Palliser Airshed Society

Ambient Air Monitoring Network Summary

Continuous Ambient Air Quality Monitoring Program
Monthly Report
July 2008

Operations and Reporting

FOCUS
AIR QUALITY MONITORING

August 27, 2008

Alberta Environment
11th Floor, Oxbridge Place
9820-106 Street
Edmonton Alberta T6B 2X3

Attention: Director of Monitoring and Evaluation

RE: Palliser Airshed Society (PAS) Ambient Air Monitoring Report – July 2008

Enclosed is the PAS Ambient Monitoring Report for the month of **July 2008**.

Continuous Monitoring – Crescent Heights and Portable-Brooks
Included in this report are; monthly sampling table, detailed hourly average reports and multipoint calibration reports of all instruments.

Crescent Heights:

- All analyzers and instruments at the Crescent Heights Station were less than 90% operational for for the month of July due to the electrical service to the air quality station inadvertently switched off by a Medicine Hat City Water Works employee (**Alberta Environment reference # 203975**).
- The measured ambient air quality was within the Alberta Objectives and Federal guidelines with no exceedences recorded at the Crescent Heights Station.
- The following is a summary of the monthly averages recorded during sampling:
  Monthly average concentrations of NO_2 was 4.5 ppb
  Monthly average concentrations for O_3 was 32.8 ppb
  Monthly average concentrations for CO was 0.18 ppm
  Monthly average concentrations for THC was 1.90 ppm
  Monthly average concentrations for $PM_{2.5}$ was 5.2 µg/m^3

Portable-Brooks:

- All pollutant analyzers at the Portable Brooks Station were 100% operational for the month of July.
- The measured ambient air quality was within the Alberta Objectives and Federal guidelines for SO_2 and O_3 pollutants recorded at the Portable - Brooks Station. The H_2S analyzer recorded six (6) exceedence greater then the Alberta Objective of 10 (ppb):
  1. July 03: 04:00 — 14 ppb — Alberta Environment Reference # **203345.**
  2. July 08: 22:00 — 17 ppb — Alberta Environment Reference # **203420.**
  3. July 08: 23:00 — 11 ppb — Alberta Environment Reference # **203420.**
  4. July 15: 19:00 — 15 ppb — Alberta Environment Reference # **203903.**
  5. July 19: 24:00 — 17 ppb — Alberta Environment Reference # **204502.**
  6. July 26: 07:00 — 13 ppb — Alberta Environment Reference # **204161.**

- The following is a summary of the monthly averages recorded during sampling:
  Monthly average concentrations of SO_2 was 0.5 ppb
  Monthly average concentrations for H_2S was 0.5 ppb
  Monthly average concentrations for O_3 was 30.0 ppb

Passive Monitoring – Twenty Sites throughout the PAS zone:
There were two duplicate sites sampled in the month of July: Site 1 and Site 11 – Brooks. The passive sample analyses were performed by MAXXAM Analytics Inc. The following are the ranges for July 2008 recorded by the twenty passive stations located throughout the PAS zone.

- Average concentrations for SO_2 passives ranged from 0.2 to 0.6 ppb with a mean of 0.4 ppb.
- Average concentrations for NO_2 passives ranged from 0.3 to 4.1 ppb with a mean of 1.5 ppb.
- Average concentrations for O_3 passives ranged from 29.8 to 42.6 ppb with a mean of 36.4 ppb.

If you have any questions, please contact the Focus Intec office at 1.403.255.9440.

Sharon Whiteley, B.Sc.
AQM Data Specialist

Kelly Baragar, C.E.T
AQM Technical Field Supervisor

Continuous Monitoring

Ambient Air Monitoring Network

Crescent Heights Station

General Station Issues

Routine monthly calibrations were performed on July 29th (NO_X) and July 30th (O_3, CO, THC, and $PM_{2.5}$). On July 1st and 2nd there were a total of three (3) hours flagged invalid for all analyzers and sensors due to a communication issue. All analyzers and instruments were less than 90% operational for for the month of July due to the electrical service at the station was switched off by a Medicine Hat City Water works employee (**Alberta Environment reference # 203975**).

Parameter	Make	Model	Units	Notes
Ozone	TECO	43I	ppb	Other than above mentioned issues no other operational were observed.
Nitrogen Dioxide	Teledyne - API	200E	ppb	Other than above mentioned issues no other operational were observed.
Total Hydrocarbons	Bendix	400A	ppm	The THC analyzer data was also flagged invalid from July 21st to the 29th as it was determined that the moly converter was not functioning properly after the power outage; it was repaired on July 29th.
Carbon Monoxide	TEI	49C	ppm	Other than above mentioned issues no other operational were observed.
$PM_{2.5}$	R&P TEOM	1400ab	$\mu g/m^3$	Twenty-seven (27) hours were flagged for excessive baseline drift
Wind Speed	Met One	010C	kph	Other than above mentioned issues no other operational were observed.
Wind Direction	Met One	020C	Deg	Other than above mentioned issues no other operational were observed.
Ambient Temperature	Met One	083D	DegC	Other than above mentioned issues no other operational were observed.
Relative Humidity	Met One	083D	%	Other than above mentioned issues no other operational were observed.
Solar Radiation	Met One	096-1	W/m^2	Other than above mentioned issues no other operational were observed.
Data Acquisition System	Titan Logix	AP1000		Other than above mentioned issues no other operational were observed.

Continuous Monitoring

Ambient Air Monitoring Network

Portable-Brooks Station

General Station Issues

Routine monthly calibrations were performed on July 21st (SO_2, H_2S and O_3).

Parameter	Make	Model	Units	Notes
Ozone	Teledyne - API	400E	ppb	No operational problems observed.
Sulphur Dioxide	TEI	43A	ppb	No operational problems observed.
Hydrogen Sulphide	TEI	43A	ppb	No operational problems observed.
Wind Speed	Blue Sky		kph	No operational problems observed.
Wind Direction	Blue Sky		Deg	No operational problems observed.
Data Acquisition System	Titan Logix	AP1000		No operational problems observed.

July 2008 Monthly Overall Summary Report

Ambient Air Quality Data

Jul-2008	Palliser Airshed Society						Maximum Recorded Values						
							1-hr				24-hr / 8-hr		
Pollutant (units)	**Objectives** 1-hr	24-hr	**Station**	**Monthly Average**	**Exceedence** 1-hr	24-hr	Conc	Day	WSPD (km/hr)	WDIR (Sector)	Conc	Day	**Operational Time (%)**
NO (**ppb**)			Crescent Heights	1.8	-	-	25	Jul-13 05:00	4.0	SSW	3.8	Jul-29	83.2%
NO_2 (**ppb**)	212	106	Crescent Heights	4.5	0	0	29	Jul-21 22:00	6.0	SE	10.6	Jul-29	83.2%
NO_X (**ppb**)			Crescent Heights	5.9	-	-	39	Jul-13 05:00	4.0	SSW	12.9	Jul-29	83.2%
O_3 (**ppb**)	82		Crescent Heights	32.8	0	-	59	Jul-05 12:00	11.0	WNW	45.2	Jul-05	83.3%
O_3 (**ppb**) - **8-hr**	65		Crescent Heights		0						57.2	Jul-15	
CO (**ppm**)	13		Crescent Heights	0.18	0	-	1	Jul-04 07:00	2	NW	0.2	Jul-03	83.2%
CO **(ppm) - 8-hr**	5		Crescent Heights		0						0.3	Jul-04	
THC (**ppm**)			Crescent Heights	1.90	-	-	2	Jul-09 03:00	7.0	NNE	2.0	Jul-09	57.4%
$PM_{2.5}$ (**µg/m^3**)	80	30	Crescent Heights	5.2	0	0	33	Jul-03 09:00	11.0	SW	17.0	Jul-03	79.6%
RH **(%)**			Crescent Heights	53.0	-	-	-	-	-	-	-	-	83.2%
SR **(W/m2)**			Crescent Heights	295.5	-	-	-	-	-	-	-	-	83.2%
Temp **(°C)**			Crescent Heights	20.8	-	-	-	-	-	-	-	-	83.2%
WSPD v (**km/hr**)			Crescent Heights	3.7	-	-	38	Jul-06 22:00	-	-	16.0	Jul-11	83.2%
WDIR			Crescent Heights	W	-	-	-	-	-	-	-	-	83.2%
SO_2 **(ppb)**	172	57	Portable-Brooks	0.5	0	0	3	Jul-01 21:00	8.0	NNE	1.2	Jul-22	100.0%
O_3 (**ppb**)	82		Portable-Brooks	30.5	0	-	59	Jul-21 17:00	16.0	SSW	42.0	Jul-05	100.0%
O_3 (**ppb**) - **8-hr**	65		Portable-Brooks		0						55.4	Jul-05	
H_2S **(ppb)**	10	3	Portable-Brooks	0.51	6	0	17	Jul-20 00:00	14	SSE	1.8	Jul-03	100.0%
WSPD v (**km/hr**)			Portable-Brooks	1.0	-	-	35	Jul-13 22:00	-	-	35.0	Jul-13	100.0%
WDIR			Portable-Brooks	WSW	-	-	-	-	-	-	-	-	100.0%

PAS - Crescent Heights

Monthly Summary Tables, Graphs and Roses

Palliser Airshed Society
Summary of Hourly Averages

Crescent Heights - Nitrogen Dioxide (NO_2) - ppb
July 1, 2008 to August 1, 2008

Number of Exceedances (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 29 ppb on Jul 21 22:00 Maximum Daily Average: 10.6 ppb on Jul 29

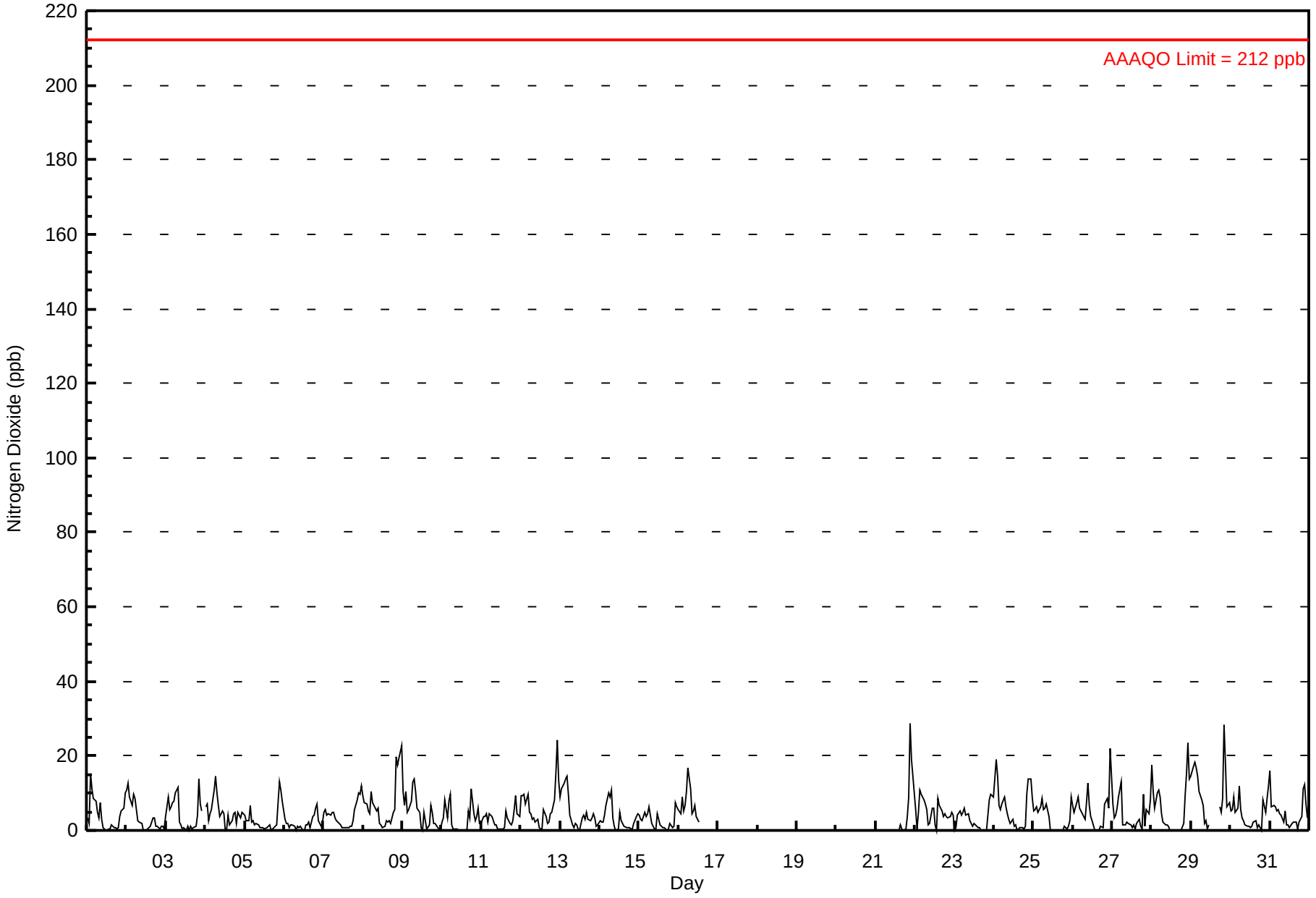
Minimum Value: 0 ppb on Jul 2 11:00 Minimum Daily Average: 1.8 ppb on Jul 6
Maximum Diurnal Average: 8.4 ppb at hour 23 Minimum Diurnal Average: 0.7 ppb at hour 13
Monthly Average: 4.47 ppb Percentiles: P_1 = 0.0 P_{10} = 0.2 Q_1 = 1.0 Median = 3.3 Q_3 = 6.4 P_{90} = 10.2 P_{99} = 21.9

Hours in Service:	744
Hours of Data:	585
Hours of Missing Data:	159
Hours of Calibration:	34
Percent Operational Time:	83.2

Day	Hourly Period Ending At (MST)																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1-Jul	3	2	Z	11	N	8	5	3	8	3	1	0	0	0	1	1	1	1	0	1	4	5	6	10	3.3	11.1
2-Jul	11	Z	9	7	10	9	6	3	2	2	0	0	N	0	N	2	3	4	1	1	0	1	1	1	3.4	10.6
3-Jul	Z	9	6	6	7	8	10	12	2	1	0	1	0	1	0	1	1	1	1	4	14	7	5	Z	4.4	13.6
4-Jul	6	7	3	5	6	11	14	10	7	4	5	5	0	0	4	1	3	5	5	2	5	3	Z	4	5.0	14.5
5-Jul	4	2	3	7	2	3	2	2	1	1	1	1	0	1	1	1	0	0	1	1	7	Z	11	8	2.6	11.0
6-Jul	3	2	2	1	1	2	1	0	1	1	1	0	0	2	2	2	1	4	4	6	Z	3	1	2	1.8	5.8
7-Jul	5	5	4	4	4	5	5	4	3	2	2	1	1	1	1	1	1	1	2	Z	8	10	10	12	4.0	12.0
8-Jul	9	7	7	5	4	10	8	6	5	6	2	2	1	1	3	2	3	2	Z	6	20	17	20	23	7.3	22.8
9-Jul	11	7	10	5	6	8	13	14	10	6	5	1	0	5	3	0	2	Z	5	2	2	1	0	0	5.0	13.9
10-Jul	2	3	8	3	8	10	2	1	1	0	0	0	0	0	0	0	Z	3	11	5	3	4	6	2	3.1	11.0
11-Jul	2	4	4	4	2	4	4	3	1	2	0	0	0	0	1	Z	3	2	1	3	6	9	4	4	2.8	9.2
12-Jul	9	9	10	7	10	5	4	3	4	2	3	1	0	0	Z	4	2	2	4	5	8	15	24	14	6.4	24.4
13-Jul	9	11	13	14	14	10	4	2	1	2	2	0	0	Z	4	3	5	3	2	3	5	3	1	1	4.9	14.4
14-Jul	3	2	2	4	7	10	9	11	3	1	0	0	Z	3	2	1	1	1	1	0	1	2	4	5	3.1	10.6
15-Jul	4	3	3	5	4	5	6	4	2	1	0	Z	3	2	1	1	0	0	0	2	1	1	7	6	2.6	7.3
16-Jul	6	5	9	5	7	10	17	11	4	5	Z	4	P	P	P	P	P	P	P	P	P	P	P	P	--	16.8
17-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
18-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
19-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
20-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
21-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	0	2	0	0	0	4	9	29	19	10	--	28.7
22-Jul	6	0	5	11	10	8	7	6	2	Z	6	6	2	Z	9	7	5	4	4	4	3	4	5	4	5.3	11.0
23-Jul	0	1	Z	5	4	5	6	4	4	3	2	1	2	1	1	1	0	0	0	0	4	8	10	9	3.1	9.7
24-Jul	9	Z	14	7	6	7	9	6	4	3	2	3	1	1	0	0	1	1	1	1	10	14	14	9	5.3	14.5
25-Jul	Z	6	6	5	6	9	6	6	7	4	0	0	0	0	0	0	0	0	0	1	0	1	2	Z	2.7	8.6
26-Jul	7	5	8	9	6	5	4	3	8	13	7	4	3	0	0	0	0	1	1	7	8	8	Z	22	5.6	22.1
27-Jul	7	4	4	6	9	13	1	2	1	2	2	1	1	1	0	2	3	1	0	10	1	Z	5	8	3.7	12.9
28-Jul	18	11	6	10	11	9	4	2	2	1	1	0	0	0	0	0	0	0	0	2	Z	15	23	14	5.6	23.4
29-Jul	14	17	18	17	15	10	8	7	2	3	0	C	C	C	C	C	C	6	5	9	28	18	6	7	10.6	28.3
30-Jul	5	6	Z	5	6	12	5	3	3	1	1	1	1	1	2	2	1	2	1	0	8	5	8	12	4.0	12.1
31-Jul	16	6	Z	6	5	6	5	4	2	5	1	1	1	2	2	2	2	0	2	4	11	12	7	4	4.7	16.0
	7.0	5.6	6.9	6.7	6.8	7.7	6.3	5.0	3.4	2.9	1.8	1.4	0.7	1.1	1.6	1.6	1.5	1.7	2.2	3.2	6.9	8.2	8.4	7.9	Diurnal Average	
	17.6	17.3	18.4	16.6	14.5	12.9	16.8	13.9	10.4	12.8	6.8	6.0	3.1	4.7	8.6	6.5	5.1	6.4	11.0	9.8	28.3	28.7	24.4	22.8	Diurnal Maximum	

C - Calibration Z - Zero/Span P - Power Failure N - Not Valid
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 212 ppb 24-hr 106 ppb

Hourly Averages for NO_2 at Crescent Heights
July 2008



Palliser Airshed Society
Summary of Hourly Maximums

Crescent Heights - Nitrogen Dioxide (NO_2) - ppb
July 1, 2008 to August 1, 2008

Maximum Value: 53 ppb on Jul 21 22:00

Maximum Daily Average: 19.0 ppb on Jul 29

Minimum Value: 0 ppb on Jul 28 19:00

Minimum Daily Average: 6.0 ppb on Jul 2

Maximum Diurnal Average: 18.3 ppb at hour 6

Minimum Diurnal Average: 4.0 ppb at hour 13

Monthly Average: 11.13 ppb

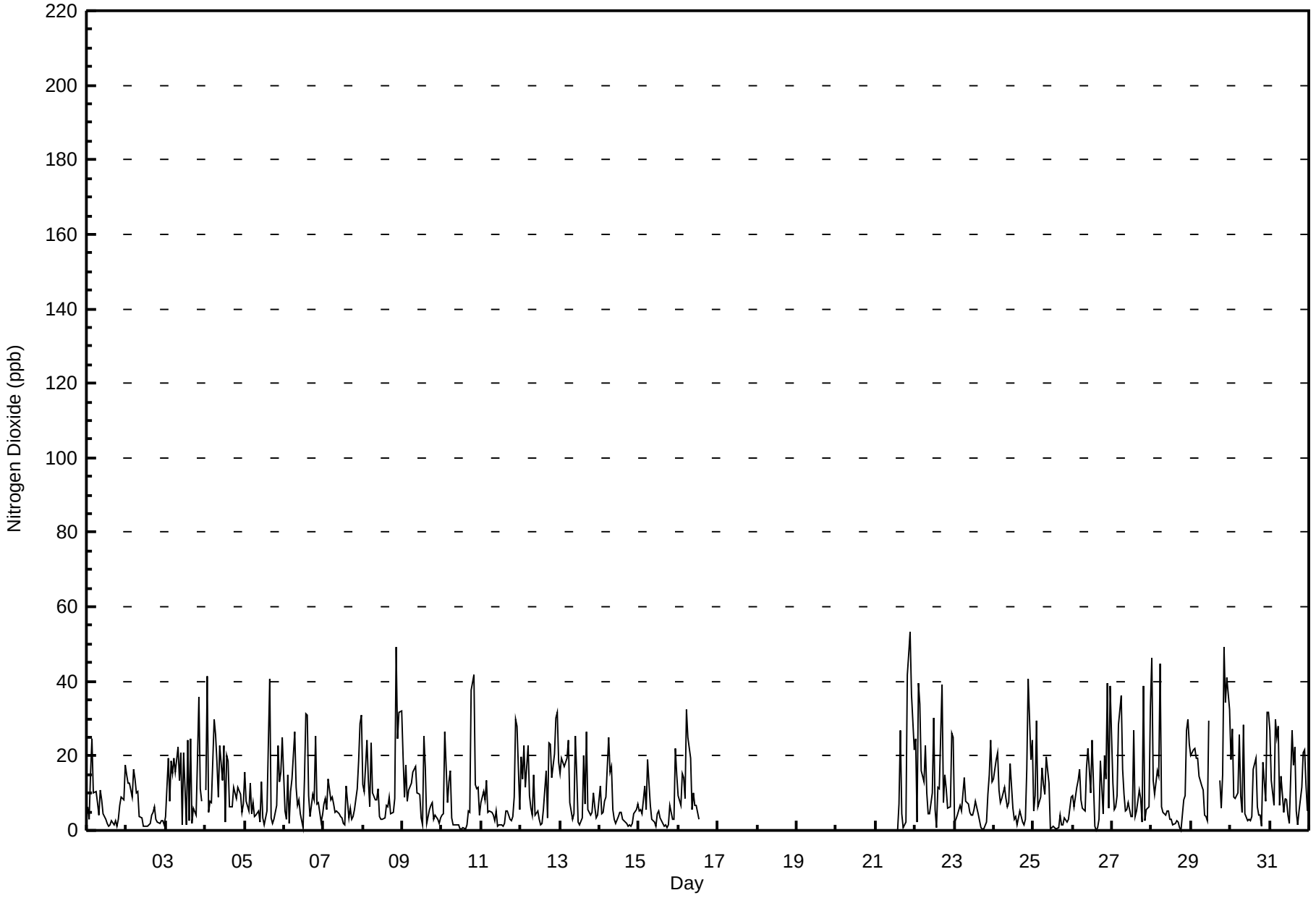
Percentiles: $P_1 = 0.5$ $P_{10} = 1.6$ $Q_1 = 3.6$ Median = 7.6 $Q_3 = 16.1$ $P_{90} = 25.5$ $P_{99} = 44.0$

Hours in Service:	744
Hours of Data:	585
Hours of Missing Data:	159
Hours of Calibration:	34
Percent Operational Time:	83.2

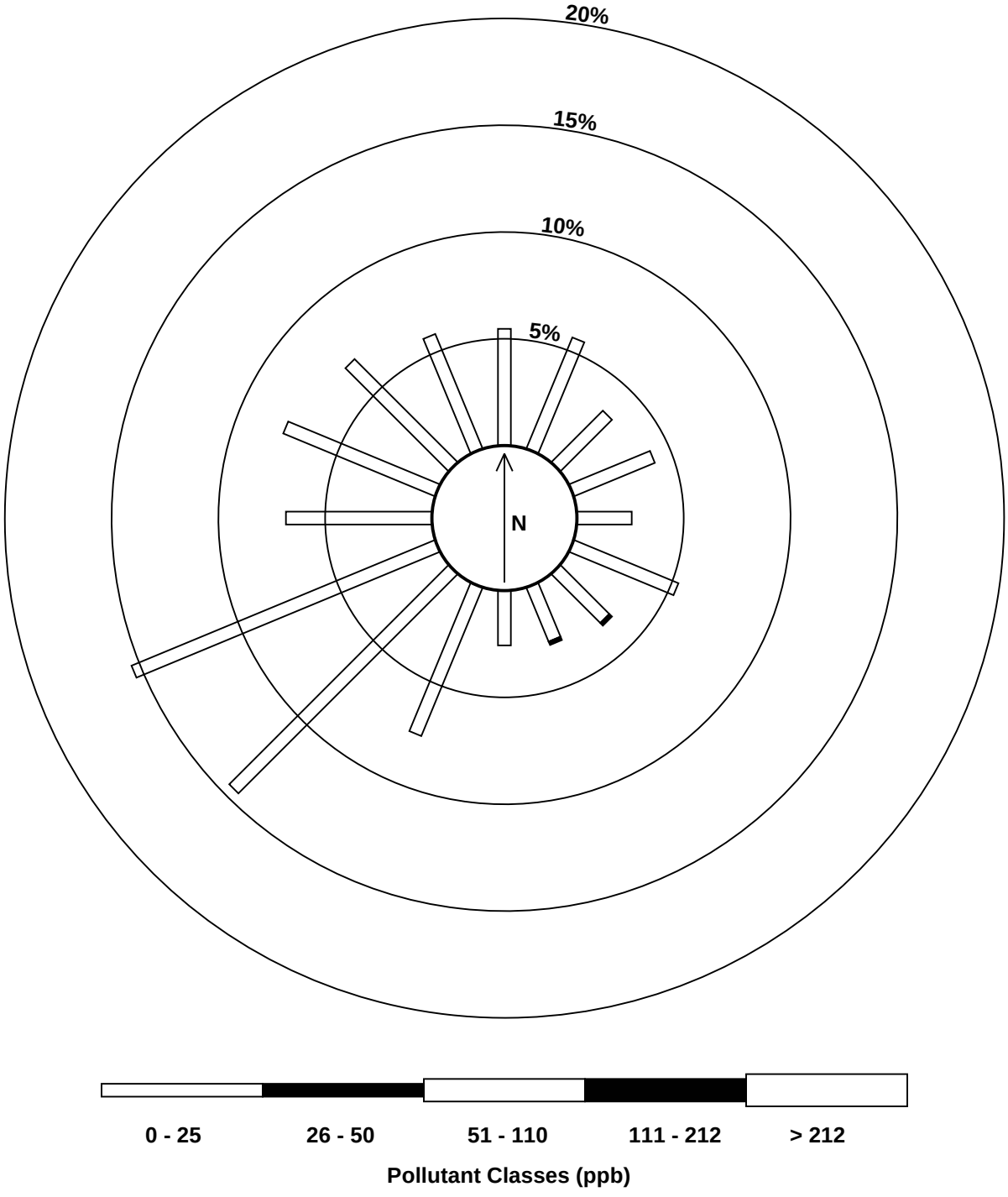
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Jul	6	3	Z	25	N	10	7	4	11	8	4	3	2	1	1	3	1	3	1	3	7	9	8	17	6.3	24.5
2-Jul	15	Z	13	9	16	14	10	10	4	3	1	1	N	1	N	4	5	6	3	2	2	3	3	2	6.0	16.3
3-Jul	Z	20	8	19	15	19	15	22	13	21	2	21	2	24	3	24	2	6	4	19	36	11	8	Z	14.3	35.6
4-Jul	11	41	5	8	8	30	26	18	9	23	13	23	2	20	19	6	6	11	10	9	11	10	Z	7	14.2	41.5
5-Jul	16	8	5	13	4	7	4	4	5	2	13	3	2	5	23	41	3	2	3	7	23	Z	16	25	10.2	40.7
6-Jul	5	3	15	2	10	14	27	11	7	8	4	1	14	31	31	9	4	10	8	25	Z	7	2	4	11.0	31.3
7-Jul	7	9	5	14	8	9	7	5	5	4	4	4	2	1	12	3	6	3	4	Z	11	19	29	31	8.8	31.1
8-Jul	12	10	24	13	7	24	10	8	8	11	4	3	3	3	7	6	9	4	Z	9	49	25	32	32	13.6	49.3
9-Jul	20	9	18	8	11	13	16	16	17	10	10	3	2	26	17	2	6	Z	8	3	4	3	2	3	9.8	25.5
10-Jul	4	4	27	7	13	16	3	2	2	2	1	0	1	1	1	2	Z	5	38	42	12	11	11	4	9.1	41.8
11-Jul	7	10	8	14	5	5	5	4	3	5	1	2	1	1	2	Z	5	3	3	4	9	30	28	6	7.0	30.0
12-Jul	20	14	23	11	23	9	6	4	15	4	5	3	1	2	Z	16	3	24	23	14	21	30	32	18	14.0	31.7
13-Jul	15	20	17	18	20	24	8	3	4	25	15	2	1	Z	20	7	26	6	4	5	10	6	3	4	11.5	26.3
14-Jul	12	5	5	8	9	25	16	17	6	3	2	4	Z	5	3	2	2	1	1	1	2	4	6	7	6.3	25.0
15-Jul	5	5	5	12	5	19	13	7	3	2	1	Z	5	3	2	1	2	1	2	7	3	3	22	15	6.2	21.9
16-Jul	9	7	15	14	8	32	25	19	6	10	Z	7	P	P	P	P	P	P	P	P	P	P	P	P	--	32.3
17-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
18-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
19-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
20-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
21-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	7	27	5	1	2	42	47	53	36	22	--	53.2
22-Jul	24	2	39	34	16	13	23	10	4	Z	10	30	6	Z	11	11	39	7	15	11	6	6	26	25	16.8	39.4
23-Jul	2	3	Z	7	5	10	14	8	7	5	4	4	6	8	5	3	1	0	0	2	10	15	24	13	6.8	24.4
24-Jul	14	Z	21	11	7	8	12	9	6	7	18	6	3	4	2	3	5	2	2	3	17	41	19	24	10.5	40.6
25-Jul	Z	9	29	6	9	17	12	10	20	13	1	1	1	1	1	1	4	2	1	3	2	3	6	Z	6.8	29.3
26-Jul	9	6	12	13	16	8	6	5	17	22	16	10	24	1	0	1	3	19	5	20	14	40	Z	39	13.3	39.7
27-Jul	13	6	6	9	28	36	17	10	5	6	8	4	4	27	4	5	11	9	2	39	3	Z	6	33	12.6	38.7
28-Jul	46	13	10	16	15	45	6	5	4	5	5	3	3	1	2	3	2	1	0	8	Z	27	30	23	11.9	46.2
29-Jul	20	22	22	19	19	14	12	11	4	4	3	C	C	C	C	C	C	14	6	15	49	34	41	33	19.0	49.1
30-Jul	19	27	Z	9	10	26	9	5	28	4	3	3	3	4	16	19	6	4	4	1	18	8	32	32	12.6	31.9
31-Jul	27	13	Z	30	25	28	7	15	5	9	8	4	2	27	18	23	5	2	5	12	21	21	12	5	14.0	30.0
	14.2	11.2	15.1	13.4	12.5	18.3	12.1	9.3	8.4	8.7	6.3	6.0	4.0	9.0	8.9	9.2	6.7	5.7	6.2	12.2	16.1	17.5	18.1	17.7	Diurnal Average	
	46.2	41.5	39.4	33.9	28.4	44.6	26.6	22.4	28.4	25.3	18.0	30.1	24.1	31.3	31.1	40.7	39.0	23.6	37.8	41.8	49.3	53.2	41.0	38.8	Diurnal Maximum	

C - Calibration Z - Zero/Span P - Power Failure N - Not Valid

Hourly Maximums for NO_2 at Crescent Heights
July 2008



Pollutant Rose for NO_2 at Crescent Heights
July 2008



Palliser Airshed Society
Summary of Hourly Averages

Crescent Heights - Nitrogen Oxide (NO) - ppb
July 1, 2008 to August 1, 2008

Maximum Value: 25 ppb on Jul 13 05:00

Maximum Daily Average: 3.8 ppb on Jul 29

Minimum Value: 0 ppb on Jul 1 21:00

Minimum Daily Average: 1.0 ppb on Jul 1

Maximum Diurnal Average: 4.2 ppb at hour 8

Minimum Diurnal Average: 0.7 ppb at hour 19

Monthly Average: 1.78 ppb

Percentiles: P_1 = 0.0 P_{10} = 0.4 Q_1 = 0.6 Median = 1.1 Q_3 = 2.0 P_{90} = 3.8 P_{99} = 13.5

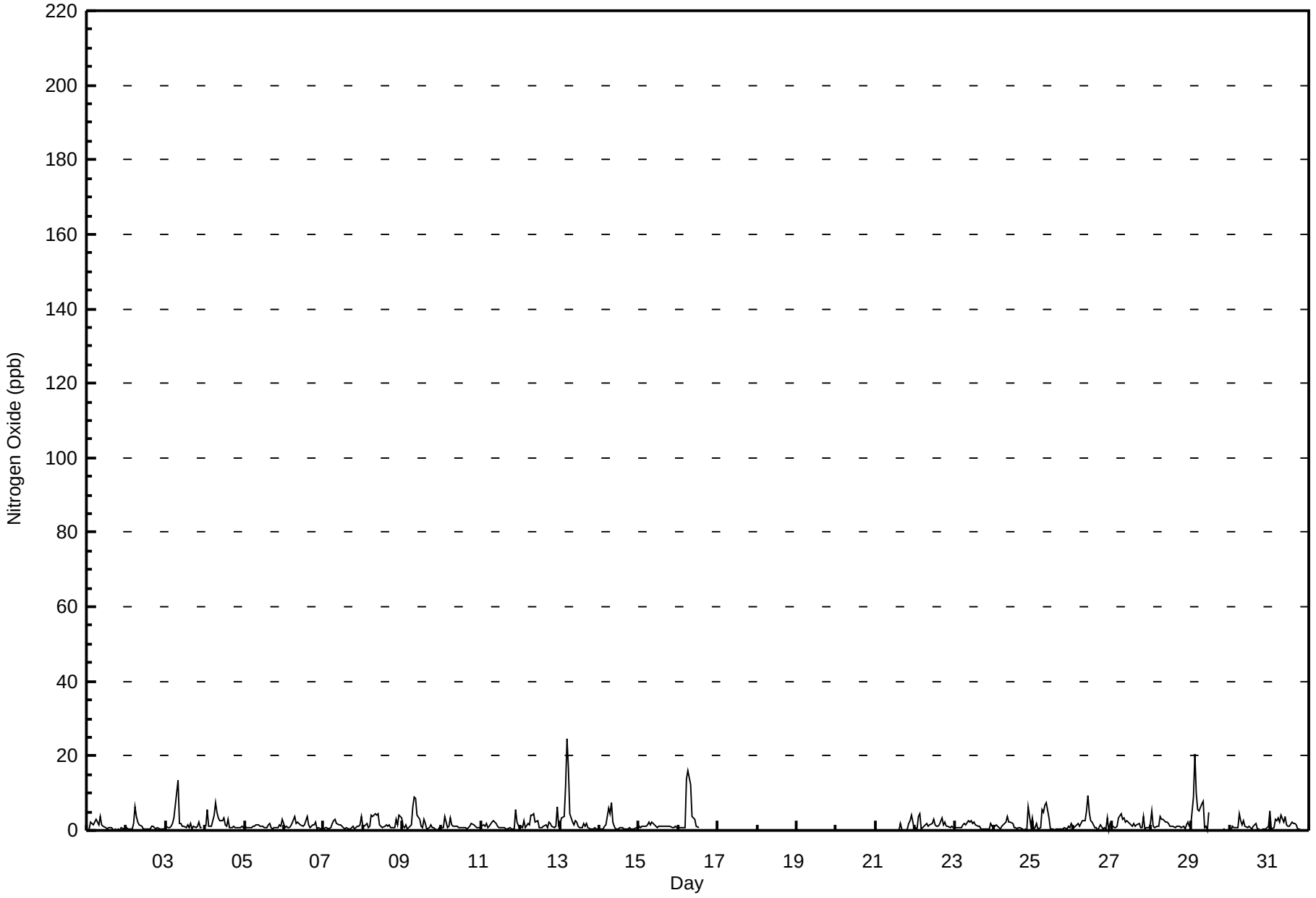
Hours in Service:	744
Hours of Data:	585
Hours of Missing Data:	159
Hours of Calibration:	34
Percent Operational Time:	83.2

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Jul	0	0	Z	2	N	3	2	1	4	2	1	1	1	1	1	1	0	0	0	0	0	1	0	1	1.0	3.8
2-Jul	1	Z	0	0	2	6	4	2	2	1	0	0	N	0	N	1	1	1	1	1	0	0	1	1	1.2	6.5
3-Jul	Z	1	1	1	2	3	7	14	2	2	1	1	1	2	1	2	1	1	1	1	2	1	1	Z	2.1	13.6
4-Jul	1	6	1	1	1	4	7	5	3	3	3	3	1	1	3	1	1	1	1	1	1	1	Z	1	2.1	7.4
5-Jul	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	Z	1	3	1.1	3.0
6-Jul	1	1	1	1	1	2	4	2	2	2	1	1	1	3	4	2	1	1	1	2	Z	1	0	0	1.5	3.7
7-Jul	1	1	1	1	1	2	3	3	2	1	1	1	1	0	1	1	0	1	1	Z	1	1	2	4	1.2	3.8
8-Jul	1	1	2	1	1	4	4	4	4	5	1	1	1	1	1	1	1	1	Z	1	3	1	4	3	2.1	4.6
9-Jul	1	1	2	0	1	2	6	9	8	4	3	1	1	3	2	1	1	Z	1	1	0	0	1	1	2.1	8.8
10-Jul	1	1	4	1	1	3	2	1	1	1	1	1	1	1	1	0	Z	1	2	2	1	1	1	1	1.3	3.7
11-Jul	1	1	1	2	1	1	2	3	2	2	1	1	1	1	1	Z	1	1	1	0	1	6	2	0	1.4	5.7
12-Jul	1	1	3	1	2	2	4	4	5	2	2	1	1	1	Z	1	1	2	2	1	1	1	6	1	1.9	6.4
13-Jul	2	3	4	12	25	17	4	2	2	2	2	1	1	Z	2	1	2	1	0	0	0	1	0	0	3.7	24.7
14-Jul	1	0	0	1	1	6	4	8	2	1	0	1	Z	1	1	0	1	0	1	0	0	1	1	0	1.4	7.6
15-Jul	1	1	1	1	1	2	2	2	2	1	1	Z	1	1	1	1	1	1	1	1	1	1	1	1	1.2	2.4
16-Jul	1	1	1	1	1	14	16	12	4	3	Z	1	P	P	P	P	P	P	P	P	P	P	P	P	--	16.1
17-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
18-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
19-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
20-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
21-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	0	2	0	0	0	0	2	2	4	0	--	4.3
22-Jul	1	0	4	5	0	1	2	2	1	Z	2	3	2	Z	1	1	3	1	2	1	1	1	1	1	1.6	4.6
23-Jul	1	1	Z	1	1	1	2	2	3	2	2	2	2	2	1	1	1	0	1	0	0	1	2	1	1.2	2.6
24-Jul	1	Z	1	1	0	1	2	2	4	2	2	2	1	1	1	1	1	0	0	0	0	6	1	3	1.4	6.4
25-Jul	Z	1	2	0	1	6	5	7	7	3	0	0	0	0	0	0	0	0	0	1	1	1	1	Z	1.7	7.5
26-Jul	1	1	1	2	1	2	3	3	5	9	5	3	2	1	1	0	1	1	0	1	0	3	Z	2	2.1	9.3
27-Jul	1	1	1	1	3	5	3	4	2	3	2	2	1	2	1	2	2	1	1	4	0	Z	1	2	1.9	4.6
28-Jul	5	1	1	1	1	4	3	3	2	2	2	1	1	1	1	1	1	1	1	1	Z	2	2	1	1.7	5.2
29-Jul	1	9	20	10	5	5	7	8	1	1	0	C	C	C	C	C	C	0	0	0	1	0	0	0	3.8	20.4
30-Jul	0	1	Z	1	1	4	3	2	3	1	1	1	1	0	1	2	0	0	0	0	0	0	1	1	1.0	4.4
31-Jul	5	0	Z	3	3	3	2	4	2	4	1	1	1	2	2	2	1	0	1	0	0	0	0	0	1.7	5.1
	1.3	1.4	2.3	1.9	2.3	4.0	4.0	4.2	2.9	2.5	1.6	1.3	1.0	1.1	1.2	1.1	0.9	0.8	0.7	0.8	0.7	1.3	1.4	1.2	Diurnal Average	
	5.2	8.8	20.4	12.1	24.7	16.6	16.1	13.6	8.5	9.3	5.0	3.5	2.4	3.0	3.6	2.0	3.4	2.1	2.3	3.6	2.9	6.4	6.4	3.8	Diurnal Maximum	

C - Calibration Z - Zero/Span P - Power Failure N - Not Valid

Hourly Averages for NO at Crescent Heights

July 2008



Palliser Airshed Society
Summary of Hourly Maximums

Crescent Heights - Nitrogen Oxide (NO) - ppb
July 1, 2008 to August 1, 2008

Maximum Value: 149 ppb on Jul 16 06:00
Maximum Daily Average: 18.1 ppb on Jul 13

Minimum Value: 0 ppb on Jul 29 18:00
Maximum Diurnal Average: 29.1 ppb at hour 6
Monthly Average: 9.74 ppb

Minimum Daily Average: 2.8 ppb on Jul 1
Minimum Diurnal Average: 4.0 ppb at hour 13
Percentiles: P_1 = 0.6 P_{10} = 1.4 Q_1 = 1.8 Median = 2.8 Q_3 = 8.8 P_{90} = 26.5 P_{99} = 83.5

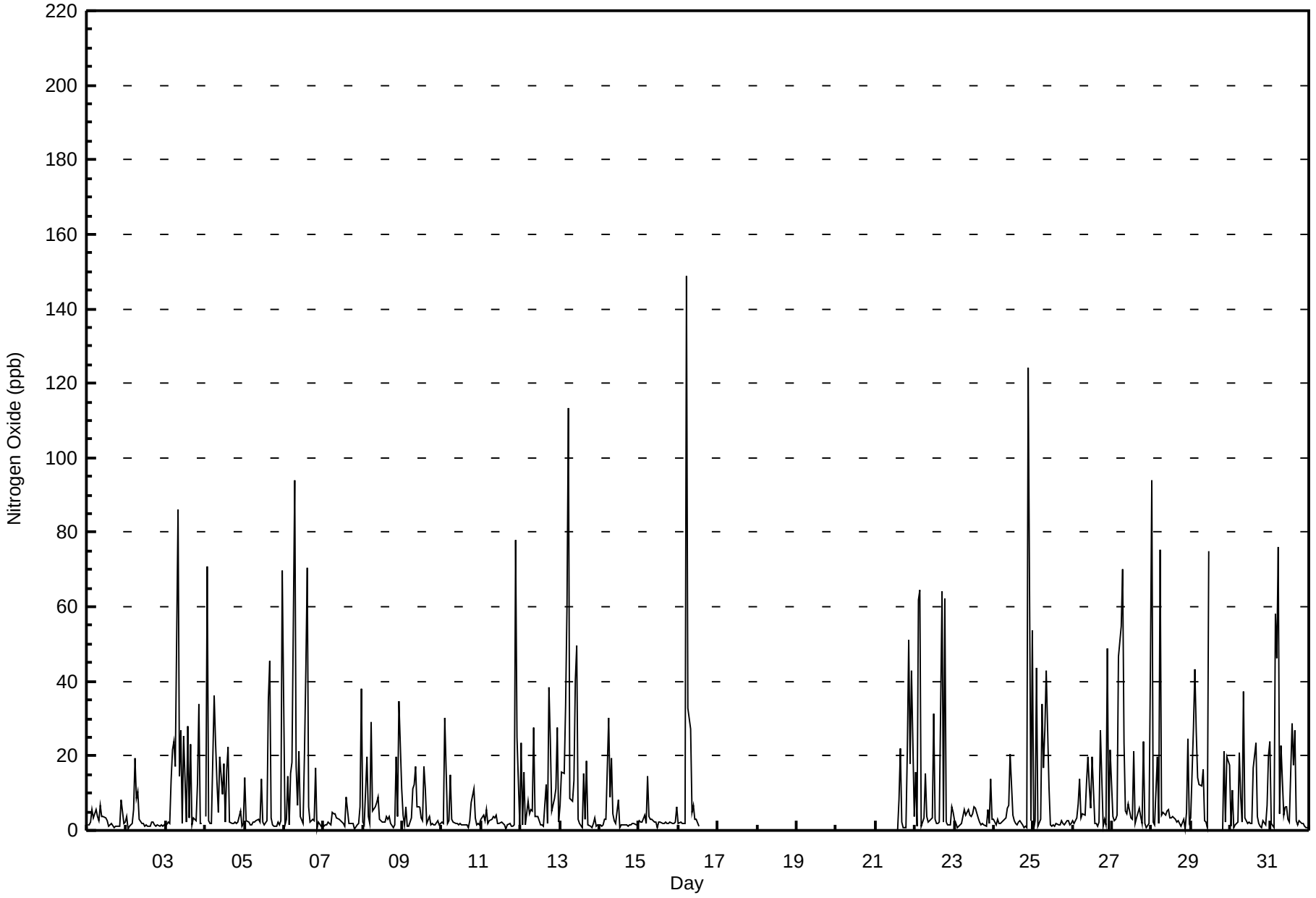
Hours in Service:	744
Hours of Data:	585
Hours of Missing Data:	159
Hours of Calibration:	34
Percent Operational Time:	83.2

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Jul	2	2	Z	6	N	6	4	3	7	4	4	3	2	1	2	2	1	1	1	1	1	8	2	2	2.8	8.1
2-Jul	4	Z	1	2	6	20	9	10	3	2	2	1	N	1	N	2	2	1	1	1	1	1	1	1	3.5	19.6
3-Jul	Z	2	2	13	22	24	17	86	14	27	2	25	2	28	3	23	2	3	3	13	34	2	2	Z	15.9	86.1
4-Jul	4	71	3	2	2	36	23	13	5	20	10	18	2	16	22	2	2	2	2	2	2	5	Z	2	11.6	71.0
5-Jul	14	3	2	2	1	2	2	3	3	2	14	2	2	3	35	45	3	1	1	1	2	Z	3	70	9.4	69.7
6-Jul	2	3	15	2	15	18	94	17	7	21	4	2	21	43	70	6	2	3	3	17	Z	2	1	2	16.1	94.1
7-Jul	1	1	1	2	2	5	5	5	3	3	3	2	2	1	9	2	2	2	2	Z	2	2	6	38	4.3	37.9
8-Jul	2	2	20	4	2	29	5	6	7	9	3	3	2	2	4	3	4	2	Z	1	20	4	35	11	7.8	34.6
9-Jul	4	2	6	1	1	3	11	12	17	6	6	4	3	17	11	2	4	Z	2	1	2	3	2	2	5.3	17.3
10-Jul	2	2	30	2	3	15	3	2	2	2	2	2	2	2	1	1	Z	3	8	11	4	2	2	2	4.4	30.2
11-Jul	3	4	3	6	2	3	3	4	3	4	2	2	2	2	2	Z	1	2	1	1	1	78	25	1	6.7	77.9
12-Jul	23	1	16	1	8	4	6	5	28	4	4	3	2	2	Z	12	2	38	24	5	8	11	27	2	10.3	38.3
13-Jul	7	16	15	33	60	113	9	8	13	40	50	3	2	Z	15	3	19	1	1	1	2	3	1	1	18.1	113.5
14-Jul	2	1	1	3	3	30	9	19	4	3	2	8	Z	1	1	1	2	1	2	1	2	2	1	1	4.4	30.0
15-Jul	3	2	2	4	2	14	4	3	3	2	2	Z	2	2	2	2	2	2	2	2	2	2	2	6	3.1	14.4
16-Jul	2	2	2	2	2	149	33	27	5	7	Z	3	P	P	P	P	P	P	P	P	P	P	P	P	--	148.8
17-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
18-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
19-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
20-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
21-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	8	22	2	1	1	21	51	18	43	4	--	51.1
22-Jul	16	1	62	64	1	3	15	4	2	Z	4	31	3	Z	2	2	64	2	62	2	2	1	6	5	16.1	64.3
23-Jul	3	2	Z	1	2	4	6	4	5	4	4	5	6	6	3	2	2	2	1	1	6	2	14	3	3.8	13.7
24-Jul	3	Z	3	2	2	2	3	3	6	7	20	4	2	2	1	2	3	2	1	1	1	124	2	54	10.9	124.1
25-Jul	Z	3	43	1	3	34	17	27	43	12	1	1	1	1	2	1	2	3	2	2	3	3	1	Z	9.3	43.4
26-Jul	3	2	3	7	14	3	5	4	13	20	12	6	20	2	2	1	2	27	1	3	2	49	Z	22	9.6	48.9
27-Jul	4	3	3	4	47	55	70	23	5	4	7	3	3	21	2	3	6	4	2	24	2	Z	2	43	14.8	69.9
28-Jul	94	2	2	20	2	75	4	5	4	5	6	3	3	4	3	2	3	2	1	3	Z	5	25	2	12.0	93.8
29-Jul	3	28	43	27	14	12	12	17	3	2	1	C	C	C	C	C	C	0	0	0	21	2	20	17	12.3	43.4
30-Jul	1	11	Z	2	2	21	9	2	37	3	2	2	2	2	17	24	4	2	1	1	3	2	7	20	7.6	37.5
31-Jul	24	2	Z	58	46	76	5	23	4	6	6	3	2	29	17	27	3	1	3	2	2	1	1	1	14.9	76.2
	9.3	6.9	12.7	10.4	10.5	29.1	14.6	12.9	9.5	8.8	6.8	5.9	4.0	8.5	10.3	8.1	5.7	4.3	5.1	4.8	7.2	13.8	9.6	13.0	Diurnal Average	
	93.8	71.0	61.9	64.3	60.3	148.8	94.1	86.1	42.7	40.2	49.5	31.2	20.6	43.4	70.4	45.5	64.1	38.3	62.2	23.9	51.1	124.1	42.8	69.7	Diurnal Maximum	

C - Calibration Z - Zero/Span P - Power Failure N - Not Valid

Hourly Maximums for NO at Crescent Heights

July 2008



Palliser Airshed Society
Summary of Hourly Averages

Crescent Heights - Oxides of Nitrogen (NO_X) - ppb
July 1, 2008 to August 1, 2008

