

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



July 8, 2016

Director, Central Region  
Alberta Environmental Protection  
4<sup>th</sup> Floor, Oxbridge Place  
9820 106 Street  
Edmonton, Alberta T5K 2J6

Dear Sir:

### **Monthly Ambient Air Quality Monitoring Report for June 2016**

Enclosed are the reports for the continuous ambient air quality monitoring stations of the West Central Airshed Society network.

Network Stations are	<b>AMS 901</b>	<b>Tomahawk</b>
Identified as:	<b>AMS 902</b>	<b>Violet Grove</b>
	<b>AMS 903</b>	<b>Carrot Creek</b>
	<b>AMS 905</b>	<b>Steeper</b>
	<b>AMS 911</b>	<b>Drayton Valley</b>
	<b>AMS 912</b>	<b>Edson</b>
	<b>AMS 913</b>	<b>Breton</b>

The person responsible for this reporting is Robert Scotten, Executive Director of West Central Airshed Society.

The following operational notes are included as required by the Air Monitoring Directive:

#### **1. Concentrations in excess of the Clean Air (Maximum Levels) Regulation:**

There were no readings in excess of guidelines as indicated in Air Monitoring Directive Section III.A.3. (a&b) for SO<sub>2</sub>, NO<sub>2</sub> and PM<sub>2.5</sub>.

#### **2. Operational times less than 90 percent:**

There were no operational times less than 90 percent in June, with the exception of the wind instrument at AMS 901 (Tomahawk), which had an operational uptime of 76.5 percent.

### **3. Monitoring Notes:**

#### **AMS 901 (Tomahawk)**

All pollutant analyzers returned uptimes of 96.9 percent for the month of June due to a power outage at the station. The external temperature and relative humidity sensor returned an uptime of 93.8 percent for the month of June due to the power outage and instrument malfunctioning. The wind instrument returned an uptime of 76.5 percent due to the power outage and instrument malfunctioning.

#### **AMS 902 (Violet Grove)**

All analyzers and meteorological equipment returned uptimes of 100 percent for the month of June.

#### **AMS 903 (Carrot Creek)**

All analyzers and meteorological equipment returned uptimes of 100 percent for the month of June.

#### **AMS 905 (Steeper)**

All analyzers and meteorological equipment returned uptimes of 100 percent for the month of June.

#### **AMS 911 (Drayton Valley)**

All analyzers and meteorological equipment returned uptimes of 100 percent for the month of June, with the exception of the PM<sub>2.5</sub> analyzer, which returned an uptime of 98.8 percent due to ongoing intermittent equipment malfunction.

#### **AMS 912 (Edson)**

All analyzers and meteorological equipment returned uptimes of 94.2 percent for the month of June due to a power outage at the station.

#### **AMS 913 (Breton)**

The SO<sub>2</sub> analyzer returned an uptime of 92.8 percent and the NO/NO<sub>2</sub>/NO<sub>x</sub> analyzer returned an uptime of 95.7 percent for the month of June due to maintenance, analyzer malfunctioning and power disruptions. The O<sub>3</sub> analyzer and wind instrument returned uptimes of 99.6 percent due to the power disruptions, while the external temperature and relative humidity sensor returned an uptime of 99.4 percent due to the power disruptions and instrument malfunctioning.

If additional information is required please contact Patrick Andersen at (403) 505-1041.

Sincerely,



Robert Scotten  
Executive Director



Patrick Andersen  
Environmental Specialist



Greg Swain  
Senior Technologist



Jeff McClintock  
Technologist

**TOMAHAWK  
STATION #901**

**CONTINUOUS AIR MONITORING DATA**

**JUNE 2016**

**Summary Report**

*Continuous air quality/meteorological monitoring measurements*

**West Central Airshed Society**

WCAS / Tomahawk Station 901													June 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)	33	665	96.9	0.452	0.0	27.3	0.0	0.0	0.1	0.2	1.0	0	0	0.002	
O <sub>3</sub> (ppb)	33	665	96.9	34.1	3.8	63.0	20.0	26.7	34.4	41.1	47.9	0	-	0.049	
NO (ppb)	34	664	96.9	0.4	0.0	13.0	0.1	0.1	0.2	0.4	0.8	-	-	-	
NO <sub>2</sub> (ppb)	34	664	96.9	3.2	1.2	23.0	1.7	2.1	2.7	3.7	5.1	0	0	0.006	
NO <sub>x</sub> (ppb)	34	664	96.9	3.6	1.4	36.0	1.9	2.3	2.9	4.1	5.9	-	-	-	
Particulate Matter 2.5 microns (μ/m <sup>3</sup> )	0	698	96.9	3.2	0.0	13.5	0.7	1.3	2.4	4.3	7.2	0	0	7.62 ug/m3	
Wind Speed (kph)	0	551	76.5	9.6	0.3	29.7	3.3	5.7	8.3	12.2	18.4	-	-	-	
Temperature (°C)	0	675	93.8	15.1	2.7	29.5	8.0	11.2	15.0	19.2	22.8	-	-	-	
Relative Humidity (%)	0	675	93.8	62.7	25.9	94.8	35.4	46.0	63.5	79.1	88.2	-	-	-	
Photosynthetically Active Radiation (W/m <sup>2</sup> )	0	698	96.9	104.6	0.0	397.0	0.0	0.1	52.3	195.8	296.8	-	-	-	
Std Dev Wind Direction (deg)	0	551	76.5	28.2	6.8	103.6	11.9	15.9	21.0	31.3	59.1	-	-	-	
Std Dev Wind Speed (kph)	0	551	76.5	3.1	0.7	8.4	1.3	1.7	2.9	4.0	5.2	-	-	-	



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

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

Maximum Value: 27.29 ppb on Jun 23 15:00		Maximum Daily Average: 2.01 ppb on Jun 8		Hours in Service: 720																						
Minimum Value: 0.0 ppb on Jun 1 12:00		Minimum Daily Average: 0.00 ppb on Jun 15		Hours of Data: 665																						
Maximum Diurnal Average: 1.57 ppb at hour 15		Minimum Diurnal Average: 0.09 ppb at hour 6		Hours of Missing Data: 55																						
Monthly Average: 0.452 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> = 1.0 P <sub>99</sub> = 7.0		Hours of Calibration: 33																						
				Percent Operational Time: 96.9																						
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-Jun	0.2	0.1	Z	0.2	0.3	0.3	0.3	0.1	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.09	0.32
2-Jun	0.0	0.0	Z	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	0.2	0.1	0.0	0.0	0.03	0.22
3-Jun	0.0	0.1	Z	0.2	0.1	0.1	0.1	0.1	0.2	0.0	0.0	0.1	0.1	0.2	0.1	0.2	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.1	0.08	0.17
4-Jun	0.1	0.1	Z	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.10	0.19
5-Jun	0.1	0.1	Z	0.2	0.1	0.1	0.1	0.3	0.4	0.3	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.2	0.4	3.5	2.2	1.4	0.45	3.49
6-Jun	1.8	1.8	Z	0.2	0.3	0.1	0.3	0.4	0.4	0.6	2.0	0.7	0.4	0.3	0.3	0.1	0.1	0.0	0.1	0.7	2.3	0.6	0.8	2.5	0.72	2.46
7-Jun	1.4	0.9	Z	1.3	1.0	0.5	0.3	0.2	0.2	0.1	0.5	5.6	6.9	2.2	3.2	3.3	2.1	1.1	0.4	0.6	0.2	2.5	2.0	0.7	1.61	6.91
8-Jun	8.0	1.7	Z	0.1	0.0	0.3	0.7	1.3	4.1	3.1	4.7	1.9	2.8	5.7	3.5	3.9	2.8	0.4	0.4	0.5	0.1	0.1	0.1	0.0	2.01	8.01
9-Jun	0.0	0.1	Z	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	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.03	0.09
10-Jun	0.0	0.0	Z	0.1	0.1	0.0	0.0	0.1	0.1	4.3	4.2	1.4	0.7	1.9	3.7	2.2	0.2	0.1	0.0	0.1	0.4	0.5	0.4	0.2	0.90	4.31
11-Jun	0.2	0.4	Z	0.3	0.2	0.1	0.1	0.2	0.1	0.1	0.1	1.4	2.2	7.0	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.57	7.02
12-Jun	0.0	0.1	Z	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.05	0.20	
13-Jun	0.0	0.0	Z	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	7.2	2.0	0.9	1.7	1.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.59	7.17
14-Jun	0.0	0.0	Z	0.0	0.0	0.0	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	0.0	0.0	0.0	0.02	0.18
15-Jun	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
16-Jun	0.1	0.2	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	0.1	0.0	0.0	0.0	0.0	0.0	0.03	0.22
17-Jun	0.0	0.0	Z	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	0.0	0.1	0.2	0.1	0.2	0.2	0.2	0.06	0.25
18-Jun	0.1	0.1	Z	0.2	0.2	0.2	0.1	0.3	0.2	0.2	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.2	0.2	0.13	0.34
19-Jun	0.2	0.2	Z	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.07	0.24
20-Jun	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.3	0.4	0.2	0.1	0.1	0.0	0.1	0.3	3.2	2.1	2.1	10.1	11.8	7.0	3.9	2.5	1.3	1.98	11.81
21-Jun	0.1	0.1	Z	0.1	0.1	0.1	0.2	1.0	0.7	0.4	0.6	0.7	1.1	1.7	0.5	0.1	0.1	0.1	0.3	0.2	0.2	0.2	0.1	0.1	0.39	1.71
22-Jun	0.2	0.1	Z	0.1	0.0	0.1	0.2	0.1	0.2	C	C	C	C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.05	0.21
23-Jun	0.1	0.0	Z	0.0	0.0	0.0	0.1	0.2	0.3	0.0	0.0	0.0	0.0	3.3	27.3	3.0	0.7	0.2	0.3	0.3	0.2	0.1	0.0	0.0	1.58	27.29
24-Jun	0.0	0.0	Z	0.0	0.0	0.0	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	0.0	0.2	0.1	0.0	0.02	0.15
25-Jun	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	0.01	0.05
26-Jun	0.0	0.0	Z	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	0.0	0.0	0.02	0.14
27-Jun	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.1	2.1	2.4	3.6	1.5	0.6	0.4	0.3	0.1	PF	PF	PF	PF	PF	PF	PF	--	3.63
28-Jun	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	--	0.09
29-Jun	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.1	0.1	0.4	1.1	0.8	1.6	0.7	3.7	3.4	0.5	1.0	0.8	0.4	0.3	0.4	0.4	0.4	0.71	3.65
30-Jun	0.4	0.3	Z	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.2	0.3	0.3	0.2	0.2	0.1	0.6	0.9	0.2	0.2	0.2	0.1	0.0	0.1	0.27	0.86
																								Diurnal Average		
																								Diurnal Maximum		
																								0.45 0.22 -- 0.13 0.11 0.09 0.12 0.19 0.29 0.47 0.60 0.87 0.72 0.87 1.57 0.73 0.34 0.22 0.45 0.53 0.41 0.44 0.33 0.26		
																								8.01 1.75 -- 1.26 1.03 0.53 0.66 1.30 4.10 4.31 4.73 7.17 6.91 7.02 27.29 3.89 2.84 2.13 10.07 11.81 7.02 3.91 2.48 2.46		
Z - zerospan C - Calibration PF - Power Failure																										
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb																										



# WCAS - Tomahawk

## Summary of Hourly Averages

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

Maximum Value: 63.00 ppb on Jun 7 17:00																							Maximum Daily Average: 49.00 ppb on Jun 5					Hours in Service: 720	
Minimum Value: 3.8 ppb on Jun 2 06:00																							Minimum Daily Average: 24.63 ppb on Jun 12					Hours of Data: 665	
Maximum Diurnal Average: 42.91 ppb at hour 16																							Minimum Diurnal Average: 20.51 ppb at hour 6					Hours of Missing Data: 55	
Monthly Average: 34.139 ppb																							Percentiles: P <sub>1</sub> = 8.6 P <sub>10</sub> = 20.0 Q <sub>1</sub> = 26.7 Median = 34.4 Q <sub>3</sub> = 41.1 P <sub>90</sub> = 47.9 P <sub>99</sub> = 57.6					Hours of Calibration: 33	
																							Percent Operational Time: 96.9						
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-Jun	29.6	28.1	Z	26.8	23.7	21.4	21.2	20.5	21.2	24.4	36.1	41.5	44.9	41.6	42.7	43.1	44.1	43.6	42.2	40.7	39.6	39.5	35.5	38.5	34.37	44.85			
2-Jun	30.0	29.2	Z	8.9	6.9	3.8	6.5	12.7	18.2	20.8	30.9	39.9	44.9	48.2	44.0	40.4	45.3	47.0	38.0	38.5	36.4	32.4	27.9	22.2	29.26	48.16			
3-Jun	19.4	28.5	Z	30.5	23.9	18.0	19.9	29.9	40.2	41.6	43.3	44.5	46.8	49.8	49.1	50.4	46.8	43.1	40.3	39.9	38.6	34.9	30.0	30.1	36.50	50.36			
4-Jun	25.2	26.0	Z	23.5	18.1	14.5	13.8	22.2	32.6	37.0	39.0	38.3	38.0	39.0	38.5	40.7	41.7	41.2	41.2	41.5	43.8	48.0	48.9	46.4	34.73	48.88			
5-Jun	48.2	47.9	Z	40.1	33.9	26.4	26.4	34.4	42.2	53.9	56.4	56.3	56.2	55.7	55.8	56.2	56.2	56.2	56.2	57.0	52.4	50.9	52.3	55.8	49.00	57.00			
6-Jun	54.4	53.1	Z	50.2	46.4	42.3	36.6	37.2	36.4	41.2	46.5	51.5	54.7	56.7	55.3	55.7	57.5	55.1	56.8	48.4	39.9	45.5	41.2	34.3	47.69	57.48			
7-Jun	33.8	39.9	Z	32.6	33.8	25.0	29.0	32.6	40.8	41.2	43.9	39.0	42.8	52.2	53.0	59.2	63.0	59.0	57.5	53.1	46.8	45.0	42.5	47.0	44.03	63.00			
8-Jun	26.8	29.1	Z	30.4	33.0	34.2	30.0	33.5	32.8	33.0	34.3	43.2	48.5	48.7	57.8	56.7	50.6	41.8	38.0	34.7	28.7	26.8	27.8	26.9	36.84	57.80			
9-Jun	24.6	22.5	Z	22.3	22.8	26.3	26.1	33.0	35.3	31.3	32.3	35.3	37.6	39.1	38.3	37.0	38.9	39.0	36.8	32.9	32.3	33.1	32.1	33.1	32.26	39.10			
10-Jun	32.3	39.1	Z	39.2	37.4	34.7	37.6	42.2	41.2	35.7	35.9	38.7	40.2	41.2	41.9	45.3	43.8	42.4	38.4	36.7	34.8	34.4	34.2	40.3	38.60	45.31			
11-Jun	40.9	39.8	Z	34.9	34.4	32.6	29.3	28.4	29.6	33.3	35.4	27.6	24.1	22.8	36.1	40.1	40.4	34.3	35.0	33.2	23.5	20.5	19.9	19.4	31.11	40.90			
12-Jun	17.5	15.5	Z	10.0	9.9	8.7	14.7	18.7	20.0	21.5	22.2	23.7	24.7	28.2	26.4	25.7	29.5	32.5	33.2	35.5	39.7	38.9	34.9	34.7	24.63	39.75			
13-Jun	30.8	30.1	Z	22.0	21.3	18.9	17.0	22.0	26.1	36.3	38.1	30.8	40.3	44.4	43.2	45.4	46.2	49.8	47.1	44.8	45.4	43.5	42.1	39.2	35.86	49.81			
14-Jun	31.4	27.5	Z	20.7	15.4	17.8	26.2	32.4	37.3	40.8	42.9	43.6	44.7	45.2	45.0	46.8	50.1	41.5	39.4	39.7	39.0	41.5	41.6	36.6	36.83	50.06			
15-Jun	34.8	32.2	Z	31.0	27.6	27.9	23.4	20.1	19.1	24.7	33.2	36.2	37.7	38.6	38.2	37.6	33.9	31.5	29.8	32.8	33.1	30.3	27.0	27.9	30.82	38.63			
16-Jun	27.0	26.0	Z	26.4	23.7	22.4	24.9	26.2	29.5	36.5	35.1	34.9	33.1	30.7	30.2	30.9	32.0	29.5	28.0	30.2	28.9	26.7	25.7	26.7	28.93	36.50			
17-Jun	27.6	26.9	Z	24.6	23.9	22.6	22.4	23.2	24.5	26.4	28.8	29.7	30.6	32.8	33.7	34.6	35.7	35.6	33.8	29.8	28.8	26.2	26.1	24.1	28.35	35.67			
18-Jun	20.3	20.0	Z	18.9	17.4	15.1	15.9	19.9	24.8	27.8	29.8	31.0	32.1	33.8	34.7	34.9	34.5	33.6	35.2	32.2	29.8	24.2	28.8	29.5	27.13	35.21			
19-Jun	30.7	30.0	Z	21.6	21.5	20.1	26.4	31.5	37.6	38.7	38.6	38.2	42.6	40.8	38.6	38.7	39.0	37.4	38.5	38.0	38.1	34.4	30.8	30.0	33.98	42.59			
20-Jun	28.1	30.8	Z	22.7	18.2	15.5	16.9	22.8	29.5	36.0	40.5	41.8	44.8	46.8	48.9	57.1	59.2	61.6	51.9	46.7	47.4	49.5	46.5	43.5	39.42	61.63			
21-Jun	40.1	37.5	Z	30.1	27.9	25.1	21.2	28.9	36.2	42.2	45.9	50.6	47.9	48.1	45.5	43.5	43.1	37.8	37.3	40.6	39.2	38.4	36.4	31.4	38.03	50.58			
22-Jun	26.4	22.6	Z	10.9	11.1	10.2	13.0	20.5	26.3	C	C	C	C	38.0	38.4	38.2	36.7	38.4	40.3	40.4	37.8	37.7	29.1	25.4	28.50	40.41			
23-Jun	22.6	20.3	Z	25.5	20.9	15.4	13.2	19.1	28.1	37.0	38.0	41.4	42.9	42.3	20.6	41.0	40.4	40.2	41.4	42.5	36.2	35.5	31.5	30.3	31.58	42.88			
24-Jun	30.4	24.5	Z	21.5	19.4	17.5	27.9	32.9	37.5	38.8	33.9	32.7	35.7	37.1	39.5	37.9	36.4	31.2	29.6	25.9	23.5	24.1	22.9	22.0	29.69	39.48			
25-Jun	22.8	22.5	Z	16.9	15.0	12.7	13.4	16.6	15.6	16.4	21.4	29.0	32.1	31.1	30.4	30.9	28.0	27.8	34.6	34.8	33.2	29.2	29.7	30.4	24.98	34.79			
26-Jun	32.6	33.2	Z	35.2	29.9	23.4	19.1	17.9	18.4	19.4	23.2	27.3	30.9	33.3	33.9	34.6	34.8	35.5	35.7	34.3	29.6	25.2	21.0	23.7	28.36	35.68			
27-Jun	23.8	16.1	Z	5.1	4.2	7.4	9.3	19.3	26.9	30.3	37.4	39.6	49.3	46.2	44.2	42.7	41.4	PF	PF	PF	PF	PF	PF	PF	--	49.31			
28-Jun	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	42.5	44.8	46.5	43.0	38.3	38.6	30.0	31.7	29.4	46.47		
29-Jun	24.7	22.0	Z	12.5	12.1	11.4	9.8	18.7	29.0	39.7	47.6	53.1	56.5	53.4	57.5	56.2	55.0	62.7	55.8	48.6	47.1	46.8	43.0	40.9	39.31	62.75			
30-Jun	38.4	43.0	Z	34.0	26.4	23.8	26.8	32.6	34.4	39.0	37.5	35.9	39.9	45.0	38.9	43.3	37.8	40.2	39.1	32.5	45.0	44.1	38.9	34.3	36.99	45.03			
30.17 29.79 -- 25.15 22.76 20.51 21.31 25.86 30.03 33.74 36.71 38.40 40.88 41.75 41.40 42.91 42.89 41.93 40.48 38.77 37.15 35.77 33.80 32.90																							Diurnal Average						
54.38 53.07 -- 50.18 46.42 42.29 37.58 42.18 42.17 53.88 56.44 56.31 56.53 56.71 57.80 59.24 63.00 62.75 57.46 57.00 52.36 50.92 52.25 55.82																							Diurnal Maximum						
Z - zerospan C - Calibration PF - Power Failure																													
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 82.5 ppb 24-hr -- ppb																													





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

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

Maximum Value: 12.99 ppb on Jun 23 15:00		Maximum Daily Average: 0.93 ppb on Jun 23		Hours in Service: 720																						
Minimum Value: 0.0 ppb on Jun 20 23:00		Minimum Daily Average: 0.13 ppb on Jun 19		Hours of Data: 664																						
Maximum Diurnal Average: 0.81 ppb at hour 7		Minimum Diurnal Average: 0.11 ppb at hour 24		Hours of Missing Data: 56																						
Monthly Average: 0.373 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.1 Q <sub>1</sub> = 0.1 Median = 0.2 Q <sub>3</sub> = 0.4 P <sub>90</sub> = 0.8 P <sub>99</sub> = 2.8		Hours of Calibration: 34																						
				Percent Operational Time: 96.9																						
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-Jun	0.1	0.1	Z	0.1	0.1	0.5	0.9	1.1	1.4	1.2	0.4	0.3	0.2	0.4	0.4	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.38	1.36
2-Jun	0.1	0.1	Z	0.3	0.5	1.9	2.8	2.2	2.3	2.2	1.4	1.6	0.8	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.79	2.83
3-Jun	0.1	0.1	Z	0.0	0.1	0.5	0.8	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	0.0	0.0	0.0	0.16	0.82
4-Jun	0.1	0.0	Z	0.1	0.1	0.9	2.0	1.0	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.0	0.31	2.04
5-Jun	0.0	0.0	Z	0.1	0.1	0.4	0.6	0.4	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.17	0.63
6-Jun	0.0	0.1	Z	0.1	0.1	0.3	0.8	0.8	1.2	1.1	0.8	0.4	0.4	0.4	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.39	1.24
7-Jun	0.2	0.2	Z	0.2	0.3	0.5	0.4	0.5	0.4	0.3	0.5	2.8	2.4	0.6	1.0	0.9	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.56	2.78
8-Jun	0.2	0.2	Z	0.2	0.2	0.4	0.9	1.0	2.1	2.1	3.4	1.4	1.3	2.1	1.0	0.7	0.7	0.4	0.4	0.2	0.2	0.2	0.2	0.2	0.85	3.39
9-Jun	0.2	0.2	Z	0.2	0.2	0.2	0.3	0.3	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.18	0.30
10-Jun	0.1	0.1	Z	0.1	0.0	0.0	0.1	0.1	0.1	3.0	2.8	0.9	0.4	0.9	1.2	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.48	3.01
11-Jun	0.1	0.1	Z	0.1	0.1	0.1	0.2	0.3	0.5	0.5	0.4	1.3	1.6	3.8	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.45	3.76
12-Jun	0.1	0.1	Z	0.2	0.3	0.5	0.5	0.4	0.5	0.5	0.4	0.5	0.4	0.3	0.3	0.4	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.29	0.49
13-Jun	0.1	0.1	Z	0.1	0.1	0.7	1.3	0.9	1.9	0.8	0.5	5.4	1.3	0.6	0.9	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.71	5.37
14-Jun	0.1	0.1	Z	0.1	0.1	0.4	0.6	0.6	0.4	0.4	0.3	0.3	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.23	0.55
15-Jun	0.1	0.1	Z	0.1	0.2	0.1	0.3	0.6	0.7	0.7	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.1	0.1	0.1	0.24	0.74
16-Jun	0.0	0.0	Z	0.1	0.1	0.7	1.2	1.5	0.9	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.0	0.30	1.46
17-Jun	0.0	0.0	Z	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.15	0.24
18-Jun	0.1	0.1	Z	0.0	0.1	0.5	0.9	1.5	0.6	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.27	1.48
19-Jun	0.1	0.1	Z	0.1	0.1	0.3	0.2	0.3	0.3	0.2	0.2	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	0.13	0.31
20-Jun	0.1	0.1	Z	0.1	0.1	0.5	1.1	0.7	0.4	0.2	0.1	0.1	0.1	0.0	0.1	0.6	0.4	0.2	1.7	1.4	0.4	0.1	0.0	0.0	0.36	1.71
21-Jun	0.0	0.0	Z	0.1	0.1	0.2	0.5	1.1	0.9	0.5	0.3	0.3	0.5	0.7	0.6	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.30	1.06
22-Jun	0.1	0.1	Z	0.1	0.2	1.0	1.4	0.8	0.6	C	C	C	C	C	0.5	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.33	1.42
23-Jun	0.1	0.1	Z	0.1	0.1	0.4	0.8	0.9	0.6	0.3	0.8	0.2	0.2	1.2	13.0	0.5	0.4	0.4	0.3	0.2	0.2	0.2	0.1	0.1	0.93	12.99
24-Jun	0.1	0.1	Z	0.1	0.1	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.16	0.37
25-Jun	0.1	0.1	Z	0.1	0.1	0.2	0.3	0.2	0.3	0.4	0.4	0.3	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.21	0.41
26-Jun	0.1	0.2	Z	0.2	0.2	0.3	0.4	0.5	0.5	0.5	0.3	0.3	0.3	0.2	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.22	0.48
27-Jun	0.1	0.2	Z	0.5	0.8	1.1	1.6	1.2	0.6	2.0	1.4	1.4	0.4	0.2	0.3	0.4	0.3	PF	PF	PF	PF	PF	PF	PF	--	1.98
28-Jun	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	--	0.19
29-Jun	0.1	0.1	Z	0.1	0.3	0.5	1.3	0.9	0.4	0.3	0.4	0.2	0.3	0.2	0.9	0.8	0.1	0.3	0.2	0.2	0.2	0.1	0.2	0.1	0.36	1.33
30-Jun	0.2	0.2	Z	0.2	0.3	0.6	0.8	0.8	0.7	0.6	0.4	0.4	0.2	0.2	0.3	0.2	0.4	0.4	0.3	0.2	0.2	0.1	0.1	0.2	0.34	0.82
																								Diurnal Average		
																								Diurnal Maximum		
																								0.11 0.11 -- 0.12 0.18 0.48 0.81 0.73 0.68 0.70 0.61 0.70 0.46 0.50 0.80 0.29 0.22 0.19 0.23 0.21 0.16 0.12 0.11 0.11		
																								0.22 0.24 -- 0.49 0.79 1.92 2.83 2.21 2.28 3.01 3.39 5.37 2.44 3.76 12.99 0.86 0.67 0.39 1.71 1.42 0.40 0.20 0.20 0.18		
Z - zerospan      C - Calibration      PF - Power Failure																										
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**  
**June 2016**

Maximum Value: 22.99 ppb on Jun 23 15:00		Maximum Daily Average: 6.11 ppb on Jun 8		Hours in Service: 720																						
Minimum Value: 1.2 ppb on Jun 3 09:00		Minimum Daily Average: 1.66 ppb on Jun 9		Hours of Data: 664																						
Maximum Diurnal Average: 3.81 ppb at hour 5		Minimum Diurnal Average: 2.38 ppb at hour 18		Hours of Missing Data: 56																						
Monthly Average: 3.224 ppb		Percentiles: P <sub>1</sub> = 1.3 P <sub>10</sub> = 1.7 Q <sub>1</sub> = 2.1 Median = 2.7 Q <sub>3</sub> = 3.7 P <sub>90</sub> = 5.1 P <sub>99</sub> = 11.2		Hours of Calibration: 34																						
				Percent Operational Time: 96.9																						
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-Jun	2.8	3.3	Z	3.7	5.3	5.2	4.7	4.8	3.9	3.4	2.1	1.7	1.3	2.2	1.9	1.6	1.4	1.7	1.7	2.0	2.0	1.9	2.5	1.7	2.73	5.30
2-Jun	2.7	2.2	Z	5.6	5.0	4.9	5.4	4.5	4.4	4.9	3.5	2.1	2.1	2.1	1.9	1.8	1.7	1.8	1.6	1.5	2.0	2.8	2.5	3.00	5.65	
3-Jun	2.8	1.8	Z	1.5	2.8	3.2	2.7	1.9	1.2	1.2	1.2	1.3	1.5	1.5	1.6	1.5	1.3	1.3	1.3	1.4	1.6	2.5	2.8	1.9	1.81	3.18
4-Jun	2.9	2.8	Z	2.5	4.6	5.9	4.5	3.1	2.2	1.7	1.5	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.8	2.0	2.3	2.9	2.3	2.43	5.85	
5-Jun	2.2	2.1	Z	2.1	3.2	4.1	3.4	2.7	2.6	1.9	1.6	1.7	1.8	2.0	2.0	2.0	2.2	2.2	2.5	2.8	4.9	8.6	6.0	4.5	3.01	8.59
6-Jun	5.3	5.2	Z	4.2	4.8	5.3	6.7	5.8	6.2	5.0	4.3	3.4	3.1	2.8	2.6	2.4	2.3	2.1	2.9	4.0	7.7	4.1	4.7	7.6	4.45	7.66
7-Jun	7.0	5.9	Z	9.1	7.8	4.7	2.8	2.7	2.2	2.1	3.2	8.6	9.0	3.8	5.2	5.3	3.9	3.5	3.6	4.6	4.0	7.8	6.8	4.0	5.11	9.08
8-Jun	15.9	7.6	Z	3.0	3.2	4.1	6.7	5.5	8.3	7.6	9.1	6.4	7.5	11.0	8.1	8.6	6.9	3.2	3.6	3.4	3.4	2.6	2.3	2.5	6.11	15.90
9-Jun	2.9	2.3	Z	1.9	1.9	2.1	1.8	1.5	1.5	1.7	1.6	1.4	1.4	1.3	1.2	1.3	1.2	1.2	1.5	1.5	1.6	1.7	1.9	1.8	1.66	2.88
10-Jun	1.7	1.5	Z	1.4	1.5	1.4	1.3	1.3	1.5	5.9	5.6	2.9	2.1	3.5	5.6	4.1	2.4	3.2	2.7	3.0	3.6	4.0	4.6	3.3	2.97	5.90
11-Jun	3.0	3.2	Z	3.2	3.2	3.3	3.7	3.2	3.2	3.0	2.6	4.5	5.1	11.2	2.4	1.7	1.5	1.9	1.7	1.7	2.7	3.1	2.7	2.9	3.25	11.23
12-Jun	3.2	3.2	Z	3.0	3.2	3.5	2.8	2.9	2.4	2.3	2.2	2.0	1.8	1.6	1.9	2.3	1.6	1.3	1.4	1.5	1.6	1.7	2.5	2.3	2.28	3.48
13-Jun	3.0	2.9	Z	3.2	4.2	4.5	3.8	3.1	4.7	3.2	2.6	9.5	4.5	3.6	4.2	2.4	2.5	3.0	3.1	3.7	3.3	3.7	3.9	3.8	3.75	9.55
14-Jun	3.1	3.1	Z	2.9	3.2	2.9	3.1	3.0	3.1	3.0	2.7	2.6	2.3	2.4	2.4	2.6	2.6	2.4	2.3	2.2	2.2	1.9	1.8	2.0	2.60	3.24
15-Jun	2.1	2.4	Z	2.3	2.7	2.7	2.8	3.7	3.3	2.5	1.9	1.7	1.6	1.8	1.9	1.9	2.4	2.6	3.1	2.5	2.3	2.9	3.7	3.9	2.55	3.94
16-Jun	4.2	4.0	Z	3.8	4.0	4.7	4.6	4.7	4.2	2.6	3.0	3.0	2.8	2.6	2.5	2.4	2.5	2.6	2.6	2.3	2.5	2.4	2.3	2.0	3.15	4.72
17-Jun	2.2	2.2	Z	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.2	2.3	2.3	2.5	2.2	2.3	2.7	2.7	4.5	3.7	4.0	2.48	4.48
18-Jun	4.6	4.1	Z	3.4	3.5	3.4	3.2	4.0	3.1	2.5	2.4	2.4	2.4	2.4	2.5	2.6	2.6	2.7	2.4	3.2	4.1	5.7	4.0	3.7	3.26	5.71
19-Jun	3.8	4.5	Z	3.2	3.5	2.9	2.6	2.8	2.6	2.5	2.5	2.2	1.9	1.7	1.8	1.8	1.9	2.1	2.2	2.3	2.4	3.1	3.0	3.2	2.65	4.54
20-Jun	3.4	3.1	Z	5.1	4.9	3.9	4.0	3.3	2.9	2.5	2.2	2.1	2.0	2.0	2.5	5.0	3.7	3.8	11.6	15.1	12.3	8.5	6.4	4.8	5.00	15.05
21-Jun	3.5	3.7	Z	4.6	4.0	3.8	4.6	5.6	5.1	4.2	3.9	3.7	4.6	5.8	4.5	3.1	2.4	2.2	2.2	3.3	5.1	4.7	3.9	5.1	4.07	5.84
22-Jun	5.3	4.9	Z	5.5	4.9	4.6	3.8	3.2	2.9	C	C	C	C	C	3.3	3.2	2.8	2.6	2.9	2.8	2.6	2.4	2.8	3.1	3.54	5.45
23-Jun	3.6	3.8	Z	2.2	2.3	2.7	2.9	3.0	2.7	2.3	3.5	2.2	2.2	5.7	23.0	7.2	5.0	3.5	3.2	2.9	3.2	3.3	2.9	2.8	4.18	22.99
24-Jun	3.1	3.1	Z	2.7	3.1	3.2	2.3	2.1	2.2	2.2	2.4	2.3	2.3	2.1	2.1	2.1	2.1	2.1	2.3	2.3	2.3	2.2	2.5	2.6	2.42	3.22
25-Jun	2.3	2.3	Z	2.4	2.8	2.9	2.5	2.4	2.3	2.3	2.1	2.0	2.0	1.9	2.0	1.8	1.9	1.9	2.0	2.2	2.0	2.2	2.3	2.3	2.19	2.87
26-Jun	2.2	2.4	Z	2.0	2.2	2.6	2.9	2.5	2.5	2.4	2.2	2.1	2.0	1.6	1.6	1.7	1.8	1.8	1.8	2.3	3.5	4.5	7.0	4.0	2.59	7.00
27-Jun	3.9	7.9	Z	12.2	8.2	3.8	3.4	3.5	3.0	5.6	5.9	6.4	3.7	2.5	2.8	2.8	2.6	PF	PF	PF	PF	PF	PF	PF	--	12.18
28-Jun	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	2.3	2.2	1.9	1.9	2.1	2.4	3.4	2.5	3.2	--	3.43
29-Jun	3.3	3.5	Z	4.3	4.1	3.6	3.4	3.3	2.9	2.9	3.3	2.6	3.1	2.5	5.2	4.5	2.5	3.5	3.2	3.1	3.5	3.5	3.5	3.5	3.42	5.15
30-Jun	4.1	3.6	Z	3.5	4.1	4.2	4.0	3.3	3.2	2.8	2.8	2.4	1.7	1.4	1.4	1.4	2.8	3.1	3.1	3.7	2.2	1.7	2.1	2.1	2.81	4.25
																								Diurnal Average		
																								Diurnal Maximum		
																								3.79 3.54 -- 3.67 3.81 3.66 3.54 3.30 3.19 3.08 3.00 3.11 2.84 3.10 3.52 2.85 2.50 2.38 2.71 3.04 3.28 3.55 3.47 3.22		
																								15.90 7.91 -- 12.18 8.21 5.85 6.74 5.80 8.32 7.64 9.14 9.55 8.99 11.23 22.99 8.60 6.89 3.79 11.63 15.05 12.29 8.59 7.00 7.59		
Z - zerospan C - Calibration PF - Power Failure																										
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**  
**June 2016**

Maximum Value: 36.01 ppb on Jun 23 15:00	Maximum Daily Average: 6.99 ppb on Jun 8	Hours in Service: 720
Minimum Value: 1.4 ppb on Jun 3 11:00	Minimum Daily Average: 1.88 ppb on Jun 9	Hours of Data: 664
Maximum Diurnal Average: 4.39 ppb at hour 7	Minimum Diurnal Average: 2.57 ppb at hour 18	Hours of Missing Data: 56
Monthly Average: 3.614 ppb	Percentiles: P <sub>1</sub> = 1.4 P <sub>10</sub> = 1.9 Q <sub>1</sub> = 2.3 Median = 2.9 Q <sub>3</sub> = 4.1 P <sub>90</sub> = 5.9 P <sub>99</sub> = 13.2	Hours of Calibration: 34
		Percent Operational Time: 96.9

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-Jun	2.9	3.4	Z	3.8	5.5	5.7	5.6	5.9	5.3	4.6	2.5	2.1	1.5	2.7	2.4	1.9	1.7	2.0	1.9	2.3	2.2	2.1	2.6	1.8	3.16	5.89
2-Jun	2.8	2.3	Z	6.0	5.5	6.9	8.3	6.7	6.7	7.2	4.9	3.3	2.9	2.4	2.3	2.2	2.0	1.9	2.0	1.8	1.8	2.2	2.9	2.7	3.82	8.29
3-Jun	3.0	1.9	Z	1.6	2.9	3.7	3.5	2.4	1.4	1.4	1.4	1.5	1.7	1.7	1.8	1.7	1.4	1.4	1.4	1.5	1.7	2.6	2.8	2.0	2.01	3.74
4-Jun	2.9	2.9	Z	2.5	4.7	6.8	6.6	4.1	2.6	2.0	1.7	1.8	1.8	1.8	1.8	1.9	1.9	2.0	2.0	2.2	2.5	3.0	2.3	2.76	6.79	
5-Jun	2.3	2.1	Z	2.2	3.3	4.5	4.1	3.1	2.9	2.1	1.7	1.9	2.0	2.1	2.1	2.1	2.3	2.4	2.7	3.0	5.1	8.8	6.2	4.6	3.19	8.76
6-Jun	5.3	5.3	Z	4.3	4.9	5.6	7.5	6.6	7.5	6.1	5.1	3.8	3.5	3.2	2.9	2.7	2.6	2.4	3.2	4.3	8.0	4.3	4.9	7.8	4.86	7.99
7-Jun	7.2	6.2	Z	9.3	8.1	5.2	3.2	3.2	2.7	2.4	3.7	11.4	11.5	4.4	6.2	6.2	4.3	3.8	3.9	4.8	4.2	8.0	7.0	4.1	5.69	11.45
8-Jun	16.1	7.8	Z	3.2	3.4	4.4	7.6	6.6	10.5	9.7	12.5	7.8	8.8	13.2	9.2	9.3	7.6	3.6	4.0	3.6	3.7	2.8	2.5	2.7	6.99	16.13
9-Jun	3.1	2.5	Z	2.1	2.1	2.3	2.1	1.9	1.7	2.0	1.9	1.7	1.7	1.5	1.4	1.4	1.4	1.4	1.6	1.7	1.8	1.9	2.0	1.9	1.88	3.08
10-Jun	1.9	1.7	Z	1.6	1.6	1.5	1.5	1.4	1.6	8.9	8.4	3.8	2.6	4.4	6.8	4.6	2.5	3.3	2.8	3.1	3.7	4.1	4.7	3.4	3.47	8.92
11-Jun	3.1	3.3	Z	3.3	3.3	3.5	3.9	3.5	3.7	3.5	2.9	5.8	6.7	15.0	2.6	1.8	1.6	2.0	1.9	1.9	2.8	3.2	2.8	3.0	3.70	15.01
12-Jun	3.3	3.3	Z	3.2	3.5	4.0	3.3	3.4	2.9	2.9	2.7	2.5	2.2	1.9	2.3	2.7	1.9	1.6	1.6	1.7	1.7	1.8	2.6	2.4	2.59	3.98
13-Jun	3.1	3.0	Z	3.3	4.3	5.2	5.1	4.0	6.6	4.1	3.1	14.9	5.8	4.2	5.1	2.7	2.7	3.2	3.3	3.9	3.4	3.8	4.0	4.0	4.47	14.94
14-Jun	3.2	3.2	Z	2.9	3.4	3.3	3.7	3.6	3.5	3.4	3.0	2.8	2.5	2.6	2.7	2.9	2.8	2.6	2.4	2.3	2.0	1.9	2.1	2.1	2.84	3.67
15-Jun	2.2	2.5	Z	2.4	2.9	2.8	3.1	4.3	4.1	3.2	2.2	1.9	1.8	1.9	2.0	2.1	2.6	2.8	3.5	2.8	2.5	3.0	3.8	4.0	2.80	4.27
16-Jun	4.3	4.0	Z	3.9	4.1	5.4	5.8	6.2	5.2	2.8	3.4	3.3	2.9	2.8	2.7	2.6	2.7	2.8	2.7	2.5	2.6	2.5	2.3	2.0	3.45	6.17
17-Jun	2.3	2.3	Z	2.0	2.2	2.2	2.2	2.3	2.3	2.3	2.2	2.3	2.5	2.4	2.5	2.5	2.8	2.3	2.4	2.9	2.9	4.6	3.8	4.2	2.63	4.61
18-Jun	4.7	4.2	Z	3.5	3.6	3.8	4.1	5.5	3.7	2.8	2.6	2.5	2.5	2.6	2.6	2.8	2.8	2.9	2.6	3.4	4.2	5.8	4.1	3.9	3.53	5.81
19-Jun	3.9	4.7	Z	3.4	3.7	3.2	2.9	3.1	2.9	2.7	2.7	2.4	2.0	1.8	1.8	1.9	2.0	2.2	2.3	2.3	2.4	3.1	3.0	3.3	2.76	4.66
20-Jun	3.4	3.1	Z	5.2	5.0	4.3	5.1	4.0	3.3	2.6	2.3	2.2	2.0	2.0	2.6	5.6	4.1	4.0	13.3	16.5	12.7	8.6	6.4	4.8	5.36	16.47
21-Jun	3.5	3.7	Z	4.6	4.1	3.9	5.2	6.7	6.0	4.7	4.1	4.0	5.2	6.5	5.1	3.3	2.5	2.3	2.3	3.5	5.3	4.8	4.0	5.2	4.37	6.74
22-Jun	5.4	5.0	Z	5.6	5.3	5.9	5.6	4.6	4.1	C	C	C	C	C	2.8	2.6	2.1	2.0	2.4	2.4	2.2	2.1	2.7	3.0	3.67	5.92
23-Jun	3.6	3.9	Z	2.3	2.5	3.1	3.8	4.0	3.3	2.6	4.3	2.5	2.5	6.9	36.0	7.8	5.4	3.9	3.6	3.2	3.4	3.5	3.0	3.0	5.14	36.01
24-Jun	3.2	3.2	Z	2.8	3.2	3.6	2.6	2.4	2.5	2.5	2.7	2.6	2.5	2.4	2.3	2.4	2.3	2.3	2.5	2.5	2.4	2.7	2.8	2.8	2.64	3.63
25-Jun	2.5	2.5	Z	2.6	3.0	3.1	2.9	2.7	2.6	2.8	2.6	2.4	2.3	2.2	2.3	2.0	2.1	2.1	2.2	2.4	2.2	2.4	2.5	2.5	2.47	3.13
26-Jun	2.4	2.7	Z	2.3	2.4	3.0	3.4	3.0	3.0	3.0	2.6	2.5	2.3	1.9	1.8	2.0	2.0	2.0	2.0	2.6	3.7	4.7	7.1	4.1	2.88	7.13
27-Jun	4.1	8.1	Z	12.7	9.1	4.9	5.0	4.8	3.7	7.6	7.3	7.8	4.2	2.8	3.2	3.2	3.0	PF	PF	PF	PF	PF	PF	PF	--	12.71
28-Jun	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	2.5	2.4	2.1	2.1	2.3	2.6	3.6	2.7	3.4	--	3.56
29-Jun	3.5	3.6	Z	4.5	4.5	4.2	4.8	4.2	3.4	3.2	3.7	2.9	3.4	2.7	6.1	5.3	2.7	3.8	3.4	3.4	3.8	3.6	3.6	3.6	3.82	6.06
30-Jun	4.3	3.8	Z	3.7	4.5	4.9	4.8	4.1	4.0	3.4	3.3	2.8	2.0	1.6	1.7	1.6	3.2	3.5	3.4	4.0	2.4	1.9	2.3	2.3	3.19	4.88

3.91	3.66	--	3.82	4.02	4.17	4.39	4.07	3.91	3.80	3.63	3.83	3.33	3.63	4.32	3.14	2.72	2.57	2.94	3.26	3.44	3.68	3.59	3.34			Diurnal Average
16.13	8.12	--	12.71	9.06	6.86	8.29	6.74	10.47	9.72	12.55	14.94	11.45	15.01	36.01	9.30	7.60	4.00	13.34	16.47	12.70	8.76	7.13	7.78			Diurnal Maximum

Z - zerospan      C - Calibration      PF - Power Failure  
 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>**  
**June 2016**

Maximum Value: 13.54 µg/m <sup>3</sup> on Jun 5 01:00      Maximum Daily Average: 7.62 µg/m <sup>3</sup> on Jun 8 Minimum Value: 0.0 µg/m <sup>3</sup> on Jun 14 23:00      Minimum Daily Average: 0.85 µg/m <sup>3</sup> on Jun 17 Maximum Diurnal Average: 3.97 µg/m <sup>3</sup> at hour 24      Minimum Diurnal Average: 2.50 µg/m <sup>3</sup> at hour 11 Monthly Average: 3.168 µg/m <sup>3</sup> Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.7 Q <sub>1</sub> = 1.3 Median = 2.4 Q <sub>3</sub> = 4.3 P <sub>90</sub> = 7.2 P <sub>99</sub> = 11.4																								Hours in Service:	720	
																								Hours of Data:	698	
																								Hours of Missing Data:	22	
																								Hours of Calibration:	0	
																								Percent Operational Time:	96.9	
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-Jun	0.7	0.7	0.7	0.8	0.9	0.9	1.0	1.2	1.3	1.2	1.6	1.5	1.6	1.4	1.0	0.9	0.7	0.9	1.0	0.8	0.7	0.6	0.7	0.7	0.98	1.62
2-Jun	0.9	0.9	0.8	1.1	1.2	1.4	1.6	1.9	1.7	1.7	1.9	1.5	1.4	1.2	1.1	1.1	1.0	0.7	0.5	0.3	0.3	0.3	0.4	0.4	1.06	1.90
3-Jun	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.4	0.4	0.5	0.5	0.8	1.4	2.0	1.9	2.6	2.7	2.4	1.9	1.8	2.1	4.6	6.7	2.9	1.63	6.71
4-Jun	5.7	4.5	6.5	5.2	5.2	5.3	4.4	3.5	1.7	1.3	1.1	1.2	1.2	1.3	1.4	1.5	1.6	1.6	1.7	2.8	4.0	6.3	11.1	11.8	3.83	11.83
5-Jun	13.5	12.3	11.6	11.9	12.8	12.4	10.6	9.0	7.5	6.7	5.0	3.5	3.1	3.0	3.0	2.6	2.5	2.9	3.4	4.1	5.1	6.6	7.2	8.0	7.01	13.54
6-Jun	9.6	10.1	10.0	9.5	8.5	8.3	6.8	5.0	3.7	2.5	2.1	2.0	2.1	2.0	2.1	2.2	2.3	2.9	4.3	4.7	5.4	5.3	7.2	5.02	10.13	
7-Jun	6.5	6.4	6.5	6.8	7.2	7.5	7.8	6.7	6.1	7.1	7.1	7.2	7.7	7.2	6.9	7.4	9.3	7.6	8.2	9.5	10.9	8.9	9.2	6.4	7.59	10.86
8-Jun	7.4	8.7	7.8	7.0	6.5	6.7	6.4	6.3	6.9	6.6	7.4	9.0	9.2	8.9	8.9	9.7	8.5	7.3	7.5	7.1	6.8	7.3	7.4	7.7	7.62	9.66
9-Jun	7.4	5.8	5.2	5.9	5.5	3.3	3.0	2.2	3.5	4.3	2.6	2.3	2.0	1.8	2.1	2.0	1.8	1.8	1.3	1.0	0.5	0.4	0.5	0.5	2.78	7.37
10-Jun	0.6	1.0	1.1	1.2	2.4	2.3	1.9	2.2	2.2	2.7	3.3	3.2	3.3	4.0	5.5	7.7	7.0	5.1	4.7	5.0	5.0	4.5	5.7	5.3	3.62	7.68
11-Jun	5.4	4.6	3.6	3.3	3.2	2.4	2.6	2.4	2.2	2.4	3.2	2.6	2.4	2.1	1.6	0.8	0.4	0.4	0.4	0.5	0.4	0.7	1.1	1.8	2.10	5.41
12-Jun	1.4	0.9	0.8	0.9	1.0	0.9	0.7	0.7	0.5	0.3	0.4	0.5	0.5	0.6	0.7	0.5	0.8	1.0	1.0	1.1	1.4	1.4	2.0	1.9	0.91	2.02
13-Jun	1.3	1.0	1.0	1.1	1.4	1.6	1.2	0.9	0.7	0.8	1.0	1.7	1.0	1.0	1.1	1.7	1.6	2.1	2.3	2.4	2.0	1.5	1.6	1.8	1.40	2.41
14-Jun	1.6	0.9	0.8	0.8	0.8	0.7	1.1	1.5	1.1	0.9	0.9	1.0	1.2	1.3	1.3	1.7	2.3	1.6	0.8	0.4	0.5	0.2	0.0	0.0	0.97	2.29
15-Jun	0.0	0.0	0.0	0.0	0.3	0.9	1.0	0.9	1.1	1.1	1.5	1.9	2.5	2.6	2.5	2.5	2.0	1.4	1.3	1.5	1.4	1.6	1.8	1.9	1.31	2.61
16-Jun	1.7	1.7	1.6	1.8	1.7	1.8	1.7	1.3	0.8	1.1	1.3	1.7	1.7	1.4	0.5	0.4	0.3	0.0	0.0	0.3	0.1	0.0	0.0	0.0	0.96	1.76
17-Jun	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.3	0.0	0.1	0.5	0.8	1.3	1.9	1.8	1.9	2.7	2.0	1.8	1.5	1.3	0.5	0.5	0.8	0.85	2.70
18-Jun	1.2	1.1	1.1	1.1	1.0	1.1	1.1	0.7	0.4	1.1	1.5	1.5	1.5	1.5	1.6	1.6	1.7	1.6	1.6	1.6	1.5	1.8	2.1	2.7	1.41	2.71
19-Jun	2.5	2.4	2.4	2.4	2.6	2.3	2.8	2.5	2.5	2.8	3.2	3.3	3.1	3.0	3.0	3.0	2.7	3.1	3.9	4.4	4.7	5.1	5.9	6.7	3.35	6.74
20-Jun	5.8	4.6	3.7	3.6	4.1	3.7	2.7	2.2	2.2	2.2	1.9	1.9	2.0	1.9	2.0	2.4	2.2	3.1	4.6	6.4	7.1	8.1	9.8	9.0	4.06	9.81
21-Jun	4.8	4.3	4.4	3.4	2.6	2.0	1.8	2.1	2.2	2.1	2.3	2.3	2.4	4.0	4.0	1.2	0.8	1.1	1.5	1.4	1.7	1.7	1.9	1.7	2.40	4.84
22-Jun	1.9	3.0	3.7	4.1	5.4	6.2	5.4	3.2	2.4	2.4	2.4	2.2	2.2	2.3	2.9	3.1	3.0	2.9	2.9	3.3	2.5	3.3	3.4	2.8	3.20	6.18
23-Jun	2.3	2.5	3.0	3.3	4.5	4.0	3.4	2.8	1.8	1.3	1.8	1.3	1.5	2.1	3.3	2.8	3.0	2.7	2.1	2.0	2.4	2.7	2.4	3.0	2.58	4.46
24-Jun	3.6	3.1	2.8	2.9	3.6	4.4	3.0	2.5	2.4	2.4	2.5	2.2	2.2	2.3	2.9	3.7	2.5	2.8	3.1	3.1	2.4	1.9	1.9	2.2	2.76	4.38
25-Jun	3.0	3.7	4.4	3.8	3.6	3.4	2.6	2.3	2.2	2.3	2.5	3.2	3.2	2.6	2.6	3.1	3.2	3.0	2.7	2.7	2.9	2.8	2.5	1.8	2.92	4.38
26-Jun	1.4	1.4	1.4	1.5	2.1	2.1	2.4	2.7	3.1	3.0	3.0	2.7	2.6	2.7	2.9	3.2	3.4	3.4	3.5	3.6	3.9	4.9	7.0	6.6	3.11	7.00
27-Jun	6.8	8.4	8.3	8.1	6.7	6.8	6.4	5.9	4.8	4.0	3.0	3.3	3.0	2.8	2.7	2.6	2.7	PF	PF	PF	PF	PF	PF	PF	--	8.45
28-Jun	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	3.3	4.0	3.0	3.8	4.3	4.6	5.8	6.3	7.1	--	7.07
29-Jun	7.3	8.0	8.1	7.8	8.0	9.6	8.4	7.2	5.4	4.8	4.1	4.4	3.8	4.4	5.9	6.3	6.4	8.6	9.0	8.5	8.4	7.7	7.6	8.4	7.01	9.56
30-Jun	8.1	5.7	5.9	6.2	6.3	5.8	5.1	3.9	3.5	3.3	3.1	3.4	3.3	2.8	2.9	3.3	4.4	4.5	4.6	4.9	3.4	2.7	2.9	4.0	4.34	8.14
																								Diurnal Average		
																								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>

**TOMAHAWK  
STATION #901**

**METEOROLOGICAL DATA**

**JUNE 2016**



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

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

<b>Maximum Value: 29.49 C on Jun 6 17:00</b> <b>Maximum Daily Average: 20.69 C on Jun 6</b>																								<b>Hours in Service: 720</b>			
<b>Minimum Value: 2.7 C on Jun 16 05:00</b> <b>Minimum Daily Average: 9.73 C on Jun 16</b>																								<b>Hours of Data: 675</b>			
<b>Maximum Diurnal Average: 20.41 C at hour 16</b> <b>Minimum Diurnal Average: 8.79 C at hour 5</b>																								<b>Hours of Missing Data: 45</b>			
<b>Monthly Average: 15.131 C</b> <b>Percentiles: P<sub>1</sub> = 4.7 P<sub>10</sub> = 8.0 Q<sub>1</sub> = 11.2 Median = 15.0 Q<sub>3</sub> = 19.2 P<sub>90</sub> = 22.8 P<sub>99</sub> = 26.5</b>																								<b>Hours of Calibration: 0</b>			
<b>Percent Operational Time: 93.8</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-Jun	11.1	10.8	9.7	8.8	8.4	8.5	9.7	10.3	11.9	14.9	17.4	19.1	20.3	15.4	17.4	17.4	18.7	18.5	15.8	15.0	14.5	11.1	9.7	8.6	13.46	20.25	
2-Jun	7.6	6.7	5.5	5.1	4.8	5.2	6.7	9.1	12.0	14.3	17.6	20.1	21.2	22.1	19.7	20.6	16.2	12.5	12.4	12.9	12.3	10.5	9.4	8.1	12.19	22.13	
3-Jun	7.7	8.3	8.7	6.7	5.3	5.8	8.0	12.0	14.7	16.7	17.9	18.6	19.7	20.9	21.2	22.5	23.5	23.4	22.9	21.6	18.6	17.1	15.8	15.2	15.53	23.48	
4-Jun	12.3	12.7	10.7	9.4	7.9	9.0	11.0	15.6	19.6	20.3	21.4	22.3	22.8	23.0	23.2	24.3	25.1	25.1	24.1	22.8	19.6	16.5	13.5	10.5	17.62	25.12	
5-Jun	11.0	10.7	9.4	8.2	7.7	7.8	10.7	14.5	17.6	20.0	21.7	21.7	22.4	23.3	23.8	24.1	24.2	23.7	23.0	21.9	19.4	16.9	16.2	15.9	17.32	24.18	
6-Jun	14.3	12.7	13.2	15.0	14.8	14.8	15.8	17.4	18.1	20.1	22.1	23.9	25.6	27.5	27.2	28.6	29.5	29.3	27.4	24.1	20.9	19.5	17.8	16.8	20.69	29.49	
7-Jun	15.8	16.5	16.0	14.0	13.3	13.8	16.9	20.0	22.0	23.0	23.2	23.6	23.6	24.6	24.9	25.5	25.5	24.2	23.1	21.3	19.0	17.6	16.5	16.9	20.04	25.49	
8-Jun	15.8	14.4	14.3	13.5	13.7	14.4	15.0	16.4	16.3	16.9	18.6	19.4	20.5	21.2	21.9	21.5	21.1	20.3	19.8	18.5	16.5	15.2	15.3	14.6	17.29	21.91	
9-Jun	13.9	13.6	13.5	13.4	13.3	12.6	13.0	14.1	15.1	15.4	14.8	15.5	16.8	17.2	17.3	17.1	17.2	17.0	16.2	13.7	12.7	11.8	11.2	10.7	14.46	17.26	
10-Jun	10.6	9.7	9.3	9.0	7.6	8.2	10.1	12.5	14.5	15.9	16.6	17.5	18.0	17.8	17.2	16.9	15.6	13.4	13.4	13.5	12.9	12.7	13.3	13.0	13.29	17.98	
11-Jun	12.8	12.0	11.3	10.9	11.2	11.4	11.7	12.5	13.9	15.2	16.3	15.7	14.4	13.5	9.8	8.2	8.4	8.7	9.5	9.6	9.5	9.1	8.5	8.0	11.34	16.30	
12-Jun	7.5	6.7	6.6	6.6	6.9	7.1	8.2	8.7	9.6	11.2	11.9	14.5	17.5	19.3	17.2	18.1	19.5	19.4	19.1	17.6	16.3	14.0	11.7	10.7	12.74	19.47	
13-Jun	8.3	7.2	6.7	4.2	5.0	5.6	7.7	11.3	14.1	16.6	16.9	17.7	18.7	18.9	19.7	20.2	19.8	19.7	18.4	16.9	15.4	13.5	12.1	10.3	13.53	20.20	
14-Jun	8.5	7.4	6.5	5.6	4.8	5.9	8.7	11.1	12.9	14.4	15.9	17.0	17.7	17.9	18.3	18.2	11.8	9.3	8.3	8.2	7.7	6.5	6.2	11.12	18.34		
15-Jun	6.2	6.3	6.3	6.1	6.0	6.6	7.1	7.6	8.2	11.2	14.2	15.8	16.5	17.6	17.6	16.6	16.7	16.4	15.4	16.1	13.0	10.6	8.3	7.2	11.40	17.65	
16-Jun	6.1	4.7	3.8	3.5	2.7	3.6	6.2	9.5	12.1	14.6	15.5	15.2	13.9	13.2	12.8	12.8	11.8	10.8	12.0	11.2	10.2	9.4	9.1	9.1	9.73	15.48	
17-Jun	8.0	7.7	7.1	7.1	7.3	7.6	8.5	9.8	10.5	11.6	12.5	13.8	14.4	15.4	16.1	17.0	18.3	18.8	18.5	17.1	15.6	12.3	11.2	10.1	12.36	18.79	
18-Jun	8.6	7.9	6.5	5.8	4.8	5.4	7.9	11.7	14.8	16.8	18.3	18.5	18.8	19.4	20.0	19.9	19.4	18.8	19.4	17.0	15.7	13.7	13.1	12.5	13.94	19.99	
19-Jun	11.9	11.7	9.8	8.6	8.6	9.3	11.5	13.6	16.0	17.3	18.8	19.4	20.3	21.0	21.3	21.6	21.7	20.3	19.2	17.5	16.2	14.9	13.9	13.2	15.72	21.67	
20-Jun	12.3	11.7	10.9	9.9	8.6	8.9	11.2	14.3	17.5	19.3	20.4	21.3	21.5	22.7	23.2	23.2	23.7	23.8	22.8	21.5	19.5	16.7	15.4	15.3	17.32	23.77	
21-Jun	15.3	14.1	12.7	12.4	11.0	11.7	13.1	15.5	17.0	18.8	19.7	21.2	21.3	20.6	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	21.29	
22-Jun	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	22.7	23.2	23.6	22.0	23.0	20.1	16.9	16.7	13.5	13.9	13.5	--	23.60	
23-Jun	12.6	10.6	10.4	9.6	8.1	8.8	10.4	13.8	17.2	19.2	19.8	21.0	20.6	20.5	20.5	18.8	15.6	16.3	17.1	16.4	15.9	13.2	12.0	11.1	14.98	21.04	
24-Jun	9.7	8.1	7.4	7.9	7.9	8.9	11.7	13.3	15.4	15.0	14.2	15.6	16.5	17.3	16.6	14.8	14.4	14.0	13.8	13.4	13.2	12.8	12.6	12.6	12.86	17.27	
25-Jun	12.6	12.5	12.1	11.9	11.8	11.9	12.3	12.1	12.8	13.7	15.9	19.0	21.0	21.0	20.0	15.0	14.0	15.4	13.9	13.8	14.3	13.6	13.1	12.7	14.44	20.97	
26-Jun	12.6	12.2	12.3	11.9	12.0	11.9	12.6	13.4	13.8	15.2	16.1	18.2	20.8	21.7	22.6	23.3	23.8	24.4	25.0	23.4	20.3	17.2	15.0	14.2	17.25	25.03	
27-Jun	13.3	11.9	11.6	10.9	9.0	9.9	12.3	15.8	19.1	21.4	22.7	22.1	23.9	24.9	8.0	25.5	25.3	PF	PF	PF	PF	PF	PF	PF	--	25.47	
28-Jun	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	24.4	24.2	25.0	24.6	21.2	19.2	15.6	14.3	13.2	--	24.96
29-Jun	12.4	11.8	10.4	9.8	9.0	11.0	12.6	16.0	19.5	21.9	23.9	24.9	25.7	26.2	26.4	26.6	26.4	25.3	23.5	21.4	19.8	19.6	18.9	18.3	19.21	26.60	
30-Jun	17.6	16.6	16.5	15.9	14.9	15.3	16.6	19.1	20.4	22.8	20.2	20.1	20.3	22.2	22.5	23.6	21.7	19.4	18.5	17.3	15.5	13.4	12.8	12.0	18.12	23.59	
11.30 10.61 9.97 9.34 8.79 9.32 10.97 13.25 15.23 16.92 18.01 18.97 19.78 20.29 19.62 20.41 20.06 19.25 18.52 17.23 15.75 13.93 12.90 12.17																								Diurnal Average			
17.59 16.58 16.45 15.92 14.86 15.27 16.93 20.04 22.04 23.03 23.86 24.86 25.74 27.47 27.15 28.57 29.49 29.33 27.43 24.13 20.93 19.64 18.90 18.25																								Diurnal Maximum			
AF - Analyzer Failure      PF - Power Failure																											





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

**Wind Speed (WS) - kph**  
**June 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	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	--		
Dir	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	--		
24 Spd	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	--		
Dir	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	--		
25 Spd	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	--		
Dir	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	--		
26 Spd	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	--		
Dir	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	--		
27 Spd	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	PF	PF	PF	PF	PF	--	--		
Dir	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	PF	PF	PF	PF	PF	PF	--	--		
28 Spd	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	7.1	10.7	10.7	12.0	8.6	4.3	3.2	4.4	1.8	--	11.97		
Dir	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	NNW	WNW	WNW	NW	NNW	NW	NW	N	NW	--	NW		
29 Spd	6.6	6.1	7.0	3.1	3.2	3.1	4.8	3.5	3.1	2.2	1.8	4.3	5.2	8.8	10.2	14.0	13.7	20.2	17.5	14.1	9.4	10.9	10.2	4.8	5.43	20.22		
Dir	W	W	WSW	WNW	SW	WSW	WSW	W	WSW	W	SSW	S	SSE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SW	SSE	SE	
30 Spd	6.8	14.5	11.4	13.3	13.1	13.1	12.4	15.3	13.9	15.8	10.2	11.5	10.1	6.0	5.1	10.4	11.0	10.2	5.5	4.5	19.4	4.3	3.7	6.5	3.92	19.35		
Dir	SSE	SSE	SSE	SE	SE	SE	SE	SSE	SSE	SSE	SSW	W	WNW	WNW	N	N	NE	ENE	ENE	SSW	W	WNW	SW	SW	SSE	W		
Spd	3.94	3.20	3.01	2.70	3.68	3.62	3.84	3.92	3.33	3.15	3.06	2.15	1.55	1.73	0.32	1.96	4.25	3.38	3.03	3.47	3.13	2.30	2.53	3.04	Diurnal Average			
Dir	W	WNW	WNW	W	WSW	W	W	WNW	WNW	NW	NW	NW	NNW	N	NW	NNW	NNW	NNW	N	N	NW	NW	WNW	WNW	Diurnal Maximum			
Spd	24.30	25.09	24.31	24.43	23.01	22.48	22.37	23.43	23.61	25.25	22.55	24.21	24.08	27.09	26.97	26.86	29.72	26.53	23.21	24.17	20.94	21.39	20.82	27.08	Diurnal Maximum			
Dir	301.98	301.61	300.14	299.23	299.87	309.34	318.05	327.98	329.24	332.85	332.92	338.89	336.14	333.91	337.31	339.28	338.31	338.77	325.87	320.22	326.64	298.41	319.90	320.03	Diurnal Maximum			
Maximum Speed Value: 29.7 kph on Jun 2 17:00																			Minimum Speed Value: 0.3 kph on Jun 4 16:00					Hours in Service:				720
Maximum Daily Speed Average: 17.74 kph on Jun 9																			Minimum Daily Speed Average: 1.33 kph on Jun 4					Hours of Data:				551
Maximum Diurnal Speed Average: 4.25 kph at hour 17																			Minimum Diurnal Speed Average: 0.32 kph at hour 15					Hours of Missing Data:				169
Monthly Average Velocity: 2.523 kph 303.11 deg																			Speed Percentiles: P <sub>1</sub> = 1.0 P <sub>10</sub> = 3.3 Q <sub>1</sub> = 5.7 Median = 8.3 Q <sub>3</sub> = 12.2 P <sub>90</sub> = 18.4 P <sub>99</sub> = 26.5					Percent Operational Time:				76.5
All monthly, daily, and diurnal averages have been calculated using vector methods																												
AF - Analyzer Failure 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	13	26	20	12	1	0	72																					
NorthEast	7	19	6	0	0	0	32																					
East	5	21	6	0	0	0	32																					
SouthEast	11	38	26	1	0	0	76																					
South	11	29	14	0	0	0	54																					
SouthWest	22	41	7	0	0	0	70																					
West	31	68	14	1	0	0	114																					
NorthWest	11	28	27	35	0	0	101																					
Total	111	270	120	49	1	0	551																					





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

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

<b>Maximum Value: 94.82 % on Jun 2 07:00</b> <b>Maximum Daily Average: 81.09 % on Jun 11</b>																								<b>Hours in Service: 720</b>			
<b>Minimum Value: 25.9 % on Jun 3 17:00</b> <b>Minimum Daily Average: 43.83 % on Jun 5</b>																								<b>Hours of Data: 675</b>			
<b>Maximum Diurnal Average: 83.61 % at hour 5</b> <b>Minimum Diurnal Average: 44.51 % at hour 15</b>																								<b>Hours of Missing Data: 45</b>			
<b>Monthly Average: 62.657 %</b> <b>Percentiles: P<sub>1</sub> = 27.3 P<sub>10</sub> = 35.4 Q<sub>1</sub> = 46.0 Median = 63.5 Q<sub>3</sub> = 79.1 P<sub>90</sub> = 88.2 P<sub>99</sub> = 94.0</b>																								<b>Hours of Calibration: 0</b>			
<b>Percent Operational Time: 93.8</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-Jun	59.3	60.6	64.0	66.8	69.5	72.1	69.2	67.9	65.3	57.9	47.6	43.3	35.7	63.2	54.9	52.7	45.0	47.0	55.9	59.9	62.3	74.7	82.0	84.5	60.89	84.46	
2-Jun	89.5	91.4	93.0	93.8	94.2	94.6	94.8	91.5	73.5	65.3	53.8	40.1	35.6	35.3	42.8	45.9	55.8	69.9	74.8	69.3	70.7	79.1	85.6	90.7	72.13	94.82	
3-Jun	92.9	80.9	70.0	75.7	84.0	85.6	80.4	63.0	45.4	41.7	38.6	37.2	35.0	32.2	32.8	29.1	25.9	26.2	26.8	29.0	36.9	42.2	46.3	46.1	50.16	92.94	
4-Jun	59.4	55.6	63.5	69.0	76.4	76.3	71.9	57.7	46.1	42.3	38.9	38.9	37.7	36.4	37.7	33.7	33.7	34.2	35.2	38.0	42.2	45.4	51.5	59.4	49.20	76.39	
5-Jun	55.5	54.7	61.1	65.9	71.3	74.7	69.4	57.0	46.6	31.2	26.9	27.8	27.4	28.3	27.0	26.3	27.4	28.7	30.1	32.6	40.7	46.5	47.9	46.8	43.83	74.72	
6-Jun	51.7	58.7	58.6	55.1	57.7	60.1	60.9	57.2	57.8	54.1	51.5	47.4	44.2	37.5	36.8	33.1	31.4	28.2	35.1	44.7	55.0	60.8	66.8	67.7	50.51	67.68	
7-Jun	73.1	75.2	74.8	82.7	86.6	85.2	74.5	65.5	56.2	45.6	45.1	43.8	43.5	42.0	41.2	37.4	34.5	36.6	40.9	48.7	61.2	65.7	73.1	63.8	58.20	86.60	
8-Jun	70.2	79.3	76.8	79.7	77.5	71.8	70.6	68.0	70.1	69.4	65.4	62.5	60.3	59.9	59.0	61.5	65.9	66.9	68.3	71.4	79.0	85.5	83.9	89.3	71.35	89.34	
9-Jun	91.9	92.7	92.9	92.6	92.0	88.1	86.1	80.4	74.9	73.4	73.0	69.0	62.2	57.2	56.6	55.2	52.3	49.4	54.8	67.8	73.4	78.8	81.3	81.4	74.05	92.89	
10-Jun	82.7	79.9	80.8	80.9	83.7	83.0	75.1	65.9	59.7	55.6	50.5	45.0	42.8	42.2	41.8	42.5	48.7	62.6	63.9	63.4	65.8	63.8	62.7	64.8	62.83	83.71	
11-Jun	66.6	75.3	79.1	80.0	80.8	81.9	83.2	82.1	76.8	69.4	63.1	71.6	78.4	74.8	83.0	88.2	88.3	90.1	85.3	83.0	89.5	91.2	91.8	92.5	81.09	92.48	
12-Jun	92.9	93.8	94.0	94.5	94.5	94.6	93.8	91.0	87.8	81.4	77.6	69.0	54.9	44.4	58.6	58.9	43.0	36.6	37.0	38.7	38.8	44.2	51.8	53.2	67.71	94.56	
13-Jun	64.2	68.1	67.7	80.2	77.8	77.5	75.6	64.5	54.1	42.3	42.8	42.9	42.8	42.2	39.8	32.4	35.4	35.4	40.9	46.8	49.6	59.3	65.4	70.1	54.91	80.24	
14-Jun	81.1	88.8	91.1	92.7	93.4	93.7	85.9	74.7	67.1	61.5	54.4	51.1	44.0	44.2	46.4	44.0	41.5	64.3	77.7	80.3	78.5	76.9	85.1	90.7	71.22	93.66	
15-Jun	90.2	89.9	87.5	89.9	91.3	86.2	86.8	86.8	81.1	67.0	47.3	35.4	30.5	28.6	27.4	27.2	35.4	38.6	44.0	33.6	32.7	39.9	49.5	50.6	57.39	91.31	
16-Jun	52.5	57.4	59.5	63.3	69.8	66.9	59.7	54.0	48.2	36.3	42.9	44.5	46.4	49.8	50.1	48.3	53.8	65.2	56.4	53.8	59.0	60.3	62.1	62.9	55.12	69.84	
17-Jun	74.6	76.7	82.2	82.2	81.3	80.4	75.3	69.0	66.1	62.5	59.4	53.8	52.7	48.1	46.9	43.2	37.5	33.0	34.4	44.0	49.4	60.1	64.5	68.6	60.25	82.24	
18-Jun	72.8	69.2	70.2	71.6	76.1	77.3	72.0	57.8	48.1	40.2	37.9	35.1	33.9	33.7	32.6	33.5	34.9	37.0	33.7	41.0	46.3	58.8	61.5	62.3	51.57	77.34	
19-Jun	61.6	63.1	81.9	87.3	80.1	83.1	76.3	68.0	58.4	54.6	53.1	47.0	37.2	32.1	32.1	30.5	30.4	35.4	39.2	46.2	48.5	55.7	62.8	65.1	55.41	87.31	
20-Jun	69.9	71.8	77.8	80.8	85.6	86.1	77.6	66.6	57.1	48.9	42.8	40.9	36.7	34.2	33.0	31.4	27.6	27.7	29.9	32.9	41.0	49.3	55.5	56.3	52.56	86.05	
21-Jun	58.9	68.6	75.7	77.2	82.7	81.6	80.2	65.2	57.4	53.5	52.9	49.2	53.8	54.9	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	82.72	
22-Jun	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	39.2	39.2	37.5	42.2	38.6	46.3	63.9	64.3	75.5	78.7	79.7	--	79.69
23-Jun	84.0	89.5	86.6	86.7	90.1	91.6	88.2	77.2	63.2	50.5	50.7	45.2	44.6	45.8	46.5	53.1	74.2	74.2	69.8	67.4	72.1	80.3	84.0	83.7	70.80	91.56	
24-Jun	87.0	90.1	92.8	92.8	92.2	91.8	84.2	78.6	70.1	69.2	74.1	74.2	69.0	65.4	61.2	63.1	71.3	75.5	77.7	81.1	83.0	82.4	85.4	87.1	79.13	92.84	
25-Jun	86.3	86.2	89.1	90.5	91.9	92.7	90.4	89.8	88.4	86.0	77.8	65.7	55.7	55.7	58.3	76.0	85.9	81.3	80.4	79.5	77.3	82.1	86.0	85.7	80.78	92.66	
26-Jun	83.3	84.7	83.9	87.7	87.5	89.1	87.1	78.4	74.7	72.6	69.0	60.8	53.5	43.2	39.5	38.6	37.1	34.6	32.7	37.8	50.8	62.8	73.0	75.5	64.08	89.14	
27-Jun	78.3	85.0	87.6	89.3	92.1	92.9	88.7	74.1	62.3	56.0	51.6	55.8	49.0	40.2	30.1	41.4	39.4	PF	PF	PF	PF	PF	PF	PF	--	92.92	
28-Jun	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	49.3	46.0	38.1	41.7	51.6	55.0	72.3	76.0	78.9	--	78.92
29-Jun	84.5	85.2	91.0	91.7	93.2	92.9	88.4	76.6	64.2	53.1	45.1	38.2	35.2	34.6	34.4	34.3	34.3	44.0	49.3	60.5	65.2	64.1	69.4	73.4	62.61	93.19	
30-Jun	76.3	77.7	82.4	81.7	87.6	87.4	82.1	72.1	69.4	63.6	73.2	69.3	62.5	53.8	56.9	53.2	63.0	66.8	69.7	75.2	76.7	87.3	88.7	91.4	73.67	91.35	
74.68 76.79 79.13 81.51 83.61 83.55 79.58 71.45 63.93 57.32 53.83 50.16 46.61 44.79 44.51 44.88 46.26 48.78 51.14 55.08 59.46 65.91 70.44 72.22																								Diurnal Average			
92.94 93.85 94.04 94.54 94.51 94.62 94.82 91.54 88.42 85.95 77.84 74.16 78.38 74.79 83.01 88.20 88.30 90.07 85.28 83.03 89.52 91.24 91.84 92.48																								Diurnal Maximum			
AF - Analyzer Failure      PF - Power Failure																											



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

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

Maximum Value: 397.03 W/m2 on Jun 4 13:00      Maximum Daily Average: 146.20 W/m2 on Jun 5																								Hours in Service:	720	
Minimum Value: 0.0 W/m2 on Jun 1 01:00      Minimum Daily Average: 40.44 W/m2 on Jun 11																								Hours of Data:	698	
Maximum Diurnal Average: 286.65 W/m2 at hour 13      Minimum Diurnal Average: 0.01 W/m2 at hour 1																								Hours of Missing Data:	22	
Monthly Average: 104.60 W/m2      Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.1 Median = 52.3 Q <sub>3</sub> = 195.8 P <sub>90</sub> = 296.8 P <sub>99</sub> = 358.1																								Hours of Calibration:	0	
																								Percent Operational Time:	96.9	
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-Jun	0.0	0.0	0.0	0.0	2.4	24.5	55.3	69.9	117.2	173.4	220.1	335.4	348.7	176.6	233.7	195.8	132.3	156.0	27.8	33.0	12.9	0.0	0.0	0.0	96.45	348.72
2-Jun	0.0	0.0	0.0	0.0	3.2	12.6	34.7	88.5	157.2	160.9	313.3	339.1	353.7	333.4	41.2	202.8	32.5	13.5	17.8	26.6	7.6	0.0	0.0	0.0	89.11	353.69
3-Jun	0.0	0.0	0.0	0.0	3.5	44.9	85.1	173.7	237.2	289.5	335.0	362.7	342.8	324.8	236.1	257.9	256.6	185.6	124.7	58.3	9.8	0.5	0.1	0.0	138.69	362.72
4-Jun	0.0	0.0	0.0	0.0	3.8	28.4	99.0	170.8	240.3	291.4	340.2	382.1	397.0	339.9	238.7	311.9	256.4	192.4	125.8	59.9	13.7	0.3	0.0	0.0	145.50	397.03
5-Jun	0.0	0.0	0.0	0.0	4.7	42.4	100.1	168.5	231.8	285.4	335.7	357.4	371.7	368.1	347.6	291.3	220.2	186.6	122.1	61.9	13.0	0.4	0.0	0.0	146.20	371.69
6-Jun	0.0	0.0	0.0	0.0	5.0	29.0	72.6	98.2	160.6	264.4	331.7	358.1	328.6	359.1	224.8	305.7	247.1	182.5	69.2	6.7	11.1	0.5	0.0	0.0	127.29	359.11
7-Jun	0.0	0.0	0.0	0.0	4.1	39.4	95.8	164.9	206.4	222.2	190.7	203.9	215.0	295.6	331.9	292.0	220.3	111.9	57.5	9.4	1.5	0.0	0.0	0.0	110.93	331.86
8-Jun	0.0	0.0	0.0	0.0	1.9	20.3	35.0	104.0	125.9	129.0	230.7	222.7	187.7	176.6	161.9	74.8	79.1	89.3	54.5	16.8	4.6	0.1	0.0	0.0	71.46	230.74
9-Jun	0.0	0.0	0.0	0.0	1.5	17.7	74.9	106.8	151.8	134.7	110.7	239.5	314.4	327.8	304.0	261.8	238.8	197.0	129.2	42.5	7.8	0.1	0.0	0.2	110.88	327.76
10-Jun	0.2	0.2	0.1	0.0	3.9	44.3	89.7	171.6	229.1	275.6	314.4	356.4	347.5	250.5	148.4	103.7	38.0	24.9	21.6	15.9	2.4	0.0	0.0	0.0	101.60	356.38
11-Jun	0.0	0.0	0.0	0.0	1.4	7.1	15.0	41.0	101.6	118.1	214.8	171.5	155.2	54.3	12.5	15.6	20.0	20.8	12.4	7.0	2.4	0.0	0.0	0.0	40.44	214.83
12-Jun	0.0	0.0	0.0	0.0	0.0	4.6	26.2	25.2	61.0	78.2	81.0	228.0	300.3	333.5	158.9	128.2	165.6	162.0	104.1	48.9	17.5	1.3	0.1	0.0	80.19	333.48
13-Jun	0.0	0.2	0.4	0.4	6.0	37.4	100.0	167.4	211.5	281.9	278.7	301.3	342.3	280.7	261.7	233.2	161.5	126.4	68.1	18.2	2.8	0.1	0.0	0.0	120.00	342.27
14-Jun	0.0	0.0	0.0	0.2	5.9	47.8	101.2	157.4	168.7	219.0	271.7	254.6	205.1	190.1	179.4	227.0	151.0	53.5	22.8	13.2	3.2	0.2	0.0	0.0	94.66	271.66
15-Jun	0.0	0.0	0.0	0.0	0.5	8.2	28.8	44.3	75.4	224.2	309.5	350.5	315.1	353.4	268.2	113.9	105.4	79.7	70.1	60.4	8.5	0.0	0.0	0.0	100.67	353.40
16-Jun	0.0	0.0	0.0	0.2	5.3	45.6	102.4	151.5	156.9	249.4	330.9	205.0	108.2	92.7	109.2	125.4	90.1	88.3	116.9	64.1	12.3	0.5	0.0	0.1	85.62	330.88
17-Jun	0.0	0.0	0.0	0.1	1.7	12.2	52.5	103.8	127.7	190.9	220.6	244.0	269.6	324.9	296.3	297.0	236.9	196.5	114.3	50.0	18.3	0.7	0.0	0.0	114.92	324.90
18-Jun	0.0	0.0	0.2	0.1	5.0	44.5	99.8	164.5	225.9	278.7	330.2	358.5	321.5	337.0	309.2	251.9	137.6	109.2	114.6	23.9	11.3	0.0	0.0	0.0	130.14	358.45
19-Jun	0.0	0.0	0.0	0.1	5.1	35.9	85.8	158.7	225.7	253.2	286.8	254.0	347.9	322.6	273.4	266.2	229.6	119.7	90.4	39.9	13.2	0.8	0.2	0.2	125.39	347.88
20-Jun	0.0	0.0	0.1	0.3	5.0	41.4	97.4	162.1	225.9	279.0	324.4	343.8	289.1	305.1	280.0	258.3	253.3	195.1	131.4	67.5	19.7	0.5	0.0	0.0	136.64	343.75
21-Jun	0.0	0.0	0.1	0.1	3.5	17.0	43.7	103.8	170.0	258.7	229.1	322.3	289.8	123.5	52.3	115.2	147.4	119.6	56.0	35.4	11.7	1.1	0.0	0.0	87.51	322.29
22-Jun	0.0	0.0	0.0	0.0	3.8	38.3	95.9	164.1	220.9	269.4	322.8	333.4	296.0	256.9	188.2	256.5	113.0	182.3	60.8	50.0	19.4	0.0	0.0	0.0	119.66	333.36
23-Jun	0.0	0.0	0.0	0.0	3.0	36.8	71.8	156.1	225.6	254.1	306.7	297.8	186.3	157.1	123.8	24.2	35.2	84.0	79.7	30.6	18.6	0.0	0.0	0.0	87.14	306.73
24-Jun	0.0	0.0	0.0	0.0	0.0	0.0	9.0	127.6	208.6	115.6	107.6	128.8	212.5	262.1	283.2	153.7	111.3	55.1	31.4	15.6	6.2	0.0	0.0	0.0	76.17	283.18
25-Jun	0.0	0.0	0.0	0.0	0.0	0.0	16.9	7.9	38.1	91.2	193.2	289.8	345.7	227.2	98.2	11.3	11.0	34.3	4.1	13.6	11.5	0.0	0.0	0.0	58.07	345.68
26-Jun	0.0	0.0	0.0	0.0	0.0	13.5	28.8	57.9	62.6	93.8	104.5	174.3	312.6	342.3	322.4	294.8	255.1	195.0	129.9	66.4	17.5	0.6	0.0	0.0	103.00	342.29
27-Jun	0.0	0.0	0.0	0.0	3.5	34.4	92.1	152.6	220.2	279.0	219.7	165.5	324.2	355.0	342.8	291.4	166.0	PF	PF	PF	PF	PF	PF	PF	--	355.04
28-Jun	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	157.6	161.4	197.4	126.7	29.5	10.7	0.0	0.0	0.0	--	197.36
29-Jun	0.0	0.0	0.0	0.0	4.2	38.7	93.0	153.0	208.6	268.2	306.9	337.1	351.0	330.4	301.5	293.2	237.6	171.5	71.2	22.8	4.9	0.0	0.0	0.0	133.08	350.98
30-Jun	0.0	0.0	0.0	0.0	2.5	17.0	79.8	147.3	151.2	244.3	75.2	59.4	133.3	252.7	160.4	231.7	106.3	34.4	20.0	12.0	2.9	0.0	0.0	0.0	72.09	252.71
																								Diurnal Average		
																								Diurnal Maximum		
PF - Power Failure																										



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

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

Maximum Value: 8.37 kph on Jun 2 17:00		Maximum Daily Average: 4.75 kph on Jun 9		Hours in Service: 720																							
Minimum Value: 0.7 kph on Jun 5 02:00		Minimum Daily Average: 2.00 kph on Jun 5		Hours of Data: 551																							
Maximum Diurnal Average: 4.27 kph at hour 14		Minimum Diurnal Average: 1.98 kph at hour 5		Hours of Missing Data: 169																							
Monthly Average: 3.080 kph		Percentiles: P <sub>1</sub> = 0.9 P <sub>10</sub> = 1.3 Q <sub>1</sub> = 1.7 Median = 2.9 Q <sub>3</sub> = 4.0 P <sub>90</sub> = 5.2 P <sub>99</sub> = 7.1		Hours of Calibration: 0																							
				Percent Operational Time: 76.5																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Jun	1.5	1.6	1.8	1.7	1.5	1.4	2.0	2.0	1.7	1.9	2.9	3.9	3.3	8.3	3.4	2.5	2.2	4.3	5.0	3.4	1.9	1.9	1.1	1.3	2.61	8.31	
2-Jun	1.5	1.4	1.4	1.9	1.6	1.7	1.2	1.2	1.8	2.3	2.1	2.4	3.7	3.8	2.3	7.5	8.4	5.2	5.1	2.9	2.4	1.2	1.3	1.2	2.72	8.37	
3-Jun	1.2	2.6	2.5	1.4	1.3	1.4	1.4	2.9	3.0	3.7	5.0	4.2	6.6	4.8	3.9	4.6	4.5	3.4	4.6	4.0	0.9	1.2	1.4	1.6	3.00	6.62	
4-Jun	1.4	1.2	2.4	2.1	1.3	1.2	1.2	1.7	2.4	3.7	3.7	3.8	3.7	2.9	2.7	3.1	5.2	3.2	3.3	2.1	2.0	1.2	1.0	0.9	2.39	5.15	
5-Jun	1.3	0.7	1.1	1.7	1.2	1.0	1.3	1.2	1.8	2.1	3.1	3.3	2.9	3.3	2.6	3.1	2.9	3.4	2.7	2.3	1.2	1.4	1.2	1.3	2.00	3.40	
6-Jun	1.1	1.7	2.7	2.0	2.5	2.1	1.8	2.1	2.4	2.7	3.4	3.1	3.6	3.8	3.5	3.3	3.7	3.0	2.5	3.9	6.3	4.2	3.3	2.3	2.96	6.28	
7-Jun	2.7	3.2	4.2	1.9	1.5	2.5	1.7	2.1	2.1	2.4	2.2	2.6	2.6	3.7	4.5	3.9	3.5	2.1	2.2	2.8	5.8	3.3	4.7	2.5	2.95	5.80	
8-Jun	2.5	3.8	2.3	2.5	2.4	2.3	3.4	4.9	4.6	4.2	4.3	3.1	3.5	2.9	3.5	2.1	4.1	5.1	3.8	3.3	3.1	2.8	3.4	5.1	3.46	5.14	
9-Jun	2.6	2.3	1.9	1.7	2.6	3.8	4.4	5.0	4.9	5.3	6.5	7.3	6.4	6.6	6.5	6.6	7.1	7.0	5.2	5.2	4.3	4.3	3.6	3.0	4.75	7.27	
10-Jun	3.5	3.3	2.7	2.9	1.3	1.5	1.7	2.6	4.1	4.0	5.0	5.6	4.2	4.4	4.3	3.7	3.9	2.2	1.6	1.2	1.6	1.8	2.8	3.6	3.06	5.57	
11-Jun	4.4	5.3	2.1	2.1	2.6	2.5	1.6	2.2	2.7	3.0	3.6	5.3	3.9	4.1	6.8	5.7	3.2	2.7	4.4	3.5	1.5	1.8	1.2	1.2	3.22	6.82	
12-Jun	1.6	1.8	2.2	2.9	2.5	1.3	2.1	2.3	2.4	3.2	3.5	3.6	4.8	4.7	3.9	3.4	5.5	5.5	4.4	2.9	4.5	1.7	1.1	2.0	3.07	5.54	
13-Jun	1.3	1.3	1.0	1.5	1.5	1.1	1.7	1.7	2.4	3.0	3.6	4.5	4.2	4.5	3.7	3.8	3.1	4.3	2.4	1.9	4.9	2.3	1.0	1.5	2.58	4.93	
14-Jun	2.9	3.1	2.2	1.6	1.9	2.3	3.7	3.1	2.2	2.8	2.9	2.8	3.1	3.2	3.6	4.2	3.9	6.7	5.2	3.5	4.5	5.0	4.6	2.7	3.40	6.71	
15-Jun	2.7	4.0	3.6	3.0	3.0	2.6	3.1	2.1	2.5	4.0	5.1	5.9	5.4	4.9	5.1	5.0	3.2	4.0	3.3	3.1	1.1	2.7	1.9	1.7	3.47	5.91	
16-Jun	1.7	1.9	1.2	1.4	1.3	1.7	1.6	2.1	2.3	4.9	4.0	4.3	4.5	4.5	5.5	5.8	4.8	6.4	7.4	6.5	5.1	4.6	4.8	6.2	3.94	7.40	
17-Jun	6.0	5.6	5.2	5.7	5.1	4.9	5.1	6.1	6.8	6.7	5.9	5.9	5.2	5.2	5.3	4.9	4.4	4.2	2.5	2.1	1.3	1.2	1.1	1.5	4.49	6.80	
18-Jun	1.1	1.2	1.9	0.8	1.7	1.4	1.5	1.6	2.0	2.7	3.2	3.8	3.8	3.3	4.5	3.1	2.6	2.0	2.6	1.1	1.3	1.5	1.4	1.7	2.16	4.47	
19-Jun	1.2	5.3	3.3	3.4	2.9	3.5	3.1	3.9	4.9	4.7	5.8	5.9	6.5	6.6	5.8	5.3	5.4	4.0	5.2	3.6	1.6	1.6	1.1	2.0	4.02	6.59	
20-Jun	2.1	1.1	1.4	1.1	1.0	1.4	1.2	1.7	2.1	2.3	2.9	2.9	3.4	3.3	3.9	4.4	3.9	4.2	2.5	2.5	1.1	0.8	2.9	2.3	2.34	4.41	
21-Jun	2.3	2.9	2.4	2.5	1.4	2.0	1.6	2.3	1.9	2.4	2.8	2.6	5.1	2.9	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	5.05	
22-Jun	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	--	
23-Jun	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	--	
24-Jun	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	--	
25-Jun	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	--	
26-Jun	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	--	
27-Jun	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	--	
28-Jun	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	2.6	3.8	2.9	3.5	2.7	2.3	2.1	1.0	1.3	--	3.78	
29-Jun	1.4	0.9	1.1	1.3	1.1	0.8	1.0	1.4	1.5	1.7	2.0	3.0	3.8	4.1	3.8	4.4	3.9	4.6	3.9	3.7	1.6	2.1	1.6	4.1	2.45	4.58	
30-Jun	3.2	2.9	2.9	1.9	2.4	2.0	2.1	3.4	3.0	3.9	4.0	4.4	3.2	2.4	3.7	4.8	4.1	3.7	2.1	3.9	6.2	5.0	2.0	1.4	3.28	6.20	
		2.23	2.57	2.32	2.12	1.98	2.02	2.15	2.60	2.85	3.37	3.81	4.09	4.23	4.27	4.21	4.25	4.23	4.09	3.71	3.13	2.89	2.42	2.16	2.29	Diurnal Average	
		6.05	5.64	5.21	5.66	5.07	4.90	5.13	6.14	6.80	6.75	6.49	7.27	6.62	8.31	6.82	7.45	8.37	6.99	7.40	6.53	6.28	5.04	4.82	6.24	Diurnal Maximum	
AF - Analyzer Failure PF - Power Failure																											
,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**  
**June 2016**

Maximum Value: 103.55 deg on Jun 5 15:00      Maximum Daily Average: 43.44 deg on Jun 4																							Hours in Service: 720 Hours of Data: 551																									
Minimum Value: 6.8 deg on Jun 18 02:00      Minimum Daily Average: 17.13 deg on Jun 9 Maximum Diurnal Average: 40.29 deg at hour 11      Minimum Diurnal Average: 16.81 deg at hour 6 Monthly Average: 28.212 deg      Percentiles: P <sub>1</sub> = 7.8 P <sub>10</sub> = 11.9 Q <sub>1</sub> = 15.9 Median = 21.0 Q <sub>3</sub> = 31.3 P <sub>90</sub> = 59.1 P <sub>99</sub> = 91.5																							Hours of Missing Data: 169 Hours of Calibration: 0 Percent Operational Time: 76.5																									
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-Jun	9.2	9.6	9.8	10.1	10.1	16.2	26.4	20.2	18.1	39.6	25.3	34.2	86.8	96.0	24.4	26.8	66.7	28.1	34.7	85.7	46.8	70.4	37.1	70.0	37.59	96.03																						
2-Jun	23.8	59.8	73.0	77.2	71.4	29.2	28.1	15.8	26.8	30.7	86.2	45.5	70.7	83.1	47.1	18.0	14.4	16.7	15.4	13.2	21.0	8.4	10.3	12.8	37.44	86.24																						
3-Jun	11.0	13.5	15.1	28.9	7.3	8.0	10.0	20.9	23.1	26.4	44.5	33.4	42.1	19.6	37.0	33.9	24.7	23.4	22.5	17.9	15.0	17.3	21.6	31.8	22.87	44.48																						
4-Jun	18.6	22.8	37.8	63.8	16.4	20.4	20.2	87.1	49.8	56.0	52.6	60.0	45.9	91.6	98.7	47.2	33.4	24.2	18.6	23.4	19.2	14.4	18.3	43.44	102.12																							
5-Jun	15.6	15.8	14.2	59.1	10.8	11.1	17.8	19.5	26.7	77.8	85.7	50.7	88.9	61.2	103.6	100.7	32.3	25.8	17.4	8.5	7.6	8.4	9.2	10.4	36.62	103.55																						
6-Jun	11.3	17.2	14.4	10.5	9.8	10.3	10.9	14.9	16.8	26.6	24.4	18.6	18.8	18.6	18.1	19.7	30.7	21.7	11.9	40.1	45.3	57.4	54.5	37.8	23.35	57.41																						
7-Jun	19.0	44.0	43.2	75.3	27.3	19.8	21.0	19.9	17.6	20.5	27.5	25.8	24.5	27.1	22.0	29.1	30.4	11.5	20.0	16.4	83.6	26.0	78.7	11.2	30.89	83.61																						
8-Jun	58.4	42.7	22.8	18.0	15.9	14.1	36.6	36.9	17.3	13.6	15.4	16.6	17.5	22.3	21.4	21.8	21.3	37.7	20.1	19.2	19.4	24.8	25.5	29.8	24.54	58.40																						
9-Jun	66.8	12.6	16.3	15.6	22.0	17.7	15.0	15.0	15.0	17.3	16.5	13.8	15.8	15.2	15.4	13.2	14.6	13.8	17.1	13.8	11.0	14.5	11.6	11.5	17.13	66.78																						
10-Jun	14.3	28.6	27.1	24.5	25.3	23.2	21.4	19.2	52.1	33.0	30.0	22.9	19.7	23.2	21.8	21.9	21.3	14.3	25.9	21.6	21.7	21.7	21.9	19.8	24.01	52.07																						
11-Jun	20.7	20.7	19.7	24.7	22.1	20.3	19.8	20.8	19.4	28.3	49.5	51.8	24.0	28.3	66.5	18.5	21.4	24.0	27.2	30.7	12.0	10.1	9.1	13.1	25.11	66.50																						
12-Jun	65.7	28.3	49.3	55.1	34.6	13.2	13.4	15.4	14.0	20.5	17.8	22.1	21.1	23.5	31.5	75.8	19.7	18.0	15.7	15.2	13.4	22.2	15.4	25.7	26.95	75.81																						
13-Jun	22.6	19.4	10.0	20.2	8.5	13.5	12.5	18.9	44.6	49.9	27.6	27.5	21.6	25.9	24.3	29.1	17.1	16.0	17.9	22.5	56.0	71.8	23.9	73.9	28.14	73.94																						
14-Jun	18.3	24.4	27.5	28.1	18.1	19.6	11.6	17.1	22.2	24.4	34.1	39.6	62.0	30.9	22.5	19.6	23.3	15.9	15.4	13.6	19.7	15.9	17.6	22.6	23.51	62.01																						
15-Jun	15.6	15.6	16.3	17.0	14.4	33.0	25.0	14.5	15.0	14.7	15.7	17.5	22.3	23.5	18.9	24.0	71.6	50.8	44.3	86.2	11.9	38.3	16.6	16.3	26.62	86.24																						
16-Jun	12.3	18.8	12.3	11.9	11.7	15.7	13.1	17.3	25.0	22.7	25.7	24.4	18.3	19.0	16.3	21.7	18.1	20.1	18.6	18.3	16.8	19.4	20.2	18.6	18.18	25.66																						
17-Jun	19.4	18.6	18.4	18.4	18.9	17.8	18.1	17.5	17.0	17.4	17.7	15.9	17.8	24.2	25.8	23.1	35.6	30.6	34.4	15.2	9.2	8.6	7.7	14.1	19.23	35.60																						
18-Jun	14.8	6.8	17.8	12.2	8.4	8.1	11.0	14.9	25.5	71.3	86.4	57.4	48.5	52.3	65.2	31.3	20.2	12.4	14.7	12.5	17.6	12.0	12.3	9.7	26.80	86.43																						
19-Jun	9.4	53.7	55.3	35.7	19.7	13.9	11.5	12.1	16.2	20.0	17.6	22.6	19.7	25.4	22.7	20.6	18.4	24.8	27.9	20.8	18.1	26.1	17.6	11.9	22.57	55.26																						
20-Jun	36.9	24.4	12.5	9.2	9.3	10.0	17.5	28.4	80.2	71.8	51.0	50.4	68.3	59.1	44.7	49.6	49.9	42.4	18.0	13.9	11.9	13.5	24.9	9.4	33.63	80.19																						
21-Jun	10.6	82.7	72.1	59.3	26.1	25.7	16.6	29.4	34.7	75.3	79.3	69.4	34.4	66.0	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	82.72																						
22-Jun	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	--																						
23-Jun	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	--																						
24-Jun	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	--																						
25-Jun	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	--																						
26-Jun	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	--																						
27-Jun	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	--																						
28-Jun	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	--	64.23																						
29-Jun	7.4	12.6	8.4	61.8	52.6	10.4	16.9	26.6	28.3	50.2	75.0	52.0	57.9	30.5	29.6	26.2	22.8	18.2	17.4	20.4	20.4	21.6	23.2	50.8	30.89	75.03																						
30-Jun	18.7	13.1	20.5	15.2	20.1	15.4	15.2	14.7	17.0	17.8	21.0	28.1	17.0	45.0	59.2	28.4	40.5	31.5	29.7	41.6	23.5	62.5	48.7	13.8	27.42	62.47																						
																								22.62	26.33	26.68	32.69	20.90	16.81	17.80	22.49	27.06	35.90	40.29	34.80	37.55	40.09	37.70	33.64	29.59	23.96	22.51	25.10	24.81	28.36	23.86	26.00	Diurnal Average
																								66.78	82.72	72.95	77.22	71.40	32.98	36.55	87.14	80.19	77.77	86.43	69.43	88.87	102.12	103.55	100.72	71.58	50.83	44.25	86.24	83.61	71.77	78.71	73.94	Diurnal Maximum
AF - Analyzer Failure      PF - Power Failure																																																
,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**

**JUNE 2016**

**Summary Report**

*Continuous air quality/meteorological monitoring measurements*

**West Central Airshed Society**

WCAS / Violet Grove Station 902													June 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	686	100.0	0.3	0.0	10.3	0.0	0.1	0.1	0.2	0.5	0	0	0.002	
O <sub>3</sub> (ppb)	35	685	100.0	33.8	12.4	73.9	20.8	26.6	33.5	40.4	46.4	0	-	0.047	
NO (ppb)	35	685	100.0	0.2	0.0	2.7	0.0	0.0	0.1	0.2	0.5	-	-	-	
NO <sub>2</sub> (ppb)	35	685	100.0	2.3	0.7	12.2	1.1	1.5	2.0	2.8	3.9	0	0	0.004	
NO <sub>x</sub> (ppb)	35	685	100.0	2.5	0.7	14.4	1.2	1.5	2.1	2.9	4.2	-	-	-	
THC (ppm)	36	684	100.0	2.2	1.9	8.8	2.0	2.0	2.1	2.2	2.3	-	-	2.55	
Wind Speed (kph)	0	720	100.0	8.9	0.2	28.1	3.0	5.4	8.1	11.3	15.9	-	-	-	
Temperature (°C)	0	720	100.0	14.1	4.3	27.1	8.1	10.9	14.1	17.3	20.3	-	-	-	
Delta Temperature (°C)	0	720	100.0	0.5	-3.3	1.6	-0.5	0.2	0.7	1.1	1.3	-	-	-	
Relative Humidity (%)	0	720	100.0	67.5	26.5	100.0	41.0	52.0	68.6	84.2	92.5	-	-	-	
Global Solar Radiation (W/m <sup>2</sup> )	0	720	100.0	263.3	0.0	990.7	0.0	0.5	145.1	490.1	760.6	-	-	-	
Photosynthetically Active Radiation (µV)	0	720	100.0	98.7	0.0	372.8	0.0	1.3	58.7	180.6	276.8	-	-	-	
Std Dev Wind Direction (deg)	0	720	100.0	27.9	5.5	109.0	9.5	12.5	19.7	37.0	62.0	-	-	-	
Std Dev Wind Speed (kph)	0	720	100.0	3.2	0.6	10.9	1.5	2.0	2.8	4.0	5.5	-	-	-	



