

















**WCAS - Power**  
**Summary of Hourly Averages**

**PM2.5 (PM<sub>2.5</sub>) - µg/m<sup>3</sup>**  
**December 2014**

Maximum Value: 30.11 µg/m <sup>3</sup> on Dec 19 16:00		Maximum Daily Average: 13.15 µg/m <sup>3</sup> on Dec 19		Hours in Service: 744																						
Minimum Value: 0.0 µg/m <sup>3</sup> on Dec 20 11:00		Minimum Daily Average: 0.32 µg/m <sup>3</sup> on Dec 23		Hours of Data: 742																						
Maximum Diurnal Average: 4.77 µg/m <sup>3</sup> at hour 17		Minimum Diurnal Average: 3.46 µg/m <sup>3</sup> at hour 4		Hours of Missing Data: 2																						
Monthly Average: 4.027 µg/m <sup>3</sup>		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.2 Q <sub>1</sub> = 1.3 Median = 3.2 Q <sub>3</sub> = 5.5 P <sub>90</sub> = 8.9 P <sub>99</sub> = 16.1		Hours of Calibration: 0																						
				Percent Operational Time: 99.7																						
Day	Hourly Period Ending At																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	4.5	4.1	3.5	3.6	3.4	2.7	3.9	2.7	3.6	3.7	4.0	3.5	3.1	2.9	2.7	2.9	2.4	4.1	4.0	5.9	7.2	7.1	6.0	5.8	4.05	7.21
2-Dec	4.8	4.8	5.8	5.4	5.7	5.2	5.3	4.2	3.6	3.2	3.1	2.6	2.6	2.3	2.4	1.3	1.8	1.8	2.7	3.2	3.3	3.1	3.1	2.7	3.50	5.83
3-Dec	2.5	2.5	2.4	2.5	3.7	3.7	3.6	4.2	3.2	2.4	2.6	2.1	2.2	2.6	3.9	5.9	3.6	3.4	3.4	4.1	3.9	4.3	4.0	6.7	3.47	6.69
4-Dec	5.5	6.8	8.1	6.7	5.3	4.6	5.4	5.1	4.4	5.4	4.8	3.8	4.4	4.9	4.7	5.8	5.1	4.7	5.2	6.6	6.6	6.4	8.0	9.0	5.72	8.99
5-Dec	8.2	9.5	12.0	9.7	9.4	8.3	8.9	7.2	7.3	8.7	9.0	7.6	9.4	6.7	8.1	9.5	10.3	8.9	7.3	6.0	4.5	4.4	4.1	4.8	7.91	11.99
6-Dec	4.5	5.6	4.9	5.7	5.3	6.1	6.3	7.9	9.1	9.7	8.1	6.9	8.5	8.6	8.1	11.7	17.0	12.8	10.8	14.7	15.7	16.3	13.3	11.4	9.54	17.00
7-Dec	10.9	10.5	10.4	9.6	8.9	7.9	7.3	4.5	3.2	3.6	2.7	2.5	2.8	2.5	3.5	4.8	7.9	7.0	10.1	7.4	4.8	6.4	7.7	7.9	6.45	10.93
8-Dec	8.0	8.0	6.6	2.9	2.7	4.6	4.4	4.1	5.2	3.9	5.7	3.6	4.4	5.0	2.5	2.6	3.5	3.2	2.5	4.2	3.5	6.5	4.4	4.5	4.44	8.03
9-Dec	4.5	3.6	1.9	3.2	1.6	1.5	1.7	0.9	0.8	2.0	1.9	2.1	1.2	1.0	1.1	1.3	0.9	1.0	3.2	2.2	1.9	3.7	3.8	3.0	2.08	4.53
10-Dec	2.6	2.9	2.2	2.2	1.0	1.3	0.8	0.8	1.1	1.1	1.6	1.7	0.4	1.3	0.7	1.5	1.9	2.2	0.9	1.3	1.5	2.0	1.5	2.5	1.54	2.95
11-Dec	2.0	2.0	2.0	1.5	2.7	8.5	6.8	5.4	3.0	2.7	2.7	3.2	1.9	1.8	4.0	4.5	4.8	4.8	2.0	4.4	1.0	0.1	3.2	1.1	3.16	8.45
12-Dec	1.0	1.8	4.0	1.8	1.9	2.4	2.4	2.8	2.7	4.3	4.1	3.8	4.5	4.7	3.5	4.1	4.5	4.7	4.6	5.6	6.1	11.4	13.1	14.7	4.77	14.65
13-Dec	9.8	6.2	6.5	6.5	10.7	12.1	9.7	7.7	6.8	6.9	8.4	9.5	9.3	5.9	5.1	4.9	6.0	5.7	4.1	3.4	3.2	2.6	1.7	2.1	6.45	12.11
14-Dec	1.8	2.4	2.8	5.4	4.8	5.1	4.8	4.1	4.5	5.7	4.6	5.4	4.7	4.3	4.5	3.9	4.0	4.8	3.4	3.6	4.2	4.2	3.1	4.8	4.21	5.71
15-Dec	4.1	3.8	3.9	3.0	3.2	3.9	3.9	5.3	5.3	6.2	6.3	5.9	4.8	3.6	3.6	2.3	2.5	2.1	1.7	2.5	2.8	2.2	2.1	1.8	3.62	6.33
16-Dec	1.6	2.3	1.7	1.5	2.0	2.1	3.1	2.4	2.2	2.9	2.8	2.8	3.3	2.6	2.4	2.7	2.4	2.5	2.2	3.1	2.3	3.2	2.9	3.1	2.51	3.28
17-Dec	3.0	3.4	3.9	3.5	3.0	3.7	3.6	3.8	4.8	4.2	3.8	4.0	4.9	6.0	7.5	8.0	7.3	8.5	7.5	6.8	9.2	9.3	6.9	4.6	5.47	9.34
18-Dec	3.6	5.5	6.8	7.2	7.7	10.5	11.2	9.4	11.3	12.8	13.2	15.8	13.7	16.5	9.6	2.9	5.7	8.2	6.1	5.0	7.2	7.5	7.3	5.9	8.78	16.48
19-Dec	5.0	5.2	5.5	3.8	3.3	7.9	12.9	14.2	12.9	11.7	14.0	15.0	18.0	20.3	22.6	30.1	29.7	25.7	15.8	11.7	10.1	7.7	6.9	5.8	13.15	30.11
20-Dec	7.3	4.9	7.3	6.5	4.6	2.4	2.5	4.9	2.5	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	2.0	0.1	0.0	0.8	0.9	0.0	2.06	7.32
21-Dec	1.1	0.0	0.2	0.9	4.7	9.2	8.8	9.4	8.9	9.1	9.3	8.6	8.5	7.7	7.4	6.7	4.4	4.9	2.8	0.0	0.0	0.0	0.0	0.0	4.69	9.41
22-Dec	1.7	2.1	2.8	2.2	1.0	0.5	0.6	0.6	1.0	1.2	1.1	0.8	0.5	0.3	0.7	1.2	1.4	1.0	1.4	4.1	1.6	0.6	0.3	0.5	1.22	4.11
23-Dec	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.2	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	1.0	0.8	1.2	0.1	0.32	1.80
24-Dec	1.0	1.1	1.1	0.7	0.3	0.3	0.2	0.0	0.3	0.2	0.2	0.2	0.6	1.6	2.0	2.9	3.1	3.0	3.5	5.6	5.5	3.3	1.4	1.59	5.64	
25-Dec	1.3	0.0	2.9	2.6	2.3	3.0	3.2	1.8	2.3	2.2	4.2	5.5	5.7	7.2	8.4	9.2	9.4	9.0	9.6	8.5	4.4	2.8	2.8	3.4	4.66	9.62
26-Dec	2.3	2.1	0.6	0.0	UC	UC	5.2	2.7	0.9	3.4	6.2	4.7	0.2	0.1	0.0	0.9	1.1	0.9	1.2	1.3	0.2	0.0	0.1	0.1	1.55	6.23
27-Dec	0.0	0.0	0.1	0.7	1.0	0.6	0.6	0.9	0.5	1.3	1.4	1.5	1.1	0.9	0.8	0.9	1.9	3.0	1.1	1.2	1.8	3.6	3.5	3.2	1.33	3.62
28-Dec	5.9	10.8	11.0	5.2	4.2	3.6	3.8	3.8	5.0	4.8	3.8	4.8	3.8	2.9	3.8	3.4	3.4	2.3	2.5	2.6	1.9	2.2	1.9	1.7	4.13	10.99
29-Dec	1.1	1.5	2.0	1.7	1.5	2.0	1.5	0.6	0.3	1.3	0.6	0.0	0.0	0.0	0.5	1.0	0.8	0.0	0.7	0.0	0.2	0.1	0.9	2.7	0.88	2.70
30-Dec	2.3	0.0	0.2	1.3	0.0	0.0	0.0	0.0	0.9	0.0	0.4	0.0	0.4	0.5	1.3	1.1	0.0	0.7	0.4	0.0	0.5	1.7	0.6	2.3	0.60	2.34
31-Dec	0.0	0.0	0.0	0.0	0.7	1.0	0.0	0.4	0.0	0.3	0.7	0.0	0.0	0.0	1.2	1.5	1.2	1.4	2.8	2.6	1.2	1.7	1.5	1.0	0.80	2.82
																								Diurnal Average		
																								Diurnal Maximum		
3.63 3.66 3.97 3.46 3.55 4.15 4.27 3.94 3.82 4.14 4.23 4.14 4.01 3.99 4.07 4.48 4.77 4.61 4.08 4.05 3.80 4.13 3.87 3.82																										
10.93 10.77 11.99 9.73 10.67 12.11 12.87 14.21 12.92 12.76 13.96 15.81 17.98 20.25 22.62 30.11 29.66 25.66 15.79 14.71 15.68 16.26 13.31 14.65																										
UO - Unstable Operation Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 80 ul/m <sup>3</sup> 24-hr 30 ul/m <sup>3</sup>																										



**WEST CENTRAL AIRSHED SOCIETY**

**CONTINUOUS AMBIENT AIR QUALITY  
MONITORING PROGRAM  
MONTHLY REPORT  
METEOROLOGICAL DATA**

**AMS 907  
POWERS  
DECEMBER 2014**

Operations and Data Collection by:  
West Central Airshed Society  
Drayton Valley, Alberta

QA/QC, Data Validation and Reporting by:  
West Central Airshed Society  
Drayton Valley, Alberta



**WCAS - Power**  
**Summary of Hourly Averages**

**External Temperature (ET) - C**  
**December 2014**

Maximum Value: 11.57 C on Dec 9 19:00		Maximum Daily Average: 5.70 C on Dec 10		Hours in Service: 744																							
Minimum Value: -20.3 C on Dec 30 03:00		Minimum Daily Average: -17.90 C on Dec 29		Hours of Data: 744																							
Maximum Diurnal Average: -3.36 C at hour 15		Minimum Diurnal Average: -7.25 C at hour 7		Hours of Missing Data: 0																							
Monthly Average: -5.592 C		Percentiles: P <sub>1</sub> = -19.6 P <sub>10</sub> = -12.5 Q <sub>1</sub> = -9.3 Median = -6.1 Q <sub>3</sub> = -1.7 P <sub>90</sub> = 2.3 P <sub>99</sub> = 9.1		Hours of Calibration: 0																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	-16.2	-15.6	-15.1	-15.4	-15.0	-14.7	-14.2	-14.6	-14.7	-14.2	-12.8	-11.0	-9.4	-8.6	-8.3	-9.0	-10.4	-11.2	-12.2	-12.1	-9.5	-9.1	-9.4	-9.4	-12.17	-8.32	
2-Dec	-9.2	-9.6	-8.9	-9.2	-9.4	-9.1	-10.6	-9.8	-10.0	-8.7	-8.4	-7.8	-7.4	-7.3	-7.0	-7.5	-8.8	-11.1	-11.2	-11.1	-10.9	-9.4	-8.6	-7.7	-9.10	-6.97	
3-Dec	-7.4	-6.6	-6.6	-6.6	-6.4	-6.1	-6.4	-6.5	-6.4	-6.1	-4.2	-2.9	-1.8	-1.3	-1.5	-2.3	-3.3	-3.9	-4.2	-3.9	-4.5	-4.3	-6.1	-5.1	-4.77	-1.28	
4-Dec	-5.0	-6.2	-6.6	-6.5	-6.1	-7.2	-8.3	-9.4	-9.7	-9.4	-7.1	-5.7	-4.8	-4.7	-4.1	-5.6	-6.1	-7.6	-8.4	-8.6	-8.1	-8.2	-8.8	-9.1	-7.12	-4.13	
5-Dec	-9.6	-10.1	-10.1	-11.1	-11.7	-12.5	-12.2	-12.3	-12.9	-12.7	-10.8	-8.8	-5.4	-4.6	-5.7	-7.3	-7.7	-8.2	-8.0	-7.7	-7.6	-7.6	-7.9	-8.3	-9.21	-4.61	
6-Dec	-8.6	-8.4	-8.3	-7.9	-7.9	-9.1	-9.7	-10.1	-10.1	-10.0	-9.4	-8.9	-8.7	-8.3	-8.2	-9.0	-9.5	-9.7	-9.8	-9.2	-8.5	-7.4	-6.6	-6.2	-8.73	-6.20	
7-Dec	-5.8	-5.4	-5.0	-5.1	-5.2	-5.4	-4.8	-3.0	-3.2	-2.4	-1.2	0.0	-0.2	0.3	0.7	0.3	-1.3	-4.9	-7.6	-8.7	-9.0	-8.9	-8.9	-8.6	-4.32	0.71	
8-Dec	-8.9	-9.2	-8.4	-6.4	-7.6	-8.7	-10.1	-9.4	-10.0	-10.2	-9.1	-7.2	-7.3	-3.9	-4.1	-4.6	-5.8	-6.8	-7.5	-7.0	-8.2	-9.1	-8.0	-7.8	-7.72	-3.85	
9-Dec	-6.5	-2.5	0.3	2.1	2.5	3.0	3.5	2.0	1.6	1.6	2.4	2.5	4.3	5.1	6.4	9.2	9.3	9.3	11.6	11.3	10.5	9.5	9.8	9.9	4.94	11.57	
10-Dec	8.4	6.9	6.1	3.7	3.5	3.7	3.6	3.9	4.4	4.8	4.8	5.1	6.7	6.9	7.3	7.4	6.9	6.5	7.5	6.9	6.0	5.3	5.6	5.1	5.70	8.41	
11-Dec	4.7	5.6	5.5	4.5	1.8	0.2	3.2	4.7	7.5	7.6	7.7	8.6	8.9	8.5	7.0	6.1	4.3	4.7	4.8	4.8	5.4	6.3	6.0	5.9	5.60	8.93	
12-Dec	5.3	4.1	2.9	2.3	2.1	1.1	0.5	0.1	0.6	1.1	1.5	0.9	3.6	1.9	1.3	2.1	0.0	-1.9	-2.5	-2.8	-2.8	-2.6	-3.3	-4.8	0.45	5.35	
13-Dec	-5.5	-5.8	-5.8	-5.3	-4.3	-2.9	-1.5	-1.3	-1.0	-1.1	-0.5	0.5	1.0	1.5	1.9	2.4	0.8	0.0	-0.5	-0.9	-1.5	-1.6	-1.5	-1.9	-1.46	2.37	
14-Dec	-2.0	-2.4	-3.1	-4.1	-4.2	-4.7	-5.0	-6.0	-6.5	-6.2	-5.1	-3.9	-2.9	-2.0	-1.1	-0.3	-3.1	-6.6	-8.3	-9.2	-9.4	-9.5	-10.0	-8.6	-5.17	-0.33	
15-Dec	-8.6	-8.4	-8.4	-8.9	-9.2	-9.3	-8.4	-9.0	-9.6	-9.5	-7.6	-5.7	-4.5	-3.8	-3.9	-3.9	-4.9	-5.7	-6.8	-7.9	-8.4	-8.5	-9.0	-9.5	-7.47	-3.82	
16-Dec	-9.6	-9.8	-10.1	-10.1	-10.0	-9.2	-8.7	-7.9	-7.9	-7.5	-7.1	-6.3	-5.5	-4.8	-4.8	-5.3	-5.2	-5.3	-5.3	-5.1	-4.9	-4.7	-4.9	-4.9	-6.87	-4.74	
17-Dec	-4.9	-4.9	-4.9	-4.9	-5.0	-5.1	-5.1	-5.2	-5.5	-5.5	-5.6	-5.6	-5.7	-6.1	-6.0	-6.4	-6.8	-7.1	-7.6	-7.9	-7.8	-7.6	-8.0	-8.4	-6.15	-4.88	
18-Dec	-8.9	-9.3	-9.8	-10.8	-11.9	-12.4	-12.4	-12.0	-10.8	-10.6	-11.2	-8.9	-4.2	-2.8	-2.2	-2.7	-5.5	-7.6	-7.5	-7.6	-7.8	-8.7	-9.3	-8.4	-8.47	-2.23	
19-Dec	-7.8	-8.3	-8.1	-7.1	-7.2	-10.0	-11.9	-12.8	-13.0	-13.8	-13.7	-13.4	-12.5	-11.9	-10.7	-10.5	-10.1	-9.1	-8.3	-7.5	-6.5	-6.0	-5.1	-4.5	-9.58	-4.51	
20-Dec	-4.9	-4.3	-6.3	-5.7	-6.2	-5.6	-7.4	-6.3	-5.2	-5.5	-3.2	-1.3	-0.2	2.2	0.0	-1.7	-1.9	-2.9	-3.6	-4.1	-4.0	-4.4	-5.0	-5.2	-3.86	2.23	
21-Dec	-5.6	-5.4	-5.2	-5.8	-9.4	-10.6	-10.7	-10.6	-10.1	-9.5	-8.9	-7.8	-6.3	-4.9	-4.5	-3.4	-2.1	-2.2	-0.8	0.3	1.2	1.2	0.3	0.0	-5.05	1.21	
22-Dec	0.2	0.0	-0.6	-1.6	-1.9	-2.3	-2.2	-1.7	-2.0	-1.4	-0.6	0.6	1.2	2.1	2.3	2.2	1.4	0.7	0.4	0.1	-0.8	-0.9	-0.5	-1.0	-0.26	2.26	
23-Dec	-1.0	-0.2	-0.5	-1.5	-1.7	-3.3	-3.2	-2.9	-2.8	-4.4	-2.5	-1.9	-1.3	-1.2	-1.1	-0.9	-0.9	-1.3	-1.4	-1.2	-1.4	-1.7	-1.4	-1.5	-1.71	-0.19	
24-Dec	-2.4	-2.2	-1.6	-0.4	-0.6	-1.5	-1.0	0.3	0.0	-0.8	-0.7	0.3	0.1	-0.4	-1.3	-2.5	-3.3	-4.3	-5.2	-6.1	-7.5	-8.9	-9.3	-10.1	-2.90	0.30	
25-Dec	-11.3	-12.4	-11.5	-11.3	-11.7	-12.1	-11.8	-11.6	-11.8	-11.9	-11.2	-10.8	-9.9	-9.4	-9.0	-8.8	-9.0	-9.1	-9.0	-8.8	-8.6	-8.9	-9.9	-11.1	-10.45	-8.55	
26-Dec	-12.2	-12.7	-12.4	-12.8	-13.1	-13.2	-12.4	-11.8	-12.0	-11.4	-10.0	-9.1	-8.5	-6.9	-6.2	-7.0	-6.4	-6.0	-5.5	-4.8	-4.2	-3.7	-3.4	-2.9	-8.69	-2.93	
27-Dec	-2.9	-3.5	-3.9	-4.4	-5.2	-5.7	-6.2	-6.6	-7.6	-9.1	-7.3	-7.3	-5.8	-6.7	-7.1	-7.3	-7.7	-8.0	-8.7	-9.2	-9.3	-9.7	-10.2	-10.3	-7.08	-2.93	
28-Dec	-10.3	-10.8	-11.0	-11.5	-12.0	-12.3	-12.6	-12.9	-13.2	-13.1	-13.0	-12.7	-12.7	-12.4	-12.1	-12.5	-12.7	-12.6	-13.1	-13.2	-13.9	-14.6	-14.8	-14.9	-12.70	-10.32	
29-Dec	-15.6	-16.1	-16.5	-17.0	-17.7	-18.3	-18.4	-18.3	-18.5	-18.6	-18.3	-18.0	-17.1	-16.8	-16.7	-16.4	-16.2	-17.6	-18.9	-20.2	-19.7	-19.6	-19.7	-19.4	-17.90	-15.56	
30-Dec	-19.2	-19.8	-20.3	-20.2	-19.7	-18.3	-18.2	-17.5	-16.8	-16.1	-13.9	-12.0	-8.7	-6.9	-5.3	-2.0	-2.1	-2.6	-2.8	-2.1	-1.9	-2.3	-2.7	-3.1	-10.61	-1.93	
31-Dec	-2.7	-2.5	-2.5	-2.8	-2.7	-2.6	-1.9	-2.9	-2.9	-2.3	-2.7	-2.1	-1.6	-0.6	0.0	0.5	0.6	0.7	1.3	2.1	3.3	4.1	3.9	4.1	-0.52	4.06	
		-6.25	-6.32	-6.34	-6.51	-6.88	-7.24	-7.25	-7.14	-7.11	-7.00	-6.13	-5.18	-4.08	-3.47	-3.36	-3.44	-4.11	-4.88	-5.12	-5.21	-5.17	-5.21	-5.37	-5.41	Diurnal Average	
		8.41	6.86	6.09	4.48	3.48	3.66	3.59	4.69	7.50	7.60	7.68	8.57	8.93	8.55	7.28	9.19	9.29	9.29	11.57	11.29	10.46	9.51	9.84	9.86	Diurnal Maximum	



**WCAS - Power**  
**Summary of Hourly Averages**

**Wind Speed (WS) - kph**  
**December 2014**

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1 Spd	18.6	17.0	13.8	12.7	10.9	7.7	9.1	7.9	9.9	11.6	12.1	10.7	9.1	8.1	7.7	8.8	8.2	7.8	7.4	10.2	13.5	10.9	10.3	9.7	9.82	18.56	
Dir	WSW	WSW	WSW	WSW	WSW	WSW	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SSW	SSW	S	SSW	SW	SW	WNW	W	WSW	WSW	
2 Spd	7.2	9.1	12.3	11.9	14.6	13.0	8.1	14.6	13.3	18.9	18.1	19.4	18.0	16.8	12.2	11.3	10.0	8.4	8.8	8.7	10.9	13.1	12.6	16.5	10.75	19.44	
Dir	W	WSW	W	W	W	WNW	WNW	WNW	WNW	NW	WNW	NW	NW	NW	NW	WNW	WSW	SW	WSW	SW	SW	SW	SW	SW	W	NW	
3 Spd	15.6	19.5	15.0	13.8	14.8	17.2	17.5	19.4	17.7	14.9	14.2	16.9	13.7	14.2	13.9	10.9	11.3	12.5	13.5	13.4	11.2	11.2	10.7	11.3	14.02	19.48	
Dir	SSW	SW	SW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	SW	SW	SW	SW	WSW	W	SW	SW	
4 Spd	11.4	11.4	10.3	11.1	14.7	12.8	10.8	11.3	7.7	8.9	8.1	4.4	3.8	3.3	4.6	6.3	4.1	8.5	7.4	10.4	12.8	13.0	10.6	7.4	8.45	14.67	
Dir	W	WSW	W	W	W	WNW	WNW	W	W	WSW	WNW	NW	NNW	NW	WNW	WSW	WSW	SW	WSW	SW	WSW	W	WNW	W	W	W	
5 Spd	6.5	7.0	7.1	7.7	6.5	9.1	9.4	7.6	7.0	8.0	7.8	6.7	4.5	6.1	11.7	13.2	14.1	16.3	16.2	17.4	16.8	19.8	19.6	15.3	7.56	19.79	
Dir	W	W	W	WSW	SW	WSW	WSW	WSW	SW	WSW	WSW	SW	SSW	S	S	SSE	SSE	SSE	SSE	SE	SE	SE	SSE	SE	S	SE	
6 Spd	19.5	14.8	13.7	12.0	12.5	9.2	10.0	7.6	4.6	5.3	8.4	4.5	4.4	6.1	7.3	8.2	6.1	6.7	5.3	4.7	7.9	6.9	6.6	8.3	3.54	19.52	
Dir	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SE	E	SE	ESE	NE	ENE	ENE	NE	NE	N	N	NNW	NW	W	WNW	WSW	SE	SSE	
7 Spd	11.3	12.2	9.3	10.1	10.5	9.3	10.1	11.7	10.6	10.1	12.9	12.6	9.4	11.0	11.4	12.5	5.4	3.7	7.7	12.7	16.7	15.4	14.8	12.1	6.14	16.67	
Dir	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WNW	W	WNW	WNW	WNW	NW	NW	NW	ENE	SE	SSE	SSE	SSE	SSE	SSE	WSW	SSE	
8 Spd	9.1	17.2	16.3	11.2	9.6	5.4	6.3	10.8	11.9	11.8	9.3	7.0	6.4	5.2	4.7	8.7	7.0	4.0	11.4	1.3	2.9	7.5	6.4	2.8	7.59	17.23	
Dir	SSE	S	S	SSE	SSE	SE	SE	SSE	SSE	SSE	SSE	SSE	SE	S	SSW	S	S	S	SSE	S	NNE	SSE	S	SW	SSE	S	
9 Spd	5.0	10.3	11.4	16.5	19.1	15.8	13.6	11.5	17.7	19.3	19.2	19.0	16.7	16.8	16.2	17.1	14.4	19.7	29.8	27.5	23.2	19.3	23.4	17.0	15.04	29.80	
Dir	SSW	SW	SW	SW	SSW	SSW	S	S	S	S	S	S	S	S	S	SSW	SSW	SSW	SW	SW	SW	W	W	W	SSW	SW	
10 Spd	12.2	9.4	8.7	11.3	15.6	16.7	17.2	17.8	15.5	15.5	19.0	14.8	14.5	13.8	11.2	11.8	13.0	17.7	16.5	16.8	20.7	18.1	18.3	18.0	14.13	20.70	
Dir	W	WSW	SW	S	S	S	S	S	S	S	S	S	S	SSE	S	S	S	S	S	SSE	SSE	SSE	SSE	SSE	S	SSE	
11 Spd	15.9	16.8	10.1	6.3	3.0	11.8	14.5	14.8	22.7	20.1	18.3	16.7	14.2	8.6	5.9	3.2	12.6	13.5	17.6	15.8	11.3	15.9	11.0	19.3	6.55	22.66	
Dir	SSE	S	S	S	WNW	W	W	SW	SW	WSW	WSW	WSW	WNW	N	ENE	ESE	SSE	SSE	SSE	SSE	SSE	ESE	E	E	ESE	S	SW
12 Spd	22.6	20.3	8.6	9.7	7.3	8.9	7.4	5.5	6.9	6.7	4.6	1.5	1.6	5.7	3.3	3.7	1.4	1.8	1.7	4.0	5.5	5.5	7.5	4.7	1.78	22.63	
Dir	ESE	SE	S	WSW	SW	SW	SSW	WSW	SW	SSW	SW	NNE	NNW	NNE	NNE	SSE	ENE	SSW	W	NW	NNW	NW	N	NNW	SSW	ESE	
13 Spd	6.6	6.1	3.3	2.8	1.6	6.5	11.9	11.3	12.8	13.1	13.8	12.4	10.2	11.4	12.3	10.7	9.9	10.4	9.9	9.4	9.2	9.4	9.1	10.8	9.00	13.76	
Dir	NNW	N	NW	NNW	W	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	W	W	WNW	WNW	WNW	WNW	WNW	WNW	W	W	W	WNW	NNW
14 Spd	10.7	12.2	12.0	13.3	13.3	12.2	10.2	11.4	12.5	11.4	11.8	9.7	8.5	5.9	4.4	3.0	2.2	4.2	3.6	4.4	3.2	5.7	7.1	11.1	6.62	13.32	
Dir	W	WNW	WNW	WNW	WNW	W	W	WNW	W	WNW	WNW	WNW	W	W	W	WNW	WNW	SW	SSW	SSW	S	SSE	S	S	W	WNW	
15 Spd	13.2	11.3	11.3	14.4	12.6	11.1	14.9	13.0	13.4	10.3	13.3	14.0	16.0	17.9	16.5	21.1	19.0	21.4	18.2	16.2	13.3	15.8	15.8	17.5	14.88	21.37	
Dir	S	S	SSE	S	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SE	SSE	SSE	SSE	SSE	SSE	SE	SE	SE	SSE	SSE	SSE	SSE
16 Spd	22.6	17.6	15.3	16.2	13.8	15.6	13.8	14.1	15.5	16.2	16.3	18.5	15.7	16.2	16.2	18.1	17.7	15.8	17.4	12.7	11.1	10.1	12.2	11.4	15.34	22.55	
Dir	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SE	SE	SE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE
17 Spd	12.4	11.5	11.0	7.9	7.1	6.5	6.9	5.3	4.2	7.8	10.4	9.7	8.4	7.7	7.3	5.0	5.8	6.3	3.9	4.6	3.0	1.7	3.1	4.1	6.41	12.44	
Dir	SSE	SSE	SSE	S	S	S	S	SSW	SSW	SSW	S	S	SSW	SW	S	S	SSE	S	SSW	SSW	SW	SSE	SE	S	S	SSE	
18 Spd	3.8	2.0	0.8	3.0	3.9	5.4	3.9	3.8	2.9	2.8	1.9	3.0	2.2	0.7	4.8	4.3	6.1	9.9	9.3	8.3	12.2	3.9	7.7	9.1	4.60	12.22	
Dir	SSW	SSW	S	SSE	S	S	S	SSW	SSW	SW	S	SSW	SSE	SW	S	S	S	S	SSE	SSE	SSE	SSE	SSE	SSE	S	SSE	
19 Spd	3.5	6.2	8.8	9.6	8.2	3.3	0.9	2.7	1.2	2.7	2.4	4.1	3.2	5.6	3.5	2.3	2.9	4.4	7.2	8.1	5.8	6.0	7.0	4.3	1.32	9.65	
Dir	SSE	SE	SE	SE	SE	SE	NNW	ENE	E	NNW	NNW	NNW	N	NNW	NNE	NNW	E	WSW	SW	WSW	WSW	SW	SW	SW	SSW	SE	
20 Spd	10.0	4.6	7.5	8.6	9.1	7.8	7.3	7.9	7.8	7.4	7.6	10.2	14.1	11.2	13.4	14.3	16.3	19.3	17.4	16.1	19.3	19.2	17.2	18.3	10.32	19.28	
Dir	WSW	SW	SSW	WSW	WSW	SW	SSW	SSW	SSW	SSW	SSW	SSW	S	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	S	SSE	
21 Spd	10.6	13.5	7.6	1.7	7.1	6.5	6.7	8.7	6.1	5.4	7.5	6.5	9.6	12.2	14.6	12.3	9.9	6.8	12.1	13.1	14.7	10.5	9.2	9.6	6.37	14.66	
Dir	SE	SE	SE	NW	NW	NNW	NNW	WNW	WNW	WNW	NW	WNW	W	WNW	WNW	WNW	NW	W	NW	NW	NW	W	WNW	W	WNW	WNW	NW
22 Spd	9.9	7.9	7.0	9.9	9.5	10.1	10.7	10.8	10.5	13.1	11.5	16.3	16.6	19.5	23.4	22.1	17.5	15.6	15.9	11.1	8.6	11.4	12.4	10.7	12.50	23.37	
Dir	WNW	WNW	W	W	W	W	W	WNW	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	WNW	NW	NW	WNW	W	WSW	W	WNW	WNW	NW	



