

**WEST CENTRAL AIRSHED  
SOCIETY  
May 2016  
Monthly Report**







**TOMAHAWK  
STATION #901**

**CONTINUOUS AIR MONITORING DATA**

**MAY 2016**

**Summary Report**

*Continuous air quality/meteorological monitoring measurements*

**West Central Airshed Society**

WCAS / Tomahawk Station 901													May 2016		
Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Min	Max	Percentile					Exceedences		24 Hour Average Max (ppm)	
							P10	Q1	Median	Q3	P90	1-hour	24-hour		
SO <sub>2</sub> (ppb)	35	709	100.0	0.293	0.0	11.0	0.0	0.0	0.1	0.2	0.6	0	0	0.001	
O <sub>3</sub> (ppb)	35	709	100.0	35.9	4.6	66.5	16.2	24.9	36.7	46.8	53.8	0	-	0.054	
NO (ppb)	35	709	100.0	0.3	0.0	6.4	0.0	0.1	0.1	0.3	0.8	-	-	-	
NO <sub>2</sub> (ppb)	35	709	100.0	2.0	0.3	11.1	0.7	0.9	1.4	2.7	4.2	0	0	0.004	
NO <sub>x</sub> (ppb)	35	709	100.0	2.4	0.0	17.5	0.8	1.0	1.6	3.1	5.0	-	-	-	
Particulate Matter 2.5 microns (μ/m <sup>3</sup> )	0	744	100.0	5.9	0.0	72.4	0.4	1.9	4.1	7.5	12.7	0	0	20.71 ug/m3	
Wind Speed (kph)	0	744	100.0	10.2	0.4	35.2	3.3	5.7	9.2	13.8	18.1	-	-	-	
Temperature (°C)	0	744	100.0	10.7	-3.6	28.3	2.5	5.2	9.9	15.2	20.9	-	-	-	
Relative Humidity (%)	0	744	100.0	57.4	12.6	96.7	21.0	32.5	57.7	82.4	93.2	-	-	-	
Photosynthetically Active Radiation (W/m <sup>2</sup> )	0	744	100.0	102.9	0.0	432.1	0.0	0.5	35.3	191.9	328.7	-	-	-	
Std Dev Wind Direction (deg)	0	744	100.0	24.8	3.1	99.4	10.8	13.8	18.0	29.7	51.0	-	-	-	
Std Dev Wind Speed (kph)	0	744	100.0	3.1	0.4	9.6	1.1	1.7	3.0	4.3	5.2	-	-	-	



**WCAS - Tomahawk**  
**Summary of Hourly Averages**

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

Maximum Value: 10.99 ppb on May 12 10:00		Maximum Daily Average: 1.26 ppb on May 12		Hours in Service: 744																							
Minimum Value: 0.0 ppb on May 4 15:00		Minimum Daily Average: 0.00 ppb on May 22		Hours of Data: 709																							
Maximum Diurnal Average: 0.68 ppb at hour 10		Minimum Diurnal Average: 0.12 ppb at hour 6		Hours of Missing Data: 35																							
Monthly Average: 0.293 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.1 O <sub>3</sub> = 0.2 P <sub>90</sub> = 0.6 P <sub>99</sub> = 3.7		Hours of Calibration: 35																							
				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-May	0.1	0.1	Z	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.09	0.18	
2-May	0.1	0.0	Z	0.1	0.0	0.1	0.2	0.3	0.3	0.7	0.3	0.3	0.3	0.2	0.3	0.3	0.2	0.1	0.2	0.2	0.2	0.1	0.2	0.3	0.22	0.72	
3-May	0.3	0.3	Z	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.2	0.13	0.32	
4-May	0.3	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.07	0.34	
5-May	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.2	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.06	0.16	
6-May	0.0	0.1	Z	0.1	0.2	0.1	0.2	0.2	0.4	0.4	0.4	0.2	0.2	0.2	0.7	0.4	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.4	0.24	0.70	
7-May	0.4	0.2	Z	0.2	0.3	0.2	0.3	0.3	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.3	0.6	0.6	0.5	0.3	0.1	0.25	0.60	
8-May	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.06	0.15	
9-May	0.1	0.2	Z	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.09	0.20	
10-May	0.0	0.0	Z	0.0	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	5.2	1.7	1.9	2.1	2.0	0.64	5.21	
11-May	1.7	0.9	Z	0.3	0.1	0.4	0.3	0.5	0.5	0.6	2.8	4.5	2.1	2.3	1.1	1.7	1.5	0.5	0.7	0.2	0.1	0.1	0.8	0.1	1.03	4.49	
12-May	1.8	1.7	Z	0.9	0.8	0.8	0.9	1.8	1.3	11.0	3.6	0.3	0.2	0.1	0.2	0.2	0.1	0.3	0.8	0.1	0.4	1.1	0.4	0.2	1.26	10.99	
13-May	0.2	0.1	Z	0.3	0.3	0.2	0.2	0.3	0.2	0.2	0.3	0.3	0.8	0.5	0.4	0.3	0.3	0.4	0.4	0.8	1.7	2.6	2.2	1.6	0.64	2.62	
14-May	1.2	0.9	Z	1.2	0.9	0.4	0.2	0.2	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.30	1.18	
15-May	0.5	0.3	Z	0.3	0.3	0.1	0.1	0.3	0.6	0.6	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.19	0.64	
16-May	0.0	0.0	Z	0.3	0.3	0.3	0.3	0.3	0.5	0.9	0.6	0.4	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.4	0.2	0.2	0.27	0.93	
17-May	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.2	0.1	0.2	0.3	0.1	0.1	0.13	0.25	
18-May	0.2	0.2	Z	0.1	0.2	0.2	0.2	0.2	0.3	0.8	5.6	4.4	3.0	1.8	1.8	4.6	0.8	0.1	0.1	0.1	0.1	0.0	0.0	0.0	1.08	5.61	
19-May	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	0.02	
20-May	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.04	0.12	
21-May	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.05	0.15	
22-May	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	
23-May	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	0.1	2.6	2.9	1.6	0.6	0.1	0.0	0.35	2.88	
24-May	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.09	
25-May	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.2	0.3	0.2	0.0	0.0	0.0	0.0	0.2	0.2	0.1	0.0	0.1	0.09	0.27	
26-May	0.1	0.1	Z	0.0	0.0	0.0	0.0	0.1	0.1	3.0	1.8	2.5	0.8	1.9	2.1	4.0	2.2	1.9	0.6	0.5	0.2	0.0	0.1	0.0	0.95	3.99	
27-May	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.02	0.13	
28-May	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.5	1.4	0.9	0.9	0.9	0.5	0.27	1.44	
29-May	0.3	0.2	Z	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.4	0.9	0.9	0.3	0.2	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.19	0.91	
30-May	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.1	C	C	C	C	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.7	0.6	0.6	0.14	0.69	
31-May	0.3	0.1	Z	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.8	0.4	0.2	0.1	0.17	0.78	
		0.25	0.19	--	0.15	0.14	0.12	0.13	0.21	0.22	0.68	0.59	0.51	0.34	0.30	0.26	0.42	0.21	0.17	0.26	0.46	0.32	0.34	0.29	0.22	Diurnal Average	
		1.78	1.71	--	1.18	0.94	0.80	0.86	1.81	1.32	10.99	5.61	4.49	2.98	2.30	2.10	4.62	2.15	1.92	2.59	5.21	1.74	2.62	2.19	2.02	Diurnal Maximum	
Z - zerospan		C - Calibration																									
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr 172 ppb					24-hr 48 ppb																				







**WCAS - Tomahawk**  
**Summary of Hourly Averages**

**Nitrogen Oxide (NO) - ppb**  
**May 2016**

Maximum Value: 6.42 ppb on May 12 10:00		Maximum Daily Average: 0.68 ppb on May 11		Hours in Service: 744																									
Minimum Value: 0.0 ppb on May 1 02:00		Minimum Daily Average: 0.03 ppb on May 5		Hours of Data: 709																									
Maximum Diurnal Average: 0.96 ppb at hour 8		Minimum Diurnal Average: 0.06 ppb at hour 2		Hours of Missing Data: 35																									
Monthly Average: 0.290 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.1 Median = 0.1 Q <sub>3</sub> = 0.3 P <sub>90</sub> = 0.8 P <sub>99</sub> = 2.6		Hours of Calibration: 35																									
Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.1 Median = 0.1 Q <sub>3</sub> = 0.3 P <sub>90</sub> = 0.8 P <sub>99</sub> = 2.6		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-May	0.0	0.0	Z	0.0	0.0	0.1	0.7	1.2	0.8	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.19	1.15			
2-May	0.0	0.0	Z	0.0	0.0	0.2	2.0	1.9	2.3	1.8	0.6	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.46	2.29			
3-May	0.0	0.1	Z	0.0	0.1	0.2	0.7	0.9	0.7	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.19	0.93			
4-May	0.0	0.0	Z	0.1	0.1	0.2	0.7	0.8	1.3	1.4	0.6	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.28	1.37			
5-May	0.1	0.1	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.03	0.12			
6-May	0.0	0.0	Z	0.0	0.1	0.4	1.2	1.5	1.1	0.7	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.27	1.48			
7-May	0.1	0.1	Z	0.0	0.0	0.2	0.8	1.3	1.1	0.8	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.0	0.0	0.0	0.25	1.27			
8-May	0.0	0.0	Z	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.04	0.12			
9-May	0.0	0.0	Z	0.0	0.1	0.1	0.3	0.2	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.05	0.26			
10-May	0.0	0.0	Z	0.0	0.0	0.2	0.8	0.6	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.9	0.0	0.0	0.2	0.0	0.16	0.89			
11-May	0.0	0.0	Z	0.0	0.2	1.2	2.2	2.7	1.1	0.6	1.6	2.6	0.8	0.9	0.4	0.5	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.68	2.69			
12-May	0.0	0.0	Z	0.0	0.0	0.3	1.1	1.0	0.7	6.4	1.4	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.53	6.42			
13-May	0.0	0.0	Z	0.0	0.1	1.2	3.2	2.7	1.7	0.4	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.45	3.15			
14-May	0.0	0.0	Z	0.0	0.0	0.5	1.4	2.1	1.5	0.5	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.32	2.05			
15-May	0.0	0.0	Z	0.0	0.1	0.5	1.2	1.2	1.4	0.4	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.27	1.37			
16-May	0.0	0.0	Z	0.0	0.0	0.3	1.0	0.7	0.8	0.4	0.3	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.18	0.96			
17-May	0.0	0.0	Z	0.0	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.3	1.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.13	1.28			
18-May	0.0	0.0	Z	0.0	0.0	0.2	0.8	2.0	1.2	1.1	2.6	1.8	0.9	0.4	0.4	1.1	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.66	2.62			
19-May	0.2	0.2	Z	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.20	0.35			
20-May	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.2	0.3	0.4	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.12	0.42			
21-May	0.1	0.1	Z	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.12	0.21			
22-May	0.0	0.1	Z	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.11	0.22			
23-May	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.9	0.8	0.4	0.3	0.3	0.2	0.23	0.90			
24-May	0.3	0.1	Z	0.2	0.2	0.4	2.9	1.7	1.8	0.5	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.50	2.88			
25-May	0.1	0.1	Z	0.0	0.0	0.8	2.1	2.0	1.9	1.1	0.6	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.4	0.4	0.2	0.2	0.2	0.2	0.53	2.12			
26-May	0.1	0.2	Z	0.4	0.4	1.4	0.8	0.5	0.6	2.2	1.0	1.6	0.5	0.8	0.7	1.1	0.6	0.5	0.3	0.2	0.2	0.1	0.2	0.2	0.63	2.24			
27-May	0.2	0.1	Z	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.18	0.28			
28-May	0.1	0.1	Z	0.1	0.2	0.7	1.4	0.9	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.5	0.5	0.3	0.1	0.1	0.1	0.30	1.40			
29-May	0.0	0.1	Z	0.1	0.2	0.8	1.2	1.2	1.0	0.8	0.7	0.9	0.6	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.39	1.19			
30-May	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.2	0.2	C	C	C	C	0.0	0.2	0.2	0.2	0.3	0.4	0.2	0.2	0.1	0.1	0.1	0.13	0.43			
31-May	0.1	0.1	Z	0.1	0.2	0.6	1.9	1.3	0.9	0.5	0.2	0.2	1.1	0.3	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.39	1.94			
		0.06	0.06	--	0.06	0.09	0.36	0.94	0.96	0.77	0.74	0.44	0.37	0.25	0.20	0.17	0.21	0.20	0.15	0.18	0.18	0.10	0.08	0.08	0.06	Diurnal Average			
		0.25	0.25	--	0.43	0.45	1.40	3.15	2.69	2.29	6.42	2.62	2.58	1.10	0.93	0.67	1.09	1.28	0.50	0.90	0.89	0.36	0.34	0.28	0.28	Diurnal Maximum			
Z - zerospan		C - Calibration																											
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr --- ppb				24-hr --- ppb																							



**WCAS - Tomahawk**  
**Summary of Hourly Averages**

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

Maximum Value: 11.07 ppb on May 12 10:00		Maximum Daily Average: 3.88 ppb on May 11		Hours in Service: 744																													
Minimum Value: 0.3 ppb on May 8 15:00		Minimum Daily Average: 0.67 ppb on May 8		Hours of Data: 709																													
Maximum Diurnal Average: 3.22 ppb at hour 6		Minimum Diurnal Average: 1.07 ppb at hour 15		Hours of Missing Data: 35																													
Monthly Average: 2.031 ppb		Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 0.7 Q <sub>1</sub> = 0.9 Median = 1.4 O <sub>3</sub> = 2.7 P <sub>90</sub> = 4.2 P <sub>99</sub> = 8.6		Hours of Calibration: 35																													
Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 0.7 Q <sub>1</sub> = 0.9 Median = 1.4 O <sub>3</sub> = 2.7 P <sub>90</sub> = 4.2 P <sub>99</sub> = 8.6		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-May	6.5	3.4	Z	3.8	3.4	3.7	3.4	3.3	2.3	1.4	0.8	0.7	0.6	0.6	0.7	0.7	0.7	0.7	0.8	0.8	1.1	1.7	1.8	2.3	1.98	6.55							
2-May	3.4	3.9	Z	3.6	3.1	3.6	5.1	4.0	4.7	4.3	2.4	1.2	0.9	0.9	1.0	0.9	0.9	0.9	1.3	1.4	1.5	2.0	2.2	2.6	2.41	5.07							
3-May	2.6	3.3	Z	3.3	3.7	4.3	3.8	3.2	2.5	1.4	0.7	0.7	0.6	0.6	0.6	0.7	0.8	1.0	1.4	1.6	1.5	2.5	1.8	1.2	1.91	4.30							
4-May	1.8	2.1	Z	3.3	3.6	3.9	4.0	3.8	4.7	4.1	2.7	1.5	1.1	0.9	0.9	0.9	1.3	1.2	1.4	1.4	1.4	1.4	1.3	1.4	2.18	4.68							
5-May	2.1	1.9	Z	0.9	0.8	0.7	0.7	0.7	0.9	0.8	0.8	0.8	0.8	1.0	0.9	0.9	0.6	0.6	0.6	0.7	1.0	0.9	1.1	1.2	0.93	2.12							
6-May	2.6	3.5	Z	6.4	5.9	4.9	4.1	3.6	2.8	2.3	1.6	1.0	0.9	0.9	1.0	1.0	1.0	1.1	1.4	1.7	2.6	3.7	2.1	4.1	2.62	6.37							
7-May	7.0	5.2	Z	4.9	4.0	4.8	4.1	4.0	3.6	3.1	1.6	0.9	0.9	0.8	0.8	1.0	0.9	0.8	1.6	3.2	5.6	2.6	2.3	1.9	2.85	7.02							
8-May	1.2	1.0	Z	0.9	0.8	0.6	0.6	0.7	0.7	0.9	1.0	0.9	0.7	0.4	0.3	0.3	0.4	0.5	0.5	0.6	0.6	0.7	0.6	0.7	0.67	1.23							
9-May	0.6	0.9	Z	1.0	1.1	1.2	1.2	0.9	0.7	0.5	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.5	0.6	0.7	0.7	0.7	0.8	0.9	0.70	1.25							
10-May	1.0	1.2	Z	1.5	2.1	2.6	2.9	1.9	1.2	0.9	0.6	0.5	0.5	0.5	0.6	0.6	0.7	0.7	1.2	9.2	3.9	3.7	6.4	4.7	2.13	9.22							
11-May	5.0	6.7	Z	8.8	9.0	9.5	6.0	5.3	3.1	2.0	3.9	5.0	3.1	3.3	2.4	3.1	2.8	1.8	1.9	1.2	1.1	1.0	2.0	1.3	3.88	9.51							
12-May	3.5	4.8	Z	5.6	6.7	4.5	5.3	4.2	2.9	11.1	5.6	1.7	1.5	1.6	1.2	0.9	0.6	0.9	1.5	1.2	3.0	2.8	1.6	1.6	3.23	11.07							
13-May	2.0	2.6	Z	8.7	8.9	7.7	6.1	4.7	3.9	1.5	0.8	0.9	1.3	1.0	1.0	1.0	1.0	1.0	1.2	1.8	3.8	8.3	5.6	4.1	3.43	8.88							
14-May	4.0	4.3	Z	3.9	3.7	5.5	5.2	5.5	4.4	2.6	2.2	1.7	1.4	1.4	1.3	1.3	1.2	1.2	1.4	1.4	2.3	2.0	2.8	3.5	2.79	5.52							
15-May	7.3	4.6	Z	5.5	8.1	8.3	6.3	4.8	5.2	2.5	1.7	1.4	1.4	1.3	1.3	1.3	1.3	1.5	1.5	1.7	2.5	2.1	2.5	2.9	3.35	8.28							
16-May	2.6	2.6	Z	3.1	3.2	3.9	4.8	3.3	3.1	2.1	1.7	1.3	1.0	1.0	0.9	0.7	0.8	0.9	1.1	1.9	1.9	3.6	2.5	2.1	2.18	4.85							
17-May	1.0	0.9	Z	0.7	0.9	1.0	1.1	1.2	0.9	0.8	0.7	0.7	0.7	0.6	0.5	0.6	1.8	0.6	0.7	1.3	2.0	1.6	1.4	1.6	1.02	2.03							
18-May	2.2	1.8	Z	1.7	2.2	3.4	4.2	5.3	3.6	3.5	6.4	5.1	3.6	2.5	2.7	6.9	3.2	1.7	1.5	1.7	1.7	1.6	1.6	1.7	3.03	6.94							
19-May	1.4	1.4	Z	1.6	1.6	1.8	1.8	1.9	1.8	1.8	1.7	1.6	1.6	1.5	1.6	1.6	1.4	1.3	1.4	1.3	1.2	1.1	1.1	1.0	1.49	1.86							
20-May	1.0	1.0	Z	1.0	1.0	0.9	0.9	0.8	0.7	0.6	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.8	0.8	0.9	0.9	0.8	0.76	0.99							
21-May	0.7	0.7	Z	0.6	0.7	0.9	1.0	0.9	0.9	0.7	0.9	0.7	0.6	0.8	0.8	0.8	0.9	0.9	0.9	0.9	1.0	0.9	0.8	0.8	0.81	1.01							
22-May	0.8	0.8	Z	0.7	0.8	1.0	1.1	1.1	1.0	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.82	1.15							
23-May	0.7	0.7	Z	0.7	1.1	1.0	1.0	1.0	1.0	0.9	0.8	0.8	0.7	0.6	0.7	0.8	0.9	1.2	6.1	7.7	6.8	4.5	2.5	2.7	1.96	7.73							
24-May	2.7	2.3	Z	2.3	1.8	2.2	2.0	2.2	2.7	1.4	1.0	1.1	1.1	1.2	1.3	1.5	1.5	1.6	1.9	1.8	2.1	2.7	3.3	2.6	1.91	3.31							
25-May	2.7	2.9	Z	2.8	2.8	3.6	4.1	3.9	3.9	3.4	2.8	2.2	2.2	2.0	1.9	1.5	1.7	1.6	2.1	3.2	3.0	3.1	2.7	3.4	2.76	4.08							
26-May	2.8	2.7	Z	7.0	4.0	4.4	2.5	1.8	1.6	5.5	4.2	3.7	1.7	2.6	2.9	5.2	3.1	3.4	3.0	3.0	2.1	1.5	1.2	1.2	3.09	7.00							
27-May	1.1	1.1	Z	1.1	1.3	1.3	1.1	1.1	1.1	1.4	1.7	1.2	1.1	1.0	1.0	1.1	1.1	1.0	1.1	1.1	1.2	1.0	1.0	0.9	1.14	1.71							
28-May	1.1	1.6	Z	2.1	2.3	2.9	2.8	1.8	0.8	0.7	0.7	0.6	0.7	0.7	0.7	0.6	1.0	0.9	1.7	3.2	4.7	4.8	4.5	4.0	1.95	4.85							
29-May	3.1	2.8	Z	4.8	3.5	2.5	2.5	2.6	2.2	1.9	2.0	2.4	2.1	1.4	1.1	0.9	0.8	0.8	0.9	0.8	0.8	0.9	0.9	0.9	1.85	4.77							
30-May	0.9	0.9	Z	0.8	0.7	0.7	1.0	1.0	0.9	C	C	C	C	0.3	0.7	0.7	1.0	1.0	1.7	1.1	1.7	3.1	2.7	2.8	1.25	3.06							
31-May	3.0	2.8	Z	2.3	2.6	1.9	1.8	1.6	1.3	1.1	0.8	0.8	0.8	1.0	0.9	1.0	1.0	1.2	1.8	2.1	2.6	2.0	2.8	2.6	1.73	2.99							
		2.53	2.46	--	3.07	3.08	3.22	2.98	2.64	2.29	2.20	1.78	1.43	1.18	1.10	1.07	1.30	1.16	1.09	1.47	1.98	2.16	2.27	2.11	2.09	Diurnal Average							
		7.29	6.69	--	8.76	8.97	9.51	6.28	5.46	5.19	11.07	6.43	5.10	3.57	3.35	2.90	6.94	3.15	3.38	6.06	9.22	6.81	8.35	6.39	4.67	Diurnal Maximum							
Z - zerospan		C - Calibration																															
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr 159 ppb				24-hr 106 ppb																											



**WCAS - Tomahawk**  
**Summary of Hourly Averages**

**NOx (NO<sub>x</sub>) - ppb**  
**May 2016**

Maximum Value: 17.50 ppb on May 12 10:00		Maximum Daily Average: 4.59 ppb on May 11		Hours in Service: 744																							
Minimum Value: 0.0 ppb on May 30 14:00		Minimum Daily Average: 0.73 ppb on May 8		Hours of Data: 709																							
Maximum Diurnal Average: 3.96 ppb at hour 7		Minimum Diurnal Average: 1.27 ppb at hour 15		Hours of Missing Data: 35																							
Monthly Average: 2.352 ppb		Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 0.8 Q <sub>1</sub> = 1.0 Median = 1.6 Q <sub>3</sub> = 3.1 P <sub>90</sub> = 5.0 P <sub>99</sub> = 9.1		Hours of Calibration: 35																							
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-May	6.6	3.4	Z	3.9	3.5	3.9	4.1	4.5	3.1	1.8	1.0	0.8	0.7	0.7	0.8	0.9	0.9	0.9	0.9	0.9	1.2	1.8	1.8	2.4	2.20	6.61	
2-May	3.4	3.9	Z	3.7	3.1	3.9	7.1	5.9	7.0	6.1	3.0	1.4	1.1	1.0	1.1	1.0	1.1	1.0	1.5	1.5	1.7	2.1	2.3	2.6	2.90	7.08	
3-May	2.7	3.4	Z	3.4	3.8	4.5	4.6	4.2	3.2	1.8	0.9	0.8	0.7	0.7	0.7	0.9	0.9	1.1	1.5	1.7	1.7	2.6	1.9	1.3	2.12	4.57	
4-May	1.9	2.2	Z	3.4	3.7	4.0	4.7	4.6	6.0	5.5	3.3	1.7	1.2	1.1	0.9	1.0	1.5	1.4	1.6	1.5	1.6	1.5	1.5	1.6	2.49	6.05	
5-May	2.3	2.0	Z	1.0	0.8	0.7	0.7	0.8	0.9	0.8	0.8	0.8	0.9	1.1	1.0	1.0	0.7	0.7	0.7	0.8	1.0	1.0	1.2	1.2	0.98	2.28	
6-May	2.6	3.6	Z	6.5	6.1	5.3	5.3	5.2	3.9	3.0	1.9	1.1	1.1	1.0	1.1	1.1	1.1	1.3	1.5	1.8	2.7	3.8	2.2	4.2	2.93	6.46	
7-May	7.2	5.3	Z	5.0	4.1	5.1	4.9	5.3	4.7	4.0	2.0	1.1	1.0	0.9	0.9	1.1	1.0	1.0	1.8	3.4	5.7	2.7	2.3	2.0	3.14	7.16	
8-May	1.3	1.0	Z	1.0	0.9	0.7	0.7	0.7	0.7	0.9	1.1	1.0	0.7	0.3	0.4	0.4	0.4	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.73	1.26	
9-May	0.7	0.9	Z	1.1	1.2	1.4	1.6	1.1	0.8	0.6	0.5	0.5	0.6	0.5	0.4	0.4	0.4	0.5	0.6	0.8	0.7	0.7	0.8	0.9	0.77	1.55	
10-May	1.0	1.2	Z	1.6	2.1	2.9	3.8	2.5	1.5	1.1	0.6	0.5	0.6	0.6	0.6	0.6	0.8	0.8	1.3	10.2	3.9	3.7	6.7	4.6	2.31	10.17	
11-May	5.0	6.7	Z	8.8	9.3	10.8	8.3	8.0	4.3	2.6	5.5	7.6	3.9	4.3	2.9	3.6	3.1	1.9	2.0	1.3	1.1	1.0	2.0	1.4	4.59	10.80	
12-May	3.5	4.9	Z	5.7	6.8	4.8	6.5	5.2	3.7	17.5	7.1	1.9	1.6	1.7	1.2	1.1	0.7	1.0	1.8	1.3	3.1	2.8	1.6	1.5	3.78	17.50	
13-May	2.0	2.6	Z	8.8	9.1	9.0	9.3	7.4	5.6	1.9	0.9	1.0	1.5	1.1	1.1	1.1	1.1	1.3	1.9	3.9	8.5	5.7	4.1	3.91	9.28		
14-May	3.9	4.3	Z	3.9	3.7	6.0	6.6	7.5	5.9	3.2	2.5	2.0	1.5	1.5	1.5	1.4	1.4	1.4	1.5	1.5	2.5	2.1	2.9	3.6	3.15	7.54	
15-May	7.4	4.6	Z	5.6	8.3	8.8	7.5	6.0	6.6	2.9	1.9	1.7	1.5	1.5	1.5	1.5	1.4	1.6	1.6	1.8	2.6	2.2	2.6	3.0	3.66	8.84	
16-May	2.7	2.7	Z	3.1	3.2	4.2	5.8	4.1	3.9	2.5	2.0	1.6	1.1	1.1	1.0	0.8	0.9	0.9	1.1	2.0	2.0	3.6	2.5	2.1	2.39	5.84	
17-May	1.0	0.9	Z	0.8	1.0	1.1	1.2	1.3	1.1	1.0	0.8	0.8	0.7	0.6	0.5	0.9	3.1	0.7	0.8	1.4	2.1	1.6	1.4	1.7	1.16	3.09	
18-May	2.3	1.8	Z	1.8	2.3	3.7	5.0	7.3	4.8	4.7	9.1	6.9	4.5	3.0	3.1	8.1	3.6	2.0	1.9	2.1	2.0	2.0	1.9	2.0	3.73	9.06	
19-May	1.7	1.7	Z	1.8	1.9	2.1	2.1	2.2	2.2	2.1	2.0	2.0	2.0	1.8	1.9	1.9	1.7	1.5	1.5	1.4	1.3	1.1	1.1	1.0	1.73	2.21	
20-May	1.0	1.0	Z	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.9	0.8	0.9	0.8	0.7	0.7	0.7	0.7	0.8	0.8	0.8	1.0	1.0	0.9	0.90	1.05	
21-May	0.9	0.8	Z	0.7	0.7	1.0	1.1	1.1	1.1	0.9	1.1	0.9	0.8	1.0	1.1	1.0	1.0	1.0	1.0	1.0	1.1	1.0	0.9	0.9	0.96	1.11	
22-May	0.8	0.9	Z	0.7	0.9	1.1	1.3	1.2	1.2	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.0	0.9	0.9	0.9	0.9	0.96	1.27	
23-May	0.8	0.8	Z	0.9	1.2	1.2	1.1	1.2	1.2	1.1	1.1	1.0	0.9	0.8	0.9	1.0	1.2	1.5	7.0	8.6	7.2	4.8	2.8	3.0	2.23	8.62	
24-May	3.0	2.4	Z	2.5	2.1	2.7	4.9	3.9	4.5	1.9	1.4	1.5	1.5	1.6	1.7	1.8	1.8	2.0	2.2	2.1	2.3	2.8	3.5	2.8	2.46	4.86	
25-May	2.8	3.0	Z	2.9	2.9	4.4	6.2	5.9	5.8	4.6	3.5	2.6	2.5	2.3	2.3	1.8	1.9	1.9	2.6	3.6	3.2	3.3	3.0	3.6	3.34	6.22	
26-May	3.0	3.0	Z	7.5	4.5	5.8	3.3	2.3	2.2	7.8	5.2	5.3	2.3	3.5	3.6	6.3	3.8	3.9	3.3	3.2	2.3	1.7	1.4	1.4	3.76	7.81	
27-May	1.3	1.3	Z	1.2	1.4	1.5	1.3	1.3	1.3	1.7	2.0	1.5	1.4	1.2	1.3	1.3	1.3	1.3	1.3	1.4	1.4	1.2	1.1	1.1	1.35	2.05	
28-May	1.3	1.7	Z	2.2	2.5	3.6	4.2	2.8	1.1	0.9	0.9	0.8	0.9	0.9	0.9	0.8	1.2	1.1	2.3	3.7	5.0	5.0	4.6	4.1	2.29	5.02	
29-May	3.2	2.9	Z	4.9	3.6	3.3	3.7	3.9	3.3	2.7	2.7	3.3	2.8	1.7	1.3	1.1	1.0	1.0	1.1	0.9	0.9	1.0	1.0	1.0	2.27	4.90	
30-May	0.9	1.0	Z	0.8	0.8	0.8	1.1	1.2	1.1	C	C	C	C	0.0	0.8	1.0	1.2	1.3	2.2	1.3	2.0	3.2	2.8	2.9	1.39	3.21	
31-May	3.1	2.9	Z	2.5	2.8	2.6	3.8	2.9	2.2	1.6	1.1	1.0	1.9	1.3	1.1	1.2	1.2	1.4	2.1	2.4	2.8	2.1	2.9	2.7	2.16	3.76	
		2.61	2.54	--	3.17	3.20	3.61	3.96	3.63	3.09	2.97	2.25	1.83	1.46	1.31	1.27	1.53	1.39	1.27	1.69	2.20	2.30	2.38	2.22	2.18	Diurnal Average	
		7.38	6.68	--	8.81	9.29	10.80	9.28	8.02	7.04	17.50	9.06	7.64	4.48	4.31	3.60	8.07	3.78	3.92	7.01	10.17	7.23	8.53	6.65	4.64	Diurnal Maximum	
Z - zerospan		C - Calibration																									
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr --- ppb																						24-hr --- ppb			



**WCAS - Tomahawk**  
**Summary of Hourly Averages**

**PM2.5 (PM<sub>2.5</sub>) - µg/m<sup>3</sup>**  
**May 2016**

<b>Maximum Value: 72.36 µg/m<sup>3</sup> on May 7 14:00</b>		<b>Maximum Daily Average: 20.71 µg/m<sup>3</sup> on May 12</b>		<b>Hours in Service: 744</b>																						
<b>Minimum Value: 0.0 µg/m<sup>3</sup> on May 8 22:00</b>		<b>Minimum Daily Average: 0.02 µg/m<sup>3</sup> on May 20</b>		<b>Hours of Data: 744</b>																						
<b>Maximum Diurnal Average: 7.59 µg/m<sup>3</sup> at hour 2</b>		<b>Minimum Diurnal Average: 3.98 µg/m<sup>3</sup> at hour 18</b>		<b>Hours of Missing Data: 0</b>																						
<b>Monthly Average: 5.891 µg/m<sup>3</sup></b>		<b>Percentiles: P<sub>1</sub> = 0.0 P<sub>10</sub> = 0.4 Q<sub>1</sub> = 1.9 Median = 4.1 Q<sub>3</sub> = 7.5 P<sub>90</sub> = 12.7 P<sub>99</sub> = 34.8</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-May	6.8	6.3	6.4	7.0	8.3	7.7	6.2	4.7	2.7	2.6	2.4	2.4	1.7	1.2	1.1	1.5	1.6	1.9	1.7	2.7	2.8	2.5	3.8	5.5	3.80	8.28
2-May	7.0	8.1	10.2	10.4	8.7	6.6	6.3	5.3	3.7	4.0	3.8	3.0	2.7	3.1	3.4	3.1	2.8	3.3	3.6	4.2	5.8	6.6	7.8	9.1	5.52	10.41
3-May	10.9	9.7	9.4	9.5	10.2	10.3	11.1	8.5	6.8	4.4	3.3	3.0	3.0	3.3	3.6	4.0	4.0	4.4	5.3	9.1	8.7	10.3	9.0	6.7	7.03	11.09
4-May	8.1	8.7	9.9	9.7	10.7	10.6	9.4	8.5	7.8	6.3	4.8	4.4	4.2	3.9	4.5	3.5	5.7	4.8	5.3	8.6	9.0	3.5	2.1	2.3	6.51	10.66
5-May	3.4	3.0	3.1	2.4	2.3	2.1	4.9	1.3	7.1	1.4	1.5	1.8	1.9	2.3	10.0	3.7	3.7	3.6	13.5	6.1	10.2	5.8	8.9	8.7	4.69	13.51
6-May	11.3	9.5	6.7	6.0	5.4	5.6	5.5	4.8	4.9	4.7	4.8	2.6	1.9	1.7	2.0	1.9	2.0	2.3	28.3	10.0	4.8	6.0	13.2	18.8	6.87	28.35
7-May	8.4	9.4	8.5	7.8	7.2	7.1	6.8	6.2	5.7	4.7	6.0	8.6	3.8	72.4	5.1	14.7	52.4	18.9	5.8	10.2	9.0	28.4	22.2	22.9	14.66	72.36
8-May	8.6	25.7	5.0	6.0	1.7	2.9	5.5	0.2	0.7	0.9	1.1	1.5	1.6	2.7	2.3	8.2	3.7	3.4	2.3	0.5	0.2	0.0	0.0	1.7	3.60	25.70
9-May	0.7	0.1	0.3	0.4	0.7	1.1	1.3	2.4	2.5	2.7	1.7	1.9	2.3	2.8	2.3	3.7	5.0	4.9	5.2	3.2	3.3	3.8	3.6	3.4	2.47	5.22
10-May	3.5	5.5	5.1	6.5	6.6	8.8	8.4	11.5	12.8	6.1	4.7	4.7	3.9	3.4	3.9	2.3	2.5	2.2	2.3	3.2	3.3	3.7	5.6	21.2	5.91	21.21
11-May	4.1	6.5	10.7	13.6	13.2	13.4	14.4	12.7	10.4	7.6	6.1	4.7	3.4	2.3	2.4	3.2	5.0	7.8	6.3	3.4	3.0	2.3	4.4	6.1	6.95	14.43
12-May	10.1	31.9	37.8	35.0	32.7	29.8	28.6	33.2	22.3	25.4	51.9	35.7	28.8	37.4	18.2	5.6	1.9	2.2	2.6	2.5	3.5	4.5	7.2	8.1	20.71	51.86
13-May	9.6	8.9	7.1	5.8	5.9	5.9	5.7	6.7	5.9	6.5	3.3	3.6	3.6	3.9	4.9	5.7	6.4	7.5	8.4	11.4	12.8	14.7	15.5	16.2	7.75	16.22
14-May	16.6	16.7	16.9	17.3	17.1	15.5	13.5	12.0	12.2	10.8	9.3	8.4	7.4	7.6	7.3	6.9	6.9	7.0	7.5	9.7	8.5	10.3	10.2	11.5	11.14	17.27
15-May	13.6	13.8	14.4	15.7	15.3	14.2	14.6	19.2	23.4	20.4	11.9	11.0	9.9	9.1	9.7	10.9	10.3	10.4	11.1	11.2	10.8	12.5	13.9	15.5	13.46	23.39
16-May	15.8	16.7	17.1	17.7	18.8	19.5	18.9	16.9	14.3	10.7	9.3	7.9	6.8	6.8	7.3	6.3	6.5	6.7	6.8	8.1	8.0	7.2	6.3	8.0	11.18	19.48
17-May	9.7	4.9	3.6	2.9	2.0	2.5	2.7	2.8	3.1	3.1	2.8	3.0	3.1	2.7	2.4	2.4	3.1	2.3	2.4	3.2	4.1	3.8	4.1	35.2	4.67	35.23
18-May	22.3	12.3	10.5	12.7	13.3	12.3	8.9	16.3	7.5	7.1	8.0	6.2	5.0	4.6	5.0	7.4	16.3	2.4	1.2	0.1	0.1	0.4	0.5	1.0	7.56	22.34
19-May	0.8	1.0	1.5	2.3	1.9	2.8	4.4	5.6	7.4	8.5	12.8	24.9	28.9	6.3	4.6	2.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.83	28.93
20-May	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.02	0.26
21-May	0.0	0.0	0.0	0.0	0.2	0.1	0.4	0.4	0.6	0.8	0.8	0.5	0.4	0.4	0.6	1.3	1.9	2.8	2.6	1.9	1.5	2.6	4.1	4.7	1.19	4.75
22-May	5.5	5.3	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.52	5.49
23-May	0.0	0.1	1.8	3.0	7.9	8.0	7.1	7.1	6.6	5.7	5.3	4.5	4.1	3.0	2.1	1.6	1.5	1.6	2.0	2.1	2.0	4.3	4.7	5.0	3.80	8.00
24-May	4.9	5.7	6.0	3.0	4.1	2.1	4.6	4.9	5.6	2.6	1.8	1.9	2.2	2.4	3.0	3.4	2.9	2.7	2.3	2.0	2.0	3.0	3.7	3.9	3.36	6.04
25-May	4.3	5.3	6.2	6.8	7.5	7.7	7.4	6.9	5.4	4.1	3.5	3.6	4.0	4.2	4.9	6.5	4.5	2.8	2.6	2.5	3.7	2.9	4.3	6.5	4.92	7.67
26-May	6.4	6.4	7.5	8.1	7.0	8.2	7.2	5.8	5.9	5.4	6.7	6.2	5.1	5.0	7.2	8.4	6.4	8.8	10.6	5.8	5.6	3.8	3.6	3.1	6.43	10.65
27-May	3.1	3.1	2.9	4.4	6.2	7.0	6.4	6.3	6.1	6.6	6.5	5.5	3.9	3.0	2.1	3.9	3.9	3.5	2.7	2.7	2.8	2.6	1.9	2.1	4.14	7.03
28-May	2.4	3.1	4.1	5.9	6.8	6.8	7.0	6.3	3.3	2.3	1.9	1.9	2.1	2.1	2.1	2.2	2.1	2.2	1.0	1.4	1.5	1.7	2.1	3.3	3.15	6.99
29-May	5.0	6.2	10.4	11.6	8.7	7.3	9.7	10.0	8.1	6.0	3.8	2.8	2.6	3.1	1.8	1.4	1.4	1.4	1.3	1.2	0.7	0.7	0.6	0.4	4.43	11.55
30-May	0.4	0.5	0.6	0.8	1.1	1.7	1.0	0.8	0.5	0.5	0.5	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.5	0.6	0.6	0.63	1.67
31-May	0.8	0.7	0.6	0.7	1.1	0.9	0.8	0.3	0.3	0.6	0.6	0.6	0.8	0.8	0.9	1.0	1.2	1.1	1.1	1.1	0.6	0.6	0.7	0.7	0.77	1.19
																								Diurnal Average		
																								Diurnal Maximum		
6.59 7.59 7.29 7.51 7.50 7.36 7.37 7.34 6.57 5.56 5.84 5.41 4.84 6.52 4.04 4.10 5.36 3.98 4.72 4.14 4.15 4.80 5.31 7.49																										
22.34 31.92 37.76 35.02 32.72 29.77 28.63 33.21 23.39 25.37 51.86 35.73 28.93 72.36 18.23 14.67 52.35 18.87 28.35 11.41 12.82 28.39 22.19 35.23																										
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 80 ul/m^3 24-hr 30 ul/m^3																										

**TOMAHAWK  
STATION #901**

**METEOROLOGICAL DATA**

**MAY 2016**



**WCAS - Tomahawk**  
**Summary of Hourly Averages**

**External Temperature (ET) - C**  
**May 2016**

Maximum Value: 28.26 C on May 3 17:00		Maximum Daily Average: 19.08 C on May 3		Hours in Service: 744																							
Minimum Value: -3.6 C on May 13 06:00		Minimum Daily Average: 2.27 C on May 20		Hours of Data: 744																							
Maximum Diurnal Average: 16.62 C at hour 15		Minimum Diurnal Average: 3.92 C at hour 6		Hours of Missing Data: 0																							
Monthly Average: 10.706 C		Percentiles: P <sub>1</sub> = -1.3 P <sub>10</sub> = 2.5 Q <sub>1</sub> = 5.2 Median = 9.9 Q <sub>3</sub> = 15.2 P <sub>90</sub> = 20.9 P <sub>99</sub> = 27.3		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-May	4.9	4.5	3.6	2.6	2.2	2.0	3.3	6.7	11.6	15.3	17.7	19.4	21.0	22.0	22.7	23.7	24.2	23.8	23.5	21.2	18.5	16.0	14.3	13.0	14.08	24.23	
2-May	11.7	10.3	9.9	9.4	6.9	6.9	9.3	11.8	16.0	19.5	22.2	24.5	25.6	26.5	27.1	27.5	27.4	27.3	25.4	21.5	19.3	18.2	17.3	14.7	18.17	27.47	
3-May	13.9	13.4	12.0	8.1	6.0	5.6	8.4	12.4	16.1	21.4	25.0	26.3	26.6	27.1	27.7	28.1	28.3	27.6	26.6	23.7	21.6	18.4	17.7	15.9	19.08	28.26	
4-May	13.6	12.4	10.6	8.9	7.5	7.4	9.4	12.4	14.5	18.8	23.2	24.7	25.8	25.7	25.4	24.5	23.6	22.2	20.6	19.0	14.7	13.3	11.7	10.6	16.68	25.78	
5-May	11.0	10.5	10.7	10.4	10.1	9.4	7.8	7.7	8.7	9.4	10.4	11.7	12.7	14.1	15.4	16.5	17.0	17.1	16.5	15.2	11.1	9.8	6.9	4.7	11.45	17.09	
6-May	2.0	2.0	0.7	0.0	-0.9	-0.6	2.0	5.9	10.4	13.4	15.9	17.1	18.3	19.4	20.3	21.0	21.0	21.1	19.6	17.5	15.7	13.8	11.8	10.3	11.58	21.08	
7-May	9.3	7.4	7.1	6.2	5.9	5.3	6.5	10.3	13.9	18.0	22.5	24.4	25.5	26.2	27.1	27.4	26.9	27.3	26.7	23.8	19.4	16.9	16.0	14.5	17.27	27.36	
8-May	15.7	14.4	13.3	11.7	10.0	9.0	7.8	5.4	6.2	6.5	7.1	9.3	13.4	15.2	15.5	15.3	14.5	11.8	9.9	8.4	7.2	5.8	4.3	3.8	10.06	15.67	
9-May	3.8	3.2	3.5	2.5	2.2	3.3	3.8	5.7	5.9	6.2	7.1	7.5	8.1	8.6	8.9	9.4	9.5	8.7	8.7	7.9	7.1	6.0	5.0	5.1	6.15	9.46	
10-May	4.0	2.9	1.7	1.1	-0.9	-1.3	0.8	5.6	8.7	10.6	12.1	12.6	13.0	13.7	13.4	14.9	15.0	15.2	13.9	11.7	8.7	7.8	5.4	3.7	8.10	15.16	
11-May	1.0	0.4	0.3	-1.3	-2.8	-1.2	0.4	5.6	9.8	12.8	14.3	15.3	14.7	14.9	14.7	14.3	13.8	13.0	11.8	11.0	9.8	8.9	8.1	7.1	8.20	15.30	
12-May	5.5	3.9	2.3	0.2	-0.2	0.1	3.2	5.6	7.5	8.4	9.1	10.4	10.7	11.3	11.8	12.4	12.2	11.5	10.7	9.6	6.7	4.5	2.8	1.0	6.72	12.44	
13-May	-0.4	-2.3	-2.8	-3.0	-3.4	-3.6	-1.6	3.3	7.5	10.3	11.1	12.4	13.3	13.7	14.5	15.0	15.2	14.8	14.8	12.5	9.5	7.2	5.8	4.1	6.99	15.23	
14-May	3.2	1.0	0.6	0.9	-1.1	-1.2	0.4	5.0	9.2	12.6	14.2	15.3	16.2	16.8	17.6	18.0	17.9	17.7	16.9	15.3	12.5	11.5	9.9	7.7	9.93	17.99	
15-May	6.3	4.3	2.6	3.4	2.2	0.7	3.7	7.6	12.1	15.3	17.3	18.1	18.7	19.2	19.8	20.1	20.1	19.8	19.1	17.6	14.1	11.7	11.3	10.4	12.32	20.13	
16-May	9.5	8.2	6.5	4.6	5.0	6.3	8.9	11.1	13.3	16.4	19.1	21.1	22.9	23.9	24.7	25.5	25.1	25.5	23.8	21.0	19.4	18.0	16.1	15.6	16.31	25.53	
17-May	16.2	15.3	14.8	13.4	11.1	9.8	12.1	14.3	15.4	17.7	18.7	19.3	20.2	21.3	22.3	23.1	22.3	22.5	21.3	20.0	16.9	15.6	12.7	11.7	16.99	23.14	
18-May	8.9	8.9	8.0	8.3	7.5	7.3	8.5	10.7	15.7	20.1	21.3	22.7	23.9	24.5	24.6	22.7	17.4	12.7	12.4	11.5	10.8	10.5	10.1	9.9	14.12	24.58	
19-May	9.6	9.5	9.2	9.0	9.0	9.0	9.1	9.3	9.7	9.8	9.7	9.8	9.6	7.1	5.7	4.8	3.9	3.2	2.9	2.4	1.7	1.4	1.0	0.8	6.57	9.82	
20-May	0.6	0.4	0.2	0.2	-0.1	-0.2	-0.2	-0.3	-0.1	0.5	0.9	1.9	3.2	4.7	5.2	4.9	4.8	5.1	4.8	4.4	3.7	3.4	3.3	3.1	2.27	5.22	
21-May	2.8	2.6	2.4	2.1	1.8	1.1	1.0	1.1	1.5	2.1	2.1	2.3	3.5	4.2	4.5	4.7	4.2	4.4	4.2	4.1	3.9	3.5	2.8	2.5	2.89	4.66	
22-May	2.5	2.5	2.4	2.5	2.4	2.5	2.5	2.5	2.7	3.1	3.8	4.4	4.8	5.0	5.0	4.9	4.9	4.8	4.9	5.0	5.0	5.0	5.0	5.1	3.88	5.10	
23-May	5.3	5.3	5.3	5.2	5.2	5.1	4.9	5.1	5.5	6.1	7.0	8.3	9.0	11.4	12.9	12.8	12.6	12.8	12.2	12.2	10.8	9.7	8.3	6.4	8.31	12.90	
24-May	5.4	4.1	4.0	2.2	2.8	3.7	2.5	4.3	7.5	10.3	12.0	13.4	15.0	15.9	17.1	17.4	17.7	18.0	17.7	16.7	14.0	12.0	10.9	9.9	10.60	17.99	
25-May	9.2	7.8	7.0	5.4	4.4	4.0	6.6	9.5	12.8	16.2	18.1	19.7	21.4	22.1	20.2	11.5	11.4	12.3	12.9	13.2	12.1	10.8	10.6	10.0	12.05	22.08	
26-May	9.5	9.3	9.1	9.0	8.4	8.1	10.0	11.7	13.7	15.5	15.2	16.3	18.4	18.9	18.6	18.1	18.4	17.6	16.2	11.8	10.0	9.3	8.8	8.8	12.94	18.89	
27-May	8.8	8.6	8.0	7.9	7.5	7.4	7.7	8.1	8.3	8.6	8.9	8.9	9.3	9.2	9.4	9.2	9.6	9.9	9.9	9.4	8.7	7.9	6.9	6.6	8.53	9.91	
28-May	6.6	5.4	4.6	3.7	2.9	2.9	4.6	7.5	10.1	11.5	11.8	13.6	13.7	14.8	15.9	16.4	14.4	10.1	11.6	11.3	8.7	7.1	5.8	4.3	9.14	16.42	
29-May	3.6	2.8	2.6	2.4	2.2	2.6	4.0	6.0	8.7	10.8	12.5	14.4	15.1	16.1	15.8	15.0	12.2	11.4	11.2	10.5	9.5	8.4	7.4	6.8	8.84	16.13	
30-May	6.3	5.7	5.6	5.6	5.6	5.9	6.5	6.9	8.5	10.7	11.2	12.7	13.4	13.3	14.0	13.7	13.8	13.5	13.2	13.0	10.9	9.2	8.7	7.7	9.82	14.04	
31-May	5.7	4.4	3.6	2.5	2.9	4.5	6.0	10.3	11.9	13.7	15.0	15.4	16.9	17.1	17.2	18.2	18.2	18.3	17.5	16.0	13.1	12.6	12.2	11.6	11.86	18.33	
		6.96	6.11	5.46	4.69	3.95	3.92	5.16	7.39	9.79	11.99	13.44	14.63	15.60	16.26	16.62	16.48	16.05	15.51	14.88	13.49	11.47	10.13	8.99	7.99	Diurnal Average	
		16.15	15.32	14.81	13.38	11.09	9.76	12.13	14.28	16.13	21.43	25.03	26.27	26.63	27.11	27.72	28.12	28.26	27.56	26.69	23.83	21.59	18.36	17.69	15.86	Diurnal Maximum	



**WCAS - Tomahawk**  
**Summary of Hourly Averages**

**Wind Speed (WS) - kph**  
**May 2016**

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24				
1 Spd	6.7	6.8	7.8	8.5	9.4	9.7	8.5	9.0	9.7	8.3	7.8	10.3	10.6	9.1	7.3	8.2	6.5	5.3	4.7	2.3	2.1	3.9	4.4	5.5	5.36	10.59		
Dir	SW	WSW	SW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	WNW	WNW	NW	WNW	N	NNE	NNW	NNW	N	SE	SSW	WSW	WSW	W	NNW		
2 Spd	5.2	5.8	5.3	4.2	0.6	1.7	3.8	5.2	5.1	6.0	7.7	11.1	11.8	11.5	11.1	13.1	12.3	12.4	11.1	10.5	10.7	9.6	8.9	8.5	7.15	13.13		
Dir	SW	SW	SW	SW	ENE	S	SSW	SSW	SSW	S	SSE	SSE	S	SSE	SSE	SSE	SSE	SSE	SSE	SE	SE	SE	SSE	ESE	SSE	SSE		
3 Spd	5.3	5.6	4.5	4.4	8.4	9.7	7.4	7.3	7.0	10.3	14.3	11.8	6.7	7.4	7.4	5.1	6.0	9.3	8.9	8.6	8.7	6.4	10.7	6.0	3.81	14.33		
Dir	ESE	SSE	SSW	WSW	WSW	WSW	WSW	SW	WSW	WNW	NNW	NNW	WNW	WSW	WSW	SW	S	S	SSE	SE	SSE	SW	NW	WNW	WSW	NNW		
4 Spd	8.7	9.9	8.7	10.2	7.2	5.8	7.9	7.9	7.8	5.7	2.4	8.6	10.8	13.3	10.3	16.1	18.0	14.0	11.0	14.6	19.8	13.2	9.7	10.1	5.95	19.75		
Dir	W	W	WSW	WSW	SW	SW	SW	SW	SW	SW	SSW	SW	SSW	W	WNW	WNW	NW	NNW	N	N	N	N	NNE	N	WNW	N		
5 Spd	7.8	11.5	16.9	18.0	16.8	21.8	21.9	14.0	12.5	15.3	14.9	14.0	14.6	14.7	15.0	10.8	14.8	14.6	12.5	7.6	5.6	4.3	2.7	1.7	12.41	21.89		
Dir	N	N	N	NNW	NNW	NNW	NNW	NNW	NW	NNW	NNW	NNW	NW	NW	NNW	NNW	NNW	NNW	NNW	NNW	N	NNW	NNW	NNW	NNW	NNW	NNW	
6 Spd	6.2	7.8	8.8	9.8	8.0	3.9	3.4	5.2	4.3	3.7	3.6	8.2	6.9	5.5	7.4	7.8	7.6	5.2	10.0	8.5	9.4	7.3	4.5	4.1	4.81	10.02		
Dir	WSW	WSW	WSW	WSW	WSW	SW	WSW	WSW	WSW	SW	WSW	W	W	W	SW	SW	SW	SSW	SE	SE	SSE	SSE	S	S	SW	SW	SE	
7 Spd	4.0	7.2	8.6	7.7	8.7	8.9	6.7	6.9	7.5	4.5	9.9	12.1	11.6	12.4	10.1	7.9	9.5	8.3	10.2	8.4	6.3	4.8	8.5	9.3	5.34	12.36		
Dir	SW	SW	SW	SW	SW	SW	WSW	SW	SW	WSW	SW	SSW	SSW	SSW	SSW	S	SE	ESE	ESE	ESE	ENE	NNW	WNW	W	SSW	SSW		
8 Spd	20.1	21.9	18.2	15.4	17.3	15.3	27.1	14.3	7.5	9.3	12.5	11.9	21.7	33.6	30.9	32.7	34.4	35.2	34.3	28.8	23.8	26.9	20.9	21.9	20.71	35.17		
Dir	NNW	N	N	N	N	N	NNW	N	WNW	WSW	WSW	W	WNW	NW	NW	NW	NW	NW	NW	NW	NW	NNW	NW	NNW	NW	NW	NW	
9 Spd	20.1	12.6	11.5	11.8	11.6	14.5	9.2	17.5	24.9	26.4	28.2	28.9	25.1	25.4	27.1	28.4	24.3	17.3	13.0	6.2	9.0	8.6	7.2	8.7	17.10	28.87		
Dir	NNW	NW	NW	NW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	NNW	NW	NNW	NNW	NNW	NNW	N	NNE	NNW	NNW	NW	NW	NNW	NNW	NNW	
10 Spd	8.8	11.2	11.3	11.1	2.6	3.9	3.8	7.3	6.7	14.0	18.2	17.1	12.8	9.5	8.4	7.4	7.7	8.7	8.3	7.4	6.7	5.6	2.8	3.0	5.63	18.22		
Dir	NW	NW	NNW	NNW	WNW	W	W	NNW	N	N	NNE	NNE	NNE	NNE	N	NNE	NE	ENE	E	E	ESE	SE	SSW	W	N	NNE		
11 Spd	3.0	5.0	5.3	3.1	4.1	3.9	0.7	2.0	3.7	4.8	6.0	9.5	4.7	10.4	14.1	14.3	16.5	16.5	16.2	13.7	10.0	10.1	9.8	11.1	6.63	16.51		
Dir	SW	WSW	SW	SW	ESE	SSE	SSW	SSE	SE	E	E	SE	E	E	E	E	E	ENE	E	E	E	E	E	ENE	E	E	E	
12 Spd	11.4	8.3	5.7	7.1	7.7	7.9	6.8	9.2	9.3	11.9	12.2	11.0	12.0	10.8	11.2	12.0	12.1	11.8	11.3	7.4	4.7	6.0	4.8	1.6	8.32	12.22		
Dir	E	E	NE	NNE	NNE	NNE	NE	NE	ENE	ENE	NE	NE	NE	ENE	NE	NE	ENE	ENE	ENE	ENE	ENE	E	E	ENE	WNW	NE	NE	
13 Spd	0.9	1.6	3.7	6.1	4.3	3.9	3.6	1.8	3.3	4.6	6.2	4.8	5.8	6.2	4.6	8.0	8.8	6.5	5.1	8.1	7.7	9.0	7.0	3.0	3.12	8.97		
Dir	NE	SE	SW	W	WSW	SW	SW	SW	WSW	S	S	SSE	ESE	S	SE	ESE	ESE	SE	ESE	E	E	E	E	ESE	SE	SE	E	
14 Spd	1.6	1.3	0.5	0.4	2.1	4.8	4.1	4.7	5.0	5.9	6.1	4.5	9.5	8.1	7.2	9.5	11.4	9.6	11.2	10.1	8.6	7.6	5.3	2.2	4.54	11.40		
Dir	S	E	S	SW	SW	WSW	SW	SW	SW	SW	SSW	SSE	SSE	S	SSE	ESE	ESE	SE	SE	SE	ESE	SE	SSE	S	SSE	ESE	ESE	
15 Spd	3.0	0.7	2.8	5.1	3.2	1.1	1.9	1.8	3.5	10.2	16.1	17.0	17.1	15.6	15.1	15.4	13.5	16.6	15.0	11.2	10.6	11.4	10.0	10.4	9.22	17.15		
Dir	SSW	SSW	ESE	SSE	S	WSW	SW	S	SSE	SSE	SSE	SSE	SSE	S	S	SSE	SSE	SSE	SSE	SSE	SE	SE	SSE	S	SSE	SSE	SSE	
16 Spd	10.8	10.3	12.3	12.5	11.1	11.6	8.1	7.3	8.2	11.2	10.9	8.4	5.9	6.9	6.3	2.7	4.0	2.6	6.4	6.7	8.7	8.8	9.7	6.6	6.16	12.47		
Dir	S	SE	ESE	ESE	SE	SE	SSE	SSW	SSW	SSW	SSW	SSW	SSW	SSW	WSW	W	SW	SSW	SSE	SSE	S	SSW	SSW	WNW	S	ESE		
17 Spd	18.6	23.1	23.0	19.7	6.3	8.2	8.4	12.5	13.2	13.4	12.5	13.6	18.3	17.1	17.2	13.7	12.5	11.4	7.5	5.5	2.9	2.4	3.1	4.3	10.69	23.09		
Dir	NNW	NNW	NNW	NNW	NW	WNW	NW	NW	NW	NNW	NNW	NW	WNW	WNW	NW	NW	N	N	NNE	NE	E	SE	WSW	N	NNW	NNW	NNW	
18 Spd	4.5	4.6	4.6	1.3	3.9	4.3	1.2	2.4	0.5	5.0	13.3	9.7	4.6	8.4	7.9	14.9	20.6	20.6	23.2	21.5	20.8	18.1	17.6	15.9	7.14	23.16		
Dir	N	N	N	SW	W	WSW	SW	WSW	ENE	ESE	ESE	ESE	ENE	NE	ENE	ENE	NW	N	N	NNW	N	N	N	N	N	N	N	
19 Spd	13.8	8.8	5.4	6.0	8.7	7.2	6.2	9.0	9.0	8.2	10.1	11.1	15.0	21.0	20.0	18.8	18.6	20.5	20.0	19.3	19.0	19.0	20.6	19.4	13.41	20.98		
Dir	NNE	N	NW	NNW	NNW	N	NNW	NNW	N	NW	NW	WNW	NW	NW	NW	NW	NW	NNW	NNW	NW	NW	NW	NW	NW	NNW	NNW	NNW	
20 Spd	19.1	18.7	18.2	17.6	17.6	18.1	18.1	18.5	17.2	16.9	16.1	15.5	17.2	16.8	15.8	14.2	14.2	13.5	15.0	11.4	10.1	10.1	10.6	13.9	15.38	19.15		
Dir	NW	NW	NW	NW	NW	NW	NW	NNW	NW	NW	NNW	NNW	NNW	NW	NW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW
21 Spd	13.2	12.0	13.4	14.4	12.7	14.2	14.3	14.4	13.0	12.9	12.7	14.8	18.8	15.1	14.2	12.6	11.8	12.7	12.9	10.4	11.0	14.0	13.5	13.8	13.27	18.79		
Dir	N	NNW	NNW	NNW	NNW	NW	NW	NNW	NNW	NNW	NW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW
22 Spd	13.5	11.1	15.2	13.2	16.3	15.9	16.6	17.9	17.1	18.8	16.1	20.6	21.6	21.5	20.5	19.4	19.7	19.9	18.2	16.0	13.9	14.2	13.1	11.7	16.68	21.55		
Dir	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N	N	NNW	N	NNW	NNW	NNW	



**WCAS - Tomahawk**  
**Summary of Hourly Averages**

**Wind Speed (WS) - kph**  
**May 2016**

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
23 Spd	11.3	13.1	18.6	18.1	16.1	15.3	18.1	16.0	15.4	15.4	16.5	14.1	14.6	14.6	12.0	10.1	9.3	6.6	1.2	1.4	3.0	7.8	6.5	9.85	18.60	
Dir	N	N	N	N	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N	NNE	NNE	NE	ENE	E	SE	E	NNE	NE	E	E	N	N	
24 Spd	5.2	0.4	4.2	4.0	1.4	3.1	3.2	3.4	3.9	7.5	7.2	6.9	6.0	7.9	10.3	10.7	12.6	15.0	14.1	11.4	9.5	8.9	7.8	7.2	5.93	14.97
Dir	E	SSE	W	NE	NE	ENE	WSW	SW	SSW	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SSE	SSE	SSE	SE	SSE	SE	SE
25 Spd	6.0	7.3	5.7	1.8	3.1	3.7	3.4	6.9	4.1	4.0	3.6	3.1	3.0	4.1	5.4	13.9	3.1	5.0	7.9	6.1	3.5	4.4	4.0	1.5	2.27	13.85
Dir	SSE	SSE	SE	SE	SW	SSW	SW	SSW	W	SSW	SSW	WSW	ESE	SE	NNE	NNW	E	WSW	SSW	SSW	SW	WSW	SW	WSW	SSW	NNW
26 Spd	3.1	1.4	4.3	2.7	0.8	6.4	6.4	6.8	2.4	1.8	2.9	2.3	5.7	8.6	13.1	13.6	15.6	15.9	5.7	16.0	15.3	12.0	9.9	5.2	1.81	16.01
Dir	WNW	SE	S	ESE	N	W	WNW	WNW	WNW	SE	SE	SSW	ESE	SE	ESE	ESE	ESE	SE	ESE	NNW	N	N	NNW	N	ENE	NNW
27 Spd	7.3	8.3	9.7	8.1	8.3	7.2	9.0	7.9	8.6	11.5	11.8	9.0	7.2	9.6	10.9	13.7	14.3	12.3	12.3	12.9	12.6	15.0	11.9	11.7	9.90	15.05
Dir	WNW	WNW	NW	NW	NNW	NW	NNW	NNW	NNW	NNW	N	NNW	NNW	WNW	WNW	WNW	NW	NW	NW	NW	WNW	WNW	WNW	WNW	NW	NNW
28 Spd	8.7	6.0	5.3	5.9	7.5	7.2	8.1	10.0	14.3	12.9	12.9	12.7	8.5	3.5	3.9	4.3	3.7	11.0	18.1	13.1	7.9	1.4	3.7	7.8	2.24	18.14
Dir	W	W	WSW	WSW	WSW	WSW	WSW	W	NW	NW	NW	NW	NW	N	NNE	N	NNW	SE	ESE	ESE	ESE	ESE	E	NNE	WNW	ESE
29 Spd	5.6	8.1	5.8	5.6	4.6	3.1	5.7	5.4	6.7	8.1	9.7	10.2	12.6	12.6	12.6	18.2	21.7	13.9	8.4	11.8	12.2	7.8	7.6	9.2	7.98	21.68
Dir	NNE	N	NNE	NE	E	WSW	WSW	NW	NNW	NNW	NNW	N	NNW	NNW	NNW	NW	WNW	WNW	NNW	N	N	N	N	NNW	NNW	WNW
30 Spd	8.7	9.4	15.3	16.4	13.5	14.8	15.6	17.0	17.0	20.1	21.3	20.7	20.4	17.6	17.9	14.2	12.3	10.6	7.7	3.8	2.6	4.6	2.3	2.7	10.96	21.34
Dir	N	N	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N	NNE	NNE	NE	ENE	NE	NE	NE	ENE	E	SE	WSW	N	NNW
31 Spd	3.7	7.5	3.7	2.0	3.1	1.8	1.4	2.5	1.4	3.9	3.6	1.1	3.3	4.6	5.6	4.6	5.5	7.9	11.0	11.7	10.4	11.2	9.4	8.2	3.08	11.73
Dir	N	NNE	N	WNW	W	W	SSW	ESE	E	NE	NE	N	NE	SSE	SSE	SE	S	SE	SE	SE	SE	SSE	SSE	S	SE	SE
Spd	4.39	4.54	5.10	5.09	4.51	4.86	5.38	5.43	5.46	5.07	4.71	4.86	5.30	5.05	5.07	4.89	4.44	3.61	3.48	3.01	2.85	2.60	2.70	3.80	Diurnal Average	
Dir	NNW	NNW	NW	NW	NW	NW	NW	NW	NW	NNW	NNW	NW	NW	NW	NNW	N	N	NNE	NE	NNE	NNE	N	NNW	NNW	Diurnal Maximum	
Spd	20.12	23.09	22.97	19.66	17.60	21.78	27.14	18.46	24.88	26.38	28.20	28.87	25.05	33.60	30.89	32.70	34.38	35.17	34.26	28.78	23.78	26.91	20.92	21.93	Diurnal Maximum	
Dir	335.28	335.63	333.53	335.56	318.10	344.00	345.41	319.76	335.17	333.89	330.76	336.13	335.51	311.52	311.75	316.50	322.21	326.07	324.73	316.03	309.42	327.20	320.76	330.03	Diurnal Maximum	
Maximum Speed Value: 35.2 kph on May 8 18:00																		Minimum Speed Value: 0.4 kph on May 24 02:00						Hours in Service: 744		
Maximum Daily Speed Average: 20.71 kph on May 8																		Minimum Daily Speed Average: 1.81 kph on May 25						Hours of Data: 744		
Maximum Diurnal Speed Average: 5.46 kph at hour 9																		Minimum Diurnal Speed Average: 2.60 kph at hour 22						Hours of Missing Data: 0		
Monthly Average Velocity: 4.110 kph 333.15 deg																		Speed Percentiles: P <sub>1</sub> = 0.8 P <sub>10</sub> = 3.3 Q <sub>1</sub> = 5.7 Median = 9.2 Q <sub>3</sub> = 13.8 P <sub>90</sub> = 18.1 P <sub>99</sub> = 27.0						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	16	41	79	22	1	0	159																			
NorthEast	11	13	12	0	0	0	36																			
East	20	31	12	0	0	0	63																			
SouthEast	20	49	27	0	0	0	96																			
South	19	25	9	0	0	0	53																			
SouthWest	39	63	4	0	0	0	106																			
West	22	33	4	0	0	0	59																			
NorthWest	5	40	94	24	9	0	172																			
Total	152	295	241	46	10	0	744																			





**WCAS - Tomahawk**  
**Summary of Hourly Averages**

**Relative Humidity (RH) - %**  
**May 2016**

Maximum Value: 96.74 % on May 20 09:00      Maximum Daily Average: 94.56 % on May 22 Minimum Value: 12.6 % on May 16 16:00      Minimum Daily Average: 30.92 % on May 16 Maximum Diurnal Average: 80.15 % at hour 6      Minimum Diurnal Average: 38.84 % at hour 15 Monthly Average: 57.430 %      Percentiles: P <sub>1</sub> = 13.3 P <sub>10</sub> = 21.0 Q <sub>1</sub> = 32.5 Median = 57.7 Q <sub>3</sub> = 82.4 P <sub>90</sub> = 93.2 P <sub>99</sub> = 95.3																								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-May	72.6	73.2	75.9	80.3	82.1	81.4	77.3	64.1	42.3	30.8	25.8	26.1	25.9	26.7	27.0	25.5	24.3	24.9	26.8	29.5	32.7	41.1	49.4	54.3	46.66	82.05
2-May	60.7	67.6	67.1	68.0	77.5	79.4	70.9	60.9	44.7	33.9	29.4	23.5	19.7	19.0	18.3	17.0	16.3	16.0	19.1	24.5	28.5	30.3	31.4	38.1	40.07	79.44
3-May	40.1	40.6	45.8	62.2	72.8	76.3	67.3	53.0	41.8	27.8	19.5	17.0	15.5	14.6	14.1	13.3	13.1	14.1	15.6	20.1	22.3	30.0	28.5	31.0	33.18	76.27
4-May	37.1	40.2	47.2	54.5	60.5	63.3	58.5	48.6	42.3	31.9	23.5	19.8	17.7	17.6	17.7	19.5	24.6	27.2	33.7	38.4	60.7	66.6	69.6	72.4	41.38	72.39
5-May	70.7	63.4	47.8	42.1	41.2	46.8	60.0	63.6	58.2	51.6	42.3	38.2	36.5	35.5	29.9	28.6	20.6	19.2	18.7	21.2	27.7	28.9	38.0	47.4	40.76	70.67
6-May	63.5	64.0	71.7	76.5	79.3	78.2	70.0	57.4	42.4	34.1	26.2	20.2	19.3	17.9	17.4	16.1	16.6	17.2	21.8	26.1	27.7	31.7	37.0	42.7	40.62	79.30
7-May	46.0	54.2	59.6	62.1	61.3	65.1	64.9	54.3	41.7	32.5	21.0	13.8	13.0	12.9	13.2	13.4	14.1	15.0	17.2	21.5	27.7	32.0	34.2	37.0	34.48	65.05
8-May	32.1	43.8	51.6	60.5	63.6	60.7	64.5	80.3	71.9	70.5	66.9	58.6	37.9	19.3	18.7	19.3	22.9	36.9	44.5	50.5	56.8	71.5	77.6	78.7	52.48	80.29
9-May	78.4	82.1	81.7	84.9	86.6	83.6	82.9	70.0	61.1	56.6	51.0	47.3	44.3	39.6	37.1	33.5	33.4	36.0	36.4	42.2	44.0	46.9	51.2	52.4	56.80	86.64
10-May	57.4	60.9	65.4	67.2	74.9	78.1	72.2	55.3	45.4	35.7	28.1	26.1	25.3	23.8	23.6	21.6	22.0	21.6	23.0	28.3	35.1	33.8	42.7	50.7	42.42	78.15
11-May	62.0	68.8	76.4	83.8	87.6	81.5	74.0	53.5	35.3	27.2	24.4	21.3	21.8	22.5	25.4	26.5	27.9	29.8	33.2	34.4	36.4	36.6	37.7	38.9	44.45	87.55
12-May	41.4	47.1	53.6	63.7	68.9	71.1	63.6	55.2	47.0	40.1	36.0	32.3	31.1	28.5	27.1	24.8	22.1	21.0	21.5	22.5	27.9	33.4	40.3	48.4	40.36	71.05
13-May	55.4	63.8	67.4	78.4	77.1	81.1	79.3	55.9	38.6	26.6	23.4	23.3	22.1	20.8	20.5	19.9	19.5	18.7	19.6	23.3	27.7	32.2	36.6	43.7	40.63	81.13
14-May	47.9	59.4	62.1	58.8	66.9	74.1	74.1	57.4	44.7	32.5	27.2	25.1	22.5	21.6	20.7	19.8	20.1	20.0	21.5	23.3	28.1	30.3	34.2	41.8	38.92	74.14
15-May	47.3	54.7	62.3	58.3	64.4	74.2	68.0	50.5	37.9	27.7	23.4	20.2	18.8	17.8	17.4	17.4	17.2	17.9	18.5	21.2	27.2	32.6	33.8	36.2	36.04	74.16
16-May	39.2	42.9	48.9	56.6	56.4	54.6	47.9	41.0	39.0	31.5	27.0	22.5	17.5	15.6	14.5	12.6	13.0	13.1	14.8	20.2	21.5	25.8	30.9	35.1	30.92	56.56
17-May	39.0	40.0	37.8	46.6	60.9	63.5	55.7	46.4	42.3	33.6	30.6	29.6	26.3	21.6	17.4	16.4	18.3	18.9	22.1	23.2	26.7	29.0	38.9	44.1	34.55	63.54
18-May	58.9	57.6	62.5	60.5	67.4	69.4	69.4	62.8	48.3	30.6	26.4	23.2	23.5	23.1	22.7	27.2	52.9	84.9	87.9	84.3	81.0	82.5	84.1	85.9	57.37	87.85
19-May	88.5	89.5	91.1	93.1	93.7	94.0	94.1	94.0	93.0	92.6	92.6	92.5	92.2	91.4	91.0	91.4	91.7	91.8	92.3	92.5	92.8	92.7	92.8	93.2	92.27	94.09
20-May	93.2	93.3	93.5	93.3	94.2	95.3	95.6	96.3	96.7	96.7	95.4	87.8	79.9	75.2	73.1	72.8	73.2	72.6	73.2	74.6	78.2	80.9	82.0	82.2	85.38	96.74
21-May	83.0	81.8	81.0	82.6	84.2	91.6	93.4	94.0	94.0	93.6	93.6	93.8	92.0	88.6	87.1	87.1	88.6	88.5	88.8	89.9	91.3	92.5	93.6	94.3	89.53	94.28
22-May	94.7	95.0	95.1	95.1	95.1	95.1	95.2	95.2	95.4	95.4	95.2	94.9	94.4	93.8	93.6	93.8	93.9	93.8	93.8	93.9	94.3	94.3	94.2	94.2	94.56	95.44
23-May	94.2	94.4	93.8	93.1	93.3	92.3	91.2	90.0	88.5	84.7	81.1	74.8	72.8	63.5	57.7	58.0	60.8	60.7	64.7	66.5	74.5	76.9	80.4	89.8	79.07	94.39
24-May	91.4	92.7	93.9	94.1	95.1	95.0	95.0	95.6	95.2	74.5	65.1	60.0	57.2	55.0	54.7	54.3	54.7	53.8	54.6	54.1	61.8	67.4	69.3	73.1	73.23	95.64
25-May	73.9	78.8	81.4	88.3	90.8	92.0	88.6	78.1	68.4	56.8	48.6	42.1	39.9	38.7	43.8	88.9	88.9	84.7	86.9	84.2	84.6	90.3	90.9	92.0	75.07	92.05
26-May	93.4	93.5	94.1	94.4	94.4	95.0	93.1	83.4	75.8	67.9	70.3	66.8	56.6	53.2	51.9	54.8	53.8	56.7	59.4	74.6	88.8	92.5	92.9	93.1	77.10	94.98
27-May	92.5	91.7	91.9	92.2	92.5	93.0	92.5	91.3	90.8	89.6	89.6	91.3	92.2	91.7	92.1	90.3	85.2	82.8	81.8	82.4	83.9	85.1	88.6	89.6	89.37	93.03
28-May	87.8	89.6	91.0	92.7	93.8	94.2	91.8	81.6	68.3	63.8	59.1	52.7	50.1	48.2	43.8	41.7	50.2	70.7	67.9	65.7	76.1	82.2	88.0	90.9	72.58	94.23
29-May	92.4	93.1	94.1	94.4	94.7	94.7	94.4	93.8	86.3	77.8	70.4	63.8	56.8	53.0	47.1	46.0	53.4	55.3	60.7	61.0	64.4	70.7	74.6	74.7	73.64	94.73
30-May	76.8	79.0	77.3	75.6	76.2	75.9	75.6	79.5	74.9	63.6	55.3	52.8	53.1	53.6	50.1	52.2	54.5	55.0	56.6	57.7	67.5	74.7	77.0	82.2	66.52	82.15
31-May	88.4	92.1	93.1	93.8	94.4	94.3	90.8	69.9	62.1	54.8	46.9	44.0	41.1	38.0	35.4	33.7	31.6	32.8	36.4	42.6	53.4	54.2	55.9	58.3	59.92	94.37
																								Diurnal Average		
																								Diurnal Maximum		



**WCAS - Tomahawk**  
**Summary of Hourly Averages**

**Photosynthetically Active Radiation (PAR) - W/m2**  
**May 2016**

Maximum Value: 432.05 W/m2 on May 11 12:00																								Maximum Daily Average: 151.77 W/m2 on May 31																								Hours in Service: 744	
Minimum Value: 0.0 W/m2 on May 8 04:00																								Minimum Daily Average: 12.46 W/m2 on May 19																								Hours of Data: 744	
Maximum Diurnal Average: 291.07 W/m2 at hour 13																								Minimum Diurnal Average: 0.16 W/m2 at hour 3																								Hours of Missing Data: 0	
Monthly Average: 102.89 W/m2																								Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.5 Median = 35.3 Q <sub>3</sub> = 191.9 P <sub>90</sub> = 328.7 P <sub>99</sub> = 385.4																								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-May	1.1	1.1	1.0	1.1	1.2	14.8	54.5	120.9	192.2	246.7	295.4	331.3	356.1	348.3	304.8	268.9	211.5	141.4	80.1	20.7	1.8	1.0	0.7	0.6	124.88	356.05																							
2-May	0.5	0.5	0.5	0.5	0.8	18.5	75.4	131.8	218.9	254.7	312.7	354.7	367.9	360.7	333.6	296.9	218.3	170.9	62.3	15.1	1.6	0.6	0.6	0.7	133.27	367.85																							
3-May	0.5	0.5	0.4	0.4	0.7	17.0	66.3	135.9	184.5	272.4	323.0	358.2	372.0	365.0	338.4	292.4	231.6	152.7	84.2	17.3	1.7	0.6	0.7	0.7	134.04	372.02																							
4-May	0.5	0.5	0.3	0.4	0.7	14.5	76.4	106.3	149.9	281.1	325.4	350.4	334.1	304.5	217.7	142.2	146.1	70.7	32.1	11.1	2.0	0.7	0.5	0.5	107.02	350.36																							
5-May	0.5	0.5	0.4	0.5	0.6	3.6	24.1	48.1	79.3	90.7	121.3	173.7	264.4	338.1	297.0	280.1	234.9	167.5	93.5	32.0	2.7	0.6	0.6	0.7	93.97	338.12																							
6-May	0.7	1.0	0.6	0.8	1.4	19.7	82.5	148.3	222.8	278.7	330.0	364.6	376.7	364.9	322.2	285.2	193.0	121.4	65.4	23.7	2.5	0.6	0.6	0.5	133.65	376.70																							
7-May	0.6	0.6	0.5	0.1	0.4	14.1	74.5	138.3	190.5	276.7	318.8	336.2	388.5	356.7	333.7	241.7	152.1	158.5	101.0	27.8	1.7	0.3	0.4	0.3	129.74	388.45																							
8-May	0.2	0.1	0.0	0.0	0.5	8.2	20.9	28.4	40.4	40.3	85.4	282.7	390.0	386.9	359.2	306.4	251.4	180.4	107.0	37.9	2.1	0.0	0.0	0.0	105.35	389.99																							
9-May	0.0	0.0	0.1	0.2	0.9	10.0	42.5	97.8	90.4	174.6	292.6	220.8	158.2	167.0	136.8	149.0	108.0	35.4	33.1	9.9	1.5	0.1	0.1	0.1	72.03	292.56																							
10-May	0.1	0.2	0.5	0.7	1.8	22.8	88.3	161.8	237.4	295.4	324.1	321.2	308.2	278.1	227.7	311.7	215.2	202.7	97.1	28.6	3.1	0.0	0.0	0.0	130.27	324.12																							
11-May	0.0	0.0	0.0	0.0	1.0	25.4	93.4	161.6	233.9	289.7	344.2	432.1	214.9	227.4	198.7	153.9	126.9	85.1	39.4	17.3	2.0	0.0	0.0	0.0	110.28	432.05																							
12-May	0.0	0.0	0.1	0.2	1.3	26.0	91.0	157.6	226.2	247.5	264.8	344.4	368.7	346.1	320.5	300.2	249.9	171.7	100.8	40.4	4.7	0.6	0.7	0.2	135.99	368.69																							
13-May	0.2	0.3	0.3	0.5	2.0	26.6	96.7	166.1	237.1	292.7	343.0	373.1	383.3	375.1	346.4	285.5	242.0	170.6	99.9	37.9	4.4	0.1	0.3	0.2	145.17	383.31																							
14-May	0.0	0.0	0.0	0.0	1.7	25.8	93.3	160.2	229.8	285.2	331.6	358.3	378.9	370.5	343.6	299.8	240.2	173.1	101.3	39.1	5.0	0.1	0.1	0.0	143.22	378.88																							
15-May	0.1	0.2	0.0	0.0	1.5	24.8	85.7	154.7	225.7	283.6	333.0	367.5	379.0	372.7	345.4	298.4	239.5	171.1	101.5	41.1	5.5	0.1	0.0	0.0	142.96	379.04																							
16-May	0.0	0.0	0.0	0.0	1.8	28.3	92.4	163.9	235.1	288.3	335.9	366.5	376.2	368.0	335.3	296.9	210.9	161.0	70.3	18.2	3.1	0.3	0.2	0.1	139.69	376.15																							
17-May	0.1	0.1	0.0	0.0	0.8	17.2	100.0	107.4	168.6	279.2	340.0	376.8	375.4	389.5	350.9	312.2	167.5	141.5	83.8	31.4	4.3	0.3	0.1	0.0	135.29	389.47																							
18-May	0.0	0.0	0.1	0.4	2.2	21.2	52.7	113.5	202.3	290.1	319.5	374.0	344.1	353.3	260.8	120.3	17.6	17.1	54.5	14.2	1.7	0.0	0.0	0.0	106.64	374.01																							
19-May	0.0	0.0	0.0	0.0	0.0	0.0	3.5	21.4	31.2	28.9	28.1	39.0	45.6	34.5	11.7	17.8	18.2	13.6	4.8	0.7	0.0	0.0	0.0	0.0	12.46	45.59																							
20-May	0.0	0.0	0.0	0.0	0.0	2.2	7.6	28.3	67.4	176.2	116.6	140.6	210.5	216.7	161.7	87.1	60.0	64.9	33.0	19.4	5.4	0.7	0.5	0.4	58.30	216.68																							
21-May	0.4	0.4	0.2	0.6	1.0	3.9	7.4	15.9	29.7	44.7	42.0	71.5	142.0	98.1	85.0	72.2	37.7	35.7	20.4	9.2	2.4	0.9	0.8	0.5	30.10	141.99																							
22-May	0.5	0.2	0.0	0.7	0.8	2.1	5.8	7.4	14.5	27.4	41.9	78.4	70.5	63.0	56.0	37.8	29.0	23.8	12.5	4.4	0.0	0.0	0.0	0.0	19.86	78.42																							
23-May	0.0	0.0	0.0	0.0	0.0	3.1	11.6	28.1	37.7	55.7	106.0	130.0	116.9	193.4	195.1	114.4	88.2	92.1	44.5	26.8	3.8	0.0	0.0	0.0	51.97	195.08																							
24-May	0.0	0.0	0.0	0.0	1.8	17.8	40.2	77.6	135.4	213.8	299.2	375.5	368.1	375.1	341.9	272.5	202.9	185.8	115.3	51.3	8.1	0.0	0.0	0.0	128.43	375.45																							
25-May	0.0	0.0	0.0	0.0	3.6	35.6	98.1	163.0	229.9	281.7	304.5	380.6	377.5	351.2	91.2	1.6	8.0	49.0	57.7	37.7	7.7	0.0	0.0	0.0	103.26	380.58																							
26-May	0.0	0.0	0.0	0.0	1.2	19.9	77.7	86.3	217.2	172.8	84.7	259.0	355.0	347.2	219.8	132.4	153.3	90.5	39.4	4.6	0.2	0.0	0.0	0.0	94.22	355.00																							
27-May	0.0	0.0	0.0	0.0	0.0	4.3	32.8	30.5	34.8	39.5	50.7	40.4	60.4	54.5	64.2	53.6	77.3	59.1	33.9	13.4	0.9	0.0	0.0	0.0	27.10	77.27																							
28-May	0.0	0.0	0.0	0.0	2.2	30.6	85.4	152.2	240.1	236.0	195.5	371.4	246.2	276.2	234.5	252.9	42.2	73.9	131.3	52.8	6.4	0.0	0.0	0.0	109.57	371.36																							
29-May	0.0	0.0	0.0	0.0	3.5	31.2	66.7	101.2	167.5	257.6	308.4	311.7	268.2	331.5	193.7	208.5	80.4	30.1	18.1	13.7	2.6	0.0	0.0	0.0	99.78	331.53																							
30-May	0.0	0.0	0.0	0.0	0.4	9.7	31.6	55.9	97.1	185.9	133.0	241.3	233.5	185.2	178.0	151.6	149.1	110.0	85.0	43.3	9.8	0.0	0.0	0.0	79.18	241.28																							
31-May	0.0	0.0	0.0	0.0	3.6	41.7	103.3	171.5	240.1	310.6	345.4	360.2	392.4	407.3	352.2	311.2	252.1	188.4	113.0	41.3	8.3	0.0	0.0	0.0	151.77	407.27																							
																								0.19	0.20	0.16	0.23	1.27	17.44	60.72	104.56	158.30	209.61	238.59	286.64	291.07	290.53	243.79	205.01	150.15	113.21	68.26	25.24	3.45	0.24	0.22	0.17	Diurnal Average	
																								1.06	1.14	1.04	1.12	3.59	41.71	103.29	171.45	240.07	310.55	345.43	432.05	392.43	407.27	359.15	312.17	252.14	202.74	131.29	52.82	9.77	0.98	0.79	0.69	Diurnal Maximum	



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

**Wind Speed (WS) - kph**  
**May 2016**

<b>Maximum Value: 9.64 kph on May 25 15:00</b>		<b>Maximum Daily Average: 6.16 kph on May 8</b>		<b>Hours in Service: 744</b>																						
<b>Minimum Value: 0.4 kph on May 17 22:00</b>		<b>Minimum Daily Average: 2.31 kph on May 1</b>		<b>Hours of Data: 744</b>																						
<b>Maximum Diurnal Average: 4.93 kph at hour 15</b>		<b>Minimum Diurnal Average: 2.03 kph at hour 5</b>		<b>Hours of Missing Data: 0</b>																						
<b>Monthly Average: 3.111 kph</b>		<b>Percentiles: P<sub>1</sub> = 0.7 P<sub>10</sub> = 1.1 Q<sub>1</sub> = 1.7 Median = 3.0 Q<sub>3</sub> = 4.3 P<sub>90</sub> = 5.2 P<sub>99</sub> = 8.0</b>		<b>Hours of Calibration: 0</b>																						
				<b>Percent Operational Time: 100.0</b>																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-May	1.0	1.4	1.6	1.2	1.0	1.2	1.6	1.6	2.3	2.0	3.4	4.4	5.7	4.8	4.9	4.7	3.1	2.4	1.4	0.8	1.9	1.2	1.0	0.9	2.31	5.65
2-May	0.7	1.0	1.2	0.9	1.3	0.9	1.8	1.9	1.8	2.6	3.5	4.5	3.8	4.7	4.6	4.9	4.1	3.8	2.2	1.4	1.2	1.2	0.9	1.7	2.36	4.87
3-May	0.7	1.2	1.0	1.9	1.2	1.5	1.9	1.9	1.8	4.4	4.6	4.8	5.2	4.8	4.8	4.3	4.5	2.7	2.0	1.1	1.1	3.0	1.7	2.5	2.69	5.23
4-May	1.4	1.0	1.0	1.3	1.6	1.2	1.2	1.9	2.0	2.5	2.5	4.9	5.0	6.7	4.6	4.4	3.7	3.6	2.0	6.6	4.9	2.8	1.9	1.8	2.95	6.68
5-May	1.7	2.7	3.7	4.3	4.3	5.4	5.5	4.3	3.4	4.5	3.7	4.1	4.5	5.2	5.6	5.8	5.1	4.1	3.6	1.9	1.1	0.8	0.9	1.5	3.64	5.79
6-May	2.1	1.0	1.7	1.8	1.7	1.4	1.5	1.2	1.9	2.5	3.2	4.4	5.1	5.0	4.2	4.0	3.4	2.8	1.9	1.0	1.2	2.4	1.2	1.1	2.41	5.12
7-May	0.9	1.1	1.3	1.2	1.1	1.0	1.5	1.7	2.6	2.5	3.4	4.0	4.7	4.3	4.8	3.1	2.4	2.3	1.8	1.0	1.1	1.6	3.3	3.7	2.36	4.79
8-May	5.1	5.7	5.0	5.6	5.3	4.8	8.3	7.3	4.4	2.6	2.9	4.0	6.8	7.5	7.6	8.2	8.1	8.6	8.5	7.3	6.6	7.9	4.6	5.1	6.16	8.61
9-May	5.5	3.4	2.4	3.0	3.2	3.3	2.4	5.4	6.7	6.5	7.3	7.0	6.9	6.7	6.2	6.7	5.7	5.0	3.7	4.2	3.0	1.6	1.6	1.7	4.55	7.26
10-May	1.7	2.0	2.0	2.3	1.3	1.2	2.6	2.5	3.5	4.8	5.3	4.8	5.3	4.3	4.1	4.9	5.1	6.2	3.8	1.3	0.4	1.8	1.0	2.1	3.10	6.17
11-May	1.6	1.5	1.0	1.5	1.1	1.4	1.2	1.5	2.4	3.4	4.5	4.8	4.4	4.9	5.5	4.6	4.2	4.6	4.7	3.4	2.9	2.4	2.7	2.8	3.04	5.52
12-May	2.4	2.6	1.5	1.1	0.8	1.1	2.5	2.8	3.3	4.6	4.1	5.3	4.6	5.4	4.9	4.3	4.9	3.9	3.8	2.6	0.8	0.9	1.3	1.1	2.94	5.37
13-May	1.9	1.4	1.3	1.2	0.9	1.0	1.9	1.3	1.8	3.9	3.8	3.8	6.1	4.3	5.5	4.4	4.0	4.2	3.7	2.3	1.1	0.6	1.6	1.6	2.65	6.09
14-May	0.8	1.1	0.8	0.6	1.8	1.7	1.3	3.3	2.0	3.1	4.6	5.1	5.3	5.7	4.6	5.8	4.8	5.2	3.5	2.4	0.9	1.0	0.7	1.5	2.82	5.79
15-May	1.3	1.0	1.3	1.2	1.0	1.0	0.7	1.4	2.1	4.6	4.8	5.1	5.6	5.7	5.2	5.0	5.1	3.9	3.3	2.6	1.3	1.2	1.5	1.6	2.80	5.68
16-May	1.6	1.2	1.8	1.7	2.3	1.4	2.1	2.5	2.4	3.4	4.0	3.9	3.4	4.1	4.5	3.3	3.3	2.6	2.5	2.6	2.9	1.8	2.0	7.0	2.83	6.95
17-May	5.7	6.4	5.9	6.3	2.0	1.1	2.1	3.7	4.4	5.1	5.4	4.9	6.2	6.4	6.2	6.3	4.0	3.1	2.4	1.6	0.8	0.4	1.1	1.9	3.88	6.41
18-May	3.4	3.2	3.0	1.1	1.0	1.5	1.1	1.6	1.2	4.5	3.8	6.2	4.5	4.7	5.5	4.2	8.4	6.0	4.6	5.1	4.2	4.6	4.2	3.0	3.78	8.43
19-May	3.6	2.5	1.9	2.1	2.0	2.4	1.4	2.4	2.2	1.9	2.1	2.5	5.5	4.8	4.9	4.3	4.1	4.8	4.7	4.4	4.3	4.1	4.4	4.8	3.41	5.45
20-May	5.0	4.2	4.0	4.0	3.8	4.2	3.9	4.0	3.5	3.4	3.6	3.7	4.4	3.9	4.5	3.4	3.5	3.3	3.3	3.2	2.3	2.3	2.7	3.4	3.65	4.98
21-May	3.6	3.1	3.1	3.7	3.5	3.3	3.7	3.2	3.0	4.0	3.0	3.3	4.0	3.8	3.3	3.2	2.7	2.9	3.0	2.7	2.6	3.8	3.5	3.3	3.32	4.04
22-May	3.1	3.0	3.9	3.1	3.7	3.9	3.7	3.8	4.1	4.3	4.3	5.0	5.1	5.0	5.2	4.7	4.4	4.4	4.2	3.5	3.2	3.5	2.9	3.3	3.97	5.19
23-May	2.7	3.5	4.1	5.2	3.7	3.7	4.0	4.1	3.9	3.9	3.8	3.7	3.5	3.9	3.6	3.6	2.6	2.2	1.9	1.2	1.3	1.7	0.9	0.6	3.05	5.23
24-May	2.6	1.5	0.7	1.3	1.3	2.0	2.0	1.3	1.8	3.1	3.7	3.9	3.9	4.1	4.8	4.5	3.6	3.6	2.8	2.8	1.6	1.2	0.6	1.2	2.50	4.79
25-May	1.0	1.1	1.9	1.6	1.3	1.0	1.1	2.1	2.1	2.7	2.5	3.2	3.1	3.4	9.6	3.0	4.2	1.9	2.2	1.8	1.3	1.5	1.0	1.3	2.33	9.64
26-May	2.4	1.2	1.2	1.1	1.2	1.1	1.3	1.8	2.4	2.6	1.9	2.0	3.6	3.6	3.7	3.3	2.8	3.1	4.9	4.0	4.1	3.8	3.5	2.2	2.62	4.86
27-May	2.0	3.1	2.4	2.0	2.9	2.3	2.0	2.1	2.4	3.1	2.7	2.1	2.0	2.3	2.5	2.8	3.5	2.9	2.4	3.0	2.7	3.7	2.6	2.6	2.58	3.68
28-May	1.9	1.5	1.4	1.0	1.2	1.3	2.0	2.0	3.8	4.0	3.1	4.9	5.6	5.0	4.0	3.0	5.5	6.0	4.3	2.1	2.2	1.7	3.5	1.6	3.02	6.01
29-May	1.0	1.4	1.4	0.8	1.2	1.7	1.6	1.7	2.5	3.4	3.7	3.7	4.3	4.2	3.5	6.1	5.0	3.6	4.5	2.8	2.7	2.0	1.5	1.8	2.74	6.10
30-May	2.2	2.1	5.7	4.3	3.4	3.1	3.8	4.1	4.2	5.6	4.8	5.9	5.6	5.6	5.2	4.2	3.6	3.6	2.5	1.7	1.0	0.5	1.5	1.0	3.54	5.88
31-May	1.4	1.7	1.0	1.7	1.0	1.6	1.2	1.6	2.0	3.1	3.2	3.4	3.6	3.1	4.7	3.6	3.9	4.2	2.6	2.1	1.5	2.0	1.7	1.8	2.41	4.74
																								Diurnal Average		
																								Diurnal Maximum		
2.32 2.21 2.26 2.26 2.03 2.05 2.35 2.64 2.83 3.63 3.78 4.30 4.75 4.77 4.93 4.47 4.31 3.93 3.32 2.72 2.21 2.23 2.05 2.30																										
5.72 6.37 5.87 6.26 5.30 5.42 8.27 7.26 6.67 6.52 7.26 7.00 6.89 7.46 9.64 8.23 8.43 8.61 8.45 7.30 6.63 7.92 4.64 6.95																										
,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3 24-hr 100 ul/m^3																										



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

**Wind Direction (WD) - deg**  
**May 2016**

Maximum Value: 99.37 deg on May 26 10:00		Maximum Daily Average: 40.45 deg on May 31		Hours in Service: 744																																													
Minimum Value: 3.1 deg on May 13 22:00		Minimum Daily Average: 12.91 deg on May 22		Hours of Data: 744																																													
Maximum Diurnal Average: 36.30 deg at hour 13		Minimum Diurnal Average: 17.13 deg at hour 6		Hours of Missing Data: 0																																													
Monthly Average: 24.779 deg		Percentiles: P <sub>1</sub> = 6.9 P <sub>10</sub> = 10.8 Q <sub>1</sub> = 13.8 Median = 18.0 Q <sub>3</sub> = 29.7 P <sub>90</sub> = 51.0 P <sub>99</sub> = 82.3		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-May	9.4	13.2	10.5	10.3	6.7	7.2	8.8	11.0	13.1	19.1	29.8	32.4	39.9	39.9	49.7	40.6	31.4	37.1	18.2	15.9	57.1	36.2	11.6	8.6	23.23	57.10																							
2-May	14.0	10.3	12.5	11.0	67.8	54.3	21.1	19.1	25.3	24.9	32.3	26.4	24.6	33.7	26.8	19.0	19.2	18.1	13.7	9.5	10.0	10.8	11.3	14.1	22.07	67.76																							
3-May	11.6	10.0	17.0	26.3	8.2	6.9	9.0	10.1	15.7	28.9	20.5	28.0	58.7	51.9	48.9	61.0	48.9	23.8	10.8	13.2	9.8	44.8	17.1	23.8	25.21	60.99																							
4-May	10.5	9.7	11.0	10.9	8.4	8.5	9.7	13.5	14.9	25.0	62.9	34.7	37.2	33.9	28.1	18.0	15.4	18.6	16.9	22.7	25.9	21.6	16.7	16.5	20.46	62.92																							
5-May	12.5	15.7	19.9	14.0	12.9	13.4	17.1	15.6	17.3	16.0	17.0	20.3	22.4	26.5	24.4	37.8	27.5	21.4	13.7	8.7	17.9	15.4	25.9	22.6	19.00	37.79																							
6-May	15.9	7.2	8.0	13.8	11.9	19.2	23.6	14.8	32.2	47.7	58.7	34.7	48.1	58.9	42.9	31.8	28.7	36.2	12.0	9.0	6.9	10.4	14.1	8.7	24.81	58.93																							
7-May	17.8	7.9	8.9	7.7	6.4	7.6	11.4	12.3	20.7	26.1	20.9	25.3	29.4	27.3	31.6	29.2	16.5	16.8	11.8	8.0	18.7	31.1	29.5	21.8	18.53	31.59																							
8-May	14.5	21.7	21.2	24.0	21.1	16.4	15.7	25.0	47.1	14.1	13.4	23.6	19.0	16.2	15.4	15.1	15.1	14.2	14.3	13.6	13.8	14.4	13.0	13.8	18.16	47.11																							
9-May	14.8	17.1	18.4	16.5	17.8	18.0	16.4	17.7	17.5	15.2	16.4	14.5	18.3	17.5	17.5	17.7	15.8	14.7	16.1	32.3	14.9	8.9	14.0	10.9	16.62	32.33																							
10-May	12.2	11.2	11.5	11.1	51.2	10.9	31.4	25.3	34.9	24.1	24.2	24.1	33.3	37.5	41.8	61.5	43.3	51.7	28.0	14.6	6.2	17.8	29.6	59.7	29.05	61.50																							
11-May	46.3	14.7	10.9	22.9	18.8	21.5	39.7	64.1	33.5	38.8	54.4	39.4	65.6	33.3	24.1	22.5	19.6	15.6	14.5	15.5	16.0	14.7	16.7	16.5	28.32	65.62																							
12-May	13.8	15.3	15.6	6.2	8.7	7.7	22.4	22.3	28.0	27.1	30.5	34.7	31.9	33.6	36.1	26.9	26.9	25.4	16.4	12.7	8.2	7.8	26.6	41.0	21.91	41.02																							
13-May	79.9	49.6	41.5	7.5	13.0	8.9	19.3	33.2	40.9	59.6	48.1	64.3	69.1	53.6	69.5	45.1	32.7	44.2	65.0	10.7	8.0	3.1	11.7	40.1	38.28	79.88																							
14-May	26.9	56.8	55.2	31.2	15.4	8.0	11.3	29.1	31.5	34.8	62.1	89.1	43.1	45.8	45.2	52.3	32.7	37.9	20.0	13.9	6.9	11.5	7.5	11.8	32.50	89.10																							
15-May	23.3	66.6	54.9	9.9	17.0	18.3	11.2	27.7	32.9	23.2	18.6	20.8	21.4	21.5	27.0	20.4	22.1	16.7	12.7	13.6	12.4	8.9	12.6	12.8	21.94	66.60																							
16-May	12.2	15.1	12.1	10.5	8.2	7.6	14.5	22.2	20.3	21.2	23.8	41.2	51.4	45.7	60.3	85.5	70.7	79.5	20.3	25.6	13.2	10.6	10.1	60.1	30.91	85.49																							
17-May	16.0	14.6	13.4	16.1	45.5	9.4	13.3	17.5	18.0	25.3	29.7	28.4	21.7	24.9	22.1	30.7	24.1	22.9	15.0	18.2	19.8	35.4	38.4	46.5	23.62	46.47																							
18-May	83.9	62.0	64.5	23.2	12.6	27.1	67.4	35.2	89.2	47.1	17.3	35.2	62.9	43.3	45.6	24.1	40.1	28.3	25.9	16.7	22.1	20.3	27.0	22.0	39.29	89.20																							
19-May	14.3	21.1	32.7	15.3	11.0	18.0	19.9	13.9	20.9	15.2	13.8	12.3	14.5	14.5	15.5	18.2	18.8	17.2	15.4	19.0	14.3	13.9	14.1	14.9	16.61	32.69																							
20-May	14.3	14.6	15.3	14.5	14.6	15.0	17.5	14.7	15.2	14.1	16.8	14.4	15.7	15.1	16.6	16.5	14.9	13.8	16.3	13.9	15.1	13.7	13.9	13.2	14.99	17.55																							
21-May	20.6	13.6	13.5	14.2	15.1	16.2	15.9	13.9	14.7	20.4	16.3	16.3	15.8	15.9	17.0	17.9	16.6	12.4	12.7	13.5	12.5	12.5	13.5	12.0	15.12	20.56																							
22-May	13.0	15.4	13.5	14.1	13.7	14.0	13.8	13.5	13.4	13.6	13.5	11.8	11.6	12.6	12.7	12.5	11.9	11.2	12.2	11.1	10.9	12.4	10.3	17.2	12.91	17.25																							
23-May	17.1	12.4	20.1	18.7	11.9	11.8	11.3	12.8	14.9	13.5	13.3	14.9	17.1	24.6	24.6	23.4	20.2	17.9	13.0	68.1	58.6	51.1	13.4	11.4	21.50	68.09																							
24-May	16.8	85.6	14.6	39.9	40.1	23.7	33.7	30.0	35.6	25.3	34.3	44.7	52.0	35.5	28.8	24.4	16.7	15.7	14.4	13.1	13.5	12.6	10.8	13.6	28.14	85.61																							
25-May	10.3	12.9	23.7	57.3	37.2	25.9	29.4	21.6	35.6	44.5	55.4	70.9	65.2	68.3	79.9	21.5	69.2	46.4	17.0	18.4	23.4	24.9	12.8	73.5	39.38	79.89																							
26-May	27.2	68.8	10.1	50.9	76.7	9.6	20.1	16.8	62.0	99.4	46.2	60.6	49.0	26.8	26.6	20.2	16.5	13.7	64.6	20.4	25.2	20.7	21.2	27.7	36.71	99.37																							
27-May	24.4	21.0	19.0	23.5	19.1	17.6	15.3	14.9	15.2	12.0	15.3	14.5	14.6	19.0	16.2	15.4	17.5	17.0	15.9	16.7	15.5	17.6	17.7	18.2	17.23	24.40																							
28-May	12.4	11.2	13.5	13.2	9.7	9.9	14.9	15.1	17.5	22.6	21.6	28.8	51.0	78.1	64.9	60.9	59.3	48.1	13.9	15.1	22.2	32.5	44.3	20.5	29.22	78.07																							
29-May	14.9	8.9	10.6	19.3	24.4	29.5	14.5	26.1	29.7	27.6	23.8	27.9	25.1	23.9	21.2	27.7	15.1	17.7	34.6	21.1	16.4	17.4	18.6	11.4	21.14	34.63																							
30-May	16.3	10.4	12.4	11.5	13.9	14.1	13.0	13.6	13.1	16.3	17.8	21.2	22.9	26.1	27.8	20.8	24.0	22.6	22.2	29.8	46.7	8.2	43.0	32.4	20.84	46.69																							
31-May	32.8	9.9	22.0	48.7	30.1	54.5	48.1	40.4	74.9	55.8	60.8	96.2	73.0	57.8	53.2	65.2	46.0	41.0	12.1	11.3	7.1	10.8	9.0	10.0	40.45	96.24																							
																								21.61	23.37	20.26	19.82	21.58	17.13	20.34	21.39	28.90	28.98	29.99	33.93	36.30	34.28	34.25	31.74	28.31	26.38	19.67	17.61	18.36	18.45	18.58	23.46	Diurnal Average	
																								83.87	85.61	64.50	57.35	76.74	54.53	67.42	64.14	89.20	99.37	62.92	96.24	72.97	78.07	79.89	85.49	70.66	79.47	65.01	68.09	58.60	51.10	44.35	73.46	Diurnal Maximum	
,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3 24-hr 100 ul/m^3																																																	

**VIOLET GROVE  
STATION #902**

**CONTINUOUS AIR MONITORING DATA**

**MAY 2016**

**Summary Report**

*Continuous air quality/meteorological monitoring measurements*

**West Central Airshed Society**

WCAS / Violet Grove Station 902													May 2016		
Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Min	Max	Percentile					Exceedences		24 Hour Average Max (ppm)	
							P10	Q1	Median	Q3	P90	1-hour	24-hour		
SO <sub>2</sub> (ppb)	36	708	100.0	0.2	0.0	6.8	0.0	0.0	0.1	0.2	0.3	0	0	0.001	
O <sub>3</sub> (ppb)	36	708	100.0	35.1	6.0	61.0	15.7	24.9	36.0	45.8	51.4	0	-	0.054	
NO (ppb)	38	706	100.0	0.2	0.0	17.4	0.0	0.0	0.1	0.2	0.5	-	-	-	
NO <sub>2</sub> (ppb)	38	706	100.0	3.0	1.4	18.2	1.8	2.1	2.6	3.5	4.8	0	0	0.005	
NO <sub>x</sub> (ppb)	38	706	100.0	2.6	0.7	27.2	1.2	1.5	2.0	3.0	4.6	-	-	-	
THC (ppm)	36	707	99.9	2.2	1.9	6.7	2.0	2.1	2.1	2.2	2.3	-	-	2.60	
Wind Speed (kph)	0	744	100.0	10.2	0.2	32.6	3.5	6.3	9.6	13.1	18.1	-	-	-	
Temperature (°C)	0	744	100.0	9.7	-2.3	25.8	2.0	4.7	9.1	13.6	18.8	-	-	-	
Delta Temperature (°C)	0	744	100.0	0.4	-4.6	1.9	-1.1	0.1	0.7	1.1	1.4	-	-	-	
Relative Humidity (%)	0	744	100.0	61.3	16.3	100.4	25.8	38.4	59.4	87.3	96.7	-	-	-	
Global Solar Radiation (W/m <sup>2</sup> )	0	744	100.0	231.9	0.0	959.1	0.0	0.0	79.6	426.3	732.4	-	-	-	
Photosynthetically Active Radiation (µV)	0	744	100.0	96.4	0.0	378.9	0.0	0.2	35.7	183.9	298.6	-	-	-	
Std Dev Wind Direction (deg)	0	744	100.0	24.9	4.1	97.8	8.9	12.2	19.0	32.1	49.6	-	-	-	
Std Dev Wind Speed (kph)	0	744	100.0	3.5	0.3	11.8	1.3	2.1	3.2	4.6	5.6	-	-	-	



**WCAS - Violet Grove**  
**Summary of Hourly Averages**

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

Maximum Value: 6.75 ppb on May 27 17:00		Maximum Daily Average: 1.00 ppb on May 12		Hours in Service: 744																									
Minimum Value: 0.0 ppb on May 3 12:00		Minimum Daily Average: 0.01 ppb on May 22		Hours of Data: 708																									
Maximum Diurnal Average: 0.31 ppb at hour 17		Minimum Diurnal Average: 0.10 ppb at hour 18		Hours of Missing Data: 36																									
Monthly Average: 0.182 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.1 Q <sub>3</sub> = 0.2 P <sub>90</sub> = 0.3 P <sub>99</sub> = 1.8		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-May	0.1	Z	0.2	0.2	0.1	0.2	0.2	0.2	0.4	0.4	0.2	0.1	0.1	0.1	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.17	0.45			
2-May	0.0	Z	0.3	0.5	0.3	0.5	0.3	0.3	0.2	0.2	0.3	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.17	0.47			
3-May	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.08	0.35			
4-May	0.2	Z	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.2	0.1	0.0	0.1	0.1	0.07	0.21			
5-May	0.1	Z	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.2	0.0	0.1	0.3	0.3	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.10	0.34			
6-May	0.0	Z	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.2	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.14	0.28		
7-May	0.2	Z	0.3	0.4	0.4	0.3	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.1	0.3	0.4	0.0	0.0	0.18	0.39			
8-May	0.1	Z	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.02	0.12			
9-May	0.0	Z	0.0	0.3	0.2	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.05	0.25			
10-May	0.1	Z	0.0	0.0	0.2	0.2	0.2	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	0.3	0.4	0.4	0.10	0.60			
11-May	0.4	Z	0.1	0.1	0.2	0.0	0.2	0.3	0.3	0.3	C	C	C	C	C	0.2	0.0	0.0	0.1	0.3	0.2	0.0	0.0	0.5	0.17	0.45			
12-May	1.9	Z	0.8	0.7	0.8	0.6	1.2	1.2	1.3	1.5	1.7	2.3	0.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.8	1.5	2.7	2.7	1.00	2.67			
13-May	0.9	Z	0.4	0.3	0.2	0.3	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.22	0.93			
14-May	0.2	Z	0.3	0.1	0.1	0.1	0.2	0.4	0.6	0.2	0.2	0.3	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.18	0.62			
15-May	0.1	Z	0.2	0.3	0.4	0.8	0.8	0.6	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.26	0.79			
16-May	0.1	Z	0.4	0.3	0.3	0.6	0.9	0.9	0.6	0.7	0.6	0.4	0.3	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.3	0.1	0.1	0.1	0.35	0.92			
17-May	0.2	Z	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.08	0.21			
18-May	0.0	Z	0.2	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.0	0.0	0.0	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.07	0.23			
19-May	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	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.03	0.37			
20-May	0.0	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.08	0.19			
21-May	0.1	Z	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.0	0.07	0.18			
22-May	0.0	Z	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	0.0	0.0	0.0	0.0	0.0	0.01	0.06			
23-May	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	0.1	0.1	0.0	0.1	0.1	0.3	0.4	0.2	0.06	0.42			
24-May	0.2	Z	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.4	0.4	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.0	0.1	0.17	0.37			
25-May	0.1	Z	0.2	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.2	0.3	0.3	1.0	0.6	0.1	0.1	0.0	0.1	0.0	0.3	1.5	0.0	0.27	1.49			
26-May	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	1.2	0.5	1.8	1.3	0.8	0.4	0.5	0.2	0.0	0.2	0.1	0.0	0.0	0.33	1.84			
27-May	0.0	Z	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.1	0.3	2.6	6.8	0.3	1.8	1.0	0.1	0.1	0.1	0.2	0.65	6.75			
28-May	0.1	Z	0.1	0.1	0.2	0.0	0.6	0.9	0.4	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.3	0.3	0.18	0.95			
29-May	0.3	Z	0.2	0.2	0.1	0.2	0.1	0.2	0.3	0.2	0.2	0.1	0.1	0.2	0.2	0.6	0.1	0.0	0.0	0.1	0.0	0.0	0.4	0.1	0.16	0.57			
30-May	0.2	Z	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.08	0.20			
31-May	0.1	Z	0.1	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.4	0.4	0.14	0.40			
		0.19	--	0.14	0.13	0.14	0.17	0.21	0.24	0.23	0.22	0.19	0.22	0.12	0.18	0.18	0.23	0.31	0.10	0.13	0.11	0.11	0.15	0.25	0.20	Diurnal Average			
		1.93	--	0.77	0.72	0.81	0.78	1.21	1.21	1.29	1.53	1.70	2.31	0.55	1.84	1.34	2.58	6.75	0.53	1.81	1.01	0.81	1.48	2.66	2.67	Diurnal Maximum			
Z - zerospan		C - Calibration																											
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr 172 ppb		24-hr 48 ppb																									