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

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

Maximum Value: 10.28 ppb on Jun 7 16:00		Maximum Daily Average: 1.52 ppb on Jun 7		Hours in Service: 720																													
Minimum Value: 0.0 ppb on Jun 1 18:00		Minimum Daily Average: 0.02 ppb on Jun 15		Hours of Data: 686																													
Maximum Diurnal Average: 0.54 ppb at hour 16		Minimum Diurnal Average: 0.13 ppb at hour 6		Hours of Missing Data: 34																													
Monthly Average: 0.251 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.1 Median = 0.1 Q <sub>3</sub> = 0.2 P <sub>90</sub> = 0.5 P <sub>99</sub> = 2.7		Hours of Calibration: 34																													
				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-Jun	0.2	Z	0.2	0.3	0.3	0.2	0.2	0.2	0.3	0.3	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	0.11	0.29							
2-Jun	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.3	0.2	0.05	0.26							
3-Jun	0.1	Z	0.2	0.2	0.4	0.5	0.3	0.4	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.3	0.1	0.2	0.16	0.53							
4-Jun	0.0	Z	0.2	0.3	0.1	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	0.0	0.1	0.1	0.0	0.1	0.09	0.28							
5-Jun	0.1	Z	0.3	0.1	0.1	0.2	0.3	0.3	0.2	0.2	0.1	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.4	0.18	0.43							
6-Jun	0.7	Z	0.4	0.4	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	2.3	0.35	2.26							
7-Jun	1.1	Z	0.4	0.4	0.5	0.5	0.4	0.7	2.1	1.7	0.7	0.6	0.6	0.9	4.9	10.3	3.9	2.5	1.3	0.3	0.2	0.2	0.3	0.7	1.52	10.28							
8-Jun	0.5	Z	0.5	0.3	0.1	0.1	1.1	1.2	2.6	1.4	2.4	2.8	1.5	0.9	1.4	1.6	3.5	2.7	0.7	0.6	0.6	0.4	0.1	0.0	1.18	3.46							
9-Jun	0.8	Z	0.1	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.3	0.0	0.1	0.1	0.0	0.3	0.1	0.1	0.0	0.0	2.7	0.2	0.25	2.74							
10-Jun	0.7	Z	0.0	0.0	0.4	0.1	0.0	0.2	0.2	0.1	0.0	0.2	1.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.15	0.98							
11-Jun	0.0	Z	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.06	0.19							
12-Jun	0.0	Z	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.2	0.2	0.2	0.0	0.1	0.1	0.2	0.08	0.22							
13-Jun	0.1	Z	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.5	1.1	0.8	0.2	0.2	0.2	0.1	0.1	0.1	0.0	0.1	0.19	1.11							
14-Jun	0.1	Z	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.1	0.1	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	0.07	0.23							
15-Jun	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	0.1	0.1	0.02	0.07							
16-Jun	0.1	Z	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.09	0.17							
17-Jun	0.2	Z	0.1	0.0	0.0	0.0	0.1	0.2	1.0	1.4	0.1	0.1	0.6	0.1	0.1	0.2	0.3	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.23	1.41							
18-Jun	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.3	0.7	C	C	C	C	0.3	0.2	0.3	0.2	0.2	0.2	0.1	0.2	0.3	0.3	0.2	0.21	0.71							
19-Jun	0.2	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	0.2	0.2	0.1	0.1	0.1	0.1	0.9	0.16	0.88							
20-Jun	0.3	Z	0.1	0.1	0.1	0.1	0.2	0.4	0.5	0.5	0.3	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.4	2.0	0.2	0.1	0.1	0.28	2.00							
21-Jun	0.0	Z	0.0	0.1	0.1	0.0	0.1	0.1	0.2	0.2	0.4	4.0	2.0	0.6	0.7	0.2	0.2	0.1	0.2	0.3	0.2	0.1	0.1	0.1	0.43	3.98							
22-Jun	0.1	Z	0.1	0.1	0.3	0.2	0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.12	0.27							
23-Jun	0.0	Z	0.1	0.1	0.1	0.0	0.2	0.3	0.1	0.1	0.1	0.2	0.2	0.2	0.6	0.2	0.2	0.4	0.3	0.2	0.2	0.2	0.2	0.1	0.19	0.64							
24-Jun	0.1	Z	0.1	0.1	0.1	0.2	0.1	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	0.1	0.0	0.1	0.1	0.07	0.16							
25-Jun	0.1	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	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.03	0.11							
26-Jun	0.0	Z	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.06	0.20							
27-Jun	0.2	Z	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.4	0.7	0.7	0.3	0.4	0.3	0.3	0.3	0.2	0.3	0.4	0.3	0.3	0.3	0.33	0.72							
28-Jun	0.3	Z	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.5	0.4	0.3	0.2	0.2	0.1	0.1	0.3	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.24	0.48							
29-Jun	0.1	Z	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.6	0.4	0.5	0.6	0.8	0.6	0.5	0.4	0.4	0.6	0.6	0.6	0.3	0.37	0.78							
30-Jun	0.2	Z	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.5	0.4	0.2	0.2	0.2	0.2	0.1	0.2	0.5	0.4	0.1	0.2	0.2	0.2	0.26	0.55							
		0.21	--	0.14	0.14	0.15	0.13	0.17	0.23	0.36	0.30	0.26	0.41	0.33	0.23	0.38	0.54	0.36	0.31	0.19	0.15	0.20	0.14	0.22	0.23	Diurnal Average							
		1.07	--	0.46	0.43	0.50	0.53	1.07	1.19	2.61	1.71	2.44	3.98	1.99	0.89	4.90	10.28	3.91	2.67	1.29	0.63	2.00	0.59	2.74	2.26	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**  
**June 2016**

Maximum Value: 73.88 ppb on Jun 7 17:00	Maximum Daily Average: 46.75 ppb on Jun 5	Hours in Service: 720
Minimum Value: 12.4 ppb on Jun 29 06:00	Minimum Daily Average: 25.58 ppb on Jun 25	Hours of Data: 685
Maximum Diurnal Average: 42.35 ppb at hour 17	Minimum Diurnal Average: 21.91 ppb at hour 6	Hours of Missing Data: 35
Monthly Average: 33.768 ppb	Percentiles: P <sub>1</sub> = 14.4 P <sub>10</sub> = 20.8 Q <sub>1</sub> = 26.6 Median = 33.5 Q <sub>3</sub> = 40.4 P <sub>90</sub> = 46.4 P <sub>99</sub> = 57.3	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-Jun	30.7	30.9	Z	29.0	26.8	24.4	23.5	21.3	21.5	27.9	37.4	42.8	44.5	43.9	42.6	42.0	42.2	43.1	42.3	38.6	34.0	23.7	23.6	30.5	33.36	44.51
2-Jun	24.6	27.6	Z	18.2	17.4	14.5	13.8	20.3	24.2	24.4	34.7	40.8	44.2	43.5	43.1	42.1	46.3	40.9	36.6	37.4	35.3	31.5	28.6	27.2	31.17	46.31
3-Jun	25.0	24.9	Z	23.7	25.0	27.9	29.8	32.5	38.0	41.3	44.3	46.5	48.1	47.7	49.1	50.6	44.0	39.2	37.9	36.1	32.8	32.1	30.3	29.2	36.35	50.58
4-Jun	29.3	29.6	Z	21.3	22.0	19.7	18.3	26.7	34.4	38.1	38.6	39.5	39.5	40.2	41.4	41.3	40.2	39.8	41.0	40.1	35.7	32.6	40.0	43.0	34.45	42.98
5-Jun	42.1	38.7	Z	34.8	30.7	29.1	32.9	36.3	42.5	50.2	54.6	55.0	55.5	55.4	55.2	54.9	54.8	55.2	55.6	53.6	49.8	44.5	46.5	47.2	46.75	55.62
6-Jun	48.8	51.8	Z	46.6	44.9	42.1	36.6	34.9	35.1	38.9	43.5	47.7	48.1	49.1	48.1	47.9	52.9	55.8	51.1	46.1	48.4	46.4	41.1	32.9	45.17	55.78
7-Jun	29.3	29.8	Z	27.2	25.5	20.4	26.8	30.7	41.7	48.6	50.0	48.1	52.1	56.7	63.6	58.5	73.9	64.7	53.3	43.1	44.5	34.7	32.9	38.7	43.25	73.88
8-Jun	36.3	38.1	Z	27.8	30.6	31.2	25.9	24.1	28.8	34.9	39.9	44.4	51.8	57.2	60.8	61.9	57.7	52.4	45.3	36.5	31.5	29.1	26.7	31.3	39.30	61.89
9-Jun	28.4	27.2	Z	29.1	20.9	21.3	28.6	30.6	33.1	34.2	34.2	38.7	38.6	38.8	38.4	39.9	39.2	41.0	41.3	39.4	33.4	29.7	29.9	38.7	33.67	41.28
10-Jun	30.1	27.8	Z	29.1	26.3	20.8	20.8	32.8	38.3	38.5	40.8	42.8	44.0	44.0	41.9	44.1	44.0	41.3	41.8	38.1	32.0	24.5	21.5	23.5	34.29	44.12
11-Jun	35.5	37.6	Z	31.6	32.4	31.4	28.4	26.5	26.2	29.2	35.6	38.5	38.0	36.3	36.6	32.4	35.5	34.8	27.6	24.4	22.0	22.3	20.5	21.3	30.63	38.49
12-Jun	25.9	18.1	Z	17.9	23.7	20.4	22.5	25.4	20.8	19.3	20.9	22.8	24.5	26.6	26.3	29.8	34.3	30.8	32.4	43.1	43.7	40.3	38.2	36.4	28.00	43.71
13-Jun	34.8	31.9	Z	30.1	26.6	18.6	21.7	24.6	30.3	36.1	37.7	38.4	40.1	41.9	43.7	43.3	46.3	46.7	48.0	43.0	46.5	38.3	38.4	29.5	36.37	47.97
14-Jun	27.5	26.4	Z	22.6	19.2	18.2	19.3	23.8	29.6	34.4	41.3	44.2	45.6	47.1	47.0	49.0	46.4	41.1	40.5	40.0	41.2	41.7	44.0	36.5	35.94	49.03
15-Jun	29.0	27.7	Z	30.0	27.1	24.6	19.0	17.7	20.3	25.8	33.0	36.8	36.9	36.2	36.8	37.5	37.5	35.4	33.6	37.0	36.8	35.6	35.9	36.1	31.58	37.51
16-Jun	33.8	34.9	Z	33.2	31.4	29.5	30.5	32.2	34.1	39.6	40.1	35.9	34.1	32.8	30.2	30.6	32.3	31.3	29.6	29.9	28.2	27.9	26.1	25.1	31.88	40.12
17-Jun	23.3	23.5	Z	26.7	26.2	24.8	25.0	24.2	24.3	26.5	28.5	29.2	30.8	31.5	32.4	32.9	31.9	33.0	33.5	31.9	27.1	26.2	27.6	27.7	28.20	33.53
18-Jun	26.8	24.7	Z	24.1	21.3	20.7	20.9	24.3	27.9	C	C	C	C	C	33.6	34.0	33.1	33.8	32.3	26.7	28.0	36.6	36.4	36.6	28.99	36.58
19-Jun	35.3	33.1	Z	27.0	22.5	22.9	28.8	31.0	32.8	34.4	36.6	38.3	38.8	40.3	44.5	40.8	41.6	41.6	40.3	35.7	32.6	37.3	31.6	32.1	34.77	44.47
20-Jun	28.9	25.3	Z	24.8	24.4	23.3	22.2	23.1	26.7	34.3	40.4	43.4	44.6	46.6	47.9	49.1	48.3	48.5	45.0	44.1	52.5	39.9	38.6	43.1	37.61	52.50
21-Jun	44.6	36.3	Z	19.8	14.9	16.4	18.6	28.4	37.0	32.2	38.8	45.1	51.5	45.9	41.5	38.4	38.0	37.5	33.9	29.0	26.1	23.3	24.5	25.1	32.47	51.51
22-Jun	24.6	19.3	Z	17.0	18.7	16.6	17.8	20.3	24.4	29.1	33.9	36.0	36.6	35.7	35.2	32.9	36.7	38.4	35.5	36.1	31.7	26.1	23.7	32.2	28.64	38.40
23-Jun	28.9	19.5	Z	20.0	16.9	17.1	17.2	22.0	30.5	34.6	36.9	38.6	40.1	41.2	44.1	44.8	46.5	45.2	41.2	35.9	34.2	28.1	31.7	27.3	32.29	46.49
24-Jun	24.9	23.4	Z	17.5	17.0	18.3	19.3	25.8	33.8	40.2	41.5	36.8	38.2	39.1	38.7	36.1	32.0	30.4	30.5	27.1	29.6	27.4	22.2	24.3	29.30	41.47
25-Jun	15.9	13.9	Z	13.3	14.2	14.6	14.8	16.1	17.3	20.6	25.2	28.0	28.7	29.1	30.0	26.6	31.0	27.2	39.3	40.9	37.5	33.4	36.0	34.8	25.58	40.93
26-Jun	31.1	30.0	Z	26.6	21.3	17.3	16.3	19.5	20.2	22.7	26.6	30.6	31.9	32.5	32.4	33.2	35.0	35.3	35.2	32.5	25.9	23.7	24.3	28.0	27.48	35.30
27-Jun	26.9	25.5	Z	20.8	17.5	14.8	15.1	17.8	24.7	28.5	36.0	43.6	43.2	39.2	38.6	37.9	38.1	38.8	38.1	32.8	31.3	29.3	33.6	27.8	30.43	43.59
28-Jun	27.8	24.9	Z	19.7	20.6	13.7	18.2	22.3	31.8	38.9	37.6	34.0	36.7	43.2	44.6	40.8	37.3	41.4	42.0	38.8	34.1	29.0	22.8	20.0	31.32	44.58
29-Jun	21.6	18.7	Z	14.6	14.9	12.4	13.5	15.8	26.0	35.6	39.8	45.6	44.5	49.4	52.8	55.7	53.5	53.2	55.5	48.5	45.9	46.0	44.5	44.6	37.07	55.71
30-Jun	38.7	39.7	Z	33.7	30.7	30.2	31.1	31.4	33.5	36.2	31.0	30.1	38.8	43.2	41.9	40.9	40.0	34.9	31.2	43.2	40.9	40.8	32.7	26.0	35.69	43.23

30.35	28.68	--	25.27	23.72	21.91	22.58	25.41	29.66	33.63	37.22	39.37	41.04	41.87	42.10	41.66	42.35	41.09	39.71	37.65	35.77	32.73	31.80	31.89	Diurnal Average	
48.80	51.78	--	46.64	44.87	42.09	36.64	36.33	42.51	50.22	54.60	54.97	55.48	57.15	63.62	61.89	73.88	64.74	55.62	53.58	52.50	46.43	46.48	47.22	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**  
**June 2016**

Maximum Value: 2.69 ppb on Jun 29 08:00		Maximum Daily Average: 0.43 ppb on Jun 8		Hours in Service: 720																							
Minimum Value: 0.0 ppb on Jun 1 03:00		Minimum Daily Average: 0.02 ppb on Jun 17		Hours of Data: 685																							
Maximum Diurnal Average: 0.77 ppb at hour 8		Minimum Diurnal Average: 0.01 ppb at hour 24		Hours of Missing Data: 35																							
Monthly Average: 0.181 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> = 1.7		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-Jun	0.0	Z	0.0	0.0	0.0	0.2	0.3	0.8	1.5	1.0	0.4	0.1	0.1	0.0	0.0	1.0	0.1	0.0	0.1	0.3	0.1	0.0	0.0	0.0	0.27	1.49	
2-Jun	0.0	Z	0.0	0.0	0.0	0.7	1.9	1.4	0.7	1.0	0.4	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.28	1.87	
3-Jun	0.0	Z	0.0	0.0	0.0	0.3	0.6	0.8	1.0	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	0.0	0.0	0.14	0.98	
4-Jun	0.0	Z	0.0	0.0	0.0	0.3	1.3	0.6	0.3	0.2	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.16	1.27	
5-Jun	0.0	Z	0.0	0.0	0.1	0.3	0.5	0.9	0.7	0.2	0.1	0.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.19	1.14	
6-Jun	0.0	Z	0.0	0.0	0.0	0.1	0.2	0.4	0.5	0.4	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.11	0.48	
7-Jun	0.1	Z	0.0	0.0	0.1	0.6	0.5	1.3	0.7	0.6	0.3	0.2	0.2	0.1	0.8	2.3	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.37	2.30	
8-Jun	0.0	Z	0.0	0.1	0.3	0.1	0.3	1.1	1.1	1.0	1.4	1.1	0.5	0.3	0.3	0.3	0.6	0.5	0.2	0.4	0.1	0.1	0.1	0.1	0.43	1.36	
9-Jun	0.0	Z	0.0	0.0	0.1	1.5	0.4	0.3	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.18	1.51	
10-Jun	0.0	Z	0.0	0.1	0.0	0.1	0.4	0.7	1.0	1.7	0.1	0.1	0.4	0.2	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.23	1.73	
11-Jun	0.0	Z	0.0	0.0	0.0	0.0	0.2	0.4	0.4	0.4	0.2	0.1	0.2	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.09	0.43	
12-Jun	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.06	0.26	
13-Jun	0.0	Z	0.0	0.0	0.2	0.2	1.1	0.7	0.8	0.4	0.2	0.2	0.2	0.1	0.1	0.2	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.21	1.10	
14-Jun	0.0	Z	0.0	0.0	0.0	0.4	0.9	0.9	0.7	0.4	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.21	0.92	
15-Jun	0.0	Z	0.0	0.0	0.0	0.0	0.2	0.5	0.4	0.2	0.1	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	0.08	0.46	
16-Jun	0.0	Z	0.0	0.0	0.0	0.3	0.7	0.5	0.4	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.11	0.73	
17-Jun	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.02	0.06	
18-Jun	0.0	Z	0.0	0.0	0.1	0.3	0.4	0.5	0.5	C	C	C	C	C	0.1	0.3	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.0	0.17	0.54	
19-Jun	0.0	Z	0.0	0.0	0.0	0.1	0.3	0.3	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.09	0.31	
20-Jun	0.0	Z	0.0	0.0	0.0	0.3	0.7	0.9	0.7	0.3	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	0.15	0.86	
21-Jun	0.0	Z	0.0	0.0	0.1	0.2	0.5	0.7	0.4	0.3	0.3	0.4	0.2	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.16	0.66	
22-Jun	0.0	Z	0.0	0.0	0.1	0.3	0.9	0.8	0.6	0.3	0.2	0.0	0.1	0.0	0.1	0.2	0.6	0.1	0.1	0.1	0.2	0.0	0.0	0.0	0.21	0.87	
23-Jun	0.1	Z	0.0	0.0	0.1	0.3	1.8	1.7	0.5	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.4	0.0	0.0	0.0	0.0	0.27	1.81	
24-Jun	0.0	Z	0.0	0.0	0.0	0.3	0.4	0.5	0.3	0.1	0.1	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.14	0.46	
25-Jun	0.0	Z	0.0	0.0	0.0	0.1	0.3	0.4	0.3	0.3	0.2	0.2	0.2	0.0	0.0	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.11	0.39	
26-Jun	0.0	Z	0.0	0.0	0.0	0.1	0.2	0.4	0.5	0.3	0.2	0.4	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.10	0.50	
27-Jun	0.0	Z	0.0	0.0	0.1	0.6	1.0	1.3	0.8	0.4	0.3	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.22	1.30	
28-Jun	0.0	Z	0.0	0.0	0.0	0.2	0.9	1.7	1.3	0.3	0.2	0.2	0.3	0.1	0.0	0.3	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.27	1.66	
29-Jun	0.1	Z	0.0	0.0	0.1	1.1	2.0	2.7	1.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.34	2.69	
30-Jun	0.0	Z	0.0	0.0	0.0	0.1	0.2	0.3	0.3	0.2	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.10	0.35	
		0.02	--	0.02	0.02	0.05	0.29	0.64	0.77	0.62	0.39	0.23	0.19	0.17	0.07	0.08	0.19	0.12	0.08	0.07	0.08	0.05	0.02	0.02	0.01	Diurnal Average	
		0.10	--	0.05	0.13	0.28	1.51	2.02	2.69	1.49	1.73	1.36	1.11	1.14	0.25	0.81	2.30	0.62	0.52	0.23	0.38	0.19	0.09	0.11	0.10	Diurnal Maximum	
Z - zerospan		C - Calibration																									
Alberta Ambient Air Quality Objectives (AAQO):		1-hr --- ppb												24-hr --- ppb													



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

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

Maximum Value: 12.17 ppb on Jun 7 16:00		Maximum Daily Average: 4.30 ppb on Jun 8		Hours in Service: 720																													
Minimum Value: 0.7 ppb on Jun 15 16:00		Minimum Daily Average: 1.26 ppb on Jun 17		Hours of Data: 685																													
Maximum Diurnal Average: 3.41 ppb at hour 6		Minimum Diurnal Average: 1.58 ppb at hour 14		Hours of Missing Data: 35																													
Monthly Average: 2.313 ppb		Percentiles: P <sub>1</sub> = 0.8 P <sub>10</sub> = 1.1 Q <sub>1</sub> = 1.5 Median = 2.0 Q <sub>3</sub> = 2.8 P <sub>90</sub> = 3.9 P <sub>99</sub> = 5.8		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-Jun	3.4	Z	3.1	3.5	3.9	4.2	4.1	4.5	5.3	3.9	2.5	1.8	1.7	1.7	1.7	2.5	1.9	1.8	1.8	2.4	2.2	2.0	2.0	2.3	2.79	5.25							
2-Jun	2.5	Z	2.6	2.7	2.9	6.7	8.0	5.5	3.3	3.1	2.4	1.9	1.5	1.6	1.8	2.0	2.1	2.0	1.8	2.0	2.3	2.4	3.4	4.3	3.00	8.02							
3-Jun	6.0	Z	2.8	3.7	5.7	4.9	3.4	3.2	2.7	1.5	1.4	1.3	1.4	1.3	1.3	1.3	1.3	1.2	1.3	1.5	2.0	1.8	2.4	2.4	2.43	6.04							
4-Jun	2.9	Z	2.9	2.7	2.7	2.9	4.0	2.8	2.1	1.9	1.6	1.5	1.5	1.6	1.5	1.6	1.6	1.8	1.7	1.9	2.7	2.7	2.3	2.7	2.24	4.05							
5-Jun	3.3	Z	2.1	4.3	4.2	4.9	4.3	4.5	4.1	2.3	1.6	1.7	1.4	1.6	1.6	1.5	1.5	1.6	1.7	1.7	1.9	2.2	2.3	3.2	2.60	4.88							
6-Jun	3.8	Z	3.8	3.5	3.7	3.8	3.9	3.8	3.4	2.9	3.2	2.6	2.1	1.9	1.7	1.7	1.8	2.3	2.2	2.1	2.5	2.6	2.9	2.8	2.82	3.92							
7-Jun	2.4	Z	3.3	3.9	4.7	5.5	3.5	5.1	4.5	4.2	2.6	2.4	2.3	2.5	6.0	12.2	5.4	4.0	4.7	3.8	2.6	2.7	4.4	3.6	4.19	12.17							
8-Jun	3.8	Z	3.3	2.9	3.4	2.6	5.1	5.7	6.7	4.8	5.7	6.0	4.8	4.1	4.5	4.8	7.2	5.4	3.4	4.1	3.8	2.5	2.1	1.9	4.30	7.19							
9-Jun	2.1	Z	1.9	2.2	2.3	3.8	2.1	1.8	1.9	1.7	1.5	1.3	1.1	1.1	1.0	1.0	1.0	0.9	0.8	1.0	1.1	1.7	1.2	0.9	1.54	3.82							
10-Jun	1.1	Z	0.9	1.2	1.1	1.9	2.0	2.2	1.3	2.5	1.0	1.1	2.0	1.5	0.9	1.1	1.6	1.3	1.5	2.4	4.0	2.5	3.1	2.7	1.78	4.01							
11-Jun	2.1	Z	2.5	2.4	2.0	1.9	1.9	2.4	2.1	1.8	1.5	1.3	1.3	1.5	1.8	1.6	1.4	1.5	2.1	1.4	1.4	2.1	2.0	1.9	1.83	2.52							
12-Jun	1.6	Z	2.6	2.3	1.7	1.7	2.2	1.3	1.5	1.2	1.4	1.2	1.1	1.0	1.1	1.0	1.0	0.9	1.0	1.1	1.0	0.9	1.1	2.0	1.39	2.55							
13-Jun	2.5	Z	3.2	2.8	2.6	1.7	2.8	2.1	2.3	1.6	1.4	1.5	1.4	1.2	1.3	1.5	1.3	1.7	1.9	2.1	1.5	1.5	1.7	2.0	1.89	3.19							
14-Jun	2.8	Z	3.4	3.2	3.3	3.3	3.2	2.8	2.8	2.1	1.5	1.5	1.5	1.5	1.2	1.4	1.6	1.3	1.5	1.3	1.2	1.1	1.0	1.5	2.00	3.40							
15-Jun	1.9	Z	1.9	1.4	1.5	1.9	2.1	2.5	1.8	1.2	1.0	0.7	0.7	0.8	0.7	0.7	0.7	0.8	1.4	0.7	1.0	1.3	1.3	1.5	1.28	2.48							
16-Jun	3.3	Z	3.0	3.0	3.1	4.4	3.7	2.2	1.9	1.2	1.2	1.2	1.2	1.2	1.1	1.2	1.2	1.2	1.1	1.4	1.7	1.3	2.0	1.5	1.93	4.44							
17-Jun	1.6	Z	1.1	1.1	1.1	1.0	1.0	1.1	1.2	1.0	1.2	1.1	1.2	1.2	1.1	1.1	1.0	1.1	1.0	1.2	1.8	1.9	2.0	2.0	1.26	1.98							
18-Jun	2.3	Z	2.9	2.6	4.9	3.8	1.9	1.9	2.0	C	C	C	C	C	1.3	1.5	1.4	1.6	1.6	2.3	2.4	1.8	2.0	2.2	2.24	4.91							
19-Jun	3.0	Z	2.4	2.8	2.7	2.9	2.6	2.0	1.9	1.9	1.6	1.6	1.5	1.3	1.1	1.0	1.0	1.0	1.2	1.6	1.4	1.1	1.5	2.0	1.79	2.98							
20-Jun	2.0	Z	4.7	5.1	3.4	3.6	2.9	2.7	2.5	2.0	1.6	1.4	1.2	1.2	1.1	1.3	1.5	1.3	1.2	1.4	3.4	1.7	1.6	1.6	2.19	5.13							
21-Jun	1.4	Z	2.1	1.8	4.0	2.6	2.7	3.3	2.5	2.4	2.9	4.0	3.2	2.7	2.4	1.8	1.5	1.3	1.4	1.6	1.5	1.8	2.2	2.2	2.31	4.02							
22-Jun	3.2	Z	3.4	4.8	4.5	3.0	3.1	2.5	2.1	1.9	1.6	1.3	1.4	1.4	1.3	2.0	1.6	1.3	1.2	1.9	2.3	1.5	2.1	1.7	2.22	4.78							
23-Jun	1.9	Z	2.7	3.6	5.8	3.7	4.5	4.1	2.2	1.7	1.4	1.5	1.6	1.6	2.1	2.0	2.0	2.3	2.1	2.5	2.0	2.2	1.9	2.2	2.50	5.78							
24-Jun	2.6	Z	3.6	3.1	3.0	3.0	2.2	2.1	2.0	1.5	1.4	1.7	1.4	1.4	1.4	1.4	1.6	1.6	1.7	1.9	2.6	1.7	2.7	2.3	2.09	3.56							
25-Jun	2.6	Z	2.4	2.5	2.2	2.5	2.3	2.0	1.9	1.6	1.5	1.3	1.2	1.1	1.5	1.6	1.3	1.3	1.7	1.4	1.5	1.8	1.7	1.4	1.74	2.65							
26-Jun	1.6	Z	1.5	1.9	2.2	2.3	2.2	2.3	2.0	1.5	1.3	1.2	1.0	1.0	1.1	1.0	1.0	1.0	1.1	1.2	1.3	1.8	2.0	2.2	1.56	2.35							
27-Jun	2.0	Z	3.7	3.9	3.5	4.5	3.7	3.6	3.4	3.1	2.9	3.0	2.4	1.7	1.5	1.4	1.3	1.3	1.5	1.8	2.3	2.3	3.1	4.3	2.70	4.47							
28-Jun	3.4	Z	4.6	3.5	3.3	2.8	4.1	5.2	4.5	2.7	2.4	2.4	2.5	1.8	1.4	1.8	2.9	2.2	1.6	1.7	2.5	2.6	2.3	3.0	2.84	5.19							
29-Jun	4.3	Z	5.8	4.8	5.8	7.3	6.0	5.5	3.9	2.5	1.9	1.8	1.6	1.7	1.8	2.1	1.8	1.8	1.9	2.6	2.6	2.6	2.4	2.6	3.27	7.30							
30-Jun	2.5	Z	2.5	3.4	3.6	3.2	2.8	2.7	2.5	2.3	3.1	2.7	2.0	1.7	1.6	1.4	1.6	2.6	3.2	2.8	2.9	2.7	2.9	3.9	2.63	3.85							
		2.67	--	2.90	3.01	3.30	3.41	3.28	3.12	2.74	2.21	1.94	1.87	1.70	1.58	1.66	1.95	1.80	1.71	1.74	1.89	2.11	1.96	2.19	2.37	Diurnal Average							
		6.04	--	5.84	5.13	5.78	7.30	8.02	5.70	6.75	4.75	5.73	6.05	4.80	4.06	6.02	12.17	7.19	5.35	4.73	4.15	4.01	2.71	4.36	4.33	Diurnal Maximum							
Z - zerospan		C - Calibration																															
Alberta Ambient Air Quality Objectives (AAQO):		1-hr 159 ppb				24-hr 106 ppb																											



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

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

Maximum Value: 14.38 ppb on Jun 7 16:00		Maximum Daily Average: 4.66 ppb on Jun 8		Hours in Service: 720																													
Minimum Value: 0.7 ppb on Jun 15 16:00		Minimum Daily Average: 1.24 ppb on Jun 17		Hours of Data: 685																													
Maximum Diurnal Average: 3.87 ppb at hour 7		Minimum Diurnal Average: 1.61 ppb at hour 14		Hours of Missing Data: 35																													
Monthly Average: 2.452 ppb		Percentiles: P <sub>1</sub> = 0.8 P <sub>10</sub> = 1.2 Q <sub>1</sub> = 1.5 Median = 2.1 Q <sub>3</sub> = 2.9 P <sub>90</sub> = 4.2 P <sub>99</sub> = 7.7		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-Jun	3.3	Z	3.0	3.4	3.9	4.3	4.3	5.3	6.7	4.9	2.8	1.9	1.7	1.7	1.7	3.5	2.0	1.8	1.9	2.6	2.2	2.0	2.0	2.3	3.01	6.69							
2-Jun	2.5	Z	2.5	2.6	2.8	7.3	9.8	6.9	3.9	4.1	2.7	2.1	1.6	1.5	1.8	2.1	2.1	2.0	1.7	1.9	2.2	2.3	3.3	4.2	3.21	9.82							
3-Jun	5.9	Z	2.7	3.6	5.6	5.1	3.9	3.9	3.7	1.6	1.5	1.3	1.4	1.2	1.3	1.2	1.3	1.2	1.3	1.5	1.9	1.8	2.3	2.4	2.51	5.92							
4-Jun	2.8	Z	2.9	2.6	2.7	3.2	5.3	3.3	2.3	2.0	1.6	1.5	1.5	1.6	1.5	1.6	1.7	1.9	1.8	1.9	2.7	2.7	2.3	2.7	2.35	5.26							
5-Jun	3.3	Z	2.1	4.3	4.2	5.1	4.8	5.3	4.8	2.5	1.7	1.8	2.3	1.6	1.5	1.5	1.5	1.6	1.7	1.7	1.9	2.1	2.3	3.2	2.72	5.31							
6-Jun	3.8	Z	3.8	3.4	3.6	3.8	4.1	4.1	3.8	3.2	3.6	2.6	2.1	1.9	1.6	1.7	1.8	2.3	2.2	2.1	2.5	2.6	2.9	2.8	2.88	4.14							
7-Jun	2.4	Z	3.3	3.9	4.8	6.1	3.9	6.3	5.1	4.7	2.8	2.6	2.5	2.6	6.7	14.4	5.6	4.1	4.8	3.8	2.6	2.7	4.3	3.5	4.49	14.38							
8-Jun	3.8	Z	3.3	2.9	3.6	2.6	5.4	6.7	7.8	5.6	7.0	7.1	5.2	4.2	4.7	5.0	7.7	5.8	3.5	4.4	3.9	2.6	2.1	2.0	4.66	7.77							
9-Jun	2.1	Z	1.9	2.2	2.3	5.3	2.5	2.0	2.1	1.9	1.7	1.4	1.2	1.2	1.1	1.0	1.1	0.9	0.9	1.0	1.2	1.7	1.2	0.9	1.69	5.26							
10-Jun	1.1	Z	0.9	1.3	1.1	1.9	2.3	2.8	2.2	4.2	1.1	1.2	2.3	1.7	0.9	1.1	1.6	1.3	1.5	2.5	4.0	2.5	3.2	2.7	1.98	4.17							
11-Jun	2.1	Z	2.5	2.4	1.9	1.9	2.1	2.7	2.5	2.1	1.6	1.4	1.4	1.5	1.7	1.6	1.5	1.5	2.1	1.4	1.4	2.1	2.0	1.9	1.88	2.69							
12-Jun	1.6	Z	2.5	2.2	1.7	1.7	2.2	1.3	1.6	1.3	1.7	1.3	1.1	1.1	1.1	1.0	1.0	1.0	1.1	1.1	1.0	0.9	1.1	2.0	1.41	2.46							
13-Jun	2.4	Z	3.2	2.7	2.8	1.8	3.9	2.8	3.1	1.9	1.6	1.7	1.6	1.3	1.4	1.6	1.3	1.7	2.0	2.1	1.5	1.5	1.6	2.0	2.06	3.88							
14-Jun	2.8	Z	3.4	3.2	3.3	3.6	4.0	3.6	3.4	2.4	1.6	1.6	1.6	1.7	1.3	1.5	1.7	1.4	1.6	1.3	1.3	1.1	1.1	1.5	2.18	4.04							
15-Jun	1.9	Z	1.9	1.4	1.5	1.9	2.2	2.9	2.2	1.4	1.0	0.8	0.8	0.8	0.7	0.7	0.7	0.8	1.6	0.7	1.0	1.3	1.2	1.5	1.34	2.88							
16-Jun	3.2	Z	2.9	2.9	3.0	4.6	4.4	2.6	2.2	1.3	1.3	1.3	1.1	1.3	1.2	1.2	1.2	1.2	1.1	1.4	1.6	1.3	1.9	1.4	1.98	4.63							
17-Jun	1.5	Z	1.0	1.0	1.0	0.9	0.9	1.1	1.1	1.0	1.2	1.1	1.2	1.2	1.1	1.1	1.1	1.1	1.0	1.2	1.8	1.9	1.9	1.9	1.24	1.94							
18-Jun	2.2	Z	2.9	2.5	4.9	4.1	2.2	2.4	2.5	C	C	C	C	C	1.3	1.6	1.4	1.6	1.6	2.4	2.4	1.8	2.0	2.2	2.33	4.91							
19-Jun	3.0	Z	2.4	2.8	2.7	2.9	2.8	2.3	2.1	2.1	1.7	1.6	1.6	1.4	1.2	1.1	1.0	1.1	1.3	1.7	1.4	1.1	1.5	2.0	1.85	2.96							
20-Jun	2.0	Z	4.7	5.2	3.4	3.9	3.5	3.6	3.1	2.3	1.7	1.4	1.2	1.2	1.1	1.3	1.5	1.3	1.2	1.4	3.4	1.6	1.6	1.6	2.32	5.16							
21-Jun	1.4	Z	2.1	1.8	4.1	2.7	3.1	3.9	2.8	2.7	3.2	4.4	3.4	2.7	2.4	1.8	1.6	1.4	1.4	1.6	1.5	1.8	2.2	2.1	2.44	4.42							
22-Jun	3.2	Z	3.4	4.8	4.5	3.2	3.9	3.3	2.7	2.1	1.7	1.3	1.4	1.4	1.4	2.1	2.2	1.4	1.2	2.0	2.5	1.5	2.1	1.7	2.40	4.79							
23-Jun	1.9	Z	2.7	3.6	5.8	4.0	6.2	5.8	2.7	1.9	1.5	1.5	1.6	1.6	2.1	2.2	2.1	2.3	2.2	2.8	2.0	2.1	1.9	2.1	2.73	6.23							
24-Jun	2.6	Z	3.5	3.1	3.0	3.2	2.6	2.6	2.3	1.6	1.4	2.0	1.6	1.5	1.5	1.5	1.7	1.7	1.8	2.0	2.6	1.7	2.7	2.3	2.19	3.52							
25-Jun	2.6	Z	2.4	2.4	2.2	2.5	2.5	2.4	2.2	1.8	1.6	1.5	1.3	1.1	1.5	1.6	1.5	1.4	1.8	1.4	1.5	1.7	1.6	1.4	1.82	2.61							
26-Jun	1.5	Z	1.5	1.8	2.2	2.3	2.4	2.8	2.4	1.8	1.4	1.5	1.2	1.0	1.2	1.0	1.0	1.0	1.1	1.2	1.3	1.7	2.0	2.2	1.64	2.75							
27-Jun	2.0	Z	3.8	3.9	3.6	5.0	4.7	4.8	4.1	3.4	3.2	3.3	2.5	1.7	1.4	1.3	1.2	1.2	1.4	1.7	2.3	2.3	3.1	4.3	2.87	5.01							
28-Jun	3.4	Z	4.7	3.5	3.3	3.0	5.0	6.8	5.8	3.0	2.5	2.5	2.8	1.8	1.3	2.1	3.2	2.3	1.5	1.7	2.5	2.5	2.3	3.0	3.07	6.83							
29-Jun	4.3	Z	5.8	4.8	5.9	8.4	8.0	8.2	5.3	2.7	2.0	1.8	1.5	1.6	1.7	2.0	1.7	1.7	1.8	2.5	2.5	2.6	2.4	2.6	3.56	8.38							
30-Jun	2.5	Z	2.5	3.3	3.6	3.3	2.9	3.0	2.8	2.4	3.4	2.9	2.1	1.8	1.6	1.4	1.6	2.7	3.3	2.8	2.9	2.7	2.9	3.8	2.70	3.83							
		2.64	--	2.87	2.98	3.30	3.66	3.87	3.85	3.31	2.56	2.13	2.02	1.82	1.61	1.70	2.10	1.88	1.75	1.78	1.93	2.12	1.94	2.16	2.34	Diurnal Average							
		5.92	--	5.84	5.16	5.87	8.38	9.82	8.19	7.77	5.64	7.02	7.08	5.23	4.25	6.74	14.38	7.72	5.81	4.77	4.44	4.05	2.72	4.34	4.32	Diurnal Maximum							
Z - zerospan		C - Calibration																															
Alberta Ambient Air Quality Objectives (AAQO):		1-hr --- ppb				24-hr --- ppb																											



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

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

Maximum Value: 8.85 ppm on Jun 27 22:00		Maximum Daily Average: 2.55 ppm on Jun 27		Hours in Service: 720																																													
Minimum Value: 1.9 ppm on Jun 18 16:00		Minimum Daily Average: 2.04 ppm on Jun 25		Hours of Data: 684																																													
Maximum Diurnal Average: 2.42 ppm at hour 22		Minimum Diurnal Average: 2.04 ppm at hour 16		Hours of Missing Data: 36																																													
Monthly Average: 2.152 ppm		Percentiles: P <sub>1</sub> = 2.0 P <sub>10</sub> = 2.0 Q <sub>1</sub> = 2.0 Median = 2.1 Q <sub>3</sub> = 2.2 P <sub>90</sub> = 2.3 P <sub>99</sub> = 2.8		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-Jun	2.5	2.3	2.3	Z	2.2	2.3	2.2	2.3	2.3	2.2	2.2	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.6	2.1	2.3	2.22	2.63																							
2-Jun	2.4	2.7	2.5	Z	2.6	2.3	2.3	2.2	2.2	2.2	2.2	2.1	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.2	2.20	2.67																							
3-Jun	2.2	2.2	2.2	Z	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.12	2.25																							
4-Jun	2.2	2.2	2.3	Z	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.3	2.1	2.2	2.11	2.31																							
5-Jun	2.2	2.2	2.2	Z	2.4	2.4	2.3	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.18	2.40																							
6-Jun	2.2	2.2	2.2	Z	2.7	2.2	2.2	2.2	2.3	2.3	2.3	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.1	2.15	2.70																							
7-Jun	2.1	2.1	2.2	Z	2.2	2.3	2.3	2.3	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.5	2.1	2.3	2.2	3.1	2.18	3.06																							
8-Jun	3.2	2.7	2.2	Z	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.16	3.22																							
9-Jun	2.0	2.0	2.1	Z	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	2.0	2.1	2.1	2.1	2.1	2.1	2.05	2.10																							
10-Jun	2.1	2.1	2.1	Z	2.1	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	2.4	2.9	2.2	2.16	2.89																							
11-Jun	2.1	2.1	2.1	Z	2.1	2.2	2.5	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2.2	2.2	2.14	2.50																							
12-Jun	2.1	2.2	2.2	Z	2.2	2.2	2.2	2.1	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	2.13	2.24																							
13-Jun	2.2	2.2	2.2	Z	2.1	2.1	2.5	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.13	2.48																							
14-Jun	2.2	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	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.15	2.20																							
15-Jun	2.1	2.1	2.1	Z	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.15	2.23																							
16-Jun	2.3	2.3	2.2	Z	2.2	2.1	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	2.15	2.26																							
17-Jun	2.1	2.1	2.1	Z	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.12	2.25																							
18-Jun	2.2	2.3	2.3	Z	2.3	2.3	2.2	2.2	2.2	C	C	C	C	C	C	1.9	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.1	--	2.28																							
19-Jun	2.1	2.3	2.1	Z	2.2	2.1	2.1	2.1	2.1	2.0	2.1	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.09	2.26																							
20-Jun	2.4	2.3	2.3	Z	2.3	2.3	2.3	2.2	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.0	2.11	2.35																							
21-Jun	2.0	2.0	2.6	Z	2.2	2.2	2.2	2.3	2.2	2.3	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.5	2.1	2.1	2.15	2.61																							
22-Jun	2.1	2.2	2.3	Z	2.2	2.2	2.3	2.4	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.1	2.1	2.12	2.37																							
23-Jun	2.1	2.2	2.2	Z	2.2	2.2	2.2	2.2	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.1	2.0	2.1	2.0	2.1	2.1	2.2	2.11	2.23																							
24-Jun	2.2	2.2	2.2	Z	2.2	2.2	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	2.0	2.1	2.1	2.1	2.08	2.23																							
25-Jun	2.1	2.1	2.1	Z	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.04	2.15																							
26-Jun	2.1	2.1	2.0	Z	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	2.0	2.0	2.1	3.2	2.8	2.1	2.13	3.20																							
27-Jun	2.1	2.1	2.2	Z	2.2	2.4	2.4	2.4	2.4	2.3	2.2	2.1	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.1	2.1	8.8	2.5	4.4	2.55	8.85																							
28-Jun	3.5	2.5	2.9	Z	2.3	2.5	2.4	2.5	2.3	2.1	2.3	2.2	2.1	2.1	2.0	2.0	2.1	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.29	3.48																							
29-Jun	2.3	2.3	2.3	Z	2.4	2.4	2.8	2.7	2.4	2.4	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.20	2.77																							
30-Jun	2.1	2.1	2.1	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	2.2	2.1	2.07	2.25																							
																								2.25	2.23	2.23	--	2.23	2.22	2.24	2.21	2.18	2.14	2.11	2.08	2.06	2.05	2.05	2.04	2.04	2.05	2.05	2.09	2.09	2.42	2.19	2.25	Diurnal Average	
																								3.48	2.72	2.88	--	2.70	2.52	2.77	2.69	2.42	2.37	2.30	2.17	2.15	2.14	2.23	2.14	2.17	2.14	2.15	2.52	2.22	8.85	2.89	4.41	Diurnal Maximum	
Z - zerospan																								C - Calibration																									
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb																																																	

**VIOLET GROVE  
STATION #902**

**METEOROLOGICAL DATA**

**JUNE 2016**



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

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

Maximum Value: 27.12 C on Jun 6 17:00      Maximum Daily Average: 19.70 C on Jun 6 Minimum Value: 4.3 C on Jun 16 05:00      Minimum Daily Average: 8.99 C on Jun 14 Maximum Diurnal Average: 18.11 C at hour 16      Minimum Diurnal Average: 9.44 C at hour 6 Monthly Average: 14.138 C      Percentiles: P <sub>1</sub> = 5.3 P <sub>10</sub> = 8.1 Q <sub>1</sub> = 10.9 Median = 14.1 Q <sub>3</sub> = 17.3 P <sub>90</sub> = 20.3 P <sub>99</sub> = 23.7																								Hours in Service:	720																								
																										Hours of Data:	720																						
																										Hours of Missing Data:	0																						
																										Hours of Calibration:	0																						
																										Percent Operational Time:	100.0																						
Day	Hourly Period Ending At																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Jun	10.2	10.1	9.2	8.8	8.1	7.9	8.3	9.1	10.8	13.2	15.3	16.6	17.4	15.2	15.9	16.4	16.3	13.5	15.2	14.2	12.9	11.0	11.2	11.4	12.42	17.36																							
2-Jun	10.5	10.1	9.3	7.5	7.4	7.4	8.1	10.2	11.9	13.5	15.6	17.3	18.6	18.7	15.3	17.9	13.8	10.6	10.9	11.4	11.2	10.5	9.4	9.2	11.93	18.68																							
3-Jun	8.6	8.1	7.3	6.7	6.6	7.2	8.9	10.6	12.8	14.1	15.0	16.2	17.3	18.5	19.8	20.8	21.5	21.3	20.9	20.4	19.4	17.8	16.5	16.0	14.69	21.51																							
4-Jun	15.3	14.2	11.3	12.3	12.2	11.5	12.7	15.1	17.0	17.6	18.2	18.9	20.1	20.9	21.6	22.3	22.1	22.0	21.8	21.3	19.2	17.1	15.9	14.3	17.28	22.26																							
5-Jun	13.0	11.6	11.5	10.7	10.1	10.2	11.2	13.1	15.5	17.1	18.0	18.8	19.6	20.2	21.0	21.4	21.6	21.3	21.3	20.4	19.0	16.6	15.9	15.0	16.42	21.56																							
6-Jun	14.3	14.7	14.3	13.7	14.0	13.6	13.0	13.8	15.3	17.6	20.1	22.1	24.1	25.6	26.9	27.1	27.1	27.0	26.3	24.5	22.6	20.7	17.6	17.0	19.70	27.12																							
7-Jun	15.9	14.9	14.1	13.2	13.8	12.5	14.2	16.5	18.6	20.0	20.2	20.5	21.0	21.6	22.3	22.6	22.4	21.9	20.3	17.3	16.7	15.4	15.1	15.4	17.76	22.56																							
8-Jun	15.0	14.9	13.0	12.8	12.9	12.5	12.5	13.3	14.1	14.9	16.2	17.0	17.7	18.6	19.3	19.3	19.3	18.4	17.8	17.3	16.3	15.3	14.0	13.1	15.66	19.32																							
9-Jun	12.6	12.2	11.7	11.4	10.6	10.8	11.6	12.3	13.4	14.1	13.5	14.9	15.3	16.1	16.5	16.4	16.6	16.1	15.7	14.3	12.1	10.8	9.9	8.8	13.24	16.57																							
10-Jun	8.1	8.2	7.7	6.6	6.4	6.3	7.3	9.5	11.0	12.4	13.0	13.6	14.4	14.9	14.9	14.5	11.7	11.3	11.4	11.6	11.3	10.5	10.2	9.9	10.70	14.94																							
11-Jun	10.4	10.4	10.6	10.5	10.5	10.6	10.9	11.3	12.0	13.2	14.3	15.4	14.7	11.8	8.8	8.0	7.9	8.4	8.8	8.9	8.7	8.6	8.4	8.1	10.48	15.38																							
12-Jun	7.7	6.6	5.9	6.7	7.9	6.7	6.8	7.9	8.4	10.0	11.7	12.4	15.4	16.4	17.4	18.5	19.1	18.3	18.2	17.4	15.7	13.9	12.7	11.6	12.22	19.06																							
13-Jun	10.7	9.1	8.6	8.7	7.3	7.7	8.5	10.4	12.4	13.7	14.9	15.7	16.5	17.1	17.5	17.4	17.4	17.6	15.6	13.2	12.0	11.0	7.7	7.7	12.85	17.63																							
14-Jun	6.8	6.3	5.9	5.3	4.7	5.0	6.3	8.1	10.5	12.2	13.4	14.2	14.9	15.5	15.9	15.5	11.8	8.1	7.4	6.3	5.7	5.5	5.4	5.3	8.99	15.87																							
15-Jun	5.1	5.3	5.3	5.3	5.4	5.4	5.2	5.8	7.4	10.2	12.4	13.7	14.4	14.4	14.9	15.5	15.5	14.9	14.5	14.4	12.8	11.0	9.4	8.4	10.29	15.49																							
16-Jun	7.6	6.9	6.1	5.4	4.3	4.6	6.4	9.3	11.7	13.0	13.6	13.5	12.6	12.0	11.5	11.4	11.0	10.8	10.8	9.9	9.2	8.5	7.9	7.4	9.40	13.63																							
17-Jun	6.7	6.6	6.0	5.8	5.7	6.2	6.9	8.3	9.0	10.1	10.5	11.8	10.9	12.8	14.8	15.3	15.4	16.1	16.6	16.0	14.8	13.1	12.3	11.4	10.96	16.64																							
18-Jun	10.5	9.5	8.2	7.6	7.3	7.7	8.8	11.2	12.9	14.1	14.9	15.8	16.2	16.6	17.4	17.7	17.4	17.2	16.8	15.4	14.7	14.0	13.0	12.5	13.23	17.69																							
19-Jun	12.1	11.4	10.8	10.1	9.2	9.5	11.2	12.2	13.1	14.9	16.5	17.5	18.2	18.7	19.3	19.7	20.0	19.7	19.1	16.5	15.8	15.3	14.6	14.0	14.97	20.04																							
20-Jun	12.5	11.4	11.7	10.9	9.2	9.7	10.5	12.3	14.6	16.6	17.7	18.9	19.4	20.1	20.6	20.9	21.1	21.2	20.6	19.7	18.3	16.5	15.5	14.4	16.02	21.16																							
21-Jun	13.2	11.8	11.3	10.2	10.1	9.7	10.7	12.9	14.8	14.9	15.9	17.2	18.4	15.2	12.5	12.2	16.4	17.0	16.9	15.6	14.7	14.2	13.5	12.6	13.84	18.35																							
22-Jun	11.9	10.9	10.6	10.3	10.4	10.6	12.2	13.8	14.9	16.6	18.1	18.9	19.6	18.7	18.3	18.8	19.4	20.0	18.9	16.2	14.8	13.7	13.6	13.4	15.19	20.00																							
23-Jun	12.2	10.8	10.4	10.1	9.5	9.7	10.1	12.0	14.3	15.8	16.6	17.1	17.5	17.4	13.7	15.5	15.5	15.6	15.3	14.8	13.6	12.7	11.6	11.6	13.72	17.52																							
24-Jun	10.2	9.5	9.2	8.6	8.4	8.5	9.3	11.3	13.3	13.7	14.0	14.0	14.5	14.7	14.4	14.8	13.6	13.4	13.3	12.6	12.6	12.3	11.8	11.2	12.05	14.80																							
25-Jun	11.3	11.4	11.1	11.0	11.0	11.0	11.2	11.7	12.6	14.3	16.3	17.6	18.5	19.3	14.8	16.0	16.8	17.7	15.1	15.6	15.0	14.3	12.5	11.6	14.07	19.33																							
26-Jun	11.3	10.9	10.7	10.5	10.2	10.3	11.1	12.4	13.6	14.6	16.3	18.0	18.6	19.4	19.7	20.4	21.1	21.4	21.1	20.2	18.5	16.3	15.8	16.2	15.78	21.36																							
27-Jun	15.7	14.8	13.8	13.0	11.9	11.4	12.0	13.5	15.5	16.8	18.7	20.0	21.2	22.3	22.1	22.8	23.5	23.3	22.0	20.9	19.8	18.3	18.2	16.9	17.86	23.52																							
28-Jun	16.2	15.7	14.5	12.6	12.3	12.2	13.7	16.3	19.0	20.4	20.0	19.4	20.0	21.7	22.4	21.3	20.5	21.3	21.3	20.1	18.8	17.2	16.1	14.3	17.81	22.36																							
29-Jun	14.3	14.0	13.0	11.9	11.9	11.7	12.5	14.4	17.1	19.5	20.9	21.9	22.8	23.2	23.7	24.0	24.0	23.8	22.9	21.2	20.0	19.1	18.4	16.4	18.45	24.03																							
30-Jun	15.4	15.4	15.4	14.9	14.2	14.9	16.4	17.3	18.9	19.9	18.6	17.2	17.2	18.6	20.0	20.7	20.8	17.4	17.3	13.9	11.1	11.2	10.8	10.8	16.18	20.76																							
																								11.52	10.92	10.29	9.77	9.46	9.44	10.29	11.86	13.55	14.97	16.01	16.88	17.57	17.88	17.90	18.11	18.02	17.53	17.22	16.15	14.99	13.81	12.98	12.20	Diurnal Average	
																								16.24	15.70	15.40	14.89	14.15	14.89	16.42	17.26	18.96	20.39	20.92	22.12	24.11	25.58	26.86	27.09	27.12	26.95	26.32	24.49	22.64	20.71	18.42	16.95	Diurnal Maximum	



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

**Wind Speed (WS) - kph**  
**June 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	10.5	13.3	12.0	7.2	5.4	6.9	6.4	4.6	3.6	1.7	6.5	2.9	1.2	4.4	9.3	12.2	5.7	4.1	9.2	9.8	3.3	2.3	4.2	2.8	3.33	13.26
Dir	S	S	S	S	S	SSW	SSW	WSW	W	NW	N	NNE	SE	SW	SSE	E	SE	SSE	E	ENE	SE	SSW	S	S	SSE	S
2 Spd	3.6	5.2	6.8	3.8	4.1	4.1	1.8	5.2	2.7	1.8	0.5	1.5	2.6	1.7	2.6	5.4	21.1	13.1	9.3	15.1	7.3	7.2	6.4	9.5	3.06	21.07
Dir	S	SSE	SSE	S	S	SSW	S	SW	SSW	WNW	E	NNE	E	SW	SSE	NNW	NW	NNW	NW	WNW	WNW	W	WSW	W	W	NW
3 Spd	10.0	11.1	8.8	8.7	7.7	8.2	8.1	8.1	6.3	6.3	2.1	3.3	1.5	3.1	1.7	9.0	13.5	22.5	16.5	10.1	9.1	11.2	9.8	7.9	7.71	22.46
Dir	W	W	W	W	W	W	W	W	NW	WNW	WSW	SE	NNE	S	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	W	WSW	WNW	WNW
4 Spd	8.1	8.4	5.0	6.1	5.7	3.7	2.3	1.3	6.7	5.5	5.3	1.4	1.2	3.3	2.7	4.8	7.2	12.4	9.8	9.2	6.5	3.1	3.5	0.9	1.70	12.36
Dir	WSW	WSW	WNW	W	W	WSW	WNW	WNW	E	E	ESE	SE	S	NE	ENE	NE	ENE	NE	NE	ENE	NE	NE	NNE	NNE	NE	NE
5 Spd	1.9	3.6	7.0	8.4	8.4	7.9	10.5	8.7	6.0	1.3	2.3	3.9	0.7	4.7	4.2	6.4	8.1	10.8	9.4	8.8	7.2	7.5	7.6	9.7	1.82	10.78
Dir	WNW	NW	WSW	W	W	W	W	WNW	WNW	N	SE	NE	S	E	SE	SE	ESE	ESE	ESE	ESE	ESE	SE	SE	SE	SSE	ESE
6 Spd	10.9	13.4	12.9	11.6	13.7	5.5	4.5	5.4	6.4	7.0	8.3	10.9	11.8	13.0	12.7	11.9	14.3	11.9	9.0	5.6	8.7	6.1	5.5	7.0	7.28	14.29
Dir	SE	SSE	SSE	SSE	S	S	S	S	S	S	SE	SE	SE	SE	SE	SE	SE	SE	ESE	ESE	NE	ENE	NNW	WNW	SE	SE
7 Spd	6.3	3.3	2.9	1.2	2.4	4.9	4.9	7.2	6.8	4.9	6.0	7.4	6.8	6.9	10.1	10.9	10.5	11.2	9.7	2.6	4.7	0.4	1.1	7.2	2.77	11.16
Dir	WNW	N	NW	WNW	SSW	WNW	WNW	NW	NNW	NNE	NE	NE	ENE	E	E	E	ENE	E	E	WNW	N	ESE	NE	SSE	NE	E
8 Spd	7.3	4.4	9.5	4.7	6.0	7.4	6.6	9.2	11.2	10.5	11.3	8.8	9.3	7.9	8.0	8.1	7.1	10.5	9.5	7.5	9.0	8.7	9.3	4.6	5.36	11.27
Dir	SSE	SSW	NNW	NNE	ENE	ESE	ESE	NE	ENE	ENE	E	E	ENE	ENE	E	ENE	N	NE	NE	NE	WNW	NNW	N	N	NE	E
9 Spd	6.5	12.0	15.3	11.0	10.9	14.8	18.9	17.1	19.7	21.1	22.5	21.7	22.1	23.5	20.8	22.6	17.2	20.3	17.8	16.5	7.5	9.8	9.2	7.3	15.19	23.55
Dir	NW	WNW	WNW	W	W	WNW	NW	WNW	WNW	NW	NW	NNW	NW	NW	NNW	NNW	NNW	NNW	NNW	NNW	N	NNW	NNW	NNW	NW	NW
10 Spd	7.4	11.5	4.7	3.9	8.2	8.8	8.2	5.0	1.5	5.8	7.7	9.0	12.8	14.1	15.2	18.3	14.9	7.5	4.0	2.4	0.8	1.8	3.6	6.9	2.89	18.27
Dir	NW	NNW	N	NW	W	W	W	WNW	NW	E	ESE	ESE	ESE	ESE	ESE	SE	SSE	SE	ESE	ESE	ESE	SSW	SE	ESE	ESE	SE
11 Spd	17.3	17.3	11.8	12.1	12.7	10.7	7.4	8.2	8.0	7.0	7.4	10.7	11.0	18.6	10.4	3.4	2.5	3.8	5.9	4.5	6.2	7.9	8.3	8.2	3.94	18.55
Dir	SE	SE	SE	SE	SSE	SSE	S	SSW	WSW	W	NW	NNW	NW	W	W	NNE	N	WNW	SW	SW	SW	SW	SSW	SSW	SSW	W
12 Spd	7.4	9.7	9.9	7.9	10.1	8.7	7.3	8.4	9.5	9.2	7.6	6.9	7.6	2.5	7.9	10.0	19.3	13.2	12.5	20.6	14.5	9.7	10.6	8.4	7.83	20.61
Dir	SSW	SSW	SW	WSW	W	W	SW	SW	SW	WSW	WNW	SW	SW	SW	S	W	WNW	NW	NW	WNW	WNW	WNW	W	WSW	W	WNW
13 Spd	9.2	5.3	5.7	7.8	2.4	2.3	4.2	4.7	4.3	8.1	11.4	12.0	11.1	10.8	13.4	13.7	15.0	14.5	17.5	5.0	7.5	4.1	3.9	11.4	5.18	17.48
Dir	W	W	W	WSW	W	SW	S	S	ESE	ESE	SE	SE	SE	SE	SE	SE	ESE	SE	SE	SSW	SSW	SSW	WSW	W	SSE	SE
14 Spd	9.9	11.9	11.3	12.0	9.6	10.9	11.4	10.3	7.6	5.0	1.7	0.4	5.4	11.2	15.9	14.7	18.8	23.2	22.4	21.9	17.8	14.1	23.8	10.0	8.21	23.78
Dir	W	W	WNW	W	W	W	W	W	WNW	W	WSW	ESE	ESE	SE	SE	SE	WNW	WNW	WNW	WNW	NW	NW	NNW	W	WNW	NNW
15 Spd	10.7	10.9	12.6	10.2	5.9	5.6	8.2	9.2	9.0	10.1	12.1	14.1	10.2	9.1	10.5	11.6	12.2	13.4	12.6	18.1	11.5	8.8	8.2	7.2	9.77	18.11
Dir	W	W	WSW	WSW	SW	SW	SSW	SSW	SW	SW	SW	WSW	SW	SW	SW	SW	WSW	W	W	W	W	WSW	SW	SW	WSW	W
16 Spd	8.9	8.1	8.6	11.0	12.8	12.5	10.4	9.3	7.9	9.9	7.6	15.1	12.8	12.7	13.2	17.5	23.7	16.9	20.1	19.6	12.7	14.9	18.8	16.5	10.99	23.67
Dir	WSW	WSW	SW	SSW	SSW	SSW	SW	WSW	W	WNW	NW	NW	NW	NNW	NW	NW	WNW	WNW	NW	WNW	WNW	NW	WNW	WNW	WNW	WNW
17 Spd	12.9	17.3	23.1	26.6	26.8	23.9	22.6	20.2	24.5	28.1	25.1	20.5	16.0	13.0	16.1	8.7	5.5	6.5	6.0	5.6	5.7	7.4	9.4	11.1	14.09	28.08
Dir	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	WNW	NW	NW	WNW	SW	WSW	W	SSW	S	S	SW	WSW	WNW	WNW
18 Spd	12.1	10.1	10.2	11.7	9.0	5.4	2.5	5.8	6.1	3.6	3.5	0.2	5.9	4.0	2.2	4.6	9.4	11.5	8.5	6.2	6.6	6.7	7.9	9.8	3.58	12.14
Dir	W	W	W	W	W	WSW	SSW	WSW	W	NW	ESE	E	ESE	SSE	S	ESE	SE	SE	SE	SSE	S	SSW	SSW	SW	SW	W
19 Spd	9.1	7.6	9.9	5.3	14.3	15.9	20.5	19.5	15.7	18.2	20.9	20.3	15.2	15.6	16.5	12.9	16.2	13.1	8.8	4.4	8.6	6.3	4.5	4.4	11.40	20.85
Dir	WSW	W	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	NNW	NNW	NNW	NNW	NNW	NW	NNW	N	W	WNW	WSW	WSW	NW	WNW
20 Spd	6.7	7.0	7.0	4.5	6.1	9.2	10.7	11.0	9.2	0.4	1.7	2.8	2.3	5.0	5.5	6.7	8.8	9.7	8.5	7.3	4.2	6.7	7.3	19.4	1.99	19.36
Dir	W	WSW	WSW	WSW	W	W	W	W	WNW	SW	SSE	E	SE	E	ENE	E	E	E	ESE	ESE	SE	W	W	WSW	WSW	WSW
21 Spd	1.6	5.3	2.6	1.1	3.3	1.4	2.2	1.4	2.8	8.7	8.1	3.0	4.3	14.5	17.5	13.0	8.8	8.5	9.2	9.8	3.8	3.0	6.3	8.5	4.82	17.51
Dir	E	WNW	SSE	SW	WNW	WSW	WSW	S	SW	W	WNW	NNW	ENE	WNW	WNW	WNW	WNW	W	WNW	WNW	S	SW	WSW	SW	W	WNW
22 Spd	5.0	7.3	9.5	7.1	7.3	6.5	6.0	8.5	11.1	7.2	7.4	8.6	2.8	4.0	3.6	3.0	5.7	3.6	3.9	5.6	2.8	0.4	7.1	5.2	3.82	11.07
Dir	WSW	W	W	WSW	WSW	W	WSW	W	W	WNW	WNW	W	NNW	WNW	E	E	N	NNE	ENE	NNE	N	WNW	WSW	SW	W	W



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

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

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
23 Spd	3.3	2.7	6.4	10.0	9.8	6.9	6.6	3.5	1.0	6.5	6.8	7.4	7.9	9.8	7.4	14.5	5.3	3.1	5.3	2.5	3.0	3.8	7.2	8.2	1.53	14.49
Dir	NNE	SW	W	W	W	W	WNW	NW	S	SSE	ESE	SE	ESE	ESE	ESE	SSE	ESE	SSW	NW	NNW	NW	WSW	W	W	SW	SSE
24 Spd	6.6	7.9	9.2	9.6	12.3	9.2	10.6	12.8	12.0	14.8	18.2	18.1	16.5	18.7	20.6	19.1	17.6	17.2	12.2	7.0	10.4	9.6	11.5	9.5	12.66	20.57
Dir	NW	WNW	W	W	W	W	W	WNW	NW	NW	NW	WNW	WNW	WNW	WNW	NW	NW	WNW	NW	NW	WNW	WNW	WNW	WNW	WNW	WNW
25 Spd	9.3	13.0	9.9	12.3	11.3	10.2	12.5	12.6	15.0	14.9	13.4	15.6	11.4	11.2	17.6	16.0	9.8	6.1	6.9	6.7	10.1	12.3	18.0	10.8	11.32	18.01
Dir	WNW	NW	NW	NW	NW	NW	WNW	WNW	WNW	NW	NW	NW	NNW	NNW	NW	WNW	NNW	NNE	N	NW	W	WNW	WNW	NW	NW	WNW
26 Spd	11.9	15.1	11.3	8.0	8.4	7.2	9.9	15.6	14.0	12.6	10.6	8.0	8.5	4.4	4.2	2.7	4.2	3.7	4.1	6.2	7.1	5.4	7.3	8.0	5.06	15.61
Dir	W	WNW	WNW	WNW	W	W	WNW	WNW	WNW	WNW	NNW	NNW	NNW	NW	NNW	NNW	NNW	NE	E	ESE	SE	SSE	S	SSW	WNW	WNW
27 Spd	10.2	8.6	5.6	7.4	4.2	8.0	6.2	6.1	4.7	1.1	2.6	3.8	3.6	5.2	9.7	8.9	8.3	7.7	8.5	6.2	4.9	6.1	7.0	5.2	3.04	10.20
Dir	SSW	SSW	SSW	SW	WSW	W	W	WNW	NW	NNE	E	E	E	E	SE	E	SE	SE	SE	SE	SE	S	S	S	SSE	SSW
28 Spd	5.3	4.0	2.5	2.6	1.8	6.6	9.4	9.0	11.6	9.4	4.7	6.8	7.1	7.0	8.1	5.5	5.8	8.1	8.9	6.7	4.9	2.3	3.1	3.8	4.01	11.63
Dir	S	S	S	WNW	WNW	W	W	W	W	W	S	S	S	SSE	S	W	NW	NW	WNW	WNW	WNW	SW	SW	WSW	WSW	W
29 Spd	6.1	6.9	4.4	4.0	4.8	7.7	4.5	3.3	3.5	3.0	4.1	7.3	7.6	10.4	11.0	12.6	15.3	15.6	14.4	6.8	7.8	6.5	4.8	6.0	3.45	15.64
Dir	W	WSW	W	WSW	WSW	W	W	WNW	W	SE	ESE	SE	ESE	ESE	ESE	ESE	SE	ESE	SE	ESE	ESE	ESE	SW	WNW	SE	ESE
30 Spd	7.5	11.0	9.8	10.3	10.4	10.9	12.8	12.7	12.5	12.1	13.4	8.9	7.4	13.1	10.1	7.8	7.2	6.0	4.7	10.3	0.2	3.8	10.0	10.2	2.27	13.43
Dir	E	SE	SE	SE	SE	SE	SE	SE	SSE	SSE	W	W	WNW	WNW	NNW	NNW	NNE	NNE	E	WSW	WNW	SW	W	W	S	W
Spd	4.33	5.10	5.38	5.60	5.74	6.05	6.16	6.24	5.43	4.30	3.34	2.84	1.39	1.31	0.45	0.85	2.60	2.53	2.03	3.29	2.61	3.24	4.85	5.56	Diurnal Average	
Dir	WSW	WSW	WSW	WSW	WSW	W	W	W	WNW	WNW	WNW	NW	NNW	NW	NW	N	NNW	NNW	NNW	NW	WNW	W	W	WSW	Diurnal Maximum	
Spd	17.33	17.33	23.11	26.62	26.80	23.86	22.63	20.19	24.53	28.08	25.13	21.68	22.07	23.55	20.85	22.62	23.67	23.22	22.43	21.87	17.76	14.91	23.78	19.36	Diurnal Maximum	
Dir	124.47	144.30	289.41	288.79	283.38	285.94	284.28	285.74	296.52	301.09	303.06	314.45	330.13	308.97	322.58	327.75	297.94	293.08	288.97	288.40	311.92	307.71	333.62	241.97	Diurnal Maximum	
Maximum Speed Value: 28.1 kph on Jun 17 10:00		Minimum Speed Value: 0.2 kph on Jun 18 12:00																		Hours in Service: 720						
Maximum Daily Speed Average: 15.19 kph on Jun 9		Minimum Daily Speed Average: 1.53 kph on Jun 4																		Hours of Data: 720						
Maximum Diurnal Speed Average: 6.24 kph at hour 8		Minimum Diurnal Speed Average: 0.45 kph at hour 15																		Hours of Missing Data: 0						
Monthly Average Velocity: 3.387 kph 276.24 deg		Speed Percentiles: P <sub>1</sub> = 0.7 P <sub>10</sub> = 3.0 Q <sub>1</sub> = 5.4 Median = 8.1 Q <sub>3</sub> = 11.3 P <sub>90</sub> = 15.9 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	18	13	7	0	0	0	38																			
NorthEast	11	15	2	0	0	0	28																			
East	19	41	4	0	0	0	64																			
SouthEast	17	44	36	0	0	0	97																			
South	25	31	6	0	0	0	62																			
SouthWest	29	55	8	1	0	0	93																			
West	25	120	30	8	0	0	183																			
NorthWest	19	46	62	27	1	0	155																			
Total	163	365	155	36	1	0	720																			





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

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

<b>Maximum Value: 1.60 C on Jun 25 15:00</b> <b>Maximum Daily Average: 0.93 C on Jun 9</b>																			<b>Hours in Service: 720</b> <b>Hours of Data: 720</b> <b>Hours of Missing Data: 0</b> <b>Hours of Calibration: 0</b> <b>Percent Operational Time: 100.0</b>							
<b>Minimum Value: -3.3 C on Jun 28 23:00</b> <b>Minimum Daily Average: -0.14 C on Jun 28</b> <b>Maximum Diurnal Average: 1.25 C at hour 12</b> <b>Minimum Diurnal Average: -0.33 C at hour 23</b> <b>Monthly Average: 0.541 C</b> <b>Percentiles: P<sub>1</sub> = -2.0 P<sub>10</sub> = -0.5 Q<sub>1</sub> = 0.2 Median = 0.7 Q<sub>3</sub> = 1.1 P<sub>90</sub> = 1.3 P<sub>99</sub> = 1.5</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-Jun	0.3	0.4	0.3	0.4	0.5	0.5	0.8	0.9	0.9	0.9	1.1	1.3	1.2	1.0	1.3	1.2	0.8	1.1	1.1	0.9	-0.1	-1.3	-2.5	-0.8	0.50	1.29
2-Jun	-2.0	-1.0	-0.3	-0.4	0.1	0.3	0.4	0.8	0.9	0.9	1.2	1.3	1.2	1.0	0.5	0.9	0.8	0.8	0.8	0.7	0.7	-0.2	0.3	0.2	0.42	1.27
3-Jun	0.2	0.0	-0.3	-0.1	0.0	-0.1	0.2	0.5	0.7	1.0	1.2	1.4	1.2	1.2	1.2	1.2	1.2	1.0	0.9	0.6	-0.2	-0.2	-0.8	-1.2	0.45	1.36
4-Jun	-0.5	-0.7	-0.4	-2.5	-2.6	-2.0	0.2	0.5	1.1	1.2	1.3	1.2	1.2	1.2	1.3	1.3	1.1	1.1	1.0	0.8	0.6	-0.9	-1.2	-1.7	0.10	1.27
5-Jun	-1.7	-1.3	-1.8	-0.8	-0.4	-0.2	0.2	0.6	0.7	1.0	1.2	1.3	1.2	1.2	1.3	1.3	1.1	1.0	0.9	0.1	-0.9	-1.7	-1.7	-1.9	0.03	1.31
6-Jun	-1.2	0.2	0.3	0.3	0.4	0.4	0.7	0.8	1.0	1.3	1.3	1.4	1.2	1.3	1.2	0.8	0.9	0.7	0.4	0.1	0.6	0.2	0.2	-0.2	0.59	1.39
7-Jun	0.1	0.0	-0.4	-0.5	-1.8	-0.2	0.4	0.7	0.9	1.0	1.1	1.1	1.2	1.2	1.4	1.4	1.0	0.7	0.4	0.1	0.3	-0.5	-0.4	-0.3	0.37	1.43
8-Jun	-0.1	-0.5	0.5	0.7	0.7	0.6	0.7	0.9	0.9	1.1	1.3	1.2	1.1	1.2	1.2	1.1	1.0	1.0	0.9	0.8	0.7	0.8	0.8	0.7	0.81	1.29
9-Jun	0.8	0.8	0.8	0.8	0.7	0.7	0.6	0.8	1.0	1.0	1.0	1.2	1.1	1.2	1.2	1.3	1.3	1.1	1.1	0.9	0.8	0.7	0.7	0.7	0.93	1.31
10-Jun	0.6	0.7	0.6	0.1	-0.3	0.6	0.7	0.7	0.9	1.5	1.6	1.5	1.5	1.4	1.1	0.9	0.8	0.8	0.8	0.8	0.5	0.3	0.5	0.7	0.80	1.60
11-Jun	0.5	0.6	0.7	0.7	0.7	0.7	0.8	1.0	1.2	1.3	1.2	1.3	1.0	0.7	0.7	0.5	0.2	0.0	0.2	0.3	0.7	0.6	0.5	0.3	0.69	1.30
12-Jun	0.2	0.4	0.5	0.5	0.4	0.6	0.8	0.9	0.9	1.0	0.9	1.0	1.5	1.1	1.3	1.2	1.0	1.0	1.0	0.7	0.5	-0.1	-0.6	-0.6	0.68	1.49
13-Jun	-0.4	0.0	-1.6	-1.2	-1.5	-1.6	0.6	1.0	1.1	1.4	1.5	1.5	1.5	1.4	0.9	0.7	0.7	0.8	0.1	0.2	-0.9	-0.8	0.2	0.30	1.55	
14-Jun	0.3	0.5	0.6	0.5	0.5	0.4	0.6	0.9	1.0	1.1	1.1	1.2	1.2	1.3	1.4	0.8	1.0	0.8	0.8	0.8	0.3	0.1	-0.1	0.2	0.71	1.43
15-Jun	0.4	0.6	0.4	-0.1	0.3	0.6	0.8	0.9	1.0	1.3	1.5	1.4	1.4	1.0	1.1	1.1	1.1	0.6	0.5	0.6	-0.3	-0.8	-0.8	-0.6	0.58	1.49
16-Jun	-0.8	-0.8	-0.8	-0.2	0.1	0.1	0.5	0.8	0.9	1.1	1.2	1.1	0.8	0.9	0.8	0.9	0.9	1.0	1.0	0.9	0.6	0.7	0.6	0.6	0.54	1.18
17-Jun	0.5	0.6	0.4	-0.3	-0.3	-0.4	0.5	0.7	0.8	0.9	1.0	1.2	1.1	1.2	1.3	1.4	1.2	1.3	1.2	0.8	-0.1	-0.6	-0.6	-0.4	0.56	1.35
18-Jun	-0.3	-0.4	-0.4	0.0	-0.7	-0.8	0.6	0.7	0.9	1.0	1.4	1.4	1.3	1.2	1.3	1.2	0.9	1.0	0.5	0.0	0.0	0.2	0.2	0.3	0.48	1.40
19-Jun	0.2	0.2	0.3	0.3	0.6	0.7	0.8	0.9	1.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.1	0.9	0.8	0.6	0.0	-0.7	-1.1	-0.7	0.59	1.23
20-Jun	-0.9	-0.4	-1.0	-0.5	-0.1	0.0	0.6	1.0	1.2	1.1	1.2	1.3	1.3	1.4	1.4	1.3	1.3	1.1	0.6	0.4	-0.1	-0.2	-0.1	0.4	0.51	1.40
21-Jun	0.3	0.4	-0.1	0.0	0.3	-0.4	0.0	1.0	1.2	1.2	1.0	1.0	1.1	0.6	0.6	1.4	1.2	1.3	1.0	0.6	0.2	0.0	-0.3	0.0	0.57	1.43
22-Jun	0.1	-0.4	-0.1	-0.1	-0.4	-0.2	0.8	1.0	1.2	1.2	1.3	1.5	1.2	0.9	1.1	0.8	1.1	1.1	1.0	0.9	0.8	0.1	-0.1	0.4	0.62	1.46
23-Jun	0.3	-1.0	-0.7	-0.3	0.1	0.2	0.6	1.0	1.1	1.3	1.4	1.2	1.0	1.0	0.8	0.7	1.3	0.9	1.0	0.9	0.6	-0.9	-0.1	0.1	0.52	1.36
24-Jun	0.4	0.1	0.2	0.3	0.5	0.5	0.8	1.0	1.2	1.1	1.2	1.4	1.6	1.5	1.2	1.3	1.0	1.0	0.9	0.8	0.7	0.7	0.7	0.7	0.86	1.55
25-Jun	0.7	0.8	0.7	0.7	0.7	0.8	0.8	0.9	0.8	1.1	1.2	1.3	1.2	1.1	1.6	0.8	0.9	0.9	0.9	0.9	0.4	0.6	0.7	0.7	0.89	1.60
26-Jun	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.9	1.1	1.1	1.3	1.3	1.2	1.2	1.2	1.2	1.0	0.9	0.4	-0.7	-0.9	-0.6	-0.4	0.65	1.30
27-Jun	0.2	0.2	-0.2	-0.1	-0.5	0.1	0.7	1.0	1.1	1.0	1.2	1.3	1.3	1.3	0.8	1.2	1.2	0.6	0.2	-0.3	-0.7	-0.7	-0.6	-1.2	0.38	1.35
28-Jun	-1.6	-2.2	-2.2	-1.1	-0.9	-0.1	0.3	1.0	1.1	1.2	0.9	1.0	1.2	1.4	1.3	0.7	1.0	1.1	0.8	0.1	-0.3	-1.9	-3.3	-2.7	-0.14	1.41
29-Jun	-1.3	-0.6	-0.7	-1.4	-0.8	0.1	0.7	1.0	1.1	1.2	1.3	1.4	1.3	1.4	1.3	1.3	1.2	0.9	0.5	0.3	0.5	0.3	0.2	0.5	0.48	1.38
30-Jun	0.3	0.5	-0.2	-0.1	0.2	0.4	0.8	1.0	1.2	1.1	0.9	0.9	1.2	1.5	1.4	1.3	1.0	0.9	0.8	0.8	0.7	0.7	0.5	0.4	0.76	1.51
																								Diurnal Average		
																								Diurnal Maximum		



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

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

Maximum Value: 100.02 % on Jun 30 22:00      Maximum Daily Average: 85.45 % on Jun 11 Minimum Value: 26.5 % on Jun 15 20:00      Minimum Daily Average: 49.92 % on Jun 18 Maximum Diurnal Average: 85.01 % at hour 6      Minimum Diurnal Average: 50.95 % at hour 14 Monthly Average: 67.514 %      Percentiles: P <sub>1</sub> = 31.0 P <sub>10</sub> = 41.0 Q <sub>1</sub> = 52.0 Median = 68.6 Q <sub>3</sub> = 84.2 P <sub>90</sub> = 92.5 P <sub>99</sub> = 97.4																								Hours in Service:	720																								
																								Hours of Data:	720																								
																								Hours of Missing Data:	0																								
																								Hours of Calibration:	0																								
																								Percent Operational Time:	100.0																								
Day	Hourly Period Ending At																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Jun	64.8	64.6	67.5	68.2	71.4	73.8	71.9	72.1	67.5	58.3	51.9	45.1	43.4	55.5	57.0	56.4	54.7	71.4	60.3	69.6	77.1	92.4	96.4	87.2	66.60	96.37																							
2-Jun	92.5	88.9	89.7	95.0	93.6	86.6	82.3	74.6	68.5	66.7	52.1	45.0	40.2	44.5	72.4	57.6	62.8	84.9	83.8	79.5	78.8	85.1	88.1	88.5	75.08	95.02																							
3-Jun	88.1	87.1	87.3	86.2	82.0	77.8	71.8	64.9	54.8	49.1	43.7	41.8	39.0	38.0	35.2	31.6	31.4	31.4	32.0	34.2	40.2	43.3	48.6	50.9	53.75	88.10																							
4-Jun	49.3	52.1	65.3	71.9	71.5	72.3	67.6	56.4	48.7	47.1	46.0	42.4	42.4	39.8	38.1	35.7	39.5	40.4	39.4	42.4	53.3	65.5	63.2	66.2	52.35	72.25																							
5-Jun	72.4	74.1	74.2	72.2	73.6	73.9	67.8	60.7	52.6	40.5	34.8	34.2	34.5	34.9	34.6	35.1	36.2	38.5	37.0	43.4	54.2	66.9	68.1	70.9	53.56	74.21																							
6-Jun	70.5	62.2	63.5	67.1	65.2	67.0	71.9	70.4	68.6	62.1	58.8	55.4	50.1	47.6	41.8	37.4	39.0	41.9	43.1	51.5	49.7	52.1	71.3	78.6	57.79	78.63																							
7-Jun	76.5	82.1	88.7	91.8	95.9	93.1	83.6	73.3	64.6	59.2	55.6	55.3	53.3	53.4	51.2	50.8	54.5	55.3	61.9	81.9	77.4	87.2	87.4	82.2	71.51	95.95																							
8-Jun	81.9	82.6	89.6	88.3	84.4	86.2	87.7	84.2	77.3	73.6	70.5	69.0	69.6	68.7	68.6	69.9	71.9	70.8	76.9	81.7	87.4	91.4	96.0	94.1	80.11	96.04																							
9-Jun	96.4	97.7	94.6	94.8	97.4	95.3	90.4	87.3	82.6	78.1	76.8	67.7	64.6	59.8	56.9	53.8	53.0	52.3	51.1	56.0	73.7	80.7	84.4	90.2	76.48	97.74																							
10-Jun	94.2	93.7	91.3	94.2	96.8	96.7	93.4	80.5	70.3	63.5	60.1	56.3	52.8	50.9	52.0	54.1	73.1	79.1	77.3	77.0	81.6	90.3	92.2	94.0	77.73	96.80																							
11-Jun	88.4	89.2	90.6	91.0	90.7	90.1	88.4	87.0	82.6	73.4	62.8	56.4	58.9	73.6	86.2	94.7	94.4	91.2	93.1	93.6	94.6	93.5	93.4	93.2	85.45	94.66																							
12-Jun	90.5	94.4	93.1	86.5	78.4	87.6	91.0	87.9	87.5	82.8	77.7	73.4	61.6	55.3	57.5	48.4	36.0	41.8	39.1	33.0	36.4	44.8	49.1	52.0	66.07	94.41																							
13-Jun	54.2	58.9	67.6	65.8	73.0	81.7	68.9	59.7	52.5	49.1	49.4	47.1	43.2	40.0	39.3	42.6	45.2	48.0	43.5	53.9	63.6	73.5	71.3	88.5	57.53	88.54																							
14-Jun	94.2	95.6	95.7	96.1	96.4	95.9	92.6	86.2	76.9	68.6	55.9	48.7	46.9	47.4	47.4	47.9	67.1	82.5	85.0	89.7	93.7	94.1	91.3	93.2	78.71	96.40																							
15-Jun	95.6	94.4	92.4	91.3	90.7	91.0	92.5	87.7	80.1	67.6	50.1	36.1	34.3	34.4	32.2	28.3	28.1	30.1	31.8	26.5	31.0	36.8	41.2	42.2	56.93	95.59																							
16-Jun	45.6	46.8	49.9	50.7	54.8	54.5	50.4	47.3	44.0	35.1	34.1	40.2	45.0	50.2	53.7	53.6	54.1	58.4	58.8	60.7	65.4	68.8	70.0	72.8	52.71	72.82																							
17-Jun	76.6	79.8	89.4	90.0	90.1	86.1	82.4	76.1	73.1	67.2	64.6	60.3	67.5	61.7	48.7	45.9	46.0	41.3	39.0	44.6	55.8	63.5	58.8	52.9	65.06	90.10																							
18-Jun	51.1	53.7	59.5	57.9	60.9	64.9	60.8	53.1	45.6	42.1	39.9	39.0	38.2	37.6	34.1	34.0	41.1	43.7	47.4	59.4	60.4	55.1	58.0	60.5	49.92	64.92																							
19-Jun	61.7	65.4	68.6	74.1	80.3	82.9	76.7	73.0	69.3	63.0	58.4	53.7	48.7	42.6	31.3	30.8	28.3	31.1	34.3	49.7	60.1	60.2	69.7	68.7	57.61	82.90																							
20-Jun	73.9	78.4	75.7	75.4	80.6	78.6	74.4	69.5	64.1	53.5	46.5	37.3	36.1	33.7	31.5	32.2	33.1	33.1	39.9	47.5	52.9	58.4	62.6	68.5	55.72	80.61																							
21-Jun	77.1	86.8	91.8	96.6	97.4	97.2	95.3	82.0	72.2	76.3	71.4	62.7	57.7	69.9	82.8	82.7	66.9	60.4	65.6	76.4	80.6	84.2	85.0	83.7	79.28	97.38																							
22-Jun	84.1	90.4	89.8	88.1	85.8	86.1	79.7	72.8	67.1	60.5	51.8	49.6	44.9	50.5	59.2	55.9	46.6	42.5	53.0	62.8	72.9	85.2	86.3	79.9	68.56	90.40																							
23-Jun	83.4	94.2	93.9	92.3	93.2	93.3	90.1	77.9	64.2	61.0	57.0	59.4	60.5	61.2	63.2	75.9	67.7	71.1	72.3	74.0	77.1	89.9	87.1	89.7	77.06	94.17																							
24-Jun	91.2	93.3	94.0	95.9	95.5	94.4	91.9	85.3	77.8	72.2	69.6	70.7	67.0	64.6	67.9	67.6	73.7	76.8	78.2	84.4	80.5	83.9	90.3	94.0	81.71	95.94																							
25-Jun	95.5	94.8	95.3	94.6	93.7	91.2	89.4	86.6	83.7	75.9	68.2	62.8	59.3	55.3	72.5	75.5	67.1	66.9	68.9	65.8	71.6	74.6	83.3	88.9	78.39	95.46																							
26-Jun	91.6	92.4	93.4	95.9	97.2	96.7	91.1	77.4	73.0	68.4	61.2	52.4	47.6	46.0	44.7	41.7	37.8	36.2	38.0	50.2	66.3	74.5	74.1	67.8	67.32	97.20																							
27-Jun	68.3	71.1	75.8	78.8	84.2	84.2	77.9	73.4	68.5	66.7	60.0	55.2	52.4	46.6	48.2	42.9	39.4	42.3	50.5	63.9	66.6	71.4	66.3	73.1	63.66	84.21																							
28-Jun	75.7	81.3	86.0	89.2	90.7	91.2	84.1	75.1	63.8	58.1	61.3	64.3	57.5	49.6	41.7	48.6	57.4	50.2	50.0	58.5	64.6	79.4	89.2	91.0	69.10	91.17																							
29-Jun	86.9	86.5	88.1	94.1	92.3	91.9	88.1	80.6	71.7	60.8	56.1	51.9	47.8	45.4	42.2	44.3	45.9	46.5	50.8	61.5	72.0	77.5	78.3	78.2	68.32	94.11																							
30-Jun	87.5	87.1	88.0	89.4	90.8	88.1	81.3	78.6	73.0	69.1	72.9	79.3	75.2	69.7	61.3	56.9	57.4	79.9	84.0	87.1	99.7	100.0	98.7	97.7	81.36	100.02																							
																								78.66	80.66	83.01	84.11	84.95	85.01	81.18	74.72	68.20	62.32	57.31	53.76	51.34	50.95	51.78	51.09	51.64	54.67	56.21	62.03	67.97	74.13	76.66	77.98	Diurnal Average	
																								96.41	97.74	95.73	96.58	97.38	97.20	95.28	87.89	87.49	82.82	77.73	79.29	75.19	73.57	86.18	94.66	94.36	91.18	93.14	93.63	99.71	100.02	98.74	97.70	Diurnal Maximum	



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

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

<b>Maximum Value: 990.70 W/m2 on Jun 28 14:00</b> <b>Maximum Daily Average: 358.15 W/m2 on Jun 20</b>																							<b>Hours in Service: 720</b> <b>Hours of Data: 720</b>			
<b>Minimum Value: 0.0 W/m2 on Jun 1 01:00</b> <b>Minimum Daily Average: 143.73 W/m2 on Jun 11</b> <b>Maximum Diurnal Average: 725.07 W/m2 at hour 12</b> <b>Minimum Diurnal Average: 0.01 W/m2 at hour 2</b> <b>Monthly Average: 263.30 W/m2</b> <b>Percentiles: P<sub>1</sub> = 0.0 P<sub>10</sub> = 0.0 Q<sub>1</sub> = 0.5 Median = 145.1 Q<sub>3</sub> = 490.1 P<sub>90</sub> = 760.6 P<sub>99</sub> = 927.0</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-Jun	0.0	0.0	0.0	0.0	1.7	43.5	88.4	158.1	272.9	372.8	570.5	858.3	621.0	282.8	543.5	424.0	142.9	425.7	326.8	110.9	31.1	0.0	0.0	0.0	219.79	858.29
2-Jun	0.0	0.0	0.0	0.0	1.7	19.5	91.9	218.8	228.2	478.0	737.2	836.9	899.2	456.2	483.8	350.9	102.8	33.1	88.9	66.8	35.9	0.0	0.0	0.0	213.74	899.18
3-Jun	0.0	0.0	0.0	0.0	0.9	30.3	199.3	368.4	529.9	673.6	792.0	896.4	858.3	832.9	729.4	719.4	614.1	465.0	303.0	145.1	39.2	0.0	0.0	0.0	341.54	896.35
4-Jun	0.0	0.0	0.0	0.0	2.2	30.9	193.9	367.4	528.1	670.6	786.4	883.2	878.2	813.3	869.2	677.7	450.1	437.7	300.5	144.7	34.4	0.0	0.0	0.0	336.18	883.22
5-Jun	0.0	0.0	0.0	0.0	3.9	40.9	176.3	348.8	498.6	594.6	781.5	850.0	909.2	905.4	862.2	755.4	505.7	423.5	306.5	124.3	33.9	0.0	0.0	0.0	338.35	909.19
6-Jun	0.0	0.0	0.0	0.0	3.7	43.9	94.2	182.0	373.7	596.8	784.3	887.9	911.5	966.0	869.8	629.2	593.8	413.7	243.1	101.1	19.0	0.0	0.0	0.0	321.40	965.96
7-Jun	0.0	0.0	0.0	0.0	2.8	37.3	179.4	290.0	414.3	492.2	378.6	477.2	622.2	671.5	842.2	639.1	285.4	164.6	29.1	11.5	11.4	0.0	0.0	0.0	231.20	842.23
8-Jun	0.0	0.0	0.0	0.0	2.2	31.2	53.1	169.8	143.7	387.0	532.4	487.6	376.3	543.2	444.2	267.1	295.6	303.8	111.6	27.0	6.3	0.0	0.0	0.0	174.25	543.22
9-Jun	0.0	0.0	0.4	0.0	2.6	30.3	159.0	252.0	358.0	439.5	469.9	778.1	731.9	842.8	806.8	735.9	613.4	363.4	311.0	113.2	26.2	0.5	0.0	0.0	293.12	842.80
10-Jun	0.0	0.0	0.0	0.0	2.5	35.9	184.9	360.5	520.2	754.2	774.6	722.9	655.1	556.2	385.7	248.3	87.6	49.9	47.7	27.5	5.0	0.0	0.0	0.5	225.79	774.61
11-Jun	0.0	0.0	0.4	0.0	1.8	23.8	142.4	208.9	391.8	677.1	643.2	734.8	242.0	28.5	13.1	28.4	80.5	92.4	73.6	41.6	22.4	2.9	0.0	0.0	143.73	734.76
12-Jun	0.0	0.0	0.0	0.0	3.1	15.8	53.6	114.2	189.9	233.1	285.0	353.8	909.5	623.8	704.3	590.0	566.9	391.5	342.5	170.7	51.2	0.0	0.0	0.0	233.28	909.48
13-Jun	0.0	0.0	0.0	0.0	3.9	42.3	188.0	359.8	487.1	675.5	802.3	837.3	853.5	923.0	728.0	423.1	306.7	294.5	279.3	22.7	6.3	0.0	0.0	0.0	301.39	922.98
14-Jun	0.0	0.0	0.0	0.0	4.6	49.9	201.8	324.4	406.4	581.8	523.2	795.2	550.3	669.7	729.8	242.6	224.5	93.1	66.3	12.2	3.4	0.8	0.7	0.7	228.39	795.20
15-Jun	0.7	0.0	0.6	0.0	2.6	30.0	69.4	136.5	309.4	600.3	831.8	935.8	812.7	491.3	558.2	572.4	485.0	264.9	221.8	178.6	36.7	0.0	0.0	0.0	272.45	935.83
16-Jun	0.0	0.0	0.0	0.0	2.8	41.5	199.8	381.3	548.7	697.8	803.1	627.8	187.5	218.9	196.2	330.2	262.4	326.7	259.6	142.8	29.7	1.5	0.0	0.0	219.11	803.13
17-Jun	0.0	0.0	0.0	0.0	2.0	34.7	124.6	214.6	355.4	454.4	398.3	725.2	533.0	936.5	889.6	623.1	474.9	495.7	334.3	170.5	45.3	0.0	0.0	0.0	283.84	936.49
18-Jun	0.0	0.0	0.0	0.0	2.2	39.6	189.2	374.2	539.4	682.8	811.1	908.3	713.1	656.6	756.6	613.6	374.1	384.9	176.7	78.1	28.8	3.1	0.0	0.0	305.51	908.34
19-Jun	0.0	0.0	0.0	0.0	2.8	42.1	202.1	313.7	369.4	636.2	680.3	808.5	703.6	904.9	759.8	691.9	608.4	345.3	205.1	62.5	17.1	2.4	0.4	0.0	306.51	904.85
20-Jun	0.0	0.0	0.0	0.0	3.1	40.7	184.1	364.9	527.4	666.4	793.5	900.6	944.6	940.6	885.2	783.7	646.3	474.8	259.1	148.6	31.6	0.5	0.0	0.0	358.15	944.61
21-Jun	0.0	0.0	0.0	0.2	3.7	22.1	79.4	277.4	520.0	377.2	281.8	361.9	556.0	26.7	34.9	230.4	586.2	494.6	258.4	62.1	17.4	1.3	0.0	0.0	174.65	586.19
22-Jun	0.0	0.0	0.0	0.0	2.7	43.5	225.1	354.4	518.3	659.2	785.1	903.4	643.7	317.0	785.5	196.6	638.3	424.9	324.5	146.0	54.7	4.9	0.5	0.0	292.85	903.43
23-Jun	0.0	0.0	0.0	0.0	4.4	43.9	158.0	356.6	540.5	585.4	610.0	457.3	363.3	305.7	178.9	121.2	572.4	165.5	206.5	136.9	68.7	0.0	0.0	0.0	203.13	609.99
24-Jun	0.0	0.0	0.0	0.0	2.6	42.2	157.1	358.6	511.4	467.1	651.7	743.6	813.8	786.9	506.0	646.6	204.2	186.5	85.7	24.0	19.7	1.0	0.0	0.2	258.71	813.81
25-Jun	0.6	0.0	0.2	0.0	1.5	18.3	108.4	141.8	145.2	482.0	639.3	872.2	657.4	603.2	154.2	221.9	285.7	295.2	238.5	188.9	13.2	2.5	1.0	1.8	211.38	872.17
26-Jun	1.8	0.2	2.3	2.9	4.6	32.6	70.0	177.0	377.9	452.6	613.2	876.4	776.3	833.5	683.6	649.5	602.3	492.5	318.6	167.5	48.8	1.3	0.1	0.4	299.41	876.42
27-Jun	0.0	0.0	0.0	0.1	3.9	42.0	175.7	353.5	425.1	396.6	787.3	886.5	919.0	930.6	440.4	738.9	652.1	315.3	164.8	94.5	47.1	2.2	0.0	0.0	307.32	930.63
28-Jun	0.2	0.0	0.0	0.8	10.6	31.7	140.4	363.1	516.9	648.2	279.0	308.0	572.2	990.7	762.0	242.0	344.7	390.9	283.2	70.2	37.9	0.0	0.0	0.0	249.69	990.70
29-Jun	0.5	0.0	0.0	0.0	5.0	40.8	169.7	336.2	490.5	639.5	764.7	871.4	866.3	867.5	784.0	775.6	663.3	484.9	215.7	59.7	18.2	1.9	1.1	0.4	335.70	871.42
30-Jun	0.6	0.0	0.5	0.6	4.3	34.3	174.8	269.1	441.1	407.0	268.8	165.5	515.8	857.3	823.5	685.0	337.8	180.5	56.5	6.4	4.1	4.6	1.3	1.0	218.36	857.34
																							Diurnal Average			
																							Diurnal Maximum			