**WCAS - Power**  
**Summary of Hourly Averages**

**Wind Speed (WS) - kph**  
**December 2014**

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
23 Spd	8.9	9.5	11.2	10.5	10.3	9.1	11.0	11.7	10.1	11.1	12.6	13.2	13.7	13.8	13.1	14.0	14.4	8.8	1.9	11.6	13.1	9.9	9.9	9.2	8.56	14.36
Dir	W	WNW	WSW	WSW	WSW	SW	SSW	SSW	SSW	S	S	S	S	S	SSE	S	S	S	N	SSW	SW	WSW	WSW	W	SSW	S
24 Spd	9.3	12.7	14.0	16.5	12.5	10.3	13.1	19.5	17.6	14.0	14.5	20.5	18.5	17.4	14.9	12.4	11.2	13.2	14.3	16.0	14.8	9.4	8.2	5.3	9.71	20.54
Dir	W	WSW	WSW	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	NNW	N	NNE	NNE	NNE	N	NNE	N	NNE	NNE	NNE	ENE	NNW	NW
25 Spd	2.9	0.7	2.6	0.9	1.6	5.0	5.2	7.1	6.1	6.9	7.5	6.6	6.4	8.8	7.1	4.9	2.0	2.0	1.4	7.7	13.1	14.7	14.9	11.0	0.92	14.89
Dir	E	NW	N	NNE	ENE	SE	S	SSE	S	SSE	SSE	SE	SE	SE	SE	S	SE	E	NNW	W	NW	NW	NW	WNW	SSW	NW
26 Spd	8.2	8.8	7.3	7.8	6.3	7.4	10.8	8.0	10.0	12.7	12.5	12.0	12.0	12.4	11.6	12.3	10.6	8.9	9.2	10.7	12.3	14.9	15.0	13.9	10.41	14.96
Dir	WNW	W	WNW	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	W	W	W	WSW	WSW	W	WSW	W	W	W	W	W
27 Spd	12.6	13.8	14.1	14.4	11.7	12.0	11.9	7.9	7.3	5.5	4.1	5.9	5.4	7.2	7.4	7.3	7.4	9.6	10.5	8.2	8.4	9.1	10.3	8.8	3.05	14.43
Dir	W	W	W	W	W	WSW	WSW	W	WNW	WNW	NNW	NE	ENE	ENE	ENE	NE	NE	NE	ENE	ENE	NE	NE	NE	NNE	NNW	W
28 Spd	9.2	9.0	10.0	11.7	10.0	10.2	10.8	12.4	10.8	10.3	11.6	9.6	11.2	10.6	11.7	10.1	10.1	15.8	15.4	14.4	21.3	17.5	15.1	15.0	12.14	21.26
Dir	NNE	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	NNE	N	N	N	N	N	N	N
29 Spd	16.8	16.0	14.7	13.1	15.2	10.1	7.0	10.4	12.1	11.2	12.7	10.4	9.4	10.1	9.9	2.8	2.4	7.4	10.6	10.1	11.8	13.5	13.0	13.9	5.80	16.78
Dir	N	N	N	N	N	N	NNW	NNW	NW	WNW	NW	NW	WNW	WNW	NNW	NNE	W	SW	SW	SW	SW	SSW	SSW	SSW	NW	N
30 Spd	17.5	18.3	19.2	19.9	22.0	22.7	21.3	22.4	21.4	24.2	23.0	21.7	21.3	21.7	17.8	27.7	24.0	26.6	23.6	26.4	26.9	29.2	27.0	21.5	14.95	29.19
Dir	SSW	SSW	SW	SW	SW	SW	SW	SSW	SW	SW	WSW	WSW	W	WNW	NW	NW	NNW	NNW	NNW	NNW	NNW	NW	NW	WNW	W	NW
31 Spd	19.8	12.6	8.6	9.0	11.2	13.2	11.4	13.5	17.3	22.4	13.9	16.5	14.6	16.9	14.2	15.4	14.1	17.0	19.9	22.7	24.9	26.5	23.5	23.5	16.10	26.46
Dir	NW	WNW	WNW	WSW	W	W	WNW	W	W	W	W	W	W	W	W	W	W	W	WNW	WNW	NW	WNW	NW	NW	NNW	WNW
Spd	4.77	5.74	5.79	6.38	6.08	6.21	6.15	6.29	6.89	6.71	6.32	5.47	4.83	3.82	2.65	2.75	2.83	3.61	3.68	4.19	3.80	3.96	4.24	4.24	Diurnal Average	
Dir	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	WSW	WSW	SSW	SSW	SSW	SW	WSW	WSW	WSW	SW	Diurnal Maximum	
Spd	22.63	20.29	19.18	19.87	22.04	22.70	21.31	22.39	22.66	24.24	23.03	21.67	21.26	21.72	23.37	27.68	23.97	26.61	29.80	27.53	26.91	29.19	27.03	23.53	Diurnal Maximum	
Dir	119.04	134.41	213.56	217.35	213.80	215.78	214.44	211.83	231.87	231.41	241.27	243.24	274.30	283.26	309.15	319.29	334.08	326.66	219.76	218.82	326.81	321.19	312.41	305.53		
Maximum Speed Value: 29.8 kph on Dec 9 19:00																		Minimum Speed Value: 0.7 kph on Dec 18 14:00						Hours in Service:		744
Maximum Daily Speed Average: 16.10 kph on Dec 30																		Minimum Daily Speed Average: 0.92 kph on Dec 19						Hours of Data:		744
Maximum Diurnal Speed Average: 6.89 kph at hour 9																		Minimum Diurnal Speed Average: 2.65 kph at hour 15						Hours of Missing Data:		0
Monthly Average Velocity: 4.785 kph 235.24 deg																		Speed Percentiles: P <sub>1</sub> = 1.4 P <sub>10</sub> = 4.4 Q <sub>1</sub> = 7.5 Median = 11.0 Q <sub>3</sub> = 14.6 P <sub>90</sub> = 18.2 P <sub>99</sub> = 26.3						Percent Operational Time:		100.0
All monthly, daily, and diurnal averages have been calculated using vector methods																										
Frequency Distribution																										
		Speed Range (kph)																								
Direction	0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total																			
North	12	24	22	1	0	0	59																			
NorthEast	6	19	2	0	0	0	27																			
East	6	2	2	0	0	0	10																			
SouthEast	8	29	51	13	0	0	101																			
South	25	41	70	6	0	0	142																			
SouthWest	12	54	42	17	1	0	126																			
West	7	92	86	5	0	0	190																			
NorthWest	15	17	35	21	1	0	89																			
Total	91	278	310	63	2	0	744																			



**WCAS - Power**  
**Summary of Hourly Averages**

**Relative Humidity (RH) - %**  
**December 2014**

Maximum Value: 100.49 % on Dec 21 19:00      Maximum Daily Average: 94.44 % on Dec 6 Minimum Value: 39.2 % on Dec 30 17:00      Minimum Daily Average: 55.91 % on Dec 31 Maximum Diurnal Average: 84.44 % at hour 1      Minimum Diurnal Average: 72.78 % at hour 14 Monthly Average: 80.635 %      Percentiles: P <sub>1</sub> = 43.8 P <sub>10</sub> = 60.5 Q <sub>1</sub> = 71.2 Median = 83.9 Q <sub>3</sub> = 91.7 P <sub>90</sub> = 95.6 P <sub>99</sub> = 99.7																								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																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Dec	72.9	71.1	70.1	71.4	72.0	72.0	71.4	73.7	74.8	74.3	72.7	69.1	65.1	70.0	81.9	79.2	79.5	83.9	83.8	84.6	78.5	78.3	89.4	90.9	76.28	90.95																							
2-Dec	91.6	91.2	87.1	84.2	80.0	81.5	86.1	84.5	82.5	74.9	71.2	65.6	61.0	56.7	53.2	54.1	59.0	71.0	74.5	77.8	80.9	80.1	80.3	79.7	75.37	91.56																							
3-Dec	80.7	74.6	73.1	74.1	73.4	72.9	73.9	72.7	71.5	69.7	63.7	60.5	58.3	57.8	59.0	62.0	67.9	71.2	71.9	70.3	72.1	71.5	78.1	77.5	69.94	80.66																							
4-Dec	75.5	78.7	79.8	79.3	77.9	80.7	84.5	88.1	90.0	89.1	80.7	75.0	71.7	73.9	72.0	78.9	84.8	90.8	91.1	94.6	91.7	91.7	92.5	93.5	83.60	94.64																							
5-Dec	95.6	96.7	96.2	95.6	94.8	93.6	92.1	91.2	91.0	91.3	91.1	89.4	77.8	73.4	78.3	83.8	87.0	89.1	89.9	89.2	88.5	89.6	90.5	91.3	89.45	96.71																							
6-Dec	92.1	93.1	95.1	96.9	96.6	96.0	94.2	92.6	91.9	91.8	91.7	91.7	90.2	90.7	94.9	96.8	96.5	95.8	95.8	96.5	96.4	96.7	96.9	95.6	94.44	96.91																							
7-Dec	94.2	93.6	93.6	95.9	96.9	98.0	97.0	93.7	93.2	85.6	80.0	77.0	78.5	77.7	74.9	73.3	79.0	89.0	92.4	91.0	90.9	91.2	93.5	94.6	88.53	98.04																							
8-Dec	97.1	96.9	97.0	96.9	95.8	95.2	94.2	92.9	93.2	92.4	88.4	80.4	82.8	76.3	79.2	79.6	85.1	89.5	92.1	91.6	95.7	96.6	94.9	94.5	90.76	97.07																							
9-Dec	95.3	84.3	74.7	68.9	67.0	65.5	63.8	69.4	71.6	72.2	71.2	71.8	65.9	62.5	59.1	50.8	51.4	52.2	43.1	44.0	46.6	49.8	43.7	42.6	61.97	95.28																							
10-Dec	48.5	53.7	55.6	65.8	65.2	64.1	65.1	64.0	60.3	58.5	59.0	57.0	50.8	52.0	53.2	55.2	58.8	60.5	55.5	57.9	62.2	65.4	65.3	68.7	59.26	68.71																							
11-Dec	71.1	66.6	66.4	70.1	80.6	82.8	70.5	66.5	59.3	58.9	57.0	51.9	49.7	52.1	58.8	62.4	72.0	70.8	70.0	69.8	65.9	60.7	62.1	62.5	64.93	82.76																							
12-Dec	64.2	71.1	77.3	79.6	78.4	81.8	83.5	84.4	82.8	81.0	81.0	81.3	69.0	74.7	77.8	74.8	81.8	91.2	96.9	99.1	99.8	100.3	100.3	100.1	83.86	100.34																							
13-Dec	99.5	98.6	98.6	98.7	99.3	99.8	99.1	98.5	98.4	97.8	93.1	85.9	79.1	72.1	67.8	63.6	71.0	73.0	73.8	73.9	75.3	74.4	73.2	73.3	84.90	99.77																							
14-Dec	74.7	75.3	77.4	80.1	79.2	80.6	80.9	83.2	84.0	83.0	77.5	72.9	69.8	66.8	63.7	60.7	70.3	83.7	89.5	92.5	95.9	96.4	95.9	96.2	80.41	96.36																							
15-Dec	95.2	95.7	96.0	95.6	95.3	95.2	94.2	93.3	93.8	93.7	89.4	85.2	81.1	78.5	79.4	79.2	82.5	86.0	89.4	93.5	96.1	94.8	93.8	94.4	90.47	96.15																							
16-Dec	94.8	93.9	93.0	92.9	94.5	95.9	96.1	95.3	94.7	94.7	92.7	89.1	89.7	88.8	89.2	92.0	91.9	91.9	90.6	90.7	90.7	90.3	92.3	90.9	92.36	96.13																							
17-Dec	90.6	90.1	89.8	89.9	90.1	90.4	90.4	90.9	91.8	93.0	93.4	94.9	94.7	96.7	95.6	96.6	97.7	98.2	98.4	97.8	97.4	97.3	97.0	96.5	94.13	98.44																							
18-Dec	96.4	95.8	95.0	94.2	93.3	93.1	93.1	93.3	93.9	93.9	92.7	96.2	98.3	97.8	92.0	84.3	86.9	92.1	91.3	90.1	93.0	94.3	95.2	93.5	93.31	98.26																							
19-Dec	92.0	91.0	91.1	89.7	89.8	90.1	90.1	90.9	91.7	88.2	86.8	85.7	85.0	87.3	86.6	88.2	89.2	90.5	90.0	87.5	86.3	85.7	83.9	82.8	88.33	91.96																							
20-Dec	84.6	81.0	88.5	86.5	86.7	85.0	88.5	89.7	86.0	84.9	70.6	64.5	59.8	54.1	60.8	66.0	65.6	70.4	71.0	73.9	77.7	82.3	84.8	85.6	77.02	89.74																							
21-Dec	86.7	86.6	85.3	86.4	90.5	90.7	91.0	91.4	90.9	90.0	88.3	85.8	83.2	83.9	89.6	95.6	99.1	100.1	100.5	99.1	92.6	90.8	93.8	94.1	91.08	100.49																							
22-Dec	91.0	89.2	90.5	92.3	86.8	84.9	82.1	79.5	79.3	78.1	79.2	76.4	74.6	69.9	68.8	69.3	69.9	70.6	71.3	72.8	75.2	73.7	69.8	70.9	77.75	92.29																							
23-Dec	71.4	68.5	67.5	65.9	64.9	69.4	71.5	68.9	67.6	76.8	66.6	67.0	62.9	61.9	62.2	59.7	56.7	59.7	61.5	60.1	59.5	61.8	66.1	64.1	65.09	76.75																							
24-Dec	67.8	70.2	71.0	69.1	68.7	72.1	69.5	64.9	67.4	71.1	71.9	71.1	75.0	78.2	82.5	86.6	89.5	90.6	91.1	90.6	90.6	92.8	91.1	90.6	78.50	92.80																							
25-Dec	91.0	93.3	94.1	95.6	95.0	94.1	92.2	91.7	91.7	91.9	92.1	92.0	91.8	91.7	91.7	91.6	92.0	92.6	92.6	92.5	90.2	87.4	86.3	89.8	91.88	95.64																							
26-Dec	91.2	91.3	90.2	90.2	91.7	92.0	94.7	92.4	92.1	89.3	85.3	84.1	80.7	74.5	72.8	77.2	78.4	79.8	81.2	80.6	79.3	80.2	80.6	80.9	84.60	94.66																							
27-Dec	81.4	82.2	79.8	79.5	81.0	82.2	83.3	84.7	87.4	91.8	87.0	86.1	80.4	85.8	90.4	91.2	92.9	94.8	97.6	96.2	95.9	94.9	93.4	91.2	87.96	97.55																							
28-Dec	90.5	92.8	92.9	91.6	91.2	90.9	90.0	89.0	88.7	89.1	88.2	87.2	87.2	87.0	86.9	87.5	89.0	86.5	85.8	86.8	83.8	81.1	84.2	84.1	88.00	92.93																							
29-Dec	83.3	81.5	82.2	83.9	82.7	82.5	83.7	81.8	78.4	77.6	74.8	72.8	69.2	68.4	67.2	68.0	66.7	74.0	79.0	82.9	83.9	88.5	85.3	82.8	78.38	88.51																							
30-Dec	80.6	84.0	83.2	79.5	75.6	73.1	72.2	74.1	69.8	67.5	62.1	59.5	53.2	50.2	49.1	40.1	39.2	43.6	44.6	42.1	43.8	51.0	58.7	72.4	61.22	84.01																							
31-Dec	76.4	72.3	68.7	67.2	58.6	55.7	45.0	47.6	46.8	45.2	47.1	45.6	45.0	44.9	47.8	52.2	54.9	55.2	56.2	61.3	61.0	60.3	63.3	63.6	55.91	76.35																							
																								84.44	84.03	83.90	84.10	83.65	83.93	83.35	83.07	82.47	81.85	78.92	76.53	73.59	72.78	73.76	74.22	76.97	80.27	81.03	81.65	81.85	82.25	83.10	83.52	Diurnal Average	
																								99.45	98.57	98.57	98.67	99.32	99.77	99.06	98.46	98.35	97.82	93.37	96.16	98.26	97.75	95.59	96.75	99.09	100.07	100.49	99.11	99.82	100.34	100.27	100.14	Diurnal Maximum	



**WCAS - Power**  
**Summary of Hourly Averages**

**Precipitation (PR) - mm**  
**December 2014**

Maximum Value: 0.70 mm on Dec 9 14:00		Maximum Daily Total: 1.00 mm on Dec 9		Hours in Service: 744																							
Minimum Value: 0.0 mm on Dec 1 01:00		Minimum Daily Total: 0.00 mm on Dec 1		Hours of Data: 744																							
Maximum Diurnal Total: 0.70 mm at hour 14		Minimum Diurnal Total: 0.00 mm at hour 1		Hours of Missing Data: 0																							
Monthly Total: 1.100 mm		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.0 Q <sub>3</sub> = 0.0 P <sub>90</sub> = 0.0 P <sub>99</sub> = 0.0		Hours of Calibration: 0																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At																								Daily Total	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
2-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
3-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
4-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
5-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
6-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
7-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
8-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
9-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	1.00	0.70
10-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
11-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
12-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
13-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
14-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
15-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
16-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
17-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
18-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
19-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
20-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
21-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
22-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
23-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
24-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
25-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
26-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
27-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
28-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
29-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
30-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.10	0.10
31-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.20	0.00	0.10	0.00	0.00	0.00	0.00	0.10	0.00	0.00	Diurnal Average		
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.20	0.00	0.10	0.00	0.00	0.00	0.00	0.10	0.00	0.00	Diurnal Maximum		



**WCAS - Power**  
**Summary of Hourly Standard Deviations**

**Wind Speed (WS) - kph**  
**December 2014**

Maximum Value: 6.73 kph on Dec 30 15:00 Minimum Value: 0.5 kph on Dec 18 05:00 Maximum Diurnal Average: 2.54 kph at hour 24 Monthly Average: 2.325 kph		Maximum Daily Average: 4.25 kph on Dec 30 Minimum Daily Average: 1.45 kph on Dec 14 Minimum Diurnal Average: 1.91 kph at hour 5 Percentiles: P <sub>1</sub> = 0.7 P <sub>10</sub> = 1.3 Q <sub>1</sub> = 1.6 Median = 2.1 Q <sub>3</sub> = 2.8 P <sub>90</sub> = 3.6 P <sub>99</sub> = 5.1		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 Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	2.1	2.0	2.6	1.5	1.4	1.3	2.6	1.9	2.3	1.9	1.6	1.3	1.7	1.8	2.6	2.0	1.7	2.1	1.7	3.2	1.9	1.9	2.0	1.6	1.95	3.15
2-Dec	1.7	1.3	2.5	1.8	2.3	2.3	1.4	3.4	3.0	3.6	3.7	3.9	3.9	3.7	2.4	1.8	2.1	1.4	0.7	1.1	1.5	1.4	2.3	3.4	2.36	3.92
3-Dec	5.1	3.5	3.1	1.7	1.7	2.3	2.0	2.0	1.6	2.0	2.6	2.7	2.5	2.8	1.9	1.5	1.0	1.3	1.4	1.1	1.0	1.3	1.2	1.6	2.04	5.14
4-Dec	1.6	1.6	1.2	1.7	2.6	1.9	1.7	1.5	2.0	1.6	2.3	1.7	1.1	1.8	1.6	1.8	0.7	1.1	1.8	1.4	1.4	1.5	1.9	2.8	1.68	2.83
5-Dec	0.9	0.8	1.2	1.2	1.1	1.4	1.4	1.5	1.0	1.7	0.7	1.3	2.0	1.7	2.3	1.6	1.9	2.0	2.0	2.4	2.2	3.1	3.4	2.2	1.71	3.42
6-Dec	2.4	2.6	2.1	2.5	2.3	3.2	2.4	1.9	1.5	1.8	2.3	2.1	1.9	1.6	1.8	1.6	1.6	2.3	1.8	2.9	2.3	2.8	2.3	2.5	2.19	3.23
7-Dec	1.9	1.7	2.7	1.5	2.2	0.7	1.4	2.1	1.1	1.6	2.7	3.0	1.6	2.5	2.0	1.7	3.9	2.5	2.6	3.4	2.0	1.6	1.7	2.4	2.10	3.95
8-Dec	3.4	1.5	2.0	2.3	1.9	2.0	3.7	4.3	3.0	2.9	2.8	2.1	2.1	3.0	2.9	3.6	3.5	2.5	3.2	4.5	1.6	1.4	3.5	1.9	2.72	4.51
9-Dec	3.0	3.1	3.1	2.0	2.6	2.7	3.9	2.9	2.7	2.6	2.2	2.8	3.6	3.3	3.7	3.7	2.9	6.1	4.8	4.9	4.0	6.4	4.6	4.4	3.59	6.45
10-Dec	2.0	1.6	1.7	1.9	2.7	2.3	1.7	2.0	2.7	2.2	2.4	2.8	3.6	2.2	2.4	2.4	3.8	2.9	2.4	2.1	2.7	2.1	2.4	2.0	2.38	3.82
11-Dec	2.1	2.2	2.9	4.2	2.0	6.3	3.4	4.0	4.2	3.4	2.5	3.9	3.2	1.8	2.8	1.4	2.2	2.1	2.0	2.8	2.1	3.5	3.2	4.3	3.02	6.29
12-Dec	4.3	5.5	2.3	2.0	1.9	2.1	2.5	1.4	1.6	2.3	2.3	2.1	1.7	2.8	2.6	4.1	1.7	0.8	0.8	1.0	1.5	1.2	1.9	2.4	2.20	5.48
13-Dec	2.1	1.8	1.3	0.8	1.1	1.9	1.8	1.4	1.8	1.8	1.9	2.2	2.2	2.5	2.0	1.7	1.8	1.7	1.3	1.0	1.0	1.6	1.0	1.5	1.64	2.49
14-Dec	1.8	1.9	2.3	2.0	2.6	2.0	1.8	1.5	1.6	1.9	1.6	2.2	1.5	1.2	0.7	1.2	0.6	0.7	0.6	0.8	1.5	1.0	0.9	1.0	1.45	2.59
15-Dec	1.0	1.1	1.6	1.0	1.6	1.4	2.2	1.7	1.8	1.4	2.8	2.8	3.0	3.0	2.2	3.0	2.8	3.0	2.2	1.6	1.7	2.0	2.0	3.1	2.09	3.08
16-Dec	3.0	3.8	2.5	2.4	2.4	2.7	2.8	2.6	2.6	2.5	3.5	3.4	3.5	2.9	2.9	3.2	2.9	3.4	4.1	2.9	2.5	2.1	2.6	2.6	2.91	4.06
17-Dec	2.3	2.9	2.9	2.4	2.6	2.0	2.5	2.0	2.7	2.2	2.7	2.8	3.0	3.1	2.1	2.4	1.9	1.6	1.6	1.6	1.0	1.0	0.8	1.3	2.14	3.14
18-Dec	1.5	0.8	1.0	0.8	0.5	1.0	1.5	1.0	0.8	1.8	1.1	1.3	1.0	1.0	1.6	2.0	1.2	2.0	3.8	4.0	2.6	3.0	2.2	1.9	1.65	4.00
19-Dec	1.6	3.5	2.0	1.4	1.6	1.9	2.1	2.3	2.9	2.5	2.1	1.4	1.7	1.7	1.5	2.1	2.5	2.4	1.8	1.5	1.9	1.6	1.2	3.0	2.01	3.55
20-Dec	2.8	2.4	2.2	1.7	2.5	1.2	1.1	1.8	2.7	1.3	2.4	3.0	4.2	1.8	1.6	1.5	2.0	2.1	2.6	1.9	2.8	2.5	2.1	2.7	2.20	4.20
21-Dec	2.4	5.0	5.2	2.7	1.8	2.3	2.7	3.7	3.5	3.5	1.5	2.0	2.2	2.0	2.1	2.4	2.5	1.6	2.6	2.5	3.3	2.0	1.3	2.1	2.62	5.23
22-Dec	1.9	1.7	1.6	1.5	1.6	1.7	1.8	2.1	2.2	2.2	2.1	3.5	3.3	4.3	4.7	4.3	3.5	2.9	2.8	2.3	1.4	1.7	1.9	1.8	2.45	4.70
23-Dec	1.8	2.3	2.1	1.4	1.0	1.5	2.3	1.7	2.6	2.4	2.5	2.9	2.7	2.7	2.5	3.1	3.0	3.6	3.4	2.9	1.5	3.3	3.0	2.6	2.45	3.62
24-Dec	2.4	1.6	2.2	2.6	2.4	2.4	4.9	4.0	3.4	2.7	3.1	3.9	3.9	3.7	3.3	2.8	2.3	2.3	3.5	3.1	2.9	2.0	2.1	1.6	2.89	4.92
25-Dec	2.3	1.2	1.1	1.5	1.5	2.2	0.9	1.3	1.4	2.5	1.7	1.2	1.1	1.5	1.8	1.6	1.8	1.3	1.5	2.7	2.6	2.9	2.8	2.1	1.77	2.93
26-Dec	1.5	1.6	1.3	1.3	1.0	1.5	1.4	2.0	1.1	1.0	1.2	1.6	1.8	2.4	2.3	2.2	1.7	1.4	1.3	1.7	2.0	2.5	2.9	2.7	1.72	2.86
27-Dec	2.1	2.1	2.2	2.4	1.6	1.2	1.2	1.5	0.6	0.9	1.0	1.8	1.7	2.1	1.8	1.7	1.8	2.7	2.4	2.1	2.3	2.2	2.5	2.6	1.85	2.69
28-Dec	2.5	1.3	1.7	1.8	1.6	1.5	1.9	1.9	2.1	1.6	1.9	1.5	1.5	1.6	2.2	2.3	2.0	3.0	2.8	3.4	3.7	4.3	3.2	2.9	2.26	4.30
29-Dec	3.5	3.4	2.4	2.0	2.3	2.7	1.4	4.1	2.4	2.3	2.6	2.8	2.5	2.2	2.2	2.2	2.2	1.8	1.6	1.4	1.3	1.7	2.1	2.1	2.31	4.10
30-Dec	3.1	3.5	3.0	3.0	3.2	3.6	3.3	3.3	3.2	3.2	3.5	2.7	5.5	4.0	6.7	6.5	4.8	4.9	5.0	4.6	5.4	5.6	6.1	4.4	4.25	6.73
31-Dec	4.9	2.6	3.0	3.5	1.8	2.6	2.4	2.7	4.2	4.7	2.7	2.7	2.4	3.4	2.5	2.7	2.8	3.3	3.7	4.2	5.2	5.5	5.0	5.3	3.49	5.48
																								Diurnal Average		
																								Diurnal Maximum		
,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3    24-hr 100 ul/m^3																										



