7	8	9	9	10	8	6	7	7	9	8	9	10	10	14	16	17	13	11	11	9.2	16.6			
21-Nov	10	10	10	9	8	11	11	19	16	6	6	5	5	4	5	5	5	5	5	6	7	5	6	6	7.8	19.4			
22-Nov	6	8	9	10	7	9	10	13	14	13	17	20	16	16	22	21	16	17	19	28	26	20	17	10	15.2	28.1			
23-Nov	15	15	12	11	12	12	11	10	10	10	12	13	12	16	32	35	23	21	16	15	15	16	15	21	15.7	34.7			
24-Nov	22	18	14	15	16	17	16	16	16	13	12	4	5	4	5	9	10	9	7	8	13	16	21	14	12.5	22.3			
25-Nov	13	11	11	14	12	12	12	15	10	9	9	10	7	8	10	20	37	22	22	18	14	12	10	9	13.6	36.7			
26-Nov	13	11	15	17	18	15	12	12	9	9	9	8	11	8	7	14	13	13	6	10	11	11	7	9	11.2	17.8			
27-Nov	8	6	2	2	4	5	4	4	4	5	8	7	5	5	7	6	4	4	5	13	11	12	14	11	6.5	14.4			
28-Nov	13	9	10	11	11	13	16	16	15	16	20	15	9	25	16	39	37	24	40	39	36	36	32	28	21.9	40.1			
29-Nov	26	22	22	22	22	20	16	17	17	18	25	22	14	10	8	7	6	8	8	11	12	13	11	11	15.3	26.4			
30-Nov	9	10	9	10	8	8	7	8	7	12	12	11	12	16	17	18	16	15	14	15	15	14	15	14	12.2	18.2			
		8.6	7.9	8.1	8.0	7.6	7.7	7.3	7.9	8.0	7.9	10.0	8.3	8.2	8.9	9.0	10.3	11.6	9.3	9.3	10.1	10.4	9.7	9.9	9.0	Diurnal Average			
		26.4	22.5	22.0	21.6	21.8	19.8	16.1	19.4	17.0	18.1	25.4	21.7	20.6	25.2	31.6	39.1	43.5	24.0	40.1	39.4	35.7	35.7	32.2	28.0	Diurnal Maximum			
P - Power Failure		M - Maintenance				N - Not Valid																							



**Pollutant Rose**

**Particulate Matter 2.5 (PM<sub>2.5</sub>) - μg/m<sup>3</sup>**  
**Evergreen Park - November 2016**



# Hourly Averages

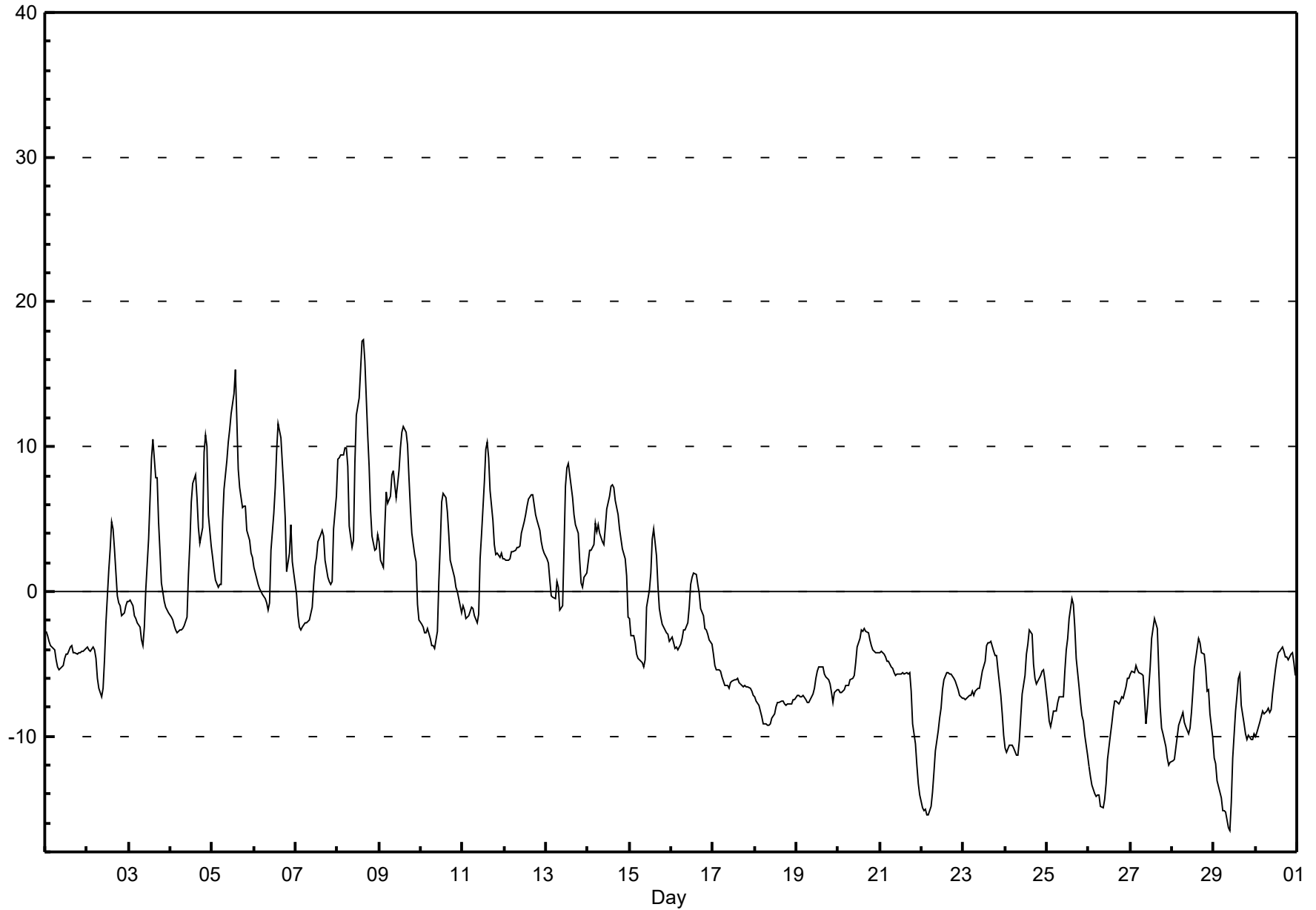
## External Temperature (ET) - °C Evergreen Park - November 2016

Maximum Value: 17.4 °C on Nov 8 16:00 Minimum Value: -16 °C on Nov 29 10:00 Maximum Diurnal Average: 1.8 °C at hour 15 Monthly Average: -2.44 °C		Maximum Daily Average: 9.0 °C on Nov 8 Minimum Daily Average: -11.4 °C on Nov 29 Minimum Diurnal Average: -4.6 °C at hour 9 Percentiles: P <sub>1</sub> = -15.2 P <sub>10</sub> = -9.4 Q <sub>1</sub> = -6.8 Median = -3.6 Q <sub>3</sub> = 2.2 P <sub>90</sub> = 6.5 P <sub>99</sub> = 13.1		Hours in Service: 720 Hours of Data: 720 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Nov	-3	-3	-3	-4	-4	-4	-5	-5	-5	-5	-5	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4.2	-2.7	
2-Nov	-4	-4	-4	-4	-4	-5	-6	-7	-7	-7	-5	-2	1	3	5	4	3	0	-1	-1	-2	-2	-1	-1	-2.0	4.8	
3-Nov	-1	-1	-1	-2	-2	-2	-2	-3	-4	-2	0	4	6	9	10	8	8	5	3	1	-1	-1	-1	-1	1.2	10.5	
4-Nov	-2	-2	-2	-3	-3	-3	-3	-3	-2	-2	1	3	6	7	8	6	4	3	4	10	11	10	5	3	2.5	10.8	
5-Nov	2	2	1	0	0	0	5	7	9	10	11	12	14	15	12	8	7	6	6	6	4	4	3	2	6.1	15.3	
6-Nov	2	1	1	0	0	0	-1	-1	-1	-1	3	5	7	10	12	11	9	7	5	1	3	5	2	1	3.4	11.6	
7-Nov	0	-2	-2	-3	-2	-2	-2	-2	-2	-1	0	2	2	3	4	4	4	2	1	1	0	1	4	7	0.7	6.6	
8-Nov	9	9	9	9	10	10	9	4	3	4	9	12	13	15	17	17	16	11	9	6	4	3	3	4	9.0	17.4	
9-Nov	3	2	2	4	7	6	7	8	8	7	6	8	10	11	11	11	10	8	6	4	3	2	-1	-2	5.9	11.4	
10-Nov	-2	-3	-3	-3	-3	-3	-4	-4	-4	-3	1	3	6	7	7	5	4	2	1	1	0	0	-1	-1	0.2	6.8	
11-Nov	-1	-1	-2	-2	-1	-1	-1	-2	-2	-2	2	4	8	10	10	9	7	5	3	3	3	2	3	2	2.3	10.4	
12-Nov	2	2	2	2	3	3	3	3	3	3	4	5	5	6	6	7	7	6	5	5	4	3	3	3	4.0	6.7	
13-Nov	2	2	1	0	0	0	1	0	-1	-1	3	7	9	9	7	6	5	5	4	2	1	0	1	1	2.6	8.9	
14-Nov	2	3	3	3	5	4	5	4	3	3	4	6	7	7	7	7	6	5	4	4	3	2	1	-2	4.1	7.4	
15-Nov	-2	-3	-3	-4	-4	-5	-5	-5	-5	-5	-1	0	1	4	4	2	0	-1	-2	-2	-3	-3	-3	-3	-1.9	4.3	
16-Nov	-3	-4	-4	-4	-4	-4	-3	-3	-3	-2	-1	0	1	1	1	0	0	-1	-2	-3	-3	-3	-3	-4	-2.0	1.2	
17-Nov	-4	-5	-5	-5	-6	-6	-6	-6	-7	-7	-6	-6	-6	-6	-6	-6	-6	-7	-7	-7	-7	-7	-7	-7	-6.2	-4.4	
18-Nov	-7	-8	-8	-8	-9	-9	-9	-9	-9	-9	-9	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-7	-7	-8.1	-7.3
19-Nov	-7	-7	-7	-7	-7	-7	-8	-8	-7	-7	-7	-6	-5	-5	-5	-5	-6	-6	-6	-6	-7	-8	-7	-7	-6.7	-5.2	
20-Nov	-7	-7	-7	-7	-6	-6	-6	-6	-6	-6	-5	-4	-3	-3	-3	-3	-3	-3	-3	-4	-4	-4	-4	-4	-4.8	-2.6	
21-Nov	-4	-4	-4	-5	-5	-5	-5	-5	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-7	-9	-11	-12	-13	-14	-6.7	-4.2	
22-Nov	-15	-15	-15	-15	-15	-15	-14	-12	-11	-10	-9	-8	-7	-6	-6	-6	-6	-6	-6	-6	-6	-7	-7	-7	-9.6	-5.6	
23-Nov	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-6	-5	-5	-4	-4	-4	-3	-4	-4	-4	-5	-7	-9	-10	-6.1	-3.5	
24-Nov	-11	-11	-11	-11	-11	-11	-11	-11	-10	-9	-7	-6	-4	-4	-3	-3	-5	-6	-6	-6	-6	-6	-5	-6	-7.5	-2.6	
25-Nov	-8	-9	-9	-9	-8	-8	-8	-7	-7	-7	-6	-4	-3	-2	-1	-1	-2	-5	-7	-8	-9	-9	-10	-11	-6.6	-0.5	
26-Nov	-12	-13	-13	-14	-14	-14	-14	-15	-15	-14	-13	-12	-10	-9	-8	-8	-8	-8	-8	-7	-7	-7	-6	-6	-10.6	-6.0	
27-Nov	-6	-5	-6	-5	-5	-6	-6	-6	-7	-9	-8	-5	-3	-3	-2	-3	-5	-8	-9	-10	-11	-11	-12	-12	-6.8	-1.9	
28-Nov	-12	-12	-11	-10	-9	-9	-8	-9	-9	-10	-9	-8	-7	-5	-4	-3	-4	-4	-4	-5	-7	-7	-8	-10	-7.7	-3.2	
29-Nov	-11	-12	-13	-14	-14	-15	-15	-15	-16	-16	-15	-12	-8	-7	-6	-6	-8	-9	-10	-10	-10	-10	-10	-10	-11.4	-5.7	
30-Nov	-10	-10	-9	-9	-8	-8	-8	-8	-8	-8	-7	-5	-5	-4	-4	-4	-4	-4	-5	-5	-4	-4	-5	-6	-6.4	-3.8	
	-3.9	-4.2	-4.4	-4.4	-4.3	-4.4	-4.3	-4.4	-4.6	-4.2	-2.6	-1.0	0.4	1.4	1.8	1.4	0.4	-0.8	-1.5	-2.1	-2.6	-2.9	-3.4	-3.8	Diurnal Average		
	9.2	9.2	9.4	9.5	9.9	9.9	8.7	8.0	9.0	10.3	11.2	12.3	13.6	15.4	17.3	17.4	15.9	10.8	8.6	9.6	10.8	10.1	5.3	6.6	Diurnal Maximum		



### Hourly Averages

External Temperature (ET) - °C  
Evergreen Park - November 2016



# Hourly Averages

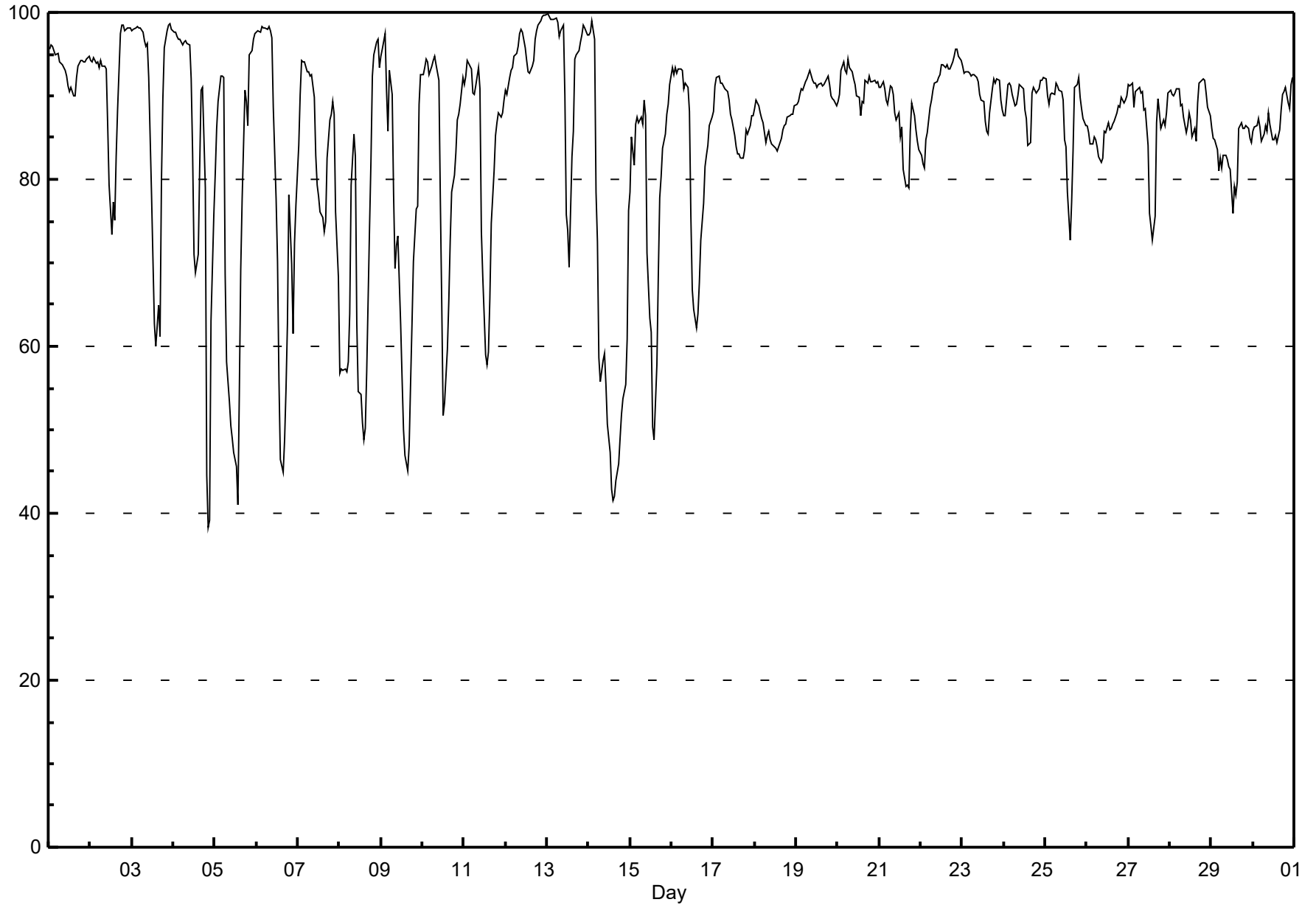
Relative Humidity (RH) - %

Evergreen Park - November 2016

Maximum Value: 99.8 % on Nov 13 01:00		Maximum Daily Average: 95.5 % on Nov 12		Hours in Service: 720																							
Minimum Value: 38 % on Nov 4 21:00		Minimum Daily Average: 62.1 % on Nov 14		Hours of Data: 720																							
Maximum Diurnal Average: 90.8 % at hour 3		Minimum Diurnal Average: 72.9 % at hour 15		Hours of Missing Data: 0																							
Monthly Average: 84.92 %		Percentiles: P <sub>1</sub> = 44.6 P <sub>10</sub> = 63.8 Q <sub>1</sub> = 82.9 Median = 89.0 Q <sub>3</sub> = 92.5 P <sub>90</sub> = 96.2 P <sub>99</sub> = 99.1		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	96	96	96	95	95	95	94	94	94	93	92	91	90	91	90	90	92	94	94	94	94	94	94	95	93.5	96.1	
2-Nov	94	94	95	94	94	93	94	94	94	93	87	79	73	77	75	83	88	97	99	98	98	98	98	98	91.2	98.5	
3-Nov	98	98	98	98	98	98	98	97	96	96	92	78	70	63	60	65	61	80	90	96	98	99	99	98	88.4	98.7	
4-Nov	98	98	97	97	97	96	96	97	96	96	92	83	71	69	71	81	91	91	79	45	38	39	63	76	81.5	97.7	
5-Nov	81	86	89	92	92	92	69	58	53	51	49	47	46	41	54	69	78	91	89	86	95	95	97	97	74.9	97.4	
6-Nov	98	98	98	98	98	98	98	98	98	97	89	78	70	56	46	45	49	55	63	78	70	62	72	77	78.7	98.4	
7-Nov	84	90	94	94	94	93	93	92	93	90	83	79	78	76	75	74	75	83	87	88	89	88	76	68	84.8	94.2	
8-Nov	57	57	57	57	57	58	64	79	85	83	63	55	54	51	49	50	57	74	82	92	95	96	97	93	69.3	96.8	
9-Nov	95	96	97	91	86	93	90	78	69	72	73	63	56	50	47	45	48	56	63	70	76	77	89	92	73.8	97.4	
10-Nov	92	93	94	94	93	94	94	95	94	92	78	65	52	53	60	65	73	78	81	83	87	88	89	92	82.5	94.8	
11-Nov	91	92	94	94	93	90	90	91	93	91	74	68	59	58	59	66	75	81	85	87	88	87	88	90	82.7	94.3	
12-Nov	91	90	92	93	93	95	95	96	97	98	98	96	94	93	93	94	94	97	98	99	99	99	100	100	95.5	99.7	
13-Nov	100	99	99	99	99	99	99	97	98	98	90	76	74	69	83	86	94	95	95	96	97	98	98	97	93.3	99.8	
14-Nov	97	98	99	97	78	73	59	56	58	59	55	51	47	43	41	42	44	46	49	52	54	55	61	76	62.1	98.9	
15-Nov	79	85	82	87	88	87	87	87	89	88	71	63	62	50	49	58	68	78	80	84	85	88	89	91	78.1	91.3	
16-Nov	93	92	93	93	93	93	93	91	92	91	88	76	67	64	62	64	68	73	77	81	83	84	87	87	82.7	93.4	
17-Nov	88	91	92	92	92	92	91	91	91	90	88	87	85	84	83	83	83	83	84	86	85	86	88	88	87.5	92.3	
18-Nov	88	89	89	88	87	87	84	85	86	85	84	84	84	83	84	85	86	86	87	87	88	88	88	89	86.3	89.5	
19-Nov	89	89	90	91	91	92	92	92	93	92	92	91	91	92	91	92	91	92	92	91	90	90	90	89	91.0	93.0	
20-Nov	89	90	93	94	93	93	94	93	93	92	91	90	90	88	89	89	92	91	92	92	92	92	92	92	91.5	94.4	
21-Nov	91	91	92	91	90	89	91	91	90	88	87	88	85	86	81	79	79	79	86	89	88	86	85	83	86.9	91.7	
22-Nov	83	82	81	85	86	89	89	91	91	92	92	93	94	94	93	94	93	93	94	95	96	96	95	94	91.0	95.6	
23-Nov	94	93	93	93	93	92	93	93	92	92	90	89	89	87	86	85	88	91	92	91	92	92	89	88	90.7	93.6	
24-Nov	88	88	91	92	91	90	89	89	90	91	91	91	88	87	84	84	90	91	91	90	91	92	92	92	89.7	92.1	
25-Nov	92	90	89	90	90	90	92	91	91	90	89	85	84	78	73	77	83	91	91	92	90	89	87	86	87.6	92.2	
26-Nov	86	86	84	84	85	85	84	83	82	83	86	86	87	86	86	87	87	88	89	89	90	89	89	90	86.2	90.0	
27-Nov	91	91	92	89	91	91	91	90	90	88	88	84	76	74	73	76	87	90	88	86	87	86	88	90	86.6	91.5	
28-Nov	91	90	90	90	91	91	89	89	87	86	87	88	87	85	86	85	89	92	92	92	90	89	88	88.9	92.0		
29-Nov	86	85	85	83	81	83	81	83	83	82	82	81	76	79	78	80	86	87	86	86	86	86	85	84	83.1	86.8	
30-Nov	86	86	86	87	86	85	85	86	86	88	87	85	85	85	84	86	88	90	91	91	89	88	91	92	87.3	92.2	
		89.5	90.2	90.8	90.7	89.8	89.8	88.6	88.2	88.2	87.5	83.6	79.0	75.5	73.1	72.9	75.2	79.3	83.7	85.5	86.3	86.7	86.6	88.1	89.2	Diurnal Average	
		99.8	99.5	99.2	99.2	99.2	99.3	98.8	98.2	97.9	98.4	97.6	95.7	94.2	93.7	93.4	93.8	94.4	97.4	98.5	98.6	99.0	99.4	99.6	99.7	Diurnal Maximum	

**Hourly Averages**

**Relative Humidity (RH) - %**  
**Evergreen Park - November 2016**





Peace Airshed Zone Association

# Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Evergreen Park - November 2016

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	10	8	5	6	10	12	10	9	13	10	11	9	9	8	7	7	10	8	7	5	5	3	8.2	12.9
Dir	47	39	41	58	45	38	37	38	43	46	39	58	49	51	53	46	56	62	76	82	75	72	66	50	51.4	39.2
2 Spd	3	3	2	1	2	1	2	3	5	2	4	4	1	4	2	2	1	2	1	2	4	5	5	4	0.7	5.4
Dir	42	43	8	9	198	221	250	204	228	346	252	238	176	129	93	120	81	20	25	29	40	50	56	61	62.3	49.6
3 Spd	3	0	2	2	2	6	3	4	3	1	2	2	2	4	11	15	8	7	1	2	4	1	2	1.9	15.1	
Dir	61	41	163	280	186	249	266	170	127	195	335	337	278	279	268	268	243	198	196	22	46	39	279	194	238.1	242.9
4 Spd	1	0	0	2	0	0	1	0	1	P	P	3	0	2	3	3	2	3	4	9	10	8	3	2	1.0	10.3
Dir	88	65	236	25	107	90	15	110	172	P	P	313	300	302	7	41	57	185	149	159	154	163	282	256	154.9	154.4
5 Spd	2	1	1	2	1	2	10	10	13	13	13	9	4	4	16	27	18	11	14	5	1	0	2	1	3.2	26.9
Dir	235	234	15	41	61	143	154	164	163	169	176	170	167	219	310	302	295	224	202	259	3	137	38	102	219.0	301.7
6 Spd	0	1	2	1	1	1	1	2	1	2	4	4	9	11	18	23	13	9	6	4	14	14	9	5	5.6	23.1
Dir	111	127	48	355	209	220	284	185	180	155	197	263	245	259	236	229	234	224	200	183	205	217	203	197	223.2	228.8
7 Spd	1	1	0	1	2	1	1	3	2	3	2	3	4	3	3	3	2	1	1	0	2	1	7	7	1.6	7.4
Dir	193	120	66	85	41	44	39	56	75	51	31	36	44	50	45	47	76	44	55	35	30	142	150	151	74.9	149.9
8 Spd	10	11	10	12	13	9	4	0	0	1	4	5	8	8	6	4	1	3	2	1	1	1	2	3	1.4	12.7
Dir	153	157	159	163	155	154	156	174	116	313	320	320	319	322	346	26	157	289	302	262	282	221	306	266	179.4	155.3
9 Spd	2	1	4	19	15	12	20	26	26	11	15	17	25	31	29	24	13	10	5	3	5	3	0	1	12.0	30.6
Dir	244	235	279	306	298	207	215	231	241	279	245	239	245	252	252	257	243	245	252	258	244	222	48	196	249.3	251.8
10 Spd	1	1	1	2	0	1	3	1	2	8	5	6	11	7	2	1	5	4	4	2	3	5	4	4	0.8	10.6
Dir	197	51	127	41	173	32	36	47	70	71	49	58	100	96	35	316	231	222	254	239	245	245	234	193	96.3	100.3
11 Spd	3	0	1	2	3	4	6	4	1	4	2	3	6	9	4	1	1	0	2	2	2	3	0	0	2.2	8.9
Dir	202	347	141	210	214	235	226	195	215	199	249	208	193	215	211	97	172	194	172	181	207	44	294	17	206.2	214.5
12 Spd	2	0	1	1	2	2	4	5	2	2	5	5	4	4	4	2	1	1	1	2	2	1	1	2	1.9	5.0
Dir	351	313	164	227	293	179	277	218	196	190	236	248	242	227	230	238	251	182	161	193	187	218	311	221	230.8	236.1
13 Spd	2	1	1	1	2	2	9	1	1	3	2	1	2	4	2	1	1	0	0	0	1	2	0	0	0.8	9.4
Dir	181	225	63	64	54	215	215	189	89	76	147	177	84	114	107	142	31	153	189	234	183	222	25	215	154.9	214.6
14 Spd	3	1	0	8	22	27	40	28	17	21	29	35	34	41	40	34	36	35	24	22	18	16	6	1	22.2	41.1
Dir	212	298	178	226	238	240	237	242	241	240	239	245	250	245	242	247	241	240	243	235	225	230	229	235	240.4	244.8
15 Spd	4	4	4	2	2	4	2	3	1	1	2	5	4	4	2	1	1	0	1	0	1	0	0	2	1.0	4.8
Dir	218	166	172	46	172	165	169	187	358	322	75	199	216	300	346	42	234	121	163	194	198	206	342	329	193.5	198.7
16 Spd	2	0	1	1	1	3	3	2	1	3	2	1	3	4	4	6	2	1	1	1	0	1	0	1	0.6	6.3
Dir	283	288	207	215	298	244	281	296	272	225	234	343	41	27	13	44	53	47	37	350	11	176	14	81	349.2	44.1
17 Spd	5	9	9	10	10	8	8	10	9	9	7	9	9	9	11	7	7	5	3	4	6	7	7	7	7.7	11.2
Dir	59	55	57	43	60	58	60	47	74	60	69	38	59	47	47	52	64	81	86	66	81	51	41	43	56.5	51.9
18 Spd	9	9	8	8	11	10	6	7	6	7	8	7	6	8	10	9	8	8	9	8	8	9	7	8	8.0	11.2
Dir	45	44	46	40	42	45	55	54	46	45	42	49	45	55	40	46	52	40	40	31	28	31	47	35	43.1	42.3
19 Spd	7	10	13	13	13	14	13	14	13	11	13	11	11	10	11	11	11	9	6	4	3	1	0	1	9.1	14.1
Dir	33	41	42	42	45	42	44	44	40	46	43	44	48	49	41	43	34	32	26	13	10	237	103	52	40.7	43.9
20 Spd	2	3	3	3	2	2	4	4	4	2	4	4	3	1	4	2	1	1	3	4	6	8	7	8	0.3	7.7
Dir	49	92	63	72	120	19	33	57	68	40	37	63	61	225	203	233	212	186	268	258	247	265	240	250	289.7	250.3
21 Spd	7	6	7	7	5	6	8	7	11	10	12	14	12	11	11	8	7	4	4	1	1	0	0	2	5.5	14.1
Dir	243	234	230	244	276	243	248	275	296	296	306	311	292	310	305	304	274	235	180	5	347	138	186	32	280.8	311.3
22 Spd	1	2	2	3	3	3	2	0	1	1	3	3	0	2	5	5	4	4	7	5	6	6	5	4	2.6	7.0
Dir	239	14	324	296	297	313	320	314	303	178	240	276	154	228	185	234	259	244	250	250	258	263	249	229	256.9	250.0



Peace Airshed Zone Association

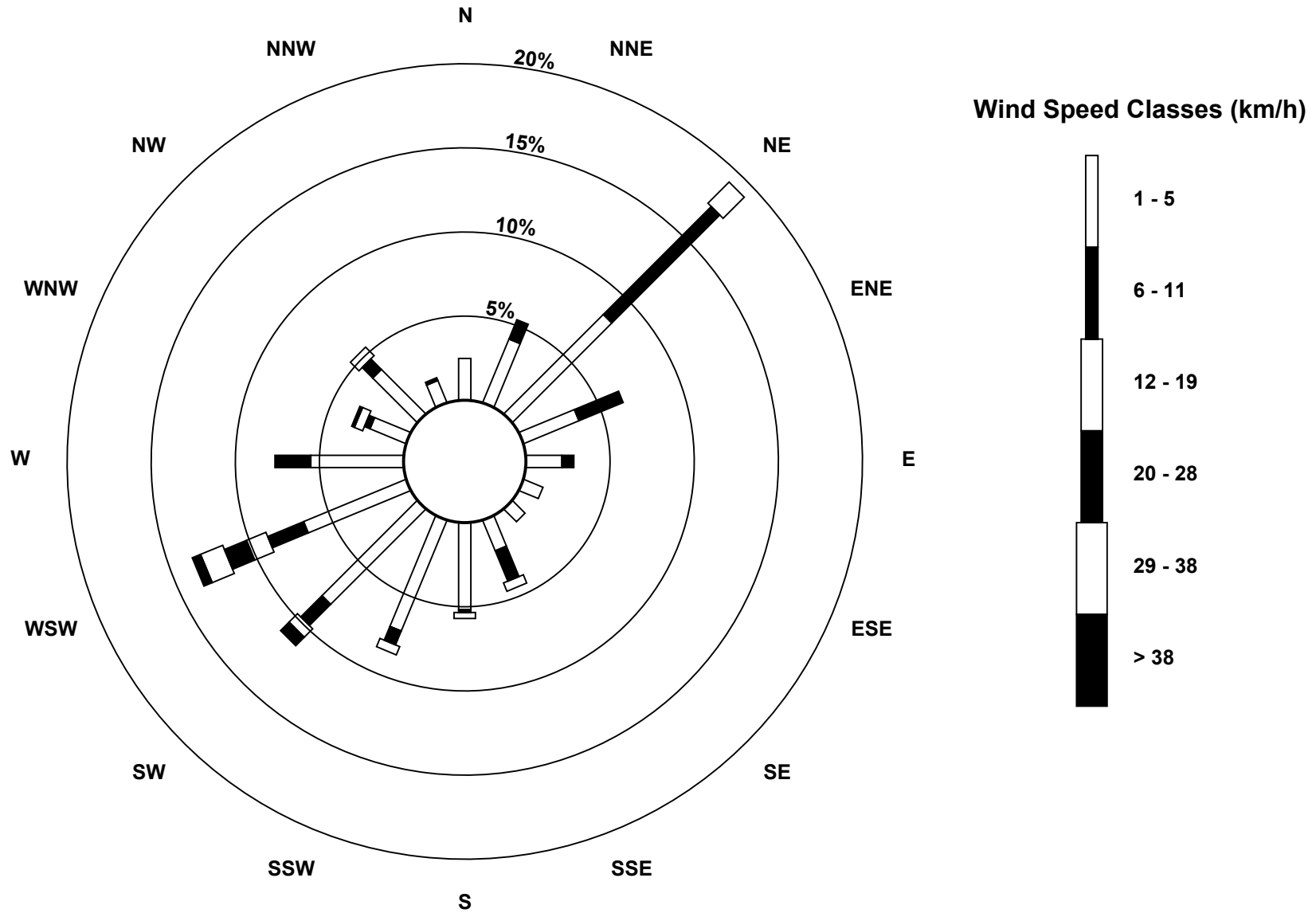
# Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Evergreen Park - November 2016

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	2	3	3	3	3	4	3	0	2	3	2	3	3	3	1	1	2	1	0	1	1	1	1	1	1.7	3.9
Dir	186	196	246	265	257	195	247	201	211	219	169	195	243	267	246	244	225	210	149	215	192	186	299	147	222.9	195.1
24 Spd	1	2	1	2	1	1	1	0	2	0	1	1	0	1	2	2	3	4	4	5	5	1	5	3	1.2	5.0
Dir	356	358	317	359	7	330	7	203	323	354	100	357	48	223	315	259	266	267	243	250	218	283	219	234	264.7	217.7
25 Spd	1	0	1	0	0	0	7	7	7	9	11	15	8	6	5	4	2	1	1	1	1	0	2	3.2	14.6	
Dir	217	82	240	217	141	175	220	276	263	265	268	247	249	266	271	309	254	241	25	3	207	187	94	41	258.5	247.0
26 Spd	0	0	1	1	1	1	1	1	1	3	3	2	2	5	3	2	3	2	4	4	5	3	3	2	1.2	5.1
Dir	207	184	29	18	343	270	199	338	272	319	279	203	325	191	324	330	254	266	223	244	321	234	191	201	258.3	190.5
27 Spd	0	2	3	0	0	4	3	4	3	0	1	0	2	2	2	1	2	2	2	0	1	4	3	0.6	4.4	
Dir	352	91	48	28	217	218	219	196	187	227	250	358	247	260	200	165	64	35	16	346	352	252	296	311	241.5	196.1
28 Spd	4	4	2	2	3	2	2	1	0	1	3	5	3	3	1	3	1	0	3	1	2	1	1	1	1.2	5.0
Dir	317	306	279	265	274	264	212	63	54	215	270	304	281	225	206	223	33	119	199	28	164	160	120	185	262.9	303.8
29 Spd	1	1	1	0	0	0	1	1	1	1	1	2	2	4	4	3	1	0	0	0	1	0	0	0	0.7	4.0
Dir	188	191	45	210	298	325	334	48	37	11	39	26	360	349	32	17	25	240	314	329	246	280	219	188	12.1	31.9
30 Spd	0	0	0	1	0	0	0	1	1	5	1	2	2	2	4	2	2	2	1	1	0	1	4	2	0.8	4.8
Dir	90	116	108	274	129	202	198	210	47	201	317	197	192	138	175	113	92	84	37	349	240	257	195	219	176.9	201.1
Spd	0.4	1.1	1.0	0.9	0.4	1.1	2.2	1.2	0.8	0.5	1.4	2.0	1.8	2.6	2.8	2.8	2.4	2.0	1.6	1.0	1.2	1.1	0.6	0.3	Diurnal Average	
Dir	84.1	67.7	58.9	356.0	305.7	218.7	228.3	225.9	238.4	263.0	271.6	270.2	265.2	262.1	277.4	283.7	260.2	233.2	216.7	239.8	216.0	223.1	214.0	199.8	Diurnal Maximum	
Spd	10.2	11.3	13.4	19.4	22.4	26.8	39.8	27.6	25.5	20.7	28.9	35.1	33.6	41.1	39.6	34.3	35.8	34.6	24.4	21.8	17.6	16.0	9.4	8.5	Diurnal Maximum	
Dir	153.2	156.7	41.6	305.6	237.8	239.8	237.0	242.5	241.3	240.0	239.4	244.8	249.7	244.8	242.4	246.6	241.1	239.8	242.7	235.1	225.0	229.6	202.8	35.1	Diurnal Maximum	
Maximum Speed Value: 41 km/h on Nov 14 14:00																		Minimum Speed Value: 0 km/h on Nov 8 09:00						Hours in Service: 720		
Maximum Daily Speed Average: 22.2 km/h on Nov 14																		Minimum Daily Speed Average: 0.3 km/h on Nov 29						Hours of Data: 718		
Maximum Diurnal Speed Average: 2.8 km/h at hour 15																		Minimum Diurnal Speed Average: 0.3 km/h at hour 24						Hours of Missing Data: 2		
Monthly Average Velocity: 1.02 km/h 253.38 deg																		Speed Percentiles: P <sub>1</sub> = 0.1 P <sub>10</sub> = 0.5 Q <sub>1</sub> = 1.2 Median = 2.7 Q <sub>3</sub> = 6.4 P <sub>90</sub> = 10.8 P <sub>99</sub> = 34.1						Percent Operational Time: 99.7		
All monthly, daily, and diurnal averages have been calculated using vector methods																										
P - Power Failure																										
Frequency Distribution																										
	Speed Range (km/h)																									
Direction	0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total																			
North	48	1	0	0	0	0	49																			
NorthEast	89	70	14	0	0	0	173																			
East	33	10	0	0	0	0	43																			
SouthEast	32	6	2	0	0	0	40																			
South	90	10	5	0	0	0	105																			
SouthWest	105	21	13	11	5	3	158																			
West	60	20	2	1	3	0	86																			
NorthWest	48	8	6	2	0	0	64																			
Total	505	146	42	14	8	3	718																			

**Wind Rose**

**Wind Speed (WS) (km/h)**  
**Evergreen Park - November 2016**



# Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Evergreen Park - November 2016

<b>Maximum Speed: 41 km/h on Nov 14 14:00</b>		<b>Maximum Daily Speed Average: 23.0 km/h on Nov 14</b>		<b>Hours in Service: 720</b>																						
<b>Minimum Speed: 0 km/h on Nov 16 21:00</b>		<b>Minimum Daily Speed Average: 1.5 km/h on Nov 29</b>		<b>Hours of Data: 718</b>																						
<b>Maximum Diurnal Speed Average: 8.0 km/h at hour 15</b>		<b>Minimum Diurnal Speed Average: 3.4 km/h at hour 24</b>		<b>Hours of Missing Data: 2</b>																						
<b>Monthly Average Speed: 5.42 km/h</b>		<b>Percentiles: P<sub>1</sub> = 0.4 P<sub>10</sub> = 1.2 Q<sub>1</sub> = 2.0 Median = 3.5 Q<sub>3</sub> = 6.9 P<sub>90</sub> = 11.3 P<sub>99</sub> = 34.5</b>		<b>Percent Operational Time: 99.7</b>																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Nov	8	11	10	8	5	7	11	13	10	10	13	11	11	10	10	9	8	8	10	9	7	6	6	4	8.9	13.3
2-Nov	4	3	2	2	3	2	4	4	7	3	5	4	2	5	3	3	3	2	1	2	5	6	5	4	3.5	6.7
3-Nov	3	3	3	3	4	7	5	5	4	3	3	2	2	2	4	12	15	8	7	3	4	4	3	3	4.7	15.4
4-Nov	2	1	1	2	2	1	4	2	3	P	P	3	1	3	4	3	3	4	5	9	10	8	5	4	3.7	10.5
5-Nov	2	2	3	2	2	3	10	10	13	13	13	9	5	6	16	28	19	12	15	6	2	1	3	3	8.3	27.6
6-Nov	3	2	3	2	2	2	3	2	1	3	5	5	9	12	18	23	13	9	6	4	14	14	9	5	7.1	23.3
7-Nov	4	3	2	2	2	1	1	3	3	3	2	3	4	4	3	4	3	1	3	2	3	3	8	7	3.1	7.6
8-Nov	11	12	11	13	13	9	4	1	1	1	4	6	9	9	8	5	2	3	3	2	2	3	2	3	5.6	13.0
9-Nov	2	2	5	20	16	12	21	26	26	12	16	17	25	31	29	24	13	11	7	7	5	3	1	1	13.9	31.1
10-Nov	1	1	2	2	1	2	3	2	3	8	6	6	11	8	3	1	5	4	5	3	4	5	5	5	4.0	11.1
11-Nov	4	3	4	3	4	5	9	5	1	5	3	3	6	9	5	2	2	1	3	2	3	3	1	1	3.7	9.3
12-Nov	2	1	1	2	4	3	5	5	2	3	6	5	4	5	4	2	2	1	1	2	3	3	1	2	2.9	5.7
13-Nov	2	2	1	2	3	2	10	3	3	4	2	2	3	5	3	2	1	1	1	2	2	4	1	2	2.4	9.6
14-Nov	5	4	2	8	23	27	40	28	17	21	29	35	34	41	40	35	36	35	25	22	18	16	7	5	23.0	41.5
15-Nov	4	4	5	2	2	4	3	4	1	1	3	5	4	5	3	1	2	1	1	1	1	0	1	2	2.6	5.3
16-Nov	3	1	1	1	1	4	3	2	1	3	3	1	4	5	5	7	2	1	1	1	0	2	1	2	2.2	6.6
17-Nov	5	10	10	10	11	9	9	10	9	10	8	10	10	10	10	12	8	8	5	4	4	6	7	7	8.4	11.6
18-Nov	9	9	9	9	11	10	7	7	6	7	8	8	7	9	11	9	8	8	9	8	8	9	7	9	8.5	11.5
19-Nov	8	10	14	13	13	14	13	14	13	11	13	11	12	11	11	11	11	9	6	4	3	1	1	1	9.6	14.3
20-Nov	2	4	3	3	2	2	4	4	4	2	5	5	4	2	4	2	2	3	3	4	6	8	7	8	3.9	8.1
21-Nov	7	7	7	8	5	6	8	7	11	10	12	15	13	11	12	8	8	5	4	2	2	1	1	2	7.1	15.3
22-Nov	1	2	2	3	4	3	3	1	2	2	4	5	4	3	6	5	5	4	7	5	6	6	6	4	3.9	7.2
23-Nov	3	3	4	3	3	4	4	2	2	3	2	3	4	4	3	2	2	2	2	1	1	2	1	2	2.6	4.2
24-Nov	1	2	2	2	2	1	1	1	2	2	3	2	2	2	2	3	3	4	4	5	6	8	11	5	3.2	11.4
25-Nov	3	2	1	2	2	4	8	7	7	10	11	15	9	7	6	4	3	2	2	2	3	1	1	3	4.7	14.8
26-Nov	1	2	1	1	1	1	1	1	1	3	4	5	6	5	4	3	3	2	5	4	5	3	3	2	2.8	6.2
27-Nov	1	3	3	0	0	4	3	5	4	1	1	1	3	3	3	2	1	2	2	2	1	2	4	4	2.2	4.5
28-Nov	4	5	2	3	3	3	2	1	1	1	3	5	3	4	2	3	2	2	4	2	3	2	2	2	2.6	5.3
29-Nov	1	2	2	1	0	1	1	1	2	1	1	2	2	4	4	4	2	1	1	1	1	0	1	1	1.5	4.3
30-Nov	1	0	1	1	0	0	0	1	1	5	2	2	3	4	5	3	2	2	4	1	0	1	4	3	2.0	5.1
																								Diurnal Average		
																								Diurnal Maximum		
3.6 3.8 4.0 4.4 4.9 5.2 6.6 5.9 5.4 5.5 6.5 6.9 7.2 7.9 8.0 7.6 6.2 5.2 5.0 4.1 4.4 4.4 3.8 3.4																								8.9		
10.5 11.6 13.7 19.9 22.5 26.9 40.0 27.8 25.8 20.9 29.1 35.4 33.9 41.5 39.9 34.7 36.0 34.8 24.6 22.0 17.9 16.1 11.4 8.9																										

P - Power Failure  
 All monthly, daily, and diurnal averages have been calculated using scalar methods

# Hourly Standard Deviations

Wind Direction (WD) - deg  
Evergreen Park - November 2016

Maximum Value: 100.1 deg on Nov 14 02:00																						Hours in Service:	720		
Minimum Value: 5.3 deg on Nov 14 06:00																						Hours of Data:	718		
Percentiles: P <sub>1</sub> = 6.5 P <sub>10</sub> = 14.4 Q <sub>1</sub> = 21.6 Median = 41.6 Q <sub>3</sub> = 69.6 P <sub>90</sub> = 84.6 P <sub>99</sub> = 95.7																						Hours of Missing Data:	2		
																						Hours of Calibration:	0		
																						Percent Operational Time:	99.7		
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	21	14	14	31	28	16	16	15	18	21	19	29	22	22	20	24	22	24	19	20	28	31	28	34	33.6
2-Nov	31	34	63	53	82	67	65	61	47	63	43	37	85	32	64	50	72	58	58	59	11	14	11	23	85.1
3-Nov	51	92	71	82	66	33	56	62	62	88	58	65	55	49	36	27	10	17	25	88	76	52	78	63	92.2
4-Nov	77	84	86	59	86	87	80	96	83	P	P	45	70	39	48	28	53	41	65	15	11	13	74	69	95.9
5-Nov	45	84	79	53	77	46	16	15	12	11	10	12	32	56	24	13	18	29	19	73	75	81	69	75	84.0
6-Nov	95	88	66	58	78	75	69	70	86	57	48	30	37	30	17	9	6	20	49	71	7	9	9	63	95.4
7-Nov	91	70	85	66	29	35	44	20	28	23	37	30	18	35	43	21	66	88	87	87	63	77	14	14	91.4
8-Nov	14	14	22	18	12	18	21	73	82	73	42	13	10	25	37	32	79	54	87	79	85	88	47	34	88.3
9-Nov	51	77	35	13	25	14	12	7	9	18	14	18	11	10	11	10	17	40	50	68	24	68	94	87	93.7
10-Nov	84	65	73	46	83	66	19	79	28	14	34	20	20	36	52	40	18	43	43	66	29	28	43	72	84.5
11-Nov	71	96	80	76	55	54	64	67	86	44	60	28	23	20	33	90	78	89	56	72	33	36	88	82	95.8
12-Nov	52	92	78	69	55	73	33	20	92	75	28	26	31	36	22	23	53	63	77	58	55	74	47	67	92.4
13-Nov	54	86	81	76	57	52	16	66	70	54	65	83	45	29	31	83	59	95	86	85	75	78	89	94	95.4
14-Nov	82	100	96	12	6	5	6	7	10	6	7	7	8	8	7	8	7	7	7	7	10	6	32	81	100.1
15-Nov	44	40	53	49	52	10	69	57	75	76	58	12	20	42	49	49	68	96	92	89	66	44	67	40	96.4
16-Nov	35	88	40	36	61	34	25	25	41	19	28	57	33	37	26	18	20	25	22	37	57	84	69	53	87.5
17-Nov	16	19	22	18	19	23	21	17	23	27	33	19	25	28	22	16	21	22	26	47	37	18	21	15	47.3
18-Nov	19	19	20	20	13	18	31	22	24	20	21	25	27	23	14	23	25	20	16	15	18	33	18	18	33.4
19-Nov	22	17	12	13	18	11	12	13	12	18	15	23	18	17	14	16	13	14	16	29	37	34	86	40	86.5
20-Nov	44	40	42	36	50	46	32	31	24	39	25	35	44	80	24	26	69	90	60	17	29	19	18	18	89.9
21-Nov	13	13	12	12	26	20	11	18	17	17	17	22	19	16	22	17	31	20	28	67	97	78	94	33	97.0
22-Nov	67	40	32	25	25	47	44	86	68	71	69	65	91	80	44	38	26	27	11	16	31	20	16	21	91.0
23-Nov	42	41	39	64	47	27	45	93	61	25	29	37	43	38	27	74	78	55	96	92	63	80	85	85	95.8
24-Nov	75	52	56	39	74	48	90	95	49	86	84	60	87	74	48	52	37	32	25	31	56	79	70	72	95.3
25-Nov	93	90	75	95	91	84	25	18	20	19	15	9	29	32	32	19	64	77	63	76	86	82	79	65	95.1
26-Nov	95	94	60	77	78	59	56	29	35	22	45	81	74	17	41	78	20	42	28	21	20	22	22	37	94.8
27-Nov	88	54	29	70	76	20	26	20	42	86	76	65	49	38	62	57	68	40	44	53	75	61	30	36	88.0
28-Nov	18	22	37	27	38	67	46	73	71	31	19	40	45	63	31	74	77	46	71	73	56	72	86	86	85.9
29-Nov	72	77	88	82	81	88	70	61	55	58	43	62	46	29	15	23	28	69	64	79	76	85	88	60	88.4
30-Nov	74	91	82	59	86	86	84	65	49	26	61	57	34	61	36	46	34	49	61	90	72	70	36	57	90.6
95.4 100.1 96.3 95.1 91.1 88.4 89.7 95.9 92.4 88.2 84.4 82.9 91.0 80.3 63.8 89.5 78.6 96.4 95.8 92.0 97.0 88.3 93.9 93.8																									
P - Power Failure																									



PAZA

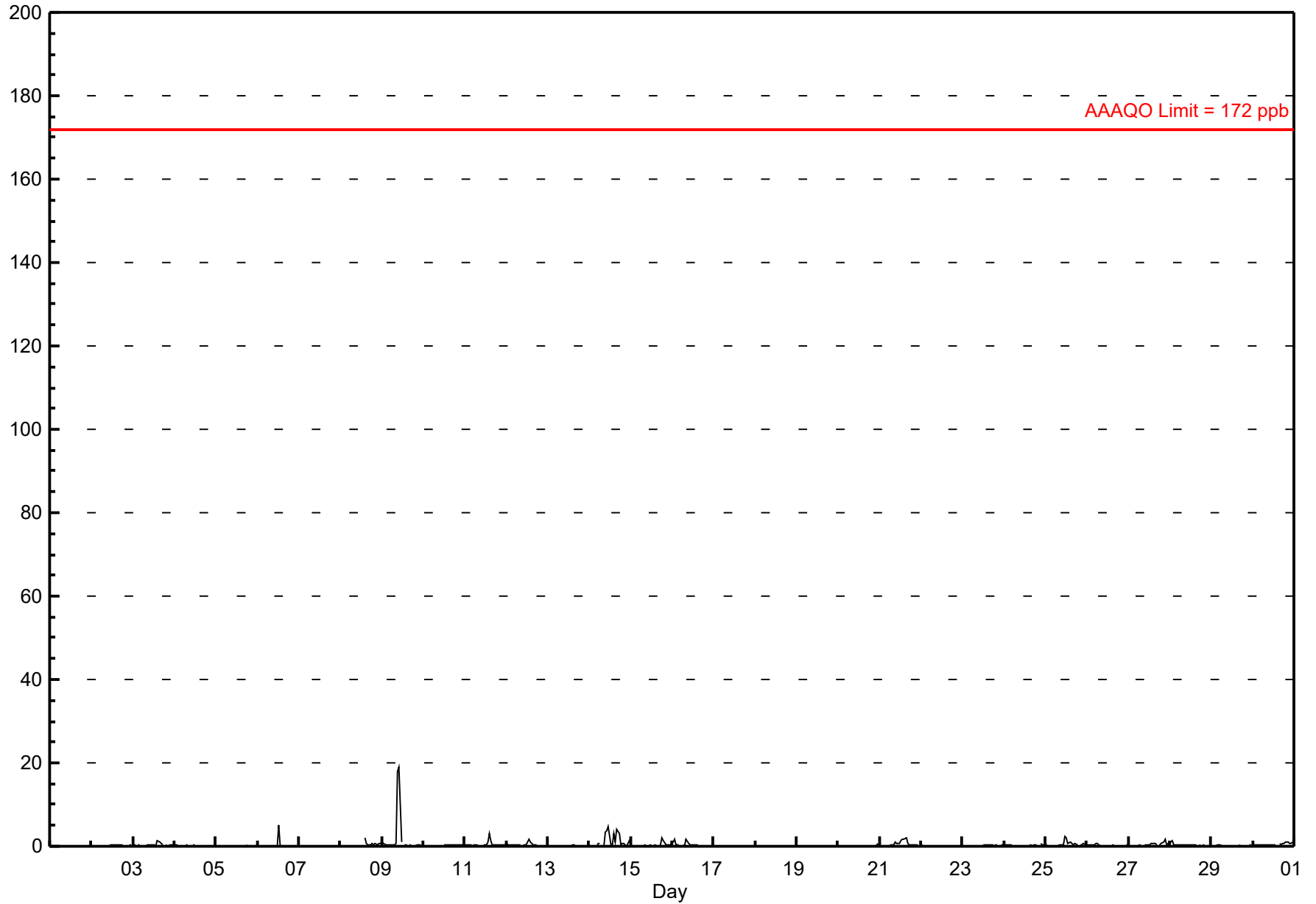
## Smoky Heights Station

Monthly Summary Tables, Graphs and  
Roses

## Hourly Averages

## Sulphur Dioxide (SO<sub>2</sub>) - ppb Smoky Heights - November 2016

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 18.9 ppb on Nov 9 11:00      Maximum Daily Average: 1.9 ppb on Nov 9		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 1 01:00 Maximum Diurnal Average: 0.9 ppb at hour 11 Monthly Average: 0.33 ppb		Minimum Daily Average: 0.0 ppb on Nov 17 Minimum Diurnal Average: 0.1 ppb at hour 8 Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.1 Median = 0.1 Q <sub>3</sub> = 0.3 P <sub>90</sub> = 0.6 P <sub>99</sub> = 3.3																								
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	0	0	0	0	0	0	0	0	A	0	0	0	0.1	0.1
2-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	0.3
3-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	A	0	0	0	0	0	0.3	1.4
4-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	0.2
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	0.2
6-Nov	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	A	0	0	0	0	0	0	0	0	0.2	5.0
7-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	0.1
8-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	2	1	0	0	1	0	1	0	1	0.3	2.1
9-Nov	1	1	0	0	0	1	0	0	1	18	19	1	A	0	0	0	0	0	0	0	0	0	0	0	1.9	18.9
10-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	0.5
11-Nov	0	0	0	0	0	0	0	0	0	0	0	A	0	1	3	1	0	0	0	0	0	0	0	0	0.5	3.2
12-Nov	1	0	0	0	0	0	0	0	0	0	A	0	1	2	1	0	0	0	0	0	0	0	0	0	0.4	1.8
13-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
14-Nov	0	0	0	0	0	1	1	A	0	3	4	5	0	0	3	1	4	3	0	1	1	0	1	1	1.3	4.9
15-Nov	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0.3	1.9
16-Nov	1	2	0	0	0	A	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	1.8
17-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
18-Nov	0	0	0	A	0	0	0	0	0	0	0	0	0	C	C	C	0	0	0	0	0	0	0	0	0.1	0.1
19-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
20-Nov	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	0.8
21-Nov	A	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2	1	0	0	0	0	0	0	A	0.6	2.1
22-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
23-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	0.3
24-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
25-Nov	0	0	0	0	0	0	0	0	0	0	0	2	2	1	1	1	1	1	0	A	0	0	1	0	0.5	2.4
26-Nov	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.2	0.7
27-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	A	0	1	1	2	0	1	0.4	1.7
28-Nov	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.3	1.5
29-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	0.5
30-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	1	0	1	1	1	1	1	1	1	0.5	1.0
																								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																										



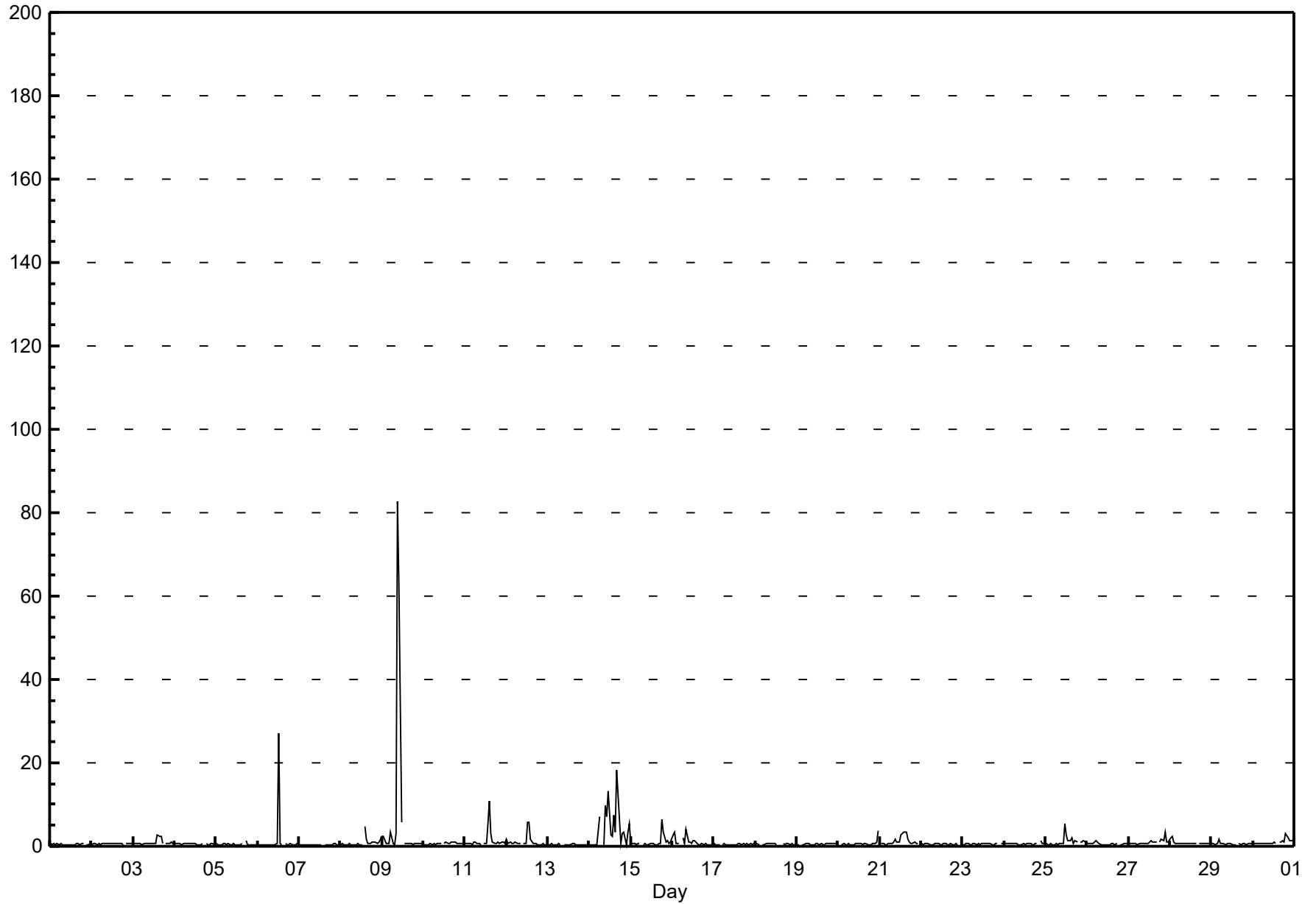
## Hourly Maximums

## Sulphur Dioxide (SO<sub>2</sub>) - ppb Smoky Heights - November 2016

Maximum Value: 82.8 ppb on Nov 9 10:00		Maximum Daily Average: 7.5 ppb on Nov 9		Hours in Service: 720																							
Minimum Value: 0 ppb on Nov 17 04:00		Minimum Daily Average: 0.4 ppb on Nov 7		Hours of Data: 686																							
Maximum Diurnal Average: 3.8 ppb at hour 10		Minimum Diurnal Average: 0.5 ppb at hour 8		Hours of Missing Data: 34																							
Monthly Average: 1.13 ppb		Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 0.4 Q <sub>1</sub> = 0.5 Median = 0.6 Q <sub>3</sub> = 0.7 P <sub>90</sub> = 1.3 P <sub>99</sub> = 9.7		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	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	1	1	0	1	1	A	0	0	1	0.5	0.6	
2-Nov	0	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0	A	1	1	1	1	0.6	0.7	
3-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	3	2	2	1	A	1	1	1	1	1	1	0.9	2.8	
4-Nov	1	1	1	1	0	1	1	1	1	1	1	1	0	0	0	1	A	1	0	0	1	1	0	0.5	0.8		
5-Nov	1	0	0	1	1	1	0	1	0	0	1	0	0	0	1	A	1	0	1	0	0	0	0	0.5	1.2		
6-Nov	0	0	0	0	0	0	0	0	0	0	1	27	1	0	A	1	0	0	1	0	0	0	1	1.6	27.2		
7-Nov	0	0	0	0	0	1	0	0	0	0	0	0	0	0	A	0	0	0	0	0	1	1	0	0.4	0.7		
8-Nov	0	1	0	0	0	1	0	0	0	0	1	0	0	A	5	2	1	1	1	1	1	1	2	0.9	4.8		
9-Nov	2	2	1	1	1	3	1	0	3	83	63	6	A	1	1	1	1	1	0	1	1	1	1	7.5	82.8		
10-Nov	0	0	0	0	1	0	1	0	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0.7	1.0		
11-Nov	1	1	1	1	0	1	1	1	1	0	A	1	1	5	11	3	1	1	1	1	1	1	1	1.5	10.7		
12-Nov	2	1	1	1	1	1	1	1	1	A	1	1	6	6	2	1	1	1	0	0	0	1	0	1.2	5.9		
13-Nov	0	0	1	0	0	0	1	0	A	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0.5	0.7		
14-Nov	0	0	0	0	0	4	7	A	0	10	7	13	3	3	7	3	18	7	1	3	3	1	3	4.4	18.4		
15-Nov	1	1	1	0	1	1	A	0	1	1	0	1	1	1	1	0	1	1	6	3	1	1	1	1.0	6.3		
16-Nov	3	3	1	1	1	A	2	1	4	1	1	1	1	1	0	0	1	0	1	0	0	0	0	1.1	4.2		
17-Nov	1	0	0	0	A	0	1	0	0	0	0	0	0	0	1	1	0	1	0	1	0	1	0	0.5	0.6		
18-Nov	0	1	0	A	0	0	1	1	1	1	1	1	0	C	C	C	0	1	0	1	1	0	0	0.5	0.7		
19-Nov	0	0	A	0	0	1	1	1	1	0	0	1	1	1	1	0	0	1	1	1	1	1	1	0.5	0.7		
20-Nov	1	A	1	1	0	0	1	0	0	0	1	1	1	1	0	1	1	0	0	0	1	1	1	0.7	3.6		
21-Nov	A	1	1	0	0	1	1	1	1	2	1	1	3	3	3	3	2	1	1	1	1	1	1	1.3	3.4		
22-Nov	1	0	1	1	1	0	0	1	1	1	1	0	1	1	0	0	1	0	0	1	0	0	1	0.5	0.7		
23-Nov	0	0	1	1	0	0	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	A	1	0.6	0.8		
24-Nov	1	1	1	1	1	1	1	1	0	0	0	1	0	1	1	1	0	0	1	1	A	1	1	0.6	1.4		
25-Nov	1	0	0	1	0	0	1	0	1	1	1	5	3	1	1	2	1	1	1	A	1	1	1	1.1	5.4		
26-Nov	1	1	1	1	1	1	1	1	0	1	0	0	0	0	1	1	0	1	A	0	0	1	1	0.6	1.3		
27-Nov	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	A	1	2	1	3	1	1.0	3.3		
28-Nov	2	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	0.8	2.5		
29-Nov	1	1	0	1	2	1	1	1	0	1	1	1	0	0	0	A	1	0	1	1	0	1	1	0.6	1.7		
30-Nov	0	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	3	2	2	1	1.0	2.9		
		0.7	0.7	0.6	0.5	0.6	0.8	0.9	0.5	0.7	3.8	2.9	1.4	1.9	1.2	1.6	1.1	1.4	0.9	0.8	0.9	0.8	0.8	0.9	Diurnal Average		
		2.6	3.4	0.9	0.8	1.7	3.8	7.3	0.8	4.2	82.8	63.1	13.2	27.2	5.8	10.7	3.4	18.4	6.5	6.3	3.3	3.4	3.3	3.4	5.3	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									

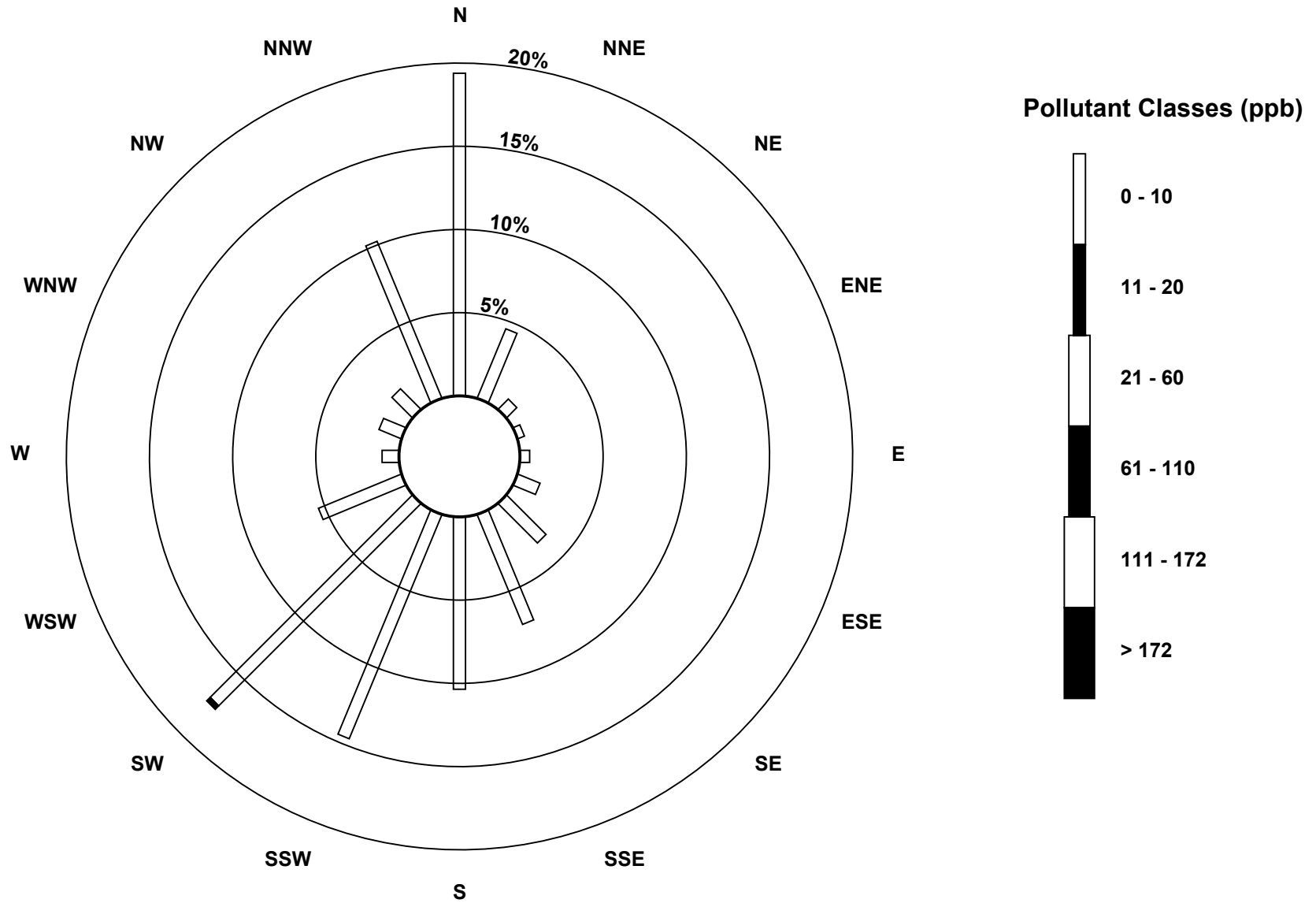
**Hourly Maximums**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Smoky Heights - November 2016**



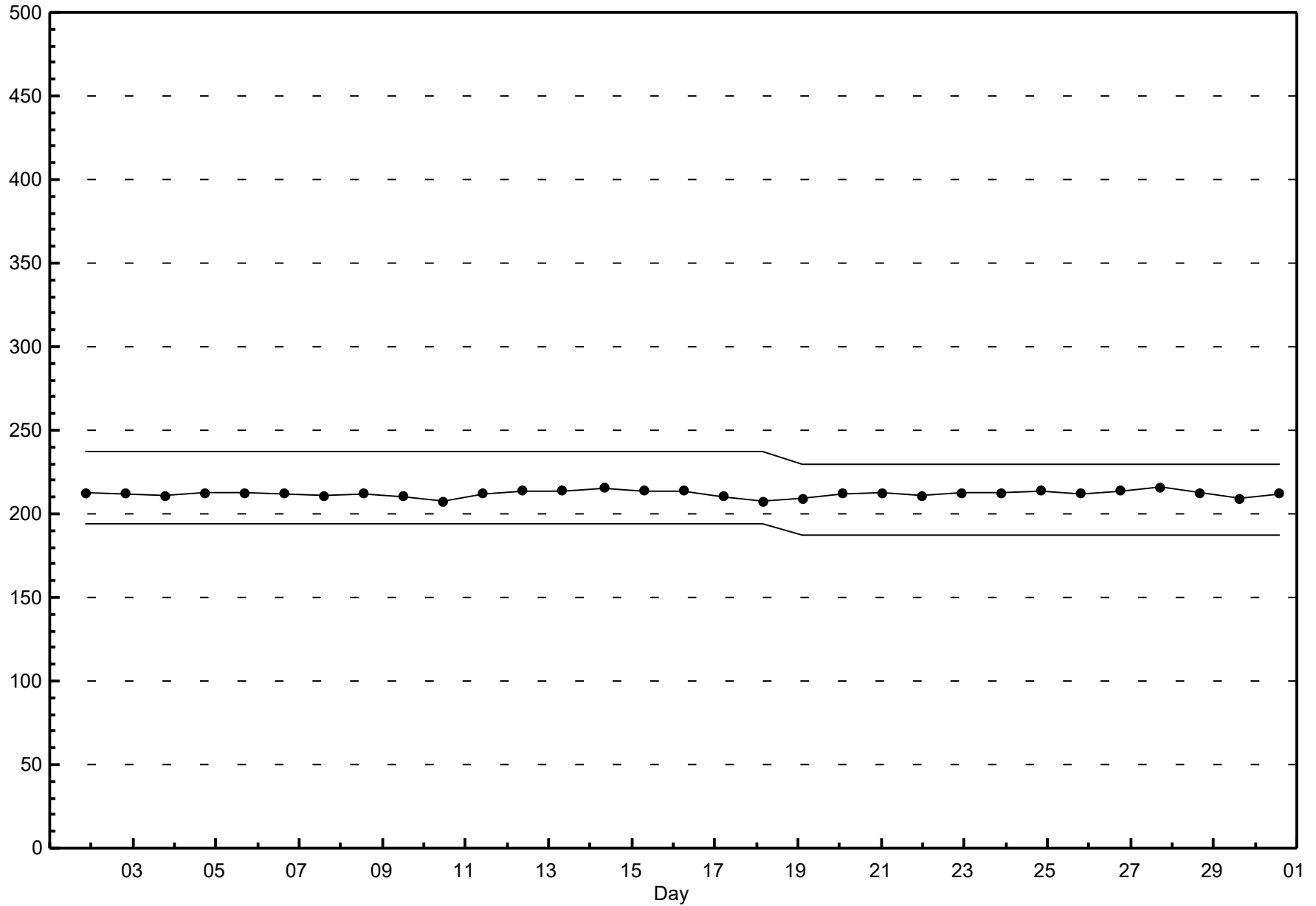
**Pollutant Rose**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Smoky Heights - November 2016**



### Span Responses

Sulphur Dioxide (SO<sub>2</sub>)  
Smoky Heights - November 2016

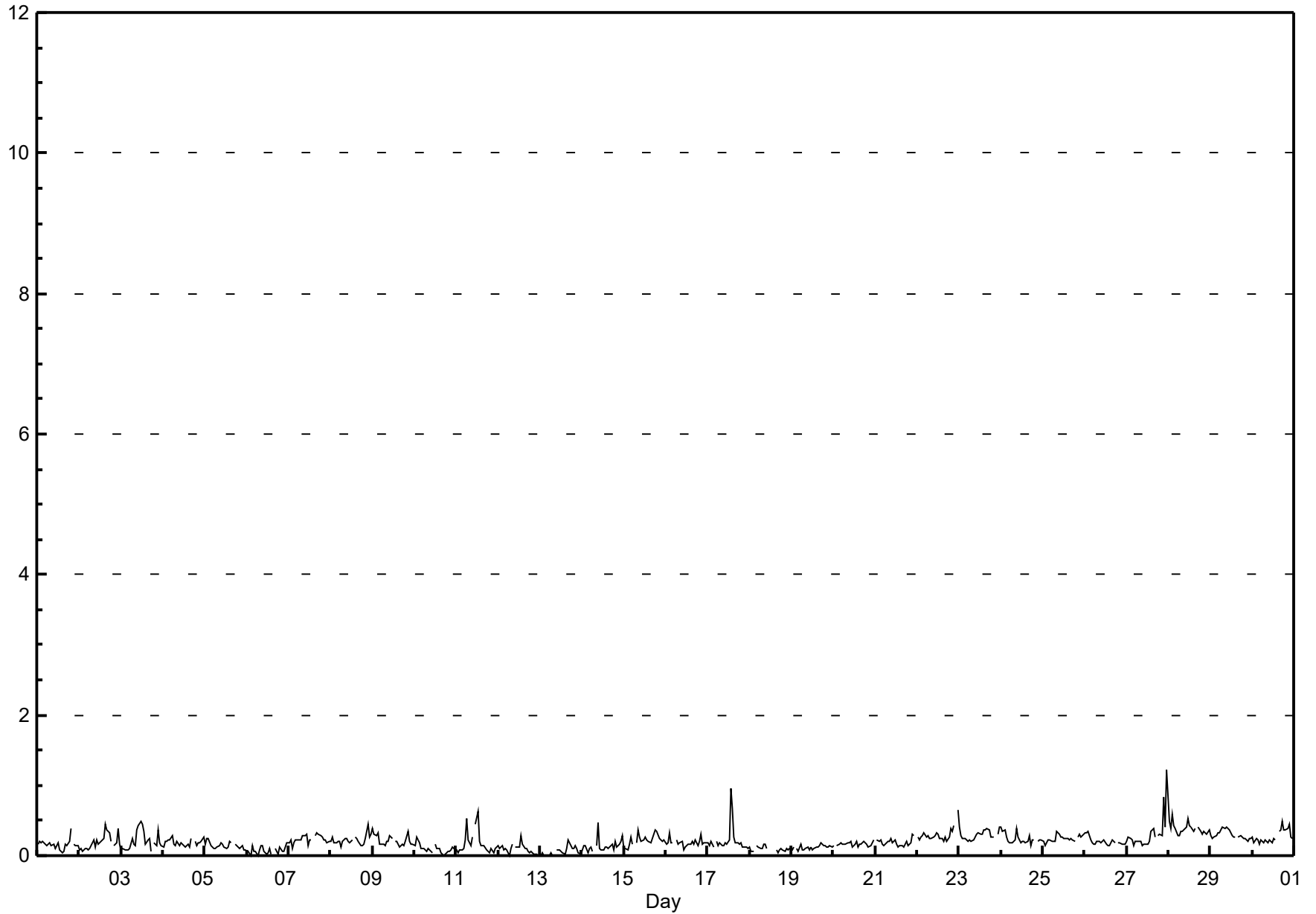


## Hourly Averages

**Total Reduced Sulphur (TRS) - ppb**  
**Smoky Heights - November 2016**

Maximum Value: 1.2 ppb on Nov 28 00:00 Minimum Value: 0 ppb on Nov 6 03:00 Maximum Diurnal Average: 0.2 ppb at hour 24 Monthly Average: 0.20 ppb		Maximum Daily Average: 0.4 ppb on Nov 28 Minimum Daily Average: 0.1 ppb on Nov 13 Minimum Diurnal Average: 0.2 ppb at hour 6 Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.1 Q <sub>1</sub> = 0.1 Median = 0.2 Q <sub>3</sub> = 0.2 P <sub>90</sub> = 0.3 P <sub>99</sub> = 0.6		Hours in Service: 720 Hours of Data: 685 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	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	0.4	
2-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	
3-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	
4-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	0.2	0.3	
5-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	
6-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	
7-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	
8-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	0.4	
9-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	
10-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	
11-Nov	0	0	0	0	0	0	1	0	0	0	A	0	1	0	0	0	0	0	0	0	0	0	0	0	0.2	0.6	
12-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	0.3	
13-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	
14-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	0.5	
15-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	0.4	
16-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	0.2	0.3	
17-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0.2	1.0	
18-Nov	0	0	0	A	0	0	0	0	0	0	0	C	C	C	C	0	0	0	0	0	0	0	0	0	0.1	0.2	
19-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	
20-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	0.2	0.2	
21-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	0.2	0.3	
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	0.3	0.6	
23-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	0.4	
24-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	0.4	
25-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	0.3	
26-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	
27-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	1	1	0.3	1.2	
28-Nov	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	A	0	0	0	0	0	0	0	0.4	0.6	
29-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	
30-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	0.3	0.5	
	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	Diurnal Average	
	0.5	0.4	0.6	0.4	0.4	0.3	0.5	0.4	0.4	0.5	0.4	0.5	0.6	1.0	0.7	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.8	0.4	1.2	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									





## Hourly Maximums

## Total Reduced Sulphur (TRS) - ppb Smoky Heights - November 2016

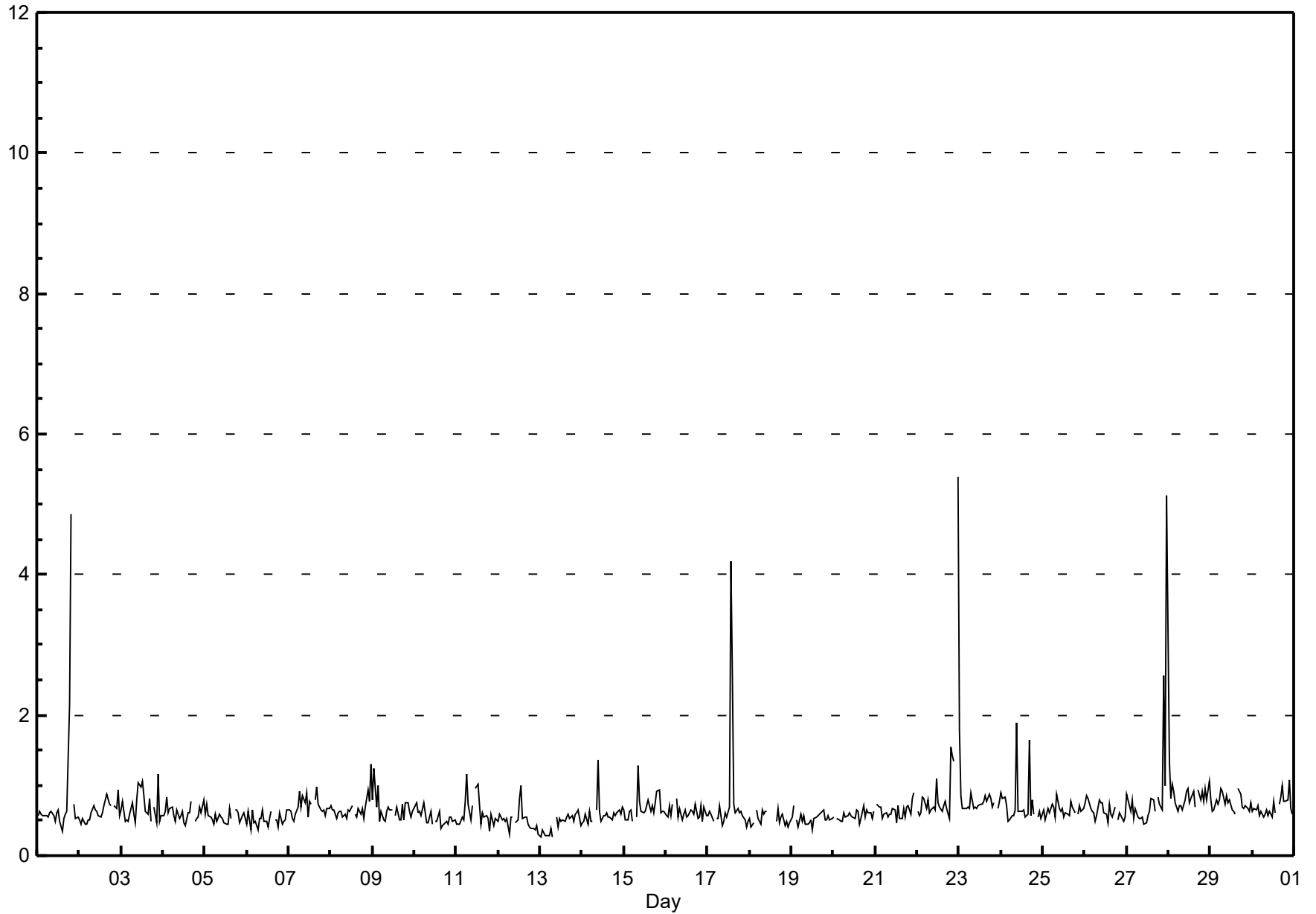
Maximum Value: 5.4 ppb on Nov 23 00:00		Maximum Daily Average: 1.0 ppb on Nov 22		Hours in Service: 720																						
Minimum Value: 0 ppb on Nov 13 08:00		Minimum Daily Average: 0.5 ppb on Nov 13		Hours of Data: 685																						
Maximum Diurnal Average: 0.9 ppb at hour 24		Minimum Diurnal Average: 0.6 ppb at hour 5		Hours of Missing Data: 35																						
Monthly Average: 0.67 ppb		Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 0.5 Q <sub>1</sub> = 0.5 Median = 0.6 Q <sub>3</sub> = 0.7 P <sub>90</sub> = 0.8 P <sub>99</sub> = 2.0		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	0	1	1	0	0	1	1	1	2	5	A	1	1	1	0.8	4.9
2-Nov	1	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	0.6	0.9
3-Nov	1	1	0	1	0	1	1	1	0	1	1	1	1	1	1	1	1	0	A	1	0	1	0	1	0.7	1.2
4-Nov	1	1	1	1	1	1	1	0	1	1	1	1	0	0	1	1	1	A	0	1	1	1	1	1	0.6	0.8
5-Nov	1	1	1	1	1	0	1	0	1	1	1	0	0	0	1	1	A	1	1	1	0	1	1	1	0.6	0.7
6-Nov	0	1	0	1	0	0	0	1	1	1	0	0	0	1	1	A	0	1	0	1	0	0	0	1	0.5	0.6
7-Nov	1	1	1	0	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	0.7	1.0
8-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	1.3
9-Nov	1	1	1	1	0	1	1	1	0	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0.7	1.2
10-Nov	1	1	1	1	1	1	1	0	0	1	0	A	0	0	1	0	0	0	0	0	0	1	1	0	0.5	0.8
11-Nov	0	0	0	1	1	1	1	1	1	1	A	1	1	1	0	1	1	1	1	0	1	0	1	1	0.6	1.2
12-Nov	0	1	1	1	0	1	0	1	1	A	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0.5	1.0
13-Nov	0	0	0	0	0	0	0	0	A	1	0	1	0	1	0	1	1	1	1	0	1	1	1	0	0.5	0.7
14-Nov	0	0	1	0	1	0	0	A	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0.6	1.4
15-Nov	1	1	0	1	1	0	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.3
16-Nov	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0.6	0.8
17-Nov	1	1	1	0	A	1	1	1	0	0	1	1	1	4	3	1	1	1	1	1	1	1	0	0	0.8	4.2
18-Nov	1	0	0	A	1	1	0	1	1	1	1	C	C	C	C	0	1	0	1	1	0	0	0	0	0.5	0.7
19-Nov	1	1	A	1	0	1	0	1	0	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	0.5	0.7
20-Nov	1	A	1	1	0	0	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0.6	0.7
21-Nov	A	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0.6	0.9
22-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	A	5	1.0	5.4
23-Nov	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	0.8	1.8
24-Nov	1	1	1	1	0	1	1	1	1	2	1	1	1	1	1	1	2	1	1	1	A	1	1	1	0.7	1.9
25-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	0.6	0.9
26-Nov	1	1	1	1	1	1	0	1	1	1	1	1	0	1	1	1	1	1	A	1	1	1	0	1	0.6	0.9
27-Nov	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	A	1	1	1	3	1	5	0.9	5.1
28-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
29-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	1.0
30-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	1.1
																								Diurnal Average	Diurnal Maximum	
																								0.7	1.8	
																								0.7	1.2	
																								0.6	1.0	
																								0.6	1.0	
																								0.6	0.8	
																								0.6	0.8	
																								0.6	1.2	
																								0.6	0.9	
																								0.6	1.3	
																								0.7	1.9	
																								0.6	1.0	
																								0.6	1.1	
																								0.6	1.1	
																								0.8	4.2	
																								0.7	2.6	
																								0.6	0.8	
																								0.7	1.7	
																								0.7	1.0	
																								0.7	2.1	
																								0.8	4.9	
																								0.6	1.4	
																								0.7	2.6	
																								0.6	1.0	
																								0.9	5.4	

C - Calibration

A - Automated Daily Zero Span

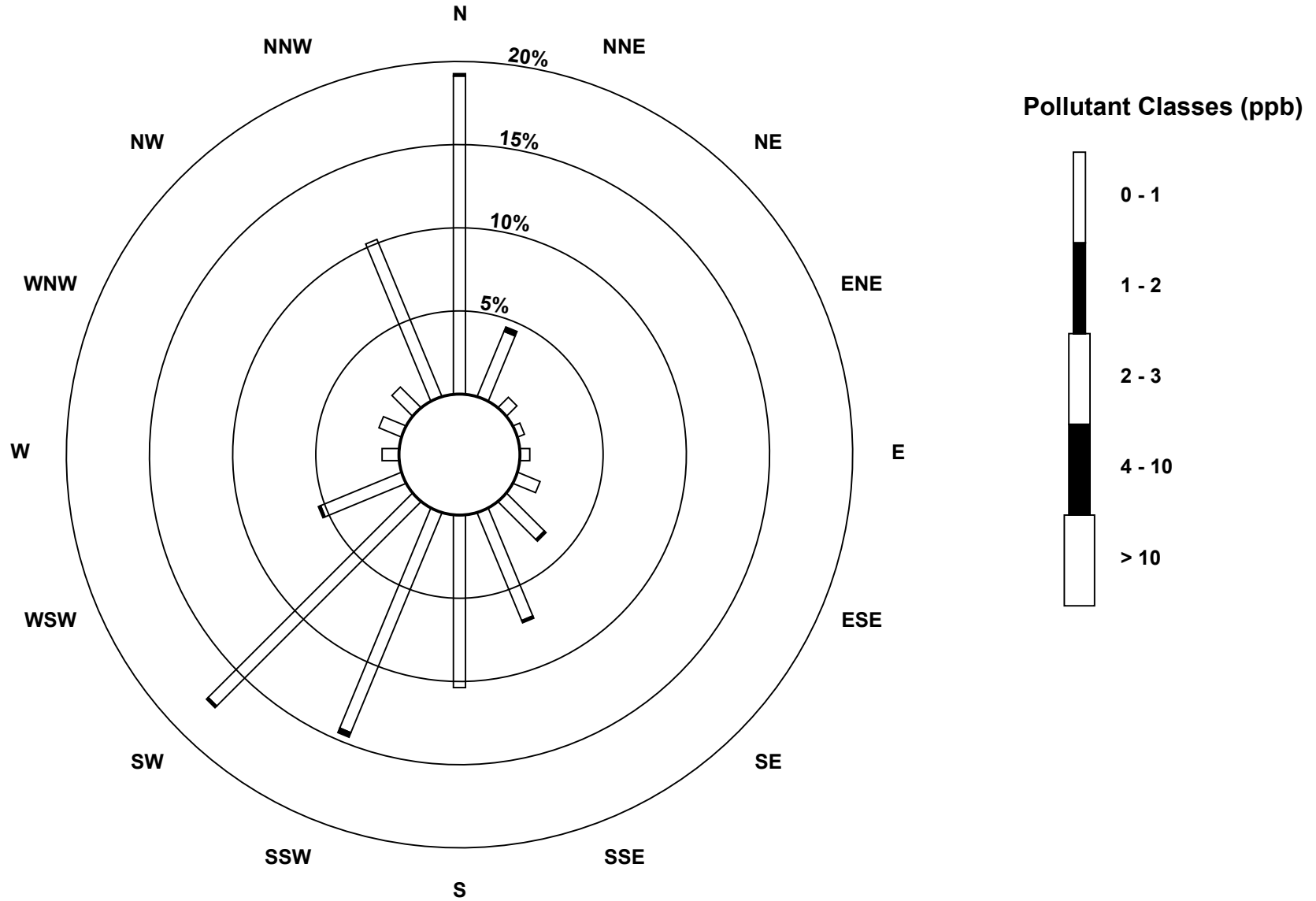
**Hourly Maximums**

**Total Reduced Sulphur (TRS) - ppb**  
**Smoky Heights - November 2016**



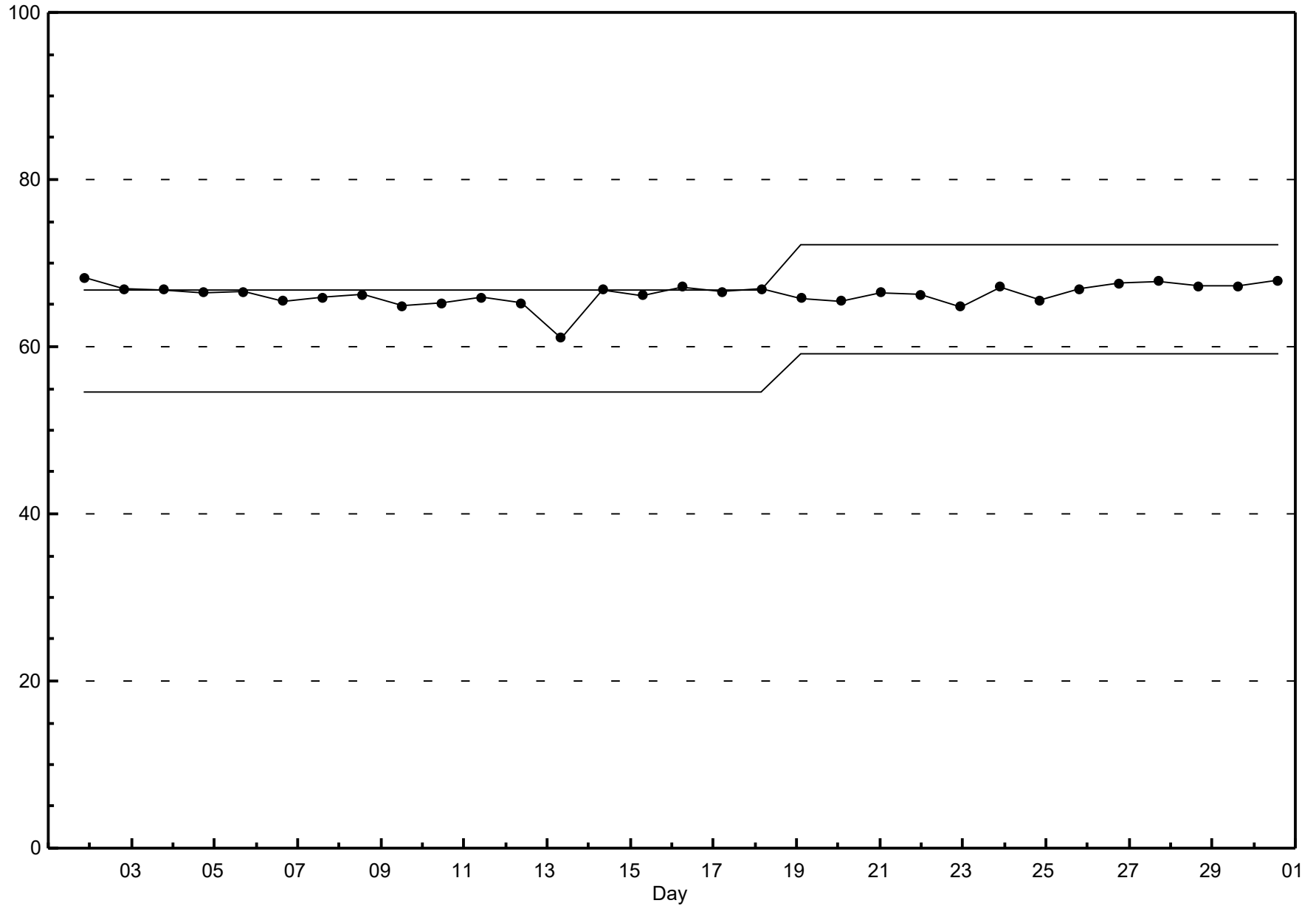
**Pollutant Rose**

**Total Reduced Sulphur (TRS) - ppb**  
**Smoky Heights - November 2016**



**Span Responses**

**Total Reduced Sulphur (TRS)  
Smoky Heights - November 2016**



## Hourly Averages

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

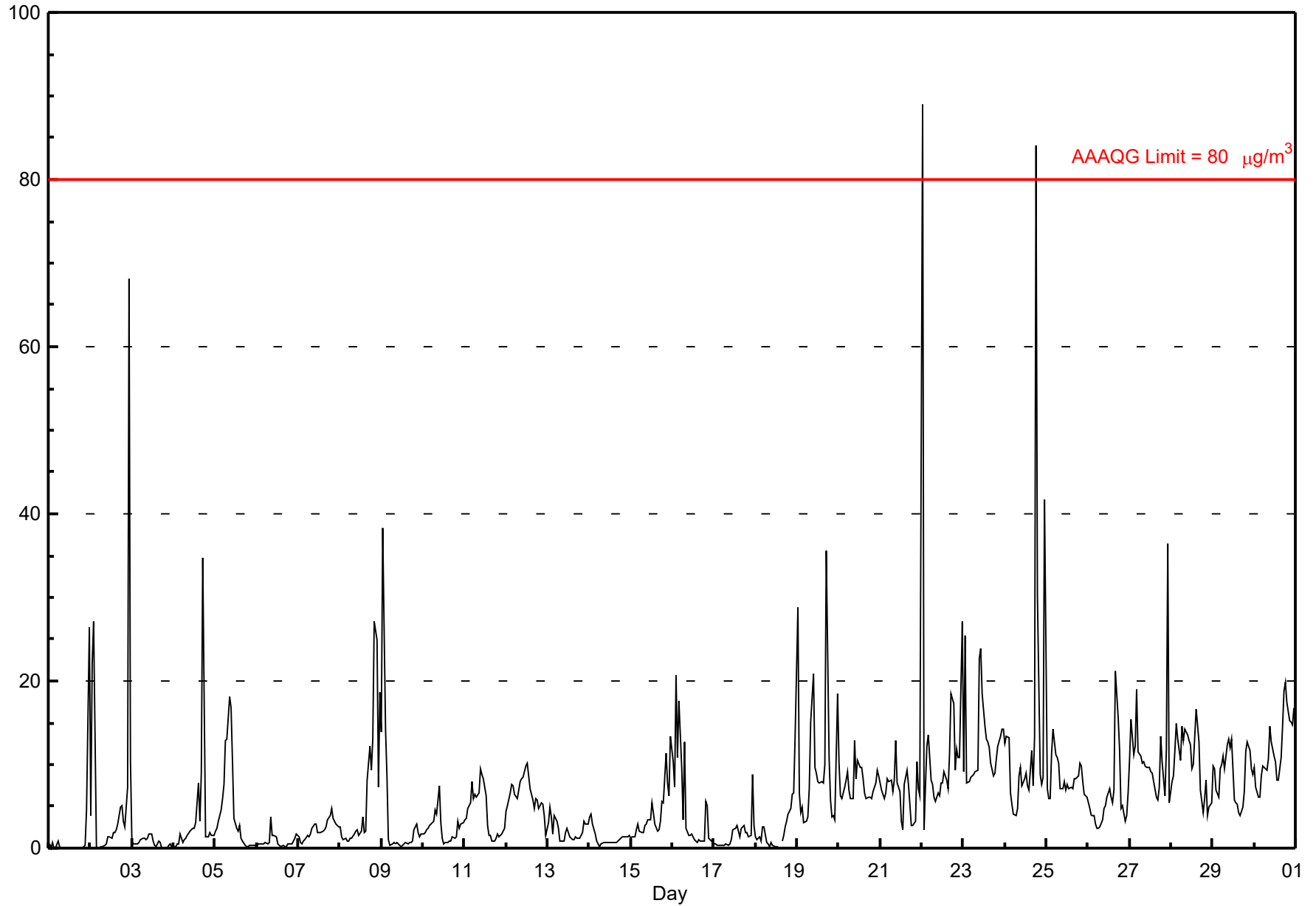
### Smoky Heights - November 2016

Number of Exceedences: 1-hr: 2 24-hr: 0	Hours in Service: 720
Maximum Value: 88.9 µg/m <sup>3</sup> on Nov 22 01:00	Maximum Daily Average: 13.9 µg/m <sup>3</sup> on Nov 24
Minimum Value: 0 µg/m <sup>3</sup> on Nov 1 05:00	Hours of Data: 719
Maximum Diurnal Average: 9.0 µg/m <sup>3</sup> at hour 24	Hours of Missing Data: 1
Monthly Average: 6.04 µg/m <sup>3</sup>	Hours of Calibration: 0
Minimum Daily Average: 0.6 µg/m <sup>3</sup> on Nov 3	Percent Operational Time: 99.9
Minimum Diurnal Average: 4.4 µg/m <sup>3</sup> at hour 14	
Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.5 Q <sub>1</sub> = 1.3 Median = 4.0 Q <sub>3</sub> = 8.6 P <sub>90</sub> = 12.9 P <sub>99</sub> = 35.0	

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	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	27	1.4	26.5
2-Nov	4	22	27	0	0	0	0	0	0	0	1	1	1	2	2	2	3	5	5	3	2	7	68	10	7.0	68.1
3-Nov	1	0	0	1	1	1	1	1	1	1	2	2	1	0	0	1	1	0	0	0	0	0	1	0	0.6	1.7
4-Nov	0	0	0	0	2	1	1	1	2	2	2	2	2	3	8	3	9	35	1	1	1	2	2	1	3.5	34.7
5-Nov	2	2	3	5	6	8	13	13	18	17	10	4	2	2	3	1	1	0	0	0	0	0	0	0	4.7	18.2
6-Nov	0	0	1	0	0	1	0	1	4	1	2	1	1	0	0	0	0	0	0	1	0	1	1	2	0.8	3.7
7-Nov	1	1	1	1	1	2	1	2	2	3	3	2	2	2	2	2	3	3	4	5	4	3	3	3	2.2	4.8
8-Nov	3	1	1	1	1	1	1	1	2	2	2	2	2	4	2	2	8	12	9	13	27	25	7	19	6.2	27.2
9-Nov	14	38	14	9	1	0	1	1	0	1	1	0	0	1	1	1	1	1	1	2	3	2	1	2	3.9	38.3
10-Nov	2	2	2	2	3	3	3	3	5	4	7	3	1	0	1	1	1	1	1	1	1	3	2	3	2.3	7.5
11-Nov	3	4	5	5	8	6	6	6	7	10	9	8	6	3	1	2	1	1	1	2	1	2	2	2	4.2	9.5
12-Nov	4	5	7	8	8	6	6	7	8	8	9	10	10	9	7	6	5	6	6	5	5	5	4	2	6.4	10.2
13-Nov	3	5	4	2	4	3	2	1	1	1	2	2	2	1	1	1	1	1	1	1	2	3	3	3	2.1	4.9
14-Nov	4	4	3	2	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.2	4.0
15-Nov	1	1	1	2	3	2	2	2	3	3	3	3	5	4	3	2	2	3	6	5	11	8	6	13	4.0	13.4
16-Nov	10	7	21	11	18	10	3	13	2	2	2	2	1	1	1	1	1	1	1	6	5	1	1	1	5.0	20.6
17-Nov	0	0	0	0	0	0	0	0	0	1	1	2	2	3	2	1	2	3	2	2	1	2	9	3	1.6	8.8
18-Nov	1	1	1	1	3	3	1	0	0	1	0	0	0	0	M	1	2	2	3	4	5	6	7	13	2.4	13.3
19-Nov	29	7	4	5	3	3	4	7	15	21	10	9	8	8	8	8	10	36	11	6	4	4	3	18	10.0	35.6
20-Nov	10	6	6	7	8	9	7	6	6	13	8	11	10	10	8	7	6	6	6	6	7	8	9	9	7.8	12.9
21-Nov	8	7	6	7	8	8	8	7	8	13	8	7	3	2	8	9	8	5	3	3	3	10	7	6	6.8	12.9
22-Nov	89	2	7	12	14	8	8	6	6	7	6	8	8	9	8	7	11	18	17	9	12	11	11	27	13.4	88.9
23-Nov	9	25	8	8	8	9	9	9	9	23	24	19	15	13	13	12	10	9	9	11	12	13	14	14	12.7	25.4
24-Nov	13	13	13	7	5	4	4	5	9	10	7	8	9	7	7	12	7	13	84	30	9	8	9	42	13.9	84.1
25-Nov	7	6	6	11	14	11	11	10	7	7	8	7	8	7	7	7	8	8	9	10	10	8	6	6	8.3	14.3
26-Nov	5	5	4	4	3	2	2	2	3	5	5	6	7	6	5	7	21	16	12	5	5	3	4	7	6.0	21.2
27-Nov	10	15	11	12	19	12	11	10	10	10	10	10	9	9	8	6	6	7	13	10	6	12	36	5	11.2	36.4
28-Nov	8	9	12	15	13	10	15	13	14	14	13	12	10	10	17	15	13	7	4	6	8	4	5	5	10.4	16.6
29-Nov	10	9	7	6	9	10	11	9	12	13	12	13	6	5	5	4	4	5	7	11	13	12	10	9	8.9	13.0
30-Nov	10	7	6	6	9	10	9	9	11	15	13	11	10	8	8	11	15	19	20	18	15	15	15	17	11.9	19.9

8.8	6.9	6.1	5.0	5.7	4.8	4.7	5.0	5.5	7.0	5.9	5.5	4.7	4.4	4.7	4.4	5.3	7.5	7.9	5.9	5.9	6.0	8.4	9.0		Diurnal Average
88.9	38.3	27.1	14.8	19.0	11.6	14.6	13.0	18.2	22.7	23.8	18.5	14.6	13.1	16.6	14.8	21.2	35.6	84.1	30.1	27.2	25.0	68.1	41.7		Diurnal Maximum

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



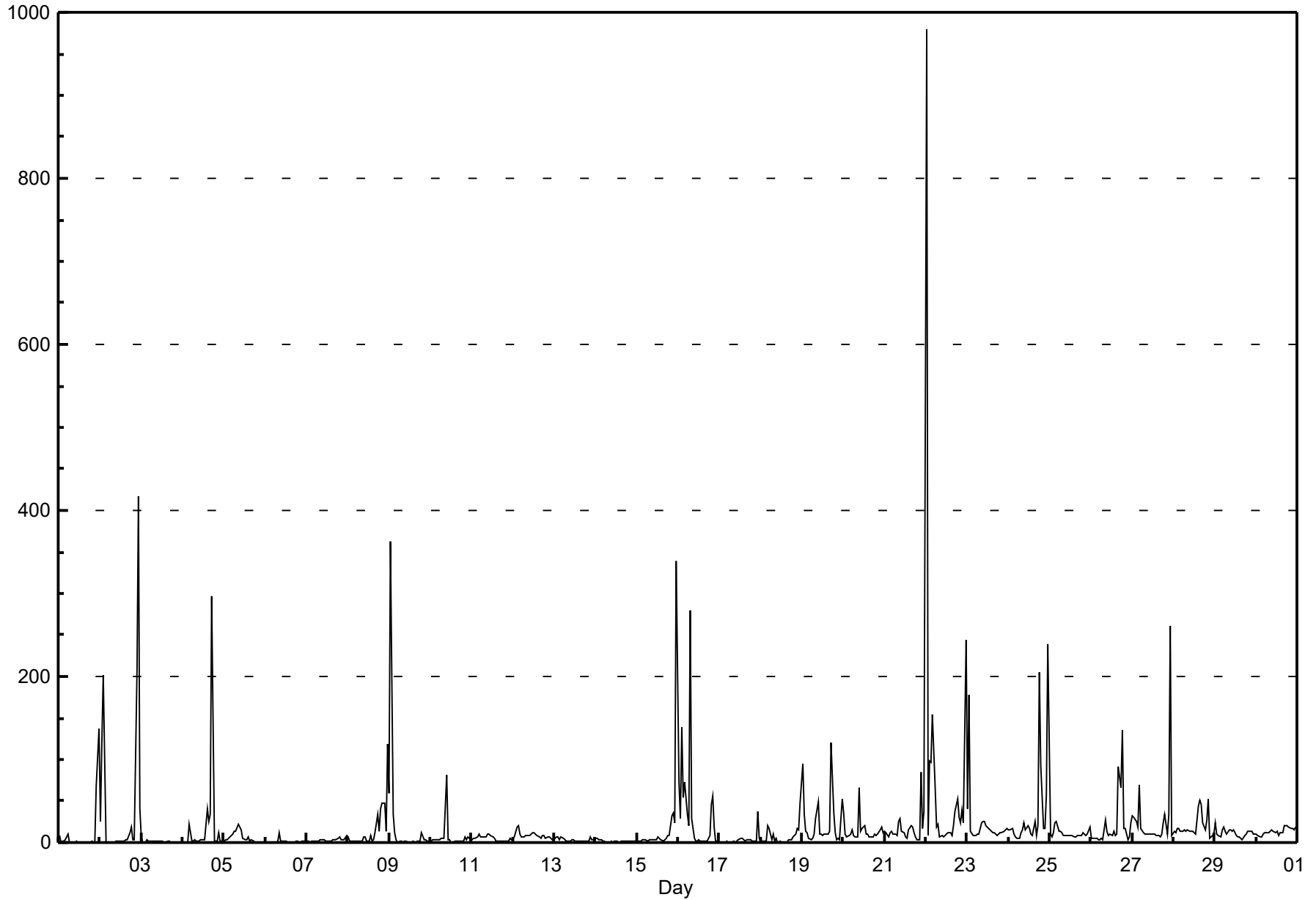
# Hourly Maximums

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

## Smoky Heights - November 2016

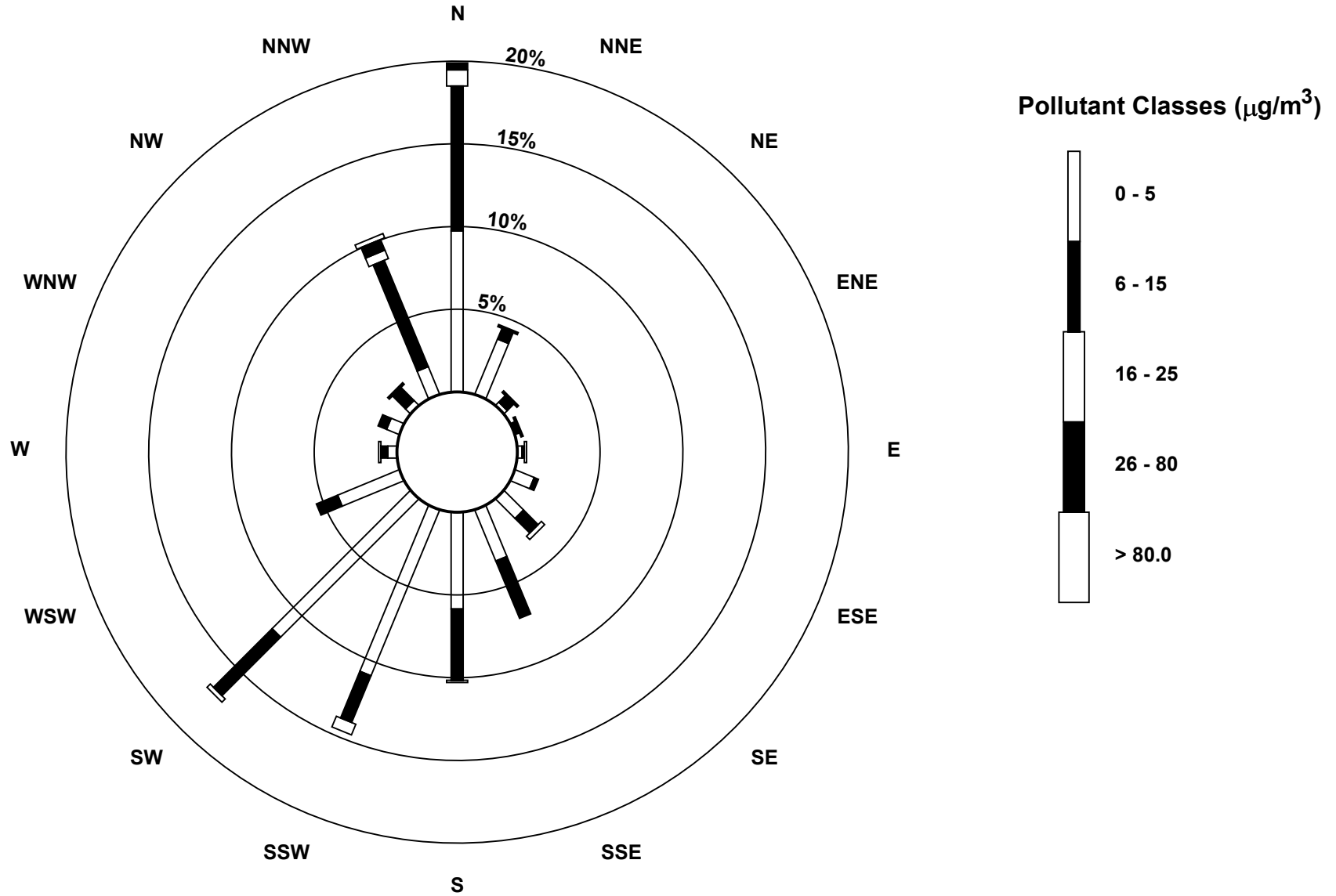
Maximum Value: 979.0 µg/m <sup>3</sup> on Nov 22 01:00		Maximum Daily Average: 82.8 µg/m <sup>3</sup> on Nov 22		Hours in Service: 720																							
Minimum Value: 0 µg/m <sup>3</sup> on Nov 1 09:00		Minimum Daily Average: 1.2 µg/m <sup>3</sup> on Nov 3		Hours of Data: 719																							
Maximum Diurnal Average: 49.4 µg/m <sup>3</sup> at hour 1		Minimum Diurnal Average: 5.7 µg/m <sup>3</sup> at hour 14		Hours of Missing Data: 1																							
Monthly Average: 17.23 µg/m <sup>3</sup>		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.7 Q <sub>1</sub> = 1.9 Median = 6.6 Q <sub>3</sub> = 13.4 P <sub>90</sub> = 28.8 P <sub>99</sub> = 248.8		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	9	0	1	1	3	10	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0	68	138	9.8	137.7	
2-Nov	25	120	201	0	0	0	0	0	0	1	2	1	1	2	2	3	4	12	18	4	3	209	416	41	44.4	416.2	
3-Nov	6	0	0	3	1	1	1	1	1	1	2	2	1	1	0	1	2	0	0	0	0	1	1	0	1.2	6.3	
4-Nov	1	0	1	1	21	1	2	3	2	2	3	3	3	3	42	26	34	297	2	1	1	12	2	2	19.4	297.0	
5-Nov	2	3	4	6	9	10	14	14	21	18	15	6	3	3	7	1	4	2	0	0	0	0	0	0	6.0	21.5	
6-Nov	0	1	1	1	1	1	1	2	12	2	2	2	1	0	0	0	0	0	2	2	1	1	2	2	1.5	12.0	
7-Nov	2	1	1	1	1	2	2	2	3	3	3	2	2	2	2	3	3	4	5	6	4	4	3	8	3.0	7.8	
8-Nov	6	2	1	1	1	1	1	1	2	7	6	2	2	8	2	3	12	34	13	41	48	47	13	119	15.7	119.2	
9-Nov	59	362	34	12	4	1	1	1	1	2	1	0	1	1	1	1	1	1	11	4	3	2	2	2	21.1	362.3	
10-Nov	2	3	3	3	3	3	5	5	5	81	4	3	1	1	1	1	1	2	1	2	8	3	7	3	6.2	80.6	
11-Nov	4	4	6	7	10	7	7	6	7	10	10	9	7	6	2	2	1	1	2	2	2	2	5	3	5.1	10.2	
12-Nov	6	7	19	21	9	8	7	8	9	9	9	11	11	10	8	7	6	9	8	6	8	6	5	3	8.7	21.0	
13-Nov	5	7	7	3	6	5	3	1	1	1	3	3	2	2	1	1	2	2	2	2	2	6	3	3	3.1	7.1	
14-Nov	5	5	3	3	1	1	0	1	1	1	1	1	1	1	1	1	1	1	2	1	2	2	1	2	1.6	4.9	
15-Nov	1	2	2	3	3	3	2	3	3	3	4	4	7	6	4	2	3	5	8	9	32	36	25	338	21.2	338.3	
16-Nov	72	28	139	54	72	34	20	280	28	5	2	2	3	1	1	2	1	1	8	46	56	19	1	1	36.5	280.2	
17-Nov	1	1	0	0	1	0	0	1	2	1	2	3	4	4	3	2	3	3	3	2	2	2	37	5	3.4	37.1	
18-Nov	2	2	2	1	21	17	3	10	1	5	1	1	0	0	M	1	3	4	4	7	10	18	15	48	7.7	47.8	
19-Nov	95	34	13	13	4	4	5	10	29	49	10	10	9	10	10	11	14	121	36	12	4	4	4	53	23.5	121.1	
20-Nov	35	11	7	8	10	16	9	7	7	66	13	17	21	10	10	8	6	6	10	9	10	16	19	13	14.2	65.7	
21-Nov	13	12	8	11	13	10	9	8	26	29	14	12	6	5	15	20	19	12	6	4	4	85	17	38	16.5	85.2	
22-Nov	979	8	98	97	154	66	19	21	7	9	8	9	10	11	11	9	20	37	53	31	24	38	23	244	82.8	979.0	
23-Nov	41	178	14	9	9	9	10	10	23	25	25	20	17	15	13	13	11	9	10	12	13	14	15	17	22.1	177.8	
24-Nov	15	16	17	10	7	5	5	13	16	23	16	20	18	11	8	26	9	20	205	93	18	17	57	239	36.8	239.1	
25-Nov	11	6	12	24	26	14	13	12	8	8	9	8	8	8	8	7	9	9	9	11	10	9	10	19	11.1	25.6	
26-Nov	6	6	4	5	3	3	6	4	27	14	9	9	8	13	8	9	92	67	135	17	17	4	6	24	20.6	135.3	
27-Nov	32	30	25	19	69	16	11	11	11	10	10	10	10	10	9	8	7	10	23	34	10	34	262	9	28.4	261.6	
28-Nov	14	12	17	18	14	14	15	14	15	14	13	14	12	11	44	51	46	24	15	26	53	5	7	9	19.9	53.2	
29-Nov	24	11	9	7	16	19	14	11	15	15	14	16	9	7	6	5	4	8	11	13	14	13	11	9	11.7	23.9	
30-Nov	10	9	6	6	10	11	12	11	14	16	13	12	13	9	11	11	20	20	21	19	16	16	16	18	13.5	20.7	
49.4		29.4	21.8	11.5	16.8	9.7	6.6	15.7	9.9	14.3	7.5	7.1	6.4	5.7	8.0	7.8	11.3	24.1	20.5	14.2	12.5	20.9	35.1	47.0	Diurnal Average		
979.0		362.3	201.2	97.4	154.1	65.9	19.7	280.2	29.0	80.6	25.4	20.3	20.7	14.6	44.2	50.5	91.8	297.0	205.2	93.0	55.7	208.8	416.2	338.3	Diurnal Maximum		
M - Maintenance																											





**Pollutant Rose**

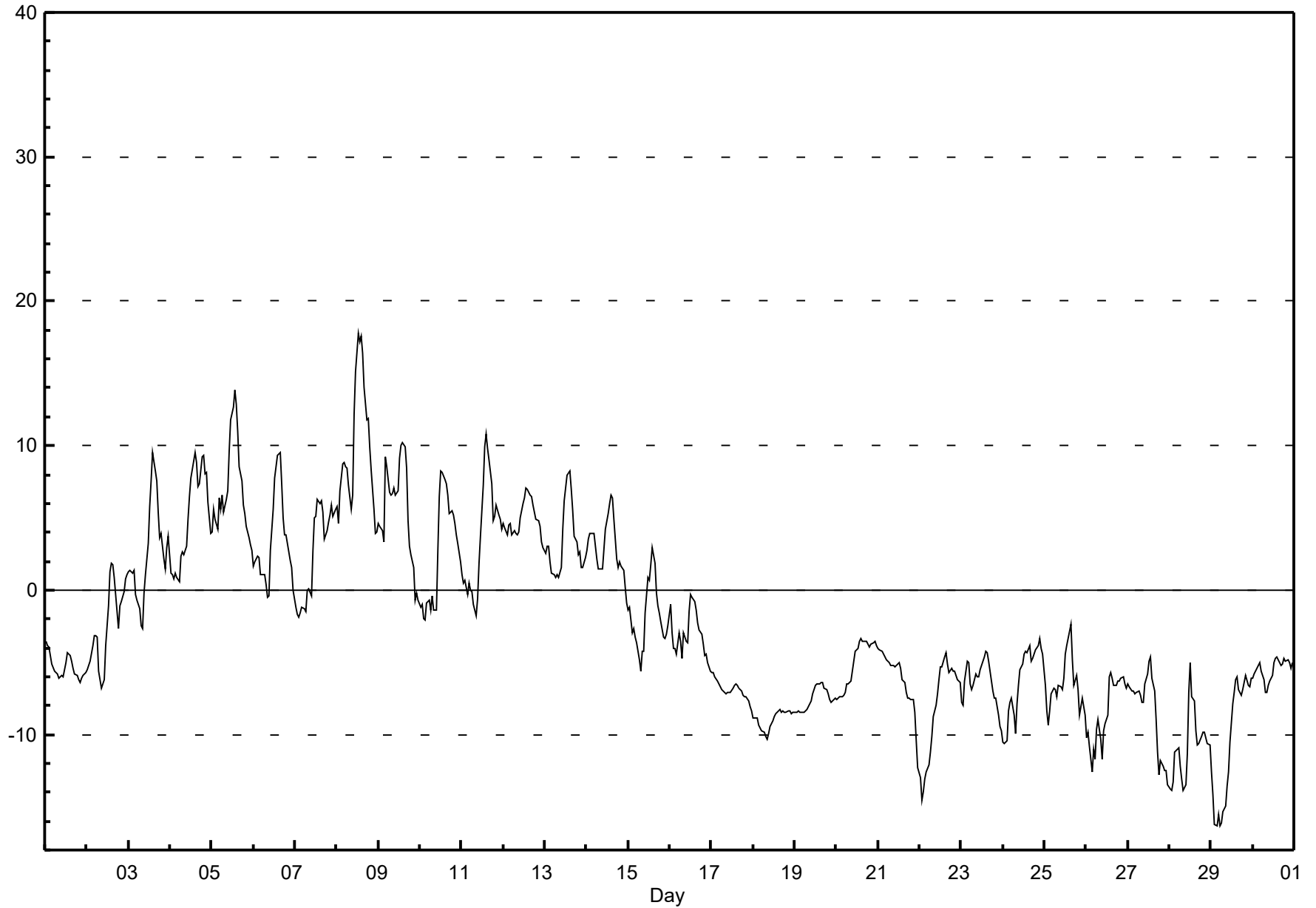
**Particulate Matter 2.5 (PM<sub>2.5</sub>) - μg/m<sup>3</sup>**  
**Smoky Heights - November 2016**



# Hourly Averages

External Temperature (ET) - °C  
Smoky Heights - November 2016

Maximum Value: 17.8 °C on Nov 8 13:00		Maximum Daily Average: 9.9 °C on Nov 8		Hours in Service: 720																							
Minimum Value: -16 °C on Nov 29 04:00		Minimum Daily Average: -10.7 °C on Nov 28		Hours of Data: 720																							
Maximum Diurnal Average: 1.3 °C at hour 15		Minimum Diurnal Average: -4.0 °C at hour 8		Hours of Missing Data: 0																							
Monthly Average: -2.16 °C		Percentiles: P <sub>1</sub> = -14.7 P <sub>10</sub> = -9.4 Q <sub>1</sub> = -6.8 Median = -3.9 Q <sub>3</sub> = 3.0 P <sub>90</sub> = 6.7 P <sub>99</sub> = 13.7		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	-4	-4	-4	-5	-5	-6	-6	-6	-6	-6	-6	-6	-5	-4	-5	-5	-5	-6	-6	-6	-6	-6	-6	-6	-5.3	-3.5	
2-Nov	-6	-5	-5	-4	-3	-3	-3	-6	-7	-7	-7	-6	-4	-1	1	2	2	1	-1	-3	-1	-1	0	1	1	-2.4	1.8
3-Nov	1	1	1	1	0	-1	-1	-3	-3	0	1	3	6	8	10	8	8	5	4	4	2	2	3	4	2.7	9.6	
4-Nov	1	1	1	1	1	1	2	3	2	3	5	6	8	8	10	9	7	7	9	9	8	8	6	4	5.0	9.5	
5-Nov	4	6	5	4	6	6	7	5	6	7	10	12	13	14	13	11	9	8	6	5	4	4	3	3	7.0	13.8	
6-Nov	2	2	2	2	1	1	1	0	-1	0	3	6	8	9	9	10	7	5	4	4	3	2	2	0	3.4	9.5	
7-Nov	-1	-2	-2	-2	-1	-1	-1	0	0	0	3	5	5	6	6	6	5	4	4	5	5	6	5	6	2.5	6.3	
8-Nov	6	5	7	9	9	9	8	7	6	7	12	15	18	17	18	16	14	12	12	10	8	6	4	4	9.9	17.8	
9-Nov	5	4	4	3	9	9	7	7	7	7	7	7	9	10	10	10	8	5	3	2	2	-1	0	-1	5.5	10.2	
10-Nov	-1	-1	-2	-2	-1	-1	-1	0	-1	-1	3	6	8	8	8	7	7	5	6	5	5	4	3	2	2.7	8.3	
11-Nov	1	0	1	0	0	0	0	-1	-2	-1	2	4	7	10	11	10	9	7	5	5	6	5	5	4	3.7	10.8	
12-Nov	5	4	4	4	5	4	4	4	4	4	5	6	6	7	7	7	6	6	5	5	5	4	3	3	4.9	7.1	
13-Nov	3	3	3	2	1	1	1	1	1	2	4	6	7	8	8	7	6	4	3	2	3	2	2	2	3.4	8.3	
14-Nov	3	4	4	4	4	3	2	1	1	1	3	4	5	6	7	6	5	2	2	2	2	1	0	-1	3.0	6.5	
15-Nov	-1	-1	-3	-3	-3	-4	-5	-6	-4	-4	-2	1	1	2	3	2	0	-1	-2	-2	-3	-3	-3	-2	-1.9	3.0	
16-Nov	-1	-3	-4	-4	-4	-3	-4	-5	-3	-4	-4	-1	0	-1	-1	-1	-2	-3	-3	-4	-5	-4	-5	-6	-3.1	-0.3	
17-Nov	-6	-6	-6	-6	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-6	-7	-7	-7	-7	-7	-7	-8	-8	-8	-6.9	-5.7	
18-Nov	-9	-9	-9	-9	-10	-10	-10	-10	-10	-10	-9	-9	-9	-9	-8	-8	-8	-8	-8	-8	-8	-8	-9	-8	-9.0	-8.3	
19-Nov	-8	-9	-8	-8	-9	-8	-8	-8	-8	-8	-7	-7	-7	-6	-7	-6	-6	-7	-7	-7	-8	-8	-8	-8	-7.5	-6.4	
20-Nov	-8	-7	-7	-7	-7	-7	-7	-7	-6	-6	-5	-4	-4	-4	-3	-4	-4	-4	-4	-4	-4	-4	-4	-4	-5.1	-3.4	
21-Nov	-4	-4	-4	-4	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-6	-6	-7	-8	-7	-8	-8	-8	-10	-12	-6.2	-4.0	
22-Nov	-13	-15	-14	-13	-13	-12	-11	-10	-9	-8	-7	-6	-5	-5	-5	-4	-5	-6	-5	-6	-6	-6	-6	-6	-8.2	-4.3	
23-Nov	-8	-8	-6	-5	-5	-6	-7	-7	-6	-6	-6	-5	-5	-5	-4	-4	-5	-6	-7	-8	-7	-9	-9	-10	-6.4	-4.2	
24-Nov	-11	-11	-10	-8	-8	-7	-9	-10	-8	-7	-6	-5	-4	-4	-4	-4	-5	-5	-4	-4	-4	-3	-4	-4	-6.2	-3.3	
25-Nov	-7	-8	-9	-8	-7	-7	-7	-7	-7	-7	-7	-6	-4	-4	-3	-2	-5	-7	-6	-7	-9	-8	-7	-9	-6.6	-2.4	
26-Nov	-10	-10	-11	-13	-11	-12	-10	-9	-10	-12	-10	-9	-9	-6	-6	-6	-7	-7	-6	-6	-6	-6	-7	-7	-8.5	-5.8	
27-Nov	-7	-7	-7	-7	-7	-7	-7	-7	-8	-8	-6	-6	-5	-5	-6	-7	-9	-11	-13	-12	-12	-13	-12	-13	-8.4	-4.6	
28-Nov	-14	-14	-13	-11	-11	-11	-12	-13	-14	-14	-11	-7	-5	-7	-8	-10	-11	-11	-10	-10	-10	-10	-11	-11	-10.7	-5.0	
29-Nov	-13	-14	-16	-16	-16	-16	-16	-15	-15	-14	-13	-11	-8	-7	-6	-6	-7	-7	-7	-6	-6	-7	-7	-6	-10.6	-5.9	
30-Nov	-6	-6	-5	-5	-5	-6	-6	-7	-7	-7	-6	-6	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5.5	-4.6	
		-3.5	-3.7	-3.9	-3.7	-3.4	-3.6	-3.7	-4.0	-4.0	-3.6	-2.2	-0.8	0.4	1.0	1.3	0.8	-0.2	-1.3	-1.6	-1.7	-2.1	-2.5	-2.8	-3.2	Diurnal Average	
		5.8	5.6	6.9	8.7	9.2	8.6	8.4	7.3	6.7	7.0	12.2	15.2	17.8	17.1	17.6	16.4	14.0	11.7	11.8	9.9	8.3	8.1	6.1	5.6	Diurnal Maximum	







Peace Airshed Zone Association

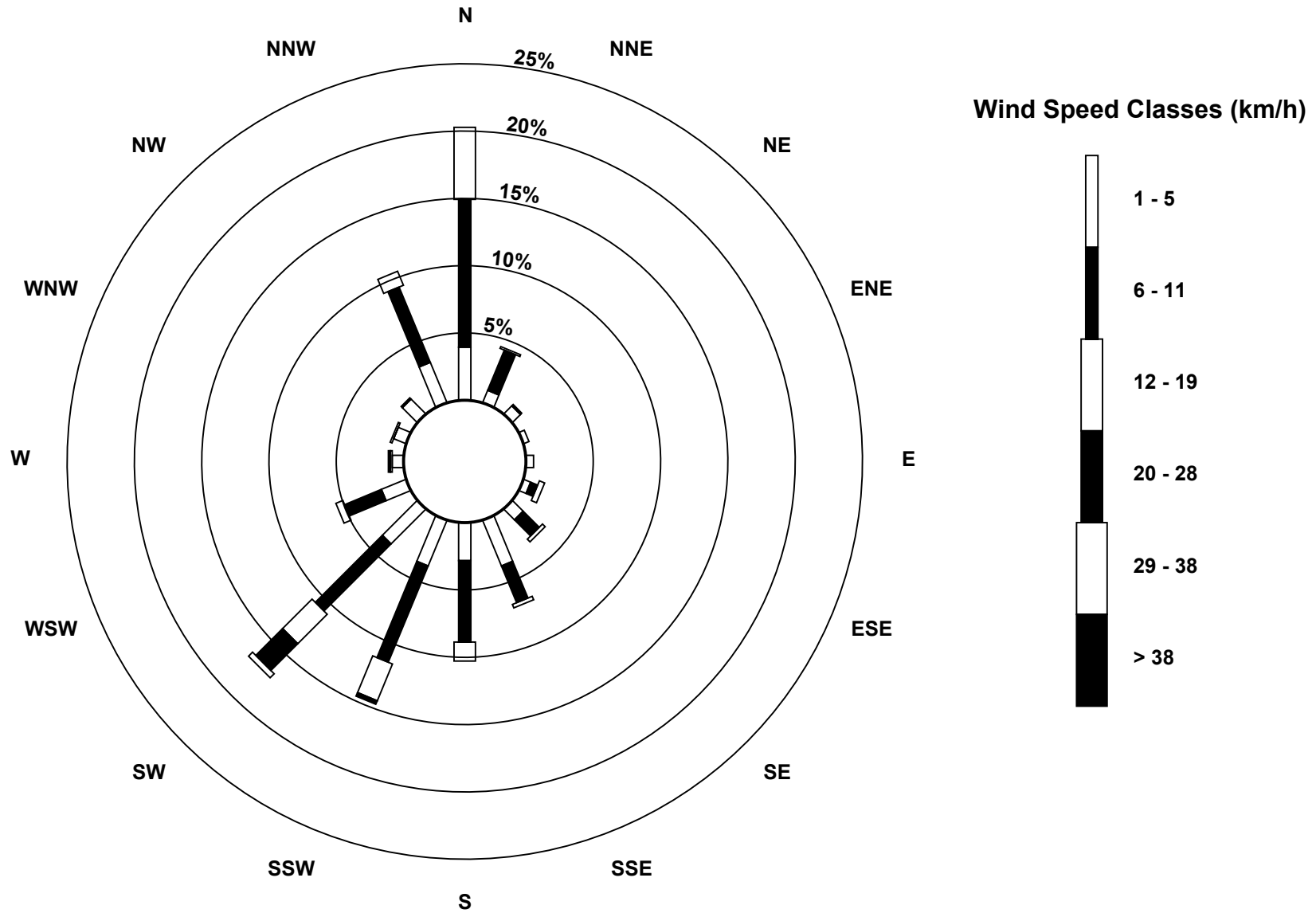
# Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Smoky Heights - November 2016