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

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

<b>Maximum Value: 372.79 W/m2 on Jun 6 14:00</b>																								<b>Hours in Service: 720</b>																									
<b>Maximum Daily Average: 133.98 W/m2 on Jun 20</b>																								<b>Hours of Data: 720</b>																									
<b>Minimum Value: 0.0 W/m2 on Jun 1 01:00</b>																								<b>Hours of Missing Data: 0</b>																									
<b>Maximum Diurnal Average: 264.37 W/m2 at hour 12</b>																								<b>Hours of Calibration: 0</b>																									
<b>Monthly Average: 98.712 W/m2</b>																								<b>Percent Operational Time: 100.0</b>																									
<b>Minimum Daily Average: 58.06 W/m2 on Jun 11</b>																																																	
<b>Minimum Diurnal Average: 0.65 W/m2 at hour 2</b>																																																	
<b>Percentiles: P<sub>1</sub> = 0.0 P<sub>10</sub> = 0.0 Q<sub>1</sub> = 1.3 Median = 58.7 Q<sub>3</sub> = 180.6 P<sub>90</sub> = 276.8 P<sub>99</sub> = 339.8</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-Jun	0.0	0.0	0.0	0.0	0.9	16.1	34.2	61.1	103.8	141.6	213.0	314.6	229.2	109.5	203.7	160.0	54.6	160.4	127.9	46.7	14.4	0.0	0.0	0.0	82.98	314.58																							
2-Jun	0.0	0.0	0.0	0.0	0.0	6.2	35.7	83.1	87.7	182.2	268.8	307.9	332.1	171.3	178.1	133.2	39.7	12.8	32.6	22.8	10.9	0.0	0.0	0.0	79.38	332.08																							
3-Jun	0.0	0.0	0.0	0.0	0.0	21.1	72.5	133.7	190.9	248.2	285.9	324.1	314.1	304.6	269.9	267.2	231.2	178.6	117.5	58.3	16.3	0.0	0.0	0.0	126.42	324.11																							
4-Jun	0.0	0.0	0.0	0.0	0.3	22.0	73.5	136.3	192.6	249.2	286.1	320.9	312.6	297.8	320.0	245.9	173.6	171.9	120.4	60.4	15.5	0.0	0.0	0.0	124.95	320.85																							
5-Jun	2.6	3.1	3.2	3.0	5.1	27.6	72.2	136.0	189.4	230.4	294.7	320.4	340.9	337.9	327.4	294.8	205.1	174.9	130.7	58.7	21.2	5.0	3.9	3.7	132.99	340.93																							
6-Jun	0.0	0.0	0.0	0.0	0.5	18.0	38.0	74.9	145.7	232.9	300.8	341.1	351.4	372.8	342.9	253.1	242.3	170.4	101.3	44.3	7.7	0.6	0.0	0.0	126.61	372.79																							
7-Jun	0.0	0.0	0.0	0.0	1.4	25.1	76.0	129.0	169.3	203.1	157.8	196.2	256.5	272.8	340.5	261.8	120.1	69.0	14.7	6.1	5.0	0.0	0.0	0.0	96.01	340.49																							
8-Jun	0.0	0.0	0.0	0.0	0.0	11.9	20.9	68.4	57.8	153.4	207.8	190.7	148.3	210.4	173.7	107.3	116.4	121.5	44.6	11.1	2.1	0.0	0.0	0.0	68.59	210.35																							
9-Jun	0.0	0.0	0.0	0.0	0.2	17.4	62.6	102.8	139.3	169.5	180.2	289.0	273.3	312.6	301.7	278.0	235.6	142.2	120.1	46.8	11.4	0.9	0.0	0.0	111.81	312.63																							
10-Jun	0.0	0.0	0.0	0.0	1.2	13.0	66.0	136.5	192.1	277.0	281.0	265.3	240.3	207.1	146.7	97.0	36.1	21.3	19.5	10.4	1.3	0.0	0.0	0.0	83.82	280.99																							
11-Jun	2.4	2.9	3.3	3.4	4.3	14.7	63.6	85.1	146.0	256.5	240.6	272.3	98.1	18.6	11.7	17.3	37.1	40.3	32.9	19.8	11.7	4.3	3.1	3.1	58.06	272.33																							
12-Jun	0.0	0.0	0.0	0.0	0.0	3.9	18.4	41.7	71.6	87.3	108.7	130.9	328.7	230.6	257.8	216.6	210.5	147.2	130.3	61.6	20.2	1.2	0.0	0.0	86.13	328.69																							
13-Jun	0.0	0.0	0.0	0.0	1.9	23.7	74.1	131.6	174.7	245.5	284.9	298.2	305.0	329.0	263.0	155.4	113.4	108.6	105.2	9.2	3.9	0.4	0.0	0.0	109.49	328.96																							
14-Jun	0.0	0.0	0.0	0.0	0.6	25.0	72.5	120.3	151.5	213.9	193.2	286.3	202.6	243.9	266.2	89.4	84.4	36.7	26.0	4.5	0.3	0.0	0.0	0.0	84.05	286.25																							
15-Jun	0.0	0.0	0.0	0.0	0.0	9.5	24.6	49.6	113.3	217.5	293.1	328.9	287.1	174.6	199.3	204.4	175.1	96.5	81.3	67.6	16.1	0.5	0.0	0.0	97.46	328.87																							
16-Jun	0.0	0.0	0.0	0.0	0.9	24.2	75.9	134.3	190.6	249.5	282.4	224.5	70.3	82.1	73.6	122.4	97.0	120.7	98.3	54.2	10.6	0.0	0.0	0.0	79.64	282.37																							
17-Jun	2.2	2.8	2.9	2.7	3.4	16.0	53.4	83.7	133.9	168.9	148.1	263.3	197.5	338.5	323.0	230.5	179.3	191.6	133.2	73.5	25.1	5.7	3.8	3.6	107.77	338.46																							
18-Jun	0.0	0.0	0.0	0.0	0.7	23.5	73.4	132.6	187.5	245.6	285.8	320.5	255.4	236.1	270.9	222.4	136.9	142.5	66.3	30.1	10.0	0.5	0.0	0.0	110.03	320.50																							
19-Jun	0.0	0.0	0.0	0.0	1.1	17.2	78.1	114.6	131.5	230.2	243.3	286.7	249.8	321.9	270.0	250.2	223.2	130.4	79.2	25.3	6.0	1.5	0.0	0.0	110.85	321.93																							
20-Jun	0.0	0.0	0.0	0.0	1.7	24.0	73.6	133.4	189.0	245.2	287.0	325.7	344.2	346.0	329.5	297.3	251.1	188.8	104.9	58.8	14.3	1.2	0.0	0.0	133.98	346.04																							
21-Jun	0.0	0.0	0.0	0.0	0.3	10.4	40.7	113.2	196.0	145.4	107.6	140.2	209.9	13.4	16.6	88.8	222.1	191.1	100.8	24.9	6.6	1.0	0.2	0.2	67.90	222.05																							
22-Jun	0.2	0.0	0.0	0.0	1.9	24.6	86.7	132.0	188.8	244.1	283.0	325.2	236.2	120.9	287.8	75.4	243.0	165.0	124.8	61.0	22.8	2.7	0.2	0.1	109.43	325.16																							
23-Jun	3.2	3.6	3.7	3.6	6.2	27.2	64.4	136.2	199.5	219.5	226.8	173.5	140.7	119.4	74.2	51.7	218.5	67.2	82.2	55.7	31.2	6.1	4.2	4.1	80.11	226.79																							
24-Jun	1.9	0.7	1.1	0.9	2.7	25.8	62.8	133.5	185.6	171.3	234.4	267.3	291.2	282.0	182.3	232.8	76.1	69.5	32.6	10.0	8.6	1.5	1.1	1.2	94.87	291.16																							
25-Jun	0.9	0.5	0.9	0.8	1.7	7.4	41.5	55.3	55.4	177.1	229.4	307.7	233.4	214.0	58.7	82.9	105.4	109.5	88.6	70.9	6.2	1.6	1.4	1.3	77.18	307.69																							
26-Jun	1.1	0.4	0.7	0.6	1.4	11.7	25.5	65.7	136.1	165.7	215.5	305.3	271.5	291.5	242.4	234.2	219.3	182.2	122.5	65.4	21.8	3.1	1.0	1.1	107.73	305.30																							
27-Jun	1.1	0.5	0.9	0.9	3.1	23.1	68.8	125.4	152.7	136.5	273.4	308.8	319.6	324.8	156.8	263.3	238.1	121.0	63.5	38.4	20.1	3.4	1.3	1.3	110.28	324.81																							
28-Jun	1.3	0.8	1.3	1.2	3.5	17.4	53.3	129.4	181.2	232.7	105.3	113.8	204.3	347.1	270.1	89.2	126.3	146.2	108.5	30.7	16.9	3.3	1.2	1.5	91.10	347.13																							
29-Jun	3.8	4.0	4.4	4.3	6.3	26.6	71.7	127.2	179.6	237.5	277.3	314.9	316.0	317.4	291.8	290.9	253.4	190.5	89.1	28.4	11.5	5.0	4.6	4.6	127.52	317.40																							
30-Jun	1.4	0.2	0.7	0.6	2.4	19.5	72.0	105.1	167.9	155.6	106.9	67.0	196.4	321.4	310.8	262.0	132.7	70.8	23.0	2.8	0.9	0.9	0.1	0.0	84.22	321.42																							
																								0.74	0.65	0.77	0.73	1.79	18.46	58.23	107.05	153.36	204.43	230.08	264.37	251.88	242.34	225.37	185.84	159.91	124.64	84.08	38.61	12.35	1.68	0.87	0.86	Diurnal Average	
																								3.82	4.05	4.44	4.25	6.27	27.64	86.75	136.45	199.51	276.95	300.79	341.05	351.44	372.79	342.90	297.26	253.36	191.56	133.15	73.55	31.17	6.06	4.56	4.58	Diurnal Maximum	



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

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

Maximum Value: 10.90 kph on Jun 2 17:00		Maximum Daily Average: 5.34 kph on Jun 9		Hours in Service: 720																						
Minimum Value: 0.6 kph on Jun 28 23:00		Minimum Daily Average: 2.01 kph on Jun 28		Hours of Data: 720																						
Maximum Diurnal Average: 4.65 kph at hour 17		Minimum Diurnal Average: 2.20 kph at hour 6		Hours of Missing Data: 0																						
Monthly Average: 3.185 kph		Percentiles: P <sub>1</sub> = 0.9 P <sub>10</sub> = 1.5 Q <sub>1</sub> = 2.0 Median = 2.8 Q <sub>3</sub> = 4.0 P <sub>90</sub> = 5.5 P <sub>99</sub> = 7.7		Hours of Calibration: 0																						
				Percent Operational Time: 100.0																						
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Jun	3.0	2.7	2.8	3.0	2.6	2.8	3.1	2.5	3.5	2.2	4.1	3.1	3.3	6.1	3.1	3.5	4.4	6.6	2.6	3.2	2.1	1.3	1.9	2.1	3.15	6.58
2-Jun	2.1	1.2	1.7	1.1	1.7	1.5	1.9	2.4	1.8	2.0	1.6	2.2	2.7	7.8	6.7	4.1	10.9	6.8	4.5	5.8	2.1	1.4	2.3	2.1	3.27	10.90
3-Jun	1.6	1.3	1.1	1.8	1.8	1.3	1.5	3.1	2.5	2.9	3.0	2.8	2.7	3.0	3.7	5.7	4.6	6.1	5.0	3.0	2.1	1.6	1.7	1.4	2.72	6.12
4-Jun	1.6	1.5	2.6	0.9	1.5	1.4	1.6	1.4	2.8	3.4	2.8	2.3	2.5	3.7	4.1	4.3	3.2	3.0	2.9	3.8	3.1	2.0	2.4	1.2	2.50	4.25
5-Jun	1.0	1.7	1.6	1.7	2.4	1.5	1.5	1.7	2.9	1.8	2.4	3.2	2.8	2.7	2.6	2.8	3.0	2.7	2.6	1.7	1.4	1.1	0.8	1.0	2.02	3.23
6-Jun	1.8	2.4	2.3	2.1	3.4	4.0	1.7	2.0	2.2	2.4	2.5	2.9	3.0	3.1	3.2	2.7	3.0	2.7	2.0	3.5	4.9	3.4	3.5	2.2	2.79	4.94
7-Jun	2.0	3.2	2.8	1.9	1.1	2.1	1.9	2.3	3.0	3.1	2.9	3.3	3.1	3.1	3.4	4.0	2.9	3.0	3.8	4.6	4.2	2.2	1.7	3.4	2.87	4.56
8-Jun	2.7	3.8	4.0	3.4	2.6	1.9	1.8	3.8	3.2	3.2	3.3	2.7	2.5	2.9	2.6	2.3	5.2	4.6	2.9	2.8	3.1	4.5	6.7	4.3	3.36	6.73
9-Jun	4.3	4.6	3.1	2.4	2.0	4.1	5.1	3.6	5.1	5.5	7.7	7.3	7.4	7.3	7.8	8.1	7.9	7.8	6.1	5.7	5.2	2.8	3.9	3.4	5.34	8.11
10-Jun	1.9	3.6	3.5	2.0	1.2	1.3	1.5	2.2	2.0	3.3	3.8	4.1	4.1	3.9	3.9	4.0	5.7	2.7	1.4	1.8	1.0	1.3	2.1	4.6	2.78	5.66
11-Jun	4.2	4.5	3.0	3.2	3.5	3.6	2.1	2.8	2.9	3.0	4.6	5.7	5.6	6.5	4.0	3.0	2.0	2.3	1.7	3.4	2.7	1.9	2.0	2.0	3.34	6.51
12-Jun	2.1	2.1	2.1	2.6	2.5	1.9	2.1	2.3	2.3	2.4	3.6	3.3	3.2	2.3	3.8	6.5	5.4	5.7	5.5	6.4	5.0	2.6	2.0	1.6	3.30	6.48
13-Jun	2.3	2.2	1.7	1.3	2.9	1.6	2.4	2.3	2.2	3.3	3.9	4.0	4.4	4.3	4.0	4.0	3.6	3.7	4.4	4.8	5.0	1.7	2.0	1.7	3.07	5.05
14-Jun	1.7	2.1	1.8	1.6	2.0	2.0	1.8	1.7	3.1	2.5	2.3	2.3	3.7	4.8	4.5	4.2	8.9	5.2	4.8	4.9	6.1	4.6	7.8	2.7	3.63	8.90
15-Jun	2.3	2.4	2.5	3.0	3.0	1.7	2.2	2.5	2.7	3.4	4.1	5.3	5.1	4.1	3.6	4.6	4.5	3.6	4.3	3.9	4.3	1.7	2.1	1.5	3.26	5.27
16-Jun	1.8	1.3	2.0	2.2	2.6	2.8	2.4	2.4	3.6	4.1	4.7	5.5	5.4	5.3	4.8	6.6	6.8	6.1	6.7	6.7	3.3	4.9	4.3	3.2	4.15	6.81
17-Jun	2.1	5.4	4.9	5.4	5.4	4.8	5.2	4.7	7.7	8.0	7.3	6.5	7.5	5.7	6.2	4.7	3.3	3.9	3.9	1.7	0.7	1.5	2.5	2.1	4.64	8.05
18-Jun	2.2	1.7	1.7	2.0	1.5	2.6	1.6	1.9	1.9	2.7	2.9	3.3	3.8	2.7	3.2	2.9	2.7	2.5	2.3	1.1	2.3	1.9	2.3	2.3	2.34	3.79
19-Jun	2.0	1.8	2.1	5.0	3.0	3.9	4.9	5.3	4.7	5.1	6.1	7.3	8.1	7.5	7.0	7.3	6.8	5.3	6.2	4.1	2.4	2.9	0.8	1.1	4.60	8.09
20-Jun	1.3	1.4	1.1	1.6	1.4	1.9	1.7	1.8	2.9	1.8	2.3	2.9	2.9	3.7	3.7	4.2	3.9	3.2	2.3	1.9	2.8	2.1	4.6	5.6	2.62	5.60
21-Jun	5.4	2.9	2.4	1.1	1.8	1.5	2.0	1.3	2.9	2.1	2.1	2.0	3.6	9.2	3.9	5.5	3.0	1.9	2.2	2.7	3.1	2.3	2.3	3.2	2.94	9.22
22-Jun	2.3	1.1	1.6	1.3	1.6	0.9	2.1	2.2	2.9	3.3	4.1	3.2	3.0	7.3	4.6	3.4	3.3	2.9	4.0	4.6	2.8	1.7	4.9	2.4	2.98	7.34
23-Jun	3.6	1.1	1.0	1.4	1.1	1.6	1.7	2.8	1.8	2.4	2.5	2.7	2.3	2.7	1.9	6.8	3.9	1.9	2.8	2.3	2.1	1.4	1.0	1.4	2.26	6.78
24-Jun	2.5	1.5	1.6	1.5	2.4	2.4	2.2	3.2	4.3	6.2	6.5	5.3	4.6	4.9	6.3	7.2	6.4	4.7	5.7	3.1	2.6	2.1	3.4	2.2	3.87	7.24
25-Jun	2.3	3.4	2.7	3.1	2.9	3.5	3.5	3.4	3.6	4.8	5.5	6.2	5.5	6.4	6.9	4.7	5.6	4.5	6.0	3.1	3.0	5.1	4.7	2.8	4.30	6.85
26-Jun	2.2	4.2	2.1	2.6	1.5	1.4	2.7	3.8	3.7	3.5	4.6	5.1	5.2	3.8	3.4	3.1	3.6	2.9	3.1	1.3	0.7	1.1	1.4	2.0	2.88	5.18
27-Jun	2.6	2.3	1.4	2.1	3.3	1.3	1.7	1.7	2.1	1.9	2.4	2.9	3.1	2.9	5.1	2.8	3.8	2.7	2.2	0.9	1.0	1.2	1.2	0.7	2.23	5.10
28-Jun	1.3	1.3	2.0	1.8	1.2	0.9	1.7	2.1	2.5	2.9	2.6	1.9	2.4	3.1	2.8	2.9	2.9	2.8	2.4	1.7	1.8	1.5	0.6	1.3	2.01	3.11
29-Jun	1.7	1.1	1.9	1.4	1.4	1.1	1.2	1.7	1.5	2.1	2.7	3.3	4.5	3.3	3.6	3.7	4.0	4.3	4.0	1.9	2.3	2.1	5.5	4.2	2.68	5.49
30-Jun	5.2	2.2	2.0	1.6	1.8	2.5	3.2	3.2	3.5	4.4	4.4	3.2	5.4	5.4	5.2	4.7	4.4	4.5	2.4	7.2	2.6	3.5	2.5	2.5	3.65	7.16
																								Diurnal Average		
																								Diurnal Maximum		
																								2.43 2.40 2.23 2.22 2.23 2.20 2.34 2.60 3.06 3.33 3.77 3.85 4.11 4.65 4.32 4.47 4.65 4.02 3.70 3.45 2.87 2.32 2.83 2.41		
																								5.35 5.44 4.86 5.44 5.40 4.84 5.23 5.25 7.69 8.05 7.70 7.30 8.09 9.22 7.79 8.11 10.90 7.80 6.70 7.16 6.11 5.10 7.83 5.60		
,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**  
**June 2016**

<b>Maximum Value: 109.03 deg on Jun 18 12:00</b> <b>Maximum Daily Average: 41.42 deg on Jun 7</b>																						<b>Hours in Service: 720</b> <b>Hours of Data: 720</b>																											
<b>Minimum Value: 5.5 deg on Jun 23 04:00</b> <b>Minimum Daily Average: 16.74 deg on Jun 24</b>																						<b>Hours of Missing Data: 0</b> <b>Hours of Calibration: 0</b>																											
<b>Maximum Diurnal Average: 45.05 deg at hour 13</b> <b>Minimum Diurnal Average: 14.94 deg at hour 6</b>																						<b>Percent Operational Time: 100.0</b>																											
<b>Monthly Average: 27.878 deg</b> <b>Percentiles: P<sub>1</sub> = 6.4 P<sub>10</sub> = 9.5 Q<sub>1</sub> = 12.5 Median = 19.7 Q<sub>3</sub> = 37.0 P<sub>90</sub> = 62.0 P<sub>99</sub> = 92.1</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-Jun	12.1	10.8	10.9	19.0	23.6	27.2	40.0	27.5	49.4	69.3	43.1	71.6	92.6	83.9	27.7	16.1	58.8	77.6	17.9	23.3	41.9	44.1	14.3	80.9	40.99	92.62																							
2-Jun	50.4	19.8	10.7	31.3	29.8	23.9	40.1	32.5	30.4	68.3	91.5	87.1	68.6	76.5	77.3	55.0	34.7	36.4	37.9	18.4	18.4	16.2	14.0	10.6	40.82	91.50																							
3-Jun	7.8	6.1	5.6	10.7	10.9	8.4	9.7	20.0	30.8	33.4	79.2	64.3	89.8	62.2	102.9	37.9	20.3	13.5	15.2	13.7	10.2	8.4	10.5	9.6	28.37	102.90																							
4-Jun	13.0	9.1	39.3	10.6	11.5	10.9	26.7	57.3	19.6	53.0	31.0	101.2	94.4	74.6	76.0	60.2	29.6	16.9	20.0	20.6	24.2	40.5	34.3	79.0	39.73	101.22																							
5-Jun	57.7	43.6	8.9	9.2	10.0	7.4	8.0	13.4	31.2	76.1	67.8	71.1	91.2	32.1	43.1	30.1	21.4	15.4	13.9	8.8	9.4	8.2	5.8	6.3	28.76	91.17																							
6-Jun	9.4	9.6	8.9	12.1	11.7	19.4	17.3	19.0	18.5	26.9	18.9	17.4	16.6	13.5	16.5	13.6	12.1	11.2	12.6	56.9	41.6	42.9	48.8	12.9	20.35	56.86																							
7-Jun	13.6	86.4	63.7	73.4	30.7	26.3	13.7	21.2	31.4	46.2	35.1	30.6	36.3	33.9	20.5	20.9	16.0	15.6	28.0	97.8	51.3	98.9	77.3	25.4	41.42	98.86																							
8-Jun	13.2	42.3	19.6	50.7	35.7	14.0	18.6	27.0	17.9	15.4	17.1	18.4	20.2	26.6	22.4	18.1	47.6	32.9	18.7	22.8	17.9	38.3	43.4	55.1	27.25	55.11																							
9-Jun	60.1	11.9	9.6	14.2	10.3	17.3	11.8	11.1	13.1	13.1	18.9	20.4	22.6	20.7	22.3	21.9	33.8	24.2	24.7	25.1	48.0	19.6	29.0	34.8	22.44	60.09																							
10-Jun	17.1	22.0	44.9	42.7	6.6	8.6	13.5	24.2	84.5	40.5	27.6	28.0	21.0	16.9	16.7	11.5	14.5	10.1	15.1	23.8	41.5	26.8	29.3	22.6	25.41	84.46																							
11-Jun	11.0	12.6	13.3	12.7	13.0	14.0	21.9	21.7	28.2	29.0	44.1	35.7	38.3	16.6	23.4	75.4	54.5	38.6	22.9	62.0	49.1	12.4	11.9	13.2	28.15	75.43																							
12-Jun	14.3	12.6	10.7	28.3	17.6	14.9	20.1	19.6	21.7	18.3	30.2	28.6	38.6	60.7	23.0	35.6	19.2	22.1	29.1	13.1	11.2	10.8	7.9	11.8	21.67	60.66																							
13-Jun	12.2	24.2	16.1	11.4	40.9	36.8	18.5	20.8	26.4	23.5	19.9	20.1	25.5	25.8	17.3	19.5	11.6	11.3	13.6	64.5	23.7	33.7	48.4	8.3	23.93	64.54																							
14-Jun	11.5	8.8	9.3	8.6	8.9	7.2	8.0	10.3	21.2	30.7	78.5	107.3	45.1	23.9	15.4	17.2	50.4	10.6	9.9	13.1	24.3	18.2	25.0	13.2	24.02	107.29																							
15-Jun	11.6	10.6	11.2	17.1	43.4	18.3	14.0	15.5	16.0	18.5	27.1	24.3	35.4	24.6	23.3	28.6	27.3	15.4	12.0	11.0	11.7	13.9	16.7	11.0	19.11	43.38																							
16-Jun	9.0	8.6	10.9	10.8	10.9	11.9	12.5	15.1	30.9	25.3	37.9	24.2	20.0	23.9	18.9	19.4	17.8	32.8	16.4	13.2	16.1	16.7	10.3	9.5	17.63	37.93																							
17-Jun	9.2	11.1	10.0	9.6	9.3	9.4	9.8	11.3	13.7	14.2	13.5	18.2	26.7	26.4	23.5	40.4	41.9	32.2	42.0	17.8	7.7	7.0	19.5	14.5	18.28	42.00																							
18-Jun	13.5	11.3	7.0	9.6	12.5	11.8	27.1	21.5	20.2	56.0	52.3	109.0	45.0	54.7	83.6	43.2	15.0	11.4	11.9	7.7	22.0	15.5	13.5	12.9	28.67	109.03																							
19-Jun	9.5	18.2	9.6	73.0	10.2	9.4	11.6	13.0	14.9	14.9	14.2	21.1	37.6	36.7	31.8	39.2	33.5	24.1	48.7	59.2	13.8	27.4	10.8	11.1	24.73	72.95																							
20-Jun	9.0	14.8	6.8	13.8	15.2	7.9	7.8	9.9	15.2	93.7	61.9	72.4	76.7	59.7	49.3	43.6	26.5	23.5	15.0	11.4	56.7	9.5	10.6	23.8	30.61	93.74																							
21-Jun	91.9	58.5	61.4	22.1	71.3	40.6	41.6	62.1	54.7	18.7	12.0	50.7	54.4	71.3	8.8	18.1	18.7	12.9	11.6	15.1	49.3	48.9	9.7	10.4	38.10	91.86																							
22-Jun	22.6	8.0	8.9	8.5	11.2	10.2	16.8	15.5	11.5	25.6	30.4	25.1	66.4	85.1	72.0	69.1	37.2	63.9	66.7	50.2	63.3	90.3	32.2	48.5	39.13	90.31																							
23-Jun	64.6	17.7	7.4	5.5	6.5	8.9	13.3	62.0	88.3	25.2	25.3	21.3	16.9	16.2	13.5	28.7	74.5	47.3	44.7	64.1	40.4	19.8	9.3	10.2	30.48	88.29																							
24-Jun	33.2	14.3	7.2	9.3	9.8	11.6	10.6	17.1	20.8	22.4	19.8	15.8	16.5	16.3	17.0	20.4	19.6	12.7	37.0	29.1	9.9	8.7	11.6	11.2	16.74	37.03																							
25-Jun	11.7	12.5	11.9	11.6	13.2	16.3	13.1	11.9	12.3	21.4	24.5	25.5	32.9	39.5	24.6	18.7	45.7	52.8	54.3	40.4	16.3	14.4	13.4	18.5	23.21	54.26																							
26-Jun	9.8	14.0	10.9	17.0	9.0	14.1	11.3	12.0	13.7	14.4	31.5	45.1	38.7	70.2	64.2	73.7	67.7	52.9	63.3	13.6	8.2	13.2	8.2	13.3	28.75	73.68																							
27-Jun	12.5	12.7	14.2	18.1	28.9	11.7	16.5	18.1	29.2	75.6	58.1	59.5	74.5	45.1	44.5	21.4	25.5	17.0	15.2	6.4	9.0	8.4	8.5	6.5	26.54	75.57																							
28-Jun	7.5	13.2	37.9	54.5	66.9	9.2	7.8	10.4	13.2	17.9	45.9	14.7	20.2	23.8	25.9	38.5	31.1	21.8	17.6	13.8	18.5	36.2	26.6	32.8	25.23	66.90																							
29-Jun	18.7	9.0	24.4	24.0	16.0	9.2	11.2	36.0	30.4	34.3	31.3	23.5	42.3	21.9	19.3	22.0	17.2	14.1	11.8	17.8	10.9	16.0	63.6	53.7	24.10	63.55																							
30-Jun	38.5	20.8	6.7	7.5	7.9	11.5	13.5	12.8	17.2	30.3	30.6	28.5	46.4	19.7	38.3	43.4	42.2	48.3	49.3	56.4	93.8	72.9	15.9	8.8	31.73	93.83																							
																								22.54	19.16	17.27	21.56	20.12	14.94	16.89	22.32	27.54	35.07	37.30	42.69	45.05	40.10	35.44	33.38	32.19	27.31	26.56	29.69	28.68	27.92	22.68	22.68	Diurnal Average	
																								91.86	86.37	63.67	73.41	71.33	40.56	41.60	62.05	88.29	93.74	91.50	109.03	94.43	85.10	102.90	75.43	74.55	77.58	66.74	97.80	93.83	98.86	77.27	80.90	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**

**JUNE 2016**

**Summary Report**

*Continuous air quality/meteorological monitoring measurements*

**West Central Airshed Society**

WCAS / Carrot Creek Station 903													June 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	686	100.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.1	0	0	0.000	
O <sub>3</sub> (ppb)	34	686	100.0	31.1	2.4	63.1	13.7	22.6	32.2	40.0	47.0		0	-	0.044	
NO (ppb)	35	685	100.0	0.3	0.0	4.6	0.0	0.0	0.1	0.2	0.8		-	-	-	
NO <sub>2</sub> (ppb)	35	685	100.0	2.8	0.8	10.2	1.4	1.7	2.4	3.5	4.6		0	0	0.004	
NO <sub>x</sub> (ppb)	35	685	100.0	3.1	0.9	12.6	1.4	1.8	2.6	3.9	5.3		-	-	-	
Wind Speed (kph)	0	720	100.0	8.2	0.1	27.4	2.2	4.0	6.6	11.1	16.0		-	-	-	
Temperature (°C)	0	720	100.0	14.6	4.4	30.3	7.9	10.5	13.9	18.6	22.4		-	-	-	
Relative Humidity (%)	0	720	100.0	64.8	20.0	96.6	32.8	47.0	68.5	83.6	91.3		-	-	-	
Std Dev Wind Direction (deg)	0	720	100.0	30.7	6.0	100.5	12.1	15.8	23.4	37.7	64.4		-	-	-	
Std Dev Wind Speed (kph)	0	720	100.0	3.1	0.7	11.1	1.4	1.9	2.7	4.0	5.3		-	-	-	





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

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

Maximum Value: 2.19 ppb on Jun 10 16:00	Maximum Daily Average: 0.30 ppb on Jun 10	Hours in Service: 720
Minimum Value: 0.0 ppb on Jun 1 05:00	Minimum Daily Average: 0.00 ppb on Jun 2	Hours of Data: 686
Maximum Diurnal Average: 0.12 ppb at hour 20	Minimum Diurnal Average: 0.00 ppb at hour 5	Hours of Missing Data: 34
Monthly Average: 0.048 ppb	Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.0 Q <sub>3</sub> = 0.0 P <sub>90</sub> = 0.1 P <sub>99</sub> = 0.8	Hours of Calibration: 34
		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-Jun	0.1	0.1	0.1	Z	0.0	0.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.06	0.52
2-Jun	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	0.0	0.0	0.0	0.0	0.00	0.00
3-Jun	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	0.0	0.0	0.0	0.0	0.00	0.00
4-Jun	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	0.0	0.0	0.0	0.0	0.00	0.00
5-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.2	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	0.0	0.0	0.03	0.26
6-Jun	0.2	0.2	0.2	Z	0.0	0.0	0.0	0.1	0.3	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.11	0.30
7-Jun	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	0.3	0.4	0.3	0.2	0.1	0.4	1.6	0.4	0.2	0.0	0.0	0.17	1.58
8-Jun	0.1	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.4	0.7	0.2	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.10	0.71
9-Jun	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	0.0	0.0	0.0	0.0	0.00	0.03
10-Jun	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	0.2	2.0	2.2	2.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.30	2.19
11-Jun	0.2	0.0	0.0	Z	0.0	0.0	0.0	0.4	0.5	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	0.06	0.54
12-Jun	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	0.0	0.0	0.0	0.0	0.00	0.00
13-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	C	C	C	C	0.0	0.3	0.0	0.1	0.3	0.1	0.0	0.0	0.0	0.0	0.04	0.26
14-Jun	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	0.0	0.0	0.0	0.0	0.00	0.00
15-Jun	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	0.0	0.0	0.0	0.0	0.00	0.02
16-Jun	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	0.0	0.0	0.0	0.0	0.00	0.00
17-Jun	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	0.0	0.0	0.0	0.0	0.00	0.00
18-Jun	0.0	0.0	0.0	Z	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	0.0	0.1	0.0	0.0	0.02	0.10
19-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.4	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	0.03	0.38
20-Jun	0.0	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	0.0	0.5	1.1	0.4	0.0	0.0	0.09	1.05
21-Jun	0.1	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.05	0.48
22-Jun	0.0	0.0	0.0	Z	0.1	0.0	0.1	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	0.0	0.0	0.0	0.03	0.20
23-Jun	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	0.0	0.0	0.0	0.0	0.01	0.04
24-Jun	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.06
25-Jun	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	0.0	0.0	0.0	0.0	0.00	0.00
26-Jun	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	0.0	0.0	0.0	0.0	0.00	0.02
27-Jun	0.0	0.0	0.0	Z	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.6	0.6	0.4	0.2	0.2	0.13	0.65
28-Jun	0.1	0.0	0.0	Z	0.0	0.0	0.1	0.1	0.2	0.2	0.2	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	0.08	0.30
29-Jun	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	0.5	1.3	0.9	0.0	0.0	0.0	0.0	0.12	1.32	
30-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.19	

0.03	0.02	0.01	--	0.00	0.01	0.01	0.04	0.07	0.06	0.05	0.04	0.02	0.04	0.11	0.12	0.09	0.06	0.08	0.12	0.07	0.04	0.01	0.01		Diurnal Average
0.24	0.24	0.19	--	0.07	0.06	0.08	0.39	0.54	0.52	0.48	0.30	0.22	0.27	2.00	2.19	1.96	0.52	1.32	1.58	1.05	0.41	0.21	0.17		Diurnal Maximum

Z - zerospan      C - Calibration  
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb    24-hr 48 ppb



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

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

Maximum Value: 63.07 ppb on Jun 5 15:00	Maximum Daily Average: 44.01 ppb on Jun 5	Hours in Service: 720
Minimum Value: 2.4 ppb on Jun 28 05:00	Minimum Daily Average: 22.80 ppb on Jun 25	Hours of Data: 686
Maximum Diurnal Average: 40.98 ppb at hour 14	Minimum Diurnal Average: 16.45 ppb at hour 6	Hours of Missing Data: 34
Monthly Average: 31.141 ppb	Percentiles: P <sub>1</sub> = 4.3 P <sub>10</sub> = 13.7 Q <sub>1</sub> = 22.6 Median = 32.2 Q <sub>3</sub> = 40.0 P <sub>90</sub> = 47.0 P <sub>99</sub> = 59.1	Hours of Calibration: 34
		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-Jun	36.2	34.1	27.3	Z	13.2	13.8	16.7	19.4	27.1	34.0	38.0	43.4	44.8	46.4	46.6	47.0	43.9	42.4	43.1	39.8	34.7	32.4	21.6	15.7	33.10	46.97
2-Jun	7.3	2.7	4.1	Z	6.5	4.8	9.6	14.3	17.8	30.9	45.0	48.5	51.1	47.6	47.4	41.5	39.3	33.0	36.4	40.1	37.3	22.0	26.3	27.0	27.85	51.10
3-Jun	28.2	25.2	27.4	Z	19.7	21.0	22.0	31.0	36.4	41.9	46.2	49.5	52.7	52.7	49.9	47.6	43.7	41.3	38.9	37.3	30.7	24.8	24.8	22.2	35.45	52.72
4-Jun	14.6	16.8	16.2	Z	15.5	15.0	18.0	21.8	36.3	39.7	40.1	40.3	41.4	43.6	42.6	43.0	44.7	48.5	56.8	61.3	59.1	52.3	35.5	21.6	35.85	61.26
5-Jun	17.8	16.2	14.9	Z	13.7	19.3	23.4	33.3	40.2	49.3	56.3	58.4	58.9	61.3	63.1	61.8	60.2	59.1	58.5	55.4	51.6	45.6	45.2	48.7	44.01	63.07
6-Jun	53.4	52.3	45.4	Z	21.6	13.6	22.4	27.5	41.5	51.1	54.2	55.0	58.3	55.6	50.6	49.6	50.2	54.1	51.1	41.1	43.1	39.1	17.7	14.3	41.86	58.31
7-Jun	14.5	13.7	10.1	Z	7.3	9.2	13.6	28.5	36.9	41.4	43.3	44.6	46.4	50.6	53.8	53.0	54.4	53.5	56.2	57.8	46.7	38.9	26.4	27.5	36.00	57.76
8-Jun	34.3	35.1	36.2	Z	30.1	24.6	25.4	32.5	32.8	36.1	40.0	43.7	47.6	49.8	50.8	49.0	46.5	48.6	47.6	40.2	34.9	41.1	43.3	40.8	39.60	50.78
9-Jun	36.5	29.9	23.6	Z	24.6	26.5	27.2	23.5	23.2	33.7	35.9	38.4	38.1	38.9	40.9	44.7	44.0	40.8	37.2	32.9	29.9	28.7	27.1	28.5	32.82	44.70
10-Jun	34.5	32.5	29.6	Z	18.1	15.6	30.1	39.7	41.2	40.3	38.8	38.2	38.5	40.6	40.2	40.5	42.6	45.0	44.1	43.6	42.5	32.0	23.3	25.7	35.55	45.01
11-Jun	27.9	33.0	32.2	Z	24.7	24.5	21.9	26.1	30.5	35.7	38.1	39.9	37.6	37.2	36.9	34.3	39.6	39.7	30.8	23.5	18.6	14.6	10.1	4.3	28.77	39.91
12-Jun	3.0	4.2	6.0	Z	12.5	16.9	18.7	23.6	21.1	20.8	21.3	22.8	25.6	26.3	28.0	32.5	34.5	39.7	42.4	42.1	39.7	32.3	30.6	28.0	24.89	42.39
13-Jun	25.5	24.8	22.0	Z	18.2	16.2	17.0	27.7	35.6	38.2	C	C	C	C	40.1	41.2	41.9	38.5	38.2	32.8	36.6	33.4	25.9	23.4	30.36	41.89
14-Jun	17.2	12.0	11.8	Z	11.6	9.5	12.2	13.9	21.2	32.0	36.6	41.1	44.6	46.9	43.9	38.3	36.0	39.2	37.7	40.0	39.0	39.4	37.5	37.1	30.39	46.94
15-Jun	36.4	37.0	38.1	Z	36.8	32.8	31.0	23.1	27.1	26.1	27.5	30.2	31.9	33.1	33.4	35.3	36.6	33.2	34.4	34.9	33.9	33.0	31.5		32.63	38.15
16-Jun	33.9	32.3	29.9	Z	25.7	25.5	24.9	27.2	31.2	31.6	32.8	33.2	32.9	32.9	33.5	29.3	24.6	26.2	26.4	25.9	25.2	24.7	24.0	23.1	28.56	33.89
17-Jun	23.7	22.9	22.1	Z	21.2	20.5	20.0	20.6	23.8	25.3	27.3	29.5	32.6	31.9	35.8	35.0	35.2	35.1	34.7	32.2	24.5	19.4	24.2	25.1	27.06	35.78
18-Jun	22.7	20.7	19.1	Z	15.6	16.1	18.6	21.7	23.9	27.8	31.3	33.4	35.7	36.4	37.1	36.6	37.3	37.1	37.2	29.8	28.4	26.4	23.9	20.8	27.72	37.30
19-Jun	16.1	13.4	16.8	Z	21.2	21.9	23.8	25.9	30.2	35.2	39.5	40.5	44.9	43.1	42.2	42.3	42.7	41.4	40.1	33.7	36.8	25.0	15.0	17.5	30.84	44.91
20-Jun	16.4	22.6	23.7	Z	20.9	19.3	20.6	23.9	26.8	31.9	42.7	48.8	50.0	52.7	51.0	51.1	50.6	50.1	50.8	54.6	54.7	47.1	34.8	29.5	38.02	54.72
21-Jun	35.4	42.8	44.1	Z	29.1	22.8	17.0	23.1	29.6	37.6	45.5	45.2	37.2	38.2	39.8	42.0	37.2	33.2	36.3	26.9	23.8	24.0	10.6	13.7	31.95	45.47
22-Jun	12.2	12.0	14.2	Z	15.3	13.6	13.2	19.0	21.3	30.1	36.5	40.5	38.4	36.8	37.3	36.9	39.4	31.9	33.5	33.2	23.3	16.8	15.1	15.2	25.47	40.47
23-Jun	13.7	14.6	9.6	Z	9.5	6.6	11.7	17.0	22.4	29.4	37.1	39.8	40.9	42.1	41.2	40.0	36.6	36.9	33.1	29.5	23.8	22.7	16.6	13.6	25.58	42.10
24-Jun	14.1	12.1	13.4	Z	23.4	24.3	23.8	27.3	26.1	26.3	30.9	28.9	28.8	27.6	20.8	24.3	31.3	31.1	28.3	24.8	24.6	22.1	14.2	14.7	23.61	31.25
25-Jun	11.4	9.7	12.8	Z	10.1	10.2	11.1	13.8	19.0	21.7	26.7	27.5	28.3	25.1	23.7	21.7	26.0	24.3	31.8	36.0	31.4	31.3	35.7	35.2	22.80	36.03
26-Jun	31.4	24.0	22.2	Z	14.2	10.4	8.9	10.7	18.8	25.1	29.4	32.4	33.6	34.4	36.7	38.0	38.7	38.7	37.1	31.1	25.6	14.7	6.2	6.1	24.70	38.67
27-Jun	6.7	5.0	2.9	Z	4.3	5.3	9.0	16.3	23.3	29.6	33.6	35.1	34.3	34.6	35.4	35.3	36.2	36.7	38.1	42.9	42.0	36.4	30.3	24.9	26.02	42.94
28-Jun	16.2	8.0	4.9	Z	2.4	3.8	8.7	20.5	29.4	39.0	38.1	37.9	41.9	42.5	40.0	39.3	44.5	42.3	40.6	37.5	35.2	23.2	15.5	16.8	27.31	44.48
29-Jun	9.7	4.3	6.9	Z	6.2	4.7	8.9	17.0	26.0	38.4	42.5	46.0	46.6	46.5	45.4	46.6	48.5	53.0	58.8	52.4	47.1	44.6	46.2	44.6	34.38	58.75
30-Jun	30.5	21.1	16.0	Z	19.0	25.6	24.3	28.1	27.4	28.6	28.2	27.8	27.7	33.2	38.0	41.2	42.7	43.3	41.2	42.5	36.1	35.6	30.4	23.1	30.94	43.34

22.72	21.16	20.11	--	17.06	16.45	18.46	23.27	28.27	33.63	37.37	39.33	40.39	40.98	40.86	40.57	40.93	40.71	40.67	38.52	35.40	30.81	25.71	24.00	Diurnal Average	
53.39	52.27	45.40	--	36.77	32.84	31.05	39.73	41.45	51.08	56.31	58.42	58.92	61.30	63.07	61.80	60.18	59.07	58.75	61.26	59.11	52.33	46.22	48.69	Diurnal Maximum	

Z - zerospan      C - Calibration  
 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**  
**June 2016**

Maximum Value: 4.65 ppb on Jun 1 15:00		Maximum Daily Average: 1.74 ppb on Jun 1		Hours in Service: 720																							
Minimum Value: 0.0 ppb on Jun 1 01:00		Minimum Daily Average: 0.05 ppb on Jun 17		Hours of Data: 685																							
Maximum Diurnal Average: 1.15 ppb at hour 8		Minimum Diurnal Average: 0.06 ppb at hour 24		Hours of Missing Data: 35																							
Monthly Average: 0.281 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> = 0.8 P <sub>99</sub> = 2.5		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-Jun	0.0	0.0	0.0	Z	3.0	1.7	0.9	3.8	2.6	2.6	2.1	1.8	1.6	2.5	4.6	3.1	2.5	2.5	1.8	1.1	0.8	0.7	0.4	0.0	1.74	4.65	
2-Jun	0.4	1.0	0.5	Z	0.1	0.5	1.5	1.1	1.4	0.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.2	0.0	0.0	0.1	0.0	0.0	0.37	1.51	
3-Jun	0.0	0.0	0.0	Z	0.1	0.3	0.7	1.0	0.6	0.3	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.18	0.96	
4-Jun	0.2	0.1	0.1	Z	0.1	0.4	0.8	1.2	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	0.1	0.1	0.18	1.17	
5-Jun	0.1	0.2	0.1	Z	0.3	0.3	1.0	1.4	0.9	0.5	0.2	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.24	1.39	
6-Jun	0.1	0.0	0.1	Z	0.3	0.9	1.6	0.8	0.9	0.6	0.3	0.2	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.30	1.56	
7-Jun	0.4	0.3	0.6	Z	0.5	0.6	1.4	1.0	0.4	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.3	0.1	0.28	1.42	
8-Jun	0.1	0.1	0.1	Z	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.11	0.24	
9-Jun	0.0	0.1	0.1	Z	0.1	0.1	0.2	0.2	0.3	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.08	0.30	
10-Jun	0.0	0.0	0.0	Z	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.7	0.6	0.5	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.17	0.73	
11-Jun	0.0	0.0	0.1	Z	0.1	0.2	0.5	0.7	0.5	0.3	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.16	0.67	
12-Jun	0.3	0.1	0.1	Z	0.1	0.1	0.2	0.2	0.2	0.3	0.7	0.3	0.3	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.14	0.70	
13-Jun	0.1	0.1	0.1	Z	0.1	0.5	1.0	1.2	0.4	0.4	C	C	C	C	C	0.1	0.1	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.27	1.21	
14-Jun	0.1	0.1	0.1	Z	0.3	1.1	1.8	2.2	2.0	0.9	0.7	0.3	0.2	0.1	0.1	0.2	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.44	2.16	
15-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.1	0.3	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.06	0.25	
16-Jun	0.0	0.0	0.0	Z	0.0	0.3	0.8	0.7	0.2	0.2	0.1	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	0.11	0.75	
17-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.05	0.22	
18-Jun	0.0	0.0	0.0	Z	0.1	0.4	0.7	1.3	0.9	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.1	0.0	0.20	1.27	
19-Jun	0.1	0.1	0.1	Z	0.1	0.2	0.3	0.8	0.3	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.12	0.80	
20-Jun	0.0	0.1	0.1	Z	0.1	0.5	1.1	1.1	1.1	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.22	1.09	
21-Jun	0.1	0.0	0.0	Z	0.1	0.1	1.2	1.2	0.6	0.4	0.4	0.2	0.1	0.0	0.1	0.1	0.2	0.4	0.2	0.2	0.1	0.0	0.1	0.0	0.25	1.25	
22-Jun	0.0	0.1	0.1	Z	0.1	0.3	0.8	1.5	1.0	0.5	0.2	0.1	0.1	0.2	0.3	0.1	0.2	0.5	0.5	0.2	0.1	0.2	0.1	0.0	0.30	1.50	
23-Jun	0.0	0.0	0.1	Z	0.3	1.5	1.7	1.7	1.2	0.8	0.4	0.2	0.1	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.40	1.71	
24-Jun	0.1	0.1	0.1	Z	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.2	0.1	0.1	0.5	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.11	0.54	
25-Jun	0.0	0.1	0.1	Z	0.1	0.4	0.9	1.0	0.3	0.3	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	0.0	0.18	0.96	
26-Jun	0.0	0.0	0.0	Z	0.1	0.5	1.5	2.5	1.2	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.30	2.47	
27-Jun	0.1	0.1	0.2	Z	0.2	0.6	2.3	2.4	1.2	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.35	2.40	
28-Jun	0.1	0.1	0.3	Z	0.7	1.4	2.2	1.2	0.9	0.2	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.0	0.1	0.1	0.33	2.20	
29-Jun	0.1	0.3	0.2	Z	0.3	1.3	4.5	3.3	1.6	0.4	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.58	4.53	
30-Jun	0.0	0.0	0.1	Z	0.1	0.2	0.6	0.5	0.5	0.6	0.3	0.4	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.19	0.64	
		0.08	0.11	0.10	--	0.26	0.49	1.02	1.15	0.74	0.43	0.26	0.16	0.14	0.15	0.25	0.19	0.16	0.20	0.14	0.10	0.09	0.08	0.08	0.06	Diurnal Average	
		0.39	1.00	0.57	--	3.01	1.67	4.53	3.83	2.63	2.60	2.09	1.76	1.56	2.51	4.65	3.07	2.46	2.46	1.84	1.07	0.80	0.72	0.40	0.39	Diurnal Maximum	
Z - zerospan		C - Calibration																									
Alberta Ambient Air Quality Objectives (AAQO):		1-hr --- ppb										24-hr --- ppb															



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

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

Maximum Value: 10.23 ppb on Jun 7 00:00      Maximum Daily Average: 4.28 ppb on Jun 6																				Hours in Service: 720 Hours of Data: 685 Hours of Missing Data: 35 Hours of Calibration: 35 Percent Operational Time: 100.0						
Minimum Value: 0.8 ppb on Jun 20 14:00      Minimum Daily Average: 1.73 ppb on Jun 15 Maximum Diurnal Average: 3.99 ppb at hour 23      Minimum Diurnal Average: 1.62 ppb at hour 14 Monthly Average: 2.762 ppb      Percentiles: P <sub>1</sub> = 1.0 P <sub>10</sub> = 1.4 Q <sub>1</sub> = 1.7 Median = 2.4 Q <sub>3</sub> = 3.5 P <sub>90</sub> = 4.6 P <sub>99</sub> = 7.4																										
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-Jun	3.8	4.6	4.7	Z	7.6	7.9	6.4	4.3	4.4	3.6	2.4	1.7	1.9	1.9	2.0	2.2	2.1	2.8	2.6	2.9	3.6	3.8	5.8	4.8	3.82	7.94
2-Jun	4.9	6.9	4.6	Z	2.6	2.8	4.6	4.0	3.9	3.6	2.4	1.6	1.7	2.3	2.2	2.1	2.7	5.0	3.1	1.6	1.9	4.8	4.0	4.0	3.37	6.86
3-Jun	3.6	4.5	4.2	Z	2.3	2.6	2.7	3.2	2.6	1.9	1.9	1.7	1.7	1.6	1.7	1.9	2.0	2.0	2.1	2.2	3.2	4.9	3.8	4.7	2.74	4.94
4-Jun	5.8	5.0	3.5	Z	2.7	3.2	3.1	3.5	2.1	1.8	1.8	1.9	1.8	1.7	1.7	1.7	1.7	1.8	1.7	1.9	2.4	3.0	5.2	6.4	2.84	6.39
5-Jun	4.7	4.0	3.1	Z	3.4	3.0	4.3	5.6	4.4	3.3	2.4	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.6	3.1	3.5	3.8	4.7	3.8	3.27	5.56
6-Jun	3.9	3.9	5.4	Z	6.3	7.5	8.2	5.9	5.1	4.3	3.9	3.2	3.1	2.4	1.7	1.5	2.1	2.6	2.4	1.6	1.4	3.2	8.6	10.2	4.28	10.23
7-Jun	7.9	6.0	6.2	Z	4.8	3.2	4.1	4.0	2.5	1.0	1.3	1.1	1.3	1.9	2.1	2.2	2.2	2.3	2.7	7.4	5.7	5.7	6.9	4.8	3.80	7.94
8-Jun	4.2	3.5	2.4	Z	2.5	2.3	3.0	2.3	2.4	2.2	2.2	2.4	2.7	2.9	3.2	5.0	3.7	3.5	3.3	3.0	2.9	2.9	2.8	2.4	2.94	4.96
9-Jun	2.9	3.3	3.6	Z	2.9	3.0	2.8	3.4	2.9	1.9	1.8	1.6	1.7	1.6	1.6	1.7	1.7	2.1	2.4	2.7	3.5	4.1	4.8	3.7	2.68	4.80
10-Jun	2.2	2.2	2.6	Z	2.8	2.7	2.3	2.3	2.3	2.0	1.8	1.8	1.8	2.3	4.6	4.9	4.8	4.2	3.0	3.6	3.0	3.3	3.2	3.3	2.91	4.86
11-Jun	4.4	3.5	4.7	Z	3.6	4.0	3.6	3.3	2.8	2.4	2.3	2.2	2.2	2.2	2.4	2.9	2.3	2.4	2.5	2.2	2.1	2.5	2.4	3.0	2.87	4.73
12-Jun	3.0	2.5	2.2	Z	3.0	2.7	2.6	2.1	1.9	2.0	2.3	1.7	1.8	1.5	1.4	1.3	1.3	1.4	1.4	1.6	1.7	2.6	3.2	5.1	2.19	5.06
13-Jun	4.9	3.6	2.3	Z	2.9	3.0	2.7	3.4	1.9	1.9	C	C	C	C	C	4.3	4.0	4.0	3.8	3.7	3.8	3.8	4.2	4.7	3.50	4.90
14-Jun	4.3	4.6	4.2	Z	5.6	4.5	4.4	3.9	3.9	3.2	2.9	2.2	1.9	1.6	1.9	2.5	2.4	1.7	2.1	2.0	1.6	1.4	1.2	1.4	2.84	5.57
15-Jun	1.6	1.6	1.5	Z	1.7	2.4	2.8	3.4	2.2	1.6	1.5	1.2	1.2	1.2	1.3	1.4	1.4	1.4	1.9	1.7	1.7	1.8	1.6	2.0	1.73	3.38
16-Jun	1.7	2.5	2.4	Z	3.2	3.8	4.0	2.8	1.8	1.8	1.6	1.6	1.5	1.5	1.7	1.8	2.0	1.7	2.0	1.8	1.6	1.6	1.7	1.7	2.08	4.01
17-Jun	1.8	1.6	1.7	Z	1.9	1.8	1.7	1.8	1.6	1.4	1.4	1.4	1.4	1.7	1.5	1.6	1.6	1.6	1.6	2.0	4.2	4.8	2.9	2.2	1.97	4.84
18-Jun	2.5	3.2	3.3	Z	2.7	2.6	2.2	2.8	2.2	1.6	1.3	1.1	1.1	1.2	1.4	1.5	1.4	1.6	1.5	3.3	3.1	3.0	3.7	2.5	2.21	3.73
19-Jun	3.7	4.7	4.1	Z	4.5	4.1	3.1	3.3	2.2	1.8	1.6	1.5	1.1	1.0	1.2	1.3	1.4	1.7	1.8	2.7	2.0	2.9	4.8	3.3	2.60	4.83
20-Jun	2.2	2.5	2.5	Z	3.1	3.6	3.9	3.2	3.0	2.5	1.4	0.8	1.0	0.8	1.0	1.1	1.2	1.3	1.4	2.2	3.3	3.5	3.1	3.6	2.27	3.89
21-Jun	2.8	1.9	1.8	Z	2.7	3.4	6.9	5.0	3.3	2.4	2.7	2.2	1.6	1.4	1.5	1.7	2.6	2.9	2.2	2.4	2.5	2.7	5.1	2.6	2.80	6.88
22-Jun	2.3	2.4	2.4	Z	3.6	3.2	2.6	3.3	2.9	2.1	1.6	1.3	1.2	1.1	1.4	2.0	2.0	3.5	2.6	2.4	2.5	6.8	5.1	3.2	2.67	6.81
23-Jun	1.7	3.1	3.6	Z	5.7	4.1	3.3	3.1	2.7	2.6	2.1	1.5	1.3	1.1	1.2	1.6	2.6	2.4	3.1	2.7	3.4	3.3	4.4	4.4	2.82	5.69
24-Jun	4.4	4.0	4.5	Z	2.1	2.0	2.0	2.0	2.2	2.0	1.2	1.5	1.4	1.4	2.2	1.5	1.2	1.2	1.4	1.7	1.7	2.2	2.7	2.4	2.13	4.46
25-Jun	2.9	3.4	2.6	Z	3.1	3.1	2.9	2.4	1.6	1.6	1.2	1.2	1.3	1.5	1.5	1.6	1.4	1.5	1.4	1.4	2.6	2.1	1.7	1.4	1.97	3.43
26-Jun	1.7	1.8	1.7	Z	2.6	4.7	5.1	4.1	2.5	1.7	1.3	1.1	1.0	1.1	1.2	1.2	1.2	1.2	1.3	1.7	1.8	3.7	7.1	5.3	2.45	7.10
27-Jun	3.3	2.7	3.0	Z	2.2	2.2	3.8	4.5	3.3	2.0	1.6	1.2	1.2	1.1	1.0	1.2	1.3	1.6	1.8	3.1	3.7	3.7	3.7	5.0	2.52	5.00
28-Jun	6.2	4.5	4.7	Z	3.2	3.3	4.3	4.2	4.3	2.7	2.1	1.7	1.2	1.3	1.9	2.1	2.0	2.2	2.3	2.7	5.9	4.9	6.7	4.3	3.42	6.67
29-Jun	4.3	3.5	2.3	Z	3.3	3.5	6.2	5.9	4.1	2.5	1.9	1.8	1.5	1.4	1.3	1.4	1.5	2.0	3.1	4.1	4.5	3.5	2.3	2.1	2.96	6.23
30-Jun	2.5	3.1	2.7	Z	3.5	3.6	3.9	3.0	3.0	3.1	2.5	2.9	2.4	1.8	1.5	1.4	1.1	1.0	1.1	1.9	2.5	2.1	2.1	1.8	2.38	3.86
																								Diurnal Average		
																								Diurnal Maximum		
																								3.53 3.48 3.28 -- 3.41 3.47 3.78 3.54 2.86 2.28 1.95 1.70 1.63 1.62 1.78 2.01 2.04 2.24 2.21 2.58 2.91 3.42 3.99 3.67		
																								7.94 6.86 6.23 -- 7.63 7.94 8.15 5.94 5.11 4.27 3.94 3.22 3.07 2.86 4.59 4.96 4.75 4.99 3.85 7.36 5.93 6.81 8.57 10.23		
Z - zerospan      C - Calibration																										
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb      24-hr 106 ppb																										



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

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

Maximum Value: 12.57 ppb on Jun 1 05:00		Maximum Daily Average: 6.74 ppb on Jun 1		Hours in Service: 720																																													
Minimum Value: 0.9 ppb on Jun 20 14:00		Minimum Daily Average: 1.79 ppb on Jun 15		Hours of Data: 685																																													
Maximum Diurnal Average: 4.86 ppb at hour 7		Minimum Diurnal Average: 1.81 ppb at hour 13		Hours of Missing Data: 35																																													
Monthly Average: 3.088 ppb		Percentiles: P <sub>1</sub> = 1.1 P <sub>10</sub> = 1.4 Q <sub>1</sub> = 1.8 Median = 2.6 Q <sub>3</sub> = 3.9 P <sub>90</sub> = 5.3 P <sub>99</sub> = 9.0		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-Jun	5.6	5.9	6.2	Z	12.6	11.5	9.0	9.8	8.6	7.7	5.9	4.7	4.7	5.6	7.7	6.2	5.5	6.1	5.2	4.6	5.0	5.0	6.7	5.1	6.74	12.57																							
2-Jun	5.5	8.1	5.1	Z	2.8	3.3	6.2	5.2	5.3	4.5	2.6	1.6	1.7	2.3	2.3	2.0	2.7	5.6	3.4	1.6	1.9	4.9	4.1	4.0	3.76	8.06																							
3-Jun	3.7	4.6	4.3	Z	2.4	2.9	3.4	4.2	3.2	2.1	2.1	1.8	1.8	1.7	1.7	2.0	2.1	2.1	2.1	2.2	3.3	5.1	3.9	4.8	2.93	5.09																							
4-Jun	6.0	5.2	3.6	Z	2.8	3.6	3.9	4.7	2.5	2.0	1.9	2.0	1.9	1.8	1.8	1.8	1.7	1.8	1.7	2.0	2.4	3.0	5.4	6.6	3.04	6.57																							
5-Jun	4.8	4.2	3.2	Z	3.8	3.4	5.3	7.0	5.2	3.7	2.5	2.2	2.2	2.3	2.3	2.3	2.4	2.4	2.7	3.2	3.5	3.8	4.8	3.9	3.53	6.98																							
6-Jun	4.0	3.9	5.5	Z	6.7	8.4	9.7	6.7	6.1	4.8	4.3	3.4	3.2	2.5	1.8	1.6	2.1	2.6	2.4	1.6	1.4	3.2	8.9	10.7	4.59	10.67																							
7-Jun	8.4	6.3	6.8	Z	5.3	3.8	5.5	5.1	2.9	1.1	1.3	1.1	1.4	2.0	2.2	2.2	2.3	2.4	2.8	7.6	5.8	5.8	7.2	4.9	4.10	8.39																							
8-Jun	4.2	3.6	2.5	Z	2.6	2.4	3.2	2.5	2.5	2.3	2.3	2.5	2.9	3.0	3.3	5.2	4.0	3.8	3.4	3.1	2.9	3.0	2.8	2.5	3.06	5.21																							
9-Jun	2.9	3.3	3.6	Z	3.0	3.1	3.0	3.6	3.2	2.0	2.0	1.7	1.7	1.6	1.7	1.8	1.8	2.2	2.5	2.8	3.6	4.2	4.9	3.7	2.78	4.88																							
10-Jun	2.2	2.2	2.6	Z	3.0	3.0	2.6	2.5	2.5	2.1	1.9	1.9	1.9	2.4	5.3	5.5	5.2	4.4	3.1	3.7	3.1	3.4	3.2	3.3	3.09	5.48																							
11-Jun	4.5	3.5	4.8	Z	3.6	4.3	4.0	4.0	3.3	2.7	2.4	2.4	2.3	2.3	2.5	3.1	2.4	2.5	2.6	2.3	2.2	2.6	2.5	3.2	3.03	4.80																							
12-Jun	3.3	2.6	2.3	Z	3.1	2.7	2.8	2.3	2.1	2.3	3.1	2.0	2.1	1.6	1.4	1.3	1.4	1.4	1.4	1.7	1.7	2.6	3.2	5.1	2.34	5.14																							
13-Jun	5.0	3.7	2.4	Z	3.0	3.5	3.6	4.6	2.4	2.3	C	C	C	C	C	4.4	4.2	4.3	4.1	3.8	3.9	3.9	4.2	4.7	3.76	4.97																							
14-Jun	4.4	4.7	4.2	Z	5.8	5.6	6.1	6.0	5.9	4.2	3.6	2.5	2.1	1.7	2.0	2.7	2.5	1.8	2.1	2.0	1.6	1.3	1.2	1.4	3.27	6.09																							
15-Jun	1.6	1.6	1.5	Z	1.7	2.4	2.9	3.6	2.3	1.7	1.6	1.3	1.3	1.2	1.3	1.5	1.4	1.4	2.0	1.7	1.6	1.8	1.6	2.0	1.79	3.62																							
16-Jun	1.7	2.4	2.4	Z	3.2	4.1	4.8	3.5	2.1	2.0	1.7	1.6	1.5	1.6	1.8	1.8	2.1	1.8	2.1	1.8	1.6	1.6	1.7	1.7	2.19	4.76																							
17-Jun	1.8	1.6	1.6	Z	1.9	1.9	1.9	1.9	1.7	1.5	1.4	1.5	1.4	1.8	1.5	1.6	1.6	1.6	1.6	2.0	4.4	5.0	2.9	2.3	2.02	4.97																							
18-Jun	2.5	3.2	3.3	Z	2.7	3.0	3.0	4.1	3.1	1.9	1.4	1.2	1.2	1.3	1.4	1.5	1.4	1.7	1.5	3.6	3.2	3.1	3.8	2.5	2.42	4.07																							
19-Jun	3.8	4.8	4.1	Z	4.6	4.3	3.4	4.1	2.5	1.9	1.7	1.5	1.2	1.1	1.2	1.3	1.5	1.8	1.8	2.8	2.0	3.0	4.9	3.3	2.73	4.90																							
20-Jun	2.3	2.6	2.6	Z	3.2	4.1	4.9	4.3	4.1	3.1	1.5	0.9	1.0	0.9	1.0	1.1	1.2	1.4	1.4	2.3	3.3	3.5	3.2	3.7	2.50	4.95																							
21-Jun	2.8	1.9	1.8	Z	2.7	3.5	8.1	6.3	3.9	2.7	3.1	2.4	1.6	1.4	1.6	1.8	2.9	3.3	2.4	2.6	2.6	2.8	5.2	2.7	3.05	8.10																							
22-Jun	2.3	2.5	2.4	Z	3.6	3.5	3.4	4.8	3.9	2.6	1.8	1.3	1.3	1.3	1.7	2.1	2.2	4.0	3.0	2.7	2.6	7.0	5.1	3.2	2.98	7.02																							
23-Jun	1.7	3.1	3.8	Z	6.0	5.6	5.0	4.8	3.9	3.5	2.6	1.6	1.4	1.1	1.2	1.6	2.7	2.6	3.3	2.8	3.6	3.3	4.5	4.4	3.23	6.02																							
24-Jun	4.5	4.1	4.5	Z	2.2	2.0	2.1	2.2	2.4	2.1	1.3	1.7	1.6	1.5	2.8	1.6	1.3	1.2	1.5	1.8	1.7	2.2	2.7	2.5	2.24	4.52																							
25-Jun	2.9	3.5	2.7	Z	3.3	3.5	3.8	3.4	1.9	1.8	1.3	1.3	1.4	1.6	1.5	1.7	1.5	1.6	1.5	1.4	2.6	2.1	1.7	1.5	2.16	3.84																							
26-Jun	1.7	1.9	1.7	Z	2.7	5.2	6.6	6.6	3.7	1.9	1.4	1.2	1.1	1.1	1.3	1.2	1.2	1.2	1.3	1.8	1.8	3.8	7.3	5.4	2.75	7.33																							
27-Jun	3.4	2.8	3.2	Z	2.4	2.9	6.1	6.9	4.4	2.3	1.7	1.2	1.2	1.1	0.9	1.1	1.2	1.5	1.7	3.1	3.9	3.9	3.7	5.0	2.86	6.92																							
28-Jun	6.2	4.6	4.9	Z	4.0	4.6	6.5	5.4	5.1	2.8	2.2	1.7	1.2	1.2	1.9	2.1	2.1	2.2	2.3	2.8	6.1	5.0	6.8	4.3	3.75	6.77																							
29-Jun	4.4	3.8	2.5	Z	3.6	4.9	10.7	9.2	5.6	3.0	2.1	1.9	1.6	1.5	1.4	1.4	1.5	2.1	3.1	4.2	4.5	3.6	2.3	2.1	3.53	10.74																							
30-Jun	2.5	3.1	2.7	Z	3.6	3.8	4.4	3.5	3.4	3.7	2.9	3.3	2.7	2.0	1.5	1.5	1.2	1.1	1.2	2.0	2.6	2.1	2.1	1.8	2.56	4.43																							
																								3.68	3.65	3.43	--	3.73	4.02	4.86	4.76	3.66	2.76	2.27	1.91	1.81	1.81	2.07	2.24	2.24	2.46	2.38	2.71	3.02	3.52	4.09	3.75	Diurnal Average	
																								8.39	8.06	6.84	--	12.57	11.45	10.74	9.81	8.59	7.71	5.91	4.73	4.66	5.61	7.73	6.24	5.48	6.07	5.21	7.60	6.14	7.02	8.90	10.67	Diurnal Maximum	
Z - zerospan C - Calibration																																																	
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ppb 24-hr --- ppb																																																	

**CARROT CREEK  
STATION #903**

**METEOROLOGICAL DATA**

**JUNE 2016**



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

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

<b>Maximum Value: 30.35 C on Jun 6 16:00</b>																								<b>Maximum Daily Average: 20.26 C on Jun 6</b>																								<b>Hours in Service: 720</b>	
<b>Minimum Value: 4.4 C on Jun 3 05:00</b>																								<b>Minimum Daily Average: 8.94 C on Jun 14</b>																								<b>Hours of Data: 720</b>	
<b>Maximum Diurnal Average: 19.61 C at hour 15</b>																								<b>Minimum Diurnal Average: 8.54 C at hour 5</b>																								<b>Hours of Missing Data: 0</b>	
<b>Monthly Average: 14.592 C</b>																								<b>Percentiles: P<sub>1</sub> = 4.9 P<sub>10</sub> = 7.9 Q<sub>1</sub> = 10.5 Median = 13.9 Q<sub>3</sub> = 18.6 P<sub>90</sub> = 22.4 P<sub>99</sub> = 26.7</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-Jun	13.1	12.4	10.3	8.9	8.7	9.2	10.1	11.1	13.4	14.9	15.9	16.8	17.5	18.7	19.2	19.9	18.7	16.6	17.3	16.4	14.4	12.4	10.0	8.2	13.92	19.90																							
2-Jun	6.9	6.1	6.4	6.8	6.8	6.5	8.5	10.3	12.5	16.4	19.0	20.0	20.9	17.5	18.6	14.7	11.6	12.2	13.9	15.2	14.6	11.4	10.2	9.5	12.36	20.92																							
3-Jun	8.7	7.4	7.2	4.9	4.4	5.8	7.8	11.6	13.7	15.8	17.4	18.4	20.3	20.5	20.9	21.5	22.3	21.8	21.0	20.7	18.6	15.4	13.3	12.2	14.65	22.28																							
4-Jun	10.7	9.9	9.1	7.7	7.7	8.7	12.6	16.5	18.1	19.1	20.0	21.2	22.1	23.0	23.7	24.2	24.1	24.0	23.8	22.5	20.8	16.4	12.3	9.8	17.00	24.24																							
5-Jun	8.1	7.0	6.0	5.2	5.0	6.9	10.4	13.7	16.3	19.0	20.3	21.1	21.8	22.6	23.3	24.1	24.2	24.5	24.4	22.7	20.1	17.5	16.3	16.0	16.52	24.46																							
6-Jun	16.4	14.8	12.8	10.6	9.1	9.3	12.8	14.2	17.7	20.3	22.4	24.6	26.9	28.6	29.8	30.3	29.7	28.2	26.8	24.9	23.4	20.1	16.7	15.6	20.26	30.35																							
7-Jun	14.3	13.5	12.0	12.0	12.2	11.9	15.2	18.5	20.7	21.4	22.3	23.3	24.1	24.8	25.1	25.2	24.9	25.2	24.1	18.8	16.6	15.7	14.8	14.0	18.77	25.23																							
8-Jun	15.4	14.2	13.3	12.6	12.3	12.1	12.7	13.7	14.3	15.4	17.0	18.4	19.3	19.1	18.3	18.1	17.4	18.9	18.8	17.3	16.2	13.5	12.4	12.4	15.54	19.33																							
9-Jun	11.9	11.7	11.6	11.5	11.4	11.5	12.0	12.4	12.9	12.6	13.9	14.6	15.2	14.9	15.6	16.3	16.5	16.1	15.0	13.4	12.3	11.9	11.5	11.0	13.24	16.48																							
10-Jun	10.4	9.9	9.6	9.3	8.8	9.3	11.3	12.7	13.9	14.7	15.6	15.7	16.8	16.7	16.4	16.3	16.3	14.9	13.3	12.9	12.3	11.3	10.3	10.3	12.87	16.77																							
11-Jun	11.0	11.0	11.0	11.3	11.1	11.4	11.9	13.1	14.0	14.7	15.1	16.3	15.2	11.0	8.7	9.4	9.6	10.0	10.5	10.4	10.3	9.9	9.2	7.8	11.42	16.31																							
12-Jun	7.0	7.1	7.5	7.6	8.0	8.1	8.7	9.7	10.3	10.9	13.8	16.1	17.8	18.1	17.8	17.7	18.1	18.9	17.9	17.3	15.9	12.4	10.6	9.5	12.78	18.87																							
13-Jun	8.4	7.6	5.7	4.7	4.8	5.9	9.0	12.5	14.7	15.7	16.2	17.5	18.1	18.2	18.5	15.8	12.0	14.0	14.1	12.5	10.4	8.9	7.8	7.2	11.67	18.46																							
14-Jun	6.1	5.1	4.6	4.6	4.5	4.6	5.9	7.6	10.6	13.0	14.2	15.3	16.3	17.0	15.3	10.8	10.4	8.2	7.9	7.7	7.1	6.2	5.7	6.0	8.94	16.99																							
15-Jun	5.9	5.5	5.5	5.5	5.9	5.9	6.6	6.9	8.1	9.0	10.8	12.1	13.4	14.1	14.7	14.9	15.1	15.1	13.9	13.6	12.6	11.4	10.2	9.1	10.25	15.13																							
16-Jun	8.8	8.2	6.8	6.8	5.5	5.7	7.2	10.4	11.4	11.5	11.7	12.0	11.6	11.7	12.4	11.3	9.7	9.9	9.2	9.3	9.1	8.6	7.9	7.1	9.32	12.44																							
17-Jun	7.1	7.0	6.9	7.1	7.4	7.5	8.2	8.3	9.4	10.3	11.4	12.7	13.8	14.4	16.2	16.7	17.9	18.6	18.6	18.0	16.9	12.1	11.0	10.8	12.02	18.62																							
18-Jun	9.4	8.6	7.6	6.1	5.2	6.9	9.9	12.1	14.1	16.2	17.5	18.0	19.1	19.6	20.4	20.6	20.7	20.2	20.0	18.9	17.5	15.2	13.3	11.8	14.53	20.71																							
19-Jun	10.5	8.8	9.9	9.4	9.6	10.0	11.2	12.8	14.9	17.0	18.4	19.2	20.2	20.6	21.1	21.2	21.9	19.7	18.7	18.1	17.2	14.3	12.4	11.5	15.36	21.92																							
20-Jun	10.7	10.4	9.9	9.2	8.8	9.8	12.6	14.2	16.8	18.6	20.9	21.8	22.0	22.7	23.1	23.5	23.5	23.2	22.6	21.7	19.3	17.4	15.4	13.9	17.17	23.55																							
21-Jun	14.4	15.1	14.4	13.6	12.2	11.8	12.0	13.3	14.8	17.5	19.0	19.8	18.9	20.1	20.8	18.7	15.4	16.9	18.7	17.8	16.4	14.8	12.1	11.3	15.82	20.78																							
22-Jun	10.7	9.9	10.0	10.0	10.0	10.5	11.0	14.8	16.1	18.9	20.3	21.5	20.9	20.5	21.1	19.0	14.5	15.1	17.0	16.7	15.7	12.7	11.2	10.4	14.93	21.48																							
23-Jun	9.4	9.0	7.4	6.9	7.3	8.0	9.7	12.9	15.0	17.1	18.4	19.3	19.8	21.2	20.4	16.9	12.8	12.4	13.4	13.0	12.0	11.3	10.8	10.9	13.14	21.19																							
24-Jun	10.3	9.4	10.3	10.8	11.0	10.7	10.9	11.5	11.3	11.5	11.2	12.3	13.1	13.9	13.8	14.0	14.5	14.5	14.6	14.3	14.0	12.7	11.9	11.9	12.26	14.63																							
25-Jun	12.3	12.3	11.8	11.1	10.2	10.2	10.8	12.6	14.8	16.4	18.7	19.8	19.9	17.1	15.2	16.5	19.7	19.5	18.2	16.1	13.2	12.8	12.3	12.1	14.74	19.93																							
26-Jun	11.5	11.1	10.2	9.9	10.3	10.6	10.8	11.3	14.8	17.1	18.7	19.9	20.5	21.5	22.4	23.2	23.5	24.0	23.6	24.7	21.2	15.9	13.0	12.0	16.75	24.73																							
27-Jun	11.0	10.3	9.1	8.0	7.8	9.3	12.8	15.8	18.3	20.8	22.4	23.2	23.9	24.6	24.8	25.4	25.5	26.0	26.3	24.5	22.5	19.4	17.2	15.8	18.52	26.28																							
28-Jun	14.0	11.7	10.7	9.7	9.3	10.5	13.6	16.8	19.2	21.9	22.9	23.9	24.4	24.4	24.1	23.0	23.6	22.6	21.2	21.3	20.3	16.3	13.9	13.0	18.01	24.43																							
29-Jun	11.7	10.5	9.9	10.1	9.3	9.9	12.8	15.7	18.1	21.6	22.9	24.1	25.0	25.4	25.8	26.0	25.9	25.0	23.2	21.2	17.7	15.7	16.0	16.8	18.36	25.96																							
30-Jun	15.2	13.8	12.0	11.2	11.7	13.8	15.2	18.1	18.9	19.4	19.0	17.3	17.2	20.4	20.9	21.6	21.6	21.4	20.8	16.3	15.7	13.8	12.5	11.6	16.66	21.64																							
																								10.70	9.99	9.32	8.78	8.54	9.08	10.80	12.84	14.64	16.29	17.58	18.54	19.21	19.43	19.61	19.23	18.71	18.58	18.29	17.28	15.81	13.58	12.08	11.31	Diurnal Average	
																								16.39	15.10	14.43	13.59	12.33	13.85	15.19	18.48	20.69	21.91	22.91	24.59	26.95	28.57	29.84	30.35	29.69	28.17	26.81	24.93	23.43	20.14	17.18	16.79	Diurnal Maximum	



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

**Wind Speed (WS) - kph**  
**June 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	7.6	4.6	1.8	1.3	2.8	3.5	4.3	5.9	6.4	7.7	8.7	13.8	13.4	8.5	2.1	5.1	11.2	3.3	6.8	8.8	5.9	6.6	4.2	1.4	2.75	13.76
Dir	SE	SE	NW	NE	WSW	SW	SW	W	W	WNW	W	W	W	WSW	W	NNW	NNW	SSW	SE	SE	SSE	SSE	S	N	WSW	W
2 Spd	2.0	2.0	3.8	2.7	2.7	1.3	4.4	4.7	2.4	2.1	4.5	5.7	4.2	11.2	7.2	8.6	8.2	4.7	6.4	10.2	5.5	3.8	8.7	7.9	3.70	11.17
Dir	SSE	S	S	SSW	WSW	WNW	WSW	W	WSW	ENE	NNE	W	W	WSW	N	NW	WNW	WNW	WSW	WNW	W	SW	SW	WSW	W	WSW
3 Spd	9.5	8.7	6.6	6.0	5.1	6.4	6.5	7.3	7.7	10.2	15.3	17.7	17.8	19.3	14.5	16.4	26.2	22.6	19.1	8.9	10.0	8.1	4.0	5.0	11.12	26.18
Dir	WSW	WSW	WSW	SSW	SSW	SSW	SSW	SW	WSW	WSW	SW	WSW	SW	W	W	WSW	WSW	WSW	WSW	W	WSW	SW	SW	WSW	WSW	WSW
4 Spd	3.2	5.3	4.8	4.4	3.8	3.3	5.6	4.1	7.5	7.0	5.7	6.6	9.9	11.3	9.7	8.1	9.5	9.4	10.3	8.7	3.8	2.5	0.6	2.5	3.49	11.28
Dir	SSW	S	S	S	S	SW	SSW	SW	WNW	NW	WNW	WNW	WSW	W	NW	NNW	NNW	N	NNW	NNW	NNW	N	SSE	S	WNW	W
5 Spd	4.5	3.3	3.9	4.7	5.7	5.6	6.8	7.5	4.6	2.4	4.7	5.7	2.2	4.3	2.9	3.0	2.1	2.2	4.4	7.6	4.8	2.7	3.0	4.0	2.14	7.58
Dir	SSW	SSW	SSW	SSW	SSW	SSW	SW	WSW	W	SW	S	SSW	W	SSE	SW	WSW	E	ENE	ENE	ENE	E	E	ESE	ESE	S	ENE
6 Spd	5.6	4.8	1.6	3.5	0.1	1.4	0.3	0.4	0.9	2.0	4.0	3.1	3.5	2.8	2.2	2.2	2.5	11.0	10.3	7.8	6.9	2.5	3.0	3.2	1.65	11.04
Dir	ESE	ENE	NNE	NNE	SE	SSW	NE	NNW	SSW	SE	ENE	NNE	NE	NW	NNE	SSW	S	N	N	NNW	NNW	NW	S	SW	N	N
7 Spd	2.2	2.4	1.9	2.6	4.0	4.1	3.7	0.9	4.1	7.1	7.2	5.9	5.7	5.4	4.8	6.9	11.6	8.8	9.8	6.1	8.9	2.9	3.8	3.9	2.88	11.59
Dir	S	S	S	SSW	SSW	SSW	SSW	NW	N	NNE	NE	ENE	NE	ESE	ESE	NNE	ENE	ENE	E	E	NNE	NE	SE	WNW	ENE	ENE
8 Spd	6.5	6.2	5.6	2.9	4.7	2.8	4.3	8.1	10.6	12.5	13.3	14.0	11.4	11.0	6.1	4.8	11.7	11.0	8.9	10.9	6.2	12.0	11.3	5.4	6.03	14.04
Dir	NNW	NW	NNE	ESE	E	N	NNE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	E	NE	NE	NE	NE	NNE	ENE	SW	NNW	NW	NE	ENE
9 Spd	4.8	5.3	6.6	8.3	11.1	10.3	9.0	14.7	13.5	15.1	16.1	21.0	19.9	20.2	20.5	20.3	20.8	17.1	11.5	10.3	6.6	5.3	5.4	6.2	11.42	21.01
Dir	WSW	SSW	WSW	WSW	WSW	WSW	W	WSW	W	W	WNW	WNW	WNW	WNW	WNW	NW	WNW	NW	NNW	NW	NW	NW	WNW	WNW	WNW	WNW
10 Spd	5.3	2.7	3.0	0.4	1.8	1.1	4.3	1.3	2.0	9.0	9.8	12.3	12.5	15.2	16.1	14.8	11.3	9.3	9.9	5.9	5.3	1.9	2.2	6.9	5.17	16.06
Dir	NNW	N	NNE	SSE	SSW	SW	SSW	WNW	NE	ENE	E	ENE	ENE	ENE	ENE	ENE	ENE	SE	SE	ESE	ENE	NE	N	NE	ENE	ENE
11 Spd	9.1	6.6	7.8	1.9	1.4	2.4	4.5	7.0	9.0	7.5	8.0	6.0	7.4	20.3	9.2	8.4	11.8	4.9	9.4	8.9	8.4	3.4	1.5	1.8	2.90	20.31
Dir	ENE	E	E	SE	SE	ESE	S	SW	WSW	W	W	W	NNW	WSW	WNW	NW	NW	NW	SW	S	SSW	S	S	SSE	WSW	WSW
12 Spd	1.7	2.3	3.0	3.0	7.9	10.4	14.8	15.9	8.7	16.6	14.1	14.8	13.3	11.8	14.6	16.0	15.6	18.6	15.4	20.3	10.5	6.6	8.2	6.7	9.92	20.26
Dir	S	S	SSW	SSW	SSW	S	SSW	SSW	W	WSW	WSW	W	W	W	WNW	W	W	W	W	WSW	W	WSW	WSW	WSW	WSW	WSW
13 Spd	4.4	4.7	6.7	5.9	8.1	4.5	5.1	5.6	4.3	2.1	3.5	1.7	6.0	12.6	11.1	5.4	11.1	9.4	9.5	1.9	8.0	6.5	6.4	4.6	1.23	12.59
Dir	SW	SSW	SSW	S	SSW	SSW	SSW	SW	SW	SSW	NW	ENE	NE	NE	N	WNW	N	N	WSW	NNW	W	WSW	SW	SW	WNW	NE
14 Spd	2.2	5.0	6.7	5.9	9.0	6.2	5.9	5.1	6.9	10.6	8.4	3.6	1.8	2.8	9.3	12.0	20.7	21.7	22.1	21.9	19.0	10.3	12.4	11.0	8.86	22.08
Dir	WSW	SW	SW	SW	SW	SW	SW	WNW	W	WSW	W	WNW	WSW	SE	SSW	W	SW	SW	WSW	WSW	W	WNW	WNW	W	WSW	WSW
15 Spd	11.6	16.6	24.5	22.8	20.3	13.9	11.3	2.9	11.4	13.5	18.2	20.7	25.0	26.9	27.4	25.8	26.2	20.1	13.2	22.7	20.7	14.7	12.7	11.6	17.14	27.39
Dir	W	W	W	WSW	WSW	SW	SW	SSW	SW	SSW	SW	SW	SW	WSW	WSW	WSW	WSW	W	WSW	SW	SW	SW	SSW	SSW	WSW	WSW
16 Spd	14.7	12.6	11.7	12.8	8.5	10.9	7.7	5.8	13.1	16.4	19.6	22.0	21.7	12.6	20.1	17.7	15.5	24.5	15.8	20.6	24.6	26.8	25.7	23.7	14.49	26.85
Dir	S	SSW	S	S	SSW	S	SSW	WSW	WNW	WNW	WNW	W	W	W	WSW	W	WSW	W	W	W	W	W	W	W	WSW	W
17 Spd	26.2	26.4	26.6	26.9	26.8	24.7	20.5	17.2	18.8	19.3	17.9	17.5	16.3	10.8	15.7	10.6	9.8	12.6	9.8	9.4	5.5	7.4	10.7	12.7	15.99	26.94
Dir	W	W	W	W	W	W	W	W	W	WNW	WNW	WNW	WNW	WSW	W	W	WSW	WSW	W	WSW	SSW	SSW	SW	SW	W	W
18 Spd	10.5	7.6	3.7	5.7	3.8	5.2	7.8	11.3	9.1	5.3	3.7	7.8	6.0	5.5	4.7	6.5	3.3	4.8	2.8	3.4	2.9	2.6	4.2	4.5	4.50	11.34
Dir	SW	WSW	WSW	SSW	S	SSW	SW	WSW	WSW	SW	SW	SW	S	WSW	S	SW	SSW	SE	SE	ESE	ESE	SE	S	SW	SSW	WSW
19 Spd	2.2	4.3	7.8	7.8	6.6	10.2	11.7	15.4	17.6	14.8	15.2	15.6	14.5	14.0	15.1	12.2	11.5	13.4	5.2	2.2	3.2	1.3	3.7	2.7	7.59	17.65
Dir	WNW	SW	W	WSW	WSW	WSW	WSW	WSW	W	W	WNW	NW	NW	NNW	NW	NW	NW	NNW	NNW	SW	NNE	SSW	S	SSW	WNW	W
20 Spd	3.3	6.1	6.9	6.3	4.0	5.4	7.6	10.0	7.4	5.1	3.3	1.5	3.8	3.1	4.5	5.5	8.9	11.5	13.0	12.4	4.4	5.5	6.9	5.3	1.68	12.99
Dir	SSW	SW	SW	SW	S	SSW	SW	WSW	SW	WSW	SSW	WSW	SSW	SE	NE	ENE	ENE	ENE	ENE	ENE	E	SSE	SW	S	SSE	ENE
21 Spd	5.4	7.7	4.4	1.8	1.5	1.4	1.6	5.6	4.2	4.6	4.6	6.2	11.1	9.2	5.9	7.1	0.8	6.9	2.4	4.0	6.5	1.4	3.5	2.7	2.14	11.14
Dir	SSE	SSE	SE	ENE	WSW	NW	SSW	WSW	W	W	WSW	SW	W	WSW	WNW	NE	S	SE	NE	SW	W	W	S	S	SW	W
22 Spd	2.7	5.0	5.6	7.4	5.5	6.1	4.9	11.6	7.6	5.8	3.9	1.0	6.7	12.1	8.7	8.6	6.4	7.9	6.4	5.1	4.7	3.5	4.3	4.8	2.87	12.13
Dir	S	S	SSW	SSW	SW	SSW	S	SW	SW	WSW	S	SSW	N	NNE	NE	SSW	NW	WNW	W	WNW	SW	SSW	SSW	SSW	WSW	NNE





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

**Wind Speed (WS) - kph**  
**June 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	5.4	3.7	6.6	5.2	4.4	2.9	8.7	3.8	3.1	1.4	4.1	5.2	7.1	10.2	10.3	6.1	19.8	3.8	4.7	9.2	10.4	4.8	4.1	2.9	1.91	19.85	
Dir	S	WSW	SW	SSW	SW	SSW	S	SW	SW	ENE	NE	NE	NE	ENE	ENE	WSW	WNW	SW	W	SSW	WSW	NW	SW	SW	SW	WSW	
24 Spd	6.5	5.3	7.2	9.8	9.8	10.3	12.8	11.0	12.4	13.0	13.0	16.6	17.9	17.6	15.7	9.0	12.7	12.7	12.9	7.1	6.8	2.5	2.9	5.8	10.10	17.87	
Dir	SW	SSW	SW	WSW	WSW	WSW	WSW	W	WSW	W	W	WSW	WSW	W	WSW	W	WNW	W	WSW	WSW	W	SW	SSW	WSW	WSW	WSW	
25 Spd	6.4	8.6	10.1	9.3	7.0	8.2	9.2	10.4	11.4	12.9	15.8	13.1	14.1	15.4	15.9	13.2	15.7	10.4	6.9	6.0	11.4	15.7	12.1	10.0	9.95	15.90	
Dir	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	WNW	WNW	W	WSW	W	W	WNW	W	NNE	NE	SW	WSW	W	W	W	W	
26 Spd	3.1	7.4	5.6	3.6	6.2	6.3	6.9	6.8	11.8	10.5	11.3	8.1	7.6	9.1	5.3	2.5	4.8	4.0	4.7	1.7	1.2	1.1	3.4	3.6	4.81	11.79	
Dir	SW	SSW	SSW	WNW	WSW	WSW	WSW	WSW	W	W	WNW	WNW	W	WSW	WSW	WSW	WNW	W	W	ESE	E	S	SSW	SSW	WSW	W	
27 Spd	0.2	2.2	3.5	5.6	5.7	5.1	5.5	6.4	4.2	1.8	0.9	2.4	4.4	4.5	2.9	2.7	3.6	3.4	0.9	3.5	3.1	3.2	1.7	2.6	2.08	6.42	
Dir	N	S	SSW	SSW	SW	SSW	SW	WSW	WSW	SSW	SSE	NNE	S	SSE	SE	SE	SSE	SW	ESE	E	E	E	ESE	ESE	S	WSW	
28 Spd	0.6	1.1	1.6	2.1	3.1	3.7	4.8	6.5	5.3	4.2	8.1	10.1	8.2	6.4	6.7	17.7	15.6	9.7	7.0	3.3	4.8	1.6	3.6	2.0	2.36	17.69	
Dir	SE	W	S	S	S	SSW	SSW	WSW	W	WSW	WNW	NW	WNW	W	SW	S	S	NE	NE	SSW	NW	SSE	SSW	SW	SW	S	
29 Spd	2.6	3.6	5.9	4.9	3.4	2.8	3.0	3.8	1.6	2.4	2.9	5.9	7.9	12.3	10.9	13.1	12.7	10.3	7.9	3.0	10.4	19.2	19.1	1.5	2.34	19.22	
Dir	S	S	SSW	SW	WSW	SW	SW	WSW	WSW	NE	ENE	ENE	NE	ENE	ENE	ENE	ENE	ENE	ENE	SW	SW	SSW	SSW	SSE	SE	SSW	
30 Spd	0.6	1.2	0.6	1.3	4.3	6.2	8.9	7.6	6.6	7.5	16.1	15.5	11.1	13.0	10.2	10.8	7.4	4.5	2.8	20.1	6.1	10.2	10.1	7.4	3.69	20.12	
Dir	SE	SSW	NW	E	ENE	ENE	ENE	ENE	SSW	SSW	SSW	SW	WSW	W	WNW	NW	NNW	N	N	SW	SW	SSW	SSW	S	SW	SW	
Spd	3.24	3.99	4.39	4.73	4.97	4.81	5.57	6.01	6.37	5.28	5.20	5.84	5.68	5.33	4.52	4.42	5.50	4.25	2.60	3.91	3.88	4.41	4.49	3.89	Diurnal Average		
Dir	SW	SW	SW	SW	SW	SW	SW	WSW	W	W	W	W	W	W	WNW	WNW	W	WNW	WNW	WSW	WSW	SW	WSW	SW	Diurnal Maximum		
Spd	26.19	26.41	26.64	26.94	26.82	24.73	20.54	17.17	18.76	19.32	19.56	22.00	24.98	26.86	27.39	25.77	26.24	24.54	22.08	22.69	24.57	26.85	25.71	23.73	Diurnal Maximum		
Dir	263.75	265.15	268.67	269.58	270.68	265.57	265.32	274.28	278.24	284.00	281.51	276.89	236.03	254.05	250.53	247.04	247.81	262.28	256.66	233.15	269.87	269.30	270.73	263.06			
Maximum Speed Value: 27.4 kph on Jun 15 15:00																				Minimum Speed Value: 0.1 kph on Jun 6 05:00				Hours in Service: 720			
Maximum Daily Speed Average: 17.14 kph on Jun 15																				Minimum Daily Speed Average: 1.23 kph on Jun 27				Hours of Data: 720			
Maximum Diurnal Speed Average: 6.37 kph at hour 9																				Minimum Diurnal Speed Average: 2.60 kph at hour 19				Hours of Missing Data: 0			
Monthly Average Velocity: 4.375 kph 254.06 deg																				Speed Percentiles: P <sub>1</sub> = 0.6 P <sub>10</sub> = 2.2 Q <sub>1</sub> = 4.0 Median = 6.6 Q <sub>3</sub> = 11.1 P <sub>90</sub> = 16.0 P <sub>99</sub> = 26.2				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	17	15	1	0	0	0	33																				
NorthEast	17	32	15	0	0	0	64																				
East	23	17	7	0	0	0	47																				
SouthEast	24	11	0	0	0	0	35																				
South	72	28	9	0	0	0	109																				
SouthWest	61	81	21	15	0	0	178																				
West	26	68	67	31	0	0	192																				
NorthWest	14	29	15	4	0	0	62																				
Total	254	281	135	50	0	0	720																				



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

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

<b>Maximum Value: 96.59 % on Jun 14 05:00</b> <b>Maximum Daily Average: 86.49 % on Jun 24</b>																							<b>Hours in Service: 720</b>			
<b>Minimum Value: 20.0 % on Jun 6 16:00</b> <b>Minimum Daily Average: 48.69 % on Jun 5</b>																							<b>Hours of Data: 720</b>			
<b>Maximum Diurnal Average: 86.73 % at hour 5</b> <b>Minimum Diurnal Average: 44.56 % at hour 15</b>																							<b>Hours of Missing Data: 0</b>			
<b>Monthly Average: 64.819 %</b> <b>Percentiles: P<sub>1</sub> = 24.1 P<sub>10</sub> = 32.8 Q<sub>1</sub> = 47.0 Median = 68.5 Q<sub>3</sub> = 83.6 P<sub>90</sub> = 91.3 P<sub>99</sub> = 95.2</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-Jun	50.4	52.5	64.5	74.4	78.5	78.1	74.3	70.2	60.4	54.0	51.5	43.9	42.5	39.9	37.6	36.6	41.3	52.9	50.8	57.7	66.3	73.1	82.0	88.1	59.22	88.14
2-Jun	92.3	93.8	93.8	92.9	92.8	93.8	90.8	83.3	77.4	60.8	45.4	37.4	33.3	52.9	48.8	59.8	81.2	83.2	74.4	56.9	59.0	77.9	79.3	78.3	72.48	93.80
3-Jun	75.7	79.5	77.7	86.5	86.7	81.0	76.0	60.6	53.4	45.5	40.2	35.3	31.2	28.9	29.1	29.5	29.0	29.7	31.5	33.4	43.1	52.5	57.9	63.5	52.39	86.71
4-Jun	71.5	73.7	73.6	80.1	78.5	77.6	66.2	56.7	45.4	42.3	41.4	40.2	37.2	32.0	30.3	28.8	27.8	26.3	23.1	22.2	25.7	39.2	60.3	74.7	48.94	80.06
5-Jun	80.7	84.1	86.5	88.0	88.0	80.2	69.1	57.1	49.0	38.9	31.5	29.3	28.6	25.2	24.2	23.7	23.8	23.4	24.3	29.8	37.1	47.0	49.8	49.5	48.69	88.01
6-Jun	47.3	53.2	63.3	74.0	83.7	85.9	73.5	70.8	56.6	48.5	46.8	43.8	38.4	30.8	23.7	20.0	24.5	32.4	32.5	30.0	28.4	38.6	62.7	66.3	48.98	85.93
7-Jun	70.3	74.6	80.8	82.6	82.0	80.1	68.3	51.7	41.0	32.9	31.3	28.2	28.0	27.9	30.2	31.9	32.8	32.3	35.9	64.6	78.3	79.2	85.2	85.3	55.62	85.28
8-Jun	76.0	84.5	88.0	91.4	91.3	91.5	89.6	83.6	80.6	76.2	68.8	63.2	61.2	62.6	65.7	70.5	79.0	72.8	72.9	76.5	80.8	89.3	91.1	90.6	79.07	91.50
9-Jun	91.8	93.3	92.7	92.3	93.2	92.4	90.0	89.7	86.5	82.7	74.4	66.3	62.7	60.4	55.8	50.9	48.3	50.1	59.7	67.7	73.8	75.8	78.5	81.8	75.45	93.27
10-Jun	81.5	83.7	85.8	84.9	89.9	86.9	74.9	67.2	61.5	57.1	50.3	49.0	43.7	42.7	45.3	44.9	44.0	52.7	65.6	65.1	68.0	78.4	88.0	85.3	66.52	89.93
11-Jun	79.2	80.1	81.8	82.5	86.5	86.2	84.6	76.7	71.0	62.0	58.7	56.0	60.0	75.4	88.3	90.1	81.9	79.1	82.8	86.2	88.2	89.8	91.6	93.6	79.67	93.64
12-Jun	94.8	95.1	95.0	94.7	94.0	91.5	88.7	83.9	81.9	79.6	68.6	59.3	54.3	51.1	47.7	41.9	38.6	33.6	34.1	35.1	39.7	55.0	60.1	62.8	65.88	95.08
13-Jun	66.8	68.8	76.5	81.3	80.9	77.6	69.9	56.7	47.3	42.0	42.1	39.0	39.0	40.2	39.7	52.1	75.5	73.6	69.4	78.0	85.2	91.4	93.7	94.1	65.87	94.11
14-Jun	94.5	95.6	96.0	96.2	96.6	96.5	94.5	90.7	83.3	72.9	66.5	58.9	51.2	44.9	55.1	84.0	83.5	88.0	88.2	87.1	89.0	91.2	93.0	91.3	82.86	96.59
15-Jun	91.8	92.2	89.4	91.0	88.2	90.3	84.2	86.9	74.3	69.8	58.1	50.3	42.6	37.1	34.7	33.6	31.0	30.6	35.9	32.8	34.6	39.8	44.4	49.2	58.86	92.21
16-Jun	46.9	50.5	58.9	55.8	64.5	63.2	59.4	52.8	49.3	51.4	52.5	54.1	53.8	54.9	51.7	59.5	78.0	68.8	74.1	70.5	66.6	68.7	75.6	83.8	61.06	83.75
17-Jun	81.7	83.5	83.4	81.1	78.8	78.5	75.5	77.1	71.7	68.2	63.4	58.6	51.6	55.5	43.1	41.7	36.3	32.7	31.4	35.7	46.1	62.0	56.4	54.7	60.35	83.45
18-Jun	59.5	61.0	64.6	70.3	74.6	69.3	61.3	53.9	48.2	44.2	40.0	37.1	33.2	32.7	31.8	32.7	31.5	32.7	32.0	40.2	45.8	56.8	65.5	68.3	49.46	74.64
19-Jun	73.3	80.5	77.8	81.4	81.3	81.9	79.7	74.1	64.3	56.1	48.6	41.5	29.9	27.5	26.8	27.0	26.7	35.2	42.3	52.2	50.3	70.7	81.1	80.4	57.93	81.91
20-Jun	81.9	78.7	79.8	81.9	81.7	79.1	71.2	64.6	58.4	53.4	38.7	29.5	29.4	24.5	26.1	25.7	26.5	28.5	28.4	32.7	38.3	44.5	58.9	68.8	51.29	81.86
21-Jun	63.4	57.5	61.7	66.9	79.9	83.1	81.4	75.9	69.5	59.5	52.4	49.9	53.7	49.3	45.2	50.5	75.5	71.0	62.5	71.6	74.9	76.6	89.1	89.5	67.10	89.47
22-Jun	90.0	90.9	89.1	85.8	86.6	85.6	83.5	69.5	65.6	54.3	47.5	39.0	40.8	43.0	42.1	49.2	69.4	73.0	65.7	63.7	73.3	85.1	88.5	90.0	69.64	90.85
23-Jun	92.3	91.5	92.9	93.6	93.7	92.5	88.3	76.8	69.7	59.5	52.3	48.6	45.5	41.1	43.1	59.3	85.5	89.1	85.9	85.7	89.6	89.6	92.9	93.1	77.17	93.72
24-Jun	92.9	93.5	93.2	90.8	89.2	91.3	91.2	88.6	90.3	90.2	88.0	88.0	83.5	81.0	82.9	81.0	73.3	73.2	75.7	80.9	82.2	89.7	93.1	92.1	86.49	93.53
25-Jun	91.8	90.8	89.5	91.0	92.0	91.5	88.7	82.5	72.7	67.9	58.4	55.3	54.2	70.9	79.5	78.3	60.8	59.6	59.3	63.9	86.1	88.4	86.0	88.1	76.97	92.02
26-Jun	93.8	94.8	95.0	95.3	95.2	92.7	90.5	84.8	72.2	62.9	54.1	47.3	41.6	40.0	36.3	33.0	30.4	29.2	32.3	36.3	48.2	74.1	86.7	87.6	64.76	95.35
27-Jun	88.7	90.6	92.1	92.9	93.2	88.9	79.6	68.6	58.7	48.7	41.3	36.7	37.2	35.1	31.8	33.2	32.4	31.7	29.4	40.3	49.4	58.8	67.6	73.9	58.36	93.19
28-Jun	81.8	90.1	92.6	93.6	94.2	92.9	85.0	75.1	67.4	52.1	47.1	42.3	35.4	36.6	44.1	47.5	40.5	43.5	46.6	51.9	51.6	74.5	83.2	85.3	64.79	94.15
29-Jun	89.5	92.6	92.6	90.5	91.4	90.8	82.4	72.4	64.9	52.0	48.1	44.1	41.1	40.8	38.1	35.0	33.4	34.5	40.9	50.7	62.4	76.4	74.5	68.7	62.83	92.63
30-Jun	80.9	88.5	91.5	93.9	94.6	88.5	84.6	75.1	75.2	73.7	74.2	75.4	79.0	66.8	57.9	53.3	51.3	51.6	55.0	71.3	76.8	82.5	88.0	91.1	75.87	94.63
																							Diurnal Average			
																							Diurnal Maximum			



