

TransAlta Utilities Corporation

AIR QUALITY MONITORING **January 2018** **Monthly Report**

Prepared by:

West Central Airshed Society
Drayton Valley, Alberta

February 15, 2018

Attention: Mr. Ken Woolard
GBS Building
RR#1, Site 4, Box #1
Duffield AB T0E 0N0

Dear Sir:

**Monthly Ambient Air Quality Monitoring Report for January 2018
For TransAlta Utilities Corporation**

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

Network Stations are	AMS 907	Power
Identified as:	AMS 908	Meadows
	AMS 959	Wagner2

The person responsible for this reporting is Gary Redmond, 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 the AAAQO as indicated in Air Monitoring Directive Section III.A.3. (a&b) for SO₂, NO₂, or PM_{2.5}.

2. Operational times less than 90 percent:

All analyzers returned operational uptimes of greater than 90% for the month of January.

3. Monitoring Notes:

AMS 907 (Power)

The wind instrument returned an uptime of 94.8% due to malfunctioning, attributed to cold temperatures and precipitation causing the instrument to freeze up. All other analyzers and meteorological sensors returned uptimes of 100% for the month of January.

AMS 908 (Meadows)

The wind instrument returned an uptime of 90.1% due to malfunctioning, attributed to cold temperatures and precipitation causing the instrument to freeze up. All other analyzers and meteorological sensors returned uptimes of 100% for the month of January.

AMS 959 (Wagner2)

The wind instrument returned an uptime of 93.6% due to malfunctioning, attributed to cold temperatures and precipitation causing the instrument to freeze up. The NOx analyzer, relative humidity, and temperature sensor returned uptimes of 99.9% due to analyzer malfunctioning. The SO₂ analyzer returned an uptime of 100% for the month of January.

If additional information is required, please call (587) 499-4900.

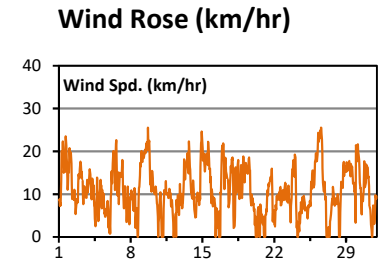
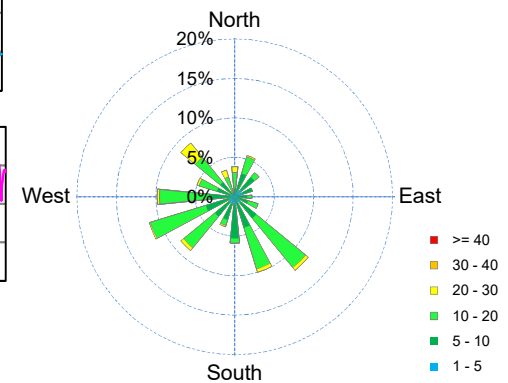
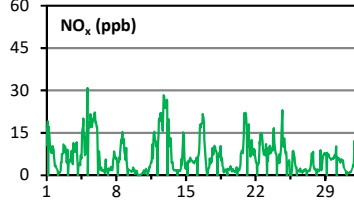
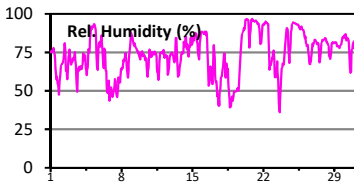
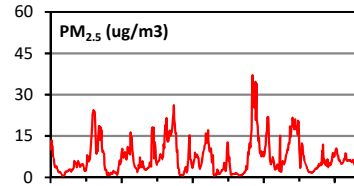
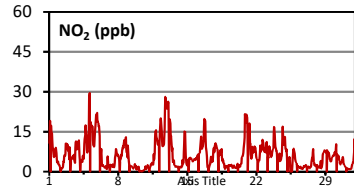
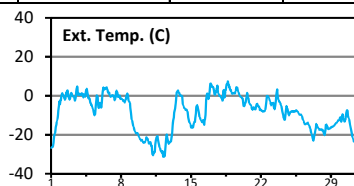
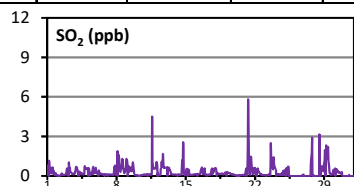
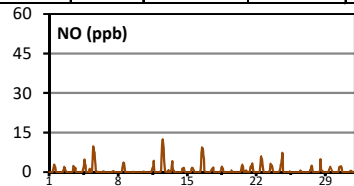
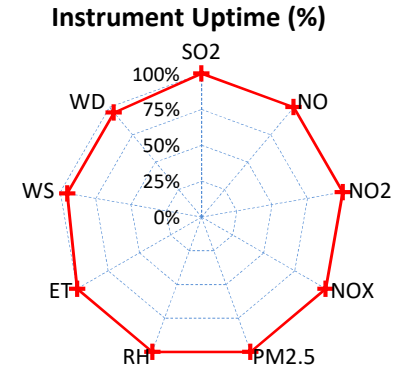
Sincerely,



Patrick Andersen
Environmental Specialist

WCAS - January 2018 Power Summary Report

Pollutants		Month Records		24-Hour Records				1-Hour Records			
Name	Conc Unit	Avg. Conc.	Uptime	Maximum		AAAQO Objective	Exceed No.	Maximum		AAAQO Objective	Exceed No.
				Conc	Time			Conc	Time		
SO ₂	ppb	0.3	100.0%	0.9	Jan-29	48	0	5.8	Jan-21 8:00	172	0
NO	ppb	0.7	100.0%	3.0	Jan-12	-	-	12.5	Jan-12 13:00	-	-
NO ₂	ppb	6.4	100.0%	17.5	Jan-5	-	-	29.5	Jan-05 3:00	159	0
NO _x	ppb	7.0	100.0%	20.0	Jan-5	-	-	30.9	Jan-05 3:00	-	-
PM _{2.5}	µg/m ³	7	100.0%	17	Jan-5	30	0	37	Jan-20 22:00	-	-

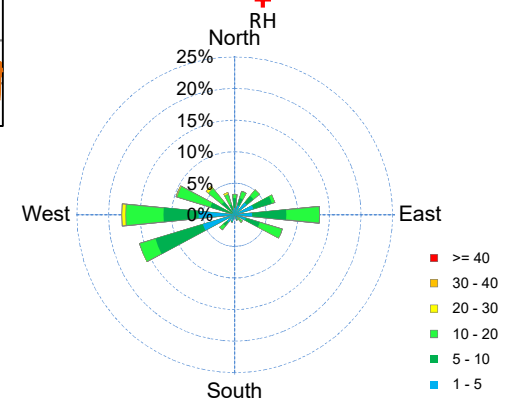
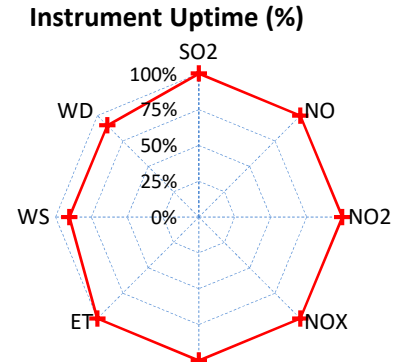
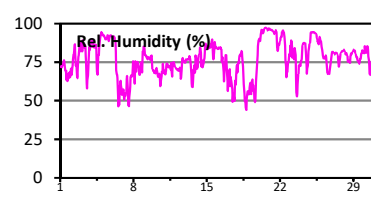
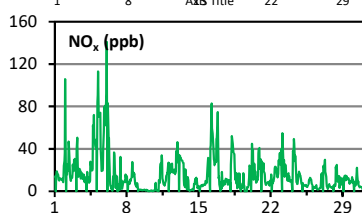
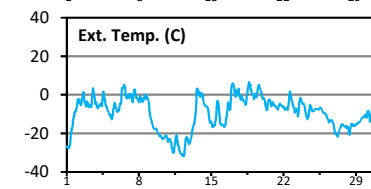
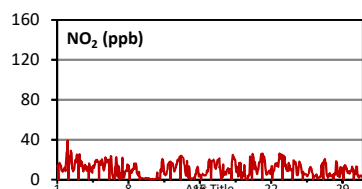
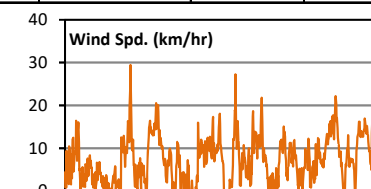
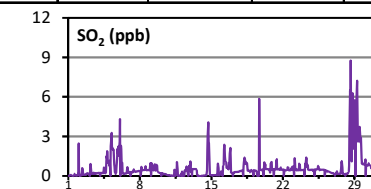
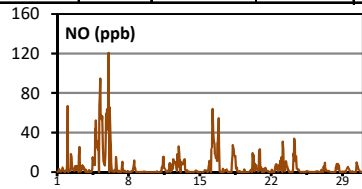


Monthly Summary

- * All data has been slope, intercept, and baseline corrected. Data may change after validation process.
- * The measured ambient concentrations of all parameters are within the AAAQO for the month of January.
- * All compliance parameters are above 90% operational for the month of January.
- * Routine calibration was performed on January 25.

WCAS - January 2018 Meadows Summary Report

Pollutants		Month Records		24-Hour Records				1-Hour Records			
Name	Conc Unit	Avg. Conc.	Uptime	Maximum		AAAQO Objective	Exceed No.	Maximum		AAAQO Objective	Exceed No.
				Conc	Time			Conc	Time		
SO ₂	ppb	0.6	100.0%	3.0	Jan-29	48	0	8.8	Jan-28 16:00	172	0
NO	ppb	5.7	100.0%	42.1	Jan-5	-	-	120.9	Jan-06 2:00	-	-
NO ₂	ppb	10.5	100.0%	18.7	Jan-2	-	-	39.2	Jan-02 1:00	159	0
NO _x	ppb	16.1	100.0%	58.7	Jan-5	-	-	140.9	Jan-06 2:00	-	-

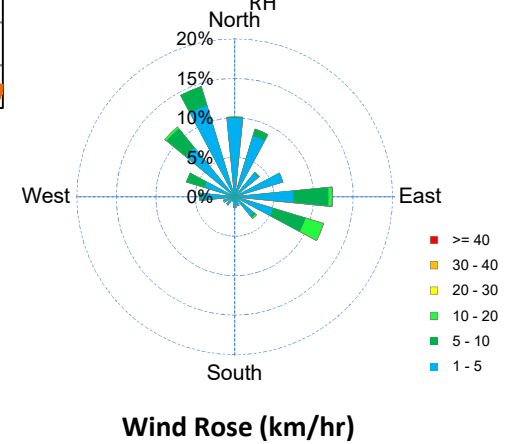
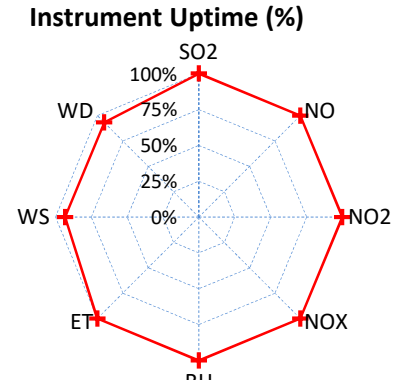
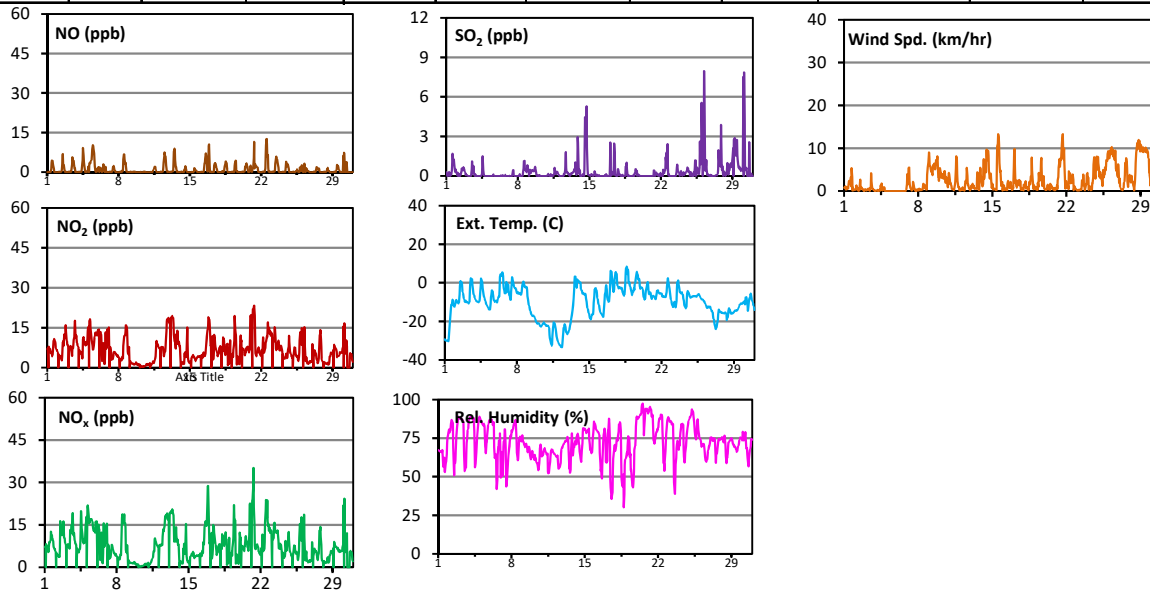


Monthly Summary

- * All data has been slope, intercept, and baseline corrected. Data may change after validation process.
- * The measured ambient concentrations of all parameters are within the AAAQO for the month of January.
- * All compliance parameters are above 90% operational for the month of January.
- * Routine calibration was performed on January 19.

WCAS - January 2018 Wagner2 Summary Report

Pollutants		Month Records		24-Hour Records				1-Hour Records			
Name	Conc Unit	Avg. Conc.	Uptime	Maximum		AAAQO Objective	Exceed No.	Maximum		AAAQO Objective	Exceed No.
				Conc	Time			Conc	Time		
SO ₂	ppb	0.3	100.0%	1.4	Jan-30	48	0	8.0	Jan-26 6:00	172	0
NO	ppb	1.0	100.0%	3.8	Jan-5	-	-	12.6	Jan-22 13:00	-	-
NO ₂	ppb	6.8	100.0%	13.4	Jan-13	-	-	23.3	Jan-21 8:00	159	0
NO _x	ppb	8.0	100.0%	16.3	Jan-5	-	-	35.2	Jan-21 8:00	-	-



Monthly Summary

- * All data has been slope, intercept, and baseline corrected. Data may change after validation process.
- * The measured ambient concentrations of all parameters are within the AAAQO for the month of January.
- * All compliance parameters are above 90% operational for the month of January.
- * Routine calibration was performed on January 30.

WEST CENTRAL AIRSHED SOCIETY

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

**AMS 907
POWERS
JANUARY 2018**

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

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

Summary Report

Continuous air quality/meteorological monitoring measurements

West Central Airshed Society

TransAlta / Powers Station 907												January 2018		
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 ₂ (ppb)	36	708	100.0	0.3	0.0	5.8	0.0	0.1	0.1	0.5	0.7	0	0	0.001
NO (ppb)	36	708	100.0	0.7	0.0	12.5	0.0	0.0	0.0	0.4	2.1	-	-	-
NO ₂ (ppb)	36	708	100.0	6.4	0.1	29.5	1.5	2.1	5.1	8.8	13.3	0	0	0.017
NO _x (ppb)	36	708	100.0	7.0	0.0	30.9	1.4	2.1	5.7	9.4	16.8	-	-	-
Particulate Matter 2.5 microns (µm ³)	0	744	100.0	7.1	0.6	37.1	1.4	2.7	5.3	9.4	16.0	0	0	16.88 ug/m3
Wind Speed (kph)	0	705	94.8	11.5	0.8	25.6	5.0	7.7	10.8	15.4	18.6	-	-	-
Temperature (°C)	0	744	100.0	-8.6	-31.4	7.4	-22.5	-15.7	-7.1	-0.5	1.8	-	-	-
Relative Humidity (%)	0	744	100.0	73.4	36.0	96.8	54.2	65.1	74.4	82.7	91.0	-	-	-
Std Dev Wind Direction (deg)	0	705	94.8	12.6	1.0	76.3	6.9	8.6	10.4	13.2	18.2	-	-	-
Std Dev Wind Speed (kph)	0	705	94.8	2.4	0.6	7.7	1.3	1.7	2.3	3.0	3.7	-	-	-



WCAS - Power
Summary of Hourly Averages

Nitrogen Oxide (NO) - ppb
January 2018

Maximum Value: 12.45 ppb on Jan 12 13:00		Maximum Daily Average: 3.04 ppb on Jan 12		Hours in Service: 744																									
Minimum Value: 0.0 ppb on Jan 1 01:00		Minimum Daily Average: 0.01 ppb on Jan 9		Hours of Data: 708																									
Maximum Diurnal Average: 2.69 ppb at hour 13		Minimum Diurnal Average: 0.00 ppb at hour 5		Hours of Missing Data: 36																									
Monthly Average: 0.662 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.4 P ₉₀ = 2.1 P ₉₉ = 9.0		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-Jan	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.5	1.6	2.3	2.8	2.1	2.0	1.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.55	2.83			
2-Jan	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.9	2.0	1.1	1.4	1.0	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.32	1.98			
3-Jan	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.2	1.1	2.3	2.0	1.5	0.6	1.6	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.43	2.33			
4-Jan	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.2	1.1	1.2	2.6	4.7	4.7	3.5	2.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.91	4.72			
5-Jan	0.1	0.4	1.3	Z	0.0	0.0	0.0	0.5	0.1	4.7	8.0	9.7	8.9	7.5	7.4	5.1	2.6	0.2	0.1	0.3	0.1	0.0	0.0	0.0	2.47	9.70			
6-Jan	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	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	0.02	0.21			
7-Jan	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.05	0.34			
8-Jan	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.4	1.6	2.8	3.5	3.5	3.5	1.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.76	3.53			
9-Jan	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.08			
10-Jan	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.02	0.20			
11-Jan	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.2	0.0	0.2	1.0	1.6	1.8	2.6	4.3	1.5	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.60	4.32			
12-Jan	0.0	0.0	0.0	Z	0.0	0.0	0.3	0.2	0.5	4.7	10.4	11.4	12.5	11.4	9.1	5.2	3.4	0.7	0.2	0.0	0.0	0.0	0.0	0.0	3.04	12.45			
13-Jan	0.2	0.4	0.7	Z	0.0	0.1	0.0	0.0	0.0	0.8	2.0	4.1	1.9	0.9	0.7	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.53	4.10			
14-Jan	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.4	0.7	0.7	1.6	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.24	1.60			
15-Jan	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.3	1.4	1.6	1.7	1.5	1.2	0.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.37	1.66			
16-Jan	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.2	0.1	3.2	7.2	8.2	9.4	9.1	8.3	6.4	4.8	0.7	0.3	0.1	0.0	0.0	0.0	0.0	2.52	9.37			
17-Jan	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.9	1.2	0.7	1.2	1.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.31	1.70			
18-Jan	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.3	1.1	1.9	2.1	1.1	1.3	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.37	2.06			
19-Jan	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.6	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.05	0.57			
20-Jan	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.7	2.1	2.6	2.9	2.0	0.6	0.0	0.0	0.2	0.3	0.1	0.1	0.7	0.55	2.86			
21-Jan	0.4	0.2	0.0	Z	0.0	0.0	0.0	0.0	0.0	1.7	2.1	1.7	2.0	2.9	3.3	2.2	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.74	3.33			
22-Jan	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	2.2	3.6	5.7	6.0	5.2	4.0	2.7	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.32	6.03			
23-Jan	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.3	0.0	0.6	3.1	2.8	2.4	2.5	2.2	1.5	0.7	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.71	3.15			
24-Jan	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.2	0.5	0.5	1.8	3.0	3.3	3.9	5.5	7.3	6.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	1.41	7.32			
25-Jan	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.3	C	C	C	C	C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.26			
26-Jan	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.6	0.3	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.06	0.58			
27-Jan	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.9	1.2	1.7	2.3	2.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.42	2.44			
28-Jan	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.4	0.7	0.7	4.9	0.8	0.5	0.4	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.39	4.86			
29-Jan	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	1.0	1.6	1.9	1.9	1.6	1.1	0.8	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.47	1.94			
30-Jan	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.2	1.4	1.9	2.1	1.8	2.1	2.3	1.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.63	2.27			
31-Jan	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.3	0.3	0.5	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.08	0.51			
		0.02	0.03	0.07	--	0.00	0.01	0.01	0.05	0.05	0.77	1.79	2.35	2.69	2.42	2.38	1.74	0.94	0.08	0.02	0.02	0.02	0.00	0.00	0.02	Diurnal Average			
		0.40	0.37	1.29	--	0.01	0.13	0.27	0.50	0.53	4.72	10.44	11.38	12.45	11.39	9.11	7.32	6.02	0.75	0.26	0.27	0.34	0.08	0.09	0.67	Diurnal Maximum			
Z - zerospan		C - Calibration																											
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr --- ppb				24-hr --- ppb																							



WCAS - Power
Summary of Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
January 2018

Maximum Value: 29.51 ppb on Jan 5 03:00		Maximum Daily Average: 17.48 ppb on Jan 5		Hours in Service: 744																							
Minimum Value: 0.1 ppb on Jan 10 10:00		Minimum Daily Average: 0.84 ppb on Jan 10		Hours of Data: 708																							
Maximum Diurnal Average: 8.79 ppb at hour 19		Minimum Diurnal Average: 4.54 ppb at hour 13		Hours of Missing Data: 36																							
Monthly Average: 6.434 ppb		Percentiles: P ₁ = 0.2 P ₁₀ = 1.5 Q ₁ = 2.1 Median = 5.1 Q ₃ = 8.8 P ₉₀ = 13.3 P ₉₉ = 24.9		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-Jan	10.7	15.1	19.0	Z	17.2	14.6	14.4	11.5	9.3	8.6	6.4	5.5	5.9	5.8	8.3	8.2	8.9	6.9	4.7	3.4	3.7	3.7	2.8	2.7	8.58	19.05	
2-Jan	2.5	2.0	1.5	Z	1.2	1.1	1.0	1.1	1.3	1.6	3.8	3.6	5.5	6.1	5.9	6.8	10.4	10.5	10.2	8.4	10.2	7.9	7.7	8.5	5.17	10.49	
3-Jan	4.6	9.2	7.4	Z	4.3	4.6	4.6	5.3	5.0	5.4	6.0	6.3	5.1	4.2	3.2	9.0	11.1	11.3	10.5	8.3	10.9	8.5	9.2	11.0	7.17	11.31	
4-Jan	11.7	5.9	4.3	Z	4.1	4.0	4.1	4.4	3.7	5.7	5.9	4.7	6.7	10.3	12.2	13.7	17.4	14.9	12.3	8.3	7.1	7.6	11.2	13.9	8.44	17.38	
5-Jan	15.6	27.6	29.5	Z	18.7	17.7	16.9	17.2	16.9	16.9	11.9	9.9	9.4	9.6	11.9	14.2	17.6	19.5	21.4	21.8	22.0	18.6	18.8	18.2	17.48	29.51	
6-Jan	16.9	17.1	13.4	Z	8.6	6.0	8.4	5.7	2.3	2.0	2.3	2.5	2.0	1.7	1.5	1.6	1.8	2.1	1.4	1.0	1.0	3.4	5.7	2.1	4.80	17.12	
7-Jan	2.0	2.0	2.3	Z	2.1	2.5	2.1	2.1	2.1	1.9	2.7	2.3	1.7	1.6	2.1	3.1	5.2	6.6	8.4	7.8	6.4	6.3	5.9	6.4	3.73	8.43	
8-Jan	5.9	5.0	4.4	Z	3.9	4.2	4.9	6.4	5.9	7.8	9.2	9.5	8.8	10.2	11.8	10.1	10.5	11.6	12.9	8.7	7.3	6.7	5.3	9.8	7.86	12.88	
9-Jan	5.7	4.0	2.9	Z	2.2	2.1	2.0	2.0	1.9	1.8	1.6	1.4	1.1	1.3	1.5	1.9	2.8	2.2	1.8	2.1	0.7	1.2	0.9	1.0	2.01	5.69	
10-Jan	1.6	1.8	0.6	Z	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.3	0.4	0.4	0.5	0.7	1.0	1.6	1.9	0.8	1.0	1.4	1.9	0.84	2.49	
11-Jan	2.2	1.7	1.2	Z	0.7	1.4	2.1	2.7	2.8	3.3	2.8	2.8	2.6	3.5	6.5	4.5	6.9	12.4	15.1	15.6	13.4	12.3	12.3	10.8	6.07	15.55	
12-Jan	10.2	10.8	11.2	Z	10.8	14.5	19.1	20.0	18.5	15.2	11.6	9.7	9.5	9.7	9.9	10.4	16.0	23.2	28.0	27.7	24.1	23.6	23.8	24.5	16.60	28.01	
13-Jan	25.2	26.2	25.7	Z	18.1	19.6	18.1	12.8	13.3	11.4	8.0	9.0	5.2	3.5	3.8	4.2	2.6	2.2	1.9	1.8	1.9	1.9	1.9	1.8	9.57	26.23	
14-Jan	1.6	1.5	1.9	Z	1.8	1.7	1.6	1.8	1.8	1.6	1.6	2.0	4.3	2.9	3.2	7.4	10.5	15.1	14.9	9.9	5.9	3.1	2.5	2.4	4.39	15.10	
15-Jan	2.9	3.8	4.5	Z	4.9	5.1	5.0	5.2	4.7	4.9	4.9	4.1	3.8	3.8	3.8	4.2	4.6	4.6	4.8	4.6	4.4	5.1	5.1	5.1	4.51	5.24	
16-Jan	5.9	6.4	5.6	Z	6.1	6.9	7.1	8.7	11.7	13.1	10.7	8.6	8.8	9.1	10.1	12.0	16.8	19.7	19.2	19.0	12.5	9.2	7.4	5.9	10.46	19.74	
17-Jan	3.4	1.6	1.1	Z	1.1	2.0	2.5	2.7	3.7	5.6	3.5	4.7	4.7	3.8	5.2	7.8	8.9	7.3	8.1	9.8	10.6	10.1	10.0	8.8	5.52	10.58	
18-Jan	8.7	8.3	7.6	Z	6.8	6.0	6.4	6.4	8.0	6.5	7.2	8.4	5.4	3.8	4.6	4.2	3.2	2.9	1.3	1.0	1.2	1.7	2.0	1.8	4.93	8.66	
19-Jan	2.1	2.0	2.1	Z	2.4	2.4	2.4	2.2	2.0	2.4	2.3	2.6	1.8	1.4	1.4	1.4	2.2	2.3	2.1	1.7	1.3	1.5	1.4	1.3	1.94	2.59	
20-Jan	1.3	2.0	2.9	Z	2.5	2.3	2.0	1.9	1.8	2.6	2.7	3.1	5.1	5.5	5.8	6.4	7.1	8.8	11.1	12.8	21.6	19.1	18.3	21.4	7.31	21.57	
21-Jan	21.3	20.2	14.5	Z	13.2	12.4	12.3	18.0	10.3	10.3	6.5	4.8	5.5	5.8	9.2	8.5	7.1	7.5	7.3	9.4	8.4	9.1	7.3	5.9	10.22	21.32	
22-Jan	4.9	4.6	4.3	Z	3.7	3.8	4.1	4.2	5.6	9.7	7.3	8.8	7.9	9.8	9.7	11.9	10.8	9.6	8.9	7.4	7.6	8.8	8.0	7.1	7.34	11.94	
23-Jan	10.5	11.1	6.0	Z	5.5	5.1	8.4	9.5	9.3	7.0	7.3	6.5	5.4	6.1	7.2	7.8	8.6	8.8	14.3	16.7	14.3	11.4	9.4	8.5	8.91	16.70	
24-Jan	7.7	7.7	6.4	Z	5.3	4.3	4.7	4.6	6.8	3.8	4.0	4.3	4.8	5.7	8.8	13.2	16.9	10.6	10.8	10.0	12.7	13.1	10.0	8.3	8.02	16.91	
25-Jan	7.7	8.3	6.0	Z	4.1	3.8	4.2	4.8	5.4	4.9	C	C	C	C	C	1.9	4.5	8.2	8.6	8.1	7.4	6.1	4.6	4.0	5.70	8.57	
26-Jan	3.3	2.9	3.0	Z	2.1	2.1	1.8	1.8	1.7	1.3	1.5	1.8	1.2	1.1	1.2	1.2	1.0	1.2	1.5	2.0	1.8	2.0	2.2	2.0	1.81	3.27	
27-Jan	2.4	2.2	1.9	Z	1.6	1.5	1.8	1.7	1.8	1.5	1.2	1.6	1.7	2.4	3.7	5.2	4.8	7.1	8.5	3.8	3.4	2.5	2.3	2.6	2.92	8.45	
28-Jan	2.0	2.1	2.2	Z	2.4	1.7	1.6	1.6	1.6	1.8	1.6	1.3	4.0	1.5	1.3	1.6	3.2	6.1	6.7	7.2	7.6	7.8	8.0	7.4	3.58	7.97	
29-Jan	7.3	7.6	7.9	Z	7.9	7.6	7.0	6.9	7.1	5.5	4.5	4.1	3.9	3.8	4.3	5.0	5.4	5.8	5.7	6.2	5.9	6.5	7.2	6.9	6.08	7.94	
30-Jan	6.6	8.6	10.3	Z	6.4	6.0	6.0	5.6	5.8	4.4	3.6	2.9	2.6	2.8	3.4	3.7	4.4	4.9	5.5	4.6	2.9	2.6	2.4	2.0	4.70	10.28	
31-Jan	1.8	1.6	1.4	Z	1.3	1.1	1.0	0.9	1.0	0.9	0.8	0.8	0.9	0.8	1.0	1.4	2.1	2.7	3.0	3.8	4.0	7.1	12.2	9.0	2.63	12.19	
		6.96	7.44	6.88	--	5.52	5.43	5.74	5.80	5.59	5.47	4.78	4.60	4.54	4.61	5.44	6.24	7.56	8.33	8.79	8.18	7.85	7.42	7.35	7.20	Diurnal Average	
		25.19	27.64	29.51	--	18.65	19.64	19.13	19.95	18.50	16.88	11.93	9.94	9.47	10.33	12.23	14.24	17.62	23.22	28.01	27.68	24.13	23.56	23.76	24.52	Diurnal Maximum	
Z - zerospan		C - Calibration																									
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr 159 ppb					24-hr 106 ppb																				