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	2	2	2	4	2	3	5	4	1	3	5	4	4	7	5	5	4	4	7	7	8	8	8	10	3.7	10.4
Dir	359	280	225	195	144	150	173	174	34	138	95	139	181	187	168	149	122	157	184	209	187	214	210	226	182.4	226.0
24 Spd	11	10	9	8	7	8	2	3	5	5	6	3	4	6	7	7	9	9	10	9	8	6	5	4	3.9	10.6
Dir	238	235	232	239	219	226	303	347	346	340	356	335	360	2	356	342	345	337	342	344	339	348	41	346	317.4	237.6
25 Spd	3	4	2	2	1	3	1	6	6	10	9	10	11	10	12	14	13	13	13	10	7	7	4	5	6.4	14.2
Dir	270	235	318	67	284	317	43	224	212	224	217	228	213	201	198	192	187	184	175	190	224	215	196	232	206.9	192.3
26 Spd	8	10	8	8	7	6	4	6	4	2	2	4	2	9	8	10	11	11	10	12	9	15	10	9	3.9	15.1
Dir	254	256	245	179	228	219	198	202	172	178	314	24	328	338	360	358	348	353	352	354	351	0	1	355	327.8	0.1
27 Spd	11	11	11	12	9	7	3	3	4	4	5	9	8	11	9	7	5	8	10	8	5	5	3	4	1.0	11.8
Dir	346	343	351	351	352	358	21	111	137	101	165	163	170	143	166	157	205	238	238	252	244	239	352	235	253.5	351.2
28 Spd	9	8	10	7	6	5	6	8	6	5	7	3	1	2	4	6	6	5	4	2	4	6	5	3	1.2	9.9
Dir	227	189	192	165	176	145	165	185	203	160	165	166	285	48	354	357	351	4	9	44	7	7	5	5	178.2	192.4
29 Spd	3	4	1	5	6	6	8	8	10	10	10	11	9	7	7	7	5	5	5	5	6	5	5	4	5.8	11.1
Dir	342	299	228	188	203	182	223	217	220	225	224	223	210	217	237	241	232	208	226	231	233	228	221	215	222.8	222.6
30 Spd	5	5	4	3	4	1	3	1	5	6	6	4	6	9	11	10	9	9	11	10	8	9	12	12	6.0	12.4
Dir	197	218	216	220	167	154	158	74	135	127	141	172	156	175	160	174	155	202	212	221	208	192	185	200	182.8	184.6
Spd	2.6	2.2	1.7	1.2	2.8	2.9	2.8	2.8	2.7	3.1	2.5	2.9	2.9	3.2	2.9	2.3	2.9	2.7	2.0	2.6	2.7	2.4	2.8	2.9	Diurnal Average	
Dir	274.1	256.4	241.0	221.8	252.3	237.2	212.0	224.0	233.1	232.8	236.0	207.8	207.2	219.6	231.5	257.4	276.7	268.0	239.1	243.9	254.0	253.0	258.4	264.8	Diurnal Maximum	
Spd	15.5	15.9	15.1	17.4	25.8	19.9	22.5	25.0	25.4	30.4	28.3	26.8	26.8	34.2	27.1	20.9	22.3	18.1	18.7	27.0	26.3	25.5	20.0	14.7	Diurnal Maximum	
Dir	347.8	348.8	350.4	141.0	261.9	218.6	211.1	215.6	215.2	228.7	232.6	228.5	230.1	230.0	233.7	231.5	232.5	203.8	219.0	229.7	229.6	222.5	230.8	224.9	Diurnal Maximum	
Maximum Speed Value: 34 km/h on Nov 9 14:00		Minimum Speed Value: 0 km/h on Nov 12 08:00										Hours in Service: 720														
Maximum Daily Speed Average: 19.3 km/h on Nov 14		Minimum Daily Speed Average: 0.8 km/h on Nov 16										Hours of Data: 720														
Maximum Diurnal Speed Average: 3.2 km/h at hour 14		Minimum Diurnal Speed Average: 1.2 km/h at hour 4										Hours of Missing Data: 0														
Monthly Average Velocity: 2.44 km/h 241.68 deg		Speed Percentiles: P <sub>1</sub> = 0.9 P <sub>10</sub> = 3.0 Q <sub>1</sub> = 4.8 Median = 7.6 Q <sub>3</sub> = 10.4 P <sub>90</sub> = 14.8 P <sub>99</sub> = 26.7										Percent Operational Time: 100.0														
All monthly, daily, and diurnal averages have been calculated using vector methods																										
Frequency Distribution																										
		Speed Range (km/h)																								
Direction	0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total																			
North	42	123	56	0	0	0	221																			
NorthEast	9	8	0	0	0	0	17																			
East	6	3	1	0	0	0	10																			
SouthEast	19	22	7	0	0	0	48																			
South	45	88	23	2	0	0	158																			
SouthWest	39	101	39	20	4	0	203																			
West	20	5	2	1	0	0	28																			
NorthWest	17	17	1	0	0	0	35																			
Total	197	367	129	23	4	0	720																			

**Wind Rose**

**Wind Speed (WS) (km/h)**  
**Smoky Heights - November 2016**



# Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

## Smoky Heights - November 2016

Maximum Speed: 34 km/h on Nov 9 14:00	Maximum Daily Speed Average: 19.6 km/h on Nov 14	Hours in Service: 720
Minimum Speed: 1 km/h on Nov 16 11:00	Minimum Daily Speed Average: 4.8 km/h on Nov 16	Hours of Data: 720
Maximum Diurnal Speed Average: 10.9 km/h at hour 14	Minimum Diurnal Speed Average: 7.5 km/h at hour 21	Hours of Missing Data: 0
Monthly Average Speed: 8.65 km/h	Percentiles: P <sub>1</sub> = 1.8 P <sub>10</sub> = 3.6 Q <sub>1</sub> = 5.1 Median = 7.8 Q <sub>3</sub> = 10.6 P <sub>90</sub> = 15.0 P <sub>99</sub> = 26.9	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	12	11	11	14	13	13	10	10	11	9	13	10	10	9	9	10	10	7	7	8	7	8	6	8	9.9	13.9
2-Nov	7	7	4	3	4	7	10	10	11	10	9	10	18	10	12	10	8	10	8	5	5	3	6	4	8.0	18.3
3-Nov	4	7	8	8	9	10	13	8	6	7	8	7	9	15	17	17	23	16	17	16	8	13	13	13	11.2	22.7
4-Nov	10	7	4	5	4	4	6	7	6	9	4	5	4	4	2	4	7	5	10	8	3	4	5	7	5.5	10.5
5-Nov	6	5	6	9	11	9	11	10	10	6	9	14	10	9	11	17	16	15	12	13	11	14	12	11	10.6	17.0
6-Nov	10	13	10	6	8	9	7	7	7	9	6	12	15	18	21	18	19	18	15	15	14	14	13	11	12.2	20.8
7-Nov	9	4	6	7	7	6	6	6	4	3	2	5	1	3	4	2	2	2	4	8	7	8	10	6	5.1	9.8
8-Nov	4	5	15	18	10	11	11	6	5	6	5	6	3	8	9	10	7	9	11	7	7	4	3	5	7.6	17.7
9-Nov	3	3	4	6	26	18	23	25	25	31	28	25	22	34	27	21	17	14	6	8	10	8	9	7	16.8	34.3
10-Nov	12	12	10	6	8	9	8	5	4	6	6	9	16	16	12	12	8	6	7	8	5	6	8	4	8.5	16.2
11-Nov	6	8	9	5	7	10	11	10	9	8	9	9	11	15	16	14	15	6	7	7	5	7	9	5	9.0	15.9
12-Nov	5	5	3	5	4	6	3	3	4	3	2	6	9	10	8	5	3	4	5	4	5	4	8	12	5.3	11.8
13-Nov	13	8	8	9	12	13	14	14	13	11	11	8	11	11	5	2	6	4	5	8	5	5	5	7	8.6	14.1
14-Nov	8	9	11	10	16	20	19	17	22	22	26	27	27	29	24	20	17	14	19	27	26	26	20	15	19.6	29.1
15-Nov	6	10	10	14	4	4	6	6	3	7	5	7	7	7	5	5	3	5	5	4	3	2	3	7	5.7	13.8
16-Nov	5	1	3	2	2	6	4	3	7	3	1	3	6	6	7	5	5	4	4	3	2	8	11	12	4.8	12.0
17-Nov	12	11	11	11	9	8	9	10	8	8	8	8	8	9	10	10	11	9	7	7	5	7	5	9	8.8	11.8
18-Nov	10	10	11	13	12	13	12	12	10	9	10	13	10	10	12	12	15	14	15	16	15	17	17	14	12.7	17.1
19-Nov	16	16	15	15	17	15	17	18	18	16	16	17	16	14	13	14	14	13	14	12	10	9	9	10	14.3	17.6
20-Nov	10	10	10	11	8	7	9	10	9	6	9	10	11	12	11	11	12	11	10	8	8	6	7	8	9.3	11.8
21-Nov	7	5	5	5	7	6	5	5	6	6	6	5	5	8	7	7	8	8	5	2	2	3	4	2	5.5	8.4
22-Nov	2	3	3	6	5	7	7	7	5	4	8	7	9	10	9	8	8	9	6	5	5	3	4	5	6.0	10.0
23-Nov	2	3	3	4	3	3	5	4	3	4	6	4	4	7	5	5	4	5	7	8	8	8	8	10	5.2	10.5
24-Nov	11	10	10	8	7	8	4	4	5	5	6	3	5	6	7	7	9	10	10	9	8	7	6	5	7.0	10.7
25-Nov	4	5	3	2	4	4	5	6	6	10	9	11	11	10	12	14	13	13	13	10	9	8	5	5	8.0	14.2
26-Nov	8	10	8	8	8	7	5	6	4	3	3	4	5	9	8	10	11	11	10	12	9	15	10	9	8.0	15.1
27-Nov	11	11	11	12	9	8	3	3	4	4	5	9	8	11	9	7	5	8	10	8	5	6	4	4	7.3	11.8
28-Nov	9	9	10	7	6	5	6	8	6	5	7	4	2	2	4	6	6	5	4	3	4	6	5	3	5.5	10.0
29-Nov	4	4	2	5	6	6	8	8	10	10	10	11	9	7	7	7	7	6	5	5	6	5	5	4	6.5	11.2
30-Nov	5	5	4	3	4	2	4	3	5	6	6	4	7	9	11	10	9	9	11	10	8	9	13	13	7.0	12.6
	7.6	7.5	7.6	7.9	8.4	8.4	8.7	8.4	8.2	8.2	8.5	9.0	9.6	10.9	10.4	10.0	9.9	9.0	9.0	8.7	7.5	8.1	8.0	7.8	Diurnal Average	
	15.6	15.9	15.2	17.7	26.3	20.1	22.5	25.1	25.5	30.6	28.4	27.0	26.9	34.3	27.2	21.0	22.7	18.2	18.8	27.1	26.3	25.6	20.1	15.1	Diurnal Maximum	

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



# Hourly Standard Deviations

Wind Direction (WD) - deg  
Smoky Heights - November 2016

Maximum Value: 91.1 deg on Nov 15 22:00																								Hours in Service: 720	
Minimum Value: 2.6 deg on Nov 27 19:00																								Hours of Data: 720	
Percentiles: P <sub>1</sub> = 3.4 P <sub>10</sub> = 5.7 Q <sub>1</sub> = 7.5 Median = 12.3 Q <sub>3</sub> = 22.1 P <sub>90</sub> = 41.4 P <sub>99</sub> = 82.6																								Hours of Missing Data: 0	
																								Hours of Calibration: 0	
																								Percent Operational Time: 100.0	
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Nov	6	5	7	7	10	8	6	9	7	8	5	8	11	9	7	8	7	14	15	6	17	6	8	13	
2-Nov	10	6	35	48	11	21	8	9	8	14	12	7	8	13	11	17	23	12	19	24	24	64	22	25	
3-Nov	52	11	12	26	15	32	12	18	27	13	15	19	18	9	8	8	11	14	8	6	26	9	10	31	
4-Nov	8	29	14	17	52	24	24	19	19	18	56	20	22	17	80	75	12	54	8	15	56	56	37	22	
5-Nov	33	36	18	33	14	13	16	16	7	15	31	6	17	18	13	11	12	21	5	20	19	6	8	10	
6-Nov	6	9	11	26	12	11	21	19	30	25	21	15	8	7	6	5	3	6	7	13	8	5	9	20	
7-Nov	41	35	22	22	22	7	12	12	50	33	77	28	51	39	62	30	76	59	37	27	77	34	35	27	
8-Nov	28	47	6	10	11	6	8	28	15	13	17	16	65	7	13	8	22	37	7	53	10	31	49	22	
9-Nov	76	64	54	60	11	11	5	5	6	6	5	6	9	4	5	4	4	5	18	16	7	44	21	7	
10-Nov	7	7	26	22	7	9	17	22	22	44	16	23	7	9	7	9	6	20	29	26	24	33	13	25	
11-Nov	17	14	11	28	34	17	16	17	16	12	16	11	17	12	7	6	9	53	11	17	25	11	6	30	
12-Nov	31	32	47	24	15	9	77	90	40	17	39	20	19	25	30	15	8	19	15	8	14	20	28	5	
13-Nov	11	10	11	12	11	8	8	11	16	12	6	23	7	7	11	55	13	25	20	14	21	28	20	24	
14-Nov	19	25	11	21	5	9	6	4	6	5	3	6	5	5	4	6	5	9	7	4	3	4	4	14	
15-Nov	63	20	9	5	87	24	21	42	84	23	21	15	17	24	30	45	32	20	25	9	80	91	19	14	
16-Nov	16	73	79	69	67	10	27	49	34	55	56	76	13	13	27	10	12	13	8	11	12	6	5	7	
17-Nov	6	8	7	9	12	13	11	12	17	12	20	22	16	14	12	10	9	7	7	8	12	9	9	6	
18-Nov	5	6	7	6	8	10	6	5	5	7	9	7	9	8	8	10	6	7	6	6	6	7	5	6	
19-Nov	6	5	6	5	5	6	5	6	6	5	7	4	4	6	7	6	5	5	6	7	6	6	9	7	
20-Nov	7	7	8	7	12	9	6	9	8	12	6	8	7	6	6	6	5	5	8	7	6	17	11	13	
21-Nov	9	19	21	25	15	15	12	8	18	10	8	9	8	7	9	8	7	6	14	51	30	31	9	18	
22-Nov	45	25	16	10	6	17	8	13	12	25	10	12	24	8	8	14	12	11	13	17	14	32	58	15	
23-Nov	52	76	42	19	41	37	14	19	84	28	13	21	15	20	16	21	25	33	12	15	8	13	7	5	
24-Nov	6	8	10	8	12	8	48	48	8	15	16	28	35	15	9	8	8	5	6	7	10	30	36	50	
25-Nov	43	40	53	31	82	54	90	11	11	8	8	9	11	5	3	3	5	4	8	16	34	30	31	12	
26-Nov	14	5	20	14	19	24	38	14	53	61	53	15	76	8	11	6	5	13	6	6	6	3	7	7	
27-Nov	5	7	5	6	9	8	17	13	15	19	11	15	21	9	9	13	26	10	3	6	14	40	49	19	
28-Nov	10	14	7	9	18	9	13	15	12	16	12	34	88	36	13	8	11	23	28	52	37	12	17	29	
29-Nov	22	13	88	14	24	20	9	5	9	4	3	4	8	8	7	13	13	10	14	9	6	15	8	16	
30-Nov	13	11	4	9	35	44	30	68	32	6	15	28	19	11	12	9	11	8	7	6	7	7	7	9	
76.1	76.2	88.3	68.7	87.0	54.3	89.7	89.5	84.4	60.6	77.1	76.2	87.5	38.9	80.1	74.5	76.5	59.2	36.9	52.9	80.4	91.1	58.4	50.0		

PAZA

## Beaverlodge Station

Monthly Summary Tables, Graphs and  
Roses

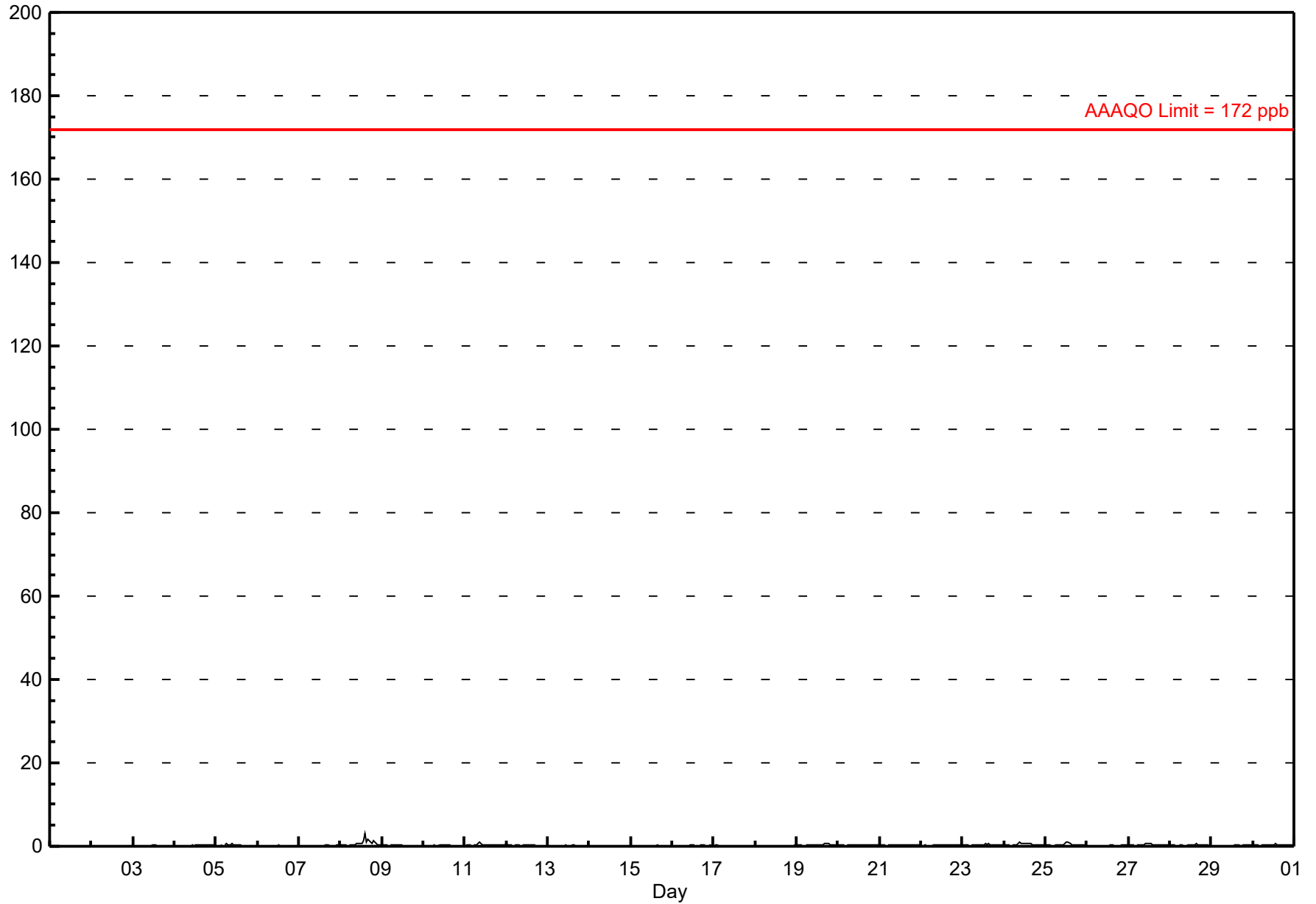
# Hourly Averages

## Sulphur Dioxide (SO<sub>2</sub>) - ppb Beaverlodge - November 2016

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 3.1 ppb on Nov 8 15:00 Maximum Daily Average: 0.7 ppb on Nov 8		Hours in Service: 720 Hours of Data: 688 Hours of Missing Data: 32 Hours of Calibration: 32 Percent Operational Time: 100.0																																														
Minimum Value: 0 ppb on Nov 1 06:00 Maximum Diurnal Average: 0.4 ppb at hour 15 Monthly Average: 0.22 ppb		Minimum Daily Average: 0.0 ppb on Nov 1 Minimum Diurnal Average: 0.2 ppb at hour 8 Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.1 Median = 0.2 Q <sub>3</sub> = 0.3 P <sub>90</sub> = 0.4 P <sub>99</sub> = 0.9																																														
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	0.0	0.0																						
2-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																						
3-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																						
4-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																						
5-Nov	0	0	0	0	A	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.7																						
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	0.2																						
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	0.1	0.3																						
8-Nov	0	0	0	0	A	0	0	0	0	1	1	1	1	1	3	1	2	1	1	1	1	0	0	0	0.7	3.1																						
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	0.2	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	0.3																						
11-Nov	0	0	0	0	A	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.9																						
12-Nov	1	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	0.5																						
13-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																						
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	0.0	0.1																						
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	0.2																						
16-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	C	C	0	0	0	0	0	0	0	0	0.2	0.5																						
17-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																						
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	0.1	0.2																						
19-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0.4	0.6																						
20-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																						
21-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																						
22-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																						
23-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0.4	0.6																						
24-Nov	0	0	0	0	A	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0.5	0.9																						
25-Nov	0	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	0.9																						
26-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																						
27-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	0.3	0.7																						
28-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	0.5																						
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	1	0	0	0	0	0	0	0	0	0	0	0.3	0.6																						
																								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	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	Diurnal Average
																								0.5	0.5	0.4	0.4	--	0.4	0.7	0.4	0.9	0.9	0.7	0.7	0.9	1.2	3.1	0.9	1.8	0.9	0.8	1.3	0.9	0.5	0.5	0.4	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 (SO<sub>2</sub>) - ppb  
Beaverlodge - November 2016



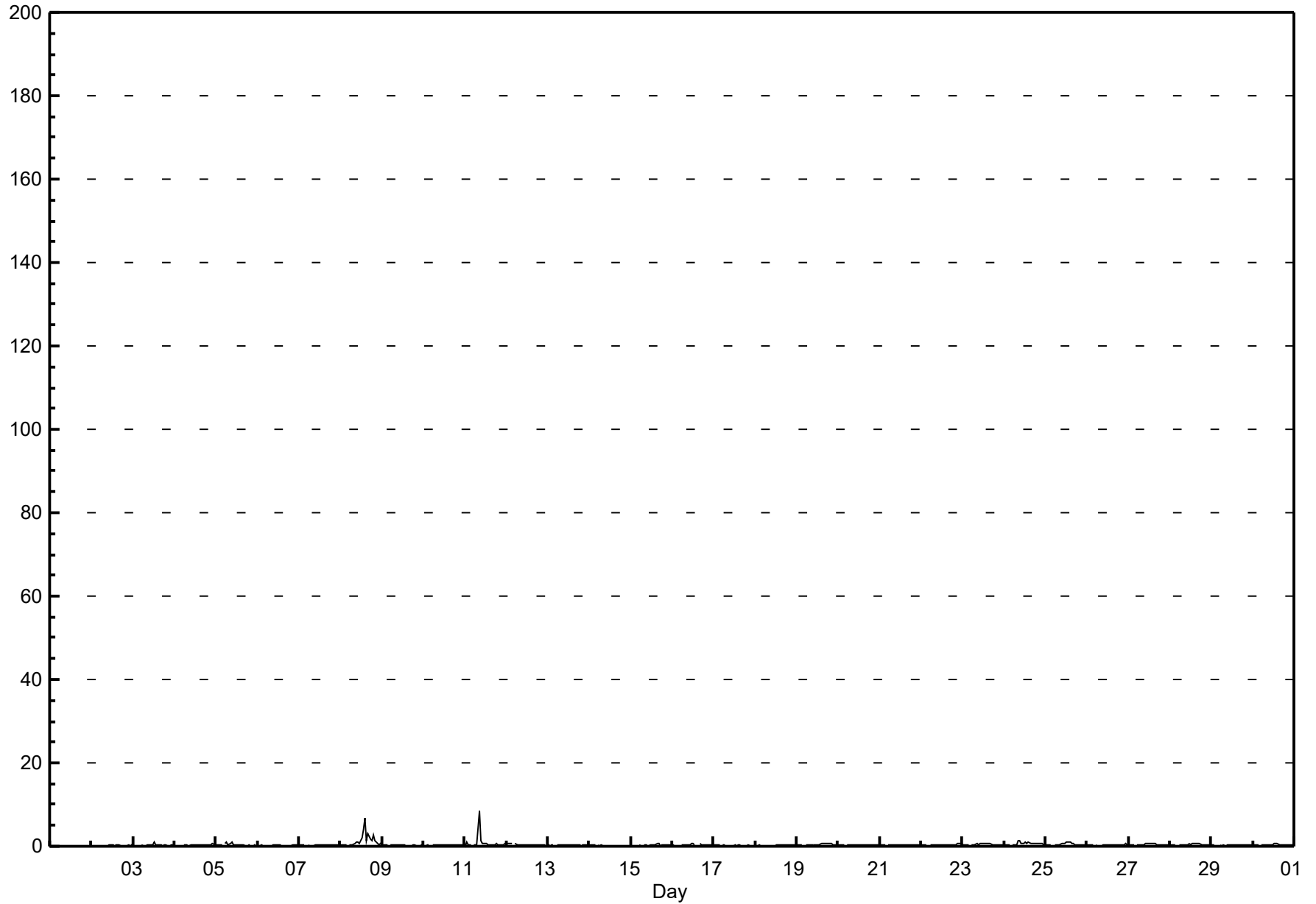
# Hourly Maximums

## Sulphur Dioxide (SO<sub>2</sub>) - ppb Beaverlodge - November 2016

Maximum Value: 8.5 ppb on Nov 11 09:00		Maximum Daily Average: 1.4 ppb on Nov 8		Hours in Service: 720																							
Minimum Value: 0 ppb on Nov 1 06:00		Minimum Daily Average: 0.1 ppb on Nov 1		Hours of Data: 688																							
Maximum Diurnal Average: 0.6 ppb at hour 15		Minimum Diurnal Average: 0.3 ppb at hour 4		Hours of Missing Data: 32																							
Monthly Average: 0.36 ppb		Percentiles: P <sub>1</sub> = 0.1 P <sub>10</sub> = 0.1 Q <sub>1</sub> = 0.2 Median = 0.3 Q <sub>3</sub> = 0.4 P <sub>90</sub> = 0.6 P <sub>99</sub> = 1.6		Hours of Calibration: 32																							
				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	0.1	
2-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	
3-Nov	0	0	0	0	A	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0.2	1.0	
4-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0.3	0.5	
5-Nov	0	0	0	0	A	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.9	
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	0.3	
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	1	1	1	1	2	4	7	1	3	2	1	3	1	1	0	1	1.4	6.8	
9-Nov	0	0	1	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5	
10-Nov	0	0	0	0	A	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5	
11-Nov	0	1	0	0	A	0	0	0	8	1	1	1	1	0	0	0	0	0	1	0	0	0	0	1	0.8	8.5	
12-Nov	1	1	1	1	A	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.6	
13-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	
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	1	1	0	0	0	0	0	0	0	0.2	0.5	
16-Nov	0	0	0	0	A	0	0	0	0	0	0	1	1	0	C	C	1	0	0	0	0	0	0	0	0.3	0.6	
17-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	
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	0.2	0.3	
19-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	0.5	0.7	
20-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	0.4	0.5	
21-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	
22-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	0.4	0.6	
23-Nov	0	0	0	0	A	0	0	0	1	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0.5	0.8	
24-Nov	0	0	0	0	A	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0.6	1.3	
25-Nov	0	0	0	0	A	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0.6	1.2	
26-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0.3	0.6	
27-Nov	0	0	0	0	A	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0.5	0.8	
28-Nov	0	0	0	0	A	0	0	0	0	0	0	1	0	1	1	1	1	0	0	0	0	0	0	0	0.4	0.8	
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	0.3	0.4	
30-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	0.4	0.7	
		0.3	0.3	0.3	0.3	--	0.3	0.3	0.3	0.6	0.4	0.4	0.4	0.5	0.5	0.6	0.4	0.4	0.3	0.3	0.4	0.3	0.3	0.3	0.3	Diurnal Average	
		0.6	0.9	0.5	0.5	--	0.8	0.9	0.5	8.5	1.2	1.2	0.8	1.9	4.0	6.8	1.4	3.1	1.7	1.4	2.6	1.2	0.6	0.6	0.6	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									

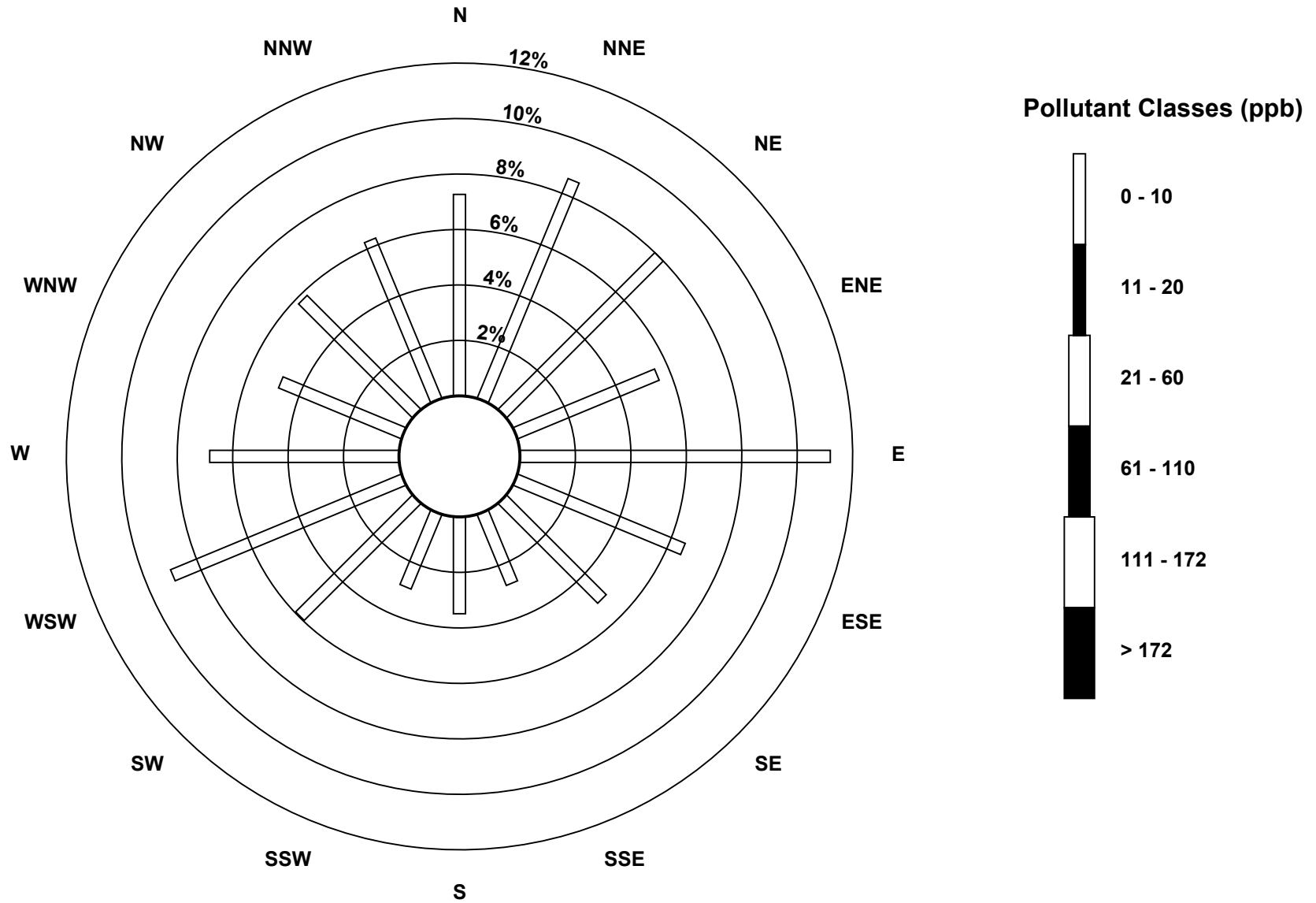
### Hourly Maximums

Sulphur Dioxide (SO<sub>2</sub>) - ppb  
Beaverlodge - November 2016



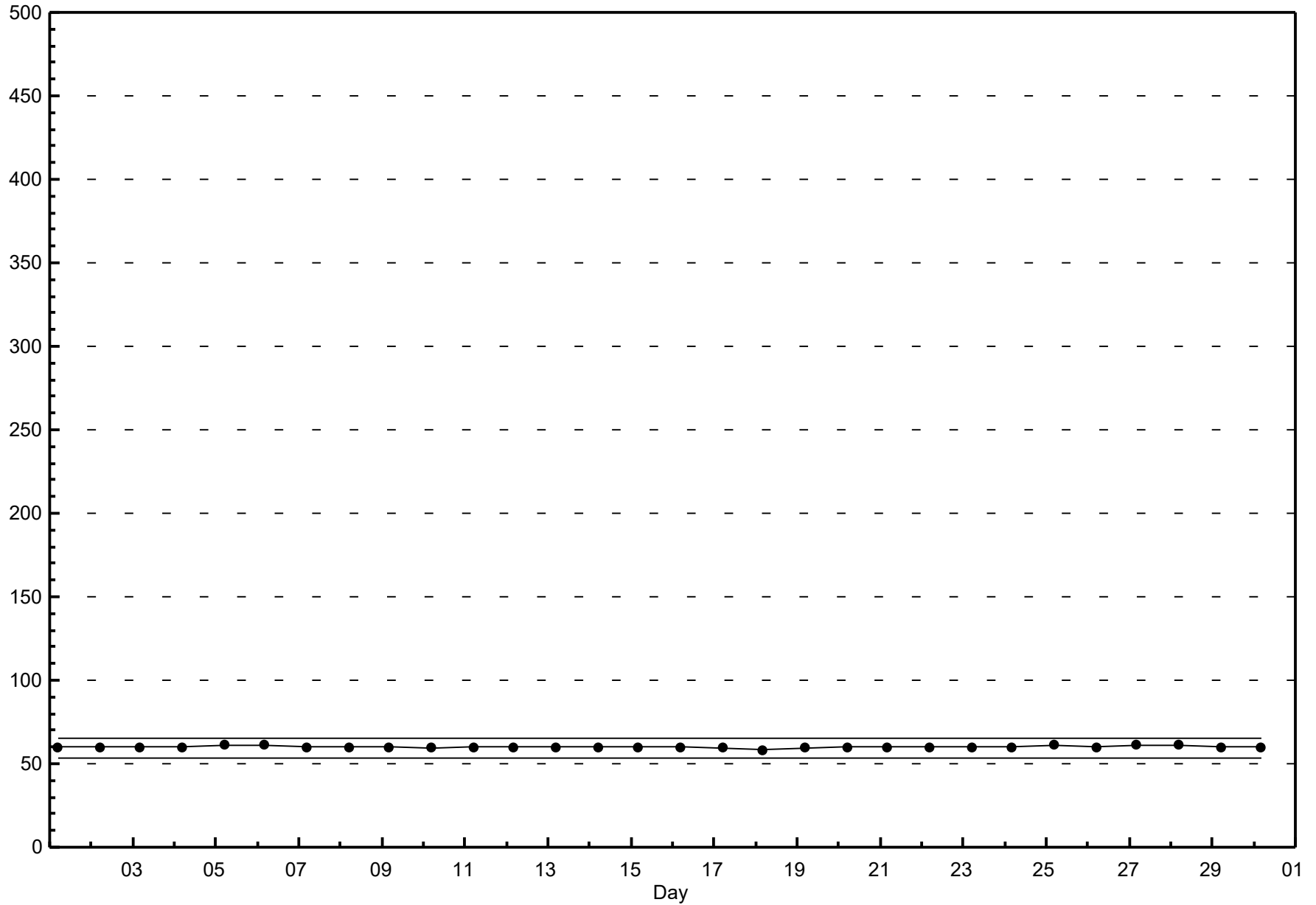
**Pollutant Rose**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Beaverlodge - November 2016**



### Span Responses

Sulphur Dioxide (SO<sub>2</sub>)  
Beaverlodge - November 2016





## Hourly Averages

## Nitrogen Dioxide (NO<sub>2</sub>) - ppb Beaverlodge - November 2016

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0	Hours in Service: 720
Maximum Value: 27.0 ppb on Nov 28 18:00	Maximum Daily Average: 16.4 ppb on Nov 30
Minimum Value: 0 ppb on Nov 14 04:00	Hours of Data: 686
Maximum Diurnal Average: 8.7 ppb at hour 18	Hours of Missing Data: 34
Monthly Average: 6.74 ppb	Hours of Calibration: 34
Minimum Daily Average: 1.0 ppb on Nov 14	Percent Operational Time: 100.0
Minimum Diurnal Average: 5.2 ppb at hour 13	
Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 1.2 Q <sub>1</sub> = 2.5 Median = 5.4 Q <sub>3</sub> = 9.6 P <sub>90</sub> = 14.1 P <sub>99</sub> = 24.0	

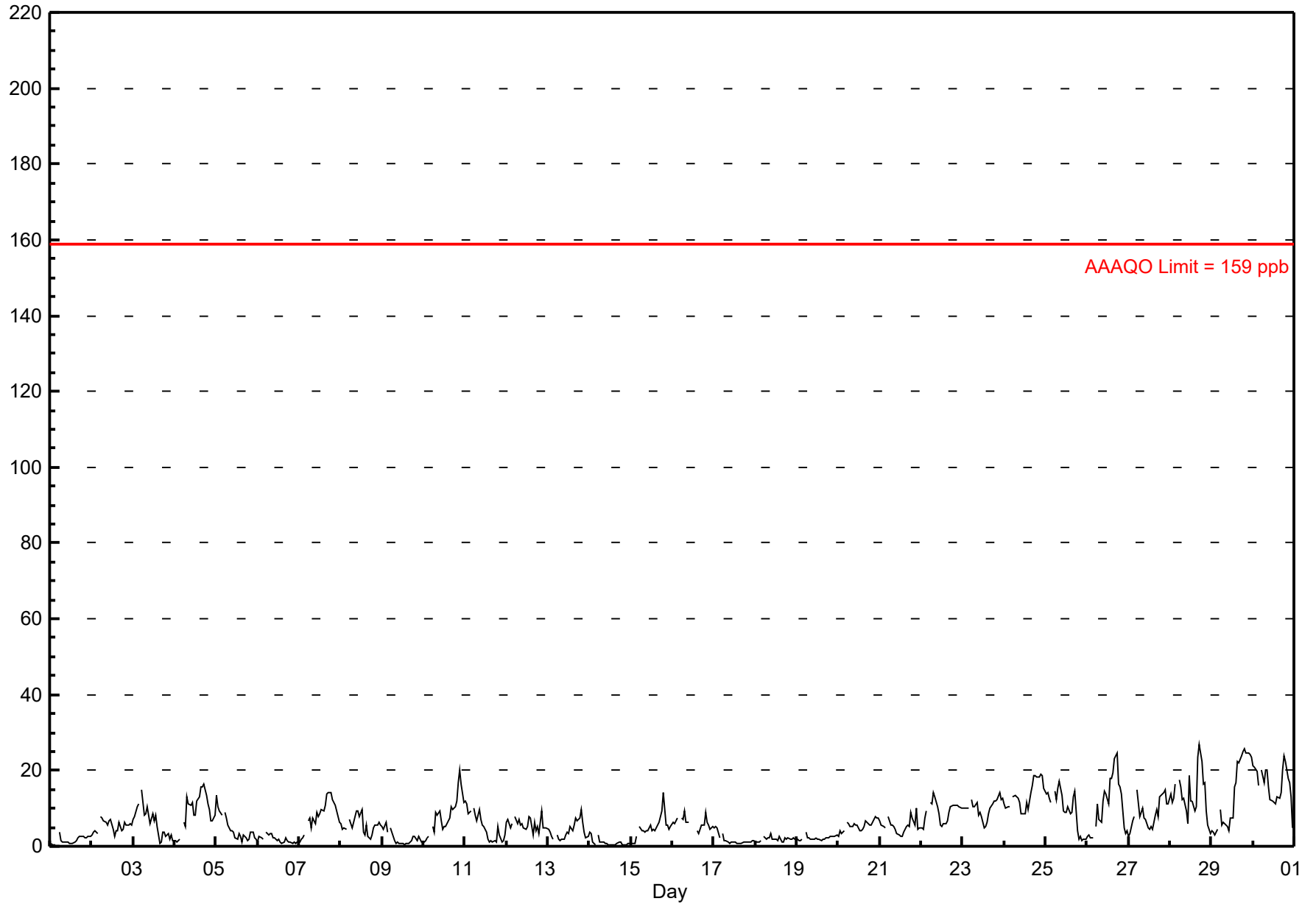
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Nov	1	0	0	0	A	4	2	1	1	1	1	1	1	1	1	2	2	3	3	3	2	2	3	3	1.6	3.7
2-Nov	3	4	4	3	A	8	8	7	6	6	7	7	5	3	4	4	6	4	4	6	6	6	6	6	5.2	7.8
3-Nov	7	8	11	11	A	15	8	9	10	8	6	8	7	8	5	1	1	4	4	3	3	2	3	1	6.2	14.8
4-Nov	1	1	1	2	A	6	5	13	11	11	12	8	8	12	13	16	15	17	13	11	10	7	7	8	9.1	16.6
5-Nov	13	10	9	8	A	9	7	5	4	4	4	2	3	3	1	3	2	1	2	4	4	2	2	4.6	13.3	
6-Nov	1	3	2	2	A	4	3	4	3	2	2	1	2	1	1	1	2	1	1	1	1	1	1	1	1.8	3.7
7-Nov	1	2	2	3	A	7	8	5	7	6	9	8	8	10	10	11	14	14	14	12	11	11	9	6	8.2	14.3
8-Nov	6	4	5	5	A	7	6	5	8	9	9	8	10	4	3	5	2	2	3	5	5	6	6	6	5.6	9.6
9-Nov	5	5	6	4	A	5	3	1	1	1	1	1	1	1	1	1	1	2	3	2	2	3	2	1	2.2	6.4
10-Nov	1	1	2	3	A	5	4	9	8	9	7	4	5	5	7	8	10	10	11	12	17	20	16	12	8.1	20.0
11-Nov	12	11	9	9	A	10	8	7	10	7	5	5	4	2	1	2	1	2	1	5	3	1	1	3	5.2	11.8
12-Nov	6	7	5	6	A	8	6	7	5	6	5	4	5	8	8	3	6	4	5	3	9	5	5	5	5.8	9.1
13-Nov	5	4	3	2	A	3	2	1	2	2	3	4	3	5	4	6	7	7	7	10	6	4	2	3	4.1	9.5
14-Nov	4	3	1	0	A	3	1	1	1	1	1	0	0	0	0	0	1	1	1	1	0	0	1	1	1.0	3.7
15-Nov	1	1	1	3	A	5	4	4	4	4	4	5	4	5	4	6	6	8	9	14	6	5	5	5	4.9	14.0
16-Nov	6	6	7	8	A	8	7	9	6	6	C	C	C	C	4	3	5	5	6	9	6	6	5	5	6.2	9.5
17-Nov	5	5	5	2	A	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1.7	5.1
18-Nov	1	1	1	2	A	3	2	2	2	3	2	2	2	2	3	1	1	2	2	2	2	2	2	2	1.9	3.4
19-Nov	2	2	2	2	A	4	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2	3	3	3	2.1	3.6
20-Nov	3	4	3	4	A	6	6	5	5	6	6	5	4	4	5	5	7	6	6	6	6	8	7	7	5.5	8.0
21-Nov	7	6	5	5	A	8	6	6	5	4	3	3	2	3	4	5	5	5	9	8	6	10	5	5	5.4	10.1
22-Nov	5	4	8	9	A	12	11	14	13	11	9	6	5	6	6	7	9	10	11	11	11	11	11	10	9.1	14.3
23-Nov	10	10	10	10	A	12	10	11	11	8	9	8	5	5	7	9	10	11	12	12	12	14	12	13	10.1	14.1
24-Nov	11	10	11	10	A	13	14	13	13	12	8	9	8	12	10	14	16	18	19	18	18	19	19	15	13.5	18.9
25-Nov	14	14	13	12	A	15	12	15	17	13	9	9	9	10	9	9	13	15	4	2	3	2	2	2	9.7	17.3
26-Nov	3	3	2	2	A	5	11	7	6	12	15	14	11	18	18	19	23	25	16	16	14	5	3	4	11.0	24.6
27-Nov	3	3	7	8	A	15	8	9	10	7	7	5	5	5	5	8	10	8	13	13	14	15	11	11	8.7	14.9
28-Nov	14	12	13	16	A	18	16	12	13	9	6	19	12	12	9	10	23	27	22	17	17	9	6	3	13.7	27.0
29-Nov	4	4	3	5	A	10	6	6	6	5	4	7	8	16	17	22	22	24	25	26	24	25	24	23	13.7	25.6
30-Nov	21	21	20	16	A	20	17	20	20	16	12	12	11	11	13	13	14	20	24	22	18	17	13	5	16.4	23.7

5.8	5.6	5.6	5.7	--	8.3	6.8	7.1	7.1	6.5	5.8	5.8	5.2	6.0	5.8	6.5	8.0	8.7	8.4	8.5	8.0	7.4	6.4	5.8		Diurnal Average
21.4	20.8	19.8	16.3	--	20.0	16.8	20.0	20.3	15.7	14.5	18.7	12.1	18.0	18.1	22.4	23.4	27.0	25.0	25.6	24.5	24.7	24.2	23.3		Diurnal Maximum

C - Calibration      A - Automated Daily Zero Span  
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb    24-hr 106 ppb

### Hourly Averages

Nitrogen Dioxide (NO<sub>2</sub>) - ppb  
Beaverlodge - November 2016



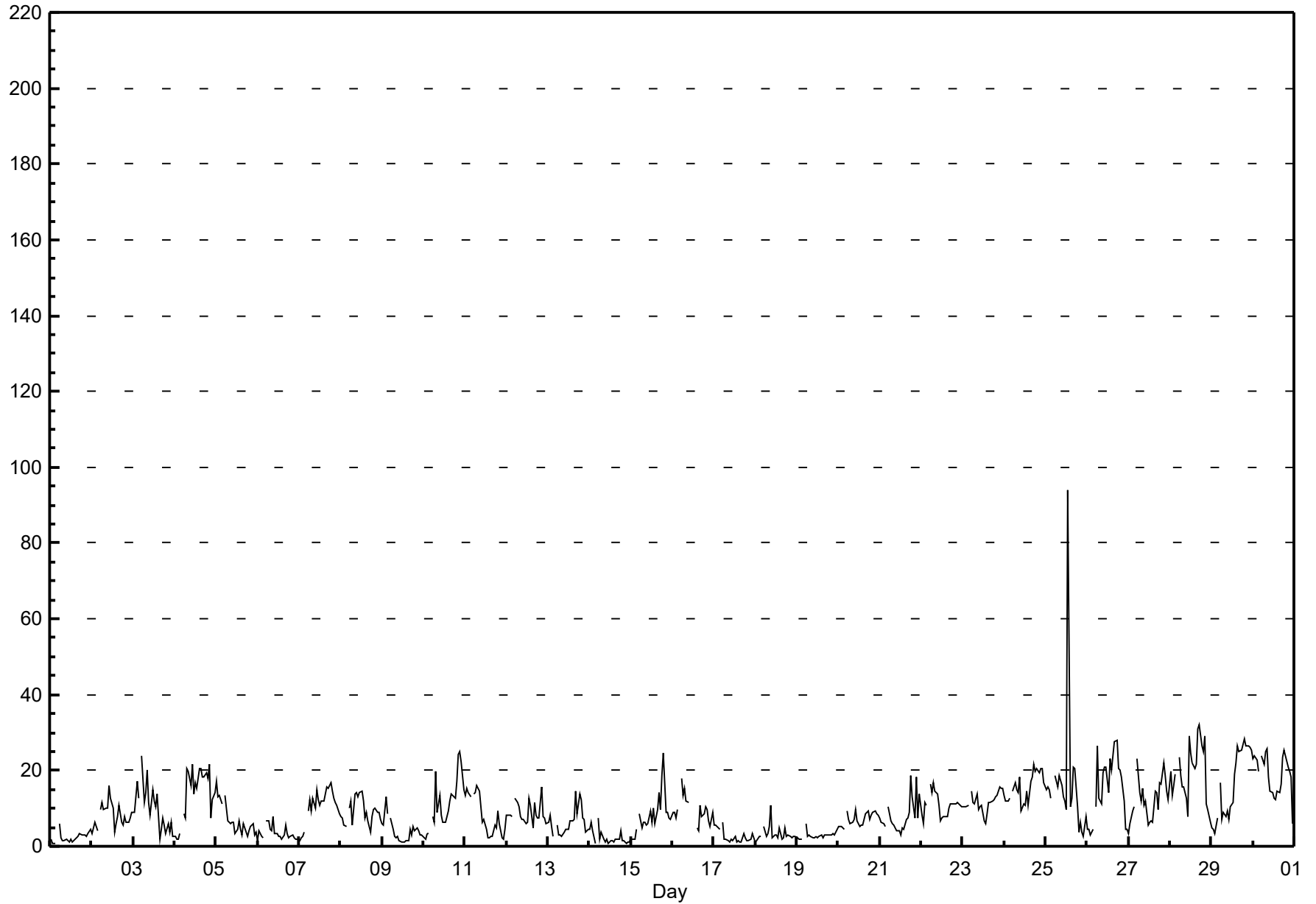
# Hourly Maximums

## Nitrogen Dioxide (NO<sub>2</sub>) - ppb Beaverlodge - November 2016

Maximum Value: 94.1 ppb on Nov 25 14:00		Maximum Daily Average: 19.6 ppb on Nov 28		Hours in Service: 720																							
Minimum Value: 1 ppb on Nov 14 04:00		Minimum Daily Average: 2.2 ppb on Nov 1		Hours of Data: 686																							
Maximum Diurnal Average: 12.3 ppb at hour 6		Minimum Diurnal Average: 7.2 ppb at hour 2		Hours of Missing Data: 34																							
Monthly Average: 9.46 ppb		Percentiles: P <sub>1</sub> = 1.0 P <sub>10</sub> = 2.1 Q <sub>1</sub> = 3.9 Median = 7.7 Q <sub>3</sub> = 13.4 P <sub>90</sub> = 19.4 P <sub>99</sub> = 27.8		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	2	1	1	1	A	6	2	2	1	2	2	1	2	1	2	2	3	3	3	3	3	3	3	5	2.2	6.0	
2-Nov	3	5	6	4	A	10	11	10	10	10	16	13	10	4	6	8	11	6	6	8	6	6	7	9	8.1	15.9	
3-Nov	9	9	17	13	A	24	11	14	20	12	8	15	12	11	14	2	5	7	5	3	6	4	6	3	10.0	23.9	
4-Nov	3	2	2	3	A	8	7	20	20	16	22	14	17	15	21	21	18	18	19	18	22	7	12	14	13.9	21.8	
5-Nov	17	13	13	11	A	13	10	7	6	6	6	3	4	7	5	3	6	4	3	4	5	6	3	4	7.0	17.1	
6-Nov	1	4	3	2	A	7	7	5	4	8	3	3	3	3	2	3	5	3	2	3	3	2	2	2	3.4	7.7	
7-Nov	2	2	2	4	A	9	12	9	13	10	15	12	11	12	12	14	16	15	17	15	13	11	11	9	10.7	16.6	
8-Nov	8	7	6	5	A	10	12	6	14	14	13	14	15	12	7	9	7	4	8	10	10	9	9	7	9.3	14.5	
9-Nov	6	6	13	8	A	8	4	2	2	3	1	1	1	1	2	2	4	3	5	4	5	4	3	3	4.0	13.0	
10-Nov	2	2	3	3	A	8	6	20	9	14	8	6	6	9	12	14	13	13	17	24	25	22	15	11.3	24.9		
11-Nov	13	15	14	13	A	14	14	16	14	10	6	7	5	2	2	2	3	6	5	9	6	2	2	4	8.1	16.0	
12-Nov	8	8	8	8	A	13	11	10	8	7	7	6	6	13	11	5	11	8	7	7	16	8	7	6	8.7	15.8	
13-Nov	6	8	5	3	A	5	3	3	2	4	4	5	5	7	7	7	15	9	14	12	8	7	4	4	6.3	14.7	
14-Nov	5	6	4	1	A	8	2	4	2	1	2	1	2	1	1	2	2	2	4	2	1	1	1	1	2.4	7.6	
15-Nov	2	2	2	4	A	8	5	6	6	6	6	9	7	10	6	10	14	10	19	24	9	9	7	7	8.2	24.5	
16-Nov	9	9	8	10	A	18	13	15	12	12	C	C	C	C	5	4	11	8	8	11	10	7	5	9	9.6	17.8	
17-Nov	5	5	5	5	A	6	2	2	2	1	2	2	2	1	2	1	1	3	2	1	2	2	4	2	2.6	6.3	
18-Nov	1	1	2	3	A	5	3	3	5	11	2	3	3	2	5	2	2	5	3	3	3	2	3	3	3.3	10.9	
19-Nov	2	2	2	2	A	6	2	3	3	2	2	3	2	2	3	2	3	3	3	3	3	3	3	5	2.8	5.9	
20-Nov	5	5	5	5	A	9	7	6	6	7	10	7	5	5	6	7	9	9	7	8	9	9	9	8	7.2	9.7	
21-Nov	7	6	6	5	A	10	7	6	6	5	4	4	3	5	4	7	7	9	19	13	7	18	8	14	7.9	18.5	
22-Nov	8	6	12	11	A	17	14	17	15	14	11	7	7	8	8	8	10	11	11	11	11	12	11	11	10.8	16.9	
23-Nov	10	10	10	11	A	15	12	11	14	10	11	11	7	6	8	11	11	12	12	13	14	16	15	15	11.5	15.6	
24-Nov	14	12	12	13	A	15	17	15	14	18	9	11	11	14	11	17	18	22	20	20	19	21	20	17	15.6	21.8	
25-Nov	15	16	15	13	A	19	17	16	19	16	13	12	10	94	11	13	21	21	10	4	6	4	3	8	16.2	94.1	
26-Nov	4	4	3	4	A	11	26	13	11	19	21	21	14	23	20	24	28	28	21	20	18	12	4	5	15.4	28.0	
27-Nov	3	6	9	11	A	23	14	12	15	11	12	6	6	7	6	15	14	10	17	16	22	19	14	12	12.2	23.1	
28-Nov	20	14	16	19	A	23	19	16	16	13	8	29	25	22	20	22	31	32	27	25	29	11	10	6	19.6	31.9	
29-Nov	5	5	3	7	A	17	7	9	8	9	7	11	11	19	22	26	25	25	27	28	26	27	26	25	16.4	28.4	
30-Nov	23	24	23	20	A	24	21	25	26	18	14	14	13	12	14	14	16	24	25	24	21	20	18	6	19.1	25.7	
		7.3	7.2	7.7	7.3	--	12.3	10.1	10.1	10.1	9.6	8.5	8.6	7.7	11.2	8.3	9.1	11.4	11.1	11.4	11.4	11.2	9.5	8.5	7.9	Diurnal Average	
		23.1	23.8	22.9	19.7	--	23.9	26.5	24.8	25.7	19.4	21.6	29.0	24.7	94.1	22.0	26.4	31.1	31.9	26.8	28.4	29.0	26.6	26.0	25.2	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									

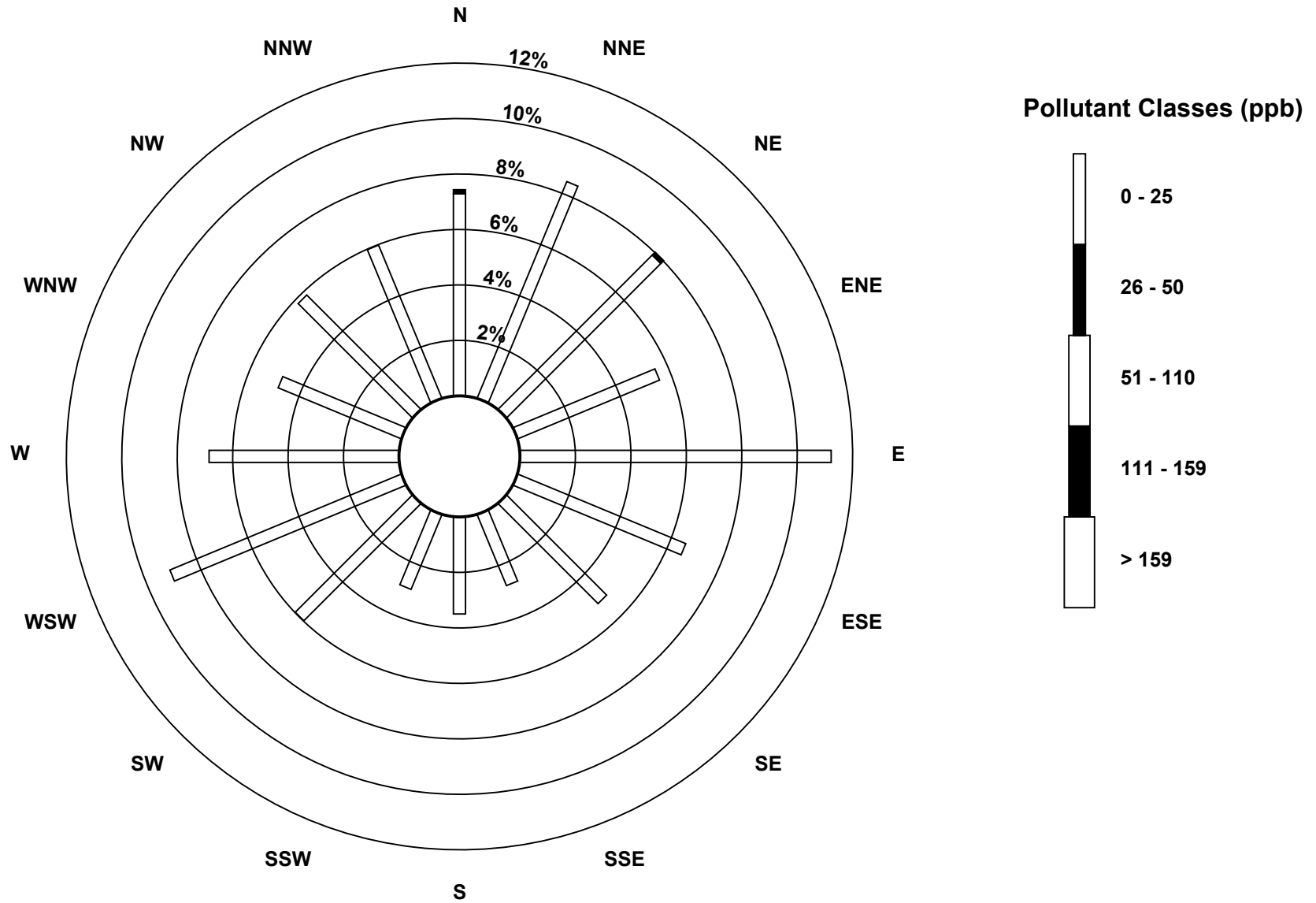
**Hourly Maximums**

**Nitrogen Dioxide (NO<sub>2</sub>) - ppb**  
**Beaverlodge - November 2016**



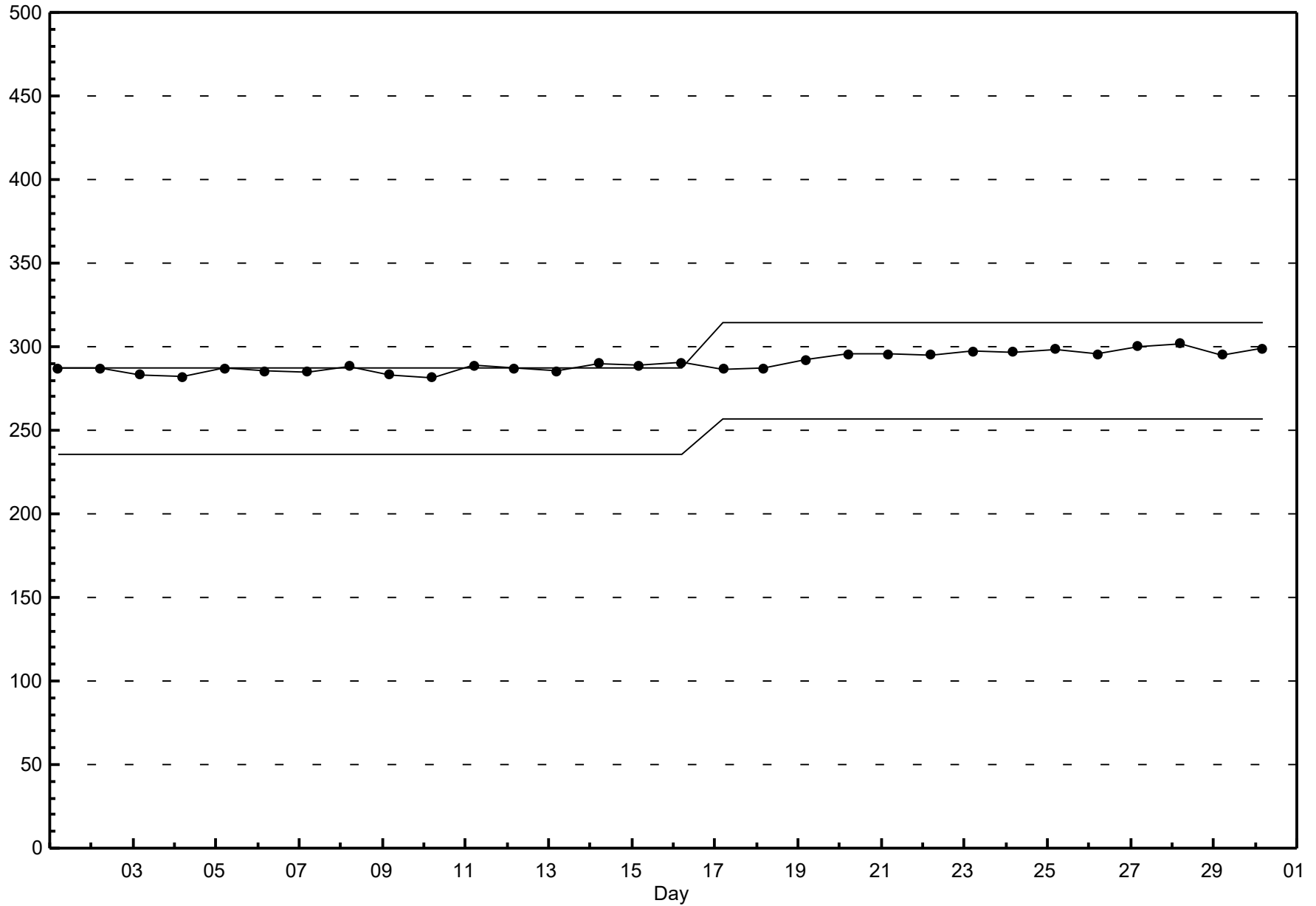
**Pollutant Rose**

**Nitrogen Dioxide (NO<sub>2</sub>) - ppb**  
**Beaverlodge - November 2016**



### Span Responses

**Nitrogen Dioxide (NO<sub>2</sub>)**  
**Beaverlodge - November 2016**



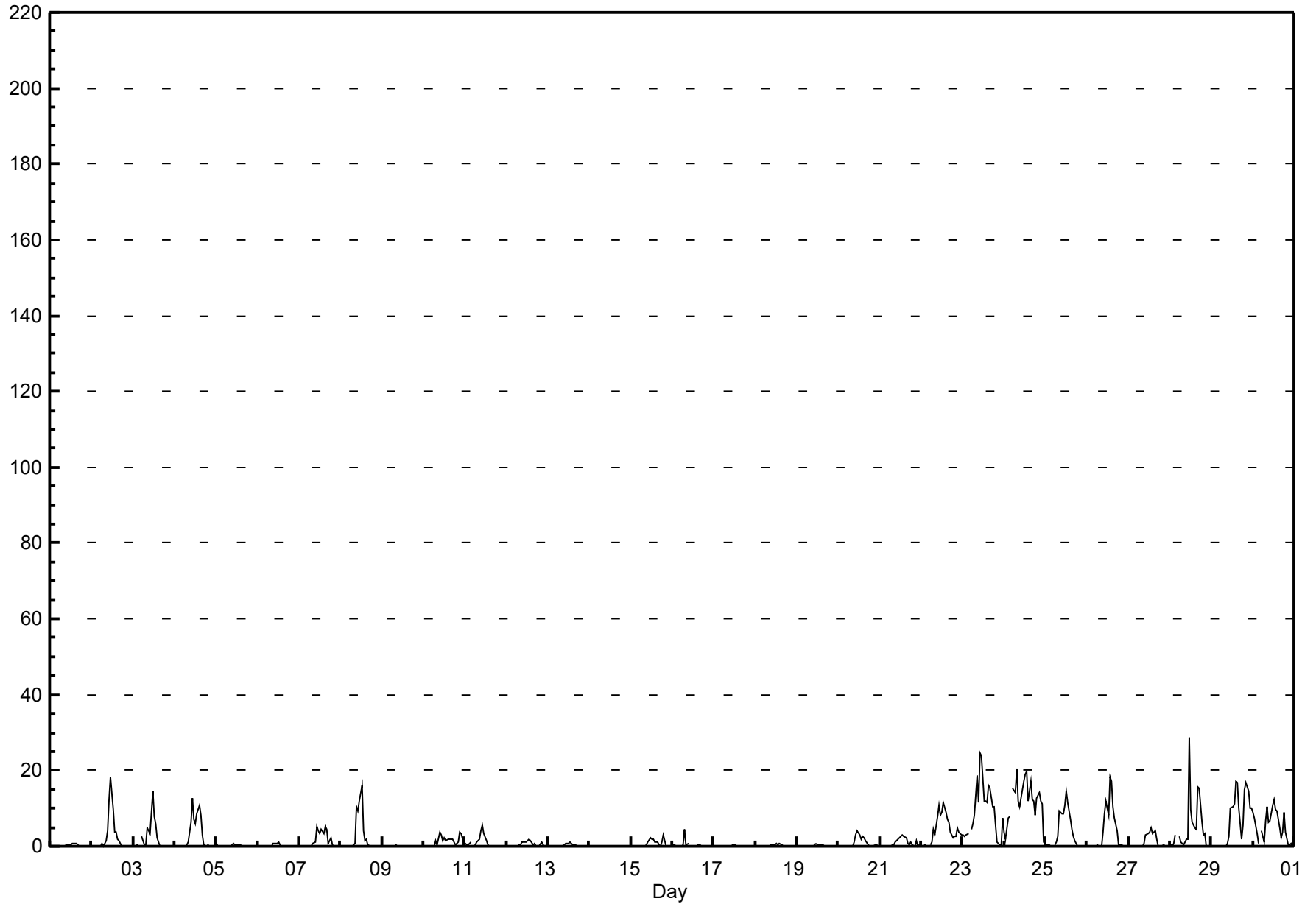
# Hourly Averages

## Nitrogen Oxide (NO) - ppb Beaverlodge - November 2016

Maximum Value: 28.9 ppb on Nov 28 12:00		Maximum Daily Average: 11.9 ppb on Nov 24		Hours in Service: 720																							
Minimum Value: 0 ppb on Nov 1 01:00		Minimum Daily Average: 0.1 ppb on Nov 14		Hours of Data: 686																							
Maximum Diurnal Average: 6.9 ppb at hour 12		Minimum Diurnal Average: 0.5 ppb at hour 2		Hours of Missing Data: 34																							
Monthly Average: 2.34 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.1 Median = 0.2 Q <sub>3</sub> = 2.4 P <sub>90</sub> = 9.1 P <sub>99</sub> = 18.7		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	0	0	0	0	A	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0.2	0.8	
2-Nov	0	0	0	0	A	0	1	0	2	4	12	18	10	4	4	2	1	0	0	0	0	0	0	0	2.5	18.2	
3-Nov	0	0	0	0	A	3	0	0	5	4	3	15	8	6	2	0	0	0	0	0	0	0	0	0	2.1	14.5	
4-Nov	0	0	0	0	A	0	0	0	1	6	13	7	6	9	11	8	3	0	0	0	0	0	0	0	2.9	12.7	
5-Nov	1	0	0	0	A	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0.2	0.6	
6-Nov	0	0	0	0	A	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0.2	0.9	
7-Nov	0	0	0	0	A	0	0	0	1	1	5	4	3	4	3	5	4	1	2	0	0	0	0	0	1.5	5.2	
8-Nov	0	0	0	0	A	0	0	0	1	10	9	12	16	4	1	2	0	0	0	0	0	0	0	0	2.5	16.1	
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	0	A	0	0	2	0	4	3	2	2	2	2	2	2	2	0	1	1	4	3	1	1.4	3.7	
11-Nov	1	0	0	1	A	0	0	1	2	4	5	3	1	0	0	0	0	0	0	0	0	0	0	0	0.9	5.5	
12-Nov	0	0	0	0	A	0	0	0	0	1	1	1	1	2	2	0	1	0	0	0	1	0	0	0	0.5	1.7	
13-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	
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	2	2	2	1	1	0	0	1	3	0	0	0	0	0.6	2.9	
16-Nov	0	0	0	0	A	0	0	4	0	1	C	C	C	C	1	0	0	0	0	0	0	0	0	0	0.5	4.3	
17-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	
18-Nov	0	0	0	0	A	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0.2	0.6	
19-Nov	0	0	0	0	A	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0.2	0.6	
20-Nov	0	0	0	0	A	0	0	0	0	1	3	4	3	2	3	2	1	0	0	0	0	0	0	0	0.9	3.9	
21-Nov	0	0	0	0	A	0	0	0	0	1	2	2	2	3	3	2	1	0	1	1	0	2	0	0	0.9	2.8	
22-Nov	0	0	0	0	A	1	1	4	3	8	11	8	9	12	9	7	6	4	2	2	3	5	4	3	4.4	11.6	
23-Nov	3	2	3	3	A	4	6	8	19	12	25	24	12	12	11	16	15	10	11	6	1	0	0	8	9.2	24.6	
24-Nov	4	2	7	8	A	15	14	21	12	11	13	17	19	20	12	17	12	12	8	13	14	12	11	1	11.9	20.6	
25-Nov	0	0	0	0	A	0	1	3	9	8	8	11	15	11	7	4	3	2	0	0	0	0	0	0	3.7	14.5	
26-Nov	0	0	0	0	A	0	0	0	0	4	9	12	8	18	17	10	7	4	0	0	0	0	0	0	4.0	18.4	
27-Nov	0	0	0	0	A	0	0	0	0	1	3	3	4	5	3	4	2	0	0	0	0	0	0	0	1.1	4.8	
28-Nov	0	0	1	3	A	3	1	1	0	2	2	29	10	6	5	5	16	15	6	3	3	0	0	0	4.8	28.9	
29-Nov	0	0	0	0	A	0	0	0	0	1	2	10	11	11	17	17	10	2	6	15	17	15	10	10	6.6	17.2	
30-Nov	9	7	3	1	A	4	1	7	11	6	7	11	12	10	9	5	2	4	9	4	0	0	1	0	5.4	12.4	
		0.6	0.5	0.6	0.6	--	1.0	0.9	1.8	2.2	3.1	4.8	6.9	5.5	5.1	4.2	3.8	3.0	1.9	1.6	1.6	1.4	1.3	1.0	0.8	Diurnal Average	
		9.1	7.3	7.4	7.7	--	15.1	14.2	20.6	18.8	11.7	24.6	28.9	19.1	19.6	17.2	17.1	15.8	15.3	10.6	14.8	16.6	14.5	11.1	10.2	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									

**Hourly Averages**

**Nitrogen Oxide (NO) - ppb**  
**Beaverlodge - November 2016**





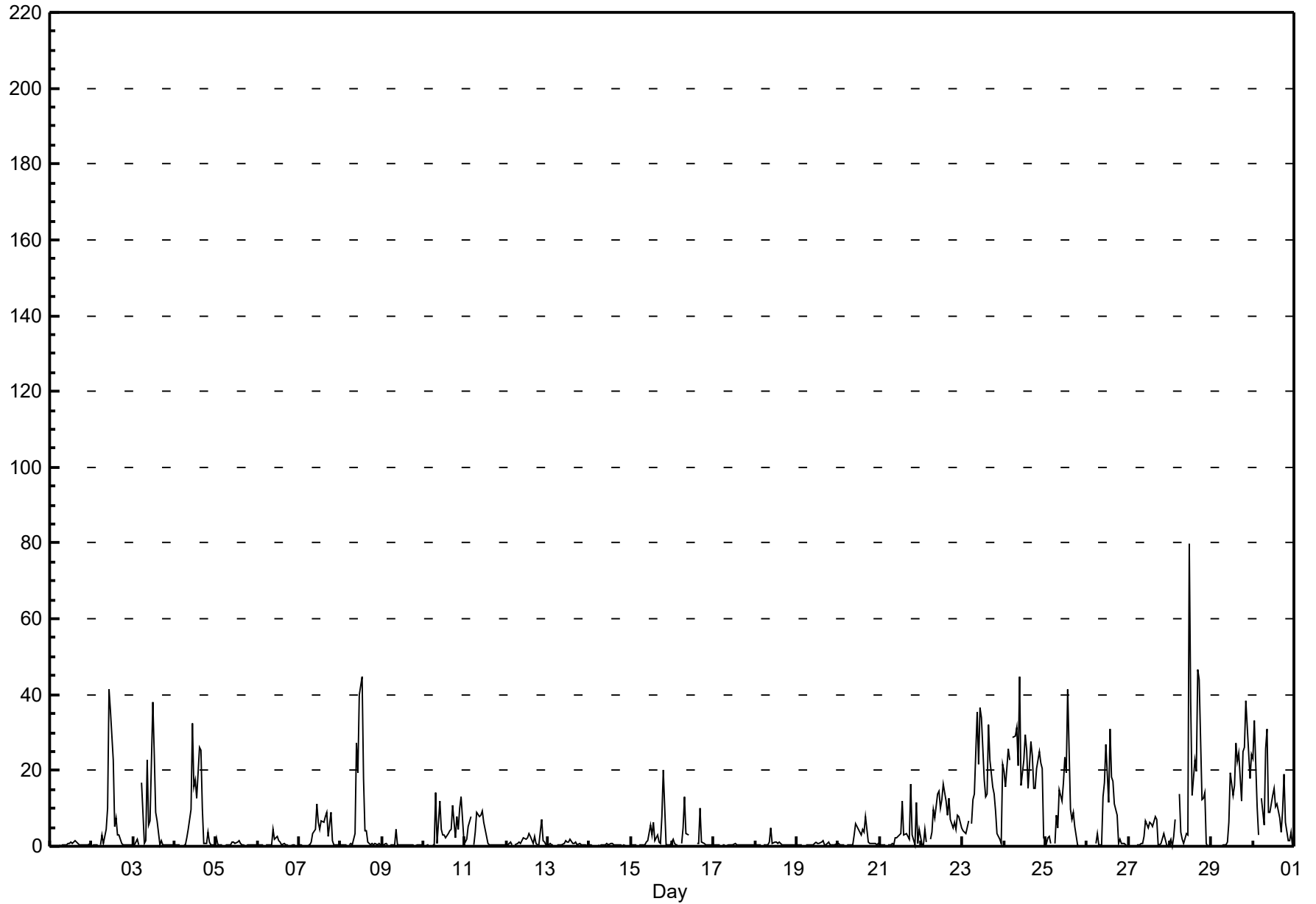
# Hourly Maximums

## Nitrogen Oxide (NO) - ppb Beaverlodge - November 2016

Maximum Value: 79.8 ppb on Nov 28 12:00		Maximum Daily Average: 22.6 ppb on Nov 24		Hours in Service: 720																						
Minimum Value: 0 ppb on Nov 28 23:00		Minimum Daily Average: 0.3 ppb on Nov 17		Hours of Data: 686																						
Maximum Diurnal Average: 13.9 ppb at hour 12		Minimum Diurnal Average: 1.8 ppb at hour 4		Hours of Missing Data: 34																						
Monthly Average: 5.19 ppb		Percentiles: P <sub>1</sub> = 0.1 P <sub>10</sub> = 0.2 Q <sub>1</sub> = 0.3 Median = 0.7 Q <sub>3</sub> = 6.1 P <sub>90</sub> = 17.3 P <sub>99</sub> = 41.4		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	0	0	A	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	1	0.5	1.4	
2-Nov	0	0	0	0	A	0	3	1	5	10	42	36	23	5	7	3	3	1	0	0	0	0	0	6.1	41.5	
3-Nov	0	0	2	0	A	17	1	1	23	6	7	38	24	9	7	0	1	0	0	0	0	0	0	6.0	38.0	
4-Nov	0	0	0	0	A	0	0	2	5	10	33	16	17	13	26	26	10	1	1	4	1	0	0	7.2	32.5	
5-Nov	2	0	0	0	A	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0.6	2.4	
6-Nov	0	0	0	0	A	0	0	0	0	4	2	3	2	1	0	1	0	0	0	0	0	0	0	0.7	4.4	
7-Nov	0	0	0	0	A	0	0	1	3	4	11	6	5	7	6	8	9	3	9	1	0	0	0	3.3	11.4	
8-Nov	0	0	0	0	A	0	1	0	3	27	19	40	45	18	4	4	1	0	1	0	1	0	1	7.3	44.8	
9-Nov	0	0	1	0	A	0	0	0	4	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0.5	4.4	
10-Nov	0	0	0	0	A	0	0	14	1	12	5	3	3	2	3	4	4	11	2	8	4	10	13	4.5	14.0	
11-Nov	1	2	5	8	A	0	4	9	8	8	9	6	3	1	0	0	0	0	0	0	0	0	0	2.9	9.3	
12-Nov	0	0	1	0	A	0	1	1	1	2	2	2	2	4	3	1	3	1	0	0	7	2	1	1.5	7.1	
13-Nov	0	1	0	0	A	0	0	0	0	1	1	1	1	2	1	1	1	0	1	0	0	0	0	0.6	1.8	
14-Nov	0	0	0	0	A	0	0	0	0	0	1	0	1	1	0	1	0	0	0	0	0	0	0	0.3	0.7	
15-Nov	0	0	0	0	A	0	0	0	0	1	2	5	3	6	1	3	1	1	8	20	0	0	0	2.4	20.2	
16-Nov	2	1	0	0	A	1	5	13	3	3	C	C	C	C	1	1	10	1	1	0	0	0	0	2.3	13.0	
17-Nov	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	0.7	
18-Nov	0	0	0	0	A	0	0	0	1	5	1	1	1	1	1	0	0	0	0	0	0	0	0	0.7	5.0	
19-Nov	0	0	0	0	A	0	0	0	0	0	1	1	1	1	1	2	1	0	1	0	0	0	1	0.5	1.6	
20-Nov	1	0	0	0	A	0	0	0	0	3	6	5	4	3	5	4	8	1	1	1	1	1	1	2.0	7.7	
21-Nov	0	0	0	0	A	0	0	1	1	2	2	3	3	12	3	3	3	2	16	3	0	11	1	3.2	16.5	
22-Nov	0	0	4	1	A	2	4	10	7	14	15	10	12	16	12	8	13	7	5	6	4	8	8	7.5	16.4	
23-Nov	4	4	3	7	A	6	12	14	35	22	36	34	18	13	14	32	23	16	14	9	3	2	1	14.9	36.4	
24-Nov	20	16	26	23	A	29	29	31	21	45	16	23	29	25	15	28	24	15	15	21	25	22	21	22.6	44.7	
25-Nov	1	2	3	1	A	1	8	5	15	12	17	23	20	41	10	7	9	5	0	0	0	0	0	7.8	41.5	
26-Nov	0	0	0	0	A	1	4	0	0	13	17	27	12	31	18	17	11	8	1	2	1	1	0	7.1	31.0	
27-Nov	0	0	0	0	A	0	0	1	1	3	7	5	6	6	5	8	7	0	0	1	3	2	0	2.5	7.9	
28-Nov	2	0	3	7	A	14	4	2	1	4	3	80	38	14	23	20	46	44	12	13	14	1	0	14.9	79.8	
29-Nov	0	0	0	0	A	0	0	0	0	1	7	19	13	16	27	22	25	12	25	26	39	25	18	13.1	38.6	
30-Nov	23	33	10	3	A	13	6	26	31	9	9	13	15	11	11	8	4	9	19	6	2	1	4	11.6	33.0	
		2.0	2.1	2.1	1.8	--	2.9	2.8	4.5	5.7	7.4	9.4	13.9	10.5	9.0	7.0	7.1	7.3	4.7	4.5	4.2	3.7	3.0	2.4	2.2	Diurnal Average
		23.1	33.0	25.8	22.6	--	28.9	29.1	31.3	35.5	44.7	41.5	79.8	44.8	41.5	27.2	32.0	46.5	44.0	24.9	26.3	38.6	24.7	20.6	24.2	Diurnal Maximum
C - Calibration		A - Automated Daily Zero Span																								

**Hourly Maximums**

**Nitrogen Oxide (NO) - ppb**  
**Beaverlodge - November 2016**

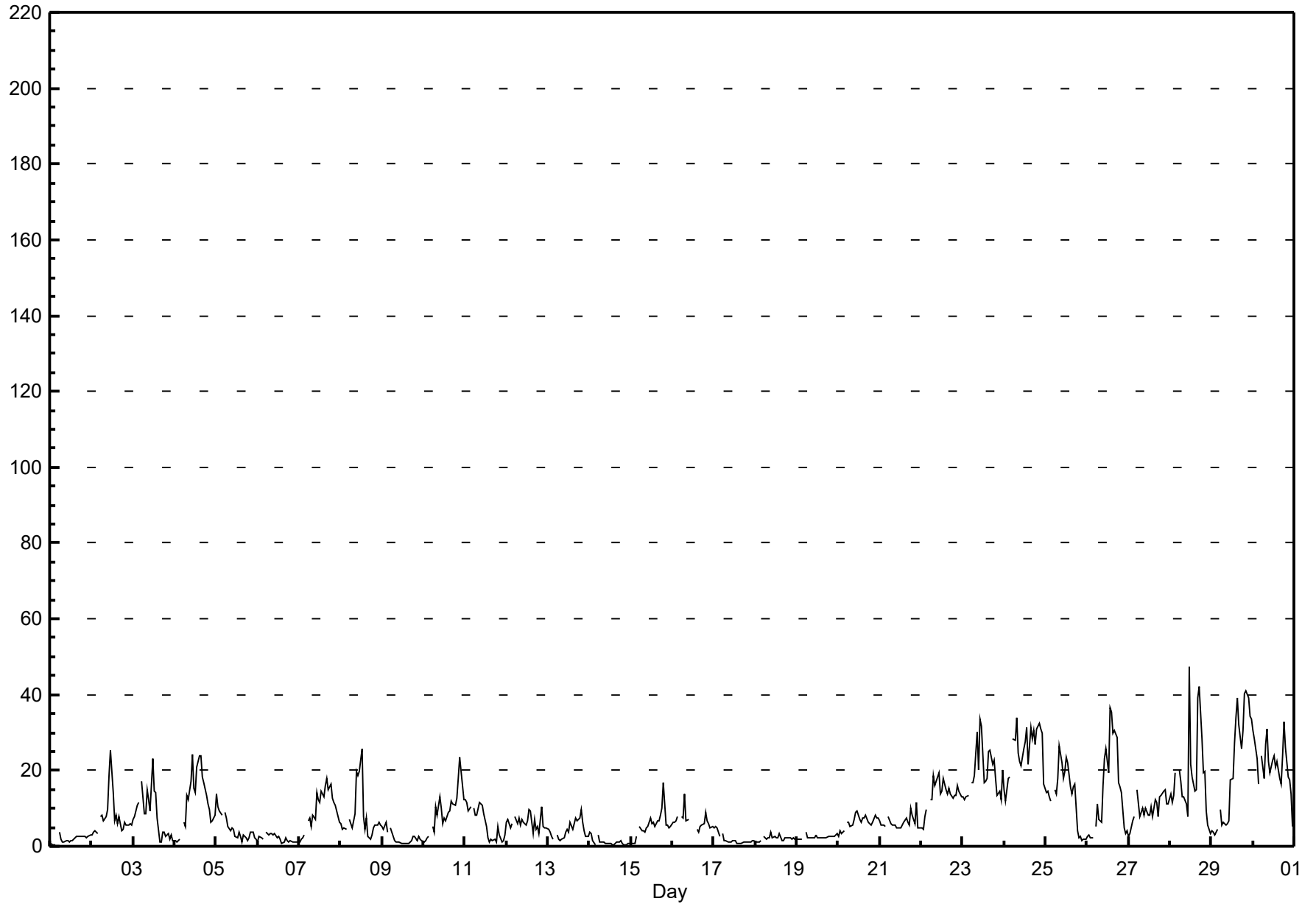


# Hourly Averages

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

Beaverlodge - November 2016

Maximum Value: 47.5 ppb on Nov 28 12:00		Maximum Daily Average: 25.4 ppb on Nov 24		Hours in Service: 720																							
Minimum Value: 0 ppb on Nov 14 22:00		Minimum Daily Average: 1.1 ppb on Nov 14		Hours of Data: 686																							
Maximum Diurnal Average: 12.7 ppb at hour 12		Minimum Diurnal Average: 6.1 ppb at hour 2		Hours of Missing Data: 34																							
Monthly Average: 9.07 ppb		Percentiles: P <sub>1</sub> = 0.5 P <sub>10</sub> = 1.3 Q <sub>1</sub> = 2.6 Median = 6.1 Q <sub>3</sub> = 13.3 P <sub>90</sub> = 21.7 P <sub>99</sub> = 39.0		Hours of Calibration: 34																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Nov	1	0	0	0	A	4	2	1	1	1	1	1	2	2	3	3	3	3	3	2	2	3	3	1.8	3.7		
2-Nov	3	4	4	3	A	8	8	7	8	10	19	25	14	7	8	6	8	4	4	6	6	6	6	7.8	25.3		
3-Nov	7	8	11	11	A	17	8	9	15	12	9	23	14	14	8	1	1	4	4	3	3	2	3	1	8.2	23.0	
4-Nov	1	1	1	2	A	6	5	13	12	17	24	15	14	21	24	24	18	17	13	11	10	6	7	8	11.9	24.3	
5-Nov	14	10	9	8	A	9	7	5	4	5	4	3	2	4	3	1	3	2	1	2	4	4	2	2	4.8	13.8	
6-Nov	1	3	2	2	A	4	3	4	3	3	3	2	3	2	1	1	2	1	1	1	1	1	1	1	2.0	3.7	
7-Nov	1	2	2	3	A	7	8	5	8	7	14	12	12	14	13	16	18	15	16	13	12	11	10	6	9.8	18.0	
8-Nov	6	4	5	4	A	7	6	5	8	20	19	20	26	8	4	7	3	2	3	5	5	6	6	6	8.0	25.7	
9-Nov	5	4	6	4	A	5	2	1	1	1	1	1	1	1	1	1	1	2	3	2	2	3	2	1	2.2	6.4	
10-Nov	1	1	2	3	A	5	4	10	8	13	10	6	8	7	9	9	12	11	11	13	18	24	20	12	9.5	23.5	
11-Nov	12	11	9	11	A	10	8	8	12	11	11	9	5	2	1	2	1	2	1	5	3	1	1	3	6.1	12.4	
12-Nov	6	7	5	6	A	8	6	7	6	7	6	6	7	10	9	3	7	4	5	3	10	5	5	5	6.3	10.3	
13-Nov	5	4	3	2	A	3	2	1	2	2	4	4	4	6	5	6	8	7	8	10	6	4	2	3	4.3	9.6	
14-Nov	4	3	1	0	A	3	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1.1	3.7	
15-Nov	1	1	1	3	A	5	4	4	4	5	5	8	6	7	5	7	7	8	10	17	6	6	5	5	5.5	17.0	
16-Nov	6	6	7	8	A	8	8	14	7	7	C	C	C	C	5	4	5	6	6	9	7	6	5	5	6.6	13.8	
17-Nov	5	5	5	2	A	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1.8	5.2	
18-Nov	1	1	1	2	A	3	2	2	2	4	2	2	2	2	3	1	1	2	2	2	2	2	2	2	2.1	3.8	
19-Nov	2	2	2	2	A	4	2	2	2	2	2	3	2	2	2	2	2	2	3	3	3	3	3	3	2.4	3.7	
20-Nov	3	4	3	4	A	6	6	5	5	7	9	9	7	6	7	7	8	6	6	6	6	8	8	8	6.4	9.4	
21-Nov	7	6	5	5	A	8	6	6	5	5	5	5	5	6	6	7	6	6	10	8	6	12	5	5	6.3	11.7	
22-Nov	5	4	8	10	A	12	12	19	16	18	19	14	14	18	15	14	15	14	13	13	14	16	14	13	13.5	19.5	
23-Nov	13	12	13	13	A	17	17	19	30	20	34	32	17	17	18	25	25	22	23	18	13	15	12	20	19.3	33.6	
24-Nov	15	12	18	18	A	28	28	34	25	22	21	26	28	31	22	31	28	30	27	31	32	31	30	16	25.4	33.9	
25-Nov	14	14	13	12	A	15	14	18	26	22	18	20	24	22	16	14	16	16	4	2	3	2	2	2	13.4	26.5	
26-Nov	3	3	2	2	A	5	11	7	6	16	23	26	19	36	35	30	31	29	17	16	14	5	3	4	15.0	36.4	
27-Nov	3	3	7	8	A	15	8	9	10	8	10	8	8	10	8	12	11	8	13	13	15	15	11	11	9.8	14.9	
28-Nov	14	12	13	19	A	20	17	13	13	11	8	48	22	18	14	15	39	42	28	19	20	9	6	3	18.5	47.5	
29-Nov	4	4	3	5	A	10	6	6	6	6	7	17	18	27	34	39	32	26	31	40	41	39	34	34	20.3	41.1	
30-Nov	31	28	23	17	A	24	18	27	31	22	19	23	24	21	23	18	16	24	33	26	18	17	14	5	21.8	32.8	
6.5		6.1	6.2	6.3	--	9.3	7.7	8.8	9.3	9.6	10.7	12.7	10.7	11.1	10.0	10.3	11.0	10.5	10.0	10.1	9.4	8.7	7.5	6.5	Diurnal Average		
30.5		28.2	23.1	19.2	--	28.3	27.8	33.9	30.9	22.2	33.6	47.5	27.5	36.4	35.3	39.0	39.1	42.2	32.8	40.5	41.1	39.2	34.2	33.6	Diurnal Maximum		
C - Calibration		A - Automated Daily Zero Span																									



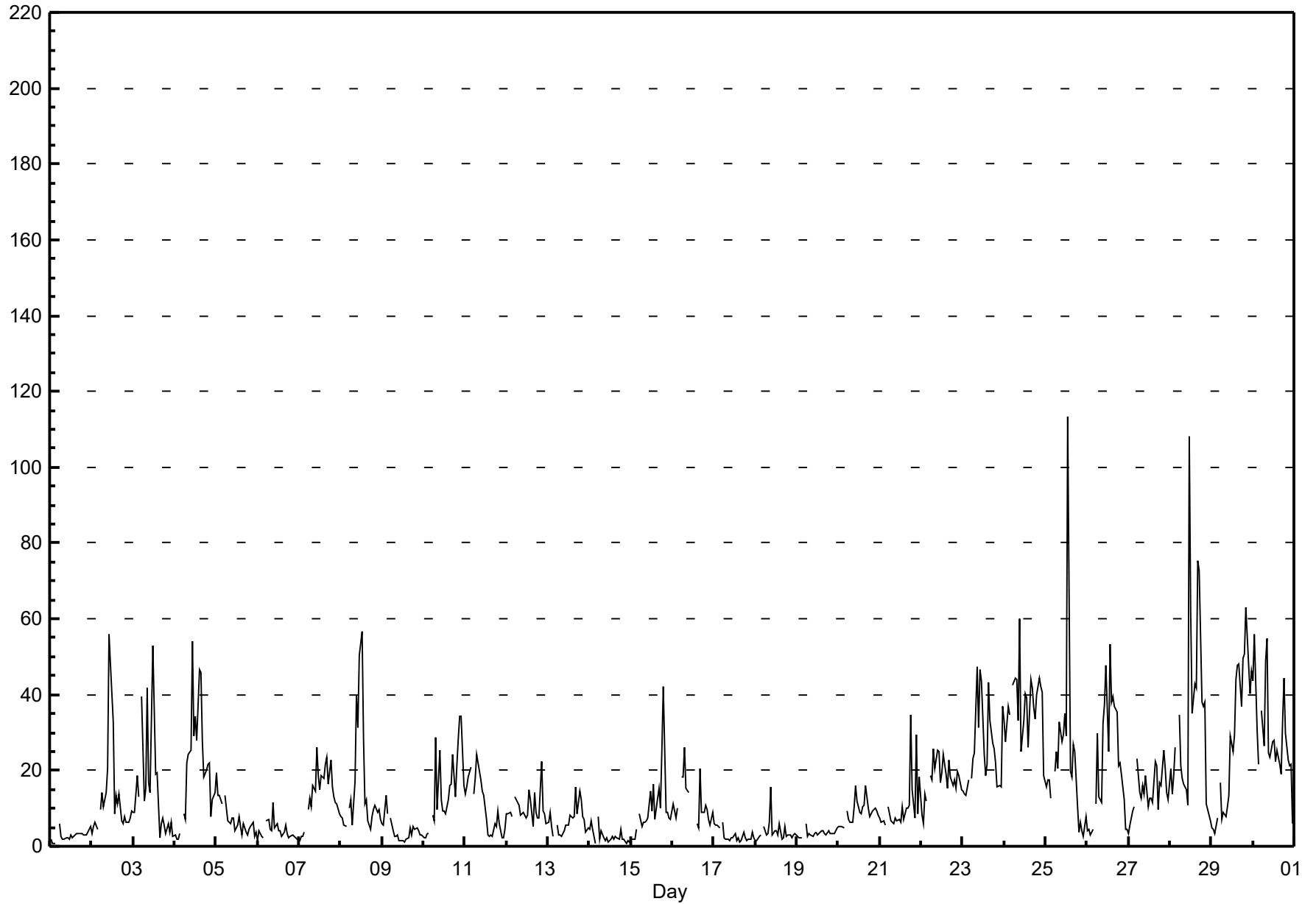
# Hourly Maximums

## Oxides of Nitrogen (NO<sub>x</sub>) - ppb Beaverlodge - November 2016

Maximum Value: 113.3 ppb on Nov 25 14:00		Maximum Daily Average: 37.5 ppb on Nov 24		Hours in Service: 720																						
Minimum Value: 1 ppb on Nov 14 22:00		Minimum Daily Average: 2.7 ppb on Nov 14		Hours of Data: 686																						
Maximum Diurnal Average: 22.2 ppb at hour 12		Minimum Diurnal Average: 9.0 ppb at hour 4		Hours of Missing Data: 34																						
Monthly Average: 14.25 ppb		Percentiles: P <sub>1</sub> = 1.3 P <sub>10</sub> = 2.4 Q <sub>1</sub> = 4.3 Median = 9.1 Q <sub>3</sub> = 19.0 P <sub>90</sub> = 34.7 P <sub>99</sub> = 59.6		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	2	1	1	1	A	6	2	2	2	2	2	3	2	3	3	3	3	3	3	3	3	4	5	2.7	6.1	
2-Nov	3	5	6	4	A	10	14	11	14	20	56	48	33	9	13	11	14	7	6	8	7	6	7	9	14.0	55.8
3-Nov	9	9	19	13	A	39	12	15	42	17	14	53	36	19	19	2	6	8	6	3	6	4	6	3	15.6	52.9
4-Nov	3	2	2	3	A	9	7	22	24	26	54	29	34	28	47	46	28	18	20	22	22	8	12	14	20.8	53.9
5-Nov	19	13	14	11	A	13	10	7	6	7	7	4	5	8	5	3	6	4	3	4	5	6	3	4	7.4	19.3
6-Nov	2	4	3	2	A	7	7	5	4	12	5	6	4	4	2	4	6	4	2	3	3	3	2	2	4.1	11.6
7-Nov	2	3	3	4	A	10	13	11	16	14	26	19	15	19	18	22	24	16	23	16	13	12	11	9	13.6	26.0
8-Nov	8	7	5	5	A	10	12	6	17	40	31	50	57	28	11	12	7	4	8	10	11	9	10	7	15.9	56.8
9-Nov	6	6	13	9	A	7	4	3	2	3	2	1	1	1	2	2	5	3	5	4	5	4	3	3	4.2	13.4
10-Nov	2	2	3	3	A	8	7	29	10	25	12	9	9	9	12	16	16	24	13	21	28	34	34	16	15.1	34.2
11-Nov	14	16	18	21	A	14	18	24	20	18	15	13	7	3	2	3	3	6	5	9	6	2	2	4	10.6	24.1
12-Nov	8	8	9	8	A	13	12	11	8	8	9	7	8	15	12	5	14	9	8	8	22	9	9	6	9.9	22.4
13-Nov	6	9	5	3	A	6	3	3	3	4	6	5	6	8	7	8	16	9	14	12	8	7	4	5	6.8	15.8
14-Nov	5	7	4	1	A	8	2	4	2	1	2	1	2	2	2	2	2	2	4	2	2	1	1	1	2.7	7.9
15-Nov	2	2	2	4	A	8	5	7	6	7	7	15	9	16	7	13	15	10	25	42	9	9	7	7	10.3	42.0
16-Nov	11	9	8	10	A	18	18	26	15	14	C	C	C	C	6	5	21	9	9	11	10	7	5	9	11.7	26.0
17-Nov	6	6	6	5	A	6	2	2	2	2	2	2	3	1	2	1	2	4	2	1	2	2	4	2	2.9	6.4
18-Nov	1	2	2	3	A	5	3	3	6	16	3	4	4	3	6	2	2	5	3	3	3	2	3	3	3.8	15.8
19-Nov	3	2	2	2	A	6	3	3	3	3	3	4	3	4	4	4	3	3	4	3	4	3	4	5	3.4	6.0
20-Nov	5	5	5	5	A	9	7	6	6	10	16	12	9	9	10	11	16	10	8	9	9	10	9	8	9.0	16.1
21-Nov	7	6	7	5	A	11	7	6	6	7	7	7	6	10	7	10	10	11	35	15	8	29	9	18	10.7	34.7
22-Nov	8	6	14	12	A	18	18	26	21	25	25	17	20	24	19	15	23	18	16	17	15	20	19	15	17.8	25.9
23-Nov	14	14	13	17	A	18	23	25	47	31	47	44	24	19	22	43	33	27	26	22	16	16	16	37	25.8	47.3
24-Nov	33	27	37	35	A	42	44	44	33	60	25	33	40	39	26	44	42	37	33	40	44	42	41	19	37.5	60.2
25-Nov	16	18	18	13	A	20	25	21	33	28	29	35	29	113	20	18	27	25	11	4	6	4	3	8	22.7	113.3
26-Nov	4	5	3	4	A	11	30	13	12	33	37	48	25	53	38	39	37	35	21	22	19	12	4	4	22.2	53.4
27-Nov	3	6	9	11	A	23	14	13	16	14	19	10	13	13	12	22	21	10	17	16	25	21	14	12	14.5	25.4
28-Nov	20	14	19	26	A	35	21	18	16	15	11	108	62	35	43	42	75	73	38	37	38	11	10	7	33.6	108.2
29-Nov	5	5	3	7	A	17	7	9	8	10	14	29	25	30	44	48	48	37	49	51	63	48	40	46	27.9	63.0
30-Nov	44	56	31	22	A	36	27	49	55	25	24	28	28	23	25	22	19	33	45	30	23	21	22	6	30.0	56.1
		9.1	9.1	9.5	9.0	--	14.8	12.6	14.0	15.2	16.6	17.6	22.2	18.0	18.9	15.0	16.0	18.1	15.5	15.4	14.9	14.5	12.2	10.6	9.9	Diurnal Average
		43.8	56.1	36.9	34.7	--	42.4	44.4	48.9	54.9	60.2	55.8	108.2	62.0	113.3	46.7	47.8	75.4	72.8	49.4	50.7	63.0	47.7	40.7	46.3	Diurnal Maximum
C - Calibration		A - Automated Daily Zero Span																								

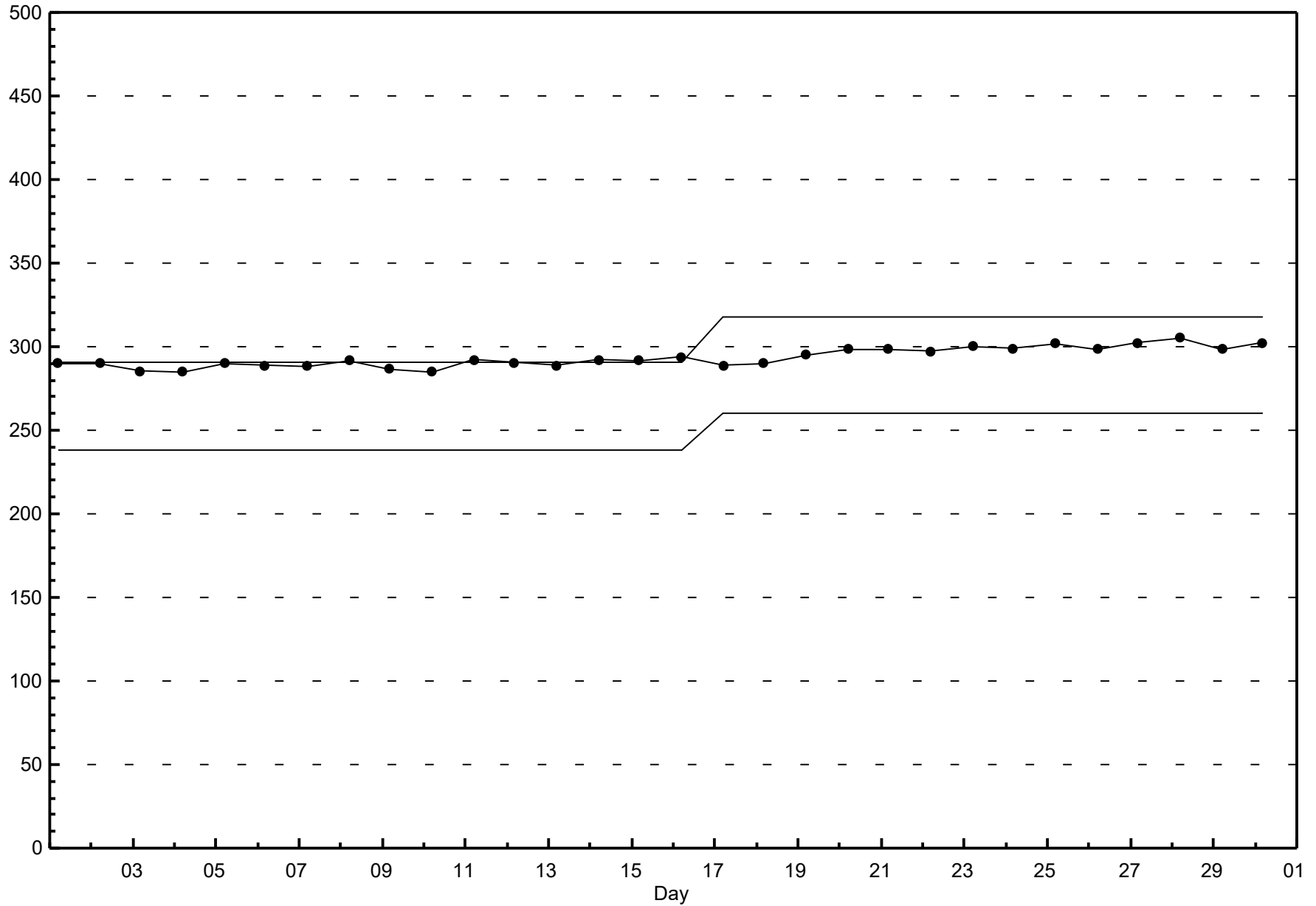
**Hourly Maximums**

**Oxides of Nitrogen (NO<sub>x</sub>) - ppb**  
**Beaverlodge - November 2016**



### Span Responses

Oxides of Nitrogen (NO<sub>x</sub>)  
Beaverlodge - November 2016



## Hourly Averages

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

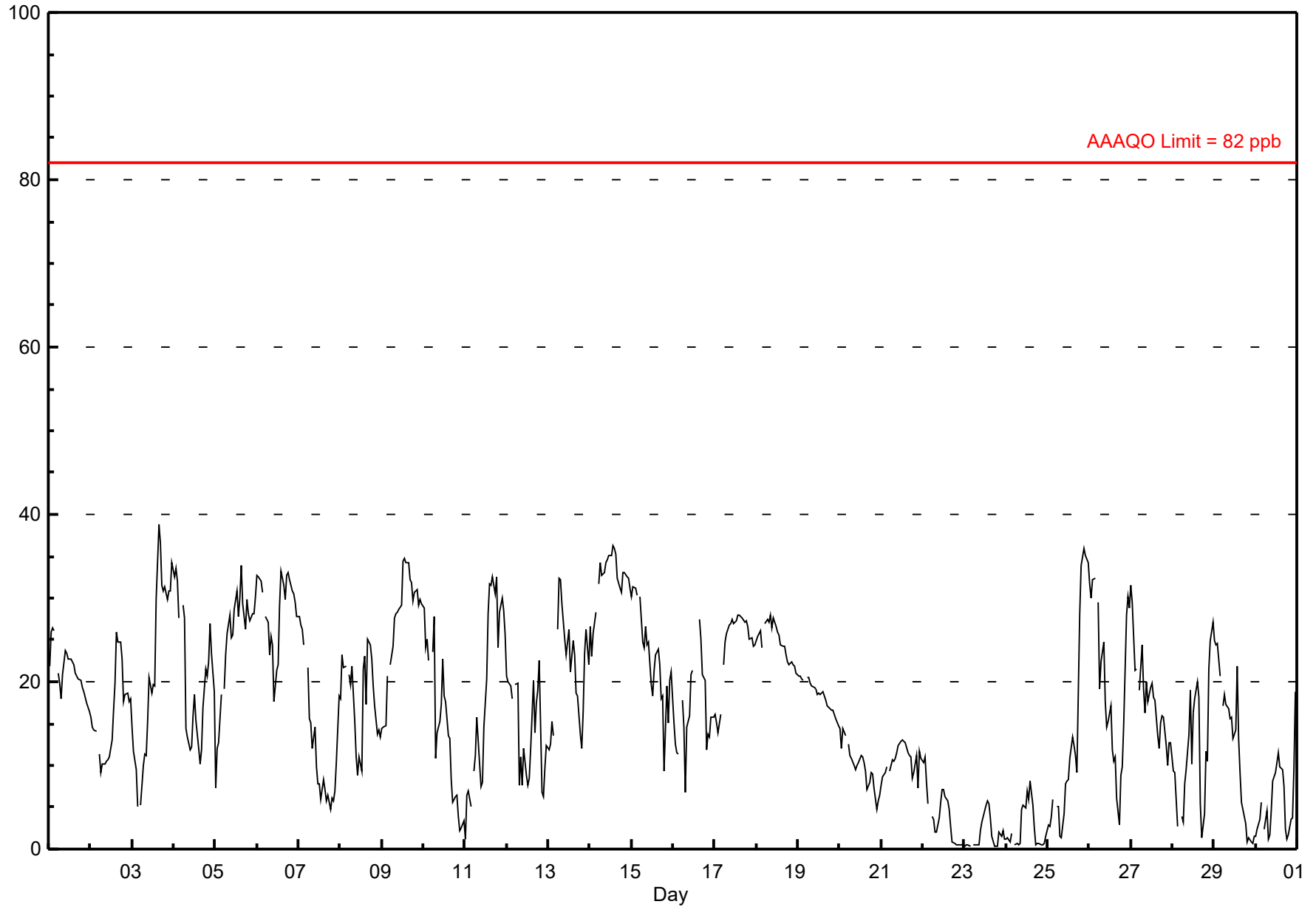
Beaverlodge - November 2016

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 38.8 ppb on Nov 3 16:00 Maximum Daily Average: 32.1 ppb on Nov 14										Hours in Service: 720 Hours of Data: 687																
Minimum Value: 0 ppb on Nov 23 19:00 Minimum Daily Average: 1.9 ppb on Nov 23 Maximum Diurnal Average: 19.1 ppb at hour 16 Minimum Diurnal Average: 15.5 ppb at hour 8 Monthly Average: 17.00 ppb Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 3.2 Q <sub>1</sub> = 9.3 Median = 17.3 Q <sub>3</sub> = 24.9 P <sub>90</sub> = 30.5 P <sub>99</sub> = 35.1										Hours of Missing Data: 33 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	22	26	26	26	A	21	20	18	21	24	23	23	23	22	21	21	20	20	19	19	18	17	16	21.3	26.4	
2-Nov	16	15	14	14	A	11	9	10	10	11	11	13	17	20	26	25	25	23	18	19	19	18	18	16.1	25.9	
3-Nov	15	12	10	5	A	5	10	11	11	15	21	19	20	19	30	39	37	32	31	31	30	31	31	21.6	38.8	
4-Nov	33	34	32	28	A	29	28	14	13	12	12	16	18	16	12	10	12	17	22	21	22	27	23	20.4	33.6	
5-Nov	7	12	13	19	A	19	23	26	28	25	26	29	31	28	30	34	29	26	30	28	27	28	28	25.0	33.9	
6-Nov	33	33	32	31	A	28	27	23	25	24	18	21	22	29	33	31	30	33	33	32	31	31	29	28	28.6	33.2
7-Nov	28	27	26	24	A	22	16	15	12	15	10	8	8	6	8	7	6	6	5	6	6	7	10	18	12.8	27.9
8-Nov	18	23	22	22	A	21	20	22	15	11	9	11	9	21	23	17	25	24	23	20	17	14	14	13	18.0	25.0
9-Nov	14	15	15	21	A	22	24	28	28	28	29	29	34	35	34	34	32	32	30	31	31	29	30	29	27.6	34.8
10-Nov	29	24	25	23	A	24	28	11	14	15	17	23	18	18	14	13	8	6	6	6	4	2	3	3	14.5	28.8
11-Nov	1	7	7	5	A	9	11	16	10	8	8	15	20	28	32	32	32	30	33	24	28	30	29	26	19.1	32.5
12-Nov	21	20	20	18	A	20	20	8	11	8	12	9	8	8	12	20	14	17	19	23	7	6	10	12	14.0	22.6
13-Nov	12	13	15	14	A	26	32	32	29	25	23	25	26	21	25	23	19	18	14	12	16	23	26	22	21.4	32.4
14-Nov	27	23	26	28	A	32	34	33	33	34	35	35	35	36	36	35	32	31	31	33	33	32	32	31	32.1	36.3
15-Nov	30	31	31	30	A	30	25	24	27	24	25	20	18	21	23	24	22	18	18	9	19	15	20	21	22.9	31.4
16-Nov	15	12	12	11	A	18	15	7	15	16	21	21	C	C	C	27	25	21	20	12	14	13	16	16	16.3	27.4
17-Nov	16	15	14	16	A	22	25	26	27	27	27	27	27	28	28	28	28	28	27	27	25	25	24	24	24.4	28.0
18-Nov	25	25	26	24	A	27	27	27	28	26	28	27	26	26	24	24	24	23	22	22	22	22	21	21	24.8	28.0
19-Nov	21	21	20	20	A	20	20	20	20	19	19	18	19	18	19	18	18	17	17	17	16	16	15	15	18.5	20.7
20-Nov	14	12	14	14	A	13	11	11	10	9	10	10	11	11	10	9	7	8	9	9	7	5	6	6	9.9	14.5
21-Nov	8	9	9	10	A	9	11	11	11	12	12	13	13	13	13	12	11	11	9	9	11	7	12	11	10.6	13.0
22-Nov	10	11	8	5	A	4	3	2	2	4	6	7	7	6	6	5	3	1	1	0	0	0	0	0	4.1	11.0
23-Nov	0	0	0	0	A	0	0	0	1	2	3	4	5	6	5	4	1	0	0	0	2	2	2	1	1.9	5.7
24-Nov	1	1	1	2	A	1	1	1	1	5	5	5	7	6	8	5	3	1	1	1	1	1	1	2	2.5	8.1
25-Nov	3	3	4	6	A	5	5	2	1	4	8	8	8	11	13	12	11	9	28	34	35	36	35	34	13.8	36.0
26-Nov	32	30	32	32	A	30	19	22	25	18	15	15	17	12	10	11	6	3	9	10	15	28	30	29	19.5	32.4
27-Nov	31	29	21	22	A	19	24	19	16	20	18	19	20	18	18	14	12	15	16	16	12	10	13	13	18.1	31.5
28-Nov	9	9	6	3	A	4	3	8	10	14	19	10	16	18	20	18	5	1	4	12	11	22	25	27	11.9	27.1
29-Nov	25	24	25	21	A	17	18	17	17	16	16	13	14	22	13	9	6	4	3	1	1	1	1	2	12.4	24.9
30-Nov	2	2	4	6	A	2	5	1	2	5	8	9	10	11	10	9	8	2	1	2	4	4	10	19	5.9	18.9
17.2 17.3 17.0 16.6 -- 17.0 17.2 15.5 15.7 15.8 16.4 16.7 17.4 18.4 19.0 19.1 17.1 16.0 16.8 16.1 16.2 16.8 17.7 18.1																								Diurnal Average		
32.7 33.6 32.3 32.4 -- 31.6 34.2 32.8 33.0 34.2 34.6 35.1 35.1 36.3 35.9 38.8 36.6 32.8 33.0 34.0 34.9 36.0 35.1 34.2																								Diurnal Maximum		
C - Calibration A - Automated Daily Zero Span Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 82 ppb 24-hr na																										



### Hourly Averages

Ozone (O<sub>3</sub>) - ppb  
Beaverlodge - November 2016



# Hourly Maximums

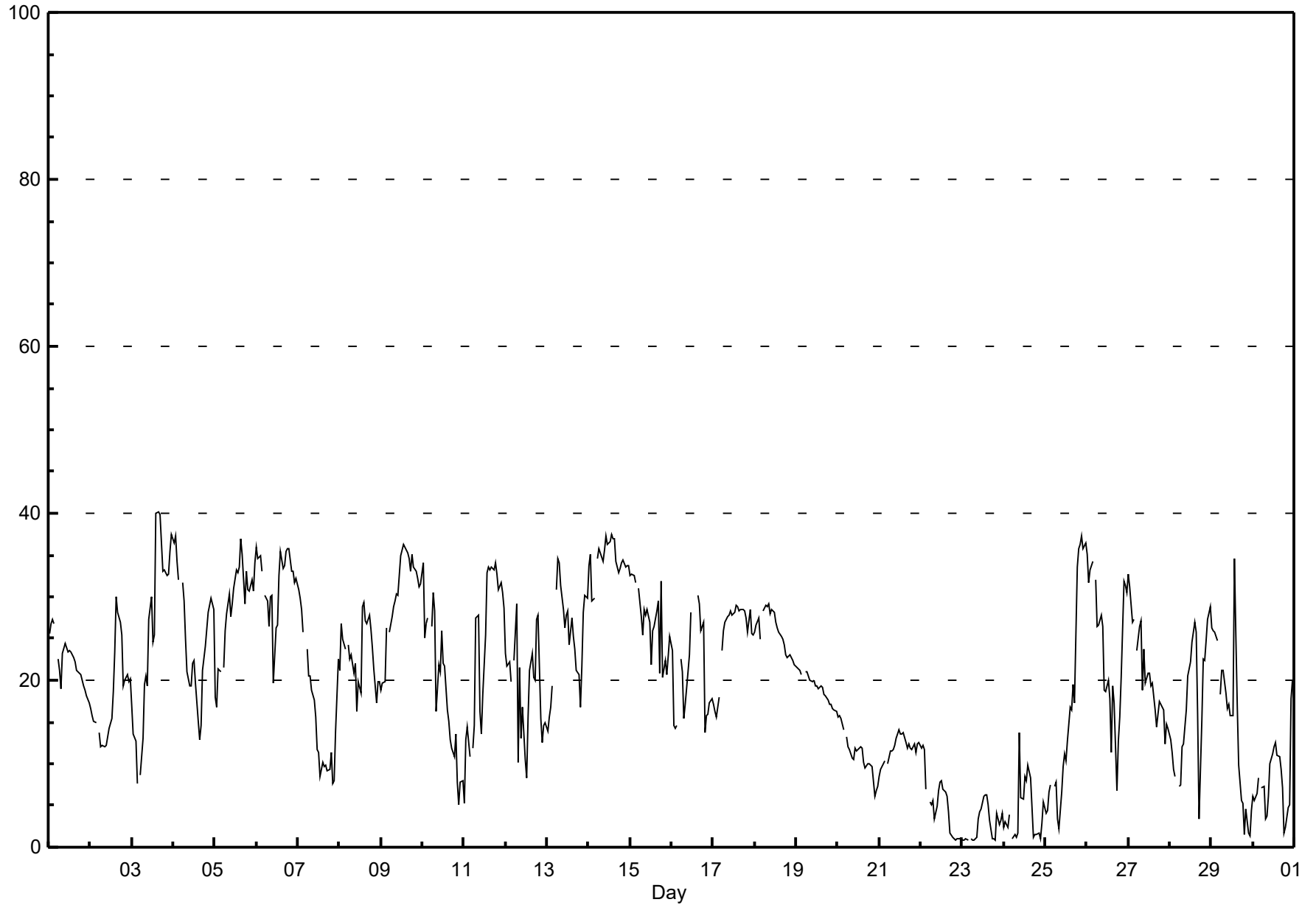
Ozone (O<sub>3</sub>) - ppb

Beaverlodge - November 2016

Maximum Value: 40.3 ppb on Nov 3 16:00		Maximum Daily Average: 34.6 ppb on Nov 14		Hours in Service: 720																							
Minimum Value: 1 ppb on Nov 23 04:00		Minimum Daily Average: 2.8 ppb on Nov 23		Hours of Data: 687																							
Maximum Diurnal Average: 22.1 ppb at hour 15		Minimum Diurnal Average: 18.6 ppb at hour 18		Hours of Missing Data: 33																							
Monthly Average: 19.96 ppb		Percentiles: P <sub>1</sub> = 0.9 P <sub>10</sub> = 5.5 Q <sub>1</sub> = 12.1 Median = 20.6 Q <sub>3</sub> = 28.1 P <sub>90</sub> = 33.2 P <sub>99</sub> = 37.3		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	26	27	27	27	A	23	21	19	23	24	24	23	23	23	22	21	21	21	20	19	19	18	17	22.3	27.2		
2-Nov	17	16	15	15	A	14	12	12	12	12	13	14	15	19	23	30	28	27	25	19	20	21	20	20	18.3	30.0	
3-Nov	17	14	13	8	A	9	13	20	21	19	27	30	25	25	40	40	40	36	33	33	33	35	38	26.1	40.3		
4-Nov	36	37	34	32	A	32	29	25	21	19	19	22	22	20	15	13	15	21	24	26	28	29	30	29	25.2	37.3	
5-Nov	18	17	21	21	A	22	26	28	30	28	29	31	33	33	34	37	35	29	33	31	31	32	31	34	28.8	37.0	
6-Nov	36	35	35	33	A	30	30	26	30	30	20	26	27	33	35	33	34	35	36	36	33	33	32	32	31.7	35.9	
7-Nov	31	30	28	26	A	24	20	21	19	18	16	12	11	9	10	10	10	9	9	11	8	8	14	22	16.3	30.9	
8-Nov	21	27	25	24	A	24	23	23	21	22	16	20	18	29	29	27	27	28	26	24	21	17	20	20	23.1	29.3	
9-Nov	19	20	20	26	A	26	28	29	29	30	30	35	36	36	36	35	35	33	35	34	33	32	31	32	30.4	36.2	
10-Nov	34	25	27	27	A	26	30	28	16	22	21	26	22	22	17	15	13	12	11	14	8	5	8	8	19.0	34.0	
11-Nov	5	13	14	11	A	12	15	27	28	16	14	18	25	33	34	33	34	33	34	33	31	32	30	29	24.1	34.0	
12-Nov	23	22	22	20	A	22	29	10	21	13	17	10	8	16	21	23	20	20	27	28	15	13	15	15	18.8	29.2	
13-Nov	14	16	17	19	A	31	35	34	31	28	26	28	28	24	28	25	24	21	21	17	22	28	30	30	25.1	34.6	
14-Nov	34	35	30	30	A	35	36	35	34	36	37	36	37	37	37	37	34	33	33	34	34	34	34	34	34.6	37.4	
15-Nov	33	33	33	32	A	31	28	25	29	28	28	27	22	26	26	28	30	21	32	20	22	21	23	25	27.0	32.7	
16-Nov	24	15	14	15	A	23	21	15	17	21	23	28	C	C	C	30	29	26	27	14	16	16	17	18	20.4	30.2	
17-Nov	17	16	16	18	A	24	26	27	28	28	28	28	28	29	29	28	28	28	28	27	26	28	26	26	25.5	28.9	
18-Nov	26	27	27	25	A	28	29	29	29	28	28	28	27	26	26	25	25	24	23	23	23	22	22	22	25.8	29.1	
19-Nov	22	21	21	21	A	21	21	21	20	20	20	19	19	19	19	19	18	18	18	17	17	17	16	16	19.2	21.5	
20-Nov	16	16	15	14	A	13	12	12	11	11	12	11	12	12	12	10	10	10	10	10	10	6	7	7	11.2	15.7	
21-Nov	8	9	10	10	A	10	12	12	12	12	13	14	13	14	14	12	12	12	12	12	12	11	12	13	11.8	14.0	
22-Nov	12	12	12	7	A	5	5	6	3	5	7	8	8	7	7	6	4	2	1	1	1	1	1	1	5.3	12.2	
23-Nov	1	1	1	1	A	1	1	1	1	3	4	5	6	6	6	5	3	1	1	1	4	3	3	4	2.8	6.3	
24-Nov	2	3	2	4	A	1	2	1	2	14	6	6	8	8	10	8	5	1	2	1	2	1	3	5	4.2	13.8	
25-Nov	4	4	7	7	A	7	8	3	2	7	10	11	10	13	17	17	19	17	34	36	36	37	36	36	16.5	37.3	
26-Nov	35	32	33	34	A	32	26	27	28	26	19	19	20	18	11	19	17	7	13	16	20	32	31	31	23.7	35.2	
27-Nov	33	31	27	27	A	24	26	27	19	24	20	21	21	19	20	16	14	16	17	17	17	12	15	14	20.8	32.8	
28-Nov	13	11	9	9	A	7	7	12	12	16	20	21	22	25	27	26	16	3	15	23	22	25	27	29	17.4	28.7	
29-Nov	26	26	26	25	A	18	21	21	18	17	17	16	16	35	25	17	10	6	5	1	5	2	1	4	15.6	34.6	
30-Nov	6	6	6	8	A	7	7	3	4	6	10	11	12	13	11	11	9	7	2	2	5	5	18	20	8.2	19.9	
		20.2	19.8	19.6	19.2	--	19.4	19.9	19.3	19.1	19.5	19.2	20.2	19.9	21.6	22.1	22.0	20.6	18.6	20.3	19.3	19.1	19.2	20.2	21.0	Diurnal Average	
		36.4	37.3	34.9	34.2	--	34.5	35.7	35.3	34.2	35.5	37.3	36.2	36.6	37.4	40.0	40.3	39.8	36.4	35.8	35.8	36.2	37.3	35.8	37.5	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									

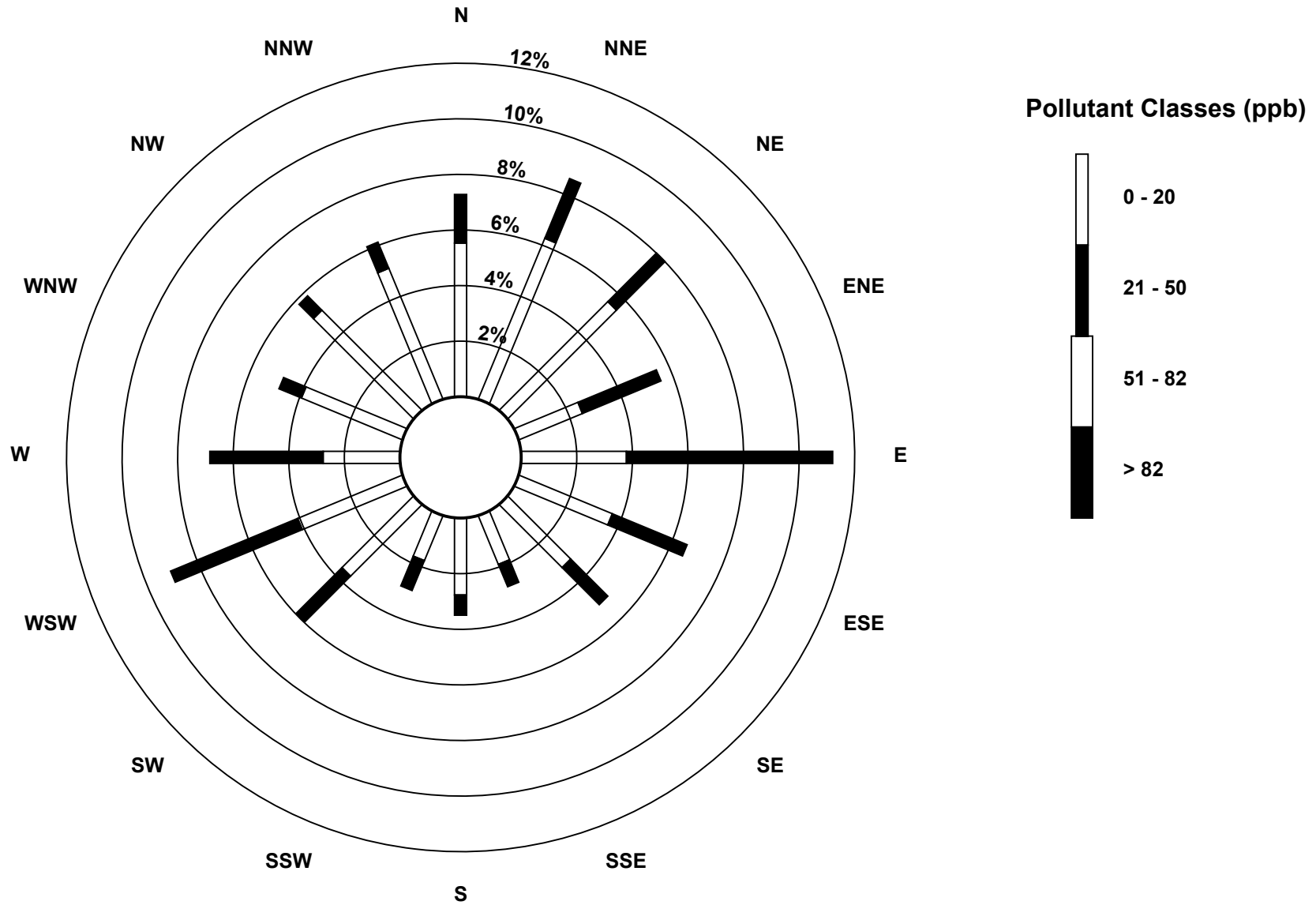
**Hourly Maximums**

**Ozone (O<sub>3</sub>) - ppb**  
**Beaverlodge - November 2016**



**Pollutant Rose**

**Ozone (O<sub>3</sub>) - ppb**  
**Beaverlodge - November 2016**



# Eight Hour Running Averages

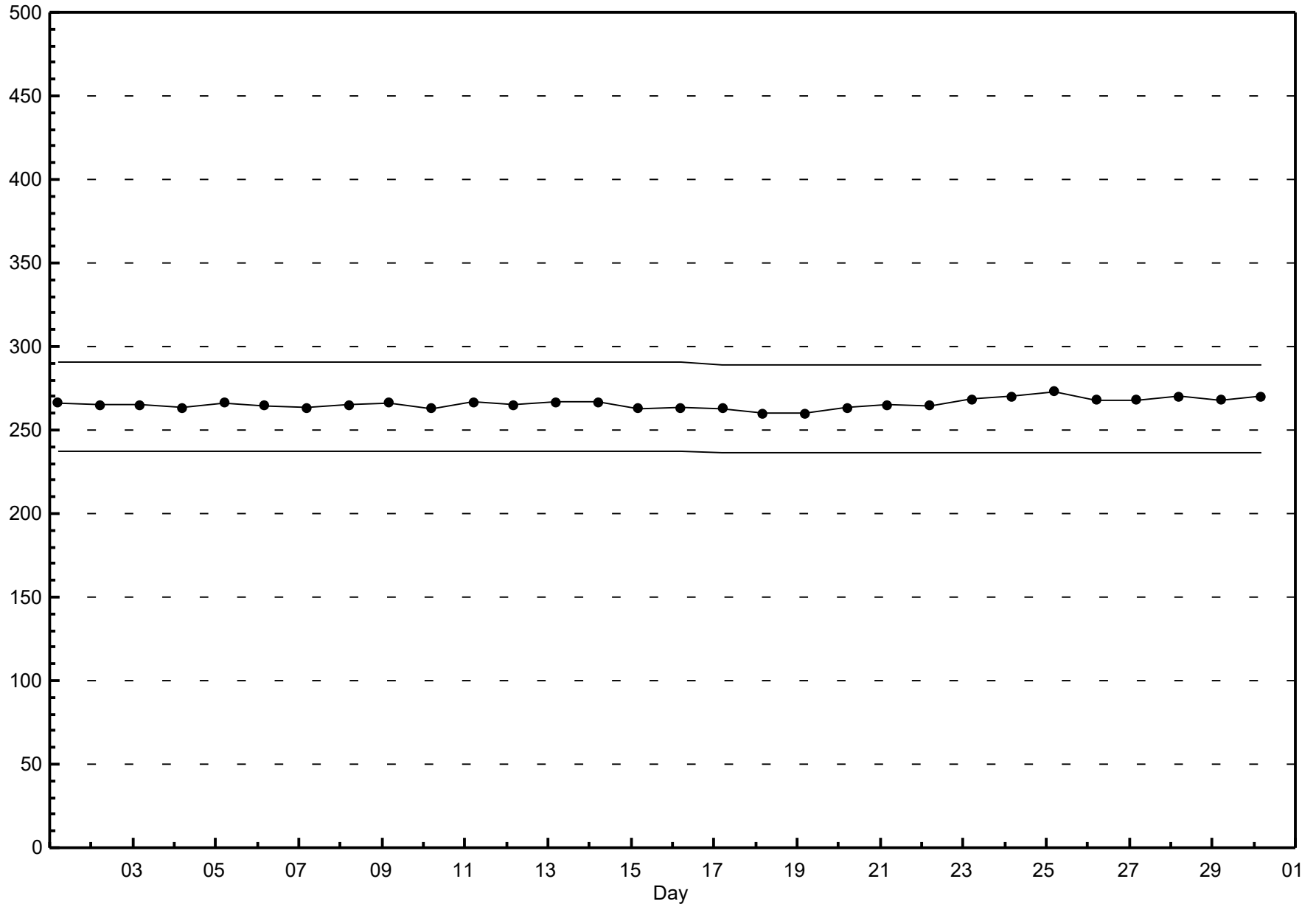
Ozone (O<sub>3</sub>) - ppb

Beaverlodge - November 2016

<b>Maximum Value: 35.0 ppb on Nov 14 16:00</b>																					Hours in Service: 720 Hours of Data: 714 Hours of Missing Data: 6 Hours of Calibration: 6 Percent Operational Time: 100.0				
<b>Minimum Value: 0.4 ppb on Nov 23 07:00</b>																									
Percentiles: P <sub>1</sub> = 0.5 P <sub>10</sub> = 3.9 Q <sub>1</sub> = 10.2 Median = 17.0 Q <sub>3</sub> = 24.1 P <sub>90</sub> = 29.5 P <sub>99</sub> = 33.7																									
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	18	20	21	22	23	23	23	23	23	22	22	21	22	22	22	22	22	22	22	21	21	20	19	19	23.0
2-Nov	18	18	17	16	16	15	14	13	12	11	11	10	11	11	13	15	17	18	20	21	21	22	21	20	21.6
3-Nov	19	17	16	14	14	12	11	10	9	10	11	13	14	16	18	22	25	27	28	30	31	32	33	32	32.6
4-Nov	31	32	32	31	32	31	31	28	25	22	19	18	18	16	14	14	13	14	15	16	16	18	19	20	31.9
5-Nov	20	19	18	18	17	16	16	17	20	22	24	25	26	27	28	29	29	29	30	30	29	29	29	28	29.6
6-Nov	29	30	30	30	31	31	30	29	28	27	25	24	24	24	25	26	26	27	29	30	32	32	31	31	31.7
7-Nov	31	30	29	28	28	26	24	23	20	18	16	14	13	11	10	9	8	7	7	7	6	6	7	8	30.6
8-Nov	10	12	14	16	17	19	20	21	21	19	17	15	15	15	15	16	18	19	20	21	20	19	19	19	21.3
9-Nov	17	16	15	15	15	16	18	20	22	24	26	27	28	29	31	31	32	32	33	33	32	32	31	30	32.8
10-Nov	30	29	28	27	27	26	26	23	21	20	19	19	19	18	16	16	16	15	13	11	9	7	6	5	30.0
11-Nov	4	4	4	4	4	5	6	8	9	9	10	11	12	14	17	19	22	25	28	29	30	30	30	29	30.2
12-Nov	28	26	25	24	23	22	20	18	17	15	14	12	12	10	9	11	11	13	13	15	15	15	14	13	27.5
13-Nov	13	13	12	11	12	15	18	21	23	25	26	28	27	27	26	25	23	23	21	20	19	19	19	19	27.6
14-Nov	20	20	22	24	25	26	27	29	30	31	33	34	34	34	35	35	35	34	34	34	33	33	33	32	35.0
15-Nov	32	32	32	32	31	31	30	29	28	27	26	25	24	23	23	23	22	21	21	19	19	19	18	18	31.9
16-Nov	17	16	16	16	15	16	15	13	13	13	15	16	16	16	N	N	N	N	N	N	20	19	19	17	19.9
17-Nov	16	15	14	15	15	16	18	19	21	22	24	26	26	27	27	27	27	28	28	27	27	27	26	26	27.5
18-Nov	26	25	25	25	25	25	26	26	26	27	27	27	27	26	26	26	25	25	24	24	23	23	22	22	27.2
19-Nov	22	22	21	21	21	21	21	20	20	20	20	19	19	19	19	19	19	18	18	18	18	17	17	16	21.9
20-Nov	16	15	15	15	14	14	13	13	12	12	11	11	11	11	10	10	10	10	10	9	9	8	8	7	16.0
21-Nov	7	7	7	7	7	8	9	9	10	10	11	11	11	12	12	12	12	12	12	11	11	10	10	10	12.3
22-Nov	10	10	10	9	9	9	8	6	5	4	4	4	4	5	5	5	5	5	4	4	3	2	1	1	10.0
23-Nov	1	0	0	0	0	0	0	0	0	1	1	2	2	3	3	4	4	4	3	3	2	2	2	1	3.9
24-Nov	1	1	1	2	1	1	1	1	1	1	2	2	3	4	5	5	5	5	4	4	3	2	1	1	5.5
25-Nov	1	1	2	2	3	3	4	4	4	4	4	5	5	6	7	8	10	10	13	16	19	22	25	28	27.8
26-Nov	30	33	34	33	33	32	30	28	27	25	23	20	20	18	17	15	13	11	10	10	9	12	14	16	33.5
27-Nov	19	23	24	26	27	26	25	24	22	20	20	19	19	19	19	18	17	17	16	16	15	14	13	13	27.2
28-Nov	13	12	11	9	9	8	7	6	6	7	9	10	10	12	14	16	15	14	12	12	11	12	12	13	15.6
29-Nov	16	19	21	22	24	23	22	21	20	19	17	16	16	17	16	15	14	12	11	9	7	5	3	2	24.0
30-Nov	2	2	2	2	2	3	3	3	3	3	4	5	5	6	7	8	9	9	8	7	6	5	5	6	8.8
31.8 33.0 33.5 33.3 33.1 32.2 31.0 29.4 29.8 31.4 32.7 33.7 33.8 34.4 34.6 35.0 34.9 34.5 34.0 33.7 33.5 33.0 32.6 32.0																								Diurnal Maximums	
N - Not Valid																									