Maximum Value: 39 ppb on Jul 13 05:00
Maximum Daily Average: 12.9 ppb on Jul 29

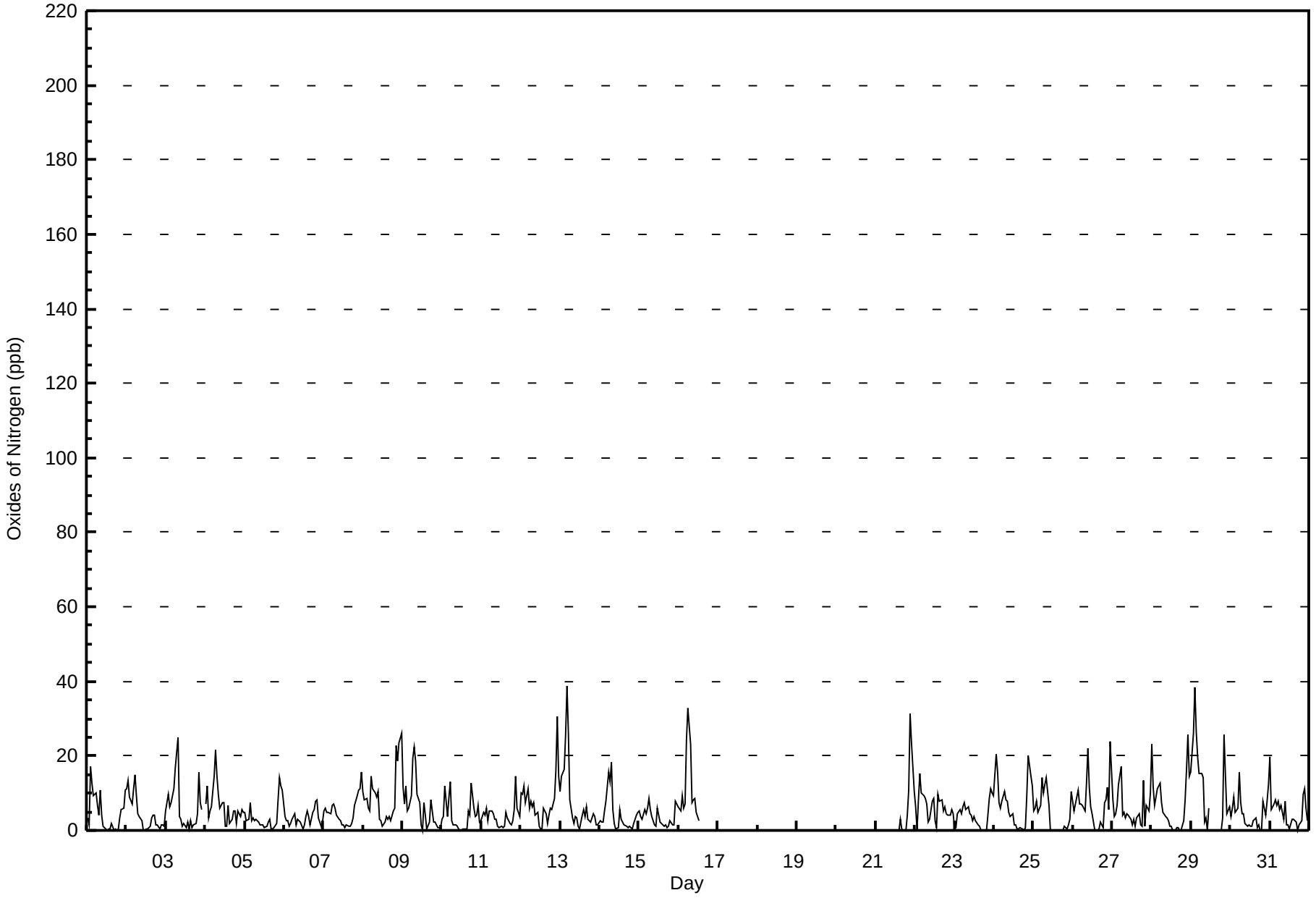
Minimum Value: 0 ppb on Jul 1 17:00
Minimum Daily Average: 3.0 ppb on Jul 6
Maximum Diurnal Average: 11.4 ppb at hour 6
Minimum Diurnal Average: 1.3 ppb at hour 13
Monthly Average: 5.86 ppb
Percentiles: P_1 = 0.0 P_{10} = 0.5 Q_1 = 1.5 Median = 4.1 Q_3 = 7.9 P_{90} = 13.1 P_{99} = 25.2

Hours in Service:	744
Hours of Data:	585
Hours of Missing Data:	159
Hours of Calibration:	34
Percent Operational Time:	83.2

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Jul	3	2	Z	13	N	10	7	4	11	4	1	0	0	0	0	2	0	0	0	0	3	5	6	11	3.8	12.6
2-Jul	11	Z	9	7	11	15	9	4	4	3	0	0	N	0	N	3	4	4	2	2	1	2	1	1	4.4	14.9
3-Jul	Z	10	6	8	9	11	17	25	4	3	1	2	1	2	0	3	1	1	2	5	16	8	6	Z	6.3	25.1
4-Jul	7	12	3	5	6	15	22	15	10	6	7	8	1	1	7	2	3	5	5	2	5	4	Z	5	6.7	21.6
5-Jul	5	3	3	7	3	3	3	3	2	1	2	1	1	1	2	3	1	0	1	2	8	Z	12	11	3.4	12.1
6-Jul	4	3	2	1	2	3	4	2	3	3	2	0	1	4	5	4	1	5	5	8	Z	3	1	2	3.0	7.9
7-Jul	5	6	5	5	4	7	7	6	4	3	3	2	1	1	2	1	1	2	3	Z	9	11	11	16	5.0	15.7
8-Jul	10	8	9	6	5	14	11	10	9	10	3	2	1	2	4	3	4	2	Z	6	23	19	24	26	9.2	26.1
9-Jul	12	7	12	5	6	9	19	22	19	10	7	1	0	7	4	0	2	Z	5	2	2	1	1	1	6.8	22.4
10-Jul	3	4	12	4	9	13	3	1	1	1	0	0	0	0	0	0	Z	4	13	6	4	4	7	2	4.0	13.0
11-Jul	2	5	4	6	3	5	5	5	3	3	1	1	1	1	1	Z	3	2	1	3	6	15	6	4	3.7	14.6
12-Jul	10	10	12	8	11	6	8	6	8	4	5	1	0	1	Z	5	2	4	6	5	9	16	31	14	7.9	30.7
13-Jul	10	14	16	26	39	26	8	3	2	4	3	1	0	Z	5	4	6	3	2	3	5	4	1	1	8.3	38.8
14-Jul	3	2	2	5	8	16	13	18	5	2	0	1	Z	3	2	1	1	1	1	1	1	2	4	5	4.2	18.2
15-Jul	5	4	3	6	5	6	8	6	4	1	1	Z	4	2	2	1	1	1	1	3	1	1	8	7	3.5	8.5
16-Jul	6	5	9	6	7	24	33	23	8	8	Z	5	P	P	P	P	P	P	P	P	P	P	P	P	--	32.7
17-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
18-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
19-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
20-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
21-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	0	3	0	0	0	4	11	31	23	10	--	31.2
22-Jul	6	0	8	15	10	9	8	7	2	Z	8	9	3	Z	10	8	8	5	7	5	4	4	6	5	6.7	15.4
23-Jul	1	1	Z	5	4	6	7	6	6	5	4	3	4	3	2	1	0	0	0	0	4	9	11	10	4.0	11.3
24-Jul	9	Z	16	7	6	8	10	8	8	5	4	4	1	2	0	0	1	0	0	1	9	20	15	12	6.4	20.1
25-Jul	Z	6	8	5	7	14	10	12	14	7	0	0	0	0	0	0	0	0	0	1	0	2	3	Z	4.1	14.1
26-Jul	8	5	9	11	7	7	7	5	13	22	12	6	5	0	0	0	0	2	1	8	8	12	Z	24	7.4	24.0
27-Jul	8	4	5	7	12	17	4	5	3	5	4	3	1	3	1	3	4	2	1	13	1	Z	5	10	5.3	17.3
28-Jul	23	12	7	11	12	13	7	5	4	3	3	1	1	0	0	1	1	0	0	2	Z	17	26	15	7.0	25.6
29-Jul	16	26	39	27	20	15	15	14	2	3	0	C	C	C	C	C	C	0	0	3	26	15	4	6	12.9	38.6
30-Jul	4	6	Z	5	6	16	7	4	5	2	1	1	1	1	3	3	1	1	0	0	8	4	8	12	4.3	15.6
31-Jul	20	5	Z	8	7	8	6	7	3	8	2	1	0	3	3	3	2	0	1	3	10	11	6	3	5.2	19.7
	8.0	6.6	9.0	8.4	8.8	11.4	10.0	8.8	6.0	5.0	3.0	2.3	1.3	1.7	2.3	2.3	2.1	1.9	2.3	3.5	7.2	9.1	9.4	8.9	Diurnal Average	
	23.0	26.0	38.6	26.6	38.8	26.1	32.7	25.1	18.7	21.9	11.5	8.8	4.6	7.4	9.8	7.7	8.3	5.4	12.7	13.4	25.6	31.2	30.7	26.1	Diurnal Maximum	

C - Calibration Z - Zero/Span P - Power Failure N - Not Valid

Hourly Averages for NO_X at Crescent Heights
July 2008



Palliser Airshed Society
Summary of Hourly Maximums

Crescent Heights - Oxides of Nitrogen (NO_X) - ppb
July 1, 2008 to August 1, 2008

Maximum Value: 172 ppb on Jul 16 06:00

Maximum Daily Average: 31.5 ppb on Jul 22

Minimum Value: 0 ppb on Jul 28 19:00

Minimum Daily Average: 7.6 ppb on Jul 1

Maximum Diurnal Average: 45.2 ppb at hour 6

Minimum Diurnal Average: 6.7 ppb at hour 13

Monthly Average: 19.48 ppb

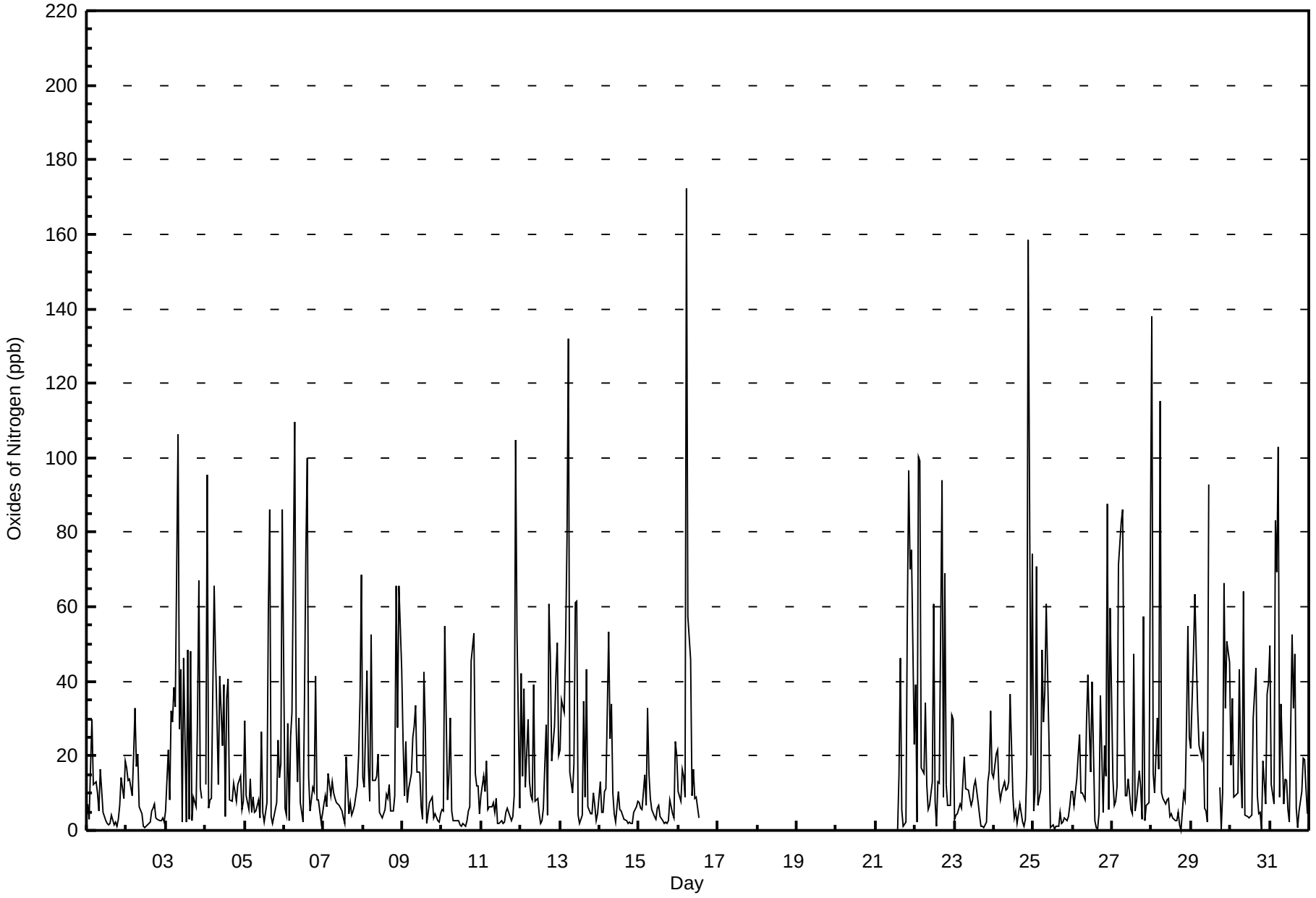
Percentiles: P_1 = 0.6 P_{10} = 2.4 Q_1 = 4.6 Median = 9.5 Q_3 = 25.1 P_{90} = 50.5 P_{99} = 108.0

Hours in Service:	744
Hours of Data:	585
Hours of Missing Data:	159
Hours of Calibration:	34
Percent Operational Time:	83.2

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Jul	7	3	Z	30	N	13	10	5	16	11	5	3	2	1	2	4	1	2	1	3	7	14	9	19	7.6	29.7
2-Jul	17	Z	14	9	20	33	17	20	6	5	1	1	N	2	N	5	6	7	3	3	2	3	3	2	8.6	32.8
3-Jul	Z	22	8	32	29	38	33	106	27	43	2	46	2	48	3	48	3	9	6	30	67	12	9	Z	28.4	106.4
4-Jul	12	96	6	8	8	66	46	30	12	41	23	39	4	35	41	8	8	13	11	8	12	14	Z	8	23.9	95.6
5-Jul	30	9	6	14	5	9	5	5	8	3	26	5	2	8	59	86	4	2	4	7	24	Z	18	86	18.5	86.3
6-Jul	6	4	29	3	25	32	110	29	13	30	8	2	35	75	100	15	5	12	10	41	Z	8	2	4	26.0	109.8
7-Jul	7	9	6	15	9	13	10	9	8	7	6	5	3	2	20	5	7	4	5	Z	12	20	35	69	12.5	68.6
8-Jul	14	11	43	17	8	52	13	13	14	20	5	4	3	6	10	8	12	5	Z	9	66	28	66	43	20.5	65.8
9-Jul	24	10	24	8	11	15	25	28	34	16	16	6	3	42	27	2	7	Z	9	3	4	3	2	4	14.1	42.4
10-Jul	5	5	55	8	15	30	5	3	3	3	2	1	1	2	1	3	Z	6	46	53	15	12	12	5	12.7	54.7
11-Jul	9	15	11	19	6	6	6	7	5	9	2	2	3	2	2	Z	6	4	3	4	9	105	53	6	12.7	104.7
12-Jul	42	15	38	12	30	13	9	8	39	8	8	5	2	2	Z	28	4	61	47	19	28	41	50	20	23.1	60.9
13-Jul	22	35	32	51	78	132	16	10	18	61	62	4	2	Z	35	9	43	6	4	4	10	7	3	4	28.1	131.9
14-Jul	13	5	5	10	11	53	25	34	10	5	2	11	Z	5	4	3	3	2	2	2	2	5	6	8	9.8	53.3
15-Jul	7	6	6	15	7	33	15	8	6	4	3	Z	7	4	3	2	2	2	3	8	4	3	24	20	8.3	32.9
16-Jul	11	8	17	15	9	172	57	46	9	16	Z	9	P	P	P	P	P	P	P	P	P	P	P	P	--	172.4
17-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
18-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
19-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
20-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
21-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15	46	5	1	2	57	97	70	75	23	--	96.7
22-Jul	39	2	100	99	17	15	34	12	6	Z	13	61	8	Z	13	13	94	9	69	12	7	7	31	30	31.5	100.4
23-Jul	3	4	Z	7	6	13	20	11	11	8	7	8	12	13	8	4	1	1	1	2	13	16	32	15	9.4	32.0
24-Jul	14	Z	22	11	8	10	13	11	11	13	37	9	3	5	2	4	7	2	1	3	17	159	20	74	19.9	158.7
25-Jul	Z	11	71	7	11	48	29	37	61	24	1	1	2	0	1	1	5	2	2	4	3	4	7	Z	15.0	70.7
26-Jul	11	7	14	20	26	10	10	8	29	42	28	16	40	3	1	1	5	36	5	23	15	88	Z	60	21.4	87.8
27-Jul	14	7	8	12	71	83	86	33	9	9	14	6	4	47	5	8	16	12	3	58	3	Z	8	77	25.7	86.0
28-Jul	138	15	10	30	16	115	10	9	7	8	9	4	5	3	2	3	5	1	0	10	Z	29	55	25	22.1	137.9
29-Jul	22	47	64	47	33	23	20	26	6	5	2	C	C	C	C	C	C	12	0	10	67	33	51	45	28.4	66.5
30-Jul	17	35	Z	9	10	43	17	6	64	4	4	3	4	4	30	44	9	4	5	0	19	7	36	40	18.1	64.1
31-Jul	50	12	Z	83	69	103	9	34	7	14	14	6	2	52	33	47	6	1	5	10	19	19	11	4	26.6	102.7
	22.2	16.4	26.6	22.8	21.6	45.2	25.1	21.2	16.9	16.4	11.9	10.7	6.7	16.5	18.1	16.5	11.0	8.7	9.9	15.3	21.7	29.4	25.7	28.8	Diurnal Average	
	137.9	95.6	100.4	99.3	77.8	172.4	109.8	106.4	64.1	61.1	61.6	60.9	39.8	74.7	100.0	86.2	94.1	60.9	69.1	57.5	96.7	158.7	75.5	86.3	Diurnal Maximum	

C - Calibration Z - Zero/Span P - Power Failure N - Not Valid

Hourly Maximums for NO_X at Crescent Heights
July 2008



Palliser Airshed Society
Summary of Hourly Averages

Crescent Heights - Ozone (O_3) - ppb
July 1, 2008 to August 1, 2008

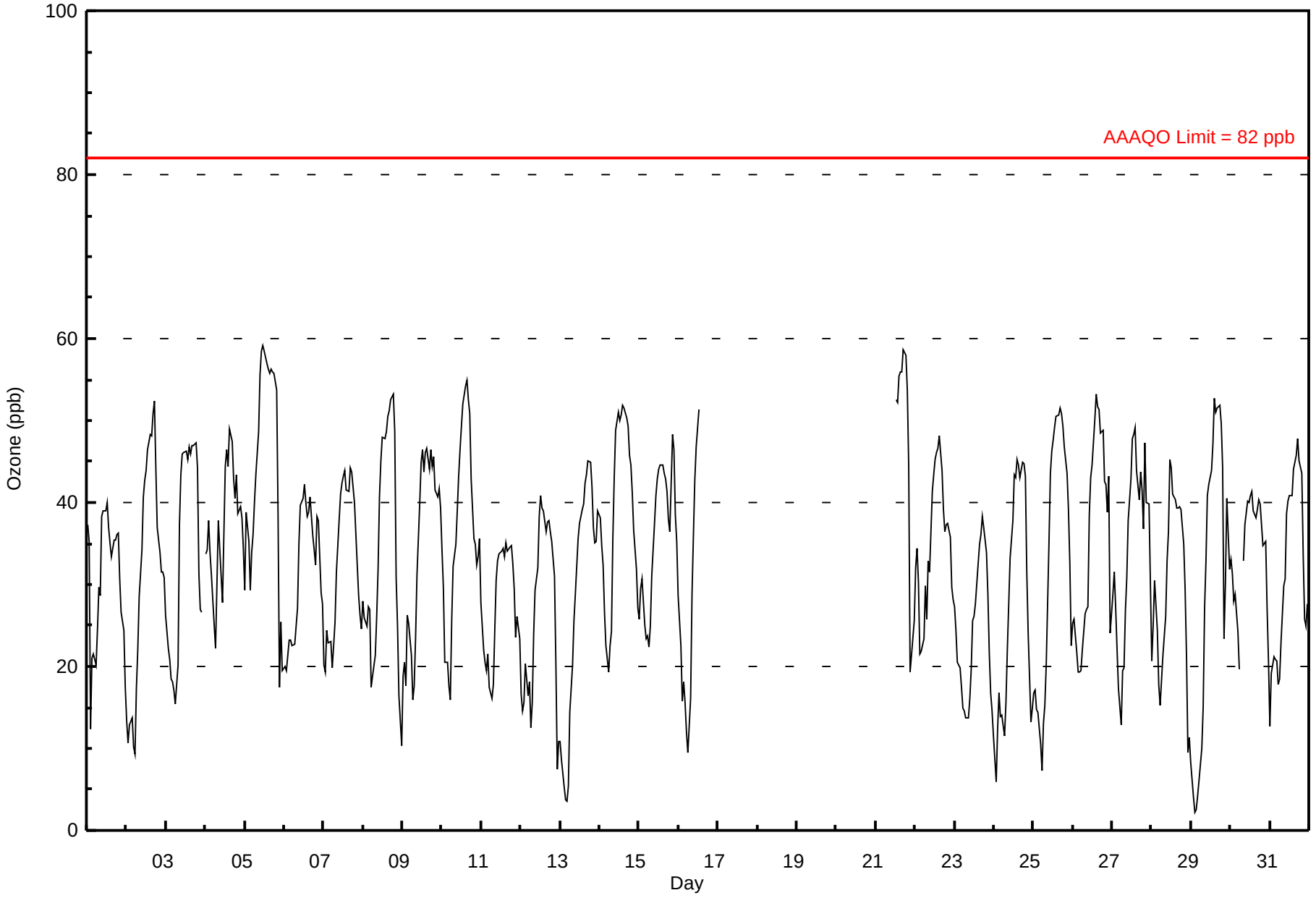
Number of Exceedances (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 59 ppb on Jul 5 12:00 Maximum Daily Average: 45.2 ppb on Jul 5

Minimum Value: 2 ppb on Jul 29 03:00 Minimum Daily Average: 24.2 ppb on Jul 23
Maximum Diurnal Average: 45.7 ppb at hour 16 Minimum Diurnal Average: 17.3 ppb at hour 6
Monthly Average: 32.75 ppb Percentiles: P_1 = 5.1 P_{10} = 16.0 Q_1 = 22.8 Median = 33.9 Q_3 = 42.9 P_{90} = 48.2 P_{99} = 56.5

Hours in Service:	744
Hours of Data:	588
Hours of Missing Data:	156
Hours of Calibration:	32
Percent Operational Time:	83.3

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Jul	37	35	Z	21	N	20	25	30	29	38	39	39	40	37	35	33	35	35	36	36	31	27	24	17	31.8	40.0
2-Jul	13	Z	13	14	10	9	17	22	28	34	41	43	N	46	N	48	51	52	44	37	34	31	32	31	31.0	52.3
3-Jul	Z	22	21	18	18	17	15	20	37	43	46	46	46	45	47	46	47	47	47	44	31	27	27	Z	34.5	47.4
4-Jul	34	34	38	34	31	25	22	30	38	34	28	36	44	46	44	49	48	43	41	43	39	39	Z	34	37.2	49.0
5-Jul	29	39	35	29	34	36	40	43	49	56	59	59	58	57	56	56	56	56	56	54	38	Z	25	19	45.2	59.2
6-Jul	20	19	21	23	23	23	23	25	27	35	40	41	42	40	38	39	41	36	34	32	Z	38	29	28	31.1	42.2
7-Jul	20	19	24	23	23	20	23	25	31	38	41	42	43	44	42	41	44	44	42	Z	32	29	26	25	32.3	44.3
8-Jul	28	26	25	27	27	17	19	21	26	32	41	45	48	48	49	51	51	53	Z	49	31	25	16	10	33.2	52.6
9-Jul	19	21	18	26	25	21	16	18	24	31	40	45	46	44	46	47	44	Z	44	46	42	41	42	39	34.0	46.6
10-Jul	34	30	21	21	18	16	26	32	35	39	43	46	49	52	54	55	Z	51	43	36	35	32	33	36	36.4	54.9
11-Jul	28	22	21	20	22	17	16	18	24	31	33	34	34	34	33	Z	34	35	35	33	29	24	26	23	27.2	34.7
12-Jul	17	15	16	20	16	18	13	16	24	29	32	38	41	39	Z	37	38	38	36	35	31	20	7	11	25.5	40.8
13-Jul	11	9	5	4	3	5	14	20	26	29	32	36	37	Z	40	42	43	45	45	42	37	35	35	39	27.6	45.1
14-Jul	38	35	32	27	22	19	23	24	36	43	49	51	Z	51	52	51	50	49	46	45	41	37	32	27	38.3	51.9
15-Jul	26	29	31	25	23	24	22	25	31	37	41	Z	44	45	45	44	43	41	38	36	48	47	39	35	35.6	48.3
16-Jul	29	23	16	18	16	12	10	16	29	36	Z	47	P	P	P	P	P	P	P	P	P	P	P	P	--	46.7
17-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
18-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
19-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
20-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
21-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	52	55	56	56	59	58	54	44	19	21	26	--	58.7
22-Jul	32	34	30	22	22	23	30	26	33	Z	41	43	45	Z	47	48	44	39	36	37	37	36	30	28	34.8	48.1
23-Jul	27	24	Z	20	18	15	15	14	14	16	20	26	26	28	33	35	36	38	37	34	29	22	17	15	24.2	38.3
24-Jul	11	Z	12	17	14	14	12	16	22	28	33	38	43	43	45	45	43	45	45	43	31	24	13	15	28.4	45.2
25-Jul	Z	17	15	14	10	7	13	15	20	35	44	46	48	49	50	51	52	51	49	47	44	39	33	Z	34.1	51.6
26-Jul	25	26	22	19	19	20	22	26	27	27	39	43	45	50	53	52	51	48	49	43	42	39	Z	24	35.3	53.3
27-Jul	29	31	27	22	17	13	20	20	27	31	38	43	48	48	49	44	40	44	41	37	47	Z	40	30	34.2	49.1
28-Jul	21	25	30	24	18	15	18	21	26	33	36	45	44	41	40	39	39	40	39	35	Z	21	10	11	29.3	45.3
29-Jul	8	4	2	3	4	6	10	15	27	33	41	42	44	47	53	51	52	52	50	44	23	30	40	32	29.7	52.7
30-Jul	33	31	Z	29	24	C	C	C	C	37	40	40	41	41	39	38	39	40	40	37	35	35	27	21	35.2	41.4
31-Jul	13	19	Z	21	21	18	18	23	30	31	39	40	41	41	44	45	46	48	45	44	34	26	25	28	32.0	47.8
	24.3	24.6	21.6	20.8	19.2	17.3	19.2	22.5	28.7	34.3	39.0	42.2	43.4	44.6	45.4	45.7	44.9	45.1	43.1	40.9	36.1	30.9	27.1	25.2	Diurnal Average	
	38.1	38.8	37.7	33.8	33.9	36.1	40.0	43.4	48.6	55.6	58.5	59.2	58.4	56.9	56.2	55.9	56.3	58.7	58.0	53.8	48.3	46.5	41.7	39.4	Diurnal Maximum	

C - Calibration Z - Zero/Span P - Power Failure N - Not Valid
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 82 ppb 24-hr na


Hourly Averages for O_3 at Crescent Heights
July 2008
AAAQO Limit = 82 ppb
Ozone (ppb)
Day
0
20
40
60
80
100
03
05
07
09
11
13
15
17
19
21
23
25
27
29
31

Palliser Airshed Society
Summary of Hourly Maximums

Crescent Heights - Ozone (O_3) - ppb
July 1, 2008 to August 1, 2008

Maximum Value: 62 ppb on Jul 5 12:00

Maximum Daily Average: 48.6 ppb on Jul 5

Minimum Value: 4 ppb on Jul 29 04:00

Minimum Daily Average: 27.4 ppb on Jul 23

Maximum Diurnal Average: 48.6 ppb at hour 16

Minimum Diurnal Average: 21.6 ppb at hour 6

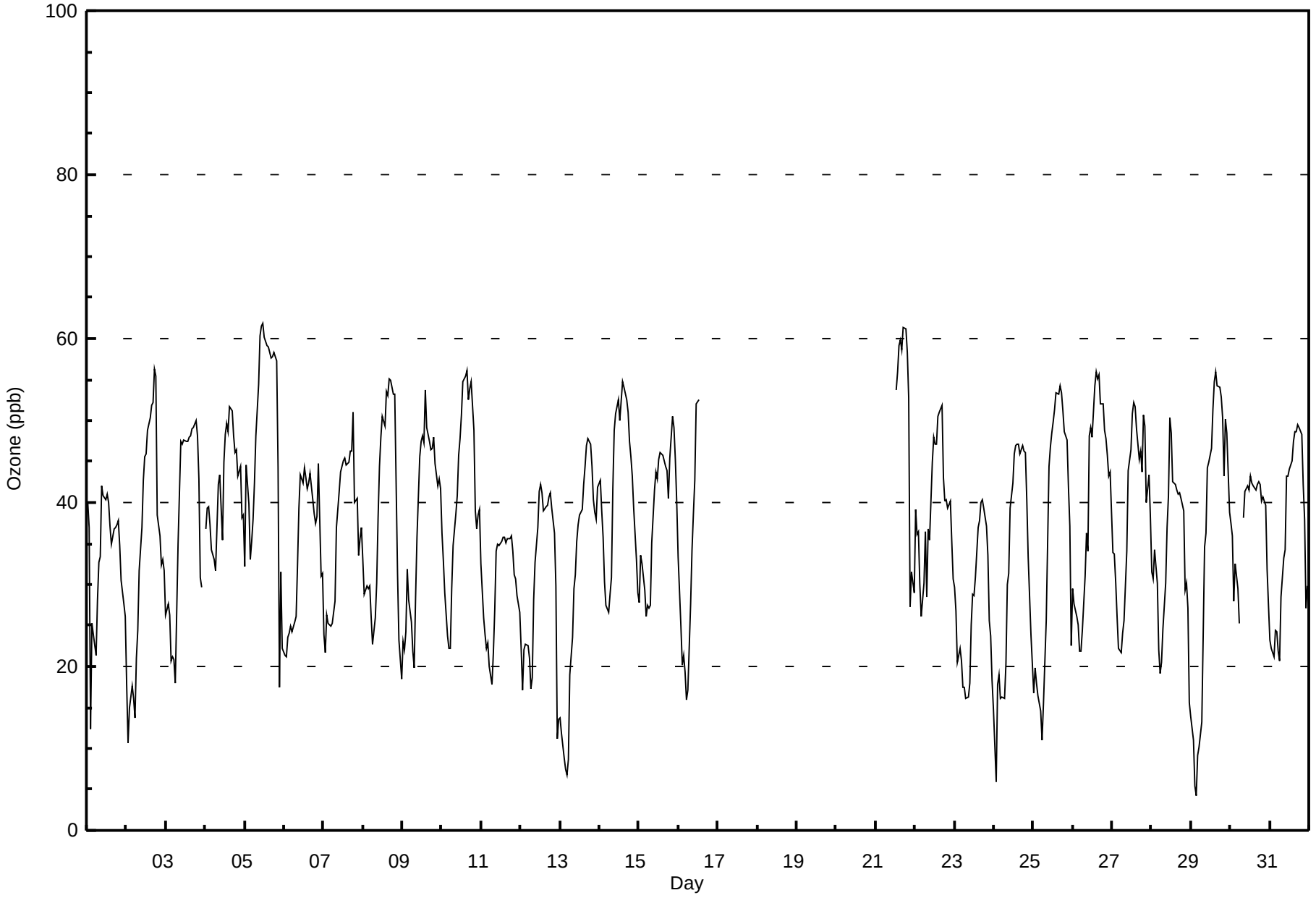
Monthly Average: 36.70 ppb

Percentiles: P_1 = 8.5 P_{10} = 20.6 Q_1 = 27.5 Median = 37.7 Q_3 = 46.0 P_{90} = 51.7 P_{99} = 60.1

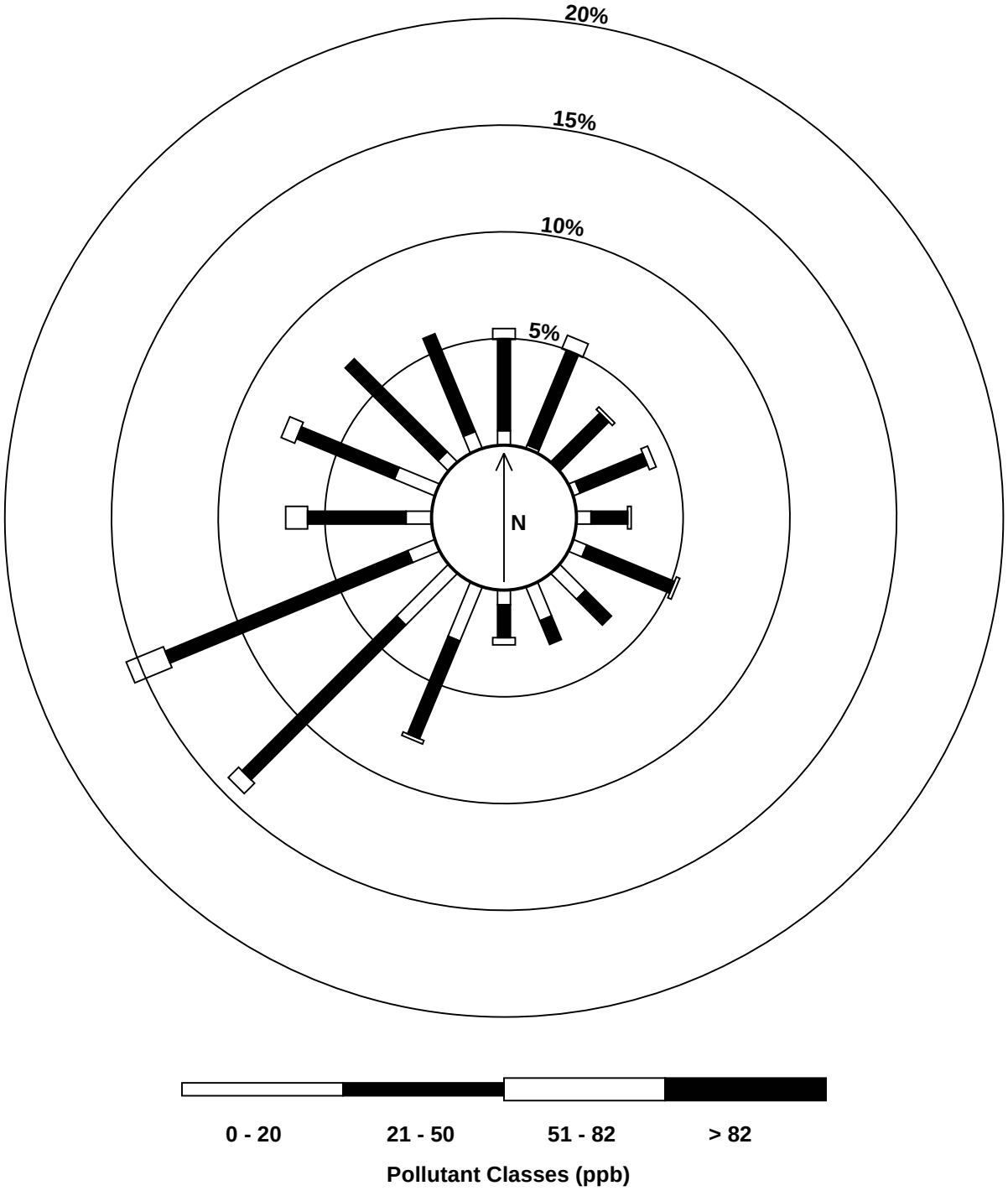
Hours in Service:	744
Hours of Data:	588
Hours of Missing Data:	156
Hours of Calibration:	32
Percent Operational Time:	83.3

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Jul	40	37	Z	25	N	21	28	33	33	42	41	40	41	40	37	35	37	37	37	38	35	31	28	26	34.6	42.0
2-Jul	18	Z	15	18	16	14	21	24	32	37	43	46	N	49	N	52	52	56	55	38	36	32	33	32	34.2	56.2
3-Jul	Z	28	26	21	21	21	18	35	41	48	47	48	47	47	48	48	49	49	50	48	43	31	30	Z	38.3	50.0
4-Jul	37	39	39	37	34	33	32	37	42	43	35	45	48	50	49	52	51	48	46	46	43	44	Z	38	42.2	51.6
5-Jul	32	45	40	33	35	38	42	48	54	60	61	62	60	59	59	58	58	58	58	57	44	Z	32	22	48.6	61.8
6-Jul	21	21	24	24	25	24	25	26	32	39	43	42	44	43	42	42	44	40	39	37	Z	45	31	31	34.2	44.8
7-Jul	24	22	26	25	25	25	27	28	37	41	44	44	45	45	45	45	46	46	51	Z	40	34	36	37	36.5	51.1
8-Jul	33	29	30	30	30	26	23	26	30	38	44	48	50	49	54	53	55	55	Z	53	42	31	23	18	37.9	55.1
9-Jul	23	22	24	32	28	25	22	20	28	36	46	48	48	47	54	49	48	Z	47	48	45	42	43	42	37.6	53.7
10-Jul	36	33	29	24	22	22	29	35	39	41	46	48	51	55	55	56	Z	54	55	49	39	37	38	39	40.5	56.1
11-Jul	33	26	24	22	23	20	18	22	27	34	35	35	35	36	36	Z	36	36	36	34	31	31	29	27	29.7	35.9
12-Jul	22	17	22	23	23	21	17	19	28	33	37	41	42	41	Z	39	40	41	41	39	36	30	11	14	29.4	42.3
13-Jul	14	12	9	7	7	9	19	23	30	31	35	37	39	Z	42	44	47	48	47	44	40	39	38	42	30.6	47.8
14-Jul	43	39	36	30	27	27	29	31	42	49	51	53	Z	52	55	54	53	51	47	46	43	39	33	29	41.6	54.8
15-Jul	28	33	32	29	26	27	27	27	35	42	44	Z	45	46	46	45	44	44	40	45	50	49	45	40	38.8	50.5
16-Jul	33	25	20	21	19	16	17	28	34	39	Z	52	P	P	P	P	P	P	P	P	P	P	P	P	--	52.0
17-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
18-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
19-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
20-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
21-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	56	59	60	59	61	61	58	53	27	32	29	--	61.4
22-Jul	39	36	36	30	26	30	36	29	37	Z	45	48	47	Z	51	51	52	43	40	40	39	40	35	31	39.2	51.9
23-Jul	30	27	Z	22	21	18	17	16	16	18	25	29	29	31	37	38	40	40	39	37	34	26	24	18	27.4	40.4
24-Jul	15	Z	18	19	16	16	16	20	30	31	39	42	46	47	47	47	46	47	46	46	40	33	24	20	32.8	47.2
25-Jul	Z	20	18	16	15	11	15	20	26	44	47	49	50	51	53	53	54	53	51	49	48	42	37	Z	37.4	54.2
26-Jul	29	28	26	25	22	22	24	31	36	34	48	49	48	54	56	55	56	52	52	49	48	46	Z	44	40.6	55.9
27-Jul	34	34	30	26	22	22	24	26	30	34	44	47	51	52	52	49	45	46	44	51	49	Z	43	38	38.8	52.1
28-Jul	31	31	34	30	22	19	20	25	30	37	41	50	48	43	42	41	41	41	40	39	Z	30	27	16	33.9	50.4
29-Jul	14	11	5	4	9	10	13	24	35	36	44	45	47	51	55	56	54	54	53	50	43	50	48	39	35.5	56.0
30-Jul	37	36	Z	33	29	C	C	C	C	41	42	42	43	42	42	41	42	42	42	40	41	40	32	27	38.8	43.2
31-Jul	23	22	Z	24	24	22	21	29	33	34	43	43	44	45	48	49	49	50	49	48	42	38	27	30	36.4	49.5
	28.7	28.0	25.7	24.3	22.7	21.6	23.3	27.2	33.5	38.5	42.8	45.3	45.6	47.2	48.4	48.6	47.8	47.7	46.8	45.3	41.9	36.9	32.4	30.4	Diurnal Average	
	42.6	44.6	39.8	37.3	35.2	37.9	42.3	48.2	54.4	60.3	61.5	61.8	60.2	59.2	59.1	59.7	58.7	61.4	61.1	58.4	52.8	50.1	48.5	43.7	Diurnal Maximum	

C - Calibration Z - Zero/Span P - Power Failure N - Not Valid


Hourly Maximums for O_3 at Crescent Heights
July 2008
Ozone (ppb)
100
80
60
40
20
0
03
05
07
09
11
13
15
17
19
21
23
25
27
29
31
Day

Pollutant Rose for O_3 at Crescent Heights
July 2008



Palliser Airshed Society

Summary of Eight Hour Running Averages

Crescent Heights - Ozone (O_3) - ppb

July 1, 2008 to August 1, 2008

Number of Exceedences (AAAQO): 8-hr: 0
Maximum Value: 57.2 ppb on Jul 5 18:00

Minimum Value: 6.0 ppb on Jul 29 06:00

Percentiles: P_1 = 8.3 P_{10} = 19.6 Q_1 = 25.4 Median = 33.3 Q_3 = 40.6 P_{90} = 45.4 P_{99} = 56.0

Hours in Service:	744
Hours of Data:	611
Hours of Missing Data:	133
Hours of Calibration:	13
Percent Operational Time:	83.9

Day	Hourly Period Ending At (MST)																								Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Maximum
1-Jul	49	46	44	39	38	34	30	28	27	27	29	31	32	35	36	36	37	37	36	36	35	34	32	30	48.8
2-Jul	28	26	23	20	17	14	13	14	16	19	22	26	28	33	36	40	44	47	47	46	45	43	41	39	47.4
3-Jul	37	33	30	27	25	23	20	19	21	24	27	30	34	37	41	45	46	46	46	46	44	42	40	39	46.4
4-Jul	37	35	34	32	32	32	31	31	32	32	30	31	32	35	38	40	41	42	44	45	44	43	43	41	44.8
5-Jul	38	38	37	35	34	34	35	36	38	40	43	47	50	53	55	56	57	57	57	56	54	53	49	44	57.2
6-Jul	38	33	28	24	22	22	22	22	23	25	27	29	32	34	36	38	39	39	39	38	37	37	36	34	39.5
7-Jul	31	29	27	26	26	23	23	22	24	26	28	30	33	36	38	40	42	43	43	43	41	39	37	35	42.8
8-Jul	32	30	27	27	27	25	24	24	24	24	26	29	31	35	39	42	45	48	49	50	47	44	39	34	49.6
9-Jul	29	24	24	21	20	20	20	20	21	22	25	27	30	33	37	40	43	45	45	45	45	44	43	42	45.3
10-Jul	41	40	37	34	31	27	25	25	25	26	29	32	36	40	44	47	48	50	50	49	46	44	41	38	50.1
11-Jul	37	33	30	28	27	25	23	20	20	21	23	24	26	28	30	32	33	34	34	34	33	32	31	30	36.7
12-Jul	28	25	23	21	20	19	17	16	17	19	21	23	26	29	31	34	36	38	38	38	36	34	30	27	38.1
13-Jul	24	20	16	12	9	7	8	9	11	13	17	21	25	28	31	35	37	39	41	42	42	41	41	40	42.1
14-Jul	40	38	37	35	33	31	29	28	27	28	30	33	35	39	44	48	50	51	50	49	48	46	44	41	50.5
15-Jul	38	35	33	31	29	27	26	26	26	27	29	29	32	35	38	41	43	43	43	42	42	43	42	41	43.1
16-Jul	39	37	34	32	28	23	20	17	17	19	19	24	25	N	N	N	N	N	N	N	N	N	N	N	39.1
17-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--
18-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--
19-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--
20-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--
21-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	56	56	54	50	46	42	56.0
22-Jul	39	36	33	29	26	26	27	27	28	27	28	31	35	36	39	43	45	44	43	42	41	41	38	36	44.8
23-Jul	34	32	31	29	26	23	21	19	17	16	16	17	18	20	22	25	27	30	32	33	34	33	31	28	33.9
24-Jul	25	23	20	17	15	14	14	14	15	17	19	22	26	29	33	37	40	42	43	44	43	40	36	32	44.0
25-Jul	31	27	23	19	16	13	13	13	14	16	20	24	29	34	38	43	47	49	49	50	49	48	46	45	49.5
26-Jul	41	37	34	30	26	23	22	22	23	23	25	28	31	35	39	42	45	48	49	49	49	47	46	42	48.9
27-Jul	39	37	34	31	27	23	23	22	22	22	23	26	30	34	38	41	43	44	45	44	44	43	42	40	44.7
28-Jul	37	34	33	31	27	25	23	22	22	23	24	27	30	33	36	38	40	41	41	40	39	36	32	28	41.0
29-Jul	23	18	13	8	8	6	6	7	9	13	17	22	27	32	38	42	45	48	49	49	46	44	43	40	49.0
30-Jul	38	36	34	31	31	32	N	N	N	N	N	N	N	N	40	40	39	40	40	39	39	38	36	34	39.9
31-Jul	31	28	27	24	22	20	19	19	21	23	25	27	30	33	36	39	41	43	44	44	43	41	39	37	44.1
	48.8	46.1	43.7	39.4	37.8	33.9	34.6	35.7	38.2	40.3	43.2	46.9	50.0	52.6	54.6	56.2	57.1	57.2	56.8	56.2	54.3	53.2	48.8	44.8	
	Diurnal Maximums																								

N - Not Valid

Alberta Ambient Air Quality Objectives (AAAQO): 8-hr 65 ppb

Palliser Airshed Society
Summary of Hourly Averages

Crescent Heights - Total Hydrocarbons (THC) - ppm
July 1, 2008 to August 1, 2008

Maximum Value: 2.3 ppm on Jul 9 03:00

Maximum Daily Average: 1.98 ppm on Jul 9

Minimum Value: 1.7 ppm on Jul 15 19:00

Minimum Daily Average: 1.84 ppm on Jul 4

Maximum Diurnal Average: 2.03 ppm at hour 6

Minimum Diurnal Average: 1.81 ppm at hour 18

Monthly Average: 1.901 ppm

Percentiles: P_1 = 1.73 P_{10} = 1.79 Q_1 = 1.83 Median = 1.88 Q_3 = 1.96 P_{90} = 2.04 P_{99} = 2.21

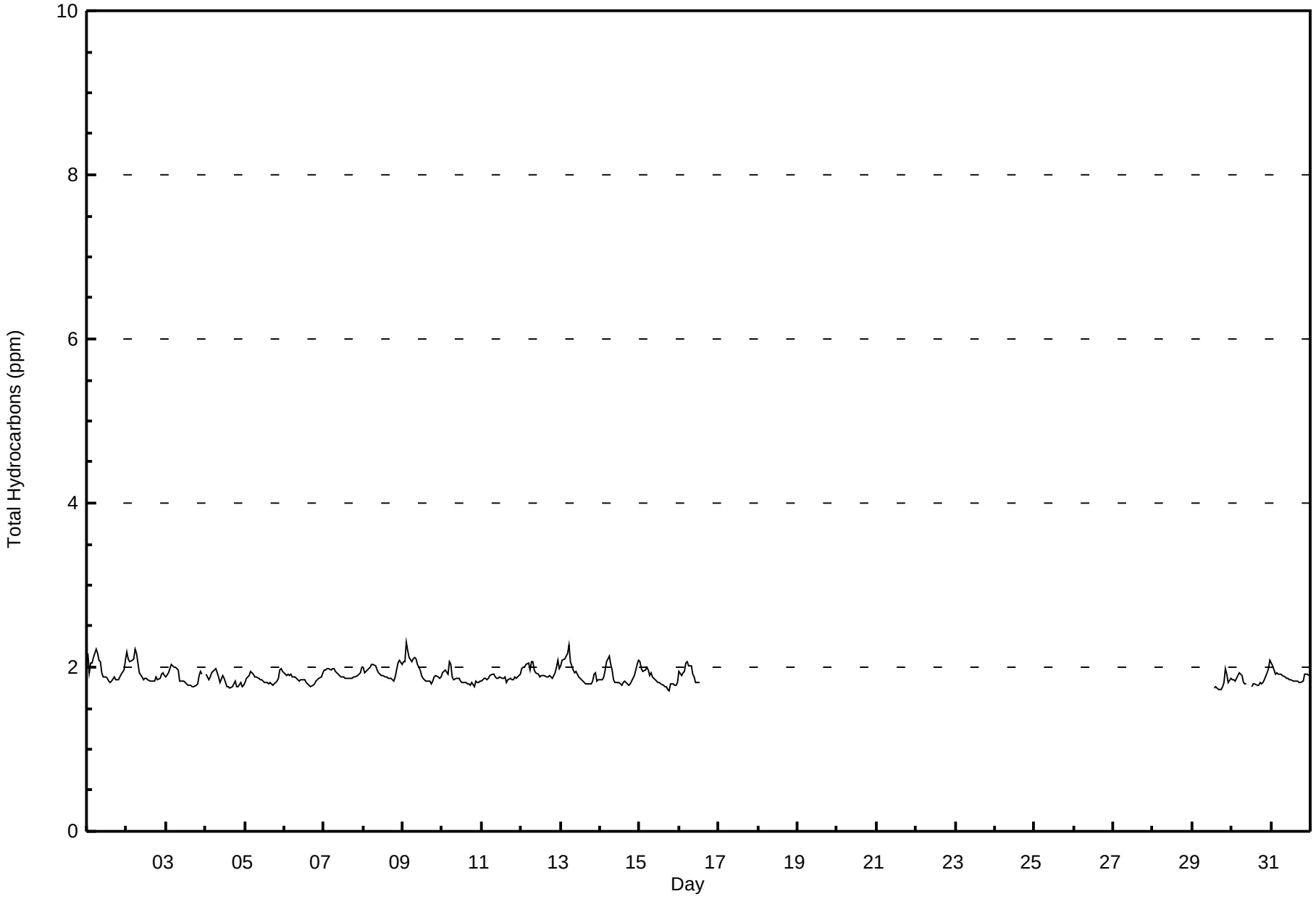
Hours in Service:	744
Hours of Data:	405
Hours of Missing Data:	339
Hours of Calibration:	22
Percent Operational Time:	57.4