**WCAS - Power**  
**Summary of Hourly Standard Deviations**

**Wind Direction (WD) - deg**  
**December 2014**

Maximum Value: 98.36 deg on Dec 23 19:00		Maximum Daily Average: 34.31 deg on Dec 19		Hours in Service: 744																																													
Minimum Value: 4.5 deg on Dec 8 02:00		Minimum Daily Average: 7.19 deg on Dec 15		Hours of Data: 744																																													
Maximum Diurnal Average: 19.82 deg at hour 17		Minimum Diurnal Average: 11.53 deg at hour 10		Hours of Missing Data: 0																																													
Monthly Average: 14.953 deg		Percentiles: P <sub>1</sub> = 5.2 P <sub>10</sub> = 7.2 Q <sub>1</sub> = 8.9 Median = 11.0 Q <sub>3</sub> = 15.1 P <sub>90</sub> = 25.9 P <sub>99</sub> = 80.4		Hours of Calibration: 0																																													
				Percent Operational Time: 100.0																																													
Day	Hourly Period Ending At																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Dec	7.3	6.8	6.6	7.3	7.4	8.7	9.6	7.9	8.9	5.7	6.1	7.5	8.3	7.4	11.6	8.9	12.6	13.6	18.4	10.1	8.4	13.9	15.2	11.0	9.55	18.36																							
2-Dec	10.3	10.2	10.0	14.7	10.1	14.3	9.1	10.3	12.4	10.4	10.2	11.6	11.8	9.9	13.1	13.2	16.9	24.5	4.9	7.0	5.9	6.6	9.0	9.9	11.11	24.53																							
3-Dec	9.6	11.9	8.7	8.5	9.2	9.2	6.8	7.2	6.5	7.4	10.0	9.8	14.8	9.6	7.2	10.7	5.6	5.8	5.5	5.3	5.8	7.8	8.1	8.3	8.31	14.81																							
4-Dec	7.7	7.6	8.9	10.8	10.6	8.6	18.1	6.6	10.3	9.2	11.6	18.1	19.2	23.3	25.1	20.2	22.4	8.8	8.9	10.1	8.1	7.4	10.5	8.2	12.51	25.14																							
5-Dec	9.8	7.5	13.4	10.4	11.1	7.0	5.7	4.6	9.2	7.2	4.8	7.3	17.7	14.6	7.7	7.2	7.0	6.8	8.3	7.5	8.7	7.5	8.1	7.2	8.60	17.74																							
6-Dec	9.2	7.7	7.7	10.9	11.3	15.9	12.5	16.0	35.6	11.1	15.6	16.2	35.8	15.7	11.1	9.6	11.1	15.1	10.3	12.1	17.9	32.6	16.1	11.3	15.35	35.80																							
7-Dec	9.5	8.8	11.7	12.6	5.2	5.4	7.7	7.7	10.3	10.5	11.2	13.1	9.8	9.6	9.6	7.5	37.0	36.4	19.5	6.7	6.3	6.1	5.6	5.9	11.40	37.02																							
8-Dec	18.7	4.5	6.1	11.1	13.7	24.4	24.2	6.7	9.7	9.2	12.5	17.2	10.3	28.7	28.7	15.3	16.9	51.7	10.6	83.9	57.7	19.3	34.5	22.8	22.43	83.92																							
9-Dec	29.5	9.4	11.6	7.6	10.1	11.4	13.6	14.2	8.7	7.3	6.7	6.4	9.8	13.7	13.7	12.7	13.7	14.4	9.5	10.9	9.8	14.1	10.0	12.3	11.71	29.47																							
10-Dec	14.7	11.6	27.0	11.1	9.5	8.8	6.5	5.8	11.3	9.4	7.5	9.9	12.9	8.1	11.8	15.0	10.3	8.9	9.7	11.6	9.4	7.8	10.0	6.6	10.64	26.95																							
11-Dec	8.7	9.4	7.1	64.7	64.5	22.7	14.4	19.1	11.8	9.4	8.6	13.1	12.0	31.0	20.8	36.6	8.7	9.9	7.0	7.7	17.4	11.5	25.1	9.8	18.79	64.74																							
12-Dec	10.4	12.3	19.3	22.3	16.5	18.9	19.8	14.4	13.8	16.6	61.7	82.9	81.6	20.4	68.7	69.1	75.3	53.1	34.7	12.2	14.1	16.6	12.5	36.5	33.48	82.85																							
13-Dec	16.4	21.3	12.5	13.4	54.1	16.6	8.0	7.6	7.6	6.9	7.8	9.0	12.1	9.1	9.3	9.1	8.8	8.8	7.3	6.8	7.9	12.9	8.8	7.9	12.08	54.10																							
14-Dec	10.7	11.3	8.1	8.1	10.0	9.0	8.7	8.7	7.1	8.4	8.7	8.4	9.1	11.9	11.7	18.4	39.5	14.5	10.1	9.5	35.7	13.4	8.9	4.9	12.28	39.49																							
15-Dec	5.1	5.3	5.3	5.3	5.2	7.2	6.5	8.2	7.3	7.1	8.9	8.6	8.2	9.3	8.2	8.1	8.0	8.2	6.5	6.7	6.9	7.1	7.6	7.5	7.19	9.34																							
16-Dec	7.7	8.7	8.7	8.7	9.1	8.7	9.2	10.6	9.5	8.9	10.7	10.1	11.1	9.5	9.5	11.0	10.8	10.6	10.7	12.1	11.0	14.3	12.0	11.0	10.18	14.33																							
17-Dec	9.9	14.2	13.0	14.6	18.2	20.1	19.8	19.8	41.4	23.1	17.1	22.5	28.8	24.1	32.0	31.5	26.1	17.4	30.1	24.2	39.7	54.2	18.2	18.3	24.11	54.24																							
18-Dec	16.6	32.8	33.6	29.5	11.1	7.4	19.0	16.6	13.5	16.5	33.2	25.9	25.5	56.3	16.5	16.5	10.0	9.1	37.5	29.3	6.3	54.1	10.9	14.0	22.57	56.25																							
19-Dec	17.2	20.7	8.3	10.1	10.2	77.2	78.6	46.5	95.2	31.5	52.5	15.2	35.4	14.9	36.7	59.5	58.1	38.3	30.6	14.4	26.9	17.7	10.4	17.4	34.31	95.25																							
20-Dec	8.1	41.3	18.7	14.1	7.1	8.7	8.8	12.8	16.2	14.5	11.7	15.5	13.5	11.7	10.0	6.5	7.2	6.2	7.9	7.6	7.7	8.1	6.9	9.2	11.67	41.34																							
21-Dec	12.1	11.7	15.8	88.1	21.7	26.3	26.0	25.5	33.7	24.1	16.5	19.3	11.0	12.6	8.8	9.2	13.8	10.6	14.1	10.4	10.5	11.6	11.0	13.6	19.08	88.14																							
22-Dec	10.4	14.1	10.3	9.5	9.3	9.1	10.7	10.2	9.1	11.3	10.6	12.7	10.7	13.1	11.3	10.6	13.3	10.7	9.5	14.7	10.4	10.8	10.2	10.4	10.95	14.67																							
23-Dec	15.1	21.6	15.6	7.3	8.7	9.2	9.4	9.4	12.3	11.4	11.6	11.1	11.6	9.1	8.9	11.6	10.6	32.6	98.4	20.5	10.2	17.2	15.1	17.4	16.90	98.36																							
24-Dec	10.4	9.2	10.7	9.7	14.3	10.5	15.6	11.2	10.9	11.9	11.6	10.1	11.5	18.9	13.5	12.9	11.4	13.3	9.9	15.5	10.9	11.3	13.6	14.6	12.23	18.87																							
25-Dec	50.6	58.5	24.0	58.3	32.2	18.6	11.7	7.0	9.9	10.9	9.8	11.2	17.4	9.8	14.4	31.0	13.4	28.9	38.0	16.3	13.0	11.2	10.3	13.8	21.68	58.48																							
26-Dec	12.3	12.6	15.7	7.2	10.1	6.7	8.5	16.6	6.4	5.3	7.2	8.2	10.8	9.5	10.4	8.5	8.7	10.5	10.7	8.3	10.2	11.0	10.4	11.0	9.86	16.56																							
27-Dec	9.8	8.7	9.7	8.8	11.2	7.1	7.2	10.2	9.2	8.9	21.6	11.6	12.8	15.0	16.4	10.9	19.2	10.5	11.4	14.2	14.3	15.7	14.3	14.1	12.20	21.59																							
28-Dec	11.4	12.4	13.1	12.5	11.1	8.4	10.8	14.5	12.0	10.8	12.4	11.3	13.6	11.9	12.9	10.0	12.5	14.5	16.0	18.2	21.3	17.1	14.3	14.0	13.21	21.28																							
29-Dec	18.3	18.9	15.3	15.0	12.3	12.1	18.8	13.0	12.8	12.2	11.2	14.0	16.8	19.8	18.0	37.9	85.7	10.0	7.9	7.9	6.2	7.3	8.0	9.5	17.03	85.67																							
30-Dec	9.5	10.3	9.8	9.9	8.3	9.7	10.0	9.7	12.6	8.6	10.3	9.0	12.4	11.7	15.4	10.8	9.8	10.5	10.9	10.9	10.8	10.2	13.3	13.5	10.74	15.36																							
31-Dec	11.5	11.8	13.9	10.1	10.9	9.0	19.5	9.1	13.0	11.9	11.0	11.2	11.4	10.2	10.8	10.4	10.2	9.3	12.1	11.1	11.2	11.6	11.2	11.3	11.40	19.50																							
																								13.18	14.61	12.90	17.17	14.66	14.10	14.66	12.50	15.75	11.53	14.55	14.79	17.02	15.50	16.25	17.75	19.82	16.89	17.00	14.32	14.21	15.11	12.25	12.37	Diurnal Average	
																								50.59	58.48	33.61	88.14	64.47	77.19	78.57	46.50	95.25	31.51	61.70	82.85	81.60	56.25	68.66	69.06	85.67	53.12	98.36	83.92	57.66	54.24	34.46	36.54	Diurnal Maximum	

Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m<sup>3</sup> 24-hr 100 ul/m<sup>3</sup>



**WEST CENTRAL AIRSHED SOCIETY**

**CONTINUOUS AMBIENT AIR QUALITY  
MONITORING PROGRAM  
MONTHLY REPORT  
CONTINUOUS AIR MONITORING DATA**

**AMS 908  
MEADOWS  
DECEMBER 2014**

Operations and Data Collection by:  
West Central Airshed Society  
Drayton Valley, Alberta

QA/QC, Data Validation and Reporting by:  
West Central Airshed Society  
Drayton Valley, Alberta

**Summary Report**

*Continuous air quality/meteorological monitoring measurements*

**West Central Airshed Society**

TransAlta / Meadows Station 908													December 2014
Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Total	Min	Max	----- P10	----- Q1	Percentile Median	----- Q3	----- P90	24 Hour Average Max (ppm)
SO <sub>2</sub> (ppb)	36	708	100.0	0.4	-	0.0	6.1	0.0	0.0	0.0	0.4	1.4	0.003
NO (ppb)	37	707	100.0	16.6	-	0.0	191.3	0.0	0.0	3.1	20.0	45.3	-
NO <sub>2</sub> (ppb)	37	707	100.0	15.4	-	0.0	40.3	1.6	6.6	15.7	22.9	28.4	0.026
NO <sub>x</sub> (ppb)	37	707	100.0	31.9	-	0.0	220.0	1.0	7.1	19.6	46.0	72.3	-
Wind Speed (kph)	0	744	100.0	7.2	-	0.0	33.7	1.4	3.3	6.3	10.0	14.2	-
Temperature (°C)	0	744	100.0	-7.6	-	-24.3	10.1	-15.5	-11.2	-8.1	-3.1	0.4	-
Relative Humidity (%)	0	744	100.0	82.4	-	41.7	96.4	68.1	78.0	85.5	90.0	91.6	-
Precipitation (mm)	0	744	100.0	-	1.3	0.0	0.5	0.0	0.0	0.0	0.0	0.0	-
Std Dev Wind Direction (deg)	0	744	100.0	25.7	-	3.2	100.0	6.4	9.2	15.3	31.3	69.5	-
Std Dev Wind Speed (kph)	0	744	100.0	2.0	-	0.0	9.7	1.0	1.3	1.8	2.5	3.3	-



**WCAS - Meadows**  
**Summary of Hourly Averages**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**December 2014**

Maximum Value: 6.12 ppb on Dec 20 07:00		Maximum Daily Average: 2.79 ppb on Dec 18		Hours in Service: 744																							
Minimum Value: 0.0 ppb on Dec 1 01:00		Minimum Daily Average: 0.00 ppb on Dec 28		Hours of Data: 708																							
Maximum Diurnal Average: 0.78 ppb at hour 4		Minimum Diurnal Average: 0.14 ppb at hour 16		Hours of Missing Data: 36																							
Monthly Average: 0.439 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.0 Q <sub>3</sub> = 0.4 P <sub>90</sub> = 1.4 P <sub>99</sub> = 4.8		Hours of Calibration: 36																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	0.0	0.0	Z	0.0	0.0	0.0	0.2	0.0	0.0	0.3	0.1	0.3	0.5	0.2	0.1	1.0	0.9	0.3	0.0	0.0	0.0	1.1	0.4	0.8	0.28	1.14	
2-Dec	0.4	0.4	Z	0.7	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.08	0.73	
3-Dec	0.0	0.0	Z	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.2	0.04	0.43	
4-Dec	0.3	0.6	Z	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.1	0.5	0.6	0.2	0.4	0.0	0.4	0.7	0.4	0.9	0.6	0.29	0.91	
5-Dec	0.4	1.0	Z	1.7	1.5	0.5	2.0	0.7	0.3	1.2	2.7	2.1	0.9	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.4	1.7	2.2	1.2	0.92	2.68	
6-Dec	1.1	0.7	Z	0.1	0.8	0.8	1.1	0.1	0.2	0.3	0.3	0.3	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.5	0.1	0.0	0.32	1.11	
7-Dec	0.7	0.1	Z	1.1	0.6	2.0	2.6	1.5	1.7	2.5	5.4	3.2	0.9	0.0	0.0	0.4	0.3	0.2	0.7	0.0	0.0	0.0	0.2	0.0	1.06	5.40	
8-Dec	0.0	0.1	Z	1.7	1.1	0.8	0.4	0.0	0.0	0.1	3.2	2.7	0.1	0.0	0.0	0.5	0.4	1.5	1.4	0.9	1.3	1.3	0.8	1.3	0.85	3.22	
9-Dec	2.7	2.4	Z	1.9	1.7	0.7	0.7	0.8	0.6	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.54	2.73	
10-Dec	0.2	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.22	
11-Dec	0.0	0.0	Z	3.3	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.4	0.1	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.35	3.41	
12-Dec	1.4	4.6	Z	1.8	0.5	0.1	0.0	0.0	0.2	0.1	0.1	0.5	0.5	0.0	0.5	0.2	0.0	0.4	0.6	0.4	0.6	2.2	1.7	0.0	0.72	4.59	
13-Dec	0.0	0.0	Z	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.7	0.0	0.0	0.7	1.4	1.9	0.24	1.90	
14-Dec	0.5	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.1	0.2	0.1	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.2	0.6	1.3	1.0	0.29	1.32	
15-Dec	0.4	0.5	Z	0.0	0.1	0.0	0.0	0.2	0.0	0.7	0.0	0.2	0.3	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.14	0.69	
16-Dec	0.0	0.0	Z	0.0	0.7	1.0	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.3	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.16	1.43	
17-Dec	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	0.5	0.4	0.0	0.0	0.4	1.0	2.4	1.9	1.4	1.5	1.5	0.52	2.38	
18-Dec	3.1	3.2	Z	2.9	3.7	4.7	5.0	5.3	4.7	4.9	3.8	2.9	2.4	1.1	0.7	0.5	0.3	1.1	3.6	3.0	2.8	3.4	0.7	0.3	2.79	5.29	
19-Dec	1.1	0.7	Z	0.6	0.5	0.4	0.4	0.4	0.3	0.4	0.4	0.3	C	C	C	C	C	0.1	0.2	0.4	0.4	1.6	1.9	2.3	0.68	2.32	
20-Dec	1.7	3.9	Z	4.8	4.7	5.2	6.1	5.3	2.0	2.1	2.2	1.0	0.9	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	1.84	6.12	
21-Dec	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.8	0.09	0.77	
22-Dec	0.0	0.4	Z	1.3	1.8	1.0	0.3	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.6	0.1	0.25	1.83	
23-Dec	0.0	0.0	Z	0.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.3	0.0	0.3	0.0	0.07	0.45	
24-Dec	0.6	0.0	Z	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.08	0.97	
25-Dec	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.5	0.3	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.12	0.82	
26-Dec	0.0	0.9	Z	0.2	0.3	0.8	1.0	1.1	0.7	0.9	4.0	2.0	1.1	2.4	1.7	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.78	4.01	
27-Dec	0.0	0.0	Z	0.0	0.0	0.1	0.4	0.0	0.1	0.0	1.0	0.6	0.6	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.15	0.99	
28-Dec	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
29-Dec	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.01	0.20	
30-Dec	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
31-Dec	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
		0.48	0.62	--	0.78	0.72	0.59	0.67	0.50	0.39	0.48	0.77	0.56	0.37	0.21	0.16	0.14	0.15	0.16	0.28	0.27	0.30	0.51	0.54	0.42	Diurnal Average	
		3.09	4.59	--	4.79	4.73	5.20	6.12	5.34	4.70	4.88	5.40	3.24	2.39	2.45	1.67	1.00	1.43	1.53	3.57	3.05	2.79	3.38	2.22	2.32	Diurnal Maximum	
Z - zerospan		C - Calibration																									
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb																											



**WCAS - Meadows**  
**Summary of Hourly Averages**

**Nitrogen Oxide (NO) - ppb**  
**December 2014**

Maximum Value: 191.26 ppb on Dec 20 07:00		Maximum Daily Average: 92.36 ppb on Dec 18		Hours in Service: 744																						
Minimum Value: 0.0 ppb on Dec 1 21:00		Minimum Daily Average: 0.00 ppb on Dec 28		Hours of Data: 707																						
Maximum Diurnal Average: 29.00 ppb at hour 11		Minimum Diurnal Average: 5.72 ppb at hour 17		Hours of Missing Data: 37																						
Monthly Average: 16.612 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 3.1 Q <sub>3</sub> = 20.0 P <sub>90</sub> = 45.3 P <sub>99</sub> = 151.8		Hours of Calibration: 37																						
				Percent Operational Time: 100.0																						
Day	Hourly Period Ending At																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	3.0	0.5	Z	0.8	0.7	2.3	12.7	1.9	2.5	20.3	13.7	21.8	24.8	17.7	11.6	38.8	35.5	18.3	1.8	3.7	0.0	43.6	21.7	32.2	14.33	43.60
2-Dec	19.1	17.6	Z	31.1	5.3	3.4	12.1	2.2	18.7	4.4	6.9	0.2	0.0	0.0	0.0	11.0	4.7	3.3	0.2	0.0	0.0	0.0	0.0	1.0	6.14	31.13
3-Dec	0.2	0.0	Z	0.5	0.3	1.2	1.0	0.0	0.8	3.8	3.0	4.9	3.0	2.4	8.5	6.7	1.3	0.0	0.0	0.0	0.0	20.6	4.6	17.1	3.48	20.57
4-Dec	20.4	30.0	Z	21.5	2.0	7.6	7.9	1.9	2.6	8.5	16.9	6.3	4.2	5.7	22.7	26.7	14.5	19.0	9.8	22.0	31.8	24.4	38.8	29.2	16.28	38.82
5-Dec	23.5	41.0	Z	63.9	57.0	28.0	69.4	32.0	21.8	48.0	90.7	75.9	40.6	31.2	12.8	7.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.05	90.70
6-Dec	0.0	0.0	Z	0.0	18.0	23.6	33.4	0.0	0.0	0.2	1.8	2.9	3.1	2.8	1.8	0.9	0.0	0.0	0.0	0.0	0.0	7.4	0.1	1.8	4.25	33.36
7-Dec	24.7	8.3	Z	40.2	27.2	69.9	87.5	56.3	61.3	85.4	173.8	110.4	40.7	3.6	2.0	19.3	17.9	17.3	34.5	0.0	0.0	7.6	17.4	6.8	39.65	173.81
8-Dec	0.0	0.0	Z	0.0	0.0	0.3	0.0	0.0	0.1	10.4	105.3	90.2	7.1	9.3	4.5	19.9	16.8	42.0	40.3	20.0	41.3	39.7	31.0	42.2	22.64	105.32
9-Dec	83.6	74.0	Z	65.1	59.7	29.7	30.1	32.7	27.1	17.7	15.8	9.0	4.6	6.8	3.1	2.6	0.0	0.2	0.0	0.0	0.0	7.5	19.4	23.5	22.25	83.56
10-Dec	19.8	0.0	Z	9.8	0.8	0.0	0.7	6.9	0.0	1.1	1.8	0.3	0.1	0.1	1.3	1.7	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.96	19.76
11-Dec	0.0	0.0	Z	102.6	107.8	0.0	0.0	0.0	0.6	1.4	3.8	8.7	22.7	9.2	7.9	5.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.77	107.84
12-Dec	0.0	0.1	Z	18.6	1.7	3.2	0.4	2.1	11.2	11.3	12.9	27.2	26.1	12.2	26.1	15.7	11.4	24.0	30.1	26.1	30.7	79.8	64.5	10.0	19.36	79.82
13-Dec	5.4	0.0	Z	0.0	2.9	12.4	27.7	0.0	0.0	0.1	1.2	1.2	1.2	0.6	0.6	0.0	3.0	23.7	35.4	14.3	13.6	34.4	55.2	71.1	13.22	71.10
14-Dec	27.2	5.9	Z	0.3	4.4	2.5	5.4	0.4	36.6	39.1	10.7	6.5	1.7	1.3	1.0	0.6	12.6	15.3	15.0	17.1	17.1	27.8	50.3	41.8	14.82	50.28
15-Dec	25.2	25.5	Z	8.4	15.1	4.5	0.9	14.2	2.1	30.6	4.5	6.4	7.6	6.3	4.0	1.8	0.4	0.0	0.0	0.0	0.0	0.0	0.5	23.4	7.89	30.62
16-Dec	3.9	1.3	Z	7.6	32.6	41.7	9.5	0.8	15.9	4.0	10.0	19.7	9.5	11.5	10.8	8.8	0.1	0.0	0.0	0.0	0.0	0.0	1.2	0.0	8.21	41.73
17-Dec	0.0	0.0	Z	10.9	0.7	0.9	0.6	0.0	1.8	1.7	0.2	0.8	1.0	0.8	0.9	0.4	2.2	22.3	41.0	80.4	66.5	54.2	55.7	56.4	17.37	80.36
18-Dec	101.6	105.3	Z	95.5	117.7	148.2	156.4	163.5	146.2	151.5	120.1	97.0	82.5	45.5	33.1	25.7	21.1	44.5	115.1	99.6	94.2	111.4	29.5	18.9	92.36	163.53
19-Dec	45.4	33.1	Z	28.4	24.0	19.5	16.3	19.8	11.8	19.6	23.4	19.5	C	C	C	C	C	C	23.2	27.9	29.4	63.2	73.0	84.3	--	84.28
20-Dec	64.4	127.3	Z	153.5	152.0	164.5	191.3	169.8	73.9	77.0	79.1	46.9	43.5	30.5	11.1	9.5	12.0	0.0	0.0	0.0	1.8	0.3	65.8	5.1	64.31	191.26
21-Dec	7.2	0.0	Z	12.2	0.4	1.2	0.0	0.0	0.0	3.1	8.5	8.1	21.6	10.5	3.7	1.0	0.4	0.0	0.0	0.0	2.3	9.1	35.9	35.8	7.00	35.93
22-Dec	4.5	23.6	Z	52.2	66.3	41.5	19.9	0.2	13.3	9.0	12.8	0.4	0.5	0.6	0.0	0.0	0.6	7.8	3.4	17.7	8.7	4.4	29.2	14.9	14.41	66.31
23-Dec	9.2	3.5	Z	25.4	24.7	1.4	2.7	0.0	0.0	0.5	3.9	4.2	2.6	1.6	1.0	0.2	0.0	0.0	8.5	2.5	18.8	2.1	2.4	17.6	5.78	25.41
24-Dec	26.5	2.2	Z	36.5	14.5	7.5	1.4	0.0	6.0	0.1	0.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.16	36.51
25-Dec	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.02	0.40
26-Dec	8.1	34.4	Z	13.8	19.6	32.4	41.4	42.5	31.4	40.0	129.7	71.6	45.4	83.2	58.6	19.8	1.7	12.0	16.3	15.2	4.7	0.0	0.2	0.0	31.39	129.73
27-Dec	3.0	1.6	Z	8.4	8.0	16.7	25.6	1.8	15.8	14.4	43.4	33.2	32.1	10.8	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.53	43.36
28-Dec	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
29-Dec	0.0	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	0.0	0.0	0.0	11.1	5.9	12.4	13.6	21.5	2.1	1.2	2.96	21.55
30-Dec	0.6	0.0	Z	1.4	1.2	2.0	1.9	0.0	0.5	3.1	4.1	6.8	1.4	0.6	0.1	0.6	0.0	5.1	1.2	0.0	0.0	0.0	0.0	0.0	1.34	6.84
31-Dec	0.0	0.3	Z	7.4	0.0	0.0	3.2	6.3	3.1	1.1	0.4	0.5	7.2	0.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.32	7.38
16.98 17.27 -- 26.32 24.67 21.49 24.49 17.92 16.30 19.59 29.00 21.98 14.49 10.19 7.72 7.46 5.72 8.69 12.52 11.62 12.33 17.41 19.27 17.20																								Diurnal Average		
101.62 127.34 -- 153.46 152.01 164.47 191.26 169.76 146.21 151.54 173.81 110.36 82.47 83.24 58.58 38.76 35.50 44.50 115.11 99.64 94.16 111.41 72.97 84.28																								Diurnal Maximum		
Z - zerospan C - Calibration																										
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ppb 24-hr --- ppb																										



**WCAS - Meadows**  
**Summary of Hourly Averages**

**Nitrogen Dioxide (NO<sub>2</sub>) - ppb**  
**December 2014**

Maximum Value: 40.30 ppb on Dec 7 11:00		Maximum Daily Average: 25.58 ppb on Dec 1		Hours in Service: 744																									
Minimum Value: 0.0 ppb on Dec 2 14:00		Minimum Daily Average: 1.04 ppb on Dec 28		Hours of Data: 707																									
Maximum Diurnal Average: 20.57 ppb at hour 4		Minimum Diurnal Average: 8.06 ppb at hour 14		Hours of Missing Data: 37																									
Monthly Average: 15.362 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 1.6 Q <sub>1</sub> = 6.6 Median = 15.7 Q <sub>3</sub> = 22.9 P <sub>90</sub> = 28.4 P <sub>99</sub> = 35.3		Hours of Calibration: 37																									
				Percent Operational Time: 100.0																									
Day	Hourly Period Ending At																								Daily Average	Daily Maximum			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24					
1-Dec	16.0	20.6	Z	21.3	25.0	22.9	32.3	27.1	22.6	25.2	18.5	19.9	21.8	18.6	16.7	27.6	34.7	33.9	29.7	28.6	26.4	34.0	29.2	35.8	25.58	35.82			
2-Dec	33.6	34.7	Z	35.1	20.7	25.5	31.8	26.6	36.1	10.9	8.5	0.8	0.4	0.0	0.3	12.4	20.6	23.8	18.4	18.9	9.2	13.6	19.6	6.2	17.73	36.06			
3-Dec	6.3	5.3	Z	8.7	10.7	14.2	15.1	5.2	9.8	12.4	4.7	4.7	3.3	3.6	9.8	13.8	15.6	18.5	19.3	15.5	15.7	28.5	22.4	30.0	12.75	29.98			
4-Dec	30.4	32.0	Z	28.5	16.8	20.4	25.2	13.8	18.0	21.1	15.7	8.7	6.3	8.8	16.6	22.9	26.3	31.1	28.7	32.2	34.4	32.5	33.2	34.7	23.40	34.72			
5-Dec	33.2	31.3	Z	31.2	31.1	28.0	30.9	26.2	24.3	24.8	27.3	24.2	17.7	15.5	14.3	14.6	18.7	16.1	13.6	15.0	17.3	17.5	16.6	14.4	21.90	33.23			
6-Dec	11.6	12.4	Z	10.3	23.4	24.3	25.4	11.8	8.2	8.0	6.3	6.2	6.6	6.7	7.5	8.6	11.0	13.7	11.1	10.8	10.5	16.8	14.1	11.6	12.04	25.37			
7-Dec	21.0	18.8	Z	19.3	19.0	21.9	24.1	21.5	23.9	26.5	40.3	33.7	22.9	6.6	6.2	19.7	31.0	35.8	33.3	14.7	5.6	12.4	26.3	25.1	22.16	40.30			
8-Dec	17.0	16.5	Z	15.6	15.3	18.9	19.3	23.9	25.1	20.9	29.2	28.0	9.3	10.1	9.8	18.5	25.7	28.1	28.4	25.4	27.2	28.1	26.7	27.5	21.50	29.17			
9-Dec	30.5	30.4	Z	26.5	26.2	25.4	24.3	24.0	23.2	20.2	20.9	18.4	13.3	14.8	10.6	12.4	12.1	3.3	3.3	3.3	4.0	19.5	32.4	35.1	18.88	35.12			
10-Dec	27.0	15.7	Z	29.1	20.6	12.3	16.9	23.4	12.4	14.0	12.5	5.1	4.2	3.1	5.3	5.9	6.2	7.9	7.9	8.5	6.8	7.0	5.8	6.4	11.47	29.07			
11-Dec	5.0	6.0	Z	33.7	28.4	8.2	7.7	7.4	4.2	6.8	11.3	11.0	15.8	8.8	11.8	19.2	13.9	14.5	10.0	6.9	5.9	4.3	8.6	12.0	11.37	33.71			
12-Dec	14.3	12.4	Z	22.3	17.5	20.7	11.5	18.8	24.5	22.8	16.8	16.6	16.6	11.6	17.3	18.0	20.3	24.3	23.5	22.6	22.9	28.2	24.9	15.3	19.29	28.22			
13-Dec	14.1	6.0	Z	5.6	12.4	15.7	20.0	10.7	5.7	6.1	5.1	3.6	2.8	2.1	2.4	2.2	14.3	27.8	31.3	23.9	27.9	34.5	34.0	35.3	14.93	35.30			
14-Dec	27.5	20.4	Z	8.6	15.5	14.0	22.2	15.2	27.5	26.6	14.7	8.4	2.9	2.6	3.1	4.6	24.0	29.5	29.5	28.2	28.6	26.1	24.8	21.9	18.54	29.54			
15-Dec	22.7	21.0	Z	24.0	19.9	19.3	15.9	17.1	10.7	20.6	10.5	9.4	9.4	8.1	7.3	8.6	10.9	11.9	12.7	10.6	4.6	3.5	7.2	21.1	13.36	23.96			
16-Dec	18.1	16.6	Z	19.2	20.7	22.4	20.0	19.5	21.6	16.3	13.5	13.3	8.5	10.1	11.6	14.0	8.7	7.2	4.9	4.1	8.4	16.6	19.6	20.9	14.59	22.39			
17-Dec	20.5	17.9	Z	20.5	7.1	6.4	7.7	5.1	6.8	5.2	3.7	3.8	3.9	3.9	4.3	5.4	10.0	20.0	23.2	24.6	22.0	19.9	21.1	21.4	12.37	24.64			
18-Dec	24.2	26.7	Z	22.2	22.4	24.1	25.6	24.4	23.5	26.0	21.1	22.3	23.6	19.0	18.3	20.8	22.3	22.1	24.6	25.2	23.9	24.0	20.9	20.0	22.92	26.66			
19-Dec	20.7	21.1	Z	21.3	21.3	20.7	20.7	20.1	20.0	18.7	16.8	14.2	C	C	C	C	C	C	21.0	19.9	19.2	20.9	22.4	21.8	--	22.41			
20-Dec	18.9	22.0	Z	22.9	23.9	27.0	28.4	26.2	20.8	18.9	18.1	14.8	15.5	15.8	12.0	13.8	17.8	14.9	12.0	15.2	17.3	14.5	27.6	16.8	18.91	28.40			
21-Dec	16.1	10.2	Z	17.3	21.8	22.5	20.4	19.5	18.2	16.4	13.1	11.0	13.6	11.6	9.3	8.4	11.2	9.8	3.7	1.3	8.1	26.2	29.1	23.3	14.88	29.12			
22-Dec	19.3	25.3	Z	28.9	32.9	32.7	28.5	14.4	17.7	24.0	21.4	2.8	2.9	3.6	2.2	1.9	8.5	25.6	23.0	29.3	27.4	30.6	33.5	28.6	20.22	33.48			
23-Dec	27.5	12.5	Z	37.8	34.1	31.7	23.9	16.1	13.5	12.6	13.3	11.6	9.9	8.8	7.7	8.2	10.2	8.5	22.5	20.3	24.5	19.5	20.8	29.7	18.49	37.83			
24-Dec	29.1	18.0	Z	32.8	20.7	23.8	15.6	7.1	21.3	8.8	5.2	3.8	1.7	1.5	0.3	0.5	0.5	0.3	0.0	0.2	0.2	1.2	1.4	0.5	8.45	32.78			
25-Dec	0.2	0.4	Z	0.2	0.2	0.3	1.9	3.2	2.4	3.2	3.6	3.2	1.5	1.7	2.5	3.0	3.6	5.2	6.6	6.4	4.0	2.5	2.3	2.4	2.63	6.57			
26-Dec	13.0	24.7	Z	21.9	22.3	21.7	21.9	22.2	21.6	19.7	27.1	22.6	20.4	26.2	28.0	21.2	17.6	27.8	27.9	30.7	23.9	5.4	17.0	5.5	21.32	30.74			
27-Dec	22.8	20.4	Z	26.1	27.8	34.5	35.4	24.2	26.8	25.5	26.3	21.1	18.4	12.3	10.1	2.6	2.4	0.4	0.1	0.0	0.0	0.0	0.0	0.8	14.70	35.38			
28-Dec	1.1	1.6	Z	3.8	2.9	2.7	2.3	1.7	1.1	0.7	0.7	0.2	0.1	0.0	0.1	0.5	1.0	1.7	0.9	0.6	0.0	0.0	0.0	0.0	1.04	3.78			
29-Dec	0.0	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	0.0	0.0	0.0	16.8	16.5	20.1	25.4	25.6	23.4	21.2	7.04	25.65			
30-Dec	12.2	9.3	Z	14.0	9.8	9.5	10.6	7.4	11.7	11.5	7.4	11.0	5.3	3.6	3.2	5.1	2.8	13.8	9.4	0.8	1.6	0.6	0.0	0.0	6.98	14.01			
31-Dec	0.7	17.1	Z	29.0	8.1	0.9	7.9	23.9	25.4	10.5	4.5	2.8	11.4	2.7	2.6	4.3	2.3	7.0	2.7	2.0	6.1	8.1	1.2	2.0	7.96	29.03			
		17.89	17.00	--	20.57	18.66	18.47	19.14	16.38	17.05	15.64	14.14	11.53	9.67	8.06	8.38	10.62	14.04	16.70	16.24	15.20	14.81	16.77	18.19	17.39	Diurnal Average			
		33.59	34.75	--	37.83	34.05	34.49	35.38	27.14	36.06	26.62	40.30	33.73	23.60	26.19	28.05	27.56	34.68	35.81	33.26	32.23	34.42	34.47	33.95	35.82	Diurnal Maximum			
Z - zerospan		C - Calibration																											
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr 159 ppb		24-hr 106 ppb																									