### Span Responses

Ozone (O<sub>3</sub>)  
Beaverlodge - November 2016



## Hourly Averages

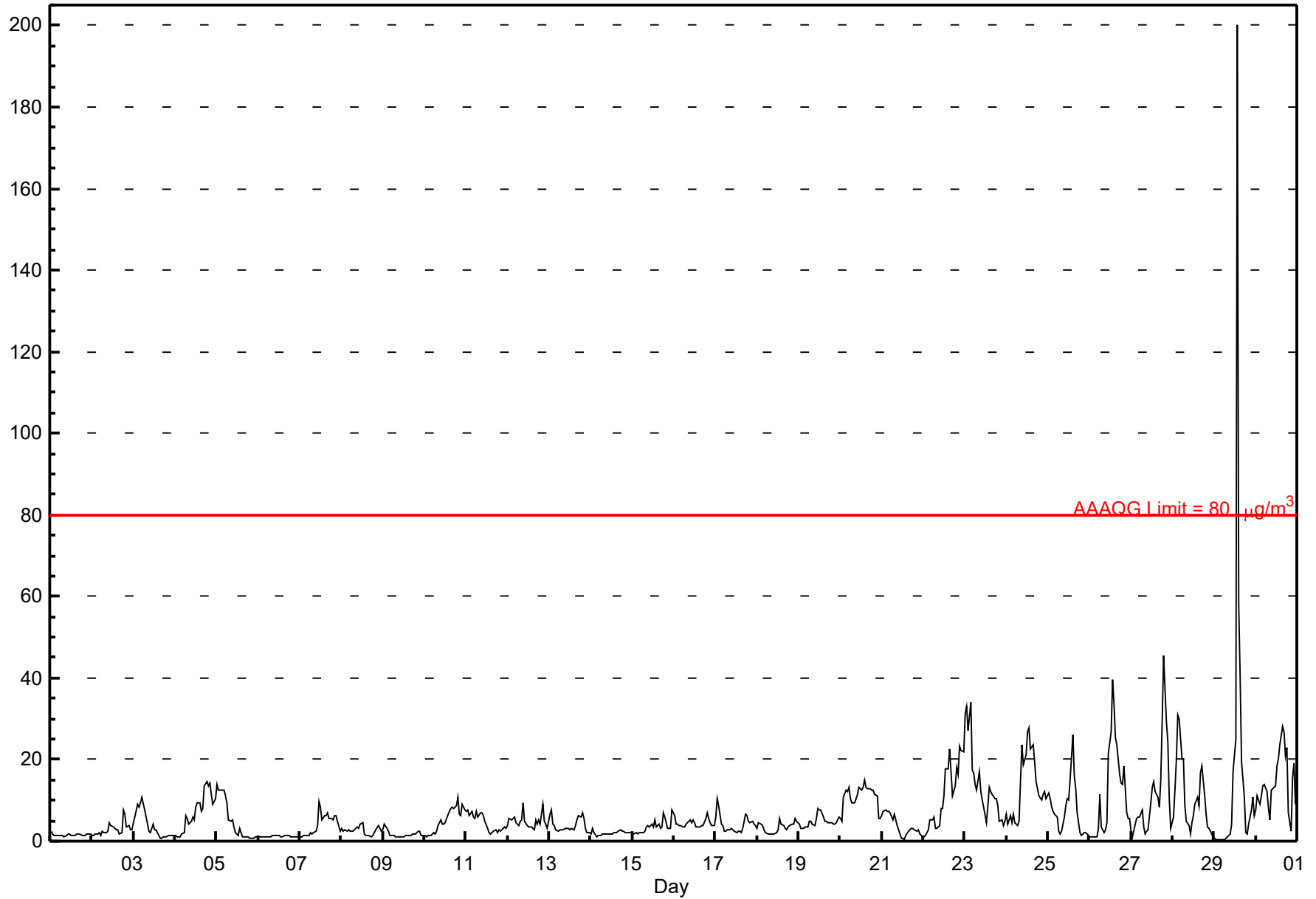
## Particulate Matter 2.5 (PM<sub>2.5</sub>) - µg/m<sup>3</sup>

### Beaverlodge - November 2016

Number of Exceedences: 1-hr: 1 24-hr: 0	Hours in Service: 720
Maximum Value: 200.1 µg/m <sup>3</sup> on Nov 29 14:00	Maximum Daily Average: 17.3 µg/m <sup>3</sup> on Nov 29
Minimum Value: 0 µg/m <sup>3</sup> on Nov 29 06:00	Hours of Data: 720
Maximum Diurnal Average: 14.5 µg/m <sup>3</sup> at hour 14	Hours of Missing Data: 0
Monthly Average: 6.54 µg/m <sup>3</sup>	Hours of Calibration: 0
Minimum Daily Average: 1.1 µg/m <sup>3</sup> on Nov 6	Percent Operational Time: 100.0
Minimum Diurnal Average: 4.1 µg/m <sup>3</sup> at hour 8	
Percentiles: P <sub>1</sub> = 0.6 P <sub>10</sub> = 1.3 Q <sub>1</sub> = 2.0 Median = 4.0 Q <sub>3</sub> = 7.7 P <sub>90</sub> = 13.8 P <sub>99</sub> = 33.6	

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	2	1	1	1	1	1	1	1	1	2	2	1	1	2	2	2	2	1	1	1	2	2	2	1.5	2.6
2-Nov	1	1	2	2	2	2	3	2	2	3	5	4	3	3	3	3	2	2	8	7	3	4	3	3	2.9	7.7
3-Nov	5	6	9	8	9	11	7	6	4	3	2	4	3	3	2	1	1	1	1	1	1	1	1	1	3.9	10.9
4-Nov	1	1	1	1	2	2	6	6	4	5	6	5	8	9	9	7	8	13	14	14	14	11	9	10	7.0	14.5
5-Nov	14	12	12	12	13	11	9	5	5	5	4	2	1	3	2	1	1	1	1	1	1	1	1	1	5.0	14.0
6-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.1	1.5
7-Nov	1	1	1	1	1	1	2	2	2	2	4	10	9	5	6	6	7	6	6	5	6	6	5	2	4.1	9.7
8-Nov	3	3	3	3	3	3	2	2	3	4	3	4	5	2	1	2	1	1	2	2	3	4	3	2	2.6	4.6
9-Nov	3	4	3	3	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	1	2	1.7	4.1
10-Nov	1	1	1	1	1	2	2	2	4	5	4	4	5	6	7	8	8	8	9	11	6	6	9	8	5.0	10.7
11-Nov	7	8	6	7	6	6	7	6	7	7	6	5	3	2	2	2	3	2	3	3	3	3	3	3	4.6	7.7
12-Nov	4	6	5	5	6	4	4	5	5	10	5	4	4	4	3	3	5	4	5	4	9	5	4	3	4.8	9.5
13-Nov	7	8	4	4	3	3	3	3	3	3	3	3	3	3	3	4	5	6	6	7	6	3	2	2	4.0	7.5
14-Nov	2	3	2	1	1	1	1	2	2	2	2	2	2	2	2	2	3	3	2	2	2	2	2	2	2.0	3.0
15-Nov	2	2	2	2	2	2	2	2	3	4	4	4	4	5	3	4	3	3	7	6	3	3	3	8	3.5	7.7
16-Nov	6	4	4	4	4	3	3	4	4	5	4	5	5	4	3	3	4	4	5	7	6	5	4	4	4.4	6.9
17-Nov	6	10	9	4	4	2	2	3	3	3	3	2	2	2	2	3	7	6	5	5	5	4	4	4	4.1	10.5
18-Nov	3	4	4	4	3	2	2	2	2	2	2	3	6	4	4	3	3	3	4	4	4	5	5	5	3.3	5.6
19-Nov	4	3	3	3	3	4	5	5	4	4	6	8	8	8	6	5	5	5	5	5	4	4	4	6	4.8	7.8
20-Nov	6	5	11	12	12	13	10	9	9	10	12	13	12	13	15	13	13	13	12	12	11	11	6	5	10.9	14.9
21-Nov	6	7	8	7	7	7	5	7	5	4	3	1	1	0	1	2	3	3	3	3	2	3	2	2	3.9	7.7
22-Nov	1	1	2	3	5	5	6	3	3	4	8	8	11	18	18	23	17	11	14	18	16	23	22	22	10.9	23.4
23-Nov	31	33	27	34	17	17	14	12	17	12	10	8	5	9	13	12	11	10	10	9	5	5	4	5	13.8	34.0
24-Nov	7	4	6	5	6	4	4	5	15	24	19	21	27	28	23	23	19	15	13	11	10	12	12	10	13.4	27.8
25-Nov	12	10	8	7	7	6	2	2	3	6	9	11	10	15	26	16	13	7	2	1	2	2	2	1	7.5	26.0
26-Nov	1	1	1	1	1	3	11	3	2	3	5	21	27	40	34	25	24	16	14	14	19	7	6	6	11.9	39.5
27-Nov	3	1	4	5	6	6	8	3	2	2	3	9	13	14	12	11	8	15	29	45	29	24	10	3	11.2	45.5
28-Nov	6	13	20	31	30	20	20	9	5	4	2	5	6	9	11	9	17	18	11	7	3	3	2	1	10.9	31.0
29-Nov	1	1	0	0	0	0	0	1	1	2	4	17	25	200	58	41	20	11	2	2	4	8	11	6	17.3	200.1
30-Nov	8	11	9	11	14	14	12	8	5	12	13	14	19	20	23	28	27	21	23	7	2	16	19	9	14.3	28.1
	5.1	5.6	5.7	6.2	5.8	5.3	5.3	4.1	4.3	5.1	5.1	6.7	7.5	14.5	10.0	8.8	7.9	7.1	7.4	7.2	6.2	6.2	5.5	4.7	Diurnal Average	
	31.3	32.9	27.2	34.0	30.0	20.3	20.3	12.4	17.0	23.5	18.9	21.5	26.7	200.1	58.0	40.7	26.7	20.9	29.2	45.5	29.1	24.2	22.3	21.8	Diurnal Maximum	

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



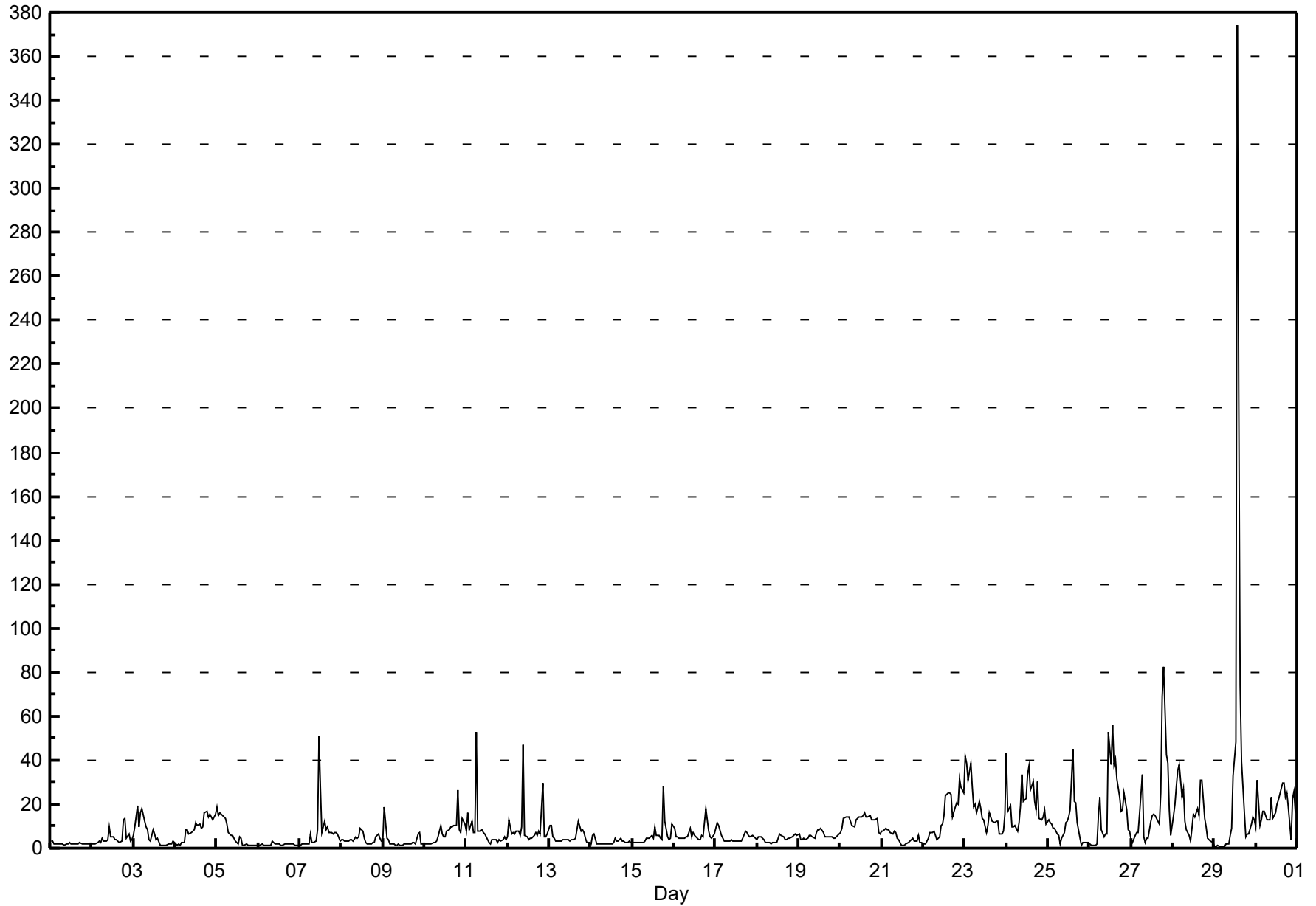


# Hourly Maximums

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

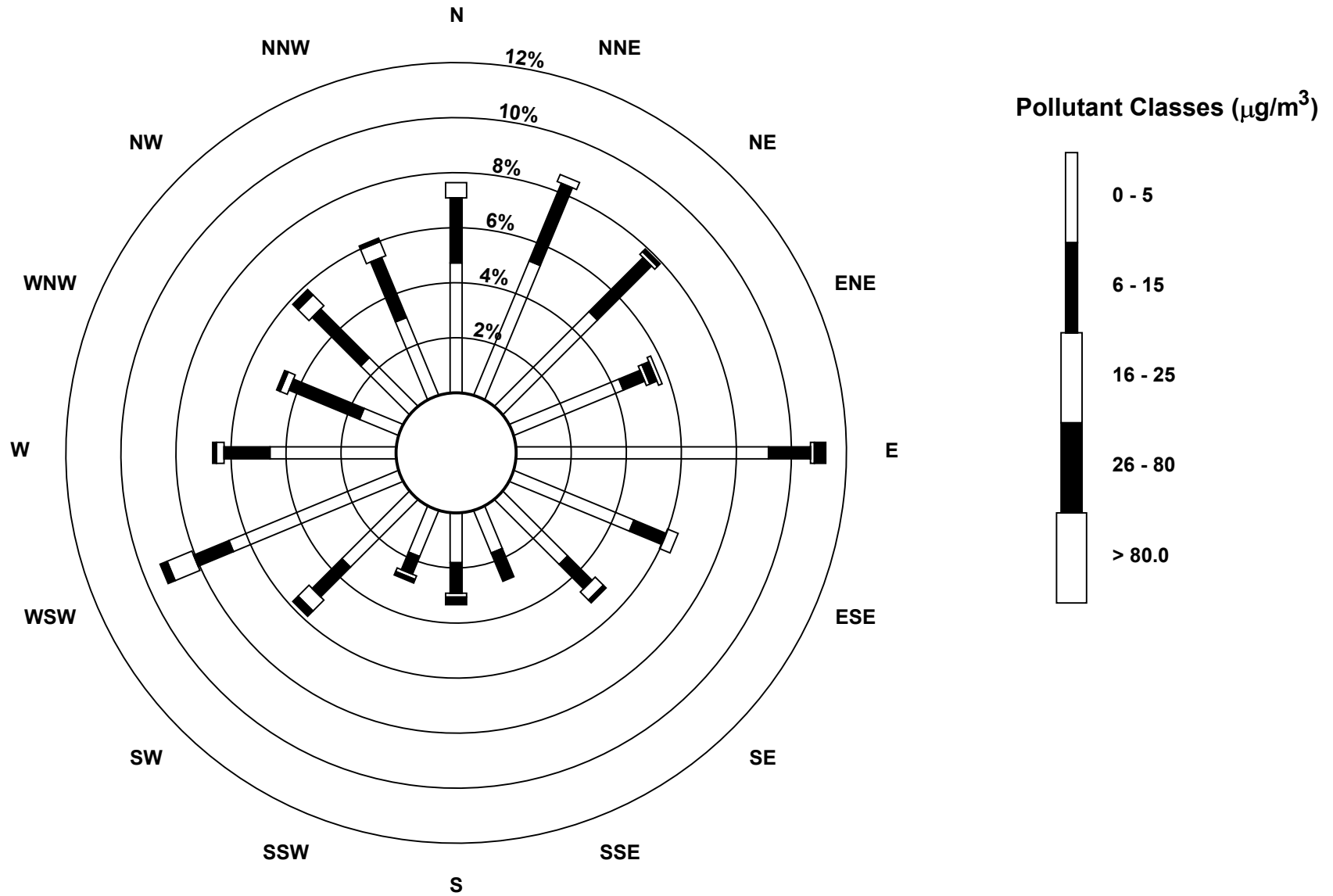
## Beaverlodge - November 2016

Maximum Value: 374.5 µg/m <sup>3</sup> on Nov 29 14:00		Maximum Daily Average: 36.4 µg/m <sup>3</sup> on Nov 29		Hours in Service: 720																							
Minimum Value: 0 µg/m <sup>3</sup> on Nov 29 05:00		Minimum Daily Average: 1.7 µg/m <sup>3</sup> on Nov 6		Hours of Data: 720																							
Maximum Diurnal Average: 22.7 µg/m <sup>3</sup> at hour 14		Minimum Diurnal Average: 5.8 µg/m <sup>3</sup> at hour 8		Hours of Missing Data: 0																							
Monthly Average: 9.81 µg/m <sup>3</sup>		Percentiles: P <sub>1</sub> = 1.0 P <sub>10</sub> = 1.8 Q <sub>1</sub> = 2.9 Median = 5.5 Q <sub>3</sub> = 11.9 P <sub>90</sub> = 20.3 P <sub>99</sub> = 51.0		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	3	3	2	2	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	3.4
2-Nov	2	2	2	2	3	3	4	3	3	4	10	5	5	4	4	3	3	3	13	13	4	6	3	4	4.6	13.5	
3-Nov	6	10	19	10	16	18	12	10	8	4	3	8	7	4	5	1	1	1	1	2	2	2	2	3	6.4	19.1	
4-Nov	2	2	2	1	2	3	8	8	6	7	8	8	12	11	11	9	10	16	17	14	15	14	13	16	9.0	16.7	
5-Nov	19	15	16	15	14	13	11	7	6	6	5	3	2	5	5	1	1	2	1	1	1	1	2	1	6.4	18.6	
6-Nov	2	1	2	1	1	1	1	1	3	2	2	2	2	2	1	2	2	2	2	2	2	2	1	2	1.7	3.0	
7-Nov	1	2	2	2	2	2	6	3	3	3	9	51	28	7	12	8	10	7	7	6	7	7	6	3	8.1	50.9	
8-Nov	4	4	3	3	4	4	4	3	5	5	5	9	8	5	2	2	2	2	3	2	5	7	5	3	4.1	9.3	
9-Nov	3	18	4	4	2	2	1	2	2	2	2	2	2	2	2	2	2	2	3	2	6	7	2	2	3.3	18.4	
10-Nov	2	2	2	2	2	3	3	3	5	10	6	5	5	8	8	9	10	10	10	26	8	7	14	11	7.1	26.4	
11-Nov	8	16	8	12	7	7	53	8	8	8	7	6	4	3	2	4	4	4	3	4	3	4	5	4	8.0	53.0	
12-Nov	5	13	6	7	7	8	8	6	9	47	6	5	4	4	4	5	7	6	8	6	30	5	5	6	9.1	46.8	
13-Nov	10	10	5	5	3	3	3	3	4	4	4	4	3	4	4	5	8	12	7	8	7	5	3	3	5.4	12.0	
14-Nov	2	6	6	2	2	2	2	2	2	2	2	2	2	3	5	3	3	4	3	3	3	3	3	3	2.9	6.1	
15-Nov	3	2	2	2	3	3	3	3	4	5	4	6	4	10	6	6	5	4	28	12	5	4	4	11	5.8	28.4	
16-Nov	9	5	5	5	5	5	4	5	5	9	5	7	6	5	4	4	6	5	18	13	8	5	5	6	6.4	17.8	
17-Nov	9	12	10	5	5	3	3	3	3	4	3	3	3	3	3	3	5	8	7	6	5	6	5	5	5.1	11.5	
18-Nov	4	5	5	4	4	3	2	2	3	2	3	5	7	6	5	4	4	4	5	5	5	6	6	6	4.2	6.6	
19-Nov	6	4	4	4	4	5	6	6	5	5	7	9	9	9	7	5	5	5	5	5	5	5	5	7	5.7	8.9	
20-Nov	7	9	13	14	14	14	13	10	10	13	13	14	14	15	16	14	14	15	13	13	13	13	7	6	12.5	16.2	
21-Nov	8	8	9	8	8	7	6	8	7	4	4	1	1	1	2	3	3	4	4	3	3	6	2	2	4.8	8.9	
22-Nov	2	2	3	5	7	7	8	6	4	5	11	11	15	24	25	25	25	14	19	20	20	31	28	25	14.2	31.4	
23-Nov	42	38	31	39	28	19	20	16	21	18	14	13	7	10	16	14	12	11	12	12	7	6	8	15	17.9	42.2	
24-Nov	43	17	20	10	9	10	8	12	19	33	21	23	33	38	26	30	22	17	30	14	13	14	17	11	20.5	43.3	
25-Nov	13	11	11	9	9	7	6	2	4	7	11	12	14	18	45	21	20	11	4	1	3	3	2	3	10.4	45.0	
26-Nov	2	1	1	1	2	15	23	8	5	6	7	53	38	56	38	41	32	23	17	17	25	17	8	8	18.6	56.0	
27-Nov	4	2	6	7	7	16	34	5	2	5	5	12	15	15	15	12	11	25	69	83	43	39	17	6	18.9	82.7	
28-Nov	15	20	29	35	38	23	27	12	8	6	3	9	16	14	18	15	31	31	13	10	5	4	3	3	16.1	37.9	
29-Nov	1	1	1	1	0	0	1	2	2	6	9	33	48	375	209	74	39	16	5	7	7	11	14	13	36.4	374.5	
30-Nov	10	31	10	13	17	17	13	13	13	23	13	16	20	22	24	30	30	23	25	19	4	22	26	16	18.7	30.6	
		8.2	9.1	8.0	7.7	7.5	7.4	9.9	5.8	6.1	8.6	6.8	11.3	11.1	22.7	17.6	12.0	10.9	9.7	11.8	11.1	8.8	8.8	7.5	6.8	Diurnal Average	
		43.3	38.4	31.0	38.6	37.9	23.5	53.0	15.8	21.4	46.8	21.3	53.1	48.4	374.5	209.1	74.4	39.4	30.8	68.8	82.7	42.8	38.9	27.8	25.4	Diurnal Maximum	



**Pollutant Rose**

**Particulate Matter 2.5 (PM<sub>2.5</sub>) - μg/m<sup>3</sup>**  
**Beaverlodge - November 2016**



# Hourly Averages

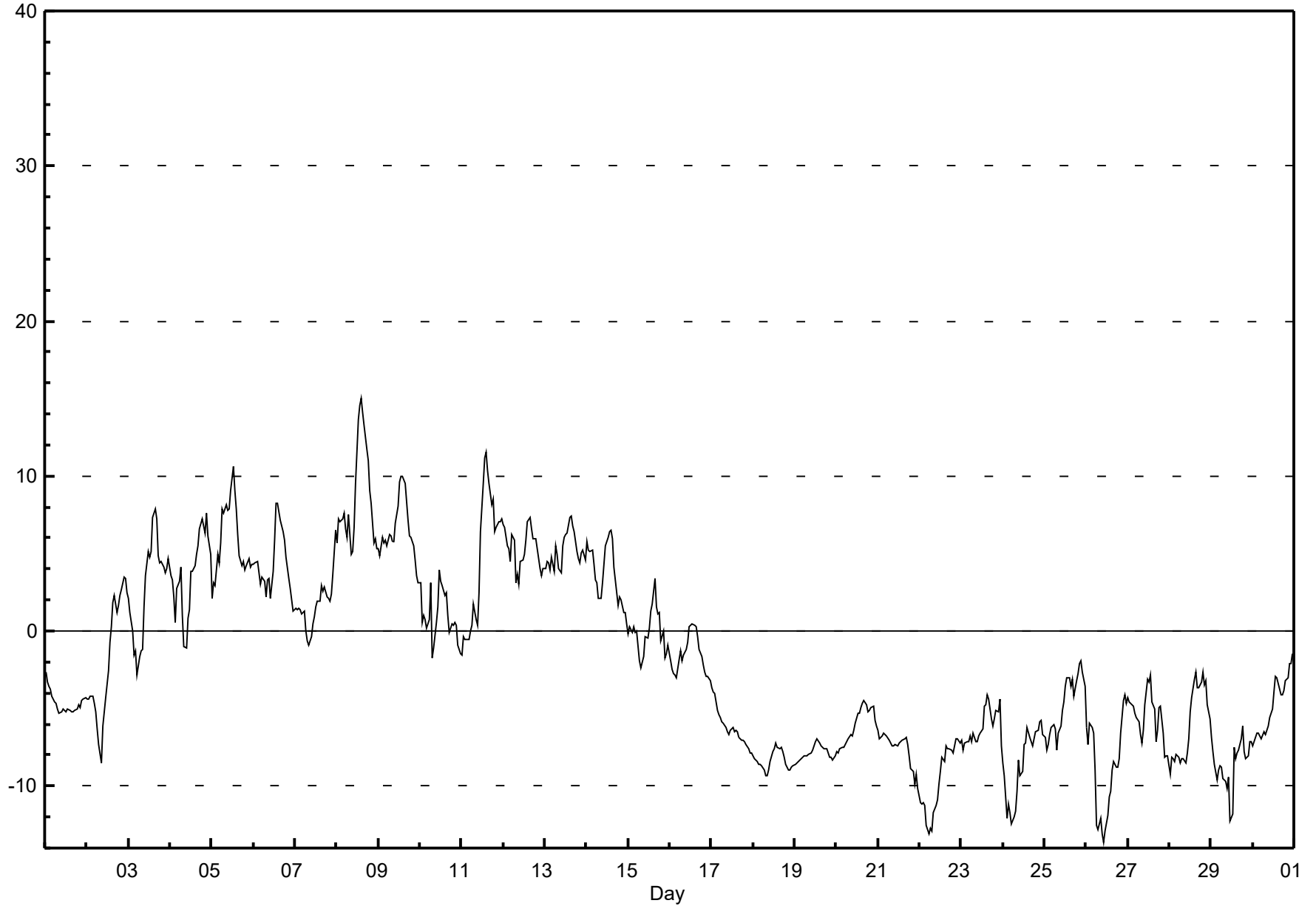
External Temperature (ET) - °C

Beaverlodge - November 2016

Maximum Value: 15.0 °C on Nov 8 15:00 Minimum Value: -14 °C on Nov 26 11:00 Maximum Diurnal Average: 0.1 °C at hour 16 Monthly Average: -1.80 °C		Maximum Daily Average: 8.7 °C on Nov 8 Minimum Daily Average: -9.7 °C on Nov 22 Minimum Diurnal Average: -3.5 °C at hour 9 Percentiles: P <sub>1</sub> = -12.5 P <sub>10</sub> = -8.5 Q <sub>1</sub> = -7.1 Median = -3.0 Q <sub>3</sub> = 3.6 P <sub>90</sub> = 6.3 P <sub>99</sub> = 11.5		Hours in Service: 720 Hours of Data: 720 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Nov	-3	-3	-4	-4	-4	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-4	-4	-4	-4.6	-2.6
2-Nov	-4	-4	-4	-4	-5	-5	-6	-7	-9	-6	-5	-4	-3	-1	0	2	2	1	2	2	3	3	3	2	-1.9	3.5
3-Nov	2	1	0	-2	-1	-3	-2	-1	-1	2	4	5	5	5	7	8	7	5	4	5	4	4	4	5	2.8	7.9
4-Nov	4	3	2	1	3	3	4	1	-1	-1	1	1	4	4	4	5	6	7	7	7	6	8	6	5	3.7	7.6
5-Nov	2	3	3	5	4	6	8	8	8	8	8	9	11	9	8	6	5	4	4	4	4	5	4	4	5.8	10.7
6-Nov	4	4	5	4	3	3	3	2	3	3	2	4	6	8	8	7	7	6	6	5	3	3	2	1	4.3	8.2
7-Nov	1	1	1	1	1	1	0	-1	-1	0	0	1	2	2	2	3	3	3	2	2	2	2	4	6	1.7	6.5
8-Nov	6	7	7	7	8	7	6	8	5	5	7	9	14	15	15	14	13	12	11	9	8	6	6	5	8.7	15.0
9-Nov	5	5	6	6	6	6	6	6	6	6	7	8	10	10	10	10	8	7	6	6	6	5	4	3	6.5	10.0
10-Nov	3	1	1	1	0	1	3	-2	-1	1	2	4	3	3	2	3	1	0	0	0	1	0	-1	-1	1.0	4.0
11-Nov	-2	0	-1	-1	-1	0	0	2	1	0	3	6	10	11	12	10	10	8	8	6	7	7	7	7	4.7	11.6
12-Nov	7	7	5	5	5	6	6	3	4	3	4	5	5	6	7	7	7	6	6	6	5	4	4	4	5.2	7.3
13-Nov	4	4	4	4	5	4	6	5	4	4	5	6	6	6	7	7	7	6	5	5	4	5	5	5	5.2	7.4
14-Nov	6	5	5	5	4	3	3	2	2	3	4	6	6	6	6	6	4	2	2	2	2	1	1	0	3.7	6.5
15-Nov	0	0	0	0	0	0	-2	-2	-2	-2	0	0	0	1	2	3	2	1	1	-1	0	-2	-2	-1	-0.1	3.4
16-Nov	-2	-2	-3	-3	-3	-2	-1	-2	-2	-1	-1	0	0	0	0	0	-1	-2	-2	-3	-3	-3	-3	-3	-1.5	0.4
17-Nov	-4	-4	-4	-5	-5	-6	-6	-6	-6	-6	-7	-6	-6	-7	-6	-7	-7	-7	-7	-7	-7	-8	-8	-8	-6.2	-3.7
18-Nov	-8	-8	-8	-9	-9	-9	-9	-9	-9	-9	-8	-8	-8	-7	-7	-8	-7	-8	-8	-9	-9	-9	-9	-9	-8.4	-7.3
19-Nov	-9	-9	-8	-8	-8	-8	-8	-8	-8	-8	-8	-7	-7	-7	-7	-8	-8	-8	-8	-8	-8	-8	-8	-8	-7.9	-7.0
20-Nov	-8	-8	-8	-8	-7	-7	-7	-7	-7	-7	-6	-6	-5	-5	-5	-5	-4	-5	-5	-5	-5	-5	-6	-6	-6.1	-4.5
21-Nov	-6	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-8	-9	-9	-9	-10	-9	-10	-7.6	-6.4
22-Nov	-11	-11	-11	-11	-13	-13	-13	-13	-12	-11	-11	-10	-9	-8	-8	-7	-8	-8	-8	-8	-7	-7	-7	-7	-9.7	-6.9
23-Nov	-7	-8	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-6	-5	-5	-4	-4	-6	-6	-6	-5	-5	-4	-7	-6.2	-4.1
24-Nov	-9	-9	-12	-11	-12	-12	-12	-12	-10	-8	-9	-9	-7	-7	-6	-7	-7	-7	-7	-7	-6	-6	-6	-7	-8.6	-5.7
25-Nov	-7	-8	-7	-7	-6	-6	-6	-8	-7	-6	-5	-5	-4	-3	-3	-4	-3	-4	-3	-3	-2	-2	-3	-4	-4.7	-1.9
26-Nov	-6	-7	-6	-6	-7	-9	-13	-13	-12	-13	-14	-13	-12	-11	-10	-9	-8	-9	-9	-8	-7	-4	-4	-5	-8.9	-4.1
27-Nov	-4	-5	-5	-5	-5	-6	-6	-7	-7	-6	-5	-3	-3	-3	-5	-5	-7	-6	-5	-5	-7	-8	-8	-8	-5.6	-2.8
28-Nov	-9	-8	-8	-8	-8	-8	-9	-8	-8	-8	-8	-7	-5	-4	-3	-3	-4	-4	-3	-3	-4	-3	-5	-6	-6.0	-2.6
29-Nov	-7	-8	-9	-10	-9	-9	-9	-10	-10	-10	-9	-12	-12	-7	-8	-8	-8	-7	-6	-8	-8	-8	-7	-7	-8.5	-6.1
30-Nov	-7	-7	-7	-7	-7	-7	-7	-7	-6	-6	-6	-5	-4	-3	-3	-4	-4	-4	-4	-3	-3	-2	-2	-1	-4.8	-1.5
	-2.3	-2.5	-2.6	-2.7	-2.8	-2.9	-2.9	-3.5	-3.5	-3.2	-2.5	-1.7	-0.8	-0.1	0.1	0.1	-0.4	-0.9	-0.9	-1.2	-1.3	-1.4	-1.5	-1.8	Diurnal Average	
	6.9	7.2	7.1	7.2	7.6	6.6	7.9	7.6	8.2	7.8	7.9	9.5	13.7	14.6	15.0	14.1	13.3	11.7	11.0	9.1	8.2	7.6	7.1	7.2	Diurnal Maximum	

**Hourly Averages**

**External Temperature (ET) - °C**  
**Beaverlodge - November 2016**



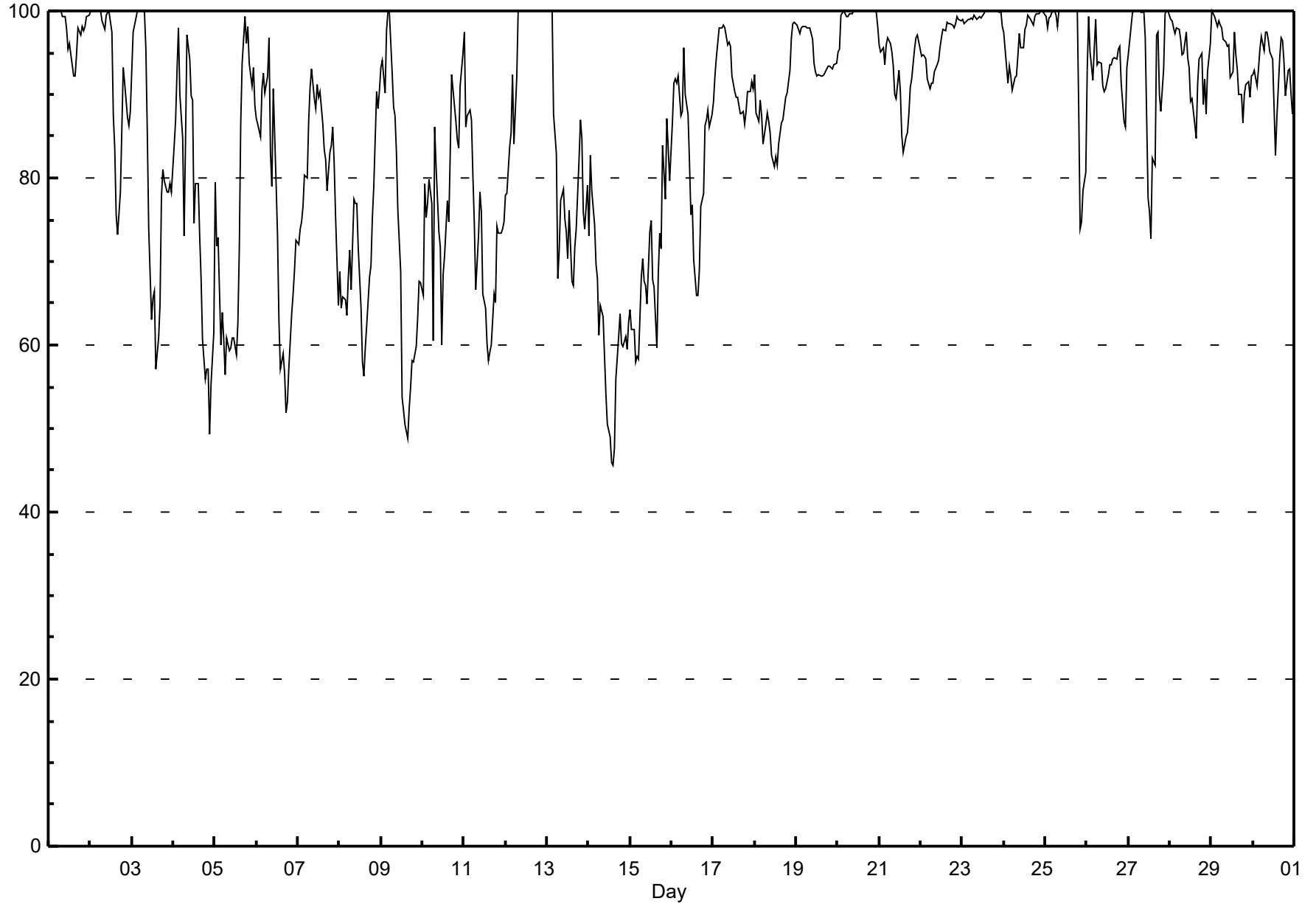
# Hourly Averages

## Relative Humidity (RH) - % Beaverlodge - November 2016

Maximum Value: 100.0 % on Nov 1 01:00		Maximum Daily Average: 99.4 % on Nov 23		Hours in Service: 720																							
Minimum Value: 46 % on Nov 14 15:00		Minimum Daily Average: 61.3 % on Nov 14		Hours of Data: 720																							
Maximum Diurnal Average: 90.2 % at hour 5		Minimum Diurnal Average: 80.2 % at hour 15		Hours of Missing Data: 0																							
Monthly Average: 86.32 %		Percentiles: P <sub>1</sub> = 50.0 P <sub>10</sub> = 63.7 Q <sub>1</sub> = 77.4 Median = 91.1 Q <sub>3</sub> = 97.9 P <sub>90</sub> = 100.0 P <sub>99</sub> = 100.0		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	100	100	100	100	100	100	100	100	99	99	98	95	96	95	92	92	95	98	97	98	98	98	99	100	97.9	100.0	
2-Nov	100	100	100	100	100	100	100	100	99	98	99	100	100	97	88	84	76	73	78	86	93	91	87	86	88	92.6	100.0
3-Nov	93	97	99	100	100	100	100	100	100	95	85	74	63	66	66	57	61	65	78	81	80	78	78	79	78	82.3	100.0
4-Nov	84	87	93	98	90	85	73	84	97	94	90	89	75	79	79	73	68	61	56	57	57	49	55	61	76.5	98.0	
5-Nov	80	72	73	60	64	61	56	61	59	60	61	61	59	63	72	86	94	99	96	98	94	91	93	89	75.0	99.4	
6-Nov	87	86	85	91	93	90	92	97	83	79	91	79	73	63	57	59	57	52	53	57	64	66	69	73	74.8	96.8	
7-Nov	72	74	75	77	80	80	87	91	93	89	88	91	90	90	86	83	82	79	83	84	86	82	75	65	82.6	93.1	
8-Nov	69	64	66	65	63	68	71	67	77	77	72	64	58	56	60	62	68	70	75	79	90	88	91	70.8	90.6		
9-Nov	93	94	90	98	100	100	93	89	87	83	76	69	54	52	50	49	52	55	58	58	60	63	68	67	73.2	100.0	
10-Nov	66	79	75	77	80	77	60	86	81	73	72	60	68	71	77	75	83	92	89	87	85	84	91	95	78.5	94.9	
11-Nov	98	86	87	88	87	80	75	67	73	78	76	66	64	60	58	59	60	66	65	74	73	73	74	75	73.5	97.5	
12-Nov	78	78	84	85	92	84	92	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	95.6	100.0	
13-Nov	100	100	100	100	88	83	68	71	77	79	75	74	70	76	68	67	72	74	82	87	85	76	74	79	80.2	100.0	
14-Nov	73	83	78	74	70	68	61	65	63	59	54	50	49	46	46	48	56	61	64	60	60	61	59	63	61.3	82.7	
15-Nov	64	62	62	58	59	58	68	70	68	67	65	73	75	68	67	60	69	73	72	84	77	87	84	80	69.5	87.1	
16-Nov	87	91	92	91	92	87	88	96	90	88	82	76	77	70	66	66	69	77	78	86	87	88	86	88	83.2	95.6	
17-Nov	89	92	94	98	98	98	98	98	96	96	96	92	90	90	90	89	88	88	87	88	90	90	91	91	92.4	98.4	
18-Nov	92	88	87	89	87	84	86	88	87	85	83	81	83	81	84	87	87	88	90	90	93	97	98	99	88.1	98.6	
19-Nov	98	98	97	98	98	98	98	98	98	97	94	93	92	92	92	92	92	93	93	93	93	93	94	94	95.0	98.3	
20-Nov	95	95	99	100	100	99	99	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	98	99.4	100.0	
21-Nov	96	95	96	93	96	97	96	95	93	90	89	93	90	85	83	85	85	88	91	92	95	97	97	96	92.3	97.0	
22-Nov	95	95	95	94	92	91	91	91	93	94	94	96	97	98	98	99	98	98	98	98	98	99	99	99	95.8	99.3	
23-Nov	99	99	99	99	99	99	99	99	99	99	99	99	100	100	100	100	100	100	100	100	100	100	100	98	99.4	100.0	
24-Nov	97	95	91	93	92	91	92	92	95	97	96	96	98	98	99	99	99	98	99	100	100	100	100	100	96.6	100.0	
25-Nov	99	98	99	99	100	100	100	98	100	100	100	100	100	100	100	100	100	100	100	88	74	75	78	81	95.4	100.0	
26-Nov	93	99	95	92	96	99	94	94	94	91	90	91	92	94	94	94	94	94	95	96	91	87	86	93	93.2	99.4	
27-Nov	95	96	100	100	100	100	100	100	100	100	97	78	76	73	82	82	97	97	90	88	93	100	100	100	93.4	100.0	
28-Nov	99	99	98	97	98	98	97	95	95	97	94	93	89	89	87	85	91	94	95	89	92	88	93	96	93.6	99.0	
29-Nov	100	100	99	98	99	98	98	97	96	96	96	92	93	98	95	93	90	90	87	90	91	91	90	92	94.5	100.0	
30-Nov	92	93	91	93	95	97	95	97	98	97	95	94	88	83	87	94	97	97	94	90	93	93	90	88	93.0	97.5	
		89.4	89.9	90.0	90.2	90.2	89.0	87.6	89.4	89.5	88.3	86.7	83.9	82.2	80.9	80.2	80.4	82.5	84.6	84.9	86.0	85.9	86.1	86.6	87.1	Diurnal Average	
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	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 2016**







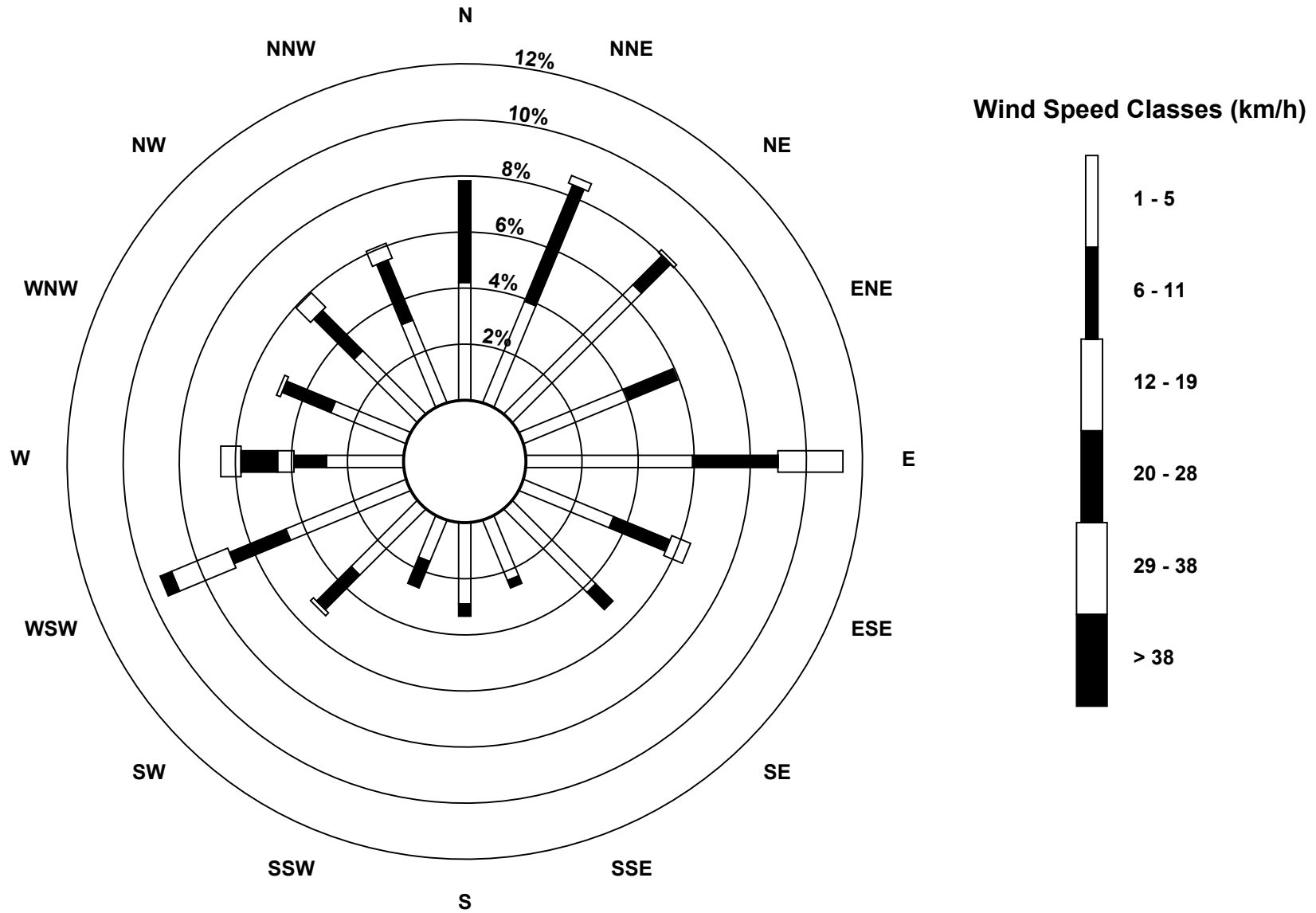
# Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Beaverlodge - November 2016

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	1	6	2	1	3	3	4	1	4	2	1	1	3	3	5	2	1	4	3	4	3	2	4	1	0.6	5.9	
Dir	131	211	78	92	239	307	40	163	307	283	229	173	114	54	30	285	180	173	75	51	68	84	60	79	69	211	
24 Spd	3	2	1	3	2	1	2	4	7	4	3	3	4	5	3	5	3	4	4	3	2	1	6	1	2.1	6.7	
Dir	26	53	56	330	30	287	353	336	34	350	260	222	322	313	348	322	1	27	326	33	240	230	286	265	338	34	
25 Spd	4	2	6	5	9	10	2	4	10	10	8	2	2	4	3	2	6	7	11	12	11	6	8	4	3.5	11.7	
Dir	103	182	357	3	0	4	349	288	293	300	299	263	81	85	84	348	249	221	254	260	272	292	326	329	302	260	
26 Spd	3	5	5	2	1	2	1	4	2	0	1	2	2	2	1	7	2	3	2	3	8	12	14	9	2.2	13.8	
Dir	132	97	81	92	249	38	157	46	43	336	81	177	303	235	252	341	61	222	239	345	338	23	36	38	30	36	
27 Spd	7	6	1	2	4	5	3	6	2	0	3	1	1	2	5	4	7	7	6	1	2	1	4	4	0.9	7.3	
Dir	18	9	207	254	285	290	339	305	68	248	159	169	199	156	151	163	102	85	75	89	231	33	42	49	57	18	
28 Spd	2	1	0	1	3	1	2	3	3	5	5	3	3	6	4	4	5	2	2	3	2	5	2	2	1.6	6.0	
Dir	58	23	5	340	38	127	107	131	147	60	55	7	323	359	321	336	303	10	319	303	303	307	342	70	2	359	
29 Spd	3	3	4	4	4	4	3	3	3	3	2	6	3	1	1	3	3	2	2	1	2	1	1	2	0.6	5.6	
Dir	74	85	87	87	74	82	110	136	184	204	186	251	251	65	264	237	246	227	257	42	34	20	74	274	137	251	
30 Spd	4	3	5	3	5	6	3	4	6	3	4	4	2	0	3	7	4	4	4	3	3	3	8	9	0.9	9.2	
Dir	46	348	321	358	56	313	319	36	280	343	20	229	87	138	109	178	178	122	143	144	73	321	282	285	324	285	
Spd	2.1	1.3	1.2	0.9	0.9	0.9	0.5	0.4	1.1	1.4	0.7	0.9	1.5	2.3	3.5	3.6	1.7	0.1	1.0	0.7	1.2	1.5	2.4	1.7	Diurnal Average		
Dir	57	32	6	30	12	10	328	283	334	302	329	228	287	292	297	292	296	214	53	325	336	16	11	33			
Spd	10.8	11.5	14.3	17.2	18.2	22.0	27.3	17.1	18.6	20.3	22.2	26.5	33.0	35.5	31.6	34.6	23.6	14.1	17.6	17.5	18.5	16.5	13.8	12.5	Diurnal Maximum		
Dir	316	322	255	329	274	254	246	251	251	264	273	272	265	262	262	275	261	89	97	98	251	105	36	323			
Maximum Speed Value: 36 km/h on Nov 14 14:00		Minimum Speed Value: 0 km/h on Nov 9 23:00																Hours in Service: 720									
Maximum Daily Speed Average: 17.3 km/h on Nov 14		Minimum Daily Speed Average: 0.3 km/h on Nov 29																Hours of Data: 720									
Maximum Diurnal Speed Average: 3.6 km/h at hour 16		Minimum Diurnal Speed Average: 0.1 km/h at hour 18																Hours of Missing Data: 0									
Monthly Average Velocity: 0.96 km/h 334.1 deg		Speed Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 1.5 Q <sub>1</sub> = 2.6 Median = 4.3 Q <sub>3</sub> = 7.7 P <sub>90</sub> = 11.4 P <sub>99</sub> = 26.9																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	50	60	0	0	0	0	110																				
NorthEast	72	33	3	0	0	0	108																				
East	71	42	21	0	0	0	134																				
SouthEast	51	11	1	0	0	0	63																				
South	32	8	0	0	0	0	40																				
SouthWest	52	23	6	2	0	0	83																				
West	52	27	15	10	5	0	109																				
NorthWest	32	28	13	0	0	0	73																				
Total	412	232	59	12	5	0	720																				

**Wind Rose**

**Wind Speed (WS) (km/h)**  
**Beaverlodge - November 2016**



# Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Beaverlodge - November 2016

Maximum Speed: 36 km/h on Nov 14 14:00		Maximum Daily Speed Average: 18.0 km/h on Nov 14		Hours in Service: 720																																													
Minimum Speed: 1 km/h on Nov 13 01:00		Minimum Daily Speed Average: 3.3 km/h on Nov 29		Hours of Data: 720																																													
Maximum Diurnal Speed Average: 8.9 km/h at hour 15		Minimum Diurnal Speed Average: 5.5 km/h at hour 1		Hours of Missing Data: 0																																													
Monthly Average Speed: 6.65 km/h		Percentiles: P <sub>1</sub> = 1.7 P <sub>10</sub> = 2.8 Q <sub>1</sub> = 3.7 Median = 5.3 Q <sub>3</sub> = 8.1 P <sub>90</sub> = 11.7 P <sub>99</sub> = 27.4		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	9	6	5	7	7	7	8	9	7	6	7	13	13	13	14	11	11	14	18	18	15	17	11	8	10.5	17.7																							
2-Nov	7	5	3	3	4	5	5	3	7	3	3	3	4	4	4	5	6	10	12	10	12	14	13	9	6.3	13.7																							
3-Nov	4	4	7	6	5	11	7	6	5	4	5	3	3	4	22	35	24	10	4	8	4	7	6	5	8.2	34.7																							
4-Nov	3	2	5	9	7	4	5	5	6	5	5	2	3	4	5	3	5	4	5	3	3	3	5	3	4.4	8.5																							
5-Nov	4	3	3	2	4	5	5	9	8	7	6	5	7	12	16	15	6	6	8	7	10	10	6	4	6.9	15.5																							
6-Nov	6	7	5	3	5	5	5	4	11	8	4	9	8	16	20	11	7	13	5	8	12	12	10	6	8.3	20.1																							
7-Nov	5	6	5	4	4	4	5	2	5	4	4	3	4	3	5	2	4	3	5	5	3	3	3	6	4.0	6.2																							
8-Nov	7	9	6	7	3	2	2	3	4	5	5	6	5	12	10	5	10	10	11	5	6	7	8	4	6.3	12.4																							
9-Nov	3	7	14	17	6	9	14	17	19	15	15	11	26	29	27	25	17	10	6	7	8	6	2	5	13.2	29.3																							
10-Nov	6	5	7	3	3	5	8	8	5	9	10	10	10	7	4	2	3	7	6	7	7	10	7	5	6.5	10.1																							
11-Nov	6	6	5	4	3	3	5	7	4	5	3	3	5	8	10	11	10	6	4	4	5	6	4	6	5.6	11.1																							
12-Nov	6	4	3	2	3	7	8	6	7	6	6	4	5	4	2	3	4	4	4	2	5	3	4	3	4.3	8.2																							
13-Nov	1	3	8	4	16	10	9	4	4	5	4	4	4	5	5	3	3	3	4	2	4	4	4	5	4.9	15.5																							
14-Nov	3	8	15	15	18	22	28	17	13	20	22	27	33	36	32	28	15	11	12	17	19	9	7	6	18.0	35.7																							
15-Nov	6	9	10	9	4	4	4	4	6	4	3	3	2	3	4	3	5	1	6	4	9	4	5	5	4.8	9.9																							
16-Nov	6	6	6	4	4	9	3	5	10	7	7	5	8	8	10	9	11	8	6	8	8	7	5	6	7.0	10.7																							
17-Nov	10	9	9	9	12	13	14	13	13	13	13	12	11	11	9	10	11	9	9	9	7	8	10	9	10.6	13.8																							
18-Nov	9	9	7	7	5	5	3	4	4	3	3	3	4	3	5	6	4	6	8	10	10	8	7	9	6.0	10.1																							
19-Nov	10	11	10	11	8	10	8	7	9	6	8	9	10	9	10	10	9	8	8	7	7	5	6	4	8.3	10.8																							
20-Nov	5	3	8	8	6	4	4	5	3	3	6	5	3	6	5	4	5	7	5	3	5	6	12	13	5.5	12.5																							
21-Nov	11	12	12	11	10	9	11	10	11	12	12	12	9	10	9	7	5	5	3	6	6	4	5	3	8.5	11.8																							
22-Nov	2	4	4	5	5	3	3	7	6	6	6	6	7	3	8	3	5	5	4	4	3	4	3	4	4.6	7.8																							
23-Nov	4	6	3	5	4	4	5	3	8	5	4	2	3	3	6	4	3	4	4	4	4	3	4	3	4.1	8.0																							
24-Nov	4	3	3	6	3	2	4	5	7	13	5	4	4	5	4	6	4	5	5	5	4	5	8	6	5.1	13.4																							
25-Nov	4	4	7	6	10	10	5	5	10	10	8	4	2	4	4	5	6	7	11	12	11	6	8	5	6.8	11.8																							
26-Nov	4	5	5	4	2	3	3	4	3	3	2	3	3	3	3	8	5	3	3	5	8	12	14	10	4.9	13.9																							
27-Nov	7	7	2	2	4	5	4	7	3	2	3	2	2	2	5	5	7	7	6	2	3	2	4	4	3.9	7.4																							
28-Nov	3	2	2	3	4	2	4	4	4	5	5	5	4	6	5	5	5	3	3	4	4	5	3	3	3.8	6.3																							
29-Nov	4	4	4	4	4	4	3	4	3	3	2	6	3	2	3	3	3	3	3	3	4	3	2	3	3.3	5.8																							
30-Nov	4	5	5	4	5	8	5	5	7	5	5	4	2	2	3	7	4	4	4	3	3	5	8	9	4.9	9.2																							
																								5.5	5.8	6.3	6.0	5.9	6.4	6.6	6.4	7.0	6.7	6.3	6.3	6.9	8.0	8.9	8.5	7.2	6.5	6.2	6.4	7.0	6.6	6.4	5.7	Diurnal Average	
																								10.9	11.6	14.6	17.4	18.3	22.4	27.7	17.2	18.6	20.4	22.4	26.6	33.1	35.7	31.7	34.7	23.8	14.2	17.7	17.6	18.5	16.6	13.9	12.5	Diurnal Maximum	

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

# Hourly Standard Deviations

Wind Direction (WD) - deg  
Beaverlodge - November 2016

Maximum Value: 93.5 deg on Nov 30 14:00																								Hours in Service:	720
Minimum Value: 3.5 deg on Nov 16 20:00																								Hours of Data:	720
Percentiles: P <sub>1</sub> = 4.5 P <sub>10</sub> = 6.9 Q <sub>1</sub> = 12.4 Median = 29.9 Q <sub>3</sub> = 58.1 P <sub>90</sub> = 76.3 P <sub>99</sub> = 90.0																								Hours of Missing Data:	0
																								Hours of Calibration:	0
																								Percent Operational Time:	100.0
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Nov	26	13	26	20	16	6	10	5	6	9	13	7	7	6	5	8	7	6	4	5	5	4	8	13	26.5
2-Nov	11	25	27	28	20	16	59	36	43	64	91	84	23	30	22	34	26	14	6	38	9	11	19	23	90.6
3-Nov	41	65	31	39	58	62	43	31	48	34	29	43	88	36	16	4	6	17	81	44	73	59	63	50	87.5
4-Nov	47	70	34	25	15	46	67	92	77	64	74	82	86	46	64	54	33	44	64	54	77	72	36	92	92.0
5-Nov	78	82	90	71	50	25	18	8	19	15	27	15	34	28	16	19	43	11	24	11	7	10	63	45	90.4
6-Nov	13	9	60	43	20	29	25	81	12	58	29	51	9	9	5	13	38	8	77	31	8	12	61	68	80.9
7-Nov	40	33	28	39	32	79	25	90	76	43	84	75	82	65	36	91	73	83	67	53	68	48	79	22	90.8
8-Nov	29	17	14	58	65	82	55	81	85	77	48	60	64	36	76	74	14	20	44	88	66	36	46	72	87.7
9-Nov	43	44	17	9	63	20	11	4	5	13	10	26	7	7	8	5	7	10	88	23	15	23	93	52	92.9
10-Nov	73	17	11	26	53	44	15	29	33	68	51	56	45	29	38	70	79	70	31	44	45	43	46	59	79.3
11-Nov	32	43	56	68	70	37	52	64	76	25	44	28	39	22	22	8	12	53	50	84	12	7	15	20	83.7
12-Nov	24	56	82	82	71	22	51	36	77	39	59	23	15	58	43	26	25	18	26	58	37	91	40	31	90.8
13-Nov	88	81	11	20	13	16	13	20	55	27	44	34	38	30	40	46	72	64	71	40	84	68	58	61	88.5
14-Nov	58	30	14	9	6	10	10	6	6	6	8	5	5	5	5	7	12	7	6	4	4	13	26	45	58.5
15-Nov	63	16	11	26	88	46	13	29	22	17	70	18	67	46	28	83	53	61	69	71	11	80	21	61	88.3
16-Nov	77	68	46	65	67	28	52	33	17	35	9	21	11	12	8	5	5	5	7	4	17	10	12	10	76.8
17-Nov	5	5	25	11	7	7	5	7	9	10	7	7	9	14	12	7	5	8	8	12	10	7	5	9	25.0
18-Nov	7	8	14	12	21	28	50	63	20	33	44	51	54	37	68	23	44	21	8	6	8	8	12	6	67.8
19-Nov	7	5	5	9	9	10	15	16	12	9	8	10	8	10	6	6	6	8	6	8	9	14	8	20	20.2
20-Nov	47	64	10	12	12	33	25	23	46	54	26	13	26	21	13	20	14	17	9	68	35	20	6	5	68.0
21-Nov	8	7	12	7	10	9	7	7	6	6	6	6	8	10	9	7	17	51	30	18	9	74	18	36	74.2
22-Nov	55	23	38	69	74	71	56	40	81	76	40	41	50	73	32	82	19	16	27	20	22	74	23	53	81.8
23-Nov	77	31	78	82	67	40	54	77	73	70	85	58	20	16	17	70	80	28	69	17	56	53	15	78	85.3
24-Nov	76	68	79	75	58	77	64	53	20	79	79	47	36	26	43	21	44	32	61	78	69	93	67	93	93.4
25-Nov	32	87	35	36	30	10	70	68	6	5	24	50	44	13	22	69	24	10	10	5	10	11	12	62	86.8
26-Nov	50	29	14	74	57	60	56	19	55	89	66	76	59	82	81	60	70	25	36	47	24	8	4	10	89.3
27-Nov	10	50	46	37	19	7	47	17	65	89	28	54	36	32	15	26	13	8	13	68	57	68	14	16	88.7
28-Nov	36	79	79	73	59	64	46	31	39	9	14	64	45	17	28	43	25	52	54	64	49	11	39	55	78.6
29-Nov	36	50	22	12	14	22	20	24	24	19	47	15	55	72	87	29	49	19	49	80	66	86	79	68	87.1
30-Nov	38	46	37	36	18	45	72	40	35	56	54	22	57	94	34	6	18	11	11	18	27	56	10	5	93.5
88.5	86.8	90.4	82.3	88.3	81.5	72.2	92.0	85.5	89.3	90.6	84.0	87.5	93.5	87.1	90.8	80.0	82.9	87.5	87.7	83.5	93.3	92.9	93.4		

**PAZA**  
**Valleyview Station**  
**Monthly Summary Tables, Graphs and**  
**Roses**

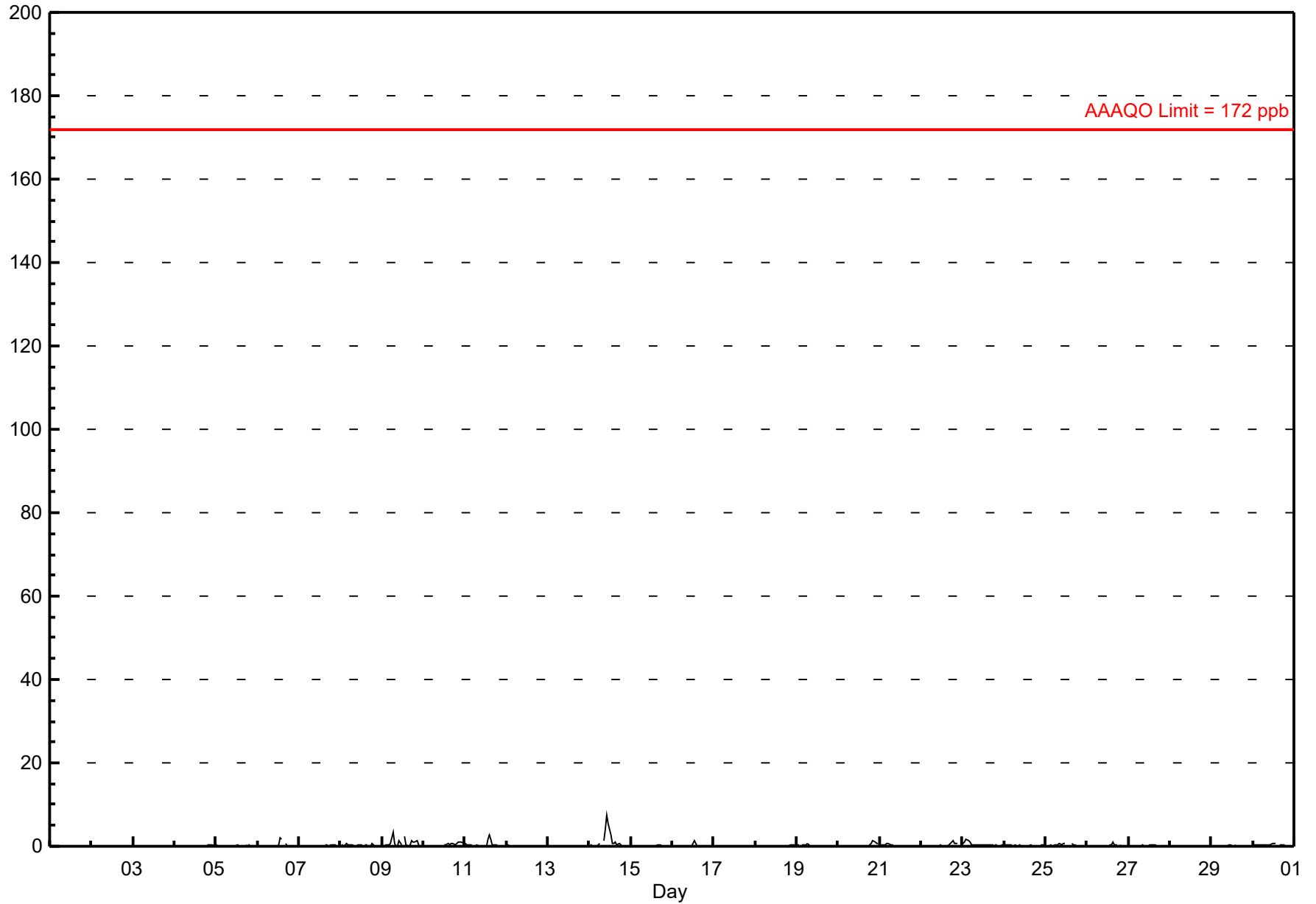
# Hourly Averages

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Valleyview - November 2016**

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0	Hours in Service: 720
Maximum Value: 7.5 ppb on Nov 14 11:00	Maximum Daily Average: 1.1 ppb on Nov 14
Minimum Value: 0 ppb on Nov 1 06:00	Hours of Data: 686
Maximum Diurnal Average: 0.4 ppb at hour 11	Hours of Missing Data: 34
Monthly Average: 0.21 ppb	Hours of Calibration: 34
Minimum Daily Average: 0.0 ppb on Nov 13	Percent Operational Time: 100.0
Minimum Diurnal Average: 0.1 ppb at hour 1	
Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.1 Q <sub>3</sub> = 0.2 P <sub>90</sub> = 0.5 P <sub>99</sub> = 2.3	

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	0	0	0	0	0	0	0	0	A	0	0	0	0.0	0.1
2-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
3-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	0.1	
4-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.1	0.3	
5-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.1	0.4	
6-Nov	0	0	0	0	0	0	0	0	0	0	0	0	2	2	A	1	0	0	0	0	0	0	0	0.2	1.9	
7-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.1	0.2	
8-Nov	0	0	0	1	0	0	0	0	0	0	0	0	0	A	0	0	0	0	1	0	0	0	0	0.2	0.6	
9-Nov	0	0	0	0	0	1	3	1	0	0	1	0	A	2	0	0	0	1	1	1	1	0	0	0.7	3.4	
10-Nov	0	0	0	0	0	0	0	0	0	0	0	A	0	0	1	0	1	1	0	1	1	1	1	0.4	1.0	
11-Nov	1	0	0	0	0	0	0	0	0	0	A	0	2	3	2	0	0	0	0	0	0	0	0	0.4	2.8	
12-Nov	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4	
13-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	0.1	
14-Nov	0	0	0	0	0	0	1	A	1	4	8	5	3	1	1	1	0	1	0	0	0	0	0	1.1	7.5	
15-Nov	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4	
16-Nov	0	0	0	0	0	A	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0.1	1.3	
17-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	
18-Nov	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3	
19-Nov	0	0	A	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.6	
20-Nov	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0.3	1.3	
21-Nov	A	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.7	
22-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	A	0.3	1.3	
23-Nov	1	1	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.5	1.7	
24-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.2	0.3	
25-Nov	0	0	0	0	0	0	0	0	1	0	1	1	C	C	C	1	0	0	0	A	0	0	0	0.2	0.7	
26-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	A	0	0	0	0	0	0.2	0.9	
27-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.1	0.3	
28-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.1	0.1	
29-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.1	0.3	
30-Nov	0	0	0	0	0	0	0	0	0	1	1	1	1	A	0	0	0	0	0	0	0	0	0	0.3	0.7	
	0.1	0.1	0.1	0.2	0.1	0.1	0.3	0.1	0.1	0.2	0.4	0.3	0.3	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	Diurnal Average	
	0.7	1.0	1.7	1.4	1.0	0.8	3.4	0.6	1.3	4.1	7.5	5.3	2.6	2.4	2.8	1.7	0.7	1.3	1.3	0.9	1.3	1.0	0.8	1.0	Diurnal Maximum	

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



# Hourly Maximums

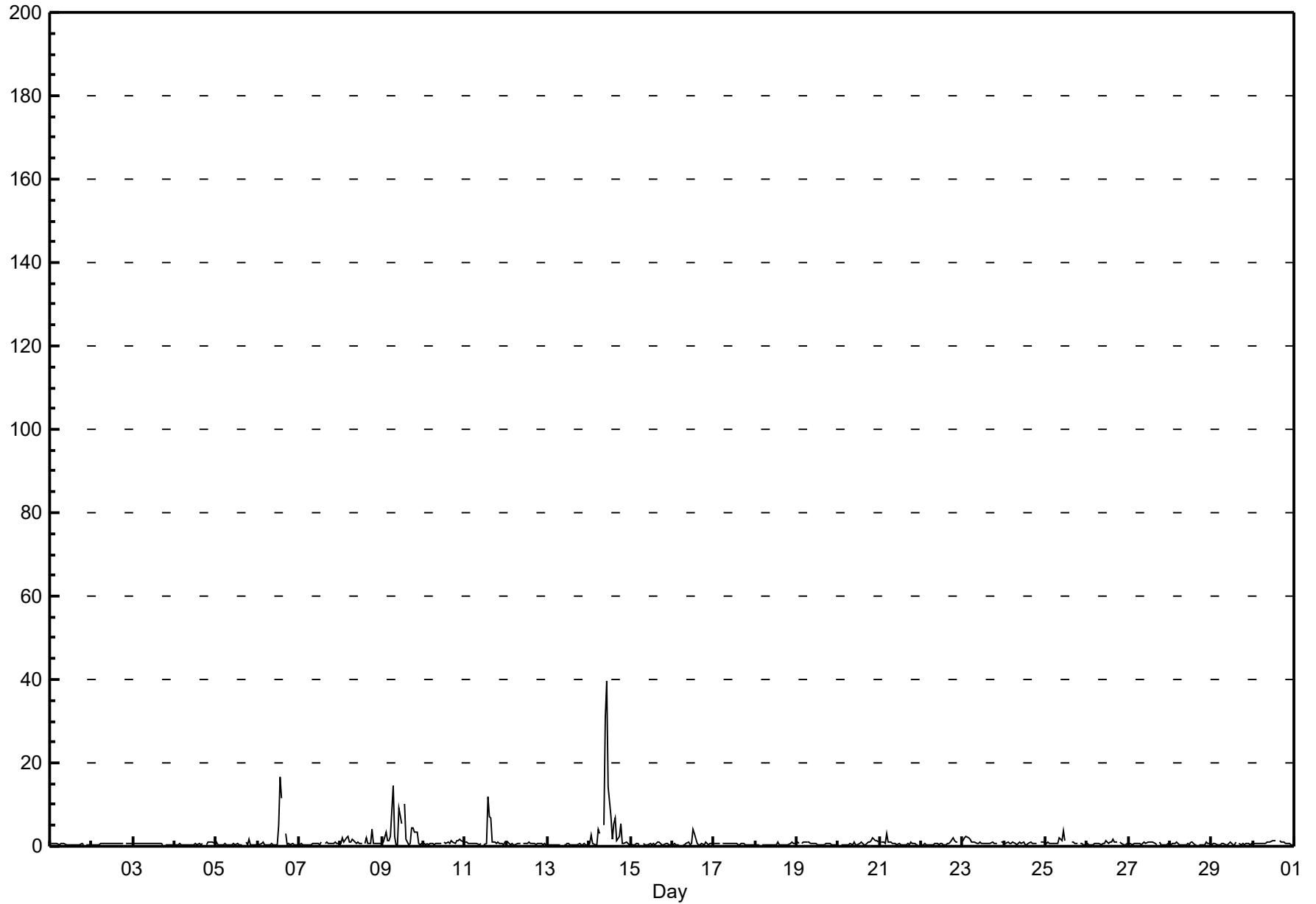
**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Valleyview - November 2016**

Maximum Value: 39.7 ppb on Nov 14 11:00      Maximum Daily Average: 5.9 ppb on Nov 14 Minimum Value: 0 ppb on Nov 26 02:00      Minimum Daily Average: 0.4 ppb on Nov 13 Maximum Diurnal Average: 2.3 ppb at hour 11      Minimum Diurnal Average: 0.6 ppb at hour 23 Monthly Average: 1.03 ppb      Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 0.4 Q <sub>1</sub> = 0.5 Median = 0.6 Q <sub>3</sub> = 0.8 P <sub>90</sub> = 1.3 P <sub>99</sub> = 11.6		Hours in Service: 720 Hours of Data: 686 Hours of Missing Data: 34 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	0	1	1	1	1	1	0	0	0	0	0	0	0	1	0	A	0	0	0	0.5	0.6	
2-Nov	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	0.6	0.8	
3-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	0	0	0	0	0.5	0.7		
4-Nov	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	0	1	A	0	1	1	1	1	1	0.6	0.9	
5-Nov	1	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	A	1	0	2	0	0	0	0	0.6	1.8	
6-Nov	1	0	1	1	0	0	0	0	1	0	0	0	5	17	12	A	3	0	1	0	1	0	0	0	2.0	16.6	
7-Nov	0	1	0	0	0	0	0	0	1	1	1	1	0	1	A	1	1	1	1	1	1	1	1	1	0.6	0.9	
8-Nov	1	2	1	2	2	1	1	2	1	1	1	1	1	A	1	2	1	1	4	1	1	1	1	1	1.2	4.2	
9-Nov	1	1	3	1	2	3	15	2	0	0	9	5	A	10	2	0	1	4	4	3	3	1	0	1	3.2	14.7	
10-Nov	1	0	1	0	1	1	0	1	1	1	1	A	1	1	1	1	1	1	1	1	1	2	1	1	0.9	1.7	
11-Nov	1	1	1	1	1	1	1	1	1	1	A	1	1	12	7	7	1	1	1	1	1	1	0	1	1.8	11.9	
12-Nov	1	1	0	1	0	0	1	1	1	A	1	1	1	1	1	1	1	0	1	1	1	0	1	0	0.6	0.9	
13-Nov	0	0	0	0	0	0	0	0	A	0	0	1	1	0	0	0	0	0	1	0	0	1	0	0	0.4	0.6	
14-Nov	1	3	1	0	0	4	3	A	5	31	40	14	7	2	5	7	1	3	5	1	1	1	1	0	5.9	39.7	
15-Nov	1	0	0	1	1	0	A	1	0	0	0	1	0	1	0	1	1	1	0	0	1	1	0	0	0.5	1.1	
16-Nov	0	1	0	0	0	A	0	0	1	1	0	1	4	3	1	0	0	1	0	1	1	1	1	1	0.8	3.9	
17-Nov	1	1	1	1	A	1	1	1	1	1	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0.6	0.8	
18-Nov	0	0	0	A	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	0.5	1.0	
19-Nov	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	0	0	0	0	0.6	1.0	
20-Nov	0	A	0	0	0	0	0	1	0	1	0	0	1	1	1	0	0	1	1	1	1	2	1	1	0.8	2.0	
21-Nov	A	1	1	1	3	1	1	1	1	1	0	1	0	0	0	0	1	0	1	1	1	0	0	A	0.7	2.9	
22-Nov	0	0	1	0	0	0	0	0	1	1	0	1	1	0	0	1	1	1	2	1	1	1	A	1	0.7	2.1	
23-Nov	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1.0	2.4	
24-Nov	1	1	1	1	1	1	1	0	1	1	1	1	0	0	1	1	1	1	1	1	A	1	1	1	0.7	0.9	
25-Nov	1	1	1	1	1	1	1	1	2	1	4	1	C	C	C	1	1	1	1	A	1	1	0	0	1.0	3.8	
26-Nov	1	0	0	0	1	1	1	1	0	1	1	1	1	1	2	1	1	1	A	1	1	0	0	1	0.7	1.5	
27-Nov	1	1	0	1	1	1	1	0	1	1	1	1	1	1	1	0	A	1	0	0	0	0	1	1	0.6	0.9	
28-Nov	0	1	1	1	1	0	0	0	0	0	1	0	1	1	0	0	A	0	0	0	0	1	1	1	0.6	1.0	
29-Nov	0	1	1	0	0	0	1	1	0	0	1	1	1	1	1	A	1	1	1	1	1	1	0	1	0.6	1.0	
30-Nov	0	1	1	1	1	1	1	1	1	1	1	2	1	2	A	1	1	1	1	1	1	1	0	0	0.9	1.5	
	0.6	0.8	0.7	0.7	0.8	0.8	1.2	0.7	0.8	1.7	2.3	1.3	1.2	2.1	1.5	1.1	0.8	0.9	1.1	0.8	0.8	0.7	0.6	0.6	Diurnal Average		
	1.3	2.8	3.5	2.0	2.9	4.1	14.7	2.5	5.2	31.0	39.7	14.1	7.2	16.6	11.7	6.8	2.9	4.5	5.3	3.3	3.3	1.7	1.3	1.5	Diurnal Maximum		
C - Calibration		A - Automated Daily Zero Span																									



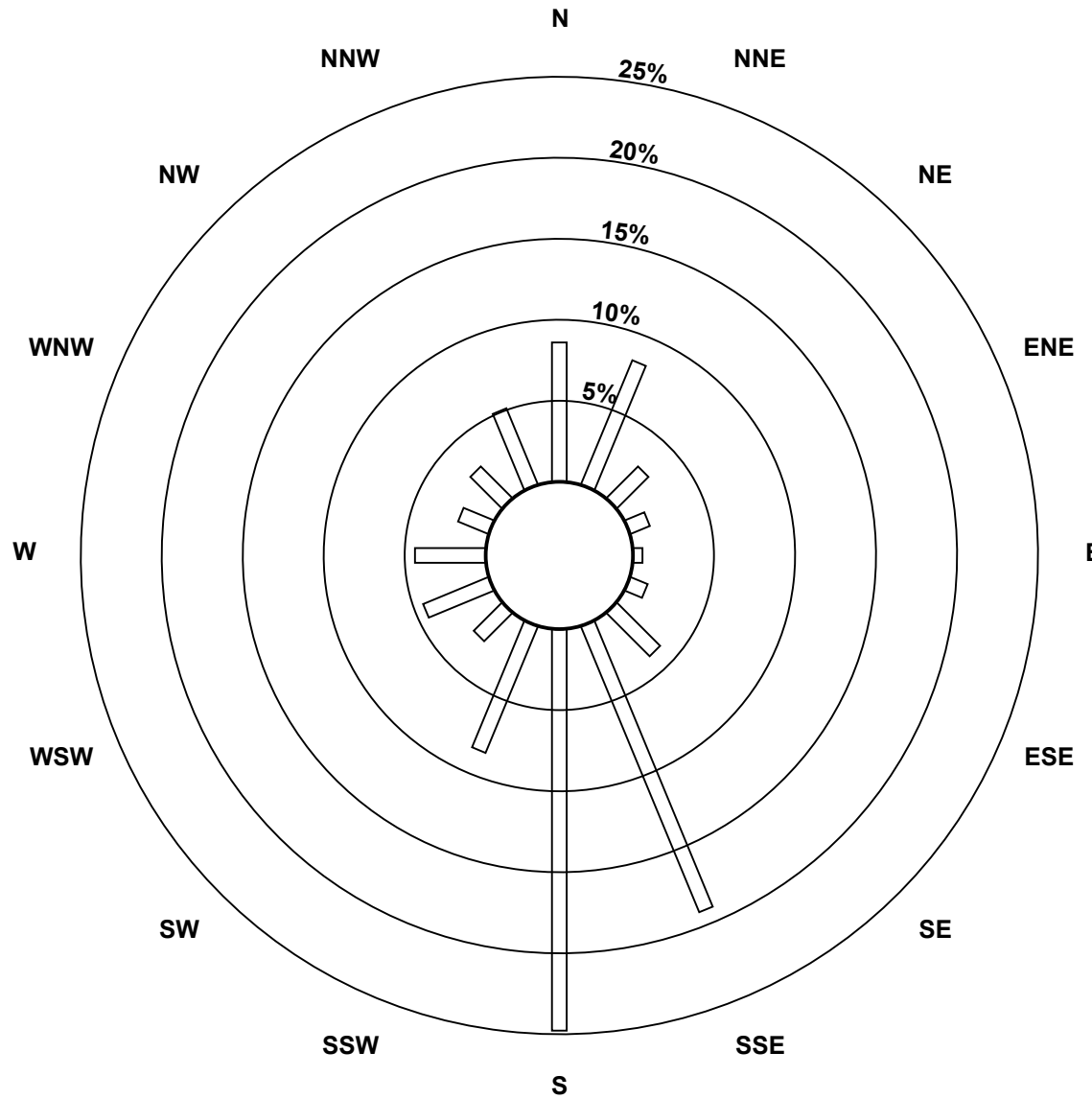
### Hourly Maximums

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Valleyview - November 2016**

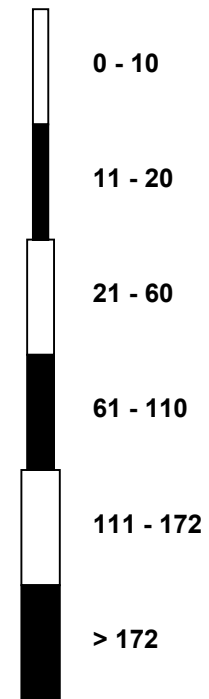


**Pollutant Rose**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Valleyview - November 2016**

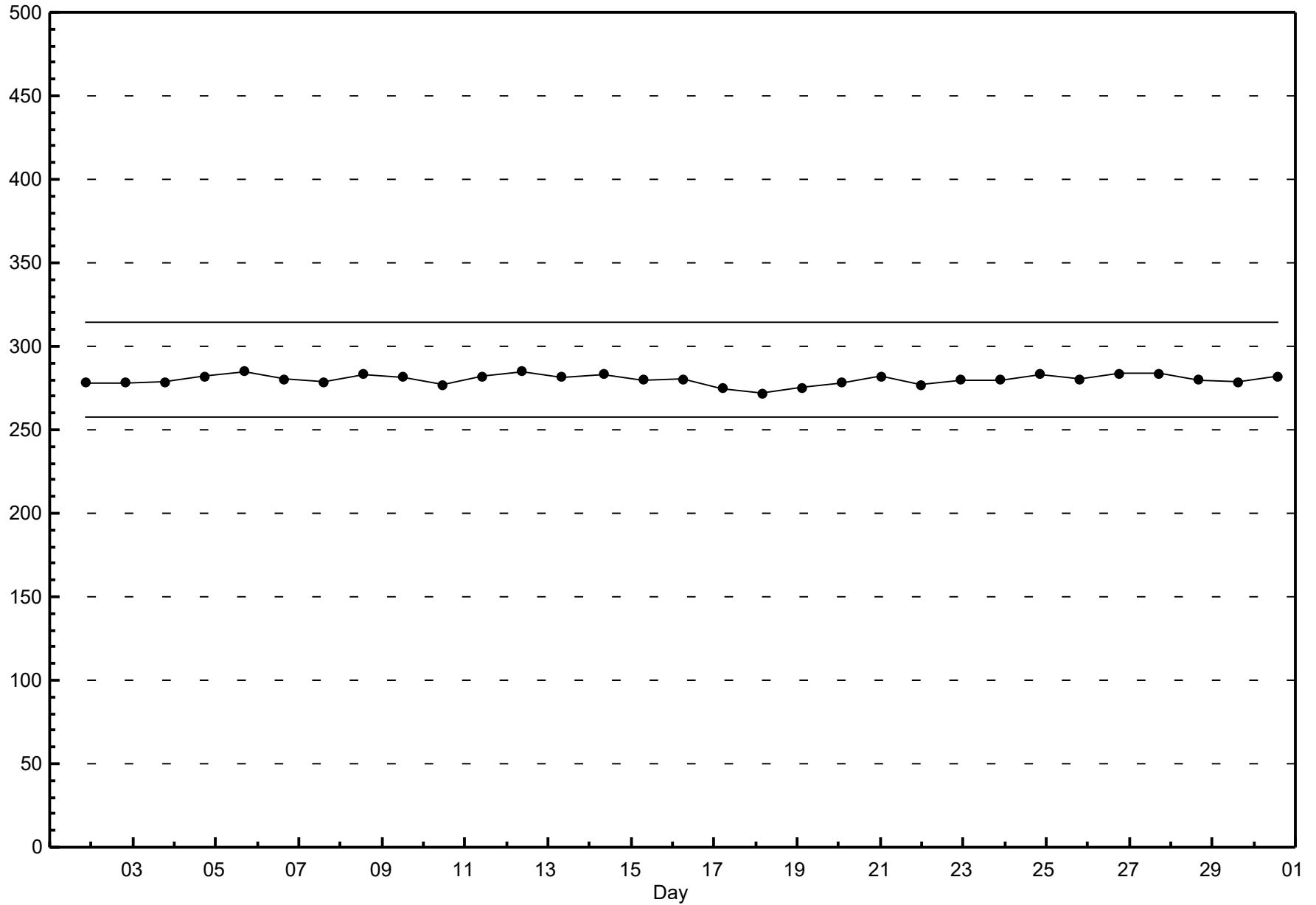


**Pollutant Classes (ppb)**



### Span Responses

Sulphur Dioxide (SO<sub>2</sub>)  
Valleyview - November 2016

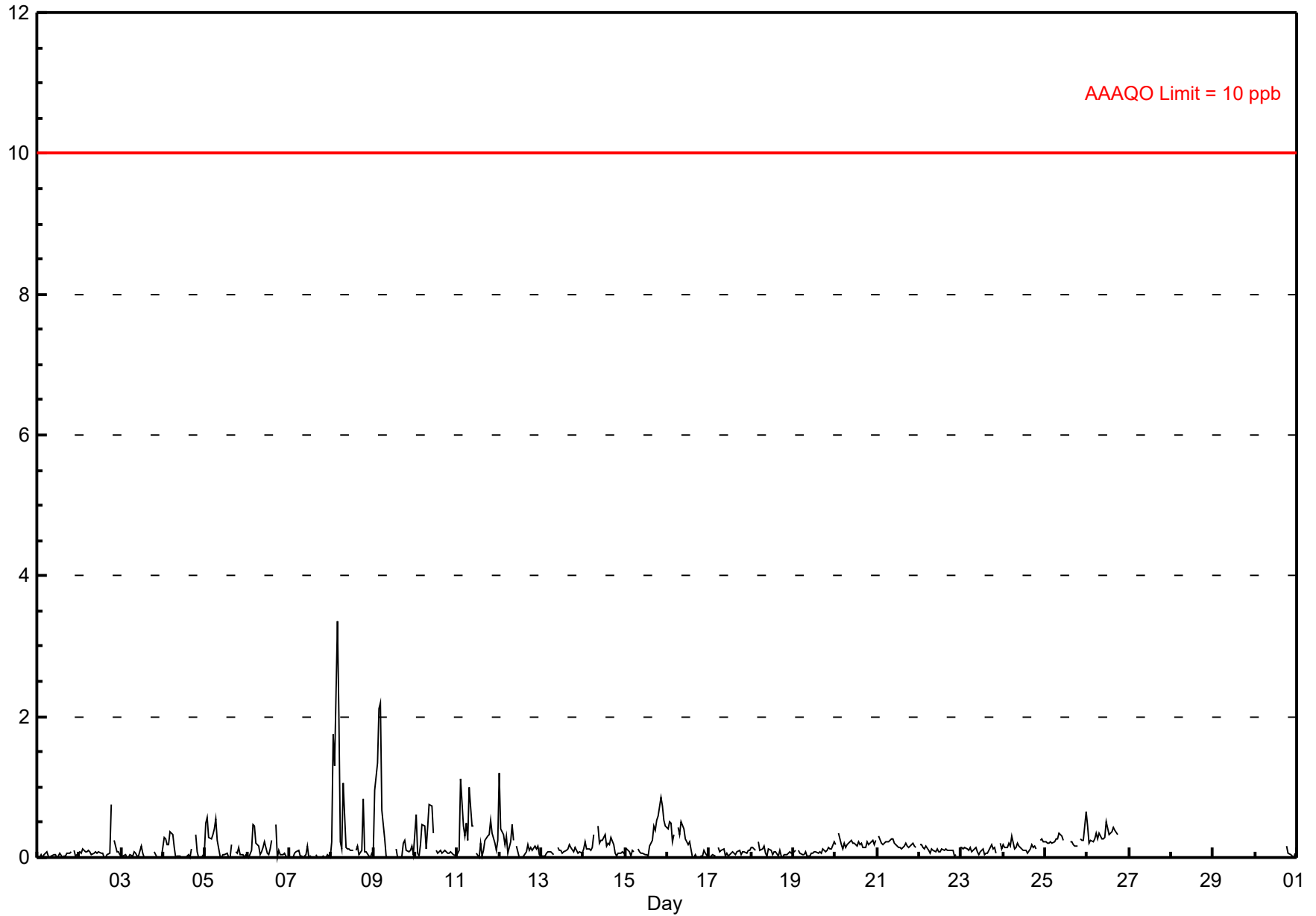


## Hourly Averages

## Hydrogen Sulphide (H<sub>2</sub>S) - ppb Valleyview - November 2016

<b>Number of Exceedences (AAAQO):</b> 1-hr: 0 24-hr: 0 <b>Maximum Value:</b> 3.4 ppb on Nov 8 04:00 <b>Maximum Daily Average:</b> 0.5 ppb on Nov 8		<b>Hours in Service:</b> 720 <b>Hours of Data:</b> 595 <b>Hours of Missing Data:</b> 125 <b>Hours of Calibration:</b> 32 <b>Percent Operational Time:</b> 87.1																								
<b>Minimum Value:</b> 0 ppb on Nov 1 15:00 <b>Maximum Diurnal Average:</b> 0.4 ppb at hour 4 <b>Monthly Average:</b> 0.17 ppb		<b>Minimum Daily Average:</b> 0.0 ppb on Nov 7 <b>Minimum Diurnal Average:</b> 0.1 ppb at hour 13 <b>Percentiles:</b> P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.1 Q <sub>3</sub> = 0.2 P <sub>90</sub> = 0.3 P <sub>99</sub> = 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	0	0	0	0	0	0	0	0	A	0	0	0	0.0	0.1
2-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	A	0	0	0	0.1	0.8
3-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	0.2
4-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	0.4
5-Nov	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.2	0.6
6-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	0.5
7-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	0.2
8-Nov	0	2	1	3	2	0	0	1	0	0	0	0	0	A	0	0	0	0	1	0	0	0	0	0	0.5	3.4
9-Nov	0	1	1	2	2	1	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.4	2.2
10-Nov	1	0	0	0	0	0	0	0	1	1	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.8
11-Nov	0	0	1	0	0	0	0	1	0	0	A	0	0	0	0	0	0	0	0	1	0	0	0	0.3	1.1	
12-Nov	1	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1.2	
13-Nov	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	
14-Nov	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4	
15-Nov	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0.3	0.9	
16-Nov	0	1	0	0	0	A	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5	
17-Nov	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	
18-Nov	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	
19-Nov	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	
20-Nov	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3	
21-Nov	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3	
22-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.1	0.2	
23-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.1	0.2	
24-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.2	0.3	
25-Nov	0	0	0	0	0	0	0	0	0	0	0	C	C	C	0	0	0	0	0	A	0	0	0	0.3	0.7	
26-Nov	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	A	N	N	N	N	0.3	0.5	
27-Nov	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--	
28-Nov	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--	
29-Nov	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--	
30-Nov	N	N	N	N	N	N	N	N	N	N	N	M	M	M	M	M	C	C	0	0	0	0	0	--	0.2	
																								Diurnal Average	Diurnal Maximum	
																								0.2	0.1	
																								1.2	0.7	

C - Calibration M - Maintenance N - Not Valid A - Automated Daily Zero Span  
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb



## Hourly Maximums

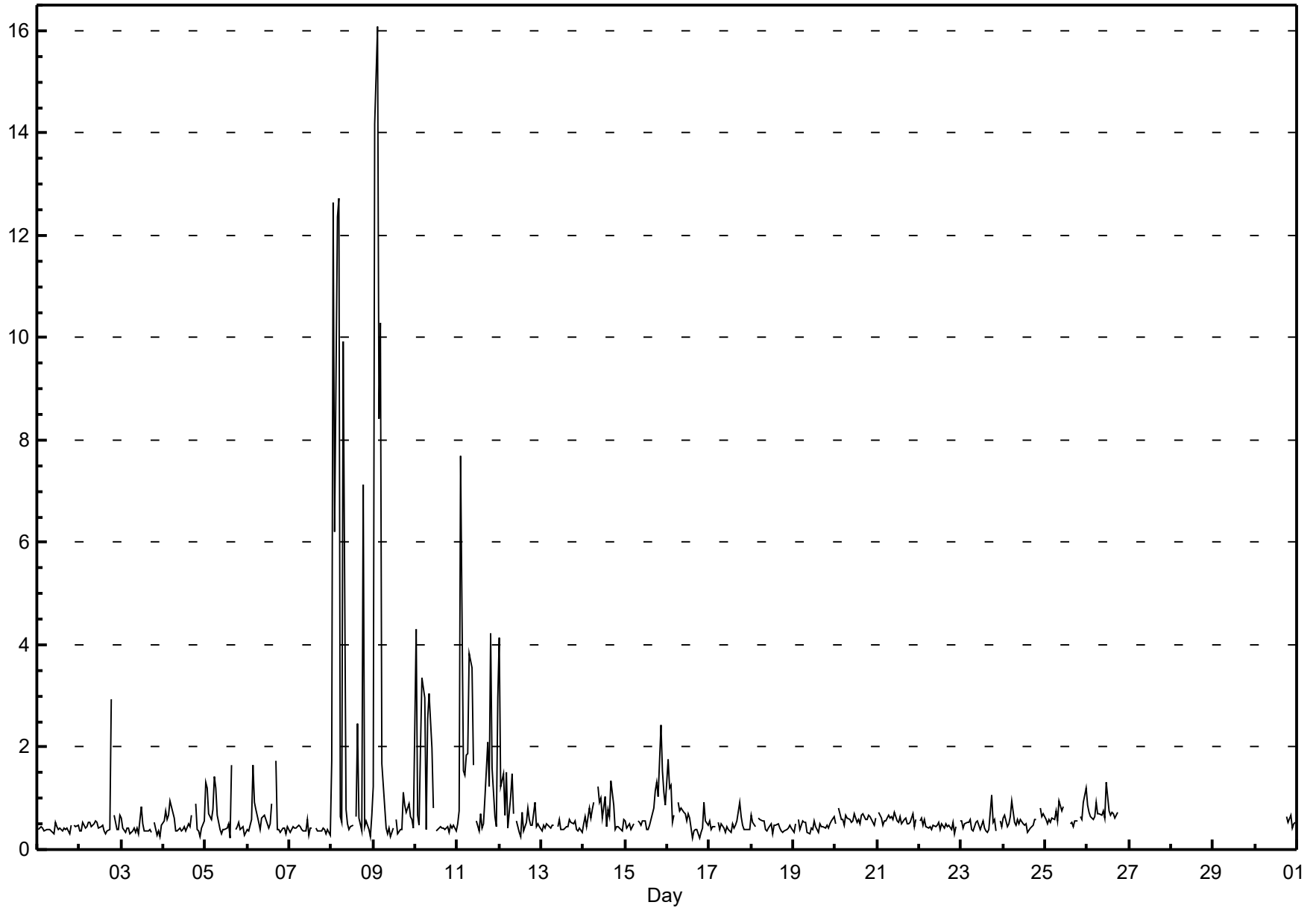
Hydrogen Sulphide (H<sub>2</sub>S) - ppb

Valleyview - November 2016

Maximum Value: 16.1 ppb on Nov 9 03:00		Maximum Daily Average: 3.2 ppb on Nov 8		Hours in Service: 720																						
Minimum Value: 0 ppb on Nov 16 15:00		Minimum Daily Average: 0.4 ppb on Nov 7		Hours of Data: 595																						
Maximum Diurnal Average: 1.7 ppb at hour 3		Minimum Diurnal Average: 0.5 ppb at hour 15		Hours of Missing Data: 125																						
Monthly Average: 0.82 ppb		Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 0.4 Q <sub>1</sub> = 0.4 Median = 0.5 Q <sub>3</sub> = 0.7 P <sub>90</sub> = 1.1 P <sub>99</sub> = 9.3		Hours of Calibration: 32																						
				Percent Operational Time: 87.1																						
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	0	0	0	0	1	0	0	0	0	0	0	0	0	0	A	0	0	0	0.4	0.5
2-Nov	0	0	1	0	0	1	1	0	1	1	1	0	0	0	0	0	0	0	3	A	1	0	0	1	0.6	2.9
3-Nov	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	A	1	0	0	0	0.4	0.8	
4-Nov	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	A	1	0	0	0	0	0.5	1.0	
5-Nov	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	2	A	0	0	1	0	0	0	0.7	1.7	
6-Nov	0	0	1	2	1	1	1	0	1	1	1	0	0	0	1	A	2	0	0	0	0	0	0	0.6	1.7	
7-Nov	0	0	0	0	0	0	0	0	0	0	1	0	0	0	A	0	0	0	0	0	0	0	0	0.4	0.6	
8-Nov	2	13	6	12	13	1	1	10	1	1	0	0	0	A	1	2	1	0	7	0	1	0	0	3.2	12.7	
9-Nov	1	14	16	8	10	2	1	0	0	0	0	0	A	1	0	0	0	1	1	1	1	1	0	2.7	16.1	
10-Nov	4	1	0	2	3	3	0	3	3	2	1	A	0	0	0	0	0	0	0	0	0	0	0	1.2	4.3	
11-Nov	1	1	8	2	1	2	2	4	4	2	A	1	0	1	0	1	1	2	1	4	2	1	0	1.8	7.7	
12-Nov	4	1	1	1	2	0	1	1	1	A	1	0	0	1	0	1	1	1	0	0	1	0	1	0.9	4.1	
13-Nov	0	0	0	1	0	0	0	0	A	0	1	0	0	0	0	0	1	1	1	1	0	0	0	0.5	0.6	
14-Nov	1	1	0	1	1	1	1	A	1	1	1	1	1	0	1	1	1	1	0	0	0	0	1	0.7	1.3	
15-Nov	1	0	1	0	0	1	A	1	1	0	1	1	0	0	1	1	1	1	1	1	2	2	1	0.8	2.4	
16-Nov	2	1	1	1	1	A	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	1	0.7	1.8	
17-Nov	1	0	0	0	A	1	0	1	0	0	0	0	0	1	0	0	1	1	1	0	0	0	0	0.5	0.9	
18-Nov	1	1	0	A	1	1	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0.5	0.7	
19-Nov	0	1	A	1	0	1	1	1	0	0	0	1	0	0	1	0	0	0	0	0	1	1	1	0.5	0.6	
20-Nov	1	A	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0.6	0.8	
21-Nov	A	1	1	0	1	1	1	1	1	1	1	1	1	0	1	1	1	1	0	1	1	0	1	0.6	0.7	
22-Nov	1	1	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	A	0.5	0.6	
23-Nov	1	0	1	1	1	1	0	0	1	1	0	0	1	0	0	0	0	1	1	1	0	A	1	0.5	1.1	
24-Nov	1	1	0	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	A	1	1	0.6	0.9	
25-Nov	1	1	1	1	1	1	1	1	1	1	1	C	C	C	1	1	0	1	1	A	1	1	1	0.7	1.2	
26-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	N	N	N	N	0.7	1.3	
27-Nov	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--	
28-Nov	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--	
29-Nov	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--	
30-Nov	N	N	N	N	N	N	N	N	N	N	N	M	M	M	M	M	C	C	1	1	1	0	0	--	0.7	
		1.0	1.6	1.7	1.5	1.6	0.8	0.7	1.1	0.8	0.6	0.6	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.9	0.7	0.6	0.5	0.5	0.6	Diurnal Average
		4.3	14.2	16.1	12.4	12.7	3.0	1.9	9.9	3.6	2.0	1.0	1.3	1.0	0.7	0.9	2.5	1.7	2.1	7.1	4.2	2.4	1.6	1.1	3.0	Diurnal Maximum
C - Calibration		M - Maintenance						N - Not Valid						A - Automated Daily Zero Span												

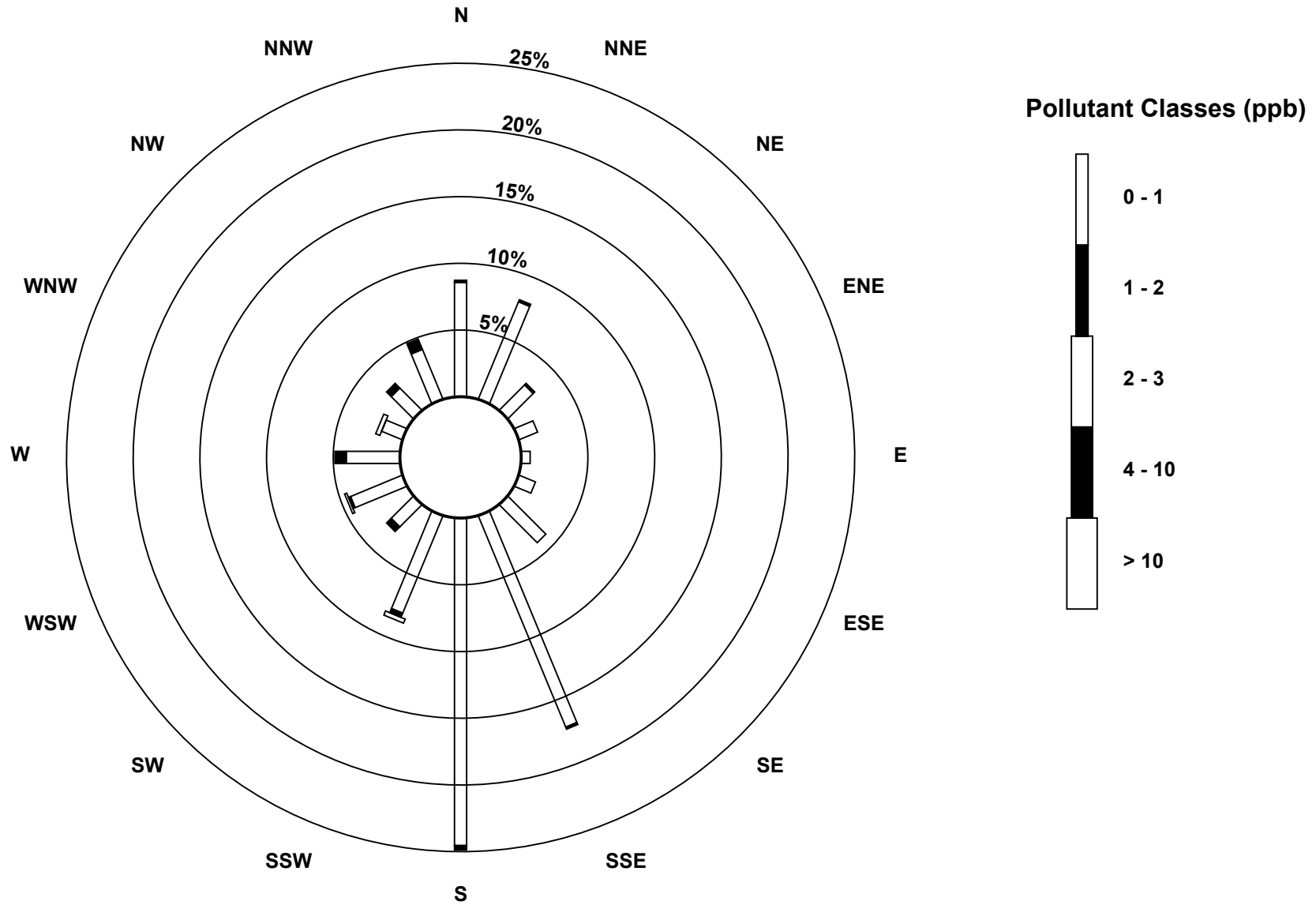
**Hourly Maximums**

**Hydrogen Sulphide (H<sub>2</sub>S) - ppb**  
**Valleyview - November 2016**



**Pollutant Rose**

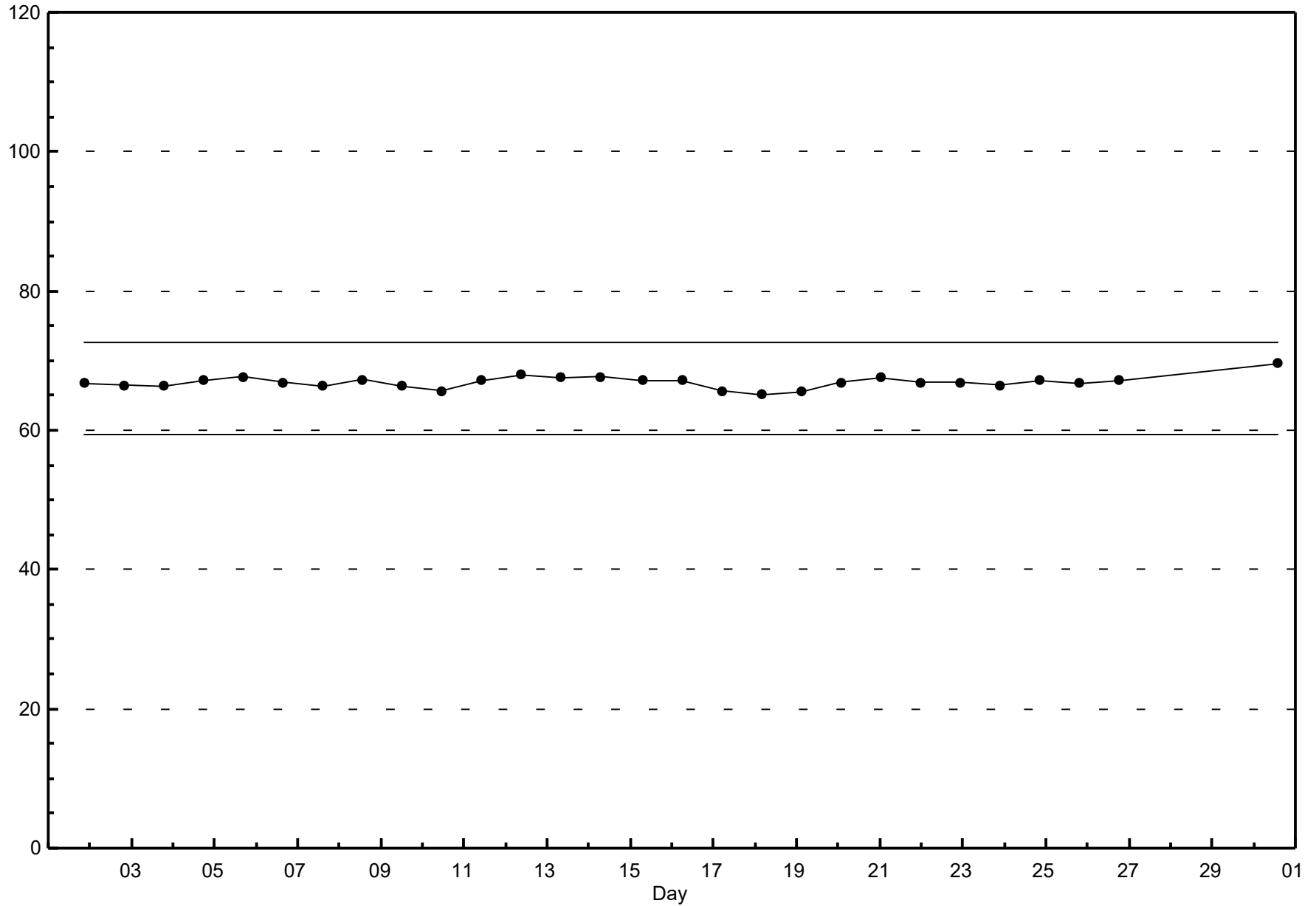
**Hydrogen Sulphide (H<sub>2</sub>S) - ppb**  
**Valleyview - November 2016**





### Span Responses

Hydrogen Sulphide (H<sub>2</sub>S)  
Valleyview - November 2016

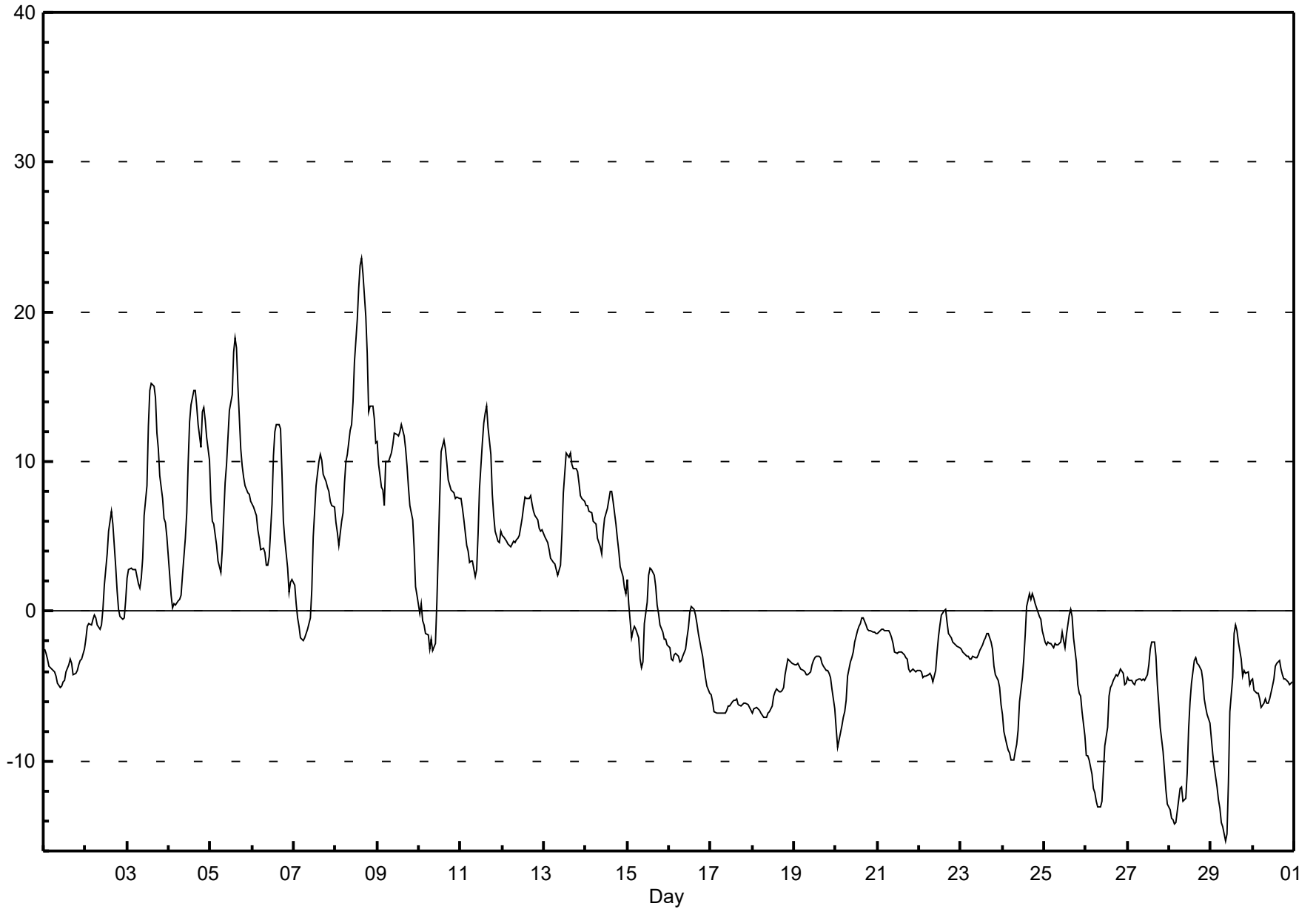


# Hourly Averages

External Temperature (ET) - °C

Valleyview - November 2016

<b>Maximum Value: 23.6 °C on Nov 8 16:00</b>		<b>Maximum Daily Average: 13.5 °C on Nov 8</b>		Hours in Service: 720 Hours of Data: 720 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																							
<b>Minimum Value: -15 °C on Nov 29 09:00</b> <b>Maximum Diurnal Average: 4.3 °C at hour 16</b> <b>Monthly Average: 0.36 °C</b>		<b>Minimum Daily Average: -8.7 °C on Nov 28</b> <b>Minimum Diurnal Average: -2.1 °C at hour 5</b> Percentiles: P <sub>1</sub> = -13.9 P <sub>10</sub> = -6.7 Q <sub>1</sub> = -4.3 Median = -1.4 Q <sub>3</sub> = 5.3 P <sub>90</sub> = 10.3 P <sub>99</sub> = 17.4																									
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	-3	-4	-4	-4	-4	-4	-5	-5	-5	-5	-5	-4	-4	-3	-4	-4	-4	-4	-4	-3	-3	-3	-3.8	-2.5	
2-Nov	-2	-1	-1	-1	-1	0	0	-1	-1	-1	0	2	4	5	6	7	6	3	1	0	0	-1	0	1	1.0	6.7	
3-Nov	2	3	3	3	3	3	2	2	2	4	6	8	12	15	15	15	14	12	11	9	8	6	6	5	7.0	15.2	
4-Nov	2	1	0	1	0	1	1	1	2	5	7	10	13	14	15	15	14	12	11	13	14	13	12	10	7.7	14.8	
5-Nov	7	6	6	4	3	3	3	4	9	10	12	13	15	17	18	18	15	11	10	9	8	8	8	7	9.3	18.3	
6-Nov	7	7	6	5	5	4	4	4	3	3	4	7	10	12	12	12	12	9	6	5	3	1	2	2	6.2	12.5	
7-Nov	2	1	0	-1	-2	-2	-2	-1	-1	0	1	5	7	8	10	11	10	9	9	8	8	7	7	7	4.2	10.5	
8-Nov	6	5	4	6	7	9	10	11	12	13	14	17	20	22	23	24	23	20	17	13	14	14	13	11	13.5	23.6	
9-Nov	11	10	8	8	7	10	10	10	11	11	12	12	12	12	12	12	11	10	8	7	6	4	2	1	9.1	12.5	
10-Nov	0	1	-1	-1	-1	-2	-3	-2	-3	-2	1	4	8	11	11	11	10	9	8	8	8	8	8	8	4.0	11.4	
11-Nov	7	7	6	4	4	3	3	3	2	3	5	8	11	13	13	14	12	11	8	6	5	5	5	5	6.9	13.7	
12-Nov	5	5	5	5	4	4	5	5	5	5	5	6	7	8	8	8	8	7	7	6	6	6	5	5	5.8	7.7	
13-Nov	5	5	5	4	4	3	3	3	2	3	5	8	9	11	10	11	10	10	9	9	9	8	8	7	6.7	10.6	
14-Nov	7	7	7	7	6	6	6	5	4	4	5	6	7	7	8	8	7	6	5	4	3	2	2	1	5.4	8.1	
15-Nov	2	1	-2	-1	-1	-1	-2	-3	-4	-3	-1	1	2	3	3	2	2	0	0	-1	-1	-2	-2	-2	-0.4	2.9	
16-Nov	-2	-3	-3	-3	-3	-3	-3	-3	-3	-3	-2	-1	0	0	0	0	-1	-1	-2	-3	-4	-4	-5	-5	-2.4	0.4	
17-Nov	-6	-6	-7	-7	-7	-7	-7	-7	-7	-7	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-7	-6.4	-5.6	
18-Nov	-7	-7	-6	-6	-7	-7	-7	-7	-7	-7	-6	-6	-5	-5	-5	-5	-5	-5	-4	-3	-3	-3	-3	-3	-5.6	-3.2	
19-Nov	-4	-4	-3	-4	-4	-4	-4	-4	-4	-4	-3	-3	-3	-3	-3	-3	-3	-4	-4	-4	-4	-4	-5	-7	-3.9	-3.0	
20-Nov	-8	-9	-9	-8	-7	-7	-6	-4	-3	-3	-3	-2	-1	-1	-1	0	0	-1	-1	-1	-1	-1	-1	-1	-3.4	-0.5	
21-Nov	-1	-1	-1	-1	-1	-1	-1	-1	-2	-2	-3	-3	-3	-3	-3	-3	-3	-3	-4	-4	-4	-4	-4	-4	-2.5	-1.2	
22-Nov	-4	-4	-4	-4	-4	-4	-4	-4	-5	-4	-3	-2	-1	0	0	0	-1	-1	-2	-2	-2	-2	-2	-2	-2.6	0.2	
23-Nov	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-2	-2	-2	-1	-1	-2	-3	-4	-4	-5	-5	-6	-3.0	-1.4	
24-Nov	-7	-8	-9	-9	-9	-10	-10	-9	-9	-8	-6	-4	-3	-2	0	1	1	1	1	1	0	0	-1	-1	-4.2	1.2	
25-Nov	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-1	-2	-2	-2	0	0	0	-2	-3	-5	-5	-6	-7	-8	-2.7	0.2	
26-Nov	-10	-10	-10	-11	-12	-12	-13	-13	-13	-13	-11	-9	-8	-6	-5	-5	-5	-4	-4	-4	-4	-4	-5	-5	-8.1	-3.9	
27-Nov	-4	-5	-5	-5	-5	-5	-5	-5	-5	-5	-4	-4	-3	-2	-2	-3	-5	-6	-8	-9	-11	-12	-13	-13	-5.5	-2.0	
28-Nov	-13	-14	-14	-14	-14	-13	-12	-12	-13	-12	-11	-8	-6	-5	-3	-3	-3	-4	-4	-5	-6	-6	-7	-7	-8.7	-3.1	
29-Nov	-8	-10	-10	-12	-13	-13	-14	-14	-15	-15	-11	-7	-4	-2	-1	-1	-2	-3	-4	-4	-4	-4	-5	-5	-7.6	-0.9	
30-Nov	-5	-5	-5	-5	-6	-6	-6	-6	-6	-6	-6	-5	-4	-4	-3	-3	-4	-4	-4	-5	-5	-5	-5	-5	-5.0	-3.3	
		-0.8	-1.2	-1.6	-1.9	-2.1	-2.0	-2.0	-2.0	-1.9	-1.5	-0.3	1.2	2.6	3.7	4.3	4.3	3.7	2.6	1.8	1.2	0.8	0.3	-0.1	-0.5	Diurnal Average	
		11.4	9.9	8.3	8.1	7.0	10.0	10.0	10.5	12.1	12.5	14.0	16.7	19.5	21.6	23.1	23.6	22.5	19.6	17.2	13.4	13.7	13.7	12.8	11.3	Diurnal Maximum	



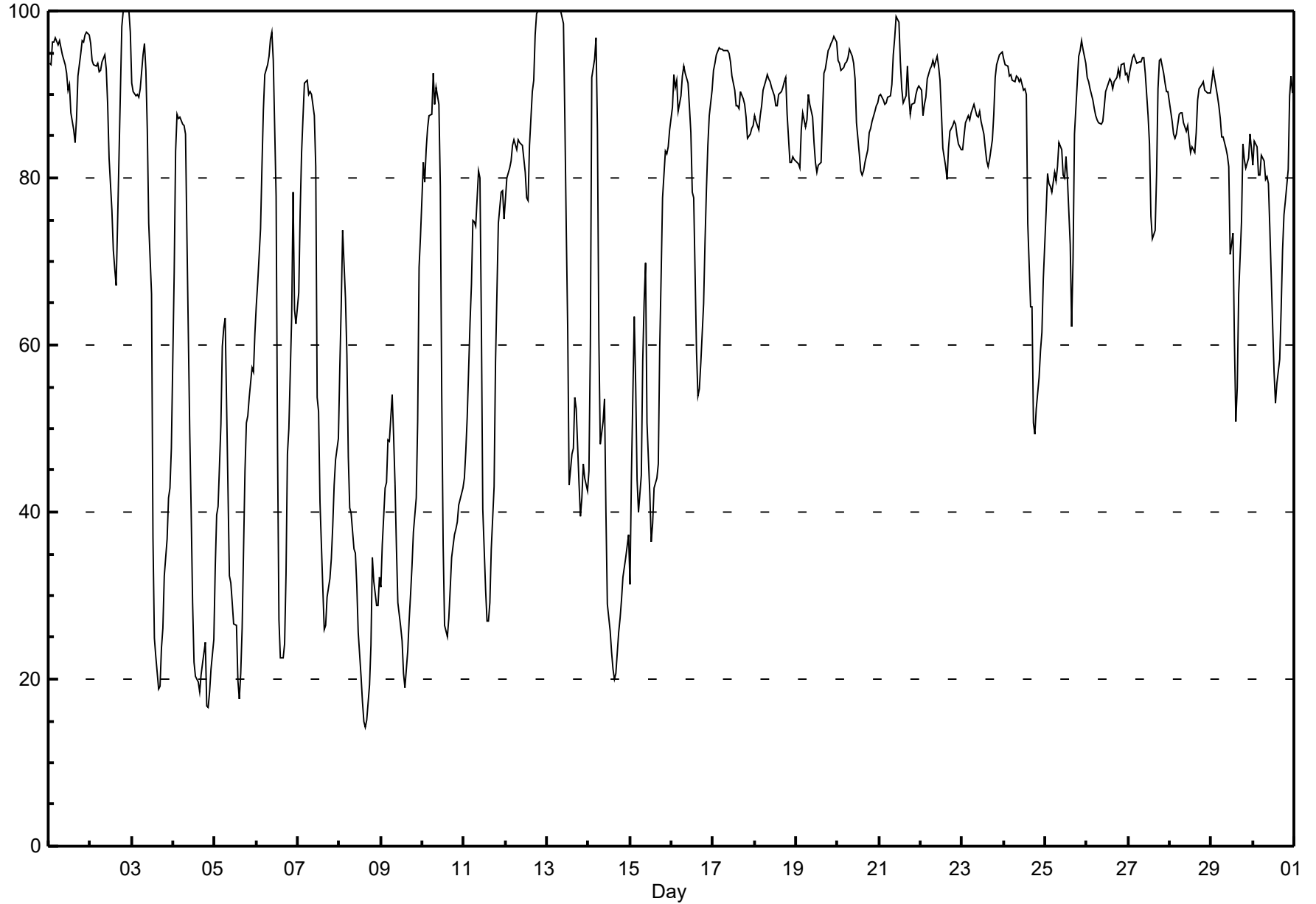
# Hourly Averages

**Relative Humidity (RH) - %**  
**Valleyview - November 2016**

Maximum Value: 100.0 % on Nov 2 20:00 Minimum Value: 14 % on Nov 8 16:00 Maximum Diurnal Average: 84.1 % at hour 5 Monthly Average: 73.25 %		Maximum Daily Average: 93.5 % on Nov 1 Minimum Daily Average: 35.7 % on Nov 8 Minimum Diurnal Average: 56.5 % at hour 16 Percentiles: P <sub>1</sub> = 18.5 P <sub>10</sub> = 31.5 Q <sub>1</sub> = 55.1 Median = 84.2 Q <sub>3</sub> = 91.3 P <sub>90</sub> = 94.5 P <sub>99</sub> = 100.0		Hours in Service: 720 Hours of Data: 720 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
1-Nov	94	94	96	96	97	96	97	96	95	94	92	91	88	86	84	87	92	95	96	96	97	98	97	93.5	97.5	
2-Nov	96	94	94	93	94	93	93	94	95	93	89	82	76	71	69	67	75	90	98	100	100	100	97	89.7	100.0	
3-Nov	91	90	90	90	90	91	95	96	93	86	75	66	37	25	23	19	19	24	26	32	37	42	43	48	59.4	96.0
4-Nov	69	83	88	87	87	86	86	85	73	49	40	29	22	20	20	19	20	22	24	17	17	18	21	25	46.2	87.7
5-Nov	33	40	41	50	60	62	63	53	32	32	29	27	26	20	18	21	26	45	51	52	54	57	57	61	42.1	63.3
6-Nov	65	67	74	81	88	92	94	95	97	97	94	78	48	27	22	22	24	33	47	50	63	78	64	63	65.2	97.4
7-Nov	66	76	83	87	91	92	90	90	90	88	81	54	52	41	31	26	26	30	32	34	38	43	46	49	59.9	91.8
8-Nov	57	65	74	66	59	47	41	40	36	35	31	26	20	17	15	14	15	19	24	35	32	29	29	32	35.7	73.7
9-Nov	31	36	43	43	49	48	54	49	43	36	29	26	25	21	19	23	27	30	34	38	42	51	69	73	39.1	73.1
10-Nov	82	80	83	86	87	88	92	89	91	89	79	54	36	26	25	27	31	35	37	38	39	41	41	43	59.1	92.5
11-Nov	44	47	51	63	67	75	75	74	81	80	63	40	31	27	29	36	43	58	66	75	78	78	75	57.6	80.9	
12-Nov	77	80	81	82	84	85	83	85	84	84	84	81	78	77	84	90	92	97	100	100	100	100	100	100	87.8	100.0
13-Nov	100	100	100	100	100	100	100	100	100	99	87	74	62	43	47	48	54	52	43	39	42	46	44	42	71.7	100.0
14-Nov	45	60	92	94	97	86	61	48	51	54	40	29	26	23	21	20	21	26	27	29	32	35	36	37	45.4	96.7
15-Nov	31	44	63	55	44	40	44	58	65	70	51	42	36	39	43	44	46	60	68	78	83	83	84	86	56.6	85.8
16-Nov	88	92	91	92	88	90	92	93	93	91	88	85	78	78	59	54	55	58	65	72	79	84	87	91	81.0	93.4
17-Nov	93	94	95	96	95	95	95	95	95	95	94	92	91	89	89	88	90	90	89	87	85	85	86	86	91.2	95.5
18-Nov	87	87	86	87	89	90	92	92	92	91	91	90	89	89	90	91	91	92	88	82	82	82	82	82	88.4	92.4
19-Nov	82	82	81	86	88	86	87	90	89	87	84	82	81	82	82	88	92	93	95	96	96	96	97	96	88.2	96.9
20-Nov	94	94	93	93	94	94	94	95	95	94	92	87	83	81	80	81	82	83	85	86	87	88	89	89	88.8	95.4
21-Nov	90	90	89	89	89	90	90	91	95	97	99	99	94	91	89	90	93	90	88	89	89	90	91	91	91.3	99.4
22-Nov	91	87	89	90	92	93	93	94	93	95	93	92	88	84	81	80	84	86	86	87	86	85	84	83	88.2	94.6
23-Nov	83	85	87	87	87	88	88	89	87	87	88	87	85	84	82	81	82	85	88	92	94	95	95	95	87.5	95.1
24-Nov	94	94	93	92	92	92	92	92	92	92	92	90	91	90	75	65	65	51	49	52	56	59	61	68	78.7	94.2
25-Nov	76	81	79	79	78	81	80	81	84	83	80	80	83	80	72	62	70	85	92	94	95	96	95	94	82.6	96.4
26-Nov	92	91	91	89	88	88	87	87	86	87	88	90	91	92	92	91	92	92	93	92	94	94	92	93	90.5	93.7
27-Nov	92	93	94	95	94	94	94	94	94	94	93	87	84	75	73	74	80	91	94	94	93	91	90	90	89.5	94.7
28-Nov	88	87	85	85	85	88	88	88	87	86	86	85	83	84	83	85	89	91	91	91	91	90	90	90	87.3	91.5
29-Nov	92	93	92	90	89	87	85	85	84	83	81	71	73	60	51	55	66	75	84	82	81	82	85	84	79.5	92.9
30-Nov	81	84	84	80	80	83	82	80	80	79	74	62	57	53	55	58	64	71	76	77	81	90	92	90	75.7	92.3
	76.9	79.6	82.7	83.5	84.1	83.9	83.6	83.3	82.4	80.8	76.3	69.2	63.9	59.2	56.7	56.5	59.8	64.3	67.7	69.5	71.2	73.6	74.3	75.0	Diurnal Average	
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	98.5	99.4	98.6	93.9	91.9	91.5	90.7	93.4	97.2	99.6	100.0	100.0	100.0	100.0	100.0	Diurnal Maximum	