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Jul	2.2	1.9	Z	2.0	N	2.2	2.2	2.1	2.1	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.9	1.8	1.8	1.9	1.9	1.9	2.0	2.1	1.96	2.23
2-Jul	2.2	Z	2.1	2.1	2.1	2.2	2.2	2.0	1.9	1.9	1.8	1.9	N	1.8	N	1.8	1.8	1.8	1.9	1.8	1.9	1.9	1.9	1.9	1.96	2.21
3-Jul	Z	1.9	2.0	2.0	2.0	2.0	2.0	2.0	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	2.0	1.9	Z	1.88	2.04
4-Jul	1.9	1.9	1.9	1.9	1.9	2.0	2.0	1.9	1.9	1.8	1.9	1.9	1.8	1.8	1.8	1.7	1.8	1.8	1.8	1.8	1.8	1.8	Z	1.8	1.84	1.98
5-Jul	1.8	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	1.8	1.8	1.8	1.8	1.8	1.9	Z	2.0	1.9	1.86	1.98
6-Jul	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	1.8	1.8	1.8	1.8	1.8	1.8	Z	1.9	1.9	1.9	1.85	1.92
7-Jul	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	1.9	1.9	1.9	Z	1.9	1.9	1.9	2.0	1.92	1.99
8-Jul	2.0	1.9	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	1.9	Z	1.9	2.0	2.1	2.1	2.0	1.95	2.09
9-Jul	2.1	2.1	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.0	2.0	1.9	1.9	1.8	1.8	1.8	1.8	Z	1.8	1.9	1.9	1.9	1.9	1.9	1.98	2.31
10-Jul	1.9	2.0	2.0	1.9	2.1	2.0	1.9	1.8	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	Z	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.87	2.06
11-Jul	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	Z	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.87	1.92
12-Jul	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	1.9	1.9	1.9	1.9	1.9	Z	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.1	2.0	1.96	2.08
13-Jul	2.0	2.1	2.1	2.1	2.2	2.3	2.1	2.0	1.9	1.9	1.9	1.9	1.9	Z	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.8	1.8	1.95	2.28
14-Jul	1.9	1.8	1.9	2.0	2.1	2.1	2.0	2.0	1.8	1.8	1.8	1.8	Z	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	2.0	2.1	1.89	2.14
15-Jul	2.1	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.8	1.8	Z	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.86	2.07
16-Jul	1.9	1.9	1.9	2.0	2.1	2.1	2.0	2.0	1.9	1.9	Z	1.8	P	P	P	P	P	P	P	P	P	P	P	P	--	2.07
17-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
18-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
19-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
20-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
21-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	N	N	N	N	N	N	N	N	N	N	--	--
22-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
23-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
24-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
25-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
26-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
27-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
28-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
29-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	1.8	1.7	1.7	1.7	1.8	1.8	2.0	1.9	1.8	1.9	--	1.99
30-Jul	1.9	1.8	Z	1.9	1.9	1.9	1.9	1.8	1.8	C	C	C	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	2.0	2.1	1.86	2.08
31-Jul	2.0	2.0	Z	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	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.89	2.04
	1.97	1.94	1.98	1.98	2.01	2.03	1.99	1.96	1.91	1.88	1.87	1.86	1.84	1.83	1.81	1.81	1.81	1.81	1.81	1.83	1.88	1.90	1.92	1.93	Diurnal Average	
	2.18	2.08	2.31	2.20	2.18	2.28	2.17	2.12	2.10	2.03	1.96	1.90	1.90	1.89	1.88	1.88	1.88	1.89	1.88	1.88	1.99	2.06	2.09	2.09	Diurnal Maximum	

C - Calibration Z - Zero/Span P - Power Failure N - Not Valid

Hourly Averages for THC at Crescent Heights

July 2008



Palliser Airshed Society
Summary of Hourly Maximums

Crescent Heights - Total Hydrocarbons (THC) - ppm
July 1, 2008 to August 1, 2008

Maximum Value: 2.5 ppm on Jul 30 22:00

Maximum Daily Average: 2.04 ppm on Jul 9

Minimum Value: 1.7 ppm on Jul 29 17:00

Minimum Daily Average: 1.88 ppm on Jul 6

Maximum Diurnal Average: 2.08 ppm at hour 6

Minimum Diurnal Average: 1.84 ppm at hour 16

Monthly Average: 1.957 ppm

Percentiles: P_1 = 1.77 P_{10} = 1.83 Q_1 = 1.86 Median = 1.92 Q_3 = 2.03 P_{90} = 2.13 P_{99} = 2.40

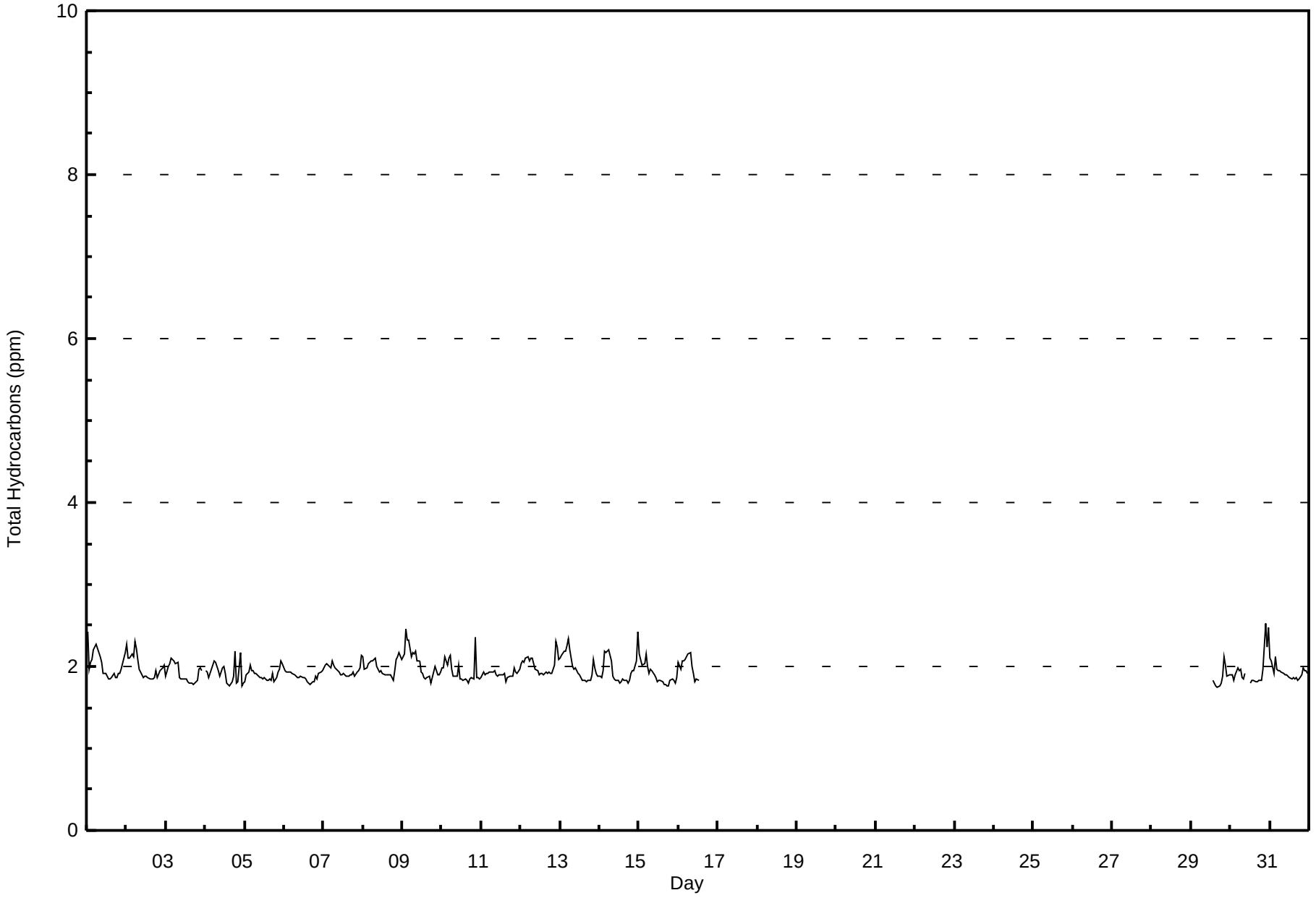
Hours in Service:	744
Hours of Data:	405
Hours of Missing Data:	339
Hours of Calibration:	22
Percent Operational Time:	57.4

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Jul	2.4	2.0	Z	2.1	N	2.3	2.2	2.2	2.1	2.0	1.9	1.9	1.9	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.1	2.2	2.01	2.42
2-Jul	2.3	Z	2.1	2.2	2.1	2.3	2.2	2.1	2.0	1.9	1.9	1.9	N	1.9	N	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.00	2.31
3-Jul	Z	2.0	2.0	2.1	2.1	2.1	2.0	2.1	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.0	2.0	1.9	Z	1.92	2.10
4-Jul	2.0	1.9	1.9	1.9	2.0	2.1	2.1	2.0	1.9	1.9	2.0	2.0	1.9	1.8	1.8	1.8	1.8	1.9	2.2	1.8	1.8	2.2	Z	1.8	1.92	2.19
5-Jul	1.8	1.9	1.9	2.0	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.8	1.8	1.8	1.8	1.9	1.8	1.9	1.9	Z	2.1	2.0	1.90	2.07
6-Jul	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.9	Z	1.9	1.9	2.0	1.88	1.95
7-Jul	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	Z	1.9	2.0	2.0	2.1	1.96	2.13
8-Jul	2.1	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	Z	1.9	2.1	2.1	2.2	2.1	2.00	2.17
9-Jul	2.1	2.2	2.5	2.3	2.3	2.1	2.2	2.2	2.2	2.1	2.1	1.9	1.9	1.9	1.9	1.9	1.9	Z	1.9	1.9	2.0	1.9	1.9	1.9	2.04	2.46
10-Jul	2.0	2.0	2.1	2.0	2.1	2.1	2.0	1.9	1.9	1.9	2.0	1.9	1.8	1.8	1.8	1.8	Z	1.8	1.9	1.9	2.4	1.9	1.9	1.9	1.94	2.35
11-Jul	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	Z	1.9	1.9	1.9	1.9	2.0	1.9	1.9	2.0	1.91	1.99
12-Jul	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	1.9	1.9	1.9	1.9	Z	1.9	1.9	1.9	1.9	1.9	2.0	2.3	2.2	2.1	2.02	2.31
13-Jul	2.1	2.1	2.2	2.2	2.3	2.3	2.2	2.0	2.0	2.0	1.9	1.9	1.9	Z	1.8	1.8	1.8	1.8	1.8	1.9	2.1	2.0	1.9	1.9	2.00	2.34
14-Jul	1.9	1.9	1.9	2.2	2.2	2.2	2.1	2.1	1.9	1.8	1.8	1.8	Z	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	2.1	2.4	1.96	2.42
15-Jul	2.2	2.1	2.0	2.0	2.2	2.0	1.9	2.0	1.9	1.9	1.9	Z	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.90	2.15
16-Jul	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.2	2.0	1.9	Z	1.8	P	P	P	P	P	P	P	P	P	P	P	P	--	2.16
17-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
18-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
19-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
20-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
21-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	N	N	N	N	N	N	N	N	N	N	--	--
22-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
23-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
24-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
25-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
26-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
27-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
28-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
29-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	1.8	1.8	1.7	1.8	1.8	1.9	2.1	2.0	1.9	1.9	--	2.12
30-Jul	1.9	1.9	Z	1.9	2.0	2.0	2.0	1.9	1.8	C	C	C	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.0	2.5	2.2	2.5	1.95	2.53
31-Jul	2.1	2.1	Z	2.1	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	1.8	1.9	1.9	2.0	1.9	2.0	1.9	1.93	2.11
	2.04	1.99	2.04	2.06	2.07	2.08	2.05	2.01	1.96	1.92	1.91	1.89	1.88	1.85	1.84	1.84	1.84	1.85	1.87	1.88	1.99	2.02	2.00	2.03	Diurnal Average	
	2.42	2.15	2.46	2.32	2.32	2.34	2.22	2.17	2.19	2.07	2.07	1.99	1.92	1.92	1.92	1.93	1.92	1.93	2.19	1.95	2.35	2.53	2.24	2.47	Diurnal Maximum	

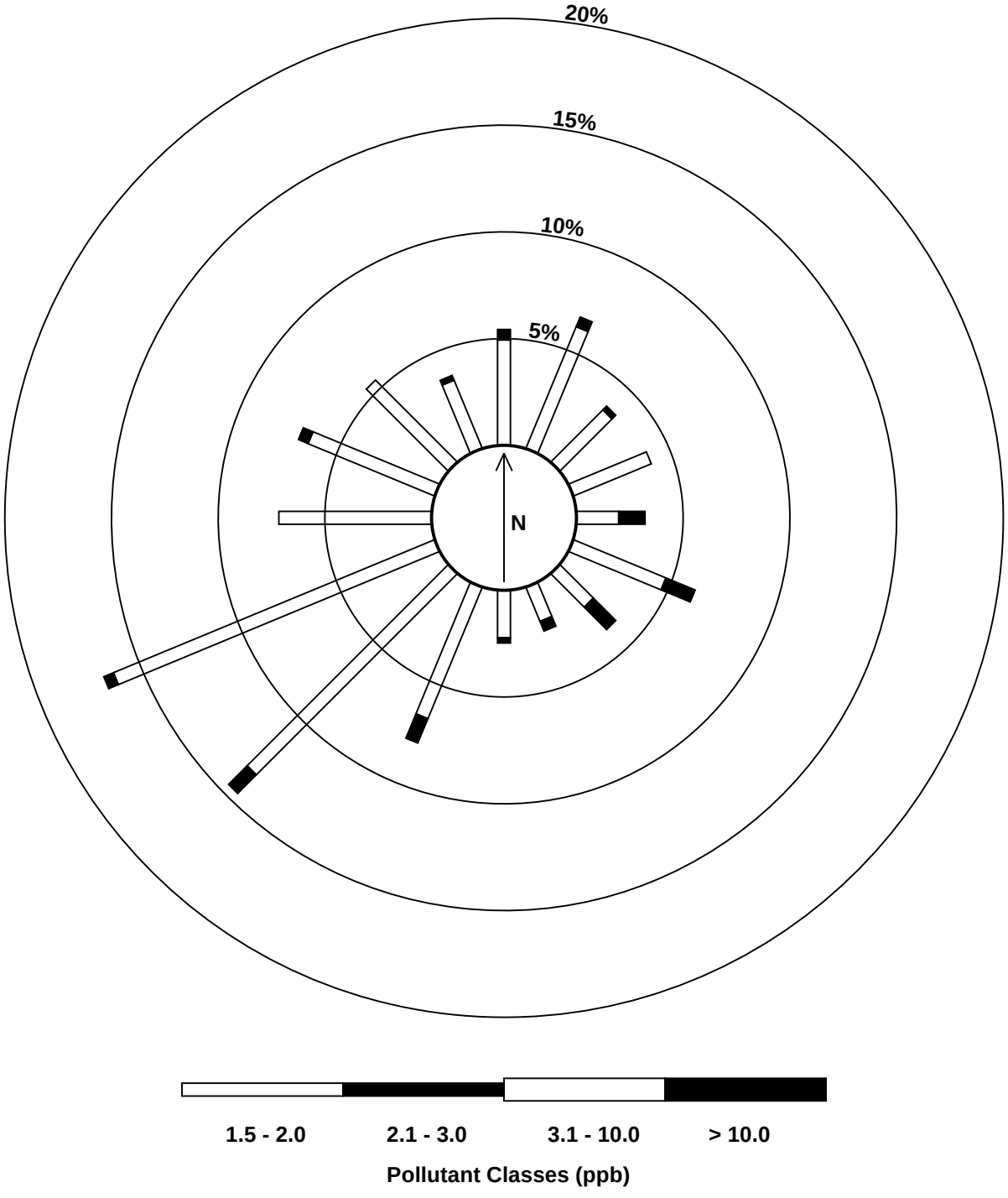
C - Calibration Z - Zero/Span P - Power Failure N - Not Valid

Hourly Maximums for THC at Crescent Heights

July 2008



Pollutant Rose for THC at Crescent Heights
July 2008



Palliser Airshed Society

Summary of Hourly Averages

Crescent Heights - Carbon Monoxide (CO) - ppm

July 1, 2008 to August 1, 2008

Number of Exceedances (AAAQO): 1-hr: 0 24-hr: 0

Maximum Value: 0.4 ppm on Jul 4 07:00

Maximum Daily Average: 0.26 ppm on Jul 3

Minimum Value: 0.0 ppm on Jul 30 13:00

Minimum Daily Average: 0.08 ppm on Jul 30

Maximum Diurnal Average: 0.23 ppm at hour 7

Minimum Diurnal Average: 0.13 ppm at hour 17

Monthly Average: 0.179 ppm

Percentiles: P_1 = -0.01 P_{10} = 0.11 Q_1 = 0.14 Median = 0.17 Q_3 = 0.22 P_{90} = 0.27 P_{99} = 0.37

Hours in Service:	744
Hours of Data:	586
Hours of Missing Data:	158
Hours of Calibration:	33
Percent Operational Time:	83.2

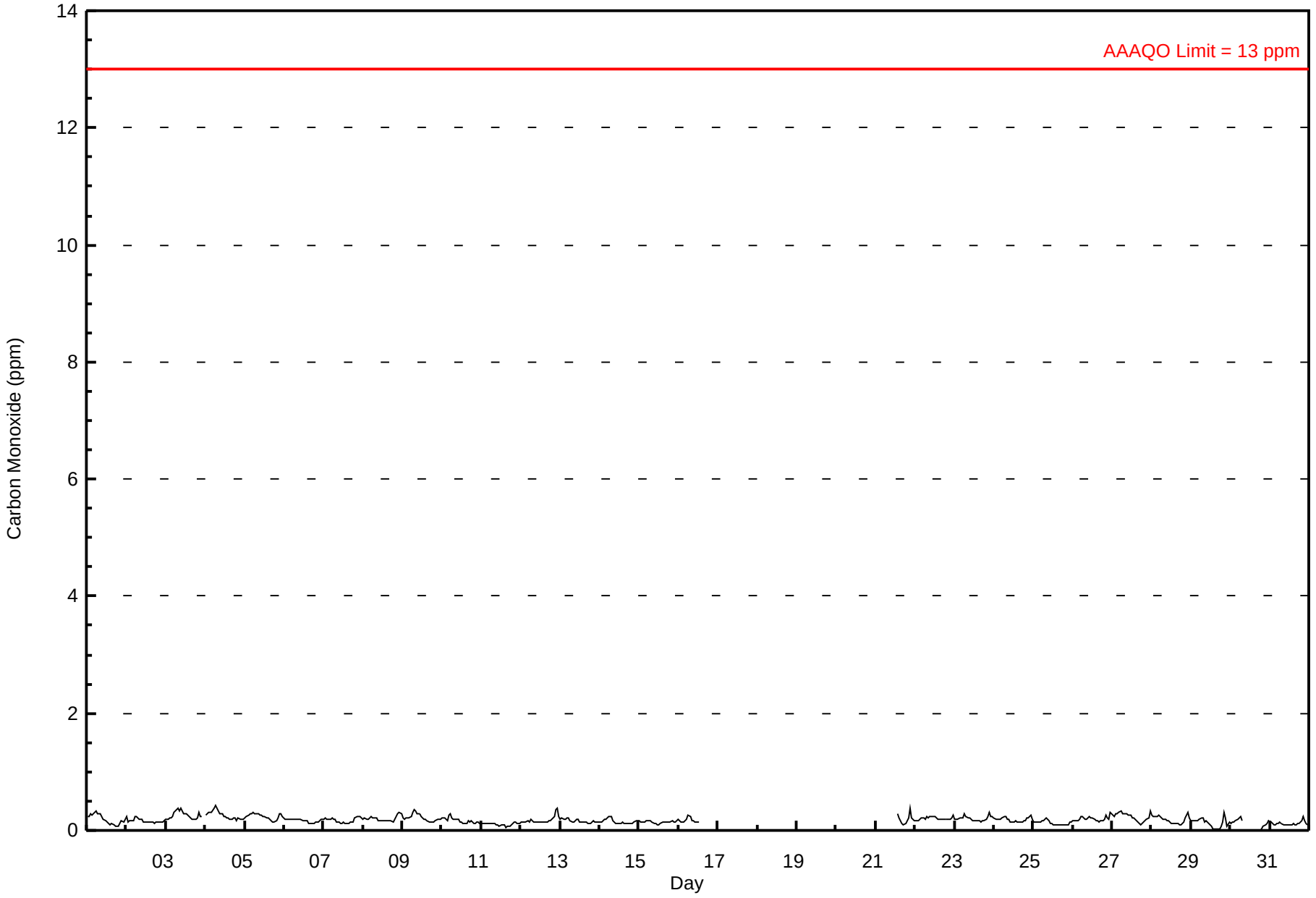
Day	Hourly Period Ending At (MST)																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1-Jul	0.2	0.2	Z	0.3	N	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.18	0.33
2-Jul	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	N	0.1	N	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.17	0.24
3-Jul	Z	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	Z	0.26	0.37
4-Jul	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	Z	0.2	0.26	0.44
5-Jul	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	Z	0.3	0.2	0.23	0.31
6-Jul	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	Z	0.1	0.2	0.2	0.17	0.20
7-Jul	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	Z	0.2	0.2	0.2	0.2	0.18	0.25
8-Jul	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	Z	0.2	0.2	0.3	0.3	0.3	0.20	0.30
9-Jul	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1	Z	0.1	0.1	0.2	0.2	0.2	0.2	0.22	0.35
10-Jul	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	Z	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.17	0.28
11-Jul	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.11	0.14
12-Jul	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.2	0.18	0.38
13-Jul	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.16	0.22
14-Jul	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.15	0.24
15-Jul	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	Z	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.15	0.17
16-Jul	0.2	0.1	0.1	0.2	0.2	0.2	0.3	0.2	0.2	0.2	Z	0.1	P	P	P	P	P	P	P	P	P	P	P	P	--	0.26
17-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
18-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
19-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
20-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
21-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.4	0.2	0.2	--	0.39
22-Jul	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	Z	0.2	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.20	0.27
23-Jul	0.2	0.2	Z	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.20	0.30
24-Jul	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.19	0.27
25-Jul	Z	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	Z	0.13	0.21
26-Jul	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.3	0.2	Z	0.3	0.20	0.30
27-Jul	0.3	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	0.1	0.1	0.1	0.2	0.2	Z	0.2	0.3	0.23	0.33
28-Jul	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	Z	0.3	0.3	0.2	0.19	0.30
29-Jul	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.2	0.1	0.1	0.13	0.31
30-Jul	0.1	0.1	Z	0.2	0.2	0.2	0.2	C	C	C	C	C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.08	0.23
31-Jul	0.1	0.2	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.12	0.24
	0.19	0.19	0.19	0.19	0.20	0.23	0.23	0.23	0.20	0.19	0.18	0.17	0.16	0.14	0.14	0.14	0.13	0.13	0.13	0.15	0.19	0.20	0.20	0.20	Diurnal Average	
	0.27	0.29	0.30	0.30	0.31	0.37	0.44	0.39	0.34	0.37	0.33	0.28	0.29	0.27	0.23	0.21	0.20	0.21	0.23	0.22	0.31	0.39	0.38	0.33	Diurnal Maximum	

C - Calibration Z - Zero/Span P - Power Failure N - Not Valid

Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 13 ppm 24-hr na

Hourly Averages for CO at Crescent Heights

July 2008



Palliser Airshed Society
Summary of Hourly Maximums

Crescent Heights - Carbon Monoxide (CO) - ppm
July 1, 2008 to August 1, 2008

Maximum Value: 0.9 ppm on Jul 4 19:00

Maximum Daily Average: 0.36 ppm on Jul 4

Minimum Value: 0.0 ppm on Jul 30 13:00

Minimum Daily Average: 0.13 ppm on Jul 30

Maximum Diurnal Average: 0.32 ppm at hour 7

Minimum Diurnal Average: 0.17 ppm at hour 17

Monthly Average: 0.236 ppm

Percentiles: P_1 = 0.02 P_{10} = 0.14 Q_1 = 0.17 Median = 0.21 Q_3 = 0.28 P_{90} = 0.35 P_{99} = 0.62

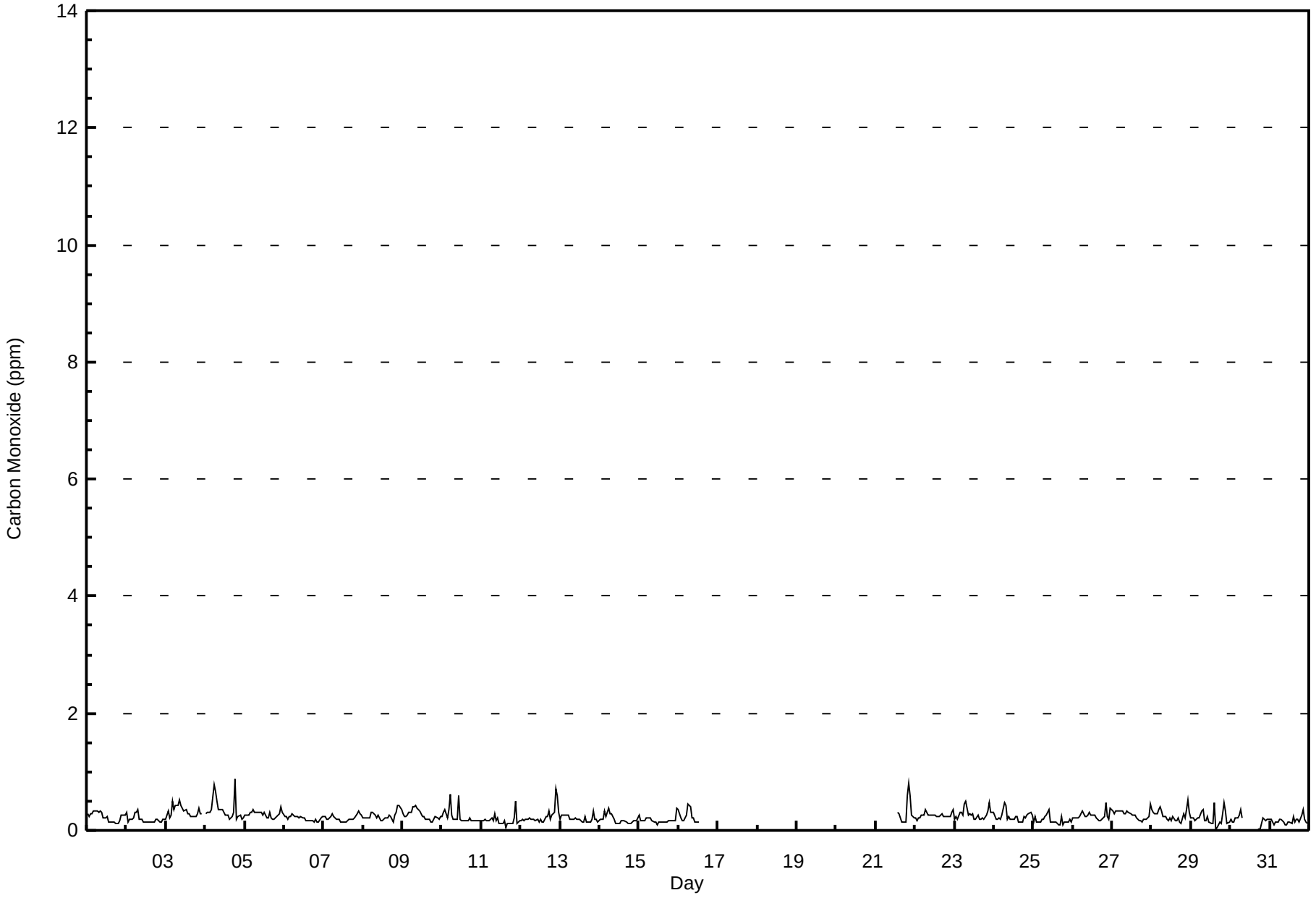
Hours in Service:	744
Hours of Data:	586
Hours of Missing Data:	158
Hours of Calibration:	33
Percent Operational Time:	83.2

Day	Hourly Period Ending At (MST)																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1-Jul	0.3	0.2	Z	0.3	N	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.23	0.34
2-Jul	0.3	Z	0.2	0.2	0.2	0.3	0.3	0.4	0.2	0.2	0.1	0.1	N	0.1	N	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.2	0.20	0.35
3-Jul	Z	0.3	0.2	0.3	0.5	0.4	0.4	0.4	0.5	0.4	0.4	0.3	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.4	0.3	0.3	Z	0.33	0.51
4-Jul	0.3	0.3	0.3	0.3	0.4	0.8	0.7	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.9	0.2	0.2	0.2	Z	0.2	0.36	0.87
5-Jul	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.3	Z	0.4	0.3	0.28	0.40
6-Jul	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	Z	0.1	0.2	0.2	0.21	0.29
7-Jul	0.2	0.2	0.2	0.2	0.2	0.3	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	Z	0.3	0.3	0.3	0.3	0.21	0.32
8-Jul	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	Z	0.3	0.3	0.4	0.4	0.3	0.26	0.43
9-Jul	0.3	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	Z	0.1	0.2	0.2	0.2	0.2	0.2	0.27	0.42
10-Jul	0.2	0.3	0.4	0.2	0.4	0.6	0.3	0.2	0.2	0.2	0.6	0.2	0.2	0.2	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.24	0.63
11-Jul	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.2	Z	0.1	0.1	0.1	0.1	0.2	0.5	0.1	0.2	0.17	0.50
12-Jul	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	Z	0.2	0.2	0.3	0.2	0.3	0.3	0.7	0.6	0.3	0.25	0.70
13-Jul	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	Z	0.1	0.2	0.1	0.1	0.1	0.2	0.3	0.2	0.2	0.1	0.20	0.33
14-Jul	0.2	0.2	0.2	0.3	0.2	0.4	0.3	0.3	0.2	0.2	0.1	0.1	Z	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.19	0.38
15-Jul	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	Z	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.18	0.37
16-Jul	0.4	0.2	0.2	0.2	0.2	0.3	0.5	0.4	0.2	0.2	Z	0.2	P	P	P	P	P	P	P	P	P	P	P	P	--	0.45
17-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
18-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
19-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
20-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
21-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	0.3	0.2	0.2	0.1	0.1	0.6	0.8	0.6	0.3	0.2	--	0.80
22-Jul	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.3	0.3	Z	0.3	0.3	0.3	Z	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.26	0.35
23-Jul	0.2	0.2	Z	0.3	0.3	0.3	0.5	0.5	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.5	0.3	0.3	0.28	0.50
24-Jul	0.3	Z	0.2	0.2	0.2	0.2	0.5	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.24	0.48
25-Jul	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	Z	0.18	0.35
26-Jul	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.5	0.2	Z	0.4	0.25	0.48
27-Jul	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	0.2	0.2	0.2	0.2	0.2	0.2	Z	0.2	0.4	0.28	0.45
28-Jul	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.3	Z	0.4	0.5	0.3	0.27	0.53
29-Jul	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.2	0.2	0.2	0.1	0.1	0.1	0.5	0.0	0.1	0.1	0.1	0.3	0.5	0.3	0.1	0.1	0.21	0.48
30-Jul	0.2	0.1	Z	0.2	0.2	0.3	0.4	C	C	C	C	C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.13	0.37
31-Jul	0.2	0.2	Z	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.4	0.2	0.1	0.1	0.17	0.35
	0.25	0.23	0.22	0.23	0.25	0.31	0.32	0.30	0.25	0.24	0.24	0.20	0.20	0.18	0.20	0.17	0.17	0.18	0.19	0.22	0.29	0.29	0.26	0.25	Diurnal Average	
	0.35	0.34	0.36	0.33	0.50	0.79	0.66	0.51	0.51	0.42	0.58	0.33	0.35	0.28	0.47	0.30	0.29	0.34	0.87	0.60	0.80	0.70	0.60	0.45	Diurnal Maximum	

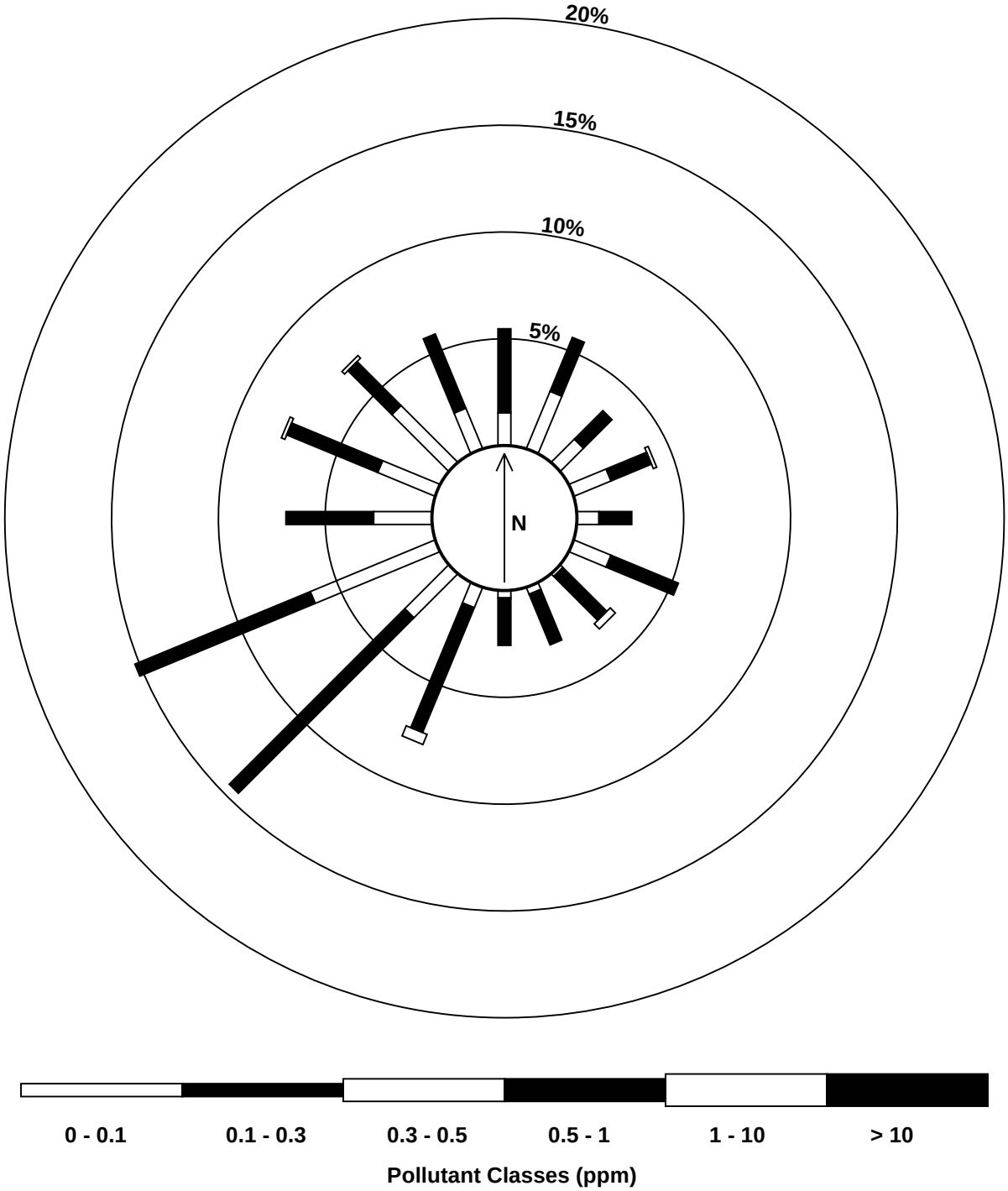
C - Calibration Z - Zero/Span P - Power Failure N - Not Valid

Hourly Maximums for CO at Crescent Heights

July 2008



Pollutant Rose for CO at Crescent Heights
July 2008



Palliser Airshed Society

Summary of Eight Hour Running Averages

Crescent Heights - Carbon Monoxide (CO) - ppm

July 1, 2008 to August 1, 2008

Number of Exceedences (AAAQO): 8-hr: 0
Maximum Value: 0.34 ppm on Jul 4 10:00

Minimum Value: 0.00 ppm on Jul 30 18:00

Percentiles: P_1 = 0.04 P_{10} = 0.12 Q_1 = 0.14 Median = 0.18 Q_3 = 0.21 P_{90} = 0.25 P_{99} = 0.33

Hours in Service:	744
Hours of Data:	609
Hours of Missing Data:	135
Hours of Calibration:	14
Percent Operational Time:	83.7

Day	Hourly Period Ending At (MST)																								Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Maximum
1-Jul	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.28
2-Jul	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.20
3-Jul	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	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.33
4-Jul	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	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.34
5-Jul	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.28
6-Jul	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.22
7-Jul	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.20
8-Jul	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.23
9-Jul	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	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.28
10-Jul	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.22
11-Jul	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.13
12-Jul	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	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.23
13-Jul	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.25
14-Jul	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.20
15-Jul	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.16
16-Jul	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	N	N	N	N	N	N	N	N	N	N	N	0.19
17-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--
18-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--
19-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--
20-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--
21-Jul	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0.1	0.2	0.2	0.2	0.2	0.19
22-Jul	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.22
23-Jul	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.22
24-Jul	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.23
25-Jul	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.19
26-Jul	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.22
27-Jul	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	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.29
28-Jul	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.25
29-Jul	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.20
30-Jul	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	N	N	N	N	N	N	N	N	N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.18
31-Jul	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.14
	0.24	0.25	0.27	0.28	0.28	0.29	0.32	0.33	0.34	0.34	0.34	0.33	0.33	0.32	0.31	0.29	0.27	0.25	0.23	0.22	0.22	0.22	0.22	0.23	
	Diurnal Maximums																								

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

Palliser Airshed Society

Summary of Hourly Averages

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

July 1, 2008 to August 1, 2008

Number of Exceedances (AAAQO): 1-hr: 0 24-hr: 0

Maximum Value: 33 $\mu g/m^3$ on Jul 3 09:00

Maximum Daily Average: 17.0 $\mu g/m^3$ on Jul 3

Minimum Value: 0 $\mu g/m^3$ on Jul 1 11:00

Minimum Daily Average: 1.5 $\mu g/m^3$ on Jul 31

Maximum Diurnal Average: 8.6 $\mu g/m^3$ at hour 22

Minimum Diurnal Average: 2.0 $\mu g/m^3$ at hour 12

Monthly Average: 5.19 $\mu g/m^3$

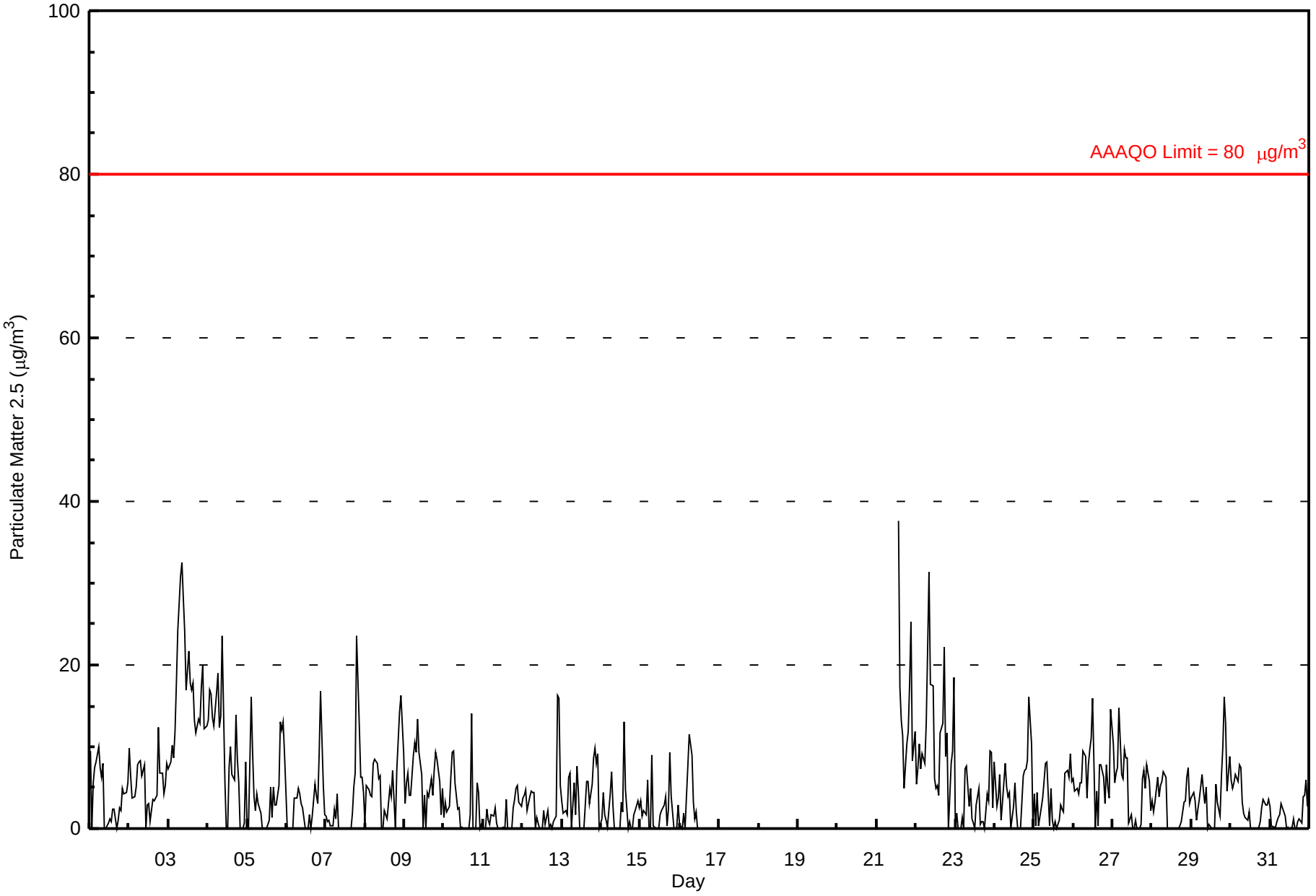
Percentiles: P_1 = 0.0 P_{10} = 0.0 Q_1 = 1.1 Median = 4.0 Q_3 = 7.5 P_{90} = 12.4 P_{99} = 23.7

Hours in Service:	744
Hours of Data:	589
Hours of Missing Data:	155
Hours of Calibration:	3
Percent Operational Time:	79.6

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Jul	10	BD	6	7	N	10	7	6	8	BD	0	1	1	1	2	2	0	1	3	2	5	4	4	6	4.1	10.0
2-Jul	10	6	4	4	5	8	8	8	6	8	0	3	N	1	N	3	4	4	12	7	7	4	5	8	5.7	12.5
3-Jul	7	8	10	9	12	18	24	31	33	28	24	17	22	18	17	18	13	12	13	13	17	20	12	13	17.0	32.6
4-Jul	13	17	16	14	12	17	19	12	14	24	6	BD	BD	7	10	7	6	14	8	6	0	0	1	8	10.5	23.6
5-Jul	0	0	16	9	4	2	4	3	2	0	0	0	0	1	5	1	5	3	3	5	13	12	13	9	4.7	16.2
6-Jul	0	0	0	0	0	4	4	5	4	3	3	0	0	0	2	BD	2	5	4	3	9	17	5	2	3.1	16.8
7-Jul	1	1	1	0	0	2	1	4	0	BD	BD	0	0	0	0	0	2	5	7	24	12	6	6	4	3.6	23.6
8-Jul	1	5	5	4	4	8	8	8	6	6	BD	BD	2	1	3	5	4	7	0	7	11	14	16	9	6.2	16.3
9-Jul	3	6	7	4	4	9	10	9	13	9	7	0	4	0	4	4	6	4	7	9	8	6	2	5	5.9	13.4
10-Jul	1	3	2	3	6	9	9	6	2	3	0	0	0	0	0	0	2	14	0	0	6	4	0	1	3.0	14.1
11-Jul	0	0	2	1	0	2	1	3	1	0	0	0	0	0	4	0	BD	0	3	4	5	5	3	3	1.6	5.3
12-Jul	4	4	5	2	4	5	4	4	0	1	0	BD	0	2	1	2	0	1	0	1	2	16	16	5	3.4	16.2
13-Jul	3	2	2	2	6	7	0	6	2	8	5	0	BD	BD	3	6	6	3	6	9	10	8	9	0	4.5	9.8
14-Jul	1	4	2	1	0	4	7	3	0	BD	BD	0	3	2	13	5	0	1	0	0	2	2	3	3	2.5	13.0
15-Jul	3	1	2	2	6	0	0	9	0	BD	0	0	2	2	3	4	0	2	9	4	BD	0	0	3	2.4	9.3
16-Jul	0	BD	2	0	4	8	12	9	3	1	2	0	P	P	P	P	P	P	P	P	P	P	P	P	--	11.5
17-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
18-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
19-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
20-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
21-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	17	13	11	5	10	12	18	25	8	12	--	25.3
22-Jul	5	7	10	7	9	8	13	22	31	18	17	6	5	5	4	12	13	22	9	12	0	8	10	18	11.4	31.4
23-Jul	0	2	BD	0	1	0	7	8	3	5	1	1	0	3	5	1	1	1	0	4	3	10	9	2	2.9	9.6
24-Jul	8	3	4	7	1	3	8	5	4	4	BD	3	6	2	0	BD	0	7	7	7	8	16	10	0	5.1	16.1
25-Jul	4	0	4	0	3	4	6	8	8	0	5	1	0	1	BD	1	3	2	2	7	7	6	9	6	3.8	9.2
26-Jul	6	5	5	4	6	6	9	9	4	8	10	11	16	BD	4	0	8	8	6	3	8	5	4	15	6.9	15.9
27-Jul	10	6	7	7	15	7	6	10	9	9	1	2	BD	0	1	0	BD	1	6	7	5	8	6	2	5.6	14.7
28-Jul	3	2	3	6	4	5	6	7	6	0	0	0	0	0	0	0	0	0	1	3	3	6	7	3	2.8	7.5
29-Jul	4	4	3	1	2	4	7	4	3	5	BD	0	0	BD	0	5	C	C	6	10	16	13	5	9	5.1	16.1
30-Jul	6	5	6	7	6	8	7	3	2	1	1	2	C	0	0	0	0	0	1	3	4	3	3	4	3.0	7.8
31-Jul	3	0	0	0	1	1	2	3	2	2	0	0	0	0	1	0	0	1	1	1	4	4	6	3	1.5	5.9
	4.2	3.9	5.0	3.9	4.6	6.0	7.4	7.9	6.4	6.5	3.8	2.0	3.0	2.1	4.1	3.7	3.7	4.9	4.8	6.2	7.3	8.6	6.7	5.8	Diurnal Average	
	13.2	17.0	16.4	13.6	14.7	17.8	24.2	30.9	32.6	28.1	24.1	17.0	21.8	17.8	17.3	17.8	13.2	22.3	13.4	23.6	17.7	25.3	16.3	18.4	Diurnal Maximum	

C - Calibration P - Power Failure N - Not Valid BD - Baseline Drift

Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 80 $\mu g/m^3$ 24-hr 30 $\mu g/m^3$


Hourly Averages for PM2.5 at Crescent Heights
July 2008
AAAQO Limit = 80 µg/m3
Particulate Matter 2.5 (µg/m3)
100
80
60
40
20
0
03
05
07
09
11
13
15
17
19
21
23
25
27
29
31
Day

Palliser Airshed Society
Summary of Hourly Maximums

Crescent Heights - Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$
July 1, 2008 to August 1, 2008

Maximum Value: 67 $\mu g/m^3$ on Jul 4 10:00

Maximum Daily Average: 27.4 $\mu g/m^3$ on Jul 4

Minimum Value: 0 $\mu g/m^3$ on Jul 6 03:00

Minimum Daily Average: 3.4 $\mu g/m^3$ on Jul 31

Maximum Diurnal Average: 20.6 $\mu g/m^3$ at hour 15

Minimum Diurnal Average: 8.8 $\mu g/m^3$ at hour 2

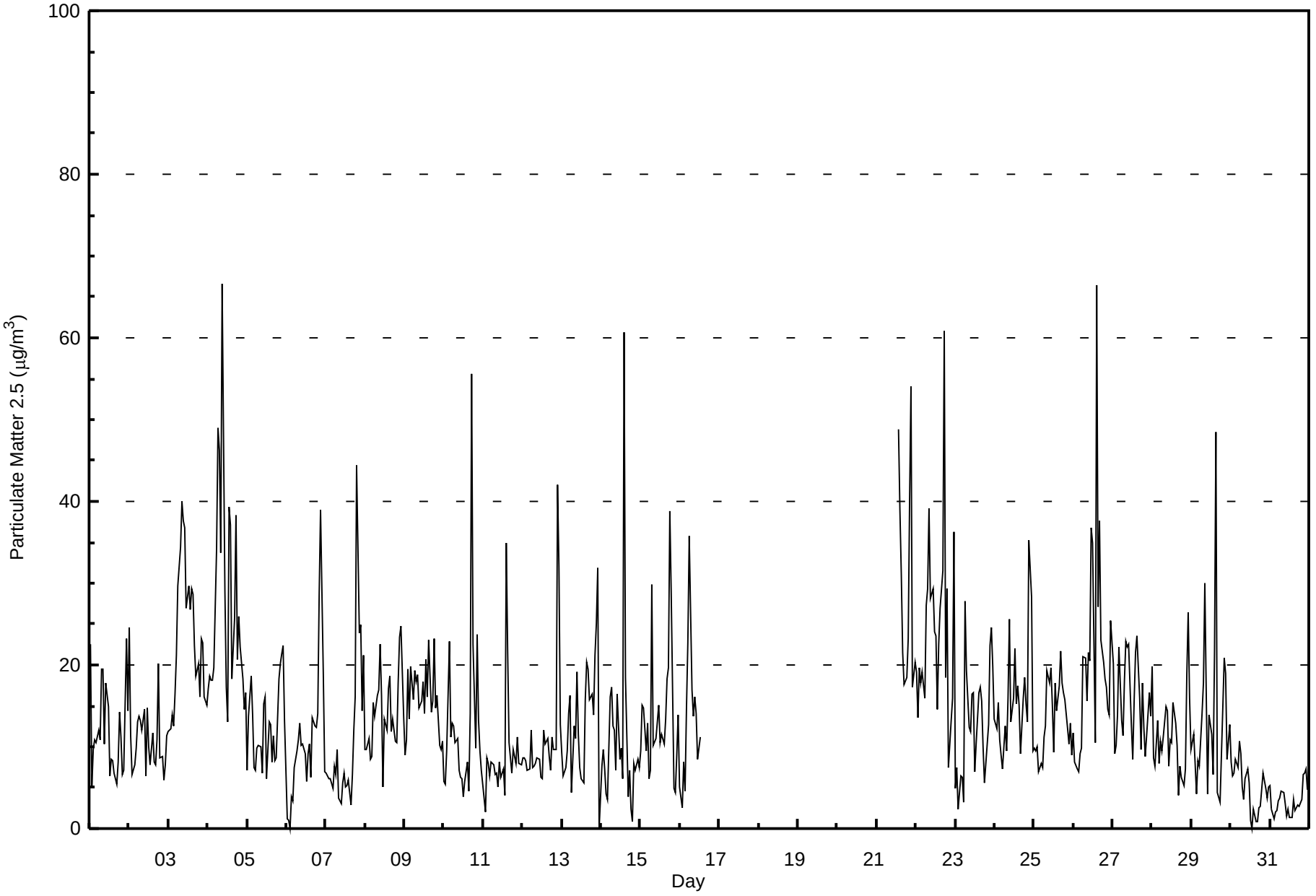
Monthly Average: 14.10 $\mu g/m^3$

Percentiles: P_1 = 1.0 P_{10} = 5.0 Q_1 = 7.6 Median = 11.9 Q_3 = 18.1 P_{90} = 25.1 P_{99} = 53.1