**WCAS - Meadows**  
**Summary of Hourly Averages**

**NOx (NO<sub>x</sub>) - ppb**  
**December 2014**

Maximum Value: 220.02 ppb on Dec 20 07:00		Maximum Daily Average: 115.57 ppb on Dec 18		Hours in Service: 744																													
Minimum Value: 0.0 ppb on Dec 2 14:00		Minimum Daily Average: 0.55 ppb on Dec 28		Hours of Data: 707																													
Maximum Diurnal Average: 46.92 ppb at hour 4		Minimum Diurnal Average: 16.14 ppb at hour 15		Hours of Missing Data: 37																													
Monthly Average: 31.946 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 1.0 Q <sub>1</sub> = 7.1 Median = 19.6 Q <sub>3</sub> = 46.0 P <sub>90</sub> = 72.3 P <sub>99</sub> = 175.3		Hours of Calibration: 37																													
				Percent Operational Time: 100.0																													
Day	Hourly Period Ending At																								Daily Average	Daily Maximum							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24									
1-Dec	19.1	21.1	Z	22.2	25.9	25.3	45.2	29.1	25.2	45.7	32.3	42.0	46.9	36.4	28.4	66.6	70.5	52.5	31.6	32.4	26.3	77.9	51.1	68.3	40.09	77.91							
2-Dec	53.0	52.6	Z	66.5	26.2	29.1	44.2	29.0	55.0	15.3	15.5	1.0	0.4	0.0	0.0	23.5	25.5	27.2	18.7	18.9	8.5	13.0	19.4	7.1	23.90	66.52							
3-Dec	6.4	4.9	Z	9.3	11.1	15.5	16.1	4.5	10.7	16.3	7.7	9.6	6.3	5.9	18.3	20.6	17.0	18.5	19.4	15.3	15.2	49.3	27.1	47.3	16.19	49.35							
4-Dec	51.0	62.3	Z	50.2	18.9	28.1	33.3	15.8	20.6	29.7	32.8	15.0	10.4	14.5	39.4	49.8	41.1	50.4	38.7	54.5	66.5	57.2	72.4	64.2	39.87	72.37							
5-Dec	57.0	72.6	Z	95.4	88.4	56.3	100.6	58.5	46.3	73.1	118.3	100.4	58.5	47.0	27.3	21.6	21.0	15.4	12.8	14.2	16.5	16.8	15.9	13.6	49.90	118.32							
6-Dec	10.7	11.5	Z	9.5	41.5	48.2	59.0	11.4	7.3	8.2	8.1	9.1	9.6	9.5	9.2	9.5	10.8	13.0	10.3	9.9	9.7	24.3	14.3	13.5	16.00	59.02							
7-Dec	46.0	27.2	Z	59.7	46.5	92.2	111.8	78.1	85.5	112.2	209.0	144.4	63.9	10.2	8.3	39.1	49.2	53.4	68.0	14.4	4.5	20.1	43.9	32.1	61.72	208.97							
8-Dec	16.5	16.4	Z	14.7	14.4	19.3	18.9	23.5	25.3	31.4	134.8	118.5	16.4	19.6	14.3	38.6	42.7	70.4	69.1	45.7	68.9	68.1	58.1	70.0	44.15	134.81							
9-Dec	114.4	104.6	Z	91.9	86.2	55.4	54.7	57.1	50.5	38.1	36.9	27.6	17.9	21.6	13.7	15.0	12.2	3.4	3.2	2.6	3.9	27.0	52.0	58.9	41.26	114.41							
10-Dec	47.0	15.0	Z	39.0	21.5	11.5	17.7	30.5	11.7	15.1	14.4	5.4	4.3	3.2	6.6	7.6	7.0	7.3	7.2	7.8	6.0	6.4	4.9	5.7	13.16	46.99							
11-Dec	4.1	5.2	Z	135.3	136.6	7.5	7.1	6.9	4.9	8.2	15.2	19.8	38.7	18.1	19.8	24.5	14.8	14.2	9.4	6.2	5.2	3.5	8.6	11.4	22.84	136.62							
12-Dec	14.2	12.6	Z	41.1	19.3	24.0	11.9	21.1	35.8	34.4	29.8	44.1	42.9	24.0	43.6	33.9	31.9	48.4	53.8	49.0	53.8	108.4	89.7	25.4	38.83	108.36							
13-Dec	19.6	5.3	Z	5.3	15.3	28.3	47.9	10.8	5.1	6.2	6.3	4.8	4.0	2.7	3.0	2.2	17.4	51.8	67.0	38.4	41.7	69.2	89.5	106.7	28.20	106.73							
14-Dec	55.0	26.3	Z	8.9	20.1	16.6	27.7	15.7	64.5	66.0	25.6	14.9	4.6	3.9	4.1	5.1	36.8	45.1	44.7	45.5	46.0	54.2	75.4	64.1	33.51	75.42							
15-Dec	48.2	46.8	Z	32.5	35.2	23.9	16.9	31.5	12.9	51.6	15.1	15.9	17.0	14.4	11.3	10.4	11.4	11.2	12.0	10.0	3.6	2.4	7.7	44.7	21.16	51.56							
16-Dec	22.0	18.0	Z	26.9	53.5	64.4	29.6	20.3	37.7	20.3	23.6	33.1	18.1	21.8	22.5	22.9	8.9	6.7	4.3	3.1	7.6	15.9	20.9	21.1	22.75	64.43							
17-Dec	20.1	17.9	Z	31.6	7.8	7.3	8.4	4.5	8.7	6.9	3.9	4.6	4.9	4.7	5.2	5.9	12.2	42.5	64.5	105.3	88.8	74.5	77.1	78.1	29.80	105.32							
18-Dec	126.2	132.3	Z	118.0	140.5	172.6	182.2	188.2	170.0	177.8	141.5	119.6	106.4	64.8	51.8	46.7	43.7	66.8	140.0	125.2	118.4	135.8	50.7	39.1	115.57	188.22							
19-Dec	66.4	54.5	Z	49.9	45.4	40.2	37.0	39.8	31.7	38.1	40.0	33.4	C	C	C	C	C	C	44.4	48.0	48.8	84.3	95.6	106.3	--	106.31							
20-Dec	83.5	149.6	Z	176.7	176.1	191.7	220.0	196.3	95.0	96.2	97.5	62.0	59.3	46.5	23.2	23.4	30.0	14.7	11.5	15.2	19.2	14.9	93.7	22.0	83.40	220.02							
21-Dec	23.4	10.1	Z	29.7	22.3	23.8	20.5	19.5	17.9	19.5	21.7	19.2	35.5	22.2	13.1	9.4	11.7	9.3	3.0	0.6	10.4	35.5	65.4	59.4	21.87	65.39							
22-Dec	23.9	49.2	Z	81.4	99.6	74.5	48.6	14.7	31.1	33.2	34.5	3.2	3.3	4.2	2.1	1.7	9.1	33.6	26.5	47.3	36.3	35.2	63.0	43.7	34.77	99.58							
23-Dec	37.0	16.1	Z	63.6	59.1	33.3	26.7	15.4	12.8	13.2	17.4	15.8	12.6	10.4	8.7	8.5	9.9	7.7	31.2	22.9	43.6	21.7	23.4	47.5	24.28	63.57							
24-Dec	55.9	20.3	Z	69.7	35.4	31.5	17.1	6.3	27.4	9.0	5.7	4.2	1.1	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.0	12.39	69.66							
25-Dec	0.0	0.0	Z	0.0	0.0	0.0	0.9	2.2	1.4	2.4	3.5	3.6	1.5	1.7	2.4	2.6	3.0	4.2	5.7	5.5	3.0	1.5	1.3	1.4	2.08	5.70							
26-Dec	21.3	59.4	Z	35.9	42.1	54.4	63.6	65.0	53.3	60.0	156.9	94.5	66.2	109.8	87.0	41.3	19.4	40.0	44.4	46.2	28.8	4.6	17.3	5.3	52.89	156.87							
27-Dec	26.0	22.1	Z	34.7	36.1	51.5	61.4	26.1	42.9	40.1	70.0	54.7	50.8	23.3	14.5	2.4	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.27	70.04							
28-Dec	0.3	0.8	Z	3.0	2.1	1.9	1.5	0.9	0.4	0.0	0.2	0.0	0.1	0.0	0.0	0.2	0.3	1.0	0.2	0.0	0.0	0.0	0.0	0.0	0.55	2.96							
29-Dec	0.0	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	0.0	0.0	0.0	28.1	22.5	32.6	39.3	47.5	25.7	22.5	13.1	10.06	47.48						
30-Dec	12.9	9.2	Z	15.5	11.1	11.5	12.6	7.1	12.3	14.7	11.5	18.0	6.7	4.2	3.3	5.6	2.4	19.1	10.7	0.2	0.9	0.0	0.0	0.0	8.24	19.06							
31-Dec	0.1	17.5	Z	36.6	7.8	0.2	11.1	30.4	28.7	11.7	4.9	3.2	18.7	3.4	2.7	4.2	1.6	6.6	2.0	1.2	5.4	7.8	0.4	1.2	9.02	36.62							
		34.87	34.23	--	46.92	43.41	40.00	43.68	34.20	33.31	35.31	43.05	33.60	24.24	18.30	16.14	18.09	19.71	25.23	28.61	26.61	26.93	34.05	37.46	34.56	Diurnal Average							
		126.18	149.58	--	176.70	176.10	191.72	220.02	196.32	169.99	177.78	208.97	144.41	106.35	109.75	86.96	66.59	70.51	70.44	139.99	125.21	118.36	135.75	95.62	106.73	Diurnal Maximum							
Z - zerospan		C - Calibration																															
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr --- ppb				24-hr --- ppb																											

**WEST CENTRAL AIRSHED SOCIETY**

**CONTINUOUS AMBIENT AIR QUALITY  
MONITORING PROGRAM  
MONTHLY REPORT  
METEOROLOGICAL DATA**

**AMS 908  
MEADOWS  
DECEMBER 2014**

Operations and Data Collection by:  
West Central Airshed Society  
Drayton Valley, Alberta

QA/QC, Data Validation and Reporting by:  
West Central Airshed Society  
Drayton Valley, Alberta



**WCAS - Meadows**  
**Summary of Hourly Averages**

**External Temperature (ET) - C**  
**December 2014**

Maximum Value: 10.06 C on Dec 9 19:00		Maximum Daily Average: 3.99 C on Dec 11		Hours in Service: 744																						
Minimum Value: -24.3 C on Dec 29 23:00		Minimum Daily Average: -18.52 C on Dec 29		Hours of Data: 744																						
Maximum Diurnal Average: -4.67 C at hour 16		Minimum Diurnal Average: -10.06 C at hour 8		Hours of Missing Data: 0																						
Monthly Average: -7.609 C		Percentiles: P <sub>1</sub> = -21.5 P <sub>10</sub> = -15.5 Q <sub>1</sub> = -11.2 Median = -8.1 Q <sub>3</sub> = -3.1 P <sub>90</sub> = 0.4 P <sub>99</sub> = 7.5		Hours of Calibration: 0																						
				Percent Operational Time: 100.0																						
Day	Hourly Period Ending At																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	-19.1	-20.1	-21.4	-20.9	-20.2	-21.5	-21.5	-20.8	-19.7	-20.4	-16.0	-14.3	-13.3	-11.6	-12.0	-11.5	-12.7	-14.4	-14.2	-15.5	-15.0	-15.2	-13.5	-12.5	-16.56	-11.50
2-Dec	-11.7	-12.6	-13.5	-12.4	-12.9	-12.4	-13.9	-14.2	-13.4	-11.2	-10.1	-8.7	-7.5	-7.3	-7.6	-9.5	-10.5	-12.1	-11.5	-13.0	-14.2	-14.8	-12.8	-6.9	-11.44	-6.94
3-Dec	-6.7	-6.2	-6.1	-6.3	-6.3	-6.4	-7.3	-7.1	-7.2	-7.6	-6.2	-4.9	-3.2	-1.3	-2.0	-4.1	-3.4	-4.9	-5.3	-8.0	-9.9	-9.0	-12.5	-11.4	-6.38	-1.29
4-Dec	-11.7	-11.2	-9.7	-9.2	-8.9	-9.9	-9.7	-9.6	-10.6	-10.4	-9.4	-7.6	-6.2	-5.9	-5.9	-5.7	-7.3	-9.1	-9.9	-10.1	-10.1	-10.9	-11.1	-12.0	-9.24	-5.67
5-Dec	-13.3	-16.3	-17.3	-18.1	-17.9	-18.7	-18.7	-20.1	-19.8	-20.4	-18.0	-16.0	-16.1	-13.8	-13.1	-11.2	-10.7	-11.0	-9.6	-8.1	-8.2	-8.1	-8.0	-8.1	-14.19	-7.97
6-Dec	-8.4	-8.4	-8.5	-9.9	-11.2	-12.1	-11.4	-10.0	-9.9	-10.3	-10.1	-10.0	-9.1	-8.5	-8.0	-7.6	-7.5	-7.9	-8.7	-8.4	-7.5	-6.2	-5.6	-5.9	-8.79	-5.64
7-Dec	-6.4	-7.1	-8.2	-10.2	-10.4	-10.9	-12.0	-13.2	-12.0	-10.6	-6.7	-4.3	-2.1	-0.5	0.2	-0.8	-3.4	-4.8	-7.1	-9.2	-10.2	-11.0	-11.2	-11.6	-7.66	0.21
8-Dec	-10.6	-10.0	-10.4	-10.8	-10.9	-11.5	-11.9	-12.5	-12.7	-12.6	-12.3	-10.4	-10.0	-7.8	-8.0	-7.9	-7.5	-8.9	-9.9	-10.0	-11.2	-10.7	-11.5	-11.7	-10.48	-7.50
9-Dec	-10.9	-10.4	-10.2	-9.8	-10.4	-9.5	-9.1	-8.8	-8.6	-7.8	-4.8	-3.9	-2.7	-0.9	0.1	2.2	3.4	10.0	10.1	10.0	9.1	6.2	5.5	5.3	-1.91	10.06
10-Dec	5.1	4.1	2.4	0.1	-2.2	-2.3	-1.8	-2.3	-1.0	0.5	2.0	6.4	8.9	8.5	7.5	7.2	7.7	6.3	4.5	3.9	3.9	2.6	2.1	2.3	3.18	8.92
11-Dec	1.6	1.3	0.1	-0.7	-1.6	0.4	0.8	2.2	7.1	6.9	6.2	6.9	7.4	8.0	7.6	5.6	4.8	4.8	4.6	4.0	4.0	5.1	4.2	4.4	3.99	7.99
12-Dec	4.1	3.4	1.3	0.5	0.2	-1.6	-0.8	-2.2	-2.2	-2.3	-2.6	-2.4	0.0	0.8	1.2	1.4	-0.5	-1.9	-3.4	-4.6	-5.0	-3.6	-3.7	-4.0	-1.17	4.11
13-Dec	-5.0	-4.6	-4.5	-3.8	-3.0	-2.1	-1.7	-1.3	-0.5	-1.4	-0.9	0.5	0.9	1.5	1.3	1.7	-0.2	-1.7	-2.3	-2.5	-3.0	-2.9	-4.2	-4.6	-1.85	1.68
14-Dec	-5.2	-5.9	-5.2	-5.3	-6.8	-7.1	-6.9	-7.9	-8.9	-8.1	-6.8	-4.8	-3.4	-2.7	-2.4	-2.9	-4.8	-6.8	-8.1	-9.4	-9.6	-10.6	-11.8	-11.9	-6.81	-2.43
15-Dec	-12.5	-14.0	-14.5	-13.5	-13.8	-11.2	-10.5	-10.5	-10.6	-11.0	-10.0	-9.2	-8.0	-5.4	-4.5	-4.8	-4.2	-5.3	-6.4	-8.0	-9.4	-9.5	-11.2	-17.1	-9.80	-4.24
16-Dec	-18.4	-18.8	-18.8	-18.9	-19.1	-18.5	-19.6	-18.8	-16.8	-15.7	-14.8	-13.1	-11.5	-9.2	-8.7	-8.3	-4.8	-5.1	-5.0	-4.9	-5.1	-7.8	-7.4	-7.9	-12.38	-4.84
17-Dec	-8.4	-8.4	-7.8	-7.1	-5.3	-5.2	-5.2	-5.3	-5.4	-5.7	-5.8	-6.0	-6.0	-6.5	-6.5	-6.9	-7.9	-8.6	-10.2	-11.0	-12.3	-12.9	-12.6	-13.1	-7.93	-5.18
18-Dec	-12.7	-12.9	-13.8	-14.1	-14.4	-14.9	-14.5	-14.1	-14.8	-14.3	-14.1	-10.4	-9.2	-8.3	-7.7	-7.5	-8.5	-9.4	-11.0	-10.6	-11.0	-10.4	-9.6	-9.6	-11.57	-7.48
19-Dec	-9.7	-9.4	-9.7	-9.8	-9.6	-9.4	-9.2	-9.6	-9.8	-10.9	-11.5	-12.0	-11.6	-10.9	-10.3	-9.6	-9.0	-8.5	-8.3	-8.4	-8.1	-8.2	-7.7	-7.7	-9.54	-7.66
20-Dec	-8.5	-8.8	-9.3	-10.9	-10.8	-10.5	-11.3	-12.0	-11.4	-12.0	-10.5	-8.7	-6.2	-4.2	-4.8	-5.6	-5.8	-5.8	-6.1	-7.8	-8.3	-8.1	-9.2	-8.8	-8.55	-4.17
21-Dec	-8.7	-8.4	-8.6	-9.6	-10.1	-10.0	-10.0	-9.7	-9.3	-9.0	-7.9	-6.8	-5.5	-4.0	-2.7	-1.2	-1.0	-0.4	1.0	0.9	1.1	0.0	-2.0	-1.8	-5.16	1.13
22-Dec	-0.5	-1.7	-2.8	-4.6	-5.1	-4.4	-3.5	-3.3	-3.6	-3.1	-1.5	-0.4	0.4	1.6	1.9	2.4	0.2	-2.8	-2.7	-2.5	-3.2	-3.3	-4.0	-3.1	-2.06	2.39
23-Dec	-1.6	-1.2	-2.4	-3.7	-5.0	-5.3	-7.3	-7.6	-7.2	-7.7	-6.4	-5.8	-3.5	-2.8	-3.0	-3.0	-2.5	-2.6	-2.7	-2.7	-2.3	-2.1	-2.9	-3.5	-3.95	-1.23
24-Dec	-4.9	-5.7	-6.1	-4.4	-3.3	-3.9	-2.5	-1.9	-2.9	-4.5	-1.7	-0.6	0.0	0.0	-0.2	-1.6	-2.5	-2.8	-3.5	-4.6	-5.9	-6.9	-7.8	-8.7	-3.63	0.00
25-Dec	-10.0	-10.1	-9.9	-10.2	-10.6	-10.8	-11.1	-11.4	-11.1	-10.9	-10.3	-9.7	-9.5	-9.1	-8.7	-8.6	-8.8	-8.8	-8.6	-8.0	-7.7	-8.0	-8.9	-10.8	-9.65	-7.73
26-Dec	-13.1	-13.7	-13.6	-14.7	-17.2	-18.4	-19.9	-19.4	-19.6	-20.6	-16.8	-15.6	-12.3	-11.8	-10.9	-8.8	-8.1	-7.7	-7.2	-6.9	-6.6	-3.3	-2.7	-2.8	-12.15	-2.69
27-Dec	-3.1	-3.3	-5.9	-7.3	-7.7	-7.8	-8.8	-9.4	-10.7	-11.8	-10.5	-8.6	-8.2	-7.2	-7.7	-6.7	-6.9	-7.2	-7.5	-8.1	-8.6	-8.9	-9.1	-9.4	-7.93	-3.07
28-Dec	-9.7	-9.7	-9.9	-10.4	-11.0	-11.2	-11.4	-11.5	-11.7	-11.9	-11.8	-11.6	-11.4	-11.3	-11.5	-11.8	-12.1	-12.1	-12.1	-12.4	-13.1	-13.8	-14.0	-14.2	-11.72	-9.66
29-Dec	-14.6	-15.2	-15.7	-16.0	-16.5	-16.9	-17.1	-17.6	-17.9	-17.9	-17.7	-17.3	-16.8	-17.4	-16.9	-16.5	-19.0	-20.5	-20.6	-22.9	-23.8	-23.8	-24.3	-21.8	-18.52	-14.61
30-Dec	-21.9	-20.7	-20.9	-20.8	-20.6	-19.2	-18.8	-18.7	-17.4	-16.8	-15.0	-12.0	-7.6	-7.0	-5.6	-4.0	-2.9	-4.9	-3.8	-1.4	-1.5	-1.4	-1.7	-3.0	-11.15	-1.35
31-Dec	-2.9	-2.7	-2.7	-2.5	-1.9	-1.7	-2.3	-3.8	-2.8	-2.5	-2.7	-2.4	-1.1	0.4	1.2	0.9	1.1	0.2	-0.4	-1.1	0.0	2.1	3.2	3.3	-0.88	3.32
																								Diurnal Average		
																								Diurnal Maximum		





**WCAS - Meadows**  
**Summary of Hourly Averages**

**Wind Speed (WS) - kph**  
**December 2014**

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1 Spd	10.8	6.6	0.5	2.8	0.4	2.2	7.1	3.1	6.3	1.8	6.1	0.6	1.7	1.5	2.0	4.1	3.8	1.4	1.7	0.6	0.8	2.8	0.7	9.0	1.58	10.76
Dir	W	W	SW	ESE	NW	W	WNW	WNW	WNW	W	W	NE	E	E	E	SE	ESE	E	E	NW	NE	W	NNE	WSW	W	W
2 Spd	9.1	5.3	6.6	2.2	1.0	4.9	5.5	8.4	10.7	14.8	13.4	17.8	16.7	15.8	14.4	11.5	7.4	7.7	8.4	3.0	0.6	2.2	4.0	19.9	8.12	19.94
Dir	WSW	W	W	WNW	NW	W	W	WSW	W	W	WNW	WNW	WNW	WNW	WNW	W	W	WSW	W	W	NW	E	WSW	SW	W	SW
3 Spd	8.4	20.0	17.0	18.2	16.5	17.5	16.7	19.4	19.3	14.1	17.9	17.2	8.1	2.5	6.2	8.8	8.5	5.2	7.2	4.0	0.7	5.2	1.8	5.0	10.76	19.97
Dir	SW	SW	WSW	SW	WSW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	W	W	NNW	WSW	WSW	WSW	WSW	SW
4 Spd	5.2	7.7	8.7	11.3	10.2	11.1	11.8	8.3	10.8	8.2	5.6	1.8	4.4	6.8	8.1	8.1	6.2	5.5	9.6	9.3	6.5	6.5	7.4	6.5	7.43	11.80
Dir	W	W	W	W	W	W	W	W	W	W	W	NE	NNW	WNW	W	W	W	W	W	W	W	W	W	W	W	W
5 Spd	4.6	2.6	2.5	4.2	4.4	2.3	3.6	3.4	0.5	1.1	1.2	0.3	2.1	2.5	3.4	4.1	4.7	10.0	11.8	13.4	10.3	13.3	16.1	12.0	3.14	16.15
Dir	W	W	W	W	W	WNW	W	WNW	W	W	W	ESE	ESE	ESE	ESE	ESE	E	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE
6 Spd	11.6	8.8	4.6	2.4	1.4	1.2	2.6	4.4	6.5	8.4	4.9	4.9	5.6	8.8	6.8	4.4	2.1	6.7	8.5	6.8	7.8	6.4	4.4	2.8	2.02	11.63
Dir	ESE	ESE	ESE	E	ESE	SW	ESE	ESE	E	E	ESE	ENE	ENE	E	E	E	N	NNW	NW	NW	WNW	W	NW	WNW	ENE	ESE
7 Spd	3.2	0.4	1.7	6.2	2.3	3.6	6.7	1.4	5.9	8.2	7.7	6.4	8.1	8.0	9.1	5.6	6.4	2.2	1.0	10.7	7.2	2.1	4.4	5.0	2.32	10.68
Dir	W	W	W	W	W	W	W	S	W	W	W	W	W	NNW	NW	W	WSW	WSW	E	ESE	ESE	ESE	SE	ESE	W	ESE
8 Spd	4.6	5.3	3.3	3.9	2.2	0.9	5.1	4.4	3.1	1.3	3.1	1.0	1.0	1.2	1.6	6.3	6.3	2.6	3.7	2.5	4.1	1.0	1.6	3.0	1.89	6.35
Dir	ESE	ESE	E	ESE	E	ESE	ESE	ESE	ESE	SE	W	SSW	ESE	ESE	NNE	ESE	SE	WSW	ESE	E	SW	SSE	N	WSW	ESE	ESE
9 Spd	1.7	0.5	0.9	0.2	2.4	2.7	3.0	2.2	5.1	5.8	5.6	6.2	6.8	7.6	7.5	5.8	5.6	33.2	33.7	32.3	32.5	18.7	13.1	13.0	5.57	33.73
Dir	W	ENE	WNW	S	E	ESE	E	SE	E	ESE	ESE	E	ESE	ESE	E	ESE	ESE	SW	SW	SW	SW	W	W	W	SSW	SW
10 Spd	10.5	2.2	4.1	1.4	2.6	2.9	3.2	2.3	6.3	8.7	7.6	10.6	11.6	16.2	23.4	21.9	20.1	4.3	6.6	7.1	8.9	7.2	8.2	7.0	4.77	23.41
Dir	WSW	NNE	SE	SW	NE	ENE	E	E	ESE	ESE	E	S	S	SSW	SSW	SSW	SSW	ESE	ENE	ESE	E	ESE	E	ESE	SSE	SSW
11 Spd	7.5	7.9	2.7	3.9	9.5	12.9	7.9	6.6	29.3	26.9	13.0	15.6	10.4	4.2	3.3	5.6	10.3	11.3	11.6	4.4	10.9	18.8	13.0	19.8	3.59	29.35
Dir	E	ESE	SW	W	W	WNW	NW	WSW	SW	SW	WSW	WSW	W	NNW	ESE	SE	SE	SE	ESE	E	E	ESE	ESE	ESE	S	SW
12 Spd	19.2	10.7	4.6	6.1	6.3	3.3	2.2	2.1	6.8	1.9	0.3	6.2	0.6	2.1	5.8	3.1	2.7	4.0	3.4	5.1	5.7	6.9	5.1	6.9	1.91	19.21
Dir	ESE	ESE	W	SW	W	WSW	SSW	NW	WSW	E	N	WNW	SE	NW	W	SE	ESE	SW	WNW	W	WSW	WSW	W	WNW	WSW	ESE
13 Spd	6.3	9.8	7.9	5.2	4.5	4.8	7.7	8.7	12.1	11.0	9.4	9.9	7.0	8.3	8.9	11.0	10.3	10.2	9.2	8.1	7.0	8.3	8.6	7.3	8.31	12.07
Dir	W	W	W	WNW	W	WSW	W	W	W	W	W	WNW	WNW	WNW	W	WNW	WNW	W	W	W	W	W	W	W	W	W
14 Spd	8.6	9.2	5.7	8.0	9.8	10.4	7.5	7.4	9.1	11.7	12.1	11.2	11.9	11.1	6.7	6.2	4.6	3.7	0.9	0.5	0.8	0.5	0.8	0.9	6.44	12.14
Dir	W	W	WNW	W	W	W	W	WNW	W	W	W	W	WNW	W	WNW	W	W	WSW	WSW	WSW	ESE	ESE	WNW	WSW	W	W
15 Spd	0.4	0.8	0.7	1.6	0.6	0.0	1.5	1.3	2.1	0.7	2.5	4.2	6.0	10.6	9.2	9.8	15.1	11.1	10.4	9.6	9.6	10.4	5.5	5.7	4.62	15.08
Dir	SW	W	SSE	SE	SSE	E	E	ESE	ESE	ESE	E	ENE	E	ESE	E	ESE	SE	SE	SE	ESE	ESE	ESE	ESE	W	ESE	SE
16 Spd	5.3	6.3	4.9	1.4	0.7	4.5	5.4	5.8	4.5	3.9	2.7	1.7	3.5	4.6	5.7	2.4	17.7	14.1	10.8	7.0	2.5	4.4	3.3	6.3	2.76	17.66
Dir	WNW	W	W	WSW	WSW	W	W	W	W	W	W	W	W	W	W	SW	SE	SE	SSE	SSE	SSE	W	W	W	SW	SE
17 Spd	6.1	6.0	3.9	4.6	4.7	6.0	5.2	7.6	8.6	10.1	7.9	8.0	7.3	7.5	7.7	5.1	2.3	0.9	3.4	3.0	4.1	5.6	5.5	6.0	4.78	10.10
Dir	W	W	W	WSW	S	SSW	SW	SW	SW	SW	S	S	SSW	SSW	SW	SSE	SW	WSW	WSW	WSW	W	W	W	W	SW	SW
18 Spd	4.7	4.6	2.1	0.7	1.9	1.1	0.2	0.6	2.4	1.6	2.6	0.3	0.6	2.6	3.1	3.1	4.6	4.2	2.3	3.9	1.2	1.7	3.7	1.1	0.30	4.66
Dir	W	W	W	W	W	W	W	W	W	W	WSW	NW	E	NE	NE	E	ESE	ESE	WSW	SE	WSW	W	ESE	E	SSW	W
19 Spd	2.2	0.3	3.7	3.5	3.6	1.8	0.4	2.8	4.1	1.3	3.8	5.6	5.4	6.1	5.4	3.0	2.4	2.5	0.8	1.5	0.7	1.6	3.4	0.6	1.03	6.11
Dir	W	ENE	ESE	E	ESE	ESE	SE	E	E	W	WNW	W	WNW	NW	WNW	WNW	NW	WNW	W	WNW	NW	WSW	WNW	SSE	WNW	NW
20 Spd	3.7	0.8	1.4	2.8	3.2	1.1	0.3	0.5	1.4	0.6	1.5	2.4	3.2	3.6	4.4	1.4	5.3	4.9	5.4	7.8	10.1	3.6	3.3	8.5	2.30	10.15
Dir	WNW	SSW	ESE	W	W	SE	WNW	NNW	E	W	E	ENE	E	E	ESE	E	E	E	E	ESE	ESE	E	SE	ESE	ESE	ESE
21 Spd	6.2	8.1	1.5	8.7	9.1	7.0	10.0	9.8	7.6	3.3	6.1	4.3	5.9	11.4	11.9	9.7	6.7	10.7	10.2	10.0	9.6	10.2	9.1	10.3	6.89	11.89
Dir	ESE	ESE	W	W	NW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	WNW	WNW	W	W	W	W	W	WNW	WNW
22 Spd	11.8	5.2	6.9	6.9	6.3	5.0	6.2	5.2	3.8	3.6	9.0	16.0	16.5	15.8	15.9	12.2	11.4	10.5	10.9	10.8	10.5	4.0	5.7	8.1	8.96	16.49
Dir	W	W	W	W	W	W	W	WNW	W	W	W	W	W	WNW	WNW	WNW	WNW	W	W	W	W	WNW	W	W	W	W