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

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

<b>Maximum Value: 11.05 kph on Jun 11 14:00</b>		<b>Maximum Daily Average: 4.63 kph on Jun 17</b>		<b>Hours in Service: 720</b>																						
<b>Minimum Value: 0.7 kph on Jun 6 08:00</b>		<b>Minimum Daily Average: 2.01 kph on Jun 27</b>		<b>Hours of Data: 720</b>																						
<b>Maximum Diurnal Average: 4.70 kph at hour 16</b>		<b>Minimum Diurnal Average: 1.99 kph at hour 6</b>		<b>Hours of Missing Data: 0</b>																						
<b>Monthly Average: 3.089 kph</b>		<b>Percentiles: P<sub>1</sub> = 1.0 P<sub>10</sub> = 1.4 Q<sub>1</sub> = 1.9 Median = 2.7 Q<sub>3</sub> = 4.0 P<sub>90</sub> = 5.3 P<sub>99</sub> = 8.2</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-Jun	2.9	3.4	1.9	1.3	2.8	2.8	1.8	1.8	1.8	2.6	3.3	3.9	3.5	4.3	3.8	4.9	4.6	5.6	3.5	3.8	1.5	1.5	1.2	1.4	2.92	5.64
2-Jun	1.4	1.9	1.2	1.3	2.7	2.5	2.2	1.9	2.0	2.6	3.0	2.5	3.2	8.4	5.8	4.9	6.2	1.6	3.2	3.6	1.6	1.5	3.3	1.4	2.91	8.37
3-Jun	2.0	2.0	1.2	1.6	2.1	1.9	1.7	1.9	2.0	3.9	4.7	6.3	5.0	5.6	4.5	4.6	5.4	5.4	4.8	3.7	2.5	1.7	2.5	1.6	3.28	6.27
4-Jun	1.7	1.2	1.6	2.0	2.5	2.6	1.4	2.1	3.1	3.4	4.0	3.4	4.3	4.8	4.6	4.5	3.4	3.7	4.0	3.7	1.6	1.2	1.7	1.4	2.83	4.79
5-Jun	1.0	0.9	1.3	2.4	2.1	1.6	1.8	2.2	1.9	2.2	2.6	2.4	3.4	3.0	2.7	2.7	2.9	2.5	2.3	2.6	2.3	1.5	1.7	2.4	2.18	3.35
6-Jun	2.6	1.5	1.4	1.6	1.4	1.2	0.9	0.7	1.4	1.9	2.5	2.4	2.1	2.8	2.6	3.0	4.4	4.8	4.3	3.2	2.9	1.6	0.9	2.4	2.27	4.83
7-Jun	1.7	1.6	1.7	1.8	1.2	1.1	1.7	1.9	1.9	2.1	2.7	2.9	3.5	3.6	3.8	3.3	3.7	3.8	5.7	4.2	2.6	1.7	1.9	5.9	2.75	5.92
8-Jun	2.6	6.4	2.5	1.4	2.2	1.3	2.1	2.7	2.9	4.2	4.1	4.4	3.7	3.8	4.2	4.4	3.2	3.2	2.6	3.0	3.1	4.1	6.4	3.9	3.44	6.45
9-Jun	1.5	2.1	3.6	3.5	2.6	2.4	2.0	3.3	3.8	4.5	5.4	5.7	6.6	5.6	6.4	6.3	6.4	6.0	4.6	3.7	2.9	2.0	1.7	2.5	3.97	6.65
10-Jun	2.3	1.2	2.5	2.5	1.8	1.5	1.8	1.8	2.6	3.9	4.6	4.9	5.7	5.1	5.0	4.5	5.0	6.4	5.6	2.6	1.3	1.3	2.2	1.5	3.23	6.40
11-Jun	2.9	3.4	4.3	1.6	1.2	1.6	2.4	2.4	2.7	2.7	3.4	3.7	4.4	11.1	6.0	4.2	5.2	3.7	3.3	2.2	1.4	2.1	1.4	1.3	3.27	11.05
12-Jun	1.7	1.4	2.3	1.7	1.9	1.7	2.6	3.6	5.1	3.9	3.5	4.5	5.0	4.5	4.6	4.4	4.2	5.1	4.3	6.8	3.0	2.0	2.0	2.4	3.43	6.81
13-Jun	1.3	1.4	1.4	1.6	2.7	1.9	2.2	2.1	2.1	2.0	2.6	3.4	4.2	4.3	4.1	6.0	8.2	3.6	3.8	6.8	3.0	2.5	2.3	3.3	3.19	8.24
14-Jun	2.3	1.5	1.4	1.5	1.3	1.2	1.7	2.4	3.1	3.0	3.5	3.0	3.1	2.3	6.2	5.5	6.5	4.8	4.3	4.7	5.7	3.6	3.6	3.6	3.32	6.50
15-Jun	2.8	5.2	5.6	4.1	5.1	2.2	2.8	2.0	3.9	2.6	4.4	4.2	6.4	6.0	6.1	6.3	5.8	8.3	5.7	5.7	3.7	2.5	2.0	2.5	4.42	8.30
16-Jun	2.7	2.0	1.1	1.8	2.0	2.2	3.7	6.0	3.8	4.1	6.1	6.7	6.3	3.8	5.2	6.1	2.9	7.5	4.5	5.6	5.5	6.4	5.5	5.3	4.43	7.48
17-Jun	6.1	5.7	5.6	5.4	5.7	5.1	5.3	4.4	5.3	5.7	5.0	5.2	5.1	5.9	6.1	4.5	3.4	4.4	3.0	3.3	1.8	5.1	1.9	2.0	4.63	6.13
18-Jun	1.6	2.1	1.9	1.4	1.9	2.4	2.5	2.3	2.5	2.8	3.3	3.7	4.1	3.7	3.6	2.9	2.5	2.6	1.7	2.1	1.9	1.2	1.6	1.6	2.42	4.10
19-Jun	2.7	3.2	2.2	1.9	2.0	2.4	2.8	3.5	4.4	4.3	5.0	5.2	5.3	5.3	5.7	4.9	5.0	5.8	3.6	1.9	2.2	1.5	2.0	2.1	3.54	5.77
20-Jun	1.6	2.6	1.6	2.3	1.1	1.6	1.8	2.0	1.8	2.2	2.6	2.9	3.8	4.0	3.4	3.6	4.2	4.2	3.9	3.3	2.4	3.2	2.3	3.2	2.73	4.24
21-Jun	2.0	3.0	3.2	2.9	1.7	1.8	1.1	2.8	1.4	2.2	3.1	4.4	3.8	3.1	3.4	4.1	4.0	1.9	1.9	1.9	1.3	2.0	1.6	1.4	2.50	4.36
22-Jun	1.9	1.1	1.3	1.5	1.1	1.0	1.2	2.6	2.5	2.5	2.3	2.6	5.0	3.3	2.8	7.8	5.0	4.1	4.3	2.3	1.8	1.1	1.3	1.0	2.56	7.77
23-Jun	2.4	1.2	2.3	2.0	2.8	1.6	2.1	2.6	1.7	2.2	2.2	2.7	3.2	4.3	4.1	9.1	3.8	4.3	3.1	3.2	2.3	3.5	1.0	1.9	2.90	9.12
24-Jun	1.5	1.4	1.7	1.8	2.0	2.3	2.9	2.5	2.5	3.1	3.6	3.6	3.6	3.9	3.3	6.1	3.4	3.3	2.9	2.1	2.4	1.9	1.5	1.1	2.69	6.05
25-Jun	1.3	1.5	2.0	2.2	1.7	1.5	1.9	2.5	2.7	3.3	4.2	4.8	6.2	6.4	6.2	3.4	4.8	4.2	3.4	3.3	3.6	3.5	3.2	2.4	3.34	6.37
26-Jun	3.6	2.9	1.5	1.4	1.3	2.1	1.6	1.8	2.6	2.9	3.4	3.5	4.2	4.9	4.0	3.1	3.2	2.7	1.8	1.1	1.2	1.3	1.5	1.3	2.46	4.94
27-Jun	1.6	1.1	1.3	1.2	1.4	1.8	2.2	1.9	1.3	1.6	1.9	2.7	2.9	3.3	3.6	2.9	2.9	2.2	1.4	2.8	1.8	1.8	1.4	1.2	2.01	3.58
28-Jun	1.2	1.2	1.7	2.1	1.2	2.0	2.3	2.2	2.8	2.7	3.8	4.1	4.3	2.5	3.5	3.5	3.0	3.5	3.3	3.4	2.0	1.4	2.0	1.5	2.55	4.31
29-Jun	1.5	1.6	2.3	1.4	1.3	2.0	1.1	1.7	1.7	2.8	2.4	2.9	4.4	4.7	4.7	5.3	5.1	4.0	3.1	10.4	4.9	4.3	4.8	6.7	3.55	10.43
30-Jun	1.8	3.3	1.4	1.5	2.5	2.2	2.2	3.6	3.9	3.8	3.6	3.7	3.1	4.3	3.3	4.2	3.1	1.8	1.6	8.2	2.7	2.1	1.8	2.0	2.99	8.20
																								Diurnal Average		
																								Diurnal Maximum		
2.13 2.30 2.17 2.02 2.11 1.99 2.13 2.50 2.70 3.06 3.55 3.87 4.32 4.62 4.45 4.70 4.40 4.17 3.52 3.84 2.55 2.37 2.28 2.41																										
6.13 6.45 5.62 5.41 5.71 5.15 5.27 5.96 5.30 5.70 6.05 6.71 6.65 11.05 6.40 9.12 8.24 8.30 5.69 10.43 5.65 6.40 6.44 6.65																										
,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**  
**June 2016**

<b>Maximum Value: 100.46 deg on Jun 30 02:00</b> <b>Maximum Daily Average: 53.15 deg on Jun 6</b>																								<b>Hours in Service: 720</b> <b>Hours of Data: 720</b>		
<b>Minimum Value: 6.0 deg on Jun 27 04:00</b> <b>Minimum Daily Average: 15.25 deg on Jun 15</b>																								<b>Hours of Missing Data: 0</b> <b>Hours of Calibration: 0</b>		
<b>Maximum Diurnal Average: 39.58 deg at hour 16</b> <b>Minimum Diurnal Average: 22.27 deg at hour 7</b>																								<b>Percent Operational Time: 100.0</b>		
<b>Monthly Average: 30.697 deg</b> <b>Percentiles: P<sub>1</sub> = 7.3 P<sub>10</sub> = 12.1 Q<sub>1</sub> = 15.8 Median = 23.4 Q<sub>3</sub> = 37.7 P<sub>90</sub> = 64.4 P<sub>99</sub> = 94.2</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-Jun	18.7	56.4	73.9	49.0	90.0	38.1	26.2	20.4	19.2	20.9	19.9	14.8	18.0	42.2	88.3	70.3	24.2	84.0	24.3	23.7	15.9	12.0	13.0	78.6	39.24	90.00
2-Jun	34.3	35.1	29.0	30.9	67.1	66.0	22.2	25.6	54.1	74.1	41.8	38.4	55.8	32.0	44.3	28.9	44.0	20.8	21.9	16.5	24.8	16.1	19.1	10.9	35.58	74.10
3-Jun	9.6	6.9	17.4	17.8	20.4	7.8	13.1	24.3	17.0	19.8	16.4	17.1	19.0	17.6	19.0	21.8	12.5	13.2	14.5	17.7	16.1	6.3	32.5	23.1	16.70	32.48
4-Jun	49.5	11.1	9.4	10.1	30.0	54.7	16.9	23.3	28.4	35.9	59.0	43.5	34.4	31.8	36.9	34.4	20.5	29.4	27.2	25.3	22.2	28.3	95.0	39.8	33.21	95.04
5-Jun	11.3	15.4	11.0	17.9	9.6	9.2	17.2	17.6	27.0	63.6	43.4	37.6	91.7	64.4	71.3	68.2	79.5	75.2	26.6	20.3	24.1	31.9	31.7	28.4	37.25	91.70
6-Jun	30.7	20.3	69.5	22.7	81.3	48.2	87.6	61.7	64.4	54.4	47.1	71.0	46.8	70.5	83.9	86.1	89.9	30.9	26.6	24.1	22.9	32.9	34.3	67.8	53.15	89.93
7-Jun	63.9	46.4	61.0	51.1	13.1	19.7	42.0	69.6	34.8	24.5	27.0	36.3	43.4	56.6	59.1	44.4	21.0	31.6	29.0	56.1	21.9	39.7	30.4	79.2	41.75	79.22
8-Jun	26.1	49.8	35.8	29.7	27.7	42.3	37.5	15.6	15.3	14.9	16.3	20.0	23.1	21.5	23.1	34.0	18.6	18.7	20.4	14.4	51.9	38.9	37.2	59.2	28.84	59.17
9-Jun	18.2	20.4	25.6	19.9	10.4	13.8	11.2	10.3	16.7	14.5	17.4	16.2	17.0	15.5	18.8	19.4	19.5	20.5	23.4	22.6	20.8	19.8	19.0	29.5	18.36	29.53
10-Jun	18.3	21.3	18.5	97.6	77.8	81.5	19.9	79.9	79.7	28.2	33.2	25.0	26.0	20.2	17.2	15.1	23.8	34.5	23.9	26.8	12.2	30.9	47.5	13.3	36.34	97.57
11-Jun	18.9	26.5	27.4	31.3	74.4	40.3	36.9	29.2	22.1	26.1	28.4	37.7	45.7	41.4	34.5	37.0	34.1	54.6	24.0	8.2	7.0	19.6	9.8	18.9	30.58	74.43
12-Jun	23.8	46.6	44.4	63.3	9.4	6.4	16.1	11.3	31.8	13.7	17.6	16.8	23.9	21.1	15.8	15.0	14.6	14.5	14.9	12.9	12.2	25.2	14.3	18.0	20.98	63.30
13-Jun	30.8	22.1	8.4	10.4	12.6	10.2	19.7	24.7	35.0	58.6	71.6	91.3	61.7	22.7	24.3	76.6	46.4	24.6	25.1	79.5	23.8	25.7	17.1	33.9	35.70	91.29
14-Jun	64.3	17.7	13.1	15.6	12.1	13.7	23.5	21.4	25.4	19.2	28.8	61.9	96.5	62.1	54.5	30.9	27.5	24.8	11.5	12.1	17.9	15.2	15.0	32.8	29.89	96.48
15-Jun	17.6	13.1	13.1	13.0	16.0	7.8	12.2	61.3	23.4	10.8	13.4	11.1	15.5	13.7	13.3	13.9	16.2	15.4	19.9	10.4	8.6	8.3	6.6	11.6	15.25	61.35
16-Jun	12.6	10.9	9.2	7.4	15.9	8.6	29.4	58.8	15.9	14.5	16.8	17.6	17.0	17.1	16.0	26.6	12.7	17.0	13.9	14.0	13.4	13.9	14.4	15.5	17.03	58.82
17-Jun	14.7	14.7	14.0	14.5	13.5	15.3	17.7	14.8	15.2	14.5	14.1	16.5	20.8	27.4	25.2	27.2	23.9	25.0	16.9	16.0	13.6	21.8	13.8	6.7	17.40	27.35
18-Jun	12.2	12.1	24.1	9.8	22.7	17.9	13.8	12.7	16.8	32.9	63.6	37.6	50.6	48.3	57.5	29.7	46.8	41.3	28.5	27.2	23.8	17.5	17.1	27.3	28.82	63.56
19-Jun	63.1	42.5	18.4	16.5	19.9	11.6	10.5	12.5	15.8	17.8	19.4	19.8	25.5	25.3	22.7	26.7	26.0	29.4	39.2	44.3	29.9	59.6	17.4	30.1	26.83	63.09
20-Jun	29.5	17.7	10.6	12.6	16.3	20.7	14.5	11.6	19.5	25.6	61.3	93.8	68.7	90.5	74.7	51.5	28.7	21.0	16.6	13.8	23.6	37.7	17.4	25.3	33.46	93.79
21-Jun	26.5	21.9	57.6	78.1	74.7	68.1	32.7	18.2	21.3	36.7	46.1	43.0	16.5	23.2	41.6	34.4	91.1	19.5	63.7	43.4	15.0	81.0	21.5	29.6	41.90	91.12
22-Jun	23.5	15.0	15.0	12.3	19.0	11.7	14.7	13.0	25.2	32.5	42.1	95.1	61.9	21.6	22.4	62.5	48.0	28.3	46.0	22.3	22.6	20.2	23.9	14.3	29.71	95.12
23-Jun	12.0	20.5	17.4	9.4	44.7	18.2	11.0	55.8	40.1	82.1	47.4	40.6	27.0	26.9	22.3	70.1	13.7	86.4	71.3	19.7	17.4	56.5	20.0	47.2	36.57	86.39
24-Jun	8.5	15.2	16.8	9.6	11.9	10.7	11.2	13.1	11.1	12.8	13.6	11.5	12.5	12.8	13.8	27.9	13.9	15.1	12.5	13.2	37.2	51.4	34.0	9.5	16.66	51.45
25-Jun	9.3	10.4	10.0	10.2	10.0	9.3	11.9	15.1	13.6	16.9	16.4	23.6	28.7	20.7	16.5	16.0	15.9	18.8	30.7	44.0	29.3	17.8	17.3	20.1	18.01	43.96
26-Jun	47.7	14.1	18.2	28.9	12.6	13.3	14.3	13.2	13.6	21.5	21.4	31.2	35.3	29.1	63.8	90.8	43.0	49.7	18.4	26.3	63.1	55.4	14.2	15.8	31.45	90.82
27-Jun	94.4	34.8	34.3	6.0	7.5	8.5	18.3	14.0	20.5	73.6	89.7	78.4	63.4	49.9	93.1	69.1	71.5	42.5	74.6	37.4	26.9	30.7	27.5	20.8	45.30	94.38
28-Jun	80.9	64.0	33.5	46.3	37.0	16.6	22.5	27.8	29.2	30.0	38.1	25.7	31.8	26.6	33.2	11.5	11.8	32.1	20.8	72.4	17.2	51.4	36.6	73.9	36.29	80.92
29-Jun	37.4	28.4	16.0	18.5	20.5	23.7	26.4	23.1	71.5	85.5	59.7	40.3	34.3	19.7	30.4	24.4	22.6	21.5	15.5	73.3	32.2	11.3	23.9	91.7	35.50	91.68
30-Jun	90.1	100.5	94.7	43.0	30.3	15.6	16.9	24.9	51.8	28.4	18.0	17.4	19.9	20.6	27.4	23.4	27.0	31.4	41.9	12.4	25.0	14.3	8.1	13.5	33.18	100.46
																								Diurnal Average		
																								Diurnal Maximum		
33.28 27.72 28.25 26.77 30.28 24.33 22.27 27.49 29.18 33.47 34.96 37.70 37.75 33.10 38.83 39.58 32.96 32.39 28.13 28.34 23.09 29.71 24.31 32.87 94.38 100.46 94.67 97.57 90.00 81.47 87.57 79.85 79.73 85.54 89.66 95.12 96.48 90.47 93.12 90.82 91.12 86.39 74.59 79.48 63.11 81.00 95.04 91.68																										
,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**

**JUNE 2016**

**Summary Report**

*Continuous air quality/meteorological monitoring measurements*

**West Central Airshed Society**

WCAS / Steeper Station 905													June 2016		
Parameter	Calibration			Percent Uptime	Mean	Min	Max	Percentile					Exceedences		24 Hour Average Max (ppm)
	Number of Hours	Data						P10	Q1	Median	Q3	P90	1-hour	24-hour	
SO <sub>2</sub> (ppb)	34	686		100.0	0.1	0.0	2.1	0.0	0.0	0.0	0.0	0.2	0	0	0.000
O <sub>3</sub> (ppb)	34	686		100.0	33.0	10.8	56.0	21.0	27.8	33.0	38.9	43.2	0	-	0.048
NO (ppb)	36	684		100.0	0.2	0.0	15.2	0.0	0.1	0.1	0.1	0.2	-	-	-
NO <sub>2</sub> (ppb)	36	684		100.0	1.2	0.4	7.7	0.5	0.7	1.0	1.5	2.2	0	0	0.002
NO <sub>x</sub> (ppb)	36	684		100.0	1.4	0.4	17.4	0.5	0.7	1.1	1.7	2.4	-	-	-
CO (ppm)	34	686		100.0	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	720		100.0	1.9	0.0	12.5	0.0	0.4	1.1	2.6	5.0	0	0	8.38 ug/m3
Wind Speed (kph)	0	720		100.0	3.3	0.1	11.9	1.2	1.9	3.0	4.1	5.8	-	-	-
Temperature (°C)	0	720		100.0	12.2	2.8	28.3	6.2	8.2	11.4	15.5	19.1	-	-	-
Relative Humidity (%)	0	720		100.0	61.2	18.0	97.9	34.0	43.2	59.6	81.3	89.9	-	-	-
Std Dev Wind Direction (deg)	0	720		100.0	1.4	0.3	4.8	0.7	0.9	1.2	1.7	2.6	-	-	-
Std Dev Wind Speed (kph)	0	720		100.0	31.7	8.6	109.1	11.9	15.6	24.1	42.0	63.4	-	-	-



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

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

Maximum Value: 2.11 ppb on Jun 5 18:00		Maximum Daily Average: 0.33 ppb on Jun 5		Hours in Service: 720																													
Minimum Value: 0.0 ppb on Jun 1 01:00		Minimum Daily Average: 0.00 ppb on Jun 16		Hours of Data: 686																													
Maximum Diurnal Average: 0.11 ppb at hour 18		Minimum Diurnal Average: 0.02 ppb at hour 7		Hours of Missing Data: 34																													
Monthly Average: 0.052 ppb		Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 0.0 Q <sub>3</sub> = 0.0 P <sub>90</sub> = 0.2 P <sub>99</sub> = 0.5		Hours of Calibration: 34																													
				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-Jun	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.06						
2-Jun	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	0.0	0.0	0.0	0.0	0.0	0.00	0.01						
3-Jun	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	0.0	0.0	0.0	0.0	0.0	0.02	0.04						
4-Jun	0.0	0.0	0.0	Z	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	0.0	0.1	0.0	0.0	0.0	0.03	0.07						
5-Jun	0.0	0.0	0.0	Z	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.5	1.6	2.1	0.7	0.1	0.1	0.2	0.3	0.3	0.33	2.11						
6-Jun	0.3	0.2	0.2	Z	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	0.1	0.1	0.1	0.0	0.1	0.2	0.07	0.29							
7-Jun	0.4	0.3	0.2	Z	0.1	0.0	0.0	0.1	0.2	0.4	0.2	0.3	0.3	0.4	0.6	0.4	0.4	0.2	0.3	0.5	0.3	0.2	0.2	0.2	0.2	0.27	0.56						
8-Jun	0.2	0.3	0.6	Z	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	C	C	C	C	0.3	0.2	0.3	0.0	0.0	0.0	0.1	0.1	0.21	0.64							
9-Jun	0.2	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	0.0	0.0	0.0	0.0	0.0	0.03	0.23							
10-Jun	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	0.0	0.0	0.0	0.0	0.01	0.04							
11-Jun	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	0.0	0.0	0.0	0.0	0.02	0.04							
12-Jun	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	0.0	0.0	0.0	0.0	0.02	0.04							
13-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.3	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.07	0.48							
14-Jun	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	0.0	0.0	0.0	0.0	0.00	0.04							
15-Jun	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	0.0	0.0	0.0	0.0	0.00	0.02							
16-Jun	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	0.0	0.0	0.0	0.0	0.00	0.00							
17-Jun	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	0.0	0.0	0.0	0.0	0.00	0.00							
18-Jun	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	0.4	0.1	0.1	0.0	0.1	0.1	0.2	0.05	0.37							
19-Jun	0.2	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	0.01	0.20							
20-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.4	0.1	0.0	0.3	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.06	0.42							
21-Jun	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	0.0	0.0	0.0	0.0	0.00	0.05							
22-Jun	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	0.0	0.1	0.1	0.0	0.01	0.06							
23-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.3	0.3	0.3	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.07	0.29							
24-Jun	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	0.0	0.0	0.0	0.0	0.00	0.03							
25-Jun	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	0.0	0.0	0.1	0.2	0.02	0.23							
26-Jun	0.1	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	0.01	0.06							
27-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.3	0.2	0.1	0.1	0.1	0.1	0.2	0.4	1.0	0.8	0.0	0.0	0.0	0.15	1.01							
28-Jun	0.0	0.0	0.0	Z	0.1	0.0	0.0	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	0.0	0.0	0.0	0.05	0.12							
29-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.5	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	0.05	0.51							
30-Jun	0.0	0.0	0.0	Z	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	0.01	0.21							
		0.05	0.03	0.04	--	0.03	0.02	0.02	0.03	0.04	0.07	0.06	0.07	0.07	0.05	0.06	0.05	0.09	0.11	0.07	0.07	0.05	0.03	0.04	0.05	Diurnal Average							
		0.41	0.28	0.64	--	0.21	0.25	0.21	0.21	0.29	0.44	0.51	0.48	0.34	0.43	0.56	0.49	1.60	2.11	0.67	1.01	0.82	0.19	0.27	0.32	Diurnal Maximum							
Z - zerospan		C - Calibration																															
Alberta Ambient Air Quality Objectives (AAQO):		1-hr 172 ppb				24-hr 48 ppb																											



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

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

Maximum Value: 55.97 ppb on Jun 5 13:00	Maximum Daily Average: 47.60 ppb on Jun 5	Hours in Service: 720
Minimum Value: 10.8 ppb on Jun 30 07:00	Minimum Daily Average: 19.50 ppb on Jun 24	Hours of Data: 686
Maximum Diurnal Average: 38.13 ppb at hour 18	Minimum Diurnal Average: 24.70 ppb at hour 7	Hours of Missing Data: 34
Monthly Average: 32.959 ppb	Percentiles: P <sub>1</sub> = 12.4 P <sub>10</sub> = 21.0 Q <sub>1</sub> = 27.8 Median = 33.0 Q <sub>3</sub> = 38.9 P <sub>90</sub> = 43.2 P <sub>99</sub> = 53.9	Hours of Calibration: 34
		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-Jun	31.8	30.0	29.4	Z	26.2	27.6	26.4	28.1	28.7	33.4	38.7	40.8	42.9	43.3	43.5	42.8	42.8	43.0	40.2	41.9	39.1	41.2	39.3	40.2	36.58	43.47
2-Jun	34.4	32.7	39.6	Z	28.6	29.7	31.3	31.8	37.3	41.7	42.2	41.6	41.4	42.7	50.5	47.3	48.9	52.3	51.0	50.7	49.5	47.3	46.2	41.3	41.75	52.27
3-Jun	44.6	44.1	42.5	Z	38.0	34.6	36.0	42.6	48.5	50.9	50.5	47.5	41.7	38.8	37.3	33.5	32.2	33.5	33.9	32.3	31.3	34.7	34.0	38.99	50.88	
4-Jun	29.5	29.9	32.8	Z	30.0	31.9	33.6	25.9	31.2	34.6	37.8	43.5	43.6	43.6	44.9	47.5	48.5	50.3	52.5	52.9	50.9	49.5	50.5	46.8	40.96	52.94
5-Jun	36.7	34.4	33.4	Z	32.5	32.4	34.1	39.8	50.0	51.6	52.6	54.4	56.0	55.2	55.0	53.7	53.3	54.1	53.9	52.5	49.6	51.1	55.1	53.5	47.60	55.97
6-Jun	49.4	44.1	43.2	Z	35.4	33.3	30.8	30.7	28.8	36.1	36.9	37.9	40.2	42.0	41.2	43.3	42.0	40.6	38.7	40.7	39.2	37.4	38.4	34.4	38.47	49.45
7-Jun	30.6	29.1	28.9	Z	23.0	20.0	19.3	22.8	27.7	35.6	43.9	46.1	46.2	45.9	45.7	42.6	43.2	45.5	46.9	49.9	43.5	39.8	37.0	35.7	36.91	49.89
8-Jun	36.3	38.9	40.0	Z	34.9	35.3	35.1	29.5	34.0	37.6	40.2	41.8	C	C	C	C	39.9	39.8	41.4	43.7	39.3	39.4	40.3	41.2	38.36	43.74
9-Jun	37.4	27.6	23.1	Z	23.1	20.0	23.0	30.1	32.7	34.9	40.3	38.6	38.8	38.8	36.1	34.6	32.5	34.7	33.7	30.1	30.9	29.9	31.8	26.9	31.72	40.28
10-Jun	20.3	23.4	18.2	Z	29.4	28.7	30.1	32.0	31.8	34.5	35.0	38.0	37.8	39.9	40.8	39.1	39.5	39.9	39.2	38.8	37.8	31.4	29.0	26.2	33.08	40.84
11-Jun	23.6	23.4	18.8	Z	35.4	31.6	26.6	32.1	31.3	32.8	33.4	39.1	39.9	40.7	40.8	41.9	41.4	41.6	39.8	42.0	41.2	40.3	40.6	38.9	35.52	42.01
12-Jun	37.5	33.9	34.0	Z	28.0	26.6	23.8	23.9	26.2	28.2	27.9	28.5	30.1	30.3	33.6	38.1	41.9	42.6	42.4	42.2	37.8	38.7	39.8	38.6	33.67	42.60
13-Jun	34.4	36.3	38.2	Z	33.5	31.2	30.5	28.0	34.3	38.2	39.2	36.7	39.1	39.7	40.8	42.1	40.7	39.7	40.4	34.6	35.9	29.6	32.5	27.7	35.79	42.08
14-Jun	23.3	16.3	17.4	Z	18.5	23.0	20.8	28.8	38.1	37.4	42.8	46.0	45.8	38.6	35.7	36.2	35.3	28.4	26.0	26.0	27.5	24.6	26.0	17.0	29.54	45.96
15-Jun	21.1	26.5	29.4	Z	34.2	34.9	33.6	33.0	31.8	32.1	32.5	32.8	31.7	31.4	33.9	34.2	33.7	34.7	35.3	37.1	37.6	38.3	37.8	37.4	33.28	38.34
16-Jun	37.3	38.1	38.2	Z	35.1	33.7	31.4	31.2	31.5	33.6	35.6	34.3	32.6	31.6	30.8	30.3	31.8	31.7	31.8	33.8	32.7	29.2	29.8	28.5	32.81	38.18
17-Jun	27.6	26.2	25.6	Z	23.5	22.0	24.3	23.6	25.6	25.6	25.8	28.4	30.3	32.1	31.7	30.8	31.1	32.1	31.7	30.8	29.1	28.1	28.6	28.9	27.98	32.09
18-Jun	29.0	28.7	28.3	Z	27.6	27.3	26.9	27.2	27.8	29.6	30.7	31.0	32.0	31.9	31.8	32.1	31.8	31.7	32.0	31.7	32.8	36.6	30.5	26.5	30.23	36.62
19-Jun	33.4	33.3	28.3	Z	24.5	28.9	27.9	23.8	24.9	27.0	27.8	33.3	33.8	34.1	35.6	34.3	37.8	37.9	36.6	35.5	32.8	34.6	33.6	29.1	31.69	37.92
20-Jun	28.8	27.5	26.6	Z	23.8	21.6	20.3	21.2	30.3	38.2	42.9	42.8	42.4	43.2	42.4	43.2	41.9	39.6	40.3	41.9	42.4	41.8	36.9	38.9	35.61	43.25
21-Jun	34.8	27.5	20.7	Z	20.8	16.6	16.2	24.4	29.7	26.6	28.8	32.4	30.5	29.0	31.5	34.8	34.8	36.4	37.3	35.1	33.0	31.4	32.5	27.7	29.24	37.29
22-Jun	24.1	26.0	27.7	Z	30.5	30.3	26.7	27.6	31.7	32.2	31.9	32.1	31.4	30.8	30.4	33.2	43.1	40.8	40.7	37.5	31.3	30.5	25.2	27.8	31.45	43.12
23-Jun	24.3	20.0	16.5	Z	12.7	12.4	13.8	17.7	24.5	31.1	30.0	30.6	30.7	30.8	30.5	35.6	36.2	35.6	36.0	34.3	33.2	26.1	23.8	12.4	26.04	36.23
24-Jun	14.2	11.6	12.5	Z	13.6	13.6	15.7	28.0	29.3	24.9	20.4	18.8	21.0	25.5	26.8	23.7	21.3	21.3	18.7	19.6	18.0	16.2	19.0	14.8	19.50	29.29
25-Jun	20.9	22.3	24.2	Z	23.3	23.4	23.4	23.7	26.2	29.2	29.1	29.3	29.0	27.5	28.4	25.7	25.3	23.8	25.6	28.0	29.2	27.2	26.2	23.7	25.85	29.28
26-Jun	23.7	15.5	12.4	Z	12.0	13.3	15.6	18.4	31.5	34.9	34.7	33.6	34.0	33.8	34.0	34.8	33.4	34.5	34.1	34.4	31.3	30.6	26.3	20.7	27.28	34.94
27-Jun	17.0	17.4	14.9	Z	12.8	13.9	14.5	18.4	25.9	28.8	29.7	31.0	31.6	33.9	33.4	31.6	32.1	32.5	32.7	32.5	33.2	34.9	33.7	31.7	26.89	34.95
28-Jun	32.2	28.7	24.3	Z	16.9	17.8	19.8	22.0	20.1	32.2	34.3	38.5	40.9	40.6	39.1	34.6	38.0	38.8	32.7	29.4	27.5	22.8	13.1	12.4	28.56	40.88
29-Jun	13.6	13.9	15.8	Z	14.7	14.9	18.7	18.9	22.8	39.8	40.4	44.2	43.5	42.3	41.8	41.7	42.5	38.2	33.8	35.1	34.2	40.7	37.8	34.3	31.46	44.17
30-Jun	34.6	32.0	35.0	Z	20.4	13.6	10.8	24.3	34.0	43.2	38.1	36.0	35.9	36.8	38.9	40.1	41.7	48.5	37.5	40.6	35.5	37.6	22.2	19.6	32.91	48.51

29.56	27.98	27.33	--	25.44	24.79	24.70	26.98	30.93	34.55	35.80	36.99	37.07	37.06	37.49	37.36	37.95	38.13	37.23	37.24	35.60	34.60	33.28	30.56	Diurnal Average	
49.45	44.15	43.17	--	38.02	35.26	35.95	42.56	50.03	51.63	52.58	54.38	55.97	55.25	54.96	53.74	53.25	54.12	53.94	52.94	50.89	51.07	55.10	53.47	Diurnal Maximum	

Z - zerospan      C - Calibration  
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 82.5 ppb    24-hr -- ppb





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

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

Maximum Value: 15.25 ppb on Jun 29 11:00		Maximum Daily Average: 0.82 ppb on Jun 29		Hours in Service: 720																																													
Minimum Value: 0.0 ppb on Jun 16 03:00		Minimum Daily Average: 0.05 ppb on Jun 15		Hours of Data: 684																																													
Maximum Diurnal Average: 0.72 ppb at hour 11		Minimum Diurnal Average: 0.07 ppb at hour 3		Hours of Missing Data: 36																																													
Monthly Average: 0.180 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> = 0.1 P <sub>90</sub> = 0.2 P <sub>99</sub> = 1.0		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-Jun	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.2	0.2	0.2	1.0	0.1	0.1	0.1	0.1	0.1	0.1	1.0	0.1	0.1	0.1	0.1	0.1	0.17	1.00																							
2-Jun	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.10	0.49																							
3-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.05	0.22																							
4-Jun	0.1	0.1	0.1	Z	0.1	0.1	0.1	1.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.7	0.15	1.21																							
5-Jun	0.1	0.1	0.1	Z	0.1	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	0.1	0.1	0.1	0.1	0.1	0.1	0.14	0.26																							
6-Jun	0.1	0.1	0.1	Z	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	0.1	0.2	0.1	0.1	0.1	0.1	0.13	0.22																							
7-Jun	0.3	0.1	0.1	Z	0.2	0.2	0.3	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.19	0.35																							
8-Jun	0.1	0.2	0.1	Z	0.2	0.2	0.2	0.5	0.4	0.3	0.3	0.2	C	C	C	C	C	C	0.2	0.1	0.2	0.1	0.1	0.1	--	0.48																							
9-Jun	0.1	0.1	0.1	Z	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.5	0.15	0.48																							
10-Jun	0.8	0.1	0.1	Z	0.1	0.1	0.1	0.1	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	0.14	0.79																							
11-Jun	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	0.8	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.09	0.79																							
12-Jun	0.1	0.2	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	0.0	0.0	0.0	0.0	0.0	0.06	0.19																							
13-Jun	0.0	0.0	0.0	Z	0.1	0.0	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	0.4	0.1	0.6	0.1	0.1	0.12	0.58																							
14-Jun	0.1	0.1	0.1	Z	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.09	0.18																							
15-Jun	0.1	0.0	0.0	Z	0.1	0.0	0.0	0.0	0.1	0.3	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	0.05	0.27																							
16-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.2	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.4	0.0	0.0	0.09	0.70																							
17-Jun	0.0	0.0	0.0	Z	0.1	0.3	0.1	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.05	0.32																							
18-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.1	0.1	0.0	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	0.1	0.1	0.06	0.12																							
19-Jun	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	0.0	0.1	0.09	0.13																							
20-Jun	0.1	0.1	0.0	Z	0.1	0.1	0.4	0.6	2.1	7.7	1.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.57	7.68																							
21-Jun	0.0	0.0	0.0	Z	0.1	0.3	0.4	0.1	0.1	0.0	0.1	0.1	0.4	0.1	0.1	0.1	0.1	0.3	0.0	0.1	0.1	0.1	0.1	0.1	0.11	0.42																							
22-Jun	0.0	0.0	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	0.2	0.1	0.1	0.0	0.1	0.1	0.1	0.2	0.1	0.09	0.15																							
23-Jun	0.1	0.1	0.1	Z	0.2	0.5	0.4	0.4	0.7	0.2	1.3	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.25	1.29																							
24-Jun	0.1	0.1	0.1	Z	0.1	0.2	0.1	0.1	1.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.7	0.1	0.1	0.14	0.98																							
25-Jun	0.1	0.1	0.0	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	3.5	0.21	3.55																							
26-Jun	0.2	0.1	0.1	Z	0.1	0.2	0.3	0.4	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.10	0.37																							
27-Jun	0.1	0.1	0.1	Z	0.2	0.4	0.7	0.6	0.2	0.1	0.1	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.18	0.75																							
28-Jun	0.1	0.1	0.1	Z	2.3	0.2	0.3	0.2	0.2	0.1	1.3	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	0.27	2.30																							
29-Jun	0.1	0.1	0.1	Z	0.1	0.3	0.4	0.3	0.2	0.1	15.2	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.82	15.25																							
30-Jun	0.1	0.1	0.1	Z	9.4	0.2	0.2	0.1	0.1	0.1	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	0.53	9.44																							
																								0.11	0.08	0.07	--	0.48	0.15	0.20	0.22	0.25	0.38	0.72	0.14	0.11	0.08	0.13	0.09	0.08	0.11	0.11	0.09	0.08	0.13	0.08	0.22	Diurnal Average	
																								0.79	0.19	0.14	--	9.44	0.47	0.75	1.21	2.11	7.68	15.25	0.97	0.39	0.17	0.79	0.24	0.18	0.70	1.00	0.38	0.15	0.69	0.30	3.55	Diurnal Maximum	
Z - zerospan																								C - Calibration																									
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**  
**June 2016**

Maximum Value: 7.73 ppb on Jun 13 22:00		Maximum Daily Average: 2.24 ppb on Jun 7		Hours in Service: 720																																													
Minimum Value: 0.4 ppb on Jun 20 11:00		Minimum Daily Average: 0.50 ppb on Jun 15		Hours of Data: 684																																													
Maximum Diurnal Average: 1.65 ppb at hour 6		Minimum Diurnal Average: 0.89 ppb at hour 14		Hours of Missing Data: 36																																													
Monthly Average: 1.213 ppb		Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 0.5 Q <sub>1</sub> = 0.7 Median = 1.0 Q <sub>3</sub> = 1.5 P <sub>90</sub> = 2.2 P <sub>99</sub> = 4.0		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-Jun	1.7	1.8	1.7	Z	1.7	1.6	1.6	1.6	2.1	2.4	1.7	3.1	1.8	1.8	1.7	1.7	1.7	1.6	4.0	1.6	1.6	1.5	1.5	1.5	1.87	3.96																							
2-Jun	1.6	1.6	1.5	Z	1.6	2.3	1.9	1.8	1.7	1.6	1.6	1.5	1.6	1.5	2.2	1.5	1.5	1.5	1.6	1.6	1.5	1.5	2.6	1.5	1.69	2.61																							
3-Jun	1.3	1.3	1.3	Z	1.3	1.2	1.3	1.4	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.3	3.4	1.3	1.3	1.41	3.42																							
4-Jun	1.5	1.6	1.2	Z	1.2	1.2	1.2	2.8	1.4	1.3	1.2	1.1	1.1	1.2	1.1	1.1	1.0	1.0	1.0	1.0	1.8	1.9	2.2	2.9	1.44	2.86																							
5-Jun	2.6	1.8	2.1	Z	2.7	2.7	2.4	1.6	2.2	2.1	1.8	1.6	1.5	1.5	1.5	1.4	1.5	1.5	1.4	1.6	2.1	1.9	2.1	2.2	1.91	2.73																							
6-Jun	2.0	1.9	1.7	Z	1.6	1.4	1.4	1.5	1.6	1.2	1.1	1.1	1.0	1.0	1.0	0.9	1.2	1.0	1.2	2.0	2.1	1.8	1.5	1.7	1.43	2.06																							
7-Jun	2.3	1.8	1.9	Z	1.5	2.4	3.7	2.8	2.2	2.3	2.0	2.0	2.0	2.0	2.0	1.8	1.8	1.8	1.9	2.0	2.3	2.6	3.1	3.5	2.24	3.73																							
8-Jun	3.2	3.8	3.3	Z	2.5	3.0	3.0	4.0	3.0	2.4	2.5	2.4	C	C	C	C	C	C	2.9	1.6	2.5	2.8	2.1	2.1	--	3.99																							
9-Jun	2.3	2.5	2.1	Z	1.5	1.4	1.3	1.1	1.2	1.3	1.0	1.1	1.2	1.2	1.1	1.1	1.3	1.2	1.1	1.2	1.0	0.9	1.0	1.9	1.36	2.51																							
10-Jun	2.7	2.3	3.0	Z	1.8	1.9	1.4	1.1	1.2	1.1	1.1	1.1	1.0	1.2	1.3	1.3	1.3	1.4	1.2	1.5	1.5	1.5	1.5	2.6	1.57	3.00																							
11-Jun	2.0	1.4	1.3	Z	0.8	0.8	0.8	0.9	0.9	0.8	0.8	0.7	0.7	0.7	1.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.89	1.95																							
12-Jun	0.8	3.1	0.7	Z	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.81	3.14																							
13-Jun	0.6	0.8	0.9	Z	0.7	0.7	0.9	0.9	0.7	0.7	0.8	1.3	1.0	0.9	0.9	0.9	1.0	1.0	0.9	1.7	0.9	7.7	1.7	0.9	1.24	7.73																							
14-Jun	0.8	0.8	1.7	Z	2.3	1.6	1.2	1.0	0.9	0.8	0.7	0.7	0.8	0.7	0.8	0.8	0.7	0.6	0.7	0.8	1.0	1.1	1.1	0.9	0.98	2.32																							
15-Jun	0.6	0.6	0.6	Z	0.5	0.5	0.4	0.4	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.8	0.5	0.5	0.5	0.5	0.5	0.50	0.77																							
16-Jun	0.5	0.6	0.6	Z	0.6	0.6	1.0	0.6	0.6	0.8	0.5	0.5	0.6	0.6	0.6	0.5	0.5	0.9	0.5	0.6	0.6	1.6	0.6	0.6	0.66	1.63																							
17-Jun	0.5	0.5	0.5	Z	1.3	2.1	0.6	0.6	0.5	0.5	0.5	0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.62	2.05																							
18-Jun	0.5	0.5	0.5	Z	0.5	0.6	0.6	0.7	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.9	1.2	1.2	1.0	1.1	0.68	1.24																							
19-Jun	1.2	1.0	0.8	Z	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.7	0.7	0.6	0.6	0.6	0.6	0.7	0.6	0.7	0.6	0.6	0.6	0.69	1.16																							
20-Jun	0.6	0.6	0.6	Z	1.0	1.6	1.9	2.0	1.4	4.5	0.4	0.7	0.7	0.8	0.8	0.8	0.8	0.9	0.7	0.8	0.8	1.0	1.7	1.1	1.14	4.48																							
21-Jun	0.9	0.7	0.8	Z	1.5	3.2	2.9	1.2	0.7	0.7	0.7	0.7	1.2	0.7	0.7	0.7	0.6	0.9	0.7	0.7	0.7	0.7	0.9	0.8	1.00	3.22																							
22-Jun	0.7	0.9	1.0	Z	0.6	0.7	1.1	0.9	0.7	0.7	0.6	0.6	0.6	0.6	0.8	0.8	0.5	0.5	0.5	0.7	1.0	1.4	4.2	1.7	0.94	4.19																							
23-Jun	1.5	1.0	0.9	Z	1.6	2.0	1.6	1.3	2.1	1.2	2.2	1.2	1.2	0.9	1.2	1.2	1.0	1.2	0.8	0.8	1.1	0.9	0.7	0.6	1.22	2.16																							
24-Jun	0.6	0.5	0.6	Z	1.4	1.5	1.0	0.6	1.3	0.5	0.5	0.5	0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.8	0.6	0.5	0.73	1.79																							
25-Jun	0.5	0.5	0.5	Z	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.5	0.6	0.8	3.2	0.63	3.20																							
26-Jun	1.8	1.0	2.7	Z	1.5	1.5	1.3	1.2	0.5	0.6	0.5	0.5	0.4	0.4	0.5	0.6	0.5	0.5	0.5	0.5	0.8	0.6	0.9	1.3	0.90	2.72																							
27-Jun	1.7	1.6	2.0	Z	3.2	3.4	3.0	2.0	1.0	0.6	0.6	2.2	0.7	0.6	0.6	0.7	0.7	0.7	0.7	0.7	1.1	0.6	2.8	0.8	1.40	3.44																							
28-Jun	0.7	1.0	1.5	Z	3.8	2.8	2.3	2.1	1.3	1.1	1.1	1.1	0.8	0.9	0.9	1.1	1.0	0.9	0.9	0.8	1.2	1.4	1.0	1.0	1.33	3.82																							
29-Jun	1.3	1.7	2.2	Z	3.0	3.2	2.1	1.3	0.9	1.0	4.1	0.8	0.8	0.7	0.8	0.7	0.9	1.2	1.2	1.3	1.7	1.7	1.9	2.1	1.60	4.10																							
30-Jun	2.2	1.7	1.3	Z	4.7	1.4	1.3	1.3	1.0	0.6	1.0	1.0	0.9	0.7	0.7	0.9	0.9	0.7	0.7	0.6	0.5	0.4	0.5	0.5	1.12	4.73																							
																								1.38	1.36	1.38	--	1.61	1.65	1.51	1.35	1.18	1.17	1.11	1.08	0.94	0.89	0.98	0.92	0.91	0.92	1.05	1.00	1.15	1.52	1.41	1.37	Diurnal Average	
																								3.18	3.84	3.33	--	4.73	3.44	3.73	3.99	3.04	4.48	4.10	3.05	1.96	2.01	2.21	1.79	1.85	1.77	3.96	2.04	2.54	7.73	4.19	3.50	Diurnal Maximum	
Z - zerospan																								C - Calibration																									
Alberta Ambient Air Quality Objectives (AAQO): 1-hr 159 ppb																								24-hr 106 ppb																									



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

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

Maximum Value: 17.37 ppb on Jun 29 11:00		Maximum Daily Average: 2.43 ppb on Jun 7		Hours in Service: 720																																													
Minimum Value: 0.4 ppb on Jun 15 08:00		Minimum Daily Average: 0.54 ppb on Jun 15		Hours of Data: 684																																													
Maximum Diurnal Average: 2.06 ppb at hour 5		Minimum Diurnal Average: 0.97 ppb at hour 14		Hours of Missing Data: 36																																													
Monthly Average: 1.366 ppb		Percentiles: P <sub>1</sub> = 0.5 P <sub>10</sub> = 0.5 Q <sub>1</sub> = 0.7 Median = 1.1 Q <sub>3</sub> = 1.7 P <sub>90</sub> = 2.4 P <sub>99</sub> = 4.7		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-Jun	1.8	1.8	1.7	Z	1.7	1.7	1.7	1.7	2.3	2.5	1.9	4.0	1.9	1.9	1.8	1.9	1.8	1.7	5.0	1.7	1.7	1.6	1.6	1.6	2.05	4.96																							
2-Jun	1.7	1.7	1.6	Z	1.7	2.4	2.1	1.9	1.8	1.7	1.7	1.6	1.6	1.6	2.7	1.6	1.5	1.6	1.7	1.6	1.5	1.7	2.7	1.5	1.79	2.71																							
3-Jun	1.3	1.3	1.3	Z	1.3	1.3	1.3	1.4	1.3	1.3	1.5	1.5	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.4	3.6	1.4	1.4	1.46	3.63																							
4-Jun	1.5	1.7	1.3	Z	1.3	1.3	1.3	4.0	1.5	1.4	1.3	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.9	2.0	2.3	3.6	1.60	4.00																							
5-Jun	2.7	1.9	2.2	Z	2.8	2.9	2.6	1.8	2.4	2.3	2.0	1.7	1.6	1.6	1.6	1.6	1.7	1.6	1.5	1.7	2.2	2.0	2.2	2.3	2.04	2.90																							
6-Jun	2.1	2.0	1.8	Z	1.7	1.5	1.5	1.6	1.8	1.4	1.2	1.2	1.1	1.1	1.1	1.0	1.3	1.1	1.4	2.1	2.2	1.9	1.6	1.8	1.55	2.21																							
7-Jun	2.6	1.9	2.0	Z	1.6	2.6	4.0	3.1	2.5	2.6	2.2	2.2	2.1	2.2	2.1	1.9	2.0	1.9	2.1	2.2	2.4	2.7	3.3	3.7	2.43	4.04																							
8-Jun	3.3	4.0	3.5	Z	2.7	3.2	3.2	4.4	3.4	2.7	2.8	2.7	C	C	C	C	C	C	3.1	1.7	2.6	2.9	2.2	2.2	--	4.45																							
9-Jun	2.4	2.6	2.2	Z	1.6	1.5	1.4	1.2	1.3	1.4	1.1	1.2	1.3	1.3	1.2	1.2	1.4	1.3	1.2	1.3	1.1	0.9	1.1	2.3	1.46	2.57																							
10-Jun	3.5	2.3	3.0	Z	1.8	1.9	1.5	1.2	1.3	1.2	1.2	1.1	1.1	1.3	1.4	1.4	1.4	1.4	1.3	1.5	1.5	1.5	1.6	2.6	1.65	3.45																							
11-Jun	2.0	1.4	1.3	Z	0.8	0.8	0.9	1.0	1.0	0.8	0.8	0.8	0.8	0.7	2.5	0.7	0.7	0.7	0.8	0.7	0.7	0.7	0.7	0.7	0.95	2.46																							
12-Jun	0.8	3.2	0.8	Z	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.86	3.25																							
13-Jun	0.6	0.8	0.9	Z	0.7	0.7	1.2	0.9	0.8	0.8	0.8	1.4	1.1	0.9	0.9	0.9	1.0	1.1	1.0	2.1	1.0	8.1	1.7	1.0	1.33	8.13																							
14-Jun	0.8	0.9	1.7	Z	2.4	1.7	1.3	1.1	1.0	0.9	0.7	0.8	0.9	0.8	0.9	0.9	0.7	0.7	0.7	0.9	1.1	1.1	1.2	0.9	1.05	2.37																							
15-Jun	0.6	0.6	0.6	Z	0.6	0.5	0.4	0.4	0.6	0.8	0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.5	1.0	0.5	0.5	0.5	0.5	0.5	0.54	0.96																							
16-Jun	0.5	0.6	0.5	Z	0.6	0.6	1.2	0.7	0.6	0.9	0.6	0.6	0.6	0.6	0.6	0.5	0.5	1.6	0.5	0.6	0.7	2.0	0.6	0.6	0.74	2.02																							
17-Jun	0.5	0.5	0.5	Z	1.3	2.3	0.7	0.6	0.6	0.5	0.5	0.5	0.8	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.66	2.32																							
18-Jun	0.5	0.5	0.5	Z	0.5	0.6	0.7	0.8	0.5	0.5	0.5	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	1.0	1.3	1.2	1.1	1.1	0.73	1.28																							
19-Jun	1.2	1.0	0.9	Z	0.9	0.8	0.7	0.8	0.8	0.8	0.7	0.7	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.6	0.7	0.6	0.6	0.6	0.76	1.24																							
20-Jun	0.7	0.7	0.6	Z	1.1	1.7	2.2	2.5	3.5	11.6	1.0	0.8	0.8	0.8	0.8	0.8	0.8	1.0	0.8	0.8	0.9	1.0	1.7	1.1	1.64	11.57																							
21-Jun	0.9	0.7	0.8	Z	1.6	3.4	3.2	1.3	0.8	0.7	0.7	0.7	1.6	0.7	0.7	0.7	0.7	1.2	0.7	0.7	0.7	0.7	0.9	0.8	1.09	3.42																							
22-Jun	0.7	0.9	1.0	Z	0.7	0.7	1.1	1.0	0.7	0.7	0.7	0.7	0.7	0.6	0.9	1.0	0.6	0.5	0.5	0.7	1.1	1.5	4.2	1.7	1.00	4.23																							
23-Jun	1.5	1.0	1.0	Z	1.7	2.4	1.9	1.7	2.7	1.4	3.4	1.3	1.3	1.0	1.3	1.4	1.2	1.3	0.9	0.9	1.2	0.9	0.8	0.6	1.42	3.38																							
24-Jun	0.6	0.6	0.6	Z	1.5	1.6	1.1	0.7	2.2	0.6	0.6	0.6	0.6	0.7	0.6	0.6	0.6	0.5	0.6	0.5	0.6	2.4	0.6	0.5	0.85	2.41																							
25-Jun	0.5	0.5	0.5	Z	0.5	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.5	0.5	0.4	0.5	0.7	0.8	0.82	6.67																							
26-Jun	2.0	1.0	2.7	Z	1.5	1.7	1.5	1.5	0.6	0.7	0.6	0.5	0.5	0.5	0.6	0.7	0.5	0.5	0.6	0.5	0.8	0.7	0.9	1.4	0.97	2.71																							
27-Jun	1.8	1.6	2.1	Z	3.3	3.7	3.6	2.5	1.1	0.7	0.6	2.5	0.8	0.7	0.7	0.8	0.8	0.7	0.7	0.7	1.1	0.7	3.0	0.9	1.54	3.72																							
28-Jun	0.8	1.0	1.5	Z	5.8	3.0	2.6	2.2	1.4	1.2	2.2	1.2	0.9	1.0	1.0	1.2	1.0	1.0	0.9	0.9	1.2	1.4	1.1	1.1	1.54	5.76																							
29-Jun	1.4	1.7	2.2	Z	3.1	3.4	2.4	1.6	1.1	1.1	17.4	0.9	0.9	0.9	1.1	0.8	1.0	1.2	1.3	1.4	1.8	1.8	1.9	2.2	2.28	17.37																							
30-Jun	2.3	1.8	1.4	Z	14.0	1.5	1.5	1.4	1.1	0.7	1.2	1.2	1.1	0.8	0.8	1.0	1.0	0.7	0.8	0.7	0.6	0.6	0.5	0.5	1.61	14.05																							
																								1.46	1.42	1.43	--	2.06	1.76	1.68	1.55	1.41	1.51	1.72	1.20	1.03	0.97	1.09	0.99	0.98	1.01	1.15	1.07	1.20	1.62	1.47	1.57	Diurnal Average	
																								3.45	3.97	3.45	--	14.05	3.72	4.04	4.45	3.49	11.57	17.37	4.03	2.13	2.18	2.69	1.94	2.01	1.93	4.96	2.19	2.62	8.13	4.23	6.67	Diurnal Maximum	
Z - zerospan      C - Calibration																																																	
Alberta Ambient Air Quality Objectives (AAQO): 1-hr --- ppb      24-hr --- ppb																																																	



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

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

Maximum Value: 0.26 ppm on Jun 6 21:00      Maximum Daily Average: 0.21 ppm on Jun 7 Minimum Value: 0.1 ppm on Jun 16 05:00      Minimum Daily Average: 0.13 ppm on Jun 16 Maximum Diurnal Average: 0.18 ppm at hour 16      Minimum Diurnal Average: 0.15 ppm at hour 6 Monthly Average: 0.168 ppm      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																								Hours in Service: 720 Hours of Data: 686 Hours of Missing Data: 34 Hours of Calibration: 34 Percent Operational Time: 100.0		
Day	Hourly Period Ending At																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Jun	0.2	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.2	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	0.14	0.16
2-Jun	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.14	0.16
3-Jun	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.15	0.16
4-Jun	0.1	0.2	0.2	Z	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.15	0.16
5-Jun	0.2	0.2	0.2	Z	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.19	0.22
6-Jun	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	0.3	0.3	0.2	0.2	0.20	0.26
7-Jun	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	0.21	0.24
8-Jun	0.2	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	C	C	C	C	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.21	0.26
9-Jun	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	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.18	0.22
10-Jun	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	0.18	0.21
11-Jun	0.2	0.2	0.2	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	0.2	0.1	0.1	0.1	0.15	0.19
12-Jun	0.1	0.1	0.1	Z	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.15	0.17
13-Jun	0.1	0.2	0.1	Z	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.17	0.23
14-Jun	0.2	0.2	0.1	Z	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.16	0.18
15-Jun	0.2	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.13	0.15
16-Jun	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	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.13	0.15
17-Jun	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.14	0.15
18-Jun	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.14	0.16
19-Jun	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	0.18	0.19
20-Jun	0.2	0.2	0.2	Z	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	0.2	0.2	0.2	0.2	0.2	0.2	0.17	0.19
21-Jun	0.2	0.2	0.2	Z	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	0.2	0.2	0.2	0.2	0.2	0.17	0.19
22-Jun	0.2	0.1	0.1	Z	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.16	0.21
23-Jun	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	0.19	0.22
24-Jun	0.2	0.2	0.2	Z	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.17	0.19
25-Jun	0.2	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.16	0.17
26-Jun	0.1	0.2	0.2	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.14	0.17
27-Jun	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.16	0.22
28-Jun	0.1	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	0.20	0.23
29-Jun	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	0.20	0.25
30-Jun	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	0.20	0.23
0.17 0.17 0.16 -- 0.15 0.15 0.16 0.16 0.17 0.17 0.17 0.17 0.17 0.17 0.17 0.17 0.18 0.17 0.17 0.17 0.17 0.17 0.17 0.17 0.17																								Diurnal Average		
0.22 0.22 0.22 -- 0.23 0.20 0.20 0.20 0.23 0.22 0.25 0.23 0.22 0.22 0.22 0.22 0.23 0.25 0.26 0.25 0.26 0.26 0.26 0.23 0.24 0.23																								Diurnal Maximum		
Z - zerospan      C - Calibration																										
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 13000 ppb    24-hr 5000 ppb																										



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

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

Maximum Value: 12.50 µg/m <sup>3</sup> on Jun 8 14:00		Maximum Daily Average: 8.38 µg/m <sup>3</sup> on Jun 7		Hours in Service: 720																																													
Minimum Value: 0.0 µg/m <sup>3</sup> on Jun 1 13:00		Minimum Daily Average: 0.25 µg/m <sup>3</sup> on Jun 15		Hours of Data: 720																																													
Maximum Diurnal Average: 2.89 µg/m <sup>3</sup> at hour 8		Minimum Diurnal Average: 1.59 µg/m <sup>3</sup> at hour 10		Hours of Missing Data: 0																																													
Monthly Average: 1.948 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 = 1.1 Q <sub>3</sub> = 2.6 P <sub>90</sub> = 5.0 P <sub>99</sub> = 10.1		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-Jun	0.6	1.0	1.3	1.3	1.8	1.7	2.3	1.9	3.2	2.6	1.2	0.7	0.0	0.3	0.7	0.7	0.0	0.0	0.0	0.5	0.4	0.4	0.8	0.7	1.01	3.17																							
2-Jun	0.7	1.3	0.7	0.6	1.8	2.1	2.0	2.2	0.7	0.0	0.0	0.4	0.6	0.4	0.1	1.6	0.7	0.8	1.9	0.0	1.1	1.1	0.9	0.5	0.93	2.22																							
3-Jun	0.8	0.8	1.0	1.1	0.9	1.9	2.2	1.9	1.6	1.5	2.1	3.2	2.2	2.3	2.2	1.6	2.0	0.9	2.0	0.5	2.0	1.2	2.0	1.6	1.64	3.22																							
4-Jun	1.8	1.8	1.1	1.0	1.2	1.3	0.9	2.5	0.6	1.5	0.1	0.0	0.4	0.1	0.2	1.0	1.1	0.8	1.8	4.3	4.8	4.7	4.9	1.58	4.86																								
5-Jun	5.2	4.6	4.2	4.0	3.7	4.5	4.8	5.0	3.5	4.6	4.2	3.2	3.9	4.2	4.0	4.1	4.7	4.8	3.7	4.8	6.3	6.2	5.3	5.2	4.53	6.27																							
6-Jun	5.1	5.6	4.8	4.9	4.2	4.2	4.7	4.8	6.1	0.5	2.6	2.8	0.0	2.3	2.8	0.9	2.7	5.7	10.1	10.1	8.3	4.8	5.9	7.9	4.66	10.13																							
7-Jun	6.7	7.0	6.1	6.6	6.8	9.9	9.8	10.5	11.9	10.3	7.2	7.7	7.8	8.0	9.1	7.3	9.4	7.4	8.3	9.3	7.8	8.5	10.9	7.1	8.38	11.86																							
8-Jun	5.9	6.4	5.6	5.3	4.9	6.4	7.8	8.3	7.6	8.5	9.0	8.2	8.7	12.5	5.6	9.3	2.9	8.1	8.2	0.0	2.5	2.5	1.5	1.8	6.15	12.50																							
9-Jun	2.8	3.5	2.6	2.0	2.8	2.5	2.5	1.4	1.1	0.3	0.0	0.6	0.8	0.0	1.7	1.5	0.7	0.9	1.3	2.6	1.0	0.5	0.7	1.0	1.44	3.47																							
10-Jun	0.7	1.0	1.5	0.6	0.7	0.4	0.2	0.7	0.4	0.9	0.2	0.0	0.3	0.3	2.0	2.5	1.5	1.4	0.7	0.5	2.4	1.6	1.5	3.1	1.04	3.10																							
11-Jun	2.0	1.8	1.9	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.7	0.1	0.6	0.0	0.0	0.0	0.32	2.01																							
12-Jun	0.4	0.3	0.0	0.3	0.0	0.1	1.1	0.0	0.3	0.0	0.0	0.1	1.0	2.0	0.7	0.6	0.4	0.0	0.9	1.0	1.0	0.4	0.0	0.0	0.45	2.02																							
13-Jun	0.0	0.0	0.0	0.0	0.5	0.8	1.6	2.4	0.0	0.0	0.0	2.5	0.5	0.2	0.0	0.9	3.0	1.6	0.0	1.3	1.1	0.5	0.0	0.0	0.70	3.02																							
14-Jun	0.0	0.1	0.0	0.9	0.6	0.2	0.2	5.6	0.4	0.7	0.0	0.5	0.4	1.6	0.4	0.3	0.0	0.0	0.1	0.6	0.6	0.1	0.3	0.0	0.57	5.61																							
15-Jun	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.6	1.0	0.2	0.0	0.2	0.5	0.5	1.1	0.1	0.4	0.4	0.6	0.0	0.25	1.15																							
16-Jun	0.3	0.0	0.5	0.4	0.7	1.3	1.4	1.3	0.9	0.6	0.4	0.6	1.4	0.5	1.3	1.0	1.2	0.7	0.3	0.4	0.2	0.7	0.0	0.2	0.68	1.44																							
17-Jun	0.2	0.4	0.4	0.2	1.4	0.6	1.4	1.4	1.1	0.0	0.3	0.0	0.0	0.0	0.6	0.0	0.4	0.0	0.0	0.1	0.7	1.0	0.6	0.0	0.45	1.43																							
18-Jun	0.1	0.2	0.0	0.0	0.1	0.4	0.6	0.8	0.7	0.0	0.0	1.4	1.0	1.6	0.7	2.2	2.1	1.2	0.8	4.0	9.7	2.8	3.5	6.1	1.67	9.71																							
19-Jun	3.3	2.7	1.8	1.6	2.3	2.9	1.6	3.2	2.3	3.1	3.1	1.0	3.7	1.8	2.9	2.1	1.3	0.6	1.8	0.8	1.5	1.9	1.1	0.7	2.06	3.67																							
20-Jun	0.8	0.6	0.7	1.0	1.4	1.2	2.0	2.6	1.9	0.6	0.9	2.7	1.3	1.9	1.8	1.5	1.8	4.0	0.0	2.4	1.6	1.6	0.3	0.2	1.45	4.00																							
21-Jun	0.1	0.6	0.2	0.4	0.3	1.6	2.5	3.0	3.0	2.3	0.5	1.3	1.5	1.1	1.8	0.5	0.2	1.5	0.5	0.7	0.8	1.9	1.1	1.1	1.19	3.02																							
22-Jun	0.4	0.0	0.0	0.3	0.4	0.7	1.2	1.6	0.7	0.0	1.8	1.8	1.1	0.5	2.1	1.3	0.0	0.0	0.0	2.6	3.8	3.0	3.3	2.7	1.22	3.82																							
23-Jun	1.4	0.9	0.7	0.7	1.1	1.5	2.6	3.8	4.1	1.9	3.2	3.4	3.2	0.4	0.3	1.7	0.7	0.6	0.0	0.5	0.9	1.8	0.4	0.0	1.50	4.10																							
24-Jun	0.0	0.6	0.0	0.0	0.1	0.8	2.0	1.0	0.3	0.0	0.4	0.9	0.6	0.6	0.1	0.3	0.0	0.0	0.0	0.0	1.4	0.5	0.3	0.6	0.44	2.04																							
25-Jun	0.4	0.0	0.3	0.6	1.5	1.3	1.6	1.1	1.1	0.1	0.9	0.6	0.9	1.6	0.5	0.8	0.0	0.2	0.0	0.3	1.3	3.2	1.4	1.9	0.90	3.23																							
26-Jun	2.1	2.2	1.7	2.0	2.2	2.2	2.4	3.1	0.0	0.3	1.5	1.7	1.1	0.7	0.7	0.7	1.5	0.9	1.9	1.7	1.5	1.5	3.0	3.6	1.68	3.63																							
27-Jun	4.2	3.8	3.7	2.9	3.4	2.8	3.3	3.0	2.5	2.1	1.1	4.2	2.1	1.1	3.2	5.5	2.8	2.8	3.2	4.0	5.6	2.7	0.7	1.9	3.02	5.60																							
28-Jun	1.7	2.5	2.9	4.8	6.8	6.1	5.4	6.0	7.3	4.5	3.6	2.9	2.8	3.0	9.8	8.9	0.8	0.9	2.2	1.8	2.2	2.5	0.0	0.2	3.73	9.84																							
29-Jun	0.6	1.2	1.6	2.0	2.1	2.4	2.7	4.5	5.4	0.5	3.0	2.1	3.5	1.8	2.1	3.0	4.2	8.0	7.0	3.8	2.6	0.6	1.6	2.1	2.85	7.97																							
30-Jun	3.0	2.9	3.0	2.7	4.6	4.5	6.8	2.9	0.0	0.2	2.6	3.1	1.7	0.0	0.0	2.2	2.8	0.6	2.6	0.0	0.2	0.5	0.0	0.0	1.94	6.78																							
																								1.71	1.79	1.61	1.62	1.94	2.20	2.59	2.89	2.30	1.59	1.67	1.94	1.77	1.71	1.90	2.12	1.65	1.85	2.01	1.87	2.46	1.98	1.75	1.84	Diurnal Average	
																								6.72	6.95	6.12	6.55	6.78	9.89	9.80	10.46	11.86	10.28	8.96	8.22	8.70	12.50	9.84	9.33	9.36	8.11	10.13	10.13	9.71	8.54	10.85	7.89	Diurnal Maximum	
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**

**JUNE 2016**



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

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

<b>Maximum Value: 28.30 C on Jun 6 14:00</b>		<b>Maximum Daily Average: 19.95 C on Jun 6</b>																								<b>Hours in Service: 720</b>	
<b>Minimum Value: 2.8 C on Jun 14 02:00</b>		<b>Minimum Daily Average: 5.78 C on Jun 14</b>																								<b>Hours of Data: 720</b>	
<b>Maximum Diurnal Average: 16.63 C at hour 15</b>		<b>Minimum Diurnal Average: 7.09 C at hour 5</b>																								<b>Hours of Missing Data: 0</b>	
<b>Monthly Average: 12.153 C</b>		<b>Percentiles: P<sub>1</sub> = 3.7 P<sub>10</sub> = 6.2 Q<sub>1</sub> = 8.2 Median = 11.4 Q<sub>3</sub> = 15.5 P<sub>90</sub> = 19.1 P<sub>99</sub> = 24.2</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-Jun	8.3	7.8	7.7	6.9	6.6	6.8	7.0	8.1	9.6	10.7	13.0	15.2	14.9	16.0	17.7	18.4	18.2	17.4	16.5	14.9	12.3	11.4	10.1	9.9	11.89	18.39	
2-Jun	8.2	7.9	9.6	8.8	7.3	7.8	8.5	11.2	14.1	14.4	16.6	16.8	18.1	15.1	16.1	17.0	14.8	15.2	13.8	12.2	10.7	8.9	8.0	5.9	11.95	18.05	
3-Jun	7.0	6.8	5.9	5.3	4.2	3.8	6.4	11.3	13.1	14.5	16.3	17.1	17.9	17.8	17.9	17.7	19.2	18.1	16.7	15.8	14.2	13.1	13.2	12.6	12.74	19.21	
4-Jun	10.6	10.4	11.0	10.1	10.1	11.5	13.3	13.3	16.4	18.7	19.8	21.4	22.2	23.5	24.0	24.0	24.4	23.1	22.2	20.6	18.2	15.5	14.3	12.7	17.14	24.38	
5-Jun	10.3	8.6	7.5	6.4	5.6	5.3	6.6	13.3	16.4	17.6	18.8	19.9	21.2	22.1	22.8	22.7	22.7	22.1	21.1	19.1	17.3	16.1	15.7	15.3	15.61	22.76	
6-Jun	14.0	13.0	12.7	11.8	12.0	12.5	13.7	17.4	21.5	24.3	25.2	27.1	28.2	28.3	26.4	26.6	24.6	23.8	22.9	21.3	19.7	18.3	17.8	15.8	19.95	28.30	
7-Jun	14.2	13.2	12.6	11.6	10.0	10.1	10.8	13.1	15.4	17.6	18.7	20.5	22.1	22.0	21.9	21.5	21.5	20.7	19.6	19.1	17.3	15.0	14.1	13.5	16.51	22.09	
8-Jun	11.8	11.2	11.1	11.0	10.6	10.9	11.2	12.0	13.0	15.1	16.4	16.7	16.3	15.7	16.2	16.8	18.2	17.3	16.6	15.4	13.1	10.9	10.3	10.5	13.67	18.15	
9-Jun	10.2	9.9	9.5	9.1	8.7	8.4	9.1	10.7	12.6	13.3	13.3	13.7	11.4	13.8	13.6	10.9	14.1	11.1	10.6	9.8	8.4	7.9	7.9	7.5	10.64	14.07	
10-Jun	6.9	6.5	6.6	5.8	6.2	6.3	6.8	8.0	9.2	10.3	11.7	11.2	11.7	11.5	9.9	9.4	9.2	8.9	8.4	7.9	7.7	7.1	7.0	7.1	8.38	11.70	
11-Jun	7.0	6.6	6.1	5.5	5.5	5.2	5.8	10.3	10.7	10.6	9.6	12.6	13.9	13.3	13.2	13.2	13.1	12.2	11.8	10.7	9.5	8.0	6.9	6.1	9.47	13.86	
12-Jun	6.9	7.8	8.0	7.6	7.5	7.1	7.8	9.8	12.0	13.3	13.8	14.6	14.9	16.2	16.7	16.7	15.2	14.6	13.9	12.6	10.6	8.5	7.7	7.7	11.32	16.74	
13-Jun	7.3	7.5	7.9	7.8	6.6	6.7	8.6	10.2	12.2	13.2	13.6	14.0	15.3	14.4	16.2	14.7	11.9	9.2	9.7	8.8	7.4	6.3	5.5	4.6	9.98	16.16	
14-Jun	3.7	2.8	3.4	3.8	3.6	3.8	3.9	7.5	11.1	10.9	9.3	8.4	8.5	6.0	4.4	6.8	6.6	6.2	6.4	5.8	4.8	4.0	3.8	3.4	5.78	11.10	
15-Jun	3.1	2.9	3.2	4.1	4.0	4.9	5.5	5.8	6.4	7.4	8.7	10.2	10.9	11.0	11.9	12.3	12.4	11.4	9.9	8.3	7.3	6.6	5.8	5.4	7.48	12.36	
16-Jun	5.1	5.8	5.9	5.4	5.3	5.6	6.4	8.2	8.4	8.8	9.7	9.5	9.4	9.5	10.1	9.7	8.8	8.3	7.5	6.9	6.5	5.7	5.2	4.3	7.34	10.10	
17-Jun	3.7	3.9	4.1	4.2	4.1	4.4	5.5	7.4	8.3	10.0	10.2	11.7	12.9	14.2	15.6	15.3	15.9	15.8	14.5	12.5	10.6	8.5	7.7	7.5	9.52	15.89	
18-Jun	7.2	6.6	6.6	6.1	5.8	5.9	7.2	10.7	12.9	14.2	15.4	16.0	17.6	18.0	17.7	17.3	16.6	16.2	15.2	14.7	13.5	13.3	11.6	10.2	12.36	17.99	
19-Jun	9.5	8.3	7.1	6.5	6.6	6.8	6.8	7.6	9.1	12.3	14.2	16.0	13.6	14.9	12.2	13.7	13.1	14.7	14.8	13.7	11.8	11.4	10.9	9.7	11.05	15.97	
20-Jun	9.5	8.8	8.1	7.4	7.1	6.9	7.9	11.6	15.2	17.0	18.0	19.3	19.5	20.1	20.4	21.4	20.8	17.0	13.8	11.8	10.8	11.3	10.4	10.5	13.52	21.35	
21-Jun	9.7	8.3	6.7	6.3	6.0	6.1	7.8	9.8	9.1	8.5	8.9	9.6	10.5	12.4	15.1	17.5	18.0	16.0	15.6	14.3	13.2	12.3	10.9	9.2	10.90	17.97	
22-Jun	8.3	8.2	8.5	8.2	8.8	9.3	9.2	12.3	15.1	15.2	15.7	16.5	16.8	16.5	14.7	14.4	18.1	17.0	16.7	14.6	12.2	11.3	10.3	9.7	12.81	18.10	
23-Jun	8.2	6.6	5.6	4.9	4.4	4.5	6.3	10.5	14.4	14.3	14.1	14.3	12.9	10.6	10.0	13.0	12.4	12.7	12.5	12.3	11.3	10.3	9.1	7.5	10.10	14.38	
24-Jun	6.5	6.1	5.4	5.3	5.3	5.8	7.4	8.9	7.9	7.8	7.9	7.6	8.0	8.4	9.2	10.0	10.4	10.7	10.4	10.6	9.5	8.3	8.2	8.2	8.08	10.71	
25-Jun	8.4	8.3	8.7	9.3	9.2	9.6	10.1	10.5	12.7	14.6	15.3	15.2	16.8	16.7	17.9	18.5	17.3	18.0	17.7	15.6	14.6	13.9	13.0	12.7	13.52	18.50	
26-Jun	11.7	9.2	7.6	7.1	6.2	6.2	7.7	11.8	15.1	16.9	17.7	18.2	18.9	19.1	20.0	19.7	19.4	18.8	18.3	17.4	16.0	15.5	13.9	12.3	14.37	19.97	
27-Jun	10.8	10.5	9.4	9.0	8.2	8.2	8.8	12.7	17.6	19.1	19.5	20.7	21.0	22.7	23.2	20.9	21.9	21.6	20.8	18.9	17.9	16.8	15.0	13.4	16.19	23.19	
28-Jun	12.7	11.9	11.3	10.4	9.7	9.5	10.7	12.0	13.7	18.2	16.9	20.0	21.6	22.6	21.1	13.6	11.3	12.1	14.9	15.5	14.7	13.6	11.5	10.0	14.15	22.65	
29-Jun	9.3	8.7	8.5	7.9	7.5	7.6	8.9	11.9	17.4	21.1	22.0	23.0	24.1	23.2	23.9	23.8	20.8	16.2	15.2	14.6	13.5	13.2	12.8	12.4	15.31	24.13	
30-Jun	12.8	12.1	12.4	11.4	10.1	9.4	10.0	11.1	11.9	12.9	14.7	16.8	17.9	19.7	19.2	16.2	11.5	10.1	13.3	13.0	12.2	11.8	9.6	8.7	12.85	19.68	
		8.77	8.21	7.94	7.50	7.09	7.23	8.20	10.63	12.74	14.10	14.83	15.80	16.30	16.50	16.63	16.45	16.07	15.22	14.71	13.62	12.22	11.16	10.28	9.48	Diurnal Average	
		14.18	13.23	12.72	11.82	12.04	12.45	13.68	17.36	21.54	24.32	25.20	27.08	28.18	28.30	26.42	26.64	24.62	23.77	22.85	21.25	19.70	18.31	17.80	15.83	Diurnal Maximum	



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

**Wind Speed (WS) - kph**  
**June 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	2.4	2.4	1.6	3.1	3.1	3.0	3.3	2.8	0.4	1.9	0.7	2.5	1.3	3.8	6.6	6.6	5.5	5.5	4.5	4.9	3.5	2.4	3.3	2.0	2.94	6.59
Dir	SSW	SSW	SSW	SW	SW	SSW	SW	SW	ENE	ENE	WNW	WSW	W	WSW	SW	WSW	WSW	WSW	SW	WSW	SW	SW	SSW	SSW	SW	SW
2 Spd	2.9	3.1	2.3	1.6	3.6	3.3	1.3	0.3	0.4	3.2	3.8	4.2	5.4	7.9	10.0	7.8	9.2	6.0	5.1	6.7	5.6	3.8	3.7	4.2	4.31	10.02
Dir	SW	SW	SSW	SW	SW	SW	SSW	S	SSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	WSW	WSW
3 Spd	3.4	3.6	4.4	2.7	3.6	4.7	3.3	2.5	4.2	4.9	5.1	4.6	5.2	7.9	4.8	7.4	7.1	8.7	7.3	7.4	3.9	1.7	0.1	2.7	4.56	8.71
Dir	SW	WSW	SW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	S	SW	WSW	WSW
4 Spd	4.4	3.0	1.8	3.5	2.7	1.6	1.3	1.3	0.7	1.2	1.8	1.8	2.5	3.4	3.7	4.9	4.1	2.7	2.5	2.1	2.8	2.1	1.8	0.9	1.57	4.90
Dir	SW	SW	SSW	SW	SSW	SSW	S	SW	WSW	WNW	W	WNW	WNW	W	W	WSW	WSW	WNW	NW	WNW	NE	ENE	ENE	S	WSW	WSW
5 Spd	2.5	2.8	3.6	3.9	4.7	4.8	3.0	0.5	2.5	2.7	2.7	2.4	2.9	3.6	3.1	3.2	3.6	3.2	2.9	2.5	1.9	1.6	0.7	3.1	0.78	4.82
Dir	SSW	SSW	SSW	SSW	SW	SW	SSW	ENE	NE	NE	NE	NE	NE	NE	NE	ENE	NE	ENE	ENE	ENE	ENE	E	SSW	SSW	ESE	SW
6 Spd	2.9	3.9	4.2	3.4	3.6	3.5	2.7	1.9	3.2	4.0	6.8	1.6	3.8	4.4	3.7	1.7	3.1	3.7	0.4	4.0	2.3	1.4	1.5	1.8	2.31	6.78
Dir	SW	SW	SW	SW	SSW	SW	SW	SSW	SW	SW	SW	W	WSW	WSW	WSW	SW	WSW	WSW	NW	ENE	ENE	ENE	S	SSW	SW	SW
7 Spd	2.2	1.8	2.0	2.0	3.2	2.2	2.2	1.1	1.2	0.3	2.3	1.4	1.8	3.5	2.5	2.2	3.1	4.4	2.5	1.1	2.4	2.1	1.6	0.6	0.69	4.38
Dir	SSW	SSW	S	SSW	SW	SSW	SSW	W	W	NNW	NE	ENE	NE	NE	ENE	NE	NE	NE	ENE	ESE	NE	ENE	NE	N	ENE	NE
8 Spd	2.8	1.4	0.9	1.4	1.1	1.8	1.3	2.1	2.8	3.0	3.4	3.3	3.8	3.4	3.3	2.6	3.0	1.8	0.8	1.4	2.4	2.2	1.4	0.9	1.65	3.77
Dir	NE	ENE	S	SE	ESE	SE	SE	NE	NE	NE	NE	NE	NE	NE	ENE	ENE	ENE	ENE	E	WSW	NE	ENE	SSW	WSW	ENE	NE
9 Spd	2.3	1.0	2.0	1.4	1.3	1.3	2.1	1.4	2.0	2.2	2.0	2.0	1.3	1.7	1.5	1.3	1.6	2.2	3.2	3.7	0.9	2.0	0.7	0.9	1.04	3.68
Dir	NE	NNE	SW	WSW	WNW	W	WSW	WNW	NNE	N	N	NNW	NW	WNW	NNW	NNE	N	NE	NE	N	WSW	N	WSW	NNW	NE	NE
10 Spd	1.0	2.4	0.6	0.5	1.0	0.7	1.4	2.0	2.5	2.3	2.8	2.3	2.2	3.5	2.9	2.7	3.2	2.9	3.0	2.7	2.1	1.4	1.5	1.9	1.90	3.55
Dir	WSW	NE	ENE	SW	E	SE	E	E	E	E	E	E	E	ENE	E	E	E	E	E	E	ESE	E	ENE	E	E	ENE
11 Spd	0.4	0.4	2.0	5.2	3.1	3.2	3.1	1.2	1.7	1.8	3.9	4.2	5.8	3.7	3.6	4.7	7.2	7.1	7.3	8.3	7.2	5.5	4.8	4.8	4.06	8.31
Dir	ENE	WNW	SW	SW	SW	SW	SW	WNW	WSW	W	WSW	WSW	WSW	WSW	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	WSW	WSW
12 Spd	4.9	5.4	5.5	2.8	3.7	3.7	4.0	5.3	7.3	8.9	9.6	9.4	8.6	7.8	7.4	8.7	9.0	8.5	9.2	8.0	6.2	3.7	3.0	3.2	6.38	9.63
Dir	SW	WSW	WSW	WSW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	WSW	WSW
13 Spd	3.0	2.4	2.4	1.0	2.2	2.4	3.1	3.0	2.7	3.0	1.6	2.9	3.5	3.2	2.9	2.3	1.6	4.5	2.6	1.9	3.5	0.8	2.0	2.4	0.77	4.48
Dir	SW	SW	SW	SW	SW	SW	SW	SW	WSW	WSW	W	ENE	ENE	ENE	ENE	ENE	WSW	WSW	W	NNE	NE	NNE	SW	SW	SW	WSW
14 Spd	3.3	4.8	4.1	3.3	3.5	2.5	2.2	0.8	0.6	1.1	3.5	1.8	1.4	5.0	1.8	2.5	1.8	1.6	1.0	1.6	1.3	1.4	1.8	2.8	1.83	5.05
Dir	SW	SW	SW	SW	SW	SW	SW	E	N	WNW	WSW	WSW	N	WSW	WSW	WSW	W	WSW	WSW	N	NNW	WSW	SW	SW	WSW	WSW
15 Spd	3.3	3.6	5.4	6.8	5.3	8.9	9.6	9.8	8.8	9.4	11.6	11.5	9.5	11.0	11.5	10.9	10.2	11.9	11.2	10.5	8.5	7.4	6.5	6.2	8.71	11.88
Dir	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	WSW	WSW
16 Spd	5.3	6.2	5.8	6.3	5.0	5.3	3.8	3.3	2.5	3.3	4.2	5.7	4.3	5.5	6.8	5.4	5.0	5.5	5.0	3.5	3.4	3.4	4.1	3.2	4.61	6.83
Dir	SW	WSW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW
17 Spd	3.1	3.4	3.3	2.9	3.3	3.6	2.2	1.6	3.2	4.1	2.6	4.8	5.6	5.4	5.2	7.9	8.5	6.5	7.0	7.2	5.8	4.4	4.7	5.1	4.59	8.49
Dir	WSW	WSW	WSW	WSW	WSW	SW	WSW	WNW	W	WSW	W	WSW	WSW	WSW	WSW	WSW	WSW	SW	WSW	SW	WSW	SW	WSW	SW	WSW	SW
18 Spd	4.7	3.8	4.7	3.9	3.7	3.8	2.6	1.1	1.3	0.6	1.0	2.1	2.3	2.7	3.9	3.0	3.4	2.6	1.8	1.2	1.6	1.6	1.8	2.3	0.36	4.73
Dir	WSW	WSW	WSW	SW	SW	SW	SW	WSW	W	WSW	NE	NE	ENE	ENE	NE	ENE	NE	ENE	E	ENE	SE	SSE	SW	WNW	SW	WSW
19 Spd	2.3	3.3	3.3	3.8	2.6	3.1	2.3	4.2	3.7	4.3	2.5	1.8	1.9	5.2	3.1	3.4	5.5	2.7	3.3	3.4	3.8	3.7	2.2	3.8	3.10	5.46
Dir	WNW	WSW	WSW	SW	WSW	WSW	SW	SW	WSW	WSW	W	NNW	W	WSW	W	WSW	WSW	WSW	WSW	WSW	SW	SW	WSW	SW	WSW	WSW
20 Spd	3.5	4.2	4.1	4.4	4.7	5.0	4.1	2.8	1.2	0.9	1.7	1.2	2.5	2.5	2.2	2.3	1.5	4.7	7.8	4.4	2.6	2.1	1.2	2.0	1.56	7.79
Dir	SW	SW	SW	SW	SW	SW	SW	SW	W	NE	NE	ENE	NE	ENE	ENE	ENE	E	SW	SW	SSW	E	ESE	SE	S	SSW	SW
21 Spd	2.6	3.1	4.7	5.1	5.3	4.7	2.7	2.3	2.0	1.6	3.4	6.5	4.8	5.6	4.4	3.0	3.3	3.1	2.1	1.1	1.2	0.9	0.4	3.6	2.93	6.50
Dir	SSW	SW	SW	SW	SW	SW	SW	W	W	WNW	WSW	WSW	WSW	WSW	WSW	W	W	WNW	WNW	WNW	W	WSW	SW	SW	WSW	WSW
22 Spd	4.3	3.6	3.5	3.7	3.9	4.3	3.8	2.8	2.3	5.1	4.3	2.3	1.1	0.3	2.4	3.0	6.7	5.9	5.6	1.5	3.7	1.5	0.2	0.5	2.10	6.74
Dir	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	WSW	NNE	NNE	WNW	ENE	WSW	WSW	WSW	WSW	NNE	NE	NE	NNW	E	WSW	WSW





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

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

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
23 Spd	1.2	3.0	4.5	4.5	4.5	4.6	2.1	0.5	2.4	3.6	2.9	3.0	0.5	1.2	1.3	2.7	3.2	1.2	1.2	1.6	0.6	0.8	1.0	2.7	0.55	4.59	
Dir	SSW	SW	SW	SW	SW	SW	SSW	S	ENE	ENE	ENE	NE	NE	E	S	NE	NE	E	SW	NE	WSW	WNW	WSW	SW	S	SW	
24 Spd	3.2	3.1	3.4	3.6	3.3	2.7	2.5	2.0	1.9	2.1	1.7	2.7	3.1	3.0	3.1	2.6	2.0	2.9	2.8	2.7	2.6	3.8	3.2	3.3	2.66	3.75	
Dir	SW	SW	SW	SW	SW	SW	WSW	W	W	W	W	WSW	WSW	WSW	WSW	WSW	W	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	
25 Spd	3.8	3.7	3.2	3.0	3.2	3.2	2.2	3.5	3.5	3.8	3.7	4.5	4.4	4.9	3.6	3.5	2.8	4.8	4.3	5.2	3.3	1.2	1.2	1.5	3.23	5.16	
Dir	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	WSW	W	WSW	W	W	WNW	WSW	WSW	WSW	WSW	NNW	N	NW	WSW	WSW	
26 Spd	1.3	3.4	3.5	3.6	4.3	3.9	3.6	2.2	1.3	1.1	0.7	2.3	1.9	1.2	0.1	1.8	2.1	3.5	1.8	1.3	2.9	2.1	2.6	3.0	2.11	4.33	
Dir	W	SW	SW	SW	SW	SW	SW	SW	WNW	WNW	NNW	WSW	W	W	NE	W	W	WSW	WSW	W	WSW	WSW	SW	SW	WSW	SW	
27 Spd	3.5	3.8	4.1	4.8	4.6	3.9	3.8	2.3	0.5	1.3	0.8	1.7	1.4	0.2	1.2	3.5	1.9	2.2	1.9	1.5	1.6	2.6	2.7	4.4	1.13	4.83	
Dir	SW	SW	SW	SW	SW	SSW	SW	SSW	WSW	W	ENE	E	ENE	ESE	E	NE	ENE	NE	ENE	ENE	E	SW	SW	SW	SSW	SW	
28 Spd	4.0	4.0	4.1	4.6	3.2	3.8	4.4	3.8	2.1	1.7	2.5	3.1	2.7	2.3	2.3	3.5	6.9	5.2	5.3	3.7	3.1	2.9	4.7	5.6	2.56	6.90	
Dir	SW	SW	SW	SW	SW	SW	SW	SW	SSW	NE	ENE	NE	ENE	ENE	E	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	
29 Spd	5.8	6.2	6.2	6.4	5.9	5.9	5.0	2.4	0.8	1.3	2.2	2.2	2.5	3.2	3.3	2.1	1.6	1.3	1.6	2.1	1.3	1.4	1.5	1.9	1.26	6.42	
Dir	SW	SW	SW	SW	SW	SW	SW	SSW	SSW	E	ENE	ENE	ENE	ENE	ENE	ESE	SSE	NNW	ENE	ENE	E	SSE	E	E	S	SW	
30 Spd	1.7	0.6	1.6	1.2	1.8	2.5	2.9	5.8	2.8	0.9	3.4	2.6	1.7	0.8	2.9	1.4	0.6	1.8	3.0	0.6	2.7	2.7	4.5	5.3	0.97	5.84	
Dir	SE	ENE	SSE	SSW	SSW	SW	SW	WSW	WSW	NNE	NE	NE	NE	NW	NNE	ENE	NNE	WSW	SW	W	SW	SW	SW	SW	SW	WSW	
Spd	2.52	2.84	3.27	3.37	3.30	3.43	2.86	2.06	1.51	1.51	1.48	1.32	1.34	1.92	1.61	2.05	2.55	2.86	2.65	1.90	1.25	1.37	1.74	2.42	Diurnal Average		
Dir	SW	SW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	W	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	Diurnal Maximum		
Spd	5.76	6.23	6.17	6.85	5.86	8.93	9.64	9.76	8.79	9.39	11.57	11.45	9.49	10.95	11.47	10.92	10.23	11.88	11.20	10.49	8.54	7.39	6.54	6.18	Diurnal Maximum		
Dir	220.43	239.59	216.59	239.47	217.82	241.74	239.73	240.19	240.84	242.65	243.51	244.62	241.84	243.89	243.51	243.86	243.05	241.03	242.55	242.57	239.82	238.15	236.08	234.69	Diurnal Maximum		
Maximum Speed Value: 11.9 kph on Jun 15 18:00																		Minimum Speed Value: 0.1 kph on Jun 26 15:00						Hours in Service:		720	
Maximum Daily Speed Average: 8.71 kph on Jun 15																		Minimum Daily Speed Average: 0.36 kph on Jun 9						Hours of Data:		720	
Maximum Diurnal Speed Average: 3.43 kph at hour 6																		Minimum Diurnal Speed Average: 1.25 kph at hour 21						Hours of Missing Data:		0	
Monthly Average Velocity: 2.155 kph 237.21 deg																		Speed Percentiles: P <sub>1</sub> = 0.4 P <sub>10</sub> = 1.2 Q <sub>1</sub> = 1.9 Median = 3.0 Q <sub>3</sub> = 4.1 P <sub>90</sub> = 5.8 P <sub>99</sub> = 10.9						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	23	0	0	0	0	0	23																				
NorthEast	99	0	0	0	0	0	99																				
East	57	0	0	0	0	0	57																				
SouthEast	12	0	0	0	0	0	12																				
South	17	0	0	0	0	0	17																				
SouthWest	253	93	5	0	0	0	351																				
West	125	18	0	0	0	0	143																				
NorthWest	18	0	0	0	0	0	18																				
Total	604	111	5	0	0	0	720																				



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

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

<b>Maximum Value: 97.87 % on Jun 24 00:00</b> <b>Maximum Daily Average: 91.19 % on Jun 24</b>																							<b>Hours in Service: 720</b>																									
<b>Minimum Value: 18.0 % on Jun 4 17:00</b> <b>Minimum Daily Average: 36.91 % on Jun 4</b>																							<b>Hours of Data: 720</b>																									
<b>Maximum Diurnal Average: 75.47 % at hour 5</b> <b>Minimum Diurnal Average: 48.18 % at hour 14</b>																							<b>Hours of Missing Data: 0</b>																									
<b>Monthly Average: 61.237 %</b> <b>Percentiles: P<sub>1</sub> = 20.2 P<sub>10</sub> = 34.0 Q<sub>1</sub> = 43.2 Median = 59.6 Q<sub>3</sub> = 81.3 P<sub>90</sub> = 89.9 P<sub>99</sub> = 97.0</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-Jun	56.6	58.2	59.5	64.3	65.9	65.1	66.1	63.9	62.3	58.2	49.7	44.8	44.0	41.4	37.5	34.9	34.3	34.0	35.2	37.7	46.8	46.3	51.7	51.6	50.41	66.11																						
2-Jun	59.2	60.7	55.3	59.3	67.0	66.4	64.1	56.7	47.7	46.0	39.2	37.9	36.2	43.7	39.0	36.1	40.9	37.0	43.1	46.4	48.6	54.2	55.7	63.6	50.17	67.02																						
3-Jun	57.2	56.5	61.3	64.5	69.1	70.5	63.1	48.0	39.9	34.8	32.6	32.8	32.2	33.1	34.0	34.9	32.6	33.6	37.3	39.6	45.5	47.7	46.1	49.4	45.67	70.50																						
4-Jun	58.2	58.4	55.3	58.3	58.0	53.1	47.6	54.0	43.2	35.3	31.4	26.1	24.7	23.0	20.8	18.9	18.0	18.3	18.1	20.0	27.8	36.6	39.3	41.5	36.91	58.35																						
5-Jun	51.0	57.1	61.0	64.6	67.3	68.5	65.1	48.7	37.9	36.7	34.4	30.0	27.2	26.8	25.8	26.2	27.1	28.1	28.9	33.8	40.3	43.9	46.7	50.8	42.83	68.49																						
6-Jun	55.2	56.4	56.9	60.2	57.3	55.8	54.3	46.0	42.6	30.7	27.3	23.5	20.3	18.6	21.3	18.9	22.6	24.7	30.0	41.3	44.7	43.2	44.0	53.6	39.56	60.22																						
7-Jun	59.2	60.9	61.2	63.3	70.3	70.0	68.7	63.5	55.7	49.0	44.0	40.9	38.5	40.1	40.4	41.1	41.3	41.5	46.8	53.0	59.6	70.0	86.4	85.9	56.30	86.42																						
8-Jun	86.9	88.7	87.2	85.7	87.9	87.2	87.7	86.0	82.7	76.1	72.3	71.9	73.4	82.7	76.2	85.1	75.4	75.6	76.4	61.7	76.3	85.2	87.2	85.6	80.88	88.73																						
9-Jun	87.6	90.8	93.5	94.8	95.9	95.9	91.4	80.4	73.2	67.8	60.0	59.3	68.0	59.5	65.5	82.3	70.6	77.8	81.7	84.2	85.4	87.2	84.8	88.5	80.25	95.94																						
10-Jun	91.7	93.1	94.9	95.8	95.8	94.4	90.7	83.3	80.4	74.5	68.3	66.8	65.6	66.0	77.8	88.1	86.1	87.7	86.9	87.7	89.6	92.9	94.5	94.8	85.30	95.79																						
11-Jun	94.0	94.8	96.1	94.2	84.3	88.3	85.9	64.3	65.1	63.3	67.2	52.3	45.2	41.4	37.4	35.8	36.0	37.1	40.0	38.9	43.2	47.6	49.4	53.9	60.66	96.13																						
12-Jun	52.8	52.6	56.0	58.4	62.4	65.9	64.5	57.1	47.0	42.3	40.8	39.5	39.0	37.8	35.4	32.2	33.1	34.1	34.8	38.7	48.0	52.7	53.8	53.7	47.19	65.87																						
13-Jun	56.0	54.2	52.1	51.8	58.1	60.6	58.2	60.6	50.4	43.4	41.5	46.4	41.1	42.1	38.2	39.0	56.9	78.9	73.0	80.7	85.8	88.9	93.7	95.9	60.30	95.90																						
14-Jun	97.0	96.3	92.3	90.0	88.5	84.1	83.6	72.5	54.9	57.3	59.0	62.0	69.1	83.7	97.1	89.9	82.9	84.8	85.2	87.7	93.0	95.1	96.1	97.5	83.32	97.50																						
15-Jun	88.3	82.9	77.7	63.9	63.2	55.0	50.7	48.4	47.2	43.7	39.7	36.5	35.5	34.0	30.9	30.6	30.6	31.0	33.7	35.9	37.9	40.8	44.6	46.1	47.02	88.30																						
16-Jun	47.2	44.6	43.2	46.3	49.5	51.0	52.9	47.9	47.9	46.0	42.6	44.1	47.5	48.3	46.7	45.1	50.0	52.4	53.8	57.8	58.1	61.7	64.3	67.9	50.70	67.92																						
17-Jun	69.7	68.9	69.0	69.3	71.7	72.9	69.0	63.1	60.2	52.8	51.2	44.6	40.5	36.0	33.0	32.9	30.9	30.5	32.3	35.8	42.2	48.9	50.6	50.2	51.08	72.90																						
18-Jun	51.2	53.3	53.7	55.8	57.3	57.6	55.2	43.2	37.9	32.9	30.5	30.4	27.9	28.5	30.2	31.1	33.2	36.3	38.6	39.8	40.3	38.2	46.6	61.6	42.13	61.56																						
19-Jun	74.8	84.8	94.6	96.6	96.7	94.4	96.5	97.2	92.6	81.5	68.8	54.2	67.1	64.2	70.2	67.5	64.5	57.4	55.8	57.7	65.1	63.0	64.3	70.6	75.00	97.18																						
20-Jun	69.7	72.8	74.7	76.9	76.4	76.6	73.6	63.9	49.8	37.9	33.5	32.3	32.6	31.1	31.5	28.4	29.8	42.9	57.8	70.7	77.3	70.0	74.8	71.2	56.51	77.31																						
21-Jun	74.7	80.6	86.9	84.0	83.3	81.5	77.0	75.9	87.0	93.4	89.8	87.1	82.1	76.2	63.1	49.7	45.9	51.8	52.0	58.5	63.1	67.4	74.0	80.8	73.57	93.42																						
22-Jun	81.3	76.9	72.8	72.6	69.0	66.4	68.7	60.3	50.1	50.1	49.9	49.3	48.3	48.4	63.7	68.3	40.7	39.3	36.9	49.0	72.3	77.0	83.6	88.6	61.81	88.64																						
23-Jun	91.9	92.8	93.4	93.2	92.8	91.5	87.7	77.0	68.5	66.7	68.7	68.6	77.8	89.8	89.7	77.3	78.6	78.7	79.2	79.1	83.5	89.9	96.8	97.9	83.79	97.87																						
24-Jun	95.5	96.1	93.2	89.5	87.3	86.7	87.4	86.2	90.2	93.2	94.2	96.7	96.7	95.1	92.7	89.7	87.5	82.9	85.3	81.9	89.2	97.4	97.1	97.1	91.19	97.36																						
25-Jun	95.2	94.7	90.8	85.4	86.7	83.8	81.8	82.6	74.2	63.9	60.7	59.6	55.3	56.5	49.9	48.8	53.4	46.9	45.0	48.4	50.2	54.2	58.4	56.7	65.96	95.16																						
26-Jun	58.8	72.4	76.4	77.4	80.1	79.8	74.7	62.3	44.0	37.8	36.5	37.6	35.2	33.5	32.8	32.0	34.3	34.5	35.9	35.7	41.0	40.9	48.5	55.5	49.90	80.05																						
27-Jun	61.1	60.9	65.4	66.2	68.8	68.7	67.8	57.3	44.6	38.5	37.1	37.0	36.8	30.5	30.7	38.1	35.4	34.9	37.3	41.4	44.2	45.1	51.0	59.5	48.27	68.82																						
28-Jun	61.3	64.3	66.9	70.1	72.1	73.4	71.4	70.2	76.0	54.7	57.0	47.2	39.4	38.0	44.6	83.3	90.0	86.2	80.9	80.0	82.4	86.5	90.7	89.9	69.85	90.68																						
29-Jun	88.4	87.7	85.5	86.6	86.0	84.9	80.6	74.2	62.4	44.9	40.2	35.0	33.9	35.5	33.5	33.6	40.0	65.0	86.6	85.0	88.2	83.7	85.6	88.1	67.29	88.39																						
30-Jun	86.8	89.6	88.2	90.0	95.2	95.6	94.9	92.3	87.9	79.9	77.3	70.8	66.7	59.7	58.3	68.9	88.9	88.6	85.2	81.3	86.0	82.9	92.2	92.4	83.31	95.61																						
																							71.94	73.40	73.83	74.29	75.47	74.85	72.68	66.23	60.12	54.44	51.51	48.84	48.26	48.18	48.25	49.63	49.71	51.75	53.78	56.31	61.84	64.64	68.42	71.34	Diurnal Average	
																							96.98	96.33	96.13	96.60	96.74	95.94	96.49	97.18	92.56	93.42	94.17	96.73	96.74	95.09	97.08	89.89	89.98	88.61	86.87	87.72	93.04	97.36	97.05	97.87	Diurnal Maximum	