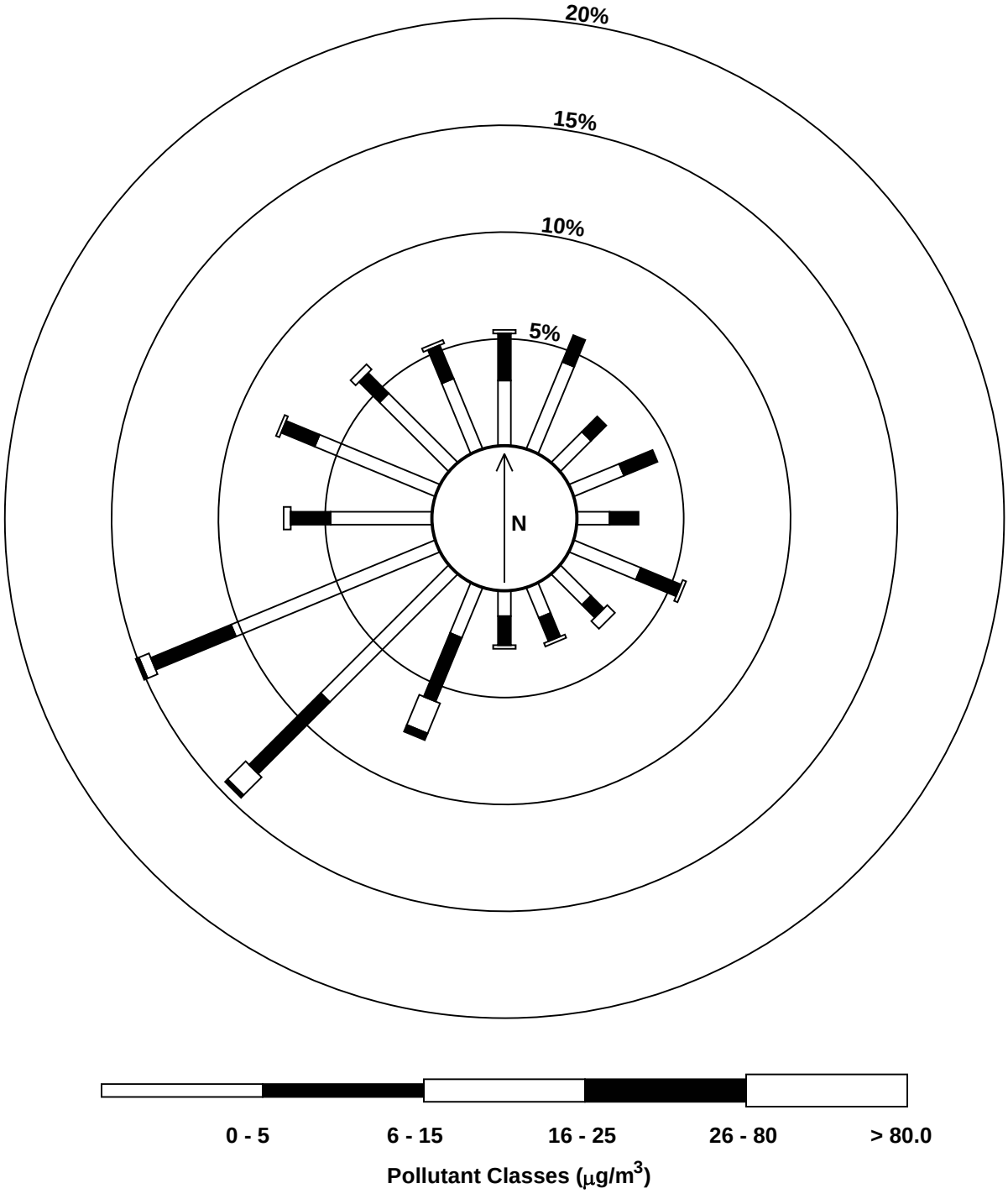
Hours in Service:	744
Hours of Data:	616
Hours of Missing Data:	128
Hours of Calibration:	3
Percent Operational Time:	83.2

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Jul	23	5	10	11	N	12	11	20	20	10	18	15	7	9	8	7	5	8	14	11	7	7	23	14	11.9	23.3
2-Jul	25	11	7	8	10	13	14	13	12	15	6	15	N	8	N	8	8	11	20	9	9	6	8	11	11.1	24.5
3-Jul	12	12	14	12	17	21	30	34	40	38	37	27	30	27	29	29	22	19	20	16	23	23	16	15	23.4	40.1
4-Jul	17	19	18	18	20	34	49	46	34	67	29	17	13	39	37	18	26	38	21	26	22	18	15	17	27.4	66.6
5-Jul	7	14	19	14	7	7	10	10	10	7	15	16	6	13	13	8	11	8	9	18	20	21	22	13	12.5	22.3
6-Jul	1	1	0	4	3	7	10	11	13	10	10	9	6	9	10	6	14	13	12	14	29	39	19	7	10.7	38.9
7-Jul	7	6	6	6	5	8	7	10	4	3	6	7	5	5	6	3	7	12	16	44	24	25	14	21	10.7	44.4
8-Jul	10	10	11	8	9	15	14	16	17	23	16	5	13	12	17	19	12	13	11	10	18	23	25	14	14.2	24.8
9-Jul	9	11	20	13	20	16	19	18	19	15	16	18	14	21	16	23	14	16	23	15	16	10	10	11	15.9	23.3
10-Jul	6	5	10	23	11	13	13	11	11	7	6	6	4	6	8	5	14	56	22	10	24	13	9	7	12.5	55.6
11-Jul	5	2	9	8	6	8	8	7	7	5	8	6	7	4	35	22	10	7	10	9	8	11	8	8	9.1	34.9
12-Jul	9	9	8	7	7	12	7	8	8	9	9	6	6	12	10	11	9	7	11	10	10	42	32	13	11.3	42.1
13-Jul	9	6	8	10	14	16	4	13	11	19	12	7	6	6	16	20	19	16	16	14	21	25	32	0	13.4	31.9
14-Jul	8	10	7	4	4	16	17	13	12	7	16	8	10	6	61	18	4	7	2	1	8	7	8	7	10.9	60.7
15-Jul	9	15	15	10	13	6	7	30	10	11	13	15	10	11	10	13	18	20	39	29	5	4	9	14	14.1	38.7
16-Jul	5	2	8	5	15	23	36	17	14	16	14	9	P	P	P	P	P	P	P	P	P	P	P	P	--	35.7
17-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
18-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
19-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
20-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
21-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	39	31	22	18	18	23	40	54	17	20	--	54.1
22-Jul	19	14	20	18	19	16	27	29	39	28	29	24	24	15	23	27	32	61	18	29	7	13	16	36	24.3	60.9
23-Jul	5	7	2	6	6	3	28	19	12	12	17	17	7	10	17	17	16	10	6	10	13	22	25	20	12.8	27.8
24-Jul	13	12	15	11	9	7	13	9	16	26	13	16	22	15	17	15	9	16	19	15	13	35	28	9	15.6	35.2
25-Jul	10	9	10	7	8	7	11	13	19	18	20	15	9	18	14	17	22	18	17	16	12	10	13	9	13.4	21.6
26-Jul	12	8	7	7	9	10	21	21	16	22	21	37	35	11	66	27	38	23	20	18	17	15	14	25	20.8	66.4
27-Jul	20	9	10	14	22	13	11	18	23	22	23	13	8	16	21	24	16	10	18	12	9	11	17	14	15.6	23.6
28-Jul	20	9	8	13	8	11	10	11	15	14	8	11	10	15	13	10	4	8	6	5	7	19	26	16	11.6	26.4
29-Jul	10	12	8	4	8	8	14	18	30	17	4	14	12	7	22	48	C	C	9	15	21	19	9	13	14.5	48.4
30-Jul	8	6	7	8	7	11	9	5	4	6	7	6	C	0	2	1	1	3	3	5	7	5	4	5	5.2	10.6
31-Jul	5	2	1	2	2	3	4	5	4	3	2	2	1	1	3	2	3	3	3	4	7	7	7	5	3.4	7.2
	10.9	8.8	9.9	9.7	10.4	12.2	15.5	16.3	16.1	16.5	14.4	13.1	11.6	11.8	20.6	16.6	14.2	16.7	14.8	14.9	15.2	18.7	16.4	13.3	Diurnal Average	
	24.5	18.7	19.7	22.8	22.2	34.2	49.0	46.2	40.1	66.6	36.7	36.8	34.9	39.3	66.4	48.4	37.6	60.9	38.7	44.4	40.2	54.1	32.0	36.3	Diurnal Maximum	

C - Calibration P - Power Failure N - Not Valid


Hourly Maximums for PM2.5 at Crescent Heights
July 2008
Particulate Matter 2.5 (µg/m3)
100
80
60
40
20
0
03
05
07
09
11
13
15
17
19
21
23
25
27
29
31
Day

Pollutant Rose for $PM_{2.5}$ at Crescent Heights
July 2008



Palliser Airshed Society
Summary of Hourly Averages

Crescent Heights - Relative Humidity (RH) - %
July 1, 2008 to August 1, 2008

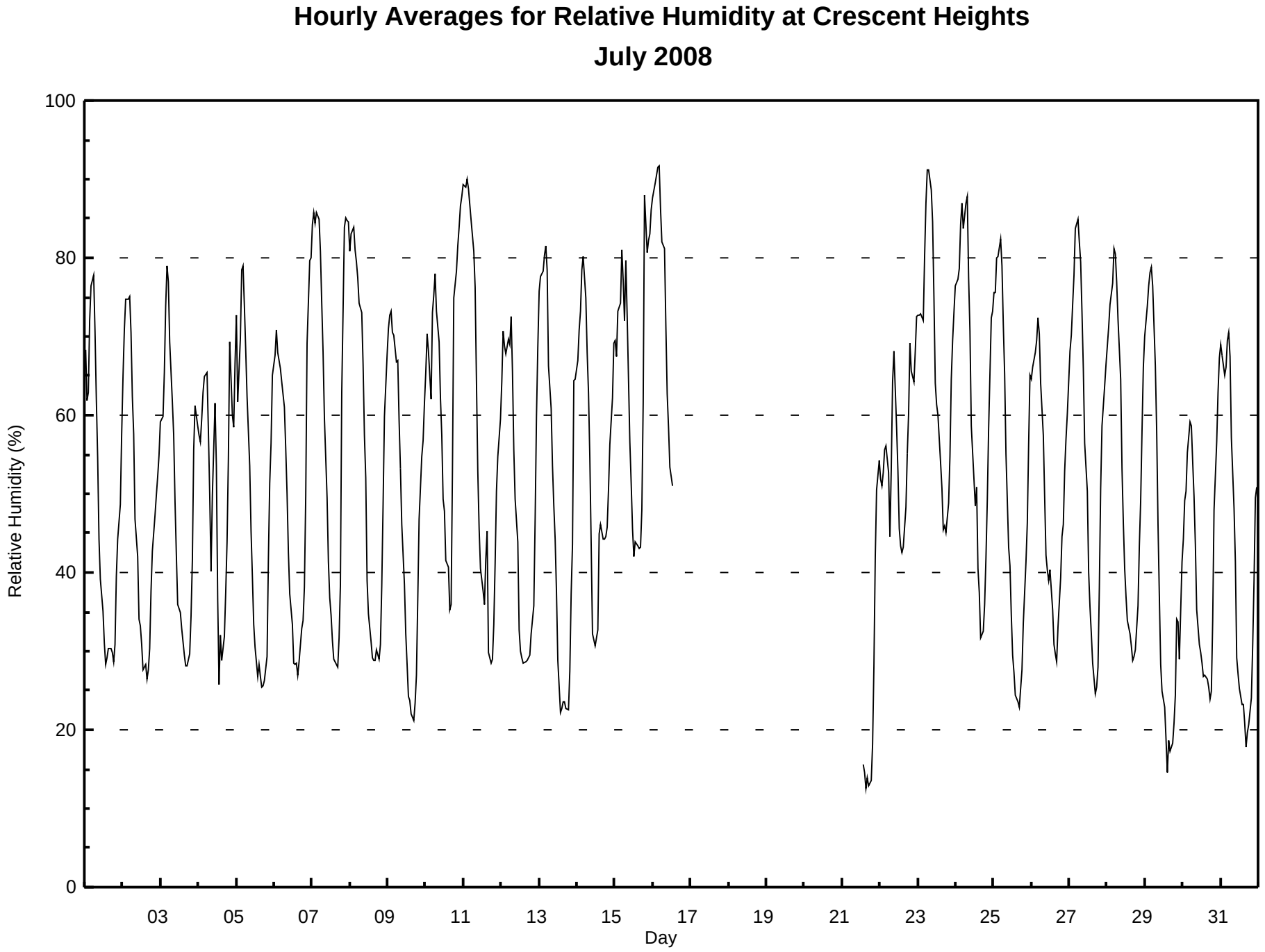
Maximum Value: 92 % on Jul 16 05:00
Maximum Daily Average: 67.7 % on Jul 23

Minimum Value: 13 % on Jul 21 16:00
Minimum Daily Average: 42.0 % on Jul 29
Maximum Diurnal Average: 76.5 % at hour 5
Minimum Diurnal Average: 29.2 % at hour 17
Monthly Average: 53.00 %
Percentiles: P_1 = 17.2 P_{10} = 28.0 Q_1 = 34.7 Median = 53.2 Q_3 = 69.5 P_{90} = 79.9 P_{99} = 89.7

Hours in Service:	744
Hours of Data:	619
Hours of Missing Data:	125
Hours of Calibration:	0
Percent Operational Time:	83.2

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Jul	68	62	63	72	N	78	71	62	55	44	39	35	31	28	29	30	30	30	29	31	40	44	49	58	46.8	77.8
2-Jul	65	71	75	75	75	70	62	58	47	42	34	33	N	28	N	26	28	30	38	43	47	50	52	55	50.1	75.0
3-Jul	59	60	65	74	79	77	69	62	57	49	42	36	35	33	31	29	28	28	30	34	42	56	61	59	49.8	79.0
4-Jul	58	57	60	63	65	65	58	50	40	50	62	54	36	26	32	29	32	37	44	54	69	60	59	67	51.0	69.4
5-Jul	73	62	70	79	79	74	68	62	54	45	39	33	30	27	28	27	25	26	26	29	42	51	56	65	48.8	79.0
6-Jul	68	71	68	67	66	64	61	56	50	43	37	33	29	28	29	27	29	33	34	38	50	69	80	80	50.3	80.0
7-Jul	84	86	84	86	85	81	74	68	60	50	41	37	35	31	29	28	28	32	38	63	84	85	85	85	60.8	85.8
8-Jul	81	83	84	81	80	78	74	73	66	57	52	39	35	31	29	29	29	30	29	31	38	49	60	68	54.4	83.8
9-Jul	71	73	73	70	70	67	67	59	53	46	39	32	28	24	24	22	21	23	27	37	47	55	57	61	47.8	73.3
10-Jul	65	70	68	62	73	75	78	73	69	62	57	49	48	41	41	35	36	53	75	78	82	84	87	88	64.6	87.8
11-Jul	89	89	90	89	87	85	81	76	64	53	46	40	38	36	42	45	30	28	29	33	41	50	55	60	57.3	90.0
12-Jul	64	71	69	68	70	69	73	66	56	49	44	33	30	29	28	29	29	29	29	32	36	47	60	69	49.0	72.6
13-Jul	76	78	78	80	81	78	66	61	54	48	44	37	29	22	23	24	24	23	23	27	37	44	64	65	49.4	81.5
14-Jul	67	71	73	78	80	75	68	63	55	44	32	31	32	33	45	46	44	44	45	46	50	56	62	69	54.5	80.2
15-Jul	69	67	73	74	81	77	72	80	72	57	51	46	42	44	43	43	43	48	62	88	81	82	83	86	65.2	88.0
16-Jul	88	89	90	91	92	86	82	81	71	63	59	53	P	P	P	P	P	P	P	P	P	P	P	P	--	91.7
17-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
18-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
19-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
20-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
21-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	15	13	14	13	14	18	28	42	50	54	--	54.2
22-Jul	52	51	53	56	56	53	45	53	64	68	59	53	46	43	43	43	48	55	60	69	66	64	68	73	55.8	72.6
23-Jul	73	73	73	72	80	87	91	91	89	85	75	64	61	60	54	51	45	46	45	49	55	65	69	73	67.7	91.2
24-Jul	76	77	79	84	87	84	87	88	78	71	59	52	48	51	41	37	32	32	36	42	49	58	72	73	62.2	87.8
25-Jul	76	76	80	80	82	79	71	65	55	43	41	35	29	27	24	24	23	25	28	34	41	46	56	65	50.3	82.4
26-Jul	65	66	68	69	72	70	64	57	50	42	40	39	40	35	31	30	29	33	39	45	46	53	57	60	50.1	72.4
27-Jul	68	70	74	78	84	85	82	80	73	66	56	50	40	36	32	28	25	25	28	38	51	59	64	67	56.6	85.0
28-Jul	69	71	74	77	81	81	77	72	65	53	46	41	37	34	32	31	29	29	30	36	43	49	58	66	53.4	81.2
29-Jul	70	74	76	78	79	76	66	58	46	37	28	25	23	19	15	19	17	18	21	24	34	34	29	41	42.0	78.9
30-Jul	44	49	50	55	59	59	54	50	44	35	31	30	28	27	27	26	25	24	25	34	48	57	63	67	42.2	67.3
31-Jul	69	68	65	66	69	71	67	57	48	41	29	27	25	23	23	21	18	20	21	24	31	39	49	51	42.6	70.5
	69.5	70.5	72.2	74.0	76.5	74.8	70.4	66.2	59.0	51.7	45.5	39.9	35.6	32.7	31.6	30.5	29.2	31.4	34.7	41.4	49.1	55.7	61.7	66.3	Diurnal Average	
	89.3	89.5	90.4	91.5	91.7	87.0	91.2	91.1	88.7	84.6	74.9	64.1	61.4	60.0	53.9	50.7	48.3	55.0	74.9	88.0	84.0	85.2	86.6	87.8	Diurnal Maximum	

P - Power Failure N - Not Valid


Hourly Averages for Relative Humidity at Crescent Heights
July 2008
Relative Humidity (%)
100
80
60
40
20
0
03
05
07
09
11
13
15
17
19
21
23
25
27
29
31
Day

Palliser Airshed Society
Summary of Hourly Averages

Crescent Heights - Solar Radiation (SR) - W/m^2
July 1, 2008 to August 1, 2008

Maximum Value: 949 W/m^2 on Jul 5 14:00

Maximum Daily Average: 352.1 W/m^2 on Jul 13

Minimum Value: 0 W/m^2 on Jul 1 01:00

Minimum Daily Average: 193.5 W/m^2 on Jul 23

Maximum Diurnal Average: 818.4 W/m^2 at hour 13

Minimum Diurnal Average: 0.1 W/m^2 at hour 2

Monthly Average: 295.46 W/m^2

Percentiles: P_1 = 0.0 P_{10} = 0.0 Q_1 = 0.2 Median = 144.2 Q_3 = 581.7 P_{90} = 814.7 P_{99} = 929.5

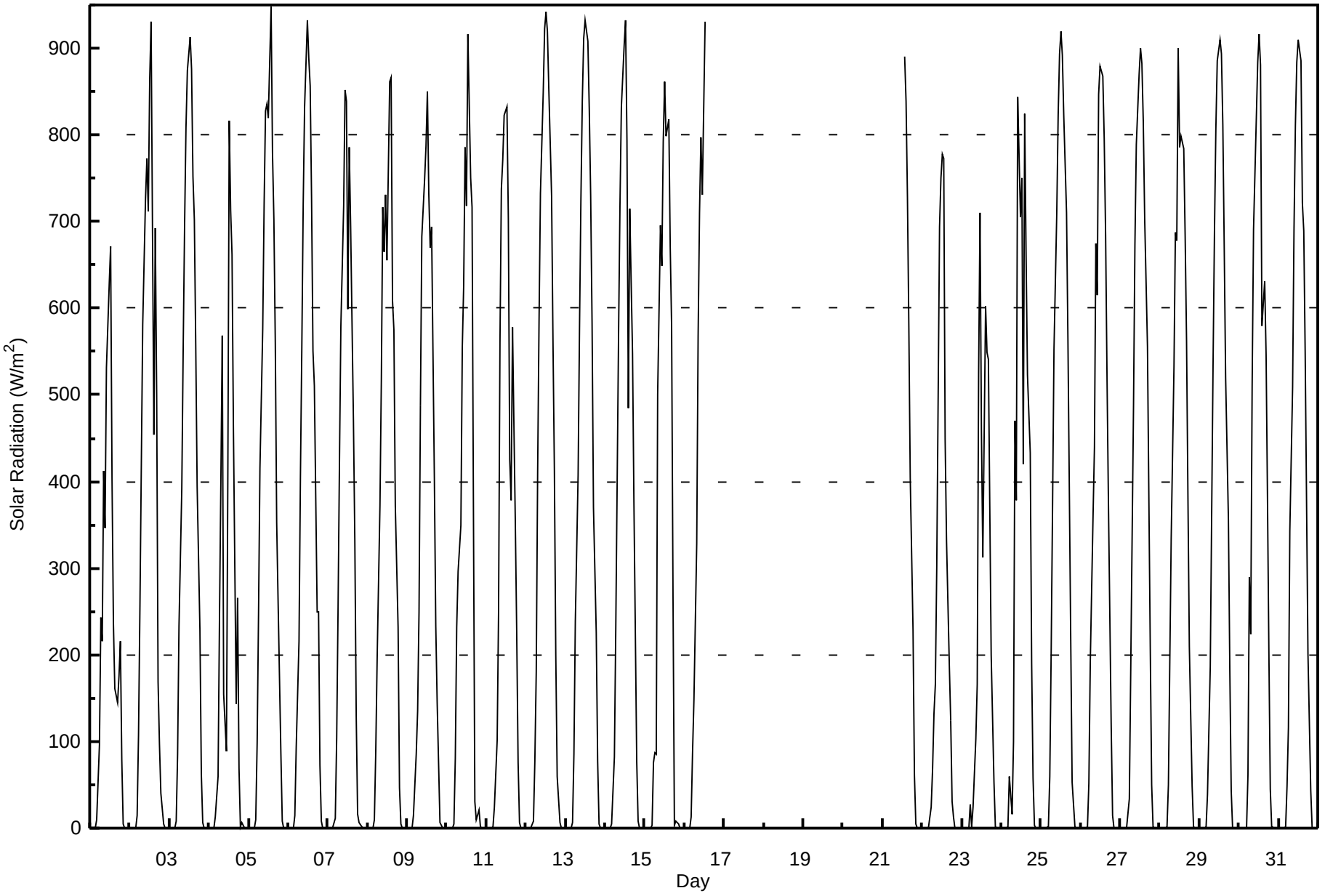
Hours in Service:	744
Hours of Data:	619
Hours of Missing Data:	125
Hours of Calibration:	0
Percent Operational Time:	83.2

Day	Hourly Period Ending At (MST)																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1-Jul	0	0	0	0	N	97	243	216	413	345	531	629	672	404	237	161	144	175	215	78	6	0	0	0	198.5	671.7
2-Jul	0	0	0	0	14	108	255	418	582	726	773	711	N	930	N	692	501	169	97	40	5	0	0	0	273.7	930.4
3-Jul	0	0	0	0	7	85	233	392	553	694	808	874	913	876	753	701	557	394	229	63	7	0	0	0	339.1	912.9
4-Jul	0	0	0	0	13	60	240	399	568	155	89	408	817	714	662	461	144	266	69	2	7	0	0	0	211.4	816.8
5-Jul	0	0	0	0	9	98	249	415	577	719	827	836	820	949	779	702	561	353	263	88	9	0	0	0	343.9	948.7
6-Jul	0	0	0	0	15	94	215	404	552	720	832	932	889	856	726	551	511	250	250	73	7	0	0	0	328.3	932.2
7-Jul	0	0	0	0	12	105	256	425	580	718	852	838	599	786	694	471	332	129	16	7	2	0	0	0	284.2	852.3
8-Jul	0	0	0	0	10	88	196	373	517	716	665	731	655	861	866	609	575	372	232	47	5	0	0	0	313.2	866.2
9-Jul	0	0	0	0	14	85	134	250	488	683	749	787	851	733	670	695	402	234	145	75	6	0	0	0	291.8	850.7
10-Jul	0	0	0	0	6	80	232	296	350	554	626	786	717	916	750	717	364	31	10	21	2	0	0	0	269.1	915.5
11-Jul	0	0	0	0	1	24	102	249	560	737	771	823	833	704	425	378	578	353	226	76	6	0	0	0	285.3	832.9
12-Jul	0	0	0	0	9	78	180	411	584	733	849	923	942	920	853	730	560	412	199	59	7	0	0	0	352.0	941.8
13-Jul	0	0	0	0	6	85	238	408	577	725	839	911	932	908	829	729	583	370	225	77	4	0	0	0	352.1	931.9
14-Jul	0	0	0	0	5	81	233	402	572	719	833	903	932	793	484	716	548	376	227	78	9	0	0	0	329.7	931.8
15-Jul	0	0	0	0	3	76	87	86	500	696	649	792	862	799	818	672	580	269	4	8	5	0	0	0	287.8	861.8
16-Jul	0	0	0	0	13	87	148	328	569	710	797	730	P	P	P	P	P	P	P	P	P	P	P	P	--	797.2
17-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
18-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
19-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
20-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
21-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	839	728	579	404	229	62	5	0	0	0	--	838.6
22-Jul	0	0	0	0	0	24	67	132	166	301	694	751	778	774	449	331	188	123	30	13	0	0	0	0	200.8	777.5
23-Jul	0	0	0	0	0	27	2	24	103	166	525	710	460	312	603	548	541	370	199	52	1	0	0	0	193.5	709.8
24-Jul	0	0	0	0	2	60	16	100	470	378	844	706	750	421	825	662	524	433	191	58	3	0	0	0	268.3	843.8
25-Jul	0	0	0	0	2	59	205	375	553	710	823	894	920	891	823	710	564	391	219	53	1	0	0	0	341.4	919.9
26-Jul	0	0	0	0	2	52	191	360	440	675	615	848	879	868	796	685	521	378	118	14	0	0	0	0	310.0	879.2
27-Jul	0	0	0	0	0	33	182	336	488	673	789	869	900	883	815	703	555	380	207	49	1	0	0	0	327.6	900.2
28-Jul	0	0	0	0	1	51	193	336	534	687	678	901	786	799	785	682	562	381	210	48	2	0	0	0	318.1	900.6
29-Jul	0	0	0	0	1	39	186	363	536	687	807	885	909	894	811	670	520	356	184	43	0	0	0	0	328.8	909.4
30-Jul	0	0	0	0	0	60	290	224	510	691	819	884	916	881	580	631	546	381	203	45	1	0	0	0	319.2	915.7
31-Jul	0	0	0	0	1	48	116	344	508	691	812	883	910	886	721	689	549	375	201	43	0	0	0	0	324.1	909.8
	0.1	0.1	0.1	0.1	6.0	68.6	180.2	310.2	494.2	615.7	726.7	805.5	818.4	790.2	703.7	616.3	484.1	312.5	169.2	48.9	3.8	0.1	0.1	0.1	Diurnal Average	
	0.3	0.3	0.3	0.3	14.7	108.5	289.9	425.2	583.9	737.4	852.3	932.2	941.8	948.7	866.2	729.8	583.3	432.5	263.2	87.7	8.7	0.3	0.4	0.4	Diurnal Maximum	

P - Power Failure N - Not Valid

Hourly Averages for Solar Radiation at Crescent Heights

July 2008



Palliser Airshed Society
Summary of Hourly Averages

Crescent Heights - External Temperature (ET) - °C
July 1, 2008 to August 1, 2008

Maximum Value: 35 °C on Jul 21 17:00
Maximum Daily Average: 24.9 °C on Jul 4

Minimum Value: 10 °C on Jul 11 05:00
Minimum Daily Average: 15.1 °C on Jul 11
Maximum Diurnal Average: 27.6 °C at hour 16
Minimum Diurnal Average: 13.7 °C at hour 5
Monthly Average: 20.81 °C
Percentiles: P_1 = 10.3 P_{10} = 13.0 Q_1 = 15.9 Median = 20.8 Q_3 = 25.5 P_{90} = 28.8 P_{99} = 32.4

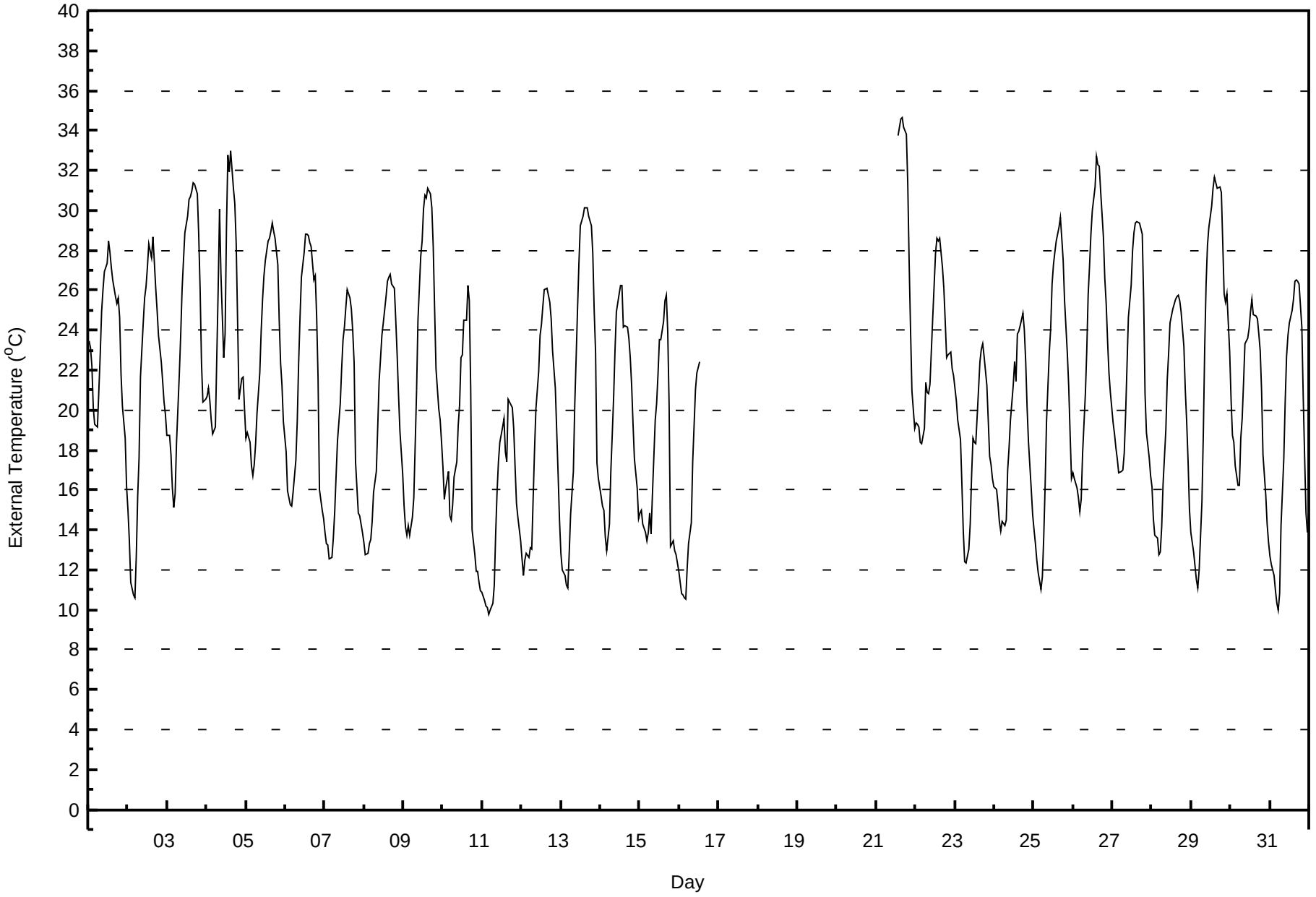
Hours in Service:	744
Hours of Data:	619
Hours of Missing Data:	125
Hours of Calibration:	0
Percent Operational Time:	83.2

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Jul	23	23	22	20	N	19	21	23	25	26	27	27	28	28	27	26	26	25	26	25	22	20	19	16	23.7	28.4
2-Jul	15	13	11	11	11	13	16	18	22	24	26	26	N	28	N	29	27	26	25	24	22	21	20	20	20.4	28.7
3-Jul	19	19	18	16	15	16	18	22	24	26	28	29	30	31	31	31	31	31	31	29	26	22	20	21	24.3	31.4
4-Jul	21	21	20	19	19	19	23	26	30	27	23	24	29	33	32	33	31	30	28	25	21	22	22	20	24.9	33.0
5-Jul	19	19	18	17	17	17	18	20	22	24	26	27	27	28	29	29	29	29	29	27	24	22	21	19	23.3	29.4
6-Jul	18	16	16	15	15	16	17	19	22	25	27	28	29	29	29	28	28	27	27	25	22	16	15	15	21.8	28.8
7-Jul	14	13	13	13	13	14	15	17	18	20	22	24	24	25	26	26	25	24	22	17	15	15	14	14	18.4	26.0
8-Jul	13	13	13	13	14	14	16	17	19	21	23	24	24	26	26	27	27	26	26	25	23	21	19	17	20.3	26.8
9-Jul	15	14	14	14	14	15	16	18	21	25	28	28	30	31	31	31	31	30	28	25	22	20	20	18	22.4	31.1
10-Jul	17	16	16	17	15	15	15	17	17	19	20	23	23	24	24	26	25	21	14	13	12	12	11	11	17.7	26.2
11-Jul	11	10	10	10	10	10	10	11	14	16	17	18	19	20	18	17	21	20	20	19	17	15	15	13	15.1	20.5
12-Jul	13	12	12	13	13	13	13	16	18	20	22	24	24	25	26	26	26	25	25	23	21	19	17	15	19.1	26.1
13-Jul	13	12	12	11	11	13	15	17	20	23	25	27	29	30	30	30	30	30	29	28	25	23	17	17	21.5	30.2
14-Jul	16	15	15	14	13	14	17	19	21	23	25	26	26	26	24	24	24	24	23	21	19	18	16	15	19.9	26.3
15-Jul	15	15	14	14	13	14	15	14	16	19	20	22	24	24	24	25	26	24	20	13	13	13	13	12	17.6	25.7
16-Jul	12	11	11	11	11	12	13	14	17	19	21	22	P	P	P	P	P	P	P	P	P	P	P	P	--	21.9
17-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
18-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
19-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
20-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
21-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	34	35	35	34	34	31	27	24	21	19	--	34.6
22-Jul	19	19	19	18	18	19	21	21	21	21	25	26	28	29	28	29	27	26	24	23	23	23	22	22	23.0	28.6
23-Jul	21	20	19	19	16	14	12	12	13	14	17	19	18	18	21	22	23	23	23	21	20	18	17	17	18.3	23.3
24-Jul	16	16	15	14	14	14	14	14	17	18	19	21	22	21	24	24	24	25	24	22	20	18	16	15	18.8	24.8
25-Jul	14	13	13	12	11	12	14	16	19	23	24	26	27	28	28	29	30	29	28	25	23	21	19	17	20.9	29.6
26-Jul	17	17	16	16	15	16	18	21	23	26	27	29	30	31	33	32	32	31	29	27	25	23	22	21	24.0	32.7
27-Jul	19	19	18	18	17	17	17	18	20	22	25	26	28	29	29	29	29	29	29	26	21	19	18	17	22.4	29.4
28-Jul	16	15	14	14	13	13	14	16	19	22	23	24	25	25	26	26	26	25	25	23	21	19	17	15	19.8	25.7
29-Jul	14	13	12	11	11	12	15	19	23	26	28	29	30	31	32	31	31	31	31	28	26	25	26	23	23.4	31.6
30-Jul	21	19	18	17	16	16	19	20	21	23	24	24	25	26	25	25	25	24	23	21	18	16	14	13	20.5	25.5
31-Jul	13	12	12	11	10	10	11	14	18	20	23	24	24	25	26	26	27	26	26	24	21	18	15	14	18.7	26.5
	16.3	15.6	15.1	14.5	13.7	14.5	15.9	17.6	20.0	22.1	23.6	24.9	26.1	26.8	27.3	27.6	27.5	26.8	25.7	23.4	21.1	19.4	17.9	16.7	Diurnal Average	
	23.5	23.1	22.2	20.1	18.8	19.2	22.6	26.0	30.1	26.8	28.3	29.2	30.2	32.8	34.1	34.6	34.6	34.2	33.8	31.3	27.3	25.4	25.8	22.9	Diurnal Maximum	

P - Power Failure N - Not Valid

Hourly Averages for External Temperature at Crescent Heights

July 2008



Palliser Airshed Society
Summary of Hourly Averages

Crescent Heights
July 1, 2008 to August 1, 2008
WS (km/h), WD (deg)

Day	Hourly Period Ending At (MST)																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1 Spd	12	14	13	12	N	11	8	4	4	8	13	15	11	15	14	13	15	15	14	13	8	8	7	2	9.0	15.4
Dir	290	310	330	355	N	351	16	254	239	346	7	9	22	358	359	2	11	20	27	28	51	46	54	94	3	11
2 Spd	2	3	4	4	4	4	5	7	3	3	6	3	N	4	N	1	10	9	13	15	13	10	7	8	5.1	15.2
Dir	88	92	129	97	103	108	89	76	66	84	59	149	N	153	N	338	10	12	34	54	83	86	109	97	73	54
3 Spd	4	4	6	7	5	6	5	6	11	11	10	13	14	12	12	12	9	8	8	7	5	7	7	5	6.9	14.0
Dir	106	155	207	241	240	216	210	212	232	208	206	202	200	192	205	219	192	182	197	175	142	115	132	181	197	200
4 Spd	10	11	7	6	5	3	2	4	0	15	15	27	18	13	12	3	2	6	8	17	14	7	12	22	3.2	26.5
Dir	218	210	216	222	229	293	308	58	133	267	313	351	46	115	162	108	107	8	301	263	170	207	245	222	246	351
5 Spd	16	15	14	12	11	10	12	12	11	9	11	11	14	18	17	14	11	9	9	7	7	7	6	9	10.6	18.1
Dir	231	258	272	266	259	266	256	280	271	284	266	288	259	243	237	259	286	282	277	274	263	242	217	208	260	243
6 Spd	13	14	13	13	11	15	12	14	13	14	14	18	16	18	17	16	19	17	19	13	13	38	17	4	11.2	38.4
Dir	229	231	227	225	219	229	230	215	227	226	239	229	237	241	248	243	238	250	240	253	303	4	14	298	247	4
7 Spd	9	7	8	9	9	7	9	10	11	10	9	7	8	9	8	9	10	13	15	14	5	6	3	8	7.0	14.6
Dir	304	286	282	265	271	240	277	300	321	329	337	289	293	288	282	287	308	348	356	307	121	208	287	250	298	356
8 Spd	12	13	9	8	5	4	6	9	10	10	15	14	14	16	17	15	14	14	10	6	5	5	5	6	9.3	17.3
Dir	237	225	234	230	264	178	205	217	221	233	230	245	237	243	244	245	248	243	273	298	246	219	174	161	236	244
9 Spd	5	6	7	6	6	6	3	4	4	4	7	12	11	17	14	16	12	7	17	21	13	18	16	10	1.2	21.3
Dir	109	111	24	89	127	134	162	122	223	192	174	215	226	246	259	261	262	288	4	30	70	111	109	95	145	30
10 Spd	11	2	10	6	6	10	15	17	13	12	12	8	10	8	8	3	5	25	23	36	24	6	6	12	9.2	36.3
Dir	17	25	192	245	303	322	15	15	7	8	17	34	23	32	28	182	19	6	326	5	351	332	296	263	357	5
11 Spd	15	21	22	19	20	15	17	18	22	23	21	20	19	18	20	16	19	19	17	13	9	9	10	10	16.0	22.9
Dir	268	333	336	347	314	292	301	313	324	329	321	313	304	307	343	334	305	310	307	295	275	258	264	309	313	329
12 Spd	7	6	8	9	7	7	6	9	11	12	13	11	13	11	11	13	14	14	10	6	3	4	6	6	7.4	14.0
Dir	274	243	267	276	272	244	195	217	237	240	242	296	303	290	252	235	231	225	229	242	270	195	143	141	246	231
13 Spd	6	5	5	4	4	5	9	11	14	14	12	14	13	13	12	15	15	12	9	5	7	9	32	23	4.0	31.9
Dir	133	127	141	150	206	197	219	214	216	210	221	213	216	250	252	249	238	254	299	306	62	61	15	43	233	15
14 Spd	10	5	9	9	9	3	3	6	8	8	3	2	9	13	22	22	19	19	20	19	17	12	6	3	7.7	22.2
Dir	117	115	56	357	353	347	127	176	194	219	87	74	42	43	11	19	23	25	20	19	21	27	47	102	31	19
15 Spd	5	8	6	4	11	9	8	16	10	12	17	17	18	24	25	25	25	30	33	34	17	8	3	4	12.2	34.3
Dir	39	12	56	134	34	116	132	11	67	108	105	98	87	67	67	63	65	74	49	349	38	110	120	241	63	349
16 Spd	10	6	6	4	4	3	3	4	6	5	6	5	P	P	P	P	P	P	P	P	P	P	P	P	--	9.5
Dir	340	325	306	210	225	212	168	250	178	97	110	75	P	P	P	P	P	P	P	P	P	P	P	P	--	340
17 Spd	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
Dir	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
18 Spd	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
Dir	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
19 Spd	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
Dir	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
20 Spd	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
Dir	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--	--
21 Spd	P	P	P	P	P	P	P	P	P	P	P	P	P	P	16	16	11	9	6	6	3	6	6	7	--	15.6
Dir	P	P	P	P	P	P	P	P	P	P	P	P	P	P	227	226	254	262	278	267	208	130	144	147	--	227
22 Spd	11	11	9	5	5	9	9	14	16	13	16	16	13	12	10	9	13	14	22	15	11	8	11	12	9.5	22.4
Dir	225	216	231	176	195	237	239	221	245	248	233	238	282	296	286	265	234	230	225	241	323	296	323	348	250	225

Palliser Airshed Society
Summary of Hourly Averages

Crescent Heights
July 1, 2008 to August 1, 2008
WS (km/h), WD (deg)

Day	Hourly Period Ending At (MST)																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
23 Spd	11	10	10	11	15	16	18	13	11	9	10	15	19	13	7	9	10	9	11	9	5	4	4	3	9.0	18.8
Dir	9	27	6	332	321	294	340	328	301	299	295	321	344	341	318	324	6	3	6	25	41	1	293	236	337	344
24 Spd	5	5	6	6	7	5	6	6	7	8	8	5	7	9	9	10	9	7	8	7	6	5	6	9	5.6	10.2
Dir	226	273	281	278	282	282	244	273	319	330	335	323	281	295	306	319	343	319	314	308	294	245	204	223	292	319
25 Spd	11	10	7	8	6	5	6	5	4	5	8	8	9	8	4	6	5	8	11	13	16	16	11	9	4.5	16.3
Dir	220	232	220	190	188	163	192	193	200	112	76	111	104	104	54	105	100	68	62	60	55	77	107	106	110	77
26 Spd	7	10	10	9	9	10	9	10	11	10	7	12	11	2	7	12	11	12	12	6	6	7	5	2	2.0	12.4
Dir	53	34	18	4	349	352	347	337	351	343	346	230	239	270	183	203	224	223	203	202	170	153	68	252	294	230
27 Spd	12	12	3	6	3	9	19	16	18	14	12	15	14	15	16	17	18	14	9	10	10	3	3	6	7.5	18.8
Dir	347	351	342	32	248	211	218	229	238	239	251	232	240	237	237	240	241	259	263	348	15	89	71	333	252	218
28 Spd	4	8	5	4	8	10	12	13	12	15	12	14	16	17	16	15	15	14	13	9	8	3	4	6	7.4	16.6
Dir	314	341	339	247	228	229	231	229	216	235	276	297	309	313	302	298	298	303	315	326	349	29	147	134	285	313
29 Spd	6	6	5	5	5	3	3	5	7	6	14	17	17	16	18	13	12	8	5	2	4	9	9	10	6.1	17.8
Dir	151	154	147	144	164	137	66	75	100	199	195	202	211	224	222	257	255	252	261	309	151	191	209	242	207	222
30 Spd	8	6	9	7	6	4	9	15	17	24	32	29	26	24	25	23	23	25	20	15	13	6	4	5	14.7	32.4
Dir	224	219	230	253	210	214	244	221	226	249	242	242	239	241	246	259	256	253	258	263	326	244	197	196	245	242
31 Spd	5	7	9	10	10	12	11	15	13	9	10	13	14	15	13	13	14	10	7	3	6	7	9	9	8.0	15.4
Dir	204	228	227	226	229	227	233	228	238	232	218	240	252	249	261	245	252	253	235	130	110	111	116	123	229	228
Spd	2.9	2.9	3.1	2.9	3.8	4.0	3.7	4.5	5.5	5.8	5.0	6.0	6.0	6.0	6.8	6.9	6.4	5.5	5.9	6.4	3.6	2.0	1.4	1.7	Diurnal Average	
Dir	256	276	278	272	267	251	252	255	253	258	261	261	268	268	267	268	277	297	314	335	19	74	82	195		
Spd	16.2	21.4	21.9	19.2	19.6	16.1	18.8	18.2	22.0	23.8	32.4	29.4	26.0	24.5	25.5	24.6	25.3	29.6	33.3	36.3	24.1	38.4	31.9	22.9	Diurnal Maximum	
Dir	231	333	336	347	314	294	218	313	324	249	242	242	239	241	67	63	65	74	49	5	351	4	15	43		

Maximum Speed Value: 38 km/h on Jul 6 22:00
Minimum Speed Value: 0 km/h on Jul 4 09:00
Maximum Daily Speed Average: 16.0 km/h on Jul 11
Minimum Daily Speed Average: 1.2 km/h on Jul 2
Maximum Diurnal Speed Average: 6.9 km/h at hour 16
Minimum Diurnal Speed Average: 1.4 km/h at hour 23

Monthly Average Velocity: 3.69 km/h 274.3 deg
Speed Percentiles: P_1 = 2.3 P_{10} = 4.3 Q_1 = 6.3 Median = 9.8 Q_3 = 13.8 P_{90} = 17.5 P_{99} = 31.6
All monthly, daily, and diurnal averages have been calculated using vector methods

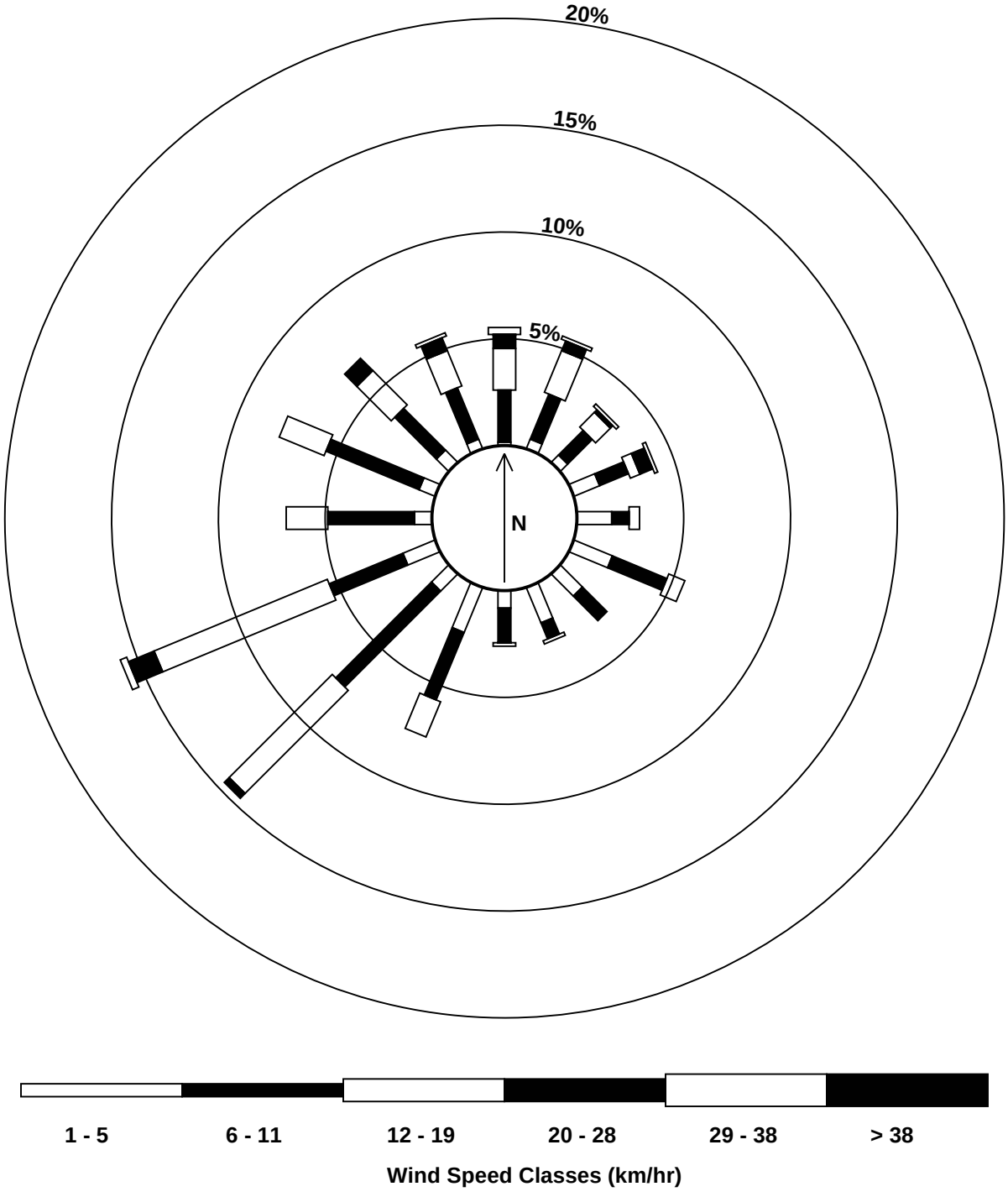
Hours in Service:	744
Hours of Data:	619
Hours of Missing Data:	125
Percent Operational Time:	83.2

P - Power Failure N - Not Valid

Percentage 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	0.65	4.68	4.68	1.29	0.48	0.16	11.95
NorthEast	1.13	3.72	1.94	1.13	0.16	0.00	8.08
East	3.23	3.72	1.45	0.00	0.16	0.00	8.56
SouthEast	2.58	3.88	0.16	0.00	0.00	0.00	6.62
South	1.94	3.88	1.13	0.00	0.00	0.00	6.95
SouthWest	2.26	11.47	13.09	0.97	0.32	0.00	28.11
West	1.29	7.43	6.46	0.81	0.00	0.00	15.99
NorthWest	1.13	5.98	4.85	1.78	0.00	0.00	13.73
Total	14.22	44.75	33.76	5.98	1.13	0.16	100.00

Wind Rose for WS at Crescent Heights
July 2008



Palliser Airshed Society
Summary of Hourly Standard Deviations

Crescent Heights - Wind Direction (WD) - deg
July 1, 2008 to August 1, 2008

Maximum Value: 97.0 deg on Jul 2 16:00

Minimum Value: 4.4 deg on Jul 1 21:00

Percentiles: P_1 = 6.6 P_{10} = 9.2 Q_1 = 12.4 Median = 18.2 Q_3 = 30.0 P_{90} = 48.5 P_{99} = 78.5