WCAS - Power
Summary of Hourly Averages

NOx (NO_x) - ppb
January 2018

Maximum Value: 30.93 ppb on Jan 5 03:00		Maximum Daily Average: 19.97 ppb on Jan 5		Hours in Service: 744																																													
Minimum Value: 0.0 ppb on Jan 10 07:00		Minimum Daily Average: 0.74 ppb on Jan 10		Hours of Data: 708																																													
Maximum Diurnal Average: 8.73 ppb at hour 19		Minimum Diurnal Average: 5.33 ppb at hour 6		Hours of Missing Data: 36																																													
Monthly Average: 7.043 ppb		Percentiles: P ₁ = 0.2 P ₁₀ = 1.4 Q ₁ = 2.1 Median = 5.7 Q ₃ = 9.4 P ₉₀ = 16.8 P ₉₉ = 24.9		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-Jan	10.6	15.0	19.1	Z	17.3	14.5	14.3	11.5	9.3	9.2	8.1	7.9	8.9	8.0	10.3	9.5	9.1	6.8	4.6	3.3	3.6	3.6	2.7	2.6	9.11	19.09																							
2-Jan	2.3	1.8	1.4	Z	1.1	0.9	0.8	1.0	1.2	1.5	4.5	4.5	7.5	7.3	7.4	7.9	10.9	10.5	10.1	8.4	10.2	7.9	7.7	8.5	5.45	10.86																							
3-Jan	4.5	9.1	7.3	Z	4.2	4.5	4.6	5.2	4.9	5.7	7.1	8.7	7.1	5.8	3.9	10.6	11.5	11.2	10.4	8.2	10.9	8.5	9.2	10.9	7.56	11.49																							
4-Jan	11.7	5.8	4.2	Z	4.0	4.0	4.0	4.3	3.6	6.0	7.1	5.9	9.3	15.1	16.9	17.2	20.1	15.0	12.3	8.3	7.1	7.5	11.1	13.8	9.32	20.11																							
5-Jan	15.7	28.1	30.9	Z	18.7	17.7	16.9	17.7	17.0	21.7	19.9	19.6	18.3	17.0	19.3	19.3	20.2	19.8	21.5	22.1	22.2	18.6	18.8	18.2	19.97	30.93																							
6-Jan	16.9	17.2	13.3	Z	8.6	5.9	8.4	5.6	2.2	1.9	2.4	2.7	2.1	1.7	1.5	1.5	1.6	1.9	1.2	0.8	0.8	3.2	5.6	1.9	4.75	17.17																							
7-Jan	1.8	1.8	2.1	Z	2.0	2.4	2.0	2.0	1.9	1.8	3.0	2.7	1.9	1.7	2.2	3.2	5.2	6.5	8.4	7.8	6.3	6.3	5.8	6.3	3.69	8.38																							
8-Jan	5.8	5.0	4.4	Z	3.8	4.2	4.8	6.3	5.8	8.2	10.7	12.3	12.3	13.6	15.4	11.7	11.2	11.6	12.8	8.6	7.3	6.6	5.3	9.6	8.59	15.37																							
9-Jan	5.6	3.8	2.7	Z	2.0	1.9	1.8	1.9	1.7	1.6	1.5	1.4	1.2	1.4	1.5	1.9	2.7	2.0	1.6	1.9	0.5	1.0	0.7	0.8	1.87	5.55																							
10-Jan	1.4	1.7	0.5	Z	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.6	0.7	0.9	1.4	1.7	0.6	0.8	1.2	1.7	2.3	0.74	2.33																							
11-Jan	2.0	1.5	1.0	Z	0.6	1.2	1.9	2.9	2.7	3.5	3.9	4.4	4.4	6.2	10.9	5.9	7.5	12.3	15.0	15.4	13.3	12.1	12.2	10.7	6.60	15.43																							
12-Jan	10.0	10.7	11.0	Z	10.7	14.4	19.5	20.2	19.1	19.9	22.0	21.0	21.9	21.1	19.0	15.7	19.4	24.1	28.3	27.8	24.3	23.7	23.9	24.7	19.67	28.32																							
13-Jan	25.5	26.7	26.6	Z	18.1	19.8	18.1	12.7	13.3	12.3	10.0	13.1	7.2	4.4	4.6	4.7	2.6	2.1	1.7	1.7	1.7	1.8	1.8	1.7	10.10	26.73																							
14-Jan	1.5	1.4	1.8	Z	1.7	1.6	1.6	1.7	1.7	1.5	1.6	2.2	5.7	3.6	4.0	9.0	11.4	15.2	14.8	9.8	5.8	3.0	2.4	2.2	4.56	15.18																							
15-Jan	2.7	3.6	4.4	Z	4.8	5.0	4.9	5.2	4.7	5.2	6.2	5.7	5.5	5.3	5.0	5.0	4.9	4.5	4.7	4.5	4.3	5.0	5.0	5.0	4.83	6.24																							
16-Jan	5.8	6.3	5.5	Z	6.0	6.8	7.0	8.9	11.8	16.3	17.9	16.8	18.1	18.2	18.4	18.5	21.7	20.6	19.6	19.2	12.5	9.2	7.4	5.8	12.97	21.66																							
17-Jan	3.3	1.5	1.0	Z	1.0	1.9	2.4	2.6	3.6	5.9	4.0	5.6	6.0	4.5	6.4	9.5	9.7	7.3	8.0	9.7	10.5	10.1	9.9	8.7	5.79	10.49																							
18-Jan	8.6	8.2	7.6	Z	6.7	5.9	6.3	6.3	8.0	6.9	8.3	10.3	7.5	5.0	6.0	4.9	3.2	2.8	1.2	0.9	1.1	1.6	1.9	1.7	5.25	10.33																							
19-Jan	1.9	1.9	1.9	Z	2.3	2.3	2.2	2.0	1.9	2.4	2.4	3.2	2.2	1.5	1.4	1.4	2.1	2.2	1.9	1.5	1.2	1.3	1.2	1.2	1.90	3.19																							
20-Jan	1.2	1.8	2.8	Z	2.4	2.2	1.9	1.7	1.7	2.6	3.1	3.8	7.3	8.2	8.7	8.5	7.8	8.8	11.1	13.0	22.0	19.2	18.4	22.1	7.84	22.12																							
21-Jan	21.8	20.4	14.5	Z	13.1	12.3	12.3	18.0	10.2	12.0	8.7	6.6	7.6	8.8	12.5	10.7	7.7	7.5	7.2	9.3	8.3	9.0	7.2	5.7	10.93	21.75																							
22-Jan	4.9	4.4	4.2	Z	3.6	3.7	4.0	4.1	5.5	11.9	10.9	14.4	14.0	15.0	13.7	14.6	11.8	9.6	8.9	7.3	7.5	8.8	7.9	7.0	8.59	14.97																							
23-Jan	10.4	11.0	5.9	Z	5.5	5.0	8.4	9.8	9.3	7.6	10.4	9.4	7.9	8.7	9.4	9.3	9.4	8.8	14.3	16.7	14.2	11.3	9.4	8.4	9.59	16.73																							
24-Jan	7.7	7.7	6.3	Z	5.3	4.3	4.6	4.9	7.3	4.3	5.7	7.3	8.2	9.7	14.3	20.5	23.0	11.1	10.8	10.0	12.6	13.0	10.0	8.3	9.43	23.04																							
25-Jan	7.6	8.2	5.9	Z	4.1	3.6	4.1	4.7	5.3	5.1	C	C	C	C	C	2.2	4.8	8.4	8.7	8.2	7.5	6.1	4.6	3.9	5.72	8.65																							
26-Jan	3.1	2.7	2.8	Z	1.9	1.9	1.6	1.6	1.5	1.3	1.7	2.4	1.5	1.2	1.3	1.3	0.9	0.9	1.2	1.8	1.6	1.8	2.0	1.8	1.73	3.14																							
27-Jan	2.2	2.0	1.7	Z	1.4	1.3	1.6	1.5	1.6	1.6	1.5	2.5	2.9	4.0	6.0	7.7	5.4	7.1	8.3	3.5	3.1	2.2	2.0	2.3	3.20	8.34																							
28-Jan	1.7	1.8	1.9	Z	2.1	1.4	1.3	1.4	1.4	2.1	2.1	2.0	8.8	2.2	1.7	2.0	3.7	6.1	6.6	7.1	7.5	7.8	7.9	7.3	3.82	8.83																							
29-Jan	7.2	7.5	7.9	Z	8.0	7.6	6.9	6.9	7.3	6.6	6.1	6.1	5.9	5.4	5.4	5.9	6.0	5.8	5.7	6.1	5.9	6.4	7.2	6.9	6.55	7.95																							
30-Jan	6.6	8.6	10.3	Z	6.4	6.0	6.0	5.6	6.1	5.9	5.5	5.0	4.5	4.9	5.7	5.5	5.3	5.0	5.4	4.5	2.8	2.5	2.2	1.9	5.30	10.27																							
31-Jan	1.6	1.4	1.2	Z	1.2	1.0	0.9	0.7	0.9	0.9	0.9	1.1	1.2	1.1	1.5	1.7	2.2	2.6	2.8	3.6	3.9	7.0	12.1	8.9	2.62	12.13																							
																								6.89	7.38	6.85	--	5.43	5.33	5.65	5.77	5.56	6.23	6.57	6.96	7.25	7.04	7.83	8.00	8.51	8.37	8.73	8.12	7.79	7.34	7.27	7.13	Diurnal Average	
																								25.50	28.12	30.93	--	18.67	19.83	19.45	20.18	19.09	21.67	22.02	21.01	21.94	21.10	19.34	20.55	23.04	24.06	28.32	27.84	24.26	23.67	23.89	24.66	Diurnal Maximum	
Z - zerospan C - Calibration																																																	
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ppb 24-hr --- ppb																																																	



WCAS - Power
Summary of Hourly Averages

PM2.5 (PM_{2.5}) - µg/m³
January 2018

Maximum Value: 37.07 µg/m ³ on Jan 20 22:00		Maximum Daily Average: 16.88 µg/m ³ on Jan 5		Hours in Service: 744																						
Minimum Value: 0.6 µg/m ³ on Jan 2 06:00		Minimum Daily Average: 1.05 µg/m ³ on Jan 19		Hours of Data: 744																						
Maximum Diurnal Average: 8.26 µg/m ³ at hour 4		Minimum Diurnal Average: 5.70 µg/m ³ at hour 16		Hours of Missing Data: 0																						
Monthly Average: 7.102 µg/m ³		Percentiles: P ₁ = 0.6 P ₁₀ = 1.4 Q ₁ = 2.7 Median = 5.3 Q ₃ = 9.4 P ₉₀ = 16.0 P ₉₉ = 27.2		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-Jan	10.1	11.8	13.4	12.0	11.2	8.0	7.4	6.7	5.3	4.4	3.7	4.0	4.1	3.5	3.9	3.2	2.7	2.6	2.0	1.8	1.8	1.9	1.8	1.8	5.37	13.39
2-Jan	1.5	1.0	0.7	0.6	0.6	0.6	0.6	0.6	0.8	1.0	1.8	2.1	2.1	1.9	2.0	2.1	2.3	2.5	2.7	2.6	2.9	2.6	2.8	2.6	1.71	2.87
3-Jan	2.0	2.2	2.7	2.9	2.9	2.8	3.4	4.5	5.9	5.5	4.9	5.1	4.7	4.5	3.6	5.1	5.6	6.0	5.4	4.8	4.5	3.7	4.5	4.4	4.24	6.01
4-Jan	4.3	4.6	4.8	4.8	4.7	4.2	3.5	2.6	2.4	2.6	2.5	2.4	3.1	4.5	8.0	5.9	7.5	6.9	5.7	6.1	6.3	7.2	10.4	12.3	5.30	12.30
5-Jan	14.0	17.2	19.7	22.9	23.9	24.4	24.1	24.0	23.2	20.0	13.0	9.5	8.5	10.2	9.9	9.5	13.7	16.6	18.6	18.0	18.4	13.5	18.1	14.5	16.88	24.37
6-Jan	17.1	11.0	9.3	9.1	9.6	8.8	8.7	4.5	2.8	2.7	2.8	2.6	1.5	0.9	0.8	0.8	1.3	1.7	1.1	0.7	0.7	1.4	1.7	1.6	4.30	17.11
7-Jan	1.3	1.1	1.3	1.7	2.4	2.2	1.9	1.8	1.7	1.7	1.7	1.3	0.9	0.9	1.3	2.5	3.7	4.1	5.6	6.2	4.7	5.4	5.7	8.3	2.90	8.26
8-Jan	9.3	10.3	7.8	7.3	7.1	7.9	8.6	9.2	8.2	7.8	6.6	6.5	7.3	9.9	11.0	9.4	8.9	9.7	10.6	8.3	12.7	16.3	11.0	14.6	9.42	16.30
9-Jan	12.6	10.2	8.2	7.1	5.7	4.9	4.3	3.7	3.4	3.4	3.2	2.7	2.4	1.9	2.5	3.0	4.4	3.5	4.1	7.3	3.8	5.4	3.7	4.4	4.82	12.62
10-Jan	3.8	5.8	4.9	4.4	3.7	3.2	2.9	2.9	2.9	2.7	2.8	2.9	3.3	3.2	3.5	3.5	3.6	3.9	5.4	4.1	4.0	3.9	10.9	16.9	4.55	16.88
11-Jan	18.2	15.5	12.7	18.1	6.8	11.3	12.8	11.3	9.2	6.2	4.8	4.6	4.8	5.6	5.9	5.8	6.1	6.8	7.4	8.3	7.8	7.6	7.5	6.9	8.83	18.17
12-Jan	6.5	7.2	9.1	12.0	10.6	15.1	16.8	19.0	17.6	19.3	21.5	13.3	13.0	12.9	13.1	14.0	15.7	17.0	16.1	15.4	15.2	16.0	16.2	18.2	14.61	21.53
13-Jan	19.6	21.0	23.5	26.2	21.3	19.1	17.1	15.9	15.9	11.8	9.4	9.9	5.7	3.4	3.5	2.9	1.1	0.9	0.8	0.8	0.8	1.0	0.7	0.6	9.71	26.18
14-Jan	0.6	0.8	0.8	1.8	2.4	2.3	2.6	3.8	2.3	1.8	1.8	2.1	5.9	6.2	9.1	13.8	15.3	9.4	6.5	6.4	5.7	4.9	3.9	3.5	4.73	15.25
15-Jan	3.8	4.8	5.6	6.2	6.9	9.0	8.6	7.3	7.4	7.9	8.3	7.3	7.3	6.9	5.4	4.1	3.1	3.1	3.4	4.0	4.5	5.3	6.4	7.6	6.01	8.96
16-Jan	8.7	9.2	9.9	10.4	11.5	12.0	12.6	16.0	12.4	14.0	13.6	14.6	17.1	13.1	11.0	9.7	9.3	9.2	9.5	10.5	6.9	5.3	5.5	8.0	10.85	17.09
17-Jan	5.1	0.9	0.6	0.6	0.6	1.0	1.3	0.9	0.8	2.0	2.8	2.3	1.7	1.2	1.7	1.7	1.3	1.4	1.9	2.2	2.4	2.7	2.5	2.8	1.78	5.15
18-Jan	3.3	3.9	5.2	4.9	5.0	2.9	2.2	4.5	6.8	10.0	12.7	12.2	8.9	5.9	7.4	5.4	3.1	2.3	1.0	0.9	0.9	1.2	1.2	1.2	4.72	12.72
19-Jan	1.2	1.1	1.2	1.3	1.2	1.5	1.4	1.4	1.2	1.3	1.2	1.1	0.8	0.7	0.7	0.6	0.6	0.7	0.8	0.9	0.8	1.1	1.1	1.3	1.05	1.51
20-Jan	1.4	1.6	1.7	2.1	2.2	2.4	4.1	3.1	2.9	4.6	7.3	9.1	8.2	10.4	12.3	12.2	10.8	13.5	16.0	17.6	28.2	37.1	31.0	27.3	11.13	37.07
21-Jan	26.7	30.1	25.3	29.3	34.7	20.9	34.0	21.3	20.1	18.5	15.3	13.2	14.3	12.1	10.1	8.9	8.4	9.6	7.6	7.7	7.7	9.2	8.9	7.8	16.74	34.66
22-Jan	7.6	8.2	9.3	10.7	11.7	15.1	15.5	17.0	21.8	21.6	21.9	19.1	13.5	9.9	6.7	6.0	4.7	4.8	5.7	5.6	6.5	7.4	7.0	5.9	10.96	21.92
23-Jan	5.1	3.8	2.8	2.8	3.0	3.6	4.1	3.2	4.7	3.6	3.6	3.5	2.4	5.8	15.1	2.2	2.1	2.0	3.6	5.4	6.0	5.2	5.0	4.9	4.31	15.07
24-Jan	4.7	5.0	5.6	6.7	7.7	8.3	8.7	9.6	10.2	10.1	11.9	12.4	12.4	13.8	18.4	14.7	15.7	17.6	18.3	19.0	21.6	19.4	18.8	18.1	12.86	21.61
25-Jan	17.5	20.8	21.1	17.9	18.0	17.3	18.5	18.3	15.5	20.5	20.2	14.7	10.1	6.4	3.4	5.4	8.1	10.3	12.3	11.8	9.8	8.7	7.9	6.9	13.39	21.08
26-Jan	6.0	5.3	5.1	4.6	4.4	3.9	3.2	3.0	2.6	2.1	1.9	1.9	1.9	1.9	1.8	1.8	1.6	1.6	1.7	1.9	1.9	2.1	2.3	2.3	2.79	5.96
27-Jan	2.6	2.9	3.2	3.1	3.1	3.2	3.4	3.4	4.0	3.9	4.9	4.5	4.3	4.4	4.5	5.1	4.5	6.2	9.6	7.4	11.9	5.3	5.5	6.5	4.90	11.86
28-Jan	5.8	4.7	4.5	5.0	4.7	4.3	6.6	3.9	3.7	3.9	4.8	4.6	5.2	4.8	4.4	4.8	6.1	6.0	7.6	8.9	8.3	7.5	7.5	7.6	5.63	8.91
29-Jan	8.5	9.3	10.1	10.5	10.3	9.3	8.1	7.9	7.4	6.3	6.1	6.3	5.9	5.3	5.1	4.9	5.1	5.2	5.0	5.2	5.7	6.3	6.7	6.7	6.96	10.47
30-Jan	7.3	8.7	8.7	6.6	6.0	6.1	6.1	6.1	6.2	6.3	6.2	6.0	6.3	6.1	6.0	5.5	5.6	6.1	6.3	6.3	5.5	5.1	4.6	5.1	6.21	8.70
31-Jan	4.3	3.2	2.8	2.6	2.5	2.1	1.9	1.7	1.8	2.9	3.4	3.5	2.4	2.0	2.3	2.3	2.4	2.2	2.2	2.2	2.1	2.4	2.8	2.4	2.51	4.30
7.76 7.86 7.79 8.26 7.94 7.67 8.23 7.71 7.46 7.43 7.31 6.62 6.13 5.81 6.28 5.70 5.95 6.24 6.60 6.72 7.10 7.16 7.22 7.51																								Diurnal Average		
26.74 30.05 25.28 29.34 34.66 24.37 34.03 23.98 23.25 21.62 21.92 19.10 17.09 13.75 18.44 14.66 15.72 17.60 18.58 19.04 28.24 37.07 31.04 27.26																								Diurnal Maximum		
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 80 ul/m ³ 24-hr 30 ul/m ³																										

Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 907, Powers

Calibration Date: January 25, 2018

Parameter: NO/NO₂/NO_x

Instrument: Teco 42i

Serial Number: 1153630147

Previous Calibration Date: December 18, 2017

Calibration: Routine

Calibration Equipment: Sabio 2010 SN - 08600312

Barometric Pressure: 27.13" Hg

Calibration Method: Standard Gas Dilution/ GPT

Cylinder ID: EX0012529

Temperature: 23.0° C

Cylinder Concentration: 27.4 ppm NO/27.5 ppm NO_x

In Service: 12/06/2017 EXP 10/25/2020

Technician: L. Burns

Instrument Settings	NO bkg ppb	NO _x bkg ppb	Pre-reactor bkg ppb	NO Coefficient	NO _x Coefficient	NO ₂ Coefficient	Monitoring Range
Previous	3.6	3.9	NA	1.096	0.999	0.993	500 ppb
Current	3.6	4.5	NA	1.108	1.001	0.993	500 ppb

NO	Final Zero: -0.5 ppb	Final Span: 379.5 ppb	As Found Correction Factor: 1.023
NO ₂	Final Zero: -1.4 ppb	Final Span: 5.9 ppb	As Found Correction Factor: NA
NO _x	Final Zero: -1.8 ppb	Final Span: 386.6 ppb	As Found Correction Factor: 1.025

Results of Linear Regression			Slope	Intercept	R ²
NO	R _c vs C _c	Previous	60.094960	36.911620	0.999971
		Current	60.024290	37.958970	0.999984
	C _i vs C _c	Current	1.000000	-0.000040	0.999984
NO ₂	R _c vs C _c	Previous	60.371200	-19.906640	0.999971
		Current	60.232510	16.294430	0.999986
	C _i vs C _c	Current	1.000000	0.000000	0.999987
NO _x	R _c vs C _c	Previous	60.084130	39.264450	0.999971
		Current	59.847720	50.296620	0.999976
	C _i vs C _c	Current	1.000000	0.000040	0.999976

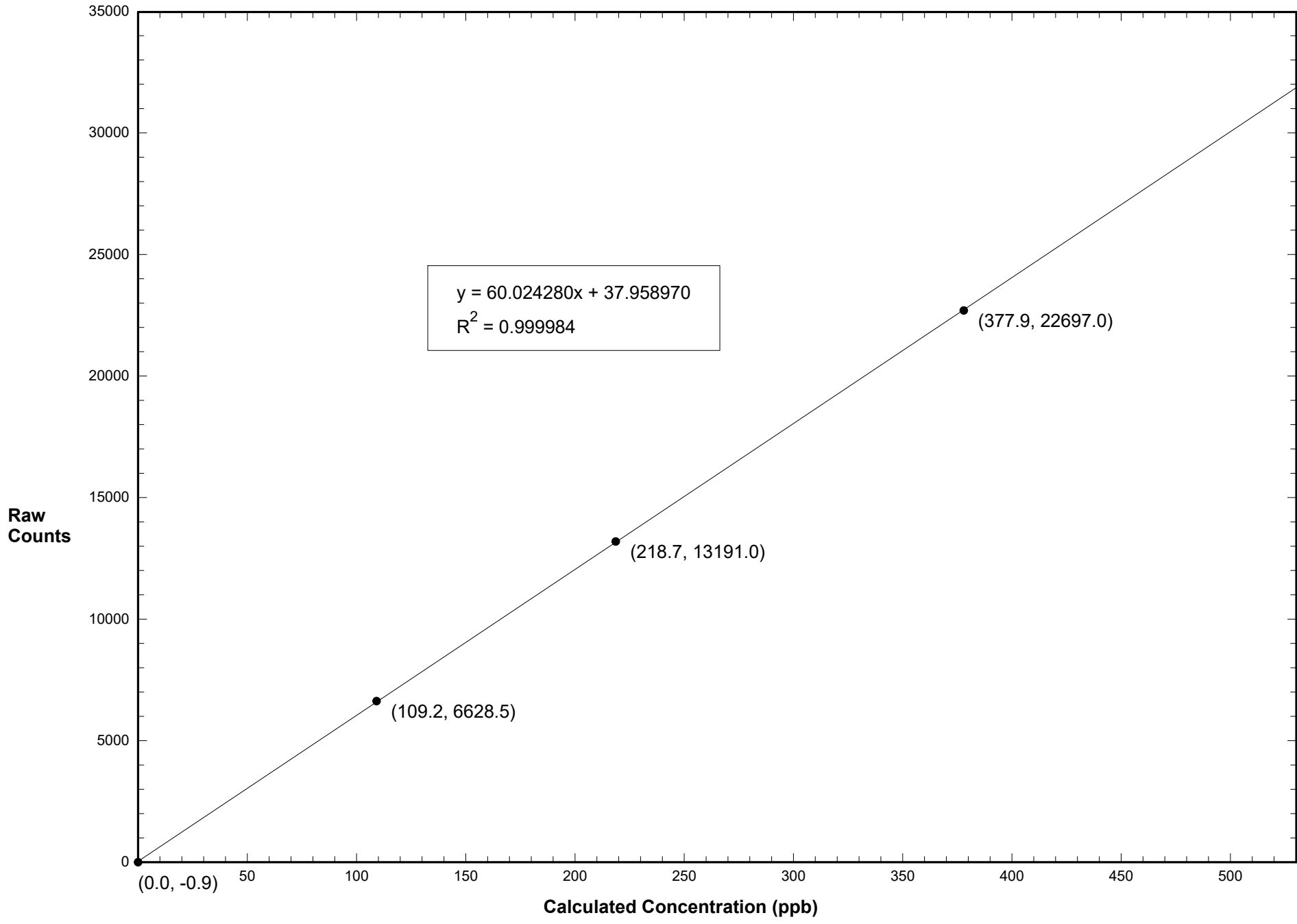
Comments: SAMPLE FLOW = 0.537 LPM

Calibration Data Summary (Page 2)

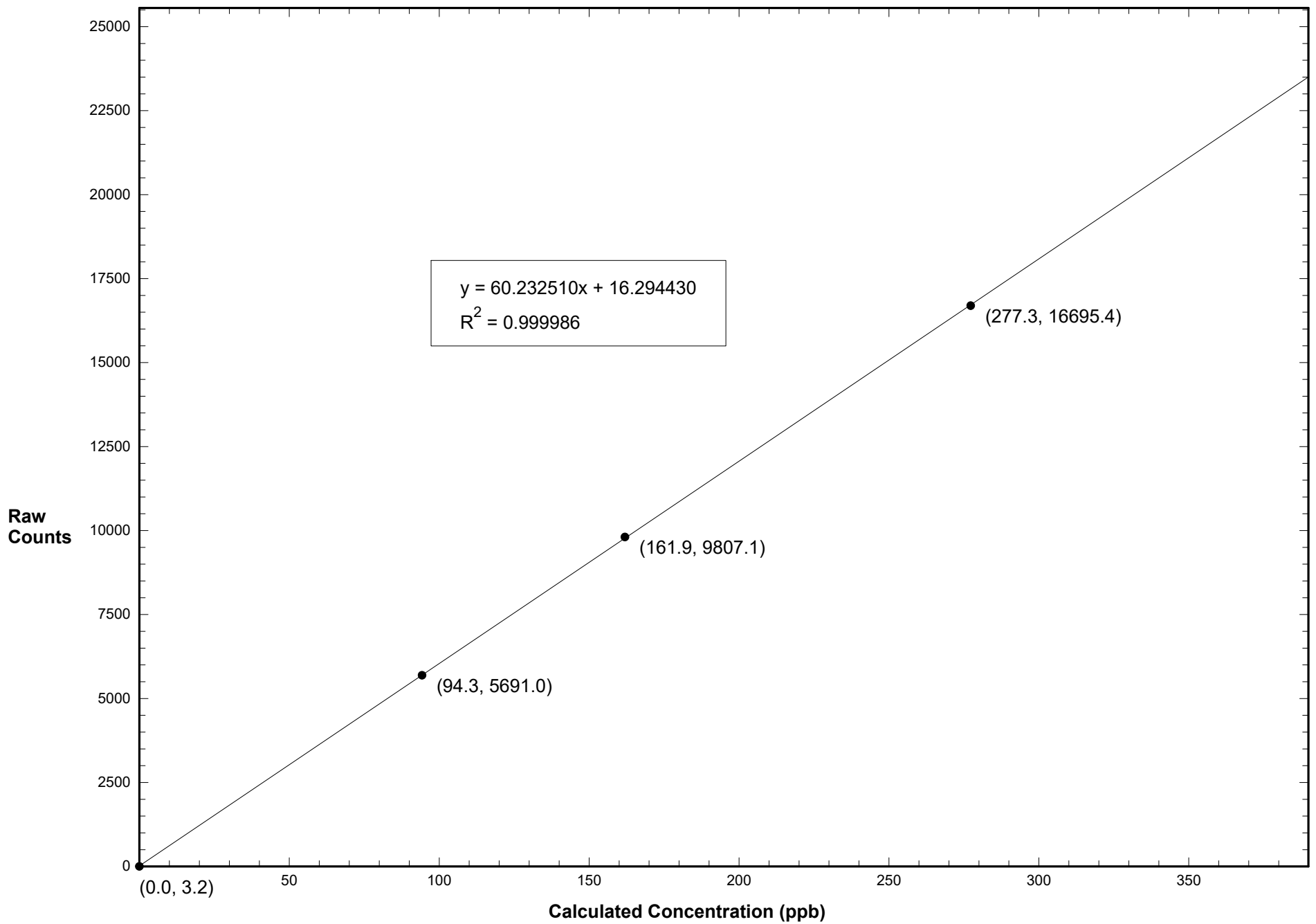
January 25, 2018 - Station 907

NO Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration C _c (ppb)	Raw Count Output R _c	Indicated Concentration C _i (ppb)	Correction Factor C _c /C _i		
0.07024	5.022	377.9	22697.0	377.5	1.001		
0.04050	5.034	218.7	13191.0	219.1	0.998		
0.02019	5.048	109.2	6628.5	109.8	0.994		
0.00000	5.000	0.0	-0.9	-0.6			
NO Calibration					Average Correction Factor: 0.998		
0.07024	5.022	379.3	22717.0	378.7	1.002		
0.04050	5.034	219.5	13224.8	220.1	0.997		
0.02019	5.048	109.6	6649.0	110.3	0.994		
0.00000	5.000	0.0	3.7	-0.8			
NO _x Calibration					Average Correction Factor: 0.997		
Reference Concentration NO (ppb)	Raw Count Output NO	Calculated Concentration NO (ppb)	Calculated Concentration NO ₂ , C _c (ppb)	Raw Count Output R _c	Indicated Concentration C _i (ppb)	Correction Factor C _c /C _i	Converter Efficiency C _i /C _c
380.7	6246.4	103.4	277.3	16695.4	276.9	1.001	0.999
380.7	13168.4	218.8	161.9	9807.1	162.6	0.996	1.004
380.7	17229.6	286.4	94.3	5691.0	94.2	1.001	0.999
			0.0	3.2	-0.2		
						Average Correction Factor: 0.999	
NO ₂ Gas Phase Titration						Average Converter Efficiency: 1.001	
Parameter	Correction Factor (Previous)	Correction Factor: (Current)	Percent Change of Correction Factor				
NO	1.002	1.001	-0.1				
NO ₂	1.000	1.001	0.1				
NO _x	1.002	1.002	0.0				

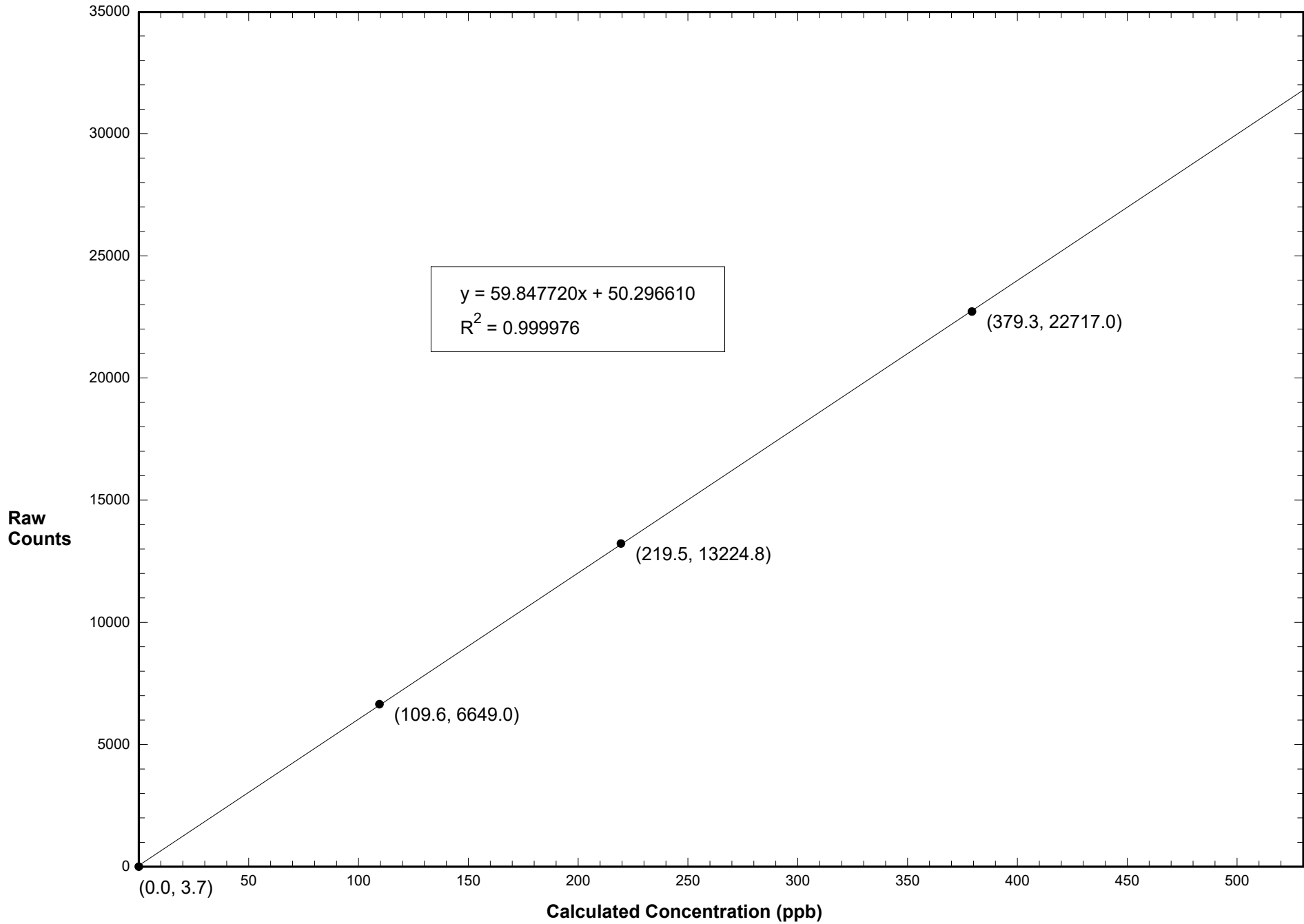
Station 907 NO January 25, 2018: Linear Regression



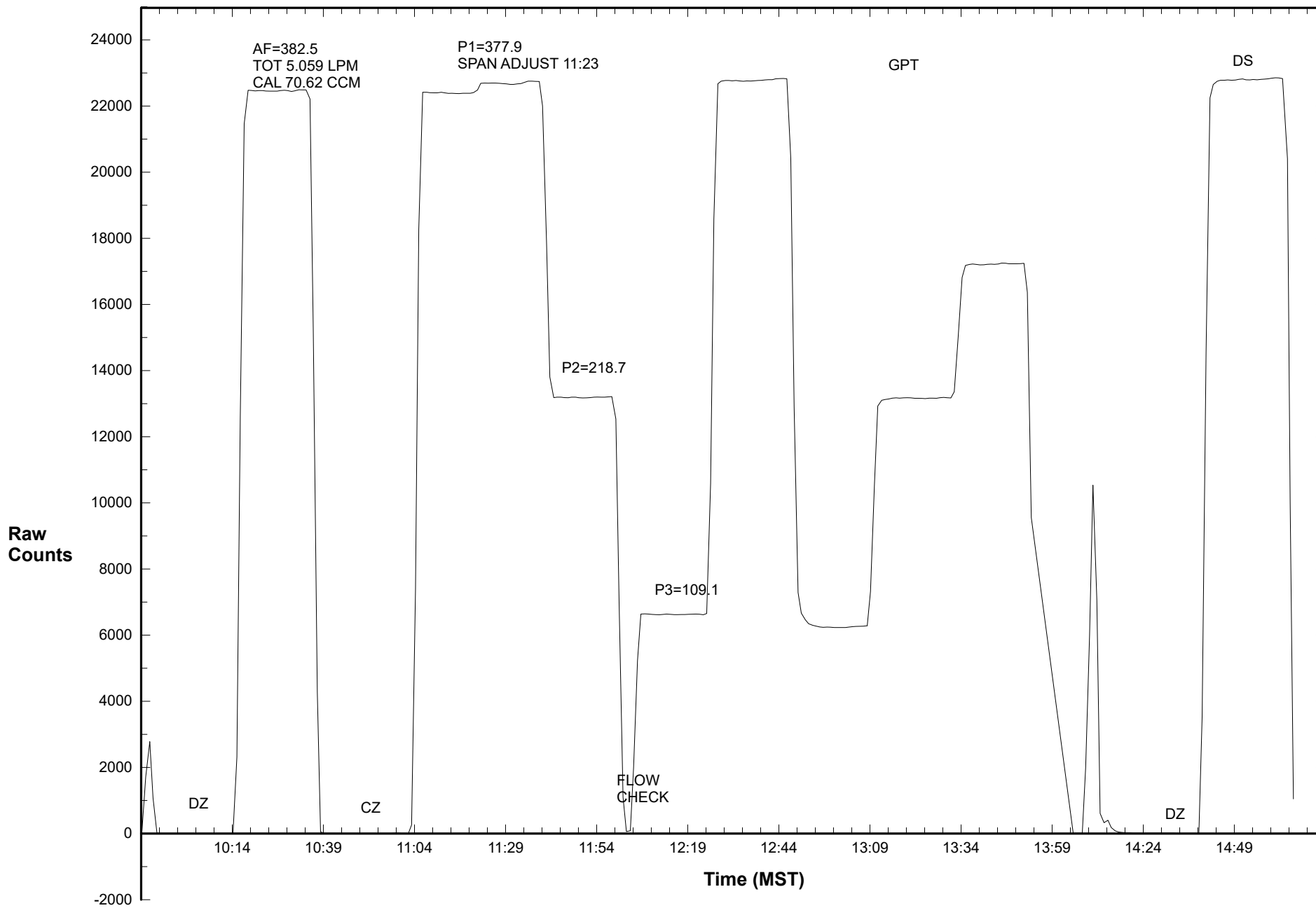
Station 907 NO2 January 25, 2018: Linear Regression