**WCAS - Violet Grove**  
**Summary of Hourly Averages**

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

Maximum Value: 61.04 ppb on May 15 17:00																								Maximum Daily Average: 53.73 ppb on May 15																								Hours in Service: 744	
Minimum Value: 6.0 ppb on May 31 06:00																								Minimum Daily Average: 14.91 ppb on May 22																								Hours of Data: 708	
Maximum Diurnal Average: 42.90 ppb at hour 16																								Minimum Diurnal Average: 24.95 ppb at hour 6																								Hours of Missing Data: 36	
Monthly Average: 35.095 ppb																								Percentiles: P <sub>1</sub> = 10.7 P <sub>10</sub> = 15.7 Q <sub>1</sub> = 24.9 Median = 36.0 Q <sub>3</sub> = 45.8 P <sub>90</sub> = 51.4 P <sub>99</sub> = 59.6																								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-May	39.5	35.9	Z	29.9	28.2	27.7	26.9	31.0	36.0	39.5	41.9	41.1	39.3	37.7	37.3	35.6	34.7	34.4	34.2	31.8	25.6	26.9	33.0	34.0	34.00	41.86																							
2-May	32.2	30.7	Z	28.2	24.7	18.4	19.5	20.7	26.5	30.0	38.4	39.7	41.2	43.3	47.1	47.4	49.7	51.3	51.8	47.4	45.4	44.9	45.7	41.7	37.65	51.81																							
3-May	40.5	39.5	Z	31.7	31.3	30.9	30.8	35.0	40.2	45.4	51.3	54.0	55.3	56.6	57.6	59.1	58.5	57.7	54.7	51.4	44.9	51.1	48.2	42.3	46.43	59.06																							
4-May	40.1	43.4	Z	36.1	33.6	32.3	30.6	30.9	37.6	47.5	51.3	55.2	53.2	54.3	53.6	52.7	51.6	50.6	44.4	48.5	46.7	41.5	37.5	35.3	43.85	55.24																							
5-May	34.9	36.1	Z	45.6	47.1	48.2	49.5	51.1	48.0	44.9	44.7	45.3	45.6	46.1	48.7	51.3	53.8	54.0	53.6	50.4	40.9	40.2	43.6	38.3	46.16	53.99																							
6-May	31.2	32.0	Z	19.1	25.2	25.8	27.6	28.1	33.6	42.0	46.2	48.6	50.9	51.6	51.8	53.1	53.5	54.0	53.2	46.6	44.5	47.0	48.2	49.2	41.87	54.05																							
7-May	49.4	44.6	Z	38.1	36.1	33.4	33.9	33.2	40.0	40.6	48.1	51.6	54.0	51.0	49.6	52.4	52.0	51.7	49.8	46.8	41.1	42.9	45.8	46.7	44.91	53.99																							
8-May	38.4	37.3	Z	37.7	40.0	42.0	42.5	46.5	45.8	42.7	41.9	42.7	41.5	51.1	51.3	47.8	43.1	39.3	38.7	38.4	37.3	35.2	35.9	36.8	41.47	51.26																							
9-May	32.8	29.7	Z	25.0	23.5	22.2	22.4	24.4	28.8	33.3	35.5	37.6	40.4	42.7	42.2	44.0	44.3	42.8	42.5	42.3	41.1	38.9	36.5	32.7	35.03	44.31																							
10-May	30.0	27.4	Z	24.3	22.7	22.8	23.0	25.3	31.0	39.1	43.4	44.0	44.1	44.7	45.1	45.0	45.9	46.4	46.5	43.2	36.0	34.5	32.8	32.1	36.05	46.45																							
11-May	38.3	39.0	Z	27.4	20.8	13.5	21.7	29.3	29.8	33.2	C	C	C	C	C	44.2	46.9	46.2	46.9	46.3	40.3	38.3	36.7	36.2	35.28	46.95																							
12-May	34.1	34.5	Z	30.9	28.5	27.4	29.6	32.8	35.1	39.9	45.3	46.6	51.1	49.3	47.9	47.5	48.2	47.4	48.1	44.5	40.2	34.6	32.2	30.3	39.39	51.12																							
13-May	30.4	31.6	Z	24.7	30.1	21.6	28.6	33.3	39.6	45.9	44.7	46.8	48.3	49.9	50.9	51.7	53.0	53.8	52.9	51.0	47.2	43.6	43.0	43.1	41.99	53.79																							
14-May	41.8	40.5	Z	35.8	32.8	34.5	32.6	35.8	40.1	49.9	55.2	56.6	57.9	58.5	58.5	59.0	58.8	59.2	59.3	58.5	53.3	48.2	43.1	42.6	48.37	59.28																							
15-May	43.5	43.5	Z	49.5	47.8	47.8	45.8	47.3	51.4	54.7	58.7	59.9	60.6	60.6	60.8	60.5	61.0	60.8	59.9	57.6	53.2	48.9	50.6	51.5	53.73	61.04																							
16-May	48.5	47.1	Z	43.0	40.0	40.5	43.5	42.1	41.7	45.2	50.6	54.6	56.8	57.5	58.1	58.4	58.2	57.0	51.2	50.3	50.7	49.5	49.1	47.3	49.61	58.45																							
17-May	47.2	48.7	Z	51.4	46.4	47.2	44.6	44.1	40.7	41.6	41.1	43.0	46.5	48.3	46.3	46.1	46.3	45.6	43.2	36.2	32.3	33.8	36.1	31.1	42.94	51.41																							
18-May	37.0	31.0	Z	18.1	18.4	18.6	16.3	18.6	23.1	37.2	39.8	34.9	31.7	33.0	34.8	40.4	33.8	28.9	26.3	28.3	29.7	30.1	28.6	27.9	28.97	40.36																							
19-May	26.8	23.1	Z	21.2	20.1	18.5	17.7	18.3	20.8	21.9	19.6	16.6	14.5	11.9	11.1	10.7	10.8	10.8	11.2	11.1	10.8	11.0	10.9	11.8	15.70	26.81																							
20-May	12.1	12.0	Z	13.2	13.3	13.5	13.9	14.9	15.3	16.2	17.9	18.7	19.5	20.0	20.0	19.8	18.8	19.1	18.4	17.8	16.6	16.2	16.2	16.8	16.53	19.98																							
21-May	17.8	15.6	Z	14.0	15.5	15.5	14.8	15.1	15.8	16.2	16.6	16.8	18.0	19.2	19.6	19.4	19.0	16.2	15.7	15.1	14.3	13.8	12.6	14.2	16.11	19.61																							
22-May	13.7	13.4	Z	12.0	12.4	13.8	14.3	14.4	14.8	15.7	15.7	15.3	14.8	15.0	15.1	15.3	16.2	15.9	15.4	15.0	15.0	15.7	16.8	17.0	14.91	17.04																							
23-May	18.6	22.3	Z	27.7	20.6	19.6	22.5	24.0	24.2	25.9	26.8	28.5	28.7	31.8	36.1	33.9	37.0	41.6	40.3	36.8	27.0	21.9	19.5	19.4	27.60	41.57																							
24-May	22.9	15.1	Z	8.4	14.1	15.2	20.2	23.0	26.8	28.4	30.5	36.4	42.8	47.4	50.8	54.2	53.4	51.4	51.6	48.7	46.3	47.5	45.2	45.3	35.89	54.19																							
25-May	43.2	41.6	Z	31.5	23.2	20.3	24.5	30.1	32.9	39.2	47.9	52.4	55.2	55.2	48.5	40.0	35.4	33.3	34.5	35.7	29.7	25.8	27.9	25.1	36.22	55.18																							
26-May	24.0	28.7	Z	26.2	25.0	22.1	18.5	19.5	23.4	26.5	27.0	25.7	37.0	45.2	47.4	49.6	48.7	47.4	45.1	44.2	42.4	39.3	38.0	36.8	34.25	49.57																							
27-May	32.0	32.2	Z	30.4	26.1	24.4	26.0	25.2	29.3	31.4	35.5	39.7	39.4	39.7	39.6	39.2	36.7	38.4	35.6	34.9	33.0	30.8	25.5	22.0	32.48	39.74																							
28-May	23.3	20.0	Z	21.1	23.1	22.0	21.6	27.9	31.3	34.3	35.7	36.8	38.3	39.8	37.8	39.7	40.1	40.1	40.6	39.0	36.8	33.7	27.2	22.4	31.85	40.63																							
29-May	18.9	15.7	Z	20.1	10.9	9.9	12.3	12.0	15.5	26.1	32.6	42.6	43.6	48.5	47.2	43.7	43.4	42.4	36.7	34.2	30.0	27.6	25.1	26.0	28.91	48.46																							
30-May	25.6	23.7	Z	18.1	17.5	18.0	19.9	20.9	24.8	27.6	29.5	29.6	29.5	29.9	31.2	31.6	30.4	29.5	28.6	27.2	22.9	16.0	14.3	14.6	24.38	31.56																							
31-May	12.3	13.2	Z	8.9	6.2	6.0	8.4	14.2	18.4	23.8	27.5	30.1	31.5	33.3	35.0	36.8	37.4	38.3	36.0	37.4	34.6	32.1	32.1	31.7	25.44	38.26																							
																								31.65	30.61	--	27.40	25.98	24.95	25.94	28.03	31.04	35.02	38.03	39.71	41.03	42.43	42.70	42.90	42.60	42.11	40.87	39.25	35.81	34.25	33.48	32.33	Diurnal Average	
																								49.43	48.71	--	51.41	47.77	48.17	49.50	51.10	51.41	54.68	58.70	59.87	60.61	60.62	60.76	60.45	61.04	60.80	59.90	58.54	53.34	51.14	50.64	51.54	Diurnal Maximum	
Z - zerospan																								C - Calibration																									
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 82.5 ppb 24-hr -- ppb																																																	





**WCAS - Violet Grove**  
**Summary of Hourly Averages**

**Nitrogen Oxide (NO) - ppb**  
**May 2016**

Maximum Value: 17.43 ppb on May 11 05:00		Maximum Daily Average: 0.61 ppb on May 13		Hours in Service: 744																						
Minimum Value: 0.0 ppb on May 1 01:00		Minimum Daily Average: 0.06 ppb on May 7		Hours of Data: 706																						
Maximum Diurnal Average: 0.90 ppb at hour 5		Minimum Diurnal Average: 0.01 ppb at hour 1		Hours of Missing Data: 38																						
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 = 0.1 O <sub>3</sub> = 0.2 P <sub>90</sub> = 0.5 P <sub>99</sub> = 3.0		Hours of Calibration: 38																						
				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-May	0.0	Z	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.5	0.1	0.1	0.0	0.1	0.0	0.1	0.3	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.11	0.55
2-May	0.0	Z	0.0	0.0	0.0	0.5	0.9	1.8	1.4	1.0	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.27	1.80
3-May	0.0	Z	0.0	0.0	0.0	0.1	0.7	0.7	0.5	0.3	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	0.10	0.74	
4-May	0.0	Z	0.0	0.0	0.0	0.0	0.2	0.5	0.8	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.10	0.75	
5-May	0.0	Z	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.08	0.57	
6-May	0.0	Z	0.0	0.1	0.0	0.1	0.6	1.5	1.4	0.7	0.2	0.1	0.1	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.24	1.47	
7-May	0.0	Z	0.0	0.0	0.0	0.0	0.2	0.4	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.06	0.39	
8-May	0.0	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.07	0.17	
9-May	0.0	Z	0.0	0.0	0.6	0.1	0.3	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.10	0.56	
10-May	0.0	Z	0.0	0.0	0.0	0.2	0.8	1.8	0.8	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.25	1.78	
11-May	0.0	Z	0.0	0.0	17.4	3.0	3.3	1.8	1.2	1.2	C	C	C	C	C	C	C	0.2	0.1	0.1	0.1	0.1	0.0	--	17.43	
12-May	0.0	Z	0.0	0.0	0.1	0.4	0.9	1.3	0.9	0.8	0.6	1.0	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.30	1.27	
13-May	0.0	Z	2.0	0.0	0.0	6.7	1.4	1.7	0.8	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.0	0.1	0.0	0.61	6.72	
14-May	0.0	Z	0.0	0.0	1.8	0.3	0.5	1.2	1.1	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.28	1.81	
15-May	0.0	Z	0.0	0.0	0.0	0.0	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.08	0.28	
16-May	0.0	Z	0.0	0.0	0.0	0.1	0.1	0.3	0.5	0.4	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	0.08	0.55	
17-May	0.0	Z	0.0	0.0	2.9	0.0	0.1	0.2	0.1	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.17	2.89	
18-May	0.0	Z	0.0	0.0	0.0	0.1	0.7	1.0	1.0	0.4	0.2	0.1	0.1	0.0	0.0	0.0	0.2	0.1	0.6	0.4	0.1	0.0	0.0	0.21	0.98	
19-May	0.0	Z	0.0	0.0	3.4	0.0	0.0	0.0	0.2	0.4	0.5	0.7	0.4	0.5	0.3	0.3	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.32	3.40	
20-May	0.0	Z	0.0	0.0	0.0	0.1	0.3	0.5	0.7	1.2	0.5	0.3	0.2	0.1	0.3	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.21	1.16	
21-May	0.0	Z	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.4	0.1	0.0	0.1	0.15	0.39	
22-May	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.7	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.10	0.65	
23-May	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.5	1.6	2.8	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.27	2.81	
24-May	0.0	Z	0.0	0.0	0.0	0.3	0.6	0.7	0.6	0.6	0.5	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.18	0.74	
25-May	0.0	Z	0.0	0.0	0.7	0.2	1.2	1.3	1.1	0.7	0.3	0.2	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.26	1.28	
26-May	0.0	Z	0.0	0.0	0.0	0.1	0.2	0.5	0.7	0.5	0.4	0.3	0.4	0.6	0.3	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.19	0.71	
27-May	0.0	Z	0.0	0.0	0.2	0.0	0.1	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.07	0.37	
28-May	0.0	Z	0.0	0.0	0.0	0.1	0.3	0.4	0.4	0.2	0.3	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.14	0.42	
29-May	0.0	Z	0.0	0.0	0.1	0.3	0.8	2.0	3.1	0.9	0.5	0.2	0.2	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.38	3.08	
30-May	0.0	Z	0.0	0.0	0.0	3.7	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.4	0.0	0.0	0.24	3.69	
31-May	0.0	Z	0.0	0.0	0.0	1.1	3.6	2.1	0.9	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.40	3.62	
		0.01	--	0.07	0.01	0.90	0.57	0.59	0.75	0.64	0.40	0.23	0.23	0.22	0.13	0.12	0.08	0.08	0.08	0.09	0.08	0.05	0.02	0.02	0.01	Diurnal Average
		0.04	--	1.97	0.11	17.43	6.72	3.62	2.07	3.08	1.22	0.61	1.56	2.81	0.64	0.65	0.30	0.29	0.20	0.57	0.35	0.38	0.11	0.11	0.08	Diurnal Maximum
Z - zerospan		C - Calibration																								
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr --- ppb				24-hr --- ppb																				



**WCAS - Violet Grove**  
**Summary of Hourly Averages**

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

Maximum Value: 18.18 ppb on May 6 04:00		Maximum Daily Average: 4.74 ppb on May 12		Hours in Service: 744																													
Minimum Value: 1.4 ppb on May 20 13:00		Minimum Daily Average: 1.93 ppb on May 20		Hours of Data: 706																													
Maximum Diurnal Average: 4.80 ppb at hour 5		Minimum Diurnal Average: 2.12 ppb at hour 16		Hours of Missing Data: 38																													
Monthly Average: 3.015 ppb		Percentiles: P <sub>1</sub> = 1.5 P <sub>10</sub> = 1.8 Q <sub>1</sub> = 2.1 Median = 2.6 Q <sub>3</sub> = 3.5 P <sub>90</sub> = 4.8 P <sub>99</sub> = 8.7		Hours of Calibration: 38																													
Percentiles: P <sub>1</sub> = 1.5 P <sub>10</sub> = 1.8 Q <sub>1</sub> = 2.1 Median = 2.6 Q <sub>3</sub> = 3.5 P <sub>90</sub> = 4.8 P <sub>99</sub> = 8.7		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-May	3.5	Z	4.7	4.9	4.5	4.5	4.0	3.0	3.3	3.3	2.2	2.1	2.1	2.0	1.9	2.0	2.0	1.9	1.9	2.0	3.4	2.9	2.4	3.1	2.93	4.90							
2-May	3.5	Z	5.2	5.4	6.3	9.1	7.3	6.4	5.3	4.4	3.5	2.5	2.1	2.1	2.1	2.0	2.1	2.3	2.4	2.6	2.9	3.4	3.7	3.6	3.91	9.08							
3-May	3.5	Z	4.1	5.3	7.8	7.3	7.9	4.8	3.7	3.2	2.4	2.0	1.9	1.9	1.8	1.8	1.9	2.1	2.2	2.4	2.7	2.8	2.5	2.6	3.41	7.86							
4-May	2.9	Z	4.3	4.6	5.1	5.3	4.1	5.1	4.7	3.4	3.0	2.4	2.3	2.3	2.3	2.4	2.6	2.9	3.3	2.8	2.7	4.3	4.4	3.0	3.50	5.32							
5-May	2.6	Z	2.7	2.1	3.3	2.2	2.3	2.3	2.2	2.2	2.2	2.0	2.0	2.0	2.0	2.1	2.1	2.2	1.9	2.1	2.7	2.2	2.3	2.4	2.26	3.34							
6-May	2.5	Z	8.1	18.2	6.8	6.4	4.8	5.4	5.0	3.5	2.5	2.2	2.2	2.1	2.3	2.1	2.1	2.2	2.2	2.9	2.9	3.1	3.3	4.3	4.23	18.18							
7-May	3.4	Z	5.8	5.8	5.4	5.0	3.9	3.9	3.3	3.2	2.9	2.7	2.5	2.1	2.1	2.2	2.2	2.5	2.9	2.8	3.1	3.2	3.3	3.9	3.39	5.79							
8-May	3.9	Z	2.4	2.7	2.4	2.3	2.4	2.2	2.2	2.3	2.1	2.4	2.3	2.2	1.7	1.6	1.5	1.6	1.7	1.8	1.9	2.1	1.8	1.7	2.14	3.92							
9-May	1.9	Z	2.5	3.3	3.7	3.7	3.1	2.5	2.1	1.9	1.7	1.6	1.5	1.5	1.5	1.6	1.6	1.8	1.7	1.7	1.8	1.9	2.5	3.9	2.21	3.89							
10-May	3.0	Z	3.7	4.1	5.7	5.5	4.8	5.1	3.3	2.1	1.7	1.6	1.7	1.7	1.8	1.8	1.8	1.9	1.9	2.2	2.3	2.5	3.5	3.4	2.92	5.65							
11-May	3.0	Z	3.9	3.7	12.7	9.5	8.8	5.8	4.2	4.3	C	C	C	C	C	C	C	2.9	3.6	4.2	4.0	3.6	4.5	4.9	--	12.67							
12-May	7.0	Z	5.6	6.1	6.7	7.5	6.9	6.6	5.2	4.3	4.0	5.5	3.6	3.2	2.8	2.8	2.8	2.5	2.2	2.6	3.7	4.9	5.9	6.4	4.74	7.45							
13-May	4.2	Z	5.4	5.1	5.0	10.2	6.1	7.0	4.0	2.3	2.2	2.1	2.1	2.1	2.2	2.3	2.4	2.3	2.4	2.6	2.9	3.3	3.0	2.8	3.66	10.24							
14-May	3.2	Z	3.8	3.7	9.3	6.0	5.7	6.6	5.7	3.9	3.0	2.9	2.8	2.9	2.7	2.7	2.6	2.6	2.7	2.7	2.8	3.1	3.6	4.3	3.88	9.31							
15-May	4.0	Z	3.8	3.8	4.0	4.8	4.8	4.3	3.2	3.2	2.8	2.8	2.7	2.8	2.4	2.4	2.4	2.4	2.4	2.5	2.7	4.9	3.6	3.1	3.31	4.91							
16-May	2.9	Z	3.0	3.0	4.1	4.5	3.3	3.3	4.0	3.7	2.9	2.7	2.4	2.1	2.1	2.0	2.1	2.1	2.2	2.6	3.6	2.9	3.2	3.2	2.95	4.51							
17-May	2.6	Z	2.1	2.2	7.9	2.6	3.2	3.6	2.8	2.2	2.1	2.2	2.3	2.3	2.3	2.3	2.4	2.3	2.5	3.1	2.7	3.1	3.1	3.8	2.86	7.86							
18-May	3.4	Z	4.4	4.1	3.9	4.3	5.8	5.0	4.3	3.8	3.3	2.6	2.4	2.1	2.0	2.7	3.1	2.6	3.0	2.3	2.4	2.3	2.3	2.4	3.23	5.76							
19-May	2.3	Z	3.3	2.6	5.1	3.5	2.9	2.6	3.3	3.4	3.4	3.3	2.6	2.5	2.7	2.8	2.6	2.5	2.2	2.4	2.4	2.2	2.8	2.2	2.85	5.09							
20-May	2.3	Z	2.5	2.8	2.9	3.1	3.0	2.3	1.9	2.0	1.6	1.5	1.4	1.5	1.5	1.5	1.5	1.6	1.5	1.6	1.6	1.5	1.7	1.7	1.93	3.10							
21-May	1.5	Z	2.1	1.8	2.0	2.3	2.8	2.2	2.0	2.1	2.1	2.3	2.0	1.9	2.0	1.8	1.9	2.3	2.1	2.1	2.2	2.1	2.2	1.9	2.07	2.80							
22-May	1.8	Z	1.8	2.1	2.1	2.0	2.1	2.2	2.1	2.1	1.9	2.0	1.9	1.9	2.1	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.1	2.01	2.17							
23-May	2.1	Z	1.6	1.9	2.3	2.5	2.3	2.2	2.3	2.1	2.2	2.5	3.5	1.9	2.0	1.9	2.0	2.1	2.1	2.3	2.8	3.2	3.6	3.4	2.38	3.56							
24-May	3.4	Z	3.0	2.7	4.0	3.7	3.1	2.8	2.6	2.8	2.7	2.4	2.4	2.2	2.3	2.2	2.1	2.3	2.6	2.8	2.9	3.3	3.4	3.5	2.83	3.99							
25-May	3.6	Z	4.0	3.7	5.2	3.8	7.2	5.7	4.9	4.2	3.7	3.4	2.9	2.7	2.6	2.6	3.0	2.4	2.5	2.6	2.5	2.6	2.5	2.5	3.52	7.19							
26-May	2.9	Z	3.0	3.1	3.3	3.3	3.4	4.1	3.6	3.0	3.2	3.1	2.8	4.2	3.6	2.9	2.5	2.9	2.6	2.8	2.9	2.7	2.5	2.3	3.07	4.23							
27-May	3.4	Z	2.7	2.9	2.9	3.2	3.4	3.8	3.1	2.9	2.3	2.1	2.1	2.0	2.0	2.1	2.2	2.1	2.4	2.3	2.3	2.1	2.2	2.2	2.56	3.81							
28-May	2.3	Z	2.6	2.7	3.2	2.7	2.2	2.3	2.1	1.9	2.6	1.7	1.7	1.6	1.7	1.6	1.6	1.7	1.7	2.0	2.7	3.6	3.5	3.6	2.32	3.64							
29-May	4.9	Z	4.6	4.1	4.1	4.0	3.9	4.3	4.1	3.1	2.7	2.1	2.0	1.9	2.1	1.8	1.9	1.7	1.9	2.0	1.9	2.0	2.2	1.8	2.84	4.93							
30-May	1.8	Z	3.8	2.8	2.2	5.5	1.9	2.0	1.7	1.8	1.6	1.6	1.7	1.6	1.7	1.6	1.7	1.7	1.7	2.0	3.1	2.2	2.1	2.3	2.18	5.51							
31-May	2.2	Z	2.4	3.9	5.0	4.1	5.1	3.6	2.6	2.3	1.9	1.9	1.9	2.0	2.0	1.9	2.1	2.0	2.1	2.3	2.4	3.1	3.6	4.3	2.81	5.11							
		3.08	--	3.65	4.03	4.80	4.66	4.28	3.97	3.39	2.93	2.55	2.40	2.25	2.18	2.14	2.12	2.16	2.20	2.28	2.43	2.68	2.87	3.00	3.11	Diurnal Average							
		6.98	--	8.14	18.18	12.67	10.24	8.83	7.01	5.70	4.36	4.03	5.54	3.62	4.23	3.55	2.89	3.13	2.91	3.56	4.22	4.05	4.91	5.92	6.45	Diurnal Maximum							
Z - zerospan		C - Calibration																															
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr 159 ppb				24-hr 106 ppb																											



**WCAS - Violet Grove**  
**Summary of Hourly Averages**

**NOx (NO<sub>x</sub>) - ppb**  
**May 2016**

Maximum Value: 27.17 ppb on May 11 05:00		Maximum Daily Average: 4.48 ppb on May 12		Hours in Service: 744																							
Minimum Value: 0.7 ppb on May 9 13:00		Minimum Daily Average: 1.34 ppb on May 8		Hours of Data: 706																							
Maximum Diurnal Average: 4.95 ppb at hour 5		Minimum Diurnal Average: 1.53 ppb at hour 16		Hours of Missing Data: 38																							
Monthly Average: 2.578 ppb		Percentiles: P <sub>1</sub> = 0.8 P <sub>10</sub> = 1.2 Q <sub>1</sub> = 1.5 Median = 2.0 O <sub>3</sub> = 3.0 P <sub>90</sub> = 4.6 P <sub>99</sub> = 10.0		Hours of Calibration: 38																							
				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-May	2.7	Z	3.9	4.1	3.7	3.7	3.5	2.7	3.1	3.0	1.6	1.4	1.4	1.3	1.1	1.3	1.6	1.2	1.2	1.2	2.8	2.1	1.6	2.3	2.29	4.11	
2-May	2.8	Z	4.4	4.7	5.5	8.9	7.4	7.5	5.9	4.5	3.1	1.8	1.4	1.3	1.3	1.3	1.3	1.5	1.7	1.8	2.1	2.6	2.9	2.8	3.41	8.85	
3-May	2.7	Z	3.3	4.5	7.0	6.7	7.8	4.7	3.4	2.8	1.7	1.3	1.1	1.1	1.0	1.0	1.0	1.2	1.4	1.5	1.9	2.0	1.7	1.8	2.72	7.80	
4-May	2.1	Z	3.5	3.8	4.4	4.6	3.6	4.9	4.7	2.9	2.4	1.7	1.6	1.5	1.5	1.6	1.8	2.2	2.6	2.0	2.0	3.7	3.8	2.3	2.83	4.85	
5-May	1.8	Z	1.9	1.3	3.1	1.4	1.5	1.5	1.4	1.5	1.4	1.2	1.2	1.3	1.3	1.4	1.4	1.5	1.2	1.4	1.9	1.4	1.5	1.6	1.53	3.14	
6-May	1.7	Z	7.3	17.4	6.0	5.8	4.6	6.1	5.6	3.4	1.9	1.6	1.5	1.8	1.6	1.4	1.4	1.4	1.5	2.2	2.1	2.3	2.6	3.5	3.67	17.44	
7-May	2.6	Z	5.0	5.0	4.7	4.2	3.3	3.5	2.8	2.7	2.3	2.0	1.7	1.3	1.3	1.3	1.3	1.6	2.1	1.9	2.3	2.4	2.4	3.1	2.65	5.03	
8-May	3.1	Z	1.6	1.9	1.6	1.5	1.6	1.5	1.4	1.5	1.3	1.7	1.5	1.4	0.9	0.8	0.7	0.9	1.0	1.0	1.1	1.2	1.0	0.8	1.34	3.10	
9-May	1.0	Z	1.6	2.4	3.4	2.9	2.5	1.8	1.3	1.1	1.0	0.7	0.7	0.7	0.7	0.8	0.8	1.1	0.9	1.0	1.0	1.1	1.6	3.0	1.44	3.39	
10-May	2.1	Z	2.8	3.3	4.8	4.8	4.8	6.1	3.3	1.5	1.0	0.9	1.0	1.1	1.1	1.2	1.1	1.3	1.2	1.5	1.6	1.8	2.8	2.6	2.33	6.09	
11-May	2.2	Z	3.0	2.8	27.2	11.7	11.3	6.8	4.7	4.7	C	C	C	C	C	C	C	2.4	3.1	3.7	3.5	3.1	3.9	4.3	--	27.17	
12-May	6.4	Z	5.0	5.6	6.3	7.2	7.3	7.3	5.6	4.6	4.1	6.0	3.3	2.7	2.3	2.4	2.3	2.1	1.7	2.2	3.2	4.3	5.3	5.9	4.48	7.31	
13-May	3.6	Z	6.7	4.6	4.4	16.3	6.9	8.1	4.2	1.9	1.7	1.6	1.6	1.7	1.8	1.9	2.0	1.8	2.0	2.1	2.4	2.7	2.4	2.2	3.68	16.34	
14-May	2.6	Z	3.2	3.1	10.5	5.7	5.6	7.2	6.2	3.7	2.5	2.5	2.3	2.4	2.2	2.2	2.1	2.1	2.2	2.1	2.2	2.5	3.1	3.7	3.56	10.49	
15-May	3.5	Z	3.2	3.1	3.4	4.2	4.4	4.0	2.8	2.7	2.4	2.4	2.2	2.4	2.1	1.9	1.9	1.9	1.9	2.0	2.1	4.3	3.0	2.5	2.79	4.42	
16-May	2.4	Z	2.4	2.4	3.5	4.0	2.8	3.0	3.9	3.6	2.5	2.2	1.9	1.5	1.5	1.4	1.5	1.5	1.7	2.0	3.1	2.3	2.6	2.6	2.44	3.97	
17-May	2.0	Z	1.6	1.6	10.2	2.1	2.8	3.2	2.4	1.7	1.7	1.9	1.8	1.8	1.8	1.7	1.8	1.7	2.1	2.6	2.1	2.5	2.6	3.2	2.47	10.16	
18-May	2.8	Z	3.9	3.5	3.3	3.8	5.9	5.4	4.7	3.6	2.9	2.2	2.0	1.5	1.5	2.1	2.7	2.2	3.0	2.1	1.9	1.8	1.7	1.9	2.88	5.93	
19-May	1.7	Z	2.7	2.0	7.9	2.9	2.3	2.1	2.9	3.2	3.2	3.4	2.4	2.4	2.4	2.5	2.2	2.1	1.7	1.8	1.7	1.6	2.1	1.6	2.56	7.89	
20-May	1.6	Z	1.9	2.2	2.2	2.6	2.6	2.2	1.9	2.5	1.5	1.2	0.9	1.0	1.1	0.9	0.9	1.1	1.0	1.0	1.0	0.9	1.1	1.2	1.51	2.62	
21-May	0.9	Z	1.4	1.2	1.3	1.7	2.3	1.6	1.5	1.7	1.6	2.0	1.6	1.5	1.6	1.3	1.3	1.7	1.5	1.8	1.6	1.4	1.6	1.2	1.54	2.26	
22-May	1.1	Z	1.2	1.4	1.4	1.3	1.4	1.5	1.5	1.5	1.4	1.5	1.4	1.4	2.1	1.5	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.4	1.42	2.09	
23-May	1.4	Z	1.0	1.2	1.6	1.8	1.7	1.5	1.7	1.6	2.0	3.4	5.6	1.3	1.5	1.3	1.5	1.5	1.6	1.8	2.2	2.7	2.9	2.8	1.99	5.64	
24-May	2.8	Z	2.4	2.0	3.3	3.3	3.1	2.9	2.6	2.7	2.5	2.0	1.9	1.8	1.8	1.6	1.5	1.7	2.0	2.2	2.4	2.7	2.8	2.8	2.39	3.33	
25-May	3.0	Z	3.4	3.1	5.2	3.4	7.8	6.4	5.4	4.3	3.4	3.0	2.4	2.2	2.0	2.1	2.5	1.9	2.1	2.1	2.0	2.1	2.0	1.9	3.21	7.79	
26-May	2.3	Z	2.5	2.6	2.8	2.8	3.0	4.1	3.7	2.9	3.0	2.8	2.5	4.3	3.3	2.5	2.1	2.4	2.0	2.3	2.3	2.1	1.9	1.7	2.69	4.29	
27-May	2.8	Z	2.2	2.3	2.5	2.6	2.9	3.6	2.7	2.4	1.8	1.6	1.5	1.5	1.5	1.7	1.7	1.6	1.8	1.8	1.7	1.5	1.6	1.5	2.03	3.56	
28-May	1.7	Z	1.9	2.1	2.5	2.2	1.9	2.1	1.9	1.4	2.3	1.2	1.3	1.1	1.2	1.1	1.1	1.2	1.2	1.6	2.2	3.1	2.9	3.0	1.82	3.09	
29-May	4.3	Z	4.0	3.4	3.5	3.7	4.0	5.7	6.6	3.4	2.5	1.7	1.6	1.5	1.6	1.3	1.4	1.2	1.4	1.5	1.4	1.5	1.7	1.3	2.61	6.58	
30-May	1.2	Z	3.2	2.1	1.6	8.6	1.4	1.6	1.3	1.3	1.1	1.1	1.2	1.2	1.3	1.2	1.3	1.3	1.3	1.7	2.9	1.7	1.6	1.8	1.88	8.64	
31-May	1.7	Z	1.9	3.3	4.5	4.7	8.2	5.2	3.0	2.2	1.6	1.5	1.5	1.6	1.6	1.5	1.6	1.5	1.6	1.8	1.9	2.6	3.0	3.8	2.69	8.22	
		2.41	--	3.03	3.35	4.95	4.56	4.20	4.05	3.36	2.66	2.11	1.97	1.81	1.64	1.60	1.53	1.58	1.63	1.70	1.84	2.07	2.23	2.36	2.45	Diurnal Average	
		6.41	--	7.32	17.44	27.17	16.34	11.29	8.14	6.58	4.74	4.08	5.97	5.64	4.29	3.29	2.47	2.72	2.44	3.07	3.72	3.51	4.33	5.35	5.87	Diurnal Maximum	
Z - zerospan		C - Calibration																									
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr --- ppb				24-hr --- ppb																					



**WCAS - Violet Grove**  
**Summary of Hourly Averages**

**Total Hydrocarbon (THC) - ppm**  
**May 2016**

Maximum Value: 6.73 ppm on May 14 00:00		Maximum Daily Average: 2.60 ppm on May 13		Hours in Service: 744																						
Minimum Value: 1.9 ppm on May 1 15:00		Minimum Daily Average: 1.97 ppm on May 8		Hours of Data: 707																						
Maximum Diurnal Average: 2.51 ppm at hour 24		Minimum Diurnal Average: 2.06 ppm at hour 15		Hours of Missing Data: 37																						
Monthly Average: 2.190 ppm		Percentiles: P <sub>1</sub> = 1.9 P <sub>10</sub> = 2.0 Q <sub>1</sub> = 2.1 Median = 2.1 Q <sub>3</sub> = 2.2 P <sub>90</sub> = 2.3 P <sub>99</sub> = 4.3		Hours of Calibration: 36																						
Percent Operational Time: 99.9																										
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-May	2.1	2.1	2.1	Z	2.2	2.2	2.2	2.2	2.2	2.1	2.0	2.0	2.0	1.9	1.9	1.9	1.9	2.0	2.0	2.1	4.7	2.3	2.0	2.0	2.18	4.73
2-May	2.1	2.1	2.1	Z	2.2	2.2	2.2	2.2	2.5	2.3	2.2	2.0	2.0	1.9	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.7	2.11	2.74
3-May	2.8	2.3	2.2	Z	2.3	2.2	2.2	2.3	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	4.3	2.1	2.1	2.0	2.22	4.30
4-May	2.1	2.1	2.1	Z	2.2	2.2	2.3	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.06	2.26
5-May	2.0	2.0	2.0	Z	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.03	2.12
6-May	2.2	2.3	2.3	Z	2.4	2.3	2.3	2.3	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.1	2.0	2.1	2.3	2.2	2.2	2.18	2.37
7-May	2.1	2.1	2.2	Z	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.07	2.20
8-May	2.1	2.0	2.0	Z	2.0	2.0	1.9	2.0	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.97	2.08
9-May	2.0	2.0	2.0	Z	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.01	2.09
10-May	2.1	2.2	2.2	Z	2.2	2.2	2.2	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.4	3.6	2.3	2.6	2.18	3.62
11-May	2.1	2.0	2.1	Z	2.5	2.3	2.3	2.3	2.3	2.3	C	C	C	C	C	2.4	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.21	2.45
12-May	2.2	2.2	2.2	Z	2.1	2.2	2.2	2.2	M	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	3.7	4.2	4.1	2.40	4.21
13-May	4.1	2.9	2.3	Z	2.3	2.5	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.5	4.3	6.7	2.60	6.73
14-May	2.1	2.5	3.5	Z	2.3	2.3	2.3	2.2	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.2	3.3	2.2	2.29	3.53
15-May	2.2	3.1	2.2	Z	2.2	2.2	2.2	2.6	2.4	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.24	3.14
16-May	2.1	2.2	2.1	Z	2.2	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.1	2.1	2.1	2.3	2.6	2.1	2.1	2.14	2.60
17-May	2.1	2.1	2.1	Z	2.0	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.3	5.1	5.7	3.6	2.42	5.66
18-May	2.8	2.7	2.5	Z	2.4	2.4	2.4	2.5	2.3	2.3	2.4	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.22	2.84
19-May	2.0	2.0	2.1	Z	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.06	2.11
20-May	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.11	2.17
21-May	2.1	2.2	2.2	Z	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.12	2.20
22-May	2.1	2.0	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.06	2.12
23-May	2.1	2.1	2.0	Z	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.8	3.3	2.3	2.2	2.17	3.35
24-May	2.2	2.2	2.2	Z	3.7	2.6	2.3	2.2	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.8	2.2	2.27	3.66
25-May	2.1	2.1	2.2	Z	2.2	2.3	2.5	2.3	2.4	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2.1	2.2	2.19	2.46
26-May	2.2	2.3	2.2	Z	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.14	2.27
27-May	2.1	2.1	2.1	Z	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2.2	2.1	2.1	2.2	2.1	2.13	2.18
28-May	2.1	2.2	2.2	Z	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.7	2.19	2.66
29-May	2.6	2.8	2.5	Z	3.6	2.7	2.5	2.5	2.5	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.1	2.1	2.1	2.1	2.1	2.35	3.58
30-May	2.1	2.2	2.2	Z	2.2	2.2	2.1	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.4	3.4	4.8	2.34	4.78	
31-May	2.4	2.3	2.4	Z	2.5	2.5	2.5	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.25	2.53
																								Diurnal Average		
																								Diurnal Maximum		
2.24 2.24 2.21 -- 2.28 2.22 2.21 2.21 2.19 2.13 2.11 2.08 2.07 2.06 2.06 2.07 2.06 2.07 2.08 2.09 2.30 2.39 2.48 2.51																										
4.09 3.14 3.53 -- 3.66 2.69 2.54 2.56 2.49 2.30 2.41 2.22 2.19 2.17 2.17 2.37 2.18 2.17 2.27 2.23 4.73 5.11 5.66 6.73																										
Z - zerospan      C - Calibration      M - Maintenance Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb      24-hr 3 ppb																										

**VIOLET GROVE  
STATION #902**

**METEOROLOGICAL DATA**

**MAY 2016**



**WCAS - Violet Grove**  
**Summary of Hourly Averages**

**External Temperature (ET) - C**  
**May 2016**

Maximum Value: 25.83 C on May 7 18:00		Maximum Daily Average: 18.98 C on May 3		Hours in Service: 744																							
Minimum Value: -2.3 C on May 13 06:00		Minimum Daily Average: 0.88 C on May 20		Hours of Data: 744																							
Maximum Diurnal Average: 13.94 C at hour 17		Minimum Diurnal Average: 4.52 C at hour 6		Hours of Missing Data: 0																							
Monthly Average: 9.731 C		Percentiles: P <sub>1</sub> = -1.1 P <sub>10</sub> = 2.0 Q <sub>1</sub> = 4.7 Median = 9.1 Q <sub>3</sub> = 13.6 P <sub>90</sub> = 18.8 P <sub>99</sub> = 24.8		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-May	8.4	7.0	6.4	4.9	4.0	3.8	4.3	6.9	10.4	13.0	15.1	16.9	18.1	19.3	20.0	20.7	21.0	21.1	21.0	19.9	17.6	16.8	16.8	16.4	13.75	21.09	
2-May	15.4	14.5	14.2	13.2	11.7	10.7	10.1	10.8	13.4	16.9	19.9	22.0	23.0	23.4	24.3	24.8	25.0	24.5	23.1	21.0	19.1	18.3	17.5	16.4	18.05	24.98	
3-May	15.0	14.6	13.0	11.0	11.0	11.2	11.9	13.5	16.5	19.8	22.3	23.1	23.7	24.5	25.1	25.5	25.6	25.1	24.3	22.9	21.1	20.3	17.9	16.7	18.98	25.61	
4-May	15.8	15.5	14.6	12.5	10.7	9.9	10.6	10.8	14.7	18.8	21.5	22.5	22.7	23.0	22.6	22.1	22.4	21.3	19.5	18.3	15.5	13.6	12.4	11.6	16.79	23.04	
5-May	11.3	10.7	10.1	9.9	9.3	7.3	5.9	5.6	6.2	6.9	7.7	9.0	9.9	10.9	12.3	13.3	13.9	14.4	14.2	13.5	11.5	10.4	8.2	7.0	9.97	14.41	
6-May	4.9	4.1	3.4	3.3	1.7	2.1	3.4	5.5	9.0	11.4	13.5	14.9	16.0	17.1	17.9	18.9	19.5	19.8	19.6	17.4	15.5	14.9	14.6	14.4	11.78	19.76	
7-May	13.3	12.1	11.0	9.7	8.9	7.7	9.1	11.4	15.7	18.1	20.1	21.6	22.9	24.1	24.8	25.5	25.7	25.8	25.4	23.8	20.8	19.5	18.2	17.4	18.02	25.83	
8-May	14.1	13.7	12.2	10.6	9.8	8.6	7.3	4.0	4.3	4.3	4.5	6.6	9.3	12.7	13.3	13.6	12.9	11.6	8.9	7.4	6.3	5.6	4.2	3.2	8.71	14.14	
9-May	2.3	2.2	2.4	1.8	1.8	2.1	3.0	3.8	4.2	4.6	5.4	6.2	6.9	7.2	7.4	7.7	7.9	7.6	7.6	7.4	6.3	4.4	3.2	2.5	4.84	7.89	
10-May	1.3	0.3	-0.6	-1.1	-0.9	-0.6	0.4	3.0	5.9	8.4	9.2	9.6	10.4	10.5	11.1	11.2	12.1	12.1	11.7	10.9	9.0	7.2	7.0	5.9	6.42	12.13	
11-May	6.0	5.9	4.5	1.3	-0.6	-1.1	3.1	5.1	6.8	8.9	10.9	11.7	12.3	12.4	12.5	12.4	12.1	11.6	10.9	10.0	9.0	8.3	7.7	7.1	7.87	12.46	
12-May	6.5	5.6	3.8	2.4	2.0	1.2	1.6	2.8	3.5	5.1	6.2	6.6	7.3	7.9	8.4	8.6	8.6	8.4	8.5	7.9	6.2	4.7	4.1	2.7	5.45	8.64	
13-May	2.0	1.9	0.8	-0.3	0.7	-2.3	1.0	3.6	6.4	7.6	8.5	9.3	10.1	10.8	11.4	12.1	12.4	12.4	12.3	11.7	9.9	8.0	6.5	6.0	6.78	12.38	
14-May	5.2	4.2	3.5	1.3	1.3	2.2	3.0	5.6	8.3	10.4	11.2	12.1	13.0	13.8	14.3	14.7	14.9	14.9	14.6	13.9	11.7	10.0	9.0	7.9	9.21	14.89	
15-May	6.4	5.9	6.5	5.9	5.2	5.3	5.7	8.0	10.5	12.6	14.1	14.7	15.4	16.2	16.9	17.4	17.6	17.7	17.3	16.3	13.7	11.8	11.2	10.3	11.77	17.66	
16-May	9.3	8.2	7.4	6.1	5.4	6.1	7.2	8.6	10.8	13.4	16.2	18.6	20.3	21.3	22.1	22.3	22.5	22.3	20.6	19.8	19.5	18.0	17.6	16.8	15.02	22.53	
17-May	15.3	14.3	13.5	12.4	11.0	10.3	10.6	11.7	12.5	14.7	15.5	16.4	17.2	18.5	18.4	19.0	19.7	20.0	19.4	18.0	16.9	16.3	15.6	14.0	15.46	20.04	
18-May	14.0	12.9	11.5	10.3	10.2	10.0	9.9	10.9	13.4	16.9	18.6	19.8	20.1	20.8	21.2	18.1	13.9	13.9	12.8	11.0	10.6	9.9	9.4	8.7	13.70	21.22	
19-May	8.2	7.8	7.6	7.3	7.1	7.1	7.1	7.3	7.0	6.8	7.1	7.4	6.7	5.1	4.1	3.0	2.1	1.4	0.9	0.3	0.0	-0.3	-0.5	-0.5	4.59	8.22	
20-May	-0.6	-0.8	-0.9	-1.1	-1.2	-1.2	-1.3	-1.4	-1.1	-0.4	0.3	0.9	1.8	2.6	3.0	3.0	3.0	3.2	3.1	2.7	2.2	1.9	1.6	1.5	0.88	3.20	
21-May	1.2	1.1	0.8	0.5	0.3	0.1	0.0	0.0	0.2	0.5	0.8	1.5	2.5	3.5	4.3	4.4	4.6	3.9	3.7	3.4	2.9	2.7	2.1	1.5	1.94	4.64	
22-May	1.3	1.2	1.1	1.1	1.1	1.2	1.2	1.2	0.9	1.1	1.7	2.0	2.4	2.8	2.9	3.1	3.0	2.7	2.2	2.1	2.5	2.6	2.7	2.8	1.96	3.15	
23-May	3.0	3.4	3.9	3.9	3.7	3.8	3.7	3.7	4.2	5.1	6.0	6.8	6.8	7.4	9.1	10.2	11.4	11.1	10.7	10.2	9.4	8.2	7.7	6.2	6.65	11.36	
24-May	5.4	4.3	3.5	3.5	3.2	2.9	4.1	5.3	6.6	8.2	9.8	10.9	12.4	13.6	14.9	16.0	16.7	17.0	16.5	15.4	13.8	12.3	11.2	10.7	9.93	17.00	
25-May	10.1	9.6	8.8	6.8	5.3	6.4	7.1	10.0	12.7	14.3	16.2	17.5	18.4	19.0	17.1	12.1	11.4	11.6	12.0	12.5	11.4	10.8	10.4	9.5	11.72	19.00	
26-May	9.1	9.8	9.4	9.1	8.5	8.3	8.3	8.9	10.6	11.9	12.4	12.1	14.1	15.8	15.8	16.3	16.2	15.4	10.8	9.6	9.2	8.2	8.0	7.7	11.07	16.28	
27-May	7.4	6.6	6.1	6.0	6.0	6.1	6.3	6.6	7.0	6.9	6.8	6.8	6.8	6.7	6.9	7.5	7.7	7.9	7.8	7.4	6.7	6.1	5.2	4.7	6.67	7.87	
28-May	4.6	3.5	2.9	2.9	3.2	3.3	4.8	6.8	8.0	9.0	10.0	10.9	11.5	12.3	11.6	12.4	11.7	11.5	11.6	10.6	9.1	7.8	6.3	5.1	7.98	12.36	
29-May	3.9	3.7	3.7	3.7	2.5	1.4	1.8	2.3	5.4	8.9	11.0	12.7	12.8	13.6	10.9	7.9	8.6	8.8	9.4	9.3	8.5	7.4	7.0	6.9	7.16	13.60	
30-May	6.2	5.4	4.6	3.9	3.5	3.3	3.5	4.5	6.6	7.8	8.9	9.6	10.0	11.0	12.1	12.7	12.8	12.8	12.2	11.7	10.2	8.2	8.6	8.0	8.25	12.83	
31-May	6.7	4.9	4.9	4.0	3.0	2.9	4.6	7.4	9.2	10.4	11.4	12.3	13.3	14.1	14.6	15.2	15.3	15.9	15.4	14.8	13.1	11.8	11.5	10.7	10.31	15.87	
		7.52	6.91	6.27	5.38	4.83	4.52	5.14	6.26	8.07	9.75	11.06	12.03	12.84	13.62	13.91	13.92	13.94	13.80	13.16	12.30	10.95	9.87	9.13	8.38	Diurnal Average	
		15.79	15.46	14.56	13.21	11.67	11.23	11.89	13.46	16.51	19.84	22.27	23.14	23.70	24.50	25.07	25.48	25.69	25.83	25.37	23.76	21.07	20.34	18.22	17.38	Diurnal Maximum	



**WCAS - Violet Grove**  
**Summary of Hourly Averages**

**Wind Speed (WS) - kph**  
**May 2016**

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1 Spd	10.6	9.7	10.5	8.4	8.2	9.5	9.7	9.1	11.0	8.3	6.2	9.0	11.0	5.8	7.6	4.9	1.6	1.6	1.5	2.4	5.7	5.9	7.7	8.5	5.93	11.03
Dir	SW	SW	SW	WSW	W	WSW	W	W	W	W	W	W	WNW	NW	W	WNW	WSW	SW	WSW	SSE	S	S	SSW	SSW	WSW	NNW
2 Spd	10.8	9.8	9.6	10.3	7.5	4.3	1.8	3.1	5.2	7.4	12.6	13.8	11.9	13.4	13.1	12.5	13.8	16.1	13.5	11.3	10.5	11.4	11.3	6.7	8.55	16.14
Dir	SSW	SW	SSW	SW	SW	SSW	WSW	SSE	SSE	SSE	SSE	SE	SE	SE	SE	SE	SE	SE	ESE	SE	SE	SSE	SSE	SSE	SSE	SE
3 Spd	5.5	5.1	7.5	12.9	9.3	10.4	13.0	14.1	14.4	13.1	13.8	5.2	5.3	6.8	5.7	4.6	6.4	10.2	11.7	9.2	6.2	13.5	8.5	5.2	5.45	14.37
Dir	S	SSW	W	W	W	W	W	W	W	WNW	NW	NW	SW	W	WSW	SW	SE	ESE	SE	SE	S	W	W	W	WSW	W
4 Spd	5.0	7.6	6.3	5.4	5.4	2.5	2.9	2.6	5.5	7.9	9.4	6.8	12.3	10.3	10.9	9.1	7.2	7.7	4.9	15.5	13.2	6.8	4.7	7.2	4.78	15.55
Dir	WSW	WSW	WSW	WSW	W	SSW	SSW	WSW	SW	SW	WSW	SW	W	WSW	W	WNW	NNW	N	NNW	NW	NNW	NNE	NNE	NNW	WNW	NW
5 Spd	10.3	12.2	12.2	17.5	14.9	18.2	17.9	15.0	11.9	13.1	9.7	9.4	11.8	13.2	15.9	14.6	16.4	10.5	11.1	7.3	4.1	3.5	1.1	3.4	10.69	18.18
Dir	N	NNW	NNW	NNW	NNW	NW	NW	NW	WNW	WNW	WNW	NW	WNW	WNW	WNW	WNW	WNW	NW	NW	WSW	WSW	SW	W	W	NW	NW
6 Spd	4.5	6.7	10.2	14.1	10.1	13.0	10.3	8.8	7.3	4.3	1.5	1.8	3.5	1.1	5.0	4.7	2.3	2.2	6.4	6.9	7.1	9.5	10.4	10.4	4.52	14.11
Dir	WSW	WSW	W	W	W	W	W	WSW	W	NW	WNW	W	W	SW	ESE	WSW	W	S	SSE	SE	SSE	S	S	SSW	WSW	W
7 Spd	11.1	11.7	10.8	11.2	9.2	9.5	7.5	8.0	7.3	5.6	8.2	10.1	9.3	7.5	6.5	6.1	8.2	11.9	8.4	3.8	5.2	5.5	12.6	11.0	5.68	12.62
Dir	SW	SW	SW	SW	WSW	WSW	W	W	WSW	SW	S	S	S	SSW	SSW	SSE	SSE	E	E	E	W	WSW	W	WSW	SW	WSW
8 Spd	13.4	17.9	9.9	4.8	16.4	10.7	24.4	19.0	10.1	12.1	10.0	12.3	12.1	27.1	30.4	31.7	32.6	31.8	31.2	28.7	23.5	24.9	21.6	18.7	18.47	32.63
Dir	NW	NNW	NNW	N	N	N	NNW	NNW	NNW	WNW	W	W	WSW	WNW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW
9 Spd	17.3	15.6	14.4	13.8	15.5	16.1	14.5	15.1	18.3	22.7	23.0	24.7	24.2	26.0	24.4	25.2	23.3	17.1	17.3	18.6	11.8	7.8	6.5	7.8	16.89	26.00
Dir	NW	NW	NW	WNW	WNW	NW	WNW	NW	NW	NW	NNW	NNW	NW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	WNW	WNW	WNW	NW	NNW
10 Spd	8.3	9.4	8.5	8.8	8.8	10.5	10.7	13.4	7.9	6.8	12.1	9.4	7.8	8.3	7.1	5.0	6.2	5.5	4.3	5.4	3.5	4.7	5.7	5.5	3.57	13.35
Dir	W	W	W	W	W	W	W	WNW	WNW	N	N	NNW	N	NNE	NNE	NNE	NNW	N	NE	ESE	SE	SSE	S	S	NW	WNW
11 Spd	7.2	9.3	5.3	1.5	0.2	0.9	1.6	2.6	4.5	7.0	9.0	8.7	9.9	10.9	11.5	13.3	15.5	14.7	12.9	14.1	10.2	11.7	7.1	8.0	6.71	15.53
Dir	SSW	SSW	SW	ESE	SE	W	S	SSE	ESE	E	ESE	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
12 Spd	7.8	6.9	7.6	6.1	8.5	5.2	9.5	11.1	10.7	10.2	10.8	10.4	6.3	8.9	8.5	10.1	7.6	7.2	10.8	9.2	4.3	3.9	4.8	3.6	7.25	11.07
Dir	E	E	E	E	E	E	ENE	ENE	NE	ENE	NE	NE	NE	ENE	NE	NE	NE	NE	ENE	E	E	SE	SE	SSE	ENE	ENE
13 Spd	3.8	4.1	1.2	1.6	4.2	0.3	2.5	5.3	6.5	8.0	6.9	6.4	7.8	4.9	5.0	6.6	6.0	7.3	7.6	8.7	5.9	4.6	4.5	5.5	3.88	8.67
Dir	S	S	SSW	SSW	SW	NNW	SW	SW	SSW	SE	SE	SE	SE	ESE	ESE	E	ENE	ESE	E	E	E	ESE	SSE	SSE	SE	E
14 Spd	7.4	7.7	6.8	3.2	0.8	2.9	2.8	2.8	7.2	8.4	10.2	10.9	9.2	10.3	9.7	9.9	12.3	13.0	12.8	11.0	7.1	6.1	7.0	8.0	7.20	13.05
Dir	SSE	SSE	SSE	SSE	SSE	SSW	SSW	SSW	S	S	SSE	SE	SE	SSE	SE	SE	SE	ESE	ESE	ESE	SE	SE	SSE	SSE	SE	ESE
15 Spd	7.5	7.2	9.0	9.7	10.6	10.8	7.9	7.6	10.0	12.0	19.1	20.9	21.2	16.9	15.0	18.7	16.3	15.8	15.3	14.1	10.6	10.4	12.8	11.3	12.46	21.21
Dir	SSE	S	S	S	S	S	S	S	SSE	SSE	SSE	SSE	SE	SSE	SSE	SE	SE	SSE	SE	SSE	SE	SE	SSE	SSE	SSE	SE
16 Spd	8.9	10.4	11.6	6.6	2.1	3.3	9.8	9.9	7.7	7.3	5.0	1.4	3.0	5.3	4.5	4.1	4.7	10.1	8.9	8.2	8.4	10.0	9.6	6.2	6.03	11.60
Dir	SSE	SSE	SSE	SSE	SSE	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSE	ESE	SSE	S	SSE	ESE	SE	SSE	S	S	SSW	WSW	S	SSE
17 Spd	23.5	21.7	20.6	15.7	9.0	7.9	7.3	11.9	10.9	10.8	7.7	10.3	14.0	12.0	10.1	7.8	4.9	8.6	4.1	0.2	3.8	4.2	4.2	0.2	7.83	23.47
Dir	NNW	NNW	NW	NW	WNW	W	WNW	NW	NNW	NNW	NNW	NW	WNW	NW	WSW	W	WNW	NNW	N	SW	SSE	SSE	SSE	NNE	NW	NNW
18 Spd	2.2	3.3	3.2	2.5	3.5	7.0	8.9	9.7	6.8	2.3	4.2	5.4	4.5	3.2	8.3	10.5	15.2	13.1	17.7	18.9	20.5	19.3	16.5	14.1	5.74	20.46
Dir	S	W	W	WNW	WSW	W	W	W	W	SSE	SE	E	S	SSW	ESE	WNW	N	N	NNW	NNW	NNW	NNW	NNW	NNW	NW	NNW
19 Spd	11.4	11.2	13.0	11.7	11.6	12.3	10.4	12.9	17.1	16.9	19.2	19.0	21.2	23.3	23.1	23.5	23.8	24.0	24.0	22.5	21.6	20.6	21.3	20.7	18.16	24.04
Dir	NW	WNW	WNW	NW	NW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	WNW	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	WNW	NW	WNW	WNW
20 Spd	19.2	21.5	20.4	21.4	19.3	20.0	21.8	20.0	18.2	17.9	17.3	15.7	15.1	14.3	15.1	14.7	10.7	11.5	8.0	10.3	8.0	8.8	12.0	14.4	15.12	21.80
Dir	NW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	WNW	NW	NW	NW	NW	NW	NNW	NNW	NNW	N	NNW	NW	NW	NNW	NNW	NW	WNW
21 Spd	12.6	10.2	11.8	13.6	14.8	16.7	17.0	16.1	13.2	13.5	13.0	13.7	13.0	11.9	7.9	6.1	7.4	13.0	12.6	11.0	11.2	11.2	11.0	16.5	11.97	17.01
Dir	NW	NW	WNW	WNW	WNW	WNW	WNW	NW	NW	WNW	NW	NW	NW	NNW	N	N	NW	WNW	NW	NNW	NNW	NNW	NNW	NNW	NW	WNW
22 Spd	12.7	10.7	12.3	15.1	16.1	20.2	18.1	19.4	18.5	22.7	18.5	20.3	21.1	19.2	20.4	17.9	19.0	18.3	19.7	20.1	19.3	19.6	17.5	15.5	17.92	22.70
Dir	NNW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW



**WCAS - Violet Grove**  
**Summary of Hourly Averages**

**Wind Speed (WS) - kph**  
**May 2016**

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
23 Spd	11.2	13.1	18.2	16.1	13.6	13.0	13.6	13.2	14.5	16.1	10.6	7.3	6.8	11.9	11.8	7.4	7.8	9.5	7.5	4.2	2.2	1.8	2.3	1.4	7.47	18.20	
Dir	NW	NW	NNW	NNW	NW	NW	NW	NW	NW	NNW	NNW	N	N	NNW	NNW	N	NNE	ENE	ESE	ESE	SSE	S	SW	WSW	NNW	NNW	
24 Spd	2.5	0.7	1.5	1.6	4.7	3.9	5.3	5.9	10.8	9.8	8.4	8.0	6.9	6.0	9.3	5.9	7.0	8.9	12.2	11.2	9.3	10.4	9.8	11.6	6.56	12.20	
Dir	W	S	SSW	S	SSE	SSE	SSE	S	SSE	SSE	SE	SE	SE	SE	ESE	SSE	SE	ESE	ESE	SE	SSE	SSE	SSE	S	SSE	ESE	
25 Spd	12.7	11.9	4.5	1.7	2.6	3.6	6.9	6.0	4.2	3.5	0.6	2.0	5.0	4.3	12.0	16.5	6.3	6.6	11.4	8.6	6.4	6.3	6.6	2.0	2.79	16.51	
Dir	S	S	SSW	W	SW	SW	W	W	W	NW	NNE	E	E	ESE	WNW	NW	WNW	SE	SSE	SSE	W	WSW	SW	WSW	SW	NW	
26 Spd	9.4	10.6	8.7	7.8	9.4	6.0	6.6	7.6	5.7	5.0	3.6	4.8	7.0	7.9	13.6	11.8	12.0	7.0	15.4	13.7	12.1	12.5	6.2	9.8	3.86	15.43	
Dir	WNW	WNW	NW	WNW	W	W	W	W	WNW	W	WNW	W	NE	E	SE	ESE	SE	SE	NW	NNW	NW	NW	NW	WNW	WNW	NW	
27 Spd	9.7	11.2	11.4	10.4	10.3	12.1	12.7	12.5	11.5	11.3	9.6	9.4	8.0	12.5	14.2	14.5	15.8	16.9	13.8	14.6	15.6	11.9	11.0	11.4	11.96	16.95	
Dir	WNW	WNW	WNW	WNW	WNW	WNW	NW	WNW	NW	NW	NW	NW	NW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	W	W	W	WNW	WNW	
28 Spd	12.7	10.3	9.1	8.7	8.8	7.2	5.4	9.0	6.6	8.2	7.1	8.0	5.3	3.8	12.8	3.9	12.7	14.3	13.7	13.5	9.0	5.3	2.9	1.9	1.94	14.31	
Dir	W	W	W	W	WSW	SW	WSW	WNW	WNW	NW	WNW	NW	NW	NW	NW	ENE	SE	SE	ESE	E	ESE	E	ESE	SE	WSW	SE	
29 Spd	0.8	0.8	1.6	3.3	2.3	5.5	5.2	6.9	7.6	7.4	7.1	9.7	13.9	10.3	17.5	21.6	13.3	7.4	4.4	6.7	8.7	8.1	6.6	9.6	6.20	21.58	
Dir	SW	SW	SSE	SSE	W	W	W	WNW	WNW	WNW	NNW	NNW	NNW	NNW	WNW	W	W	SW	W	NNW	NNW	NNW	NW	NNW	WNW	W	
30 Spd	9.3	8.3	10.1	11.2	10.2	12.8	14.8	13.1	12.2	18.0	18.5	18.5	14.9	13.8	15.0	13.9	11.9	9.2	9.3	7.1	2.5	2.0	2.4	1.6	9.41	18.53	
Dir	NW	NW	WNW	NW	NW	WNW	NW	NW	NW	NNW	NNW	NNW	NNW	NNW	NNW	N	N	NNE	ENE	E	SSW	S	SSW	NNW	NNW		
31 Spd	0.8	1.9	5.4	6.7	4.0	4.3	5.2	2.2	6.3	6.5	5.0	5.3	4.1	5.1	6.9	7.8	7.4	9.6	11.6	10.8	8.4	8.5	11.3	12.0	4.12	12.00	
Dir	S	W	W	WSW	W	WSW	W	ENE	E	E	ENE	E	ESE	ESE	ESE	SE	ESE	ESE	SE	SE	SE	SE	SSE	SSE	SE	SSE	
Spd	4.77	5.30	5.97	6.31	6.20	6.93	7.33	7.21	6.03	5.31	3.89	3.52	3.54	3.89	4.30	4.34	2.85	2.19	2.34	2.06	2.10	2.63	2.88	3.29	Diurnal Average		
Dir	WNW	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	NW	NW	NW	NNW	NNE	NNE	N	NW	W	W	W	Diurnal Maximum		
Spd	23.47	21.68	20.61	21.35	19.33	20.22	24.45	19.95	18.50	22.70	23.01	24.71	24.17	27.07	30.39	31.68	32.63	31.77	31.16	28.70	23.50	24.88	21.55	20.71	Diurnal Maximum		
Dir	331.75	329.31	314.03	301.67	301.08	303.92	338.09	301.87	307.22	304.62	333.08	332.02	325.86	299.62	305.08	306.47	307.45	316.63	317.60	309.01	306.79	304.77	316.59	303.63			
Maximum Speed Value: 32.6 kph on May 8 17:00																		Minimum Speed Value: 0.2 kph on May 17 20:00						Hours in Service: 744			
Maximum Daily Speed Average: 18.47 kph on May 8																		Minimum Daily Speed Average: 1.94 kph on May 13						Hours of Data: 744			
Maximum Diurnal Speed Average: 7.33 kph at hour 7																		Minimum Diurnal Speed Average: 2.06 kph at hour 20						Hours of Missing Data: 0			
Monthly Average Velocity: 4.027 kph 296.79 deg																		Speed Percentiles: P <sub>1</sub> = 0.8 P <sub>10</sub> = 3.5 Q <sub>1</sub> = 6.3 Median = 9.6 Q <sub>3</sub> = 13.1 P <sub>90</sub> = 18.1 P <sub>99</sub> = 25.5						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	5	27	23	2	0	0	57																				
NorthEast	2	17	0	0	0	0	19																				
East	10	35	10	0	0	0	55																				
SouthEast	19	57	37	3	0	0	116																				
South	32	44	6	0	0	0	82																				
SouthWest	26	29	3	0	0	0	58																				
West	26	79	28	1	0	0	134																				
NorthWest	6	46	115	50	6	0	223																				
Total	126	334	222	56	6	0	744																				





**WCAS - Violet Grove**  
**Summary of Hourly Averages**

**Delta Temperature (ET\_D) - C**  
**May 2016**

<b>Maximum Value: 1.91 C on May 15 13:00</b>		<b>Maximum Daily Average: 0.94 C on May 8</b>		<b>Hours in Service: 744</b>																																												
<b>Minimum Value: -4.6 C on May 4 00:00</b>		<b>Minimum Daily Average: -0.35 C on May 3</b>		<b>Hours of Data: 744</b>																																												
<b>Maximum Diurnal Average: 1.28 C at hour 15</b>		<b>Minimum Diurnal Average: -0.76 C at hour 22</b>		<b>Hours of Missing Data: 0</b>																																												
<b>Monthly Average: 0.405 C</b>		<b>Percentiles: P<sub>1</sub> = -3.9 P<sub>10</sub> = -1.1 Q<sub>1</sub> = 0.1 Median = 0.7 Q<sub>3</sub> = 1.1 P<sub>90</sub> = 1.4 P<sub>99</sub> = 1.8</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-May	0.0	-0.1	-0.2	-0.1	-0.3	-0.4	0.0	0.7	1.0	1.1	1.2	1.4	1.5	1.3	1.4	1.4	1.1	1.0	0.8	-0.4	-2.3	-3.7	-1.3	-0.4	0.20	1.49																						
2-May	0.0	-0.1	-0.1	0.1	0.1	-0.3	0.2	0.8	1.1	1.2	1.4	1.5	1.2	1.0	1.4	1.2	1.1	0.6	-0.4	-1.9	-2.1	-1.6	-0.3	-1.6	0.20	1.55																						
3-May	-2.6	-2.5	-1.6	-0.9	-0.4	-0.5	-0.2	0.4	0.8	1.1	1.2	1.3	1.3	1.3	1.3	1.1	0.4	0.0	-1.3	-2.8	-1.1	-1.3	-4.6	-0.35	1.32																							
4-May	-4.0	-1.5	-1.2	-2.1	-1.8	-1.7	-0.4	0.4	1.0	1.1	1.3	1.1	1.1	1.5	1.0	0.8	1.1	0.9	0.6	0.7	0.7	0.6	0.6	0.6	0.10	1.48																						
5-May	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.9	0.9	1.0	1.1	1.1	1.3	1.5	1.7	1.7	1.6	1.4	1.0	0.4	-2.2	-4.5	-3.8	-4.3	0.25	1.73																						
6-May	-3.5	-1.0	-0.8	-0.3	0.0	-0.4	0.2	0.8	1.0	1.1	1.3	1.5	1.5	1.3	1.5	1.4	1.2	1.0	0.6	-1.4	-1.8	-1.0	-0.7	-0.4	0.13	1.53																						
7-May	-0.1	-0.1	-0.1	-0.1	-0.4	-0.3	-0.2	0.6	0.9	1.1	1.4	1.4	1.4	1.3	1.3	1.3	1.0	1.0	0.6	-0.6	-2.8	-3.0	-1.5	-0.9	0.13	1.42																						
8-May	0.2	0.6	0.5	0.3	0.7	0.8	0.8	0.9	0.8	0.8	1.1	1.6	1.8	1.4	1.5	1.4	1.3	1.2	1.0	0.9	0.7	0.7	0.8	0.7	0.94	1.79																						
9-May	0.7	0.7	0.6	0.5	0.7	0.7	0.7	0.9	0.9	0.9	1.1	1.1	1.1	1.1	1.0	1.0	1.0	0.8	0.8	0.8	0.6	0.2	0.1	-0.3	0.74	1.14																						
10-May	-0.9	-0.5	-0.4	-0.3	-0.5	-0.5	0.2	0.7	1.0	1.2	1.3	1.3	1.5	1.3	1.4	1.2	1.6	1.3	1.0	0.2	-1.7	-2.7	-4.0	-2.7	0.05	1.61																						
11-May	-1.0	-0.3	-0.5	-1.5	-1.3	-1.2	-0.4	0.9	1.3	1.5	1.7	1.7	1.5	1.5	1.2	1.2	1.1	0.9	0.9	0.8	0.7	0.7	0.7	0.7	0.53	1.68																						
12-May	0.7	0.7	0.5	0.2	0.7	0.4	0.8	1.0	1.1	1.5	1.4	1.5	1.4	1.5	1.5	1.4	1.3	1.0	1.0	0.8	-0.2	-2.9	-3.1	-2.2	0.49	1.51																						
13-May	-2.9	-2.5	-3.9	-4.2	-1.8	-1.6	-0.3	0.9	1.4	1.6	1.7	1.7	1.8	1.6	1.7	1.6	1.5	1.4	1.1	0.7	0.0	-2.2	-2.2	-3.1	-0.25	1.84																						
14-May	-2.9	-0.7	-0.9	-1.3	-3.0	-2.2	-0.4	0.8	1.4	1.6	1.7	1.8	1.8	1.8	1.8	1.7	1.6	1.4	0.9	0.1	-1.6	-1.9	-3.0	-2.6	-0.09	1.85																						
15-May	-0.9	-0.6	-0.5	-0.4	-0.4	-0.1	0.4	0.9	1.2	1.5	1.6	1.8	1.9	1.8	1.8	1.8	1.5	1.2	0.8	0.5	-1.3	-2.5	-0.4	-0.1	0.49	1.91																						
16-May	-0.7	-1.0	-0.9	-1.7	-1.7	-1.3	0.4	0.9	1.2	1.5	1.5	1.4	1.4	1.5	1.6	1.4	1.2	0.8	-0.6	0.1	-0.2	0.1	0.0	0.3	0.29	1.56																						
17-May	0.8	0.7	0.8	0.7	0.0	-0.3	0.3	0.7	0.8	1.1	1.2	1.5	1.8	1.4	1.4	1.1	1.2	1.1	0.9	-0.1	-2.1	-1.7	-0.7	-0.9	0.49	1.76																						
18-May	-1.9	-0.8	-0.4	-1.0	-2.8	-1.5	0.3	0.8	0.9	1.1	1.3	1.5	1.3	1.3	1.6	0.5	-0.3	1.0	0.9	0.8	0.8	0.8	0.8	0.8	0.32	1.59																						
19-May	0.8	0.8	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.6	0.5	0.4	0.7	0.8	0.6	0.5	0.5	0.4	0.4	0.5	0.5	0.4	0.58	0.82																						
20-May	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.9	1.0	1.0	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.75	0.97																						
21-May	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.6	0.6	0.7	0.6	0.5	0.4	0.9	1.1	1.0	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.77	1.05																						
22-May	0.7	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.5	0.3	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.53	0.70																						
23-May	0.6	0.6	0.4	0.4	0.5	0.4	0.3	0.3	0.6	0.9	0.9	0.9	0.9	0.9	1.0	0.9	0.9	0.9	0.9	0.8	0.1	-0.8	-0.5	-1.1	0.50	0.98																						
24-May	-1.2	-1.4	-1.2	-2.0	-1.3	-0.5	0.6	1.0	1.5	1.4	1.4	1.5	1.4	1.3	1.5	1.5	1.3	1.3	1.1	0.7	-0.3	0.1	0.2	0.0	0.41	1.51																						
25-May	0.1	0.2	0.2	-0.9	-1.1	-0.9	0.5	0.6	0.8	0.9	1.1	1.1	1.3	1.1	0.8	0.8	0.8	0.9	0.9	0.8	0.1	0.2	0.2	0.4	0.46	1.29																						
26-May	0.0	0.6	0.7	0.2	0.1	0.6	0.8	0.9	0.9	1.0	1.0	1.0	1.3	1.3	1.4	1.2	1.0	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.82	1.35																						
27-May	0.8	0.6	0.5	0.6	0.6	0.5	0.4	0.4	0.7	0.9	0.9	0.9	0.9	1.0	0.9	1.0	0.9	1.0	0.9	0.8	0.8	0.7	0.6	0.7	0.75	0.99																						
28-May	0.7	0.4	0.4	0.6	0.5	0.5	0.5	0.6	0.8	0.9	1.1	1.3	1.2	1.1	1.0	1.1	1.3	1.4	1.1	0.9	0.6	0.0	-1.1	-0.8	0.67	1.38																						
29-May	-0.4	-0.8	-1.3	-0.9	-0.5	0.4	0.9	1.0	0.8	1.1	1.2	1.3	1.2	1.3	0.9	1.0	0.8	0.7	0.9	0.8	0.7	0.6	0.7	0.7	0.54	1.33																						
30-May	0.7	0.7	0.7	0.7	0.8	0.7	0.8	0.9	0.9	0.9	0.9	0.9	0.9	1.2	1.3	1.1	1.1	1.1	0.9	0.9	0.0	-0.8	-1.0	-0.5	0.65	1.29																						
31-May	-1.0	-0.9	-1.1	0.2	-0.1	-0.2	0.4	0.7	1.1	1.3	1.3	1.4	1.4	1.4	1.4	1.5	1.2	1.3	0.9	0.5	-0.6	-1.3	0.0	0.3	0.47	1.47																						
																								-0.49	-0.18	-0.21	-0.32	-0.30	-0.17	0.36	0.74	0.95	1.10	1.19	1.26	1.27	1.27	1.28	1.17	1.07	0.97	0.73	0.34	-0.42	-0.76	-0.54	-0.57	Diurnal Average
																								0.82	0.79	0.81	0.81	0.79	0.80	0.93	1.02	1.50	1.65	1.74	1.81	1.91	1.85	1.83	1.79	1.62	1.41	1.12	0.89	0.81	0.79	0.82	0.83	Diurnal Maximum



**WCAS - Violet Grove**  
**Summary of Hourly Averages**

**Relative Humidity (RH) - %**  
**May 2016**

Maximum Value: 100.35 % on May 24 07:00      Maximum Daily Average: 97.46 % on May 22 Minimum Value: 16.3 % on May 3 16:00      Minimum Daily Average: 31.73 % on May 7 Maximum Diurnal Average: 79.08 % at hour 6      Minimum Diurnal Average: 44.47 % at hour 15 Monthly Average: 61.292 %      Percentiles: P <sub>1</sub> = 17.8 P <sub>10</sub> = 25.8 Q <sub>1</sub> = 38.4 Median = 59.4 Q <sub>3</sub> = 87.3 P <sub>90</sub> = 96.7 P <sub>99</sub> = 99.5																								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-May	58.7	65.0	67.6	72.4	74.1	73.8	70.4	59.0	44.3	36.6	32.1	32.1	32.3	30.0	29.4	28.2	27.8	28.4	27.7	36.3	49.4	52.0	45.1	43.2	46.50	74.09																							
2-May	45.8	48.4	48.9	50.7	56.6	61.9	62.4	60.7	52.8	46.0	34.2	28.5	25.4	26.1	23.9	23.3	22.7	24.1	27.8	38.1	40.6	39.0	35.8	40.8	40.19	62.43																							
3-May	47.1	49.2	51.1	58.9	53.9	49.8	46.0	41.7	35.7	30.9	24.5	21.0	19.4	18.7	17.3	16.3	17.5	22.1	25.6	31.2	38.4	26.2	27.1	41.6	33.80	58.92																							
4-May	44.6	34.1	34.6	46.3	54.1	56.0	53.9	51.5	42.6	31.5	28.0	23.4	24.9	23.8	25.1	25.8	25.8	30.1	37.5	40.1	55.6	67.4	69.9	73.0	41.65	72.99																							
5-May	68.1	63.5	56.7	43.9	44.3	62.3	73.3	74.7	72.0	66.8	60.2	48.7	46.9	44.5	39.6	35.6	31.9	28.3	26.1	29.9	49.1	60.5	65.5	72.2	52.68	74.66																							
6-May	80.0	70.5	69.6	65.7	68.7	69.1	63.0	55.8	43.7	32.5	27.0	24.5	23.8	23.5	23.2	19.2	17.8	18.5	21.2	35.3	36.1	36.4	36.8	32.4	41.42	80.01																							
7-May	33.2	37.5	42.4	48.1	50.0	53.4	50.5	47.4	36.6	33.7	24.3	21.9	19.5	17.8	17.6	17.2	19.3	19.3	20.0	25.9	40.3	38.4	25.0	22.3	31.73	53.37																							
8-May	33.8	47.3	55.4	64.0	70.4	70.2	73.4	85.5	81.9	82.9	83.0	76.3	67.7	34.8	22.9	21.2	23.6	30.8	44.8	51.3	57.1	62.7	76.6	80.3	58.25	85.51																							
9-May	85.5	86.8	85.8	86.4	87.4	86.6	84.2	80.1	72.9	64.4	56.2	49.9	45.7	41.4	39.3	38.3	37.6	39.4	39.1	39.6	45.1	54.8	60.1	65.4	61.33	87.41																							
10-May	72.8	75.6	78.0	80.1	80.2	80.1	77.2	68.2	55.1	38.5	29.1	28.0	27.4	26.9	25.7	25.2	23.0	22.4	23.4	31.5	46.3	57.5	55.0	54.1	49.22	80.21																							
11-May	48.2	44.1	50.1	64.9	74.8	78.1	60.3	49.5	47.4	41.3	31.2	26.7	25.2	25.3	25.7	26.3	29.7	31.8	35.6	39.4	42.5	43.6	45.6	45.0	43.01	78.11																							
12-May	44.8	47.5	52.0	58.2	58.5	62.7	60.1	57.4	56.8	49.0	41.7	39.4	35.9	33.2	30.6	31.7	31.2	32.0	28.2	27.5	33.7	54.5	56.4	56.6	44.98	62.73																							
13-May	59.2	54.2	65.0	73.8	61.6	73.0	59.9	47.8	38.3	29.9	28.7	27.0	26.8	25.6	24.9	24.2	23.3	24.0	23.5	25.9	32.1	46.2	55.0	55.3	41.88	73.79																							
14-May	53.1	53.8	58.1	66.7	74.9	70.9	67.7	55.2	47.1	35.5	31.1	29.5	27.3	26.8	25.4	25.5	25.0	24.7	26.0	28.4	39.5	44.3	47.8	51.1	43.15	74.86																							
15-May	52.8	53.7	49.3	49.4	51.6	50.1	51.4	47.6	42.1	36.5	28.6	26.2	24.7	23.9	23.5	22.5	21.9	23.5	25.0	35.2	42.5	38.9	39.5		36.97	53.72																							
16-May	43.9	49.0	52.2	59.6	62.9	61.5	54.4	50.9	45.9	39.6	31.6	25.2	22.3	20.0	18.2	17.5	18.5	20.3	29.0	26.0	23.4	28.5	33.5	36.6	36.27	62.92																							
17-May	42.9	46.3	47.3	52.8	61.4	63.0	62.5	58.1	55.2	41.0	36.4	35.5	35.8	31.3	35.4	34.0	31.4	29.4	32.4	46.5	59.5	55.6	45.1	56.3	45.63	63.00																							
18-May	58.6	62.3	66.5	74.7	83.1	77.9	71.2	65.7	57.6	40.5	37.9	34.0	31.9	30.9	29.7	47.7	80.0	77.6	79.1	79.9	78.2	79.7	83.8	89.7	63.26	89.74																							
19-May	93.9	96.9	98.5	99.0	99.2	99.4	99.5	99.7	99.5	99.2	98.5	97.1	95.4	95.2	96.2	96.4	96.0	95.9	95.8	95.6	95.6	95.6	96.4	96.2	97.11	99.66																							
20-May	95.8	97.2	98.1	98.6	98.9	98.9	98.9	98.9	99.1	99.4	99.3	99.2	99.6	87.1	80.4	79.6	81.4	80.3	81.6	83.4	86.6	88.3	88.6	87.6	91.94	99.64																							
21-May	87.5	89.7	92.7	92.8	93.5	94.1	96.1	96.5	97.2	96.8	96.2	94.8	90.7	87.9	87.3	87.8	87.9	92.0	91.6	92.3	94.9	93.6	96.0	96.7	92.77	97.17																							
22-May	97.6	98.0	98.1	98.5	98.7	98.6	98.4	98.4	98.0	98.2	97.9	97.5	96.9	96.6	96.6	96.7	95.6	95.6	96.1	96.9	97.3	97.3	97.4	98.0	97.46	98.73																							
23-May	98.6	99.2	97.6	96.6	97.5	97.4	95.5	94.6	93.2	88.9	85.7	81.0	79.9	72.4	62.3	66.2	63.1	63.7	68.9	73.3	82.7	91.8	92.7	96.0	84.95	99.16																							
24-May	97.6	98.1	98.6	98.6	99.3	99.7	100.4	90.5	83.8	78.8	73.5	69.1	61.7	53.9	51.3	41.3	41.4	48.3	56.5	62.6	70.9	73.9	76.0	74.1	74.99	100.35																							
25-May	73.8	73.1	74.4	87.9	95.0	94.6	87.7	78.5	70.7	62.7	53.7	49.5	43.2	42.3	50.3	81.9	90.3	90.1	86.9	81.0	90.9	94.0	90.3	91.4	76.43	94.99																							
26-May	93.1	86.8	88.4	90.7	93.1	92.7	93.4	91.4	84.4	80.3	78.7	84.7	70.8	63.3	64.8	59.9	61.5	65.5	83.3	92.6	93.0	97.1	96.9	96.0	83.44	97.09																							
27-May	97.3	97.9	97.9	98.1	98.4	97.8	96.3	95.0	93.1	94.2	95.2	95.0	95.2	96.7	95.0	91.7	89.8	85.5	85.9	87.0	89.9	89.9	93.2	94.6	93.78	98.39																							
28-May	93.8	95.8	97.0	95.9	94.3	93.4	89.3	81.3	76.3	70.4	64.0	59.5	53.5	46.9	57.5	49.4	57.1	59.5	58.9	65.7	74.6	83.2	92.5	97.2	75.29	97.22																							
29-May	97.9	98.3	98.5	99.3	98.9	99.1	99.5	99.7	95.9	79.6	69.2	55.0	53.1	46.1	61.8	84.4	74.9	71.3	74.7	70.6	70.6	77.2	81.4	80.0	80.71	99.69																							
30-May	82.6	85.5	89.2	90.6	90.7	90.0	88.5	85.9	78.6	71.8	64.6	61.1	60.7	57.0	50.8	46.5	47.3	49.9	52.7	56.0	70.1	87.3	90.0	89.2	72.37	90.71																							
31-May	93.5	96.4	96.6	93.0	94.6	95.5	89.7	76.5	69.3	61.1	54.1	49.3	48.1	46.8	46.5	44.3	44.9	43.1	48.9	52.9	63.8	71.3	63.9	62.1	66.92	96.58																							
																								70.20	71.01	72.78	76.01	78.07	79.08	76.62	72.37	66.68	59.94	54.72	51.33	48.82	45.08	44.47	45.39	46.45	47.29	50.08	53.79	60.74	65.50	66.40	68.22	Diurnal Average	
																								98.63	99.16	98.57	99.25	99.26	99.74	100.35	99.69	99.49	99.37	99.29	99.20	99.64	96.68	96.57	96.71	96.02	95.95	96.14	96.95	97.31	97.33	97.43	97.99	Diurnal Maximum	



**WCAS - Violet Grove**  
**Summary of Hourly Averages**

**Global Solar Radiation (GSR) - W/m2**  
**May 2016**

Maximum Value: 959.06 W/m2 on May 31 13:00		Maximum Daily Average: 350.55 W/m2 on May 24		Hours in Service: 744																							
Minimum Value: 0.0 W/m2 on May 1 01:00		Minimum Daily Average: 39.65 W/m2 on May 22		Hours of Data: 744																							
Maximum Diurnal Average: 667.96 W/m2 at hour 13		Minimum Diurnal Average: 0.00 W/m2 at hour 2		Hours of Missing Data: 0																							
Monthly Average: 231.91 W/m2		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 79.6 Q <sub>3</sub> = 426.3 P <sub>90</sub> = 732.4 P <sub>99</sub> = 908.7		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-May	0.0	0.0	0.0	0.0	0.0	14.9	90.1	251.7	441.3	548.4	681.7	769.3	815.7	779.9	700.9	632.9	461.8	326.3	198.8	49.5	0.0	0.0	0.1	0.0	281.80	815.69	
2-May	0.0	0.0	0.0	0.0	0.0	13.3	68.1	222.3	411.3	576.4	726.8	851.5	692.5	571.2	763.4	617.2	533.6	342.8	114.4	44.3	2.9	0.0	0.0	0.0	272.99	851.49	
3-May	0.0	0.0	0.0	0.0	0.0	16.6	106.7	282.5	456.8	604.5	737.6	832.4	876.8	864.1	797.3	693.2	544.9	308.2	216.6	65.9	0.5	0.0	0.0	0.0	308.53	876.80	
4-May	0.0	0.0	0.0	0.0	0.0	14.0	104.2	123.1	460.8	603.0	734.9	651.2	618.2	842.6	444.6	283.0	403.3	240.1	61.5	26.5	0.0	0.0	0.0	0.0	233.78	842.61	
5-May	0.3	0.0	0.7	0.7	0.7	6.3	34.4	72.9	114.8	153.3	308.6	286.0	467.5	679.2	772.4	692.0	560.0	400.4	226.6	82.4	0.2	0.0	0.0	0.0	202.47	772.44	
6-May	0.0	0.0	0.0	0.0	0.0	17.6	125.8	297.6	466.3	622.3	748.9	847.0	884.5	873.3	780.6	640.2	515.3	335.8	228.5	50.0	4.2	0.0	0.0	0.0	309.91	884.54	
7-May	0.0	0.0	0.0	0.0	0.0	14.1	118.5	279.4	445.5	567.2	759.6	783.8	886.9	869.7	757.8	732.3	563.2	429.1	202.3	60.6	0.0	0.0	0.0	0.0	311.25	886.91	
8-May	0.0	0.0	0.0	0.0	0.4	7.8	20.9	85.4	70.7	70.5	200.2	680.2	781.6	897.5	850.5	744.3	596.4	425.5	247.6	84.5	6.8	0.0	0.0	0.0	240.44	897.48	
9-May	0.0	0.0	0.0	0.0	0.9	15.0	116.4	142.3	128.4	305.5	596.2	451.8	489.6	406.9	301.5	378.9	310.2	125.4	103.1	80.5	11.9	0.0	0.0	0.0	165.20	596.21	
10-May	0.0	0.0	0.0	0.0	0.0	22.4	138.3	320.2	487.7	630.2	639.2	624.8	767.7	513.8	653.4	437.7	611.8	407.5	189.2	103.5	5.0	0.0	0.0	0.0	273.02	767.72	
11-May	0.0	0.0	0.0	0.0	0.0	23.0	143.2	314.8	483.1	637.3	767.1	813.3	720.4	629.5	361.4	437.4	285.0	155.3	105.8	50.5	7.2	0.0	0.0	0.0	247.26	813.33	
12-May	0.0	0.0	0.0	0.0	0.0	31.1	168.4	284.1	313.1	643.5	701.2	710.3	680.7	703.1	762.1	508.4	407.4	179.4	185.2	89.6	5.7	0.0	0.0	0.0	265.56	762.05	
13-May	0.0	0.0	0.0	0.0	0.0	24.1	147.0	320.1	486.9	647.3	767.3	871.5	913.6	901.0	837.0	728.3	585.3	419.7	245.9	97.3	8.6	0.0	0.0	0.0	333.37	913.63	
14-May	0.0	0.0	0.0	0.0	0.0	25.4	134.3	304.7	480.2	637.0	763.4	860.2	904.4	891.6	829.6	723.8	585.0	421.9	246.9	98.6	9.2	0.0	0.0	0.0	329.83	904.38	
15-May	0.0	0.0	0.0	0.0	0.0	23.2	134.4	307.3	475.8	629.7	759.2	865.1	905.1	895.7	834.8	730.7	590.2	427.2	253.9	102.7	11.7	0.0	0.0	0.0	331.11	905.13	
16-May	0.0	0.0	0.0	0.0	0.0	27.0	153.3	327.5	490.8	640.9	764.2	859.1	893.3	876.5	824.0	670.4	476.4	307.7	76.3	60.9	19.3	0.0	0.0	0.0	311.15	893.33	
17-May	0.0	0.0	0.0	0.0	0.0	20.9	92.7	177.2	281.8	618.4	583.3	787.0	801.0	664.2	500.2	364.6	405.8	292.8	164.7	41.7	7.6	0.0	0.5	0.0	241.84	800.96	
18-May	0.0	0.0	0.0	0.0	0.0	26.3	89.2	184.1	413.9	640.5	691.3	810.1	672.7	646.3	728.1	85.3	320.0	307.8	151.2	48.1	8.8	0.4	0.7	0.0	242.70	810.12	
19-May	0.4	0.0	0.7	0.7	0.7	4.0	15.8	32.9	75.9	114.8	144.9	185.9	159.1	128.0	65.6	38.2	34.8	37.1	22.8	9.5	2.6	0.7	0.7	0.7	44.87	185.94	
20-May	0.7	0.0	0.7	0.5	0.9	9.1	20.6	71.3	157.5	390.3	466.0	467.8	553.0	504.0	332.6	203.5	108.2	183.7	80.3	49.6	15.1	0.3	0.0	0.7	150.68	552.95	
21-May	0.3	0.0	0.5	0.7	0.9	4.9	17.5	28.4	65.5	78.6	99.5	163.7	304.9	251.9	274.3	164.7	83.9	50.4	61.4	32.8	5.6	0.2	0.5	0.7	70.49	304.94	
22-May	0.8	0.0	0.7	0.7	0.8	2.5	7.3	18.2	31.3	75.9	93.5	110.1	135.9	127.7	121.1	94.5	55.3	33.6	23.7	12.8	3.1	0.6	0.7	0.7	39.65	135.88	
23-May	0.7	0.0	0.7	0.7	0.7	5.2	26.0	65.4	108.4	229.7	216.8	272.2	180.6	283.4	398.1	296.4	269.7	193.0	174.6	56.9	26.1	0.0	0.0	0.0	116.89	398.06	
24-May	0.0	0.0	0.0	0.0	1.3	32.2	155.0	416.7	502.2	671.6	785.8	882.7	928.3	922.6	862.4	757.1	616.6	452.6	280.7	127.3	18.5	0.0	0.0	0.0	350.55	928.27	
25-May	0.0	0.0	0.0	0.0	0.2	43.5	149.6	332.6	494.1	634.8	764.8	854.0	910.0	669.2	189.4	46.1	59.0	99.3	190.0	125.0	7.1	0.0	0.0	0.0	232.03	909.95	
26-May	0.0	0.0	0.0	0.0	1.1	34.5	51.3	123.5	354.5	404.0	263.6	239.7	883.9	772.0	579.9	488.8	293.2	165.3	50.0	14.1	9.7	0.0	0.0	0.0	197.04	883.88	
27-May	0.0	0.0	0.6	0.1	1.7	17.3	56.2	115.0	134.6	75.6	66.7	106.0	92.5	135.2	140.7	286.4	162.1	185.8	107.6	39.9	9.7	0.0	0.0	0.0	72.24	286.43	
28-May	0.0	0.0	0.0	0.0	0.4	29.1	178.1	367.4	475.1	407.8	620.7	720.0	666.2	491.6	406.3	316.3	548.4	434.9	269.9	140.6	27.8	0.0	0.0	0.0	254.19	720.02	
29-May	0.0	0.0	0.0	0.0	2.4	34.3	66.3	168.0	473.2	554.0	707.2	740.1	755.5	877.4	156.5	288.9	113.1	56.6	133.1	46.7	17.3	0.0	0.0	0.0	216.28	877.37	
30-May	0.0	0.0	0.0	0.0	1.4	29.0	70.4	164.0	292.7	282.3	317.7	384.5	405.7	662.7	764.4	489.6	370.7	347.4	205.5	120.1	14.5	0.0	0.0	0.0	205.11	764.41	
31-May	0.0	0.0	0.0	0.0	0.1	37.4	224.4	383.9	523.3	674.7	761.8	929.6	959.1	911.3	747.0	712.6	408.5	438.1	227.5	117.7	28.8	0.0	0.0	0.0	336.90	959.06	
		0.10	0.00	0.16	0.14	0.47	20.19	97.54	212.40	341.86	463.55	556.11	626.15	667.96	653.00	565.73	460.77	383.19	275.18	162.75	68.72	9.53	0.07	0.11	0.09	Diurnal Average	
		0.83	0.00	0.73	0.73	2.43	43.52	224.38	416.67	523.29	674.69	785.76	929.59	959.06	922.61	862.35	757.14	616.61	452.56	280.67	140.61	28.78	0.73	0.73	0.73	Diurnal Maximum	



**WCAS - Violet Grove**  
**Summary of Hourly Averages**

**Photosynthetically Active Radiation (PAR) - W/m2**  
**May 2016**

<b>Maximum Value: 378.89 W/m2 on May 13 13:00</b> <b>Maximum Daily Average: 140.73 W/m2 on May 13</b>																							<b>Hours in Service: 744</b> <b>Hours of Data: 744</b>			
<b>Minimum Value: 0.0 W/m2 on May 1 02:00</b> <b>Minimum Daily Average: 17.27 W/m2 on May 22</b> <b>Maximum Diurnal Average: 272.23 W/m2 at hour 13</b> <b>Minimum Diurnal Average: 0.45 W/m2 at hour 2</b> <b>Monthly Average: 96.449 W/m2</b> <b>Percentiles: P<sub>1</sub> = 0.0 P<sub>10</sub> = 0.0 Q<sub>1</sub> = 0.2 Median = 35.7 Q<sub>3</sub> = 183.9 P<sub>90</sub> = 298.6 P<sub>99</sub> = 372.5</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-May	0.3	0.0	0.0	0.0	0.0	4.7	38.0	104.0	178.9	227.7	276.2	310.9	328.8	317.7	289.5	265.6	197.6	143.7	92.7	27.8	2.1	0.0	0.0	0.0	116.93	328.77
2-May	0.0	0.0	0.0	0.0	0.0	5.5	31.1	95.3	169.7	240.2	295.5	343.7	282.1	236.6	315.6	259.4	227.0	149.1	52.8	21.4	2.4	0.0	0.0	0.0	113.64	343.68
3-May	0.0	0.0	0.0	0.0	0.0	7.1	45.6	116.9	185.4	249.3	298.9	338.2	356.5	353.6	331.7	291.7	234.4	137.0	96.9	32.0	3.0	0.2	0.2	0.1	128.27	356.47
4-May	0.0	0.0	0.0	0.0	0.0	6.5	46.1	58.4	193.0	255.5	305.5	274.1	261.3	352.1	191.3	123.8	175.4	108.9	29.3	12.8	1.2	0.1	0.0	0.1	99.80	352.09
5-May	0.0	0.0	0.0	0.0	0.0	2.4	14.5	31.8	51.2	69.4	137.2	127.2	205.0	292.9	330.4	296.3	240.6	176.5	104.0	39.9	4.0	0.0	0.0	0.0	88.47	330.35
6-May	1.6	2.3	2.7	2.8	2.7	11.6	57.7	128.1	197.3	266.8	312.4	351.7	368.7	364.2	331.9	276.1	226.3	153.8	107.6	29.7	7.3	3.9	3.9	3.9	133.95	368.66
7-May	0.5	0.0	0.0	0.0	0.0	7.1	52.7	120.6	188.9	243.4	315.5	325.2	368.1	360.3	319.5	311.0	243.4	190.5	95.1	34.1	2.7	0.0	0.0	0.0	132.43	368.05
8-May	0.0	0.0	0.0	0.0	0.0	2.6	8.4	37.0	31.6	32.4	87.1	288.1	328.7	372.2	354.8	312.4	255.5	186.4	112.5	39.4	2.6	0.0	0.0	0.0	102.15	372.24
9-May	0.0	0.0	0.0	0.0	0.0	4.3	46.8	58.3	53.6	129.0	250.5	188.4	205.0	171.7	128.2	160.4	131.1	52.4	42.7	30.8	3.8	0.0	0.0	0.0	69.04	250.49
10-May	0.0	0.0	0.0	0.0	0.0	9.9	57.4	131.5	200.1	264.2	266.7	259.9	316.6	215.8	274.5	185.9	260.7	178.6	87.0	47.0	4.5	0.0	0.0	0.0	115.01	316.64
11-May	0.0	0.0	0.0	0.0	0.0	10.8	60.8	132.2	201.5	270.1	321.9	345.1	306.6	269.5	161.6	192.8	125.3	69.2	46.2	20.8	2.8	0.0	0.0	0.0	105.72	345.13
12-May	1.9	2.5	2.9	2.5	2.7	16.7	74.4	124.9	140.9	275.9	297.1	301.4	288.6	293.4	320.2	218.2	173.3	83.1	85.2	45.8	9.3	2.9	2.4	2.2	115.36	320.17
13-May	0.0	0.0	0.0	0.0	0.0	12.5	63.3	133.1	200.7	272.3	318.3	360.6	378.9	375.7	352.6	310.0	253.3	184.3	111.3	45.3	5.5	0.0	0.0	0.0	140.73	378.89
14-May	0.0	0.0	0.0	0.0	0.0	11.2	56.9	127.3	199.7	268.8	317.9	357.3	376.0	372.6	349.7	307.9	252.5	183.7	109.6	44.9	6.1	0.0	0.0	0.0	139.25	375.97
15-May	0.0	0.0	0.0	0.0	0.0	11.1	57.1	128.8	198.0	266.3	316.2	359.5	377.1	374.0	352.4	311.2	254.2	185.7	112.8	47.0	6.7	0.0	0.0	0.0	139.92	377.12
16-May	0.0	0.0	0.0	0.0	0.0	14.4	64.5	138.2	206.2	273.0	320.6	358.0	372.5	367.8	347.8	288.1	210.7	137.3	36.7	26.3	7.3	0.0	0.0	0.0	132.06	372.54
17-May	0.0	0.0	0.0	0.0	0.0	12.8	39.1	76.7	123.5	271.4	250.6	336.4	341.6	285.8	217.4	160.0	182.0	133.4	78.1	20.8	4.2	0.0	0.0	0.0	105.57	341.60
18-May	2.7	3.3	3.8	3.6	4.2	15.4	45.9	90.3	187.2	287.7	303.7	354.3	300.0	289.8	320.4	46.4	150.8	143.4	72.7	25.7	7.6	3.9	3.7	3.6	111.25	354.29
19-May	0.0	0.0	0.0	0.0	0.0	0.0	4.7	12.9	32.0	48.5	62.1	81.4	69.9	56.6	30.4	18.5	16.6	16.9	9.2	2.7	0.0	0.0	0.0	0.0	19.26	81.39
20-May	0.0	0.0	0.0	0.0	0.0	2.7	8.9	35.6	73.0	172.7	206.7	206.8	236.6	209.8	137.4	85.6	47.1	78.3	33.1	20.1	4.7	0.0	0.0	0.0	64.96	236.61
21-May	0.0	0.0	0.0	0.0	0.0	0.6	6.3	11.8	28.3	34.2	43.2	69.9	123.5	104.9	114.2	69.7	36.1	21.3	24.9	12.5	0.9	0.0	0.0	0.0	29.26	123.50
22-May	0.0	0.0	0.0	0.0	0.0	0.0	2.0	7.5	14.3	34.2	42.6	49.5	59.2	55.7	53.2	42.5	25.2	14.9	9.5	4.2	0.0	0.0	0.0	0.0	17.27	59.22
23-May	0.0	0.0	0.0	0.0	0.0	0.6	9.2	25.8	42.9	92.5	88.3	111.8	76.0	115.2	155.6	117.8	107.1	76.9	69.0	22.6	10.6	0.0	0.0	0.0	46.74	155.57
24-May	2.2	2.6	2.8	2.7	4.0	22.4	71.0	142.7	203.0	263.3	302.7	337.0	352.4	349.1	329.7	293.6	245.0	185.0	119.4	58.6	14.7	4.3	3.8	3.6	138.14	352.36
25-May	0.6	0.0	0.0	0.0	0.4	21.6	57.4	129.3	188.8	247.0	290.8	326.2	347.1	258.8	77.4	23.5	26.6	42.6	77.8	54.4	4.9	0.0	0.0	0.0	90.63	347.08
26-May	0.0	0.0	0.0	0.0	0.2	12.7	20.2	49.1	140.4	163.6	107.9	96.5	335.1	298.1	227.4	194.1	119.6	69.2	22.1	7.4	5.4	1.3	1.0	0.8	78.00	335.14
27-May	0.8	0.3	0.7	0.5	1.0	6.8	23.0	46.5	55.5	32.9	30.1	46.1	41.7	57.7	58.7	114.8	65.6	74.0	43.4	16.4	3.9	0.5	0.2	0.2	30.05	114.81
28-May	0.0	0.0	0.0	0.2	1.5	16.9	70.9	135.6	181.0	155.4	233.1	268.0	250.6	186.7	155.9	121.7	210.4	170.7	109.2	58.1	13.9	1.3	0.6	0.5	97.58	268.02
29-May	0.2	0.0	0.0	0.0	1.5	13.1	26.9	65.8	185.7	211.5	256.0	274.6	281.0	325.8	66.0	113.8	47.6	24.7	54.2	19.2	7.4	1.0	0.4	0.4	82.36	325.77
30-May	2.7	2.8	3.0	2.8	3.7	14.8	33.4	67.8	119.0	110.9	124.4	149.0	156.4	251.3	287.3	186.6	145.1	137.0	82.8	53.4	13.7	4.5	3.7	3.5	81.65	287.26
31-May	0.5	0.0	0.0	0.0	0.6	23.7	72.5	132.5	190.1	250.1	277.2	334.8	347.8	331.7	275.6	267.8	158.1	169.5	90.9	49.2	13.4	0.3	0.0	0.0	124.43	347.80
0.45																							Diurnal Average			
2.67																							Diurnal Maximum			



**WCAS - Violet Grove**  
**Summary of Hourly Standard Deviations**

**Wind Speed (WS) - kph**  
**May 2016**

<b>Maximum Value: 11.76 kph on May 8 19:00</b>		<b>Maximum Daily Average: 7.38 kph on May 8</b>		<b>Hours in Service: 744</b>																							
<b>Minimum Value: 0.3 kph on May 13 23:00</b>		<b>Minimum Daily Average: 2.34 kph on May 1</b>		<b>Hours of Data: 744</b>																							
<b>Maximum Diurnal Average: 5.24 kph at hour 15</b>		<b>Minimum Diurnal Average: 2.42 kph at hour 22</b>		<b>Hours of Missing Data: 0</b>																							
<b>Monthly Average: 3.512 kph</b>		<b>Percentiles: P<sub>1</sub> = 0.7 P<sub>10</sub> = 1.3 Q<sub>1</sub> = 2.1 Median = 3.2 Q<sub>3</sub> = 4.6 P<sub>90</sub> = 5.6 P<sub>99</sub> = 10.0</b>		<b>Hours of Calibration: 0</b>																							
				<b>Percent Operational Time: 100.0</b>																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-May	2.4	1.8	1.8	2.2	1.9	1.4	1.0	1.3	2.2	2.1	3.0	4.5	5.4	4.6	3.6	3.3	2.8	2.3	2.1	1.6	0.7	0.7	1.6	1.9	2.34	5.39	
2-May	2.4	2.3	1.9	2.4	4.0	3.2	2.4	2.1	2.0	3.5	3.8	4.3	4.7	4.0	4.6	4.1	3.7	3.3	3.1	1.1	0.7	2.4	2.0	1.7	2.91	4.69	
3-May	1.3	2.0	3.1	1.5	1.9	1.9	2.3	2.6	2.7	2.7	6.0	4.6	4.1	5.1	4.8	4.1	4.1	3.1	2.2	1.6	1.1	2.7	2.6	1.0	2.88	5.97	
4-May	1.2	1.9	1.8	1.3	1.2	1.9	2.5	2.4	3.6	2.4	3.3	4.2	3.9	4.2	4.1	3.1	4.6	5.7	3.3	5.4	6.1	3.9	3.3	3.8	3.30	6.05	
5-May	4.5	3.9	4.0	5.0	4.6	7.1	7.1	5.4	3.0	3.4	3.4	3.6	4.5	5.5	5.8	5.6	5.2	5.4	5.2	2.8	0.9	1.9	0.8	0.7	4.14	7.10	
6-May	0.8	0.8	2.2	2.4	2.3	1.9	2.7	2.0	1.9	2.8	2.5	3.7	3.9	3.0	3.6	3.9	3.5	2.3	2.1	1.4	1.6	1.5	2.3	2.6	2.42	3.89	
7-May	2.5	2.3	2.3	2.4	2.1	2.0	2.6	2.9	1.9	2.2	2.6	3.4	3.5	4.2	3.2	4.4	4.7	3.4	3.0	3.5	2.5	4.3	2.1	2.2	2.92	4.72	
8-May	7.5	5.7	5.3	3.4	8.1	8.3	9.2	9.3	4.5	3.0	2.4	4.1	4.9	8.7	9.7	10.2	10.5	10.7	11.8	10.5	7.3	6.5	8.2	7.3	7.38	11.76	
9-May	5.2	4.6	3.6	2.5	2.9	4.1	3.6	4.6	6.8	8.4	9.3	9.0	8.9	8.7	9.1	8.3	9.3	6.2	7.0	5.6	5.1	1.1	1.9	1.5	5.72	9.35	
10-May	1.2	1.3	0.9	1.4	1.1	1.0	1.4	2.7	2.8	5.2	7.7	6.2	5.5	6.0	5.1	4.1	5.1	4.9	3.6	1.9	1.2	0.6	0.8	0.9	3.03	7.68	
11-May	1.7	2.0	2.5	1.8	1.6	1.3	2.3	2.0	2.3	2.6	4.1	4.9	4.6	4.8	5.1	5.8	4.3	4.2	5.1	4.6	2.8	3.7	1.9	2.3	3.27	5.85	
12-May	3.2	2.1	2.4	2.1	1.9	1.3	2.3	2.6	2.5	4.1	5.1	5.4	4.9	5.3	5.3	5.6	5.5	3.6	3.9	3.2	1.9	0.5	0.7	0.4	3.17	5.59	
13-May	0.9	1.4	1.2	1.3	2.7	0.9	2.2	2.6	2.7	3.6	4.1	5.0	4.7	4.9	3.9	4.6	4.2	3.7	3.8	2.1	1.6	1.0	0.3	1.4	2.70	5.01	
14-May	1.1	0.9	1.0	2.4	0.9	1.3	1.4	1.9	2.4	3.1	4.8	6.0	5.0	5.3	5.9	5.1	5.1	3.9	3.5	2.5	0.8	0.5	0.6	1.1	2.76	6.04	
15-May	1.4	1.2	1.8	2.1	2.0	2.3	2.2	2.1	2.9	3.9	5.3	5.9	6.2	5.8	5.2	5.7	5.4	4.2	4.0	3.5	1.8	1.6	2.2	2.0	3.36	6.17	
16-May	1.2	1.8	2.2	2.1	2.7	1.8	2.9	3.2	3.1	2.5	2.9	2.8	3.0	3.7	3.9	3.9	3.9	3.2	1.7	2.2	2.4	2.5	3.1	5.6	2.85	5.56	
17-May	8.5	6.9	7.8	7.2	1.2	1.3	1.6	4.3	4.9	5.3	5.1	7.1	5.3	5.5	3.7	3.5	3.8	4.4	3.1	1.4	1.3	1.0	0.9	1.4	4.01	8.50	
18-May	1.1	1.9	1.6	2.7	0.9	1.8	1.4	1.9	2.9	2.6	2.5	3.4	3.1	3.5	3.8	10.8	8.4	8.4	7.2	7.9	6.5	5.2	5.3	4.5	4.14	10.81	
19-May	3.2	2.7	3.2	3.5	2.7	2.8	2.5	2.8	4.0	3.2	3.7	4.3	5.2	5.2	6.1	5.0	4.2	4.9	5.6	5.8	5.1	5.2	4.7	4.9	4.20	6.12	
20-May	5.0	4.9	4.9	4.9	4.1	4.4	4.0	4.9	4.8	4.5	5.1	5.2	5.5	4.3	5.0	4.8	4.7	4.2	5.9	3.9	3.2	3.3	3.1	4.4	4.54	5.93	
21-May	5.1	3.4	2.7	3.7	2.9	3.2	3.8	3.7	3.9	3.2	3.5	4.1	4.5	4.9	5.0	3.5	4.0	3.4	3.7	4.5	3.4	4.3	5.2	4.5	3.92	5.21	
22-May	4.7	4.3	4.1	4.1	4.8	4.1	4.8	4.9	5.0	4.7	4.6	4.9	4.9	5.3	5.3	5.4	6.8	6.6	5.3	4.2	4.6	4.8	4.7	4.2	4.88	6.82	
23-May	3.1	3.2	5.3	5.3	4.2	4.9	4.7	4.3	5.4	5.7	6.1	5.5	5.1	5.0	4.9	5.6	4.7	2.5	1.9	1.9	0.9	1.3	1.9	1.7	3.96	6.13	
24-May	1.6	1.5	1.0	1.3	1.3	0.9	2.1	2.1	3.1	2.8	3.1	3.3	3.5	4.2	3.7	3.5	2.9	3.4	3.1	2.9	1.7	1.9	2.0	2.4	2.46	4.17	
25-May	2.7	2.8	4.1	1.9	1.3	1.2	2.1	1.8	2.4	2.7	2.1	2.4	3.2	3.1	8.3	5.5	5.7	4.4	2.8	4.1	4.5	2.2	2.6	3.0	3.20	8.27	
26-May	2.5	1.8	2.8	1.3	0.9	1.9	1.4	1.7	2.5	2.6	2.6	1.5	3.0	3.9	4.1	3.5	3.0	4.0	5.2	5.2	3.8	3.0	3.6	2.4	2.85	5.25	
27-May	2.4	2.5	3.3	1.9	1.7	2.3	2.6	3.0	3.8	3.0	2.9	3.4	3.2	2.9	3.0	3.5	4.0	3.3	3.8	3.3	4.0	2.6	2.2	2.3	2.94	4.00	
28-May	2.0	2.0	1.4	2.0	2.4	2.6	1.6	2.2	2.6	3.7	3.9	3.7	4.2	4.1	5.9	3.3	4.4	3.9	3.4	3.4	2.6	1.1	2.3	1.0	2.90	5.93	
29-May	1.0	0.8	0.8	1.2	1.6	2.4	1.5	2.1	2.3	2.9	4.0	5.8	6.6	5.7	10.5	4.5	3.9	3.3	3.0	3.5	4.6	2.2	1.7	3.0	3.29	10.46	
30-May	2.6	3.3	1.8	2.9	2.4	2.2	3.5	4.0	4.5	6.4	6.3	7.2	5.5	6.7	6.4	7.3	6.4	6.5	5.0	2.2	1.3	0.5	1.1	1.3	4.06	7.34	
31-May	0.9	1.5	1.2	1.9	1.8	2.6	1.4	2.9	1.9	2.6	2.4	2.4	3.8	3.9	3.6	3.5	3.5	3.0	2.7	2.2	1.2	1.0	2.3	2.4	2.36	3.88	
		2.74	2.56	2.71	2.64	2.46	2.59	2.81	3.12	3.27	3.58	4.14	4.58	4.66	4.91	5.24	5.01	4.91	4.39	4.10	3.55	2.81	2.42	2.51	2.58	Diurnal Average	
		8.50	6.86	7.77	7.23	8.10	8.25	9.23	9.31	6.82	8.42	9.35	9.00	8.92	8.74	10.46	10.81	10.51	10.74	11.76	10.45	7.26	6.50	8.18	7.30	Diurnal Maximum	
,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3 24-hr 100 ul/m^3																											