Hours in Service:	744
Hours of Data:	619
Hours of Missing Data:	125
Hours of Calibration:	0
Percent Operational Time:	83.2

Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Jul	15	10	9	9	N	11	16	55	36	57	14	13	26	14	11	8	7	8	13	13	4	13	29	65	65.3
2-Jul	63	50	18	26	29	22	26	29	61	68	49	75	N	63	N	97	18	13	16	8	10	13	23	36	97.0
3-Jul	36	37	19	14	43	22	26	28	13	23	33	21	25	26	29	22	31	30	22	14	29	8	20	16	42.7
4-Jul	7	7	17	29	14	47	81	47	93	23	46	12	14	28	18	77	78	70	23	17	35	59	28	9	93.3
5-Jul	12	16	8	13	12	10	12	17	20	26	25	25	20	18	15	25	27	29	26	26	14	14	18	9	29.4
6-Jul	7	5	6	6	13	7	14	12	18	16	17	12	19	15	16	12	11	8	11	8	41	9	7	51	50.5
7-Jul	12	16	18	11	10	29	26	18	23	28	41	48	37	33	47	33	24	19	11	31	38	19	57	20	57.1
8-Jul	9	8	7	9	30	32	21	15	20	19	16	21	20	17	14	20	16	14	33	20	15	14	25	17	33.5
9-Jul	29	30	58	45	32	48	58	32	58	42	36	23	33	18	18	15	18	29	21	9	28	7	7	38	58.2
10-Jul	13	74	23	48	41	18	15	15	16	19	20	37	38	49	49	78	75	18	20	10	12	77	25	11	77.6
11-Jul	12	13	8	10	13	9	9	9	8	8	10	13	13	15	25	18	11	9	11	9	13	9	9	12	24.7
12-Jul	22	19	13	14	15	37	38	17	19	15	22	29	21	29	26	29	16	13	13	11	28	24	12	13	38.4
13-Jul	16	18	22	40	21	12	20	11	12	15	17	14	19	23	17	14	14	21	17	18	41	39	8	11	40.9
14-Jul	24	52	25	11	7	79	51	28	19	35	71	81	32	22	12	12	12	12	7	7	12	10	36	53	80.7
15-Jul	46	26	37	42	23	16	21	27	27	14	11	16	16	12	10	9	13	8	22	17	31	29	44	59	58.7
16-Jul	19	24	32	51	21	40	56	61	39	56	44	67	P	P	P	P	P	P	P	P	P	P	P	P	66.7
17-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--
18-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--
19-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--
20-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	--
21-Jul	P	P	P	P	P	P	P	P	P	P	P	P	P	P	13	14	17	15	16	13	41	11	16	19	40.8
22-Jul	17	16	29	34	29	12	24	16	12	14	11	13	22	20	19	27	9	13	6	24	16	23	12	10	33.7
23-Jul	13	17	11	13	10	15	11	26	15	17	23	24	11	17	33	31	22	24	18	8	38	47	53	63	63.3
24-Jul	72	31	15	28	20	35	43	23	30	39	42	55	53	27	28	33	28	41	16	10	12	30	11	9	72.0
25-Jul	5	12	21	12	10	17	11	20	40	34	30	32	36	48	79	48	55	32	11	9	9	13	17	13	79.1
26-Jul	28	8	7	12	9	7	9	10	9	18	42	13	17	90	42	20	22	25	14	25	18	24	34	64	89.9
27-Jul	17	8	73	38	78	40	8	9	13	14	21	12	18	17	16	10	11	10	16	55	10	41	57	76	77.7
28-Jul	75	48	65	62	12	10	8	8	12	18	28	18	20	15	17	16	15	15	9	8	8	73	51	15	75.1
29-Jul	24	20	29	22	26	55	40	31	22	31	18	16	19	14	13	12	13	16	32	76	37	35	33	26	76.2
30-Jul	15	37	21	20	37	61	23	9	11	12	9	11	10	8	9	8	9	8	9	12	10	26	45	30	61.0
31-Jul	26	10	18	10	13	9	9	8	14	21	27	26	21	18	16	19	15	16	16	53	14	10	8	12	53.1
	75.1	74.5	73.4	61.5	77.7	79.4	81.2	60.7	93.3	67.5	70.8	80.7	53.4	89.9	79.1	97.0	77.6	69.5	33.5	76.2	40.9	77.1	57.1	76.2	

P - Power Failure N - Not Valid

PAS – Portable-Brooks

Monthly Summary Tables, Graphs and Roses

Palliser Airshed Society
Summary of Hourly Averages

Portable-Brooks - Sulphur Dioxide (SO_2) - ppb
July 1, 2008 to August 1, 2008

Number of Exceedances (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 3 ppb on Jul 1 21:00 Maximum Daily Average: 1.2 ppb on Jul 22

Minimum Value: 0 ppb on Jul 7 01:00
Maximum Diurnal Average: 0.7 ppb at hour 10
Monthly Average: 0.50 ppb

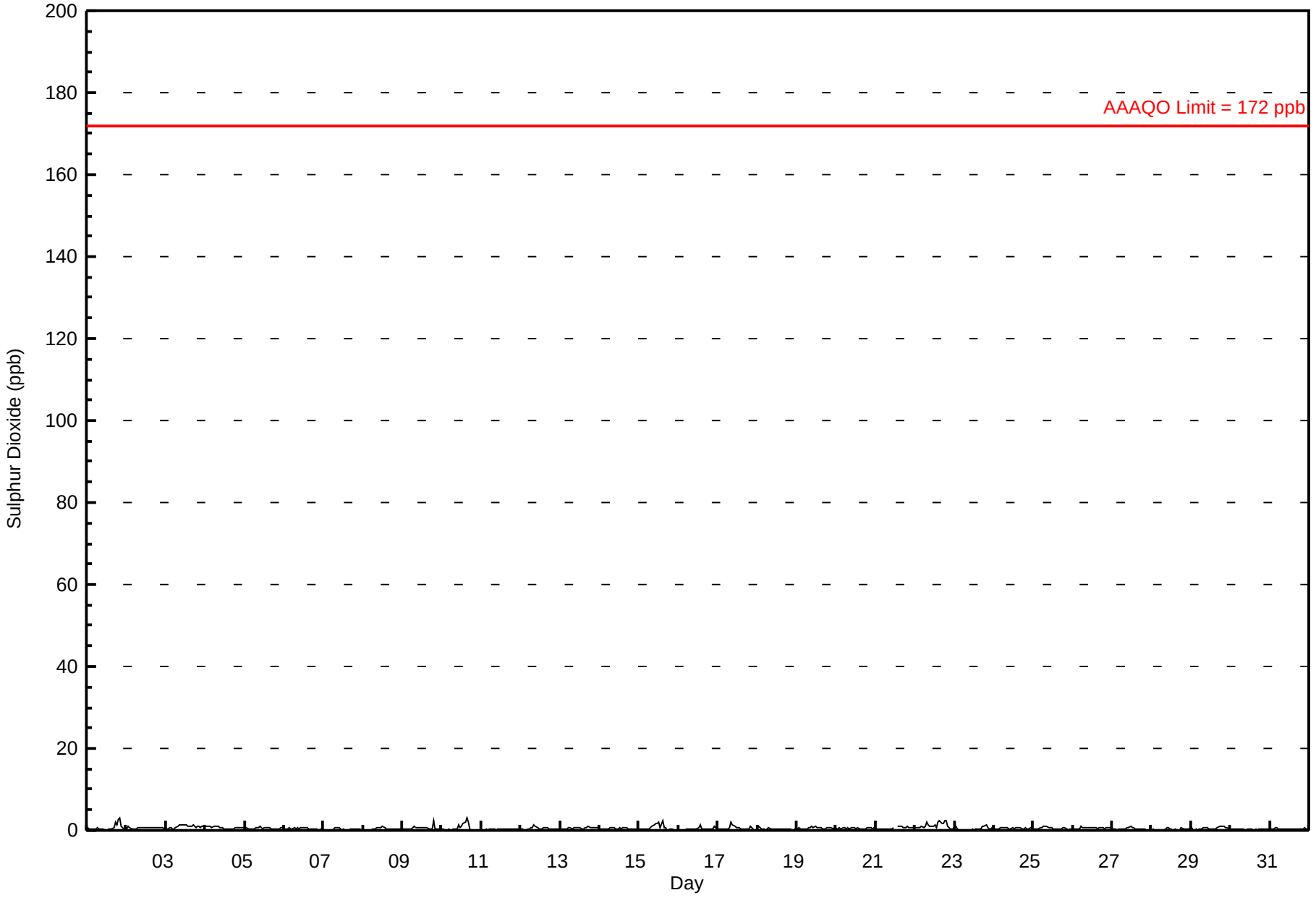
Minimum Daily Average: 0.2 ppb on Jul 28
Minimum Diurnal Average: 0.3 ppb at hour 4
Percentiles: P_1 = 0.0 P_{10} = 0.2 Q_1 = 0.3 Median = 0.4 Q_3 = 0.6 P_{90} = 0.9 P_{99} = 2.2

Hours in Service:	744
Hours of Data:	709
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-Jul	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	2	1	Z	3	1	0	0	0.6	3.2
2-Jul	0	1	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	Z	1	1	1	1	0	0.6	1.0
3-Jul	0	0	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	Z	1	1	1	1	1	1	0.9	1.4
4-Jul	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	1	Z	0	1	1	1	1	1	1	0.7	1.1
5-Jul	1	1	0	0	0	0	0	1	1	1	1	0	1	1	1	Z	0	0	0	0	0	0	1	1	0.5	0.9
6-Jul	0	0	0	1	0	0	1	0	1	0	1	1	1	1	Z	0	0	0	0	0	0	0	0	0	0.4	0.6
7-Jul	0	0	0	0	0	0	0	1	1	1	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0.2	0.8
8-Jul	0	0	0	0	0	0	0	0	1	1	1	1	Z	1	0	0	0	0	0	0	1	0	0	0	0.4	0.8
9-Jul	0	0	0	0	0	0	1	1	1	1	1	Z	1	1	1	1	0	0	0	2	0	0	0	0	0.6	2.2
10-Jul	0	0	0	0	0	0	0	0	0	0	Z	1	1	2	2	3	2	0	0	0	0	0	0	0	0.6	3.1
11-Jul	0	0	0	0	0	0	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.4
12-Jul	0	0	0	0	0	0	1	1	Z	1	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0.4	1.1
13-Jul	0	0	0	0	0	1	1	Z	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	0.5	0.9
14-Jul	0	0	0	0	0	0	Z	1	1	1	0	0	1	0	1	1	1	0	0	0	0	0	0	0	0.4	0.7
15-Jul	0	0	0	0	0	Z	0	1	1	1	2	2	2	1	3	1	1	0	0	0	0	0	0	0	0.7	2.5
16-Jul	0	0	0	0	Z	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	0.3	1.4
17-Jul	0	0	0	Z	0	0	0	1	2	1	1	1	1	1	0	0	0	0	0	0	1	0	0	0	0.6	1.9
18-Jul	1	1	Z	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	1.0
19-Jul	0	Z	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	0	1	0.6	1.0
20-Jul	Z	0	1	0	1	1	0	1	1	1	1	1	0	1	0	0	0	0	0	1	1	1	0	Z	0.5	0.8
21-Jul	0	0	0	0	0	0	0	0	0	0	0	C	C	C	1	1	1	1	1	1	1	1	1	1	0.6	0.9
22-Jul	1	Z	1	1	1	1	1	2	1	1	1	1	2	1	2	2	2	2	2	2	1	0	0	0	1.2	2.4
23-Jul	Z	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	Z	0.3	1.4
24-Jul	0	0	0	0	1	1	1	1	1	0	0	1	1	1	1	1	1	0	0	1	0	0	Z	0	0.5	0.8
25-Jul	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	1	1	0	Z	0	0	0.6	1.0
26-Jul	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	Z	1	1	1	0.6	1.0
27-Jul	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	Z	0	0	0	0	0.3	0.9
28-Jul	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	Z	0	0	0	0	0	0.2	0.6
29-Jul	1	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	1	Z	1	1	1	1	1	0	0.5	1.0
30-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Z	0	0	0	0	0	0	0	0.3	0.4
31-Jul	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	Z	0	0	0	0	0	1	0	0	0.4	0.6
	0.4	0.4	0.3	0.3	0.3	0.4	0.5	0.6	0.6	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.6	0.6	0.6	0.4	0.4	0.4	Diurnal Average	
	1.0	1.0	1.0	1.0	0.9	1.0	1.0	1.9	1.9	1.4	1.5	1.6	1.9	1.8	2.5	3.1	2.0	2.1	2.3	2.4	3.2	1.2	0.9	1.0	Diurnal Maximum	

C - Calibration Z - Zero/Span
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 57 ppb

Hourly Averages for SO_2 at Portable-Brooks
July 2008



Palliser Airshed Society
Summary of Hourly Maximums

Portable-Brooks - Sulphur Dioxide (SO_2) - ppb
July 1, 2008 to August 1, 2008

Maximum Value: 9 ppb on Jul 15 15:00
Maximum Daily Average: 2.2 ppb on Jul 15

Minimum Value: 0 ppb on Jul 7 04:00
Maximum Diurnal Average: 1.5 ppb at hour 20
Monthly Average: 1.14 ppb

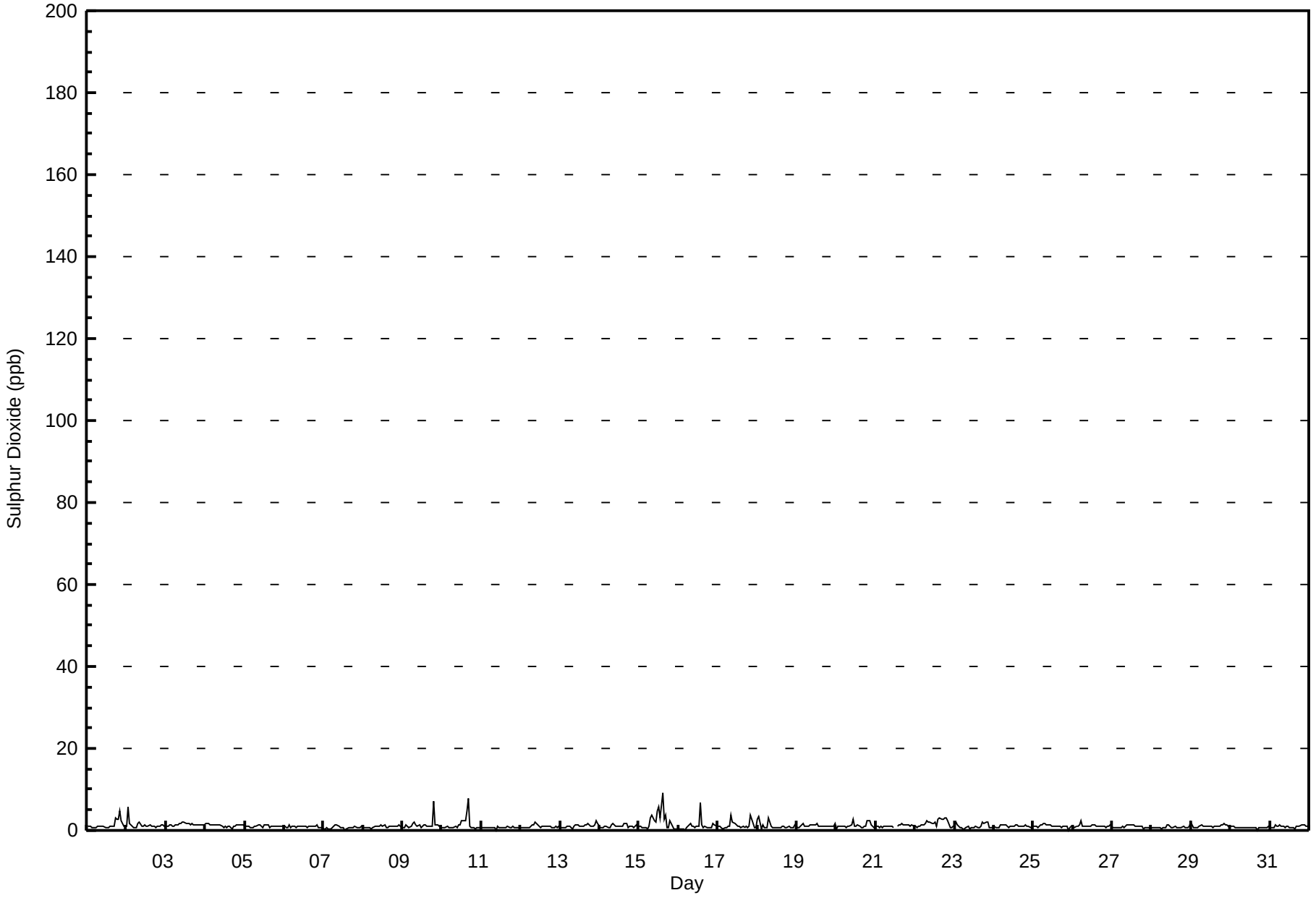
Minimum Daily Average: 0.7 ppb on Jul 7
Minimum Diurnal Average: 0.9 ppb at hour 4
Percentiles: P_1 = 0.4 P_{10} = 0.6 Q_1 = 0.8 Median = 1.0 Q_3 = 1.2 P_{90} = 1.6 P_{99} = 4.4

Hours in Service:	744
Hours of Data:	709
Hours of Missing Data:	35
Hours of Calibration:	35
Percent Operational Time:	100.0

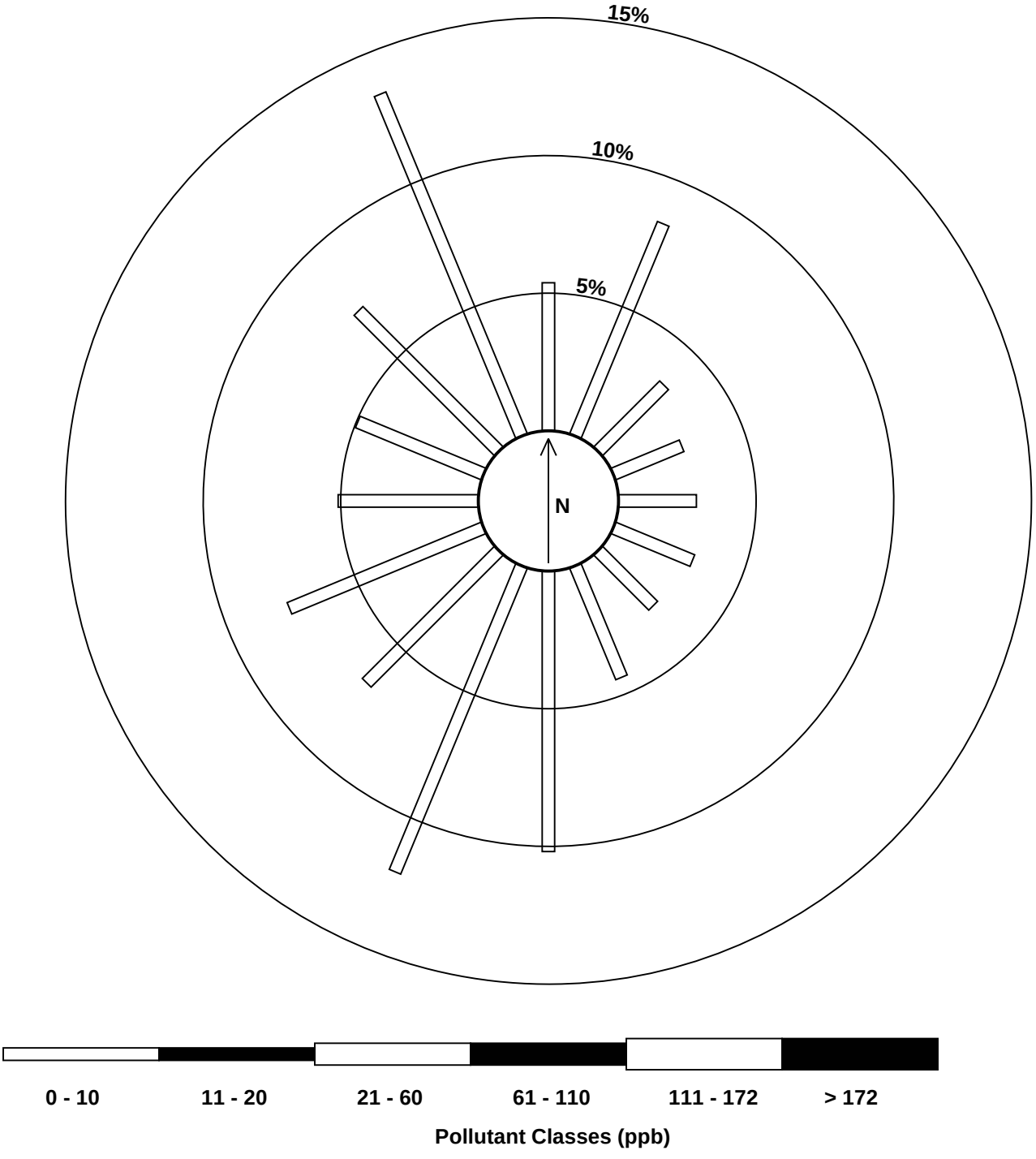
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Jul	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	Z	5	2	1	1	1.3	4.8
2-Jul	1	6	2	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	Z	1	1	1	1	1	1.4	5.6
3-Jul	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	1	2	Z	1	1	1	1	1	1	1.4	2.0
4-Jul	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	Z	1	1	1	1	1	1	1	1.2	1.8
5-Jul	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	Z	1	1	1	1	1	1	1	1	1.0	1.5
6-Jul	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Z	1	1	1	1	1	1	1	1	1	0.9	1.5
7-Jul	1	0	1	0	0	1	1	2	1	1	1	1	1	Z	0	1	1	1	1	1	1	1	1	1	0.7	1.5
8-Jul	1	1	1	1	1	0	1	1	1	1	1	1	Z	1	1	1	1	1	1	1	1	1	1	1	0.9	1.4
9-Jul	1	1	1	1	1	1	2	2	1	1	1	Z	1	1	1	1	1	1	1	7	1	1	1	1	1.4	7.2
10-Jul	1	1	1	1	1	1	1	1	1	1	Z	1	2	3	3	5	8	1	1	1	0	1	1	1	1.5	7.6
11-Jul	1	1	1	1	1	1	1	1	1	Z	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.0
12-Jul	1	1	1	1	1	1	1	1	Z	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.9
13-Jul	1	1	1	1	1	1	1	Z	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2	2	1.2	2.2
14-Jul	1	1	1	1	1	1	Z	1	2	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1.0	1.7
15-Jul	1	1	1	1	1	Z	1	3	4	2	2	5	6	3	9	3	4	1	1	2	1	0	0	0	2.2	9.2
16-Jul	0	1	0	0	Z	1	1	2	1	1	1	1	1	7	1	1	1	1	1	1	1	2	1	1	1.2	6.9
17-Jul	1	1	1	Z	1	1	1	1	4	2	2	1	1	1	1	1	1	1	1	1	4	2	1	1	1.3	3.7
18-Jul	3	3	Z	1	1	1	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.1	3.2
19-Jul	1	Z	1	1	2	1	1	1	1	2	2	1	2	1	1	1	1	1	1	1	1	1	1	2	1.2	1.8
20-Jul	Z	1	1	1	1	1	1	1	1	1	3	1	1	1	1	1	1	1	1	2	2	1	1	Z	1.2	2.6
21-Jul	1	1	1	1	1	1	1	1	1	1	1	C	C	C	1	1	2	1	1	1	1	1	1	1	1.1	1.7
22-Jul	1	Z	1	1	1	1	2	3	2	2	2	2	2	1	3	3	3	3	3	3	2	1	1	1	1.9	3.0
23-Jul	Z	2	1	1	1	0	0	1	1	0	1	1	1	1	1	1	1	2	2	2	2	1	1	Z	1.0	2.2
24-Jul	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Z	1	1.1	1.4
25-Jul	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	Z	1	1	1.1	1.6
26-Jul	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Z	1	1	1	1.1	2.3
27-Jul	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	Z	1	1	1	0	0.9	1.5
28-Jul	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	Z	1	1	1	1	1	0.8	1.2
29-Jul	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Z	1	1	2	1	1	1	1.1	2.1
30-Jul	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Z	1	1	1	1	1	1	1	0.8	1.0
31-Jul	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Z	1	1	1	2	1	1	1	1	1.0	1.5
	1.0	1.1	0.9	0.9	0.9	0.9	1.0	1.3	1.3	1.2	1.2	1.2	1.3	1.4	1.4	1.2	1.4	1.1	1.1	1.5	1.3	1.0	1.0	1.0	Diurnal Average	
	2.7	5.6	1.6	1.4	1.8	2.3	1.8	3.0	3.7	2.4	2.6	4.8	5.7	6.9	9.2	4.7	7.6	3.2	3.0	7.2	4.8	2.3	2.2	1.8	Diurnal Maximum	

C - Calibration Z - Zero/Span

Hourly Maximums for SO_2 at Portable-Brooks
July 2008



Pollutant Rose for SO_2 at Portable-Brooks
July 2008



Palliser Airshed Society
Summary of Hourly Averages

Portable-Brooks - Hydrogen Sulphide (H_2S) - ppb
July 1, 2008 to August 1, 2008

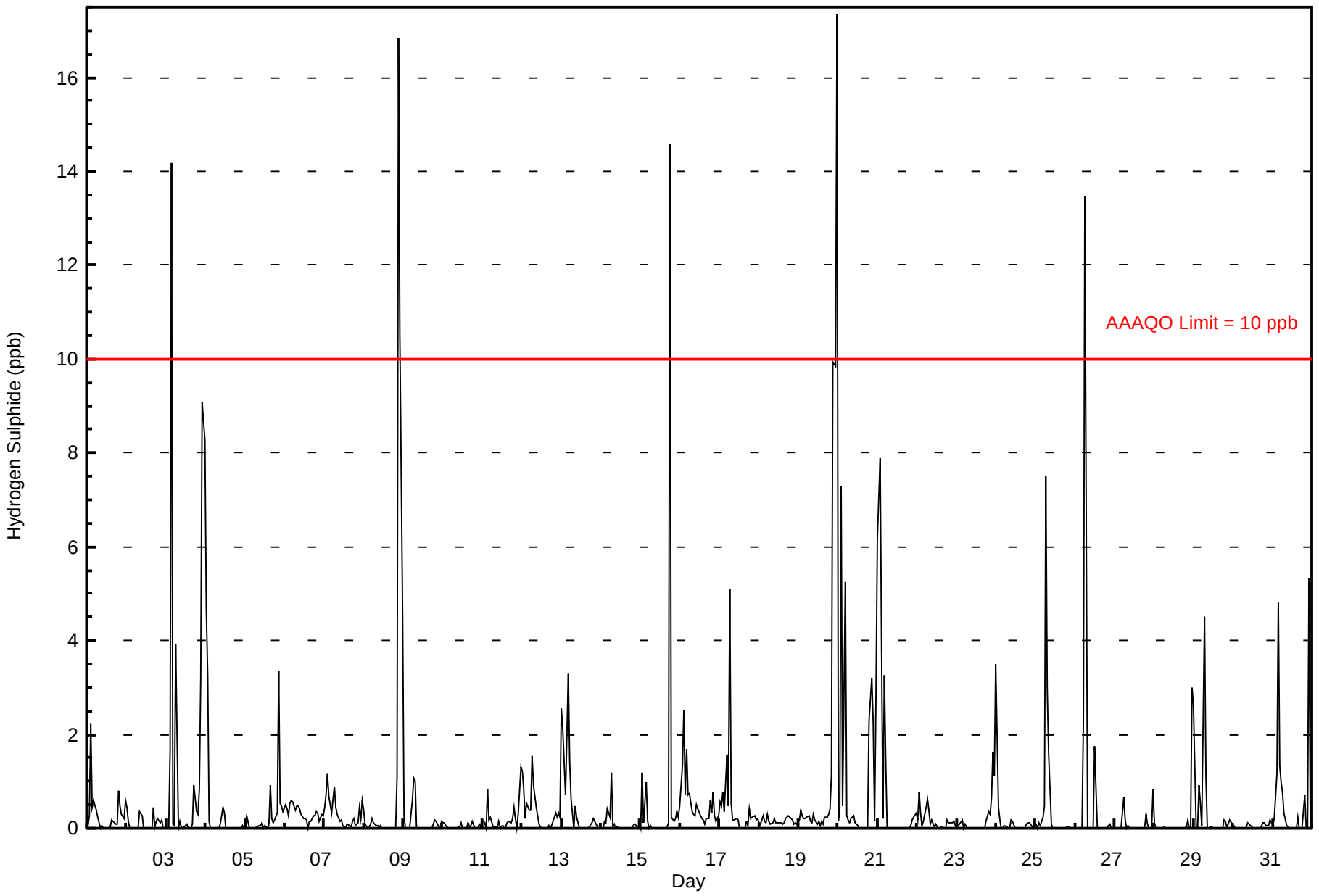
Number of Exceedances (AAAQO): 1-hr: 6 24-hr: 0
Maximum Value: 17 ppb on Jul 20 00:00 Maximum Daily Average: 1.8 ppb on Jul 3

Minimum Value: 0 ppb on Jul 1 09:00 Minimum Daily Average: 0.0 ppb on Jul 10
Maximum Diurnal Average: 1.4 ppb at hour 7 Minimum Diurnal Average: 0.0 ppb at hour 14
Monthly Average: 0.51 ppb Percentiles: P_1 = 0.0 P_{10} = 0.0 Q_1 = 0.0 Median = 0.1 Q_3 = 0.3 P_{90} = 0.8 P_{99} = 9.6

Hours in Service:	744
Hours of Data:	709
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-Jul	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Z	0	0	0	1	0.3	2.2
2-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Z	0	0	0	0	0	0.1	0.5
3-Jul	0	0	2	14	0	0	4	0	0	0	0	0	0	0	0	0	0	Z	0	0	1	3	9	8	1.8	14.2
4-Jul	5	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Z	0	0	0	0	0	0	0	0.4	4.7
5-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Z	0	0	0	0	3	1	0	0	0.3	3.3
6-Jul	0	0	0	1	1	1	0	0	0	0	0	0	0	0	Z	0	0	0	0	0	0	0	0	0	0.3	0.6
7-Jul	0	1	1	1	0	1	1	0	0	0	0	0	0	Z	0	0	0	0	0	0	0	0	0	1	0.3	1.1
8-Jul	0	0	0	0	0	0	0	0	0	0	0	0	Z	0	0	0	0	0	0	0	1	17	11	5	1.5	16.8
9-Jul	0	0	0	0	0	1	1	1	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1.1
10-Jul	0	0	0	0	0	0	0	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
11-Jul	0	0	0	1	0	0	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	1.3
12-Jul	1	1	0	1	0	0	2	1	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	1.5
13-Jul	3	2	1	2	3	1	1	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6	3.3
14-Jul	0	0	0	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
15-Jul	0	1	0	1	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	0	0.8	14.6
16-Jul	0	1	3	1	Z	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0.5	2.5
17-Jul	1	0	1	Z	2	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	5.1
18-Jul	0	0	Z	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
19-Jul	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	10	10	17	1.8	17.4
20-Jul	Z	0	7	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	2	0	Z	1.0	7.3
21-Jul	6	8	4	0	3	1	0	0	0	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0	1.1	7.9
22-Jul	0	Z	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.6
23-Jul	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	Z	0.2	1.6
24-Jul	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Z	0	0.2	3.5
25-Jul	0	0	0	0	0	0	7	3	2	0	0	0	0	0	0	0	0	0	0	0	0	Z	0	0	0.6	7.5
26-Jul	0	0	0	0	0	2	13	0	0	0	0	0	2	0	0	0	0	0	0	0	Z	0	0	0	0.8	13.5
27-Jul	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	Z	0	0	0	1	0.1	0.8
28-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Z	0	0	0	0	3	0.1	3.0
29-Jul	3	0	0	1	1	0	5	1	0	0	0	0	0	0	0	0	0	Z	0	0	0	0	0	0	0.5	4.5
30-Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Z	0	0	0	0	0	0	0	0.0	0.2
31-Jul	0	0	1	5	1	1	1	0	0	0	0	0	0	0	0	Z	0	0	0	1	0	0	5	0	0.7	5.3
	0.9	0.7	0.8	0.9	0.6	0.4	1.4	0.3	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.6	0.3	0.5	1.2	1.3	1.3	Diurnal Average	
	6.2	7.9	7.3	14.2	5.3	2.4	13.5	3.0	1.6	0.4	0.5	0.4	1.7	0.2	0.2	0.2	0.4	0.3	14.6	2.3	3.3	16.8	10.5	17.4	Diurnal Maximum	

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


Hourly Averages for H_2S at Portable-Brooks
July 2008
Hydrogen Sulphide (ppb)
0
2
4
6
8
10
12
14
16
AAAQO Limit = 10 ppb
03
05
07
09
11
13
15
17
19
21
23
25
27
29
31
Day

Palliser Airshed Society
Summary of Hourly Maximums

Portable-Brooks - Hydrogen Sulphide (H_2S) - ppb
July 1, 2008 to August 1, 2008

Maximum Value: 96 ppb on Jul 15 19:00

Maximum Daily Average: 8.4 ppb on Jul 3

Minimum Value: 0 ppb on Jul 9 05:00

Minimum Daily Average: 1.1 ppb on Jul 30

Maximum Diurnal Average: 6.0 ppb at hour 24

Minimum Diurnal Average: 1.0 ppb at hour 14

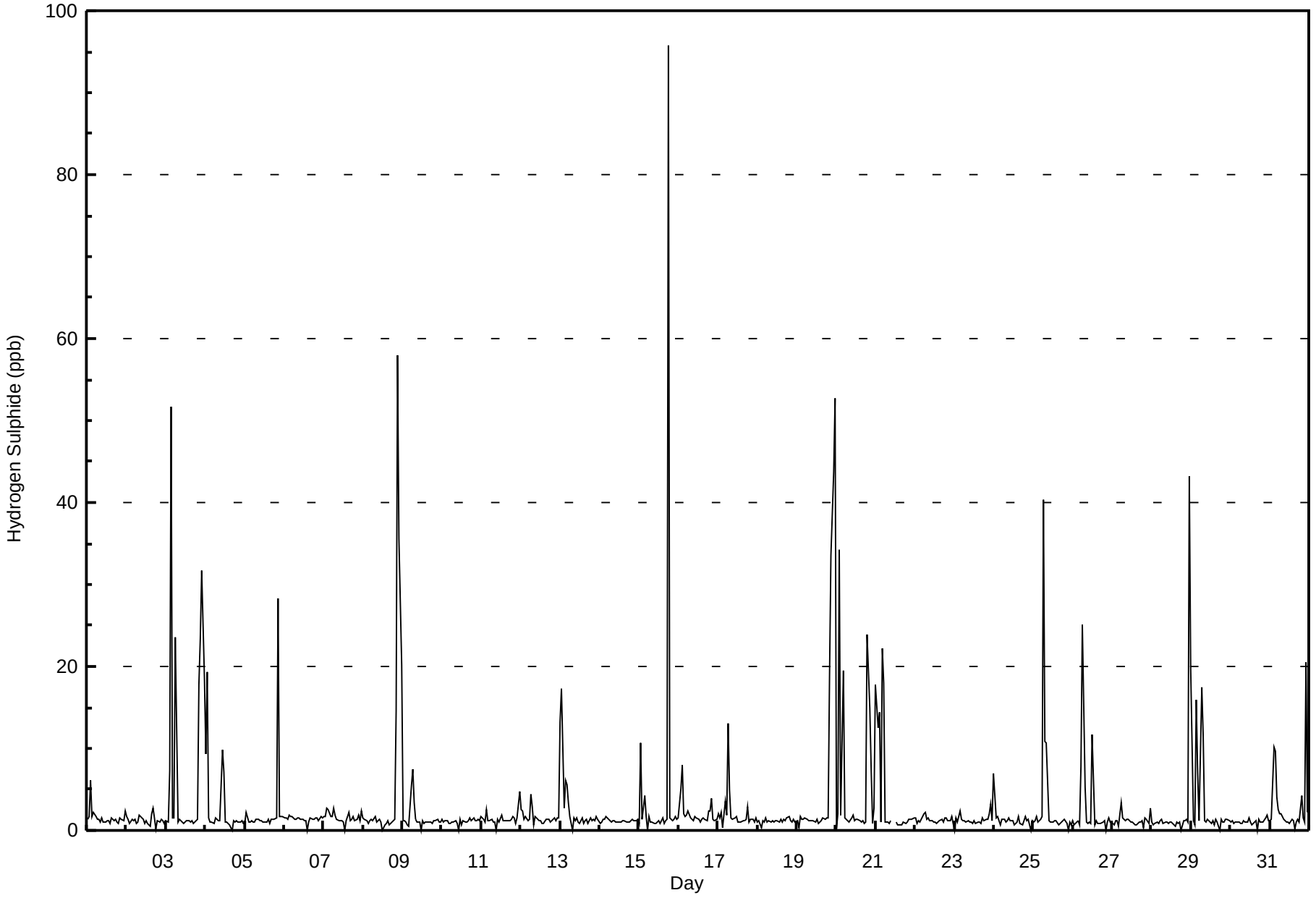
Monthly Average: 2.85 ppb

Percentiles: $P_1 = 0.7$ $P_{10} = 0.9$ $Q_1 = 1.0$ Median = 1.2 $Q_3 = 1.5$ $P_{90} = 3.2$ $P_{99} = 38.5$

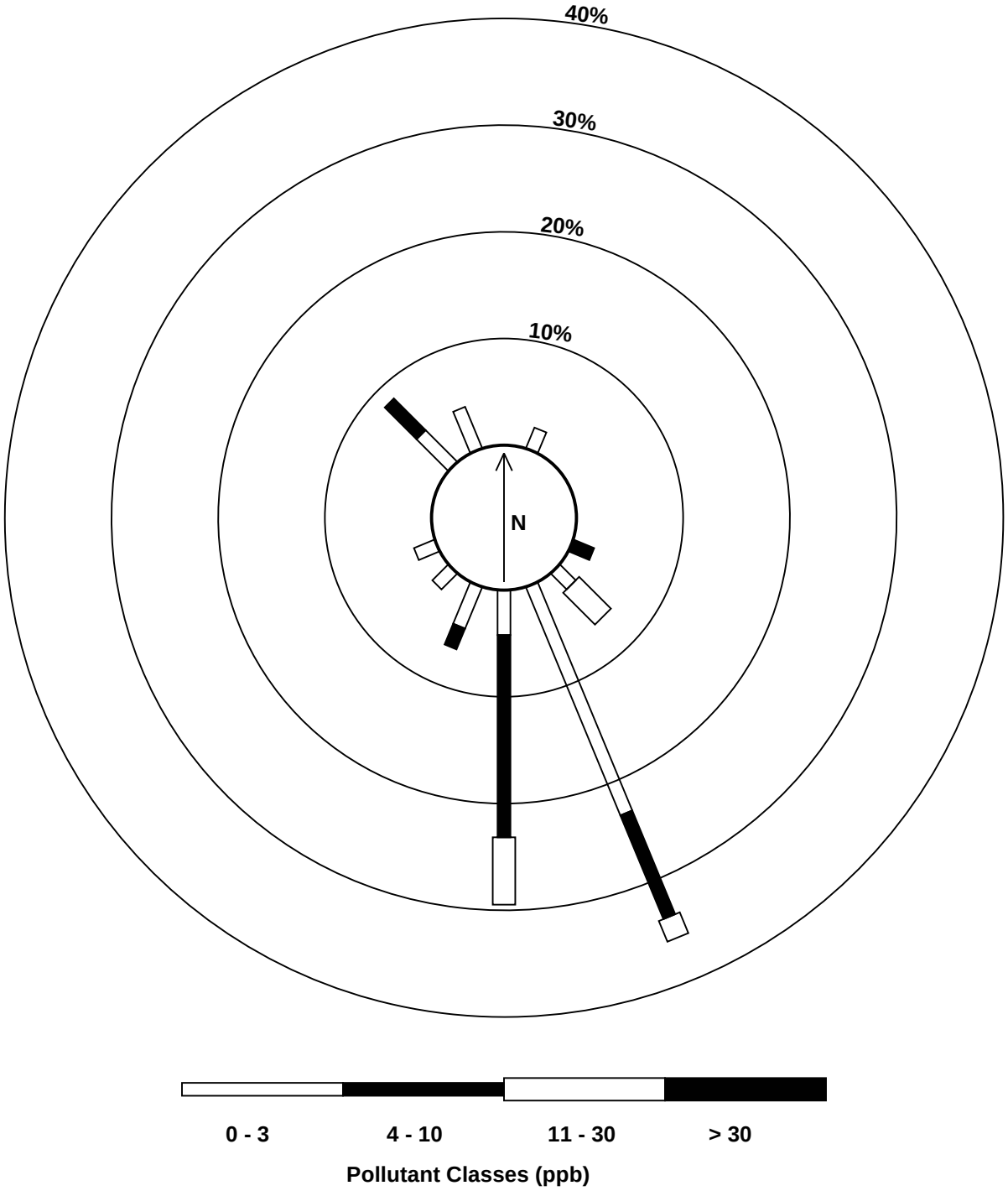
Hours in Service:	744
Hours of Data:	709
Hours of Missing Data:	35
Hours of Calibration:	35
Percent Operational Time:	100.0

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-Jul	1	2	6	2	2	2	1	1	1	1	1	1	1	1	1	2	1	1	1	Z	1	1	1	2	1.6	6.1
2-Jul	2	1	1	1	1	1	1	1	2	2	1	1	1	1	1	2	3	2	Z	1	1	1	1	1	1.3	2.6
3-Jul	1	1	7	52	1	1	24	1	1	1	1	1	1	1	1	1	1	Z	1	1	18	23	32	18	8.4	51.8
4-Jul	9	19	1	1	1	1	1	1	1	1	10	7	1	1	1	1	Z	1	1	1	1	1	1	1	2.9	19.3
5-Jul	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	Z	1	1	1	2	28	2	2	2	2.5	28.3
6-Jul	1	2	1	2	2	2	1	1	1	2	1	1	1	1	Z	1	1	1	1	2	2	1	2	2	1.4	1.8
7-Jul	2	2	3	2	2	2	3	2	1	1	1	1	1	Z	1	2	1	1	2	1	1	2	1	2	1.6	2.7
8-Jul	1	1	1	1	1	1	1	2	1	1	1	1	Z	1	1	1	1	1	1	1	15	58	36	20	6.5	58.0
9-Jul	1	1	1	1	0	5	7	3	1	1	1	Z	1	1	1	1	1	1	1	1	1	1	1	1	1.6	7.5
10-Jul	1	1	1	1	1	1	1	1	1	1	Z	1	1	1	1	1	1	1	1	1	1	1	1	1	1.1	1.5
11-Jul	2	1	1	3	1	1	1	1	1	Z	1	1	2	1	1	1	1	1	1	2	2	1	2	5	1.5	4.7
12-Jul	2	2	1	2	1	1	4	3	Z	2	1	1	1	1	1	1	1	1	1	1	2	1	2	1	1.6	4.4
13-Jul	13	17	3	6	6	3	2	Z	1	1	2	1	1	2	1	1	1	1	2	1	1	1	2	1	3.1	17.3
14-Jul	1	1	1	1	2	1	Z	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.2	1.7
15-Jul	1	11	1	4	2	Z	2	1	1	1	1	1	1	1	1	1	1	1	96	2	1	1	2	1	5.9	95.7
16-Jul	2	5	8	2	Z	2	2	2	1	1	2	2	1	1	1	1	1	1	2	2	4	1	1	1	2.1	7.9
17-Jul	2	1	2	Z	3	2	13	5	1	1	1	2	1	1	1	1	1	1	3	1	1	1	1	1	2.2	13.0
18-Jul	1	1	Z	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1.2	1.8
19-Jul	1	Z	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	19	33	44	53	7.5	52.7
20-Jul	Z	2	34	2	20	1	1	1	1	1	2	1	1	1	1	1	1	1	1	24	15	7	1	Z	5.6	34.2
21-Jul	18	12	14	1	22	18	1	1	1	C	C	C	1	1	1	1	1	1	1	1	1	1	1	2	4.8	22.3
22-Jul	1	Z	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1.3	2.2
23-Jul	Z	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	2	3	Z	1.3	3.2
24-Jul	7	2	2	1	1	1	1	1	1	2	1	1	1	1	1	2	1	1	1	2	1	1	Z	1	1.4	6.9
25-Jul	1	1	2	1	1	2	40	11	11	1	1	1	1	1	1	1	1	1	1	1	1	Z	1	1	3.7	40.3
26-Jul	1	1	1	1	1	8	25	5	1	1	1	1	12	1	1	1	1	1	1	1	Z	1	2	1	3.0	25.0
27-Jul	1	1	1	1	1	3	2	1	1	1	1	1	1	1	1	1	1	1	1	Z	2	1	1	3	1.2	3.3
28-Jul	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Z	1	1	1	1	43	2.8	43.3
29-Jul	20	1	1	16	7	1	18	11	1	1	1	1	1	1	1	1	1	Z	1	1	1	1	1	1	4.0	19.6
30-Jul	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	Z	1	1	1	1	2	2	1	1.1	1.9
31-Jul	1	1	10	10	4	2	2	2	1	1	1	1	1	1	1	Z	1	1	1	4	1	1	20	2	3.2	20.4
	3.4	3.4	3.8	4.1	3.0	2.5	5.5	2.3	1.5	1.2	1.5	1.3	1.4	1.0	1.0	1.2	1.2	1.2	4.6	2.2	4.3	5.2	5.6	6.0	Diurnal Average	
	19.6	19.3	34.2	51.8	22.3	17.9	40.3	11.5	10.6	1.7	9.8	7.1	11.7	1.5	1.5	2.1	2.6	1.6	95.7	24.0	28.3	58.0	43.7	52.7	Diurnal Maximum	

C - Calibration Z - Zero/Span


Hourly Maximums for H_2S at Portable-Brooks
July 2008
Hydrogen Sulphide (ppb)
100
80
60
40
20
0
03
05
07
09
11
13
15
17
19
21
23
25
27
29
31
Day

Pollutant Rose for H_2S at Portable-Brooks
July 2008



Palliser Airshed Society

Summary of Hourly Averages

Portable-Brooks - Ozone (O_3) - ppb

July 1, 2008 to August 1, 2008

Number of Exceedances (AAAQO): 1-hr: 0 24-hr: 0

Maximum Value: 59 ppb on Jul 21 17:00

Maximum Daily Average: 42.0 ppb on Jul 5

Minimum Value: 1 ppb on Jul 13 05:00

Minimum Daily Average: 22.8 ppb on Jul 12

Maximum Diurnal Average: 43.5 ppb at hour 15

Minimum Diurnal Average: 15.6 ppb at hour 6

Monthly Average: 30.05 ppb

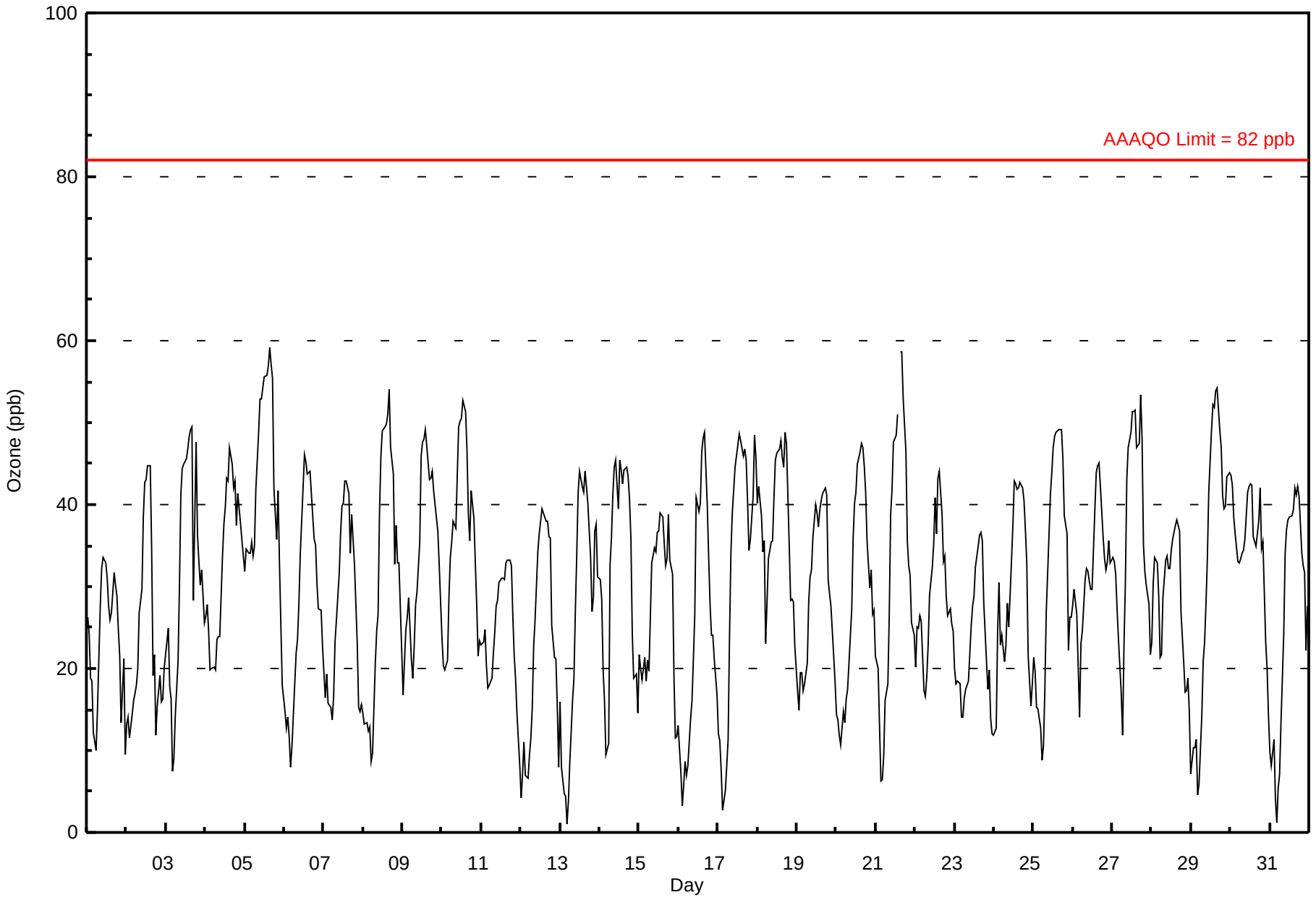
Percentiles: P_1 = 4.5 P_{10} = 13.2 Q_1 = 20.1 Median = 31.3 Q_3 = 40.1 P_{90} = 46.1 P_{99} = 53.4