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

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

<b>Maximum Value: 4.78 kph on Jun 20 18:00</b>		<b>Maximum Daily Average: 3.14 kph on Jun 15</b>		<b>Hours in Service: 720</b>																																													
<b>Minimum Value: 0.3 kph on Jun 10 03:00</b>		<b>Minimum Daily Average: 0.98 kph on Jun 23</b>		<b>Hours of Data: 720</b>																																													
<b>Maximum Diurnal Average: 2.12 kph at hour 18</b>		<b>Minimum Diurnal Average: 0.92 kph at hour 23</b>		<b>Hours of Missing Data: 0</b>																																													
<b>Monthly Average: 1.436 kph</b>		<b>Percentiles: P<sub>1</sub> = 0.5 P<sub>10</sub> = 0.7 Q<sub>1</sub> = 0.9 Median = 1.2 Q<sub>3</sub> = 1.7 P<sub>90</sub> = 2.6 P<sub>99</sub> = 3.8</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-Jun	0.9	0.8	0.9	0.9	0.9	1.0	0.8	0.7	0.9	0.8	1.0	1.3	1.1	2.2	2.4	2.5	2.7	2.4	1.7	1.7	1.4	1.2	0.7	0.7	1.32	2.70																							
2-Jun	0.6	0.8	0.5	1.2	0.9	0.9	1.0	0.8	1.1	2.7	1.8	2.0	2.7	3.4	3.5	3.6	3.5	3.0	3.2	2.5	2.1	1.6	0.8	0.9	1.86	3.55																							
3-Jun	1.3	1.3	1.1	0.8	1.2	1.2	0.8	1.5	2.3	2.1	2.4	2.1	2.9	3.4	2.6	3.2	3.2	3.3	2.6	2.5	1.7	1.0	0.9	1.0	1.94	3.45																							
4-Jun	1.0	0.9	1.0	0.9	0.7	1.0	0.7	0.7	0.8	1.3	1.4	1.7	2.1	2.2	2.3	3.0	2.8	2.0	1.9	1.7	1.5	0.8	0.5	0.7	1.40	3.02																							
5-Jun	0.5	0.6	0.9	0.8	1.1	1.0	1.0	0.8	1.0	1.2	1.4	1.3	2.0	1.5	1.5	1.2	1.4	1.0	0.9	0.8	0.5	0.8	1.1	1.4	1.07	1.96																							
6-Jun	0.7	0.8	0.9	1.0	1.0	1.0	0.8	0.7	1.2	1.7	2.9	2.0	3.0	2.1	1.7	1.3	1.3	1.4	1.6	1.2	1.0	0.6	0.6	0.7	1.31	2.97																							
7-Jun	1.0	0.9	0.7	0.9	0.9	0.9	0.4	0.7	0.5	1.0	1.4	1.3	1.2	1.7	1.1	1.0	1.5	1.4	1.1	0.6	1.4	0.5	0.8	1.1	0.99	1.65																							
8-Jun	1.1	1.1	0.7	1.1	0.8	0.9	0.9	0.9	1.1	1.1	1.2	1.3	1.2	1.6	1.2	0.8	1.0	1.1	2.1	1.6	1.5	1.3	0.9	0.6	1.12	2.12																							
9-Jun	1.0	0.9	0.5	1.0	0.8	1.0	1.0	1.1	1.4	1.6	1.8	1.9	1.6	1.6	1.5	1.3	1.4	1.7	1.4	1.6	0.9	0.8	0.7	0.8	1.22	1.87																							
10-Jun	0.9	0.8	0.3	0.7	0.7	0.9	0.8	1.0	1.0	1.4	1.2	1.1	1.3	1.2	1.3	1.3	1.5	1.3	1.3	1.0	1.3	0.8	0.9	0.5	1.02	1.54																							
11-Jun	0.6	0.5	1.3	1.7	1.0	0.8	1.1	0.9	1.0	1.0	1.8	2.4	3.1	2.2	2.4	2.7	2.8	2.9	2.6	3.0	2.6	1.9	1.5	1.0	1.79	3.10																							
12-Jun	1.3	2.0	2.3	1.2	1.2	0.8	1.5	2.5	3.3	3.7	3.8	3.9	3.7	3.3	3.1	3.7	3.5	3.4	3.4	3.0	1.8	1.9	0.7	1.1	2.51	3.89																							
13-Jun	1.3	0.5	0.7	0.7	1.0	0.8	1.5	1.0	1.2	1.6	1.3	1.2	1.3	1.5	1.2	1.2	1.5	2.4	2.0	1.3	1.1	1.1	0.5	0.8	1.20	2.37																							
14-Jun	1.0	1.1	1.0	0.8	0.8	0.8	0.6	0.9	0.9	1.1	2.1	1.6	1.2	2.5	1.3	1.2	1.6	0.9	0.7	0.9	0.9	0.8	0.5	0.5	1.08	2.48																							
15-Jun	0.8	0.7	1.7	2.6	1.7	3.3	3.5	3.8	3.4	3.9	4.2	4.5	3.8	4.2	4.3	3.9	3.8	4.2	3.8	3.6	2.8	2.5	2.2	2.1	3.14	4.51																							
16-Jun	1.6	2.0	2.0	1.7	1.5	1.5	1.3	1.9	1.6	1.9	2.4	3.3	2.4	2.9	2.6	2.9	2.8	2.5	2.3	1.7	1.9	1.4	1.3	1.3	2.03	3.32																							
17-Jun	1.1	1.2	1.2	1.0	1.3	1.0	0.9	1.3	1.7	2.1	1.9	2.4	2.7	2.5	2.4	3.3	2.9	2.6	2.5	2.4	1.9	1.2	1.0	1.2	1.81	3.26																							
18-Jun	1.0	0.9	0.9	0.7	0.7	0.6	0.7	0.6	0.9	1.1	1.3	1.5	1.1	1.7	1.9	1.2	1.2	1.3	0.7	0.6	0.9	0.7	0.7	1.7	1.03	1.92																							
19-Jun	1.8	1.4	0.9	1.8	1.8	1.6	1.2	1.4	1.5	1.6	1.9	1.8	2.6	2.6	2.3	2.2	2.3	1.9	1.6	1.3	1.2	1.6	1.0	1.0	1.67	2.59																							
20-Jun	1.0	0.9	0.8	1.0	1.1	1.1	0.9	0.9	0.6	1.1	1.2	1.2	1.4	1.2	1.3	1.5	0.9	4.8	2.9	2.5	3.0	1.1	0.8	0.7	1.41	4.78																							
21-Jun	0.7	1.0	1.3	1.3	1.3	1.2	0.8	1.0	1.5	1.3	2.7	2.3	1.9	2.4	2.1	2.1	2.5	2.5	1.6	0.9	0.8	0.9	1.0	0.8	1.51	2.68																							
22-Jun	1.0	0.7	0.8	0.9	0.8	0.9	0.9	0.6	1.5	2.1	2.1	1.4	1.4	1.2	0.6	3.3	2.7	2.2	2.8	2.1	0.8	0.8	0.5	0.5	1.36	3.28																							
23-Jun	0.9	0.7	0.9	1.0	1.0	1.1	1.0	1.0	0.9	1.1	0.9	1.1	1.0	0.8	1.5	1.6	1.2	1.1	1.0	1.0	0.8	0.6	0.9	0.6	0.98	1.64																							
24-Jun	0.9	0.6	0.9	1.0	0.8	1.1	1.1	1.2	1.3	1.0	1.1	1.2	1.4	1.6	1.2	1.2	1.5	1.3	1.4	1.4	0.9	0.7	1.0	1.0	1.12	1.56																							
25-Jun	1.2	1.0	0.7	0.8	0.7	1.0	0.9	1.4	1.4	1.9	2.2	2.4	2.7	2.6	2.4	2.4	2.4	2.7	2.2	2.2	1.5	1.4	1.2	0.9	1.69	2.71																							
26-Jun	0.7	0.9	0.8	0.9	1.1	0.8	0.9	0.5	1.1	1.3	1.4	1.3	1.1	1.3	1.2	1.4	1.2	2.0	1.3	0.8	0.8	0.7	0.6	0.7	1.03	1.96																							
27-Jun	0.9	0.9	1.0	1.1	1.2	0.9	0.9	0.8	0.7	0.8	1.0	1.0	1.0	1.3	1.2	1.3	1.1	1.6	1.0	0.5	0.6	1.0	1.2	1.0	0.99	1.57																							
28-Jun	0.9	0.9	0.9	1.1	0.9	0.8	0.9	0.8	0.8	1.0	0.7	1.2	1.2	1.1	1.4	2.3	2.5	2.1	1.5	1.0	0.6	0.7	1.4	1.3	1.16	2.50																							
29-Jun	1.4	1.6	1.4	1.5	1.3	1.4	1.0	1.0	0.8	1.0	1.2	1.1	1.3	1.0	1.4	1.4	1.4	1.4	1.3	0.7	0.9	1.1	0.8	0.6	1.17	1.57																							
30-Jun	1.3	0.8	1.0	1.0	0.8	0.6	1.4	2.0	1.8	1.1	1.1	1.1	1.2	1.1	1.5	1.7	2.0	1.0	0.9	1.1	0.5	0.5	1.1	1.3	1.15	2.03																							
																								1.01	0.97	1.00	1.10	1.04	1.06	1.04	1.15	1.31	1.56	1.75	1.79	1.88	1.99	1.89	2.06	2.07	2.12	1.84	1.57	1.33	1.07	0.92	0.95	Diurnal Average	
																								1.84	2.03	2.27	2.59	1.80	3.32	3.47	3.84	3.42	3.90	4.21	4.51	3.79	4.16	4.30	3.94	3.80	4.78	3.82	3.62	2.99	2.51	2.24	2.08	Diurnal Maximum	
,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**  
**June 2016**

<b>Maximum Value: 109.07 deg on Jun 27 14:00</b> <b>Maximum Daily Average: 44.93 deg on Jun 9</b>																							<b>Hours in Service: 720</b> <b>Hours of Data: 720</b>																									
<b>Minimum Value: 8.6 deg on Jun 10 02:00</b> <b>Minimum Daily Average: 17.77 deg on Jun 15</b>																							<b>Hours of Missing Data: 0</b> <b>Hours of Calibration: 0</b>																									
<b>Maximum Diurnal Average: 44.05 deg at hour 13</b> <b>Minimum Diurnal Average: 19.21 deg at hour 5</b>																							<b>Percent Operational Time: 100.0</b>																									
<b>Monthly Average: 31.703 deg</b> <b>Percentiles: P<sub>1</sub> = 9.4 P<sub>10</sub> = 11.9 Q<sub>1</sub> = 15.6 Median = 24.1 Q<sub>3</sub> = 42.0 P<sub>90</sub> = 63.4 P<sub>99</sub> = 92.3</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-Jun	15.6	19.1	47.6	13.4	14.2	16.4	12.9	13.1	82.4	19.3	76.3	40.8	69.6	26.2	20.4	20.9	25.7	21.5	18.8	19.6	16.1	16.1	10.8	12.3	27.04	82.44																						
2-Jun	11.7	13.1	9.5	34.4	12.0	12.3	72.3	90.6	89.3	42.1	30.9	30.9	29.5	22.4	18.2	25.6	20.0	28.9	36.5	19.8	19.1	19.3	13.6	11.8	29.74	90.61																						
3-Jun	15.2	18.7	12.0	15.7	14.3	12.5	14.3	33.0	28.1	25.5	28.0	29.5	32.8	23.6	34.6	25.0	26.4	22.6	20.7	18.4	18.4	23.8	91.7	18.7	25.15	91.73																						
4-Jun	10.1	15.4	34.1	15.4	15.3	56.5	45.6	30.5	78.8	66.0	58.3	62.2	58.6	43.0	43.9	38.5	42.8	52.6	49.7	52.9	43.4	9.6	11.2	65.3	41.66	78.78																						
5-Jun	13.8	12.4	15.7	12.0	12.5	12.3	13.1	89.5	23.9	26.5	34.0	38.2	43.5	27.8	30.5	18.6	20.3	19.6	18.1	16.4	16.4	41.1	96.4	29.3	28.40	96.36																						
6-Jun	16.1	10.8	11.1	14.6	14.6	14.1	14.5	19.8	19.1	23.3	20.1	81.5	47.2	27.3	27.5	52.8	20.8	20.5	84.8	9.5	10.8	24.5	37.6	28.8	27.16	84.77																						
7-Jun	18.6	28.2	37.1	43.0	13.5	24.5	10.9	40.1	29.3	83.4	43.1	74.2	47.6	24.8	26.0	17.9	16.3	14.4	15.1	36.8	14.2	10.4	23.1	73.1	31.90	83.36																						
8-Jun	26.1	55.2	53.2	46.9	38.7	32.4	53.2	19.0	19.1	20.9	17.7	19.4	16.1	22.3	20.4	22.4	21.4	30.8	66.4	75.8	33.8	55.1	66.7	70.5	37.66	75.77																						
9-Jun	10.0	62.9	9.4	40.8	43.9	44.6	36.5	53.4	43.4	47.8	52.8	55.3	67.5	63.6	63.5	49.0	60.2	45.6	17.6	23.3	71.6	26.1	39.8	49.7	44.93	71.63																						
10-Jun	65.0	8.6	12.3	88.4	43.5	62.6	36.9	36.0	28.3	40.9	29.4	36.2	40.8	22.2	29.6	34.1	32.9	32.0	27.1	28.3	39.6	34.8	33.4	17.7	35.85	88.35																						
11-Jun	94.9	61.9	53.3	14.0	18.3	11.9	19.0	45.4	34.2	36.3	22.0	35.4	28.2	38.8	46.1	37.5	22.2	20.4	19.9	18.0	18.5	17.3	15.2	10.9	30.82	94.92																						
12-Jun	12.8	16.9	14.2	22.3	16.2	10.8	19.9	23.6	24.5	22.4	21.2	23.2	26.0	25.0	23.9	23.1	21.0	21.1	19.1	19.8	16.2	19.1	14.1	21.7	19.92	26.03																						
13-Jun	22.3	12.6	11.0	45.8	20.9	14.4	25.7	18.0	27.4	34.4	50.3	31.7	23.3	21.4	26.5	26.4	77.5	25.2	50.6	40.5	14.4	85.2	13.8	12.0	30.48	85.22																						
14-Jun	10.7	11.8	12.0	12.1	12.5	11.4	12.3	79.6	79.7	70.6	34.0	68.0	62.5	21.8	69.5	30.1	47.5	47.9	50.9	37.0	39.1	39.2	12.9	9.2	36.77	79.70																						
15-Jun	12.7	10.2	12.2	18.0	16.6	18.2	18.5	18.8	19.0	20.3	19.8	20.3	20.7	20.5	19.8	19.7	20.1	17.7	17.6	17.7	17.1	17.2	17.0	16.8	17.77	20.74																						
16-Jun	13.7	16.9	17.5	14.2	16.1	14.8	20.2	30.8	41.1	36.1	38.4	33.9	36.2	35.0	22.3	33.3	35.0	24.0	27.3	34.3	36.3	26.1	19.8	23.6	26.95	41.15																						
17-Jun	21.1	19.9	21.0	24.4	22.0	14.9	26.7	49.8	36.2	32.7	42.8	30.6	27.2	28.0	25.0	21.0	18.2	21.4	18.6	17.7	16.0	11.2	10.6	11.9	23.70	49.83																						
18-Jun	11.1	9.7	11.0	9.8	10.5	8.6	9.1	27.2	60.4	89.0	88.8	52.0	40.3	48.2	21.5	23.9	16.4	24.2	23.2	18.5	43.6	23.1	13.9	50.1	30.59	88.99																						
19-Jun	54.9	22.9	13.9	19.7	63.1	48.4	58.6	19.1	22.7	20.5	47.9	64.5	73.7	24.5	46.6	35.7	24.1	36.1	30.0	24.7	14.5	21.2	36.6	12.7	34.88	73.75																						
20-Jun	16.8	11.9	10.5	11.8	11.9	11.7	10.9	11.3	36.7	71.4	57.3	79.1	51.3	41.1	43.0	40.8	45.8	79.3	16.5	40.4	63.3	36.9	51.3	29.8	36.70	79.29																						
21-Jun	15.9	11.9	11.3	12.7	11.6	14.6	23.6	34.4	50.0	54.1	41.2	17.7	24.1	23.3	26.0	42.2	48.3	53.7	50.6	50.0	45.3	68.8	83.7	11.1	34.42	83.75																						
22-Jun	11.5	9.4	11.9	11.5	10.9	11.0	11.1	12.8	45.8	19.2	32.0	44.8	92.4	86.3	12.3	83.7	20.9	19.6	23.7	77.2	11.0	12.1	71.4	50.1	33.02	92.39																						
23-Jun	73.4	10.0	10.2	10.5	11.3	11.3	41.0	82.2	19.7	15.8	15.8	16.8	87.8	60.9	64.6	26.2	15.8	62.5	64.8	32.8	85.0	36.0	62.7	11.3	38.68	87.77																						
24-Jun	15.2	9.2	14.8	14.0	13.3	28.7	36.1	42.8	45.7	35.3	39.9	27.8	22.0	27.1	30.9	29.1	40.4	34.6	30.3	36.9	40.9	11.1	13.8	17.8	27.40	45.68																						
25-Jun	17.8	14.8	14.3	17.8	13.6	19.0	30.2	25.0	24.2	33.8	39.8	36.9	41.9	32.9	43.7	48.3	53.5	30.5	32.6	21.6	30.3	60.8	53.4	38.2	32.28	60.76																						
26-Jun	39.1	10.8	12.9	12.8	13.5	11.0	11.4	24.0	58.1	76.0	79.5	38.6	43.9	74.2	104.2	54.1	37.8	21.8	45.0	36.0	16.5	21.7	12.6	12.6	36.17	104.19																						
27-Jun	12.3	12.4	12.3	11.9	14.0	12.4	12.6	11.4	75.5	38.6	92.4	53.7	47.1	109.1	69.4	16.2	32.2	33.6	26.7	11.5	41.5	21.2	21.7	11.9	33.40	109.07																						
28-Jun	11.8	12.3	11.4	11.3	23.3	13.6	11.8	11.2	17.3	61.0	12.3	21.6	35.3	33.1	46.4	43.4	20.4	25.7	16.1	13.5	10.7	12.9	12.5	12.4	20.88	60.95																						
29-Jun	12.4	12.2	11.8	12.2	11.9	12.4	10.1	15.0	71.7	52.0	38.5	36.8	41.5	21.3	23.3	50.5	59.0	59.2	69.8	14.9	59.6	61.1	37.0	28.8	34.29	71.71																						
30-Jun	51.6	83.2	51.1	76.5	22.2	8.8	34.3	16.1	44.8	77.6	12.3	24.1	43.0	79.6	36.4	75.8	100.1	40.2	16.8	76.3	13.3	12.3	11.4	11.5	42.48	100.13																						
																							24.48	20.84	19.35	23.59	19.21	19.87	25.11	34.13	42.56	43.09	40.56	40.86	44.05	38.51	37.19	35.53	34.77	32.90	33.50	31.33	30.56	29.18	33.65	26.06	Diurnal Average	
																							94.92	83.24	53.28	88.35	63.11	62.60	72.29	90.61	89.30	88.99	92.45	81.52	92.39	109.07	104.19	83.71	100.13	79.29	84.77	77.16	84.96	85.22	96.36	73.10	Diurnal Maximum	
,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**

**JUNE 2016**

Weyerhaeuser / Drayton Valley Station 911													June 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	705	97.9	5.0	0.8	22.8	1.6	2.5	4.1	6.6	9.8	0	0	11.3	
Wind Speed (kph)	0	720	100.0	7.6	0.4	24.0	2.6	4.3	6.5	9.7	14.1	-	-	-	
Temperature ( $^{\circ}\text{C}$ )	0	720	100.0	15.5	4.0	29.0	9.0	12.1	15.5	19.0	22.2	-	-	-	
Std Dev Wind Direction (deg)	0	720	100.0	32.5	1.3	108.0	14.2	18.0	26.4	40.6	63.9	-	-	-	
Std Dev Wind Speed (kph)	0	720	100.0	3.1	0.6	11.2	1.2	2.0	2.9	3.8	5.1	-	-	-	



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

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

Maximum Value: 22.84 µg/m <sup>3</sup> on Jun 18 23:00		Maximum Daily Average: 11.34 µg/m <sup>3</sup> on Jun 8		Hours in Service: 720																						
Minimum Value: 0.8 µg/m <sup>3</sup> on Jun 10 00:00		Minimum Daily Average: 1.62 µg/m <sup>3</sup> on Jun 16		Hours of Data: 705																						
Maximum Diurnal Average: 6.44 µg/m <sup>3</sup> at hour 6		Minimum Diurnal Average: 3.96 µg/m <sup>3</sup> at hour 18		Hours of Missing Data: 15																						
Monthly Average: 4.998 µg/m <sup>3</sup>		Percentiles: P <sub>1</sub> = 0.9 P <sub>10</sub> = 1.6 Q <sub>1</sub> = 2.5 Median = 4.1 Q <sub>3</sub> = 6.6 P <sub>90</sub> = 9.8 P <sub>99</sub> = 16.4		Hours of Calibration: 0																						
				Percent Operational Time: 97.9																						
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-Jun	2.5	2.7	3.3	7.6	6.8	4.1	6.7	7.3	6.9	7.6	5.5	4.9	4.8	5.8	4.1	2.9	2.7	7.2	7.4	4.7	6.0	7.2	12.3	10.9	5.92	12.35
2-Jun	15.5	13.7	9.7	9.4	9.1	8.0	6.9	6.8	6.9	3.9	4.2	4.2	3.8	2.7	4.6	4.5	3.3	1.7	1.6	1.8	1.7	1.8	1.4	2.1	5.38	15.48
3-Jun	1.9	1.9	2.0	4.1	3.8	4.5	4.5	4.0	3.1	3.0	3.1	4.2	5.3	5.8	8.1	9.5	6.6	4.9	4.1	3.5	4.9	3.1	2.3	2.4	4.20	9.48
4-Jun	13.9	4.0	3.0	7.3	10.5	13.3	AF	AF	AF	1.8	1.8	1.9	1.8	2.1	2.2	2.2	2.2	2.6	2.7	3.0	3.5	4.5	4.7	4.7	4.46	13.92
5-Jun	5.7	5.0	5.5	6.7	8.3	8.0	7.5	6.9	6.5	11.1	9.6	5.8	6.1	5.9	5.9	5.8	5.6	5.0	4.8	5.5	6.8	5.8	5.5	5.9	6.46	11.13
6-Jun	6.1	6.8	6.7	6.9	5.7	7.4	7.2	6.0	6.6	7.5	6.7	6.6	6.3	7.0	7.0	7.0	6.1	6.2	6.3	8.8	8.0	6.5	6.9	9.2	6.89	9.17
7-Jun	10.4	11.3	11.5	11.1	12.7	14.3	16.5	13.8	11.5	9.7	10.9	10.3	9.9	12.6	11.9	11.7	10.8	8.8	9.1	9.5	9.1	10.8	9.1	9.1	11.11	16.47
8-Jun	12.4	16.3	9.6	8.0	7.6	8.4	9.2	11.5	9.8	10.2	11.1	11.3	12.7	14.3	14.2	16.7	15.0	10.8	12.1	11.8	10.0	9.9	10.8	8.2	11.34	16.68
9-Jun	5.3	5.5	4.7	4.3	4.9	6.8	4.9	5.6	8.3	8.9	4.7	4.3	3.2	3.0	3.7	2.9	2.5	2.5	1.8	1.5	1.5	1.2	0.8	0.8	3.89	8.88
10-Jun	2.0	1.8	1.9	2.1	2.4	3.1	3.0	4.0	4.3	3.6	3.8	3.2	2.9	3.0	3.6	3.9	3.6	3.9	4.0	3.4	4.2	5.5	3.8	3.7	3.35	5.54
11-Jun	2.8	4.5	3.8	3.9	4.9	7.2	9.2	10.3	9.2	7.0	4.8	4.1	4.0	5.0	1.5	2.0	1.7	1.4	1.4	1.7	5.7	7.6	6.3	5.1	4.79	10.33
12-Jun	6.3	4.1	4.8	5.1	3.1	3.2	3.7	2.7	2.6	2.1	2.0	2.6	2.2	2.1	1.5	1.7	1.8	1.8	2.0	2.2	2.1	2.4	1.7	1.3	2.70	6.27
13-Jun	1.2	1.7	2.4	4.2	3.9	4.5	3.9	3.1	2.0	1.5	1.5	1.1	0.9	1.1	1.5	1.6	2.0	2.3	2.4	3.7	2.2	2.5	2.2	3.1	2.36	4.46
14-Jun	2.9	2.9	2.7	2.8	2.7	3.1	4.3	5.0	4.2	3.8	3.6	2.2	1.9	1.9	2.1	2.8	5.6	2.5	2.0	2.7	3.3	2.8	3.0	1.9	3.03	5.62
15-Jun	2.0	9.0	1.9	1.8	2.3	2.6	2.8	2.8	3.9	2.8	1.7	1.6	1.9	1.7	1.4	1.2	1.1	1.1	1.0	0.9	1.2	1.8	2.9	1.6	2.20	9.03
16-Jun	1.2	1.5	2.5	2.1	2.0	3.4	3.6	2.4	2.0	1.2	0.9	1.2	1.2	1.1	1.7	1.8	1.4	1.2	1.2	1.1	1.4	1.1	0.8	0.8	1.62	3.56
17-Jun	0.9	0.8	0.8	0.8	1.0	1.7	1.2	1.3	1.4	1.6	1.6	1.3	1.3	1.2	1.2	1.5	1.4	1.2	1.1	2.3	2.9	5.7	4.7	21.3	2.50	21.25
18-Jun	0.9	1.4	1.8	1.5	2.4	3.7	4.1	2.7	1.8	1.3	1.2	1.4	1.3	1.3	1.5	2.2	1.7	2.0	1.7	2.7	4.6	7.5	22.8	7.9	3.39	22.84
19-Jun	2.7	2.0	2.1	2.3	2.6	4.2	2.7	2.4	2.5	2.9	3.9	4.1	3.8	3.1	2.9	3.0	3.1	3.1	2.9	3.2	4.0	4.0	4.7	5.5	3.24	5.55
20-Jun	5.5	6.7	5.3	7.2	7.4	6.8	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	5.8	5.6	4.1	4.1	4.2	5.2	2.8	3.8	--	7.38
21-Jun	5.2	4.8	5.3	7.2	8.9	7.6	5.2	8.0	6.7	5.9	6.2	6.5	6.3	6.5	6.8	3.3	2.8	3.4	3.7	4.0	4.3	5.3	6.4	9.0	5.80	8.99
22-Jun	7.8	8.5	7.0	7.2	6.9	8.3	7.0	4.7	4.4	3.7	3.9	4.0	4.1	4.4	4.2	3.6	2.9	2.1	2.8	3.5	3.2	3.8	5.3	3.0	4.84	8.47
23-Jun	4.3	3.9	4.2	5.8	7.5	5.5	4.6	3.9	3.2	2.6	2.5	2.9	2.9	3.2	3.5	3.2	2.6	3.9	2.6	2.9	3.0	4.1	5.3	2.9	3.79	7.48
24-Jun	2.2	2.0	3.6	3.7	3.6	3.4	3.4	4.2	3.2	2.6	2.7	2.3	2.3	2.0	2.4	3.4	2.7	2.5	2.7	2.3	2.5	2.2	2.4	2.6	2.78	4.22
25-Jun	3.2	4.2	5.1	5.0	5.1	4.0	4.7	5.8	5.6	5.5	5.4	5.4	5.0	5.2	5.4	5.0	5.4	4.8	4.9	5.7	4.3	3.8	3.0	2.3	4.75	5.84
26-Jun	2.7	2.3	2.3	2.7	2.7	3.3	3.6	3.4	3.3	2.7	2.3	2.3	2.5	2.8	2.9	3.0	2.8	2.8	3.0	3.0	4.2	6.3	12.6	13.5	3.88	13.53
27-Jun	6.2	8.7	9.9	12.4	7.7	10.3	10.0	6.9	7.0	6.4	7.3	6.8	6.4	6.5	5.8	4.6	3.9	3.5	3.9	4.1	4.3	5.2	7.5	8.7	6.82	12.38
28-Jun	15.1	16.4	12.1	18.3	22.2	10.4	8.3	4.6	4.2	4.6	6.2	6.5	5.1	3.8	3.5	3.2	4.6	4.6	3.5	4.0	5.1	6.0	10.2	14.6	8.20	22.19
29-Jun	18.2	16.3	12.8	11.9	13.2	14.3	AF	AF	7.0	10.5	4.9	4.6	4.4	4.9	4.5	6.9	8.6	7.9	11.3	11.8	12.1	13.2	8.8	6.1	9.74	18.19
30-Jun	7.9	6.0	7.1	7.6	7.7	7.7	6.0	5.1	4.8	4.1	5.9	6.1	5.6	4.8	4.4	4.6	4.8	7.6	7.7	5.1	4.5	3.9	3.4	3.6	5.66	7.90
																								Diurnal Average		
																								Diurnal Maximum		
																								5.82 5.90 5.18 6.04 6.30 6.44 5.73 5.38 5.11 4.83 4.48 4.26 4.14 4.30 4.26 4.33 4.16 3.96 3.99 4.15 4.48 5.02 5.82 5.86		
																								18.19 16.43 12.80 18.30 22.19 14.30 16.47 13.81 11.48 11.13 11.07 11.35 12.70 14.34 14.24 16.68 15.00 10.84 12.06 11.83 12.06 13.24 22.84 21.25		
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**

**JUNE 2016**





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

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

<b>Maximum Value: 29.01 C on Jun 6 17:00</b>		<b>Maximum Daily Average: 21.07 C on Jun 6</b>		<b>Hours in Service: 720</b>																																													
<b>Minimum Value: 4.0 C on Jun 16 05:00</b>		<b>Minimum Daily Average: 10.40 C on Jun 16</b>		<b>Hours of Data: 720</b>																																													
<b>Maximum Diurnal Average: 19.94 C at hour 16</b>		<b>Minimum Diurnal Average: 10.08 C at hour 5</b>		<b>Hours of Missing Data: 0</b>																																													
<b>Monthly Average: 15.528 C</b>		<b>Percentiles: P<sub>1</sub> = 6.1 P<sub>10</sub> = 9.0 Q<sub>1</sub> = 12.1 Median = 15.5 Q<sub>3</sub> = 19.0 P<sub>90</sub> = 22.2 P<sub>99</sub> = 25.1</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-Jun	12.0	11.3	10.0	9.0	8.7	8.8	9.4	10.5	12.7	14.7	17.2	18.8	19.2	16.6	17.1	18.5	17.6	15.0	15.6	15.5	14.6	12.2	10.9	10.2	13.59	19.19																							
2-Jun	9.5	9.1	8.7	7.9	7.6	7.1	8.0	9.4	11.8	15.2	17.3	19.3	20.1	20.3	17.2	20.3	15.1	12.2	12.2	12.2	12.2	11.1	10.3	9.6	12.64	20.28																							
3-Jun	10.3	9.9	9.0	7.2	6.4	6.6	10.2	12.5	14.6	16.0	17.1	18.1	19.2	20.1	21.6	22.8	23.2	23.5	23.0	22.4	20.3	18.3	17.4	16.6	16.09	23.52																							
4-Jun	14.7	14.1	13.2	11.8	10.9	10.7	15.2	17.0	18.9	19.3	20.4	21.2	22.1	23.0	23.8	23.7	23.9	24.2	23.9	22.8	21.2	19.1	17.2	16.0	18.68	24.23																							
5-Jun	13.8	11.9	10.3	9.8	9.8	9.9	11.7	15.1	17.7	19.7	20.8	20.8	21.2	22.0	22.8	23.1	23.3	23.3	23.0	22.1	20.4	18.9	18.3	17.6	17.81	23.31																							
6-Jun	16.8	16.4	15.7	15.7	15.7	15.1	15.0	15.8	16.8	19.3	21.2	23.9	25.4	26.3	27.6	28.9	29.0	28.4	27.6	25.6	22.7	20.4	18.5	18.2	21.07	29.01																							
7-Jun	17.9	17.3	16.7	15.9	14.7	14.9	17.3	19.1	20.9	22.1	21.9	22.2	22.8	23.6	24.2	24.5	23.6	23.5	22.6	21.3	19.7	18.4	18.0	17.5	20.03	24.55																							
8-Jun	16.0	15.3	15.5	14.5	14.1	13.7	14.1	15.1	15.8	16.9	18.3	19.0	19.6	20.0	20.7	20.8	20.6	20.0	19.3	18.5	17.3	16.5	15.4	14.5	17.14	20.84																							
9-Jun	14.1	13.7	13.3	12.9	12.1	12.0	12.7	14.3	15.1	15.6	13.5	15.6	16.4	17.2	17.8	17.6	17.5	17.5	16.8	15.0	12.9	11.5	10.8	10.2	14.43	17.83																							
10-Jun	10.1	9.9	9.0	8.3	7.6	8.5	10.3	12.1	13.7	14.2	14.8	15.7	16.5	16.8	16.4	16.0	13.1	12.9	13.0	13.0	12.7	12.4	11.8	11.8	12.52	16.78																							
11-Jun	11.9	11.8	11.7	11.6	11.7	11.6	12.1	12.7	14.1	15.4	16.3	17.2	16.1	12.6	8.9	8.5	8.5	9.3	9.9	10.0	9.8	9.4	8.8	8.3	11.58	17.16																							
12-Jun	7.7	7.0	6.6	7.3	8.7	8.1	8.0	8.7	9.7	11.4	12.9	14.6	16.7	17.9	18.1	19.0	20.2	19.6	19.5	18.2	17.1	14.8	13.6	12.2	13.23	20.16																							
13-Jun	11.7	10.5	8.0	7.0	7.7	7.5	8.8	11.3	14.6	15.5	16.2	17.1	17.9	18.7	19.0	19.3	19.2	18.8	18.8	17.4	14.3	13.8	12.2	10.1	13.97	19.25																							
14-Jun	8.5	7.8	7.3	6.9	6.2	6.7	9.1	11.0	12.9	14.7	15.8	16.5	16.7	16.9	17.5	17.4	15.3	10.2	8.8	8.1	6.8	6.5	6.1	6.4	10.84	17.55																							
15-Jun	6.2	6.1	6.1	6.1	6.1	6.5	6.5	6.8	8.7	11.8	14.0	15.4	15.7	16.4	16.6	17.0	17.1	16.7	16.4	16.0	13.8	11.4	9.1	8.6	11.46	17.14																							
16-Jun	8.8	7.2	5.7	4.7	4.0	4.3	7.4	10.5	13.0	14.7	15.3	14.8	14.0	13.3	13.0	12.8	12.3	12.1	12.4	11.2	10.6	9.6	9.1	8.9	10.40	15.31																							
17-Jun	8.4	7.4	6.8	6.6	6.6	7.3	8.2	9.8	10.6	11.4	12.2	13.3	13.2	14.7	16.0	17.0	17.3	18.0	18.5	17.8	16.3	13.9	12.0	11.5	12.29	18.48																							
18-Jun	11.7	9.5	8.2	7.4	5.6	5.8	9.3	12.6	14.7	16.2	17.3	17.9	18.0	18.2	19.3	19.2	18.8	18.8	18.5	17.3	16.3	14.8	13.9	13.6	14.28	19.29																							
19-Jun	13.2	13.0	12.9	11.9	10.4	10.8	12.5	14.0	15.6	17.0	18.3	19.1	19.7	20.5	21.2	21.6	21.8	21.3	20.1	18.3	17.2	16.0	15.2	14.7	16.52	21.82																							
20-Jun	13.8	11.8	11.0	9.9	9.3	10.2	13.5	15.2	17.3	19.0	20.4	20.9	21.4	21.7	22.5	23.0	22.9	23.0	22.3	21.1	19.5	18.2	17.1	16.4	17.55	23.04																							
21-Jun	14.7	14.4	14.2	12.8	12.3	12.5	14.2	14.7	16.6	17.6	18.9	20.8	20.4	17.7	14.2	16.5	18.2	20.1	19.5	17.6	16.8	15.6	14.5	13.2	16.15	20.81																							
22-Jun	12.3	11.6	10.7	9.8	9.4	10.0	12.1	15.2	16.9	18.8	20.1	21.1	21.6	21.6	21.7	21.7	21.7	21.8	18.8	16.5	16.1	15.3	14.6	14.6	16.42	21.77																							
23-Jun	13.5	12.1	10.9	10.3	10.1	11.0	12.2	15.2	17.1	17.5	18.6	19.3	19.3	19.4	19.1	15.7	16.3	16.6	17.1	16.8	16.6	14.5	13.2	12.3	15.20	19.38																							
24-Jun	11.4	10.8	10.1	9.7	10.2	10.5	12.3	12.9	13.8	15.4	15.5	15.7	15.5	15.4	16.2	16.0	14.6	14.1	13.8	13.8	13.7	13.5	12.9	12.6	13.35	16.21																							
25-Jun	12.6	12.5	12.3	12.1	11.9	12.1	12.4	12.9	13.7	15.0	17.1	18.7	20.2	21.5	18.1	18.0	18.6	18.1	13.4	14.8	14.8	14.4	14.0	12.9	15.09	21.47																							
26-Jun	12.6	12.1	12.1	12.3	12.3	12.2	12.9	14.2	14.9	15.9	18.1	19.4	20.5	21.3	22.2	22.3	22.9	22.9	22.6	21.7	20.4	17.8	16.0	15.4	17.28	22.90																							
27-Jun	14.7	13.7	13.3	12.0	11.5	11.8	13.7	16.4	18.7	19.7	20.1	21.6	23.3	24.3	23.8	24.0	25.3	25.3	24.8	23.4	22.3	20.2	18.2	16.9	19.13	25.33																							
28-Jun	15.6	15.5	15.1	14.1	13.9	14.8	17.1	19.5	21.3	22.7	22.1	21.4	21.8	23.4	24.2	24.4	23.3	24.1	24.1	22.4	20.7	18.6	16.4	15.5	19.66	24.38																							
29-Jun	14.2	13.1	12.1	11.6	11.2	11.5	13.9	16.8	19.8	21.4	22.8	23.5	24.3	24.9	25.4	25.6	25.5	25.6	23.9	22.2	20.9	20.0	19.7	18.2	19.50	25.59																							
30-Jun	16.9	16.4	16.7	16.4	15.8	15.6	17.2	18.3	19.8	21.4	21.0	20.9	19.9	20.1	21.8	23.2	21.9	19.8	18.6	16.4	13.4	13.5	12.7	12.7	17.93	23.20																							
																								12.51	11.77	11.11	10.45	10.08	10.26	11.91	13.65	15.39	16.85	17.85	18.79	19.30	19.55	19.61	19.94	19.62	19.22	18.63	17.66	16.37	15.02	13.93	13.23	Diurnal Average	
																								17.89	17.30	16.74	16.44	15.83	15.60	17.26	19.51	21.27	22.71	22.81	23.86	25.36	26.29	27.56	28.89	29.01	28.36	27.61	25.57	22.65	20.36	19.66	18.20	Diurnal Maximum	



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

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

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1 Spd	9.8	9.1	6.9	7.3	9.2	11.5	9.6	6.8	3.6	2.5	6.5	4.1	3.2	7.6	10.1	5.9	4.6	6.3	3.0	3.8	1.6	1.5	1.7	0.7	3.39	11.48
Dir	SSE	S	S	SSW	S	S	SSW	SW	SSW	SW	N	N	WNW	S	SE	ESE	E	SE	ENE	NE	S	S	SSE	S	S	S
2 Spd	0.4	0.8	1.1	1.6	4.2	4.2	5.4	5.8	4.7	0.9	2.8	1.5	4.0	2.4	5.8	6.4	21.5	11.9	10.2	10.1	6.2	4.4	4.8	4.8	2.70	21.48
Dir	SSW	WNW	SSE	SE	S	S	S	S	SSW	SW	SSE	SSE	SE	SE	SW	NW	NW	NW	WNW	WNW	WNW	W	SW	W	W	W
3 Spd	5.7	8.1	5.3	3.9	4.5	4.7	5.1	6.2	6.7	5.8	3.8	6.0	7.8	7.8	5.7	10.8	16.6	15.0	13.9	8.2	3.5	6.1	7.3	5.2	5.79	16.58
Dir	WNW	WNW	WNW	SSW	SSW	SSW	WNW	WSW	NW	NW	WSW	SSW	SSW	SSW	SW	W	WNW	W	WNW	WNW	W	W	WNW	WSW	W	WNW
4 Spd	3.8	1.4	4.8	2.3	0.9	2.3	0.4	2.6	3.3	4.6	3.0	2.8	5.5	5.7	3.3	5.4	7.0	5.6	5.3	5.7	3.5	4.0	3.9	4.4	1.18	6.99
Dir	SW	W	NW	S	W	S	W	S	ENE	ENE	NW	SW	SW	W	SW	NE	NNE	N	NE	NE	NNE	NNE	NNE	N	N	N
5 Spd	1.8	0.8	3.1	3.4	2.2	2.5	5.1	3.6	4.8	2.1	2.2	0.7	4.6	5.3	3.6	5.4	5.5	5.6	4.7	3.9	3.8	4.6	6.5	9.7	2.21	9.73
Dir	NW	SSW	S	SSE	S	S	S	SW	NW	W	NNW	SSE	SSE	SSE	ENE	E	E	E	ENE	E	ESE	ESE	ESE	SE	SE	SE
6 Spd	9.2	11.3	8.4	9.6	10.7	7.3	6.6	9.1	9.6	8.6	9.0	9.1	10.5	10.8	8.1	8.5	11.7	8.8	5.1	4.9	8.4	4.6	4.8	4.3	5.95	11.74
Dir	SSE	SSE	SE	SSE	SSE	S	S	S	S	S	SSE	SE	SSE	SE	SE	SE	SE	SE	ESE	NNE	NNE	NE	NNW	NNW	SSE	SE
7 Spd	7.5	5.0	4.9	1.4	0.6	5.6	4.5	7.5	7.5	6.2	5.9	4.2	5.2	4.6	5.4	6.0	4.4	5.3	4.1	1.2	3.4	5.5	4.9	4.9	3.49	7.54
Dir	N	NNE	N	NNE	WNW	NW	NW	NW	N	NNE	NNE	NE	NE	ENE	ENE	NE	ENE	E	ENE	WSW	N	N	NNE	SE	NNE	N
8 Spd	3.6	1.3	10.3	10.1	5.7	5.1	3.4	7.2	7.6	6.4	6.0	5.6	5.3	6.2	6.4	5.0	12.5	8.6	6.8	6.9	8.9	10.9	11.8	8.6	5.94	12.54
Dir	S	WSW	NNW	N	NE	NE	ENE	NNE	NE	NE	NE	NE	NE	NNE	NNE	NNE	NNW	N	NNE	N	NNW	NNW	NNW	N	NNE	NNW
9 Spd	7.1	9.1	9.8	8.7	8.9	12.3	16.5	19.5	20.7	21.0	21.2	23.5	20.8	21.3	24.0	20.5	19.5	18.2	15.6	13.7	10.9	11.3	9.5	9.5	15.17	23.97
Dir	NNW	NW	W	WNW	WSW	WNW	WNW	WNW	WNW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	NNW	NNW	NW	NW
10 Spd	11.4	12.1	8.2	5.0	5.9	7.2	8.6	4.1	3.2	3.3	5.3	6.2	9.0	7.6	7.3	12.5	14.0	6.5	3.5	3.3	2.6	2.5	3.2	5.9	1.86	14.01
Dir	NW	NNW	N	NW	NW	WNW	NW	NW	NNE	ENE	E	ESE	ESE	E	ESE	SE	SSE	SE	ENE	NE	NE	E	SE	ESE	ENE	SSE
11 Spd	11.7	14.7	11.5	13.2	14.1	13.7	12.2	11.3	8.7	7.1	6.4	11.6	8.4	8.6	11.0	8.4	5.0	6.9	5.8	5.2	6.1	7.3	6.0	4.7	4.47	14.70
Dir	SE	SE	SE	SE	SSE	SSE	SSE	SSE	SSW	SW	W	NW	NNE	W	W	NNW	WSW	WSW	WSW	SSW	SSW	SSW	S	S	S	SE
12 Spd	4.4	4.7	4.6	5.7	6.8	8.1	8.7	9.6	9.7	9.2	9.5	9.0	8.8	10.1	6.7	7.2	14.5	13.7	12.7	13.5	13.7	7.6	6.8	6.6	5.93	14.55
Dir	S	S	SSW	SW	W	WSW	SSW	SW	SSW	SW	W	SW	SW	SSW	S	S	NW	NW	NW	NW	WNW	WNW	W	W	WSW	NW
13 Spd	7.2	3.6	4.6	3.6	0.8	3.7	6.8	7.1	2.6	6.2	8.5	8.7	8.4	8.6	9.6	8.6	10.6	12.1	12.8	8.1	9.4	3.4	0.6	6.3	4.69	12.75
Dir	W	WNW	S	S	WSW	S	S	S	E	SE	SE	ESE	SE	SSE	SE	SE	SE	SE	SE	SSE	SW	S	ESE	WNW	SSE	SE
14 Spd	8.2	5.7	7.5	5.3	4.8	3.5	5.0	6.1	4.8	4.0	3.1	1.1	4.9	7.6	9.4	13.3	9.2	18.0	16.2	17.7	16.3	14.0	8.7	7.8	5.64	18.00
Dir	WNW	W	WNW	W	SW	SW	W	WSW	W	W	W	NNE	SE	SE	SE	SE	W	WNW	W	W	WNW	WNW	W	W	W	WNW
15 Spd	9.8	9.7	10.4	9.6	7.4	6.3	8.9	9.7	10.9	11.6	15.6	13.8	14.0	13.8	13.3	12.7	11.3	9.0	8.6	12.3	9.3	7.1	6.9	7.4	9.53	15.59
Dir	W	SW	SW	SW	SSW	SSW	S	S	SSW	SSW	SSW	SSW	S	SSW	SSW	SSW	SW	WSW	WSW	WSW	WSW	SW	SSW	SW	SW	SSW
16 Spd	8.9	5.7	5.4	6.1	7.6	5.9	6.8	8.5	5.4	7.2	7.4	13.3	12.7	14.4	14.7	17.4	17.0	15.7	19.4	16.8	14.0	13.2	14.4	12.2	8.76	19.43
Dir	WSW	SW	S	S	S	S	SSW	SSW	WSW	WNW	WNW	NW	NW	NW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	W	WNW	WNW
17 Spd	19.8	18.9	19.3	19.5	16.0	16.0	15.7	23.1	23.9	22.1	20.7	20.8	14.8	15.2	13.2	11.8	7.8	8.2	6.0	7.8	6.6	4.6	5.7	7.3	12.32	23.86
Dir	WNW	W	W	W	W	W	W	WNW	WNW	WNW	WNW	WNW	WNW	NW	NW	WNW	WSW	SW	SW	S	S	S	SSW	WSW	W	WNW
18 Spd	8.1	4.9	4.1	3.7	5.4	4.6	3.4	6.3	5.8	2.7	2.9	2.2	5.4	6.1	1.4	5.1	8.4	9.8	6.2	6.5	6.4	7.0	7.3	8.2	4.14	9.80
Dir	WSW	SW	S	SSW	S	S	SSW	SW	WSW	WNW	NW	SSW	S	S	S	SSE	SE	SE	SE	SE	S	SSW	SSW	SW	S	SE
19 Spd	5.7	5.9	1.3	3.9	7.3	13.2	16.8	17.7	16.0	15.7	20.8	16.9	17.7	19.0	16.6	15.3	14.9	12.3	11.1	8.3	5.1	2.5	1.4	0.8	9.84	20.79
Dir	SW	WSW	NW	WNW	NW	WNW	WNW	WNW	WNW	WNW	NW	NW	NNW	NNW	NW	NNW	NNW	NNW	N	NNW	W	W	SW	SW	NW	NW
20 Spd	2.1	3.7	3.1	4.8	4.8	4.3	7.3	7.6	3.0	1.6	3.0	0.8	4.0	6.2	3.4	1.3	4.8	5.9	5.6	4.1	3.5	2.0	3.4	11.2	1.31	11.21
Dir	S	S	SSE	S	S	SSW	W	WNW	W	ESE	WSW	SE	SE	ESE	ENE	ESE	E	ENE	E	E	E	SW	W	SW	S	SW
21 Spd	8.1	2.1	4.1	1.9	3.3	1.7	0.8	2.0	4.5	6.4	6.3	6.7	4.1	5.5	13.3	9.7	10.5	7.9	11.2	5.5	5.3	3.5	3.5	5.2	3.73	13.33
Dir	WSW	NW	SE	S	WNW	NNW	NNE	S	SSW	WSW	W	W	ENE	WSW	WNW	W	W	W	WNW	W	S	SSW	S	SSW	W	WNW
22 Spd	4.7	4.0	5.1	5.2	4.1	3.7	6.1	7.8	6.6	6.5	6.7	5.8	3.6	3.6	2.6	2.9	4.9	1.5	4.7	8.6	7.0	2.5	4.7	3.2	2.10	8.57
Dir	S	S	S	S	S	S	SSW	WSW	WSW	W	W	W	NW	WNW	N	SSW	NNW	NNW	NNE	N	N	NNW	SW	WSW	W	N



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

**Wind Speed (WS) - kph**  
**June 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	4.3	2.1	1.9	2.7	2.1	4.2	4.4	1.3	1.4	5.1	4.3	4.1	4.6	5.0	4.0	10.1	6.6	4.8	6.6	4.2	4.2	3.4	0.7	6.5	0.67	10.13	
Dir	NE	NW	WSW	S	SW	WNW	W	WSW	SSW	SE	E	ENE	ENE	E	E	S	SE	SSW	W	NW	WSW	S	NW	NW	S	S	
24 Spd	7.0	8.4	3.9	4.3	8.3	10.3	11.5	11.2	16.3	16.8	15.3	15.0	11.6	14.9	17.5	20.5	20.8	14.8	13.3	9.7	6.0	10.4	11.9	9.8	11.80	20.80	
Dir	NW	WNW	WSW	WSW	W	WNW	WNW	W	NW	NW	NW	WNW	NW	WNW	WNW	WNW	NW	NW	NW	WNW	W	WNW	WNW	WNW	WNW	NW	
25 Spd	9.0	11.5	8.1	8.3	7.2	9.4	11.8	9.7	8.7	10.0	13.8	14.5	14.2	13.5	19.3	17.6	9.7	13.7	8.8	7.0	2.6	13.0	13.9	9.6	10.50	19.26	
Dir	WNW	NW	NW	WNW	WNW	WNW	WNW	WNW	WNW	NNW	NW	NW	NNW	NNW	WNW	WNW	NNW	NNW	NNW	WNW	W	WNW	WNW	NW	NW	WNW	
26 Spd	10.7	10.8	10.5	7.4	7.5	5.5	10.5	14.3	12.3	13.4	14.5	11.4	8.9	4.7	4.9	5.0	1.5	3.6	3.2	5.1	4.3	3.2	3.0	4.7	5.14	14.47	
Dir	WNW	WNW	NW	NW	WNW	WSW	WNW	WNW	WNW	WNW	NW	NW	N	NNW	NW	N	NE	NE	ESE	ESE	SE	S	S	S	NW	NW	
27 Spd	5.0	4.6	5.2	4.6	4.2	3.4	4.5	3.1	2.7	4.6	3.7	4.0	2.0	3.1	12.1	7.8	6.7	7.7	6.8	4.8	5.7	5.6	1.1	0.5	3.48	12.11	
Dir	S	S	S	S	S	S	SSW	W	N	NNE	E	E	S	SE	SE	SE	SE	SSE	SE	ESE	SE	SSE	SSW	NE	SSE	SE	
28 Spd	1.2	2.9	0.9	0.5	0.7	2.6	3.2	5.9	7.5	7.9	8.5	10.0	9.2	9.0	7.8	8.2	9.6	9.2	8.7	6.3	4.8	0.6	1.2	1.0	3.29	9.96	
Dir	SSW	SSE	S	WNW	SSE	WNW	WSW	WSW	SW	WSW	S	S	S	SSE	SSW	SW	NW	WNW	WNW	NW	WNW	WSW	S	SE	SW	S	
29 Spd	0.5	2.9	2.7	3.9	4.3	4.3	2.7	3.1	2.0	2.7	4.7	5.7	5.7	6.6	7.0	10.2	9.7	9.5	6.4	4.2	3.4	4.4	7.8	6.7	3.68	10.16	
Dir	WSW	S	S	S	SSE	S	SSE	SW	SSW	S	SSE	SE	ESE	E	ESE	SE	SE	ESE	ESE	E	ENE	E	SSE	WNW	SE	SE	
30 Spd	3.7	4.9	7.7	5.3	5.1	6.1	13.5	12.1	12.7	12.8	13.0	11.7	10.5	7.4	8.6	7.9	9.5	7.3	4.8	10.9	9.1	3.4	7.8	2.9	2.21	13.49	
Dir	E	ESE	SE	ESE	ESE	ESE	SE	SE	SE	SSE	SW	W	W	WSW	WNW	NW	N	NNE	ENE	SSW	WNW	SW	W	WSW	SSW	SE	
Spd	3.06	2.48	2.07	2.63	3.05	3.39	4.00	4.82	4.08	3.71	4.09	3.21	1.59	1.54	2.14	2.12	3.52	2.89	3.27	2.92	2.94	2.51	2.83	3.01	Diurnal Average		
Dir	W	WSW	WSW	SW	SW	WSW	WSW	WSW	W	W	WNW	WNW	WNW	W	W	WNW	NW	NW	NW	WNW	W	W	W	W	W	Diurnal Maximum	
Spd	19.75	18.87	19.25	19.45	16.04	15.95	16.79	23.07	23.86	22.10	20.99	21.17	23.47	20.85	21.28	23.97	21.48	19.49	19.43	17.69	16.27	13.97	14.42	12.22	Diurnal Maximum		
Dir	285.22	268.44	268.87	267.11	266.90	274.91	297.61	284.95	293.34	296.16	304.93	311.98	311.34	312.50	315.86	314.09	321.87	324.78	303.45	263.20	282.03	283.93	284.38	278.66			
Maximum Speed Value: 24.0 kph on Jun 9 16:00																					Minimum Speed Value: 0.4 kph on Jun 4 07:00				Hours in Service: 720		
Maximum Daily Speed Average: 15.17 kph on Jun 9																					Minimum Daily Speed Average: 0.67 kph on Jun 4				Hours of Data: 720		
Maximum Diurnal Speed Average: 4.82 kph at hour 8																					Minimum Diurnal Speed Average: 1.54 kph at hour 14				Hours of Missing Data: 0		
Monthly Average Velocity: 2.699 kph 270.84 deg																					Speed Percentiles: P <sub>1</sub> = 0.6 P <sub>10</sub> = 2.6 Q <sub>1</sub> = 4.3 Median = 6.5 Q <sub>3</sub> = 9.7 P <sub>90</sub> = 14.1 P <sub>99</sub> = 21.1				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	24	5	0	0	0	45																				
NorthEast	23	20	0	0	0	0	43																				
East	29	18	0	0	0	0	47																				
SouthEast	21	48	19	0	0	0	88																				
South	71	56	6	0	0	0	133																				
SouthWest	33	47	6	0	0	0	86																				
West	31	63	26	5	0	0	125																				
NorthWest	25	50	58	20	0	0	153																				
Total	249	326	120	25	0	0	720																				



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

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

Maximum Value: 11.23 kph on Jun 2 17:00      Maximum Daily Average: 5.03 kph on Jun 17																				Hours in Service: 720 Hours of Data: 720 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0						
Minimum Value: 0.6 kph on Jun 2 02:00      Minimum Daily Average: 1.91 kph on Jun 27 Maximum Diurnal Average: 4.41 kph at hour 17      Minimum Diurnal Average: 1.90 kph at hour 5 Monthly Average: 3.078 kph      Percentiles: P <sub>1</sub> = 0.7 P <sub>10</sub> = 1.2 Q <sub>1</sub> = 2.0 Median = 2.9 Q <sub>3</sub> = 3.8 P <sub>90</sub> = 5.1 P <sub>99</sub> = 7.4																										
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Jun	2.3	1.8	1.5	1.2	1.8	2.4	2.2	2.1	1.6	2.5	3.4	3.0	4.4	4.9	4.8	3.4	3.1	5.1	4.4	2.7	1.9	1.2	1.5	1.3	2.69	5.09
2-Jun	0.8	0.6	1.2	0.8	1.4	0.8	1.0	1.4	1.3	1.5	1.8	2.7	3.8	3.4	4.7	2.8	11.2	5.0	4.6	3.9	2.2	1.9	1.7	1.5	2.58	11.23
3-Jun	1.8	2.1	2.0	1.5	1.4	0.9	3.4	2.1	2.4	3.0	3.3	4.2	4.2	4.2	3.5	4.7	5.5	5.7	4.6	3.8	2.0	1.8	2.1	1.6	2.99	5.66
4-Jun	0.9	1.9	2.3	1.9	0.9	1.1	0.7	1.6	2.3	2.8	2.6	3.1	3.5	4.0	3.1	3.5	3.6	3.2	3.2	2.9	1.7	2.0	1.6	2.1	2.36	3.99
5-Jun	1.2	0.9	1.8	1.0	1.8	1.6	1.1	1.4	1.7	1.9	2.4	3.5	3.0	3.3	3.5	3.0	2.9	3.1	2.9	1.9	1.6	1.6	2.9	3.0	2.22	3.51
6-Jun	3.2	2.5	2.2	2.1	2.3	2.3	1.5	2.5	2.2	2.5	2.9	3.3	3.4	3.5	3.8	3.6	3.9	4.2	1.9	5.6	4.1	3.3	3.1	3.7	3.07	5.61
7-Jun	2.7	3.0	2.8	1.7	0.9	2.6	2.0	2.4	2.9	2.6	2.8	2.6	2.7	3.4	3.5	3.6	2.7	2.8	2.9	3.9	2.7	2.3	3.6	3.5	2.78	3.88
8-Jun	2.6	3.4	3.1	3.8	3.1	2.6	2.5	3.7	3.6	4.0	3.3	3.1	3.1	3.1	3.3	2.7	5.2	4.4	3.3	3.2	3.1	3.5	3.7	3.8	3.38	5.15
9-Jun	2.4	2.5	3.6	3.1	2.9	4.3	4.4	4.5	5.5	5.8	6.1	6.1	6.4	6.7	6.8	6.7	6.2	6.0	6.2	4.7	3.9	3.6	4.0	2.9	4.81	6.80
10-Jun	3.4	3.9	3.2	1.5	1.8	1.9	1.8	2.9	3.0	3.1	3.7	4.7	4.7	4.6	4.0	4.6	4.6	2.9	2.1	1.7	1.9	1.3	2.2	3.3	3.02	4.72
11-Jun	4.8	4.1	2.6	3.4	3.8	3.8	3.2	2.7	3.2	4.2	4.0	4.9	4.7	10.0	6.4	3.7	1.8	2.3	1.9	2.8	3.1	1.9	1.2	0.8	3.56	10.00
12-Jun	1.4	1.0	2.3	2.3	2.3	2.6	2.3	2.1	2.4	3.1	3.9	2.7	3.4	3.6	2.6	3.3	5.1	4.2	3.6	4.3	5.2	2.4	1.9	1.8	2.91	5.18
13-Jun	2.1	1.9	1.7	1.2	0.9	1.1	1.8	1.7	2.2	3.6	3.6	3.7	4.6	3.3	4.0	3.7	4.4	3.9	4.1	7.6	7.4	2.0	0.8	3.7	3.13	7.58
14-Jun	3.5	2.8	3.2	2.4	1.5	1.0	1.9	1.9	2.2	2.5	3.0	2.2	3.5	3.1	3.9	4.5	7.5	6.6	6.0	6.6	6.3	5.7	3.1	3.0	3.65	7.47
15-Jun	3.6	2.6	2.7	2.2	2.3	2.7	2.4	2.2	3.0	3.6	4.9	5.2	4.8	4.7	4.6	4.6	3.8	3.2	3.5	3.7	2.4	2.3	1.2	2.0	3.26	5.23
16-Jun	2.1	1.5	1.0	1.3	1.5	1.3	2.0	2.0	3.4	3.5	4.6	5.2	4.2	4.4	5.1	5.8	5.7	5.8	6.2	6.3	5.0	4.5	4.7	4.6	3.83	6.33
17-Jun	7.0	7.2	7.2	7.2	5.9	6.0	5.6	8.4	7.9	6.4	6.9	6.2	5.8	5.8	4.8	4.6	3.1	3.1	2.2	2.5	1.8	1.5	1.0	2.5	5.03	8.44
18-Jun	2.4	1.6	1.1	1.4	0.8	0.8	1.1	1.7	2.1	2.4	2.4	3.8	3.9	3.3	3.8	3.0	2.9	2.8	2.7	1.7	2.2	1.7	1.6	2.4	2.23	3.93
19-Jun	2.1	2.0	3.3	2.9	2.4	4.2	4.4	4.8	4.8	5.4	6.3	5.5	6.4	6.8	5.5	5.5	4.9	4.4	4.6	3.3	2.0	1.5	0.8	2.2	4.00	6.81
20-Jun	2.1	1.0	0.7	0.9	0.9	1.5	2.7	3.0	2.4	1.6	2.3	2.8	4.1	3.2	3.1	3.1	3.1	3.5	3.0	2.4	1.4	2.4	2.3	5.5	2.45	5.45
21-Jun	6.6	2.3	1.4	1.2	2.1	1.2	2.2	1.4	2.0	2.5	2.7	3.4	3.4	6.9	5.3	3.4	4.3	2.9	3.4	3.8	3.2	1.3	0.9	1.4	2.90	6.93
22-Jun	1.2	0.9	1.2	0.9	0.9	1.5	1.4	2.6	2.7	2.8	3.1	3.1	3.5	2.9	3.1	3.0	3.5	3.5	6.3	3.3	2.1	1.8	3.2	2.0	2.53	6.30
23-Jun	2.0	1.0	1.1	1.2	1.2	2.9	1.7	1.2	2.1	2.2	3.2	2.7	2.9	2.8	2.2	5.7	3.2	2.7	2.8	2.6	1.5	1.2	2.3	2.2	2.27	5.74
24-Jun	2.6	2.6	1.9	1.5	2.9	4.0	4.1	4.0	5.0	5.2	4.6	4.5	3.6	4.1	5.1	5.6	5.7	5.3	3.7	3.2	2.0	3.0	3.4	2.6	3.76	5.73
25-Jun	2.6	3.6	2.2	2.1	1.9	2.3	3.3	3.1	3.8	3.8	4.5	4.5	4.7	4.5	6.9	6.3	5.7	6.2	4.2	3.4	2.2	4.7	4.5	3.2	3.92	6.89
26-Jun	3.7	3.7	3.4	2.6	2.4	1.8	3.4	3.6	3.5	3.5	4.5	4.5	3.7	3.3	4.2	3.1	2.6	2.9	2.3	2.0	1.6	1.1	0.9	0.9	2.89	4.50
27-Jun	0.6	0.6	0.8	0.9	0.8	0.8	0.8	1.5	2.0	2.6	2.4	2.5	2.4	3.8	3.6	2.9	3.7	2.8	2.6	1.9	2.1	1.6	1.3	0.7	1.91	3.83
28-Jun	0.8	0.6	1.0	1.2	0.7	1.5	2.1	2.4	2.3	3.0	2.7	2.5	3.0	3.0	2.8	3.6	2.7	2.8	2.6	2.6	2.1	1.2	1.9	1.1	2.10	3.58
29-Jun	0.9	1.1	1.0	0.9	1.0	1.2	1.6	1.6	1.7	1.8	2.7	3.4	3.7	3.1	4.1	4.4	4.5	4.9	3.5	2.7	1.9	2.2	3.8	3.8	2.57	4.93
30-Jun	3.1	2.1	3.2	2.5	2.3	3.3	3.0	3.2	3.3	3.7	5.0	4.2	3.3	4.1	3.9	3.7	5.3	4.0	3.1	6.1	4.3	3.3	2.9	2.5	3.55	6.07
																								Diurnal Average		
																								Diurnal Maximum		
																								2.55   2.23   2.23   1.96   1.90   2.20   2.39   2.66   2.96   3.24   3.65   3.79   3.97   4.26   4.20   4.07   4.41   4.00   3.61   3.57   2.84   2.33   2.33   2.53		
																								6.99   7.20   7.23   7.23   5.91   5.98   5.63   8.44   7.94   6.37   6.86   6.18   6.45   10.00   6.89   6.68   11.23   6.59   6.30   7.58   7.43   5.74   4.71   5.45		
																								,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**  
**June 2016**

Maximum Value: 107.96 deg on Jun 5 12:00		Maximum Daily Average: 47.54 deg on Jun 4		Hours in Service: 720																																													
Minimum Value: 1.3 deg on Jun 2 02:00		Minimum Daily Average: 18.21 deg on Jun 24		Hours of Data: 720																																													
Maximum Diurnal Average: 46.24 deg at hour 12		Minimum Diurnal Average: 21.22 deg at hour 6		Hours of Missing Data: 0																																													
Monthly Average: 32.523 deg		Percentiles: P <sub>1</sub> = 8.4 P <sub>10</sub> = 14.2 Q <sub>1</sub> = 18.0 Median = 26.4 Q <sub>3</sub> = 40.6 P <sub>90</sub> = 63.9 P <sub>99</sub> = 94.9		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-Jun	12.3	12.7	10.5	11.5	11.8	12.3	15.3	24.2	25.5	61.8	37.7	62.0	84.8	43.9	36.2	45.7	46.7	44.9	68.6	52.0	44.2	19.4	21.3	77.7	36.80	84.82																							
2-Jun	77.9	1.3	73.2	27.2	28.9	12.8	11.6	13.4	25.3	88.9	52.0	94.6	84.2	88.4	45.4	36.3	23.1	31.7	29.6	18.0	23.7	24.4	17.5	19.9	39.56	94.56																							
3-Jun	19.3	14.3	14.7	35.1	20.7	11.5	71.9	28.9	31.0	34.0	60.6	57.2	40.7	49.6	51.3	27.4	15.4	21.4	20.7	21.7	16.4	24.0	16.8	23.4	30.33	71.90																							
4-Jun	23.8	76.9	14.8	47.1	57.9	33.9	75.7	41.1	59.8	46.7	62.9	69.8	59.6	48.4	87.7	50.0	44.8	44.8	43.4	32.5	31.6	31.3	27.7	28.9	47.54	87.70																							
5-Jun	41.1	64.0	70.6	13.5	53.1	52.9	10.6	39.6	28.5	64.0	86.6	108.0	41.3	62.8	66.9	52.1	38.7	38.7	41.1	30.5	20.7	22.5	24.8	17.5	45.42	107.96																							
6-Jun	15.3	13.3	11.8	13.1	11.8	13.4	12.0	13.9	16.1	26.6	25.1	24.9	21.3	20.1	29.9	30.6	19.3	23.8	21.5	58.5	34.4	46.1	70.1	69.0	26.75	70.07																							
7-Jun	28.4	35.7	42.7	76.2	68.2	18.5	20.6	21.8	30.6	36.6	36.0	45.1	38.8	53.9	49.0	43.1	44.3	36.4	49.3	100.2	65.7	32.5	46.7	33.1	43.89	100.16																							
8-Jun	29.2	66.4	23.1	33.1	38.1	24.9	47.3	36.6	30.9	39.0	36.8	38.7	46.5	37.7	37.8	41.1	26.4	34.6	33.1	34.5	28.3	28.4	25.8	32.2	35.45	66.42																							
9-Jun	27.8	19.2	21.7	18.5	16.3	21.0	14.4	17.2	17.1	17.2	15.6	17.9	16.9	19.7	18.3	18.5	19.6	20.1	19.0	21.4	17.6	18.4	19.5	18.4	18.80	27.83																							
10-Jun	17.9	27.4	27.9	28.4	14.1	17.2	13.9	53.2	57.7	64.6	45.9	46.2	37.2	43.8	37.9	22.0	12.3	22.0	35.1	32.2	45.6	33.5	27.5	26.8	32.93	64.65																							
11-Jun	22.1	13.9	12.5	14.6	15.1	14.2	14.9	13.6	38.2	42.2	49.9	32.9	39.7	92.6	28.6	46.3	24.6	17.7	22.0	26.5	29.4	14.1	11.5	8.5	26.91	92.59																							
12-Jun	28.3	9.7	32.0	31.3	22.6	20.8	15.6	17.2	16.8	25.1	25.0	21.6	29.2	20.2	36.4	63.4	22.3	16.0	17.0	16.3	13.0	16.3	17.0	18.8	22.99	63.45																							
13-Jun	18.8	48.3	23.5	16.4	66.0	15.2	12.8	17.1	70.5	40.0	33.7	28.7	35.6	35.7	31.0	29.0	24.3	16.3	18.7	33.1	22.5	54.6	79.3	35.2	33.60	79.34																							
14-Jun	24.0	26.6	21.1	33.0	20.5	20.6	29.6	26.9	38.4	51.6	70.8	99.7	49.5	29.2	27.2	21.7	63.2	19.2	19.0	23.1	25.3	19.7	24.8	28.0	33.86	99.70																							
15-Jun	22.8	15.7	13.9	13.8	18.9	32.6	18.1	12.5	15.8	18.0	20.4	23.4	21.1	26.2	23.4	24.2	23.6	20.0	20.6	17.6	14.2	28.8	12.8	16.6	19.79	32.62																							
16-Jun	15.0	18.6	12.0	11.7	9.8	10.9	16.8	18.4	47.0	29.2	52.5	22.5	20.8	19.1	20.3	17.7	24.7	29.5	18.3	18.5	17.5	16.3	16.7	19.5	20.97	52.45																							
17-Jun	18.6	19.8	19.5	19.4	19.7	19.0	20.5	18.4	16.8	16.6	18.2	17.4	25.9	28.5	27.3	26.2	30.3	25.9	33.4	26.9	12.2	10.6	7.0	16.7	20.62	33.40																							
18-Jun	15.4	19.0	25.3	14.7	8.6	7.9	16.7	17.8	29.3	79.0	64.1	100.4	56.0	46.5	108.0	44.5	20.8	20.7	26.4	16.0	16.7	14.3	14.8	14.6	33.24	107.95																							
19-Jun	16.2	19.8	89.0	48.3	23.9	15.3	13.3	14.3	19.0	19.8	16.9	21.3	24.4	23.9	23.2	24.4	23.1	21.7	33.4	30.0	21.3	29.2	36.4	60.6	27.87	89.05																							
20-Jun	83.1	18.2	13.7	11.1	12.3	23.0	22.4	18.8	57.3	70.9	53.4	103.6	71.4	42.4	72.7	96.9	48.9	40.5	38.6	37.3	23.2	67.4	26.1	30.7	45.16	103.63																							
21-Jun	55.7	77.5	22.4	44.1	52.1	40.9	83.5	46.0	35.5	31.3	36.2	39.6	67.4	78.0	27.3	27.3	21.3	24.0	18.0	54.1	38.8	36.5	14.4	11.3	40.97	83.50																							
22-Jun	16.2	18.6	13.0	13.2	11.4	12.7	16.0	23.2	28.3	26.4	36.9	44.5	77.1	64.6	79.5	67.4	49.2	94.3	74.9	29.7	28.0	66.7	37.1	66.7	41.50	94.35																							
23-Jun	26.4	28.7	34.4	31.8	36.9	52.3	25.1	64.9	92.6	36.0	52.4	52.5	39.5	40.1	32.9	42.5	28.6	39.6	23.5	38.7	27.2	40.2	84.9	19.5	41.29	92.55																							
24-Jun	19.1	14.3	42.8	21.4	20.7	17.6	16.4	18.0	16.1	18.0	17.9	19.8	19.3	17.0	17.6	17.1	15.5	16.8	14.8	18.0	20.3	13.1	12.3	13.0	18.21	42.81																							
25-Jun	14.4	14.8	14.5	12.2	17.6	11.8	13.5	16.0	19.9	21.8	18.3	21.3	24.2	21.7	17.6	17.8	35.6	28.8	29.5	34.3	77.1	16.7	18.7	26.8	22.70	77.13																							
26-Jun	20.2	21.5	15.5	15.6	14.9	22.2	15.8	13.0	14.6	15.7	21.6	28.7	31.5	55.5	60.4	46.6	91.2	53.2	56.1	26.3	21.2	14.2	9.1	9.5	28.92	91.16																							
27-Jun	5.6	7.9	7.6	15.0	18.4	17.5	15.7	43.2	59.4	42.9	37.6	49.8	80.2	72.9	20.8	23.6	37.5	29.1	26.8	25.4	21.3	14.5	66.4	58.6	33.25	80.17																							
28-Jun	7.5	22.1	57.1	89.5	58.4	24.4	29.0	23.6	23.4	29.4	30.5	16.5	21.7	24.1	32.7	33.0	18.0	17.6	17.3	27.0	24.0	70.5	96.7	76.8	36.28	96.71																							
29-Jun	57.2	28.7	40.7	10.6	14.0	11.9	19.7	38.2	61.9	52.1	39.5	46.7	45.8	42.8	40.0	28.4	27.7	29.0	36.5	36.2	35.3	31.7	54.1	27.6	35.69	61.89																							
30-Jun	64.3	40.3	21.0	26.7	25.5	27.2	12.9	15.4	14.3	19.5	25.7	31.6	30.5	35.5	34.2	36.5	40.7	39.0	41.4	43.8	31.4	84.9	19.7	63.5	34.41	84.93																							
																								28.13	27.17	28.09	26.61	26.94	21.22	24.05	25.55	34.58	38.84	39.37	46.24	42.74	42.83	40.72	36.71	32.06	30.58	31.59	32.68	28.27	31.37	31.92	32.32	Diurnal Average	
																								83.08	77.53	89.05	89.46	68.21	52.88	83.50	64.94	92.55	88.92	86.65	107.96	84.82	92.59	107.95	96.87	91.16	94.35	74.92	100.16	77.13	84.93	96.71	77.72	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**

**JUNE 2016**

**Summary Report**

*Continuous air quality/meteorological monitoring measurements*

**West Central Airshed Society**

Weyerhaeuser / Edson Station 912												June 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)	33	667	97.2	0.1	0.0	2.0	0.0	0.0	0.1	0.2	0.3	0	0	0.000
O <sub>3</sub> (ppb)	36	664	97.2	33.7	5.5	73.5	14.4	23.5	33.2	42.9	51.0	0	-	0.051
NO (ppb)	35	665	97.2	0.6	0.0	10.4	0.0	0.0	0.1	0.5	1.9	-	-	-
NO <sub>2</sub> (ppb)	35	665	97.2	2.8	0.5	18.4	0.8	1.1	2.1	3.7	6.3	0	0	0.006
NOx (ppb)	35	665	97.2	3.4	0.5	24.6	0.9	1.2	2.3	4.4	7.9	-	-	-
Particulate Matter 2.5 microns (μm <sup>3</sup> )	0	700	97.2	2.9	0.0	42.7	0.1	0.8	2.0	3.9	6.6	0	0	6.6 ug/m3
Wind Speed (kph)	0	700	97.2	6.7	0.1	21.0	2.0	3.4	5.8	9.1	13.3	-	-	-
Temperature (°C)	0	700	97.2	14.7	3.7	30.3	8.0	10.7	14.0	18.6	22.3	-	-	-
Std Dev Wind Direction (deg)	0	700	97.2	36.0	7.7	105.9	14.5	20.1	28.6	45.8	72.1	-	-	-
Std Dev Wind Speed (kph)	0	700	97.2	3.2	0.6	10.0	1.5	2.0	2.8	4.2	5.4	-	-	-



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

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

Maximum Value: 2.01 ppb on Jun 29 09:00      Maximum Daily Average: 0.35 ppb on Jun 7																				Hours in Service: 720 Hours of Data: 667 Hours of Missing Data: 53 Hours of Calibration: 33 Percent Operational Time: 97.2						
Minimum Value: 0.0 ppb on Jun 2 03:00      Minimum Daily Average: 0.00 ppb on Jun 12 Maximum Diurnal Average: 0.28 ppb at hour 9      Minimum Diurnal Average: 0.06 ppb at hour 5 Monthly Average: 0.127 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> = 0.9																										
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-Jun	0.3	0.3	0.2	Z	0.2	0.1	0.1	0.2	0.2	0.1	0.2	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.16	0.35
2-Jun	0.0	0.0	0.0	Z	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	0.0	0.0	0.0	0.0	0.0	0.02	0.10
3-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.1	0.3	0.4	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.06	0.40
4-Jun	0.0	0.2	0.0	Z	0.0	0.0	0.1	0.2	0.2	0.1	0.3	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.08	0.29
5-Jun	0.2	0.2	0.1	Z	0.1	0.3	0.4	0.4	0.9	0.6	0.2	0.3	0.3	0.2	0.2	0.3	0.2	0.3	0.2	0.3	0.3	0.3	0.4	0.3	0.31	0.92
6-Jun	0.5	0.5	0.4	Z	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.4	0.5	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.21	0.54
7-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.3	0.6	0.5	0.5	0.4	0.5	0.5	0.7	1.7	1.3	0.5	0.3	0.35	1.75
8-Jun	0.2	0.2	0.1	Z	0.1	0.0	0.1	0.2	0.1	0.2	0.2	0.3	0.4	0.4	0.3	0.3	1.1	1.5	0.7	0.2	0.1	PF	PF	PF	0.33	1.55
9-Jun	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--	0.03
10-Jun	0.0	0.1	0.1	Z	0.1	0.0	0.0	C	C	C	C	0.6	0.3	0.1	0.8	0.8	0.8	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.24	0.83
11-Jun	0.1	0.0	0.1	Z	0.0	0.0	0.0	0.3	0.2	0.1	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	0.05	0.31
12-Jun	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	0.0	0.0	0.0	0.0	0.00	0.01
13-Jun	0.0	0.0	0.0	Z	0.0	0.1	0.3	0.1	0.0	0.0	0.1	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	0.06	0.26
14-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.2	0.4	0.3	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	0.0	0.06	0.36
15-Jun	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	0.0	0.1	0.0	0.0	0.01	0.06
16-Jun	0.0	0.1	0.1	Z	0.1	0.1	0.1	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	0.16	0.23
17-Jun	0.2	0.3	0.2	Z	0.2	0.2	0.2	0.1	0.2	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	0.0	0.1	0.10	0.29
18-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.5	0.6	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	0.1	0.1	0.10	0.56
19-Jun	0.1	0.1	0.0	Z	0.0	0.0	0.0	0.1	0.1	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.07	0.28
20-Jun	0.0	0.0	0.0	Z	0.0	0.1	0.3	0.3	0.2	0.2	0.1	0.0	0.1	0.0	0.1	0.2	0.1	0.1	0.1	0.2	0.3	0.2	0.2	0.2	0.13	0.34
21-Jun	0.1	0.2	0.1	Z	0.0	0.0	0.1	0.1	0.2	0.5	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.07	0.46
22-Jun	0.0	0.1	0.2	Z	0.0	0.1	0.3	0.6	0.6	0.2	0.1	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	0.12	0.63
23-Jun	0.0	0.1	0.0	Z	0.0	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.06	0.17
24-Jun	0.0	0.0	0.0	Z	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.05	0.14
25-Jun	0.0	0.1	0.1	Z	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.2	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.13	0.27
26-Jun	0.2	0.1	0.2	Z	0.2	0.2	0.2	0.4	0.3	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.16	0.35
27-Jun	0.1	0.0	0.0	Z	0.0	0.0	0.2	0.6	0.6	0.6	0.4	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.3	0.4	0.2	0.21	0.59
28-Jun	0.1	0.1	0.1	Z	0.2	0.2	0.1	0.2	0.2	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.10	0.26
29-Jun	0.0	0.0	0.0	Z	0.1	0.1	0.2	1.5	2.0	0.9	0.3	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.0	0.1	0.0	0.30	2.01
30-Jun	0.1	0.1	0.1	Z	0.1	0.1	0.2	0.1	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	0.0	0.0	0.05	0.23
																								Diurnal Average		
																								Diurnal Maximum		
0.08 0.09 0.08 -- 0.06 0.08 0.16 0.27 0.28 0.21 0.16 0.14 0.12 0.11 0.11 0.11 0.15 0.13 0.11 0.09 0.12 0.12 0.08 0.07																										
0.48 0.50 0.44 -- 0.30 0.35 0.50 1.46 2.01 0.88 0.43 0.62 0.54 0.58 0.82 0.80 1.08 1.55 0.65 0.67 1.75 1.34 0.54 0.33																										
Z - zerospan      C - Calibration      PF - Power Failure																										
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**  
**June 2016**

Maximum Value: 73.49 ppb on Jun 5 16:00	Maximum Daily Average: 51.33 ppb on Jun 5	Hours in Service: 720
Minimum Value: 5.5 ppb on Jun 2 06:00	Minimum Daily Average: 23.39 ppb on Jun 25	Hours of Data: 664
Maximum Diurnal Average: 43.88 ppb at hour 18	Minimum Diurnal Average: 16.64 ppb at hour 6	Hours of Missing Data: 56
Monthly Average: 33.662 ppb	Percentiles: P <sub>1</sub> = 7.2 P <sub>10</sub> = 14.4 Q <sub>1</sub> = 23.5 Median = 33.2 Q <sub>3</sub> = 42.9 P <sub>90</sub> = 51.0 P <sub>99</sub> = 70.8	Hours of Calibration: 36
		Percent Operational Time: 97.2

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-Jun	38.3	35.3	28.1	Z	18.9	21.7	20.6	17.2	44.4	47.2	46.4	49.6	51.4	51.8	52.6	50.2	48.3	48.2	47.9	50.6	42.4	41.5	37.9	27.7	39.93	52.56	
2-Jun	27.4	19.4	13.6	Z	8.6	5.5	12.7	14.7	17.6	42.1	55.2	61.5	56.3	55.0	48.0	45.5	46.8	50.3	49.2	47.4	40.5	29.6	37.6	37.3	35.73	61.46	
3-Jun	35.9	33.2	28.3	Z	16.9	12.7	19.6	24.4	30.8	43.5	53.5	62.6	61.8	59.1	55.4	50.5	47.4	46.2	43.9	41.4	35.1	32.1	27.7	28.2	38.71	62.64	
4-Jun	33.3	24.1	19.4	Z	14.4	12.1	18.0	17.6	34.6	43.8	46.1	45.8	48.7	46.8	47.5	49.0	50.3	58.4	64.3	65.9	65.4	65.3	64.0	58.2	43.17	65.87	
5-Jun	43.1	27.0	28.8	Z	13.6	25.0	25.1	25.1	36.9	58.0	64.5	68.7	69.2	70.9	72.9	73.5	72.6	68.4	65.3	60.7	54.2	51.9	53.1	51.9	51.33	73.49	
6-Jun	53.5	54.6	51.7	Z	46.6	46.6	40.5	35.1	31.7	47.0	62.7	71.4	71.9	50.9	51.4	50.3	54.6	53.4	48.3	47.3	46.5	46.2	43.3	41.1	49.85	71.87	
7-Jun	30.4	24.6	16.8	Z	26.3	14.0	14.8	22.4	44.1	51.0	52.9	54.3	58.1	61.5	61.2	59.1	58.1	56.8	53.8	54.2	70.8	62.1	48.9	45.8	45.30	70.79	
8-Jun	53.0	51.9	43.0	Z	31.3	28.0	29.2	32.5	35.0	40.1	42.9	49.1	49.8	51.2	51.7	48.4	62.1	66.7	59.4	50.8	30.8	PF	PF	PF	45.35	66.74	
9-Jun	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	52.8	49.2	44.6	39.3	34.7	34.3	35.0	--	52.78	
10-Jun	41.4	39.4	38.6	Z	34.3	27.5	38.8	C	C	C	C	C	C	C	C	36.0	42.1	42.5	40.9	40.9	42.4	42.5	40.1	38.0	35.7	--	42.47
11-Jun	31.3	27.1	25.9	Z	16.0	13.4	19.2	26.7	31.4	35.0	38.3	40.5	38.4	34.3	36.1	42.8	43.1	37.5	32.4	29.3	23.9	19.5	23.5	15.5	29.62	43.07	
12-Jun	13.2	10.5	9.4	Z	19.8	14.6	13.1	12.5	16.3	18.2	17.7	26.0	30.3	30.5	31.7	32.3	35.7	42.8	44.5	43.0	40.0	38.7	37.1	31.1	26.48	44.52	
13-Jun	23.5	19.0	17.3	Z	11.5	13.9	16.4	19.6	29.1	35.8	39.8	41.3	42.2	43.6	41.9	41.3	42.5	46.9	46.1	41.7	38.2	30.3	32.9	22.2	32.04	46.87	
14-Jun	15.8	9.7	12.3	Z	13.1	8.4	10.3	19.7	29.6	33.6	37.3	43.9	44.6	44.1	41.7	39.8	36.8	31.7	39.8	40.2	40.9	39.6	33.6	32.6	30.39	44.56	
15-Jun	35.8	41.9	39.9	Z	36.7	25.6	18.3	13.2	16.3	20.8	19.6	25.9	30.1	32.0	34.2	35.0	38.0	36.3	36.7	36.6	34.0	29.3	29.2	30.5	30.26	41.91	
16-Jun	32.1	27.3	27.7	Z	19.2	12.9	20.0	28.7	30.7	33.1	35.4	34.9	34.9	35.1	34.1	26.9	28.3	30.4	28.7	26.1	26.0	25.5	24.4	24.9	28.14	35.43	
17-Jun	24.8	23.8	23.8	Z	21.6	20.1	18.3	19.7	22.2	27.2	31.0	32.2	33.3	32.4	32.8	33.3	34.9	35.2	35.6	34.8	30.3	25.2	23.2	20.3	27.65	35.60	
18-Jun	15.8	15.3	11.1	Z	6.7	10.5	13.7	18.3	25.3	28.8	33.4	36.2	37.4	37.7	39.7	41.4	41.1	40.8	39.1	34.4	30.5	25.3	29.5	28.7	27.86	41.44	
19-Jun	29.7	28.8	24.1	Z	23.1	24.6	23.8	25.8	28.7	32.6	35.8	39.5	47.3	49.4	46.8	46.6	44.5	39.5	39.5	39.0	37.6	31.1	26.4	25.6	34.34	49.39	
20-Jun	27.3	24.1	22.3	Z	12.1	12.1	12.3	17.1	25.5	33.9	45.8	51.2	52.8	54.6	53.9	51.2	50.3	48.9	47.8	46.4	40.9	38.8	36.9	34.4	36.54	54.59	
21-Jun	32.3	29.0	28.2	Z	17.6	16.8	19.9	23.0	30.6	33.6	37.7	38.4	39.7	41.0	41.2	41.4	43.8	46.8	47.4	48.4	42.9	40.8	32.0	25.4	34.69	48.37	
22-Jun	25.8	19.8	18.5	Z	12.0	12.9	13.1	17.9	25.2	34.9	39.5	41.0	38.3	36.2	38.3	36.6	31.6	29.3	30.3	29.6	22.3	19.5	16.6	12.1	26.15	41.02	
23-Jun	11.3	15.0	14.7	Z	9.7	5.9	7.4	13.1	19.1	30.9	38.4	41.3	42.6	42.9	39.1	37.4	33.1	32.7	27.8	29.5	29.8	22.0	19.5	19.2	25.32	42.95	
24-Jun	20.7	20.5	27.1	Z	23.6	22.0	24.9	31.1	29.9	30.1	30.0	27.2	23.2	24.9	28.7	30.1	32.1	30.7	29.0	27.4	23.0	17.7	13.0	13.4	25.24	32.10	
25-Jun	14.0	15.5	11.3	Z	13.5	13.1	13.9	15.9	21.9	24.7	27.7	30.2	25.3	22.1	25.0	27.9	28.1	30.6	30.2	30.1	32.6	32.2	27.2	25.1	23.39	32.64	
26-Jun	22.3	16.5	16.2	Z	11.6	9.1	13.2	17.2	22.0	31.3	34.5	36.4	38.0	39.4	39.2	39.3	38.6	38.3	36.2	37.4	34.1	25.2	17.6	11.8	27.19	39.35	
27-Jun	14.7	6.7	5.6	Z	13.4	11.6	13.4	15.3	21.4	31.4	37.1	38.4	37.6	37.6	39.5	39.8	39.9	41.5	42.1	37.5	28.3	31.1	31.6	29.0	28.03	42.14	
28-Jun	23.6	18.9	16.7	Z	10.3	8.5	9.8	18.8	30.6	39.2	43.6	46.7	44.3	46.6	48.6	47.7	44.2	42.2	40.8	42.4	38.0	35.8	27.0	15.9	32.20	48.61	
29-Jun	16.6	9.7	11.4	Z	7.7	6.5	10.3	13.8	23.4	36.8	43.5	48.7	47.0	46.7	46.7	46.5	47.8	45.1	43.7	43.5	40.5	42.4	35.9	29.7	32.34	48.73	
30-Jun	25.6	21.2	14.0	Z	29.3	26.9	25.1	22.9	22.3	23.5	19.0	21.9	32.8	44.3	46.2	48.0	50.2	46.9	45.7	45.3	38.3	28.0	20.0	13.6	30.90	50.15	

28.02	24.47	22.27	--	18.61	16.64	18.47	20.69	27.74	35.28	39.62	43.03	43.82	43.67	43.53	43.24	43.69	43.88	42.85	41.60	37.98	34.54	31.79	28.34			Diurnal Average
53.52	54.59	51.67	--	46.57	46.63	40.55	35.10	44.43	58.02	64.49	71.35	71.87	70.86	72.88	73.49	72.57	68.44	65.32	65.87	70.79	65.29	63.96	58.20			Diurnal Maximum

Z - zerospan      C - Calibration      PF - Power Failure  
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 82.5 ppb    24-hr -- ppb



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

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

Maximum Value: 10.44 ppb on Jun 14 07:00																								Maximum Daily Average: 1.88 ppb on Jun 29																								Hours in Service: 720	
Minimum Value: 0.0 ppb on Jun 1 01:00																								Minimum Daily Average: 0.06 ppb on Jun 19																								Hours of Data: 665	
Maximum Diurnal Average: 3.32 ppb at hour 8																								Minimum Diurnal Average: 0.08 ppb at hour 1																								Hours of Missing Data: 55	
Monthly Average: 0.645 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> = 0.5 P <sub>90</sub> = 1.9 P <sub>99</sub> = 6.1																								Hours of Calibration: 35	
																								Percent Operational Time: 97.2																									
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-Jun	0.0	0.0	0.0	Z	0.0	0.1	1.4	4.4	0.3	0.4	0.5	0.1	0.1	0.1	0.8	0.1	0.1	0.0	0.4	0.4	0.3	0.0	0.0	0.0	0.41	4.43																							
2-Jun	0.0	0.0	0.0	Z	0.1	3.0	1.6	6.1	6.8	2.3	0.6	1.2	0.1	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.97	6.76																							
3-Jun	0.0	0.0	0.0	Z	0.1	2.6	3.6	5.2	3.9	1.1	0.5	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.80	5.21																							
4-Jun	0.0	0.2	0.1	Z	0.2	1.1	2.3	9.5	2.5	0.5	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.75	9.54																							
5-Jun	0.0	0.1	0.0	Z	2.9	0.7	1.8	3.6	2.0	0.9	1.0	0.2	0.2	0.7	0.4	0.2	0.2	0.3	0.2	0.1	0.2	0.1	0.2	0.3	0.70	3.57																							
6-Jun	0.4	0.0	0.0	Z	0.0	0.1	0.3	1.1	4.8	6.1	2.1	0.6	0.4	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.71	6.12																							
7-Jun	0.0	0.0	0.2	Z	0.1	4.4	5.6	6.0	1.4	0.2	0.1	0.1	0.2	0.2	0.3	0.9	1.1	0.0	0.1	0.4	0.1	0.1	0.0	0.1	0.93	6.00																							
8-Jun	0.0	0.0	0.0	Z	0.0	0.1	0.1	0.7	1.1	1.4	1.9	1.7	0.7	0.4	0.4	0.8	0.3	0.3	0.2	0.0	0.0	PF	PF	PF	0.51	1.93																							
9-Jun	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	0.1	0.1	0.1	0.0	0.0	0.0	0.0	--	0.12																							
10-Jun	0.0	0.0	0.0	Z	0.0	0.2	0.7	C	C	C	C	C	C	C	3.4	7.1	3.4	4.3	1.0	1.1	1.1	0.2	0.2	0.0	0.0	--	7.10																						
11-Jun	0.0	0.0	0.0	Z	0.1	0.6	1.2	1.6	1.1	0.1	0.1	0.1	0.0	0.1	0.2	0.0	0.1	0.6	0.6	0.1	0.1	0.0	0.0	0.0	0.29	1.58																							
12-Jun	0.0	0.0	0.0	Z	0.0	0.3	1.1	2.3	1.2	0.2	0.7	0.7	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.31	2.31																							
13-Jun	0.0	0.0	0.1	Z	0.3	2.3	4.5	3.9	1.8	1.2	1.0	0.9	1.1	0.6	0.1	0.4	0.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.84	4.52																							
14-Jun	0.0	0.9	0.0	Z	0.2	3.3	10.4	6.1	0.6	0.5	0.2	0.1	0.0	0.1	0.1	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	10.44																							
15-Jun	0.0	0.0	0.0	Z	0.0	0.4	0.4	2.1	1.3	0.8	2.3	1.0	1.0	0.9	0.5	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.0	0.0	0.51	2.32																							
16-Jun	0.0	0.0	0.0	Z	0.1	1.3	2.1	0.8	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.23	2.08																							
17-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.5	0.2	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.09	0.47																							
18-Jun	0.1	0.0	0.1	Z	2.2	2.6	5.7	4.0	0.4	0.5	0.3	0.3	0.6	0.3	0.1	0.1	1.1	0.6	0.4	0.5	0.1	0.1	0.0	0.0	0.87	5.70																							
19-Jun	0.0	0.0	0.0	Z	0.0	0.1	0.2	0.2	0.2	0.2	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	0.06	0.24																							
20-Jun	0.0	0.0	0.0	Z	0.6	1.7	6.1	4.0	1.3	1.2	0.5	0.5	0.5	0.4	0.1	0.5	0.4	0.4	0.4	0.1	0.6	0.0	0.0	1.2	0.89	6.09																							
21-Jun	0.0	0.1	0.1	Z	0.1	0.8	1.2	1.8	2.5	0.8	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.35	2.53																							
22-Jun	0.0	0.0	0.0	Z	0.9	1.0	3.6	3.4	1.4	0.3	0.1	0.2	0.1	0.1	0.1	0.4	0.7	0.2	0.2	0.1	0.1	0.0	0.0	0.3	0.58	3.57																							
23-Jun	0.2	0.0	0.0	Z	0.1	4.1	5.5	3.6	5.7	2.7	0.3	1.0	0.2	0.1	0.5	0.1	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	1.09	5.70																							
24-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.09	0.32																							
25-Jun	0.0	0.0	0.0	Z	0.1	0.2	0.5	0.4	0.4	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.1	0.2	0.1	0.1	0.1	0.7	0.1	0.18	0.70																							
26-Jun	0.0	0.1	0.0	Z	0.1	0.8	0.9	0.8	0.4	0.2	0.1	0.1	0.0	0.2	0.0	0.2	0.0	0.1	0.1	0.0	0.1	0.1	0.1	1.1	0.24	1.09																							
27-Jun	1.3	0.9	2.8	Z	0.1	1.0	3.1	5.9	4.5	1.2	0.7	0.3	0.5	0.4	0.2	0.1	0.5	0.7	0.2	0.8	0.6	0.1	0.0	0.0	1.12	5.93																							
28-Jun	0.0	0.0	0.0	Z	0.4	5.9	6.1	4.5	1.0	0.6	0.3	0.0	0.1	0.0	0.2	0.2	0.1	0.1	0.4	0.2	0.1	0.0	0.0	0.7	0.91	6.12																							
29-Jun	0.1	1.2	0.0	Z	0.3	2.3	4.7	9.2	4.9	2.3	0.3	0.3	0.6	2.2	2.5	2.4	1.6	0.7	0.8	0.1	0.2	3.6	2.9	0.1	1.88	9.23																							
30-Jun	0.0	0.0	0.0	Z	0.1	0.2	0.7	1.2	1.8	1.1	0.7	1.0	0.2	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.0	0.5	0.36	1.76																							
0.08 0.12 0.12 -- 0.32 1.42 2.61 3.32 1.91 0.98 0.55 0.40 0.29 0.41 0.50 0.38 0.44 0.22 0.21 0.17 0.11 0.17 0.15 0.15																								Diurnal Average																									
1.26 1.16 2.80 -- 2.89 5.86 10.44 9.54 6.76 6.12 2.32 1.70 1.15 3.44 7.10 3.42 4.25 1.04 1.12 1.15 0.61 3.61 2.93 1.19																								Diurnal Maximum																									
Z - zerospan C - Calibration PF - Power Failure																																																	
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**  
**June 2016**

Maximum Value: 18.41 ppb on Jun 6 10:00      Maximum Daily Average: 5.09 ppb on Jun 29																				Hours in Service: 720 Hours of Data: 665 Hours of Missing Data: 55 Hours of Calibration: 35 Percent Operational Time: 97.2																													
Minimum Value: 0.5 ppb on Jun 26 17:00      Minimum Daily Average: 1.07 ppb on Jun 25 Maximum Diurnal Average: 5.22 ppb at hour 8      Minimum Diurnal Average: 1.52 ppb at hour 13 Monthly Average: 2.811 ppb      Percentiles: P <sub>1</sub> = 0.5 P <sub>10</sub> = 0.8 Q <sub>1</sub> = 1.1 Median = 2.1 Q <sub>3</sub> = 3.7 P <sub>90</sub> = 6.3 P <sub>99</sub> = 9.8																																																	
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-Jun	2.2	2.7	1.8	Z	2.4	2.5	5.2	8.8	2.0	2.4	2.4	1.1	1.0	0.9	2.2	0.9	0.8	0.8	2.1	2.2	3.6	3.8	3.0	3.1	2.52	8.77																							
2-Jun	1.9	1.8	2.5	Z	3.7	5.6	6.2	7.4	7.5	5.3	2.6	4.8	1.6	1.6	1.1	1.2	1.3	0.7	1.0	1.2	1.3	2.6	2.0	1.8	2.90	7.49																							
3-Jun	1.5	1.6	2.3	Z	5.5	9.4	6.9	8.0	6.3	2.9	2.1	1.2	0.9	1.1	1.3	1.2	1.4	0.9	0.8	0.9	2.0	2.7	2.8	2.2	2.87	9.43																							
4-Jun	1.5	7.0	4.4	Z	6.3	5.4	5.2	10.4	4.9	1.9	1.9	1.0	0.9	0.7	0.7	0.8	0.8	0.8	0.7	0.8	0.8	1.0	0.9	1.3	2.61	10.39																							
5-Jun	2.9	7.0	3.5	Z	12.3	6.3	5.8	6.8	5.1	3.9	4.6	1.8	1.8	3.4	2.8	2.2	1.5	2.0	2.1	1.5	2.7	5.0	6.2	6.1	4.22	12.27																							
6-Jun	5.0	2.4	2.4	Z	2.8	2.9	5.5	6.1	11.0	18.4	9.8	5.4	4.4	0.8	0.7	0.8	1.3	1.1	1.2	0.9	2.8	1.8	1.4	1.4	3.93	18.41																							
7-Jun	2.1	2.6	7.5	Z	3.0	8.5	7.6	8.8	3.7	1.0	1.1	1.2	1.5	1.8	2.3	3.3	2.2	1.6	3.0	3.0	3.7	5.0	4.4	4.6	3.62	8.77																							
8-Jun	1.4	1.1	1.0	Z	3.4	2.3	2.4	4.0	4.1	2.8	3.6	3.6	2.7	1.9	3.4	4.2	3.0	3.5	3.0	2.1	3.5	PF	PF	PF	2.85	4.23																							
9-Jun	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	0.6	0.7	0.9	1.0	1.0	0.9	0.9	--	1.02																							
10-Jun	0.8	0.8	0.8	Z	1.7	2.5	3.0	C	C	C	C	C	C	C	4.8	8.6	6.4	8.0	2.9	2.7	4.8	2.5	2.7	3.0	2.1	--	8.56																						
11-Jun	2.6	3.3	2.8	Z	2.7	3.4	3.7	3.9	3.5	1.1	1.2	1.1	2.3	1.8	1.5	0.7	1.1	4.1	2.3	2.3	2.4	4.6	1.6	1.3	2.40	4.60																							
12-Jun	1.7	2.0	1.8	Z	1.8	3.0	6.4	5.7	3.0	1.4	2.1	1.3	0.9	0.8	0.9	1.1	1.0	1.0	0.7	0.9	1.1	1.0	0.9	1.7	1.84	6.43																							
13-Jun	3.7	8.2	4.4	Z	6.0	7.6	7.1	6.7	3.7	3.0	2.9	2.7	2.7	2.4	1.3	1.3	1.7	2.3	1.9	2.5	1.8	2.1	2.3	3.2	3.54	8.15																							
14-Jun	3.5	5.4	4.6	Z	3.8	8.5	8.3	5.9	1.7	1.6	1.4	0.8	0.8	1.6	1.4	1.4	2.0	5.1	2.9	1.0	0.9	1.0	1.0	1.5	2.88	8.55																							
15-Jun	1.1	0.5	0.7	Z	0.6	5.9	4.8	7.1	3.6	2.5	4.7	2.4	2.7	2.4	1.3	0.9	0.9	0.9	1.1	2.6	4.0	6.0	2.9	2.6	2.72	7.09																							
16-Jun	3.6	6.1	3.6	Z	6.3	10.8	6.9	2.2	0.9	0.8	0.5	0.6	0.9	0.9	0.9	1.0	0.6	0.8	0.9	0.7	0.7	0.6	0.6	0.7	2.24	10.77																							
17-Jun	0.7	0.6	0.7	Z	0.8	0.8	1.2	0.9	0.8	0.8	0.6	0.9	1.0	1.4	1.1	1.2	0.6	0.6	0.6	0.7	1.5	3.9	2.5	2.2	1.14	3.85																							
18-Jun	6.8	7.9	9.2	Z	11.5	6.3	7.4	4.8	1.1	1.4	1.1	1.1	1.8	1.2	1.0	1.3	3.5	1.9	2.3	2.4	3.2	6.1	3.4	2.5	3.86	11.47																							
19-Jun	1.3	1.2	2.1	Z	2.0	1.4	1.6	1.3	1.0	1.1	0.9	0.7	0.7	0.6	0.6	0.5	0.6	0.9	0.9	1.0	1.0	2.8	2.9	1.3	1.24	2.95																							
20-Jun	1.3	1.9	2.3	Z	8.2	6.3	8.1	5.4	2.6	3.1	1.9	1.9	2.2	1.3	0.9	1.6	1.1	1.9	1.6	1.8	4.3	2.3	2.8	4.1	3.00	8.21																							
21-Jun	3.4	5.5	3.5	Z	6.0	6.4	5.0	4.8	6.7	3.0	1.0	0.8	0.9	0.8	0.8	0.8	0.9	1.0	1.3	1.0	1.4	1.0	2.1	3.1	2.66	6.67																							
22-Jun	2.1	4.9	4.5	Z	7.8	4.4	5.5	5.0	2.7	1.1	0.9	1.2	0.9	1.0	0.8	2.4	2.9	2.2	1.1	0.9	1.6	3.2	2.6	4.5	2.79	7.84																							
23-Jun	5.9	5.2	3.2	Z	2.9	5.3	3.8	3.7	6.8	4.8	1.6	1.8	1.4	1.3	2.4	3.2	5.4	3.8	2.4	1.9	1.4	1.5	1.7	1.9	3.19	6.80																							
24-Jun	3.0	3.3	1.9	Z	2.3	2.0	1.9	1.3	1.1	1.2	1.0	1.0	1.1	1.1	1.0	0.9	1.1	0.9	0.8	1.0	1.4	1.7	1.4	1.6	1.48	3.30																							
25-Jun	1.4	1.2	1.6	Z	2.1	1.5	1.3	1.0	0.9	0.9	0.7	0.7	0.8	0.8	0.7	0.9	1.1	0.7	1.0	0.9	0.8	0.9	1.4	1.3	1.07	2.12																							
26-Jun	2.0	3.7	3.0	Z	2.3	2.7	1.7	1.4	1.0	0.7	0.5	0.5	0.5	0.8	0.5	0.7	0.5	0.6	0.8	0.7	1.7	2.9	2.8	7.7	1.73	7.66																							
27-Jun	4.8	7.7	7.5	Z	2.4	3.7	5.2	6.5	6.6	3.0	2.7	1.5	1.6	1.7	1.3	1.0	2.3	1.7	1.8	4.0	7.8	3.5	4.3	4.5	3.79	7.78																							
28-Jun	2.5	1.9	2.6	Z	6.8	8.5	7.1	5.8	3.6	3.6	2.6	0.9	0.9	0.8	1.3	1.7	1.3	1.4	3.0	2.3	2.6	2.9	7.1	9.6	3.51	9.64																							
29-Jun	5.5	7.2	3.9	Z	4.3	5.2	5.5	8.4	8.4	6.0	2.4	2.4	2.6	4.6	4.9	4.0	4.0	4.4	4.8	3.6	4.4	7.6	9.0	4.2	5.09	8.97																							
30-Jun	3.1	2.1	1.6	Z	2.2	2.1	2.8	4.0	4.3	3.5	4.0	3.7	1.3	0.9	0.7	0.7	0.7	0.9	1.6	4.0	5.1	7.0	7.4	8.7	3.15	8.69																							
																								2.73	3.68	3.16	--	4.27	4.87	4.94	5.22	3.88	2.98	2.24	1.72	1.52	1.57	1.67	1.67	1.84	1.73	1.70	1.82	2.44	3.04	2.95	3.16	Diurnal Average	
																								6.84	8.15	9.15	--	12.27	10.77	8.35	10.39	10.97	18.41	9.84	5.40	4.43	4.84	8.56	6.36	7.97	5.07	4.79	4.79	7.78	7.60	8.97	9.64	Diurnal Maximum	
Z - zerospan      C - Calibration      PF - Power Failure																																																	
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**  
**June 2016**