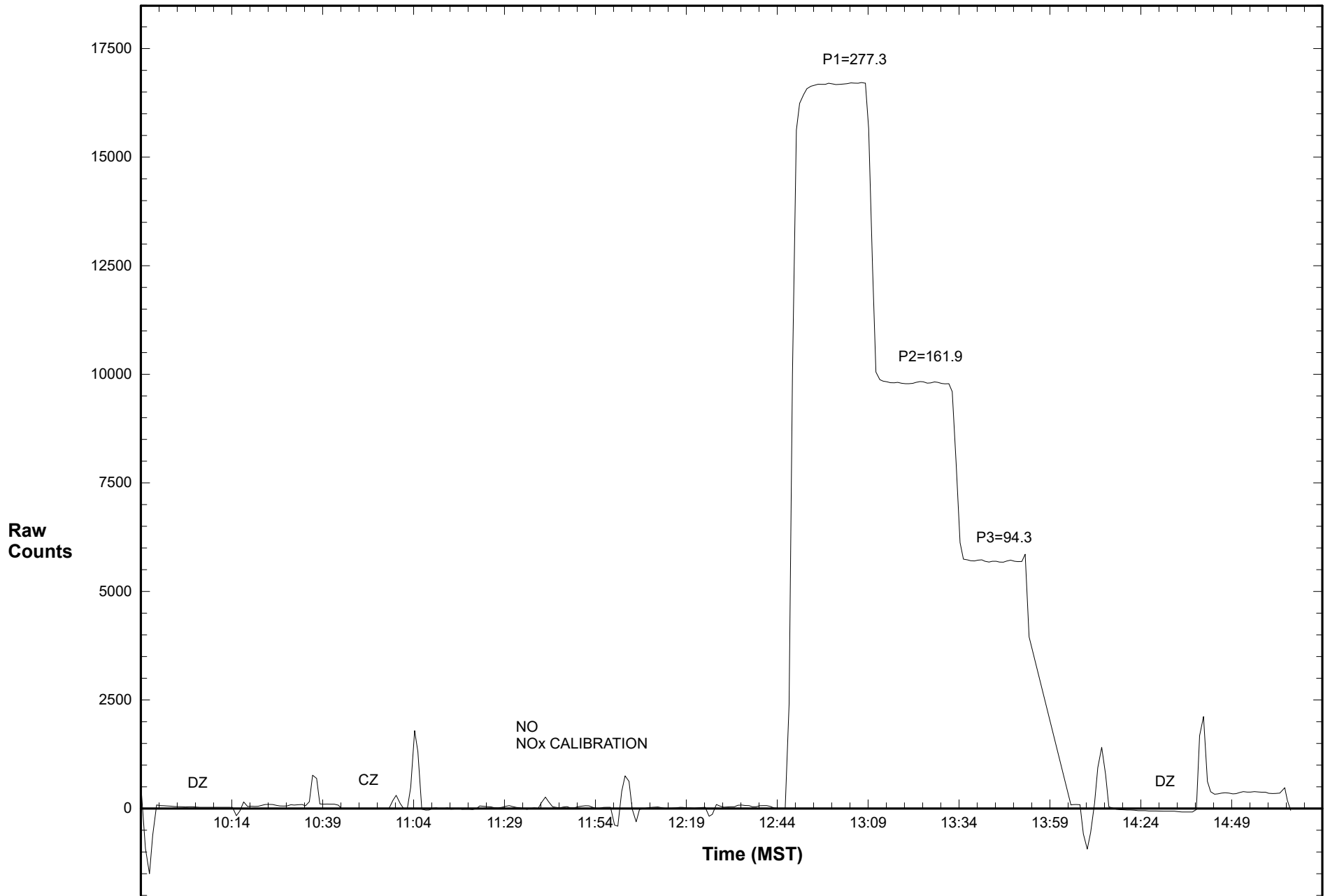
Station 907 NOX January 25, 2018: Linear Regression



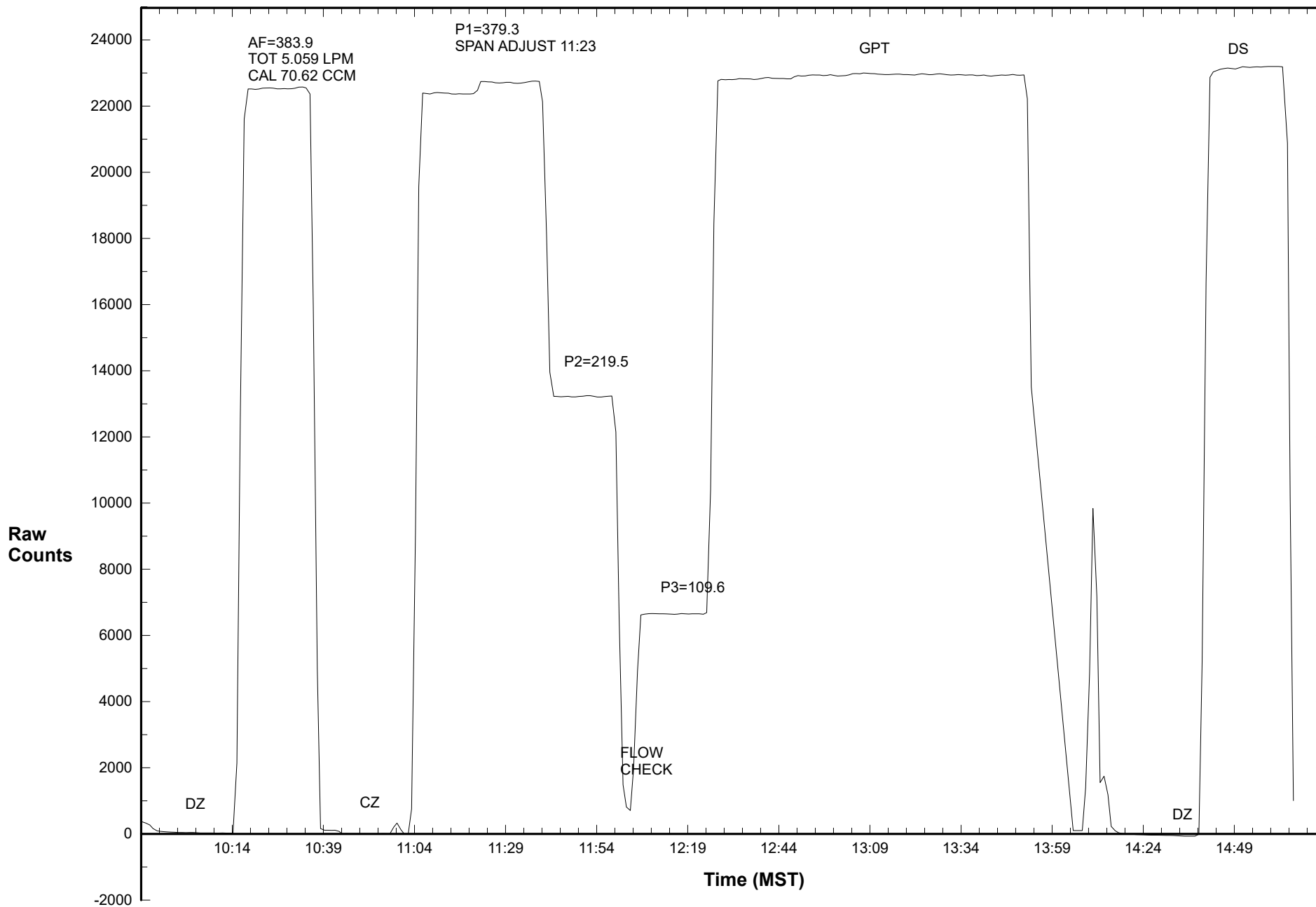
Station 907 NO January 25, 2018: Calibration Graph



Station 907 NO2 January 25, 2018: Calibration Graph



Station 907 NOX January 25, 2018: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 907, Powers

Calibration Date: January 25, 2018

Parameter: SO₂

Instrument: Teco 43CTL/Thermo 43i

Serial Number: 333803284/1153630148

Previous Calibration Date: December 18, 2017

Calibration: Removal/Install

Calibration Equipment: Sabio 2010 SN - 04300810

Barometric Pressure: 27.13" Hg

Calibration Method: Standard Gas Dilution

Cylinder ID: EX0012416

Temperature: 23.0° C

Cylinder Concentration: 24.4 ppm SO₂

In Service: 12/06/2017 EXP 10/25/2020

Technician: L. Burns

Instrument Settings	SO ₂ bkg ppb	SO ₂ Coefficient	Monitoring Range
Previous	4.40	0.813	500 ppb
Current	14.0	0.958	500 ppb

Final Zero: -0.7 ppb

Final Span: 372.2 ppb

As Found Correction Factor: 1.018

SO ₂ Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration C _c (ppb)	Raw Count Output R _c	Indicated Concentration C _i (ppb)	Correction Factor C _c /C _i
0.0783	5.043	373.0	22320.6	372.4	1.002
0.0422	5.030	203.0	12239.6	204.0	0.995
0.0219	5.033	105.6	6367.0	105.9	0.998
0.0000	5.000	0.0	-6.7	-0.6	

Results of Linear Regression

R _c vs C _c	Slope	Intercept	R ²
Previous	59.943610	16.181270	0.999991
Current	59.854130	30.584400	0.999977
C _i vs C _c			
Current	1.000000	0.000000	0.999977

Average Correction Factor: 0.998

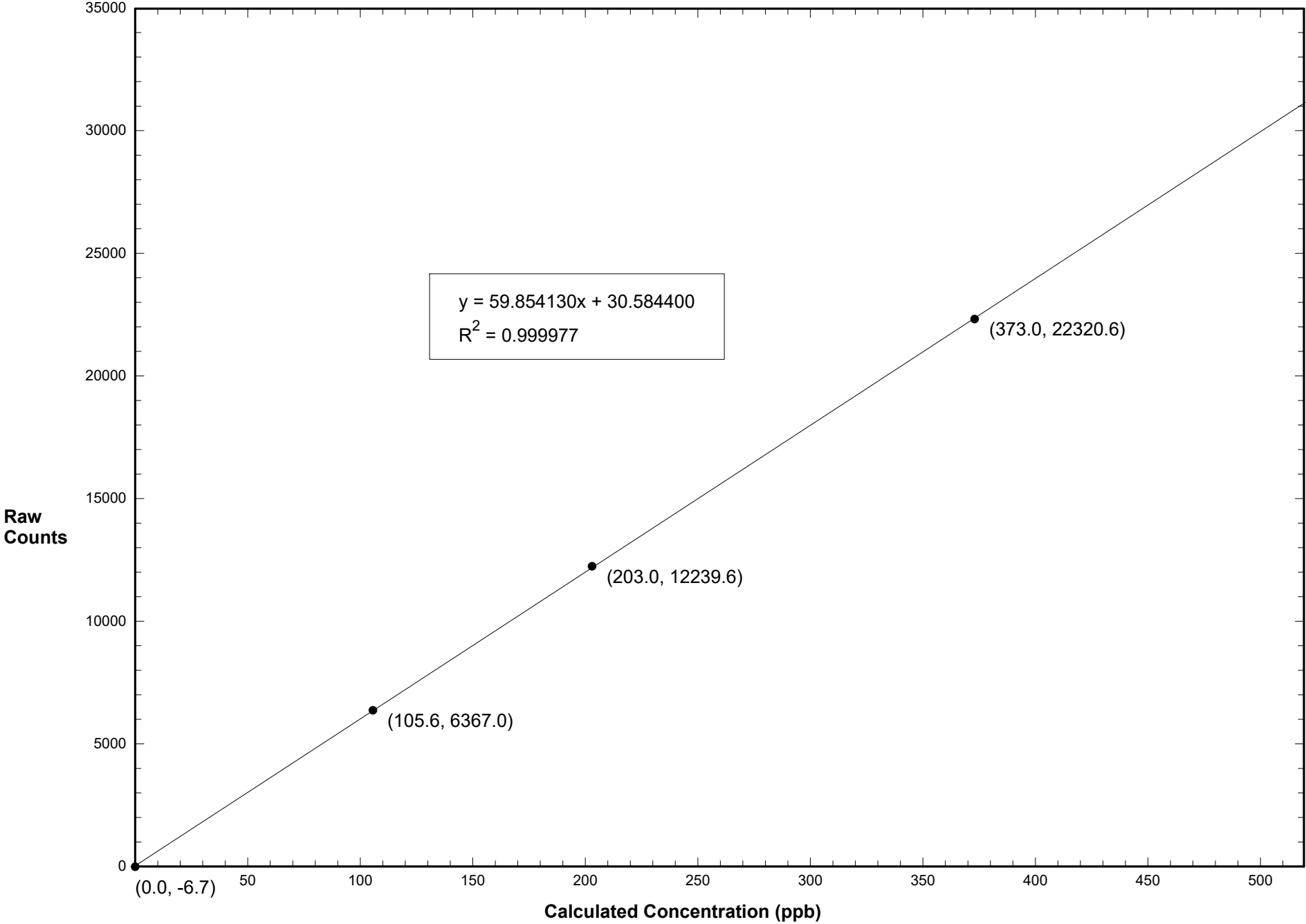
Previous Correction Factor: 1.001

Current Correction Factor: 1.002

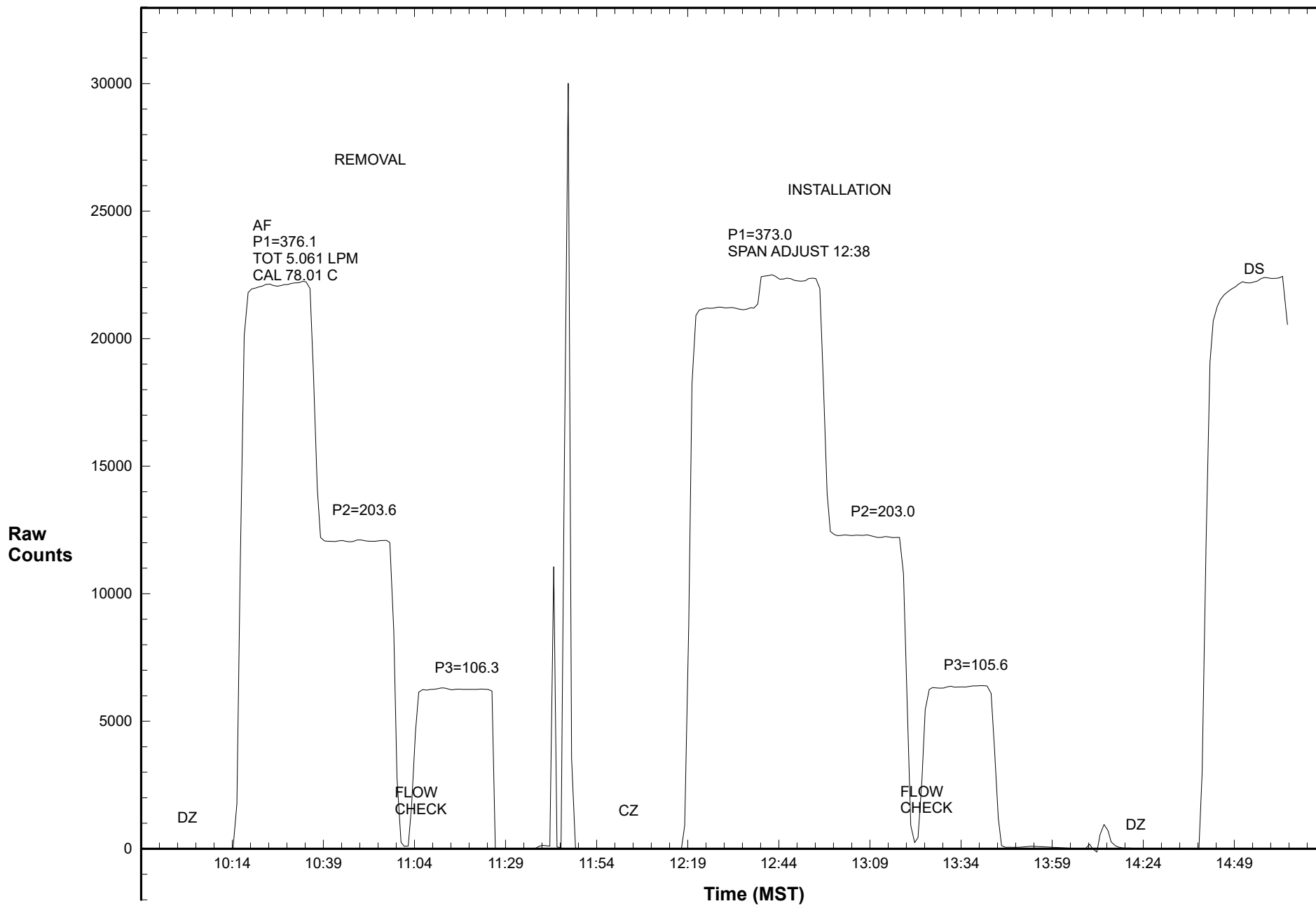
Percent Change of Correction Factor: 0.1

Comments:

Station 907 SO2 January 25, 2018: Linear Regression



Station 907 SO2 January 25, 2018: Calibration Graph



WEST CENTRAL AIRSHED SOCIETY

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

**AMS 907
POWERS
JANUARY 2018**

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

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



WCAS - Power
Summary of Hourly Averages

External Temperature (ET) - C
January 2018

Maximum Value: 7.39 C on Jan 18 17:00																								Maximum Daily Average: 2.49 C on Jan 18																								Hours in Service: 744	
Minimum Value: -31.4 C on Jan 12 06:00																								Minimum Daily Average: -26.12 C on Jan 12																								Hours of Data: 744	
Maximum Diurnal Average: -5.56 C at hour 15																								Minimum Diurnal Average: -10.69 C at hour 9																								Hours of Missing Data: 0	
Monthly Average: -8.615 C																								Percentiles: P ₁ = -30.0 P ₁₀ = -22.5 Q ₁ = -15.7 Median = -7.1 Q ₃ = -0.5 P ₉₀ = 1.8 P ₉₉ = 5.8																								Hours of Calibration: 0	
																								Percent Operational Time: 100.0																									
Day	Hourly Period Ending At																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Jan	-26.8	-26.5	-26.3	-26.3	-26.1	-24.2	-22.2	-20.7	-20.1	-19.1	-17.8	-16.1	-14.8	-13.5	-13.0	-11.4	-9.9	-7.6	-5.1	-3.0	-4.4	-4.4	-2.1	-2.2	-15.15	-2.14																							
2-Jan	-0.9	0.8	1.2	1.1	0.7	0.3	-0.1	-1.0	-1.9	-2.1	-1.7	0.5	1.7	1.4	2.6	2.7	1.2	-0.4	-0.9	-1.1	-2.0	-1.3	0.2	1.1	0.08	2.70																							
3-Jan	1.4	1.1	0.5	0.2	-0.3	-0.4	-0.5	-1.0	-1.9	-2.4	-1.2	-0.1	2.1	3.5	4.7	3.7	0.9	0.5	1.1	0.3	0.6	0.9	0.7	0.6	0.63	4.72																							
4-Jan	0.6	1.4	1.1	0.9	-0.4	-0.9	0.6	0.2	0.0	-0.5	0.7	2.0	2.9	3.6	2.4	1.5	-0.1	-1.3	-1.1	-1.1	-1.4	-2.7	-3.6	-3.9	0.03	3.56																							
5-Jan	-5.0	-4.8	-5.6	-6.2	-6.7	-7.8	-8.7	-9.3	-10.1	-9.5	-7.4	-5.3	-2.0	0.2	0.1	-0.3	-3.8	-5.5	-6.3	-5.3	-5.9	-3.7	-5.4	-4.8	-5.38	0.19																							
6-Jan	-6.0	-3.5	-1.2	0.9	2.4	4.3	2.9	3.2	3.5	3.5	3.8	3.7	4.2	4.2	4.2	3.2	1.8	1.2	1.6	1.6	0.7	-0.2	-0.5	-0.5	1.64	4.30																							
7-Jan	-0.4	0.0	0.3	0.2	0.2	0.2	-0.7	-1.3	-2.3	-1.9	-0.7	1.2	2.3	2.5	1.9	1.2	-0.5	-0.1	-0.5	-0.1	0.1	-0.7	-1.7	-1.4	-0.09	2.54																							
8-Jan	-1.6	-1.6	-1.6	-2.1	-2.6	-2.3	-2.3	-2.7	-3.3	-3.5	-2.4	-1.9	-0.7	0.4	1.1	1.1	-0.3	-1.9	-2.7	-2.9	-3.4	-3.8	-6.2	-8.8	-2.33	1.12																							
9-Jan	-10.4	-12.0	-12.9	-13.8	-14.6	-15.4	-16.3	-17.1	-17.8	-18.4	-18.9	-19.2	-19.5	-19.2	-19.2	-19.3	-19.7	-20.1	-20.8	-21.4	-21.9	-22.2	-22.5	-23.0	-18.15	-10.41																							
10-Jan	-23.0	-22.7	-22.7	-23.2	-23.6	-24.0	-24.1	-24.0	-23.9	-23.8	-23.5	-22.5	-21.4	-21.3	-21.9	-22.0	-22.8	-23.4	-24.5	-24.4	-24.1	-23.8	-23.8	-24.5	-23.29	-21.35																							
11-Jan	-25.6	-25.7	-28.2	-30.0	-30.6	-30.0	-29.0	-28.9	-29.1	-27.8	-25.0	-22.6	-22.0	-21.2	-20.7	-20.8	-22.1	-23.8	-24.6	-25.4	-26.3	-26.9	-27.7	-28.3	-25.93	-20.73																							
12-Jan	-28.6	-28.7	-29.2	-28.5	-30.5	-31.4	-31.1	-30.5	-31.1	-30.1	-26.0	-24.0	-21.8	-20.0	-21.2	-22.1	-23.5	-24.4	-24.7	-24.3	-24.2	-23.9	-23.5	-23.5	-26.12	-19.98																							
13-Jan	-22.4	-21.0	-18.9	-16.1	-13.9	-12.6	-11.2	-8.8	-8.0	-6.6	-5.2	-4.0	-0.1	1.8	2.0	2.4	2.7	2.2	1.7	1.4	0.8	0.1	0.1	0.0	-5.56	2.74																							
14-Jan	0.1	0.0	-0.2	-2.2	-4.2	-5.1	-5.7	-6.2	-6.5	-6.8	-7.0	-7.3	-7.2	-7.1	-7.8	-8.2	-9.8	-11.2	-12.7	-13.4	-13.7	-14.3	-14.7	-15.5	-7.78	0.08																							
15-Jan	-16.3	-16.3	-15.8	-16.3	-16.2	-15.4	-14.6	-13.5	-13.4	-13.4	-11.5	-9.0	-6.1	-5.2	-4.8	-5.2	-6.3	-7.7	-8.6	-9.6	-10.7	-11.4	-12.0	-12.4	-11.32	-4.84																							
16-Jan	-13.1	-13.5	-13.3	-13.1	-12.5	-12.7	-14.2	-14.9	-12.8	-12.5	-9.8	-6.1	-2.0	0.3	1.1	1.0	0.1	-1.7	-1.1	-0.1	2.3	4.5	6.2	6.2	-5.49	6.16																							
17-Jan	5.8	5.0	4.6	4.5	4.6	4.4	3.1	1.9	0.8	0.5	2.1	1.9	2.7	4.0	3.6	5.3	1.7	1.1	1.0	0.0	-0.3	-0.1	-0.4	-0.8	2.37	5.85																							
18-Jan	-1.0	-1.4	-2.4	-2.4	-2.3	2.0	2.9	-1.1	-0.9	0.9	2.1	2.5	4.9	5.9	5.9	6.9	7.4	5.8	5.7	4.4	4.6	3.4	2.8	3.1	2.49	7.39																							
19-Jan	2.2	1.7	0.9	1.1	1.3	1.4	1.4	1.3	1.4	1.2	1.9	2.9	4.2	4.4	4.2	3.4	2.6	2.1	1.4	0.9	0.3	-0.2	-0.5	-0.5	1.71	4.41																							
20-Jan	-0.6	-1.2	-1.2	-1.3	-2.5	-4.1	-5.2	-5.4	-5.1	-4.0	-3.6	-2.8	-1.6	-0.2	1.5	0.7	-0.4	-1.2	-2.3	-3.4	-4.1	-4.3	-4.6	-4.8	-2.58	1.52																							
21-Jan	-5.3	-6.2	-6.8	-7.2	-6.3	-6.2	-5.9	-6.5	-6.5	-6.8	-7.1	-6.3	-5.5	-4.3	-4.3	-4.1	-5.0	-5.6	-5.4	-5.8	-6.3	-7.3	-7.3	-7.2	-6.06	-4.07																							
22-Jan	-7.2	-7.7	-7.8	-7.7	-8.1	-8.1	-8.0	-7.9	-7.9	-7.5	-7.1	-6.0	-3.1	-1.4	0.1	-0.1	-0.2	-0.7	-1.0	-1.4	-2.2	-2.5	-3.5	-4.5	-4.65	0.05																							
23-Jan	-5.0	-4.5	-3.8	-4.1	-4.1	-3.6	-5.3	-6.1	-6.9	-5.9	-5.0	-2.3	0.0	1.3	3.2	0.7	-0.6	-1.7	-2.4	-3.0	-3.2	-3.5	-3.9	-4.6	-3.09	3.21																							
24-Jan	-5.3	-6.1	-7.2	-8.1	-9.3	-10.1	-11.3	-12.2	-12.3	-12.4	-9.5	-8.0	-6.6	-5.4	-6.3	-6.6	-7.4	-9.1	-9.8	-10.1	-9.3	-8.7	-8.4	-8.2	-8.65	-5.27																							
25-Jan	-8.0	-8.0	-8.1	-8.1	-8.2	-8.2	-8.1	-8.2	-8.1	-8.0	-7.8	-7.8	-7.3	-7.7	-7.9	-8.0	-8.2	-8.7	-9.1	-9.5	-9.8	-9.7	-9.7	-9.7	-8.41	-7.34																							
26-Jan	-9.8	-10.1	-10.8	-11.5	-12.1	-12.7	-13.1	-13.8	-14.4	-14.7	-14.6	-14.5	-14.3	-14.3	-14.1	-14.1	-13.8	-14.4	-14.8	-15.3	-15.6	-16.3	-17.1	-18.2	-13.93	-9.78																							
27-Jan	-18.9	-19.9	-20.2	-21.0	-22.0	-23.0	-22.5	-21.4	-20.3	-19.1	-17.8	-16.5	-14.5	-15.0	-15.2	-15.9	-16.2	-16.5	-17.0	-17.4	-17.5	-17.4	-17.3	-17.3	-18.31	-14.46																							
28-Jan	-17.3	-17.6	-17.7	-17.5	-17.8	-18.0	-18.8	-20.0	-20.3	-19.4	-17.4	-14.9	-15.2	-14.8	-15.5	-15.9	-16.8	-17.2	-17.0	-17.0	-16.9	-16.7	-16.6	-16.5	-17.20	-14.79																							
29-Jan	-16.2	-15.9	-16.1	-16.0	-15.7	-15.7	-15.5	-15.3	-15.2	-14.9	-14.5	-14.2	-13.9	-13.8	-13.7	-13.3	-12.7	-12.7	-12.6	-12.5	-12.0	-11.4	-11.0	-12.3	-14.05	-11.04																							
30-Jan	-13.3	-12.7	-10.3	-9.5	-9.7	-11.0	-12.1	-12.6	-13.3	-13.1	-12.5	-11.1	-8.7	-8.0	-7.5	-7.7	-10.3	-11.1	-11.1	-12.2	-13.2	-14.3	-15.5	-16.7	-11.56	-7.47																							
31-Jan	-17.8	-19.0	-20.2	-21.2	-21.8	-22.7	-23.4	-23.6	-23.4	-23.2	-22.1	-20.8	-19.4	-17.6	-18.1	-19.4	-19.8	-20.6	-21.2	-21.9	-21.4	-21.4	-21.3	-21.2	-20.94	-17.60																							
																								-9.53	-9.56	-9.67	-9.82	-10.10	-10.10	-10.28	-10.56	-10.69	-10.37	-9.24	-8.02	-6.54	-5.69	-5.56	-5.82	-6.83	-7.60	-7.90	-8.17	-8.39	-8.52	-8.74	-9.03	Diurnal Average	
																								5.85	4.96	4.58	4.52	4.58	4.41	3.12	3.20	3.53	3.50	3.84	3.73	4.88	5.88	5.87	6.85	7.39	5.84	5.66	4.44	4.56	4.48	6.15	6.16	Diurnal Maximum	



WCAS - Power
Summary of Hourly Averages

Wind Speed (WS) - kph
January 2018

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1 Spd	8.6	8.8	7.2	8.0	7.4	13.4	20.0	19.7	20.0	22.3	20.1	15.0	15.6	17.8	15.2	20.8	23.5	21.4	18.5	17.1	11.0	12.2	14.6	15.0	13.87	23.54
Dir	SSW	SSW	S	SSW	S	SSW	SSW	SSW	SSW	SSW	SW	SW	SW	SW	WSW	SW	SW	WSW	WSW	W	WNW	W	WNW	WNW	SW	SW
2 Spd	18.2	20.8	18.1	19.4	19.8	17.1	12.2	8.9	9.8	9.0	10.7	8.6	11.0	8.6	8.4	5.3	6.5	8.2	8.8	7.9	8.1	12.4	14.6	13.9	9.68	20.76
Dir	WNW	NW	NW	NW	WNW	NW	NW	WNW	W	WSW	WSW	WSW	SW	SW	SW	SW	SW	SW	WSW	WSW	SW	SW	SW	WSW	W	NW
3 Spd	13.7	15.8	17.6	17.5	14.7	15.2	13.6	13.1	9.1	7.6	11.2	11.9	10.6	11.1	9.2	9.4	9.1	11.2	13.3	10.4	12.0	12.6	13.4	14.6	12.17	17.62
Dir	WSW	SW	SW	SW	WSW	WSW	WSW	W	WSW	WSW	WSW	WSW	W	W	WSW	WSW	SW	SW	WSW	SW	WSW	SW	SW	SW	WSW	SW
4 Spd	15.8	14.6	12.2	11.5	8.8	10.8	13.7	11.8	10.8	12.1	7.2	7.1	4.3	2.5	4.5	7.2	9.7	13.9	11.0	9.3	3.7	5.1	7.1	8.5	6.87	15.84
Dir	WSW	WSW	WSW	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SE	SSE	S	S	S	SSE	SE	SSE	SE	SE	SE	SW	WSW
5 Spd	10.7	13.4	11.3	12.1	6.7	11.0	8.0	7.9	10.1	8.4	5.4	5.7	4.7	4.7	5.0	6.6	6.7	7.3	8.4	6.4	2.1	5.0	0.8	2.5	6.69	13.36
Dir	SE	SE	SE	SE	SSE	SSE	S	SSE	SSE	S	SSW	S	S	S	S	SSE	SSE	S	S	S	SW	NW	SW	SW	SSE	SE
6 Spd	0.8	9.7	10.2	15.3	12.5	14.5	17.1	20.1	17.1	16.0	18.0	10.9	16.7	21.7	22.6	18.2	10.2	9.7	15.1	14.1	7.7	11.4	15.0	14.5	11.36	22.60
Dir	W	WSW	SW	WSW	WSW	WSW	W	NW	NNW	NW	NNW	NW	NW	NW	NW	NW	NW	NW	NW	NW	W	SW	SW	SW	WNW	NW
7 Spd	14.8	14.8	14.0	14.7	18.0	16.1	11.3	8.2	6.7	10.5	11.8	8.4	9.0	7.2	3.4	3.5	7.5	11.7	8.5	8.8	7.8	2.9	9.2	8.7	7.68	17.99
Dir	WSW	WSW	W	W	W	WNW	W	W	WSW	WSW	WSW	WSW	WNW	W	WSW	S	S	SSW	S	S	SSW	SE	SSE	SSE	WSW	W
8 Spd	8.7	10.8	10.6	9.3	9.8	7.6	6.2	6.0	8.0	11.4	10.2	2.1	4.2	6.8	2.4	3.3	AF	AF	9.6	11.6	11.6	14.3	17.3	16.4	1.37	17.32
Dir	SE	SSE	S	S	SSE	S	SSW	SSW	SSW	SW	WSW	WNW	WSW	WSW	W	W	AF	AF	NNE	NE	NE	NE	NNE	NNE	SE	NNE
9 Spd	17.8	20.1	17.7	17.6	19.0	19.5	18.4	19.0	19.9	20.3	19.6	20.0	21.8	21.5	22.2	20.3	25.5	22.5	22.0	22.5	19.8	12.3	13.5	12.4	18.74	25.53
Dir	NNE	NNE	NNE	NNE	NNE	NNE	NNE	N	N	N	N	N	N	N	NNW	NNW	N	NNW	NNW	NNW	N	NNW	NNW	NNW	N	N
10 Spd	10.6	12.5	15.4	13.7	11.9	10.8	10.5	11.3	10.0	10.6	11.7	11.2	9.1	7.8	7.5	4.7	AF	3.4	4.7	7.3	8.6	10.4	8.6	6.6	8.60	15.45
Dir	NNW	NNW	N	N	N	N	N	N	NNW	N	N	N	NNE	NNE	NE	NE	AF	AF	NNE	NW	W	WNW	NW	N	N	N
11 Spd	AF	AF	AF	AF	AF	6.6	11.0	10.4	10.0	10.8	13.0	10.4	9.9	10.2	10.1	10.3	9.0	9.1	11.2	9.9	10.0	10.2	7.4	7.0	9.35	13.03
Dir	AF	AF	AF	AF	AF	S	SSE	SSE	SSE	SSE	SSE	SSE	SE	SE	SE	SE	ESE	ESE	SE	SE	SSE	SSE	SSE	SSE	SSE	SSE
12 Spd	8.6	7.5	6.0	3.4	AF	AF	4.3	4.1	3.8	5.5	AF	8.7	7.0	5.9	9.7	9.8	8.3	5.1	9.4	12.3	9.7	7.7	7.5	10.0	6.88	12.33
Dir	SSE	S	SSW	SSW	AF	AF	SSW	SW	SSW	S	AF	S	S	SSE	SE	SE	SSE	SSE	SSE	SSE	S	S	S	S	SSE	SSE
13 Spd	6.7	7.7	8.0	10.7	13.1	18.1	16.9	13.4	15.4	16.6	17.1	17.0	18.6	19.6	18.1	14.8	22.3	20.7	16.3	15.7	13.3	10.3	11.7	9.5	12.54	22.33
Dir	S	SSW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	WSW	W	W	WNW	NW	NW	WNW	WNW	NW	WNW	WNW	WNW	W	NW
14 Spd	8.9	10.7	13.2	11.0	7.8	6.4	5.3	4.5	4.6	6.6	9.4	8.7	10.4	8.4	9.0	9.4	7.4	10.2	8.8	16.3	21.9	22.4	24.6	22.0	7.08	24.63
Dir	NW	NNW	NNW	NE	ENE	NE	NE	NE	E	E	ENE	E	SE	ESE	ESE	SE	ESE	ESE	SE	SE	SE	SSE	SE	SSE	ESE	SE
15 Spd	20.7	17.8	19.5	18.4	17.4	15.3	16.3	18.0	18.6	19.5	17.9	18.3	16.8	22.3	19.5	18.2	15.8	16.0	12.8	14.0	7.9	11.2	10.8	9.2	16.31	22.28
Dir	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SE	SE	SE	SE	SE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SE
16 Spd	7.2	9.3	8.5	9.1	8.6	7.2	AF	AF	6.7	5.5	6.2	2.2	3.7	4.3	AF	6.0	AF	AF	10.4	10.1	17.0	19.9	21.4	20.3	7.31	21.36
Dir	SSE	SSE	S	S	S	SW	AF	AF	SSW	S	SSW	SSW	SSW	SW	AF	SW	AF	AF	SW	WSW	W	W	W	W	SW	W
17 Spd	21.8	21.5	16.2	11.2	16.3	18.5	17.0	15.3	14.6	13.8	13.3	12.0	6.9	7.9	8.7	11.5	14.5	16.5	15.2	18.2	17.8	18.6	15.0	8.91	21.84	
Dir	WNW	WNW	W	W	WSW	W	WSW	WSW	SW	SW	SW	SW	SSW	S	SSE	SSE	SE	SE	SSE	SSE	SSE	SSE	SSE	SSE	SSW	WNW
18 Spd	5.0	2.0	2.3	2.7	4.6	16.3	12.3	10.2	11.0	13.1	16.4	18.0	14.8	11.7	8.8	9.6	12.9	14.3	16.8	10.0	9.1	11.2	15.0	18.8	9.82	18.80
Dir	SE	NE	ESE	NNW	SSW	SW	WSW	W	W	WSW	WSW	WSW	WSW	W	W	WSW	W	W	W	W	WNW	WSW	WSW	W	WSW	W
19 Spd	17.1	17.1	12.8	14.9	14.7	17.3	16.6	16.0	16.5	15.7	14.8	16.4	18.4	18.5	15.8	15.7	10.0	7.9	7.4	9.9	7.8	9.0	7.6	7.8	12.90	18.55
Dir	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	WNW	WNW	NW	NW	NW	NW	NW	W	W	WNW
20 Spd	6.1	6.5	2.8	4.9	AF	AF	AF	AF	AF	5.9	7.0	5.8	2.6	AF	AF	7.6	6.5	4.3	5.4	3.4	4.1	2.9	4.7	1.0	--	7.56
Dir	W	SW	SW	WSW	AF	AF	AF	AF	AF	S	SSE	S	S	AF	AF	SE	SE	SSE	SE	ENE	ENE	ENE	SE	ENE	--	SE
21 Spd	AF	4.2	AF	5.1	5.2	6.4	6.0	10.8	10.7	9.7	12.4	11.8	12.4	12.9	13.6	14.0	13.8	14.2	16.0	9.2	3.6	5.5	3.5	6.2	8.35	15.96
Dir	AF	ENE	AF	NE	E	E	E	E	E	ESE	ESE	ESE	E	E	E	ESE	ESE	ESE	ESE	ESE	ENE	N	N	N	E	ESE
22 Spd	2.9	2.4	4.6	7.4	6.4	9.5	9.7	8.7	8.7	9.1	10.2	10.4	8.7	11.5	11.7	7.3	7.5	8.6	8.3	10.6	10.9	10.6	8.6	10.3	7.89	11.70
Dir	NNE	NW	WNW	WNW	W	WNW	W	W	WSW	WSW	SW	WSW	WSW	WSW	W	WNW	W	W	W	W	W	W	WSW	SW	W	W