**WCAS - Meadows**  
**Summary of Hourly Averages**

**Wind Speed (WS) - kph**  
**December 2014**

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
23 Spd	9.9	12.1	8.8	5.5	4.8	0.4	3.1	4.6	3.4	3.8	4.3	4.5	2.9	5.9	4.3	2.9	1.3	3.5	1.8	1.3	7.0	6.7	3.7	5.4	0.91	12.10	
Dir	W	WSW	W	W	W	SSW	NE	ENE	E	E	ENE	E	ENE	E	ESE	E	ENE	ESE	W	SSW	W	W	WNW	W	W	WSW	
24 Spd	6.1	4.1	4.3	3.7	5.0	3.3	12.5	12.8	11.8	12.1	14.5	14.7	14.1	9.7	8.8	8.0	8.7	11.7	9.4	9.4	8.2	8.4	9.0	9.1	4.96	14.65	
Dir	W	WSW	ESE	W	NW	W	W	WNW	W	W	WNW	WNW	WNW	NW	NNW	NNE	NNE	NE	NNE	NE	NNE	ENE	NE	ENE	NW	WNW	
25 Spd	4.3	3.3	2.8	3.5	8.6	12.1	10.3	10.8	4.5	5.3	5.7	6.6	7.1	8.9	8.5	7.2	5.2	3.2	2.8	7.8	10.6	10.7	9.5	8.2	2.77	12.12	
Dir	ENE	NE	ENE	ESE	ESE	SE	ESE	ESE	ESE	ESE	ESE	ESE	E	E	E	E	E	E	WNW	WNW	WNW	WNW	NW	WNW	E	SE	
26 Spd	7.9	7.7	7.6	5.5	1.9	4.1	4.8	1.3	1.0	2.5	0.5	2.8	1.7	4.3	5.0	5.3	5.1	5.2	4.8	2.4	1.9	15.5	20.0	18.1	5.43	20.00	
Dir	W	W	WSW	W	WNW	W	W	ESE	E	W	W	W	NW	W	W	W	W	W	W	W	WNW	WNW	WNW	W	W	W	
27 Spd	13.7	13.5	8.8	7.8	9.7	4.4	5.1	3.2	1.9	4.8	4.7	2.0	2.7	5.1	9.0	9.8	11.6	11.3	13.0	11.3	9.0	10.0	8.6	1.82	13.67		
Dir	W	W	W	W	W	W	WNW	WNW	S	WSW	WSW	WSW	E	ENE	E	E	ENE	ENE	E	ENE	NE	NE	NE	NE	NNE	W	
28 Spd	8.7	6.0	8.5	9.4	8.5	6.9	6.9	7.6	10.1	6.3	4.8	7.9	8.4	8.9	8.1	7.2	4.3	6.5	10.8	11.7	14.7	13.0	11.2	11.6	8.31	14.68	
Dir	NE	N	N	NNW	NNW	NW	NNW	NNW	N	N	NNW	N	N	NNW	NNW	NNE	N	NW	NNE	NNE	N	N	N	NNW	N	N	
29 Spd	12.0	11.4	10.2	9.2	11.6	9.3	10.0	13.5	11.6	11.7	11.7	14.3	12.1	10.7	9.5	6.6	4.8	6.4	4.8	0.6	1.5	1.5	0.5	5.5	6.02	14.29	
Dir	N	NNE	NNE	NNE	NNE	NNE	NNW	NW	NW	NW	NW	WNW	WNW	WNW	WNW	WNW	W	SW	SW	NNW	ENE	E	N	W	NW	WNW	
30 Spd	7.8	7.4	11.2	7.4	14.4	17.4	15.1	14.6	12.5	13.0	16.3	14.8	7.0	9.4	19.9	7.8	8.1	11.5	11.4	14.3	9.5	15.8	25.3	16.2	11.72	25.31	
Dir	WSW	W	WSW	WSW	WSW	WSW	WSW	WSW	W	WSW	WSW	WSW	WNW	WNW	WNW	WNW	WNW	W	WNW	WNW	WNW	NW	NW	WNW	W	NW	
31 Spd	9.9	10.2	12.6	14.0	16.6	17.8	14.8	15.6	19.5	23.0	19.6	19.3	16.6	16.1	16.7	14.1	17.7	13.1	14.5	15.3	16.6	19.7	18.0	16.9	16.09	23.04	
Dir	WNW	W	W	W	WNW	WNW	WNW	W	W	W	WNW	WNW	W	W	WNW	W	WNW	WNW	WNW	W	W	W	WNW	WNW	W	W	
Spd	3.20	2.87	3.12	3.58	3.56	3.73	4.08	3.78	4.64	4.66	4.65	4.66	3.51	2.98	3.51	1.60	1.33	2.14	1.96	1.34	1.62	2.47	2.80	3.48	Diurnal Average		
Dir	W	W	W	W	W	W	W	W	W	W	W	W	WNW	WNW	W	W	SW	SW	WSW	WSW	W	WNW	WNW	W	Diurnal Maximum		
Spd	19.21	19.97	17.02	18.19	16.57	17.75	16.74	19.39	29.35	26.93	19.62	19.25	16.70	16.23	23.41	21.95	20.06	33.15	33.73	32.26	32.52	19.72	25.31	19.94	Diurnal Maximum		
Dir	116.44	231.63	238.79	233.00	282.13	287.51	235.22	249.43	235.70	235.68	281.82	285.69	293.63	205.50	208.25	209.02	206.67	224.85	217.42	216.02	224.64	280.44	304.76	221.67	Diurnal Maximum		
Maximum Speed Value: 33.7 kph on Dec 9 19:00 Maximum Daily Speed Average: 16.09 kph on Dec 31 Maximum Diurnal Speed Average: 4.66 kph at hour 12																		Minimum Speed Value: 0.0 kph on Dec 15 06:00 Minimum Daily Speed Average: 0.30 kph on Dec 18 Minimum Diurnal Speed Average: 1.33 kph at hour 17						Hours in Service: 744 Hours of Data: 744 Hours of Missing Data: 0			
Monthly Average Velocity: 3.055 kph 270.26 deg All monthly, daily, and diurnal averages have been calculated using vector methods																		Speed Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 1.4 Q <sub>1</sub> = 3.3 Median = 6.3 Q <sub>3</sub> = 10.0 P <sub>90</sub> = 14.2 P <sub>99</sub> = 23.8						Percent Operational Time: 100.0			
<b>Frequency Distribution</b>																											
		Speed Range (kph)																									
Direction	0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total																				
North	11	18	7	0	0	0	36																				
NorthEast	14	11	4	0	0	0	29																				
East	78	43	5	0	0	0	126																				
SouthEast	35	27	12	2	0	0	76																				
South	8	7	1	0	0	0	16																				
SouthWest	20	14	12	6	5	0	57																				
West	106	155	65	9	0	0	335																				
NorthWest	24	32	12	1	0	0	69																				
Total	296	307	118	18	5	0	744																				



**WCAS - Meadows**  
**Summary of Hourly Averages**

**Relative Humidity (RH) - %**  
**December 2014**

<b>Maximum Value: 96.41 % on Dec 13 02:00</b> <b>Maximum Daily Average: 91.40 % on Dec 8</b>																						<b>Hours in Service: 744</b> <b>Hours of Data: 744</b>				
<b>Minimum Value: 41.7 % on Dec 30 20:00</b> <b>Minimum Daily Average: 58.24 % on Dec 31</b> <b>Maximum Diurnal Average: 84.86 % at hour 4</b> <b>Minimum Diurnal Average: 76.78 % at hour 14</b> <b>Monthly Average: 82.436 %</b> <b>Percentiles: P<sub>1</sub> = 48.8 P<sub>10</sub> = 68.1 Q<sub>1</sub> = 78.0 Median = 85.5 Q<sub>3</sub> = 90.0 P<sub>90</sub> = 91.6 P<sub>99</sub> = 95.9</b>																						<b>Hours of Missing Data: 0</b> <b>Hours of Calibration: 0</b> <b>Percent Operational Time: 100.0</b>				
Day	Hourly Period Ending At																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	77.4	78.5	80.2	81.9	79.9	81.3	81.3	81.2	80.8	80.7	80.2	76.7	76.0	74.4	75.1	75.6	80.8	83.9	84.4	86.9	87.2	86.7	87.3	87.8	81.10	87.84
2-Dec	88.7	87.6	88.5	88.4	88.5	86.7	86.6	87.9	88.4	85.1	79.6	72.1	66.5	63.0	62.4	67.6	69.1	73.9	78.4	83.0	87.3	87.5	87.7	78.1	80.53	88.73
3-Dec	75.2	71.4	71.5	73.2	74.2	75.0	75.1	72.3	71.3	70.7	68.2	68.0	64.0	57.4	60.5	69.8	67.4	71.0	73.0	80.4	90.8	87.4	90.2	89.5	73.65	90.82
4-Dec	89.2	89.1	84.9	83.4	82.8	84.2	84.0	84.8	87.3	86.2	80.7	79.9	75.3	76.4	78.0	78.9	82.4	86.1	88.9	88.7	90.4	90.2	91.0	90.0	84.70	90.96
5-Dec	88.7	85.6	85.4	84.4	84.8	83.9	83.6	82.8	82.9	82.2	83.9	84.5	84.5	85.8	88.8	89.6	89.7	89.9	91.3	91.4	90.1	90.0	89.3	90.5	86.81	91.38
6-Dec	89.6	90.8	90.6	90.5	90.4	89.5	90.1	90.9	90.5	89.9	89.1	89.2	89.8	89.8	89.3	88.2	87.9	90.3	89.7	92.2	92.1	92.3	91.0	91.4	90.21	92.34
7-Dec	92.8	93.6	93.7	92.4	91.8	91.5	90.8	89.9	90.3	91.6	94.1	94.5	86.6	79.4	75.2	77.8	84.2	89.0	93.9	93.3	91.7	91.0	91.1	91.2	89.64	94.48
8-Dec	91.6	92.1	91.5	91.2	91.1	90.7	90.5	89.9	89.8	89.7	90.0	91.2	91.5	93.1	93.0	93.3	93.8	92.5	91.8	91.8	91.2	91.3	90.6	90.6	91.40	93.79
9-Dec	91.2	91.3	91.4	91.6	91.3	92.1	92.4	92.7	92.9	93.7	95.7	96.0	96.3	95.9	93.0	80.8	75.2	52.3	51.2	50.2	53.3	65.4	67.4	64.8	81.58	96.28
10-Dec	63.2	64.2	69.0	76.4	85.0	88.1	85.4	84.8	81.1	79.5	77.5	54.3	42.6	47.8	55.6	57.9	56.0	61.8	69.4	71.6	70.8	75.5	77.1	76.4	69.63	88.11
11-Dec	79.6	80.8	83.9	87.6	88.9	80.8	80.5	77.9	63.0	62.4	64.6	61.0	58.9	55.2	56.6	64.6	70.1	72.4	74.2	74.1	73.8	66.9	71.5	70.5	71.66	88.90
12-Dec	71.0	74.4	81.8	83.5	82.2	90.0	85.7	93.5	91.8	91.6	93.8	89.5	82.1	79.5	78.5	77.2	83.9	89.8	93.6	95.9	96.1	95.4	94.4	95.9	87.13	96.08
13-Dec	96.3	96.4	96.2	96.0	95.0	94.2	93.9	94.3	93.6	94.2	92.4	86.3	81.3	74.6	74.2	66.7	71.4	74.8	78.7	77.9	78.0	76.4	81.2	82.4	85.26	96.41
14-Dec	82.1	84.3	81.7	79.2	82.6	83.5	82.8	85.3	87.5	84.3	81.5	76.9	70.5	67.8	67.7	69.1	74.5	82.3	86.3	90.2	92.4	92.0	91.0	90.4	81.91	92.38
15-Dec	89.5	88.0	87.9	88.6	87.9	90.1	90.5	90.2	89.8	90.6	91.2	92.6	94.2	92.1	88.3	84.2	83.4	85.2	89.5	92.4	92.9	90.1	85.3	89.36	94.20	
16-Dec	84.1	84.4	84.2	83.9	83.7	83.9	83.2	84.5	85.9	86.7	87.3	88.2	89.4	90.8	90.7	87.5	86.1	85.2	85.1	84.9	88.6	89.0	88.9	86.53	90.83	
17-Dec	88.9	88.8	88.4	89.1	87.1	86.5	86.9	87.7	88.2	89.3	89.2	89.3	88.5	88.5	88.5	89.6	90.5	93.2	91.3	90.6	89.7	89.0	89.1	88.8	89.03	93.21
18-Dec	89.5	89.4	88.1	87.9	87.5	87.3	87.5	87.8	87.1	87.7	87.3	89.2	87.3	85.0	83.6	81.8	88.5	91.8	90.4	90.8	90.6	91.1	92.0	91.3	88.35	91.97
19-Dec	91.2	91.6	91.1	91.1	91.2	91.2	91.3	91.0	90.9	89.7	89.6	89.1	89.2	89.4	89.8	90.0	89.7	90.3	90.0	90.4	90.4	90.3	91.0	90.6	90.42	91.64
20-Dec	90.3	90.6	91.8	89.9	90.4	90.6	90.1	89.4	90.6	89.2	89.1	86.5	83.1	78.9	81.9	84.7	85.1	83.6	82.8	84.9	85.8	85.9	90.7	91.6	87.39	91.76
21-Dec	92.0	91.0	90.1	90.0	89.0	88.8	88.9	88.7	88.5	87.9	86.0	86.4	84.1	82.2	89.0	95.6	95.3	95.7	89.8	90.2	89.6	91.2	93.3	93.8	89.88	95.68
22-Dec	90.0	91.0	93.0	93.3	92.3	87.3	85.0	82.5	82.4	80.4	80.7	78.9	76.3	70.6	70.9	67.3	70.9	79.7	77.7	77.3	79.4	80.0	82.0	76.9	81.08	93.28
23-Dec	74.4	70.5	69.4	72.1	74.2	76.9	84.4	89.1	84.3	85.4	82.9	81.8	75.9	72.2	76.9	79.4	73.6	72.9	74.6	75.5	71.0	66.6	70.0	72.8	76.12	89.09
24-Dec	76.8	79.3	82.3	79.1	77.9	78.8	74.4	72.4	75.3	75.0	70.4	68.1	66.6	70.6	81.9	93.0	91.4	85.3	85.7	90.3	90.2	87.9	87.2	86.8	80.27	93.01
25-Dec	89.2	88.6	87.7	88.3	89.8	91.2	91.0	90.4	90.8	90.5	90.4	89.6	89.2	89.3	89.4	89.3	89.8	90.0	90.0	89.2	85.9	82.0	81.5	85.8	88.70	91.22
26-Dec	89.4	89.1	88.4	87.5	85.4	85.0	83.3	84.0	83.6	82.2	84.9	85.5	87.9	87.9	88.1	87.3	86.9	86.3	86.6	87.3	87.4	81.5	81.7	83.3	85.85	89.38
27-Dec	82.5	79.4	83.7	86.6	84.6	85.2	88.0	88.9	90.0	89.7	89.3	82.7	78.8	82.3	85.7	87.3	88.7	89.5	89.9	92.3	90.7	90.6	89.4	87.7	86.81	92.26
28-Dec	83.7	82.5	85.0	86.9	85.3	85.1	84.4	83.9	82.1	81.2	81.2	81.4	80.9	80.4	79.3	80.0	82.2	85.9	80.4	79.2	78.4	78.0	78.3	79.8	81.89	86.90
29-Dec	78.0	76.5	79.4	80.1	80.4	77.3	76.7	75.5	75.1	73.4	71.4	70.7	69.0	70.0	70.7	67.9	73.6	79.4	79.0	80.9	81.2	80.5	79.4	80.8	76.12	81.15
30-Dec	80.9	80.4	78.8	76.2	74.1	72.6	71.9	71.9	71.4	71.3	68.1	65.6	56.1	58.8	57.6	55.8	48.7	51.7	48.7	41.7	46.5	50.6	61.8	82.1	64.30	82.13
31-Dec	83.6	76.6	69.3	60.4	55.4	49.9	48.7	55.4	51.2	50.2	50.1	49.1	49.9	48.8	49.5	55.2	55.3	58.5	61.2	63.8	66.0	63.9	62.1	63.7	58.24	83.59
84.85 84.44 84.81 84.86 84.66 84.48 84.17 84.56 83.83 83.27 82.58 80.43 77.75 76.78 77.86 78.71 79.61 81.07 81.72 82.80 83.39 83.19 84.18 84.50																								Diurnal Average		
96.33 96.41 96.16 96.03 94.97 94.18 93.92 94.29 93.61 94.18 95.68 95.95 96.28 95.92 93.04 95.58 95.28 95.68 93.86 95.94 96.08 95.38 94.41 95.93																								Diurnal Maximum		



**WCAS - Meadows**  
**Summary of Hourly Averages**

**Precipitation (PR) - mm**  
**December 2014**

<b>Maximum Value: 0.50 mm on Dec 6 21:00</b> <b>Maximum Daily Total: 1.10 mm on Dec 6</b>																								<b>Hours in Service: 744</b>		
<b>Minimum Value: 0.0 mm on Dec 1 01:00</b> <b>Minimum Daily Total: 0.00 mm on Dec 1</b>																								<b>Hours of Data: 744</b>		
<b>Maximum Diurnal Total: 0.50 mm at hour 21</b> <b>Minimum Diurnal Total: 0.00 mm at hour 1</b>																								<b>Hours of Missing Data: 0</b>		
<b>Monthly Total: 1.300 mm</b> <b>Percentiles: P<sub>1</sub> = 0.0 P<sub>10</sub> = 0.0 Q<sub>1</sub> = 0.0 Median = 0.0 Q<sub>3</sub> = 0.0 P<sub>90</sub> = 0.0 P<sub>99</sub> = -0.1</b>																								<b>Hours of Calibration: 0</b>		
<b>Percent Operational Time: 100.0</b>																										
Day	Hourly Period Ending At																								Daily Total	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
2-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
3-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
4-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
5-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
6-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	0.3	0.2	0.0	1.10	0.50
7-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
8-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
9-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.20	0.10
10-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
11-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
12-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
13-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
14-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
15-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
16-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
17-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
18-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
19-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
20-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
21-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
22-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
23-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
24-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
25-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
26-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
27-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
28-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
29-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
30-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
31-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
<b>0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.10 0.20 0.50 0.30 0.20 0.00</b>																								<b>Diurnal Average</b>		
<b>0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.10 0.10 0.50 0.30 0.20 0.00</b>																								<b>Diurnal Maximum</b>		



**WCAS - Meadows**  
**Summary of Hourly Standard Deviations**

**Wind Speed (WS) - kph**  
**December 2014**

Maximum Value: 9.68 kph on Dec 11 08:00      Maximum Daily Average: 3.96 kph on Dec 30		Hours in Service: 744 Hours of Data: 744 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																								
Minimum Value: 0.0 kph on Dec 15 06:00 Maximum Diurnal Average: 2.32 kph at hour 23 Monthly Average: 2.009 kph		Minimum Daily Average: 1.21 kph on Dec 18 Minimum Diurnal Average: 1.73 kph at hour 3 Percentiles: P <sub>1</sub> = 0.5 P <sub>10</sub> = 1.0 Q <sub>1</sub> = 1.3 Median = 1.8 Q <sub>3</sub> = 2.5 P <sub>90</sub> = 3.3 P <sub>99</sub> = 5.9																								
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	2.5	2.4	2.4	1.0	1.0	1.8	1.0	2.1	3.2	1.3	1.7	0.9	1.0	1.2	1.2	0.8	2.5	2.5	1.4	1.3	1.4	1.4	2.1	1.8	1.66	3.18
2-Dec	1.6	1.5	1.6	1.2	1.7	1.6	1.3	1.0	1.5	2.1	3.1	2.1	2.8	2.7	2.2	2.1	1.6	2.2	2.0	1.9	1.2	1.4	6.1	3.2	2.07	6.11
3-Dec	4.9	5.9	2.6	2.2	2.0	2.7	1.8	3.2	3.5	2.2	3.2	3.6	4.5	1.9	4.0	2.7	2.1	1.3	1.8	3.9	1.2	1.5	2.0	2.9	2.82	5.88
4-Dec	1.9	1.8	0.5	2.0	2.2	2.5	2.1	1.7	1.0	1.2	0.9	1.6	3.1	1.9	1.2	1.0	0.9	1.6	2.5	0.7	1.2	1.3	0.6	0.9	1.51	3.13
5-Dec	1.0	1.6	1.0	0.7	0.6	1.6	0.4	0.9	0.9	1.2	1.2	0.6	0.4	0.8	1.0	1.0	1.1	2.4	2.5	2.0	1.5	3.5	3.5	1.8	1.39	3.51
6-Dec	1.1	2.6	1.9	1.7	1.9	1.8	1.5	1.7	2.3	1.5	2.8	1.3	2.5	1.6	1.9	2.0	1.3	2.5	2.3	1.9	1.7	2.1	1.6	1.8	1.90	2.75
7-Dec	0.8	0.9	2.4	2.1	2.0	1.6	1.6	2.1	1.6	0.6	0.9	0.8	2.7	1.8	2.7	1.8	1.2	2.1	3.4	1.8	1.7	1.5	2.2	0.9	1.72	3.39
8-Dec	0.7	0.6	1.1	1.2	1.1	1.1	3.4	1.6	1.9	1.5	0.9	1.8	1.8	2.0	1.4	2.9	1.6	1.9	2.6	2.5	1.4	1.5	1.7	0.9	1.64	3.43
9-Dec	1.3	1.1	1.0	1.2	1.4	1.9	1.6	2.1	2.5	2.4	1.4	2.3	1.8	3.5	3.0	1.8	4.8	6.3	5.3	3.5	3.6	3.9	2.5	3.5	2.66	6.31
10-Dec	4.1	2.0	2.1	1.9	1.4	1.7	2.6	2.0	2.5	2.3	1.9	5.8	4.0	5.7	3.5	2.6	3.0	2.7	1.8	3.8	3.1	2.6	2.6	1.7	2.81	5.76
11-Dec	1.3	3.0	2.3	3.1	2.6	7.1	3.1	9.7	2.6	4.1	3.4	2.4	1.6	2.5	2.2	1.1	3.4	2.7	2.3	1.9	3.7	3.0	1.9	4.0	3.12	9.68
12-Dec	3.2	4.3	3.3	2.3	2.0	3.7	2.4	3.8	4.3	2.1	1.3	1.9	2.0	2.2	2.1	3.2	1.7	1.9	1.9	1.3	2.2	1.3	2.0	1.7	2.42	4.35
13-Dec	1.6	1.9	1.4	1.9	1.4	1.2	1.5	1.5	2.0	0.7	1.1	2.3	1.5	2.0	1.2	0.8	0.7	1.0	1.0	1.1	1.0	0.9	1.0	0.9	1.31	2.26
14-Dec	0.7	0.7	2.2	2.1	1.5	1.4	2.1	1.2	2.5	1.2	1.6	1.8	1.5	1.5	2.7	1.4	0.8	1.5	1.1	1.1	0.9	1.2	1.1	1.0	1.45	2.70
15-Dec	0.9	1.0	1.1	0.7	0.9	0.0	0.9	1.9	1.5	1.2	0.8	1.1	1.7	2.3	1.7	2.9	3.7	2.6	1.7	0.7	1.0	0.9	2.7	1.6	1.48	3.73
16-Dec	1.1	1.0	1.2	1.4	1.1	0.4	0.7	0.5	0.6	0.4	0.5	0.3	1.4	1.8	1.1	4.5	2.7	2.6	2.6	1.9	1.7	1.1	1.4	2.2	1.43	4.54
17-Dec	1.7	2.4	1.7	1.5	2.1	2.0	1.4	2.0	2.1	2.5	2.4	2.4	2.1	2.6	2.2	1.8	2.1	1.3	1.3	1.5	2.2	1.0	1.2	1.1	1.86	2.58
18-Dec	0.9	0.6	1.4	1.0	0.9	1.2	0.7	0.8	1.2	1.2	0.7	0.6	1.0	1.4	0.8	1.1	0.8	2.6	1.1	1.9	1.8	1.4	2.5	1.4	1.21	2.55
19-Dec	1.3	0.9	0.9	1.1	0.8	2.0	0.8	2.5	1.7	1.2	1.1	1.0	1.3	1.3	1.1	2.2	2.7	1.9	1.3	1.6	1.6	1.2	2.1	1.5	1.47	2.65
20-Dec	1.6	1.6	1.4	2.3	1.8	1.1	1.0	1.0	1.4	1.2	1.5	1.4	1.7	1.4	1.8	1.2	2.6	2.7	1.3	0.7	2.9	3.3	2.8	1.7	1.72	3.33
21-Dec	1.6	1.7	2.9	4.1	2.1	2.2	2.5	2.5	2.5	1.1	2.5	1.5	1.9	3.1	2.3	1.9	1.7	3.3	2.2	1.2	2.0	1.6	1.0	1.4	2.11	4.07
22-Dec	1.4	1.3	1.9	1.5	1.3	1.3	1.6	2.1	1.2	1.6	3.6	2.0	2.5	2.3	2.8	2.8	2.2	1.2	1.8	1.4	1.2	2.9	2.0	3.1	1.96	3.58
23-Dec	1.9	5.1	1.3	0.8	1.3	0.9	2.2	1.1	1.0	1.7	1.6	1.6	1.9	1.4	1.8	1.9	1.5	2.5	3.1	2.9	3.7	2.8	1.3	1.96	5.10	
24-Dec	2.8	4.5	0.7	2.9	2.3	2.1	5.2	1.8	1.3	1.0	2.7	2.6	3.3	2.4	2.6	2.8	2.0	2.5	2.1	2.3	2.2	2.6	2.2	2.9	2.49	5.19
25-Dec	1.2	1.8	1.0	1.0	2.5	2.2	0.9	1.6	1.1	3.0	1.5	1.3	1.2	1.9	1.7	1.2	1.6	1.4	2.3	2.1	2.4	2.8	2.7	1.3	1.73	3.03
26-Dec	1.1	1.4	1.6	1.1	1.6	2.4	1.2	1.3	1.2	0.7	0.8	1.0	1.4	1.9	1.5	2.0	1.1	1.1	1.7	1.1	2.7	3.3	3.2	2.1	1.61	3.34
27-Dec	1.7	1.4	1.4	1.5	1.9	1.1	0.7	1.6	2.1	1.8	0.9	1.7	1.3	1.8	2.5	1.6	1.6	1.6	1.6	2.1	1.8	2.3	2.3	2.1	1.68	2.51
28-Dec	2.2	1.5	2.3	2.0	2.3	1.8	1.9	1.8	2.1	3.0	1.3	1.6	1.8	1.9	1.8	2.3	1.5	2.0	2.2	3.2	4.3	3.1	2.3	2.8	2.22	4.30
29-Dec	2.9	2.8	2.9	2.1	2.5	2.6	3.3	3.3	2.5	3.0	2.6	3.0	2.9	1.8	2.1	1.5	0.8	1.5	2.5	1.1	1.0	1.0	1.3	1.8	2.19	3.33
30-Dec	4.0	3.4	1.8	6.7	3.4	3.2	3.4	2.2	3.4	2.8	2.4	1.9	5.2	7.8	3.4	5.8	3.9	2.7	4.9	3.5	2.0	7.4	5.9	4.0	3.96	7.85
31-Dec	1.5	1.9	2.4	2.0	2.3	4.0	3.5	2.0	2.3	3.7	2.3	2.5	2.4	2.1	3.7	2.4	5.3	3.4	3.4	2.9	2.3	2.4	2.7	2.4	2.75	5.25
																								Diurnal Average		
																								Diurnal Maximum		
,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3    24-hr 100 ul/m^3																										