**WCAS - Violet Grove**  
**Summary of Hourly Standard Deviations**

**Wind Direction (WD) - deg**  
**May 2016**

Maximum Value: 97.80 deg on May 6 12:00 Minimum Value: 4.1 deg on May 14 03:00 Maximum Diurnal Average: 38.08 deg at hour 14 Monthly Average: 24.853 deg		Maximum Daily Average: 41.58 deg on May 25 Minimum Daily Average: 11.36 deg on May 19 Minimum Diurnal Average: 15.20 deg at hour 1 Percentiles: P <sub>1</sub> = 4.9 P <sub>10</sub> = 8.9 Q <sub>1</sub> = 12.2 Median = 19.0 Q <sub>3</sub> = 32.1 P <sub>90</sub> = 49.6 P <sub>99</sub> = 86.6		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-May	13.6	9.9	12.5	13.6	13.8	6.3	5.5	8.6	10.7	16.5	34.7	38.1	33.7	52.6	37.5	66.4	80.2	85.7	47.7	19.3	6.8	5.4	12.2	10.6	26.74	85.69
2-May	11.6	10.5	10.0	10.9	16.4	38.5	78.9	53.2	22.9	27.4	18.4	20.3	23.4	18.0	18.5	18.7	15.5	12.1	8.2	5.4	6.4	11.6	8.3	14.5	19.98	78.92
3-May	13.5	32.8	17.9	4.9	9.6	9.1	8.0	9.0	9.4	16.8	29.7	65.3	47.4	45.6	64.3	63.4	48.9	18.9	9.3	11.2	16.5	21.2	6.0	11.2	24.58	65.25
4-May	17.2	10.1	8.5	17.1	19.6	46.8	59.3	53.2	59.1	19.2	23.7	43.2	22.8	30.2	23.1	22.6	42.3	47.2	48.2	20.1	30.0	37.4	44.9	39.0	32.70	59.28
5-May	25.2	24.5	18.0	17.4	16.6	21.6	21.1	20.1	12.7	12.9	22.0	25.2	21.4	25.6	21.2	24.4	20.4	37.2	23.3	20.3	7.1	23.6	16.8	13.0	20.47	37.18
6-May	6.1	5.0	7.0	8.8	11.8	6.3	7.9	11.6	22.3	43.4	80.4	97.8	84.6	89.1	65.1	68.3	94.8	54.3	16.9	10.4	6.2	8.5	10.3	14.4	34.63	97.80
7-May	12.7	10.2	10.4	11.3	11.3	16.6	14.8	16.2	16.9	26.2	24.0	24.0	32.6	40.8	39.2	39.7	34.0	24.8	24.5	40.7	24.5	28.4	9.7	11.7	22.71	40.76
8-May	37.0	23.9	26.0	46.1	34.8	48.2	21.4	27.3	34.5	19.1	16.0	17.9	34.6	19.7	17.2	18.4	17.8	20.9	22.6	18.5	15.0	13.6	20.2	20.9	24.66	48.23
9-May	16.2	14.9	13.2	9.3	8.3	12.4	12.7	15.8	19.4	23.1	29.7	28.5	25.9	24.7	26.6	25.5	26.6	29.5	27.4	19.1	17.8	8.9	9.5	10.1	18.97	29.72
10-May	5.3	5.7	4.9	5.5	4.6	4.3	8.2	9.1	22.3	50.6	40.6	43.7	51.7	48.0	53.5	53.6	49.0	59.9	67.6	15.8	21.1	10.0	5.7	8.7	27.05	67.57
11-May	17.0	10.9	18.7	66.2	88.3	46.4	65.2	41.5	42.2	23.5	27.4	42.2	30.8	32.2	22.8	30.4	17.1	19.9	19.0	18.1	12.5	11.4	15.3	14.6	30.57	88.30
12-May	14.6	15.6	14.2	16.1	9.1	13.3	11.9	15.7	16.8	27.4	34.6	34.8	57.8	43.5	42.3	37.9	49.0	34.4	25.4	14.3	27.9	8.7	12.9	12.3	24.61	57.85
13-May	11.1	10.5	24.5	37.8	61.3	74.7	25.1	24.4	24.8	29.4	43.5	63.3	47.7	60.8	62.4	53.6	49.8	33.5	28.6	12.8	9.9	20.9	8.0	5.4	34.32	74.65
14-May	5.3	5.6	4.1	16.8	31.4	19.7	29.0	34.0	19.1	27.9	26.3	30.2	36.8	36.5	41.0	33.6	24.8	16.3	13.2	9.8	8.8	5.4	4.6	6.0	20.26	40.98
15-May	7.9	9.1	10.3	9.9	8.7	9.6	12.1	13.0	14.9	21.0	18.0	16.2	16.0	21.3	22.2	16.7	21.3	17.7	14.3	11.2	6.6	4.5	8.6	8.8	13.33	22.23
16-May	6.9	7.4	7.5	10.4	80.6	36.9	17.8	18.8	22.4	25.1	39.5	84.4	73.2	55.2	69.0	67.1	64.6	15.6	13.6	9.4	17.7	14.6	16.2	52.3	34.43	84.38
17-May	19.4	19.8	20.6	21.3	12.2	7.1	11.5	13.0	27.1	33.5	45.2	38.4	17.3	22.8	32.8	40.2	60.4	35.3	43.4	92.7	25.5	11.8	7.0	94.8	31.37	94.78
18-May	16.2	38.4	20.7	69.1	20.8	8.1	7.5	10.0	20.0	58.1	46.8	46.4	51.9	75.0	33.9	94.6	40.9	45.4	31.7	31.1	24.2	17.8	20.5	20.4	35.39	94.62
19-May	14.6	11.1	11.8	14.2	10.9	12.2	12.4	10.3	9.2	10.0	9.7	10.8	14.0	11.1	12.5	9.5	8.8	10.2	11.1	12.5	11.4	12.6	10.6	11.1	11.36	14.61
20-May	12.4	10.5	12.4	11.3	11.0	11.7	9.3	11.9	13.9	14.4	14.8	18.3	19.0	16.7	18.4	20.3	31.3	26.6	49.6	25.0	19.1	21.0	17.0	18.1	18.09	49.56
21-May	21.4	19.0	12.3	12.6	10.5	9.8	10.9	12.4	15.0	12.0	15.0	15.2	21.0	28.0	45.5	42.9	38.4	12.3	18.8	29.1	18.5	20.2	22.2	18.1	20.04	45.53
22-May	19.9	21.3	16.5	13.8	15.7	10.7	11.9	12.6	13.3	10.5	11.8	11.7	11.7	14.5	13.1	16.3	19.0	19.4	14.0	11.5	12.1	12.8	13.4	13.3	14.20	21.28
23-May	14.0	13.5	17.2	19.1	17.5	20.1	17.9	17.9	20.6	25.2	35.7	50.3	50.1	29.7	31.1	44.4	39.6	20.2	13.3	22.2	22.1	45.8	48.7	33.5	27.91	50.33
24-May	25.8	49.4	19.3	14.5	8.2	9.9	14.8	20.8	15.7	19.2	21.2	26.8	28.0	48.8	19.9	38.9	22.9	19.0	12.9	12.7	8.3	9.7	10.4	9.5	20.27	49.40
25-May	9.8	10.9	81.0	52.7	42.8	25.1	12.5	13.6	51.6	57.3	91.6	79.5	44.8	38.6	75.4	22.1	62.7	55.2	15.9	20.1	29.4	20.5	21.1	63.7	41.58	91.64
26-May	15.2	10.9	13.2	15.2	8.5	32.3	8.9	14.1	25.9	27.4	49.5	29.1	36.0	31.2	18.6	17.3	16.8	66.2	21.1	25.5	18.9	12.2	37.6	17.5	23.72	66.17
27-May	15.6	12.3	20.6	9.0	7.9	8.0	9.6	11.6	18.5	12.8	20.0	21.2	26.2	11.2	13.0	14.1	13.1	11.0	14.8	11.2	9.6	10.4	8.6	9.1	13.31	26.25
28-May	9.8	7.8	8.4	13.4	10.8	14.9	19.4	16.4	24.0	28.8	37.9	34.4	60.1	74.2	29.5	59.9	21.6	15.2	14.4	12.4	11.2	16.2	22.9	24.9	24.52	74.19
29-May	27.7	17.1	16.3	10.1	48.5	33.0	12.2	15.7	17.4	30.2	40.8	42.5	35.2	40.3	27.9	9.2	25.1	33.8	73.2	38.7	32.0	16.3	14.8	18.7	28.20	73.16
30-May	14.6	18.4	7.3	11.8	11.4	8.5	10.6	15.4	22.1	25.9	23.6	30.1	25.8	37.4	29.7	38.9	40.9	47.3	39.2	17.8	38.8	13.0	7.4	39.4	23.97	47.35
31-May	13.7	62.8	10.2	8.0	21.9	36.4	10.8	85.5	17.6	26.8	38.9	28.8	56.6	57.3	37.3	25.5	31.8	19.7	10.7	7.7	5.7	6.9	7.5	8.8	26.54	85.51
15.20 17.08 15.98 19.30 22.09 21.25 18.68 21.06 22.00 25.85 32.61 37.37 36.71 38.08 34.35 36.59 36.43 31.12 25.60 20.21 16.83 15.52 15.44 21.12																								Diurnal Average		
36.98 62.77 81.03 69.14 88.30 74.65 78.92 85.51 59.13 58.09 91.64 97.80 84.58 89.07 75.39 94.62 94.80 85.69 73.16 92.67 38.83 45.80 48.69 94.78																								Diurnal Maximum		
,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3 24-hr 100 ul/m^3																										

**CARROT CREEK  
STATION #903**

**CONTINUOUS AIR MONITORING DATA**

**MAY 2016**

**Summary Report**

*Continuous air quality/meteorological monitoring measurements*

**West Central Airshed Society**

WCAS / Carrot Creek Station 903													May 2016		
Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Min	Max	Percentile					Exceedences		24 Hour Average Max (ppm)	
							P10	Q1	Median	Q3	P90	1-hour	24-hour		
SO <sub>2</sub> (ppb)	34	708	99.7	0.1	0.0	1.5	0.0	0.0	0.0	0.1	0.2	0	0	0.000	
O <sub>3</sub> (ppb)	34	708	99.7	31.6	0.2	61.3	12.0	17.6	32.7	43.6	49.9	0	-	0.045	
NO (ppb)	36	706	99.7	1.0	0.0	18.7	0.0	0.0	0.1	0.7	3.4	-	-	-	
NO <sub>2</sub> (ppb)	36	706	99.7	4.1	0.9	16.3	2.1	2.5	3.2	4.8	7.4	0	0	0.007	
NO <sub>x</sub> (ppb)	36	706	99.7	5.0	0.9	34.0	2.2	2.7	3.6	6.6	10.3	-	-	-	
Wind Speed (kph)	0	742	99.7	7.7	0.1	30.2	2.0	4.3	7.0	10.7	13.8	-	-	-	
Temperature (°C)	0	742	99.7	10.0	-5.0	28.3	1.5	4.2	9.2	14.6	20.0	-	-	-	
Relative Humidity (%)	0	742	99.7	59.5	10.3	98.2	21.6	35.2	59.9	87.4	94.5	-	-	-	
Std Dev Wind Direction (deg)	0	742	99.7	29.3	4.5	97.5	12.5	14.8	22.4	37.3	59.7	-	-	-	
Std Dev Wind Speed (kph)	0	742	99.7	3.0	0.1	9.8	1.2	1.8	2.8	3.9	4.9	-	-	-	







**WCAS - Carrot Creek**  
**Summary of Hourly Averages**

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

Maximum Value: 61.29 ppb on May 15 15:00																						Maximum Daily Average: 45.23 ppb on May 15																						Hours in Service: 744											
Minimum Value: 0.2 ppb on May 24 05:00																						Minimum Daily Average: 13.99 ppb on May 19																						Hours of Data: 708											
Maximum Diurnal Average: 42.57 ppb at hour 16																						Minimum Diurnal Average: 17.43 ppb at hour 6																						Hours of Missing Data: 36											
Monthly Average: 31.630 ppb																						Percentiles: P <sub>1</sub> = 2.3 P <sub>10</sub> = 12.0 Q <sub>1</sub> = 17.6 Median = 32.7 Q <sub>3</sub> = 43.6 P <sub>90</sub> = 49.9 P <sub>99</sub> = 59.9																						Hours of Calibration: 34											
																																												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-May	26.2	25.6	27.2	Z	24.7	25.3	24.3	27.3	33.7	35.5	38.0	36.8	36.8	37.0	35.5	36.0	36.1	36.1	36.2	29.7	18.2	7.6	9.2	7.2	28.27	38.03																													
2-May	6.8	4.2	2.6	Z	2.7	3.5	7.3	10.6	17.1	28.1	39.3	40.4	43.6	46.4	47.5	48.4	48.3	45.9	46.2	44.8	44.2	39.3	42.1	39.9	30.40	48.41																													
3-May	20.6	27.3	31.6	Z	31.6	28.9	30.3	32.4	37.5	45.0	50.9	54.5	55.7	57.2	56.3	56.4	57.2	57.6	56.2	52.2	46.7	40.5	35.0	32.7	43.23	57.64																													
4-May	33.2	29.9	25.9	Z	22.4	18.8	18.4	21.2	30.7	39.5	46.0	51.5	52.6	51.3	51.4	51.7	51.7	47.8	46.0	42.3	38.7	37.7	38.4	32.1	38.22	52.64																													
5-May	34.6	41.6	45.1	Z	49.1	43.3	37.7	35.8	31.8	35.3	39.0	41.6	45.5	48.2	49.7	51.0	52.0	53.3	53.3	51.5	42.0	19.3	17.7	16.2	40.64	53.35																													
6-May	20.1	20.3	20.3	Z	21.7	19.3	22.2	27.5	32.4	40.0	44.6	46.8	48.6	49.7	50.9	52.2	52.4	52.1	49.3	45.6	43.9	42.7	34.1	26.9	37.56	52.43																													
7-May	19.7	30.9	32.6	Z	29.6	27.1	26.2	31.1	34.0	43.9	49.4	49.1	47.4	47.9	48.4	49.8	49.1	46.0	41.1	38.4	26.1	28.2	34.0	38.7	37.77	49.82																													
8-May	36.7	37.8	43.0	Z	40.6	43.1	40.2	38.8	37.9	37.5	38.8	46.1	44.9	41.7	40.2	38.3	37.9	36.8	36.1	34.5	33.1	34.6	31.5	26.0	38.09	46.11																													
9-May	23.8	23.4	19.8	Z	16.8	20.2	22.9	27.7	32.5	33.3	35.7	39.1	41.4	41.9	42.7	42.9	42.9	42.7	41.4	39.7	36.6	30.8	30.0	25.7	32.78	42.91																													
10-May	17.9	17.6	20.5	Z	16.3	12.8	17.5	24.0	28.2	37.9	42.2	42.0	43.2	44.6	44.6	44.5	45.0	46.0	45.0	43.4	36.8	19.0	14.4	12.5	31.12	46.02																													
11-May	15.2	9.5	5.3	Z	5.9	4.1	7.7	15.8	27.6	34.9	42.7	45.1	45.2	45.8	47.3	47.3	47.4	45.9	43.5	42.3	41.0	39.4	37.4	38.3	31.93	47.41																													
12-May	40.1	40.5	37.9	Z	34.2	31.8	31.4	36.7	40.0	43.6	46.7	48.7	50.1	47.4	47.2	48.0	47.8	48.5	47.7	45.1	34.7	34.5	25.5	16.7	40.20	50.07																													
13-May	11.0	11.3	10.6	Z	8.9	7.4	9.6	21.8	29.1	40.0	44.7	46.8	48.5	49.3	50.9	50.3	50.9	51.8	52.2	50.9	48.2	35.8	31.6	21.7	34.05	52.19																													
14-May	13.5	13.8	10.9	Z	9.9	11.6	15.3	25.6	34.5	44.7	54.1	56.1	57.6	57.8	58.1	59.1	59.4	59.5	59.9	57.2	55.7	48.7	38.3	40.0	40.94	59.90																													
15-May	29.2	22.9	15.9	Z	10.8	8.0	14.6	30.4	39.4	55.1	58.6	59.3	60.1	60.9	61.3	61.0	61.1	60.9	59.7	59.6	58.3	55.0	50.5	47.5	45.23	61.29																													
16-May	44.2	38.6	34.7	Z	13.3	10.6	20.3	30.2	37.4	45.1	51.0	56.2	60.0	59.5	59.9	59.0	57.3	56.1	56.4	53.5	41.5	24.5	43.6	48.3	43.54	60.00																													
17-May	49.5	52.6	49.9	Z	37.6	35.3	30.6	29.8	33.9	39.0	43.0	46.0	47.8	49.7	49.5	49.1	47.9	46.7	45.4	40.4	21.1	14.9	11.1	9.4	38.26	52.59																													
18-May	5.3	3.8	9.5	Z	10.7	7.9	11.3	12.3	15.1	26.4	31.0	34.4	42.6	34.1	29.5	28.5	29.5	29.7	30.1	21.3	20.8	22.2	15.2	21.6	21.43	42.59																													
19-May	16.9	18.4	16.8	Z	16.8	21.6	23.2	21.6	15.3	13.4	12.9	11.3	11.1	11.2	10.9	10.8	10.4	10.1	10.7	11.3	11.2	11.8	12.2	12.0	13.99	23.20																													
20-May	12.6	13.0	14.1	Z	14.5	14.4	14.8	14.6	15.5	PF	PF	18.0	20.1	20.5	20.3	20.1	19.6	18.8	17.8	18.5	16.4	15.9	16.6	15.8	16.75	20.54																													
21-May	15.5	15.4	15.0	Z	17.2	16.8	15.9	16.1	16.2	16.6	17.2	17.3	18.0	17.6	16.8	17.1	17.2	16.2	15.1	13.9	12.3	10.3	8.9	11.7	15.40	17.95																													
22-May	12.1	12.4	12.4	Z	15.6	15.1	15.2	16.1	15.4	15.2	15.0	14.9	14.8	14.8	15.4	15.6	15.9	15.2	14.8	14.5	14.5	15.0	15.8	16.9	14.90	16.93																													
23-May	18.3	18.3	17.1	Z	18.2	19.2	21.0	21.7	25.8	29.2	32.9	38.1	41.6	45.2	46.5	46.1	44.1	44.3	44.3	42.8	39.8	29.8	21.0	21.3	31.59	46.47																													
24-May	16.0	6.0	4.0	Z	0.2	2.2	5.8	12.8	23.4	36.2	43.5	45.9	48.0	49.3	50.5	50.6	49.0	49.9	49.0	47.5	47.3	42.8	35.5	25.2	32.19	50.61																													
25-May	9.5	5.1	4.8	Z	7.9	14.2	13.0	12.4	18.0	31.9	44.3	46.5	43.7	39.8	41.4	42.0	40.6	42.7	41.0	39.9	41.4	33.7	27.8	14.5	28.51	46.48																													
26-May	13.5	12.2	13.2	Z	21.8	15.8	16.8	19.7	19.6	30.3	C	C	C	46.7	49.0	48.0	45.9	47.1	43.0	41.4	40.1	33.9	33.8	31.3	31.16	49.03																													
27-May	31.7	32.2	28.7	Z	31.9	20.7	23.4	33.3	38.9	40.2	43.8	40.8	39.2	39.3	38.6	38.9	39.5	35.7	36.9	34.7	29.9	30.5	31.7	31.9	34.45	43.77																													
28-May	29.9	28.5	28.8	Z	18.7	16.9	22.0	25.1	28.8	32.5	35.3	37.0	38.8	42.1	42.1	43.1	43.7	42.1	41.6	37.6	41.4	34.1	14.6	10.9	31.98	43.65																													
29-May	5.7	2.4	2.4	Z	4.8	8.3	13.4	15.8	21.5	27.6	30.9	40.6	47.2	45.4	47.4	47.9	37.9	34.5	39.3	33.9	29.9	27.8	27.2	24.9	26.81	47.89																													
30-May	20.7	18.5	17.2	Z	16.7	14.2	14.5	19.7	26.6	28.7	30.8	31.6	32.4	33.2	31.8	32.2	31.5	32.2	32.1	27.7	27.2	23.0	15.8	11.3	24.77	33.17																													
31-May	5.0	1.3	2.4	Z	0.4	1.9	5.2	12.6	17.1	25.4	28.8	30.0	31.9	32.1	32.8	33.9	36.7	36.9	36.7	35.5	31.9	29.6	28.9	32.7	23.03	36.94																													
																								21.13	20.49	20.00	--	18.44	17.43	19.10	23.24	27.58	34.40	39.01	40.41	41.95	42.18	42.40	42.57	42.12	41.59	40.91	38.43	34.55	29.44	26.76	24.57	Diurnal Average							
																								49.49	52.59	49.91	--	49.07	43.34	40.20	38.84	40.04	55.09	58.63	59.29	60.13	60.88	61.29	61.05	61.15	60.89	59.90	59.57	58.26	55.05	50.53	48.35	Diurnal Maximum							
Z - zerospan																								C - Calibration				PF - Power Failure																											
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 82.5 ppb 24-hr -- ppb																																																							



**WCAS - Carrot Creek**  
**Summary of Hourly Averages**

**Nitrogen Oxide (NO) - ppb**  
**May 2016**

Maximum Value: 18.71 ppb on May 12 21:00		Maximum Daily Average: 6.35 ppb on May 28		Hours in Service: 744																																													
Minimum Value: 0.0 ppb on May 4 23:00		Minimum Daily Average: 0.05 ppb on May 27		Hours of Data: 706																																													
Maximum Diurnal Average: 1.99 ppb at hour 8		Minimum Diurnal Average: 0.62 ppb at hour 24		Hours of Missing Data: 38																																													
Monthly Average: 0.977 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.1 Q <sub>3</sub> = 0.7 P <sub>90</sub> = 3.4 P <sub>99</sub> = 8.6		Hours of Calibration: 36																																													
				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-May	0.3	0.1	0.1	Z	0.0	0.1	0.6	0.9	0.8	0.8	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.3	0.6	1.4	2.0	0.4	0.41	2.04																							
2-May	1.0	1.5	1.6	Z	1.9	1.8	1.7	6.0	3.9	2.0	0.6	0.2	0.2	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1	1.00	5.96																							
3-May	0.8	0.3	0.0	Z	0.1	0.4	0.8	1.5	1.1	0.5	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.28	1.51																							
4-May	0.1	0.1	0.4	Z	0.5	0.6	0.9	2.7	1.7	1.1	0.5	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.40	2.73																							
5-May	0.0	0.0	0.0	Z	0.0	0.0	0.3	0.4	0.4	0.6	0.6	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.3	0.16	0.56																							
6-May	0.3	0.2	0.3	Z	0.2	0.7	1.3	1.6	1.7	0.7	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.36	1.66																							
7-May	0.5	0.1	0.1	Z	0.1	0.3	1.1	1.1	1.1	0.5	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.5	0.8	0.5	0.2	0.0	0.36	1.09																							
8-May	0.0	0.0	0.0	Z	0.0	0.0	0.2	0.1	0.1	0.4	0.5	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.08	0.52																							
9-May	0.0	0.0	0.1	Z	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.09	0.18																							
10-May	0.7	0.6	0.2	Z	0.5	1.4	2.4	2.1	1.6	0.6	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.2	0.1	0.1	0.4	0.4	0.7	0.54	2.35																							
11-May	0.2	0.3	0.8	Z	0.9	3.4	4.3	4.8	1.7	1.0	0.5	0.4	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.83	4.85																							
12-May	0.0	0.0	0.0	Z	0.1	0.1	0.3	0.6	0.4	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.9	18.7	0.1	0.3	0.2	0.97	18.71																							
13-May	0.7	0.4	0.3	Z	0.6	6.5	4.7	3.3	2.7	0.9	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.92	6.45																							
14-May	0.3	0.1	0.6	Z	0.4	0.8	1.5	3.4	2.2	1.2	0.3	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.51	3.36																							
15-May	0.1	0.0	0.2	Z	0.3	2.6	1.9	0.9	1.4	0.5	0.2	0.2	0.2	0.3	0.1	0.2	0.2	0.2	0.3	0.2	0.1	0.0	0.0	0.0	0.45	2.62																							
16-May	0.0	0.0	0.1	Z	1.1	2.6	2.1	2.8	1.8	1.1	0.6	0.4	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.6	0.2	0.0	0.61	2.83																							
17-May	0.0	0.0	0.1	Z	0.1	0.2	0.5	1.1	1.1	0.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.2	0.8	1.2	0.36	1.20																							
18-May	3.7	2.6	1.2	Z	0.3	2.6	1.4	1.9	3.2	1.4	0.2	0.1	0.1	0.0	0.1	0.2	0.0	0.1	0.0	0.1	0.0	0.8	2.7	0.0	1.00	3.73																							
19-May	4.0	0.1	0.1	Z	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.29	4.00																							
20-May	0.0	0.0	0.0	Z	0.0	0.0	0.1	0.2	0.4	PF	PF	0.6	0.3	0.2	0.2	0.4	0.3	0.2	0.3	0.3	0.1	0.0	0.0	0.0	0.18	0.59																							
21-May	0.0	0.0	0.0	Z	0.0	0.0	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.3	0.4	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.1	0.0	0.13	0.41																							
22-May	0.0	0.0	0.0	Z	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.08	0.20																							
23-May	0.0	0.0	0.0	Z	0.0	0.2	0.4	0.4	0.3	0.3	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.1	0.12	0.42																							
24-May	0.2	0.9	0.2	Z	2.9	1.3	2.3	3.1	1.4	1.0	0.5	0.3	0.2	0.1	0.1	0.1	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.1	0.65	3.10																							
25-May	0.4	0.9	1.1	Z	0.6	0.4	1.1	1.4	3.3	1.1	0.1	0.1	0.1	0.1	0.3	0.0	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.4	0.53	3.33																							
26-May	0.3	0.3	0.3	Z	0.4	0.4	0.8	0.4	0.4	0.4	C	C	C	C	C	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.23	0.78																							
27-May	0.0	0.0	0.0	Z	0.0	0.1	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.05	0.15																							
28-May	0.0	0.0	0.2	Z	3.3	8.6	9.2	8.0	6.9	7.5	2.2	5.6	9.7	9.0	8.6	8.4	8.3	8.8	8.5	8.4	7.8	6.5	5.5	5.0	6.35	9.75																							
29-May	5.8	6.6	6.9	Z	5.8	7.0	6.5	1.4	0.9	5.6	5.9	6.1	2.5	1.0	3.1	3.8	4.4	2.8	1.1	0.0	0.0	4.4	7.6	4.4	4.06	7.60																							
30-May	2.1	2.6	4.1	Z	6.7	7.9	7.7	6.6	5.8	5.4	5.3	5.5	5.9	7.1	7.7	7.5	7.6	6.6	5.5	5.5	6.2	4.7	4.5	5.0	5.81	7.86																							
31-May	4.3	3.4	3.7	Z	4.6	4.2	3.6	4.2	2.9	2.7	2.1	1.6	3.0	1.2	0.0	0.0	0.0	0.9	2.7	2.6	1.9	1.2	0.8	0.4	2.26	4.64																							
																								0.83	0.69	0.73	--	1.03	1.76	1.87	1.99	1.61	1.29	0.78	0.77	0.81	0.70	0.74	0.72	0.72	0.68	0.66	0.65	1.22	0.74	0.85	0.62	Diurnal Average	
																								5.76	6.61	6.89	--	6.75	8.57	9.21	8.00	6.88	7.50	5.94	6.14	9.75	9.01	8.58	8.42	8.27	8.80	8.47	8.40	18.71	6.48	7.60	5.02	Diurnal Maximum	
Z - zeronspan      C - Calibration      PF - Power Failure																																																	
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ppb      24-hr --- ppb																																																	





**CARROT CREEK  
STATION #903**

**METEOROLOGICAL DATA**

**MAY 2016**



**WCAS - Carrot Creek**  
**Summary of Hourly Averages**

**External Temperature (ET) - C**  
**May 2016**

Maximum Value: 28.34 C on May 3 18:00		Maximum Daily Average: 18.94 C on May 3		Hours in Service: 744																							
Minimum Value: -5.0 C on May 13 05:00		Minimum Daily Average: 1.86 C on May 20		Hours of Data: 742																							
Maximum Diurnal Average: 15.80 C at hour 16		Minimum Diurnal Average: 3.03 C at hour 5		Hours of Missing Data: 2																							
Monthly Average: 9.984 C		Percentiles: P <sub>1</sub> = -3.3 P <sub>10</sub> = 1.5 Q <sub>1</sub> = 4.2 Median = 9.2 Q <sub>3</sub> = 14.6 P <sub>90</sub> = 20.0 P <sub>99</sub> = 27.6		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-May	4.3	3.7	3.6	2.0	2.0	2.1	3.8	7.4	11.2	13.8	17.6	18.8	20.0	20.8	21.7	22.4	23.2	23.4	23.4	21.6	16.7	12.1	9.3	8.8	13.07	23.37	
2-May	6.9	6.3	5.5	4.6	4.3	5.0	8.4	11.3	14.6	19.4	23.3	25.0	25.8	26.8	27.7	27.9	28.1	27.3	26.1	24.3	21.3	18.9	18.5	15.6	17.63	28.07	
3-May	10.0	9.3	11.1	9.7	10.9	10.3	11.7	14.3	17.3	21.3	23.7	24.9	26.2	26.2	27.2	27.8	28.2	28.3	26.6	24.9	20.4	16.6	15.1	12.5	18.94	28.34	
4-May	11.7	9.6	7.9	8.0	6.4	5.5	6.2	10.2	17.1	20.9	20.9	22.2	22.7	22.2	21.4	22.3	22.4	20.1	18.4	17.2	15.2	14.0	12.9	10.3	15.25	22.70	
5-May	10.9	11.1	10.5	8.6	6.3	5.3	5.8	6.2	6.8	8.3	9.9	11.3	13.4	14.2	15.1	15.9	16.4	16.6	16.5	15.8	11.2	5.7	3.2	1.9	10.29	16.57	
6-May	1.1	0.3	-0.2	-1.0	-0.2	0.3	3.8	8.2	10.9	13.3	15.4	16.9	18.0	19.4	20.4	20.8	21.6	21.9	20.9	19.2	17.0	14.5	10.1	7.5	11.67	21.93	
7-May	5.5	7.1	7.3	6.8	5.8	5.1	7.9	12.2	15.9	20.3	22.2	24.7	25.4	26.2	27.2	27.8	27.7	25.4	24.0	20.2	14.6	13.7	14.9	17.3	16.88	27.84	
8-May	15.2	14.2	13.0	10.1	8.6	5.6	5.4	6.0	6.9	7.4	9.6	12.2	13.0	13.3	13.3	12.6	10.7	8.5	8.1	7.2	6.4	3.8	3.2	3.1	9.05	15.19	
9-May	3.0	2.9	2.1	2.1	2.7	3.5	4.0	4.2	4.4	5.0	6.3	7.1	7.9	8.5	8.3	9.0	9.5	9.7	8.9	8.2	6.6	3.7	2.9	1.5	5.49	9.71	
10-May	0.4	1.2	1.9	-0.2	-1.8	-2.0	1.4	4.2	7.3	10.0	10.9	11.9	12.5	13.1	12.8	13.4	13.4	13.8	14.1	13.1	10.0	4.6	2.1	0.0	7.00	14.06	
11-May	-0.4	-1.9	-2.7	-3.2	-3.5	-3.3	0.1	4.1	8.1	11.0	12.8	13.2	13.7	13.1	13.3	13.2	12.8	12.4	11.6	10.7	9.9	8.7	8.0	6.6	7.02	13.71	
12-May	6.2	5.0	3.7	2.8	1.6	0.8	1.7	4.3	5.6	7.1	7.9	8.8	9.4	10.3	10.8	11.1	10.8	11.0	10.6	9.5	7.1	5.0	2.1	-1.1	6.33	11.10	
13-May	-2.2	-3.4	-4.0	-4.7	-5.0	-4.8	-0.9	3.0	7.4	10.3	11.3	12.0	12.7	13.5	14.0	14.4	14.5	14.4	13.8	12.8	10.5	6.7	3.9	1.9	6.34	14.47	
14-May	-0.2	-1.6	-2.8	-3.2	-3.7	-3.3	0.3	4.7	8.7	12.5	14.4	15.0	15.8	16.6	17.1	17.5	17.7	17.7	17.2	16.2	13.4	9.8	6.4	4.9	8.80	17.68	
15-May	3.1	1.1	-0.1	-1.2	-2.2	-2.0	1.6	7.4	11.4	15.3	16.5	17.5	18.6	18.9	19.5	19.9	20.1	20.1	19.8	18.6	15.8	12.8	10.3	8.5	11.30	20.15	
16-May	7.5	4.9	2.7	0.4	-1.2	-1.1	3.7	8.1	10.5	14.6	18.0	20.9	22.8	24.4	25.1	25.2	25.0	23.6	23.0	21.8	18.2	14.7	16.3	16.1	14.39	25.22	
17-May	15.0	14.2	13.4	11.2	9.6	9.7	10.1	11.8	13.8	16.2	17.8	18.9	19.9	20.6	21.2	22.2	21.5	21.3	20.4	18.6	16.6	14.4	12.4	11.5	15.93	22.20	
18-May	10.9	8.8	6.5	5.5	5.7	5.9	8.7	11.3	12.5	15.5	17.6	19.5	20.7	18.9	15.7	14.6	13.9	13.5	12.2	10.1	9.7	9.2	9.1	8.6	11.86	20.69	
19-May	8.5	8.4	8.2	8.1	8.0	7.7	7.4	7.3	7.4	7.3	6.3	5.0	4.2	3.4	2.8	2.3	1.8	0.7	0.3	0.2	0.1	0.1	0.1	0.0	4.40	8.48	
20-May	0.0	-0.1	-0.3	-0.4	-0.5	-0.5	-0.5	-0.4	0.1	PF	PF	2.0	3.0	3.5	3.8	4.1	4.4	4.2	4.5	4.0	3.2	2.6	2.2	2.1	1.86	4.45	
21-May	1.7	1.4	1.2	1.3	1.3	1.3	1.0	1.1	1.5	2.0	2.1	2.3	2.4	2.7	3.4	4.0	4.1	4.2	4.1	3.6	3.2	2.6	2.4	2.3	2.38	4.16	
22-May	2.1	2.1	2.2	2.1	2.1	2.0	2.0	2.0	2.2	2.4	2.7	2.9	3.2	3.4	3.7	3.8	3.8	3.9	4.0	3.9	3.6	3.6	3.8	4.0	2.98	4.05	
23-May	4.4	4.5	4.5	4.6	4.7	4.6	5.0	5.7	6.8	8.8	9.8	11.1	12.2	13.2	14.1	14.9	15.7	15.5	15.7	15.1	12.0	8.7	6.9	5.6	9.34	15.75	
24-May	4.5	3.1	1.9	1.1	0.3	1.0	4.2	8.0	10.9	12.7	14.2	15.5	16.6	17.8	18.9	19.5	19.4	19.8	19.7	18.5	16.0	13.7	11.6	8.7	11.56	19.80	
25-May	6.9	5.7	5.5	4.6	4.9	7.1	8.6	9.7	13.2	17.3	19.1	20.0	18.8	15.8	18.8	19.2	18.0	18.2	17.4	13.7	12.4	11.4	10.9	10.0	12.80	20.00	
26-May	9.3	8.4	7.7	8.1	8.9	8.9	9.6	10.4	10.3	10.7	12.4	14.0	15.9	17.7	17.7	16.6	13.5	10.1	9.5	9.1	8.7	8.6	8.2	7.8	10.92	17.73	
27-May	7.5	7.1	7.1	7.0	6.9	7.1	7.2	7.0	7.3	7.4	7.7	8.1	8.1	8.0	7.9	8.3	8.6	8.5	8.1	7.4	7.0	6.4	6.2	6.0	7.41	8.58	
28-May	5.8	5.7	5.6	5.0	3.9	4.2	6.5	7.8	8.7	9.4	10.6	11.5	12.9	13.8	13.9	14.7	15.1	14.1	11.4	7.5	7.5	6.3	5.0	4.0	8.78	15.07	
29-May	2.8	2.3	1.5	1.3	1.3	2.3	3.8	5.3	7.0	8.0	10.2	12.4	13.7	13.4	13.1	13.1	12.0	11.6	11.5	10.8	10.0	9.3	8.2	6.6	7.98	13.73	
30-May	5.2	4.4	4.1	4.2	4.1	3.0	3.9	6.4	9.4	10.1	10.7	11.6	12.4	13.2	13.1	13.6	13.7	14.6	14.4	13.3	13.7	10.8	8.1	6.7	9.36	14.55	
31-May	6.2	5.1	4.2	2.9	1.7	3.0	5.9	8.8	11.4	13.1	14.1	15.3	16.2	16.8	16.8	17.6	18.1	18.0	17.8	16.6	14.9	13.6	12.8	12.3	11.80	18.13	
		5.61	4.87	4.28	3.49	3.03	3.05	4.79	7.04	9.25	11.71	13.19	13.95	14.77	15.16	15.47	15.80	15.67	15.23	14.64	13.35	11.39	9.25	7.96	6.82	Diurnal Average	
		15.19	14.23	13.38	11.17	10.86	10.34	11.68	14.28	17.28	21.34	23.66	25.03	26.24	26.81	27.69	27.90	28.19	28.34	26.63	24.87	21.30	18.91	18.49	17.26	Diurnal Maximum	
PF - Power Failure																											



**WCAS - Carrot Creek**  
**Summary of Hourly Averages**

**Wind Speed (WS) - kph**  
**May 2016**

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1 Spd	6.6	5.6	5.7	4.8	6.0	6.4	5.9	5.2	13.7	11.4	9.6	9.8	10.1	7.6	5.4	6.7	3.0	3.1	3.5	2.3	2.4	2.9	4.4	0.9	4.88	13.72	
Dir	SSW	SSW	S	SSW	S	SSW	SSW	SSW	WSW	WSW	W	W	W	SW	WSW	SSW	SW	SW	SW	SE	ESE	SSE	SSE	WNW	SW	WSW	
2 Spd	2.4	1.5	2.5	3.5	3.5	3.0	0.7	1.0	1.8	3.3	9.9	10.0	8.7	8.0	7.1	7.5	7.3	8.5	9.7	6.3	5.7	5.1	5.7	0.9	4.25	10.01	
Dir	SSW	SSE	S	S	S	S	SSW	NW	N	ENE	ESE	ESE	ESE	ESE	SE	E	ESE	E	E	E	ENE	ESE	ESE	S	ESE	ESE	
3 Spd	4.7	6.5	5.9	5.3	5.9	9.2	7.5	11.3	16.6	16.9	16.7	6.2	10.0	7.3	5.1	4.4	3.9	5.1	7.2	7.3	16.5	8.3	4.9	4.1	6.46	16.94	
Dir	S	SSW	SSW	SSW	SW	SW	SW	WSW	WSW	WSW	WSW	W	SSW	WSW	S	SW	ESE	ESE	ENE	WSW	WSW	WSW	SW	SSW	SW	WSW	
4 Spd	3.2	3.9	6.6	5.4	4.2	5.8	2.2	2.5	1.7	3.5	11.0	9.7	11.7	14.1	12.6	9.8	11.2	12.0	12.9	10.1	5.0	3.6	3.9	3.2	5.51	14.06	
Dir	S	SSW	SSW	SSW	SSW	SW	W	SSW	NW	NW	WNW	W	W	W	W	W	WNW	NW	NW	NW	NW	NNW	NNW	WNW	W	WSW	
5 Spd	3.9	6.8	12.7	13.7	11.5	7.6	9.8	14.2	12.4	14.6	15.2	12.4	14.6	12.6	13.6	12.5	10.2	7.4	8.6	4.7	0.2	3.2	4.4	4.5	8.37	15.23	
Dir	WNW	NW	WNW	WNW	WNW	W	SW	SW	WSW	WSW	WSW	WSW	W	W	W	W	WNW	NW	NW	NNW	S	S	S	S	W	WSW	
6 Spd	6.8	5.3	5.3	7.7	7.0	5.8	5.4	6.7	6.5	4.3	4.4	7.6	4.5	7.9	4.6	5.5	2.3	3.1	6.6	6.5	5.8	2.9	0.9	1.1	3.81	7.91	
Dir	SSW	SSW	SSW	SSW	SSW	SW	SSW	SW	WSW	WSW	SW	WSW	WSW	SW	WSW	WNW	WNW	SSW	SE	SE	SE	SE	SW	N	SSW	SW	
7 Spd	4.2	5.1	5.1	4.6	6.5	7.2	5.9	5.7	5.3	6.6	4.4	6.2	7.9	8.7	5.9	3.6	5.4	7.0	6.6	4.9	8.8	7.3	4.9	16.0	4.25	16.02	
Dir	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	WSW	SSE	SSE	SSE	SSE	ESE	WNW	W	SSW	SSE	SSW	SW	WSW	NW	SSW	NW	
8 Spd	9.8	8.0	14.5	15.5	14.0	13.7	5.7	11.2	11.7	14.2	19.7	25.2	24.9	30.2	27.5	29.7	28.3	27.8	26.4	25.5	22.7	14.8	9.7	9.1	17.26	30.22	
Dir	NW	WNW	NW	WNW	WNW	WNW	W	W	WSW	SW	SW	W	W	W	W	WNW	WNW	W	W	W	W	WNW	W	W	W	W	W
9 Spd	9.9	11.6	11.9	11.0	10.1	9.4	9.2	12.2	14.4	15.7	17.8	17.6	20.1	19.6	18.1	16.8	18.2	16.0	12.0	7.1	6.1	6.9	7.1	6.6	11.92	20.10	
Dir	W	W	WSW	WSW	WSW	W	W	WNW	NW	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	NW	NW	WNW	WNW	WSW	WSW	WSW	WNW	WNW	WNW
10 Spd	5.7	5.6	6.1	5.3	6.8	5.6	7.1	9.5	7.1	4.4	5.6	5.9	4.3	5.5	7.0	6.5	4.7	3.7	4.9	2.9	1.6	1.4	3.2	2.4	2.95	9.51	
Dir	SW	SW	WSW	SW	SSW	SSW	SW	WSW	WSW	WNW	NW	NW	WNW	NW	NW	W	WNW	NNW	E	E	E	SE	SSE	S	W	WSW	
11 Spd	0.7	0.4	1.5	1.8	2.5	1.4	1.1	1.9	8.1	9.9	10.7	13.1	13.0	11.1	12.2	11.8	13.1	15.8	15.0	14.0	10.2	7.8	10.7	9.8	7.53	15.84	
Dir	SW	NE	SSW	S	S	S	SSW	N	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	ENE	NE	NE	NE	NE	NE	NE
12 Spd	11.4	10.4	8.4	8.0	7.0	5.0	2.9	8.9	9.0	8.6	10.1	8.0	8.1	7.4	5.8	8.4	8.7	5.2	6.9	5.9	6.1	4.2	2.9	1.7	6.52	11.44	
Dir	ENE	NE	NE	NE	ENE	NNE	NNE	NNE	NE	NE	NNE	NE	NNE	NE	NE	ENE	NE	ENE	E	E	ENE	E	SE	S	NE	ENE	
13 Spd	2.6	0.2	2.0	1.6	1.5	2.0	0.8	0.9	0.9	4.9	8.0	5.6	9.3	6.0	5.4	6.5	10.3	10.7	13.2	10.0	5.9	2.8	2.0	1.5	3.75	13.15	
Dir	S	NW	S	SSW	SSW	S	SSW	NNW	NNE	ENE	NE	ENE	NE	ENE	ENE	ENE	NE	ENE	NE	NE	ENE	ESE	SE	S	ENE	NE	
14 Spd	0.5	0.9	2.0	2.5	3.1	3.1	2.2	1.8	1.1	3.2	7.3	7.7	5.8	8.2	7.6	8.9	7.5	7.8	7.2	6.0	5.0	3.3	2.0	2.8	3.54	8.92	
Dir	SSW	S	S	S	S	SSW	SSW	WNW	NNW	NE	ESE	SE	E	E	ESE	E	ESE	ESE	E	E	E	E	E	E	E	ESE	E
15 Spd	1.7	0.1	0.2	0.8	1.5	0.9	0.2	2.2	5.9	11.2	15.4	13.6	12.1	13.6	11.1	11.6	10.7	10.1	10.3	8.4	5.7	4.9	3.2	3.9	6.24	15.45	
Dir	E	NNW	SW	S	S	SSE	S	NNE	NE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	E	E	E	E	E	E	E	ESE	ESE	
16 Spd	1.4	0.7	1.5	0.3	2.3	2.6	2.7	5.5	6.0	2.6	4.4	4.6	5.8	6.7	5.1	6.0	7.2	4.9	6.2	3.9	1.8	1.3	16.2	15.0	3.23	16.22	
Dir	E	E	ENE	S	SSE	SSE	SSW	WSW	WSW	WSW	SSW	SW	WSW	WSW	S	SSW	SW	WNW	WNW	NW	NW	SSW	NW	WNW	W	NW	
17 Spd	13.8	19.5	9.2	6.3	7.2	9.0	4.2	4.9	11.3	8.7	14.7	16.9	16.8	13.2	10.3	15.2	11.0	12.8	5.8	1.7	2.0	1.4	0.8	0.5	7.81	19.53	
Dir	WNW	W	WNW	SW	WSW	WSW	SSW	SW	SW	W	W	W	W	W	WNW	WSW	WSW	W	N	NNE	SE	S	SE	NW	W	W	
18 Spd	1.0	2.1	3.7	4.0	1.9	3.2	5.4	1.6	4.7	3.5	9.4	7.4	8.0	11.5	11.9	14.3	11.6	10.0	8.5	9.4	5.7	4.6	2.2	6.2	4.51	14.33	
Dir	SE	S	S	S	SW	SW	SW	NW	NNW	NNE	NW	N	NNE	NNW	WNW	NW	NNW	NNW	NW	WNW	NW	NW	WNW	WNW	NW	NW	
19 Spd	3.4	6.7	7.1	7.6	7.5	6.8	7.7	7.7	7.8	11.0	11.1	12.7	12.3	14.9	15.8	15.0	14.3	14.3	14.2	11.2	14.1	13.8	14.1	14.7	10.92	15.85	
Dir	WSW	W	W	W	WNW	WNW	W	W	WNW	WNW	WNW	WNW	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
20 Spd	13.3	14.5	13.6	13.9	13.1	13.6	14.1	14.4	12.1	PF	PF	11.4	10.3	10.0	10.2	9.2	6.1	5.4	4.9	7.0	5.5	6.3	6.7	6.9	9.65	14.50	
Dir	W	W	W	W	W	W	W	WSW	W	PF	PF	W	W	W	WNW	WNW	NW	NNW	NNW	WNW	WNW	WNW	WNW	W	W	W	
21 Spd	7.6	8.0	5.5	8.3	8.6	9.9	9.7	8.8	9.2	9.4	8.6	11.3	11.5	10.1	9.2	8.6	10.3	8.6	9.3	8.6	6.4	6.7	4.8	6.2	8.41	11.55	
Dir	W	W	W	W	W	W	W	W	W	W	W	W	W	WNW	WNW	WNW	W	W	WNW	WNW	WNW	WNW	WNW	W	W	W	WNW
22 Spd	7.1	8.8	8.7	10.0	11.6	13.2	14.2	13.5	11.7	12.2	12.9	11.8	12.2	12.3	14.0	13.5	13.8	11.8	11.7	11.4	12.1	10.0	9.4	9.7	11.49	14.20	
Dir	W	W	W	W	W	W	W	W	W	W	W	W	W	W	WNW	WNW	WNW	WNW	W	W	W	W	WNW	WNW	W	W	W





**WCAS - Carrot Creek**  
**Summary of Hourly Averages**

**Wind Speed (WS) - kph**  
**May 2016**

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
23 Spd	9.5	8.8	10.6	8.4	9.8	9.2	8.7	10.8	15.1	13.7	12.0	11.9	10.7	11.0	9.5	7.9	6.1	7.8	7.0	6.6	6.2	1.7	3.8	3.8	6.22	15.13
Dir	WNW	WNW	W	W	WNW	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	NW	NNW	NNW	N	NNE	NE	ENE	ENE	E	SSE	SSE	NW	WNW
24 Spd	3.0	2.8	1.0	2.2	1.9	2.4	0.7	0.7	5.4	5.9	6.3	5.2	7.2	4.9	5.9	9.3	15.2	10.9	8.0	6.2	7.5	7.2	3.1	1.3	4.25	15.17
Dir	ENE	SSW	NE	S	SSE	SSW	WSW	WSW	E	ESE	ESE	E	E	ENE	ENE	ENE	NE	ENE	E	E	ENE	ENE	ENE	NNW	ENE	NE
25 Spd	0.5	1.4	3.4	2.9	4.6	7.1	5.4	4.1	3.2	4.0	2.4	2.5	9.5	6.4	5.1	4.4	11.7	10.5	1.1	5.6	6.3	6.2	5.8	1.6	1.83	11.69
Dir	WSW	WNW	SSE	S	S	WSW	SSW	SSW	SSW	WSW	SSW	W	NW	NNW	SW	NNW	ESE	SE	S	SW	SSE	WNW	WNW	SSW	SW	ESE
26 Spd	2.2	4.1	4.8	5.3	4.9	2.2	5.3	6.2	6.3	6.6	9.0	12.1	10.9	10.0	11.0	7.9	12.1	8.1	7.3	9.3	3.5	8.1	9.4	10.4	2.14	12.14
Dir	SSE	S	SSW	SW	SW	SW	SW	WSW	W	NW	NNE	NNE	NE	ENE	ENE	NE	W	SSW	NW	NW	WNW	W	WSW	W	WNW	NNE
27 Spd	8.2	7.5	7.0	8.7	7.5	6.6	9.5	13.9	11.2	9.7	9.3	8.0	10.2	11.2	14.3	11.2	11.3	14.3	14.6	13.2	13.8	14.8	13.9	14.3	10.87	14.84
Dir	WSW	W	WSW	W	W	WSW	W	W	W	W	WNW	W	W	W	WSW	W	W	WSW	W	W	WSW	WSW	WSW	WSW	W	WSW
28 Spd	12.6	13.0	10.6	9.9	7.7	8.1	13.7	16.0	16.2	17.0	13.5	6.9	8.4	8.4	5.5	6.0	5.8	0.4	5.8	1.0	9.6	2.5	2.3	1.8	6.03	17.04
Dir	WSW	SW	SW	SW	SSW	SSW	WSW	WSW	WSW	W	W	WNW	W	WSW	S	SE	SE	W	W	SE	NNE	ENE	SSE	S	WSW	W
29 Spd	0.5	2.3	2.0	2.9	2.4	2.2	1.7	4.1	3.4	6.2	6.3	10.7	10.3	11.9	8.5	3.6	9.9	10.7	10.8	6.7	2.9	5.4	7.3	5.6	4.91	11.91
Dir	N	S	SSW	SSW	SW	WNW	NW	W	WSW	W	W	WNW	W	W	WSW	W	NNW	NW	WNW	NNW	WNW	NW	NW	WNW	WNW	W
30 Spd	4.3	6.2	7.1	8.8	8.5	8.8	11.2	11.4	13.7	11.1	10.1	11.9	12.0	6.8	8.3	9.9	7.9	8.4	6.3	3.2	3.4	1.7	0.4	0.8	6.36	13.68
Dir	W	W	W	W	W	WSW	WSW	W	WNW	WNW	NW	NNW	NW	NW	NW	NW	NW	NNW	NW	W	NE	NNE	SSW	E	WNW	WNW
31 Spd	0.9	2.5	3.6	0.8	3.9	2.4	4.1	2.3	1.8	4.0	3.2	4.3	4.1	5.5	5.8	5.3	4.5	5.9	5.8	5.4	3.1	2.8	2.9	4.6	2.76	5.88
Dir	SSW	SSW	SSW	SSE	SSW	S	SSW	SW	NE	E	E	E	ESE	E	E	ESE	ESE	ESE	E	ESE	E	E	E	SE	ESE	ESE
Spd	3.05	4.05	4.08	4.43	4.33	4.83	5.13	5.80	5.61	4.68	4.43	4.51	4.65	4.76	4.04	3.92	3.60	2.98	2.85	2.23	1.50	1.87	2.50	3.09	Diurnal Average	
Dir	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	W	W	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	NW	NW	W	W	W	Diurnal Maximum	
Spd	13.76	19.53	14.54	15.53	13.95	13.67	14.20	16.00	16.65	17.04	19.68	25.24	24.89	30.22	27.46	29.73	28.26	27.85	26.39	25.46	22.74	14.84	16.22	16.02	Diurnal Maximum	
Dir	289.66	274.20	317.09	301.00	302.69	299.49	273.43	251.84	253.35	267.97	225.87	263.40	276.69	279.48	275.56	282.94	294.54	279.07	276.62	272.97	278.86	253.41	306.02	324.25	Diurnal Maximum	
Maximum Speed Value: 30.2 kph on May 8 14:00																		Minimum Speed Value: 0.1 kph on May 15 02:00						Hours in Service: 744		
Maximum Daily Speed Average: 17.26 kph on May 8																		Minimum Daily Speed Average: 1.83 kph on May 31						Hours of Data: 742		
Maximum Diurnal Speed Average: 5.80 kph at hour 8																		Minimum Diurnal Speed Average: 1.50 kph at hour 21						Hours of Missing Data: 2		
Monthly Average Velocity: 3.596 kph 273.77 deg																		Speed Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 2.0 Q <sub>1</sub> = 4.3 Median = 7.0 Q <sub>3</sub> = 10.7 P <sub>90</sub> = 13.8 P <sub>99</sub> = 24.6						Percent Operational Time: 99.7		
All monthly, daily, and diurnal averages have been calculated using vector methods																										
PF - Power Failure																										
Frequency Distribution																										
		Speed Range (kph)																								
Direction	0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total																			
North	11	6	0	0	0	0	17																			
NorthEast	12	40	13	0	0	0	65																			
East	28	44	5	0	0	0	77																			
SouthEast	18	18	4	0	0	0	40																			
South	72	26	0	0	0	0	98																			
SouthWest	40	48	10	1	0	0	99																			
West	17	111	96	8	2	0	234																			
NorthWest	27	50	32	2	1	0	112																			
Total	225	343	160	11	3	0	742																			



**WCAS - Carrot Creek**  
**Summary of Hourly Averages**

**Relative Humidity (RH) - %**  
**May 2016**

<b>Maximum Value: 98.24 % on May 19 23:00</b>																						<b>Maximum Daily Average: 95.78 % on May 22</b>																						<b>Hours in Service: 744</b>					
<b>Minimum Value: 10.3 % on May 3 18:00</b>																						<b>Minimum Daily Average: 30.10 % on May 3</b>																						<b>Hours of Data: 742</b>					
<b>Maximum Diurnal Average: 83.76 % at hour 6</b>																						<b>Minimum Diurnal Average: 38.97 % at hour 16</b>																						<b>Hours of Missing Data: 2</b>					
<b>Monthly Average: 59.536 %</b>																						<b>Percentiles: P<sub>1</sub> = 12.4 P<sub>10</sub> = 21.6 Q<sub>1</sub> = 35.2 Median = 59.9 Q<sub>3</sub> = 87.4 P<sub>90</sub> = 94.5 P<sub>99</sub> = 97.9</b>																						<b>Hours of Calibration: 0</b>					
																																												<b>Percent Operational Time: 99.7</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-May	65.8	65.6	64.6	70.1	68.6	68.5	65.3	54.3	41.1	35.1	30.4	31.1	30.6	29.5	28.2	26.9	25.5	24.2	23.4	28.6	46.0	63.2	71.8	73.4	47.15	73.41																							
2-May	79.5	81.6	83.6	86.3	87.3	84.4	73.0	64.2	53.9	40.7	24.6	19.1	17.1	15.6	13.8	13.3	13.0	15.3	18.1	21.4	26.1	30.3	29.9	37.9	42.91	87.34																							
3-May	59.0	61.5	50.2	52.5	43.2	46.1	43.3	39.3	33.1	26.2	21.6	18.0	15.1	14.7	13.3	12.5	11.6	10.3	13.0	16.3	21.7	29.3	31.7	38.9	30.10	61.53																							
4-May	41.7	49.2	56.6	55.5	62.2	67.5	64.7	56.5	38.6	32.2	30.1	25.7	25.4	26.1	27.1	25.7	25.9	34.3	40.9	43.4	48.5	50.9	51.4	62.2	43.42	67.46																							
5-May	53.3	41.1	42.9	57.1	76.3	86.7	87.4	85.1	82.3	70.3	58.8	49.4	33.9	28.3	25.8	22.6	20.1	18.4	17.3	19.0	30.9	54.5	64.6	71.0	49.88	87.41																							
6-May	73.6	73.9	74.8	76.5	72.2	70.4	61.2	47.0	38.0	29.5	24.5	22.3	20.2	17.6	15.8	15.7	14.7	14.1	16.7	21.0	24.4	29.0	43.1	53.4	39.58	76.50																							
7-May	62.5	54.2	50.2	49.8	52.4	56.4	50.6	38.8	32.4	23.4	18.5	13.8	12.8	12.4	12.0	11.7	12.9	17.8	19.4	24.2	38.5	38.9	32.3	31.9	31.98	62.54																							
8-May	41.8	47.3	58.3	67.0	72.3	86.3	83.9	76.8	71.7	66.6	64.9	36.1	23.9	22.9	25.2	27.4	41.1	51.4	54.9	59.3	63.6	86.7	89.3	90.9	58.74	90.86																							
9-May	88.8	87.5	89.6	90.7	90.9	87.8	83.9	76.5	68.7	64.8	55.2	50.1	39.5	37.5	38.2	35.8	35.1	34.6	37.5	39.4	46.5	59.8	63.1	70.1	61.32	90.88																							
10-May	77.0	80.8	74.5	79.8	85.3	87.0	76.8	65.2	53.3	34.2	28.3	28.4	26.4	24.4	23.8	23.4	23.7	22.4	21.2	23.1	32.2	56.6	69.2	77.3	49.75	86.95																							
11-May	78.3	84.2	87.9	89.3	88.9	89.5	78.7	63.8	49.5	37.5	29.2	27.0	25.6	25.5	23.8	26.1	28.4	30.7	33.7	37.7	40.4	44.3	44.4	44.0	50.36	89.47																							
12-May	41.8	44.0	50.0	54.6	60.2	65.0	64.3	54.6	50.3	45.0	38.1	33.7	30.2	28.0	27.1	25.6	26.3	24.6	24.9	27.3	32.8	39.2	52.3	71.8	42.15	71.80																							
13-May	76.4	80.7	82.8	84.6	85.1	85.0	72.8	55.7	40.2	27.5	24.4	23.3	22.8	21.9	21.1	21.2	20.8	20.6	21.5	22.8	27.2	38.6	50.1	61.0	45.34	85.11																							
14-May	71.4	77.0	81.1	83.7	83.9	82.2	70.2	55.5	42.7	33.5	25.5	22.5	21.6	20.7	18.7	19.3	18.7	18.4	19.9	22.2	27.1	35.8	49.1	54.5	43.97	83.91																							
15-May	63.4	72.9	79.3	83.9	87.7	86.1	73.4	53.4	42.0	26.5	21.8	21.5	19.7	17.7	17.8	16.7	16.0	16.6	17.4	19.7	24.9	30.5	37.3	43.8	41.26	87.73																							
16-May	46.1	56.7	66.7	75.8	84.6	85.1	69.4	53.1	45.1	35.0	27.3	21.6	16.6	12.3	11.3	12.1	12.5	15.6	15.4	19.5	28.8	40.5	38.7	39.5	38.73	85.07																							
17-May	42.7	42.5	45.6	55.3	60.8	63.3	71.6	69.4	58.2	44.4	29.8	24.1	21.8	21.3	21.7	20.9	23.0	23.7	24.0	29.8	39.4	50.6	59.1	62.6	41.90	71.60																							
18-May	66.8	74.5	79.8	81.5	80.4	81.2	72.8	66.3	61.1	50.1	44.6	37.7	31.0	42.9	64.8	67.6	64.7	66.2	71.2	92.2	94.1	93.2	93.5	93.7	69.66	94.07																							
19-May	92.8	93.9	94.8	95.2	95.5	95.3	95.2	94.8	95.1	94.9	94.3	94.3	94.9	94.6	94.8	95.2	95.2	96.3	97.4	97.8	98.1	98.2	98.2	98.2	95.64	98.24																							
20-May	98.0	97.9	98.0	97.9	97.8	97.8	97.6	97.3	96.5	PF	PF	82.7	78.5	75.7	75.5	74.6	73.6	75.4	76.3	77.0	82.5	85.5	87.3	88.4	86.89	98.03																							
21-May	89.3	89.4	90.1	88.5	86.9	87.0	92.3	94.2	94.2	92.5	93.6	94.3	94.0	92.5	90.0	87.9	86.9	86.3	85.6	85.9	88.5	93.7	94.8	95.2	90.57	95.23																							
22-May	96.4	96.8	96.7	96.7	96.5	96.5	96.1	95.9	96.2	96.5	96.1	95.8	95.7	95.8	95.5	95.0	93.9	94.4	94.8	94.3	94.7	95.7	96.3	96.6	95.78	96.83																							
23-May	95.7	95.6	95.2	94.7	93.3	92.1	90.9	89.1	82.8	72.9	64.7	54.6	47.3	39.2	35.2	34.2	36.4	36.0	34.8	37.6	46.9	66.0	76.6	83.9	66.49	95.66																							
24-May	89.4	93.6	95.5	96.5	96.9	96.4	87.9	78.6	71.2	59.1	49.8	48.0	45.7	41.9	38.4	37.2	42.3	37.6	36.1	39.3	47.6	60.0	74.4	86.1	64.56	96.88																							
25-May	91.7	94.4	95.2	95.7	96.2	93.8	90.1	87.7	77.2	59.8	44.5	43.5	47.4	60.2	53.6	46.5	53.8	49.8	51.7	68.0	76.8	81.6	86.4	91.0	72.35	96.19																							
26-May	92.9	93.7	93.7	92.1	89.0	90.2	89.3	86.9	88.3	86.7	78.1	70.5	63.8	54.0	50.8	54.7	67.0	89.0	93.4	93.7	93.0	93.0	92.7	93.7	82.92	93.72																							
27-May	92.7	92.5	93.0	92.0	92.1	93.3	91.5	93.0	91.8	90.6	89.6	88.4	88.0	89.5	92.5	91.3	88.0	90.3	89.0	87.1	88.5	91.5	91.6	91.3	90.80	93.31																							
28-May	91.4	91.3	91.1	91.5	93.8	93.3	85.3	81.0	75.5	72.3	66.8	60.0	55.9	47.3	47.0	43.8	39.8	41.9	59.3	85.9	83.3	89.3	94.0	95.6	74.02	95.60																							
29-May	96.4	97.0	97.4	97.6	97.8	97.8	97.3	96.3	91.8	86.9	79.3	60.8	44.6	44.5	42.9	40.3	51.6	55.1	51.5	58.2	64.5	67.8	71.1	77.0	73.55	97.81																							
30-May	83.8	88.2	88.8	87.4	87.9	90.6	89.0	78.9	66.6	62.0	55.9	50.9	48.2	45.3	47.7	47.1	48.3	43.1	42.2	51.8	48.7	63.1	78.0	84.3	65.75	90.62																							
31-May	88.2	92.8	93.3	94.9	95.9	93.9	85.0	73.8	64.6	54.0	49.1	46.1	41.5	39.8	38.2	35.9	33.3	34.2	35.7	41.9	49.5	54.6	56.8	56.8	60.41	95.90																							
																								75.12	77.18	78.75	81.12	82.65	83.76	79.06	71.71	64.32	55.03	48.65	45.01	41.28	39.99	39.72	38.97	40.14	41.57	43.17	47.91	53.40	61.67	66.75	71.48	Diurnal Average	
																								98.03	97.92	97.98	97.89	97.81	97.78	97.59	97.35	96.53	96.55	96.14	95.83	95.67	95.77	95.51	95.18	95.25	96.34	97.45	97.83	98.08	98.23	98.24	98.16	Diurnal Maximum	
PF - Power Failure																																																	



**WCAS - Carrot Creek**  
**Summary of Hourly Standard Deviations**

**Wind Speed (WS) - kph**  
**May 2016**

<b>Maximum Value: 9.78 kph on May 3 20:00</b>		<b>Maximum Daily Average: 5.64 kph on May 8</b>		<b>Hours in Service: 744</b>																																													
<b>Minimum Value: 0.1 kph on May 15 02:00</b>		<b>Minimum Daily Average: 2.27 kph on May 1</b>		<b>Hours of Data: 742</b>																																													
<b>Maximum Diurnal Average: 4.55 kph at hour 14</b>		<b>Minimum Diurnal Average: 1.78 kph at hour 4</b>		<b>Hours of Missing Data: 2</b>																																													
<b>Monthly Average: 2.991 kph</b>		<b>Percentiles: P<sub>1</sub> = 0.7 P<sub>10</sub> = 1.2 Q<sub>1</sub> = 1.8 Median = 2.8 Q<sub>3</sub> = 3.9 P<sub>90</sub> = 4.9 P<sub>99</sub> = 7.8</b>		<b>Hours of Calibration: 0</b>																																													
				<b>Percent Operational Time: 99.7</b>																																													
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-May	2.2	1.1	1.2	1.2	1.1	1.6	2.1	2.8	2.4	2.6	3.3	4.0	3.7	3.9	3.6	3.6	3.4	2.8	2.6	1.1	1.3	1.4	0.5	1.0	2.27	4.00																							
2-May	1.6	1.0	1.4	1.1	1.1	0.9	0.9	1.1	1.3	2.3	4.8	4.5	4.8	4.4	4.7	3.8	4.2	3.8	4.1	2.4	2.0	2.0	2.1	2.4	2.61	4.76																							
3-May	2.2	2.4	1.0	1.9	1.5	1.5	2.1	3.0	3.2	3.7	4.9	4.2	4.8	5.0	5.4	4.4	3.6	3.3	3.1	9.8	5.7	1.6	1.5	1.8	3.40	9.78																							
4-May	1.8	2.0	1.1	1.0	2.8	1.6	3.0	1.8	1.6	2.2	2.7	3.3	3.9	3.6	3.6	4.2	4.6	4.1	4.7	3.7	2.2	2.2	1.9	2.2	2.73	4.75																							
5-May	1.0	2.4	4.8	3.8	4.3	1.9	3.0	2.4	2.5	3.3	3.9	4.8	5.2	6.5	6.3	4.8	4.5	4.5	3.5	1.7	1.2	1.1	0.9	0.7	3.29	6.49																							
6-May	1.3	2.5	1.7	1.0	1.6	1.3	1.4	1.8	1.7	2.4	3.2	4.3	4.2	4.1	4.4	4.2	2.7	3.4	1.9	2.2	2.1	1.9	2.2	1.6	2.46	4.37																							
7-May	2.3	1.8	1.5	1.8	1.8	2.1	1.1	2.1	2.2	2.7	3.1	5.1	4.1	3.7	4.0	3.8	4.4	2.3	3.2	2.1	2.2	1.8	4.6	6.0	2.90	6.03																							
8-May	4.4	3.2	6.6	5.2	4.8	6.1	3.6	4.0	2.9	3.0	4.1	7.4	7.2	8.5	8.2	8.0	8.4	7.6	7.7	7.0	6.5	6.0	3.0	1.9	5.64	8.47																							
9-May	2.3	3.7	2.8	2.3	2.2	2.5	2.7	4.4	5.6	5.6	6.0	5.7	7.4	6.7	5.5	5.7	6.3	5.7	4.2	2.6	1.4	1.8	1.6	1.6	4.01	7.41																							
10-May	1.8	1.6	1.7	1.0	1.2	1.8	2.0	2.1	2.2	3.3	3.6	6.1	3.8	3.4	3.6	3.0	2.8	2.8	2.2	1.8	1.5	1.3	1.1	1.7	2.38	6.05																							
11-May	1.1	1.4	0.9	0.8	0.8	0.9	0.9	1.7	2.2	2.8	4.2	3.9	5.2	4.0	3.9	4.9	4.4	4.8	3.9	4.1	2.9	1.6	2.4	2.4	2.76	5.23																							
12-May	3.3	2.3	2.8	1.6	1.5	1.9	1.5	2.8	3.2	4.8	4.3	5.2	5.1	4.7	4.7	4.8	5.0	4.0	3.1	2.4	3.0	2.3	1.1	1.8	3.23	5.17																							
13-May	0.9	1.0	0.8	1.6	1.1	1.5	1.3	1.1	1.5	4.2	5.3	4.8	4.7	4.7	5.1	5.1	4.1	4.4	3.4	2.8	2.1	1.5	1.7	1.0	2.74	5.31																							
14-May	1.0	1.2	0.7	0.6	0.9	0.7	1.0	1.1	1.4	3.2	4.7	5.9	4.5	5.0	4.9	6.4	5.2	3.7	3.6	3.2	1.7	1.3	1.1	1.2	2.67	6.42																							
15-May	1.7	0.1	0.4	0.7	0.8	0.9	0.5	1.7	1.8	6.4	6.1	5.9	5.8	5.2	4.9	4.5	4.4	4.4	4.4	4.2	2.2	1.8	1.4	1.9	3.01	6.40																							
16-May	1.5	1.0	2.0	1.1	1.2	1.4	1.3	3.7	3.3	2.0	3.7	4.1	4.2	5.2	4.9	4.7	5.4	1.6	4.9	1.8	1.6	2.2	9.0	4.7	3.19	9.01																							
17-May	4.1	6.4	7.5	3.2	2.0	5.2	2.2	2.9	2.3	3.4	5.7	6.1	5.8	5.1	5.2	5.9	4.0	3.5	2.2	1.8	1.4	1.3	1.4	1.2	3.74	7.47																							
18-May	1.5	1.8	1.7	1.8	2.1	2.1	1.2	1.6	1.8	2.0	3.7	3.7	5.3	4.8	3.3	5.0	4.7	3.8	4.3	4.0	2.4	3.0	1.7	1.9	2.88	5.34																							
19-May	1.8	2.3	2.0	1.7	2.1	1.8	2.0	3.1	2.5	2.9	3.9	3.4	3.1	3.8	3.9	3.9	3.5	3.1	3.5	3.5	3.3	3.2	3.3	3.5	2.96	3.95																							
20-May	3.1	3.4	3.6	2.9	3.1	3.0	3.3	3.3	2.7	PF	PF	2.9	3.0	3.0	2.8	3.0	2.4	2.2	3.2	2.6	2.5	2.3	2.5	1.8	2.85	3.57																							
21-May	1.7	1.8	1.6	2.1	2.1	2.5	2.6	2.2	2.5	3.0	2.1	2.8	3.1	3.4	2.5	2.4	2.7	2.3	2.6	2.5	1.9	2.1	2.2	1.8	2.36	3.40																							
22-May	1.7	2.2	2.2	2.4	2.5	3.8	3.7	3.9	3.1	3.1	3.2	2.9	3.1	3.3	3.7	3.5	3.4	3.1	2.8	2.8	3.3	2.6	2.8	2.6	2.99	3.88																							
23-May	2.6	2.4	2.6	2.1	2.8	3.1	3.3	4.2	3.8	4.3	4.3	4.1	4.4	4.1	4.2	4.5	3.9	4.4	2.7	2.9	3.4	1.6	1.9	2.4	3.33	4.52																							
24-May	3.1	1.7	1.7	1.3	1.2	1.2	1.1	1.2	3.4	3.0	3.4	3.5	4.8	4.2	4.1	4.7	4.1	4.0	3.9	3.0	2.2	3.0	3.2	1.1	2.83	4.80																							
25-May	1.3	1.7	1.7	1.4	1.5	2.5	1.3	1.3	1.4	2.4	2.3	2.3	7.0	3.6	4.0	3.0	5.4	4.6	4.3	3.7	5.3	3.4	3.1	1.5	2.92	6.97																							
26-May	1.4	0.9	1.8	1.5	1.6	2.9	2.2	2.0	2.7	3.6	2.8	2.9	3.7	5.2	4.7	2.5	9.6	4.0	2.5	3.9	1.9	1.8	2.1	2.5	2.94	9.62																							
27-May	2.1	2.2	1.4	1.6	1.8	1.5	2.4	3.1	3.1	2.7	2.4	1.9	2.4	3.4	3.2	3.0	2.8	3.3	3.7	3.2	3.0	3.1	2.8	2.6	2.62	3.71																							
28-May	2.4	2.4	2.1	2.2	2.4	1.4	2.9	2.9	4.3	4.8	4.0	3.8	3.7	6.2	5.4	3.4	3.3	3.7	4.4	3.5	2.5	2.7	1.2	1.8	3.22	6.21																							
29-May	1.2	1.4	1.3	1.3	1.6	1.5	1.5	2.0	1.9	2.5	3.2	3.6	5.0	3.9	3.3	2.0	4.8	3.9	3.9	2.8	1.0	2.9	2.0	1.8	2.51	5.04																							
30-May	1.2	1.6	2.6	1.9	1.9	2.1	2.1	2.6	4.3	4.1	3.7	4.2	4.3	3.6	3.4	3.3	4.9	3.9	2.7	1.7	1.7	1.8	0.6	1.3	2.73	4.90																							
31-May	1.2	1.1	1.4	1.0	1.4	1.7	0.8	1.6	2.4	3.3	3.6	3.8	3.6	4.8	3.7	4.3	3.5	3.0	3.2	2.8	1.7	1.7	1.9	3.2	2.53	4.80																							
																								1.96	1.99	2.15	1.78	1.90	2.10	1.96	2.44	2.62	3.31	3.88	4.22	4.54	4.55	4.37	4.21	4.40	3.74	3.56	3.14	2.49	2.21	2.21	2.10	Diurnal Average	
																								4.38	6.39	7.47	5.21	4.80	6.11	3.72	4.39	5.64	6.40	6.09	7.41	7.41	8.47	8.21	7.99	9.62	7.61	7.68	9.78	6.47	6.01	9.01	6.03	Diurnal Maximum	
PF - Power Failure																																																	
,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3 24-hr 100 ul/m^3																																																	



**WCAS - Carrot Creek**  
**Summary of Hourly Standard Deviations**

**Wind Direction (WD) - deg**  
**May 2016**

Maximum Value: 97.50 deg on May 16 22:00																								Hours in Service: 744																									
Maximum Daily Average: 48.18 deg on May 16																								Hours of Data: 742																									
Minimum Value: 4.5 deg on May 6 05:00																								Hours of Missing Data: 2																									
Minimum Daily Average: 12.79 deg on May 27																								Hours of Calibration: 0																									
Maximum Diurnal Average: 37.15 deg at hour 15																								Percent Operational Time: 99.7																									
Minimum Diurnal Average: 16.87 deg at hour 5																																																	
Monthly Average: 29.273 deg																																																	
Percentiles: P <sub>1</sub> = 7.1 P <sub>10</sub> = 12.5 Q <sub>1</sub> = 14.8 Median = 22.4 Q <sub>3</sub> = 37.3 P <sub>90</sub> = 59.7 P <sub>99</sub> = 88.3																																																	
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-May	21.2	12.6	10.4	20.0	7.7	12.5	8.5	23.0	11.9	14.1	30.7	27.5	31.9	35.7	42.1	36.1	66.0	53.2	34.4	40.4	23.0	18.3	6.0	52.4	26.66	66.05																							
2-May	45.7	23.7	19.2	11.4	15.8	10.5	39.5	48.0	36.8	48.7	32.2	32.4	35.7	39.3	47.4	40.7	41.7	21.4	20.0	19.7	14.2	18.0	21.2	83.6	31.94	83.60																							
3-May	31.7	20.5	9.1	17.5	11.2	7.2	11.7	13.9	9.8	13.5	17.9	50.4	37.2	64.0	77.0	64.0	67.9	47.9	30.0	88.4	9.5	6.8	24.7	21.3	31.38	88.37																							
4-May	16.0	37.3	9.9	12.2	25.9	24.0	74.1	57.7	72.3	41.3	15.7	26.6	23.2	18.8	16.7	29.7	27.1	22.5	22.3	23.0	19.6	26.6	21.6	25.3	28.72	74.06																							
5-May	16.3	21.6	17.3	16.1	14.3	14.4	11.4	10.6	10.1	12.8	17.9	27.6	29.4	31.8	30.5	30.9	31.0	39.5	22.1	20.0	88.6	13.0	6.9	6.6	22.53	88.63																							
6-May	7.1	31.7	20.5	5.7	4.5	10.2	12.9	17.5	20.6	35.6	53.9	41.2	66.0	40.1	60.8	60.0	70.8	68.2	15.9	17.4	17.7	45.8	79.9	87.6	37.15	87.56																							
7-May	22.1	13.1	9.4	15.3	9.2	15.4	15.5	16.0	27.6	30.7	43.5	67.3	35.7	29.3	53.0	75.0	76.4	17.1	25.3	19.8	14.2	15.0	55.5	18.6	30.00	76.36																							
8-May	25.8	21.3	23.2	18.3	22.2	22.4	44.0	22.4	15.9	9.7	13.1	22.1	16.7	17.2	17.5	16.2	18.2	15.6	14.8	13.9	15.1	20.3	16.6	13.1	18.98	43.96																							
9-May	10.8	13.4	9.7	11.1	8.9	14.1	14.1	20.0	21.7	20.0	20.5	21.2	20.6	21.2	18.2	20.3	21.9	23.0	19.6	19.3	14.0	11.6	10.5	10.5	16.51	23.04																							
10-May	17.7	17.3	12.7	13.7	11.2	13.3	14.1	13.3	22.1	51.0	48.5	60.0	75.7	43.6	33.7	40.2	39.5	63.6	34.9	31.2	33.5	30.1	11.2	79.7	33.83	79.73																							
11-May	53.5	86.3	32.9	11.0	11.8	14.7	41.3	41.2	16.8	18.6	24.8	21.1	27.3	25.6	22.6	27.3	23.6	18.1	15.2	13.7	12.9	12.9	13.6	12.9	24.99	86.26																							
12-May	14.7	15.3	14.7	13.7	14.4	17.6	26.7	20.8	25.6	32.6	29.7	39.5	39.7	49.9	61.1	35.5	50.6	44.1	31.6	22.7	15.7	25.9	25.4	66.3	30.58	66.34																							
13-May	31.9	79.7	19.0	30.7	26.1	22.4	96.3	56.4	84.5	65.9	45.0	70.5	40.6	68.6	61.8	64.1	29.1	23.0	18.0	14.5	15.5	24.1	24.2	27.0	43.29	96.33																							
14-May	68.5	53.1	21.0	7.1	7.0	10.7	37.2	44.5	73.1	64.0	50.3	51.1	56.1	48.9	45.2	44.2	50.7	41.3	27.6	26.3	17.8	19.3	23.8	15.6	37.68	73.10																							
15-May	22.0	61.8	78.3	36.8	8.2	11.7	79.9	30.4	21.3	34.2	27.2	27.1	33.1	27.4	30.9	28.8	28.7	32.5	25.0	24.6	20.5	18.4	19.9	26.4	31.47	79.91																							
16-May	47.3	77.8	55.9	85.7	35.1	24.4	24.9	30.4	31.5	52.8	57.3	60.6	57.1	55.8	69.4	53.5	58.4	23.2	43.2	20.1	27.5	97.5	47.8	19.3	48.18	97.50																							
17-May	16.7	17.7	42.7	17.8	10.6	17.2	26.5	21.6	9.9	26.3	24.3	24.2	26.1	28.5	32.7	31.9	17.0	17.0	45.7	32.3	23.2	18.7	70.8	67.4	27.79	70.82																							
18-May	59.6	69.7	18.6	26.4	56.1	33.4	19.6	74.5	24.8	33.9	24.3	46.4	43.0	27.9	17.4	19.3	22.8	23.5	33.1	34.1	26.2	45.6	75.9	21.8	36.58	75.90																							
19-May	54.3	13.2	15.3	16.6	16.7	15.0	14.7	25.1	20.3	15.5	19.8	14.1	14.1	12.6	14.8	13.4	12.9	10.5	12.4	13.6	12.9	12.5	13.0	12.8	16.50	54.29																							
20-May	12.7	11.9	13.9	12.7	13.5	12.5	13.0	13.3	14.0	PF	PF	15.5	17.8	19.1	17.0	20.2	24.4	24.0	33.0	17.2	20.9	18.5	12.0	14.7	16.89	32.97																							
21-May	14.1	13.9	17.3	14.8	14.6	11.6	15.3	14.9	13.0	14.9	14.5	13.6	15.9	19.4	16.0	19.4	12.9	15.7	14.8	12.8	14.1	16.8	21.9	14.1	15.27	21.89																							
22-May	12.8	13.9	13.6	12.3	11.9	13.6	14.9	13.4	13.2	13.2	13.5	13.9	13.9	13.9	12.8	13.1	12.9	14.2	13.1	13.3	13.6	14.1	15.9	14.1	13.54	15.91																							
23-May	14.0	15.3	13.6	16.0	14.8	16.3	17.3	16.3	13.2	18.0	22.3	24.4	28.9	29.6	33.9	39.0	56.1	29.4	25.0	24.0	21.3	33.0	40.5	45.5	25.32	56.08																							
24-May	46.0	20.6	62.4	36.5	16.3	32.2	82.9	84.9	39.3	36.5	39.3	48.3	47.0	59.2	52.3	33.1	15.8	27.8	27.9	24.0	15.9	17.5	48.8	59.3	40.57	84.90																							
25-May	88.4	85.1	46.9	39.7	21.3	24.3	19.5	17.8	32.9	40.6	56.7	70.0	47.3	36.3	74.9	59.2	25.7	23.6	86.6	62.8	70.4	44.6	26.1	34.4	47.30	88.44																							
26-May	45.0	24.1	14.5	17.1	12.7	84.7	31.2	14.0	29.2	31.3	24.0	16.8	23.5	30.5	21.5	22.2	61.5	45.3	28.5	23.3	52.3	12.5	10.5	10.1	28.60	84.68																							
27-May	15.0	11.9	10.2	9.3	12.7	13.7	10.2	11.5	14.9	15.2	14.8	15.1	14.7	15.0	14.6	14.7	13.5	11.0	13.6	13.4	9.9	10.1	11.4	10.7	12.79	15.19																							
28-May	13.6	8.3	9.3	11.0	9.7	13.6	15.1	10.9	14.9	17.0	17.4	39.8	37.8	65.9	64.2	44.2	45.1	93.3	60.9	96.0	16.8	51.1	9.4	59.1	34.35	95.98																							
29-May	84.9	27.4	39.9	13.0	50.5	22.3	31.8	29.6	50.9	27.0	37.1	26.3	27.6	19.1	23.2	31.9	23.5	22.1	15.6	19.8	22.4	25.0	17.2	18.2	29.43	84.85																							
30-May	17.1	14.0	12.3	13.4	13.7	12.9	8.4	18.3	16.7	22.1	23.0	25.4	22.9	42.0	29.7	24.3	30.7	29.9	32.4	37.6	32.0	22.4	79.1	21.9	25.08	79.13																							
31-May	48.9	21.5	38.3	76.9	14.3	14.1	13.2	37.1	87.9	58.9	73.0	67.4	67.2	54.7	38.6	59.0	49.7	35.0	27.7	27.2	26.3	28.3	30.8	25.7	42.57	87.94																							
																								32.11	30.81	23.61	21.29	16.87	18.81	28.57	28.04	28.91	30.52	31.07	35.73	34.63	35.19	37.15	35.87	36.32	31.50	28.07	27.94	23.80	24.97	28.78	32.12	Diurnal Average	
																								88.44	86.26	78.26	85.69	56.06	84.68	96.33	84.90	87.94	65.90	72.96	70.48	75.74	68.60	77.02	75.00	76.36	93.33	86.65	95.98	88.63	97.50	79.89	87.56	Diurnal Maximum	

PF - Power Failure

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

**STEEPER  
STATION #905**

**CONTINUOUS AIR MONITORING DATA**

**MAY 2016**

**Summary Report**

*Continuous air quality/meteorological monitoring measurements*

**West Central Airshed Society**

WCAS / Steeper Station 905													May 2016		
Parameter	Calibration Number of			Percent Uptime	Mean	Min	Max	Percentile					Exceedences		24 Hour Average Max (ppm)
	Hours	Data						P10	Q1	Median	Q3	P90	1-hour	24-hour	
SO <sub>2</sub> (ppb)	34	654		92.5	0.1	0.0	1.5	0.0	0.0	0.0	0.0	0.1	0	0	0.000
O <sub>3</sub> (ppb)	34	654		92.5	33.3	6.5	57.5	16.5	24.5	33.9	41.9	48.9	0	-	0.047
NO (ppb)	35	653		92.5	0.2	0.0	19.5	0.1	0.1	0.1	0.1	0.3	-	-	-
NO <sub>2</sub> (ppb)	35	653		92.5	3.9	1.5	8.3	2.6	3.3	4.0	4.5	5.0	0	0	0.005
NO <sub>x</sub> (ppb)	35	653		92.5	4.1	1.7	26.9	2.8	3.4	4.1	4.6	5.2	-	-	-
CO (ppm)	34	654		92.5	0.2	0.1	0.3	0.1	0.1	0.2	0.2	0.2	0	0	0.000
Particulate Matter 2.5 microns (µ/m <sup>3</sup> )	0	689		92.6	2.4	0.0	15.0	0.0	0.4	1.3	3.5	7.0	0	0	7.78 ug/m3
Wind Speed (kph)	0	715		96.1	2.9	0.0	10.7	1.2	1.7	2.7	3.6	4.8	-	-	-
Temperature (°C)	0	714		96.0	7.8	-3.7	25.6	0.0	2.3	6.9	12.4	17.8	-	-	-
Relative Humidity (%)	0	714		96.0	61.8	10.0	101.1	24.2	35.8	62.5	91.6	99.2	-	-	-
Std Dev Wind Direction (deg)	0	715		96.1	1.2	0.4	4.5	0.7	0.9	1.1	1.4	1.9	-	-	-
Std Dev Wind Speed (kph)	0	715		96.1	33.8	7.4	110.1	11.8	14.1	29.3	48.2	64.1	-	-	-





**WCAS - Steeper**  
**Summary of Hourly Averages**

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

Maximum Value: 57.54 ppb on May 3 16:00																								Maximum Daily Average: 47.09 ppb on May 16																								Hours in Service: 744	
Minimum Value: 6.5 ppb on May 22 01:00																								Minimum Daily Average: 14.63 ppb on May 21																								Hours of Data: 654	
Maximum Diurnal Average: 39.45 ppb at hour 16																								Minimum Diurnal Average: 26.27 ppb at hour 5																								Hours of Missing Data: 90	
Monthly Average: 33.341 ppb																								Percentiles: P <sub>1</sub> = 9.0 P <sub>10</sub> = 16.5 Q <sub>1</sub> = 24.5 Median = 33.9 Q <sub>3</sub> = 41.9 P <sub>90</sub> = 48.9 P <sub>99</sub> = 55.7																								Hours of Calibration: 34	
																																																Percent Operational Time: 92.5	
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-May	34.0	38.1	39.6	Z	34.1	30.0	26.6	26.3	26.1	26.2	29.5	29.0	28.0	27.8	27.8	28.7	29.7	31.0	31.4	31.5	30.5	29.3	22.1	18.3	29.38	39.64																							
2-May	18.3	18.6	16.9	Z	13.4	14.1	16.1	16.3	18.1	24.9	30.0	33.7	35.2	35.1	38.7	39.0	39.7	44.0	44.4	44.5	43.1	42.9	41.4	40.9	30.85	44.50																							
3-May	39.8	40.6	40.1	Z	32.3	32.9	35.6	39.5	42.1	46.6	47.8	49.2	49.0	52.7	57.1	57.5	56.5	54.5	50.8	49.8	47.8	46.7	46.9	45.7	46.15	57.54																							
4-May	47.7	44.7	42.5	Z	44.1	45.8	45.7	45.5	41.0	38.7	37.9	39.9	38.4	38.9	47.4	47.9	47.1	46.8	46.1	43.8	40.2	35.3	34.9	29.6	42.16	47.89																							
5-May	29.5	32.6	34.1	Z	32.9	30.5	32.6	33.5	38.6	38.8	41.9	40.4	40.4	43.1	44.5	45.9	46.2	47.0	47.5	47.7	46.4	46.4	32.8	24.8	24.4	38.10	47.73																						
6-May	24.7	24.2	22.8	Z	23.9	23.6	24.2	27.3	38.0	43.4	44.5	46.3	47.5	45.4	49.8	51.6	51.7	50.5	49.1	48.3	47.0	43.5	40.5	36.1	39.30	51.67																							
7-May	38.8	37.9	41.3	Z	40.7	42.4	42.7	39.0	40.0	44.3	45.7	45.2	45.2	46.6	47.9	51.7	54.8	53.4	53.2	51.6	49.6	47.6	44.6	37.7	45.31	54.80																							
8-May	34.8	35.7	32.3	Z	34.7	35.2	36.2	33.8	32.6	40.6	52.6	52.2	51.2	49.1	47.2	43.4	38.4	34.5	34.7	33.8	32.2	28.8	26.6	25.6	37.65	52.60																							
9-May	21.8	21.4	22.1	Z	22.2	22.5	22.3	22.3	25.8	30.3	34.3	34.2	37.7	39.7	39.6	38.9	38.9	37.6	36.2	36.4	36.4	33.1	31.2	28.9	31.03	39.66																							
10-May	26.3	25.0	23.5	Z	22.2	23.0	23.8	26.4	34.9	38.9	38.4	37.8	38.5	41.1	40.2	41.3	40.9	40.7	40.0	39.6	40.9	38.1	26.5	26.0	33.65	41.26																							
11-May	25.0	25.0	24.9	Z	24.5	26.2	28.8	25.6	28.1	32.2	34.5	36.9	41.8	43.2	44.4	44.9	44.9	45.0	44.2	41.8	39.2	40.9	41.4	36.9	35.66	44.99																							
12-May	32.3	31.2	33.3	Z	31.7	24.7	23.7	24.2	24.9	26.7	32.0	38.6	40.4	42.1	43.4	44.2	44.9	45.4	44.6	40.5	32.2	32.7	28.8	24.8	34.23	45.38																							
13-May	23.1	20.9	20.7	Z	22.7	22.7	23.8	28.7	42.3	45.9	46.0	46.8	48.3	48.1	48.0	48.6	48.7	49.2	49.4	51.7	52.3	47.7	45.0	40.7	40.06	52.25																							
14-May	28.4	25.3	29.8	Z	30.5	29.6	29.4	31.9	38.7	48.2	50.0	51.9	52.0	53.6	55.2	55.3	57.2	56.8	55.7	55.2	53.9	51.0	56.0	49.3	45.42	57.21																							
15-May	41.1	38.9	39.4	Z	34.6	34.1	35.5	37.1	39.6	43.0	47.5	54.9	54.3	53.9	55.0	55.0	54.7	54.0	54.3	54.2	53.3	52.7	52.0	42.2	47.01	55.00																							
16-May	40.6	37.4	37.8	Z	38.5	40.1	44.4	49.7	47.0	52.1	54.3	54.3	53.4	52.8	50.9	50.9	48.9	49.5	49.5	48.3	46.1	45.7	45.8	45.3	47.09	54.33																							
17-May	43.3	42.0	42.3	Z	37.6	33.9	31.0	28.8	33.3	39.6	40.3	41.3	39.4	37.3	34.4	31.7	29.9	29.1	28.2	28.0	27.6	27.8	27.5	27.5	33.98	43.26																							
18-May	27.1	25.9	25.2	Z	21.5	21.0	21.9	20.6	23.7	31.9	33.0	27.0	25.4	24.9	25.9	24.5	23.1	22.9	24.3	23.0	22.4	19.8	20.1	17.0	24.00	33.03																							
19-May	20.0	21.5	24.5	Z	38.0	36.4	31.4	34.2	35.8	C	C	C	C	C	16.5	16.2	15.9	15.7	15.5	14.3	13.8	14.0	14.2	14.9	21.83	37.99																							
20-May	15.2	15.4	15.4	Z	16.3	16.2	16.1	16.1	16.6	18.0	18.6	18.7	18.8	19.2	19.1	18.7	16.9	16.7	15.7	16.3	15.7	13.8	12.6	11.1	16.40	19.22																							
21-May	11.6	12.8	14.8	Z	14.4	15.5	13.8	16.6	16.0	16.0	15.3	15.2	15.9	16.2	16.8	17.3	17.0	17.4	16.2	16.5	13.5	9.9	9.9	8.0	14.63	17.35																							
22-May	6.5	6.7	9.9	Z	8.3	9.6	11.5	11.7	13.1	15.5	16.6	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	--	16.64																							
23-May	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	--	--																							
24-May	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	--	48.97																							
25-May	29.4	32.1	30.7	Z	19.5	19.9	19.7	20.9	19.2	23.6	29.0	27.9	28.7	34.2	36.8	39.9	41.5	38.7	37.5	39.0	34.9	33.7	38.7	39.4	31.09	41.48																							
26-May	29.0	29.5	30.1	Z	21.1	19.3	18.6	19.5	31.4	39.9	43.8	43.6	43.1	46.4	45.2	42.3	38.7	39.9	38.2	36.1	35.0	35.8	36.2	34.9	34.68	46.39																							
27-May	33.6	30.1	37.9	Z	36.2	33.4	39.2	40.0	36.2	38.7	35.8	33.3	33.5	32.6	32.1	35.4	35.7	32.4	32.6	35.9	30.5	27.0	28.8	22.6	33.63	40.02																							
28-May	24.0	23.4	19.1	Z	15.9	17.0	19.4	15.0	24.0	32.8	32.0	35.3	36.7	35.6	33.1	34.4	35.7	36.6	34.4	32.6	31.2	27.7	27.1	24.6	28.16	36.72																							
29-May	17.8	19.7	17.5	Z	27.2	36.7	36.7	33.1	36.7	25.2	30.5	40.4	41.7	41.1	41.8	41.8	37.0	35.0	31.9	35.7	29.5	28.2	23.6	24.4	31.88	41.79																							
30-May	20.1	18.0	17.8	Z	16.2	16.9	18.2	18.7	21.1	22.9	23.5	22.5	22.8	24.5	22.8	25.1	27.1	26.9	25.1	25.4	26.9	22.6	15.0	10.4	21.32	27.08																							
31-May	9.4	9.2	7.9	Z	6.8	9.0	11.8	16.2	25.1	27.2	30.0	30.8	30.0	32.0	32.5	32.9	34.1	34.7	30.5	30.9	31.7	37.2	32.6	35.2	25.12	37.23																							
																								27.35	27.03	27.39	--	26.27	26.29	26.92	27.52	30.69	34.00	36.26	38.04	38.42	39.16	39.08	39.45	39.14	38.77	37.90	37.98	36.25	33.92	31.87	29.30	Diurnal Average	
																								47.65	44.74	42.46	--	44.11	45.77	45.70	49.66	47.01	52.12	54.32	54.89	54.26	53.94	57.09	57.54	57.21	56.82	55.74	55.21	53.87	52.72	56.03	49.30	Diurnal Maximum	
Z - zerospan																								C - Calibration								PF - Power Failure																	
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 82.5 ppb 24-hr -- ppb																																																	





**WCAS - Steeper**  
**Summary of Hourly Averages**

**Nitrogen Oxide (NO) - ppb**  
**May 2016**

Maximum Value: 19.48 ppb on May 2 14:00		Maximum Daily Average: 1.28 ppb on May 2		Hours in Service: 744																																												
Minimum Value: 0.0 ppb on May 1 01:00		Minimum Daily Average: 0.07 ppb on May 7		Hours of Data: 653																																												
Maximum Diurnal Average: 1.38 ppb at hour 14		Minimum Diurnal Average: 0.07 ppb at hour 3		Hours of Missing Data: 91																																												
Monthly Average: 0.219 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.1 Q <sub>1</sub> = 0.1 Median = 0.1 Q <sub>3</sub> = 0.1 P <sub>90</sub> = 0.3 P <sub>99</sub> = 2.2		Hours of Calibration: 35																																												
Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.1 Q <sub>1</sub> = 0.1 Median = 0.1 Q <sub>3</sub> = 0.1 P <sub>90</sub> = 0.3 P <sub>99</sub> = 2.2		Percent Operational Time: 92.5																																														
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-May	0.0	0.0	0.0	Z	0.1	0.1	0.3	0.4	0.3	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.14	0.49																						
2-May	0.1	0.1	0.1	Z	0.1	0.5	0.4	0.6	1.2	0.3	0.3	0.2	5.1	19.5	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.28	19.48																						
3-May	0.1	0.1	0.1	Z	0.1	0.1	0.3	0.2	0.2	0.1	0.2	0.1	1.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.16	1.34																						
4-May	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.11	0.27																						
5-May	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.08	0.12																						
6-May	0.1	0.1	0.1	Z	0.1	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.1	8.1	0.1	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.1	1.6	0.52	8.08																						
7-May	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.07	0.10																						
8-May	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.2	0.5	0.1	0.0	0.0	0.0	0.0	0.1	0.7	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.12	0.69																						
9-May	0.3	0.0	0.0	Z	0.2	0.0	0.1	0.1	0.1	0.1	0.1	0.1	4.0	4.7	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.46	4.67																						
10-May	0.1	0.1	0.1	Z	0.1	0.1	0.3	0.4	0.2	0.1	0.1	0.1	0.6	2.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.22	2.25																						
11-May	0.1	0.1	0.1	Z	0.1	0.7	0.1	0.2	0.7	0.5	0.4	0.8	0.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.22	0.83																						
12-May	0.0	0.0	0.0	Z	0.4	0.1	0.1	0.3	0.4	0.6	0.6	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.16	0.63																						
13-May	0.1	0.0	0.1	Z	0.1	0.1	0.3	0.3	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.10	0.26																						
14-May	0.1	0.1	0.1	Z	0.1	0.1	0.3	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.11	0.33																						
15-May	0.1	0.1	0.1	Z	0.1	0.1	0.3	0.4	0.5	0.6	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.15	0.62																						
16-May	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.8	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.11	0.81																						
17-May	0.2	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.11	0.26																						
18-May	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.1	2.1	0.4	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.25	2.13																						
19-May	0.1	0.1	0.0	Z	0.0	0.1	0.0	0.1	0.1	C	C	C	C	C	C	0.4	0.3	0.2	0.1	0.8	0.9	0.1	0.0	0.0	--	0.92																						
20-May	0.1	0.0	0.0	Z	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.1	0.1	0.1	0.1	0.14	0.44																						
21-May	0.3	0.1	0.1	Z	0.1	0.2	0.3	0.3	0.4	0.5	0.4	0.5	0.5	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.1	0.1	0.1	0.25	0.48																						
22-May	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.2	0.2	0.1	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	--	0.21																						
23-May	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	--	--																						
24-May	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	--	0.08																						
25-May	0.1	0.1	0.1	Z	0.1	0.2	0.4	0.4	0.5	0.5	0.1	1.5	0.2	0.1	0.7	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.26	1.54																						
26-May	0.1	0.1	0.1	Z	0.1	0.2	0.2	0.2	0.2	0.3	0.2	1.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.16	1.08																						
27-May	0.1	0.1	0.0	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.09	0.29																						
28-May	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.09	0.13																						
29-May	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.5	0.3	0.1	0.1	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.12	0.48																						
30-May	3.5	0.1	0.0	Z	0.1	0.1	0.1	0.2	0.1	0.1	0.1	2.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.33	3.46																						
31-May	0.1	0.1	0.1	Z	0.2	0.3	0.2	0.2	0.2	0.3	0.2	1.7	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.20	1.74																						
																								0.21	0.07	0.07	--	0.10	0.14	0.17	0.20	0.24	0.25	0.17	0.42	0.61	1.38	0.14	0.11	0.17	0.10	0.10	0.11	0.10	0.07	0.08	0.13	Diurnal Average
																								3.46	0.13	0.11	--	0.39	0.72	0.45	0.61	1.18	0.63	0.61	2.07	5.08	19.48	0.67	0.45	0.81	0.24	0.44	0.81	0.92	0.11	0.11	1.62	Diurnal Maximum
Z - zerospan      C - Calibration      PF - Power Failure																																																
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ppb    24-hr --- ppb																																																



**WCAS - Steeper**  
**Summary of Hourly Averages**

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

Maximum Value: 8.29 ppb on May 6 14:00		Maximum Daily Average: 4.90 ppb on May 2		Hours in Service: 744																							
Minimum Value: 1.5 ppb on May 31 12:00		Minimum Daily Average: 2.25 ppb on May 30		Hours of Data: 653																							
Maximum Diurnal Average: 4.23 ppb at hour 6		Minimum Diurnal Average: 3.70 ppb at hour 15		Hours of Missing Data: 91																							
Monthly Average: 3.939 ppb		Percentiles: P <sub>1</sub> = 1.8 P <sub>10</sub> = 2.6 Q <sub>1</sub> = 3.3 Median = 4.0 Q <sub>3</sub> = 4.5 P <sub>90</sub> = 5.0 P <sub>99</sub> = 6.8		Hours of Calibration: 35																							
				Percent Operational Time: 92.5																							
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-May	4.3	4.2	4.1	Z	4.6	5.7	5.8	5.2	5.0	5.0	4.5	4.7	4.3	4.2	4.1	4.1	4.2	4.3	4.3	4.3	4.8	5.4	4.8	5.0	4.65	5.82	
2-May	4.3	4.4	4.9	Z	6.8	7.1	5.2	5.2	4.9	4.4	4.5	4.2	5.1	7.7	4.1	4.2	4.7	3.9	4.0	4.2	4.6	4.8	4.8	4.7	4.90	7.65	
3-May	4.5	4.5	5.0	Z	7.1	6.4	6.0	4.9	4.6	4.5	4.5	4.3	3.8	4.1	4.2	4.4	4.5	4.6	4.5	4.3	4.7	4.7	4.7	4.7	4.76	7.06	
4-May	4.7	4.7	4.7	Z	4.6	4.7	4.7	4.7	4.7	4.8	4.8	5.0	5.5	5.5	4.1	4.1	4.5	4.5	4.6	4.6	5.0	5.3	4.8	4.8	4.75	5.48	
5-May	3.9	3.8	3.6	Z	3.2	3.2	3.2	3.1	3.3	3.5	3.7	3.7	3.7	3.7	3.8	3.9	4.1	4.3	4.3	4.4	4.3	4.8	5.0	4.2	3.85	4.99	
6-May	4.6	4.9	5.1	Z	4.5	5.2	4.1	3.6	3.5	3.8	3.9	4.1	4.4	8.3	4.2	4.1	4.7	4.3	4.2	4.4	4.4	4.7	5.1	8.3	4.71	8.29	
7-May	4.7	5.2	4.3	Z	4.4	4.4	4.4	4.1	4.2	4.3	4.2	4.2	4.2	4.2	4.2	4.0	4.0	4.1	4.1	4.2	4.3	4.6	4.7	5.1	4.36	5.22	
8-May	5.1	5.0	5.3	Z	4.0	3.8	3.8	3.8	4.0	4.1	3.3	3.5	3.6	3.7	3.8	3.9	4.5	4.3	4.1	3.9	3.9	3.7	3.5	3.3	3.99	5.25	
9-May	4.4	3.1	3.0	Z	3.2	3.0	2.9	2.9	3.0	3.0	3.0	3.1	2.0	4.3	3.7	3.8	3.9	4.0	4.0	3.9	4.3	3.8	3.5	3.3	3.44	4.40	
10-May	3.1	3.3	3.6	Z	4.5	4.9	4.6	4.2	3.3	3.2	3.6	3.9	4.2	5.9	3.9	4.0	4.0	3.8	3.9	3.9	3.9	4.2	3.8	3.8	3.98	5.86	
11-May	4.0	3.7	3.5	Z	4.6	4.6	3.4	3.6	6.2	5.4	4.9	4.4	4.5	4.0	4.2	4.2	4.3	4.4	4.3	6.1	7.3	5.9	5.6	5.3	4.72	7.33	
12-May	5.2	5.1	4.4	Z	4.0	4.5	4.6	4.6	5.1	5.3	5.1	4.4	3.9	3.8	3.8	4.0	4.1	4.1	4.1	4.4	4.2	3.9	3.6	3.3	4.33	5.29	
13-May	3.1	3.0	3.2	Z	4.0	5.0	4.5	3.9	3.5	3.6	4.0	4.1	4.1	4.2	4.3	4.5	4.6	4.6	4.6	4.4	4.6	4.7	4.6	5.0	4.18	5.00	
14-May	4.8	5.8	4.0	Z	4.5	4.4	5.1	4.1	4.3	4.1	4.0	3.9	4.1	4.6	4.5	4.7	4.8	4.9	4.8	4.9	4.9	5.4	4.7	4.5	4.60	5.81	
15-May	4.2	4.2	4.3	Z	6.0	5.9	5.2	5.0	5.1	5.7	4.6	3.9	4.3	4.3	4.1	4.1	4.1	4.2	4.3	4.6	4.8	4.8	4.9	4.3	4.64	5.95	
16-May	4.3	4.6	4.8	Z	4.4	4.1	3.9	4.0	4.3	4.0	4.1	4.0	3.9	3.9	4.0	4.0	5.7	3.9	3.9	4.1	4.1	4.2	4.6	4.5	4.23	5.70	
17-May	4.8	3.9	3.7	Z	3.5	3.5	3.4	3.4	3.4	3.6	4.2	3.6	3.6	3.5	3.5	3.5	3.4	3.5	3.4	3.5	3.8	3.9	3.8	3.7	3.66	4.85	
18-May	3.6	3.6	3.6	Z	3.6	3.9	3.4	3.5	3.7	3.7	3.9	6.1	5.9	4.4	3.6	3.6	3.6	3.1	2.8	2.7	2.7	2.7	2.8	2.8	3.62	6.07	
19-May	2.8	2.8	2.8	Z	2.8	2.8	2.8	2.8	2.9	C	C	C	C	C	C	C	3.7	3.8	3.6	3.4	4.0	3.7	3.4	3.2	3.3	--	3.97
20-May	3.3	3.3	3.3	Z	3.1	3.2	3.3	3.3	3.3	3.2	3.2	3.3	3.2	3.3	3.3	3.5	3.8	4.0	4.5	3.9	4.5	4.7	4.3	4.3	3.61	4.71	
21-May	6.4	4.6	5.3	Z	5.3	4.9	5.9	4.4	4.2	4.0	3.9	3.7	3.7	3.7	3.7	3.8	4.0	4.0	4.0	4.3	4.2	5.7	4.3	4.0	4.42	6.37	
22-May	4.1	4.1	4.0	Z	3.6	3.6	3.5	3.3	3.5	3.2	3.0	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	--	4.14	
23-May	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	--	--	
24-May	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	--	5.14	
25-May	4.9	5.1	5.1	Z	6.9	6.3	6.1	5.3	5.2	4.9	4.2	5.4	4.1	3.7	4.3	3.7	3.7	4.5	4.2	4.0	3.8	3.7	3.6	3.6	4.62	6.85	
26-May	3.5	3.5	3.5	Z	4.0	4.3	4.1	3.8	4.1	4.2	4.0	5.4	3.5	3.7	3.5	3.7	4.0	3.5	3.5	3.2	3.1	3.1	3.1	3.4	3.73	5.38	
27-May	3.4	3.5	3.5	Z	3.9	4.4	3.2	3.0	3.0	2.9	3.1	3.5	3.0	2.8	2.9	3.1	3.0	3.0	3.6	3.1	3.2	3.1	2.7	2.6	3.19	4.36	
28-May	2.5	2.4	2.5	Z	2.8	2.4	2.5	2.4	2.5	2.5	2.6	2.4	2.4	2.9	3.1	2.9	3.0	2.8	2.9	3.0	3.4	3.5	3.5	3.3	2.79	3.54	
29-May	2.6	2.7	2.5	Z	2.3	2.3	2.2	2.5	2.5	3.6	3.2	2.5	2.4	2.4	2.6	2.3	3.0	3.1	2.8	2.4	2.3	2.2	2.2	2.3	2.56	3.62	
30-May	5.7	2.8	2.2	Z	2.0	2.0	1.9	2.0	2.0	2.0	2.0	1.5	2.3	2.1	2.2	2.1	1.9	1.8	2.0	2.3	1.9	2.3	2.5	2.5	2.25	5.65	
31-May	3.0	3.3	3.8	Z	3.8	2.5	1.7	1.6	2.1	2.3	1.9	1.5	2.1	2.0	2.1	2.1	2.1	2.1	2.4	2.7	2.1	1.8	1.8	1.7	2.27	3.85	
4.12 3.96 3.92 -- 4.20 4.23 3.98 3.74 3.83 3.89 3.77 3.85 3.78 4.10 3.70 3.72 3.93 3.82 3.84 3.93 4.07 4.14 3.98 4.01																								Diurnal Average			
6.37 5.81 5.29 -- 7.06 7.11 6.12 5.35 6.22 5.68 5.08 6.07 5.94 8.29 4.54 4.67 5.70 4.85 4.82 6.09 7.33 5.93 5.60 8.28																								Diurnal Maximum			
Z - zerospan C - Calibration PF - Power Failure																											
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb 24-hr 106 ppb																											