Maximum Value: 24.55 ppb on Jun 6 10:00      Maximum Daily Average: 6.94 ppb on Jun 29																							Hours in Service: 720 Hours of Data: 665																									
Minimum Value: 0.5 ppb on Jun 15 02:00      Minimum Daily Average: 1.19 ppb on Jun 17 Maximum Diurnal Average: 8.51 ppb at hour 8      Minimum Diurnal Average: 1.80 ppb at hour 13 Monthly Average: 3.433 ppb      Percentiles: P <sub>1</sub> = 0.5 P <sub>10</sub> = 0.9 Q <sub>1</sub> = 1.2 Median = 2.3 Q <sub>3</sub> = 4.4 P <sub>90</sub> = 7.9 P <sub>99</sub> = 15.1																							Hours of Missing Data: 55 Hours of Calibration: 35 Percent Operational Time: 97.2																									
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-Jun	2.2	2.7	1.8	Z	2.4	2.5	6.5	13.2	2.3	2.8	2.9	1.2	1.2	1.0	3.0	1.0	0.9	0.8	2.5	2.7	4.0	3.8	3.0	3.0	2.94	13.22																						
2-Jun	1.8	1.8	2.6	Z	3.8	8.6	7.8	13.5	14.3	7.7	3.2	6.0	1.7	1.9	1.2	1.2	1.4	0.7	1.0	1.2	1.3	2.6	2.0	1.8	3.87	14.29																						
3-Jun	1.4	1.5	2.3	Z	5.6	12.1	10.5	13.2	10.2	4.0	2.6	1.3	1.0	1.3	1.4	1.4	1.6	1.1	0.9	1.0	2.1	2.7	2.9	2.3	3.68	13.23																						
4-Jun	1.5	7.2	4.4	Z	6.5	6.5	7.6	19.9	7.4	2.3	2.2	1.1	1.0	0.8	0.8	0.8	0.8	0.8	0.7	0.9	0.8	1.0	0.9	1.3	3.37	19.95																						
5-Jun	2.9	7.0	3.5	Z	15.2	7.0	7.6	10.4	7.0	4.8	5.6	2.0	2.0	4.1	3.2	2.5	1.6	2.3	2.3	1.5	2.9	5.1	6.5	6.4	4.92	15.18																						
6-Jun	5.3	2.4	2.4	Z	2.8	3.0	5.8	7.2	15.8	24.6	12.0	6.0	4.8	0.9	0.8	0.9	1.3	1.2	1.3	1.0	2.9	1.8	1.4	1.4	4.65	24.55																						
7-Jun	2.1	2.6	7.6	Z	3.0	12.8	13.2	14.8	5.1	1.2	1.2	1.3	1.7	2.0	2.6	4.2	3.3	1.6	3.1	3.4	3.8	5.1	4.5	4.6	4.56	14.80																						
8-Jun	1.4	1.1	1.0	Z	3.5	2.3	2.5	4.7	5.2	4.2	5.5	5.3	3.5	2.3	3.8	5.0	3.3	3.8	3.2	2.0	3.5	PF	PF	PF	3.36	5.51																						
9-Jun	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	0.7	0.8	0.9	1.1	1.0	0.9	0.9	--	1.06																						
10-Jun	0.7	0.7	0.8	Z	1.6	2.6	3.6	C	C	C	C	C	C	C	7.9	15.7	9.8	12.2	3.9	3.8	6.0	2.7	2.8	3.1	2.1	--	15.66																					
11-Jun	2.5	3.3	2.7	Z	2.8	4.0	4.8	5.4	4.6	1.2	1.3	1.2	2.3	1.8	1.7	0.7	1.1	4.7	2.8	2.4	2.4	4.6	1.5	1.2	2.65	5.42																						
12-Jun	1.7	2.0	1.8	Z	1.8	3.3	7.5	8.0	4.2	1.6	2.8	2.0	1.0	0.8	0.9	1.2	1.1	1.0	0.7	0.9	1.1	1.0	0.9	1.6	2.12	8.03																						
13-Jun	3.6	8.2	4.4	Z	6.3	9.9	11.6	10.7	5.5	4.2	3.8	3.6	3.8	3.1	1.5	1.6	2.3	2.5	1.9	2.4	1.8	2.0	2.2	3.1	4.34	11.57																						
14-Jun	3.5	6.2	4.6	Z	3.9	11.8	18.7	12.0	2.3	2.1	1.6	0.9	0.7	1.7	1.4	1.5	2.0	5.3	2.8	1.0	0.8	0.9	1.0	1.4	3.84	18.69																						
15-Jun	1.1	0.5	0.7	Z	0.6	6.2	5.2	9.1	4.9	3.3	7.0	3.4	3.7	3.3	1.7	1.2	1.0	1.0	1.2	2.8	4.2	6.1	2.9	2.5	3.20	9.14																						
16-Jun	3.5	6.1	3.5	Z	6.4	12.1	8.9	2.9	1.0	1.0	0.6	0.7	1.0	1.0	0.9	1.0	0.7	0.9	0.9	0.7	0.6	0.5	0.6	0.6	2.44	12.08																						
17-Jun	0.7	0.5	0.6	Z	0.7	0.8	1.4	1.1	0.9	0.9	0.7	1.1	1.2	1.9	1.3	1.5	0.7	0.6	0.5	0.7	1.5	3.8	2.4	2.1	1.19	3.79																						
18-Jun	6.9	7.8	9.3	Z	13.7	8.8	13.1	8.7	1.5	1.9	1.3	1.3	2.4	1.5	1.1	1.4	4.5	2.4	2.6	2.8	3.2	6.2	3.3	2.5	4.71	13.67																						
19-Jun	1.2	1.2	2.1	Z	2.0	1.5	1.8	1.5	1.2	1.3	1.0	0.7	0.7	0.6	0.6	0.5	0.6	0.9	0.9	1.0	1.0	2.8	2.9	1.3	1.27	2.94																						
20-Jun	1.3	1.8	2.2	Z	8.7	8.0	14.2	9.4	3.9	4.3	2.4	2.4	2.7	1.6	0.9	2.1	1.5	2.3	1.9	1.9	4.9	2.3	2.8	5.3	3.86	14.20																						
21-Jun	3.3	5.6	3.5	Z	6.0	7.1	6.2	6.6	9.2	3.8	1.1	0.8	1.0	0.8	0.9	0.9	0.9	1.0	1.3	1.0	1.4	1.0	2.1	3.0	2.98	9.18																						
22-Jun	2.0	4.9	4.4	Z	8.7	5.4	9.1	8.4	4.1	1.4	1.0	1.4	0.9	1.1	0.9	2.7	3.6	2.4	1.3	1.0	1.7	3.2	2.6	4.8	3.34	9.05																						
23-Jun	6.1	5.2	3.2	Z	3.0	9.4	9.3	7.3	12.5	7.5	1.9	2.7	1.6	1.5	2.9	3.3	5.6	4.0	2.6	2.0	1.4	1.5	1.7	1.9	4.25	12.45																						
24-Jun	2.9	3.2	1.9	Z	2.3	2.0	2.0	1.3	1.2	1.3	1.2	1.1	1.4	1.3	1.2	1.0	1.2	1.0	0.9	1.1	1.4	1.7	1.4	1.6	1.54	3.23																						
25-Jun	1.4	1.2	1.6	Z	2.2	1.7	1.7	1.4	1.3	1.1	0.8	0.7	0.9	0.9	0.8	1.1	1.3	0.8	1.2	0.9	0.9	1.0	2.1	1.3	1.23	2.16																						
26-Jun	2.0	3.7	3.0	Z	2.4	3.5	2.5	2.2	1.4	0.9	0.5	0.6	0.6	0.9	0.5	0.8	0.5	0.6	0.9	0.7	1.8	2.9	2.8	8.7	1.94	8.71																						
27-Jun	6.0	8.6	10.3	Z	2.4	4.7	8.3	12.4	11.1	4.2	3.4	1.7	2.1	2.1	1.5	1.0	2.8	2.3	2.0	4.9	8.4	3.6	4.3	4.5	4.89	12.42																						
28-Jun	2.5	1.9	2.6	Z	7.2	14.4	13.2	10.3	4.5	4.2	2.8	0.9	1.0	0.8	1.4	1.9	1.4	1.5	3.4	2.5	2.6	2.9	7.1	10.3	4.39	14.36																						
29-Jun	5.5	8.3	3.9	Z	4.6	7.5	10.3	17.5	13.2	8.3	2.6	2.6	3.2	6.8	7.4	6.4	5.6	5.1	5.5	3.7	4.5	11.2	11.9	4.2	6.94	17.54																						
30-Jun	3.1	2.1	1.6	Z	2.2	2.3	3.5	5.1	6.1	4.6	4.7	4.7	1.5	1.0	0.7	0.7	0.7	1.0	1.7	4.2	5.3	7.1	7.4	9.1	3.49	9.13																						
																							2.77	3.77	3.25	--	4.56	6.27	7.52	8.51	5.77	3.94	2.77	2.10	1.80	1.95	2.16	2.03	2.27	1.94	1.89	1.96	2.53	3.18	3.06	3.27	Diurnal Average	
																							6.95	8.58	10.26	--	15.18	14.36	18.69	19.95	15.78	24.55	11.95	6.02	4.83	7.94	15.66	9.80	12.24	5.30	5.51	5.95	8.37	11.17	11.87	10.28	Diurnal Maximum	
Z - zerospan      C - Calibration      PF - Power Failure 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>**  
**June 2016**

Maximum Value: 42.70 µg/m <sup>3</sup> on Jun 6 10:00      Maximum Daily Average: 8.90 µg/m <sup>3</sup> on Jun 6																				Hours in Service: 720 Hours of Data: 700 Hours of Missing Data: 20 Hours of Calibration: 0 Percent Operational Time: 97.2						
Minimum Value: 0.0 µg/m <sup>3</sup> on Jun 1 18:00      Minimum Daily Average: 0.33 µg/m <sup>3</sup> on Jun 15 Maximum Diurnal Average: 4.19 µg/m <sup>3</sup> at hour 8      Minimum Diurnal Average: 1.66 µg/m <sup>3</sup> at hour 14 Monthly Average: 2.892 µg/m <sup>3</sup> Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.1 Q <sub>1</sub> = 0.8 Median = 2.0 Q <sub>3</sub> = 3.9 P <sub>90</sub> = 6.6 P <sub>99</sub> = 14.8																										
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-Jun	2.6	3.2	3.6	2.8	3.6	3.6	4.5	5.2	0.9	0.9	1.6	0.1	0.9	0.7	2.6	2.9	0.4	0.0	1.0	2.5	2.4	1.6	2.4	3.0	2.21	5.20
2-Jun	1.4	2.1	2.3	2.0	2.7	4.3	4.3	6.1	7.3	6.6	2.0	7.8	3.4	0.0	2.9	4.2	0.0	0.0	0.9	0.0	1.5	2.0	1.0	1.2	2.75	7.83
3-Jun	1.3	0.9	0.6	1.7	2.1	2.6	2.9	2.6	3.5	0.7	0.5	0.6	1.8	1.5	1.8	2.1	1.7	0.9	1.2	1.7	2.6	5.2	5.6	3.3	2.06	5.59
4-Jun	1.8	4.1	5.3	4.2	3.4	4.5	4.6	6.2	2.5	0.9	1.5	0.8	0.4	0.7	0.4	0.7	1.9	0.5	1.4	2.3	2.6	3.8	4.2	5.6	2.68	6.18
5-Jun	5.1	6.1	4.7	4.2	5.8	6.3	6.6	7.5	6.3	4.5	7.3	4.2	3.4	6.7	6.6	3.0	2.4	3.7	4.1	5.4	5.6	7.7	12.5	8.4	5.74	12.47
6-Jun	6.6	4.8	4.4	4.9	5.3	5.9	12.0	8.9	10.1	42.7	26.9	18.7	14.8	0.0	0.9	3.4	10.2	6.8	4.8	3.2	4.1	4.4	4.8	5.3	8.90	42.70
7-Jun	6.6	6.4	9.0	6.6	5.9	7.7	11.4	9.1	5.8	3.2	2.1	4.4	6.3	6.0	6.2	7.2	5.8	7.1	10.5	9.9	12.4	11.5	8.3	3.7	7.21	12.35
8-Jun	4.1	3.2	0.9	0.5	2.4	3.3	3.5	3.2	4.7	3.4	4.4	5.6	5.8	5.2	8.3	6.8	5.5	9.3	6.5	5.2	26.8	PF	PF	PF	5.64	26.85
9-Jun	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	14.9	5.7	4.6	2.6	1.7	1.5	0.6	--	14.94
10-Jun	0.3	0.3	0.8	1.1	0.8	3.6	0.0	2.1	6.6	3.9	6.2	1.7	1.6	1.1	5.4	7.9	8.7	2.6	2.4	3.1	1.5	1.8	0.9	1.5	2.74	8.65
11-Jun	1.8	2.0	1.7	2.7	3.1	2.5	3.7	3.4	1.6	1.0	0.0	0.0	1.0	0.7	0.0	0.0	0.0	0.5	0.5	0.6	0.8	1.5	0.2	0.1	1.23	3.66
12-Jun	0.3	1.2	0.9	1.5	0.0	0.5	1.0	0.4	1.3	0.0	0.5	0.0	0.0	0.6	0.3	0.3	0.3	0.8	1.2	0.6	0.8	0.6	0.1	0.6	0.57	1.54
13-Jun	0.8	1.2	1.4	2.0	1.3	1.4	2.7	1.9	0.7	0.1	0.9	0.9	1.3	0.7	0.0	0.2	0.0	0.1	2.4	1.5	0.7	0.8	0.0	1.1	1.01	2.74
14-Jun	1.3	1.3	0.6	0.6	0.0	1.3	1.0	1.8	1.2	1.3	0.5	0.0	0.0	1.2	1.0	0.1	0.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.63	1.80
15-Jun	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.6	0.2	0.4	0.0	0.8	0.5	0.0	0.0	0.6	0.2	0.1	1.1	1.3	1.1	0.4	0.3	0.33	1.27
16-Jun	0.4	0.7	0.4	1.2	1.4	1.8	2.3	1.0	0.2	0.0	0.8	0.0	0.0	0.0	1.8	1.3	0.8	0.0	0.7	0.1	0.2	0.1	0.3	0.1	0.65	2.31
17-Jun	0.5	0.7	0.4	0.9	0.8	0.6	0.7	0.9	1.5	0.7	0.7	0.1	0.3	0.8	0.0	0.0	0.0	0.0	0.0	0.3	1.4	3.3	2.4	2.6	0.82	3.29
18-Jun	2.6	1.8	2.4	2.4	2.5	1.4	1.2	2.0	0.4	0.4	0.0	0.0	0.4	0.2	0.0	1.5	4.4	2.5	1.7	1.8	2.0	3.0	3.1	3.0	1.69	4.39
19-Jun	2.6	2.9	2.5	2.6	2.9	2.9	2.5	2.7	2.9	2.9	3.2	1.8	0.5	1.9	1.3	1.5	2.2	3.9	2.9	2.8	2.8	5.0	4.5	2.8	2.69	5.02
20-Jun	1.7	1.7	1.5	2.0	2.9	2.9	3.8	4.2	2.6	2.2	1.3	2.4	2.2	1.6	0.6	1.7	2.6	4.0	6.2	7.4	8.9	3.4	1.3	1.3	2.94	8.88
21-Jun	0.6	2.0	3.6	3.7	3.0	4.3	4.0	3.8	3.7	4.5	2.6	1.6	1.3	1.7	2.3	2.9	1.7	3.5	2.2	1.6	2.2	2.6	3.0	3.3	2.73	4.50
22-Jun	2.8	2.8	3.4	4.5	3.5	3.0	4.8	4.2	3.0	0.9	1.7	2.1	3.4	4.4	1.4	6.9	3.0	3.5	1.2	1.8	1.4	0.7	0.6	1.2	2.76	6.89
23-Jun	1.9	1.6	1.0	0.9	1.1	1.4	2.3	2.3	2.8	2.6	0.2	0.5	0.2	0.4	2.2	5.6	0.0	0.0	1.0	0.0	0.0	0.0	1.2	0.9	1.25	5.59
24-Jun	0.7	0.9	0.8	0.3	1.3	1.2	0.8	0.4	0.5	0.1	0.7	0.9	1.1	0.7	0.3	0.2	0.0	0.4	0.5	1.8	2.5	2.6	2.3	1.9	0.96	2.62
25-Jun	1.7	1.0	1.1	0.9	1.3	1.8	2.3	2.5	2.0	2.0	1.8	2.7	3.4	3.2	1.4	1.0	1.9	1.1	4.0	3.1	4.3	2.0	2.3	1.6	2.10	4.32
26-Jun	1.1	1.4	1.7	2.4	2.3	5.3	2.8	2.8	3.2	0.4	0.5	1.3	0.9	1.5	0.9	1.0	1.7	1.1	2.3	1.5	2.4	4.2	4.1	4.8	2.15	5.35
27-Jun	4.7	4.4	3.3	2.8	2.9	3.6	4.9	6.3	4.4	2.7	2.5	2.7	2.8	3.8	1.9	2.4	6.9	3.7	4.7	5.8	9.8	6.6	7.1	7.3	4.49	9.75
28-Jun	6.7	5.9	5.9	6.8	6.9	9.2	10.7	11.0	10.1	9.9	7.4	0.0	1.6	0.0	1.6	5.7	4.1	3.6	3.2	2.3	3.7	3.5	5.2	5.1	5.43	11.02
29-Jun	4.3	3.9	4.8	4.9	4.5	6.3	6.7	11.2	13.8	11.7	7.2	4.5	3.1	2.0	4.3	6.1	8.3	13.3	21.6	3.1	1.1	4.3	5.4	1.1	6.56	21.60
30-Jun	1.8	0.6	0.9	0.9	3.1	2.9	6.0	7.4	7.4	10.4	6.6	3.5	1.2	0.5	1.4	0.0	2.5	1.3	1.6	0.0	1.9	1.3	2.1	2.0	2.81	10.43
																								Diurnal Average		
																								Diurnal Maximum		
																								2.35 2.37 2.41 2.48 2.66 3.31 3.93 4.19 3.85 4.16 3.17 2.38 2.21 1.66 1.99 2.65 2.70 3.01 3.21 2.50 3.67 2.97 2.99 2.55		
																								6.74 6.38 8.97 6.78 6.92 9.17 12.01 11.19 13.80 42.70 26.85 18.66 14.82 6.72 8.29 7.92 10.15 14.94 21.60 9.94 26.85 11.46 12.47 8.37		
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>																										

**WEYERHAEUSER - EDSON  
STATION #912**

**METEOROLOGICAL DATA**

**JUNE 2016**



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

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

Maximum Value: 30.31 C on Jun 6 15:00      Maximum Daily Average: 20.53 C on Jun 6 Minimum Value: 3.7 C on Jun 14 05:00      Minimum Daily Average: 8.51 C on Jun 14 Maximum Diurnal Average: 19.67 C at hour 15      Minimum Diurnal Average: 8.64 C at hour 5 Monthly Average: 14.665 C      Percentiles: P <sub>1</sub> = 4.9 P <sub>10</sub> = 8.0 Q <sub>1</sub> = 10.7 Median = 14.0 Q <sub>3</sub> = 18.6 P <sub>90</sub> = 22.3 P <sub>99</sub> = 26.1																								Hours in Service:	720																								
																								Hours of Data:	700																								
																								Hours of Missing Data:	20																								
																								Hours of Calibration:	0																								
																								Percent Operational Time:	97.2																								
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-Jun	11.9	11.0	9.8	9.5	8.7	9.0	10.3	11.7	14.7	15.5	15.7	16.4	17.7	18.0	19.1	18.2	17.8	18.0	18.1	17.8	15.7	14.0	12.5	9.6	14.20	19.08																							
2-Jun	8.8	8.4	8.1	8.0	7.6	7.7	9.5	10.9	12.9	16.1	18.6	20.0	17.6	18.9	14.0	12.6	13.6	15.0	15.1	15.5	13.4	11.0	10.3	8.8	12.61	20.04																							
3-Jun	7.6	6.3	5.3	4.7	3.8	4.5	7.0	9.8	12.5	15.4	17.0	18.9	19.7	20.5	20.9	21.3	21.3	21.9	21.5	21.0	18.1	15.4	13.1	12.8	14.17	21.90																							
4-Jun	12.9	12.1	9.3	9.1	7.6	7.3	10.5	14.3	17.7	19.4	20.8	21.7	22.5	23.3	24.1	24.8	24.4	23.9	23.5	22.0	19.8	18.0	16.6	15.0	17.52	24.75																							
5-Jun	11.7	9.4	7.6	6.7	6.1	7.9	9.5	12.3	16.0	19.1	20.3	21.1	22.1	23.0	24.0	24.4	25.0	25.0	23.9	22.8	20.2	19.0	18.2	17.2	17.19	25.04																							
6-Jun	16.7	15.3	14.0	12.7	12.0	12.4	12.6	13.5	15.7	18.9	22.4	25.1	27.5	29.6	30.3	30.1	27.6	27.2	25.4	23.9	22.5	20.3	19.0	17.8	20.53	30.31																							
7-Jun	16.1	15.0	15.0	14.8	13.8	13.2	15.8	18.5	20.8	21.7	22.1	23.0	23.9	24.7	25.6	25.2	25.6	24.6	23.4	21.8	20.1	17.8	15.9	16.6	19.79	25.63																							
8-Jun	15.5	14.1	12.8	12.5	12.0	11.7	12.7	13.6	13.9	14.6	16.0	17.7	18.0	18.4	18.3	17.7	19.4	19.8	19.4	18.0	13.9	PF	PF	PF	15.70	19.84																							
9-Jun	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	16.3	15.7	13.7	11.9	10.5	10.7	10.7	--	16.31																							
10-Jun	10.6	10.2	9.9	9.7	9.6	11.2	11.0	13.0	13.6	14.3	15.1	15.6	16.3	16.4	16.3	16.2	15.7	12.9	12.6	12.2	11.6	11.4	11.0	10.5	12.79	16.41																							
11-Jun	10.4	10.4	10.3	10.3	9.3	9.4	10.8	12.4	13.3	14.4	15.1	15.9	12.2	10.4	11.8	11.3	11.5	11.7	11.9	11.6	11.2	10.4	9.3	8.1	11.39	15.86																							
12-Jun	8.0	8.1	8.1	8.2	8.0	7.9	8.2	8.9	9.9	10.8	12.7	17.1	18.7	19.2	17.5	17.0	17.6	18.1	17.8	16.9	15.1	13.0	11.4	9.3	12.80	19.16																							
13-Jun	7.6	6.8	5.2	5.1	4.4	6.1	8.2	10.9	13.0	15.0	16.3	17.0	18.1	17.5	16.5	17.8	17.5	16.3	14.5	9.9	9.1	8.2	7.5	6.5	11.46	18.08																							
14-Jun	5.7	5.0	4.9	4.3	3.7	4.6	6.2	9.0	11.0	12.7	14.1	14.4	15.2	14.2	11.7	10.5	9.7	8.1	7.3	7.0	6.4	6.3	6.1	6.1	8.51	15.19																							
15-Jun	6.0	5.6	5.3	5.5	5.7	5.6	5.9	6.5	7.2	8.0	9.5	10.9	12.0	13.2	14.2	14.6	14.4	14.0	14.1	13.3	12.6	10.8	9.0	8.7	9.69	14.61																							
16-Jun	8.9	8.2	7.2	6.4	6.0	6.5	8.5	10.6	10.5	11.2	10.9	10.9	11.3	12.0	12.0	9.6	10.4	9.5	9.4	9.0	8.6	8.0	7.1	6.6	9.12	12.03																							
17-Jun	6.5	6.5	6.4	6.5	6.7	7.0	7.8	9.1	10.1	11.0	12.3	13.2	13.8	15.7	16.5	17.3	18.5	19.0	18.9	18.4	15.4	13.1	11.0	9.0	12.07	18.97																							
18-Jun	8.3	7.6	6.2	4.9	4.9	5.7	8.3	11.8	14.5	16.6	17.7	18.4	18.9	19.3	20.4	20.4	20.9	20.6	20.0	18.6	17.2	16.0	15.4	14.2	14.45	20.89																							
19-Jun	12.5	12.1	10.4	10.1	9.8	10.1	11.3	12.6	14.9	16.7	18.1	19.1	20.2	20.5	21.1	21.6	21.8	19.3	18.4	18.2	16.9	15.6	14.2	12.6	15.76	21.80																							
20-Jun	11.9	10.3	9.5	8.3	8.4	8.9	11.6	14.3	16.8	19.1	20.8	21.5	22.5	22.6	22.9	23.5	23.8	23.6	23.0	21.3	19.6	16.3	14.7	13.7	17.03	23.77																							
21-Jun	13.5	13.3	12.4	11.2	11.0	11.2	12.8	14.1	16.1	17.5	18.8	18.9	19.5	20.5	21.0	21.0	21.3	20.4	19.3	18.5	17.3	15.3	12.8	11.6	16.22	21.34																							
22-Jun	11.0	10.4	9.8	10.3	10.1	9.8	12.2	14.5	17.1	19.5	20.7	21.8	20.6	18.6	20.3	16.7	14.4	14.9	15.5	16.9	14.1	12.4	10.8	9.6	14.66	21.75																							
23-Jun	9.6	9.3	8.2	7.6	7.1	7.5	8.7	11.2	14.4	17.1	17.5	19.4	19.4	20.3	19.6	14.2	11.2	11.8	12.4	12.3	11.6	10.7	10.6	11.1	12.61	20.32																							
24-Jun	11.4	11.2	11.2	11.0	10.7	10.6	11.0	11.3	11.0	10.7	11.4	12.0	12.3	13.5	13.7	13.9	13.8	14.4	15.3	15.2	14.0	13.3	12.5	12.5	12.41	15.27																							
25-Jun	12.3	12.0	11.0	10.2	10.1	9.6	11.2	13.6	15.8	16.7	18.5	18.2	16.8	15.1	18.2	16.2	18.1	21.3	20.2	17.9	13.3	12.3	11.9	11.7	14.68	21.33																							
26-Jun	11.5	11.2	10.6	9.9	9.4	8.7	10.9	13.9	16.1	18.5	19.3	20.3	21.1	22.3	22.7	23.3	23.7	23.6	23.1	21.7	19.6	17.4	15.2	13.9	17.00	23.71																							
27-Jun	13.7	12.0	10.9	9.6	9.9	10.8	13.8	16.1	18.6	21.3	22.4	22.7	23.2	24.4	25.0	25.5	26.4	25.9	25.5	24.9	22.1	19.7	18.7	17.7	19.21	26.39																							
28-Jun	15.2	13.3	12.4	11.4	11.9	13.5	15.4	17.8	19.4	21.8	22.7	23.9	22.1	23.7	25.6	25.7	24.2	22.3	21.4	21.1	19.3	17.2	16.0	13.8	18.80	25.65																							
29-Jun	12.6	11.4	10.7	10.7	10.0	10.7	12.9	15.2	18.5	20.6	22.2	23.8	24.9	26.0	26.4	26.4	25.9	24.4	21.6	15.3	14.7	15.6	16.0	14.0	17.93	26.44																							
30-Jun	13.3	12.6	11.4	11.0	12.3	12.5	13.8	15.5	16.1	17.1	15.8	16.1	18.9	20.7	20.8	21.5	21.4	20.7	17.2	15.0	14.5	13.6	12.5	11.8	15.67	21.51																							
																								11.10	10.31	9.44	8.97	8.64	9.01	10.64	12.64	14.55	16.24	17.40	18.45	18.87	19.40	19.67	19.26	19.20	18.82	18.19	17.05	15.33	13.88	12.75	11.79	Diurnal Average	
																								16.73	15.30	14.98	14.83	13.85	13.50	15.76	18.46	20.77	21.78	22.75	25.13	27.55	29.55	30.31	30.11	27.59	27.19	25.52	24.88	22.46	20.30	18.97	17.80	Diurnal Maximum	
PF - Power Failure																																																	



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

**Wind Speed (WS) - kph**  
**June 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	1.2	2.2	1.6	3.1	2.5	2.8	2.3	3.3	7.4	8.3	7.6	6.6	4.3	5.0	6.7	13.6	12.9	9.4	7.2	8.0	4.9	0.6	0.5	0.8	1.05	13.62	
Dir	S	N	NNW	NNW	WSW	W	SW	WSW	W	WSW	WSW	WSW	WNW	NNE	E	NNE	NNE	NE	ENE	SE	SSE	SSW	NW	WNW	N	NNE	
2 Spd	1.4	1.0	1.7	0.8	0.6	4.9	2.3	1.4	2.3	1.1	1.8	2.2	6.9	3.3	8.8	6.2	8.0	12.8	6.1	4.2	2.2	2.5	2.8	1.7	1.85	12.84	
Dir	NE	W	WSW	WNW	WNW	W	W	E	S	WNW	ESE	E	WSW	S	NNW	N	N	N	WNW	WNW	W	SW	W	SW	NW	N	
3 Spd	2.3	3.1	5.3	5.7	4.9	6.5	8.8	7.1	6.4	7.3	11.0	13.8	13.6	11.6	14.0	17.2	15.7	14.4	9.0	9.7	3.8	3.3	1.8	2.8	8.13	17.23	
Dir	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	SSW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	
4 Spd	2.1	4.2	4.0	5.4	4.0	2.3	4.3	4.9	1.6	4.1	3.4	2.8	6.5	6.7	4.0	4.8	6.7	12.7	12.3	11.0	5.7	8.5	8.8	6.3	4.07	12.70	
Dir	W	WSW	WSW	W	WSW	W	WSW	SW	W	WSW	SSW	NW	W	NW	NW	NNW	N	NNW	N	NNW	N	N	N	N	NW	N	
5 Spd	3.2	4.4	3.4	3.9	4.9	8.1	7.9	6.5	2.9	3.3	2.6	2.1	1.9	5.8	4.5	4.6	4.8	7.7	15.6	13.4	9.5	5.9	5.4	5.1	1.46	15.55	
Dir	WNW	WSW	WSW	WSW	WSW	W	WSW	SW	SW	S	ESE	SSE	NE	S	NE	ENE	ENE	ENE	ENE	ENE	NE	ENE	E	ENE	E	ENE	
6 Spd	6.7	10.6	9.2	10.4	8.3	5.4	3.0	0.3	1.3	1.3	0.2	0.3	1.3	6.9	6.3	5.6	17.6	16.1	13.5	14.0	9.3	3.4	3.9	4.0	5.31	17.59	
Dir	NE	NNE	NNE	NNE	N	NNE	ENE	SW	S	ENE	NW	N	N	W	W	NW	N	NNE	N	N	N	NNW	WNW	W	N	N	
7 Spd	3.4	1.2	1.0	1.6	1.3	4.4	2.2	1.0	6.4	9.7	10.1	8.1	5.5	4.4	4.6	7.3	9.1	10.0	9.0	8.1	11.9	9.0	6.8	2.8	4.39	11.87	
Dir	W	WNW	N	NW	W	W	WSW	SW	NE	NE	ENE	NE	NE	NE	ESE	ENE	NE	NE	NNE	NE	ENE	NE	NE	NW	NE	ENE	
8 Spd	13.1	9.4	10.4	6.8	1.7	3.6	1.6	2.3	9.3	13.4	13.8	15.0	13.1	12.3	7.2	15.6	15.9	14.9	16.4	17.1	10.2	PF	PF	PF	8.53	17.13	
Dir	N	N	NE	NE	WNW	WNW	NNW	E	ENE	ENE	ENE	ENE	ENE	ENE	E	ENE	ENE	ENE	NE	NE	W	PF	PF	PF	ENE	NE	
9 Spd	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	8.0	9.9	14.0	6.9	2.6	3.5	5.6	--	13.99
Dir	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	NW	NNW	N	NNW	NW	NW	NNW	--	N
10 Spd	5.9	9.1	3.4	1.4	0.5	3.1	3.9	3.0	6.8	14.4	16.6	18.7	19.6	17.7	21.0	17.7	18.2	12.0	10.8	12.1	10.9	10.4	11.9	7.2	8.98	21.04	
Dir	N	N	N	N	NNW	S	SW	E	E	E	E	E	E	E	E	E	E	SE	SE	E	ENE	ENE	NE	NE	E	E	
11 Spd	8.2	4.3	0.8	1.6	2.1	2.2	0.6	3.5	4.3	4.4	4.0	6.7	9.6	2.2	6.1	9.4	2.1	3.7	4.6	4.2	3.3	1.0	1.0	1.5	1.60	9.62	
Dir	NE	NNE	W	ENE	N	WSW	NW	SW	WSW	W	WNW	NNW	WSW	SW	NW	NNW	NE	S	S	SW	SW	W	NW	NNW	WNW	WSW	
12 Spd	1.5	2.9	1.9	2.4	2.8	5.0	5.6	5.4	5.3	4.6	4.8	11.3	15.2	10.7	6.8	5.5	6.2	9.7	17.3	10.7	4.6	5.3	3.1	3.7	5.98	17.29	
Dir	WNW	W	W	SW	WSW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	W	NW	WNW	WNW	W	WSW	WSW	W	W	WSW	WSW	WSW	WSW	
13 Spd	2.6	2.5	3.7	5.1	4.4	6.3	5.8	5.3	5.0	3.7	0.1	4.8	5.9	6.2	7.8	17.2	18.4	17.1	6.5	8.0	7.4	5.6	3.6	4.6	2.05	18.39	
Dir	WSW	W	WSW	W	WSW	WSW	SW	SW	SSE	NE	SW	NE	ENE	E	NNE	NE	NE	NE	N	NW	NNW	W	WNW	WSW	N	NE	
14 Spd	5.5	3.3	6.1	6.3	5.9	8.1	7.9	8.1	9.9	5.8	2.2	3.1	2.1	9.1	11.1	9.4	13.0	13.0	8.9	8.5	6.6	5.2	2.1	4.4	6.41	12.99	
Dir	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WNW	NW	WNW	WSW	WSW	WSW	SW	SW	WSW	W	NW	NW	WSW	WSW	WSW	SW	
15 Spd	7.2	14.9	9.6	7.7	6.8	6.4	2.2	3.7	8.7	10.7	9.7	13.6	16.6	14.7	17.9	15.5	16.0	9.7	13.1	19.9	16.2	8.4	5.4	6.8	10.63	19.85	
Dir	W	W	WSW	W	W	SW	WSW	SW	SW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	WSW	WSW	SW	
16 Spd	8.0	5.4	5.2	3.1	1.5	2.0	1.3	5.7	4.7	9.3	14.8	12.7	14.8	12.8	9.7	7.2	14.8	16.2	10.4	12.4	13.8	12.8	10.7	14.3	9.13	16.25	
Dir	SW	WSW	WSW	SW	W	WSW	W	W	WNW	W	W	W	WSW	WSW	W	WSW	W	WSW	W	WSW	W	W	W	WSW	WSW	WSW	
17 Spd	14.0	12.5	11.7	11.2	9.3	8.1	7.6	11.7	10.7	9.4	8.4	9.3	9.1	11.0	8.9	9.8	9.5	8.7	7.8	6.2	4.1	3.1	2.1	2.6	8.37	14.03	
Dir	WSW	WSW	WSW	WSW	WSW	WSW	W	W	W	WNW	WNW	WSW	W	WSW	SW	WSW	WSW	WSW	WSW	WSW	W	WSW	W	WSW	WSW	WSW	
18 Spd	2.6	2.2	4.5	3.7	5.7	4.8	6.9	6.8	5.0	2.6	4.9	5.4	3.8	6.6	4.7	3.3	6.0	7.5	8.4	5.2	3.5	4.8	0.2	3.0	1.48	8.38	
Dir	SW	WSW	W	WSW	W	WSW	WSW	SW	WSW	S	S	S	SSE	SSW	SSW	SSW	ESE	E	ENE	NE	NNE	N	N	W	SSW	ENE	
19 Spd	6.7	7.8	5.2	7.3	6.7	6.3	7.2	6.7	10.4	12.0	9.5	8.0	10.6	10.8	9.3	8.4	6.8	6.6	10.7	6.2	2.3	4.6	3.4	3.2	5.69	12.01	
Dir	W	W	WSW	W	WSW	WSW	WSW	W	W	W	WNW	NW	NNW	NNW	NNW	NNW	NW	N	NNE	N	WSW	W	W	W	WNW	W	
20 Spd	3.6	4.8	2.0	3.8	5.1	5.9	8.3	6.6	5.7	4.1	3.6	4.6	5.4	6.3	9.5	9.8	13.3	15.3	16.9	13.9	4.0	12.3	6.0	4.7	1.34	16.93	
Dir	W	WSW	W	W	W	WSW	SW	SW	SW	SSW	ESE	ENE	E	NE	NNE	NE	ENE	ENE	ENE	ENE	SSE	SW	SW	S	E	ENE	
21 Spd	0.8	3.4	3.0	1.7	1.8	1.1	3.9	2.9	6.0	5.1	12.9	13.6	12.9	5.2	6.9	8.4	5.9	6.3	5.6	5.0	4.8	3.1	3.8	1.7	4.35	13.56	
Dir	SW	NNE	W	W	N	N	W	WSW	SW	WSW	WSW	WSW	WSW	W	NNW	W	NNW	NW	NNW	NNW	N	NNW	W	W	W	WSW	
22 Spd	2.7	4.2	3.1	2.3	6.5	4.3	8.0	10.3	5.5	4.3	2.8	1.5	12.0	9.8	10.9	6.5	1.5	5.8	9.8	1.9	3.6	4.6	3.1	4.0	2.19	12.00	
Dir	WSW	WSW	WSW	SW	SW	WSW	SW	SW	WSW	WSW	WSW	WSW	NE	N	N	SE	NE	NNW	N	NW	W	WSW	WSW	WSW	W	NE	





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

**Wind Speed (WS) - kph**  
**June 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	5.8	6.3	5.9	6.5	3.6	2.2	5.3	4.6	0.9	5.4	9.2	9.3	10.7	9.0	9.2	15.0	9.3	4.0	3.3	3.7	4.1	4.1	3.2	4.0	1.46	14.98			
Dir	WSW	W	WSW	W	W	SW	SW	SW	SSW	ENE	NE	ENE	ENE	ENE	ENE	SW	SW	W	WSW	WSW	W	WSW	WSW	WSW	WSW	WSW	SW		
24 Spd	4.4	5.1	4.1	4.9	4.1	4.2	5.8	7.6	6.9	6.9	8.3	8.6	8.0	8.2	10.2	10.0	8.5	8.8	6.5	5.5	2.5	4.6	4.0	4.3	6.26	10.20			
Dir	W	W	W	W	WSW	WSW	W	W	W	WSW	WSW	W	WSW	W	W	W	W	W	W	W	W	W	W	WSW	WSW	W	W		
25 Spd	3.4	7.0	6.5	6.6	8.8	7.0	7.3	5.2	6.4	6.6	8.0	5.9	9.3	6.4	9.0	8.7	4.8	3.9	8.8	7.6	14.9	14.7	2.9	2.0	5.37	14.91			
Dir	WSW	W	W	WSW	W	W	W	WSW	W	W	W	WNW	W	W	W	W	W	NW	WSW	NNW	N	NNE	NNE	NNW	WNW	N	N		
26 Spd	4.0	4.1	4.6	5.9	4.8	5.0	5.3	6.6	6.5	7.2	7.1	4.7	3.1	0.6	3.1	2.2	3.2	3.7	5.0	2.4	1.0	4.2	2.8	0.9	3.17	7.17			
Dir	WSW	WSW	W	W	WSW	WSW	WSW	WSW	W	W	NNW	NNE	NW	W	NW	WNW	WNW	NW	N	NNW	WNW	W	WSW	WSW	WNW	W	W		
27 Spd	2.1	0.6	5.0	5.2	8.0	4.5	5.5	6.3	5.5	4.0	1.9	3.4	2.9	3.0	2.6	3.8	4.8	7.3	6.7	8.3	4.5	4.2	6.0	4.8	0.66	8.34			
Dir	NNW	SSE	WSW	WSW	W	WSW	WSW	WSW	SSW	SSE	SE	NNE	NNE	E	ENE	NNE	E	ENE	NE	E	E	NNE	NNE	N	NE	E	E		
28 Spd	0.7	0.5	1.8	3.2	5.0	0.6	2.1	5.0	4.4	1.9	2.2	4.1	10.4	5.7	2.7	8.0	9.4	15.1	11.5	3.5	5.0	3.4	3.7	1.4	1.93	15.10			
Dir	N	WSW	W	WSW	W	N	S	ESE	SW	S	NNW	WNW	NNW	N	SE	SSE	S	SW	SW	WNW	NNE	W	W	WSW	WSW	SW	SW		
29 Spd	1.8	2.4	3.6	7.1	3.1	3.0	6.0	5.8	0.8	4.1	7.6	10.3	13.3	14.4	17.4	18.2	19.1	16.3	2.0	14.3	5.6	15.5	6.2	5.9	3.28	19.11			
Dir	W	W	W	W	WSW	WSW	WSW	SW	E	ENE	NE	NE	ENE	ENE	ENE	ENE	ENE	ENE	WSW	SW	SSW	ESE	ESE	WNW	E	E	ENE		
30 Spd	4.2	2.4	0.9	1.5	9.2	16.1	13.5	2.0	1.0	8.6	8.1	8.0	9.8	7.8	9.8	10.5	9.6	3.4	15.1	8.1	10.1	8.6	4.5	7.6	3.23	16.08			
Dir	WNW	WNW	NE	NNE	N	N	NNE	NE	ESE	SSE	SW	SW	W	WNW	NNW	NNW	N	NW	WSW	WSW	SW	WSW	SW	WSW	WNW	N	N		
Spd	2.47	3.09	3.09	3.36	3.58	3.58	3.97	4.13	3.29	1.89	1.44	1.61	2.21	1.44	2.13	1.63	1.93	2.43	2.41	2.31	2.07	1.72	1.40	2.53	Diurnal Average				
Dir	W	WNW	W	W	W	WSW	WSW	WSW	WSW	WSW	WSW	WNW	WNW	WNW	NW	NNW	N	NNW	NW	NW	NW	WNW	WNW	W					
Spd	14.03	14.90	11.74	11.23	9.30	16.08	13.46	11.68	10.67	14.41	16.55	18.69	19.58	17.70	21.04	18.21	19.11	17.12	17.29	19.85	16.24	15.48	11.88	14.29	Diurnal Maximum				
Dir	248.21	269.46	255.48	252.93	258.30	10.64	21.70	263.44	271.92	81.28	92.11	81.94	83.63	86.44	84.30	73.40	73.88	41.92	249.58	231.95	231.04	122.79	56.30	252.16					
Maximum Speed Value: 21.0 kph on Jun 10 15:00																		Minimum Speed Value: 0.1 kph on Jun 13 11:00						Hours in Service: 720					
Maximum Daily Speed Average: 10.63 kph on Jun 15																		Minimum Daily Speed Average: 0.66 kph on Jun 2						Hours of Data: 700					
Maximum Diurnal Speed Average: 4.13 kph at hour 8																		Minimum Diurnal Speed Average: 1.40 kph at hour 23						Hours of Missing Data: 20					
Monthly Average Velocity: 2.082 kph 280.16 deg																		Speed Percentiles: P <sub>1</sub> = 0.5 P <sub>10</sub> = 2.0 Q <sub>1</sub> = 3.4 Median = 5.8 Q <sub>3</sub> = 9.1 P <sub>90</sub> = 13.3 P <sub>99</sub> = 18.1						Percent Operational Time: 97.2					
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	28	37	14	0	0	0	79																						
NorthEast	23	35	18	0	0	0	76																						
East	8	17	17	3	0	0	45																						
SouthEast	13	5	2	0	0	0	20																						
South	18	5	0	0	0	0	23																						
SouthWest	56	62	22	1	0	0	141																						
West	118	113	26	0	0	0	257																						
NorthWest	32	27	0	0	0	0	59																						
Total	296	301	99	4	0	0	700																						



# WCAS - Edson Summary of Hourly Standard Deviations

Wind Speed (WS) - kph  
June 2016

Maximum Value: 10.04 kph on Jun 8 21:00	Maximum Daily Average: 4.57 kph on Jun 16	Hours in Service: 720
Minimum Value: 0.6 kph on Jun 6 08:00	Minimum Daily Average: 2.29 kph on Jun 27	Hours of Data: 700
Maximum Diurnal Average: 4.90 kph at hour 16	Minimum Diurnal Average: 2.00 kph at hour 6	Hours of Missing Data: 20
Monthly Average: 3.177 kph	Percentiles: P <sub>1</sub> = 1.0 P <sub>10</sub> = 1.5 Q <sub>1</sub> = 2.0 Median = 2.8 Q <sub>3</sub> = 4.2 P <sub>90</sub> = 5.4 P <sub>99</sub> = 7.7	Hours of Calibration: 0
		Percent Operational Time: 97.2

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Jun	1.5	1.7	2.0	3.2	2.0	2.1	2.4	2.7	3.4	3.3	3.8	3.5	4.3	3.7	3.8	6.7	4.3	3.9	3.2	2.6	2.7	1.2	1.2	1.1	2.94	6.66
2-Jun	1.6	1.1	1.5	1.4	1.6	2.3	2.4	2.4	2.2	2.3	2.3	3.1	6.4	4.2	4.2	5.8	5.7	5.7	4.6	3.4	1.4	2.2	1.9	1.7	2.97	6.36
3-Jun	1.3	1.7	1.4	1.7	1.3	1.5	2.1	1.6	2.0	4.1	3.9	6.1	6.3	5.7	5.3	6.4	5.5	6.3	5.3	4.6	2.0	1.6	1.1	1.7	3.35	6.41
4-Jun	2.1	1.5	1.8	1.8	1.8	2.1	1.4	2.0	1.5	2.8	4.1	3.2	5.0	4.6	4.4	4.4	5.1	4.7	4.4	2.9	1.6	2.2	1.1	3.8	2.94	5.09
5-Jun	1.9	1.5	2.2	2.3	2.8	2.7	2.1	1.8	1.9	1.9	2.5	2.6	2.4	3.2	3.2	3.0	4.2	4.4	3.0	2.4	1.4	1.9	2.3	2.7	2.52	4.41
6-Jun	3.3	1.8	1.6	1.6	1.4	1.4	1.7	0.6	1.4	1.9	1.4	1.6	2.5	4.8	4.7	5.2	4.3	4.1	3.0	3.3	3.2	1.5	2.0	1.5	2.49	5.25
7-Jun	2.0	2.2	1.8	2.1	1.6	2.0	1.5	1.4	3.1	2.9	3.1	3.8	4.7	4.1	3.3	3.1	4.0	2.4	1.9	3.8	3.1	4.2	3.0	4.2	2.89	4.67
8-Jun	6.4	8.4	2.0	2.0	1.8	2.0	2.0	2.2	2.5	2.8	3.6	3.4	2.8	3.0	2.8	5.4	3.5	3.3	3.4	4.0	10.0	PF	PF	PF	3.68	10.04
9-Jun	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	4.8	6.0	3.6	2.5	1.9	1.9	3.0	--	6.05
10-Jun	3.7	2.3	3.4	1.2	0.7	1.9	2.1	2.4	3.9	4.9	4.4	4.9	4.9	4.8	4.7	4.8	5.2	3.8	3.1	2.7	2.4	1.9	2.2	2.0	3.25	5.15
11-Jun	1.8	3.2	1.0	2.8	2.2	1.7	2.1	2.5	3.1	2.5	2.9	4.3	7.7	3.1	4.8	6.2	2.9	2.5	1.5	1.4	1.2	1.0	1.2	2.1	2.74	7.67
12-Jun	2.0	1.7	1.3	1.8	2.1	3.0	2.2	3.2	3.1	2.4	2.4	5.6	6.5	8.2	4.6	4.3	4.0	7.2	7.8	5.4	3.1	2.2	2.3	2.0	3.69	8.24
13-Jun	1.3	1.0	1.4	1.5	1.9	2.0	1.4	2.7	2.5	2.3	2.4	3.2	4.2	4.9	4.9	3.9	3.9	3.5	5.1	4.5	3.5	2.4	2.1	1.5	2.83	5.05
14-Jun	1.8	2.1	1.9	1.9	1.9	2.7	2.4	3.4	3.6	3.2	3.1	2.7	2.6	4.5	5.3	4.6	5.0	3.7	3.8	5.4	4.2	3.6	1.9	2.8	3.24	5.39
15-Jun	4.5	7.2	4.6	4.3	4.2	1.8	2.1	2.5	2.0	2.3	2.3	3.9	5.2	5.5	6.6	6.9	6.5	4.3	6.3	5.9	4.4	4.2	2.3	2.0	4.24	7.21
16-Jun	1.5	2.0	2.2	1.6	1.6	1.6	1.1	4.3	3.2	5.6	7.1	6.4	6.4	6.3	5.4	4.0	8.3	6.5	5.1	5.8	6.8	5.6	4.9	6.2	4.57	8.26
17-Jun	5.2	4.9	5.5	4.6	4.1	3.7	3.9	5.6	5.8	6.2	5.9	5.8	5.3	5.1	5.4	3.8	5.2	4.8	4.1	3.5	3.3	2.3	1.8	1.7	4.49	6.23
18-Jun	1.7	1.5	1.2	1.5	1.0	1.5	2.7	2.5	2.8	2.4	3.9	4.4	4.1	3.4	3.9	2.8	2.8	2.5	2.4	1.5	2.7	3.4	0.6	2.8	2.50	4.40
19-Jun	3.8	4.6	2.5	2.9	2.6	2.4	3.3	3.8	5.2	6.5	5.4	4.9	6.3	6.3	5.7	5.4	4.3	5.8	3.1	3.6	1.1	1.3	1.7	1.7	3.92	6.48
20-Jun	1.4	2.2	1.1	1.4	1.6	1.5	1.9	2.3	2.6	2.6	3.1	4.4	4.6	4.8	5.1	5.1	5.2	3.6	3.5	3.4	4.0	4.0	2.7	2.1	3.09	5.20
21-Jun	1.7	1.5	1.9	1.6	2.3	1.9	2.0	2.1	2.4	3.0	6.0	6.0	5.7	3.8	4.3	4.6	3.6	4.1	3.8	3.3	1.5	1.5	1.3	1.3	2.98	5.97
22-Jun	1.4	1.8	1.5	2.2	1.6	1.3	2.8	2.9	2.4	3.0	3.0	4.1	3.9	3.5	3.9	5.6	2.7	4.2	4.4	1.8	2.2	2.5	1.4	1.9	2.76	5.57
23-Jun	1.6	2.1	1.6	2.2	2.7	1.5	1.6	1.9	1.5	3.3	2.5	3.5	3.6	4.3	3.0	8.9	4.4	2.6	2.7	3.0	2.5	1.6	1.7	1.7	2.75	8.88
24-Jun	2.8	2.5	2.7	2.3	2.1	2.0	3.1	3.4	4.0	3.3	3.7	4.2	3.5	4.6	5.1	5.1	4.4	4.2	3.7	2.9	1.8	2.0	1.6	2.2	3.22	5.10
25-Jun	2.1	2.6	2.0	2.0	2.8	2.2	3.0	2.8	3.7	3.6	4.3	3.9	6.0	4.3	3.9	6.0	4.1	4.2	3.0	4.1	4.5	5.5	4.3	2.1	3.57	5.96
26-Jun	2.0	1.7	2.1	1.3	1.4	1.7	1.7	2.6	3.0	4.0	4.6	3.9	3.4	3.0	3.3	2.9	3.0	3.0	2.9	2.0	1.1	1.8	1.5	1.6	2.48	4.63
27-Jun	2.6	1.6	0.8	1.5	1.6	1.7	2.1	1.8	1.7	2.5	2.6	2.2	2.6	3.1	3.2	3.1	3.2	2.8	2.1	2.2	2.3	2.7	2.5	2.2	2.29	3.21
28-Jun	1.5	1.5	1.8	2.0	2.9	2.1	2.0	2.0	2.4	2.1	4.0	3.6	4.5	3.8	2.6	6.6	3.3	4.4	4.4	2.4	3.8	1.7	2.0	1.9	2.88	6.55
29-Jun	2.1	1.6	2.1	1.7	1.8	1.7	2.3	2.3	1.5	2.6	3.0	3.6	4.9	5.0	4.5	4.3	4.4	3.2	7.6	5.6	4.6	9.2	4.3	2.9	3.62	9.20
30-Jun	1.7	1.7	1.6	1.7	2.9	2.1	3.1	3.6	2.9	4.5	2.7	3.6	5.4	4.4	4.2	4.9	4.6	1.5	7.9	4.5	3.0	2.9	1.7	1.5	3.27	7.89

2.36	2.46	2.02	2.08	2.07	2.00	2.22	2.60	2.81	3.27	3.59	4.01	4.67	4.48	4.39	4.90	4.36	4.07	4.14	3.56	3.06	2.77	2.03	2.27	Diurnal Average	
6.37	8.40	5.46	4.62	4.18	3.69	3.95	5.63	5.83	6.48	7.14	6.43	7.67	8.24	6.57	8.88	8.26	7.20	7.89	5.89	10.04	9.20	4.94	6.18	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>



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

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

Maximum Value: 105.94 deg on Jun 2 10:00	Maximum Daily Average: 57.06 deg on Jun 2	Hours in Service: 720
Minimum Value: 7.7 deg on Jun 5 20:00	Minimum Daily Average: 21.17 deg on Jun 15	Hours of Data: 700
Maximum Diurnal Average: 47.09 deg at hour 12	Minimum Diurnal Average: 27.96 deg at hour 22	Hours of Missing Data: 20
Monthly Average: 35.985 deg	Percentiles: P <sub>1</sub> = 10.3 P <sub>10</sub> = 14.5 Q <sub>1</sub> = 20.1 Median = 28.6 Q <sub>3</sub> = 45.8 P <sub>90</sub> = 72.1 P <sub>99</sub> = 98.0	Hours of Calibration: 0
		Percent Operational Time: 97.2

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-Jun	55.2	59.0	68.8	52.3	40.8	45.7	61.5	40.7	23.8	21.8	29.0	30.3	64.3	45.3	39.3	35.1	22.3	26.7	39.8	22.9	19.7	79.3	90.0	47.1	44.20	89.99
2-Jun	85.0	77.0	44.9	80.0	93.1	19.9	63.8	91.5	59.3	105.9	76.3	79.8	45.2	67.5	34.3	66.2	51.0	25.1	38.7	37.0	26.2	30.6	27.7	43.0	57.06	105.94
3-Jun	25.0	22.1	12.6	11.6	17.0	15.0	12.9	14.8	20.6	32.5	22.5	27.5	28.5	30.5	20.9	19.7	19.9	22.7	27.9	22.3	26.0	18.1	19.1	23.6	21.37	32.54
4-Jun	52.2	24.2	20.1	18.3	28.1	47.5	21.5	19.2	68.6	51.6	86.0	64.1	52.5	44.2	67.5	58.7	41.8	24.4	23.2	18.1	14.3	18.3	16.9	40.8	38.42	86.00
5-Jun	51.4	25.8	38.7	38.8	32.9	15.4	14.2	15.8	33.8	45.6	72.8	78.7	75.9	47.2	52.8	32.6	47.2	44.8	9.5	7.7	9.7	17.8	27.2	34.7	36.29	78.70
6-Jun	27.7	15.9	15.4	10.6	13.9	19.1	60.4	90.5	58.4	69.1	98.2	99.7	84.8	39.2	45.8	48.5	23.4	19.3	20.9	20.6	17.9	35.9	25.3	21.6	40.92	99.72
7-Jun	29.9	69.9	72.0	82.8	77.2	15.2	31.6	81.8	34.4	21.1	16.9	32.7	56.4	57.8	48.7	27.7	22.0	13.0	16.0	37.9	13.1	42.2	59.8	81.0	43.38	82.85
8-Jun	43.1	61.3	11.9	10.7	85.4	28.8	79.0	37.4	14.9	11.2	13.2	11.9	13.6	13.7	32.9	23.2	13.7	17.0	13.7	12.4	57.2	PF	PF	PF	28.88	85.41
9-Jun	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	PF	40.1	39.2	21.3	22.6	33.7	30.2	23.3	--	40.06
10-Jun	18.4	14.5	48.5	57.9	72.6	38.5	52.8	59.9	41.1	19.6	21.4	15.9	18.0	18.7	14.8	17.2	19.6	18.7	17.2	20.9	11.0	10.2	8.7	13.7	27.08	72.58
11-Jun	10.4	63.3	46.5	92.5	59.4	33.2	90.8	43.6	42.9	41.5	47.8	48.7	41.9	78.4	41.8	38.0	73.8	36.8	23.8	19.2	26.6	34.9	63.0	65.7	48.53	92.54
12-Jun	58.1	18.1	45.5	37.9	62.0	65.8	17.1	55.2	35.5	29.0	25.3	27.7	22.5	45.6	37.6	39.7	35.8	34.5	22.7	22.9	36.8	21.5	33.2	31.8	35.90	65.85
13-Jun	30.8	29.5	19.5	16.5	21.1	22.3	18.1	42.1	34.3	50.9	104.7	62.6	58.4	66.9	50.7	13.8	19.0	12.8	68.5	51.0	32.2	22.6	27.2	17.1	37.19	104.66
14-Jun	13.8	30.0	14.9	14.9	16.7	14.2	17.4	24.9	19.2	38.6	72.7	53.0	69.6	44.5	30.9	27.3	20.7	17.3	22.1	34.6	38.6	46.6	48.2	33.7	31.84	72.74
15-Jun	30.6	25.9	25.4	34.7	34.7	12.1	40.9	41.6	12.9	12.1	13.2	13.3	14.3	18.1	19.2	23.6	21.3	23.3	20.8	14.4	13.8	14.5	13.6	13.9	21.17	41.64
16-Jun	10.3	14.3	19.9	34.7	40.1	26.8	49.1	43.5	39.4	31.9	27.1	27.7	23.3	26.1	34.4	31.7	28.0	19.0	28.1	23.5	26.3	22.8	23.9	21.5	28.06	49.08
17-Jun	20.7	21.9	23.7	22.8	23.8	24.7	26.4	25.3	30.5	37.3	41.2	44.6	38.9	29.4	39.7	25.0	30.6	30.4	29.3	28.1	30.9	22.6	30.6	22.5	29.20	44.59
18-Jun	45.8	21.0	12.4	19.4	11.3	15.5	19.1	20.2	32.0	64.0	50.9	55.9	72.8	36.4	77.3	59.9	37.2	32.8	17.2	22.8	43.2	45.4	82.1	37.5	38.83	82.12
19-Jun	31.4	33.0	27.3	20.8	20.2	21.5	20.4	30.4	26.2	31.5	37.0	39.3	38.0	39.1	41.3	41.7	44.5	57.8	19.7	35.2	20.9	11.5	23.0	28.7	30.84	57.80
20-Jun	17.1	14.5	18.9	12.7	16.1	15.2	13.0	21.1	26.7	35.9	75.9	82.5	59.0	49.0	34.7	38.5	26.9	16.6	11.1	9.4	69.6	16.9	28.0	28.1	30.72	82.49
21-Jun	81.8	54.0	50.1	79.7	87.5	80.1	26.1	42.1	25.0	41.1	25.5	25.8	26.4	52.7	47.2	35.1	43.3	39.7	37.2	34.7	14.3	32.3	17.7	28.1	42.81	87.47
22-Jun	28.1	16.1	18.2	62.2	11.0	20.6	14.6	14.6	27.9	53.7	72.5	98.6	17.9	23.7	31.0	83.3	82.3	35.3	26.9	46.6	19.5	28.3	24.5	15.5	36.38	98.61
23-Jun	15.6	15.4	14.1	11.9	59.6	21.2	17.9	30.2	88.3	29.3	20.5	26.7	18.9	42.4	11.1	58.0	27.7	28.6	62.6	53.2	28.5	20.2	18.3	23.3	30.98	88.31
24-Jun	34.8	25.6	35.4	27.6	21.6	21.1	24.9	24.9	31.1	25.4	23.4	25.9	23.2	30.9	28.5	27.1	27.9	27.0	32.9	30.4	35.7	19.0	19.6	22.5	26.93	35.69
25-Jun	24.3	20.3	16.2	15.9	18.1	16.0	21.2	27.7	35.3	30.4	32.7	36.5	28.6	32.9	28.0	24.9	36.7	61.8	29.9	55.0	23.5	11.5	70.1	65.1	31.78	70.13
26-Jun	22.9	18.9	20.4	13.3	17.4	15.2	15.2	21.2	24.6	36.3	44.4	73.6	68.6	100.0	62.0	81.3	56.4	54.1	22.3	43.8	38.4	14.2	47.9	76.8	41.21	99.97
27-Jun	80.6	80.5	12.5	12.9	10.6	15.8	18.2	15.6	23.6	38.4	89.6	62.3	84.0	72.6	84.9	65.8	64.6	25.2	18.0	23.0	30.9	35.5	19.1	34.6	42.44	89.64
28-Jun	83.3	93.8	59.1	45.8	26.6	99.9	41.9	26.9	37.7	76.8	76.9	73.1	29.7	63.7	79.6	76.2	22.9	16.0	22.8	37.1	49.6	42.8	48.8	76.8	54.49	99.85
29-Jun	75.6	16.0	12.1	12.5	21.2	18.7	19.7	23.9	82.6	36.5	22.7	21.4	24.4	20.7	17.4	15.5	11.3	11.0	91.4	20.3	61.3	44.4	63.6	52.5	33.19	91.40
30-Jun	47.8	44.8	72.2	68.6	18.7	15.2	13.4	86.1	85.3	21.6	24.9	25.8	34.6	39.2	29.7	28.9	24.5	25.7	27.0	25.7	17.8	17.7	20.1	8.7	34.33	86.07

39.71	35.40	30.94	35.19	36.51	28.29	31.83	38.37	38.48	39.33	47.07	47.09	42.56	44.01	40.83	40.15	34.35	28.58	29.34	28.40	29.21	27.96	35.41	35.62	Diurnal Average	
85.04	93.85	72.21	92.54	93.13	99.85	90.81	91.47	88.31	105.94	104.66	99.72	84.78	99.97	84.88	83.28	82.33	61.76	91.40	54.99	69.62	79.29	89.99	81.03	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>

**BRETON  
STATION #913**

**CONTINUOUS AIR MONITORING DATA**

**JUNE 2016**















**BRETON  
STATION #913**

**METEOROLOGICAL DATA**

**JUNE 2016**















# **CALIBRATIONS**

# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 901, Tomahawk

Calibration Date: June 22, 2016

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

Instrument: Teco 42i

Serial Number: 0708721217

Previous Calibration Date: May 30, 2016

Calibration: Routine

Calibration Equipment: SABIO 2010 #04300810

Barometric Pressure: 27.20" Hg

Calibration Method: Standard Gas Dilution/GPT

Cylinder ID: FF16109

Temperature: 22.0° C

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

In Service: January 14, 2015

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	12.7	13.1	na	1.264	0.998	1.000	200 ppb
Current	12.7	13.9	na	1.253	0.997	1.000	200 ppb

NO	Final Zero: -0.1 ppb	Final Span: 129.3 ppb	As Found Correction Factor: 1.004
NO <sub>2</sub>	Final Zero: 1.5 ppb	Final Span: 1.0 ppb	As Found Correction Factor: NA
NO <sub>x</sub>	Final Zero: -0.1 ppb	Final Span: 129.1 ppb	As Found Correction Factor: 1.002

Results of Linear Regression			Slope	Intercept	R <sup>2</sup>
NO	R <sub>c</sub> vs C <sub>c</sub>	Previous	149.682500	-31.957350	0.999989
		Current	150.007700	9.953101	0.999984
	C <sub>i</sub> vs C <sub>c</sub>	Current	1.000000	-0.000022	0.999984
NO <sub>2</sub>	R <sub>c</sub> vs C <sub>c</sub>	Previous	149.805000	19.785650	0.999989
		Current	149.551200	-187.242500	0.999496
	C <sub>i</sub> vs C <sub>c</sub>	Current	1.000000	-0.000015	0.999496
NO <sub>x</sub>	R <sub>c</sub> vs C <sub>c</sub>	Previous	150.215300	-45.412010	0.999989
		Current	150.284200	30.373900	0.999963
	C <sub>i</sub> vs C <sub>c</sub>	Current	1.000000	-0.000001	0.999963

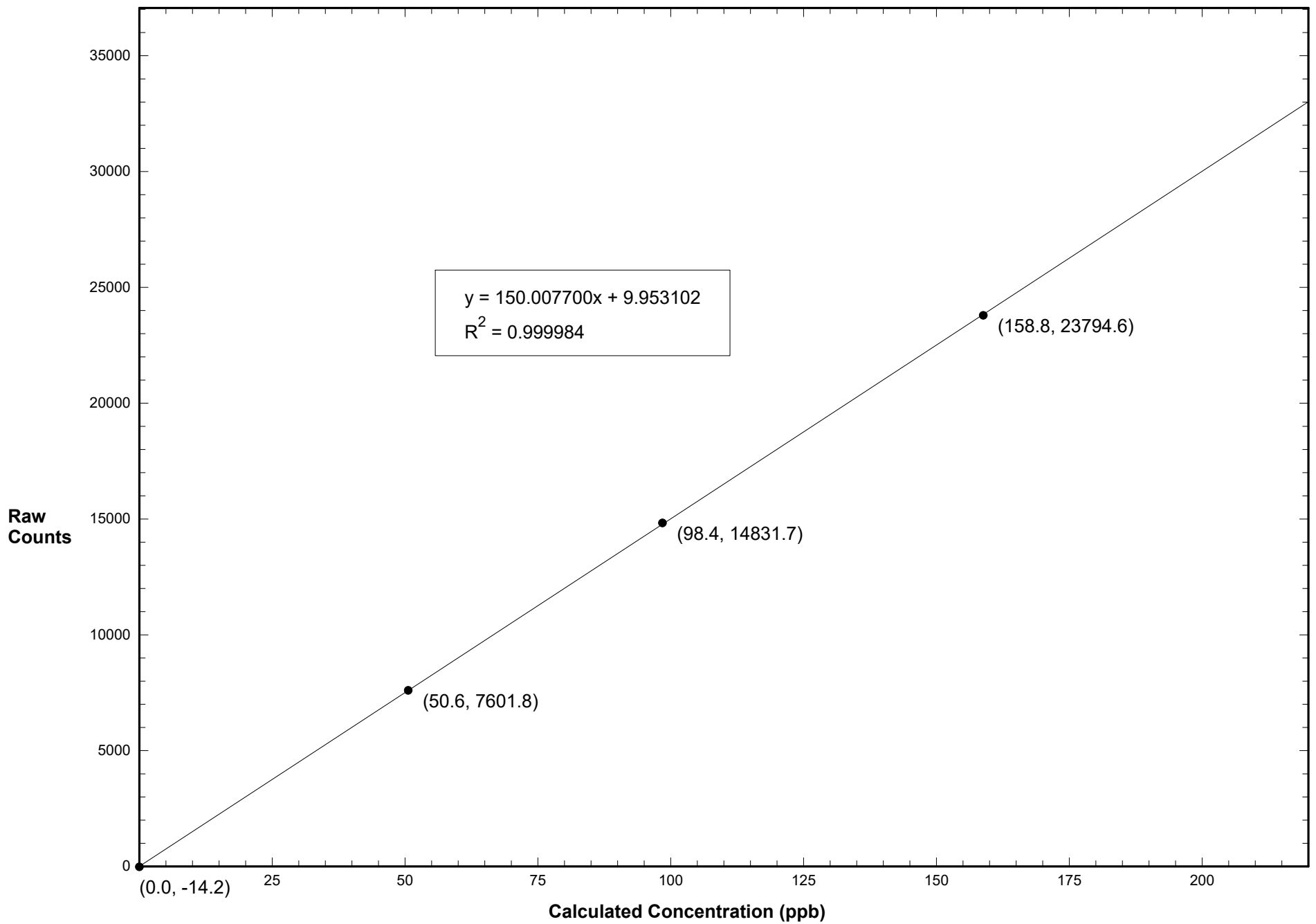
Comments:

# Calibration Data Summary (Page 2)

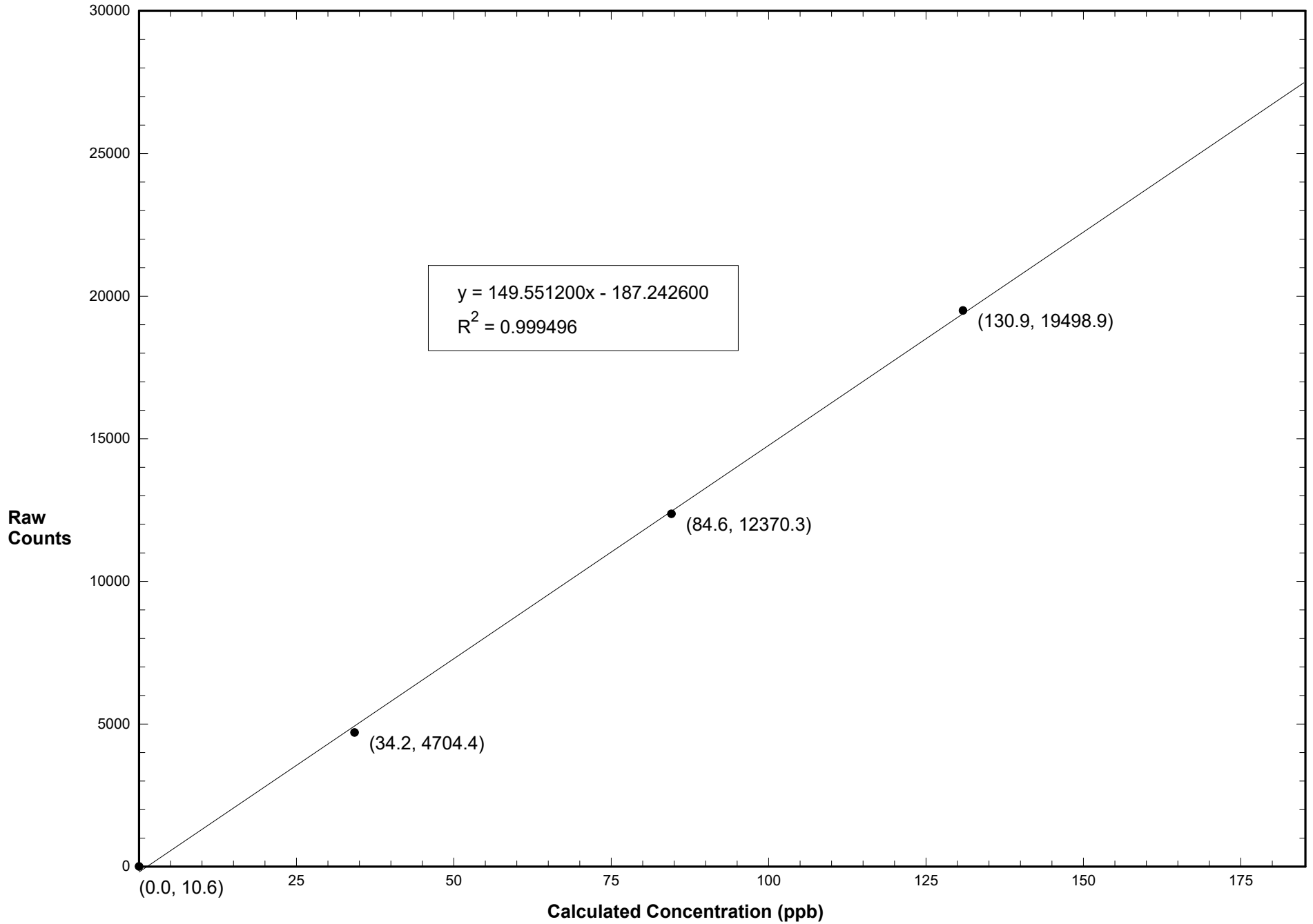
June 22, 2016 - Station 901

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>		
0.06693	5.033	158.8	23794.6	158.6	1.002		
0.04141	5.049	98.4	14831.7	98.8	0.996		
0.02117	5.043	50.6	7601.8	50.6	0.999		
0.00000	4.979	0.0	-14.2	-0.2			
NO Calibration					Average Correction Factor:	0.999	
0.06693	5.033	158.8	23839.8	158.4	1.002		
0.04141	5.049	98.4	14902.6	99.0	0.995		
0.02117	5.043	50.6	7651.0	50.7	0.998		
0.00000	4.979	0.0	-12.7	-0.3			
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>
158.3	4125.7	27.4	130.9	19498.9	131.6	0.994	1.006
158.3	11071.6	73.7	84.6	12370.3	84.0	1.007	0.993
158.3	18622.7	124.1	34.2	4704.4	32.7	1.046	0.956
			0.0	10.6	1.3		
					Average Correction Factor:	1.016	
NO <sub>2</sub> Gas Phase Titration					Average Converter Efficiency: 0.985		
Parameter	Correction Factor (Previous)	Correction Factor: (Current)	Percent Change of Correction Factor				
NO	0.999	1.002	0.3				
NO <sub>2</sub>	1.001	0.994	-0.7				
NO <sub>x</sub>	0.999	1.002	0.3				

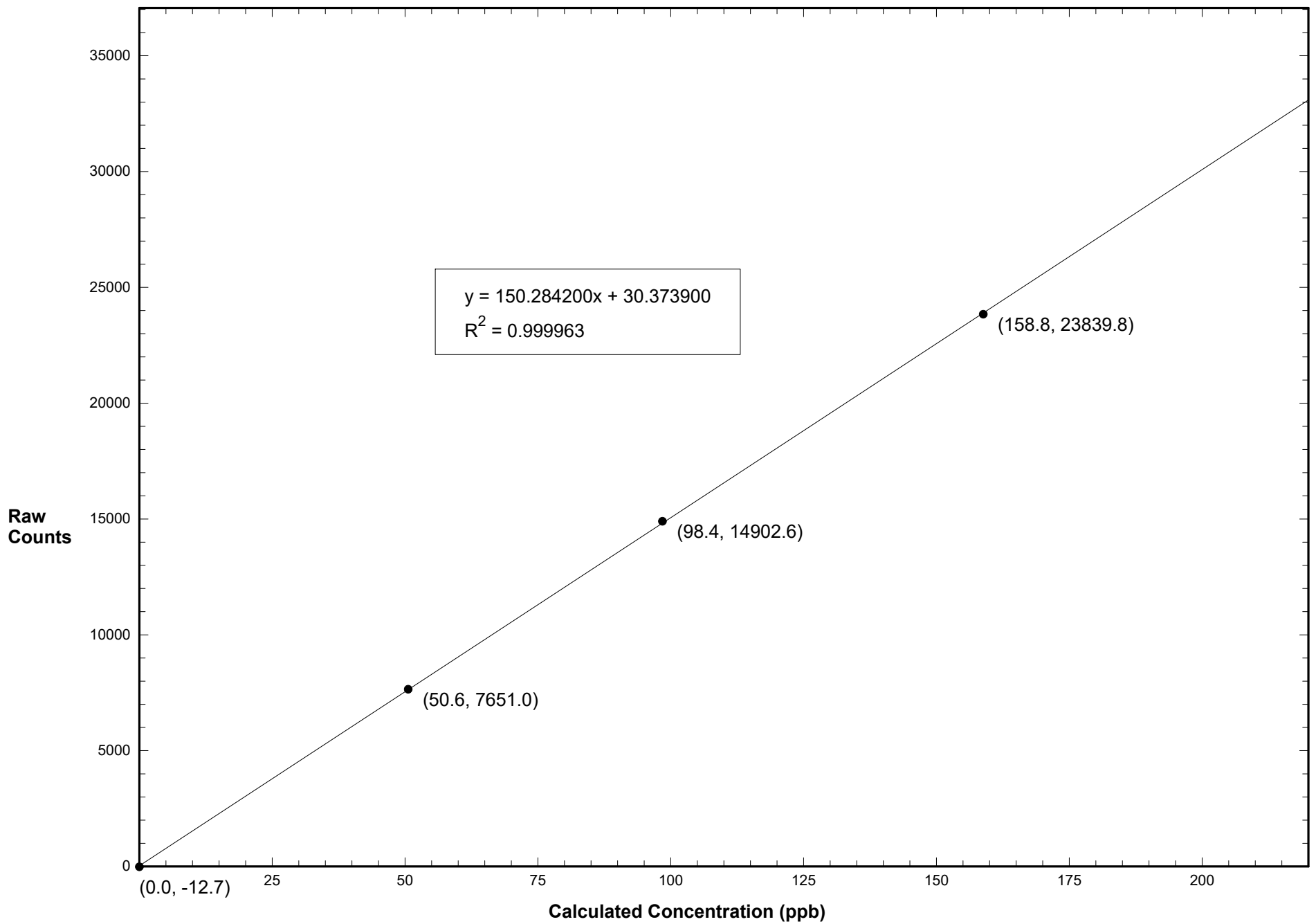
### Station 901 NO June 22, 2016: Linear Regression



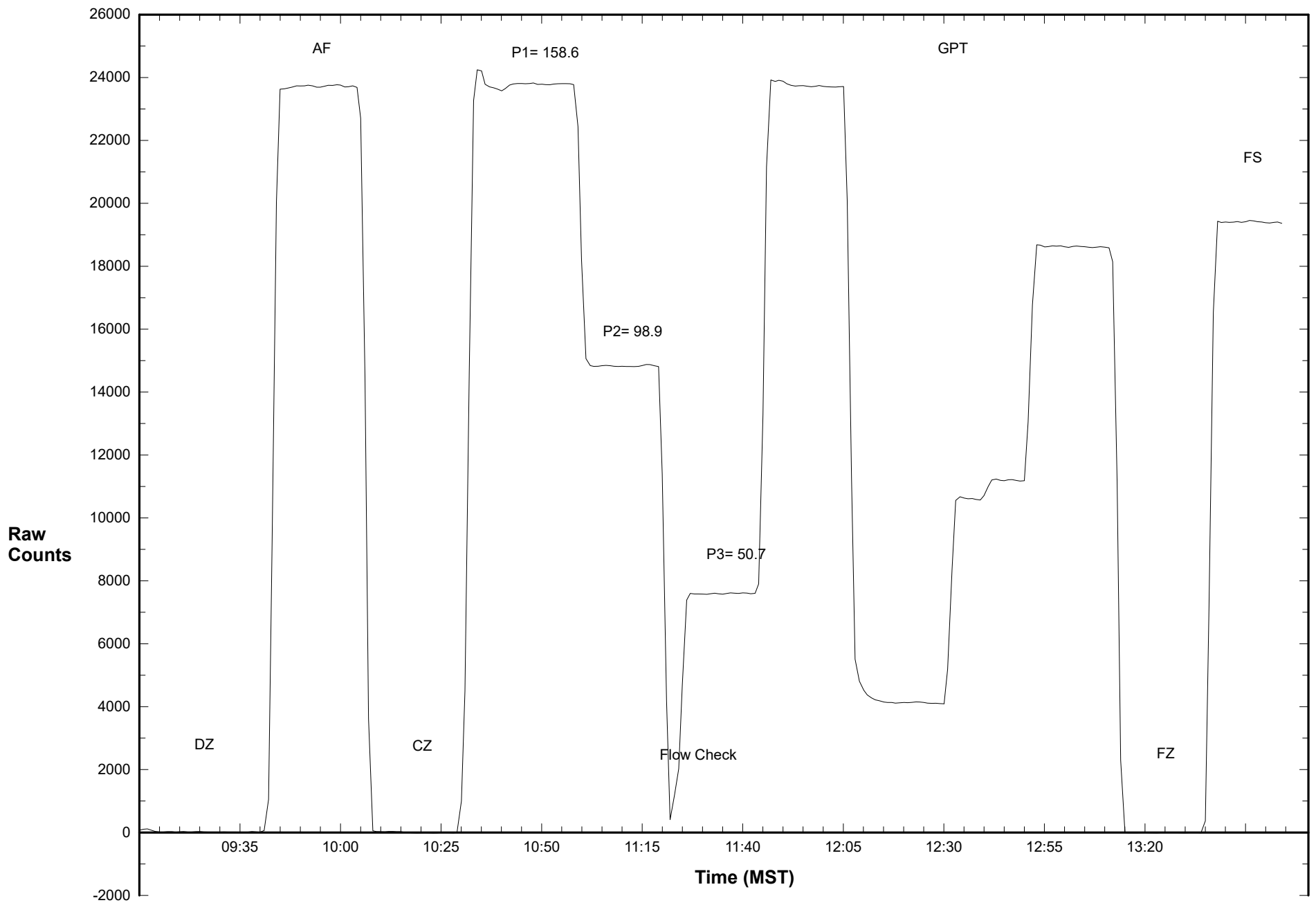
# Station 901 NO2 June 22, 2016: Linear Regression



# Station 901 NOX June 22, 2016: Linear Regression

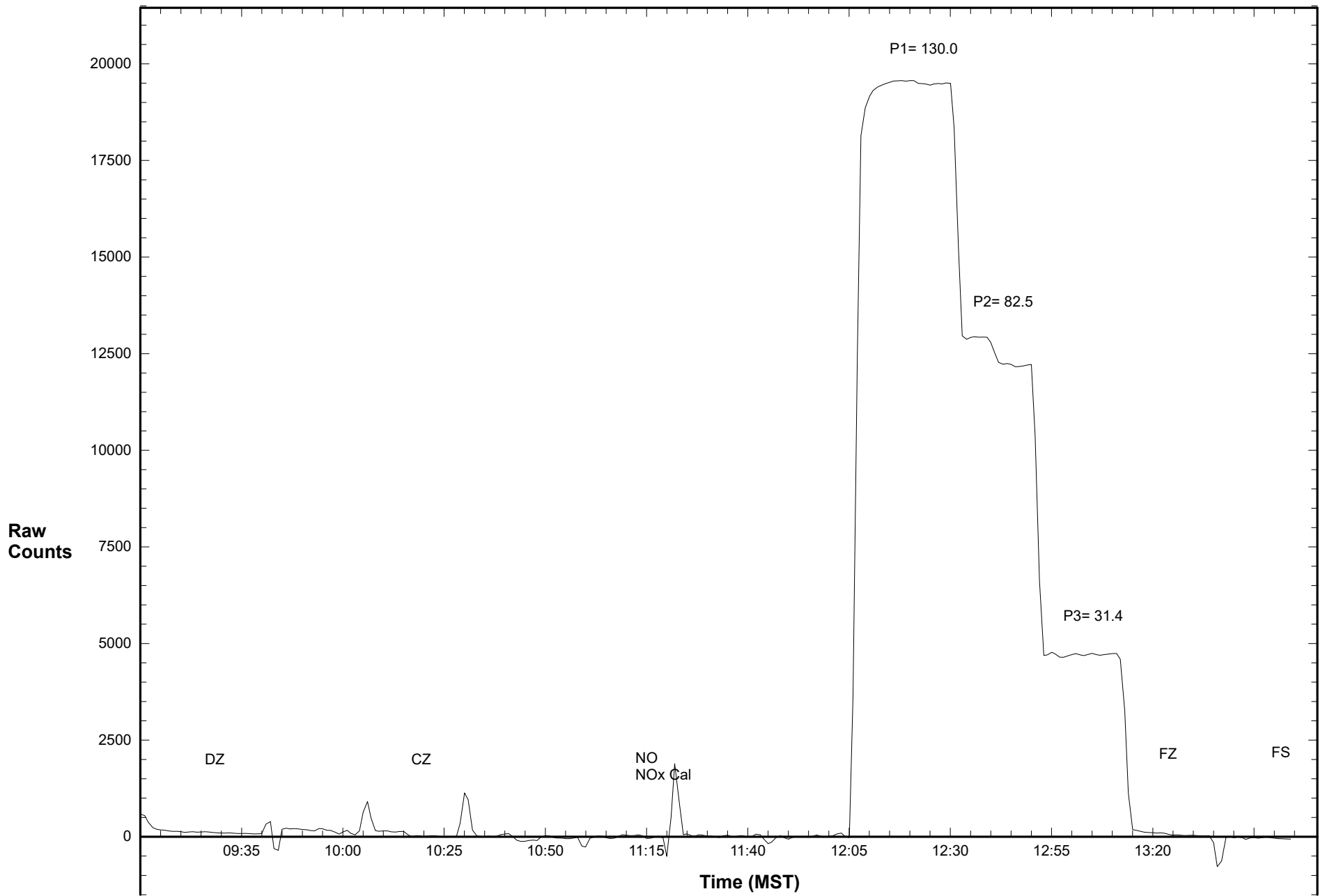


# Station 901 NO June 22, 2016: Calibration Graph

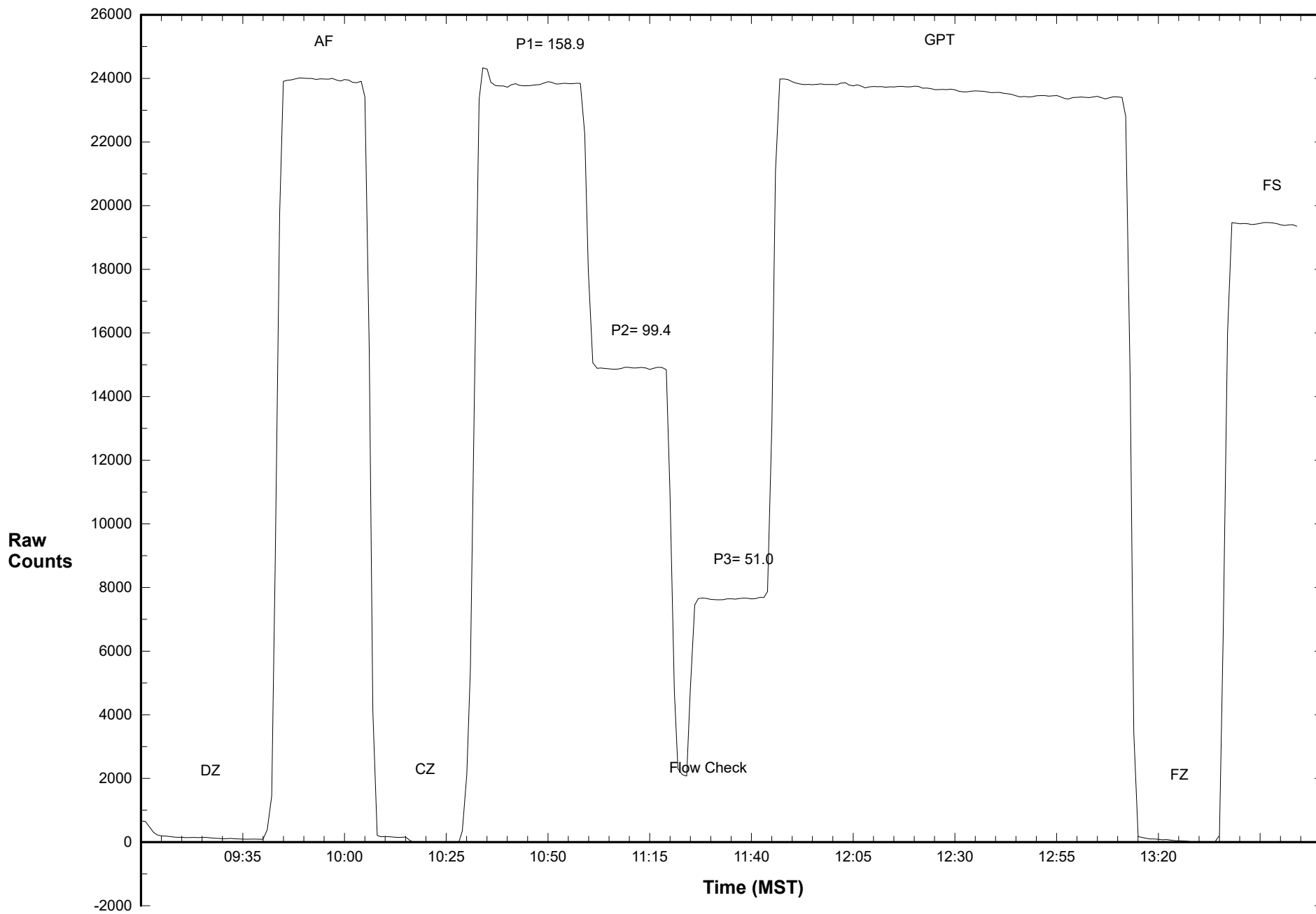




# Station 901 NO2 June 22, 2016: Calibration Graph



# Station 901 NOX June 22, 2016: Calibration Graph



# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 901, Tomahawk

Calibration Date: June 22, 2016

Parameter: O<sub>3</sub>

Instrument: Teco 49i

Serial Number: 0708721220

Previous Calibration Date: May 30, 2016

Calibration: Routine

Calibration Equipment: 2B Technology 306 #135

Barometric Pressure: 27.20" Hg

Calibration Method: Certified Ozone Generator

Temperature: 22.0° C

Technician: Dean Yustak

Instrument Settings	Background	Coefficient	Monitoring Range
Previous	0.0	1.021	500 ppb
Current	-0.3	1.060	500 ppb

Final Zero: -0.5 ppb

Final Span: 235.3 ppb

As Found Correction Factor: 1.011

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	24499.0	407.7	1.003
3.000	255.0	15472.9	257.2	0.991
3.000	103.2	6229.7	103.1	1.001
3.000	0.0	1.4	-0.7	

### Results of Linear Regression

R <sub>c</sub> vs C <sub>c</sub>	Slope	Intercept	R <sup>2</sup>
Previous	59.873110	24.407550	0.999989
Current	59.983460	45.921850	0.999926
C <sub>i</sub> vs C <sub>c</sub>			
Current	1.000000	0.000039	0.999926

Average Correction Factor: 0.999

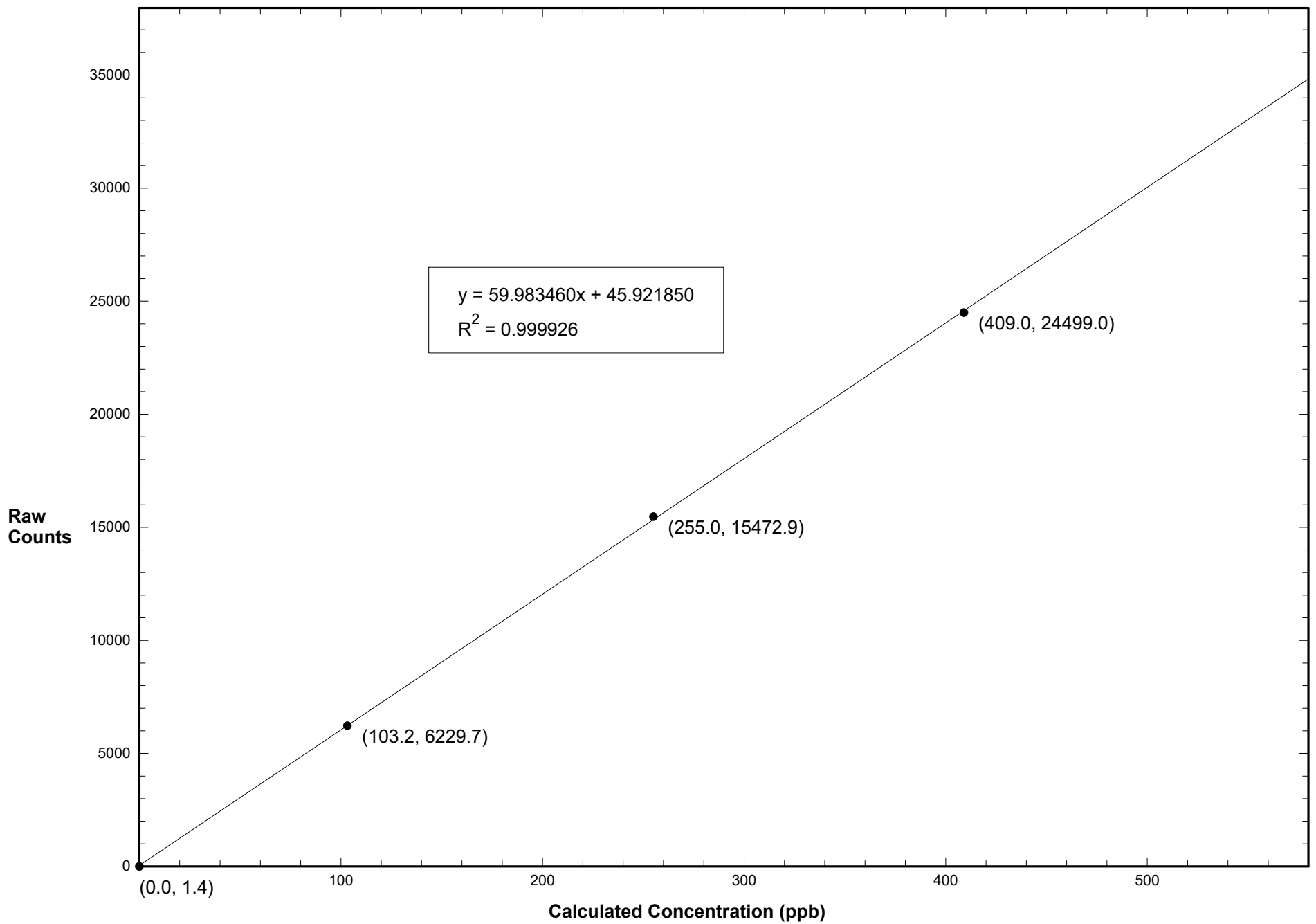
Previous Correction Factor: 1.001

Current Correction Factor: 1.003

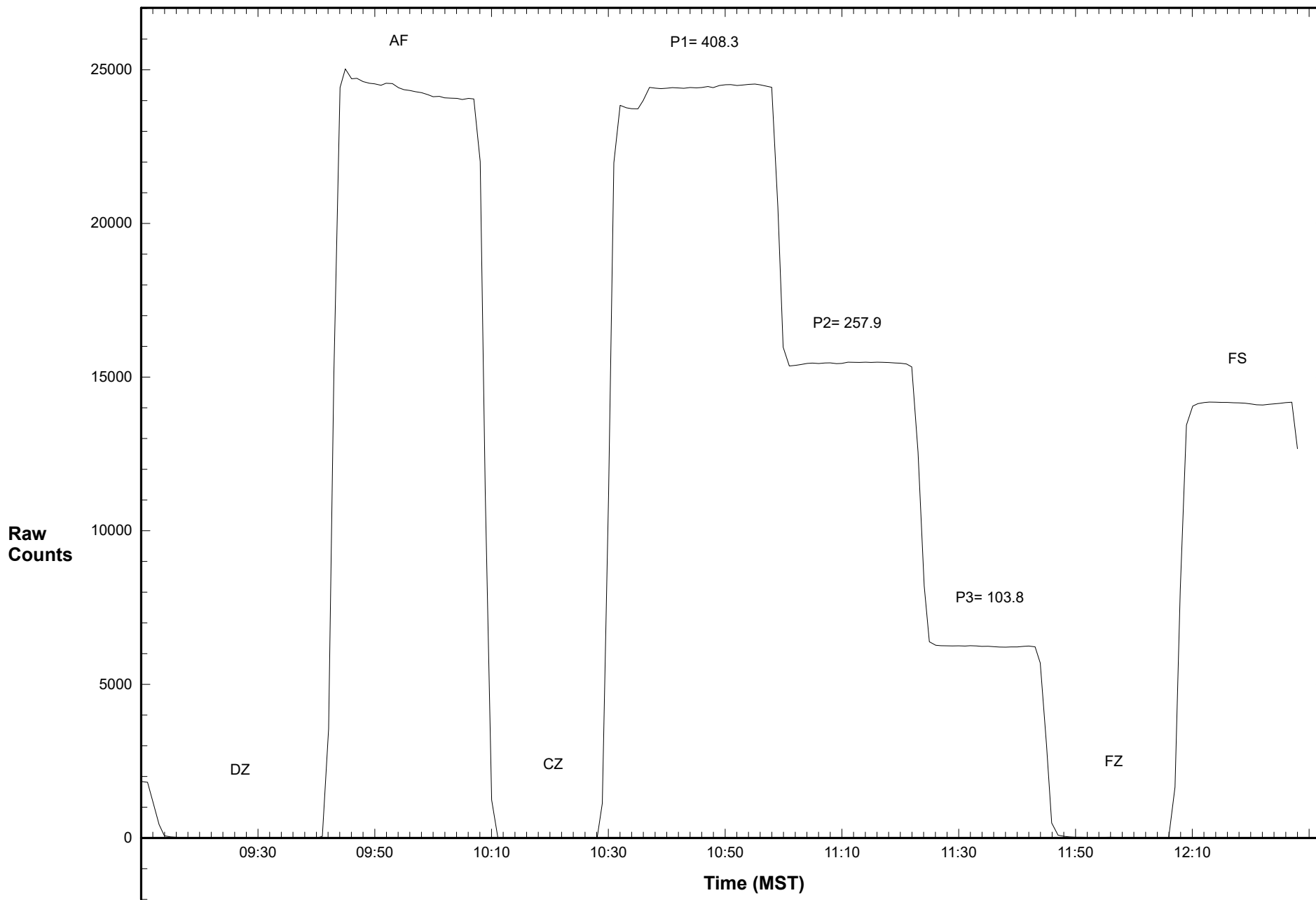
Percent Change of Correction Factor: 0.2

Comments:

### Station 901 O3 June 22, 2016: Linear Regression



# Station 901 O3 June 22, 2016: Calibration Graph



# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 901, Tomahawk

Calibration Date: June 22, 2016

Parameter: SO<sub>2</sub>

Instrument: Teco 43i

Serial Number: 0708721218

Previous Calibration Date: May 30, 2016

Calibration: Routine

Calibration Equipment: SABIO 2010 #04300810

Barometric Pressure: 27.20" Hg

Calibration Method: Standard Gas Dilution

Cylinder ID: FF16109

Temperature: 22.0° 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	13.9	0.865	100 ppb
Current	14.1	0.881	100 ppb

Final Zero: 0.2 ppb

Final Span: 61.3 ppb

As Found Correction Factor: 1.020

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>
0.0669	5.033	80.2	24077.4	80.1	1.001
0.0414	5.049	49.7	15002.4	49.9	0.997
0.0212	5.043	25.5	7653.3	25.4	1.007
0.0000	4.979	0.0	63.9	0.1	

### Results of Linear Regression

R <sub>c</sub> vs C <sub>c</sub>	Slope	Intercept	R <sup>2</sup>
Previous	299.154900	-43.544120	0.999952
Current	299.864200	47.122970	0.999981
C <sub>i</sub> vs C <sub>c</sub>			
Current	1.000000	-0.000011	0.999981

Average Correction Factor: 1.001

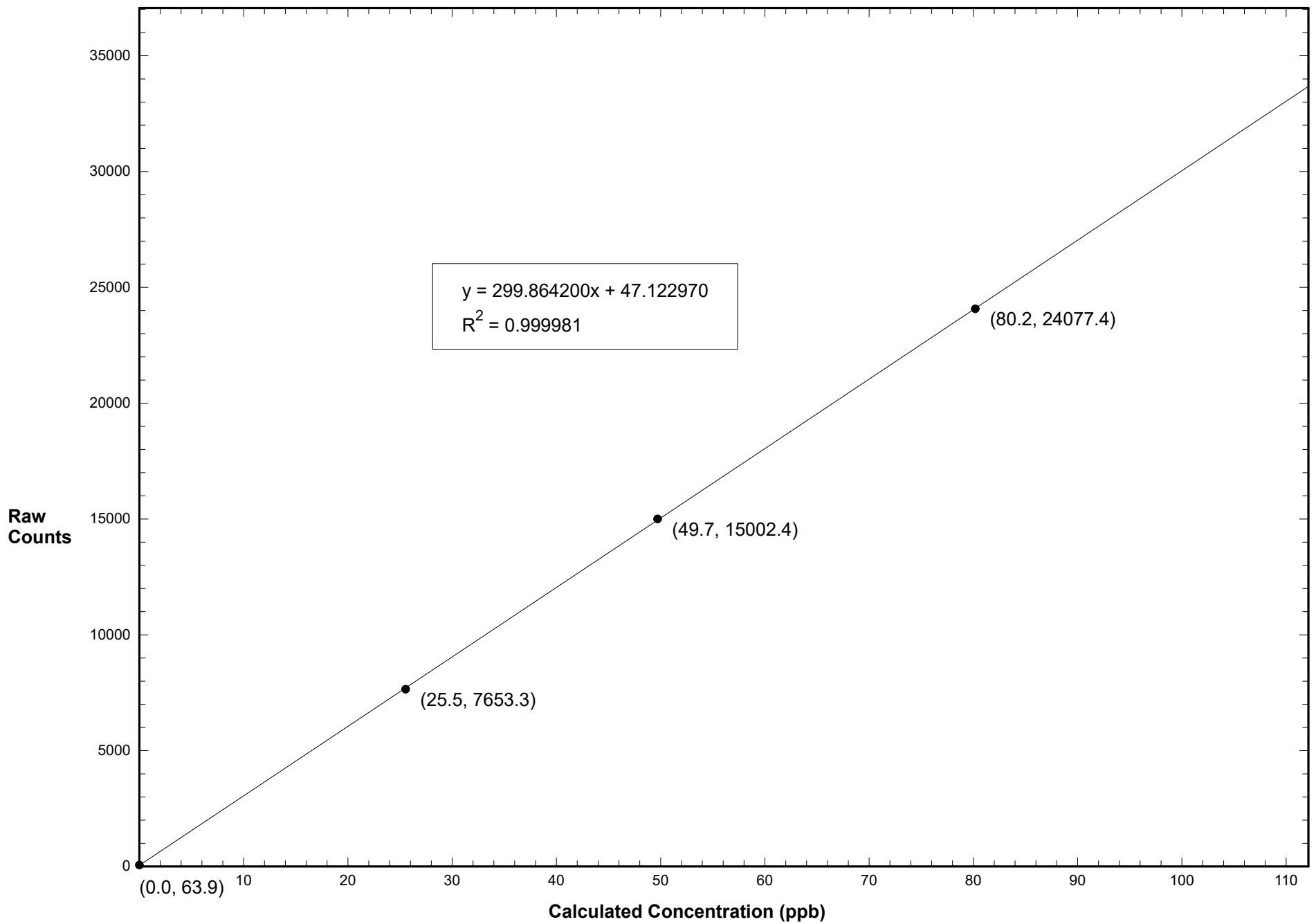
Previous Correction Factor: 0.999

Current Correction Factor: 1.001

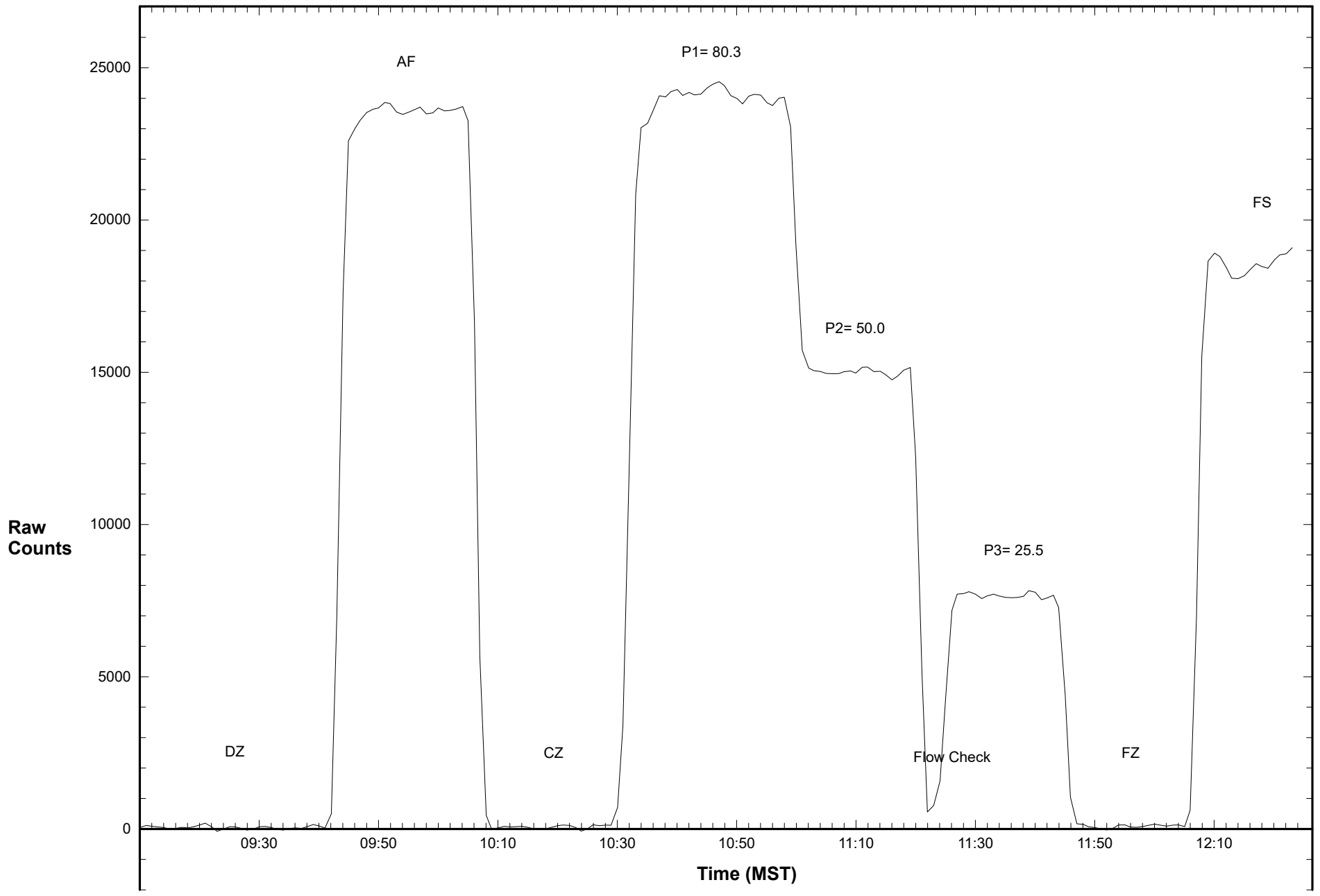
Percent Change of Correction Factor: 0.2

Comments:

### Station 901 SO2 June 22, 2016: Linear Regression



# Station 901 SO2 June 22, 2016: Calibration Graph





# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 902, Violet Grove

Calibration Date: June 18, 2016

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

Instrument: Teco 42i

Serial Number: 0708721428

Previous Calibration Date: May 11,2016

Calibration: Routine

Calibration Equipment: SABIO 2010 sn 05200311

Barometric Pressure: 26.96" Hg

Calibration Method: Standard Gas Dilution/ GPT

Cylinder ID: FF 9469

Temperature: 22.0° C

Cylinder Concentration: 12.6 ppm NO/ NOX

In Service: Jan 14. 2015

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	15.5	16.3	na	1.675	1.003	1.000	200 ppb
Current	16.3	17.3	na	1.779	1.012	1.000	200 ppb

NO	Final Zero: 0.2 ppb	Final Span: 53.1 ppb	As Found Correction Factor: 1.062
NO <sub>2</sub>	Final Zero: -0.9 ppb	Final Span: -0.4 ppb	As Found Correction Factor: 0.989
NO <sub>x</sub>	Final Zero: -0.4 ppb	Final Span: 53.0 ppb	As Found Correction Factor: 1.071

Results of Linear Regression			Slope	Intercept	R <sup>2</sup>
NO	R <sub>c</sub> vs C <sub>c</sub>	Previous	149.443600	12.733550	0.999994
		Current	149.685000	-13.257120	0.999991
	C <sub>i</sub> vs C <sub>c</sub>	Current	1.000000	0.000021	0.999990
NO <sub>2</sub>	R <sub>c</sub> vs C <sub>c</sub>	Previous	149.049300	1.679722	0.999994
		Current	149.794200	77.949150	0.999933
	C <sub>i</sub> vs C <sub>c</sub>	Current	1.000000	-0.000024	0.999933
NO <sub>x</sub>	R <sub>c</sub> vs C <sub>c</sub>	Previous	150.312600	7.010228	0.999994
		Current	149.993700	-9.905559	0.999998
	C <sub>i</sub> vs C <sub>c</sub>	Current	1.000000	0.000000	0.999998

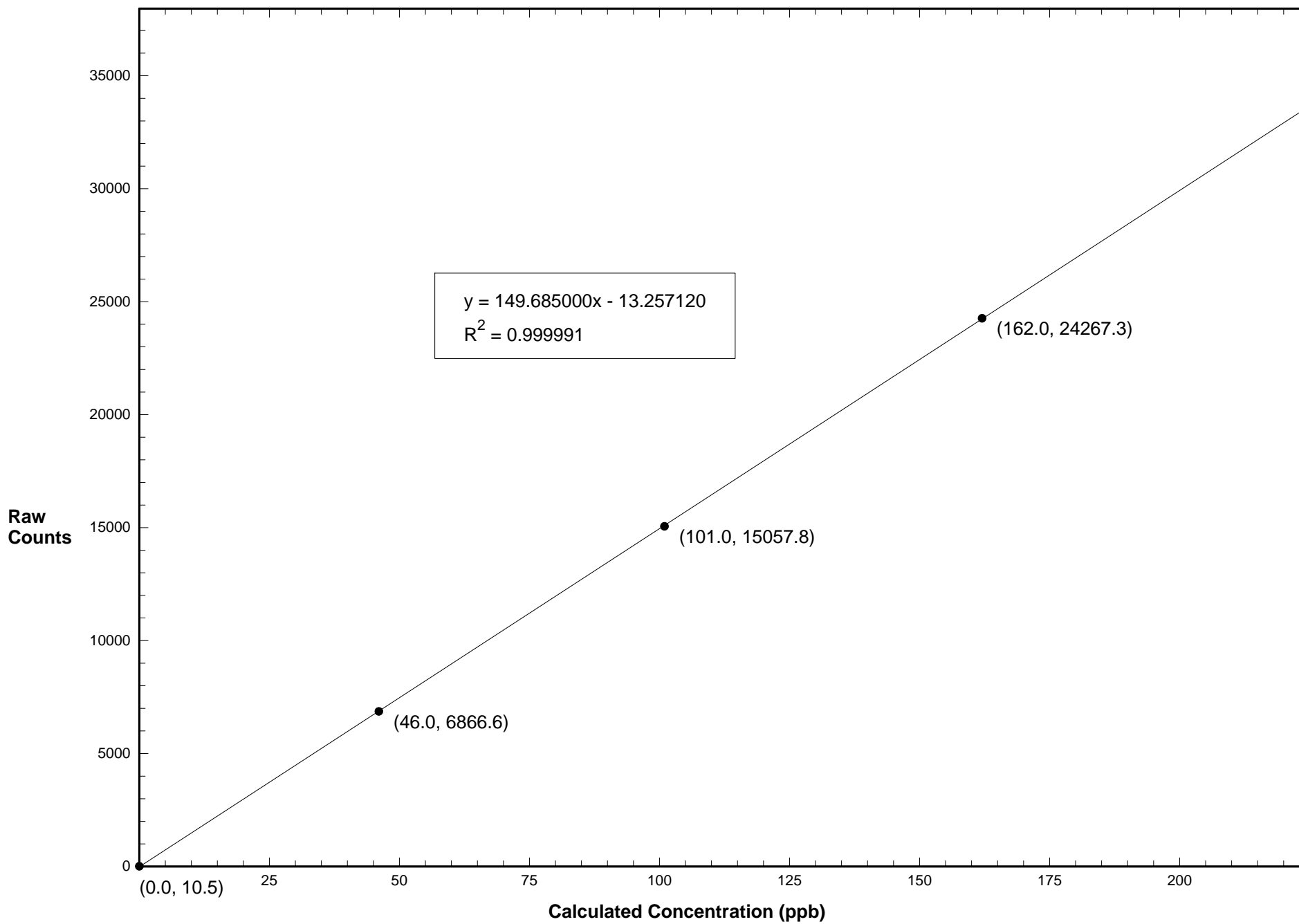
Comments:

**Calibration Data Summary (Page 2)**

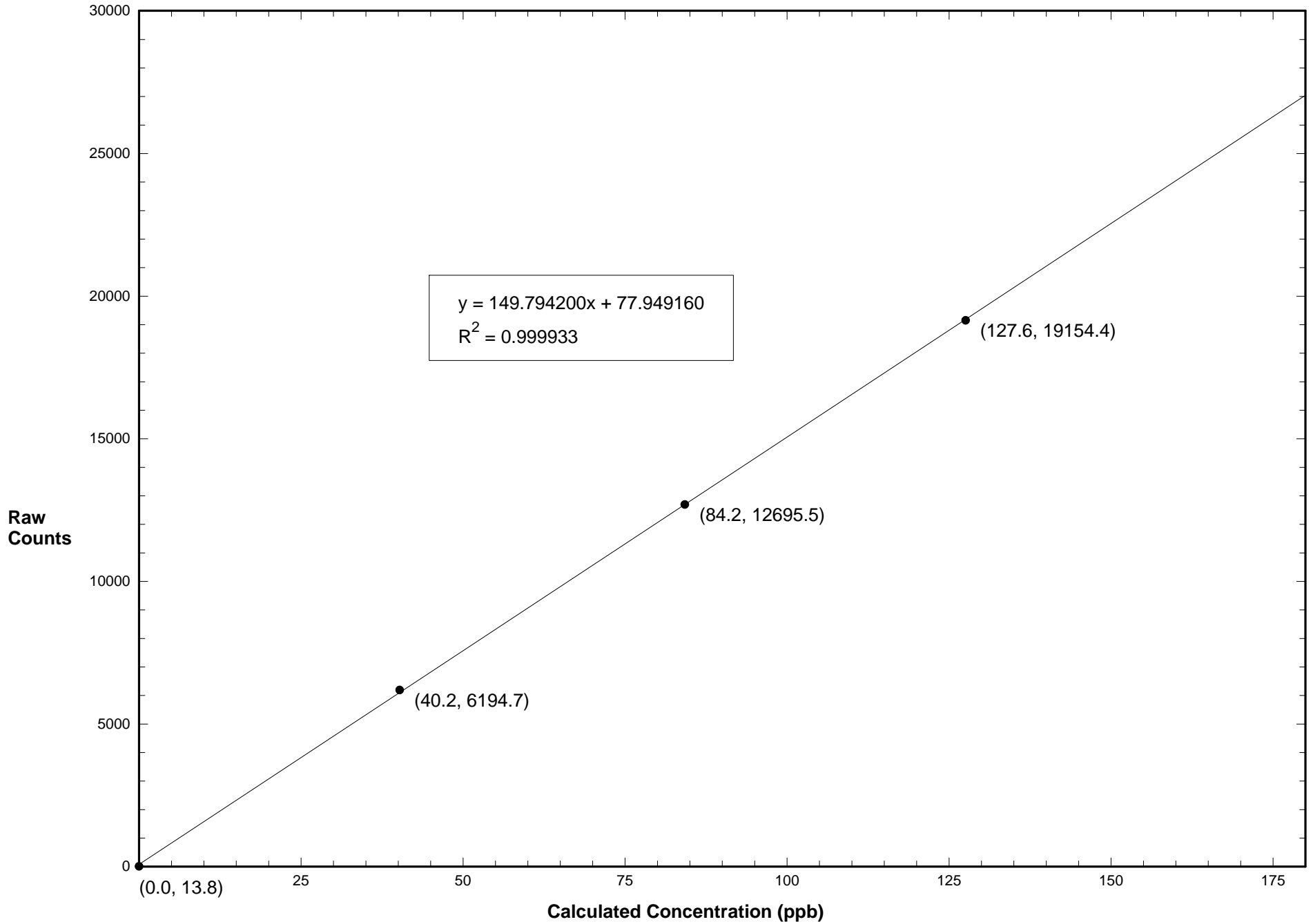
June 18, 2016 - Station 902

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>		
0.06650	5.105	162.0	24267.3	162.2	0.999		
0.04090	5.064	101.0	15057.8	100.7	1.003		
0.01850	5.044	46.0	6866.6	46.0	1.002		
0.00000	5.000	0.0	10.5	0.2			
NO Calibration					Average Correction Factor:	1.001	
0.06650	5.105	162.0	24303.9	162.1	1.000		
0.04090	5.064	101.0	15120.4	100.9	1.001		
0.01850	5.044	46.0	6881.6	45.9	1.002		
0.00000	5.000	0.0	5.1	0.1			
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 <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>
162.0	5144.7	34.5	127.6	19154.4	127.4	1.002	0.998
162.0	11631.3	77.8	84.2	12695.5	84.2	1.000	1.000
162.0	18218.1	121.8	40.2	6194.7	40.8	0.985	1.015
			0.0	13.8	-0.4		
						Average Correction Factor:	0.995
NO <sub>2</sub> Gas Phase Titration					Average Converter Efficiency:	1.005	
Parameter	Correction Factor (Previous)	Correction Factor: (Current)	Percent Change of Correction Factor				
NO	1.000	0.999	-0.1				
NO <sub>2</sub>	1.000	1.002	0.2				
NO <sub>x</sub>	1.000	1.000	0.0				

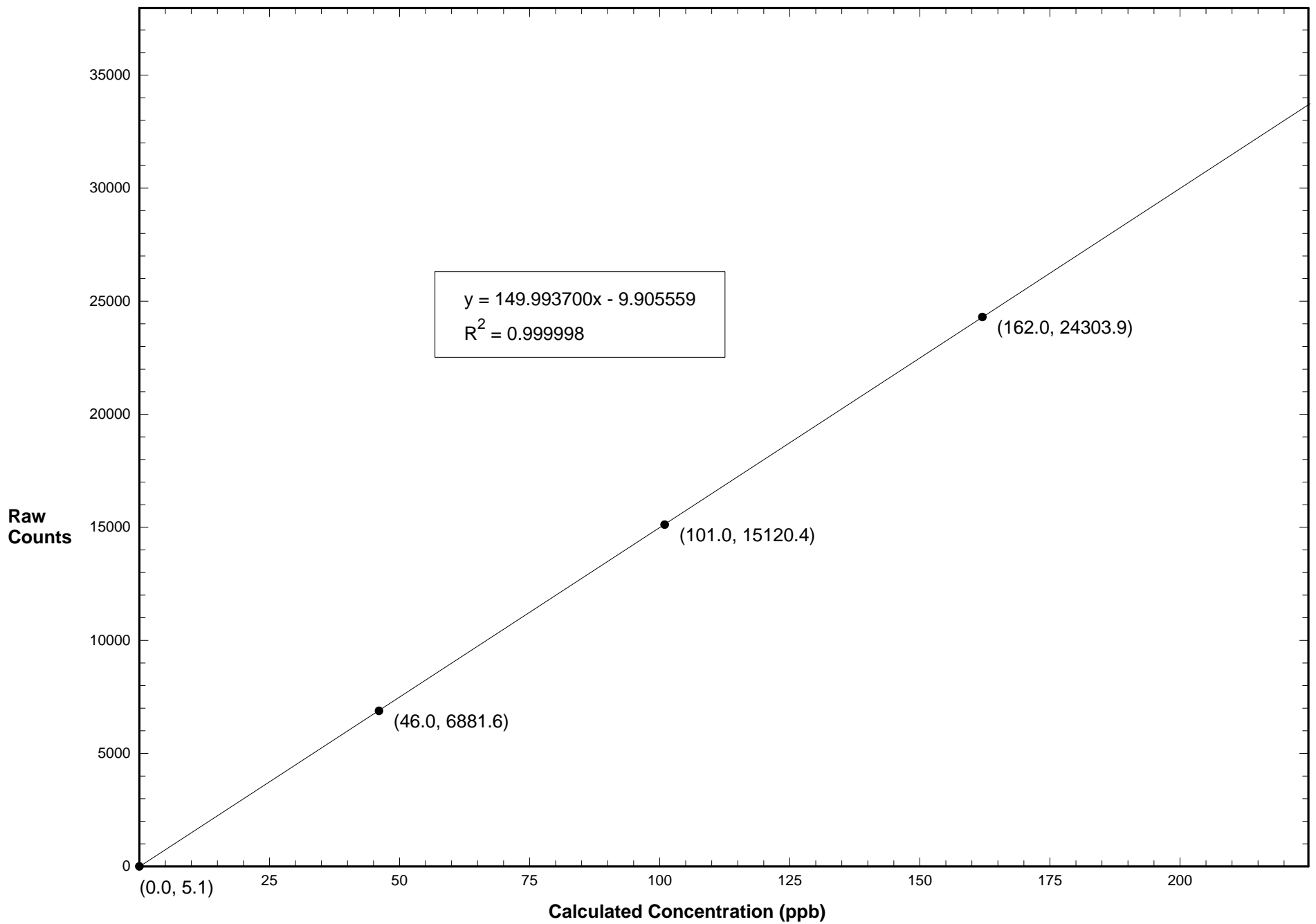
# Station 902 NO June 18, 2016: Linear Regression



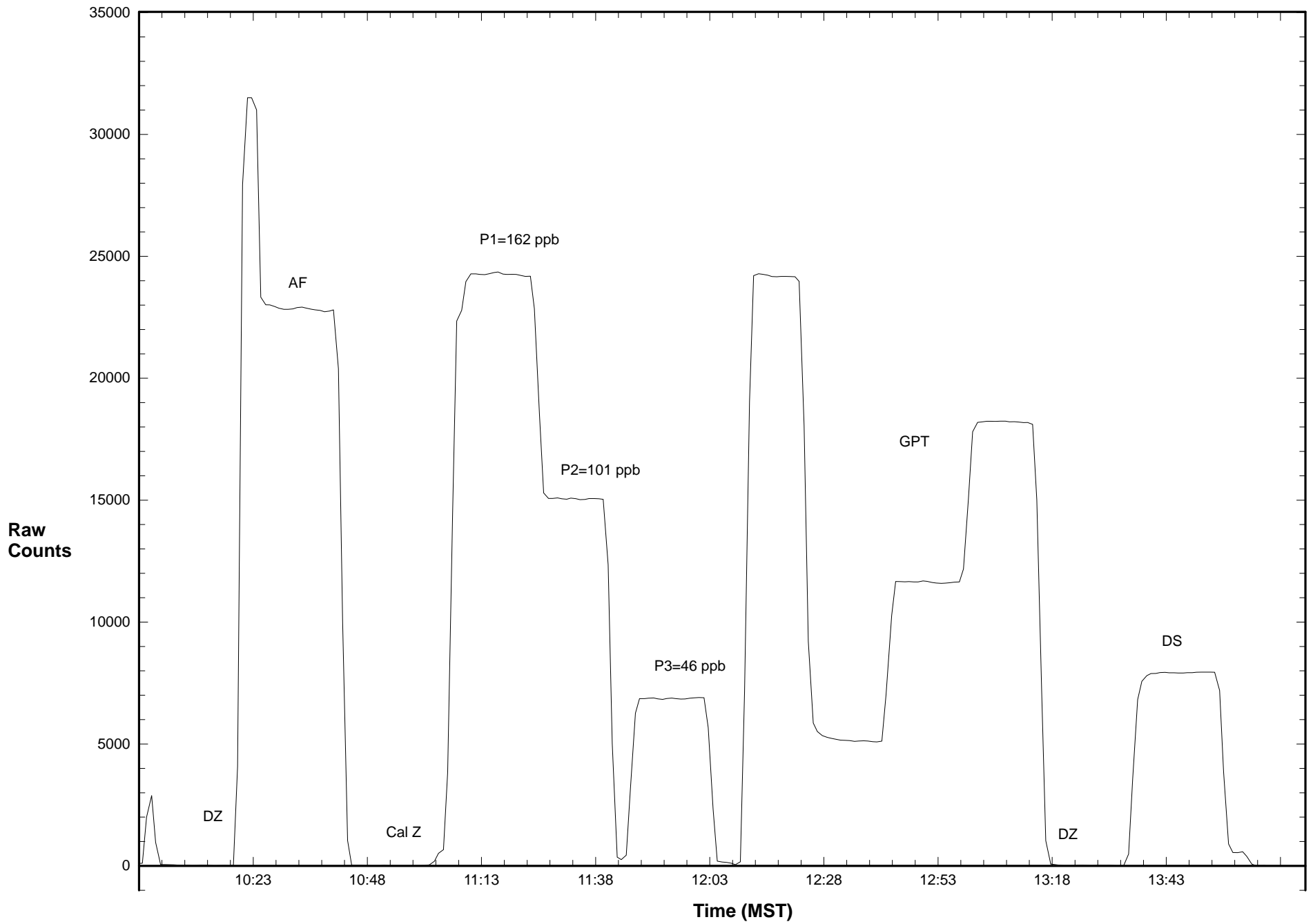
# Station 902 NO2 June 18, 2016: Linear Regression



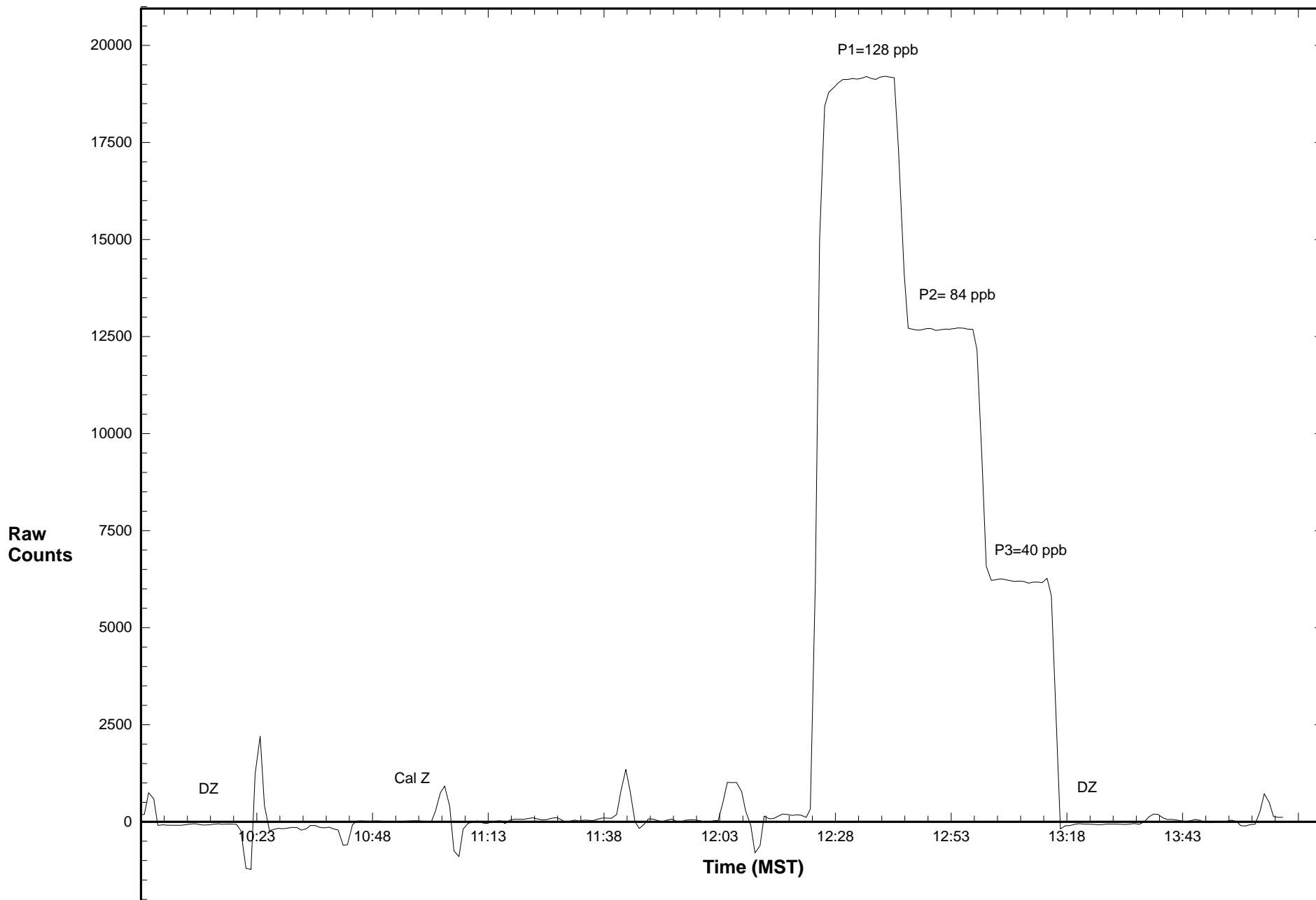
# Station 902 NOX June 18, 2016: Linear Regression



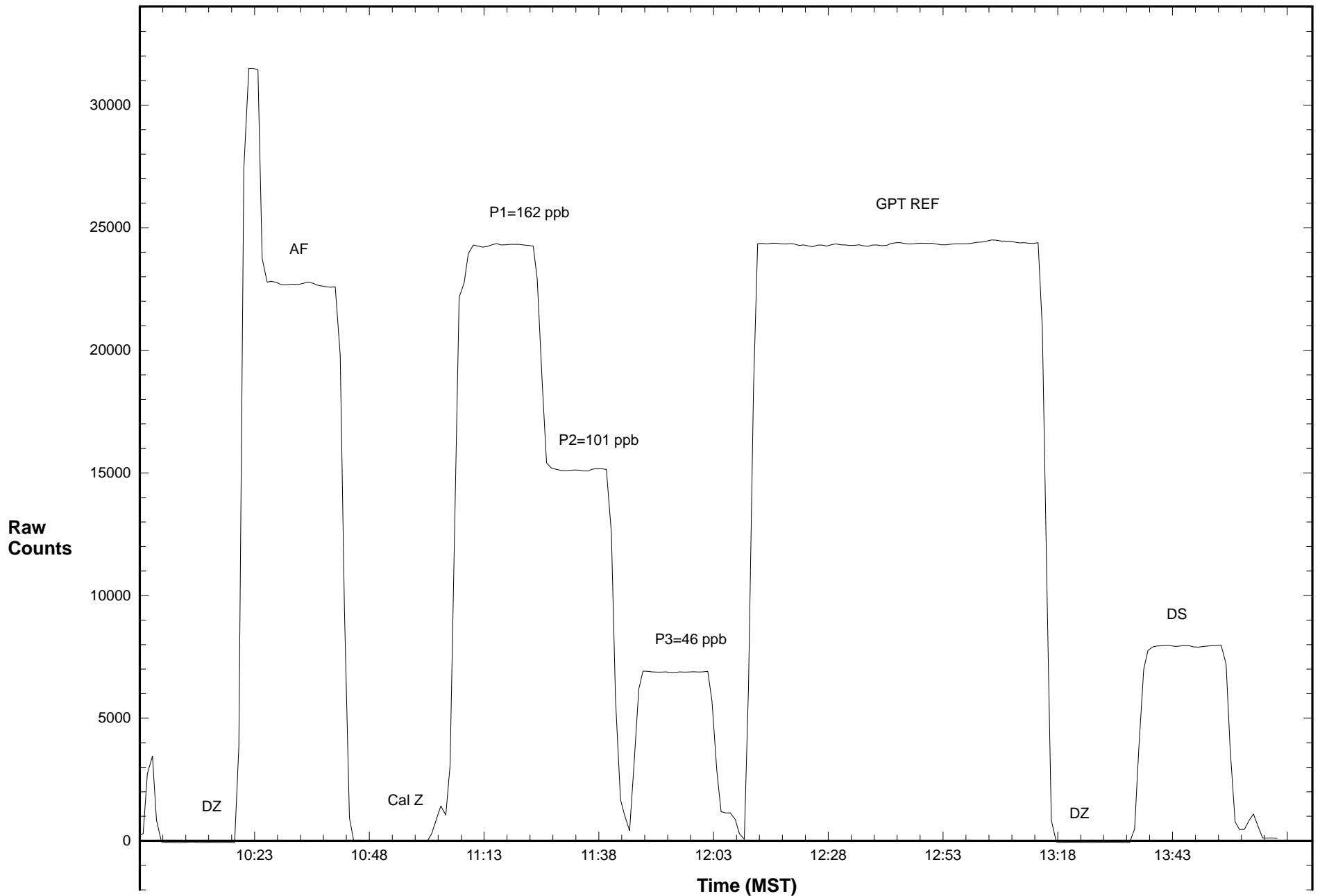
# Station 902 NO June 18, 2016: Calibration Graph



# Station 902 NO2 June 18, 2016: Calibration Graph



# Station 902 NOX June 18, 2016: Calibration Graph





# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 902, Violet Grove

Calibration Date: June 18, 2016

Parameter: O<sub>3</sub>

Instrument: Teco 49 i

Serial Number: 0905034790

Previous Calibration Date: May 11, 2016

Calibration: Routine

Calibration Equipment: 2B Technology 306 sn 145

Barometric Pressure: 26.96" Hg

Calibration Method: Ozone Generator

Temperature: 22.0° C

Technician: J.McClintock

Instrument Settings	Background	Coefficient	Monitoring Range
Previous	0.3	1.015	500 ppb
Current	-0.1	1.003	500 ppb

Final Zero: -0.3 ppb

Final Span: 265.9 ppb

As Found Correction Factor: 0.990

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	24567.9	408.6	1.001
3.000	256.0	15435.9	256.6	0.998
3.000	102.0	6159.9	102.2	0.998
3.000	0.0	3.2	-0.3	

### Results of Linear Regression

R <sub>c</sub> vs C <sub>c</sub>	Slope	Intercept	R <sup>2</sup>
Previous	60.028580	88.096790	0.999932
Current	60.070140	23.274560	0.999993
C <sub>i</sub> vs C <sub>c</sub>			
Current	1.000000	0.000039	0.999994

Average Correction Factor: 0.999

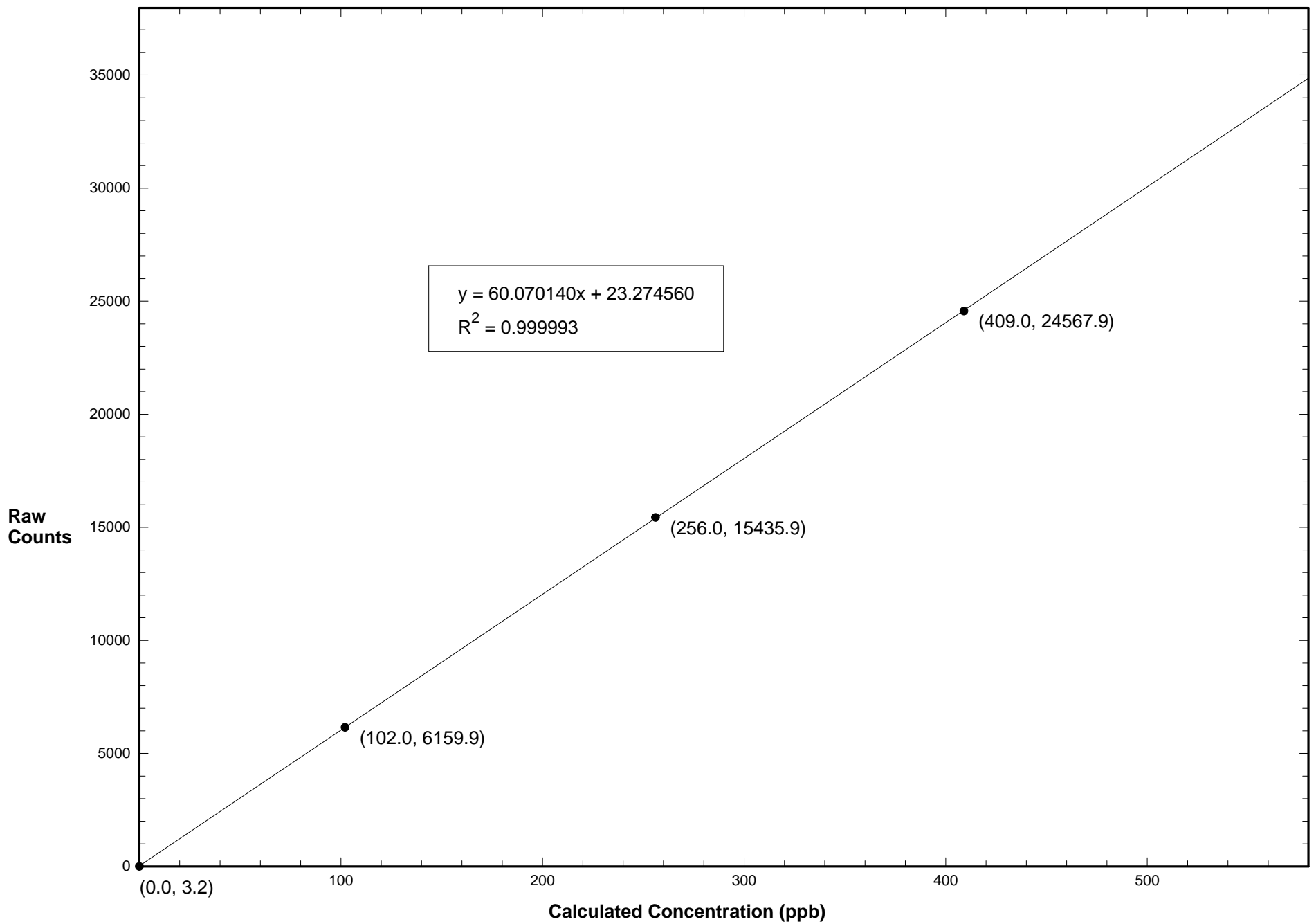
Previous Correction Factor: 1.002

Current Correction Factor: 1.001

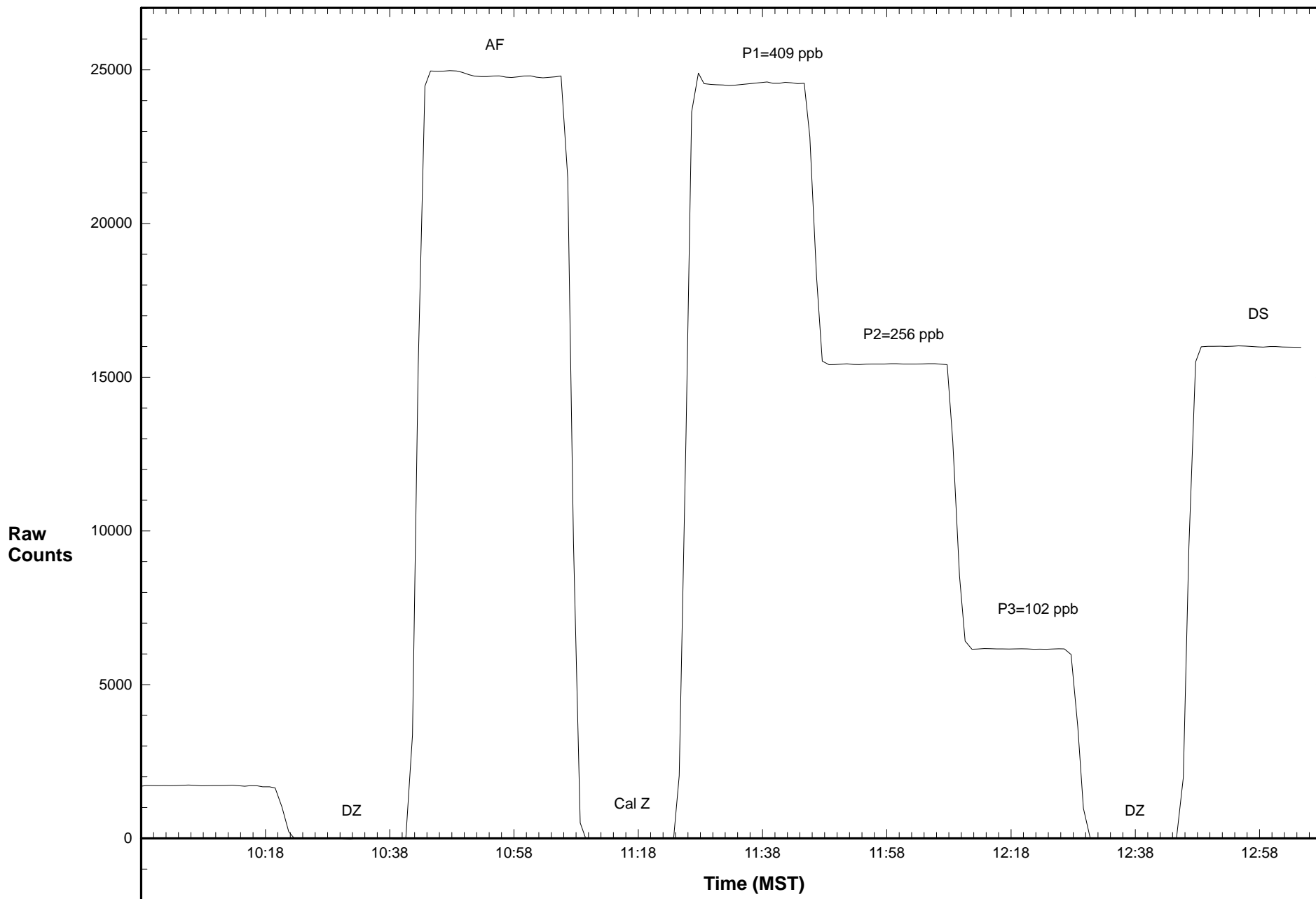
Percent Change of Correction Factor: -0.1

Comments:

### Station 902 O3 June 18, 2016: Linear Regression



# Station 902 O3 June 18, 2016: Calibration Graph



# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 902, Violet Grove

Calibration Date: June 18, 2016

Parameter: SO<sub>2</sub>

Instrument: Teco 43 i

Serial Number: 43C 0700419949

Previous Calibration Date: May 11,2016

Calibration: Routine

Calibration Equipment: SABIO 2010 sn 05200311

Barometric Pressure: 26.96" Hg

Calibration Method: Standard Gas Dilution

Cylinder ID: FF 9469

Temperature: 22.0° C

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

In Service: Jan 14. 2015

Technician: J.McClintock

### Instrument Settings

SO<sub>2</sub> bkg ppb

SO<sub>2</sub> Coefficient

Monitoring Range

Previous

6.2

0.973

100 ppb

Current

5.8

0.922

100 ppb

Final Zero: -0.1 ppb

Final Span: 24.3 ppb

As Found Correction Factor: 0.958

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>

0.0665  
0.0409  
0.0185  
0.0000

5.105  
5.064  
5.044  
5.000

79.7  
49.7  
22.7  
0.0

24035.5  
14973.0  
6847.3  
36.0

79.7  
49.6  
22.6  
0.0

1.000  
1.001  
1.000

### Results of Linear Regression

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

Slope

Intercept

R<sup>2</sup>

Previous  
Current

301.644300  
301.012800

91.969410  
30.245750

0.999762  
1.000000

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

Current

1.000000

0.000000

0.999999

Average Correction Factor:

1.000

Previous Correction Factor:

1.006

Current Correction Factor:

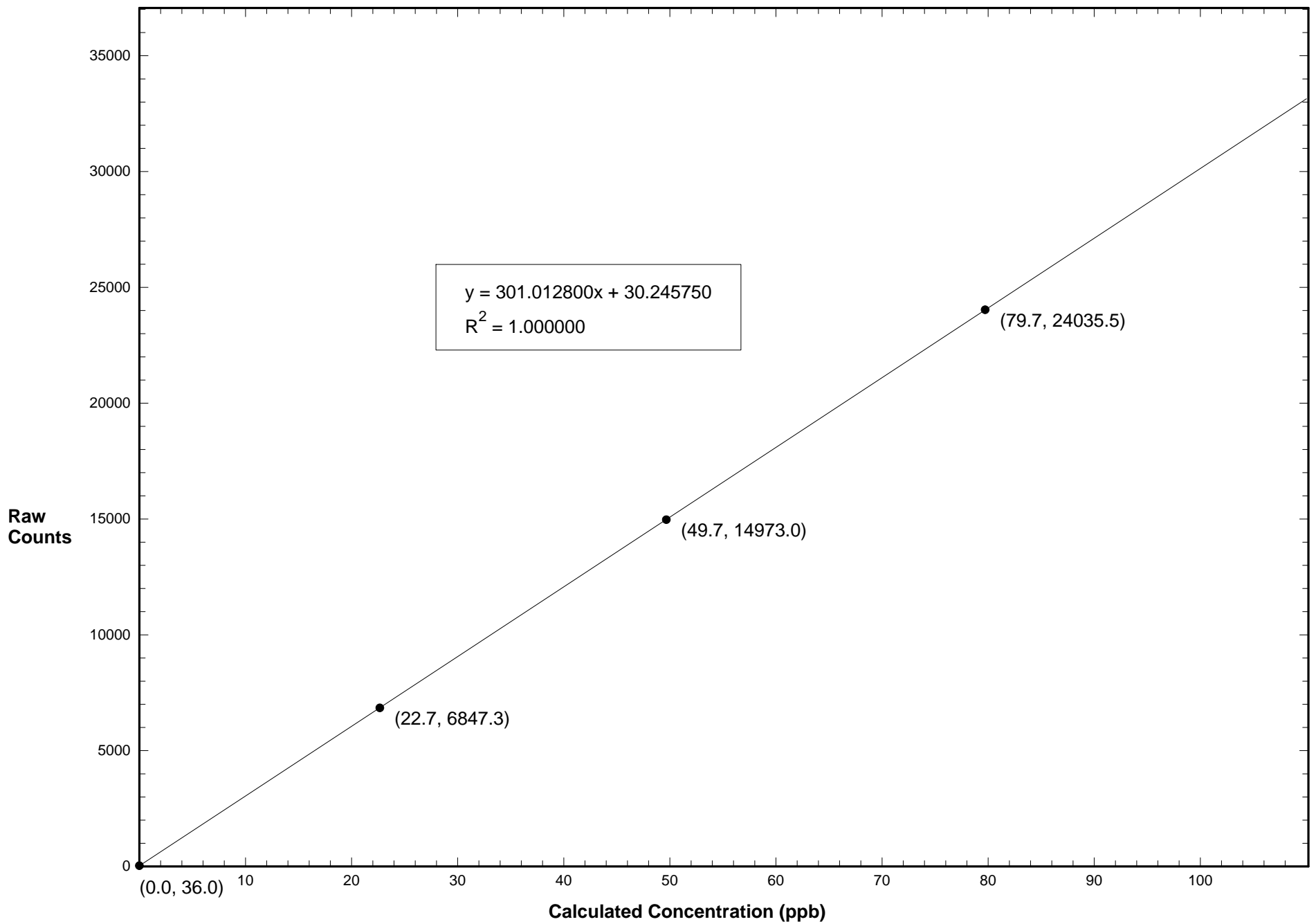
1.000

Percent Change of  
Correction Factor:

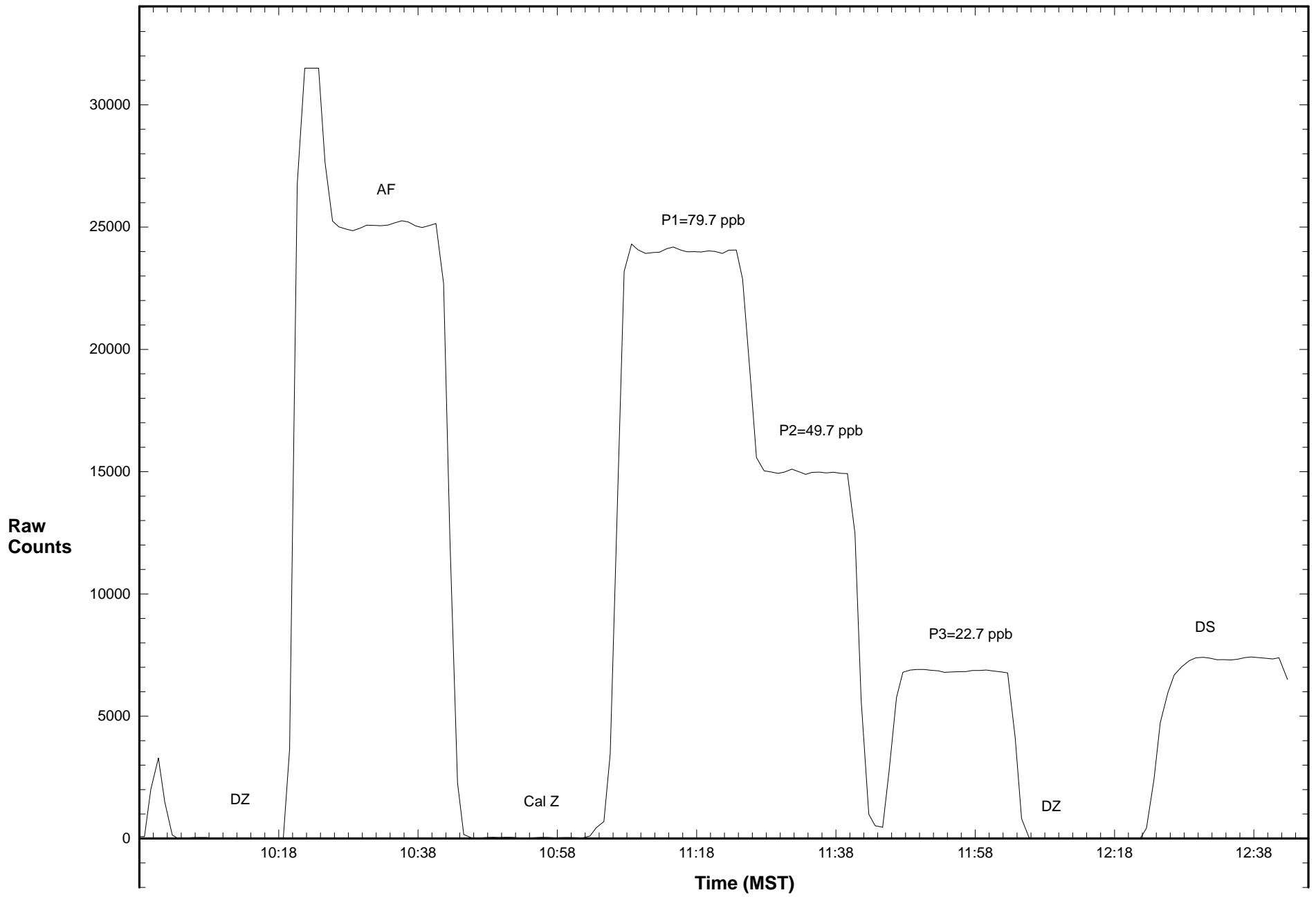
-0.6

Comments:

### Station 902 SO2 June 18, 2016: Linear Regression



# Station 902 SO2 June 18, 2016: Calibration Graph



# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 902, Violet Grove

Calibration Date: June 18, 2016

Parameter: THC

Instrument: Teco 51i-LT

Serial Number: 1415561633

Previous Calibration Date: May 11, 2016

Calibration: Routine

Calibration Method: Standard Gas Dilution

Barometric Pressure: 26.96" Hg

Gas Concentration 1: 717 ppm CH4

Cylinder ID: SG9154049

Temperature: 22.0° C

Gas Concentration 2:

In Service: August 2010

Technician: J.McClintock

Instrument Settings	Zero Pot	Span Pot	Monitoring Range
Previous	1.29	4.255	20 ppm
Current	1.42	4.212	20 ppm

Final Zero: 0.00 ppm

Final Span: 16.22 ppm

As Found Correction Factor: 0.984

Certified Concentration $C_c$ (ppm)	Raw Count Output $R_c$	Indicated Concentration $C_i$ (ppm)	Correction Factor $C_c/C_i$
16.79	25292.7	16.85	0.996
9.81	14578.0	9.73	1.009
4.75	7028.4	4.70	1.011
0.00	61.7	0.07	

### Results of Linear Regression

$R_c$ vs $C_c$	Slope	Intercept	$R^2$
Previous	1493.125000	230.188800	0.999987
Current	1503.752000	-46.558370	0.999874
$C_i$ vs $C_c$			
Current	1.000000	0.000000	0.999874

Average Correction Factor: 1.005

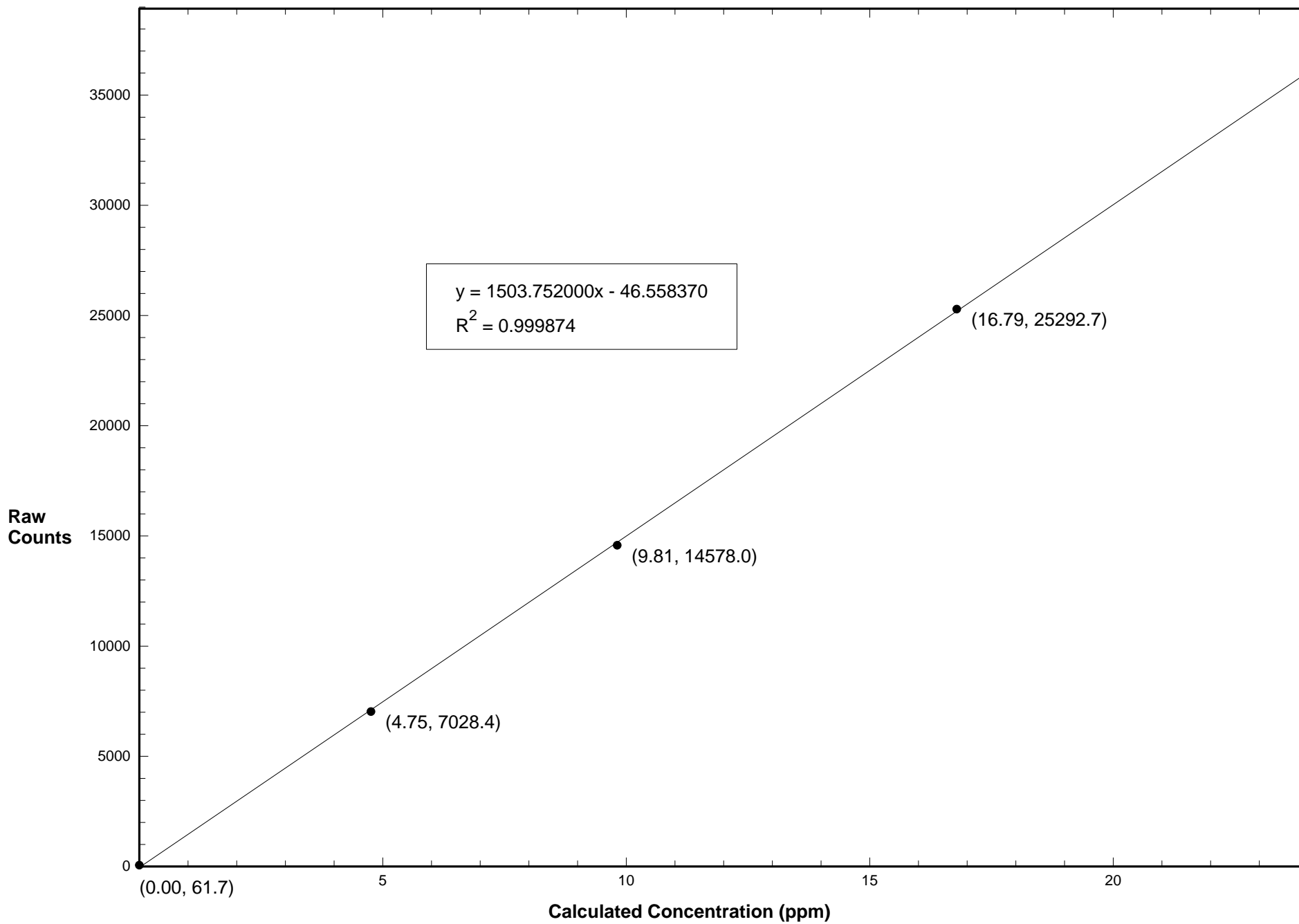
Previous Correction Factor: 1.001

Current Correction Factor: 0.996

Percent Change of  
Correction Factor: -0.5

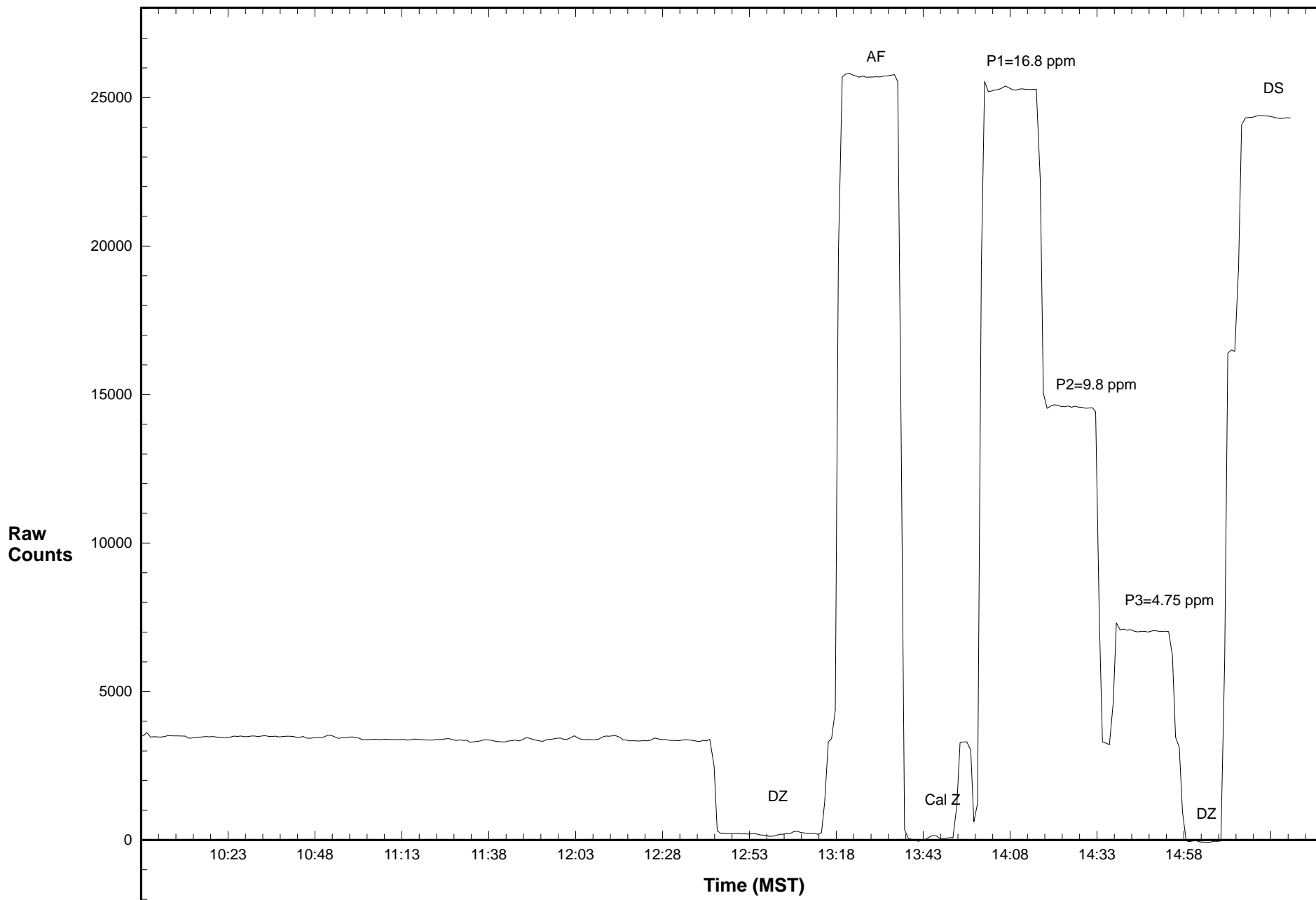
Comments:

### Station 902 THC June 18, 2016: Linear Regression





# Station 902 THC June 18, 2016: Calibration Graph



# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 903, Carrot Creek

Calibration Date: June 13, 2016

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

Instrument: Teco 42i

Serial Number: 1136451324

Previous Calibration Date: May 26, 2016

Calibration: Routine

Calibration Equipment: Sabio 2010 SN 08600312

Barometric Pressure: 27.00" Hg

Calibration Method: Standard Gas Dilution/Gas Phase Titration

Cylinder ID: FF13698

Temperature: 23.8° 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	6.5	7.2	NA	0.966	1.003	0.995	200 ppb
Current	6.6	7.2	NA	0.971	1.005	0.995	200 ppb

NO	Final Zero: -0.2 ppb	Final Span: 130.6 ppb	As Found Correction Factor: 1.001
NO <sub>2</sub>	Final Zero: -0.3 ppb	Final Span: 0.1 ppb	As Found Correction Factor: NA
NO <sub>x</sub>	Final Zero: -0.5 ppb	Final Span: 130.2 ppb	As Found Correction Factor: 1.003

Results of Linear Regression			Slope	Intercept	R <sup>2</sup>
NO	R <sub>c</sub> vs C <sub>c</sub>	Previous	149.382100	26.065020	0.999992
		Current	149.436500	27.925080	0.999978
	C <sub>i</sub> vs C <sub>c</sub>	Current	1.000000	0.000000	0.999978
NO <sub>2</sub>	R <sub>c</sub> vs C <sub>c</sub>	Previous	150.299100	28.919900	0.999992
		Current	150.037300	35.849300	0.999998
	C <sub>i</sub> vs C <sub>c</sub>	Current	1.000000	0.000011	0.999998
NO <sub>x</sub>	R <sub>c</sub> vs C <sub>c</sub>	Previous	149.811300	4.004396	0.999992
		Current	150.149500	44.026850	0.999983
	C <sub>i</sub> vs C <sub>c</sub>	Current	1.000000	0.000000	0.999983

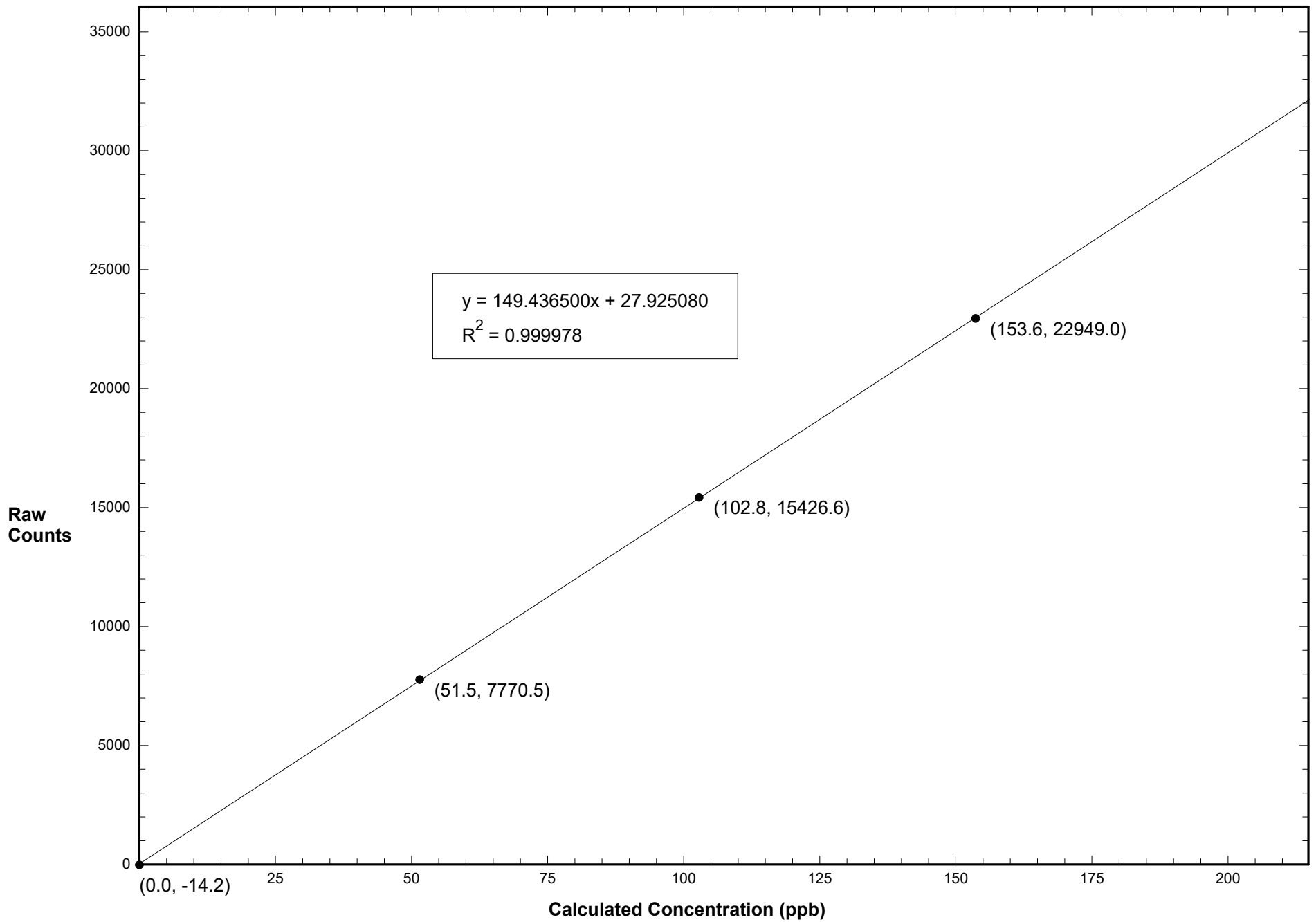
Comments:

**Calibration Data Summary (Page 2)**

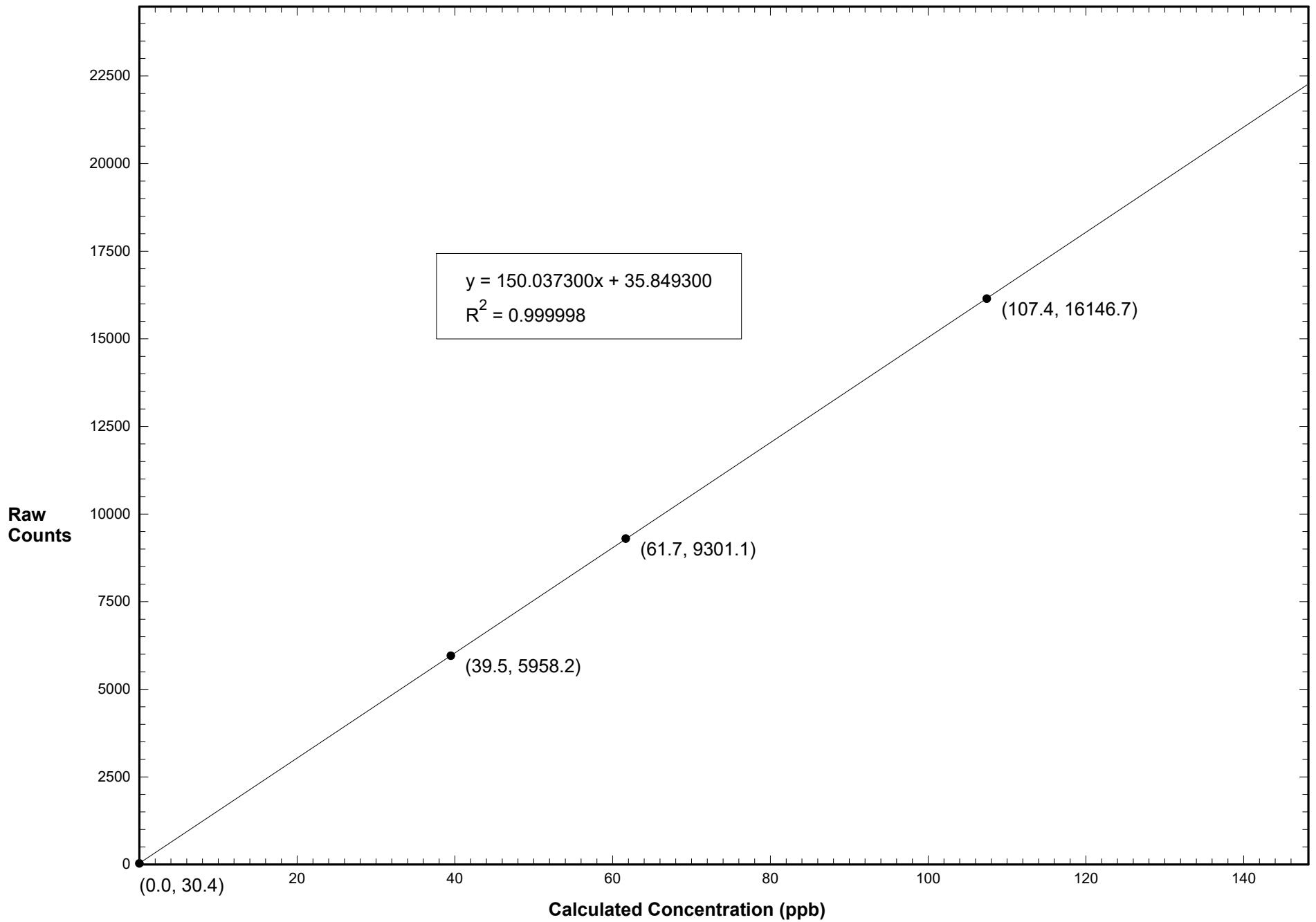
June 13, 2016 - Station 903

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>		
0.07480	6.011	153.6	22949.0	153.4	1.002		
0.04979	6.003	102.8	15426.6	103.0	0.998		
0.02485	6.007	51.5	7770.5	51.8	0.994		
0.00000	6.000	0.0	-14.2	-0.3			
NO Calibration					Average Correction Factor:	0.998	
0.07480	6.011	153.6	23080.7	153.4	1.001		
0.04979	6.003	102.8	15509.0	103.0	0.998		
0.02485	6.007	51.5	7819.3	51.8	0.994		
0.00000	6.000	0.0	6.9	-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>
153.1	6851.7	45.7	107.4	16146.7	107.4	1.000	1.000
153.1	13692.3	91.4	61.7	9301.1	61.8	0.998	1.002
153.1	17006.1	113.6	39.5	5958.2	39.5	1.000	1.000
			0.0	30.4	0.0		
						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	1.001	1.002	0.1				
NO <sub>2</sub>	1.001	1.000	-0.1				
NO <sub>x</sub>	1.001	1.001	0.0				

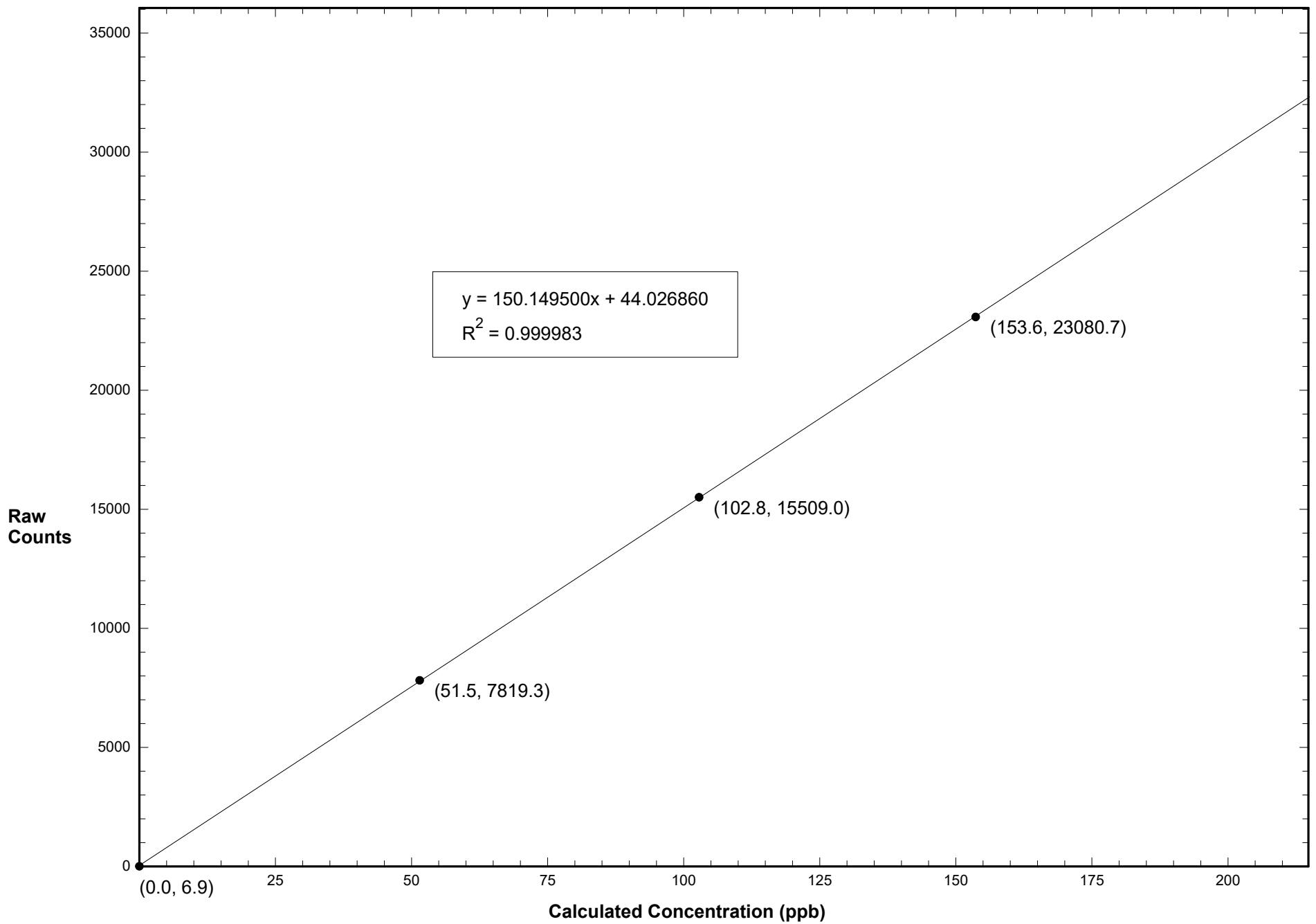
### Station 903 NO June 13, 2016: Linear Regression



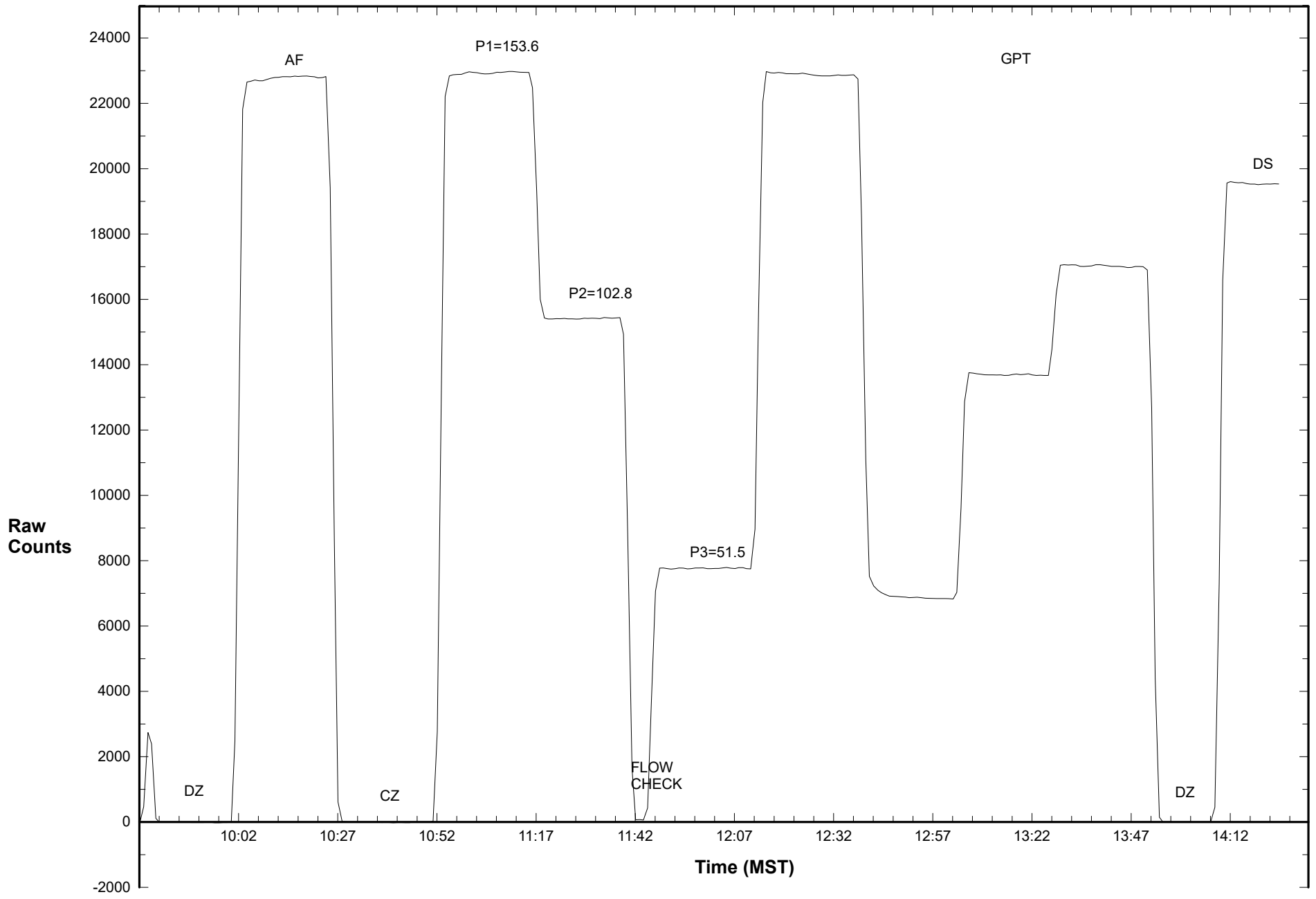
# Station 903 NO2 June 13, 2016: Linear Regression



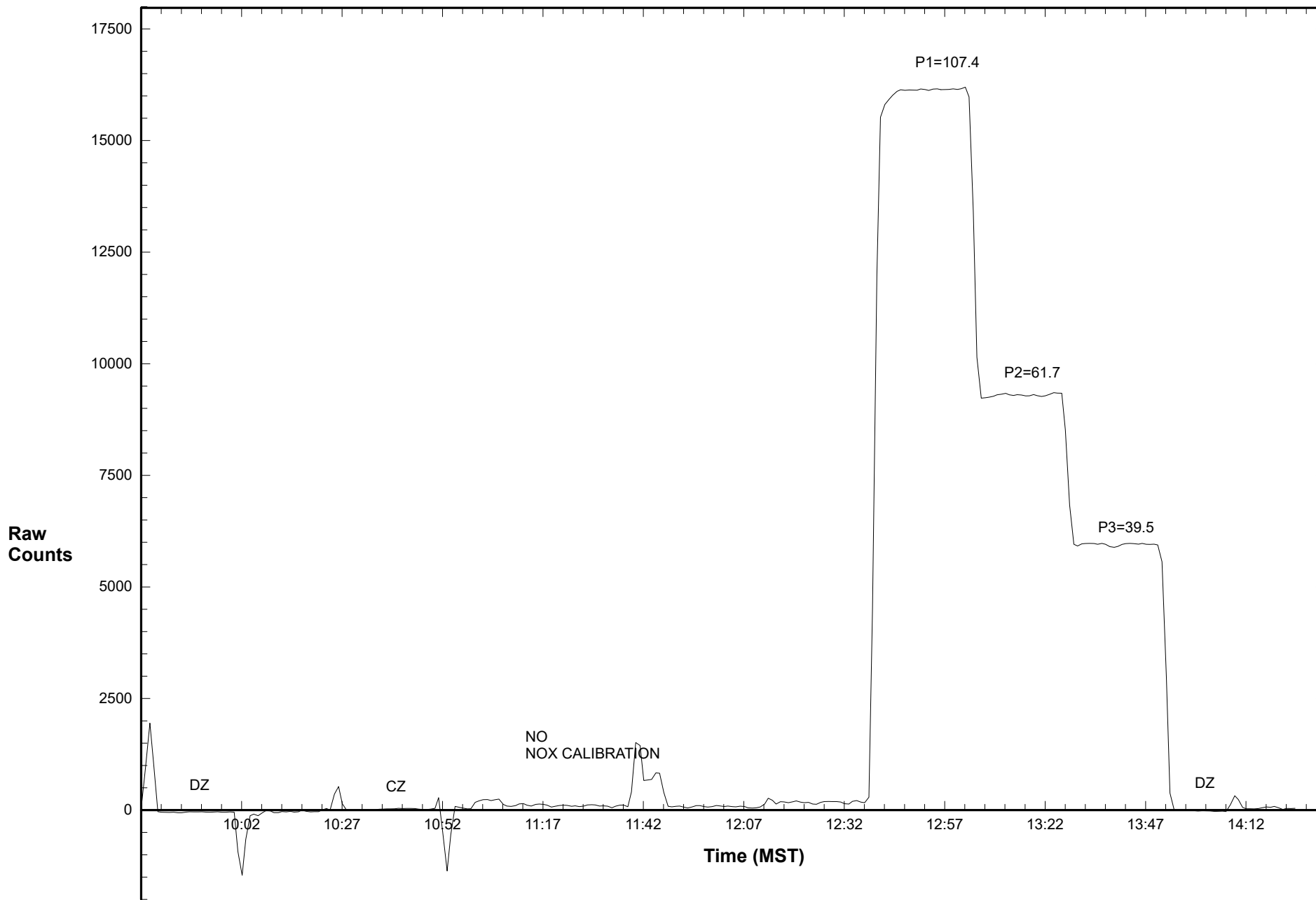
### Station 903 NOX June 13, 2016: Linear Regression



# Station 903 NO June 13, 2016: Calibration Graph

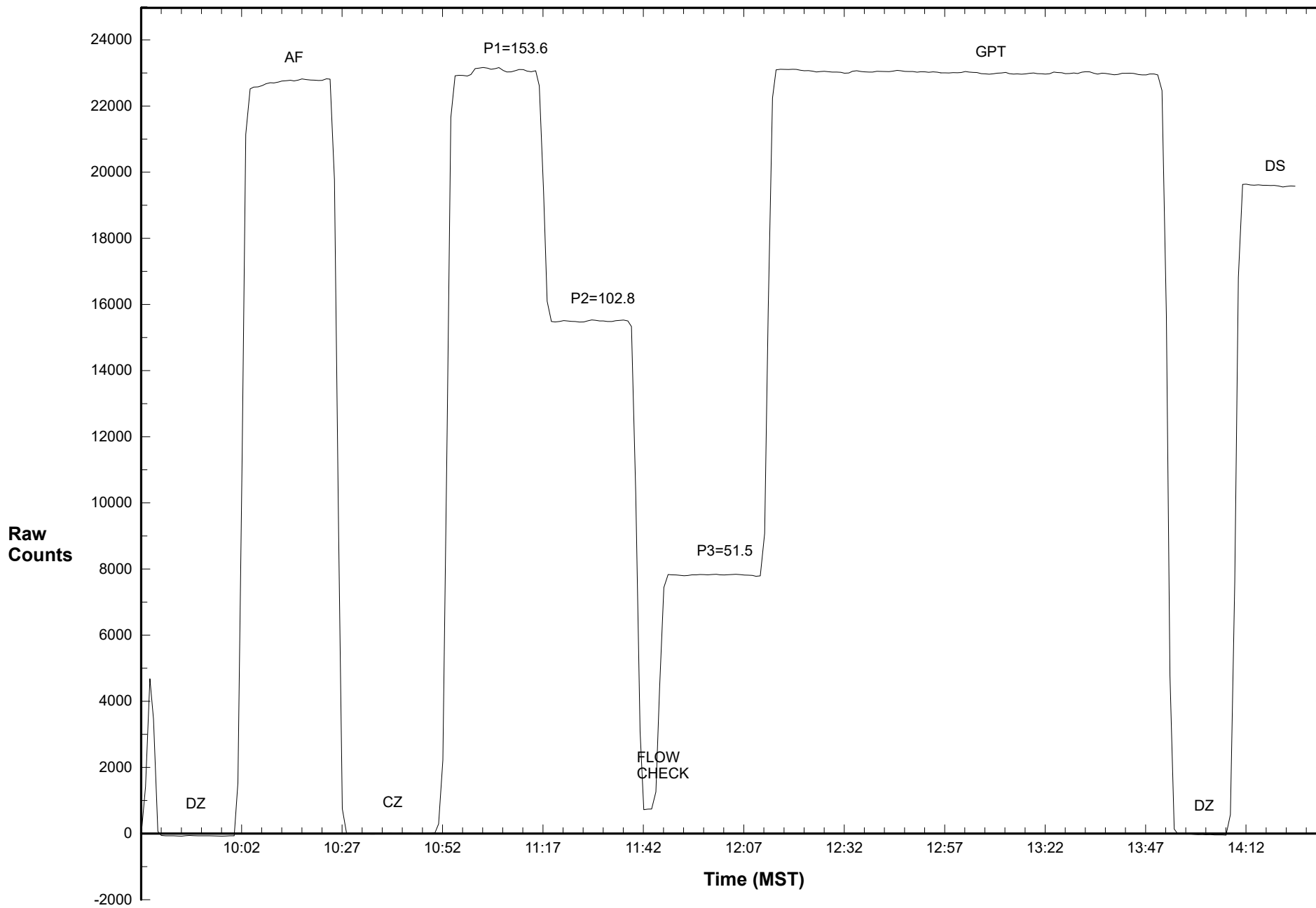


# Station 903 NO2 June 13, 2016: Calibration Graph





# Station 903 NOX June 13, 2016: Calibration Graph



# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 903, Carrot Creek

Calibration Date: June 13, 2016

Parameter: O<sub>3</sub>

Instrument: Teco 49C

Serial Number: 0432409136

Previous Calibration Date: May 26, 2016

Calibration: Routine

Calibration Equipment: 2B Tech Model 306 SN 142

Barometric Pressure: 27.00" Hg

Calibration Method: Certified Ozone Generation

Temperature: 23.8° C

Technician: L. Burns

Instrument Settings	Background	Coefficient	Monitoring Range
Previous	0.1	1.048	500 ppb
Current	0.1	1.027	500 ppb

Final Zero: -1.4 ppb

Final Span: 175.0 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	23931.0	397.8	1.003
3.000	214.0	13017.6	215.6	0.993
3.000	105.0	6460.2	106.1	0.990
3.000	0.0	12.3	-1.6	

### Results of Linear Regression

R <sub>c</sub> vs C <sub>c</sub>	Slope	Intercept	R <sup>2</sup>
Previous	59.713950	49.423980	0.999979
Current	59.885340	105.857200	0.999913
C <sub>i</sub> vs C <sub>c</sub>			
Current	1.000000	-0.000032	0.999913

Average Correction Factor: 0.995

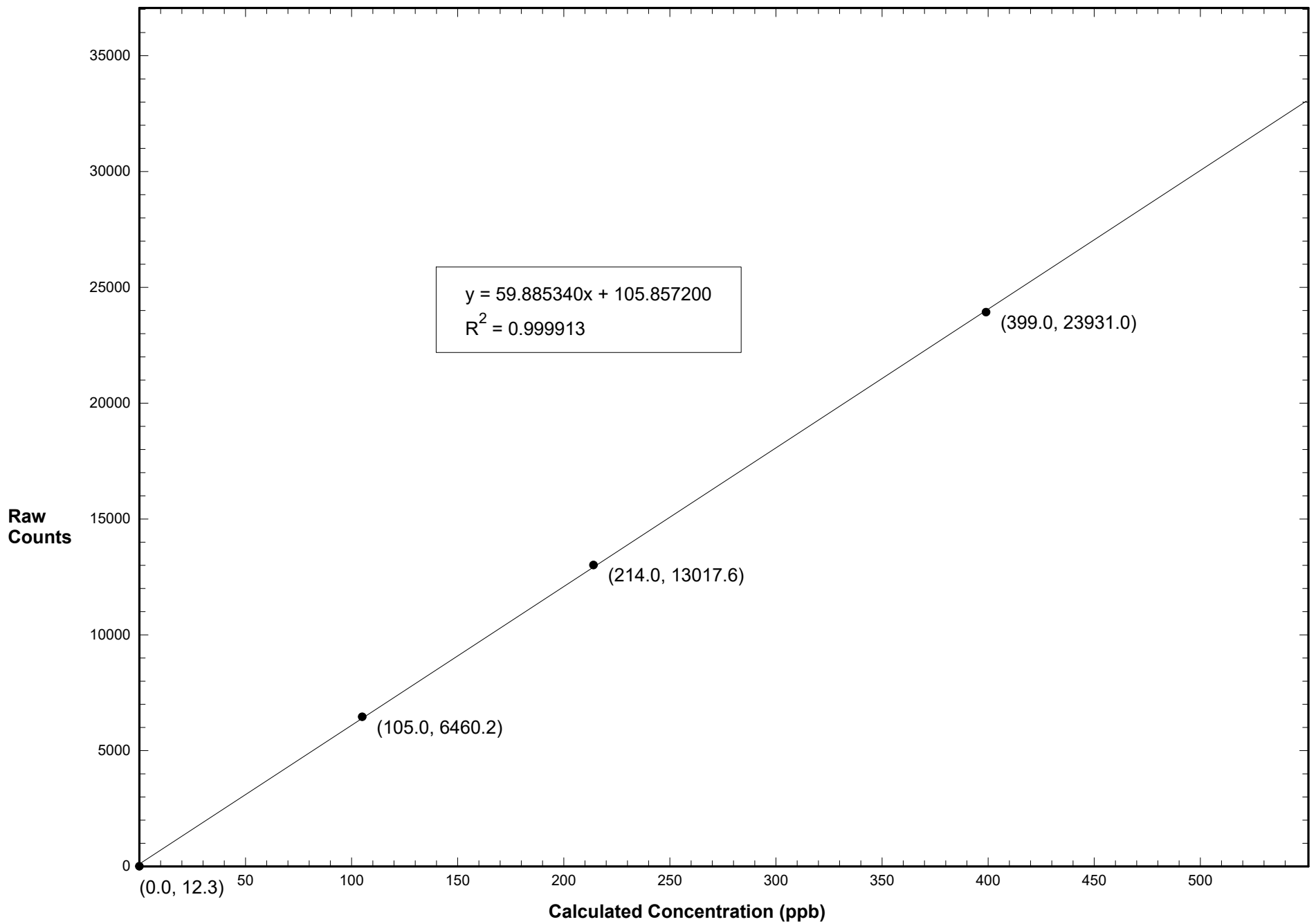
Previous Correction Factor: 1.002

Current Correction Factor: 1.003

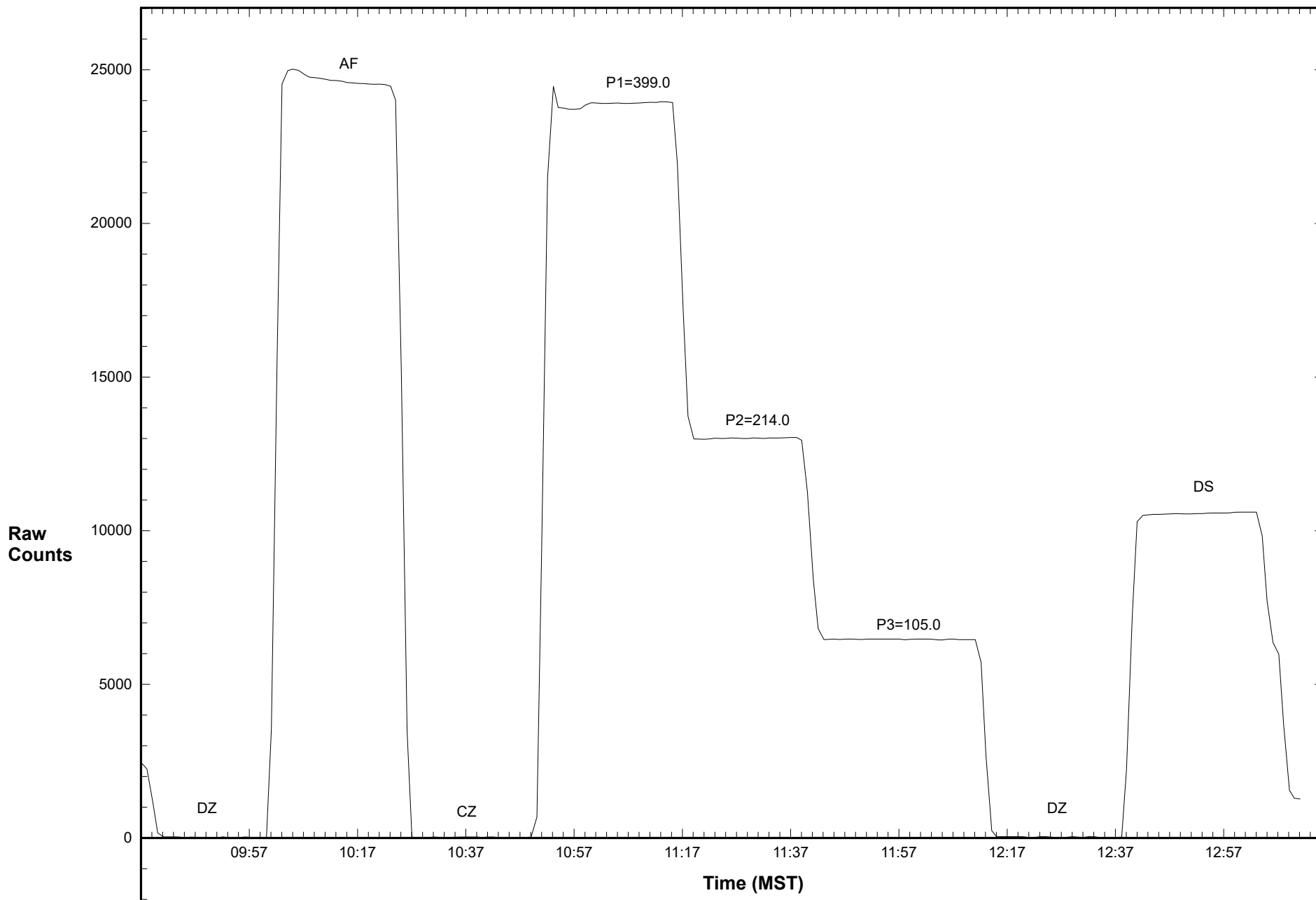
Percent Change of Correction Factor: 0.1

Comments:

### Station 903 O3 June 13, 2016: Linear Regression



# Station 903 O3 June 13, 2016: Calibration Graph



# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 903, Carrot Creek

Calibration Date: June 13, 2016

Parameter: SO<sub>2</sub>

Instrument: Teco 43i

Serial Number: 0905034789

Previous Calibration Date: May 26, 2016

Calibration: Routine

Calibration Equipment: Sabio 2010 SN 08600312

Barometric Pressure: 27.00" Hg

Calibration Method: Standard Gas Dilution

Cylinder ID: FF13698

Temperature: 23.8° 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	8.1	0.934	100 ppb
Current	7.6	0.911	100 ppb

Final Zero: 0.3 ppb

Final Span: 62.2 ppb

As Found Correction Factor: 0.986

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>
0.0748	6.011	75.1	22519.1	75.1	1.000
0.0498	6.003	50.3	15028.2	50.2	1.002
0.0249	6.007	25.2	7578.3	25.3	0.994
0.0000	6.000	0.0	-40.7	-0.1	

### Results of Linear Regression

R <sub>c</sub> vs C <sub>c</sub>	Slope	Intercept	R <sup>2</sup>
Previous	301.327200	-7.009152	0.999994
Current	300.060100	-20.784410	0.999988
C <sub>i</sub> vs C <sub>c</sub>			
Current	1.000000	0.000001	0.999987