**WCAS - Meadows**  
**Summary of Hourly Standard Deviations**

**Wind Direction (WD) - deg**  
**December 2014**

Maximum Value: 99.97 deg on Dec 3 21:00		Maximum Daily Average: 48.68 deg on Dec 1		Hours in Service: 744																						
Minimum Value: 3.2 deg on Dec 13 17:00		Minimum Daily Average: 7.99 deg on Dec 31		Hours of Data: 744																						
Maximum Diurnal Average: 35.72 deg at hour 8		Minimum Diurnal Average: 16.39 deg at hour 15		Hours of Missing Data: 0																						
Monthly Average: 25.711 deg		Percentiles: P <sub>1</sub> = 4.1 P <sub>10</sub> = 6.4 Q <sub>1</sub> = 9.2 Median = 15.3 Q <sub>3</sub> = 31.3 P <sub>90</sub> = 69.5 P <sub>99</sub> = 91.8		Hours of Calibration: 0																						
				Percent Operational Time: 100.0																						
Day	Hourly Period Ending At																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	10.1	21.3	92.9	26.7	96.2	68.7	6.4	43.8	12.0	74.4	13.5	81.9	42.0	24.6	46.7	14.2	41.6	90.9	62.4	94.2	72.9	34.9	88.5	7.3	48.68	96.24
2-Dec	5.9	20.6	10.5	51.4	66.4	24.0	14.5	10.2	9.7	4.1	11.8	6.5	11.0	10.1	7.5	12.5	6.3	15.0	13.5	75.0	97.5	37.7	68.7	7.0	24.89	97.49
3-Dec	22.9	19.8	13.5	5.7	4.5	5.5	7.2	5.4	7.2	3.9	7.3	9.7	59.5	16.5	17.9	13.1	14.5	15.7	69.5	100.0	33.6	85.6	43.9	24.66	99.97	
4-Dec	22.2	8.3	6.0	8.5	12.1	11.1	5.9	8.2	5.3	13.3	13.0	60.9	52.7	19.2	7.9	10.0	11.7	11.6	5.7	4.5	10.0	9.9	4.1	8.0	13.75	60.88
5-Dec	8.8	50.8	42.6	9.4	12.0	37.7	8.3	5.6	88.5	52.5	83.3	36.0	14.7	23.5	15.0	18.8	11.8	7.6	5.7	5.8	8.7	8.9	5.0	9.2	23.76	88.52
6-Dec	7.6	12.6	18.7	44.2	88.7	86.7	48.4	21.0	19.2	10.9	17.2	16.7	18.4	9.2	11.8	13.7	47.4	19.3	11.5	12.7	10.9	37.2	22.5	18.2	26.03	88.70
7-Dec	27.2	64.1	47.9	23.8	75.3	17.7	10.2	85.2	11.7	3.9	8.1	15.3	18.9	15.3	16.4	23.1	8.5	73.7	81.1	9.5	11.8	19.2	8.7	7.2	28.48	85.23
8-Dec	5.7	8.8	17.3	11.3	18.6	83.3	18.3	11.2	50.1	84.1	21.0	57.4	31.4	71.4	39.4	14.7	9.1	55.9	80.6	64.7	37.6	69.5	51.9	23.3	39.01	84.14
9-Dec	42.4	71.3	86.7	81.1	71.0	28.9	26.2	71.3	30.8	16.1	18.4	29.1	19.7	35.3	32.9	21.8	41.6	8.1	6.6	6.4	5.6	12.3	12.1	7.2	32.62	86.74
10-Dec	17.6	55.7	39.1	69.1	68.4	42.9	57.8	80.6	19.5	20.4	17.1	48.0	14.9	14.4	6.9	6.1	6.9	56.9	13.5	64.1	20.3	25.5	26.3	23.7	33.99	80.61
11-Dec	19.1	20.1	61.9	61.8	10.1	18.3	25.6	80.4	4.4	4.9	20.4	15.7	9.6	56.3	45.4	17.6	14.5	11.6	13.1	24.7	10.2	7.8	8.2	5.7	23.63	80.36
12-Dec	6.3	8.5	64.8	22.2	21.6	67.5	76.9	96.5	37.1	67.9	89.4	32.8	84.0	80.6	19.3	79.3	35.9	35.8	29.5	17.6	19.2	14.0	18.6	30.5	43.99	96.47
13-Dec	12.7	10.0	14.0	12.5	28.4	14.6	6.6	8.9	5.9	6.1	6.9	7.5	8.5	9.0	6.1	3.9	3.2	4.4	6.1	11.1	8.4	6.0	7.2	6.7	8.95	28.39
14-Dec	6.5	7.2	18.7	11.0	5.5	5.2	4.6	16.9	8.7	4.4	4.0	9.4	5.4	6.2	12.0	7.9	18.5	37.5	65.3	86.6	22.9	52.8	84.2	78.3	24.15	86.63
15-Dec	57.8	94.1	82.3	29.9	27.6	23.4	21.7	69.4	47.7	74.4	20.7	8.7	7.4	13.9	13.5	29.0	7.0	7.3	8.5	4.5	4.0	5.0	60.4	6.4	30.20	94.08
16-Dec	7.8	8.9	10.2	61.1	74.3	5.7	4.7	5.8	6.9	5.0	7.2	7.6	4.5	6.6	6.0	75.4	6.3	6.7	11.3	12.6	75.7	24.6	37.0	13.4	20.22	75.73
17-Dec	9.3	29.4	27.5	37.0	19.6	19.1	20.0	18.7	13.0	15.3	21.3	17.7	19.1	23.9	16.5	26.7	49.2	62.6	17.2	13.3	9.9	8.4	8.0	8.8	21.30	62.58
18-Dec	8.8	11.7	17.3	69.5	22.9	77.4	87.0	84.2	22.0	58.8	17.1	68.9	26.8	10.2	11.4	26.2	8.9	24.6	69.1	11.4	86.8	66.3	19.7	25.8	38.86	86.97
19-Dec	48.3	61.2	11.9	14.3	9.6	63.3	23.2	74.9	14.6	84.7	19.5	13.7	19.1	12.2	16.0	42.1	72.1	37.1	52.6	59.2	89.8	57.4	21.8	64.4	40.94	89.78
20-Dec	8.7	81.7	49.8	62.7	53.8	11.7	91.9	74.9	19.6	80.7	34.5	22.0	24.3	22.0	10.5	71.3	17.9	42.2	20.4	4.9	9.9	64.3	60.2	9.6	39.56	91.94
21-Dec	11.4	10.7	84.7	30.7	14.3	21.8	14.2	15.0	11.0	17.4	21.9	27.2	8.9	9.6	7.3	8.8	14.9	7.7	9.3	6.3	10.0	5.1	6.3	5.4	15.84	84.73
22-Dec	5.1	9.7	5.1	9.1	4.9	20.9	9.4	19.8	19.5	21.3	8.8	5.0	5.1	8.0	13.6	12.9	14.5	7.0	11.5	6.4	13.4	22.1	10.3	13.3	11.53	22.10
23-Dec	11.3	16.4	8.4	6.6	16.0	70.4	42.0	12.5	17.7	27.6	21.0	23.4	47.6	7.9	31.6	36.7	86.7	29.9	87.8	84.4	21.3	35.5	45.4	19.1	33.63	87.81
24-Dec	32.2	81.2	11.3	76.3	21.8	30.5	8.3	9.5	9.3	5.4	9.4	11.2	9.7	14.1	17.9	16.9	12.5	10.6	13.2	14.6	14.3	18.7	15.1	10.6	19.78	81.24
25-Dec	14.2	22.8	23.2	15.3	7.8	5.3	5.8	7.3	11.9	16.7	17.3	19.2	9.8	14.1	10.4	7.8	11.5	31.1	57.8	15.8	12.6	14.9	10.9	7.2	15.45	57.79
26-Dec	14.7	9.4	9.4	11.0	33.8	61.7	12.6	84.8	47.5	16.9	84.3	16.8	27.2	16.5	6.8	6.6	13.4	11.0	22.7	17.7	83.5	6.2	7.5	4.3	26.10	84.81
27-Dec	5.3	4.1	7.2	12.7	8.3	15.1	8.6	44.5	77.0	22.6	15.9	48.7	27.3	41.5	21.8	8.6	13.5	10.2	8.1	6.8	9.6	14.7	12.5	13.0	19.07	77.01
28-Dec	12.6	20.2	19.0	17.2	15.0	13.8	13.2	14.2	17.5	25.2	20.1	13.5	15.6	15.4	14.8	16.8	20.2	15.2	20.8	20.6	22.0	21.2	18.2	18.0	17.51	25.24
29-Dec	20.0	20.3	13.7	12.6	10.2	15.0	15.9	11.5	12.2	11.4	11.8	11.1	16.2	7.9	11.1	27.1	11.3	15.4	32.7	40.1	37.1	44.8	73.4	21.8	21.02	73.39
30-Dec	26.3	37.1	23.3	55.0	14.9	10.0	12.7	10.3	14.4	7.7	9.3	7.7	82.3	56.2	6.5	21.7	18.9	15.2	27.5	10.3	10.4	15.7	12.1	9.9	21.48	82.29
31-Dec	12.0	9.3	9.3	7.2	7.2	7.1	13.2	4.6	6.6	6.8	4.6	5.7	6.5	7.5	8.6	7.2	6.9	13.7	12.5	7.8	5.2	9.2	6.8	6.3	7.99	13.72
16.80 29.26 30.58 31.18 30.35 31.75 23.26 35.72 21.89 28.08 21.70 24.27 22.53 23.29 16.39 22.68 21.15 25.49 28.82 28.48 30.70 25.91 29.59 17.21																								Diurnal Average		
57.78 94.08 92.93 81.12 96.24 86.68 91.94 96.47 88.52 84.71 89.38 81.92 83.99 80.63 46.66 79.31 86.70 90.93 87.81 94.20 99.97 69.48 88.53 78.29																								Diurnal Maximum		
,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3 24-hr 100 ul/m^3																										

**WEST CENTRAL AIRSHED SOCIETY**

**CONTINUOUS AMBIENT AIR QUALITY  
MONITORING PROGRAM  
MONTHLY REPORT  
CONTINUOUS AIR MONITORING DATA**

**AMS 959  
WAGNER2  
DECEMBER 2014**

Operations and Data Collection by:  
West Central Airshed Society  
Drayton Valley, Alberta

QA/QC, Data Validation and Reporting by:  
West Central Airshed Society  
Drayton Valley, Alberta

**Summary Report**

*Continuous air quality/meteorological monitoring measurements*

**West Central Airshed Society**

TransAlta / Wagner2 Station 959												December 2014
Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Min	Max	----- P10	----- Q1	Percentile Median	----- Q3	----- P90	24 Hour Average Max (ppm)
SO <sub>2</sub> (ppb)	36	708	100.0	0.2	0.0	15.2	0.0	0.0	0.0	0.0	0.0	0.002
NO (ppb)	37	707	100.0	3.8	0.0	63.2	0.0	0.0	0.0	3.1	15.3	-
NO <sub>2</sub> (ppb)	37	707	100.0	10.7	0.4	32.4	2.5	4.7	9.4	16.1	20.3	0.022
NO <sub>x</sub> (ppb)	37	707	100.0	14.1	0.0	88.5	1.7	4.2	9.4	20.9	33.7	-
Wind Speed (kph)	0	744	100.0	1.7	0.0	13.3	0.0	0.0	0.3	2.6	5.7	-
Temperature (°C)	0	744	100.0	-7.7	-28.0	11.7	-15.3	-12.0	-7.7	-3.4	0.8	-
Relative Humidity (%)	0	744	100.0	80.3	37.0	93.5	65.9	76.7	83.8	87.1	89.8	-
Std Dev Wind Direction (deg)	0	744	100.0	59.3	9.3	120.0	22.7	35.0	61.9	82.4	92.3	-
Std Dev Wind Speed (kph)	0	744	100.0	1.3	0.1	7.4	0.1	0.1	1.0	2.1	3.0	-





**WCAS - Wagner2**  
**Summary of Hourly Averages**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**December 2014**

Maximum Value: 15.19 ppb on Dec 31 00:00		Maximum Daily Average: 1.50 ppb on Dec 30		Hours in Service: 744																													
Minimum Value: 0.0 ppb on Dec 1 01:00		Minimum Daily Average: 0.00 ppb on Dec 4		Hours of Data: 708																													
Maximum Diurnal Average: 0.76 ppb at hour 12		Minimum Diurnal Average: 0.00 ppb at hour 4		Hours of Missing Data: 36																													
Monthly Average: 0.236 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.0 Q <sub>3</sub> = 0.0 P <sub>90</sub> = 0.0 P <sub>99</sub> = 6.5		Hours of Calibration: 36																													
				Percent Operational Time: 100.0																													
Day	Hourly Period Ending At																								Daily Average	Daily Maximum							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24									
1-Dec	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	3.7	3.1	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.40	3.66							
2-Dec	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	1.4	10.6	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.60	10.62							
3-Dec	0.0	0.0	Z	0.0	0.0	0.0	2.8	0.0	0.0	0.8	2.1	0.5	3.7	2.6	0.0	0.0	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.57	3.73								
4-Dec	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00								
5-Dec	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.1	0.03	0.51								
6-Dec	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00								
7-Dec	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00								
8-Dec	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00								
9-Dec	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00								
10-Dec	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00								
11-Dec	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00								
12-Dec	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00								
13-Dec	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00								
14-Dec	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00								
15-Dec	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	C	C	C	C	C	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00								
16-Dec	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00								
17-Dec	0.0	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	0.0	0.0	0.5	0.8	1.6	0.9	0.3	0.0	0.0	0.18	1.59								
18-Dec	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00								
19-Dec	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00								
20-Dec	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00								
21-Dec	0.0	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	4.7	5.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.53	4.97								
22-Dec	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	4.3	9.7	0.9	1.8	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.79	9.67								
23-Dec	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00								
24-Dec	0.0	0.0	Z	0.0	0.0	0.0	0.0	1.2	0.0	0.0	4.3	13.5	9.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.25	13.52								
25-Dec	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.00	0.11								
26-Dec	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00								
27-Dec	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00								
28-Dec	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00								
29-Dec	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.7	3.8	6.5	2.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.89	7.67								
30-Dec	0.0	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	3.3	0.5	0.0	4.8	3.5	0.0	0.0	7.1	15.2	1.50	15.19								
31-Dec	11.2	0.4	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.50	11.22								
		0.36	0.01	--	0.00	0.00	0.00	0.09	0.04	0.00	0.05	0.51	0.76	0.58	0.61	0.59	0.34	0.26	0.08	0.29	0.14	0.01	0.02	0.23	0.49	Diurnal Average							
		11.22	0.38	--	0.00	0.00	0.00	2.82	1.23	0.03	1.42	10.62	13.52	9.70	6.47	9.67	4.71	4.97	1.10	4.76	3.51	0.26	0.51	7.11	15.19	Diurnal Maximum							
Z - zerospan		C - Calibration																															
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr 172 ppb				24-hr 48 ppb																											



**WCAS - Wagner2**  
**Summary of Hourly Averages**

**Nitrogen Oxide (NO) - ppb**  
**December 2014**

Maximum Value: 63.16 ppb on Dec 1 14:00		Maximum Daily Average: 22.97 ppb on Dec 19		Hours in Service: 744																													
Minimum Value: 0.0 ppb on Dec 1 01:00		Minimum Daily Average: 0.00 ppb on Dec 25		Hours of Data: 707																													
Maximum Diurnal Average: 10.98 ppb at hour 13		Minimum Diurnal Average: 0.81 ppb at hour 21		Hours of Missing Data: 37																													
Monthly Average: 3.807 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.0 Q <sub>3</sub> = 3.1 P <sub>90</sub> = 15.3 P <sub>99</sub> = 42.4		Hours of Calibration: 37																													
				Percent Operational Time: 100.0																													
Day	Hourly Period Ending At																								Daily Average	Daily Maximum							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24									
1-Dec	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	6.3	32.7	21.4	30.1	63.2	25.1	11.0	0.9	0.0	0.2	0.0	0.0	3.1	0.0	0.0	8.44	63.16							
2-Dec	1.5	0.9	Z	0.0	0.8	0.0	0.0	0.0	23.5	8.4	8.2	0.3	1.4	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.02	23.50							
3-Dec	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	2.7	8.3	7.1	7.5	8.4	7.4	8.4	0.0	0.0	0.0	0.0	0.0	3.1	0.0	0.0	2.30	8.37							
4-Dec	0.0	0.0	Z	0.0	0.0	0.0	0.0	2.8	6.9	7.6	14.7	19.6	24.8	27.8	44.0	8.2	0.0	0.1	0.0	3.8	1.1	0.0	7.2	8.6	7.70	43.97							
5-Dec	5.0	1.9	Z	6.2	9.5	8.2	6.1	6.8	9.1	18.2	26.0	33.9	28.3	17.7	12.1	8.7	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.72	33.93							
6-Dec	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.6	1.6	1.0	0.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.24	1.61							
7-Dec	0.0	0.0	Z	4.1	7.0	3.9	2.5	1.7	3.3	8.3	11.9	14.1	16.9	12.0	11.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.26	16.92							
8-Dec	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	4.4	17.5	4.8	4.0	4.2	4.9	3.1	6.6	1.7	0.0	0.0	0.0	0.0	0.0	14.3	2.85	17.51							
9-Dec	29.3	25.7	Z	18.7	18.4	15.8	12.9	14.5	14.9	18.6	24.0	20.0	20.3	18.6	17.5	13.7	12.7	6.7	0.5	0.0	0.0	0.0	0.0	0.0	13.15	29.25							
10-Dec	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	1.3	2.9	1.4	1.3	0.5	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.37	2.86							
11-Dec	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	4.2	0.0	2.4	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.35	4.24							
12-Dec	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	1.7	5.5	9.0	11.2	15.9	7.1	3.1	0.5	0.0	9.0	2.3	0.3	7.6	17.6	15.2	4.61	17.63							
13-Dec	13.3	6.9	Z	0.0	0.0	0.0	0.0	0.3	0.7	6.7	8.0	11.7	8.9	3.6	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.74	13.27							
14-Dec	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	1.2	6.1	7.3	6.6	4.7	4.1	1.6	0.0	2.7	3.3	0.0	0.0	0.0	0.0	0.0	1.63	7.29							
15-Dec	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	1.4	4.4	9.1	10.1	C	C	C	C	C	C	0.0	0.0	0.0	0.0	0.0	0.0	--	10.14							
16-Dec	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	1.0	22.2	53.9	54.0	46.8	31.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.11	53.98							
17-Dec	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	2.7	0.13	2.68							
18-Dec	0.5	0.0	Z	5.2	5.2	6.6	2.7	9.0	13.0	12.8	17.9	23.4	25.8	17.8	14.9	8.4	4.4	1.1	0.1	0.0	0.1	3.5	6.4	10.8	8.25	25.77							
19-Dec	16.3	17.3	Z	19.6	19.4	21.2	19.0	16.4	19.3	15.9	23.9	37.8	56.3	47.1	15.4	15.4	11.9	17.9	22.3	23.7	23.7	23.1	22.6	22.8	22.97	56.34							
20-Dec	22.7	20.8	Z	21.0	20.3	20.0	20.2	19.4	15.9	17.7	22.0	20.8	13.4	10.6	8.6	3.3	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.25	22.66							
21-Dec	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	5.1	10.3	9.4	10.2	6.9	7.6	2.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.27	10.33							
22-Dec	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	3.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.26	3.63							
23-Dec	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.5	1.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.11	1.26							
24-Dec	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	6.2	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.50	6.17							
25-Dec	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00							
26-Dec	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.7	2.4	2.1	2.3	1.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.45	2.36							
27-Dec	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.0	2.6	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.29	2.55							
28-Dec	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00							
29-Dec	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.8	3.1	4.4	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.66	5.80							
30-Dec	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.8	0.2	0.7	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.17	1.31							
31-Dec	0.4	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.11	1.99							
		2.87	2.37	--	2.41	2.60	2.44	2.05	2.29	3.52	5.33	10.00	10.63	10.98	10.19	6.38	2.95	1.49	1.01	1.14	0.96	0.81	1.30	1.75	2.41	Diurnal Average							
		29.25	25.70	--	20.99	20.26	21.15	20.23	19.37	23.50	22.23	53.88	53.98	56.34	63.16	43.97	15.42	12.67	17.88	22.29	23.70	23.65	23.08	22.59	22.76	Diurnal Maximum							
Z - zerospan		C - Calibration																															
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr --- ppb				24-hr --- ppb																											



**WCAS - Wagner2**  
**Summary of Hourly Averages**

**Nitrogen Dioxide (NO<sub>2</sub>) - ppb**  
**December 2014**

Maximum Value: 32.45 ppb on Dec 1 14:00		Maximum Daily Average: 21.58 ppb on Dec 4		Hours in Service: 744																																													
Minimum Value: 0.4 ppb on Dec 29 02:00		Minimum Daily Average: 2.22 ppb on Dec 28		Hours of Data: 707																																													
Maximum Diurnal Average: 11.65 ppb at hour 18		Minimum Diurnal Average: 9.79 ppb at hour 12		Hours of Missing Data: 37																																													
Monthly Average: 10.688 ppb		Percentiles: P <sub>1</sub> = 0.6 P <sub>10</sub> = 2.5 Q <sub>1</sub> = 4.7 Median = 9.4 Q <sub>3</sub> = 16.1 P <sub>90</sub> = 20.3 P <sub>99</sub> = 29.2		Hours of Calibration: 37																																													
				Percent Operational Time: 100.0																																													
Day	Hourly Period Ending At																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Dec	9.0	9.6	Z	9.2	11.1	11.1	11.5	11.9	14.4	16.8	18.0	21.7	29.1	32.4	18.7	29.0	24.8	24.8	25.4	22.1	22.5	31.1	29.2	27.1	20.03	32.45																							
2-Dec	29.9	30.6	Z	26.2	29.4	24.9	19.4	16.9	19.2	19.7	12.6	4.0	5.4	2.6	2.6	5.8	9.1	12.1	10.3	8.8	15.7	15.7	8.2	6.3	14.58	30.63																							
3-Dec	6.3	7.4	Z	10.7	9.4	9.6	13.4	10.0	13.1	14.9	14.0	12.7	12.6	14.9	16.4	15.9	13.9	18.1	16.5	16.7	22.9	27.4	21.5	18.5	14.64	27.41																							
4-Dec	17.5	19.9	Z	18.3	17.9	19.4	23.7	25.5	25.3	18.0	14.8	17.8	21.1	23.4	29.3	19.4	17.4	18.3	16.1	28.4	25.7	23.4	28.1	27.6	21.58	29.34																							
5-Dec	27.2	26.2	Z	25.2	24.9	23.9	21.4	23.0	22.3	18.9	18.5	19.6	18.2	15.4	14.7	18.4	21.1	16.7	18.3	17.1	16.1	15.9	14.6	12.2	19.56	27.22																							
6-Dec	10.9	9.2	Z	6.9	6.7	6.4	6.6	7.8	8.6	8.8	7.7	6.9	6.7	6.0	7.2	7.9	8.7	8.4	11.6	12.8	15.4	19.1	13.7	12.3	9.41	19.09																							
7-Dec	14.6	16.5	Z	19.2	18.8	17.7	17.2	18.5	17.9	12.5	10.0	9.6	11.4	11.6	13.4	10.8	11.2	9.1	5.4	4.0	3.7	4.1	5.0	6.0	11.67	19.17																							
8-Dec	6.6	7.8	Z	9.6	10.2	12.4	17.6	20.2	19.7	14.9	14.6	7.9	8.2	9.1	9.7	13.6	25.2	23.9	18.9	19.4	19.5	17.8	20.7	22.3	15.21	25.18																							
9-Dec	23.3	22.5	Z	20.9	20.5	20.2	19.4	19.7	19.4	17.6	17.3	16.7	17.3	15.9	15.0	16.5	17.5	17.8	8.4	2.9	6.1	6.3	5.1	4.5	15.26	23.29																							
10-Dec	4.8	7.2	Z	10.1	8.6	9.0	10.2	10.3	9.1	11.5	8.7	5.2	5.4	5.7	7.8	8.6	10.4	6.1	5.8	5.8	5.1	5.7	4.5	5.6	7.44	11.46																							
11-Dec	5.3	5.3	Z	3.7	6.5	5.7	7.2	7.2	7.5	5.8	6.2	8.7	4.9	7.2	6.7	5.7	5.7	5.5	6.8	5.8	4.7	5.6	6.1	11.5	6.31	11.54																							
12-Dec	4.2	4.0	Z	11.8	12.6	10.6	10.5	9.7	14.3	12.5	11.3	9.6	12.0	16.6	14.4	15.6	21.4	22.5	26.7	25.5	23.7	21.7	21.4	20.9	15.37	26.70																							
13-Dec	20.2	18.5	Z	7.0	13.9	15.6	13.8	14.4	13.9	12.7	9.3	9.4	9.2	6.6	6.6	5.7	3.7	6.1	7.7	8.6	7.5	9.1	15.4	9.2	10.61	20.23																							
14-Dec	7.4	8.2	Z	13.4	12.9	10.3	9.7	10.4	11.1	10.3	9.8	10.1	9.6	9.4	11.9	12.3	15.1	20.9	26.1	19.2	15.9	14.0	13.5	13.0	12.80	26.10																							
15-Dec	12.5	13.1	Z	14.7	16.1	15.5	14.4	13.9	12.9	10.5	9.0	7.7	C	C	C	C	C	C	4.3	4.0	3.6	3.6	3.3	3.2	--	16.08																							
16-Dec	2.9	2.6	Z	2.0	1.6	1.3	1.3	2.4	8.1	17.9	19.3	17.9	16.8	15.9	2.9	2.6	2.2	3.4	2.8	3.0	3.2	4.0	3.9	3.0	6.13	19.26																							
17-Dec	3.0	3.4	Z	3.3	2.9	3.5	3.4	2.0	2.0	2.0	2.8	2.8	3.2	3.4	3.9	4.9	9.9	15.7	20.4	19.0	16.8	14.7	19.1	20.1	7.92	20.36																							
18-Dec	19.4	12.8	Z	20.9	21.1	20.5	19.7	19.6	18.4	14.6	12.8	11.5	11.7	10.8	12.4	13.0	14.8	15.6	16.1	16.4	16.2	16.8	16.5	17.3	16.03	21.10																							
19-Dec	18.3	17.0	Z	16.4	15.6	16.1	17.1	17.4	16.4	15.2	13.8	16.1	20.2	19.2	15.1	18.8	20.8	21.5	20.3	19.5	18.6	18.8	17.8	17.9	17.74	21.49																							
20-Dec	18.2	17.2	Z	18.2	17.6	16.7	16.7	16.5	16.3	14.0	11.8	11.0	10.6	11.1	12.5	14.1	16.1	16.2	15.7	12.1	11.8	9.8	9.8	10.2	14.10	18.22																							
21-Dec	9.9	10.5	Z	6.9	5.9	14.6	21.0	23.2	21.9	18.7	15.8	16.1	15.0	13.7	16.9	19.1	23.2	15.7	12.0	5.7	3.5	4.7	2.9	4.9	13.12	23.25																							
22-Dec	5.7	4.5	Z	6.0	5.1	5.2	4.7	5.1	4.9	7.2	6.8	6.0	6.1	13.1	16.3	6.4	11.6	9.7	6.2	8.9	8.7	13.2	9.1	8.1	7.76	16.26																							
23-Dec	7.7	7.5	Z	7.1	7.4	7.0	6.3	6.2	5.7	4.8	3.8	4.0	4.3	4.3	4.6	5.0	5.2	5.2	5.0	5.3	6.6	11.0	12.5	14.3	6.54	14.29																							
24-Dec	14.3	11.5	Z	10.0	11.3	11.0	9.5	9.2	7.3	6.4	11.8	18.5	14.3	2.0	1.5	1.4	1.6	1.2	1.0	1.0	2.0	2.6	2.6	1.5	6.67	18.46																							
25-Dec	1.1	1.1	Z	1.1	1.2	1.3	1.3	1.4	1.8	1.8	2.2	2.5	2.8	3.0	3.3	3.3	4.4	5.6	5.8	6.1	5.3	2.6	2.3	2.3	2.77	6.09																							
26-Dec	3.1	5.8	Z	5.0	5.8	6.6	7.7	6.4	5.5	4.2	2.8	3.2	3.6	3.6	4.3	5.2	6.3	6.4	6.5	6.3	6.3	6.4	5.5	3.8	5.23	7.74																							
27-Dec	2.5	3.2	Z	4.7	8.8	7.9	7.6	10.9	6.6	5.2	4.0	3.9	4.0	4.0	2.6	1.6	1.5	1.6	1.0	0.8	0.7	0.6	1.3	1.9	3.78	10.92																							
28-Dec	2.1	2.3	Z	8.1	4.5	3.7	3.2	2.4	2.4	2.0	2.0	1.8	1.6	1.7	1.5	1.8	1.7	2.6	1.6	1.3	1.1	0.6	0.5	0.9	2.22	8.08																							
29-Dec	0.6	0.4	Z	0.5	0.4	0.5	0.6	0.7	0.6	1.7	1.5	9.0	6.6	8.4	6.1	4.3	4.9	4.7	7.6	8.0	6.3	4.4	4.2	4.2	3.75	8.97																							
30-Dec	4.1	4.1	Z	3.9	4.0	4.1	4.0	4.1	3.9	7.7	9.5	7.8	6.7	10.2	9.8	12.3	10.6	10.4	16.0	13.3	4.0	2.3	14.8	24.8	8.36	24.80																							
31-Dec	21.4	6.4	Z	2.4	3.0	3.2	3.7	3.2	4.3	3.0	2.4	3.7	9.6	5.7	5.8	4.8	4.6	3.7	3.1	4.0	3.8	2.7	3.5	4.6	4.90	21.42																							
																								10.78	10.20	--	10.43	10.83	10.82	11.09	11.29	11.44	10.70	9.84	9.79	10.29	10.23	9.80	10.13	11.48	11.65	11.27	10.69	10.42	10.83	10.86	10.97	Diurnal Average	
																								29.94	30.63	--	26.16	29.39	24.93	23.69	25.48	25.27	19.66	19.26	21.73	29.13	32.45	29.34	29.01	25.18	24.81	26.70	28.38	25.71	31.09	29.24	27.59	Diurnal Maximum	
Z - zerospan																								C - Calibration																									
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb 24-hr 106 ppb																																																	