**WCAS - Steeper**  
**Summary of Hourly Averages**

**NO<sub>x</sub> (NO<sub>x</sub>) - ppb**  
**May 2016**

Maximum Value: 26.89 ppb on May 2 14:00		Maximum Daily Average: 6.12 ppb on May 2		Hours in Service: 744																																													
Minimum Value: 1.7 ppb on Jun 1 00:00		Minimum Daily Average: 2.45 ppb on May 31		Hours of Data: 653																																													
Maximum Diurnal Average: 5.41 ppb at hour 14		Minimum Diurnal Average: 3.80 ppb at hour 15		Hours of Missing Data: 91																																													
Monthly Average: 4.114 ppb		Percentiles: P <sub>1</sub> = 2.0 P <sub>10</sub> = 2.8 Q <sub>1</sub> = 3.4 Median = 4.1 Q <sub>3</sub> = 4.6 P <sub>90</sub> = 5.2 P <sub>99</sub> = 8.1		Hours of Calibration: 35																																													
Percentiles: P <sub>1</sub> = 2.0 P <sub>10</sub> = 2.8 Q <sub>1</sub> = 3.4 Median = 4.1 Q <sub>3</sub> = 4.6 P <sub>90</sub> = 5.2 P <sub>99</sub> = 8.1		Percent Operational Time: 92.5																																															
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-May	4.2	4.2	4.1	Z	3.9	5.0	5.3	4.9	4.6	4.9	4.0	4.2	3.9	3.8	3.8	3.8	3.9	4.0	4.0	4.1	4.6	5.3	4.7	4.9	4.35	5.31																							
2-May	4.2	4.4	5.0	Z	6.8	7.5	5.5	5.7	6.1	4.7	4.7	4.4	10.1	26.9	4.2	4.3	4.8	4.0	4.0	4.2	4.6	4.9	4.9	4.7	6.12	26.89																							
3-May	4.5	4.6	5.1	Z	7.1	6.5	6.2	5.1	4.8	4.6	4.7	4.4	5.0	4.1	4.2	4.4	4.5	4.6	4.5	4.4	4.7	4.8	4.7	4.7	4.88	7.13																							
4-May	4.7	4.8	4.7	Z	4.6	4.7	4.8	4.8	4.7	4.8	4.9	5.1	5.7	5.7	4.2	4.1	4.5	4.6	4.6	4.7	5.1	5.3	4.9	4.9	4.82	5.68																							
5-May	4.0	3.8	3.6	Z	3.3	3.2	3.2	3.1	3.3	3.5	3.7	3.7	3.8	3.8	3.8	4.0	4.2	4.3	4.4	4.4	4.4	4.8	5.0	4.3	3.90	5.05																							
6-May	4.6	4.9	5.2	Z	4.6	5.3	4.3	3.9	3.6	3.9	4.0	4.2	4.5	15.8	4.3	4.2	4.9	4.3	4.2	4.4	4.5	4.8	5.2	9.9	5.18	15.79																							
7-May	4.8	5.2	4.4	Z	4.4	4.4	4.4	4.1	4.3	4.4	4.3	4.3	4.2	4.2	4.2	4.0	4.0	4.1	4.2	4.2	4.4	4.7	4.8	5.2	4.40	5.25																							
8-May	5.2	5.0	5.3	Z	4.0	3.9	3.9	3.9	4.2	4.6	3.3	3.5	3.6	3.7	3.8	3.9	5.2	4.3	4.2	3.9	3.9	3.7	3.5	3.3	4.08	5.32																							
9-May	4.7	3.2	3.1	Z	3.4	3.0	2.9	3.0	3.0	3.0	3.2	3.2	4.6	8.9	3.7	3.9	4.0	4.1	4.0	4.0	4.3	3.8	3.6	3.3	3.82	8.94																							
10-May	3.1	3.3	3.6	Z	4.6	5.0	4.8	4.5	3.5	3.2	3.6	3.9	4.8	8.1	4.0	4.1	4.0	3.9	3.9	3.9	4.0	4.3	3.8	3.9	4.17	8.09																							
11-May	4.0	3.7	3.6	Z	4.7	5.3	3.5	3.7	6.9	5.9	5.2	5.2	5.2	4.0	4.2	4.3	4.3	4.5	4.3	6.1	7.4	5.9	5.6	5.4	4.91	7.36																							
12-May	5.2	5.1	4.4	Z	4.4	4.6	4.7	4.8	5.4	5.9	5.6	4.6	4.0	3.9	3.9	4.1	4.1	4.1	4.1	4.4	4.3	3.9	3.6	3.3	4.46	5.87																							
13-May	3.1	3.0	3.2	Z	4.0	5.1	4.7	4.1	3.6	3.7	4.1	4.2	4.3	4.3	4.4	4.6	4.7	4.7	4.6	4.5	4.6	4.7	4.6	5.0	4.24	5.08																							
14-May	4.8	5.8	4.1	Z	4.5	4.5	5.3	4.4	4.6	4.2	4.1	4.0	4.2	4.6	4.6	4.7	4.9	4.9	4.9	5.0	4.9	5.4	4.8	4.5	4.68	5.84																							
15-May	4.2	4.2	4.3	Z	6.0	6.0	5.4	5.4	5.5	6.3	4.7	4.0	4.4	4.4	4.2	4.1	4.2	4.2	4.4	4.6	4.8	4.9	5.0	4.4	4.76	6.25																							
16-May	4.3	4.7	4.9	Z	4.4	4.1	4.0	4.1	4.4	4.1	4.2	4.0	3.9	4.0	4.0	4.1	6.5	3.9	3.9	4.1	4.2	4.2	4.7	4.5	4.31	6.48																							
17-May	5.0	4.0	3.8	Z	3.6	3.5	3.4	3.5	3.5	3.7	4.4	3.6	3.7	3.6	3.5	3.6	3.5	3.5	3.4	3.5	3.8	3.9	3.9	3.8	3.73	5.04																							
18-May	3.7	3.7	3.6	Z	3.6	3.9	3.5	3.6	3.8	3.8	4.0	7.1	8.0	4.7	3.8	3.8	3.7	3.2	2.9	2.8	2.7	2.8	2.8	2.8	3.84	8.02																							
19-May	2.9	2.9	2.8	Z	2.8	2.9	2.8	2.8	2.9	C	C	C	C	C	C	C	4.2	4.2	3.9	3.5	4.8	4.7	3.4	3.3	--	4.79																							
20-May	3.3	3.4	3.3	Z	3.2	3.3	3.4	3.3	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.7	4.0	4.2	4.9	4.0	4.6	4.8	4.4	4.4	3.73	4.95																							
21-May	6.6	4.7	5.3	Z	5.4	5.1	6.2	4.7	4.5	4.5	4.2	4.1	4.2	4.1	4.0	4.0	4.2	4.2	4.1	4.5	4.3	5.8	4.4	4.1	4.65	6.63																							
22-May	4.2	4.2	4.0	Z	3.7	3.6	3.6	3.5	3.7	3.4	3.1	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	--	4.22																							
23-May	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	--	--																							
24-May	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	--	5.16																							
25-May	4.9	5.1	5.2	Z	6.9	6.5	6.5	5.7	5.6	5.3	4.3	6.9	4.2	3.8	4.9	3.9	3.8	4.6	4.3	4.1	3.9	3.8	3.7	3.6	4.85	6.92																							
26-May	3.6	3.6	3.5	Z	4.1	4.5	4.3	3.9	4.3	4.5	4.2	6.4	3.6	3.8	3.6	3.8	4.2	3.6	3.6	3.2	3.1	3.1	3.2	3.4	3.88	6.43																							
27-May	3.5	3.5	3.5	Z	4.0	4.4	3.2	3.0	3.0	2.9	3.1	3.8	3.1	2.8	3.0	3.2	3.1	3.1	3.9	3.1	3.3	3.1	2.8	2.7	3.27	4.44																							
28-May	2.6	2.5	2.5	Z	2.9	2.5	2.6	2.5	2.6	2.6	2.6	2.5	2.5	3.0	3.2	3.0	3.1	2.9	3.0	3.1	3.5	3.6	3.6	3.4	2.88	3.61																							
29-May	2.7	2.8	2.5	Z	2.3	2.3	2.3	2.5	2.5	4.1	3.4	2.6	2.5	2.5	3.1	2.3	3.2	3.2	2.9	2.5	2.4	2.3	2.3	2.3	2.68	4.08																							
30-May	9.1	2.9	2.3	Z	2.1	2.1	2.0	2.2	2.1	2.1	2.1	2.8	2.5	2.2	2.4	2.2	2.0	1.9	2.1	2.4	2.0	2.4	2.6	2.6	2.55	9.14																							
31-May	3.1	3.4	3.8	Z	4.0	2.8	1.9	1.8	2.3	2.6	2.1	2.8	2.2	2.1	2.2	2.2	2.2	2.2	2.5	2.8	2.2	1.8	1.9	1.7	2.45	3.99																							
																								4.31	4.01	3.96	--	4.25	4.32	4.10	3.88	4.02	4.09	3.90	4.18	4.29	5.41	3.80	3.80	4.06	3.89	3.91	4.01	4.14	4.19	4.02	4.11	Diurnal Average	
																								9.14	5.84	5.33	--	7.13	7.53	6.51	5.73	6.89	6.25	5.64	7.12	10.05	26.89	4.92	4.73	6.48	4.92	4.95	6.13	7.36	5.94	5.61	9.87	Diurnal Maximum	
Z - zerospan																								C - Calibration		PF - Power Failure																							
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ppb 24-hr --- ppb																																																	



**WCAS - Steeper**  
**Summary of Hourly Averages**

**Carbon Monoxide (CO) - ppm**  
**May 2016**

<b>Maximum Value: 0.33 ppm on May 16 15:00</b>		<b>Maximum Daily Average: 0.21 ppm on May 26</b>		<b>Hours in Service: 744</b>																							
<b>Minimum Value: 0.1 ppm on May 29 01:00</b>		<b>Minimum Daily Average: 0.13 ppm on May 8</b>		<b>Hours of Data: 654</b>																							
<b>Maximum Diurnal Average: 0.17 ppm at hour 8</b>		<b>Minimum Diurnal Average: 0.15 ppm at hour 20</b>		<b>Hours of Missing Data: 90</b>																							
<b>Monthly Average: 0.156 ppm</b>		<b>Percentiles: P<sub>1</sub> = 0.1 P<sub>10</sub> = 0.1 Q<sub>1</sub> = 0.1 Median = 0.2 Q<sub>3</sub> = 0.2 P<sub>90</sub> = 0.2 P<sub>99</sub> = 0.2</b>		<b>Hours of Calibration: 34</b>																							
				<b>Percent Operational Time: 92.5</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-May	0.1	0.1	0.1	Z	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.15	0.18	
2-May	0.2	0.2	0.2	Z	0.1	0.2	0.2	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.16	0.22
3-May	0.1	0.1	0.1	Z	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.15	0.17
4-May	0.1	0.1	0.1	Z	0.1	0.2	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.17	0.21
5-May	0.2	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.16	0.20
6-May	0.1	0.1	0.1	Z	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.15	0.19
7-May	0.2	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.15	0.16
8-May	0.1	0.1	0.2	Z	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.13	0.15
9-May	0.1	0.2	0.1	Z	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.13	0.17
10-May	0.2	0.2	0.2	Z	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.14	0.16
11-May	0.1	0.1	0.1	Z	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.15	0.19
12-May	0.2	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.17	0.23
13-May	0.2	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.14	0.18
14-May	0.1	0.1	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.15	0.19
15-May	0.2	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.17	0.21
16-May	0.2	0.2	0.2	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.17	0.33
17-May	0.2	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.16	0.23
18-May	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.17	0.21
19-May	0.2	0.2	0.2	Z	0.2	0.1	0.1	0.1	0.1	C	C	C	C	C	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.15	0.17
20-May	0.2	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.14	0.16
21-May	0.2	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.16	0.17
22-May	0.2	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	--	0.20
23-May	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	--	--
24-May	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	--	0.19
25-May	0.2	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.21	0.24
26-May	0.2	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.21	0.23
27-May	0.2	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.17	0.19
28-May	0.1	0.1	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.14	0.17
29-May	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.14	0.18
30-May	0.1	0.1	0.2	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.13	0.16
31-May	0.1	0.1	0.1	Z	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.14	0.18
																								Diurnal Average			
																								Diurnal Maximum			
0.15 0.16 0.16 -- 0.15 0.16 0.17 0.17 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15																											
0.23 0.22 0.22 -- 0.20 0.20 0.21 0.20 0.22 0.23 0.23 0.23 0.23 0.23 0.25 0.33 0.23 0.23 0.22 0.24 0.23 0.24 0.23 0.23 0.23																											
<b>Z - zerospan      C - Calibration      PF - Power Failure</b> <b>Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 13000 ppb    24-hr 5000 ppb</b>																											



**WCAS - Steeper**  
**Summary of Hourly Averages**

**PM2.5 (PM<sub>2.5</sub>) - µg/m<sup>3</sup>**  
**May 2016**

Maximum Value: 15.05 µg/m <sup>3</sup> on May 16 03:00	Maximum Daily Average: 7.78 µg/m <sup>3</sup> on May 13	Hours in Service: 744
Minimum Value: 0.0 µg/m <sup>3</sup> on May 2 18:00	Minimum Daily Average: 0.07 µg/m <sup>3</sup> on May 19	Hours of Data: 689
Maximum Diurnal Average: 3.10 µg/m <sup>3</sup> at hour 21	Minimum Diurnal Average: 1.77 µg/m <sup>3</sup> at hour 15	Hours of Missing Data: 55
Monthly Average: 2.408 µg/m <sup>3</sup>	Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.4 Median = 1.3 Q <sub>3</sub> = 3.5 P <sub>90</sub> = 7.0 P <sub>99</sub> = 10.8	Hours of Calibration: 0
		Percent Operational Time: 92.6

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-May	0.7	0.5	0.9	1.6	1.5	1.8	1.6	1.5	2.1	1.5	0.7	0.5	0.4	0.2	0.3	0.1	0.4	0.9	1.6	1.8	1.5	3.1	2.7	1.7	1.23	3.08																							
2-May	1.3	1.2	1.2	1.6	1.4	1.5	1.1	1.8	2.3	0.7	1.9	0.5	1.2	1.8	0.9	1.2	1.1	0.0	0.0	0.5	0.8	1.3	1.4	1.8	1.19	2.25																							
3-May	1.1	1.8	2.1	2.9	2.4	3.1	3.2	3.3	2.4	1.9	1.6	0.8	1.1	0.0	0.0	0.0	1.0	2.1	2.3	3.1	1.9	2.2	2.0	2.2	1.86	3.34																							
4-May	2.1	2.2	1.8	2.3	2.0	2.1	2.0	1.8	3.3	2.7	4.1	3.5	5.7	3.3	0.0	0.6	0.5	1.6	1.0	1.4	3.4	3.6	3.4	2.6	2.37	5.69																							
5-May	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.2	1.1	0.0	1.6	0.6	0.2	1.1	0.0	0.8	1.2	0.8	1.7	2.9	5.0	3.6	2.5	1.05	4.97																							
6-May	2.8	4.0	3.3	2.7	2.4	2.8	2.6	2.0	0.5	0.0	0.5	0.0	0.0	1.2	0.0	0.0	0.0	0.6	0.5	0.0	0.2	1.6	1.5	2.2	1.30	3.99																							
7-May	0.7	0.5	0.1	0.1	0.4	0.6	0.3	1.2	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.9	1.2	1.9	8.0	0.70	8.05																							
8-May	5.0	1.9	5.2	4.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.4	1.1	2.2	4.9	1.8	0.6	2.6	1.5	0.6	0.4	1.35	5.21																							
9-May	0.5	0.4	0.5	0.3	0.8	1.2	1.0	1.2	1.0	0.3	0.5	0.0	0.0	0.0	0.6	0.9	1.1	1.8	1.4	1.2	2.1	1.3	0.9	0.9	0.82	2.08																							
10-May	0.9	0.8	0.7	0.8	0.8	1.1	1.5	1.6	0.0	0.6	0.2	0.8	0.2	0.1	1.0	0.7	0.9	0.3	0.8	1.0	0.8	2.3	1.7	0.7	0.85	2.27																							
11-May	0.6	0.7	0.7	1.0	1.4	1.2	1.1	2.0	2.1	2.2	2.2	1.7	1.1	1.4	2.3	2.9	2.4	3.9	2.0	3.5	5.9	7.4	9.6	10.9	2.92	10.91																							
12-May	9.6	8.8	6.8	6.2	6.1	6.6	6.1	6.1	7.8	8.5	11.5	11.8	8.0	6.5	5.0	5.2	5.0	5.8	7.0	10.2	7.7	6.8	7.1	7.2	7.39	11.81																							
13-May	7.0	7.2	7.0	7.6	8.4	9.3	10.3	10.7	12.7	11.1	10.9	10.3	9.1	9.1	8.7	6.9	6.3	5.2	5.3	4.8	4.1	4.9	4.2	5.7	7.78	12.73																							
14-May	6.3	6.4	6.2	6.5	7.7	8.2	9.1	9.2	7.3	4.9	3.4	2.6	3.4	5.0	5.3	6.4	6.8	6.6	6.6	8.2	9.8	10.8	9.0	8.2	6.84	10.84																							
15-May	7.5	7.9	7.6	7.8	8.2	8.1	7.3	7.3	8.0	8.0	5.9	0.0	6.9	4.8	5.1	4.5	4.4	5.8	5.3	6.1	7.5	7.2	9.2	7.4	6.58	9.16																							
16-May	7.0	6.7	15.0	9.4	5.9	4.3	4.3	5.4	5.6	2.7	3.5	5.0	4.3	5.2	5.0	5.1	5.6	6.0	5.0	3.9	4.8	6.7	10.1	7.9	6.01	15.05																							
17-May	7.5	4.2	1.9	2.2	0.6	1.4	1.7	2.8	1.5	0.4	0.0	1.3	0.2	1.4	0.0	0.9	2.8	0.8	0.9	0.8	9.2	0.6	0.2	0.0	1.80	9.19																							
18-May	0.0	0.0	0.1	0.0	0.6	3.1	2.6	2.6	0.4	0.5	2.2	7.6	8.0	4.7	2.2	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.49	8.00																							
19-May	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	0.0	0.0	0.0	0.3	0.1	0.0	0.5	0.5	0.0	0.0	0.0	0.07	0.53																							
20-May	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	1.0	0.7	2.0	0.8	0.4	1.2	0.3	1.3	1.2	0.9	0.2	0.0	0.5	0.46	1.98																							
21-May	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.5	0.5	1.2	0.6	0.3	0.9	1.3	2.2	1.9	1.7	1.7	2.0	1.5	2.1	1.4	0.4	0.85	2.19																							
22-May	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	--	0.00																							
23-May	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	--	--																							
24-May	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	12.2	12.20																							
25-May	7.2	7.9	6.3	5.1	5.6	5.6	5.3	5.9	6.0	5.9	4.4	4.7	4.0	0.2	1.2	1.3	1.2	4.5	3.6	2.8	3.9	3.8	3.1	2.0	4.23	7.91																							
26-May	1.3	0.6	0.7	0.5	0.7	2.1	1.6	2.6	3.5	3.2	3.0	2.1	1.7	3.1	2.3	3.7	3.5	2.4	2.1	0.0	0.0	0.0	0.1	0.0	1.70	3.68																							
27-May	0.2	1.1	4.0	3.5	2.5	1.9	5.3	5.7	4.7	3.1	3.5	2.3	1.2	0.3	0.8	1.1	0.3	0.8	2.6	3.8	2.8	1.8	1.2	0.0	2.27	5.65																							
28-May	0.0	0.0	0.3	1.6	2.2	2.6	2.8	2.8	0.6	0.0	0.0	0.0	0.0	1.8	2.3	1.2	1.2	1.2	1.3	1.7	2.3	2.3	1.5	1.2	1.29	2.84																							
29-May	0.2	0.2	0.5	0.4	1.0	0.5	0.4	1.0	0.5	3.7	1.2	0.3	0.6	0.1	0.4	1.3	3.8	3.3	2.1	0.1	0.5	0.5	0.8	0.8	1.01	3.83																							
30-May	0.9	0.9	1.0	0.5	0.9	0.9	0.6	1.2	0.8	0.0	0.0	1.9	1.9	0.3	2.2	0.0	0.0	0.0	0.7	0.7	0.4	1.4	0.8	0.4	0.77	2.21																							
31-May	0.5	0.9	0.6	0.5	1.3	1.2	1.1	1.2	0.0	0.0	0.0	0.4	0.6	0.1	0.3	1.2	1.0	0.9	1.8	1.2	1.2	0.5	1.5	0.4	0.76	1.75																							
																								2.47	2.31	2.57	2.38	2.23	2.46	2.51	2.83	2.59	2.21	2.15	2.19	2.19	1.91	1.77	1.78	1.99	2.24	2.46	2.54	3.10	3.00	2.98	2.84	Diurnal Average	
																								9.58	8.76	15.05	9.36	8.40	9.29	10.29	10.69	12.73	11.12	11.48	11.81	9.09	9.06	8.67	6.94	6.83	6.79	12.20	10.52	10.11	10.84	10.07	10.91	Diurnal Maximum	

PF - Power Failure

Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 80 ul/m<sup>3</sup> 24-hr 30 ul/m<sup>3</sup>

**STEEPER  
STATION #905**

**METEOROLOGICAL DATA**

**MAY 2016**



**WCAS - Steeper**  
**Summary of Hourly Averages**

**External Temperature (ET) - C**  
**May 2016**

Maximum Value: 25.59 C on May 3 16:00		Maximum Daily Average: 16.52 C on May 7		Hours in Service: 744																							
Minimum Value: -3.7 C on May 13 06:00		Minimum Daily Average: -0.04 C on May 20		Hours of Data: 714																							
Maximum Diurnal Average: 12.70 C at hour 16		Minimum Diurnal Average: 2.51 C at hour 6		Hours of Missing Data: 30																							
Monthly Average: 7.829 C		Percentiles: P <sub>1</sub> = -3.1 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 2.3 Median = 6.9 Q <sub>3</sub> = 12.4 P <sub>90</sub> = 17.8 P <sub>99</sub> = 24.3		Hours of Calibration: 0																							
				Percent Operational Time: 96.0																							
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-May	3.5	4.3	4.7	4.0	4.0	3.8	3.8	5.6	8.9	12.7	15.5	17.1	18.3	19.2	19.8	20.5	21.0	20.5	19.3	18.2	16.2	14.9	11.9	10.1	12.41	20.99	
2-May	8.8	8.2	7.5	6.9	6.5	6.4	7.0	9.1	13.1	17.8	20.4	21.3	22.4	23.1	24.5	23.7	24.1	24.6	23.5	21.5	19.0	17.1	15.4	13.8	16.06	24.56	
3-May	11.9	11.5	10.6	8.5	7.4	6.8	8.4	11.6	16.0	18.6	20.7	21.8	23.2	24.1	25.0	25.6	24.7	21.7	18.7	17.4	16.2	14.9	14.5	14.0	16.41	25.59	
4-May	14.2	13.0	12.3	13.2	12.7	12.5	13.0	13.3	12.9	13.4	15.2	16.5	16.0	16.4	17.3	16.1	15.3	14.7	13.4	12.3	10.5	9.5	9.1	6.8	13.32	17.27	
5-May	5.2	3.8	2.5	1.7	0.4	0.0	0.1	0.4	1.7	4.4	6.5	7.7	8.5	10.6	11.6	12.3	13.2	13.3	12.1	11.6	10.0	6.8	4.3	3.0	6.32	13.29	
6-May	2.5	1.8	1.0	0.1	0.2	0.1	-0.1	2.6	9.5	12.4	14.1	16.2	17.2	19.2	20.2	21.3	21.6	20.9	19.6	17.3	14.9	12.8	11.1	9.9	11.10	21.57	
7-May	8.8	8.4	9.1	8.6	8.8	9.4	9.8	9.9	14.3	19.5	21.4	23.3	24.4	25.3	23.7	22.3	22.1	22.6	22.1	20.0	18.0	16.2	15.1	13.3	16.52	25.33	
8-May	11.6	10.6	9.8	6.5	3.5	2.7	1.5	0.4	1.3	4.7	7.5	8.2	8.5	9.5	9.8	9.7	9.5	6.2	3.1	2.8	1.5	0.5	0.1	0.1	5.40	11.64	
9-May	0.2	0.2	0.3	0.1	0.1	0.0	0.3	0.8	0.9	1.5	2.7	4.3	5.7	6.0	6.4	6.3	6.6	5.1	5.1	4.9	3.5	1.9	0.6	-0.5	2.62	6.62	
10-May	-1.3	-1.7	-2.0	-2.2	-2.5	-2.5	-1.6	1.0	5.5	6.6	7.3	7.8	8.3	9.5	9.1	10.0	10.0	11.1	9.2	7.9	6.9	5.6	2.6	2.2	4.45	11.05	
11-May	1.1	0.0	-0.7	-1.1	-1.2	-1.0	0.1	3.4	6.5	8.1	8.4	9.0	9.2	9.5	8.9	8.4	8.0	7.4	6.9	6.2	5.7	4.5	3.5	1.6	4.68	9.49	
12-May	0.7	0.4	0.2	0.2	0.3	0.1	-0.1	-0.2	0.0	1.2	3.1	4.5	4.4	5.2	5.9	6.6	5.9	6.0	5.9	4.9	3.3	1.7	0.6	-0.6	2.51	6.58	
13-May	-1.5	-2.1	-2.5	-3.0	-3.4	-3.7	-3.3	-0.5	5.2	7.4	8.5	9.6	10.2	11.2	11.7	12.2	12.4	11.6	10.7	9.5	7.9	6.0	4.6	2.8	5.06	12.43	
14-May	-0.2	-1.0	-1.1	-1.0	-1.3	-1.5	-0.7	2.2	9.0	10.9	11.3	12.5	13.4	14.6	15.0	15.4	15.3	14.6	13.3	11.8	10.0	8.0	7.9	5.3	7.66	15.37	
15-May	2.6	1.2	1.0	0.5	0.1	0.0	0.6	3.3	8.9	11.6	13.6	15.4	16.6	17.4	18.1	18.6	18.8	17.8	16.6	14.8	12.6	10.7	10.3	7.0	9.92	18.78	
16-May	6.0	5.0	4.9	4.5	4.3	4.6	6.5	11.4	15.5	17.9	19.6	20.2	21.2	21.1	19.7	19.7	18.9	18.3	19.0	17.4	15.1	14.5	13.1	12.1	13.77	21.23	
17-May	10.2	8.5	8.1	7.6	7.4	6.6	6.8	8.6	11.5	14.1	14.7	16.8	17.1	19.3	18.3	19.8	19.0	18.9	17.7	16.3	14.2	12.9	11.8	11.4	13.23	19.84	
18-May	10.7	9.9	9.6	8.7	7.4	7.6	9.3	12.3	14.3	16.5	17.1	13.4	11.6	10.8	10.8	9.9	9.0	7.6	6.2	6.0	5.5	5.4	5.0	4.9	9.56	17.12	
19-May	4.5	4.3	4.1	3.8	2.9	1.9	0.8	1.0	1.5	1.9	2.3	2.4	1.7	1.3	1.1	1.0	0.2	-0.4	-0.8	-1.3	-1.9	-2.2	-2.5	-2.7	1.04	4.54	
20-May	-2.8	-2.9	-3.0	-3.1	-3.1	-3.1	-2.9	-2.5	-1.8	-0.5	0.4	1.1	2.0	2.5	3.6	4.2	4.0	3.3	2.6	1.6	0.4	-0.1	-0.2	-0.4	-0.04	4.22	
21-May	-0.7	-1.0	-1.7	-2.0	-2.2	-2.3	-2.2	-1.9	-1.3	-0.7	0.3	1.5	2.6	3.0	3.7	3.9	4.4	4.5	4.7	4.3	3.5	2.4	2.0	1.7	1.10	4.67	
22-May	1.1	0.8	0.4	0.0	-0.1	-0.2	-0.2	-0.1	-0.1	0.1	0.2	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	--	1.13	
23-May	PF	12.4	12.1	11.1	10.3	8.8	6.2	3.6	2.0	1.0	0.4	0.2	0.4	0.4	0.6	1.6	5.3	11.5	15.0	16.2	16.3	16.8	18.0	18.5	8.20	18.45	
24-May	19.6	18.8	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	17.1	16.2	14.8	11.1	8.4	7.2	--	19.63	
25-May	7.8	9.2	7.6	6.0	5.3	5.3	6.0	8.2	10.6	14.0	14.4	12.4	10.4	11.2	16.4	18.4	18.5	12.9	10.2	9.4	9.0	8.8	7.6	7.1	10.28	18.51	
26-May	6.8	6.5	6.0	5.3	4.0	3.6	3.9	5.4	9.7	12.9	13.9	14.3	12.3	12.5	15.2	11.0	7.4	6.9	6.4	4.7	4.4	4.0	3.7	3.1	7.66	15.21	
27-May	2.7	2.8	2.7	2.6	2.2	2.2	2.3	2.6	3.3	3.0	3.0	3.0	2.5	2.6	4.0	5.0	4.9	4.5	4.3	3.8	3.6	3.3	2.8	2.6	3.18	5.00	
28-May	2.3	1.7	1.1	0.6	0.6	0.9	2.0	3.5	6.7	8.9	8.9	10.9	11.4	10.3	9.0	9.6	10.7	11.0	9.1	7.7	6.6	5.4	4.8	4.3	6.17	11.44	
29-May	2.9	2.2	1.1	1.2	2.4	4.1	5.0	6.4	7.5	7.7	7.6	8.0	9.5	9.7	12.1	11.4	8.0	5.4	4.5	3.0	2.9	2.2	1.8	1.9	5.36	12.06	
30-May	2.4	1.7	1.8	2.0	1.7	2.4	3.4	4.7	6.9	8.0	8.2	8.2	6.8	5.7	7.1	9.0	10.3	10.4	8.8	8.2	7.2	5.6	3.8	2.5	5.70	10.39	
31-May	1.6	1.0	0.5	0.0	-0.2	-0.1	1.4	6.2	10.8	11.7	12.6	13.6	12.7	14.2	14.1	14.7	14.3	14.7	13.6	13.0	11.6	10.8	9.3	9.3	8.80	14.69	
		4.78	4.50	3.60	3.04	2.63	2.51	2.91	4.41	7.02	8.91	10.00	11.07	11.33	11.91	12.51	12.70	12.53	11.98	11.26	10.25	8.98	7.74	6.70	5.74	Diurnal Average	
		19.63	18.80	12.27	13.22	12.69	12.48	12.98	13.27	15.99	19.54	21.40	23.25	24.38	25.33	25.00	25.59	24.70	24.56	23.46	21.50	19.02	17.10	17.96	18.45	Diurnal Maximum	
PF - Power Failure																											



# WCAS - Steeper Summary of Hourly Averages

## Wind Speed (WS) - kph May 2016

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24				
1 Spd	5.3	5.7	5.5	5.5	6.1	5.9	6.0	5.8	4.1	3.0	1.2	1.4	2.0	0.8	3.3	2.6	3.5	3.3	4.5	4.0	3.6	2.3	3.1	3.7	1.64	6.08		
Dir	SW	SW	SW	SW	SW	SSW	SSW	SW	SW	SW	E	NW	WSW	NNW	ENE	ENE	ENE	NE	NE	ENE	E	ESE	SSW	SSW	SSW	SSW	SSW	SW
2 Spd	4.5	4.8	5.8	6.3	6.6	6.3	4.9	4.8	3.2	0.2	2.8	4.2	4.2	3.9	1.2	1.0	1.9	3.2	3.7	3.7	3.8	3.0	5.6	3.5	2.23	6.58		
Dir	SSW	SSW	SW	SW	SW	SSW	SSW	SW	SW	S	NE	NE	NE	NE	NW	NE	ENE	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	
3 Spd	5.5	5.3	3.7	6.9	7.3	5.6	3.6	3.0	1.6	1.6	1.3	1.9	0.8	1.9	3.8	4.7	8.8	9.8	10.2	9.9	6.2	4.7	1.7	4.3	4.44	10.16		
Dir	SW	SW	SW	SW	SW	SW	SSW	SSW	WSW	WSW	WSW	ENE	ESE	SSW	SW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	SW	SW	SW	WSW	WSW
4 Spd	3.3	4.8	4.3	3.6	3.1	1.5	2.0	0.6	1.6	1.5	0.2	1.6	2.7	1.7	8.0	7.0	4.4	3.1	2.1	2.2	4.1	3.3	2.8	2.7	1.18	7.96		
Dir	SW	SW	SW	SW	SW	SSW	S	WSW	SW	WSW	W	NE	NE	ENE	WSW	WSW	WSW	W	NW	N	NE	NE	NE	NNE	WSW	WSW	SW	
5 Spd	2.0	3.2	1.4	1.4	1.2	1.5	1.7	3.3	3.1	2.0	1.3	1.0	2.2	2.3	2.6	2.8	1.8	1.9	1.5	1.2	1.6	3.9	4.7	4.1	1.55	4.71		
Dir	N	NNE	NNW	W	W	W	WSW	SW	SW	SW	W	W	WSW	WSW	W	W	WNW	WNW	NNW	W	SW	SW	SW	SW	WSW	WSW	SW	
6 Spd	4.7	4.5	4.8	5.5	5.7	5.9	5.5	2.4	1.3	1.2	0.5	1.2	0.7	1.5	1.8	2.8	3.1	2.9	3.1	3.2	3.0	3.5	4.3	4.4	2.93	5.92		
Dir	SSW	SSW	SSW	SSW	SSW	SW	SW	SSW	SSE	SSW	WSW	W	N	SW	W	W	W	W	WSW	WSW	SW	SW	SW	SW	SW	SW	SW	SW
7 Spd	4.7	4.9	5.2	5.5	5.4	5.2	4.6	3.8	3.2	1.8	1.3	1.7	5.3	7.0	7.0	7.7	9.9	10.7	7.4	6.2	4.7	4.1	5.8	1.4	5.03	10.73		
Dir	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	WSW	SW	SW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	SW	N	SW	WSW	WSW	SW
8 Spd	2.6	0.6	3.8	4.0	3.1	1.0	4.1	1.1	1.6	5.3	8.3	6.5	6.4	5.8	6.3	4.0	3.3	3.5	2.5	5.0	3.8	3.7	2.9	2.1	2.11	8.33		
Dir	NNE	E	NE	NNE	NNE	NNE	NE	NE	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	NW	N	WNW	WSW	WSW	WSW	WSW	W	W	WSW	WSW	W
9 Spd	2.5	2.8	2.4	2.4	1.8	2.4	2.2	1.7	2.1	2.2	2.5	2.5	2.5	3.0	3.0	2.2	2.3	2.0	1.5	1.6	1.6	2.4	2.8	2.8	1.70	2.99		
Dir	WSW	WSW	WSW	WSW	W	W	W	W	NNW	NNW	NW	WNW	NNW	NNW	NNW	NNW	NW	NNW	N	NNW	NNE	WSW	WSW	SW	WNW	NNW	NNW	NNW
10 Spd	3.1	3.4	3.3	4.0	4.2	4.6	4.0	2.6	1.5	1.8	3.3	0.8	1.3	3.0	2.0	1.5	1.3	0.9	2.7	1.2	1.2	1.6	3.6	3.6	0.79	4.56		
Dir	SW	SW	SSW	SSW	SSW	SSW	SSW	SSW	WSW	NNE	NE	N	NNE	NE	NE	NNE	NE	NNE	NE	ENE	E	SSE	SSW	SW	SSW	SSW	SSW	SSW
11 Spd	3.4	4.1	4.5	4.6	4.7	3.5	1.9	0.9	1.9	3.5	3.8	4.1	2.1	2.0	2.0	2.0	2.8	2.5	2.3	3.6	2.7	3.0	3.1	3.1	1.19	4.69		
Dir	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	NE	NE	ENE	NE	ENE	E	ESE	ESE	ENE	E	ENE	ENE	ENE	ENE	E	ENE	ESE	SSW	SSW	SSW
12 Spd	2.8	2.7	3.1	2.0	1.6	1.9	2.1	2.8	2.7	3.0	3.3	3.7	3.3	2.3	2.8	1.8	1.5	1.7	0.7	0.8	2.5	3.0	3.7	3.2	1.38	3.71		
Dir	ENE	ENE	E	E	ESE	NE	ENE	NE	ENE	NE	NE	NE	ENE	ENE	NE	E	ENE	ENE	E	SSW	SW	SW	SW	SW	ENE	ENE	ENE	NE
13 Spd	3.0	3.5	3.8	4.2	4.4	4.5	3.3	2.2	1.7	2.0	3.3	2.4	2.2	2.0	2.0	2.9	2.3	2.7	2.9	3.3	2.7	2.7	1.8	1.1	1.10	4.46		
Dir	SW	SSW	SW	SW	SW	SW	SSW	S	SE	ESE	E	E	E	E	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	E	S	SE	SSW	SSW	SSW
14 Spd	3.4	4.6	5.2	5.2	4.4	4.8	3.0	1.2	1.1	2.1	3.0	2.6	3.0	2.6	2.5	2.6	3.0	3.0	3.6	3.1	2.4	2.3	2.8	2.3	1.38	5.17		
Dir	SW	SW	SW	SW	SW	SW	SSW	SSW	ENE	E	E	E	E	E	E	E	E	E	ENE	ENE	E	E	SSE	SSW	SE	SSW	SSW	SSW
15 Spd	2.5	3.1	4.7	4.3	4.9	5.0	3.8	2.3	1.1	4.2	3.8	3.3	3.1	3.5	3.3	3.2	3.0	3.8	3.0	2.4	1.9	1.6	1.6	3.3	1.17	5.00		
Dir	SW	SSW	SW	SW	SW	SW	SSW	SSW	ENE	NE	ENE	ENE	E	ENE	E	E	E	ENE	E	E	E	ENE	E	SSW	SE	SSW	SSW	SSW
16 Spd	5.0	5.1	4.5	3.6	4.4	4.2	4.4	3.9	1.1	1.7	1.8	1.5	1.3	2.7	1.5	2.4	3.5	5.1	3.8	3.9	3.7	0.7	3.4	1.5	2.47	5.10		
Dir	SW	SW	SW	SW	SW	SW	SW	SW	WNW	WNW	WNW	NW	WNW	W	NW	W	WSW	WSW	WSW	WSW	SW	NNW	NNE	WNW	WSW	WSW	WSW	WSW
17 Spd	2.5	3.1	1.9	1.3	1.4	2.8	2.9	1.1	1.5	1.0	2.1	3.0	3.3	3.7	3.0	4.3	3.6	4.8	4.4	4.5	4.0	2.7	3.0	3.6	2.77	4.84		
Dir	W	SW	SW	SSW	SSW	SW	SW	SW	SW	W	W	W	W	W	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	WSW	SW	WSW	WSW	WSW
18 Spd	3.1	3.3	3.5	3.6	3.7	3.6	2.0	0.7	1.2	0.8	0.8	2.6	1.9	3.4	3.4	3.0	2.6	1.8	1.7	0.7	0.6	0.2	1.0	1.0	0.38	3.70		
Dir	SW	SW	SW	SW	SW	SW	SSW	SSW	SW	W	N	NNE	N	NE	NE	NE	NE	N	N	WNW	N	W	NNW	W	W	WSW	WSW	WSW
19 Spd	0.9	1.1	1.4	1.5	1.8	2.0	2.8	3.1	3.3	2.5	1.9	2.2	2.6	1.7	2.5	2.0	2.3	2.5	2.6	2.5	2.1	2.7	2.9	2.3	1.86	3.33		
Dir	W	NW	W	N	N	W	WSW	WSW	WSW	W	W	NW	NW	NW	NW	NNW	NW	NW	NW	WNW	WNW	W	W	W	WNW	WSW	WSW	WSW
20 Spd	2.8	2.5	2.6	3.1	2.7	2.5	2.2	1.6	2.3	1.8	1.4	1.5	1.3	1.6	1.6	1.9	2.8	3.1	3.4	2.7	2.8	1.6	2.0	1.2	0.99	3.41		
Dir	W	W	W	WSW	W	W	W	W	W	WNW	NNW	NW	NW	N	NNE	NNE	NE	NE	NE	NE	NE	NE	NE	NE	NNW	NNW	NNW	NNW
21 Spd	2.5	1.9	2.6	2.3	1.5	2.0	1.7	1.4	0.9	0.9	0.6	1.2	1.4	2.0	1.4	1.3	1.4	0.9	1.1	1.0	1.2	2.3	0.9	1.3	1.32	2.63		
Dir	NE	NNE	NE	NE	NNE	NE	NE	NNE	NNE	N	NW	NNE	NNE	NNE	NNE	NNE	NNE	NNE	W	W	NNE	NE	NNW	NNE	NNW	NNW	NNW	NNW
22 Spd	1.5	1.3	1.4	1.5	2.1	2.0	2.1	2.7	3.1	2.8	3.2	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	--	3.18	
Dir	NNE	NNW	NW	W	WSW	W	W	W	W	W	W	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	--	W	W





**WCAS - Steeper**  
**Summary of Hourly Averages**

**Wind Speed (WS) - kph**  
**May 2016**

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
23 Spd	PF	2.5	2.5	3.0	2.1	1.8	1.2	3.3	3.8	3.9	4.2	4.7	5.9	6.2	6.2	5.2	2.7	1.0	0.2	0.8	1.8	2.4	1.5	1.7	1.25	6.19
Dir	PF	NNE	NNE	NE	NE	ENE	S	SSW	SSW	SSW	SSW	SW	SW	SW	SW	SW	SSW	SSW	SSE	NNW	NNE	NE	NE	NE	SSW	SW
24 Spd	1.7	1.2	1.2	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	1.6	1.7	1.4	2.0	3.7	4.5	--	4.52
Dir	SSW	ENE	E	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	ESE	E	SE	SW	SW	SW	--	SW
25 Spd	3.9	2.6	2.4	3.6	4.8	4.9	4.9	3.9	2.6	0.7	1.7	2.4	2.4	3.8	4.7	2.3	2.0	4.0	0.6	1.0	1.8	1.4	3.0	3.6	2.20	4.92
Dir	WSW	WSW	SW	SSW	SW	SW	SW	SW	SW	WNW	N	NW	W	SW	WSW	WSW	WSW	NE	SE	SW	SW	W	WSW	SW	SW	SW
26 Spd	2.5	3.1	3.3	4.7	4.3	4.5	4.1	2.6	0.7	2.6	2.7	3.6	1.6	3.4	2.5	2.0	3.3	2.6	1.8	1.6	2.2	2.5	2.7	3.3	0.55	4.71
Dir	WSW	SW	SW	SW	SW	SW	SW	SW	ESE	ENE	ENE	ENE	NE	NE	ENE	NE	NE	NNE	N	N	WSW	WSW	WSW	SW	SW	SW
27 Spd	3.2	3.8	2.5	3.3	3.4	3.0	2.3	2.5	1.6	1.5	1.4	1.2	2.1	2.8	1.4	1.2	1.6	1.4	1.1	1.2	0.9	2.0	1.9	2.9	1.75	3.79
Dir	SW	SW	SW	SW	SW	WSW	WSW	W	NNW	NW	WNW	W	WSW	W	NW	NW	WNW	NW	NW	NW	W	WSW	WSW	WSW	WSW	SW
28 Spd	2.7	2.9	3.9	3.6	3.4	2.4	1.2	0.0	0.5	1.0	1.6	3.4	1.5	2.2	2.5	3.3	2.0	1.3	1.2	2.8	2.7	2.4	1.1	1.6	0.63	3.87
Dir	SW	SW	SW	SW	SW	SSW	SSW	WSW	NNE	NNW	WSW	WSW	WSW	NE	E	E	E	SE	SE	ENE	ENE	ENE	E	SW	S	SW
29 Spd	3.5	3.1	3.8	4.1	3.7	2.7	2.8	1.9	1.2	3.2	2.9	1.9	1.6	2.0	1.8	2.1	6.6	4.6	1.2	1.8	3.5	3.2	2.7	2.6	0.45	6.63
Dir	SW	SSW	SW	SW	SW	SW	SW	WSW	N	NE	ENE	NE	NE	ENE	SW	N	NE	NE	NE	ENE	SW	SW	SW	WSW	SW	NE
30 Spd	2.7	2.9	2.5	2.5	2.5	2.8	1.3	1.6	0.7	1.2	2.6	3.6	2.3	1.4	1.9	2.3	1.9	2.4	2.4	1.4	0.8	2.0	3.2	4.1	0.50	4.14
Dir	WSW	SW	SW	SW	SW	WSW	W	N	NNW	NNW	NNE	NE	NE	N	NNE	NNE	NNE	NNE	NNE	NNE	NNW	SW	SW	SW	WNW	SW
31 Spd	3.9	4.1	4.3	4.9	4.7	4.1	1.9	0.8	1.4	2.4	2.7	1.5	3.2	1.8	2.2	2.3	1.7	1.1	0.9	0.6	2.8	2.8	3.0	2.4	0.94	4.93
Dir	SSW	SSW	SW	SW	SW	SW	SSW	S	E	NE	NE	ENE	NE	E	NE	ENE	ENE	ENE	ENE	SE	SW	SW	SW	SW	S	SW
Spd	2.36	2.39	2.43	2.83	2.97	2.93	2.32	1.72	0.92	0.35	0.54	0.70	0.43	0.27	0.60	0.51	0.61	0.63	0.44	0.45	0.59	0.88	1.58	1.93	Diurnal Average	
Dir	SW	SW	SW	SW	SW	SW	SW	SW	SW	NW	N	N	NNW	NNW	W	WNW	NNW	NW	NW	W	SW	SW	SW	SW	Diurnal Maximum	
Spd	5.46	5.75	5.82	6.91	7.29	6.31	6.03	5.78	4.09	5.28	8.33	6.52	6.37	7.02	7.96	7.73	9.88	10.73	10.16	9.89	6.23	4.66	5.80	4.52	Diurnal Maximum	
Dir	233.45	218.47	213.89	225.80	223.51	211.88	212.73	216.39	216.96	245.15	249.35	252.00	254.55	231.57	245.67	241.73	241.95	240.06	237.36	236.95	234.98	234.37	229.92	220.98	Diurnal Maximum	
Maximum Speed Value: 10.7 kph on May 7 18:00																			Minimum Speed Value: 0.0 kph on May 28 08:00					Hours in Service:		744
Maximum Daily Speed Average: 5.03 kph on May 7																			Minimum Daily Speed Average: 0.38 kph on May 21					Hours of Data:		715
Maximum Diurnal Speed Average: 2.97 kph at hour 5																			Minimum Diurnal Speed Average: 0.27 kph at hour 14					Hours of Missing Data:		29
Monthly Average Velocity: 1.092 kph 233.47 deg																			Speed Percentiles: P <sub>1</sub> = 0.5 P <sub>10</sub> = 1.2 Q <sub>1</sub> = 1.7 Median = 2.7 Q <sub>3</sub> = 3.6 P <sub>90</sub> = 4.8 P <sub>99</sub> = 8.0					Percent Operational Time:		96.1
All monthly, daily, and diurnal averages have been calculated using vector methods																										
PF - Power Failure																										
Frequency Distribution																										
		Speed Range (kph)																								
Direction	0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total																			
North	52	0	0	0	0	0	52																			
NorthEast	125	1	0	0	0	0	126																			
East	75	0	0	0	0	0	75																			
SouthEast	11	0	0	0	0	0	11																			
South	19	0	0	0	0	0	19																			
SouthWest	221	53	0	0	0	0	274																			
West	106	6	0	0	0	0	112																			
NorthWest	46	0	0	0	0	0	46																			
Total	655	60	0	0	0	0	715																			



**WCAS - Steeper**  
**Summary of Hourly Averages**

**Relative Humidity (RH) - %**  
**May 2016**

Maximum Value: 101.07 % on May 22 08:00		Maximum Daily Average: 98.62 % on May 19		Hours in Service: 744																								
Minimum Value: 10.0 % on May 7 17:00		Minimum Daily Average: 20.97 % on May 7		Hours of Data: 714																								
Maximum Diurnal Average: 78.97 % at hour 6		Minimum Diurnal Average: 44.37 % at hour 16		Hours of Missing Data: 30																								
Monthly Average: 61.769 %		Percentiles: P <sub>1</sub> = 11.7 P <sub>10</sub> = 24.2 Q <sub>1</sub> = 35.8 Median = 62.5 Q <sub>3</sub> = 91.6 P <sub>90</sub> = 99.2 P <sub>99</sub> = 100.9		Hours of Calibration: 0																								
				Percent Operational Time: 96.0																								
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-May	58.0	50.9	47.9	52.8	53.5	57.3	60.7	56.8	51.3	45.1	39.2	36.2	33.6	32.0	31.5	29.1	27.9	28.6	31.6	33.7	38.0	40.9	54.5	61.4	43.85	61.37		
2-May	64.2	64.8	67.2	69.7	71.1	70.9	68.0	62.3	53.1	38.2	31.4	27.7	25.5	23.9	21.2	21.6	20.6	15.0	14.2	16.1	20.6	23.5	26.9	29.9	39.48	71.14		
3-May	32.8	33.2	35.6	42.8	47.3	50.8	47.0	40.4	32.1	26.3	22.8	20.2	17.7	13.6	10.9	10.3	10.8	13.4	18.9	21.8	25.6	28.7	29.4	31.6	27.67	50.84		
4-May	31.2	34.7	37.4	35.2	38.1	38.1	36.9	36.2	40.5	42.3	41.3	38.5	41.8	42.1	33.2	34.9	37.7	42.4	49.3	55.5	67.6	75.0	76.9	91.8	45.78	91.81		
5-May	97.3	98.9	99.2	99.7	100.0	100.6	100.8	100.6	98.5	85.4	68.2	62.0	58.0	47.5	41.9	36.9	33.2	31.3	30.8	30.3	36.0	57.4	70.9	74.1	69.15	100.75		
6-May	71.2	69.9	72.7	76.1	72.1	71.2	71.2	60.0	35.3	27.7	25.1	20.2	16.9	17.4	14.4	12.0	11.4	12.8	14.3	16.8	19.8	24.2	27.3	28.8	37.03	76.07		
7-May	31.1	32.0	29.6	30.7	29.8	28.0	28.0	31.7	27.2	18.6	15.2	14.2	13.4	12.3	12.5	11.8	10.0	10.4	10.8	12.8	15.6	19.7	23.4	34.2	20.97	34.22		
8-May	47.4	54.3	58.4	84.8	97.5	98.4	98.8	99.9	99.7	84.0	44.9	35.0	30.8	28.6	27.0	27.2	29.6	52.1	72.5	73.0	85.5	97.7	99.8	100.3	67.80	100.34		
9-May	100.3	99.7	98.2	96.7	96.6	99.8	99.4	96.6	92.7	85.0	73.1	64.7	52.1	45.9	43.5	44.0	43.3	50.8	51.9	51.7	59.8	67.6	75.1	80.4	73.71	100.25		
10-May	82.6	82.9	83.3	81.7	81.4	80.0	75.8	66.3	46.5	37.1	37.3	38.3	36.0	31.1	33.9	32.0	31.6	28.7	32.3	35.9	37.2	44.2	63.2	64.1	52.64	83.33		
11-May	67.5	71.2	73.6	74.8	74.9	73.3	67.2	59.2	50.0	44.5	43.1	39.9	36.3	34.7	37.3	41.9	44.6	49.7	51.3	50.3	53.2	64.7	74.5	93.4	57.13	93.37		
12-May	98.4	100.0	99.5	99.1	97.8	99.3	99.4	94.5	94.7	91.9	75.7	62.3	55.2	47.9	42.9	40.9	42.4	41.5	42.1	52.3	71.6	77.6	83.1	88.8	74.94	99.95		
13-May	91.7	92.9	92.7	92.4	90.9	89.6	87.1	76.0	50.1	35.5	32.7	30.8	28.3	27.1	26.7	25.3	24.7	25.1	26.6	28.1	30.9	36.6	42.9	51.5	51.51	92.94		
14-May	69.0	75.1	73.9	72.5	74.7	76.1	73.1	62.3	40.9	30.8	27.4	22.4	21.0	20.7	18.6	19.1	19.6	21.3	23.5	26.1	30.9	36.0	36.5	45.1	42.35	76.05		
15-May	55.7	62.1	63.8	67.0	69.2	70.2	67.8	58.1	44.0	37.9	31.5	19.0	18.5	18.5	17.1	17.1	17.5	19.5	21.7	24.4	28.5	32.6	33.7	46.3	39.24	70.19		
16-May	50.0	53.8	53.2	53.8	52.4	48.6	40.8	29.7	25.8	20.0	16.6	15.9	15.6	16.3	18.7	19.3	20.8	22.7	21.8	24.3	28.2	29.1	41.3	48.9	31.98	53.84		
17-May	64.8	78.2	76.9	78.9	76.4	78.0	76.6	69.3	57.7	46.7	41.7	34.7	34.4	30.9	32.3	30.6	32.1	33.0	34.4	38.5	45.3	48.1	51.1	51.4	51.76	78.92		
18-May	53.4	55.7	56.8	60.2	65.1	65.5	61.8	57.8	51.3	40.2	38.9	58.8	78.1	88.2	84.2	93.2	93.4	97.5	97.8	97.6	97.6	98.1	98.4	98.8	74.51	98.75		
19-May	99.1	99.3	99.5	99.5	99.5	99.4	100.2	100.6	100.5	100.4	100.2	99.3	98.1	98.8	97.5	97.0	97.1	96.9	94.3	95.5	99.2	99.0	99.0	97.0	98.62	100.56		
20-May	97.0	96.5	95.8	94.8	94.1	94.3	93.2	92.4	89.0	82.3	79.7	77.7	75.1	73.3	69.9	69.0	72.8	76.5	81.8	86.8	94.8	98.5	99.4	100.0	86.86	99.95		
21-May	100.0	99.5	98.6	98.8	98.7	98.2	98.5	96.8	95.0	92.9	89.6	86.1	81.6	80.9	78.3	77.9	77.9	78.0	77.3	79.8	86.7	93.4	98.0	99.2	90.07	99.96		
22-May	99.9	100.2	100.5	100.7	100.9	101.0	101.1	101.1	101.0	101.0	100.9	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	--	101.07		
23-May	PF	35.8	32.2	31.5	33.4	41.3	56.3	73.6	80.9	84.9	88.0	88.5	86.7	85.1	82.4	77.4	64.4	43.4	28.6	28.6	27.9	26.4	25.9	24.6	54.25	88.46		
24-May	23.4	23.4	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	24.8	26.2	29.4	46.6	58.2	61.2	--	61.18
25-May	61.8	65.6	74.7	77.0	79.6	80.5	78.0	71.9	67.4	56.5	53.7	65.2	85.9	73.0	51.3	39.3	35.8	63.0	82.7	86.4	89.1	89.3	95.2	97.4	71.67	97.40		
26-May	98.1	98.5	98.8	99.1	98.3	97.4	95.7	93.4	80.1	70.2	63.6	59.3	61.4	63.2	50.8	71.0	96.1	96.2	97.1	98.1	98.7	99.4	99.5	99.8	86.82	99.84		
27-May	100.1	100.2	100.1	100.0	100.2	100.4	100.3	100.2	99.5	96.5	96.7	97.8	98.4	98.8	97.8	94.6	93.2	95.1	96.3	97.2	98.4	99.2	99.7	99.9	98.36	100.39		
28-May	100.1	100.4	100.7	100.9	101.0	100.9	100.3	98.2	80.3	62.8	61.1	48.1	40.5	49.2	66.2	62.3	58.8	54.6	61.6	68.5	78.1	86.2	90.8	91.6	77.62	100.97		
29-May	87.2	81.5	85.4	83.6	78.6	72.1	70.9	68.4	62.7	72.9	70.0	60.7	52.3	50.8	41.2	39.8	68.5	88.5	92.1	97.0	98.6	99.7	100.1	99.7	75.93	100.10		
30-May	96.3	98.7	99.3	96.2	97.0	93.8	89.4	85.7	76.4	67.5	62.6	69.0	79.4	84.4	84.3	72.2	57.4	53.8	62.5	64.0	63.9	76.3	87.2	90.5	79.50	99.31		
31-May	91.6	92.2	93.3	94.2	94.3	94.1	89.2	71.8	56.3	52.3	45.7	42.4	45.8	39.9	39.7	39.0	38.6	37.8	44.5	44.1	49.7	46.7	53.8	51.2	60.33	94.26		
74.03 74.26 76.62 78.18 78.82 78.97 77.79 73.72 66.01 59.24 53.92 49.48 48.91 47.44 45.08 44.37 45.24 47.57 49.65 52.04 56.89 62.08 67.18 71.09																								Diurnal Average				
100.25 100.40 100.68 100.89 100.97 101.03 101.05 101.07 101.04 100.99 100.91 99.29 98.35 98.83 97.84 97.03 97.14 97.47 97.78 98.12 99.19 99.66 100.10 100.34																								Diurnal Maximum				
PF - Power Failure																												



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

**Wind Speed (WS) - kph**  
**May 2016**

Maximum Value: 4.53 kph on May 8 10:00		Maximum Daily Average: 2.16 kph on May 8		Hours in Service: 744																																												
Minimum Value: 0.4 kph on May 15 23:00		Minimum Daily Average: 0.84 kph on May 21		Hours of Data: 715																																												
Maximum Diurnal Average: 1.68 kph at hour 16		Minimum Diurnal Average: 0.94 kph at hour 8		Hours of Missing Data: 29																																												
Monthly Average: 1.230 kph		Percentiles: P <sub>1</sub> = 0.5 P <sub>10</sub> = 0.7 Q <sub>1</sub> = 0.9 Median = 1.1 Q <sub>3</sub> = 1.4 P <sub>90</sub> = 1.9 P <sub>99</sub> = 3.1		Hours of Calibration: 0																																												
				Percent Operational Time: 96.1																																												
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-May	1.2	1.0	0.9	1.1	1.2	1.2	1.3	1.5	0.9	0.9	1.2	1.1	1.2	1.2	1.4	1.3	1.5	1.4	1.0	0.9	0.5	1.3	0.7	0.8	1.10	1.54																						
2-May	1.0	1.0	1.2	1.3	1.4	1.2	1.1	1.2	0.9	0.8	1.3	1.4	1.5	1.6	1.3	0.8	1.3	1.8	1.7	1.4	1.4	1.4	1.5	0.9	1.27	1.82																						
3-May	1.1	1.4	2.0	1.7	1.6	1.6	0.7	0.7	0.6	1.3	1.4	1.6	1.4	1.9	2.3	2.9	2.7	2.8	2.8	3.3	1.8	1.2	1.3	2.2	1.76	3.34																						
4-May	1.5	1.1	1.2	1.2	1.0	0.6	0.8	1.1	0.8	0.9	0.7	1.0	2.3	0.9	3.2	2.5	2.1	1.9	1.5	1.7	0.9	0.7	0.7	1.5	1.32	3.15																						
5-May	1.2	1.7	1.0	1.0	0.7	0.7	0.6	0.9	0.9	1.1	0.9	1.1	1.3	1.7	1.8	2.2	1.8	1.4	1.2	0.9	0.6	1.0	1.2	0.7	1.14	2.17																						
6-May	0.9	1.1	1.1	1.4	1.4	1.5	1.2	1.3	1.0	1.2	1.1	1.2	1.2	1.6	2.0	2.2	1.8	1.8	1.5	1.3	0.8	0.8	1.2	1.1	1.31	2.16																						
7-May	1.2	1.3	1.3	1.4	1.4	1.2	1.0	0.8	0.8	1.1	1.5	1.4	3.1	2.4	2.5	3.0	3.1	3.2	2.4	2.0	1.7	1.5	1.5	2.0	1.78	3.19																						
8-May	1.7	0.8	2.5	2.6	1.2	0.9	1.6	1.2	1.4	4.5	3.5	3.4	3.4	3.4	3.2	2.6	2.8	1.7	2.1	2.1	1.8	1.4	1.2	0.9	2.16	4.53																						
9-May	1.0	1.1	1.2	1.0	1.1	1.2	1.1	1.2	1.8	2.0	2.1	2.1	2.2	2.2	2.2	1.8	1.9	1.5	1.1	1.4	1.4	0.8	0.7	0.5	1.44	2.24																						
10-May	0.7	0.8	0.7	0.9	1.0	1.1	1.0	0.8	0.8	1.5	1.5	1.4	1.3	1.9	1.3	1.2	0.9	1.2	1.0	0.6	0.5	0.9	0.8	0.9	1.02	1.87																						
11-May	0.7	0.8	1.0	1.0	1.0	1.0	0.6	0.7	0.9	1.1	1.6	1.6	1.7	1.6	1.8	1.5	1.4	1.3	1.1	1.4	1.1	1.7	1.4	1.0	1.21	1.75																						
12-May	0.9	0.8	1.2	0.9	1.2	0.8	0.9	0.7	0.7	1.2	1.2	1.3	1.0	1.1	1.1	0.9	0.9	1.0	0.8	1.2	0.5	0.6	0.8	0.7	0.93	1.27																						
13-May	0.8	0.8	0.9	1.0	1.0	1.0	1.2	0.8	1.2	1.5	1.5	1.5	1.6	1.4	1.4	1.3	1.4	1.3	1.0	0.9	0.7	0.6	0.5	0.8	1.08	1.57																						
14-May	0.8	1.1	1.2	1.2	1.1	1.1	0.7	0.9	0.9	1.3	1.3	1.5	1.6	1.6	1.4	1.4	1.3	1.2	1.0	0.9	0.7	0.8	1.8	1.0	1.16	1.76																						
15-May	0.6	0.9	1.2	1.1	1.1	1.2	1.0	0.7	1.3	1.3	1.4	1.5	1.5	1.5	1.5	1.3	1.3	1.3	1.2	1.1	0.7	0.4	0.4	1.1	1.12	1.55																						
16-May	1.1	1.2	1.0	0.6	1.0	0.9	0.7	1.0	0.9	1.2	1.4	1.5	1.8	1.9	1.3	1.8	1.9	2.1	1.9	1.3	1.2	1.5	2.2	1.3	1.35	2.16																						
17-May	1.6	1.5	0.7	0.5	0.8	0.7	0.6	1.0	0.8	1.2	1.5	2.1	2.1	2.2	2.1	2.4	1.9	2.2	2.1	1.9	1.5	0.8	0.5	0.9	1.40	2.37																						
18-May	0.5	0.7	0.8	0.6	0.8	0.9	1.1	0.7	0.6	1.1	1.1	1.7	1.5	1.2	1.1	1.2	1.5	1.8	1.4	0.9	1.0	0.5	0.7	0.8	1.01	1.83																						
19-May	0.6	0.8	0.8	1.2	1.2	1.6	1.0	1.2	1.4	1.5	1.4	1.8	2.2	1.5	2.0	1.7	2.0	1.9	2.0	1.7	1.5	1.7	1.7	1.5	1.51	2.19																						
20-May	1.5	1.5	1.5	1.4	1.4	1.5	1.4	1.1	1.5	1.5	1.4	1.3	1.3	1.2	1.1	1.3	1.1	1.2	1.1	0.9	1.0	0.7	0.7	0.6	1.21	1.53																						
21-May	0.8	0.7	0.7	0.8	0.8	0.7	0.9	0.8	0.7	0.8	0.8	1.0	1.0	1.1	1.1	0.8	0.9	0.8	0.7	0.8	0.8	0.9	0.7	1.0	0.84	1.12																						
22-May	1.1	1.0	1.0	0.8	0.9	1.0	1.3	1.4	1.5	1.3	1.7	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	--	1.69																						
23-May	PF	1.2	1.2	1.2	1.0	0.7	0.9	0.8	0.9	0.8	1.1	1.3	1.4	1.4	1.5	1.2	1.4	0.6	0.8	0.9	1.5	1.3	1.3	1.5	1.13	1.51																						
24-May	1.4	1.0	0.9	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	0.8	0.5	0.6	1.1	1.1	1.1	--	1.39																						
25-May	1.0	0.9	0.6	0.9	1.3	1.3	1.3	0.9	0.8	0.7	1.0	1.9	1.8	1.8	1.9	1.7	2.2	3.0	1.2	1.3	1.1	1.1	1.1	1.0	1.32	3.01																						
26-May	0.9	0.8	0.6	1.3	1.0	1.1	0.9	0.7	0.7	1.0	1.2	1.3	1.7	1.8	1.3	1.9	1.5	1.3	1.1	1.1	1.0	0.6	0.7	0.7	1.09	1.90																						
27-May	0.7	0.9	0.7	0.9	0.7	0.6	0.8	0.9	1.2	1.3	1.1	1.3	1.3	1.3	1.2	1.1	1.3	1.2	1.1	1.0	0.7	0.9	0.6	0.5	0.97	1.30																						
28-May	0.6	0.7	1.0	0.9	0.7	0.6	0.8	0.7	0.8	0.9	0.9	1.9	1.4	1.7	1.3	1.3	1.4	1.5	1.0	0.7	0.7	0.8	0.6	1.1	1.00	1.87																						
29-May	0.9	0.8	1.0	1.0	1.0	1.1	0.8	1.0	1.1	1.0	0.9	1.2	1.2	0.9	1.8	3.1	1.9	1.9	1.4	1.1	0.9	0.6	0.6	0.8	1.17	3.14																						
30-May	0.7	0.6	0.5	0.6	0.7	0.8	0.8	1.0	0.9	1.3	1.7	1.4	1.7	1.2	1.3	1.4	1.1	1.2	1.1	0.9	0.8	0.5	0.9	1.1	1.00	1.72																						
31-May	0.9	1.0	1.2	1.1	1.1	0.9	0.8	0.9	0.9	1.2	1.5	1.2	1.2	1.2	1.2	1.0	0.8	0.8	0.6	0.5	1.0	0.8	0.7	0.7	0.97	1.54																						
																								1.00	1.00	1.05	1.08	1.06	1.02	0.96	0.94	0.98	1.28	1.36	1.52	1.65	1.60	1.66	1.68	1.63	1.59	1.32	1.23	1.01	0.97	0.99	1.03	Diurnal Average
																								1.73	1.67	2.48	2.57	1.55	1.61	1.62	1.47	1.76	4.53	3.52	3.42	3.38	3.36	3.18	3.14	3.14	3.19	2.82	3.34	1.80	1.75	2.16	2.17	Diurnal Maximum
PF - Power Failure																																																
,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3 24-hr 100 ul/m^3																																																



# WCAS - Steeper

## Summary of Hourly Standard Deviations

Wind Direction (WD) - deg  
May 2016

Maximum Value: 110.08 deg on May 23 19:00 Minimum Value: 7.4 deg on May 1 03:00 Maximum Diurnal Average: 50.90 deg at hour 13 Monthly Average: 33.752 deg		Maximum Daily Average: 43.57 deg on May 19 Minimum Daily Average: 24.06 deg on May 7 Minimum Diurnal Average: 18.32 deg at hour 4 Percentiles: P <sub>1</sub> = 9.1 P <sub>10</sub> = 11.8 Q <sub>1</sub> = 14.1 Median = 29.3 Q <sub>3</sub> = 48.2 P <sub>90</sub> = 64.1 P <sub>99</sub> = 94.3		Hours in Service: 744 Hours of Data: 715 Hours of Missing Data: 29 Hours of Calibration: 0 Percent Operational Time: 96.1																						
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-May	11.0	8.2	7.4	10.3	9.3	11.5	11.6	10.1	10.0	24.1	76.8	76.7	52.7	98.7	29.3	40.0	34.4	25.6	14.8	13.8	8.7	50.4	14.1	11.6	27.55	98.75
2-May	11.5	12.1	11.2	10.3	10.5	10.3	10.8	11.1	12.2	98.4	35.1	21.9	22.3	30.6	79.5	79.1	69.0	48.8	24.6	19.1	18.4	40.4	13.6	17.1	29.91	98.39
3-May	8.9	14.2	32.1	11.0	10.2	10.1	15.2	13.5	34.7	66.2	82.8	76.8	99.6	76.0	44.6	60.6	15.4	16.1	13.4	12.3	11.9	10.9	56.3	44.5	34.89	99.57
4-May	36.6	13.8	15.3	12.4	14.4	36.9	34.2	82.7	34.3	50.0	86.3	45.7	44.1	61.1	19.0	17.2	26.8	40.0	48.0	43.8	9.2	8.6	18.3	21.3	34.17	86.29
5-May	30.6	24.1	44.0	44.1	47.7	34.3	29.4	13.1	12.8	57.9	50.3	76.4	44.7	53.0	50.8	53.5	65.2	55.4	51.7	48.2	16.2	13.3	13.1	13.4	39.30	76.38
6-May	12.6	14.7	15.1	13.8	13.6	12.7	11.0	34.3	53.0	76.2	95.5	71.0	88.1	74.1	74.9	57.6	45.0	45.5	30.2	20.1	14.2	12.4	12.4	12.9	37.95	95.52
7-May	13.4	13.8	12.5	12.4	12.5	13.1	11.0	11.6	12.9	48.7	74.7	61.6	39.3	18.4	19.3	17.7	16.7	14.7	18.0	17.5	15.5	17.1	11.4	73.8	24.06	74.72
8-May	45.6	86.5	24.4	31.5	23.4	48.0	19.3	82.1	59.3	64.3	23.0	29.2	32.9	34.4	31.6	44.2	55.8	38.4	56.1	25.7	31.0	23.4	27.9	32.5	40.44	86.53
9-May	23.6	24.2	33.0	28.5	41.1	33.2	37.7	47.9	47.8	56.2	53.6	54.8	55.9	45.4	47.8	50.0	54.7	45.9	43.8	54.7	52.5	22.1	18.0	12.8	41.05	56.18
10-May	13.2	14.1	14.6	14.9	14.9	15.0	15.8	16.7	39.9	59.5	29.0	76.8	64.5	44.1	52.8	64.1	39.3	83.6	19.1	17.4	8.9	40.3	12.1	10.9	32.56	83.64
11-May	11.6	11.3	11.9	12.0	11.8	12.9	22.8	53.3	29.4	16.7	19.7	25.3	66.9	52.8	56.5	52.5	30.7	35.9	38.7	18.5	19.8	25.7	23.0	18.9	28.28	66.85
12-May	17.0	19.4	20.4	23.0	48.0	11.6	13.0	9.7	12.5	16.8	20.0	20.6	18.9	31.3	22.7	43.6	32.9	37.2	73.4	70.1	11.8	9.8	11.0	11.0	25.24	73.44
13-May	11.5	12.4	12.9	12.6	13.2	12.1	13.4	22.8	55.5	54.1	33.2	48.6	56.1	55.8	54.7	35.8	43.3	36.1	25.7	13.5	12.7	10.3	14.8	47.1	29.51	56.06
14-May	12.4	11.6	12.1	11.6	13.2	12.4	14.2	78.1	56.1	45.3	30.4	42.5	39.9	45.6	43.4	40.7	32.2	24.4	18.4	18.1	17.4	27.0	41.7	31.1	29.99	78.05
15-May	15.3	12.5	11.7	13.3	12.4	12.4	13.8	15.1	97.4	15.7	20.9	31.8	35.2	25.4	31.5	31.5	32.8	19.7	24.5	29.3	23.9	15.5	31.0	26.7	24.96	97.44
16-May	12.7	12.5	11.1	9.2	12.2	12.5	10.0	12.6	62.2	49.4	55.1	67.4	75.3	43.6	62.1	48.7	36.0	21.5	24.1	18.9	13.8	71.6	43.6	58.4	35.18	75.31
17-May	44.3	21.3	20.9	14.5	69.7	9.8	11.1	88.9	58.1	75.1	56.5	46.9	41.5	40.1	48.5	33.2	34.3	26.0	26.7	24.4	14.8	16.6	10.1	14.3	35.31	88.87
18-May	9.7	12.0	10.5	12.4	10.7	12.1	43.3	80.3	28.2	74.4	76.7	46.0	47.1	18.6	17.0	18.2	42.3	62.9	49.5	74.7	69.2	84.2	34.5	46.9	40.88	84.21
19-May	49.5	40.0	32.9	51.6	41.2	50.1	19.1	20.2	24.8	39.6	51.3	52.5	47.0	53.2	48.0	52.4	52.7	47.2	48.9	46.1	47.3	45.9	39.2	45.3	43.57	53.19
20-May	38.3	42.1	37.5	32.5	37.4	40.5	41.4	47.1	40.5	52.5	57.1	59.6	60.3	46.5	46.0	51.6	21.9	18.0	16.6	13.1	12.7	10.2	12.0	12.1	35.32	60.25
21-May	12.8	14.3	14.0	14.9	19.5	11.8	13.1	21.6	37.6	57.3	72.0	58.6	53.0	37.5	50.1	38.0	40.5	53.7	42.1	45.1	41.1	18.2	38.4	34.6	35.00	71.95
22-May	42.7	44.6	46.1	41.5	30.2	35.5	43.5	34.2	30.4	27.6	33.9	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	--	46.12
23-May	PF	34.4	29.1	15.8	14.1	13.7	54.7	13.3	11.6	12.5	13.4	14.0	12.2	11.7	12.7	12.2	34.3	48.4	110.1	68.3	56.9	38.2	78.1	61.7	33.54	110.08
24-May	62.0	73.1	53.2	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	37.2	22.1	50.7	42.7	15.2	14.2	--	73.15
25-May	19.0	24.0	19.6	14.9	14.1	12.6	14.1	15.1	14.6	61.7	37.3	51.4	50.0	30.5	24.5	48.9	82.1	62.5	83.0	87.3	63.0	58.0	26.0	15.6	38.74	87.33
26-May	19.4	16.7	12.1	12.5	12.1	13.6	10.3	11.6	66.1	22.5	32.3	21.2	74.9	35.0	37.5	85.3	26.0	29.2	40.2	44.7	37.4	15.1	17.0	11.6	29.35	85.26
27-May	12.2	13.8	14.7	14.0	10.3	10.2	22.7	20.1	57.4	55.1	49.7	56.7	38.7	29.7	56.4	59.6	46.3	51.5	53.7	51.1	43.3	24.7	23.7	10.6	34.42	59.59
28-May	9.8	11.0	12.1	12.6	11.5	10.8	51.6	98.7	80.2	62.1	37.5	33.5	76.3	71.8	48.4	25.0	65.0	75.2	56.2	14.7	15.9	14.7	38.5	27.9	40.04	98.70
29-May	12.6	13.5	11.5	12.3	14.2	20.6	12.2	41.4	56.3	18.1	16.5	39.2	80.4	29.4	78.3	71.1	14.4	14.6	86.5	49.4	14.5	10.8	13.8	21.7	31.39	86.55
30-May	20.2	11.9	11.3	17.0	21.8	18.1	42.4	40.0	74.9	65.7	42.7	19.3	36.9	55.2	48.0	39.3	40.4	29.2	23.6	31.7	57.7	16.6	11.8	12.6	32.84	74.87
31-May	13.3	13.5	14.1	12.1	12.2	10.5	25.9	61.6	48.2	31.1	40.6	67.2	21.8	57.8	33.1	27.4	30.4	42.1	22.0	59.2	12.1	12.4	11.6	15.1	28.97	67.20
21.77 22.31 20.30 18.32 20.91 18.96 22.96 36.95 41.97 48.49 46.79 48.04 50.90 45.08 43.76 44.79 40.03 39.64 40.70 35.76 27.42 26.91 24.40 26.26																								Diurnal Average		
62.01 86.53 53.23 51.57 69.70 50.09 54.65 98.70 97.44 98.39 95.52 76.75 99.57 98.75 79.52 85.26 82.10 83.64 110.08 87.33 69.21 84.21 78.12 73.79																								Diurnal Maximum		
PF - Power Failure																										
,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3 24-hr 100 ul/m^3																										

**WEYERHAEUSER – DRAYTON VALLEY  
STATION #911**

**CONTINUOUS AIR MONITORING DATA**

**MAY 2016**

Weyerhaeuser / Drayton Valley Station 911												May 2016		24 Hour Average Max ( $\mu\text{g}/\text{m}^3$ )
Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Min	Max	Percentile					Exceedences		
							P10	Q1	Median	Q3	P90	1-hour	24-hour	
Particulate Matter 2.5 microns ( $\mu\text{m}^3$ )	0	735	98.8	7.4	0.4	164.5	1.4	2.4	5.1	9.4	15.0	1	0	20.2
Wind Speed (kph)	0	744	100.0	8.7	0.4	34.8	2.3	4.5	7.6	11.8	16.8	-	-	-
Temperature ( $^{\circ}\text{C}$ )	0	743	99.9	10.9	-1.9	27.5	2.9	5.6	10.3	14.7	20.4	-	-	-
Std Dev Wind Direction (deg)	0	744	100.0	28.6	1.0	109.7	12.6	15.2	22.0	35.9	54.8	-	-	-
Std Dev Wind Speed (kph)	0	744	100.0	3.2	0.2	9.7	1.1	1.8	3.2	4.2	5.3	-	-	-



**WCAS - Drayton Valley**  
**Summary of Hourly Averages**

**PM2.5 (PM<sub>2.5</sub>) - µg/m<sup>3</sup>**  
**May 2016**

Maximum Value: 164.52 µg/m <sup>3</sup> on May 7 21:00      Maximum Daily Average: 20.22 µg/m <sup>3</sup> on May 12 Minimum Value: 0.4 µg/m <sup>3</sup> on May 22 17:00      Minimum Daily Average: 0.74 µg/m <sup>3</sup> on May 22 Maximum Diurnal Average: 10.42 µg/m <sup>3</sup> at hour 7      Minimum Diurnal Average: 4.17 µg/m <sup>3</sup> at hour 18 Monthly Average: 7.419 µg/m <sup>3</sup> Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 1.4 O <sub>1</sub> = 2.4 Median = 5.1 O <sub>3</sub> = 9.4 P <sub>90</sub> = 15.0 P <sub>99</sub> = 38.8																								Hours in Service: 744 Hours of Data: 735 Hours of Missing Data: 9 Hours of Calibration: 0 Percent Operational Time: 98.8																									
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-May	11.5	8.8	9.9	6.8	6.5	5.5	9.3	10.1	2.9	2.1	1.9	1.5	1.4	1.4	0.8	1.4	0.8	1.1	1.5	3.3	4.2	11.8	17.1	31.0	6.37	30.97																							
2-May	17.8	9.8	8.0	7.5	7.3	6.9	13.4	15.9	11.4	13.0	5.4	3.3	4.0	4.3	4.3	4.1	5.0	6.5	5.8	5.4	5.9	6.2	6.4	5.9	7.66	17.81																							
3-May	6.9	12.3	11.4	41.9	15.1	13.1	16.6	7.2	5.3	6.8	7.7	4.9	5.6	5.5	5.8	6.3	5.9	6.4	6.9	9.5	13.9	4.6	21.1	10.26	41.91																								
4-May	25.8	25.2	24.5	16.1	10.5	8.8	11.7	15.1	9.3	6.1	5.2	5.2	5.3	5.9	6.0	7.9	7.0	5.3	6.4	9.3	4.4	3.1	2.9	3.3	9.59	25.78																							
5-May	1.8	1.6	1.8	3.3	1.7	4.3	3.0	3.4	3.3	3.2	10.1	3.5	10.5	15.4	3.2	3.9	3.9	3.0	3.2	3.4	7.1	6.1	4.7	3.6	4.54	15.42																							
6-May	3.4	12.7	8.6	6.4	9.5	9.2	12.2	11.9	12.2	6.3	6.4	4.3	3.9	3.4	4.2	3.9	3.4	3.3	3.7	5.6	7.2	12.5	24.4	39.5	9.08	39.46																							
7-May	9.4	8.7	7.3	22.4	7.0	7.2	13.3	7.5	4.4	5.7	15.8	4.6	35.6	26.5	5.3	37.2	4.2	4.3	4.5	7.4	164.5	49.8	15.0	13.4	20.04	164.52																							
8-May	31.4	17.9	2.4	1.6	23.0	2.1	AF	AF	AF	2.5	10.9	3.7	5.7	4.8	3.5	3.3	4.5	1.9	2.0	2.5	4.3	1.7	0.7	1.0	6.24	31.35																							
9-May	1.1	1.0	1.1	1.4	1.4	1.8	1.7	2.3	2.6	2.1	2.4	2.7	2.4	1.9	1.7	2.6	2.5	1.8	2.3	2.7	3.1	3.1	3.0	2.3	2.13	3.12																							
10-May	2.3	2.7	2.9	4.4	4.1	9.7	4.7	3.8	4.2	2.6	2.0	2.5	2.4	2.7	2.7	2.2	2.2	2.7	2.6	3.1	5.3	6.9	13.2	16.1	4.50	16.09																							
11-May	31.3	12.7	10.7	6.7	11.7	14.8	15.7	10.0	25.1	25.2	5.1	11.4	17.0	11.3	7.4	14.7	6.7	10.6	26.7	19.0	15.9	13.2	10.8	12.6	14.43	31.26																							
12-May	14.4	16.0	21.4	36.3	38.2	34.3	28.6	22.9	18.4	14.2	22.2	44.4	46.8	27.7	33.6	31.1	12.7	4.5	1.6	2.0	2.9	2.8	3.7	4.5	20.22	46.80																							
13-May	4.9	12.0	14.4	14.8	12.1	9.9	10.5	8.3	7.0	8.8	5.1	5.2	4.3	3.8	4.9	3.8	4.0	4.3	5.4	9.4	12.7	14.3	10.5	17.4	8.66	17.37																							
14-May	14.9	16.3	18.5	23.5	22.5	20.7	17.1	15.4	17.5	12.2	9.2	10.3	8.6	7.8	7.8	12.9	9.4	8.2	8.8	8.6	9.0	10.1	10.5	13.9	13.08	23.46																							
15-May	14.3	24.0	40.2	27.7	33.3	37.8	39.0	34.7	26.9	18.0	14.3	12.4	10.9	11.4	11.0	9.4	10.0	10.4	9.6	9.7	10.2	11.2	11.3	11.7	18.72	40.25																							
16-May	11.4	10.5	10.8	12.4	12.4	18.3	14.0	10.8	9.9	9.4	8.9	7.7	8.3	6.9	7.5	8.0	7.7	7.5	7.2	7.7	6.6	6.5	7.4	8.6	9.43	18.29																							
17-May	8.6	5.6	5.9	2.9	2.6	3.7	AF	AF	5.5	2.8	2.8	3.0	6.5	3.7	3.6	2.3	2.5	2.0	2.4	2.1	3.6	4.0	7.8	6.6	4.11	8.65																							
18-May	9.6	16.7	6.9	9.0	19.5	12.6	18.3	15.8	12.1	12.1	7.7	5.6	13.9	7.0	23.8	10.6	5.3	4.0	3.0	2.1	2.0	1.7	1.7	1.8	9.28	23.76																							
19-May	2.3	2.4	2.6	2.2	2.2	2.8	2.3	7.1	2.2	2.0	2.4	2.2	1.9	4.6	5.0	5.4	2.8	1.3	1.0	1.0	0.9	0.9	0.8	0.8	2.46	7.07																							
20-May	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	1.0	1.9	2.2	2.0	1.8	2.4	2.9	3.6	3.3	2.3	1.5	1.4	1.2	0.9	0.8	1.53	3.63																							
21-May	0.8	0.8	0.9	1.0	1.1	1.2	1.5	1.7	2.2	2.2	2.0	1.7	1.4	1.7	2.2	2.6	2.9	4.5	6.4	5.1	3.8	2.8	3.2	3.9	2.39	6.38																							
22-May	3.5	2.5	1.3	0.8	0.6	0.6	0.8	0.7	0.6	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.5	0.4	0.5	0.74	3.53																							
23-May	0.5	0.7	1.3	1.6	3.1	5.0	5.8	6.2	5.7	5.2	5.6	5.1	3.9	3.6	3.8	3.0	1.6	1.4	1.5	1.9	2.2	3.4	3.9	4.6	3.35	6.19																							
24-May	4.1	4.9	4.4	4.9	5.1	6.1	4.6	6.2	5.1	4.6	4.2	4.0	4.4	4.4	3.2	3.3	3.6	4.2	4.2	3.9	4.0	4.4	4.6	5.6	4.51	6.23																							
25-May	6.2	8.9	12.7	8.9	11.7	10.3	12.4	13.9	11.4	9.4	8.2	8.3	8.1	7.8	8.8	8.4	7.7	6.7	5.8	5.1	6.8	6.2	8.3	8.1	8.74	13.88																							
26-May	6.1	6.9	7.4	6.3	5.6	7.1	AF	AF	AF	AF	9.0	8.1	7.6	7.2	6.6	5.6	6.2	9.3	10.2	9.7	10.2	8.0	6.2	5.5	7.44	10.24																							
27-May	4.3	4.1	7.2	9.2	9.3	9.7	12.1	13.1	12.0	11.1	9.8	9.4	8.6	6.6	7.3	5.7	4.8	3.7	3.0	2.9	3.0	2.7	3.0	6.7	7.05	13.13																							
28-May	5.8	5.1	5.9	5.7	5.0	5.1	5.8	4.8	3.3	3.3	2.6	2.4	2.0	1.9	1.6	1.8	2.3	1.9	2.2	3.1	3.6	7.2	9.0	10.8	4.26	10.82																							
29-May	4.5	3.9	4.8	5.9	5.9	8.6	6.4	7.3	7.9	5.2	4.3	3.0	3.2	2.5	2.2	2.3	1.7	2.2	1.8	1.8	1.7	1.4	1.6	1.4	3.81	8.62																							
30-May	1.6	1.6	1.5	1.9	2.8	2.6	2.0	1.8	1.7	1.6	1.8	2.1	3.0	1.9	1.8	2.0	2.3	2.1	1.7	1.4	1.5	3.5	5.3	5.0	2.27	5.30																							
31-May	7.6	3.6	2.7	4.3	2.5	5.3	8.3	3.4	1.6	1.4	1.7	1.8	1.7	1.9	1.7	1.4	1.2	1.2	1.1	1.2	1.7	2.5	2.1	2.2	2.68	8.28																							
																								8.68	8.41	8.39	9.63	9.48	9.23	10.42	9.37	8.02	6.69	6.36	6.03	7.78	6.38	5.92	6.77	4.49	4.17	4.67	4.82	10.31	7.21	6.62	8.72	Diurnal Average	
																								31.35	25.17	40.25	41.91	38.23	37.83	38.95	34.73	26.86	25.24	22.18	44.36	46.80	27.65	33.62	37.18	12.69	10.57	26.71	19.03	164.52	49.81	24.40	39.46	Diurnal Maximum	
AF - Analyzer Failure																																																	
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 80 ul/m <sup>3</sup> 24-hr 30 ul/m <sup>3</sup>																																																	

**WEYERHAEUSER – DRAYTON VALLEY  
STATION #911**

**METEOROLOGICAL DATA**

**MAY 2016**





**WCAS - Drayton Valley**  
**Summary of Hourly Averages**

**External Temperature (ET) - C**  
**May 2016**

<b>Maximum Value: 27.48 C on May 7 18:00</b>		<b>Maximum Daily Average: 19.59 C on May 3</b>		<b>Hours in Service: 744</b>																																													
<b>Minimum Value: -1.9 C on May 13 06:00</b>		<b>Minimum Daily Average: 1.75 C on May 20</b>		<b>Hours of Data: 743</b>																																													
<b>Maximum Diurnal Average: 15.64 C at hour 15</b>		<b>Minimum Diurnal Average: 4.93 C at hour 6</b>		<b>Hours of Missing Data: 1</b>																																													
<b>Monthly Average: 10.875 C</b>		<b>Percentiles: P<sub>1</sub> = -0.6 P<sub>10</sub> = 2.9 Q<sub>1</sub> = 5.6 Median = 10.3 Q<sub>3</sub> = 14.7 P<sub>90</sub> = 20.4 P<sub>99</sub> = 26.8</b>		<b>Hours of Calibration: 0</b>																																													
				<b>Percent Operational Time: 99.9</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-May	6.6	5.9	5.6	5.0	4.1	3.5	4.4	8.0	12.7	15.6	17.3	18.6	20.1	21.3	22.3	22.8	23.0	23.0	23.0	21.2	18.5	16.0	13.8	13.4	14.42	23.05																							
2-May	12.3	12.0	10.9	10.6	10.2	9.9	10.6	12.0	14.2	17.9	21.2	23.4	24.3	25.2	25.7	26.2	26.5	26.3	25.0	22.9	21.2	20.6	18.7	17.8	18.57	26.55																							
3-May	15.6	13.1	12.9	10.3	8.0	9.0	10.5	14.9	19.0	22.0	24.2	25.4	25.9	26.3	26.9	27.3	27.3	26.9	26.1	24.1	21.1	20.0	18.4	15.2	19.59	27.35																							
4-May	14.1	13.2	12.5	12.3	10.9	10.3	10.7	12.3	14.7	19.7	23.1	24.6	24.8	25.1	25.1	24.0	23.6	23.3	21.3	19.5	16.0	14.6	13.7	13.0	17.59	25.08																							
5-May	12.5	11.9	11.3	10.8	10.2	8.8	7.2	7.1	8.0	8.7	9.6	11.0	11.8	13.4	14.7	15.4	16.2	16.5	16.4	15.7	13.0	10.2	8.6	7.5	11.52	16.53																							
6-May	6.6	3.6	3.1	2.6	2.6	2.7	3.3	7.8	11.5	13.9	15.6	16.6	17.8	19.1	19.7	20.5	21.0	21.1	20.5	18.7	17.3	14.7	13.4	12.2	12.74	21.09																							
7-May	11.4	11.1	10.1	9.1	8.0	7.5	8.6	12.1	16.1	19.4	21.6	23.2	24.3	25.3	26.7	27.4	27.2	27.5	27.0	25.0	21.2	18.7	18.0	18.2	18.54	27.48																							
8-May	15.9	14.7	13.5	12.3	10.8	9.6	7.7	5.1	5.8	6.0	6.5	8.8	12.8	14.5	15.0	14.9	14.2	12.3	9.7	8.7	7.5	6.6	4.9	4.1	10.08	15.87																							
9-May	3.7	3.5	3.6	3.2	2.9	3.5	4.7	5.5	5.4	5.6	6.5	7.5	7.6	8.2	8.5	9.1	9.1	8.8	8.8	8.6	7.9	6.4	5.0	4.1	6.16	9.11																							
10-May	3.3	2.7	2.2	1.6	1.0	-0.6	2.9	5.6	8.4	9.8	10.9	11.2	11.6	12.5	12.8	13.4	13.9	13.6	13.6	12.2	9.9	8.0	5.9	4.4	7.95	13.93																							
11-May	3.9	3.3	1.6	1.8	1.3	1.3	2.6	5.4	7.5	10.6	12.8	13.6	13.5	14.3	13.8	13.9	13.3	12.5	11.6	10.9	10.1	9.2	8.5	7.9	8.55	14.33																							
12-May	7.1	5.8	4.2	3.1	2.3	1.8	2.7	4.5	5.6	7.4	7.9	8.4	9.2	9.9	10.0	10.7	10.4	10.0	9.8	9.2	6.7	5.3	4.9	4.4	6.72	10.67																							
13-May	2.1	0.9	0.4	-0.7	-1.4	-1.9	0.4	3.9	7.4	9.3	10.4	11.2	11.7	12.6	13.3	14.0	14.4	14.4	13.9	12.9	10.4	8.9	8.7	7.9	7.72	14.39																							
14-May	7.4	5.2	3.6	2.3	2.0	1.1	2.9	5.6	9.5	12.0	13.0	13.8	14.7	15.3	16.1	16.3	16.6	16.6	16.2	15.3	13.4	12.1	11.4	8.6	10.45	16.65																							
15-May	7.4	6.1	5.4	4.4	3.4	3.3	5.1	7.9	11.7	14.3	15.6	16.3	16.9	17.5	18.2	18.8	19.0	19.0	18.6	17.6	15.8	14.4	13.0	12.1	12.57	19.03																							
16-May	11.1	9.5	8.8	8.1	6.5	6.1	8.0	10.3	12.5	15.1	17.8	20.3	22.1	23.2	24.0	24.4	24.3	24.2	23.4	21.7	20.5	19.0	17.7	16.8	16.48	24.43																							
17-May	16.4	15.4	14.7	13.0	11.4	10.8	12.4	13.3	14.0	16.1	17.4	18.2	19.4	20.3	21.3	21.2	21.8	22.1	21.3	20.4	17.8	16.5	15.4	15.0	16.90	22.14																							
18-May	13.7	13.8	13.3	11.6	9.7	9.8	9.7	11.8	15.6	19.1	20.1	21.5	22.1	22.3	23.2	20.8	14.7	14.8	14.0	12.4	11.5	11.0	10.7	10.2	14.89	23.18																							
19-May	9.7	9.3	8.8	8.5	8.3	8.5	8.4	8.5	8.5	8.5	8.6	8.8	7.9	6.4	5.1	4.2	3.8	3.1	2.4	1.8	1.3	1.1	0.9	0.8	5.96	9.73																							
20-May	0.4	0.0	-0.3	-0.5	-0.6	-0.6	-0.6	-0.6	-0.4	0.3	1.0	2.5	3.1	3.7	4.0	3.8	3.8	4.0	4.1	3.8	3.3	2.9	2.6	2.4	1.75	4.05																							
21-May	2.2	2.1	1.9	1.5	1.3	1.1	1.0	0.9	1.1	1.4	1.9	2.5	3.5	4.3	4.4	4.6	4.9	4.8	4.3	3.8	3.8	3.5	2.9	2.2	2.75	4.90																							
22-May	2.0	1.9	2.0	2.2	2.3	2.3	2.3	2.3	2.3	2.6	3.1	3.6	3.9	4.1	4.2	4.3	4.2	4.0	3.8	3.9	4.0	3.9	4.0	4.1	3.22	4.31																							
23-May	4.3	4.7	4.9	4.8	4.8	4.7	4.5	4.6	5.0	5.5	6.2	6.8	7.8	9.3	10.6	11.9	12.6	12.2	11.7	11.3	11.1	9.7	9.1	8.3	7.76	12.63																							
24-May	6.4	5.2	5.2	4.9	3.4	1.7	2.9	4.4	7.5	10.1	11.7	13.0	14.3	15.6	16.5	17.5	18.1	18.3	17.7	16.7	15.0	13.2	12.5	11.4	10.97	18.30																							
25-May	10.5	8.9	7.6	7.3	5.6	6.0	7.7	10.4	14.0	16.6	18.1	19.6	20.6	20.8	18.0	12.2	12.1	13.0	13.4	14.2	12.8	11.9	11.4	10.5	12.63	20.83																							
26-May	10.5	10.5	10.4	10.6	9.7	9.2	9.7	10.6	12.6	13.9	14.9	16.6	17.0	17.9	17.8	17.8	17.4	17.3	13.4	10.7	9.9	9.5	9.1	8.8	12.74	17.92																							
27-May	8.6	8.2	7.5	7.2	7.1	7.2	7.4	7.7	8.2	8.3	8.2	8.1	8.1	8.3	8.5	9.0	9.6	9.2	9.0	8.6	8.0	7.5	6.5	6.1	8.00	9.61																							
28-May	5.6	5.1	4.1	3.6	3.0	3.2	5.3	8.5	9.8	10.8	12.2	13.0	13.6	14.6	14.3	14.6	12.6	12.7	12.5	11.2	9.6	8.4	7.4	7.1	9.27	14.64																							
29-May	6.1	6.0	5.6	4.1	3.5	4.3	4.3	4.8	7.3	11.2	12.8	14.2	14.4	14.9	13.9	9.8	10.9	10.6	10.8	10.6	9.9	9.1	8.5	8.2	8.99	14.94																							
30-May	7.3	6.6	5.9	5.5	5.3	5.5	5.7	6.7	8.4	9.7	10.8	11.3	12.2	12.4	13.9	14.2	13.7	13.5	13.3	13.0	11.7	9.4	8.9	8.8	9.74	14.21																							
31-May	7.7	6.2	5.4	4.7	4.0	3.6	5.7	AF	10.8	12.4	13.5	14.4	14.7	15.7	16.5	17.0	17.4	17.8	17.3	16.5	14.6	13.7	13.2	12.5	11.96	17.75																							
																								8.14	7.30	6.67	5.98	5.22	4.93	5.76	7.39	9.52	11.41	12.72	13.80	14.57	15.30	15.64	15.55	15.41	15.28	14.64	13.65	12.09	10.83	9.92	9.16	Diurnal Average	
																								16.37	15.38	14.68	13.03	11.42	10.78	12.36	14.92	18.96	21.98	24.18	25.37	25.93	26.33	26.86	27.39	27.27	27.48	26.96	25.02	21.22	20.58	18.70	18.24	Diurnal Maximum	
AF - Analyzer Failure																																																	





**WCAS - Drayton Valley**  
**Summary of Hourly Averages**

**Wind Speed (WS) - kph**  
**May 2016**

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
23 Spd	9.0	12.1	15.3	14.2	14.8	15.2	17.8	18.2	17.5	15.3	10.7	11.8	13.2	13.1	10.3	10.0	5.9	3.9	3.5	2.1	0.4	1.8	1.0	2.5	9.11	18.20
Dir	NW	NW	NNW	NW	NW	NW	NW	NW	NW	NW	NNW	NNW	NNW	NW	NNW	NNW	NNE	ENE	ENE	ESE	WSW	NW	NNE	NNE	NW	NW
24 Spd	1.4	0.4	1.4	2.5	0.9	1.7	4.4	4.5	6.3	8.2	6.8	5.8	6.3	5.5	6.1	6.5	6.4	6.1	11.2	11.0	8.9	7.7	7.4	6.8	5.04	11.20
Dir	N	NE	ENE	E	SE	S	S	SSW	SSE	SE	SE	SE	SE	SE	SE	SSE	SSE	ESE	SE	SE	SE	SE	SSE	S	SE	SE
25 Spd	6.3	4.5	2.4	1.2	2.3	4.8	5.9	6.4	3.7	3.3	4.6	1.9	1.2	4.4	10.5	13.9	0.9	8.2	6.8	5.9	3.5	6.0	4.5	3.7	2.27	13.95
Dir	S	SSE	SSW	SW	S	SSE	SSW	S	WSW	SSE	S	N	NW	ESE	NW	NNW	S	SE	S	S	WSW	SW	S	WSW	SSW	NNW
26 Spd	5.8	5.8	6.7	5.2	1.3	2.8	4.5	4.3	3.7	1.7	1.6	2.8	1.6	5.2	8.8	9.7	8.2	7.4	14.4	13.4	14.3	8.8	10.1	10.9	2.76	14.42
Dir	WNW	WNW	NW	WNW	NNW	S	WSW	WSW	NW	WSW	NW	NNW	N	ESE	SE	SE	ESE	SE	NW	NW	NW	NNW	NW	WNW	NW	NW
27 Spd	8.5	9.0	10.8	7.6	7.9	9.1	11.5	8.6	8.5	8.7	9.1	9.8	7.0	8.7	10.6	11.7	12.2	11.0	12.2	8.8	9.8	9.7	7.9	7.9	8.93	12.24
Dir	NW	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	NW	NW	NW	NW	WNW	WNW	W	WNW	W	WNW	W	W	W	WSW	WSW	WNW	WNW
28 Spd	8.1	5.2	4.4	3.8	3.6	4.0	3.9	7.5	10.6	8.1	6.5	11.1	7.5	1.5	9.6	4.2	10.0	8.9	7.1	6.1	3.6	1.8	2.0	2.4	1.58	11.13
Dir	WSW	WSW	SW	SW	S	SSE	SSW	WNW	NW	WNW	WNW	WNW	WNW	N	NW	NNW	SE	ESE	E	E	E	NE	ENE	NE	W	WNW
29 Spd	2.7	4.2	4.9	1.2	1.2	0.9	5.4	5.0	5.4	4.6	8.1	12.1	12.9	10.2	13.5	17.1	12.6	8.5	4.1	9.8	10.7	9.5	9.4	8.8	5.60	17.06
Dir	NNE	NE	NE	E	NNW	W	WNW	WNW	NW	NW	NW	NW	NNW	NNW	WNW	WSW	WSW	SW	NNW	NNW	NNW	NNW	NW	NNW	NW	WSW
30 Spd	7.3	10.2	9.6	11.6	12.7	14.3	16.2	15.1	15.9	15.0	18.1	18.4	15.8	16.6	15.5	11.8	11.4	8.7	6.0	5.7	2.7	0.7	0.7	0.4	10.13	18.43
Dir	NW	NW	NW	NW	NW	NW	NW	NW	NW	NNW	NNW	NNW	NW	NW	NNW	N	N	N	NNE	NNE	NE	SE	S	SSW	NNW	NNW
31 Spd	0.8	1.6	1.5	1.7	0.5	2.3	3.3	2.1	3.7	3.5	1.6	3.4	2.4	5.2	3.7	4.2	5.9	6.0	8.4	7.6	6.1	9.6	11.3	10.0	3.50	11.28
Dir	NW	NW	WNW	NNE	WNW	SSE	S	ESE	ESE	E	NE	ENE	SSE	SSW	SSE	SE	ESE	ESE	SE	SE	ESE	SE	SSE	SSE	SE	SSE
Spd	3.69	4.19	4.26	3.71	3.53	3.47	4.42	4.89	5.21	4.32	3.99	4.62	4.71	3.86	4.60	4.38	3.30	2.70	2.82	2.79	2.67	2.43	2.49	3.21	Diurnal Average	
Dir	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	WNW	WNW	WNW	NW	NNW	NNW	NNW	NW	NW	WNW	WNW	Diurnal Maximum	
Spd	19.59	24.49	24.49	18.40	19.01	19.60	19.89	18.20	21.04	23.61	22.66	22.85	24.56	25.48	28.99	29.24	31.45	32.51	34.79	27.35	21.01	22.83	21.12	22.82	Diurnal Maximum	
Dir	324.91	316.81	313.66	294.62	294.26	320.66	335.87	315.65	314.02	322.54	320.33	321.24	316.36	293.09	294.62	302.50	305.54	313.89	311.54	302.61	300.84	308.51	309.34	313.80		
Maximum Speed Value: 34.8 kph on May 8 19:00																		Minimum Speed Value: 0.4 kph on May 24 02:00						Hours in Service: 744		
Maximum Daily Speed Average: 18.06 kph on May 8																		Minimum Daily Speed Average: 1.58 kph on May 13						Hours of Data: 744		
Maximum Diurnal Speed Average: 5.21 kph at hour 9																		Minimum Diurnal Speed Average: 2.43 kph at hour 22						Hours of Missing Data: 0		
Monthly Average Velocity: 3.643 kph 302.58 deg																		Speed Percentiles: P <sub>1</sub> = 0.6 P <sub>10</sub> = 2.3 Q <sub>1</sub> = 4.5 Median = 7.6 Q <sub>3</sub> = 11.8 P <sub>90</sub> = 16.8 P <sub>99</sub> = 23.7						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	15	21	14	0	0	0	50																			
NorthEast	23	26	0	0	0	0	49																			
East	29	11	0	0	0	0	40																			
SouthEast	24	61	19	0	0	0	104																			
South	59	70	7	0	0	0	136																			
SouthWest	25	17	1	0	0	0	43																			
West	17	35	8	0	0	0	60																			
NorthWest	22	75	120	40	5	0	262																			
Total	214	316	169	40	5	0	744																			



**WCAS - Drayton Valley**  
**Summary of Hourly Standard Deviations**

**Wind Speed (WS) - kph**  
**May 2016**

<b>Maximum Value: 9.72 kph on May 8 17:00</b>		<b>Maximum Daily Average: 6.42 kph on May 8</b>		<b>Hours in Service: 744</b>																							
<b>Minimum Value: 0.2 kph on May 1 22:00</b>		<b>Minimum Daily Average: 2.02 kph on May 1</b>		<b>Hours of Data: 744</b>																							
<b>Maximum Diurnal Average: 4.70 kph at hour 15</b>		<b>Minimum Diurnal Average: 2.10 kph at hour 5</b>		<b>Hours of Missing Data: 0</b>																							
<b>Monthly Average: 3.205 kph</b>		<b>Percentiles: P<sub>1</sub> = 0.5 P<sub>10</sub> = 1.1 Q<sub>1</sub> = 1.8 Median = 3.2 Q<sub>3</sub> = 4.2 P<sub>90</sub> = 5.3 P<sub>99</sub> = 8.6</b>		<b>Hours of Calibration: 0</b>																							
				<b>Percent Operational Time: 100.0</b>																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-May	1.1	1.1	1.2	1.2	1.2	0.9	0.8	1.5	2.3	2.9	3.1	3.8	4.0	4.1	4.1	3.6	2.7	1.8	1.9	1.2	1.9	0.2	0.6	1.3	2.02	4.13	
2-May	0.7	0.7	0.7	0.8	0.8	1.4	1.0	1.5	1.4	2.4	3.0	4.1	5.0	4.2	4.4	4.1	4.0	3.6	3.2	2.3	3.5	3.2	1.9	2.0	2.49	5.02	
3-May	2.6	1.1	1.2	1.3	1.4	1.1	1.2	2.4	3.2	4.4	4.3	3.7	3.3	5.0	4.3	4.1	3.4	3.3	2.6	2.0	1.6	3.5	3.0	0.7	2.69	4.97	
4-May	1.0	1.8	1.3	1.1	0.8	1.0	1.2	1.5	1.9	2.4	3.3	3.9	4.2	4.9	4.1	3.2	3.8	4.0	2.7	6.1	4.2	3.7	2.5	3.1	2.83	6.13	
5-May	2.6	4.4	4.1	3.8	4.6	5.5	5.0	3.9	3.4	3.7	3.9	4.1	4.6	4.5	4.9	4.5	5.4	4.6	3.9	2.9	1.0	0.9	0.7	1.6	3.69	5.54	
6-May	1.2	1.2	0.6	1.0	1.8	0.9	0.8	1.4	2.2	2.0	2.6	3.5	3.8	4.2	4.3	4.2	3.6	2.4	2.3	1.6	1.8	1.6	0.8	1.2	2.13	4.32	
7-May	1.4	1.6	1.1	1.5	1.0	1.1	1.0	1.6	1.8	2.1	2.7	3.6	4.0	4.7	4.5	4.3	3.5	3.1	2.2	1.2	2.5	2.9	2.5	2.8	2.45	4.74	
8-May	5.1	4.8	4.0	4.4	5.0	5.4	7.3	6.2	4.2	3.1	2.9	4.4	8.8	9.1	8.7	8.8	9.7	9.0	9.6	8.3	6.7	7.0	5.9	5.7	6.42	9.72	
9-May	4.5	4.1	3.1	3.1	3.5	3.2	4.0	5.5	7.2	7.0	7.4	7.3	7.3	7.2	6.6	7.5	6.3	5.9	5.2	3.9	2.5	1.8	2.4	1.9	4.94	7.48	
10-May	2.1	2.2	2.0	1.6	1.5	1.2	2.8	3.0	2.6	4.5	5.5	5.1	4.4	4.2	4.2	3.3	3.6	3.5	2.6	2.5	1.1	1.8	0.5	0.3	2.76	5.55	
11-May	1.9	0.8	0.7	1.0	0.6	1.3	1.9	1.8	2.1	2.4	3.6	3.6	3.9	4.1	4.4	4.3	4.1	3.7	4.7	3.9	3.4	2.6	2.9	3.3	2.79	4.68	
12-May	2.6	2.4	2.0	2.2	1.8	2.0	2.6	3.3	2.7	3.8	4.1	4.2	3.8	4.3	4.4	4.2	3.5	3.4	3.4	3.0	1.0	0.5	1.0	1.4	2.82	4.44	
13-May	0.6	0.3	1.4	0.6	0.9	0.5	1.0	1.4	2.2	2.7	4.4	4.3	4.7	4.1	4.1	3.3	3.3	3.1	2.9	2.5	1.1	1.3	1.4	2.7	2.28	4.67	
14-May	3.3	1.0	0.7	0.4	0.8	0.6	1.1	1.9	2.0	3.2	4.1	4.5	4.9	5.7	4.4	4.9	4.3	3.7	3.9	2.3	1.5	2.3	3.0	1.8	2.76	5.75	
15-May	1.3	1.0	0.5	0.5	0.5	0.7	1.0	1.4	2.2	5.1	4.8	5.2	5.2	5.2	5.0	4.8	4.3	4.4	3.7	2.9	2.3	3.1	2.6	2.5	2.93	5.25	
16-May	2.2	2.0	2.4	2.7	1.7	2.0	2.7	3.7	3.0	2.8	3.3	3.0	3.7	3.4	4.2	3.9	3.9	2.9	3.4	2.3	2.4	2.6	1.9	6.6	3.03	6.62	
17-May	6.0	6.9	6.8	8.2	1.6	1.7	2.3	3.5	3.1	3.9	4.7	4.6	4.4	4.6	4.2	3.7	4.9	4.8	3.5	1.9	1.1	1.4	1.0	1.0	3.74	8.20	
18-May	1.0	2.1	2.1	1.3	1.0	1.0	1.1	0.7	1.2	3.2	3.4	3.0	3.5	3.4	3.8	8.7	7.3	5.9	6.1	6.2	5.3	5.2	4.4	3.3	3.51	8.71	
19-May	3.0	2.7	3.3	3.8	3.2	2.8	2.5	2.8	3.4	3.7	3.8	4.4	5.4	6.0	5.5	5.9	5.8	6.5	6.1	5.4	5.4	6.0	5.3	5.5	4.51	6.46	
20-May	5.3	5.1	5.1	5.2	4.9	5.1	5.8	4.2	4.8	4.8	5.1	4.1	4.5	3.9	3.7	3.3	2.8	3.5	2.6	2.9	2.6	3.3	2.8	3.8	4.13	5.77	
21-May	3.9	3.8	4.7	4.9	4.0	4.1	3.8	4.1	3.6	3.9	3.7	4.4	4.0	4.5	3.6	3.2	2.3	3.1	3.3	3.3	3.1	3.9	3.5	3.4	3.77	4.87	
22-May	3.3	3.5	4.6	4.2	4.8	4.8	4.4	4.9	5.3	5.5	4.8	5.1	5.9	5.6	5.1	5.6	5.7	5.6	5.4	4.7	4.7	4.1	4.0	3.5	4.79	5.92	
23-May	2.4	3.5	4.7	4.3	4.4	4.0	5.0	4.7	4.9	4.3	3.7	3.4	3.9	4.0	3.4	3.9	3.1	2.5	1.8	1.2	0.9	1.2	1.1	1.5	3.23	5.02	
24-May	1.3	1.4	1.3	1.8	1.2	0.8	1.3	1.2	2.9	3.0	3.1	3.8	3.1	3.7	4.0	3.4	3.1	3.0	4.2	2.7	2.6	1.6	1.5	1.2	2.38	4.25	
25-May	1.2	0.7	1.2	1.2	1.3	0.8	1.1	1.5	2.1	2.3	2.7	2.3	3.0	3.2	8.6	5.4	3.1	2.2	2.1	2.8	2.1	1.9	1.0	1.3	2.30	8.62	
26-May	2.8	2.4	2.5	2.1	1.7	1.7	1.4	1.3	1.7	1.7	2.0	2.4	2.7	3.6	3.8	3.8	3.5	3.5	7.4	4.5	4.2	4.1	4.1	3.3	3.01	7.38	
27-May	2.8	2.3	4.3	2.7	2.5	2.8	3.5	3.1	2.8	2.9	2.5	2.9	2.5	2.7	4.1	4.3	4.5	4.3	3.6	2.7	4.0	3.2	2.5	2.4	3.15	4.48	
28-May	2.6	2.0	1.4	1.6	1.8	1.2	1.6	3.3	3.0	3.5	3.5	4.6	3.5	3.5	3.3	3.1	6.0	4.1	3.5	3.4	1.9	1.3	1.1	1.2	2.75	5.99	
29-May	1.4	1.2	1.1	1.1	0.9	1.5	1.5	1.5	2.3	3.3	3.3	5.1	4.7	4.2	6.6	6.3	5.1	2.9	4.6	3.4	3.2	2.8	2.5	2.5	3.04	6.60	
30-May	2.3	3.6	3.2	3.5	3.5	3.6	4.2	4.3	5.1	5.1	6.0	5.8	5.1	5.1	5.4	5.3	4.8	3.7	2.9	2.6	2.0	0.5	0.4	0.8	3.70	6.04	
31-May	0.9	0.8	1.3	1.5	0.5	0.9	0.7	1.8	2.6	2.4	2.5	2.7	2.7	3.5	4.1	3.5	3.6	3.8	2.7	2.9	2.1	3.2	2.5	2.2	2.31	4.15	
		2.40	2.34	2.42	2.42	2.10	2.12	2.44	2.74	2.99	3.48	3.80	4.10	4.34	4.53	4.70	4.59	4.35	3.93	3.81	3.21	2.70	2.66	2.30	2.45	Diurnal Average	
		6.01	6.87	6.84	8.20	5.00	5.54	7.31	6.24	7.19	7.04	7.43	7.25	8.78	9.11	8.68	8.83	9.72	9.01	9.59	8.26	6.75	7.05	5.86	6.62	Diurnal Maximum	
,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3    24-hr 100 ul/m^3																											