WCAS - Power
Summary of Hourly Averages

Wind Speed (WS) - kph
January 2018

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
23 Spd	11.3	12.7	12.5	11.1	8.5	9.5	10.9	8.0	11.6	12.0	9.1	8.2	7.9	6.7	3.4	7.2	9.2	13.8	15.8	15.7	17.9	16.2	14.2	14.0	6.76	17.87	
Dir	SW	WSW	W	W	W	WSW	SW	SSW	SW	SW	SW	SW	SW	SW	SSW	ESE	ESE	SE	SE	SE	SE	SSE	SE	SE	S	SE	
24 Spd	19.2	18.6	14.4	7.5	2.2	3.5	AF	AF	2.7	2.8	1.3	5.8	3.1	5.8	8.1	7.8	5.6	9.2	6.5	7.6	6.9	9.6	8.4	8.0	5.21	19.24	
Dir	SE	SE	SE	SE	ESE	SE	AF	AF	NE	SW	WSW	NNE	NE	NNE	NE	NE	ENE	ENE	ENE	ENE	ENE	E	E	E	E	SE	
25 Spd	6.2	6.2	6.9	6.3	6.3	4.5	4.3	6.7	7.4	6.9	7.1	8.4	7.2	9.6	12.9	11.3	14.7	15.5	15.5	14.5	11.5	12.3	14.7	17.6	7.00	17.56	
Dir	E	ENE	NE	NE	NE	ENE	NNE	NNE	NNE	NNE	NNE	NE	NNE	NNW	N	NNW	NW	NNW	NW	NW	WNW	WNW	WNW	NW	NNW	NW	
26 Spd	18.2	19.6	17.6	17.7	18.5	19.3	24.3	22.2	22.4	23.3	23.4	24.9	23.2	25.6	24.4	22.4	18.5	14.0	12.1	11.0	10.6	12.9	11.0	8.7	18.43	25.59	
Dir	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NNW	NNW	NNW	NW	NW	WNW	NW	NW	
27 Spd	9.3	2.7	AF	AF	AF	AF	2.2	AF	AF	AF	3.6	4.0	5.3	6.2	7.5	8.9	7.7	11.7	10.3	9.3	7.8	7.2	8.2	8.5	--	11.69	
Dir	WNW	WNW	AF	AF	AF	AF	W	AF	AF	AF	E	ESE	NE	NNE	NNE	NE	NNE	NE	NNE	N	N	NW	NW	NW	--	NE	
28 Spd	9.1	7.6	8.3	8.1	9.9	8.4	6.7	AF	AF	AF	5.8	8.3	12.9	11.8	11.9	12.5	11.5	16.2	17.5	14.3	15.4	15.3	16.5	16.0	6.07	17.53	
Dir	NW	NW	NW	WNW	NW	NW	NNW	AF	AF	AF	SE	SSE	SE	SE	SE	SE	ESE	SE	SE	SE	SE	SE	SE	SE	SE	SE	
29 Spd	15.2	17.4	16.5	15.4	15.7	16.1	17.5	17.7	16.3	15.3	14.2	17.1	16.4	16.1	16.4	13.7	12.4	12.8	12.3	10.6	10.8	8.9	3.3	21.4	12.73	21.43	
Dir	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SSE	SE	SSE	SSE	S	NNW	SE	NNW	
30 Spd	20.5	19.7	17.7	21.6	19.7	19.4	18.0	15.9	12.7	11.3	11.4	9.1	5.3	9.3	8.2	8.4	10.0	10.6	17.7	14.1	11.6	12.3	12.7	16.9	12.06	21.62	
Dir	NNW	WNW	NW	NW	NW	NW	NW	NW	WNW	WNW	WNW	NW	NNW	NNE	NNE	NNW	NW	NW	NNW	N	NNE	NNE	NNE	NNE	NNW	NNW	NW
31 Spd	16.2	16.5	16.2	13.8	14.1	11.9	7.2	7.1	6.3	4.9	2.8	1.6	AF	AF	4.7	7.4	6.4	3.0	3.5	4.3	9.7	9.4	9.0	9.4	5.84	16.47	
Dir	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NE	NNE	NNE	AF	AF	NE	NE	NE	NE	ENE	SE	SSE	SE	SE	SE	NE	NNE	
Spd	2.96	3.37	3.39	3.66	3.98	4.96	5.34	4.49	4.16	4.86	4.33	3.51	2.97	2.59	1.30	0.57	0.89	1.16	1.36	1.31	1.72	2.71	2.62	2.38	Diurnal Average		
Dir	W	W	W	W	W	W	W	W	WSW	WSW	WSW	SW	WSW	W	NW	SW	SW	SSW	SW	SW	SSW	SSW	SW	WSW	Diurnal Maximum		
Spd	21.84	21.53	19.52	21.62	19.80	19.49	24.31	22.17	22.45	23.32	23.35	24.88	23.25	25.59	24.42	22.45	25.53	22.50	22.00	22.50	21.95	22.39	24.63	21.95	Diurnal Maximum		
Dir	286.66	285.12	151.83	319.09	302.75	19.92	315.52	315.76	313.45	314.42	314.69	317.17	318.38	317.75	321.13	322.90	349.24	347.57	342.61	347.78	145.23	146.65	145.13	147.57			
Maximum Speed Value: 25.6 kph on Jan 26 14:00																				Minimum Speed Value: 0.8 kph on Jan 6 01:00				Hours in Service:		744	
Maximum Daily Speed Average: 18.74 kph on Jan 9																				Minimum Daily Speed Average: 1.37 kph on Jan 5				Hours of Data:		705	
Maximum Diurnal Speed Average: 5.34 kph at hour 7																				Minimum Diurnal Speed Average: 0.57 kph at hour 16				Hours of Missing Data:		39	
Monthly Average Velocity: 2.726 kph 249.46 deg										Speed Percentiles: P ₁ = 2.1 P ₁₀ = 5.0 Q ₁ = 7.7 Median = 10.8 Q ₃ = 15.4 P ₉₀ = 18.6 P ₉₉ = 23.1										Percent Operational Time:		94.8					
All monthly, daily, and diurnal averages have been calculated using vector methods																											
AF - Analyzer 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	3	23	26	16	0	0	68																				
NorthEast	19	31	9	1	0	0	60																				
East	5	15	7	0	0	0	27																				
SouthEast	8	50	71	10	0	0	139																				
South	11	58	6	1	0	0	76																				
SouthWest	11	47	54	7	0	0	119																				
West	10	43	63	6	0	0	122																				
NorthWest	4	28	37	25	0	0	94																				
Total	71	295	273	66	0	0	705																				



WCAS - Power
Summary of Hourly Averages

Relative Humidity (RH) - %
January 2018

Maximum Value: 96.76 % on Jan 20 09:00 Maximum Daily Average: 92.66 % on Jan 20 Minimum Value: 36.0 % on Jan 23 15:00 Minimum Daily Average: 53.12 % on Jan 7 Maximum Diurnal Average: 78.51 % at hour 9 Minimum Diurnal Average: 62.94 % at hour 15 Monthly Average: 73.436 % Percentiles: P ₁ = 41.0 P ₁₀ = 54.2 Q ₁ = 65.1 Median = 74.4 Q ₃ = 82.7 P ₉₀ = 91.0 P ₉₉ = 96.2																								Hours in Service: 744 Hours of Data: 744 Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0		
Day	Hourly Period Ending At																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Jan	75.0	75.9	75.9	76.0	75.3	76.2	77.9	76.3	74.9	73.3	70.1	65.2	60.1	57.6	59.4	56.4	54.4	54.9	50.6	47.5	52.3	56.2	59.9	62.6	65.15	77.89
2-Jan	65.6	67.1	67.4	67.4	68.1	69.5	70.2	73.9	79.1	81.0	76.5	67.9	62.9	65.1	59.6	57.5	63.0	69.0	72.0	73.9	76.8	74.6	70.7	68.0	69.44	80.97
3-Jan	67.0	67.9	69.2	68.8	71.3	70.9	70.3	71.2	73.8	75.1	70.2	66.6	59.7	54.9	49.4	53.7	63.1	64.8	62.8	65.5	64.6	63.8	65.7	66.1	65.69	75.09
4-Jan	66.0	64.2	65.5	67.0	71.9	74.3	69.8	71.4	71.8	73.0	68.5	64.5	62.6	60.2	63.4	65.5	70.8	77.0	75.8	75.0	77.7	83.8	87.8	91.2	71.62	91.18
5-Jan	91.7	90.1	91.1	91.8	91.5	92.1	93.2	93.3	92.4	91.7	89.1	83.6	74.0	65.4	64.2	63.5	75.5	79.2	81.0	79.2	82.0	78.6	81.8	82.6	83.28	93.34
6-Jan	85.9	82.1	76.3	72.1	68.9	64.9	69.8	77.4	76.4	70.9	63.4	63.0	53.9	50.2	48.5	51.2	55.1	56.6	46.5	43.6	45.4	49.5	52.2	52.1	61.49	85.90
7-Jan	49.8	46.9	46.0	47.8	48.9	49.8	52.0	54.1	57.8	56.3	53.8	48.7	46.2	45.8	48.1	51.9	58.6	55.5	58.2	55.9	55.3	59.0	64.0	64.5	53.12	64.54
8-Jan	63.4	64.9	64.6	66.9	70.1	69.1	69.6	71.6	73.6	74.6	70.2	68.8	64.5	61.4	59.0	58.5	64.4	71.8	74.7	76.3	80.4	83.0	88.0	86.7	70.68	88.05
9-Jan	86.3	85.3	83.0	81.4	80.3	79.2	79.8	80.8	79.3	78.1	77.6	77.2	75.9	75.9	74.6	75.6	74.1	72.5	71.7	71.1	70.3	74.1	75.1	74.8	77.24	86.25
10-Jan	75.7	73.8	72.6	73.6	73.6	73.6	73.0	70.1	70.6	71.5	70.4	66.1	60.4	59.0	62.8	64.6	70.5	73.3	76.8	73.5	71.9	72.9	73.7	72.2	70.67	76.80
11-Jan	75.4	75.2	74.8	73.5	73.7	73.6	75.5	75.3	74.8	74.4	72.2	65.5	62.0	61.0	58.4	57.0	62.5	69.1	71.6	74.4	74.7	75.0	75.1	74.6	70.81	75.47
12-Jan	74.6	74.5	74.0	76.6	73.8	71.4	72.3	73.6	72.0	73.0	72.2	72.4	68.3	60.4	62.1	63.6	65.5	69.9	73.0	73.4	73.6	73.7	73.7	74.9	71.36	76.64
13-Jan	74.2	73.3	72.6	69.8	69.2	68.5	70.0	78.6	84.4	84.3	78.5	72.0	63.6	59.2	59.9	60.2	62.1	64.8	66.6	68.6	70.7	73.5	75.2	75.0	70.63	84.38
14-Jan	74.2	74.4	75.8	81.8	80.0	78.7	81.0	85.4	85.1	80.2	77.3	80.4	77.7	73.7	72.2	73.3	79.0	78.5	79.3	84.4	85.0	83.3	79.8	80.7	79.22	85.44
15-Jan	83.1	84.5	83.4	82.6	85.4	87.0	86.5	87.7	86.9	85.5	82.4	80.5	75.6	73.9	71.5	70.4	74.1	80.8	83.8	86.2	88.1	88.6	88.4	88.3	82.72	88.55
16-Jan	88.0	87.5	87.3	86.8	87.7	88.5	86.8	86.1	88.4	86.6	83.3	76.3	65.6	57.9	53.4	54.2	56.5	64.7	65.8	65.4	63.6	60.3	54.6	54.4	72.90	88.54
17-Jan	60.8	77.9	79.7	76.2	70.9	60.1	57.1	55.6	56.3	53.1	46.4	47.8	45.5	40.5	43.5	40.3	48.8	50.4	53.6	58.5	59.4	59.3	61.6	64.8	57.00	79.69
18-Jan	65.9	69.1	74.2	74.4	74.0	60.4	58.5	67.9	67.7	65.4	64.0	64.1	56.0	52.3	50.6	44.5	39.2	39.4	39.5	41.1	44.0	46.2	45.3	43.6	56.15	74.40
19-Jan	46.0	47.5	49.6	49.4	49.3	49.4	49.6	49.9	49.7	50.7	51.6	50.7	49.9	51.4	53.8	62.0	67.8	71.5	76.4	80.9	84.7	86.6	87.9	88.4	60.62	88.36
20-Jan	88.7	90.8	90.6	90.0	93.8	96.3	96.1	96.3	96.8	96.4	96.3	96.1	95.4	90.0	78.1	81.8	86.5	89.6	94.0	96.1	95.3	96.7	96.4	95.7	92.66	96.76
21-Jan	95.4	95.3	95.3	94.9	95.6	95.7	95.5	95.2	94.9	93.7	93.4	93.6	93.6	91.3	90.7	85.9	80.6	80.3	81.0	83.7	86.4	92.6	93.0	93.0	91.27	95.70
22-Jan	92.6	93.5	94.1	93.7	94.2	95.1	94.4	94.0	94.0	93.7	93.3	93.3	84.5	71.5	63.6	65.6	66.6	66.6	68.0	69.5	71.3	70.7	73.8	75.2	82.21	95.13
23-Jan	76.1	70.6	61.0	58.6	59.4	59.0	64.7	65.3	69.2	61.7	57.6	50.8	42.8	39.2	36.0	44.1	48.5	56.5	61.1	64.5	65.2	67.7	67.7	66.8	58.93	76.12
24-Jan	68.3	71.7	76.2	79.6	84.2	86.9	89.7	90.8	90.3	89.3	84.8	78.2	71.7	68.1	74.1	77.1	81.1	88.1	90.1	92.8	93.5	94.2	94.4	94.2	83.72	94.40
25-Jan	94.0	93.9	93.9	93.9	93.7	93.5	93.1	93.0	93.1	93.0	92.6	91.4	91.4	90.2	89.9	90.4	90.7	91.8	90.6	90.0	89.5	89.5	89.5	88.6	91.87	94.05
26-Jan	87.7	84.4	84.0	85.4	80.8	80.2	79.0	79.9	79.9	78.6	75.7	72.5	69.0	67.5	67.4	69.1	69.2	73.0	75.0	77.9	80.7	79.0	79.7	81.4	77.38	87.67
27-Jan	81.9	83.3	83.1	83.0	82.5	81.7	80.3	80.3	81.2	80.9	80.5	77.0	68.4	68.5	70.8	74.5	77.7	80.4	81.9	83.1	83.0	82.9	82.7	83.2	79.70	83.28
28-Jan	83.7	84.3	84.4	83.9	82.9	81.7	81.0	81.5	80.8	80.0	78.7	72.4	71.8	70.7	70.7	72.2	76.4	80.0	80.9	81.5	81.5	80.7	81.1	81.2	79.34	84.41
29-Jan	81.6	81.4	81.5	81.6	81.1	80.1	78.8	79.0	79.0	79.2	78.9	77.9	77.8	78.6	79.5	79.9	80.1	82.3	83.8	84.7	85.2	84.8	84.6	85.4	81.11	85.36
30-Jan	86.4	84.5	86.9	83.7	82.7	83.1	84.5	83.2	83.8	83.1	80.8	76.2	66.0	63.4	61.7	62.3	73.6	76.7	77.3	79.4	81.0	82.0	82.1	77.8	78.42	86.85
31-Jan	76.8	79.2	77.4	77.0	77.3	76.2	76.2	76.0	75.8	74.3	69.4	63.9	57.1	51.9	53.9	62.2	64.5	67.6	69.8	71.8	70.6	71.7	72.2	70.7	70.15	79.17
76.83 77.25 77.13 77.08 77.17 76.34 76.65 77.89 78.51 77.51 74.84 71.80 66.90 63.80 62.94 64.15 67.75 70.83 72.08 73.23 74.33 75.31 76.06 76.09																								Diurnal Average		
95.42 95.30 95.27 94.93 95.57 96.34 96.13 96.25 96.76 96.41 96.27 96.11 95.37 91.41 90.72 89.87 90.43 90.75 94.05 96.09 95.26 96.73 96.39 95.70																								Diurnal Maximum		



WCAS - Power
Summary of Hourly Standard Deviations

Wind Speed (WS) - kph
January 2018

Maximum Value: 7.73 kph on Jan 29 23:00		Maximum Daily Average: 3.69 kph on Jan 9		Hours in Service: 744																																													
Minimum Value: 0.6 kph on Jan 20 17:00		Minimum Daily Average: 1.35 kph on Jan 11		Hours of Data: 705																																													
Maximum Diurnal Average: 2.77 kph at hour 5		Minimum Diurnal Average: 2.22 kph at hour 24		Hours of Missing Data: 39																																													
Monthly Average: 2.449 kph		Percentiles: P ₁ = 0.9 P ₁₀ = 1.3 Q ₁ = 1.7 Median = 2.3 Q ₃ = 3.0 P ₉₀ = 3.7 P ₉₉ = 5.2		Hours of Calibration: 0																																													
				Percent Operational Time: 94.8																																													
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Jan	1.8	2.4	2.0	1.5	2.8	3.9	2.9	3.9	3.6	3.6	3.5	3.1	2.8	3.3	3.0	5.1	2.7	2.8	3.1	4.2	2.2	2.0	2.9	2.7	3.00	5.14																							
2-Jan	3.9	3.6	3.7	3.4	3.5	2.8	3.3	1.3	1.4	1.2	1.7	1.7	2.3	1.9	4.8	3.2	1.8	1.5	1.4	1.2	1.2	1.3	2.0	1.8	2.33	4.77																							
3-Jan	1.7	1.7	2.0	2.2	1.5	2.0	2.0	2.4	2.2	2.5	1.8	1.8	1.8	2.4	2.0	1.8	1.1	2.5	1.5	1.3	1.2	1.9	1.7	1.8	1.85	2.47																							
4-Jan	1.3	2.2	1.5	1.8	1.2	1.9	1.8	1.7	2.2	1.9	2.4	1.2	4.0	3.1	3.2	1.1	1.8	1.3	2.1	2.0	2.5	2.5	1.2	1.0	1.95	3.96																							
5-Jan	1.7	0.8	1.8	1.7	4.6	2.0	2.1	0.9	1.8	2.7	1.7	2.4	2.6	1.9	3.5	2.0	1.6	1.6	2.2	3.0	2.6	3.5	2.3	3.1	2.26	4.57																							
6-Jan	1.6	2.2	1.5	2.9	1.8	2.2	3.1	3.9	3.4	3.0	4.1	2.3	4.4	5.1	5.1	4.0	2.1	2.3	3.3	3.7	1.5	3.1	2.2	1.9	2.94	5.15																							
7-Jan	2.2	3.7	2.9	2.6	4.2	3.0	1.8	2.4	2.2	1.5	1.6	2.6	2.1	1.4	2.6	3.7	2.0	1.9	2.1	2.0	1.6	3.1	2.3	1.5	2.37	4.16																							
8-Jan	1.9	2.4	3.3	1.7	2.0	2.4	2.8	1.8	2.9	4.3	3.3	2.5	2.5	2.8	2.1	2.2	AF	AF	1.7	2.1	2.4	3.4	4.1	3.4	2.62	4.26																							
9-Jan	3.6	3.6	3.5	3.3	3.7	4.0	3.7	3.5	3.2	3.2	3.7	3.5	3.6	3.8	3.9	3.7	6.1	4.1	4.3	4.2	6.2	2.0	2.2	1.9	3.69	6.25																							
10-Jan	1.5	2.7	3.2	2.4	2.7	1.7	2.0	2.3	2.1	2.6	2.3	1.9	2.1	1.4	1.5	1.5	AF	1.1	1.1	2.0	1.9	1.9	1.4	1.6	1.96	3.20																							
11-Jan	AF	AF	AF	AF	AF	0.8	1.3	1.7	0.9	1.0	1.1	1.8	1.1	1.3	1.5	1.8	2.0	1.3	1.9	1.5	1.1	1.0	1.5	1.0	1.35	2.04																							
12-Jan	1.0	0.9	0.8	2.1	AF	AF	0.8	0.9	0.8	1.2	AF	3.0	3.1	2.8	1.2	1.4	1.3	1.0	2.4	1.8	2.0	2.2	1.7	2.1	1.64	3.10																							
13-Jan	1.8	1.7	1.9	2.9	2.5	2.7	2.2	1.9	2.4	2.5	2.3	2.3	4.6	3.9	3.2	2.6	5.5	4.0	3.2	3.0	2.2	1.8	1.8	1.5	2.68	5.54																							
14-Jan	1.8	2.5	2.0	2.4	2.2	3.2	2.7	2.1	2.6	1.5	3.0	2.1	1.5	1.5	1.6	1.3	1.7	1.4	2.5	3.7	2.6	2.9	3.6	3.1	2.32	3.71																							
15-Jan	3.2	2.8	3.2	2.4	2.4	2.8	2.6	2.6	3.2	3.2	2.7	3.2	4.0	3.4	3.5	2.8	2.6	2.3	2.3	2.4	2.2	1.7	1.5	1.8	2.70	3.99																							
16-Jan	1.3	1.3	2.2	2.6	2.8	2.2	AF	AF	1.9	1.3	2.2	2.6	3.3	3.0	AF	3.7	AF	AF	2.5	3.3	4.3	3.7	4.8	4.1	2.80	4.75																							
17-Jan	4.5	4.2	3.5	2.1	4.3	3.6	2.8	2.2	1.5	2.1	1.7	1.8	1.9	2.4	2.3	3.4	1.7	2.1	2.9	2.9	1.9	1.9	2.7	2.5	2.62	4.54																							
18-Jan	2.9	3.3	2.5	3.9	4.1	3.2	2.0	1.6	2.0	2.2	3.0	3.0	2.4	2.7	2.3	2.0	3.4	4.2	3.6	1.7	5.1	2.4	2.4	3.5	2.90	5.12																							
19-Jan	3.0	2.7	3.0	2.4	2.4	3.0	2.9	2.6	2.9	2.7	2.7	3.1	3.8	5.3	3.3	3.4	3.1	1.5	1.6	2.2	1.5	1.1	1.2	1.3	2.61	5.30																							
20-Jan	2.0	3.0	2.8	2.2	AF	AF	AF	AF	AF	1.9	2.1	1.6	2.2	AF	AF	1.6	0.6	2.4	1.1	3.1	3.1	2.5	2.2	2.2	2.15	3.10																							
21-Jan	AF	1.6	AF	0.9	1.9	1.7	1.5	2.7	2.3	2.3	2.7	2.9	3.0	2.8	2.9	3.2	3.2	3.2	4.8	2.5	2.5	1.4	1.9	2.5	2.49	4.82																							
22-Jan	2.5	2.4	1.1	4.5	4.2	2.5	2.7	2.2	1.6	1.4	1.5	2.8	2.8	3.3	2.4	1.3	1.5	1.5	1.9	2.0	1.5	1.7	1.3	1.4	2.16	4.46																							
23-Jan	1.1	1.4	1.8	2.3	2.4	1.8	1.1	1.2	1.7	3.0	2.8	4.2	2.9	3.3	3.0	1.0	1.4	1.9	1.5	2.2	2.1	2.5	2.3	2.3	2.14	4.18																							
24-Jan	2.8	3.3	4.4	3.2	1.9	2.7	AF	AF	1.9	2.3	1.3	2.8	2.1	1.6	1.8	1.7	2.3	1.9	2.1	1.9	1.7	2.2	2.2	1.9	2.28	4.40																							
25-Jan	1.8	1.6	1.6	1.7	1.4	1.4	1.0	1.2	1.5	2.3	1.6	2.2	2.6	2.2	2.4	2.7	5.2	2.7	2.3	2.0	1.9	1.9	2.9	2.8	2.13	5.20																							
26-Jan	3.1	3.3	3.1	2.9	3.4	3.0	4.0	3.4	3.6	3.7	4.0	4.4	4.3	4.0	4.7	3.8	3.0	2.4	1.8	2.9	2.7	1.9	1.8	0.9	3.16	4.65																							
27-Jan	1.2	2.6	AF	AF	AF	AF	1.1	AF	AF	AF	1.7	1.3	1.6	1.6	2.9	1.7	1.5	2.0	2.1	1.4	1.8	1.4	1.2	1.1	1.67	2.93																							
28-Jan	1.0	1.2	0.8	1.1	1.5	1.2	1.1	AF	AF	AF	1.7	1.9	1.4	1.8	2.0	1.8	2.6	2.4	2.7	2.3	2.0	2.8	2.6	2.5	1.83	2.83																							
29-Jan	2.6	2.8	2.5	2.8	2.6	3.3	3.1	3.1	3.5	3.5	2.7	2.8	3.1	2.1	2.8	2.7	3.5	3.3	4.1	3.6	3.7	2.9	7.7	4.7	3.31	7.73																							
30-Jan	3.6	4.5	3.9	4.5	4.1	3.7	2.8	2.9	3.1	2.1	2.2	2.3	2.2	1.7	1.9	3.3	1.8	3.3	3.3	5.3	1.9	2.4	2.9	3.5	3.05	5.27																							
31-Jan	3.1	3.3	3.2	3.2	2.7	2.9	2.1	1.3	2.7	2.7	2.3	2.2	AF	AF	2.6	1.4	1.8	2.6	1.5	2.9	1.9	1.7	1.4	1.5	2.31	3.32																							
																								2.26	2.52	2.49	2.53	2.77	2.56	2.26	2.22	2.33	2.38	2.38	2.49	2.73	2.69	2.76	2.49	2.46	2.29	2.42	2.58	2.35	2.23	2.38	2.22	Diurnal Average	
																								4.54	4.51	4.40	4.54	4.57	4.04	4.03	3.93	3.64	4.26	4.12	4.37	4.57	5.30	5.15	5.14	6.06	4.19	4.82	5.27	6.25	3.75	7.73	4.70	Diurnal Maximum	
AF - Analyzer Failure																																																	



WCAS - Power
Summary of Hourly Standard Deviations

Wind Direction (WD) - deg
January 2018

Maximum Value: 76.33 deg on Jan 18 02:00 Maximum Daily Average: 23.86 deg on Jan 18 Minimum Value: 1.0 deg on Jan 27 07:00 Minimum Daily Average: 7.33 deg on Jan 11 Maximum Diurnal Average: 15.49 deg at hour 14 Minimum Diurnal Average: 9.79 deg at hour 18 Monthly Average: 12.576 deg Percentiles: P ₁ = 4.6 P ₁₀ = 6.9 Q ₁ = 8.6 Median = 10.4 Q ₃ = 13.2 P ₉₀ = 18.2 P ₉₉ = 62.1																								Hours in Service:	744																								
																								Hours of Data:	705																								
																								Hours of Missing Data:	39																								
																								Hours of Calibration:	0																								
																								Percent Operational Time:	94.8																								
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-Jan	10.7	12.9	12.6	10.1	14.6	14.5	8.6	11.1	13.5	9.4	11.6	16.7	11.5	10.2	12.9	10.2	6.8	9.1	9.4	10.8	13.6	10.0	9.7	12.2	11.37	16.72																							
2-Jan	9.4	10.8	9.5	9.5	10.0	10.0	9.3	15.8	9.5	9.3	7.5	6.3	9.1	13.2	15.6	14.2	7.4	10.2	7.9	15.6	6.9	6.6	7.5	7.7	9.94	15.82																							
3-Jan	7.1	6.6	6.2	6.4	6.9	8.9	9.0	9.0	9.9	7.9	8.5	9.1	8.7	10.6	11.4	7.3	10.4	11.7	4.8	4.8	4.1	6.8	5.4	8.1	7.91	11.73																							
4-Jan	5.4	9.0	11.9	6.9	7.2	8.1	6.8	7.5	9.2	7.9	15.0	8.8	7.1	46.8	12.7	6.5	7.7	6.5	7.6	6.6	16.0	15.1	6.5	4.8	10.32	46.85																							
5-Jan	4.6	4.4	6.4	6.3	13.9	8.3	7.6	5.9	6.2	12.9	13.4	16.8	27.1	22.4	19.5	17.7	13.3	12.2	10.5	12.4	32.1	17.8	69.3	56.9	17.42	69.26																							
6-Jan	33.4	8.9	9.2	6.6	6.9	9.0	12.5	15.4	14.2	9.8	10.7	13.5	11.7	10.7	11.0	10.6	10.0	9.2	13.6	19.8	13.5	10.0	8.1	8.8	11.96	33.45																							
7-Jan	6.8	11.1	10.5	9.1	12.5	12.5	14.7	9.7	9.9	6.8	7.8	12.0	11.4	12.7	25.8	14.3	12.7	8.4	11.9	12.2	7.7	20.8	5.7	9.9	11.54	25.80																							
8-Jan	15.9	10.2	13.7	9.4	11.5	13.2	11.7	11.0	15.8	10.8	35.2	38.2	12.7	10.2	13.7	26.3	AF	AF	8.5	10.0	9.4	16.9	10.3	10.8	14.78	38.21																							
9-Jan	10.2	10.9	10.8	13.1	16.2	13.4	14.9	16.9	18.0	17.5	15.1	14.9	17.0	16.7	12.4	9.9	14.8	12.7	10.7	11.7	12.9	11.3	8.4	8.7	13.30	18.02																							
10-Jan	7.6	10.4	12.0	14.0	14.3	11.1	11.5	12.1	12.4	9.9	12.7	13.7	12.8	10.7	9.8	9.4	AF	10.7	24.0	13.2	17.0	9.0	12.8	7.7	12.12	24.03																							
11-Jan	AF	AF	AF	AF	AF	5.2	4.6	4.2	5.3	3.9	4.8	15.7	6.5	6.0	8.6	10.8	13.5	7.9	8.6	8.5	6.5	4.6	5.7	8.5	7.33	15.71																							
12-Jan	4.9	8.5	10.4	24.4	AF	AF	9.2	6.6	14.0	12.6	AF	13.3	14.7	27.3	7.5	8.7	7.3	8.5	7.7	5.9	9.3	12.4	12.4	10.2	11.23	27.29																							
13-Jan	17.0	11.6	11.5	13.1	9.1	7.2	8.0	9.8	8.5	9.4	9.8	8.6	11.7	11.7	10.2	11.4	11.0	11.4	10.0	10.0	9.3	14.3	8.3	9.7	10.54	17.02																							
14-Jan	11.9	12.4	13.1	19.9	11.9	15.8	18.0	12.2	31.4	15.5	13.0	23.8	11.2	12.7	11.5	8.8	18.5	8.3	7.8	10.2	6.7	7.3	7.2	7.2	13.18	31.42																							
15-Jan	7.6	8.0	7.6	7.0	7.0	7.6	8.0	7.7	8.4	7.9	8.4	10.0	10.4	8.5	8.9	7.8	7.5	7.6	7.3	6.6	9.8	7.3	6.1	8.0	7.95	10.40																							
16-Jan	5.5	6.8	14.6	13.1	14.2	14.9	AF	AF	23.4	15.4	22.0	14.6	35.7	33.3	AF	22.8	AF	AF	8.3	10.6	10.3	10.0	10.9	10.8	15.65	35.74																							
17-Jan	14.0	11.8	9.9	10.6	11.3	10.7	10.2	9.6	7.6	6.9	10.3	9.0	8.1	23.6	9.0	21.0	7.9	6.2	8.1	10.7	7.3	6.8	8.0	7.8	10.26	23.58																							
18-Jan	26.3	76.3	64.2	72.6	26.6	11.0	29.1	20.7	18.2	9.6	9.7	12.0	9.5	19.0	14.9	15.7	12.2	9.6	11.7	11.7	60.3	10.9	10.4	10.6	23.86	76.33																							
19-Jan	9.8	9.5	10.2	9.5	10.0	10.5	9.7	9.7	10.2	10.1	10.3	11.0	11.6	11.6	15.5	11.4	14.2	11.7	8.4	13.4	16.3	8.6	10.9	9.7	10.99	16.26																							
20-Jan	10.0	12.5	14.8	8.7	AF	AF	AF	AF	AF	9.7	11.6	12.1	11.2	AF	AF	7.3	5.2	17.2	17.4	14.6	16.0	20.9	29.4	68.1	16.86	68.07																							
21-Jan	AF	19.8	AF	25.2	14.6	14.0	16.5	11.7	12.9	15.9	11.5	12.6	15.0	12.0	12.4	12.3	10.6	11.5	12.1	14.2	26.2	17.1	22.5	12.8	15.16	26.18																							
22-Jan	19.1	74.8	26.9	11.7	12.0	15.8	13.0	11.7	9.8	9.3	8.0	10.8	13.8	14.9	10.3	9.4	9.8	9.7	13.0	9.7	7.4	7.1	12.6	5.1	14.40	74.81																							
23-Jan	5.6	14.2	10.5	9.7	8.4	13.7	6.7	11.2	7.5	7.7	12.8	17.7	18.4	18.7	46.1	13.0	6.3	6.9	6.3	8.0	8.0	8.1	8.6	9.6	11.82	46.13																							
24-Jan	8.0	7.6	10.1	14.5	21.6	21.2	AF	AF	36.9	72.5	23.2	35.5	28.9	17.5	17.1	9.9	19.6	13.7	14.6	20.0	11.5	11.0	12.0	12.7	19.98	72.48																							
25-Jan	20.1	22.8	10.3	11.7	11.1	17.6	10.4	13.4	10.1	12.2	12.1	11.8	22.5	20.9	12.3	13.2	11.1	13.0	8.0	8.4	10.7	9.4	10.8	8.9	13.04	22.85																							
26-Jan	8.9	9.3	9.7	8.6	9.3	8.7	9.0	9.1	8.7	9.1	10.1	9.4	10.1	10.5	9.3	8.8	9.3	7.4	7.8	9.3	11.6	11.4	7.9	6.2	9.14	11.55																							
27-Jan	5.7	8.4	AF	AF	AF	AF	1.0	AF	AF	AF	32.9	34.2	6.9	9.0	9.1	13.8	8.1	7.9	10.2	9.3	13.0	5.4	9.9	7.1	11.29	34.19																							
28-Jan	6.7	6.6	6.9	8.7	10.3	9.1	13.3	AF	AF	AF	29.3	14.7	6.8	9.8	9.6	11.1	9.8	7.9	8.5	9.0	11.0	9.8	9.1	9.5	10.35	29.29																							
29-Jan	8.9	10.2	9.5	9.8	9.0	11.8	9.4	9.8	11.2	15.3	11.7	9.7	10.3	9.9	9.5	13.3	10.4	12.7	16.3	13.5	13.2	9.9	59.4	12.0	13.19	59.36																							
30-Jan	14.0	13.0	12.9	10.4	13.1	13.1	9.6	10.0	10.6	12.9	10.6	9.7	35.9	8.1	10.0	26.0	13.1	8.7	9.2	17.4	14.8	15.4	11.5	12.9	13.46	35.88																							
31-Jan	14.9	11.8	9.7	13.0	10.8	10.7	8.3	9.6	13.3	9.2	10.5	7.1	AF	AF	7.4	6.9	7.9	5.5	9.6	25.9	8.1	10.9	7.5	8.6	10.33	25.92																							
																								11.37	15.04	13.07	13.57	12.00	11.71	10.73	10.83	13.10	12.66	13.66	14.63	14.28	15.49	13.24	12.57	10.58	9.79	10.31	11.74	13.56	11.06	13.70	12.63	Diurnal Average	
																								33.45	76.33	64.24	72.57	26.59	21.22	29.06	20.74	36.90	72.48	35.18	38.21	35.88	46.85	46.13	26.27	19.65	17.25	24.03	25.92	60.35	20.89	69.26	68.07	Diurnal Maximum	
AF - Analyzer Failure																																																	

Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 908, Meadows

Calibration Date: January 19, 2018

Parameter: NO/NO₂/NO_x

Instrument: Thermo 42i

Serial Number: 1170050135

Previous Calibration Date: December 27, 2017

Calibration: Routine

Calibration Equipment: Sabio 2010 S/N 08600312

Barometric Pressure: 27.65" Hg

Calibration Method: Standard Gas Dilution/ GPT

Cylinder ID: EX0012529

Temperature: 20.5° C

Cylinder Concentration: 27.4 ppm NO/27.5 ppm NO_x

In Service: 12/06/2017 EXP 10/25/2020

Technician: L. Burns

Instrument Settings	NO bkg ppb	NO _x bkg ppb	Pre-reactor bkg ppb	NO Coefficient	NO _x Coefficient	NO ₂ Coefficient	Monitoring Range
Previous	6.0	6.5	NA	0.877	1.001	1.000	500 ppb
Current	6.9	7.5	NA	1.008	1.002	1.000	500 ppb

NO	Final Zero: -1.5 ppb	Final Span: 324.2 ppb	As Found Correction Factor: 1.064
NO ₂	Final Zero: 1.1 ppb	Final Span: 2.7 ppb	As Found Correction Factor: NA
NO _x	Final Zero: -0.7 ppb	Final Span: 326.6 ppb	As Found Correction Factor: 1.065

Results of Linear Regression			Slope	Intercept	R ²
NO	R _c vs C _c	Previous	59.741540	-79.956490	0.999805
		Current	59.973290	90.441610	0.999882
	C _i vs C _c	Current	1.000000	-0.000074	0.999883
NO ₂	R _c vs C _c	Previous	59.159530	-72.634490	0.999805
		Current	59.756500	-19.834410	0.999991
	C _i vs C _c	Current	1.000000	-0.000025	0.999991
NO _x	R _c vs C _c	Previous	59.605870	-80.841550	0.999805
		Current	59.975840	79.783570	0.999896
	C _i vs C _c	Current	1.000000	0.000000	0.999895

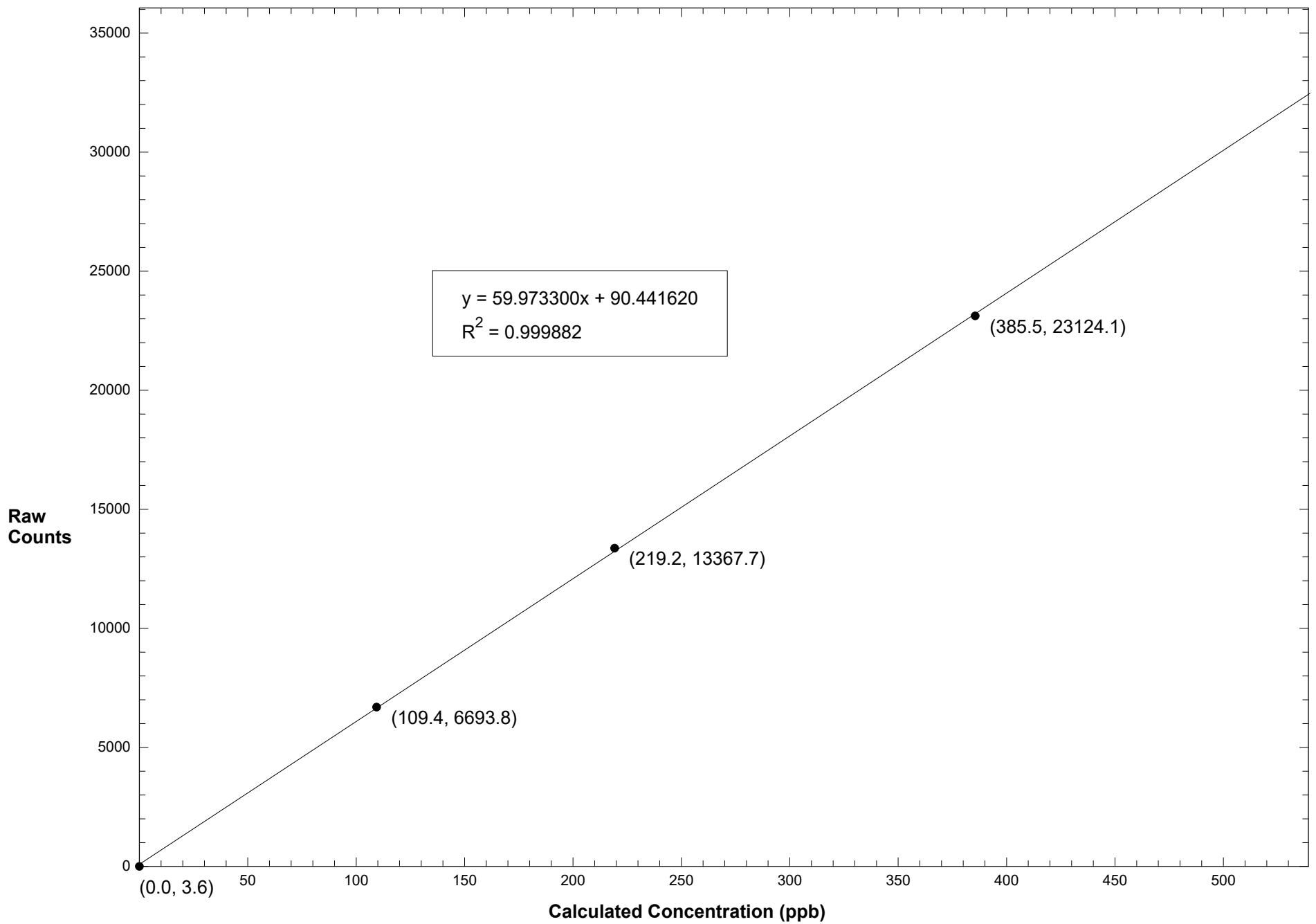
Comments: SAMPLE FLOW = 0.619 LPM

Calibration Data Summary (Page 2)

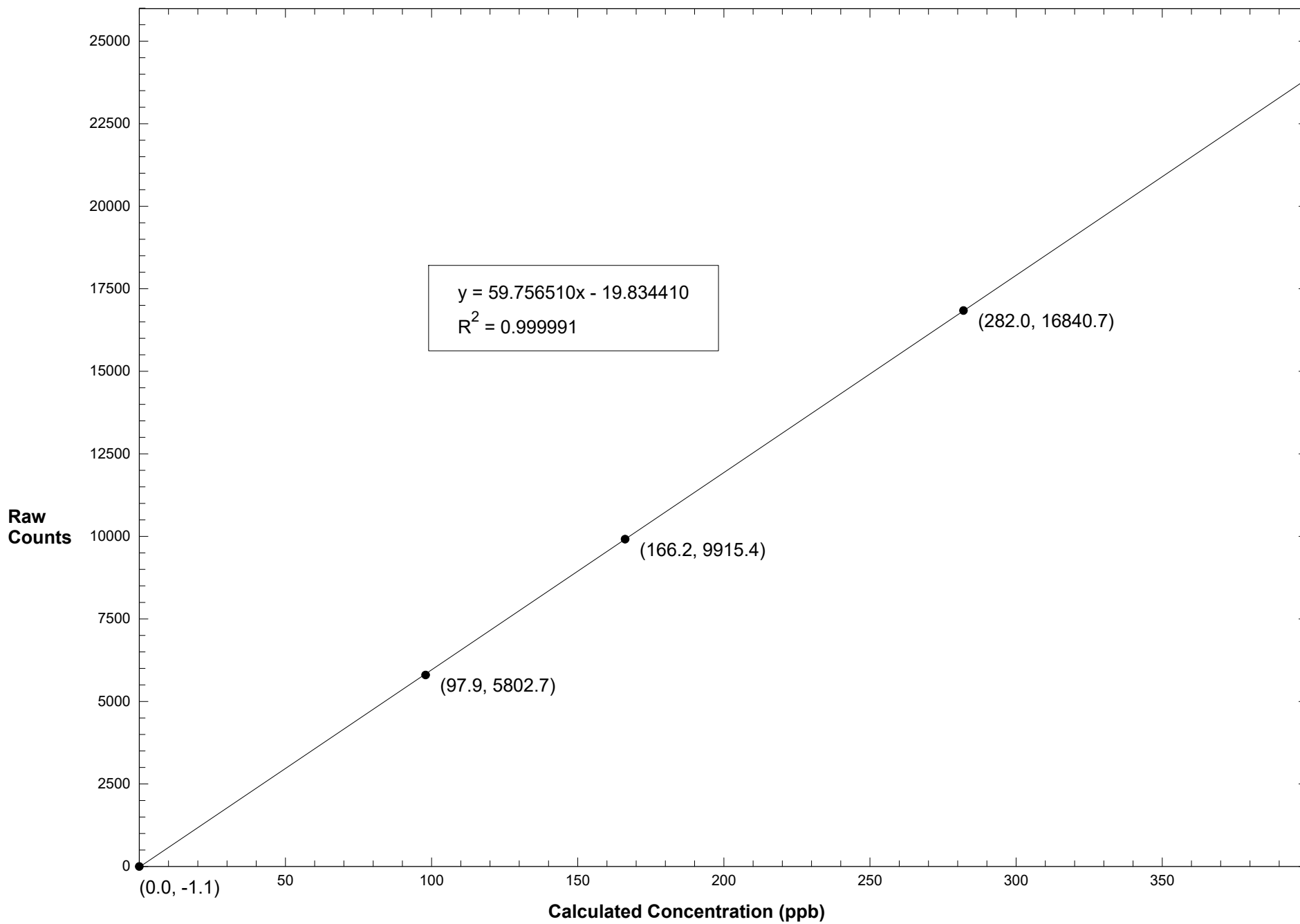
January 19, 2018 - Station 908

NO Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration C _c (ppb)	Raw Count Output R _c	Indicated Concentration C _i (ppb)	Correction Factor C _c /C _i		
0.07074	4.957	385.5	23124.1	384.1	1.004		
0.04048	5.020	219.2	13367.7	221.4	0.990		
0.02009	5.011	109.4	6693.8	110.1	0.994		
0.00000	5.000	0.0	3.6	-1.4			
NO Calibration					Average Correction Factor:	0.996	
0.07074	4.957	386.9	23203.3	385.5	1.004		
0.04048	5.020	220.0	13401.1	222.1	0.990		
0.02009	5.011	109.8	6700.5	110.4	0.995		
0.00000	5.000	0.0	-0.2	-1.3			
NO _x Calibration					Average Correction Factor:	0.996	
Reference Concentration NO (ppb)	Raw Count Output NO	Calculated Concentration NO (ppb)	Calculated Concentration NO ₂ , C _c (ppb)	Raw Count Output R _c	Indicated Concentration C _i (ppb)	Correction Factor C _c /C _i	Converter Efficiency C _i /C _c
384.2	6220.5	102.2	282.0	16840.7	282.2	0.999	1.001
384.2	13164.2	218.0	166.2	9915.4	166.3	1.000	1.000
384.2	17259.1	286.3	97.9	5802.7	97.4	1.005	0.995
			0.0	-1.1	0.3		
					Average Correction Factor:	1.001	
NO ₂ Gas Phase Titration					Average Converter Efficiency:	0.999	
Parameter	Correction Factor (Previous)	Correction Factor: (Current)	Percent Change of Correction Factor				
NO	0.994	1.004	1.0				
NO ₂	0.998	0.999	0.1				
NO _x	0.994	1.004	1.0				

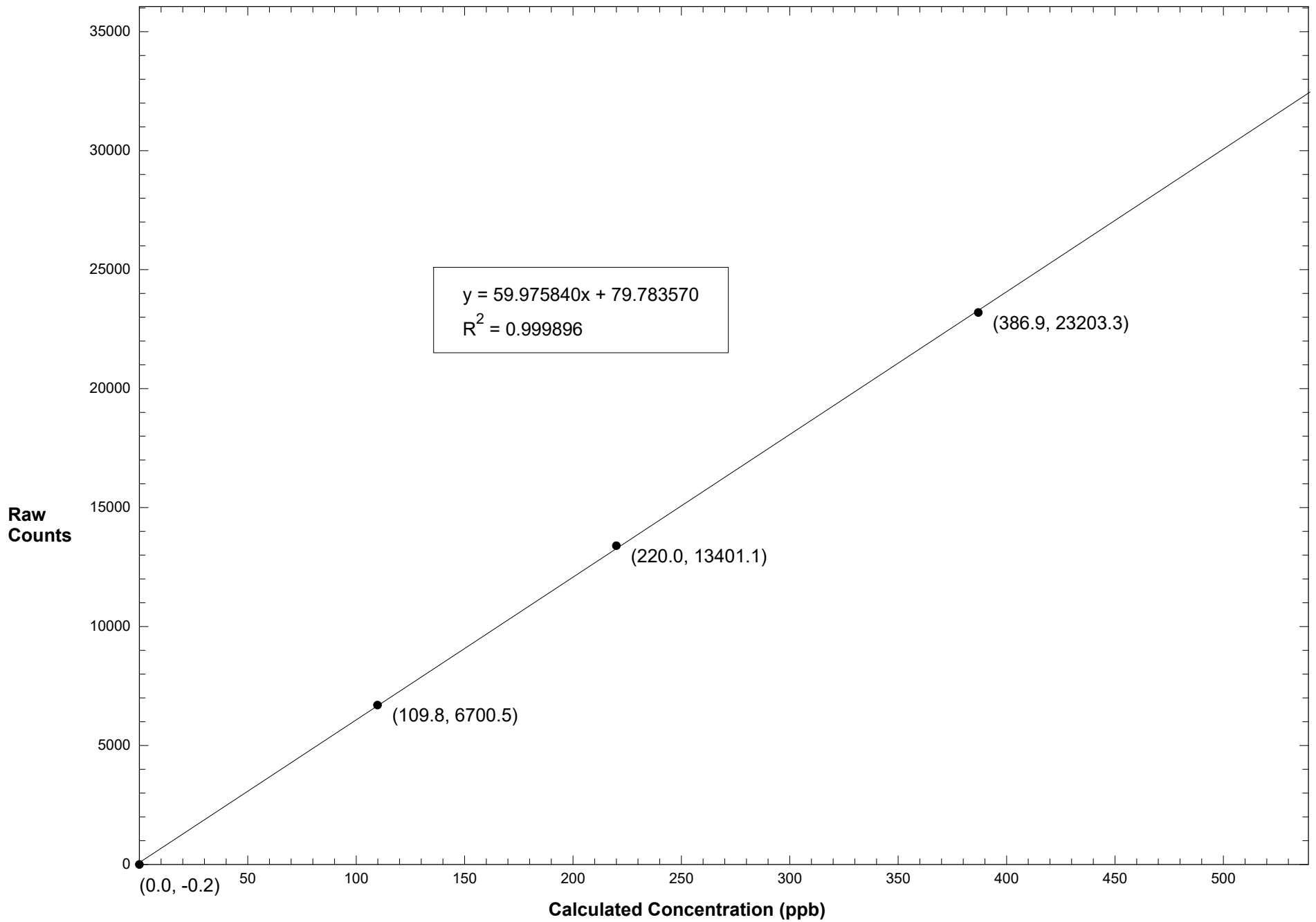
Station 908 NO January 19, 2018: Linear Regression



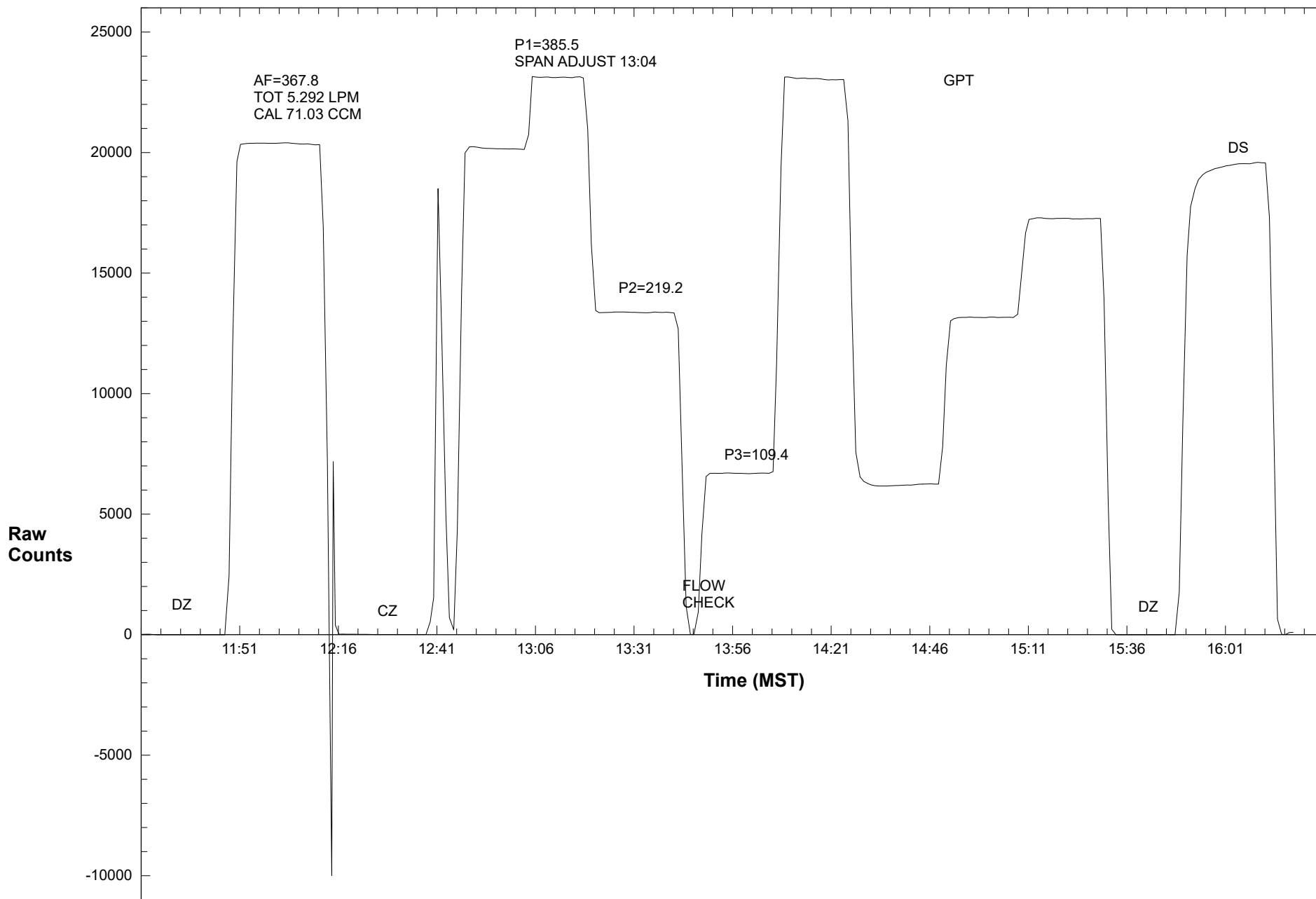
Station 908 NO2 January 19, 2018: Linear Regression



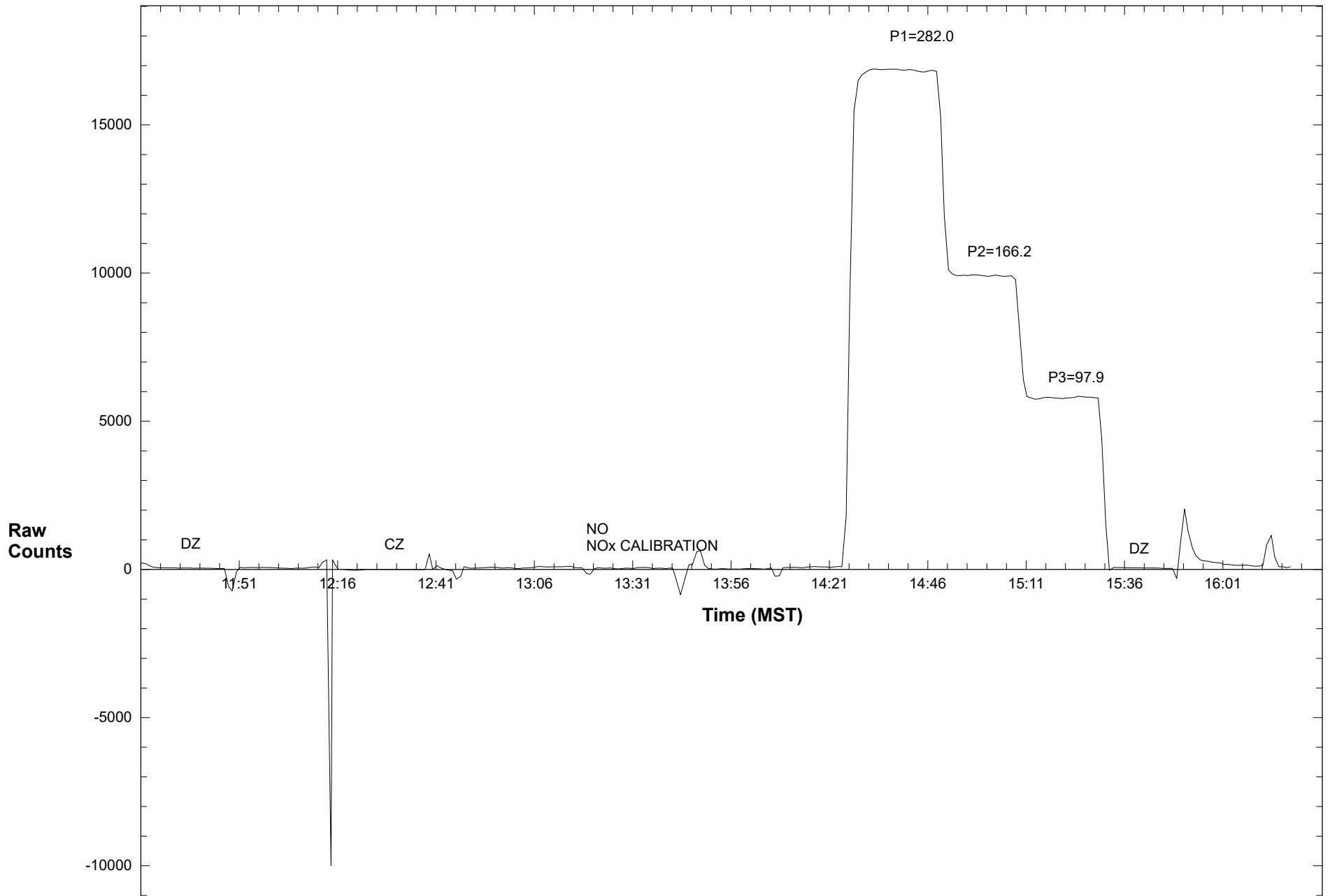
Station 908 NOX January 19, 2018: Linear Regression



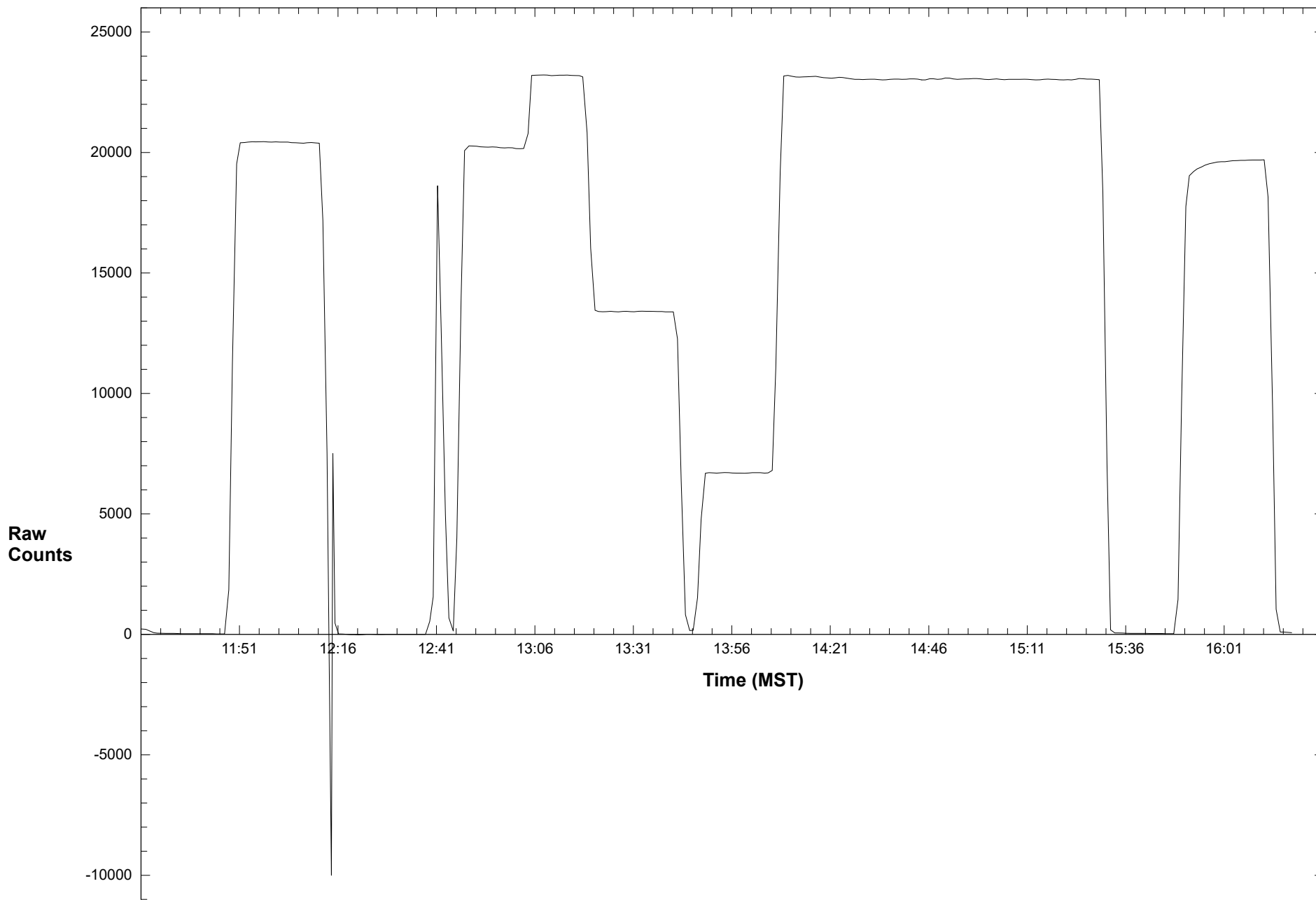
Station 908 NO January 19, 2018: Calibration Graph



Station 908 NO2 January 19, 2018: Calibration Graph



Station 908 NOX January 19, 2018: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 908, Meadows

Calibration Date: January 19, 2018

Parameter: SO₂

Instrument: TECO 43CTL

Serial Number: 0333803285

Previous Calibration Date: December 27, 2017

Calibration: Routine

Calibration Equipment: Sabio 2010 S/N 08600312

Barometric Pressure: 27.65" Hg

Calibration Method: Standard Gas Dilution

Cylinder ID: EX0012529

Temperature: 20.5° C

Cylinder Concentration: 24.3 ppm SO₂

In Service: 12/06/2017 EXP 10/25/2020

Technician: L. Burns

Instrument Settings	SO ₂ bkg ppb	SO ₂ Coefficient	Monitoring Range
Previous	3.15	1.440	500 ppb
Current	3.53	1.588	500 ppb

Final Zero: -1.3 ppb

Final Span: 64.5 ppb

As Found Correction Factor: 1.027

SO ₂ Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration C _c (ppb)	Raw Count Output R _c	Indicated Concentration C _i (ppb)	Correction Factor C _c /C _i
0.0707	4.957	341.9	20500.1	340.9	1.003
0.0405	5.020	194.4	11819.3	196.1	0.991
0.0201	5.011	97.0	5895.7	97.2	0.998
0.0000	5.000	0.0	14.0	-0.9	

Results of Linear Regression

R _c vs C _c	Slope	Intercept	R ²
Previous	59.950040	-59.111260	0.999909
Current	59.942970	66.575500	0.999927
C _i vs C _c			
Current	1.000000	0.000039	0.999927

Average Correction Factor: 0.997

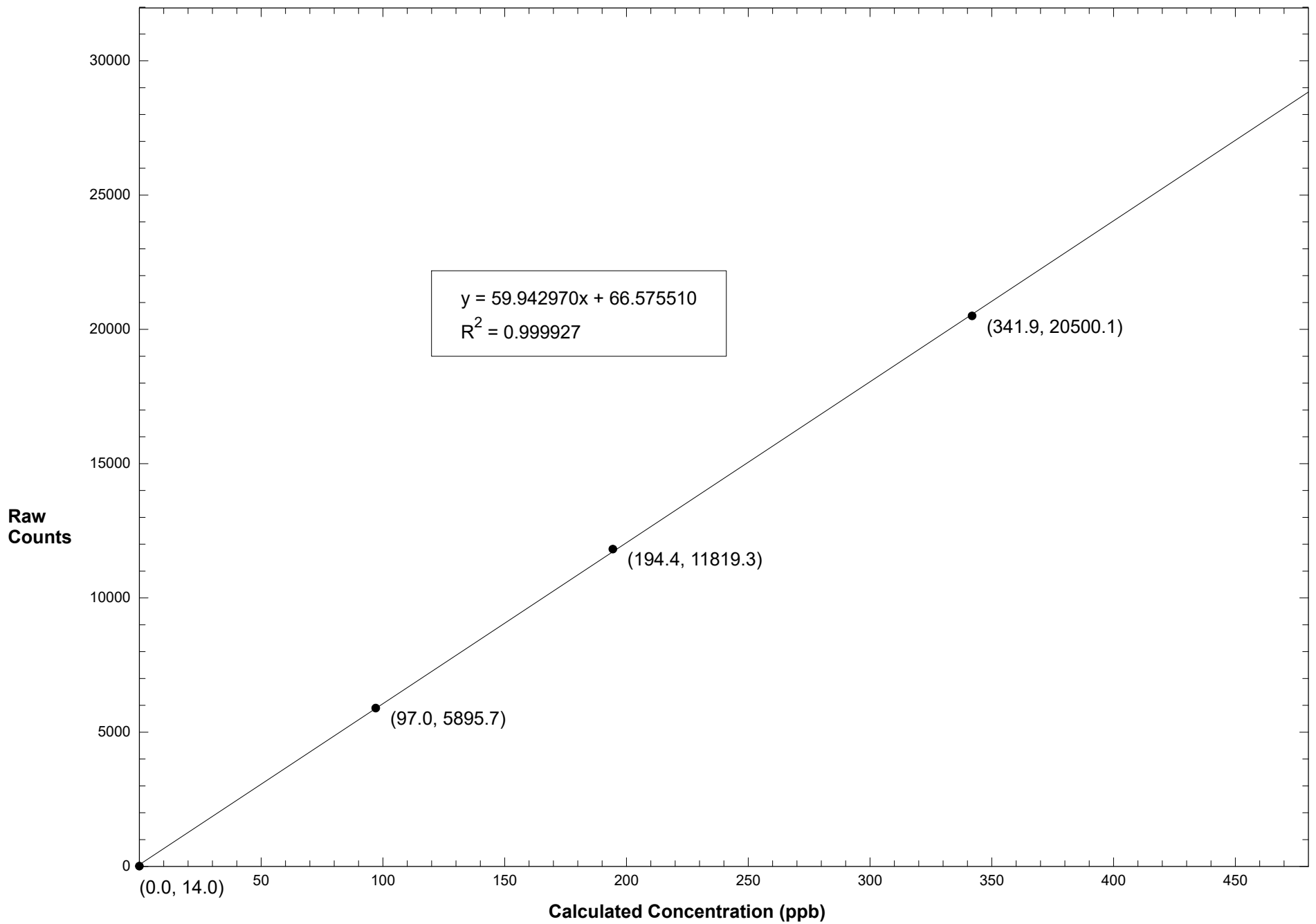
Previous Correction Factor: 0.996

Current Correction Factor: 1.003

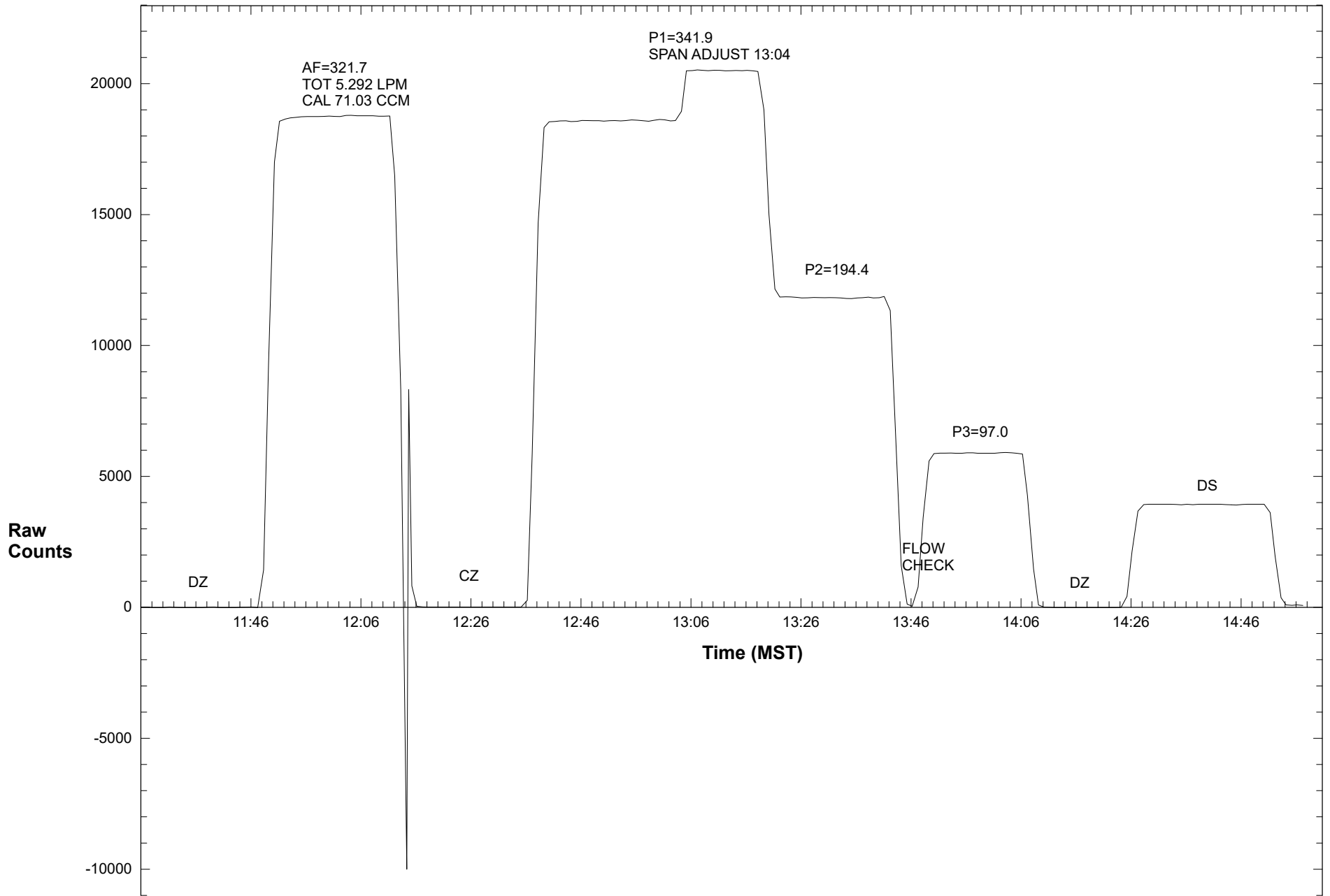
Percent Change of Correction Factor: 0.7