**Hourly Averages**

**Relative Humidity (RH) - %  
Valleyview - November 2016**



## Hourly Averages

**Wind Speed (km/h)**  
**Wind Direction (deg)**  
**Valleyview - November 2016**

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	9	8	10	9	5	8	7	8	9	8	7	6	7	5	4	2	2	3	2	2	1	1	1	0	5.0	9.6
Dir	5	355	360	23	27	16	4	5	3	5	357	357	350	7	11	27	343	337	339	47	49	359	342	93	5	360
2 Spd	1	4	3	7	7	6	6	5	5	5	3	4	3	3	3	2	1	0	1	0	0	0	1	2	2.9	6.9
Dir	154	162	165	168	168	171	162	169	170	169	175	166	166	176	179	172	180	85	272	194	215	248	185	168	170	168
3 Spd	8	7	8	8	8	3	4	2	3	1	2	1	4	4	4	5	6	4	5	2	2	2	2	1	3.6	8.3
Dir	172	173	172	169	168	183	173	172	173	199	195	299	170	182	198	215	189	188	252	184	176	152	153	340	181	169
4 Spd	2	0	1	1	0	0	1	1	2	4	2	5	4	4	2	3	1	1	1	5	6	4	2	2	2.0	6.1
Dir	341	62	182	311	305	244	243	194	197	179	176	168	164	173	180	171	199	154	179	176	175	180	175	197	179	175
5 Spd	1	1	1	1	0	1	1	2	5	5	7	7	5	7	6	3	15	12	6	1	4	4	4	2	1.9	15.3
Dir	338	184	319	340	1	184	269	175	171	168	169	166	180	174	180	272	290	318	323	226	177	177	183	167	215	290
6 Spd	2	3	1	1	0	1	1	0	1	0	0	2	10	11	6	1	1	0	1	1	1	2	3	1.3	10.7	
Dir	161	169	306	281	181	190	187	186	1	276	251	161	194	279	281	287	273	203	150	203	156	176	196	183	243	281
7 Spd	2	1	0	0	0	0	1	0	0	0	1	1	0	0	2	5	5	6	4	5	5	5	4	3	1.9	5.8
Dir	201	197	343	327	254	278	268	256	143	252	273	171	318	267	173	167	167	169	175	176	177	182	177	186	180	169
8 Spd	2	1	1	1	2	4	4	2	8	6	7	8	5	5	5	2	3	2	2	2	4	5	3	3	3.4	7.7
Dir	195	289	273	207	199	203	186	212	176	172	172	173	171	172	168	169	168	204	228	178	181	179	190	179	181	173
9 Spd	2	2	1	1	1	13	7	5	6	7	6	6	7	13	16	13	8	7	3	1	1	1	1	2	4.6	16.2
Dir	225	236	240	298	247	310	279	236	228	239	251	246	269	277	289	299	297	280	263	138	179	189	173	207	273	289
10 Spd	1	2	1	1	1	0	1	1	1	1	1	1	2	9	7	9	11	12	11	11	11	7	7	6	4.4	12.2
Dir	163	195	199	191	251	242	178	167	331	321	238	234	193	163	165	166	164	164	164	167	168	172	169	169	169	164
11 Spd	3	2	1	0	1	1	1	1	0	0	1	2	1	0	1	1	2	0	1	0	0	1	1	1	0.6	2.6
Dir	179	185	178	249	242	204	197	332	123	238	157	176	175	269	204	277	344	30	175	265	151	179	179	180	197	179
12 Spd	2	0	0	1	1	1	1	2	0	0	2	1	1	0	0	0	0	0	1	1	0	1	2	1	0.4	2.4
Dir	334	315	126	193	325	207	178	317	236	134	167	180	168	208	123	157	35	165	180	163	19	183	176	187	190	334
13 Spd	2	1	1	2	2	3	2	2	2	3	3	3	5	4	3	2	1	2	4	3	3	2	1	2	2.3	4.8
Dir	185	186	164	175	183	173	171	190	182	180	171	166	169	162	128	147	204	183	172	180	186	197	179	163	173	169
14 Spd	1	4	2	1	2	4	13	7	5	7	7	17	17	15	15	13	9	2	7	6	2	2	1	6.1	17.3	
Dir	169	255	211	179	203	256	280	265	280	262	259	275	278	284	281	284	287	263	247	242	148	181	226	166	269	278
15 Spd	1	2	1	1	2	3	1	0	1	1	1	0	1	0	1	1	0	1	0	0	0	2	0	1	0.3	3.0
Dir	231	203	160	171	174	194	197	210	351	182	105	168	200	241	10	24	349	352	321	280	41	346	199	177	201	194
16 Spd	1	2	2	0	0	1	1	0	0	0	0	1	0	2	5	5	4	4	6	6	7	5	4	9	2.6	9.1
Dir	40	350	340	186	195	40	340	182	216	161	33	45	240	47	21	22	15	15	20	7	1	359	354	11	10	11
17 Spd	8	8	8	6	6	5	4	5	3	2	2	1	1	2	4	5	7	7	5	5	4	4	7	6	4.6	7.8
Dir	8	20	13	12	15	356	354	356	16	51	110	32	1	358	23	19	15	10	24	19	18	22	13	15	14	13
18 Spd	5	6	5	6	6	6	6	4	4	3	3	4	2	3	4	5	5	4	4	2	3	5	5	5	3.3	6.4
Dir	357	13	17	13	16	2	2	358	354	348	347	5	21	18	4	2	19	22	27	79	131	127	125	127	21	2
19 Spd	4	5	3	4	6	5	5	6	5	5	4	4	3	4	5	5	5	4	4	2	2	2	1	1	3.5	6.1
Dir	117	119	112	55	53	65	68	64	58	51	69	71	49	37	48	48	46	45	28	30	16	21	343	344	58	53
20 Spd	0	2	2	2	3	2	1	1	4	2	3	5	4	5	5	2	4	6	6	5	5	5	5	5	2.5	6.4
Dir	336	335	355	25	3	10	21	104	151	120	129	152	135	133	124	129	166	164	162	161	159	165	171	169	146	162
21 Spd	3	2	1	1	1	1	0	2	2	5	5	5	5	4	4	3	3	3	4	1	1	1	1	1	1.7	5.4
Dir	165	161	171	161	142	14	39	349	318	337	357	7	11	9	15	3	336	334	354	32	31	345	4	12	0	7
22 Spd	1	3	2	3	4	4	5	5	4	5	7	8	9	7	6	6	7	8	9	10	11	10	12	9	6.5	12.2
Dir	134	156	150	145	138	132	129	134	147	151	149	157	158	162	156	160	160	162	165	165	163	165	167	165	157	167



Peace Airshed Zone Association

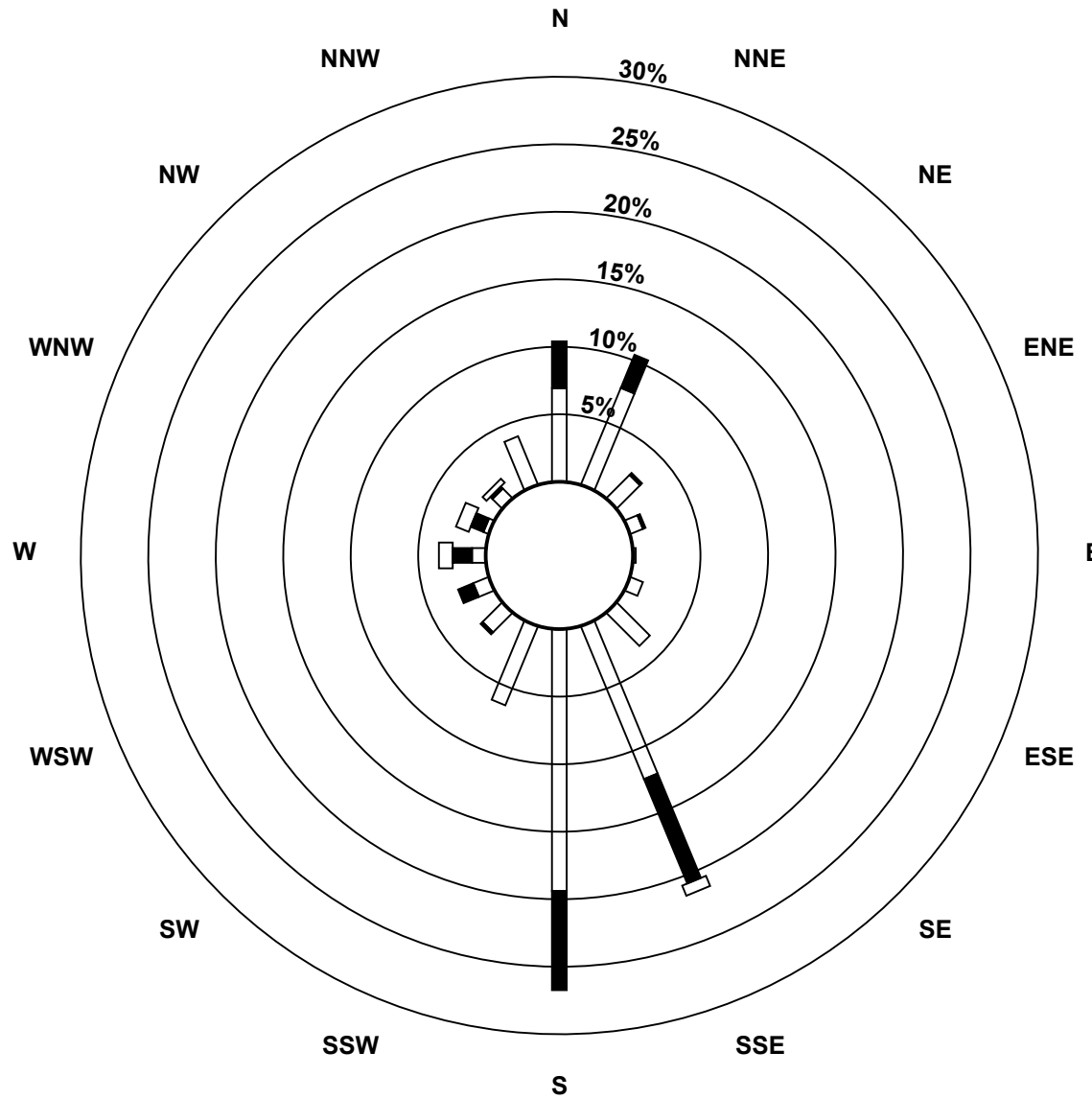
# Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Valleyview - November 2016

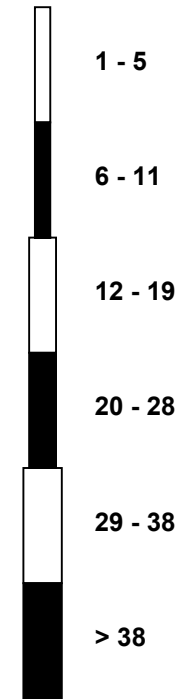
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
23 Spd	7	6	5	5	5	6	7	3	3	2	2	2	2	2	2	1	0	0	0	0	1	0	0	1	2.6	7.1	
Dir	164	164	163	166	167	163	168	175	171	158	143	166	173	175	168	183	210	167	225	180	195	198	192	193	167	164	
24 Spd	0	0	0	0	0	1	0	1	0	0	2	2	1	1	4	3	5	6	8	8	9	8	8	8	3.0	9.3	
Dir	15	249	194	211	162	262	200	279	250	217	234	178	352	164	175	176	175	174	171	172	168	170	174	174	176	168	
25 Spd	6	4	2	3	2	3	1	1	2	1	2	6	6	3	2	1	0	1	1	0	1	0	0	1	1.2	6.4	
Dir	170	175	182	177	187	177	169	338	323	127	286	291	271	253	233	162	182	193	186	164	170	322	312	331	218	170	
26 Spd	1	1	0	0	0	0	0	0	0	0	0	2	0	0	1	1	0	0	1	2	3	5	4	2	0.8	4.6	
Dir	174	200	218	174	139	301	157	159	142	170	194	25	59	99	71	8	352	195	352	20	11	0	2	8	11	0	
27 Spd	1	1	2	2	2	0	1	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	1	1	0.1	2.4	
Dir	22	2	19	26	17	316	282	254	163	199	244	208	185	211	167	170	168	168	225	247	153	202	346	345	350	26	
28 Spd	0	0	0	0	0	1	1	0	0	0	0	1	0	1	1	1	1	0	1	3	4	2	3	3	0.5	4.4	
Dir	329	159	166	164	180	174	170	166	174	166	56	149	329	196	169	180	196	172	40	26	21	14	5	357	23	21	
29 Spd	3	2	0	0	1	0	0	0	0	0	0	0	3	2	2	1	0	1	1	3	6	3	2	4	0.9	5.5	
Dir	351	318	348	175	209	127	327	199	175	148	281	170	159	168	151	150	166	166	158	167	161	154	139	174	163	161	
30 Spd	4	3	3	6	10	10	10	9	13	12	11	11	10	8	8	9	10	8	9	9	7	6	6	7	8.3	12.8	
Dir	161	148	166	172	171	170	168	170	164	168	167	167	169	169	170	170	169	170	167	170	167	169	170	171	168	164	
Spd	0.6	0.5	0.3	0.6	0.8	0.4	0.6	0.5	0.9	1.0	1.1	1.3	1.4	1.4	1.0	0.7	0.7	0.7	1.0	1.7	2.0	1.7	1.5	1.4	Diurnal Average		
Dir	150	163	119	128	143	193	203	196	175	179	179	192	202	212	217	229	228	188	183	163	158	162	166	162	Diurnal Maximum		
Spd	9.1	8.4	9.6	8.8	9.9	12.9	13.4	9.5	12.8	11.5	10.6	17.1	17.3	15.4	16.2	13.4	15.3	12.2	10.6	10.6	10.8	10.3	12.2	9.1	Diurnal Maximum		
Dir	5	355	360	23	171	310	280	170	164	168	167	275	278	284	289	299	290	164	164	164	163	165	167	11	Diurnal Maximum		
Maximum Speed Value: 17 km/h on Nov 14 13:00		Minimum Speed Value: 0 km/h on Nov 12 21:00																Hours in Service: 720									
Maximum Daily Speed Average: 8.3 km/h on Nov 30		Minimum Daily Speed Average: 0.1 km/h on Nov 27																Hours of Data: 720									
Maximum Diurnal Speed Average: 2.0 km/h at hour 21		Minimum Diurnal Speed Average: 0.3 km/h at hour 3																Hours of Missing Data: 0									
Monthly Average Velocity: 0.91 km/h 178.6 deg		Speed Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.3 Q <sub>1</sub> = 0.8 Median = 2.2 Q <sub>3</sub> = 5.0 P <sub>90</sub> = 7.5 P <sub>99</sub> = 12.4																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	88	36	0	0	0	0	124																				
NorthEast	37	7	0	0	0	0	44																				
East	11	1	0	0	0	0	12																				
SouthEast	54	6	0	0	0	0	60																				
South	235	86	5	0	0	0	326																				
SouthWest	50	6	0	0	0	0	56																				
West	36	15	9	0	0	0	60																				
NorthWest	33	2	3	0	0	0	38																				
Total	544	159	17	0	0	0	720																				

**Wind Rose**

**Wind Speed (WS) (km/h)**  
**Valleyview - November 2016**



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





# Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Valleyview - November 2016

<b>Maximum Speed: 18 km/h on Nov 14 13:00</b>		<b>Maximum Daily Speed Average: 8.4 km/h on Nov 30</b>		Hours in Service: 720																						
<b>Minimum Speed: 0 km/h on Nov 24 01:00</b>		<b>Minimum Daily Speed Average: 0.9 km/h on Nov 27</b>		Hours of Data: 720																						
<b>Maximum Diurnal Speed Average: 4.7 km/h at hour 15</b>		<b>Minimum Diurnal Speed Average: 2.6 km/h at hour 3</b>		Hours of Missing Data: 0																						
<b>Monthly Average Speed: 3.45 km/h</b>		Percentiles: P <sub>1</sub> = 0.2 P <sub>10</sub> = 0.5 Q <sub>1</sub> = 1.0 Median = 2.4 Q <sub>3</sub> = 5.1 P <sub>90</sub> = 7.6 P <sub>99</sub> = 12.6		<b>Percent Operational Time: 100.0</b>																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Nov	9	8	10	9	5	8	7	8	9	8	7	6	7	6	4	2	2	3	2	2	1	1	1	0	5.2	9.7
2-Nov	1	4	3	7	7	7	6	5	5	5	3	4	3	3	3	2	1	1	1	0	1	0	1	2	3.1	7.0
3-Nov	8	7	8	8	8	3	4	3	3	2	2	2	4	4	4	5	6	4	6	2	2	2	2	2	4.2	8.4
4-Nov	2	1	1	1	1	1	1	2	2	4	2	5	4	5	2	3	2	1	2	5	6	4	2	3	2.6	6.1
5-Nov	2	1	2	2	2	1	2	2	5	5	7	7	6	7	6	3	16	13	7	2	4	4	4	2	4.6	15.8
6-Nov	2	3	3	1	1	1	1	0	1	1	0	2	3	10	11	6	1	1	1	2	2	1	2	3	2.5	11.0
7-Nov	2	1	1	1	1	0	1	1	1	1	1	2	0	1	2	5	5	6	4	5	5	5	4	3	2.4	5.8
8-Nov	2	2	2	2	3	4	4	3	8	6	7	8	5	5	5	2	3	2	2	2	4	5	3	3	3.9	7.8
9-Nov	2	2	1	2	2	13	7	6	6	7	6	6	8	13	17	14	8	7	4	1	1	1	1	2	5.7	16.6
10-Nov	1	2	2	1	1	0	1	2	1	1	1	1	3	9	7	9	11	12	11	11	11	7	7	6	4.8	12.3
11-Nov	3	2	2	2	1	2	2	1	2	1	1	2	1	1	1	2	2	1	1	1	0	1	1	1	1.4	2.8
12-Nov	2	1	1	1	1	2	1	2	2	1	2	1	1	0	0	1	0	0	1	1	0	1	2	1	1.1	2.5
13-Nov	2	1	1	2	2	3	2	2	2	3	3	3	5	4	3	2	1	2	4	3	3	2	1	2	2.4	4.9
14-Nov	1	5	2	1	2	5	13	8	6	7	7	17	18	16	15	13	9	3	7	6	2	2	3	1	7.0	17.5
15-Nov	2	2	2	1	2	3	1	1	1	1	1	1	1	1	2	1	1	1	0	0	0	3	0	1	1.1	3.1
16-Nov	1	2	2	0	0	1	1	0	0	0	0	1	1	2	5	5	4	4	6	6	7	5	4	9	2.9	9.3
17-Nov	8	8	8	7	7	6	5	5	4	3	2	2	2	3	5	5	7	7	5	5	4	4	7	6	5.2	8.2
18-Nov	6	6	5	6	6	6	6	4	5	3	4	4	3	3	4	5	5	5	4	3	3	5	5	5	4.6	6.5
19-Nov	4	5	3	4	6	6	6	6	5	5	5	4	3	4	5	5	5	4	4	3	2	2	1	1	4.0	6.2
20-Nov	0	2	2	2	3	2	1	1	4	2	3	5	4	5	5	2	4	6	6	5	6	5	5	5	3.6	6.4
21-Nov	3	2	1	1	1	1	0	2	2	5	5	6	5	4	4	3	3	4	5	1	1	1	1	1	2.6	5.5
22-Nov	1	3	2	3	5	4	5	5	4	5	7	8	9	7	7	6	8	8	9	11	11	10	12	9	6.7	12.3
23-Nov	7	6	5	5	5	6	7	3	3	2	2	2	2	2	2	1	0	1	0	0	1	0	0	1	2.7	7.3
24-Nov	0	0	0	0	0	1	1	1	1	1	2	2	2	2	4	4	5	6	8	8	9	8	9	8	3.4	9.3
25-Nov	6	4	2	4	2	3	1	2	3	1	3	6	7	3	3	1	0	1	1	1	1	1	1	1	2.4	6.8
26-Nov	1	1	0	0	0	0	0	0	0	0	0	2	3	1	1	1	1	0	1	2	3	5	4	3	1.3	4.7
27-Nov	1	1	2	2	2	0	1	1	1	0	1	1	1	2	1	1	1	0	0	0	0	0	1	1	0.9	2.4
28-Nov	1	1	0	0	0	1	1	0	0	0	1	1	1	1	1	1	1	1	1	3	5	3	3	3	1.2	4.5
29-Nov	3	2	0	0	1	0	0	0	0	0	0	1	3	2	2	1	0	1	1	3	6	3	2	4	1.5	5.6
30-Nov	4	3	3	6	10	10	10	10	13	12	11	11	10	8	8	9	10	8	9	9	7	7	6	7	8.4	12.9
		3.0	3.0	2.6	2.8	2.9	3.4	3.3	2.8	3.3	3.0	3.3	4.1	4.1	4.4	4.7	3.9	4.0	3.7	3.8	3.4	3.6	3.3	3.3	3.3	Diurnal Average
		9.3	8.5	9.7	9.0	10.0	13.3	13.5	9.5	12.9	11.6	10.7	17.3	17.5	15.6	16.6	13.6	15.8	12.9	10.7	10.7	10.9	10.4	12.3	9.3	Diurnal Maximum

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

# Hourly Standard Deviations

Wind Direction (WD) - deg  
Valleyview - November 2016

Maximum Value: 99.7 deg on Nov 24 01:00																						Hours in Service:	720		
Minimum Value: 4.9 deg on Nov 13 20:00																						Hours of Data:	720		
Percentiles: P <sub>1</sub> = 6.1 P <sub>10</sub> = 8.1 Q <sub>1</sub> = 10.9 Median = 19.8 Q <sub>3</sub> = 48.2 P <sub>90</sub> = 76.1 P <sub>99</sub> = 91.4																						Hours of Missing Data:	0		
																						Hours of Calibration:	0		
																						Percent Operational Time:	100.0		
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Nov	10	8	6	14	13	11	7	7	7	10	9	9	11	17	21	22	40	7	10	33	21	25	21	84	84.3
2-Nov	33	9	15	8	8	18	9	11	6	7	22	9	16	14	21	15	28	88	60	96	70	78	66	19	95.9
3-Nov	7	9	7	7	7	13	10	71	23	63	29	79	44	9	23	23	10	12	31	17	18	18	7	76	78.5
4-Nov	35	84	61	39	85	92	45	45	17	8	19	9	13	8	24	33	78	78	74	6	7	7	33	41	92.2
5-Nov	88	61	76	89	90	69	84	58	10	8	6	6	24	9	10	45	14	22	17	48	13	8	16	13	89.7
6-Nov	14	15	75	70	57	28	34	33	67	64	91	24	42	21	12	14	50	50	80	27	58	23	13	9	91.0
7-Nov	15	47	86	94	90	63	56	66	81	93	64	63	81	78	12	9	8	7	11	10	7	7	12	12	93.8
8-Nov	14	76	84	82	26	27	10	41	7	11	6	8	10	10	10	47	23	36	45	31	7	5	10	12	84.1
9-Nov	28	30	51	52	53	14	33	29	24	17	16	19	19	13	13	10	10	13	85	82	45	71	33	18	84.6
10-Nov	37	19	11	47	42	44	11	78	40	61	73	65	44	11	8	7	8	6	7	8	6	7	7	9	77.5
11-Nov	21	23	63	81	29	36	54	86	84	78	58	17	34	84	48	49	43	82	52	57	73	45	12	64	85.6
12-Nov	16	76	54	32	69	48	80	49	91	92	38	22	47	69	65	89	85	26	14	13	91	18	7	8	91.7
13-Nov	9	11	19	8	6	12	8	9	9	8	11	14	10	12	11	24	41	14	6	5	8	18	32	22	41.4
14-Nov	21	40	25	27	28	28	7	19	20	19	15	9	10	10	10	12	14	43	11	10	29	34	38	23	43.4
15-Nov	30	43	20	16	26	7	60	68	89	23	77	87	42	76	34	24	68	29	68	73	78	35	55	9	89.0
16-Nov	65	14	71	20	22	89	58	65	34	85	60	60	75	41	15	11	8	11	11	9	10	15	10	10	88.9
17-Nov	15	16	18	23	23	30	29	31	42	42	55	89	74	64	16	16	13	13	14	15	15	14	15	15	88.8
18-Nov	8	10	12	13	13	10	9	10	10	16	15	15	16	16	13	10	10	14	13	49	12	15	11	11	49.3
19-Nov	16	17	19	15	8	18	17	16	16	17	22	23	20	13	11	10	9	11	11	11	16	14	42	57	56.8
20-Nov	84	25	27	25	21	37	48	36	16	13	10	14	14	12	10	17	14	10	9	12	10	10	10	11	84.3
21-Nov	11	12	18	18	61	49	61	73	20	16	14	11	12	15	12	21	8	23	25	20	42	16	53	48	73.0
22-Nov	35	17	14	14	15	14	10	13	16	12	12	11	11	11	12	12	10	7	10	8	9	9	7	10	35.1
23-Nov	11	10	12	10	11	11	9	10	11	13	16	13	15	19	16	32	42	67	66	45	16	31	64	20	66.7
24-Nov	100	69	44	65	50	78	47	75	43	42	40	16	67	85	14	26	28	7	6	7	7	7	8	8	99.7
25-Nov	7	10	26	32	16	9	69	92	57	63	84	29	21	37	35	27	34	20	24	63	23	74	73	70	91.5
26-Nov	34	15	88	69	75	87	58	27	87	84	73	37	80	87	59	30	89	64	54	14	10	11	10	41	89.5
27-Nov	40	39	19	13	16	38	77	67	43	44	56	35	28	36	35	41	19	17	62	58	47	69	85	66	85.3
28-Nov	60	88	55	40	39	18	25	78	47	66	80	90	44	58	11	20	18	50	85	22	14	41	22	26	90.1
29-Nov	17	18	86	40	27	86	85	72	61	48	76	62	12	21	17	16	38	21	71	9	10	10	13	10	85.9
30-Nov	12	12	17	7	6	7	8	7	7	7	8	8	7	8	7	8	7	7	8	8	8	8	9	7	16.7
	99.7	88.5	88.2	93.8	90.1	92.2	84.5	91.5	91.1	92.7	91.0	90.1	81.5	87.3	65.3	88.8	89.5	88.2	84.8	95.9	90.5	78.0	85.3	84.3	

PAZA

Donnelly Station

Monthly Summary Tables, Graphs and  
Roses

## Hourly Averages

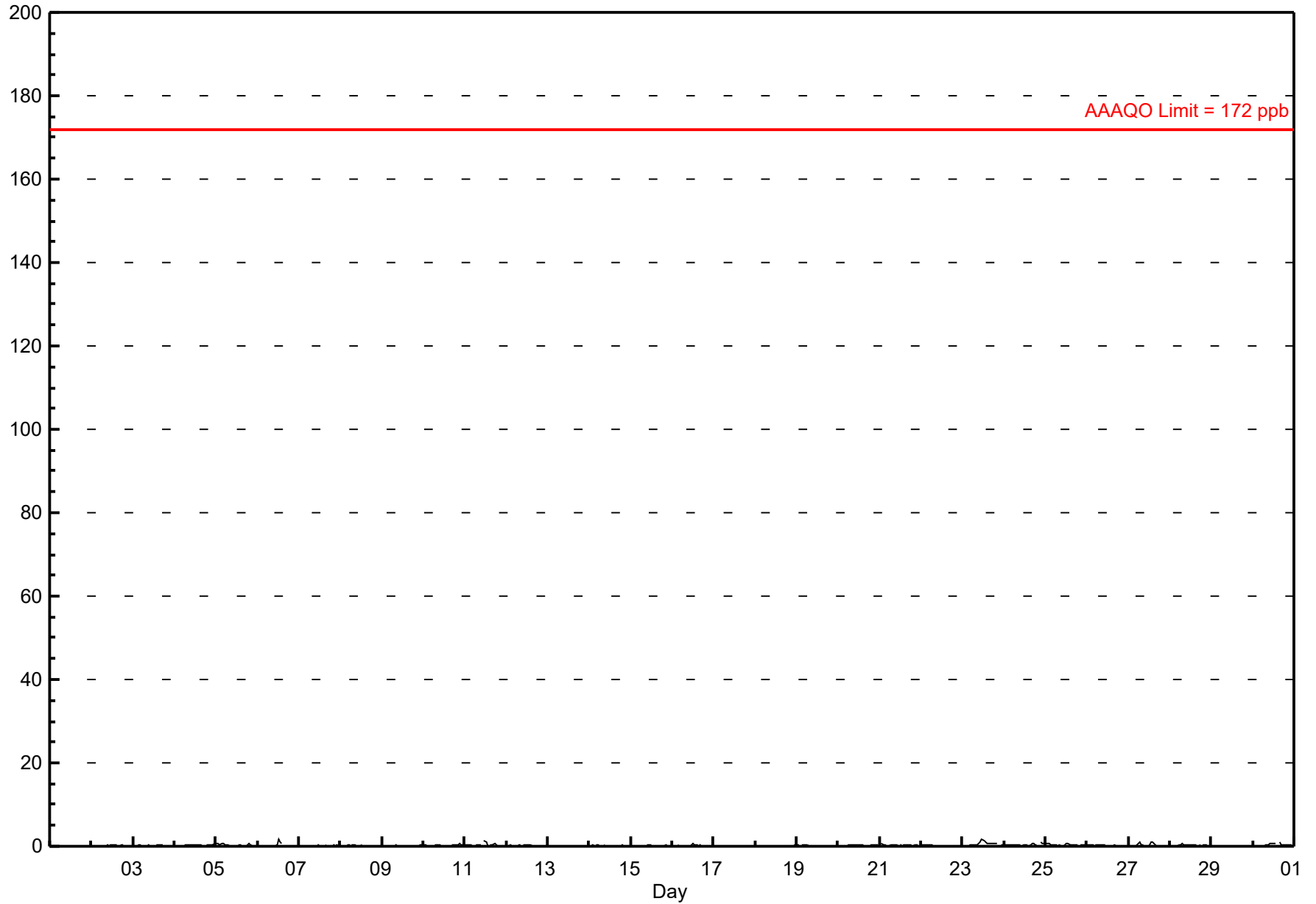
Sulphur Dioxide (SO<sub>2</sub>) - ppb

Donnelly - November 2016

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 1.8 ppb on Nov 23 12:00 Maximum Daily Average: 0.6 ppb on Nov 23											Hours in Service: 720 Hours of Data: 686																																					
Minimum Value: 0 ppb on Nov 5 18:00 Minimum Daily Average: 0.0 ppb on Nov 13 Maximum Diurnal Average: 0.3 ppb at hour 13 Minimum Diurnal Average: 0.1 ppb at hour 3 Monthly Average: 0.19 ppb Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.1 Median = 0.1 Q <sub>3</sub> = 0.2 P <sub>90</sub> = 0.4 P <sub>99</sub> = 1.0											Hours of Missing Data: 34 Hours of Calibration: 33 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	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																						
2-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	0.3																						
3-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	0.4																						
4-Nov	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	0.6																						
5-Nov	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	A	0	0	1	1	0	0	0	0.3	0.8																						
6-Nov	0	0	0	0	0	0	0	0	0	0	0	2	1	1	A	0	0	0	0	0	0	0	0	0	0.2	1.6																						
7-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																						
8-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																						
9-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	0.1	0.4																						
10-Nov	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	1	1	0	0	0.2	0.7																						
11-Nov	0	0	0	0	0	0	0	0	0	0	A	1	1	0	0	0	0	1	0	0	0	0	0	0	0.3	1.2																						
12-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	0.5																						
13-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																						
14-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																						
15-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																						
16-Nov	0	0	0	0	0	A	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.6																						
17-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																						
18-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																						
19-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																						
20-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	0.2	0.3																						
21-Nov	A	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.2	0.5																						
22-Nov	0	0	0	0	0	0	0	0	0	D	C	C	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4																						
23-Nov	0	0	0	0	0	0	0	0	0	0	1	1	2	1	1	1	1	1	1	1	1	A	0	0	0.6	1.8																						
24-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	A	1	1	1	0.3	0.9																						
25-Nov	1	1	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	A	0	0	0	0	0.4	0.7																						
26-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																						
27-Nov	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	A	0	0	0	0	0	0	0.2	1.0																						
28-Nov	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.2	0.6																						
29-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	0.1																						
30-Nov	0	0	0	0	0	0	0	0	0	0	1	1	1	1	A	1	0	0	0	0	0	0	0	0	0.3	0.9																						
																								0.2	0.2	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	Diurnal Average
																								0.7	0.8	0.5	0.7	0.6	0.5	0.9	0.6	0.4	0.8	1.1	1.8	1.6	1.0	1.0	0.9	0.8	0.7	0.6	0.6	0.5	0.9	0.7	0.6	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 (SO<sub>2</sub>) - ppb**  
**Donnelly - November 2016**



## Hourly Maximums

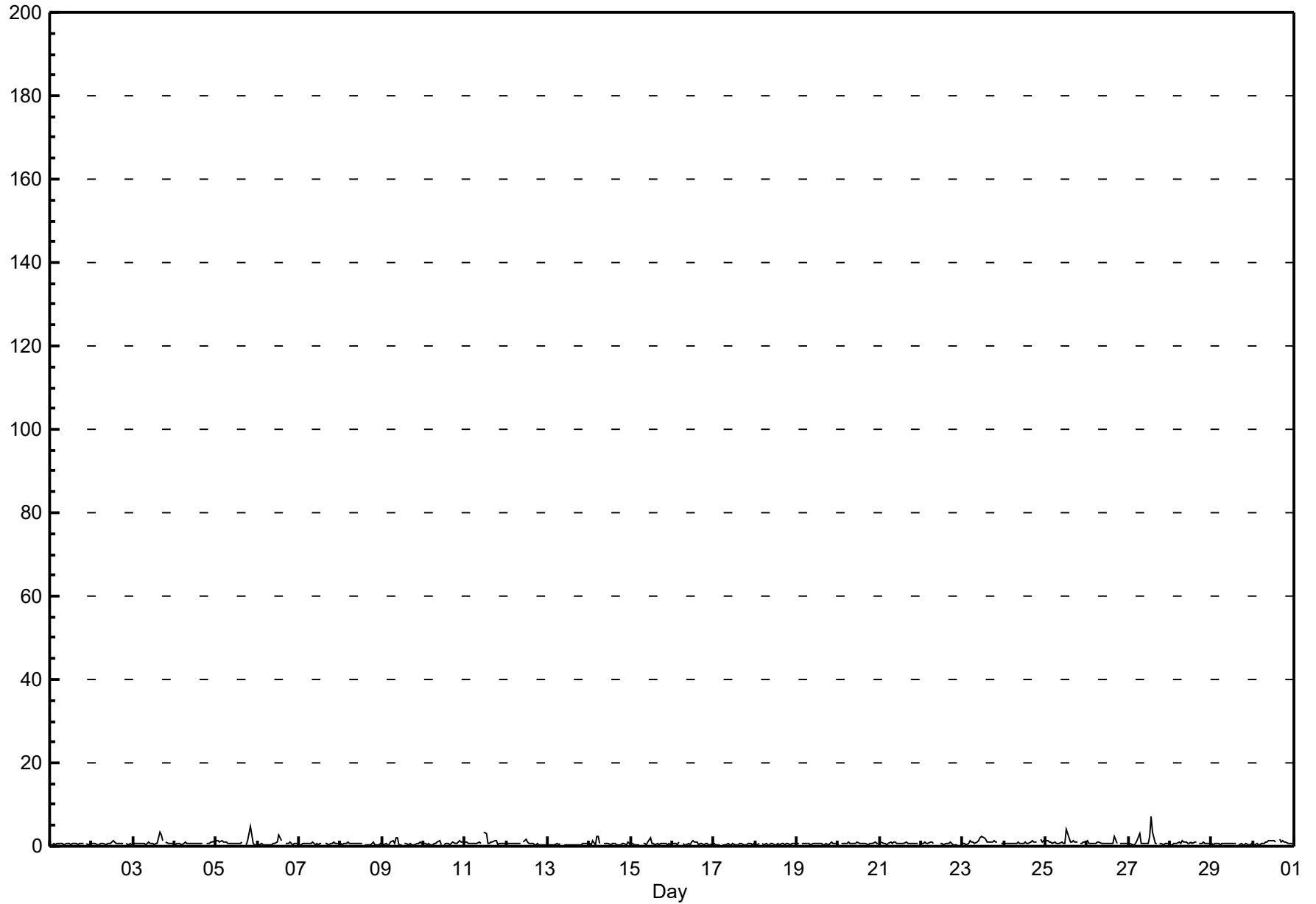
Sulphur Dioxide (SO<sub>2</sub>) - ppb

Donnelly - November 2016

Maximum Value: 7.2 ppb on Nov 27 14:00		Maximum Daily Average: 1.2 ppb on Nov 27		Hours in Service: 720																							
Minimum Value: 0 ppb on Nov 13 01:00		Minimum Daily Average: 0.5 ppb on Nov 13		Hours of Data: 686																							
Maximum Diurnal Average: 1.1 ppb at hour 13		Minimum Diurnal Average: 0.6 ppb at hour 4		Hours of Missing Data: 34																							
Monthly Average: 0.75 ppb		Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 0.4 Q <sub>1</sub> = 0.5 Median = 0.6 Q <sub>3</sub> = 0.8 P <sub>90</sub> = 1.1 P <sub>99</sub> = 3.0		Hours of Calibration: 33																							
				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	0	0	1	0	1	1	1	1	0	1	1	1	0	1	1	1	0	1	1	1	A	1	1	1	0.5	0.7	
2-Nov	1	1	1	0	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	A	1	0	1	0	0.6	1.4	
3-Nov	0	1	1	1	1	1	1	0	1	1	1	1	0	1	1	4	3	1	A	1	1	1	1	1	0.9	3.5	
4-Nov	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	0.7	1.3	
5-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	0	1	3	5	1	0	0	1.1	4.9		
6-Nov	0	0	1	0	0	0	0	1	1	1	1	3	2	1	A	1	1	1	1	0	1	1	1	0.8	2.7		
7-Nov	0	0	1	1	1	1	1	1	1	0	1	1	1	A	1	1	0	1	1	1	1	1	1	0.6	1.0		
8-Nov	1	1	1	1	1	1	1	1	1	1	1	1	A	0	1	0	0	1	1	0	0	0	1	0.6	0.9		
9-Nov	1	0	1	0	0	1	1	1	2	2	0	A	1	1	1	0	1	0	0	0	1	1	1	0.7	2.0		
10-Nov	1	1	0	1	0	0	1	1	1	1	0	A	0	1	1	0	1	1	1	1	1	1	1	0.7	1.3		
11-Nov	1	1	1	1	1	1	1	1	1	1	A	3	3	1	1	1	1	1	1	0	1	1	1	1.0	3.4		
12-Nov	0	1	1	1	1	1	1	1	1	A	1	2	1	1	1	1	0	0	1	0	0	0	0	0.7	1.6		
13-Nov	0	0	0	0	0	1	0	1	A	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0.5	0.6		
14-Nov	1	0	1	0	2	2	1	A	1	1	1	1	0	1	1	1	0	0	1	1	1	0	1	0.8	2.4		
15-Nov	0	1	0	0	0	0	A	1	1	0	1	2	1	1	0	1	0	1	1	1	1	1	0	0.6	1.9		
16-Nov	1	1	1	0	1	A	1	0	0	1	0	1	1	1	1	1	1	0	1	1	0	1	1	0.6	1.2		
17-Nov	1	0	0	0	A	0	0	0	1	1	0	1	0	0	1	1	0	0	0	1	1	0	1	0.5	0.7		
18-Nov	1	0	1	A	1	0	1	0	0	1	1	0	1	0	1	1	0	1	1	0	1	1	1	0.5	0.8		
19-Nov	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	1	1	1	1	1	0.6	0.9		
20-Nov	0	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0.7	0.9		
21-Nov	A	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.2		
22-Nov	1	1	1	1	1	1	1	1	D	C	C	1	1	0	1	1	1	1	0	0	0	0	A	0	0.7	1.0	
23-Nov	1	1	0	1	1	1	1	1	1	2	2	2	2	2	1	1	1	1	1	1	1	A	1	1.1	2.5		
24-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	2	1	0.9	1.5		
25-Nov	1	1	1	1	1	1	1	1	1	1	1	4	3	1	1	1	1	1	1	A	1	1	1	1.2	4.1		
26-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	A	1	1	1	1	1	0.7	2.4		
27-Nov	1	1	0	0	1	1	3	1	1	1	1	3	7	3	1	1	A	1	1	0	1	1	1	1.2	7.2		
28-Nov	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	0.8	1.4		
29-Nov	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	0	0	1	1	0	0.6	0.8		
30-Nov	0	0	1	0	0	1	1	1	1	1	1	1	1	1	A	2	1	1	1	1	1	1	1	0.9	1.6		
		0.6	0.6	0.7	0.6	0.7	0.7	0.8	0.7	0.8	0.8	0.7	0.9	1.1	1.1	0.8	0.9	0.8	0.7	0.7	0.7	0.8	0.7	0.7	Diurnal Average		
		1.4	1.4	1.3	1.3	2.3	2.4	2.9	1.4	1.9	2.0	2.0	3.4	4.1	7.2	3.4	3.5	2.6	1.4	1.5	3.1	4.9	1.5	1.2	1.4	Diurnal Maximum	
C - Calibration		D - DAS Failure						A - Automated Daily Zero Span																			

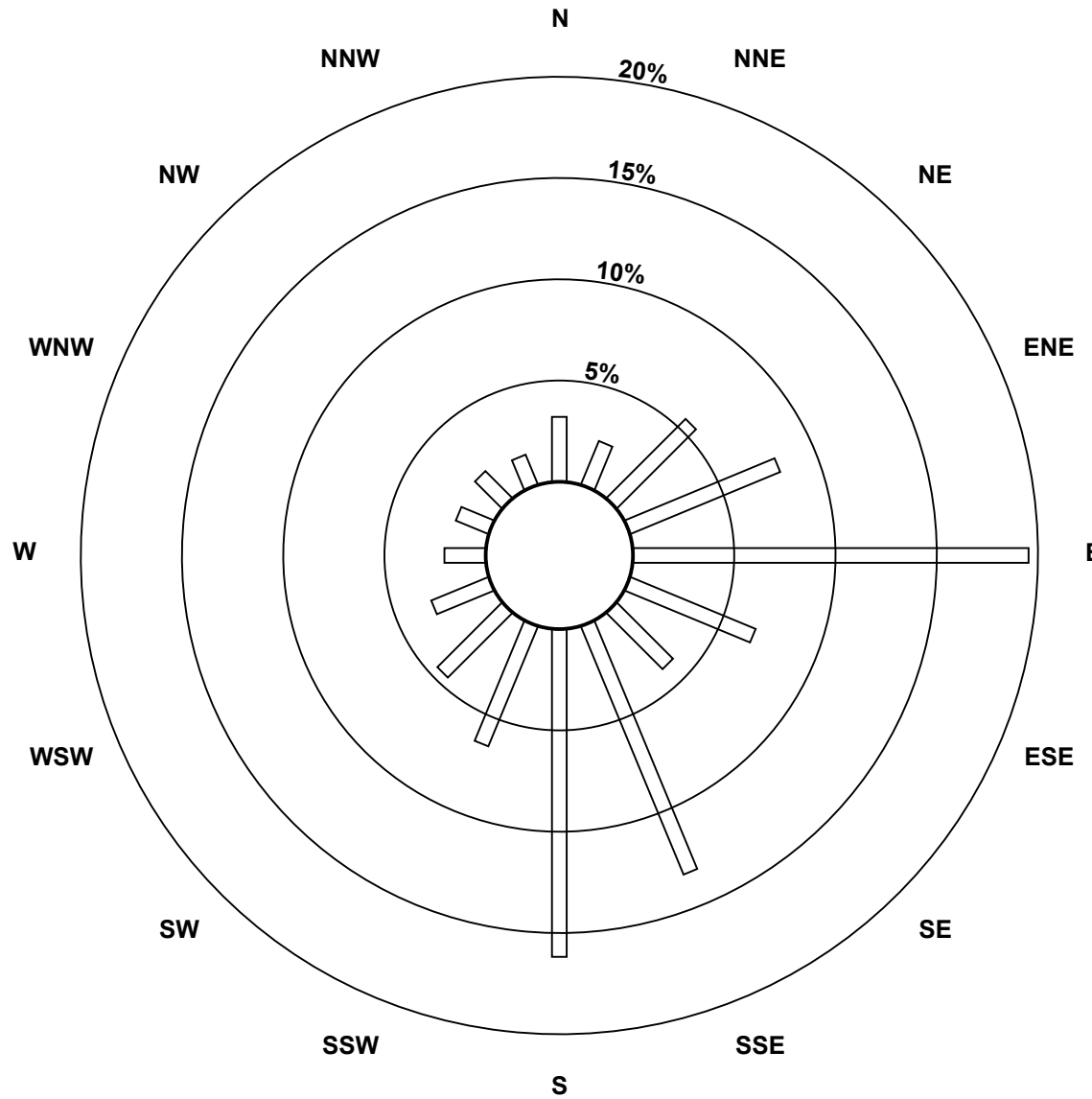
**Hourly Maximums**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Donnelly - November 2016**

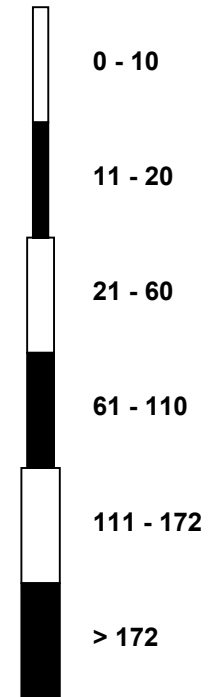


**Pollutant Rose**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Donnelly - November 2016**



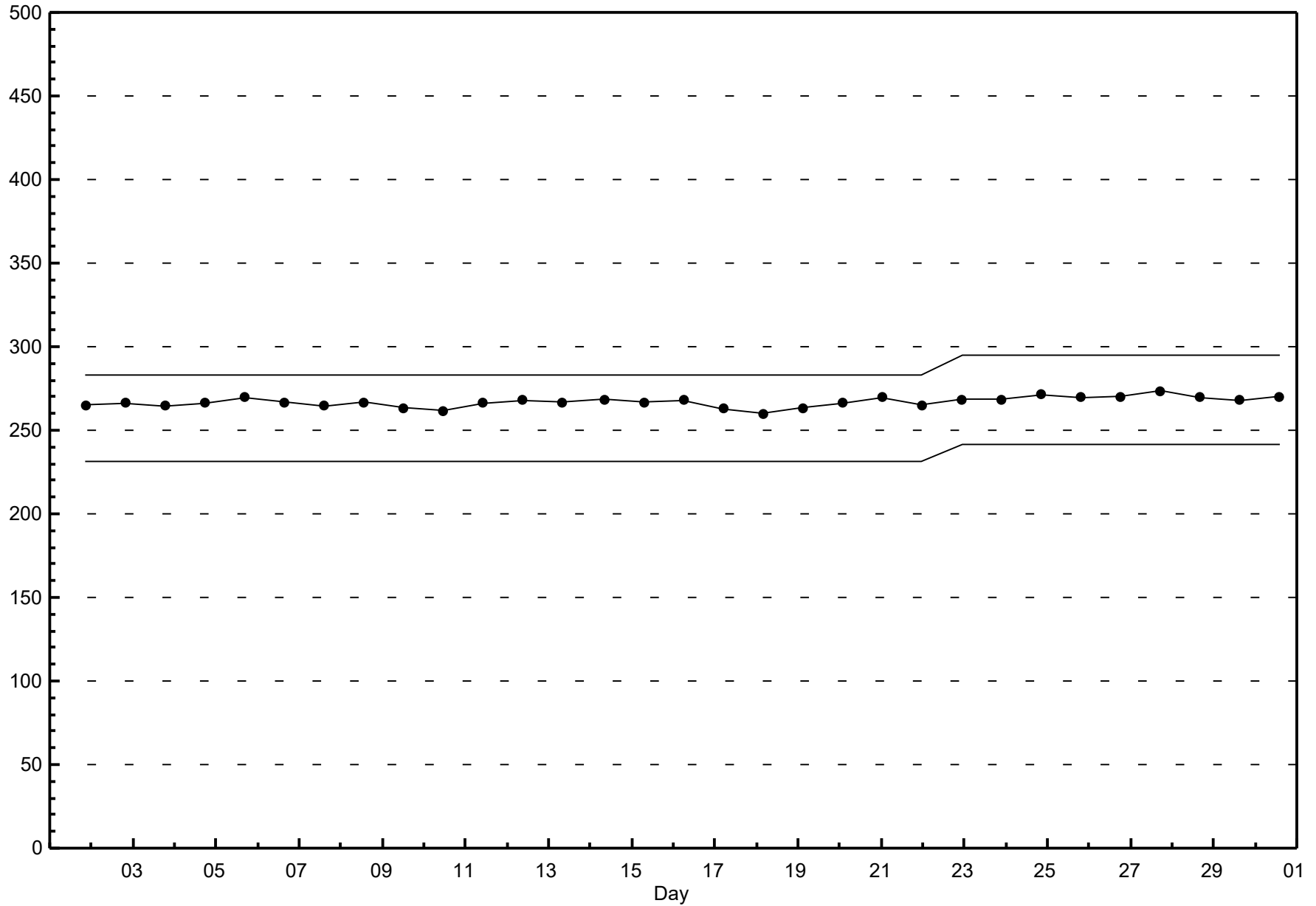
**Pollutant Classes (ppb)**





### Span Responses

Sulphur Dioxide (SO<sub>2</sub>)  
Donnelly - November 2016



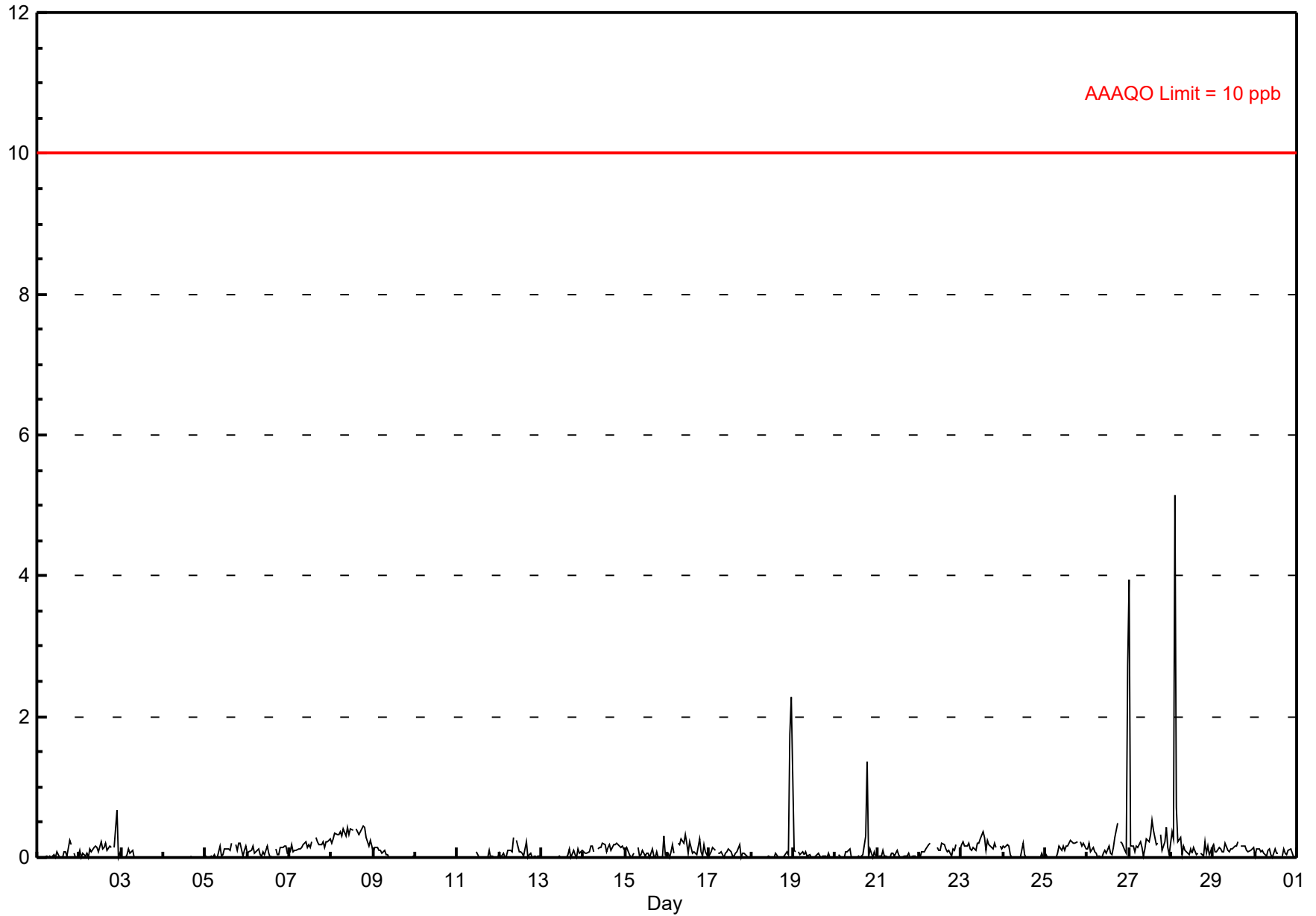
## Hourly Averages

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

Donnelly - November 2016

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 5.2 ppb on Nov 28 03:00      Maximum Daily Average: 0.4 ppb on Nov 28		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 1 02:00 Maximum Diurnal Average: 0.2 ppb at hour 3 Monthly Average: 0.11 ppb		Minimum Daily Average: 0.0 ppb on Nov 10 Minimum Diurnal Average: 0.1 ppb at hour 7 Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.1 Q <sub>3</sub> = 0.1 P <sub>90</sub> = 0.2 P <sub>99</sub> = 0.5																								
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.0	0.2
2-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	1	0	0	0.1	0.7
3-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
4-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
5-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
6-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
7-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
8-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
9-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	0.1
10-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	0.0
11-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
12-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	0.3
13-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
14-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
15-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
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	0.1	0.3
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	0.1	0.2
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	0.2	2.3
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	0.1
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	0.1	1.4
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	0.1
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	0.1	0.2
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	0.2	0.4
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	0.0	0.2
25-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	0.1	0.2
26-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	0.2	2.7
27-Nov	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	3.9
28-Nov	0	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	5.2
29-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	0.1	0.2
30-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	0.1	0.1
																								Diurnal Average	Diurnal Maximum	
																								0.2	0.2	
																								3.9	2.7	

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



## Hourly Maximums

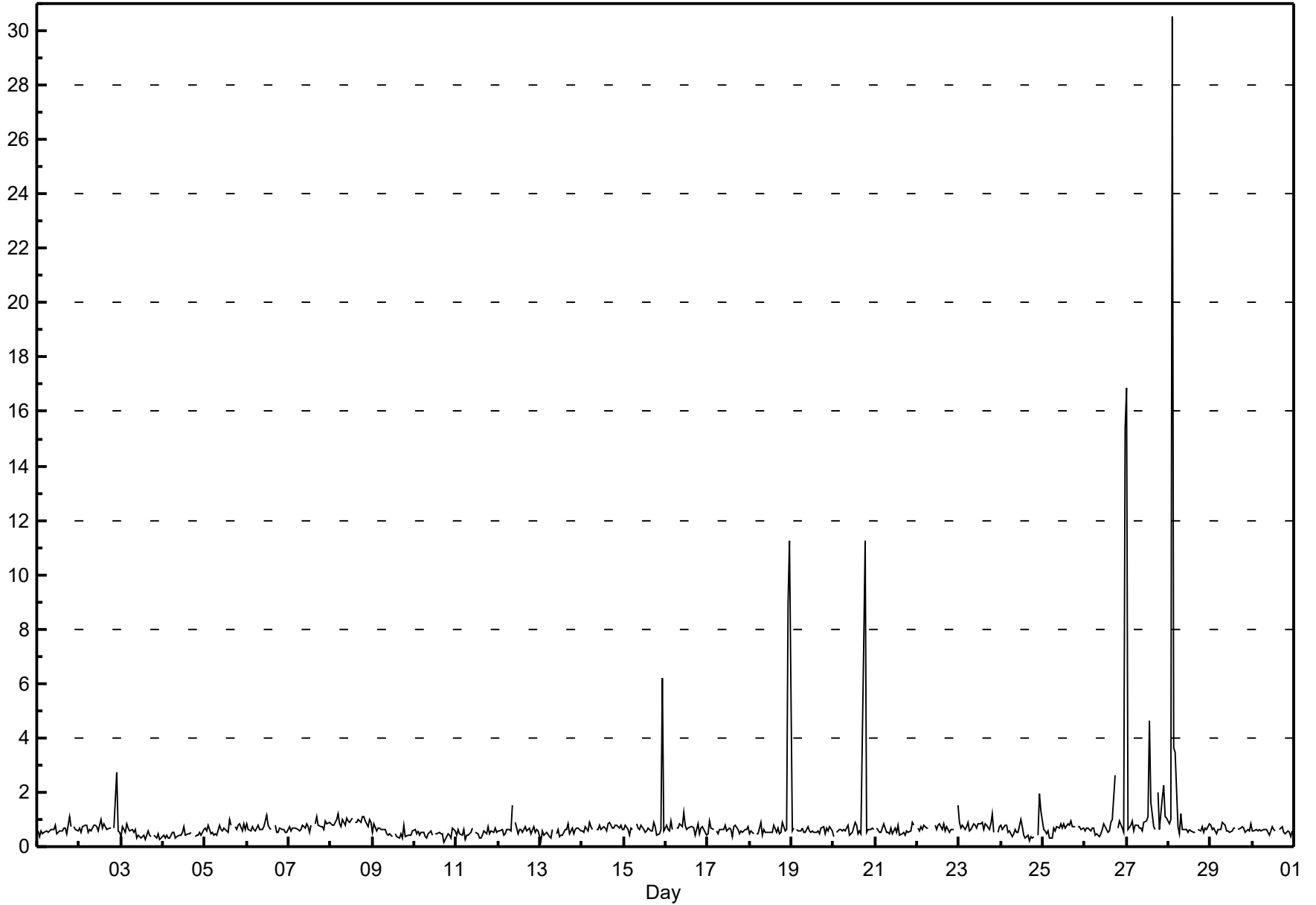
Hydrogen Sulphide (H<sub>2</sub>S) - ppb

Donnelly - November 2016

Maximum Value: 30.5 ppb on Nov 28 03:00		Maximum Daily Average: 2.2 ppb on Nov 28		Hours in Service: 720																						
Minimum Value: 0 ppb on Nov 10 18:00		Minimum Daily Average: 0.4 ppb on Nov 4		Hours of Data: 686																						
Maximum Diurnal Average: 1.6 ppb at hour 3		Minimum Diurnal Average: 0.6 ppb at hour 7		Hours of Missing Data: 34																						
Monthly Average: 0.81 ppb		Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 0.4 Q <sub>1</sub> = 0.5 Median = 0.6 Q <sub>3</sub> = 0.7 P <sub>90</sub> = 0.9 P <sub>99</sub> = 7.0		Hours of Calibration: 34																						
				Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Nov	1	0	1	0	1	1	1	1	1	1	1	0	0	1	1	1	1	0	1	1	A	1	1	1	0.6	1.1
2-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	3	1	1	0.8	2.8
3-Nov	0	1	1	1	1	1	1	1	1	0	0	0	0	0	1	0	0	A	0	0	0	0	0	0	0.5	0.8
4-Nov	0	0	0	0	0	1	1	0	0	0	0	1	1	0	0	1	A	0	0	0	0	1	0	1	0.4	0.7
5-Nov	1	1	1	0	1	0	0	0	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	0.7	1.0
6-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	1.2
7-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	1.1
8-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	0.9	1.2
9-Nov	1	1	1	1	1	1	1	1	0	0	0	0	A	0	0	0	0	0	1	0	0	0	0	1	0.5	0.8
10-Nov	1	0	1	0	1	1	0	0	0	1	0	A	0	0	1	0	0	0	0	0	0	0	1	1	0.5	0.7
11-Nov	0	1	0	0	1	0	0	0	1	1	A	1	0	0	0	0	1	0	1	0	1	1	1	1	0.5	0.7
12-Nov	1	1	1	0	0	1	1	1	2	A	1	0	1	1	1	1	1	1	1	0	1	1	1	1	0.6	1.5
13-Nov	0	1	0	0	1	0	0	1	A	0	1	0	0	0	1	1	1	0	1	0	1	1	1	1	0.5	0.8
14-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	0.7	0.9
15-Nov	1	1	1	0	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	6	1	0.9	6.2
16-Nov	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	0	0.7	1.2
17-Nov	0	1	1	1	A	1	0	1	1	1	1	1	1	0	1	1	1	1	0	1	1	1	1	1	0.6	1.0
18-Nov	0	1	0	A	0	0	1	0	1	1	1	0	1	1	1	1	0	1	1	1	1	1	9	11	1.4	11.2
19-Nov	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	1	1	0.6	0.8
20-Nov	0	A	1	1	1	1	1	1	1	0	0	1	1	1	0	1	0	8	11	1	1	1	1	1	1.4	11.2
21-Nov	A	1	1	1	1	1	1	1	0	1	0	1	1	1	0	0	1	0	1	1	1	1	1	A	0.6	0.9
22-Nov	1	1	1	1	1	1	1	C	C	C	1	1	1	1	1	1	1	1	1	1	1	1	A	2	0.7	1.5
23-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.2
24-Nov	1	1	1	1	1	1	0	0	1	1	1	1	1	0	0	0	0	0	0	0	A	0	2	1	0.6	2.0
25-Nov	1	1	0	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	0.7	0.9
26-Nov	1	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	1	3	A	1	1	1	1	15	1.4	15.4
27-Nov	17	1	1	1	1	1	1	1	1	1	1	1	1	5	2	1	1	A	2	1	2	2	1	1	1.9	16.9
28-Nov	1	1	31	4	3	1	0	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	2.2	30.5
29-Nov	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	0.7	0.9
30-Nov	1	1	1	1	1	1	1	1	1	1	0	1	1	1	A	1	1	1	1	0	1	1	0	1	0.6	0.8
1.2		0.6	1.6	0.7	0.7	0.6	0.6	0.6	0.7	0.6	0.7	0.6	0.7	0.7	0.6	0.7	0.7	0.9	1.1	0.6	0.7	0.8	1.2	1.6	Diurnal Average	
16.9		1.0	30.5	3.6	3.4	0.9	0.9	1.2	1.5	1.0	1.2	1.2	1.1	4.6	1.6	0.9	1.1	7.5	11.2	1.2	1.8	2.8	8.9	15.4	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																								

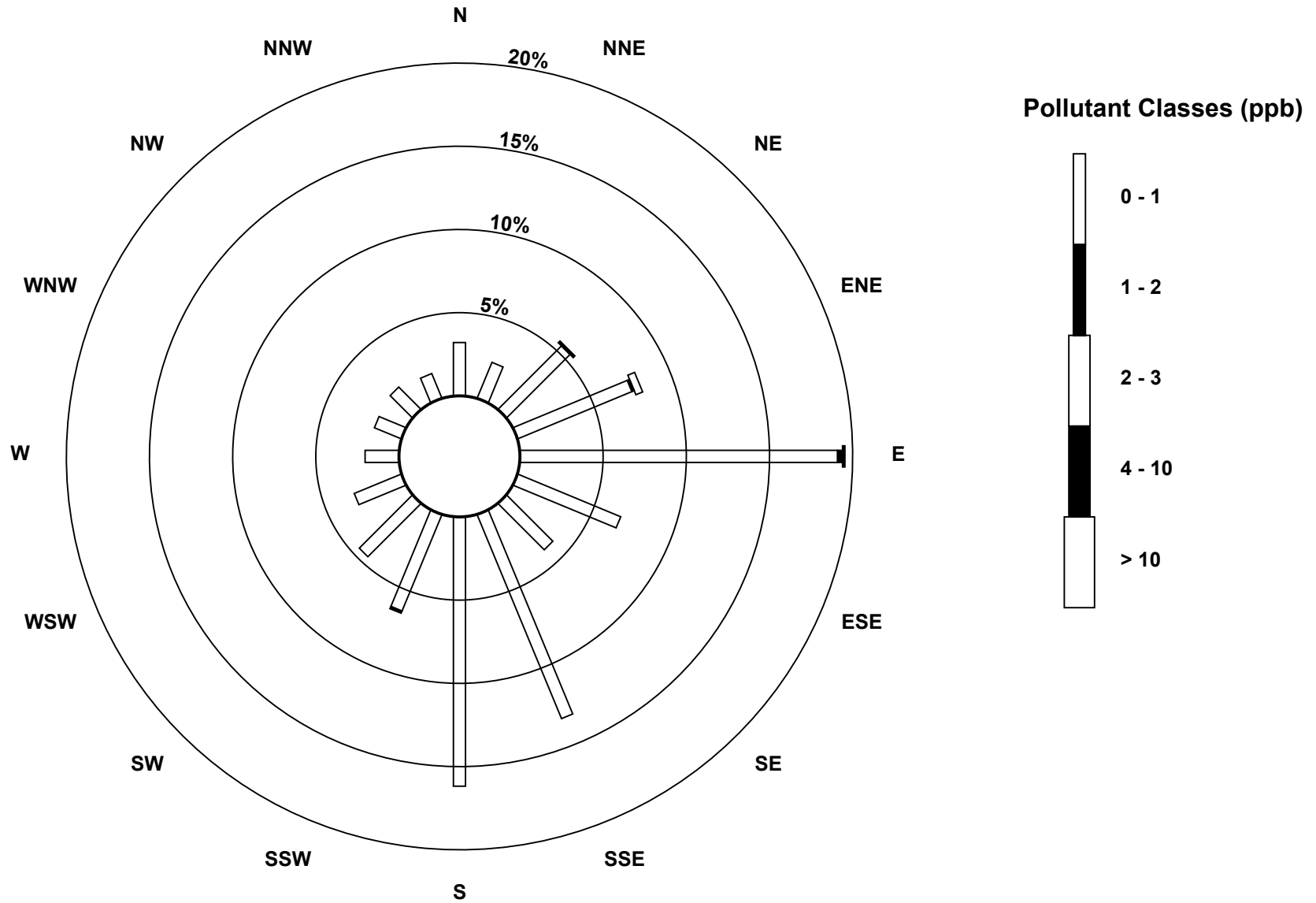
**Hourly Maximums**

**Hydrogen Sulphide (H<sub>2</sub>S) - ppb**  
**Donnelly - November 2016**



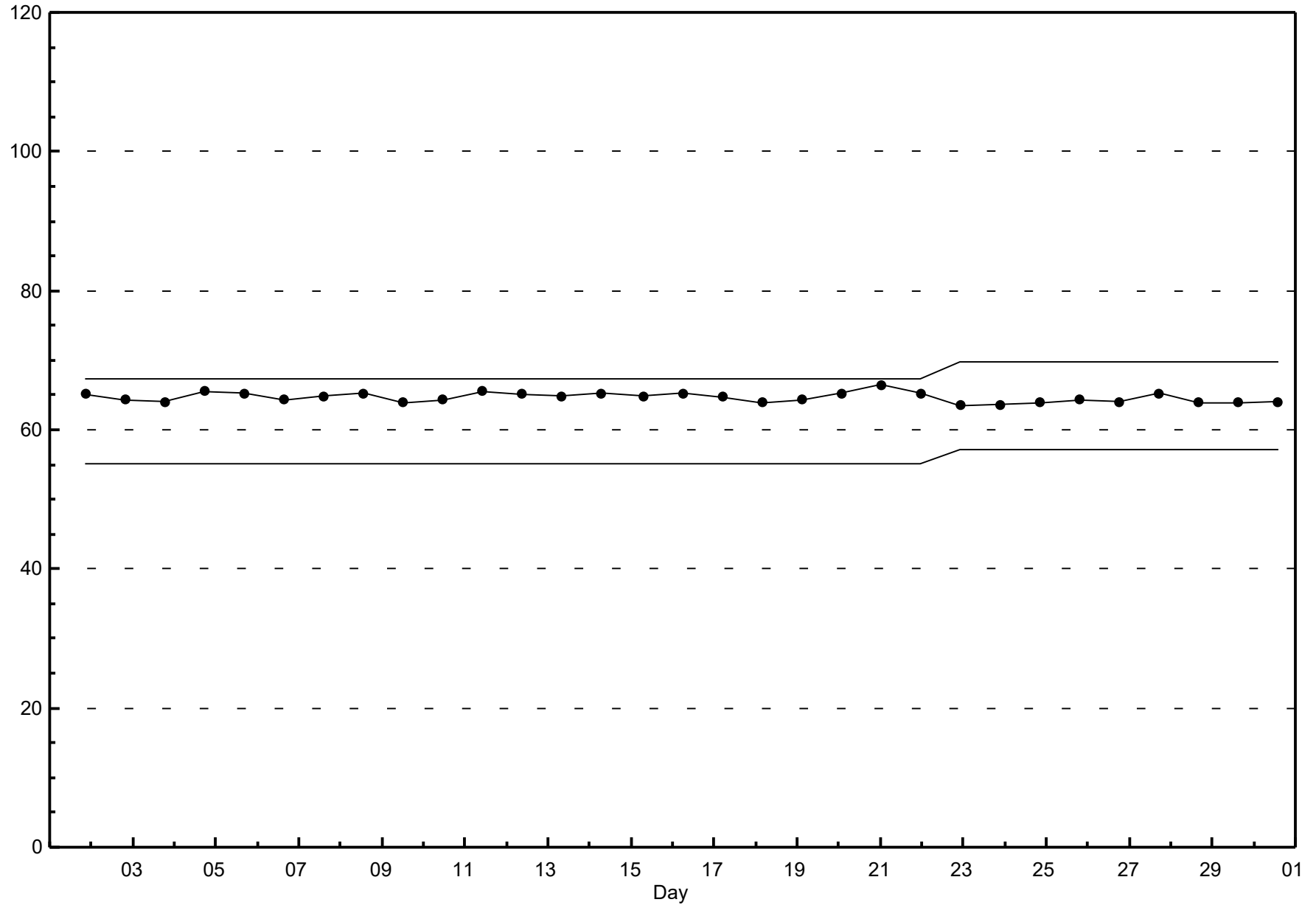
**Pollutant Rose**

**Hydrogen Sulphide (H<sub>2</sub>S) - ppb**  
**Donnelly - November 2016**



### Span Responses

Hydrogen Sulphide (H<sub>2</sub>S)  
Donnelly - November 2016



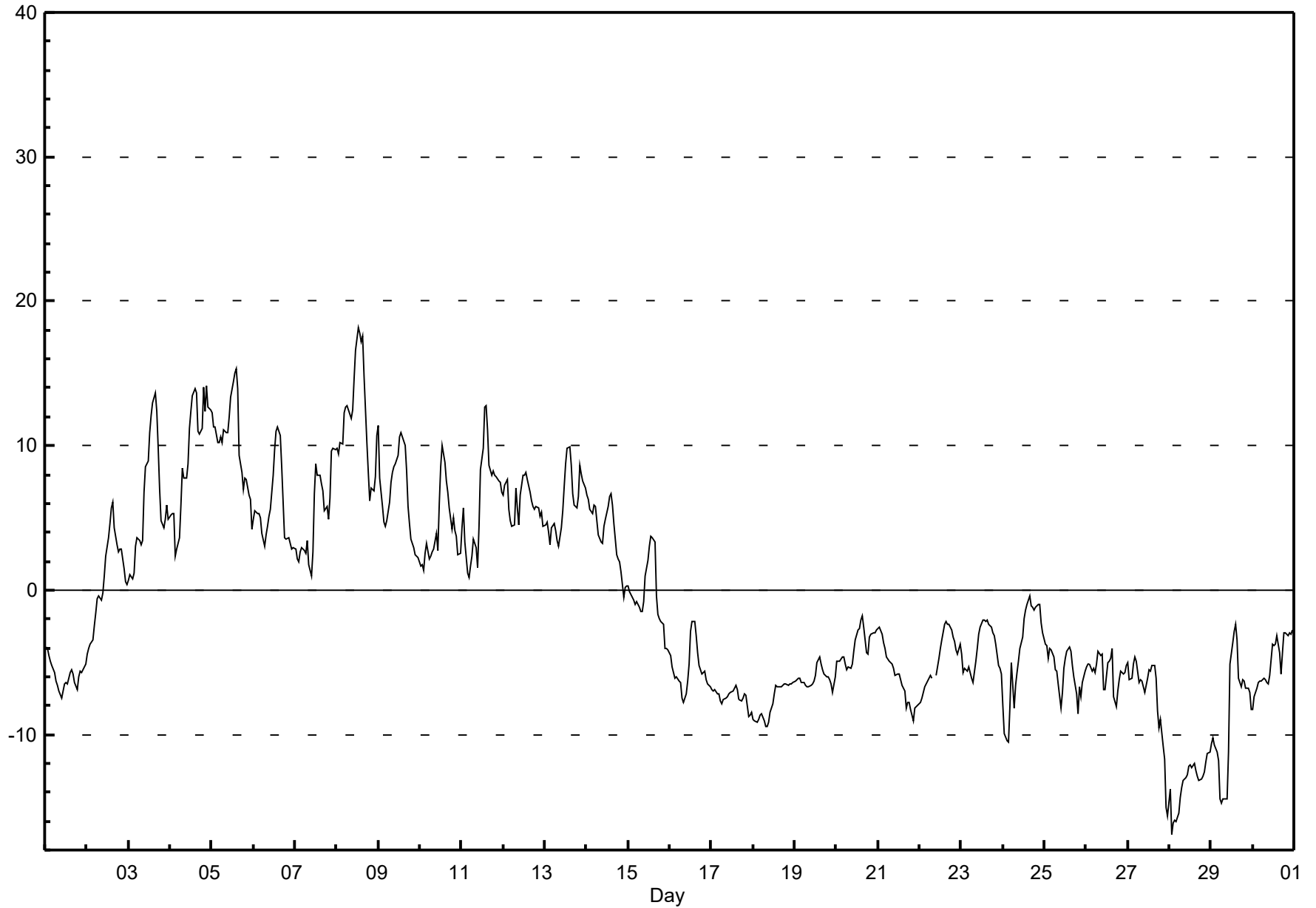
## Hourly Averages

External Temperature (ET) - °C

Donnelly - November 2016

Maximum Value: 18.2 °C on Nov 8 13:00		Maximum Daily Average: 12.0 °C on Nov 8		Hours in Service: 720																							
Minimum Value: -17 °C on Nov 28 02:00		Minimum Daily Average: -13.4 °C on Nov 28		Hours of Data: 719																							
Maximum Diurnal Average: 2.4 °C at hour 15		Minimum Diurnal Average: -2.1 °C at hour 4		Hours of Missing Data: 1																							
Monthly Average: -0.61 °C		Percentiles: P <sub>1</sub> = -14.9 P <sub>10</sub> = -8.0 Q <sub>1</sub> = -6.2 Median = -2.7 Q <sub>3</sub> = 5.3 P <sub>90</sub> = 9.6 P <sub>99</sub> = 14.8		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	-4	-4	-5	-5	-5	-6	-6	-7	-7	-7	-7	-6	-6	-7	-6	-6	-6	-6	-7	-6	-6	-6	-5	-5	-5.9	-4.0	
2-Nov	-4	-4	-4	-3	-2	-2	-1	0	-1	0	1	2	4	5	6	6	4	3	3	3	3	1	1	0	0.8	6.0	
3-Nov	1	1	1	1	3	4	3	3	3	7	9	9	11	12	13	14	12	10	7	5	4	5	6	5	6.2	13.7	
4-Nov	5	5	5	2	3	4	6	8	8	8	9	11	12	13	14	14	11	11	11	14	12	14	13	12	9.4	14.1	
5-Nov	12	11	11	10	10	11	10	11	11	11	12	13	14	15	15	14	9	8	7	8	8	7	6	4	10.4	15.4	
6-Nov	5	5	5	5	5	4	3	4	4	5	6	8	10	11	11	11	9	6	4	4	4	3	3	3	5.7	11.3	
7-Nov	3	2	2	3	3	3	3	3	2	1	3	7	9	8	8	7	7	5	6	5	6	10	10	10	5.2	9.8	
8-Nov	10	9	10	10	12	13	13	12	12	12	15	17	18	18	17	18	15	10	8	6	7	7	8	11	12.0	18.2	
9-Nov	11	8	6	5	4	5	6	8	8	9	9	9	11	11	11	10	8	6	5	4	3	2	2	2	6.7	11.4	
10-Nov	2	2	1	3	3	2	2	3	3	4	3	6	9	10	9	8	7	6	4	5	4	4	2	2	4.3	10.0	
11-Nov	4	6	3	1	1	2	2	4	3	2	4	8	10	13	13	11	9	8	8	8	8	8	7	7	6.2	12.7	
12-Nov	7	7	8	6	5	4	5	7	6	5	7	8	8	8	8	7	6	6	6	6	6	5	5	4	6.1	8.1	
13-Nov	4	5	4	3	4	5	4	3	3	4	5	7	9	10	10	9	7	6	6	6	9	8	8	7	6.1	9.9	
14-Nov	7	6	6	5	6	6	5	4	3	3	4	5	6	7	7	6	5	2	2	2	1	-1	0	0	4.1	6.7	
15-Nov	0	0	-1	-1	-1	-1	-1	-2	-2	-1	1	2	3	4	4	3	0	-2	-2	-2	-2	-4	-4	-4	-0.5	3.7	
16-Nov	-5	-5	-6	-6	-6	-6	-6	-7	-8	-7	-6	-5	-3	-2	-2	-3	-4	-5	-6	-6	-6	-6	-7	-7	-5.4	-2.2	
17-Nov	-7	-7	-7	-7	-7	-8	-8	-8	-8	-7	-7	-7	-7	-7	-7	-7	-8	-8	-8	-7	-7	-9	-9	-8	-7.4	-6.6	
18-Nov	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-8	-8	-7	-7	-7	-7	-7	-7	-6	-7	-7	-7	-6	-6	-7.8	-6.4	
19-Nov	-6	-6	-6	-6	-6	-6	-7	-7	-7	-7	-6	-6	-5	-5	-5	-5	-6	-6	-6	-6	-6	-7	-7	-6	-6.1	-4.6	
20-Nov	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-4	-3	-3	-3	-2	-2	-3	-4	-4	-3	-3	-3	-3	-3	-3.9	-1.7	
21-Nov	-3	-3	-3	-4	-4	-5	-5	-5	-5	-5	-6	-6	-6	-6	-7	-7	-8	-8	-8	-8	-9	-8	-8	-8	-6.0	-2.6	
22-Nov	-8	-7	-7	-7	-6	-6	-6	-6	D	-6	-5	-5	-4	-3	-2	-2	-2	-2	-3	-3	-4	-4	-4	-4	-4.7	-2.2	
23-Nov	-4	-6	-5	-6	-5	-6	-6	-6	-5	-4	-3	-3	-2	-2	-2	-2	-2	-3	-3	-3	-4	-5	-5	-6	-4.1	-2.0	
24-Nov	-8	-10	-10	-11	-8	-5	-8	-7	-6	-5	-4	-3	-2	-1	-1	0	-1	-1	-1	-1	-1	-1	-2	-3	-4.2	-0.4	
25-Nov	-4	-4	-5	-4	-4	-5	-6	-6	-7	-8	-7	-5	-5	-4	-4	-4	-5	-6	-7	-9	-7	-7	-6	-6	-5.6	-3.7	
26-Nov	-5	-5	-5	-6	-5	-6	-5	-4	-5	-4	-7	-7	-5	-5	-5	-4	-7	-8	-7	-6	-6	-6	-6	-5	-5.6	-4.0	
27-Nov	-5	-6	-6	-5	-5	-5	-6	-6	-6	-7	-7	-6	-6	-6	-5	-5	-6	-8	-10	-9	-11	-12	-15	-16	-7.4	-4.7	
28-Nov	-14	-17	-16	-16	-16	-15	-14	-14	-13	-13	-12	-12	-12	-12	-12	-13	-13	-13	-13	-13	-13	-12	-11	-11	-13.4	-11.2	
29-Nov	-11	-10	-11	-11	-12	-15	-15	-14	-14	-14	-11	-5	-4	-3	-2	-3	-6	-7	-6	-6	-7	-7	-8	-8	-8.8	-2.4	
30-Nov	-8	-7	-7	-6	-6	-6	-6	-6	-6	-7	-6	-4	-4	-4	-3	-4	-6	-4	-3	-3	-3	-3	-3	-3	-5.0	-2.8	
		-1.3	-1.6	-1.8	-2.1	-1.8	-1.8	-2.0	-1.6	-1.6	-1.6	-0.8	0.7	1.7	2.2	2.4	2.1	0.6	-0.4	-0.8	-0.8	-0.8	-1.1	-1.3	-1.3	Diurnal Average	
		12.3	11.3	11.3	10.2	12.3	12.7	12.7	12.5	11.9	12.5	14.6	16.6	18.2	17.8	17.2	17.6	14.8	10.8	11.1	14.0	12.3	14.1	12.7	12.5	Diurnal Maximum	
D - DAS Failure																											









Peace Airshed Zone Association

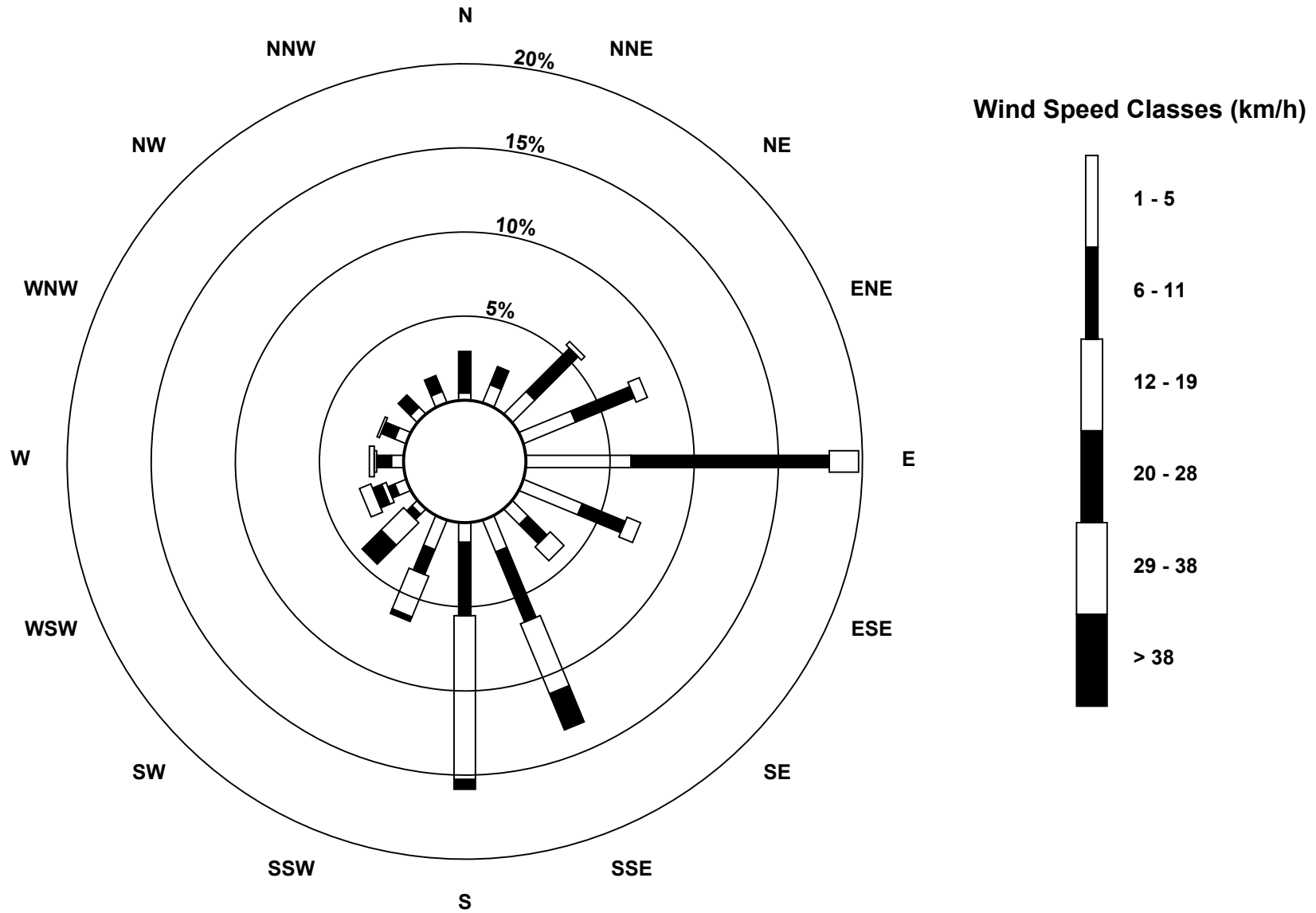
# Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Donnelly - November 2016

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
23 Spd	6	5	6	4	5	5	4	3	7	3	3	5	6	5	6	4	4	3	4	4	7	5	8	7	4.5	8.2
Dir	101	100	108	100	106	92	92	120	111	99	121	149	124	157	149	120	122	133	135	165	149	160	166	130	160	
24 Spd	4	4	2	5	5	5	6	10	13	13	14	13	12	12	13	13	11	10	7	7	8	7	5	5	8.4	13.9
Dir	144	120	117	81	86	81	84	91	92	92	90	89	89	90	89	89	91	91	85	79	83	86	91	99	91	90
25 Spd	5	6	4	6	4	4	3	6	9	5	8	12	13	15	16	8	6	9	5	4	10	8	11	14	4.9	15.5
Dir	98	97	97	91	93	72	82	250	255	280	271	273	234	218	226	213	182	177	173	162	187	188	188	189	204	226
26 Spd	14	14	16	16	16	13	14	12	13	11	6	5	4	4	7	2	1	3	5	7	8	6	7	6	5.4	16.0
Dir	185	182	176	174	172	169	165	157	156	156	64	55	77	60	63	110	187	27	54	52	52	55	57	58	141	172
27 Spd	3	1	1	1	2	3	3	0	4	7	7	3	6	10	5	2	1	3	4	4	4	4	3	4	2.1	9.5
Dir	36	357	292	81	71	178	208	174	200	204	204	190	212	201	212	251	265	104	121	158	164	148	63	66	179	201
28 Spd	1	2	1	0	1	1	1	0	0	0	0	0	0	1	1	3	4	2	1	2	1	2	5	5	0.9	5.4
Dir	118	49	85	79	227	220	168	71	179	236	196	305	245	266	257	265	296	186	203	216	205	196	181	215	181	181
29 Spd	4	1	3	1	2	0	2	1	1	1	2	2	3	7	13	9	7	7	7	6	7	8	7	6	3.8	13.0
Dir	179	171	199	90	80	87	82	81	64	65	74	106	55	142	133	109	90	91	97	97	92	93	88	65	103	133
30 Spd	6	6	11	10	11	11	10	12	13	9	7	5	11	10	11	9	3	5	11	10	11	18	24	20	9.0	23.6
Dir	63	78	89	89	91	92	92	90	91	93	95	102	118	117	125	122	80	132	146	154	148	159	168	170	121	168
Spd	5.9	4.8	4.8	4.3	4.4	4.6	5.1	6.1	5.8	6.0	5.0	4.8	4.3	4.0	3.4	3.0	2.1	2.4	4.0	4.2	4.8	5.3	6.0	6.5	Diurnal Average	
Dir	150	148	144	128	144	146	147	155	157	157	157	173	185	195	192	202	185	155	143	142	143	146	151	150	Diurnal Maximum	
Spd	26.4	18.6	17.4	16.1	23.1	26.0	26.4	26.0	22.3	23.8	28.5	28.5	30.2	30.3	32.2	28.6	25.3	17.0	15.9	17.2	16.3	18.9	23.6	21.7	Diurnal Maximum	
Dir	163	157	152	175	152	165	167	167	213	217	229	243	242	259	257	255	221	210	163	131	206	131	168	157	Diurnal Maximum	
Maximum Speed Value: 32 km/h on Nov 9 15:00		Minimum Speed Value: 0 km/h on Nov 17 17:00																Hours in Service: 720								
Maximum Daily Speed Average: 18.2 km/h on Nov 14		Minimum Daily Speed Average: 0.9 km/h on Nov 28																Hours of Data: 719								
Maximum Diurnal Speed Average: 6.5 km/h at hour 24		Minimum Diurnal Speed Average: 2.1 km/h at hour 17																Hours of Missing Data: 1								
Monthly Average Velocity: 4.44 km/h 155.7 deg		Speed Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 2.1 Q <sub>1</sub> = 4.8 Median = 8.2 Q <sub>3</sub> = 12.7 P <sub>90</sub> = 16.9 P <sub>99</sub> = 28.0																Percent Operational Time: 99.9								
All monthly, daily, and diurnal averages have been calculated using vector methods																										
D - DAS Failure																										
Frequency Distribution																										
		Speed Range (km/h)																								
Direction	0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total																			
North	12	25	3	0	0	0	40																			
NorthEast	27	46	6	0	0	0	79																			
East	58	118	17	0	0	0	193																			
SouthEast	27	29	26	2	0	0	84																			
South	22	48	104	19	0	0	193																			
SouthWest	17	11	22	12	3	0	65																			
West	14	11	3	4	6	0	38																			
NorthWest	12	14	1	0	0	0	27																			
Total	189	302	182	37	9	0	719																			

**Wind Rose**

**Wind Speed (WS) (km/h)**  
**Donnelly - November 2016**



# Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Donnelly - November 2016

Maximum Speed: 32 km/h on Nov 9 15:00	Maximum Daily Speed Average: 20.1 km/h on Nov 14	Hours in Service: 720
Minimum Speed: 0 km/h on Nov 28 10:00	Minimum Daily Speed Average: 1.5 km/h on Nov 28	Hours of Data: 719
Maximum Diurnal Speed Average: 11.4 km/h at hour 13	Minimum Diurnal Speed Average: 7.5 km/h at hour 19	Hours of Missing Data: 1
Monthly Average Speed: 9.40 km/h	Percentiles: P <sub>1</sub> = 0.1 P <sub>10</sub> = 2.8 Q <sub>1</sub> = 5.1 Median = 8.4 Q <sub>3</sub> = 13.0 P <sub>90</sub> = 17.0 P <sub>99</sub> = 28.0	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	6	8	8	11	10	11	10	11	11	11	10	8	8	5	2	1	2	1	1	4	7	7	10	9	7.3	11.3
2-Nov	10	11	9	8	5	5	8	15	11	22	18	17	17	15	15	13	11	15	16	13	10	5	8	12	12.0	21.8
3-Nov	11	7	7	6	8	12	12	11	8	18	17	20	22	18	13	21	25	18	14	12	15	12	15	13	13.9	25.4
4-Nov	9	6	8	8	10	10	8	20	17	21	18	13	4	6	16	14	13	15	14	17	14	19	18	22	13.3	21.9
5-Nov	20	16	14	9	14	16	17	17	22	20	22	22	19	19	16	24	17	10	9	12	12	10	11	11	15.7	23.7
6-Nov	11	10	10	7	9	8	4	8	7	12	14	13	17	22	27	22	16	15	15	15	15	16	16	16	13.5	27.3
7-Nov	16	14	15	14	11	7	7	9	5	9	12	14	10	7	8	7	11	8	11	11	12	19	18	19	11.3	18.9
8-Nov	26	19	17	16	23	26	26	26	21	21	21	17	14	9	10	7	5	2	3	4	3	3	5	12	14.0	26.5
9-Nov	16	11	9	5	15	9	14	13	14	15	15	23	30	31	32	29	19	14	12	11	13	12	13	14	16.2	32.3
10-Nov	16	14	15	13	10	13	14	11	11	8	10	9	10	11	9	9	10	7	7	5	6	6	3	6	9.7	15.6
11-Nov	4	7	5	6	5	5	2	8	5	4	3	14	22	24	18	11	12	8	5	8	10	11	11	10	9.1	24.3
12-Nov	10	9	9	4	4	3	6	9	5	4	3	4	3	2	4	7	9	6	8	7	6	6	7	10	6.0	10.1
13-Nov	9	10	12	10	13	15	15	15	13	15	15	15	15	15	6	4	5	5	3	5	15	13	12	10	11.1	15.4
14-Nov	11	11	12	13	21	18	19	22	22	24	29	29	30	30	30	28	22	15	16	17	16	16	17	15	20.1	30.2
15-Nov	16	16	16	16	16	17	17	17	17	14	8	10	8	7	3	4	4	4	2	2	4	4	3	4	9.5	17.4
16-Nov	3	2	2	1	2	0	1	2	3	3	3	3	6	8	9	6	6	4	4	8	10	12	11	11	5.0	11.5
17-Nov	9	8	10	9	8	10	8	8	6	4	3	4	6	5	5	3	0	1	1	2	7	5	4	9	5.6	10.2
18-Nov	9	10	10	10	8	6	7	7	5	4	7	7	9	5	5	7	9	11	8	10	11	8	9	6	7.9	11.0
19-Nov	5	7	7	10	11	11	16	13	15	15	14	15	13	11	11	10	10	10	9	7	6	7	6	6	10.3	16.1
20-Nov	5	6	6	7	7	8	9	10	10	8	7	7	8	9	8	9	5	4	6	5	5	5	5	2	6.8	9.8
21-Nov	2	1	0	5	9	7	6	6	6	7	8	8	8	10	9	8	6	7	5	3	2	1	0	1	5.3	9.6
22-Nov	1	2	3	4	5	5	6	8	D	9	9	10	8	8	10	6	10	9	10	9	7	7	7	9	7.0	10.1
23-Nov	6	5	6	4	5	5	4	3	7	3	3	5	6	6	6	4	4	3	4	4	7	5	8	8	5.1	8.3
24-Nov	5	4	3	5	5	6	7	10	13	13	14	13	12	12	13	13	11	10	7	7	8	7	5	5	8.7	13.9
25-Nov	6	6	4	6	4	4	4	7	9	5	8	12	13	15	16	8	7	9	5	5	10	8	11	14	8.1	15.6
26-Nov	14	14	16	16	16	13	14	12	13	11	7	6	4	4	7	4	3	3	5	7	8	6	7	6	9.0	16.0
27-Nov	3	2	1	1	2	3	3	0	4	7	7	3	6	10	5	2	1	4	4	4	4	4	4	4	3.7	9.6
28-Nov	2	2	1	0	1	1	1	0	0	0	0	0	0	1	1	3	5	2	0	2	1	2	5	6	1.5	5.5
29-Nov	4	1	3	1	2	0	2	1	1	1	2	2	3	7	13	9	7	7	7	6	7	8	7	6	4.5	13.2
30-Nov	6	7	11	10	11	11	11	12	13	9	7	6	11	10	11	10	3	6	11	10	11	19	24	20	10.7	23.7
	9.0	8.2	8.3	7.9	9.0	8.8	9.2	10.3	10.2	10.6	10.5	11.0	11.4	11.4	11.2	10.1	8.9	7.7	7.5	7.8	8.8	8.7	9.3	9.8	Diurnal Average	
	26.5	18.7	17.4	16.1	23.4	26.0	26.4	26.1	22.3	23.9	28.6	28.6	30.3	30.6	32.3	28.7	25.4	17.6	15.9	17.2	16.4	18.9	23.7	21.9	Diurnal Maximum	

D - DAS Failure  
 All monthly, daily, and diurnal averages have been calculated using scalar methods

# Hourly Standard Deviations

Wind Direction (WD) - deg

Donnelly - November 2016

Maximum Value: 82.4 deg on Nov 11 11:00																								Hours in Service:	720	
Minimum Value: 0.8 deg on Nov 17 17:00																								Hours of Data:	719	
Percentiles: P <sub>1</sub> = 2.2 P <sub>10</sub> = 3.8 Q <sub>1</sub> = 5.4 Median = 8.6 Q <sub>3</sub> = 16.5 P <sub>90</sub> = 34.6 P <sub>99</sub> = 65.9																								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	10	12	15	6	7	7	7	6	7	8	6	21	14	10	16	25	8	17	35	10	8	8	6	6	35.0	
2-Nov	7	5	8	9	13	13	17	8	9	3	6	6	3	3	6	11	3	5	3	5	9	23	5	4	22.7	
3-Nov	9	18	11	9	25	12	7	12	48	4	6	3	3	8	6	5	4	15	9	6	3	2	6	6	47.8	
4-Nov	19	10	44	17	5	11	34	4	4	3	3	8	34	32	7	6	5	4	5	4	9	5	6	8	43.9	
5-Nov	4	4	9	12	5	5	6	8	3	3	3	4	6	5	4	37	6	14	20	15	20	9	4	6	37.3	
6-Nov	5	5	8	5	6	19	33	46	7	7	5	18	6	9	5	4	6	11	3	5	4	3	3	6	46.4	
7-Nov	3	3	4	5	9	5	6	9	12	5	4	8	10	13	9	6	7	6	6	6	10	3	9	6	12.5	
8-Nov	4	5	5	14	11	3	3	2	3	3	3	12	7	50	10	15	54	77	76	40	14	51	43	12	77.2	
9-Nov	6	22	28	24	20	33	7	14	6	6	5	10	6	7	5	3	4	9	12	31	14	5	4	3	33.0	
10-Nov	3	5	3	11	8	3	3	9	7	27	4	5	7	8	8	7	5	6	21	18	16	11	14	15	26.8	
11-Nov	20	28	33	17	19	18	68	66	53	59	82	16	12	4	7	10	6	30	39	6	5	4	4	5	82.4	
12-Nov	9	7	7	57	30	50	56	38	35	61	32	29	35	57	26	20	6	6	5	5	7	7	8	2	61.4	
13-Nov	7	4	4	5	6	3	2	5	5	2	3	3	4	3	37	17	31	11	9	36	9	3	4	6	36.7	
14-Nov	6	10	8	8	9	4	5	5	2	4	6	6	4	4	5	4	5	6	12	5	6	2	4	3	11.9	
15-Nov	4	2	4	4	4	2	4	2	2	4	13	13	10	14	34	14	57	16	35	6	53	29	9	18	57.2	
16-Nov	16	51	82	66	26	52	36	36	53	18	24	20	12	14	14	9	7	13	16	11	7	7	6	13	82.2	
17-Nov	12	16	18	18	11	15	17	12	27	33	38	54	26	25	32	20	1	30	29	55	8	7	27	5	55.1	
18-Nov	4	6	5	4	9	9	8	11	9	11	14	10	11	15	11	7	7	8	11	6	5	8	10	10	14.6	
19-Nov	11	8	6	8	5	5	3	5	3	4	5	4	5	6	7	9	6	4	6	4	6	6	5	6	10.9	
20-Nov	8	7	6	10	9	7	5	5	5	8	8	8	10	8	9	8	14	29	13	10	10	11	13	12	29.5	
21-Nov	33	49	40	22	16	6	14	11	10	12	9	8	11	5	7	9	8	7	15	27	54	23	25	35	53.6	
22-Nov	32	14	15	16	16	23	11	10	D	9	9	10	12	12	9	15	8	8	6	7	7	8	7	9	32.5	
23-Nov	15	12	11	10	8	7	7	18	6	11	25	13	10	17	13	14	10	13	25	32	19	18	10	8	31.6	
24-Nov	26	19	32	14	23	24	12	5	4	4	5	5	6	5	4	4	5	5	10	10	7	9	9	8	32.3	
25-Nov	11	11	23	7	7	27	35	25	12	11	10	7	17	5	4	10	16	6	26	52	5	3	3	4	52.0	
26-Nov	7	3	4	3	2	3	2	4	3	7	37	20	21	12	18	62	72	25	6	3	6	8	3	3	71.6	
27-Nov	35	58	52	52	22	37	22	19	10	5	9	24	12	9	16	12	42	11	8	12	11	9	43	10	57.7	
28-Nov	39	52	32	62	40	73	47	26	22	42	51	45	27	27	38	25	17	28	38	14	31	12	11	9	73.0	
29-Nov	17	67	15	44	14	20	17	13	7	11	23	44	17	43	8	15	6	6	6	8	7	7	11	8	66.8	
30-Nov	10	12	5	6	6	6	6	5	5	7	9	13	5	5	5	7	24	34	10	8	7	6	3	2	34.2	
	38.6	66.8	82.2	65.9	39.6	73.0	68.3	65.5	53.5	61.4	82.4	54.3	35.1	57.4	38.0	62.1	71.6	77.2	76.4	55.1	53.6	50.9	43.5	35.3		
D - DAS Failure																										

PAZA

Portable – Rycroft Station

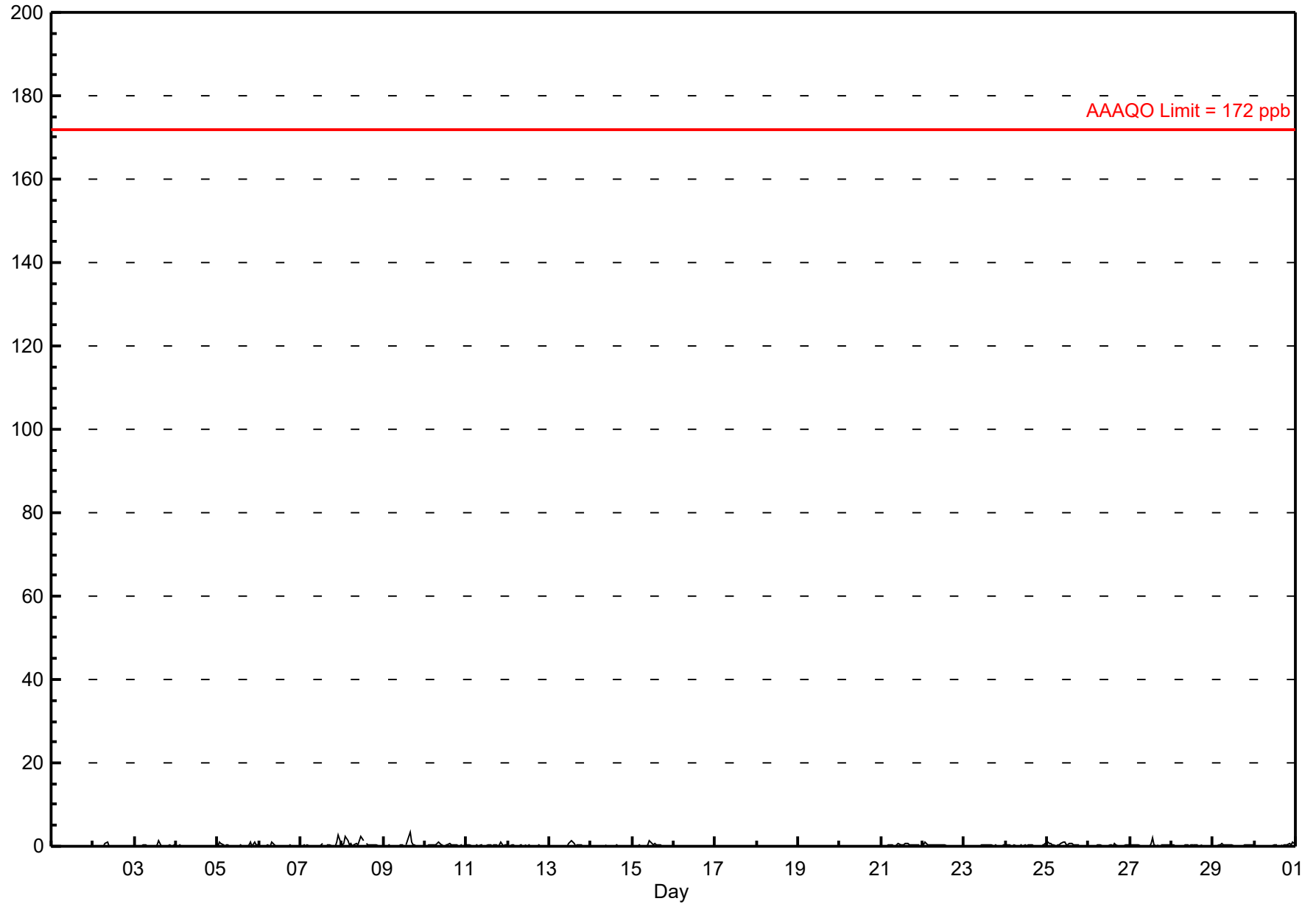
Monthly Summary Tables, Graphs and  
Roses

## Hourly Averages

## Sulphur Dioxide (SO<sub>2</sub>) - ppb Portable Rycroft - November 2016

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 3.5 ppb on Nov 9 16:00      Maximum Daily Average: 0.6 ppb on Nov 8		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: 0.3 ppb at hour 14 Monthly Average: 0.20 ppb		Minimum Daily Average: 0.0 ppb on Nov 17 Minimum Diurnal Average: 0.1 ppb at hour 7 Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.1 Q <sub>3</sub> = 0.2 P <sub>90</sub> = 0.5 P <sub>99</sub> = 1.4																																														
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	0	0	0	0	0	0	0	0	0	C	C	C	C	0	0	0	0	0	0	0	A	0	0	0	0.0	0.1																						
2-Nov	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0.1	0.9																						
3-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	A	0	0	0	0	0	0.1	1.2																						
4-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	0.2																						
5-Nov	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	1	0	1	0	0	0.3	1.2																						
6-Nov	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.1	0.8																						
7-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	1	A	0	0	0	0	0	0	1	3	1	0.3	2.6																						
8-Nov	0	1	3	1	0	1	0	0	1	0	1	2	1	A	1	0	0	0	0	0	0	0	0	0	0.6	2.5																						
9-Nov	0	0	0	0	0	0	0	0	0	0	0	0	A	0	1	4	1	0	0	0	0	0	0	0	0.4	3.5																						
10-Nov	0	0	0	0	0	0	0	1	1	0	0	A	0	1	1	0	0	0	0	0	0	0	0	0	0.3	1.0																						
11-Nov	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	1	0	0	0	0.3	1.1																						
12-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	0.4																						
13-Nov	0	0	0	0	0	0	0	0	A	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0.2	1.4																						
14-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																						
15-Nov	0	0	0	0	0	0	A	0	0	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0.2	1.2																						
16-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																						
17-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																						
18-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	0.0	0.1																						
19-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	0.1																						
20-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	0.1																						
21-Nov	A	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0.3	0.8																						
22-Nov	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.9																						
23-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	0.3																						
24-Nov	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	0.8																						
25-Nov	1	1	1	0	0	0	0	0	1	1	1	0	0	1	1	0	0	0	0	A	0	0	0	0	0.4	1.1																						
26-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	A	0	0	0	0	0	0	0.2	0.7																						
27-Nov	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	A	0	0	0	0	0	0	0.4	2.1																						
28-Nov	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	A	0	0	0	0	0	0	0	0	0.2	0.5																						
29-Nov	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.2	0.6																						
30-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	1	0	1	1	0.2	1.1																						
																								0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.3	0.2	0.1	0.2	0.1	0.1	0.2	0.2	0.2	0.2	Diurnal Average
																								1.1	0.9	2.5	1.4	0.5	0.6	0.4	0.8	1.0	0.9	1.3	2.3	1.3	2.1	1.4	3.5	0.9	0.3	0.4	0.9	1.1	1.2	2.6	0.8	Diurnal Maximum
C - Calibration      A - Automated Daily Zero Span Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb    24-hr 48 ppb    30-day 11 ppb																																																





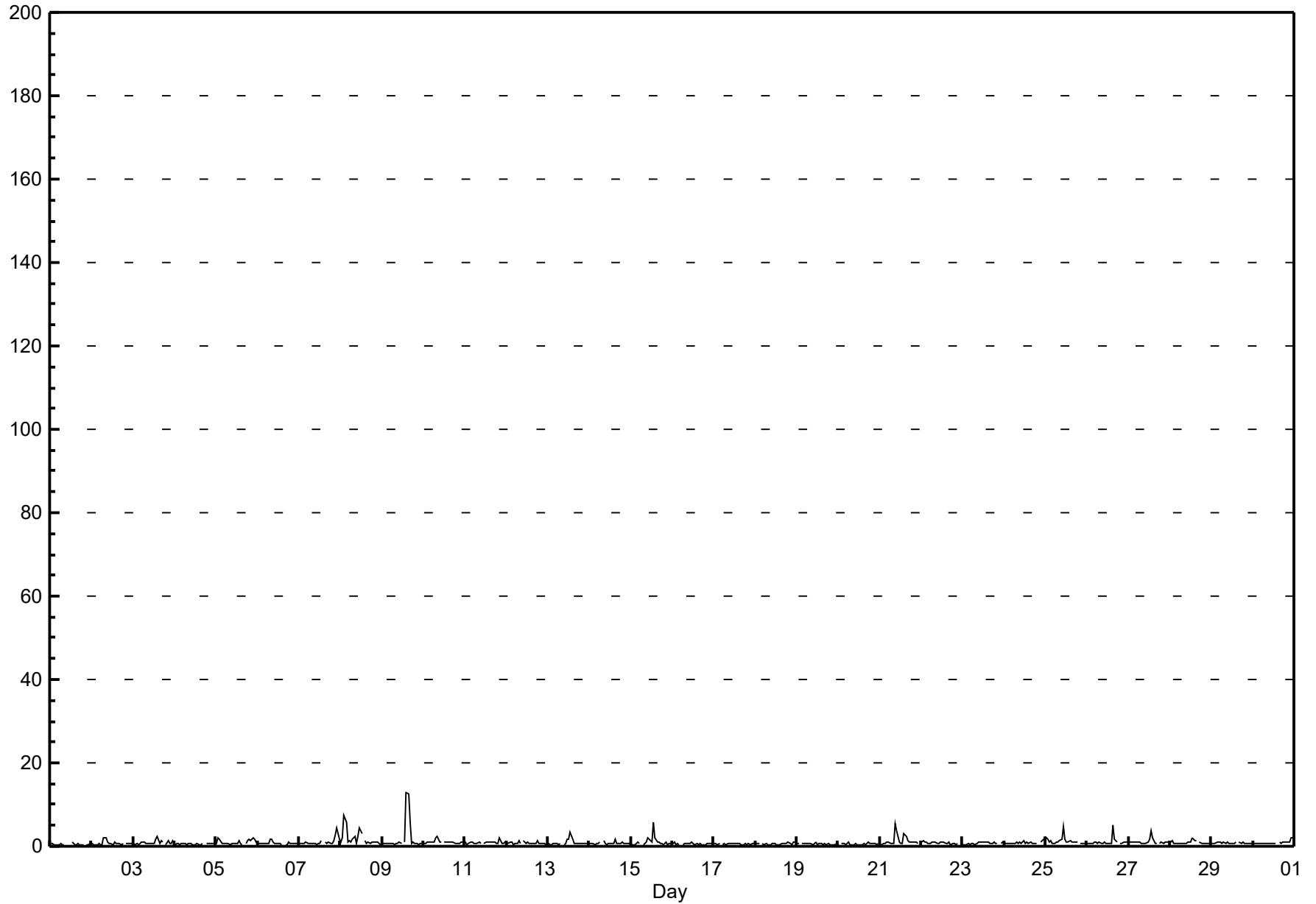
# Hourly Maximums

## Sulphur Dioxide (SO<sub>2</sub>) - ppb Portable Rycroft - November 2016

Maximum Value: 12.7 ppb on Nov 9 15:00		Maximum Daily Average: 2.0 ppb on Nov 9		Hours in Service: 720																						
Minimum Value: 0 ppb on Nov 6 17:00		Minimum Daily Average: 0.5 ppb on Nov 1		Hours of Data: 685																						
Maximum Diurnal Average: 1.5 ppb at hour 15		Minimum Diurnal Average: 0.7 ppb at hour 20		Hours of Missing Data: 35																						
Monthly Average: 0.91 ppb		Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 0.5 Q <sub>1</sub> = 0.6 Median = 0.8 Q <sub>3</sub> = 1.0 P <sub>90</sub> = 1.3 P <sub>99</sub> = 5.3		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	0	1	0	1	1	0	0	C	C	C	C	1	0	0	1	0	0	0	A	0	0	1	0.5	1.0
2-Nov	1	0	0	0	1	0	0	2	2	1	1	1	0	1	1	1	1	0	1	A	1	1	1	1	0.7	1.9
3-Nov	1	0	1	0	1	1	1	1	1	1	1	1	1	2	2	1	1	1	A	0	1	1	1	1	0.9	2.5
4-Nov	0	1	1	1	1	1	1	0	1	1	0	0	0	1	0	0	1	A	1	1	1	1	1	1	0.6	0.8
5-Nov	1	2	2	1	1	1	1	1	0	1	1	1	1	1	1	0	A	1	1	2	1	2	2	1	1.0	2.1
6-Nov	1	1	1	1	1	1	1	2	2	1	1	1	1	1	0	A	0	0	1	1	1	1	1	1	0.7	1.7
7-Nov	1	1	1	1	1	1	1	1	1	1	0	1	1	1	A	1	1	1	1	1	1	3	4	2	1.1	4.3
8-Nov	1	2	7	6	1	1	1	2	2	1	3	5	3	A	1	1	1	1	1	1	1	1	1	0	1.8	7.3
9-Nov	1	1	1	1	1	1	1	0	1	1	1	1	A	1	13	13	6	1	1	1	1	0	1	1	2.0	12.7
10-Nov	1	1	1	1	1	1	1	2	2	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1.0	2.3
11-Nov	1	0	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	2	1	1	0.9	2.2
12-Nov	1	1	1	1	0	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0.8	1.2
13-Nov	1	0	0	1	1	1	0	1	A	0	1	2	2	3	2	1	1	1	1	1	1	1	1	1	0.9	3.3
14-Nov	1	1	1	0	1	1	1	A	1	1	0	1	1	1	1	2	1	1	1	1	1	1	1	1	0.8	1.8
15-Nov	0	0	0	1	1	1	A	0	1	1	2	1	1	6	2	1	1	1	1	0	1	0	1	1	1.1	5.8
16-Nov	1	1	0	1	0	A	0	1	1	1	1	1	1	0	1	0	1	0	1	0	1	1	1	1	0.6	0.9
17-Nov	1	1	0	1	A	0	1	0	1	1	1	1	1	1	1	0	0	1	0	1	0	1	0	1	0.6	0.8
18-Nov	1	1	1	A	1	0	1	0	0	1	1	0	0	0	1	1	1	1	1	1	1	0	1	1	0.6	0.9
19-Nov	1	1	A	1	1	1	1	1	1	0	1	1	0	1	1	0	1	0	1	0	0	0	0	1	0.6	0.9
20-Nov	0	A	1	1	0	1	1	0	0	0	1	0	0	0	0	1	0	1	1	1	1	1	0	1	0.5	0.9
21-Nov	A	0	1	1	1	1	1	1	1	5	4	1	1	1	3	2	1	1	1	1	1	1	1	1	1.3	5.4
22-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	A	1	0.9	1.5
23-Nov	0	0	0	1	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	0.8	1.1
24-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	2	0.8	1.6
25-Nov	2	2	1	1	1	1	1	1	1	2	5	2	1	1	2	1	1	1	1	A	1	1	1	1	1.2	4.7
26-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	2	1	A	1	1	1	1	1	1	1.0	5.0
27-Nov	1	1	1	1	1	1	1	1	1	1	1	1	2	4	2	1	1	A	1	1	1	1	1	1	1.1	3.7
28-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	A	1	1	1	1	1	1	1	0.9	2.1
29-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	1.1
30-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	2	2	0.9	2.1
		0.7	0.8	0.9	0.9	0.7	0.7	0.7	0.8	0.9	0.9	1.1	1.0	0.9	1.2	1.5	1.4	1.0	0.7	0.8	0.7	0.8	0.8	0.9	0.9	Diurnal Average
		1.9	2.0	7.3	5.9	1.1	1.4	1.0	1.9	2.4	5.4	4.7	4.5	3.0	5.8	12.7	12.7	5.7	1.1	1.4	1.7	2.2	2.9	4.3	2.1	Diurnal Maximum
C - Calibration		A - Automated Daily Zero Span																								

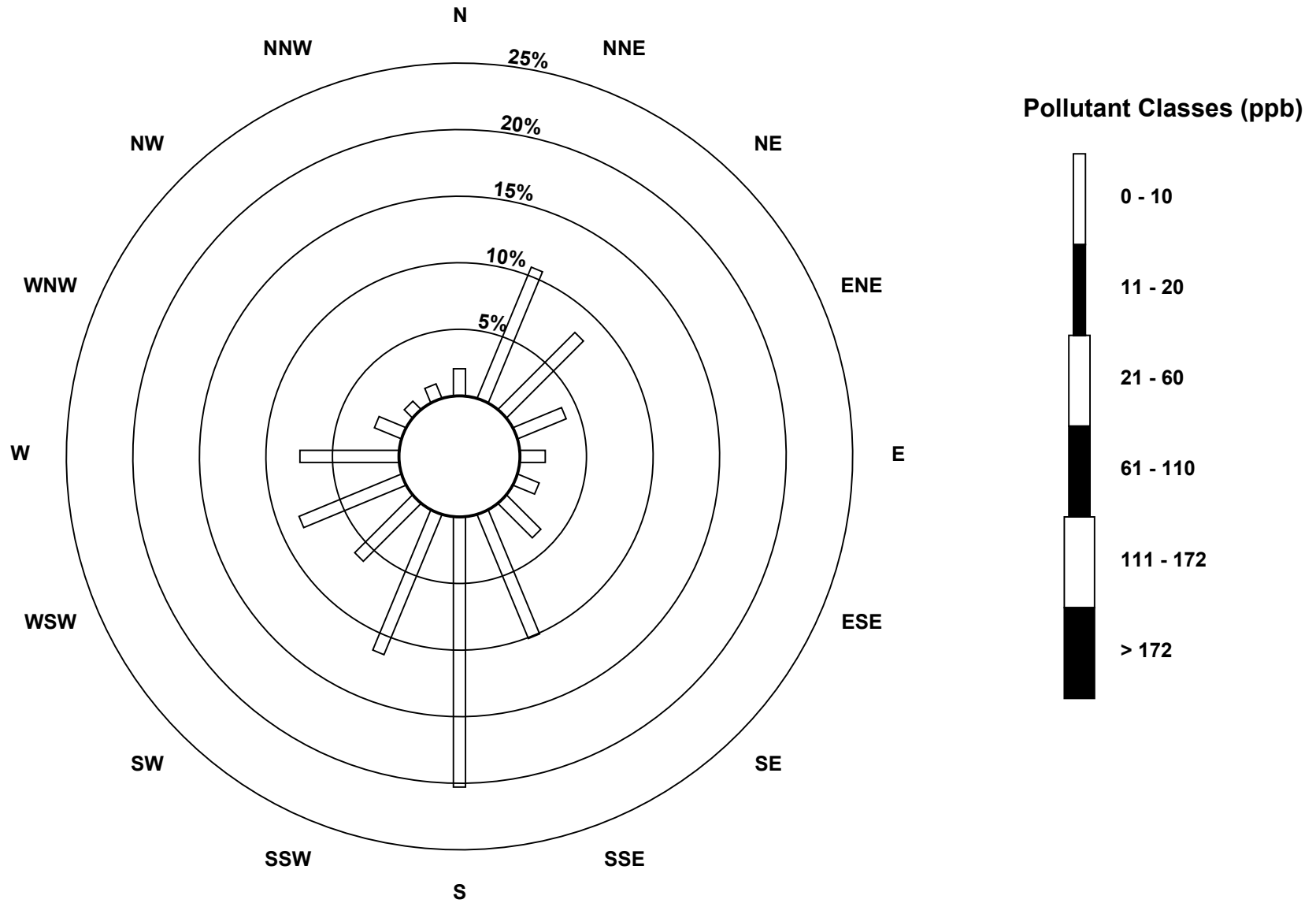
**Hourly Maximums**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Portable Rycroft - November 2016**



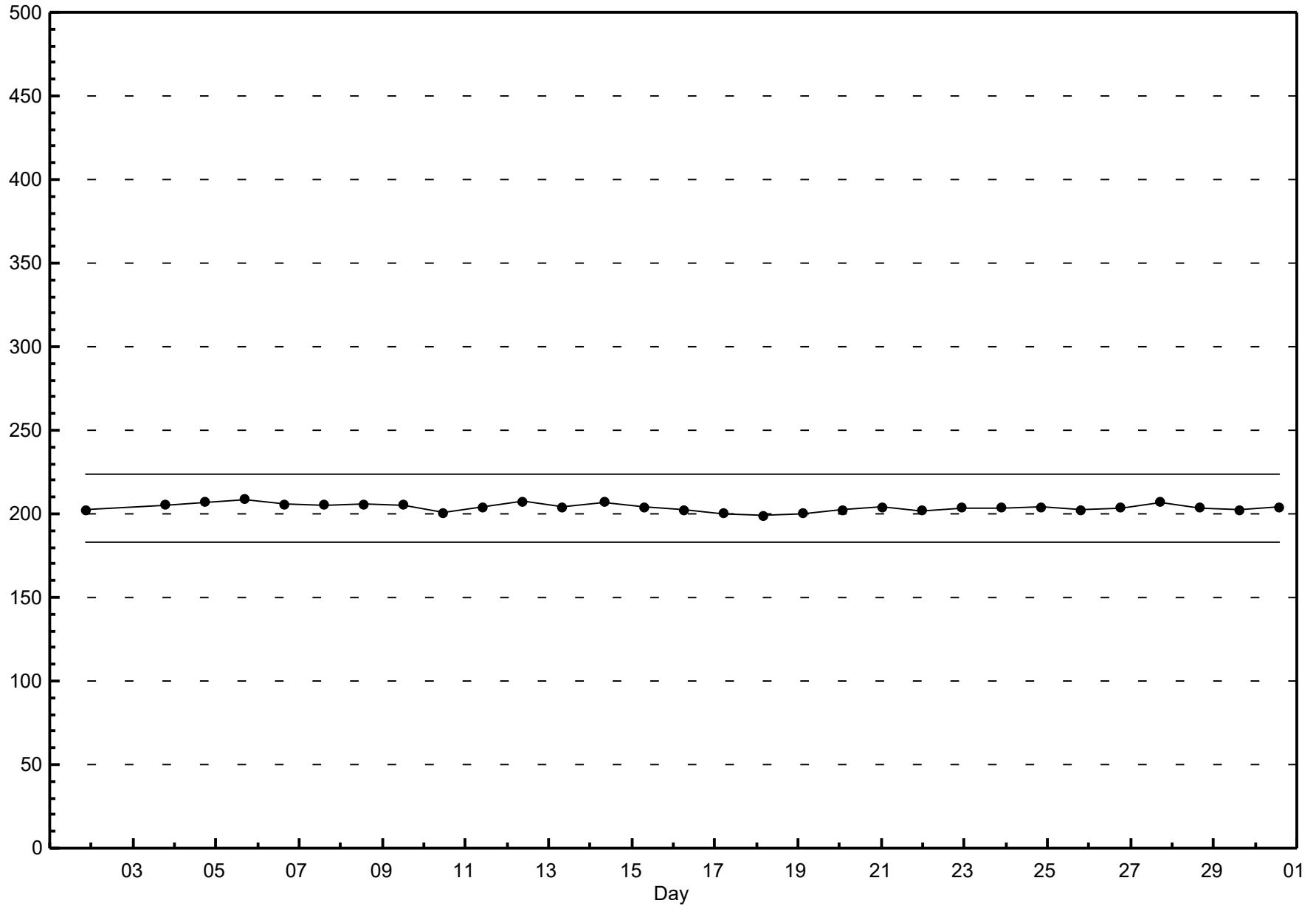
**Pollutant Rose**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**Portable Rycroft - November 2016**



### Span Responses

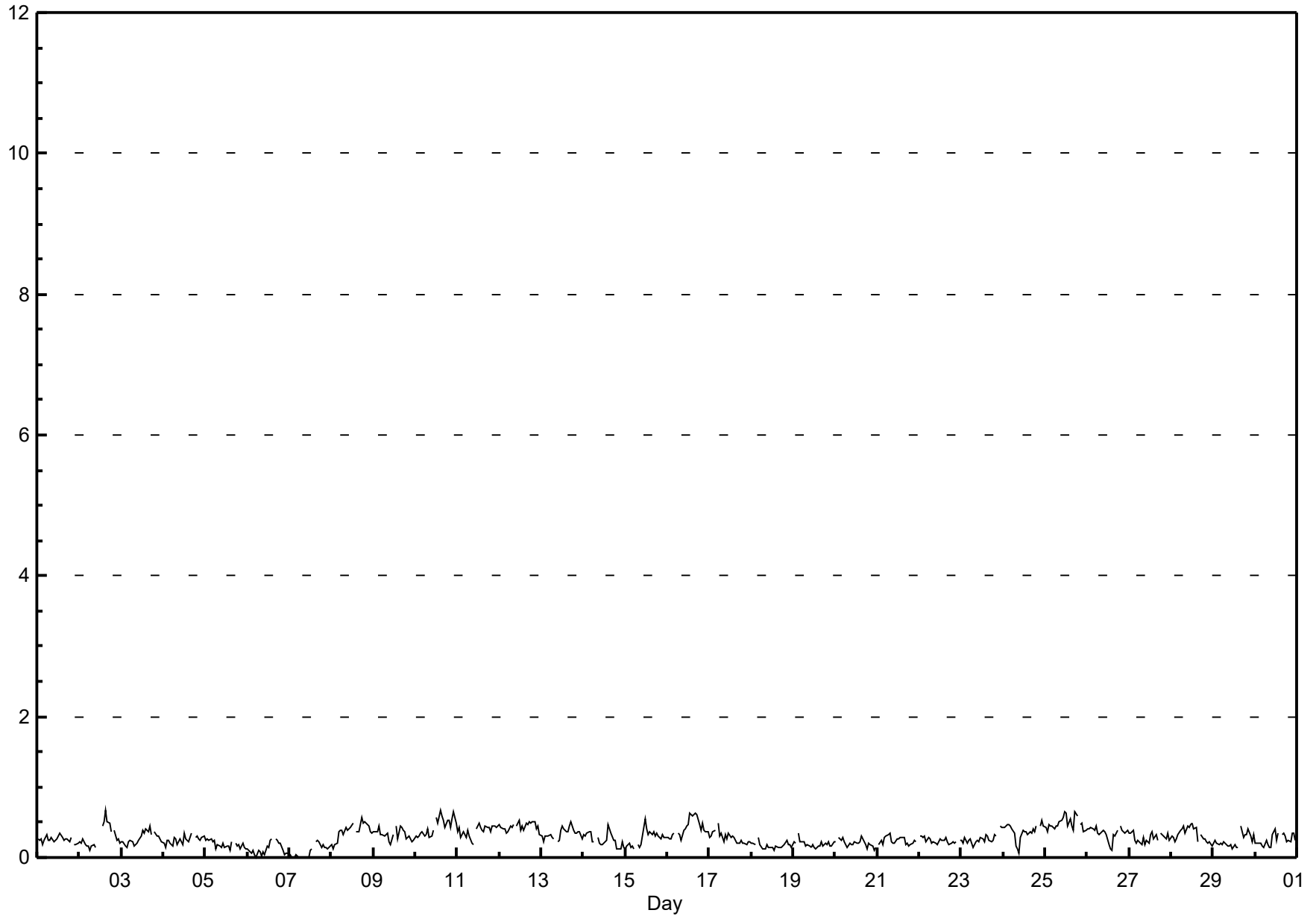
Sulphur Dioxide (SO<sub>2</sub>)  
Portable Rycroft - November 2016



## Hourly Averages

**Total Reduced Sulphur (TRS) - ppb**  
**Portable Rycroft - November 2016**

Maximum Value: 0.7 ppb on Nov 2 16:00		Maximum Daily Average: 0.5 ppb on Nov 25		Hours in Service: 720																							
Minimum Value: 0 ppb on Nov 6 06:00		Minimum Daily Average: 0.1 ppb on Nov 7		Hours of Data: 686																							
Maximum Diurnal Average: 0.3 ppb at hour 16		Minimum Diurnal Average: 0.2 ppb at hour 10		Hours of Missing Data: 34																							
Monthly Average: 0.29 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.1 Q <sub>1</sub> = 0.2 Median = 0.3 Q <sub>3</sub> = 0.4 P <sub>90</sub> = 0.4 P <sub>99</sub> = 0.6		Hours of Calibration: 34																							
Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.1 Q <sub>1</sub> = 0.2 Median = 0.3 Q <sub>3</sub> = 0.4 P <sub>90</sub> = 0.4 P <sub>99</sub> = 0.6		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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.3
2-Nov	0	0	0	0	0	0	0	0	0	0	C	C	C	0	1	1	1	0	0	A	0	0	0	0	0	0.3	0.7
3-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	0.3	0.4
4-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	0.2	0.3
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	0.2	0.3
6-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	0.1	0.3
7-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	0.1	0.3
8-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	1	0	0	0	0	0.4	0.6
9-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	0.3	0.5
10-Nov	0	0	0	0	0	0	0	0	0	0	0	A	1	0	1	1	1	0	1	1	0	1	1	0	1	0.4	0.7
11-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	0.4	0.5
12-Nov	0	0	0	0	0	0	0	0	0	0	A	0	1	0	0	0	0	0	1	0	1	1	0	0	0	0.4	0.5
13-Nov	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0.3	0.5
14-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	0.3	0.5
15-Nov	0	0	0	0	0	0	0	A	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.6
16-Nov	0	0	0	0	0	0	A	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0.4	0.6
17-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	0.3	0.5
18-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	0.2	0.3
19-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	0.2	0.3
20-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	0.2	0.3
21-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	0.2	0.4
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	0.2	0.3
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	0.3	0.4
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	0	0.4	0.5
25-Nov	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	1	0	0	1	1	A	0	0	0	0	0.5	0.7
26-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	0.3	0.5
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	0.3	0.4
28-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	0.3	0.5
29-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	0.2	0.4
30-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	0.3	0.4
0.3		0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	Diurnal Average
0.5		0.4	0.5	0.5	0.4	0.5	0.4	0.5	0.5	0.5	0.5	0.6	0.7	0.6	0.6	0.7	0.7	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.7	0.5	Diurnal Maximum
C - Calibration		A - Automated Daily Zero Span																									