**WCAS - Drayton Valley**  
**Summary of Hourly Standard Deviations**

**Wind Direction (WD) - deg**  
**May 2016**

Maximum Value: 109.73 deg on May 6 12:00																							Maximum Daily Average: 45.89 deg on May 31																							Hours in Service: 744		
Minimum Value: 1.0 deg on May 13 02:00																							Minimum Daily Average: 14.67 deg on May 22																							Hours of Data: 744		
Maximum Diurnal Average: 42.07 deg at hour 13																							Minimum Diurnal Average: 16.86 deg at hour 7																							Hours of Missing Data: 0		
Monthly Average: 28.561 deg																							Percentiles: P <sub>1</sub> = 5.8 P <sub>10</sub> = 12.6 Q <sub>1</sub> = 15.2 Median = 22.0 Q <sub>3</sub> = 35.9 P <sub>90</sub> = 54.8 P <sub>99</sub> = 93.6																							Hours of Calibration: 0		
																							Percentiles: P <sub>1</sub> = 5.8 P <sub>10</sub> = 12.6 Q <sub>1</sub> = 15.2 Median = 22.0 Q <sub>3</sub> = 35.9 P <sub>90</sub> = 54.8 P <sub>99</sub> = 93.6																							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-May	8.7	10.3	9.1	9.0	8.3	10.1	9.2	21.5	17.8	31.2	40.7	33.6	38.7	53.1	66.3	70.5	91.8	85.4	84.1	17.1	12.6	2.8	19.6	10.0	31.72	91.80																						
2-May	9.3	5.4	6.1	8.4	6.5	10.6	16.8	14.9	14.6	20.3	26.2	25.3	31.2	26.1	25.4	26.7	31.0	18.5	17.5	17.2	18.1	17.1	17.1	23.6	18.07	31.19																						
3-May	29.5	63.7	49.4	14.4	9.1	14.5	15.1	16.8	21.7	20.2	28.9	51.2	58.8	67.2	42.2	69.7	30.4	22.3	13.1	15.0	16.4	39.6	46.0	37.7	33.04	69.72																						
4-May	44.4	24.1	15.1	8.0	8.7	9.0	10.4	10.7	13.3	21.2	46.7	43.3	47.1	44.4	31.7	22.5	28.0	27.6	27.5	17.6	22.8	31.7	29.0	20.1	25.20	47.06																						
5-May	27.2	25.8	22.4	16.0	14.2	15.3	16.3	17.6	17.0	17.9	22.1	25.2	35.6	41.8	43.3	30.1	28.6	26.3	26.2	19.8	17.4	19.1	22.7	24.5	23.84	43.28																						
6-May	6.9	28.0	9.2	9.9	26.0	8.3	8.8	17.9	35.1	89.3	107.1	109.7	67.3	61.9	63.0	42.2	49.7	36.1	17.9	16.8	13.2	10.3	8.0	14.4	35.71	109.73																						
7-May	12.6	12.6	8.3	11.5	8.3	9.4	11.4	9.5	13.5	23.6	22.8	22.3	28.8	25.3	32.7	76.9	40.6	39.4	32.3	25.9	34.8	58.6	36.0	22.3	25.82	76.93																						
8-May	22.9	22.7	19.9	26.9	24.9	23.1	23.6	21.8	37.3	25.4	22.4	30.4	27.2	21.1	18.5	19.9	17.7	17.5	14.7	15.3	15.2	17.8	14.7	13.7	21.44	37.29																						
9-May	14.5	14.5	14.0	14.0	15.7	14.0	20.1	19.0	17.9	19.2	19.4	22.3	17.0	21.0	22.5	20.1	22.8	20.3	23.9	23.7	17.5	13.8	14.4	11.1	18.03	23.90																						
10-May	14.7	12.9	13.6	14.8	28.8	34.7	15.3	14.0	28.6	30.4	31.2	32.6	44.1	57.5	47.5	47.2	42.0	41.1	58.7	39.2	18.9	41.2	17.9	1.2	30.33	58.70																						
11-May	32.9	9.0	11.6	8.3	11.7	50.5	52.4	33.9	39.7	39.6	47.2	51.7	55.4	52.5	38.2	35.7	41.5	41.7	43.6	38.2	32.4	24.7	26.1	29.9	35.35	55.41																						
12-May	28.9	24.3	26.9	27.9	27.4	28.8	28.7	31.2	34.6	43.6	47.8	40.2	46.4	44.2	44.9	49.7	46.3	39.2	31.1	28.9	36.3	51.2	18.6	89.1	38.17	89.11																						
13-May	26.9	1.0	37.8	15.4	6.2	5.0	12.6	14.9	35.5	52.3	65.1	73.0	47.6	67.3	91.4	77.5	41.9	59.3	46.7	36.9	51.6	19.8	20.2	39.3	39.38	91.41																						
14-May	25.9	15.1	9.0	10.4	10.4	7.3	9.7	12.9	27.8	28.5	29.6	39.1	40.6	55.9	57.5	28.9	35.0	33.1	27.1	21.3	19.9	18.9	39.1	43.3	26.93	57.50																						
15-May	7.6	9.6	5.9	4.7	7.2	5.0	8.9	21.3	22.8	23.2	19.8	25.3	24.0	22.0	22.5	21.6	22.2	19.2	14.7	13.3	11.4	11.5	14.5	10.6	15.36	25.25																						
16-May	12.2	12.4	15.1	23.3	29.4	92.3	14.6	13.9	16.8	18.4	29.8	52.8	75.4	80.2	86.4	101.0	57.2	50.7	32.5	11.4	13.4	14.5	20.1	51.0	38.54	101.03																						
17-May	18.8	15.2	14.5	17.7	17.0	17.0	16.0	15.9	17.3	26.9	33.3	34.1	42.9	23.5	35.8	37.8	25.0	31.2	26.0	45.7	49.0	56.8	9.0	53.6	28.34	56.80																						
18-May	60.7	90.8	69.7	92.2	15.7	60.0	11.1	25.9	41.2	45.7	37.7	62.2	75.4	62.9	48.5	91.8	32.3	27.8	25.5	20.5	18.7	19.5	19.6	19.4	44.79	92.16																						
19-May	25.8	28.8	16.7	14.6	13.9	15.7	14.2	15.5	14.7	15.1	13.6	15.4	14.8	15.2	14.6	14.1	14.9	14.9	16.1	16.2	15.0	14.6	14.2	13.8	15.93	28.83																						
20-May	14.6	13.3	13.0	13.3	12.8	13.4	15.9	14.3	15.6	13.9	15.1	15.3	16.0	18.8	18.1	22.8	17.5	19.8	18.6	16.1	15.0	13.4	17.1	16.5	15.85	22.77																						
21-May	15.3	15.3	16.8	14.7	17.1	14.4	15.7	15.3	15.0	16.8	17.1	17.5	15.3	18.2	20.4	18.6	25.7	20.9	17.5	17.9	17.8	17.6	18.1	17.3	17.35	25.74																						
22-May	16.4	13.9	14.6	14.3	15.4	16.7	15.0	14.2	13.2	13.5	15.7	14.7	14.7	14.7	13.1	13.7	14.9	14.0	14.0	15.2	14.1	17.8	13.8	14.3	14.67	17.84																						
23-May	13.5	16.3	17.5	17.6	14.5	14.9	13.8	13.3	14.4	15.4	24.8	19.0	18.8	19.0	25.1	26.7	35.2	37.8	33.7	32.0	88.6	24.2	45.0	35.7	25.70	88.64																						
24-May	31.3	73.6	63.3	40.6	67.8	22.6	14.5	16.8	27.0	30.8	32.8	48.2	37.7	44.2	52.6	48.3	47.1	40.1	21.1	13.0	14.5	12.4	13.2	10.2	34.31	73.58																						
25-May	8.3	10.2	46.9	73.3	41.9	13.4	11.9	12.4	47.5	54.3	52.3	88.8	100.4	51.5	50.8	30.0	89.2	19.6	16.2	24.3	35.9	22.5	15.9	27.9	39.40	100.42																						
26-May	21.6	26.4	20.4	16.5	71.5	42.2	25.4	22.0	31.4	66.1	81.7	76.1	94.7	49.7	30.2	26.2	27.2	30.1	41.7	20.5	17.5	33.0	20.5	15.8	37.84	94.66																						
27-May	20.4	17.8	23.3	19.7	16.6	15.1	14.1	19.9	19.6	19.6	18.1	16.0	22.8	17.9	19.8	20.5	18.8	21.7	16.9	20.1	20.7	19.6	17.4	16.1	18.86	23.32																						
28-May	16.8	25.1	17.9	31.0	22.2	21.1	35.1	23.1	18.6	28.2	41.6	24.3	38.2	94.1	29.1	57.9	55.4	30.5	34.3	37.5	36.5	44.9	22.6	25.3	33.81	94.14																						
29-May	28.4	13.5	8.6	58.5	40.6	88.5	18.5	24.2	38.7	53.1	30.0	26.7	28.2	33.8	27.3	16.8	23.7	22.4	84.5	27.2	24.4	22.8	14.1	19.9	32.27	88.50																						
30-May	15.8	16.4	16.2	17.9	16.1	14.3	13.7	17.2	18.5	20.2	21.9	20.5	20.7	22.3	24.0	34.2	32.2	31.3	33.9	33.4	29.8	37.8	10.2	45.1	23.49	45.09																						
31-May	55.0	6.2	48.3	77.2	57.6	24.2	14.0	60.9	55.1	53.3	97.1	63.8	78.6	59.4	79.5	66.9	47.5	46.9	22.6	19.5	20.9	23.6	11.4	11.6	45.89	97.11																						
																							22.18	21.75	21.98	23.93	22.05	23.60	16.86	19.44	25.22	31.52	36.76	39.37	42.07	41.50	39.45	40.85	36.57	31.83	30.15	23.11	24.86	24.94	20.20	25.30	Diurnal Average	
																							60.67	90.84	69.70	92.16	71.51	92.35	52.40	60.92	55.09	89.27	107.09	109.73	100.42	94.14	91.41	101.03	91.80	85.36	84.50	45.68	88.64	58.55	46.03	89.11	Diurnal Maximum	
,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3 24-hr 100 ul/m^3																																																

**WEYERHAEUSER - EDSON  
STATION #912**

**CONTINUOUS AIR MONITORING DATA**

**MAY 2016**

**Summary Report**

*Continuous air quality/meteorological monitoring measurements*

**West Central Airshed Society**

Weyerhaeuser / Edson Station 912												May 2016		24 Hour Average Max (ppm)
Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Min	Max	Percentile					Exceedences		
							P10	Q1	Median	Q3	P90	1-hour	24-hour	
SO <sub>2</sub> (ppb)	36	708	100.0	0.2	0.0	2.9	0.0	0.0	0.1	0.2	0.5	0	0	0.001
O <sub>3</sub> (ppb)	36	708	100.0	37.3	2.5	69.1	16.3	23.5	38.7	50.5	57.7	0	-	0.058
NO (ppb)	39	705	100.0	0.9	0.0	26.3	0.0	0.0	0.1	0.5	2.2	-	-	-
NO <sub>2</sub> (ppb)	39	705	100.0	3.9	0.7	24.4	1.3	1.8	2.6	4.9	8.7	0	0	0.009
NOx (ppb)	39	705	100.0	4.8	0.7	40.0	1.4	1.8	2.7	5.7	11.2	-	-	-
Particulate Matter 2.5 microns (μm <sup>3</sup> )	0	744	100.0	4.6	0.0	144.5	0.0	0.9	2.6	5.4	10.1	1	0	10.1 ug/m3
Wind Speed (kph)	0	744	100.0	6.4	0.2	20.3	2.1	3.6	5.5	8.5	12.0	-	-	-
Temperature (°C)	0	744	100.0	10.2	-2.9	28.4	2.0	4.6	9.2	14.5	20.1	-	-	-
Std Dev Wind Direction (deg)	0	744	100.0	34.8	7.9	107.4	14.6	21.3	30.1	42.7	63.3	-	-	-
Std Dev Wind Speed (kph)	0	744	100.0	3.1	0.4	9.5	1.5	1.9	2.8	4.0	5.1	-	-	-



**WCAS - Edson**  
**Summary of Hourly Averages**

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

Maximum Value: 2.94 ppb on May 4 08:00		Maximum Daily Average: 0.76 ppb on May 4		Hours in Service: 744																													
Minimum Value: 0.0 ppb on May 3 01:00		Minimum Daily Average: 0.01 ppb on May 9		Hours of Data: 708																													
Maximum Diurnal Average: 0.71 ppb at hour 9		Minimum Diurnal Average: 0.09 ppb at hour 3		Hours of Missing Data: 36																													
Monthly Average: 0.207 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.1 Q <sub>3</sub> = 0.2 P <sub>90</sub> = 0.5 P <sub>99</sub> = 2.0		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-May	0.2	0.3	0.0	Z	0.7	0.1	0.2	0.4	1.1	1.6	1.4	0.5	0.3	0.5	0.5	0.5	0.5	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.44	1.55							
2-May	0.1	0.1	0.1	Z	0.1	0.1	0.2	0.8	2.6	0.7	0.5	0.6	0.3	0.3	0.2	0.1	0.1	0.2	0.0	0.1	0.0	0.1	0.1	0.0	0.32	2.62							
3-May	0.0	0.0	0.0	Z	0.2	0.8	0.6	1.1	1.5	1.7	0.2	0.0	0.2	0.1	0.1	0.1	0.1	0.0	0.2	0.3	0.6	0.5	1.0	0.6	0.43	1.69							
4-May	1.7	0.8	0.5	Z	1.3	1.6	1.0	2.9	2.0	0.8	0.7	0.4	0.2	0.2	0.4	0.2	0.1	0.2	0.3	0.6	0.4	0.4	0.5	0.2	0.76	2.94							
5-May	0.2	0.1	0.1	Z	0.1	0.0	0.0	0.2	0.8	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.09	0.77							
6-May	0.1	0.0	0.1	Z	0.2	0.5	0.4	0.7	2.1	2.1	0.3	0.1	0.2	0.2	0.5	0.6	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.43	2.13							
7-May	0.3	0.3	0.3	Z	0.1	0.9	0.6	0.2	1.7	0.1	0.2	0.6	0.2	0.1	0.1	0.2	0.3	0.8	0.0	0.0	0.1	0.3	0.3	0.3	0.35	1.73							
8-May	0.3	0.3	0.2	Z	0.0	0.0	0.0	0.0	0.1	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	0.04	0.31							
9-May	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.01	0.08							
10-May	0.0	0.1	0.0	Z	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.06	0.21							
11-May	0.0	0.0	0.0	Z	0.0	0.0	0.1	0.2	0.2	0.5	0.3	0.2	0.6	0.7	0.7	0.6	0.6	0.4	0.4	0.1	0.0	0.0	0.0	0.0	0.24	0.74							
12-May	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.2	1.2	1.2	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	0.12	1.21							
13-May	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.2	0.3	0.4	0.3	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.0	0.3	0.6	0.9	1.4	1.6	0.30	1.63							
14-May	0.9	0.6	0.3	Z	0.2	0.2	0.3	0.6	0.8	0.6	0.3	0.3	0.4	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.34	0.92							
15-May	0.2	0.3	0.3	Z	0.3	0.2	0.2	0.3	1.3	0.7	0.3	0.3	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.31	1.34							
16-May	0.1	0.2	0.1	Z	0.2	0.2	0.2	0.3	2.4	1.6	2.0	1.4	0.4	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.1	0.2	0.2	0.1	0.46	2.41							
17-May	0.1	0.1	0.1	Z	0.2	0.5	0.5	0.3	0.2	0.2	0.1	C	C	C	C	C	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.14	0.53							
18-May	0.0	0.0	0.0	Z	0.0	0.4	0.6	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.2	0.20	0.61							
19-May	0.1	0.2	0.2	Z	0.3	0.2	0.1	0.1	0.1	0.1	0.1	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	0.06	0.26							
20-May	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.07							
21-May	0.0	0.0	0.0	Z	0.1	0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.05	0.14							
22-May	0.1	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.03	0.08							
23-May	0.0	0.0	0.0	Z	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.6	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.08	0.63							
24-May	0.1	0.1	0.1	Z	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.4	0.3	0.3	0.4	0.5	0.3	0.3	0.3	0.2	0.24	0.45							
25-May	0.2	0.1	0.1	Z	0.1	0.0	0.2	0.6	1.7	1.0	1.1	0.8	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.37	1.75							
26-May	0.2	0.1	0.1	Z	0.1	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.09	0.31							
27-May	0.1	0.0	0.0	Z	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.02	0.11							
28-May	0.0	0.0	0.0	Z	0.0	0.0	0.2	0.4	0.2	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.06	0.38							
29-May	0.0	0.0	0.0	Z	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.03	0.12							
30-May	0.0	0.1	0.1	Z	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.6	0.4	0.1	0.1	0.1	0.0	0.1	0.0	0.14	0.63							
31-May	0.1	0.0	0.0	Z	0.0	0.1	0.2	0.3	0.3	0.2	0.1	0.1	0.2	0.1	0.1	0.2	0.3	0.3	0.4	0.4	0.3	0.2	0.2	0.3	0.21	0.41							
		0.16	0.13	0.09	--	0.14	0.21	0.22	0.36	0.71	0.49	0.29	0.21	0.15	0.14	0.17	0.15	0.17	0.15	0.11	0.12	0.13	0.14	0.17	0.16	Diurnal Average							
		1.66	0.80	0.45	--	1.28	1.58	1.01	2.94	2.62	2.13	1.95	1.36	0.59	0.71	0.74	0.59	0.63	0.79	0.39	0.58	0.60	0.93	1.41	1.63	Diurnal Maximum							
Z - zerospan		C - Calibration																															
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr 172 ppb				24-hr 48 ppb																											





**WCAS - Edson**  
**Summary of Hourly Averages**

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

Maximum Value: 69.14 ppb on May 3 18:00		Maximum Daily Average: 55.12 ppb on May 15		Hours in Service: 744																									
Minimum Value: 2.5 ppb on May 29 06:00		Minimum Daily Average: 18.93 ppb on May 22		Hours of Data: 708																									
Maximum Diurnal Average: 48.89 ppb at hour 16		Minimum Diurnal Average: 19.83 ppb at hour 7		Hours of Missing Data: 36																									
Monthly Average: 37.256 ppb		Percentiles: P <sub>1</sub> = 5.6 P <sub>10</sub> = 16.3 Q <sub>1</sub> = 23.5 Median = 38.7 Q <sub>3</sub> = 50.5 P <sub>90</sub> = 57.7 P <sub>99</sub> = 66.1		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-May	32.5	31.4	31.4	Z	26.5	22.6	20.4	23.5	26.9	37.0	39.5	41.4	40.3	40.7	39.2	38.6	39.9	39.1	36.4	36.3	30.6	20.7	23.7	21.0	32.15	41.38			
2-May	19.1	16.4	15.0	Z	9.6	7.6	8.4	10.2	15.4	28.9	41.7	50.9	52.2	54.1	52.5	53.1	55.9	55.2	54.6	50.1	40.5	47.3	46.3	40.4	35.89	55.92			
3-May	35.6	22.7	30.0	Z	17.5	19.1	23.4	26.7	29.4	42.0	60.2	64.5	65.9	64.2	63.9	66.1	67.2	69.1	65.9	58.5	53.1	48.2	31.4	36.0	46.11	69.14			
4-May	34.3	26.3	26.2	Z	23.1	20.9	20.9	25.4	29.7	23.9	46.7	55.5	56.0	57.1	58.7	57.5	53.7	49.3	45.8	42.8	40.8	43.2	42.4	40.73	58.75				
5-May	41.6	42.3	49.1	Z	46.8	36.8	38.7	29.4	37.4	42.6	45.3	50.4	56.2	58.0	59.7	61.8	63.5	64.3	64.3	63.0	62.7	52.8	33.4	36.4	49.43	64.33			
6-May	31.4	27.7	25.7	Z	15.8	12.3	13.0	18.5	26.6	33.7	49.5	55.1	57.4	59.0	58.5	59.1	59.6	58.8	57.3	48.1	44.2	47.2	43.5	27.0	40.38	59.59			
7-May	26.9	25.5	27.2	Z	28.2	22.9	21.5	26.1	34.9	42.9	50.9	58.2	54.4	54.5	55.9	55.5	56.5	54.9	58.4	52.9	35.9	42.0	40.9	43.5	42.20	58.35			
8-May	42.5	42.1	46.1	Z	45.0	47.1	42.6	39.4	41.7	45.8	52.6	57.5	51.8	49.1	46.9	44.6	43.9	42.0	41.0	39.5	38.5	36.1	31.2	31.8	43.42	57.52			
9-May	27.4	25.4	22.1	Z	24.2	22.1	25.3	33.9	38.3	40.7	41.0	49.2	47.9	48.3	50.2	50.6	50.0	49.1	47.1	45.2	42.4	39.9	32.4	26.8	38.24	50.59			
10-May	24.8	23.2	19.3	Z	15.0	13.3	15.6	17.3	24.0	40.6	47.1	47.9	48.6	50.0	50.6	50.8	53.0	53.3	54.3	50.9	50.1	41.2	40.3	31.3	37.49	54.27			
11-May	28.1	25.3	20.3	Z	19.3	17.6	9.0	21.7	30.6	38.8	47.3	52.3	52.2	51.4	52.7	54.0	52.8	53.0	50.5	47.7	43.8	43.8	40.7	43.4	38.97	54.00			
12-May	44.0	44.5	45.4	Z	42.0	40.9	39.6	39.9	41.9	45.6	51.6	54.0	56.1	57.1	55.9	56.3	54.1	54.0	53.8	51.3	41.3	40.8	43.0	43.0	47.66	57.10			
13-May	34.5	28.2	29.1	Z	26.1	22.2	12.7	17.4	28.8	41.3	51.5	52.8	56.3	57.8	57.0	57.7	58.3	58.4	56.9	55.8	53.0	48.4	43.8	44.1	43.14	58.36			
14-May	39.4	34.5	27.8	Z	13.2	21.7	14.6	14.3	31.9	43.8	58.8	63.1	64.5	65.6	66.7	67.1	65.3	64.6	63.7	63.7	60.4	55.2	53.8	50.3	48.00	67.10			
15-May	55.4	49.9	49.1	Z	40.5	32.9	27.6	43.9	44.3	54.9	63.9	64.5	63.4	63.8	64.3	64.9	65.8	63.5	62.9	63.6	57.9	59.1	57.1	54.4	55.12	65.83			
16-May	53.5	51.2	50.5	Z	40.7	34.3	20.1	27.0	34.1	43.4	51.1	58.7	67.0	66.1	65.1	64.3	62.2	60.4	57.5	57.1	56.9	50.7	53.1	52.8	51.20	66.96			
17-May	56.7	54.7	49.5	Z	40.8	39.2	33.5	11.8	33.5	46.1	52.1	C	C	C	C	C	46.8	43.1	38.6	33.8	32.9	39.4	28.0	25.1	39.20	56.66			
18-May	25.6	22.1	17.2	Z	15.0	10.3	9.1	9.1	8.6	24.8	34.6	33.8	36.5	35.5	34.0	34.3	31.7	27.3	24.0	24.7	23.5	18.4	17.9	17.9	23.29	36.50			
19-May	16.9	14.8	22.6	Z	35.5	34.5	29.3	24.6	20.3	18.7	16.6	16.3	16.7	16.4	16.0	14.9	14.8	14.8	15.1	16.6	16.4	16.9	17.0	17.5	19.28	35.54			
20-May	17.8	18.9	18.9	Z	18.0	18.0	18.9	20.7	20.1	22.6	24.9	26.3	26.5	26.6	26.6	28.2	27.6	26.8	27.2	24.4	25.5	23.5	20.1	19.5	22.94	28.15			
21-May	21.7	19.6	20.1	Z	15.1	17.4	18.3	20.2	21.4	20.9	21.3	21.5	20.5	23.9	23.4	22.9	20.3	18.8	17.5	16.2	16.0	15.1	15.4	16.1	19.29	23.94			
22-May	12.3	12.8	13.1	Z	13.0	13.8	17.4	20.9	23.6	23.4	22.1	20.3	20.7	20.4	19.7	20.1	19.1	18.4	19.9	20.3	19.4	21.0	21.6	21.9	18.93	23.60			
23-May	20.5	20.7	21.6	Z	18.8	14.2	16.2	29.7	31.8	35.8	41.8	48.8	54.5	57.1	58.4	60.1	63.0	63.4	59.6	54.3	44.9	39.9	33.3	33.0	40.06	63.39			
24-May	24.9	17.3	19.5	Z	6.9	5.9	9.1	17.7	24.5	32.1	46.3	56.9	60.0	62.2	63.6	63.3	63.8	61.7	57.6	53.7	47.0	47.4	46.7	44.9	40.56	63.77			
25-May	44.1	42.8	29.9	Z	24.2	15.6	15.5	14.1	17.1	26.0	37.3	44.6	47.9	47.9	51.3	51.8	54.4	51.5	46.5	43.1	32.8	30.4	33.6	38.0	36.54	54.36			
26-May	37.1	45.3	46.0	Z	33.9	26.9	24.0	44.4	48.7	50.7	53.2	52.2	54.8	52.3	49.1	49.3	46.9	52.3	51.3	46.2	51.0	52.3	47.9	38.8	45.85	54.79			
27-May	30.9	26.2	21.0	Z	26.2	26.5	29.8	37.3	37.1	36.2	40.8	38.7	41.0	48.2	40.6	39.2	43.1	41.6	39.2	36.2	35.8	35.8	37.1	35.7	35.83	48.22			
28-May	36.4	29.4	24.1	Z	10.3	5.2	13.2	25.3	29.1	41.6	42.5	47.4	48.9	46.2	48.6	49.6	50.8	52.4	51.8	46.3	46.1	42.0	32.3	25.3	36.73	52.39			
29-May	15.2	12.9	11.3	Z	3.8	2.5	4.4	17.3	29.8	26.2	31.2	38.0	46.5	50.4	53.2	48.6	50.7	46.5	44.4	39.2	38.5	34.1	31.6	27.7	30.61	53.22			
30-May	16.9	12.3	11.6	Z	7.7	7.0	16.9	20.7	29.4	33.0	34.4	35.1	36.6	37.0	38.8	38.8	33.1	35.6	33.2	33.9	31.3	26.4	28.7	22.0	26.97	38.83			
31-May	12.1	14.5	13.3	Z	5.5	4.8	5.5	9.6	17.3	25.3	33.2	37.7	41.0	42.3	43.3	43.6	44.1	42.5	44.5	43.4	36.1	35.9	36.7	39.0	29.18	44.49			
		30.97	28.41	27.54	--	22.85	20.52	19.83	23.81	29.30	35.79	42.94	46.44	48.07	48.78	48.82	48.89	48.86	48.07	46.58	43.93	40.36	38.47	35.67	33.78	Diurnal Average			
		56.66	54.67	50.48	--	46.84	47.09	42.59	44.45	48.72	54.91	63.95	64.52	66.96	66.09	66.68	67.10	67.18	69.14	65.86	63.68	62.74	59.14	57.11	54.44	Diurnal Maximum			
Z - zerospan		C - Calibration																											
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr 82.5 ppb		24-hr -- ppb																									



**WCAS - Edson**  
**Summary of Hourly Averages**

**Nitrogen Oxide (NO) - ppb**  
**May 2016**

Maximum Value: 26.32 ppb on May 11 07:00		Maximum Daily Average: 2.57 ppb on May 11		Hours in Service: 744																									
Minimum Value: 0.0 ppb on May 3 03:00		Minimum Daily Average: 0.02 ppb on May 9		Hours of Data: 705																									
Maximum Diurnal Average: 5.10 ppb at hour 8		Minimum Diurnal Average: 0.02 ppb at hour 24		Hours of Missing Data: 39																									
Monthly Average: 0.930 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.1 O <sub>3</sub> = 0.5 P <sub>90</sub> = 2.2 P <sub>99</sub> = 15.3		Hours of Calibration: 39																									
				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-May	0.1	0.0	0.0	Z	0.0	0.2	1.3	3.5	5.5	2.1	1.2	0.3	0.2	0.2	0.2	0.2	0.2	0.7	0.3	0.1	0.1	1.2	0.1	0.1	0.78	5.53			
2-May	0.1	0.1	0.1	Z	0.2	1.6	5.1	11.1	21.9	6.0	2.1	0.9	1.9	0.7	0.3	1.2	0.1	0.1	0.1	0.6	0.4	0.1	0.2	0.0	2.39	21.87			
3-May	0.0	0.2	0.0	Z	0.1	0.5	1.6	4.5	5.9	3.0	0.1	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.76	5.90			
4-May	0.0	0.2	0.2	Z	0.0	0.3	2.2	5.0	2.8	6.6	1.4	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.83	6.60			
5-May	0.0	0.0	0.0	Z	0.0	0.2	0.1	1.1	1.2	0.5	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.19	1.17			
6-May	0.0	0.0	0.0	Z	0.1	1.5	9.5	7.5	4.5	3.8	0.5	0.2	0.2	0.2	0.1	0.1	0.2	0.0	0.2	1.2	0.0	0.0	0.1	1.31	9.54				
7-May	0.0	0.0	0.0	Z	0.0	1.0	2.4	4.0	3.9	1.3	0.7	0.2	0.0	0.0	0.1	0.0	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.62	4.03				
8-May	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.3	0.5	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	0.06	0.48				
9-May	0.0	0.0	0.0	Z	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.02	0.10				
10-May	0.1	0.1	0.0	Z	0.2	1.1	3.7	6.9	6.5	1.1	0.3	0.1	0.0	0.1	0.1	0.1	0.2	0.0	0.2	0.0	0.0	0.0	0.0	0.90	6.86				
11-May	0.1	0.1	0.0	Z	0.1	0.5	26.3	17.6	3.4	1.3	1.8	0.5	0.9	1.8	0.3	0.9	0.9	0.5	1.0	0.2	1.0	0.0	0.0	2.57	26.32				
12-May	0.1	0.0	0.0	Z	0.0	0.0	0.1	0.7	1.0	0.9	0.1	0.7	0.6	0.7	0.3	1.1	0.9	0.4	0.7	0.8	0.1	0.1	0.0	0.41	1.11				
13-May	0.1	0.0	0.0	Z	0.0	0.5	9.2	15.3	8.3	3.2	0.9	1.3	0.2	0.3	0.5	0.3	0.3	0.2	0.1	0.0	0.0	0.3	0.7	1.82	15.35				
14-May	0.0	0.0	0.0	Z	0.7	0.5	8.1	19.3	6.3	2.0	1.9	1.5	1.0	0.4	0.5	0.9	2.5	1.7	1.9	0.8	0.0	0.0	0.0	2.18	19.30				
15-May	0.0	0.0	0.0	Z	0.0	0.2	2.2	1.1	1.9	4.1	3.0	3.1	4.0	4.3	4.0	3.7	2.4	4.4	3.0	1.4	0.8	0.0	0.0	1.90	4.39				
16-May	0.0	0.0	0.0	Z	0.0	0.2	6.5	7.9	8.5	4.8	2.5	1.3	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	1.41	8.54				
17-May	0.0	0.0	0.0	Z	0.0	0.1	0.4	13.7	3.2	0.3	0.1	C	C	C	C	C	C	C	C	0.1	0.0	0.0	0.0	--	13.70				
18-May	0.0	0.0	0.0	Z	0.0	1.0	2.8	7.1	12.2	5.0	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	1.26	12.16				
19-May	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.2	0.2	0.3	0.2	0.2	0.3	0.2	0.2	0.3	0.3	0.3	0.2	0.1	0.0	0.0	0.3	0.14	0.33				
20-May	0.0	0.0	0.0	Z	0.0	0.1	0.4	0.4	0.9	0.9	0.5	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.19	0.93				
21-May	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.2	0.4	0.3	0.3	0.3	0.2	0.1	0.1	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.10	0.41				
22-May	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.05	0.21				
23-May	0.0	0.0	0.0	Z	0.0	0.9	1.5	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.3	0.17	1.51				
24-May	0.0	0.0	0.0	Z	0.2	2.2	12.5	7.3	5.5	2.0	0.7	0.8	0.5	0.3	0.3	0.2	0.2	0.4	0.3	0.2	0.1	0.1	0.0	1.47	12.49				
25-May	0.0	0.0	0.1	Z	0.0	0.6	1.6	6.9	7.7	5.2	1.9	0.5	0.2	0.1	0.1	0.1	0.3	1.2	0.2	0.2	0.2	0.1	0.0	1.18	7.65				
26-May	0.0	0.0	0.0	Z	0.0	0.2	0.3	0.0	0.0	0.1	0.0	0.1	0.4	0.2	0.1	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.08	0.41				
27-May	0.0	0.0	0.0	Z	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.05	0.23				
28-May	0.0	0.0	0.0	Z	0.3	5.5	3.8	0.6	0.9	0.1	0.0	0.0	0.0	0.2	1.4	0.4	0.1	0.0	0.0	2.8	0.4	0.0	0.0	0.73	5.53				
29-May	0.0	0.0	0.0	Z	2.0	16.2	13.4	1.8	1.9	1.6	0.7	0.5	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.67	16.16				
30-May	0.0	0.1	0.1	Z	0.4	3.9	1.5	0.9	0.4	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.6	0.1	0.1	0.1	0.0	0.0	0.0	0.37	3.95				
31-May	0.2	0.0	0.0	Z	0.3	3.6	15.5	13.0	4.3	1.9	1.7	0.7	0.7	1.3	0.6	1.0	1.8	1.2	0.4	0.1	0.2	0.3	0.2	2.14	15.46				
		0.03	0.03	0.03	--	0.15	1.38	4.27	5.10	3.86	1.92	0.76	0.48	0.41	0.40	0.34	0.37	0.38	0.41	0.30	0.26	0.15	0.08	0.10	0.02	Diurnal Average			
		0.22	0.25	0.20	--	1.99	16.16	26.32	19.30	21.87	6.60	3.00	3.08	3.97	4.31	4.03	3.74	2.51	4.39	2.99	2.84	1.21	1.25	1.04	0.14	Diurnal Maximum			
Z - zerospan		C - Calibration																											
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr --- ppb				24-hr --- ppb																							



**WCAS - Edson**  
**Summary of Hourly Averages**

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

Maximum Value: 24.36 ppb on May 17 08:00		Maximum Daily Average: 6.82 ppb on May 14		Hours in Service: 744																													
Minimum Value: 0.7 ppb on May 30 13:00		Minimum Daily Average: 1.67 ppb on May 21		Hours of Data: 705																													
Maximum Diurnal Average: 7.89 ppb at hour 8		Minimum Diurnal Average: 2.11 ppb at hour 15		Hours of Missing Data: 39																													
Monthly Average: 3.936 ppb		Percentiles: P <sub>1</sub> = 0.8 P <sub>10</sub> = 1.3 Q <sub>1</sub> = 1.8 Median = 2.6 O <sub>3</sub> = 4.9 P <sub>90</sub> = 8.7 P <sub>99</sub> = 16.3		Hours of Calibration: 39																													
				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-May	7.3	8.4	6.4	Z	7.4	7.2	7.7	9.2	10.4	6.1	4.9	2.9	2.4	2.6	2.6	2.7	2.7	3.3	3.6	3.5	7.2	13.1	7.2	4.5	5.80	13.14							
2-May	3.8	4.5	5.2	Z	5.9	8.5	9.7	9.3	16.5	10.2	7.5	5.4	4.2	2.9	2.7	3.7	2.2	2.3	2.7	4.8	12.8	8.7	8.6	7.3	6.50	16.51							
3-May	4.6	11.7	6.2	Z	12.4	12.7	9.8	11.7	12.0	8.3	2.2	2.2	2.5	2.9	2.4	2.3	2.3	2.3	2.6	2.8	3.4	3.6	19.2	9.5	6.51	19.15							
4-May	6.4	11.0	9.2	Z	10.5	11.1	13.2	13.8	10.9	14.1	5.6	2.8	2.5	2.5	3.3	2.5	2.4	2.7	2.7	2.5	3.2	3.0	2.2	2.3	6.11	14.13							
5-May	2.8	2.7	2.3	Z	2.4	6.0	4.1	9.6	6.0	3.3	2.2	2.1	1.9	2.2	2.1	2.0	1.9	1.9	2.0	2.7	2.0	3.0	9.3	4.4	3.43	9.57							
6-May	4.6	5.2	7.7	Z	11.1	12.2	11.6	9.3	7.5	7.4	2.7	2.3	2.5	2.4	2.3	2.3	2.2	2.4	2.6	7.7	9.4	5.0	4.6	9.2	5.83	12.23							
7-May	7.9	9.9	9.3	Z	7.6	13.3	12.1	11.1	8.7	5.5	4.1	2.9	1.9	1.8	1.9	2.1	2.2	4.3	4.1	4.4	13.9	8.9	9.1	2.2	6.49	13.94							
8-May	2.1	2.1	2.1	Z	2.0	1.7	1.9	2.9	3.2	2.7	2.1	1.5	1.5	1.5	1.5	1.5	1.7	1.7	1.8	1.8	2.0	2.0	2.2	2.4	2.00	3.20							
9-May	3.2	2.6	3.1	Z	3.0	2.7	2.8	1.8	1.5	1.4	1.5	1.4	1.4	1.5	1.5	1.5	1.6	1.6	1.7	1.7	1.9	2.1	3.9	7.9	2.32	7.93							
10-May	7.6	8.2	7.8	Z	8.8	9.5	9.0	9.4	8.6	3.5	1.7	1.5	1.4	1.4	1.6	1.5	2.0	1.4	2.8	2.9	2.8	4.6	4.6	6.6	4.74	9.48							
11-May	5.3	4.9	6.5	Z	6.2	6.5	13.7	12.4	6.2	3.8	3.9	2.3	3.9	4.5	2.7	3.2	3.8	3.2	4.0	3.2	4.9	2.6	4.2	2.5	4.97	13.71							
12-May	2.8	1.9	1.9	Z	1.9	1.8	2.4	3.2	3.5	3.1	1.3	2.5	2.6	2.8	2.4	2.6	3.3	2.5	3.6	4.9	7.8	7.1	3.6	3.0	3.14	7.75							
13-May	8.5	5.5	4.1	Z	4.5	5.6	12.6	14.6	13.0	6.6	3.1	3.0	1.8	1.9	2.3	2.4	1.9	2.2	1.8	2.5	2.9	6.2	11.8	8.9	5.55	14.63							
14-May	5.1	4.4	7.2	Z	17.0	7.5	13.5	19.7	11.8	5.4	5.5	5.4	3.5	2.8	2.9	3.6	5.8	5.3	6.1	5.0	2.5	3.3	6.0	7.7	6.82	19.67							
15-May	3.5	4.1	3.9	Z	3.4	4.7	8.0	5.4	6.6	8.1	6.2	7.0	8.6	9.3	8.1	7.6	6.9	9.7	8.1	6.9	11.8	3.1	4.5	5.5	6.57	11.83							
16-May	4.3	4.5	3.8	Z	4.7	5.6	14.2	16.9	18.1	12.1	8.3	5.9	2.1	1.6	1.6	1.5	1.5	1.6	1.9	1.8	2.4	3.3	1.7	1.6	5.27	18.12							
17-May	1.5	1.6	2.0	Z	3.2	3.6	5.7	24.4	7.3	2.0	1.2	C	C	C	C	C	C	C	C	2.2	2.4	2.8	4.9	2.4	--	24.36							
18-May	2.3	3.6	3.4	Z	5.9	7.7	10.3	10.5	12.1	5.8	2.0	1.8	1.7	1.7	1.7	1.6	1.5	1.7	3.0	1.8	1.8	2.4	2.5	2.6	3.89	12.10							
19-May	3.5	3.3	2.6	Z	1.7	1.9	2.5	3.0	2.3	1.9	1.8	1.8	1.5	1.5	1.5	1.8	2.0	2.0	1.9	1.5	1.7	1.6	1.9	2.3	2.07	3.50							
20-May	2.4	2.1	2.0	Z	2.7	2.9	2.6	2.6	2.2	1.6	1.3	1.1	1.1	1.2	1.2	1.1	1.2	1.2	1.2	1.2	1.2	1.4	2.0	1.6	1.70	2.88							
21-May	1.4	1.4	1.3	Z	2.4	2.4	1.8	1.8	1.6	1.9	1.8	2.0	1.8	1.2	1.1	1.3	1.6	1.8	1.6	1.5	1.8	1.7	1.6	1.5	1.67	2.40							
22-May	2.5	1.9	2.0	Z	2.3	2.0	2.0	2.2	1.7	1.4	1.4	1.4	1.7	1.6	1.3	1.3	1.2	1.5	2.0	1.7	1.6	2.1	1.8	2.0	1.79	2.50							
23-May	3.0	2.2	2.4	Z	3.2	5.1	3.5	1.4	1.3	1.2	1.0	1.0	0.9	1.0	1.0	1.0	1.0	1.0	1.3	2.3	3.5	3.2	7.3	5.2	2.34	7.33							
24-May	4.1	4.2	2.1	Z	2.6	3.9	6.3	5.5	6.7	3.8	2.9	3.2	2.6	2.1	2.2	2.0	1.8	2.5	2.5	2.2	3.7	2.6	2.4	2.1	3.21	6.72							
25-May	1.8	2.1	4.8	Z	6.4	6.8	8.0	13.1	12.8	8.9	5.5	2.4	1.7	1.4	1.2	1.2	1.5	3.4	1.6	2.1	4.9	3.8	2.4	2.5	4.36	13.13							
26-May	1.6	1.2	1.4	Z	4.8	7.4	7.4	2.2	1.3	1.3	1.0	1.1	1.8	1.5	1.9	2.1	2.9	1.3	1.2	1.0	1.0	1.0	1.6	3.0	2.22	7.42							
27-May	2.2	2.4	2.7	Z	2.4	3.0	2.9	2.7	2.2	2.3	1.5	1.4	1.4	1.4	2.0	1.6	1.6	1.6	1.3	1.4	1.5	1.9	1.8	2.0	1.97	3.01							
28-May	1.5	3.1	2.3	Z	4.5	9.3	6.0	2.5	2.7	1.0	0.8	0.9	0.8	1.3	2.6	1.6	0.9	1.2	1.2	4.5	1.9	1.2	1.8	3.4	2.49	9.27							
29-May	3.6	2.9	2.2	Z	3.4	4.8	5.1	3.5	5.6	4.1	2.5	2.2	1.1	1.1	0.7	0.8	0.8	0.9	0.8	0.8	1.0	1.4	1.2	1.1	2.25	5.55							
30-May	1.5	2.6	4.3	Z	6.6	6.2	3.3	2.8	1.3	0.9	0.7	0.8	0.7	0.8	0.7	0.8	2.3	1.2	1.2	1.1	1.6	3.6	1.9	3.4	2.18	6.65							
31-May	7.1	2.9	2.7	Z	3.1	3.6	6.0	6.6	3.9	2.8	3.1	1.8	2.0	3.3	2.0	2.3	3.9	3.6	2.1	2.0	3.5	5.0	4.3	3.5	3.53	7.08							
		3.86	4.16	4.03	--	5.29	6.05	7.09	7.89	6.76	4.59	2.95	2.47	2.19	2.17	2.11	2.11	2.30	2.46	2.49	2.80	4.02	3.71	4.58	4.01	Diurnal Average							
		8.54	11.74	9.30	--	16.96	13.35	14.24	24.36	18.12	14.13	8.27	6.96	8.64	9.28	8.09	7.59	6.90	9.73	8.06	7.70	13.94	13.14	19.15	9.53	Diurnal Maximum							
Z - zerospan		C - Calibration																															
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr 159 ppb				24-hr 106 ppb																											



**WCAS - Edson**  
**Summary of Hourly Averages**

**NOx (NO<sub>x</sub>) - ppb**  
**May 2016**

Maximum Value: 40.01 ppb on May 11 07:00		Maximum Daily Average: 8.97 ppb on May 14		Hours in Service: 744																																													
Minimum Value: 0.7 ppb on May 30 13:00		Minimum Daily Average: 1.76 ppb on May 21		Hours of Data: 705																																													
Maximum Diurnal Average: 12.99 ppb at hour 8		Minimum Diurnal Average: 2.43 ppb at hour 15		Hours of Missing Data: 39																																													
Monthly Average: 4.846 ppb		Percentiles: P <sub>1</sub> = 0.8 P <sub>10</sub> = 1.4 Q <sub>1</sub> = 1.8 Median = 2.7 O <sub>3</sub> = 5.7 P <sub>90</sub> = 11.2 P <sub>99</sub> = 24.8		Hours of Calibration: 39																																													
Percent Operational Time: 100.0																										Daily Average	Daily Maximum																						
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-May	7.3	8.4	6.4	Z	7.4	7.4	9.0	12.7	16.0	8.2	6.1	3.1	2.6	2.7	2.8	2.8	2.8	4.0	3.9	3.6	7.3	14.4	7.3	4.5	6.56	15.96																							
2-May	3.8	4.6	5.2	Z	6.2	10.2	14.8	20.4	38.3	16.2	9.6	6.3	6.0	3.6	3.1	4.9	2.2	2.3	2.7	5.4	13.2	8.8	8.8	7.3	8.87	38.34																							
3-May	4.5	12.0	6.2	Z	12.5	13.2	11.4	16.3	17.9	11.3	2.2	2.2	2.6	3.1	2.4	2.3	2.3	2.3	2.6	2.8	3.3	3.5	20.2	9.5	7.24	20.16																							
4-May	6.4	11.2	9.3	Z	10.5	11.4	15.4	18.8	13.8	20.7	7.0	2.8	2.5	2.4	3.5	2.5	2.3	2.6	2.7	2.4	3.1	2.9	2.1	2.3	6.91	20.73																							
5-May	2.7	2.6	2.2	Z	2.3	6.3	4.2	10.7	7.1	3.8	2.4	2.3	2.0	2.2	2.1	2.0	1.9	1.9	1.9	2.8	1.9	2.9	9.4	4.4	3.57	10.72																							
6-May	4.5	5.2	7.6	Z	11.2	13.8	21.2	16.8	11.9	11.2	3.2	2.5	2.6	2.6	2.5	2.3	2.3	2.5	2.6	7.9	10.6	5.0	4.5	9.3	7.12	21.15																							
7-May	7.9	9.9	9.3	Z	7.5	14.4	14.5	15.1	12.6	6.7	4.7	3.1	1.9	1.9	2.0	2.0	2.3	4.5	4.2	4.4	14.0	8.9	9.1	2.1	7.09	15.10																							
8-May	2.1	2.1	2.1	Z	1.9	1.6	1.9	2.9	3.5	3.1	2.3	1.5	1.5	1.4	1.5	1.5	1.7	1.7	1.8	1.8	1.9	2.0	2.1	2.3	2.01	3.52																							
9-May	3.1	2.6	3.0	Z	3.0	2.7	2.9	1.8	1.6	1.4	1.5	1.4	1.4	1.4	1.4	1.5	1.5	1.6	1.6	1.6	1.8	2.1	3.9	8.0	2.29	7.98																							
10-May	7.7	8.2	7.8	Z	9.0	10.6	12.7	16.3	15.1	4.6	1.9	1.6	1.4	1.4	1.7	1.6	2.2	1.4	2.9	2.9	2.7	4.6	4.6	6.7	5.62	16.25																							
11-May	5.3	4.9	6.5	Z	6.2	6.9	40.0	30.0	9.6	5.1	5.7	2.8	4.8	6.3	3.0	4.0	4.7	3.7	4.9	3.4	5.8	2.6	4.1	2.5	7.51	40.01																							
12-May	2.8	1.9	1.8	Z	1.9	1.8	2.5	3.8	4.5	4.0	1.4	3.2	3.1	3.5	2.7	3.7	4.1	2.8	4.2	5.7	7.9	7.1	3.5	3.0	3.52	7.86																							
13-May	8.6	5.5	4.1	Z	4.5	6.1	21.9	29.9	21.3	9.8	3.9	4.2	1.9	2.1	2.8	2.7	2.1	2.3	1.9	2.5	2.9	6.5	12.4	8.8	7.34	29.95																							
14-May	5.0	4.4	7.3	Z	17.7	7.9	21.6	38.9	18.1	7.4	7.5	6.9	4.4	3.2	3.5	4.5	8.2	7.0	7.9	5.7	2.5	3.2	5.9	7.6	8.97	38.91																							
15-May	3.5	4.0	3.8	Z	3.4	4.9	10.2	6.5	8.5	12.2	9.2	10.0	12.6	13.6	12.1	11.3	9.2	14.1	11.0	8.4	12.7	3.1	4.4	5.5	8.44	14.10																							
16-May	4.2	4.4	3.8	Z	4.6	5.8	20.7	24.8	26.6	17.0	10.8	7.2	2.3	1.6	1.7	1.5	1.6	1.6	1.9	1.8	2.3	3.3	1.7	1.6	6.65	26.64																							
17-May	1.5	1.7	2.0	Z	3.2	3.7	6.1	38.0	10.5	2.2	1.3	C	C	C	C	C	C	C	C	2.3	2.4	2.8	4.9	2.4	--	38.01																							
18-May	2.3	3.6	3.4	Z	5.9	8.7	13.2	17.6	24.3	10.8	2.2	2.1	1.7	1.7	1.8	1.6	1.6	1.8	3.1	1.8	1.8	2.4	2.5	2.6	5.15	24.27																							
19-May	3.5	3.3	2.5	Z	1.7	1.9	2.5	3.1	2.6	2.2	2.0	2.0	1.8	1.7	1.7	2.1	2.3	2.3	2.2	1.5	1.7	1.7	2.2	2.3	2.20	3.47																							
20-May	2.4	2.0	2.0	Z	2.7	3.0	3.0	3.0	3.2	2.4	1.8	1.4	1.4	1.4	1.3	1.2	1.3	1.2	1.2	1.2	1.2	1.4	2.0	1.6	1.87	3.15																							
21-May	1.4	1.3	1.2	Z	2.3	2.4	1.8	1.9	1.8	2.3	2.1	2.3	2.1	1.4	1.2	1.4	1.8	1.9	1.7	1.5	1.8	1.7	1.6	1.5	1.76	2.36																							
22-May	2.5	1.9	1.9	Z	2.3	2.0	2.0	2.2	1.7	1.4	1.4	1.8	1.7	1.4	1.4	1.3	1.6	2.2	1.8	1.6	2.1	1.8	2.0	2.0	1.83	2.46																							
23-May	2.9	2.1	2.4	Z	3.1	6.1	5.0	1.6	1.5	1.3	1.1	1.0	0.9	0.9	0.9	1.0	0.9	0.9	1.4	2.4	3.6	3.3	7.6	5.3	2.49	7.59																							
24-May	4.1	4.1	2.1	Z	2.8	6.1	18.8	12.8	12.2	5.7	3.5	4.0	3.1	2.4	2.4	2.2	1.9	2.9	2.8	2.3	3.8	2.6	2.4	2.1	4.67	18.76																							
25-May	1.8	2.0	4.9	Z	6.4	7.5	9.6	20.0	20.5	14.2	7.4	2.9	1.9	1.4	1.3	1.3	1.8	4.6	1.7	2.3	5.1	3.8	2.4	2.5	5.54	20.53																							
26-May	1.6	1.3	1.4	Z	4.8	7.6	7.7	2.2	1.4	1.3	1.1	1.3	2.2	1.7	2.0	2.1	3.2	1.3	1.2	1.0	0.9	0.9	1.6	3.0	2.29	7.71																							
27-May	2.2	2.3	2.7	Z	2.3	3.0	3.0	2.8	2.4	2.5	1.6	1.5	1.5	1.3	2.2	1.7	1.7	1.7	1.3	1.4	1.5	1.8	1.8	2.0	2.00	3.02																							
28-May	1.5	3.0	2.3	Z	4.8	14.8	9.9	3.1	3.6	1.1	0.9	0.9	0.8	1.5	4.1	2.0	1.0	1.3	1.2	7.4	2.4	1.1	1.8	3.3	3.20	14.83																							
29-May	3.6	2.9	2.2	Z	5.4	21.0	18.6	5.4	7.4	5.7	3.2	2.7	1.2	1.2	0.8	0.8	0.7	0.9	0.8	0.8	1.0	1.3	1.2	1.1	3.91	21.00																							
30-May	1.5	2.7	4.4	Z	7.1	10.2	4.7	3.8	1.7	1.0	0.8	0.8	0.7	0.9	0.8	0.8	2.8	1.4	1.3	1.2	1.6	3.6	1.8	3.4	2.56	10.19																							
31-May	7.3	2.9	2.7	Z	3.4	7.2	21.5	19.5	8.2	4.8	4.8	2.5	2.7	4.7	2.6	3.3	5.8	4.8	2.5	2.2	3.7	5.3	4.5	3.6	5.67	21.45																							
																								3.85	4.15	4.02	--	5.42	7.43	11.36	12.99	10.62	6.51	3.70	2.94	2.58	2.56	2.43	2.47	2.66	2.85	2.77	3.04	4.15	3.76	4.65	4.01	Diurnal Average	
																								8.61	11.98	9.34	--	17.66	21.00	40.01	38.91	38.34	20.73	10.80	10.04	12.59	13.58	12.07	11.31	9.24	14.10	11.04	8.37	14.00	14.37	20.16	9.51	Diurnal Maximum	
Z - zerospan      C - Calibration																																																	
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ppb      24-hr --- ppb																																																	



**WCAS - Edson**  
**Summary of Hourly Averages**

**PM2.5 (PM<sub>2.5</sub>) - µg/m<sup>3</sup>**  
**May 2016**

Maximum Value: 144.48 µg/m <sup>3</sup> on May 17 00:00      Maximum Daily Average: 18.09 µg/m <sup>3</sup> on May 16																						Hours in Service: 744 Hours of Data: 744				
Minimum Value: 0.0 µg/m <sup>3</sup> on May 1 17:00      Minimum Daily Average: 0.37 µg/m <sup>3</sup> on May 19 Maximum Diurnal Average: 8.47 µg/m <sup>3</sup> at hour 24      Minimum Diurnal Average: 3.08 µg/m <sup>3</sup> at hour 11 Monthly Average: 4.561 µg/m <sup>3</sup> Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.9 Median = 2.6 Q <sub>3</sub> = 5.4 P <sub>90</sub> = 10.1 P <sub>99</sub> = 31.9																						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-May	3.6	2.8	2.5	1.9	2.2	2.2	1.8	1.2	1.7	1.2	1.6	0.6	0.0	0.6	0.3	0.2	0.0	0.5	1.2	2.2	3.6	4.4	5.0	3.9	1.88	4.95
2-May	3.3	3.3	3.3	3.5	3.5	4.6	5.4	5.4	10.0	8.8	7.4	6.3	0.8	0.0	1.2	1.8	1.1	1.8	3.6	7.1	10.0	8.3	7.9	9.1	4.89	10.04
3-May	6.0	6.0	4.6	6.2	6.0	5.3	4.2	5.7	7.3	5.3	0.0	0.0	1.1	1.5	1.0	0.0	0.5	0.1	4.4	4.4	3.9	3.6	6.2	5.8	3.71	7.29
4-May	6.5	5.4	4.3	4.8	6.1	5.3	5.0	6.3	7.4	9.6	3.0	2.2	1.6	2.0	2.5	1.5	0.0	6.2	4.0	2.6	1.6	1.4	0.7	2.1	3.83	9.58
5-May	2.8	1.2	0.9	2.0	1.4	1.7	0.9	2.4	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	1.3	1.8	2.0	5.1	5.0	3.1	1.39	5.09
6-May	3.0	2.9	2.5	3.4	3.7	3.4	4.0	3.5	3.2	1.4	0.0	0.5	0.0	0.0	0.5	0.0	0.0	0.0	0.7	3.7	3.5	3.5	3.2	4.5	2.14	4.51
7-May	4.4	3.6	3.0	2.8	3.0	4.1	3.8	2.1	1.8	1.6	0.3	0.0	0.0	0.0	0.5	0.0	0.4	0.0	2.6	5.4	3.2	7.7	8.3	2.45	8.26	
8-May	5.6	2.1	4.4	0.8	1.3	0.0	0.7	0.7	0.0	1.7	0.0	0.0	0.1	0.2	0.9	1.9	4.0	1.3	0.5	1.2	2.8	11.8	0.9	0.7	1.81	11.80
9-May	0.0	0.4	0.4	1.1	0.8	1.4	1.9	1.4	1.4	0.9	0.0	0.0	0.4	0.7	0.6	1.4	1.3	1.7	1.7	2.1	2.6	3.0	2.5	2.3	1.25	3.04
10-May	2.0	2.7	2.2	4.1	2.8	2.5	3.0	3.5	2.4	0.0	0.2	0.6	0.0	0.3	1.5	0.1	2.6	0.8	3.5	3.5	2.6	3.4	2.6	3.9	2.12	4.14
11-May	4.8	3.7	3.3	4.7	1.9	1.9	9.0	11.3	2.8	1.9	1.6	2.1	2.9	6.7	4.9	4.5	4.8	7.0	10.3	11.4	13.1	10.5	9.4	8.7	5.96	13.07
12-May	7.0	5.1	4.7	11.3	18.5	18.2	12.8	10.6	9.5	7.6	5.8	9.7	20.0	21.3	27.1	26.2	21.6	14.7	23.0	30.8	30.8	42.6	33.5	5.5	17.40	42.60
13-May	8.6	9.2	4.4	6.7	6.3	6.2	10.4	18.2	16.3	11.8	6.9	5.4	3.4	3.0	2.6	4.2	3.8	3.9	4.7	5.2	9.4	25.0	18.6	8.4	8.44	25.00
14-May	24.7	6.8	6.3	12.1	8.1	5.5	7.3	8.9	12.4	10.3	10.1	13.1	7.6	5.9	6.4	7.7	13.8	11.2	10.9	9.8	10.1	9.3	6.4	7.4	9.66	24.73
15-May	7.7	8.8	8.5	8.5	9.6	8.6	9.2	8.3	11.3	18.3	14.5	19.3	16.3	17.6	13.7	14.0	13.0	20.7	15.4	17.7	21.8	9.7	8.7	8.6	12.91	21.76
16-May	9.1	19.7	60.4	13.5	23.0	12.1	11.6	13.1	15.4	14.7	10.3	8.3	1.5	4.5	5.4	5.8	7.9	7.1	8.2	6.1	5.8	13.2	12.8	144.5	18.09	144.48
17-May	23.2	11.5	32.7	4.0	1.4	2.9	4.0	8.4	47.8	29.7	0.0	36.5	17.4	1.4	1.1	2.0	2.1	0.8	0.4	3.0	1.8	3.7	3.7	0.5	9.99	47.80
18-May	1.2	0.9	1.3	1.8	2.4	3.4	4.2	5.4	8.9	8.8	3.6	3.9	3.7	5.0	9.9	0.8	0.0	2.2	1.8	0.1	0.7	1.3	1.5	0.0	3.03	9.92
19-May	0.7	1.6	1.5	0.8	0.0	1.2	1.0	0.8	0.1	0.0	0.0	0.1	0.1	0.4	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.37	1.56
20-May	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	3.3	0.6	0.3	0.1	0.6	0.2	0.0	0.9	0.0	1.5	0.6	0.7	0.0	0.0	0.0	0.40	3.28
21-May	0.0	0.2	0.0	0.0	0.0	1.0	0.0	1.1	0.5	0.7	0.8	1.0	0.0	0.0	0.3	1.5	0.5	0.7	0.0	0.1	0.0	0.5	0.2	1.2	0.43	1.46
22-May	0.4	0.5	0.6	0.3	0.0	0.0	0.0	0.4	1.9	1.2	0.9	0.3	0.0	0.0	0.3	0.4	0.4	0.4	0.5	0.2	0.1	0.8	0.5	1.1	0.46	1.87
23-May	0.9	1.6	1.9	2.8	2.8	3.1	3.2	3.5	3.2	3.3	2.4	2.1	2.0	3.0	2.1	2.2	2.4	2.1	2.9	2.8	3.5	4.5	6.5	7.9	3.02	7.87
24-May	4.3	3.9	2.6	2.4	2.0	2.9	4.1	5.3	4.3	3.9	3.8	7.2	5.8	5.1	4.6	4.4	3.9	5.1	6.3	5.7	6.2	5.3	5.5	5.8	4.59	7.22
25-May	5.7	5.0	5.7	6.4	6.5	7.4	7.6	8.7	10.1	11.3	9.1	5.3	6.7	3.2	2.9	3.4	2.7	9.3	7.4	2.6	4.7	3.1	3.6	3.1	5.91	11.31
26-May	2.6	2.1	2.1	2.3	3.1	4.5	5.4	3.5	2.0	2.8	2.1	2.4	2.1	3.7	5.2	3.9	3.9	2.2	1.2	0.8	0.4	3.2	4.5	6.2	3.01	6.21
27-May	4.7	4.9	5.5	4.2	5.3	6.7	6.7	6.4	6.3	5.7	4.7	4.7	3.9	4.9	4.8	2.8	1.6	1.4	1.0	1.1	1.4	2.0	2.0	1.8	3.92	6.69
28-May	2.4	2.5	2.3	2.1	3.2	4.4	5.3	2.5	1.9	0.0	0.0	0.8	0.9	1.7	1.4	2.8	1.3	2.2	0.4	4.8	1.3	1.4	1.3	1.9	2.04	5.28
29-May	2.1	1.8	1.0	0.9	2.8	3.7	4.2	3.1	4.1	3.9	2.4	0.9	1.0	1.3	0.3	3.4	0.7	0.6	0.9	0.7	0.4	0.8	1.1	1.0	1.80	4.25
30-May	1.2	1.1	1.9	1.2	1.9	2.6	1.6	1.7	0.3	0.0	0.0	0.2	0.9	1.7	0.0	1.1	2.6	0.8	1.6	0.9	1.9	2.0	1.0	2.1	1.26	2.63
31-May	2.3	1.6	1.2	0.9	1.3	1.7	2.9	3.7	3.6	3.1	3.6	1.1	2.3	6.0	2.7	4.1	10.2	2.4	2.6	2.9	4.0	5.2	4.5	3.3	3.21	10.24
4.87 3.97 5.68 3.79 4.22 4.14 4.55 5.10 6.43 5.57 3.08 4.35 3.30 3.30 3.36 3.31 3.47 3.49 3.92 4.47 5.03 6.18 5.39 8.47																								Diurnal Average		
24.73 19.70 60.45 13.53 22.99 18.18 12.78 18.17 47.80 29.68 14.53 36.49 20.04 21.31 27.07 26.16 21.61 20.74 22.98 30.79 30.76 42.60 33.52 144.48																								Diurnal Maximum		
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 80 ul/m <sup>3</sup> 24-hr 30 ul/m <sup>3</sup>																										

**WEYERHAEUSER - EDSON  
STATION #912**

**METEOROLOGICAL DATA**

**MAY 2016**



**WCAS - Edson**  
**Summary of Hourly Averages**

**External Temperature (ET) - C**  
**May 2016**

Maximum Value: 28.43 C on May 3 18:00      Maximum Daily Average: 18.19 C on May 3		Hours in Service: 744 Hours of Data: 744 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0																								
Minimum Value: -2.9 C on May 13 05:00 Maximum Diurnal Average: 15.57 C at hour 16 Monthly Average: 10.182 C		Minimum Daily Average: 2.01 C on May 20 Minimum Diurnal Average: 3.46 C at hour 6 Percentiles: P <sub>1</sub> = -1.8 P <sub>10</sub> = 2.0 Q <sub>1</sub> = 4.6 Median = 9.2 Q <sub>3</sub> = 14.5 P <sub>90</sub> = 20.1 P <sub>99</sub> = 27.2																								
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-May	5.5	4.9	3.8	3.3	3.1	2.4	2.9	6.0	9.1	13.2	16.4	18.4	19.9	20.6	21.4	22.4	23.1	23.6	22.5	21.9	19.4	16.5	13.4	10.8	13.52	23.59
2-May	9.1	8.1	7.0	6.2	5.2	4.9	6.8	10.1	14.4	17.4	21.0	23.5	25.8	26.6	27.0	27.8	27.6	27.7	26.6	25.0	22.0	20.4	18.7	15.9	17.70	27.79
3-May	12.6	11.4	9.6	8.6	7.2	7.1	8.5	12.0	15.0	20.2	23.6	24.7	25.5	26.1	26.6	27.5	28.4	28.4	27.3	23.3	19.5	15.9	14.7	12.6	18.19	28.43
4-May	10.2	9.6	8.4	8.3	7.6	8.1	9.9	13.3	14.9	15.8	19.6	20.4	20.6	20.8	21.8	21.6	20.9	18.8	16.2	15.1	13.9	12.6	12.4	11.9	14.70	21.79
5-May	10.7	8.9	7.3	6.1	5.3	5.0	5.2	5.5	6.6	7.7	9.9	11.5	12.7	13.7	14.8	15.4	16.4	16.4	16.3	15.3	13.3	10.7	6.6	4.7	10.24	16.40
6-May	2.5	2.0	2.2	1.2	1.0	0.9	2.4	4.8	8.1	11.7	15.1	16.4	18.0	19.2	20.6	22.0	22.1	22.5	22.2	20.2	18.3	16.4	13.6	9.4	12.21	22.54
7-May	8.8	8.3	7.8	7.3	6.7	6.8	7.4	9.2	12.7	16.8	20.3	23.8	25.2	26.3	27.2	26.5	26.0	25.3	24.6	22.6	19.5	18.3	17.5	17.2	17.16	27.17
8-May	15.6	14.7	12.9	8.9	6.8	5.3	5.4	5.6	6.9	8.4	11.0	12.5	12.8	12.7	12.8	12.4	9.8	8.7	8.1	7.1	6.3	4.6	3.3	3.2	8.99	15.56
9-May	2.6	2.1	1.8	1.8	2.6	2.3	3.0	4.1	4.6	5.1	6.4	7.8	8.0	8.0	8.0	8.8	8.7	8.9	8.9	8.1	6.6	4.9	2.8	2.3	5.35	8.87
10-May	1.2	0.5	-1.2	-2.2	-2.0	-1.6	0.5	3.2	7.2	9.5	10.3	11.4	11.9	12.3	13.2	13.4	14.0	13.8	14.2	12.1	10.7	7.3	6.2	4.1	7.09	14.23
11-May	2.6	0.9	-0.5	-1.1	-1.7	-1.8	1.7	5.0	7.2	10.4	12.9	13.6	13.4	13.6	13.2	13.0	12.8	12.2	11.6	11.0	10.0	9.3	8.5	7.8	7.74	13.63
12-May	6.8	5.8	4.7	3.8	2.8	2.1	2.3	3.7	5.6	7.2	8.1	8.9	9.6	10.4	10.7	11.4	11.1	11.1	10.6	10.0	7.2	5.6	4.3	3.5	6.97	11.37
13-May	2.0	-1.0	-1.9	-2.5	-2.9	-2.8	-1.0	3.5	6.3	9.1	11.0	11.8	12.8	13.3	14.0	14.4	14.6	14.9	14.3	13.1	10.6	8.6	8.3	6.6	7.38	14.94
14-May	3.5	1.2	0.3	-0.5	-1.8	-1.9	0.4	3.8	7.5	10.8	13.5	14.6	15.7	16.7	17.5	17.9	17.8	17.3	16.0	13.4	10.2	9.8	8.5	8.5	9.59	17.94
15-May	8.2	6.2	5.3	4.5	2.1	1.3	3.9	7.1	9.8	13.9	15.9	16.7	17.9	18.6	19.6	20.0	20.3	20.4	20.1	19.0	17.2	13.7	12.8	11.2	12.74	20.39
16-May	9.7	8.4	7.0	6.4	4.2	2.7	4.1	7.8	10.6	14.1	17.6	21.2	23.6	24.3	25.0	24.9	24.6	23.5	22.4	22.5	20.4	18.2	16.9	15.9	15.67	24.98
17-May	14.1	12.7	11.4	10.1	9.1	9.6	9.6	10.1	13.4	16.5	18.1	18.9	19.8	20.7	21.3	21.8	21.6	21.4	20.9	19.7	18.4	17.5	16.6	15.6	16.21	21.78
18-May	13.9	11.8	8.9	8.2	8.3	8.0	9.3	10.0	11.0	14.6	16.3	16.8	17.1	16.6	14.4	12.6	11.8	11.3	10.2	9.9	9.6	9.2	8.7	8.3	11.54	17.14
19-May	8.2	8.1	7.8	7.4	7.0	6.6	6.6	7.0	7.1	6.5	5.5	4.6	4.1	3.3	2.6	1.9	1.0	0.5	0.5	0.3	0.2	0.0	-0.2	-0.3	4.01	8.19
20-May	-0.4	-0.5	-0.6	-0.7	-0.8	-0.8	-0.6	-0.6	0.2	1.4	2.6	3.2	3.7	3.9	4.3	5.1	5.2	5.0	4.6	4.2	3.3	2.5	2.2	2.0	2.01	5.19
21-May	1.9	1.7	1.5	1.3	1.3	1.3	1.2	1.5	1.8	2.6	2.9	2.7	2.6	3.4	3.8	4.3	4.5	4.3	3.7	3.6	3.3	3.0	2.4	2.3	2.62	4.50
22-May	2.3	2.2	2.1	2.1	2.0	1.5	1.6	1.9	2.0	1.9	2.4	2.9	3.0	3.3	3.5	3.8	3.9	3.6	3.8	3.6	3.5	3.6	3.7	3.9	2.84	3.89
23-May	4.1	4.1	4.2	4.3	4.0	3.5	4.1	6.6	7.8	9.4	10.2	11.6	12.6	13.4	14.4	15.1	15.5	15.9	15.7	14.9	12.2	9.9	9.2	8.1	9.61	15.88
24-May	6.4	4.2	3.9	1.8	0.8	1.2	4.2	7.7	9.3	11.7	14.5	16.8	18.0	19.2	20.0	20.5	21.0	20.9	20.2	19.0	16.6	14.8	13.2	11.6	12.40	21.04
25-May	11.1	10.8	9.1	8.6	9.2	9.1	9.9	11.2	12.8	15.7	17.4	19.5	18.4	17.9	19.4	19.3	21.4	20.0	13.8	12.0	11.8	11.1	11.2	11.4	13.83	21.41
26-May	11.1	10.8	10.4	10.0	9.8	9.8	9.8	9.6	10.2	11.0	12.9	14.6	15.8	16.5	15.9	13.5	12.9	10.6	9.5	9.4	8.5	8.0	7.6	7.5	11.07	16.53
27-May	7.4	7.2	7.1	7.0	6.8	6.8	6.8	7.1	7.5	7.8	7.8	8.0	8.1	7.9	7.5	8.1	8.3	7.8	7.2	6.9	6.5	6.0	5.7	5.4	7.19	8.30
28-May	5.2	5.3	4.4	3.2	2.6	3.3	4.8	6.6	7.5	9.2	10.6	11.7	12.3	11.6	13.3	14.8	14.5	12.1	11.5	10.7	8.7	7.4	6.1	5.1	8.44	14.76
29-May	3.7	3.0	2.5	2.2	1.4	2.1	3.1	6.2	7.8	8.3	9.2	11.1	12.3	13.5	14.0	11.5	9.9	10.1	11.4	9.1	8.8	7.7	7.2	5.9	7.58	13.96
30-May	3.7	2.4	2.2	1.8	1.2	1.3	4.1	6.5	9.1	10.8	11.8	11.6	12.2	12.4	13.5	13.4	13.0	13.4	12.9	14.0	12.1	10.9	10.4	8.5	8.87	14.03
31-May	7.5	6.9	5.9	4.4	2.7	3.1	5.1	7.8	10.2	12.6	14.1	15.5	16.6	17.1	17.6	17.8	18.4	17.7	17.8	17.0	15.6	14.9	13.8	12.9	12.20	18.41
	6.83	5.90	5.02	4.25	3.59	3.46	4.61	6.57	8.53	10.69	12.55	13.76	14.52	14.96	15.44	15.57	15.52	15.11	14.41	13.45	11.85	10.31	9.28	8.20	Diurnal Average	
	15.56	14.66	12.86	10.14	9.76	9.80	9.91	13.25	15.03	20.15	23.64	24.73	25.77	26.59	27.17	27.79	28.36	28.43	27.33	25.01	21.96	20.43	18.68	17.15	Diurnal Maximum	







**WCAS - Edson**  
**Summary of Hourly Averages**

**Wind Speed (WS) - kph**  
**May 2016**

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
23 Spd	5.3	5.6	4.6	2.4	2.2	1.5	2.7	5.4	5.3	6.6	7.6	8.0	10.1	10.3	7.7	9.0	8.6	9.0	9.2	7.2	3.3	1.6	3.7	2.5	3.40	10.32	
Dir	WSW	W	WSW	SSW	SSW	SW	WSW	WNW	WNW	WNW	NW	NNW	NNW	N	N	N	NNE	NE	NE	NE	NE	NNE	NE	ENE	NNW	N	
24 Spd	3.1	4.2	2.7	1.7	1.7	3.4	0.2	1.9	3.1	4.2	6.8	5.8	6.1	5.1	5.5	9.2	11.0	12.8	15.3	14.6	10.4	11.1	12.6	13.5	5.54	15.27	
Dir	WSW	NNE	N	W	WNW	W	SW	E	ESE	NE	ENE	ENE	ENE	ENE	NE	ENE	ENE	ENE	ENE	NE	NE	NNE	N	N	NE	ENE	
25 Spd	11.7	8.2	1.6	2.9	6.8	4.0	4.7	4.7	3.5	5.1	7.6	10.3	10.3	7.7	3.1	6.1	5.2	7.8	9.8	11.9	0.7	4.6	3.2	5.9	1.90	11.90	
Dir	N	NNW	N	WSW	W	WSW	WSW	SW	SW	SSW	SW	WSW	N	N	NNW	NNE	SSE	ESE	N	ENE	NW	W	W	W	NW	ENE	
26 Spd	6.2	6.0	5.3	5.3	3.4	7.1	6.1	10.4	15.2	14.8	12.7	12.1	15.2	13.8	10.9	2.0	6.6	7.8	5.5	6.3	4.2	3.0	3.9	5.0	3.29	15.20	
Dir	W	WSW	W	WSW	SW	SW	WSW	NNW	NNE	NE	NE	NE	ENE	ENE	ENE	SW	NNE	NNW	NW	NNW	NW	W	WSW	WSW	N	ENE	
27 Spd	5.0	2.3	2.9	3.8	5.9	4.2	5.9	5.9	5.8	4.1	4.7	5.1	4.2	5.0	6.5	6.0	6.8	7.6	6.1	5.6	4.6	4.9	4.6	5.4	5.03	7.63	
Dir	W	W	WSW	W	W	WSW	W	W	W	WNW	WNW	W	WNW	W	WSW	W	W	W	W	W	WSW	W	WSW	WSW	W	W	
28 Spd	4.9	4.2	1.6	2.8	3.2	3.5	4.9	6.4	10.8	9.0	8.3	4.9	2.0	9.2	8.4	8.7	13.5	4.1	5.3	14.4	10.4	7.8	2.8	2.9	1.20	14.39	
Dir	WSW	WSW	WSW	WSW	SW	SW	WSW	WSW	SW	WSW	W	WNW	WNW	SE	E	SE	SSE	WSW	NNE	E	ENE	N	NNE	W	SSW	E	
29 Spd	0.3	0.6	0.7	0.9	1.6	1.3	4.0	1.2	1.9	5.1	5.4	2.5	3.0	2.5	3.9	12.0	9.3	2.8	4.4	4.7	2.5	2.2	4.7	3.1	2.06	12.01	
Dir	NNW	WNW	SW	SW	SW	SW	WSW	SSE	SE	SW	SW	WNW	NW	NE	N	N	N	WNW	NW	NW	WNW	WNW	NW	NW	NW	N	
30 Spd	2.3	3.1	2.5	3.2	3.8	2.8	4.4	5.0	5.5	5.1	7.9	8.4	13.3	12.6	8.4	4.7	10.6	3.5	6.1	3.9	3.5	3.7	6.0	2.2	3.75	13.34	
Dir	W	SW	WSW	WSW	WSW	SW	WSW	W	NW	WNW	WNW	NNW	N	NNE	N	NNW	SW	NNW	W	WNW	WNW	NW	NW	NW	NW	N	
31 Spd	1.4	3.4	1.4	2.2	1.9	3.6	4.6	2.4	2.6	3.6	4.7	5.2	4.5	5.9	5.4	6.8	10.3	8.7	5.8	5.6	5.7	5.9	4.6	4.1	2.93	10.30	
Dir	WNW	W	WSW	W	WSW	WSW	SW	S	ESE	ENE	ENE	E	ESE	E	ESE	ENE	E	ENE	ESE	ESE	E	E	E	E	E	E	
Spd	2.84	2.67	2.70	3.07	3.40	3.54	3.89	3.19	2.46	1.77	1.95	1.92	1.87	1.66	1.59	2.31	1.54	1.98	2.37	2.80	2.24	2.37	2.82	2.77	Diurnal Average		
Dir	WNW	WNW	WNW	W	W	WSW	WSW	WSW	WSW	W	WNW	NW	NNW	N	N	N	N	N	N	N	NNE	NNW	NNW	NW	Diurnal Maximum		
Spd	16.74	13.29	15.05	12.88	11.84	11.00	9.21	10.68	15.17	14.84	19.20	19.87	17.10	19.44	20.34	18.78	16.83	19.70	17.22	18.35	15.26	14.59	12.58	20.03	Diurnal Maximum		
Dir	62.47	51.11	45.02	48.35	30.25	24.20	43.80	53.75	25.42	35.68	123.96	113.80	275.79	277.62	54.82	286.85	290.39	278.82	64.98	61.23	69.44	64.44	7.21	351.58	Diurnal Maximum		
Maximum Speed Value: 20.3 kph on May 11 15:00																		Minimum Speed Value: 0.2 kph on May 11 03:00						Hours in Service:		744	
Maximum Daily Speed Average: 10.43 kph on May 8																		Minimum Daily Speed Average: 1.20 kph on May 29						Hours of Data:		744	
Maximum Diurnal Speed Average: 3.89 kph at hour 7																		Minimum Diurnal Speed Average: 1.54 kph at hour 17						Hours of Missing Data:		0	
Monthly Average Velocity: 1.798 kph 308.61 deg																		Speed Percentiles: P <sub>1</sub> = 0.3 P <sub>10</sub> = 2.1 Q <sub>1</sub> = 3.6 Median = 5.5 Q <sub>3</sub> = 8.5 P <sub>90</sub> = 12.0 P <sub>99</sub> = 18.4						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	21	26	14	1	0	0	62																				
NorthEast	20	44	35	1	0	0	100																				
East	20	21	18	0	0	0	59																				
SouthEast	5	9	1	2	0	0	17																				
South	12	4	1	0	0	0	17																				
SouthWest	61	51	3	0	0	0	115																				
West	122	138	10	2	0	0	272																				
NorthWest	59	41	2	0	0	0	102																				
Total	320	334	84	6	0	0	744																				



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

**Wind Speed (WS) - kph**  
**May 2016**

<b>Maximum Value: 9.45 kph on May 8 16:00</b>		<b>Maximum Daily Average: 6.10 kph on May 8</b>		<b>Hours in Service: 744</b>																							
<b>Minimum Value: 0.4 kph on May 11 04:00</b>		<b>Minimum Daily Average: 2.24 kph on May 21</b>		<b>Hours of Data: 744</b>																							
<b>Maximum Diurnal Average: 4.53 kph at hour 14</b>		<b>Minimum Diurnal Average: 1.83 kph at hour 6</b>		<b>Hours of Missing Data: 0</b>																							
<b>Monthly Average: 3.067 kph</b>		<b>Percentiles: P<sub>1</sub> = 0.7 P<sub>10</sub> = 1.5 Q<sub>1</sub> = 1.9 Median = 2.8 Q<sub>3</sub> = 4.0 P<sub>90</sub> = 5.1 P<sub>99</sub> = 7.7</b>		<b>Hours of Calibration: 0</b>																							
				<b>Percent Operational Time: 100.0</b>																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-May	1.4	2.0	1.7	1.9	2.0	1.7	1.7	2.5	2.2	2.6	2.8	4.0	4.3	4.0	3.2	3.0	3.1	3.4	2.8	1.4	0.7	1.4	1.6	1.5	2.36	4.29	
2-May	1.5	1.0	1.0	1.5	1.5	1.3	1.2	1.1	1.6	2.0	2.2	3.3	5.0	4.7	3.6	4.6	4.0	3.7	3.0	2.8	2.6	2.2	2.2	2.8	2.52	4.95	
3-May	1.4	1.0	1.0	1.4	1.0	2.3	2.0	2.6	2.8	2.8	4.8	3.5	4.6	4.7	4.6	4.5	5.1	4.8	7.0	5.2	3.0	1.8	2.4	1.3	3.15	7.03	
4-May	1.0	1.4	1.4	1.4	1.9	2.1	2.6	2.3	2.8	1.9	3.9	3.7	4.0	3.4	3.9	4.8	4.5	4.3	3.6	2.8	1.8	2.8	3.5	2.0	2.83	4.77	
5-May	2.3	3.0	3.5	3.0	2.3	1.9	2.1	1.6	3.3	4.0	4.2	5.2	4.7	4.8	5.4	4.2	4.4	4.3	3.3	1.7	1.5	2.0	2.1	1.7	3.19	5.44	
6-May	1.4	1.9	2.1	1.9	2.2	2.2	1.6	2.4	2.3	2.6	4.1	4.1	3.9	4.1	3.8	4.1	4.0	2.9	2.5	0.9	2.2	1.7	1.4	2.4	2.60	4.08	
7-May	1.8	1.8	1.6	2.1	2.1	1.9	2.1	2.6	2.4	3.3	2.3	2.8	3.5	4.1	3.5	3.1	3.2	2.5	3.3	2.1	2.0	2.5	9.0	5.8	2.96	8.97	
8-May	6.5	2.3	6.5	6.6	4.1	5.4	2.7	2.2	3.6	5.1	7.0	7.9	7.9	9.2	8.6	9.5	9.1	9.0	8.1	7.7	6.4	5.5	2.6	3.0	6.10	9.45	
9-May	2.2	1.6	1.7	1.9	1.7	1.5	2.3	3.8	4.7	4.9	7.2	6.3	5.7	6.2	6.1	5.5	5.2	4.8	3.4	3.4	1.5	1.3	1.7	1.9	3.60	7.16	
10-May	2.3	1.6	2.3	1.6	1.5	1.4	1.7	1.8	1.9	3.5	3.4	4.2	3.4	3.6	4.2	3.0	4.8	4.0	1.7	2.2	2.8	2.0	2.4	1.5	2.61	4.85	
11-May	2.1	0.8	0.7	0.4	1.8	1.4	0.6	3.8	2.0	3.2	4.6	5.3	5.2	4.1	5.0	5.5	6.2	4.8	4.7	4.6	2.8	2.9	2.3	3.1	3.25	6.23	
12-May	3.1	2.6	2.8	2.8	2.5	2.2	2.5	2.5	2.9	4.4	4.4	5.3	5.7	5.2	5.4	5.0	4.5	4.2	3.2	3.4	2.6	2.5	1.5	2.3	3.48	5.73	
13-May	1.6	1.1	1.2	1.6	1.1	0.4	0.7	1.4	1.8	3.4	4.4	5.1	5.8	5.5	6.3	5.7	5.1	5.7	4.1	3.0	1.6	3.2	2.5	2.2	3.10	6.28	
14-May	2.0	1.4	0.6	1.1	0.5	1.3	0.8	1.2	1.9	2.6	5.9	5.5	5.4	6.1	5.2	5.2	5.6	4.7	4.6	3.6	2.1	2.5	1.7	2.9	3.10	6.10	
15-May	2.1	3.0	3.9	2.3	2.0	0.8	1.9	1.4	2.5	5.6	5.5	5.7	5.5	5.7	5.3	5.5	5.1	4.5	3.7	4.0	2.9	3.6	1.5	1.6	3.58	5.72	
16-May	1.7	1.9	1.5	1.5	2.9	2.4	1.1	2.0	2.1	2.4	2.9	3.5	4.7	6.0	4.9	4.7	3.4	4.4	1.9	2.1	0.9	6.7	5.1	6.0	3.19	6.66	
17-May	6.4	4.8	2.1	1.6	1.6	2.1	1.1	1.1	3.1	4.4	5.4	5.3	5.4	5.4	4.2	5.1	4.4	3.6	2.7	1.7	3.8	2.0	2.0	1.9	3.37	6.36	
18-May	2.0	1.9	1.7	1.6	1.1	1.5	1.6	1.7	1.9	7.2	4.3	4.4	4.3	5.8	5.5	5.4	3.8	5.2	2.7	4.0	2.2	1.9	1.8	2.2	3.15	7.19	
19-May	2.0	2.0	2.4	3.2	3.6	2.9	3.0	2.3	3.3	3.4	3.5	3.7	3.8	4.3	4.3	3.6	2.9	3.2	3.4	3.7	3.6	4.2	3.8	3.8	3.33	4.35	
20-May	3.0	3.0	3.2	3.0	2.8	2.3	2.6	3.2	3.4	3.5	4.0	3.7	3.5	3.2	3.2	3.3	3.3	3.4	2.8	2.2	2.1	1.8	1.8	1.4	2.91	4.05	
21-May	1.9	1.5	1.8	1.4	1.8	1.7	2.0	2.2	2.3	3.3	2.2	2.8	2.7	3.3	2.6	2.2	2.5	2.3	2.8	2.3	1.8	2.8	1.7	2.0	2.24	3.29	
22-May	2.0	2.0	1.8	1.9	2.0	2.0	3.1	3.3	3.5	3.7	3.4	2.9	3.4	3.2	3.2	3.3	2.7	2.4	2.6	3.1	3.0	3.4	3.4	3.1	2.85	3.73	
23-May	2.3	2.6	2.3	1.6	1.5	1.2	2.4	3.6	3.9	4.3	5.2	4.5	5.1	4.8	5.3	4.4	5.3	3.8	2.6	2.3	3.1	2.4	2.2	1.9	3.28	5.31	
24-May	1.6	3.7	3.0	1.8	1.5	1.7	1.8	1.6	2.1	2.7	3.5	3.8	3.8	3.8	4.0	4.2	3.6	3.4	3.0	2.8	1.8	1.4	2.3	1.4	2.67	4.20	
25-May	1.6	2.3	2.6	2.6	1.7	1.2	1.5	1.7	1.6	3.0	2.4	3.9	5.6	3.3	3.5	3.3	3.3	4.9	4.4	4.3	2.1	2.1	2.6	2.3	2.83	5.60	
26-May	2.3	2.5	2.6	2.4	2.2	2.6	2.5	3.1	3.4	3.1	3.0	3.5	4.0	3.4	3.6	3.2	4.5	4.0	3.3	3.7	3.4	2.2	2.2	2.3	3.05	4.51	
27-May	2.3	1.6	1.2	1.7	2.3	1.8	2.4	2.9	3.2	2.8	3.0	2.7	2.6	3.0	3.3	3.1	3.8	3.9	3.7	2.7	2.6	2.4	2.2	2.7	2.66	3.92	
28-May	2.2	2.0	1.5	1.2	1.3	1.1	1.9	2.8	4.0	4.4	4.4	3.8	2.8	3.3	3.5	4.2	6.7	5.2	4.2	4.2	2.5	2.6	2.6	1.9	3.10	6.70	
29-May	1.3	1.4	1.2	1.3	1.3	1.6	1.5	1.8	1.8	2.1	2.1	3.4	3.3	2.6	3.0	6.2	4.8	2.7	3.5	4.1	2.1	1.8	1.9	1.9	2.45	6.16	
30-May	1.1	1.5	1.9	1.6	2.6	1.5	1.8	2.5	3.8	4.0	4.7	4.3	5.4	5.7	4.0	3.0	4.7	3.7	3.8	2.4	1.7	1.9	1.6	2.5	2.99	5.70	
31-May	1.5	1.4	1.6	1.8	1.7	1.2	1.2	1.3	1.8	2.9	3.8	3.7	4.1	4.2	4.1	2.8	4.0	3.0	2.1	3.2	4.3	2.1	1.5	2.2	2.57	4.31	
		2.19	2.02	2.09	1.98	1.94	1.83	1.87	2.27	2.70	3.52	4.02	4.24	4.49	4.53	4.40	4.36	4.44	4.09	3.51	3.15	2.50	2.57	2.48	2.43	Diurnal Average	
		6.52	4.76	6.45	6.56	4.13	5.40	3.10	3.76	4.72	7.19	7.16	7.86	7.91	9.17	8.59	9.45	9.06	9.05	8.12	7.70	6.37	6.66	8.97	6.02	Diurnal Maximum	
,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3 24-hr 100 ul/m^3																											



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

**Wind Direction (WD) - deg**  
**May 2016**

<b>Maximum Value: 107.43 deg on May 13 03:00</b>																						<b>Maximum Daily Average: 51.69 deg on May 29</b>																						<b>Hours in Service: 744</b>					
<b>Minimum Value: 7.9 deg on May 14 23:00</b>																						<b>Minimum Daily Average: 25.22 deg on May 12</b>																						<b>Hours of Data: 744</b>					
<b>Maximum Diurnal Average: 46.06 deg at hour 15</b>																						<b>Minimum Diurnal Average: 26.43 deg at hour 6</b>																						<b>Hours of Missing Data: 0</b>					
<b>Monthly Average: 34.796 deg</b>																						<b>Percentiles: P<sub>1</sub> = 9.1 P<sub>10</sub> = 14.6 Q<sub>1</sub> = 21.3 Median = 30.1 Q<sub>3</sub> = 42.7 P<sub>90</sub> = 63.3 P<sub>99</sub> = 95.0</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-May	12.3	12.5	12.2	13.6	13.6	14.8	12.7	12.3	14.5	16.4	19.2	32.3	35.7	36.9	53.6	101.5	91.5	55.0	24.4	22.1	71.1	87.1	69.6	95.5	38.77	101.48																							
2-May	50.3	63.6	46.7	29.7	16.5	10.5	11.8	25.2	43.1	39.4	89.6	65.4	66.7	86.1	64.4	46.3	38.1	20.0	15.3	28.6	28.0	76.6	81.9	52.9	45.69	89.61																							
3-May	13.4	19.9	10.4	15.9	16.6	14.6	16.2	16.8	13.5	18.8	40.6	52.7	81.7	61.8	85.7	73.5	43.0	36.3	48.3	22.0	19.7	38.3	73.8	13.2	35.28	85.73																							
4-May	10.1	13.2	11.6	11.9	14.4	14.6	20.3	17.7	20.3	24.4	28.0	25.5	28.0	33.5	32.9	30.5	32.5	34.4	32.6	17.9	17.3	42.7	34.1	73.7	25.92	73.67																							
5-May	31.1	31.3	32.9	41.1	33.5	25.4	18.3	13.2	18.3	28.1	33.4	41.6	47.0	42.9	51.1	46.3	50.1	41.2	42.6	23.1	15.3	53.9	14.9	11.9	32.86	53.93																							
6-May	11.5	12.7	12.3	13.5	14.1	14.6	27.9	16.6	16.2	34.5	64.0	65.3	67.3	95.7	68.3	51.5	45.6	57.8	70.0	52.7	41.9	32.0	42.1	59.2	41.13	95.68																							
7-May	18.8	13.4	13.0	13.9	12.9	14.8	16.4	14.4	17.4	36.4	58.4	91.3	45.7	83.4	103.3	40.8	25.6	18.6	16.3	17.5	16.5	27.4	55.8	25.4	33.23	103.34																							
8-May	40.3	55.4	28.6	39.1	44.5	34.9	61.7	39.9	33.2	21.3	22.7	26.3	25.9	26.7	28.7	27.9	31.7	22.8	24.1	22.5	26.6	33.6	28.3	25.1	32.15	61.65																							
9-May	25.6	17.5	15.3	23.6	30.8	14.6	42.7	38.5	41.6	37.1	33.7	38.6	36.7	35.0	33.5	38.4	34.1	38.4	40.5	24.6	18.7	22.8	25.3	25.0	30.52	42.66																							
10-May	24.4	15.2	16.4	20.3	14.3	14.3	20.5	12.0	22.4	35.8	47.0	59.4	69.7	87.9	80.5	76.4	57.8	58.9	56.5	80.1	19.2	54.4	35.6	56.6	43.15	87.95																							
11-May	94.8	88.0	72.4	71.2	58.7	38.8	76.7	46.0	15.3	19.3	24.8	28.4	20.7	21.8	17.3	21.4	21.9	19.3	15.5	12.8	10.6	9.1	11.1	8.7	34.35	94.81																							
12-May	9.4	10.3	9.5	10.1	9.1	10.1	11.6	13.2	20.1	24.2	22.3	48.4	48.4	46.1	37.9	45.6	31.9	36.3	35.2	20.0	30.3	35.7	16.9	22.6	25.22	48.44																							
13-May	60.4	86.2	107.4	40.2	20.5	74.2	22.6	46.8	43.5	41.6	54.7	29.8	42.5	45.0	47.1	41.2	32.4	35.4	17.1	13.5	8.2	24.9	35.0	99.5	44.57	107.43																							
14-May	69.9	95.3	52.4	13.4	66.2	24.8	13.6	26.1	63.2	34.9	34.1	30.6	41.7	45.0	28.3	29.9	37.5	22.0	24.1	16.0	8.0	33.4	7.9	23.4	35.07	95.26																							
15-May	25.4	34.4	29.9	20.2	84.2	36.9	49.5	15.2	13.5	29.1	21.8	20.5	28.4	21.8	27.9	25.2	24.0	24.5	20.2	15.2	15.0	22.7	8.9	10.3	26.03	84.22																							
16-May	12.6	19.1	18.0	14.9	59.5	40.2	12.4	20.0	24.3	24.8	30.5	73.8	51.8	60.3	46.4	43.4	72.8	59.4	28.4	31.3	21.8	35.3	35.3	39.9	36.51	73.75																							
17-May	34.9	42.7	65.7	17.3	15.5	31.9	15.4	10.4	41.5	39.6	38.8	39.5	38.0	53.7	38.7	37.4	31.5	31.2	31.6	47.4	52.3	77.6	28.7	29.9	37.13	77.59																							
18-May	57.7	50.1	28.5	17.3	12.6	14.5	16.0	26.1	53.1	85.3	22.1	23.5	24.6	28.8	41.2	23.8	20.4	56.2	56.4	45.9	46.4	24.0	23.6	26.2	34.34	85.30																							
19-May	28.6	16.7	29.7	33.0	34.6	23.7	25.7	24.4	40.9	53.2	52.0	31.9	33.0	32.4	29.4	26.4	25.2	25.2	23.4	29.5	22.9	22.9	20.5	23.0	29.50	53.15																							
20-May	22.7	23.9	20.6	22.7	22.7	21.8	21.0	23.1	24.9	28.1	38.8	39.5	36.7	33.1	44.6	39.4	41.7	36.0	22.8	23.5	22.1	33.4	41.9	46.4	30.48	46.42																							
21-May	38.0	39.5	34.2	36.1	27.5	27.3	29.9	45.0	32.1	47.2	31.0	23.9	37.4	33.8	37.0	47.5	31.8	29.7	30.1	40.8	29.9	33.3	26.0	42.3	34.65	47.55																							
22-May	23.6	21.2	19.9	19.3	22.2	22.2	24.4	24.4	32.4	32.6	36.0	36.5	25.6	30.5	30.1	35.5	30.1	25.3	26.4	27.9	42.1	34.9	25.0	25.0	28.05	42.09																							
23-May	20.5	21.9	22.8	33.7	36.6	32.9	33.8	41.0	42.8	41.7	42.8	38.6	34.5	34.4	47.8	35.9	45.6	27.4	22.6	17.1	66.1	69.6	32.4	59.4	37.57	69.61																							
24-May	26.2	63.3	77.1	61.9	41.1	40.6	90.1	38.8	36.9	40.5	33.2	42.4	48.6	55.0	45.4	26.0	18.6	15.3	11.3	9.7	11.5	8.3	18.1	20.2	36.67	90.13																							
25-May	19.1	23.3	93.1	76.7	13.2	15.1	14.0	19.2	24.1	27.5	19.6	25.9	53.3	29.3	82.4	27.7	36.6	60.4	40.7	17.2	75.3	23.5	45.6	21.7	36.84	93.09																							
26-May	20.4	26.7	20.9	30.9	42.0	17.3	22.3	28.4	24.1	10.6	13.8	22.1	21.5	17.4	13.7	80.5	43.3	28.9	36.9	37.6	42.7	38.4	23.8	21.3	28.56	80.55																							
27-May	22.5	22.8	18.4	20.3	19.2	22.0	21.5	23.9	24.8	35.8	33.4	30.7	33.4	31.5	24.4	27.2	29.7	27.5	33.2	25.8	30.5	23.6	25.0	24.0	26.29	35.76																							
28-May	24.1	20.0	26.6	16.0	20.1	12.3	19.2	23.3	18.2	28.1	38.4	53.9	78.5	26.5	35.7	37.7	21.0	60.4	46.4	13.4	23.7	19.7	85.2	28.5	32.38	85.24																							
29-May	68.8	69.6	68.9	87.3	59.6	84.4	22.5	83.4	59.2	29.0	27.8	65.5	62.2	65.1	55.8	32.2	38.4	51.7	46.3	36.9	39.2	41.4	20.0	25.6	51.69	87.28																							
30-May	15.1	26.7	32.2	15.1	26.2	45.9	21.5	25.4	43.4	43.8	39.8	32.0	27.9	41.9	36.6	44.1	21.8	64.5	33.1	38.4	19.8	25.5	16.3	79.8	34.03	79.83																							
31-May	42.5	17.9	70.6	49.6	29.9	9.3	17.0	48.7	49.3	50.4	62.2	54.1	72.1	41.0	58.2	44.0	26.9	20.1	31.0	33.5	42.4	23.7	28.0	38.9	40.05	72.10																							
																								31.44	34.65	36.07	29.99	30.07	26.43	26.74	27.73	31.22	34.17	37.25	41.61	44.04	44.65	46.06	42.10	36.56	36.77	32.37	27.88	30.17	36.45	33.44	37.25	Diurnal Average	
																								94.81	95.26	107.43	87.28	84.22	84.39	90.13	83.41	63.17	85.30	89.61	91.33	81.66	95.68	103.34	101.48	91.48	64.53	69.97	80.07	75.27	87.13	85.24	99.49	Diurnal Maximum	
,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m <sup>3</sup> 24-hr 100 ul/m <sup>3</sup>																																																	

**BRETON  
STATION #913**

**CONTINUOUS AIR MONITORING DATA**

**MAY 2016**

**Summary Report**

*Continuous air quality/meteorological monitoring measurements*

**West Central Airshed Society**

WCAS / Breton Station 913													May 2016		
Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Min	Max	Percentile					Exceedences		24 Hour Average Max (ppm)	
							P10	Q1	Median	Q3	P90	1-hour	24-hour		
SO <sub>2</sub> (ppb)	35	709	100.0	0.2	0.0	4.8	0.0	0.0	0.1	0.2	0.5	0	0	0.001	
O <sub>3</sub> (ppb)	35	709	100.0	31.5	0.0	61.9	12.2	19.4	31.8	43.2	50.6	0	-	0.048	
NO (ppb)	36	708	100.0	0.2	0.0	4.5	0.0	0.0	0.1	0.2	0.5	-	-	-	
NO <sub>2</sub> (ppb)	36	708	100.0	1.8	0.5	8.5	0.9	1.1	1.5	2.2	3.1	0	0	0.003	
NO <sub>x</sub> (ppb)	36	708	100.0	2.0	0.6	9.1	1.0	1.2	1.6	2.4	3.6	-	-	-	
Wind Speed (kph)	0	744	100.0	9.0	0.2	32.8	2.2	3.5	8.1	13.1	16.5	-	-	-	
Temperature (°C)	0	744	100.0	10.6	-4.9	28.5	1.6	5.1	9.9	15.1	21.0	-	-	-	
Relative Humidity (%)	0	744	100.0	56.1	9.7	94.5	18.6	31.0	58.2	81.2	91.1	-	-	-	
Std Dev Wind Direction (deg)	0	744	100.0	29.2	6.7	109.6	12.9	15.3	21.3	35.5	59.5	-	-	-	
Std Dev Wind Speed (kph)	0	744	100.0	3.2	0.5	11.4	1.1	1.7	3.1	4.4	5.4	-	-	-	



**WCAS - Breton**  
**Summary of Hourly Averages**

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

Maximum Value: 4.79 ppb on May 30 21:00		Maximum Daily Average: 1.12 ppb on May 30		Hours in Service: 744																							
Minimum Value: 0.0 ppb on May 1 01:00		Minimum Daily Average: 0.00 ppb on May 21		Hours of Data: 709																							
Maximum Diurnal Average: 0.44 ppb at hour 20		Minimum Diurnal Average: 0.06 ppb at hour 6		Hours of Missing Data: 35																							
Monthly Average: 0.229 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.1 Q <sub>3</sub> = 0.2 P <sub>90</sub> = 0.5 P <sub>99</sub> = 3.0		Hours of Calibration: 35																							
				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-May	0.0	0.2	Z	0.3	0.3	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.13	0.32	
2-May	0.1	0.1	Z	0.2	0.2	0.2	0.1	0.3	0.2	0.2	0.2	0.4	0.4	0.4	0.3	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.0	0.1	0.18	0.41	
3-May	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.06	0.20	
4-May	0.1	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.4	0.2	2.8	3.7	0.33	3.70	
5-May	2.8	2.5	Z	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.24	2.76	
6-May	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.03	0.13	
7-May	0.2	0.6	Z	0.6	0.5	0.2	0.2	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.2	0.18	0.63	
8-May	0.1	0.1	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	0.12	
9-May	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	0.2	0.2	1.3	1.0	0.9	0.4	0.18	1.27	
10-May	0.1	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.9	0.8	0.7	0.3	0.3	0.8	0.5	1.5	1.8	1.2	0.4	0.1	0.41	1.78	
11-May	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.1	0.4	0.6	0.9	0.2	0.0	0.0	0.1	0.13	0.87		
12-May	0.1	0.1	Z	0.1	0.1	0.2	0.9	0.6	0.5	C	C	C	C	1.3	1.2	0.5	0.7	0.7	0.9	1.2	1.1	0.2	0.1	0.1	0.56	1.28	
13-May	0.1	0.1	Z	0.1	0.1	0.0	0.1	0.2	0.2	0.5	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.0	0.1	0.1	0.1	0.16	0.49	
14-May	0.0	0.0	Z	0.1	0.2	0.2	0.2	0.3	0.4	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.16	0.38	
15-May	0.2	0.1	Z	0.1	0.1	0.1	0.1	0.3	0.8	0.5	0.2	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.2	0.18	0.80	
16-May	0.2	0.2	Z	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.21	0.38	
17-May	0.2	0.2	Z	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.10	0.23	
18-May	0.0	0.0	Z	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	0.0	0.5	0.1	0.6	0.1	0.0	0.0	0.5	0.09	0.61	
19-May	2.2	1.7	Z	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	0.0	0.0	0.0	0.0	0.18	2.25	
20-May	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	0.03	
21-May	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	
22-May	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	
23-May	0.0	0.0	Z	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	4.5	1.0	2.6	3.5	1.3	2.7	0.8	0.1	0.85	4.51	
24-May	0.0	0.0	Z	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.07	
25-May	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.4	0.2	0.3	0.3	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.09	0.36	
26-May	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.7	1.2	1.1	0.6	0.2	0.1	0.0	0.0	0.0	0.1	0.3	0.2	0.2	0.24	1.20	
27-May	0.1	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.2	1.9	0.5	0.3	0.3	0.1	0.1	0.18	1.90	
28-May	0.1	0.0	Z	0.1	0.2	0.1	0.1	0.1	0.4	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.2	0.0	0.14	0.38	
29-May	0.1	0.1	Z	0.1	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.3	0.5	0.3	0.4	0.2	0.1	0.0	0.0	0.1	0.1	0.1	0.15	0.49	
30-May	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.5	0.7	1.1	2.2	2.0	3.8	3.1	4.8	3.2	2.3	1.0	1.12	4.79	
31-May	0.4	0.1	Z	0.0	0.0	0.0	0.0	0.4	2.7	2.7	2.5	1.7	1.5	1.4	0.7	0.6	0.3	0.8	1.1	0.9	0.7	0.6	0.3	0.2	0.86	2.73	
		0.23	0.21	--	0.07	0.09	0.06	0.08	0.11	0.24	0.21	0.19	0.17	0.20	0.25	0.20	0.24	0.31	0.25	0.42	0.44	0.43	0.35	0.29	0.24	Diurnal Average	
		2.76	2.53	--	0.60	0.53	0.25	0.90	0.64	2.73	2.69	2.55	1.65	1.47	1.44	1.17	2.90	4.51	1.98	3.84	3.49	4.79	3.22	2.83	3.70	Diurnal Maximum	
Z - zerospan		C - Calibration																									
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb																											