**WCAS - Wagner2**  
**Summary of Hourly Averages**

**NOx (NO<sub>x</sub>) - ppb**  
**December 2014**

Maximum Value: 88.49 ppb on Dec 1 14:00		Maximum Daily Average: 41.03 ppb on Dec 19		Hours in Service: 744																							
Minimum Value: 0.0 ppb on Dec 24 20:00		Minimum Daily Average: 1.47 ppb on Dec 28		Hours of Data: 707																							
Maximum Diurnal Average: 21.40 ppb at hour 13		Minimum Diurnal Average: 10.52 ppb at hour 21		Hours of Missing Data: 37																							
Monthly Average: 14.050 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 1.7 Q <sub>1</sub> = 4.2 Median = 9.4 Q <sub>3</sub> = 20.9 P <sub>90</sub> = 33.7 P <sub>99</sub> = 62.5		Hours of Calibration: 37																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	8.1	8.7	Z	8.4	10.2	10.2	10.6	11.0	14.8	23.4	41.2	43.3	59.4	88.5	41.9	40.3	26.0	24.0	25.9	21.2	22.0	34.6	29.5	26.4	27.36	88.49	
2-Dec	31.8	32.0	Z	25.5	30.6	24.4	18.4	15.9	38.8	28.3	20.9	4.4	6.9	2.2	1.8	5.7	10.7	10.9	9.6	7.6	14.6	14.7	7.0	5.1	15.99	38.77	
3-Dec	5.2	6.2	Z	9.7	8.3	8.5	12.4	8.8	12.4	17.8	22.5	20.0	20.4	23.5	24.0	24.1	13.2	17.1	15.6	15.7	21.9	30.8	20.7	17.5	16.35	30.79	
4-Dec	16.5	18.9	Z	17.5	17.0	18.6	23.6	28.5	32.5	25.9	29.7	37.5	46.0	51.3	73.4	27.7	17.2	18.6	16.4	32.6	27.2	23.7	35.6	36.5	29.23	73.39	
5-Dec	32.6	28.4	Z	31.7	34.6	32.4	27.7	30.1	31.7	37.3	44.6	53.6	46.6	33.3	27.1	27.3	24.3	16.0	18.3	16.4	15.4	15.2	13.9	11.4	28.24	53.59	
6-Dec	10.0	8.3	Z	6.1	5.8	5.6	5.7	7.0	7.9	9.5	9.4	8.6	7.9	6.7	7.7	7.8	8.0	7.6	10.9	12.1	14.8	18.7	13.1	11.6	9.17	18.69	
7-Dec	14.0	16.2	Z	23.5	26.1	21.9	20.0	20.5	21.4	21.0	22.0	23.9	28.5	23.8	24.6	12.2	10.9	8.5	4.7	3.3	2.9	3.3	4.3	5.3	15.77	28.48	
8-Dec	5.9	7.1	Z	9.0	9.6	11.8	17.1	19.7	20.0	19.5	32.2	12.8	12.3	13.4	14.7	16.9	32.1	25.9	18.3	19.1	19.4	17.3	20.8	36.8	17.90	36.81	
9-Dec	52.6	48.2	Z	39.7	39.1	36.2	32.5	34.4	34.5	36.3	41.4	36.8	37.8	34.7	32.7	30.4	30.3	24.7	9.1	2.1	5.3	5.5	4.3	3.6	28.36	52.62	
10-Dec	3.9	6.4	Z	9.4	7.8	8.1	9.3	9.5	8.3	12.9	11.7	6.7	6.9	6.3	7.9	8.2	11.7	4.9	4.7	4.7	3.9	4.5	3.2	4.4	7.18	12.94	
11-Dec	4.0	4.0	Z	2.4	5.3	4.5	5.9	5.9	6.3	6.8	6.0	13.1	4.8	9.7	7.4	5.5	5.4	4.3	5.7	4.6	3.5	4.4	5.0	10.4	5.87	13.06	
12-Dec	2.9	2.8	Z	10.8	11.6	9.6	9.4	8.6	13.7	14.4	17.0	18.7	23.4	32.7	21.8	18.9	22.1	22.2	36.0	28.1	24.2	29.6	39.2	36.3	19.73	39.19	
13-Dec	33.7	25.6	Z	6.1	13.8	15.1	13.1	14.9	14.8	19.5	17.4	21.2	18.3	10.3	9.8	5.7	2.6	5.1	6.6	7.6	6.5	8.1	14.9	8.2	13.00	33.74	
14-Dec	6.4	7.2	Z	12.6	12.1	9.5	8.9	9.5	10.4	11.6	16.1	17.5	16.3	14.2	16.2	14.1	14.8	23.8	29.7	18.7	15.2	13.3	12.8	12.3	14.05	29.66	
15-Dec	11.7	12.4	Z	14.2	15.6	15.0	13.9	13.6	14.7	15.2	18.4	18.1	C	C	C	C	C	C	3.1	2.9	2.5	2.5	2.1	2.1	--	18.40	
16-Dec	1.8	1.5	Z	0.9	0.5	0.2	0.2	1.3	9.2	40.5	73.5	72.3	64.0	47.7	3.1	2.0	1.4	2.6	2.0	2.2	2.4	3.3	3.2	2.2	14.69	73.46	
17-Dec	2.2	2.7	Z	2.6	2.2	2.8	2.7	1.3	1.3	1.3	2.4	2.6	3.2	3.5	3.9	4.8	9.4	15.2	20.1	18.5	16.7	14.1	19.6	23.1	7.66	23.07	
18-Dec	20.1	12.1	Z	26.5	26.6	27.4	22.7	28.9	31.7	27.7	31.1	35.2	37.8	28.8	27.6	21.6	19.4	17.0	16.5	16.5	16.6	20.5	23.2	28.4	24.52	37.80	
19-Dec	35.0	34.7	Z	36.2	35.4	37.6	36.4	34.2	36.0	31.4	38.1	54.2	76.9	66.7	30.8	34.5	33.1	39.7	42.9	43.5	42.5	42.1	40.7	41.0	41.03	76.94	
20-Dec	41.1	38.3	Z	39.5	38.2	37.0	37.3	36.2	32.5	32.0	34.1	32.1	24.3	21.9	21.4	17.6	18.3	15.6	14.9	11.0	10.8	8.7	8.6	9.1	25.24	41.12	
21-Dec	8.8	9.4	Z	5.7	4.7	13.6	20.1	23.2	22.2	24.1	26.5	25.8	25.5	20.9	24.8	21.7	23.7	14.8	11.4	4.6	2.3	3.5	1.7	3.7	14.90	26.45	
22-Dec	4.5	3.3	Z	4.9	4.0	4.0	3.6	3.9	3.8	6.5	6.4	6.0	6.2	15.6	20.1	5.9	10.9	8.7	5.1	7.8	7.6	12.2	8.1	7.1	7.24	20.11	
23-Dec	6.8	6.5	Z	6.2	6.4	6.0	5.4	5.2	4.7	4.3	4.1	4.6	4.9	5.6	4.8	4.8	4.3	4.2	4.0	4.2	5.6	10.1	11.6	13.5	5.98	13.46	
24-Dec	13.5	10.6	Z	9.2	10.5	10.2	8.6	8.4	6.4	6.0	13.1	24.9	18.7	1.3	0.6	0.5	0.6	0.2	0.0	0.0	1.0	1.7	1.7	0.5	6.45	24.91	
25-Dec	0.1	0.1	Z	0.2	0.2	0.4	0.4	0.5	0.9	1.0	1.7	2.3	2.8	3.0	3.0	2.7	3.6	4.8	5.0	5.3	4.9	1.8	1.5	1.4	2.08	5.27	
26-Dec	2.3	5.0	Z	4.3	5.1	5.9	7.0	5.6	4.8	4.5	4.5	5.7	5.8	6.1	6.1	5.6	5.8	5.6	5.7	5.5	5.6	5.7	4.8	3.0	5.21	7.04	
27-Dec	1.7	2.4	Z	4.0	8.2	7.2	6.9	10.3	5.9	5.3	5.1	6.0	6.7	5.1	2.3	0.8	0.6	0.8	0.1	0.0	0.0	0.0	0.4	1.0	3.52	10.27	
28-Dec	1.2	1.4	Z	7.4	3.7	2.8	2.4	1.6	1.6	1.2	1.4	1.3	1.1	1.2	0.9	1.2	0.8	1.7	0.7	0.3	0.1	0.0	0.0	0.0	1.47	7.39	
29-Dec	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	15.0	9.9	13.0	8.2	4.2	4.1	3.8	6.8	7.1	5.4	3.5	3.2	3.2	3.87	14.96	
30-Dec	3.1	3.1	Z	2.9	3.0	3.1	3.0	3.0	2.9	7.5	10.9	8.8	7.1	11.1	10.2	12.4	9.9	9.4	15.1	12.3	2.9	1.2	15.1	25.5	7.98	25.52	
31-Dec	22.1	5.4	Z	1.3	1.9	2.1	2.5	2.1	3.2	1.9	1.5	3.4	11.7	5.9	5.6	4.0	3.5	2.5	1.9	2.9	2.7	1.6	2.3	3.5	4.15	22.11	
		13.02	11.89	--	12.21	12.84	12.64	12.50	13.02	14.48	15.98	19.54	20.52	21.40	20.27	16.14	12.98	12.63	12.00	11.83	10.91	10.52	11.48	12.00	12.71	Diurnal Average	
		52.62	48.24	--	39.73	39.06	37.58	37.27	36.17	38.77	40.48	73.46	72.25	76.94	88.49	73.39	40.25	33.08	39.67	42.89	43.48	42.53	42.11	40.71	40.97	Diurnal Maximum	
Z - zerospan		C - Calibration																									
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr --- ppb												24-hr --- ppb													

**WEST CENTRAL AIRSHED SOCIETY**

**CONTINUOUS AMBIENT AIR QUALITY  
MONITORING PROGRAM  
MONTHLY REPORT  
METEOROLOGICAL DATA**

**AMS 959  
WAGNER2  
DECEMBER 2014**

Operations and Data Collection by:  
West Central Airshed Society  
Drayton Valley, Alberta

QA/QC, Data Validation and Reporting by:  
West Central Airshed Society  
Drayton Valley, Alberta



**WCAS - Wagner2**  
**Summary of Hourly Averages**

**External Temperature (ET) - C**  
**December 2014**

Maximum Value: 11.67 C on Dec 11 13:00      Maximum Daily Average: 5.95 C on Dec 11 Minimum Value: -28.0 C on Dec 30 03:00      Minimum Daily Average: -18.16 C on Dec 29 Maximum Diurnal Average: -3.60 C at hour 15      Minimum Diurnal Average: -10.87 C at hour 9 Monthly Average: -7.683 C      Percentiles: P <sub>1</sub> = -26.1 P <sub>10</sub> = -15.3 Q <sub>1</sub> = -12.0 Median = -7.7 Q <sub>3</sub> = -3.4 P <sub>90</sub> = 0.8 P <sub>99</sub> = 9.6																								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																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	-23.0	-22.4	-21.5	-20.1	-19.7	-19.7	-20.1	-20.0	-20.1	-18.9	-15.0	-12.4	-10.6	-10.1	-9.3	-9.2	-12.3	-14.1	-13.5	-16.7	-15.9	-14.5	-13.4	-14.3	-16.12	-9.24
2-Dec	-13.9	-14.7	-14.1	-12.7	-13.3	-12.2	-14.0	-14.5	-14.5	-9.0	-6.6	-5.8	-5.7	-5.6	-5.8	-8.3	-10.4	-12.0	-14.1	-14.5	-14.7	-13.7	-12.6	-11.9	-11.43	-5.59
3-Dec	-11.0	-10.1	-9.1	-6.7	-5.4	-5.4	-6.7	-7.8	-8.5	-6.9	-5.0	-3.6	-2.3	-1.3	-0.9	-1.9	-5.3	-6.8	-7.7	-8.7	-9.7	-10.1	-10.7	-12.2	-6.84	-0.92
4-Dec	-13.0	-12.6	-13.0	-13.5	-14.6	-14.6	-14.9	-15.3	-15.4	-13.3	-7.9	-6.4	-5.6	-4.3	-4.6	-5.9	-6.9	-9.6	-11.4	-12.5	-13.6	-14.9	-15.7	-16.3	-11.50	-4.31
5-Dec	-17.5	-17.9	-18.2	-18.8	-19.0	-19.6	-20.1	-20.2	-20.2	-19.1	-16.0	-13.5	-11.9	-11.1	-10.2	-10.2	-11.1	-11.2	-10.2	-9.7	-7.7	-7.3	-7.5	-7.5	-13.99	-7.31
6-Dec	-8.1	-8.5	-9.3	-11.2	-10.7	-10.5	-10.2	-9.7	-9.6	-9.5	-8.2	-7.2	-7.1	-6.6	-6.4	-6.4	-6.9	-7.2	-7.1	-7.0	-6.3	-4.8	-4.2	-4.8	-7.81	-4.21
7-Dec	-5.7	-7.3	-8.8	-10.0	-10.7	-11.6	-12.1	-12.4	-12.5	-9.8	-5.4	-3.3	-0.1	0.8	-0.6	-1.4	-4.6	-6.1	-7.4	-11.0	-12.3	-13.0	-13.5	-14.0	-8.02	0.77
8-Dec	-14.8	-14.7	-14.2	-14.6	-15.3	-15.1	-14.8	-14.8	-15.1	-14.2	-9.7	-7.8	-8.0	-8.3	-7.2	-7.1	-8.2	-10.6	-11.3	-11.7	-11.2	-11.6	-11.7	-12.0	-11.83	-7.09
9-Dec	-11.3	-11.1	-10.2	-10.2	-10.7	-10.3	-9.9	-9.8	-9.6	-8.9	-7.2	-5.8	-4.9	-3.8	-2.8	-1.8	-1.5	-1.9	5.8	8.9	9.7	11.1	7.3	3.6	-3.56	11.08
10-Dec	1.0	-0.8	-1.9	-3.1	-4.0	-4.5	-4.3	-4.0	-3.7	-2.7	-1.3	0.3	2.0	3.7	7.2	8.9	4.9	4.4	3.1	1.4	1.4	0.5	0.3	0.1	0.37	8.92
11-Dec	-0.2	-0.6	0.0	0.9	0.3	6.1	7.7	6.9	9.1	9.8	11.0	11.4	11.7	10.1	8.4	5.6	5.5	4.7	5.3	5.8	6.0	6.6	5.5	5.2	5.95	11.67
12-Dec	5.2	3.9	1.1	0.2	-0.6	-1.5	-2.5	-3.0	-3.5	-3.6	-2.6	-0.6	1.7	1.6	1.7	0.8	-1.1	-3.3	-4.7	-5.5	-5.0	-4.5	-4.4	-5.1	-1.47	5.20
13-Dec	-5.0	-4.2	-3.4	-3.2	-3.0	-2.5	-2.4	-2.4	-2.8	-3.1	-1.8	0.3	1.3	2.6	2.5	1.6	-1.9	-3.6	-4.4	-5.6	-6.2	-6.9	-7.2	-7.9	-2.88	2.61
14-Dec	-8.2	-8.6	-8.5	-9.2	-10.2	-10.7	-11.0	-11.7	-12.0	-9.8	-5.0	-1.6	-0.3	-1.2	-1.9	-2.5	-6.2	-8.4	-10.1	-11.3	-12.3	-13.4	-14.3	-14.8	-8.46	-0.31
15-Dec	-15.6	-16.3	-16.6	-16.5	-16.7	-17.5	-18.0	-18.4	-18.5	-16.6	-12.0	-8.7	-6.9	-5.5	-3.3	-2.4	-3.1	-4.7	-6.4	-7.7	-8.3	-8.2	-9.5	-10.1	-11.15	-2.40
16-Dec	-10.0	-9.9	-10.3	-11.0	-12.0	-12.7	-13.0	-13.4	-14.2	-15.0	-13.2	-11.3	-9.2	-6.6	-3.6	-3.9	-4.1	-3.8	-3.3	-3.1	-3.1	-3.2	-3.2	-3.2	-8.17	-3.09
17-Dec	-3.1	-3.1	-3.1	-3.2	-3.3	-3.5	-3.4	-3.6	-3.9	-3.9	-4.0	-4.2	-4.3	-4.4	-4.5	-4.4	-6.1	-9.3	-10.4	-11.5	-12.2	-11.4	-10.4	-9.8	-5.88	-3.06
18-Dec	-10.1	-11.1	-11.1	-11.5	-11.9	-12.6	-13.0	-13.5	-14.0	-14.3	-12.4	-9.9	-8.2	-7.9	-7.2	-6.9	-9.1	-11.2	-12.1	-12.6	-13.2	-13.9	-14.5	-14.9	-11.54	-6.90
19-Dec	-15.0	-15.1	-14.5	-13.9	-13.3	-13.3	-13.7	-14.0	-13.8	-13.0	-11.7	-9.4	-8.4	-6.7	-5.9	-6.5	-6.5	-6.2	-6.0	-6.3	-6.4	-6.5	-6.5	-6.4	-9.96	-5.92
20-Dec	-7.9	-9.2	-10.4	-11.3	-11.9	-12.7	-13.2	-13.8	-14.2	-12.4	-7.6	-5.5	-4.6	-4.3	-4.8	-6.3	-7.1	-7.7	-8.7	-9.3	-10.2	-10.4	-10.6	-10.4	-9.35	-4.26
21-Dec	-9.6	-9.1	-7.7	-7.6	-5.8	-5.8	-6.6	-7.0	-7.5	-7.3	-6.0	-5.4	-4.4	-3.1	-1.6	0.8	0.8	0.3	2.6	2.8	3.0	2.4	-0.5	0.4	-3.41	2.98
22-Dec	1.4	-2.1	-3.9	-5.1	-6.0	-5.9	-5.4	-6.1	-6.5	-2.3	2.4	3.1	3.5	3.9	4.0	4.0	2.0	0.8	-1.9	-4.0	-5.1	-5.8	-6.7	-6.8	-2.02	4.02
23-Dec	-6.1	-6.1	-6.4	-7.2	-8.3	-8.9	-9.3	-9.6	-10.1	-9.8	-8.3	-6.7	-5.4	-4.4	-3.5	-3.1	-3.4	-3.5	-2.9	-2.2	-2.7	-2.7	-4.5	-5.3	-5.85	-2.22
24-Dec	-5.9	-6.7	-6.6	-6.3	-5.6	-5.8	-5.2	0.7	-0.8	-1.6	1.2	1.9	1.9	1.7	1.1	-0.4	-1.4	-1.9	-2.6	-3.5	-5.1	-5.7	-6.2	-7.1	-2.91	1.94
25-Dec	-9.2	-11.4	-12.2	-14.1	-15.3	-14.8	-13.9	-13.1	-12.2	-11.5	-10.2	-8.9	-7.9	-7.5	-7.4	-7.0	-7.2	-7.6	-7.7	-7.5	-5.9	-6.4	-7.3	-8.4	-9.78	-5.94
26-Dec	-12.2	-14.6	-15.6	-16.3	-17.6	-18.5	-18.8	-19.5	-20.3	-18.6	-13.1	-11.9	-11.9	-10.5	-11.4	-9.9	-9.3	-9.1	-8.7	-8.6	-8.2	-7.9	-7.3	-2.5	-12.59	-2.50
27-Dec	-2.3	-2.7	-3.7	-6.0	-7.9	-9.8	-10.7	-10.7	-12.4	-11.7	-9.0	-5.8	-2.8	-4.3	-5.6	-5.9	-6.1	-6.2	-6.5	-7.0	-7.4	-7.8	-8.2	-8.6	-7.04	-2.32
28-Dec	-8.7	-8.8	-9.0	-9.2	-9.6	-10.0	-10.3	-10.6	-10.8	-11.2	-10.9	-10.6	-10.4	-10.3	-10.3	-10.7	-11.4	-11.4	-11.1	-11.4	-11.7	-12.7	-13.2	-13.2	-10.73	-8.72
29-Dec	-13.5	-14.2	-14.7	-15.0	-15.3	-15.9	-16.3	-16.3	-16.5	-16.5	-16.4	-16.0	-15.8	-15.6	-15.5	-15.6	-18.9	-20.9	-21.7	-23.2	-24.0	-25.3	-26.1	-26.8	-18.16	-13.47
30-Dec	-27.5	-27.8	-28.0	-27.5	-27.3	-26.1	-25.3	-24.4	-21.7	-15.5	-12.8	-11.0	-8.6	-6.4	-4.8	-2.1	-4.2	-7.4	-2.4	-2.1	0.2	-0.4	-0.6	-1.4	-13.13	0.17
31-Dec	-1.0	-1.1	-1.4	-0.9	-1.0	-0.5	-0.3	-2.0	-1.3	-0.4	0.7	0.8	1.5	2.5	2.7	1.8	0.8	-1.2	3.7	3.8	4.3	4.2	4.7	4.9	1.05	4.93
																								Diurnal Average		
																								Diurnal Maximum		
																								-9.09 5.20		
																								-9.64 3.86		
																								-9.88 1.13		
																								-10.15 0.86		
																								-10.50 0.34		
																								-10.53 6.13		
																								-10.69 7.65		
																								-10.77 6.93		
																								-10.87 9.11		
																								-9.69 9.82		
																								-7.23 10.97		
																								-5.66 11.44		
																								-4.57 11.67		
																								-3.96 10.07		
																								-3.60 8.44		
																								-3.75 8.92		
																								-5.17 5.52		
																								-6.34 4.67		
																								-6.25 5.75		
																								-6.83 8.88		
																								-6.91 9.68		
																								-7.04 11.08		
																								-7.50 7.25		
																								-7.79 5.20		



**WCAS - Wagner2**  
**Summary of Hourly Averages**

**Wind Speed (WS) - kph**  
**December 2014**

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1 Spd	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.6	1.3	1.8	2.2	1.8	0.0	0.6	0.2	0.1	0.2	0.1	0.6	0.3	0.31	2.16	
Dir	NNE	S	SSW	S	SSE	S	SSE	SSE	SSE	SE	NE	ENE	ESE	ESE	ESE	ESE	SSE	NNW	N	NW	SE	W	NE	NE	E	ESE	
2 Spd	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.1	5.1	8.9	11.6	10.9	9.0	6.6	2.3	3.0	0.5	0.4	0.2	0.0	0.0	0.7	0.0	2.38	11.64	
Dir	NE	NNE	E	E	S	ESE	WSW	S	SSE	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	NW	NNW	NNE	SSW	S	NE	S	WNW	WNW	
3 Spd	0.2	0.1	0.0	2.4	3.6	3.4	3.9	5.6	3.0	5.1	4.3	6.4	3.8	2.2	2.9	1.7	1.0	0.3	0.0	0.0	0.0	0.0	0.1	0.0	1.91	6.36	
Dir	NE	W	S	W	W	W	W	WNW	W	WSW	SW	WSW	WSW	W	W	NW	N	N	SSE	SW	ESE	NNW	S	WNW	W	WSW	
4 Spd	0.0	0.0	0.0	0.2	0.2	0.2	0.0	0.0	0.0	0.0	1.9	0.9	0.5	0.2	0.4	0.4	0.1	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.08	1.89	
Dir	NE	S	S	NE	W	WSW	ENE	SSE	ESE	NNW	ESE	SSW	SSE	S	S	NW	NNW	NW	NW	NW	SSW	SE	SW	SE	SSE	ESE	
5 Spd	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.2	0.1	0.0	0.0	0.3	0.0	0.0	7.5	9.2	6.7	5.8	1.30	9.21
Dir	SE	NNE	SSE	SSE	S	SSW	SE	SSE	S	E	SE	SE	SE	SSE	SE	SE	SE	SW	NNE	SE	ESE	ESE	ESE	ESE	ESE	ESE	
6 Spd	0.6	0.2	0.0	0.0	0.1	0.0	0.3	0.7	0.1	0.4	1.7	3.6	5.2	5.0	4.6	4.8	0.7	0.3	1.1	1.4	1.4	1.2	0.5	0.0	0.93	5.16	
Dir	E	WSW	SSE	WSW	WNW	SE	E	SE	NW	E	ENE	E	E	E	E	E	ENE	NNW	NNW	NW	W	W	W	SE	E	E	
7 Spd	0.0	0.0	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	0.0	4.2	1.4	0.4	0.0	0.0	0.0	0.0	0.19	4.16	
Dir	SSE	SSE	WSW	ESE	SSE	WNW	E	SSW	WNW	NNW	NNW	NNW	WNW	SSE	SW	WNW	SE	E	E	NNW	SE	SSE	SE	SE	E	E	
8 Spd	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	1.5	1.7	0.9	0.5	1.6	0.6	0.2	0.6	0.4	0.0	0.0	0.0	0.15	1.73	
Dir	SSE	SE	N	SE	SSE	SSE	SE	ESE	SE	SE	WNW	SSE	NNW	NW	NW	S	SE	NNW	NW	NNW	N	W	ENE	SE	NW	NW	
9 Spd	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.4	0.4	0.0	4.1	3.0	5.6	7.7	5.8	1.3	1.03	7.73	
Dir	ESE	S	S	SSE	SE	ESE	NNW	WNW	SE	SE	SSE	ESE	N	NNW	SE	ESE	SE	ESE	SW	W	WSW	W	WNW	NW	W	W	
10 Spd	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.9	1.5	3.2	2.3	2.8	0.1	0.0	0.0	0.2	0.1	0.0	0.22	3.23	
Dir	SE	NNE	NNW	E	E	SSE	WSW	NNE	NW	NNW	E	E	WNW	ENE	S	S	NE	ENE	NNE	S	N	E	SW	E	ESE	S	
11 Spd	0.0	0.2	0.1	0.2	0.1	7.3	2.8	2.8	6.3	5.9	3.9	4.7	3.7	0.9	0.8	0.1	1.1	0.7	2.6	2.1	7.0	10.0	2.7	8.4	0.09	9.96	
Dir	W	W	SSW	NNW	NNE	WNW	W	WNW	WSW	WSW	W	WSW	WNW	NNW	NNE	NNE	E	ENE	E	ENE	E	E	E	E	WNW	E	
12 Spd	12.4	6.1	2.6	1.6	0.9	0.6	0.0	0.0	0.2	0.0	0.1	0.8	1.4	1.3	0.6	1.0	2.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.54	12.36	
Dir	ESE	ESE	NW	W	WNW	NNE	NNE	ESE	NW	NW	SW	SE	ESE	NW	E	SSW	NNW	N	NW	NNE	SSE	WSW	NE	E	E	ESE	
13 Spd	0.0	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.1	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.09	1.09	
Dir	NW	N	NE	NE	E	ENE	WSW	WSW	SSE	NE	NNE	NW	WNW	WNW	SSE	SSW	NW	WNW	SSE	SE	NE	NNE	ESE	ESE	NNW	WNW	
14 Spd	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1	1.4	0.8	1.8	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.16	1.77	
Dir	NNE	SW	WSW	NW	W	ESE	E	ESE	E	E	E	ESE	ESE	NNW	NW	NW	SSE	NW	S	SSE	SW	SE	ESE	SE	ESE	ESE	
15 Spd	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	5.6	7.9	9.2	6.0	2.3	1.5	1.5	2.6	0.2	0.1	1.58	9.22	
Dir	SSE	SE	SSE	NW	S	SE	SE	SE	SE	SE	NW	N	NNE	E	ESE	SE	SE	ESE	ESE	E	ESE	ESE	E	ESE	ESE	SE	
16 Spd	0.3	0.7	1.4	0.7	0.1	0.0	0.0	0.0	0.1	0.0	0.6	0.4	0.5	2.8	11.6	10.8	10.3	8.5	9.4	8.4	7.5	8.6	8.0	6.9	3.99	11.58	
Dir	SE	SSE	SE	SE	ENE	E	ENE	ENE	SSW	ENE	S	S	S	SE	SE	SE	SE	SE	SE	SSE	SSE	SE	SE	SE	SE	SE	
17 Spd	5.6	6.3	3.2	3.5	1.0	0.4	1.2	1.2	2.8	4.2	4.5	5.2	3.6	4.3	2.6	1.8	0.5	1.3	1.2	0.0	0.0	0.0	0.0	0.0	1.89	6.29	
Dir	SSE	SSE	S	S	SE	S	SSW	SW	SW	S	S	S	SSW	S	SW	ESE	ENE	NNW	NW	SE	N	SE	SE	ESE	S	SSE	
18 Spd	1.5	0.1	0.6	0.1	0.6	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.9	0.9	1.0	1.0	0.7	0.3	0.2	0.6	0.0	0.0	0.4	0.2	0.07	1.54	
Dir	NW	NW	SW	WNW	WNW	SSW	ESE	W	SE	SW	ESE	SSE	SE	SSE	SE	SSE	NW	NW	NNW	SSW	SSE	W	NNW	NNW	SSW	NW	
19 Spd	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.4	0.1	0.0	0.0	1.0	1.2	3.2	3.6	1.5	0.9	0.7	0.2	0.1	0.5	0.0	0.0	0.36	3.64	
Dir	SSE	WSW	SE	SE	SSE	NW	S	N	NW	NNW	ESE	SW	SSW	SSE	NW	NW	WNW	WSW	SW	W	NE	N	SSW	SSE	WNW	NW	
20 Spd	0.3	0.1	0.8	0.2	0.0	0.0	0.0	0.0	0.0	0.3	1.1	2.2	1.3	1.0	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.4	0.1	0.0	0.16	2.15	
Dir	NNW	NNE	NW	NW	WSW	SE	S	SE	SE	SE	SSE	SE	SE	SSE	WSW	NNW	NW	NNE	E	NW	SE	NW	W	NNW	SSE	SE	
21 Spd	0.0	0.0	1.0	1.6	4.9	6.1	4.6	4.2	4.2	1.3	1.0	2.1	2.1	1.8	0.6	6.5	2.6	2.5	6.2	5.8	3.7	3.2	3.2	4.6	2.68	6.48	
Dir	E	N	W	NW	NNW	NW	NW	NW	WNW	WNW	SSW	S	WSW	WSW	WNW	NW	WNW	WSW	NW	NW	NW	WNW	WNW	W	WNW	NW	
22 Spd	4.2	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	4.4	5.7	7.8	5.9	8.5	8.0	8.0	5.4	4.5	0.9	0.3	0.0	0.1	0.3	2.62	8.52	
Dir	W	W	NNW	NW	W	NE	SE	SE	NNE	WNW	W	WNW	WNW	WNW	WNW	NW	WNW	W	WNW	SW	E	NE	WSW	SSW	WNW	WNW	



**WCAS - Wagner2**  
**Summary of Hourly Averages**

**Wind Speed (WS) - kph**  
**December 2014**

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
23 Spd	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.8	0.0	0.0	0.0	0.0	0.1	0.3	0.3	0.2	0.3	0.6	0.0	0.06	0.76
Dir	N	ESE	N	NNW	S	NNW	NE	WSW	ESE	ESE	ENE	ESE	ESE	ESE	N	SW	ENE	ESE	NNW	S	S	ESE	N	E	ENE	ESE
24 Spd	0.5	0.1	0.0	0.0	0.0	0.1	0.2	4.9	2.2	2.7	6.1	8.8	8.0	5.5	4.7	2.6	1.8	2.9	3.0	4.2	2.1	3.4	2.7	5.9	2.08	8.82
Dir	NE	S	SSW	WSW	SSW	W	NNE	WNW	W	W	WNW	NW	NW	NW	N	NNE	N	NE	NNE	NNE	NNE	NE	N	E	NNW	NW
25 Spd	2.1	0.5	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.8	0.3	3.6	4.0	5.9	4.2	0.5	2.1	2.5	2.7	1.6	7.9	8.3	5.9	5.0	1.04	8.28
Dir	E	NNW	NNW	SE	SSE	WSW	SSE	NW	ESE	ESE	N	ESE	ESE	E	E	ENE	N	N	NW	WNW	NW	NW	NW	WNW	N	NW
26 Spd	2.2	0.4	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	1.2	0.1	0.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	4.6	0.22	4.64	
Dir	WNW	NW	NW	E	SSE	W	SE	SE	SSE	SSW	ESE	SE	E	E	S	WNW	W	SSE	S	W	SE	W	ENE	WNW	WNW	WNW
27 Spd	3.5	3.7	4.7	1.1	0.2	0.0	0.2	0.1	0.8	0.1	0.0	0.2	0.0	5.3	8.3	8.7	6.4	5.4	4.4	4.6	4.0	4.4	4.1	2.3	1.73	8.68
Dir	WNW	WNW	NW	WNW	W	SSW	NW	N	NW	NW	E	ESE	NW	E	E	ESE	E	E	ENE	ENE	NE	NNE	NE	NNE	ENE	ESE
28 Spd	1.3	1.0	2.5	1.7	1.6	1.7	2.0	1.5	0.9	1.0	0.4	1.1	1.8	1.6	2.1	1.1	0.0	0.4	3.3	1.9	3.1	5.2	1.3	3.8	1.70	5.22
Dir	N	NNW	N	N	NNW	NW	NNW	NNE	N	N	NNW	N	N	N	NNE	NNE	NNE	NW	NNE	NNE	N	NNE	NNW	NNW	N	NNE
29 Spd	3.9	2.7	2.8	2.1	2.7	3.1	2.0	2.8	5.8	5.4	8.4	4.5	3.1	3.2	3.8	2.6	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	2.26	8.42
Dir	NNW	NNE	N	NNW	N	N	NNE	NW	NW	NW	NNW	NW	NW	NNW	WNW	WNW	SE	NNW	SSW	SSW	SSE	SSE	ESE	SE	NNW	NNW
30 Spd	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.4	0.7	3.3	5.1	7.8	7.4	5.5	3.2	4.3	0.6	2.2	5.8	2.3	8.2	12.4	11.6	13.3	3.44	13.33
Dir	S	SSE	SE	S	E	E	ESE	E	NE	W	W	W	W	WSW	SSW	WNW	W	WNW	WNW	WNW	NW	NW	NW	WNW	WNW	WNW
31 Spd	10.5	4.4	2.9	3.7	4.6	6.2	5.6	4.0	5.8	6.2	7.4	6.2	3.4	2.2	1.1	1.5	0.3	0.1	8.6	9.4	9.4	9.0	10.9	10.2	5.34	10.92
Dir	WNW	W	WSW	W	W	WNW	WNW	W	W	W	W	W	WSW	SW	WSW	SW	S	WNW	WNW	WNW	WNW	WNW	WNW	WNW	W	WNW
Spd	0.19	0.12	0.35	0.31	0.44	0.78	0.57	0.75	0.85	1.14	1.22	1.34	0.93	0.39	0.32	0.23	0.47	0.42	0.49	0.39	0.45	0.61	0.75	0.58	Diurnal Average	
Dir	NNW	SSW	WNW	WNW	NW	WNW	WNW	WNW	WNW	W	W	W	W	WNW	ESE	ESE	E	E	NW	NW	NNW	N	NW	NW	Diurnal Maximum	
Spd	12.36	6.29	4.73	3.66	4.93	7.29	5.63	5.64	6.35	6.23	8.85	11.64	10.94	8.96	11.58	10.78	10.29	8.49	9.44	9.40	9.35	12.42	11.58	13.33	Diurnal Maximum	
Dir	108.63	163.29	306.07	274.56	346.54	283.11	288.32	289.23	256.35	259.39	294.31	289.45	291.56	293.25	136.31	135.49	129.57	141.76	154.66	288.61	283.71	316.05	307.67	302.22	Diurnal Maximum	
Maximum Speed Value: 13.3 kph on Dec 31 00:00																		Minimum Speed Value: 0.0 kph on Dec 8 03:00						Hours in Service: 744		
Maximum Daily Speed Average: 5.34 kph on Dec 31																		Minimum Daily Speed Average: 0.06 kph on Dec 13						Hours of Data: 744		
Maximum Diurnal Speed Average: 1.34 kph at hour 12																		Minimum Diurnal Speed Average: 0.12 kph at hour 2						Hours of Missing Data: 0		
Monthly Average Velocity: 0.422 kph 297.92 deg																		Speed Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.3 Q <sub>3</sub> = 2.6 P <sub>90</sub> = 5.7 P <sub>99</sub> = 10.3						Percent Operational Time: 100.0		
All monthly, daily, and diurnal averages have been calculated using vector methods																										
Frequency Distribution																										
		Speed Range (kph)																								
Direction	0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total																			
North	84	1	0	0	0	0	85																			
NorthEast	48	0	0	0	0	0	48																			
East	85	14	1	0	0	0	100																			
SouthEast	126	16	1	0	0	0	143																			
South	80	2	0	0	0	0	82																			
SouthWest	41	0	0	0	0	0	41																			
West	84	30	1	0	0	0	115																			
NorthWest	102	25	3	0	0	0	130																			
Total	650	88	6	0	0	0	744																			