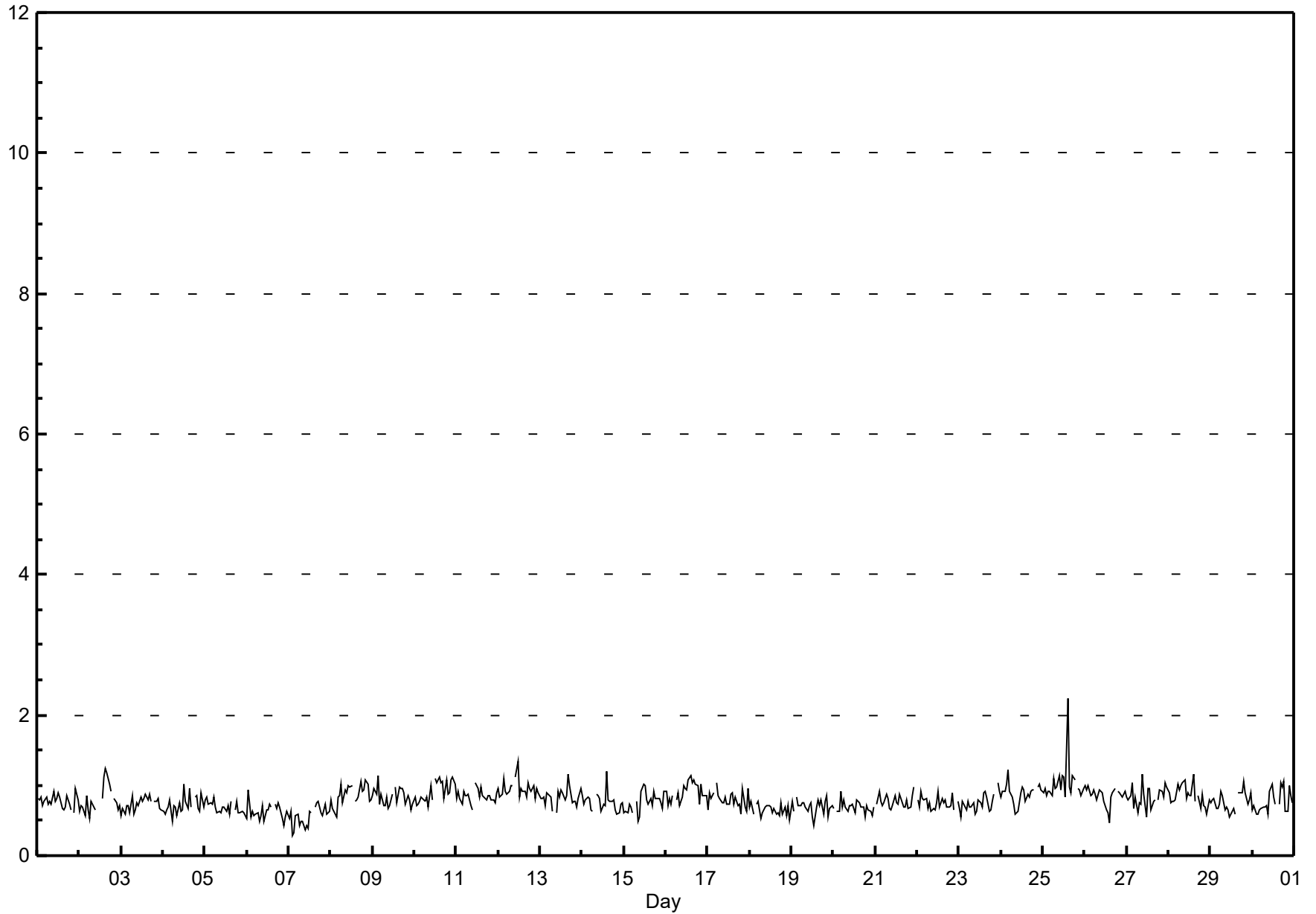


## Hourly Maximums

## Total Reduced Sulphur (TRS) - ppb Portable Rycroft - November 2016

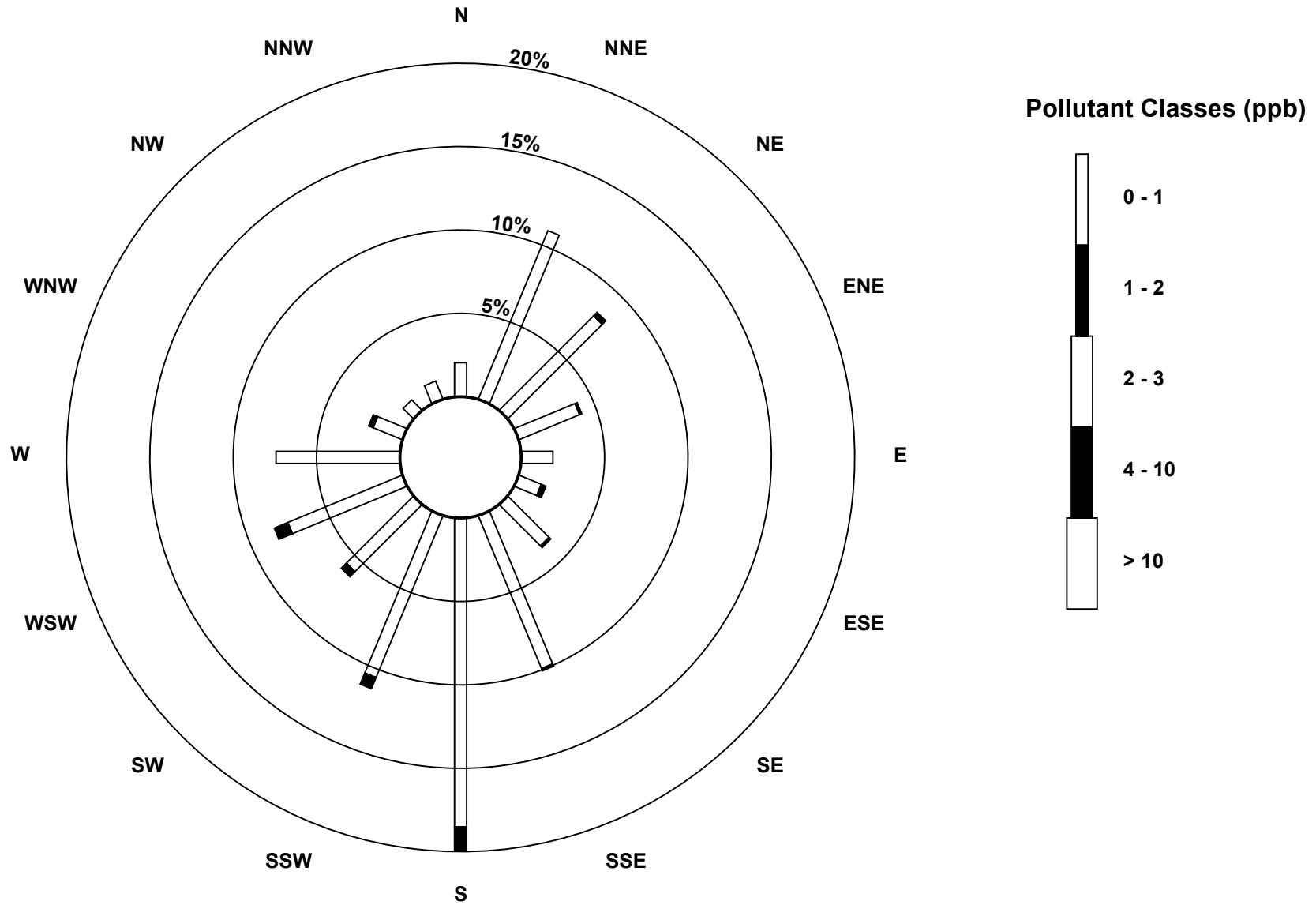
Maximum Value: 2.2 ppb on Nov 25 15:00		Maximum Daily Average: 1.0 ppb on Nov 25		Hours in Service: 720																						
Minimum Value: 0 ppb on Nov 7 03:00		Minimum Daily Average: 0.6 ppb on Nov 7		Hours of Data: 686																						
Maximum Diurnal Average: 0.9 ppb at hour 15		Minimum Diurnal Average: 0.7 ppb at hour 9		Hours of Missing Data: 34																						
Monthly Average: 0.79 ppb		Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 0.6 Q <sub>1</sub> = 0.7 Median = 0.8 Q <sub>3</sub> = 0.9 P <sub>90</sub> = 1.0 P <sub>99</sub> = 1.2		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	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.0
2-Nov	1	1	1	1	1	1	1	1	1	1	C	C	C	1	1	1	1	1	1	1	A	1	1	1	0.8	1.2
3-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	0.9
4-Nov	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	0.7	1.0
5-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	0.7	0.8
6-Nov	1	1	1	1	1	1	1	0	1	1	0	1	1	1	1	1	A	1	1	1	1	1	0	1	0.6	0.9
7-Nov	1	1	0	0	1	1	0	0	0	0	0	0	1	1	1	A	1	1	1	1	1	1	1	1	0.6	0.8
8-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.1
9-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.1
10-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
11-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	0.8	1.0
12-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
13-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
14-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	1.2
15-Nov	1	1	1	1	1	1	A	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.0
16-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	1.1
17-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	0.8	1.0
18-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	0.8
19-Nov	1	1	A	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	0.7	0.8
20-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	0.7	0.9
21-Nov	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.0
22-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	0.9
23-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
24-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	0.9	1.2
25-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	A	1	1	1	1.0	2.2
26-Nov	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	A	1	1	1	1	0.9	1.0
27-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	0.8	1.2
28-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	0.9	1.2
29-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
30-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	0.8	1.1
		0.8	0.8	0.7	0.8	0.8	0.8	0.8	0.7	0.7	0.8	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	0.8	Diurnal Average
		1.0	1.0	1.0	1.1	1.2	1.0	1.1	1.0	1.0	1.2	1.1	1.3	1.1	1.1	2.2	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.1	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																								

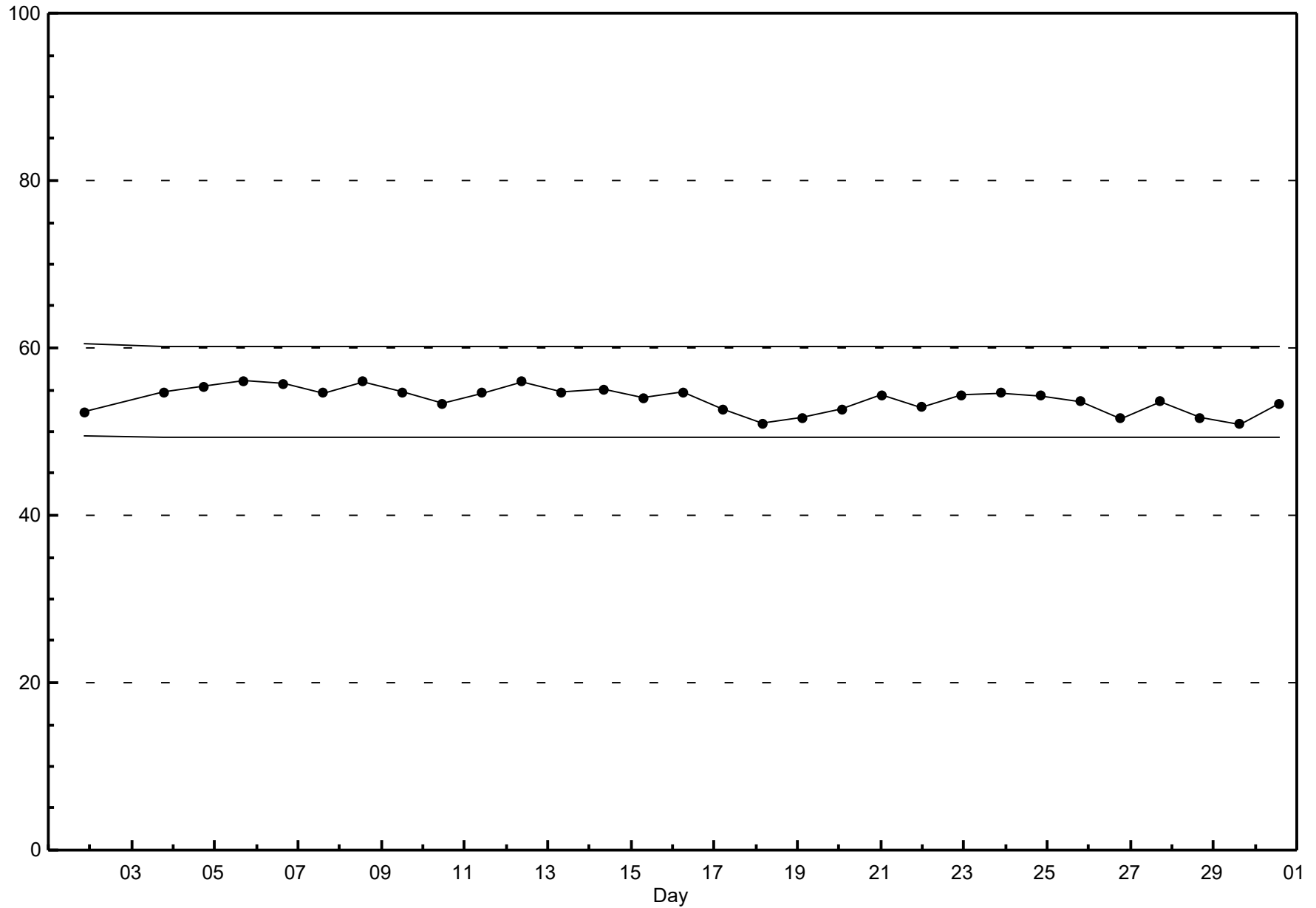




**Pollutant Rose**

**Total Reduced Sulphur (TRS) - ppb**  
**Portable Rycroft - November 2016**







# Hourly Averages

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

Peace Airshed Zone Association

## Portable Rycroft - November 2016

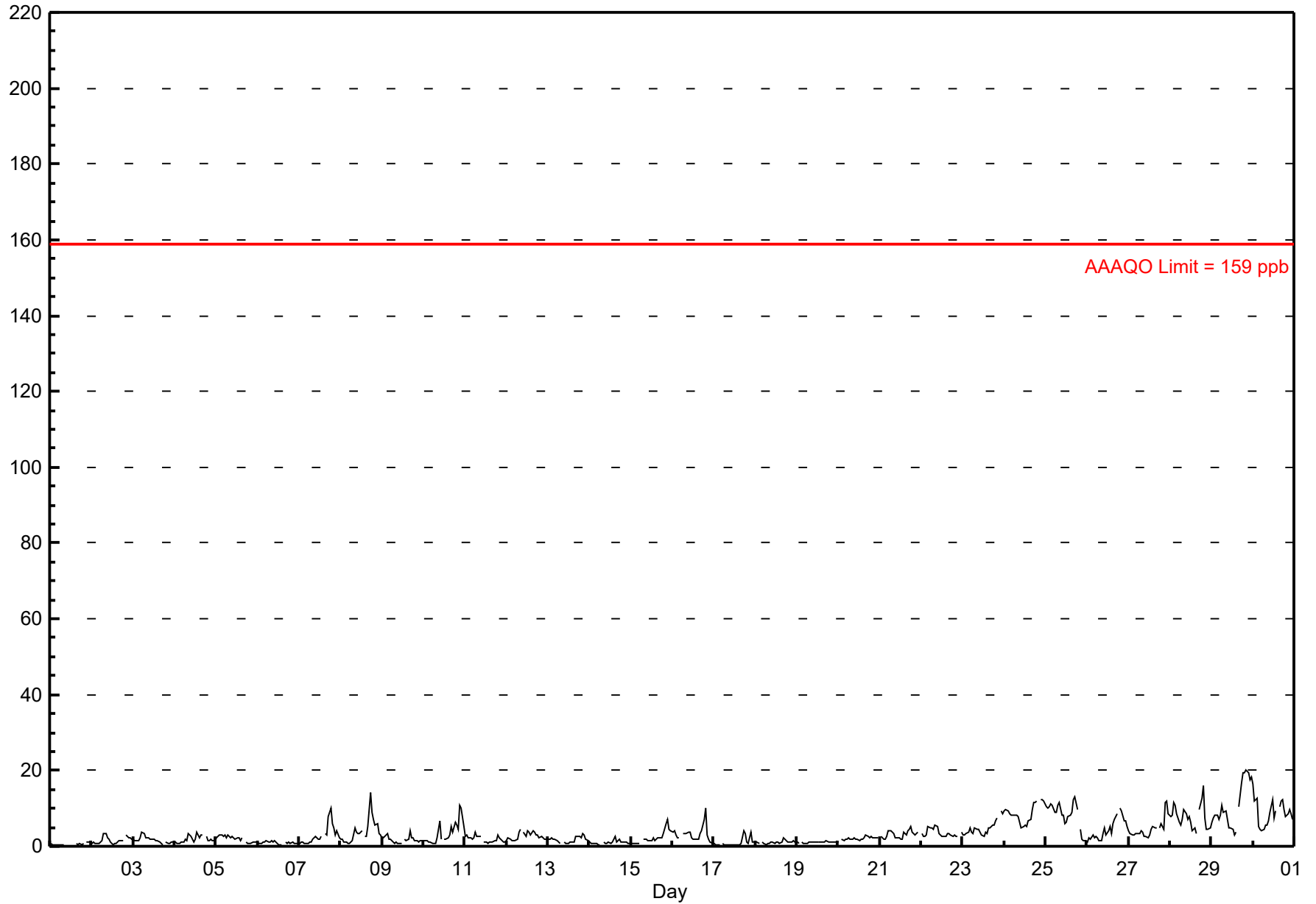
Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	720
Maximum Value: 20.1 ppb on Nov 29 21:00	Maximum Daily Average: 10.6 ppb on Nov 29		Hours of Data:	683
Minimum Value: 0 ppb on Nov 17 04:00	Minimum Daily Average: 0.9 ppb on Nov 6		Hours of Missing Data:	37
Maximum Diurnal Average: 5.1 ppb at hour 18	Minimum Diurnal Average: 2.6 ppb at hour 15		Hours of Calibration:	37
Monthly Average: 3.46 ppb	Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 0.8 Q <sub>1</sub> = 1.2 Median = 2.3 Q <sub>3</sub> = 4.3 P <sub>90</sub> = 8.5 P <sub>99</sub> = 16.6		Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Nov	1	0	0	0	0	0	1	1	0	C	C	C	C	C	C	1	1	1	1	1	A	1	1	1	--	1.3																							
2-Nov	1	1	1	1	1	1	2	3	3	2	2	1	1	1	1	1	1	1	1	A	3	2	2	2	1.5	3.4																							
3-Nov	2	1	1	2	2	4	3	2	2	2	2	2	2	1	1	1	1	1	A	1	1	1	1	1	1.7	3.7																							
4-Nov	1	1	1	1	1	1	2	2	3	2	2	1	2	4	2	3	3	A	3	2	1	2	1	2	1.8	3.9																							
5-Nov	2	3	3	3	3	3	2	3	2	3	2	2	2	2	1	2	A	1	1	1	1	1	1	1	2.0	3.1																							
6-Nov	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	A	1	1	1	1	1	1	1	1	0.9	1.4																							
7-Nov	1	1	1	1	1	1	1	1	2	2	2	2	2	3	A	3	3	8	10	6	5	3	4	2	2.8	9.9																							
8-Nov	2	2	1	1	1	1	1	2	5	4	3	4	A	A	3	3	5	14	9	7	5	6	3	3	3.8	14.2																							
9-Nov	2	2	3	3	2	2	1	1	1	1	1	A	A	2	1	2	4	2	2	1	2	1	1	2	1.8	4.1																							
10-Nov	2	1	1	1	1	1	1	1	2	7	2	A	A	2	2	3	5	4	6	6	4	11	10	5	3.5	10.7																							
11-Nov	3	3	2	2	2	2	4	2	3	2	A	1	1	1	1	1	1	1	1	3	2	1	1	1	1.9	3.6																							
12-Nov	2	2	2	2	2	1	2	4	5	A	4	3	4	4	3	4	4	3	3	2	2	2	2	2	2.7	4.6																							
13-Nov	2	2	2	2	2	1	1	1	A	1	1	1	1	1	1	1	2	3	3	2	3	3	2	2	1.7	3.4																							
14-Nov	1	1	1	1	1	1	1	A	1	1	1	1	1	1	2	3	1	2	1	1	1	1	1	1	1.0	2.8																							
15-Nov	1	1	1	1	1	1	A	2	2	2	2	2	2	2	2	2	2	2	2	3	6	7	4	4	2.3	7.1																							
16-Nov	4	4	3	2	2	A	3	3	3	4	4	2	2	2	2	2	3	4	7	10	3	2	1	1	3.2	10.1																							
17-Nov	1	0	0	0	A	1	0	0	0	0	0	0	0	0	0	0	1	4	3	1	1	4	1	1	1.0	4.0																							
18-Nov	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1.1	2.1																							
19-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	1.1	1.3																							
20-Nov	1	A	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	2	3	2	2	2	2	2.0	3.0																							
21-Nov	A	3	2	2	2	4	4	4	3	2	2	2	2	2	4	3	4	5	5	4	3	4	4	A	3.1	5.1																							
22-Nov	3	3	3	3	5	5	5	5	5	5	3	3	3	3	3	3	3	3	3	3	3	3	A	4	3.5	5.5																							
23-Nov	3	3	3	4	5	4	3	5	4	4	4	3	3	4	3	5	5	6	6	7	7	A	9	9	4.7	9.2																							
24-Nov	9	10	9	9	8	8	8	8	8	6	5	5	6	5	7	7	10	12	12	12	A	12	12	12	8.7	12.4																							
25-Nov	11	10	11	11	11	9	9	11	11	8	8	6	6	8	8	9	12	13	10	A	4	2	2	2	8.3	12.9																							
26-Nov	1	2	2	3	2	2	2	2	2	3	5	3	4	5	3	6	7	9	A	10	9	7	7	5	4.5	10.0																							
27-Nov	4	3	3	3	3	3	3	4	4	3	2	2	3	4	5	5	5	A	5	6	4	11	12	9	4.7	11.8																							
28-Nov	8	8	11	11	9	6	6	7	10	9	7	8	6	4	5	3	A	10	13	16	7	5	5	5	7.7	15.9																							
29-Nov	6	7	8	8	7	8	11	9	9	7	5	5	4	3	4	A	10	17	20	19	20	19	18	18	10.6	20.1																							
30-Nov	17	12	13	5	4	4	4	6	6	7	9	12	7	9	A	10	12	12	10	8	8	10	9	7	8.8	16.5																							
																								3.2	3.1	3.2	2.9	2.8	2.7	3.0	3.2	3.5	3.4	3.0	2.7	2.6	2.8	3.2	4.1	5.1	5.0	4.9	4.1	4.4	4.1	3.6	Diurnal Average		
																								16.5	12.1	12.7	11.2	10.7	8.8	10.8	10.7	11.5	8.6	9.1	12.3	7.4	9.4	8.2	10.4	12.3	16.9	19.5	19.3	20.1	19.4	17.6	18.3	Diurnal Maximum	

C - Calibration                      A - Automated Daily Zero Span  
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb    24-hr 106 ppb

### Hourly Averages

Nitrogen Dioxide (NO<sub>2</sub>) - ppb  
Portable Rycroft - November 2016



# Hourly Maximums

## Nitrogen Dioxide (NO<sub>2</sub>) - ppb Portable Rycroft - November 2016

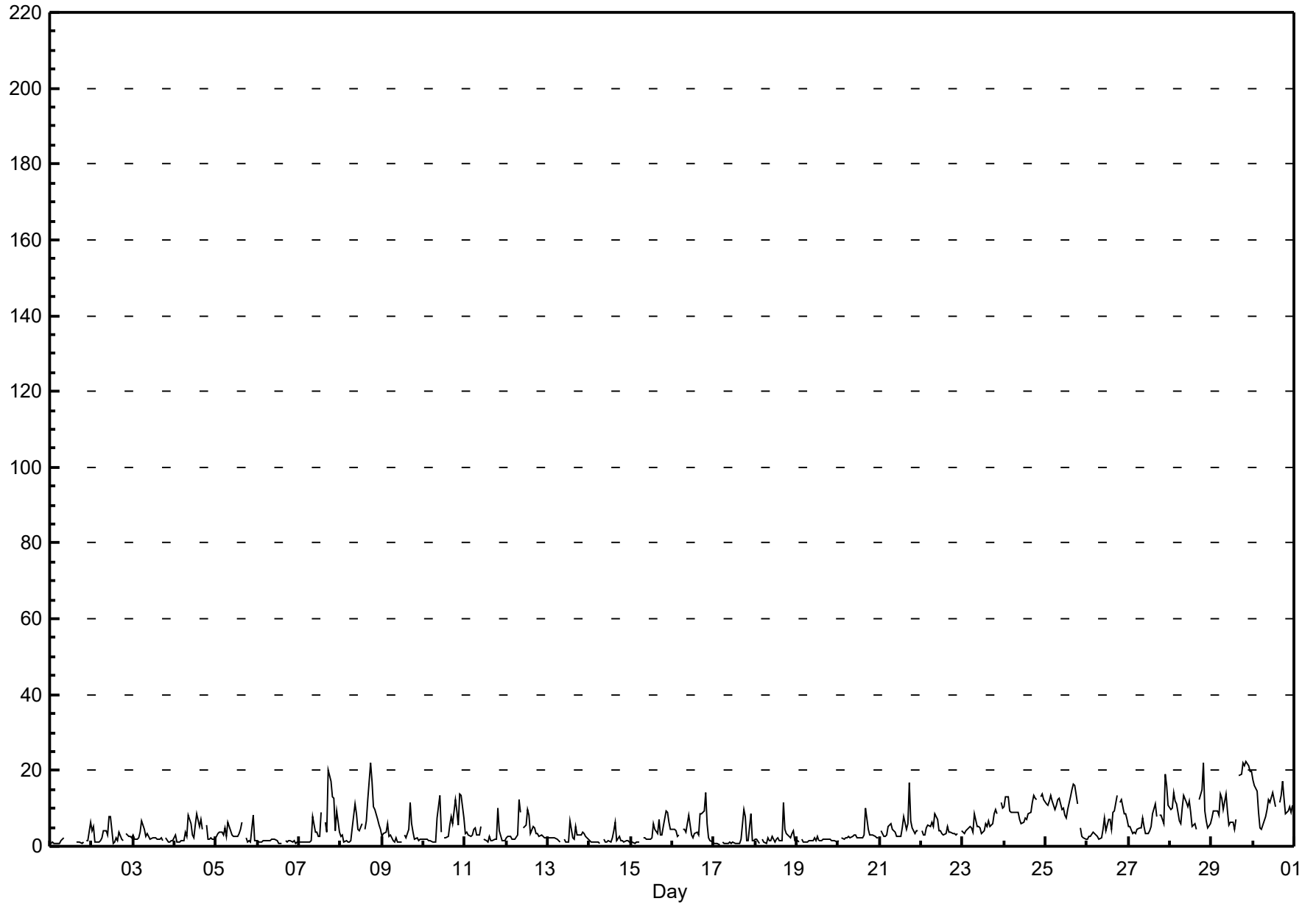
Maximum Value: 22.6 ppb on Nov 29 21:00	Maximum Daily Average: 12.9 ppb on Nov 29	Hours in Service: 720
Minimum Value: 0 ppb on Nov 17 04:00	Minimum Daily Average: 1.3 ppb on Nov 6	Hours of Data: 683
Maximum Diurnal Average: 8.0 ppb at hour 18	Minimum Diurnal Average: 3.5 ppb at hour 5	Hours of Missing Data: 37
Monthly Average: 4.92 ppb	Percentiles: P <sub>1</sub> = 0.7 P <sub>10</sub> = 1.2 Q <sub>1</sub> = 1.7 Median = 3.2 Q <sub>3</sub> = 7.0 P <sub>90</sub> = 11.5 P <sub>99</sub> = 19.6	Hours of Calibration: 37
		Percent Operational Time: 100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Nov	1	1	1	1	1	1	1	2	2	C	C	C	C	C	C	1	1	1	1	1	A	2	1	6	--	6.4
2-Nov	4	5	1	1	1	2	2	4	4	3	8	8	1	1	2	1	4	2	2	A	3	3	3	2	2.9	8.0
3-Nov	3	2	2	2	4	7	4	3	3	2	2	2	2	2	2	2	2	2	A	2	1	1	1	1	2.4	6.8
4-Nov	3	1	1	1	1	1	4	3	8	6	3	2	6	9	5	7	5	A	6	2	2	2	2	2	3.5	8.8
5-Nov	2	3	4	4	3	5	3	6	4	3	3	2	3	3	4	6	A	2	1	1	1	8	1	1	3.3	8.2
6-Nov	1	1	1	1	1	2	1	1	2	2	2	1	1	1	1	A	2	1	1	1	1	1	1	1	1.3	1.8
7-Nov	1	1	1	1	1	1	1	1	8	4	4	3	3	9	A	6	4	20	17	13	13	4	9	4	5.6	20.0
8-Nov	3	3	1	1	1	1	2	5	11	8	4	4	6	A	4	7	12	22	17	10	10	7	5	4	6.6	22.2
9-Nov	3	3	4	6	3	3	1	1	2	1	1	1	A	3	2	5	12	6	4	2	2	1	2	2	3.1	11.6
10-Nov	2	2	2	1	1	1	1	1	8	14	4	A	2	2	3	6	8	6	12	9	6	14	13	7	5.4	13.8
11-Nov	3	4	3	3	3	5	5	3	3	5	A	2	1	1	3	2	2	2	2	10	4	2	2	1	3.0	10.2
12-Nov	2	3	2	2	2	2	3	12	9	A	5	6	10	8	3	5	5	3	4	3	3	3	2	2	4.3	12.1
13-Nov	2	2	2	2	2	2	2	1	A	2	1	1	1	7	2	2	5	3	3	3	4	3	3	2	2.5	6.6
14-Nov	1	1	1	1	1	1	1	A	2	1	1	1	1	2	4	6	2	3	1	2	1	2	1	1	1.7	6.2
15-Nov	1	1	1	1	1	1	A	2	2	2	2	2	2	6	5	3	7	3	3	5	9	9	6	4	3.5	9.3
16-Nov	4	5	4	3	3	A	4	4	4	8	6	3	2	3	4	3	9	9	9	14	6	2	2	1	4.9	14.3
17-Nov	1	1	1	0	A	1	1	1	1	1	1	1	1	1	1	1	2	10	8	2	2	9	1	2	2.0	9.5
18-Nov	2	2	1	A	2	1	1	2	2	1	3	1	2	2	1	1	12	4	3	3	2	3	4	2	2.5	11.5
19-Nov	1	1	A	2	1	1	1	2	1	1	2	1	3	2	1	2	2	2	2	2	2	2	1	1	1.6	2.6
20-Nov	1	A	2	2	2	2	3	2	3	3	3	2	2	2	2	3	10	5	3	3	3	3	2	2	2.8	10.0
21-Nov	A	4	3	3	3	5	6	4	4	4	3	2	3	5	8	4	6	17	7	5	3	4	4	A	4.8	16.9
22-Nov	4	3	3	5	6	5	6	5	9	7	4	4	3	3	3	5	4	4	3	3	3	3	A	4	4.4	8.6
23-Nov	4	3	4	5	5	5	4	8	5	5	5	3	4	6	5	7	5	6	9	10	8	A	11	10	6.0	11.4
24-Nov	11	13	13	9	9	9	9	9	9	7	6	6	8	7	9	9	11	13	13	12	A	13	14	12	10.0	13.8
25-Nov	11	11	12	13	12	10	11	12	13	10	10	8	8	10	13	15	16	16	11	A	5	3	2	2	10.2	16.5
26-Nov	2	2	2	4	3	3	2	2	2	4	8	4	7	7	5	9	9	14	A	12	12	9	9	7	6.0	13.6
27-Nov	5	5	4	4	3	4	5	5	7	5	3	3	4	5	9	11	8	A	8	8	6	19	16	11	6.9	18.9
28-Nov	10	10	14	12	11	7	6	10	14	12	10	12	9	5	6	5	A	12	15	22	9	7	5	6	9.9	22.1
29-Nov	8	9	9	9	8	14	13	10	14	9	5	6	6	5	7	A	19	19	22	21	23	21	20	20	12.9	22.6
30-Nov	18	16	15	9	5	4	7	8	10	12	12	14	12	10	A	12	13	17	13	9	9	10	9	11	11.1	17.6
	3.9	4.1	3.9	3.7	3.5	3.6	3.8	4.5	5.7	5.1	4.3	3.9	4.0	4.6	4.3	5.2	7.0	8.0	7.1	6.8	5.5	5.9	5.3	4.6	Diurnal Average	
	17.6	16.2	14.6	13.4	11.9	13.7	12.6	12.4	13.7	13.5	11.7	14.3	12.2	10.4	13.2	15.0	18.6	22.2	22.1	22.1	22.6	21.4	19.6	19.9	Diurnal Maximum	

C - Calibration                      A - Automated Daily Zero Span

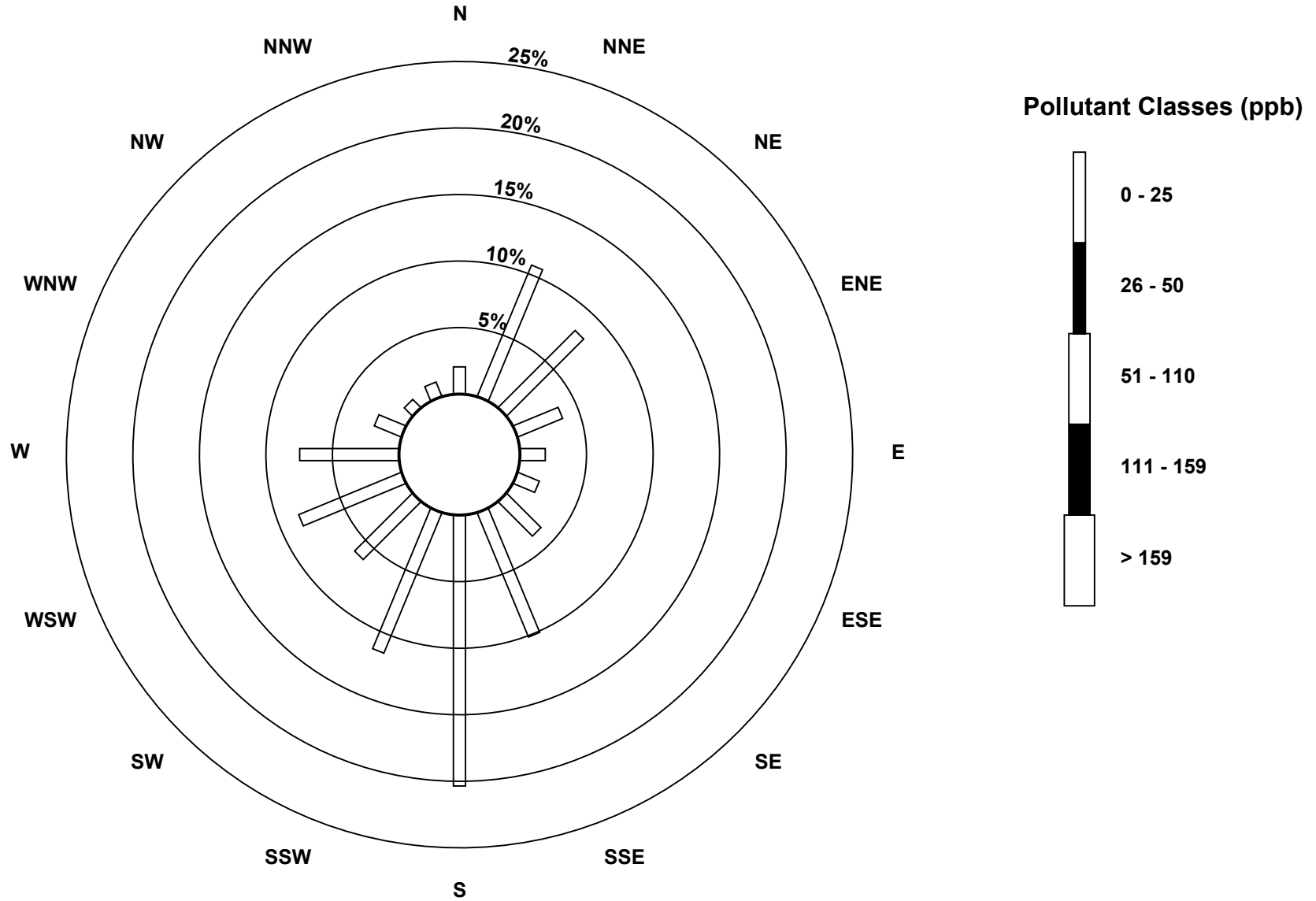
**Hourly Maximums**

**Nitrogen Dioxide (NO<sub>2</sub>) - ppb**  
**Portable Rycroft - November 2016**



**Pollutant Rose**

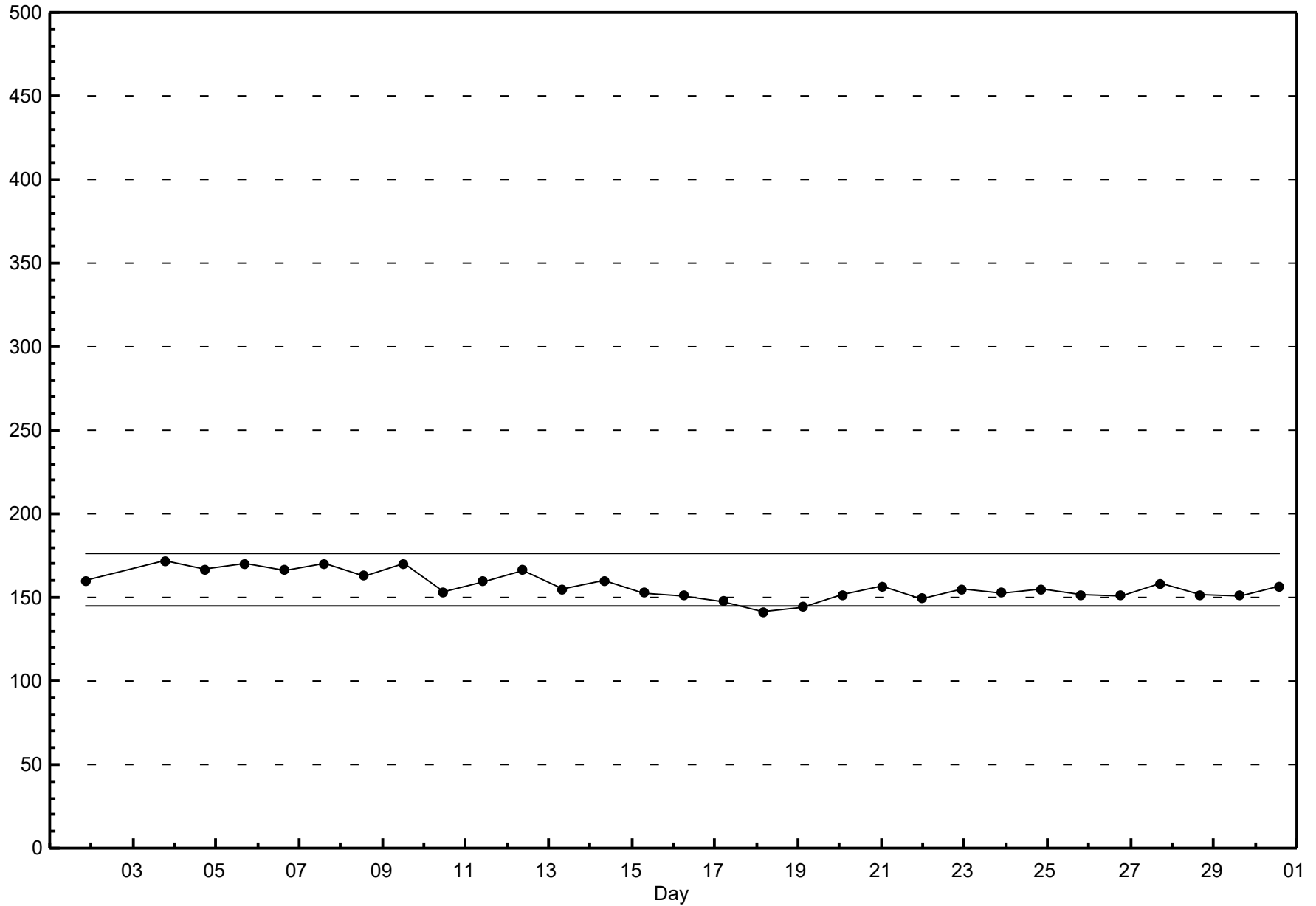
**Nitrogen Dioxide (NO<sub>2</sub>) - ppb**  
**Portable Rycroft - November 2016**





**Span Responses**

**Nitrogen Dioxide (NO<sub>2</sub>)**  
**Portable Rycroft - November 2016**

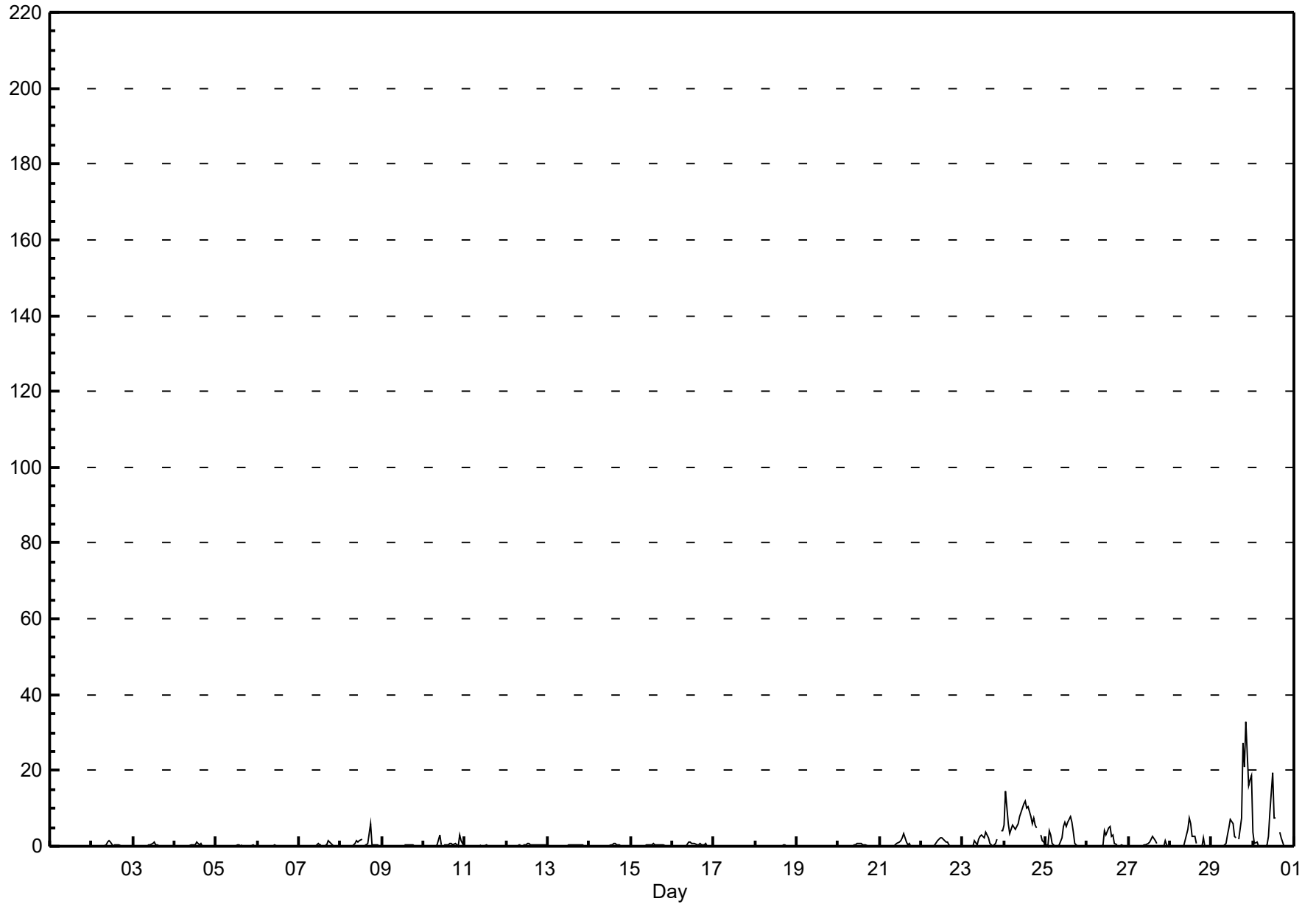


## Hourly Averages

Nitrogen Oxide (NO) - ppb

Portable Rycroft - November 2016

Maximum Value: 32.7 ppb on Nov 29 21:00		Maximum Daily Average: 7.4 ppb on Nov 29		Hours in Service: 720																							
Minimum Value: 0 ppb on Nov 1 01:00		Minimum Daily Average: 0.0 ppb on Nov 17		Hours of Data: 683																							
Maximum Diurnal Average: 2.5 ppb at hour 12		Minimum Diurnal Average: 0.2 ppb at hour 7		Hours of Missing Data: 37																							
Monthly Average: 0.96 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.1 Q <sub>3</sub> = 0.4 P <sub>90</sub> = 2.4 P <sub>99</sub> = 15.4		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	0	0	0	0	0	0	0	0	0	C	C	C	C	C	C	0	0	0	0	0	A	0	0	0	0	--	0.2
2-Nov	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	A	0	0	0	0	0	0.2	1.5
3-Nov	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	A	0	0	0	0	0	0	0.2	0.9
4-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	A	0	0	0	0	0	0	0	0.2	1.0
5-Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	1	0	0	0.1	0.5
6-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	0.2
7-Nov	0	0	0	0	0	0	0	0	0	0	1	1	0	1	A	0	0	2	1	0	0	0	0	0	0	0.2	1.6
8-Nov	0	0	0	0	0	0	0	0	1	2	1	1	2	A	1	0	1	6	0	0	0	0	0	0	0	0.7	5.9
9-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	0.1	0.4
10-Nov	0	0	0	0	0	0	0	0	0	3	0	A	0	0	0	1	1	0	1	0	0	3	1	0	0	0.5	3.1
11-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	0.1	0.3
12-Nov	0	0	0	0	0	0	0	0	0	0	A	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0.3	0.8
13-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	0.2	0.4
14-Nov	0	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	0.9
15-Nov	0	0	0	0	0	0	A	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0.2	0.7
16-Nov	0	0	0	0	0	A	0	0	0	1	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0.4	1.3
17-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	0.1
18-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	0.1	0.5
19-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	0.1	0.2
20-Nov	0	A	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0.2	0.8
21-Nov	A	0	0	0	0	0	0	0	0	0	1	1	1	2	4	1	0	1	0	0	0	0	0	0	A	0.6	3.5
22-Nov	0	0	0	0	0	0	0	0	0	1	2	2	2	2	1	1	0	0	0	0	0	0	0	0	0	0.6	2.4
23-Nov	0	0	0	0	0	0	0	2	0	2	3	3	2	4	3	2	1	0	0	1	2	A	4	4	1.4	4.2	
24-Nov	6	14	6	3	4	6	5	5	6	8	9	11	12	10	10	8	6	8	5	5	A	3	1	1	6.6	14.4	
25-Nov	0	0	4	3	1	0	0	0	0	2	5	6	5	6	8	6	4	1	0	A	0	0	0	0	2.3	7.8	
26-Nov	0	0	0	0	0	0	0	0	0	0	4	3	5	5	3	3	1	0	A	0	0	0	0	0	1.1	5.2	
27-Nov	0	0	0	0	0	0	0	0	0	0	1	1	1	2	2	1	1	A	0	0	0	1	0	0	0.5	2.4	
28-Nov	0	0	0	0	0	0	0	0	0	3	4	8	6	3	3	1	A	0	0	2	0	0	0	0	1.3	7.6	
29-Nov	0	0	0	0	0	0	0	1	3	5	7	6	3	2	A	2	8	27	21	33	16	18	19	7.4	32.7		
30-Nov	4	1	1	0	0	0	0	0	0	3	9	19	7	8	A	4	2	1	0	0	0	0	0	0	2.6	19.3	
		0.4	0.6	0.4	0.3	0.2	0.2	0.2	0.3	0.4	1.1	1.8	2.5	2.0	1.8	1.5	1.2	0.8	1.0	1.3	1.1	1.3	0.9	0.9	0.9	Diurnal Average	
		5.7	14.4	6.1	3.3	4.4	5.5	4.6	5.2	5.9	7.7	9.0	19.3	12.1	10.2	10.4	7.7	5.9	7.6	27.4	20.9	32.7	16.0	17.6	18.8	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									



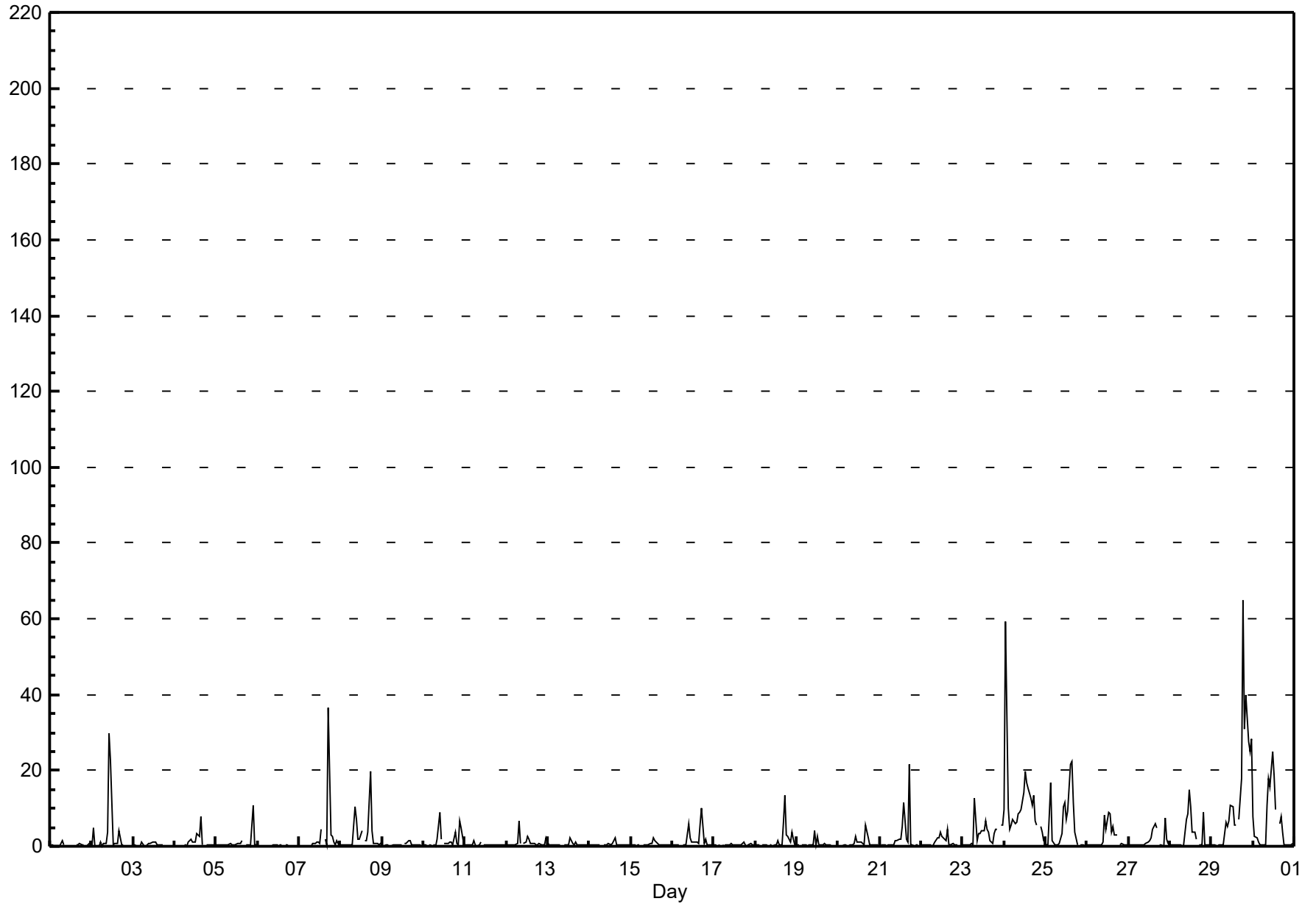
## Hourly Maximums

## Nitrogen Oxide (NO) - ppb Portable Rycroft - November 2016

Maximum Value: 65.1 ppb on Nov 29 19:00		Maximum Daily Average: 12.8 ppb on Nov 29		Hours in Service: 720																						
Minimum Value: 0 ppb on Nov 7 06:00		Minimum Daily Average: 0.2 ppb on Nov 6		Hours of Data: 683																						
Maximum Diurnal Average: 5.5 ppb at hour 18		Minimum Diurnal Average: 0.5 ppb at hour 7		Hours of Missing Data: 37																						
Monthly Average: 2.33 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.2 Q <sub>1</sub> = 0.2 Median = 0.4 Q <sub>3</sub> = 1.4 P <sub>90</sub> = 6.6 P <sub>99</sub> = 28.0		Hours of Calibration: 37																						
				Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Nov	0	0	0	0	0	0	1	1	0	C	C	C	C	C	0	0	1	0	0	A	0	0	1		--	1.3
2-Nov	0	5	0	0	0	1	0	1	1	4	30	23	0	1	1	1	4	0	0	A	0	0	0	0	3.1	29.7
3-Nov	0	0	0	0	0	1	0	0	0	1	1	1	1	1	0	0	0	0	A	0	0	0	0	0	0.4	1.2
4-Nov	0	0	0	0	0	0	0	0	1	2	1	1	1	3	2	8	0	A	0	0	0	0	0	0	1.0	7.8
5-Nov	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	2	A	0	0	0	0	0	11	0	0.9	11.0
6-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	0.5
7-Nov	0	0	0	0	0	0	0	0	1	1	1	1	1	5	A	2	0	37	3	3	1	0	1	0	2.5	36.6
8-Nov	0	0	0	0	0	0	0	0	10	7	2	2	4	A	2	2	4	20	4	1	1	1	0	1	2.6	19.7
9-Nov	0	0	0	0	0	0	0	0	0	0	0	0	A	1	1	2	1	0	0	0	0	0	0	0	0.4	1.5
10-Nov	0	0	0	0	0	0	0	0	2	9	2	A	1	1	1	1	1	0	4	1	0	7	5	0	1.6	8.8
11-Nov	0	0	0	0	0	1	0	0	0	1	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	1.5
12-Nov	0	0	0	0	0	0	1	7	1	A	1	1	3	2	1	1	1	0	0	1	1	1	0	2	1.0	6.7
13-Nov	0	0	0	0	0	0	0	0	A	0	0	0	0	2	1	0	1	0	0	0	0	0	0	0	0.5	2.3
14-Nov	0	0	0	0	0	0	0	A	0	0	0	1	0	1	1	2	0	0	0	0	0	0	0	0	0.5	2.1
15-Nov	0	0	0	0	0	0	A	0	0	0	0	1	1	1	2	2	1	1	1	0	1	0	0	0	0.5	2.1
16-Nov	0	0	0	0	0	A	0	0	1	6	2	1	1	1	1	1	6	10	1	2	0	0	0	0	1.5	10.1
17-Nov	0	0	0	0	A	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0.3	1.1
18-Nov	0	0	0	A	0	0	0	0	0	0	0	0	0	1	0	0	6	13	3	3	1	4	2	0	1.6	13.5
19-Nov	0	0	A	0	0	0	0	0	0	0	4	0	3	0	0	0	1	0	0	0	0	0	0	0	0.5	4.3
20-Nov	0	A	0	0	0	0	0	0	0	1	3	1	1	1	1	1	6	2	0	0	0	0	0	0	0.8	5.8
21-Nov	A	0	0	0	0	0	0	0	0	2	1	2	2	5	12	2	1	22	0	0	0	0	0	A	2.4	21.8
22-Nov	0	0	0	0	0	0	0	1	1	2	2	4	3	2	1	5	0	0	1	0	0	0	A	0	1.1	4.6
23-Nov	0	0	0	0	0	1	0	13	1	3	3	4	4	7	4	4	1	1	3	4	4	A	6	6	3.1	12.5
24-Nov	10	59	10	4	6	7	6	6	9	9	10	14	20	17	15	13	11	14	7	5	A	5	4	1	11.3	59.2
25-Nov	1	0	8	17	2	0	0	0	1	3	10	12	7	9	22	22	12	4	1	A	0	0	0	0	5.7	22.2
26-Nov	0	0	0	0	0	0	0	0	0	1	8	5	9	9	4	5	3	3	A	0	1	0	0	0	2.2	8.9
27-Nov	0	0	0	0	0	0	0	0	0	0	1	1	1	2	5	6	5	A	0	0	0	7	2	1	1.5	7.4
28-Nov	0	0	1	0	0	0	0	0	1	7	9	15	10	4	4	2	A	1	1	9	0	0	0	0	2.8	15.0
29-Nov	0	0	0	0	0	0	0	0	6	5	7	11	10	5	6	A	7	18	65	31	40	27	25	28	12.8	65.1
30-Nov	8	3	2	1	0	0	0	0	11	18	16	25	19	10	A	6	8	4	1	0	0	0	1	1	5.7	24.9
		0.8	2.5	0.9	1.0	0.5	0.6	0.5	1.1	1.7	3.0	4.2	4.6	3.7	3.4	3.2	3.1	2.9	5.5	3.4	2.3	1.9	2.3	1.7	1.6	Diurnal Average
		9.6	59.2	10.0	16.6	5.5	7.2	6.1	12.5	10.8	17.7	29.7	24.9	19.7	16.8	21.7	22.2	11.7	36.6	65.1	30.9	39.7	27.5	24.9	28.4	Diurnal Maximum
C - Calibration		A - Automated Daily Zero Span																								

**Hourly Maximums**

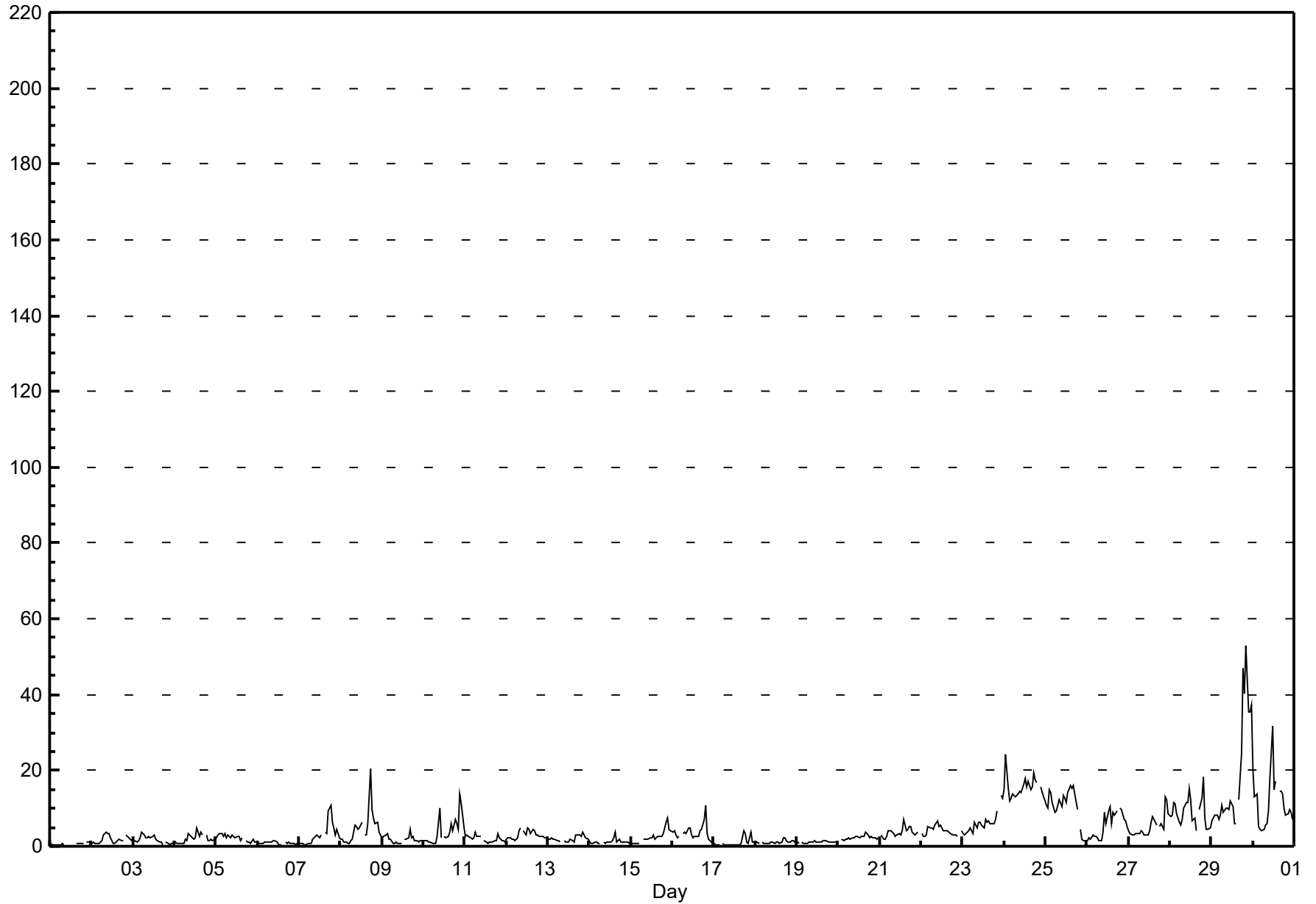
**Nitrogen Oxide (NO) - ppb**  
**Portable Rycroft - November 2016**



## Hourly Averages

## Oxides of Nitrogen (NO<sub>x</sub>) - ppb Portable Rycroft - November 2016

Maximum Value: 53.0 ppb on Nov 29 21:00		Maximum Daily Average: 18.1 ppb on Nov 29		Hours in Service: 720																							
Minimum Value: 0 ppb on Nov 17 04:00		Minimum Daily Average: 0.9 ppb on Nov 6		Hours of Data: 683																							
Maximum Diurnal Average: 6.4 ppb at hour 19		Minimum Diurnal Average: 3.0 ppb at hour 6		Hours of Missing Data: 37																							
Monthly Average: 4.43 ppb		Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 0.8 Q <sub>1</sub> = 1.3 Median = 2.5 Q <sub>3</sub> = 5.0 P <sub>90</sub> = 11.5 P <sub>99</sub> = 30.5		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	1	1	0	0	0	0	1	1	0	C	C	C	C	C	C	1	1	1	1	1	A	1	1	1	--	1.3	
2-Nov	1	1	1	1	1	1	2	3	4	3	3	2	1	1	1	1	2	1	1	A	3	2	2	2	1.8	3.8	
3-Nov	2	1	1	1	2	4	3	2	2	2	2	3	3	2	2	1	1	1	A	1	1	1	1	1	1.7	3.8	
4-Nov	1	1	1	1	1	1	2	1	3	3	2	2	2	5	3	4	3	A	3	2	1	2	2	2	2.0	4.9	
5-Nov	2	3	3	3	3	3	2	3	2	3	3	2	3	3	1	2	A	1	1	1	1	2	1	1	2.2	3.2	
6-Nov	1	1	1	1	1	1	1	1	1	1	2	1	0	1	1	A	1	1	1	1	1	1	0	1	0.9	1.5	
7-Nov	1	1	1	1	0	1	1	1	2	3	3	3	2	3	A	4	3	9	11	6	5	3	4	2	3.0	10.7	
8-Nov	2	2	1	1	1	1	1	2	6	5	5	5	6	A	3	3	6	20	10	7	6	6	4	3	4.6	20.3	
9-Nov	2	2	3	3	2	2	1	1	1	1	1	A	2	2	2	2	5	2	3	1	2	1	1	2	1.9	4.5	
10-Nov	1	1	1	1	1	1	1	1	3	10	2	A	2	2	3	4	6	4	7	6	5	14	12	5	4.0	13.8	
11-Nov	3	3	2	2	2	2	4	3	3	3	A	1	1	1	1	1	1	2	2	3	2	1	1	1	2.0	3.8	
12-Nov	2	2	2	2	2	2	2	4	5	A	4	3	5	4	3	4	4	3	3	3	3	3	2	2	3.0	4.9	
13-Nov	2	2	2	2	2	1	1	1	A	1	1	1	1	2	2	1	3	3	3	3	4	3	2	2	1.9	3.6	
14-Nov	1	1	1	1	1	1	1	A	1	1	1	1	1	1	2	4	1	2	1	1	1	1	1	1	1.2	3.7	
15-Nov	1	1	1	1	1	1	A	2	2	2	2	2	2	3	2	3	3	3	3	3	6	7	5	4	2.5	7.3	
16-Nov	4	4	3	2	2	A	4	4	3	5	5	3	2	2	3	2	4	5	7	11	3	2	1	1	3.6	10.8	
17-Nov	1	0	0	0	A	1	0	0	0	1	1	1	0	0	0	0	1	4	3	1	1	4	1	1	1.0	4.1	
18-Nov	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1.2	2.3	
19-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	1.1	1.4	
20-Nov	1	A	2	2	2	2	2	2	2	2	3	2	2	2	2	3	4	3	2	3	2	2	2	2	2.3	3.6	
21-Nov	A	3	2	2	3	4	4	4	3	3	3	3	3	4	7	4	4	5	5	4	3	3	4	A	3.7	7.2	
22-Nov	3	3	3	3	5	5	5	5	6	7	5	5	5	4	4	4	4	3	3	3	3	3	A	4	4.1	6.8	
23-Nov	3	3	3	4	5	4	3	6	5	6	7	6	5	7	6	7	6	6	6	7	9	A	13	12	6.1	13.5	
24-Nov	15	24	15	12	13	14	13	14	14	14	14	16	18	16	17	15	16	19	17	17	A	16	14	13	15.5	24.1	
25-Nov	11	10	15	14	12	9	9	11	12	10	13	13	12	14	16	15	16	14	10	A	4	2	2	2	10.7	16.2	
26-Nov	1	2	2	3	2	3	2	2	2	4	9	6	9	11	6	9	8	9	A	10	10	7	7	5	5.6	10.6	
27-Nov	4	4	3	3	3	4	4	4	4	3	3	3	4	6	8	6	5	A	5	6	4	13	12	9	5.2	13.0	
28-Nov	8	8	12	11	9	6	6	7	10	12	12	15	12	7	7	4	A	10	13	18	8	5	5	5	9.0	18.4	
29-Nov	7	7	8	8	7	8	11	9	10	10	10	12	11	6	6	A	12	25	47	40	53	36	35	37	18.1	53.0	
30-Nov	21	13	14	5	4	4	4	6	6	9	18	32	15	17	A	14	14	14	10	8	9	10	9	7	11.5	31.7	
		3.6	3.7	3.6	3.2	3.1	3.0	3.2	3.4	3.9	4.5	4.8	5.2	4.7	4.6	4.1	4.4	4.9	6.2	6.4	6.1	5.4	5.3	5.1	4.5	Diurnal Average	
		20.6	24.1	15.5	14.2	12.8	13.8	12.9	13.5	14.0	14.4	18.0	31.7	17.8	17.1	17.2	15.4	16.2	24.8	47.1	40.4	53.0	35.5	35.4	37.3	Diurnal Maximum	
C - Calibration		A - Automated Daily Zero Span																									



# Hourly Maximums

## Oxides of Nitrogen (NO<sub>x</sub>) - ppb Portable Rycroft - November 2016

Maximum Value: 85.0 ppb on Nov 29 19:00	Maximum Daily Average: 25.2 ppb on Nov 29	Hours in Service: 720
Minimum Value: 0 ppb on Nov 17 04:00	Minimum Daily Average: 1.2 ppb on Nov 6	Hours of Data: 683
Maximum Diurnal Average: 13.0 ppb at hour 18	Minimum Diurnal Average: 3.7 ppb at hour 5	Hours of Missing Data: 37
Monthly Average: 7.01 ppb	Percentiles: P <sub>1</sub> = 0.6 P <sub>10</sub> = 1.1 Q <sub>1</sub> = 1.8 Median = 3.7 Q <sub>3</sub> = 8.9 P <sub>90</sub> = 17.4 P <sub>99</sub> = 45.3	Hours of Calibration: 37
		Percent Operational Time: 100.0

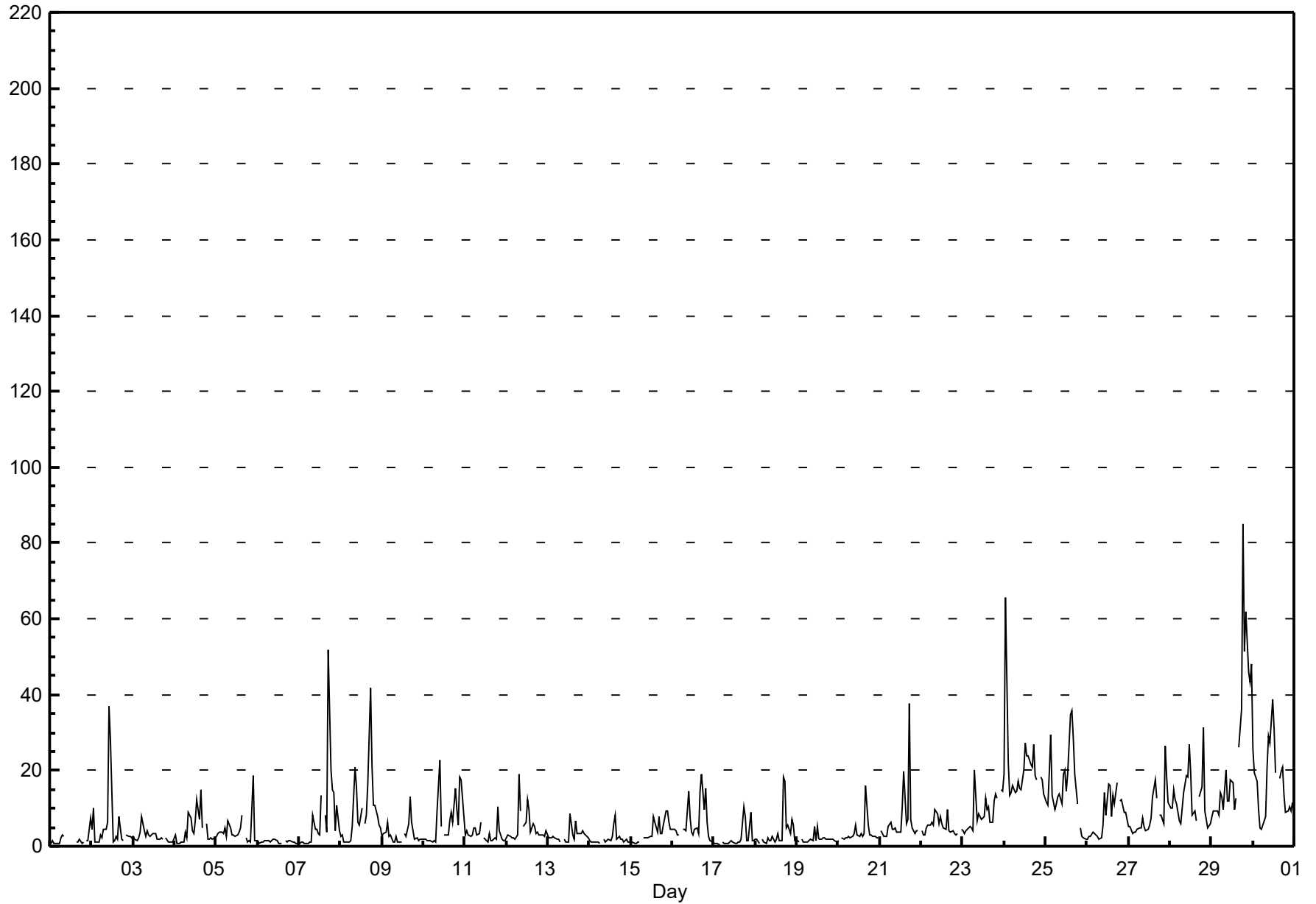
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Nov	1	1	1	1	1	1	2	3	2	C	C	C	C	C	C	1	1	2	1	1	A	2	1	8	--	7.6																						
2-Nov	4	10	1	1	1	3	2	4	4	6	37	28	1	1	3	2	8	2	2	A	3	3	3	2	5.7	36.9																						
3-Nov	3	2	1	2	4	8	4	3	4	3	3	3	3	2	2	2	2	2	A	2	1	1	1	1	2.6	7.9																						
4-Nov	3	1	1	1	1	1	4	2	9	8	4	3	7	12	7	15	5	A	6	2	2	2	2	2	4.3	15.0																						
5-Nov	2	3	4	4	3	5	3	7	5	3	3	3	3	4	5	8	A	2	1	1	1	18	1	2	4.0	18.5																						
6-Nov	1	1	1	1	1	2	1	1	2	2	2	2	1	1	1	A	2	1	1	1	1	1	1	1	1.2	1.9																						
7-Nov	1	1	1	1	1	1	1	1	8	5	5	3	3	13	A	8	4	52	20	15	14	4	11	4	7.7	51.9																						
8-Nov	3	3	1	1	1	1	2	5	21	16	6	6	10	A	6	8	16	42	21	11	11	8	6	5	9.1	41.8																						
9-Nov	3	3	4	6	3	3	1	1	3	1	1	1	A	4	3	6	13	6	4	2	2	2	2	2	3.3	13.2																						
10-Nov	2	2	2	1	1	1	1	1	9	23	5	A	3	3	3	7	9	6	15	10	6	18	17	8	6.7	22.6																						
11-Nov	3	4	3	3	3	5	5	3	3	6	A	2	2	1	3	2	2	2	2	10	4	2	2	2	3.2	10.5																						
12-Nov	2	3	3	2	2	2	3	19	9	A	5	6	12	10	4	6	5	3	4	3	3	3	3	4	5.1	19.1																						
13-Nov	2	2	2	2	2	2	2	1	A	2	1	1	1	9	3	2	7	3	3	3	4	3	3	2	2.8	8.7																						
14-Nov	2	1	1	1	1	1	1	A	2	1	1	2	2	3	6	8	2	3	2	2	1	2	1	1	2.0	8.2																						
15-Nov	1	1	1	1	1	1	A	2	2	2	2	3	3	8	6	4	8	3	3	6	10	9	6	5	3.8	9.5																						
16-Nov	4	5	4	3	3	A	4	4	4	14	8	4	3	4	5	3	14	19	10	15	6	2	2	1	6.3	19.0																						
17-Nov	1	1	1	0	A	1	1	1	1	1	2	1	1	1	1	1	2	10	8	2	2	9	2	2	2.1	10.4																						
18-Nov	2	2	1	A	2	1	1	2	2	2	3	1	2	3	2	2	18	17	5	6	3	7	6	2	3.9	18.2																						
19-Nov	2	1	A	2	1	1	1	2	2	1	5	1	5	2	2	2	2	2	2	2	2	2	1	1	1.9	5.3																						
20-Nov	1	A	2	2	2	2	3	2	2	3	6	3	3	3	3	3	16	6	3	3	3	3	2	2	3.5	15.9																						
21-Nov	A	4	2	3	3	5	6	4	4	5	4	4	4	10	20	6	7	38	7	5	3	4	4	A	7.0	37.7																						
22-Nov	4	3	3	5	6	5	6	6	10	8	6	8	6	5	5	10	4	4	4	3	3	3	A	4	5.3	9.8																						
23-Nov	4	3	4	5	5	5	4	20	7	9	8	7	8	13	10	10	6	6	12	14	13	A	15	15	8.8	20.3																						
24-Nov	19	66	22	13	14	16	14	15	17	15	15	20	27	24	24	22	21	27	19	18	A	18	18	14	20.7	65.6																						
25-Nov	12	11	19	29	13	10	11	13	14	11	19	20	15	19	35	36	28	19	11	A	5	3	2	2	15.5	35.8																						
26-Nov	2	3	2	4	3	3	3	2	2	6	14	8	16	16	8	13	11	17	A	12	12	9	9	7	7.9	16.7																						
27-Nov	5	5	4	4	4	4	5	5	7	5	4	4	5	7	13	17	13	A	8	8	6	27	18	11	8.3	26.6																						
28-Nov	10	10	15	12	11	7	6	10	14	19	18	27	19	8	9	7	A	13	16	31	9	7	5	6	12.6	31.2																						
29-Nov	8	9	9	9	8	14	13	10	20	12	12	17	17	10	13	A	26	36	85	51	62	46	43	48	25.2	85.0																						
30-Nov	26	19	17	10	5	4	7	8	21	29	27	39	31	20	A	18	20	21	13	9	9	10	9	11	16.7	38.9																						
																								4.6	6.2	4.6	4.5	3.7	4.0	4.0	5.4	7.3	7.8	8.0	8.2	7.6	7.8	7.4	8.2	9.7	13.0	10.3	8.9	7.2	7.9	6.7	6.0	Diurnal Average
																								25.7	65.6	21.9	29.5	14.3	15.9	14.1	20.3	20.9	29.1	36.9	38.9	31.1	23.9	34.7	35.8	28.4	51.9	85.0	51.5	61.9	46.0	43.4	48.1	Diurnal Maximum

C - Calibration                      A - Automated Daily Zero Span



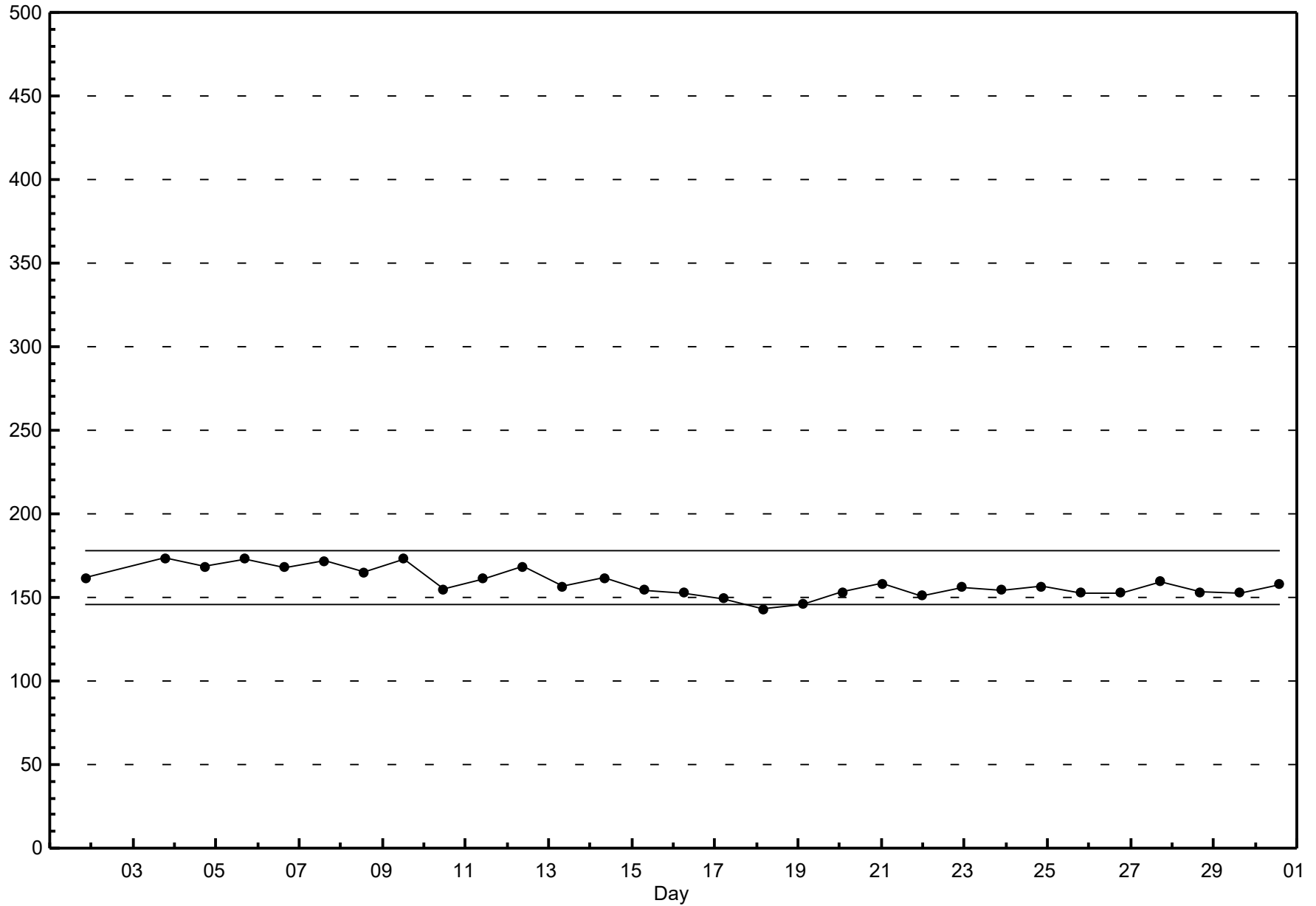
### Hourly Maximums

Oxides of Nitrogen (NO<sub>x</sub>) - ppb  
Portable Rycroft - November 2016



### Span Responses

Oxides of Nitrogen (NO<sub>x</sub>)  
Portable Rycroft - November 2016



## Hourly Averages

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

Portable Rycroft - November 2016

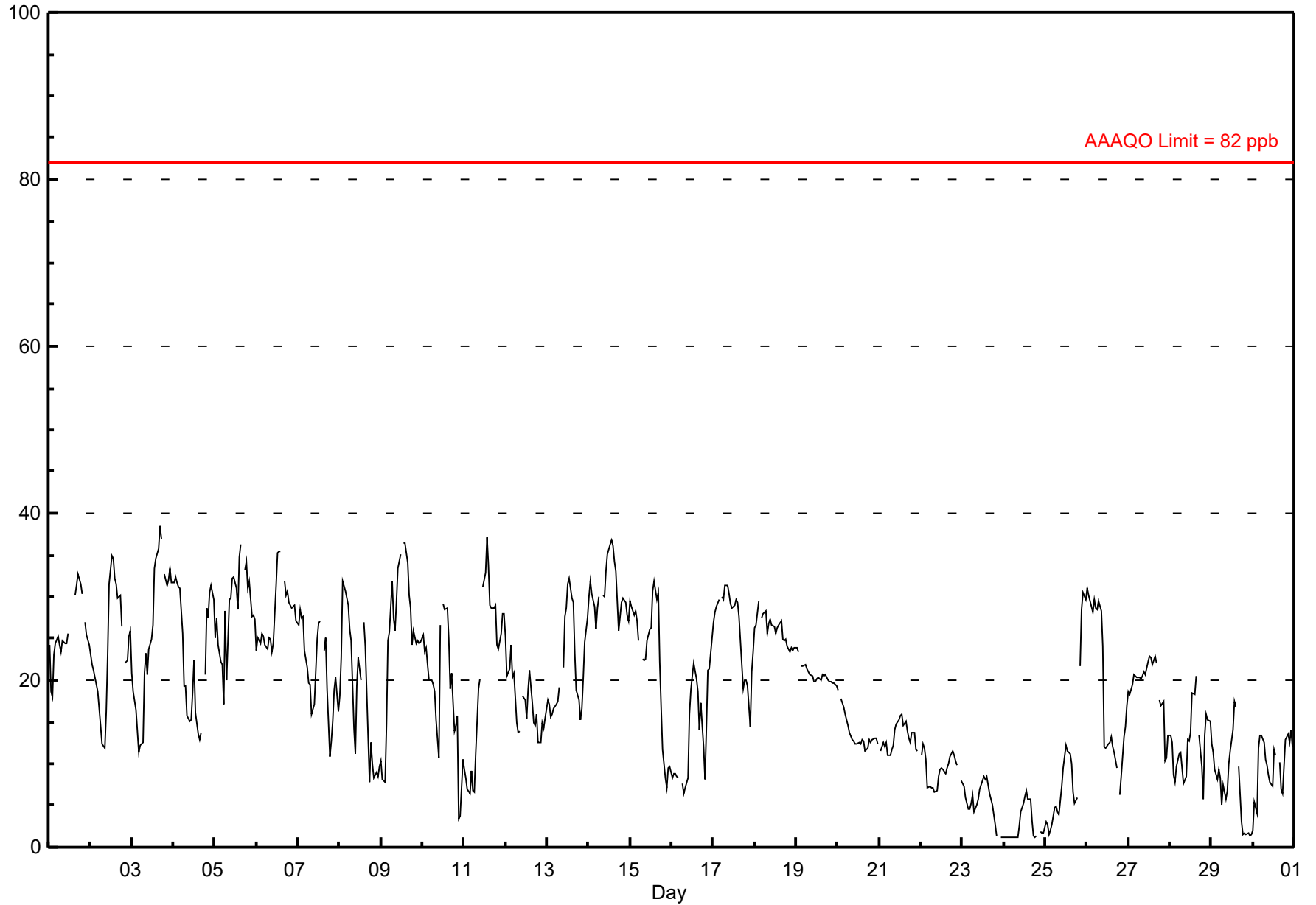
Number of Exceedences (AAAQO):	1-hr: 0	24-hr: 0	Hours in Service:	720
Maximum Value: 38.5 ppb on Nov 3 17:00	Maximum Daily Average: 30.8 ppb on Nov 14		Hours of Data:	686
Minimum Value: 1 ppb on Nov 24 00:00	Minimum Daily Average: 2.6 ppb on Nov 24		Hours of Missing Data:	34
Maximum Diurnal Average: 23.1 ppb at hour 15	Minimum Diurnal Average: 16.6 ppb at hour 8		Hours of Calibration:	34
Monthly Average: 18.72 ppb	Percentiles: P <sub>1</sub> = 1.2 P <sub>10</sub> = 6.6 Q <sub>1</sub> = 11.5 Median = 19.2 Q <sub>3</sub> = 26.5 P <sub>90</sub> = 30.5 P <sub>99</sub> = 36.3		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	24	19	18	23	24	25	24	23	25	24	24	26	C	C	C	30	31	33	32	30	A	27	25	24	25.6	32.6																							
2-Nov	23	22	21	19	19	17	15	12	12	16	23	31	35	35	32	32	30	30	26	A	22	22	25	26	23.7	34.9																							
3-Nov	21	19	16	14	11	12	13	21	23	21	24	25	27	33	35	36	38	37	A	33	31	32	33	32	25.5	38.5																							
4-Nov	32	32	32	31	31	26	19	19	16	15	15	18	22	16	14	13	14	A	21	29	28	30	31	30	23.2	32.3																							
5-Nov	25	27	24	22	22	17	28	20	30	30	32	32	31	29	35	36	A	33	34	31	32	28	28	27	28.4	36.3																							
6-Nov	24	25	24	26	25	24	24	25	25	23	24	31	35	35	35	A	32	30	31	29	29	29	29	27	27.9	35.4																							
7-Nov	27	28	28	28	24	22	20	19	16	17	21	25	27	27	A	24	25	19	11	13	15	19	20	16	21.3	28.5																							
8-Nov	18	23	32	31	30	29	26	25	14	11	19	23	20	A	27	24	19	8	13	10	8	9	8	10	19.0	31.9																							
9-Nov	10	8	8	15	25	26	32	27	26	29	33	35	A	36	36	34	30	29	24	26	24	25	24	25	25.6	36.5																							
10-Nov	25	23	24	22	20	20	19	19	15	11	27	A	29	29	29	25	19	21	14	15	16	3	4	11	19.1	29.2																							
11-Nov	9	8	7	6	9	7	7	11	19	20	A	31	33	37	34	29	29	29	29	24	24	26	28	28	21.0	37.2																							
12-Nov	25	21	21	24	20	21	15	14	14	A	18	18	15	19	21	17	15	15	16	13	13	15	14	15	17.3	25.3																							
13-Nov	18	17	16	16	17	17	17	19	A	21	28	29	32	32	30	29	23	19	18	15	17	20	25	27	21.8	32.2																							
14-Nov	30	32	30	29	26	29	30	A	30	30	33	35	36	37	36	34	33	26	28	29	30	29	28	27	30.8	36.8																							
15-Nov	30	29	28	28	27	25	A	23	22	23	25	26	26	31	32	30	30	22	17	12	8	7	9	10	22.6	31.8																							
16-Nov	8	9	9	8	8	A	8	7	7	8	16	19	20	22	20	19	14	17	12	8	14	21	21	25	14.0	25.1																							
17-Nov	27	28	29	30	A	30	30	31	31	30	29	29	29	30	29	28	25	19	20	20	19	14	21	23	26.1	31.4																							
18-Nov	26	27	30	A	27	28	28	26	27	27	26	26	26	27	27	25	25	25	24	23	24	24	24	24	26.0	29.5																							
19-Nov	24	23	A	22	22	22	21	21	21	20	20	20	20	20	21	21	21	20	20	20	20	20	19	19	20.7	23.9																							
20-Nov	19	A	18	17	16	15	14	14	13	13	12	12	13	12	13	13	12	12	13	12	13	13	13	12	13.6	18.8																							
21-Nov	A	12	12	12	12	11	11	12	12	14	15	15	16	16	15	15	14	13	13	14	14	12	12	A	13.2	15.9																							
22-Nov	11	12	12	10	7	7	7	7	7	7	9	9	9	9	9	10	10	11	12	11	10	10	A	8	9.3	12.4																							
23-Nov	8	7	6	5	5	5	6	4	5	6	7	7	8	8	8	7	6	5	4	3	1	A	1	1	5.4	8.5																							
24-Nov	1	1	1	1	1	1	1	1	1	3	4	5	6	7	6	6	3	1	1	1	A	2	2	2	2.6	6.9																							
25-Nov	3	3	1	2	3	5	5	4	4	7	9	11	12	11	11	10	7	5	6	A	22	29	31	30	10.0	30.5																							
26-Nov	31	30	29	28	30	29	29	30	28	24	12	12	12	13	13	12	11	10	A	6	8	13	14	17	19.2	31.0																							
27-Nov	19	18	19	21	20	20	20	20	20	21	21	22	23	23	22	23	22	A	18	17	17	10	11	13	19.2	22.9																							
28-Nov	13	13	9	8	10	11	11	9	8	9	13	13	14	18	18	21	A	13	10	6	13	16	15	15	12.4	20.6																							
29-Nov	12	11	9	8	9	8	5	7	6	7	10	12	14	17	17	A	10	3	2	2	2	1	1	1	7.6	17.5																							
30-Nov	2	5	4	12	13	13	13	11	10	9	8	7	12	11	A	10	7	6	10	13	14	13	14	12	9.9	14.0																							
																								18.8	18.4	17.9	17.8	17.7	18.0	17.2	16.6	16.8	17.1	19.3	20.9	21.5	22.9	23.1	21.9	19.8	18.3	17.0	16.6	17.4	17.9	18.4	18.6	Diurnal Average	
																								31.7	32.3	31.9	31.2	31.1	30.0	31.8	31.4	31.3	30.3	33.4	35.1	36.3	37.2	36.5	36.3	38.5	36.9	34.2	32.7	31.8	32.0	33.3	31.7	Diurnal Maximum	

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

**Hourly Averages**

**Ozone (O<sub>3</sub>) - ppb**  
**Portable Rycroft - November 2016**



# Hourly Maximums

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

Portable Rycroft - November 2016

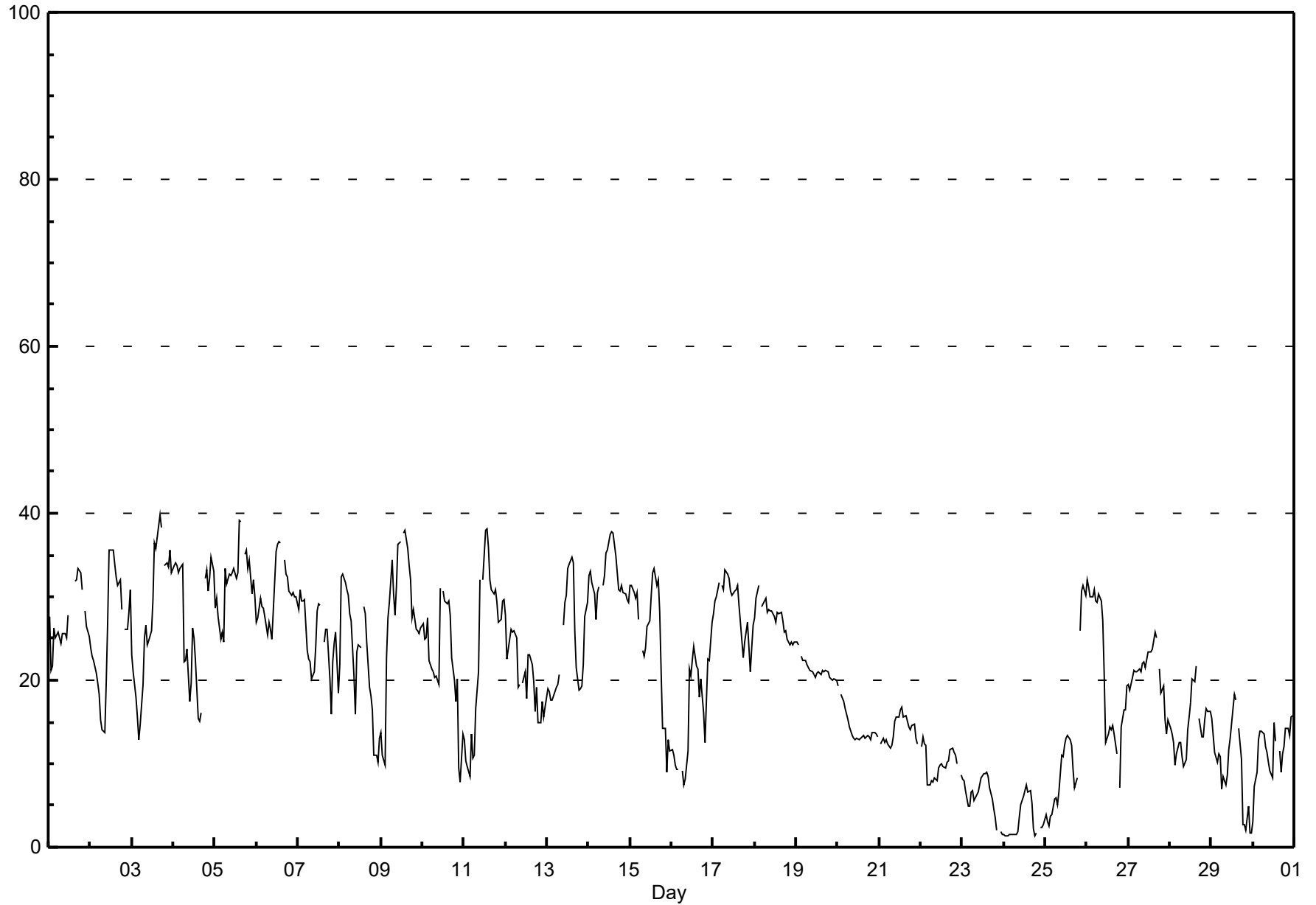
Maximum Value: 39.9 ppb on Nov 3 17:00	Maximum Daily Average: 32.5 ppb on Nov 14	Hours in Service: 720
Minimum Value: 1 ppb on Nov 24 03:00	Minimum Daily Average: 3.2 ppb on Nov 24	Hours of Data: 686
Maximum Diurnal Average: 24.6 ppb at hour 15	Minimum Diurnal Average: 18.8 ppb at hour 8	Hours of Missing Data: 34
Monthly Average: 20.85 ppb	Percentiles: P <sub>1</sub> = 1.5 P <sub>10</sub> = 8.0 Q <sub>1</sub> = 13.1 Median = 21.3 Q <sub>3</sub> = 29.2 P <sub>90</sub> = 32.6 P <sub>99</sub> = 38.0	Hours of Calibration: 34
		Percent Operational Time: 100.0

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Nov	28	21	22	26	25	26	25	24	26	26	25	28	C	C	C	32	32	33	33	31	A	28	26	25	27.1	33.4	
2-Nov	24	23	22	21	20	18	15	14	14	20	27	36	36	36	34	32	31	32	29	A	26	26	28	31	25.8	35.6	
3-Nov	23	21	18	16	13	15	20	25	27	24	25	26	30	36	36	39	40	38	A	34	34	34	36	33	27.8	39.9	
4-Nov	34	34	34	33	33	34	22	22	24	17	20	26	25	22	15	15	16	A	32	33	31	32	35	33	27.1	34.8	
5-Nov	29	30	28	25	26	25	33	32	33	33	33	33	32	33	39	39	A	35	36	33	34	30	32	30	31.8	39.2	
6-Nov	27	27	30	29	29	28	25	27	26	25	28	36	36	37	36	A	34	33	32	31	30	30	30	30	30.3	36.6	
7-Nov	28	31	29	30	30	24	23	22	20	21	24	28	29	29	A	25	26	26	20	16	22	24	26	18	24.9	30.9	
8-Nov	22	32	33	32	31	30	28	27	20	16	23	24	A	A	29	28	25	19	18	17	11	11	10	13	22.7	32.6	
9-Nov	14	11	10	23	28	29	34	30	28	31	36	37	A	A	38	38	36	34	32	28	28	26	26	26	28.2	38.0	
10-Nov	27	25	25	27	22	21	21	20	21	19	31	A	A	31	29	29	30	28	23	20	17	20	9	8	14	22.5	31.0
11-Nov	13	10	10	8	14	11	11	17	21	32	A	A	32	38	38	36	32	31	30	31	29	27	27	30	30	24.2	38.2
12-Nov	28	22	25	26	26	26	25	19	19	A	A	20	21	18	23	23	22	20	16	19	15	15	17	16	17	20.8	27.7
13-Nov	19	19	18	18	18	19	19	21	A	A	27	29	30	33	34	35	34	26	22	19	19	19	22	28	29	24.2	34.8
14-Nov	33	33	32	30	27	31	31	A	A	31	33	35	36	37	38	38	36	35	31	31	31	31	30	30	29	32.5	37.8
15-Nov	31	31	31	30	31	27	A	A	24	23	24	26	27	30	33	33	31	32	28	21	14	14	9	13	12	25.0	33.4
16-Nov	12	11	10	9	9	A	A	9	7	8	12	21	21	22	24	22	21	18	20	16	13	18	23	22	27	16.3	27.0
17-Nov	28	29	30	32	A	A	31	31	33	33	32	31	30	31	31	31	29	27	23	25	26	27	21	24	27	28.7	33.2
18-Nov	28	30	31	A	A	29	29	30	28	29	28	28	27	28	28	28	27	26	26	25	24	25	24	25	25	27.4	31.4
19-Nov	25	24	A	A	23	22	22	22	22	21	21	20	21	21	21	21	21	21	21	20	20	20	20	20	20	21.4	24.5
20-Nov	19	A	18	17	17	16	15	14	13	13	13	13	13	13	13	13	13	13	13	13	13	14	14	14	13	14.3	19.3
21-Nov	A	12	13	13	13	12	12	12	13	15	16	16	16	17	16	16	15	14	14	15	15	13	12	A	14.1	16.8	
22-Nov	12	13	12	12	7	8	8	8	8	8	10	10	10	10	9	10	10	10	12	12	11	11	10	A	9	10.0	13.3
23-Nov	8	8	7	5	5	7	7	6	6	7	7	8	9	9	9	9	7	6	5	4	2	A	2	1	6.2	9.0	
24-Nov	1	1	1	2	2	1	2	2	2	4	5	6	7	8	7	7	5	2	1	2	A	2	2	3	3.2	7.5	
25-Nov	4	3	2	4	4	6	6	5	7	11	11	12	13	13	13	12	9	7	8	A	26	31	31	30	11.7	31.3	
26-Nov	32	31	30	30	31	29	29	30	30	27	21	12	14	14	14	15	14	11	A	7	14	16	16	19	21.2	32.0	
27-Nov	19	19	20	21	21	21	21	21	22	22	22	23	23	23	24	26	25	A	21	18	19	15	14	15	20.8	25.7	
28-Nov	14	14	13	10	11	13	13	11	10	11	14	16	17	20	20	22	A	15	13	13	15	17	16	16	14.5	21.6	
29-Nov	15	13	11	10	11	11	7	8	7	9	12	13	17	18	18	A	14	11	3	3	2	5	2	2	9.6	18.3	
30-Nov	3	7	9	13	14	14	14	12	11	10	9	8	15	13	A	11	9	11	12	14	14	13	16	16	11.7	15.7	
	20.7	20.3	19.8	19.8	19.6	20.1	19.3	18.8	19.0	19.9	21.5	22.6	23.4	24.6	24.6	23.9	22.3	21.1	19.9	19.0	20.1	20.1	20.2	20.4		Diurnal Average	
	33.7	34.1	33.7	32.9	33.3	33.8	34.4	33.2	32.8	32.6	36.3	36.7	37.9	38.2	39.2	39.1	39.9	38.3	35.7	33.7	34.4	33.5	35.5	33.0		Diurnal Maximum	

C - Calibration                      A - Automated Daily Zero Span

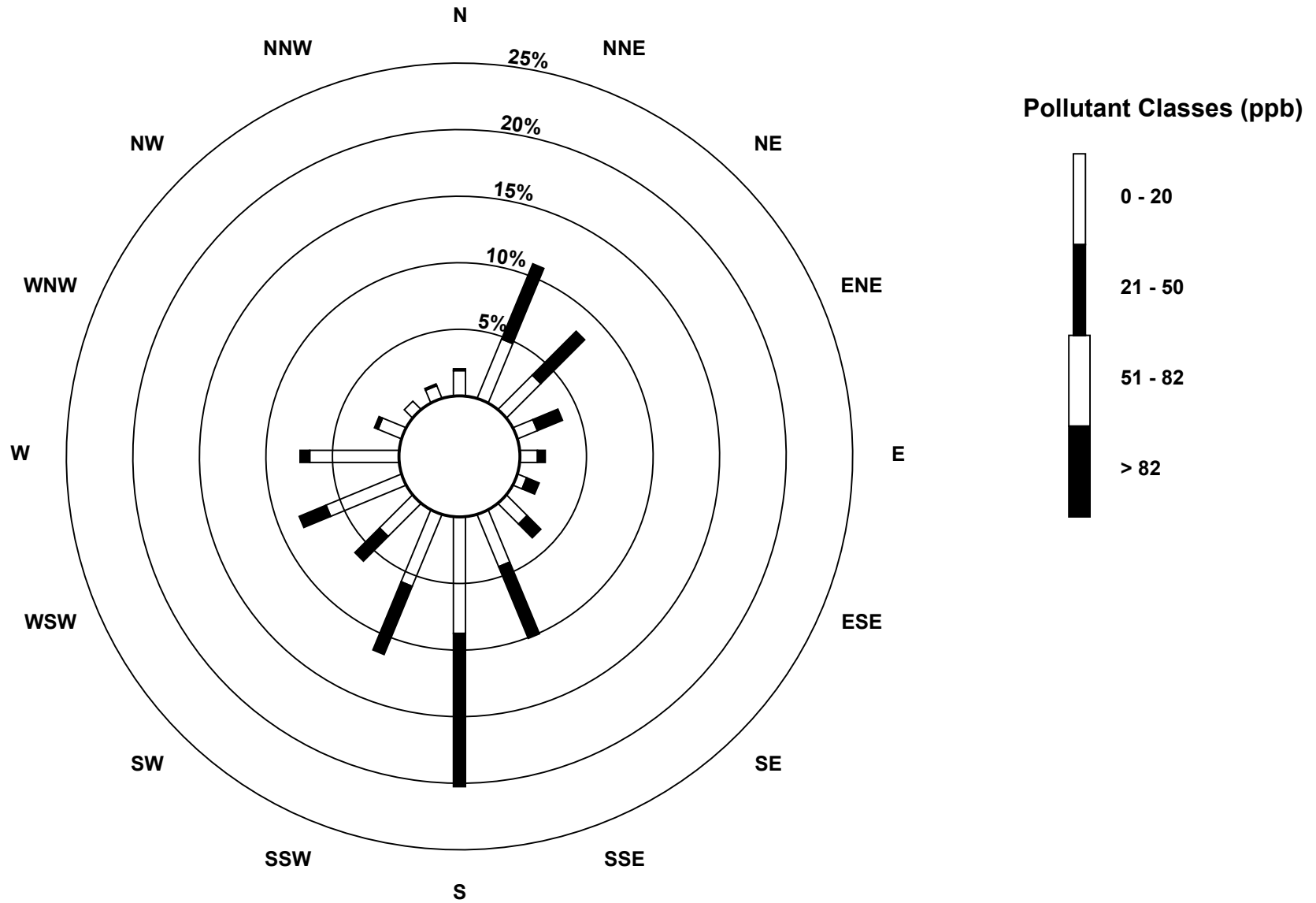
**Hourly Maximums**

**Ozone (O<sub>3</sub>) - ppb**  
**Portable Rycroft - November 2016**



**Pollutant Rose**

Ozone (O<sub>3</sub>) - ppb  
Portable Rycroft - November 2016



# Eight Hour Running Averages

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

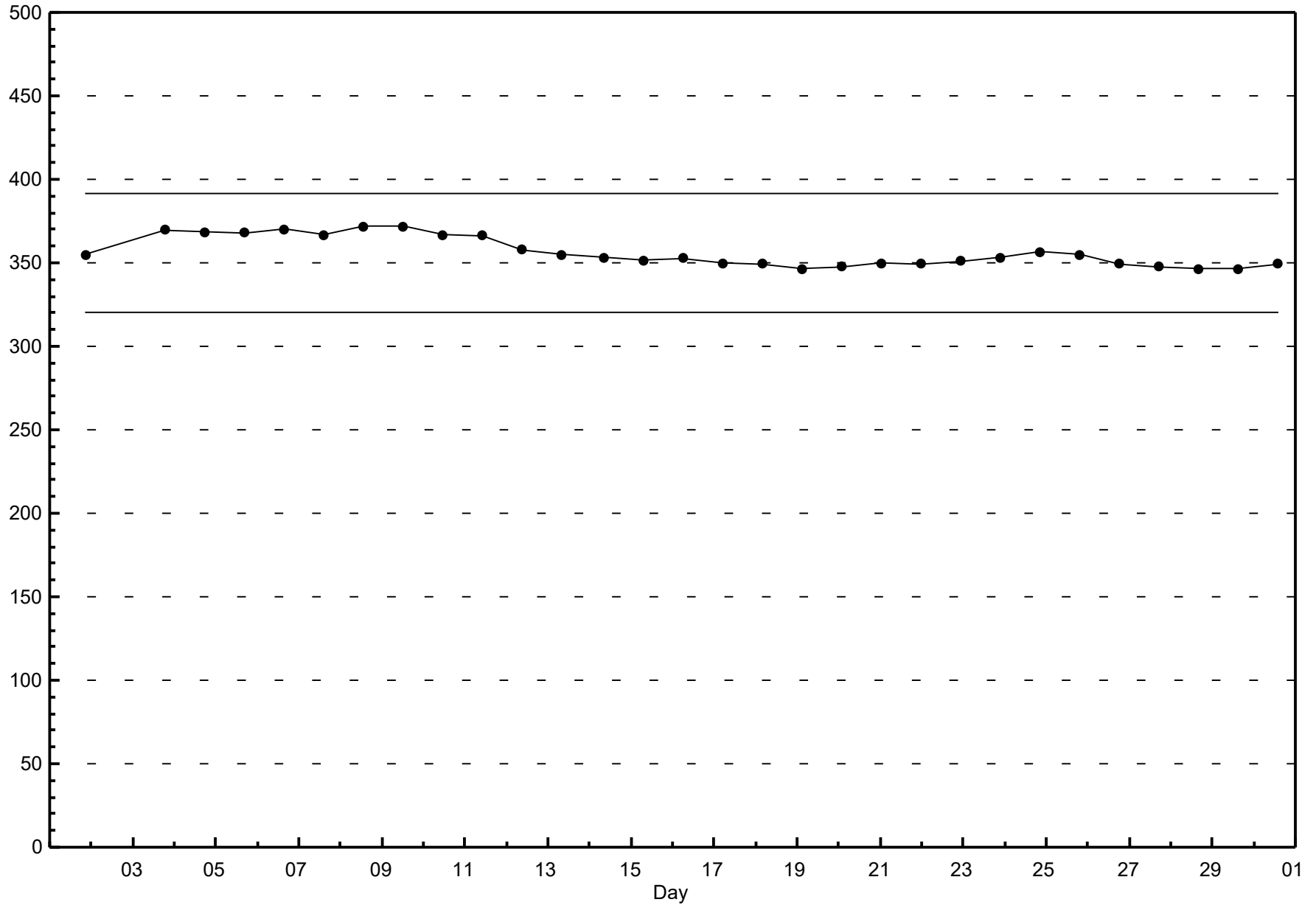
Portable Rycroft - November 2016

<b>Maximum Value: 34.7 ppb on Nov 3 21:00</b>																								Hours in Service: 720 Hours of Data: 713 Hours of Missing Data: 7 Hours of Calibration: 7 Percent Operational Time: 100.0	
<b>Minimum Value: 1.2 ppb on Nov 24 05:00</b>																									
Percentiles: P <sub>1</sub> = 1.3 P <sub>10</sub> = 7.6 Q <sub>1</sub> = 11.8 Median = 19.8 Q <sub>3</sub> = 25.8 P <sub>90</sub> = 29.6 P <sub>99</sub> = 33.9																									
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	24	24	23	23	23	23	23	23	23	23	24	25	25	24	N	N	N	N	N	N	31	30	29	30.5	
2-Nov	28	26	25	23	23	21	20	18	17	16	17	18	20	22	25	27	29	31	31	31	30	28	27	26	31.4
3-Nov	25	23	22	21	19	18	16	16	16	16	17	19	21	23	26	28	30	32	33	34	35	35	34	34	34.7
4-Nov	33	32	32	32	32	31	29	28	26	24	22	20	19	18	17	16	16	16	17	18	19	21	24	26	32.8
5-Nov	28	28	28	27	27	25	24	23	24	24	25	26	28	29	30	32	32	33	33	33	33	33	32	30	32.9
6-Nov	30	29	27	27	26	25	25	25	25	25	25	25	27	28	29	30	31	32	33	33	32	31	30	29	32.9
7-Nov	29	29	28	28	27	26	25	24	23	22	21	20	21	22	22	22	24	24	22	21	19	18	18	17	28.8
8-Nov	16	17	20	22	24	25	26	27	26	25	23	22	21	20	20	20	20	20	19	17	16	15	12	11	26.6
9-Nov	10	10	9	10	12	14	17	19	21	23	27	29	30	31	32	33	34	33	32	31	30	29	27	26	33.6
10-Nov	25	25	25	24	24	23	22	22	20	19	19	19	20	21	23	23	24	25	24	22	21	18	15	13	25.4
11-Nov	12	10	9	8	7	8	8	8	9	11	11	15	18	23	26	29	30	32	31	30	29	28	27	27	31.6
12-Nov	27	26	25	25	24	24	22	20	19	18	18	17	16	16	17	17	18	17	17	16	16	16	15	14	26.6
13-Nov	15	15	15	15	16	16	17	17	17	18	19	21	23	25	27	29	28	28	26	25	23	21	21	20	28.7
14-Nov	21	23	25	26	27	28	29	29	29	29	30	30	32	33	34	34	34	34	33	32	32	31	30	29	34.3
15-Nov	28	29	29	29	28	28	28	27	26	25	25	24	24	25	26	27	28	28	27	25	23	20	17	14	28.7
16-Nov	12	10	9	9	9	9	9	8	8	8	9	10	12	13	15	16	17	18	18	17	16	16	16	17	18.4
17-Nov	18	20	22	24	26	27	28	29	30	30	30	30	30	30	30	29	29	27	26	25	24	22	21	20	30.2
18-Nov	20	21	23	23	24	26	27	27	27	28	27	27	27	27	26	27	26	26	26	26	25	25	25	24	27.6
19-Nov	24	24	24	23	23	23	23	22	22	21	21	21	21	20	20	20	20	20	20	20	20	20	20	20	24.0
20-Nov	20	20	19	19	18	18	17	16	15	15	14	14	13	13	13	13	12	12	12	12	12	13	13	12	19.7
21-Nov	13	13	13	12	12	12	12	12	12	12	12	13	13	14	14	15	15	15	15	14	14	14	13	13	14.9
22-Nov	13	12	12	12	11	10	10	9	9	8	8	7	8	8	8	9	9	9	9	10	10	10	10	10	12.5
23-Nov	10	9	9	8	7	6	6	6	5	5	5	6	6	7	7	7	7	7	7	6	5	5	4	3	9.8
24-Nov	2	2	1	1	1	1	1	1	1	1	2	2	3	4	4	5	5	5	4	4	4	3	2	2	5.0
25-Nov	2	2	2	2	2	3	3	3	3	4	5	6	7	8	9	10	10	10	9	9	10	13	16	18	18.3
26-Nov	22	25	29	29	30	30	29	29	29	28	26	24	22	20	18	16	14	12	12	11	11	11	11	11	29.6
27-Nov	13	14	14	16	18	19	19	20	20	20	21	21	21	21	22	22	22	22	22	21	20	18	17	15	22.2
28-Nov	14	14	13	12	11	11	11	10	10	9	10	10	11	12	13	14	15	16	15	14	14	14	13	13	15.7
29-Nov	13	12	12	13	12	11	10	9	8	8	8	8	9	10	11	12	12	12	11	9	7	5	3	3	12.6
30-Nov	2	2	2	4	5	7	8	9	10	11	11	10	10	10	10	9	9	9	9	10	10	10	11	11	11.0
32.8 32.2 32.1 31.9 31.9 31.1 29.4 29.4 29.8 30.2 30.2 30.4 31.9 33.0 33.9 33.9 34.3 33.8 33.1 34.1 34.7 34.5 34.4 33.8																									
Diurnal Maximums																									
N - Not Valid																									



### Span Responses

Ozone (O<sub>3</sub>)  
Portable Rycroft - November 2016



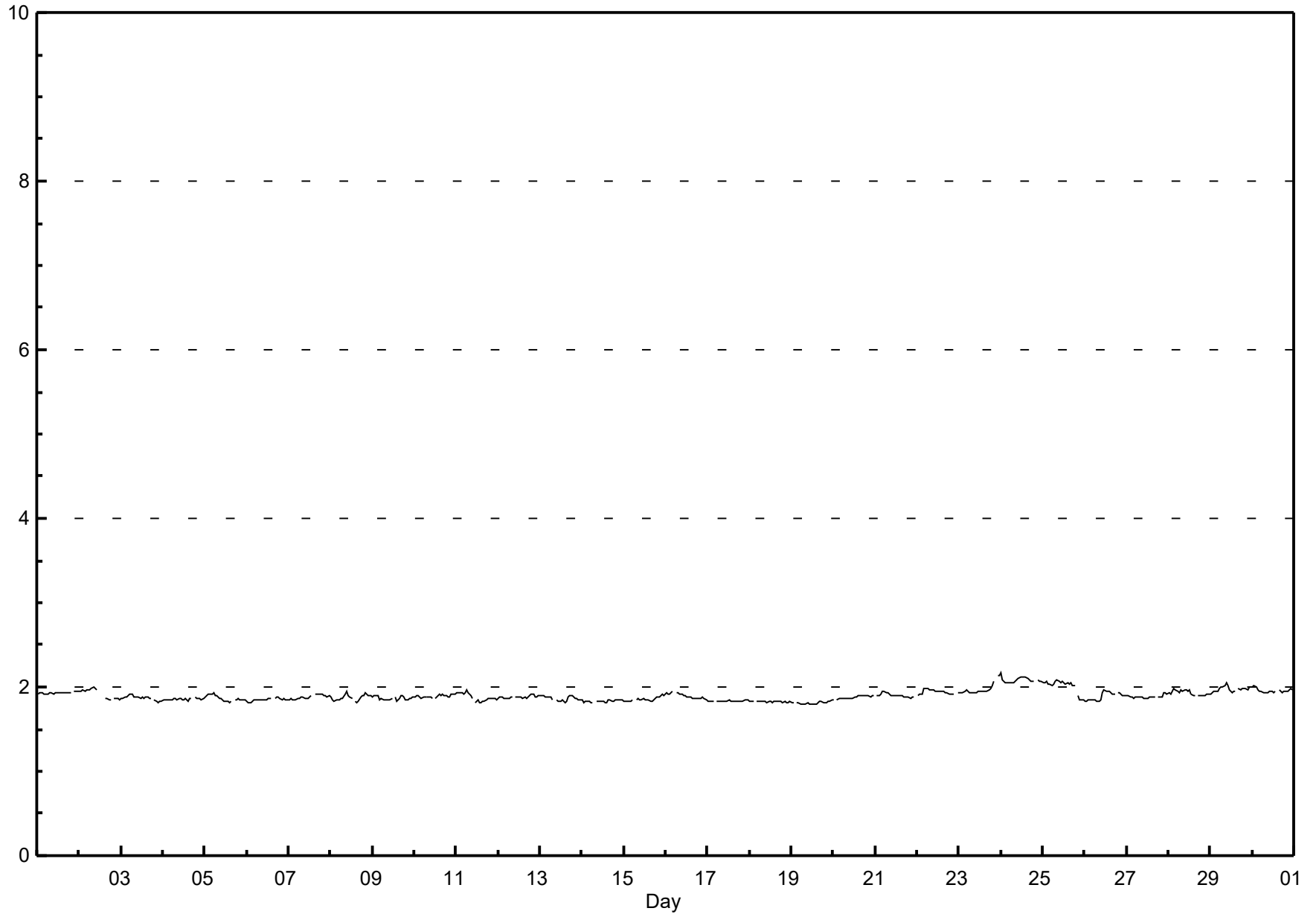
# Hourly Averages

## Total Hydrocarbons (THC) - ppm Portable Rycroft - November 2016

Maximum Value: 2.17 ppm on Nov 24 01:00      Maximum Daily Average: 2.08 ppm on Nov 24 Minimum Value: 1.8 ppm on Nov 19 14:00      Minimum Daily Average: 1.81 ppm on Nov 19 Maximum Diurnal Average: 1.90 ppm at hour 7      Minimum Diurnal Average: 1.89 ppm at hour 15 Monthly Average: 1.897 ppm      Percentiles: P <sub>1</sub> = 1.80 P <sub>10</sub> = 1.83 Q <sub>1</sub> = 1.85 Median = 1.88 Q <sub>3</sub> = 1.93 P <sub>90</sub> = 1.98 P <sub>99</sub> = 2.11																								Hours in Service:	720	
																								Hours of Data:	685	
																								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	1.9	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	1.9	1.9	1.9	A	1.9	1.9	2.0	1.93	1.95
2-Nov	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	C	C	C	C	1.9	1.9	1.9	1.8	A	1.9	1.9	1.9	1.9	1.92	2.00
3-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	1.9	1.9	1.9	1.9	A	1.8	1.8	1.8	1.8	1.8	1.87	1.92
4-Nov	1.9	1.9	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.86	1.88
5-Nov	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	1.8	A	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.87	1.94
6-Nov	1.8	1.8	1.8	1.8	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.8	1.9	1.8	1.9	1.85	1.88
7-Nov	1.9	1.9	1.9	1.8	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	1.88	1.92
8-Nov	1.9	1.9	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	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	1.94
9-Nov	1.9	1.9	1.9	1.9	1.8	1.9	1.8	1.9	1.9	1.8	1.9	1.9	A	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	1.9	1.87	1.90
10-Nov	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	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.89	1.91
11-Nov	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.9	A	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.88	1.96
12-Nov	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	1.9	1.9	1.9	1.88	1.91
13-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.86	1.91	
14-Nov	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	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.83	1.85
15-Nov	1.8	1.8	1.8	1.8	1.8	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.86	1.92
16-Nov	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	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.89	1.94
17-Nov	1.8	1.8	1.8	1.8	A	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.8	1.84	1.85
18-Nov	1.8	1.8	1.8	A	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.83	1.84
19-Nov	1.8	1.8	A	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.81	1.84
20-Nov	1.8	A	1.8	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	1.9	1.9	1.9	1.9	1.88	1.90
21-Nov	A	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	1.9	1.9	1.9	1.9	1.9	A	1.90	1.95
22-Nov	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.94	1.99
23-Nov	1.9	1.9	1.9	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.1	A	2.1	1.97	2.14
24-Nov	2.2	2.1	2.1	2.0	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	A	2.1	2.1	2.08	2.17
25-Nov	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	A	1.9	1.9	1.8	1.8	2.01	2.08
26-Nov	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.0	2.0	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.89	1.96
27-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	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.88	1.93
28-Nov	1.9	1.9	1.9	2.0	2.0	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.93	1.99
29-Nov	1.9	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	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.98	2.04
30-Nov	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	2.0	A	2.0	2.0	1.9	1.9	1.9	1.9	2.0	2.0	2.0	1.96	2.01
1.90 1.90 1.90 1.90 1.90 1.90 1.90 1.90 1.90 1.90 1.90 1.89 1.89 1.89 1.89 1.89 1.90 1.90 1.90 1.89 1.89 1.89 1.90 1.90																								Diurnal Average		
2.17 2.09 2.07 2.05 2.05 2.05 2.05 2.06 2.08 2.08 2.10 2.12 2.13 2.12 2.11 2.11 2.09 2.07 2.06 2.08 2.07 2.09 2.14 2.14																								Diurnal Maximum		
C - Calibration      A - Automated Daily Zero Span																										

**Hourly Averages**

**Total Hydrocarbons (THC) - ppm**  
**Portable Rycroft - November 2016**



# Hourly Maximums

# Total Hydrocarbons (THC) - ppm Portable Rycroft - November 2016

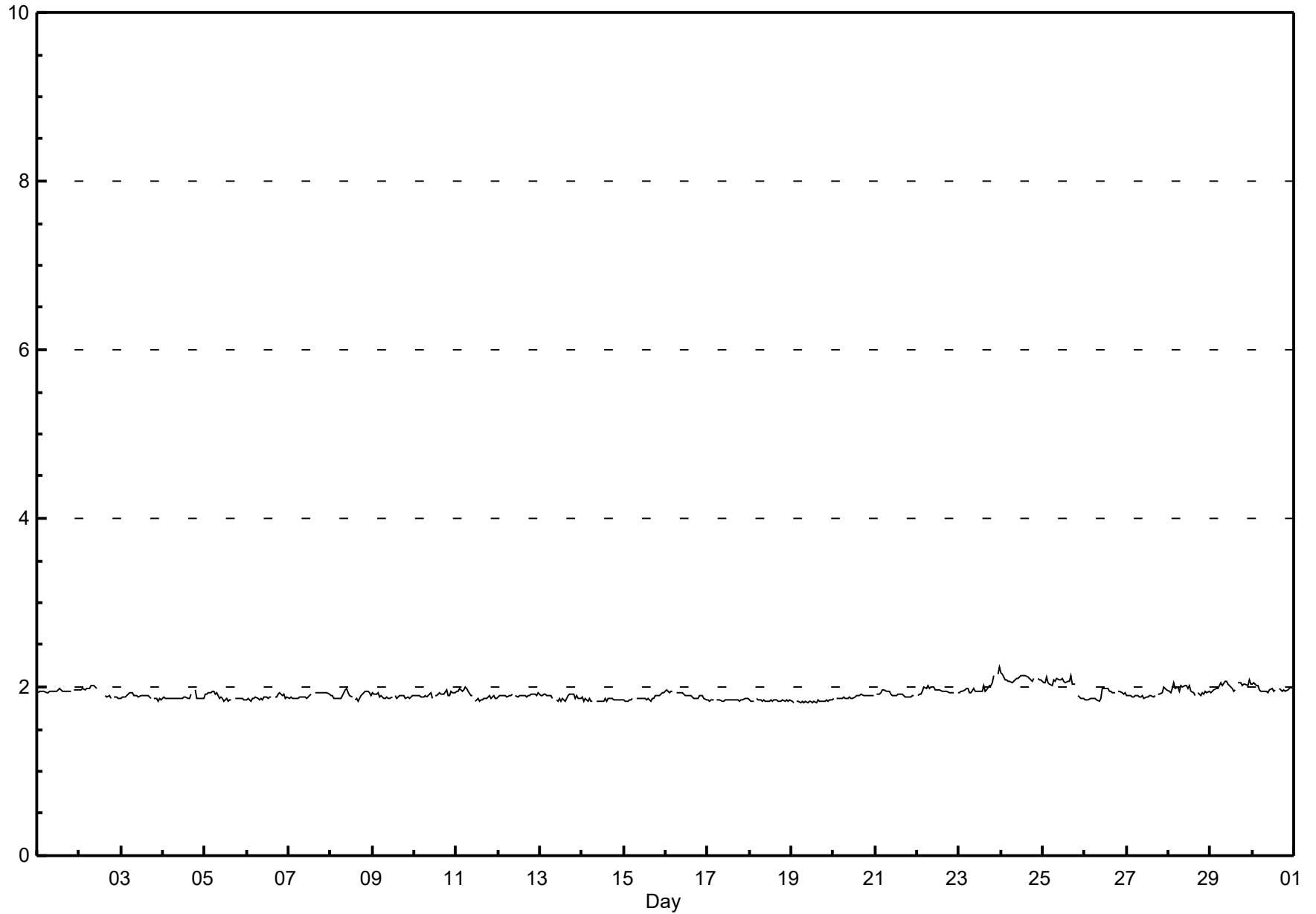
Maximum Value: 2.23 ppm on Nov 24 00:00	Maximum Daily Average: 2.10 ppm on Nov 24	Hours in Service: 720
Minimum Value: 1.8 ppm on Nov 19 15:00	Minimum Daily Average: 1.83 ppm on Nov 19	Hours of Data: 685
Maximum Diurnal Average: 1.92 ppm at hour 9	Minimum Diurnal Average: 1.91 ppm at hour 15	Hours of Missing Data: 35
Monthly Average: 1.916 ppm	Percentiles: P <sub>1</sub> = 1.82 P <sub>10</sub> = 1.85 Q <sub>1</sub> = 1.86 Median = 1.90 Q <sub>3</sub> = 1.95 P <sub>90</sub> = 2.01 P <sub>99</sub> = 2.13	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	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	1.9	1.9	2.0	1.9	2.0	1.9	A	2.0	2.0	2.0	1.95	1.98
2-Nov	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	C	C	C	C	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.94	2.01
3-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	1.9	1.9	1.9	1.9	A	1.9	1.9	1.8	1.9	1.8	1.89	1.94
4-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	1.9	1.9	1.9	A	2.0	1.9	1.9	1.9	1.9	1.9	1.87	1.97
5-Nov	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.8	1.8	1.8	A	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.88	1.95
6-Nov	1.8	1.9	1.8	1.9	1.9	1.9	1.9	1.8	1.9	1.8	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	1.87	1.93
7-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	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.90	1.94
8-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	1.9	1.9	A	A	1.8	1.9	1.8	1.9	1.9	1.9	2.0	1.9	1.9	1.9	1.90	1.98
9-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	A	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.89	1.93
10-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	A	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	2.0	1.9	1.9	1.91	1.96
11-Nov	1.9	2.0	2.0	1.9	2.0	2.0	2.0	2.0	1.9	1.9	A	A	1.8	1.9	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.90	2.00
12-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	A	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	1.90	1.93
13-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	A	1.8	1.8	1.9	1.8	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.88	1.92
14-Nov	1.9	1.8	1.9	1.8	1.9	1.8	1.8	A	A	1.8	1.8	1.8	1.8	1.8	1.9	1.8	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.85	1.88
15-Nov	1.8	1.8	1.8	1.8	1.8	1.9	A	A	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.87	1.93
16-Nov	2.0	2.0	1.9	2.0	2.0	A	A	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	1.8	1.91	1.96
17-Nov	1.8	1.8	1.8	1.8	A	A	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.85	1.87
18-Nov	1.8	1.8	1.8	A	A	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.84	1.86
19-Nov	1.8	1.8	A	A	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.83	1.85
20-Nov	1.9	A	A	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	1.9	1.9	1.9	1.9	1.89	1.92
21-Nov	A	1.9	1.9	1.9	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	1.9	1.9	1.9	1.9	A	1.91	1.97
22-Nov	1.9	1.9	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	1.9	2.0	1.9	1.9	1.9	1.9	A	1.9	1.96	2.01
23-Nov	1.9	2.0	2.0	2.0	2.0	2.0	1.9	1.9	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	A	2.2	2.2	1.99	2.23
24-Nov	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	A	2.1	2.1	2.1	2.10	2.17
25-Nov	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.1	2.0	2.0	A	1.9	1.9	1.9	1.9	2.04	2.13
26-Nov	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.8	1.8	1.9	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	A	2.0	2.0	1.9	1.9	1.9	1.91	1.99
27-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	1.9	1.9	1.9	A	1.9	1.9	1.9	2.0	2.0	2.0	1.91	2.00
28-Nov	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	A	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.96	2.05
29-Nov	1.9	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	A	A	2.1	2.0	2.0	2.0	2.0	2.1	2.0	2.01	2.08
30-Nov	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.0	A	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0	1.98	2.06
1.92 1.92 1.92 1.92 1.92 1.92 1.92 1.92 1.92 1.92 1.92 1.91 1.91 1.91 1.91 1.91 1.91 1.92 1.92 1.92 1.92 1.91 1.91 1.92 1.92																								Diurnal Average		
2.17 2.15 2.12 2.08 2.07 2.07 2.08 2.07 2.09 2.10 2.11 2.13 2.14 2.13 2.13 2.12 2.13 2.08 2.07 2.09 2.13 2.10 2.15 2.23																								Diurnal Maximum		