**WCAS - Breton**  
**Summary of Hourly Averages**

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

Maximum Value: 61.90 ppb on May 15 17:00		Maximum Daily Average: 47.81 ppb on May 16		Hours in Service: 744																									
Minimum Value: 0.0 ppb on May 31 01:00		Minimum Daily Average: 11.45 ppb on May 22		Hours of Data: 709																									
Maximum Diurnal Average: 40.87 ppb at hour 16		Minimum Diurnal Average: 19.86 ppb at hour 7		Hours of Missing Data: 35																									
Monthly Average: 31.545 ppb		Percentiles: P <sub>1</sub> = 2.9 P <sub>10</sub> = 12.2 Q <sub>1</sub> = 19.4 Median = 31.8 Q <sub>3</sub> = 43.2 P <sub>90</sub> = 50.6 P <sub>99</sub> = 59.1		Hours of Calibration: 35																									
				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-May	31.7	34.7	Z	30.0	28.4	22.3	19.2	22.7	27.4	38.2	41.4	41.2	38.8	39.3	37.9	35.6	33.6	29.7	28.1	25.4	20.2	18.4	14.1	14.1	29.25	41.43			
2-May	14.4	12.5	Z	13.1	13.5	12.4	14.1	16.4	24.0	33.5	35.8	39.4	42.0	44.5	45.7	47.5	47.9	49.2	49.7	49.5	46.2	41.5	35.9	34.4	33.18	49.69			
3-May	34.2	33.9	Z	32.6	27.7	26.9	23.5	24.8	35.6	44.1	48.7	51.5	53.4	54.1	54.8	56.1	55.4	56.1	56.8	51.7	44.1	37.9	31.6	29.7	41.95	56.83			
4-May	29.2	29.5	Z	21.5	19.1	20.4	17.1	19.8	31.8	42.1	49.6	51.9	52.7	53.4	52.7	52.5	51.6	51.2	49.7	46.5	42.5	41.2	33.9	28.9	38.63	53.42			
5-May	27.8	25.4	Z	35.0	40.7	44.1	44.6	48.2	48.4	46.6	43.6	43.9	42.7	43.2	44.6	46.1	48.3	49.7	50.4	47.2	38.0	37.6	32.1	25.2	41.44	50.35			
6-May	21.9	18.2	Z	17.2	18.6	18.0	18.6	21.4	27.9	37.9	43.2	46.3	48.9	50.0	51.4	53.1	54.2	53.0	50.7	45.5	43.4	38.6	36.1	36.0	36.95	54.19			
7-May	44.0	44.6	Z	40.1	36.8	29.9	25.7	23.5	31.6	38.0	45.4	50.7	53.0	55.2	54.7	53.2	51.6	50.3	50.1	54.0	47.2	44.7	45.5	45.2	44.14	55.24			
8-May	44.9	40.0	Z	38.1	38.9	37.9	41.4	44.7	47.6	47.2	45.0	43.1	42.3	42.7	44.2	49.9	45.0	38.6	36.3	35.3	35.5	34.2	31.8	32.5	40.74	49.91			
9-May	32.9	29.8	Z	26.2	24.0	21.9	20.1	22.2	28.1	29.9	32.8	33.8	35.3	37.9	38.3	37.5	41.9	41.9	36.8	36.3	30.8	27.9	24.5	21.2	30.96	41.94			
10-May	17.6	13.9	Z	14.0	13.9	13.1	13.1	19.0	27.3	34.6	38.1	41.1	41.3	41.6	41.5	42.2	43.3	42.9	43.0	39.8	32.0	29.5	26.9	22.5	30.10	43.30			
11-May	21.2	19.7	Z	17.1	16.7	18.0	17.7	20.6	30.7	38.5	43.1	44.0	45.6	45.7	46.1	45.4	44.9	46.2	46.6	40.8	38.5	36.7	36.4	36.0	34.62	46.60			
12-May	34.8	34.5	Z	30.8	31.5	29.5	29.3	32.5	34.8	C	C	C	C	47.9	48.1	46.8	46.2	45.7	44.0	41.1	38.6	33.8	30.2	26.2	37.17	48.08			
13-May	23.2	22.0	Z	20.1	19.4	17.7	18.4	25.3	33.8	41.2	42.7	43.4	44.6	46.3	47.5	48.7	49.7	50.7	51.6	51.7	50.7	47.3	43.5	35.2	38.03	51.73			
14-May	32.2	29.6	Z	24.5	23.2	23.6	23.7	26.6	34.3	50.8	51.8	52.0	53.3	53.8	54.1	55.9	57.8	58.9	59.3	58.5	51.4	47.8	42.2	37.2	43.58	59.30			
15-May	35.1	31.3	Z	27.7	22.8	17.7	20.7	30.0	43.1	55.5	57.3	58.1	58.9	59.8	60.8	61.7	61.9	61.9	60.6	59.4	55.7	52.4	49.2	44.8	47.23	61.90			
16-May	43.0	42.1	Z	41.0	41.3	41.3	42.7	42.3	44.2	46.0	48.1	50.6	52.6	53.7	54.5	54.9	55.1	55.8	55.9	54.1	50.6	47.1	43.0	39.6	47.81	55.91			
17-May	36.2	40.2	Z	46.9	47.0	43.9	41.3	42.4	44.7	41.0	40.1	40.5	41.1	43.5	45.9	47.3	48.3	47.9	47.0	43.5	35.9	36.2	29.1	25.5	41.53	48.30			
18-May	22.8	21.9	Z	22.1	19.0	14.7	15.1	16.1	20.0	25.6	39.3	44.2	38.4	36.4	34.4	37.2	39.1	41.6	36.2	27.6	23.8	24.4	25.3	23.3	28.19	44.16			
19-May	20.2	26.5	Z	23.3	18.5	17.1	15.6	15.3	16.4	17.8	19.5	18.1	19.0	14.8	9.3	7.5	7.4	7.6	7.4	7.5	7.8	7.9	8.5	9.0	13.99	26.45			
20-May	9.4	9.7	Z	9.9	10.1	10.4	10.8	11.2	11.5	12.5	13.2	14.1	15.0	16.4	17.2	16.9	16.2	15.9	15.4	14.6	13.3	14.4	13.1	11.6	13.16	17.19			
21-May	11.6	11.5	Z	12.0	12.3	13.7	13.6	13.0	12.9	13.1	13.4	13.9	14.3	15.0	14.8	14.5	14.2	14.0	13.4	12.7	12.3	11.3	11.4	10.8	13.04	14.96			
22-May	9.8	9.2	Z	9.4	10.7	10.9	10.9	11.8	12.5	12.2	12.1	11.7	11.2	11.3	11.4	11.8	12.3	12.0	11.3	11.3	11.5	11.7	12.6	13.8	11.45	13.80			
23-May	15.3	16.8	Z	27.2	30.3	22.0	18.3	19.1	20.3	20.4	21.4	23.7	24.5	26.9	26.9	30.7	30.4	34.7	34.2	28.4	15.1	19.9	23.6	27.0	24.21	34.71			
24-May	23.6	14.0	Z	9.7	5.7	6.6	15.9	27.6	31.5	35.8	36.1	33.4	38.4	41.0	43.5	46.1	47.9	50.3	50.1	50.4	47.7	42.8	35.1	29.7	33.17	50.42			
25-May	24.6	23.3	Z	21.6	16.3	14.3	10.9	17.9	28.3	34.3	46.3	52.9	54.6	54.9	53.6	52.4	38.5	36.2	31.1	31.6	29.2	24.7	18.2	17.9	31.89	54.95			
26-May	17.6	12.1	Z	9.0	9.1	7.2	8.7	11.8	19.1	24.1	32.6	38.0	43.8	39.9	43.5	46.8	44.9	46.6	43.2	41.6	41.9	41.4	38.3	37.6	30.39	46.85			
27-May	36.0	35.0	Z	33.2	31.2	26.9	26.0	27.5	29.1	28.5	29.2	28.4	27.5	27.3	28.6	31.0	34.8	35.0	31.3	31.0	29.5	29.2	28.8	24.3	29.98	35.99			
28-May	21.8	19.7	Z	16.8	15.9	14.2	13.7	16.3	26.2	33.6	35.6	34.1	34.4	34.6	34.8	36.9	36.8	37.2	36.7	36.6	32.5	27.7	25.6	21.5	27.97	37.16			
29-May	17.2	14.4	Z	6.9	3.6	3.4	3.0	13.1	23.5	25.3	29.4	30.0	36.8	40.1	41.9	42.0	42.1	41.6	41.1	30.6	21.0	19.7	19.6	19.4	24.59	42.05			
30-May	21.4	23.1	Z	22.4	21.2	19.7	22.0	22.8	21.5	22.2	26.8	29.3	29.4	25.2	25.7	25.0	21.9	21.1	17.8	17.5	11.2	5.5	4.0	2.6	19.96	29.38			
31-May	0.0	1.2	Z	0.0	0.0	0.0	0.0	5.5	10.1	15.1	17.9	22.1	25.3	27.1	31.4	33.7	35.2	35.8	36.1	35.5	34.0	31.2	27.9	25.1	19.56	36.10			
		25.02	23.88	--	22.56	21.53	19.99	19.86	22.95	28.33	32.85	35.98	37.51	38.63	39.47	39.99	40.87	40.59	40.61	39.41	37.32	33.29	31.12	28.32	26.05	Diurnal Average			
		44.88	44.65	--	46.92	46.97	44.15	44.59	48.15	48.40	55.48	57.27	58.08	58.86	59.78	60.79	61.66	61.90	61.87	60.63	59.37	55.74	52.42	49.17	45.23	Diurnal Maximum			
Z - zerospan		C - Calibration																											
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr 82.5 ppb		24-hr -- ppb																									



**WCAS - Breton**  
**Summary of Hourly Averages**

**Nitrogen Oxide (NO) - ppb**  
**May 2016**

Maximum Value: 4.45 ppb on May 31 09:00		Maximum Daily Average: 0.99 ppb on May 31		Hours in Service: 744																							
Minimum Value: 0.0 ppb on May 3 21:00		Minimum Daily Average: 0.04 ppb on May 8		Hours of Data: 708																							
Maximum Diurnal Average: 0.72 ppb at hour 9		Minimum Diurnal Average: 0.01 ppb at hour 2		Hours of Missing Data: 36																							
Monthly Average: 0.196 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.1 Q <sub>3</sub> = 0.2 P <sub>90</sub> = 0.5 P <sub>99</sub> = 1.8		Hours of Calibration: 36																							
Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.1 Q <sub>3</sub> = 0.2 P <sub>90</sub> = 0.5 P <sub>99</sub> = 1.8		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-May	0.0	0.0	Z	0.0	0.1	0.1	0.3	0.7	0.8	0.5	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.18	0.80	
2-May	0.1	0.1	Z	0.0	0.0	0.0	0.3	0.6	0.8	0.6	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.16	0.76	
3-May	0.0	0.0	Z	0.0	0.0	0.1	0.4	0.9	0.7	0.3	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.13	0.87	
4-May	0.0	0.0	Z	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.09	0.65	
5-May	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.2	0.0	0.0	0.0	0.05	0.15	
6-May	0.0	0.0	Z	0.0	0.0	0.1	0.5	1.8	1.5	0.5	0.3	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.23	1.80	
7-May	0.0	0.0	Z	0.0	0.0	0.0	0.2	0.5	0.8	0.6	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.12	0.81	
8-May	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.04	0.10	
9-May	0.0	0.0	Z	0.0	0.0	0.1	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.09	0.28	
10-May	0.0	0.0	Z	0.0	0.0	0.5	0.6	1.4	0.8	0.3	0.1	0.1	0.6	0.4	0.4	0.2	0.2	0.3	0.2	0.3	0.1	0.0	0.0	0.0	0.29	1.36	
11-May	0.0	0.0	Z	0.0	0.0	0.1	0.5	1.0	1.6	0.9	0.2	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.22	1.64	
12-May	0.0	0.0	Z	0.0	0.0	0.1	0.4	0.8	0.8	C	C	C	C	C	0.4	0.2	0.3	0.4	0.3	0.3	0.1	0.0	0.0	0.0	0.22	0.84	
13-May	0.0	0.0	Z	0.0	0.0	0.1	0.4	0.9	0.8	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.12	0.87	
14-May	0.0	0.0	Z	0.0	0.0	0.1	0.3	0.8	0.8	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.15	0.78	
15-May	0.0	0.0	Z	0.0	0.0	0.8	0.4	0.7	0.6	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.16	0.82	
16-May	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.3	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.06	0.29	
17-May	0.0	0.0	Z	0.0	0.0	0.0	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.05	0.34	
18-May	0.0	0.0	Z	0.0	0.0	0.0	0.2	0.3	0.7	0.5	0.3	0.1	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.12	0.66	
19-May	0.0	0.0	Z	0.1	0.1	0.1	0.2	0.2	0.4	0.5	0.4	0.4	0.5	0.6	0.6	0.5	0.4	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.25	0.63	
20-May	0.0	0.0	Z	0.0	0.0	0.1	0.1	0.2	0.7	0.6	0.6	0.4	0.5	0.3	0.2	0.2	0.2	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.21	0.68	
21-May	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.1	0.3	0.3	0.4	0.4	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.14	0.39	
22-May	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.1	0.2	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.11	0.34	
23-May	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	1.5	1.7	0.3	0.3	0.3	0.3	0.3	0.0	0.0	0.26	1.67	
24-May	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.4	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.08	0.35	
25-May	0.0	0.0	Z	0.0	0.1	0.8	1.1	1.3	1.4	1.0	0.3	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.29	1.36	
26-May	0.0	0.0	Z	0.0	0.1	1.1	0.2	0.4	0.5	0.5	0.3	0.3	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.18	1.06	
27-May	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.0	0.1	0.1	0.1	0.11	0.25	
28-May	0.1	0.0	Z	0.0	0.0	0.1	0.3	0.5	0.6	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.13	0.56	
29-May	0.0	0.0	Z	0.0	0.1	0.2	0.6	0.6	1.4	1.8	1.1	0.7	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0.36	1.82	
30-May	0.1	0.1	Z	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.2	0.2	0.2	0.6	0.8	0.9	1.4	1.2	1.9	1.1	1.2	0.4	0.1	0.1	0.51	1.95	
31-May	2.1	0.1	Z	0.1	0.3	0.9	1.9	2.6	4.5	3.5	2.7	1.3	1.1	0.8	0.3	0.2	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.99	4.45	
		0.08	0.01	--	0.02	0.03	0.18	0.32	0.59	0.72	0.50	0.34	0.23	0.20	0.18	0.16	0.18	0.19	0.14	0.15	0.12	0.09	0.04	0.02	0.02	Diurnal Average	
		2.07	0.09	--	0.09	0.33	1.06	1.88	2.64	4.45	3.49	2.70	1.35	1.08	0.81	0.76	1.53	1.67	1.19	1.95	1.11	1.18	0.42	0.15	0.14	Diurnal Maximum	
Z - zerospan		C - Calibration																									
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr --- ppb																						24-hr --- ppb			





**WCAS - Breton**  
**Summary of Hourly Averages**

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

Maximum Value: 8.50 ppb on May 30 23:00		Maximum Daily Average: 2.81 ppb on May 30		Hours in Service: 744																									
Minimum Value: 0.5 ppb on May 8 17:00		Minimum Daily Average: 0.93 ppb on May 8		Hours of Data: 708																									
Maximum Diurnal Average: 2.34 ppb at hour 9		Minimum Diurnal Average: 1.20 ppb at hour 15		Hours of Missing Data: 36																									
Monthly Average: 1.811 ppb		Percentiles: P <sub>1</sub> = 0.7 P <sub>10</sub> = 0.9 Q <sub>1</sub> = 1.1 Median = 1.5 Q <sub>3</sub> = 2.2 P <sub>90</sub> = 3.1 P <sub>99</sub> = 6.5		Hours of Calibration: 36																									
Percentiles: P <sub>1</sub> = 0.7 P <sub>10</sub> = 0.9 Q <sub>1</sub> = 1.1 Median = 1.5 Q <sub>3</sub> = 2.2 P <sub>90</sub> = 3.1 P <sub>99</sub> = 6.5		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-May	3.0	2.9	Z	3.0	2.8	2.7	2.6	3.1	2.7	2.0	1.6	1.1	1.0	1.1	1.1	0.9	0.9	0.9	0.8	1.1	1.3	1.9	3.1	2.2	1.90	3.12			
2-May	2.0	1.9	Z	2.5	2.6	2.5	2.3	2.2	2.7	2.3	1.7	1.4	1.1	1.1	1.0	1.1	1.0	1.0	1.0	1.3	1.4	1.6	2.0	2.4	1.74	2.70			
3-May	3.5	4.4	Z	3.8	3.7	4.0	3.6	3.7	2.8	1.8	1.3	1.2	1.0	1.0	0.9	1.0	1.0	1.1	1.1	1.4	1.7	2.0	2.9	2.3	2.22	4.40			
4-May	1.9	1.8	Z	1.8	1.9	2.1	2.0	2.3	3.2	2.2	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.3	1.9	2.1	2.9	2.3	5.8	6.5	2.14	6.46			
5-May	5.3	5.9	Z	1.8	1.1	1.1	1.2	1.2	1.4	1.3	1.4	1.2	1.1	1.0	1.0	1.1	1.1	1.1	1.1	1.6	5.6	1.8	1.7	1.7	1.85	5.91			
6-May	1.8	1.8	Z	2.0	2.1	2.1	3.1	4.7	3.7	2.1	1.6	1.1	1.0	0.9	1.0	1.0	1.0	1.0	1.0	1.1	1.2	1.5	2.2	2.7	1.81	4.70			
7-May	2.9	2.6	Z	2.9	3.0	2.9	2.7	2.6	3.1	2.7	1.7	1.1	1.0	1.0	0.9	1.0	0.8	0.9	0.9	1.2	2.0	2.0	1.6	2.0	1.89	3.08			
8-May	1.9	1.8	Z	1.1	1.2	1.0	0.9	0.8	0.7	0.8	1.1	1.0	1.0	1.0	0.9	0.5	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.7	0.93	1.95			
9-May	0.7	0.7	Z	1.0	1.3	1.7	2.2	1.4	0.9	1.0	0.7	0.6	0.7	0.8	0.9	0.7	0.8	0.9	1.5	1.6	2.9	3.5	4.9	3.6	1.53	4.88			
10-May	2.7	2.7	Z	2.5	2.3	3.2	2.7	3.0	2.0	1.2	0.8	0.9	1.9	1.8	1.6	1.3	1.1	1.6	1.2	2.8	3.7	2.8	1.9	1.6	2.06	3.69			
11-May	1.4	1.5	Z	1.7	1.9	2.3	2.3	2.7	4.2	2.6	1.0	0.8	0.9	0.8	0.9	0.9	0.9	1.5	2.0	2.8	2.0	1.7	1.7	1.6	1.74	4.18			
12-May	1.7	1.7	Z	1.9	1.6	2.0	2.9	3.2	3.0	C	C	C	C	C	3.0	1.9	1.8	1.8	2.1	2.7	3.1	1.7	1.5	1.5	2.17	3.21			
13-May	1.8	1.8	Z	2.2	2.4	2.2	2.2	2.8	2.7	1.0	0.8	0.8	0.8	0.9	0.9	1.0	1.0	1.1	1.1	1.1	1.2	1.3	1.6	1.7	1.50	2.81			
14-May	1.9	2.2	Z	2.3	2.4	2.5	2.8	3.4	3.3	2.0	1.6	1.5	1.3	1.2	1.1	1.2	1.4	1.4	1.5	1.4	1.6	1.6	1.8	1.9	1.89	3.39			
15-May	2.1	2.2	Z	2.6	3.1	6.5	3.2	3.6	3.7	1.9	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.7	1.7	1.9	2.9	2.28	6.46			
16-May	3.8	3.6	Z	3.4	3.1	2.9	2.3	2.4	2.0	1.7	1.5	1.3	1.3	1.2	1.0	1.0	0.9	1.0	1.1	1.3	1.3	1.5	1.9	2.3	1.90	3.79			
17-May	2.7	1.8	Z	1.0	0.9	1.3	2.6	2.4	1.4	1.8	1.2	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.1	1.0	1.2	1.2	1.6	1.7	1.37	2.69			
18-May	2.0	2.2	Z	2.1	2.3	2.2	2.4	2.6	3.0	2.6	2.3	1.8	1.3	1.0	0.9	1.7	1.4	2.3	2.0	3.2	1.8	1.6	1.5	3.0	2.05	3.15			
19-May	7.2	4.7	Z	2.5	4.2	2.5	1.9	2.2	2.7	2.9	2.1	1.9	1.9	1.9	1.6	1.8	1.9	1.5	1.3	1.3	1.4	1.5	1.4	1.3	2.32	7.19			
20-May	1.3	1.2	Z	1.4	1.5	1.5	1.5	1.3	1.3	0.9	1.1	1.0	1.0	0.9	0.8	0.9	1.0	1.0	1.0	1.2	1.1	1.1	1.0	1.1	1.14	1.50			
21-May	1.2	1.2	Z	0.9	0.9	0.9	1.1	1.2	1.4	1.2	1.2	1.1	1.1	1.0	1.0	1.0	1.1	1.1	1.2	1.2	1.3	1.5	1.2	0.9	1.12	1.49			
22-May	0.8	1.0	Z	0.9	0.9	1.0	1.1	1.1	1.0	1.1	1.1	1.0	0.9	0.8	0.8	0.9	0.9	0.9	0.9	0.8	0.9	1.0	0.9	1.0	0.93	1.12			
23-May	1.0	1.0	Z	0.8	1.3	1.0	1.2	1.2	1.1	1.2	1.2	1.2	1.2	1.1	1.1	4.4	6.2	1.9	3.8	5.3	6.3	7.6	2.7	1.3	2.40	7.56			
24-May	1.1	1.2	Z	1.4	1.4	1.6	1.3	0.9	1.0	1.3	1.4	1.5	1.5	1.5	1.4	1.3	1.3	1.5	1.5	1.6	1.7	1.7	2.0	2.4	1.47	2.41			
25-May	2.9	3.1	Z	3.0	3.5	3.8	3.1	3.3	3.9	3.3	2.2	1.6	1.5	1.4	1.3	1.5	1.9	2.5	1.6	1.6	1.5	1.3	1.9	1.5	2.32	3.86			
26-May	1.5	1.5	Z	2.0	2.4	3.2	1.5	1.8	2.2	2.1	1.8	1.8	2.0	2.4	1.6	1.1	1.0	1.0	1.2	1.3	1.9	3.2	2.9	1.9	1.89	3.21			
27-May	1.7	1.2	Z	1.1	1.4	1.7	2.1	1.9	1.9	1.7	1.8	1.9	1.7	1.6	1.7	1.6	1.3	1.4	1.4	1.6	1.5	1.4	1.5	1.3	1.58	2.11			
28-May	2.0	1.7	Z	2.1	1.7	1.4	1.3	1.5	1.5	1.0	1.0	0.9	0.7	0.7	0.7	0.7	0.7	0.9	0.8	0.9	1.3	2.4	1.6	1.2	1.25	2.44			
29-May	1.4	1.7	Z	1.7	1.6	1.3	1.0	1.3	2.8	3.5	2.6	2.2	1.5	1.3	1.4	1.2	1.0	1.0	1.1	1.3	3.7	3.3	2.2	1.7	1.81	3.66			
30-May	1.0	0.9	Z	1.0	1.0	1.1	0.9	1.0	1.3	1.2	0.9	1.0	0.8	1.7	1.9	2.2	2.9	2.8	5.4	4.8	7.8	8.2	8.5	6.3	2.81	8.50			
31-May	5.4	4.0	Z	2.4	2.1	1.5	1.1	2.1	3.8	3.7	3.3	2.4	2.0	2.1	1.3	1.2	0.9	1.3	1.5	1.6	1.5	1.5	1.5	1.9	2.18	5.39			
		2.31	2.19	--	1.96	2.05	2.19	2.05	2.22	2.34	1.87	1.49	1.29	1.22	1.22	1.20	1.28	1.33	1.31	1.49	1.76	2.23	2.20	2.25	2.14	Diurnal Average			
		7.19	5.91	--	3.76	4.18	6.46	3.59	4.70	4.18	3.71	3.32	2.36	2.00	2.41	3.04	4.42	6.21	2.78	5.41	5.32	7.84	8.22	8.50	6.46	Diurnal Maximum			
Z - zerospan		C - Calibration																											
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr 159 ppb		24-hr 106 ppb																									



**WCAS - Breton**  
**Summary of Hourly Averages**

**NOx (NO<sub>x</sub>) - ppb**  
**May 2016**

Maximum Value: 9.08 ppb on May 30 21:00		Maximum Daily Average: 3.35 ppb on May 30		Hours in Service: 744																							
Minimum Value: 0.6 ppb on May 8 17:00		Minimum Daily Average: 1.00 ppb on May 8		Hours of Data: 708																							
Maximum Diurnal Average: 3.10 ppb at hour 9		Minimum Diurnal Average: 1.39 ppb at hour 15		Hours of Missing Data: 36																							
Monthly Average: 2.038 ppb		Percentiles: P <sub>1</sub> = 0.8 P <sub>10</sub> = 1.0 Q <sub>1</sub> = 1.2 Median = 1.6 Q <sub>3</sub> = 2.4 P <sub>90</sub> = 3.6 P <sub>99</sub> = 7.2		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-May	3.0	2.9	Z	3.1	2.9	2.8	2.9	3.9	3.6	2.6	2.0	1.3	1.1	1.2	1.2	1.1	1.0	1.0	1.0	1.2	1.4	2.1	3.3	2.4	2.14	3.86	
2-May	2.1	2.1	Z	2.6	2.7	2.6	2.7	2.9	3.5	2.9	2.1	1.6	1.3	1.2	1.1	1.2	1.1	1.1	1.1	1.4	1.5	1.7	2.1	2.5	1.95	3.54	
3-May	3.6	4.5	Z	3.9	3.8	4.1	4.0	4.6	3.6	2.1	1.5	1.4	1.1	1.1	1.0	1.1	1.0	1.1	1.4	1.7	2.1	3.0	2.4	2.41	4.61		
4-May	2.0	1.8	Z	1.9	1.9	2.2	2.3	2.9	4.0	2.5	1.2	1.1	1.1	1.1	1.1	1.0	1.1	1.4	2.0	2.2	2.9	2.3	5.9	6.6	2.28	6.56	
5-May	5.3	6.0	Z	1.8	1.1	1.1	1.3	1.3	1.5	1.4	1.6	1.4	1.2	1.1	1.1	1.2	1.3	1.2	1.2	1.7	5.8	1.8	1.7	1.7	1.95	6.01	
6-May	1.9	1.9	Z	2.1	2.1	2.3	3.6	6.6	5.3	2.7	2.0	1.2	1.1	1.0	1.1	1.1	1.1	1.1	1.0	1.2	1.2	1.6	2.3	2.7	2.09	6.61	
7-May	3.0	2.7	Z	2.9	3.0	2.9	3.0	3.2	4.0	3.4	2.0	1.2	1.1	1.1	1.0	1.0	0.9	0.9	1.0	1.2	2.0	2.0	1.7	2.0	2.06	3.98	
8-May	2.0	1.9	Z	1.1	1.3	1.1	1.0	0.9	0.8	0.9	1.2	1.1	1.2	1.1	1.1	0.6	0.6	0.7	0.7	0.8	0.8	0.9	0.8	0.8	1.00	1.96	
9-May	0.7	0.7	Z	1.0	1.3	1.9	2.5	1.6	1.1	1.1	0.9	0.7	0.9	1.0	1.1	0.8	1.0	1.0	1.7	1.7	3.0	3.5	5.0	3.7	1.66	4.96	
10-May	2.8	2.8	Z	2.5	2.4	3.8	3.4	4.5	2.9	1.5	1.0	1.0	2.5	2.3	2.1	1.6	1.4	2.0	1.4	3.1	3.9	2.9	1.9	1.6	2.40	4.47	
11-May	1.4	1.5	Z	1.8	2.0	2.5	2.9	3.8	5.9	3.6	1.2	1.0	1.0	0.9	1.0	0.9	1.0	1.6	2.1	3.0	2.1	1.8	1.7	1.7	2.02	5.91	
12-May	1.7	1.8	Z	2.0	1.7	2.1	3.4	4.1	3.9	C	C	C	C	C	3.4	2.1	2.1	2.1	2.5	3.0	3.2	1.7	1.4	1.5	2.43	4.10	
13-May	1.9	1.8	Z	2.2	2.4	2.4	2.7	3.7	3.6	1.1	0.9	0.8	0.8	0.9	1.0	1.1	1.1	1.2	1.2	1.2	1.3	1.3	1.6	1.7	1.64	3.73	
14-May	1.9	2.2	Z	2.3	2.4	2.6	3.2	4.2	4.1	2.3	1.8	1.6	1.5	1.3	1.2	1.4	1.5	1.5	1.6	1.5	1.6	1.7	1.9	2.0	2.06	4.20	
15-May	2.1	2.2	Z	2.7	3.1	7.3	3.6	4.3	4.4	2.1	1.9	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.9	3.0	2.47	7.31	
16-May	3.8	3.7	Z	3.4	3.1	3.0	2.4	2.7	2.3	2.0	1.7	1.4	1.3	1.2	1.0	1.0	1.0	1.1	1.1	1.3	1.3	1.4	1.9	2.3	1.97	3.83	
17-May	2.7	1.8	Z	1.0	0.8	1.2	2.8	2.8	1.5	1.9	1.3	1.0	1.0	1.0	1.1	1.0	1.0	1.0	1.1	0.9	1.2	1.2	1.6	1.7	1.43	2.85	
18-May	2.0	2.2	Z	2.1	2.3	2.2	2.7	3.0	3.7	3.1	2.6	2.0	1.3	1.0	0.9	1.9	1.4	2.5	2.2	3.4	1.9	1.6	1.5	3.0	2.19	3.70	
19-May	7.2	4.7	Z	2.6	4.3	2.6	2.1	2.4	3.1	3.4	2.4	2.3	2.4	2.5	2.2	2.3	2.4	1.9	1.6	1.4	1.5	1.5	1.5	1.3	2.60	7.24	
20-May	1.3	1.2	Z	1.4	1.5	1.6	1.6	1.6	2.0	1.5	1.8	1.5	1.5	1.2	1.0	1.2	1.2	1.2	1.2	1.1	1.4	1.2	1.0	1.1	1.36	2.03	
21-May	1.2	1.3	Z	1.0	1.0	0.9	1.1	1.4	1.7	1.5	1.6	1.5	1.5	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.4	1.6	1.2	0.9	1.27	1.69	
22-May	0.9	1.0	Z	0.9	0.9	1.0	1.2	1.2	1.1	1.3	1.3	1.3	1.2	1.2	1.0	1.1	1.0	1.1	1.1	0.9	1.0	1.0	1.0	1.0	1.06	1.32	
23-May	1.0	1.0	Z	0.8	1.3	1.0	1.3	1.3	1.2	1.3	1.4	1.4	1.4	1.3	1.2	6.0	7.9	2.2	4.1	5.7	6.7	7.9	2.8	1.3	2.67	7.93	
24-May	1.2	1.2	Z	1.4	1.5	1.6	1.3	0.9	1.1	1.5	1.6	1.9	1.7	1.7	1.5	1.4	1.4	1.6	1.6	1.7	1.8	1.8	2.1	2.4	1.56	2.45	
25-May	3.0	3.1	Z	3.1	3.6	4.6	4.3	4.7	5.3	4.4	2.6	1.7	1.5	1.5	1.4	1.5	2.0	2.6	1.7	1.6	1.6	1.3	1.9	1.5	2.63	5.26	
26-May	1.5	1.5	Z	2.0	2.5	4.3	1.7	2.3	2.8	2.6	2.1	2.1	2.3	2.7	1.8	1.2	1.1	1.0	1.2	1.3	1.9	3.2	3.0	2.0	2.09	4.30	
27-May	1.7	1.2	Z	1.2	1.4	1.7	2.2	2.0	2.1	1.9	2.1	2.1	1.9	1.8	2.0	1.8	1.4	1.6	1.5	1.7	1.6	1.5	1.6	1.4	1.71	2.24	
28-May	2.1	1.8	Z	2.1	1.7	1.6	1.6	2.0	2.0	1.2	1.2	1.1	0.9	0.8	0.8	0.8	0.8	1.1	0.9	1.0	1.3	2.5	1.6	1.3	1.40	2.50	
29-May	1.4	1.8	Z	1.8	1.7	1.6	1.7	1.9	4.2	5.3	3.7	3.0	1.8	1.5	1.6	1.4	1.1	1.1	1.1	1.4	3.9	3.4	2.3	1.9	2.20	5.35	
30-May	1.1	1.0	Z	1.1	1.1	1.2	1.1	1.2	1.6	1.6	1.2	1.2	1.0	2.2	2.6	3.2	4.4	4.0	7.4	5.9	9.1	8.7	8.7	6.5	3.35	9.08	
31-May	7.5	4.2	Z	2.5	2.5	2.4	3.0	4.8	8.3	7.2	6.1	3.7	3.1	2.9	1.6	1.4	0.9	1.4	1.7	1.7	1.6	1.5	1.5	1.9	3.20	8.27	
		2.42	2.23	--	2.01	2.11	2.40	2.41	2.85	3.10	2.40	1.87	1.55	1.45	1.43	1.39	1.48	1.55	1.48	1.67	1.91	2.35	2.27	2.30	2.19	Diurnal Average	
		7.48	6.01	--	3.86	4.27	7.31	4.26	6.61	8.27	7.23	6.07	3.75	3.13	2.94	3.43	5.99	7.93	4.02	7.41	5.92	9.08	8.67	8.68	6.56	Diurnal Maximum	
Z - zerospan		C - Calibration																									
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr --- ppb 24-hr --- ppb																									

**BRETON  
STATION #913**

**METEOROLOGICAL DATA**

**MAY 2016**



**WCAS - Breton**  
**Summary of Hourly Averages**

**External Temperature (ET) - C**  
**May 2016**

Maximum Value: 28.53 C on May 3 18:00		Maximum Daily Average: 19.10 C on May 3		Hours in Service: 744																							
Minimum Value: -4.9 C on May 13 06:00		Minimum Daily Average: 2.17 C on May 20		Hours of Data: 744																							
Maximum Diurnal Average: 16.28 C at hour 16		Minimum Diurnal Average: 3.84 C at hour 6		Hours of Missing Data: 0																							
Monthly Average: 10.569 C		Percentiles: P <sub>1</sub> = -2.9 P <sub>10</sub> = 1.6 Q <sub>1</sub> = 5.1 Median = 9.9 Q <sub>3</sub> = 15.1 P <sub>90</sub> = 21.0 P <sub>99</sub> = 27.1		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-May	6.3	7.7	6.6	5.3	4.1	1.7	3.1	7.3	10.9	14.6	16.7	18.1	18.9	20.2	21.6	22.5	23.1	23.4	23.2	22.3	15.1	12.4	11.3	10.3	13.61	23.36	
2-May	9.1	7.5	6.9	6.7	6.5	5.9	7.8	12.2	17.1	21.4	23.0	24.2	25.1	25.9	26.7	27.1	27.5	27.5	26.6	24.5	20.2	17.6	14.8	13.0	17.70	27.48	
3-May	12.7	12.8	13.7	11.4	9.1	8.9	9.1	13.3	18.3	21.5	23.6	24.7	26.0	27.0	27.2	27.4	28.3	28.5	27.9	24.9	19.6	16.8	13.8	11.7	19.10	28.53	
4-May	9.7	8.8	6.7	5.7	4.7	4.6	5.4	12.2	18.4	21.6	23.8	24.8	25.5	26.2	26.1	25.8	25.2	24.8	23.4	21.4	19.5	16.5	14.3	12.8	17.00	26.19	
5-May	12.2	11.4	10.6	10.7	10.7	9.8	9.6	8.4	7.9	8.3	8.9	9.5	10.5	11.7	13.4	14.8	15.8	16.0	16.1	15.6	12.9	6.8	4.3	3.1	10.79	16.12	
6-May	1.4	-0.5	-1.3	-2.0	-2.4	-2.9	-0.2	5.3	9.9	12.9	15.4	16.8	17.7	18.7	19.5	20.3	20.9	21.2	21.0	19.0	15.8	12.8	11.3	10.1	10.86	21.21	
7-May	12.5	12.5	11.5	9.7	8.0	5.7	5.4	9.6	15.6	19.6	22.3	24.0	25.2	25.9	26.8	27.3	28.2	28.5	27.9	26.7	20.6	19.3	19.0	17.5	18.72	28.52	
8-May	16.9	16.0	14.1	12.8	11.6	10.7	9.7	8.5	6.7	6.4	6.4	6.9	9.1	10.9	13.6	15.5	15.5	14.4	11.8	9.6	8.1	7.3	6.5	4.8	10.58	16.90	
9-May	4.0	3.4	3.2	3.7	3.7	3.4	3.4	4.8	6.4	6.1	6.8	7.5	7.7	8.2	8.5	8.8	9.0	8.8	8.2	7.9	7.0	5.7	4.0	1.0	5.88	8.97	
10-May	0.5	0.7	0.2	-2.2	-3.1	-3.5	-1.4	2.2	5.9	8.6	9.9	11.2	11.5	11.6	12.2	12.4	13.3	13.7	13.4	12.8	7.3	3.7	2.8	1.0	6.03	13.71	
11-May	-0.1	-1.2	-1.9	-2.5	-2.8	-2.5	-0.8	3.2	9.3	12.7	14.3	14.3	15.1	14.5	15.0	14.3	13.8	13.0	12.4	11.3	10.3	8.9	7.6	7.0	7.72	15.06	
12-May	6.4	5.4	2.7	1.1	0.4	-0.1	1.2	3.8	5.3	7.2	8.2	9.0	9.3	10.1	10.5	10.6	10.6	11.5	10.8	9.8	7.1	1.5	0.6	-0.8	5.91	11.48	
13-May	-2.0	-2.5	-3.1	-4.1	-4.5	-4.9	-3.2	1.8	8.0	10.4	11.5	12.1	12.6	13.3	14.1	14.5	14.7	15.1	14.9	14.0	10.0	7.4	6.1	2.6	6.62	15.13	
14-May	1.4	0.4	-0.6	-1.8	-2.2	-2.2	-0.7	3.5	10.5	13.0	14.1	14.8	15.9	16.4	17.1	17.4	17.6	18.1	17.5	16.4	12.7	9.0	7.3	4.6	9.17	18.13	
15-May	3.6	1.6	1.4	0.4	-0.9	-1.3	0.3	5.8	12.5	15.5	16.7	17.6	17.9	18.3	19.3	19.7	20.0	19.9	19.4	18.5	16.4	13.3	11.1	9.5	11.52	20.04	
16-May	8.9	8.4	7.5	7.8	8.3	8.7	11.2	13.2	15.5	17.0	19.2	21.0	22.4	23.5	24.6	24.5	25.2	25.0	24.0	22.2	19.9	18.8	17.8	16.1	17.11	25.22	
17-May	15.0	15.4	15.2	14.3	13.6	12.3	11.7	13.5	15.3	14.8	16.3	17.6	18.8	20.1	20.4	21.2	22.0	22.2	21.5	20.2	14.8	13.7	12.5	11.4	16.41	22.18	
18-May	10.9	10.5	10.5	10.6	9.2	7.5	9.1	11.4	14.5	17.3	20.8	22.3	23.1	23.1	24.2	22.2	22.7	18.4	16.9	15.6	12.7	11.6	10.8	10.5	15.26	24.17	
19-May	10.3	10.0	9.3	9.0	9.1	9.1	8.9	9.0	9.2	9.5	9.6	9.6	9.9	9.6	7.8	6.1	5.0	4.5	3.7	3.0	2.3	1.8	1.5	1.2	7.05	10.32	
20-May	1.1	0.8	0.6	0.4	0.3	0.2	0.1	0.0	0.1	0.8	0.8	1.5	2.3	3.3	4.1	4.3	4.4	4.3	4.6	4.5	4.2	3.7	3.1	2.8	2.17	4.56	
21-May	2.7	2.7	2.3	1.8	1.6	1.1	1.0	1.2	1.3	1.7	2.1	2.7	3.3	3.7	4.1	4.4	4.5	4.7	4.6	4.5	4.2	3.9	3.8	3.4	2.97	4.71	
22-May	2.9	2.7	2.5	2.3	2.3	2.5	2.6	2.7	2.9	3.1	3.3	4.0	4.6	4.9	5.0	4.8	4.9	4.9	4.9	4.6	4.6	4.7	4.7	4.8	3.80	4.96	
23-May	4.8	4.7	5.0	5.3	5.4	5.2	5.3	5.1	5.0	5.1	5.5	6.1	6.9	7.7	8.9	10.9	11.5	11.4	11.2	11.1	9.9	9.5	9.0	8.0	7.44	11.53	
24-May	5.3	5.6	6.0	6.0	6.3	6.5	7.4	8.5	8.9	10.0	11.3	13.8	15.0	16.0	16.9	17.7	18.0	18.1	18.1	17.2	15.3	12.6	10.1	8.6	11.63	18.11	
25-May	7.5	7.0	7.2	6.3	5.0	5.0	6.5	9.9	13.5	16.5	18.7	19.8	21.1	21.6	22.3	21.4	12.5	11.9	12.5	12.9	12.3	11.1	10.9	10.2	12.65	22.25	
26-May	10.3	9.9	9.8	9.3	9.1	9.3	10.1	11.2	12.0	13.4	16.1	17.5	17.6	16.6	17.8	18.8	18.8	18.5	17.4	17.1	14.7	11.2	10.1	10.0	13.61	18.83	
27-May	9.9	9.4	9.2	9.0	8.6	7.8	7.7	8.0	7.9	8.1	8.3	8.5	8.8	9.3	9.3	9.4	9.3	9.7	9.4	9.2	9.0	8.7	7.9	7.1	8.72	9.87	
28-May	6.2	5.1	3.8	3.3	2.9	2.4	3.7	5.7	9.4	11.0	12.0	12.6	14.1	15.0	14.9	15.9	15.0	11.4	12.9	11.8	9.9	7.9	7.0	5.5	9.14	15.86	
29-May	4.0	2.9	2.3	0.9	0.3	1.6	3.3	6.7	10.4	11.7	13.4	14.1	14.4	15.3	15.9	15.3	11.5	10.7	10.1	9.2	8.4	8.1	8.3	8.0	8.62	15.90	
30-May	7.5	7.1	6.6	6.1	5.8	5.7	5.9	6.6	6.7	8.3	10.5	11.1	11.8	11.4	11.8	12.1	12.7	13.1	12.8	12.0	11.3	6.2	5.5	5.0	8.88	13.11	
31-May	3.8	2.8	1.7	1.3	0.6	0.8	3.5	7.0	10.9	12.7	13.9	14.4	15.7	15.8	16.8	17.3	18.7	18.8	18.6	17.5	15.4	12.9	11.7	11.4	11.00	18.78	
		6.63	6.08	5.48	4.80	4.22	3.84	4.74	7.15	9.88	11.63	13.02	13.92	14.76	15.35	16.01	16.28	16.14	15.88	15.40	14.43	11.99	9.85	8.70	7.49	Diurnal Average	
		16.90	15.96	15.21	14.28	13.64	12.32	11.72	13.51	18.40	21.58	23.84	24.85	25.97	26.99	27.24	27.44	28.30	28.53	27.94	26.73	20.57	19.26	19.02	17.53	Diurnal Maximum	



**WCAS - Breton**  
**Summary of Hourly Averages**

**Wind Speed (WS) - kph**  
**May 2016**

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1 Spd	4.2	5.2	4.0	3.4	2.3	3.6	3.2	2.6	4.9	10.2	8.5	9.1	9.4	10.0	7.5	8.6	5.5	4.2	4.7	0.3	1.4	2.2	3.0	4.7	1.59	10.15
Dir	SE	SSE	SSE	SSE	SE	SE	SSE	SSE	WSW	WNW	W	NW	WNW	WNW	NW	NNW	N	NNW	N	ENE	SSE	SE	SSE	SE	WNW	WNW
2 Spd	5.0	3.5	4.5	5.0	5.1	5.0	4.4	2.4	3.3	9.4	16.8	14.7	13.6	11.8	11.9	12.3	10.1	12.2	13.0	6.3	3.3	4.6	3.4	2.5	7.37	16.81
Dir	SE	SE	SE	SE	SE	SE	SE	S	SSE	S	S	S	S	S	S	S	SSE	SSE	SSE	SSE	ESE	SE	SE	SSE	SSE	S
3 Spd	3.6	5.5	7.2	4.2	3.4	3.6	1.4	2.3	8.0	12.3	13.2	9.5	3.5	4.9	7.0	6.5	3.5	5.8	7.9	5.5	1.4	2.8	1.8	1.1	1.58	13.15
Dir	SSE	SSE	SSE	SSE	SSE	SE	SSE	SW	WNW	WNW	NW	NNW	NW	SW	WSW	W	S	SSE	SSE	E	ESE	SE	NW	SE	SW	NW
4 Spd	1.0	0.9	1.7	2.7	2.7	3.3	3.2	2.3	2.3	5.2	10.3	10.5	9.3	8.1	15.2	16.2	11.5	9.9	14.9	13.2	12.5	16.0	15.5	11.8	4.26	16.23
Dir	ESE	SSE	SE	SSE	SE	SE	SSE	SSE	SSW	WSW	WSW	W	W	W	WSW	W	W	NNW	N	N	N	NNW	N	NNE	NW	W
5 Spd	6.3	6.8	9.4	13.8	16.5	21.7	16.0	20.8	15.1	10.5	12.4	11.4	10.5	11.3	12.2	13.6	12.9	11.9	11.4	8.0	2.6	0.7	2.6	4.1	9.81	21.72
Dir	NW	NNW	NNW	NNW	NNW	NNW	N	NNW	NNW	NW	NW	NNW	NW	WNW	WNW	WNW	NNW	NNW	NNW	NNW	NNW	SE	SSE	SSE	NNW	NNW
6 Spd	3.2	2.7	3.5	3.8	1.9	1.1	1.6	2.2	3.5	6.4	4.2	7.7	8.2	5.6	6.3	5.5	6.3	2.5	2.5	3.7	3.3	4.6	3.7	4.0	1.55	8.17
Dir	SSE	SSE	SSE	SSE	SE	SE	SE	SSE	WSW	WNW	W	W	NW	WNW	W	W	WNW	WSW	S	SE	SE	SSE	SSE	SE	SW	NW
7 Spd	3.9	4.7	4.1	3.0	3.4	2.8	2.5	1.0	2.9	3.7	6.0	9.5	14.6	14.9	16.3	11.4	7.3	7.1	11.2	4.4	5.4	5.4	5.8	4.9	5.91	16.31
Dir	SE	SSE	SSE	SSE	SSE	SE	SSE	S	S	SW	S	S	S	SSW	S	SSW	S	SSE	SSE	ESE	E	S	SSW	SSW	S	S
8 Spd	5.7	11.2	13.5	9.2	10.9	18.7	19.6	27.1	23.8	13.1	11.0	8.6	9.5	14.0	13.1	30.6	30.2	31.8	32.8	28.5	23.4	19.9	24.4	23.0	17.29	32.77
Dir	S	NNW	NNW	N	N	N	N	N	N	NNW	NNW	W	W	W	NW	NW	NW	NNW	NNW	NNW	NNW	NW	NNW	NNW	NNW	NNW
9 Spd	23.2	15.7	9.1	10.4	9.8	11.1	10.5	15.8	20.9	26.2	29.7	31.5	28.8	26.8	26.4	24.9	26.3	22.4	14.3	11.1	7.1	2.6	2.7	0.4	16.55	31.47
Dir	NNW	NNW	NW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N	N	N	N	NNE	NNW	NNW	N	NNW	NNW
10 Spd	0.5	0.9	3.4	2.4	1.3	0.6	0.3	4.0	8.2	12.4	16.9	18.4	19.0	16.2	16.1	14.0	13.1	10.8	12.2	9.5	3.5	1.5	2.9	3.2	6.70	18.99
Dir	SE	NNW	NNW	SSE	SSE	N	SSE	WNW	NNW	NNW	N	N	N	N	N	N	N	N	NNE	NNE	ENE	SSE	SSE	SSE	N	N
11 Spd	3.6	3.6	3.2	3.6	4.4	3.5	3.2	2.0	7.0	3.4	4.0	3.4	5.4	7.5	9.8	9.4	10.5	12.3	11.7	13.0	11.2	10.7	9.4	11.6	5.89	12.98
Dir	SSE	SSE	SSE	SSE	SSE	SE	SE	SSE	SSE	SE	ESE	ESE	ENE	ENE	ENE	E	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	E	E
12 Spd	10.0	11.2	4.0	7.8	7.4	8.0	8.2	9.3	11.5	11.4	13.6	12.0	15.5	13.5	14.6	12.3	13.9	11.7	14.0	11.9	8.3	4.1	1.2	3.1	9.26	15.52
Dir	ENE	ENE	ENE	ENE	NE	NE	NE	ENE	NE	NE	NE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NE	ENE	SSE	SSE	NE	NNE
13 Spd	3.7	4.0	3.4	2.9	3.7	3.3	3.4	3.3	2.0	2.9	2.9	4.1	2.5	3.0	3.4	5.5	4.6	6.2	5.8	5.6	7.2	3.4	2.9	1.8	3.48	7.24
Dir	SSE	SSE	SSE	SSE	SE	SSE	SSE	SSE	SSW	SE	SE	SSE	SE	SE	SE	ESE	SSE	SSE	SSE	E	E	SE	SE	SSE	SE	E
14 Spd	2.6	3.3	2.8	2.6	2.9	2.8	2.4	4.3	3.1	7.5	8.6	8.4	5.2	6.1	9.2	8.2	10.5	7.4	8.3	7.9	1.8	1.1	2.3	2.0	4.74	10.48
Dir	SE	SE	SE	SE	SE	SE	SSE	S	S	SW	S	S	SSE	SE	S	S	S	SSE	S	S	SE	SE	SE	SSE	SSE	S
15 Spd	2.5	3.1	4.2	4.0	3.2	2.4	2.6	4.0	4.0	12.6	15.5	15.7	20.3	19.7	14.9	13.9	12.9	13.8	15.4	14.1	7.6	3.6	4.7	5.8	9.01	20.27
Dir	SE	SE	SE	SE	SSE	SSE	SSE	SSE	SSE	S	SSE	SSE	S	S	SSE	S	SSE	SSE	SSE	SSE	SSE	SE	SSE	SSE	SSE	S
16 Spd	6.9	6.2	7.1	9.6	10.4	8.8	17.5	20.1	24.2	27.8	23.2	19.9	13.7	12.4	12.9	11.0	6.7	10.4	15.7	14.6	16.8	16.6	15.4	7.0	13.61	27.80
Dir	SSE	SSE	SSE	SSE	SSE	SSE	S	S	S	S	S	S	SSW	SSW	S	SSW	S	S	S	SSE	S	S	S	SSE	S	S
17 Spd	2.2	10.8	20.1	14.1	14.5	5.8	6.3	9.6	14.1	9.8	9.7	7.6	13.0	13.4	12.2	7.3	12.2	10.9	8.7	5.8	1.4	2.9	2.6	3.0	7.45	20.13
Dir	WSW	NNW	NNW	NNW	NNW	WNW	NW	NW	NNW	NW	NW	N	NW	WNW	WNW	WNW	WNW	NNW	NW	NNW	NE	SE	SE	SE	NW	NNW
18 Spd	3.0	4.5	2.5	2.9	0.9	2.5	2.6	2.7	1.9	2.0	3.3	2.3	2.9	4.7	2.4	4.3	13.2	22.7	22.5	16.2	21.6	17.9	14.9	15.0	5.03	22.69
Dir	SSE	SSE	SSE	SE	S	SSE	SSE	SSE	SSW	WNW	E	ESE	WSW	WNW	WNW	NNW	ENE	NNW	N	N	NNW	N	N	N	N	N
19 Spd	12.8	12.2	10.3	7.3	9.0	7.9	9.1	8.9	7.6	8.4	11.0	12.7	12.3	14.4	18.8	16.1	16.5	19.0	17.7	17.0	16.5	14.9	16.1	17.1	12.40	18.98
Dir	N	N	N	NNW	NNW	NW	NW	NW	NW	NW	WNW	WNW	NW	WNW	NW	NW	WNW	NW	NW	WNW	NW	NW	NW	NW	NW	NW
20 Spd	16.2	16.4	16.2	14.8	15.3	15.6	15.1	14.6	14.3	15.3	14.7	14.9	14.5	16.9	16.5	13.5	13.3	13.6	11.1	10.5	9.3	10.9	8.2	9.6	13.61	16.93
Dir	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	NW	NW	NW	NNW	NNW	NNW	NNW	NNW	NNW	NW	NNW
21 Spd	10.3	10.1	11.8	11.7	12.2	13.2	12.4	13.1	12.0	11.8	13.2	12.5	12.7	13.1	13.5	12.4	9.9	11.1	10.9	11.0	12.8	13.3	14.6	14.7	11.94	14.66
Dir	NNW	NNW	NNW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NNW	N	NNW	NNW	NNW	NNW	N	NNW	NNW	NNW	NNW	NNW	NNW
22 Spd	14.0	11.8	16.5	13.9	14.0	13.6	15.1	18.0	19.6	16.5	16.2	19.3	19.6	19.5	19.8	18.4	19.0	19.6	18.2	17.1	15.6	13.1	12.6	9.8	16.25	19.82
Dir	NNW	NNW	NNW	NNW	NNW	NW	NW	NNW	NNW	NW	NW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NW	NNW	NNW	NNW	NNW



**WCAS - Breton**  
**Summary of Hourly Averages**

**Wind Speed (WS) - kph**  
**May 2016**

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
23 Spd	11.2	10.9	12.1	12.9	15.8	14.6	15.3	15.3	15.4	12.7	14.1	14.0	14.0	15.5	9.8	13.6	13.7	13.0	7.8	1.4	1.5	4.8	7.0	8.5	10.31	15.80	
Dir	NW	NW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NW	NW	NNW	NNW	N	NNW	N	NNE	NNE	NE	ENE	NW	NNW	NE	ENE	NNW	NNW	
24 Spd	6.4	1.6	0.3	0.7	0.8	1.0	2.7	6.5	7.9	5.4	5.2	6.3	6.2	6.7	6.9	11.1	11.6	11.4	10.8	12.4	9.5	5.3	4.4	4.9	5.51	12.39	
Dir	NE	E	WSW	ESE	SSE	SE	ESE	SSE	SSE	S	SSW	SE	SE	SSE	SE	S	S	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	
25 Spd	4.2	4.3	3.9	4.8	1.6	2.7	2.0	4.4	4.1	6.0	6.5	4.5	2.7	4.6	9.2	8.5	26.4	1.4	9.4	7.0	4.8	1.0	2.3	2.0	0.90	26.43	
Dir	SSE	SSE	SSE	SSE	S	SSE	SSE	SSE	SW	SSE	SSW	SW	NNE	NNE	NE	NNW	N	SE	SSE	SE	SSW	W	W	SSE	SE	N	
26 Spd	2.1	1.9	0.7	0.3	0.5	2.7	0.9	1.5	5.2	3.3	1.6	5.6	5.2	2.2	9.0	7.9	9.5	5.9	6.6	3.4	8.1	12.7	8.6	6.4	0.18	12.71	
Dir	E	SSE	SW	WNW	NNW	WNW	WSW	SW	WNW	WNW	S	E	NE	SW	SSE	SSE	SE	SSE	SE	SSE	NW	NNW	NNW	NNW	SSE	NNW	
27 Spd	8.2	12.2	9.0	8.9	7.4	8.4	7.8	7.6	9.3	7.9	7.7	6.0	5.7	6.9	10.3	10.3	12.5	11.3	9.1	9.3	6.9	9.0	7.8	5.7	8.19	12.45	
Dir	NW	NNW	NNW	NNW	NW	WNW	NW	NNW	NW	NNW	NW	NW	NW	NW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	W	WNW	W	NW	NNW	
28 Spd	5.6	2.3	2.7	2.0	1.5	2.3	2.6	2.5	6.4	8.8	8.7	10.6	8.2	5.6	5.6	3.1	8.2	2.7	12.0	17.2	8.2	3.5	2.8	2.8	1.15	17.18	
Dir	W	W	S	SW	WSW	SSE	SSE	S	WNW	WNW	WNW	NW	W	NNE	NE	NE	S	SSW	NE	NE	ENE	ESE	SE	SE	N	NE	
29 Spd	1.9	0.2	2.0	1.1	0.4	0.4	0.9	3.1	7.7	8.6	6.7	9.7	11.4	14.4	11.3	14.3	20.4	16.0	9.3	1.3	2.5	2.5	5.2	6.3	5.57	20.37	
Dir	ESE	ESE	N	ENE	SE	S	S	W	WNW	NW	NW	NW	NNW	NNW	NNW	NNW	NW	WNW	W	SE	NNW	NNW	NW	NNW	NW	NW	
30 Spd	8.3	10.6	11.2	12.9	12.4	12.6	17.3	16.3	14.1	18.1	24.4	21.3	21.9	21.4	19.2	15.8	16.9	14.7	14.8	8.3	3.9	3.1	0.7	0.9	12.22	24.40	
Dir	NNW	NNW	NNW	NNW	NNW	NW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N	N	NNE	NNE	NNE	NNE	NNE	NE	ENE	SW	SE	N	NNW	
31 Spd	1.5	0.9	2.2	2.2	1.3	1.8	1.0	0.6	1.5	3.7	4.6	3.8	5.3	1.7	5.2	3.9	0.6	4.9	5.8	5.8	6.4	3.0	4.9	6.6	1.61	6.61	
Dir	SE	SSE	SSE	SSE	SSE	S	SSE	WSW	N	NW	N	N	NE	E	NE	N	SSE	SE	ESE	ESE	SSE	SE	SSE	SSE	ESE	SSE	
Spd	1.85	2.31	2.73	2.19	2.80	2.89	2.71	3.64	4.88	5.35	4.94	4.90	5.18	5.01	4.32	5.15	5.04	4.43	3.63	3.35	2.76	2.41	2.25	1.74	Diurnal Average		
Dir	N	NNW	NNW	NNW	NNW	NNW	NNW	NW	NW	WNW	NW	NW	NW	NW	NW	NW	NNW	NNW	N	NNE	N	NNW	NNW	N	Diurnal Maximum		
Spd	23.17	16.44	20.13	14.76	16.48	21.72	19.56	27.12	24.17	27.80	29.67	31.47	28.83	26.80	26.38	30.58	30.20	31.83	32.77	28.53	23.43	19.87	24.38	23.04	Diurnal Maximum		
Dir	336.16	310.65	344.44	307.43	340.36	345.37	355.75	350.04	190.45	190.72	337.90	336.98	341.12	341.36	340.38	320.34	322.27	333.64	341.54	334.19	328.66	319.98	331.63	331.67			
Maximum Speed Value: 32.8 kph on May 8 19:00 Maximum Daily Speed Average: 17.29 kph on May 8 Maximum Diurnal Speed Average: 5.35 kph at hour 10																		Minimum Speed Value: 0.2 kph on May 29 02:00 Minimum Daily Speed Average: 0.18 kph on May 31 Minimum Diurnal Speed Average: 1.74 kph at hour 24						Hours in Service: 744 Hours of Data: 744 Hours of Missing Data: 0			
Monthly Average Velocity: 3.422 kph 330.36 deg All monthly, daily, and diurnal averages have been calculated using vector methods																		Speed Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 2.2 Q <sub>1</sub> = 3.5 Median = 8.1 Q <sub>3</sub> = 13.1 P <sub>90</sub> = 16.5 P <sub>99</sub> = 28.0						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	13	21	56	20	3	0	113																				
NorthEast	6	21	19	0	0	0	46																				
East	15	11	3	0	0	0	29																				
SouthEast	142	28	0	0	0	0	170																				
South	38	40	34	7	0	0	119																				
SouthWest	16	3	1	0	0	0	20																				
West	13	29	6	0	0	0	48																				
NorthWest	16	65	98	15	5	0	199																				
Total	259	218	217	42	8	0	744																				



**WCAS - Breton**  
**Summary of Hourly Averages**

**Relative Humidity (RH) - %**  
**May 2016**

<b>Maximum Value: 94.53 % on May 20 10:00</b> <b>Maximum Daily Average: 92.16 % on May 22</b>																						<b>Hours in Service: 744</b> <b>Hours of Data: 744</b>				
<b>Minimum Value: 9.7 % on May 7 16:00</b> <b>Minimum Daily Average: 25.39 % on May 7</b> <b>Maximum Diurnal Average: 78.29 % at hour 6</b> <b>Minimum Diurnal Average: 36.74 % at hour 16</b> <b>Monthly Average: 56.147 %</b> <b>Percentiles: P<sub>1</sub> = 10.5 P<sub>10</sub> = 18.6 Q<sub>1</sub> = 31.0 Median = 58.2 Q<sub>3</sub> = 81.2 P<sub>90</sub> = 91.1 P<sub>99</sub> = 93.2</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-May	63.3	57.4	60.8	65.0	69.7	79.6	74.3	63.1	48.2	28.6	22.8	22.4	23.6	23.1	21.7	20.8	20.5	22.1	22.4	28.4	45.7	54.3	59.5	62.0	44.14	79.56
2-May	65.5	70.7	72.9	72.2	71.5	73.9	67.7	58.1	42.2	27.2	22.9	20.8	18.8	17.1	15.6	15.4	14.2	13.4	13.5	15.8	24.3	31.4	41.3	46.7	38.89	73.93
3-May	45.3	42.6	37.6	45.5	53.6	54.1	56.1	45.7	29.3	21.7	18.2	16.6	13.0	11.6	11.5	10.7	11.0	11.2	11.0	17.6	27.2	35.4	45.7	51.1	30.13	56.11
4-May	55.7	56.1	62.6	66.6	70.6	70.1	69.4	56.5	34.6	25.1	17.9	15.6	14.4	13.2	13.4	13.6	14.9	16.6	23.0	26.6	34.0	48.3	57.1	59.8	38.99	70.64
5-May	60.8	66.5	66.3	50.7	39.4	42.8	44.5	55.9	61.7	60.1	53.6	43.4	38.5	35.1	31.1	29.5	27.5	25.3	19.9	20.3	27.4	46.8	58.9	67.5	44.72	67.50
6-May	74.4	81.5	84.5	85.6	86.4	85.8	77.6	62.4	43.5	29.3	22.8	18.1	16.3	15.8	15.0	13.7	12.6	12.9	15.1	22.0	26.9	37.5	43.6	44.9	42.84	86.38
7-May	30.0	29.8	33.5	39.8	46.8	57.1	61.3	55.5	36.3	27.6	20.0	12.6	10.5	9.9	9.7	9.7	9.8	10.5	11.1	11.9	22.9	21.4	15.4	16.4	25.39	61.29
8-May	16.6	23.4	39.9	50.2	57.8	60.8	58.5	59.0	64.5	65.1	66.5	66.1	57.1	54.0	40.9	14.2	14.4	19.3	32.5	42.3	47.7	51.5	60.8	71.1	47.24	71.14
9-May	74.4	77.6	80.2	78.7	78.7	79.5	79.2	76.3	59.6	57.1	47.7	43.9	43.1	39.8	36.8	34.6	31.6	31.4	36.8	39.7	45.7	51.0	57.7	70.6	56.31	80.16
10-May	76.4	77.0	76.5	83.2	88.3	90.2	86.5	69.5	52.5	41.7	33.5	25.9	23.7	23.1	22.8	21.6	19.9	19.8	20.1	21.5	38.3	49.6	56.4	65.7	49.32	90.23
11-May	70.3	76.0	79.3	82.1	81.4	82.5	74.4	63.4	37.6	25.5	20.4	19.8	20.0	20.5	20.2	22.4	23.9	25.8	27.7	31.5	34.7	38.1	41.4	40.2	44.12	82.51
12-May	42.5	44.0	52.5	59.3	62.6	65.9	62.1	54.2	50.8	43.5	34.9	31.8	29.7	27.3	25.9	25.0	23.3	19.4	18.5	20.1	26.3	46.5	50.0	59.6	40.64	65.91
13-May	66.5	69.7	72.4	76.7	78.4	81.0	75.2	60.2	35.1	22.1	20.3	20.2	19.8	19.5	19.0	18.6	18.3	18.6	18.9	20.2	27.3	33.3	41.6	57.8	41.28	80.98
14-May	65.8	70.5	74.1	78.7	80.0	81.3	76.1	64.6	41.6	27.0	22.7	21.1	19.2	17.6	15.9	16.5	16.9	16.3	17.3	17.5	27.9	37.0	46.6	58.1	42.09	81.29
15-May	62.9	71.6	72.9	75.9	79.3	81.0	73.3	58.9	36.4	23.6	20.3	18.0	16.3	15.9	15.4	15.2	15.1	15.0	15.5	17.3	21.2	27.4	33.1	39.0	38.35	81.02
16-May	40.3	42.2	46.1	44.7	42.2	41.0	34.3	30.6	26.8	24.2	21.7	18.7	16.3	14.8	12.8	11.4	10.8	9.8	9.7	14.0	19.2	22.8	26.5	32.1	25.54	46.10
17-May	36.9	37.8	39.5	40.1	42.9	49.9	54.8	49.0	38.4	41.9	35.3	30.7	26.4	23.8	23.1	21.9	19.1	18.9	20.3	24.3	37.6	40.7	50.5	57.4	35.88	57.43
18-May	59.9	61.5	61.8	61.3	67.1	74.3	72.7	67.8	57.4	48.8	34.2	27.2	23.8	23.0	20.8	30.0	30.0	45.5	53.2	60.8	75.4	75.3	75.5	78.0	53.55	77.97
19-May	79.3	79.9	86.0	90.1	91.7	92.1	92.2	92.4	92.8	92.9	92.4	91.6	90.7	90.7	90.1	90.1	89.9	89.3	89.4	90.0	91.0	91.4	91.2	91.5	89.95	92.92
20-May	91.4	91.5	91.4	91.7	91.9	92.0	92.1	93.5	94.4	94.5	93.9	88.8	83.7	78.6	75.7	75.6	75.6	75.6	75.0	75.3	77.3	76.8	81.7	85.2	85.14	94.53
21-May	86.0	85.5	86.7	89.1	90.3	92.4	92.8	92.9	92.8	92.5	92.0	91.6	90.8	89.3	87.3	86.3	85.6	85.6	86.4	86.2	88.7	90.1	90.9	92.2	89.33	92.86
22-May	92.8	93.0	93.2	93.1	93.1	92.9	92.7	92.5	92.1	91.5	91.9	91.7	91.1	90.8	90.7	91.2	91.4	91.3	91.6	92.1	92.5	92.7	92.9	92.9	92.16	93.19
23-May	92.9	92.9	93.0	92.8	91.4	91.2	90.7	89.9	89.5	88.7	86.8	83.6	78.1	73.4	63.6	62.0	65.4	62.2	64.2	76.2	72.9	76.9	80.9	81.24	92.98	
24-May	87.8	91.1	90.9	91.1	91.2	91.1	88.4	76.0	71.0	65.9	62.7	60.1	56.4	54.1	51.1	47.5	45.7	44.7	44.2	46.7	51.2	60.0	70.8	76.7	67.35	91.18
25-May	79.9	81.5	79.2	81.0	85.7	87.0	81.9	73.3	60.3	53.2	42.1	34.1	31.0	31.6	30.2	33.5	33.5	77.2	83.2	85.4	80.3	80.0	84.4	88.0	67.98	87.99
26-May	87.9	89.1	89.4	90.3	91.0	91.1	89.7	85.7	80.1	73.9	63.0	57.4	54.9	58.9	56.1	45.6	47.3	46.9	54.5	57.5	61.3	75.8	84.8	86.6	71.62	91.14
27-May	85.9	85.5	86.6	85.6	85.9	90.0	90.3	88.2	88.1	89.7	90.3	90.8	91.0	89.9	89.5	87.5	84.0	79.5	79.7	79.3	79.5	78.8	80.4	83.5	85.80	90.99
28-May	84.1	87.2	89.8	91.1	91.4	92.1	91.4	87.4	71.4	61.8	56.0	51.0	44.8	43.0	42.0	36.9	38.5	64.0	59.4	62.4	71.4	79.5	82.9	85.9	69.39	92.07
29-May	88.3	91.1	91.9	92.8	93.3	93.2	92.3	86.2	71.7	65.4	57.8	58.9	53.6	49.1	43.4	44.6	57.8	55.9	60.4	73.8	85.1	82.4	81.5	80.1	72.94	93.26
30-May	77.2	73.3	73.9	74.6	76.2	77.5	75.4	73.9	79.3	75.7	60.8	53.9	49.4	59.3	58.2	59.1	60.7	58.3	56.5	59.3	64.6	81.0	86.4	89.5	68.91	89.48
31-May	90.6	91.6	92.5	92.9	93.3	93.4	91.8	83.1	65.9	56.0	48.9	44.1	39.2	37.4	34.2	32.9	28.4	30.0	32.3	35.7	42.6	51.2	57.0	58.9	59.34	93.41
68.76 70.61 72.84 74.59 76.23 78.29 76.12 69.88 59.56 52.98 47.62 44.31 41.63 40.51 38.49 36.74 37.99 39.40 40.76 43.69 50.67 56.95 62.16 66.76																								Diurnal Average		
92.93 92.99 93.19 93.13 93.34 93.41 92.79 93.52 94.41 94.53 93.91 91.74 91.13 90.78 90.67 91.16 91.40 91.25 91.64 92.11 92.51 92.71 92.86 92.91																								Diurnal Maximum		



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

**Wind Speed (WS) - kph**  
**May 2016**

<b>Maximum Value: 11.36 kph on May 25 16:00</b>		<b>Maximum Daily Average: 5.80 kph on May 8</b>		<b>Hours in Service: 744</b>																							
<b>Minimum Value: 0.5 kph on May 1 20:00</b>		<b>Minimum Daily Average: 2.25 kph on May 6</b>		<b>Hours of Data: 744</b>																							
<b>Maximum Diurnal Average: 5.01 kph at hour 16</b>		<b>Minimum Diurnal Average: 2.03 kph at hour 4</b>		<b>Hours of Missing Data: 0</b>																							
<b>Monthly Average: 3.210 kph</b>		<b>Percentiles: P<sub>1</sub> = 0.8 P<sub>10</sub> = 1.1 Q<sub>1</sub> = 1.7 Median = 3.1 Q<sub>3</sub> = 4.4 P<sub>90</sub> = 5.4 P<sub>99</sub> = 7.3</b>		<b>Hours of Calibration: 0</b>																							
				<b>Percent Operational Time: 100.0</b>																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-May	1.1	1.3	1.5	1.1	1.0	0.7	0.8	1.0	2.1	3.0	2.9	4.6	4.7	4.7	5.3	4.3	3.7	3.0	2.7	0.5	1.0	1.1	1.3	1.2	2.27	5.30	
2-May	1.2	1.1	1.2	1.4	1.4	1.3	1.4	1.2	1.5	6.7	4.4	5.0	5.2	6.0	5.9	4.5	5.3	4.9	4.1	3.1	0.8	1.8	1.4	1.7	3.01	6.73	
3-May	1.6	1.7	2.7	1.9	1.3	1.1	1.3	1.7	3.7	3.4	3.8	4.0	4.4	4.6	5.5	4.7	4.7	4.1	3.5	2.0	1.5	1.4	2.8	1.7	2.88	5.45	
4-May	1.1	0.9	1.6	1.2	1.3	1.2	2.0	1.4	1.4	2.8	4.2	4.8	6.0	6.2	5.3	4.9	4.0	3.8	3.9	4.0	2.5	5.1	3.4	3.0	3.16	6.20	
5-May	1.1	1.2	1.9	3.1	3.8	5.9	4.5	5.1	4.6	2.9	3.2	4.5	3.2	3.9	4.7	5.4	4.8	3.6	3.2	3.3	1.4	1.0	1.4	1.2	3.30	5.91	
6-May	1.0	0.8	0.8	0.9	1.6	1.2	1.2	1.2	1.9	2.3	2.6	3.7	4.9	4.1	4.7	3.8	3.7	2.6	2.4	1.7	1.6	2.0	1.9	1.3	2.25	4.88	
7-May	1.7	1.8	2.1	1.4	1.1	0.8	1.0	1.1	2.1	2.6	2.9	4.7	4.9	5.6	5.3	5.8	4.7	4.4	4.2	2.5	3.3	2.6	2.1	2.3	2.95	5.76	
8-May	3.2	3.4	3.0	2.8	4.6	4.3	5.4	7.3	6.5	5.8	6.9	2.8	3.7	4.7	9.4	8.8	7.8	8.3	8.4	7.3	6.7	6.2	6.4	5.6	5.80	9.41	
9-May	6.1	4.8	2.3	2.6	2.6	2.7	2.7	4.1	5.3	7.5	7.0	7.4	8.3	7.0	6.6	6.1	6.0	5.6	4.2	3.1	2.6	1.3	2.1	1.1	4.55	8.29	
10-May	0.8	1.1	1.3	1.3	1.7	0.9	1.0	3.1	2.4	4.3	4.7	5.5	5.5	4.5	4.4	3.8	4.4	4.6	3.0	3.0	2.2	0.9	1.1	1.2	2.77	5.55	
11-May	1.5	1.3	1.4	0.9	1.2	1.3	1.2	1.7	3.3	2.8	3.6	3.8	4.8	3.9	5.6	5.5	6.9	6.1	5.6	3.5	2.1	1.9	1.8	1.5	3.05	6.87	
12-May	1.3	2.3	2.7	2.5	3.4	4.2	3.7	2.2	2.5	3.8	4.8	4.7	5.2	6.3	5.5	6.4	4.6	4.3	3.9	2.8	1.4	2.0	1.2	0.9	3.44	6.41	
13-May	0.8	1.4	1.1	0.9	1.1	1.0	0.9	0.8	1.8	3.9	3.9	5.4	4.7	4.3	4.5	4.8	4.7	5.0	3.3	2.5	1.3	2.0	1.8	1.3	2.62	5.35	
14-May	1.2	1.2	1.2	1.1	1.1	0.9	0.9	1.0	2.3	3.8	5.5	4.8	4.4	5.2	5.6	5.2	5.0	4.8	4.4	3.4	1.0	1.2	1.6	1.5	2.84	5.58	
15-May	1.2	1.2	1.5	1.0	1.1	1.0	0.9	1.6	2.1	5.1	5.5	7.0	6.1	6.2	6.8	5.3	6.0	6.2	5.5	4.5	3.4	1.4	2.2	2.6	3.56	6.98	
16-May	2.7	2.8	3.0	3.1	3.1	3.4	5.6	5.0	6.0	6.3	5.9	5.4	5.3	4.9	5.4	6.4	4.6	5.0	3.6	3.7	2.8	3.5	3.0	4.7	4.38	6.38	
17-May	4.6	5.1	6.0	3.7	5.0	1.4	1.4	3.0	3.5	3.2	3.0	5.1	7.3	5.3	5.1	5.6	4.6	4.2	3.1	1.5	0.9	1.0	1.2	1.4	3.60	7.34	
18-May	1.5	1.9	1.8	2.2	1.7	1.1	1.6	1.5	1.6	1.8	3.1	2.7	4.4	3.3	3.9	4.4	3.0	6.2	4.9	5.8	5.9	4.1	3.6	3.5	3.14	6.22	
19-May	3.4	4.7	3.7	2.0	2.1	1.9	2.3	2.3	2.0	2.3	2.9	3.5	3.3	4.0	4.7	4.8	4.3	5.4	4.8	4.5	3.9	4.1	4.0	4.3	3.55	5.39	
20-May	4.5	4.2	4.3	4.1	3.8	3.7	4.0	3.7	3.4	4.4	3.8	4.1	4.2	3.7	3.9	3.2	3.4	3.2	3.1	3.3	2.5	3.5	2.2	2.1	3.59	4.48	
21-May	2.2	2.3	3.9	3.2	3.0	3.4	3.2	3.4	3.6	3.0	3.2	3.3	3.5	3.6	2.9	2.6	2.4	2.9	2.4	2.2	2.7	3.1	3.8	3.5	3.05	3.89	
22-May	4.1	2.8	3.6	3.8	3.3	3.2	3.9	3.8	4.6	4.7	3.9	4.2	4.7	4.6	5.0	4.4	4.5	4.6	4.5	3.7	3.8	3.4	3.1	2.5	3.96	5.04	
23-May	3.3	2.4	2.9	3.3	3.4	3.8	3.7	4.0	4.1	3.3	3.3	3.5	3.3	4.4	3.2	4.3	3.0	2.6	3.2	1.4	1.4	1.2	1.7	2.0	3.04	4.38	
24-May	0.9	1.8	0.9	0.9	1.0	1.0	1.9	3.5	4.0	3.3	3.6	3.4	3.9	4.5	4.1	5.2	4.3	4.6	4.2	3.5	3.4	2.0	2.0	1.9	2.91	5.17	
25-May	1.5	2.0	1.6	1.5	1.8	1.5	1.1	1.8	2.2	3.1	3.1	4.0	3.6	3.4	4.1	11.4	5.0	4.8	3.0	3.8	1.8	1.7	2.5	1.4	2.99	11.36	
26-May	2.5	1.3	1.3	1.0	1.0	1.4	1.8	1.4	2.2	2.3	2.2	3.7	3.2	2.4	4.8	4.7	5.4	4.1	2.7	2.8	6.1	3.5	2.7	1.9	2.77	6.10	
27-May	4.5	3.0	2.5	2.3	2.2	2.0	2.2	2.1	2.6	2.1	1.7	2.1	1.7	1.7	2.6	2.9	3.7	3.1	2.7	2.8	2.3	3.4	3.9	2.7	2.60	4.52	
28-May	2.1	1.0	1.4	1.4	1.4	0.8	0.8	0.9	5.0	3.3	4.1	3.3	4.6	4.8	4.0	2.6	6.3	4.5	2.5	2.9	5.7	1.9	1.3	1.5	2.83	6.32	
29-May	1.4	1.1	1.4	1.7	0.9	1.0	1.2	1.7	2.3	2.1	2.9	4.5	4.3	4.0	5.0	6.6	5.6	5.8	4.9	1.7	1.2	2.1	1.3	2.0	2.78	6.59	
30-May	2.0	3.7	3.0	3.7	3.0	3.7	3.7	4.2	3.6	5.8	5.4	5.2	5.7	5.1	4.9	3.5	3.6	3.4	3.5	3.6	0.7	1.1	1.0	1.1	3.51	5.76	
31-May	1.0	0.9	0.7	0.9	1.3	1.5	1.1	1.2	1.7	3.1	3.6	3.7	3.6	2.9	3.8	3.4	3.1	3.4	3.3	3.0	2.4	1.4	2.3	2.6	2.33	3.82	
		2.16	2.15	2.20	2.03	2.13	2.05	2.21	2.51	3.08	3.71	3.92	4.34	4.60	4.51	4.92	5.01	4.61	4.48	3.83	3.14	2.59	2.36	2.33	2.18	Diurnal Average	
		6.11	5.10	5.95	4.13	5.02	5.91	5.60	7.29	6.50	7.49	7.03	7.40	8.29	7.03	9.41	11.36	7.76	8.27	8.39	7.33	6.72	6.24	6.35	5.65	Diurnal Maximum	
,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3 24-hr 100 ul/m^3																											





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

**Wind Direction (WD) - deg**  
**May 2016**

<b>Maximum Value: 109.57 deg on May 31 17:00</b>																						<b>Maximum Daily Average: 52.87 deg on May 31</b>																						<b>Hours in Service: 744</b>					
<b>Minimum Value: 6.7 deg on May 11 23:00</b>																						<b>Minimum Daily Average: 12.54 deg on May 22</b>																						<b>Hours of Data: 744</b>					
<b>Maximum Diurnal Average: 38.86 deg at hour 13</b>																						<b>Minimum Diurnal Average: 21.63 deg at hour 19</b>																						<b>Hours of Missing Data: 0</b>					
<b>Monthly Average: 29.209 deg</b>																						<b>Percentiles: P<sub>1</sub> = 9.1 P<sub>10</sub> = 12.9 Q<sub>1</sub> = 15.3 Median = 21.3 Q<sub>3</sub> = 35.5 P<sub>90</sub> = 59.5 P<sub>99</sub> = 89.2</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-May	15.1	11.7	18.3	18.0	30.2	15.7	14.6	24.7	29.5	21.1	30.1	32.7	34.3	31.8	49.2	31.0	50.0	52.2	30.9	48.3	55.4	56.8	29.6	16.8	31.16	56.82																							
2-May	16.2	15.9	11.7	11.6	12.8	13.1	19.9	17.5	18.0	30.3	17.6	19.9	25.8	29.7	31.0	23.0	28.9	22.3	16.5	19.4	17.4	19.5	21.6	35.0	20.61	35.02																							
3-May	23.3	20.3	16.6	19.6	23.0	18.5	28.1	40.3	21.3	18.6	21.5	29.6	86.5	60.8	54.6	54.0	80.3	40.7	22.9	18.0	33.0	22.4	70.7	64.6	37.05	86.47																							
4-May	46.0	45.0	60.0	30.7	19.4	16.8	32.9	35.5	37.0	40.1	30.4	33.0	42.2	52.1	24.6	24.1	25.8	37.0	15.8	14.7	16.8	12.4	14.9	13.9	30.06	60.01																							
5-May	19.6	20.3	14.8	12.1	12.3	11.8	12.9	14.3	16.8	15.7	15.0	20.4	18.5	25.4	26.3	27.4	29.5	26.8	22.6	14.0	21.2	77.0	29.7	15.8	21.68	77.03																							
6-May	13.9	14.2	11.3	12.4	60.7	65.5	44.5	31.9	37.3	26.4	51.9	38.1	49.3	61.4	60.5	56.2	49.3	71.1	46.1	26.3	25.5	25.0	30.4	18.3	38.65	71.10																							
7-May	25.6	22.4	20.2	22.5	19.7	14.0	28.6	83.2	40.7	43.7	29.0	30.1	23.5	24.9	22.2	29.5	38.4	39.9	16.8	33.5	62.0	39.7	24.2	42.7	32.37	83.16																							
8-May	51.2	17.1	13.1	15.2	14.6	19.6	17.8	16.4	18.0	24.5	24.0	23.6	25.8	25.1	41.5	17.1	16.4	14.8	16.9	14.0	13.2	15.1	14.0	12.2	20.05	51.16																							
9-May	12.3	11.7	16.7	13.3	13.0	13.2	13.6	15.3	14.7	14.3	14.8	15.2	16.9	16.0	16.5	15.8	17.1	15.8	15.8	18.5	15.4	44.1	38.8	95.2	20.59	95.21																							
10-May	54.1	70.7	17.9	21.3	64.2	78.0	92.3	36.2	21.8	19.0	19.9	21.6	20.9	20.6	17.8	23.4	21.9	28.3	16.9	14.2	55.3	29.6	18.4	21.1	33.55	92.28																							
11-May	23.2	19.3	23.4	17.2	13.7	29.2	20.5	53.1	22.7	52.9	60.5	72.6	71.6	44.1	50.5	35.6	33.9	29.0	25.8	14.5	10.1	8.8	6.7	7.5	31.10	72.61																							
12-May	7.3	7.4	20.8	18.0	28.9	52.4	30.1	16.6	17.9	23.7	23.8	29.9	21.7	28.2	26.4	28.5	19.8	28.0	21.0	11.7	11.6	48.8	31.1	13.8	23.64	52.43																							
13-May	14.3	20.7	15.7	16.0	16.5	19.5	18.5	16.7	59.3	83.7	80.4	80.9	104.3	77.8	76.1	62.5	67.8	64.7	35.7	26.2	9.2	28.5	32.8	39.4	44.46	104.25																							
14-May	21.1	20.2	21.6	18.9	17.5	19.6	16.5	10.8	30.9	44.1	46.2	51.4	66.4	73.2	45.0	39.1	28.6	38.5	32.1	14.4	38.9	38.9	40.4	34.9	33.72	73.22																							
15-May	23.8	25.0	19.4	17.4	18.9	22.8	18.0	13.2	36.3	26.6	24.2	27.6	18.7	19.1	25.6	27.0	28.5	23.9	19.4	15.5	19.3	24.6	25.8	27.9	22.85	36.29																							
16-May	22.8	27.4	22.9	18.1	17.9	21.1	13.0	14.5	15.6	13.6	17.9	19.5	30.3	28.1	24.2	42.8	51.0	41.3	13.7	13.4	9.0	9.7	10.5	35.4	22.24	51.03																							
17-May	76.8	24.5	13.9	13.3	18.2	22.8	14.7	15.3	13.7	16.6	32.6	45.1	54.2	34.0	24.4	56.7	28.9	26.7	35.4	20.8	40.7	17.4	20.3	29.2	29.01	76.75																							
18-May	24.0	28.1	48.3	47.7	86.2	43.6	40.6	32.3	54.0	58.5	58.2	68.1	84.1	56.3	93.4	77.1	17.0	16.7	20.0	19.3	15.3	12.5	14.9	15.5	42.99	93.41																							
19-May	15.3	18.3	15.5	20.4	13.5	16.9	14.4	15.7	15.8	20.1	15.1	14.2	14.2	13.8	13.6	16.6	17.6	15.6	17.1	17.5	15.8	15.3	14.0	13.9	15.85	20.43																							
20-May	13.9	12.9	13.4	14.0	12.9	13.0	15.5	13.8	15.9	13.2	13.8	14.6	15.3	14.0	14.2	17.0	18.1	14.2	17.1	15.7	14.1	12.8	15.9	15.2	14.61	18.08																							
21-May	12.7	12.4	12.7	13.3	14.5	13.9	14.4	13.9	16.1	15.6	13.7	15.8	17.8	15.7	17.1	17.0	17.0	15.0	13.6	11.4	12.5	12.2	12.1	12.1	14.27	17.77																							
22-May	13.1	11.4	10.9	12.9	12.8	13.2	12.5	11.9	12.9	14.1	13.1	11.8	12.4	12.7	13.2	12.0	12.2	12.5	11.6	12.5	12.0	12.1	14.0	13.0	12.54	14.11																							
23-May	13.4	12.9	11.8	11.6	13.6	12.7	13.5	12.4	13.0	14.3	12.6	13.1	16.3	14.6	24.4	19.8	16.6	16.1	18.8	41.8	54.1	21.2	26.2	8.4	18.04	54.06																							
24-May	14.3	67.6	72.8	34.7	59.9	26.7	34.6	30.6	27.0	51.2	57.2	38.7	41.3	49.4	37.9	31.2	25.8	24.3	21.8	14.7	16.0	23.4	24.8	21.3	35.31	72.79																							
25-May	19.7	21.4	21.6	17.6	74.9	37.9	28.3	19.4	43.3	32.3	36.7	58.2	80.8	69.9	35.3	63.1	16.2	84.6	15.9	37.5	42.2	87.4	62.8	20.6	42.83	87.43																							
26-May	53.9	56.7	90.7	87.0	89.5	40.7	83.2	70.4	28.7	43.8	94.0	43.0	52.6	66.5	28.6	34.0	30.4	35.5	26.0	33.5	58.2	13.7	19.1	12.8	49.68	93.97																							
27-May	25.2	12.5	12.7	14.8	17.7	15.3	13.8	16.2	14.7	19.2	14.9	18.3	16.5	19.1	13.0	15.4	16.8	17.7	18.6	15.9	17.7	18.0	25.9	27.1	17.37	27.05																							
28-May	16.8	34.4	31.6	27.8	35.0	27.3	15.9	28.1	44.9	30.6	35.7	29.4	40.6	81.6	57.8	54.7	30.9	78.1	13.7	10.5	32.3	31.9	19.8	27.8	34.88	81.57																							
29-May	40.9	89.4	35.3	80.7	74.5	74.7	84.3	23.1	20.5	21.1	28.6	32.7	32.8	22.1	30.2	25.5	14.8	17.5	23.1	86.1	59.0	74.0	15.5	22.1	42.85	89.37																							
30-May	12.1	11.2	11.8	12.7	12.6	12.9	12.5	11.8	12.3	13.6	14.3	15.4	15.6	19.7	18.1	19.0	15.8	18.3	11.6	19.7	14.0	20.3	77.3	44.5	18.63	77.28																							
31-May	53.8	52.7	17.4	23.4	75.0	75.9	44.9	77.8	78.5	59.4	55.9	59.7	53.8	81.2	52.7	81.9	109.6	54.2	37.6	30.2	20.5	26.3	25.2	21.4	52.87	109.57																							
																								25.66	26.96	24.03	23.04	32.07	28.33	27.90	26.88	27.39	29.74	32.37	33.04	38.86	38.36	34.38	34.77	31.45	32.94	21.63	22.70	27.02	29.01	26.71	25.78	Diurnal Average	
																								76.75	89.37	90.70	87.03	89.54	77.98	92.28	83.16	78.47	83.70	93.97	80.94	104.25	81.57	93.41	81.94	109.57	84.65	46.07	86.09	61.97	87.43	77.28	95.21	Diurnal Maximum	
,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3 24-hr 100 ul/m^3																																																	

# **CALIBRATIONS**

# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 901, Tomahawk

Calibration Date: May 30, 2016

Parameter: NO/NO<sub>2</sub>/NO<sub>x</sub>

Instrument: Teco 42i

Serial Number: 0708721217

Previous Calibration Date: April 29,2016

Calibration: Routine

Calibration Equipment: SABIO 2010 sn#05200311

Barometric Pressure: 27.51" Hg

Calibration Method: Standard Gas Dilution /GPT

Cylinder ID: FF9469

Temperature: 22.0° C

Cylinder Concentration: 12.6 ppm NO/NO<sub>x</sub>

In Service: Jan 14/15

Technician: J.McClintock

Instrument Settings	NO bkg ppb	NO <sub>x</sub> bkg ppb	Pre-reactor bkg ppb	NO Coefficient	NO <sub>x</sub> Coefficient	NO <sub>2</sub> Coefficient	Monitoring Range
Previous	12.5	12.8	na	1.230	1.007	1.000	200 ppb
Current	12.8	13.1	na	1.264	0.998	1.000	200 ppb

NO	Final Zero: 0.3 ppb	Final Span: 138.7 ppb	As Found Correction Factor: 1.020
NO <sub>2</sub>	Final Zero: -0.2 ppb	Final Span: -0.3 ppb	As Found Correction Factor: 1.010
NO <sub>x</sub>	Final Zero: 0.3 ppb	Final Span: 138.5 ppb	As Found Correction Factor: 1.022

Results of Linear Regression			Slope	Intercept	R <sup>2</sup>
NO	R <sub>c</sub> vs C <sub>c</sub>	Previous	149.574700	71.197980	0.999902
		Current	149.682500	-31.957350	0.999989
	C <sub>i</sub> vs C <sub>c</sub>	Current	1.000000	-0.000020	0.999990
NO <sub>2</sub>	R <sub>c</sub> vs C <sub>c</sub>	Previous	151.289100	84.835850	0.999902
		Current	149.805000	19.785650	0.999988
	C <sub>i</sub> vs C <sub>c</sub>	Current	1.000000	0.000000	0.999988
NO <sub>x</sub>	R <sub>c</sub> vs C <sub>c</sub>	Previous	151.427700	84.961460	0.999902
		Current	150.215300	-45.412010	0.999987
	C <sub>i</sub> vs C <sub>c</sub>	Current	1.000000	-0.000021	0.999988

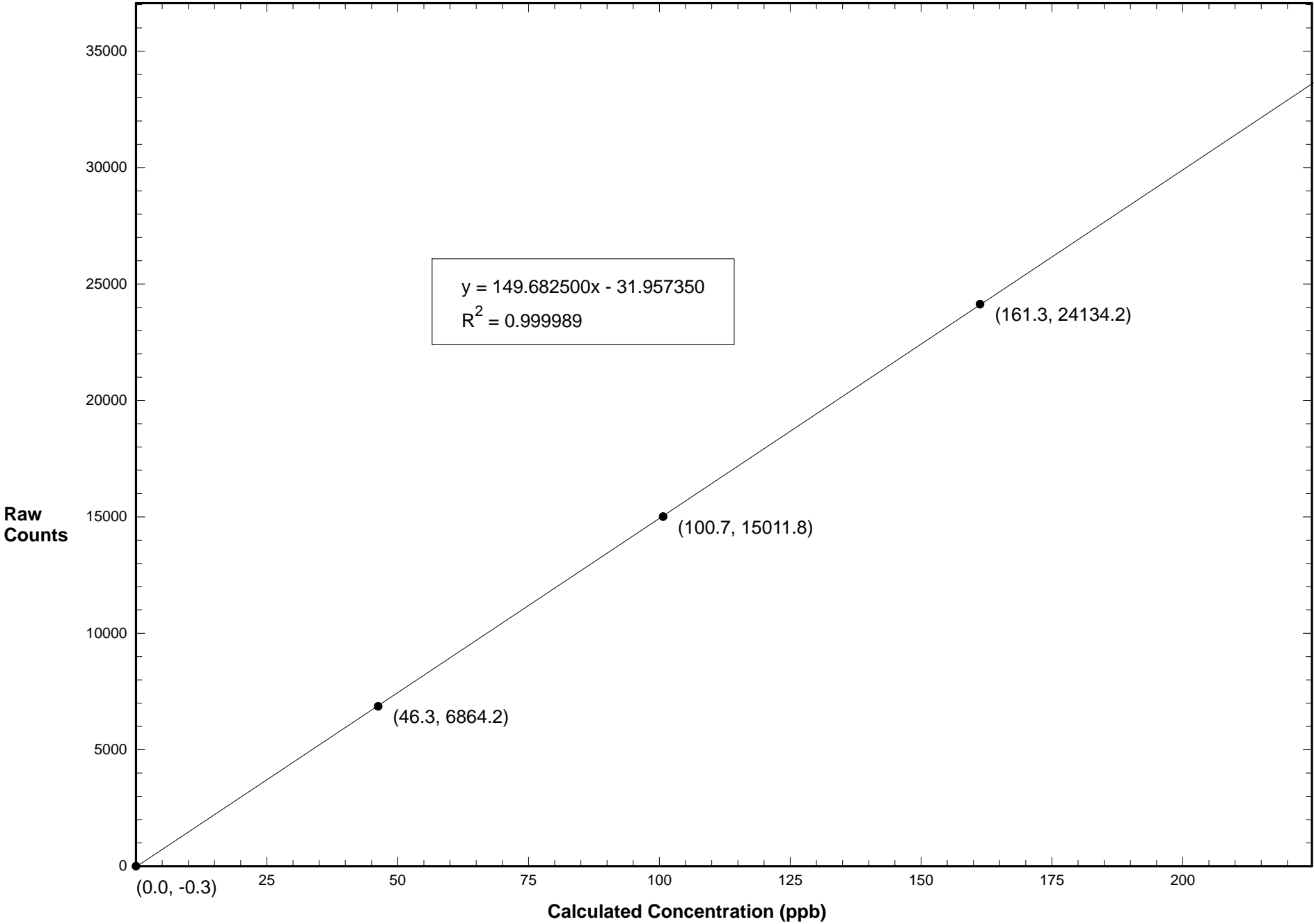
Comments: Averaging time changed to 120 from 20 seconds .

## Calibration Data Summary (Page 2)

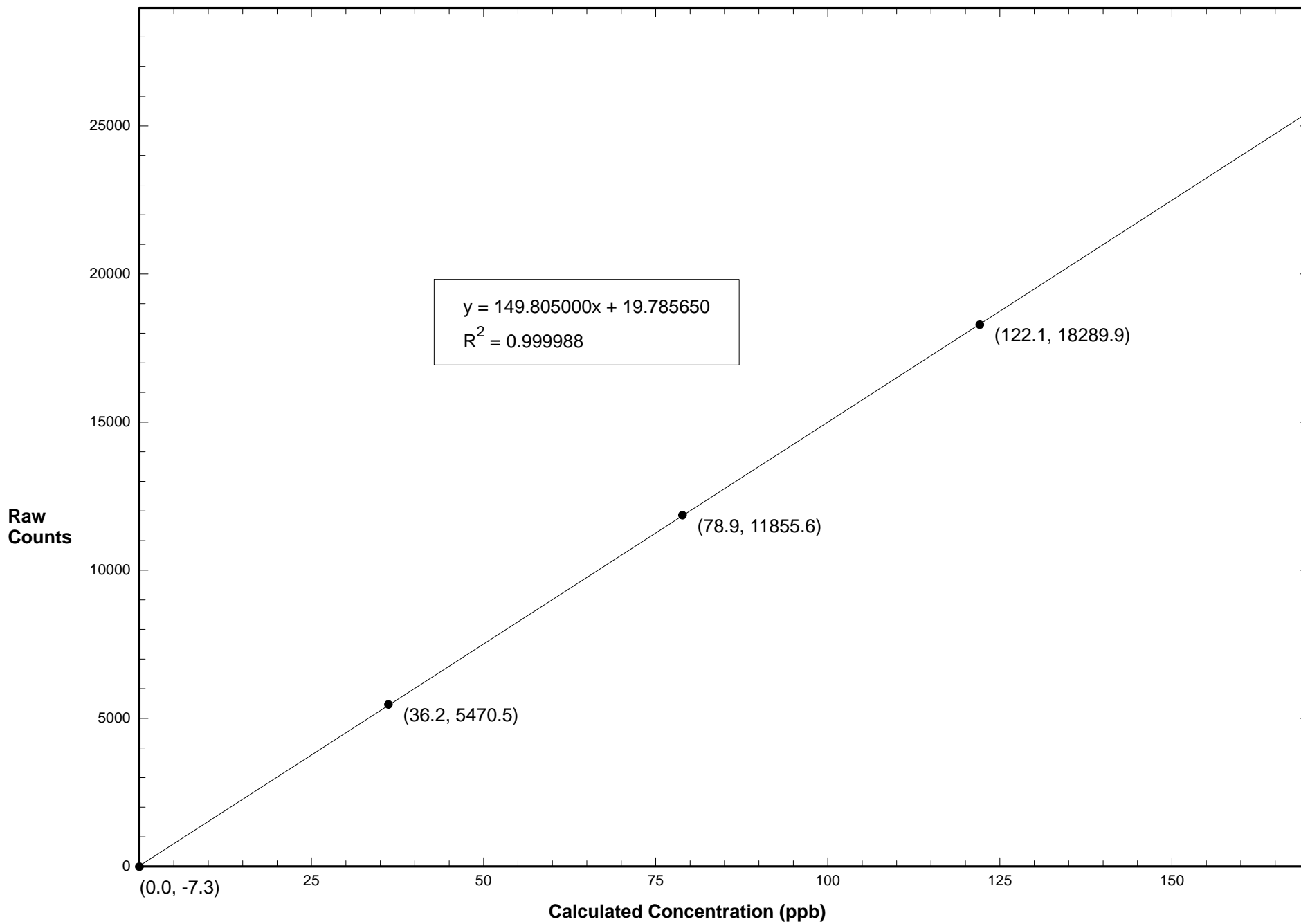
May 30, 2016 - Station 901

NO Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration $C_c$ (ppb)	Raw Count Output $R_c$	Indicated Concentration $C_i$ (ppb)	Correction Factor $C_c/C_i$		
0.06590	5.083	161.3	24134.2	161.4	0.999		
0.04090	5.076	100.7	15011.8	100.5	1.002		
0.01866	5.064	46.3	6864.2	46.1	1.004		
0.00000	5.000	0.0	-0.3	0.2			
NO Calibration					Average Correction Factor:	1.002	
0.06590	5.083	161.3	24211.0	161.5	0.999		
0.04090	5.076	100.7	15040.0	100.4	1.003		
0.01866	5.064	46.3	6886.4	46.1	1.002		
0.00000	5.000	0.0	-17.1	0.2			
NO <sub>x</sub> Calibration					Average Correction Factor:	1.001	
Reference Concentration NO (ppb)	Raw Count Output NO	Calculated Concentration NO (ppb)	Calculated Concentration NO <sub>2</sub> , C <sub>c</sub> (ppb)	Raw Count Output $R_c$	Indicated Concentration $C_i$ (ppb)	Correction Factor $C_c/C_i$	Converter Efficiency $C_i/C_c$
160.8	5766.8	38.7	122.1	18289.9	122.0	1.001	0.999
160.8	12230.7	81.9	78.9	11855.6	79.0	0.999	1.001
160.8	18625.5	124.6	36.2	5470.5	36.4	0.994	1.006
			0.0	-7.3	-0.2		
						Average Correction Factor:	0.998
NO <sub>2</sub> Gas Phase Titration					Average Converter Efficiency: 1.002		
Parameter	Correction Factor (Previous)	Correction Factor: (Current)	Percent Change of Correction Factor				
NO	0.998	0.999	0.1				
NO <sub>2</sub>	0.996	1.001	0.5				
NO <sub>x</sub>	0.998	0.999	0.1				

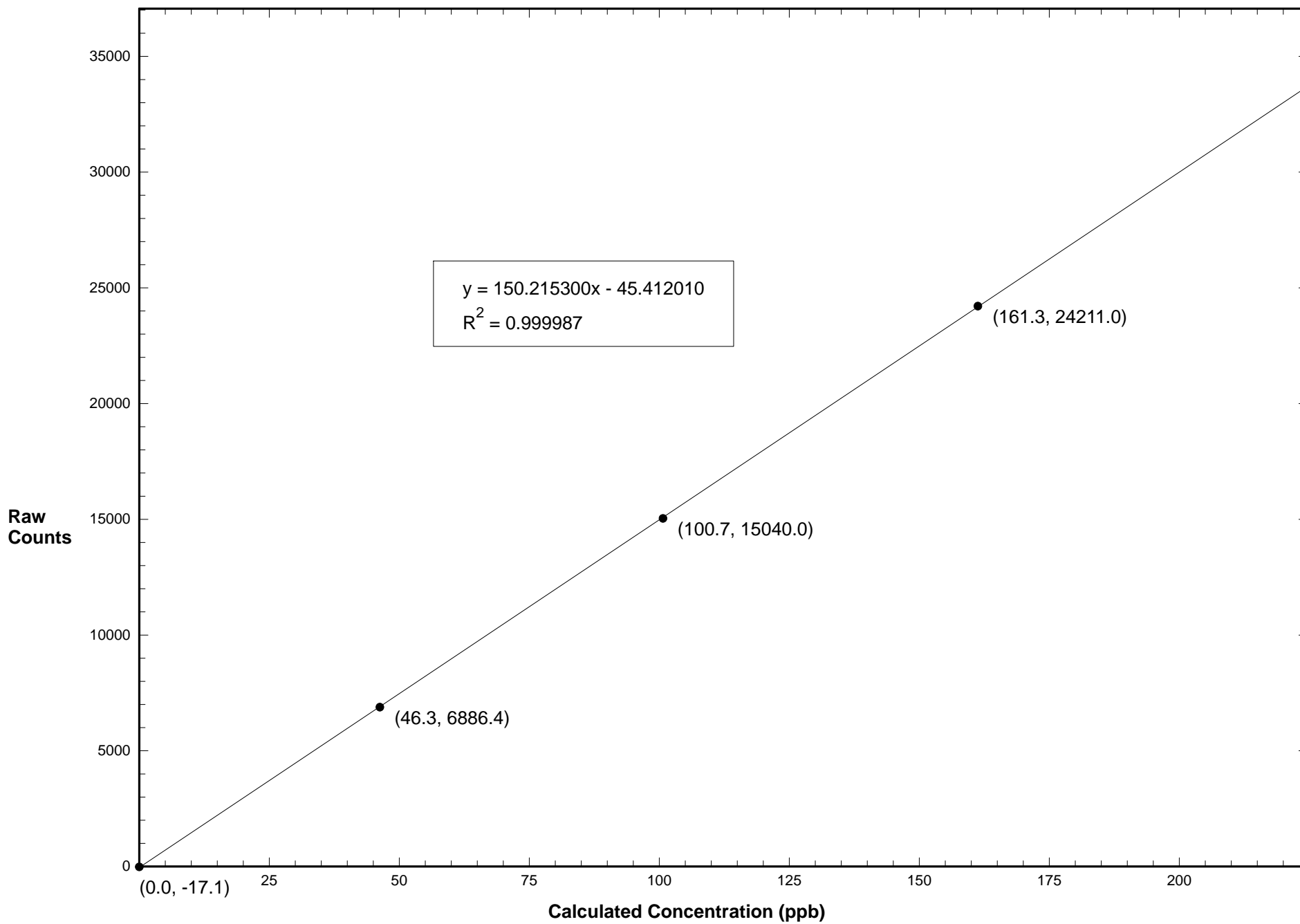
# Station 901 NO May 30, 2016: Linear Regression



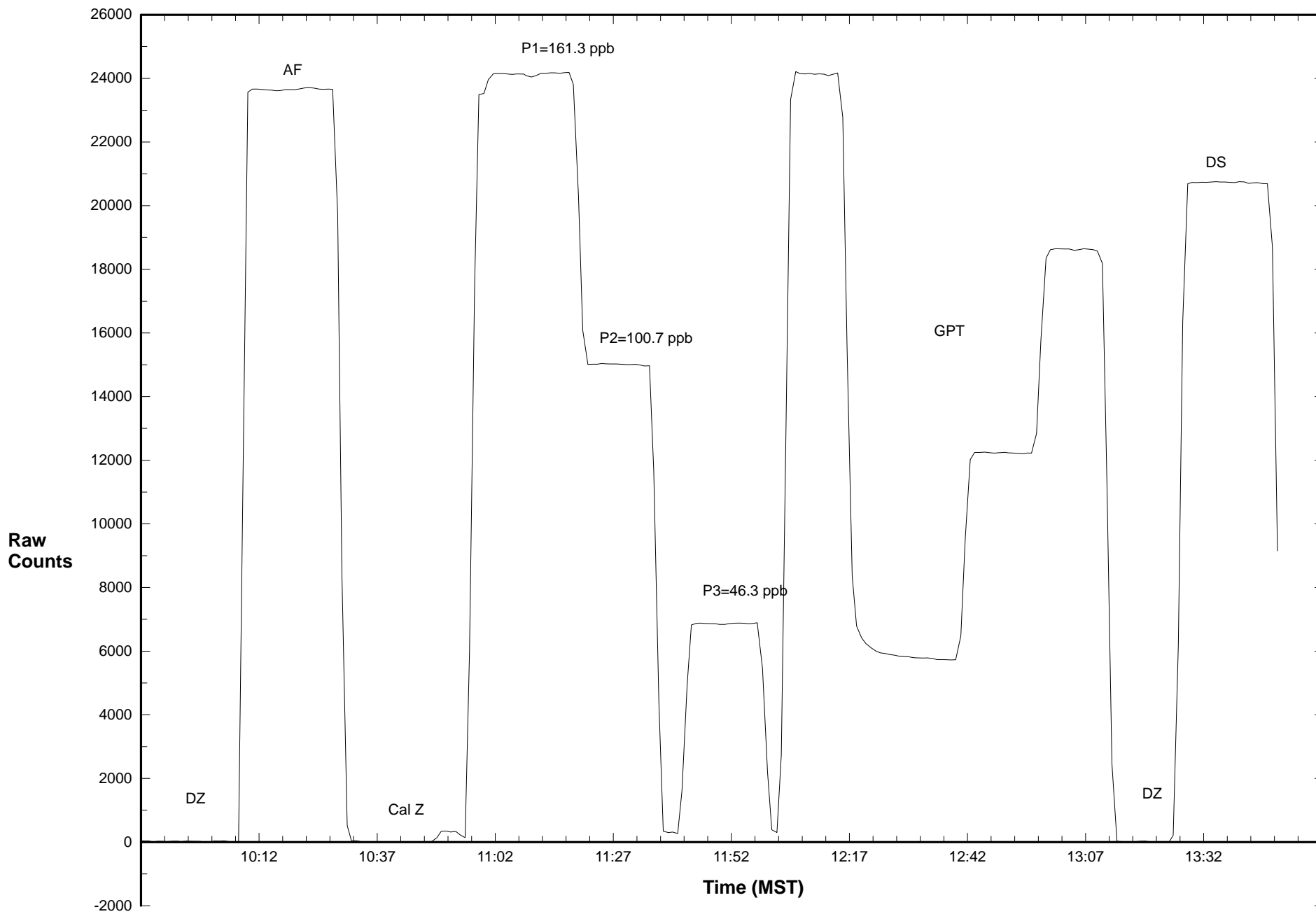
### Station 901 NO2 May 30, 2016: Linear Regression



### Station 901 NOX May 30, 2016: Linear Regression

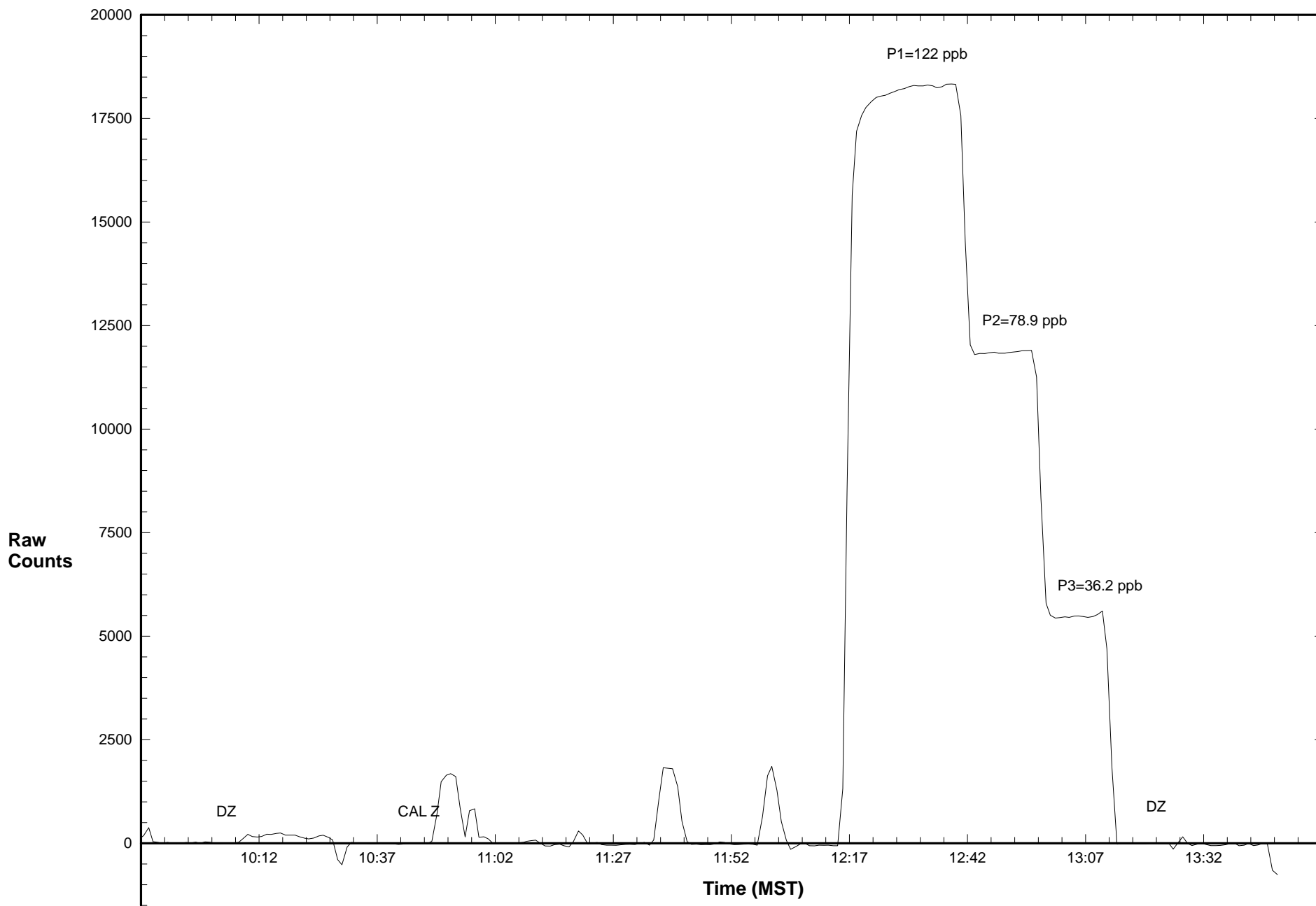


# Station 901 NO May 30, 2016: Calibration Graph

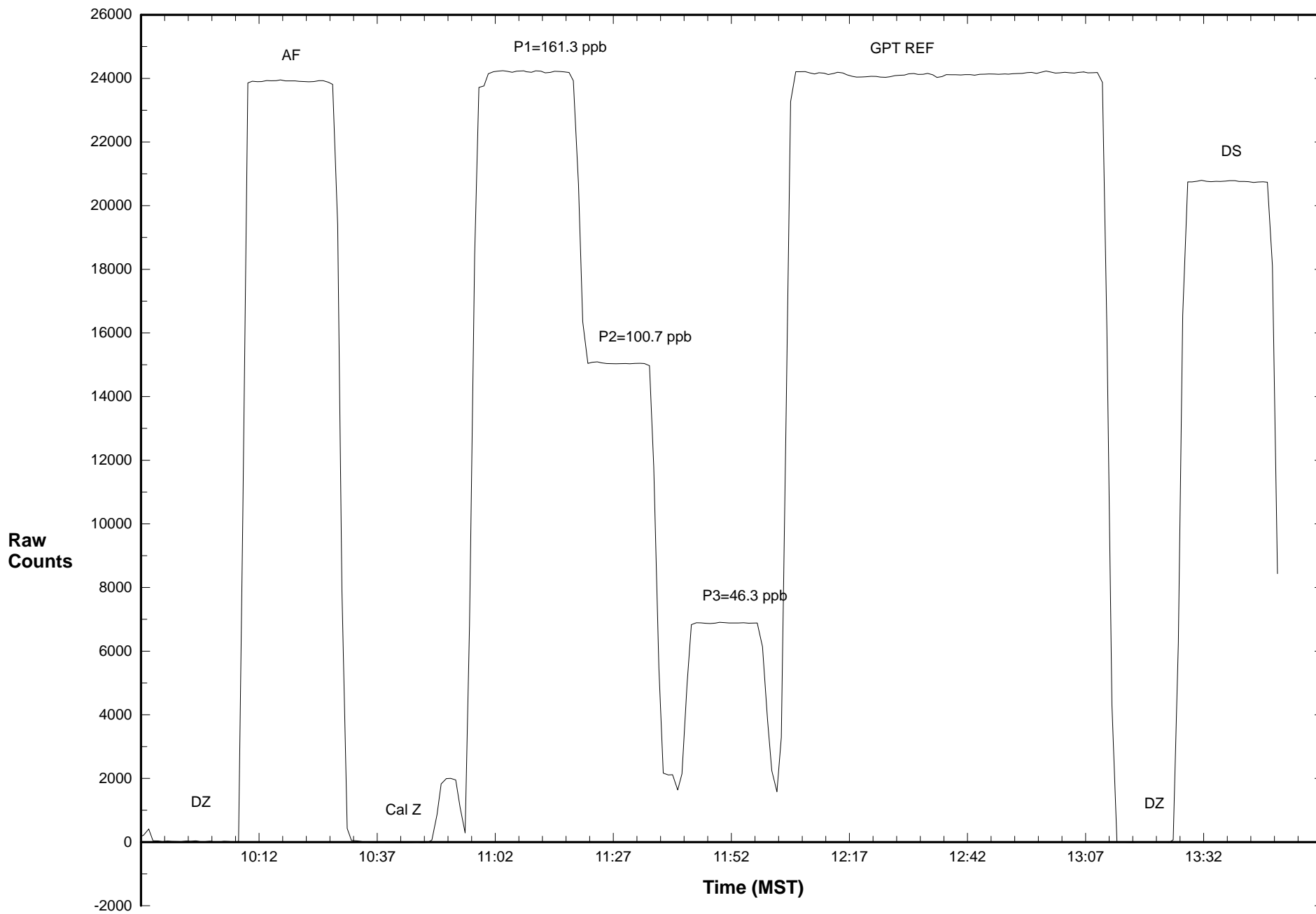




# Station 901 NO2 May 30, 2016: Calibration Graph



# Station 901 NOX May 30, 2016: Calibration Graph



# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 901, Tomahawk

Calibration Date: May 30, 2016

Parameter: O<sub>3</sub>

Instrument: Teco 49i

Serial Number: 0708721220

Previous Calibration Date: April 29, 2016

Calibration: Routine

Calibration Equipment: 2B Technology 306 sn# 145 Barometric Pressure: 27.51" Hg

Calibration Method: Ozone Generator

Temperature: 22.0° C

Technician: J.McClintock

Instrument Settings	Background	Coefficient	Monitoring Range
Previous	0.2	1.055	500 ppb
Current	-0.0	1.021	500 ppb