Hours in Service:	744
Hours of Data:	709
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-Jul	26	24	19	19	12	10	15	21	28	32	34	33	31	28	26	27	32	30	29	Z	22	13	21	9	23.5	33.6
2-Jul	13	14	12	14	16	17	18	20	27	30	39	43	43	45	45	34	19	22	Z	15	19	16	16	20	24.2	44.8
3-Jul	22	25	18	16	7	9	14	21	30	41	44	45	46	47	48	49	49	Z	48	36	33	30	32	26	32.0	49.4
4-Jul	27	28	25	20	20	20	20	24	24	24	34	38	40	43	43	47	Z	42	43	37	41	38	36	34	32.4	47.0
5-Jul	32	35	34	34	35	34	35	42	49	53	53	54	56	56	57	Z	57	55	42	36	42	33	25	18	42.0	57.1
6-Jul	15	13	14	12	8	10	18	22	23	28	34	42	46	45	Z	44	44	38	36	35	30	27	27	23	27.6	46.1
7-Jul	19	17	19	16	15	14	17	23	26	31	36	40	40	Z	43	41	34	39	36	33	23	15	15	16	26.4	42.9
8-Jul	15	13	13	12	13	9	10	21	25	27	39	46	Z	49	50	51	54	47	44	33	37	33	33	22	30.2	54.1
9-Jul	17	21	25	26	29	21	19	23	28	29	35	Z	48	48	49	47	43	43	44	42	40	37	33	28	33.6	49.2
10-Jul	24	20	20	21	29	34	35	38	37	44	Z	50	53	51	47	39	36	42	38	33	28	21	23		35.3	52.8
11-Jul	23	23	25	20	18	18	19	22	24	Z	28	30	31	31	31	33	33	33	32	26	21	19	14	8	24.5	33.3
12-Jul	4	7	11	7	7	9	12	15	Z	26	34	36	38	39	39	38	38	36	36	25	21	21	15	8	22.8	39.5
13-Jul	16	8	5	4	1	4	9	Z	19	27	34	41	44	42	42	44	42	40	34	27	29	37	38	31	26.8	44.2
14-Jul	31	29	20	16	10	11	Z	36	41	45	45	40	45	44	43	44	45	43	41	36	24	19	19	15	32.2	45.5
15-Jul	22	20	19	21	19	Z	20	26	33	35	34	37	37	39	39	35	32	33	39	33	32	19	11	12	28.1	39.0
16-Jul	13	7	3	6	Z	7	8	14	16	21	27	41	39	40	47	48	49	40	33	28	24	24	21	17	24.9	48.9
17-Jul	12	11	8	Z	5	8	11	24	34	39	45	46	47	49	48	46	47	46	40	34	36	41	48	46	33.5	48.7
18-Jul	40	42	Z	34	36	23	28	33	35	36	41	45	46	47	48	46	45	49	47	35	28	28	28	23	37.6	48.8
19-Jul	17	Z	20	19	17	18	21	28	31	32	36	40	39	37	39	40	41	42	41	31	29	28	22	18	29.9	42.1
20-Jul	Z	14	12	11	15	13	16	17	21	27	36	40	42	45	46	47	47	45	41	36	30	32	27	Z	30.0	47.5
21-Jul	22	20	13	6	6	9	16	18	27	39	42	48	49	C	C	C	59	53	47	36	33	31	26	24	29.6	58.6
22-Jul	20	Z	25	26	26	17	17	19	23	29	32	35	41	36	43	44	39	33	34	29	26	27	25	25	29.2	44.1
23-Jul	Z	18	18	18	14	14	16	18	18	22	25	28	29	32	35	36	37	36	28	21	17	20	14	Z	23.4	36.7
24-Jul	12	13	24	30	23	24	21	23	28	25	29	37	43	42	42	42	43	42	40	37	33	22	Z	18	30.1	42.8
25-Jul	21	20	15	15	13	9	11	17	27	36	41	44	47	48	49	49	49	49	46	39	36	Z	26	26	31.9	49.2
26-Jul	28	30	27	20	14	23	25	31	32	32	31	30	30	39	44	45	45	42	36	33	Z	33	36	33	32.0	45.1
27-Jul	34	33	32	27	24	17	12	23	31	43	47	49	51	51	51	47	47	53	48	Z	32	30	28	22	36.2	53.3
28-Jul	23	30	34	33	29	21	22	29	33	34	32	32	34	36	37	38	38	37	Z	21	17	17	19	15	28.7	38.1
29-Jul	7	10	10	11	5	6	14	21	23	28	33	42	49	52	52	54	54	Z	47	41	40	40	43	44	31.6	54.2
30-Jul	44	42	39	36	33	33	33	34	34	36	41	42	43	42	36	35	Z	38	42	35	35	23	20	14	35.3	43.5
31-Jul	10	8	11	4	1	5	7	13	24	34	37	38	38	39	40	Z	41	42	41	34	33	32	22	28	25.4	42.2
	20.9	20.5	18.9	18.6	16.6	15.6	17.9	23.9	28.4	32.8	36.6	40.4	42.0	43.0	43.5	42.9	42.8	40.9	39.9	32.5	29.9	27.1	25.4	22.2	Diurnal Average	
	43.5	42.4	38.5	36.4	35.6	33.7	35.3	41.9	48.8	52.8	52.9	54.2	55.6	55.7	57.0	53.8	58.6	55.4	48.0	41.7	41.6	41.0	48.4	45.8	Diurnal Maximum	

C - Calibration Z - Zero/Span

Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 82 ppb 24-hr na


Hourly Averages for O_3 at Portable-Brooks
July 2008
AAAQO Limit = 82 ppb
Ozone (ppb)
Day
0
20
40
60
80
100
03
05
07
09
11
13
15
17
19
21
23
25
27
29
31

Palliser Airshed Society
Summary of Hourly Maximums

Portable-Brooks - Ozone (O_3) - ppb
July 1, 2008 to August 1, 2008

Maximum Value: 61 ppb on Jul 5 18:00

Maximum Daily Average: 47.5 ppb on Jul 5

Minimum Value: 5 ppb on Jul 13 05:00

Minimum Daily Average: 26.7 ppb on Jul 23

Maximum Diurnal Average: 46.9 ppb at hour 17

Minimum Diurnal Average: 20.2 ppb at hour 6

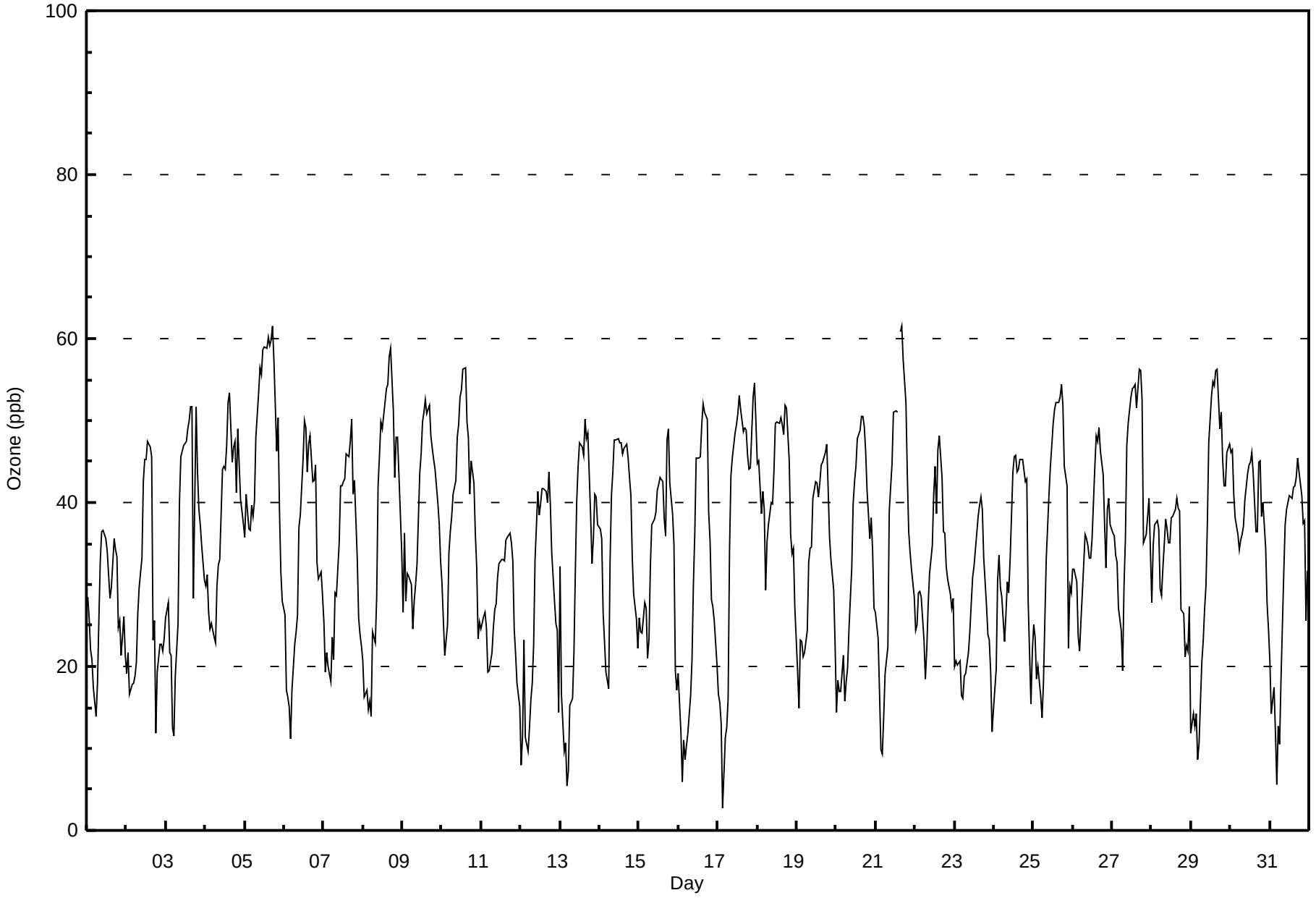
Monthly Average: 34.72 ppb

Percentiles: P_1 = 9.7 P_{10} = 17.9 Q_1 = 25.1 Median = 35.7 Q_3 = 44.5 P_{90} = 50.0 P_{99} = 58.7

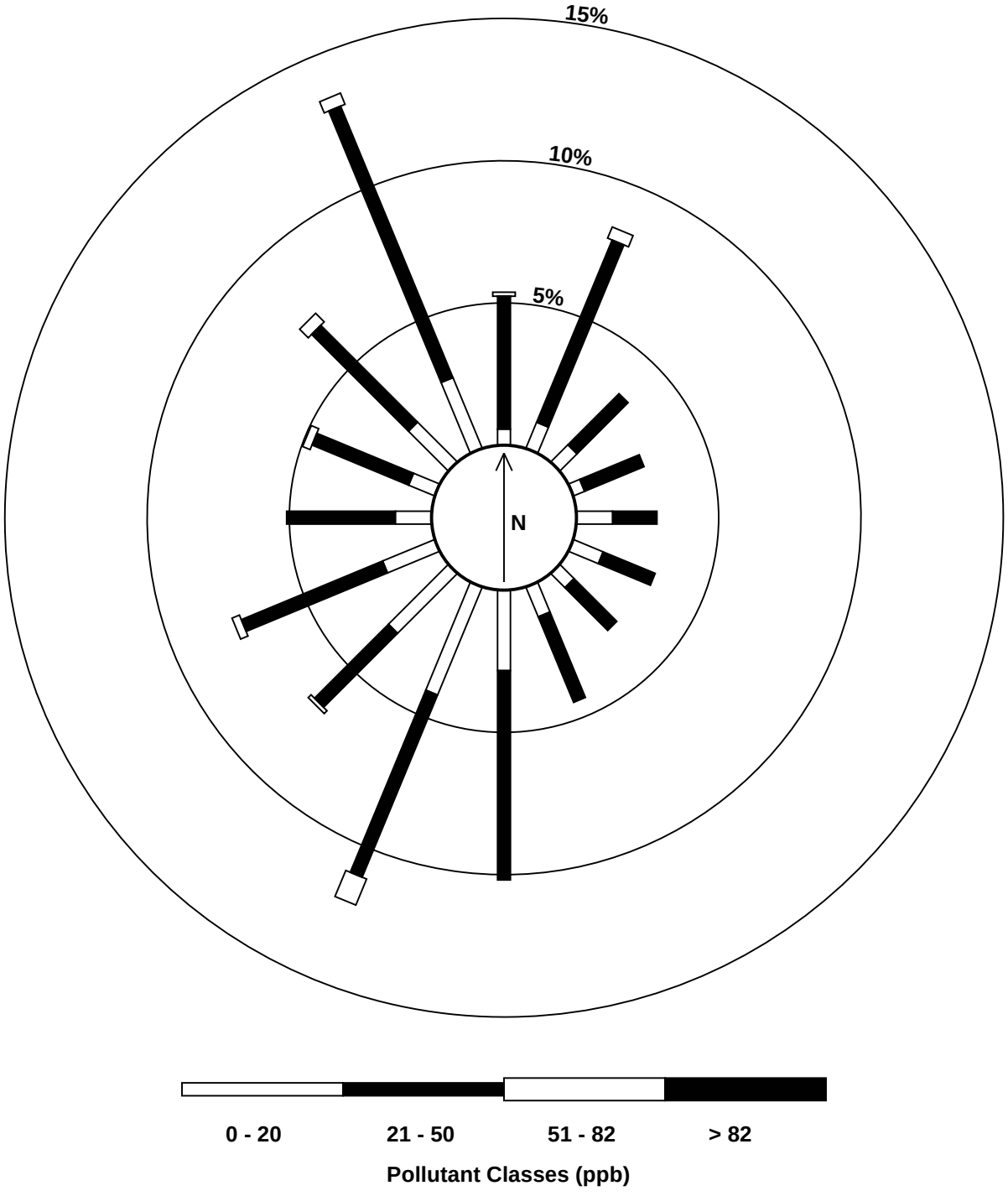
Hours in Service:	744
Hours of Data:	709
Hours of Missing Data:	35
Hours of Calibration:	35
Percent Operational Time:	100.0

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-Jul	28	26	22	21	17	14	18	26	33	36	37	36	34	31	28	30	36	34	33	Z	26	21	26	21	27.6	36.6
2-Jul	19	22	17	18	18	19	21	26	30	33	43	45	45	48	47	46	23	26	Z	19	23	23	22	23	28.4	47.5
3-Jul	26	28	22	21	12	11	19	25	40	46	46	47	47	49	50	52	52	Z	52	44	39	37	35	31	36.1	51.7
4-Jul	30	31	27	25	25	24	23	30	32	33	44	44	44	47	52	53	Z	47	47	41	49	40	39	37	37.6	53.4
5-Jul	36	41	37	37	40	38	40	48	53	56	56	59	59	59	60	Z	60	61	58	46	50	39	32	28	47.5	61.5
6-Jul	26	17	16	15	11	17	23	24	26	37	39	45	50	49	Z	47	48	43	43	45	33	31	32	29	32.4	50.0
7-Jul	25	19	22	20	18	24	21	29	29	35	42	42	42	Z	46	46	47	50	41	43	33	26	24	22	32.5	50.2
8-Jul	21	16	17	15	16	14	24	23	28	42	46	50	Z	52	54	54	58	59	51	43	48	48	43	34	37.2	58.8
9-Jul	27	36	28	31	31	30	25	28	30	32	44	Z	50	51	53	51	52	48	47	45	44	40	37	33	38.8	52.6
10-Jul	30	26	21	25	34	36	38	41	43	48	Z	53	54	56	56	50	48	41	45	42	36	32	23	25	39.4	56.5
11-Jul	25	26	27	25	19	19	22	25	27	Z	31	32	33	33	33	35	36	36	35	33	25	22	18	15	27.4	36.3
12-Jul	8	12	23	11	10	12	16	18	Z	33	41	39	40	42	42	41	40	44	40	34	28	25	24	14	27.7	43.7
13-Jul	32	17	10	11	5	7	15	Z	22	32	40	44	47	47	46	50	48	48	39	33	36	41	41	37	32.5	50.2
14-Jul	37	36	27	23	19	17	Z	41	44	48	48	48	47	47	46	47	47	45	43	41	33	29	26	22	37.4	47.8
15-Jul	26	24	24	28	27	Z	23	32	37	38	39	42	42	43	43	38	36	48	49	42	39	35	20	17	34.4	48.9
16-Jul	19	12	6	11	Z	10	12	16	21	30	36	45	46	46	49	52	51	50	39	35	28	27	26	20	29.9	52.1
17-Jul	17	16	13	Z	11	13	16	34	43	45	48	49	51	53	51	49	49	49	46	44	44	53	55	50	39.1	54.7
18-Jul	45	45	Z	41	39	29	35	37	40	40	44	50	50	50	50	49	48	52	52	45	36	34	34	27	42.3	51.8
19-Jul	20	Z	23	23	21	22	24	33	34	35	40	43	42	41	42	45	45	46	47	42	36	33	29	23	34.3	47.1
20-Jul	Z	18	17	17	21	16	18	20	25	32	40	43	44	48	49	50	51	49	46	42	36	38	34	Z	34.2	50.6
21-Jul	27	23	17	10	9	14	19	22	39	42	45	51	51	C	C	C	61	58	52	43	36	34	32	28	34.0	61.5
22-Jul	24	Z	29	29	28	23	18	22	28	31	35	41	44	39	46	48	43	36	36	32	31	29	27	28	32.6	48.2
23-Jul	Z	21	20	21	16	16	19	19	22	24	28	31	32	34	38	40	41	39	33	27	24	23	19	Z	26.7	40.6
24-Jul	15	20	31	34	30	29	23	26	30	29	33	44	46	46	44	44	45	45	44	42	43	28	Z	22	34.4	45.7
25-Jul	25	24	18	20	16	14	18	26	33	41	44	47	50	51	52	52	53	54	52	44	42	Z	30	29	36.4	54.4
26-Jul	32	32	30	24	22	26	29	36	36	35	33	33	36	44	48	48	49	46	43	38	Z	39	40	37	36.3	49.1
27-Jul	36	36	34	33	27	24	19	30	36	47	50	53	54	54	54	52	56	56	53	Z	36	36	40	34	41.3	56.3
28-Jul	28	35	37	38	37	29	29	32	38	37	35	35	38	38	39	41	39	39	Z	26	21	23	22	27	33.2	40.5
29-Jul	12	14	13	14	9	11	20	23	27	30	37	47	53	55	54	56	56	Z	51	45	42	42	46	47	35.0	56.2
30-Jul	46	46	41	38	36	34	35	36	37	40	44	45	45	46	44	36	Z	45	45	38	40	34	28	25	39.3	46.4
31-Jul	21	14	17	12	6	13	10	18	31	37	39	40	41	41	42	Z	43	45	44	41	37	38	26	32	29.9	45.5
	26.2	25.3	22.8	23.0	21.1	20.2	22.4	28.2	33.1	37.5	40.8	44.1	45.3	46.2	46.9	46.5	46.9	46.2	45.0	39.2	35.8	33.3	31.0	28.3	Diurnal Average	
	46.0	46.4	41.1	41.4	39.7	38.3	40.1	48.0	53.4	56.4	55.6	58.6	58.9	58.8	60.2	56.1	61.5	61.5	57.5	46.2	50.3	53.0	54.7	49.8	Diurnal Maximum	

C - Calibration Z - Zero/Span


Hourly Maximums for O_3 at Portable-Brooks
July 2008
Ozone (ppb)
100
80
60
40
20
0
03
05
07
09
11
13
15
17
19
21
23
25
27
29
31
Day

Pollutant Rose for O_3 at Portable-Brooks
July 2008



Palliser Airshed Society

Summary of Eight Hour Running Averages

Portable-Brooks - Ozone (O_3) - ppb

July 1, 2008 to August 1, 2008

Number of Exceedences (AAAQO): 8-hr: 0
Maximum Value: 55.4 ppb on Jul 5 18:00

Minimum Value: 6.6 ppb on Jul 13 08:00

Percentiles: P_1 = 8.1 P_{10} = 15.8 Q_1 = 22.3 Median = 30.2 Q_3 = 38.0 P_{90} = 43.1 P_{99} = 48.9

Hours in Service:	744
Hours of Data:	738
Hours of Missing Data:	6
Hours of Calibration:	6
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Jul	36	32	28	25	24	20	19	18	18	19	21	23	25	28	29	30	30	30	29	29	28	25	25	22	36.1
2-Jul	20	17	15	15	14	15	14	16	17	19	23	26	30	33	36	38	37	36	36	32	28	24	20	18	38.1
3-Jul	19	19	19	19	18	17	16	17	18	20	23	27	31	36	40	44	46	47	47	46	44	42	40	36	47.4
4-Jul	33	32	29	27	26	25	23	23	22	22	23	25	28	31	34	36	38	41	42	42	42	42	41	39	42.4
5-Jul	38	37	36	35	35	34	34	35	37	39	42	44	47	50	52	54	55	55	54	51	49	46	41	39	55.4
6-Jul	33	28	24	21	17	14	13	14	15	17	19	23	28	32	34	38	40	42	42	41	39	36	35	33	42.2
7-Jul	30	27	25	22	20	19	17	17	18	20	22	25	28	31	34	37	38	39	39	38	36	33	29	26	39.1
8-Jul	24	21	18	15	14	13	13	13	14	16	19	23	25	31	37	41	45	48	49	47	46	44	41	38	48.7
9-Jul	33	30	28	27	26	24	22	23	24	25	26	26	29	33	37	41	43	45	46	45	45	43	41	39	46.0
10-Jul	36	33	30	28	26	26	26	28	29	32	34	38	41	44	46	47	48	47	46	44	42	39	35	32	47.7
11-Jul	30	29	27	25	23	21	21	21	21	21	21	23	25	27	28	30	31	31	32	31	30	29	27	24	31.9
12-Jul	20	17	14	12	10	9	8	9	10	12	16	20	24	29	33	36	36	37	38	36	34	32	29	25	37.6
13-Jul	22	19	15	12	10	8	7	7	7	10	14	19	25	31	36	37	40	41	41	39	37	37	36	35	41.2
14-Jul	33	32	30	29	26	23	21	22	23	25	29	32	38	42	42	43	44	44	43	43	40	37	34	30	43.8
15-Jul	27	24	22	20	19	19	19	21	22	25	27	29	32	33	35	36	36	36	36	36	35	33	29	26	36.3
16-Jul	24	21	16	13	10	8	8	8	9	11	14	19	22	26	31	35	39	41	42	40	39	37	33	30	42.1
17-Jul	25	21	18	17	14	12	10	11	15	18	24	27	32	37	41	44	46	47	46	45	43	42	42	42	46.6
18-Jul	41	41	41	41	41	39	36	34	33	32	33	35	36	39	41	43	44	46	47	45	43	41	38	35	46.6
19-Jul	32	30	26	23	22	20	19	20	22	23	25	28	31	33	35	37	38	39	40	39	38	37	34	32	40.1
20-Jul	30	26	22	19	17	15	14	14	15	17	20	23	27	31	34	38	41	44	44	44	42	41	38	37	44.2
21-Jul	33	30	25	21	18	15	13	14	14	17	20	26	31	34	37	N	N	N	N	N	N	43	40	38	42.9
22-Jul	34	31	28	26	25	23	22	21	22	23	24	25	27	29	32	36	37	38	38	37	36	34	32	30	38.2
23-Jul	28	26	24	23	21	19	18	17	17	17	18	19	21	24	26	28	30	32	33	32	30	29	26	25	32.5
24-Jul	21	18	17	19	19	20	21	21	23	25	25	26	29	31	34	36	38	40	41	41	40	38	37	34	41.5
25-Jul	30	27	24	21	18	16	15	15	16	18	21	25	29	34	39	43	45	47	48	47	46	45	42	39	47.6
26-Jul	36	33	30	28	24	24	24	25	25	25	26	27	29	31	34	35	37	38	39	39	41	40	39	37	40.7
27-Jul	35	34	33	32	31	29	26	25	25	26	28	31	34	38	43	46	48	50	50	50	47	44	41	37	50.0
28-Jul	34	30	28	29	29	27	27	28	29	29	29	29	30	32	33	35	35	36	36	34	32	29	27	23	36.1
29-Jul	19	15	15	13	12	10	10	11	13	15	18	21	27	33	38	42	46	48	50	50	49	47	46	44	50.0
30-Jul	43	43	42	41	40	39	38	37	36	35	35	36	37	38	39	39	39	40	40	39	38	35	33	30	42.6
31-Jul	27	23	20	16	12	9	8	8	9	13	16	20	25	29	33	36	38	39	40	39	38	37	35	34	39.9
	42.6	42.6	41.5	41.1	41.1	39.3	38.0	36.8	37.2	39.5	41.8	44.3	46.9	49.6	52.4	53.9	55.0	55.4	53.9	51.2	49.2	46.8	45.5	44.1	
	Diurnal Maximums																								

N - Not Valid

Alberta Ambient Air Quality Objectives (AAAQO): 8-hr 65 ppb

Palliser Airshed Society
Summary of Hourly Averages

Portable-Brooks
July 1, 2008 to August 1, 2008
WS (km/h), WD (deg)

Day	Hourly Period Ending At (MST)																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1 Spd	1	1	5	6	7	5	12	13	11	13	15	15	14	8	8	6	8	7	8	9	8	6	5	6	7.7	15.5
Dir	263	279	331	316	2	353	21	19	15	19	24	23	15	348	336	325	342	359	1	17	21	35	33	32	8.5	23.9
2 Spd	5	7	6	5	8	7	8	4	13	13	9	8	7	8	7	5	7	8	2	6	4	6	7	8	3.1	13.0
Dir	47	39	78	95	118	121	89	93	162	158	177	204	209	221	241	277	338	25	353	91	105	106	81	100	121.8	161.6
3 Spd	7	11	11	11	7	7	6	9	10	13	17	17	15	14	11	12	11	9	10	7	9	12	9	10	9.9	17.2
Dir	115	127	144	178	193	171	172	188	198	190	183	188	191	190	222	210	201	206	190	197	173	156	169	171	182.0	188.1
4 Spd	12	14	13	13	14	12	9	9	11	11	22	12	19	16	17	12	26	20	20	21	23	12	13	7	13.0	25.5
Dir	157	168	170	179	178	183	207	202	252	256	158	158	200	218	229	243	202	195	189	193	207	219	236	278	199.6	202.3
5 Spd	6	7	3	4	3	3	5	5	6	6	9	6	6	7	8	8	7	7	7	5	9	8	7	9	2.9	9.1
Dir	317	324	318	274	272	280	277	274	283	307	338	325	289	326	340	339	342	19	63	96	159	192	201	202	306.7	202.0
6 Spd	10	8	9	9	7	5	3	5	7	7	6	6	7	6	7	7	7	3	8	28	27	12	8	4	3.9	27.6
Dir	207	212	226	218	198	215	278	287	322	328	326	308	293	301	277	283	272	289	360	6	46	14	327	341	316.0	5.8
7 Spd	4	1	3	2	3	3	4	5	3	2	4	2	3	2	3	6	10	10	4	3	2	6	4	2	2.1	9.9
Dir	257	308	327	293	255	298	311	321	290	282	32	42	339	1	346	25	5	343	239	236	154	213	231	298	316.9	343.2
8 Spd	3	4	5	4	4	5	1	4	6	5	5	5	9	6	8	7	6	5	4	5	6	5	5	2	2.2	9.1
Dir	260	237	221	218	228	219	248	324	341	318	309	294	222	225	266	258	288	1	52	91	147	145	183	104	251.2	222.2
9 Spd	6	9	9	9	10	6	5	8	13	12	10	11	11	6	6	11	19	26	24	19	13	12	5	4	4.9	26.2
Dir	23	64	82	94	105	190	181	139	176	191	187	204	229	277	1	43	29	27	42	71	90	96	115	79	82.9	26.9
10 Spd	3	13	11	12	28	21	16	10	8	9	9	7	8	7	12	20	26	26	23	12	8	9	7	7	12.3	28.0
Dir	13	32	44	10	25	30	28	5	331	352	353	358	42	24	14	18	18	7	21	357	338	333	325	322	12.1	25.4
11 Spd	12	14	15	9	12	14	15	15	15	15	14	14	15	13	12	12	11	10	8	2	2	4	4	5	10.5	15.0
Dir	331	334	332	326	329	331	330	333	336	331	334	330	334	329	322	325	328	325	321	331	246	250	325	262	327.5	335.6
12 Spd	4	3	3	4	5	3	3	6	6	5	6	8	5	5	6	6	9	11	8	9	9	8	9	8	3.8	10.8
Dir	255	226	219	232	239	266	338	314	308	320	310	344	336	289	216	237	220	200	201	188	185	197	206	205	236.3	200.4
13 Spd	6	3	1	2	3	8	6	7	3	1	2	3	4	3	4	7	9	8	6	9	16	35	18	10	3.4	35.0
Dir	166	13	138	196	226	205	213	203	218	337	301	308	278	310	318	2	42	57	59	34	23	27	63	63	33.5	26.9
14 Spd	10	4	3	1	5	6	6	11	11	8	3	14	15	18	19	19	21	17	16	10	7	6	3	5	6.1	21.2
Dir	357	225	257	160	228	250	246	240	246	237	264	1	1	17	17	15	17	15	23	20	4	13	55	20	357.6	17.4
15 Spd	5	4	5	1	2	7	5	10	10	11	12	15	16	18	21	24	23	21	8	7	5	6	3	0	7.3	23.8
Dir	128	174	202	209	230	356	81	91	90	120	109	94	77	86	70	64	51	11	146	66	41	360	327	227	73.8	64.1
16 Spd	6	4	5	3	4	1	4	5	5	5	5	6	5	3	5	5	3	3	3	3	2	5	7	7	1.8	7.3
Dir	280	294	310	327	339	88	64	47	60	78	163	157	53	52	254	259	337	330	332	343	307	322	309	324	335.8	324.2
17 Spd	5	4	3	2	6	2	3	4	4	5	6	8	8	9	11	13	14	13	10	12	15	6	9	21	3.9	21.3
Dir	331	308	10	1	258	273	318	16	61	106	150	135	153	171	188	178	177	155	146	117	129	130	22	54	135.4	53.7
18 Spd	14	18	16	9	7	7	10	9	11	12	12	11	10	10	8	13	19	19	9	5	6	9	2	5	8.2	18.8
Dir	69	55	70	75	78	13	40	53	6	10	12	24	28	26	8	353	346	335	329	108	343	358	294	252	21.3	335.1
19 Spd	6	3	4	6	6	9	6	7	9	7	7	6	7	6	6	5	4	4	3	5	8	7	7	7	3.7	9.3
Dir	236	248	280	244	220	201	224	249	242	261	269	283	265	288	304	288	303	299	16	111	140	147	173	189	239.8	201.1
20 Spd	7	5	5	6	9	9	12	12	11	12	10	9	10	9	9	8	8	8	7	8	9	9	13	14	8.4	14.2
Dir	197	198	180	186	173	179	188	194	195	193	206	209	193	217	213	225	193	190	178	162	162	153	134	150	185.1	150.0
21 Spd	9	6	6	8	5	11	15	15	16	16	16	16	18	20	17	19	16	11	10	9	9	9	11	11	12.3	20.2
Dir	174	166	190	175	166	172	192	198	200	206	201	197	196	192	201	200	204	209	206	190	185	188	195	197	194.6	192.4
22 Spd	12	8	9	11	8	6	8	11	11	12	13	12	12	11	10	8	5	4	8	5	11	14	14	16	6.8	16.0
Dir	199	218	219	224	249	320	328	330	331	332	332	338	340	338	347	328	322	333	334	318	358	9	15	7	329.1	7.3

Palliser Airshed Society
Summary of Hourly Averages

Portable-Brooks
July 1, 2008 to August 1, 2008
WS (km/h), WD (deg)

Day	Hourly Period Ending At (MST)																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
23 Spd	15	11	7	11	10	8	10	10	8	9	9	10	11	8	8	11	8	4	2	2	2	1	2	3	6.9	15.3
Dir	4	340	324	332	333	332	329	340	339	337	341	334	342	338	4	12	19	18	268	246	247	261	322	331	341.6	3.9
24 Spd	2	3	6	9	9	5	7	7	6	3	3	3	3	6	7	8	7	5	4	1	5	7	6	7	3.5	9.0
Dir	310	289	312	347	3	323	333	344	333	287	294	329	330	313	334	338	342	328	342	274	197	205	210	207	316.8	347.0
25 Spd	6	7	8	8	6	3	3	3	7	10	15	15	15	13	10	10	9	6	5	3	1	7	12	11	7.0	15.4
Dir	214	208	204	206	202	170	158	147	180	185	170	167	171	178	186	195	200	178	194	207	243	92	130	119	175.7	167.1
26 Spd	13	14	13	8	10	13	13	19	19	15	13	9	12	6	16	16	13	12	12	11	13	4	9	13	9.0	18.7
Dir	119	119	116	122	134	152	158	172	185	184	183	200	163	186	188	203	206	206	195	191	188	217	2	17	171.1	184.6
27 Spd	17	18	13	9	5	4	3	4	4	5	5	6	8	10	12	10	10	25	24	15	7	4	3	5	4.3	24.7
Dir	20	31	46	45	28	301	295	313	297	320	286	270	241	214	217	232	258	5	23	42	10	342	239	262	350.6	5.1
28 Spd	2	2	2	3	0	6	3	4	7	11	13	11	12	13	13	11	9	8	7	5	8	9	10	7	3.8	13.1
Dir	262	304	250	229	14	204	328	297	326	334	344	338	333	334	334	334	331	337	2	32	113	119	126	183	337.6	333.5
29 Spd	9	9	9	5	9	10	12	15	14	12	12	12	18	19	16	16	15	15	13	7	11	14	18	17	11.3	18.7
Dir	194	196	194	173	122	140	157	171	186	188	185	188	203	206	213	214	213	209	206	235	242	236	242	246	202.6	205.7
30 Spd	16	12	8	13	12	16	18	22	27	16	13	8	8	7	17	25	23	14	14	5	3	6	5	3	11.3	27.2
Dir	241	227	219	237	237	237	241	242	245	274	291	299	301	295	254	244	244	261	357	349	277	215	225	217	253.0	244.8
31 Spd	1	1	2	5	8	6	6	4	4	4	5	11	11	11	10	10	8	6	8	9	13	13	11	12	5.7	13.2
Dir	271	91	166	213	218	219	214	257	270	252	248	212	245	240	239	235	237	227	184	142	136	140	175	181	206.7	139.6
Spd	0.6	0.2	0.9	1.6	1.1	1.9	1.2	1.9	3.2	2.6	1.7	1.5	2.3	2.6	3.5	3.3	2.9	3.4	1.7	2.1	2.2	1.3	1.2	0.8	Diurnal Average	
Dir	229.2	92.0	170.3	215.0	207.8	220.1	246.3	249.1	251.9	259.3	241.0	260.6	250.6	260.5	268.8	283.9	303.0	339.3	24.2	78.0	125.9	113.0	178.0	177.6		
Spd	17.0	18.3	16.2	13.3	28.0	21.1	18.4	22.5	27.2	16.1	22.1	17.2	18.5	20.2	20.5	24.7	25.7	26.5	23.8	27.6	26.9	35.0	18.3	21.3	Diurnal Maximum	
Dir	20.0	55.5	70.5	236.9	25.4	30.2	240.7	242.0	244.8	205.9	157.8	188.1	200.5	192.4	70.3	243.7	17.5	6.7	42.2	5.8	45.8	26.9	62.5	53.7		

Maximum Speed Value: 35 km/h on Jul 13 22:00
Minimum Speed Value: 0 km/h on Jul 16 00:00
Maximum Daily Speed Average: 13.0 km/h on Jul 4
Minimum Daily Speed Average: 1.8 km/h on Jul 7
Maximum Diurnal Speed Average: 3.5 km/h at hour 15
Minimum Diurnal Speed Average: 0.2 km/h at hour 2

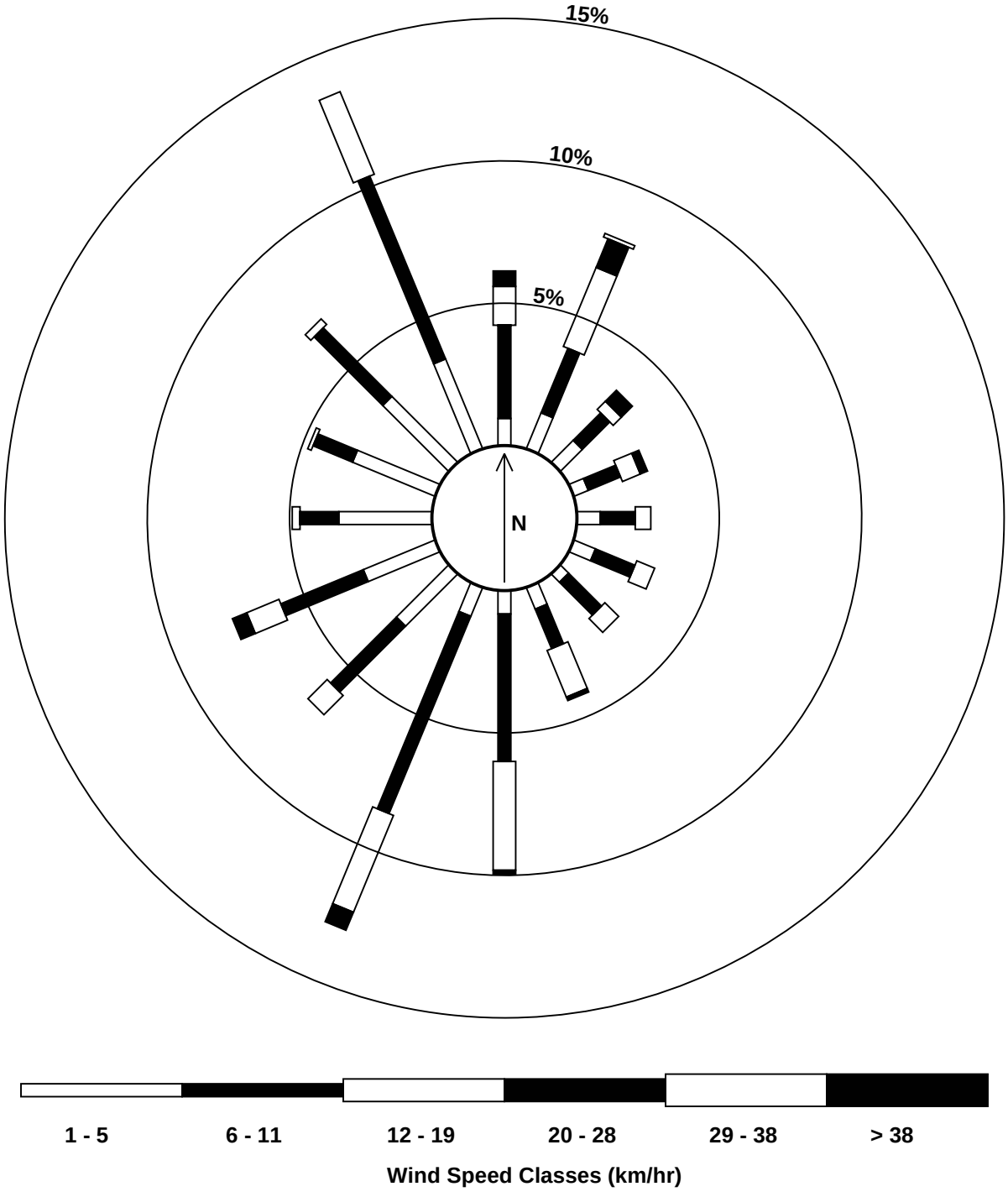
Monthly Average Velocity: 1.01 km/h 255.06 deg
Speed Percentiles: P_1 = 1.0 P_{10} = 3.1 Q_1 = 5.2 Median = 7.9 Q_3 = 11.8 P_{90} = 15.5 P_{99} = 25.9
All monthly, daily, and diurnal averages have been calculated using vector methods

Hours in Service:	744
Hours of Data:	744
Hours of Missing Data:	0
Percent Operational Time:	100.0

Percentage Frequency Distribution

Direction	Speed Range (km/h) 0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total
North	2.55	8.06	4.03	1.08	0.00	0.00	15.73
NorthEast	1.34	3.76	1.75	1.21	0.13	0.00	8.20
East	1.34	2.42	1.21	0.13	0.00	0.00	5.11
SouthEast	0.40	3.63	2.42	0.00	0.00	0.00	6.45
South	1.61	8.87	7.53	0.81	0.00	0.00	18.82
SouthWest	3.49	9.41	4.17	0.67	0.00	0.00	17.74
West	5.51	3.90	0.67	0.00	0.00	0.00	10.08
NorthWest	6.85	7.66	3.36	0.00	0.00	0.00	17.88
Total	23.12	47.72	25.13	3.90	0.13	0.00	100.00

Wind Rose for WS at Portable-Brooks
July 2008



Palliser Airshed Society

Summary of Hourly Standard Deviations

Portable-Brooks - Wind Direction (WD) - deg

July 1, 2008 to August 1, 2008

Maximum Value: 95.9 deg on Jul 7 21:00

Minimum Value: 2.5 deg on Jul 26 00:00

Percentiles: P_1 = 3.5 P_{10} = 6.6 Q_1 = 10.6 Median = 18.3 Q_3 = 34.5 P_{90} = 56.3 P_{99} = 89.6

Hours in Service:	744
Hours of Data:	744
Hours of Missing Data:	0
Hours of Calibration:	0
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Maximum
1-Jul	87	86	20	12	13	20	5	7	8	9	9	7	6	13	9	11	14	7	9	5	17	12	20	6	86.7
2-Jul	10	6	23	22	6	42	12	43	13	11	21	28	25	33	19	40	15	14	49	21	18	19	19	8	49.0
3-Jul	14	5	9	15	25	17	9	11	12	15	13	16	18	15	17	15	13	14	9	8	19	12	8	6	25.5
4-Jul	6	7	3	3	5	11	21	13	19	23	35	27	9	10	14	49	5	9	9	9	5	8	11	32	49.5
5-Jul	37	22	46	52	58	62	39	39	32	34	17	35	37	28	27	15	17	16	13	24	20	11	8	9	61.9
6-Jul	8	7	9	7	13	58	56	37	21	23	28	33	30	33	33	31	32	61	25	27	6	27	13	49	61.0
7-Jul	52	90	40	73	60	44	36	38	56	79	51	88	65	96	65	54	7	31	65	63	96	12	36	53	95.9
8-Jul	40	17	14	11	10	14	83	43	21	31	37	39	25	53	30	33	40	27	31	12	17	37	48	89	89.0
9-Jul	43	16	22	12	10	22	47	32	10	9	17	25	19	33	46	14	13	5	10	8	11	23	67	66	66.9
10-Jul	71	10	7	26	7	7	7	27	19	19	23	31	31	42	19	9	7	18	4	21	12	10	20	47	71.4
11-Jul	11	8	8	14	8	8	10	9	11	10	13	11	11	11	17	15	14	15	26	83	43	34	54	17	82.6
12-Jul	28	38	33	12	15	56	57	30	30	45	31	23	58	52	64	44	26	11	17	4	8	4	5	7	63.6
13-Jul	20	38	76	60	47	9	18	15	62	80	71	66	66	65	49	40	14	14	6	12	10	13	8	22	80.1
14-Jul	27	57	54	89	32	28	15	12	11	26	66	12	16	12	11	10	7	9	5	8	22	40	70	55	88.6
15-Jul	55	84	40	80	59	26	35	11	21	10	18	14	16	10	13	6	14	12	41	37	45	14	73	93	92.7
16-Jul	18	24	23	50	26	85	34	20	26	40	44	43	53	69	35	37	58	67	56	40	65	19	9	11	85.2
17-Jul	11	26	49	65	12	42	47	34	30	40	46	30	32	30	24	17	16	13	10	7	4	90	56	19	89.8
18-Jul	30	30	13	30	39	22	9	16	10	11	12	12	14	17	21	16	13	8	53	59	43	15	65	23	64.9
19-Jul	19	64	58	17	16	9	20	15	14	19	32	31	33	32	30	38	39	42	55	14	12	5	36	23	63.8
20-Jul	8	40	32	16	11	11	5	8	12	12	19	22	22	24	23	24	39	12	16	6	3	6	4	7	39.8
21-Jul	12	17	16	13	23	11	4	5	7	7	8	9	8	7	14	7	8	10	7	6	6	4	5	5	23.5
22-Jul	4	18	12	10	31	47	18	12	13	11	11	12	14	14	18	15	36	57	13	17	17	4	4	11	57.1
23-Jul	7	10	25	18	9	11	12	11	11	12	16	14	17	21	21	14	17	28	27	58	59	49	68	56	68.0
24-Jul	54	47	39	12	27	19	12	19	23	51	50	68	76	40	30	21	23	33	20	61	8	5	7	7	76.3
25-Jul	10	7	4	3	4	15	26	42	20	16	13	18	15	20	21	21	24	34	29	22	78	31	5	2	77.5
26-Jul	3	3	3	7	6	4	6	9	7	11	15	23	28	57	18	7	7	4	6	4	3	72	24	5	72.4
27-Jul	4	6	13	14	32	47	52	47	47	34	37	33	31	29	21	20	36	13	8	10	35	53	46	21	53.2
28-Jul	64	72	74	46	94	38	65	36	34	14	12	16	13	13	10	11	23	15	10	37	16	7	4	29	94.2
29-Jul	8	6	17	22	5	7	7	8	10	12	15	19	12	11	18	14	15	10	4	15	8	11	5	7	22.4
30-Jul	5	14	12	8	6	5	5	5	5	17	17	26	34	39	22	6	6	20	27	57	30	37	23	74	74.0
31-Jul	64	90	78	28	20	25	17	25	45	39	53	34	22	23	22	24	24	26	8	13	4	4	10	7	90.0
	86.7	90.0	77.8	88.6	94.2	85.2	83.0	47.3	62.1	80.1	70.6	88.1	76.3	95.8	64.8	53.9	57.6	67.3	65.4	82.6	95.9	89.8	73.1	92.7	

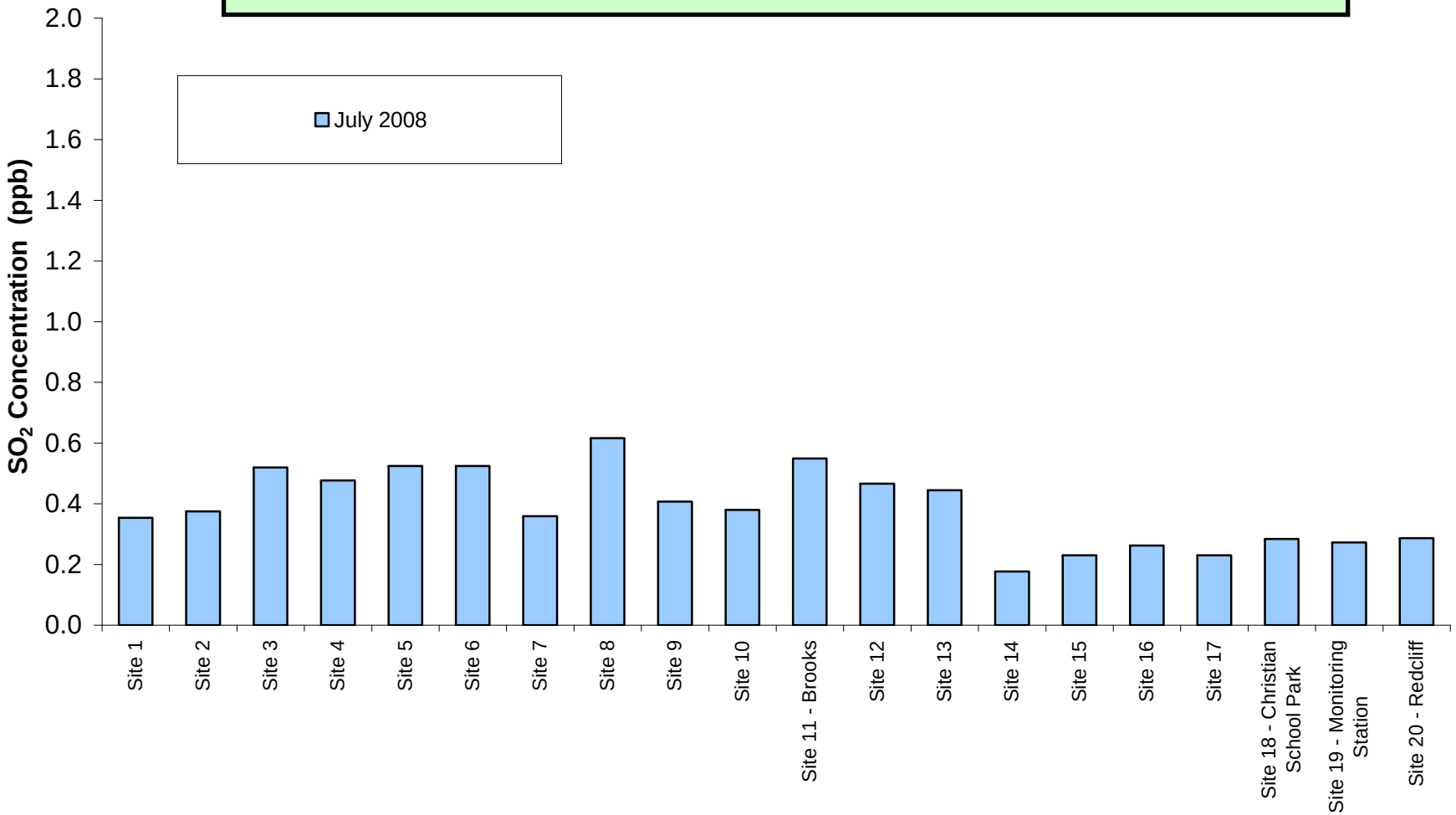
Palliser Airshed Society
Passive Monitoring – July 2008

Palliser Airshed Society - Palliser Passive Stations for July 2008
Palliser Passive Monitoring Expansion