C - Calibration                      A - Automated Daily Zero Span

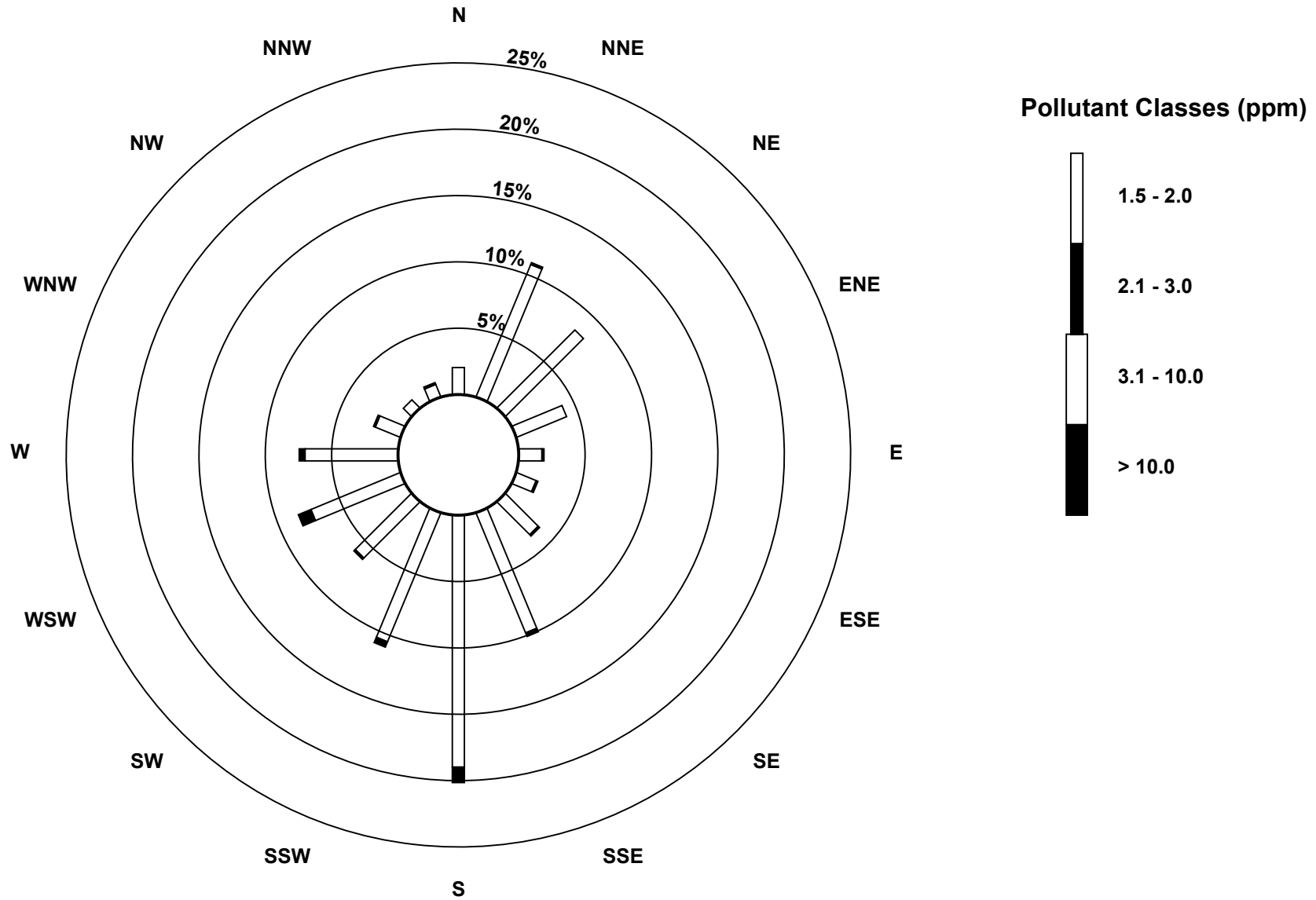
**Hourly Maximums**

**Total Hydrocarbons (THC) - ppm**  
**Portable Rycroft - November 2016**



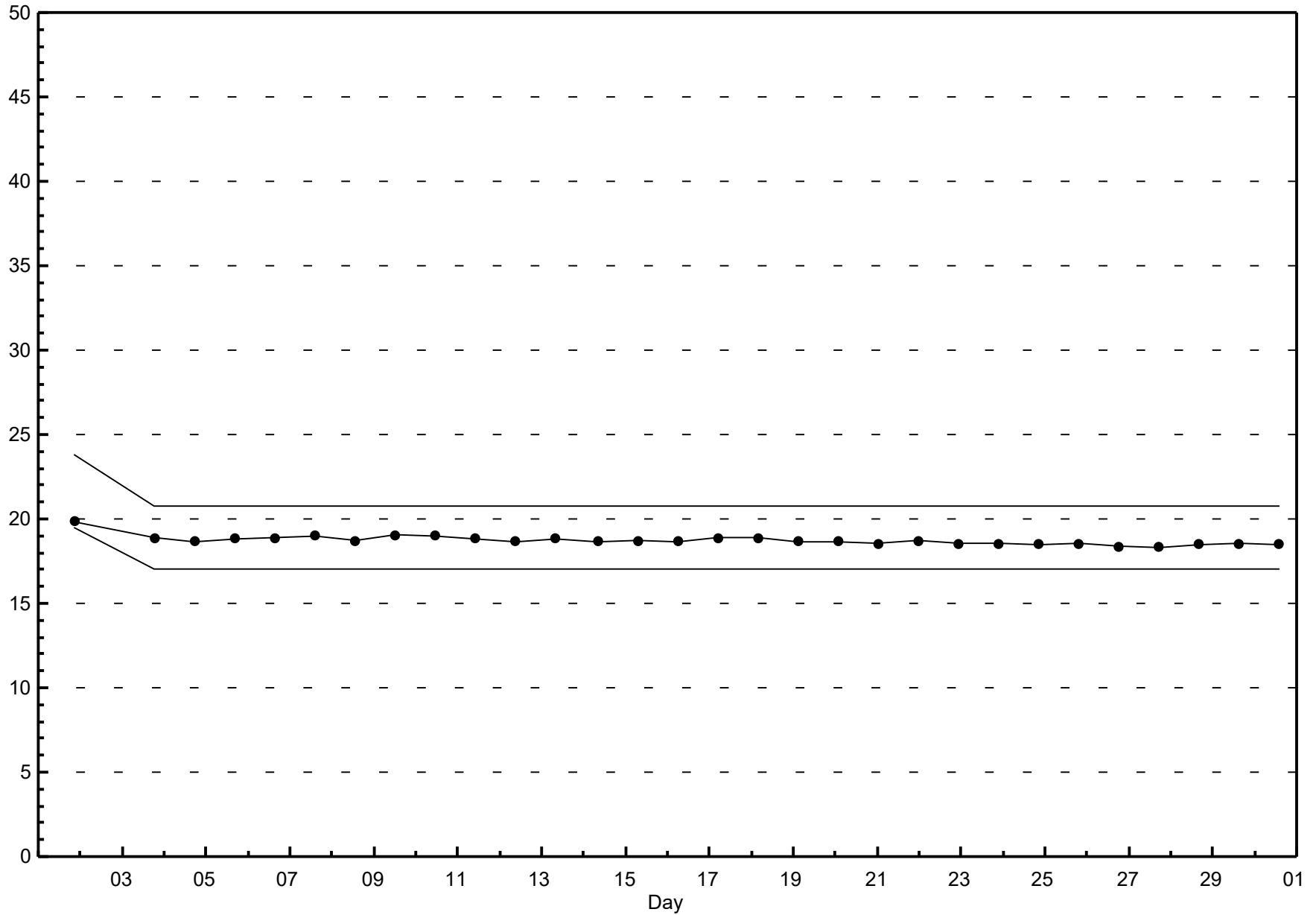
**Pollutant Rose**

**Total Hydrocarbons (THC) - ppm**  
**Portable Rycroft - November 2016**



**Span Responses**

**Total Hydrocarbons (THC)  
Portable Rycroft - November 2016**



# Hourly Averages

Methane (CH<sub>4</sub>) - ppm

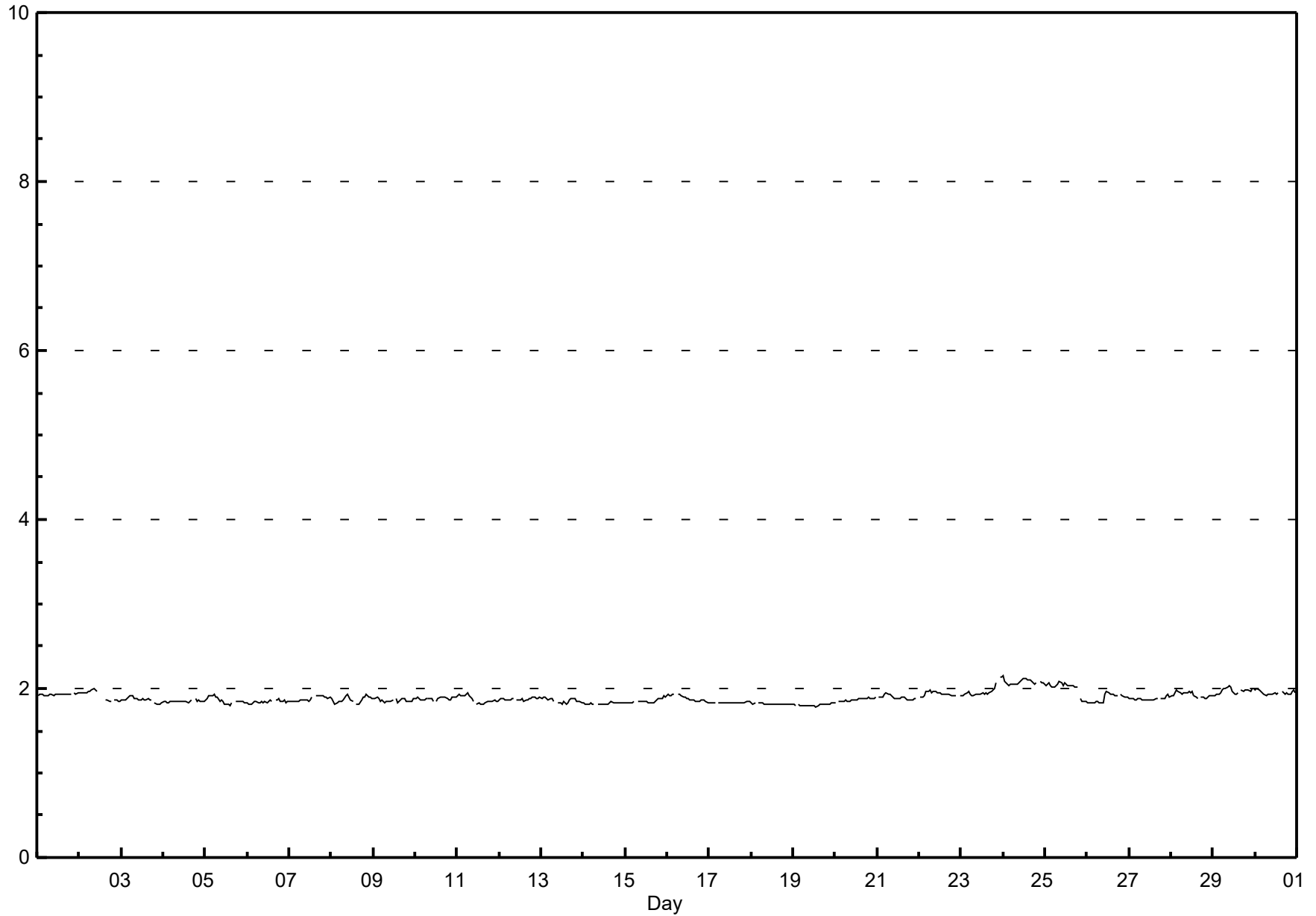
Portable Rycroft - November 2016

Maximum Value: 2.16 ppm on Nov 24 01:00      Maximum Daily Average: 2.08 ppm on Nov 24 Minimum Value: 1.8 ppm on Nov 19 14:00      Minimum Daily Average: 1.81 ppm on Nov 19 Maximum Diurnal Average: 1.90 ppm at hour 7      Minimum Diurnal Average: 1.88 ppm at hour 15 Monthly Average: 1.891 ppm      Percentiles: P <sub>1</sub> = 1.80 P <sub>10</sub> = 1.82 Q <sub>1</sub> = 1.84 Median = 1.88 Q <sub>3</sub> = 1.93 P <sub>90</sub> = 1.97 P <sub>99</sub> = 2.11																								Hours in Service:	720	
																								Hours of Data:	685	
																								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	1.9	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	1.9	1.9	1.9	A	1.9	1.9	1.9	1.93	1.95
2-Nov	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	C	C	C	C	1.9	1.9	1.8	1.8	A	1.9	1.9	1.9	1.8	1.92	1.99
3-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	1.9	1.9	1.9	1.9	A	1.8	1.8	1.8	1.8	1.8	1.86	1.92
4-Nov	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	A	1.9	1.9	1.9	1.8	1.8	1.9	1.85	1.88
5-Nov	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	1.8	1.8	A	1.8	1.8	1.9	1.8	1.8	1.8	1.8	1.86	1.93
6-Nov	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.8	1.9	1.8	1.8	1.84	1.88
7-Nov	1.8	1.9	1.8	1.8	1.8	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	1.88	1.92
8-Nov	1.9	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	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	1.94
9-Nov	1.9	1.9	1.9	1.9	1.8	1.9	1.8	1.8	1.8	1.8	1.8	1.8	A	1.9	1.8	1.9	1.9	1.9	1.9	1.8	1.8	1.9	1.9	1.9	1.86	1.89
10-Nov	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	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.88	1.91
11-Nov	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.9	A	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.8	1.87	1.95
12-Nov	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	1.9	1.9	1.9	1.87	1.90
13-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	A	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.86	1.90
14-Nov	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	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.82	1.84
15-Nov	1.8	1.8	1.8	1.8	1.8	1.8	A	1.8	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.85	1.91
16-Nov	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	1.8	1.9	1.9	1.9	1.9	1.8	1.8	1.89	1.94
17-Nov	1.8	1.8	1.8	1.8	A	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.83	1.85
18-Nov	1.8	1.8	1.8	A	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.82	1.83
19-Nov	1.8	1.8	A	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.81	1.83
20-Nov	1.8	A	1.8	1.8	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	1.9	1.9	1.9	1.87	1.89
21-Nov	A	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	1.9	1.9	1.9	1.9	1.9	A	1.89	1.94
22-Nov	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.93	1.98
23-Nov	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	2.0	1.9	1.9	2.0	2.0	2.0	2.0	2.1	A	2.1	1.96	2.13
24-Nov	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	A	2.1	2.1	2.1	2.08	2.16
25-Nov	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	1.9	1.8	1.8	1.8	2.01	2.08
26-Nov	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.0	2.0	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.88	1.96
27-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	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.88	1.92
28-Nov	1.9	1.9	1.9	2.0	2.0	1.9	1.9	2.0	2.0	2.0	2.0	1.9	2.0	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.93	1.98
29-Nov	1.9	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	1.9	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.97	2.04
30-Nov	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	A	2.0	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	1.95	2.01
1.89 1.89 1.89 1.89 1.90 1.89 1.90 1.90 1.90 1.90 1.89 1.89 1.89 1.89 1.88 1.89 1.89 1.89 1.89 1.89 1.88 1.88 1.89 1.89																								Diurnal Average		
2.16 2.08 2.06 2.04 2.05 2.05 2.04 2.06 2.08 2.07 2.09 2.11 2.12 2.12 2.11 2.10 2.08 2.07 2.07 2.07 2.07 2.08 2.13 2.13																								Diurnal Maximum		
C - Calibration      A - Automated Daily Zero Span																										



**Hourly Averages**

**Methane (CH<sub>4</sub>) - ppm**  
**Portable Rycroft - November 2016**



# Hourly Maximums

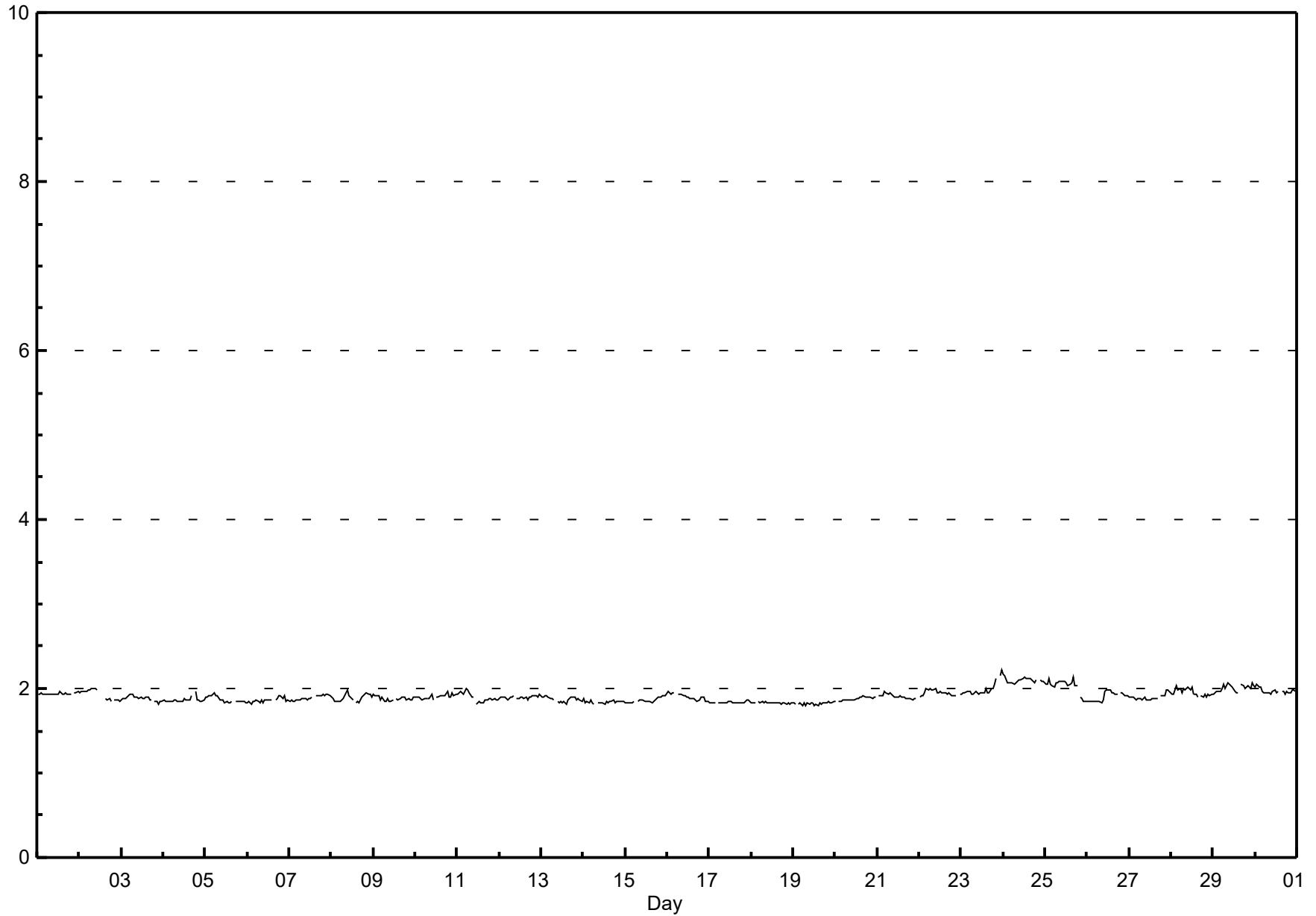
Methane (CH<sub>4</sub>) - ppm

Portable Rycroft - November 2016

Maximum Value: 2.23 ppm on Nov 24 00:00																						Maximum Daily Average: 2.10 ppm on Nov 24																						Hours in Service: 720			
Minimum Value: 1.8 ppm on Nov 19 06:00																						Minimum Daily Average: 1.82 ppm on Nov 19																						Hours of Data: 685			
Maximum Diurnal Average: 1.92 ppm at hour 9																						Minimum Diurnal Average: 1.90 ppm at hour 15																						Hours of Missing Data: 35			
Monthly Average: 1.909 ppm																						Percentiles: P <sub>1</sub> = 1.81 P <sub>10</sub> = 1.84 Q <sub>1</sub> = 1.86 Median = 1.89 Q <sub>3</sub> = 1.95 P <sub>90</sub> = 2.01 P <sub>99</sub> = 2.12																						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	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	2.0	1.94	1.97																					
2-Nov	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	C	C	C	C	1.9	1.9	1.9	1.8	A	1.9	1.9	1.9	1.9	1.93	2.00																					
3-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	1.9	1.9	1.9	1.9	A	1.8	1.8	1.8	1.9	1.8	1.88	1.94																					
4-Nov	1.9	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	2.0	1.9	1.9	1.9	1.8	1.9	1.87	1.96																					
5-Nov	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	1.8	A	1.8	1.9	1.9	1.8	1.8	1.8	1.8	1.87	1.95																					
6-Nov	1.8	1.8	1.8	1.9	1.8	1.9	1.9	1.8	1.9	1.8	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.87	1.92																					
7-Nov	1.9	1.9	1.8	1.8	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	1.89	1.94																					
8-Nov	1.9	1.9	1.8	1.8	1.9	1.9	1.9	1.9	2.0	2.0	1.9	1.9	A	A	1.8	1.8	1.8	1.9	1.9	1.9	2.0	1.9	1.9	1.9	1.89	1.98																					
9-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	1.9	1.9	1.9	A	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.88	1.93																					
10-Nov	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	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.90	1.96																					
11-Nov	1.9	1.9	2.0	1.9	2.0	2.0	2.0	2.0	1.9	1.9	A	1.8	1.9	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.90	2.00																					
12-Nov	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	1.9	1.9	1.9	1.89	1.93																					
13-Nov	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.8	1.8	1.8	1.8	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.87	1.91																					
14-Nov	1.9	1.8	1.8	1.8	1.9	1.8	1.8	A	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.8	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.84	1.87																					
15-Nov	1.8	1.8	1.8	1.8	1.8	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.86	1.92																					
16-Nov	2.0	2.0	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	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.90	1.96																					
17-Nov	1.8	1.8	1.8	1.8	A	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.84	1.87																					
18-Nov	1.8	1.8	1.8	A	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.83	1.85																					
19-Nov	1.8	1.8	A	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.82	1.84																					
20-Nov	1.8	A	1.8	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	1.9	1.9	1.9	1.9	1.88	1.91																					
21-Nov	A	1.9	1.9	1.9	2.0	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	1.9	1.9	1.9	A	1.91	1.96																					
22-Nov	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.95	2.01																					
23-Nov	1.9	2.0	1.9	2.0	2.0	2.0	1.9	1.9	2.0	1.9	1.9	1.9	2.0	1.9	2.0	1.9	2.0	2.0	2.0	2.0	2.1	A	2.1	2.2	1.99	2.23																					
24-Nov	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	A	2.1	2.1	2.1	2.10	2.17																					
25-Nov	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.1	2.0	2.0	A	1.9	1.9	1.8	1.9	2.03	2.13																					
26-Nov	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.0	2.0	2.0	2.0	1.9	2.0	1.9	1.9	A	2.0	1.9	1.9	1.9	1.9	1.90	1.98																					
27-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	1.9	1.9	1.9	A	1.9	1.9	1.9	2.0	2.0	2.0	1.90	1.99																					
28-Nov	1.9	1.9	2.0	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.0	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.96	2.04																					
29-Nov	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	1.9	2.0	A	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.01	2.08																					
30-Nov	2.0	2.1	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	A	2.0	2.0	1.9	2.0	1.9	2.0	2.0	2.0	2.0	1.97	2.06																					
																						1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.92	1.91	1.91	1.91	1.91	1.90	1.90	1.91	1.91	1.91	1.91	1.91	1.90	1.91	1.91	1.91	Diurnal Average		
																						2.17	2.15	2.11	2.07	2.07	2.07	2.07	2.07	2.09	2.09	2.11	2.12	2.14	2.12	2.12	2.11	2.13	2.08	2.06	2.09	2.12	2.10	2.15	2.23	Diurnal Maximum	
C - Calibration																						A - Automated Daily Zero Span																									

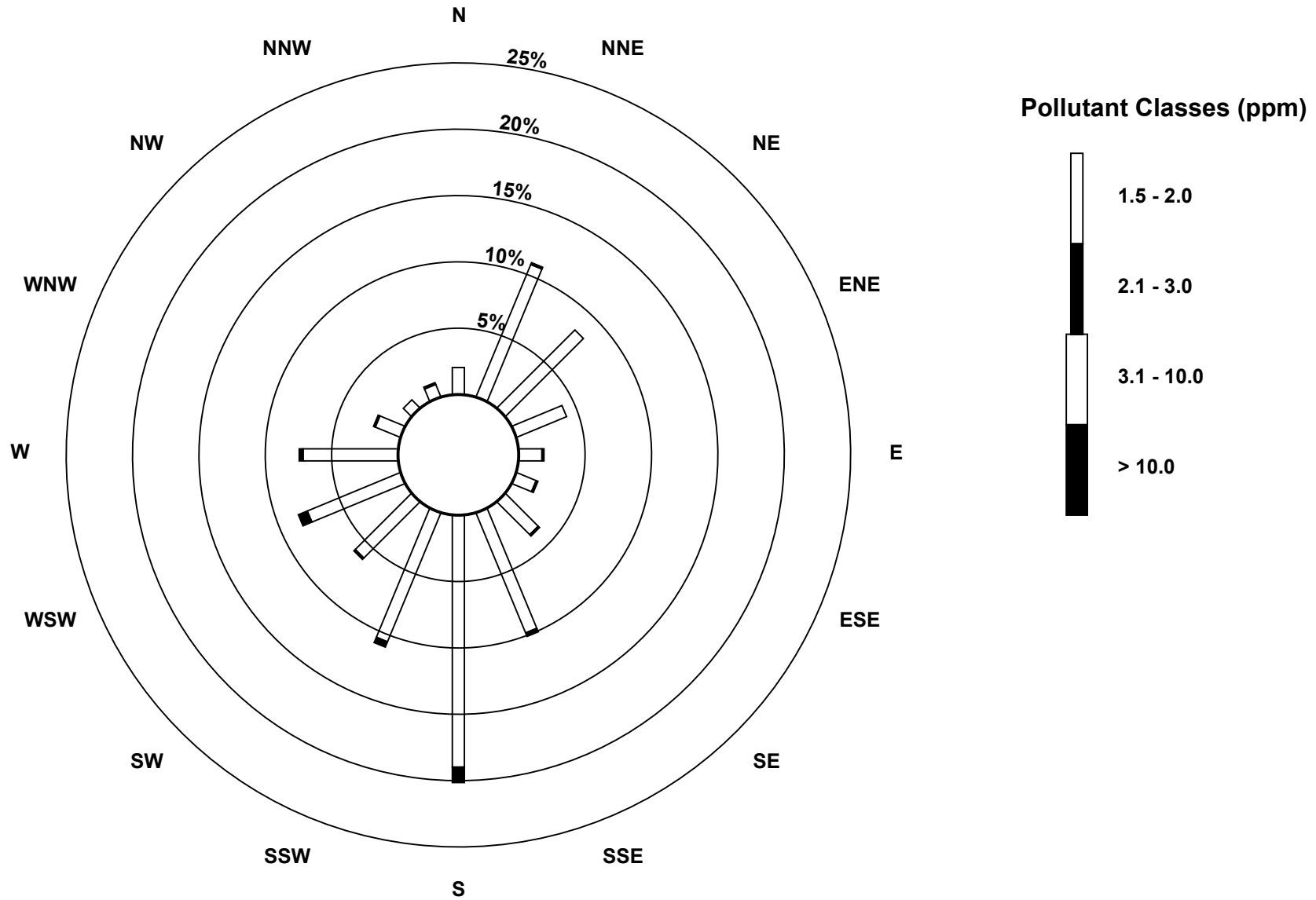
### Hourly Maximums

Methane (CH<sub>4</sub>) - ppm  
Portable Rycroft - November 2016



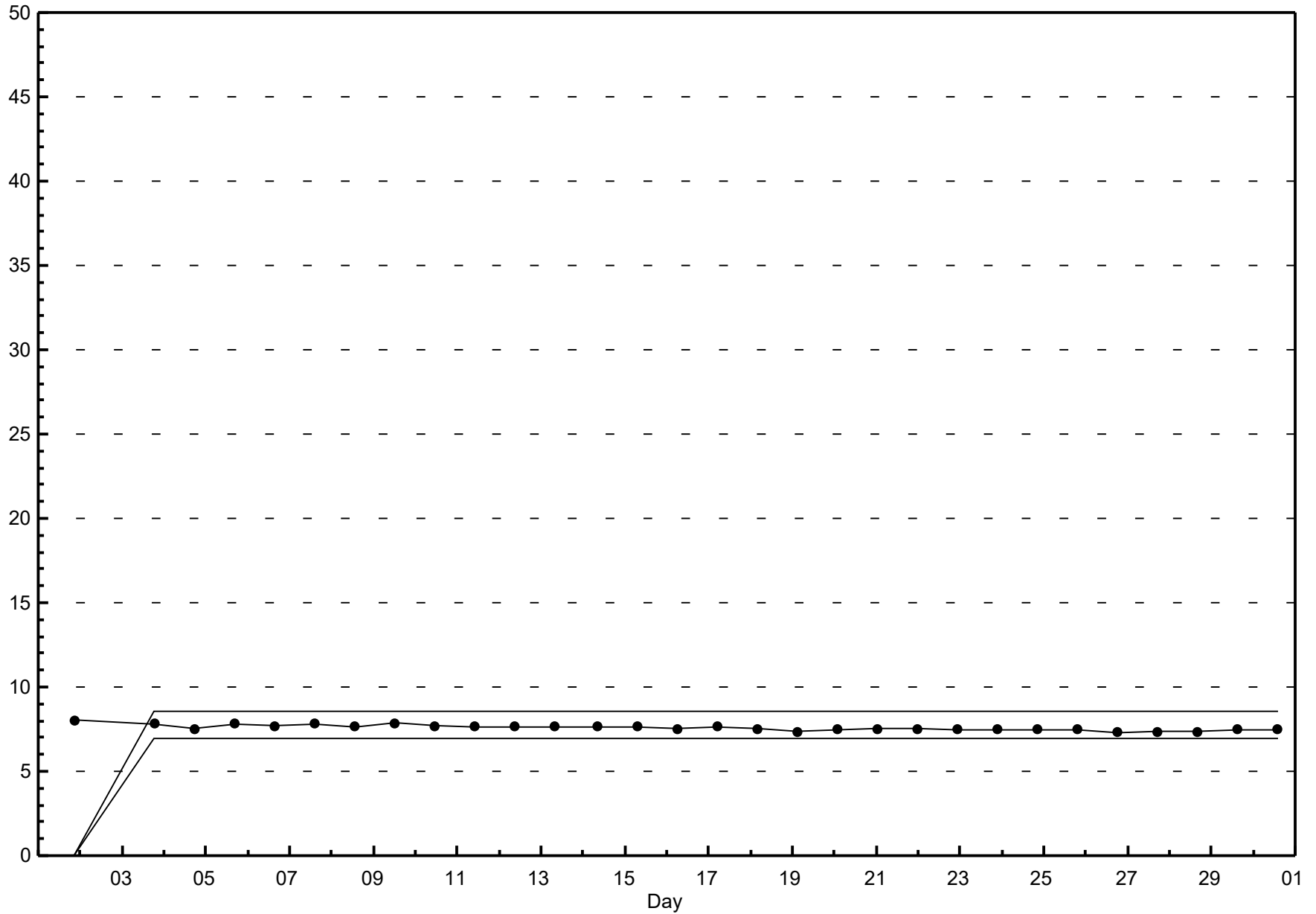
**Pollutant Rose**

**Methane (CH<sub>4</sub>) - ppm**  
**Portable Rycroft - November 2016**



**Span Responses**

**Methane (CH<sub>4</sub>)**  
**Portable Rycroft - November 2016**



# Hourly Averages

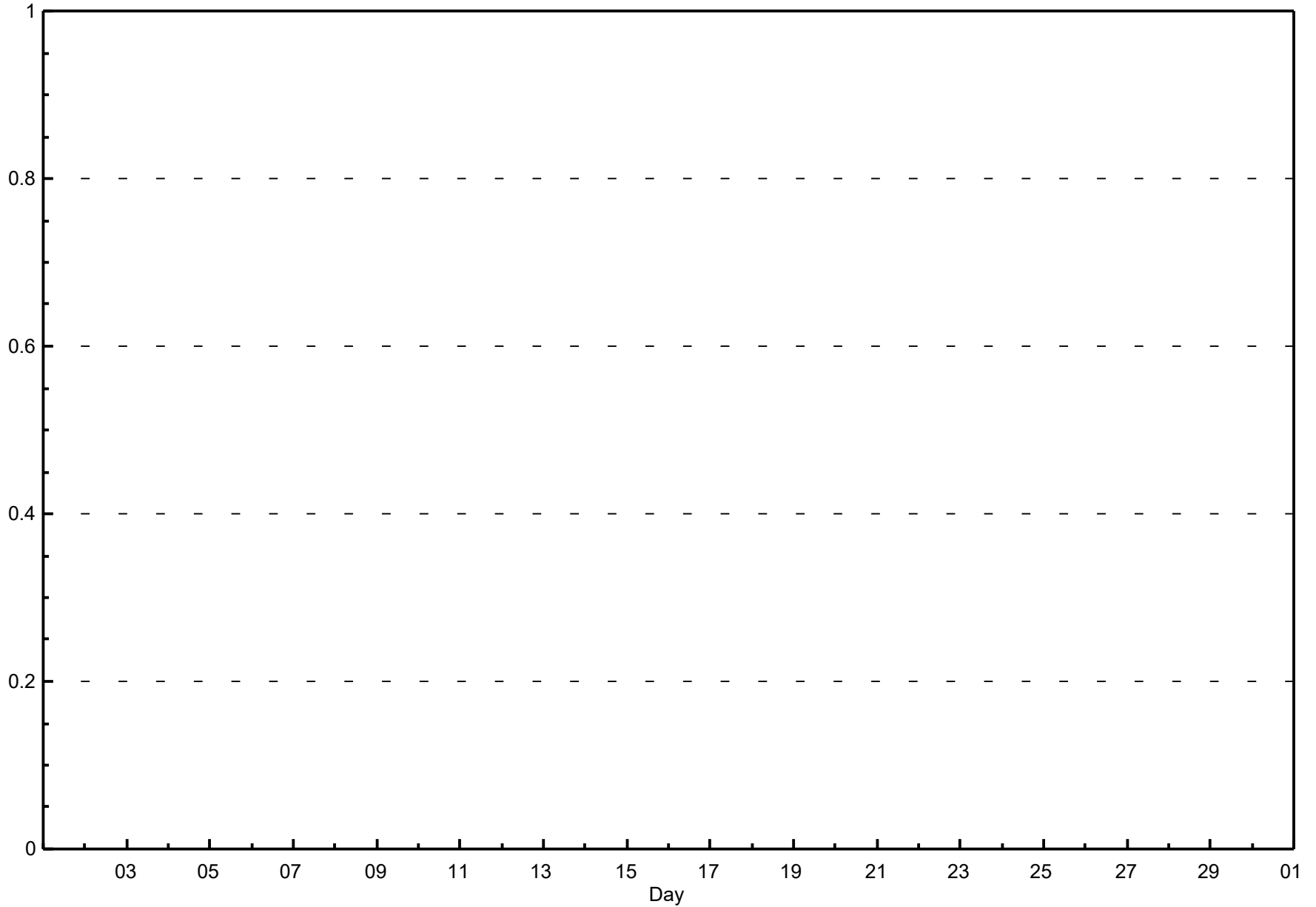
Non Methane Hydrocarbon (NMHC) - ppm

Portable Rycroft - November 2016

Maximum Value: 0.00 ppm on Nov 26 08:00      Maximum Daily Average: 0.00 ppm on Nov 26 Minimum Value: 0.0 ppm on Nov 1 01:00      Minimum Daily Average: 0.00 ppm on Nov 3 Maximum Diurnal Average: 0.00 ppm at hour 13      Minimum Diurnal Average: 0.00 ppm at hour 2 Monthly Average: 0.000 ppm      Percentiles: P <sub>1</sub> = 0.00 P <sub>10</sub> = 0.00 Q <sub>1</sub> = 0.00 Median = 0.00 Q <sub>3</sub> = 0.00 P <sub>90</sub> = 0.00 P <sub>99</sub> = 0.00																								Hours in Service:	720		
																								Hours of Data:	685		
																								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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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
2-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	C	C	C	C	0.0	0.0	0.0	0.0	A	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	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	
4-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	
5-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	
6-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	
7-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	
8-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	
9-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	
10-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	
11-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	
12-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	
13-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	
14-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	
15-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	
16-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	
17-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	
18-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	
19-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	
20-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	
21-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	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	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	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	
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	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	
25-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	
26-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	
27-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	
28-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	
29-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	
30-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	
																								Diurnal Average			
																								Diurnal Maximum			

C - Calibration

A - Automated Daily Zero Span



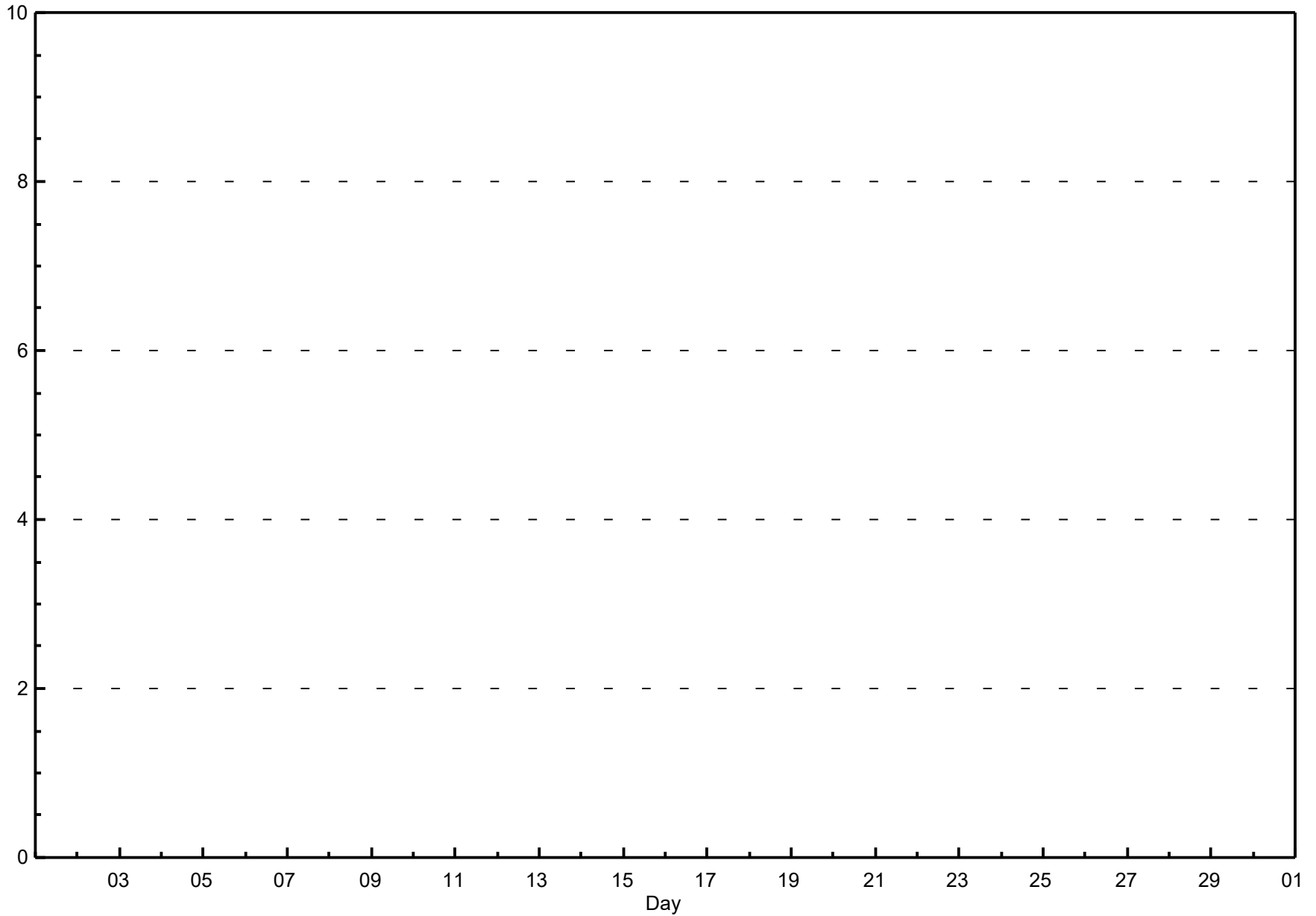
# Hourly Maximums

Non Methane Hydrocarbon (NMHC) - ppm

Portable Rycroft - November 2016

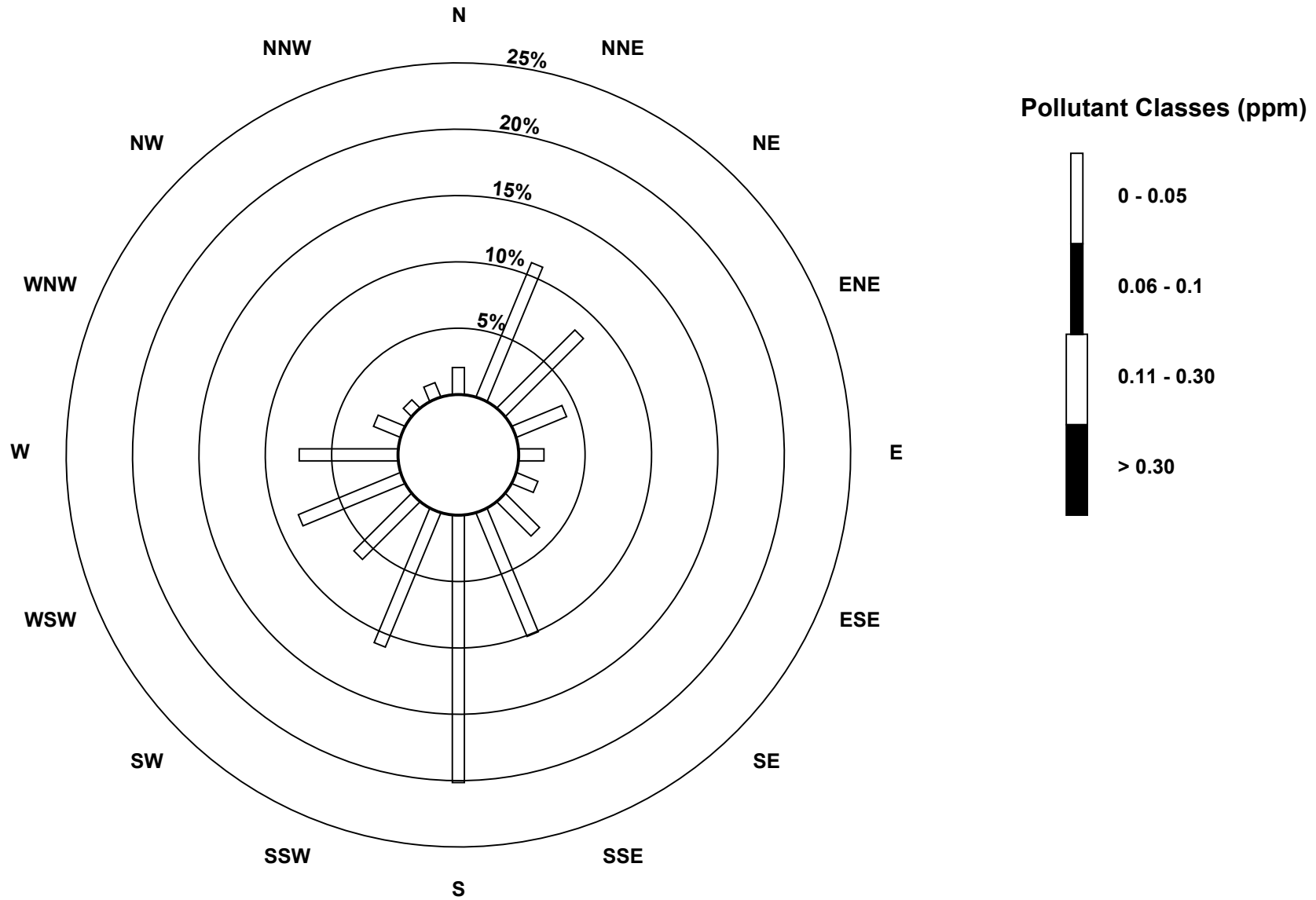
Maximum Value: 0.00 ppm on Nov 13 13:00      Maximum Daily Average: 0.00 ppm on Nov 26 Minimum Value: 0.0 ppm on Nov 1 01:00      Minimum Daily Average: 0.00 ppm on Nov 10 Maximum Diurnal Average: 0.00 ppm at hour 17      Minimum Diurnal Average: 0.00 ppm at hour 9 Monthly Average: 0.000 ppm      Percentiles: P <sub>1</sub> = 0.00 P <sub>10</sub> = 0.00 Q <sub>1</sub> = 0.00 Median = 0.00 Q <sub>3</sub> = 0.00 P <sub>90</sub> = 0.00 P <sub>99</sub> = 0.00																								Hours in Service:	720		
																								Hours of Data:	685		
																								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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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
2-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	C	C	C	C	0.0	0.0	0.0	0.0	A	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	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	
4-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	
5-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	
6-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	
7-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	
8-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	
9-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	
10-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	
11-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	
12-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	
13-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	
14-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	
15-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	
16-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	
17-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	
18-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	
19-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	
20-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	
21-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	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	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	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	
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	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	
25-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	
26-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	
27-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	
28-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	
29-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	
30-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	
0.00																								Diurnal Average			
0.00																								Diurnal Maximum			
C - Calibration																								A - Automated Daily Zero Span			

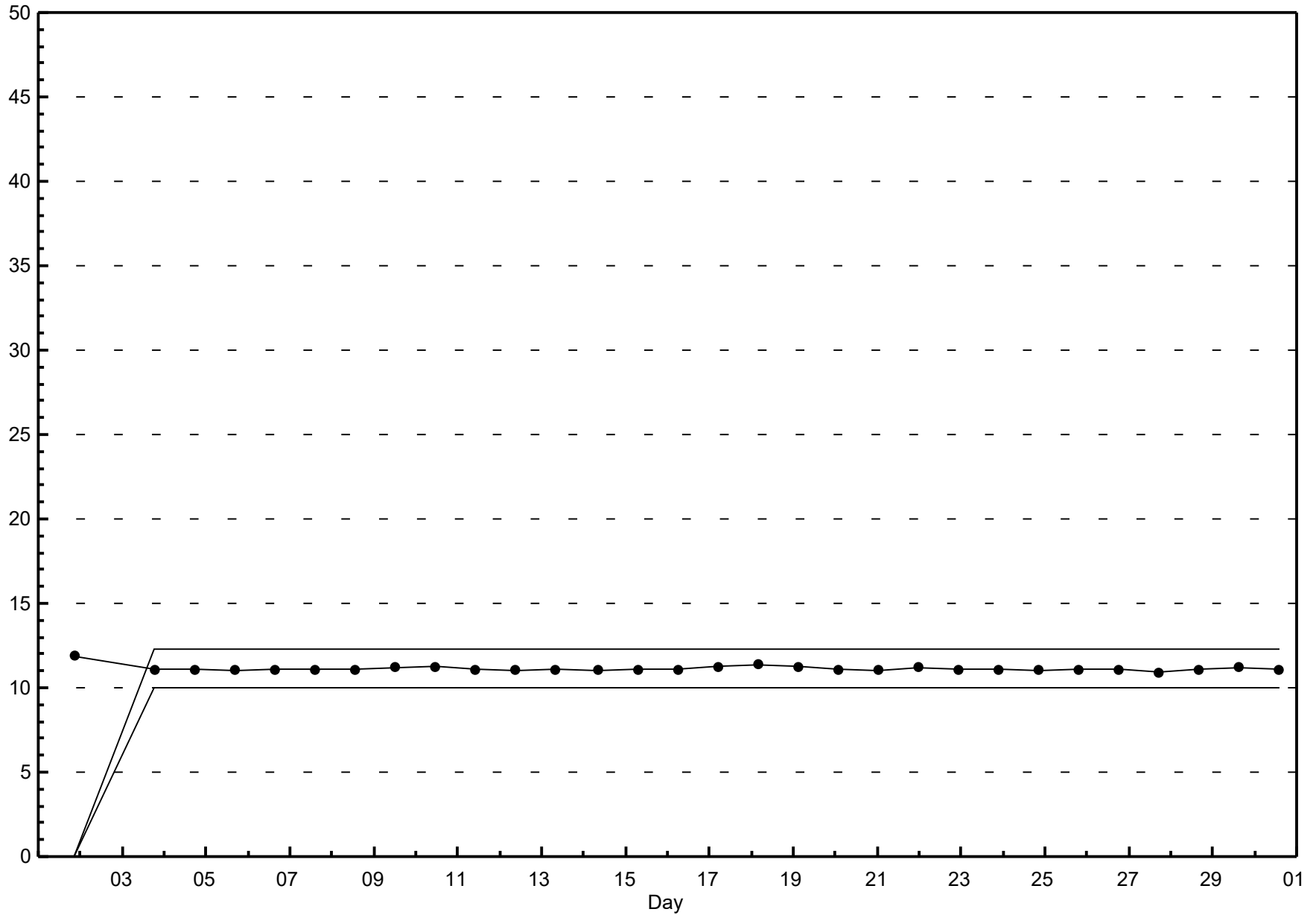




### Pollutant Rose

Non Methane Hydrocarbon (NMHC) - ppm  
Portable Rycroft - November 2016





## Hourly Averages

PM2.5 (PM<sub>2.5</sub>) - µg/m<sup>3</sup>

Portable Rycroft - November 2016

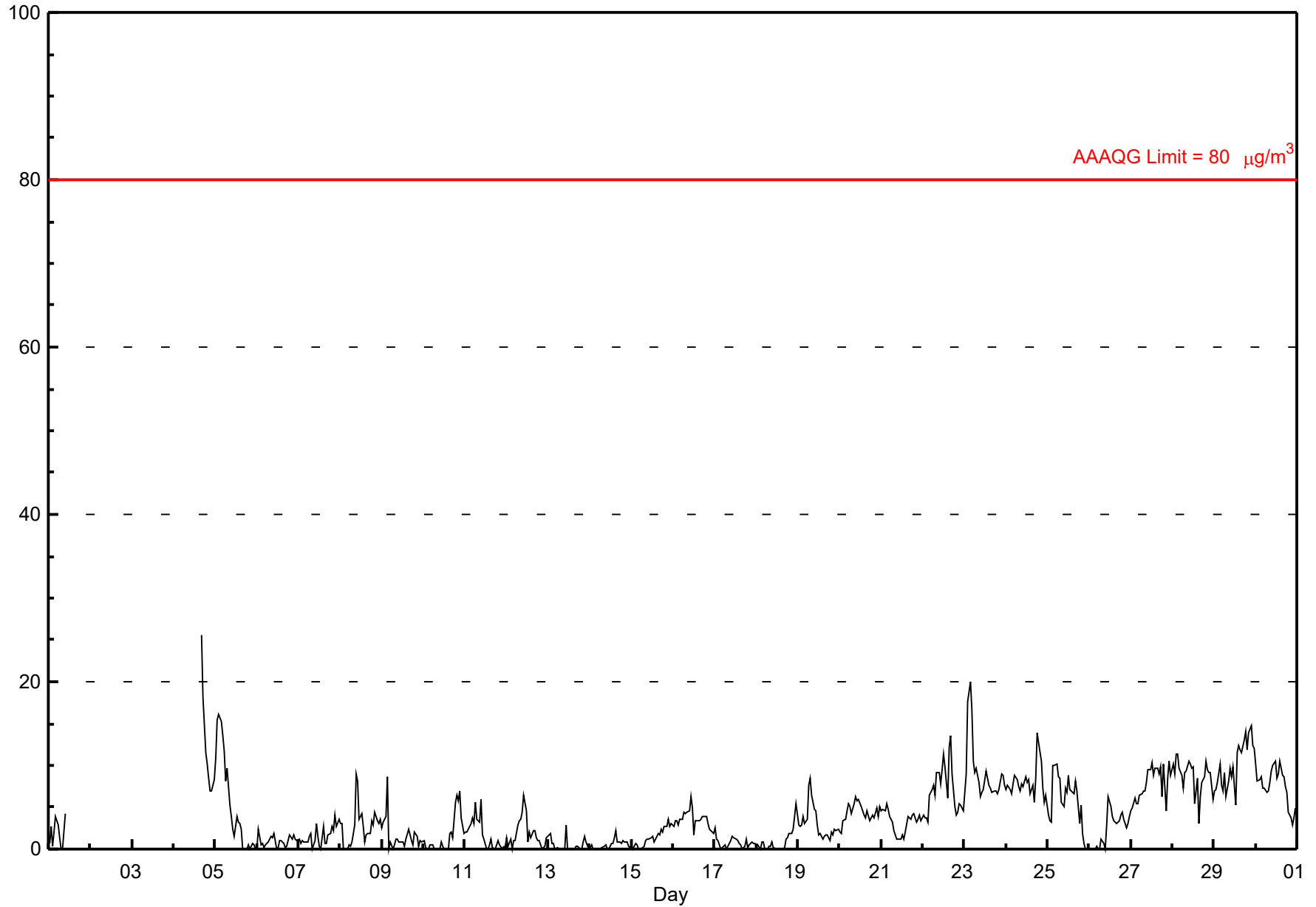
Number of Exceedences: 1-hr: 0 24-hr: 0	Hours in Service: 720
Maximum Value: 25.5 µg/m <sup>3</sup> on Nov 4 17:00	Maximum Daily Average: 10.1 µg/m <sup>3</sup> on Nov 29
Minimum Value: 0 µg/m <sup>3</sup> on Nov 1 08:00	Hours of Data: 660
Maximum Diurnal Average: 4.6 µg/m <sup>3</sup> at hour 11	Hours of Missing Data: 60
Monthly Average: 3.89 µg/m <sup>3</sup>	Hours of Calibration: 1
Minimum Daily Average: 0.5 µg/m <sup>3</sup> on Nov 13	Percent Operational Time: 91.8
Minimum Diurnal Average: 3.4 µg/m <sup>3</sup> at hour 1	
Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.7 Median = 2.9 Q <sub>3</sub> = 6.6 P <sub>90</sub> = 9.2 P <sub>99</sub> = 15.4	

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	3	0	2	4	3	1	0	0	4	M	M	M	M	M	0	0	0	0	0	0	0	0	0	0.9	4.2																						
2-Nov	0	0	0	0	0	0	0	0	0	M	M	M	M	M	M	M	N	N	N	N	N	N	N	N	--	0.0																						
3-Nov	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--																						
4-Nov	N	N	N	N	N	N	N	N	N	N	N	N	N	N	M	C	26	18	12	10	9	7	7	8	--	25.5																						
5-Nov	11	15	16	15	14	12	8	10	5	4	2	2	4	3	3	2	0	0	0	0	0	1	1	0	5.3	16.2																						
6-Nov	0	2	0	1	0	1	1	1	2	1	2	0	0	1	1	1	0	0	1	2	1	2	1	1	0.9	2.4																						
7-Nov	1	1	1	1	1	1	1	2	0	1	3	1	0	0	3	1	1	2	2	3	2	4	3	4	1.6	4.0																						
8-Nov	3	3	0	0	0	1	0	1	3	9	8	4	4	3	1	2	2	2	3	3	4	3	3	4	2.7	8.9																						
9-Nov	3	3	4	9	0	1	0	0	1	1	1	1	0	1	2	2	2	1	0	2	1	0	1	1	1.6	8.7																						
10-Nov	1	0	0	0	1	1	0	0	0	0	1	0	0	0	0	2	2	1	6	6	6	7	4	2	1.6	7.0																						
11-Nov	2	2	2	3	4	3	6	4	3	6	2	1	0	0	1	1	0	0	0	1	0	0	0	0	1.7	6.0																						
12-Nov	1	0	1	0	1	1	3	3	4	4	6	5	1	2	1	2	2	1	1	1	0	0	0	1	1.9	6.4																						
13-Nov	2	2	1	1	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	1	1	1	0	0.5	3.0																						
14-Nov	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	2	1	1	1	1	1	1	0	0	0.5	2.2																						
15-Nov	0	0	1	0	0	0	0	0	1	1	1	1	2	1	1	2	2	2	2	3	3	4	3	3	1.4	3.6																						
16-Nov	3	3	3	3	4	3	4	4	4	5	6	5	2	3	3	3	4	4	4	4	3	2	2	2	3.6	6.3																						
17-Nov	2	1	1	0	0	0	0	0	1	1	2	1	1	1	1	0	0	0	1	0	0	1	1	1	0.8	2.5																						
18-Nov	0	1	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	1	1	2	2	2	4	5	0.9	5.4																						
19-Nov	3	3	3	4	3	4	8	8	6	5	5	3	2	2	1	2	2	2	1	2	2	2	2	2	3.1	8.5																						
20-Nov	2	2	3	4	5	5	5	4	5	6	6	6	5	5	4	4	5	3	4	4	4	5	4	5	4.4	6.3																						
21-Nov	5	5	5	5	5	4	3	2	2	1	1	1	2	1	2	4	4	3	4	4	3	4	4	3	3.2	5.5																						
22-Nov	4	4	4	3	6	7	8	6	9	9	8	9	11	10	6	12	14	9	5	4	4	5	5	5	7.0	13.6																						
23-Nov	7	9	18	20	17	11	9	10	8	6	7	7	9	8	8	7	7	7	7	7	7	9	9	8	9.2	19.9																						
24-Nov	7	8	7	7	8	9	8	7	7	8	7	9	8	8	7	8	6	8	14	13	11	7	6	6	8.0	13.8																						
25-Nov	4	3	3	10	10	10	9	8	6	5	7	7	9	7	7	7	8	7	3	5	2	1	0	0	5.7	10.2																						
26-Nov	0	0	0	0	0	0	0	1	1	0	3	6	5	4	3	3	3	3	4	4	4	3	3	4	2.3	6.3																						
27-Nov	5	5	6	5	5	6	7	7	7	8	10	10	10	9	10	10	9	10	6	10	5	9	10	9	7.8	10.5																						
28-Nov	10	9	11	11	10	9	7	9	9	11	10	10	10	5	8	3	6	8	9	10	10	9	9	6	8.8	11.4																						
29-Nov	7	7	8	10	8	7	9	6	8	10	9	10	5	12	12	12	12	13	14	12	14	15	12	12	10.1	14.7																						
30-Nov	10	8	8	9	7	7	7	7	8	9	10	10	8	9	11	9	9	7	7	4	4	3	4	5	7.5	10.5																						
																								3.4	3.6	3.8	4.4	4.0	3.8	3.8	3.7	3.6	4.3	4.6	4.2	3.9	3.7	3.7	3.7	4.4	4.1	4.0	4.2	3.6	3.8	3.6	3.5	Diurnal Average
																								10.9	15.4	17.6	19.9	16.7	11.7	9.2	9.7	9.3	10.6	10.2	10.5	11.3	11.5	12.4	12.2	25.5	18.1	14.0	12.7	13.9	14.7	12.3	12.0	Diurnal Maximum

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

### Hourly Averages

PM2.5 (PM<sub>2.5</sub>) -  $\mu\text{g}/\text{m}^3$   
Portable Rycroft - November 2016



## Hourly Maximums

PM2.5 (PM<sub>2.5</sub>) - µg/m<sup>3</sup>

Portable Rycroft - November 2016

Maximum Value: 28.8 µg/m <sup>3</sup> on Nov 4 17:00	Maximum Daily Average: 14.3 µg/m <sup>3</sup> on Nov 29	Hours in Service: 720
Minimum Value: 0 µg/m <sup>3</sup> on Nov 1 08:00	Minimum Daily Average: 2.1 µg/m <sup>3</sup> on Nov 14	Hours of Data: 660
Maximum Diurnal Average: 8.1 µg/m <sup>3</sup> at hour 11	Minimum Diurnal Average: 5.7 µg/m <sup>3</sup> at hour 8	Hours of Missing Data: 60
Monthly Average: 6.31 µg/m <sup>3</sup>	Percentiles: P <sub>1</sub> = 0.2 P <sub>10</sub> = 1.6 Q <sub>1</sub> = 2.6 Median = 5.1 Q <sub>3</sub> = 9.4 P <sub>90</sub> = 12.8 P <sub>99</sub> = 19.2	Hours of Calibration: 1
		Percent Operational Time: 91.8

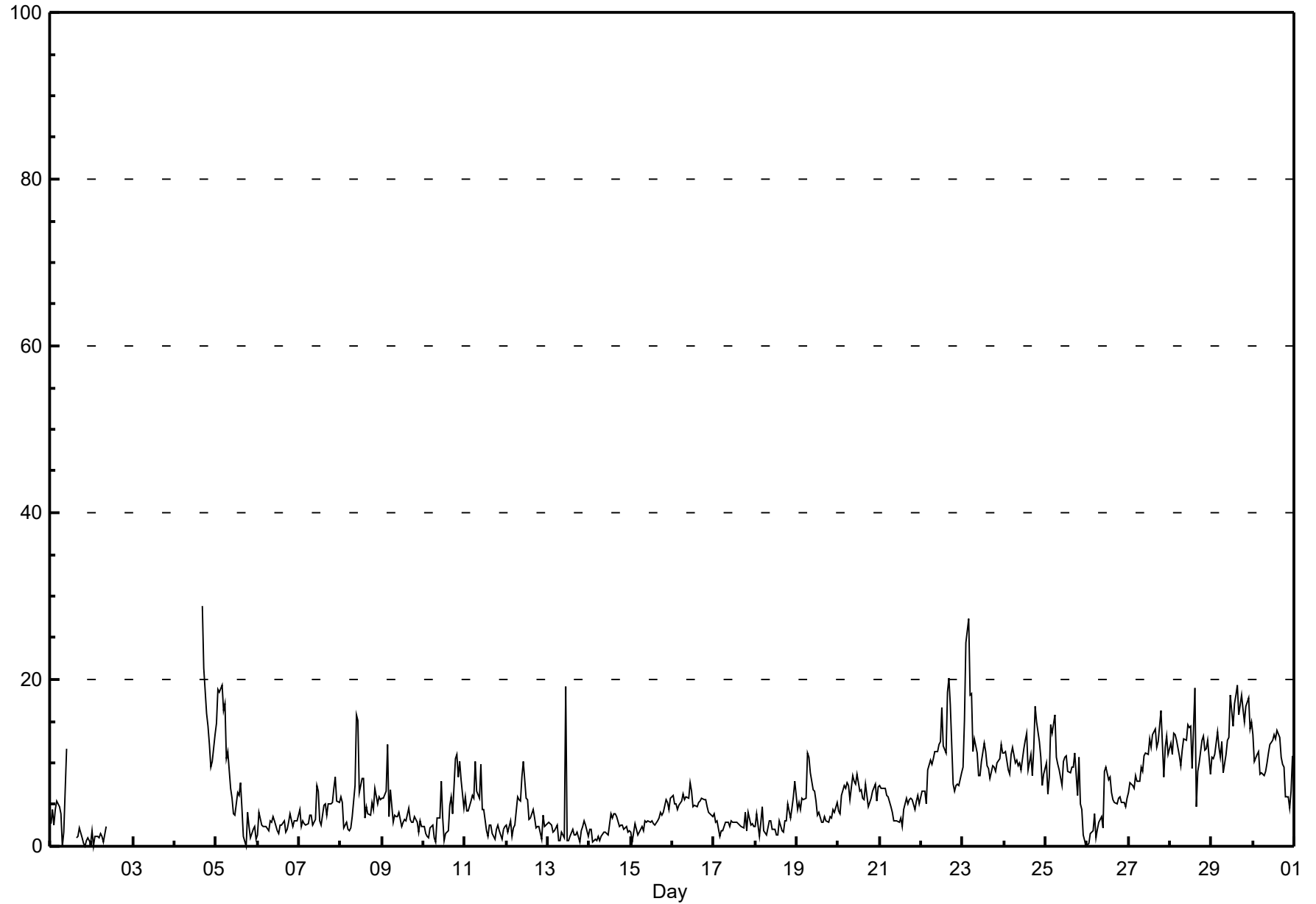
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Nov	3	4	3	4	5	5	4	0	2	12	M	M	M	M	M	1	1	2	1	0	0	1	1	0	2.6	11.7
2-Nov	2	0	1	1	1	1	1	0	2	M	M	M	M	M	M	M	N	N	N	N	N	N	N	N	--	2.4
3-Nov	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
4-Nov	N	N	N	N	N	N	N	N	N	N	N	N	N	N	M	C	29	21	16	14	12	9	10	13	--	28.8
5-Nov	15	19	18	19	16	17	11	11	7	6	4	4	7	6	8	5	1	0	4	2	1	2	2	1	7.7	19.3
6-Nov	1	4	3	2	2	2	2	3	3	4	3	2	2	3	3	3	2	2	3	4	2	3	3	3	2.6	4.1
7-Nov	4	2	3	3	3	3	4	4	3	3	7	7	3	3	5	5	4	5	5	5	7	8	5	5	4.4	8.3
8-Nov	6	5	2	3	2	2	2	4	7	16	15	6	8	8	3	5	4	4	5	4	7	5	6	6	5.6	15.8
9-Nov	6	6	7	12	4	7	3	4	4	4	4	2	3	3	3	5	3	3	3	4	3	2	3	2	4.0	12.2
10-Nov	2	2	1	1	2	3	1	0	3	3	8	3	1	2	2	5	6	4	10	11	8	10	8	5	4.2	11.0
11-Nov	6	4	4	5	6	6	10	7	6	10	4	4	2	1	3	3	2	1	2	3	2	1	2	2	4.0	10.2
12-Nov	3	2	3	1	2	2	6	6	5	8	10	6	6	3	3	4	3	2	2	2	1	4	2	3	3.8	10.2
13-Nov	3	3	3	2	2	3	1	1	2	1	19	1	1	1	2	1	1	2	1	2	2	3	3	1	2.4	19.2
14-Nov	2	2	0	1	1	1	1	1	2	2	2	1	4	3	4	4	4	2	3	2	2	2	2	2	2.1	3.9
15-Nov	2	1	3	2	1	2	2	2	3	3	3	3	3	3	3	3	3	4	4	4	6	5	4	6	3.1	5.8
16-Nov	6	5	5	4	5	5	6	6	6	6	8	7	5	5	5	5	5	6	6	6	5	4	4	4	5.3	7.6
17-Nov	4	3	3	1	2	2	2	3	3	2	3	3	3	3	3	3	2	2	4	2	4	3	3	2	2.7	4.1
18-Nov	2	4	1	3	5	2	1	2	3	3	2	2	1	1	3	2	2	3	3	5	3	5	6	8	3.0	7.7
19-Nov	4	5	4	6	6	6	11	11	9	7	7	5	4	4	3	3	4	3	3	4	3	4	4	5	5.2	11.2
20-Nov	4	4	6	7	7	8	7	6	8	8	8	9	7	7	6	6	7	5	5	6	7	7	6	7	6.5	8.6
21-Nov	7	7	7	7	6	6	5	4	3	3	3	3	3	2	4	6	5	6	6	6	4	5	6	5	5.0	7.3
22-Nov	7	7	7	5	9	10	10	11	11	11	12	13	17	12	11	18	20	17	8	7	7	8	7	9	10.5	20.2
23-Nov	9	15	24	27	18	18	11	13	11	8	8	10	12	11	10	9	8	10	9	9	10	11	12	11	12.4	27.3
24-Nov	11	11	9	9	11	12	10	10	10	10	9	12	13	14	9	11	8	12	17	15	13	11	7	9	10.9	16.8
25-Nov	10	6	8	15	14	16	11	10	9	7	10	11	11	9	9	9	9	11	6	11	5	4	1	0	8.9	15.7
26-Nov	0	0	2	2	4	1	2	3	4	2	9	10	8	8	6	6	5	5	6	6	5	5	5	6	4.6	9.5
27-Nov	6	8	7	7	8	8	8	9	9	11	11	11	13	12	13	14	12	13	14	16	8	12	13	11	10.6	16.3
28-Nov	12	11	14	13	13	11	10	12	13	13	15	14	14	9	19	5	9	10	13	13	12	12	13	9	11.9	19.0
29-Nov	11	10	11	14	12	11	12	9	11	13	13	18	14	17	18	19	16	18	16	15	17	18	14	15	14.3	19.3
30-Nov	13	10	11	11	9	9	8	9	10	11	12	13	13	13	14	13	11	10	9	6	6	5	7	11	10.2	13.9

5.8	5.7	6.1	6.7	6.3	6.3	5.8	5.7	6.0	6.9	8.1	6.9	6.8	6.3	6.6	6.4	6.7	6.5	6.6	6.5	5.8	6.0	5.7	5.7		Diurnal Average
14.8	18.8	24.5	27.3	18.2	18.4	12.5	12.9	12.8	15.8	19.2	18.1	16.5	17.1	19.0	19.3	28.8	21.4	16.8	16.3	16.7	17.8	14.2	14.9		Diurnal Maximum

C - Calibration      M - Maintenance      N - Not Valid

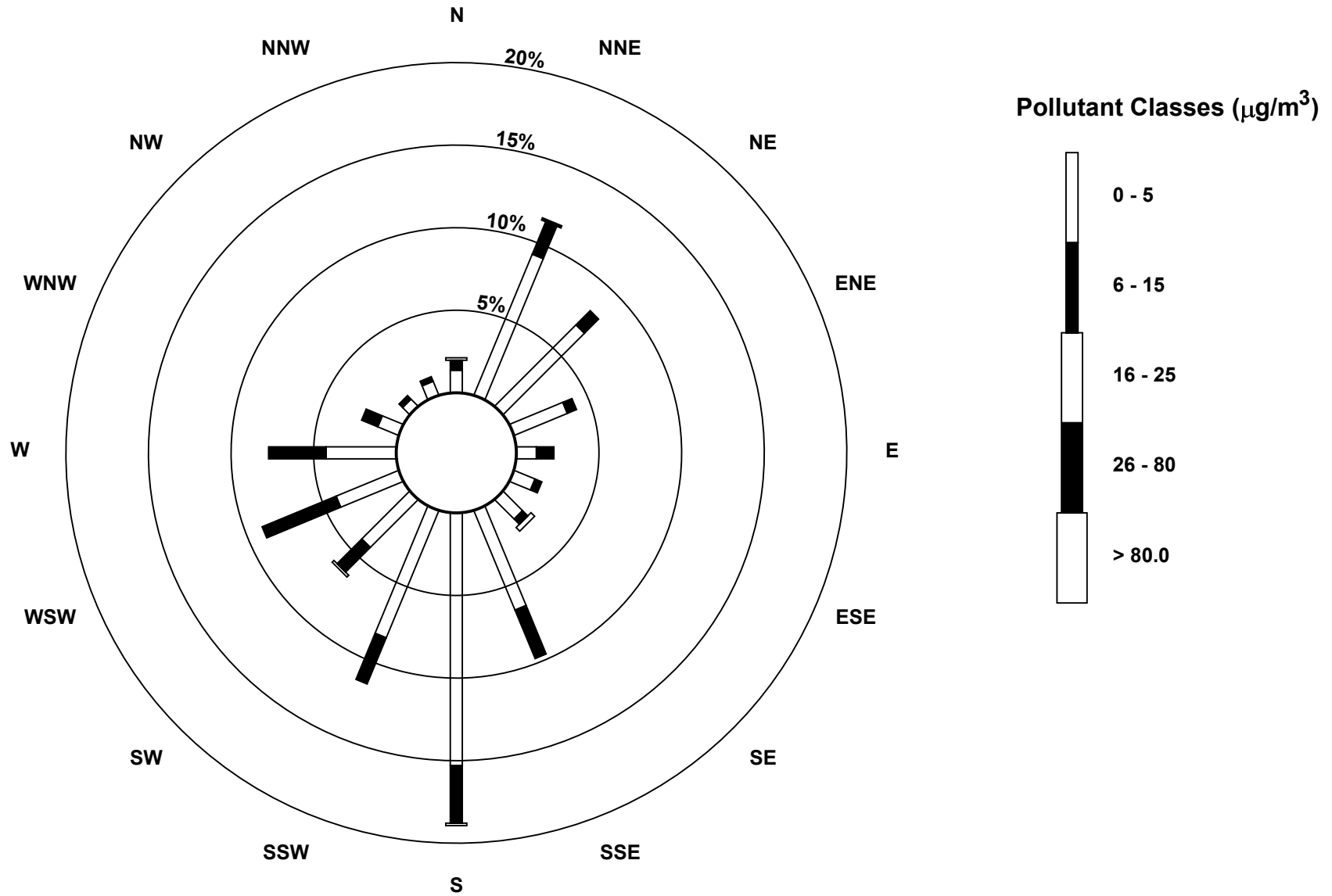
### Hourly Maximums

PM2.5 (PM<sub>2.5</sub>) -  $\mu\text{g}/\text{m}^3$   
Portable Rycroft - November 2016



**Pollutant Rose**

**PM<sub>2.5</sub> (PM<sub>2.5</sub>) -  $\mu\text{g}/\text{m}^3$**   
**Portable Rycroft - November 2016**





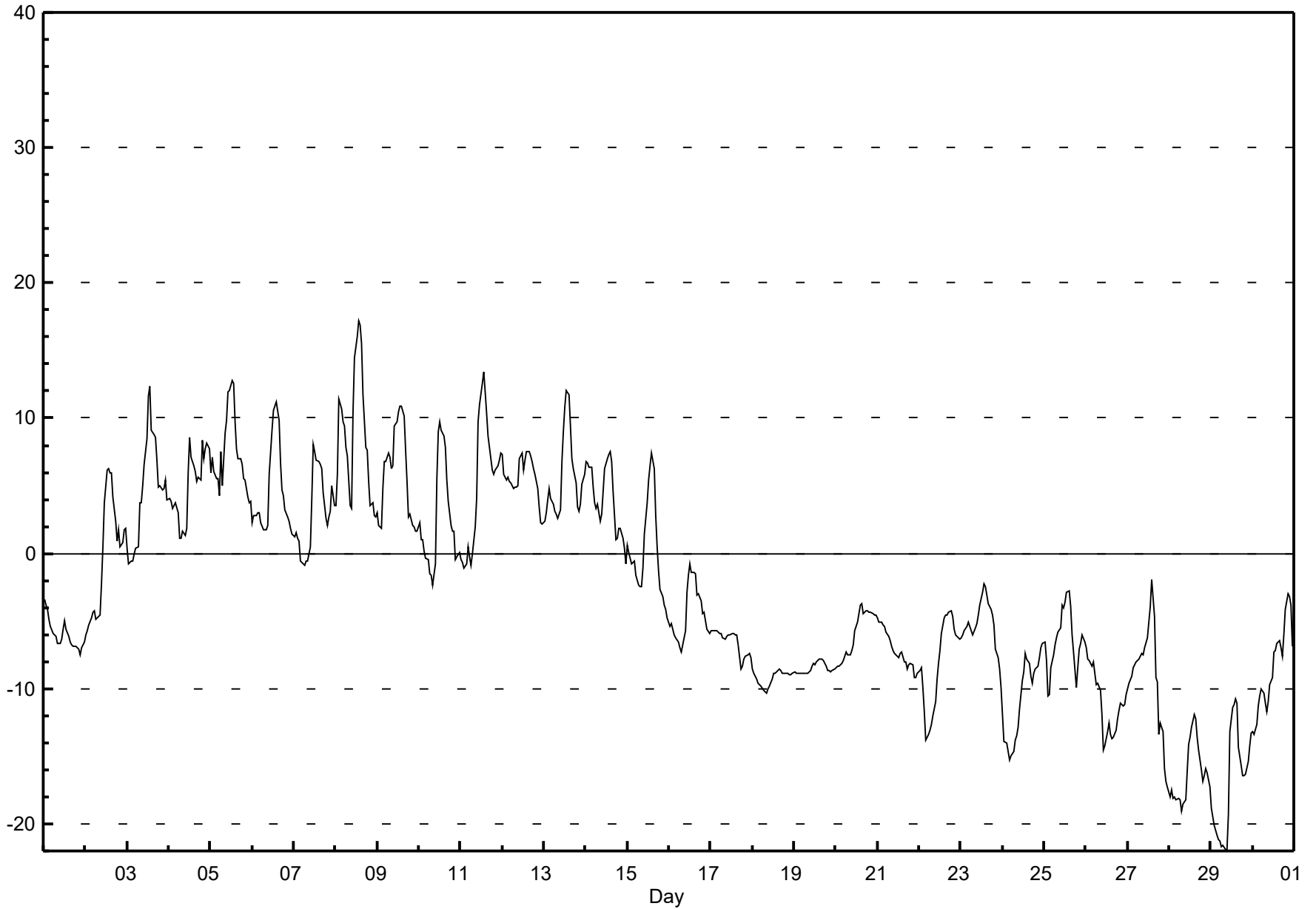
# Hourly Averages

External Temperature (ET) - °C  
 Portable Rycroft - November 2016

Maximum Value: 17.2 °C on Nov 8 14:00 Minimum Value: -22 °C on Nov 29 09:00 Maximum Diurnal Average: 1.1 °C at hour 14 Monthly Average: -2.61 °C		Maximum Daily Average: 8.7 °C on Nov 8 Minimum Daily Average: -17.0 °C on Nov 29 Minimum Diurnal Average: -4.4 °C at hour 8 Percentiles: P <sub>1</sub> = -20.3 P <sub>10</sub> = -12.3 Q <sub>1</sub> = -8.2 Median = -4.2 Q <sub>3</sub> = 3.8 P <sub>90</sub> = 7.4 P <sub>99</sub> = 12.5		Hours in Service: 720 Hours of Data: 720 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
1-Nov	-3	-4	-4	-5	-5	-6	-6	-6	-7	-7	-6	-6	-5	-6	-6	-7	-7	-7	-7	-7	-7	-7	-7	-7	-6.0	-3.4
2-Nov	-6	-6	-5	-5	-4	-4	-5	-5	-5	-2	0	4	6	6	6	6	4	2	1	2	0	1	2	2	-0.2	6.3
3-Nov	0	-1	-1	-1	0	0	1	4	4	5	7	8	12	12	9	9	9	7	5	5	5	5	5	4	4.7	12.3
4-Nov	4	4	3	3	4	3	1	1	2	1	2	6	9	7	7	6	5	6	5	8	7	8	8	8	4.9	8.6
5-Nov	6	7	6	6	6	4	7	5	9	10	12	12	13	13	10	8	7	7	7	6	5	4	4	4	7.3	12.8
6-Nov	2	3	3	3	3	2	2	2	2	2	6	9	11	11	11	10	7	5	4	3	3	2	2	1	4.5	11.2
7-Nov	1	2	1	1	-1	-1	-1	-1	-1	0	4	8	8	7	7	7	6	4	3	2	3	3	5	4	3.0	8.1
8-Nov	4	6	11	11	10	9	8	7	4	3	10	14	16	17	17	16	12	8	8	5	4	4	3	3	8.7	17.2
9-Nov	3	2	2	5	7	7	7	7	6	7	9	10	10	11	11	10	8	5	3	3	2	2	2	2	5.8	10.9
10-Nov	2	1	1	0	0	0	-1	-2	-2	-1	6	9	10	9	9	8	5	4	2	2	2	0	0	0	2.6	9.7
11-Nov	0	-1	-1	-1	0	0	-1	0	2	4	10	11	13	13	12	10	9	7	6	6	6	6	7	7	5.3	13.4
12-Nov	7	6	5	6	5	5	5	5	5	5	7	7	6	7	8	8	7	7	6	6	5	3	2	2	5.6	7.5
13-Nov	2	3	4	5	4	4	3	3	3	3	7	9	11	12	12	9	7	6	5	3	3	4	5	6	5.6	12.1
14-Nov	7	7	6	6	5	4	3	4	2	3	5	6	7	7	7	7	5	1	1	2	2	1	0	-1	4.1	7.5
15-Nov	1	0	-1	-1	-1	-2	-2	-2	-2	-1	1	4	5	7	7	6	3	1	-1	-3	-3	-4	-4	-5	0.1	7.5
16-Nov	-5	-5	-6	-6	-6	-7	-7	-7	-7	-6	-3	-2	-1	-1	-1	-2	-3	-3	-4	-4	-4	-5	-6	-6	-4.4	-0.8
17-Nov	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-7	-9	-8	-8	-8	-8	-7	-8	-6.5	-5.7
18-Nov	-9	-9	-9	-10	-10	-10	-10	-10	-10	-10	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9.2	-8.5
19-Nov	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-9	-9	-9	-9	-8.5	-7.8
20-Nov	-8	-8	-8	-8	-8	-8	-7	-7	-8	-7	-7	-6	-5	-4	-4	-4	-4	-4	-4	-4	-4	-4	-5	-5	-6.0	-3.7
21-Nov	-5	-5	-5	-5	-5	-6	-6	-6	-7	-7	-7	-8	-8	-7	-7	-8	-8	-8	-8	-8	-8	-9	-9	-9	-7.1	-4.8
22-Nov	-9	-8	-10	-12	-14	-13	-13	-13	-12	-11	-9	-8	-7	-6	-5	-5	-5	-4	-4	-5	-6	-6	-6	-6	-8.2	-4.2
23-Nov	-6	-6	-6	-5	-5	-5	-6	-6	-6	-5	-5	-4	-3	-2	-2	-3	-4	-4	-5	-5	-7	-8	-9	-10	-5.3	-2.2
24-Nov	-12	-14	-14	-15	-15	-15	-15	-14	-14	-13	-12	-9	-9	-7	-8	-8	-9	-10	-9	-9	-8	-8	-7	-7	-10.8	-6.7
25-Nov	-7	-8	-11	-10	-8	-8	-7	-6	-6	-5	-4	-4	-4	-3	-3	-4	-6	-7	-10	-8	-7	-7	-6	-7	-6.4	-2.8
26-Nov	-7	-8	-8	-8	-8	-9	-10	-10	-10	-12	-15	-14	-13	-13	-13	-14	-14	-13	-12	-12	-11	-11	-11	-10	-11.1	-7.0
27-Nov	-10	-10	-9	-8	-8	-8	-8	-8	-7	-8	-7	-6	-5	-4	-2	-5	-9	-9	-13	-13	-13	-16	-17	-17	-9.2	-2.0
28-Nov	-18	-17	-18	-18	-18	-18	-18	-19	-19	-18	-16	-14	-14	-13	-12	-12	-14	-15	-16	-17	-16	-16	-16	-17	-16.2	-11.9
29-Nov	-19	-20	-20	-21	-21	-21	-22	-22	-22	-22	-19	-13	-11	-11	-11	-11	-14	-16	-16	-16	-16	-15	-14	-13	-17.0	-10.7
30-Nov	-13	-13	-13	-11	-11	-10	-10	-11	-12	-11	-10	-9	-7	-7	-7	-6	-7	-8	-6	-4	-3	-3	-4	-7	-8.5	-2.9
	-3.7	-3.9	-4.0	-4.0	-4.0	-4.2	-4.4	-4.4	-4.4	-3.9	-1.9	-0.3	0.7	1.1	1.0	0.3	-1.1	-2.1	-2.9	-2.9	-3.1	-3.4	-3.4	-3.6	Diurnal Average	
	7.3	7.1	11.5	10.7	9.7	9.4	7.8	7.2	8.9	9.9	11.9	14.4	16.0	17.2	16.9	15.6	11.7	7.8	7.6	8.4	7.0	7.7	8.2	7.7	Diurnal Maximum	

**Hourly Averages**

**External Temperature (ET) - °C**  
**Portable Rycroft - November 2016**





Peace Airshed Zone Association

### Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Portable Rycroft - November 2016

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	9	12	13	15	13	14	10	9	12	12	12	12	11	10	12	14	13	11	11	10	8	7	5	3	9.9	15.3
Dir	346	13	22	17	15	19	30	36	18	20	30	40	60	66	59	56	59	58	58	61	62	68	68	67	38.5	16.6
2 Spd	4	5	6	1	3	2	6	11	14	10	14	14	9	11	11	9	7	6	9	10	7	7	5	5	6.0	14.2
Dir	66	69	50	70	56	154	169	167	161	186	186	188	200	198	194	185	171	145	145	147	164	162	132	36	164.9	187.9
3 Spd	4	4	4	2	2	5	7	14	4	6	11	11	4	7	19	19	17	16	9	12	10	11	8	10	7.5	19.2
Dir	20	34	44	213	126	202	184	170	102	132	144	147	150	194	189	188	215	194	188	175	175	173	174	196	177.0	189.1
4 Spd	8	7	9	7	5	5	4	4	1	3	3	2	3	2	6	5	3	2	2	7	9	12	12	8	4.1	12.1
Dir	183	176	155	135	148	179	218	179	86	125	143	159	186	273	42	47	32	229	192	178	160	160	165	172	161.4	165.0
5 Spd	6	9	6	8	5	6	5	2	3	12	16	12	9	9	26	19	10	15	14	9	9	7	8	8	7.8	25.7
Dir	182	152	174	167	178	164	152	86	82	172	170	168	188	228	261	247	172	176	185	184	188	193	203	191	190.5	261.4
6 Spd	8	8	3	8	8	7	8	7	4	6	10	15	17	14	11	9	7	9	9	9	8	5	5	9	8.2	16.6
Dir	182	178	145	173	176	192	186	168	179	148	165	190	197	204	210	203	204	187	184	191	191	202	197	170	186.9	197.4
7 Spd	9	8	8	8	8	6	6	4	5	5	1	3	5	7	6	5	5	2	1	2	3	2	4	4	3.2	9.0
Dir	171	158	154	157	153	155	169	184	65	55	44	76	93	93	112	110	114	109	1	27	70	41	27	18	120.1	171.5
8 Spd	2	6	15	12	12	13	12	10	4	4	1	2	3	6	7	8	7	5	4	6	5	7	7	5	3.5	14.9
Dir	64	167	152	156	156	158	171	168	268	256	275	270	327	28	39	31	334	283	153	189	192	174	181	184	164.9	152.1
9 Spd	4	6	6	18	8	11	9	9	8	9	14	15	26	28	29	24	15	9	6	9	9	7	9	10	11.1	29.4
Dir	188	179	195	257	184	183	218	214	224	217	226	234	238	245	252	255	251	224	182	191	193	199	195	189	226.1	251.6
10 Spd	11	8	8	7	8	6	4	6	3	2	6	6	8	9	5	4	3	6	3	4	3	5	4	4	3.0	11.1
Dir	187	173	174	180	180	171	170	172	53	14	68	98	112	86	102	76	48	67	289	42	44	245	182	182	137.9	187.0
11 Spd	3	2	0	2	3	0	4	7	5	3	9	11	13	16	8	8	10	9	9	3	6	6	4	10	5.7	16.5
Dir	201	211	131	240	169	115	253	176	164	218	197	202	221	227	221	186	188	185	171	248	164	169	152	158	194.9	227.4
12 Spd	7	7	2	3	0	4	3	3	2	4	5	2	4	2	3	1	1	4	6	4	3	5	8	7	3.1	7.6
Dir	165	167	225	145	234	156	223	210	237	196	166	198	292	199	214	304	125	152	154	174	185	164	174	171	179.1	173.6
13 Spd	8	8	9	9	10	11	10	10	11	5	9	14	9	3	4	5	3	8	7	5	6	9	7	5	7.0	13.8
Dir	174	175	174	189	194	184	187	179	191	192	186	178	197	240	9	133	118	143	151	177	161	147	170	162	175.5	178.2
14 Spd	15	16	15	11	10	10	10	11	9	9	14	29	32	32	27	26	14	6	7	9	9	8	7	8	13.4	32.5
Dir	182	192	187	206	200	206	207	209	202	205	225	240	239	243	245	246	235	212	211	202	212	215	208	187	220.9	243.1
15 Spd	13	9	8	7	7	7	8	9	10	8	9	8	6	6	5	1	1	4	3	2	6	3	4	5	5.7	12.8
Dir	189	176	176	167	200	188	182	173	172	173	180	184	194	247	275	46	117	140	178	191	184	211	198	192	185.3	189.3
16 Spd	4	4	6	5	4	4	5	5	6	5	5	5	3	3	2	3	3	3	4	7	6	13	12	12	1.3	12.5
Dir	217	188	184	192	209	234	225	196	179	215	276	284	268	256	217	214	222	182	245	270	12	56	49	48	219.1	55.7
17 Spd	11	9	7	8	7	6	10	9	7	7	8	8	10	9	10	8	8	4	1	1	1	3	7	9	6.8	11.0
Dir	44	48	50	49	48	54	34	43	39	22	31	33	31	25	38	35	23	15	55	66	57	3	49	39	37.3	44.2
18 Spd	13	12	15	10	9	10	9	6	7	8	10	9	9	11	10	10	13	12	12	13	11	14	14	10	10.5	15.1
Dir	41	45	50	48	41	39	43	21	31	21	32	36	25	26	31	37	31	29	29	26	26	28	29	29	33.2	49.7
19 Spd	11	11	13	13	16	17	16	16	13	13	13	14	14	13	10	12	11	10	8	9	8	7	6	6	11.4	17.3
Dir	16	18	16	27	26	23	19	24	28	20	25	22	18	21	12	20	21	20	350	344	354	352	350	11	16.9	23.0
20 Spd	7	6	4	6	4	4	5	7	6	7	8	7	7	6	4	4	3	6	7	5	7	3	5	6	4.9	7.5
Dir	33	38	50	57	58	46	28	32	24	24	21	18	21	14	18	335	284	26	53	42	30	335	320	299	22.0	21.0
21 Spd	6	6	9	9	10	12	14	15	16	18	16	17	19	14	10	13	10	2	1	4	1	2	2	2	9.0	19.1
Dir	283	267	268	263	260	256	259	258	261	260	258	260	258	256	261	265	271	278	271	281	125	134	130	85	260.8	258.5
22 Spd	3	3	2	1	2	2	3	3	4	2	2	3	1	6	12	10	11	8	7	8	8	6	3	1	2.9	12.3
Dir	89	98	127	199	210	216	206	155	234	156	94	224	192	51	62	54	58	45	53	49	41	42	69	153	67.0	62.3



Peace Airshed Zone Association

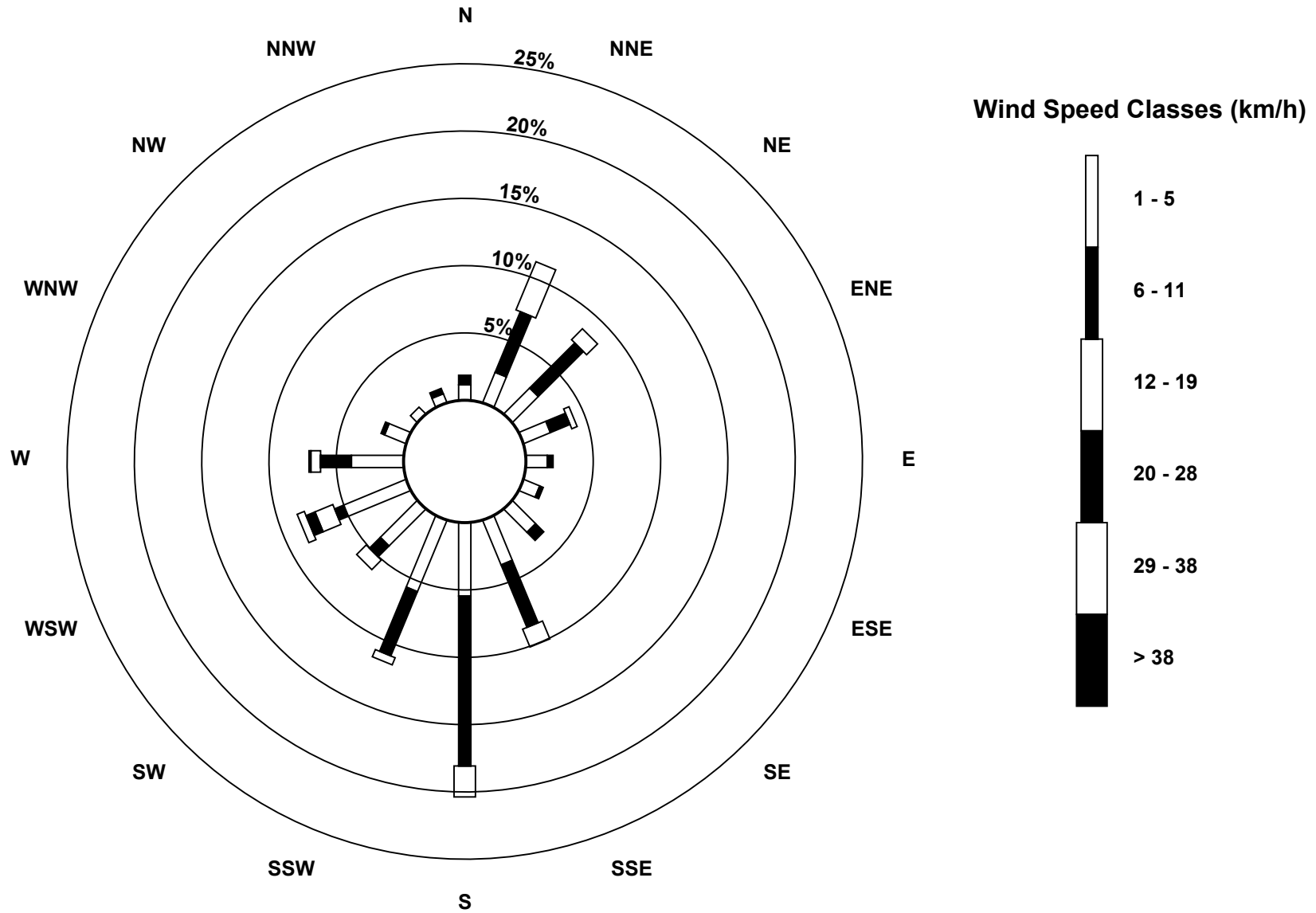
# Hourly Averages

Wind Speed (km/h)  
Wind Direction (deg)  
Portable Rycroft - November 2016

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	2	2	2	2	0	6	3	3	5	4	1	3	1	3	5	2	1	3	1	2	3	5	2	2	0.3	6.2
Dir	204	171	138	133	5	47	29	305	289	254	102	85	21	334	313	21	150	89	287	131	169	153	137	179	97.7	47.1
24 Spd	2	7	4	2	5	2	2	1	1	2	0	2	3	1	2	3	2	3	3	4	4	3	1	1	1.5	7.4
Dir	188	252	240	242	275	244	177	216	161	172	123	281	21	344	298	249	256	206	174	174	165	167	170	88	221.7	252.1
25 Spd	1	1	6	5	5	4	5	6	3	5	15	13	10	8	8	7	5	3	4	7	8	8	9	8	5.2	15.1
Dir	156	296	266	245	158	157	182	187	208	212	245	248	242	246	254	260	256	187	193	181	178	195	183	175	217.6	244.6
26 Spd	8	8	9	9	12	8	7	9	6	4	6	4	6	5	4	5	3	3	2	1	1	2	3	5	4.0	11.7
Dir	176	181	176	164	167	164	164	158	174	206	268	262	262	280	253	246	238	202	169	261	322	264	232	250	199.4	167.4
27 Spd	11	10	9	5	5	4	7	2	3	3	1	3	3	3	4	4	2	4	5	4	5	5	5	5	2.8	11.1
Dir	267	267	267	282	288	289	272	284	1	40	218	248	278	276	302	21	61	90	199	157	174	241	238	226	264.4	267.5
28 Spd	2	2	2	3	4	5	3	2	3	4	3	2	2	2	1	4	2	1	3	1	1	2	2	2	1.7	4.6
Dir	204	196	278	221	188	172	182	221	188	229	257	280	200	232	243	185	251	232	258	351	2	105	185	193	216.1	172.5
29 Spd	2	2	1	1	1	1	2	1	2	1	1	2	4	5	3	1	2	5	9	3	4	0	3	5	1.3	9.0
Dir	202	171	223	195	213	209	197	204	230	156	164	20	6	23	360	31	275	267	267	242	254	134	251	272	266.1	266.6
30 Spd	3	5	2	5	4	3	4	1	2	1	3	5	1	2	5	3	1	1	8	11	12	9	6	5	2.3	11.9
Dir	267	254	250	273	265	266	274	182	209	193	220	244	264	236	261	69	81	55	147	152	161	182	192	314	209.0	161.0
Spd	2.0	2.3	2.1	2.1	2.2	2.3	2.3	2.9	1.2	1.4	2.4	3.1	3.1	2.9	2.8	1.6	0.8	1.7	2.3	2.3	2.5	2.5	2.3	1.9	Diurnal Average	
Dir	177.3	169.7	159.3	182.4	172.0	170.7	192.9	176.4	179.9	195.4	197.9	214.7	234.1	250.5	256.9	244.6	225.4	156.5	165.4	166.9	158.7	163.3	166.5	169.9	Diurnal Maximum	
Spd	15.1	16.4	15.1	18.4	15.6	17.3	15.5	15.5	15.7	17.7	15.9	29.5	32.0	32.5	29.4	25.7	16.9	16.2	14.1	12.7	11.9	13.7	13.8	11.9	Diurnal Maximum	
Dir	181.8	192.2	49.7	257.3	26.1	23.0	19.2	24.3	260.6	260.1	258.4	240.2	239.3	243.1	251.6	246.0	215.4	193.8	185.5	25.7	161.0	26.1	27.8	48.2	Diurnal Maximum	
Maximum Speed Value: 32 km/h on Nov 14 14:00																		Minimum Speed Value: 0 km/h on Nov 29 22:00						Hours in Service: 720		
Maximum Daily Speed Average: 13.4 km/h on Nov 14																		Minimum Daily Speed Average: 0.3 km/h on Nov 28						Hours of Data: 720		
Maximum Diurnal Speed Average: 3.1 km/h at hour 13																		Minimum Diurnal Speed Average: 0.8 km/h at hour 17						Hours of Missing Data: 0		
Monthly Average Velocity: 1.89 km/h 189.01 deg																		Speed Percentiles: P <sub>1</sub> = 0.5 P <sub>10</sub> = 1.8 Q <sub>1</sub> = 3.2 Median = 6.1 Q <sub>3</sub> = 9.2 P <sub>90</sub> = 12.7 P <sub>99</sub> = 24.8						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	20	18	16	0	0	0	54																			
NorthEast	27	68	26	0	0	0	121																			
East	25	9	0	0	0	0	34																			
SouthEast	36	23	5	0	0	0	64																			
South	67	138	28	1	0	0	234																			
SouthWest	59	27	11	3	4	0	104																			
West	50	27	13	3	1	0	94																			
NorthWest	11	4	0	0	0	0	15																			
Total	295	314	99	7	5	0	720																			

**Wind Rose**

**Wind Speed (WS) (km/h)**  
**Portable Rycroft - November 2016**



# Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

## Portable Rycroft - November 2016

<b>Maximum Speed: 33 km/h on Nov 14 14:00</b>		<b>Maximum Daily Speed Average: 14.5 km/h on Nov 14</b>		Hours in Service: 720																						
<b>Minimum Speed: 1 km/h on Nov 30 08:00</b>		<b>Minimum Daily Speed Average: 2.6 km/h on Nov 28</b>		Hours of Data: 720																						
<b>Maximum Diurnal Speed Average: 9.2 km/h at hour 15</b>		<b>Minimum Diurnal Speed Average: 6.1 km/h at hour 19</b>		Hours of Missing Data: 0																						
<b>Monthly Average Speed: 7.15 km/h</b>		Percentiles: P <sub>1</sub> = 1.3 P <sub>10</sub> = 2.4 Q <sub>1</sub> = 3.9 Median = 6.3 Q <sub>3</sub> = 9.2 P <sub>90</sub> = 12.8 P <sub>99</sub> = 25.4		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	9	12	13	15	13	14	10	9	12	12	12	12	11	10	13	14	13	11	11	10	8	7	5	3	10.8	15.3
2-Nov	4	5	6	2	4	2	7	11	14	10	14	14	9	11	11	9	7	6	9	11	7	8	5	6	8.0	14.3
3-Nov	4	5	5	5	3	7	7	14	5	7	11	11	5	8	19	19	17	16	10	12	10	11	9	10	9.6	19.2
4-Nov	8	8	9	8	6	6	5	4	4	4	4	3	4	3	6	6	4	3	3	7	9	12	12	8	6.1	12.2
5-Nov	7	9	6	8	6	7	5	3	4	12	16	12	9	9	26	19	10	15	14	9	9	8	8	8	10.0	26.1
6-Nov	8	8	6	8	8	7	8	7	5	6	10	15	17	14	11	9	7	9	9	9	8	5	5	9	8.7	16.6
7-Nov	9	8	8	8	8	6	6	4	6	6	2	4	5	7	6	5	5	2	3	3	4	3	5	5	5.3	9.0
8-Nov	4	10	15	13	12	13	12	11	5	5	1	3	4	6	8	8	7	6	5	6	5	7	7	6	7.4	14.9
9-Nov	4	6	6	19	10	11	9	9	8	9	14	15	26	28	29	24	15	9	7	9	9	7	9	10	12.6	29.5
10-Nov	11	8	8	7	8	6	4	6	5	3	7	7	9	9	6	5	4	6	5	5	4	5	4	5	6.1	11.1
11-Nov	4	3	2	2	5	4	5	7	5	5	9	11	13	17	9	9	11	9	9	4	6	7	4	10	7.1	16.5
12-Nov	8	7	3	4	2	4	6	4	3	4	5	4	5	3	3	2	2	4	6	4	4	5	8	7	4.4	8.2
13-Nov	8	8	9	9	10	11	10	10	11	5	9	14	9	4	5	6	3	8	7	6	7	9	8	6	7.9	13.8
14-Nov	15	17	15	11	10	10	10	11	9	9	14	30	32	33	27	26	14	6	7	9	10	8	7	8	14.5	32.5
15-Nov	13	9	8	8	7	7	8	9	10	8	9	8	6	7	5	2	1	4	3	3	6	3	4	6	6.5	12.8
16-Nov	5	4	6	5	4	4	5	6	6	5	5	5	3	3	2	3	3	3	4	8	8	13	12	12	5.6	12.7
17-Nov	11	9	7	8	7	6	10	9	7	7	9	9	10	10	10	8	8	5	2	1	2	4	7	9	7.2	11.1
18-Nov	13	12	15	10	9	10	9	7	7	8	10	9	9	11	10	10	13	13	12	13	11	14	14	10	10.7	15.2
19-Nov	11	11	13	13	16	17	16	16	13	13	14	14	14	13	10	12	11	10	9	9	8	7	6	6	11.7	17.4
20-Nov	7	6	4	6	4	4	5	7	6	7	8	7	7	6	5	4	5	7	7	6	7	5	6	6	5.9	7.6
21-Nov	7	7	9	9	11	12	14	15	16	18	16	17	19	14	10	13	10	3	1	5	1	2	2	2	9.7	19.1
22-Nov	3	3	2	3	2	3	3	3	5	3	4	3	2	7	12	10	11	8	7	8	8	6	4	2	5.1	12.4
23-Nov	2	3	2	3	3	6	4	3	5	4	2	3	2	3	5	4	2	4	2	2	3	5	3	3	3.3	6.5
24-Nov	4	8	4	3	5	2	2	1	2	2	2	3	4	2	2	4	2	3	4	4	4	4	2	3	3.2	7.6
25-Nov	3	3	6	5	5	4	5	6	4	5	15	13	10	8	8	7	5	3	4	7	8	8	9	8	6.6	15.1
26-Nov	8	8	9	9	12	8	7	9	6	5	7	4	6	5	5	5	4	4	2	2	1	3	3	5	5.7	11.8
27-Nov	11	10	9	6	5	5	7	3	4	3	2	3	3	3	3	4	5	2	4	5	4	5	5	5	4.8	11.2
28-Nov	2	3	2	3	4	5	3	3	3	4	3	2	2	3	2	4	3	2	3	1	2	2	2	2	2.6	4.7
29-Nov	2	2	2	2	2	2	2	1	2	1	2	2	2	5	5	3	2	3	6	9	3	5	2	3	3.1	9.2
30-Nov	4	5	2	5	4	3	4	1	2	1	3	5	1	3	5	3	2	3	8	11	12	9	6	6	4.6	12.0
		7.0	7.1	7.1	7.2	6.8	7.0	6.9	7.0	6.4	6.4	7.9	8.7	8.7	8.8	9.2	8.4	6.9	6.4	6.1	6.4	6.4	6.4	6.2	6.4	Diurnal Average
		15.2	16.5	15.2	18.6	15.7	17.4	15.6	15.6	15.7	17.7	16.0	29.5	32.0	32.5	29.5	25.8	17.1	16.3	14.1	12.8	12.0	13.8	13.9	12.1	Diurnal Maximum

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

# Hourly Standard Deviations

Wind Direction (WD) - deg  
 Portable Rycroft - November 2016

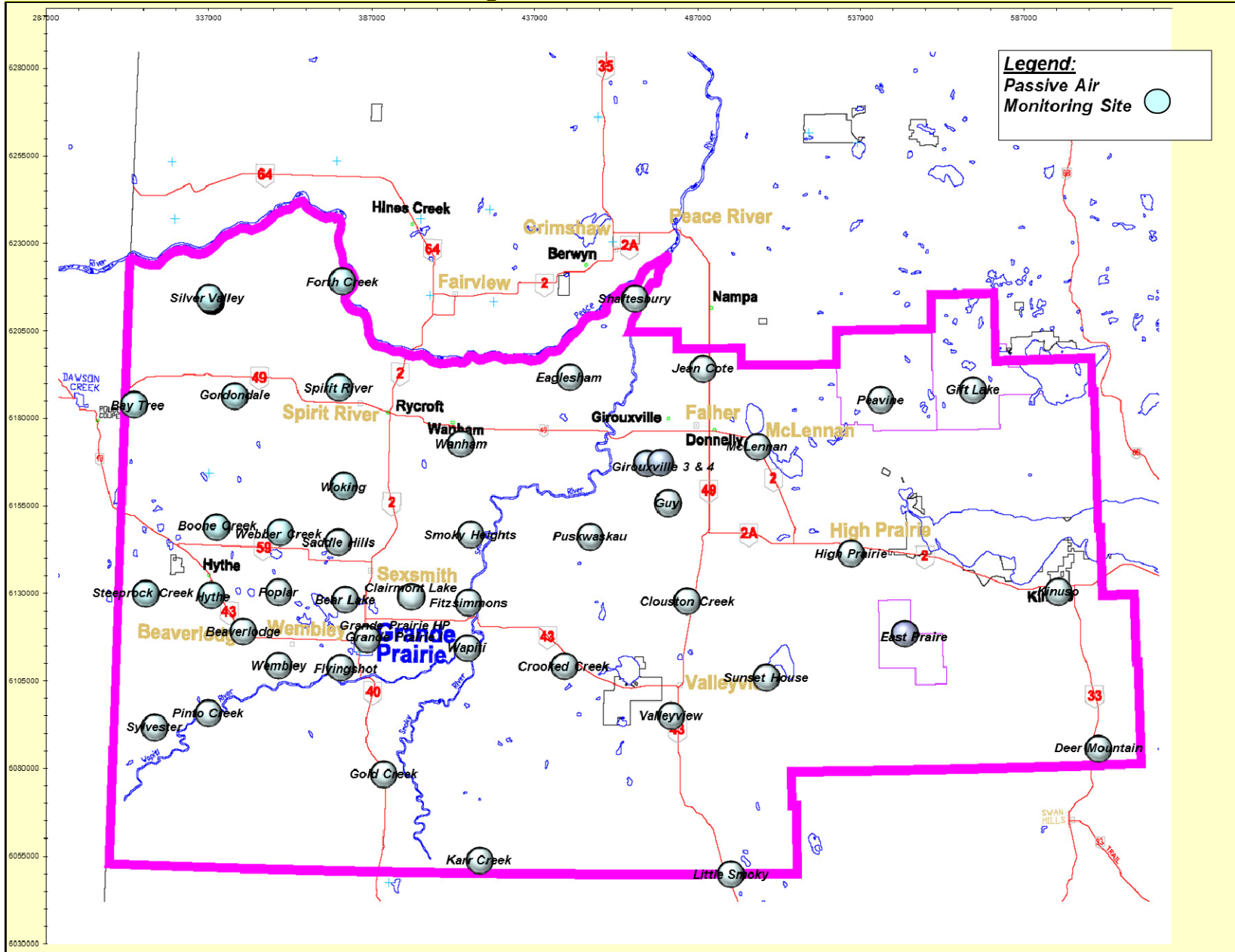
Maximum Value: 96.8 deg on Nov 25 02:00																							Hours in Service:	720	
Minimum Value: 1.9 deg on Nov 15 09:00																							Hours of Data:	720	
Percentiles: P <sub>1</sub> = 3.2 P <sub>10</sub> = 5.2 Q <sub>1</sub> = 7.5 Median = 13.8 Q <sub>3</sub> = 32.2 P <sub>90</sub> = 54.9 P <sub>99</sub> = 87.0																							Hours of Missing Data:	0	
																							Hours of Calibration:	0	
																							Percent Operational Time:	100.0	
Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Nov	9	13	7	4	6	4	8	4	7	5	4	15	16	14	8	8	6	8	7	6	10	8	14	24	23.7
2-Nov	36	20	14	38	22	54	36	7	6	7	5	7	4	5	6	8	10	16	8	13	7	19	25	38	54.5
3-Nov	31	25	45	77	78	45	18	8	28	14	7	5	66	34	3	10	9	6	10	3	8	6	15	19	78.4
4-Nov	17	9	8	10	31	30	34	38	78	37	42	69	49	48	24	31	42	36	67	25	14	10	9	22	77.9
5-Nov	32	9	18	15	28	43	20	50	42	21	4	7	10	14	10	14	14	5	7	6	10	11	6	8	49.8
6-Nov	9	19	68	14	6	11	6	17	33	14	30	7	5	6	5	5	4	4	5	7	10	11	10	10	67.9
7-Nov	5	10	7	9	7	13	15	12	42	12	72	46	15	12	10	9	13	47	81	64	52	55	35	38	81.5
8-Nov	63	76	5	6	8	8	9	32	55	53	80	71	53	11	8	15	17	27	30	14	16	13	16	42	79.7
9-Nov	28	10	20	7	30	18	13	7	19	6	8	7	5	5	4	3	6	10	17	8	7	4	4	7	29.5
10-Nov	3	8	6	16	10	7	19	7	64	61	32	26	14	14	17	36	41	15	68	31	49	15	15	42	67.8
11-Nov	58	54	84	55	58	93	58	23	38	75	5	10	13	5	17	12	7	10	7	51	23	13	22	9	93.2
12-Nov	44	11	66	39	87	18	51	30	52	23	14	55	32	32	12	68	40	12	13	14	16	16	6	7	86.8
13-Nov	10	6	7	5	5	7	8	8	6	14	8	4	23	40	54	23	33	8	9	16	14	3	17	15	53.6
14-Nov	9	7	4	6	6	5	4	3	4	6	11	4	3	3	3	4	8	10	7	5	6	5	5	6	10.7
15-Nov	4	6	6	21	12	12	10	2	2	4	6	8	14	18	18	59	44	12	29	35	12	13	26	23	59.0
16-Nov	20	8	7	5	16	13	11	17	5	32	11	10	27	18	10	11	18	18	12	11	42	8	4	8	42.3
17-Nov	8	10	14	12	11	12	8	10	10	13	14	19	18	17	14	13	9	10	55	78	76	23	17	9	77.8
18-Nov	4	6	6	5	7	10	10	10	10	8	9	10	12	10	7	9	8	6	8	6	6	5	5	6	11.5
19-Nov	5	7	6	6	4	3	8	7	5	5	6	6	4	8	10	7	5	5	18	4	6	9	10	10	18.4
20-Nov	6	11	42	12	16	15	14	5	9	7	8	8	13	7	28	20	51	50	10	17	5	50	8	10	50.7
21-Nov	15	19	10	8	4	7	5	3	3	3	4	4	3	5	8	5	9	69	60	32	39	33	21	55	69.2
22-Nov	26	23	15	84	18	23	19	48	23	36	68	21	74	18	8	12	7	6	8	11	9	12	40	42	84.2
23-Nov	48	28	32	38	87	18	35	31	29	14	65	30	70	30	15	61	64	47	93	28	34	13	72	66	93.1
24-Nov	66	12	19	35	15	50	48	77	79	34	87	50	31	52	29	13	54	25	17	16	13	42	86	83	87.2
25-Nov	92	97	28	28	13	14	13	12	11	21	5	6	13	4	10	7	10	16	14	11	10	7	6	4	96.8
26-Nov	6	3	4	13	7	6	10	6	7	22	38	21	13	41	32	13	30	27	26	44	67	45	14	21	67.4
27-Nov	5	4	6	15	8	13	15	37	19	31	68	14	18	15	16	22	25	44	29	18	29	12	8	9	67.9
28-Nov	31	18	42	16	11	11	20	31	16	16	41	53	22	23	44	36	24	23	46	22	28	41	38	55	55.0
29-Nov	35	53	78	50	56	41	21	65	47	66	90	38	21	9	40	81	60	36	12	43	50	88	10	21	89.8
30-Nov	47	8	66	17	24	22	56	74	17	58	19	12	71	70	61	38	66	59	7	4	6	10	13	51	74.3
	91.8	96.8	84.3	84.2	87.3	93.2	57.7	77.1	78.7	74.7	89.8	71.3	74.3	70.5	61.3	80.9	65.7	69.2	93.1	77.8	76.4	87.7	86.1	82.6	

# PAZA

## Monthly Passive Data Summary



# Location of PAZA Passive Monitoring Stations



## PAZA Passive Results for November 2016

Station Number	Station Name	SO2 ppb	O3 ppb	NO2 ppb	H2S ppb	Site Legal
<b>Duplicates</b>						
14a	Sylvester	0.0	20.8	1.0		
14b	Sylvester	0.1	18.7	1.3		
19a	Wanham	0.2	29.9	1.3		
19b	Wanham	0.2	28.0	1.3		
37a	Crooked Creek	0.1	25.5	2.4		
37b	Crooked Creek	0.1	23.8	2.5		
50a	East Prairie	0.0	15.8	0.8		
50b	East Prairie	0.0	23.3	0.8		
64a	Girouville 4				0.2	
64b	Girouville 4				BDL	
1	Silver Valley	0.1	27.9	1.6		08-27-081-11 W6M
2	Bay Tree	0.2	26.7	1.7		13-16-078-13 W6M
3	Fourth Creek	0.2	32.5	1.3		04-13-082-07 W6M
4	Gordondale	N/S	33.0	N/S		04-34-078-10 W6M
5	Boone Creek	0.1	24.1	1.3		16-36-074-11 W6M
7	Steeprock Creek	0.2	28.9	1.3		09-35-072-13 W6M
9	Spirit River	0.2	25.2	1.6		08-12-079-07 W6M
10	Woking	0.3	19.5	1.4		01-13-076-07 W6M
11	Webber Creek	0.3	21.0	3.2		09-36-074-09 W6M
12	Hythe	0.1	18.0	2.4		14-36-072-11 W6M
14	Sylvester	0.0	19.8	1.2		08-06-069-12 W6M
16	Beaverlodge	0.3	24.4	4.1		15-36-071-10 W6M
17	Poplar	0.3	20.2	3.4		13-06-073-08 W6M
18	Saddle Hills	0.2	24.9	1.0		04-25-074-07 W6M
19	Wanham	0.2	28.9	1.3		16-22-077-03 W6M
20	Shaftesbury	0.1	23.6	1.2		04-03-082-23 W5M
21	Eaglesham	0.3	17.1	1.4		16-21-079-25 W5M
23	Bear Lake	0.1	23.4	3.9		15-31-072-06 W6M
24	Wembley	0.2	23.2	2.9		12-31-070-08 W6M
25	Pinto Creek	0.0	15.9	2.5		04-24-069-11 W6M
26	Flyingshot	0.1	15.6	3.5		15-36-070-07 W6M
27	Grande Prairie I	0.2	13.1	10.2		08-15-071-06 W6M
28	Clairmont Lake	0.2	22.6	3.3		09-06-073-04 W6M

## PAZA Passive Results for November 2016 (Continued)

29	Smoky Heights	0.3	19.3	2.3		04-06-075-02 W6M
30	Fitzsimmons	0.1	14.6	2.4		15-36-072-03 W6M
32	Gold Creek	0.1	10.6	5.1		06-33-067-05 W6M
33	Wapiti	0.0	20.4	2.9		02-25-071-03 W6M
34	Puskwaskau	0.0	15.2	0.8		15-35-074-25 W5M
35	Jean Cote	0.1	20.4	2.3		12-35-079-21 W5M
36	Guy	0.1	19.1	1.2		03-04-076-22 W5M
37	Crooked Creek	0.1	24.7	2.4		16-01-071-26 W5M
38	Karr Creek	0.0	15.4	1.4		10-16-065-02 W6M
39	Clouston Creek	0.1	23.3	1.3		12-01-073-22 W5M
40	McLennan	0.1	21.5	1.5		03-29-077-19 W5M
41	Valleyview	0.2	21.9	1.9		09-30-069-22 W5M
42	Sunset House	0.2	22.5	2.0		05-32-070-19 W5M
43	High Prairie	0.1	20.0	3.2		16-13-074-17 W5M
44	Peavine	0.0	18.2	0.8		03-05-079-15 W5M
45	Gift Lake	0.0	17.8	1.1	0.1	10-07-079-12 W5M
46	Little Smoky	0.1	15.9	4.8		12-01-065-21 W5M
47	Kinuso	0.1	22.1	1.7		12-10-073-10 W5M
65	Deer Mountain 2	0.2	18.0	1.5		15-22-068-09 W5M
49	Grande Prairie HP	0.1	11.0	8.7		17-26-071-06 W6M
50	East Prairie	0.0	19.6	0.8		13-02-072-15 W5M
63	Girouxville 3				0.4	14-02-077-23 W5M
64	Girouxville 4				0.2	4-08-077-22 W5M

\*BDL = Below Detection Level

\*NS - No sample

## Passive Summary for November 2016

Stats	Sulphur Dioxide SO <sub>2</sub>	Ozone O <sub>3</sub>	Nitrogen Dioxide NO <sub>2</sub>	Hydrogen Sulphide H <sub>2</sub> S
	ppb	ppb	ppb	ppb

Passive Summary for November 2016 (PAZA Zone)				
<b>Mean</b>	<b>0.1</b>	<b>20.9</b>	<b>2.5</b>	<b>0.2</b>
<b>Standard Deviation</b>	<b>0.1</b>	<b>5.1</b>	<b>1.9</b>	<b>0.2</b>
<b>Minimum</b>	<b>0.0</b>	<b>10.6</b>	<b>0.8</b>	<b>0.1</b>
<b>Minimum At</b>	<b>Gift Lake (#45)</b>	<b>Gold Creek (#32)</b>	<b>Peavine (#44)</b>	<b>Gift Lake (#45)</b>
<b>Maximum</b>	<b>0.3</b>	<b>33.0</b>	<b>10.2</b>	<b>0.4</b>
<b>Maximum At</b>	<b>Eaglesham (#21)</b>	<b>Gordondale (#4)</b>	<b>Grande Prairie I (#27)</b>	<b>Girouxville 3 (#63)</b>

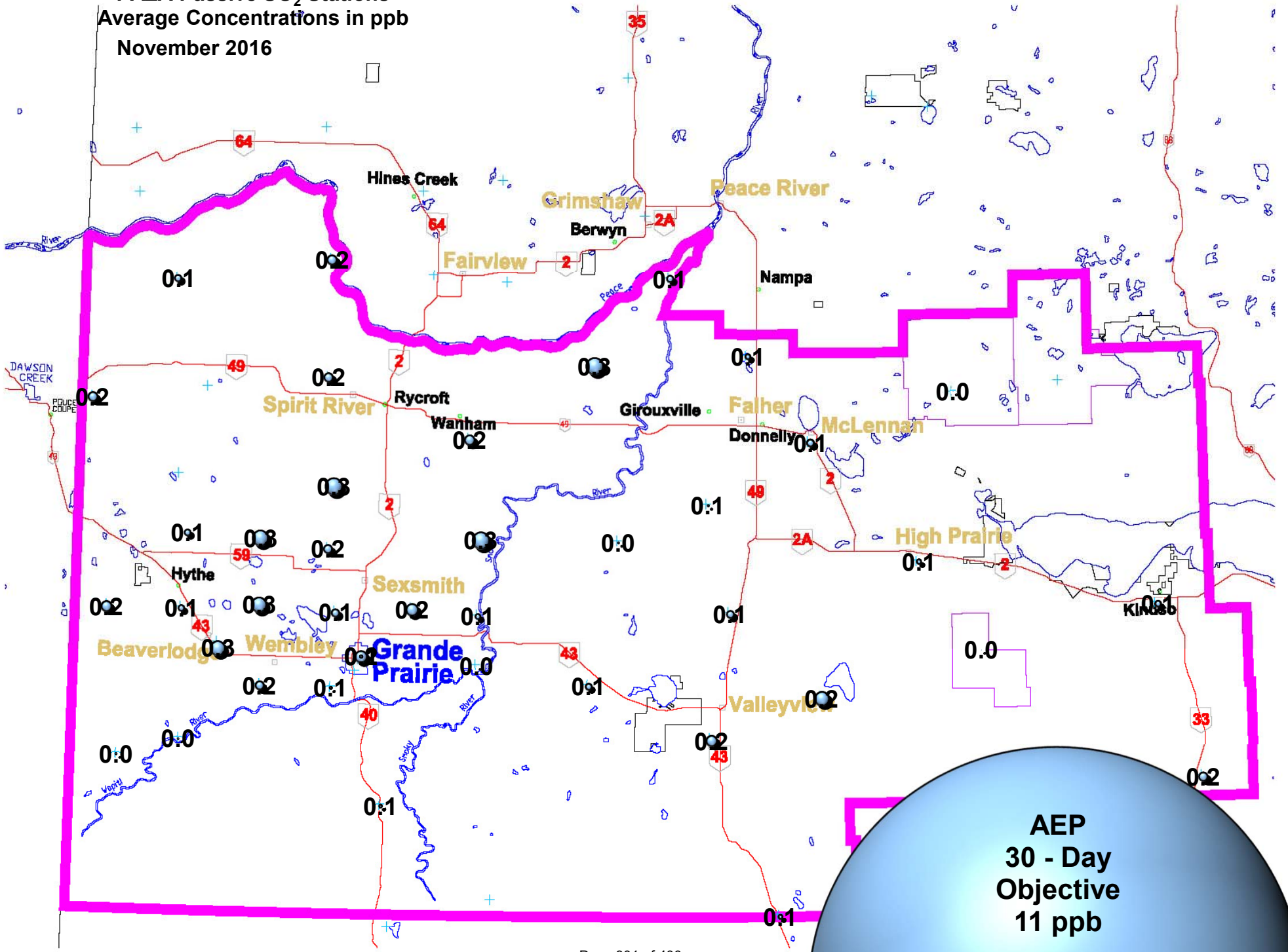
### Comparison between Continuous and Passive monitoring at Beaverlodge (passive #16 Beaverlodge)

	SO <sub>2</sub>	O <sub>3</sub>	NO <sub>2</sub>
<b>PAZA Beaverlodge station</b>	<b>0.2</b>	<b>17.0</b>	<b>6.7</b>
<b>PAZA Beaverlodge passive</b>	<b>0.3</b>	<b>24.4</b>	<b>4.1</b>

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

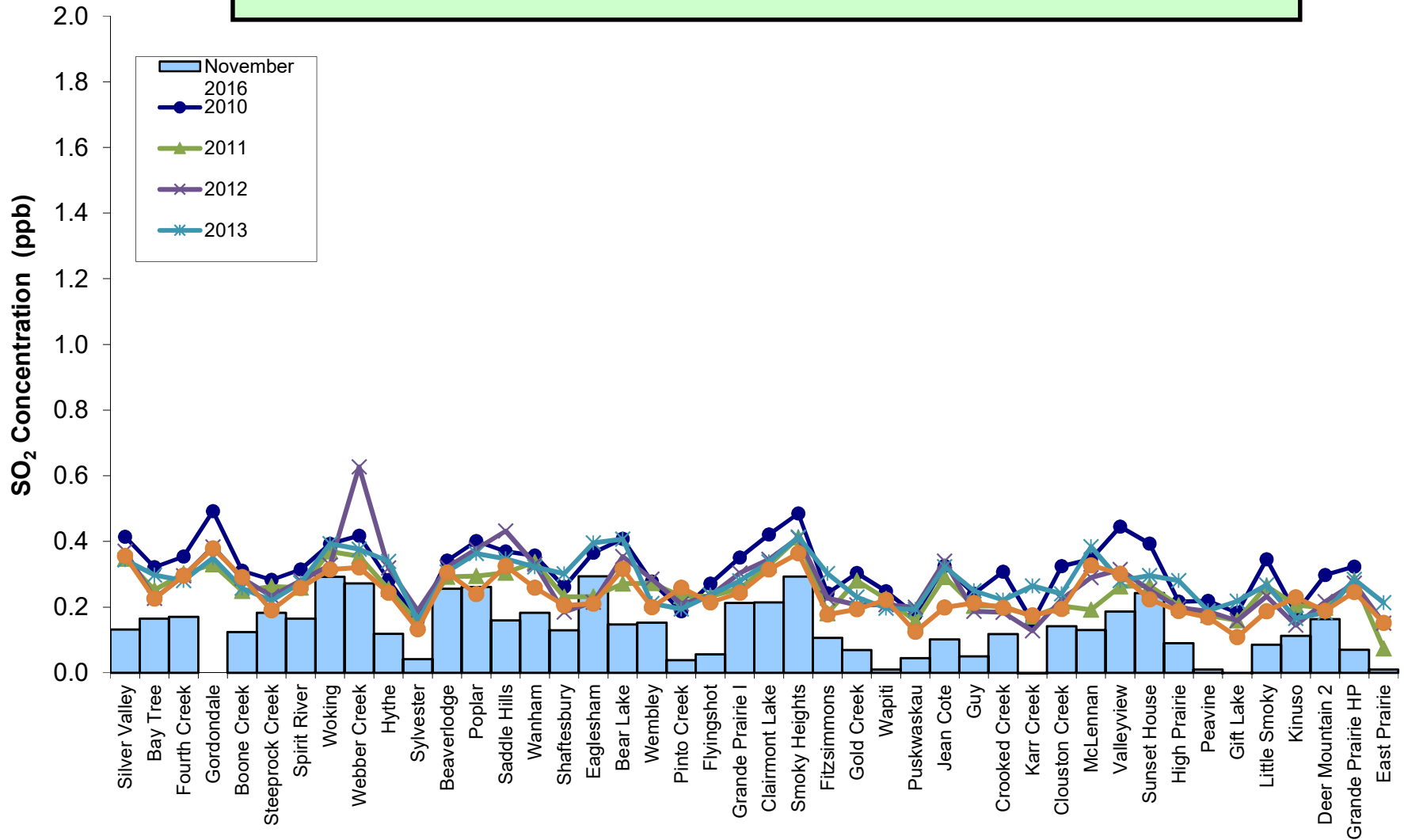
	SO <sub>2</sub>	O <sub>3</sub>	NO <sub>2</sub>
<b>PAZA Henry Pirker station</b>	<b>0.1</b>	<b>9.4</b>	<b>13.9</b>
<b>PAZA Grande Prairie passive</b>	<b>0.1</b>	<b>11.0</b>	<b>8.7</b>

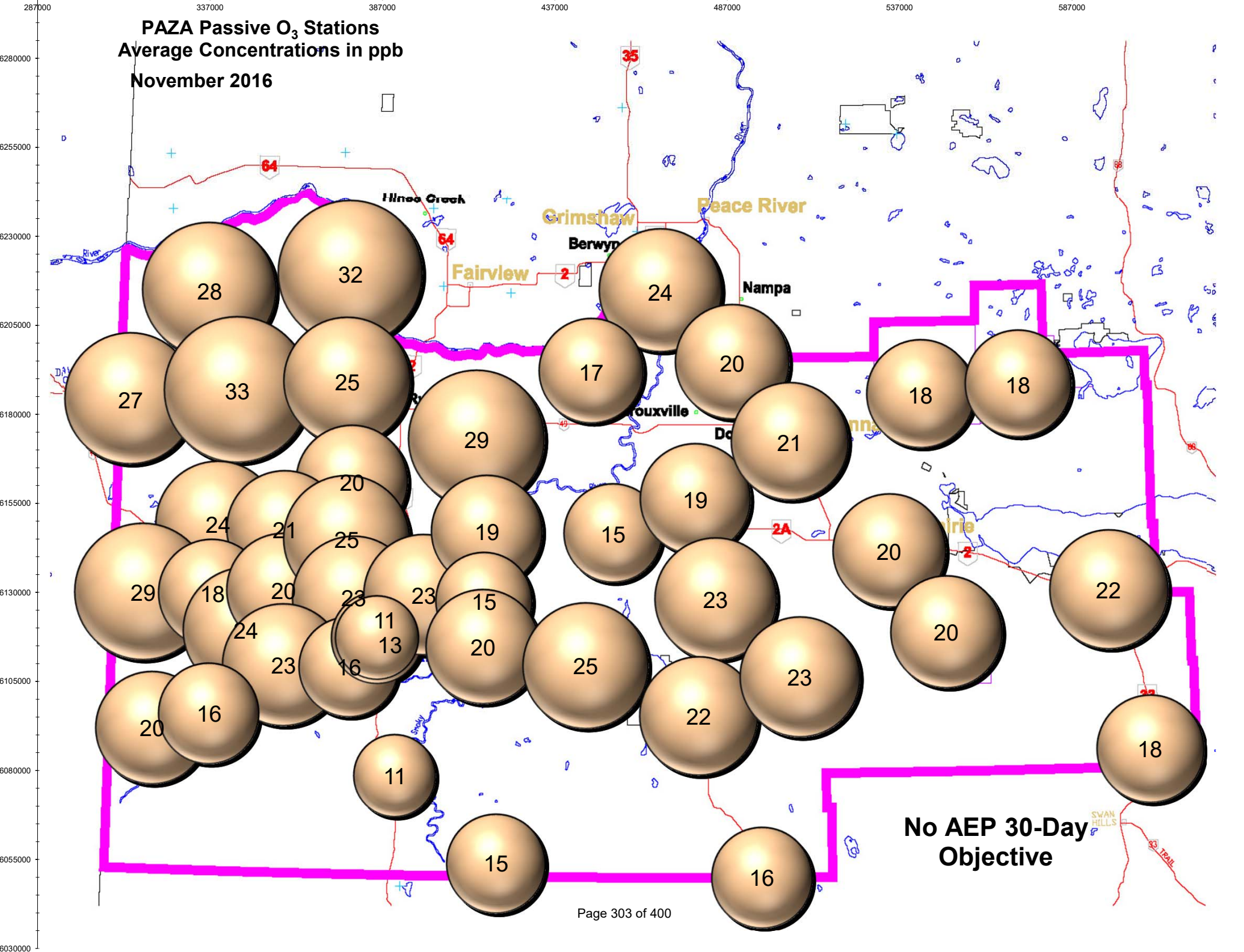
**PAZA Passive SO<sub>2</sub> Stations**  
**Average Concentrations in ppb**  
**November 2016**



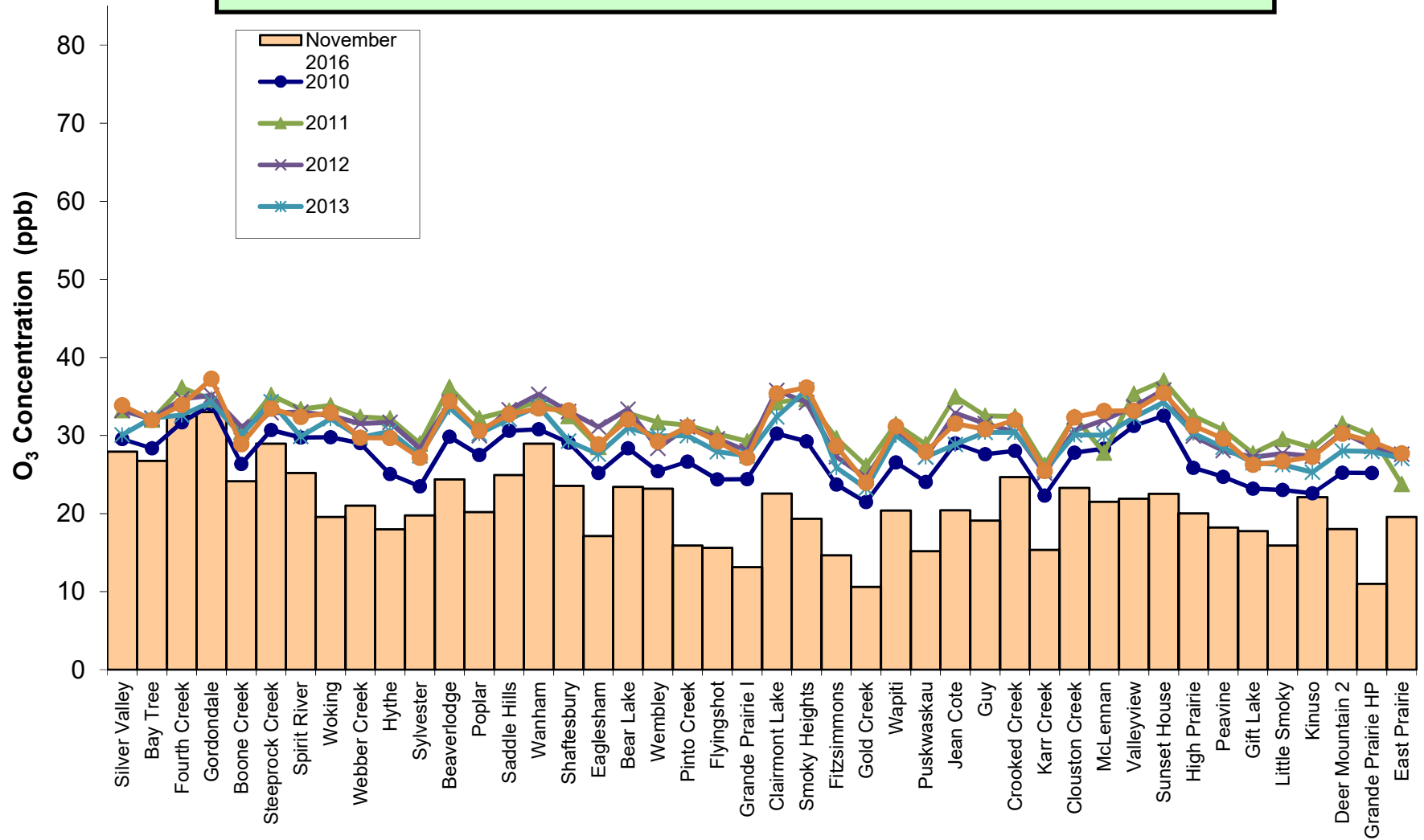
**AEP**  
**30 - Day**  
**Objective**  
**11 ppb**