Comments: SAMPLE FLOW = 0.340 LPM

Station 908 SO2 January 19, 2018: Linear Regression



Station 908 SO2 January 19, 2018: Calibration Graph



WEST CENTRAL AIRSHED SOCIETY

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

**AMS 908
MEADOWS
JANUARY 2018**

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

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

Summary Report

Continuous air quality/meteorological monitoring measurements

West Central Airshed Society

TransAlta / Meadows Station 908													January 2018		
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 ₂ (ppb)	36	708	100.0	0.6	0.0	8.8	0.0	0.2	0.4	0.6	1.2	0	0	0.003	
NO (ppb)	37	707	100.0	5.7	0.0	120.9	0.0	0.1	0.9	4.7	16.1	-	-	-	
NO ₂ (ppb)	37	707	100.0	10.5	0.0	39.2	1.4	4.7	9.6	15.8	20.2	0	0	0.019	
NO _x (ppb)	37	707	100.0	16.1	0.1	140.9	1.6	5.3	10.9	20.4	35.9	-	-	-	
Wind Speed (kph)	0	670	90.1	8.1	0.0	29.4	1.9	4.1	7.6	11.6	14.9	-	-	-	
Temperature (°C)	0	744	100.0	-9.6	-31.9	6.6	-21.9	-15.8	-7.7	-3.1	0.3	-	-	-	
Relative Humidity (%)	0	744	100.0	76.7	44.0	97.4	61.7	69.8	77.0	84.6	91.6	-	-	-	
Std Dev Wind Direction (deg)	0	670	90.1	22.6	3.3	96.7	7.4	10.3	14.6	25.5	54.4	-	-	-	
Std Dev Wind Speed (kph)	0	670	90.1	2.2	0.0	8.4	1.2	1.5	2.1	2.8	3.5	-	-	-	



WCAS - Meadows
Summary of Hourly Averages

Sulphur Dioxide (SO₂) - ppb
January 2018

Maximum Value: 8.76 ppb on Jan 28 16:00		Maximum Daily Average: 3.03 ppb on Jan 29		Hours in Service: 744																													
Minimum Value: 0.0 ppb on Jan 1 11:00		Minimum Daily Average: 0.04 ppb on Jan 1		Hours of Data: 708																													
Maximum Diurnal Average: 0.85 ppb at hour 16		Minimum Diurnal Average: 0.48 ppb at hour 23		Hours of Missing Data: 36																													
Monthly Average: 0.619 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.2 Median = 0.4 Q ₃ = 0.6 P ₉₀ = 1.2 P ₉₉ = 5.7		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-Jan	0.0	0.0	Z	0.0	0.1	0.1	0.1	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	0.3	0.04	0.29								
2-Jan	2.5	0.3	Z	0.1	0.0	0.0	0.0	0.0	0.6	0.5	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.1	0.25	2.46								
3-Jan	0.1	0.1	Z	0.6	0.9	0.4	0.1	0.1	0.2	0.1	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.24	0.91								
4-Jan	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.6	0.4	0.5	0.2	0.2	0.2	1.5	1.3	1.9	1.1	1.0	0.9	0.57	1.88								
5-Jan	0.8	1.1	Z	2.2	2.6	3.3	2.1	2.2	2.0	2.0	2.0	0.9	0.6	0.3	0.1	0.2	0.2	0.6	1.3	2.1	1.7	2.2	1.5	2.0	1.48	3.27							
6-Jan	2.6	4.3	Z	2.3	2.0	1.1	1.0	0.3	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.7	0.5	0.2	0.2	0.3	0.3	0.76	4.30								
7-Jan	0.3	0.3	Z	0.3	0.3	0.3	0.3	0.3	0.4	0.5	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.33	0.50								
8-Jan	0.4	0.4	Z	0.7	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.7	0.5	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.46	0.73								
9-Jan	0.9	1.0	Z	1.0	0.8	0.7	0.4	0.4	0.4	0.4	0.6	0.8	0.9	0.4	0.6	0.8	0.8	0.8	0.4	0.3	0.3	0.2	0.2	0.2	0.58	0.97							
10-Jan	0.2	0.2	Z	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.11	0.21								
11-Jan	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.4	0.0	0.0	0.1	0.3	1.1	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.13	1.06								
12-Jan	0.1	0.2	Z	0.3	0.0	0.0	0.0	0.0	0.0	0.4	0.3	0.5	0.4	0.7	0.5	0.4	0.2	0.0	0.0	0.8	0.5	0.6	1.1	0.8	0.34	1.10							
13-Jan	0.3	0.5	Z	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.28	0.52								
14-Jan	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	2.0	3.0	4.1	2.6	2.4	0.9	0.1	0.0	0.1	0.69	4.05								
15-Jan	0.0	0.0	Z	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.6	0.9	0.6	0.0	0.0	0.1	0.1	0.2	0.3	0.1	0.16	0.92							
16-Jan	0.1	0.1	Z	0.7	0.8	2.0	2.4	1.4	1.2	1.1	1.0	0.6	0.6	0.6	0.6	0.6	0.5	1.1	1.1	1.7	2.1	1.3	0.2	0.2	0.96	2.36							
17-Jan	0.2	0.2	Z	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.30	0.39							
18-Jan	0.4	0.4	Z	0.7	1.0	1.4	1.3	1.2	0.9	0.9	1.0	1.0	0.7	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.65	1.39							
19-Jan	0.3	0.4	Z	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	C	C	C	C	C	5.8	0.5	0.5	0.5	0.5	0.4	0.4	0.5	0.72	5.83							
20-Jan	0.5	0.5	Z	0.6	1.0	0.7	0.9	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.2	0.5	1.0	1.0	1.0	0.5	0.5	0.61	1.05							
21-Jan	0.5	0.5	Z	0.5	0.5	0.5	0.5	0.5	1.2	1.3	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.5	0.5	0.5	0.5	0.56	1.27							
22-Jan	0.5	0.5	Z	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.7	0.6	0.4	0.4	0.4	0.4	0.6	0.4	0.5	0.7	0.5	0.5	0.48	0.68							
23-Jan	0.7	0.4	Z	1.3	1.0	0.5	0.4	0.5	0.4	0.4	0.5	0.5	0.4	0.4	0.9	0.9	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.56	1.34							
24-Jan	0.4	0.5	Z	0.5	0.9	0.8	1.4	1.3	0.7	0.9	0.8	0.5	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.61	1.39							
25-Jan	0.5	0.5	Z	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.8	0.7	0.5	0.5	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.50	0.75							
26-Jan	0.5	0.4	Z	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.30	0.47							
27-Jan	0.2	0.1	Z	0.2	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.6	1.0	1.1	0.6	0.2	0.2	0.1	0.1	0.28	1.12							
28-Jan	0.1	0.1	Z	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.8	3.4	6.5	4.7	8.8	1.8	1.1	3.1	6.3	2.1	2.5	3.0	2.19	8.76							
29-Jan	5.8	4.4	Z	4.8	5.8	6.5	7.2	3.4	2.6	3.4	2.8	3.4	3.7	2.9	2.5	2.9	1.3	0.9	1.0	0.9	0.9	0.9	0.9	0.9	3.03	7.22							
30-Jan	0.8	1.3	Z	0.8	0.8	0.8	0.8	0.8	0.9	1.0	0.8	0.8	0.8	0.8	0.7	0.6	0.6	0.4	0.5	0.7	0.7	0.5	0.5	0.4	0.73	1.25							
31-Jan	0.3	0.3	Z	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.4	1.2	0.5	0.4	0.1	0.1	0.1	0.1	0.3	0.31	1.24							
		0.65	0.62	--	0.68	0.73	0.74	0.75	0.54	0.52	0.59	0.54	0.52	0.57	0.65	0.64	0.85	0.76	0.50	0.61	0.73	0.52	0.53	0.48	0.54	Diurnal Average							
		5.75	4.41	--	4.80	5.77	6.54	7.22	3.40	2.61	3.39	2.75	3.41	3.72	6.47	4.70	8.76	5.83	2.61	3.08	6.27	2.13	2.50	2.98	4.81	Diurnal Maximum							
Z - zerospan		C - Calibration																															
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr 172 ppb				24-hr 48 ppb																											



WCAS - Meadows
Summary of Hourly Averages

Nitrogen Oxide (NO) - ppb
January 2018

Maximum Value: 120.91 ppb on Jan 6 02:00		Maximum Daily Average: 42.09 ppb on Jan 5		Hours in Service: 744																							
Minimum Value: 0.0 ppb on Jan 7 08:00		Minimum Daily Average: 0.06 ppb on Jan 10		Hours of Data: 707																							
Maximum Diurnal Average: 8.99 ppb at hour 5		Minimum Diurnal Average: 1.95 ppb at hour 17		Hours of Missing Data: 37																							
Monthly Average: 5.742 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.1 Median = 0.9 Q ₃ = 4.7 P ₉₀ = 16.1 P ₉₉ = 64.9		Hours of Calibration: 37																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Jan	0.3	0.3	Z	0.5	2.8	1.1	0.9	0.6	0.1	0.3	1.5	2.5	4.6	3.6	1.4	1.5	0.4	0.1	0.1	0.2	1.2	1.8	1.3	7.7	1.51	7.67	
2-Jan	66.9	6.1	Z	1.3	0.9	2.0	2.1	1.3	18.1	15.5	9.3	5.0	3.9	1.9	2.9	2.5	1.1	1.5	5.9	2.4	2.0	6.1	5.8	2.4	7.26	66.94	
3-Jan	2.8	1.5	Z	17.0	25.3	10.4	1.0	0.5	3.0	3.4	5.0	6.9	2.5	4.1	5.4	2.8	3.0	1.0	0.2	2.2	0.1	0.1	0.2	0.1	4.28	25.31	
4-Jan	0.2	0.4	Z	2.1	0.2	0.1	0.6	0.4	0.1	0.7	3.3	15.1	12.2	12.3	8.4	7.0	6.8	43.8	37.7	52.2	29.3	29.2	24.7	24.0	13.52	52.16	
5-Jan	22.4	31.5	Z	67.2	74.1	94.6	55.5	57.8	53.7	53.0	56.4	25.4	17.0	10.2	9.3	7.6	6.7	18.3	36.2	59.0	48.3	63.7	42.8	57.3	42.09	94.58	
6-Jan	73.3	120.9	Z	65.7	58.0	33.1	27.2	8.8	1.1	0.4	0.3	0.8	1.4	0.3	0.1	0.0	2.4	1.5	15.3	11.6	1.6	0.5	0.1	0.9	18.48	120.91	
7-Jan	1.2	1.3	Z	0.2	0.1	0.1	0.0	0.0	3.6	10.6	1.4	2.7	0.5	0.3	0.8	1.3	0.5	0.1	0.1	0.1	0.1	0.9	0.6	0.1	1.16	10.57	
8-Jan	0.3	0.1	Z	0.2	0.1	0.5	0.2	0.3	1.1	0.7	1.9	3.9	7.7	11.9	3.4	4.2	1.8	0.7	0.2	0.2	0.0	0.0	0.0	0.0	1.71	11.86	
9-Jan	0.1	0.0	Z	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.3	0.2	0.3	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.08	0.30	
10-Jan	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.06	0.75	
11-Jan	0.0	0.0	Z	0.7	0.1	0.0	4.5	6.0	3.9	15.3	15.7	5.5	4.4	3.2	2.3	1.9	0.5	0.1	0.0	0.1	0.4	0.4	2.1	1.9	3.00	15.70	
12-Jan	7.5	9.3	Z	8.3	2.0	0.9	4.6	4.0	3.3	13.0	9.4	10.2	9.4	10.0	10.0	6.4	5.2	1.1	1.2	18.3	9.8	12.9	25.9	18.3	8.73	25.94	
13-Jan	4.5	11.8	Z	9.6	10.2	7.4	8.5	8.5	7.9	8.4	12.1	13.0	12.8	2.5	0.7	0.4	0.2	2.1	0.1	0.1	0.0	0.0	0.5	0.5	5.29	12.95	
14-Jan	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.5	1.5	1.2	1.6	1.1	0.1	0.1	0.3	0.0	0.0	0.0	0.0	0.29	1.56	
15-Jan	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.1	0.0	0.2	1.3	1.9	1.7	1.7	1.2	1.2	0.8	0.0	0.0	0.5	4.3	8.2	11.3	6.7	1.80	11.33	
16-Jan	1.1	0.2	Z	22.3	24.6	53.4	64.0	40.1	34.6	31.1	28.3	17.8	16.9	13.9	14.2	14.6	11.2	30.0	30.6	42.5	54.5	27.6	0.8	0.9	25.00	63.96	
17-Jan	0.1	0.1	Z	0.0	0.1	0.1	3.3	0.1	0.4	0.4	0.8	2.2	1.7	1.5	2.1	2.6	1.0	0.1	0.0	0.3	0.0	0.0	0.0	0.0	0.74	3.28	
18-Jan	0.0	0.0	Z	8.4	16.7	27.3	25.4	22.3	17.6	16.8	16.1	16.2	9.4	3.5	2.7	4.6	0.6	0.4	0.0	0.0	0.3	0.9	0.5	0.4	8.27	27.30	
19-Jan	0.0	0.0	Z	0.1	0.1	0.0	0.1	0.0	2.7	0.1	0.4	C	C	C	C	C	C	0.1	0.1	0.1	0.2	0.4	1.2	1.1	--	2.74	
20-Jan	2.3	0.6	Z	6.1	19.3	11.1	17.3	3.3	0.6	8.4	6.0	5.5	6.8	3.8	2.3	2.0	2.1	0.5	1.1	18.9	22.4	23.0	2.6	2.6	7.33	22.99	
21-Jan	4.7	1.6	Z	2.6	0.2	0.2	1.0	3.4	0.4	2.1	4.4	2.3	1.4	1.2	1.1	1.2	0.7	0.1	0.2	0.2	0.0	0.0	0.0	0.1	1.27	4.75	
22-Jan	0.0	2.4	Z	0.2	0.0	0.1	0.1	0.1	1.2	5.9	7.1	8.0	7.7	5.1	2.1	1.2	0.8	0.8	7.1	3.1	4.7	11.3	4.6	2.0	3.30	11.28	
23-Jan	14.8	1.0	Z	30.9	21.7	6.0	3.7	7.0	0.8	6.4	10.9	10.5	6.8	5.8	4.5	2.0	2.3	0.6	0.2	0.1	0.1	0.0	0.0	0.0	5.93	30.91	
24-Jan	0.1	0.1	Z	1.6	18.9	15.5	33.7	28.1	11.0	16.2	16.0	7.1	3.3	2.9	2.1	2.4	2.8	0.9	0.8	0.5	0.2	0.1	0.1	0.1	7.15	33.70	
25-Jan	0.1	0.1	Z	0.0	0.1	0.0	0.2	0.1	0.0	0.3	0.7	1.0	0.6	0.3	0.3	0.3	0.4	0.2	0.1	0.2	0.1	0.1	0.1	0.0	0.24	1.01	
26-Jan	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.7	0.8	0.6	0.4	0.4	0.3	0.1	0.1	0.0	0.1	0.0	0.0	2.3	0.2	0.28	2.26	
27-Jan	0.8	0.2	Z	5.7	2.9	4.6	9.6	1.9	1.1	2.2	1.6	1.0	1.0	0.6	1.0	1.1	1.1	0.3	0.0	0.1	0.0	0.0	0.0	0.0	1.60	9.60	
28-Jan	0.0	0.0	Z	0.0	0.0	0.0	0.2	0.1	4.9	4.1	8.1	3.0	5.7	8.2	4.7	6.4	1.1	0.1	0.1	0.3	0.0	0.1	0.2	0.5	2.07	8.20	
29-Jan	0.4	0.4	Z	0.4	0.3	0.8	0.9	0.2	0.8	3.0	3.8	4.7	5.2	4.6	3.9	2.5	1.2	0.6	0.2	0.0	0.1	0.4	0.5	0.6	1.55	5.21	
30-Jan	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.1	4.1	9.6	7.2	3.6	5.3	3.2	2.3	1.6	1.2	0.4	0.0	0.0	0.0	0.0	0.0	0.0	1.69	9.63	
31-Jan	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.3	0.5	0.7	1.1	1.2	1.5	1.5	0.6	2.8	0.2	1.0	0.0	0.0	0.0	0.51	2.83	
		6.59	6.13	--	8.10	8.99	8.69	8.54	6.30	5.69	7.38	7.43	5.92	5.07	4.01	3.08	2.76	1.95	3.43	4.53	6.93	5.83	6.06	4.14	4.15	Diurnal Average	
		73.30	120.91	--	67.22	74.09	94.58	63.96	57.80	53.67	53.04	56.37	25.42	17.03	13.93	14.20	14.58	11.16	43.81	37.69	58.98	54.49	63.72	42.77	57.33	Diurnal Maximum	
Z - zerospan		C - Calibration																									
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr --- ppb				24-hr --- ppb																					



WCAS - Meadows
Summary of Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
January 2018

Maximum Value: 39.16 ppb on Jan 2 01:00		Maximum Daily Average: 18.72 ppb on Jan 2		Hours in Service: 744																																													
Minimum Value: 0.0 ppb on Jan 10 14:00		Minimum Daily Average: 0.89 ppb on Jan 10		Hours of Data: 707																																													
Maximum Diurnal Average: 12.70 ppb at hour 7		Minimum Diurnal Average: 6.28 ppb at hour 14		Hours of Missing Data: 37																																													
Monthly Average: 10.504 ppb		Percentiles: P ₁ = 0.2 P ₁₀ = 1.4 Q ₁ = 4.7 Median = 9.6 Q ₃ = 15.8 P ₉₀ = 20.2 P ₉₉ = 25.9		Hours of Calibration: 37																																													
				Percent Operational Time: 100.0																																													
Day	Hourly Period Ending At																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Jan	14.0	14.0	Z	14.6	16.1	16.8	15.7	15.3	14.0	10.6	8.6	8.4	7.8	7.9	10.3	9.3	10.6	11.9	10.7	8.3	13.4	22.4	27.6	28.6	13.78	28.58																							
2-Jan	39.2	23.0	Z	15.6	15.2	18.5	23.8	18.7	29.0	26.9	18.4	10.7	9.1	7.9	10.1	10.1	11.8	15.5	19.5	16.8	17.4	23.9	25.2	24.2	18.72	39.16																							
3-Jan	22.1	18.3	Z	22.2	25.4	21.6	15.9	13.5	18.4	17.6	16.1	13.2	9.5	8.2	12.5	11.2	13.2	14.7	11.1	13.6	11.0	8.6	10.4	10.8	14.74	25.43																							
4-Jan	13.0	13.3	Z	16.2	11.2	8.5	12.6	9.6	8.0	8.0	6.7	12.9	12.2	14.2	11.6	12.8	14.6	18.3	18.4	19.8	18.1	19.6	19.0	17.6	13.74	19.77																							
5-Jan	17.7	17.5	Z	16.8	16.7	18.5	14.5	14.8	17.5	20.3	17.8	15.7	11.5	9.0	10.1	11.9	15.1	22.1	20.6	20.5	20.1	16.9	19.7	18.2	16.67	22.15																							
6-Jan	18.6	19.9	Z	17.5	17.9	16.4	23.3	23.4	11.6	6.0	4.4	1.9	3.7	0.8	0.2	0.8	12.1	14.2	21.6	22.4	15.0	10.7	3.0	13.8	12.14	23.45																							
7-Jan	6.2	12.6	Z	6.2	5.3	4.6	3.7	1.1	13.5	22.0	6.1	7.8	2.1	1.8	4.6	7.0	8.4	8.5	8.7	9.9	8.5	15.1	12.4	9.2	8.06	21.96																							
8-Jan	14.0	9.4	Z	6.4	6.7	6.6	9.3	6.7	10.3	9.0	9.0	9.9	13.2	16.0	10.7	13.8	13.6	16.2	13.4	7.0	5.8	5.1	4.1	3.9	9.57	16.19																							
9-Jan	7.8	4.0	Z	1.9	1.6	1.3	1.2	1.2	1.3	1.1	1.0	1.0	0.7	0.8	0.9	1.2	1.6	1.2	0.8	0.8	0.7	1.3	1.3	0.8	1.54	7.78																							
10-Jan	0.9	0.8	Z	0.3	0.2	0.1	0.2	0.5	0.6	0.3	0.5	0.3	0.0	0.0	0.3	0.6	0.7	0.9	1.5	7.2	2.3	0.6	0.7	0.7	0.89	7.22																							
11-Jan	0.7	1.0	Z	9.9	9.4	8.0	17.6	20.5	16.7	18.9	13.7	6.6	5.1	4.8	4.1	5.3	4.7	6.1	8.4	10.1	14.4	15.9	15.5	15.6	10.13	20.51																							
12-Jan	17.8	18.0	Z	17.9	16.0	16.3	16.7	16.5	15.3	13.2	10.9	8.1	7.9	9.6	10.5	11.9	15.3	15.3	17.4	19.8	18.2	19.3	20.6	21.1	15.37	21.10																							
13-Jan	22.7	22.7	Z	23.8	23.7	23.5	22.9	22.1	22.0	20.8	16.0	14.0	14.1	8.6	4.8	3.5	4.0	18.7	8.0	8.8	2.1	1.4	13.1	10.1	14.41	23.83																							
14-Jan	1.5	1.4	Z	0.8	1.4	0.9	1.0	1.1	1.4	2.0	1.4	0.7	2.2	5.7	5.2	8.4	10.8	9.0	12.9	12.0	5.9	2.8	4.0	4.8	4.22	12.85																							
15-Jan	5.0	4.4	Z	3.1	3.6	4.5	5.8	5.0	4.8	4.3	4.7	4.2	4.1	4.4	4.5	5.7	8.9	9.2	7.8	10.5	18.4	19.3	20.3	18.3	7.87	20.32																							
16-Jan	12.3	12.6	Z	18.6	18.8	18.8	19.0	19.4	20.1	17.9	15.8	12.3	12.0	10.7	12.4	14.7	16.8	19.3	19.9	19.3	20.2	21.3	11.5	12.8	16.38	21.34																							
17-Jan	6.3	3.4	Z	1.6	8.5	2.3	15.1	4.7	4.5	5.7	5.3	7.7	5.5	5.0	7.9	9.2	10.0	9.4	11.4	10.7	6.2	7.1	10.4	8.9	7.26	15.07																							
18-Jan	8.5	7.9	Z	16.8	21.9	24.9	24.6	22.6	22.2	20.2	19.9	18.5	13.0	7.5	7.5	12.8	6.5	10.2	2.9	9.8	16.6	9.5	5.8	16.6	14.21	24.91																							
19-Jan	3.0	1.9	Z	4.3	3.5	2.8	7.6	4.4	14.5	4.4	4.7	C	C	C	C	C	C	3.8	3.5	4.0	4.7	12.6	23.2	22.8	--	23.22																							
20-Jan	20.2	12.8	Z	14.0	25.6	23.1	22.0	15.1	10.3	17.7	14.8	12.3	12.1	8.0	5.6	7.0	9.5	10.1	13.6	17.1	17.7	18.1	18.8	23.6	15.18	25.60																							
21-Jan	25.9	24.0	Z	26.0	19.9	18.3	22.1	23.2	19.4	15.7	11.3	7.0	4.8	4.9	5.1	6.7	7.6	8.3	8.7	8.0	6.1	5.4	8.0	10.4	12.90	26.00																							
22-Jan	7.2	13.5	Z	7.7	7.2	7.9	8.9	11.0	13.4	15.7	16.1	15.2	14.0	16.5	14.2	13.5	12.5	16.0	22.2	26.2	24.5	25.2	20.9	24.3	15.37	26.16																							
23-Jan	25.0	20.0	Z	24.2	24.1	22.0	20.4	22.8	13.2	15.5	14.6	10.1	8.9	9.3	10.2	8.3	14.1	16.7	9.9	14.2	9.4	9.3	10.1	9.4	14.86	25.00																							
24-Jan	10.6	9.2	Z	10.5	19.2	19.2	15.7	16.9	17.6	17.6	14.1	9.6	5.0	4.4	4.6	6.5	13.2	14.2	17.9	16.8	14.9	15.0	11.2	8.7	12.72	19.18																							
25-Jan	6.6	7.4	Z	7.6	5.8	5.1	5.1	5.3	5.3	5.6	5.3	4.5	3.4	4.3	4.0	5.0	6.4	9.8	11.3	12.6	12.7	10.8	11.0	8.2	7.09	12.66																							
26-Jan	6.8	5.9	Z	2.7	3.6	3.5	3.2	3.1	4.4	4.5	5.3	2.6	1.4	1.2	1.1	1.3	1.8	2.5	2.9	2.9	2.7	5.8	14.4	11.0	4.12	14.45																							
27-Jan	16.4	10.0	Z	18.4	19.1	18.0	20.5	16.5	16.3	11.7	6.2	3.4	2.8	1.6	2.5	3.8	5.4	6.4	4.6	3.8	4.0	3.3	3.3	3.1	8.74	20.52																							
28-Jan	4.7	4.4	Z	3.7	6.1	5.0	4.8	6.8	18.4	12.1	17.2	10.6	3.4	5.7	4.4	8.0	2.4	3.0	7.5	12.7	6.2	7.7	8.6	10.9	7.58	18.37																							
29-Jan	12.0	10.0	Z	12.2	14.0	13.6	14.2	10.3	11.8	11.4	7.7	6.7	6.7	6.7	8.3	7.6	5.8	8.2	8.8	8.2	8.4	10.8	12.8	10.6	9.86	14.24																							
30-Jan	8.0	9.8	Z	7.7	6.3	5.6	5.5	6.6	13.1	12.8	7.8	4.0	4.0	2.4	2.0	1.9	3.1	4.1	3.9	3.9	3.2	2.4	2.2	1.9	5.31	13.11																							
31-Jan	1.1	0.8	Z	0.3	0.3	0.4	0.5	0.2	0.4	0.1	0.2	0.2	0.4	0.9	1.3	2.0	4.2	7.6	21.4	18.4	19.2	6.7	3.1	2.4	4.00	21.38																							
																								12.12	10.78	--	11.28	12.07	11.51	12.70	11.58	12.55	11.93	9.72	8.00	6.69	6.28	6.38	7.39	8.82	10.70	11.32	12.13	11.22	11.42	12.00	12.37	Diurnal Average	
																								39.16	23.97	--	26.00	25.60	24.91	24.58	23.45	28.98	26.93	19.89	18.53	14.07	16.47	14.16	14.71	16.84	22.15	22.16	26.16	24.53	25.22	27.62	28.58	Diurnal Maximum	
Z - zerospan C - Calibration																																																	
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb 24-hr 106 ppb																																																	



WCAS - Meadows
Summary of Hourly Averages

NOx (NO_x) - ppb
January 2018

Maximum Value: 140.93 ppb on Jan 6 02:00		Maximum Daily Average: 58.68 ppb on Jan 5		Hours in Service: 744																													
Minimum Value: 0.1 ppb on Jan 10 06:00		Minimum Daily Average: 0.93 ppb on Jan 10		Hours of Data: 707																													
Maximum Diurnal Average: 21.11 ppb at hour 7		Minimum Diurnal Average: 9.39 ppb at hour 15		Hours of Missing Data: 37																													
Monthly Average: 16.135 ppb		Percentiles: P ₁ = 0.3 P ₁₀ = 1.6 Q ₁ = 5.3 Median = 10.9 Q ₃ = 20.4 P ₉₀ = 35.9 P ₉₉ = 82.6		Hours of Calibration: 37																													
				Percent Operational Time: 100.0																													
Day	Hourly Period Ending At																								Daily Average	Daily Maximum							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24									
1-Jan	14.0	14.1	Z	14.9	18.7	17.7	16.4	15.8	14.0	10.8	10.1	10.9	12.2	11.4	11.6	10.7	10.8	11.8	10.7	8.4	14.4	23.9	28.5	35.9	15.12	35.91							
2-Jan	105.8	28.8	Z	16.7	15.9	20.3	25.6	19.8	46.8	42.1	27.5	15.6	12.9	9.8	12.8	12.5	12.8	16.8	25.2	19.0	19.2	29.7	30.7	26.3	25.77	105.82							
3-Jan	24.6	19.5	Z	39.0	50.5	31.8	16.7	13.8	21.2	20.8	20.9	20.0	11.9	12.2	17.7	13.8	16.1	15.5	11.2	15.7	10.9	8.6	10.5	10.8	18.85	50.50							
4-Jan	13.0	13.5	Z	18.1	11.3	8.6	13.1	9.9	8.0	8.7	9.9	27.8	24.3	26.4	19.7	19.6	21.1	62.1	56.0	71.8	47.2	48.7	43.5	41.5	27.12	71.85							
5-Jan	40.0	48.9	Z	84.1	90.8	113.0	70.1	72.6	71.1	73.3	74.1	41.0	28.4	19.0	19.2	19.3	21.6	40.2	56.7	79.4	68.3	80.7	62.4	75.5	58.68	113.03							
6-Jan	91.9	140.9	Z	83.1	75.8	49.4	50.4	32.0	12.6	6.3	4.7	2.7	5.0	1.1	0.3	0.9	14.3	15.5	36.6	33.7	16.4	11.1	3.1	14.5	30.53	140.93							
7-Jan	7.3	13.8	Z	6.3	5.3	4.6	3.6	1.2	16.9	32.3	7.4	10.4	2.6	2.1	5.4	8.2	8.8	8.5	8.7	9.9	8.5	15.9	12.9	9.2	9.13	32.28							
8-Jan	14.2	9.4	Z	6.5	6.7	7.1	9.4	7.0	11.2	9.6	10.8	13.6	20.7	27.7	14.0	17.9	15.2	16.7	13.4	7.1	5.7	5.1	4.1	3.9	11.18	27.68							
9-Jan	7.7	4.0	Z	1.9	1.6	1.3	1.2	1.2	1.5	1.2	1.1	1.2	1.0	1.1	1.1	1.3	1.7	1.2	0.9	0.8	0.6	1.2	1.2	0.7	1.61	7.73							
10-Jan	0.9	0.7	Z	0.3	0.2	0.1	0.2	0.5	0.6	0.3	0.6	0.4	0.1	0.1	0.4	0.7	0.8	0.9	1.5	7.9	2.2	0.6	0.7	0.7	0.93	7.91							
11-Jan	0.6	1.0	Z	10.5	9.4	7.9	21.9	26.2	20.4	34.0	29.3	12.0	9.5	8.0	6.4	7.1	5.2	6.1	8.3	10.0	14.6	16.2	17.4	17.4	13.01	33.97							
12-Jan	25.1	27.1	Z	25.9	17.8	17.0	21.1	20.2	18.4	26.0	20.1	18.1	17.2	19.3	20.3	18.1	20.3	16.2	18.4	37.9	27.8	32.0	46.3	39.1	23.90	46.31							
13-Jan	27.0	34.2	Z	33.1	33.7	30.5	31.1	30.3	29.5	29.0	27.9	26.8	26.7	11.0	5.5	3.9	4.1	20.5	8.0	8.8	2.1	1.5	13.4	10.4	19.52	34.23							
14-Jan	1.5	1.4	Z	0.8	1.4	0.9	1.0	1.2	1.4	2.1	1.5	0.8	2.6	7.2	6.4	9.9	11.7	9.0	12.8	12.2	5.9	2.8	4.0	4.8	4.49	12.77							
15-Jan	5.0	4.4	Z	3.2	3.7	4.5	5.9	5.2	4.8	4.6	6.0	6.1	5.8	6.1	5.7	7.0	9.6	9.1	7.7	10.8	22.5	27.3	31.4	24.7	9.61	31.38							
16-Jan	13.3	12.6	Z	40.8	43.2	72.2	82.9	59.4	54.5	48.9	44.0	30.0	28.8	24.5	26.5	29.2	27.9	49.2	50.4	61.9	74.6	48.8	12.3	13.6	41.28	82.93							
17-Jan	6.4	3.5	Z	1.7	8.6	2.4	18.2	4.8	4.9	6.1	6.1	9.8	7.3	6.6	10.0	11.7	10.9	9.4	11.3	10.9	6.1	7.0	10.3	8.9	7.95	18.18							
18-Jan	8.4	7.9	Z	25.0	38.4	52.0	49.7	44.6	39.5	36.8	35.8	34.5	22.3	10.9	10.2	17.3	7.1	10.5	2.9	9.8	16.7	10.3	6.2	16.8	22.33	52.02							
19-Jan	3.0	2.0	Z	4.3	3.6	2.8	7.6	4.4	17.0	4.6	5.1	C	C	C	C	C	C	3.9	3.7	4.1	4.9	12.9	24.2	23.6	--	24.19							
20-Jan	22.3	13.3	Z	20.0	44.7	33.9	39.0	18.2	10.8	25.9	20.6	17.6	18.7	11.6	7.9	8.9	11.5	10.4	14.5	35.8	39.9	40.9	21.1	25.9	22.33	44.66							
21-Jan	30.3	25.3	Z	28.2	19.8	18.2	22.8	26.3	19.5	17.6	15.5	9.2	6.2	6.1	6.1	7.9	8.2	8.3	8.8	8.1	6.0	5.3	7.9	10.3	14.00	30.26							
22-Jan	7.1	15.7	Z	7.8	7.1	7.9	8.8	11.0	14.4	21.4	23.0	22.9	21.5	21.4	16.0	14.5	13.1	16.6	28.9	28.9	28.9	36.1	25.2	25.9	18.45	36.14							
23-Jan	39.5	20.7	Z	54.9	45.5	27.7	23.8	29.4	13.8	21.6	25.3	20.4	15.4	14.9	14.5	10.2	16.1	17.0	9.9	14.2	9.3	9.2	10.0	9.3	20.55	54.87							
24-Jan	10.5	9.1	Z	12.0	37.8	34.5	49.3	44.8	28.3	33.6	29.9	16.5	8.2	7.2	6.7	8.7	15.7	14.9	18.5	17.1	14.9	14.9	11.2	8.7	19.70	49.31							
25-Jan	6.6	7.4	Z	7.6	5.8	5.1	5.2	5.3	5.4	5.9	6.0	5.5	4.0	4.6	4.3	5.2	6.8	9.9	11.4	12.6	12.7	10.8	11.0	8.2	7.27	12.66							
26-Jan	6.8	5.9	Z	2.8	3.6	3.5	3.3	3.2	4.4	4.7	5.9	3.4	2.0	1.6	1.5	1.6	2.0	2.6	2.9	3.0	2.7	5.8	16.5	11.1	4.39	16.50							
27-Jan	17.0	10.1	Z	23.8	21.8	22.4	29.8	18.1	17.1	13.7	7.7	4.3	3.7	2.2	3.5	4.9	6.4	6.7	4.6	3.9	4.0	3.3	3.3	3.1	10.23	29.83							
28-Jan	4.7	4.4	Z	3.7	6.0	5.0	5.0	6.8	23.0	15.9	25.0	13.5	9.1	13.9	9.0	14.2	3.4	3.2	7.5	12.9	6.2	7.7	8.7	11.3	9.57	24.99							
29-Jan	12.3	10.2	Z	12.4	14.2	14.2	15.0	10.3	12.5	14.2	11.4	11.3	11.8	11.3	12.1	10.0	6.9	8.7	8.9	8.2	8.5	11.1	13.2	11.2	11.30	14.97							
30-Jan	8.0	9.8	Z	7.7	6.3	5.6	5.6	6.7	17.1	22.3	14.9	7.6	9.3	5.5	4.3	3.6	4.3	4.5	4.0	4.0	3.3	2.4	2.3	1.9	7.01	22.27							
31-Jan	1.1	0.8	Z	0.3	0.3	0.4	0.6	0.3	0.5	0.1	0.4	0.7	1.0	2.0	2.5	3.5	5.7	8.2	23.9	18.3	20.0	6.6	3.2	2.4	4.47	23.92							
		18.58	16.80	--	19.27	20.94	20.09	21.11	17.75	18.10	19.18	17.04	13.82	11.67	10.22	9.39	10.07	10.68	14.02	15.74	18.94	16.95	17.37	16.01	16.37	Diurnal Average							
		105.82	140.93	--	84.07	90.83	113.03	82.93	72.56	71.13	73.29	74.07	41.01	28.83	27.68	26.49	29.18	27.87	62.06	56.65	79.38	74.65	80.67	62.37	75.50	Diurnal Maximum							
Z - zerospan		C - Calibration																															
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr --- ppb				24-hr --- ppb																											