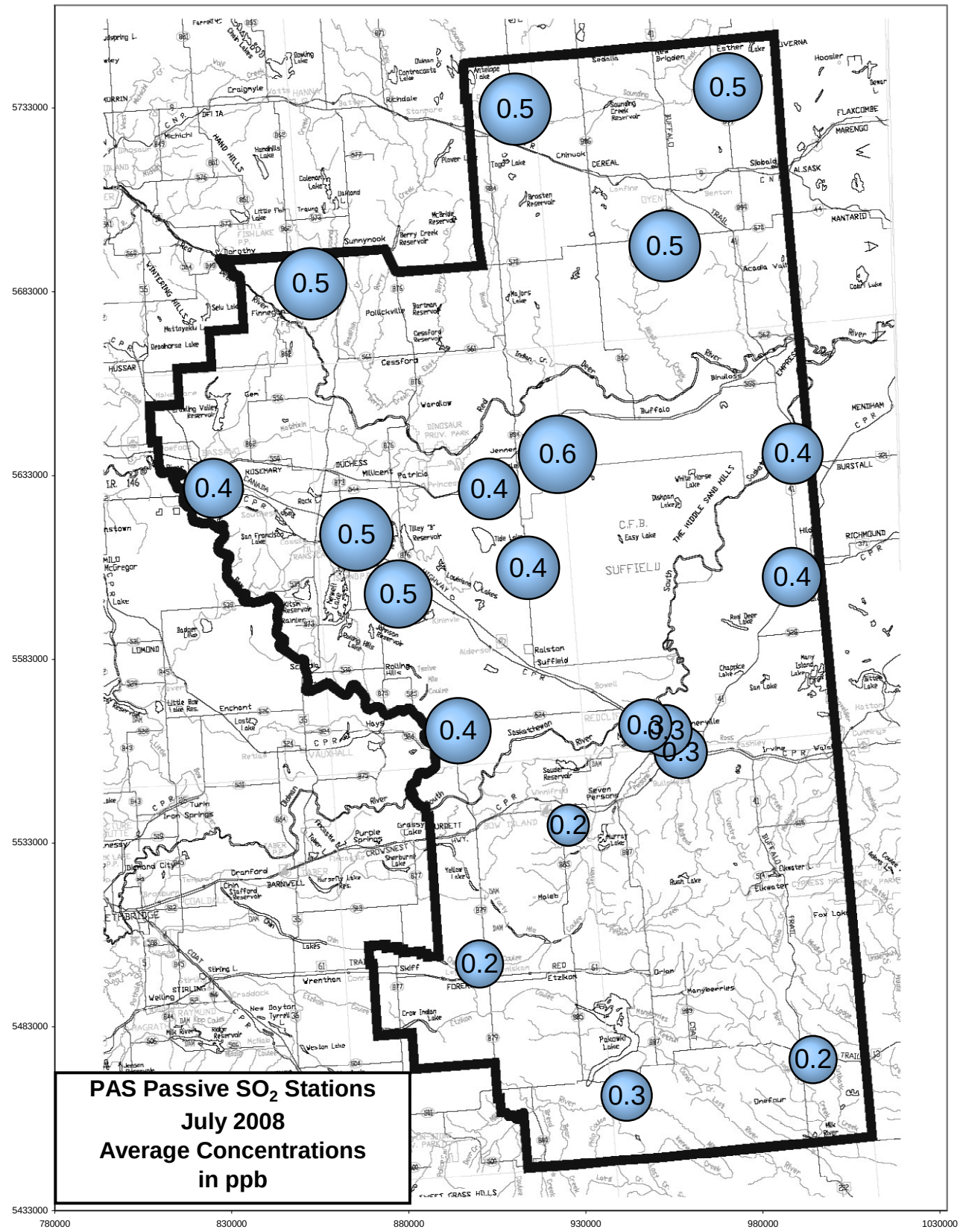
Station Number	Station Name	SO2 ppb	O3 ppb	NO2 ppb	Location Easting	Location Northing	Elevation meter
Duplicates							
1a	Site 1	**0.3**	**39.6**	**0.9**			
1b	Site 1	**0.4**	**42.2**	**1.3**			
11a	Site 11 - Brooks	**0.6**	**30.2**	**2.4**			
11b	Site 11 - Brooks	**0.5**	**29.5**	**2.4**			
1	Site 1	**0.4**	**40.9**	**1.1**	562434	5583139	719
2	Site 2	**0.4**	**36.4**	**1.0**	565416	5616277	
3	Site 3	**0.5**	**38.5**	**0.7**	533794	5675379	779
4	Site 4	**0.5**	**35.5**	**0.9**	554771	5717338	718
5	Site 5	**0.5**	**34.7**	**1.1**	494218	5715862	735
6	Site 6	**0.5**	**33.9**	**1.3**	433039	5673766	818
7	Site 7	**0.4**	**32.8**	**1.5**	400808	5620907	780
8	Site 8	**0.6**	**42.3**	**1.3**	498530	5621839	747
9	Site 9	**0.4**	**36.9**	**1.9**	487701	5591707	763
10	Site 10	**0.4**	**34.8**	**2.0**	478223	5613583	774
11	Site 11 - Brooks	**0.5**	**29.8**	**2.4**	439773	5604548	736
12	Site 12	**0.5**	**32.1**	**1.6**	450287	5587201	726
13	Site 13	**0.4**	**36.8**	**0.9**	464279	5548934	
14	Site 14	**0.2**	**32.6**	**0.7**	493206	5521201	870
15	Site 15	**0.2**	**36.1**	**0.6**	465824	5485742	874
16	Site 16	**0.3**	**39.2**	**0.5**	503827	5446942	903
17	Site 17	**0.2**	**42.6**	**0.3**	557668	5452307	942
18	Site 18 - Christian School Park	**0.3**	**36.0**	**3.2**	526575	5538135	709
19	Site 19 - Monitoring Station	**0.3**	**42.0**	**4.1**	522813	5544137	714
20	Site 20 - Redcliff	**0.3**	**33.2**	**2.6**	517479	5546059	725

BDL = Below Detection Limit

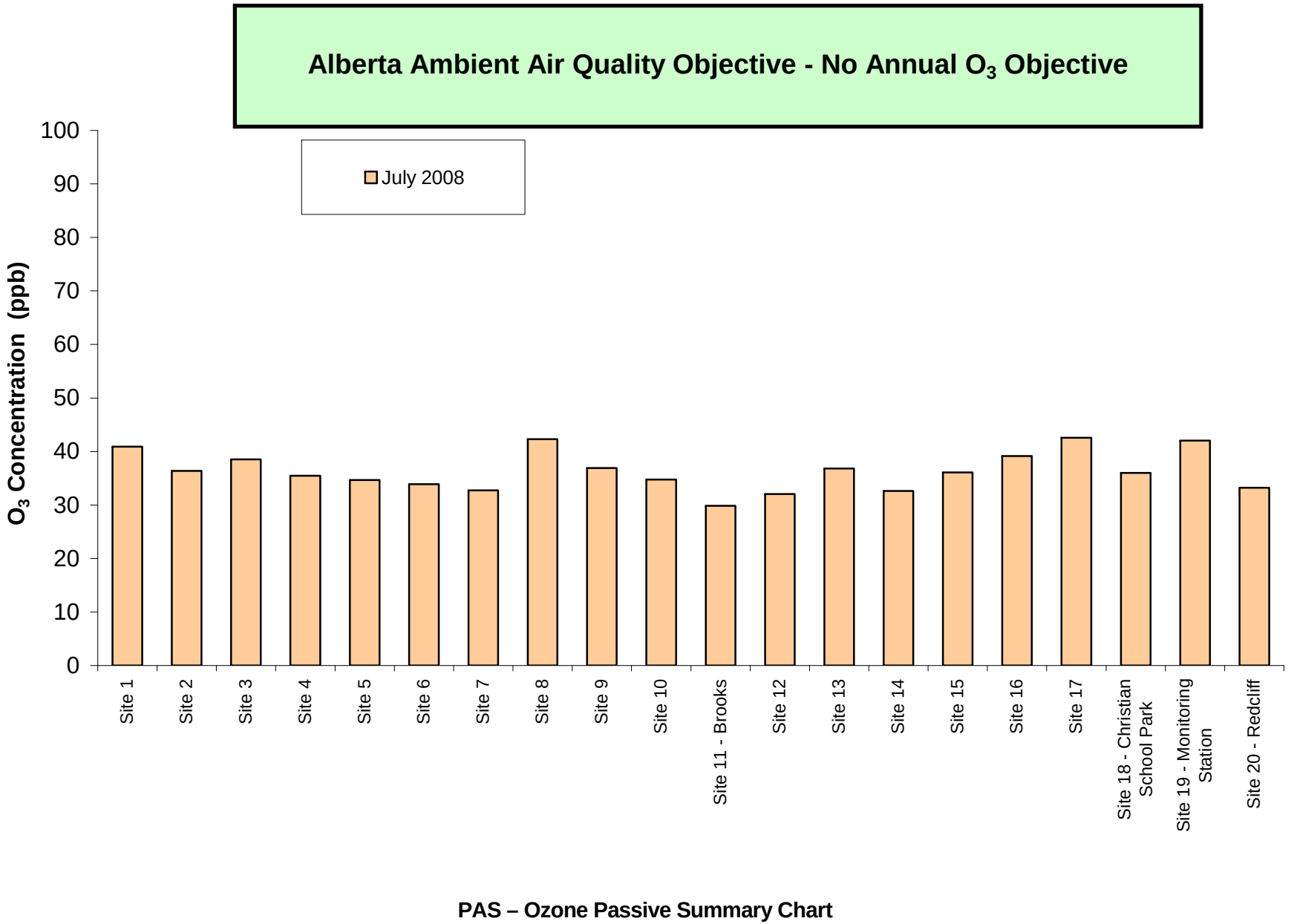
Alberta Ambient Air Quality Objective - Annual SO_2 Objective is 11 ppb



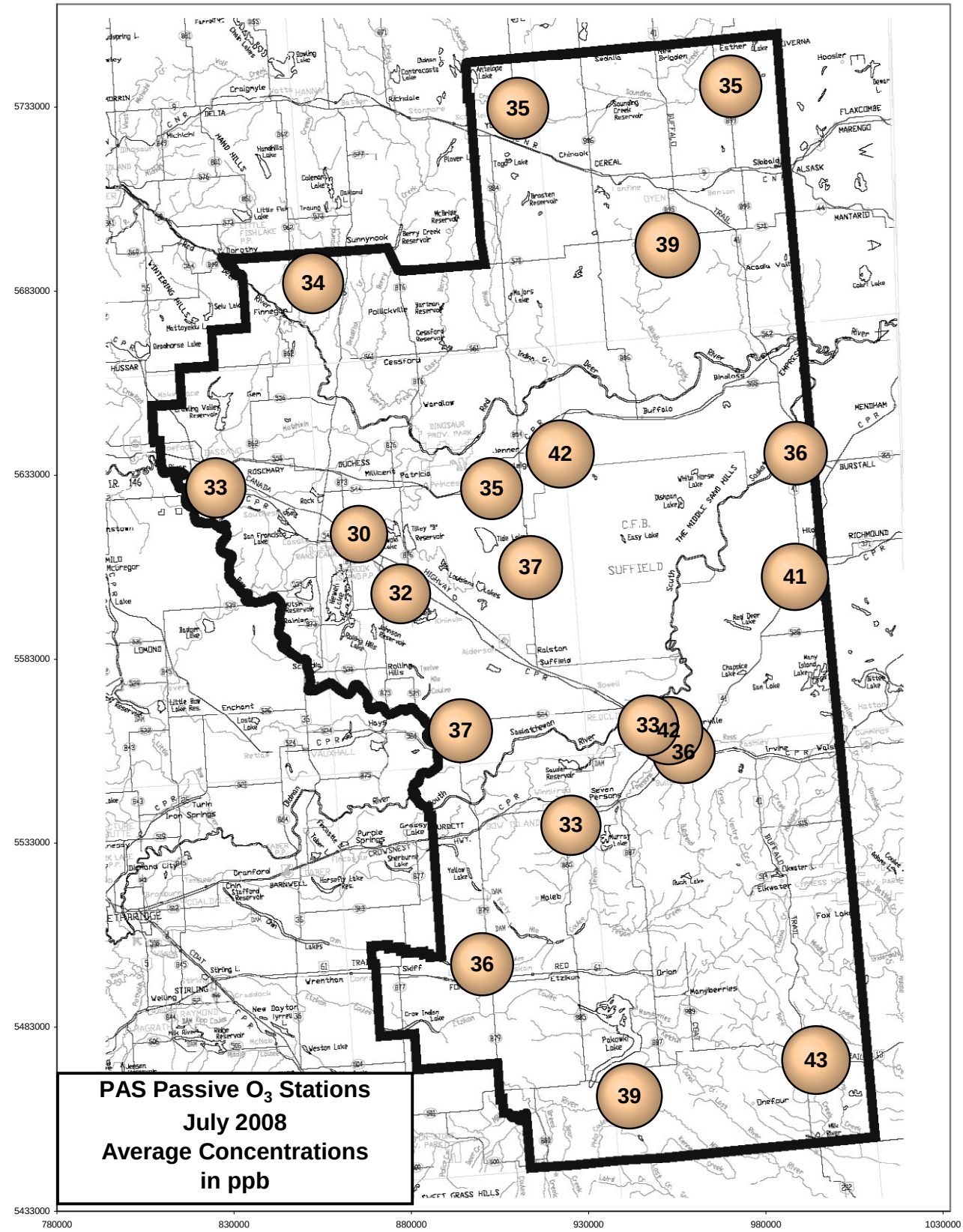
PAS – Sulphur Dioxide Passive Summary Chart



PAS – Sulphur Dioxide Passive Summary Bubble Chart

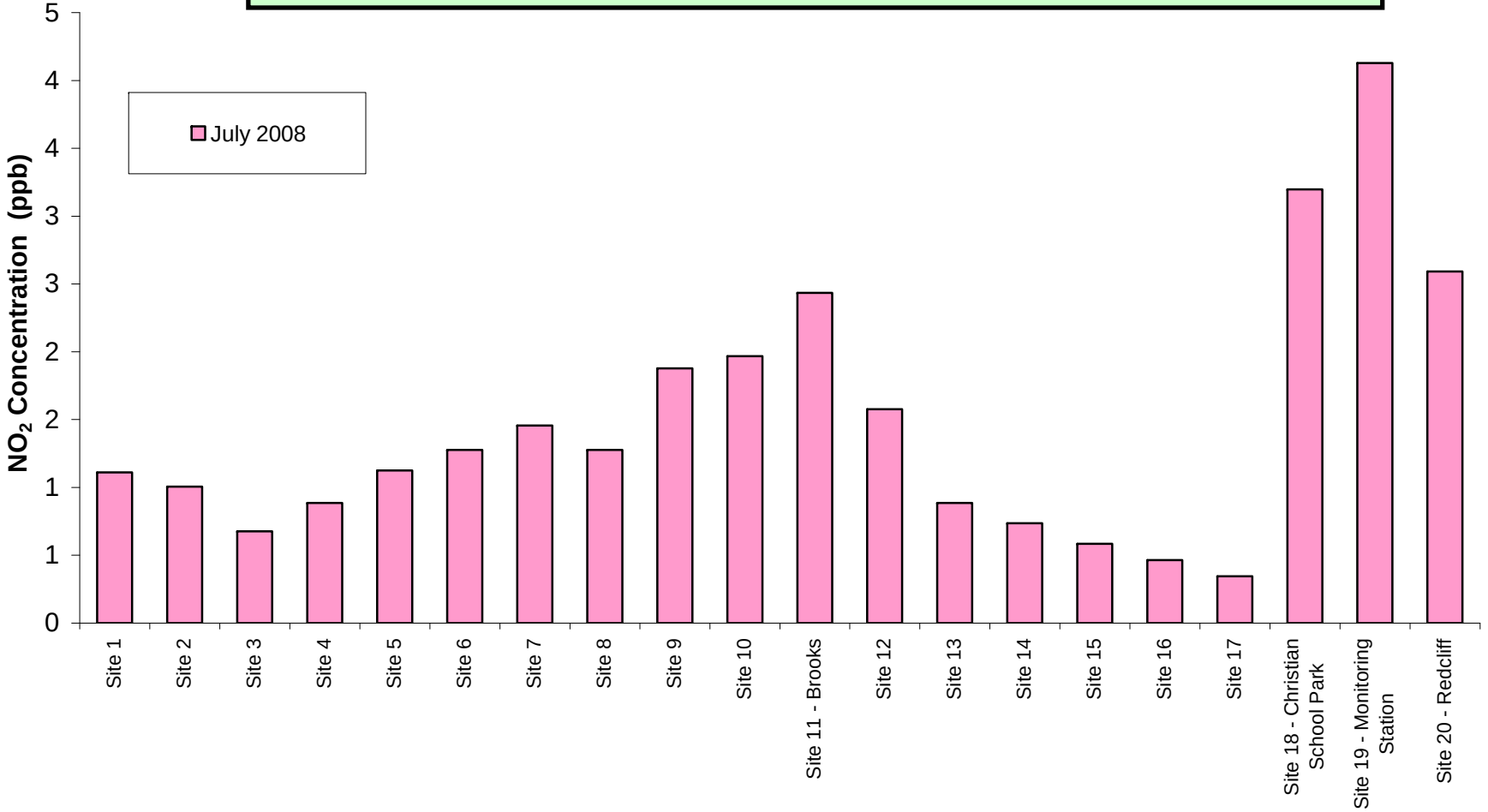


PAS – Ozone Passive Summary Chart

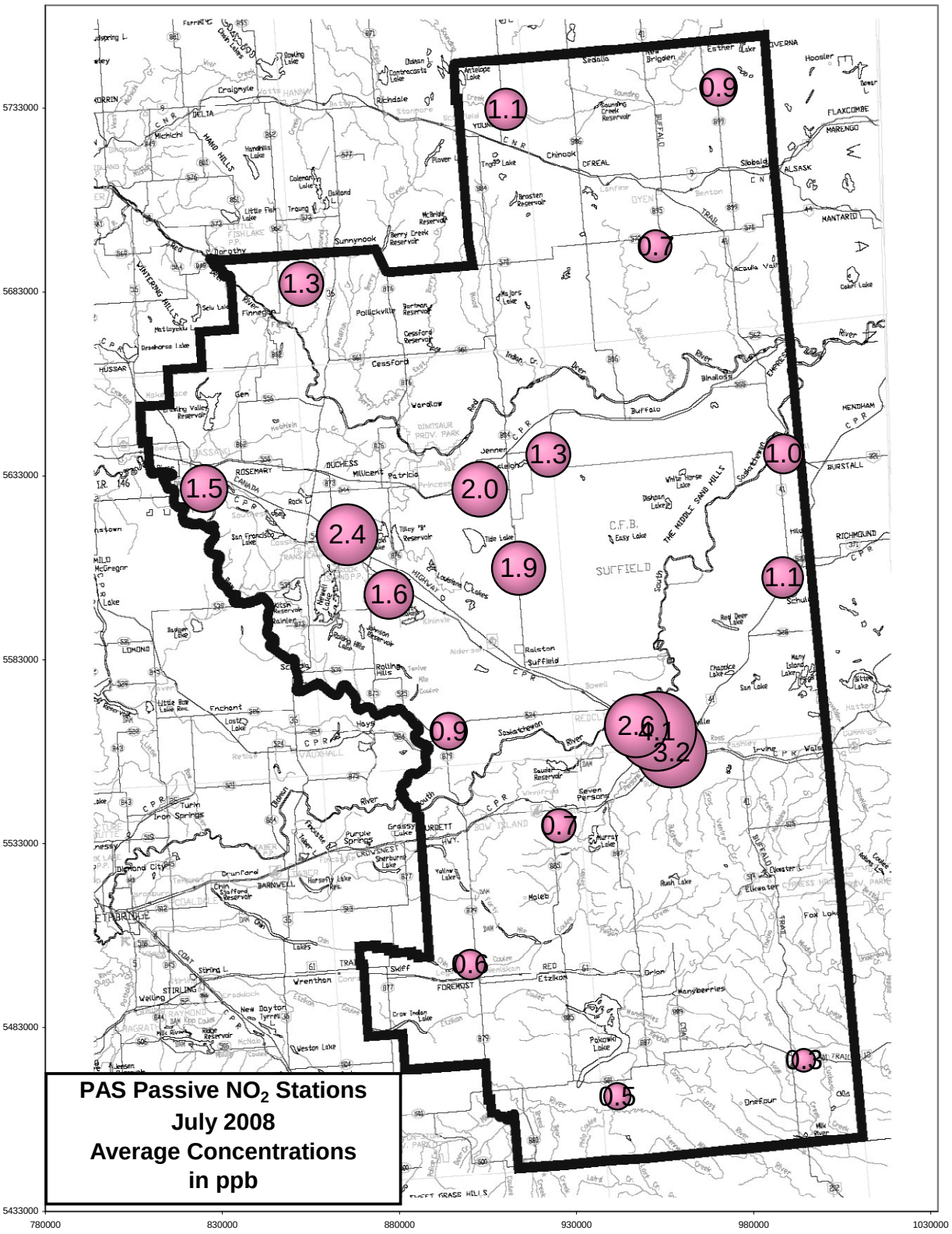


PAS – Ozone Passive Summary Bubble Chart

Alberta Ambient Air Quality Objective - Annual NO_2 Objective is 32 ppb



PAS – Nitrogen Dioxide Passive Summary Chart



PAS – Nitrogen Dioxide Passive Summary Bubble Chart

Palliser Airshed Society
July 2008 - Calibration Reports

Crescent Heights Station: O_3, NO_x, NO, NO_2, THC, CO and $PM_{2.5}$

Portable-Brooks: O_3, SO_2, and H_2S

Calibration Report

FOCUS AIR QUALITY MONITORING

Parameter	O3
Air Monitoring Network	Palliser Airshed

Station Information

Calibration Date	July 30 / 2008	Previous Calibration	June 20, 2008
Station Number	101	Station Location	Crescent Heights

Reason: **Routine** Calibration Removal Other:

Start Time (MST)	5:31	End Time (MST)	8:27
Barometric Pressure	0.9 ATM	Station Temperature	20.0 Deg C
Calibrator	SABIO 2010	Serial Number	3750708
Cal Gas Concentration	NA	Cal Gas Expiry Date	NA
DACS make	Focus AP1000	DACS serial No.	45270
DACS voltage range	0 - 10 volt	DACS channel #	5
	Before		After
Calculated slope	0.958179	Calculated slope	0.990772
Calculated intercept	-1.417486	Calculated intercept	-0.988367
Analyzer make	TEI 49i	Analyzer serial #	713021144

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
O3 Background	0.5	ppb	0.5	ppb
O3 Coeff	1.033		1.033	
CellA	68040	Hz	68067	Hz
CellB	104797	Hz	104782	Hz
Pressure	706.0	mmHg	706.3	mmHg
Cell A Flow	725	ccm	723	ccm
Cell B Flow	710	ccm	712	ccm
Bench	36.2	Deg C	36.2	Deg C

Calibration Data

Dilution air flow rate (cc/min)	Ozone Set Point	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
5026	0.0	0.0	1.9	N/A
5026	400(1.1v)	411.0	416.1	0.9878
5026	200(0.58v)	206.0	208.9	0.9861
5026	100(0.31v)	99.0	99.8	0.9921
5026	0.0	0.0	1.9	0.0000
5026	400(1.1v)	411.0	416.1	0.9878
			Average Correction Factor	0.9886

Calculated value of As Found Response: 395.5 ppm Percent Change of As Found: -3.8%

	before calibration		after calibration	
Auto zero	-4.3	ppb	-3.2	ppb
Auto span	150.2	ppb	146.0	ppb

Notes: No Adjustments Made..

Calibration Performed By: Brad Moyles

Calibration Summary

Parameter	O3
Air Monitoring Network	Palliser Airshed

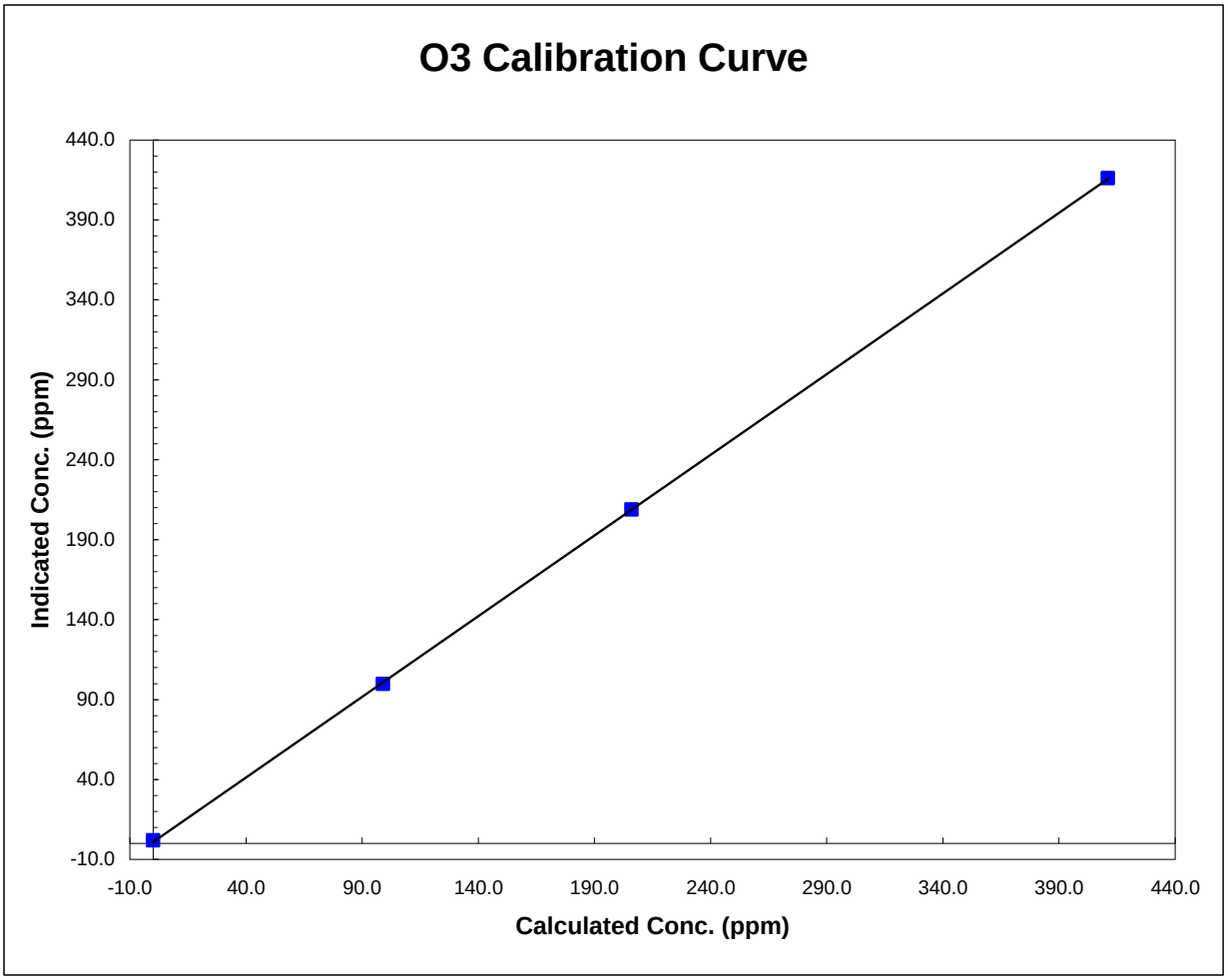
FOCUS AIR QUALITY MONITORING

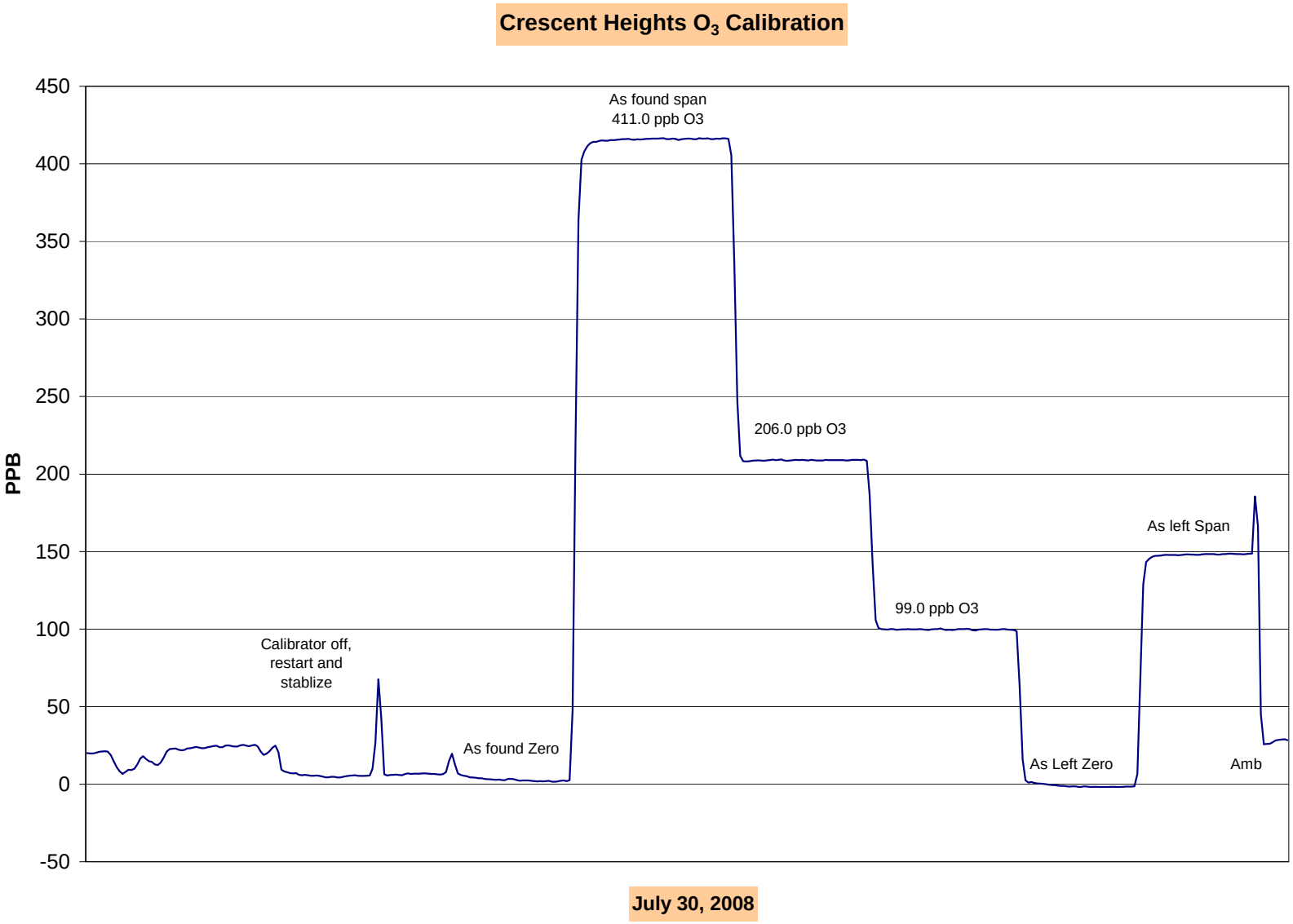
Station Information

Calibration Date	July 30 / 2008	Previous Calibration	June 20, 2008
Station Number	101	Station Location	Crescent Heights
Start Time (MST)	5:31	End Time (MST)	8:27
Analyzer make/model	TEI 49i	Analyzer serial #	713021144

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
411.0	416.1	0.9878		
206.0	208.9	0.9861	Correlation Coefficient	0.999978
99.0	99.8	0.9921		
0.0	1.9	N/A	Slope	0.990772
			Intercept	-0.988367




Crescent Heights O_3 Calibration
PPB
450
400
350
300
250
200
150
100
50
0
-50
As found span
411.0 ppb O3
206.0 ppb O3
99.0 ppb O3
As left Span
Calibrator off,
restart and
stablize
As found Zero
As Left Zero
Amb
July 30, 2008

Calibration Report

Parameter: NO_X-NO-NO_2

Air Monitoring Network: **Palliser Airshed**

FOCUS AIR QUALITY MONITORING

Station Information

Calibration Date	July 29, 2008	Previous Calibration	June 20, 2008
Station Number	101	Station Location	Crescent Heights

Reason: Routine | Installation | Removal | Other:

Start Time (MST)	11:38	End Time (MST)	17:14
Barometric Pressure	0.943 Atm	Station Temperature	20.0 Deg C
Calibrator	SABIO 2010	Serial Number	3750708
NO Cal Gas Conc	50 ppm	Cal Gas Expiry Date	June 6 / 2010
NOx Cal Gas Conc	50 ppm	Cal Gas Serial #	ALM051339

DACS Information

DACS make: FOCUS AP1000 — DACS serial No.: 45270

Parameter		NO2	NOx	NO
Before	Data Slope	1.025545	0.999949	0.996459
	Data Offset	5.300061	-0.348062	1.382586
After	Data Slope	1.025590	1.000736	0.997854
	Data Offset	4.575904	-0.696060	0.907083
Channel #		8	6	7
Voltage Range		0 - 10 VDC	0 - 10 VDC	0 - 10 VDC

Analyzer Information

Analyzer make/model: API Model 200E — Analyzer serial #: 219

Test Point	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
NO offset	-9.0	mV	-9.0	mV
NOx offset	-5.5	mV	-5.5	mV
NO slope	1.435		1.329	
NOx slope	1.376		1.309	
R Cell Temp	49.6	Deg C	49.9	Deg C
PMT Temp	7.1	Deg C	7.2	Deg C
Azero	57.8	mV	57.6	mV
IZS Temp	37.2	Deg C	37.1	Deg C
R Cell Press	4.2	in Hg	4.5	in Hg
Sample Press	26.3	in Hg	26.3	in Hg
O3 Flow	75.0	ccm	75.0	ccm
Sample Flow	445.0	ccm	452.0	ccm

Notes: Span Adjustment Performed

Calibration Report

FOCUS AIR QUALITY MONITORING

Parameter	**$NOx\text{-}NO\text{-}NO_2$**
Air Monitoring Network	**Palliser Airshed**

Station Information

Calibration Date: July 29, 2008 Station Location: Crescent Heights

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	5025	0.00	0.0	0.0	0.0	1.4	0.0	-2.6	N/A	N/A
1	5025	40.20	396.8	396.8	0.0	397.4	397.4	-3.4	0.9985	0.9985
2	5026	20.20	200.2	200.2	0.0	200.8	198.7	-1.7	0.9969	1.0075
3	5025	10.10	100.3	100.3	0.0	100.0	99.0	-3.0	1.0033	1.0130
AFZ	5025	0.00	0.0	0.0	0.0	1.4	0.0	-2.6	0.0000	0.0000
AFS	5025	40.20	396.8	396.8	0.0	414.6	428.3	-17.3	0.9572	0.9266
							Average Correction Factor		0.9995	1.0063

As Found Concentrations: NO_X= 412.8 NO= 429.6 As Found Percent Change NO_X= 4.0% NO= 8.3%

GPT Calibration Data

Dilution Flow 5025 ccm Source Gas Flow 40.20 ccm

O3 Setpoint (ppb)	Indicated NO high point (ppb)	Indicated NO drop conc (ppb)	Calculated NO2 conc (ppb)	Indicated NOx conc (ppb)	Indicated NO conc (ppb)	Indicated NO2 conc (ppb)	NOx Correction factor	NO Correction factor	NO2 Correction factor	Converter Efficiency
0	0.0	0.0	0.0	1.4	0.0	-2.6	N/A	N/A	N/A	N/A
NO point	395.3	395.3	0.0	392.7	395.3	-5.9	1.0067	1.0000	N/A	N/A
300(0.82v)	395.3	90.4	304.9	388.5	90.4	293.9	1.0175	1.0000	1.0374	96.4%
200(0.52v)	395.3	209.0	186.3	389.6	209.0	176.7	1.0145	1.0000	1.0541	94.9%
100(0.32v)	395.3	290.7	104.6	389.5	290.7	95.1	1.0148	1.0000	1.1000	90.9%
					Average Correction Factor		1.0156	1.0000	1.0638	94.1%

AIC Data

	Previous calibration				Current calibration			
Parameter	NOx	NO2	NO		NOx	NO2	NO	
Auto zero	1.3	2.7	0.9	ppb	0.8	2.0	0.7	ppb
Auto span	266.3	268.1	7.3	ppb	264.5	266.0	6.8	ppb

Calibration Performed By: Brad Moyles

Calibration Summary

Parameter	NO_2
Air Monitoring Network	**Palliser Airshed**

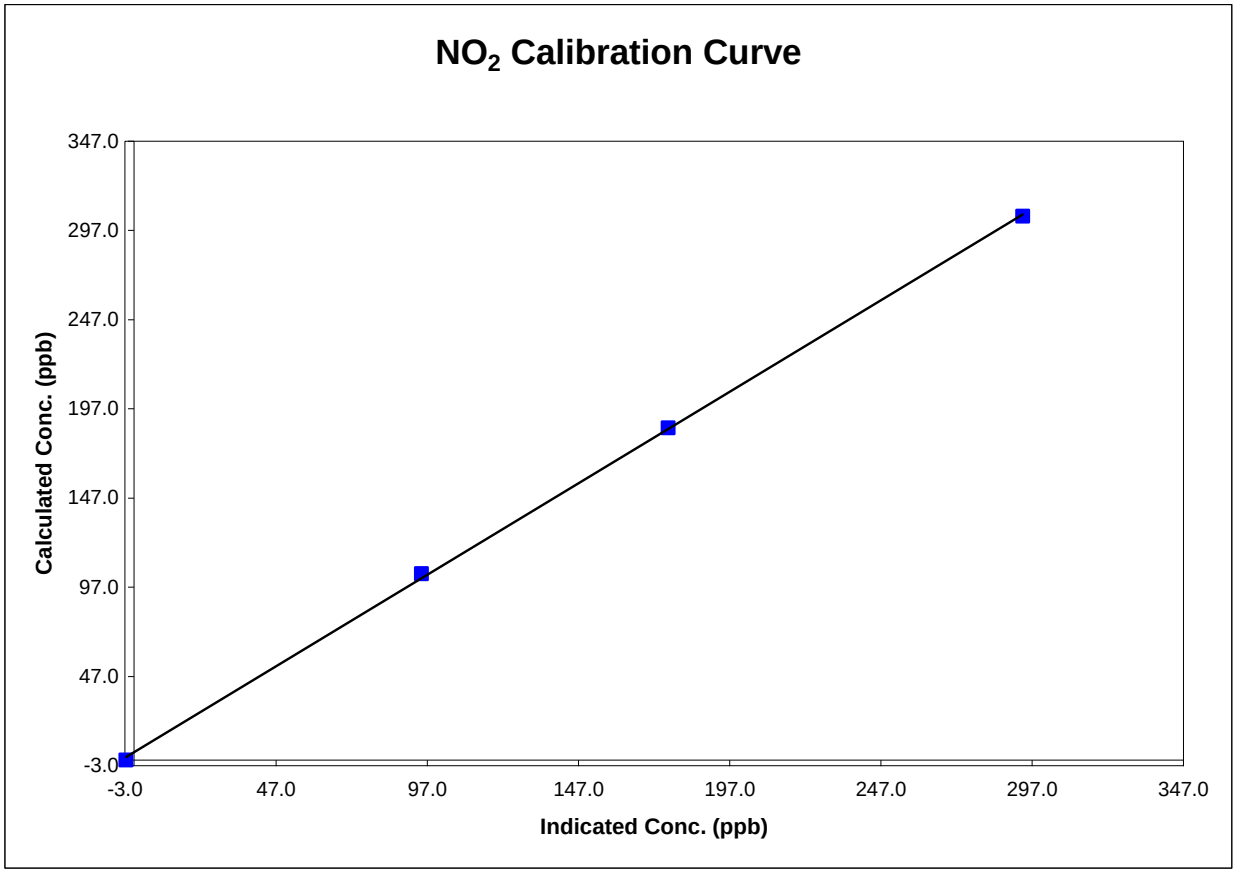
FOCUS AIR QUALITY MONITORING

Station Information

Calibration Date	July 29, 2008	Previous Calibration	June 20, 2008
Station Number	101	Station Location	Crescent Heights
Start Time (MST)	11:38	End Time (MST)	17:14
Analyzer make	API Model 200E	Analyzer serial #	219

Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-2.6	N/A		
304.9	293.9	1.0374	Correlation Coefficient	0.999776
186.3	176.7	1.0541		
104.6	95.1	1.1000	Slope	1.025590
			Intercept	4.575904



Calibration Summary

Parameter	NO_x
Air Monitoring Network	**Palliser Airshed**

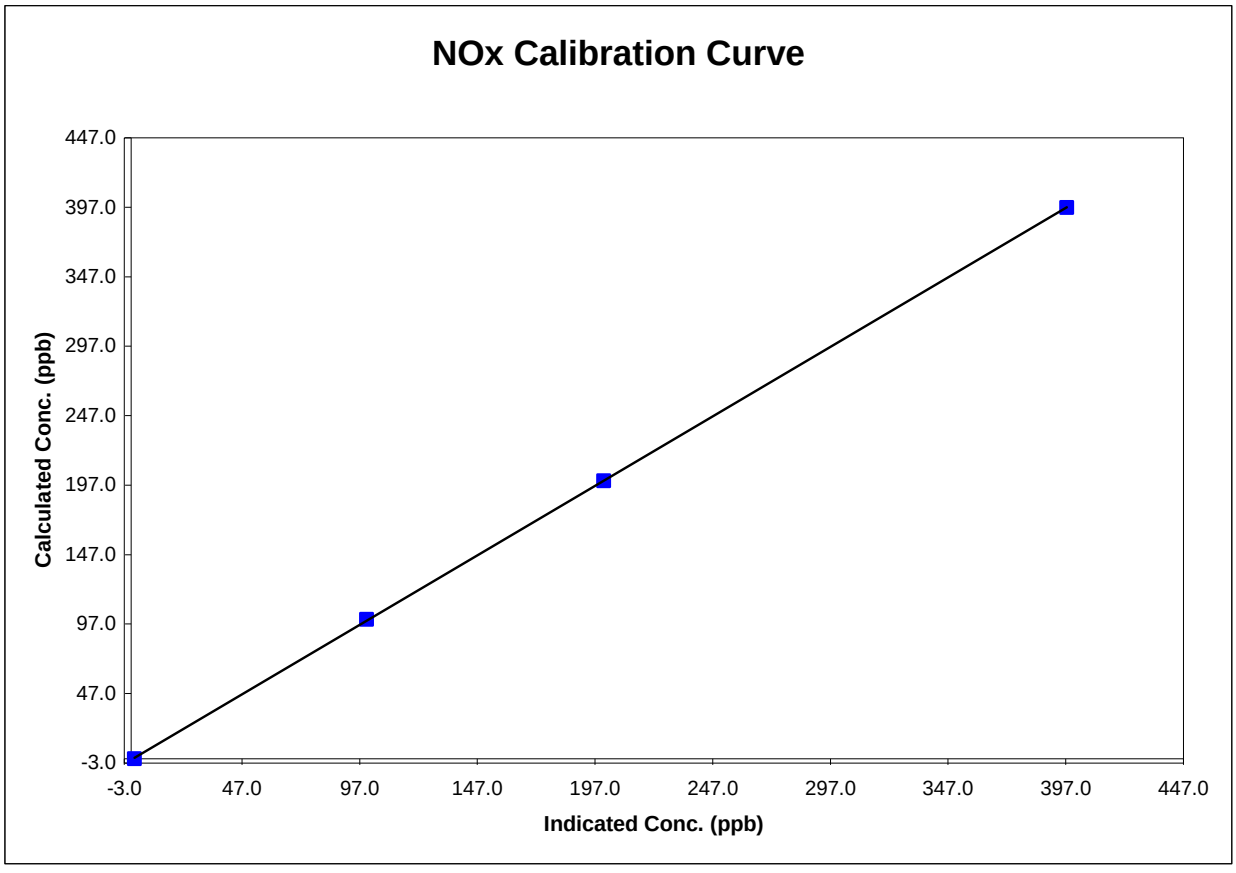
FOCUS AIR QUALITY MONITORING

Station Information

Calibration Date	July 29, 2008	Previous Calibration	June 20, 2008
Station Number	101	Station Location	Crescent Heights
Start Time (MST)	11:38	End Time (MST)	17:14
Analyzer make	API Model 200E	Analyzer serial #	219

Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	1.4	N/A		
396.8	397.4	0.9985	Correlation Coefficient	0.999984
200.2	200.8	0.9969		
100.3	100.0	1.0033	Slope	1.000736
			Intercept	-0.696060



Calibration Summary

Parameter	**NO**
Air Monitoring Network	**Palliser Airshed**

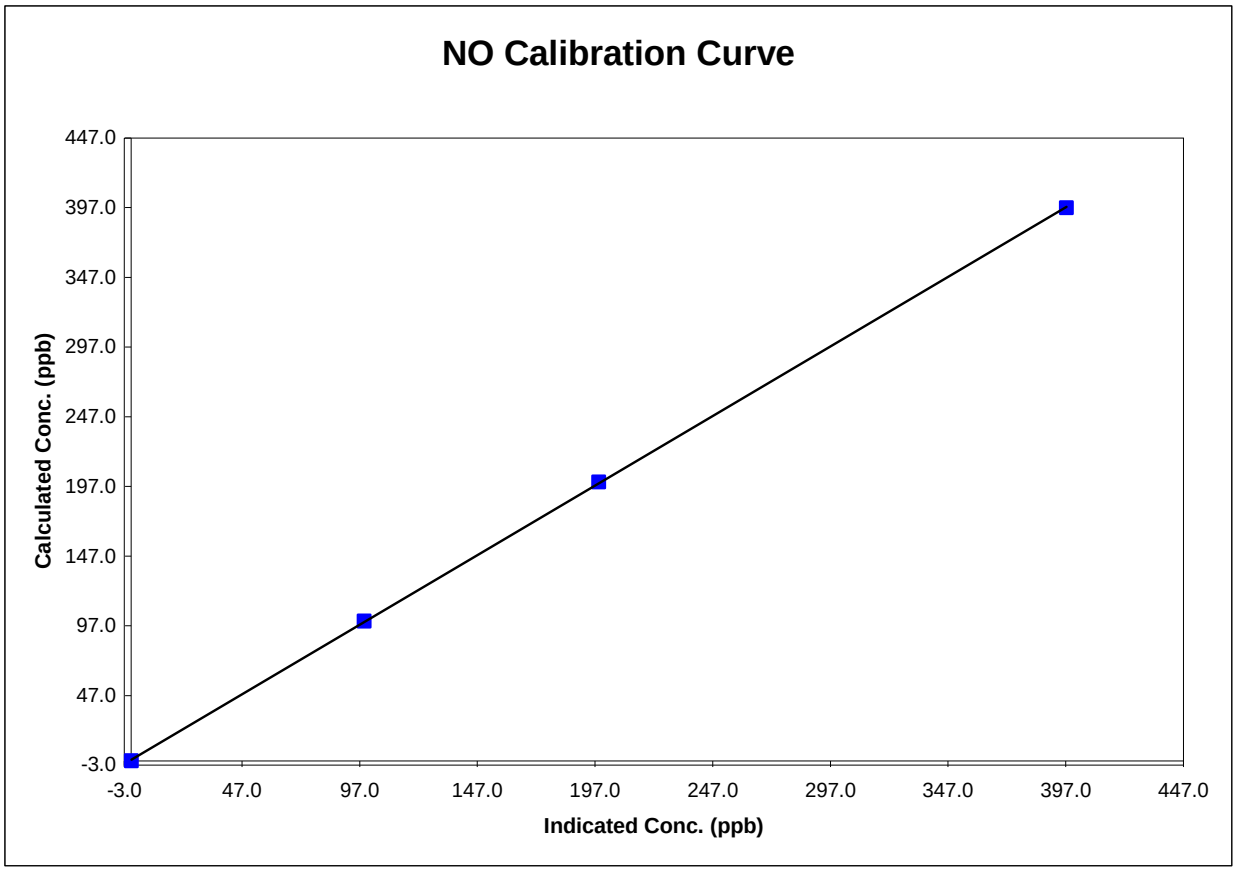
FOCUS AIR QUALITY MONITORING

Station Information

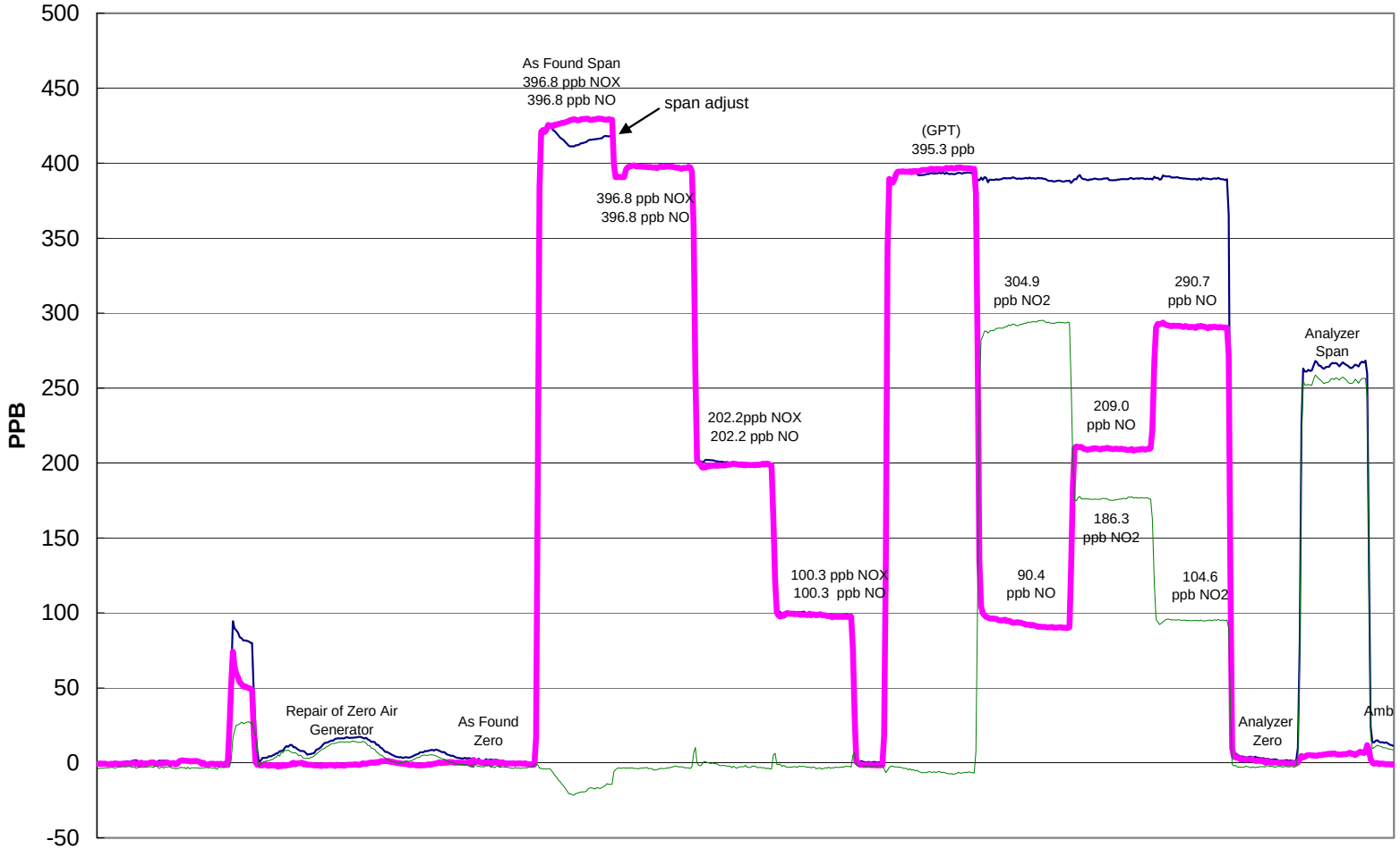
Calibration Date	July 29, 2008	Previous Calibration	June 20, 2008
Station Number	101	Station Location	Crescent Heights
Start Time (MST)	11:38	End Time (MST)	17:14
Analyzer make	API Model 200E	Analyzer serial #	219

Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.0	N/A		
396.8	397.4	0.9985	Correlation Coefficient	0.999969
200.2	198.7	1.0075		
100.3	99.0	1.0130	Slope	0.997854
			Intercept	0.907083



Crescent Heights NOx Calibration



July 29, 2008

Calibration Report

Parameter **THC**

Air Monitoring Network **Palliser Airshed**

FOCUS AIR QUALITY MONITORING

Station Information

Calibration Date	July 30 / 2008	Previous Calibration	June 25, 2008
Station Number	101	Station Location	Crescent Heights