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



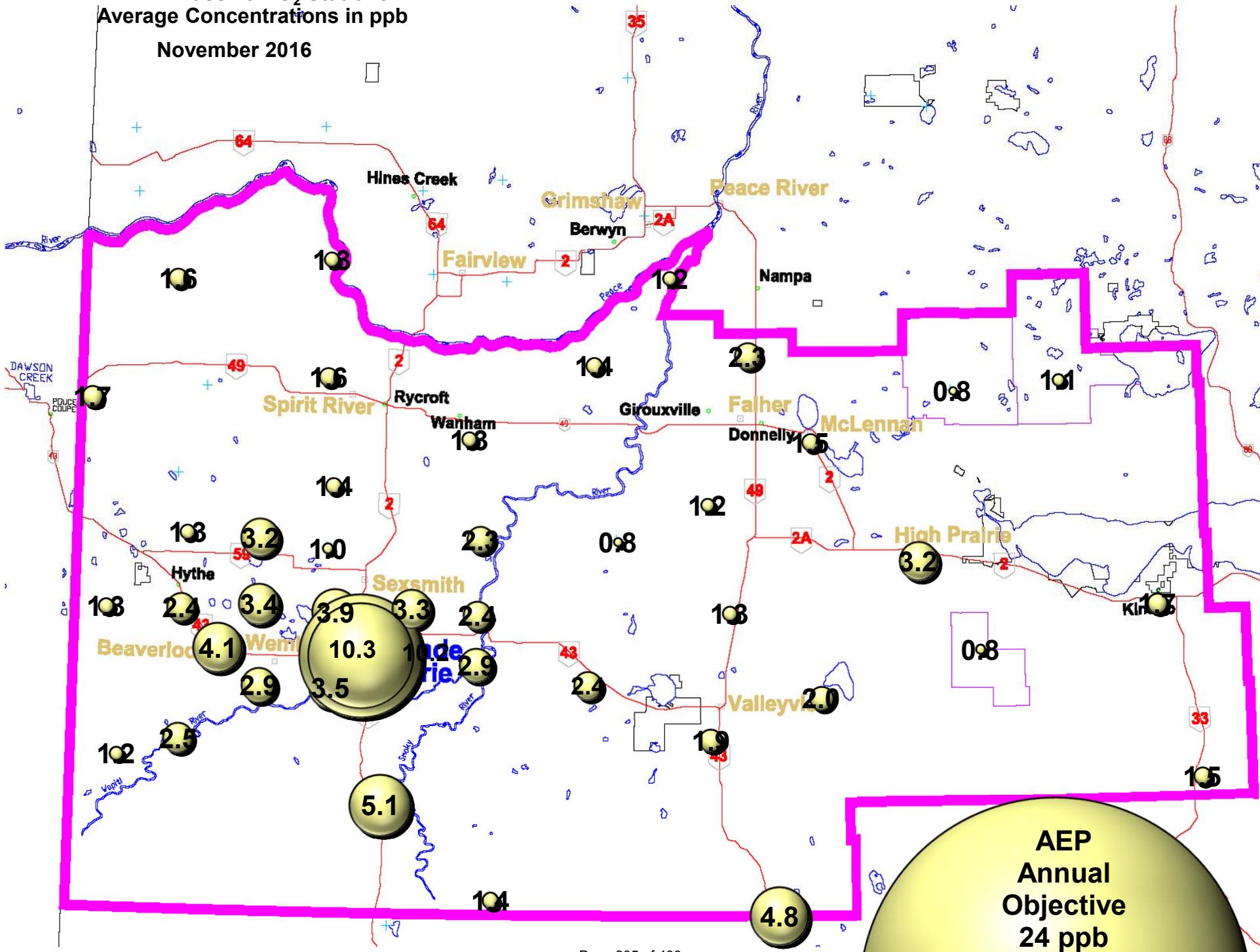


## Alberta Ambient Air Quality Objective - No Annual O<sub>3</sub> Objective



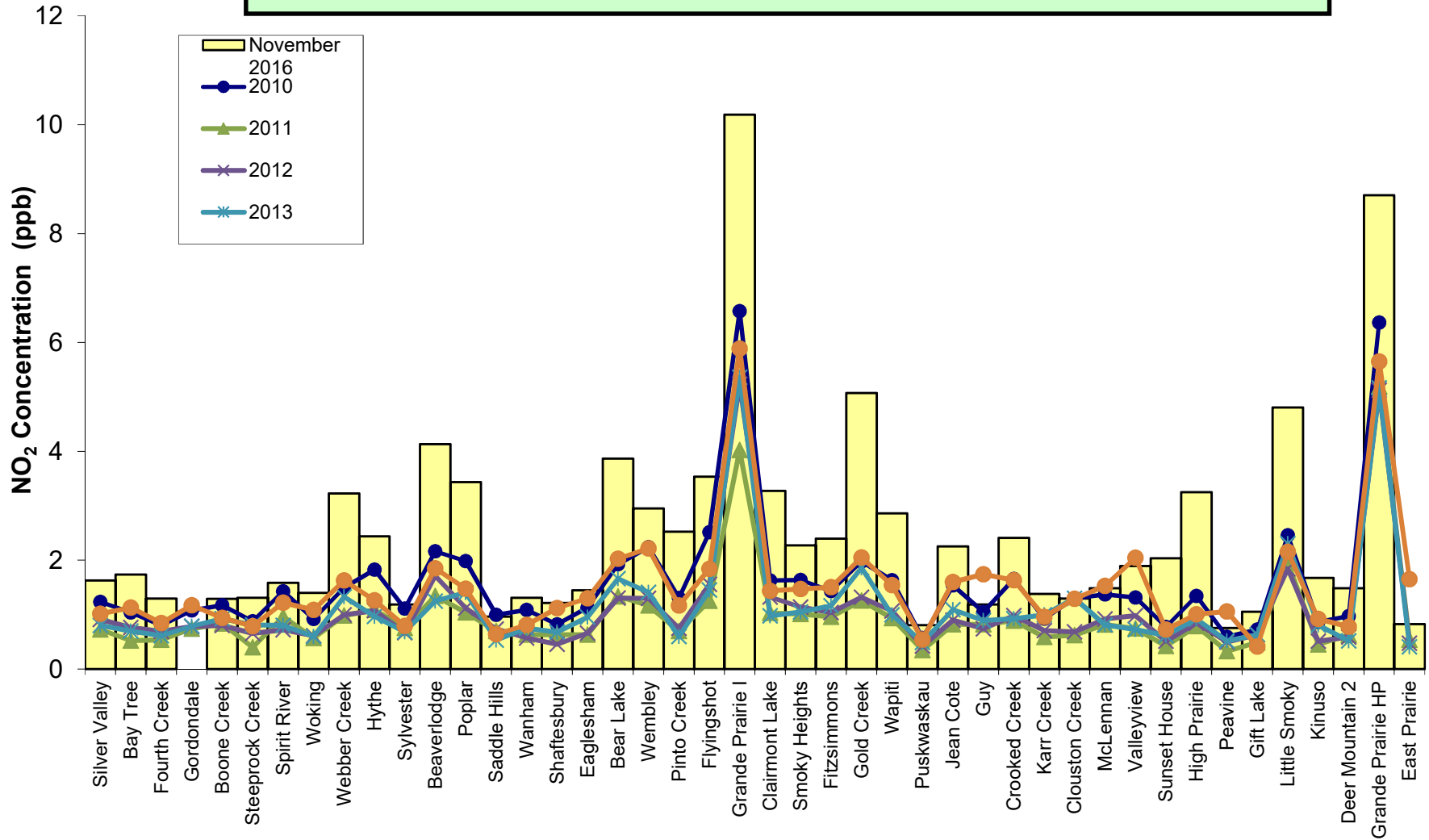


**PAZA Passive NO<sub>2</sub> Stations  
Average Concentrations in ppb  
November 2016**

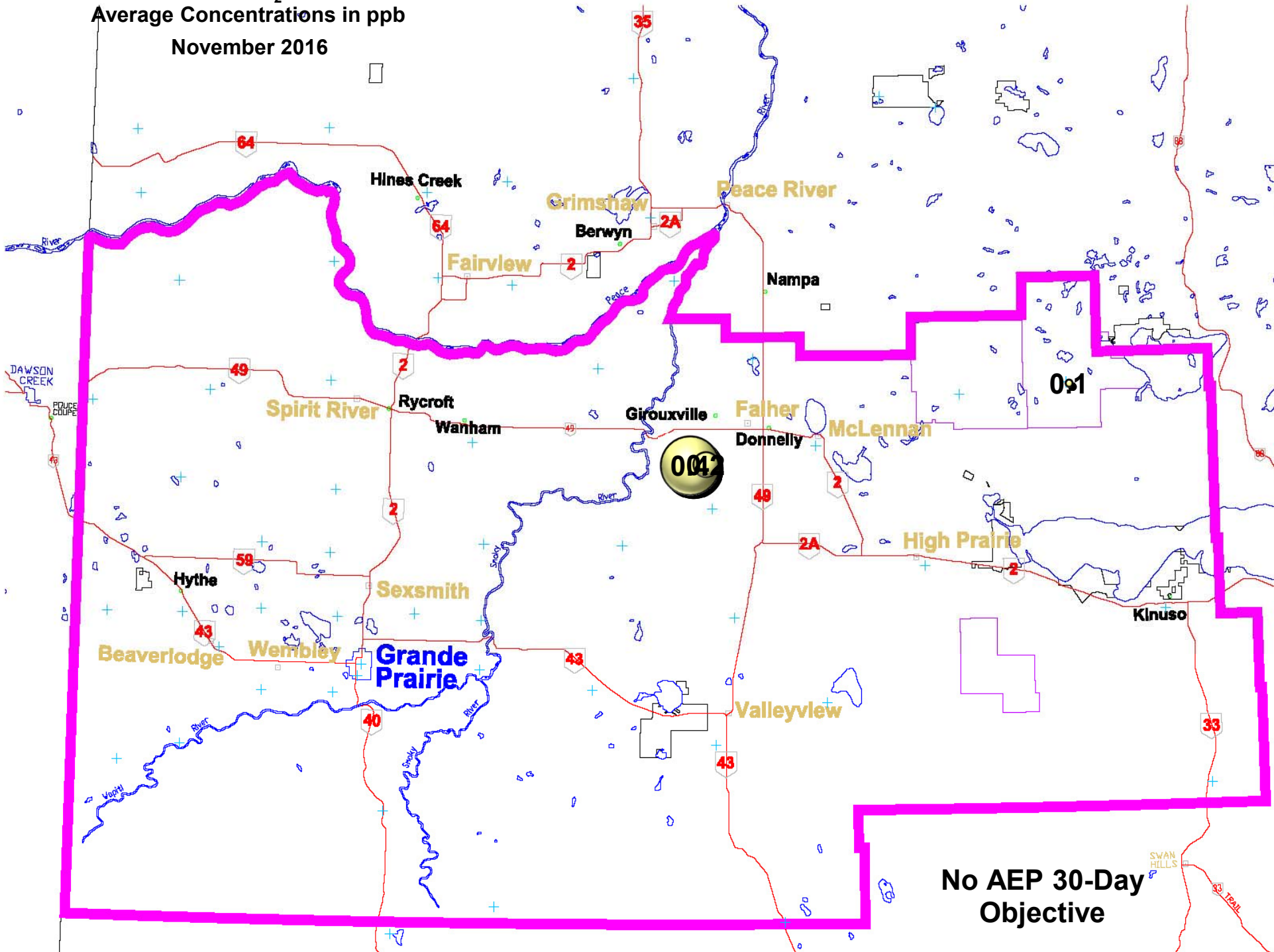


**AEP  
Annual  
Objective  
24 ppb**

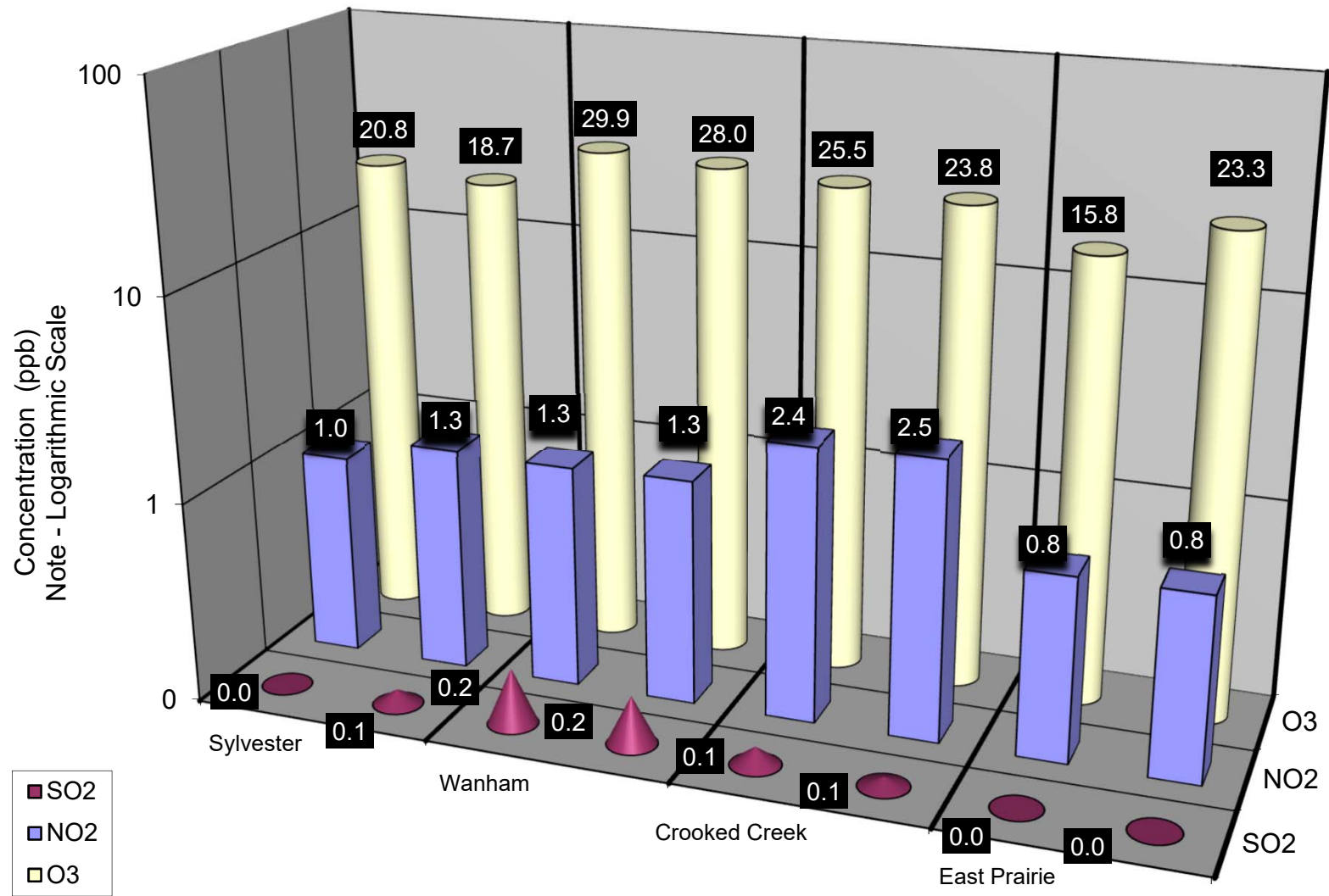
**Alberta Ambient Air Quality Objective - Annual NO<sub>2</sub> Objective is 24 ppb**



**PAZA Passive H<sub>2</sub>S Stations  
Average Concentrations in ppb  
November 2016**



**No AEP 30-Day  
Objective**



Duplicate Summary Chart

# November 2016 Calibration Reports

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

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

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

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

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

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

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

# Calibration Report



AIR QUALITY MONITORING

Parameter SO2

Air Monitoring Network PAZA

## Station Information

Calibration Date	November 7, 2016	Previous Calibration	October 4, 2016
Station Number	1	Station Location	Henry Pirker
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
			<input type="checkbox"/> Other:
Start Time (MST)	9:45	End Time (MST)	12:10
Barometric Pressure	721.000 mm	Station Temperature	21.0 Deg C
Calibrator	EnviroNics	Serial Number	6586
Cal Gas Conc	49.7 ppm	Cal Gas Cert Date	October 5, 2018
		Cal Gas Cylinder #	LL103793
DACS make	CR3000	DACS serial No.	5408
DACS voltage range	0 - 1 volt	DACS channel #	10
	Before		After
Calculated slope	0.979845	Calculated slope	0.998782
Calculated intercept	1.328736	Calculated intercept	1.075131
Analyzer make	TEI 43I-TLE	Analyzer serial #	1507864682 (AMU 2006)

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Background	1.46		1.43	
Coefficient	0.934		0.920	
Pressure	669.8	mm Hg	669.4	mm Hg
Flow	0.441	lpm	0.441	lpm
Lamp intensity	82	Hz	82	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)
4996	0.00	0.0	0.1	N/A
4998	39.94	394.0	394.2	0.9995
4997	19.99	198.0	196.0	1.0106
4999	9.89	98.1	96.4	1.0180
4996	0.00	0.0	0.1	As Found Zero
4996	39.93	394.1	399.8	As Found Span
Average Correction Factor				1.0093

Calculated value of As Found Response: 392.9 ppb      Percent Change of As Found: 0.3%

	before calibration		after calibration	
Auto zero	0.1	ppb	0.1	ppb
Auto span	288.1	ppb	281.7	ppb

Notes: Span adjustment made

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Calibration Performed By: Dmytro Dolotii

# Calibration Summary



Parameter SO2  
 Air Monitoring Network PAZA

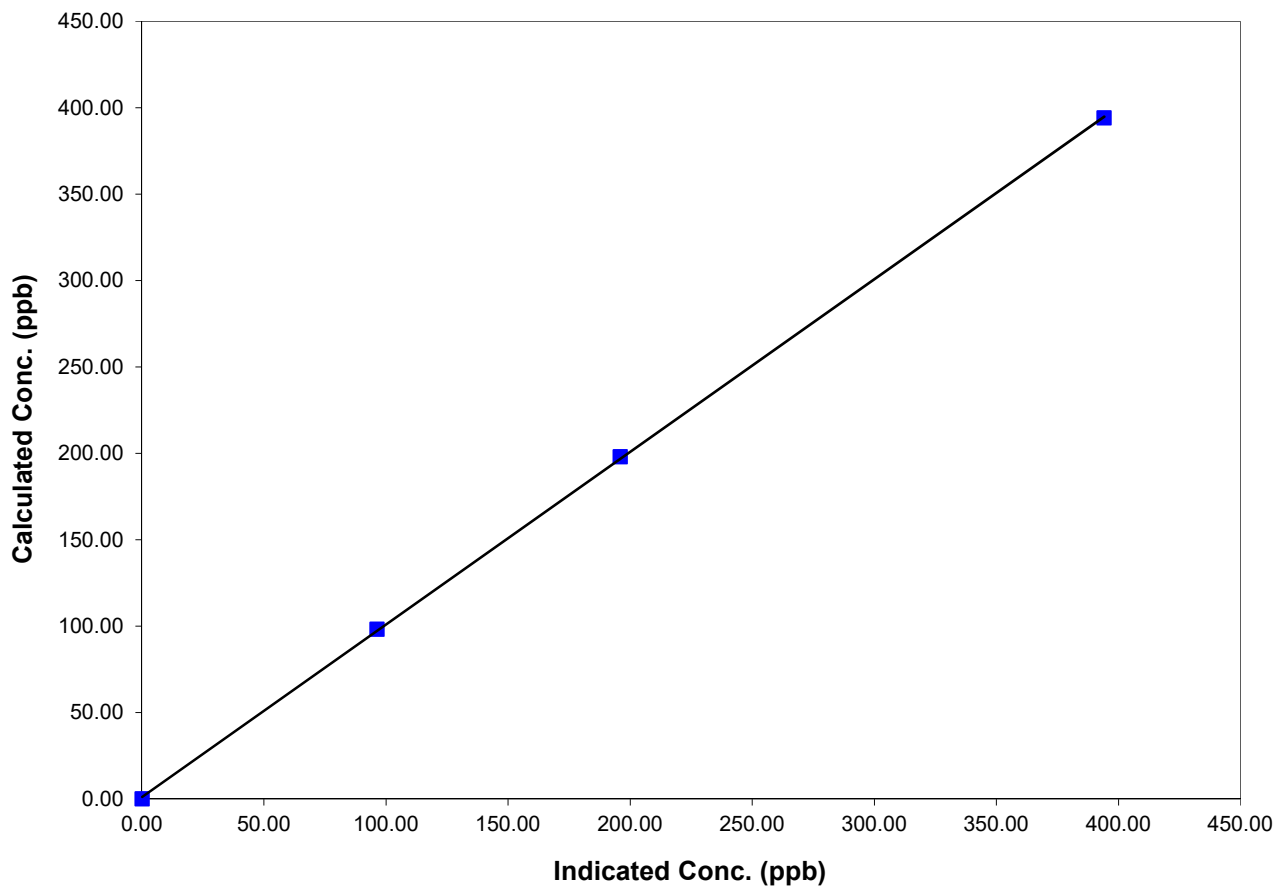
### Station Information

Calibration Date	November 7, 2016	Previous Calibration	October 4, 2016
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	9:45	End Time (MST)	12:10
Analyzer make/model	TEI 43I-TLE	Analyzer serial #	1507864682 (AMU 2006)

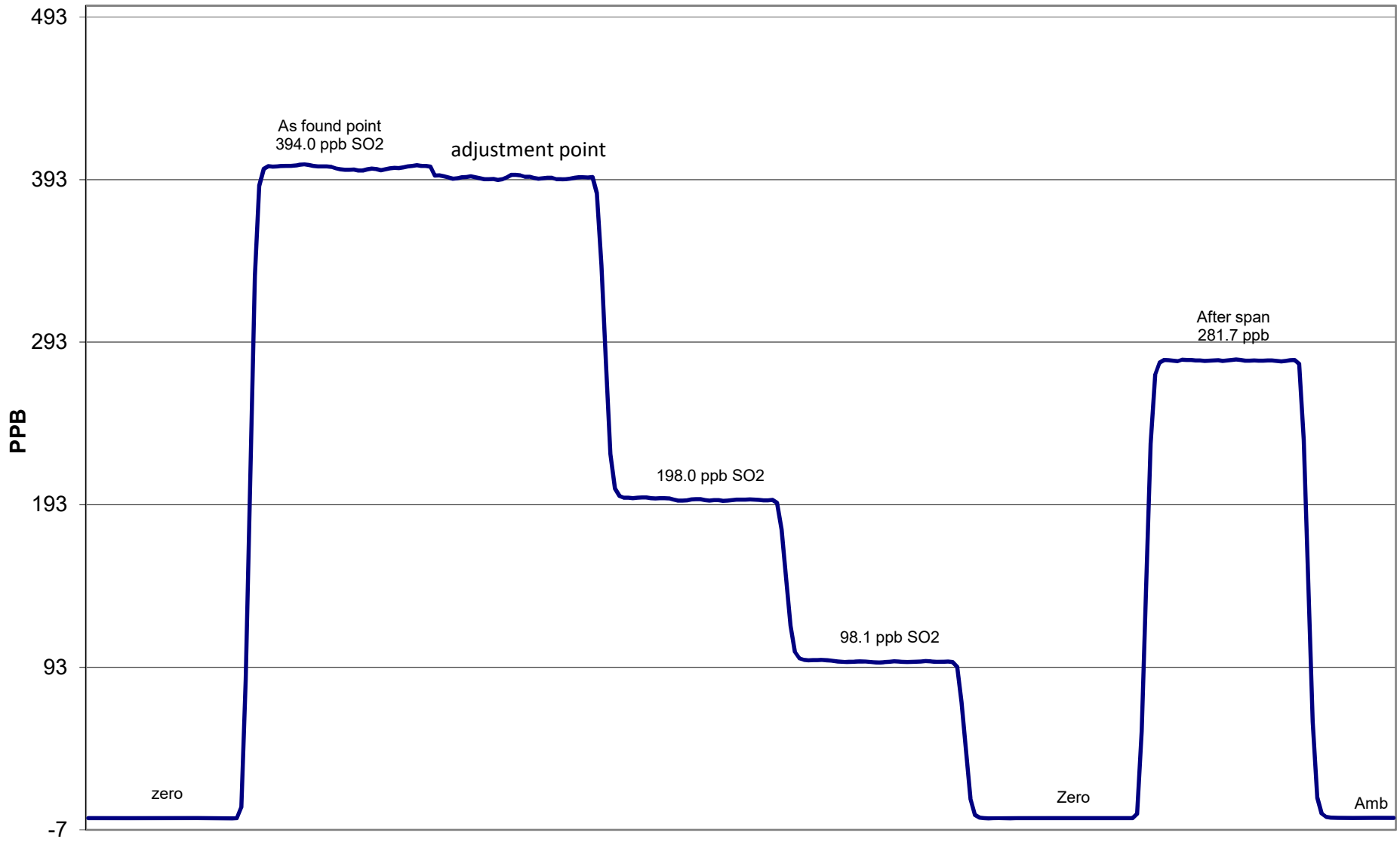
### Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.1	N/A		
394.0	394.2	0.9995	Correlation Coefficient	0.999950
198.0	196.0	1.0106		
98.1	96.4	1.0180	Slope	0.998782
			Intercept	1.075131

## SO2 Calibration Curve



# SO2 Calibration



November 7, 2016



# Calibration Report

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



## Station Information

Calibration Date	November 7, 2016	Previous Calibration	October 4, 2016
Station Number	1	Station Location	Henry Pirker
Reason:	<b>Routine</b> Installation Removal Other:		
Start Time (MST)	9:45	End Time (MST)	11:55
Barometric Pressure	721.000 mm	Station Temperature	21.0 Deg C
Calibrator	Envionics	Serial Number	906535067(AMU 197)
NO Cal Gas Conc	50.9 ppm	Cal Gas Expiry Date	October 5, 2018
NO <sub>x</sub> Cal Gas Conc	51.2 ppm	Cal Gas Serial #	LL103793

## DACS Information

DACS make	CR3000	DACS serial No.	5408	
	<b>Parameter</b>	<b>NO2</b>	<b>NOx</b>	<b>NO</b>
Before	Data Slope	1.001426	1.007813	1.001394
	Data Offset	-0.311605	0.796556	0.648272
After	Data Slope	1.001421	1.005243	0.999128
	Data Offset	-0.226681	0.586529	0.387205
	Channel #	8	6	7
	Voltage Range	0 - 5 VDC	0 - 5 VDC	0 - 5 VDC

## Analyzer Information

Analyzer make/model	42i	Analyzer serial #	906535087	
<b>Test Point</b>	<b>before</b>		<b>after</b>	
Concentration range	0 - 500	ppb	0 - 500	ppb
NO offset	6.0	mV	5.9	mV
NO <sub>x</sub> bkgnd	6.5	mV	6.3	mV
NO coefficient	0.952		0.928	
NO <sub>x</sub> coefficient	1.000		1.000	
NO2 conv temp	322.1	Deg C	322.1	Deg C
Cooler Temp	-2.9	Deg C	-2.9	Deg C
PMT Volt	-844.3	mV	-844.3	mV
R Cell Press	169.5	in Hg	168.9	in Hg
Sample Flow	0.634	LPM	0.632	LPM

Notes: Span adjustment made.  
Flow slightly dropped since the last calibration.

# Calibration Report



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

## Station Information

Calibration Date: November 7, 2016 Station Location: Henry Pirker

## Calibration Data

	Dilution flow rate (ccm)	Source gas flow rate (ccm)	Calculated NOx conc (ppb)	Calculated NO conc (ppb)	Calculated NO2 conc (ppb)	Indicated NOx conc (ppb)	Indicated NO conc (ppb)	Indicated NO2 conc (ppb)	NOx Correction factor	NO Correction factor	
zero	4996	0.00	0.0	0.0	0.0	0.4	0.7	0.0	N/A	N/A	
1	4997	39.96	406.2	403.8	2.4	404.0	404.5	-0.1	1.0055	0.9984	
2	4998	19.95	203.6	202.4	1.2	201.4	201.2	0.0	1.0106	1.0060	
3	4997	9.94	101.6	101.0	0.6	99.6	99.9	0.0	1.0205	1.0113	
AFZ	4996	0.00	0.0	0.0	0.0	0.4	0.7	0.0	0.0000	0.0000	
AFS	4996	39.92	405.9	403.5	0.8	415.1	415.6	0.0	0.9777	0.9709	
									Average Correction Factor	1.0122	1.0052

As Found Concentrations: NO<sub>x</sub>= 418.8 NO= 416.1 As Found Percent Change NO<sub>x</sub>= 3.2% NO= 3.1%

## 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	0.7	0.7	0.0	0.4	0.7	0.0	N/A	N/A	N/A	N/A	
NO point	403.4	403.4	0.0	403.2	403.4	-0.2	1.0006	1.0000	N/A	N/A	
300	403.4	66.2	337.2	403.4	66.2	336.9	0.9999	1.0000	1.0009	99.9%	
200	403.4	176.5	226.9	404.1	176.5	226.7	0.9983	1.0000	1.0008	99.9%	
100	403.4	293.4	110.0	404.7	293.4	110.4	0.9967	1.0000	0.9963	100.4%	
							Average Correction Factor	0.9983	1.0000	0.9993	100.1%

## AIC Data

Parameter	Previous calibration				Current calibration			
	NOx	NO2	NO		NOx	NO2	NO	
Auto zero	0.3	0.0	0.7	ppb	0.4	0.0	0.8	ppb
Auto span	326.1	322.6	3.2	ppb	315.8	312.6	3.0	ppb

Calibration Performed By: Dmytro Dolotii

# Calibration Summary



Parameter NO<sub>2</sub>

Air Monitoring Network PAZA

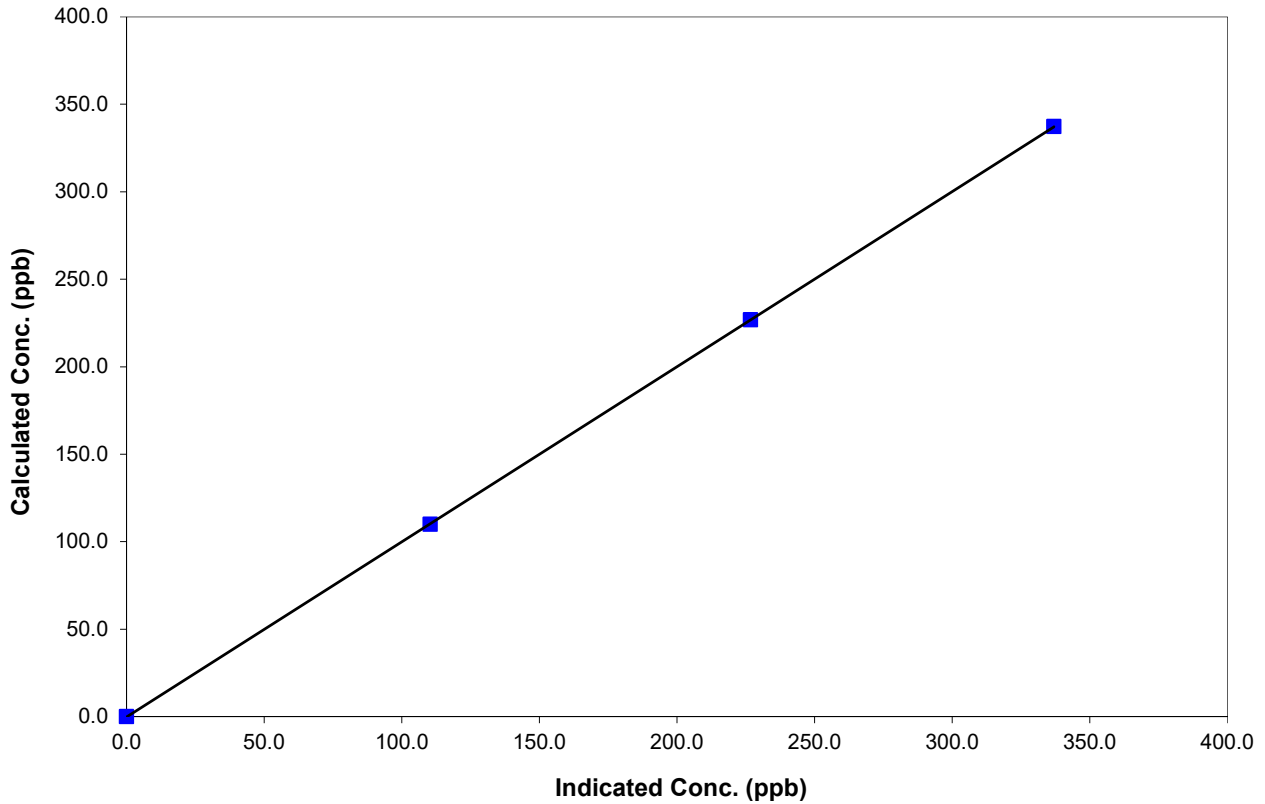
## Station Information

Calibration Date	November 7, 2016	Previous Calibration	October 4, 2016
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	9:45	End Time (MST)	11:55
Analyzer make	42i	Analyzer serial #	906535087

## Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.0	N/A	Correlation Coefficient	0.999997
337.2	336.9	1.0009		
226.9	226.7	1.0008	Slope	1.001421
110.0	110.4	0.9963		

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



# Calibration Summary



Parameter NO<sub>x</sub>

Air Monitoring Network PAZA

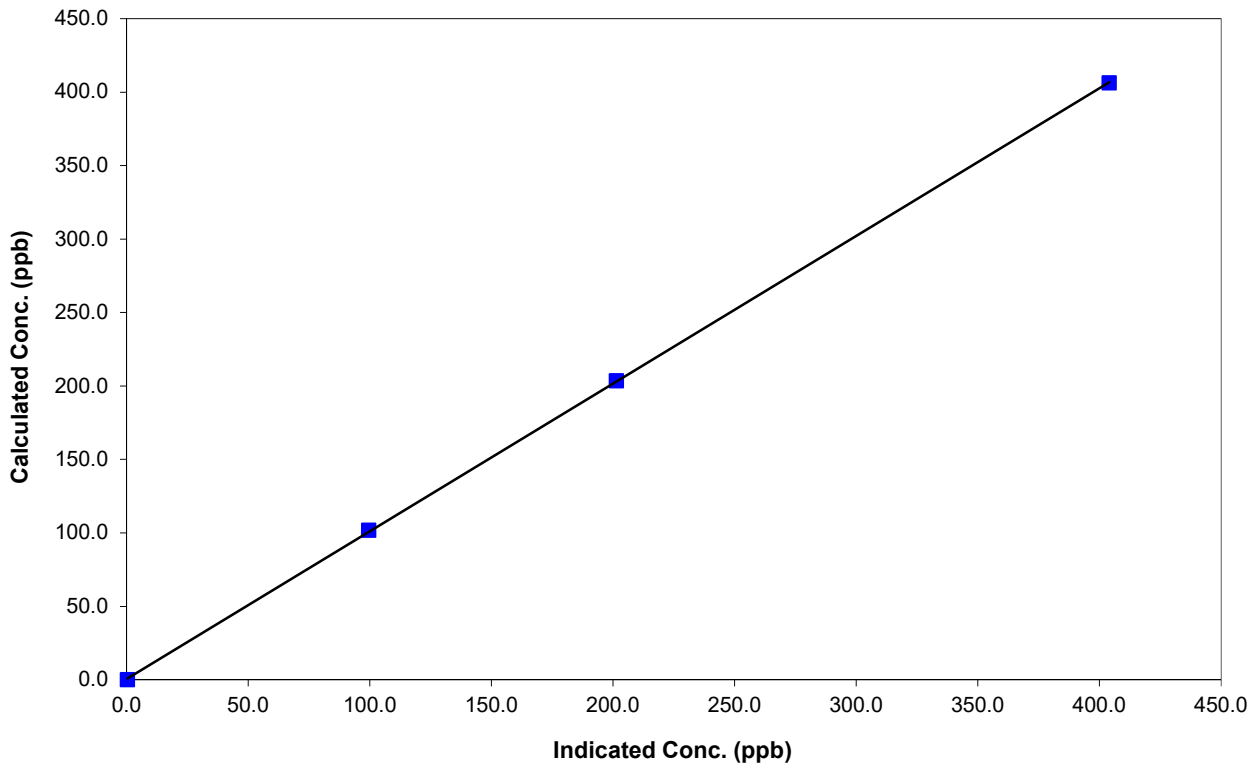
### Station Information

Calibration Date	November 7, 2016	Previous Calibration	October 4, 2016
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	9:45	End Time (MST)	11:55
Analyzer make	42i	Analyzer serial #	906535087

### Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.4	N/A	Correlation Coefficient	0.999975
406.2	404.0	1.0055		
203.6	201.4	1.0106	Slope	1.005243
101.6	99.6	1.0205		
			Intercept	0.586529

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



# Calibration Summary

Parameter NO

Air Monitoring Network PAZA



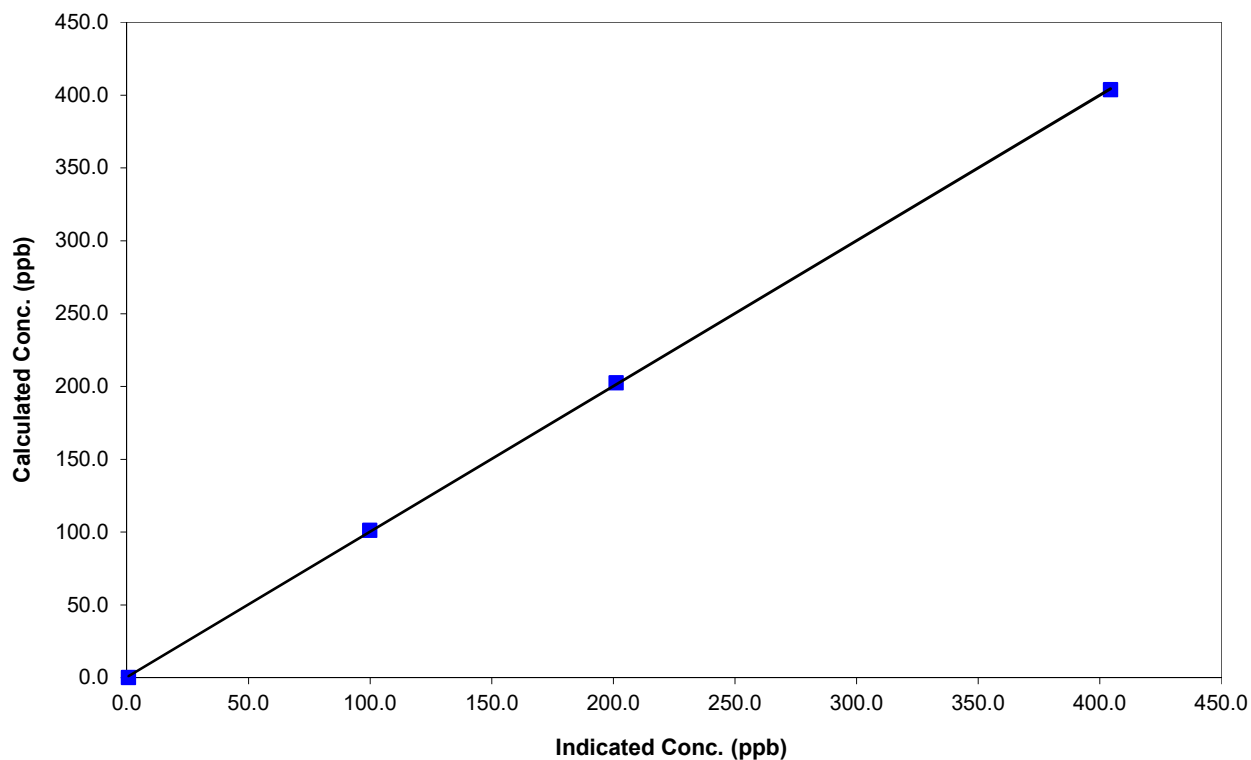
## Station Information

Calibration Date	November 7, 2016	Previous Calibration	October 4, 2016
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	9:45	End Time (MST)	11:55
Analyzer make	42i	Analyzer serial #	906535087

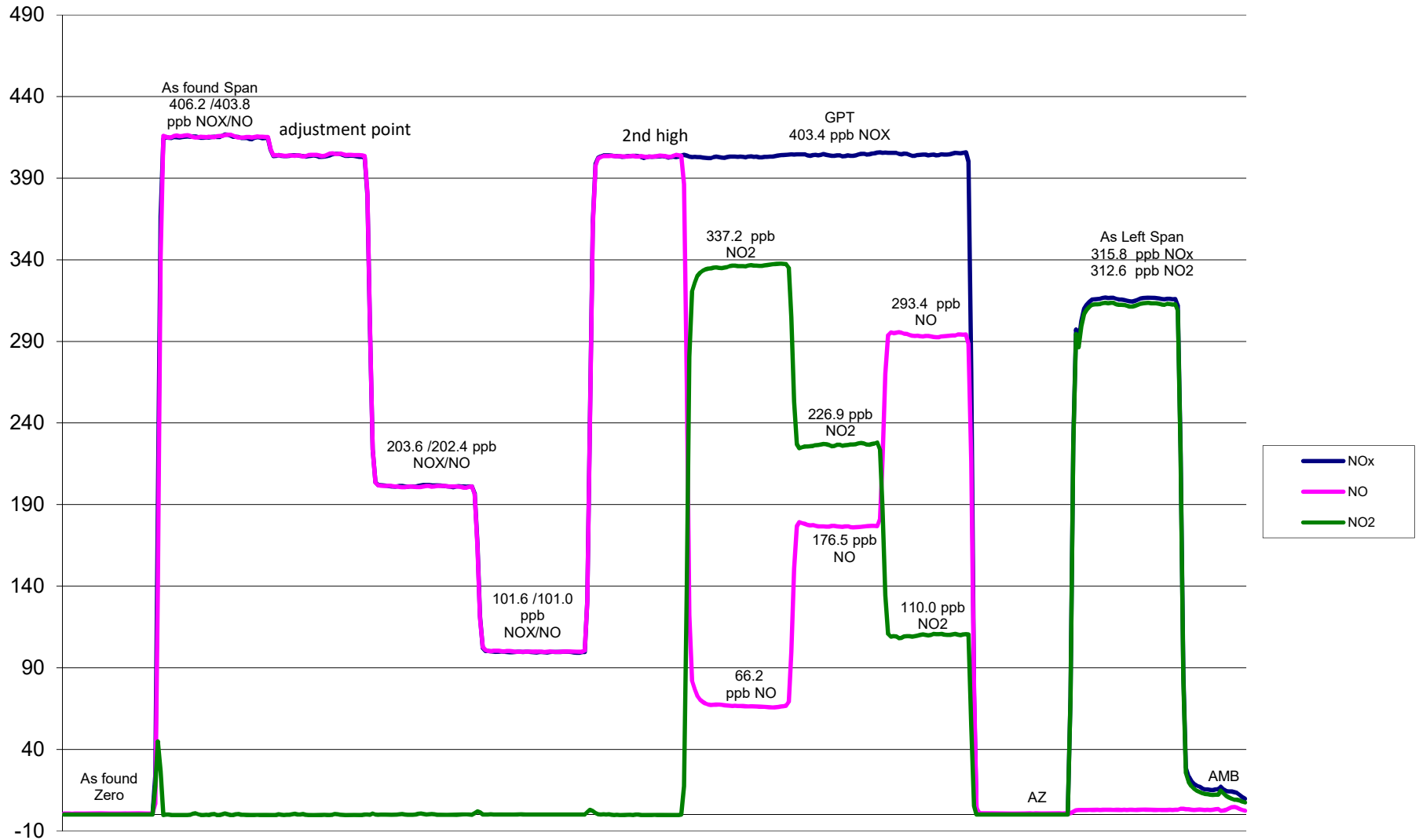
## Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.7	N/A	Correlation Coefficient	0.999962
403.8	404.5	0.9984		
202.4	201.2	1.0060		
101.0	99.9	1.0113	Slope	0.999128
			Intercept	0.387205

## NO Calibration Curve



# NO<sub>x</sub> Calibration



November 7, 2016

# Calibration Report



AIR QUALITY MONITORING

Parameter 03

Air Monitoring Network PAZA

## Station Information

Calibration Date	November 7, 2016	Previous Calibration	October 4, 2016
Station Number	1	Station Location	Henry Pirker
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
		<input type="checkbox"/> Other:	
Start Time (MST)	0:30	End Time (MST)	14:40:00 PM
Barometric Pressure	721.000 mm	Station Temperature	21.0 Deg C
Calibrator	Envionics	Serial Number	6586
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	0.996408	Calculated slope	1.009525
Calculated intercept	0.168761	Calculated intercept	-0.617986
Analyzer make	Teco 49I	Analyzer serial #	1507964699 (AMU:2015)

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
offset	-1.10	ppb	-1.10	ppb
slope	1.017		1.017	
Lamp temp	53.7	mV	53.6	mV
Lamp Intensity A/B	72769/79930	mV	72571/79123	mV
Pressure	690.4	mm Hg	695.2	mm Hg
Flow A	0.73	ccm	0.734	ccm
Flow B	0.732	ccm	0.734	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)
4997	0.0	0.0	-0.2	N/A
4999	0.3	337.2	334.1	1.0094
4999	0.2	226.9	225.7	1.0053
4998	0.1	110.0	110.6	0.9944
4997	0.0	0.0	-0.2	As found zero
4997	0.3	337.2	334.1	As found span
Average Correction Factor				1.0030

Calculated value of As Found Response: 333.2 ppm      Percent Change of As Found: -1.2%

	before calibration		after calibration	
Auto zero	0.2	ppb	0.2	ppb
Auto span	366.5	ppb	372.7	ppb

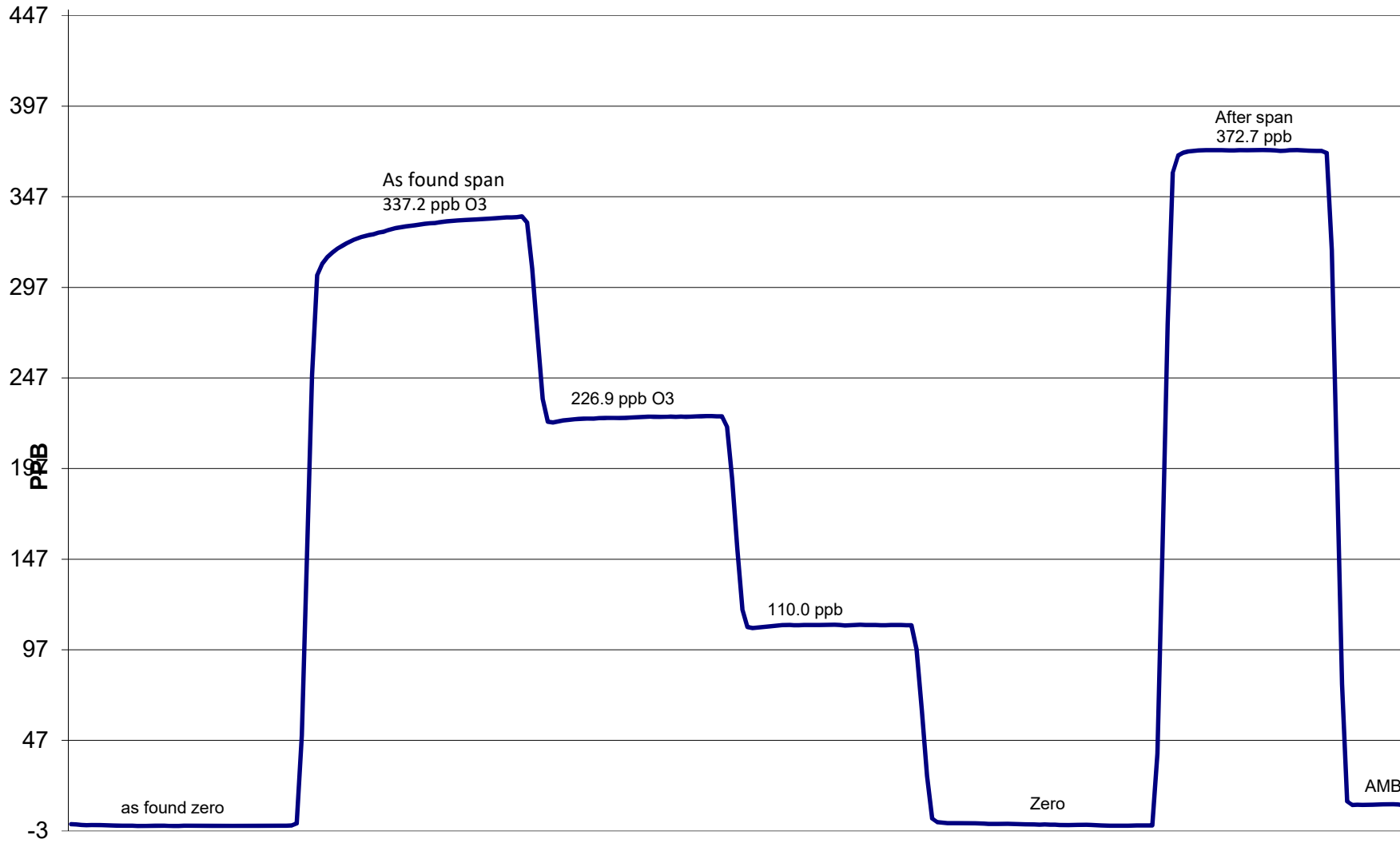
Notes: No adjustment made

Calibration Performed By: Dmytro Dolotii





# O3 Calibration



November 7, 2016

# Calibration Report



**AIR QUALITY MONITORING**

Parameter CO

Air Monitoring Network PAZA

## Station Information

Calibration Date	November 3, 2016	Previous Calibration	October 4, 2016
Station Number	1	Station Location	Henry Pirker
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
		<input type="checkbox"/> Other:	
Start Time (MST)	12:35	End Time (MST)	15:25:00 PM
Barometric Pressure	724.0 mm/hg	Station Temperature	21.0 Deg C
Calibrator	EnviroNics 6100	Serial Number	6586
Cal Gas Conc	2906 ppm	Cal Gas Expiry Date	7/7/2023
		Cal Gas Cylinder #	LL109096
DACS make	CR3000	DACS serial No.	5408
DACS voltage range	0 - 5 volt	DACS channel #	9
	<b>Before</b>		<b>After</b>
Calculated slope	1.001023	Calculated slope	0.996064
Calculated intercept	-0.244924	Calculated intercept	-0.146795
Analyzer make	Model 48I-TLE	Analyzer serial #	1408761378

	before		after	
Concentration range	0 - 50	ppm	0 - 50	ppm
CO zero setting	6.147		6.558	
CO span setting	1.058		1.058	
Sample pressure	694.1	mm Hg	695	mm Hg
Sample Flow	0.447	LPM	0.450	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	0.01	N/A
4997	69.91	40.10	40.32	0.9944
4998	34.96	20.19	20.50	0.9846
4996	17.93	10.39	10.72	0.9698
4995	0.00	0.00	0.41	As Found Zero
4995	69.91	40.11	41.37	As Found Span
Average Correction Factor				0.9830

Calculated value of As Found Response: 40.752 ppm      Percent Change of As Found: -1.6%

	before calibration		after calibration	
Auto zero	0.00	ppm	0.00	ppm
Auto span	20.53	ppm	20.58	ppm

Notes: Zero span made

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Calibration Performed By: Dmytro Dolotii

# Calibration Summary



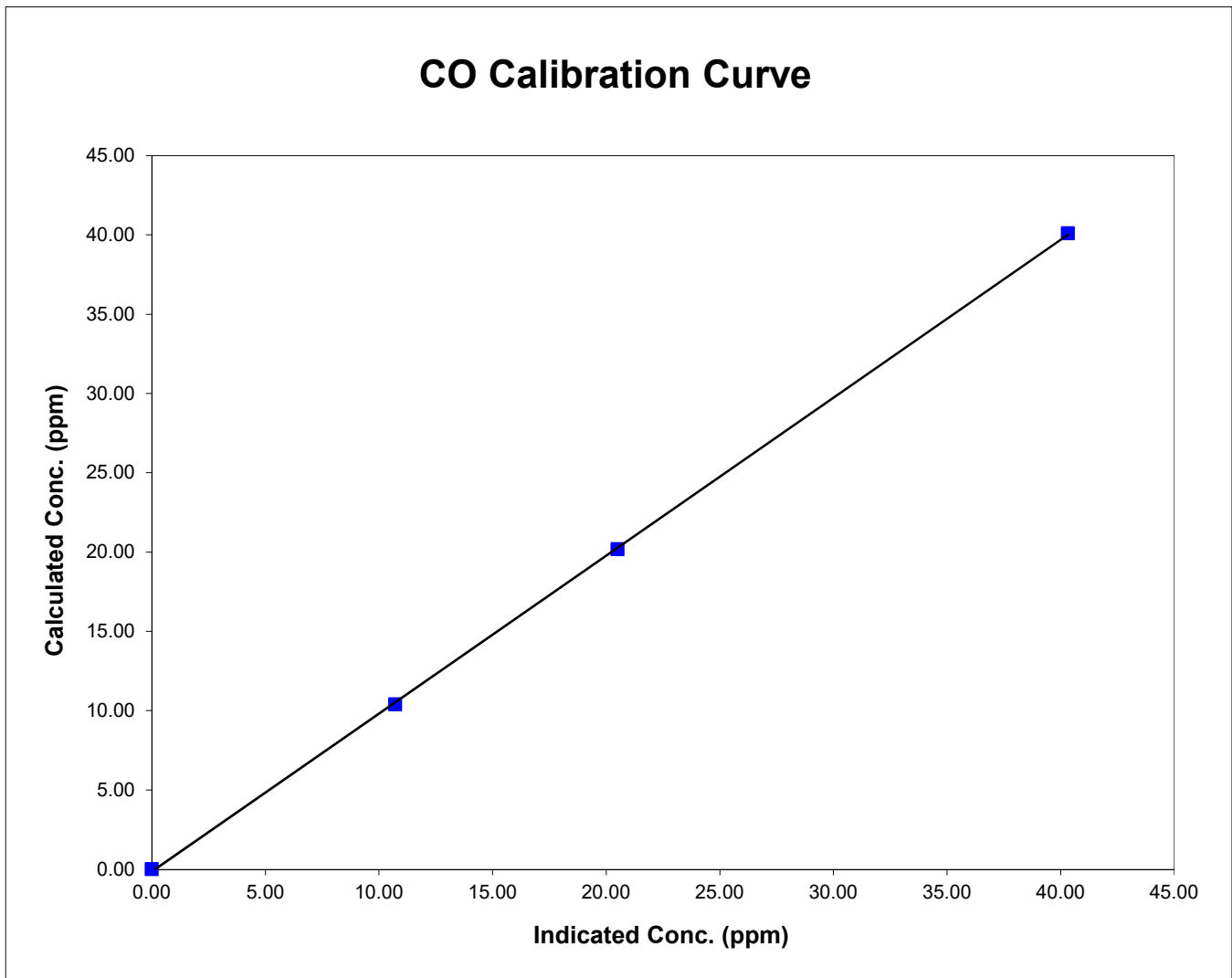
Parameter CO  
 Air Monitoring Network PAZA

### Station Information

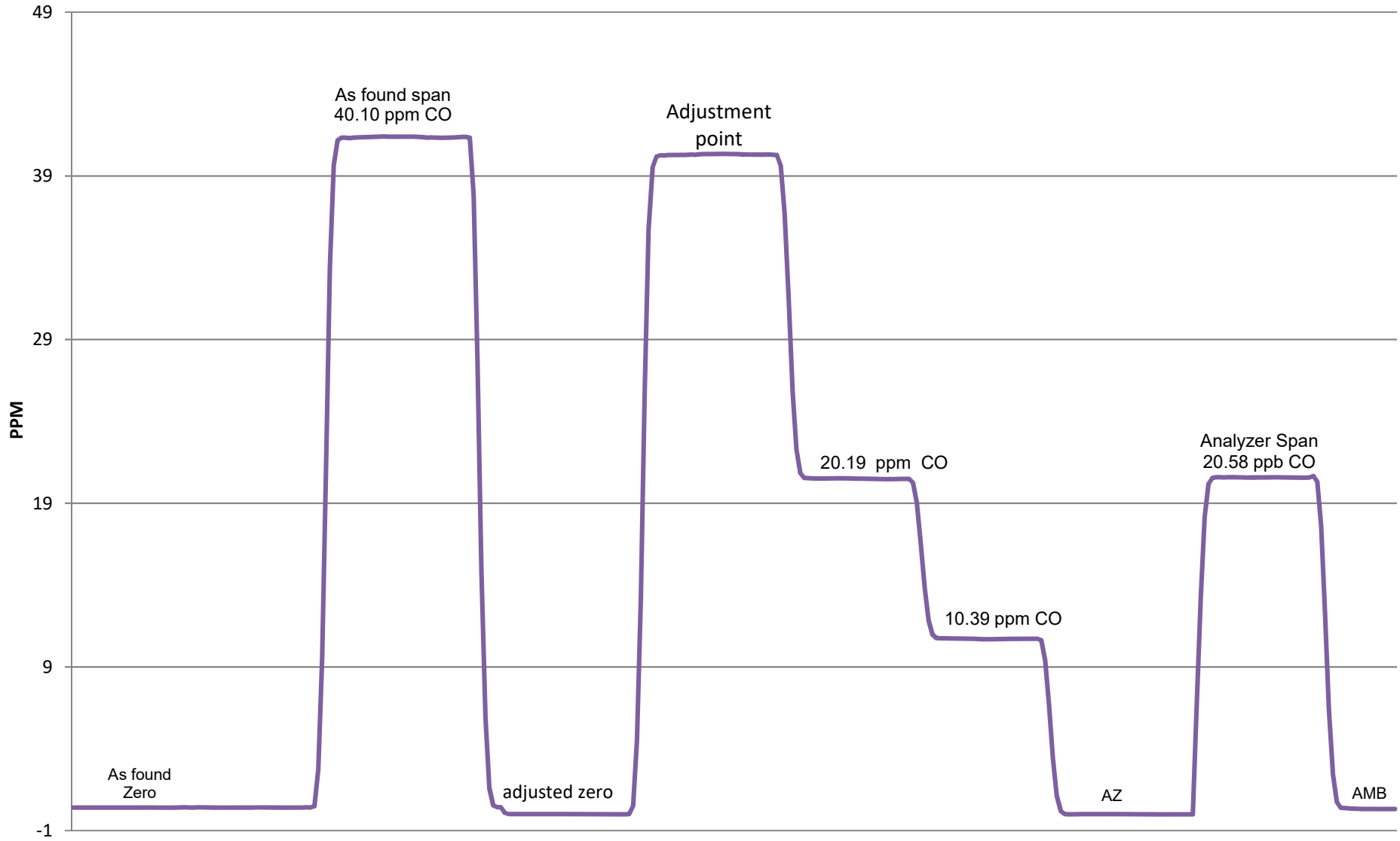
Calibration Date	November 3, 2016	Previous Calibration	October 4, 2016
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	12:35	End Time (MST)	15:25:00 PM
Analyzer make/model	Model 48I-TLE	Analyzer serial #	1408761378

### Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	0.005	N/A	Correlation Coefficient	0.999940
40.095	40.321	0.9944		
20.186	20.501	0.9846	Slope	0.996064
10.392	10.715	0.9698		
			Intercept	-0.146795



# CO Calibration



November 3, 2016

# Calibration Report



Parameter CH4 / NMHC / THC

Air Monitoring Network PAZA

## Station Information

Calibration Date	November 3, 2016	Previous Calibration	October 11, 2016
Station Number	1	Station Location	Henry Pirker
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
		<input type="checkbox"/> Other:	
Start Time (MST)	10:20	End Time (MST)	13:35:00 PM
Barometric Pressure	726.00 mm/hg	Station Temperature	21.0 Deg C
Calibrator	EnviroNics 6103	Serial Number	6586
Cal Gas CH4 Conc	386 ppm CH4	Cal Gas Expiry Date	3/28/2014
Cal Gas C3H8 Conc	207 569.25 ppm CH4	Cal Gas Cylinder #	LL34318
DACS make	CR3000	DACS serial No.	5408
DACS voltage range	0 - 5 volt	DACS channel #	SE 11,12,13

Analyzer make TEI 551 Analyzer serial # 1134650658

	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	27.8	PSI
Fuel pressure	42.1	PSI	42.1	PSI
Carrier pressure	30.3	PSI	30.3	PSI
CH4 cal factor	6.23		6.01	E <sup>-4</sup>
NMHC cal factor	2.74		2.45	E <sup>-4</sup>
Rt	12.31	Sec	12.31	Sec
Pk Index	23.43		23.43	

## 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)
1995	0.00	0.00	0.02	N/A
1997	68.96	12.88	12.89	0.9993
1998	40.99	7.76	7.74	1.0024
1999	15.97	3.06	3.04	1.0077
1995	0.00	0.00	0.02	As Found Zero
1995	68.93	12.89	12.97	As Found Span
Average Correction Factor				1.0031

Calculated value of As Found Response: 12.932 ppm Percent Change of As Found: -0.3%

	Before		After
Calculated slope	0.999347	Calculated slope	1.000164
Calculated intercept	-0.010519	Calculated intercept	0.002212

## Final Zero/Span Data

	before calibration		after calibration	
Auto zero	0.03	ppm	0.03	ppm
Auto span	9.32	ppm	8.89	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)
1995	0.00	0.00	0.02	N/A
1997	68.96	19.00	18.49	1.0277
1998	40.99	11.44	11.53	0.9922
1999	15.97	4.51	4.68	0.9646
1995	0.00	0.00	0.02	As Found Zero
1995	68.93	19.01	20.02	As Found Span
Average Correction Factor				0.9948

Calculated value of As Found Response: 19.243 ppm      Percent Change of As Found: -1.2%

	Before		After
Calculated slope	0.974230	Calculated slope	1.028623
Calculated intercept	-0.241450	Calculated intercept	-0.189187

#### Final Zero/Span Data

	before calibration		after calibration	
Auto zero	0.02	ppm	0.02	ppm
Auto span	13.47	ppm	12.27	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)
1995	0.00	0.00	0.03	N/A
1997	68.96	31.89	31.35	1.0170
1998	40.99	19.20	19.26	0.9973
1999	15.97	7.57	7.70	0.9832
1995	0.00	0.00	0.03	As Found Zero
1995	68.93	31.90	33.88	As Found Span
Average Correction Factor				0.9992

Calculated value of As Found Response: 33.092 ppm      Percent Change of As Found: -3.7%

	Before		After
Calculated slope	0.984843	Calculated slope	1.017866
Calculated intercept	-0.247704	Calculated intercept	-0.180586

#### Final Zero/Span Data

	before calibration		after calibration	
Auto zero	0.02	ppm	0.02	ppm
Auto span	22.78	ppm	21.15	ppm

Notes: Span adjustment made  
Hydrogen cylinder changed.

Calibration Performed By: Dmytro Doloti

# Calibration Summary



Parameter CH4  
 Air Monitoring Network PAZA

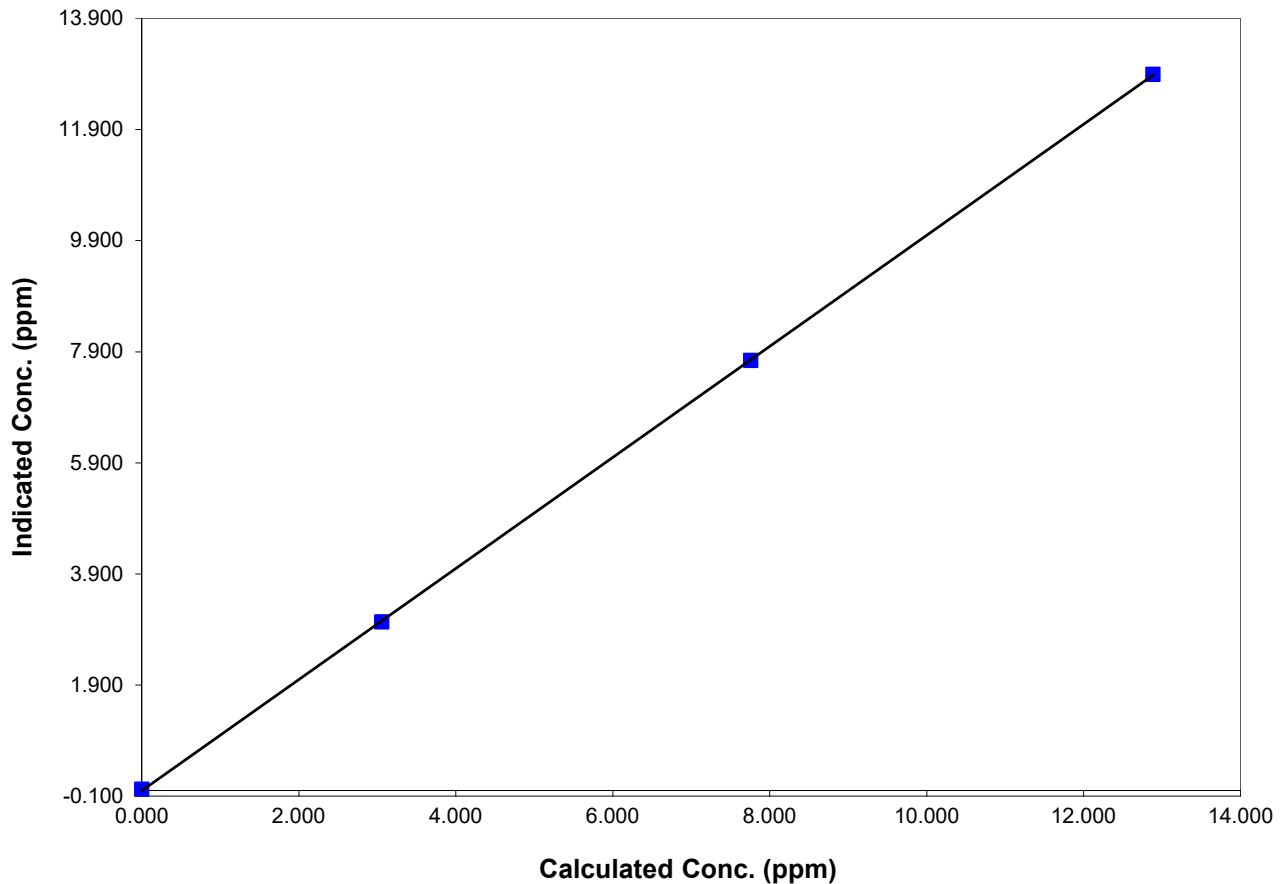
### Station Information

Calibration Date	November 3, 2016	Previous Calibration	October 11, 2016
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	10:20	End Time (MST)	13:35:00 PM
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	0.020	N/A	Correlation Coefficient	0.999986
12.884	12.894	0.9993		
7.760	7.741	1.0024	Slope	1.000164
3.059	3.036	1.0077		
			Intercept	0.002212

## CH4 Calibration Data







# Calibration Summary



Parameter THC  
 Air Monitoring Network PAZA

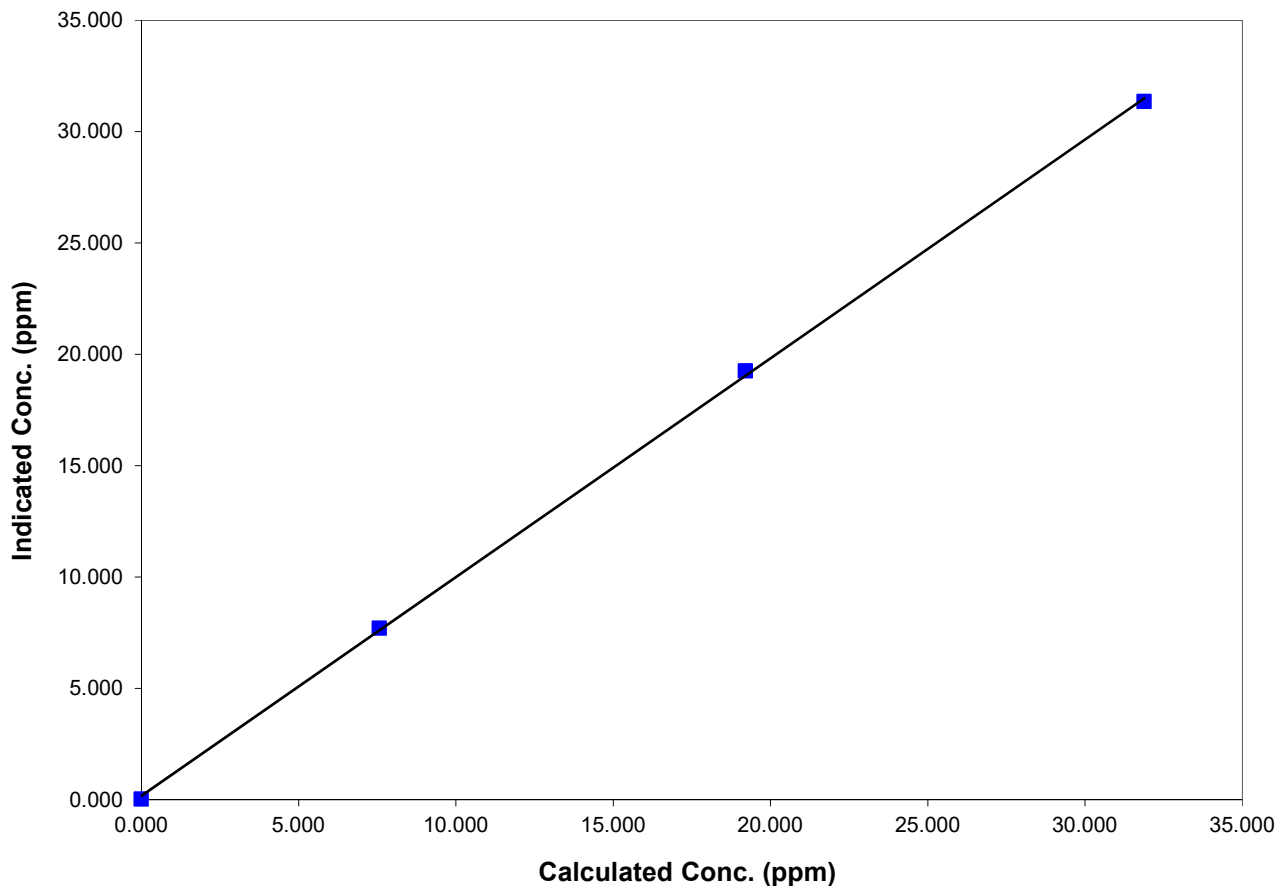
### Station Information

Calibration Date	November 3, 2016	Previous Calibration	October 11, 2016
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	10:20	End Time (MST)	13:35:00 PM
Analyzer make/model	TEI 55I	Analyzer serial #	1134650658

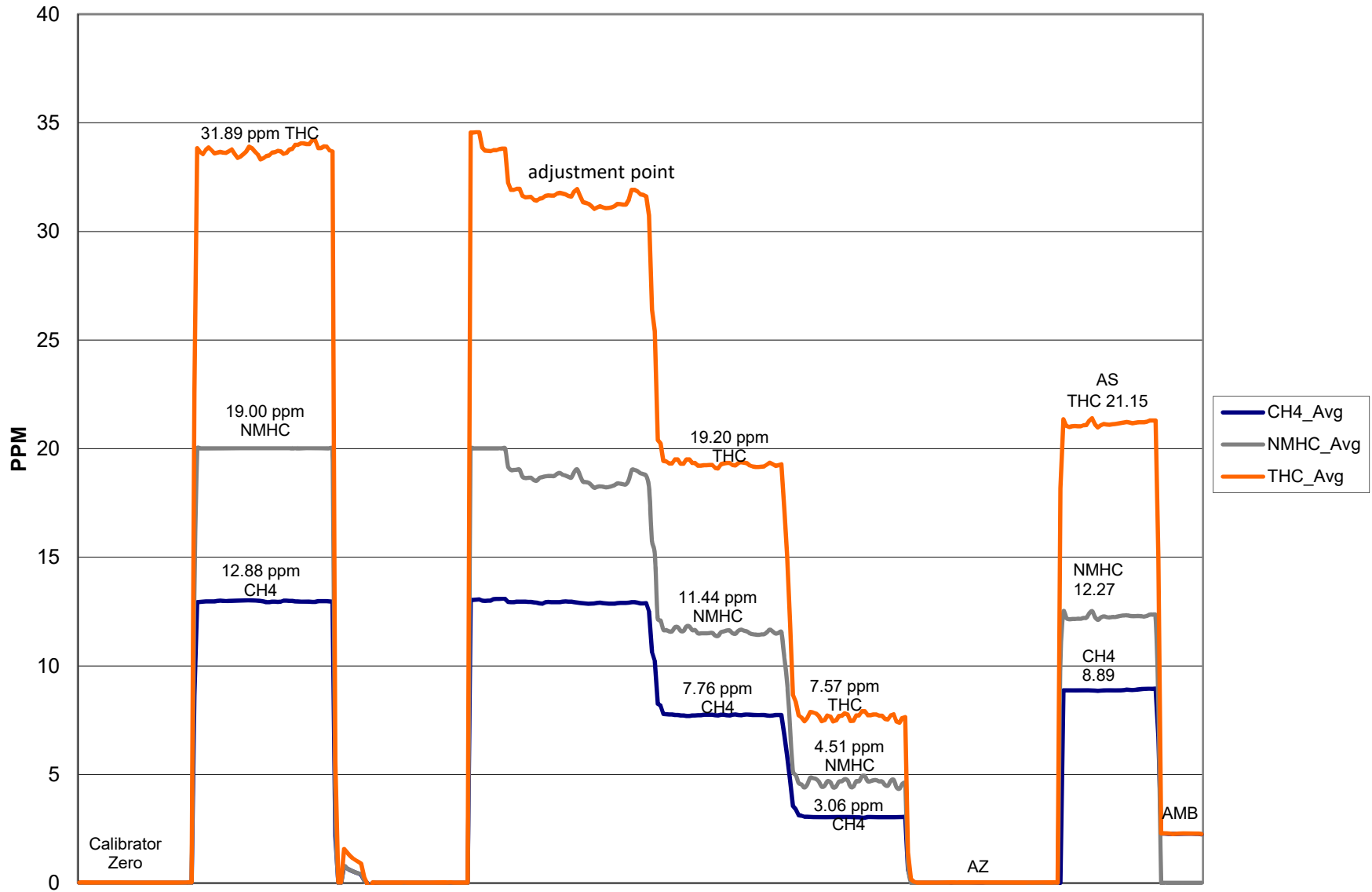
### Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	0.032	N/A	Correlation Coefficient	0.999830
31.885	31.353	1.0170		
19.203	19.255	0.9973	Slope	1.017866
7.571	7.700	0.9832		
			Intercept	-0.180586

## THC Calibration Data



# THC/CH<sub>4</sub>/NMHC Calibration



# Calibration Report



Parameter TRS

Air Monitoring Network PAZA

## Station Information

Calibration Date	November 3, 2016	Previous Calibration	October 4, 2016
Station Number	1	Station Location	Henry Pirker
Reason:	<b>Routine</b>	Install	Removal
Start Time (MST)	8:45	End Time (MST)	11:10
Barometric Pressure	721.00 mm/Hg	Station Temperature	21.0 Deg C
Calibrator	Envionics 6103	Serial Number	6586
Cal Gas Conc	10.2 ppb	Cal Gas Expiry Date	02/23/2019
DACS make	CR3000	Cal Gas Cylinder #	EY0000380
DACS voltage range	0 - 1 volt	DACS serial No.	5408
Calculated slope	1.011835	DACS channel #	9
Calculated intercept	0.063082	Before	After
Analyzer make	TEI 45C	Calculated slope	1.017507
Analyzer serial #	630718528	Calculated intercept	0.038392

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Coefficient	0.940		0.940	
Background	19.4		19.3	
Pressure	661.0	mm Hg	661.5	mm Hg
Flow	0.444	ccm	0.446	ccm
Lamp Voltage	908	V	903	V

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4997	0.00	0.00	0.47	N/A
4999	39.97	80.91	79.80	1.0139
4999	19.98	40.61	39.31	1.0330
6998	10.01	14.56	14.00	1.0399
4997	0.00	0.00	0.47	As Found Zero
4997	39.93	80.86	79.80	As Found Span
Average Correction Factor				1.0290

Calculated value of As Found Response: 80.3 ppb      Percent Change of As Found: 0.7%

	before calibration		after calibration	
Auto zero	0.73	ppb	0.44	ppb
Auto span	28.95	ppb	28.67	ppb

Notes: No adjustment made  
Sox scrubber check performed

Calibration Performed By: Dmytro Dolotii

# Calibration Summary



Parameter TRS  
 Air Monitoring Network PAZA

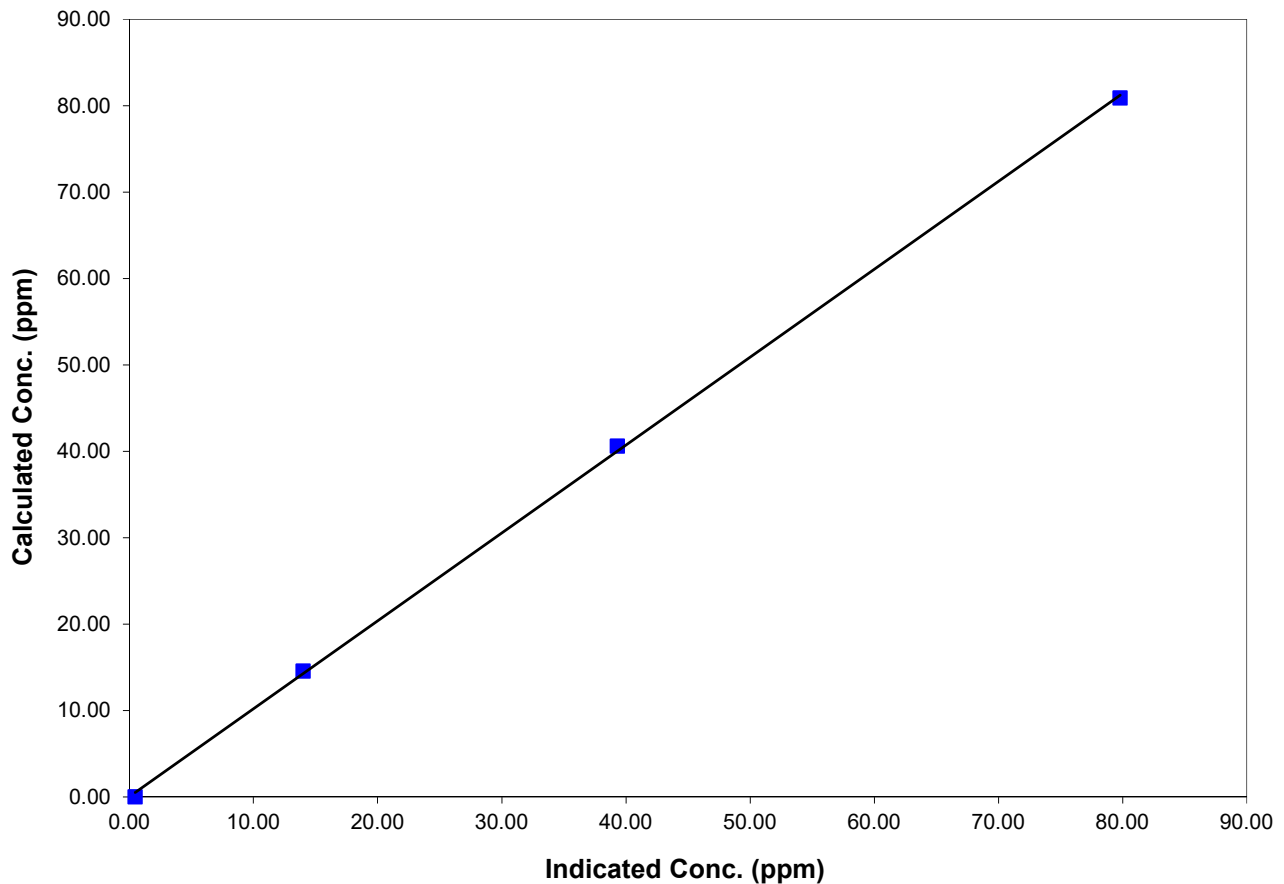
### Station Information

Calibration Date	<u>November 3, 2016</u>	Previous Calibration	<u>October 4, 2016</u>
Station Number	<u>1</u>	Station Location	<u>Henry Pirker</u>
Start Time (MST)	<u>8:45</u>	End Time (MST)	<u>11:10</u>
Analyzer make/model	<u>TEI 45C</u>	Analyzer serial #	<u>630718528</u>

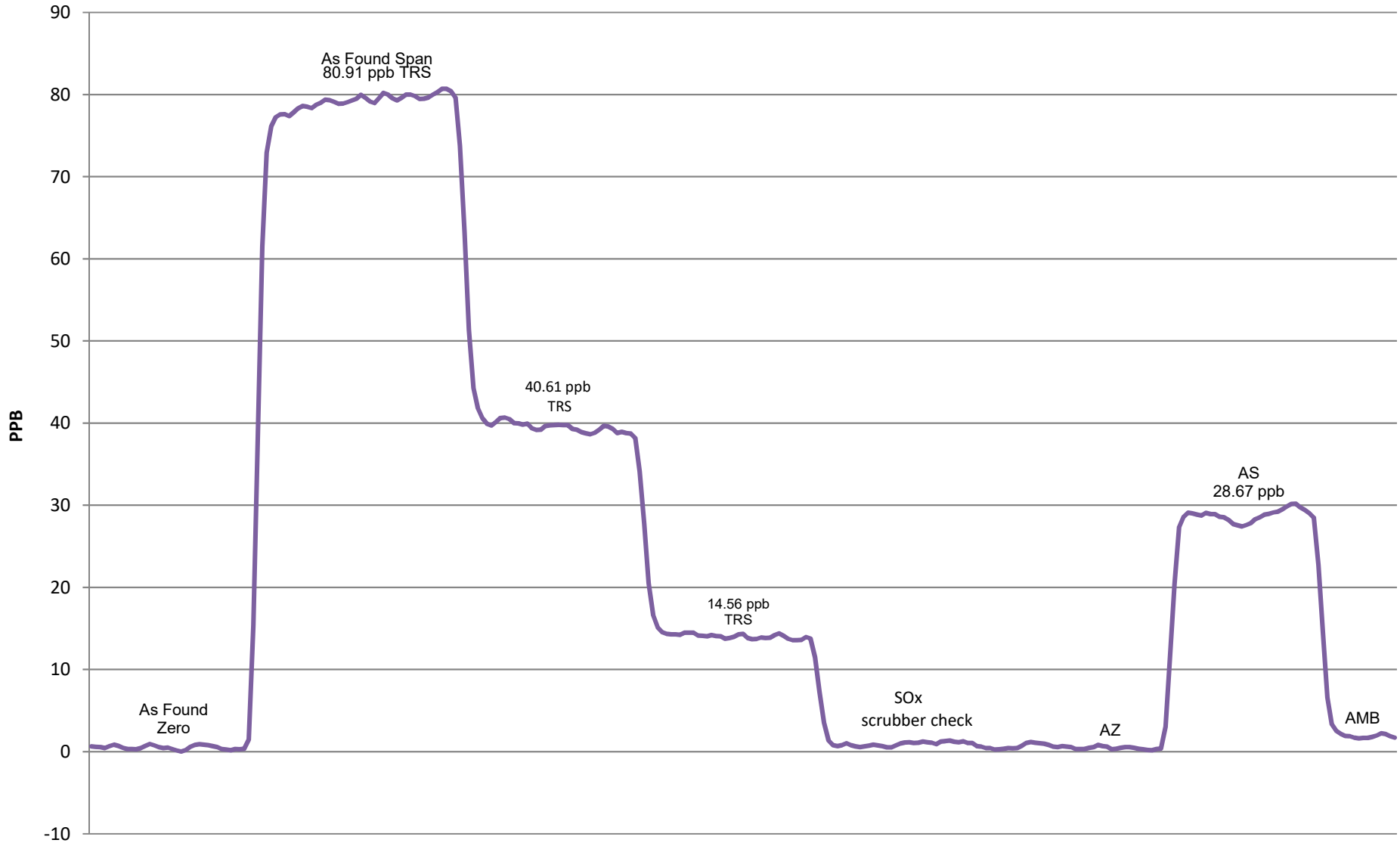
### Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	0.474	N/A		
80.908	79.799	1.0139	Correlation Coefficient	0.999794
40.605	39.307	1.0330		
14.562	14.003	1.0399	Slope	1.017507
			Intercept	0.038392

### TRS Calibration Curve



# TRS Calibration



November 3, 2016

# Calibration Report



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

## Station Information

Calibration Date	November 9 2016	Previous Calibration	October 6 2016
Station Number	2	Station Location	Evergreen Park
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
		<input type="checkbox"/> Other:	
Start Time (MST)	12:05	End Time (MST)	14:15:00 PM
Barometric Pressure	0.926 ATM	Station Temperature	19.0 Deg C
Calibrator	EnviroNics	Serial Number	6586
Cal Gas Concentration	49.7 ppm	Cal Gas Expiry Date	10/5/2018
Correction factor	0.031585	Cal Gas Cylinder #	LL103793
DACS make	CR3000	DACS serial No.	5236
DACS voltage range	0 - 5 volt	DACS channel #	6
	<u>Before</u>		<u>After</u>
Calculated slope	1.004458	Calculated slope	0.992389
Calculated intercept	0.678651	Calculated intercept	0.687464
Analyzer make	Teco 43i	Analyzer serial #	701120008

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Background	11.6		11.6	
coefficient	1.224		1.224	
Lamp Voltage	831	volts	830	volts
Chamber Temp	45.2	Deg C	45	Deg C
Perm Gas Temp	45	Deg C	45	Deg C
Pressure	668.9	mm Hg	668.8	mm Hg
Sample Flow	0.446	ccm	0.447	ccm
Lamp Intensity	89	%	89	%

Dilution air flow rate (cc/min)	Corrected gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4996	0.0	0.00	0.7	N/A
4998	39.95	394.1	397.2	0.9922
4998	19.96	197.7	197.5	1.0008
4997	9.99	99.2	98.1	1.0110
4996	0.0	0.0	0.7	As Found Zero
4996	39.93	394.1	397.2	As Found Span
Average Correction Factor				1.0013

Calculated value of As Found Response: 398.990 ppm      Percent Change of As Found: -1.2%

	before calibration		after calibration	
Auto zero	0.6	ppm	0.6	ppm
Auto span	259.2	ppm	257.7	ppm

Notes: No adjustments made

Calibration Performed By: Dmytro Dolotii

# Calibration Summary

Parameter SO2  
 Air Monitoring Network PAZA



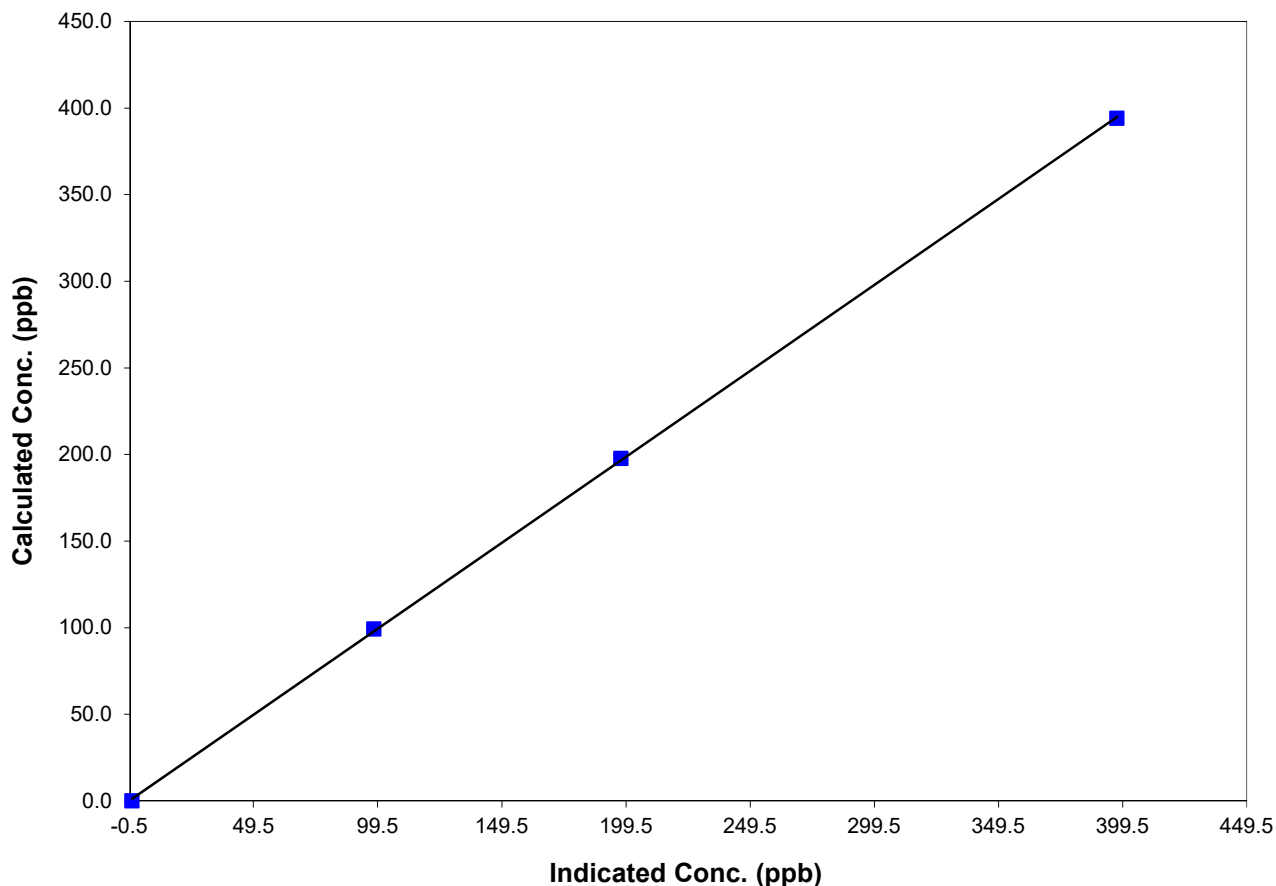
### Station Information

Calibration Date	November 9 2016	Previous Calibration	October 6 2016
Station Number	2	Station Location	Evergreen Park
Start Time (MST)	12:05	End Time (MST)	14:15:00 PM
Analyzer make/model	Teco 43i	Analyzer serial #	701120008

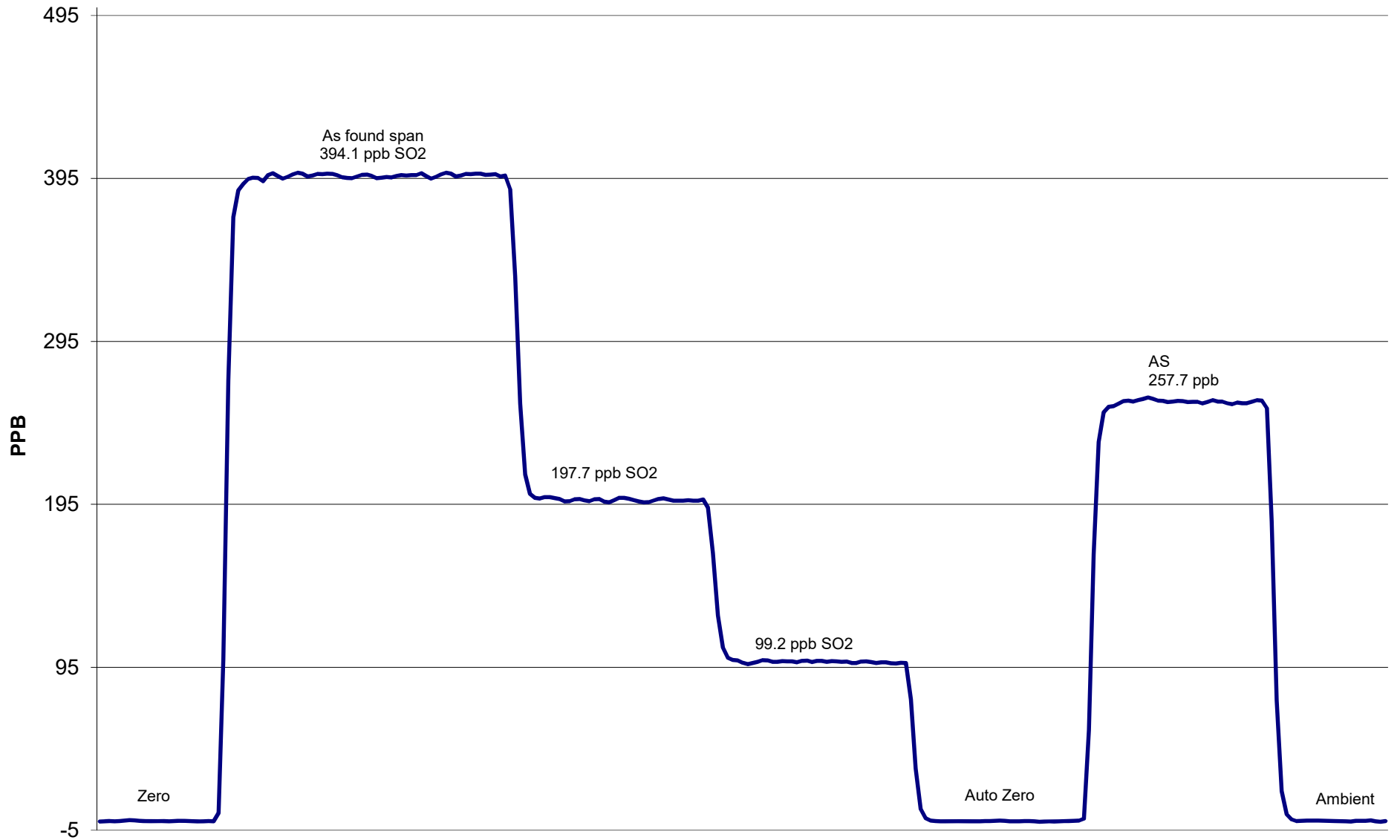
### Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.7	N/A	Correlation Coefficient	0.999946
394.1	397.2	0.9922		
197.7	197.5	1.0008	Slope	0.992389
99.2	98.1	1.0110		
			Intercept	0.687464

## SO2 Calibration Curve



# SO2 Calibration



November 9 2016





# Calibration Summary

Parameter TRS  
 Air Monitoring Network PAZA



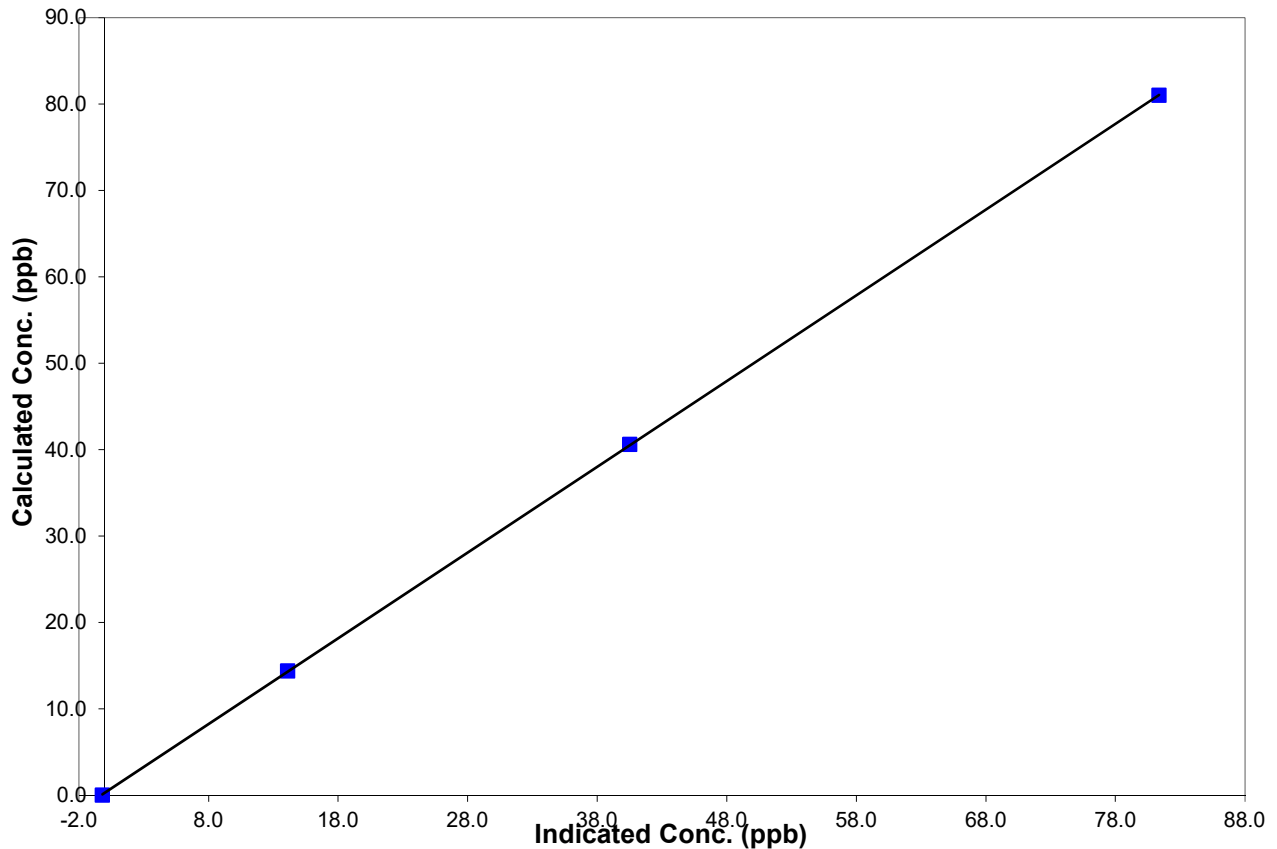
### Station Information

Calibration Date	<u>November 9 2016</u>	Previous Calibration	<u>October 3 2016</u>
Station Number	<u>2</u>	Station Location	<u>Evergreen Park</u>
Start Time (MST)	<u>10:00</u>	End Time (MST)	<u>12:50</u>
Analyzer make/model	<u>TEI Model 43C</u>	Analyzer serial #	<u>3199000000491</u>

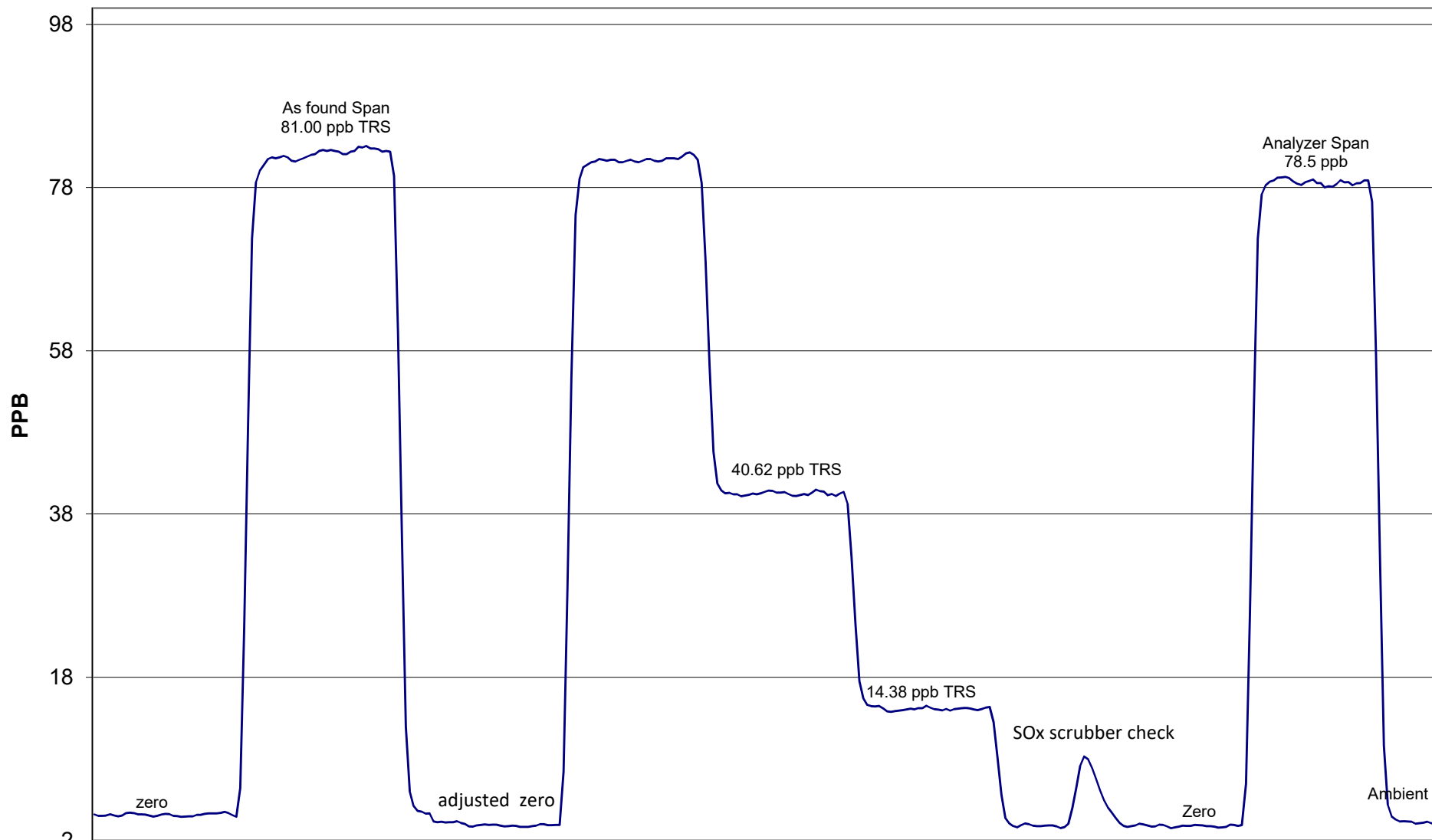
### Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.2	N/A		
81.0	81.4	0.9956	Correlation Coefficient	0.999992
40.6	40.5	1.0024		
14.4	14.1	1.0194	Slope	0.992602
			Intercept	0.301230

## TRS Calibration Curve



# TRS Calibration



November 9 2016

# Calibration Report



Parameter SO<sub>2</sub>

Air Monitoring Network PAZA

## Station Information

Calibration Date	November 18, 2016	Previous Calibration	October 18, 2016
Station Number	3	Station Location	Smokey Heights
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
			<input type="checkbox"/> Other:
Start Time (MST)	13:30:00 AM	End Time (MST)	15:40:00 PM
Barometric Pressure	0.930 ATM	Station Temperature	22.0 Deg C
Calibrator	EnviroNics	Serial Number	3474
Cal Gas Concentration	49.7 ppm	Cal Gas Cert Date	11/5/2018
Correction factor	0.031399	Cal Gas Cylinder #	LL103793
DACS make	CR3000	DACS serial No.	5238
DACS voltage range	0 - 5 volt	DACS channel #	6
	<u>Before</u>		<u>After</u>
Calculated slope	0.998456	Calculated slope	0.986998
Calculated intercept	0.284654	Calculated intercept	-0.095355
Analyzer make	Teco 43i	Analyzer serial #	701120009

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Background	12.7		12.7	
coefficient	0.939		0.939	
Lamp Voltage	943	volts	942	volts
Chamber Temp	4.8	Deg C	45	Deg C
Perm Gas Temp	44.9	Deg C	45	Deg C
Pressure	677.7	mm Hg	676.8	mm Hg
Sample Flow	0.446	lpm	0.446	lpm
Lamp Intensity	88	%	88	%

Dilution air flow rate (cc/min)	Corrected gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4996	0.0	0.00	0.9	N/A
4998	39.92	393.82	399.6	0.9856
4996	19.95	197.67	199.8	0.9893
4991	9.98	99.18	99.9	0.9930
4996	0.0	0.00	0.9	As Found Zero
4998	39.92	393.82	399.6	As Found Span
Average Correction Factor				0.9893

Calculated value of As Found Response: 398.319 ppm      Percent Change of As Found: -1.1%

	before calibration		after calibration	
Auto zero	0.9	ppb	1.0	ppb
Auto span	210.3	ppb	207.7	ppb

Notes: No adjustment made

Calibration Performed By: Dmytro Dolotii

# Calibration Summary

Parameter SO2  
 Air Monitoring Network PAZA



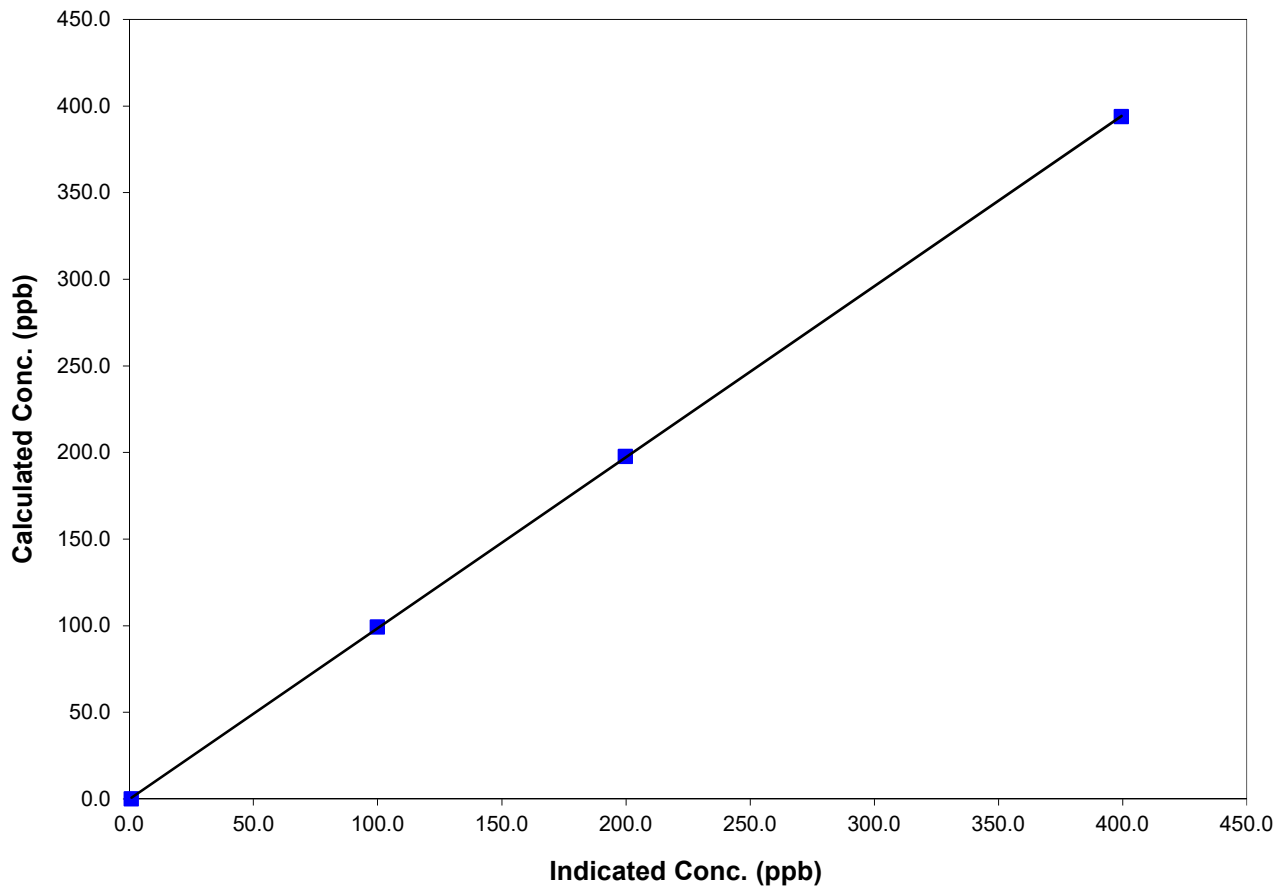
### Station Information

Calibration Date	November 18, 2016	Previous Calibration	October 18, 2016
Station Number	3	Station Location	Smokey Heights
Start Time (MST)	13:30:00 AM	End Time (MST)	15:40:00 PM
Analyzer make/model	Teco 43i	Analyzer serial #	701120009

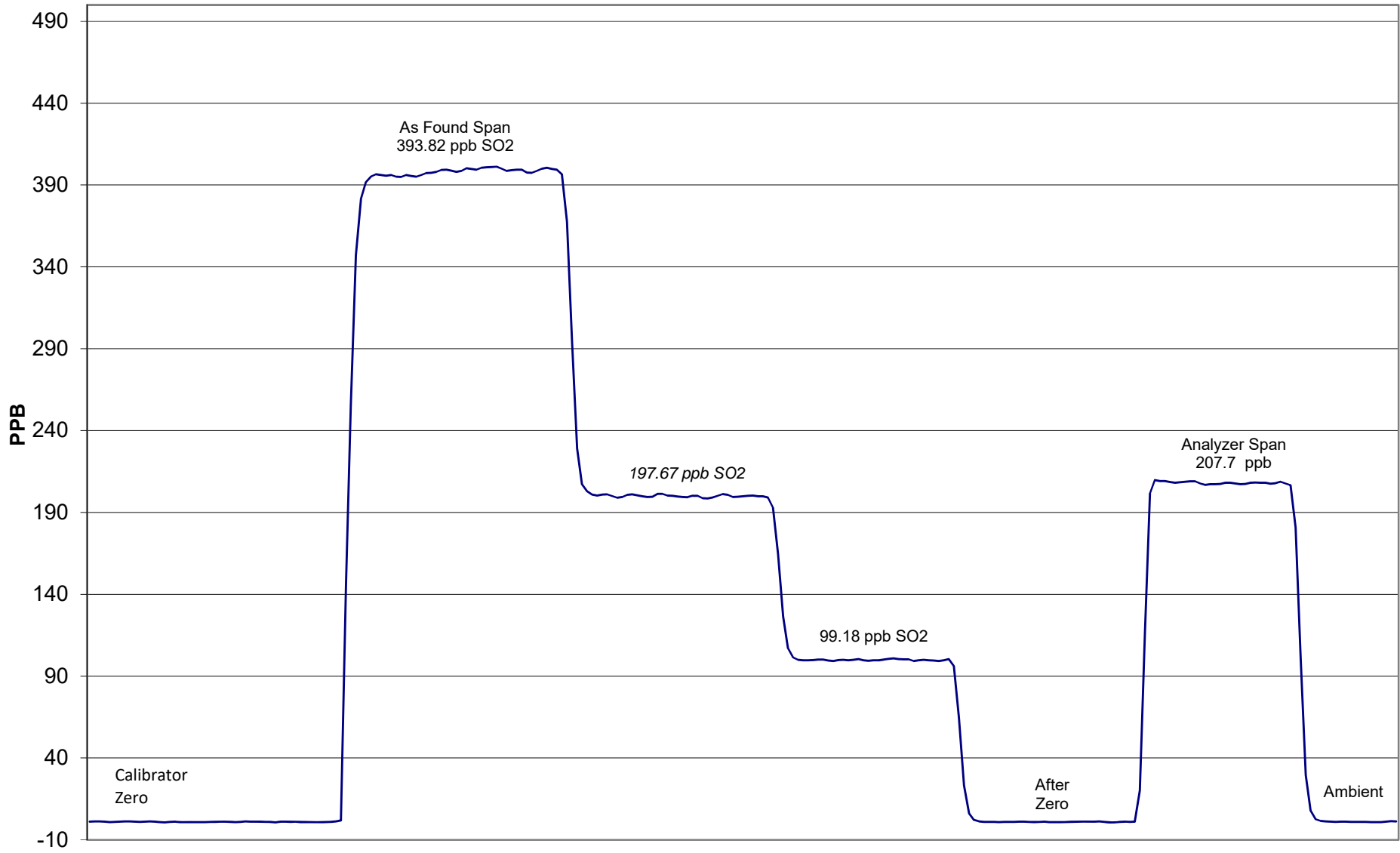
### Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.9	N/A	Correlation Coefficient	0.999981
393.8	399.6	0.9856		
197.7	199.8	0.9893		
99.2	99.9	0.9930		
			Slope	0.986998
			Intercept	-0.095355

## SO2 Calibration Curve



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



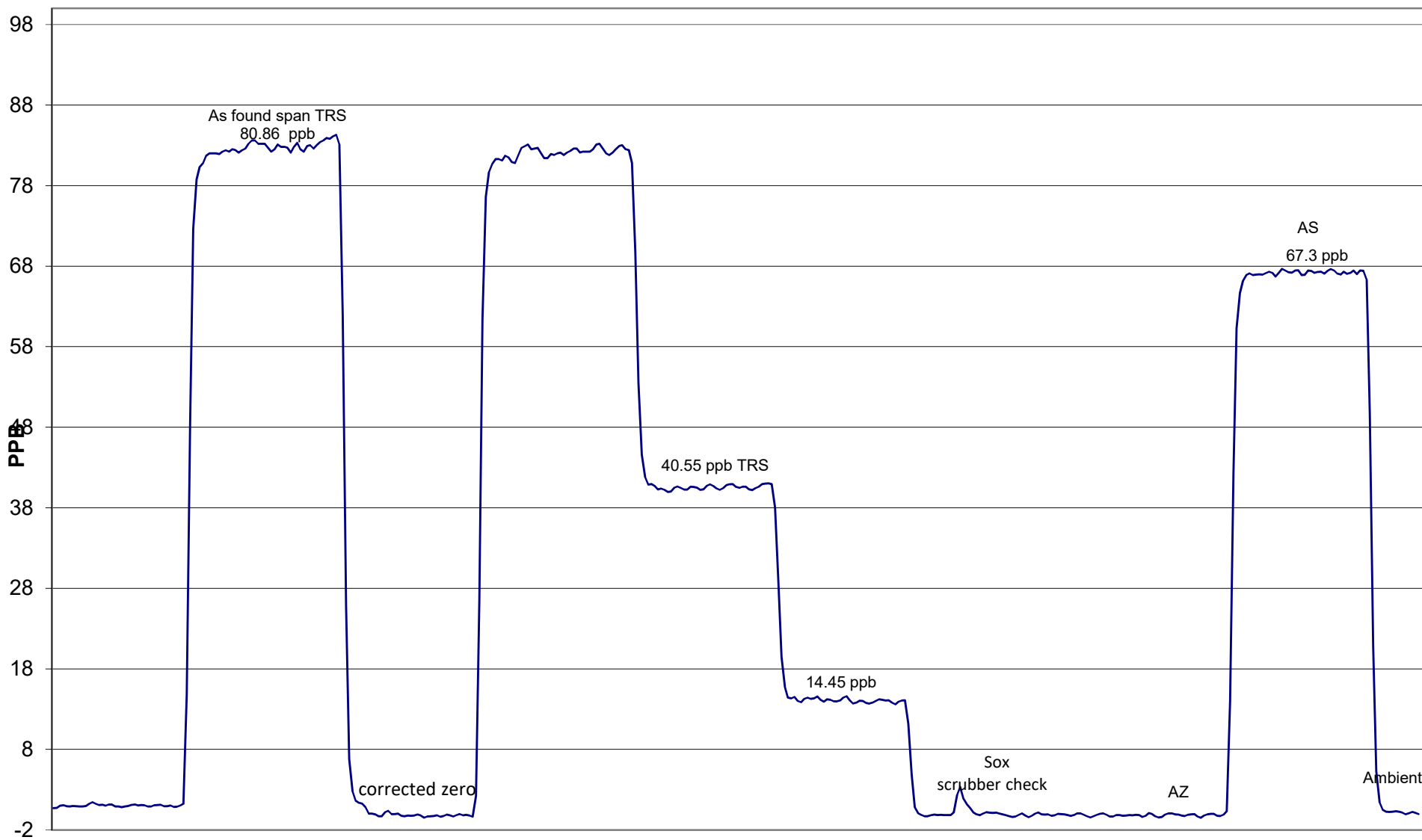
November 18, 2016







# Smokey Heights TRS Calibration



November 18, 2016

# Calibration Report



Parameter SO2

Air Monitoring Network PAZA

## Station Information

Calibration Date	November 16, 2016	Previous Calibration	October 17, 2016
Station Number	4	Station Location	Beaverlodge
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
		<input type="checkbox"/> Other:	
Start Time (MST)	13:55:00 PM	End Time (MST)	15:55:00 PM
Barometric Pressure	0.928 atm	Station Temperature	20.0 Deg C
Calibrator	Envionics	Serial Number	3474
Cal Gas Concentration	10.5 ppm	Cal Gas Expiry Date	1/12/2019
Gas Cert Reference	FF16108		
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	0.994845	Calculated slope	0.993732
Calculated intercept	-0.262038	Calculated intercept	-0.439349
Analyzer make	TEI Model 43i-TLE	Analyzer serial #	713021137

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Background	2.55		2.55	
Coefficient	0.969		0.969	
PMT	-768.1	V	-768.1	V
UV Lamp Voltage	1115	V	1112	V
Chamber Temp	44.7	Deg C	45.9	Deg C
Pressure	660.4	mm Hg	668.2	mm Hg
Sample Flow	0.451	LPM	0.459	LPM
Lamp Intensity	96	%	96	%

## Calibration Data

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4989	0.00	0.0	0.3	N/A
4989	39.84	83.2	84.0	0.9900
4989	19.92	41.8	42.6	0.9793
4989	9.91	20.8	21.5	0.9670
4989	0.00	0.0	0.3	As found zero
4989	39.84	83.2	84.0	As found span
Average Correction Factor				0.9788

Calculated value of As Found Response: 83.080 ppm      Percent Change of As Found: 0.1%

	before calibration		after calibration	
Auto zero	0.0	ppb	-0.2	ppb
Auto span	59.8	ppb	58.9	ppb

Notes: No adjustment made

Calibration Performed By: Dmytro Dolotii

# Calibration Summary

Parameter SO2  
 Air Monitoring Network PAZA

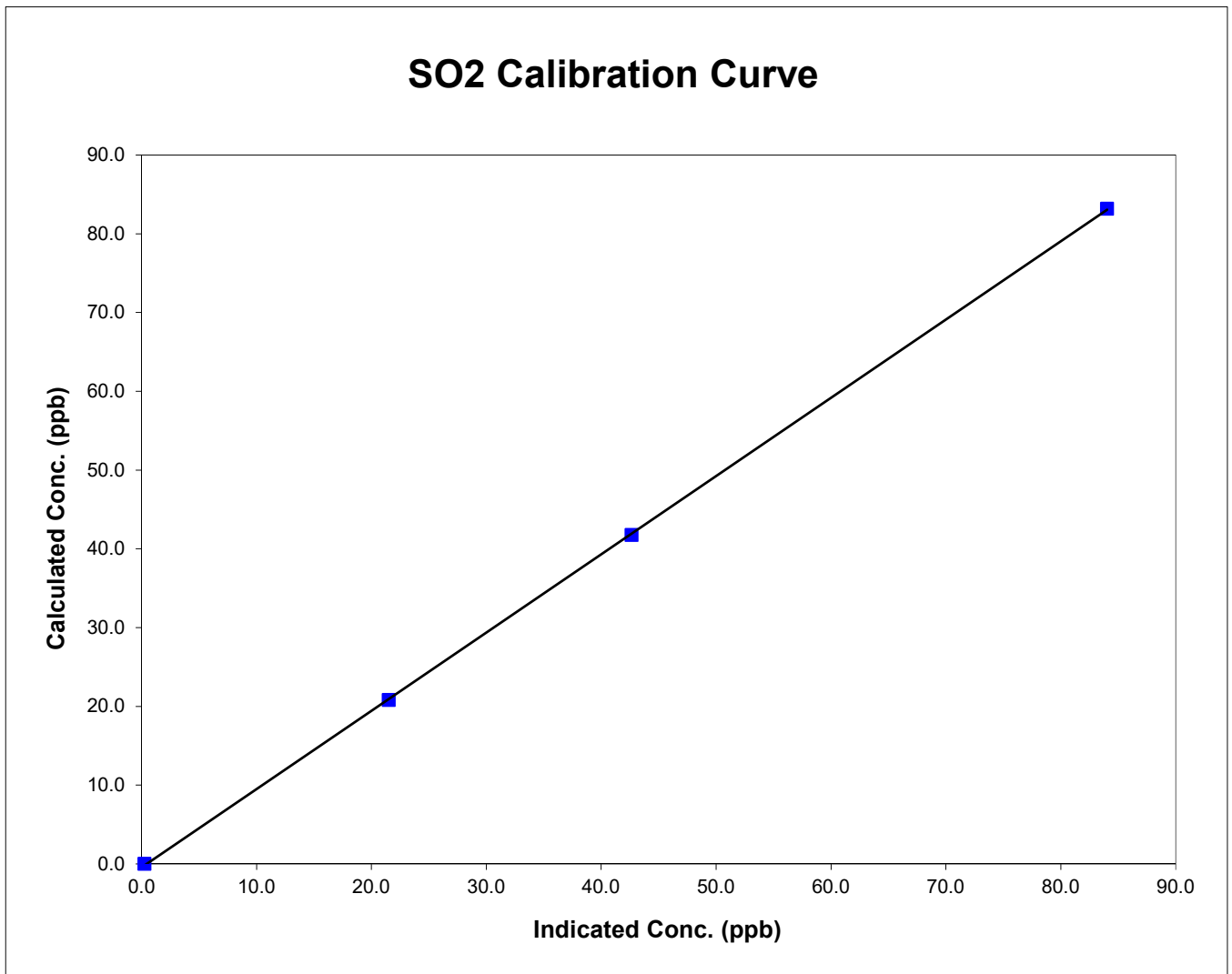


## Station Information

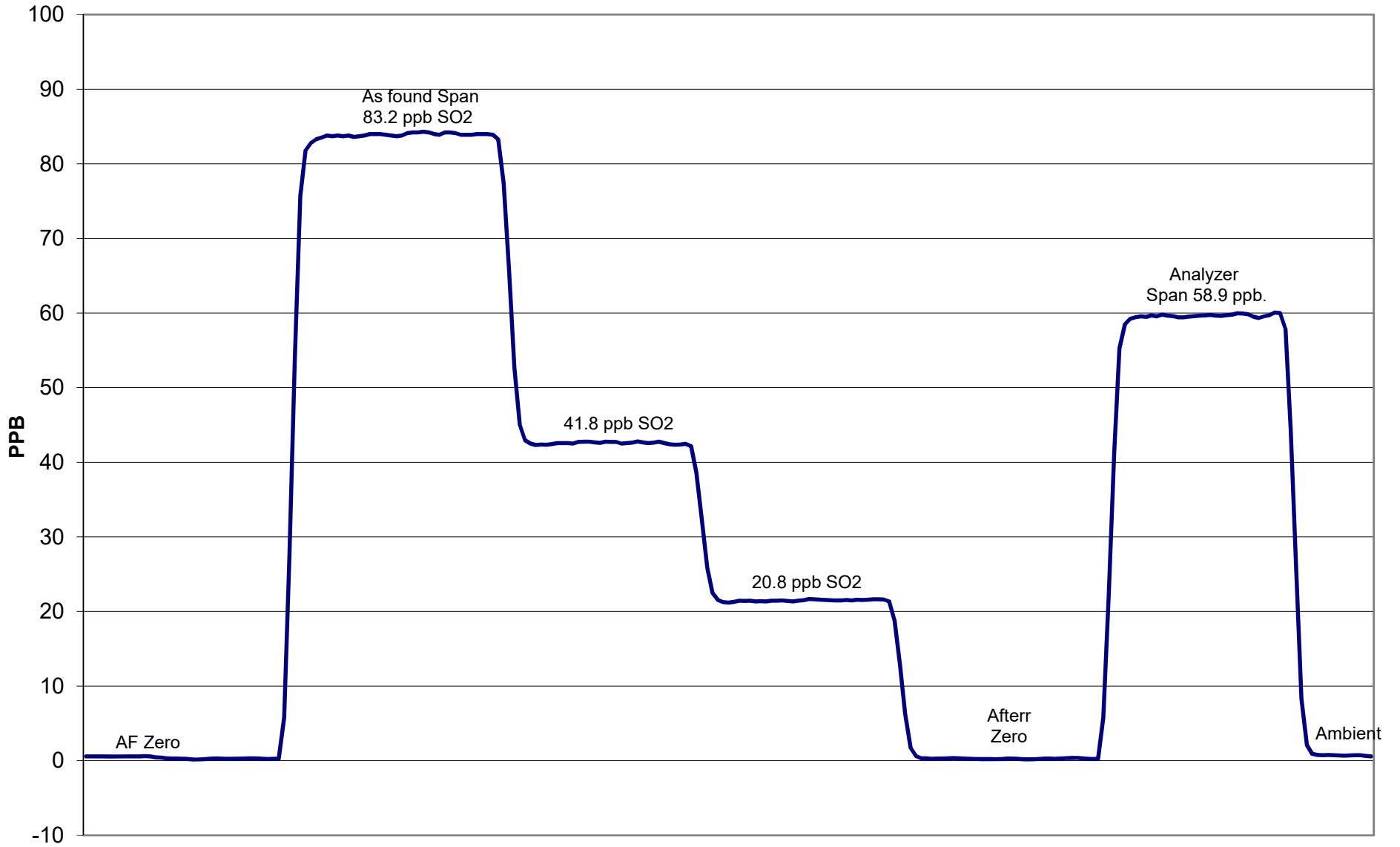
Calibration Date	November 16, 2016	Previous Calibration	October 17, 2016
Station Number	4	Station Location	Beaverlodge
Start Time (MST)	13:55:00 PM	End Time (MST)	15:55:00 PM
Analyzer make/model	TEI Model 43i-TLE	Analyzer serial #	713021137

## Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.3	N/A		
83.2	84.0	0.9900	Correlation Coefficient	0.999973
41.8	42.6	0.9793		
20.8	21.5	0.9670	Slope	0.993732
			Intercept	-0.439349



# SO2 Calibration



November 16, 2016

# Calibration Report

Parameter

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

Air Monitoring Network

PAZA



## Station Information

Calibration Date	November 16, 2016		Previous Calibration	October 17, 2016	
Station Number	4		Station Location	Beaverlodge	
Reason:	<b>Routine</b>	Installation	Removal	Other:	
Start Time (MST)	10:12		End Time (MST)	13:30:00 PM	
Barometric Pressure	0.928	Atm	Station Temperature	20.0	Deg C
Calibrator	EnviroNics		Serial Number	3474	
NO Cal Gas Conc	50.9	ppm	Cal Gas Expiry Date	November 5, 2018	
NO <sub>x</sub> Cal Gas Conc	51.2	ppm	Cal Gas Serial #	LL103793	

## DACS Information

DACS make	CR3000		DACS serial No.	5237	
	<b>Parameter</b>	<b>NO2</b>	<b>NOx</b>	<b>NO</b>	
Before	Data Slope	1.003138	1.009564	1.003266	
	Data Offset	-0.133069	0.303075	0.461171	
After	Data Slope	0.997798	1.008470	1.004524	
	Data Offset	-0.536914	0.690699	1.026034	
	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	
<b>Test Point</b>	<b>before</b>		<b>after</b>		
Concentration range	0-500	ppb	0-500	ppb	
NO offset	2.8	mV	2.8	mV	
NO <sub>x</sub> bkgnd	3.3	mV	3.3	mV	
NO coefficient	1.168		1.168		
NO <sub>x</sub> coefficient	0.999		0.999		
NO2 conv temp	322.1	Deg C	232.5	Deg C	
PMT Temp	-3.0	Deg C	-3.0	Deg C	
PMT Volt	-730.0	mV	-730.0	mV	
R Cell Press	185.8	in Hg	186.7	in Hg	
Sample Flow	0.672	LPM	0.676	LPM	

Notes: No adjustment made

# Calibration Report



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

## Station Information

Calibration Date: November 16, 2016 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	4990	0.00	0.0	0.0	0.0	-0.2	-0.1	-0.1	N/A	N/A	
1	4990	39.87	405.8	403.5	2.4	402.1	401.2	0.1	1.0093	1.0056	
2	4990	19.92	203.6	202.4	1.2	200.7	199.5	0.3	1.0143	1.0145	
3	4990	9.92	101.6	101.0	0.6	99.7	99.0	0.5	1.0192	1.0203	
AFZ	4990	0.00	0.0	0.0	0.0	-0.2	-0.1	-0.1	0.0000	0.0000	
AFS	4990	39.92	406.3	404.0	0.8	402.1	401.2	0.1	1.0106	1.0068	
									Average Correction Factor	1.0143	1.0134

As Found Concentrations: NO<sub>x</sub>= 406.4 NO= 403.1 As Found Percent Change NO<sub>x</sub>= 0.0% NO= -0.2%

## GPT Calibration Data

Dilution Flow 4995 ccm Source Gas Flow 39.93 ccm

O3 Setpoint (ppb)	Indicated NOx 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	-0.1	N/A	N/A	N/A	N/A	
NO point	400.8	400.8	0.0	401.2	400.8	-0.3	0.9991	1.0000	N/A	N/A	
300	400.8	61.6	339.2	402.6	61.6	339.9	0.9956	1.0000	0.9979	100.2%	
200	400.8	171.5	229.3	403.3	171.5	230.9	0.9937	1.0000	0.9931	100.7%	
100	400.8	289.8	111.0	402.9	289.8	112.4	0.9949	1.0000	0.9871	101.3%	
							Average Correction Factor	0.9947	1.0000	0.9927	100.7%

## AIC Data

Parameter	Previous calibration				Current calibration			
	NOx	NO2	NO		NOx	NO2	NO	
Auto zero	-0.1	-0.1	-0.1	ppb	-0.1	-0.1	-0.2	ppb
Auto span	306.3	303.2	2.3	ppb	292.0	288.9	2.1	ppb