WEST CENTRAL AIRSHED SOCIETY

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

**AMS 908
MEADOWS
JANUARY 2018**

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

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



WCAS - Meadows
Summary of Hourly Averages

External Temperature (ET) - C
January 2018

Maximum Value: 6.58 C on Jan 18 16:00		Maximum Daily Average: 1.24 C on Jan 17		Hours in Service: 744																							
Minimum Value: -31.9 C on Jan 12 08:00		Minimum Daily Average: -27.07 C on Jan 12		Hours of Data: 744																							
Maximum Diurnal Average: -6.21 C at hour 15		Minimum Diurnal Average: -11.98 C at hour 9		Hours of Missing Data: 0																							
Monthly Average: -9.600 C		Percentiles: P ₁ = -30.7 P ₁₀ = -21.9 Q ₁ = -15.8 Median = -7.7 Q ₃ = -3.1 P ₉₀ = 0.3 P ₉₉ = 5.2		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-Jan	-27.2	-27.2	-27.5	-26.6	-27.7	-27.6	-26.7	-26.1	-24.3	-20.9	-19.3	-17.4	-17.9	-16.7	-13.1	-13.1	-11.1	-11.1	-9.1	-8.6	-8.9	-8.6	-6.8	-6.5	-17.92	-6.50	
2-Jan	-5.5	-2.3	-2.3	-4.0	-2.5	-3.8	-4.4	-3.9	-3.7	-5.3	-4.1	-1.8	-1.3	-0.6	1.4	1.0	-1.1	-3.7	-3.8	-4.4	-5.7	-6.0	-6.1	-3.4	-3.22	1.45	
3-Jan	-4.4	-5.2	-4.7	-6.4	-5.4	-5.7	-6.3	-5.5	-6.3	-6.1	-3.2	-1.4	2.5	3.5	1.8	0.2	-0.7	-2.7	-4.8	-4.0	-4.2	-5.4	-6.5	-7.0	-3.65	3.46	
4-Jan	-6.8	-5.7	-6.1	-5.7	-5.2	-5.1	-4.6	-5.5	-5.2	-5.8	-5.3	-0.8	0.7	1.5	0.1	-2.3	-2.2	-4.0	-5.1	-5.9	-6.5	-6.3	-7.4	-8.4	-4.49	1.53	
5-Jan	-8.7	-9.6	-10.1	-10.0	-10.7	-10.2	-11.5	-12.2	-12.7	-12.6	-10.9	-9.5	-7.7	-6.4	-5.1	-4.1	-4.8	-5.9	-7.0	-7.7	-8.0	-8.9	-8.1	-7.8	-8.76	-4.09	
6-Jan	-8.5	-8.0	-6.5	-5.0	-4.3	-4.9	-3.7	0.2	3.5	3.7	3.6	3.7	4.5	5.2	4.6	4.1	1.1	-0.3	-1.6	-1.9	-1.7	-0.3	0.0	-0.1	-0.53	5.22	
7-Jan	-1.2	-1.8	0.3	-0.2	0.2	0.1	-0.7	-1.5	-3.6	-3.8	-0.9	1.0	2.3	2.7	2.7	0.5	-0.3	-1.7	-1.8	-1.8	-1.6	-2.0	-3.2	-3.9	-0.85	2.74	
8-Jan	-3.4	-3.1	-0.5	-2.8	-3.6	-1.9	-2.6	-2.8	-3.3	-3.7	-2.7	-2.0	-0.9	-0.1	-0.7	0.0	-2.2	-2.2	-2.0	-1.2	-2.2	-2.7	-3.6	-5.6	-2.33	-0.01	
9-Jan	-8.1	-10.0	-11.5	-12.2	-13.0	-13.8	-14.8	-15.7	-16.3	-17.1	-17.5	-17.6	-17.7	-17.5	-17.8	-17.8	-17.6	-18.1	-19.0	-19.9	-20.3	-20.6	-21.0	-21.5	-16.52	-8.05	
10-Jan	-21.5	-21.3	-21.2	-21.5	-22.2	-22.6	-22.9	-23.0	-22.8	-22.6	-22.4	-22.4	-22.1	-21.2	-21.0	-21.1	-21.4	-21.8	-23.2	-24.5	-23.1	-23.0	-23.0	-23.0	-22.29	-20.96	
11-Jan	-23.2	-23.3	-24.5	-25.8	-27.8	-28.4	-30.1	-29.5	-30.1	-29.2	-27.3	-26.2	-24.3	-22.1	-21.1	-21.1	-22.2	-24.5	-25.6	-26.4	-26.9	-28.2	-29.1	-29.7	-26.10	-21.10	
12-Jan	-30.6	-30.7	-30.8	-31.4	-31.5	-30.9	-31.8	-31.9	-31.8	-30.6	-26.8	-26.1	-22.9	-22.3	-22.3	-21.8	-22.5	-23.7	-24.3	-25.1	-25.7	-25.2	-24.9	-24.0	-27.07	-21.84	
13-Jan	-22.8	-22.1	-20.8	-19.6	-17.8	-16.5	-15.7	-15.7	-14.8	-12.8	-11.5	-10.1	-6.1	1.8	2.8	3.3	2.3	0.0	1.3	0.3	1.6	1.0	-1.0	0.2	-8.04	3.26	
14-Jan	0.8	0.9	0.6	0.3	-0.9	-2.9	-4.0	-4.7	-5.3	-5.5	-5.9	-5.9	-6.2	-6.5	-6.5	-7.3	-9.4	-11.0	-12.3	-14.4	-14.0	-13.7	-13.9	-13.9	-6.40	0.91	
15-Jan	-15.1	-15.4	-16.7	-16.9	-16.2	-15.8	-15.4	-16.1	-15.7	-13.8	-13.4	-10.0	-6.6	-3.8	-3.1	-3.4	-4.9	-7.0	-9.3	-12.4	-14.6	-15.3	-15.3	-15.2	-12.14	-3.14	
16-Jan	-15.9	-15.7	-15.7	-15.8	-16.2	-16.7	-16.7	-16.0	-16.0	-14.9	-12.1	-11.9	-10.0	-7.9	-4.9	-3.9	-5.0	-6.4	-7.1	-7.9	-6.3	-0.8	3.6	4.4	-9.81	4.38	
17-Jan	5.8	5.4	6.0	5.2	4.0	3.7	0.1	-0.1	-1.2	-0.9	-0.2	2.3	1.1	2.2	2.6	3.2	0.2	-0.8	0.1	-0.6	-2.5	-2.4	-0.8	-2.6	1.24	5.95	
18-Jan	-2.7	-2.3	-3.1	-3.5	-3.6	-3.9	-4.4	-5.3	-4.7	-3.1	-0.6	0.0	3.0	3.5	5.0	6.6	5.3	4.3	5.5	2.5	2.7	1.7	0.6	0.4	0.16	6.58	
19-Jan	0.1	-0.5	-1.6	-2.2	0.5	0.5	-0.6	-0.8	-1.4	0.3	0.7	2.6	3.4	5.0	5.3	5.1	3.3	2.9	2.6	1.7	0.8	-0.9	-1.9	-1.8	0.96	5.25	
20-Jan	-1.9	-1.4	-1.8	-2.5	-2.9	-4.6	-6.1	-7.1	-7.9	-7.9	-5.8	-4.1	-3.0	-2.5	-2.5	-2.8	-2.7	-4.0	-5.3	-5.9	-5.0	-4.7	-3.7	-4.1	-4.18	-1.39	
21-Jan	-4.6	-5.5	-5.6	-5.5	-5.7	-6.0	-6.0	-6.5	-6.8	-6.8	-7.7	-7.6	-6.5	-5.7	-4.6	-4.7	-5.2	-5.4	-5.6	-5.8	-6.1	-5.7	-5.9	-6.2	-5.91	-4.56	
22-Jan	-6.4	-7.1	-7.7	-7.7	-7.5	-7.1	-6.8	-6.7	-7.5	-8.0	-6.8	-5.0	-3.1	-0.9	1.7	1.0	0.5	-1.5	-2.7	-3.1	-4.3	-5.4	-5.7	-7.0	-4.78	1.72	
23-Jan	-7.5	-9.2	-9.3	-8.8	-7.2	-7.3	-8.3	-9.2	-9.8	-11.3	-9.4	-7.3	-4.3	-2.7	-1.7	-1.6	-2.6	-2.8	-3.9	-4.6	-4.6	-4.5	-4.6	-5.2	-6.15	-1.64	
24-Jan	-5.8	-6.8	-8.5	-9.8	-10.7	-11.6	-12.4	-12.7	-12.2	-11.6	-9.9	-8.8	-6.3	-5.3	-5.9	-6.0	-6.5	-8.1	-8.6	-8.5	-8.7	-8.4	-8.2	-7.9	-8.71	-5.25	
25-Jan	-7.7	-7.5	-7.4	-7.4	-7.4	-7.5	-7.5	-7.5	-7.7	-7.6	-7.4	-7.2	-6.8	-6.6	-6.7	-7.1	-7.4	-8.2	-8.5	-8.9	-9.3	-9.4	-9.5	-9.6	-7.82	-6.61	
26-Jan	-9.8	-9.9	-10.1	-10.7	-11.5	-12.0	-12.5	-13.0	-13.8	-14.3	-14.1	-13.5	-13.4	-13.5	-13.4	-13.1	-13.2	-13.8	-14.3	-15.1	-16.0	-17.0	-18.7	-20.3	-13.62	-9.78	
27-Jan	-20.0	-20.0	-20.6	-20.9	-21.4	-21.9	-21.0	-19.8	-19.2	-18.7	-17.7	-17.2	-16.8	-16.2	-15.3	-15.2	-15.4	-15.5	-15.8	-16.1	-16.4	-16.5	-16.4	-16.4	-17.93	-15.23	
28-Jan	-16.3	-16.4	-17.4	-16.4	-16.5	-16.6	-17.2	-19.3	-20.7	-20.8	-18.3	-17.4	-16.2	-15.4	-14.9	-15.0	-15.8	-16.2	-16.1	-15.7	-16.0	-16.0	-15.8	-15.6	-16.76	-14.91	
29-Jan	-15.3	-15.2	-15.2	-14.8	-14.4	-14.6	-14.6	-14.3	-14.2	-13.9	-13.5	-13.1	-12.8	-12.3	-11.9	-12.0	-11.8	-11.5	-11.5	-11.5	-11.2	-10.5	-10.2	-10.9	-12.96	-10.22	
30-Jan	-11.9	-11.5	-9.2	-8.4	-8.2	-9.5	-10.9	-11.9	-14.1	-13.6	-11.7	-10.5	-9.5	-7.8	-7.3	-7.5	-8.8	-9.9	-10.1	-10.9	-11.5	-12.4	-13.1	-13.8	-10.58	-7.32	
31-Jan	-15.5	-17.0	-18.0	-18.8	-19.7	-21.0	-21.3	-21.9	-22.0	-22.2	-22.1	-21.8	-21.2	-19.9	-20.5	-20.0	-19.3	-20.4	-21.5	-21.9	-21.9	-21.3	-20.5	-20.6	-20.43	-15.51	
		-10.37	-10.50	-10.56	-10.83	-10.87	-11.17	-11.66	-11.81	-11.98	-11.66	-10.46	-9.26	-7.94	-6.71	-6.21	-6.30	-7.07	-8.17	-8.68	-9.29	-9.63	-9.67	-9.69	-9.91	Diurnal Average	
		5.75	5.40	5.95	5.21	3.99	3.68	0.14	0.23	3.51	3.66	3.57	3.71	4.52	5.22	5.25	6.58	5.28	4.27	5.55	2.50	2.72	1.74	3.65	4.38	Diurnal Maximum	



WCAS - Meadows
Summary of Hourly Averages

Wind Speed (WS) - kph
January 2018

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1 Spd	0.9	4.5	0.8	9.3	2.2	2.1	3.5	2.5	1.6	10.4	9.5	7.5	2.8	1.5	8.4	3.0	8.4	12.2	12.4	4.5	5.5	8.2	9.2	8.7	4.63	12.42	
Dir	W	W	NNW	WSW	ESE	N	ENE	NE	W	WSW	WSW	WSW	N	NE	SW	SW	SW	WSW	SW	W	W	WSW	WSW	W	WSW	SW	
2 Spd	9.4	16.4	11.7	7.0	13.3	14.8	16.0	11.4	4.8	5.2	1.7	0.0	2.9	1.1	3.4	5.6	1.2	1.0	3.8	2.4	1.2	0.9	6.2	5.8	5.58	16.37	
Dir	W	W	W	WSW	W	WSW	W	WSW	W	WSW	SSW	W	ENE	NE	WSW	WSW	SSE	SW	SW	WSW	W	SSW	WNW	W	W	W	
3 Spd	2.3	4.7	6.0	7.6	3.5	4.0	7.0	7.4	8.3	6.8	7.1	5.3	5.4	1.5	2.0	2.3	0.8	3.9	1.4	2.2	4.3	0.2	1.1	2.3	3.08	8.34	
Dir	W	WSW	WSW	WSW	WSW	SW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SSW	ENE	ENE	SSE	W	W	ENE	ESE	NNE	W	W	WSW	WSW	
4 Spd	6.6	5.7	2.6	6.0	5.6	4.3	6.7	4.0	4.4	3.3	2.0	2.8	1.9	0.9	3.5	AF	AF	3.0	AF	AF	AF	3.7	2.5	1.7	2.46	6.74	
Dir	W	W	W	WSW	WSW	WSW	WSW	W	WSW	WSW	ESE	W	W	ESE	E	AF	AF	WSW	AF	AF	AF	ESE	ENE	WSW	WSW	WSW	
5 Spd	AF	AF	1.8	1.2	AF	AF	AF	AF	AF	0.7	0.0	1.5	2.6	3.5	3.8	2.0	4.3	5.8	5.2	AF	2.1	0.9	1.5	1.3	--	5.78	
Dir	AF	AF	W	WSW	AF	AF	AF	AF	AF	NE	NNE	ENE	NE	NE	NE	ENE	ESE	ESE	ESE	AF	NE	WNW	WSW	SW	--	ESE	
6 Spd	1.5	2.7	AF	AF	AF	AF	AF	AF	12.5	9.9	10.7	10.9	9.0	9.8	12.9	9.8	8.0	5.6	9.2	10.3	9.0	8.8	11.2	16.3	15.5	8.92	16.30
Dir	W	WSW	AF	AF	AF	AF	AF	AF	W	WNW	WNW	WNW	W	WNW	NW	NW	WNW	WSW	W	WSW	W	WSW	WSW	WSW	W	WSW	
7 Spd	16.1	11.4	19.6	23.9	29.4	24.0	15.3	10.2	9.4	10.4	12.0	6.0	5.8	3.6	1.0	6.1	1.3	1.0	1.5	0.4	0.4	3.6	6.1	3.1	7.34	29.43	
Dir	SW	WSW	W	W	W	W	W	W	W	WSW	SW	W	WNW	NW	SW	S	SSW	SSE	ENE	NE	E	E	E	E	ENE	WSW	W
8 Spd	6.6	6.2	7.7	2.3	0.4	6.5	4.2	3.7	4.5	5.0	5.9	3.3	1.9	2.8	1.3	AF	AF	AF	2.7	9.0	10.1	12.5	14.8	15.2	1.94	15.21	
Dir	E	E	SSE	ENE	SE	SSW	WSW	SW	SW	SW	SW	W	W	W	NE	AF	AF	AF	N	ENE	NE	NE	NNE	ENE	ENE	ENE	NNE
9 Spd	16.4	14.9	14.9	13.5	13.6	13.2	14.1	12.9	13.6	13.0	15.7	15.1	14.4	18.3	20.5	14.5	15.4	17.3	20.1	18.5	14.9	10.7	14.2	11.9	13.77	20.54	
Dir	NE	NNE	NNE	NNE	NNE	NNE	N	N	N	N	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NW	NW	NW	N	N	NNW
10 Spd	12.5	11.8	10.1	9.9	10.5	9.5	7.6	7.2	6.0	7.0	7.5	6.9	3.6	2.1	3.3	2.0	5.9	7.2	6.3	5.9	9.3	9.9	9.5	8.9	6.49	12.47	
Dir	NW	NW	NNW	N	NNE	N	NNE	N	NNW	NNW	N	N	NNE	N	NNW	N	NW	NW	WNW	W	WNW	WNW	WNW	NW	NNW	NW	
11 Spd	8.4	5.1	2.7	0.1	1.7	0.1	2.1	1.8	AF	AF	AF	2.7	5.8	6.8	11.5	11.0	10.9	10.0	5.5	6.7	8.3	AF	AF	AF	3.59	11.49	
Dir	NNW	NW	W	SSW	SW	NNE	W	NE	AF	AF	AF	NNE	NE	E	ESE	E	E	E	E	ESE	ESE	AF	AF	AF	ENE	ESE	
12 Spd	4.0	3.7	4.3	3.4	4.4	AF	AF	AF	AF	3.9	AF	AF	2.1	5.4	7.2	4.6	6.0	AF	AF	AF	AF	AF	AF	AF	2.4	--	7.20
Dir	WSW	WSW	WSW	W	WSW	AF	AF	AF	AF	ESE	AF	AF	SSE	ESE	ENE	ESE	ESE	AF	AF	AF	AF	AF	AF	AF	ENE	--	ENE
13 Spd	1.0	AF	AF	AF	AF	AF	AF	AF	AF	0.9	0.2	3.3	3.6	2.2	15.9	12.6	10.3	7.7	9.5	9.6	8.6	12.0	11.2	11.1	9.0	--	15.94
Dir	W	AF	AF	AF	AF	AF	AF	AF	AF	ENE	NE	ENE	ENE	W	WSW	W	WNW	WNW	W	W	W	WNW	WNW	W	W	--	WSW
14 Spd	9.0	10.8	8.9	5.7	10.0	11.6	8.7	6.4	6.3	7.2	11.1	12.4	9.6	10.1	11.9	9.4	12.7	11.7	8.9	8.8	7.6	12.0	16.4	17.3	6.90	17.27	
Dir	W	WNW	NW	NW	NNE	NE	NE	NE	NE	ENE	E	E	E	ESE	E	ESE	ESE	ESE	ESE	ESE	E	E	E	ESE	ESE	E	ESE
15 Spd	10.1	11.1	6.9	7.3	9.4	9.5	9.4	8.9	9.7	10.9	9.4	10.2	14.9	16.0	18.1	15.7	11.1	10.2	9.1	7.8	7.0	7.0	6.2	3.7	7.13	18.08	
Dir	ESE	E	ENE	ENE	E	E	E	ENE	E	E	ENE	E	ESE	ESE	ESE	ESE	ESE	ESE	ESE	E	WSW	WSW	WSW	W	W	E	ESE
16 Spd	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	2.6	1.8	1.1	0.8	1.9	0.9	4.3	6.0	12.1	11.9	12.6	--	12.62	
Dir	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	NE	W	W	NNE	SSW	SW	WSW	WSW	W	W	W	--	W	
17 Spd	18.9	18.6	27.2	15.0	14.1	9.9	11.5	16.3	11.8	11.5	8.4	5.7	1.3	5.7	1.2	5.7	6.7	8.9	5.1	7.1	6.7	10.7	8.1	7.9	3.51	27.24	
Dir	W	WNW	WNW	W	W	WNW	WSW	SW	WSW	WSW	WSW	SW	E	ENE	E	ESE	E	E	E	ESE	E	ESE	E	E	E	WSW	WNW
18 Spd	6.6	4.4	3.2	3.7	5.7	2.9	2.7	8.2	10.0	8.0	8.1	1.1	1.6	1.6	4.1	4.0	13.8	17.5	18.6	10.6	8.9	13.1	13.9	13.2	6.29	18.64	
Dir	E	E	WSW	WSW	WSW	SW	WSW	WSW	WSW	WSW	WSW	ENE	ENE	N	NW	WSW	W	W	W	WSW	WSW	SW	WSW	W	WSW	WSW	W
19 Spd	13.7	13.5	12.3	7.6	11.4	10.2	11.8	13.1	10.2	11.8	10.4	15.2	18.0	21.8	19.1	16.1	7.8	6.8	10.0	8.6	7.2	8.4	7.5	7.7	11.36	21.77	
Dir	W	W	W	W	W	W	W	WSW	W	W	W	W	W	W	W	WNW	NW	WNW	WNW	WNW	W	W	WSW	WSW	W	W	W
20 Spd	5.7	6.2	2.9	3.1	0.8	0.0	2.8	3.0	AF	3.3	0.4	1.3	3.7	2.6	4.1	2.9	AF	AF	2.3	2.4	AF	AF	5.3	3.9	0.36	6.16	
Dir	WSW	WSW	WSW	ESE	E	NNE	WSW	WSW	AF	E	E	E	E	NE	NNE	NNE	AF	AF	E	W	AF	AF	E	ESE	ESE	ESE	WSW
21 Spd	0.1	1.2	3.6	0.9	5.9	6.9	9.0	11.6	11.8	9.9	12.0	10.9	10.0	8.9	11.2	15.1	13.3	13.9	12.6	8.7	7.1	3.5	4.0	4.7	7.55	15.08	
Dir	E	ENE	E	E	ENE	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	NE	NE	NNW	NNW	E	E
22 Spd	2.5	5.3	5.8	8.7	10.1	11.3	10.1	11.2	10.0	6.6	8.1	8.1	5.7	9.2	11.5	11.9	9.9	8.9	7.4	8.3	6.1	5.0	4.1	1.3	7.47	11.91	
Dir	WNW	W	W	W	WNW	WNW	WNW	W	WSW	WSW	WSW	WSW	WNW	W	W	W	W	W	W	WSW	WSW	W	W	WSW	E	W	W



WCAS - Meadows
Summary of Hourly Averages

Wind Speed (WS) - kph
January 2018

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	1.7	0.3	4.7	5.2	3.9	3.3	1.3	2.3	5.3	0.7	0.2	2.3	4.5	5.5	5.3	5.3	9.8	9.0	7.6	9.2	6.9	6.8	4.9	12.2	2.48	12.20		
Dir	WSW	WNW	W	W	W	WSW	E	W	WSW	ESE	SSW	ENE	ENE	NE	NE	E	ESE	E	ENE	E	NE	ENE	E	E	ENE	E		
24 Spd	11.8	8.2	7.2	0.9	2.8	0.8	2.2	3.3	5.4	5.9	4.5	7.0	1.9	3.4	2.8	8.0	11.0	7.3	3.7	8.4	9.5	12.4	12.1	10.8	3.38	12.40		
Dir	E	E	E	WSW	WSW	SSE	W	WSW	WSW	WSW	W	NW	NNW	N	NE	ENE	E	E	NE	ENE	ENE	ENE	E	E	ENE	ENE		
25 Spd	7.6	9.0	8.2	6.6	6.3	6.6	6.5	5.7	7.3	5.5	6.6	8.8	7.4	8.8	10.7	11.3	12.2	13.3	12.9	10.8	12.1	12.2	13.9	15.7	5.89	15.73		
Dir	E	ENE	ENE	NE	NNE	NE	NNE	N	NNE	N	N	NNE	NNE	NW	NW	WNW	NW	WNW	WNW	WNW	W	W	W	W	NNW	W		
26 Spd	14.0	16.3	12.7	13.5	14.3	17.4	16.6	17.7	14.9	12.1	15.0	18.2	20.9	22.2	20.4	16.3	17.1	14.7	12.5	11.0	10.8	7.9	8.3	8.6	14.34	22.16		
Dir	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	NW	NW	WNW	WNW	WNW	NW	WNW	W	WSW	WNW	NW		
27 Spd	9.2	5.8	6.7	4.8	3.8	2.5	AF	AF	AF	AF	AF	AF	AF	5.7	6.3	5.8	8.2	10.0	10.1	13.0	10.5	7.3	6.5	7.3	7.5	3.07	13.01	
Dir	WSW	W	WSW	WSW	WSW	W	AF	AF	AF	AF	AF	AF	AF	ENE	NNE	ENE	ENE	ENE	NE	NE	NE	N	NNW	NW	WNW	N	NE	
28 Spd	7.5	7.3	6.7	7.4	6.7	6.4	5.4	4.9	AF	AF	AF	AF	AF	4.8	9.3	10.9	12.6	12.9	13.5	14.9	16.2	16.2	13.9	12.6	14.0	13.5	5.33	16.20
Dir	WNW	WNW	W	WNW	WNW	WNW	NW	W	AF	AF	AF	AF	AF	E	ESE	ESE	SE	ESE	E	E	ESE	ESE	E	E	E	ESE	ESE	
29 Spd	13.8	13.2	12.7	12.6	13.8	14.4	14.7	16.9	15.6	13.8	13.4	15.1	15.2	13.3	13.1	11.5	9.9	9.2	9.3	6.8	6.3	5.9	4.9	13.5	10.72	16.89		
Dir	ESE	E	E	ESE	ESE	ESE	SE	SE	ESE	ESE	SE	SE	SE	SE	SE	E	E	ESE	ESE	ESE	ESE	SE	SE	NW	ESE	SE		
30 Spd	17.4	17.9	16.7	13.6	14.4	12.4	13.7	9.2	7.7	7.8	7.0	7.0	8.8	6.3	6.7	6.0	6.5	7.5	14.9	11.6	13.6	13.0	13.2	12.7	10.20	17.93		
Dir	WNW	WNW	WNW	WNW	NW	NW	NW	WNW	W	WSW	W	W	W	NW	NW	NNW	N	NNW	NW	NW	NW	NW	NW	NNW	NW	WNW		
31 Spd	13.6	13.2	12.3	10.5	11.0	7.9	5.2	9.5	5.6	9.6	8.6	5.5	4.1	1.6	4.4	4.7	3.3	2.8	AF	AF	AF	3.9	4.0	8.3	8.6	6.08	13.58	
Dir	NNE	NNE	NE	NE	NNE	NE	NNE	NE	ENE	ENE	NE	NE	ESE	E	NE	ENE	SE	ESE	AF	AF	AF	ESE	ESE	ESE	NE	NNE		
Spd	2.88	3.66	3.94	3.66	3.68	2.92	3.10	3.09	2.71	2.03	2.04	1.24	1.35	1.54	1.71	1.38	1.64	0.89	1.74	1.60	2.00	1.56	1.81	2.19	Diurnal Average			
Dir	NNW	WNW	WNW	WNW	WNW	NW	WNW	WNW	W	W	W	NNW	N	N	N	NE	NE	N	NNW	NW	NNW	WNW	WNW	NW	Diurnal Maximum			
Spd	18.87	18.59	27.24	23.91	29.43	24.02	16.60	17.71	15.56	13.78	15.71	18.17	20.93	22.16	20.54	16.26	17.08	17.46	20.07	18.48	14.89	13.07	16.43	17.27	Diurnal Maximum			
Dir	278.04	287.64	286.06	265.52	261.07	268.91	290.59	294.54	122.94	123.23	339.05	301.89	308.34	309.12	337.45	315.27	303.59	263.61	338.22	335.81	338.36	227.17	105.30	111.79	Diurnal Maximum			
Maximum Speed Value: 29.4 kph on Jan 7 05:00																		Minimum Speed Value: 0.0 kph on Jan 5 11:00						Hours in Service: 744				
Maximum Daily Speed Average: 14.34 kph on Jan 9																		Minimum Daily Speed Average: 0.36 kph on Jan 20						Hours of Data: 670				
Maximum Diurnal Speed Average: 3.94 kph at hour 3																		Minimum Diurnal Speed Average: 0.89 kph at hour 18						Hours of Missing Data: 74				
Monthly Average Velocity: 1.888 kph 307.98 deg																		Speed Percentiles: P ₁ = 0.2 P ₁₀ = 1.9 Q ₁ = 4.1 Median = 7.6 Q ₃ = 11.6 P ₉₀ = 14.9 P ₉₉ = 20.8						Percent Operational Time: 90.1				
All monthly, daily, and diurnal averages have been calculated using vector methods																												
AF - Analyzer 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	20	13	1	0	0	47																					
NorthEast	36	31	13	0	0	0	80																					
East	36	73	39	0	0	0	148																					
SouthEast	12	6	15	0	0	0	33																					
South	5	2	0	0	0	0	7																					
SouthWest	30	23	12	0	0	0	65																					
West	59	92	53	6	1	0	211																					
NorthWest	5	37	33	4	0	0	79																					
Total	196	284	178	11	1	0	670																					