Reason: **Routine** | Install | Removal | Other:

Start Time (MST)	9:31	End Time (MST)	11:54
Barometric Pressure	0.9 ATM	Station Temperature	20.0 Deg C
Calibrator	SABIO	Serial Number	3750708
Cal Gas Concentration	708 ppm CH_4 / 299 ppm C_3H_8	Cal Gas Expiry Date	1/25/2009
Cal Gas CH4 equiv	1530.25 ppm	Cal Gas Cylinder #	LL-41839
DACS make	Focus AP1000	DACS serial No.	45270
DACS voltage range	0 - 10 volt	DACS channel #	9
	Before		After
Calculated slope	0.997023	Calculated slope	1.006488
Calculated intercept	0.115626	Calculated intercept	0.097782

Analyzer make	TEI 51C-LT	Analyzer serial # 0407505596

	before		after	
Concentration range	0 - 50	ppm	0 - 50	ppm
THC sample pressure	5.74	PSI	5.74	PSI
THC span counts	19864	raw	19864	raw
THC zero counts	1478	raw	1478	raw
V Bias	-326	Volts	-326	Volts

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)
3020	0.00	0.00	0.01	N/A
3021	80.10	39.53	39.26	1.0069
3021	40.20	20.10	19.71	1.0194
3021	10.10	5.10	4.94	1.0321
3020	0.00	0.00	0.01	As Found Zero
3021	80.10	39.53	39.26	As Found Span
			Average Correction Factor	1.0195

Calculated value of As Found Response: 39.249 ppm Percent Change of As Found: 0.7%

	before calibration		after calibration	
Auto zero	0.11	ppm	0.10	ppm
Auto span	24.64	ppm	24.38	ppm

Notes: No adjustments made…

Calibration Performed By: Brad Moyles

Calibration Summary

Parameter	THC
Air Monitoring Network	Palliser Airshed

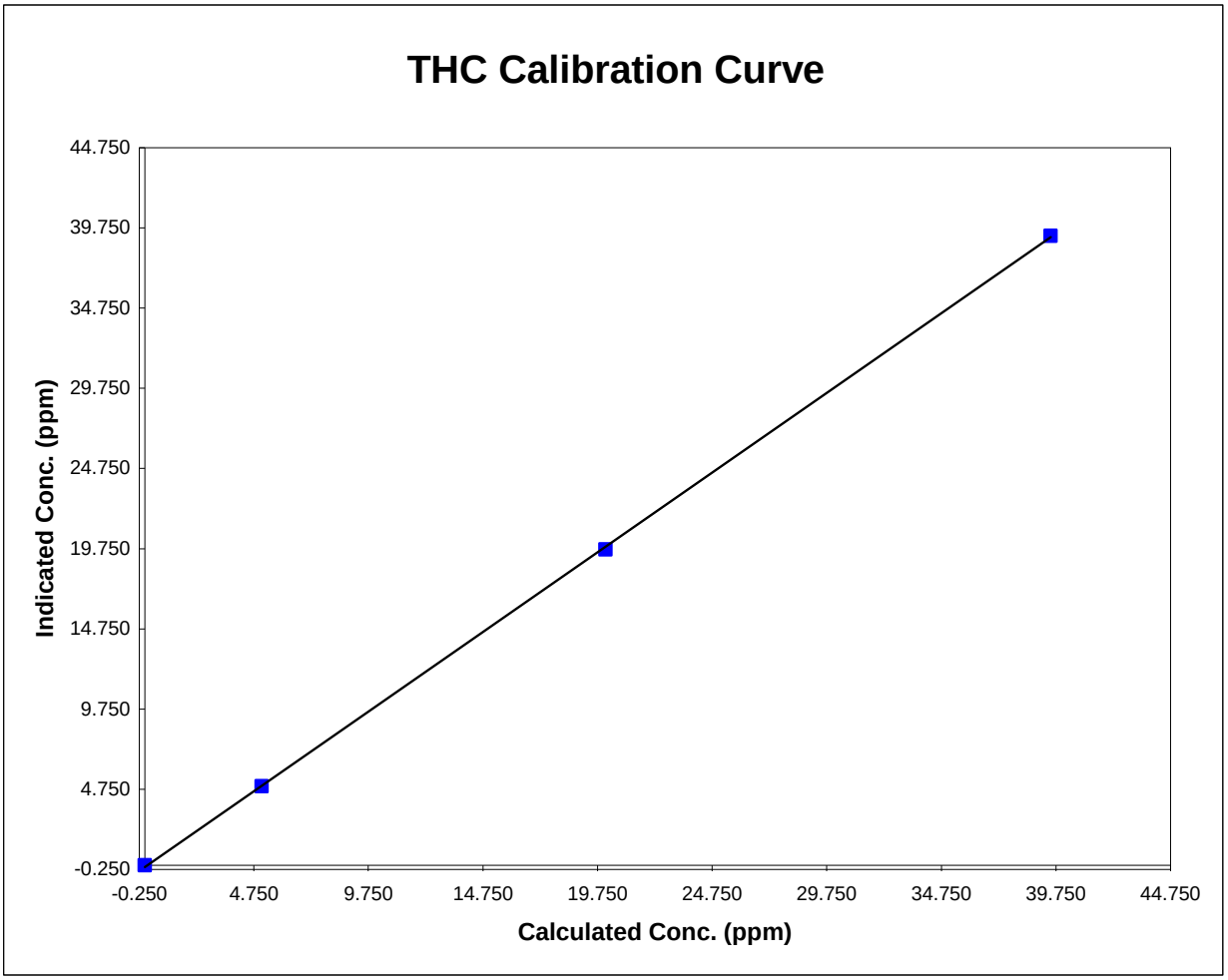
FOCUS AIR QUALITY MONITORING

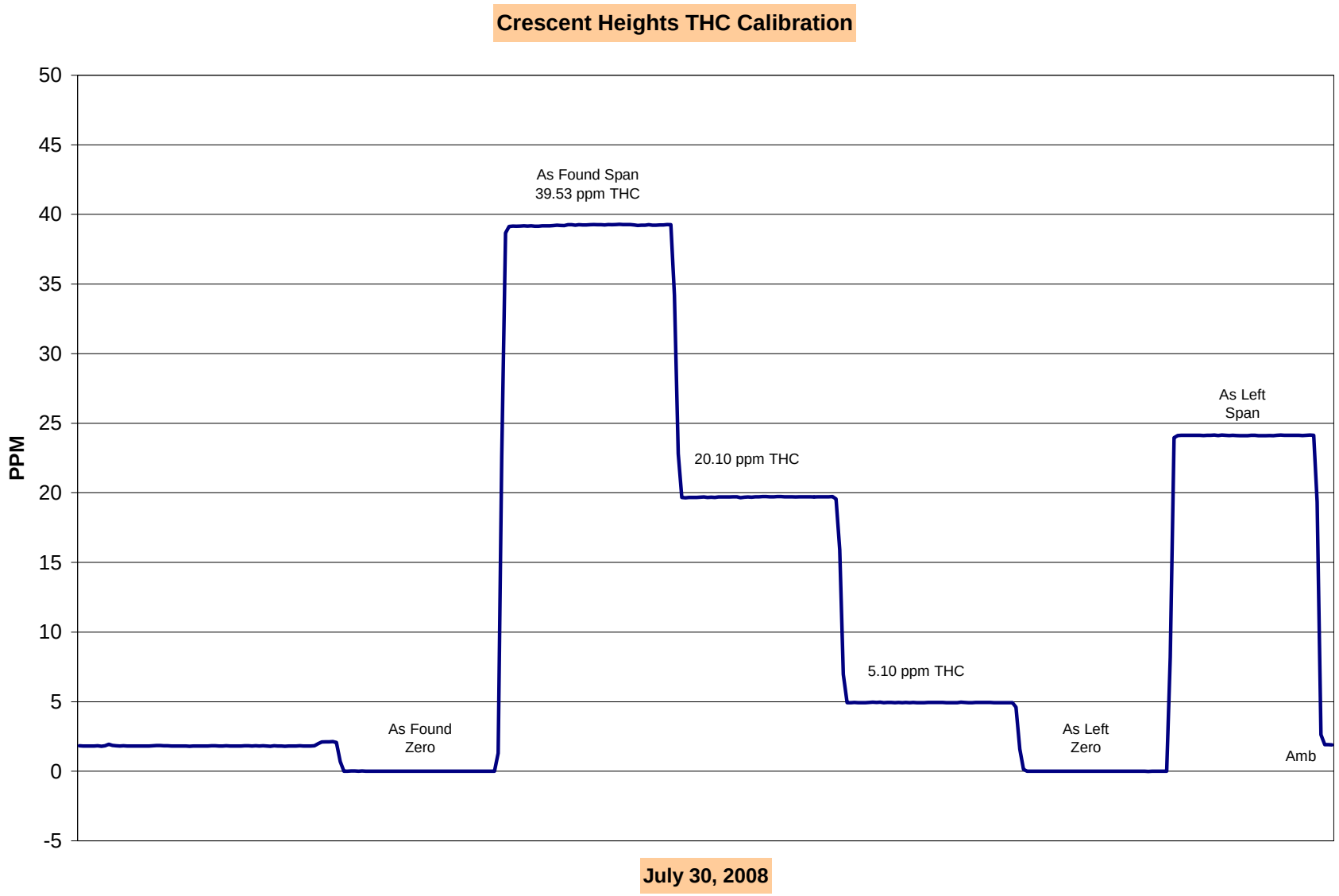
Station Information

Calibration Date	July 30 / 2008	Previous Calibration	June 25, 2008
Station Number	101	Station Location	Crescent Heights
Start Time (MST)	9:31	End Time (MST)	11:54
Analyzer make/model	TEI 51C-LT	Analyzer serial #	0407505596

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	0.006	N/A		
39.526	39.256	1.0069	Correlation Coefficient	0.999954
20.095	19.712	1.0194		
5.099	4.941	1.0321	Slope	1.006488
			Intercept	0.097782




Crescent Heights THC Calibration
50
45
40
35
30
25
20
15
10
5
0
-5
PPM
As Found Span
39.53 ppm THC
20.10 ppm THC
5.10 ppm THC
As Left
Span
As Found
Zero
As Left
Zero
Amb
July 30, 2008

Calibration Report

Parameter	CO
Air Monitoring Network	**Palliser**

FOCUS AIR QUALITY MONITORING

Station Information

Calibration Date	July 30, 2008	Previous Calibration	June 25, 2008
Station Number	101	Station Location	Crescent Heights

Reason: Routine | Install | Removal | Other:

Start Time (MST)	7:36	End Time (MST)	11:28
Barometric Pressure	0.90 ATM	Station Temperature	20.0 Deg C
Calibrator	SABIO 2010	Serial Number	3750708
Cal Gas Conc	3010 ppm	Cal Gas Expiry Date	April 1 / 2010
		Cal Gas Cylinder #	ALM035956
DACS make	Focus AP1000	DACS serial No.	45270
DACS voltage range	0 - 1 volt	DACS channel #	11
	Before		After
Calculated slope	0.998091	Calculated slope	0.991484
Calculated intercept	0.032414	Calculated intercept	-0.067859

Analyzer make	TEI Model 48C	Analyzer serial # 436609887

	before		after	
Concentration range	0 - 50	ppm	0 - 50	ppm
CO coefficient	1.106		1.106	
CO bkg setting	4.025		4.050	
Lamp ratio	1.110767		1.110767	
Lamp intensity	199040	Hz	199174	Hz
Sample Flow	1.015	LPM	1.010	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)
3021	0.00	0.00	0.14	N/A
3020	40.10	39.44	39.90	0.9886
3020	20.20	20.00	20.17	0.9913
3021	10.10	10.03	10.13	0.9898
3021	0.00	0.00	0.14	0.0000
3020	40.10	39.44	39.89	0.9888
			Average Correction Factor	0.9899

Calculated value of As Found Response: 39.706 ppm Percent Change of As Found: -0.7%

	before calibration		after calibration	
Auto zero	-0.04	ppm	0.11	ppm
Auto span	19.58	ppm	19.75	ppm

Notes: No Adjustments Made

Calibration Performed By: Brad Moyles

Calibration Summary

Parameter	CO
Air Monitoring Network	Palliser

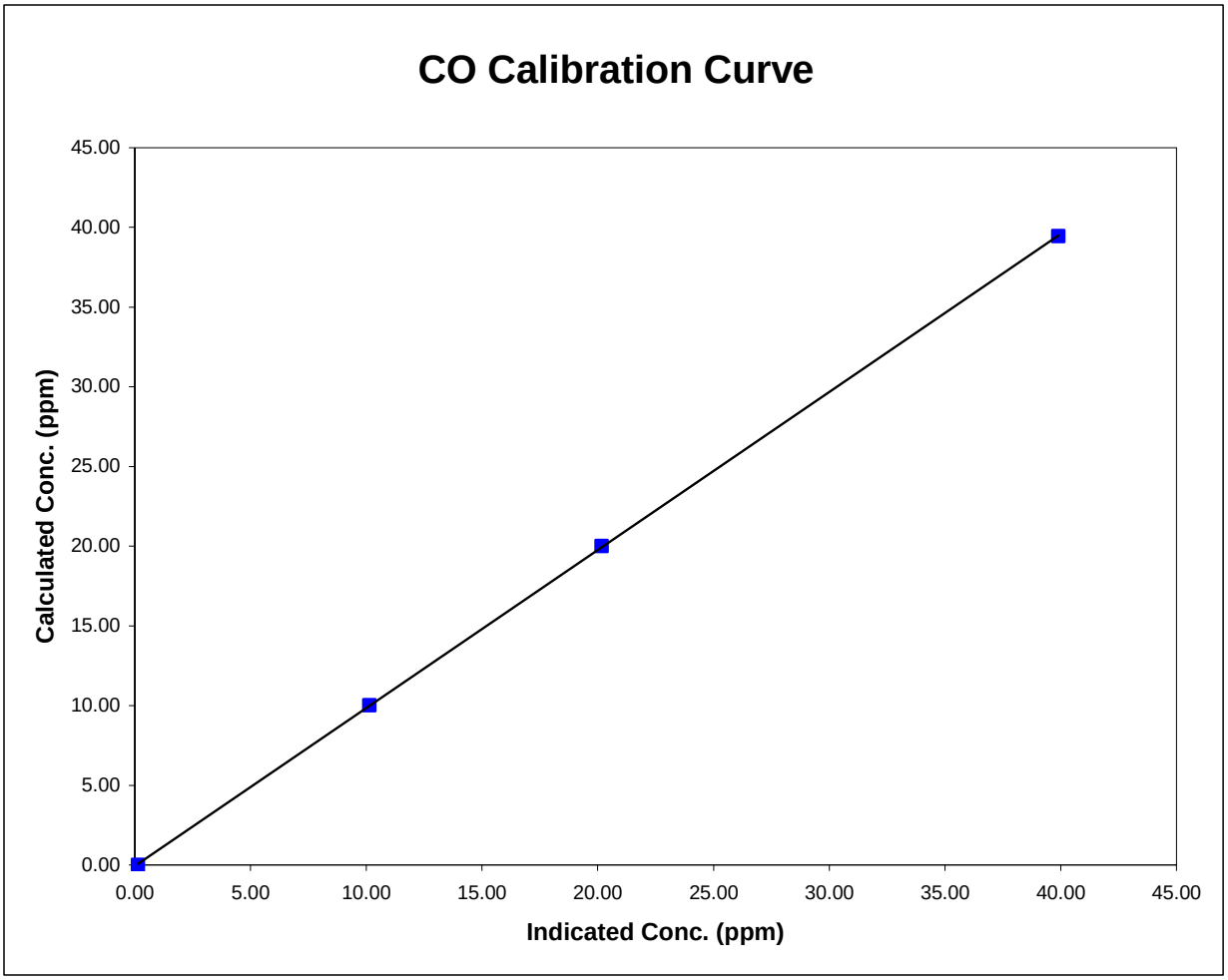
FOCUS AIR QUALITY MONITORING

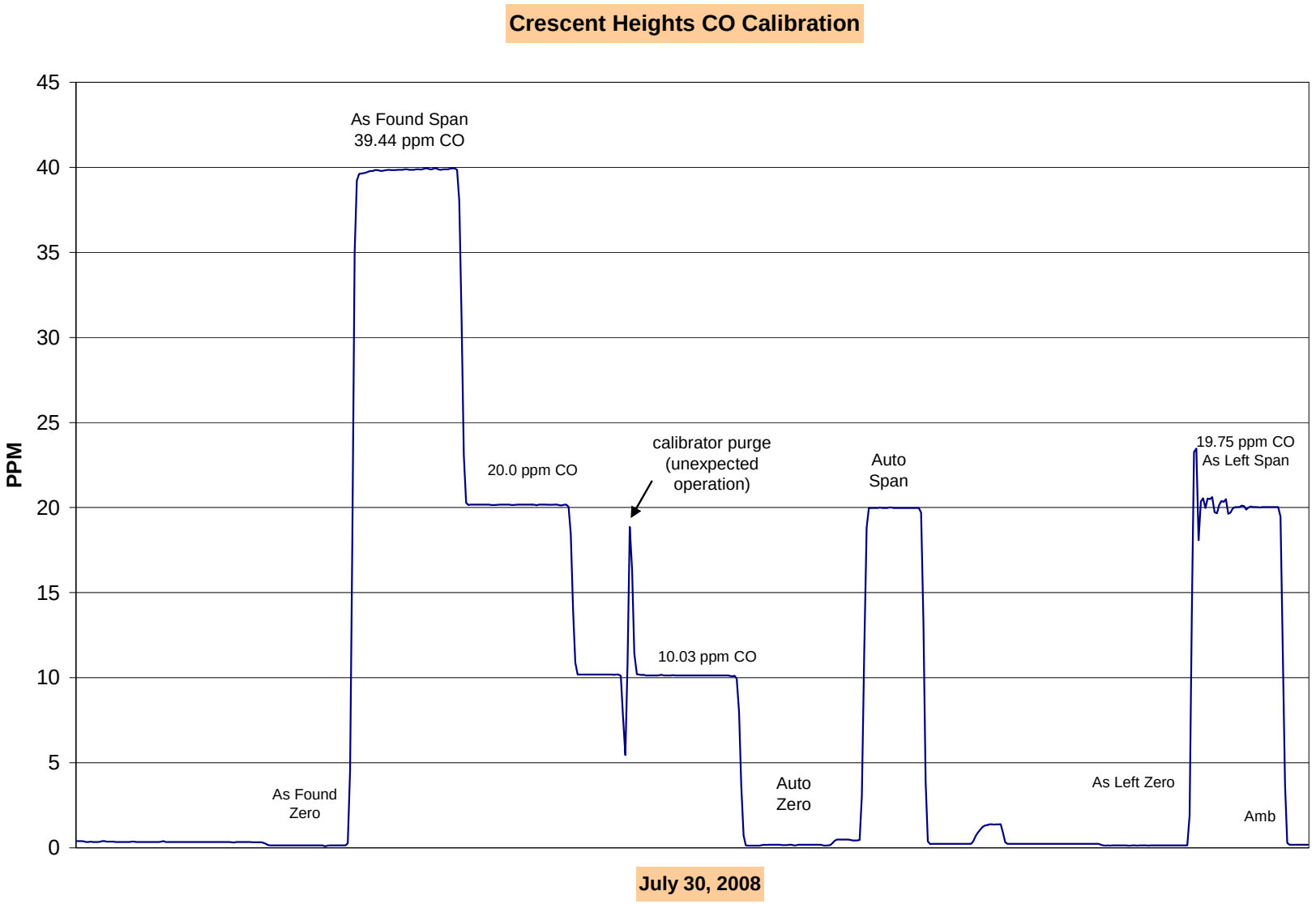
Station Information

Calibration Date	July 30, 2008	Previous Calibration	June 25, 2008
Station Number	101	Station Location	Crescent Heights
Start Time (MST)	7:36	End Time (MST)	11:28
Analyzer make/model	TEI Model 48C	Analyzer serial #	436609887

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.00	0.14	N/A		
39.44	39.90	0.9886	Correlation Coefficient	0.999984
20.00	20.17	0.9913		
10.03	10.13	0.9898	Slope	0.991484
			Intercept	-0.067859




Crescent Heights CO Calibration
PPM
45
40
35
30
25
20
15
10
5
0
As Found Span
39.44 ppm CO
20.0 ppm CO
calibrator purge
(unexpected
operation)
10.03 ppm CO
Auto
Span
19.75 ppm CO
As Left Span
As Found
Zero
Auto
Zero
As Left Zero
Amb
July 30, 2008

Calibration Report

FOCUS AIR QUALITY MONITORING

Parameter	O3
Air Monitoring Network	PAS

Station Information

Calibration Date	July 25 / 2008	Previous Calibration	June 25 / 2008
Station Number	110	Station Location	Rover - Brooks

Reason: Routine | Install | Removal | Other:

Start Time (MST)	13:00	End Time (MST)	15:20
Barometric Pressure	27.3 inches Hg	Station Temperature	20.0 Deg C
Calibrator	Environics 6103	Serial Number	2844
Cal Gas Concentration	NA	Cal Gas Expiry Date	NA
DACS make	Focus AP1000	DACS serial No.	45265
DACS voltage range	0 - 1 volt	DACS channel #	7
	Before		After
Calculated slope	0.998519	Calculated slope	0.964066
Calculated intercept	-4.934128	Calculated intercept	-2.391081
Analyzer make	API Model 400E	Analyzer serial #	331

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Offset	-10.5	ppb	-10.5	ppb
Slope	0.988		0.988	
Lamp measure	4139.5	mV	4094.1	mV
Lamp Reference	4143.5	mV	4098.6	mV
Pressure	27.0	inches Hg	26.9	inches Hg
Sample Flow	552	ccm	514	ccm
Sample temp	38.0	Deg C	41.1	Deg C

Calibration Data

Dilution air flow rate (cc/min)	Ozone Set Point	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4996	0.0	0.0	1.3	N/A
4996	300(1.1v)	389.4	405.1	0.9613
4996	200(0.58v)	193.7	206.1	0.9401
4996	100(0.31v)	92.4	98.1	0.9416
4996	0.0	0.0	1.3	As Found Zero
4996	300.0	389.4	405.1	As Found Span
			Average Correction Factor	0.9476

Calculated value of As Found Response: 398.2 ppm Percent Change of As Found: -1.7%

	before calibration		after calibration	
Auto zero	-0.2	ppb	3.3	ppb
Auto span	393.0	ppb	223.6	ppb

Notes: No adjustents were made…

Calibration Performed By: Lenin Flores / Brad Moyles

Calibration Summary

Parameter	O3
Air Monitoring Network	PAS

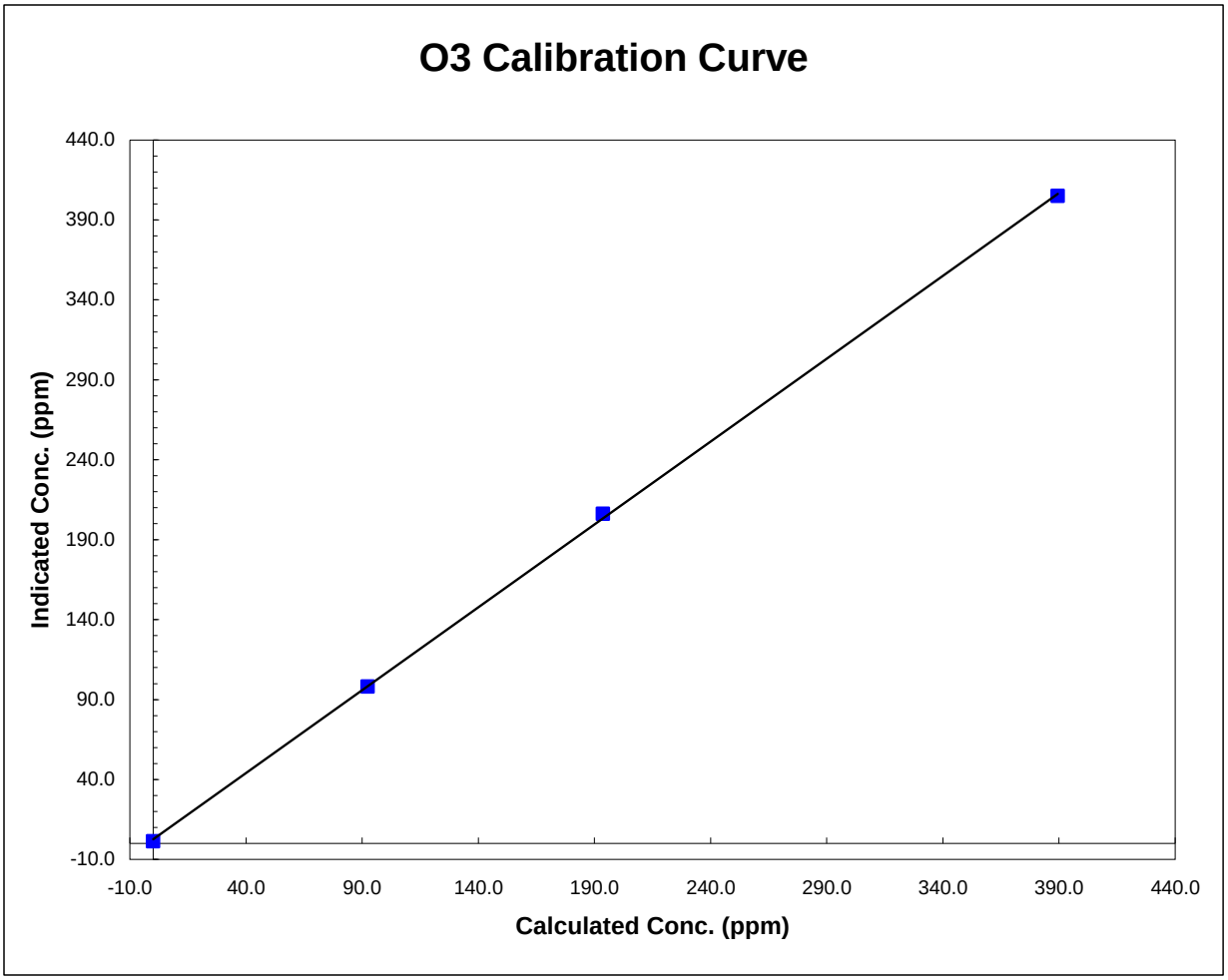
FOCUS AIR QUALITY MONITORING

Station Information

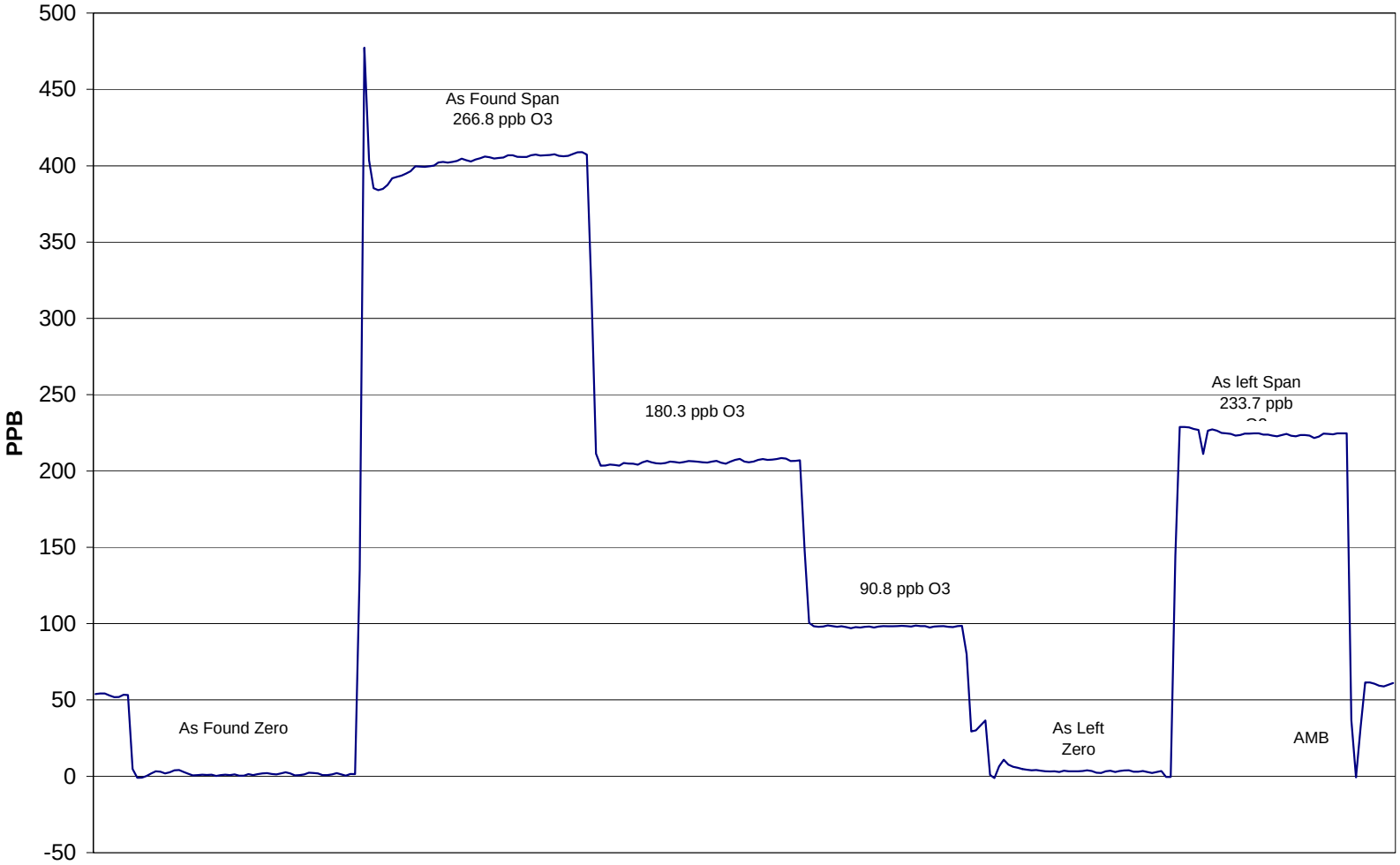
Calibration Date	July 25 / 2008	Previous Calibration	June 25 / 2008
Station Number	110	Station Location	Rover - Brooks
Start Time (MST)	13:00	End Time (MST)	15:20
Analyzer make/model	API Model 400E	Analyzer serial #	331

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
389.4	405.1	0.9613		
193.7	206.1	0.9401	Correlation Coefficient	0.999888
92.4	98.1	0.9416		
0.0	1.3	N/A	Slope	0.964066
			Intercept	-2.391081



Portable-Brooks O_3 Calibration



July 25, 2008

Calibration Report

FOCUS AIR QUALITY MONITORING

Parameter	SO2
Air Monitoring Network	PAS

Station Information

Calibration Date	July 21 / 2008	Previous Calibration	May 28, 2007
Station Number	110	Station Location	Rover - Brooks

Reason: Routine | Install | Removal | Other:

Start Time (MST)	11:10	End Time (MST)	13:57
Barometric Pressure	27.80 inches Hg	Station Temperature	22.0 Deg C
Calibrator	Environics 6103	Serial Number	2844
Cal Gas Concentration	50.3 ppm	Cal Gas Expiry Date	27-Jul-09
Gas Cert Reference	LL-16136		
DACS make	Focus AP1000	DACS serial No.	45265
DACS voltage range	0 - 10 volt	DACS channel #	5
	Before		After
DACS Scale High	500	DACS slope	500
DACS Scale Low	0	DACS intercept	0
Calculated slope	0.989299	Calculated slope	0.975451
Calculated intercept	6.939647	Calculated intercept	7.446052

Analyzer make	TEI Model 43A		Analyzer serial #	NA

	before		after	
Concentration range	0-500	ppb	0-500	ppb
SO2 zero pot	1.5		1.5	
SO2 span pot	3.75		5.44	
Analyzer flow	0.5	LPM	0.5	LPM
UV Lamp voltage	857	V	858	V
Vacuum	22	in Hg	22	in Hg

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)
5030	0.00	0.0	-0.7	N/A
5030	40.20	398.8	405.3	0.9839
5037	20.20	200.9	191.8	1.0477
5031	10.10	100.8	91.2	1.1045
5030	0.00	0.0	-0.7	As found zero
5030	39.93	396.2	362.7	As found span
			Average Correction Factor	1.0454

Calculated value of As Found Response: 366.491 ppm Percent Change of As Found: 7.5%

	before calibration		after calibration	
Auto zero	-7.0	ppm	-1.2	ppm
Auto span	203.9	ppm	219.7	ppm

Notes:

Calibration Performed By: Lenin Flores / Brad Moyles

Calibration Summary

Parameter	SO2
Air Monitoring Network	PAS

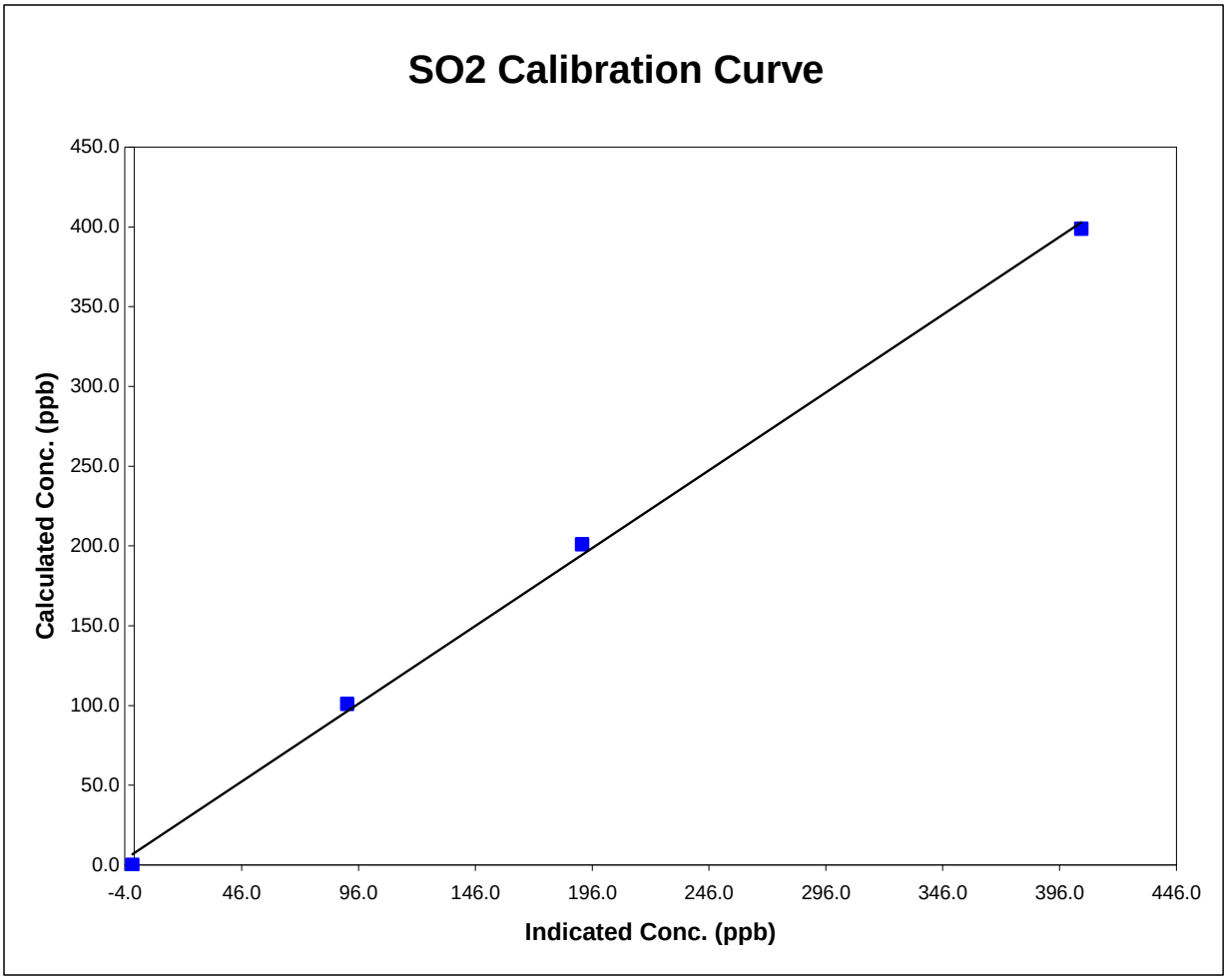
FOCUS AIR QUALITY MONITORING

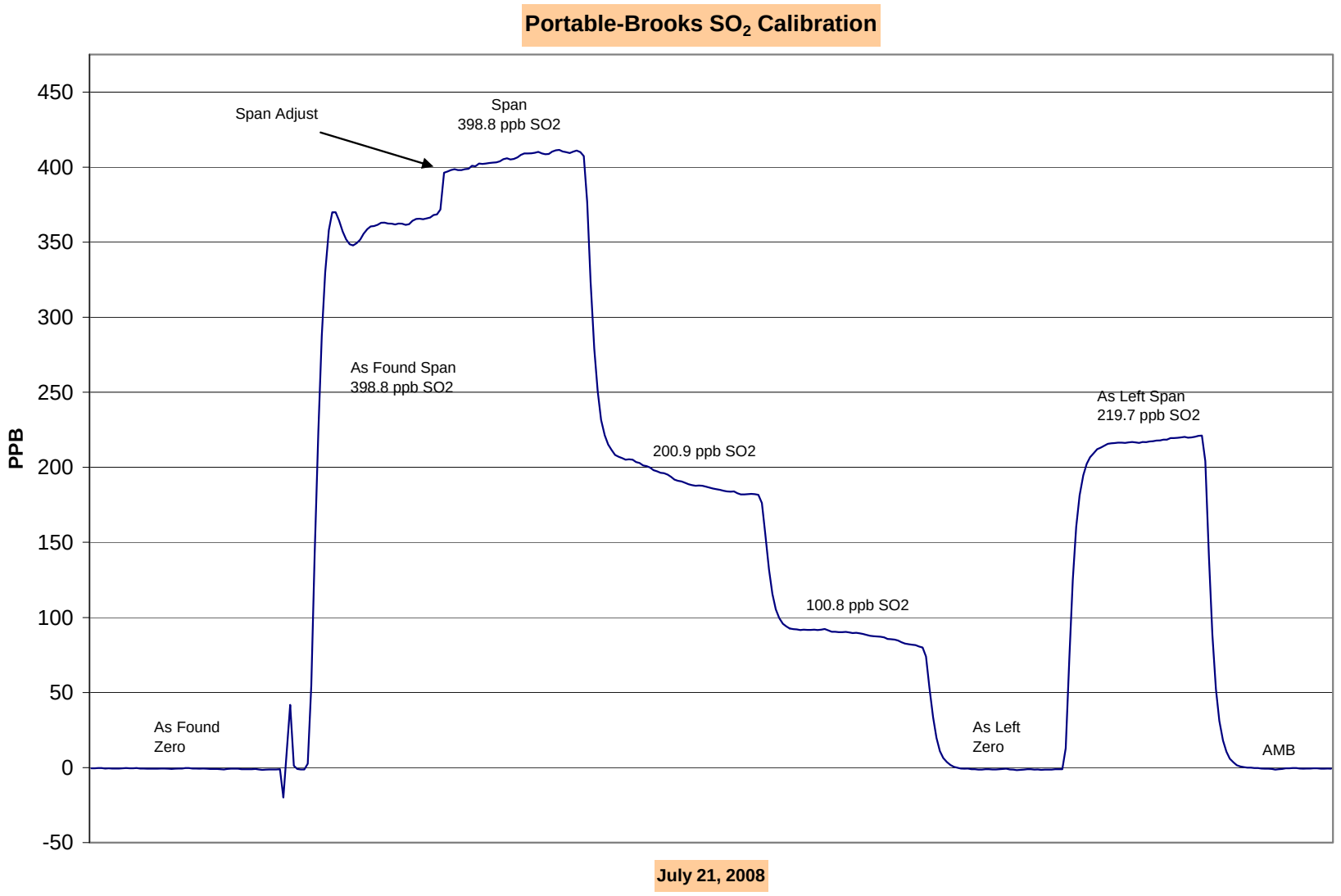
Station Information

Calibration Date	July 21 / 2008	Previous Calibration	May 28, 2007
Station Number	110	Station Location	Rover - Brooks
Start Time (MST)	11:10	End Time (MST)	13:57
Analyzer make/model	TEI Model 43A	Analyzer serial #	NA

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.7	N/A		
398.8	405.3	0.9839	Correlation Coefficient	0.998605
200.9	191.8	1.0477		
100.8	91.2	1.1045	Slope	0.975451
			Intercept	7.446052




Portable-Brooks SO2 Calibration
PPB
450
400
350
300
250
200
150
100
50
0
-50
Span Adjust
Span
398.8 ppb SO2
As Found Span
398.8 ppb SO2
200.9 ppb SO2
100.8 ppb SO2
As Left Span
219.7 ppb SO2
As Found
Zero
As Left
Zero
AMB
July 21, 2008

Calibration Report

FOCUS AIR QUALITY MONITORING

Parameter	H2S
Air Monitoring Network	PAS

Station Information

Calibration Date	July 21, 2008	Previous Calibration	June 19 / 2008
Station Number	110	Station Location	Brooks Rover

Reason: Routine | Install | Removal | Other:

Start Time (MST)	9:30	End Time (MST)	12:05
Barometric Pressure	27.8 inches Hg	Station Temperature	22.0 Deg C
Calibrator	SABIO 2010	Serial Number	3750708
Cal Gas Concentration	5.12 ppm	Cal Gas Expiry Date	15-Nov-05
Gas Cert Reference	BLM003489		
DACS make	Focus AP1000	DACS serial No.	45265
DACS voltage range	0 - 10 volt	DACS channel #	6
	Before		After
DACS Scale High	100	DACS slope	100
DACS Scale Low	0	DACS intercept	0
Calculated slope	0.965845	Calculated slope	0.986814
Calculated intercept	-0.257886	Calculated intercept	-0.609657

Analyzer make	TEI Model 43A	Analyzer serial # 43A-25575-221

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
H2S zero pot	9.60		9.60	
H2S span pot	7.35		7.35	
Analyzer flow	0.900	LPM	0.900	LPM
UV Lamp voltage	924	V	924	V
Vacuum	21.5	in Hg	21.5	in Hg

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)
4030	0.00	0.0	1.2	N/A
4030	70.20	87.7	89.6	0.9785
4030	40.20	50.6	51.8	0.9771
4032	10.10	12.8	13.0	0.9855
3996	0.00	0.0	1.2	As found zero
3996	69.89	88.0	89.6	As found span
			Average Correction Factor	0.9803

Calculated value of As Found Response: 85.13 ppm Percent Change of As Found: 3.3%

	before calibration		after calibration	
Auto zero		ppm	1.3	ppm
Auto span		ppm	45.7	ppm

Notes: No adjustments were performed…

Calibration Performed By: Lenin Flores / Brad Moyles

Calibration Summary

Parameter	H2S
Air Monitoring Network	PAS

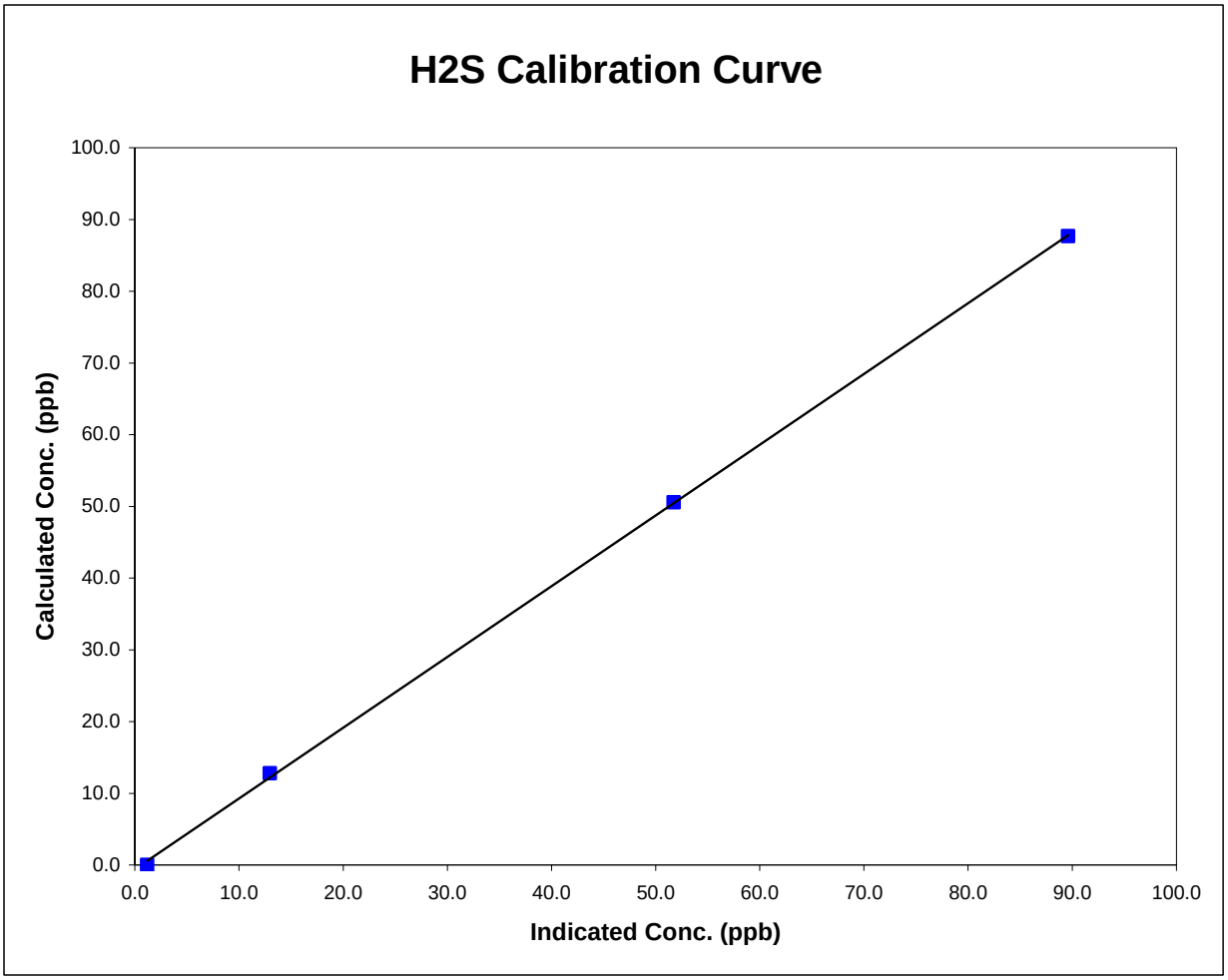
FOCUS AIR QUALITY MONITORING

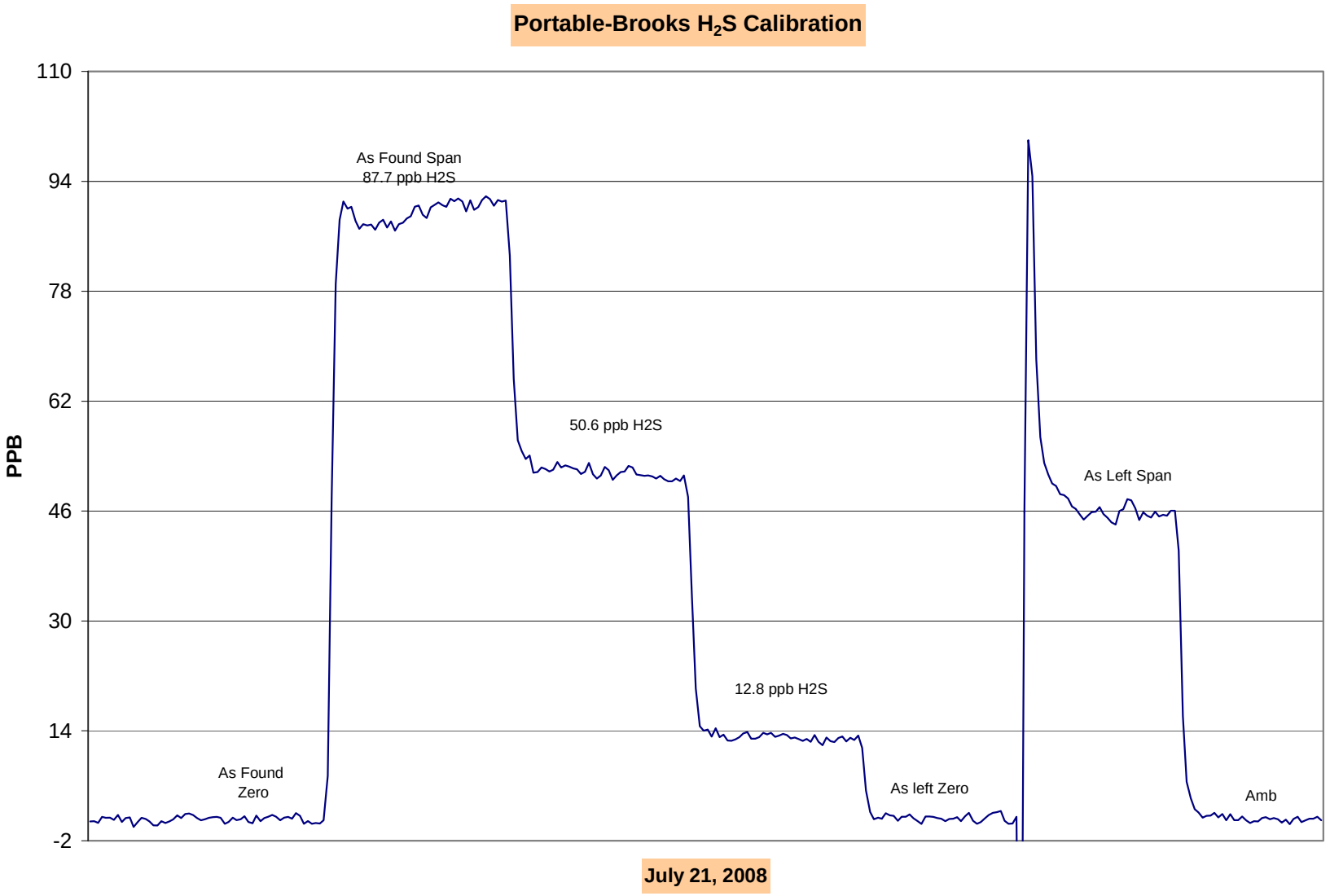
Station Information

Calibration Date	July 21, 2008	Previous Calibration	June 19 / 2008
Station Number	110	Station Location	Brooks Rover
Start Time (MST)	9:30	End Time (MST)	12:05
Analyzer make/model	TEI Model 43A	Analyzer serial #	43A-25575-221

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	1.2	N/A		
87.7	89.6	0.9785	Correlation Coefficient	0.999853
50.6	51.8	0.9771		
12.8	13.0	0.9855	Slope	0.986814
			Intercept	-0.609657




Portable-Brooks H_2S Calibration
110
94
78
62
46
30
14
-2
PPB
As Found Span
87.7 ppb H2S
50.6 ppb H2S
12.8 ppb H2S
As left Zero
As Left Span
Amb
As Found
Zero
July 21, 2008