**WCAS - Wagner2**  
**Summary of Hourly Averages**

**Relative Humidity (RH) - %**  
**December 2014**

Maximum Value: 93.45 % on Dec 10 07:00      Maximum Daily Average: 87.49 % on Dec 13 Minimum Value: 37.0 % on Dec 31 11:00      Minimum Daily Average: 51.57 % on Dec 31 Maximum Diurnal Average: 85.18 % at hour 3      Minimum Diurnal Average: 71.94 % at hour 13 Monthly Average: 80.304 %      Percentiles: P <sub>1</sub> = 41.6 P <sub>10</sub> = 65.9 Q <sub>1</sub> = 76.7 Median = 83.8 Q <sub>3</sub> = 87.1 P <sub>90</sub> = 89.8 P <sub>99</sub> = 93.0																								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																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Dec	77.8	78.3	79.2	80.3	80.5	80.5	80.2	80.2	80.1	81.3	83.6	84.1	83.4	83.2	83.9	84.4	84.7	85.1	85.4	82.8	84.8	85.1	85.7	84.6	82.47	85.72																							
2-Dec	85.7	84.6	85.7	86.5	85.9	86.7	85.0	84.9	86.0	87.6	78.2	68.2	62.1	54.8	53.2	59.1	69.4	76.0	80.8	83.8	85.5	85.8	85.0	85.1	78.56	87.61																							
3-Dec	85.1	86.2	86.8	78.7	69.3	69.0	71.4	71.6	73.8	66.2	60.0	57.1	54.7	53.1	55.0	58.3	69.8	75.3	80.1	85.4	86.2	87.1	89.2	87.3	73.19	89.21																							
4-Dec	87.0	86.9	86.5	86.0	85.2	85.4	85.2	84.8	84.8	83.8	77.4	73.6	77.2	73.7	76.7	75.9	80.7	84.5	87.7	87.5	87.2	85.3	85.0	84.6	83.02	87.69																							
5-Dec	82.9	82.8	82.3	81.7	81.9	80.9	80.6	80.7	80.8	79.7	79.5	79.0	77.3	77.3	78.2	80.5	84.5	86.7	87.9	88.2	88.1	86.6	87.1	86.2	82.56	88.18																							
6-Dec	86.8	88.6	87.8	87.2	88.3	88.3	89.0	88.1	87.2	86.4	84.2	83.6	85.1	85.0	83.5	83.3	83.1	84.5	85.2	87.1	89.5	89.2	88.0	89.4	86.60	89.54																							
7-Dec	90.3	90.2	89.7	89.0	88.9	88.2	87.5	87.4	87.0	85.4	75.9	72.5	68.2	70.6	82.2	79.9	85.7	87.8	84.1	85.8	87.4	87.4	87.2	86.3	84.36	90.29																							
8-Dec	85.2	85.4	86.7	84.9	84.2	84.4	84.7	84.6	84.3	83.8	77.0	73.4	76.4	79.4	77.0	79.3	84.5	86.1	86.6	87.1	87.4	87.1	87.4	87.1	83.49	87.43																							
9-Dec	87.0	86.3	86.8	86.4	87.0	87.6	87.7	87.2	87.8	87.2	85.4	84.2	85.0	83.6	81.4	80.8	83.5	86.5	66.1	54.1	50.5	43.6	58.7	72.3	78.61	87.78																							
10-Dec	82.6	88.2	88.2	89.5	90.6	93.0	93.5	93.1	92.6	91.2	89.2	87.1	82.6	76.1	60.6	54.1	69.7	71.5	77.3	84.1	84.7	87.4	88.6	89.5	83.53	93.45																							
11-Dec	90.3	90.8	91.1	88.1	88.7	63.9	55.4	61.7	53.7	49.6	44.7	42.6	42.1	49.2	54.0	65.0	66.1	70.5	67.3	65.0	64.5	61.0	65.5	67.5	64.93	91.12																							
12-Dec	65.9	72.1	82.8	85.8	90.1	90.7	91.7	92.1	92.2	91.4	89.5	83.2	74.0	74.1	75.0	78.2	82.3	87.7	90.9	92.3	93.3	93.1	92.9	93.0	85.60	93.31																							
13-Dec	93.0	92.9	92.1	91.2	91.5	91.8	92.1	92.1	92.6	92.8	90.6	85.3	81.8	75.2	77.0	71.6	76.7	80.6	84.8	86.5	90.4	92.9	92.6	91.5	87.49	93.03																							
14-Dec	91.5	91.6	91.9	90.7	90.1	89.9	89.6	88.8	88.7	86.6	80.2	65.9	61.3	66.8	72.7	77.5	78.0	84.7	86.2	88.2	88.6	87.5	86.7	86.1	83.73	91.89																							
15-Dec	85.2	83.8	83.6	86.1	83.9	82.5	82.1	81.9	81.8	80.9	76.6	71.0	73.7	81.2	80.1	73.7	73.4	80.4	85.6	90.5	92.0	91.1	90.6	90.6	82.60	92.01																							
16-Dec	90.8	89.3	89.1	89.0	87.9	87.2	87.4	87.7	87.0	83.8	80.9	80.3	79.8	83.3	81.6	81.8	82.6	82.4	81.1	80.9	81.7	82.6	82.7	83.1	84.34	90.81																							
17-Dec	81.8	80.9	80.5	80.8	81.7	83.5	82.3	82.5	83.1	83.5	83.6	83.8	83.7	83.4	83.0	81.8	85.0	88.0	88.6	88.0	87.6	88.9	88.6	91.6	84.43	91.62																							
18-Dec	91.3	89.1	89.1	88.9	88.3	87.2	86.8	86.3	85.8	85.4	85.8	83.2	79.0	80.8	83.7	85.7	86.6	86.9	86.7	86.4	86.1	85.4	84.8	84.4	85.98	91.31																							
19-Dec	84.7	84.1	84.8	84.9	85.4	85.1	85.0	85.0	85.1	85.1	84.4	83.9	85.4	85.1	83.5	86.1	85.8	86.4	86.9	87.8	88.8	88.9	88.8	88.9	85.83	88.94																							
20-Dec	88.3	88.3	87.9	87.5	87.3	86.4	86.3	86.0	85.4	83.8	71.8	66.8	69.7	75.6	78.1	81.8	86.4	89.3	90.7	89.8	88.8	88.3	88.5	88.5	84.22	90.66																							
21-Dec	89.3	90.1	90.7	89.7	87.8	86.9	85.7	86.3	85.2	84.4	79.4	79.8	76.2	75.7	76.4	89.7	90.4	92.0	83.6	83.7	84.0	82.9	88.5	87.8	85.24	91.99																							
22-Dec	81.4	90.0	92.4	92.4	92.8	93.2	92.7	92.3	92.3	85.1	70.7	66.2	64.0	63.1	64.3	63.1	67.9	70.3	77.4	83.2	87.0	86.8	87.7	89.6	81.08	93.18																							
23-Dec	91.4	90.1	90.9	91.5	90.4	91.9	91.4	90.3	89.4	88.9	87.7	87.0	85.8	84.7	85.4	86.2	86.7	83.1	79.6	80.0	78.9	81.6	84.0	86.76	91.95																								
24-Dec	84.8	84.3	85.5	86.9	86.6	88.2	87.3	67.2	72.6	65.4	64.6	65.4	67.6	73.1	80.2	80.8	79.7	80.1	80.3	80.5	80.5	81.8	80.8	88.20	88.21																								
25-Dec	82.8	85.3	85.5	86.2	85.9	86.0	85.4	85.4	87.3	86.5	85.4	83.4	82.9	83.6	83.9	82.6	83.9	84.8	84.7	84.9	78.2	74.7	74.7	77.2	83.38	87.27																							
26-Dec	82.5	86.0	85.9	84.7	83.5	82.6	82.2	81.0	80.4	79.6	70.7	68.5	76.1	75.9	78.7	79.5	80.8	82.0	83.8	84.5	84.8	84.8	85.3	82.1	81.08	85.95																							
27-Dec	80.0	78.6	79.7	82.4	88.4	87.9	89.1	89.2	87.2	85.2	80.5	71.0	61.5	72.4	81.4	84.6	85.6	84.9	84.8	85.5	86.3	85.4	82.6	82.0	82.34	89.24																							
28-Dec	82.2	81.4	82.8	82.6	81.4	80.7	80.0	78.5	79.0	78.0	77.3	76.4	74.2	74.2	72.9	74.6	78.2	82.5	76.0	76.0	76.7	71.9	74.6	75.7	77.82	82.79																							
29-Dec	75.0	72.7	72.1	73.5	74.5	72.9	72.5	72.9	71.1	69.8	68.0	67.1	69.0	68.7	67.0	67.9	73.4	77.2	78.7	79.1	77.8	76.2	74.8	74.1	72.74	79.11																							
30-Dec	73.2	72.9	72.7	73.2	74.2	74.4	75.0	76.3	78.8	74.3	61.0	58.0	54.6	54.7	56.4	49.4	58.9	64.9	47.6	50.2	41.6	53.9	56.1	76.6	63.70	78.76																							
31-Dec	75.4	70.4	70.0	55.0	52.1	46.8	41.3	45.7	42.9	40.3	37.0	38.1	38.2	39.5	41.4	48.2	53.9	64.7	52.3	53.1	55.7	56.7	58.8	60.4	51.57	75.43																							
																								84.23	84.59	85.18	84.56	84.33	83.34	82.77	82.31	82.13	80.65	76.17	73.19	71.94	72.63	73.59	74.97	78.67	81.64	80.70	81.34	81.48	81.19	82.26	83.47	Diurnal Average	
																								93.03	92.94	92.45	92.42	92.81	93.18	93.45	93.08	92.64	92.84	90.60	87.10	85.76	85.06	85.40	89.70	90.38	91.99	90.88	92.30	93.31	93.11	92.90	93.02	Diurnal Maximum	



**WCAS - Wagner2**  
**Summary of Hourly Standard Deviations**

**Wind Speed (WS) - kph**  
**December 2014**

Maximum Value: 7.38 kph on Dec 11 06:00      Maximum Daily Average: 2.71 kph on Dec 31		Hours in Service: 744 Hours of Data: 744 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																								
Minimum Value: 0.1 kph on Dec 8 03:00 Maximum Diurnal Average: 1.73 kph at hour 13 Monthly Average: 1.267 kph		Minimum Daily Average: 0.38 kph on Dec 14 Minimum Diurnal Average: 0.66 kph at hour 5 Percentiles: P <sub>1</sub> = 0.1 P <sub>10</sub> = 0.1 Q <sub>1</sub> = 0.1 Median = 1.0 Q <sub>3</sub> = 2.1 P <sub>90</sub> = 3.0 P <sub>99</sub> = 5.0																								
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-Dec	0.7	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	1.3	1.5	1.5	1.3	1.8	0.2	1.2	1.1	0.5	0.6	0.6	1.4	0.8	0.63	1.83
2-Dec	0.5	0.7	0.2	0.2	0.1	1.0	0.3	0.1	0.7	4.3	4.3	4.0	4.0	3.3	2.2	2.1	1.1	1.3	1.0	0.8	0.2	0.1	1.0	0.1	1.39	4.29
3-Dec	0.9	0.5	0.2	2.6	2.3	2.1	1.8	2.0	2.6	2.3	2.4	2.4	2.1	1.7	1.9	1.5	1.3	0.8	0.3	0.2	0.3	0.3	0.6	0.4	1.40	2.64
4-Dec	0.2	0.1	0.1	1.1	0.8	1.0	0.1	0.1	0.1	0.1	1.2	1.5	1.1	0.8	1.0	0.9	0.5	1.0	0.5	0.5	0.3	0.1	0.1	0.1	0.55	1.54
5-Dec	0.1	0.3	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.6	1.0	1.1	0.8	0.7	0.1	0.1	0.3	0.9	0.2	2.9	1.6	1.8	3.6	0.70	3.56
6-Dec	1.3	0.8	0.1	0.5	0.5	0.1	1.1	1.5	1.0	1.2	1.9	2.6	2.9	2.5	2.8	3.2	1.7	1.0	1.8	1.8	1.8	1.9	1.2	0.1	1.47	3.22
7-Dec	0.1	0.1	1.0	0.1	0.1	0.8	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.7	1.0	0.1	3.5	2.3	1.1	0.1	0.1	0.1	0.1	0.49	3.55
8-Dec	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.6	0.7	2.3	2.1	1.4	1.8	1.7	1.3	0.8	1.7	1.5	0.3	0.1	0.1	0.71	2.27
9-Dec	0.1	0.2	0.1	0.1	0.1	0.1	1.1	0.7	0.3	0.7	0.3	0.1	0.1	0.1	0.5	1.4	1.6	1.4	3.5	2.4	4.0	3.3	3.0	2.0	1.12	4.01
10-Dec	0.1	0.4	1.0	0.1	0.1	0.1	0.1	0.1	0.8	0.2	0.1	0.5	0.1	1.5	2.5	2.8	2.0	2.1	0.4	0.1	0.1	0.7	0.5	0.2	0.68	2.81
11-Dec	0.4	1.2	0.5	0.8	1.0	7.4	3.0	3.7	3.8	3.8	3.7	2.7	1.9	1.6	1.4	0.5	1.7	1.4	2.3	2.1	2.6	4.1	2.5	5.4	2.47	7.38
12-Dec	3.4	5.2	2.2	2.1	1.7	1.3	0.3	0.8	0.9	0.1	0.5	1.5	2.6	2.0	1.6	2.0	2.7	1.1	1.0	0.3	0.3	0.2	0.1	0.1	1.42	5.17
13-Dec	0.1	1.4	1.5	1.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.6	1.6	0.1	0.1	0.7	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.38	1.63
14-Dec	0.1	0.6	0.2	0.3	0.1	0.3	0.2	0.1	0.1	0.4	2.1	1.4	1.8	0.1	0.1	0.1	0.1	0.8	0.1	0.1	0.1	0.1	0.1	0.1	0.38	2.06
15-Dec	0.1	0.1	0.1	0.4	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	2.0	1.4	2.5	2.2	1.6	2.0	1.4	2.1	1.9	0.8	0.7	0.84	2.53
16-Dec	1.0	1.4	1.6	1.2	0.1	0.1	0.1	0.1	0.4	0.2	0.8	0.7	0.9	2.8	3.1	3.2	2.8	2.4	2.9	2.5	1.8	2.7	1.9	1.6	1.51	3.20
17-Dec	1.5	2.0	2.6	1.8	1.3	1.1	1.3	1.4	2.2	3.0	2.5	2.9	2.4	2.1	2.1	1.8	1.1	1.6	1.4	0.1	0.3	0.1	0.1	0.1	1.53	2.97
18-Dec	1.2	0.5	1.1	0.6	0.9	0.3	0.1	0.4	0.1	0.3	0.1	0.9	1.1	1.0	1.2	1.3	0.9	0.7	1.0	0.1	0.1	0.3	0.8	0.6	0.63	1.25
19-Dec	0.1	0.2	0.1	0.1	0.1	0.3	0.1	1.4	0.9	0.5	0.3	0.3	1.3	1.3	2.0	2.4	3.0	1.6	1.1	0.7	0.5	1.0	0.1	0.1	0.81	3.03
20-Dec	0.8	0.5	0.9	0.6	0.1	0.1	0.1	0.1	0.1	0.7	1.1	1.0	1.6	1.2	0.4	0.6	0.3	0.8	0.5	0.6	0.2	0.9	0.6	0.2	0.57	1.56
21-Dec	0.1	0.1	1.7	2.0	2.7	2.7	3.1	3.0	2.3	1.5	1.5	1.6	2.0	1.8	1.9	3.3	2.7	2.9	3.5	3.1	2.7	1.6	1.1	1.6	2.09	3.50
22-Dec	2.0	0.7	0.5	0.4	0.1	0.1	0.1	0.1	0.1	4.0	2.7	2.9	2.9	3.6	3.6	3.6	2.1	1.5	1.2	0.7	0.2	0.1	0.6	1.6	1.46	4.00
23-Dec	1.3	0.6	0.5	0.5	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.8	1.5	0.2	0.1	0.1	0.1	0.4	1.4	2.5	1.2	1.0	1.4	1.1	0.64	2.53
24-Dec	1.0	0.5	0.1	0.1	0.1	0.7	1.3	3.1	2.1	2.1	3.5	4.1	4.6	3.3	3.6	2.3	2.4	2.7	2.2	3.2	2.4	2.6	2.0	2.7	2.19	4.63
25-Dec	2.6	1.1	0.4	0.1	0.1	0.1	0.1	0.4	0.8	1.3	0.9	1.7	1.6	2.2	3.2	1.1	1.9	2.1	1.7	3.1	4.4	4.6	3.4	2.6	1.71	4.55
26-Dec	2.0	1.1	0.4	0.1	0.1	1.2	0.2	0.1	0.1	0.1	1.6	0.5	1.5	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.7	2.7	0.60	2.72
27-Dec	1.9	2.1	1.9	1.7	0.9	0.1	0.6	0.6	1.3	0.6	0.3	0.9	0.1	2.3	2.4	1.8	2.0	2.2	2.2	2.2	2.5	2.2	2.4	1.7	1.52	2.45
28-Dec	1.4	1.6	1.8	2.0	2.1	1.8	2.3	2.0	1.7	1.8	1.2	2.0	2.4	2.4	2.6	2.2	0.5	1.3	3.4	3.0	4.1	4.7	2.3	3.6	2.26	4.72
29-Dec	3.7	3.3	2.8	2.2	2.4	2.8	2.3	3.2	3.3	3.3	4.1	3.2	2.4	2.0	2.2	2.2	0.1	0.8	0.1	0.1	0.1	0.1	0.1	0.1	1.95	4.07
30-Dec	0.1	0.1	0.1	0.1	0.5	0.6	0.7	1.2	1.7	2.7	3.4	3.2	3.5	3.1	2.2	2.4	1.4	2.3	2.4	2.5	5.4	7.0	6.3	5.6	2.44	7.02
31-Dec	4.7	2.3	1.7	2.4	2.0	2.3	2.7	2.5	3.4	2.8	3.9	3.4	1.4	1.9	1.6	1.6	1.5	1.0	4.1	3.5	3.6	3.2	3.9	3.5	2.71	4.74
																								Diurnal Average		
																								Diurnal Maximum		
1.08 0.95 0.82 0.83 0.66 0.94 0.76 0.94 1.01 1.24 1.48 1.61 1.73 1.72 1.67 1.67 1.30 1.41 1.52 1.32 1.50 1.53 1.35 1.39																								Diurnal Average		
4.74 5.17 2.79 2.64 2.65 7.38 3.05 3.68 3.82 4.29 4.27 4.14 4.63 3.60 3.60 3.55 3.03 3.55 4.13 3.51 5.43 7.02 6.35 5.61																								Diurnal Maximum		
,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3    24-hr 100 ul/m^3																										



**WCAS - Wagner2**  
**Summary of Hourly Standard Deviations**

**Wind Direction (WD) - deg**  
**December 2014**

<b>Maximum Value: 119.95 deg on Dec 9 18:00</b> <b>Maximum Daily Average: 82.25 deg on Dec 23</b>																								Hours in Service:	744	
<b>Minimum Value: 9.3 deg on Dec 5 22:00</b> <b>Minimum Daily Average: 31.17 deg on Dec 31</b>																								Hours of Data:	744	
<b>Maximum Diurnal Average: 69.90 deg at hour 18</b> <b>Minimum Diurnal Average: 48.25 deg at hour 14</b>																								Hours of Missing Data:	0	
<b>Monthly Average: 59.343 deg</b> <b>Percentiles: P<sub>1</sub> = 12.1 P<sub>10</sub> = 22.7 Q<sub>1</sub> = 35.0 Median = 61.9 Q<sub>3</sub> = 82.4 P<sub>90</sub> = 92.3 P<sub>99</sub> = 102.6</b>																								Hours of Calibration:	0	
																								Percent Operational Time:	100.0	
Day	Hourly Period Ending At																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	79.3	74.8	77.4	56.9	46.0	23.6	28.3	22.3	61.7	56.9	83.4	59.0	53.4	29.8	27.1	50.4	61.0	90.8	84.0	84.6	51.1	99.1	95.4	56.4	60.53	99.10
2-Dec	95.8	82.9	74.0	66.6	77.0	81.8	70.1	48.2	103.1	61.0	22.8	17.7	18.7	18.0	16.3	49.7	17.0	75.4	91.8	92.4	92.3	80.7	82.3	31.7	61.13	103.13
3-Dec	84.3	89.4	61.2	45.6	24.1	31.1	21.5	18.9	49.3	22.6	40.4	23.9	29.7	43.5	38.5	47.4	81.7	94.0	51.8	64.1	71.1	87.0	104.1	92.4	54.89	104.09
4-Dec	91.5	85.7	71.9	65.5	71.9	88.7	99.2	88.8	72.4	101.0	45.6	82.5	80.2	45.5	98.7	86.3	86.9	100.1	77.8	99.9	75.2	86.4	83.0	71.7	81.51	101.04
5-Dec	43.5	64.0	61.9	38.7	31.3	66.8	35.7	40.6	58.1	30.9	39.8	79.4	41.6	88.3	74.9	15.3	35.5	57.1	97.0	91.3	12.2	9.3	11.2	28.8	48.05	97.00
6-Dec	90.3	46.5	43.5	80.6	82.2	98.0	101.0	64.0	91.5	71.6	41.0	31.1	25.1	22.0	32.9	24.6	76.5	75.9	85.3	89.3	77.4	64.6	87.6	25.8	63.67	100.95
7-Dec	45.8	41.4	65.6	61.0	89.2	81.3	78.7	79.0	99.1	100.6	42.0	42.2	70.0	94.0	69.8	82.1	71.8	54.4	64.1	86.0	46.7	78.1	56.1	43.6	68.44	100.56
8-Dec	31.0	21.1	54.0	42.7	34.9	68.2	33.3	39.8	26.3	61.5	92.2	85.5	73.6	70.8	86.0	92.0	31.3	80.7	74.4	87.7	103.0	71.5	103.3	70.9	63.98	103.32
9-Dec	62.9	72.1	83.5	69.2	81.9	78.2	80.6	76.6	64.6	80.1	102.7	100.9	85.2	54.2	81.0	98.3	116.6	120.0	45.3	35.1	26.7	24.5	25.9	74.2	72.52	119.95
10-Dec	81.9	77.3	76.1	80.6	90.2	91.5	100.0	41.8	85.8	85.3	92.4	70.4	98.9	75.5	72.4	72.9	56.7	55.3	88.2	72.3	105.9	102.2	69.3	81.6	80.19	105.92
11-Dec	98.7	93.5	103.2	93.1	108.9	42.4	72.8	58.7	27.9	26.9	40.6	30.8	25.1	89.6	61.3	85.0	69.6	85.4	41.9	53.0	18.6	13.8	78.1	22.4	60.05	108.85
12-Dec	13.5	53.5	52.5	83.6	105.7	90.7	88.5	89.8	88.2	74.9	90.8	101.5	90.2	80.6	85.0	71.5	69.2	99.8	77.9	88.3	52.9	90.3	94.8	71.5	79.37	105.69
13-Dec	97.2	80.1	82.4	79.9	27.6	70.2	51.6	82.5	55.5	94.5	84.8	40.5	64.3	58.0	56.5	88.8	59.1	83.5	52.3	28.6	73.4	30.5	54.0	62.7	64.95	97.23
14-Dec	50.3	85.7	72.7	44.0	66.1	84.5	61.6	72.7	64.8	85.2	70.8	84.1	58.4	21.9	27.9	45.5	42.4	82.5	55.3	46.7	74.6	63.7	80.5	77.2	63.30	85.73
15-Dec	50.8	25.0	43.8	76.0	35.0	55.1	33.7	47.3	22.7	68.4	54.9	33.5	47.2	53.2	13.1	13.0	10.6	13.1	51.8	23.6	35.6	20.3	85.0	80.8	41.39	85.01
16-Dec	74.3	69.0	48.8	55.9	20.8	19.6	68.0	91.2	48.8	46.3	64.3	87.6	84.1	43.7	13.6	15.4	14.9	17.2	16.3	15.3	16.1	17.5	19.3	15.6	40.98	91.16
17-Dec	15.3	19.6	28.2	27.9	63.0	88.4	56.2	42.7	34.4	31.6	29.5	28.8	41.5	35.8	39.6	66.8	81.8	70.9	74.4	59.7	72.3	53.8	79.4	21.6	48.46	88.36
18-Dec	60.7	59.9	69.2	75.6	89.7	45.6	31.2	66.4	37.3	61.1	56.2	51.4	54.6	21.6	86.9	75.4	71.6	67.8	84.9	52.5	40.1	53.6	94.2	83.1	62.10	94.23
19-Dec	46.3	54.8	17.5	47.1	44.8	76.6	53.2	83.7	95.6	85.9	66.6	83.3	28.7	54.9	29.1	36.9	66.9	71.7	64.1	80.9	79.2	71.5	57.3	78.6	61.46	95.64
20-Dec	91.7	69.3	63.8	70.7	71.0	44.9	56.9	61.4	41.1	88.8	65.7	23.3	61.0	76.6	93.0	99.1	97.9	98.1	84.8	73.2	60.4	93.3	83.1	97.2	73.59	99.12
21-Dec	74.5	83.4	87.0	78.0	37.4	30.8	46.1	40.9	22.8	65.6	62.4	34.0	27.8	49.8	80.4	28.3	58.5	53.4	29.4	28.8	35.1	22.1	13.9	14.7	46.05	87.03
22-Dec	18.0	52.4	92.3	79.1	84.0	85.1	90.4	81.9	64.2	56.9	24.1	19.2	23.6	21.8	22.7	23.3	19.4	19.9	76.2	93.0	52.0	68.1	87.0	79.9	55.61	93.03
23-Dec	90.3	67.7	69.1	103.1	83.2	76.7	93.4	88.0	23.1	71.4	63.4	90.5	82.8	85.1	100.3	83.8	66.7	87.2	83.5	98.8	100.3	87.6	84.0	93.8	82.25	103.05
24-Dec	89.5	71.7	45.5	94.0	78.5	82.0	100.5	33.3	37.3	52.3	27.1	26.0	30.1	30.4	43.1	41.1	41.4	58.4	37.1	36.3	39.5	49.4	32.2	22.1	49.95	100.49
25-Dec	56.5	83.2	82.6	23.7	42.3	64.1	61.4	77.2	68.4	74.9	99.5	15.1	10.3	19.2	68.0	88.5	38.6	33.9	28.2	94.3	30.5	28.4	33.2	30.9	52.20	99.51
26-Dec	67.8	75.1	83.6	84.3	77.9	89.6	69.7	92.1	34.2	88.1	84.4	81.9	88.0	71.4	32.3	100.0	97.8	88.4	59.0	95.3	75.5	79.6	100.5	28.0	76.86	100.48
27-Dec	27.6	26.0	27.3	90.9	71.0	52.4	71.0	96.1	82.0	96.8	83.5	90.6	30.2	11.4	13.5	11.1	12.1	16.3	26.9	30.2	35.9	28.1	29.4	27.8	45.34	96.78
28-Dec	71.2	64.3	30.5	44.1	50.3	71.9	46.9	58.7	95.0	80.2	94.5	60.2	56.2	41.2	39.2	66.3	66.4	73.4	37.2	58.0	41.1	37.9	61.9	31.5	57.42	94.97
29-Dec	39.5	39.0	41.0	32.4	37.3	37.5	35.2	46.3	28.7	29.7	27.3	32.8	26.4	23.9	25.3	61.7	25.6	67.4	61.8	65.9	49.4	61.6	63.8	55.2	42.28	67.35
30-Dec	38.8	54.4	51.3	36.3	58.7	76.0	82.1	94.6	105.7	62.6	36.9	22.9	24.3	23.3	36.0	29.0	97.2	75.5	20.0	64.5	29.5	29.6	28.3	21.6	49.96	105.66
31-Dec	20.7	22.6	27.8	23.9	19.2	17.5	20.5	25.3	25.2	22.7	22.3	26.1	22.1	40.8	47.9	50.4	99.2	99.4	23.3	19.0	18.4	17.9	17.4	18.7	31.17	99.45
61.28 61.46 60.93 62.94 61.33 64.87 62.55 62.93 58.54 65.68 59.74 53.44 50.11 48.25 52.00 58.06 59.42 69.90 59.55 64.79 54.57 55.53 64.37 52.00																								Diurnal Average		
98.72 93.54 103.20 103.05 108.85 98.00 100.95 96.11 105.66 101.04 102.71 101.54 98.94 94.04 100.28 99.96 116.59 119.95 97.00 99.86 105.92 102.15 104.09 97.24																								Diurnal Maximum		
,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3 24-hr 100 ul/m^3																										

**WEST CENTRAL AIRSHED SOCIETY**

**CONTINUOUS AMBIENT AIR QUALITY  
MONITORING PROGRAM  
MONTHLY REPORT**

**END OF REPORT  
DECEMBER 2014**