Average Correction Factor: 0.999

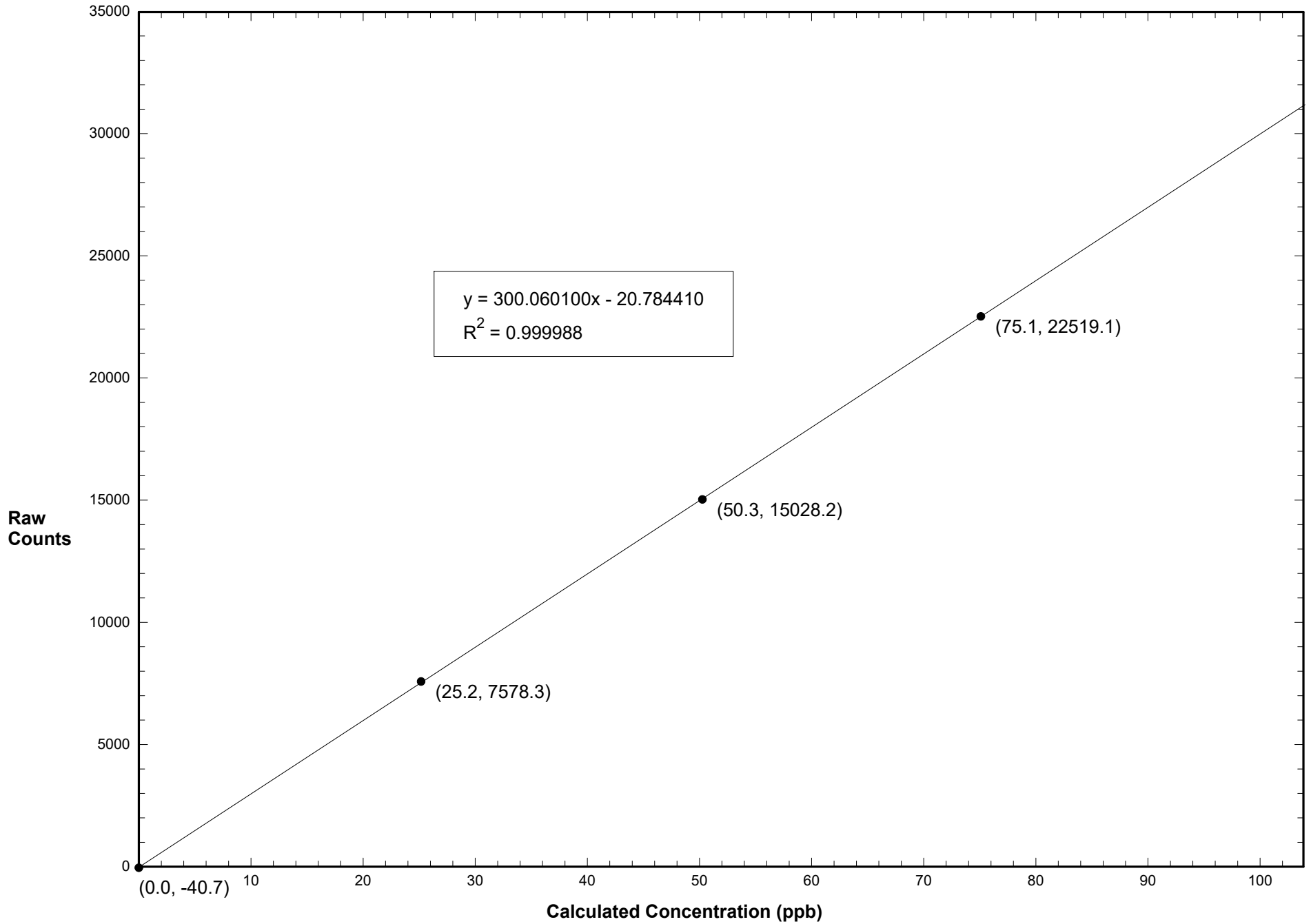
Previous Correction Factor: 1.001

Current Correction Factor: 1.000

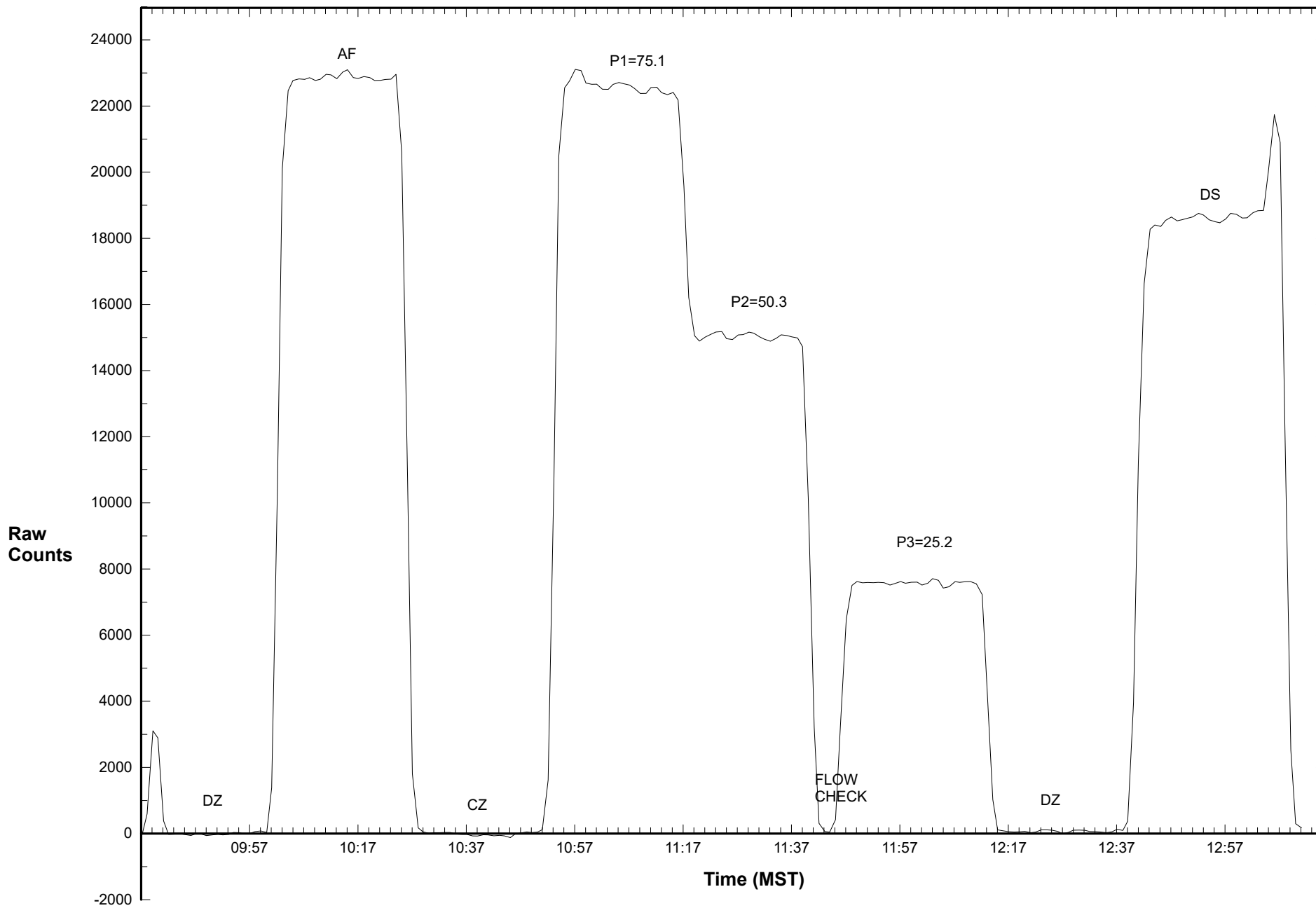
Percent Change of Correction Factor: -0.1

Comments:

# Station 903 SO2 June 13, 2016: Linear Regression



# Station 903 SO2 June 13, 2016: Calibration Graph



# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 905, Steeper

Calibration Date: June 8, 2016

Parameter: CO

Instrument: Teco 48 CTL

Serial Number: 0523012614

Previous Calibration Date: May 19, 2016

Calibration: Routine

Calibration Equipment: Sabio 2010 SN 08600312

Barometric Pressure: 25.00" Hg

Calibration Method: Standard Gas Dilution

Cylinder ID: FF23225

Temperature: 21.7° C

Cylinder Concentration: 2611 ppm CO

Technician: L. Burns

Instrument Settings	Zero Pot	Span Pot	Monitoring Range
Previous	11.809	1.119	50 ppm
Current	12.059	1.135	50 ppm

Final Zero: 0.0 ppm

Final Span: 30.5 ppm

As Found Correction Factor: 1.001

CO Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration $C_c$ (ppm)	Raw Count Output $R_c$	Indicated Concentration $C_i$ (ppm)	Correction Factor $C_c/C_i$
0.0749	6.001	32.2	19361.9	32.2	0.999
0.0500	6.006	21.6	12982.8	21.6	1.000
0.0250	6.005	10.8	6505.7	10.7	1.007
0.0000	6.000	0.0	111.8	0.1	

### Results of Linear Regression

$R_c$ vs $C_c$	Slope	Intercept	$R^2$
Previous	590.618300	294.543000	0.999954
Current	598.303800	80.687280	0.999984
$C_i$ vs $C_c$			
Current	1.000000	0.000005	0.999984

Average Correction Factor: 1.002

Previous Correction Factor: 1.001

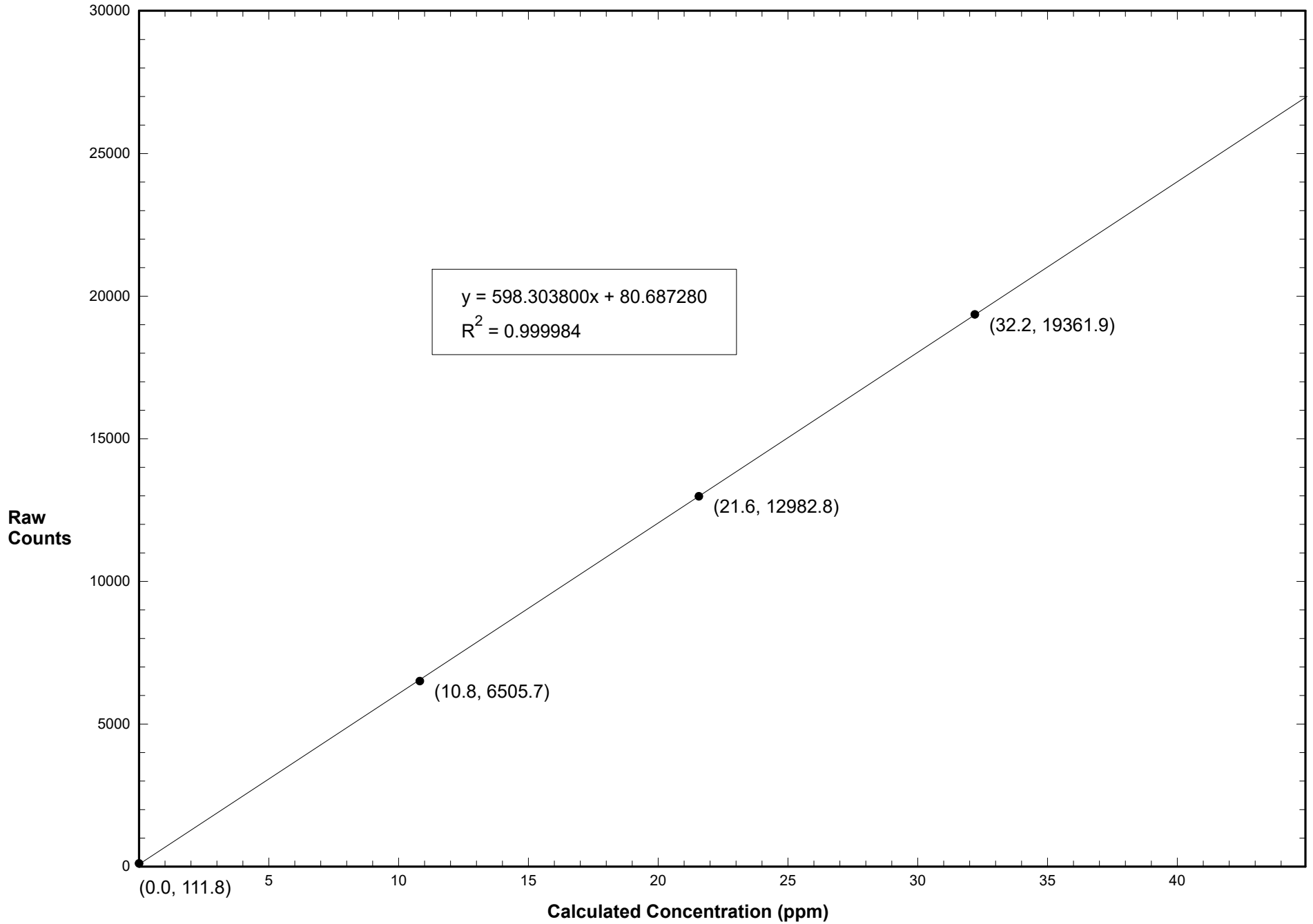
Current Correction Factor: 0.999

Percent Change of Correction Factor: -0.2

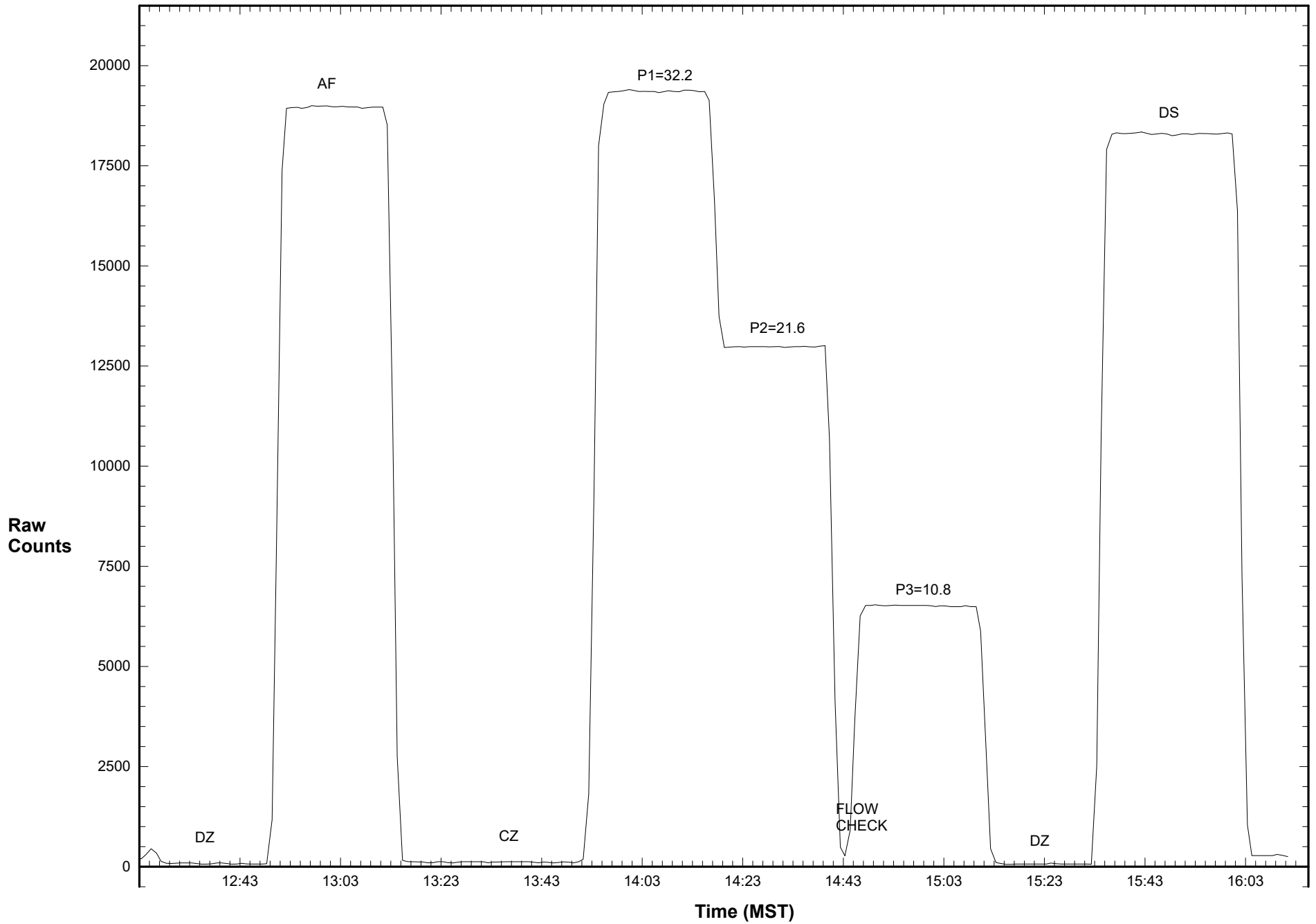
Comments:



# Station 905 CO June 8, 2016: Linear Regression



# Station 905 CO June 8, 2016: Calibration Graph



# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 905, Steeper

Calibration Date: June 8, 2016

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

Instrument: TECO 42i

Serial Number: 1327059403

Previous Calibration Date: May 19, 2016

Calibration: Routine

Calibration Equipment: Sabio 2010 SN 08600312

Barometric Pressure: 25.00" Hg

Calibration Method: Standard Gas Dilution/Gas Phase Titration

Cylinder ID: FF23225

Temperature: 21.7° C

Cylinder Concentration: 11.9 ppm NO

In Service: December 10, 2013

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	4.0	6.4	NA	1.084	0.995	1.002	200 ppb
Current	3.8	4.3	NA	1.020	1.006	1.002	200 ppb

NO	Final Zero: -0.6 ppb	Final Span: 147.7 ppb	As Found Correction Factor: 0.951
NO <sub>2</sub>	Final Zero: -0.9 ppb	Final Span: 0.2 ppb	As Found Correction Factor: NA
NO <sub>x</sub>	Final Zero: -0.9 ppb	Final Span: 147.4 ppb	As Found Correction Factor: 0.949

Results of Linear Regression			Slope	Intercept	R <sup>2</sup>
NO	R <sub>c</sub> vs C <sub>c</sub>	Previous	149.423100	52.425790	0.999710
		Current	149.453900	91.714160	0.999912
	C <sub>i</sub> vs C <sub>c</sub>	Current	1.000000	-0.000043	0.999912
NO <sub>2</sub>	R <sub>c</sub> vs C <sub>c</sub>	Previous	148.230000	18.184620	0.999710
		Current	147.192100	88.183340	0.999779
	C <sub>i</sub> vs C <sub>c</sub>	Current	1.000000	0.000009	0.999779
NO <sub>x</sub>	R <sub>c</sub> vs C <sub>c</sub>	Previous	148.497300	105.381100	0.999710
		Current	150.292700	87.661410	0.999906
	C <sub>i</sub> vs C <sub>c</sub>	Current	1.000000	0.000000	0.999906

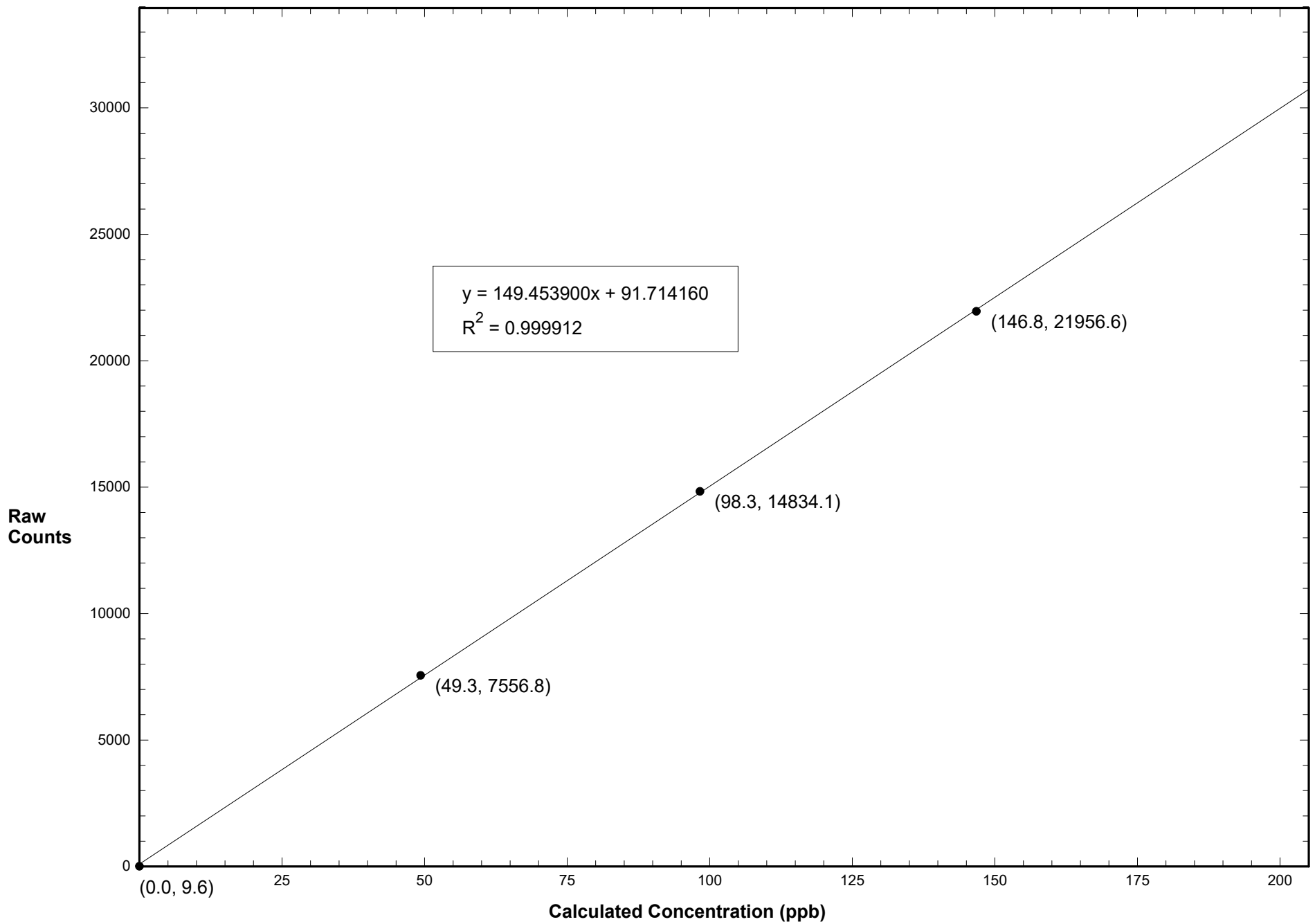
Comments:

**Calibration Data Summary (Page 2)**

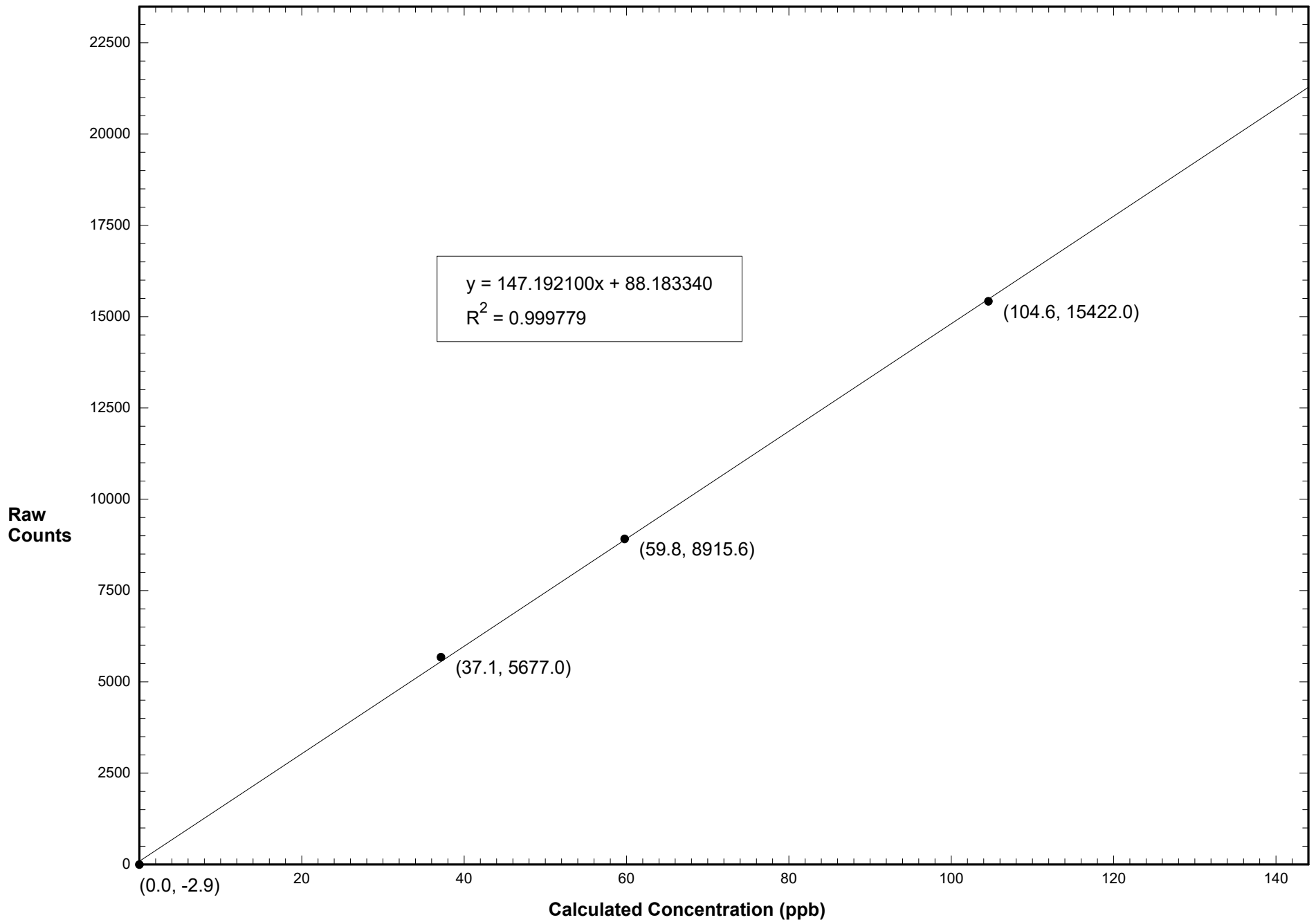
June 8, 2016 - Station 905

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>		
0.07493	6.001	146.8	21956.6	146.3	1.003		
0.05002	6.006	98.3	14834.1	98.6	0.996		
0.02498	6.005	49.3	7556.8	49.9	0.987		
0.00000	6.000	0.0	9.6	-0.5			
NO Calibration					Average Correction Factor:	0.995	
0.07493	6.001	146.8	22072.9	146.3	1.003		
0.05002	6.006	98.3	14914.9	98.7	0.996		
0.02498	6.005	49.3	7597.5	50.0	0.987		
0.00000	6.000	0.0	2.5	-0.6			
NO <sub>x</sub> Calibration					Average Correction Factor:	0.995	
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>
152.6	7263.5	48.0	104.6	15422.0	104.2	1.004	0.996
152.6	13961.4	92.8	59.8	8915.6	60.0	0.997	1.003
152.6	17342.6	115.4	37.1	5677.0	38.0	0.978	1.022
			0.0	-2.9	-0.6		
					Average Correction Factor:	0.993	
NO <sub>2</sub> Gas Phase Titration					Average Converter Efficiency: 1.007		
Parameter	Correction Factor (Previous)	Correction Factor: (Current)	Percent Change of Correction Factor				
NO	1.002	1.003	0.1				
NO <sub>2</sub>	1.000	1.004	0.4				
NO <sub>x</sub>	1.002	1.003	0.1				

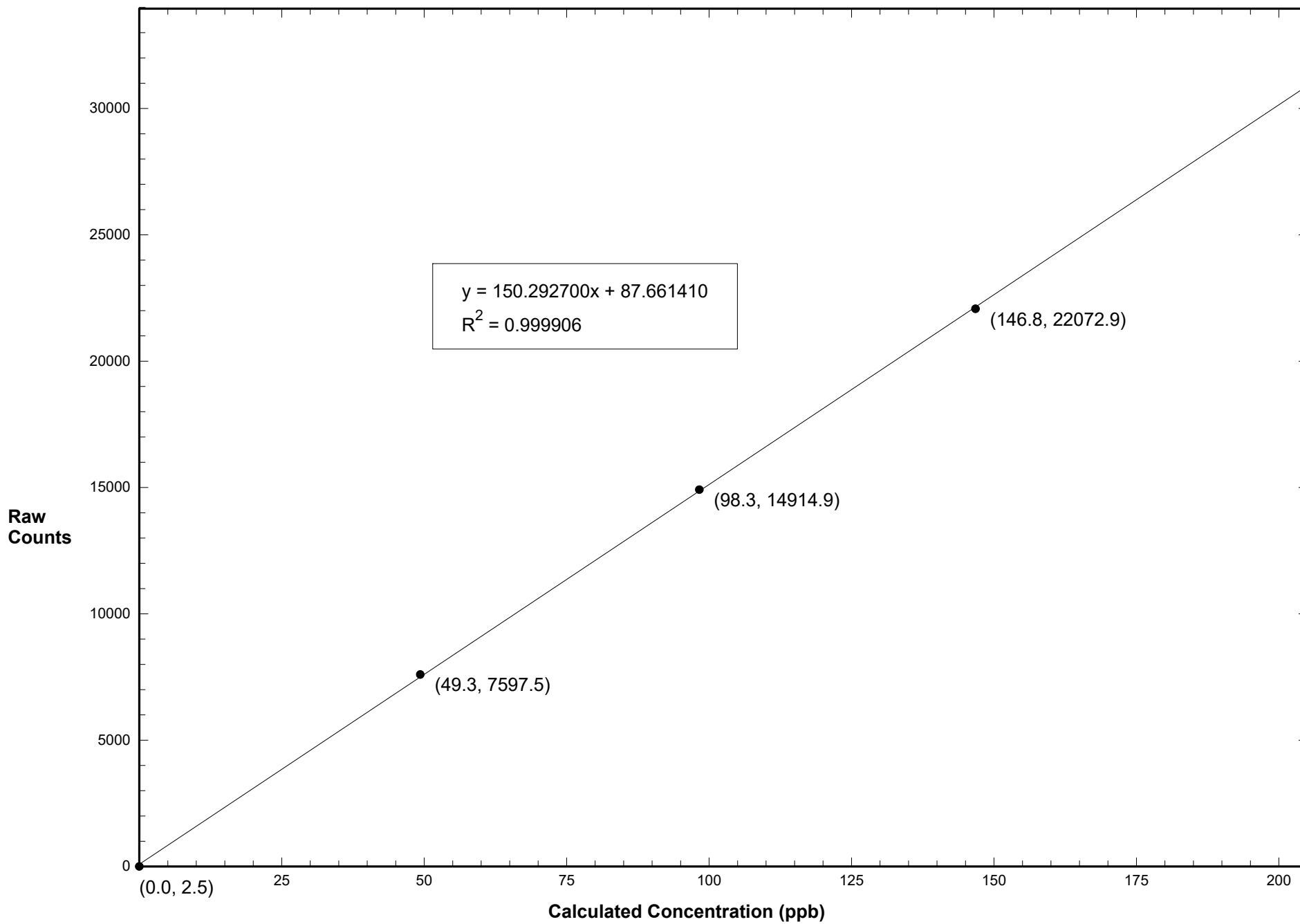
# Station 905 NO June 8, 2016: Linear Regression



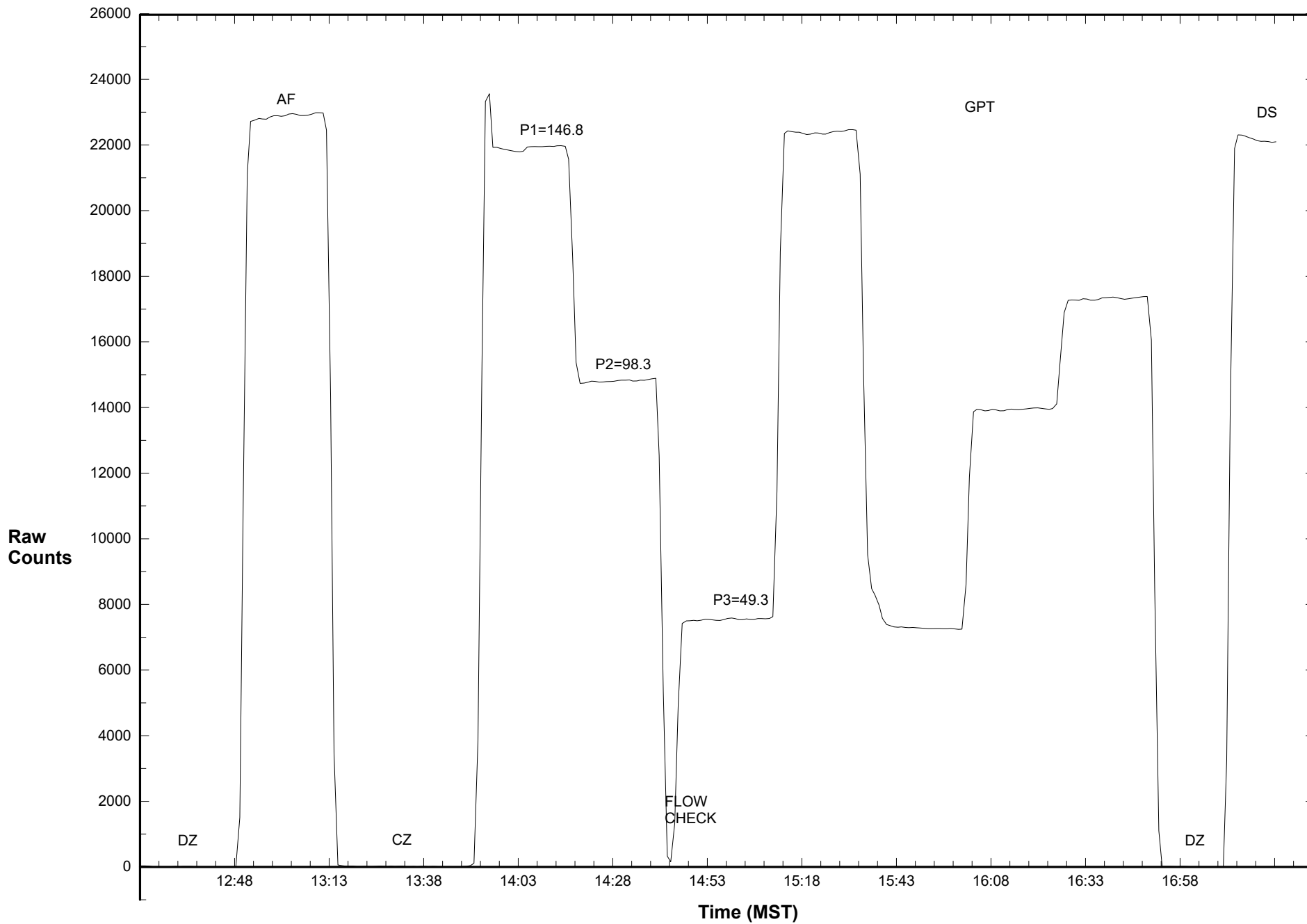
### Station 905 NO2 June 8, 2016: Linear Regression



### Station 905 NOX June 8, 2016: Linear Regression

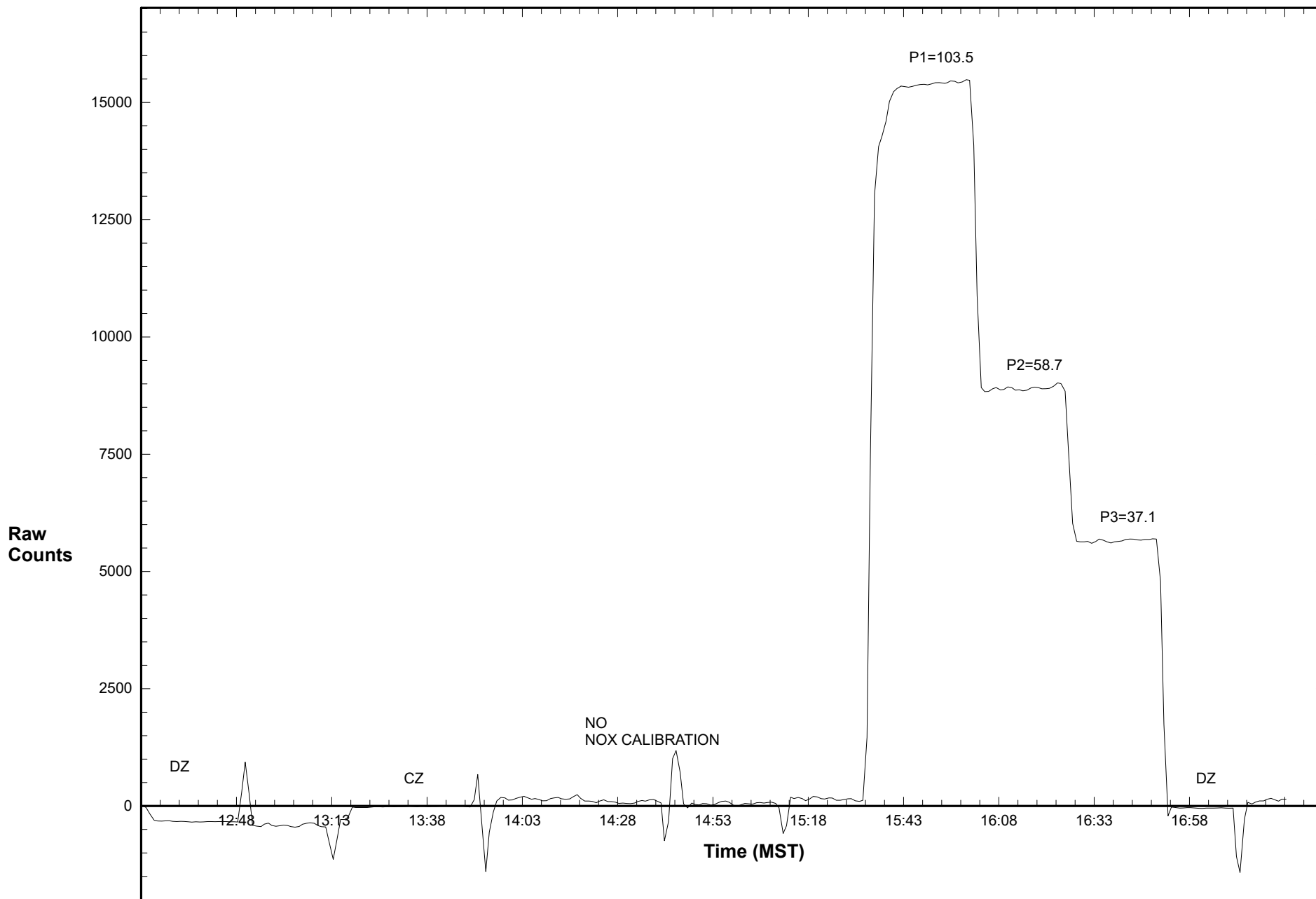


# Station 905 NO June 8, 2016: Calibration Graph

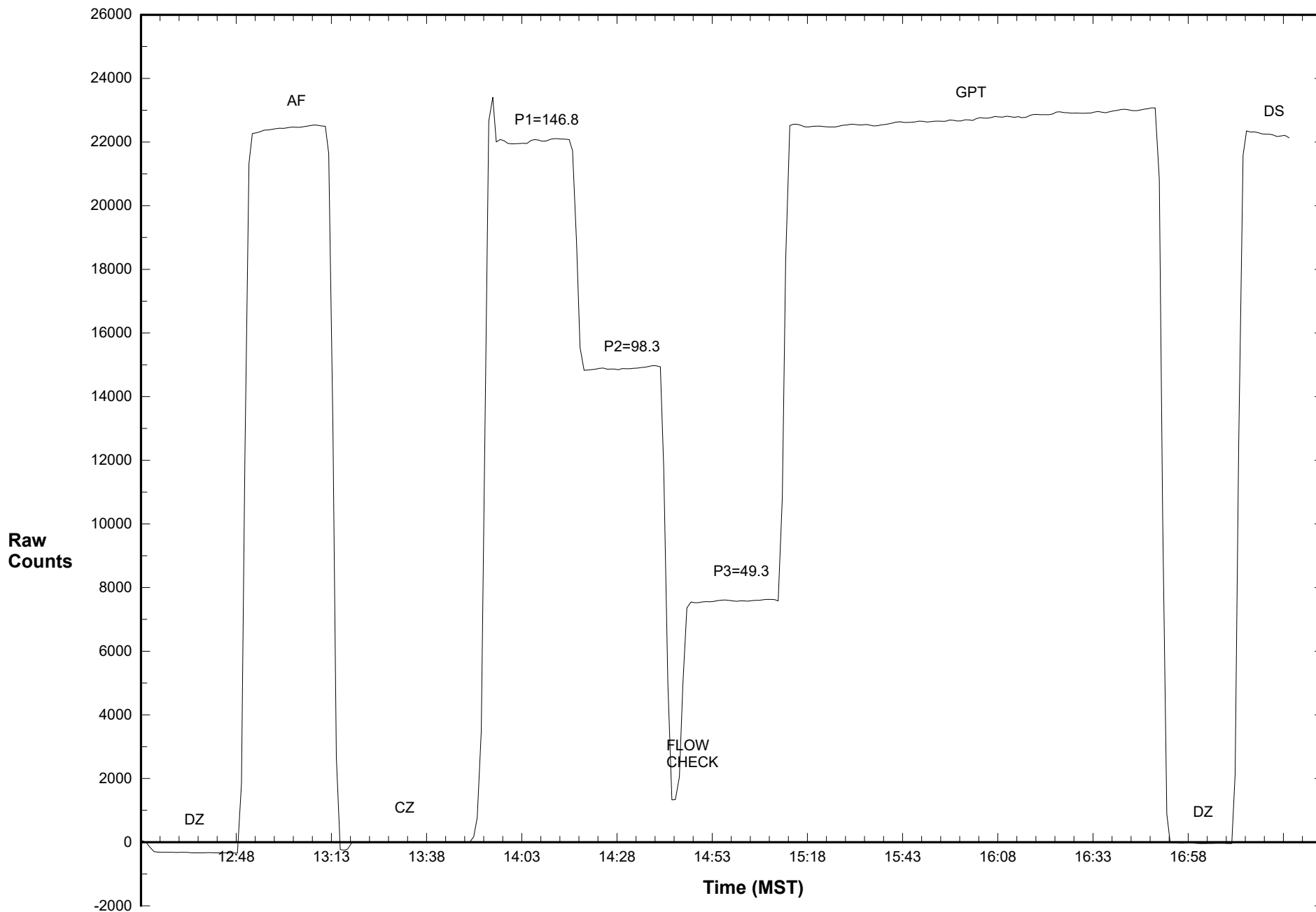




# Station 905 NO2 June 8, 2016: Calibration Graph



# Station 905 NOX June 8, 2016: Calibration Graph



# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 905, Steeper

Calibration Date: June 8, 2016

Parameter: O<sub>3</sub>

Instrument: Teco 49i

Serial Number: 1407861290

Previous Calibration Date: May 19, 2016

Calibration: Routine

Calibration Equipment: 2B Tech Model 306 SN142

Barometric Pressure: 25.00" Hg

Calibration Method: Certified Ozone Generator

Temperature: 21.7° C

Technician: L. Burns

Instrument Settings	Background	Coefficient	Monitoring Range
Previous	-0.0	1.078	500 ppb
Current	0.1	1.078	500 ppb

Final Zero: -2.2 ppb

Final Span: 366.9 ppb

As Found Correction Factor: 0.972

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	23925.6	397.6	1.004
3.000	214.0	13045.9	215.7	0.992
3.000	105.0	6532.6	106.9	0.982
3.000	0.0	2.8	-2.2	

### Results of Linear Regression

R <sub>c</sub> vs C <sub>c</sub>	Slope	Intercept	R <sup>2</sup>
Previous	59.706350	71.981060	0.999963
Current	59.840610	135.335200	0.999843
C <sub>i</sub> vs C <sub>c</sub>			
Current	1.000000	0.000000	0.999843

Average Correction Factor: 0.993

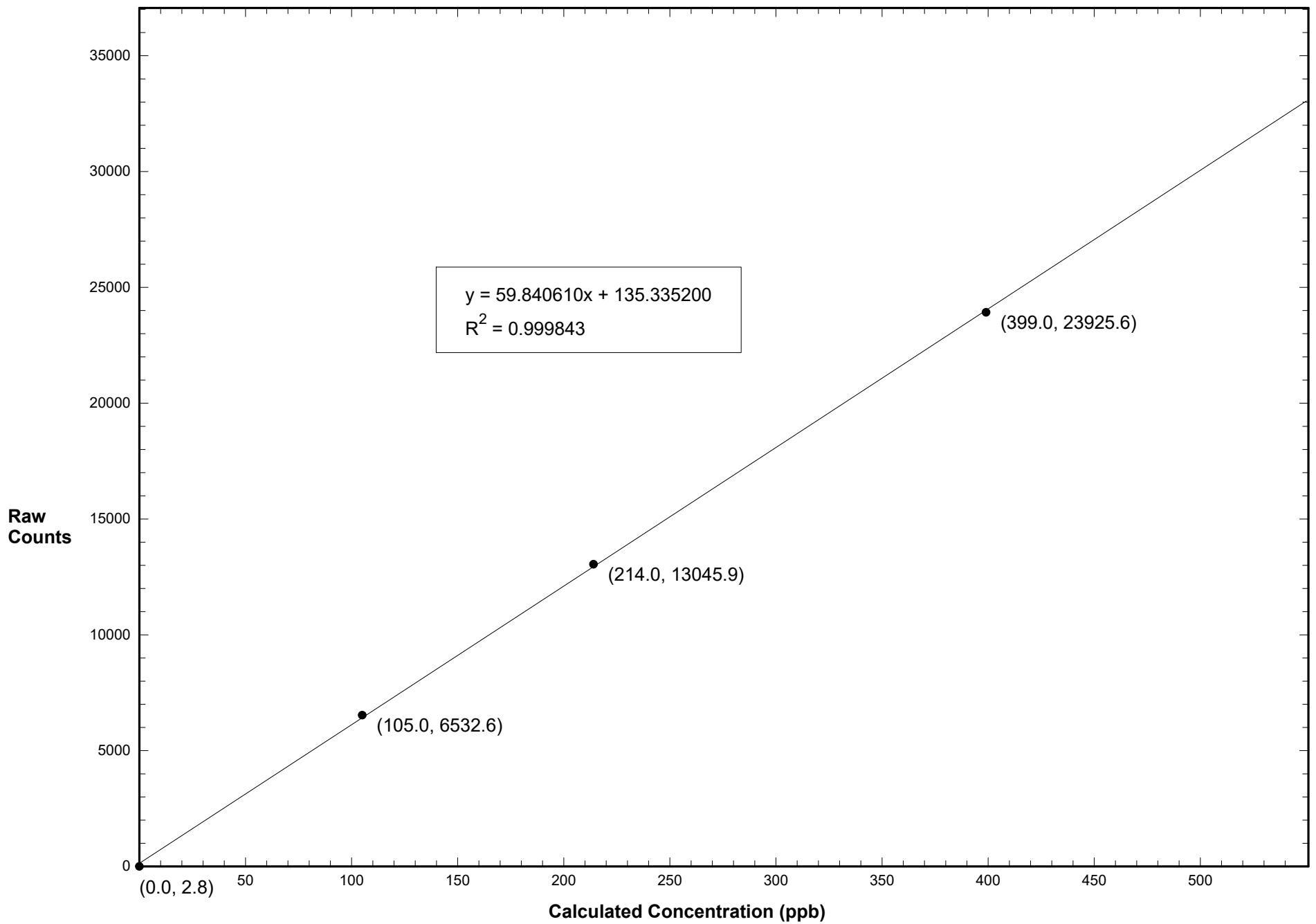
Previous Correction Factor: 1.002

Current Correction Factor: 1.004

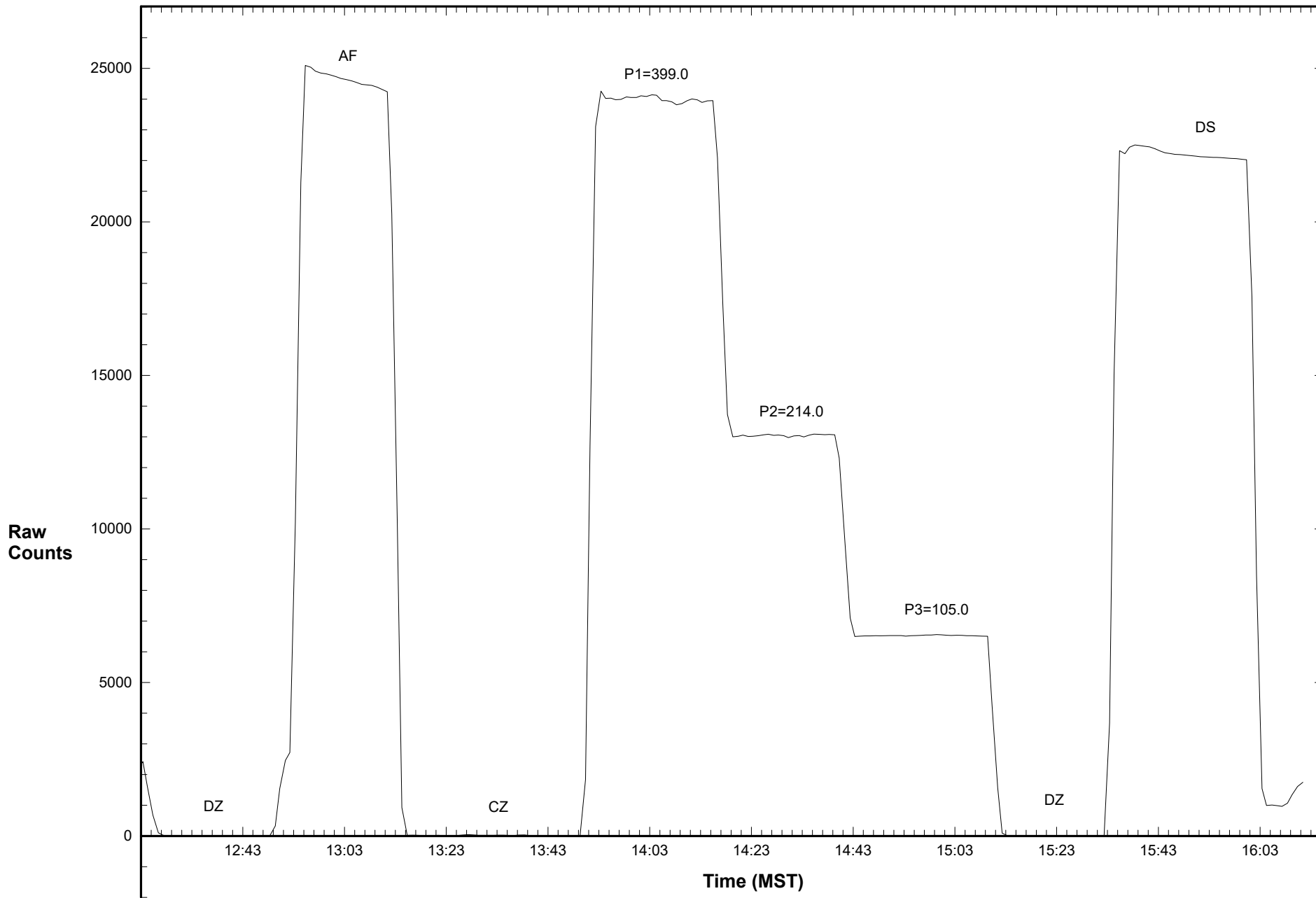
Percent Change of Correction Factor: 0.2

Comments:

### Station 905 O3 June 8, 2016: Linear Regression



# Station 905 O3 June 8, 2016: Calibration Graph



# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 905, Steeper

Calibration Date: June 8, 2016

Parameter: SO<sub>2</sub>

Instrument: Teco 43C

Serial Number: 43CTL-68293-365

Previous Calibration Date: May 19, 2016

Calibration: Routine

Calibration Equipment: Sabio 2010 SN 08600312

Barometric Pressure: 25.00" Hg

Calibration Method: Standard Gas Dilution

Cylinder ID: FF23225

Temperature: 21.7° C

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

In Service: December 10, 2013

Technician: L. Burns

Instrument Settings	SO <sub>2</sub> bkg ppb	SO <sub>2</sub> Coefficient	Monitoring Range
Previous	2.86	1.097	100 ppb
Current	2.78	1.079	100 ppb

Final Zero: 0.1 ppb

Final Span: 67.5 ppb

As Found Correction Factor: 0.986

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>
0.0749	6.001	73.5	22159.0	73.5	1.000
0.0500	6.006	49.2	14876.3	49.3	0.998
0.0250	6.005	24.7	7378.1	24.5	1.009
0.0000	6.000	0.0	36.0	0.1	

### Results of Linear Regression

R <sub>c</sub> vs C <sub>c</sub>	Slope	Intercept	R <sup>2</sup>
Previous	302.154200	0.572333	0.999996
Current	301.450600	2.588819	0.999975
C <sub>i</sub> vs C <sub>c</sub>			
Current	1.000000	-0.000012	0.999975

Average Correction Factor: 1.002

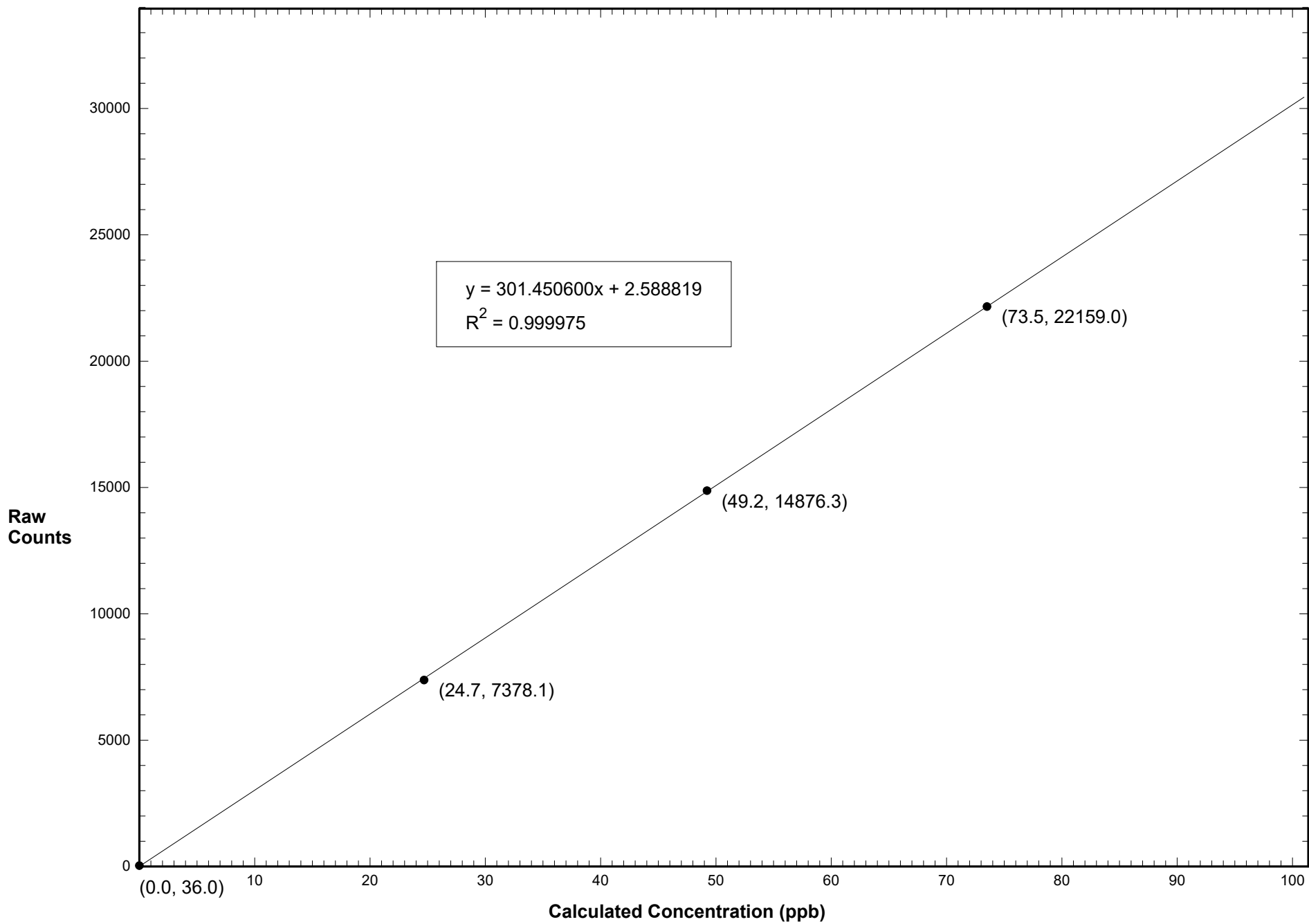
Previous Correction Factor: 1.000

Current Correction Factor: 1.000

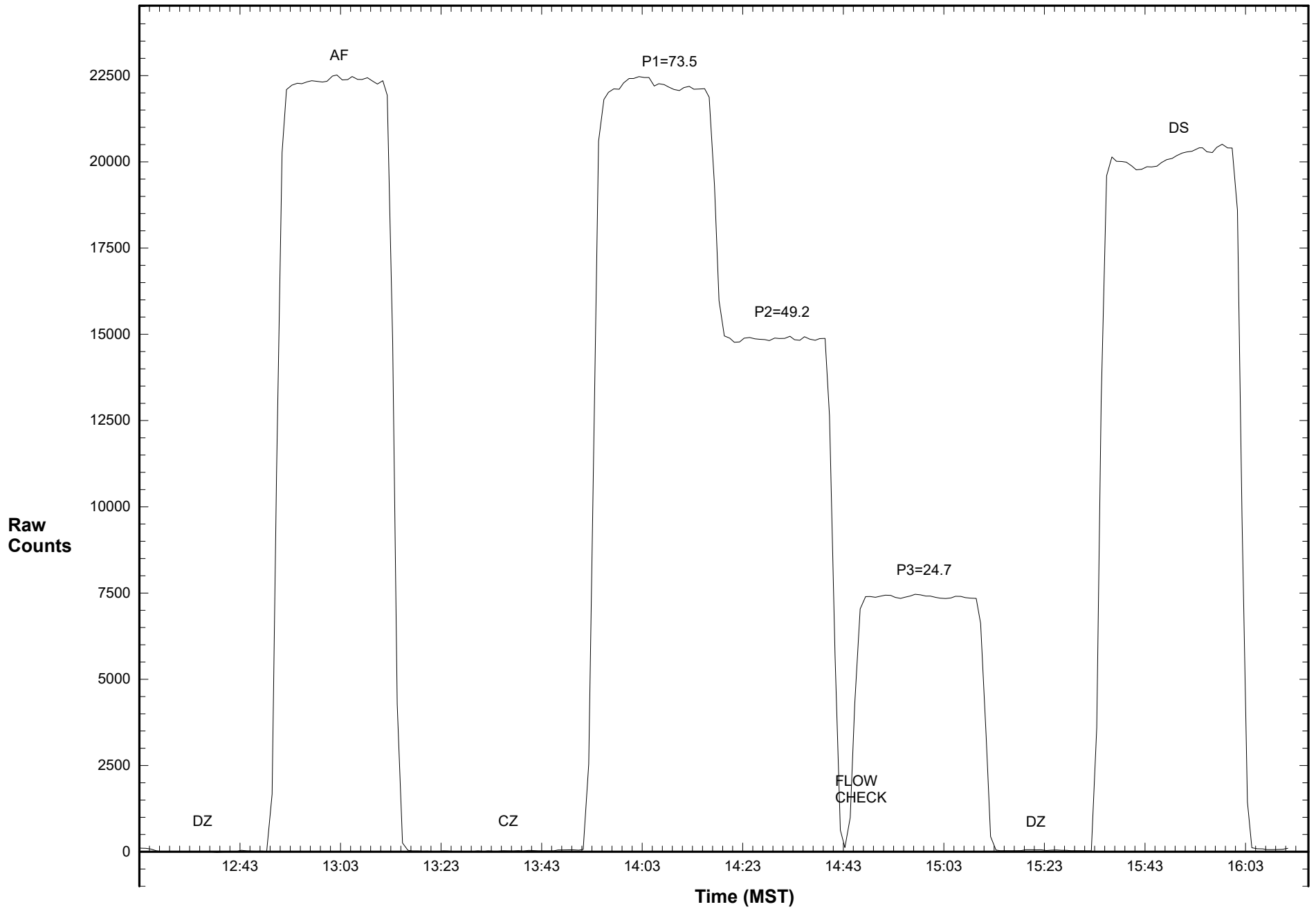
Percent Change of Correction Factor: 0.0

Comments:

# Station 905 SO2 June 8, 2016: Linear Regression



# Station 905 SO2 June 8, 2016: Calibration Graph





# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 912, Edson

Calibration Date: June 10, 2016

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

Instrument: Teco 42i

Serial Number: 1150790047

Previous Calibration Date: May 17, 2016

Calibration: Routine

Calibration Equipment: Sabio 2010 SN 08600312

Barometric Pressure: 26.90" Hg

Calibration Method: Standard Gas Dilution/GPT

Cylinder ID: FF 13698

Temperature: 21.5° 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	11.6	12.5	NA	1.227	0.997	1.000	200 ppb
Current	12.6	12.8	NA	1.317	1.005	1.000	200 ppb

NO	Final Zero: 0.0 ppb	Final Span: 157.9 ppb	As Found Correction Factor: 1.073
NO <sub>2</sub>	Final Zero: -0.4 ppb	Final Span: 0.4 ppb	As Found Correction Factor: NA
NO <sub>x</sub>	Final Zero: 0.0 ppb	Final Span: 157.5 ppb	As Found Correction Factor: 1.074

Results of Linear Regression			Slope	Intercept	R <sup>2</sup>
NO	R <sub>c</sub> vs C <sub>c</sub>	Previous	149.981400	52.641280	0.999957
		Current	149.192000	-5.537307	0.999992
	C <sub>i</sub> vs C <sub>c</sub>	Current	1.000000	0.000000	0.999992
NO <sub>2</sub>	R <sub>c</sub> vs C <sub>c</sub>	Previous	153.838400	-677.116400	0.999957
		Current	150.305200	43.504740	0.999952
	C <sub>i</sub> vs C <sub>c</sub>	Current	1.000000	-0.000011	0.999952
NO <sub>x</sub>	R <sub>c</sub> vs C <sub>c</sub>	Previous	150.264900	60.948660	0.999957
		Current	150.652800	-10.702390	0.999990
	C <sub>i</sub> vs C <sub>c</sub>	Current	1.000000	-0.000002	0.999990

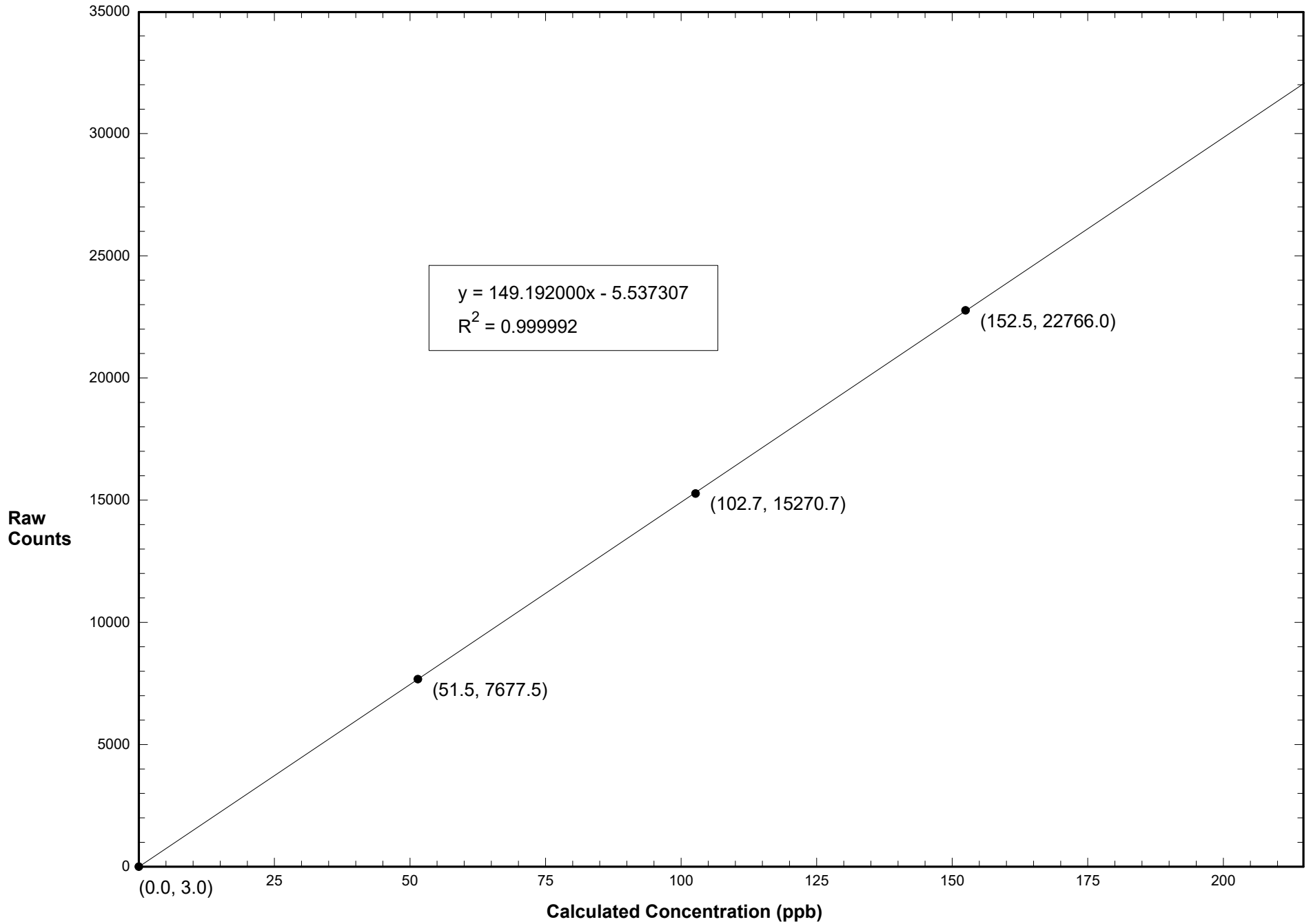
Comments:

**Calibration Data Summary (Page 2)**

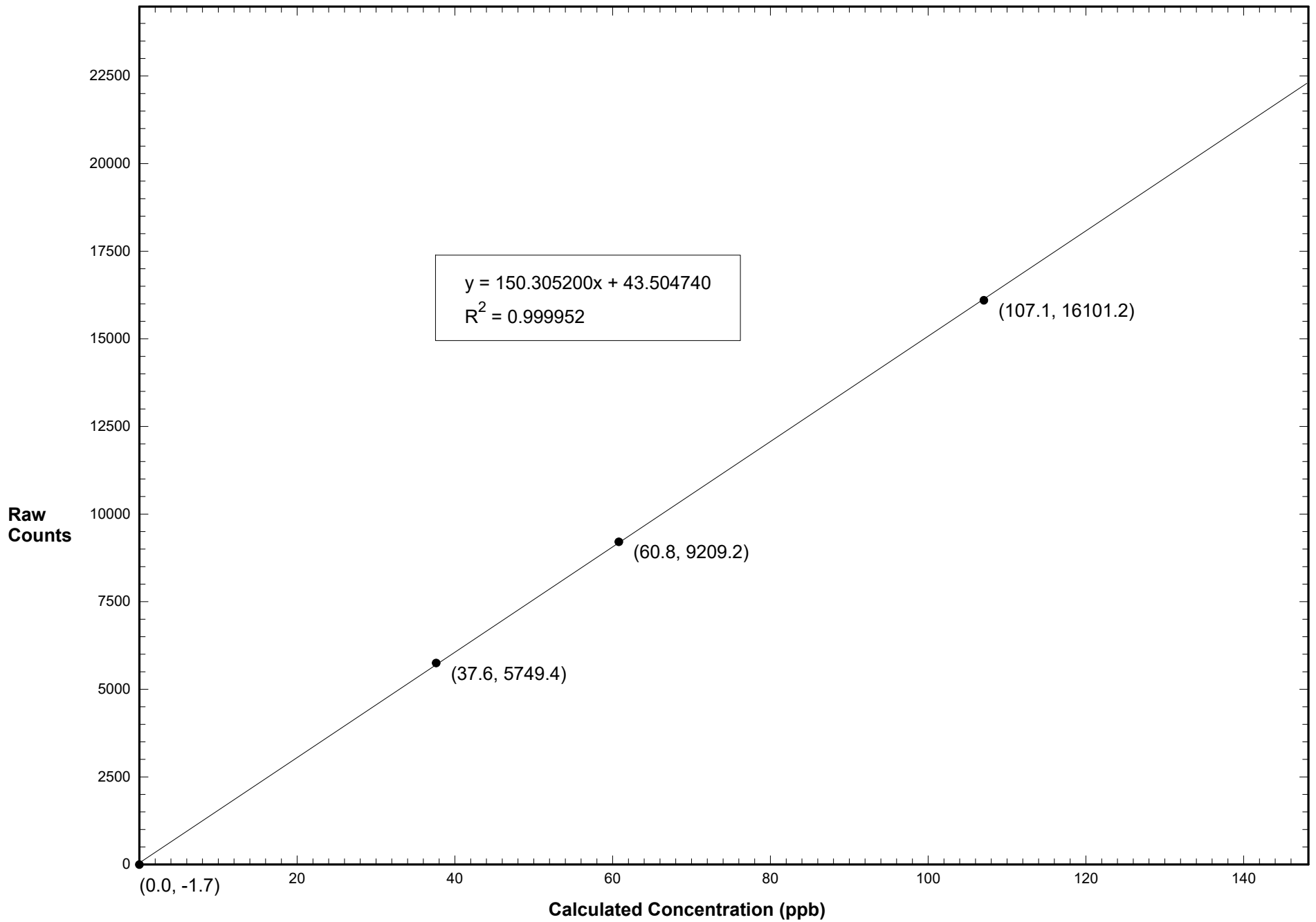
June 10, 2016 - Station 912

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>		
0.07468	6.048	152.5	22766.0	152.6	0.999		
0.04972	6.004	102.7	15270.7	102.4	1.003		
0.02479	5.998	51.5	7677.5	51.5	0.999		
0.00000	6.000	0.0	3.0	0.1			
NO Calibration					Average Correction Factor:	1.000	
0.07468	6.048	152.5	22987.0	152.7	0.999		
0.04972	6.004	102.7	15411.4	102.4	1.003		
0.02479	5.998	51.5	7745.5	51.5	0.999		
0.00000	6.000	0.0	0.5	0.1			
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>
152.4	6757.9	45.3	107.1	16101.2	106.8	1.002	0.998
152.4	13662.6	91.6	60.8	9209.2	61.0	0.997	1.003
152.4	17116.7	114.8	37.6	5749.4	38.0	0.991	1.009
			0.0	-1.7	-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	0.999	-0.3				
NO <sub>2</sub>	0.993	1.002	0.9				
NO <sub>x</sub>	1.002	0.999	-0.3				

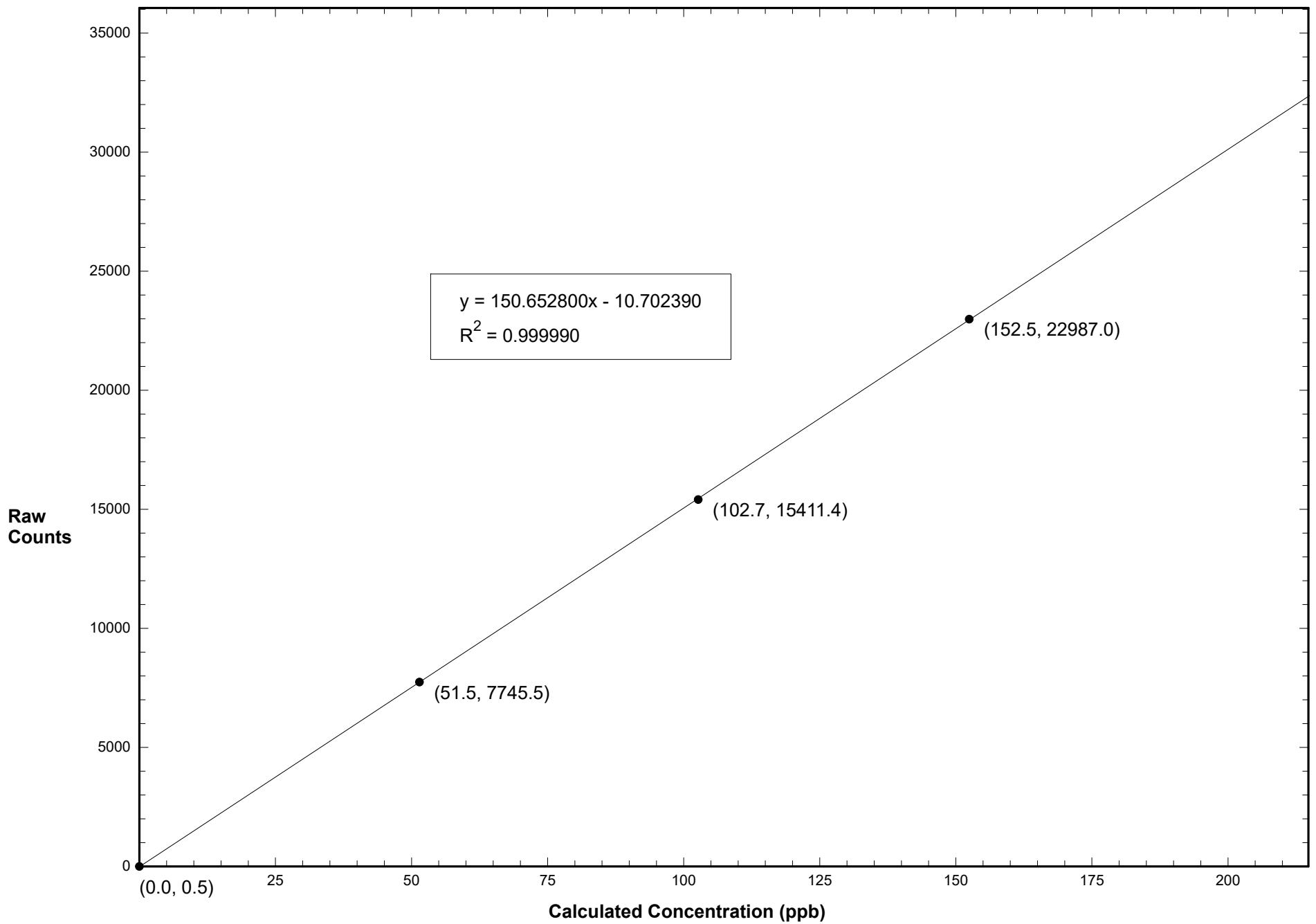
# Station 912 NO June 10, 2016: Linear Regression



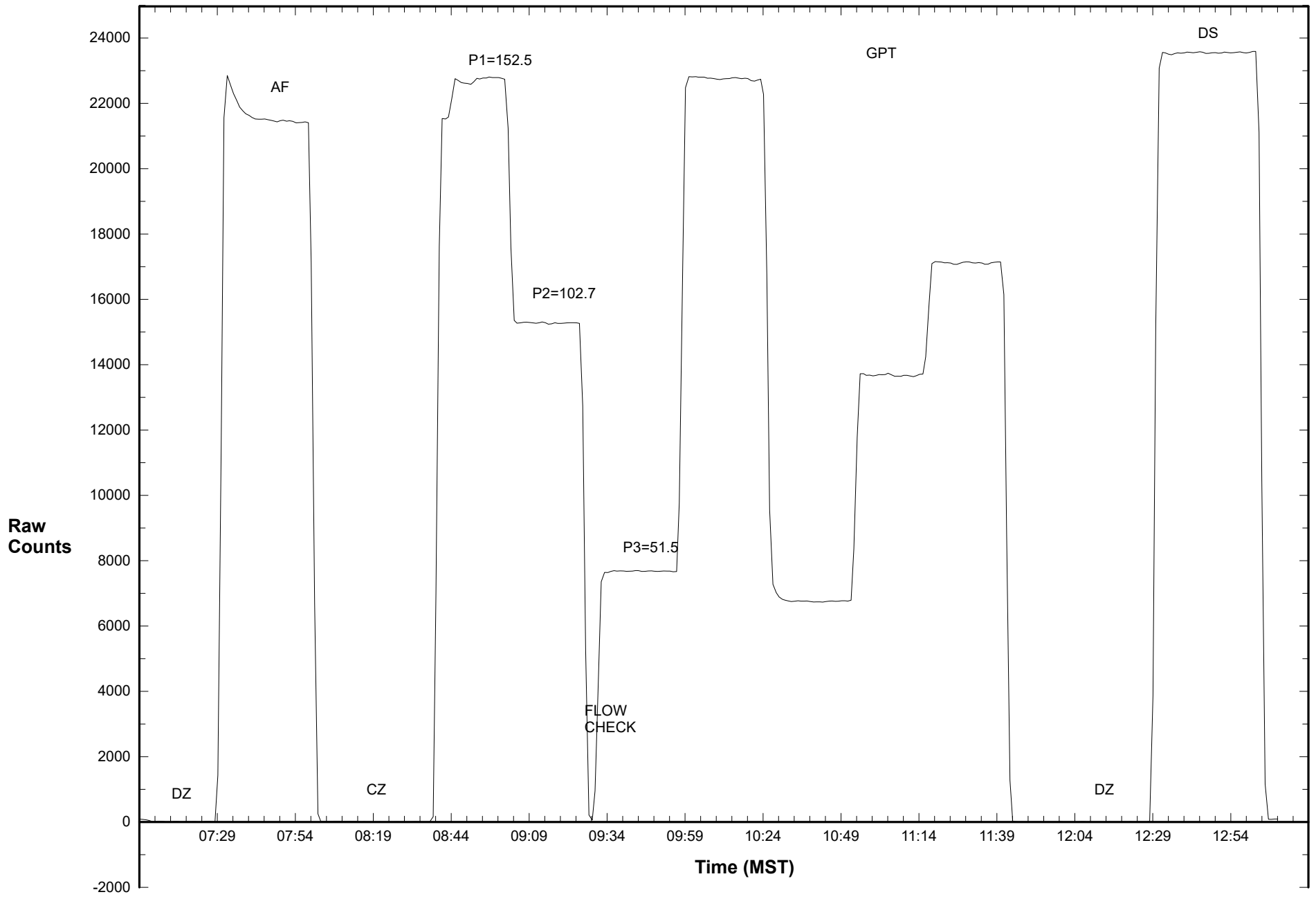
# Station 912 NO2 June 10, 2016: Linear Regression



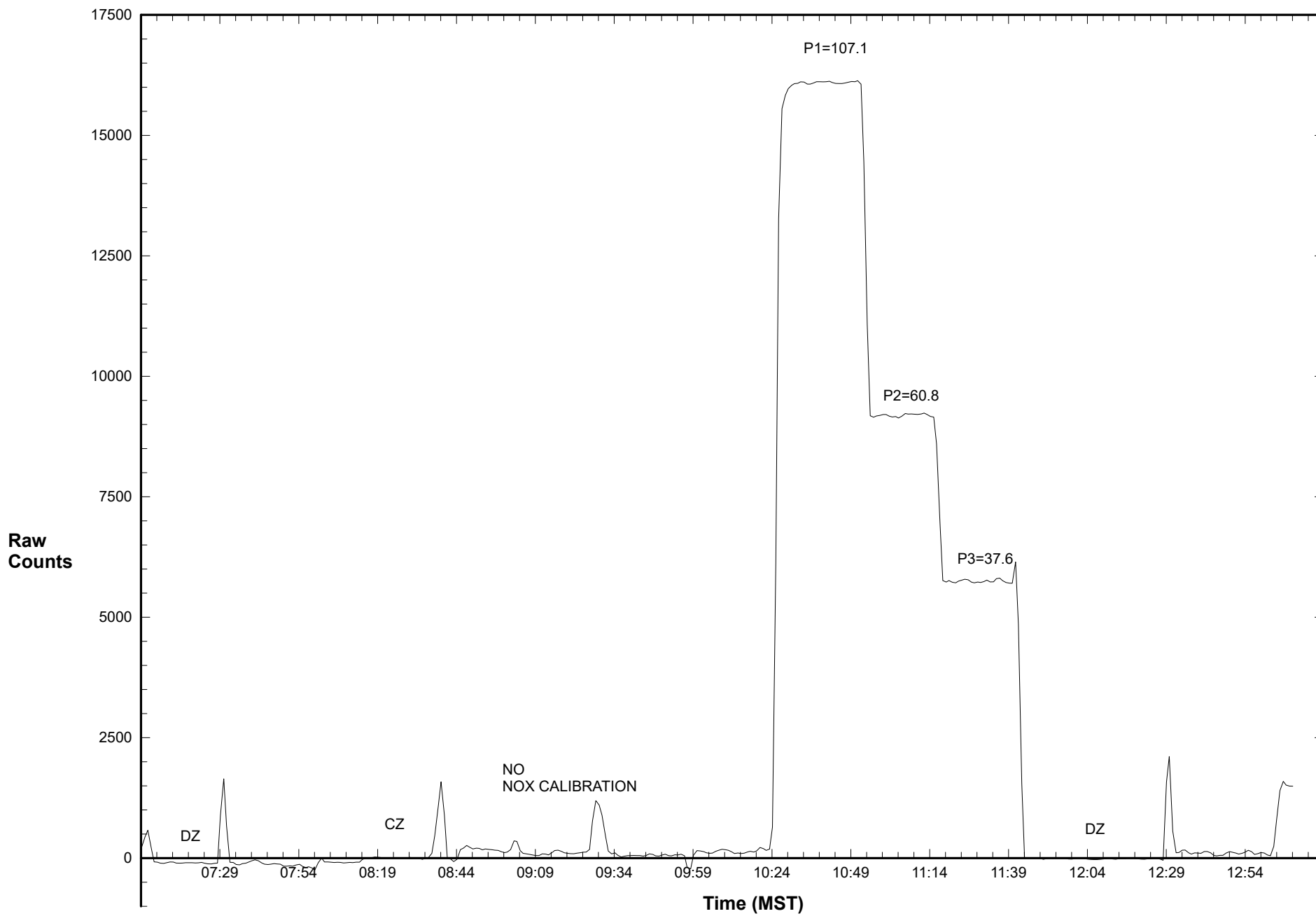
# Station 912 NOX June 10, 2016: Linear Regression



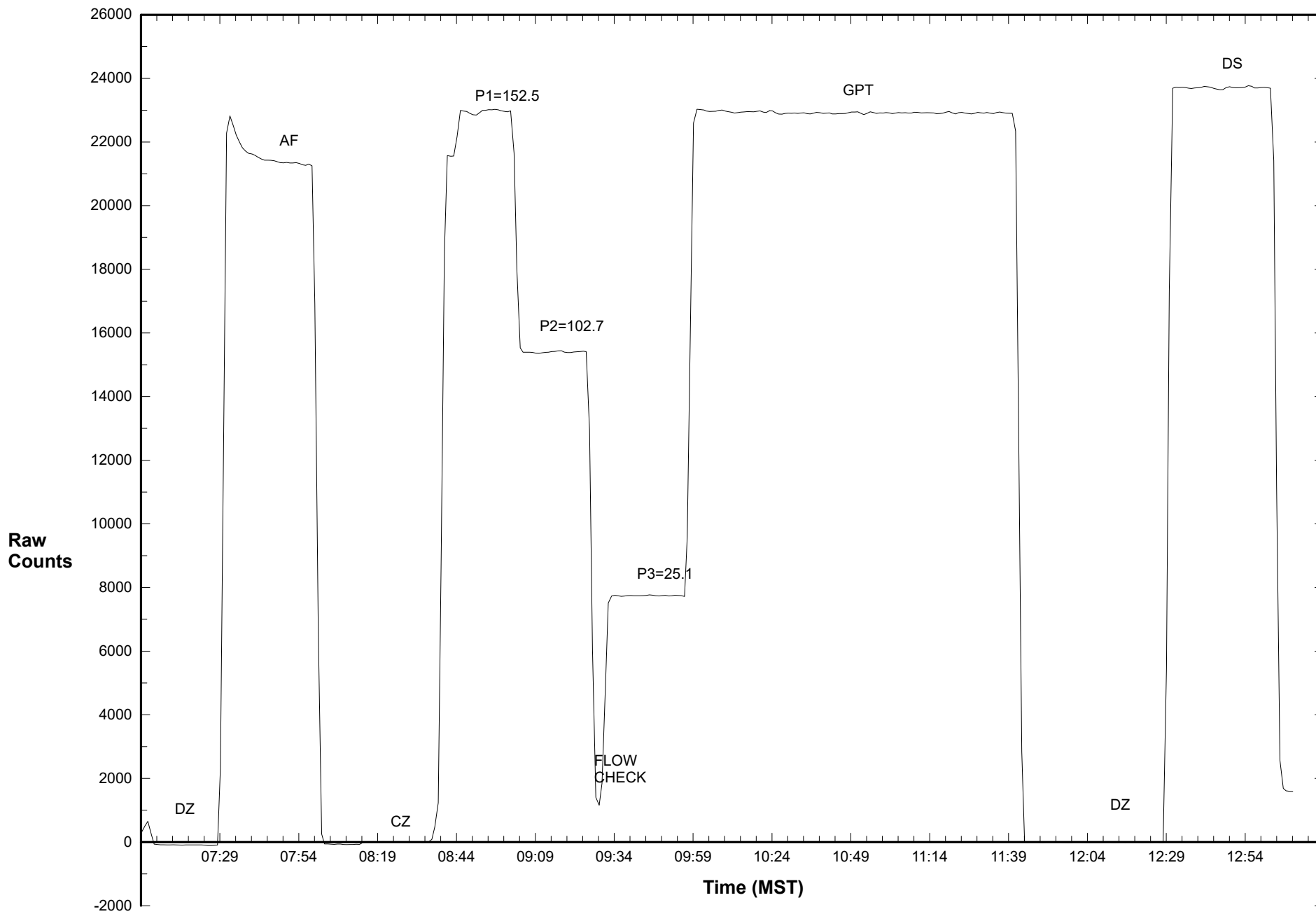
# Station 912 NO June 10, 2016: Calibration Graph



# Station 912 NO2 June 10, 2016: Calibration Graph



# Station 912 NOX June 10, 2016: Calibration Graph





# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 912, Edson

Calibration Date: June 10, 2016

Parameter: O<sub>3</sub>

Instrument: Teco 49i

Serial Number: 1136451325

Previous Calibration Date: May 17, 2016

Calibration: Routine

Calibration Equipment: 2B Tech Model 306 SN 142

Barometric Pressure: 26.90" Hg

Calibration Method: Certified Ozone Generator

Temperature: 21.5° C

Technician: L. Burns

Instrument Settings	Background	Coefficient	Monitoring Range
Previous	-0.0	1.257	500 ppb
Current	-0.0	1.043	500 ppb

Final Zero: -2.4 ppb

Final Span: 365.7 ppb

As Found Correction Factor: 0.830

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>
0.000	399.0	23874.7	398.1	1.002
0.000	214.0	12927.1	214.8	0.996
0.000	105.0	6458.3	106.5	0.986
0.000	0.0	4.2	-1.5	

### Results of Linear Regression

R <sub>c</sub> vs C <sub>c</sub>	Slope	Intercept	R <sup>2</sup>
Previous	59.728330	84.570140	0.999900
Current	59.726010	95.256510	0.999929
C <sub>i</sub> vs C <sub>c</sub>			
Current	1.000000	-0.000038	0.999929

Average Correction Factor: 0.995

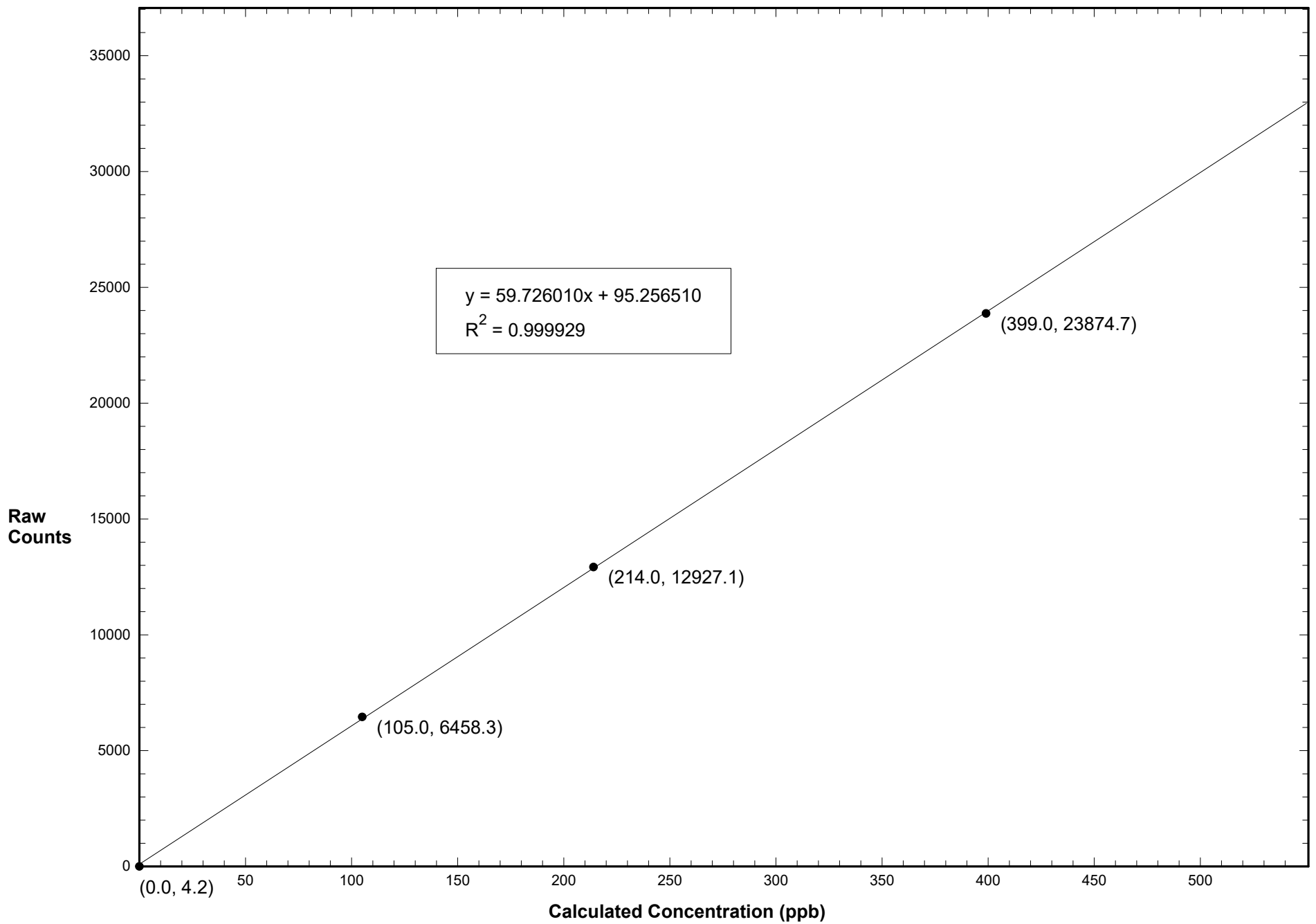
Previous Correction Factor: 1.004

Current Correction Factor: 1.002

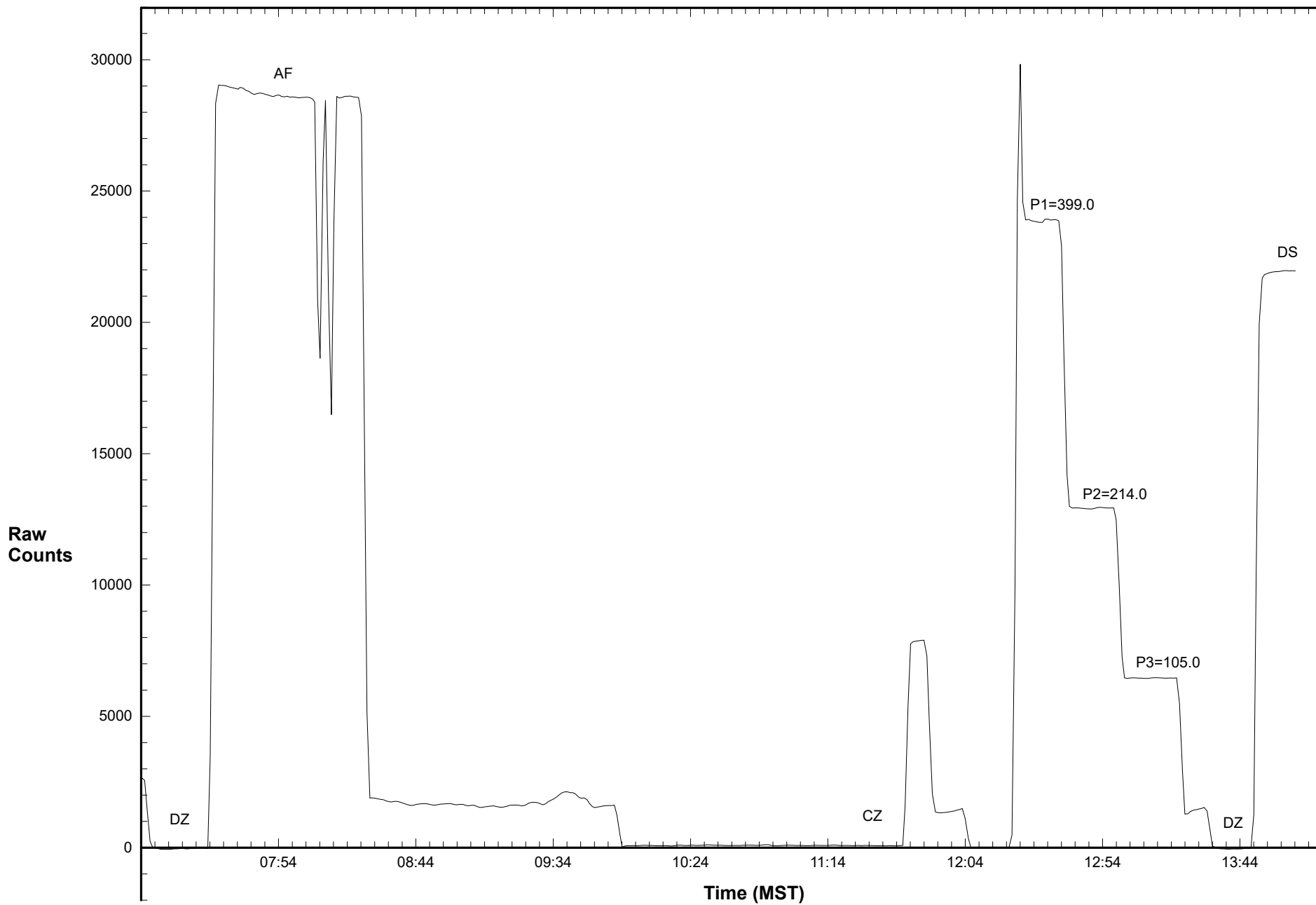
Percent Change of Correction Factor: -0.2

Comments: AF sapn out 17% due to power outage/electrical strom the night before.

### Station 912 O3 June 10, 2016: Linear Regression



# Station 912 O3 June 10, 2016: Calibration Graph



# Calibration Data Summary

## West Central Airshed Society

Operator: WCAS

Location: Station 912, Edson

Calibration Date: June 10, 2016

Parameter: SO<sub>2</sub>

Instrument: Teco 43CTL

Serial Number: 0333803283

Previous Calibration Date: May 17, 2016

Calibration: Routine

Calibration Equipment: Sabio 2010 SN 08600312

Barometric Pressure: 26.90" Hg

Calibration Method: Standard Gas Dilution

Cylinder ID: FF 13698

Temperature: 21.5° 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	32.0	0.993	100 ppb
Current	29.9	1.060	100 ppb

Final Zero: -0.3 ppb

Final Span: 75.2 ppb

As Found Correction Factor: 0.998

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	6.048	74.5	22347.8	74.5	1.000
0.0497	6.004	50.2	15083.7	50.3	0.998
0.0248	5.998	25.1	7511.9	25.0	1.006
0.0000	6.000	0.0	34.3	0.1	

### Results of Linear Regression

R <sub>c</sub> vs C <sub>c</sub>	Slope	Intercept	R <sup>2</sup>
Previous	299.572400	27.086440	0.999982
Current	299.716900	15.792380	0.999990
C <sub>i</sub> vs C <sub>c</sub>			
Current	1.000000	0.000012	0.999990

Average Correction Factor: 1.001

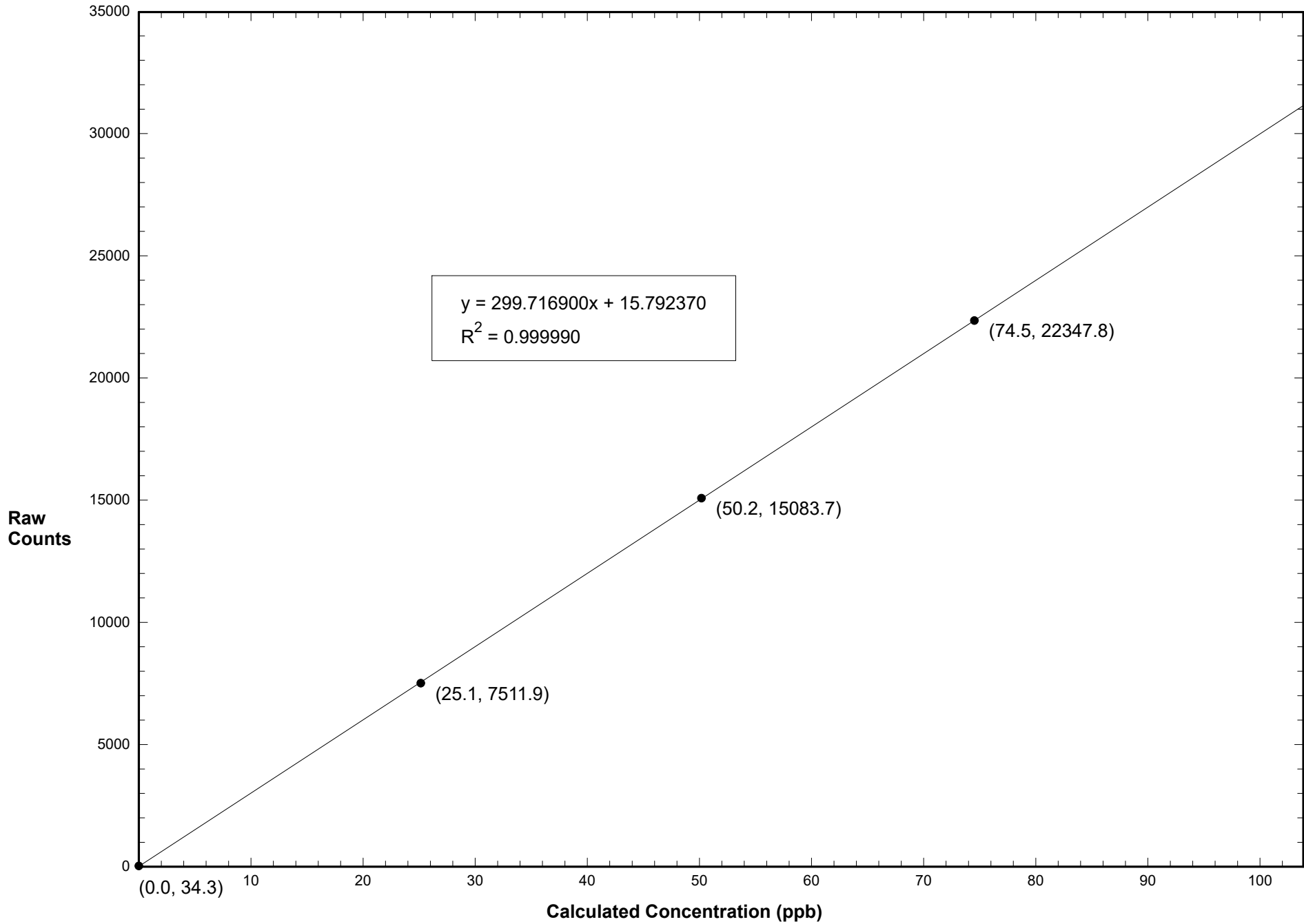
Previous Correction Factor: 1.001

Current Correction Factor: 1.000

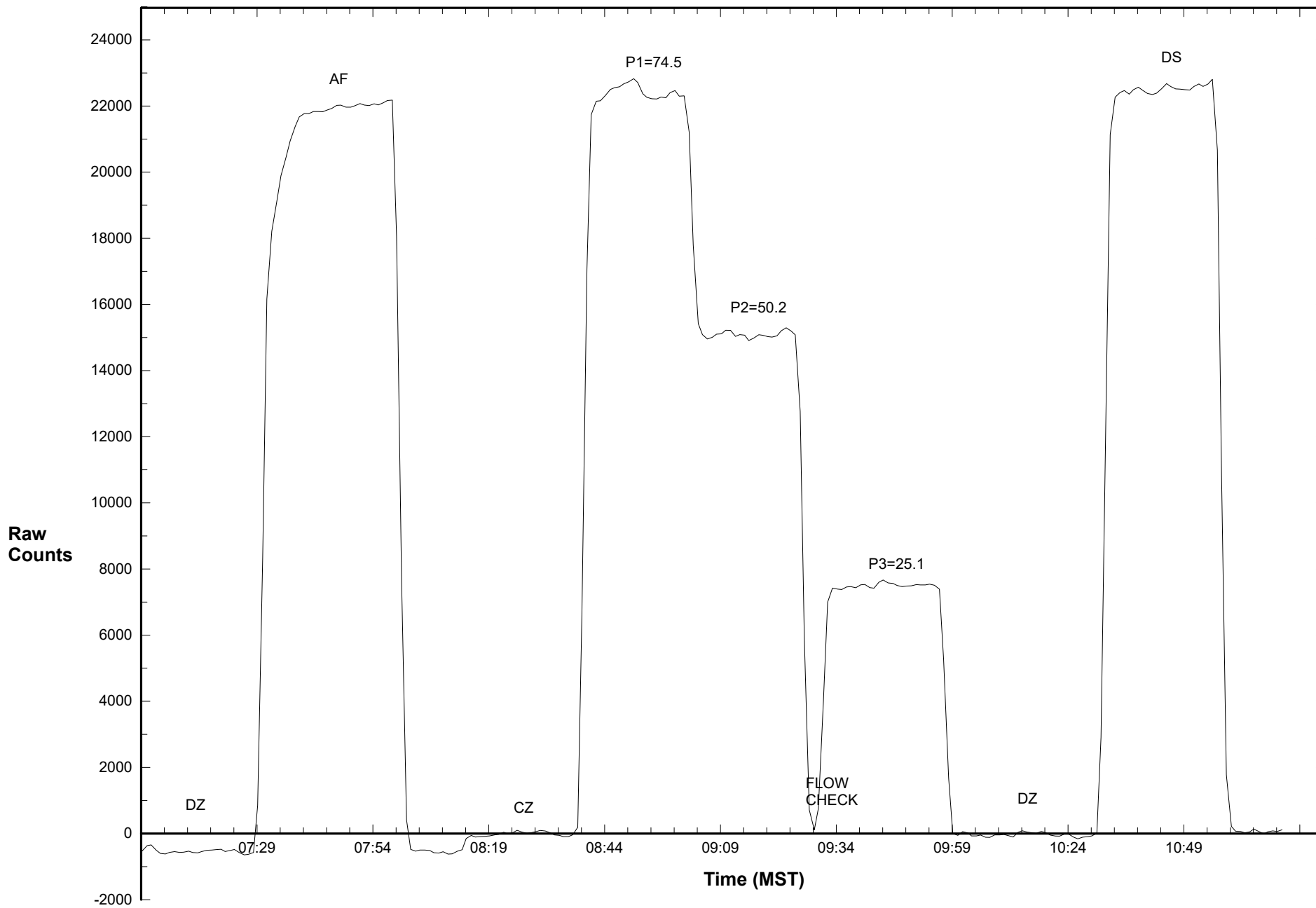
Percent Change of Correction Factor: -0.1

Comments:

# Station 912 SO2 June 10, 2016: Linear Regression



# Station 912 SO2 June 10, 2016: Calibration Graph



**WEST CENTRAL AIRSHED SOCIETY**

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

**END OF REPORT  
JUNE 2016**