Calibration Performed By: Dmytro Dolotii

# Calibration Summary



Parameter NO<sub>2</sub>

Air Monitoring Network PAZA

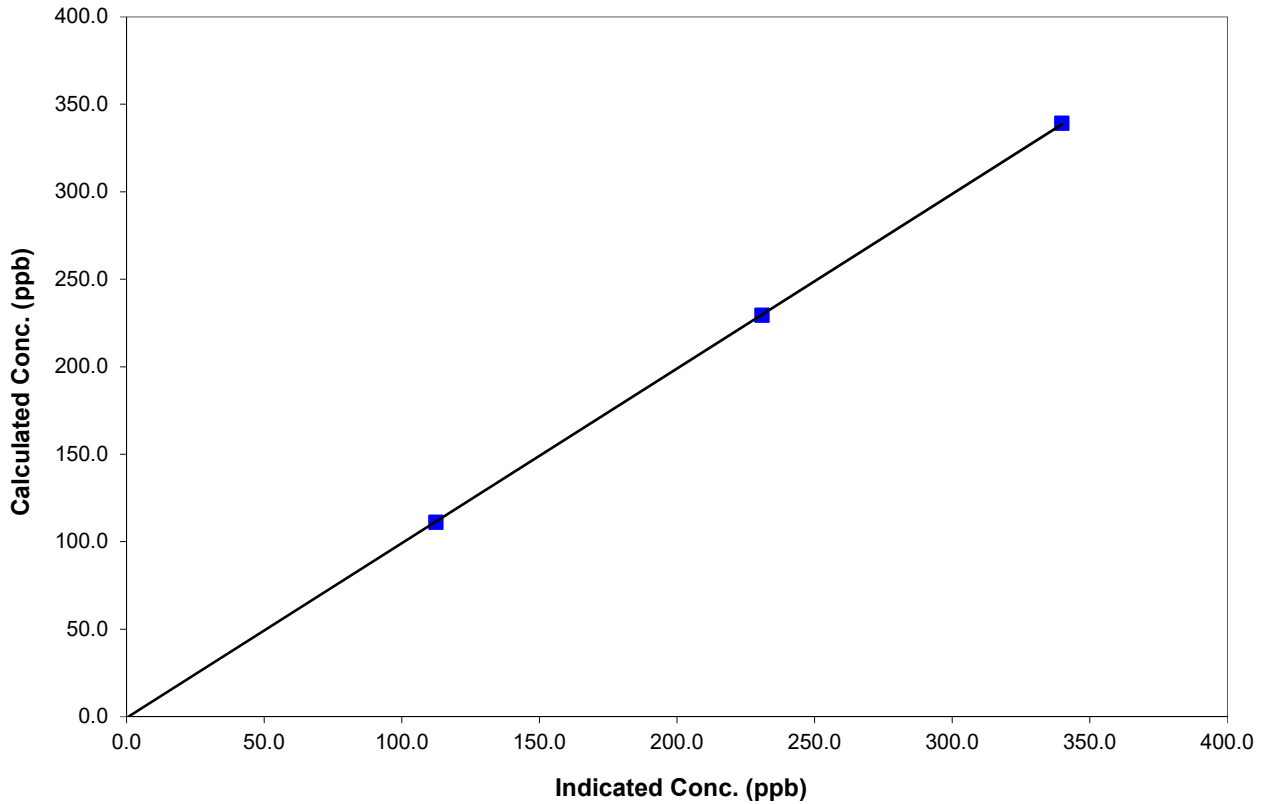
## Station Information

Calibration Date	November 16, 2016	Previous Calibration	October 17, 2016
Station Number	4	Station Location	Beaverlodge
Start Time (MST)	10:12	End Time (MST)	13:30:00 PM
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		
339.2	339.9	0.9979	Correlation Coefficient	0.999977
229.3	230.9	0.9931		
111.0	112.4	0.9871	Slope	0.997798
			Intercept	-0.536914

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



# Calibration Summary



Parameter NO<sub>x</sub>

Air Monitoring Network PAZA

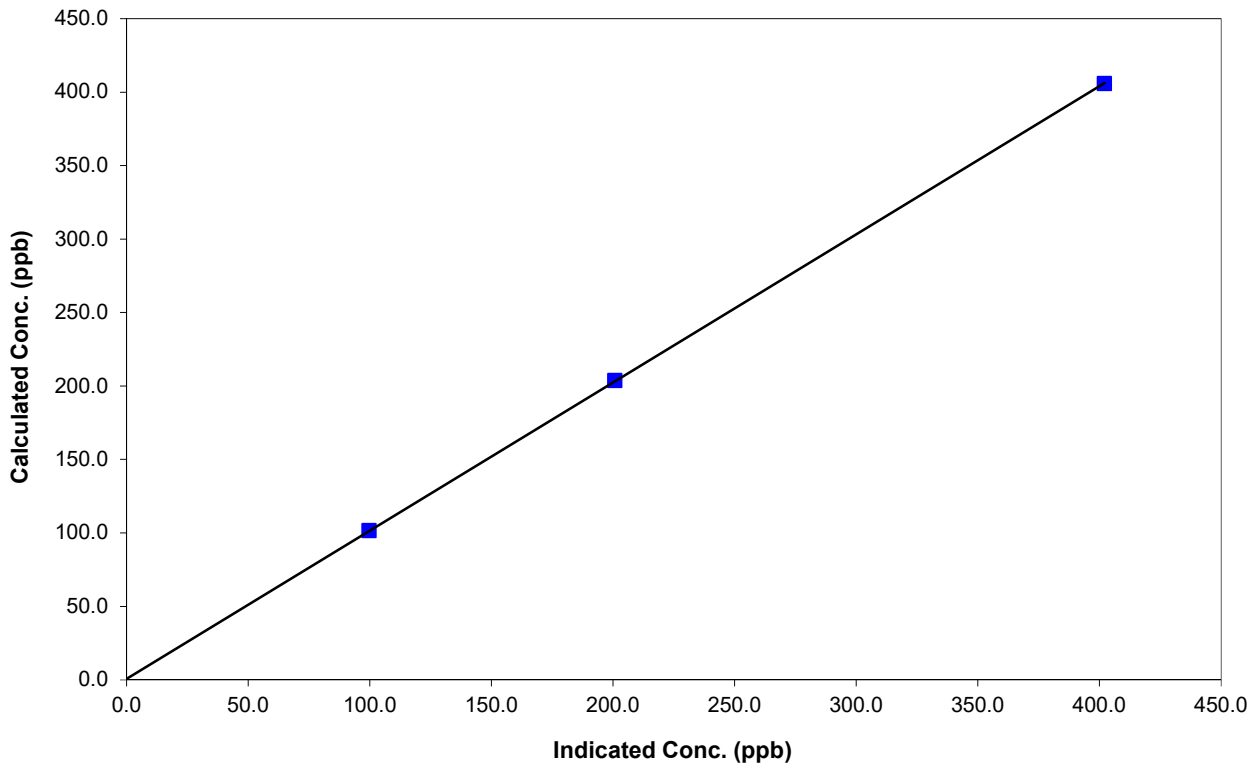
## Station Information

Calibration Date	November 16, 2016	Previous Calibration	October 17, 2016
Station Number	4	Station Location	Beaverlodge
Start Time (MST)	10:12	End Time (MST)	13:30:00 PM
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	0.999991
405.8	402.1	1.0093		
203.6	200.7	1.0143	Slope	1.008470
101.6	99.7	1.0192		
			Intercept	0.690699

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





# Calibration Summary



Parameter NO  
 Air Monitoring Network PAZA

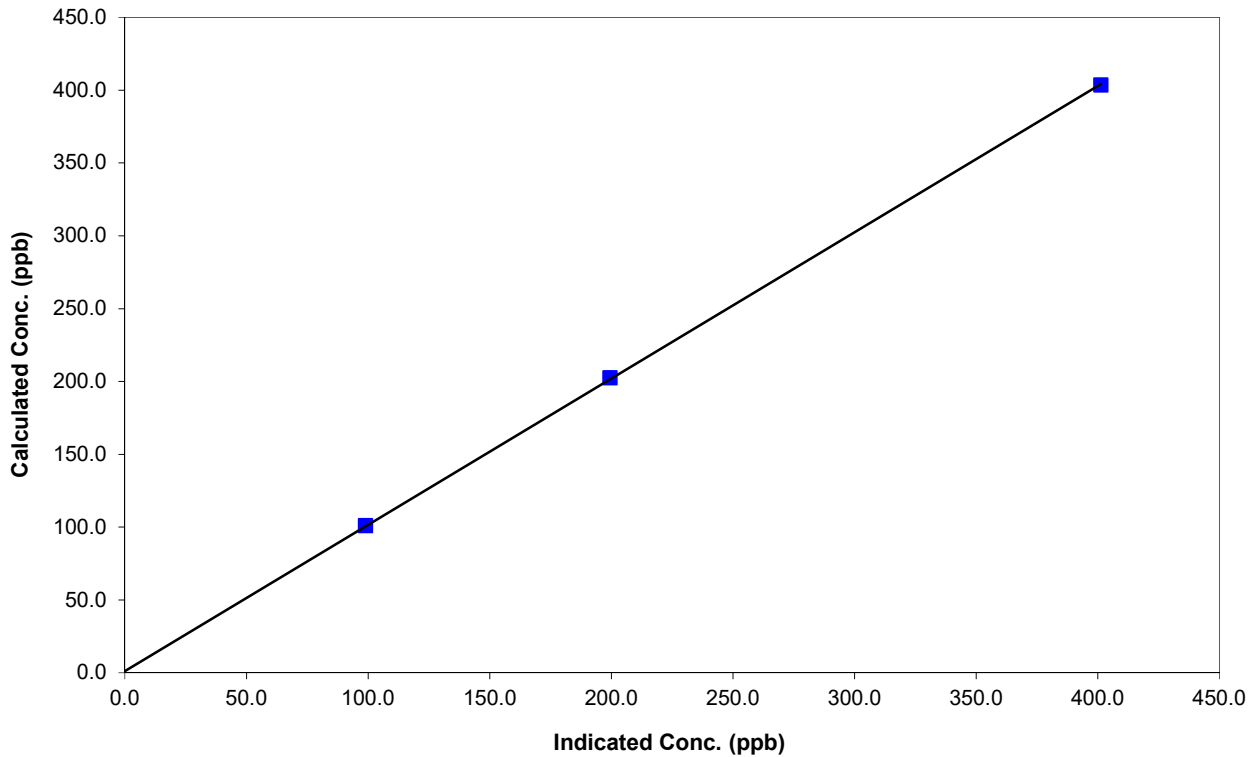
## Station Information

Calibration Date	November 16, 2016	Previous Calibration	October 17, 2016
Station Number	4	Station Location	Beaverlodge
Start Time (MST)	10:12	End Time (MST)	13:30:00 PM
Analyzer make	TEI 42i	Analyzer serial #	906535068

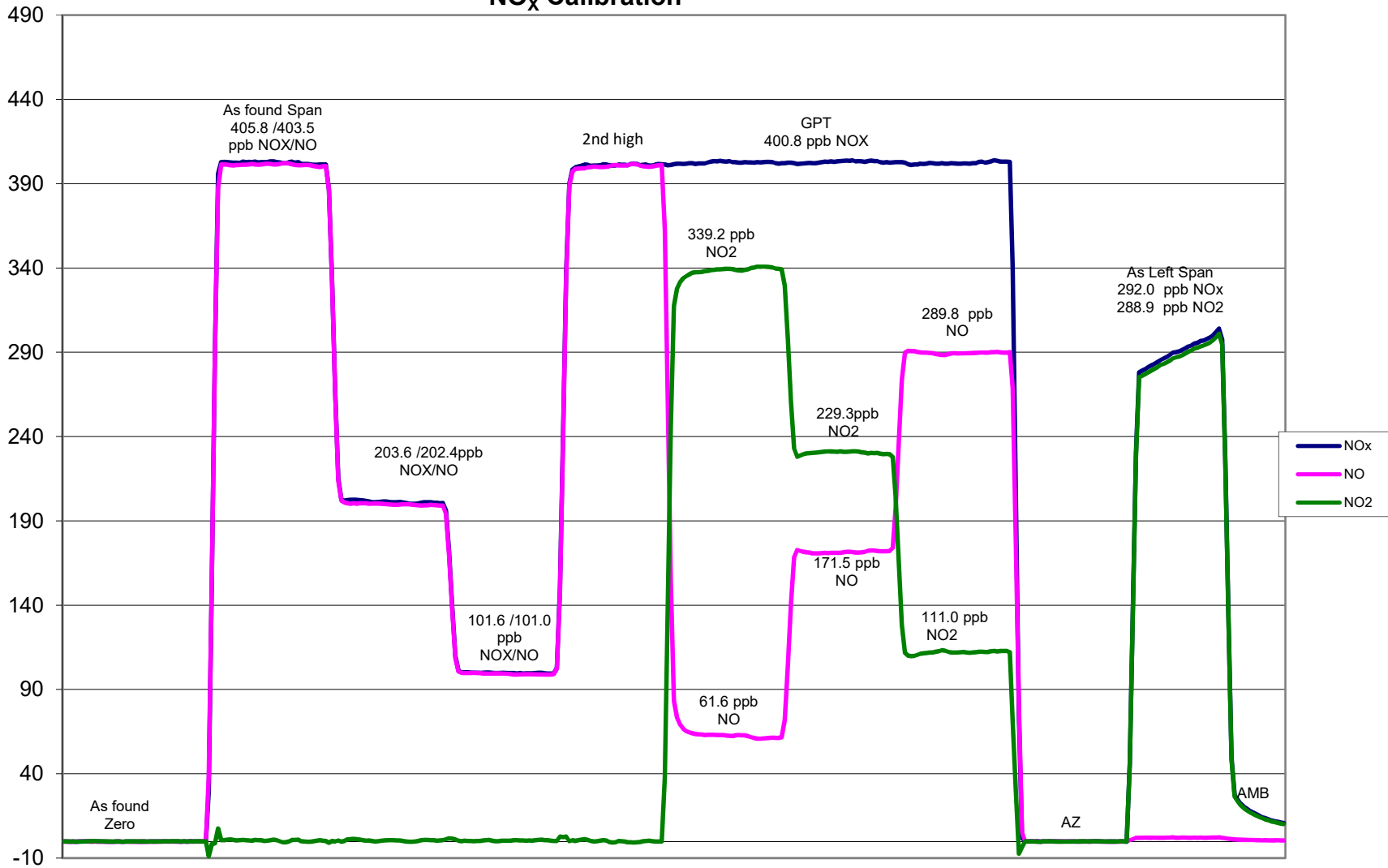
## Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.1	N/A	Correlation Coefficient	0.999973
403.5	401.2	1.0056		
202.4	199.5	1.0145		
101.0	99.0	1.0203		
			Slope	1.004524
			Intercept	1.026034

## NO Calibration Curve



# NO<sub>x</sub> Calibration



November 16, 2016

# Calibration Report



Parameter 03  
Air Monitoring Network PAZA

## Station Information

Calibration Date	November 16, 2016	Previous Calibration	October 17, 2016
Station Number	4	Station Location	Beaverlodge
Reason:	<b>Routine</b>	Install	Removal
		Other:	
Start Time (MST)	12:35	End Time (MST)	14:45:00 PM
Barometric Pressure	0.928 atm	Station Temperature	20.0 Deg C
Calibrator	Envionics	Serial Number	3474
Cal Gas Concentration	NA	Cal Gas Expiry Date	NA
DACS make	CR3000	DACS serial No.	5237
DACS voltage range	0 - 5 volt	DACS channel #	9
	Before		After
Calculated slope	0.999377	Calculated slope	1.015308
Calculated intercept	0.804452	Calculated intercept	-0.337858
Analyzer make	Teco 49i	Analyzer serial #	1136451236,AMU 1879

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
offset	-0.30	ppb	-0.30	ppb
slope	1.016		1.016	
Lamp temp	53.8	mV	53.8	mV
Lamp Intensity A/B	45088/50804	mV	45121/50453	mV
Pressure	676.9	mm Hg	679.3	mm Hg
Flow A	0.779	LPM	0.779	LPM
Flow B	0.740	LPM	0.741	LPM

## Calibration Data

Dilution air flow rate (cc/min)	Calibrator Setting	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
5028	0.00	0.0	0.4	N/A
5028	0.30	339.2	335.5	1.0110
5028	0.20	229.3	224.1	1.0232
5028	0.10	110.0	109.5	1.0041
5028	0.00	0.0	0.4	As found zero
5028	0.30	339.2	335.5	As found span
Average Correction Factor				1.0128

Calculated value of As Found Response: 335.7 ppm      Percent Change of As Found: -1.0%

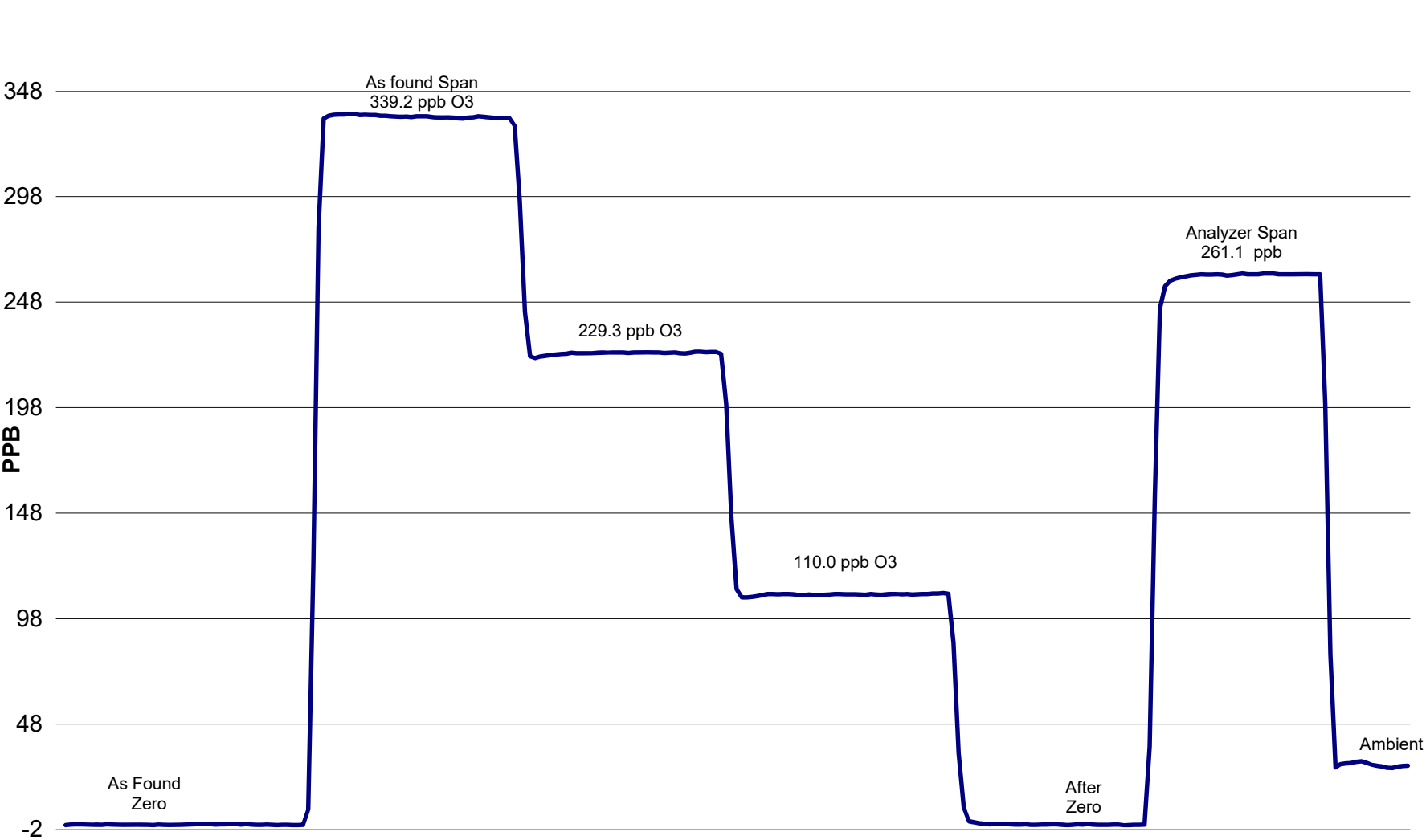
	before calibration		after calibration	
Auto zero	0.4	ppb	0.4	ppb
Auto span	258.4	ppb	261.1	ppb

Notes: No adjustment made  
Intensity A is close to the low limit at 45000mV

Calibration Performed By: Dmytro Dolotii



# O3 Calibration



November 16, 2016

# Calibration Report



AIR QUALITY MONITORING

Parameter SO2

Air Monitoring Network PAZA

## Station Information

Calibration Date	November 25 2016	Previous Calibration	October 20 2016
Station Number	6	Station Location	Valleyview
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
		<input type="checkbox"/> Other:	
Start Time (MST)	12:40	End Time (MST)	14:45:00 PM
Barometric Pressure	0.926 atm	Station Temperature	21.5 Deg C
Calibrator	Envionics	Serial Number	3016
Cal Gas Concentration	49.7 ppm	Cal Gas Exp Date	November 5, 2018
Gas Cylinder Num.	LL103793		
DACS make	CR3000	DACS serial No.	5409
DACS voltage range	0 - 5 volt	DACS channel #	4
	<u>Before</u>		<u>After</u>
DACS Scale High	500	DACS slope	500
DACS Scale Low	0	DACS intercept	0
Calculated slope	0.997109	Calculated slope	0.999462
Calculated intercept	0.509081	Calculated intercept	1.356958
Analyzer make	TEI 43C	Analyzer serial #	609716239

	before		after	
Concentration range	0-500	ppb	0-500	ppb
Background	16.6		16.6	
Coefficient	1.011		1.011	
UV Lamp Voltage	738	LPM	738	LPM
Chamber Temp	43	V	43	V
Perm Gas Temp	45	C	45	C
Pressure	665	in Hg	665.3	in Hg
Sample Flow	0.483	LPM	0.483	LPM
Lamp Intensity	47522	Hz	47235	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	0.2	N/A
4997	39.93	394.0	393.7	1.0008
4999	19.99	197.9	195.7	1.0116
4995	9.95	98.8	96.2	1.0273
4995	0.00	0.0	0.2	As found zero
4995	39.93	394.2	393.7	As found span
Average Correction Factor				1.0132

Calculated value of As Found Response: 392.9 ppm      Percent Change of As Found: 0.3%

	before calibration		after calibration	
Auto zero	0.0	ppm	0.2	ppm
Auto span	282.2	ppm	281.4	ppm

Notes: No adjustments made

# Calibration Summary

Parameter SO2  
 Air Monitoring Network PAZA



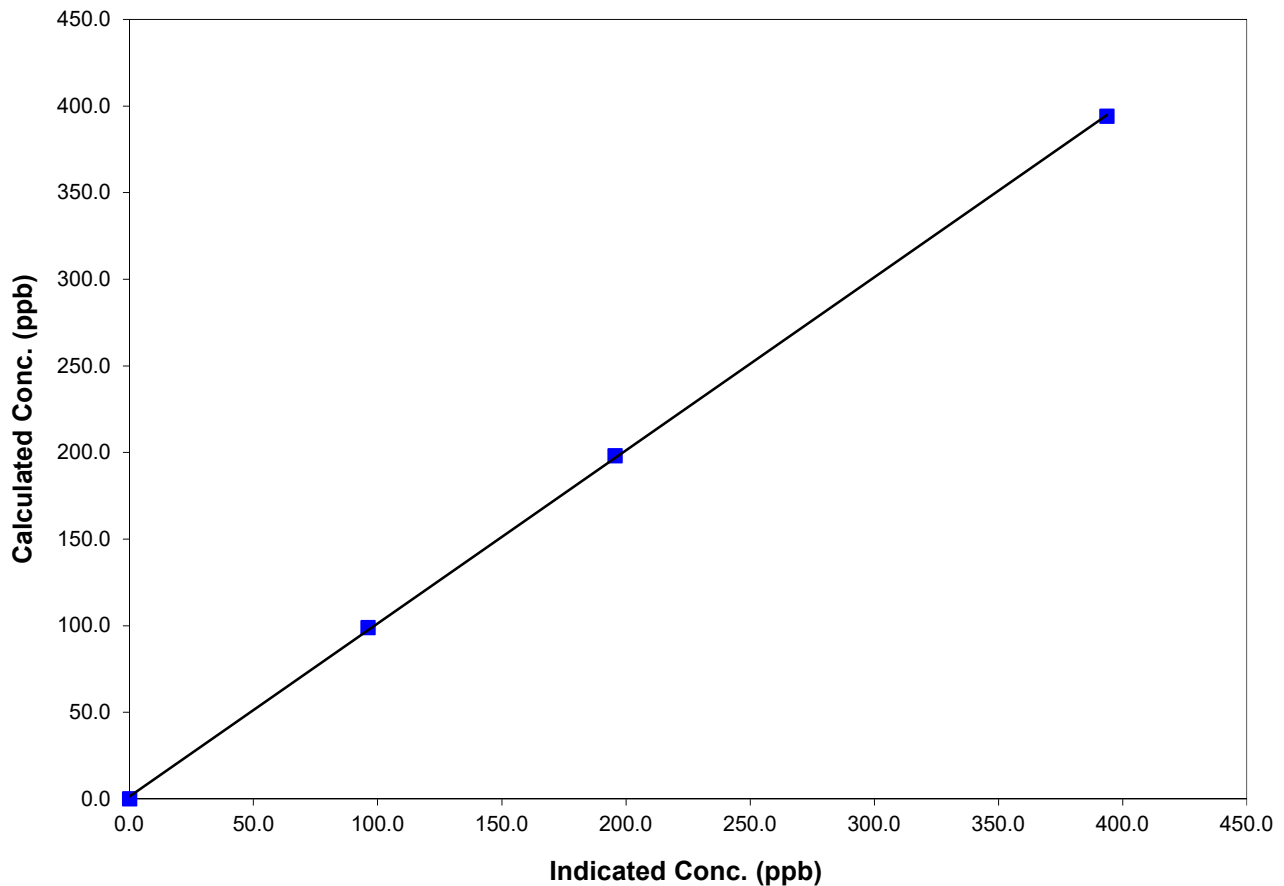
### Station Information

Calibration Date	November 25 2016	Previous Calibration	October 20 2016
Station Number	6	Station Location	Valleyview
Start Time (MST)	12:40	End Time (MST)	14:45:00 PM
Analyzer make/model	TEI 43C	Analyzer serial #	609716239

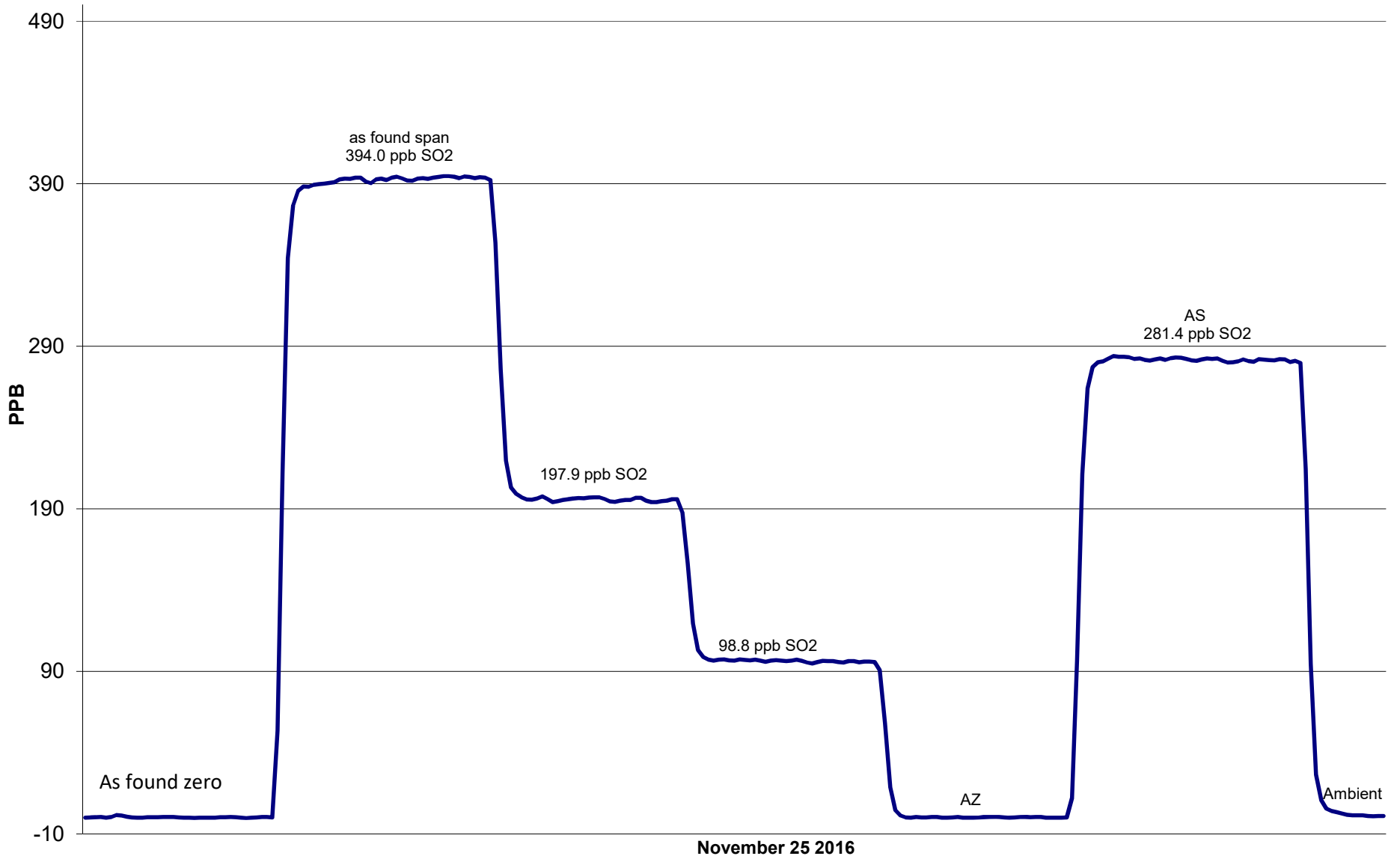
### Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.2	N/A		
394.0	393.7	1.0008	Correlation Coefficient	0.999932
197.9	195.7	1.0116		
98.8	96.2	1.0273	Slope	0.999462
			Intercept	1.356958

## SO2 Calibration Curve



### SO2 Calibration







# Calibration Summary



Parameter                   H2S                    
Air Monitoring Network   PAZA  

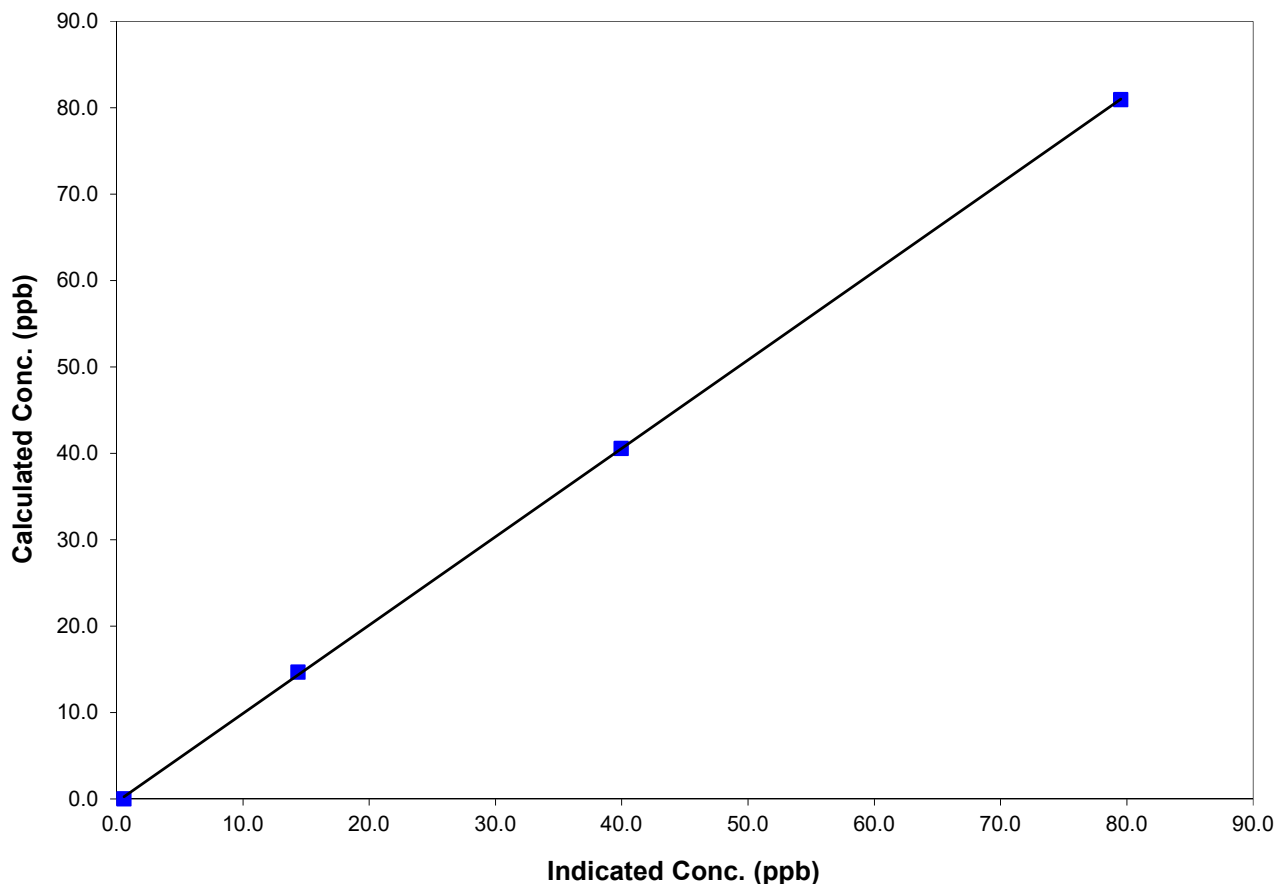
### Station Information

Calibration Date	<u>          November 25 2016          </u>	Previous Calibration	<u>          October 20 2016          </u>
Station Number	<u>                                6                                </u>	Station Location	<u>                                Valleyview                                </u>
Start Time (MST)	<u>                                10:20                                </u>	End Time (MST)	<u>                                13:50:00 PM                                </u>
Analyzer make/model	<u>          TEI Model 43i - APSCB          </u>	Analyzer serial #	<u>                                701120010                                </u>

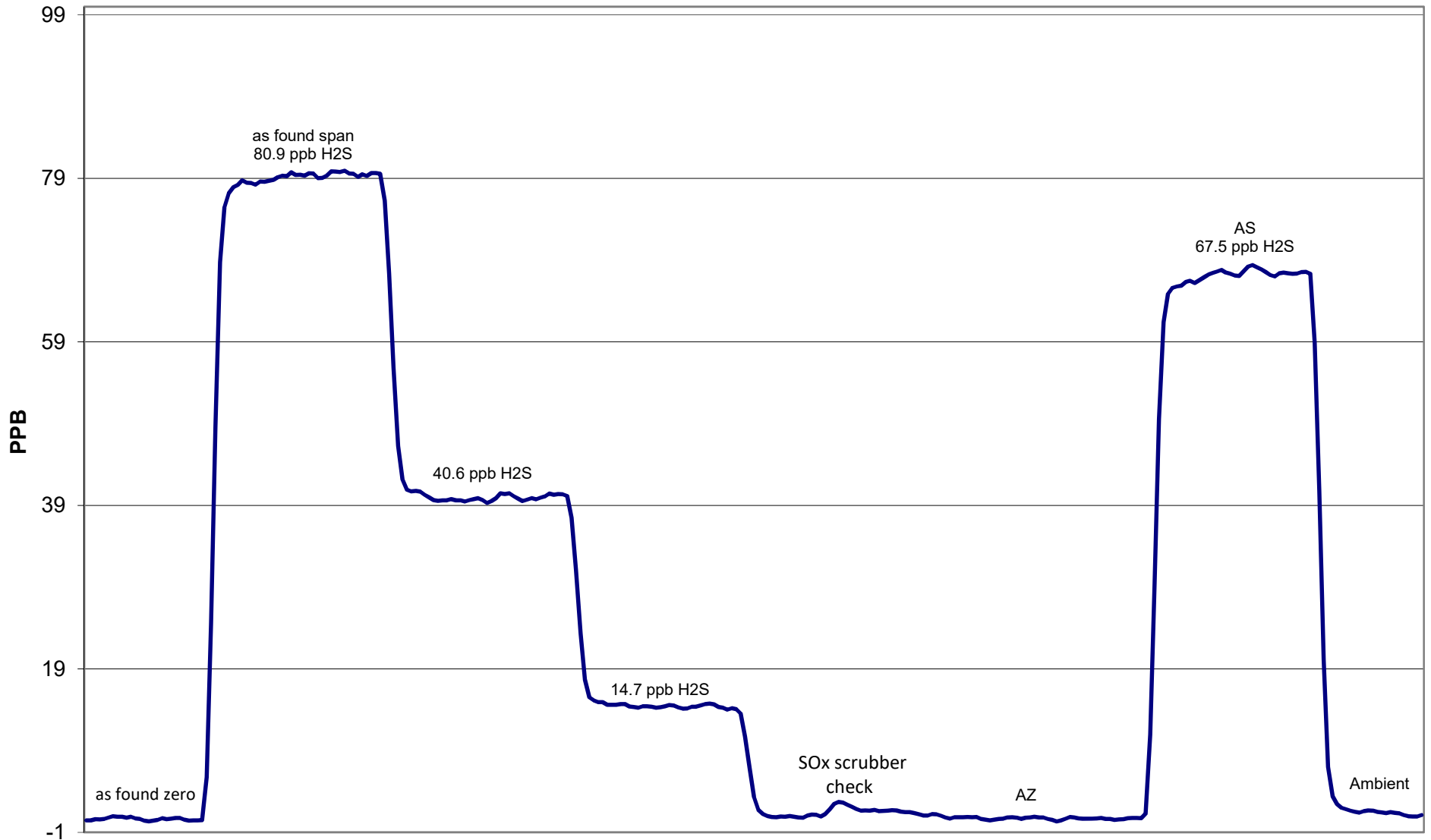
### Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.6	N/A		
80.9	79.5	1.0180	Correlation Coefficient	0.999955
40.6	40.0	1.0150		
14.7	14.4	1.0217	Slope	1.022857
			Intercept	-0.328168

## H2S Calibration Curve



# H2S Calibration



November 25 2016



# Calibration Summary

Parameter H2S  
 Air Monitoring Network PAZA



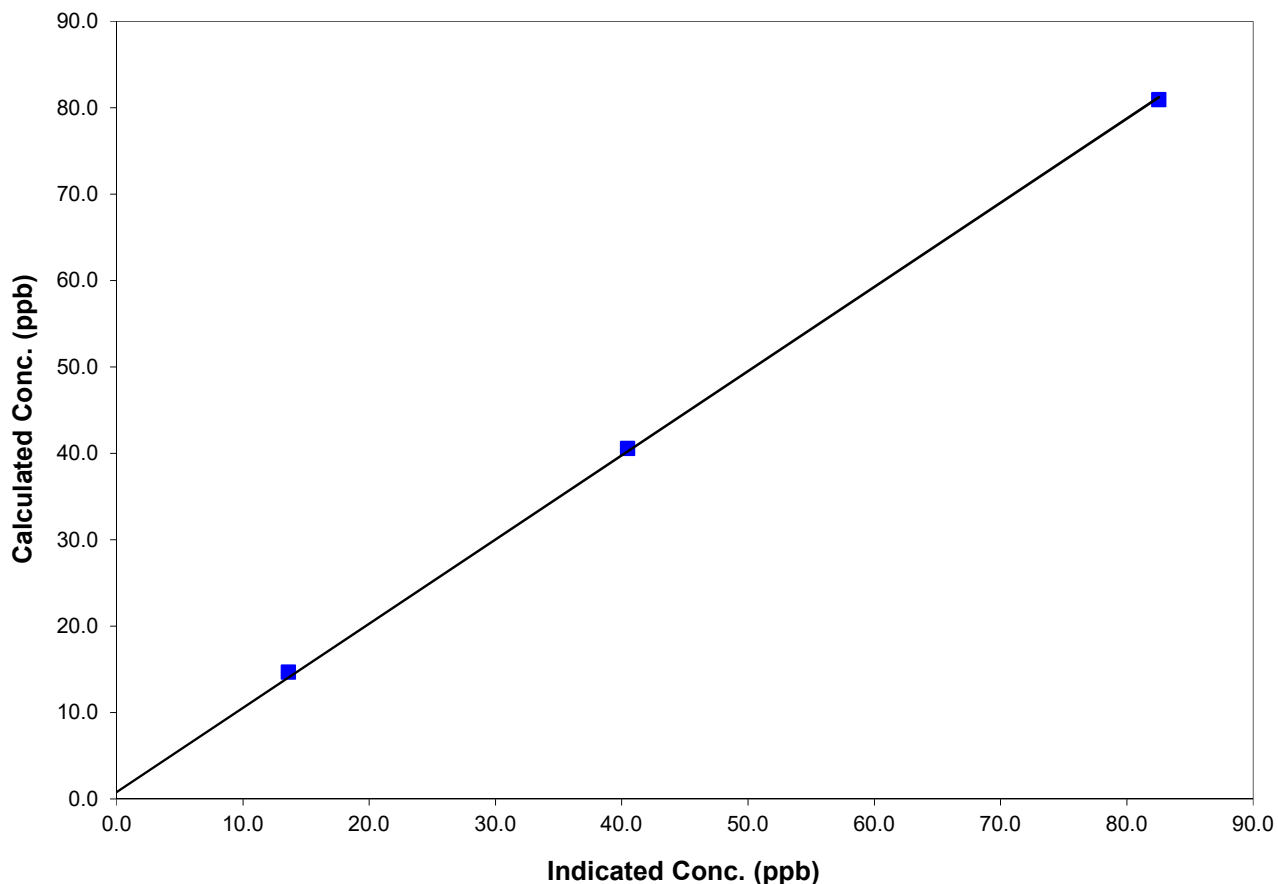
### Station Information

Calibration Date	November 30 2016	Previous Calibration	November 25 2016
Station Number	6	Station Location	Valleyview
Start Time (MST)	10:50	End Time (MST)	17:45:00 PM
Analyzer make/model	TEI Model 43i - APSCB	Analyzer serial #	701120010

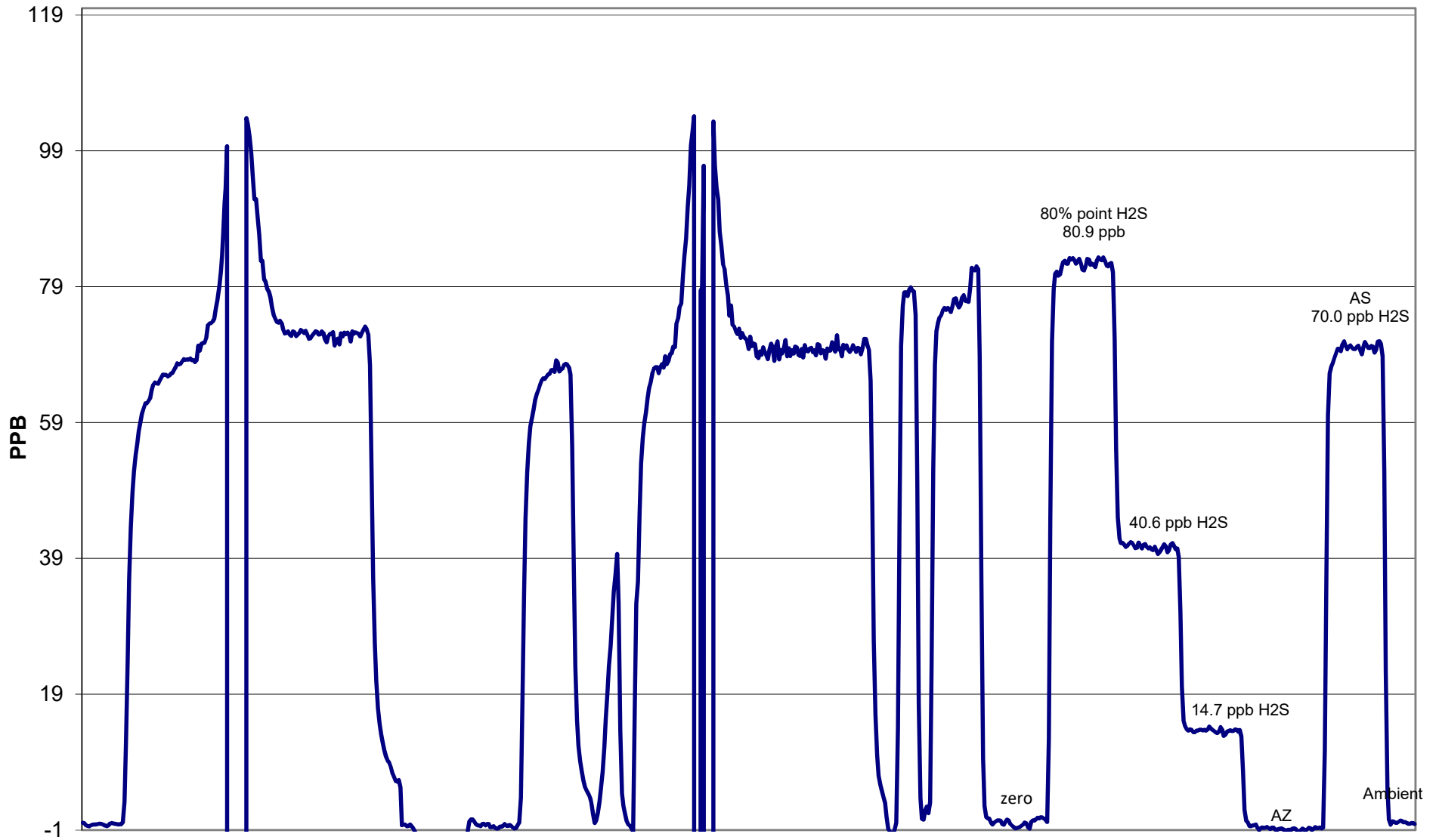
### Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.1	N/A	Correlation Coefficient	0.999726
80.9	82.5	0.9806		
40.6	40.5	1.0022		
14.7	13.6	1.0781	Slope	0.974214
			Intercept	0.798248

## H2S Calibration Curve



# H2S Calibration



November 30 2016

# Calibration Report



Parameter SO<sub>2</sub>

Air Monitoring Network PAZA

## Station Information

Calibration Date	November 22, 2016	Previous Calibration	October 19, 2016
Station Number	1	Station Location	Donnelly
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
			<input type="checkbox"/> Other:
Start Time (MST)	9:10	End Time (MST)	11:10
Barometric Pressure	0.925 mm	Station Temperature	20.5 Deg C
Calibrator	Envionics	Serial Number	6586
Cal Gas Concentration	49.7 ppm	Cal Gas Expiry Date	11/5/2018
Correction factor	0.031390	Cal Gas Cylinder #	LL103793
DACS make	CR1000	DACS serial No.	3980
DACS voltage range	0 - 5 volt	DACS channel #	6
	<u>Before</u>		<u>After</u>
Calculated slope	0.985001	Calculated slope	0.981175
Calculated intercept	-0.018021	Calculated intercept	-0.149097
Analyzer make	Teco 43i	Analyzer serial #	1207452008

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Background	6.5		6.5	
coefficient	0.929		0.929	
Lamp Voltage	855	volts	855	volts
Chamber Temp	45.2	Deg C	44.9	Deg C
Perm Gas Temp	45	Deg C	45	Deg C
Pressure	678.8	mm Hg	680.6	mm Hg
Sample Flow	0.396	ccm	0.399	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	1.0	N/A
4995	39.93	394.2	402.4	0.9794
4995	19.96	197.8	200.8	0.9849
4995	9.97	99.0	100.6	0.9846
4995	0.0	0.0	1.0	As Found Zero
4995	39.93	394.2	402.4	As Found Span
Average Correction Factor				0.9829

Calculated value of As Found Response: 395.418 ppm      Percent Change of As Found: **-0.3%**

	before calibration		after calibration	
Auto zero	1.0	ppm	1.1	ppm
Auto span	261.3	ppm	264.6	ppm

Notes: No adjustment made

Calibration Performed By: Dmytro Dolotii

# Calibration Summary

Parameter SO2  
 Air Monitoring Network PAZA



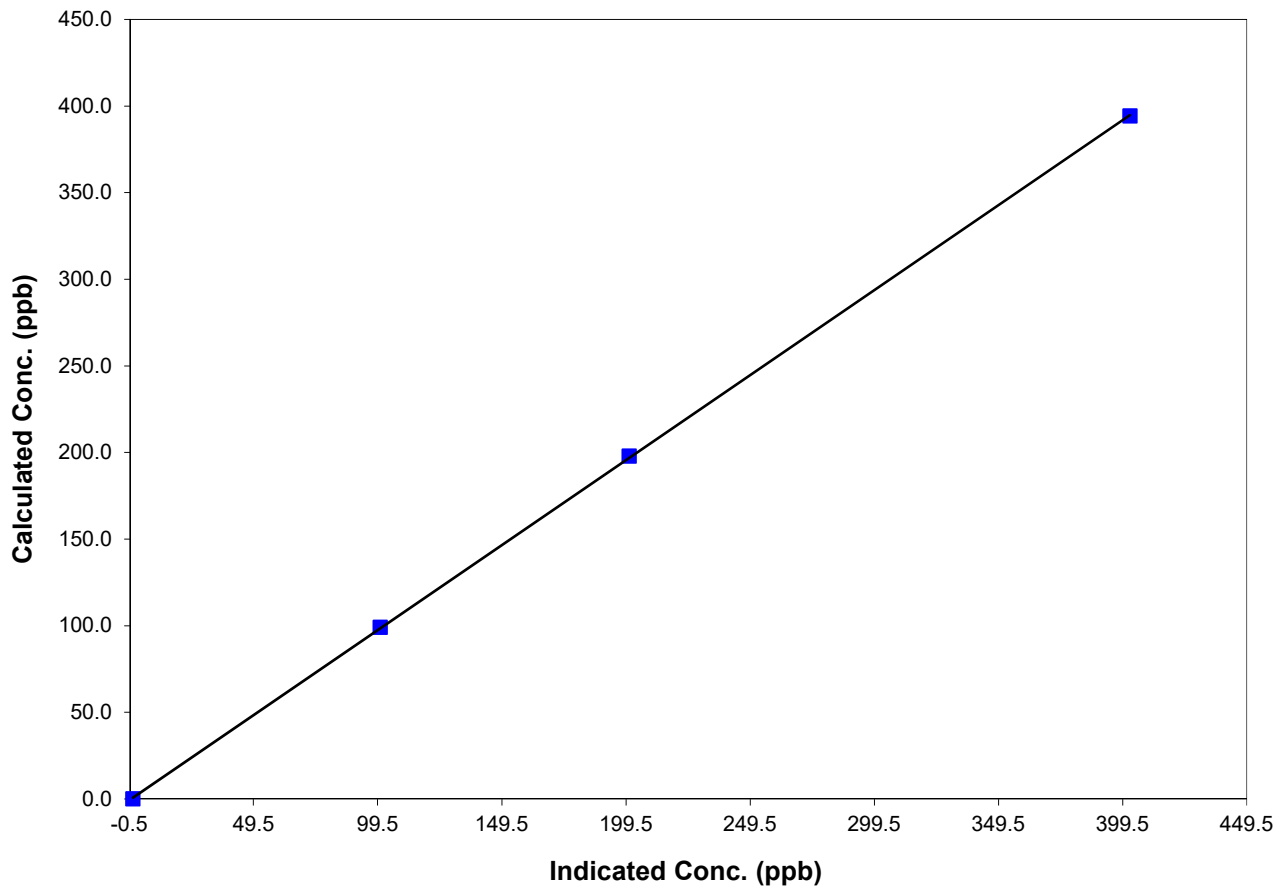
### Station Information

Calibration Date	November 22, 2016	Previous Calibration	October 19, 2016
Station Number	1	Station Location	Donnelly
Start Time (MST)	9:10	End Time (MST)	11:10
Analyzer make/model	Teco 43i	Analyzer serial #	1207452008

### Calibration Data

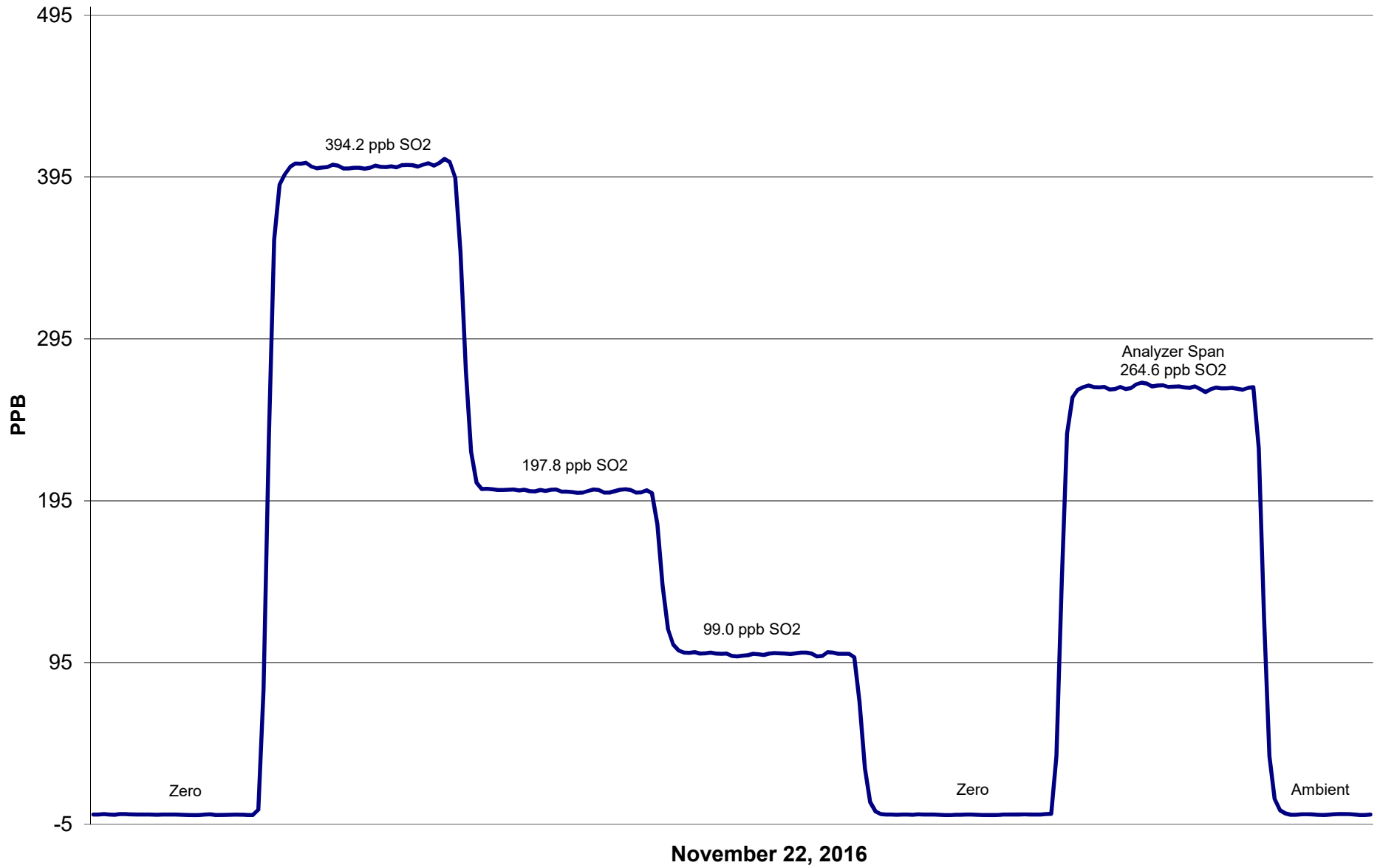
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	1.0	N/A		
394.2	402.4	0.9794	Correlation Coefficient	0.999976
197.8	200.8	0.9849		
99.0	100.6	0.9846	Slope	0.981175
			Intercept	-0.149097

## SO2 Calibration Curve





# SO2 Calibration



# Calibration Report



Parameter H2S  
Air Monitoring Network PAZA

### Station Information

Calibration Date	November 22, 2016	Previous Calibration	October 19, 2016
Station Number	1	Station Location	Donnelly
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
		<input type="checkbox"/> Other:	
Start Time (MST)	7:24	End Time (MST)	10:15
Barometric Pressure	0.925 mm	Station Temperature	20.5 Deg C
Calibrator	EnviroNics	Serial Number	6586
Cal Gas Conc	10.2 ppm	Cal Gas Expiry Date	7/8/2016
Correction factor	0.031390	Cal Gas Cylinder #	LL103793
DACS make	CR1000	DACS serial No.	3980
DACS voltage range	0 - 5 volt	DACS channel #	5
	<u>Before</u>		<u>After</u>
Calculated slope	0.992568	Calculated slope	0.998979
Calculated intercept	-0.602681	Calculated intercept	-0.630997
Analyzer make	Thermo 450i	Analyzer serial #	1207452006

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Background	15.4	ppb	14.9	ppb
coefficient	1.063		1.031	
Lamp Voltage	805	volts	806	volts
Chamber Temp	45	Deg C	45	Deg C
Perm Gas Temp	45	Deg C	45	Deg C
Pressure	487.8	mm Hg	487.8	mm Hg
Sample Flow	0.761	lpm	0.765	lpm
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	1.0	N/A
4995	39.93	80.89	81.8	0.9887
4995	19.96	40.60	40.9	0.9920
6994	9.97	14.52	15.0	0.9708
4995	0.00	0.00	1.0	As Found Zero
4995	39.93	80.89	84.0	As Found Span
Average Correction Factor				0.9838

Calculated value of As Found Response: 81.77 ppm      Percent Change of As Found: **-1.1%**

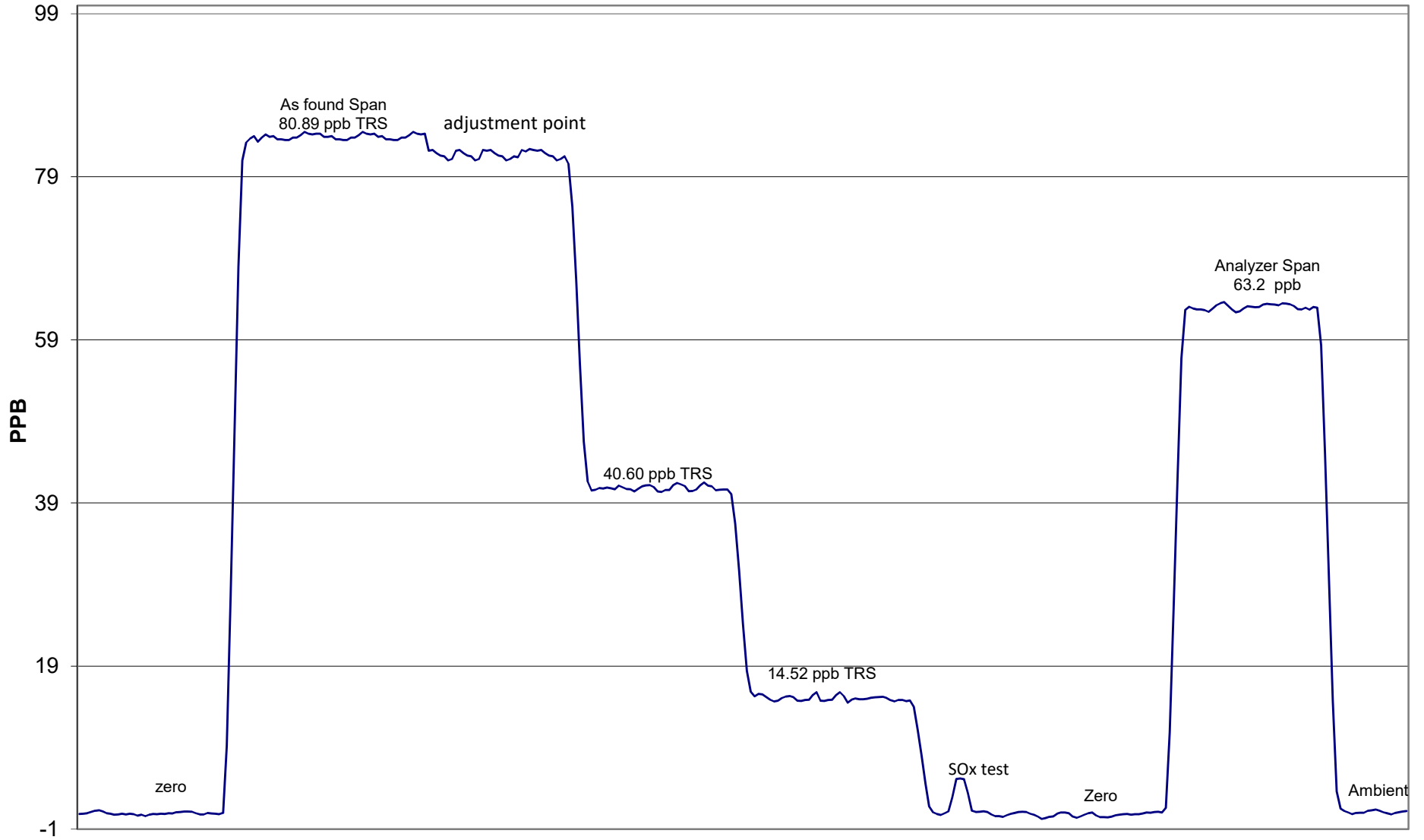
	before calibration		after calibration	
Auto zero	0.8	ppm	0.7	ppm
Auto span	63.9	ppm	63.2	ppm

Notes: Span adjustment made

Calibration Performed By: Dmytro Dolotii



# H2S Calibration



November 22, 2016

# Calibration Report



AIR QUALITY MONITORING

Parameter SO2

Air Monitoring Network PAZA

## Station Information

Calibration Date	November 1, 2016	Previous Calibration	October 12, 2016
Station Number	10	Station Location	Clairmont
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
		<input type="checkbox"/> Other:	
Start Time (MST)	9:40	End Time (MST)	12:15
Barometric Pressure	0.929 Atm	Station Temperature	17.0 Deg C
Calibrator	EnviroNics 6103	Serial Number	6586
Cal Gas Concentration	49.8 ppm	Cal Gas Expiry Date	3/10/2017
Gas Cert Reference	LL119493		
DACS make	CR3000	DACS serial No.	5407
DACS voltage range	0 - 5 Volt	DACS channel #	2
	<u>Before</u>		<u>After</u>
DACS Scale High	500	DACS slope	500
DACS Scale Low	0	DACS intercept	0
Calculated slope	0.985621	Calculated slope	1.000552
Calculated intercept	0.985696	Calculated intercept	0.887183
Analyzer make	TEI 43C	Analyzer serial #	436610005

	before		after	
Concentration range	0-500	ppb	0-500	ppb
Background	23.1		23.4	
Coefficient	1.041		1.056	
UV Lamp Voltage	891	V	891	V
Chamber Temp	44.7	C	44.4	C
Perm Gas Temp	45	C	45	C
Pressure	674.1	mm Hg	673.8	mm Hg
Sample Flow	0.466	LPM	0.467	LPM
Lamp Intesity	30454	Hz	30374	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)
4998	0.00	0.0	0.3	N/A
4996	39.95	395.1	394.7	1.0010
4997	19.98	198.3	196.3	1.0102
4999	9.94	98.8	97.0	1.0189
4998	0.00	0.0	0.3	As found zero
4999	39.93	394.6	389.6	As found span
Average Correction Factor				1.0100

Calculated value of As Found Response: 384.724 ppm      Percent Change of As Found: 2.5%

	before calibration		after calibration	
Auto zero	0.3	ppm	0.3	ppm
Auto span	206.2	ppm	203.5	ppm

Notes: Span adjustment made

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# Calibration Summary

Parameter SO2  
 Air Monitoring Network PAZA

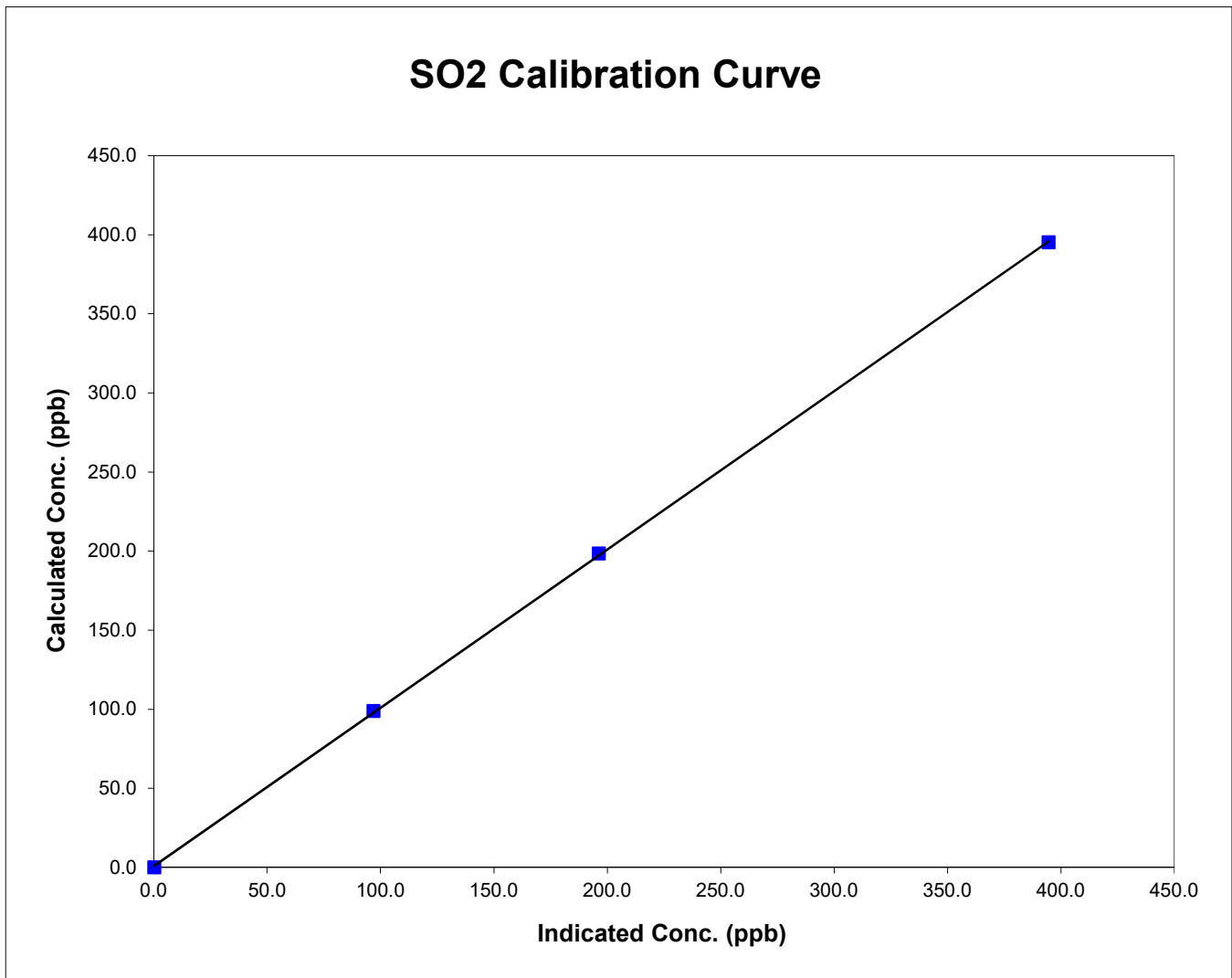


### Station Information

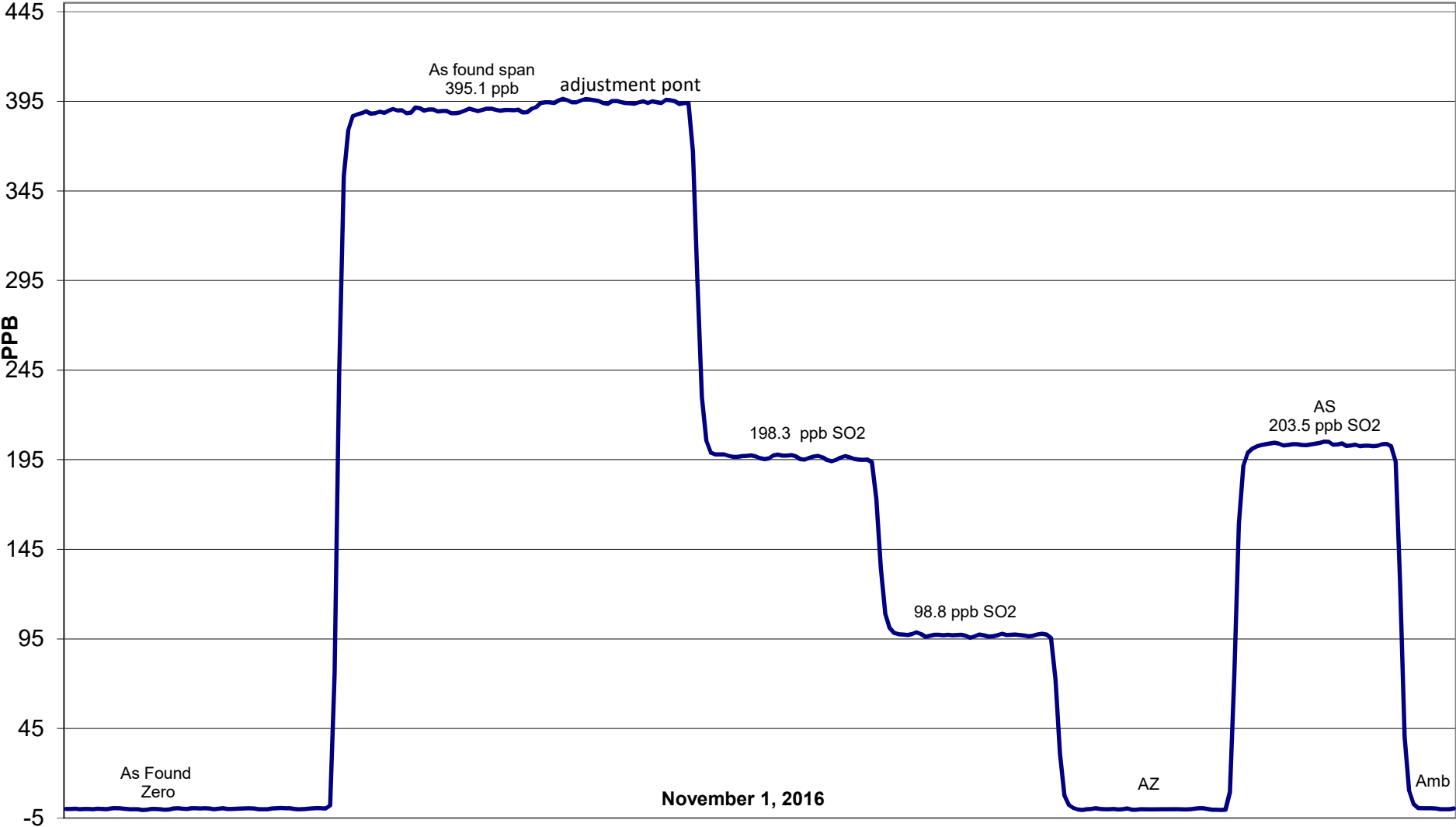
Calibration Date	November 1, 2016	Previous Calibration	October 12, 2016
Station Number	10	Station Location	Clairmont
Start Time (MST)	9:40	End Time (MST)	12:15
Analyzer make/model	TEI 43C	Analyzer serial #	436610005

### Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.3	N/A	Correlation Coefficient	0.999957
395.1	394.7	1.0010		
198.3	196.3	1.0102	Slope	1.000552
98.8	97.0	1.0189		
			Intercept	0.887183



# SO2 Calibration



# Calibration Report

Parameter  
Air Monitoring Network

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



## Station Information

Calibration Date	November 1, 2016		Previous Calibration	October 12, 2016	
Station Number	10		Station Location	Rycroft	
Reason:	<b>Routine</b>	Installation	Removal	Other: _____	
Start Time (MST)	9:50		End Time (MST)	13:45:00 PM	
Barometric Pressure	0.929	Atm	Station Temperature	17.0	Deg C
Calibrator	EnviroNics		Serial Number	6586	
NO Cal Gas Conc	50.9	ppm	Cal Gas Expiry Date	March 10, 2017	
NOx Cal Gas Conc	51.2	ppm	Cal Gas Serial #	LL103793	

## DACS Information

DACS make	CR3000		DACS serial No.	5407	
	Parameter	NO2	NOx	NO	
Before	Data Slope	0.992954	0.998741	0.995989	
	Data Offset	-0.147093	1.286163	0.935799	
After	Data Slope	1.000056	1.002085	1.000491	
	Data Offset	-0.603488	0.296170	0.134042	
	Channel #	8	6	7	
	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	7.8	mV	8.1	mV	
NOx bkgnd	8.0	mV	8.3	mV	
NO coefficient	1.469		1.499		
NOx coefficient	0.999		0.999		
NO2 conv temp	323.2	Deg C	323.4	Deg C	
PMT Temp	-3.0	Deg C	-3.0	Deg C	
PMT Volt	-835.1	mV	-835.2	mV	
R Cell Press	232.5	in Hg	228.3	in Hg	
Sample Flow	0.620	LPM	0.641	LPM	

Notes: Span adjustment made



# Calibration Report



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

## Station Information

Calibration Date: November 1, 2016 Station Location: Rycroft

## 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	4994	0.00	0.0	0.0	0.0	-0.2	-0.1	0.0	N/A	N/A
1	4995	39.92	405.9	403.6	2.4	404.9	403.3	-0.1	1.0026	1.0006
2	4994	19.96	203.8	202.6	1.2	203.0	202.1	0.0	1.0043	1.0026
3	4998	9.98	102.0	101.4	0.6	101.5	101.5	0.2	1.0052	0.9998
AFZ	4994	0.00	0.0	0.0	0.0	-0.2	-0.1	0.0	0.0000	0.0000
AFS	4999	39.92	405.6	403.2	0.8	397.3	396.2	-0.5	1.0209	1.0179
Average Correction Factor									1.0040	1.0010

As Found Concentrations: NO<sub>x</sub>= 398.3 NO= 395.7 As Found Percent Change NO<sub>x</sub>= -1.8% NO= -1.9%

## GPT Calibration Data

Dilution Flow 4995 ccm Source Gas Flow 39.93 ccm

O3 Setpoint (ppb)	Indicated NOx 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	0.0	N/A	N/A	N/A	N/A
NO point	407.6	407.6	0.0	408.8	407.6	-0.8	0.9972	1.0000	N/A	N/A
300	407.6	65.6	342.0	409.2	65.6	342.1	0.9961	1.0000	0.9998	100.0%
200	407.6	176.8	230.8	410.8	176.8	231.9	0.9923	1.0000	0.9954	100.5%
100	407.6	296.5	111.1	411.0	296.5	112.4	0.9918	1.0000	0.9891	101.1%
Average Correction Factor							0.9934	1.0000	0.9948	100.5%

## AIC Data

Parameter	Previous calibration				Current calibration			
	NOx	NO2	NO		NOx	NO2	NO	
Auto zero	-0.1	-0.1	0.0	ppb	0.0	0.1	0.0	ppb
Auto span	157.4	155.4	1.3	ppb	169.3	167.4	1.2	ppb

Calibration Performed By: Dmytro Dolotii

# Calibration Summary



Parameter NO<sub>2</sub>

Air Monitoring Network PAZA

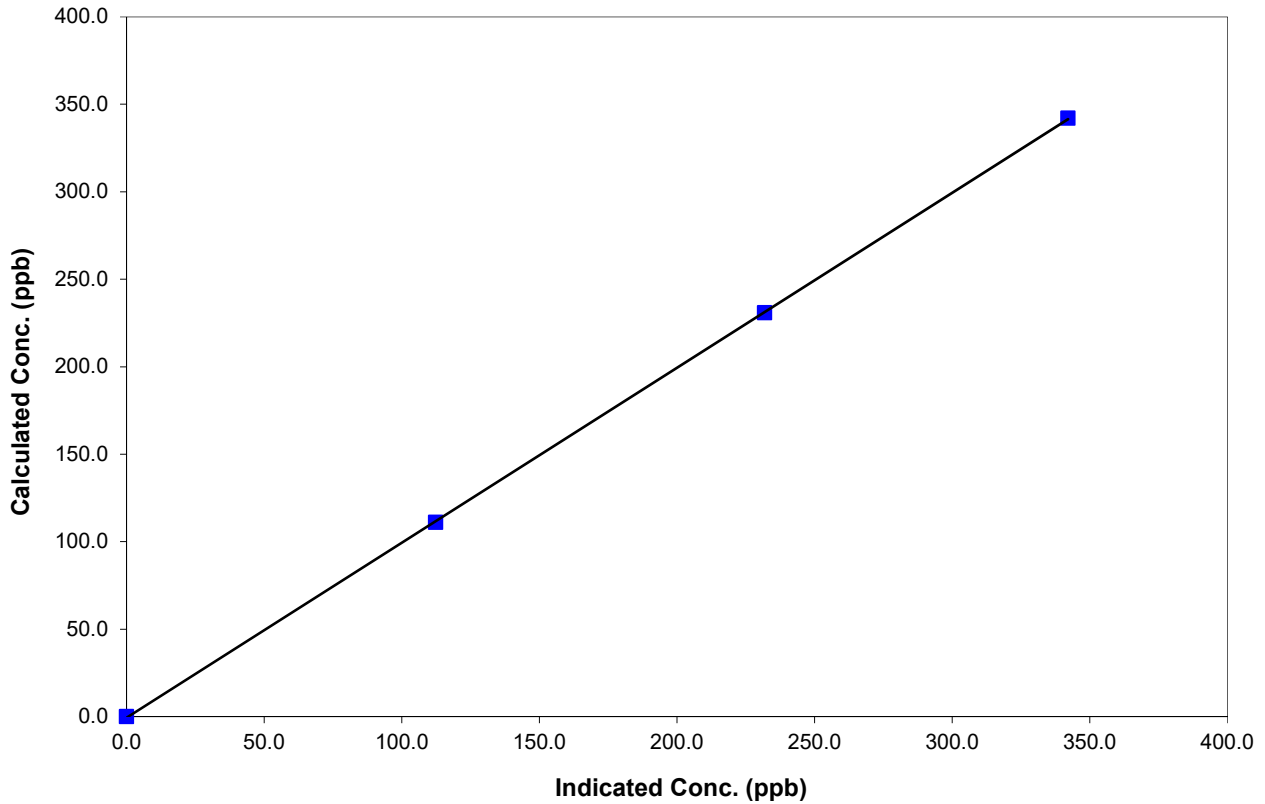
## Station Information

Calibration Date	November 1, 2016	Previous Calibration	October 12, 2016
Station Number	10	Station Location	Rycroft
Start Time (MST)	9:50	End Time (MST)	13:45:00 PM
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	0.999982
342.0	342.1	0.9998		
230.8	231.9	0.9954	Slope	1.000056
111.1	112.4	0.9891		
			Intercept	-0.603488

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



# Calibration Summary



Parameter NO<sub>x</sub>

Air Monitoring Network PAZA

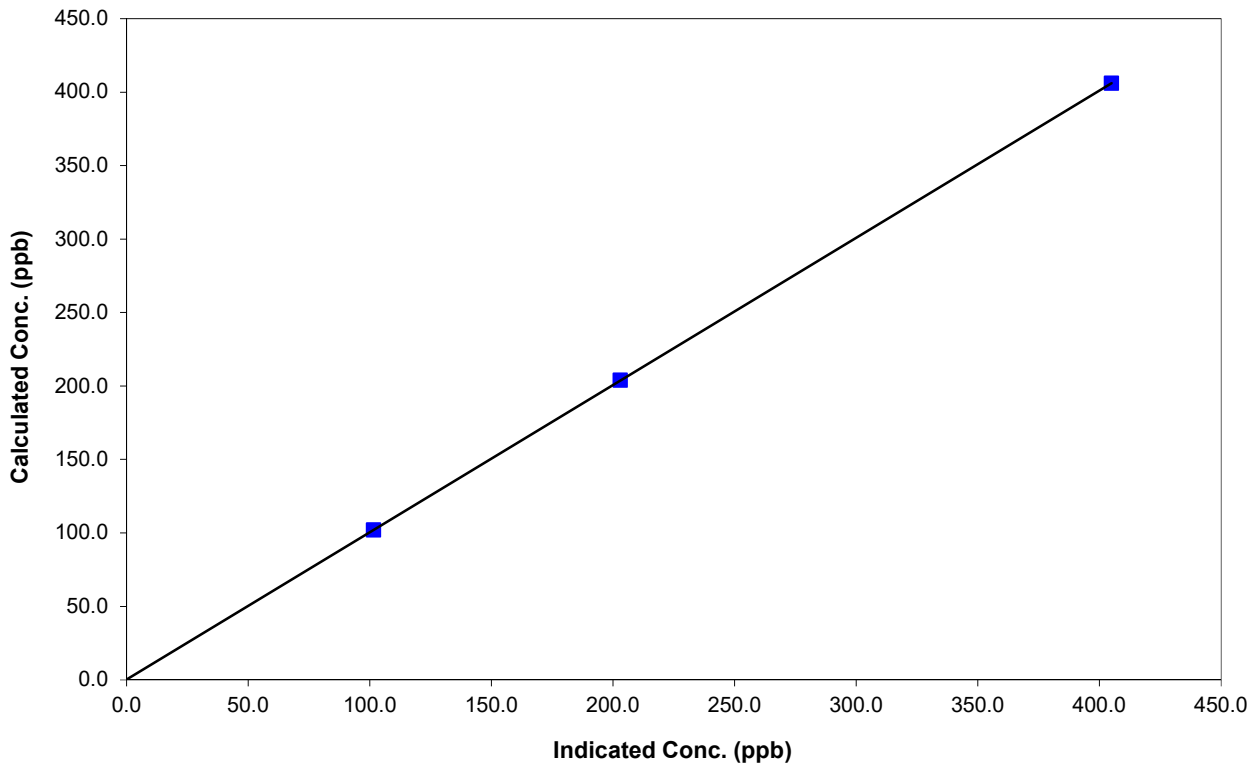
## Station Information

Calibration Date	November 1, 2016	Previous Calibration	October 12, 2016
Station Number	10	Station Location	Rycroft
Start Time (MST)	9:50	End Time (MST)	13:45:00 PM
Analyzer make	TEI 42i	Analyzer serial #	0701120011

## Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.2	N/A	Correlation Coefficient	1.000000
405.9	404.9	1.0026		
203.8	203.0	1.0043	Slope	1.002085
102.0	101.5	1.0052		
			Intercept	0.296170

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



# Calibration Summary



Parameter NO  
 Air Monitoring Network PAZA

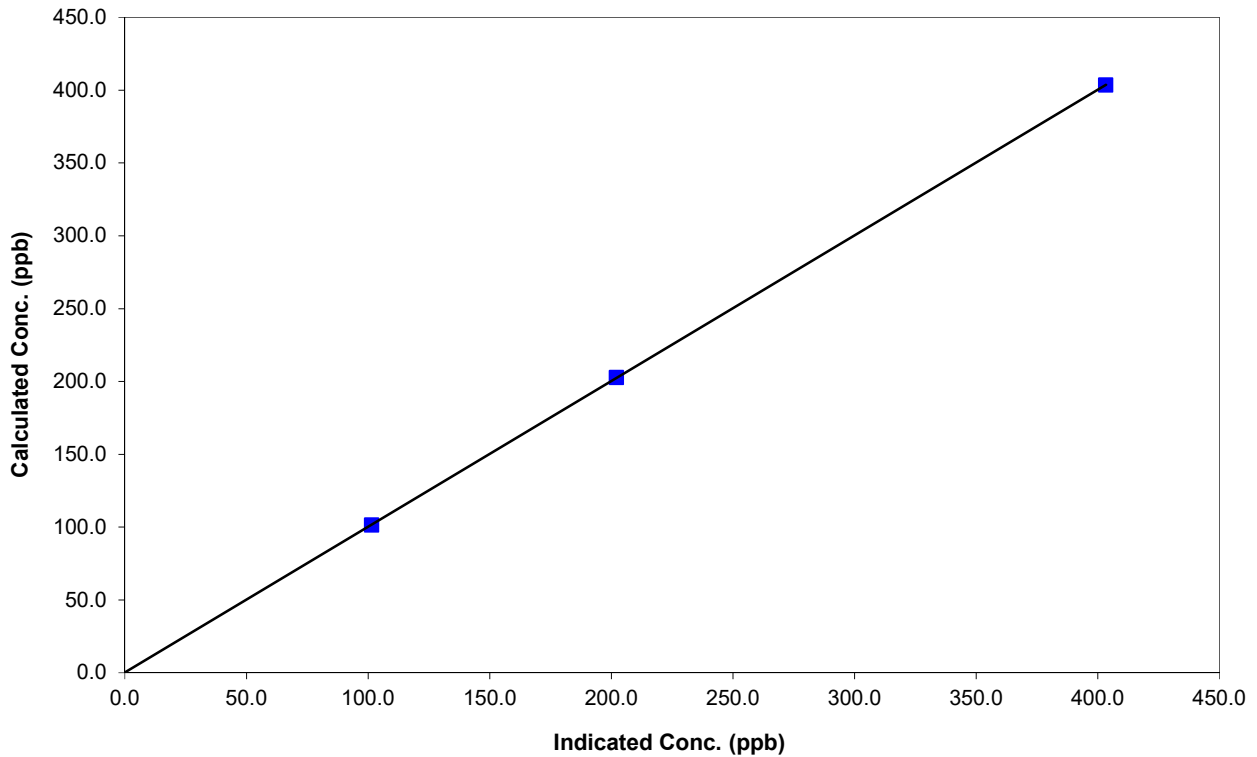
## Station Information

Calibration Date	November 1, 2016	Previous Calibration	October 12, 2016
Station Number	10	Station Location	Rycroft
Start Time (MST)	9:50	End Time (MST)	13:45:00 PM
Analyzer make	TEI 42i	Analyzer serial #	0701120011

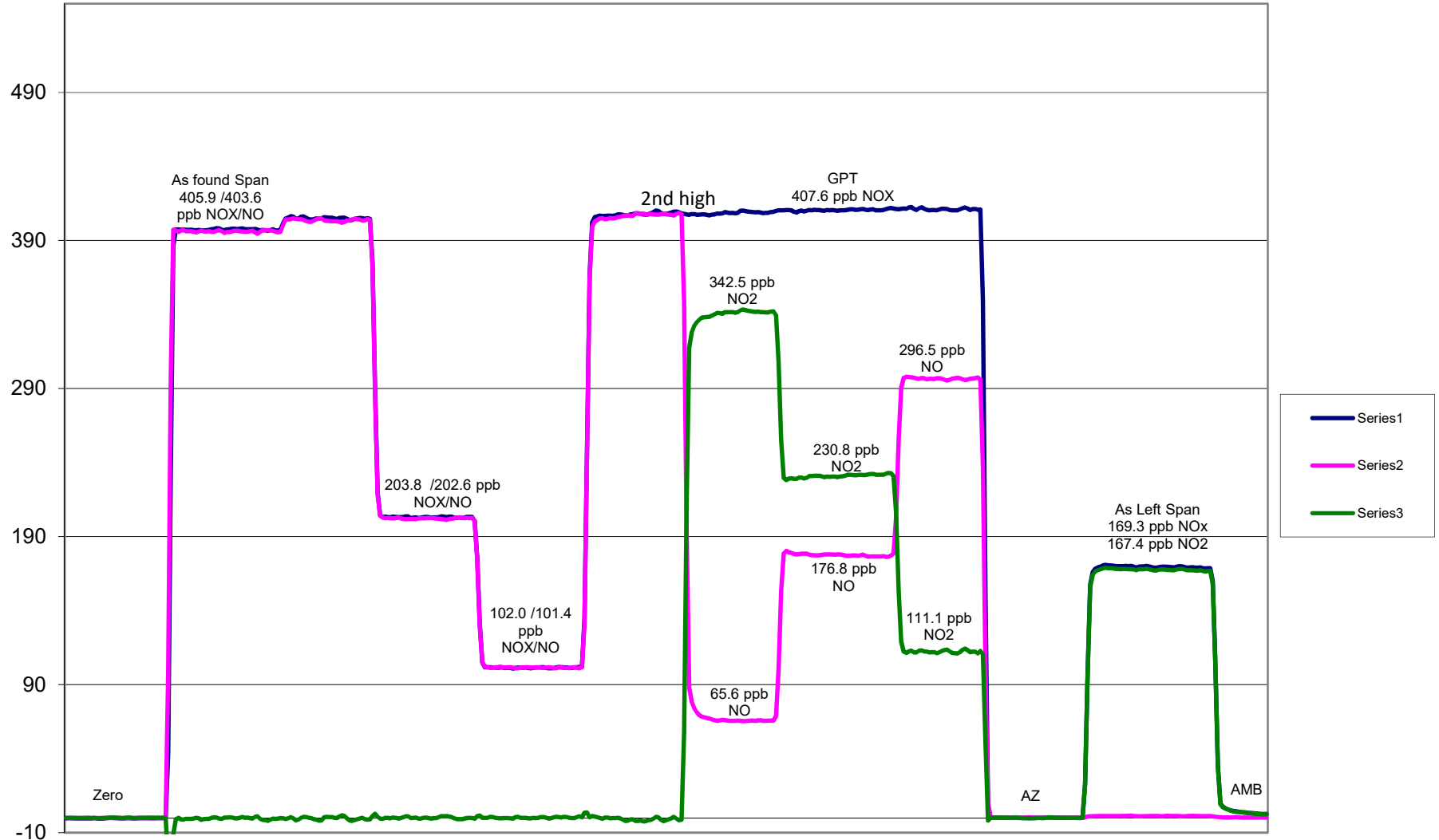
## Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.1	N/A	Correlation Coefficient	0.999999
403.6	403.3	1.0006		
202.6	202.1	1.0026	Slope	1.000491
101.4	101.5	0.9998		
			Intercept	0.134042

## NO Calibration Curve



# NO<sub>x</sub> Calibration



November 1, 2016

# Calibration Report



AIR QUALITY MONITORING

Parameter 03

Air Monitoring Network PAZA

## Station Information

Calibration Date	November 1 2016	Previous Calibration	October 12 2016
Station Number	10	Station Location	Rycroft
Reason:	<b>Routine</b>	Install	Removal
		Other:	
Start Time (MST)	12:40	End Time (MST)	14:40:00 PM
Barometric Pressure	0.929 atm	Station Temperature	17.0 Deg C
Calibrator	Envionics 6103	Serial Number	6586
DACS make	CR3000	DACS serial No.	5407
DACS voltage range	0 - 5 Volts	DACS channel #	6
	Before		After
Calculated slope	1.001072	Calculated slope	1.019209
Calculated intercept	-1.306325	Calculated intercept	-0.815905
Analyzer make	Model 49-I	Analyzer serial #	1153630156

	before		after	
Concentration range	0-500	ppb	0-500	ppb
Offset	-0.6	ppb	-0.6	ppb
Span	1.012		1.012	
Cell A intensity	89472	Hz	89123	Hz
Cell B intensity	113520	Hz	114478	Hz
Pressure	694.40	in Hg	695.20	in Hg
CellA Flow	0.692	ccm	0.693	ccm
Cell B Flow	0.690	cmm	0.692	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)
5015	0.00	0.0	0.6	N/A
5020	0.30	342.5	337.5	1.0149
5025	0.20	230.8	225.8	1.0221
5020	0.10	111.1	110.9	1.0022
5015	0.00	0.0	0.6	As found zero
5020	0.30	342.5	337.5	As found span
Average Correction Factor				1.0131

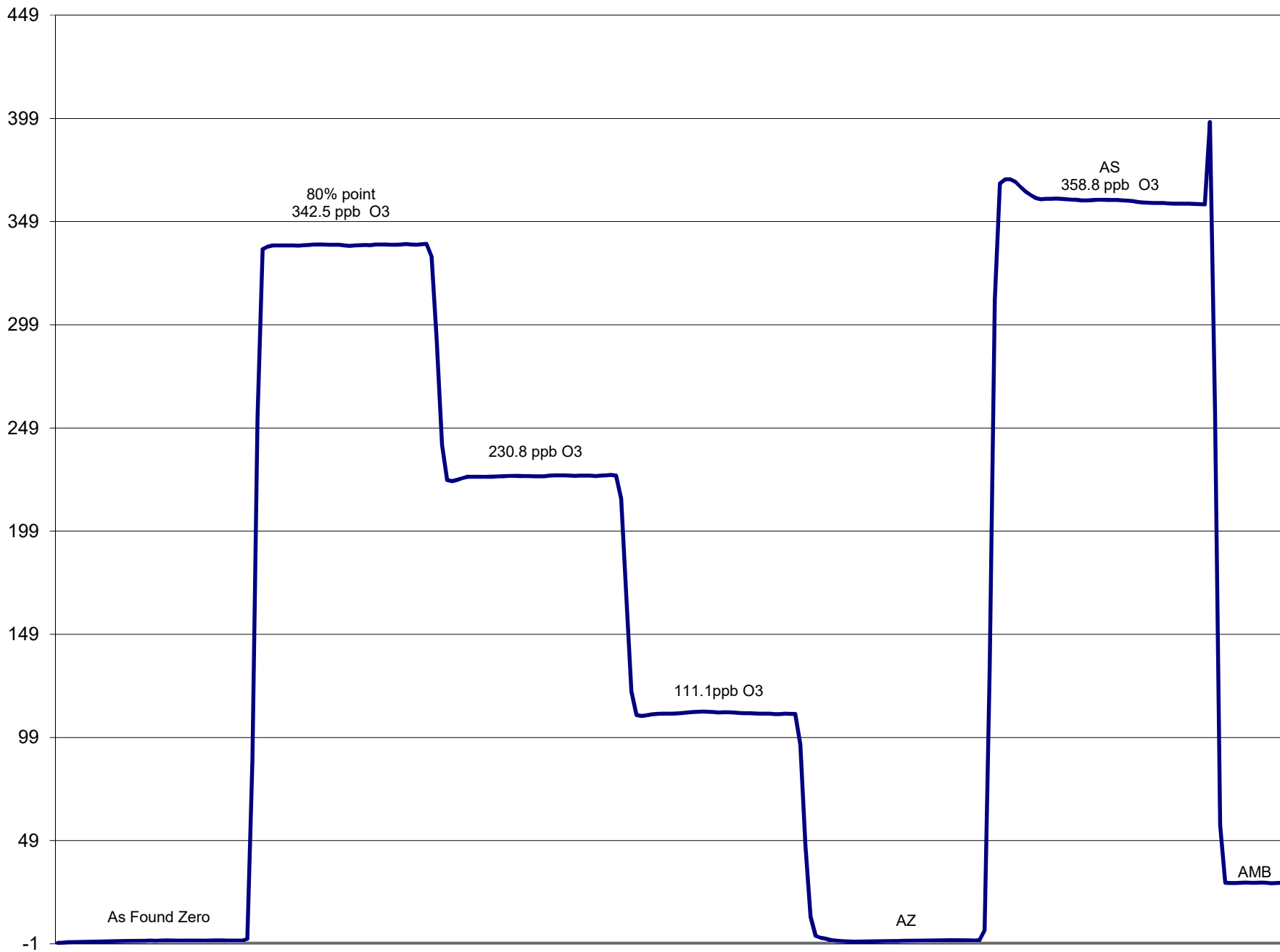
Calculated value of As Found Response: 335.9 ppm      Percent Change of As Found: -1.9%

	before calibration		after calibration	
Auto zero	0.6	ppb	0.5	ppb
Auto span	375.5	ppb	358.8	ppb

Notes: No adjustment made

Calibration Performed By: Dmytro Dolotii





November 1 2016



# Calibration Report



Parameter CH4 / NMHC / THC

Air Monitoring Network PAZA

## Station Information

Calibration Date	November 2, 2016	Previous Calibration	October 14, 2016
Station Number	1	Station Location	Rycroft
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
			<input type="checkbox"/> Other:
Start Time (MST)	11:45	End Time (MST)	15:00:00 PM
Barometric Pressure	729.00 mm/hg	Station Temperature	18.0 Deg C
Calibrator	EnviroNics 6103	Serial Number	6586
Cal Gas CH4 Conc	386 ppm CH4	Cal Gas Expiry Date	3/28/2014
Cal Gas C3H8 Conc	207 569.25 ppm CH4	Cal Gas Cylinder #	LL34318
DACS make	CR3000	DACS serial No.	5408
DACS voltage range	0 - 5 volt	DACS channel #	SE 12,13,14

Analyzer make TEI 55I-A3PHAA Analyzer serial # 1151980005

	before		after	
Concentration range	0-20 (CH4, NMHC); 0-40 (THC)	ppm	0-20 (CH4, NMHC); 0-40 (THC)	ppm
Air pressure	34.6	PSI	34.7	PSI
Fuel pressure	49.5	PSI	49.4	PSI
Carrier pressure	40.2	PSI	40.1	PSI
CH4 cal factor				E <sup>-4</sup>
NMHC cal factor				E <sup>-4</sup>
Rt		Sec		Sec
Pk Index				

## 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)
1995	0.00	0.00	0.00	N/A
1997	68.96	12.88	12.90	0.9987
1998	40.99	7.76	7.63	1.0165
1999	15.97	3.06	3.00	1.0204
1995	0.00	0.00	0.00	As Found Zero
1995	68.93	12.89	13.40	As Found Span
Average Correction Factor				1.0119

Calculated value of As Found Response: 13.155 ppm Percent Change of As Found: -2.0%

	Before		After
Calculated slope	0.980386	Calculated slope	0.999392
Calculated intercept	0.017677	Calculated intercept	0.045763

## Final Zero/Span Data

	before calibration		after calibration	
Auto zero	0.00	ppm	0.00	ppm
Auto span	7.92	ppm	7.58	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)
1995	0.00	0.00	0.00	N/A
1997	68.96	19.00	19.00	1.0001
1998	40.99	11.44	11.37	1.0067
1999	15.97	4.51	4.33	1.0418
1995	0.00	0.00	0.00	As Found Zero
1995	68.93	19.01	20.16	As Found Span
Average Correction Factor				1.0162

Calculated value of As Found Response: 19.337 ppm      Percent Change of As Found: -1.7%

	Before		After
Calculated slope	0.953473	Calculated slope	0.997390
Calculated intercept	0.111671	Calculated intercept	0.087304

#### Final Zero/Span Data

	before calibration		after calibration	
Auto zero	0.00	ppm	0.00	ppm
Auto span	11.53	ppm	11.07	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)
1995	0.00	0.00	0.00	N/A
1997	68.96	31.89	31.94	0.9982
1998	40.99	19.20	19.00	1.0108
1999	15.97	7.57	7.36	1.0294
1995	0.00	0.00	0.00	As Found Zero
1995	68.93	31.90	33.61	As Found Span
Average Correction Factor				1.0128

Calculated value of As Found Response: 32.507 ppm      Percent Change of As Found: -1.9%

	Before		After
Calculated slope	0.963369	Calculated slope	0.997211
Calculated intercept	0.127099	Calculated intercept	0.131674

#### Final Zero/Span Data

	before calibration		after calibration	
Auto zero	0.00	ppm	0.00	ppm
Auto span	19.45	ppm	18.61	ppm

Notes: Slight span adjustment made

Calibration Performed By: Dmytro Dolotii

# Calibration Summary



Parameter CH4  
 Air Monitoring Network PAZA

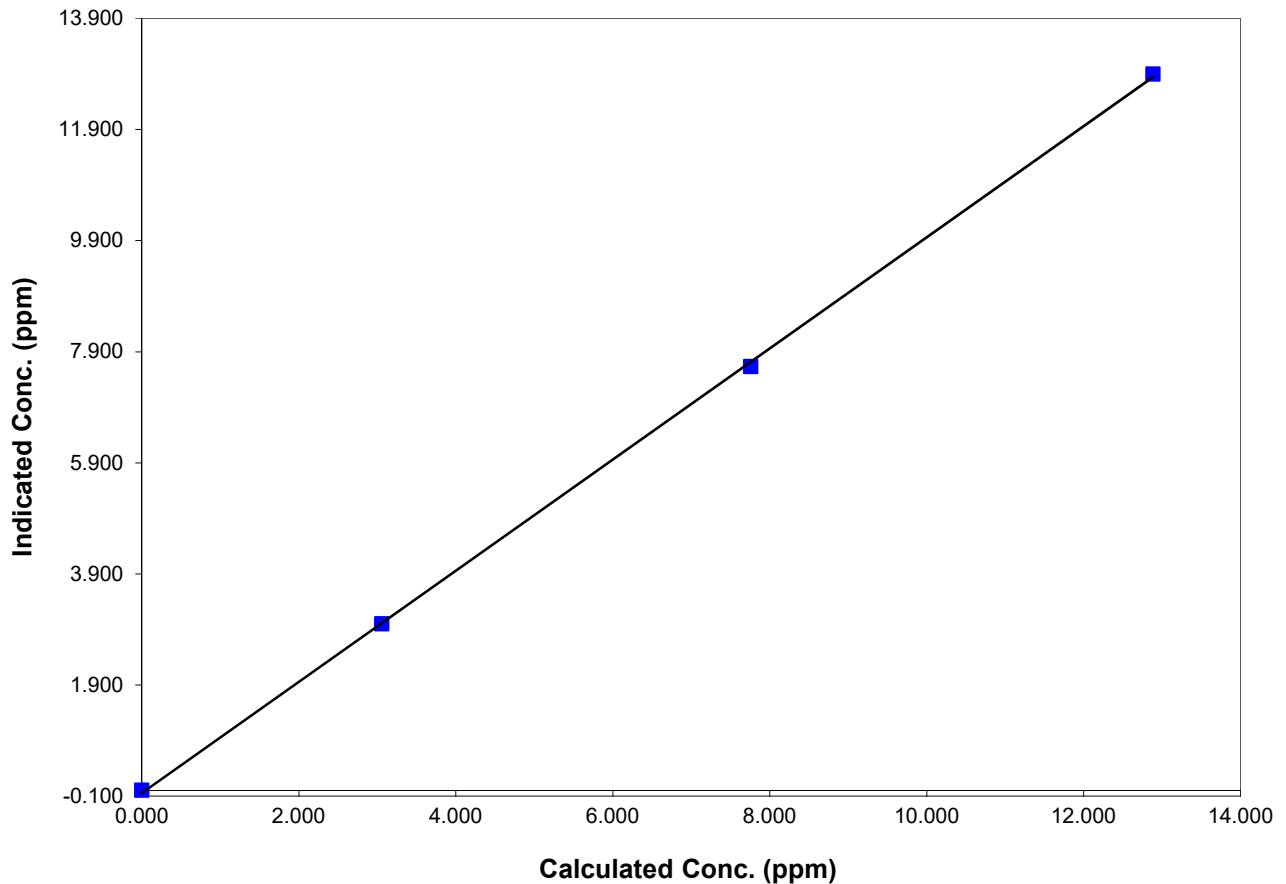
### Station Information

Calibration Date	November 2, 2016	Previous Calibration	October 14, 2016
Station Number	1	Station Location	Rycroft
Start Time (MST)	11:45	End Time (MST)	15:00:00 PM
Analyzer make/model	TEI 55I-A3PHAA	Analyzer serial #	1151980005

### Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	0.002	N/A	Correlation Coefficient	0.999867
12.884	12.901	0.9987		
7.760	7.634	1.0165		
3.059	2.998	1.0204		
			Slope	0.999392
			Intercept	0.045763

## CH4 Calibration Data





# Calibration Summary



Parameter THC  
 Air Monitoring Network PAZA

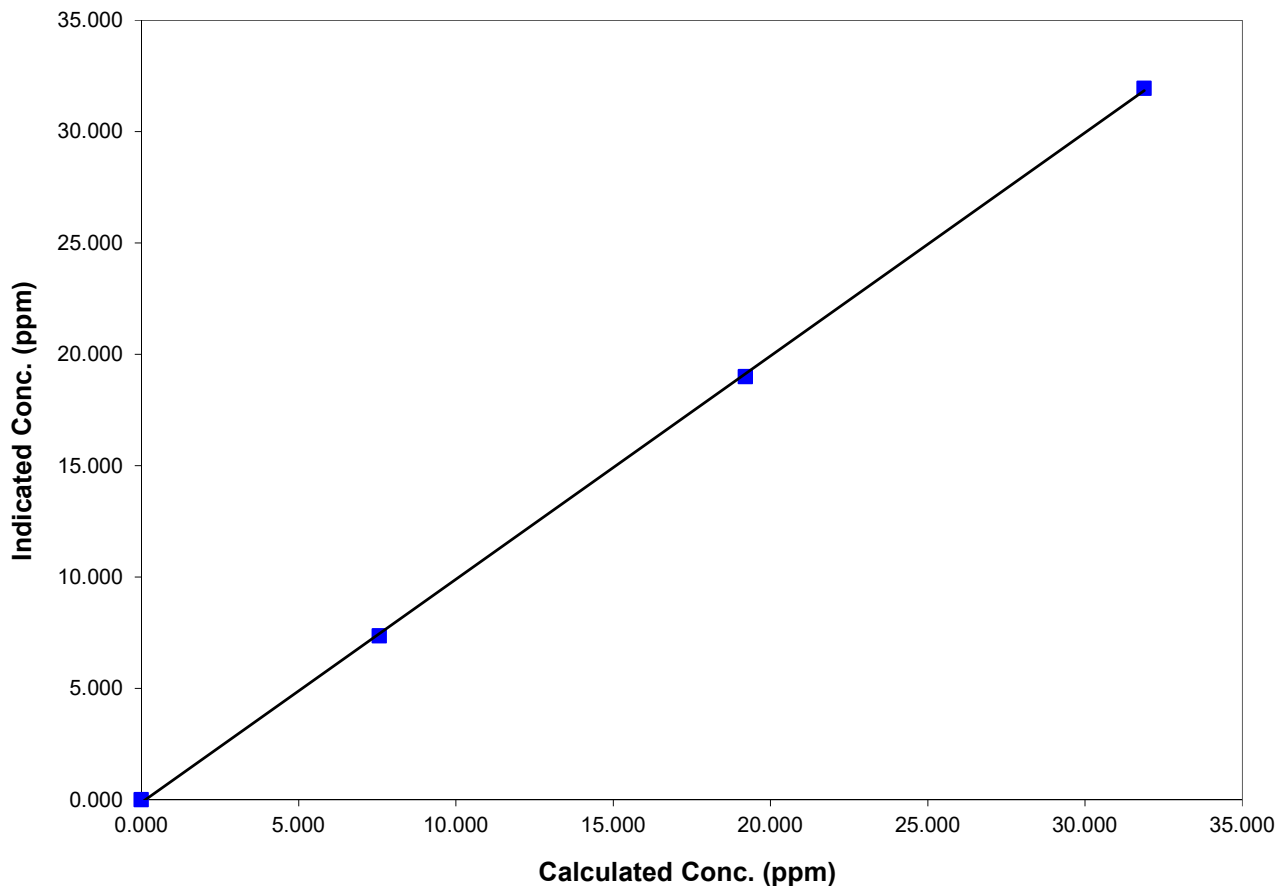
### Station Information

Calibration Date	November 2, 2016	Previous Calibration	October 14, 2016
Station Number	1	Station Location	Rycroft
Start Time (MST)	11:45	End Time (MST)	15:00:00 PM
Analyzer make/model	TEI 55I-A3PHAA	Analyzer serial #	1151980005

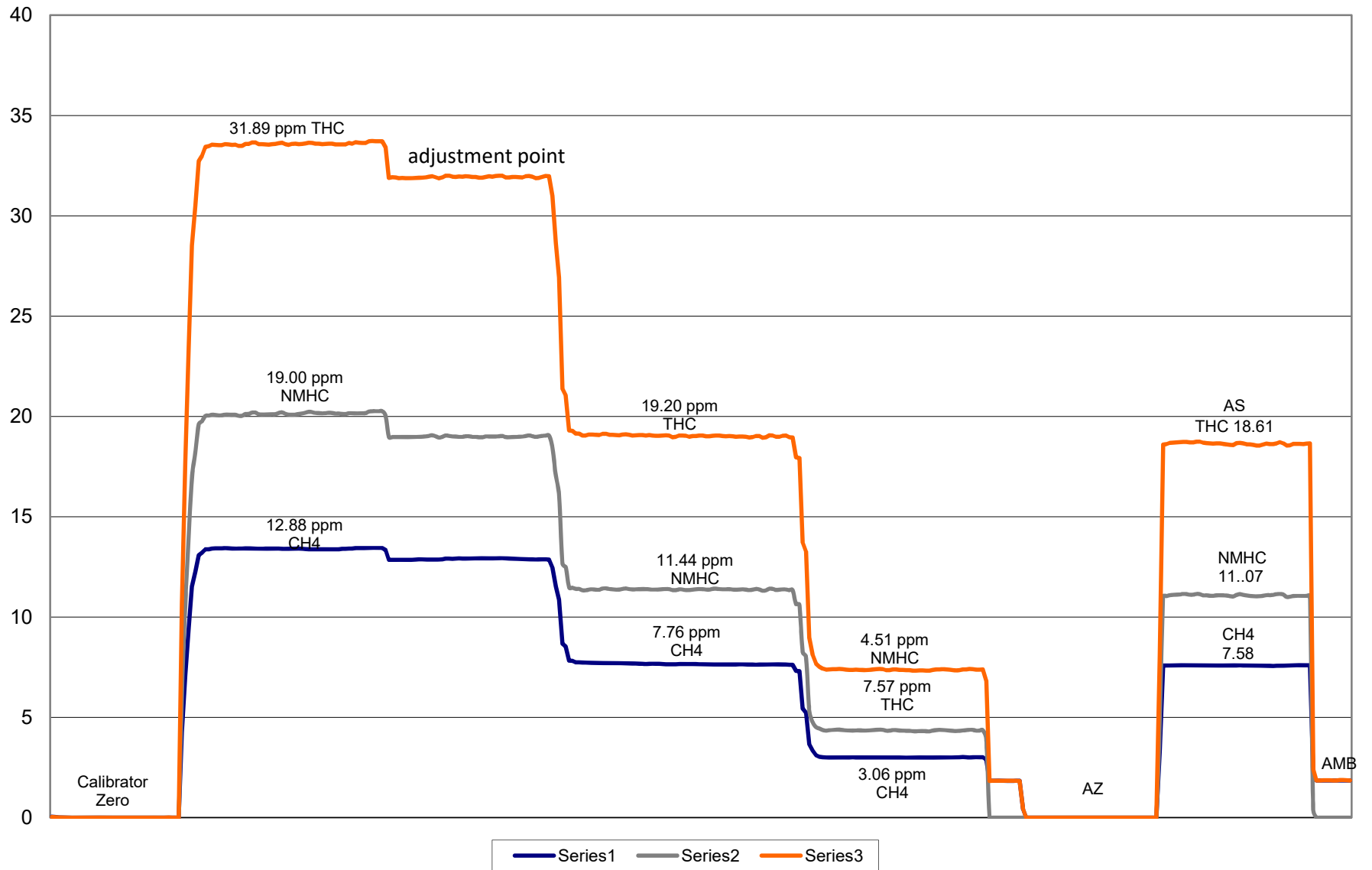
### Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	0.000	N/A	Correlation Coefficient	0.999907
31.885	31.942	0.9982		
19.203	18.998	1.0108	Slope	0.997211
7.571	7.355	1.0294		
			Intercept	0.131674

## THC Calibration Data



# THC/CH<sub>4</sub>/NMHC Calibration





# Calibration Summary



Parameter TRS  
 Air Monitoring Network PAZA

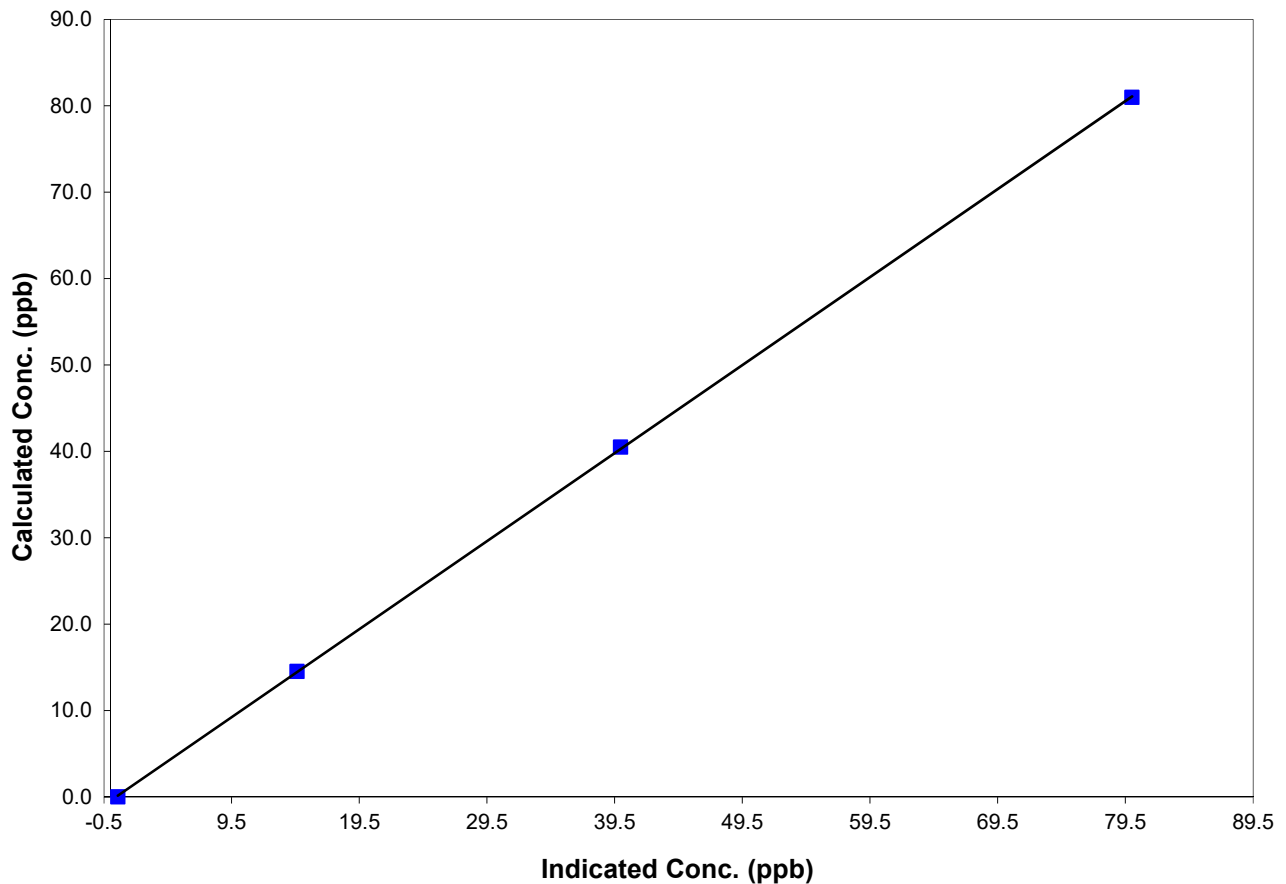
### Station Information

Calibration Date	November 2, 2016	Previous Calibration	October 12, 2016
Station Number	PAZA Rover	Station Location	Rycroft
Start Time (MST)	9:47	End Time (MST)	12:35
Analyzer make/model	TEI 43C	Analyzer serial #	609716238

### Calibration Data

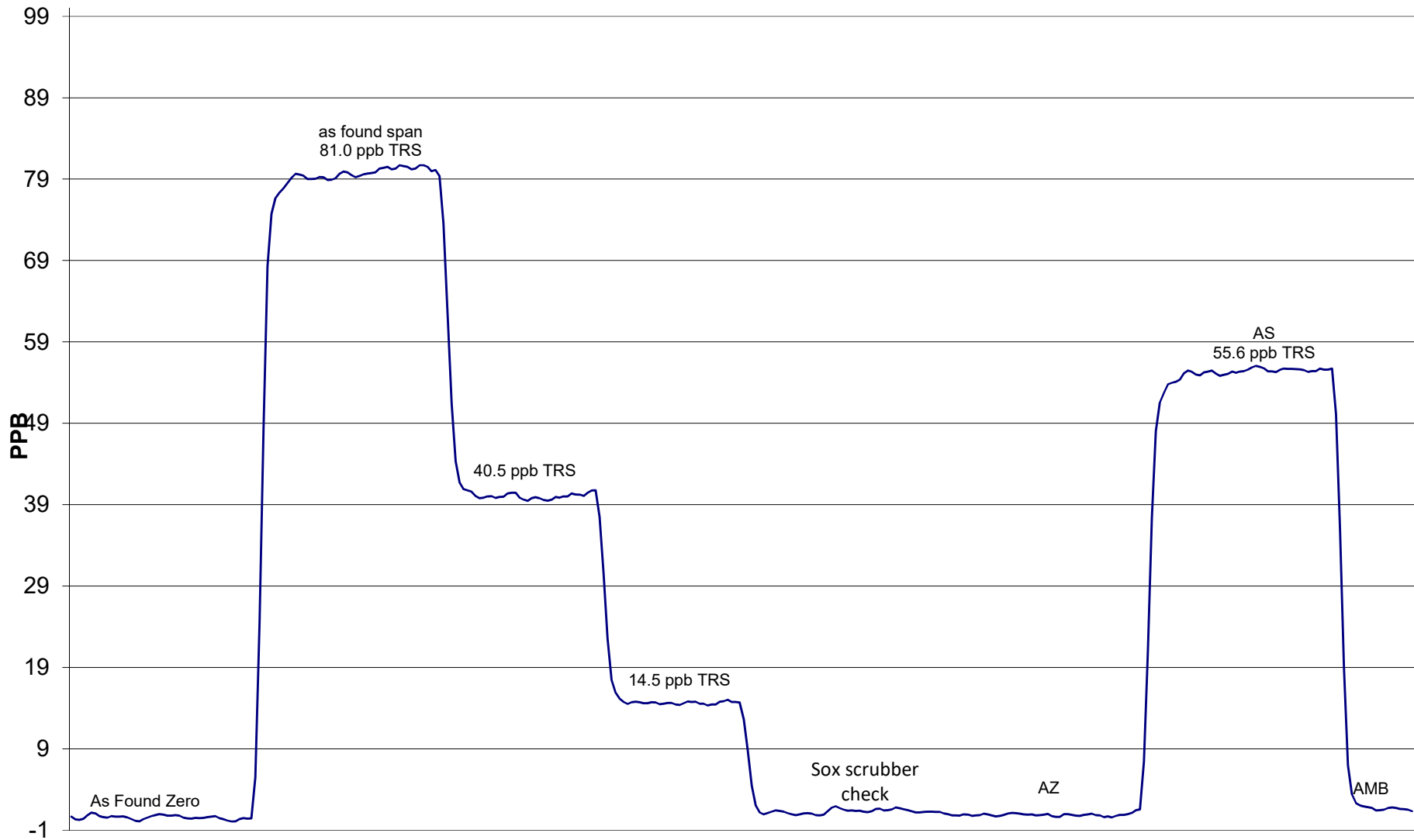
Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.6	N/A	Correlation Coefficient	0.999978
81.0	80.0	1.0116		
40.5	40.0	1.0128	Slope	1.018495
14.5	14.6	0.9928		
			Intercept	-0.436377

### TRS Calibration Curve





# TRS Calibration



November 2, 2016

# AB TEOM PM2.5 Calibration



STATION: **Rover-Rycroft**  
 LOCATION: PAZA - Grande Prairie

OPERATOR: Dmytro Dolotii, Grover Christi  
 DATE: 2-Nov-16

MONITOR INFO / PARAMETER VALUES:

Make/Model	TEOM AB
Configuration	PM2.5
Serial Number	21551
Site Number	10
Inlet Type	PM 10 / SCC
FAdj. Main Setting	1.000
FAdj. Aux. Setting	0.990
T-Case Indicated / Set Point	40/40
T-Air Indicated / Set Point	40/40
T-Cap Indicated / Set Point	40/40
Splitter Assembly Alignment (cm)	15.5

( vs. specified depth of 15.5 cm from top of flow tube to top of concentric 1/2 in. tube )

RECENT CALIBRATION AND AUDIT HISTORY

Previous Audit	
Previous Calibration	9-Jul-16

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

LEAK CHECK	Indicated Flow (lpm)	
	Main	Auxiliary
PUMP ON	0.040	0.050
PUMP OFF	0.000	0.010
NET	0.040	0.040
<b>LIMITS</b>	<b>&lt;0.15</b>	<b>&lt;0.60</b>

	Ambient Temp. (°C)	Ambient Pres. (atm)	Ko *	Bypass flow (lpm)	Sample flow (lpm)
SET POINT ( S )	na	na	12893	13.67	3.000
INDICATED ( I )	6.0	0.932	<del>12893</del>	13.67	2.990
MEASURED ( AF )	5.6	0.933	<del>12893</del>	12.73	2.430
MEASURED ( M )	5.6	0.933	12981	13.67	2.970
DIFFERENCE (M-I)	-0.4	0.001	0.7%	0.00	-0.03
<b>LIMITS</b>	<b>± 2 ° C</b>	<b>± 0.005 atm</b>	<b>± 2.5 %</b>	<b>± 1.0 L/min</b>	<b>± 0.2 L/min</b>

As Found Data  
 Adjusted Data

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

COMMENTS:      Pass

Full audit was performed.

Span adjustment done using hardware adjustment.

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

# AB TEOM PM2.5 Calibration



STATION: **Rover-Rycroft**  
 LOCATION: PAZA - Grande Prairie

OPERATOR: Dmytro Dolotii, Grover Christi  
 DATE: 4-Nov-16

MONITOR INFO / PARAMETER VALUES:

Make/Model	TEOM AB
Configuration	PM2.5
Serial Number	140AB245710304
Site Number	10
Inlet Type	PM 10 / SCC
FAdj. Main Setting	1.000
FAdj. Aux. Setting	0.990
T-Case Indicated / Set Point	40/40
T-Air Indicated / Set Point	40/40
T-Cap Indicated / Set Point	40/40
Splitter Assembly Alignment (cm)	15.5

( vs. specified depth of 15.5 cm from top of flow tube to top of concentric 1/2 in. tube )

RECENT CALIBRATION AND AUDIT HISTORY

Previous Audit	
Previous Calibration	N/A

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

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

LEAK CHECK	Indicated Flow (lpm)	
	Main	Auxiliary
PUMP ON	0.014	0.041
PUMP OFF	0.000	0.010
NET	0.014	0.031
<b>LIMITS</b>	<b>&lt;0.15</b>	<b>&lt;0.60</b>

	Ambient Temp. (°C)	Ambient Pres. (atm)	Ko *	Bypass flow (lpm)	Sample flow (lpm)
SET POINT ( S )	na	na	12122	13.67	3.000
INDICATED ( I )	6.4	0.927	<del>12122</del>	13.67	3.010
<i>As Found Data</i> MEASURED ( AF )	6.1	0.923	<del>12122</del>	13.54	2.900
<i>Adjusted Data</i> MEASURED ( M )	6.1	0.923	12177	13.69	3.000
DIFFERENCE (M-I)	-0.3	-0.004	0.5%	0.02	0.00
<b>LIMITS</b>	<b>± 2 ° C</b>	<b>± 0.005 atm</b>	<b>± 2.5 %</b>	<b>± 1.0 L/min</b>	<b>± 0.2 L/min</b>

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

COMMENTS:      Pass

Full audit was performed.

Span adjustment done using hardware adjustment.

Sample Head Inspection/Cleaning:

Large In Line Filter Inspection & Or Cleaning:

## Air Monitoring Directive Exceedance Report

**Alberta Environment and Parks**  
 Environmental Service Response Centre  
 111 Twin Atria Building  
 4999 – 98<sup>th</sup> Avenue  
 Edmonton, Alberta T6B 2X3  
 Phone: (780) 422-4505  
 Fax: (780) 427-1044  
[erc.environment@gov.ab.ca](mailto:erc.environment@gov.ab.ca)

Reference Number:	318301	Reported To (AESRD Contact):	Trina
Date & Time Incident Reported to AESRD:	Nov 15 2016 18:40	Reported By:	Dmytro Dolotii
Reported on Behalf of:	PAZA	Approval Number (if applicable):	N/A
Location(s) of Incident:	Henry Pirker station		
Start Date & Time of Incident:	Nov 15, 2016 17:00 MST	End Date & Time of Incident:	Nov 15, 2016 18:00 MST
<b>Reason or Nature of Incident:</b>			
The PM <sub>2.5</sub> analyzer (Sharp 5030) within the Henry Pirker station, located in Muskoseepi park in Grande Prairie AB, exceeded the AENV 1 hour average PM <sub>2.5</sub> guideline (80 µg/m <sup>3</sup> ) as detailed below: 17:00-18:00 MST, Nov 15 2016: PM2.5 90.4 ug/m3 WS: 3.5 km/hr, WD: 292.8, degrees, Temp: 0.1 C			
<b>Immediate Actions Taken:</b>			
Confirmed validity of data and proceeded to call in the exceedance to AEP.			
<b>Investigation Details:</b>			
Seems like an inversion plus local traffic with almost no wind created a spike of PM 2.5. NOx analyzer was reading high numbers as well.			
<b>Actions Taken to Prevent Reoccurrence (if any):</b>			
N/A			
<b>Additional Actions Required (if any):</b>			
N/A			
Report Completed By:	Dmytro Dolotii	Date Report Submitted:	Nov 16 2016
7-Day Letter Due Date:	November 23 2016		

## Air Monitoring Directive Exceedence Report

**Alberta Environment and Parks**  
 Environmental Service Response Centre  
 111 Twin Atria Building  
 4999 – 98<sup>th</sup> Avenue  
 Edmonton, Alberta T6B 2X3  
 Phone: (780) 422-4505  
 Fax: (780) 427-1044  
[erc.environment@gov.ab.ca](mailto:erc.environment@gov.ab.ca)

Reference Number:	318463	Reported To (AESRD Contact):	Taryn
Date & Time Incident Reported to AESRD:	November 22, 2016 09:00	Reported By:	Dmytro Dolotii
Reported on Behalf of:	PAZA	Approval Number (if applicable):	N/A
Location(s) of Incident:	Smoky Heights air quality monitoring station		
Start Date & Time of Incident:	November 22, 2016 00:00 MST	End Date & Time of Incident:	November 22, 2016 01:00 MST
<b>Reason or Nature of Incident:</b>			
<p>The PM<sub>2.5</sub> analyzer (Sharp 5030) within the Smoky Heights station, currently located ENE of Grande Prairie at LSD 13-8-074-02 W6, exceeded the AENV 1 hour average PM<sub>2.5</sub> guideline (80 µg/m<sup>3</sup>) as detailed below:</p> <p>01:00 MST PM<sub>2.5</sub>=88.9 µg/m<sup>3</sup>   WS=1.5 km/hr   WD=336.5 degrees   Amb Temp= -13.0°C</p>			
<b>Immediate Actions Taken:</b>			
Reviewed and confirmed the data as valid, called it in to AEP.			
<b>Investigation Details:</b>			
WD suggests smoke from wood boiler located at Oil Field Rig Mat process.			
<b>Actions Taken to Prevent Reoccurrence (if any):</b>			
N/A			
<b>Additional Actions Required (if any):</b>			
N/A			
Report Completed By:	Dmytro Dolotii	Date Report Submitted:	November 22, 2016
7-Day Letter Due Date:	November 29 2016		

## Air Monitoring Directive Exceedence Report

**Alberta Environment and Parks**  
 Environmental Service Response Centre  
 111 Twin Atria Building  
 4999 – 98<sup>th</sup> Avenue  
 Edmonton, Alberta T6B 2X3  
 Phone: (780) 422-4505  
 Fax: (780) 427-1044  
[erc.environment@gov.ab.ca](mailto:erc.environment@gov.ab.ca)

Reference Number:	318606	Reported To (AESRD Contact):	Erin
Date & Time Incident Reported to AESRD: November 24, 2016 8:25 PM		Reported By: Grover Christiansen	
Reported on Behalf of:	PASA	Approval Number (if applicable):	
Location(s) of Incident: Smokey Heights			
Start Date & Time of Incident: November 24, 2016 18:00		End Date & Time of Incident: November 24, 2016 19:00	
<b>Reason or Nature of Incident:</b>			
The PM <sub>2.5</sub> analyzer (Sharp 5030) within the Smokey Heights station, currently located ENE of Grande Prairie at LSD 13-8-074-02 W6, exceeded the AENV 1 hour average PM <sub>2.5</sub> guideline (80 µg/m <sup>3</sup> ) as detailed below: 19:00 MST: Pm2.5 84.1 ug/m3 WS: 9.7 km/hr WD: 337.1 deg Ambient temp: -4.5 C			
<b>Immediate Actions Taken:</b>			
Confirm data and instrumentation. Call in Exceedence to AEP.			
<b>Investigation Details:</b>			
Suspect wood boiler on adjacent property.			
<b>Actions Taken to Prevent Reoccurrence (if any):</b>			
N/A			
<b>Additional Actions Required (if any):</b>			
N/A			
Report Completed By:	Grover Christiansen	Date Report Submitted:	2016/11/24
7-Day Letter Due Date:	2016/12/01		

## Air Monitoring Directive Exceedance Report

**Alberta Environment and Parks**  
 Environmental Service Response Centre  
 111 Twin Atria Building  
 4999 – 98<sup>th</sup> Avenue  
 Edmonton, Alberta T6B 2X3  
 Phone: (780) 422-4505  
 Fax: (780) 427-1044  
[erc.environment@gov.ab.ca](mailto:erc.environment@gov.ab.ca)

Reference Number:	318746	Reported To (AESRD Contact):	Jasmin
Date & Time Incident Reported to AESRD:	Nov 29 2016 14:50	Reported By:	Dmytro Dolotii
Reported on Behalf of:	PAZA	Approval Number (if applicable):	N/A
Location(s) of Incident:	Beaverlodge station		
Start Date & Time of Incident:	Nov 29, 2016 13:00 MST	End Date & Time of Incident:	Nov 29, 2016 14:00 MST
<b>Reason or Nature of Incident:</b>			
<p>The PM<sub>2.5</sub> analyzer (Sharp 5030) within the Beaverlodge station, currently located near agriculture research centre at Beaverlodge AB, exceeded the AENV 1 hour average PM<sub>2.5</sub> guideline (80 µg/m<sup>3</sup>) as detailed below:</p> <p>13:00-14:00 MST, Nov 29 2016:                  PM<sub>2.5</sub> 200.1µg/m<sup>3</sup>; WS: 1.1 km/hr; WD: 65.0, degrees; Temp: -7.5°C.</p>			
<b>Immediate Actions Taken:</b>			
Confirmed validity of data and proceeded to call in the exceedance to AEP			
<b>Investigation Details:</b>			
<b>Actions Taken to Prevent Reoccurrence (if any):</b>			
N/A			
<b>Additional Actions Required (if any):</b>			
N/A			
Report Completed By:	Dmytro Dolotii	Date Report Submitted:	Nov 29 2016
7-Day Letter Due Date:	Dec 5 2016		

## Air Monitoring Directive Exceedence Report

**Alberta Environment and Parks**  
 Environmental Service Response Centre  
 111 Twin Atria Building  
 4999 – 98<sup>th</sup> Avenue  
 Edmonton, Alberta T6B 2X3  
 Phone: (780) 422-4505  
 Fax: (780) 427-1044  
[erc.environment@gov.ab.ca](mailto:erc.environment@gov.ab.ca)

Reference Number: <b>319324</b>	Reported To (AESRD Contact): Iona
Date & Time Incident Reported to AESRD: December 19 <sup>th</sup> 09:30	Reported By: Grover Christiansen
Reported on Behalf of: PASA	Approval Number (if applicable):
Location(s) of Incident: Valley View Monitoring Trailer.	
Start Date & Time of Incident: November 27 <sup>th</sup> 17:00	End Date & Time of Incident: November 30 <sup>th</sup> 17:37
Reason or Nature of Incident:	
The <b>Valley View site located approximately 18 km southeast of Valley View:</b> H2S Data for the Thermo 43i was below 90% capture objective for the month of November 2016.	
Immediate Actions Taken:	
Confirm data and instrumentation. Call in Exceedence to AEP December 19 <sup>th</sup> 2016	
Investigation Details:	
No daily span noted 17:00 November 27 <sup>th</sup> . Drove to location Nov 28 <sup>th</sup> and noted external H2S converter was not holding temperature. Remove converter to shop for repair. Ordered converter thermal couple from CD Nova. Receive and replace at shop November 29 <sup>th</sup> . Condition overnight.	
Actions Taken to Prevent Reoccurrence (if any):	
Install rebuilt converter at site November 30 <sup>th</sup> –allow stabilize. Valid data as of 17:37	
Additional Actions Required (if any):	
Report Completed By:	Tech's name Grover Christiansen
Date Report Submitted:	Dec 19,2016
7-Day Letter Due Date:	December 26, 2016

WSP AQM Group: Exceedence Report  
 Revision #3  
 January 01, 2015