Final Zero: -0.4 ppb

Final Span: 236.1 ppb

As Found Correction Factor: 0.968

Calibration System Flow Rate (LPM)	Calculated Concentration C <sub>c</sub> (ppb)	Raw Count Output R <sub>c</sub>	Indicated Concentration C <sub>i</sub> (ppb)	Correction Factor C <sub>c</sub> /C <sub>i</sub>
3.000	409.0	24482.4	408.5	1.001
3.000	256.0	15393.2	256.7	0.997
3.000	102.0	6148.6	102.3	0.997
3.000	0.0	-3.9	-0.5	

### Results of Linear Regression

R <sub>c</sub> vs C <sub>c</sub>	Slope	Intercept	R <sup>2</sup>
Previous	59.789850	114.921900	0.999881
Current	59.873110	24.407550	0.999989
C <sub>i</sub> vs C <sub>c</sub>			
Current	1.000000	-0.000039	0.999989

Average Correction Factor: 0.999

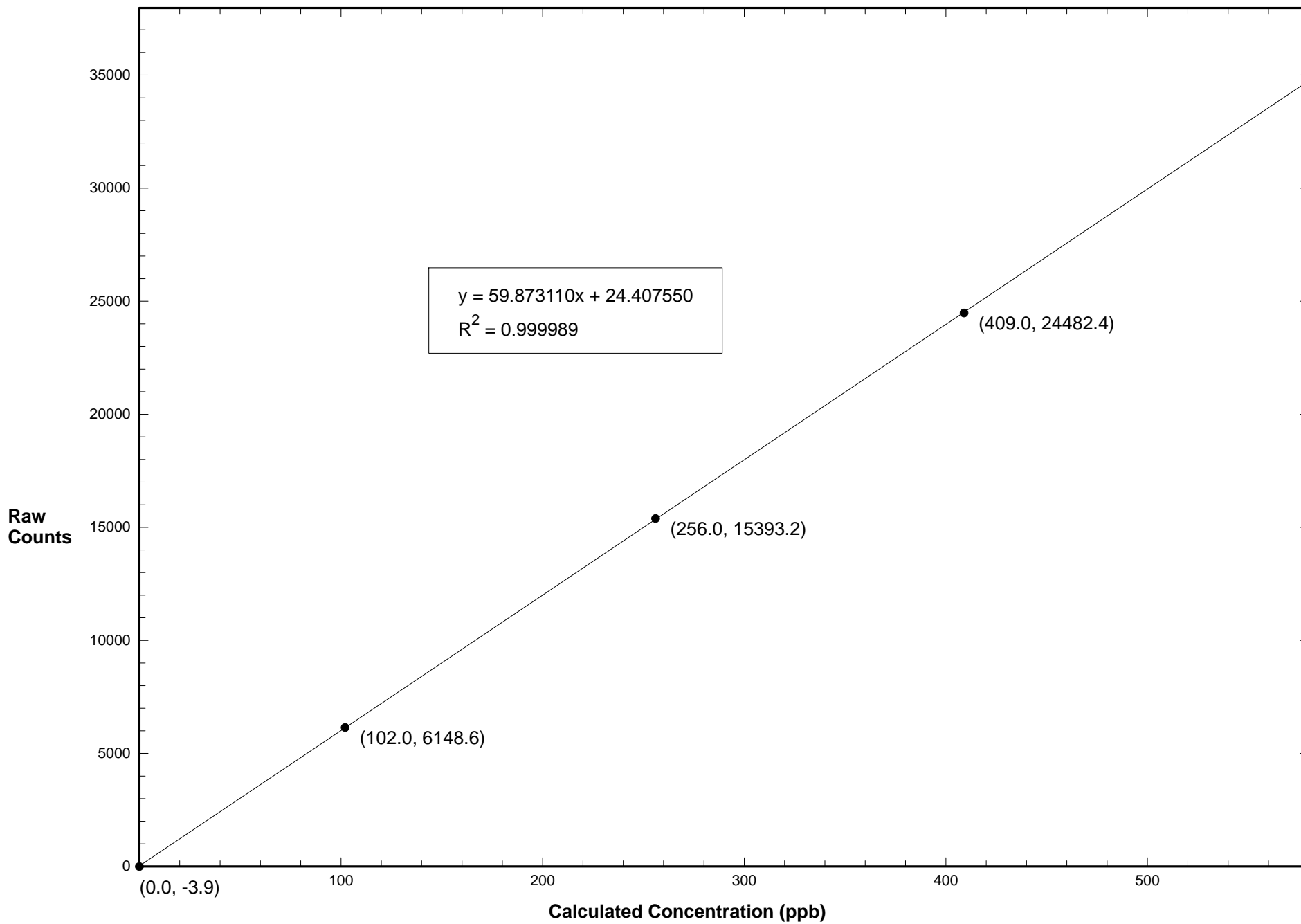
Previous Correction Factor: 1.003

Current Correction Factor: 1.001

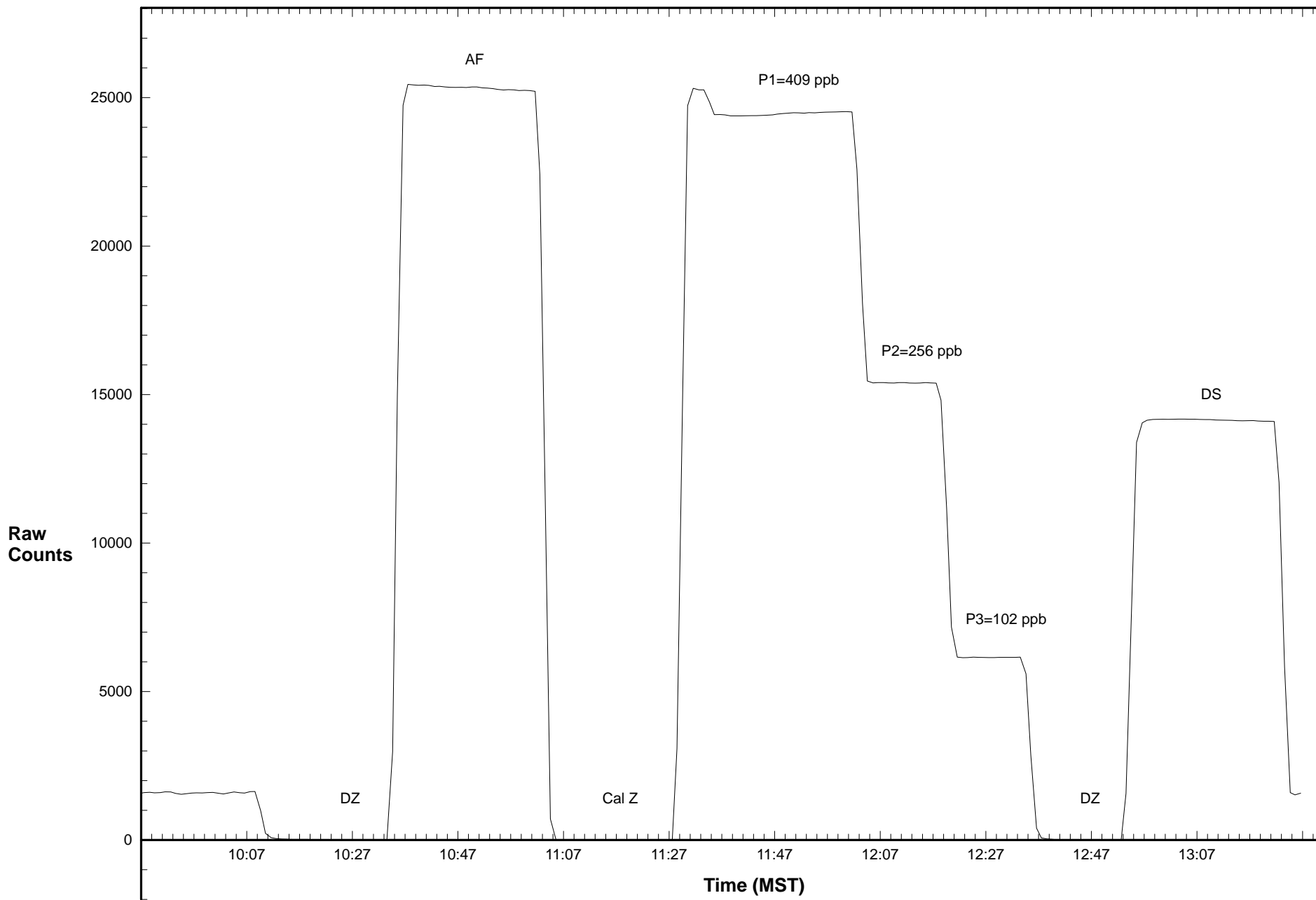
Percent Change of Correction Factor: -0.2

Comments:

### Station 901 O3 May 30, 2016: Linear Regression



# Station 901 O3 May 30, 2016: Calibration Graph



# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 901, Tomahawk

Calibration Date: May 30, 2016

Parameter: SO<sub>2</sub>

Instrument: Teco 43i

Serial Number: 0708721218

Previous Calibration Date: April 29,2016

Calibration: Routine

Calibration Equipment: SABIO 2010 sn#05200311

Barometric Pressure: 27.51" Hg

Calibration Method: Standard Gas Dilution

Cylinder ID: FF9469

Temperature: 22.0° C

Cylinder Concentration: 6.2 ppm SO<sub>2</sub>

In Service: Jan 14/15

Technician: J.McClintock

### Instrument Settings

SO<sub>2</sub> bkg ppb

SO<sub>2</sub> Coefficient

Monitoring Range

Previous

14.9

0.913

100 ppb

Current

13.9

0.865

100 ppb

Final Zero: 0.3 ppb

Final Span: 61.3 ppb

As Found Correction Factor: 0.961

SO<sub>2</sub> Flow  
Rate (LPM)

Dilution Flow  
Rate (LPM)

Calculated  
Concentration  
C<sub>c</sub> (ppb)

Raw Count  
Output  
R<sub>c</sub>

Indicated  
Concentration  
C<sub>i</sub> (ppb)

Correction  
Factor  
C<sub>c</sub>/C<sub>i</sub>

0.0659

5.083

79.4

23717.6

79.4

0.999

0.0409

5.076

49.6

14791.7

49.6

0.999

0.0187

5.065

22.8

6665.0

22.4

1.015

0.0000

5.000

0.0

23.7

0.2

### Results of Linear Regression

R<sub>c</sub> vs C<sub>c</sub>

Slope

Intercept

R<sup>2</sup>

Previous

301.462200

113.006200

0.999760

Current

299.154900

-43.544120

0.999952

C<sub>i</sub> vs C<sub>c</sub>

Current

1.000000

0.000000

0.999952

Average Correction Factor:

1.004

Previous Correction Factor:

1.006

Current Correction Factor:

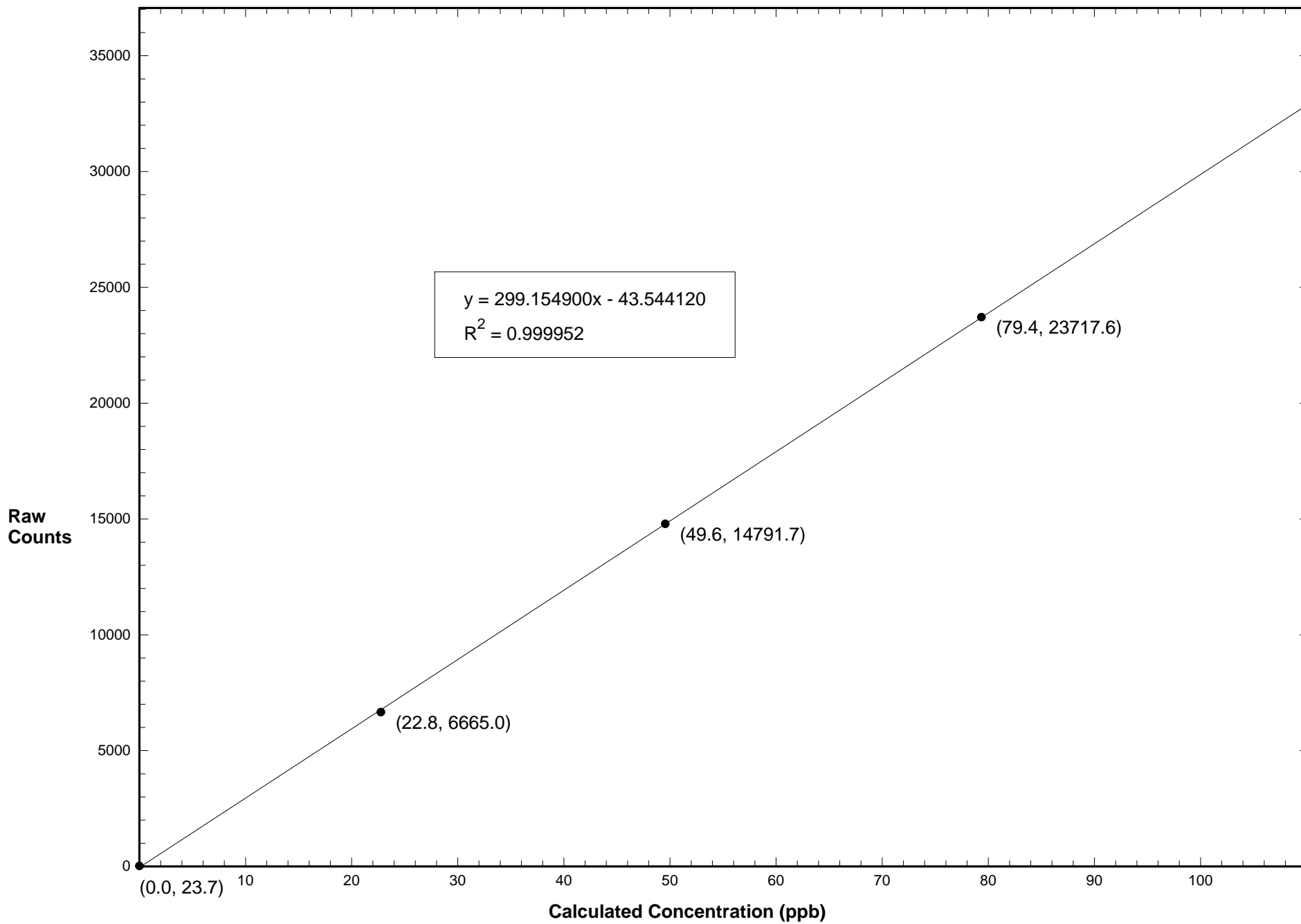
0.999

Percent Change of  
Correction Factor:

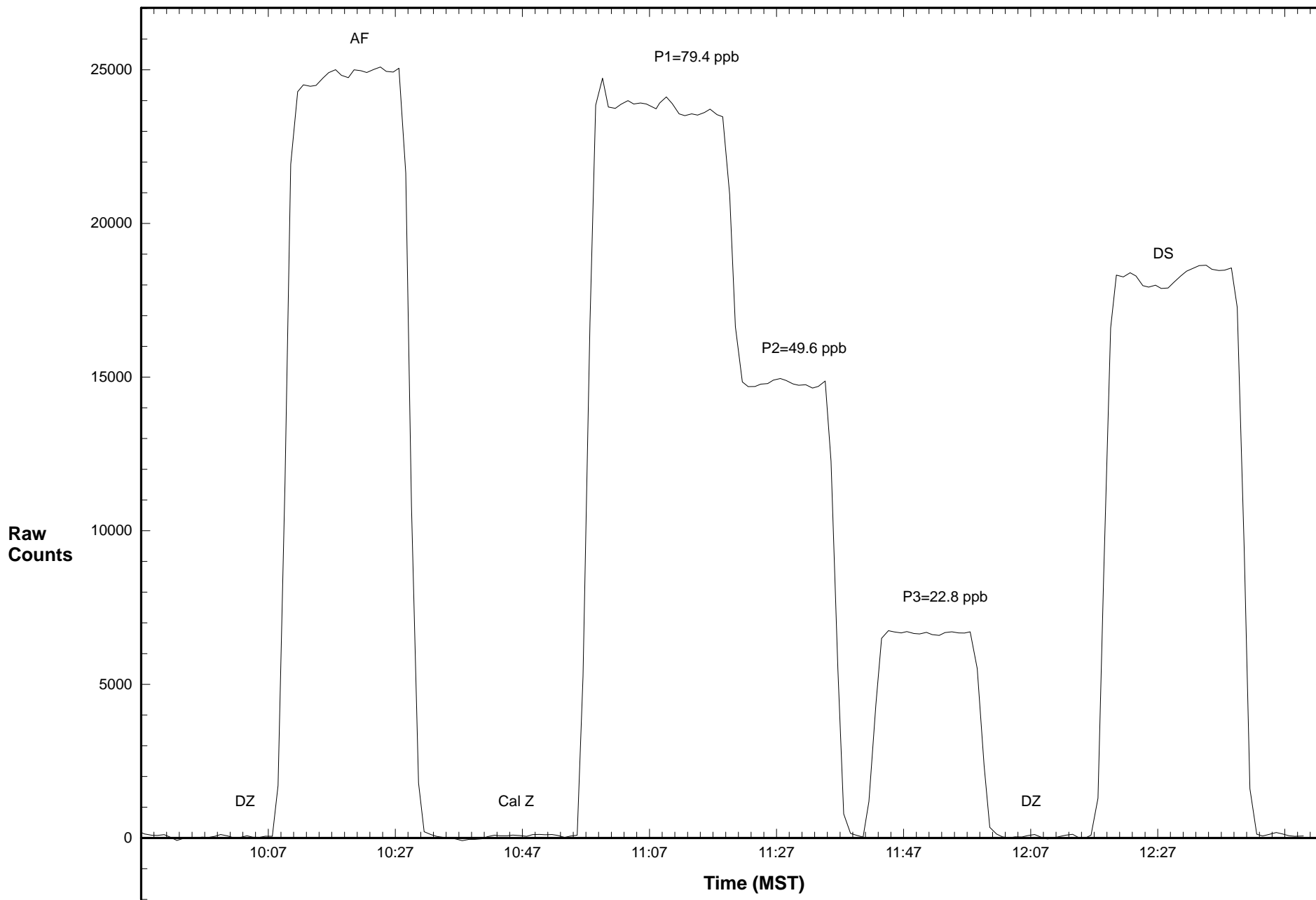
-0.7

Comments:

### Station 901 SO2 May 30, 2016: Linear Regression



# Station 901 SO2 May 30, 2016: Calibration Graph





# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 902, Violet Grove

Calibration Date: May 11, 2016

Parameter: NO/NO<sub>2</sub>/NO<sub>x</sub>

Instrument: Teco 42i

Serial Number: 0708721428

Previous Calibration Date: April 27, 2016

Calibration: Routine

Calibration Equipment: Sabio 2010 SN 08600312

Barometric Pressure: 27.10" Hg

Calibration Method: Standard Gas Dilution/GPT

Cylinder ID: FF13698

Temperature: 21.2° C

Cylinder Concentration: 12.5 ppm NO

In Service: January 14, 2015

Technician: L. Burns

Instrument Settings	NO bkg ppb	NO <sub>x</sub> bkg ppb	Pre-reactor bkg ppb	NO Coefficient	NO <sub>x</sub> Coefficient	NO <sub>2</sub> Coefficient	Monitoring Range
Previous	15.2	16.1	NA	1.621	1.001	1.000	200 ppb
Current	15.5	16.3	NA	1.675	1.003		200 ppb

NO	Final Zero: 0.1 ppb	Final Span: 52.4 ppb	As Found Correction Factor: 1.058
NO <sub>2</sub>	Final Zero: -0.2 ppb	Final Span: -0.1 ppb	As Found Correction Factor: NA
NO <sub>x</sub>	Final Zero: -0.1 ppb	Final Span: 52.0 ppb	As Found Correction Factor: 1.052

Results of Linear Regression			Slope	Intercept	R <sup>2</sup>
NO	R <sub>c</sub> vs C <sub>c</sub>	Previous	150.165900	39.540230	0.999972
		Current	149.443600	12.733550	0.999994
	C <sub>i</sub> vs C <sub>c</sub>	Current	1.000000	0.000002	0.999994
NO <sub>2</sub>	R <sub>c</sub> vs C <sub>c</sub>	Previous	149.813800	6.924356	0.999972
		Current	149.049300	1.679722	0.999999
	C <sub>i</sub> vs C <sub>c</sub>	Current	1.000000	0.000000	0.999998
NO <sub>x</sub>	R <sub>c</sub> vs C <sub>c</sub>	Previous	150.382800	18.186830	0.999972
		Current	150.312600	7.010227	0.999997
	C <sub>i</sub> vs C <sub>c</sub>	Current	1.000000	0.000023	0.999997

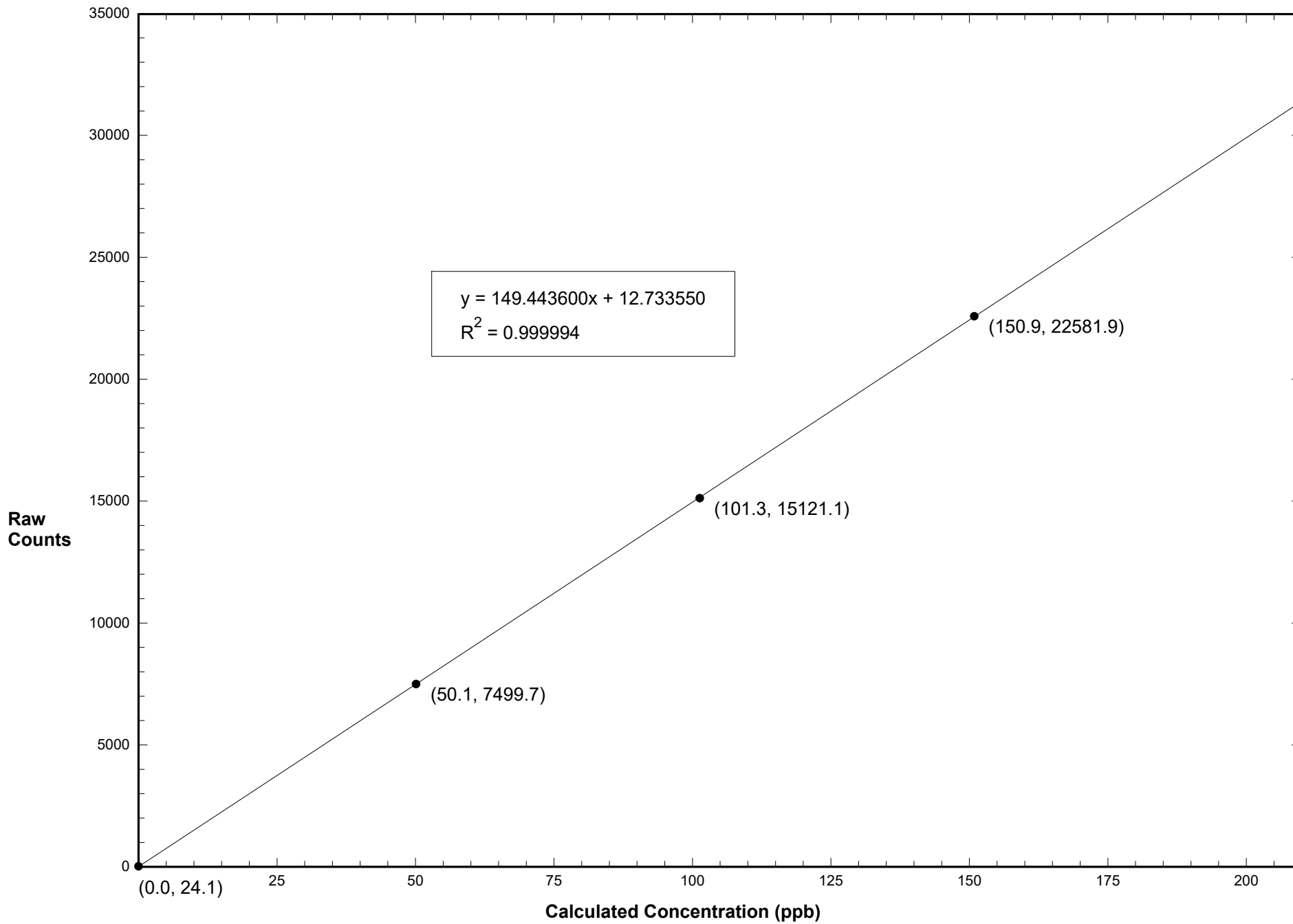
Comments:

**Calibration Data Summary (Page 2)**

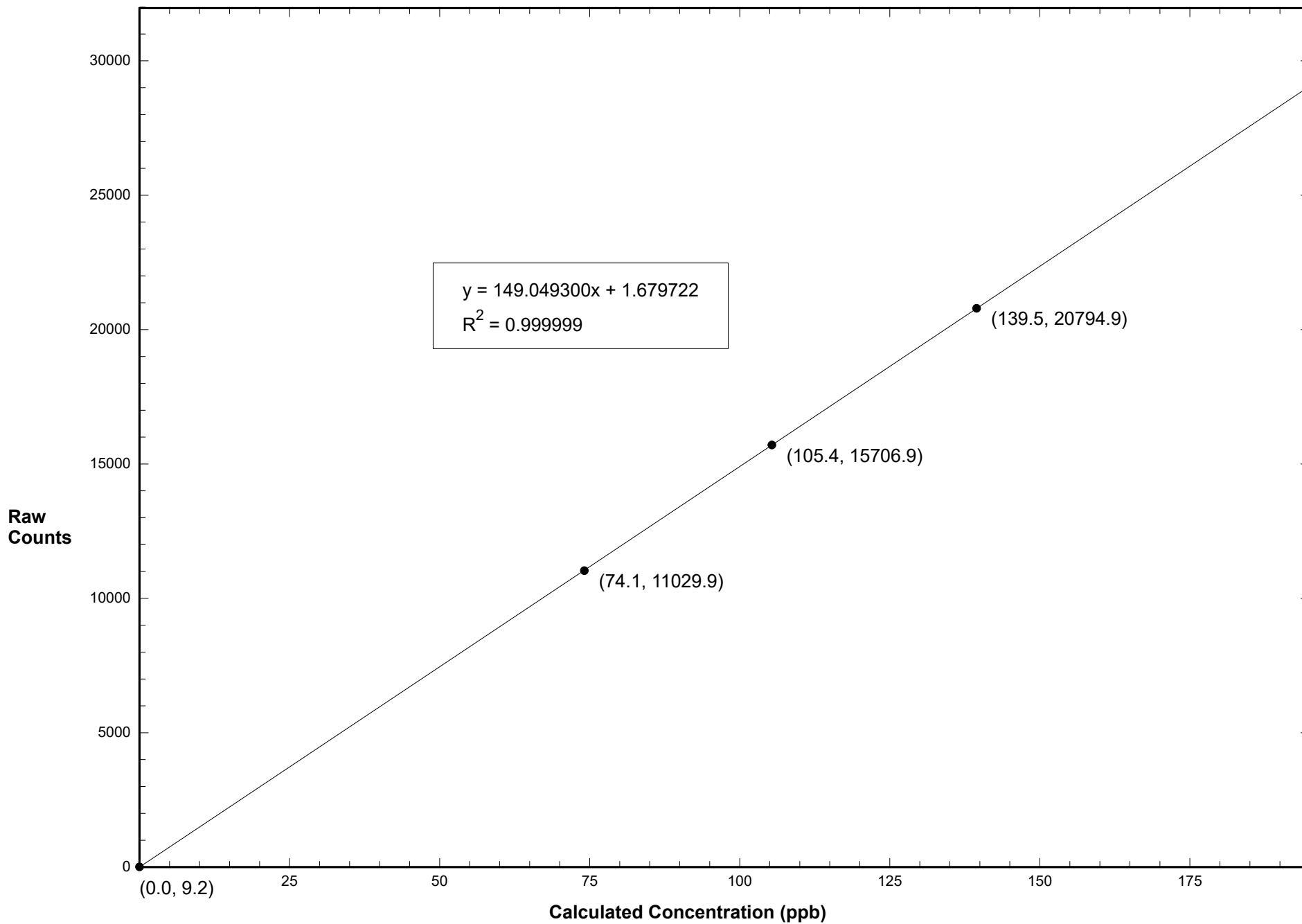
May 11, 2016 - Station 902

NO Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration C <sub>c</sub> (ppb)	Raw Count Output R <sub>c</sub>	Indicated Concentration C <sub>i</sub> (ppb)	Correction Factor C <sub>c</sub> /C <sub>i</sub>		
0.03758	3.076	150.9	22581.9	151.0	0.999		
0.02494	3.052	101.3	15121.1	101.1	1.002		
0.01217	3.024	50.1	7499.7	50.1	1.000		
0.00000	3.000	0.0	24.1	0.1			
NO Calibration					Average Correction Factor:	1.000	
0.03758	3.076	150.9	22699.2	151.0	0.999		
0.02494	3.052	101.3	15212.6	101.2	1.002		
0.01217	3.024	50.1	7543.3	50.1	0.999		
0.00000	3.000	0.0	11.5	0.0			
NO <sub>x</sub> Calibration					Average Correction Factor:	1.000	
Reference Concentration NO (ppb)	Raw Count Output NO	Calculated Concentration NO (ppb)	Calculated Concentration NO <sub>2</sub> , C <sub>c</sub> (ppb)	Raw Count Output R <sub>c</sub>	Indicated Concentration C <sub>i</sub> (ppb)	Correction Factor C <sub>c</sub> /C <sub>i</sub>	Converter Efficiency C <sub>i</sub> /C <sub>c</sub>
154.5	2253.7	15.0	139.5	20794.9	139.5	1.000	1.000
154.5	7349.5	49.1	105.4	15706.9	105.4	1.000	1.000
154.5	12019.8	80.3	74.1	11029.9	74.0	1.002	0.998
			0.0	9.2	0.1		
					Average Correction Factor:	1.000	
NO <sub>2</sub> Gas Phase Titration					Average Converter Efficiency: 1.000		
Parameter	Correction Factor (Previous)	Correction Factor: (Current)	Percent Change of Correction Factor				
NO	1.002	0.999	-0.3				
NO <sub>2</sub>	1.000	1.000	0.0				
NO <sub>x</sub>	1.002	0.999	-0.3				

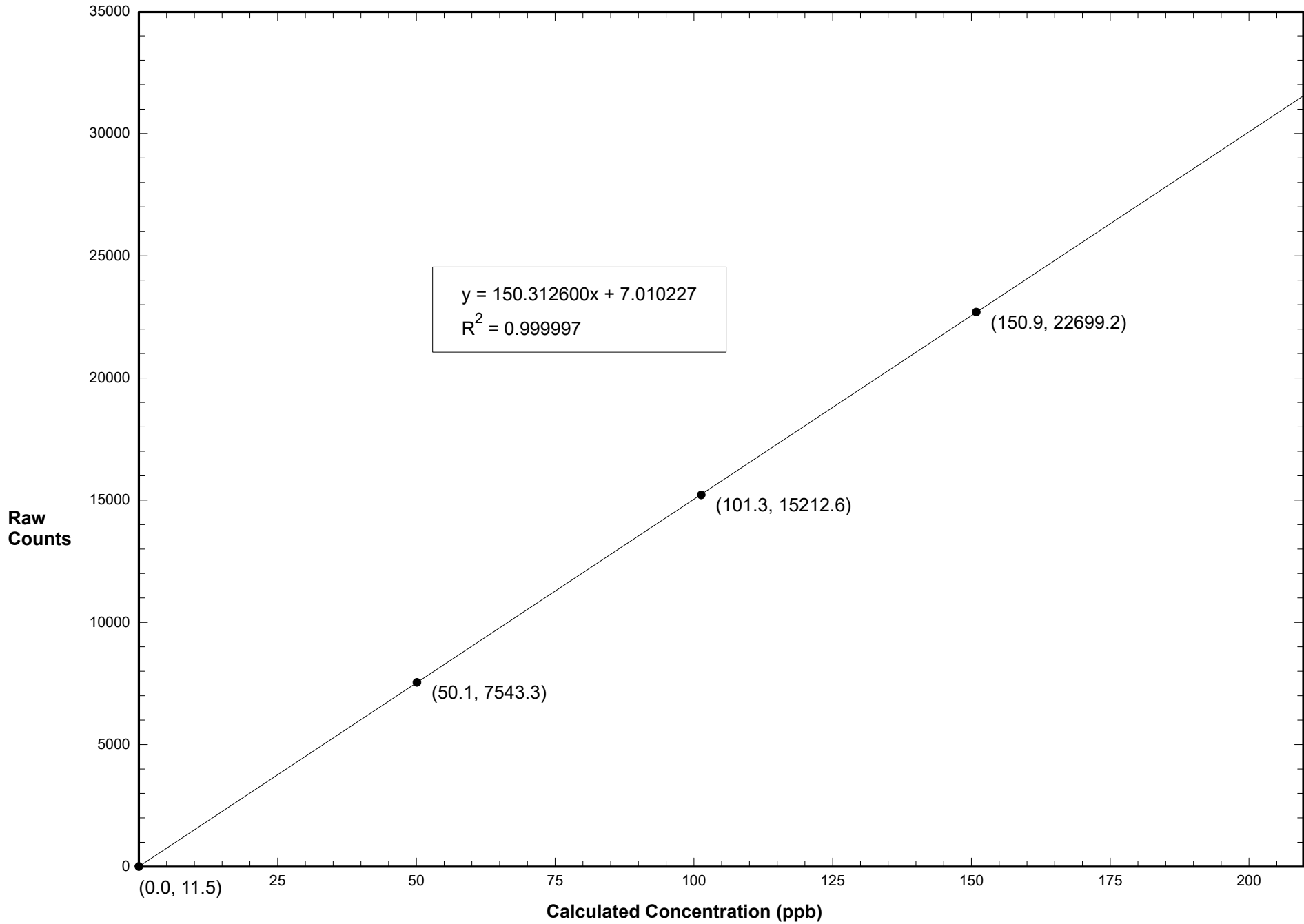
# Station 902 NO May 11, 2016: Linear Regression



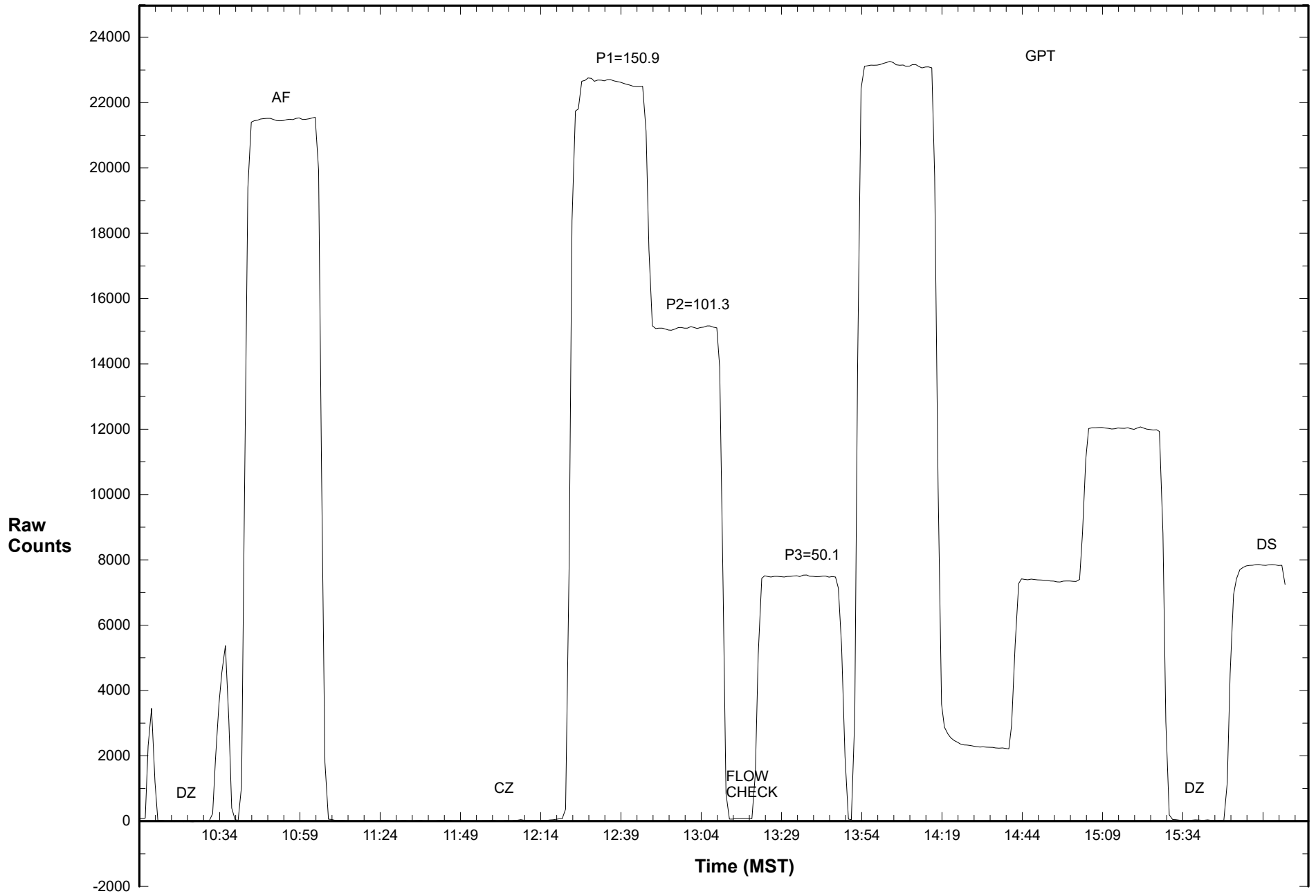
# Station 902 NO2 May 11, 2016: Linear Regression



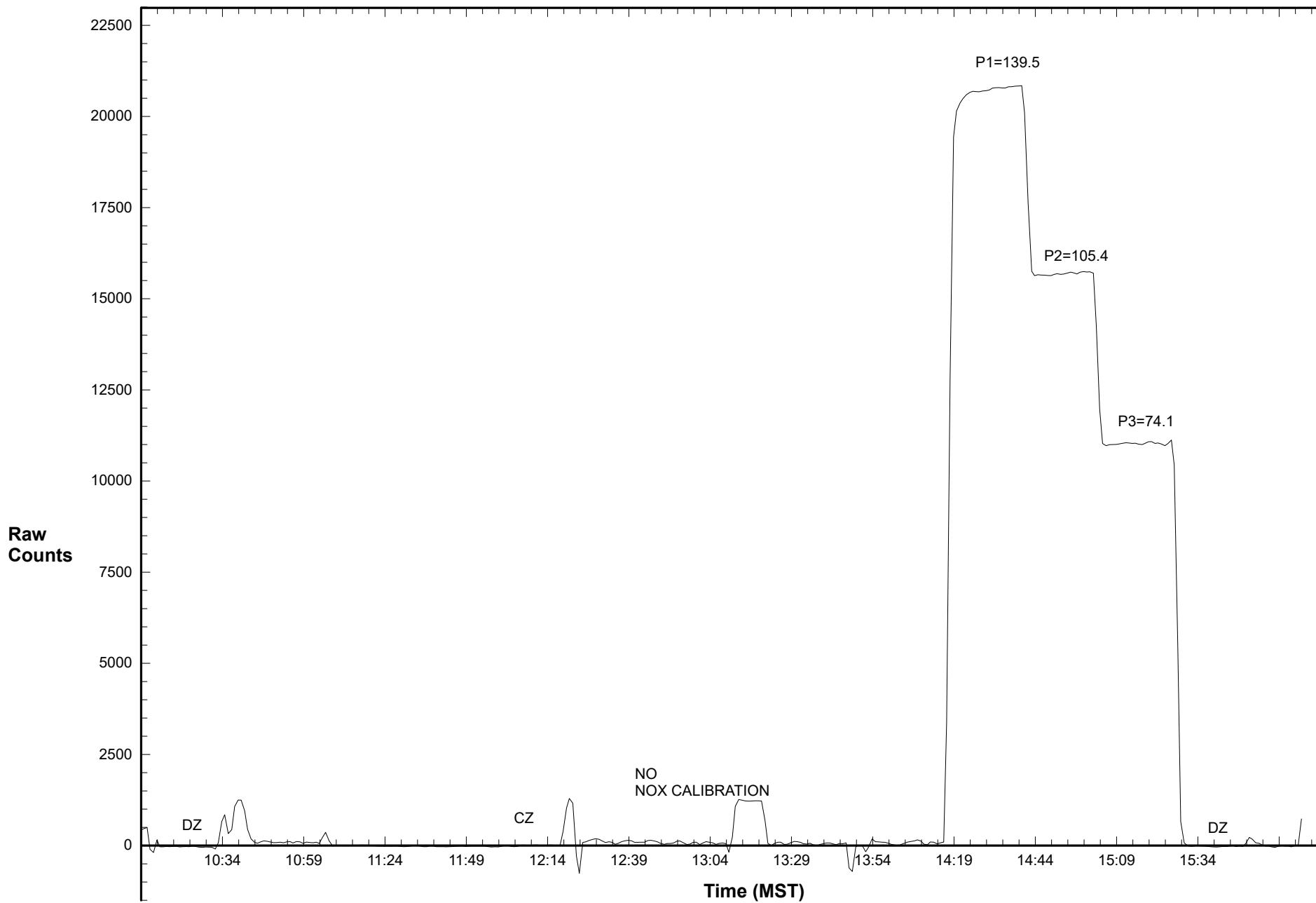
# Station 902 NOX May 11, 2016: Linear Regression



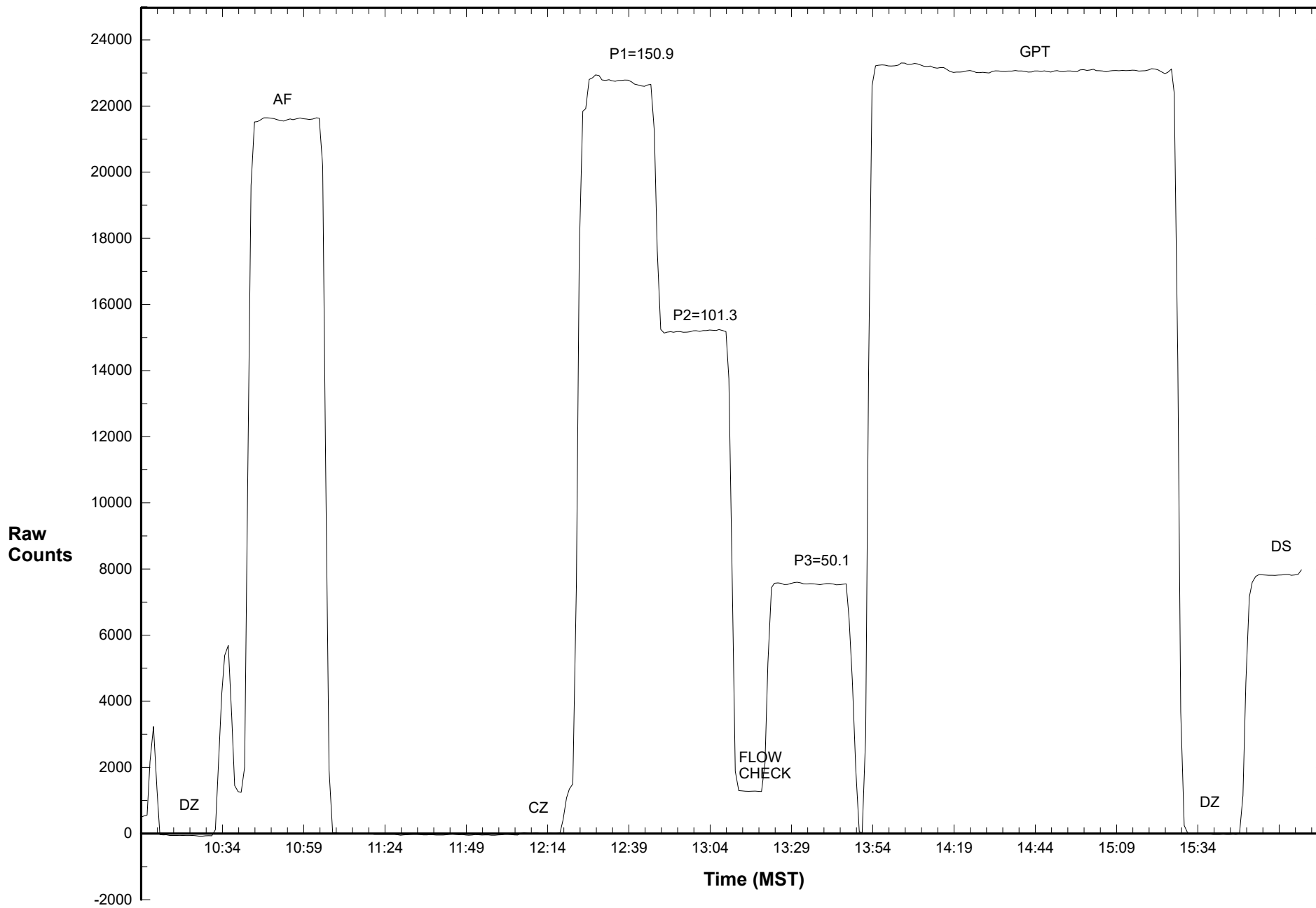
# Station 902 NO May 11, 2016: Calibration Graph



# Station 902 NO2 May 11, 2016: Calibration Graph



# Station 902 NOX May 11, 2016: Calibration Graph





# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 902, Violet Grove

Calibration Date: May 11, 2016

Parameter: O<sub>3</sub>

Instrument: Teco 49i

Serial Number: 0905034790

Previous Calibration Date: April 27, 2016

Calibration: Routine

Calibration Equipment: 2B Tech Model 306 SN 142

Barometric Pressure: 27.10" Hg

Calibration Method: Certified Ozone Generator

Temperature: 21.2° C

Technician: L. Burns

Instrument Settings	Background	Coefficient	Monitoring Range
Previous	0.3	1.031	500 ppb
Current	0.3	1.015	500 ppb

Final Zero: -1.7 ppb

Final Span: 270.2 ppb

As Found Correction Factor: 0.971

Calibration System Flow Rate (LPM)	Calculated Concentration C <sub>c</sub> (ppb)	Raw Count Output R <sub>c</sub>	Indicated Concentration C <sub>i</sub> (ppb)	Correction Factor C <sub>c</sub> /C <sub>i</sub>
3.000	399.0	23981.3	398.0	1.002
3.000	214.0	13006.9	215.2	0.994
3.000	105.0	6464.1	106.2	0.989
3.000	0.0	0.6	-1.5	

### Results of Linear Regression

R <sub>c</sub> vs C <sub>c</sub>	Slope	Intercept	R <sup>2</sup>
Previous	60.009940	23.369650	0.999979
Current	60.028580	88.096790	0.999932
C <sub>i</sub> vs C <sub>c</sub>			
Current	1.000000	-0.000011	0.999931

Average Correction Factor: 0.995

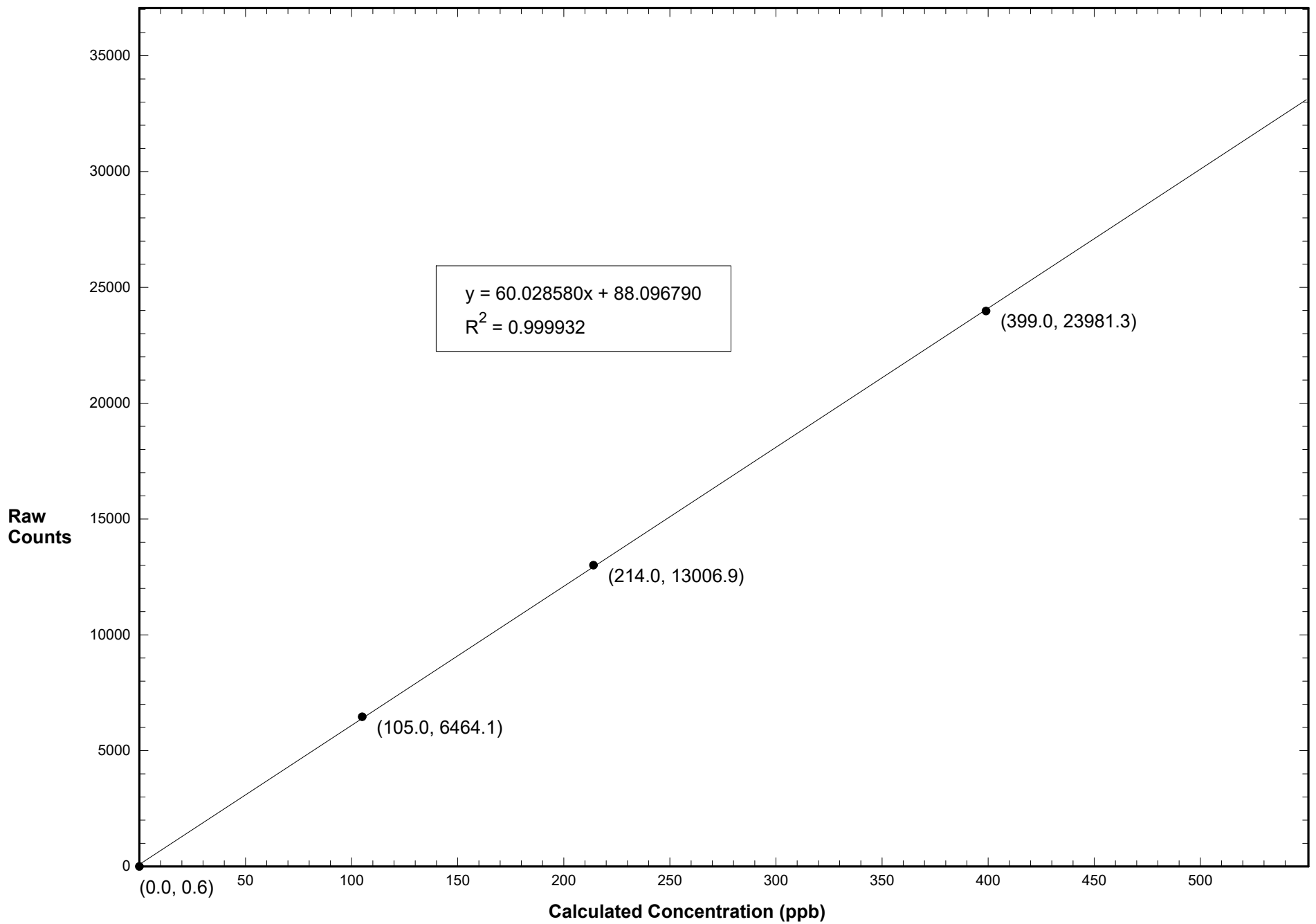
Previous Correction Factor: 1.002

Current Correction Factor: 1.002

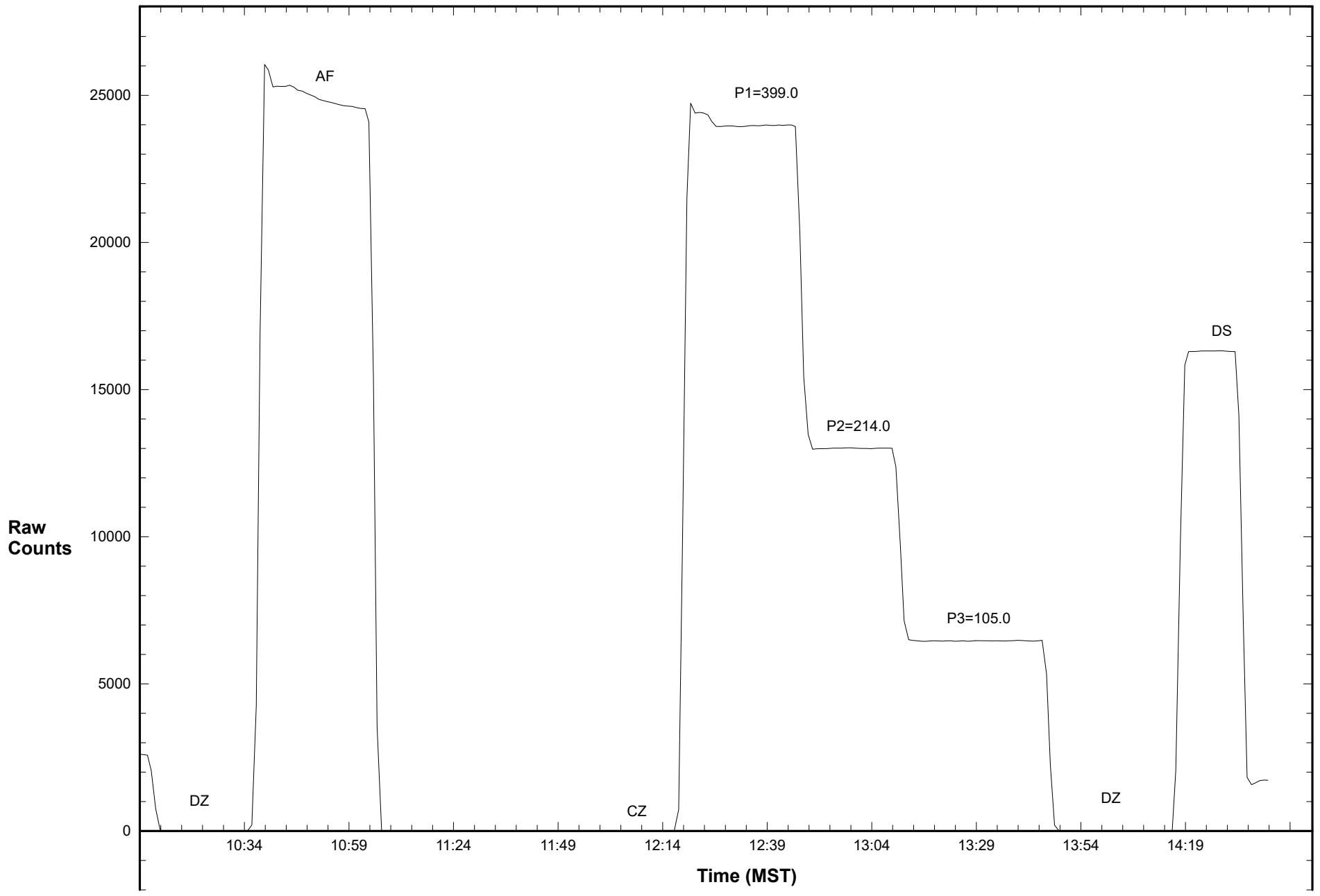
Percent Change of Correction Factor: 0.0

Comments:

### Station 902 O3 May 11, 2016: Linear Regression



# Station 902 O3 May 11, 2016: Calibration Graph



# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 902, Violet Grove

Calibration Date: May 11, 2016

Parameter: SO<sub>2</sub>

Instrument: Teco 43i

Serial Number: 0700419949

Previous Calibration Date: April 27, 2016

Calibration: Routine

Calibration Equipment: Sabio 2010 SN 08600312

Barometric Pressure: 27.10" Hg

Calibration Method: Standard Gas Dilution

Cylinder ID: FF13698

Temperature: 21.2° C

Cylinder Concentration: 6.11 ppm SO<sub>2</sub>

In Service: January 14, 2015

Technician: L. Burns

Instrument Settings	SO <sub>2</sub> bkg ppb	SO <sub>2</sub> Coefficient	Monitoring Range
Previous	6.1	0.940	100 ppb
Current	6.2	0.973	100 ppb

Final Zero: -0.3 ppb

Final Span: 25.2 ppb

As Found Correction Factor: 1.029

SO <sub>2</sub> Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration C <sub>c</sub> (ppb)	Raw Count Output R <sub>c</sub>	Indicated Concentration C <sub>i</sub> (ppb)	Correction Factor C <sub>c</sub> /C <sub>i</sub>
0.0376	3.076	73.7	22197.0	73.3	1.006
0.0249	3.052	49.5	15229.4	50.2	0.987
0.0122	3.024	24.5	7499.3	24.6	0.997
0.0000	3.000	0.0	13.5	-0.3	

### Results of Linear Regression

R <sub>c</sub> vs C <sub>c</sub>	Slope	Intercept	R <sup>2</sup>
Previous	300.148800	-2.292312	0.999992
Current	301.644300	91.969410	0.999762
C <sub>i</sub> vs C <sub>c</sub>			
Current	1.000000	-0.000001	0.999763

Average Correction Factor: 0.997

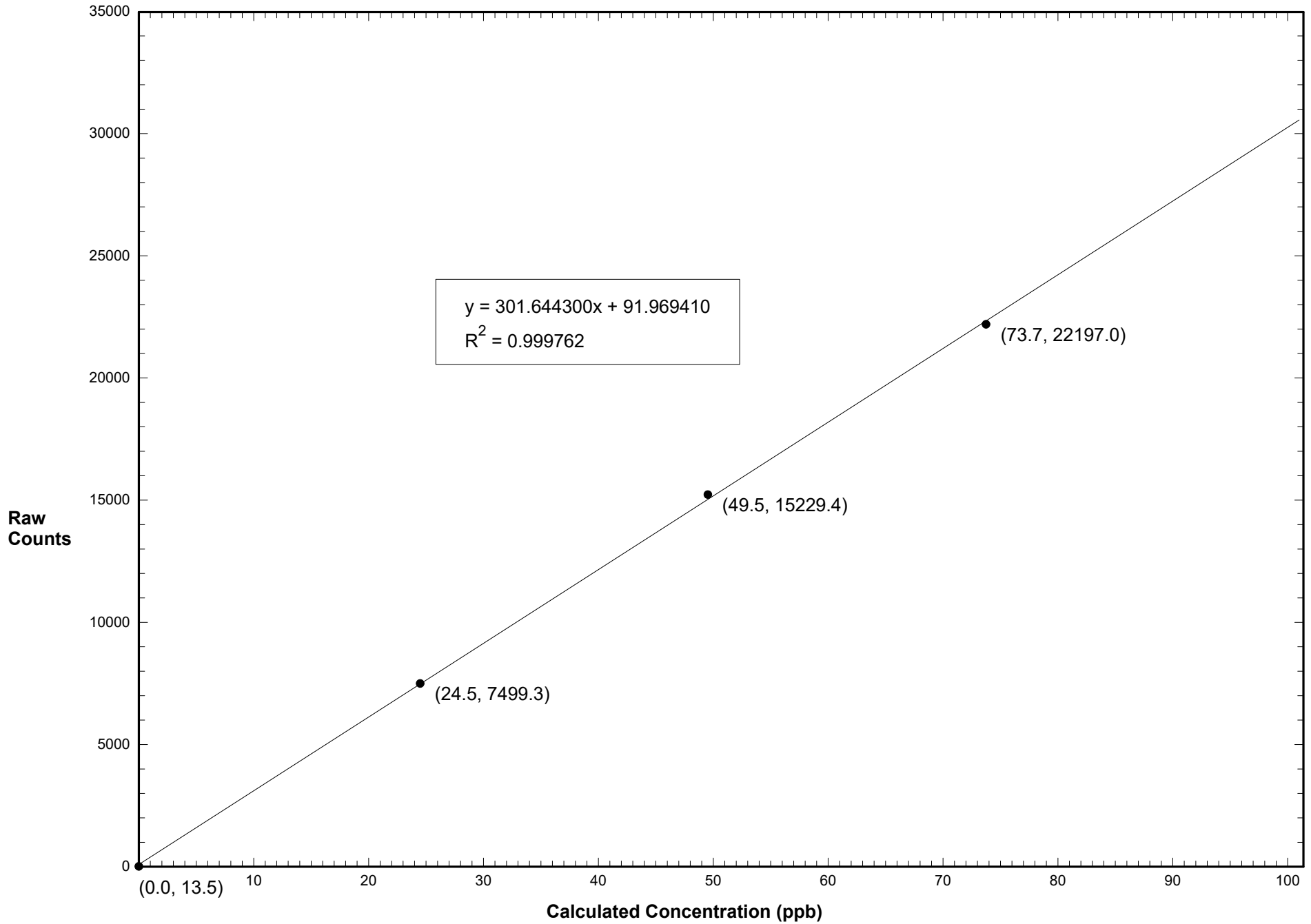
Previous Correction Factor: 1.001

Current Correction Factor: 1.006

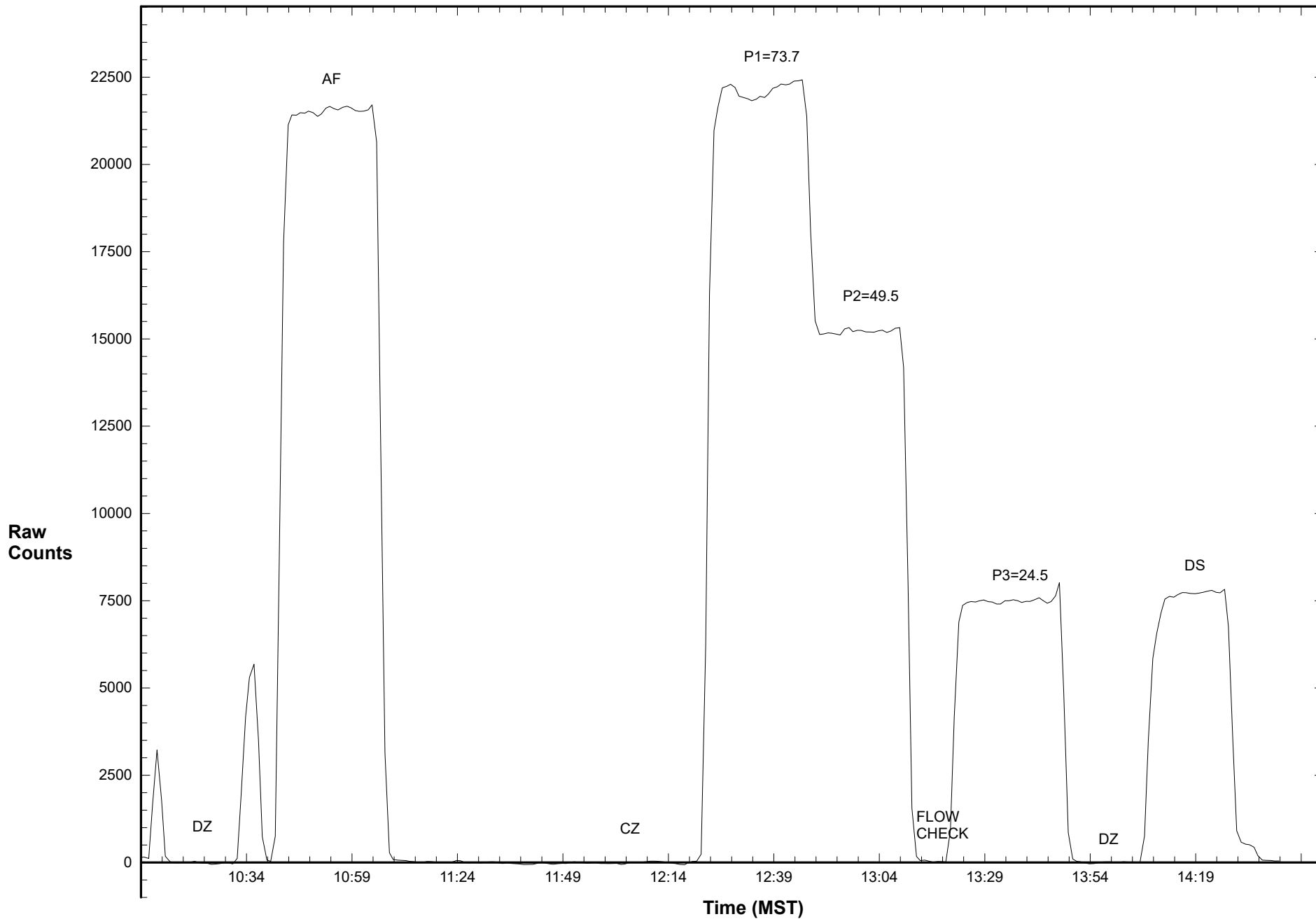
Percent Change of Correction Factor: 0.5

Comments:

# Station 902 SO2 May 11, 2016: Linear Regression



# Station 902 SO2 May 11, 2016: Calibration Graph



# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 902, Violet Grove

Calibration Date: May 11, 2016

Parameter: THC

Instrument: Teco 51i-LT

Serial Number: 1415561633

Previous Calibration Date: April 27, 2016

Calibration: Routine

Calibration Method: Standard Gas Dilution

Barometric Pressure: 27.10" Hg

Gas Concentration 1: 717 ppm

Cylinder ID: SG-9154049

Temperature: 21.2° C

Gas Concentration 2:

In Service: August 23, 2010

Technician: L. Burns

Instrument Settings	Zero Pot	Span Pot	Monitoring Range
Previous	1.97	6.158	20 ppm
Current	1.29	4.255	20 ppm

Final Zero: 0.08 ppm

Final Span: 11.49 ppm

As Found Correction Factor: 1.033

Certified Concentration $C_c$ (ppm)	Raw Count Output $R_c$	Indicated Concentration $C_i$ (ppm)	Correction Factor $C_c/C_i$
17.37	26123.8	17.34	1.001
11.78	17866.0	11.81	0.997
5.99	9197.1	6.01	0.998
0.00	201.2	-0.02	

### Results of Linear Regression

$R_c$ vs $C_c$	Slope	Intercept	$R^2$
Previous	1491.838000	-40.557390	0.999988
Current	1493.125000	230.188800	0.999987
$C_i$ vs $C_c$			
Current	1.000000	0.000004	0.999987

Average Correction Factor: 0.999

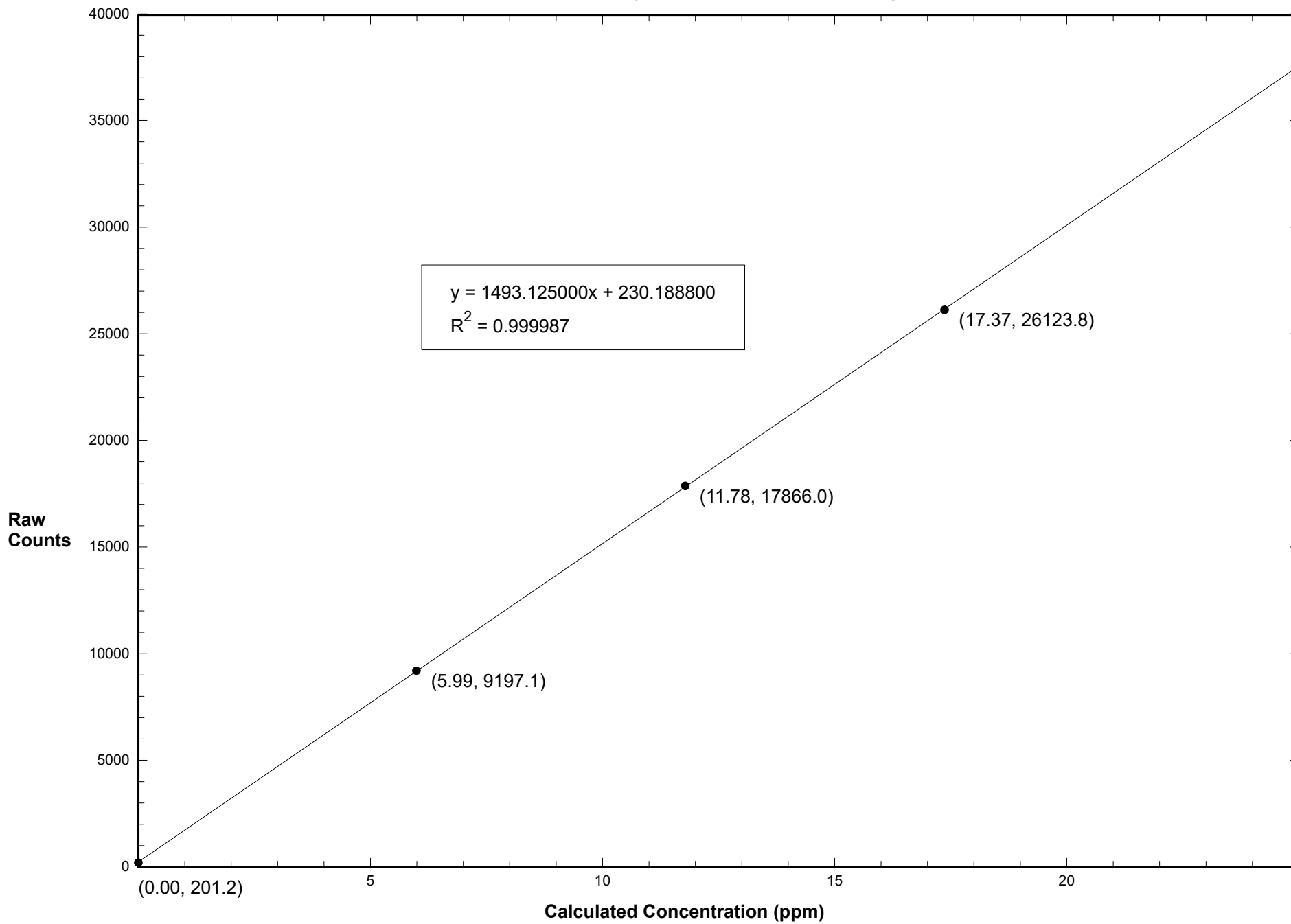
Previous Correction Factor: 0.999

Current Correction Factor: 1.001

Percent Change of  
Correction Factor: 0.2

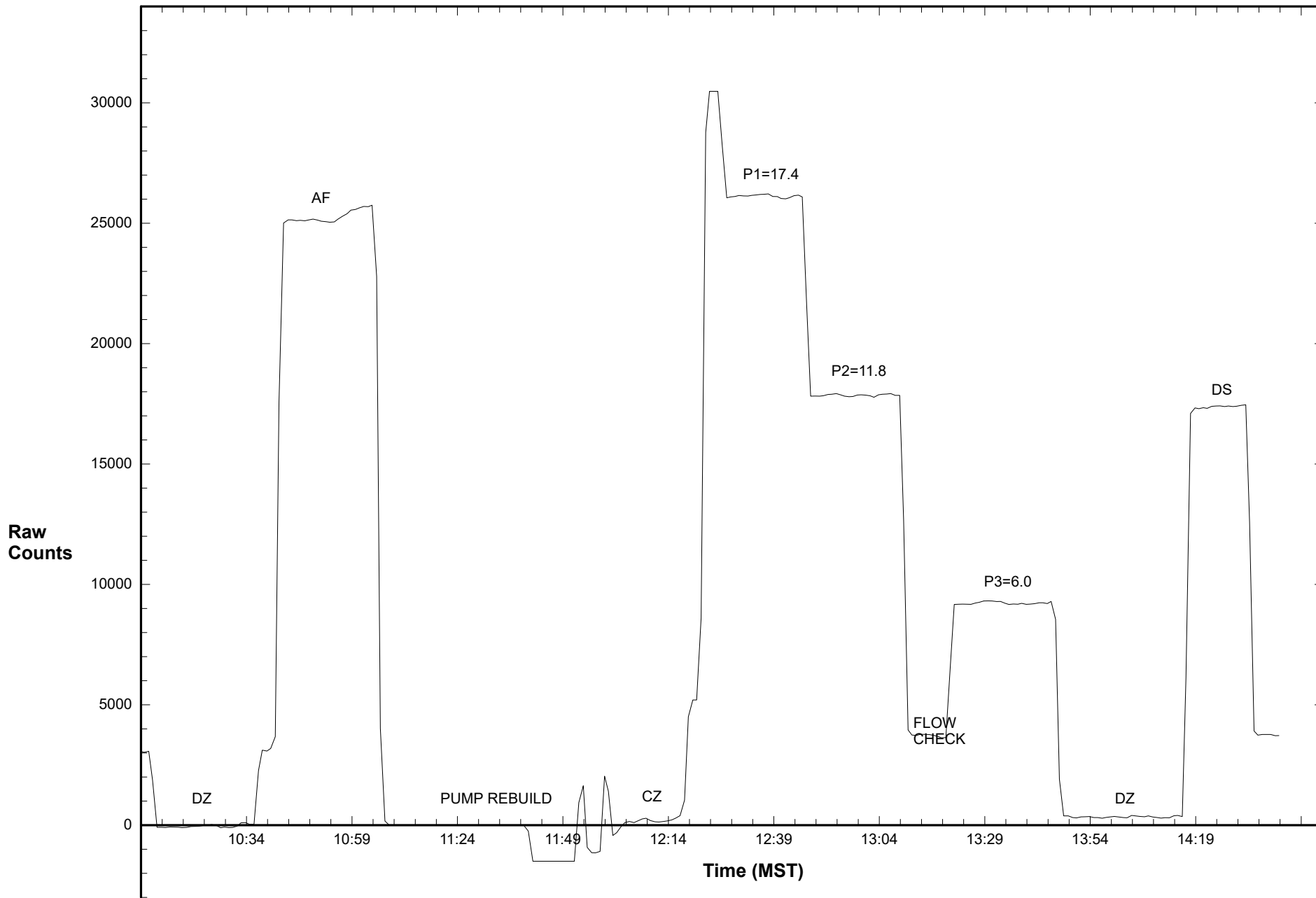
Comments: Rebuilt pump.

# Station 902 THC May 11, 2016: Linear Regression





# Station 902 THC May 11, 2016: Calibration Graph



# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 903, Carrot Creek

Calibration Date: May 26, 2016

Parameter: NO/NO<sub>2</sub>/NO<sub>x</sub>

Instrument: Teco 42i

Serial Number: 1136451324

Previous Calibration Date: April 12, 2016

Calibration: Routine

Calibration Equipment: Sabio 2010 SN-04300810

Barometric Pressure: 27.00" Hg

Calibration Method: Std. Gas Dilution/GPT

Cylinder ID: FF16109

Temperature: 21.5° C

Cylinder Concentration: 12.1 ppm NO & NO<sub>x</sub>

In Service: February 22, 2016

Technician: Dean Yustak

Instrument Settings	NO bkg ppb	NO <sub>x</sub> bkg ppb	Pre-reactor bkg ppb	NO Coefficient	NO <sub>x</sub> Coefficient	NO <sub>2</sub> Coefficient	Monitoring Range
Previous	6.8	7.2	na	0.997	1.001	0.995	200 ppb
Current	6.5	7.2	na	0.966	1.003	0.995	200 ppb

NO	Final Zero: -0.2 ppb	Final Span: 126.3 ppb	As Found Correction Factor: 0.956
NO <sub>2</sub>	Final Zero: -0.3 ppb	Final Span: 0.0 ppb	As Found Correction Factor: NA
NO <sub>x</sub>	Final Zero: -0.2 ppb	Final Span: 126.3 ppb	As Found Correction Factor: 0.958

Results of Linear Regression			Slope	Intercept	R <sup>2</sup>
NO	R <sub>c</sub> vs C <sub>c</sub>	Previous	150.339800	-72.581960	0.999940
		Current	149.382100	26.065020	0.999992
	C <sub>i</sub> vs C <sub>c</sub>	Current	1.000000	0.000021	0.999991
NO <sub>2</sub>	R <sub>c</sub> vs C <sub>c</sub>	Previous	149.966200	3.943037	0.999940
		Current	150.299100	28.919900	0.999986
	C <sub>i</sub> vs C <sub>c</sub>	Current	1.000000	0.000013	0.999986
NO <sub>x</sub>	R <sub>c</sub> vs C <sub>c</sub>	Previous	150.138200	-61.520830	0.999940
		Current	149.811300	4.004396	0.999997
	C <sub>i</sub> vs C <sub>c</sub>	Current	1.000000	-0.000020	0.999997

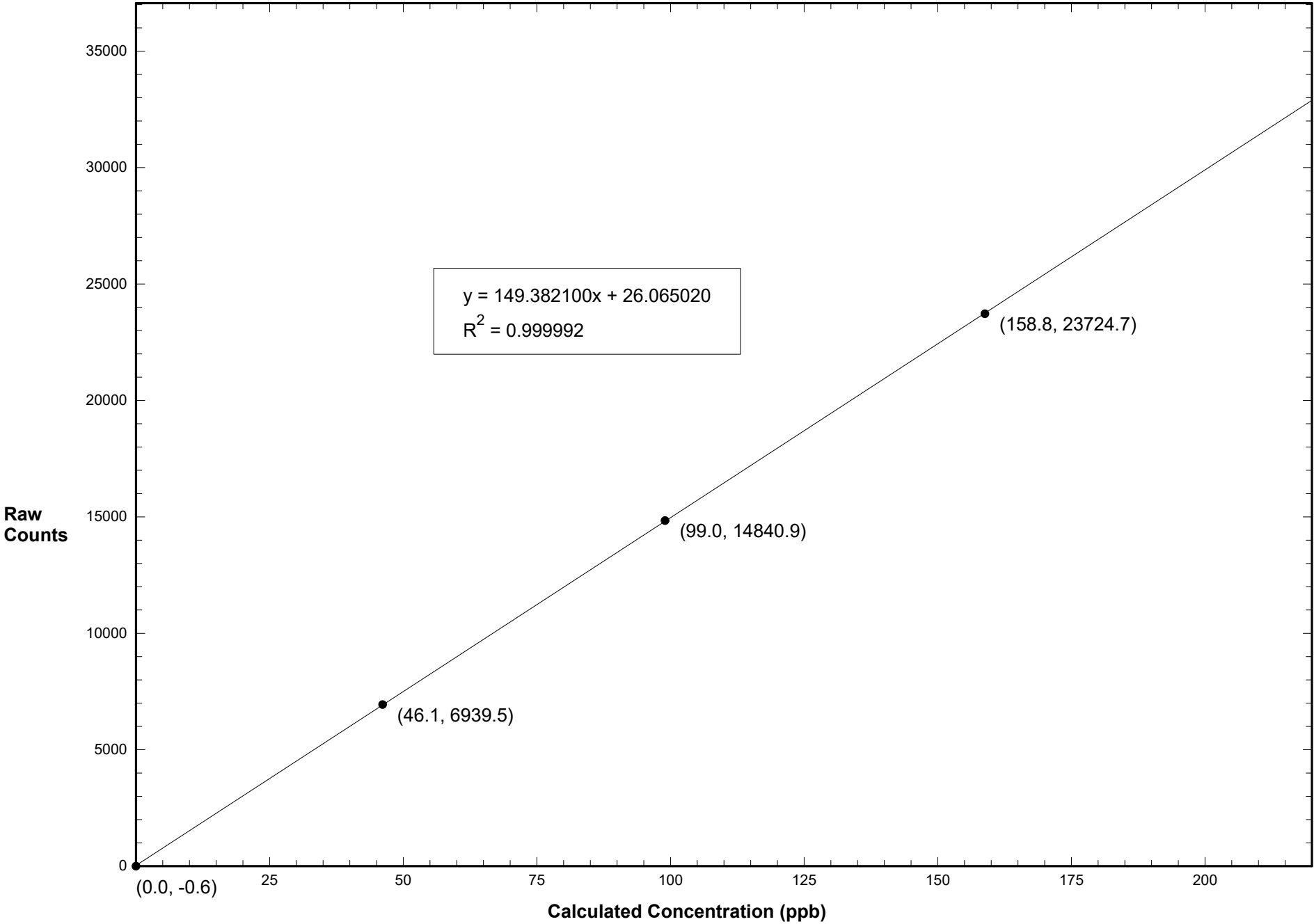
Comments:

# Calibration Data Summary (Page 2)

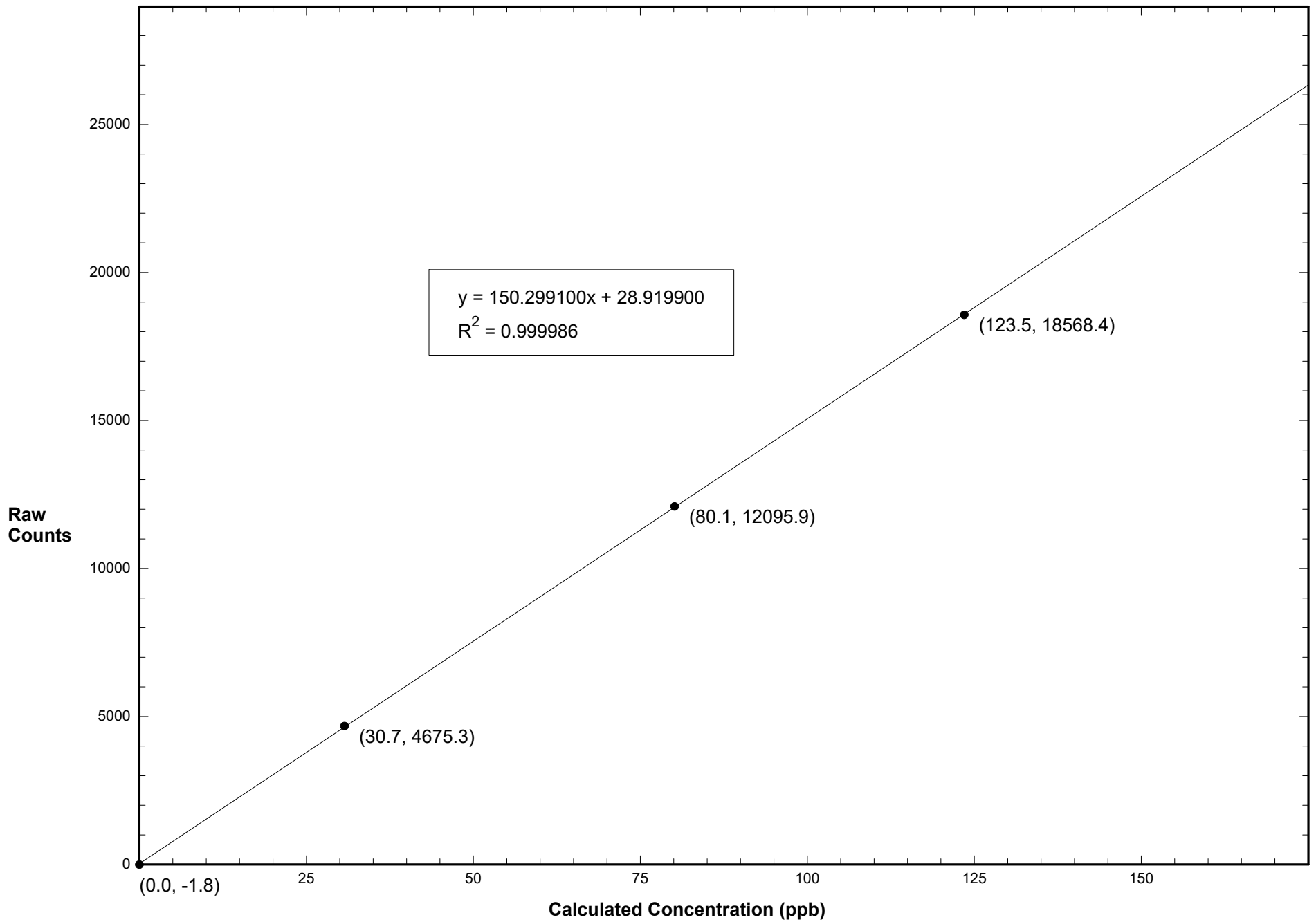
May 26, 2016 - Station 903

NO Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration C <sub>c</sub> (ppb)	Raw Count Output R <sub>c</sub>	Indicated Concentration C <sub>i</sub> (ppb)	Correction Factor C <sub>c</sub> /C <sub>i</sub>		
0.06703	5.040	158.8	23724.7	158.6	1.001		
0.04163	5.048	99.0	14840.9	99.2	0.998		
0.01931	5.045	46.1	6939.5	46.3	0.997		
0.00000	5.007	0.0	-0.6	-0.2			
NO Calibration					Average Correction Factor:	0.999	
0.06703	5.040	158.8	23783.1	158.7	1.001		
0.04163	5.048	99.0	14843.7	99.1	0.999		
0.01931	5.045	46.1	6932.7	46.2	0.998		
0.00000	5.007	0.0	-12.8	-0.1			
NO <sub>x</sub> Calibration					Average Correction Factor:	0.999	
Reference Concentration NO (ppb)	Raw Count Output NO	Calculated Concentration NO (ppb)	Calculated Concentration NO <sub>2</sub> , C <sub>c</sub> (ppb)	Raw Count Output R <sub>c</sub>	Indicated Concentration C <sub>i</sub> (ppb)	Correction Factor C <sub>c</sub> /C <sub>i</sub>	Converter Efficiency C <sub>i</sub> /C <sub>c</sub>
158.0	5179.4	34.5	123.5	18568.4	123.4	1.001	0.999
158.0	11655.5	77.9	80.1	12095.9	80.3	0.998	1.002
158.0	19039.9	127.3	30.7	4675.3	30.9	0.993	1.007
			0.0	-1.8	-0.2		
					Average Correction Factor:	0.998	
NO <sub>2</sub> Gas Phase Titration					Average Converter Efficiency: 1.002		
Parameter	Correction Factor (Previous)	Correction Factor: (Current)	Percent Change of Correction Factor				
NO	0.997	1.001	0.4				
NO <sub>2</sub>	1.000	1.001	0.1				
NO <sub>x</sub>	0.998	1.001	0.3				

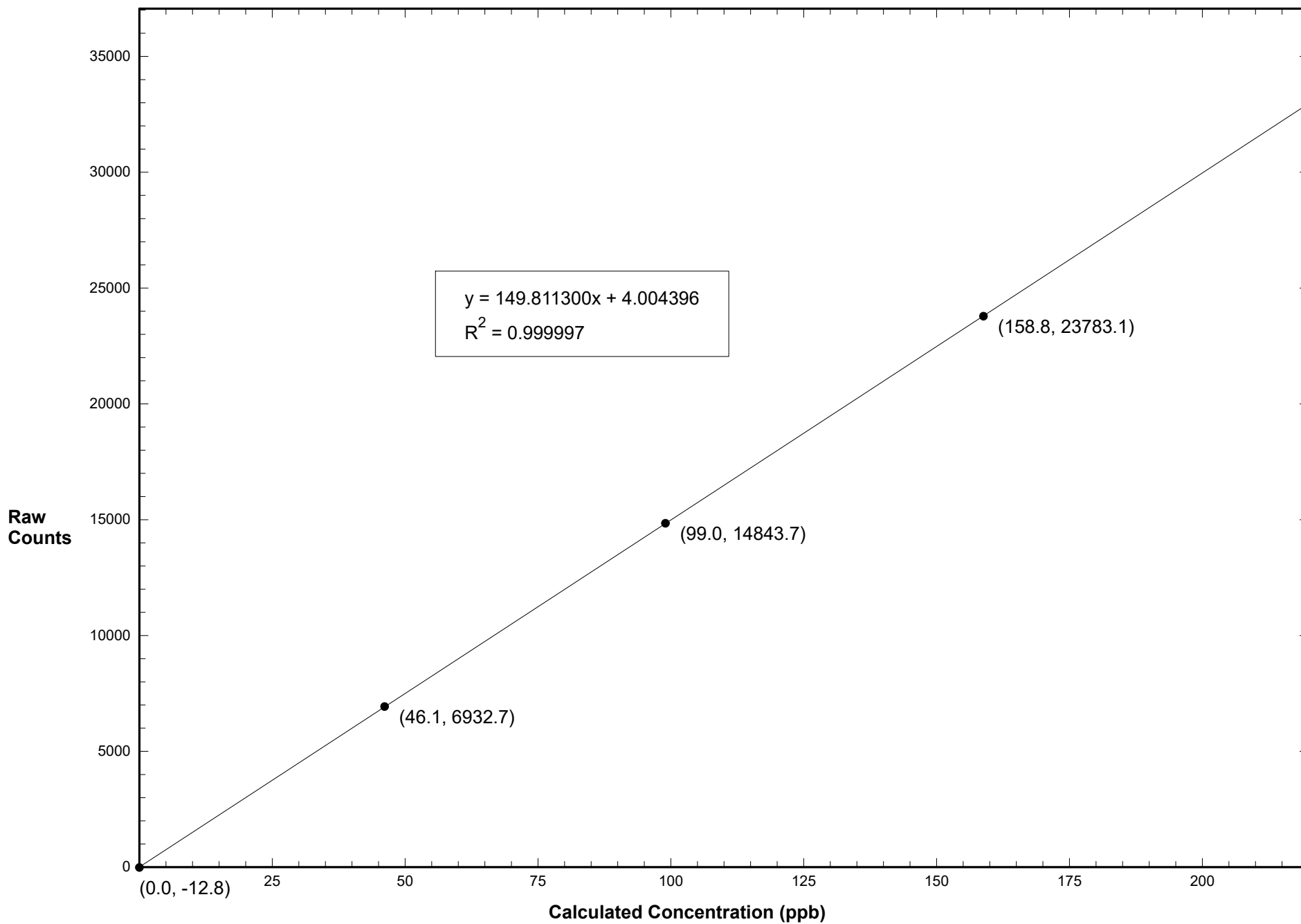
# Station 903 NO May 26, 2016: Linear Regression



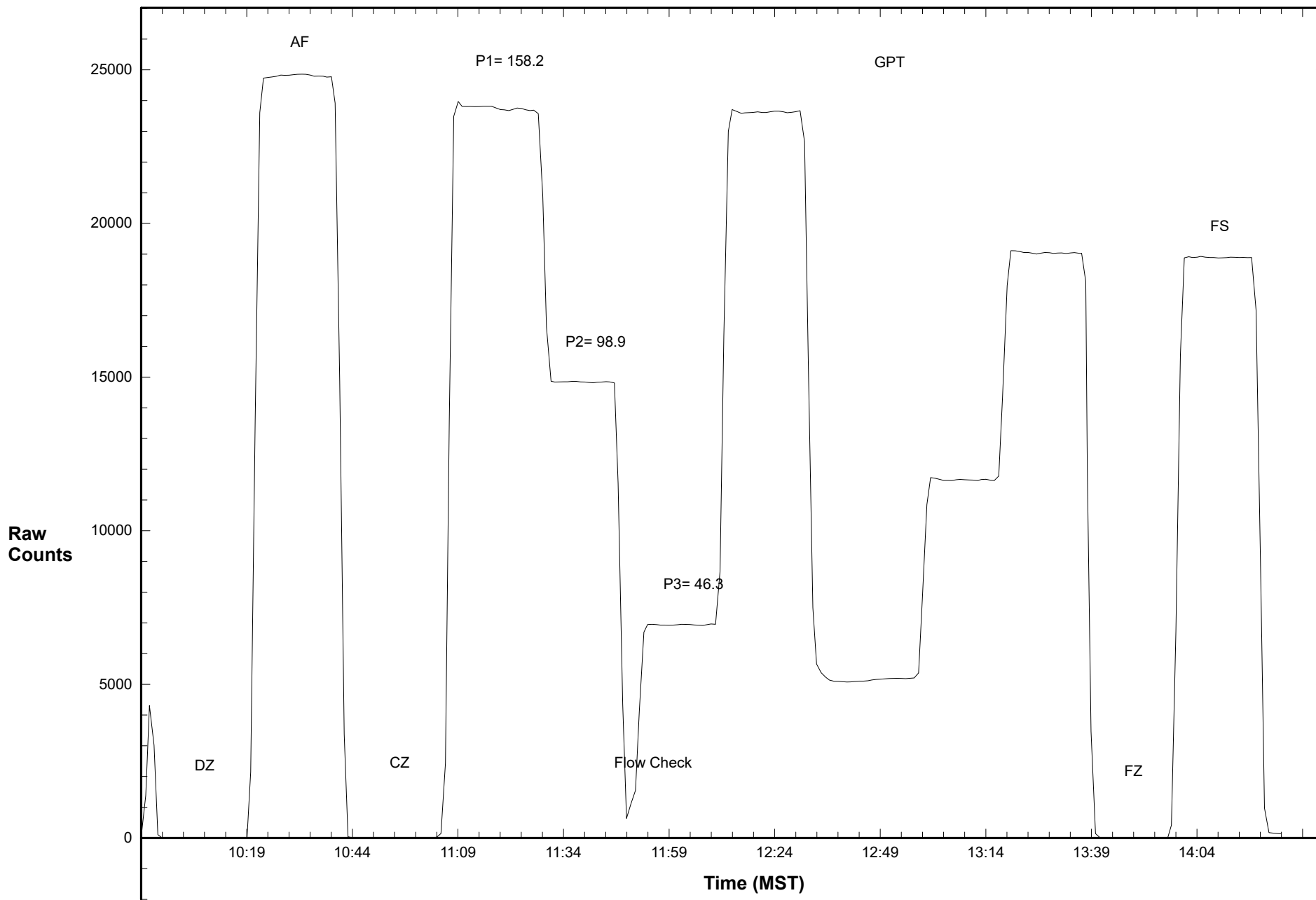
### Station 903 NO2 May 26, 2016: Linear Regression



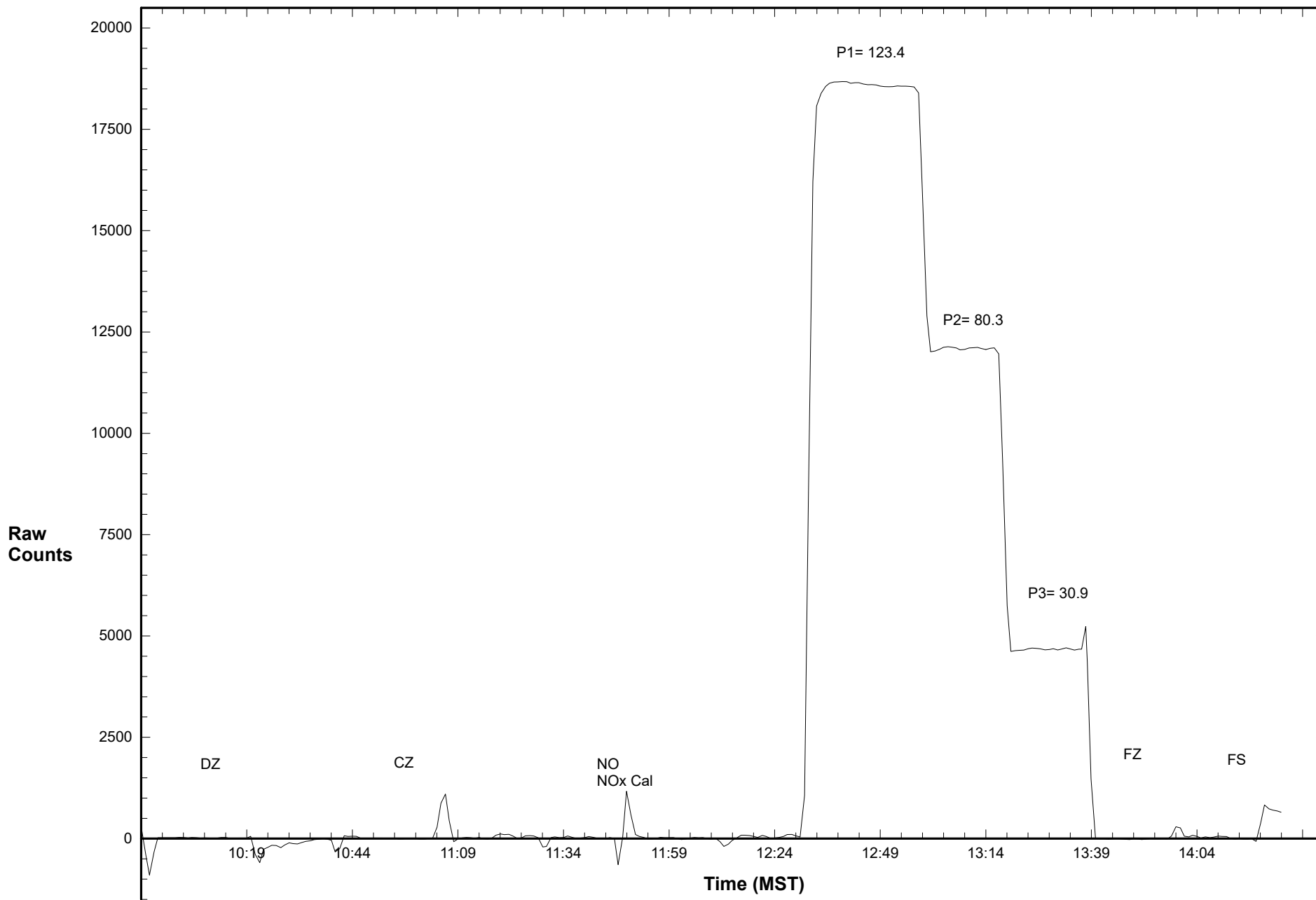
### Station 903 NOX May 26, 2016: Linear Regression



# Station 903 NO May 26, 2016: Calibration Graph

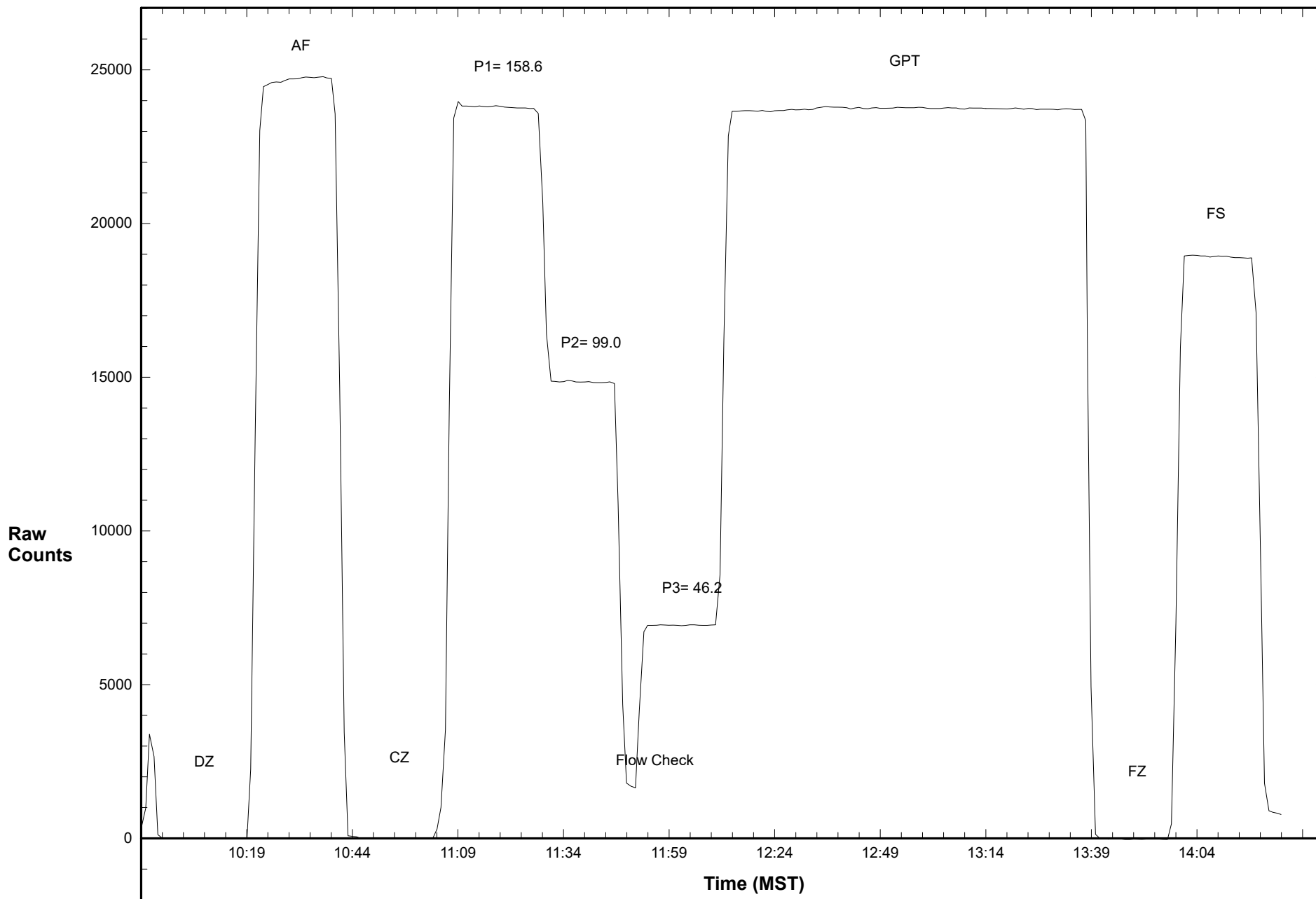


# Station 903 NO2 May 26, 2016: Calibration Graph





# Station 903 NOX May 26, 2016: Calibration Graph



# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 903, Carrot Creek

Calibration Date: May 26, 2016

Parameter: O<sub>3</sub>

Instrument: Teco 49C

Serial Number: 0432409136

Previous Calibration Date: April 12, 2016

Calibration: Routine

Calibration Equipment: 2B TECH 306 sn# 135

Barometric Pressure: 27.00" Hg

Calibration Method: Certified Ozone Generator

Temperature: 21.5° C

Technician: Dean Yustak

Instrument Settings	Background	Coefficient	Monitoring Range
Previous	0.4	1.013	500 ppb
Current	0.1	1.048	500 ppb

Final Zero: -0.7 ppb

Final Span: 171.9 ppb

As Found Correction Factor: 1.027

Calibration System Flow Rate (LPM)	Calculated Concentration C <sub>c</sub> (ppb)	Raw Count Output R <sub>c</sub>	Indicated Concentration C <sub>i</sub> (ppb)	Correction Factor C <sub>c</sub> /C <sub>i</sub>
3.000	409.0	24434.3	408.4	1.002
3.000	255.0	15322.1	255.8	0.997
3.000	102.3	6196.9	102.9	0.994
3.000	0.0	3.2	-0.8	

### Results of Linear Regression

R <sub>c</sub> vs C <sub>c</sub>	Slope	Intercept	R <sup>2</sup>
Previous	59.941140	8.885186	0.999998
Current	59.713950	49.423980	0.999979
C <sub>i</sub> vs C <sub>c</sub>			
Current	1.000000	0.000007	0.999979

Average Correction Factor: 0.997

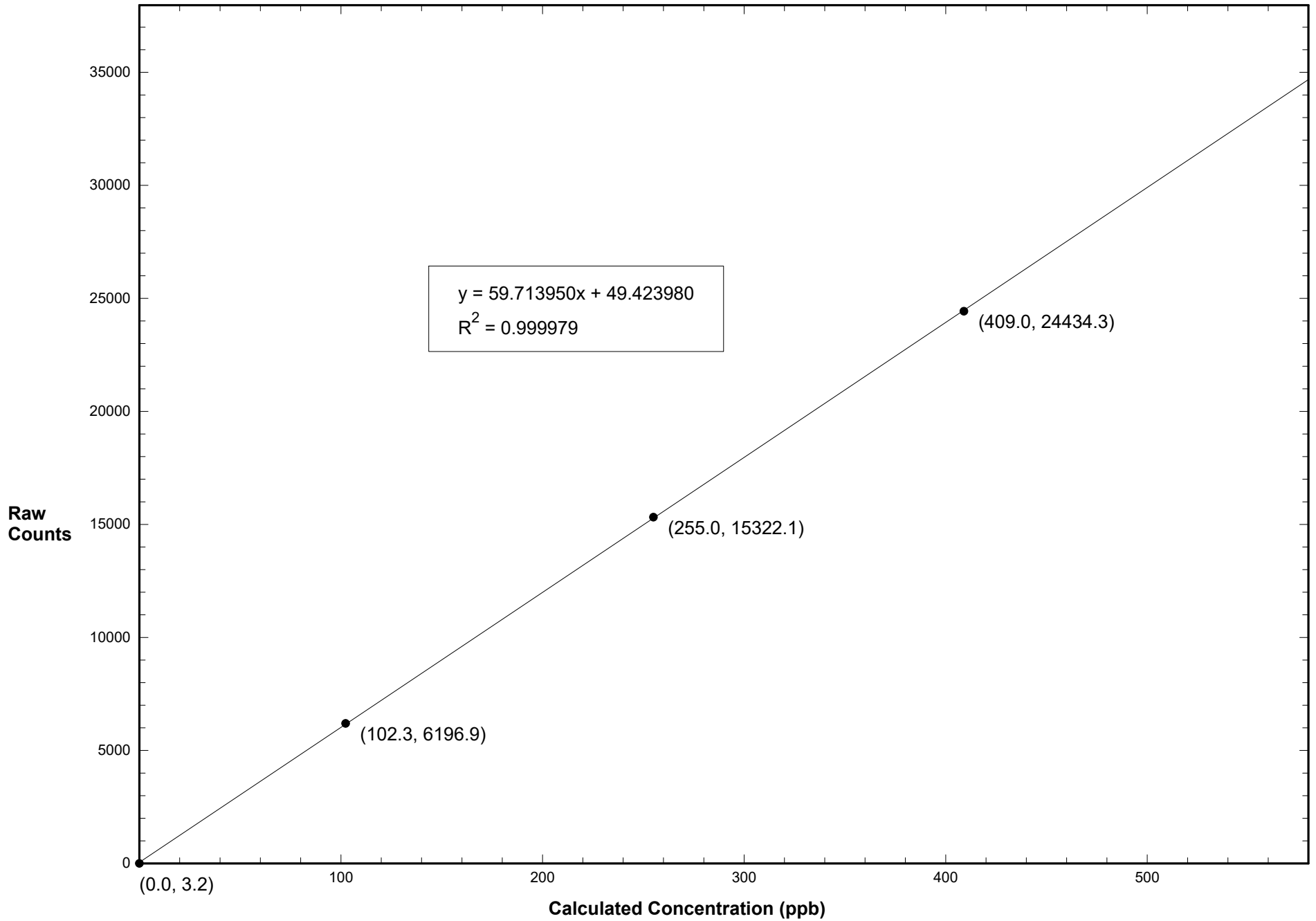
Previous Correction Factor: 1.001

Current Correction Factor: 1.002

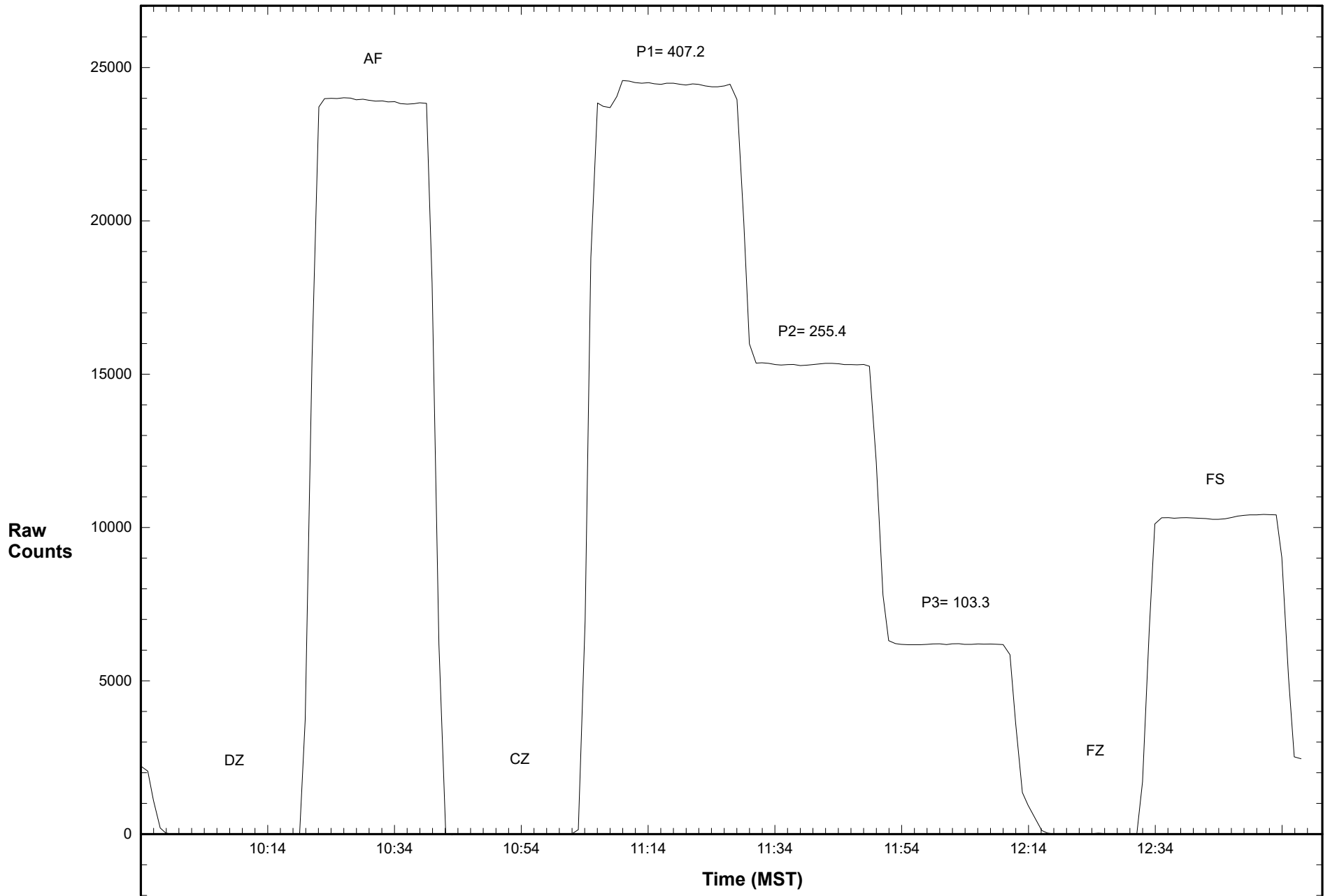
Percent Change of Correction Factor: 0.1

Comments:

# Station 903 O3 May 26, 2016: Linear Regression



# Station 903 O3 May 26, 2016: Calibration Graph



# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 903, Carrot Creek

Calibration Date: May 26, 2016

Parameter: SO<sub>2</sub>

Instrument: Teco 43i

Serial Number: 0905034789

Previous Calibration Date: April 12, 2016

Calibration: Routine

Calibration Equipment: Sabio 2010 SN-04300810

Barometric Pressure: 27.00" Hg

Calibration Method: Standard Gas Dilution

Cylinder ID: FF16109

Temperature: 21.5° C

Cylinder Concentration: 6.11 ppm SO<sub>2</sub>

In Service: January 14, 2015

Technician: Dean Yustak

Instrument Settings	SO <sub>2</sub> bkg ppb	SO <sub>2</sub> Coefficient	Monitoring Range
Previous	7.9	0.919	100 ppb
Current	8.1	0.934	100 ppb

Final Zero: 0.0 ppb

Final Span: 62.6 ppb

As Found Correction Factor: 1.009

SO <sub>2</sub> Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration C <sub>c</sub> (ppb)	Raw Count Output R <sub>c</sub>	Indicated Concentration C <sub>i</sub> (ppb)	Correction Factor C <sub>c</sub> /C <sub>i</sub>
0.0670	5.040	80.2	24136.9	80.1	1.001
0.0416	5.048	50.0	15089.7	50.1	0.998
0.0193	5.045	23.3	7003.8	23.3	1.001
0.0000	5.007	0.0	-14.6	0.0	

### Results of Linear Regression

R <sub>c</sub> vs C <sub>c</sub>	Slope	Intercept	R <sup>2</sup>
Previous	301.457000	-68.505200	0.999947
Current	301.327200	-7.009152	0.999994
C <sub>i</sub> vs C <sub>c</sub>			
Current	1.000000	-0.000010	0.999994

Average Correction Factor: 1.000

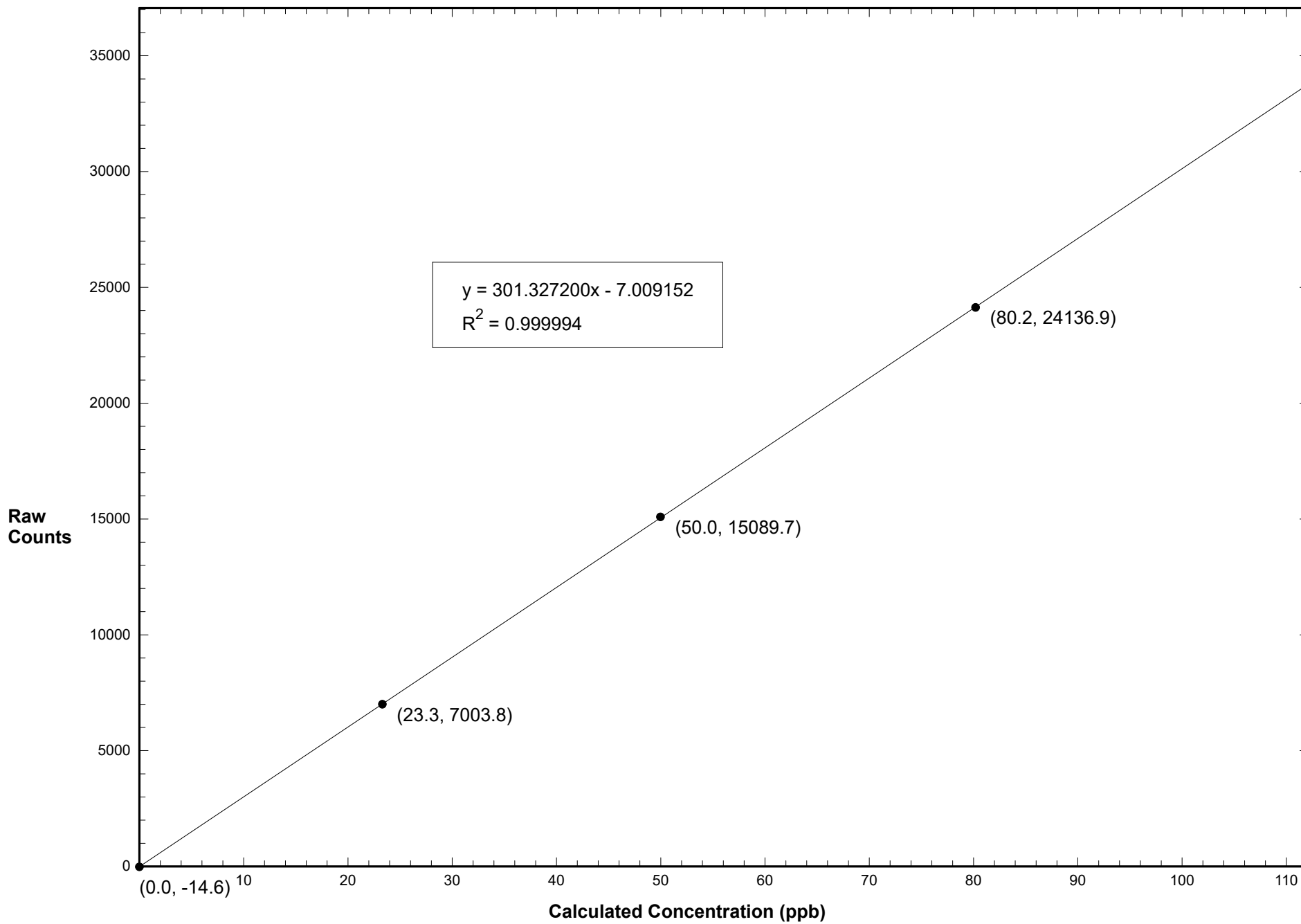
Previous Correction Factor: 0.998

Current Correction Factor: 1.001

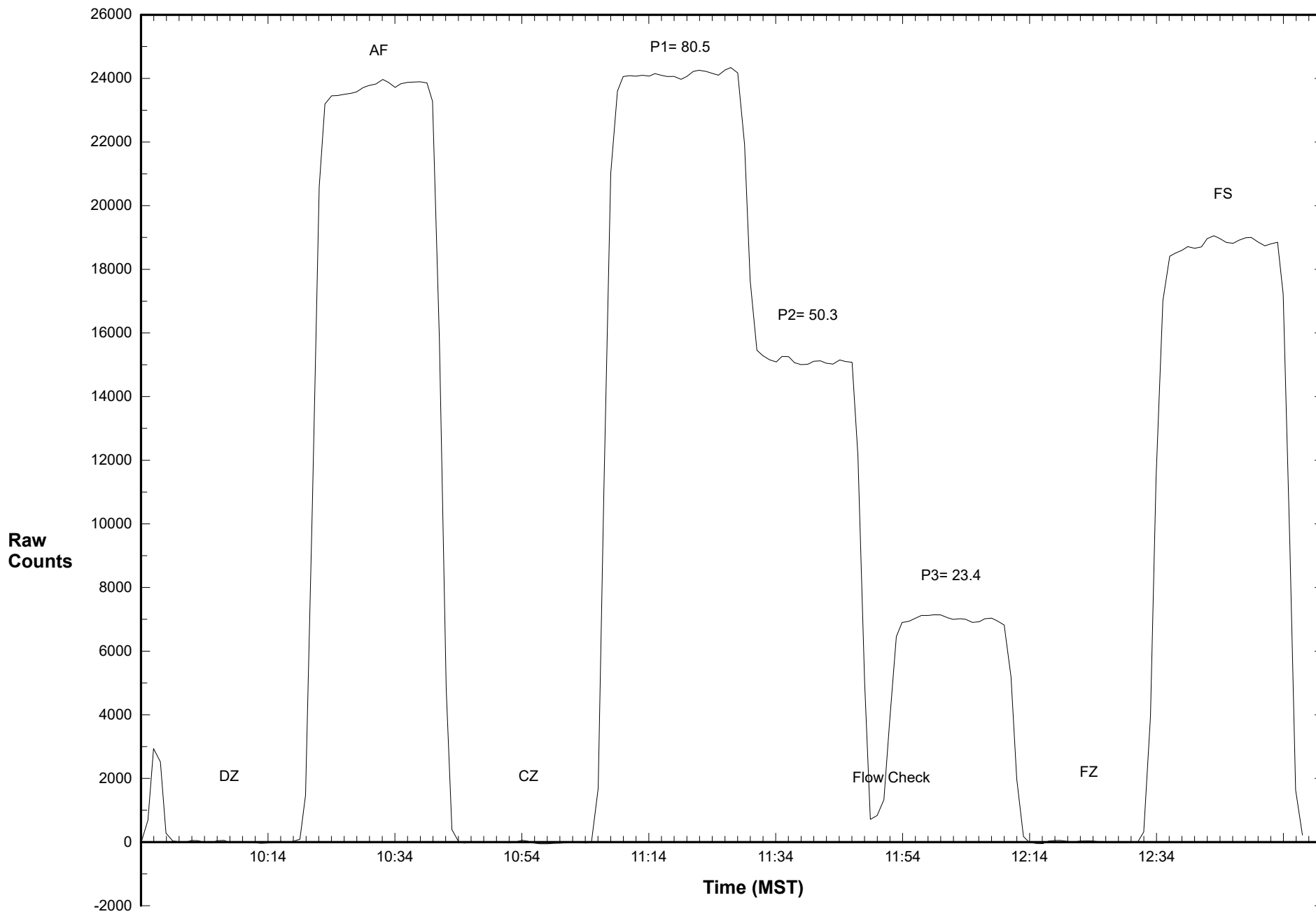
Percent Change of Correction Factor: 0.3

Comments:

### Station 903 SO2 May 26, 2016: Linear Regression



# Station 903 SO2 May 26, 2016: Calibration Graph



# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 905, Steeper 905

Calibration Date: May 19, 2016

Parameter: CO

Instrument: Teco 48CTL

Serial Number: 0523012614

Previous Calibration Date: April 14 2016

Calibration: Routine

Calibration Equipment: SABIO 2010 sn# 04300810

Barometric Pressure: 24.90" Hg

Calibration Method: Standard Gas Dilution

Cylinder ID: FF 23225

Temperature: 22.0° C

Cylinder Concentration: 2611 ppm CO

Technician: Dean Yustak

### Instrument Settings

#### Zero Pot

#### Span Pot

#### Monitoring Range

Previous

11.755

1.113

50 ppm

Current

11.809

1.119

50 ppm

Final Zero: -0.3 ppm

Final Span: 34.7 ppm

As Found Correction Factor: 0.997

CO Flow  
Rate (LPM)

Dilution Flow  
Rate (LPM)

Calculated  
Concentration  
C<sub>c</sub> (ppm)

Raw Count  
Output  
R<sub>c</sub>

Indicated  
Concentration  
C<sub>i</sub> (ppm)

Correction  
Factor  
C<sub>c</sub>/C<sub>i</sub>

0.0768

6.029

32.8

19675.8

32.8

1.001

0.0512

6.017

22.0

13378.2

22.2

0.995

0.0261

6.010

11.3

6888.8

11.2

1.010

0.0000

5.994

0.0

319.2

0.0

### Results of Linear Regression

R<sub>c</sub> vs C<sub>c</sub>

Slope

Intercept

R<sup>2</sup>

Previous

594.740700

134.167600

0.999902

Current

590.618300

294.543000

0.999954

C<sub>i</sub> vs C<sub>c</sub>

Current

1.000000

0.000000

0.999955

Average Correction Factor:

1.002

Previous Correction Factor:

0.996

Current Correction Factor:

1.001

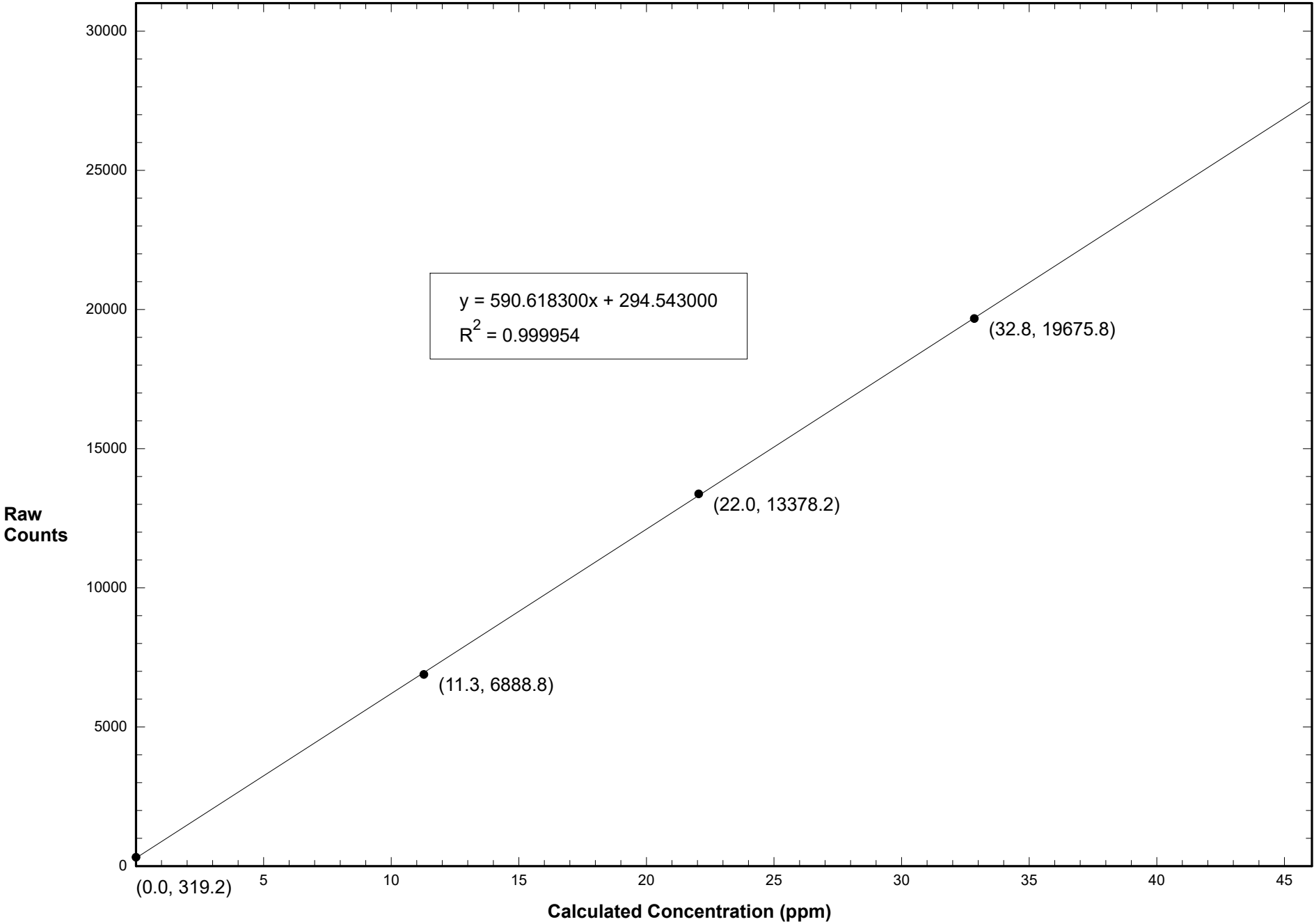
Percent Change of  
Correction Factor:

0.5

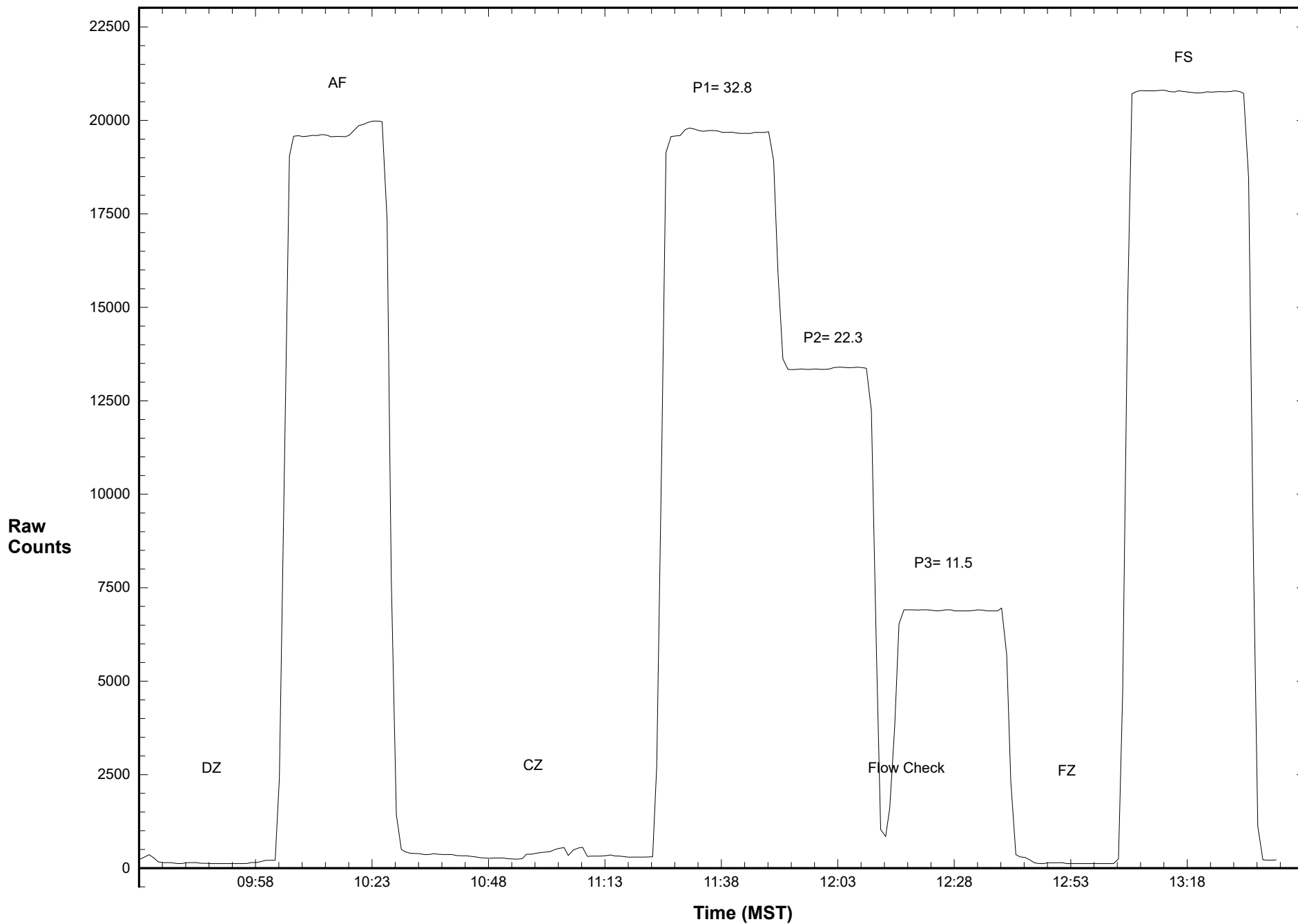
Comments:



# Station 905 CO May 19, 2016: Linear Regression



# Station 905 CO May 19, 2016: Calibration Graph



# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 905, Steeper 905

Calibration Date: May 19, 2016

Parameter: NO/NO<sub>2</sub>/NO<sub>x</sub>

Instrument: Teco 42i

Serial Number: 1327059403

Previous Calibration Date: April 14 2016

Calibration: Routine

Calibration Equipment: SABIO 2010 sn# 04300810

Barometric Pressure: 24.90" Hg

Calibration Method: Standard Gas Dilution/ GPT

Cylinder ID: FF 23225

Temperature: 22.0° C

Cylinder Concentration: 11.9 ppm NO/ NO<sub>x</sub>

In Service: December 10, 2013

Technician: Dean Yustak

Instrument Settings	NO bkg ppb	NO <sub>x</sub> bkg ppb	Pre-reactor bkg ppb	NO Coefficient	NO <sub>x</sub> Coefficient	NO <sub>2</sub> Coefficient	Monitoring Range
Previous	3.8	3.9	NA	1.028	0.997	1.002	200 ppb
Current	4.0	6.4		1.084	0.995	1.002	200 ppb

NO	Final Zero: -0.3 ppb	Final Span: 170.5 ppb	As Found Correction Factor: 1.055
NO <sub>2</sub>	Final Zero: -2.0 ppb	Final Span: -2.8 ppb	As Found Correction Factor: NA
NO <sub>x</sub>	Final Zero: -2.6 ppb	Final Span: 168.4 ppb	As Found Correction Factor: 1.042

Results of Linear Regression			Slope	Intercept	R <sup>2</sup>
NO	R <sub>c</sub> vs C <sub>c</sub>	Previous	150.010700	-26.869290	0.999949
		Current	149.423100	52.425790	0.999971
	C <sub>i</sub> vs C <sub>c</sub>	Current	1.000000	-0.000002	0.999971
NO <sub>2</sub>	R <sub>c</sub> vs C <sub>c</sub>	Previous	149.228100	32.740250	0.999949
		Current	148.230000	18.184620	0.999988
	C <sub>i</sub> vs C <sub>c</sub>	Current	1.000000	0.000010	0.999988
NO <sub>x</sub>	R <sub>c</sub> vs C <sub>c</sub>	Previous	149.477600	-26.642120	0.999949
		Current	148.497300	105.381100	0.999944
	C <sub>i</sub> vs C <sub>c</sub>	Current	1.000000	0.000000	0.999944

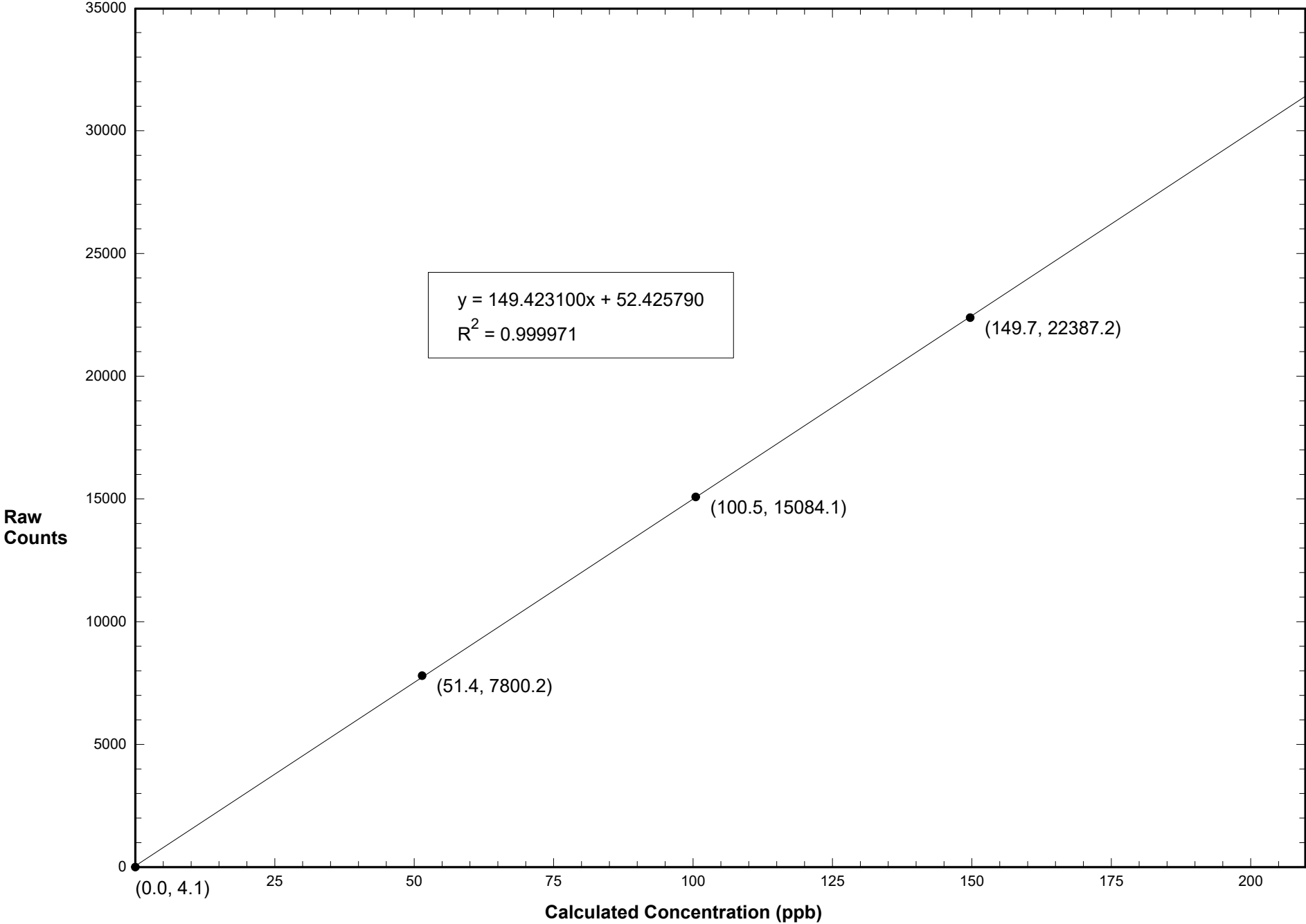
Comments:

**Calibration Data Summary (Page 2)**

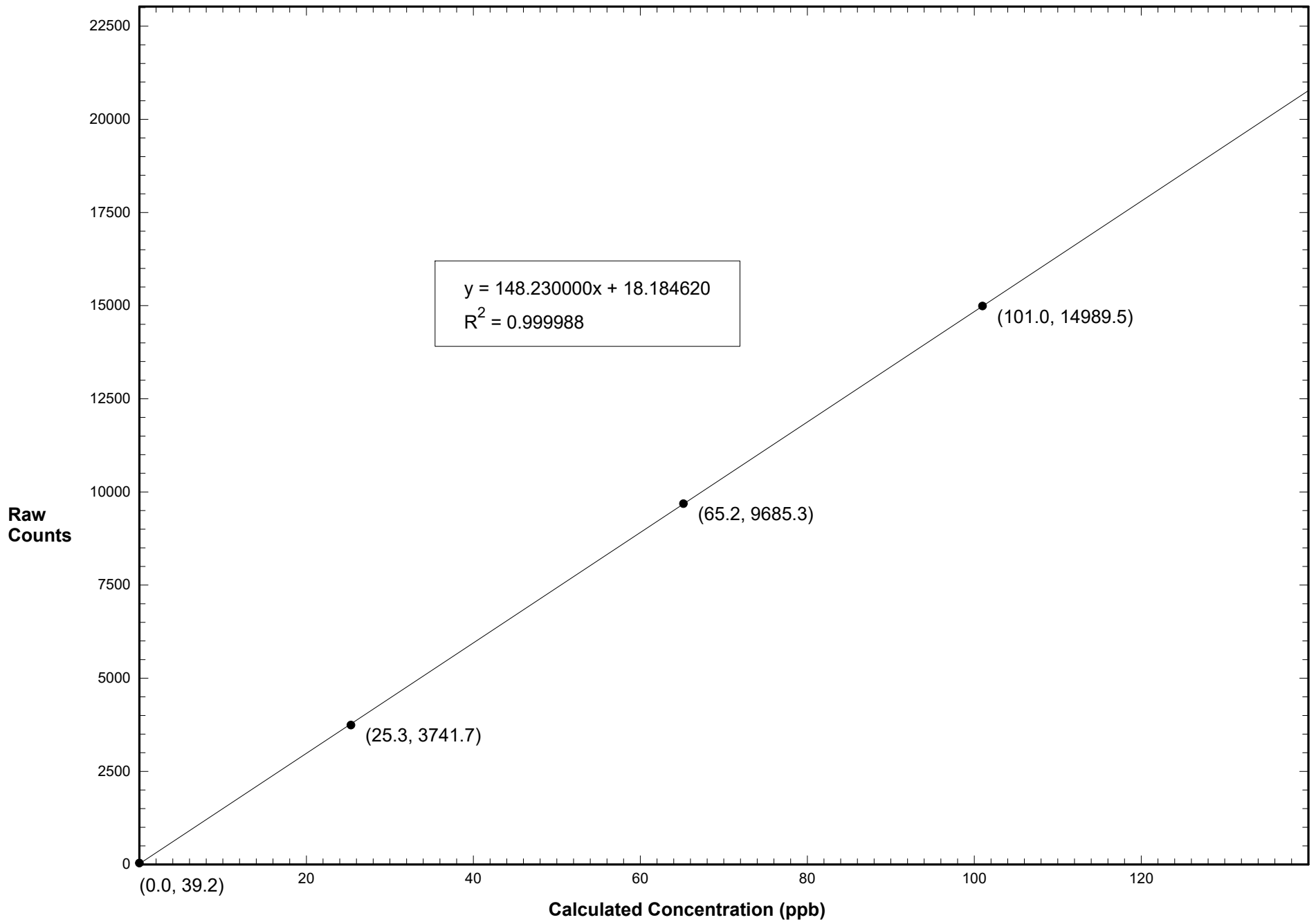
May 19, 2016 - Station 905

NO Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration C <sub>c</sub> (ppb)	Raw Count Output R <sub>c</sub>	Indicated Concentration C <sub>i</sub> (ppb)	Correction Factor C <sub>c</sub> /C <sub>i</sub>		
0.07681	6.029	149.7	22387.2	149.5	1.002		
0.05124	6.017	100.5	15084.1	100.6	0.999		
0.02608	6.010	51.4	7800.2	51.9	0.992		
0.00000	5.994	0.0	4.1	-0.3			
NO Calibration					Average Correction Factor:	0.997	
0.07681	6.029	149.7	22282.0	149.3	1.002		
0.05124	6.017	100.5	15064.5	100.7	0.997		
0.02608	6.010	51.4	7822.5	52.0	0.989		
0.00000	5.994	0.0	39.2	-0.4			
NO <sub>x</sub> Calibration					Average Correction Factor:	0.996	
Reference Concentration NO (ppb)	Raw Count Output NO	Calculated Concentration NO (ppb)	Calculated Concentration NO <sub>2</sub> , C <sub>c</sub> (ppb)	Raw Count Output R <sub>c</sub>	Indicated Concentration C <sub>i</sub> (ppb)	Correction Factor C <sub>c</sub> /C <sub>i</sub>	Converter Efficiency C <sub>i</sub> /C <sub>c</sub>
148.9	7208.5	47.9	101.0	14989.5	101.0	1.000	1.000
148.9	12560.6	83.7	65.2	9685.3	65.2	0.999	1.001
148.9	18511.9	123.5	25.3	3741.7	25.1	1.009	0.992
			0.0	39.2	0.1		
					Average Correction Factor:	1.003	
NO <sub>2</sub> Gas Phase Titration					Average Converter Efficiency: 0.998		
Parameter	Correction Factor (Previous)	Correction Factor: (Current)	Percent Change of Correction Factor				
NO	0.997	1.002	0.5				
NO <sub>2</sub>	1.001	1.000	-0.1				
NO <sub>x</sub>	0.997	1.002	0.5				

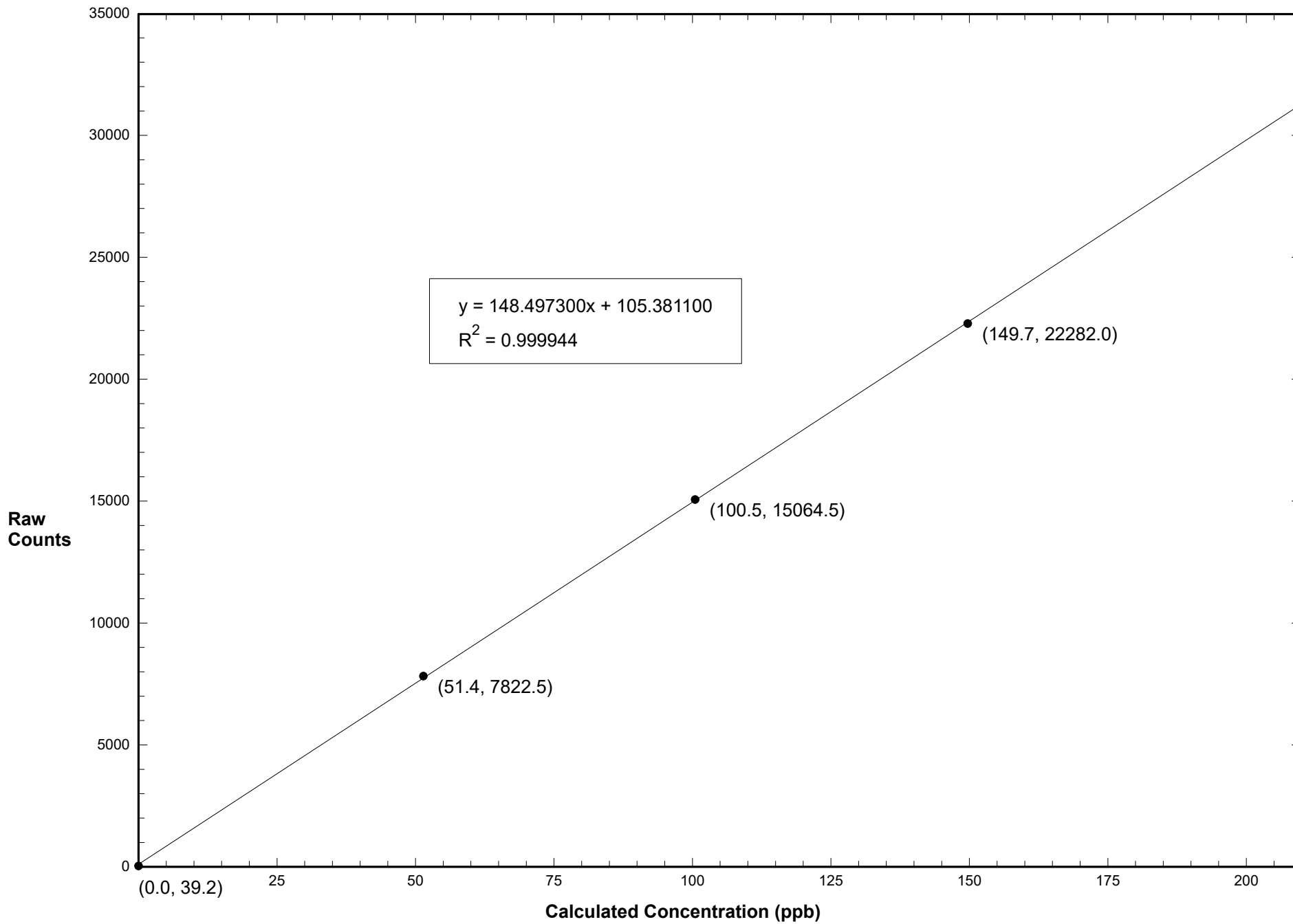
# Station 905 NO May 19, 2016: Linear Regression



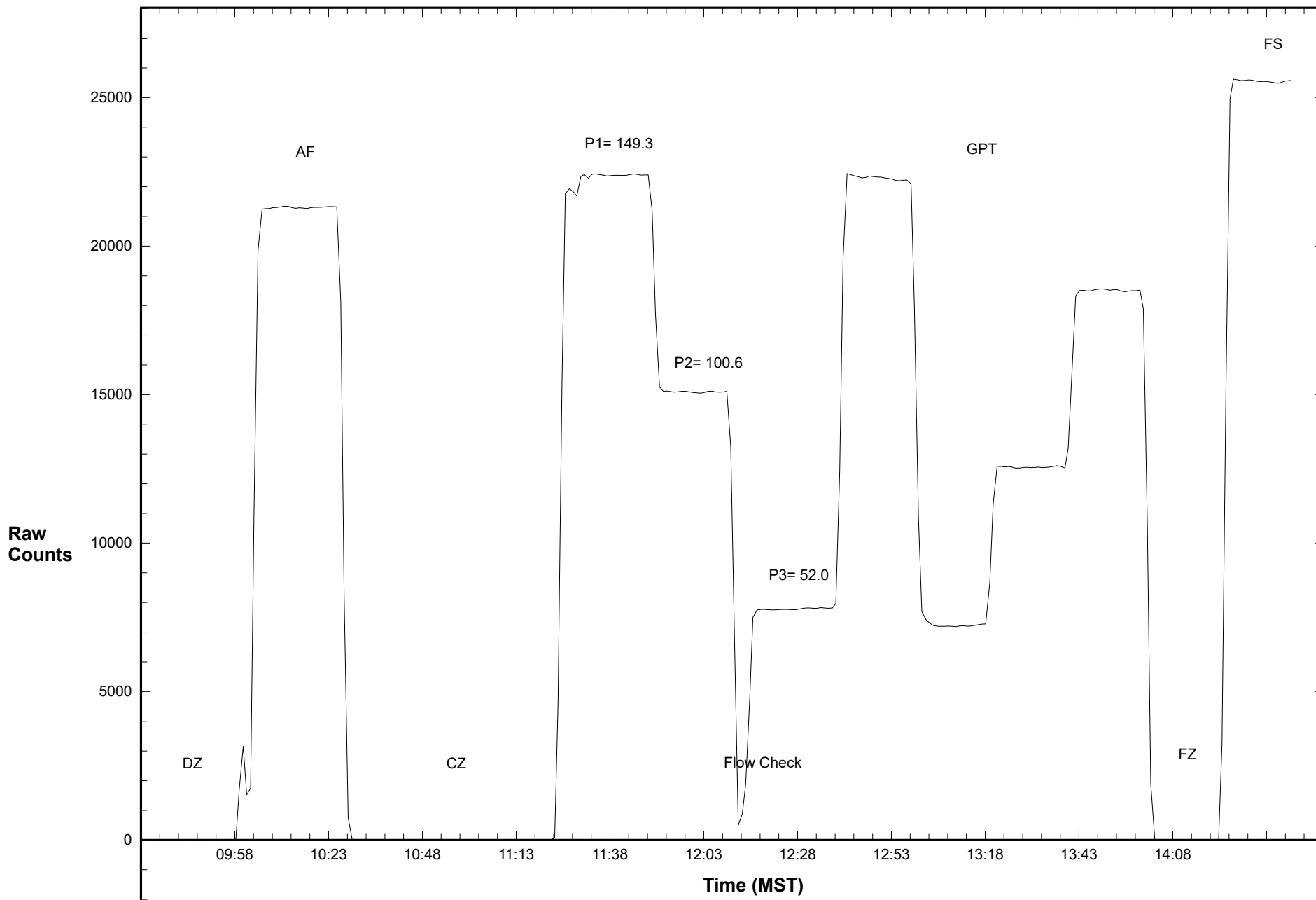
# Station 905 NO2 May 19, 2016: Linear Regression



# Station 905 NOX May 19, 2016: Linear Regression

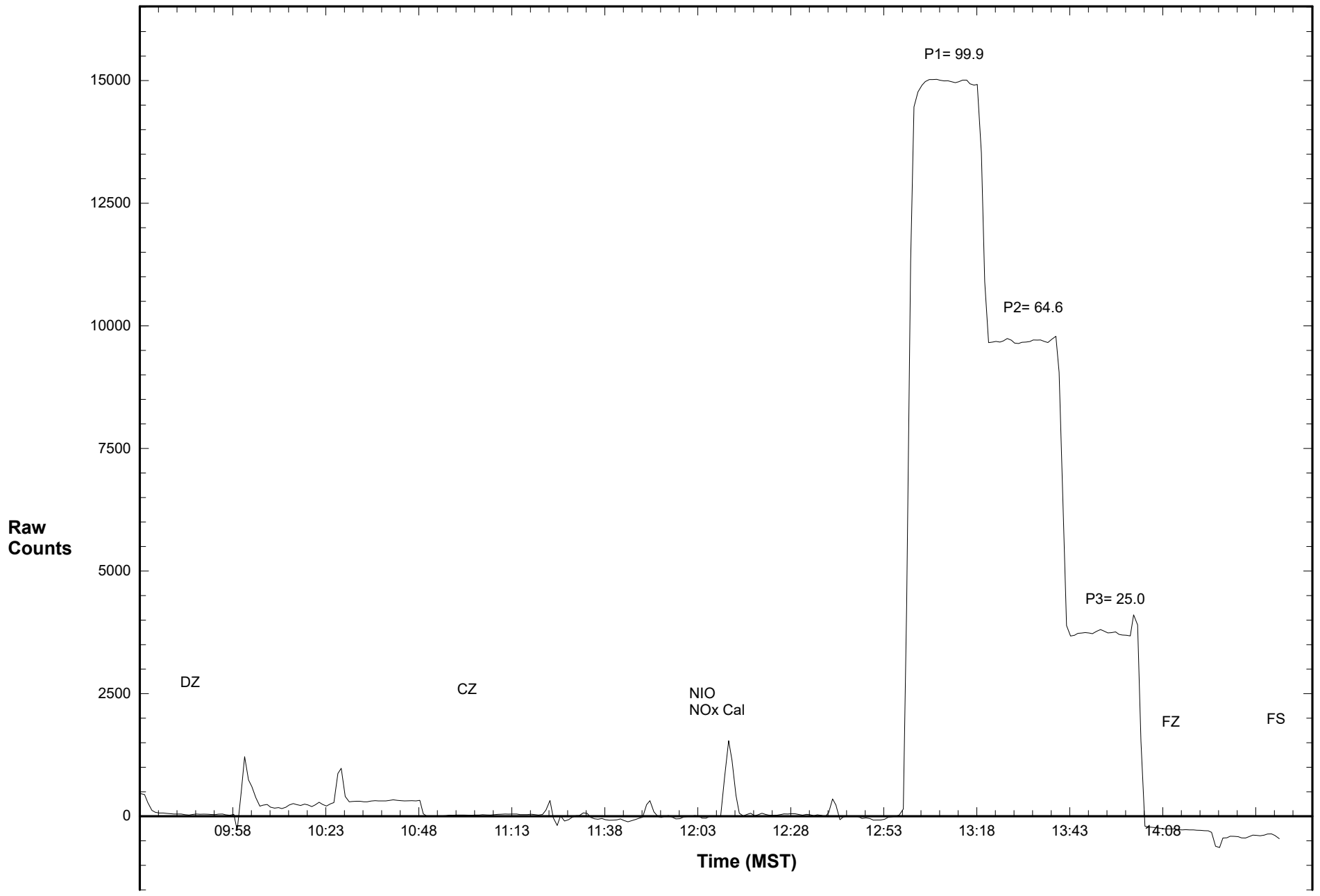


# Station 905 NO May 19, 2016: Calibration Graph

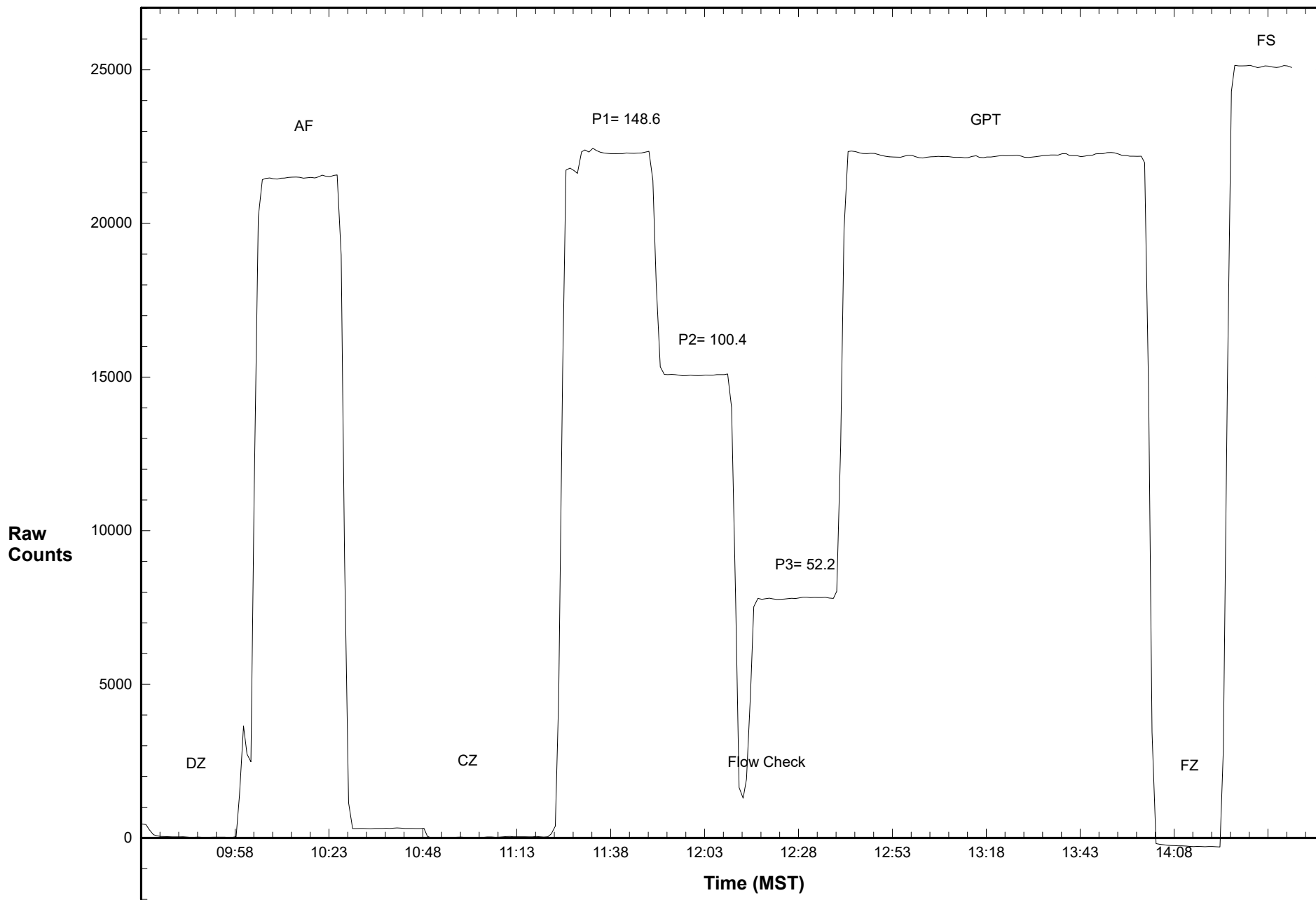




# Station 905 NO2 May 19, 2016: Calibration Graph



# Station 905 NOX May 19, 2016: Calibration Graph



# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 905, Steeper 905

Calibration Date: May 19, 2016

Parameter: O<sub>3</sub>

Instrument: Teco 49C

Serial Number: 49C - 69993 - 364

Previous Calibration Date: April 14 2016

Calibration: Routine

Calibration Equipment: Model 2B SN 135

Barometric Pressure: 24.90" Hg

Calibration Method: Certified Ozone Calibrator

Temperature: 22.0° C

Technician: Dean Yustak

Instrument Settings	Background	Coefficient	Monitoring Range
Previous	0.2	1.068	500 ppb
Current	-0.0	1.078	500 ppb

Final Zero: -0.8 ppb

Final Span: 366.9 ppb

As Found Correction Factor: 1.010

Calibration System Flow Rate (LPM)	Calculated Concentration C <sub>c</sub> (ppb)	Raw Count Output R <sub>c</sub>	Indicated Concentration C <sub>i</sub> (ppb)	Correction Factor C <sub>c</sub> /C <sub>i</sub>
3.000	409.0	24439.4	408.1	1.002
3.000	255.0	15363.4	256.1	0.996
3.000	102.3	6224.5	103.0	0.993
3.000	0.0	13.6	-1.0	

### Results of Linear Regression

R <sub>c</sub> vs C <sub>c</sub>	Slope	Intercept	R <sup>2</sup>
Previous	60.124750	38.555440	0.999986
Current	59.706350	71.981060	0.999963
C <sub>i</sub> vs C <sub>c</sub>			
Current	1.000000	0.000007	0.999963

Average Correction Factor: 0.997

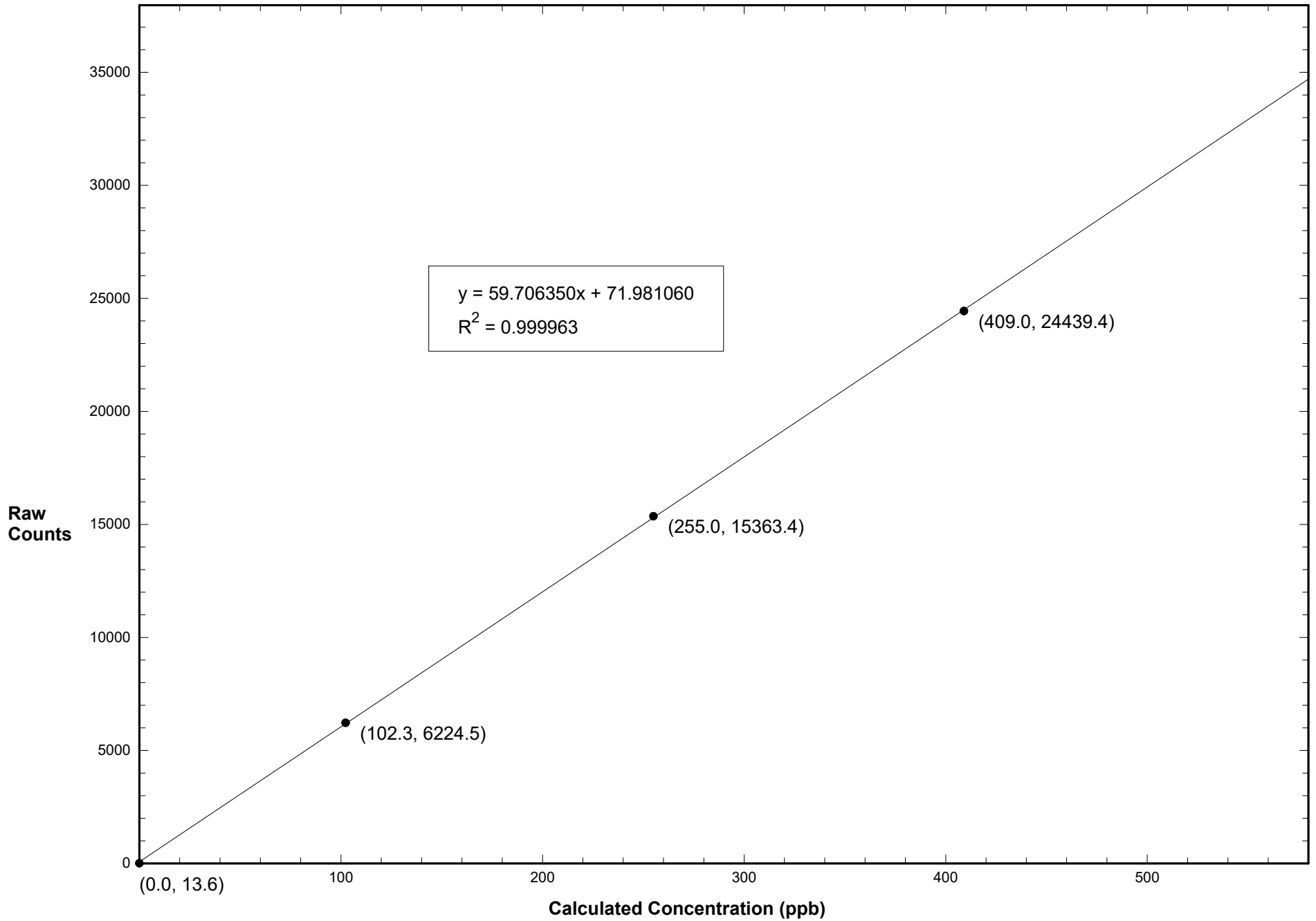
Previous Correction Factor: 1.001

Current Correction Factor: 1.002

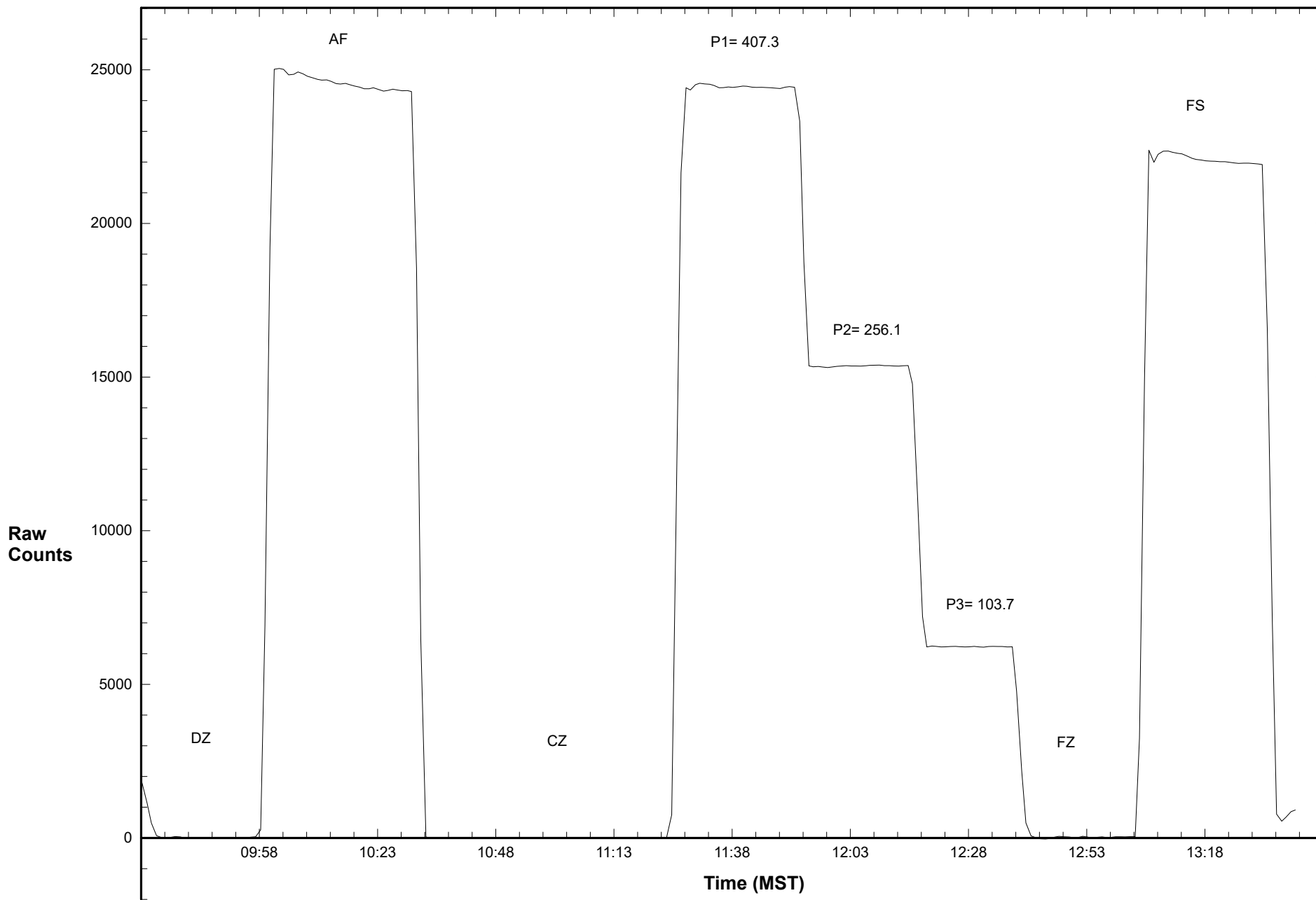
Percent Change of Correction Factor: 0.1

Comments:

# Station 905 O3 May 19, 2016: Linear Regression



# Station 905 O3 May 19, 2016: Calibration Graph



# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 905, Steeper 905

Calibration Date: May 19, 2016

Parameter: SO<sub>2</sub>

Instrument: Teco 43CTL

Serial Number: 43CTL 68293 365

Previous Calibration Date: April 14 2016

Calibration: Routine

Calibration Equipment: SABIO 2010 sn# 04300810

Barometric Pressure: 24.90" Hg

Calibration Method: Standard Gas Dilution

Cylinder ID: FF 23225

Temperature: 22.0° C

Cylinder Concentration: 5.96 ppm SO<sub>2</sub>

In Service: December 10, 2013

Technician: Dean Yustak

Instrument Settings	SO <sub>2</sub> bkg ppb	SO <sub>2</sub> Coefficient	Monitoring Range
Previous	2.80	1.067	100 ppb
Current	2.86	1.097	100 ppb

Final Zero: 0.0 ppb

Final Span: 78.0 ppb

As Found Correction Factor: 1.013

SO <sub>2</sub> Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration C <sub>c</sub> (ppb)	Raw Count Output R <sub>c</sub>	Indicated Concentration C <sub>i</sub> (ppb)	Correction Factor C <sub>c</sub> /C <sub>i</sub>
0.0768	6.029	75.0	22660.4	75.0	1.000
0.0512	6.017	50.3	15212.9	50.3	1.000
0.0261	6.010	25.8	7753.2	25.7	1.004
0.0000	5.994	0.0	17.1	0.1	

### Results of Linear Regression

R <sub>c</sub> vs C <sub>c</sub>	Slope	Intercept	R <sup>2</sup>
Previous	299.617900	-56.692150	0.999928
Current	302.154200	0.572333	0.999996
C <sub>i</sub> vs C <sub>c</sub>			
Current	1.000000	0.000000	0.999996

Average Correction Factor: 1.001

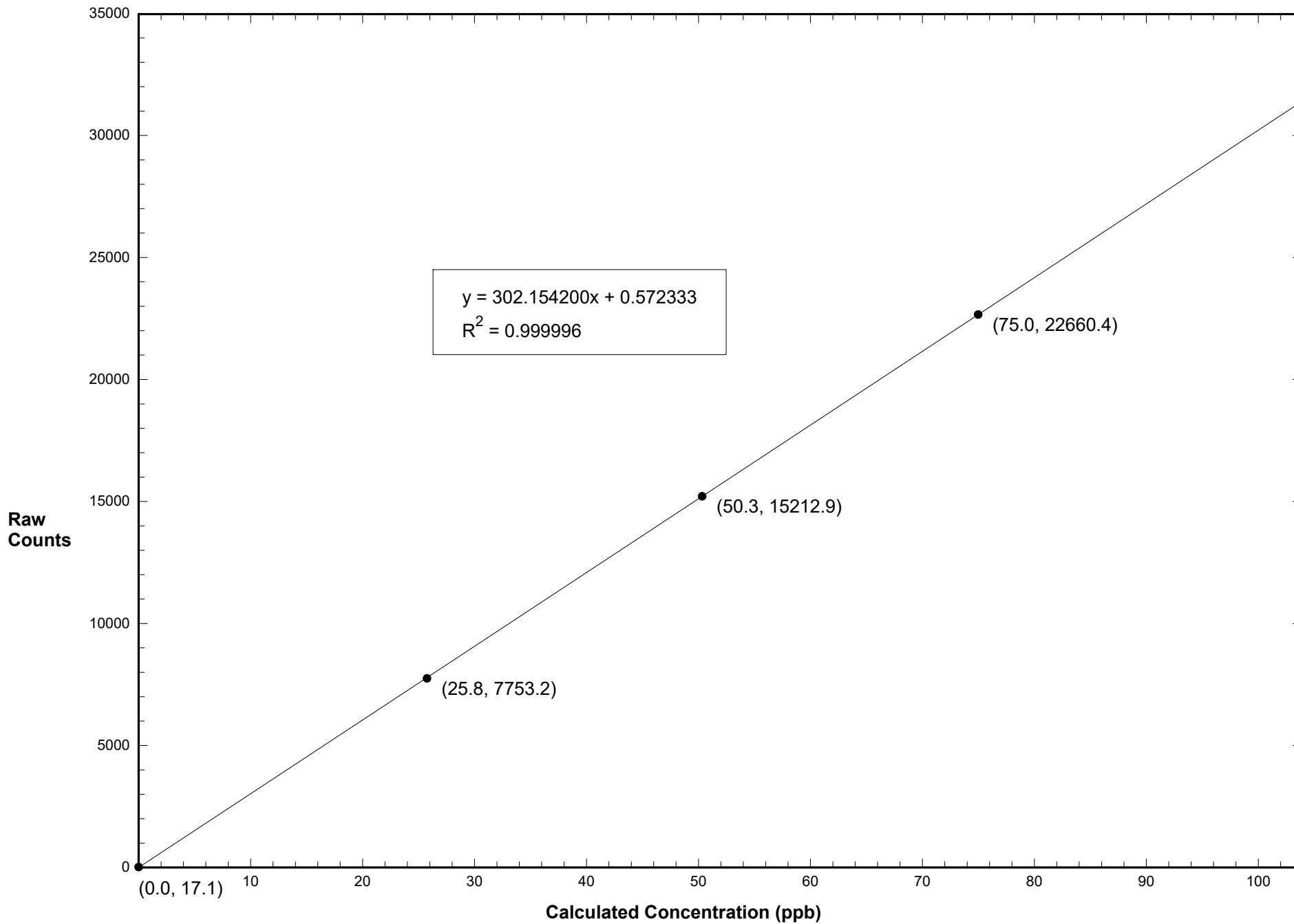
Previous Correction Factor: 0.997

Current Correction Factor: 1.000

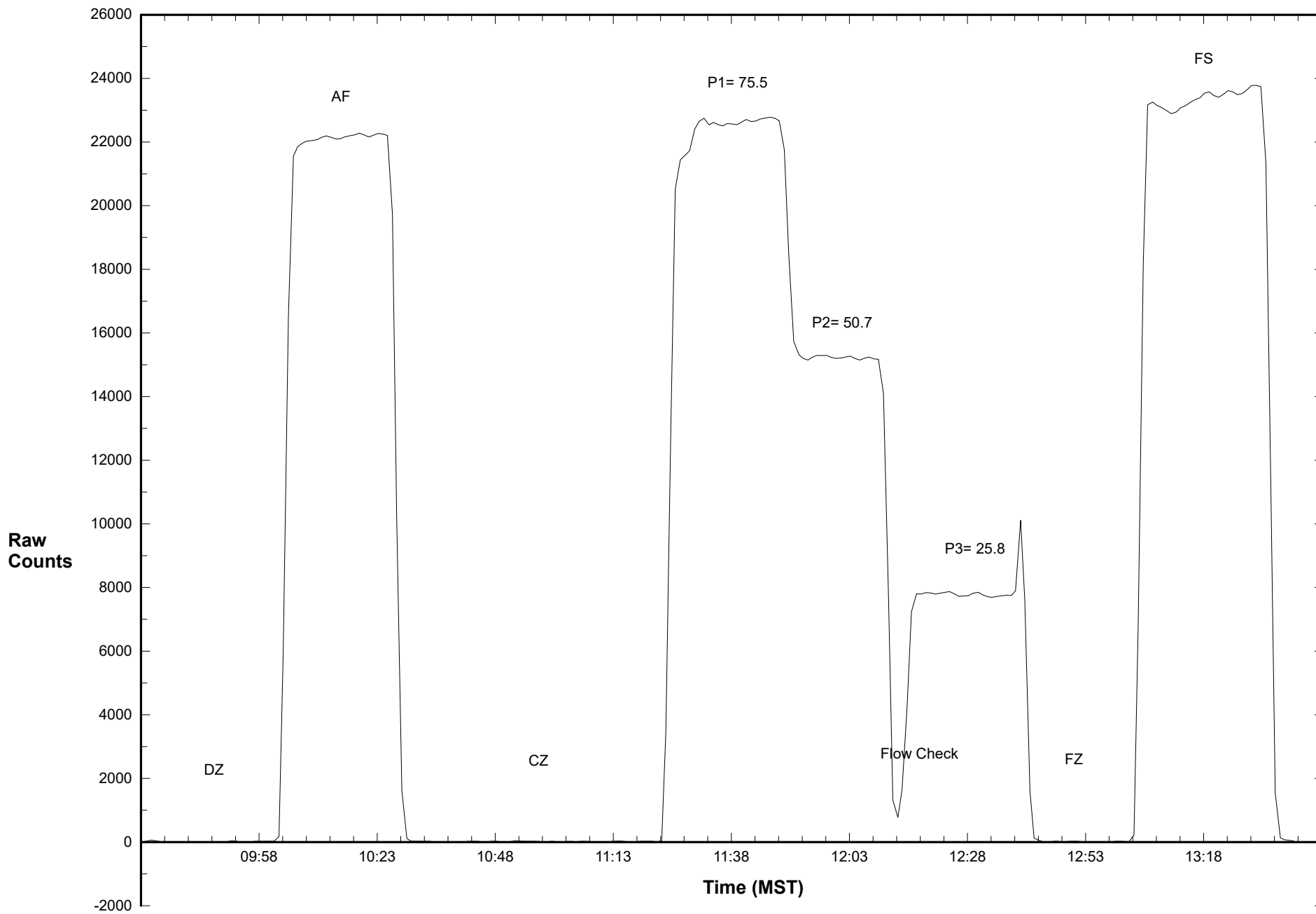
Percent Change of Correction Factor: 0.3

Comments:

# Station 905 SO2 May 19, 2016: Linear Regression



# Station 905 SO2 May 19, 2016: Calibration Graph





# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 913, Breton

Calibration Date: May 12, 2016

Parameter: NO/NO<sub>2</sub>/NO<sub>x</sub>

Instrument: Teco 42i

Serial Number: 1004840575

Previous Calibration Date: April 22, 2016

Calibration: Routine

Calibration Equipment: Sabio 2010 SN 08600312

Barometric Pressure: 27.50" Hg

Calibration Method: Standard Gas Dilution / GPT

Cylinder ID: FF13698

Temperature: 20.2° C

Cylinder Concentration: 12.5 ppm NO

In Service: January 14, 2015

Technician: L. Burns

Instrument Settings	NO bkg ppb	NO <sub>x</sub> bkg ppb	Pre-reactor bkg ppb	NO Coefficient	NO <sub>x</sub> Coefficient	NO <sub>2</sub> Coefficient	Monitoring Range
Previous	6.2	7.1	NA	1.020	0.999	0.996	200 ppb
Current	6.5	6.8	NA	1.099	1.006	0.996	200 ppb

NO	Final Zero: -0.2 ppb	Final Span: 147.2 ppb	As Found Correction Factor: 1.079
NO <sub>2</sub>	Final Zero: -0.4 ppb	Final Span: 1.1 ppb	As Found Correction Factor: NA
NO <sub>x</sub>	Final Zero: -0.2 ppb	Final Span: 147.8 ppb	As Found Correction Factor: 1.077

Results of Linear Regression			Slope	Intercept	R <sup>2</sup>
NO	R <sub>c</sub> vs C <sub>c</sub>	Previous	150.102700	46.769280	0.999976
		Current	149.866600	43.074130	0.999964
	C <sub>i</sub> vs C <sub>c</sub>	Current	1.000000	-0.000021	0.999964
NO <sub>2</sub>	R <sub>c</sub> vs C <sub>c</sub>	Previous	150.498100	-35.887950	0.999976
		Current	150.759100	54.479570	0.999958
	C <sub>i</sub> vs C <sub>c</sub>	Current	1.000000	0.000000	0.999959
NO <sub>x</sub>	R <sub>c</sub> vs C <sub>c</sub>	Previous	149.783400	29.782800	0.999976
		Current	150.597100	36.490350	0.999983
	C <sub>i</sub> vs C <sub>c</sub>	Current	1.000000	0.000024	0.999983

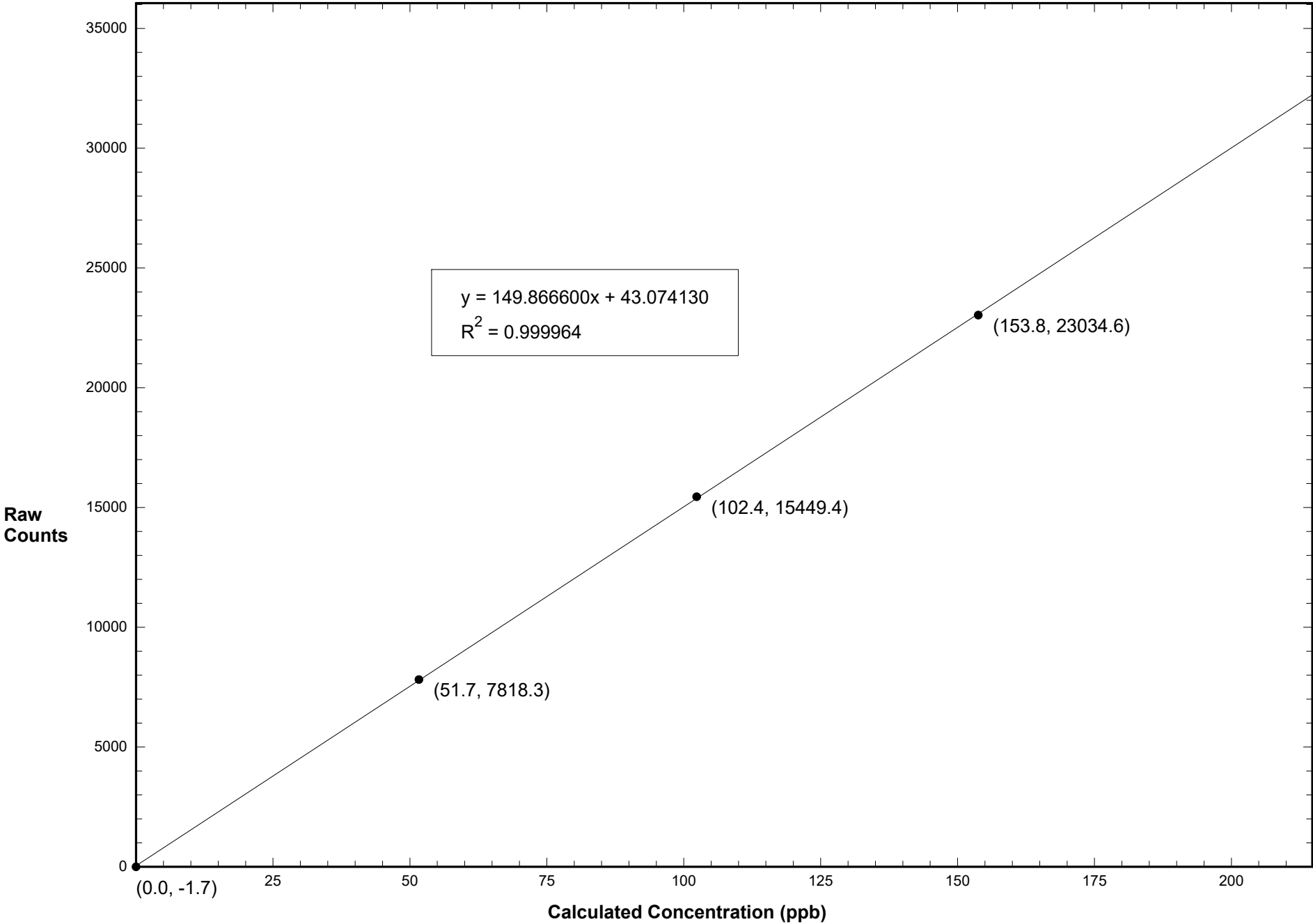
Comments:

**Calibration Data Summary (Page 2)**

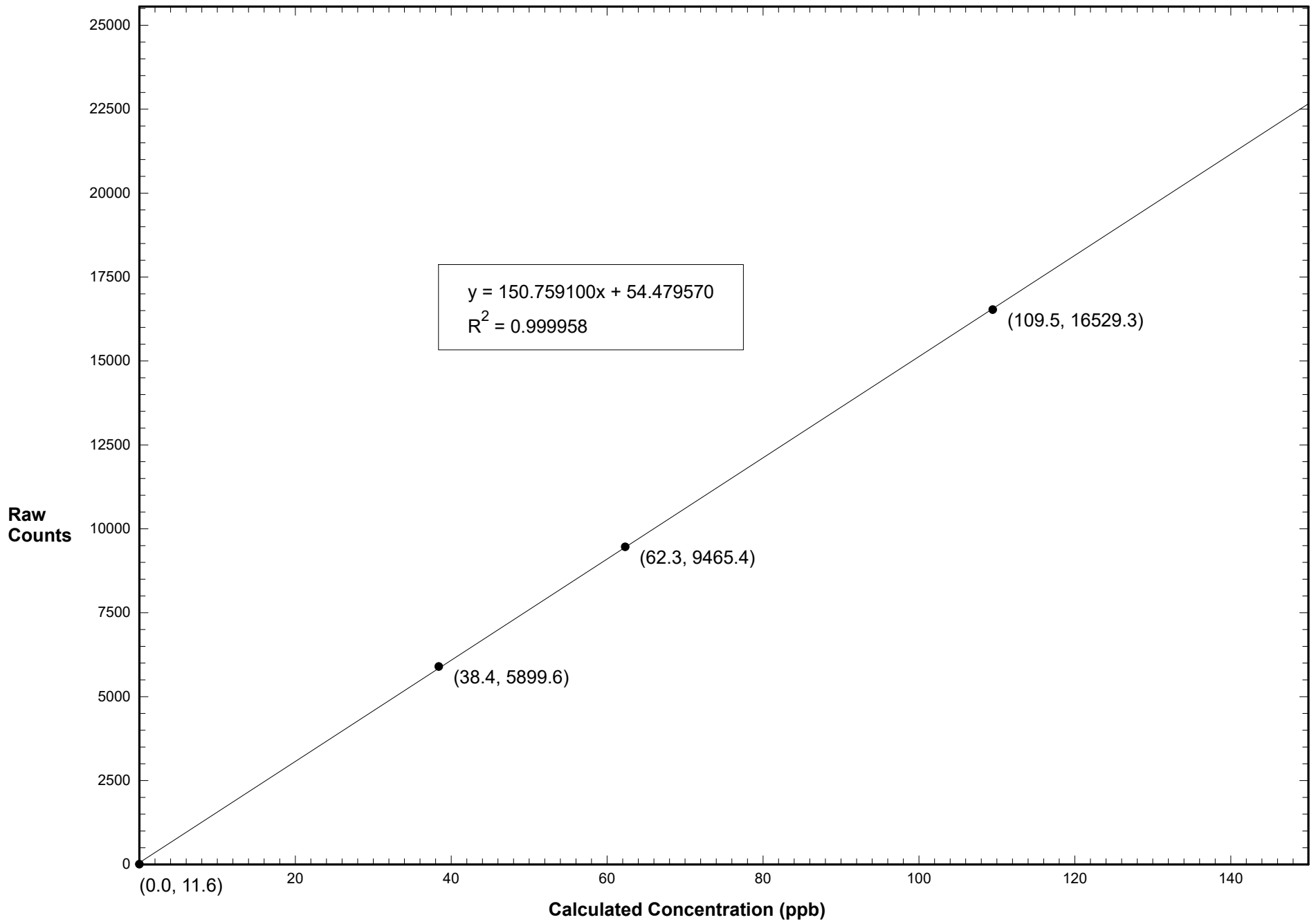
May 12, 2016 - Station 913

NO Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration C <sub>c</sub> (ppb)	Raw Count Output R <sub>c</sub>	Indicated Concentration C <sub>i</sub> (ppb)	Correction Factor C <sub>c</sub> /C <sub>i</sub>		
0.07471	5.998	153.8	23034.6	153.4	1.002		
0.04963	6.011	102.4	15449.4	102.8	0.996		
0.02490	6.001	51.7	7818.3	51.9	0.996		
0.00000	6.000	0.0	-1.7	-0.3			
NO Calibration					Average Correction Factor:	0.998	
0.07471	5.998	153.8	23158.1	153.5	1.002		
0.04963	6.011	102.4	15492.8	102.6	0.997		
0.02490	6.001	51.7	7845.7	51.9	0.996		
0.00000	6.000	0.0	2.5	-0.2			
NO <sub>x</sub> Calibration					Average Correction Factor:	0.998	
Reference Concentration NO (ppb)	Raw Count Output NO	Calculated Concentration NO (ppb)	Calculated Concentration NO <sub>2</sub> , C <sub>c</sub> (ppb)	Raw Count Output R <sub>c</sub>	Indicated Concentration C <sub>i</sub> (ppb)	Correction Factor C <sub>c</sub> /C <sub>i</sub>	Converter Efficiency C <sub>i</sub> /C <sub>c</sub>
154.2	6742.6	44.7	109.5	16529.3	109.3	1.002	0.998
154.2	13809.3	91.9	62.3	9465.4	62.4	0.998	1.002
154.2	17392.8	115.8	38.4	5899.6	38.8	0.991	1.010
			0.0	11.6	-0.3		
					Average Correction Factor:	0.997	
NO <sub>2</sub> Gas Phase Titration					Average Converter Efficiency: 1.003		
Parameter	Correction Factor (Previous)	Correction Factor: (Current)	Percent Change of Correction Factor				
NO	1.002	1.002	0.0				
NO <sub>2</sub>	0.999	1.002	0.3				
NO <sub>x</sub>	1.001	1.002	0.1				

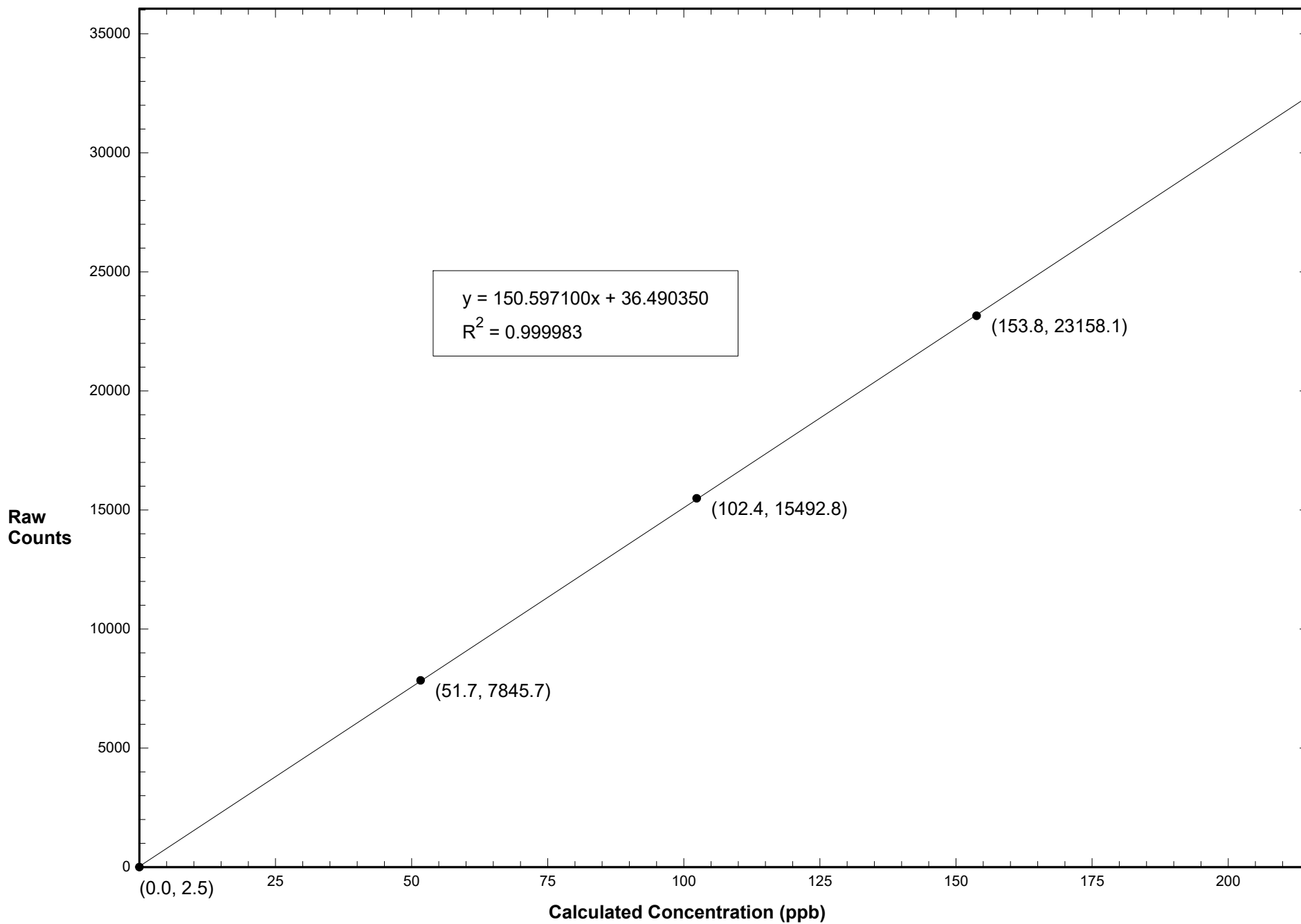
# Station 913 NO May 12, 2016: Linear Regression



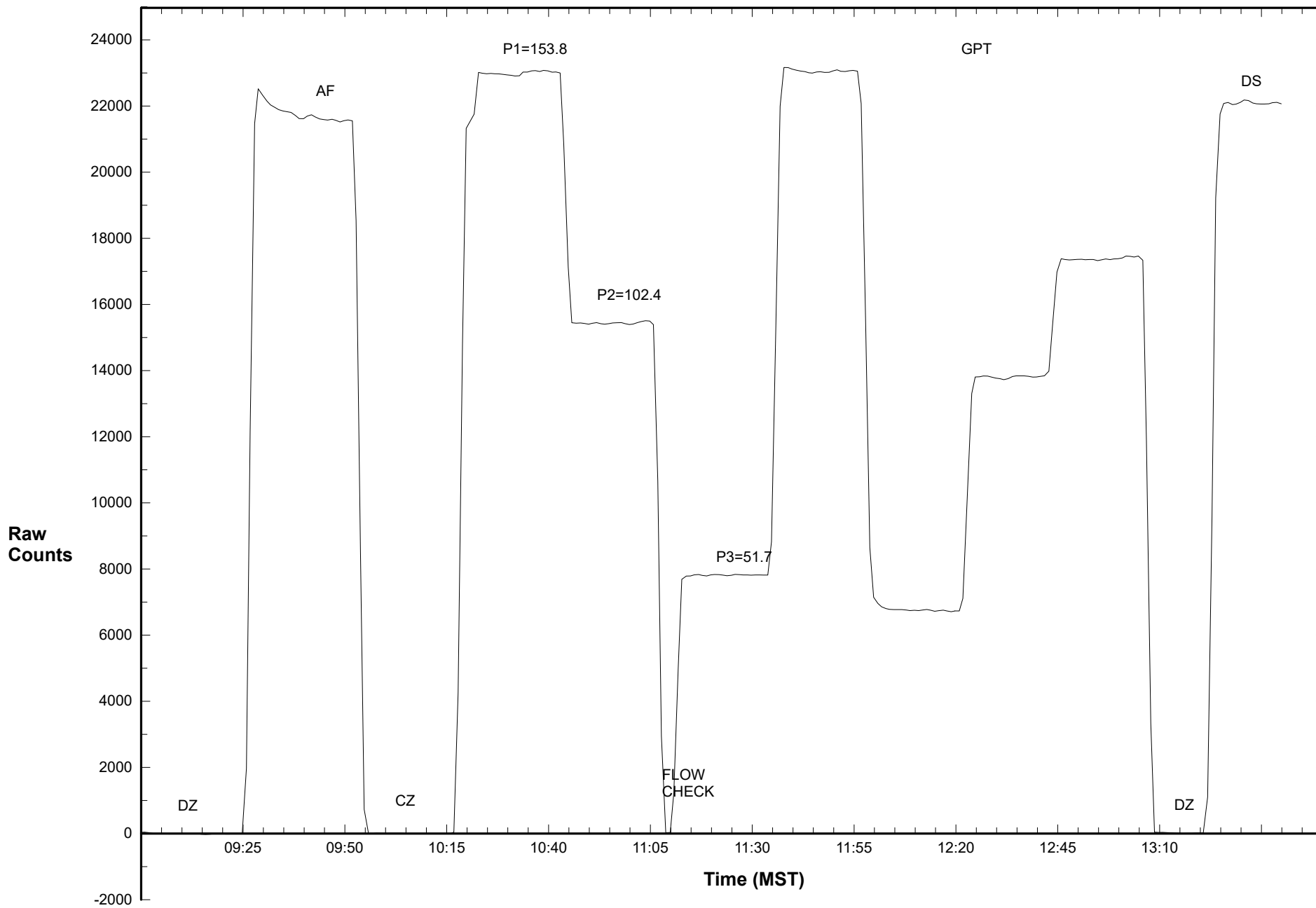
# Station 913 NO2 May 12, 2016: Linear Regression



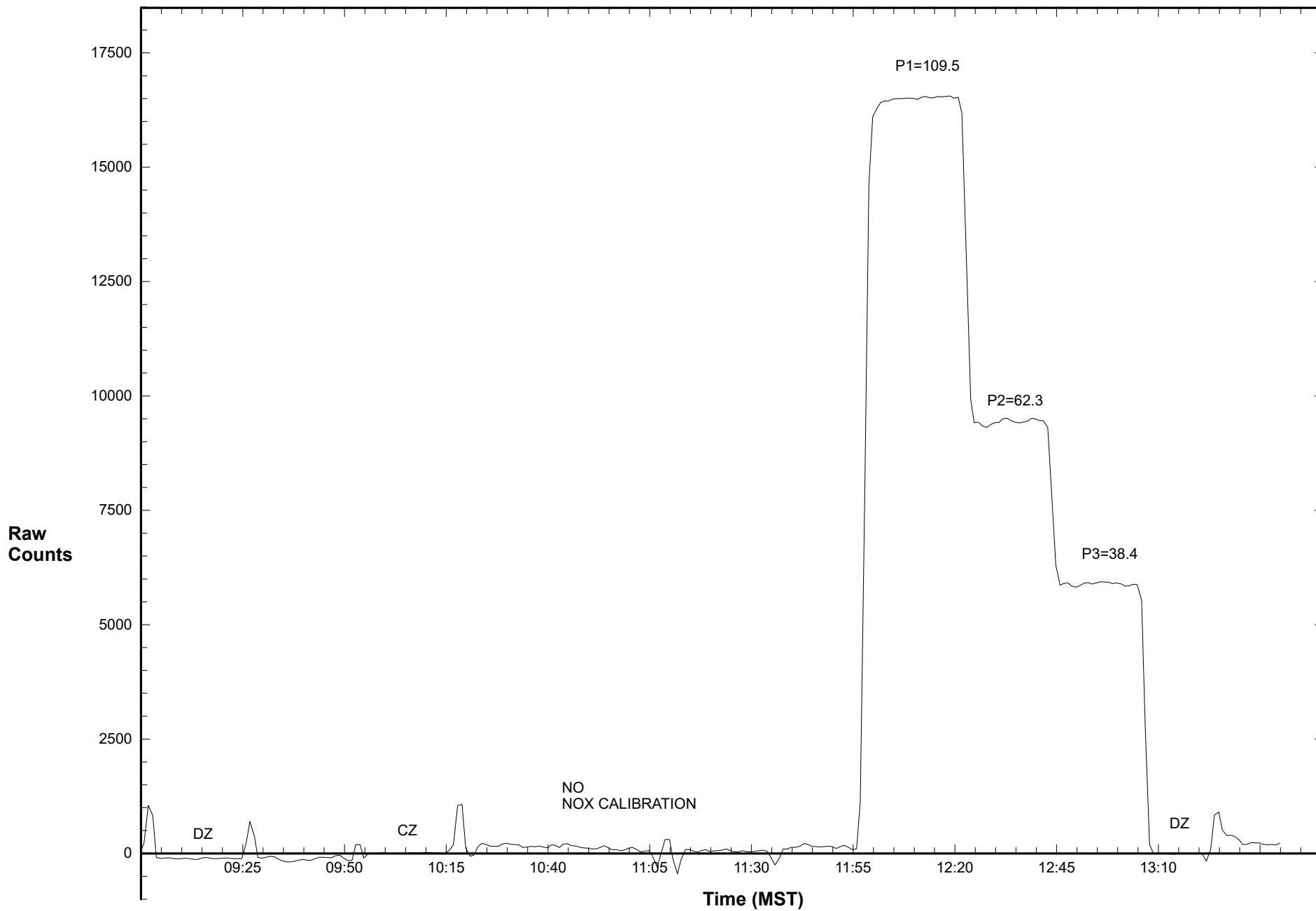
# Station 913 NOX May 12, 2016: Linear Regression



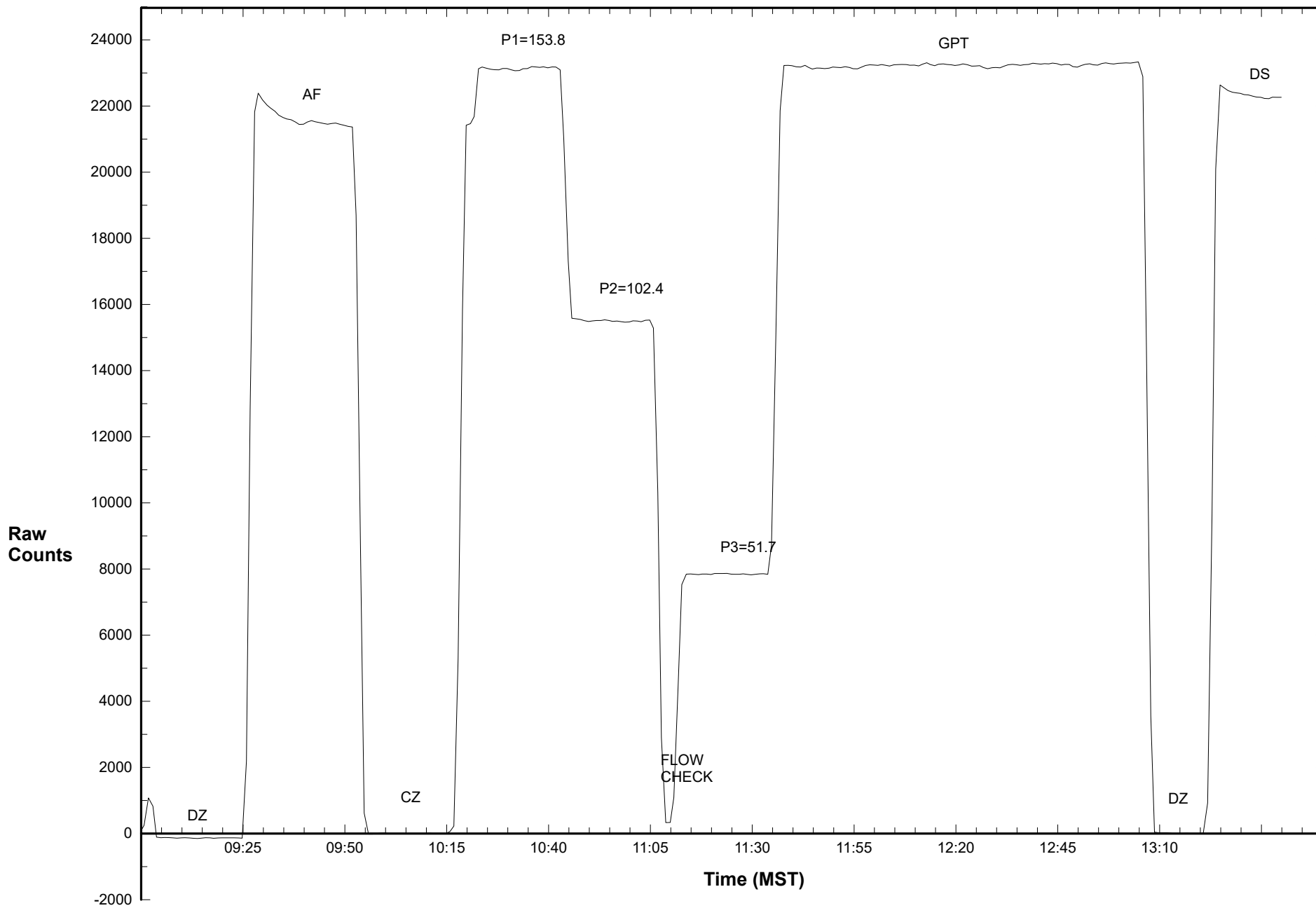
# Station 913 NO May 12, 2016: Calibration Graph



# Station 913 NO2 May 12, 2016: Calibration Graph



# Station 913 NOX May 12, 2016: Calibration Graph





# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 913, Breton  
Calibration Date: May 12, 2016  
Parameter: O<sub>3</sub>

Instrument: Teco 49i

Serial Number: 1106047298

Previous Calibration Date: April 22, 2016

Calibration: Routine

Calibration Equipment: 2B Tech Model 306 SN 142

Barometric Pressure: 27.50" Hg

Calibration Method: Certified Ozone Generator

Temperature: 20.2° C

Technician: L. Burns

Instrument Settings	Background	Coefficient	Monitoring Range
Previous	0.0	1.028	500 ppb
Current	-0.1	1.011	500 ppb

Final Zero: -1.3 ppb

Final Span: 224.0 ppb

As Found Correction Factor: 0.978

Calibration System Flow Rate (LPM)	Calculated Concentration C <sub>c</sub> (ppb)	Raw Count Output R <sub>c</sub>	Indicated Concentration C <sub>i</sub> (ppb)	Correction Factor C <sub>c</sub> /C <sub>i</sub>
3.000	399.0	23964.8	398.2	1.002
3.000	214.0	12968.0	214.8	0.997
3.000	105.0	6479.7	106.5	0.986
3.000	0.0	6.9	-1.5	

### Results of Linear Regression

R <sub>c</sub> vs C <sub>c</sub>	Slope	Intercept	R <sup>2</sup>
Previous	60.112250	57.445720	0.999964
Current	59.945320	94.664990	0.999936
C <sub>i</sub> vs C <sub>c</sub>			
Current	1.000000	0.000027	0.999935

Average Correction Factor: 0.995

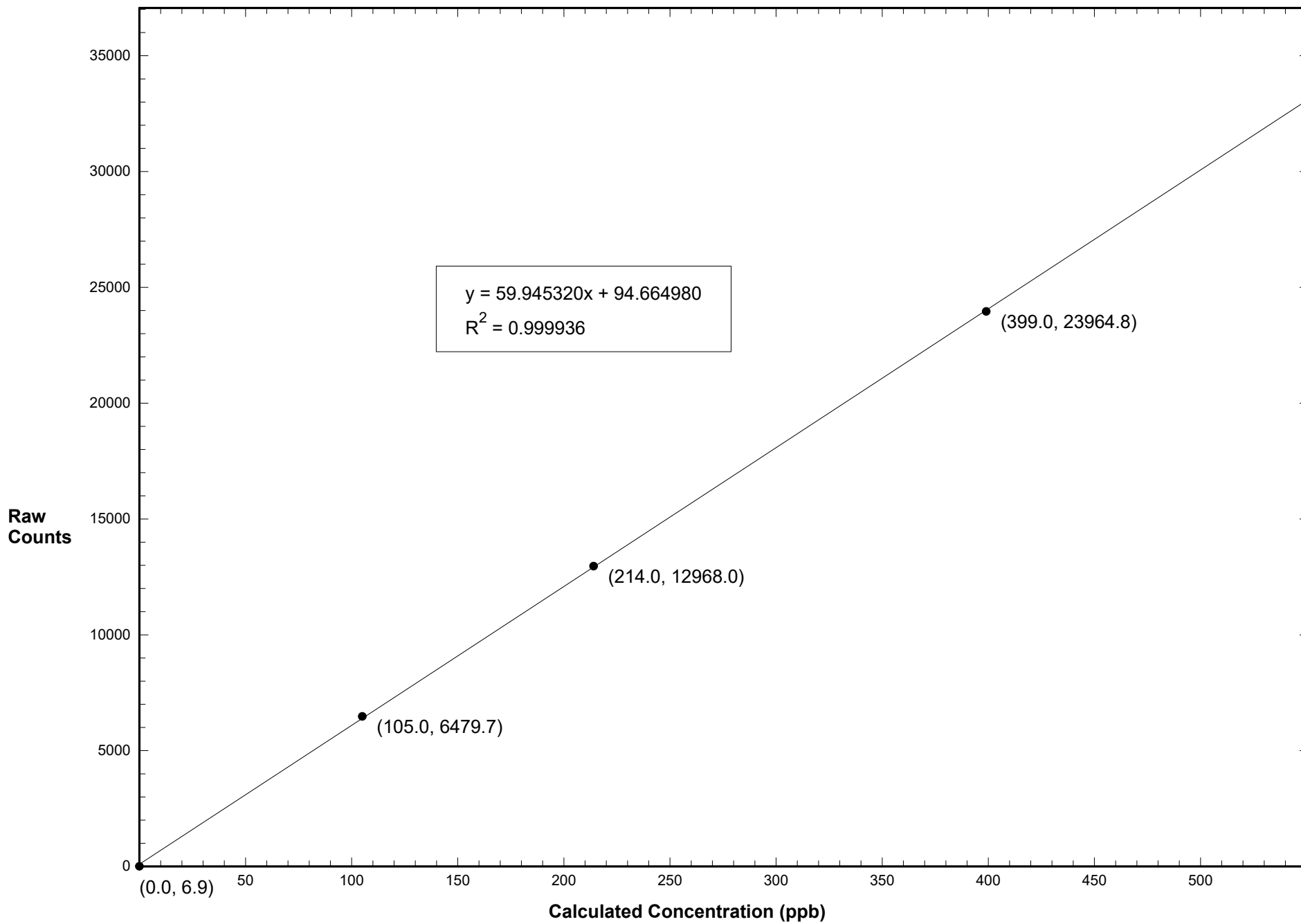
Previous Correction Factor: 1.002

Current Correction Factor: 1.002

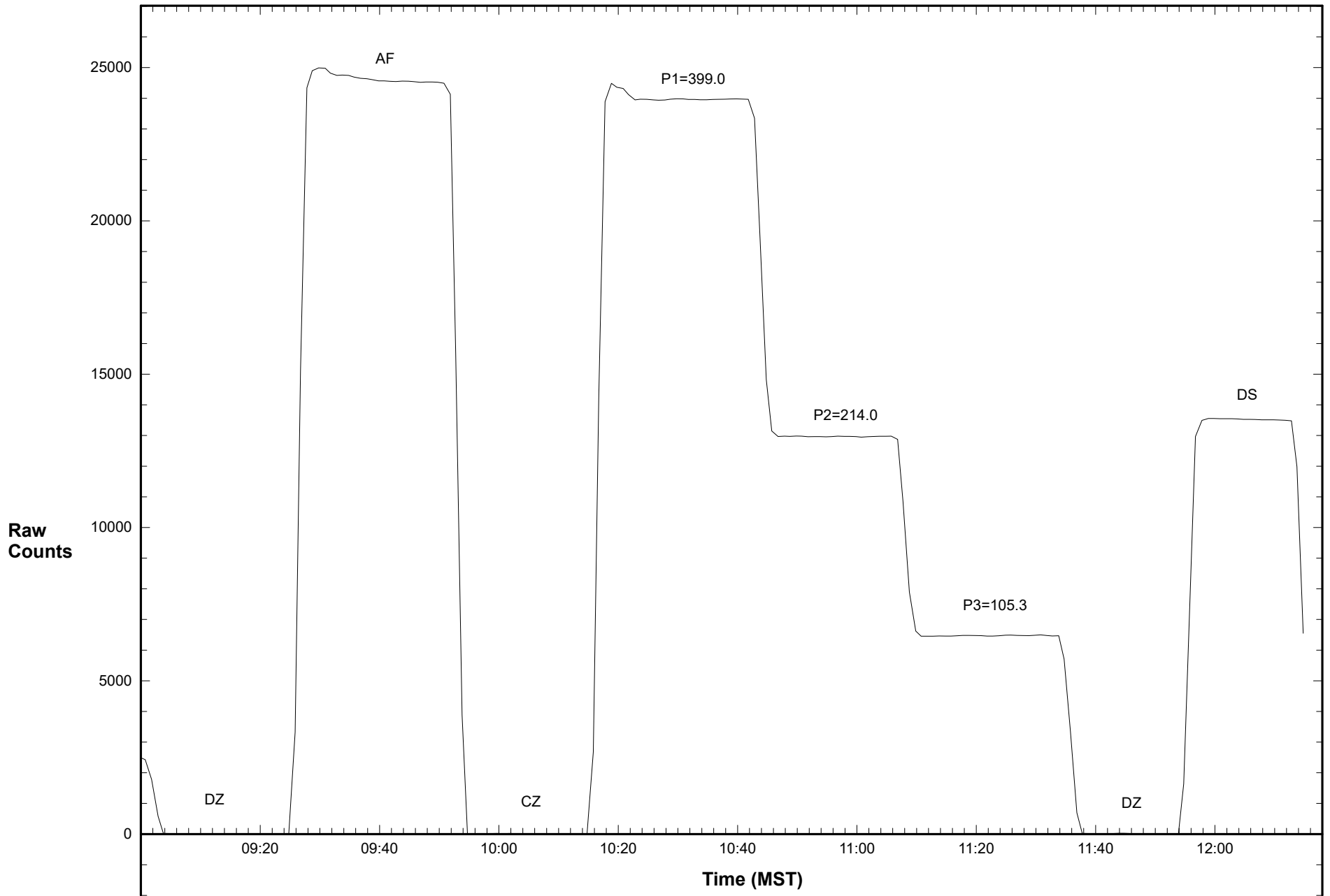
Percent Change of Correction Factor: 0.0

Comments:

### Station 913 O3 May 12, 2016: Linear Regression



# Station 913 O3 May 12, 2016: Calibration Graph



# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 913, Breton

Calibration Date: May 12, 2016

Parameter: SO<sub>2</sub>

Instrument: Teco 43i

Serial Number: 1106047299

Previous Calibration Date: April 22, 2016

Calibration: Routine

Calibration Equipment: Sabio 2010 SN 08600312

Barometric Pressure: 27.50" Hg

Calibration Method: Standard Gas Dilution

Cylinder ID: FF13698

Temperature: 20.2° C

Cylinder Concentration: 6.11 ppm SO<sub>2</sub>

In Service: January 14, 2015

Technician: L. Burns

Instrument Settings	SO <sub>2</sub> bkg ppb	SO <sub>2</sub> Coefficient	Monitoring Range
Previous	8.0	1.481	100 ppb
Current	7.6	1.467	100 ppb

Final Zero: 0.0 ppb

Final Span: 65.8 ppb

As Found Correction Factor: 1.015

SO <sub>2</sub> Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration C <sub>c</sub> (ppb)	Raw Count Output R <sub>c</sub>	Indicated Concentration C <sub>i</sub> (ppb)	Correction Factor C <sub>c</sub> /C <sub>i</sub>
0.0747	5.998	75.2	22645.2	75.2	0.999
0.0496	6.011	50.0	15071.4	50.0	1.001
0.0249	6.001	25.2	7654.6	25.2	1.000
0.0000	6.000	0.0	85.2	0.0	

### Results of Linear Regression

R <sub>c</sub> vs C <sub>c</sub>	Slope	Intercept	R <sup>2</sup>
Previous	300.667800	48.348760	0.999958
Current	300.036000	78.952870	0.999998
C <sub>i</sub> vs C <sub>c</sub>			
Current	1.000000	0.000000	0.999998

Average Correction Factor: 1.000

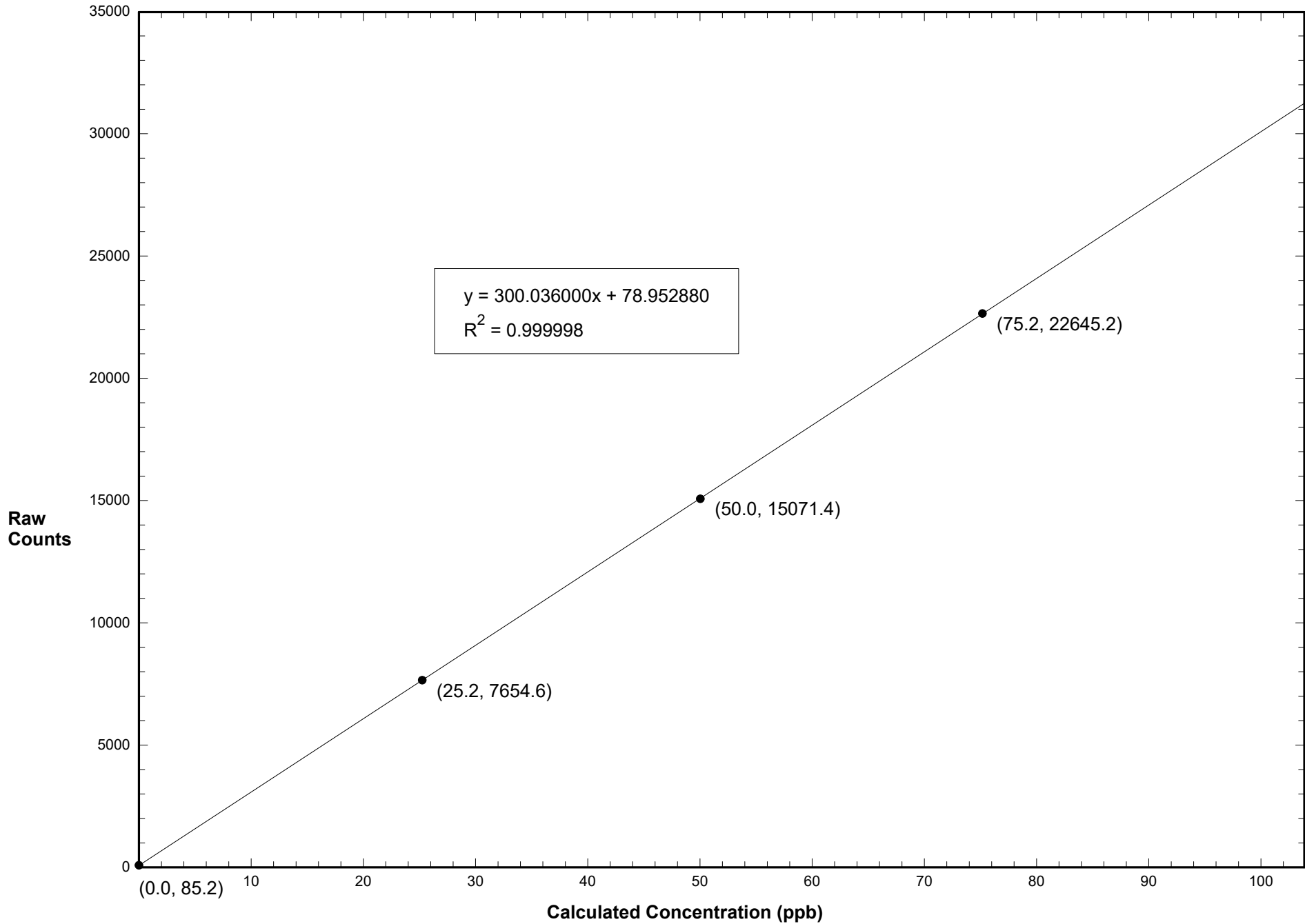
Previous Correction Factor: 1.000

Current Correction Factor: 0.999

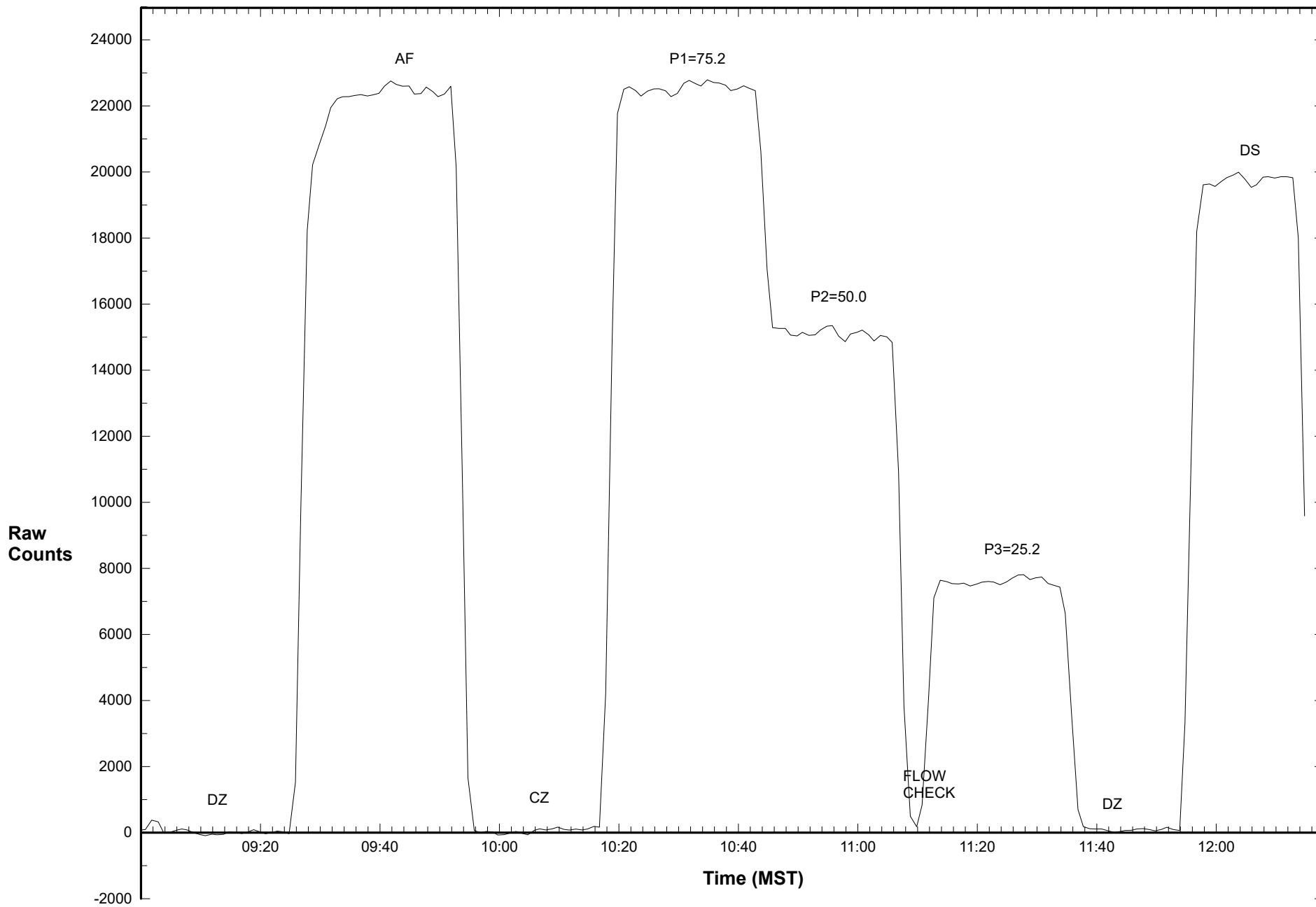
Percent Change of Correction Factor: -0.1

Comments:

### Station 913 SO2 May 12, 2016: Linear Regression



# Station 913 SO2 May 12, 2016: Calibration Graph



**WEST CENTRAL AIRSHED SOCIETY**

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

**END OF REPORT  
MAY 2016**