WCAS - Meadows
Summary of Hourly Averages

Relative Humidity (RH) - %
January 2018

Maximum Value: 97.39 % on Jan 20 16:00		Maximum Daily Average: 95.06 % on Jan 20		Hours in Service: 744																							
Minimum Value: 44.0 % on Jan 18 19:00		Minimum Daily Average: 59.11 % on Jan 7		Hours of Data: 744																							
Maximum Diurnal Average: 79.99 % at hour 7		Minimum Diurnal Average: 68.95 % at hour 15		Hours of Missing Data: 0																							
Monthly Average: 76.748 %		Percentiles: P₁ = 49.0 P₁₀ = 61.7 Q₁ = 69.8 Median = 77.0 Q₃ = 84.6 P₉₀ = 91.6 P₉₉ = 96.8		Hours of Calibration: 0																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Jan	71.9	72.2	72.6	72.0	71.6	73.0	73.8	74.5	76.2	75.0	73.1	69.4	68.9	69.3	63.4	67.5	62.8	66.5	65.6	64.7	66.7	68.3	65.3	67.6	69.65	76.16	
2-Jan	70.9	67.2	66.7	71.4	72.7	76.7	80.3	80.7	82.3	86.7	80.2	72.7	73.9	72.7	65.3	64.6	71.0	78.5	79.4	81.9	86.4	87.2	87.9	82.0	76.63	87.89	
3-Jan	85.5	85.4	82.0	89.1	86.9	85.5	86.0	84.3	86.3	84.6	78.6	75.0	61.0	57.9	63.4	66.5	70.8	76.3	84.8	82.9	84.6	85.8	87.9	89.2	80.01	89.20	
4-Jan	89.9	87.4	89.1	88.4	84.7	86.0	84.6	84.6	85.0	86.5	84.2	74.6	68.8	66.9	72.1	79.5	79.5	84.6	88.6	90.6	91.7	93.6	94.5	93.9	84.55	94.45	
5-Jan	93.4	92.7	92.4	92.4	91.7	92.1	90.9	90.0	89.9	89.8	90.8	91.5	92.5	92.4	91.2	88.6	90.0	91.4	92.2	92.1	92.5	91.9	91.4	90.7	91.45	93.38	
6-Jan	90.3	91.0	90.6	91.9	91.2	89.6	88.4	82.1	69.8	67.1	66.8	64.8	53.5	46.4	48.6	47.3	59.3	60.8	63.0	59.9	57.3	53.9	54.8	55.9	68.51	91.92	
7-Jan	57.3	57.2	50.7	53.9	53.1	53.2	55.2	55.7	64.0	66.1	59.1	53.4	47.1	46.4	52.4	56.4	59.3	65.5	66.5	66.4	65.7	67.3	71.2	75.6	59.11	75.61	
8-Jan	74.6	74.6	61.2	71.1	75.7	68.7	72.1	72.7	73.7	75.2	73.6	71.7	69.0	66.7	66.8	68.8	74.2	74.1	75.1	68.3	74.3	82.0	82.9	85.1	73.01	85.12	
9-Jan	84.8	82.4	79.6	79.7	79.1	79.1	77.8	78.6	77.0	78.2	77.6	78.0	77.7	76.7	76.4	78.6	78.9	79.4	75.0	70.7	69.5	69.7	69.5	68.0	76.75	84.80	
10-Jan	68.2	68.4	67.7	70.1	71.3	70.1	69.2	66.4	65.4	66.4	67.0	67.5	63.6	59.4	61.7	64.7	65.8	69.0	69.9	74.0	68.8	67.9	69.5	68.6	67.52	73.96	
11-Jan	67.1	67.2	69.7	73.3	74.2	73.9	71.9	72.6	71.8	72.5	72.0	72.8	72.5	70.0	74.6	69.8	65.7	71.3	73.9	75.1	75.0	73.4	72.6	72.0	71.86	75.05	
12-Jan	71.2	70.9	70.9	70.3	70.1	70.5	69.5	69.5	69.7	70.7	71.5	68.8	64.2	65.1	71.0	75.2	77.7	75.6	75.8	75.3	75.0	75.0	74.6	76.0	71.84	77.66	
13-Jan	76.9	76.7	76.6	76.9	77.0	76.7	77.1	77.9	79.0	77.3	75.9	73.8	67.6	61.3	58.9	58.8	61.7	70.3	68.1	72.8	68.1	69.4	79.3	77.4	72.32	79.29	
14-Jan	72.9	70.6	70.8	71.5	77.9	79.4	80.1	80.9	84.5	84.3	81.0	72.4	76.3	75.8	71.8	73.4	73.8	75.9	77.7	80.9	86.7	87.1	86.7	86.2	78.27	87.11	
15-Jan	85.2	85.3	83.8	83.8	84.0	84.7	85.0	84.4	84.9	86.4	86.2	88.7	89.7	82.2	77.7	76.9	81.3	85.1	88.0	85.2	84.1	84.1	84.5	83.9	84.38	89.71	
16-Jan	83.8	83.6	83.8	84.5	84.2	83.8	83.7	84.7	84.3	83.4	75.4	78.3	74.6	73.6	68.5	62.6	66.9	73.0	75.4	79.6	79.7	74.2	66.4	63.2	77.13	84.68	
17-Jan	56.3	69.2	67.6	67.3	70.5	59.4	65.6	63.6	62.4	59.1	57.6	49.3	54.8	51.8	52.8	49.8	59.1	63.0	60.5	66.5	72.9	73.0	68.4	74.6	62.30	74.57	
18-Jan	74.7	74.2	78.5	79.5	80.0	79.4	79.6	82.3	81.6	78.1	72.5	71.0	62.1	58.6	54.6	49.6	49.2	45.5	44.0	51.3	53.2	56.1	56.1	54.3	65.25	82.34	
19-Jan	54.0	54.4	58.3	61.5	54.4	54.2	61.3	62.5	63.8	57.5	60.2	55.8	56.8	50.9	49.0	49.5	62.5	65.7	69.4	74.5	79.7	85.5	89.2	89.3	63.33	89.30	
20-Jan	90.2	88.8	88.7	93.1	94.3	95.9	95.9	94.4	93.6	94.0	95.2	96.4	97.0	97.2	97.3	97.4	97.3	96.9	96.2	95.5	96.1	96.2	97.0	96.8	95.06	97.39	
21-Jan	96.5	96.0	96.0	95.9	95.9	95.6	95.5	95.1	94.7	94.5	93.3	93.6	94.4	95.0	95.7	94.7	89.9	84.7	82.3	83.4	86.5	86.0	86.8	88.1	92.10	96.50	
22-Jan	89.0	91.0	91.5	91.5	94.6	95.3	95.6	95.6	94.5	92.8	91.5	85.6	76.4	72.5	65.3	69.8	68.7	71.7	74.8	75.2	78.0	80.2	78.9	85.5	83.57	95.65	
23-Jan	85.1	89.1	88.7	84.4	78.0	79.7	83.2	82.6	76.9	84.2	82.5	79.6	65.8	55.4	52.9	54.5	60.8	67.0	67.5	72.8	73.0	73.4	72.6	75.4	74.38	89.10	
24-Jan	75.4	77.1	81.3	85.5	86.9	87.4	87.2	87.4	87.5	87.3	84.1	81.5	73.3	67.6	70.8	72.8	76.8	82.0	84.7	86.5	87.7	90.2	94.2	94.6	82.92	94.61	
25-Jan	94.2	94.3	94.5	94.4	94.5	94.4	94.3	93.9	93.7	93.6	93.4	92.8	91.0	89.6	88.1	88.8	86.6	89.6	91.4	90.8	89.7	88.7	87.1	85.0	91.43	94.50	
26-Jan	82.9	81.2	79.4	77.5	77.6	77.3	77.8	78.2	79.3	78.6	76.1	70.8	67.9	67.3	67.5	67.4	67.3	69.2	71.1	74.0	75.5	77.0	80.6	81.7	75.14	82.90	
27-Jan	81.7	81.6	81.2	81.1	80.6	79.9	80.5	81.0	81.3	81.0	80.9	80.2	78.9	76.0	72.2	73.1	75.4	78.4	80.4	81.0	81.7	82.0	82.2	82.1	79.77	82.16	
28-Jan	82.6	82.8	83.1	82.7	82.0	81.2	80.1	80.8	80.8	80.4	78.9	75.4	75.3	75.3	75.8	74.6	74.5	78.5	80.6	80.8	80.1	81.2	81.8	82.6	79.66	83.14	
29-Jan	83.0	82.8	82.4	82.4	81.1	79.9	79.0	78.0	78.1	76.3	75.9	75.0	75.1	74.0	74.5	77.1	77.2	78.8	80.7	80.9	82.6	81.2	81.0	81.8	79.12	83.01	
30-Jan	80.9	81.2	85.4	82.7	81.1	80.9	82.1	82.3	85.4	83.5	78.8	76.3	73.2	67.4	66.7	67.8	70.7	75.0	75.8	75.3	74.1	78.7	82.1	81.8	77.89	85.44	
31-Jan	80.0	80.3	77.8	78.6	76.9	77.5	76.7	75.3	75.0	74.4	73.9	72.9	71.3	69.3	70.2	69.4	66.6	71.5	73.6	76.9	77.6	74.9	70.0	73.3	74.32	80.29	
		79.05	79.25	78.80	79.95	79.80	79.39	79.99	79.76	79.75	79.53	77.67	75.15	72.07	69.38	68.95	69.53	71.65	74.67	75.87	76.97	77.89	78.54	78.93	79.42	Diurnal Average	
		96.50	96.05	95.96	95.93	95.95	95.94	95.90	95.65	94.73	94.51	95.21	96.41	96.99	97.22	97.29	97.39	97.26	96.88	96.16	95.53	96.11	96.25	96.96	96.81	Diurnal Maximum	



WCAS - Meadows
Summary of Hourly Standard Deviations

Wind Speed (WS) - kph
January 2018

Maximum Value: 8.41 kph on Jan 17 03:00		Maximum Daily Average: 3.49 kph on Jan 9		Hours in Service: 744																																													
Minimum Value: 0.0 kph on Jan 20 06:00		Minimum Daily Average: 1.49 kph on Jan 5		Hours of Data: 670																																													
Maximum Diurnal Average: 2.79 kph at hour 19		Minimum Diurnal Average: 1.93 kph at hour 10		Hours of Missing Data: 74																																													
Monthly Average: 2.238 kph		Percentiles: P ₁ = 0.6 P ₁₀ = 1.2 Q ₁ = 1.5 Median = 2.1 Q ₃ = 2.8 P ₉₀ = 3.5 P ₉₉ = 5.3		Hours of Calibration: 0																																													
				Percent Operational Time: 90.1																																													
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Jan	1.7	2.2	1.4	4.0	1.1	1.2	0.8	1.2	5.2	4.9	6.0	4.6	2.9	2.1	3.0	2.7	2.7	3.5	5.2	1.6	1.3	1.6	1.3	1.1	2.64	5.99																							
2-Jan	1.1	1.7	2.9	3.5	1.8	1.7	1.1	2.2	1.6	0.9	2.0	0.0	2.7	1.3	2.2	3.3	2.1	2.1	3.3	1.6	1.7	3.0	2.5	4.7	2.13	4.66																							
3-Jan	3.0	3.2	3.5	1.2	2.6	2.7	1.4	2.4	2.7	1.5	3.1	3.1	2.0	1.9	1.1	1.1	1.1	2.3	1.7	1.1	0.7	1.3	2.0	2.1	2.03	3.53																							
4-Jan	1.7	1.5	1.3	1.3	1.4	1.1	0.6	2.5	2.3	2.7	1.9	1.0	1.5	2.0	0.8	AF	AF	1.8	AF	AF	AF	1.4	2.4	2.2	1.66	2.73																							
5-Jan	AF	AF	2.1	1.7	AF	AF	AF	AF	AF	1.2	0.3	1.4	1.7	1.1	0.8	2.0	1.6	1.0	1.7	AF	AF	1.7	2.2	1.8	1.49	2.24																							
6-Jan	2.2	1.9	AF	AF	AF	AF	AF	2.2	2.3	2.1	2.6	1.6	3.7	3.6	3.0	2.1	1.3	1.7	1.7	1.6	1.8	3.8	3.0	3.1	2.37	3.83																							
7-Jan	2.3	1.7	3.6	3.3	2.8	4.7	5.3	1.6	0.9	1.5	2.9	2.2	1.4	2.2	1.2	2.2	2.3	1.8	2.0	1.1	1.0	3.6	1.6	1.6	2.28	5.29																							
8-Jan	1.4	1.7	2.2	1.7	1.7	3.5	1.7	2.6	2.6	2.3	3.1	1.5	1.6	2.0	2.0	AF	AF	AF	3.2	2.9	1.5	3.4	2.7	2.9	2.29	3.48																							
9-Jan	2.8	2.9	3.2	3.1	2.9	3.2	3.2	3.0	3.2	3.0	3.5	3.6	3.2	4.9	4.6	3.4	4.0	3.8	4.8	4.4	3.9	2.7	3.8	2.5	3.49	4.91																							
10-Jan	2.6	2.5	2.9	2.3	2.5	2.4	2.0	1.9	2.2	1.5	2.0	1.7	1.8	1.7	1.6	1.7	2.5	2.1	2.0	0.8	2.3	2.5	2.4	2.4	2.09	2.88																							
11-Jan	2.3	1.3	1.7	0.5	1.5	0.5	2.5	1.2	AF	AF	AF	1.7	1.2	1.5	2.2	2.1	1.5	1.5	2.5	1.5	2.5	AF	AF	AF	1.65	2.49																							
12-Jan	1.3	0.9	0.6	1.4	1.0	AF	AF	AF	AF	1.6	AF	AF	2.2	3.4	1.5	3.4	1.0	AF	AF	AF	AF	AF	AF	2.1	1.70	3.41																							
13-Jan	2.0	AF	AF	AF	AF	AF	AF	AF	1.9	0.9	1.5	1.2	3.1	2.9	2.4	2.9	2.3	1.1	1.7	1.5	2.7	2.7	1.2	2.3	2.01	3.08																							
14-Jan	3.2	2.3	3.1	1.8	3.4	2.8	1.4	1.3	1.4	2.8	2.1	2.4	1.8	2.6	1.8	2.1	2.4	1.9	1.9	3.2	2.1	2.3	2.1	3.3	2.30	3.42																							
15-Jan	1.2	1.6	2.1	1.7	1.5	2.6	1.2	0.7	1.6	1.9	1.1	2.1	2.4	2.9	2.8	2.8	1.3	1.5	1.8	3.2	1.1	0.8	0.6	2.8	1.80	3.17																							
16-Jan	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	2.5	2.6	2.0	1.7	2.5	2.1	4.0	4.2	4.2	4.7	2.8	3.02	4.71																							
17-Jan	3.6	5.2	8.4	2.5	2.9	2.6	1.9	3.5	2.9	1.0	2.7	3.2	2.7	1.9	2.0	3.7	1.9	1.3	2.9	2.3	1.8	2.4	3.3	2.9	2.90	8.41																							
18-Jan	2.4	2.2	2.1	2.3	1.5	2.7	3.1	2.3	1.4	2.3	3.1	2.3	2.7	2.2	3.9	3.8	1.7	4.6	8.2	1.5	2.3	2.0	1.6	1.0	2.63	8.18																							
19-Jan	1.1	1.3	3.2	2.1	1.5	1.6	1.3	1.7	1.1	1.4	1.1	4.3	3.0	3.5	4.1	4.4	2.6	1.6	2.1	1.9	1.7	1.5	1.3	0.8	2.08	4.37																							
20-Jan	1.7	1.3	2.6	1.8	1.0	0.0	2.1	1.9	AF	1.4	0.9	1.2	1.4	1.8	1.0	1.1	AF	AF	2.4	1.8	AF	AF	1.8	2.3	1.55	2.63																							
21-Jan	0.4	2.1	2.8	1.7	1.7	1.3	2.4	2.2	2.2	2.2	2.2	2.9	2.4	2.8	2.4	3.2	3.0	2.7	2.7	2.0	1.3	1.2	2.3	1.7	2.16	3.25																							
22-Jan	1.9	2.4	1.1	2.5	2.2	2.5	2.3	2.3	2.7	1.0	1.8	2.1	3.9	2.8	3.5	2.3	4.1	5.4	2.4	1.7	0.7	1.4	1.5	1.7	2.34	5.36																							
23-Jan	1.8	0.6	1.5	0.7	2.0	3.4	1.8	3.2	2.8	1.6	1.5	1.9	1.0	2.0	1.5	1.8	1.6	1.0	1.5	2.3	3.5	2.1	4.0	1.7	1.95	4.00																							
24-Jan	3.0	1.4	3.1	1.6	2.2	2.0	2.8	1.2	0.8	1.6	1.6	1.6	1.9	3.1	1.3	3.5	2.0	2.8	2.4	1.6	1.9	2.2	2.0	1.6	2.05	3.52																							
25-Jan	2.0	1.5	1.6	1.6	1.2	1.3	1.3	1.3	1.4	2.0	1.8	2.2	1.5	2.1	2.5	2.7	2.6	2.9	2.9	2.5	2.0	1.7	2.3	2.7	1.98	2.92																							
26-Jan	2.4	2.7	2.6	2.9	2.9	3.5	3.1	3.7	3.2	2.6	3.0	5.5	4.3	4.5	4.1	3.6	3.5	2.9	2.9	2.3	2.4	1.6	1.1	1.4	3.02	5.46																							
27-Jan	1.4	0.8	1.3	1.3	0.6	2.0	AF	AF	AF	AF	AF	1.4	1.3	1.3	2.7	1.5	2.1	2.8	2.7	1.7	1.3	1.3	1.4	1.4	1.60	2.75																							
28-Jan	1.2	1.7	1.1	1.5	1.3	1.4	1.3	0.8	AF	AF	AF	2.4	2.7	1.8	2.6	2.3	2.2	2.2	2.2	3.5	2.0	2.4	2.1	2.1	1.94	3.48																							
29-Jan	2.3	2.2	1.9	2.8	2.3	2.7	2.9	3.0	3.0	3.3	2.7	2.3	2.3	2.1	2.2	2.6	2.2	1.8	3.7	2.1	2.8	2.0	2.0	7.2	2.69	7.20																							
30-Jan	4.1	3.9	3.7	3.1	4.1	3.2	2.9	2.6	1.0	1.0	1.7	1.8	1.7	1.8	1.5	1.6	2.1	2.5	3.7	2.9	3.0	2.7	3.0	3.2	2.62	4.15																							
31-Jan	3.4	3.1	2.3	2.0	2.3	2.4	4.0	2.4	1.4	1.8	2.6	1.7	1.6	1.8	1.1	2.4	1.6	0.8	AF	AF	1.7	4.1	2.2	1.4	2.18	4.14																							
																								2.12	2.06	2.50	2.06	2.01	2.26	2.18	2.11	2.16	1.93	2.26	2.24	2.25	2.39	2.25	2.56	2.18	2.28	2.79	2.17	2.03	2.27	2.21	2.36	Diurnal Average	
																								4.11	5.18	8.41	4.01	4.15	4.66	5.29	3.65	5.21	4.95	5.99	5.46	4.26	4.91	4.56	4.37	4.10	5.36	8.18	4.39	4.17	4.16	4.71	7.20	Diurnal Maximum	
AF - Analyzer Failure																																																	



WCAS - Meadows
Summary of Hourly Standard Deviations

Wind Direction (WD) - deg
January 2018

Maximum Value: 96.69 deg on Jan 16 19:00																								Hours in Service: 744		
Minimum Value: 3.3 deg on Jan 2 07:00																								Hours of Data: 670		
Maximum Diurnal Average: 31.31 deg at hour 14																								Hours of Missing Data: 74		
Monthly Average: 22.610 deg																								Hours of Calibration: 0		
Minimum Daily Average: 44.52 deg on Jan 16																								Percent Operational Time: 90.1		
Minimum Daily Average: 9.36 deg on Jan 15																								Percentiles: P ₁ = 4.5 P ₁₀ = 7.4 Q ₁ = 10.3 Median = 14.6 Q ₃ = 25.5 P ₉₀ = 54.4 P ₉₉ = 89.9		
Minimum Diurnal Average: 17.91 deg at hour 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-Jan	78.6	17.4	90.1	12.6	39.5	60.9	17.0	26.9	84.9	32.2	23.4	39.5	62.6	65.5	25.5	42.2	25.5	17.4	9.9	26.6	18.1	7.2	5.3	5.7	34.78	90.14
2-Jan	5.9	4.4	6.8	21.7	10.3	3.3	3.3	5.1	11.1	11.0	49.0	85.5	63.5	44.8	43.7	33.7	75.3	87.3	23.8	43.6	76.9	76.0	34.5	58.1	36.61	87.28
3-Jan	74.0	76.9	58.2	8.1	41.3	47.8	15.9	13.0	9.2	9.6	21.2	28.3	43.0	59.5	29.5	28.9	63.7	21.2	88.2	44.4	12.2	77.3	87.8	68.4	42.81	88.23
4-Jan	14.5	10.7	23.9	12.8	15.2	11.3	10.1	51.0	25.1	33.1	56.2	22.5	22.6	86.2	22.5	AF	AF	42.5	AF	AF	AF	11.6	57.4	86.8	32.42	86.80
5-Jan	AF	AF	35.4	47.8	AF	AF	AF	AF	AF	45.9	76.3	21.7	22.7	12.7	15.7	19.1	25.9	11.4	23.6	AF	55.0	69.7	77.1	37.8	37.31	77.11
6-Jan	48.2	29.2	AF	AF	AF	AF	AF	16.8	13.4	11.9	12.6	15.9	28.2	12.9	13.3	16.3	10.8	14.1	12.1	11.0	9.8	20.4	8.2	11.3	16.66	48.15
7-Jan	6.3	13.8	10.1	7.8	4.9	6.8	11.2	8.3	4.8	10.0	4.9	23.8	18.4	28.8	52.4	18.6	89.9	41.8	33.6	73.5	22.3	26.0	16.9	43.4	24.09	89.92
8-Jan	9.9	12.8	21.1	62.4	90.3	14.8	24.7	31.9	30.5	32.2	24.1	41.2	27.7	33.0	51.7	AF	AF	AF	62.3	22.4	6.9	7.2	14.8	10.3	30.10	90.28
9-Jan	9.4	11.7	12.7	15.8	13.7	16.9	19.2	18.5	20.0	18.9	16.6	13.6	15.9	11.7	12.6	12.2	11.9	13.1	12.6	11.9	13.3	14.9	11.7	11.4	14.18	20.01
10-Jan	11.9	12.8	15.4	20.8	16.6	18.9	16.2	18.2	23.4	17.9	15.7	16.0	24.0	51.1	25.7	36.8	36.6	20.5	26.1	13.7	14.1	13.5	13.5	15.1	20.60	51.13
11-Jan	12.7	18.9	22.8	76.0	57.4	59.7	64.6	18.4	AF	AF	AF	12.4	23.3	17.8	12.0	15.4	8.3	3.9	18.5	7.6	8.7	AF	AF	AF	25.47	76.03
12-Jan	13.6	12.4	6.0	23.8	15.0	AF	AF	AF	AF	10.4	AF	AF	63.9	73.2	12.1	25.1	12.7	AF	AF	AF	AF	AF	AF	30.5	24.90	73.18
13-Jan	92.1	AF	AF	AF	AF	AF	AF	AF	80.4	63.8	25.8	24.2	90.4	16.4	10.1	15.2	12.4	12.0	21.3	12.4	11.8	11.1	4.4	6.1	30.00	92.10
14-Jan	9.6	13.6	16.0	18.1	24.4	10.4	10.2	8.8	7.2	8.8	10.6	9.9	21.9	15.2	8.2	26.8	10.7	6.1	11.9	12.5	8.1	7.0	4.7	4.9	11.91	26.77
15-Jan	5.7	8.6	16.0	13.4	7.8	9.1	6.1	4.6	8.1	6.9	6.0	15.5	6.7	9.4	6.2	6.6	4.1	5.7	9.7	36.2	6.0	5.3	6.9	14.0	9.36	36.16
16-Jan	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	15.7	65.3	70.9	59.6	44.7	96.7	50.3	52.6	11.4	9.4	13.2	44.52	96.69
17-Jan	10.8	10.7	10.8	10.8	6.8	10.3	12.6	7.0	10.4	7.8	15.7	25.2	66.6	19.3	37.3	25.8	10.7	16.0	25.2	18.5	16.6	7.0	17.2	35.3	18.10	66.65
18-Jan	26.5	38.9	53.8	29.7	22.3	79.7	92.2	16.5	10.7	17.8	11.4	72.1	48.5	71.3	52.2	42.2	12.6	13.8	15.4	8.0	12.9	5.8	8.5	5.8	32.01	92.18
19-Jan	6.2	6.9	5.9	8.6	7.9	9.0	5.1	7.2	4.1	8.1	5.7	6.3	6.4	8.2	11.1	10.9	19.8	20.3	11.1	12.9	21.6	9.5	9.7	8.6	9.63	21.62
20-Jan	6.9	20.3	78.0	26.6	32.0	82.4	51.0	31.6	AF	21.9	28.5	26.7	22.8	38.8	10.9	15.9	AF	AF	42.8	53.6	AF	AF	14.2	17.8	32.77	82.44
21-Jan	50.9	28.2	22.1	25.3	13.0	10.4	8.5	10.9	8.3	10.0	8.8	10.1	11.6	11.0	7.1	8.9	7.4	9.9	9.3	12.5	13.7	21.5	32.6	18.6	15.44	50.92
22-Jan	31.1	26.8	15.5	23.0	10.1	10.5	10.6	11.3	8.1	11.7	11.8	14.0	42.9	19.7	19.2	9.8	16.1	26.3	20.8	10.4	5.5	11.7	21.2	68.2	19.01	68.20
23-Jan	38.1	47.4	12.1	13.7	22.9	53.8	73.6	86.8	16.7	85.5	84.4	18.7	15.6	15.7	15.1	12.7	4.8	15.7	14.2	16.1	22.7	13.6	26.7	8.4	30.62	86.77
24-Jan	5.8	11.2	17.4	86.3	51.5	73.8	78.2	27.4	12.3	11.9	27.0	16.3	61.1	68.2	30.4	20.4	16.8	18.9	30.1	14.2	9.2	8.7	7.6	8.1	29.70	86.33
25-Jan	16.8	9.8	10.5	21.5	16.3	14.4	11.6	16.2	10.8	17.9	17.8	20.8	21.6	20.1	12.0	17.0	18.5	12.3	10.7	11.1	9.1	7.4	7.0	8.4	14.15	21.64
26-Jan	9.2	8.6	10.5	10.2	9.9	9.9	9.0	10.1	10.3	11.5	9.9	13.2	10.6	10.3	10.8	12.1	11.7	10.0	10.5	11.0	11.2	13.5	6.2	6.5	10.28	13.53
27-Jan	4.9	10.2	7.4	12.4	12.2	37.6	AF	AF	AF	AF	AF	16.0	16.5	25.2	20.7	10.6	9.4	7.7	12.5	16.6	17.7	10.4	10.9	13.2	14.32	37.60
28-Jan	9.7	9.7	9.5	18.0	13.9	11.2	15.3	16.4	AF	AF	AF	14.4	25.5	12.1	13.5	12.5	11.7	6.1	6.8	8.1	7.0	8.4	7.5	7.5	11.66	25.45
29-Jan	8.8	7.9	7.2	11.3	9.1	9.4	8.8	7.9	8.8	10.1	11.9	8.0	9.4	8.4	15.2	8.0	8.5	14.7	21.8	15.1	28.4	15.4	24.8	44.1	13.46	44.14
30-Jan	15.1	10.0	12.2	10.1	12.3	16.5	11.2	25.1	10.8	9.2	11.8	17.9	11.0	18.4	12.7	14.8	17.9	21.6	12.8	14.8	13.7	13.0	11.7	14.6	14.13	25.06
31-Jan	16.0	11.9	10.4	12.3	13.5	9.7	30.0	12.6	14.5	9.9	11.7	20.6	33.3	69.9	29.7	35.6	20.1	32.2	AF	AF	24.8	27.6	16.4	7.3	21.36	69.88
22.38 17.91 22.07 23.60 21.85 26.86 24.65 19.55 18.48 20.21 23.03 23.11 31.24 31.31 22.73 21.55 22.63 20.25 24.80 21.81 18.92 19.01 19.83 22.98																								Diurnal Average		
92.10 76.85 90.14 86.33 90.28 82.44 92.18 86.77 84.91 85.53 84.37 85.46 90.43 86.24 65.32 70.86 89.92 87.28 96.69 73.54 76.85 77.32 87.84 86.80																								Diurnal Maximum		
AF - Analyzer Failure																										

WEST CENTRAL AIRSHED SOCIETY

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

**AMS 959
WAGNER2
JANUARY 2018**

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

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

Summary Report

Continuous air quality/meteorological monitoring measurements

West Central Airshed Society

TransAlta / Wagner2 Station 959												January 2018		
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 ₂ (ppb)	36	708	100.0	0.3	0.0	8.0	0.0	0.0	0.1	0.4	0.9	0	0	0.001
NO (ppb)	37	706	99.9	1.0	0.0	12.6	0.0	0.0	0.1	1.2	3.3	-	-	-
NO ₂ (ppb)	37	706	99.9	6.8	0.3	23.3	1.4	3.6	5.8	9.5	13.3	0	0	0.013
NO _x (ppb)	37	706	99.9	8.0	0.2	35.2	1.5	3.9	6.7	11.3	16.2	-	-	-
Wind Speed (kph)	0	696	93.6	2.9	0.0	13.3	0.2	0.5	1.8	4.4	7.8	-	-	-
Temperature (°C)	0	743	99.9	-10.2	-33.5	8.5	-21.9	-15.5	-9.0	-4.6	0.1	-	-	-
Relative Humidity (%)	0	743	99.9	72.1	30.2	97.5	57.2	64.8	71.9	80.7	87.7	-	-	-
Std Dev Wind Direction (deg)	0	696	93.6	52.0	9.4	106.1	17.1	26.7	49.2	79.5	89.0	-	-	-
Std Dev Wind Speed (kph)	0	696	93.6	1.6	0.2	5.1	0.6	0.8	1.3	2.2	3.0	-	-	-



WCAS - Wagner2
Summary of Hourly Averages

Sulphur Dioxide (SO₂) - ppb
January 2018

Maximum Value: 7.97 ppb on Jan 26 06:00																				Maximum Daily Average: 1.40 ppb on Jan 30					Hours in Service: 744																								
Minimum Value: 0.0 ppb on Jan 1 04:00																				Minimum Daily Average: 0.00 ppb on Jan 20					Hours of Data: 708																								
Maximum Diurnal Average: 0.63 ppb at hour 16																				Minimum Diurnal Average: 0.18 ppb at hour 8					Hours of Missing Data: 36																								
Monthly Average: 0.349 ppb																				Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.1 Q ₃ = 0.4 P ₉₀ = 0.9 P ₉₉ = 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-Jan	0.3	0.1	Z	0.0	0.0	0.1	0.3	0.2	0.0	0.0	0.2	0.1	0.3	0.4	1.7	1.4	1.0	1.2	1.0	0.7	0.3	0.5	0.3	0.3	0.45	1.69																							
2-Jan	0.1	0.1	Z	0.2	0.1	0.0	0.1	0.0	0.0	0.1	0.2	0.4	0.6	0.5	0.5	0.4	0.7	0.6	0.4	0.3	0.2	0.1	0.1	0.1	0.24	0.67																							
3-Jan	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.1	0.2	0.2	0.8	0.2	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.14	1.10																							
4-Jan	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.9	1.5	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.14	1.49																							
5-Jan	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	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.11																							
6-Jan	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	0.1	0.0	0.0	0.0	0.0	0.0	0.01	0.08																							
7-Jan	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.05	0.45																							
8-Jan	0.0	0.0	Z	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.6	1.1	1.2	0.4	0.5	0.5	0.3	0.3	0.3	0.8	0.4	0.30	1.15																							
9-Jan	0.4	0.5	Z	0.4	0.5	0.4	0.2	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.6	0.7	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.34	0.69																							
10-Jan	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	0.1	0.01	0.14																							
11-Jan	0.1	0.0	Z	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.2	0.6	0.4	0.3	0.1	0.2	0.3	0.3	0.3	0.1	0.1	0.14	0.61																							
12-Jan	0.1	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	0.3	0.5	1.8	0.6	0.3	0.3	0.3	0.2	0.2	0.1	0.21	1.80																							
13-Jan	0.1	0.0	Z	0.1	0.1	0.2	0.1	0.2	0.2	0.3	0.3	0.3	0.5	0.6	0.3	1.0	0.4	0.1	0.2	0.6	3.0	2.5	0.5	0.2	0.51	2.95																							
14-Jan	0.5	0.4	Z	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.5	4.5	3.6	2.4	2.9	5.3	2.1	0.4	0.1	0.1	0.1	0.1	1.01	5.27																							
15-Jan	0.0	0.1	Z	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.3	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.06	0.34																							
16-Jan	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.13																							
17-Jan	0.9	2.5	Z	0.3	0.3	0.2	0.2	0.1	0.1	0.8	2.5	1.7	0.1	0.0	0.0	0.0	0.1	0.0	0.3	0.5	0.3	0.1	0.1	0.1	0.49	2.54																							
18-Jan	0.1	0.0	Z	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.8	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.14	0.99																							
19-Jan	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.5	0.2	0.4	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.10	0.51																							
20-Jan	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00																							
21-Jan	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.2	0.09	0.41																							
22-Jan	0.1	0.1	Z	0.0	0.0	0.5	0.3	0.2	0.2	0.4	0.5	1.4	1.0	1.8	0.6	2.4	0.6	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.44	2.40																							
23-Jan	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	0.6	0.9	0.4	0.3	0.3	0.2	0.1	0.0	0.1	0.2	0.4	0.16	0.86																							
24-Jan	0.2	0.2	Z	0.1	0.1	0.3	0.1	0.2	0.1	0.2	0.2	0.3	0.4	0.4	0.6	0.6	0.3	0.3	0.3	0.2	0.0	0.3	0.3	0.2	0.26	0.63																							
25-Jan	0.0	0.0	Z	0.1	0.0	0.3	0.2	0.6	1.2	1.2	0.0	0.2	0.6	0.5	0.3	0.3	0.2	0.1	0.6	2.6	1.2	0.9	1.6	5.5	0.80	5.55																							
26-Jan	2.9	2.1	Z	1.7	1.6	8.0	4.2	1.0	0.4	0.8	1.2	0.5	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	1.08	7.97																							
27-Jan	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	0.2	0.5	1.9	1.1	1.2	0.9	0.7	1.6	3.9	0.9	0.4	0.59	3.86																							
28-Jan	0.7	0.2	Z	0.1	0.3	0.2	0.2	0.0	0.1	0.1	0.2	0.7	1.0	0.2	0.1	0.3	0.4	0.5	0.8	0.9	0.9	0.6	0.7	1.1	0.46	1.15																							
29-Jan	1.4	2.1	Z	2.8	2.9	2.9	2.1	1.5	1.8	2.7	2.7	1.6	1.2	0.8	0.6	0.6	0.7	0.6	0.5	0.4	0.5	0.5	0.5	0.6	1.39	2.87																							
30-Jan	0.4	7.5	Z	7.9	4.0	0.5	0.4	0.5	0.6	0.3	C	C	C	C	C	2.6	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.0	1.40	7.85																							
31-Jan	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	0.1	0.4	0.02	0.37																							
																								0.27	0.52	--	0.45	0.33	0.44	0.28	0.18	0.18	0.24	0.29	0.29	0.37	0.52	0.47	0.63	0.41	0.40	0.29	0.29	0.31	0.33	0.22	0.33	Diurnal Average	
																								2.90	7.51	--	7.85	4.05	7.97	4.19	1.53	1.76	2.73	2.73	1.68	1.23	4.46	3.60	2.57	2.85	5.27	2.09	2.62	2.95	3.86	1.58	5.55	Diurnal Maximum	
Z - zerospan C - Calibration																																																	
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb																																																	



WCAS - Wagner2
Summary of Hourly Averages

Nitrogen Oxide (NO) - ppb
January 2018

Maximum Value: 12.64 ppb on Jan 22 13:00 Maximum Daily Average: 3.82 ppb on Jan 5																				Hours in Service: 744 Hours of Data: 706 Hours of Missing Data: 38 Hours of Calibration: 37 Percent Operational Time: 99.9																			
Minimum Value: 0.0 ppb on Jan 1 01:00 Minimum Daily Average: 0.02 ppb on Jan 10 Maximum Diurnal Average: 3.96 ppb at hour 13 Minimum Diurnal Average: 0.02 ppb at hour 19 Monthly Average: 1.015 ppb Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.1 Q ₃ = 1.2 P ₉₀ = 3.3 P ₉₉ = 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-Jan	0.0	0.0	Z	0.1	0.0	0.0	0.0	0.0	0.0	1.1	3.6	4.4	4.3	3.2	2.5	1.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.90	4.36													
2-Jan	0.0	0.0	Z	0.1	0.1	0.0	0.0	0.0	0.0	0.3	0.9	2.4	6.8	3.3	3.0	2.8	1.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.92	6.78													
3-Jan	0.0	0.0	Z	0.1	0.1	0.0	0.0	0.0	0.0	0.9	2.8	5.6	4.4	4.2	4.3	2.9	1.2	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1.22	5.62													
4-Jan	0.0	0.0	Z	0.1	0.1	0.0	0.0	0.0	0.0	0.8	3.3	4.4	9.2	6.2	3.8	2.7	0.8	0.0	0.2	0.0	0.0	0.0	0.2	0.2	1.39	9.19													
5-Jan	1.3	2.1	Z	3.3	3.4	3.3	4.0	4.3	4.6	6.4	8.6	10.2	10.0	8.8	7.1	4.7	2.3	0.3	0.1	0.1	0.1	1.3	1.7	3.82	10.22														
6-Jan	1.4	1.7	Z	1.8	1.5	1.6	1.5	0.9	0.0	0.1	0.2	0.9	2.9	1.5	0.2	0.1	0.1	2.0	0.0	0.0	0.0	0.1	0.0	0.0	0.80	2.91													
7-Jan	0.0	0.1	Z	0.1	0.1	0.0	0.0	0.0	0.0	0.2	1.0	1.9	2.4	1.8	1.0	0.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.41	2.39													
8-Jan	0.0	0.0	Z	0.1	0.1	0.1	0.0	0.0	0.5	0.3	0.8	4.8	6.7	6.7	4.8	3.1	3.5	2.5	0.2	0.1	0.1	0.0	0.0	0.0	1.49	6.71													
9-Jan	0.0	0.0	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.04	0.19													
10-Jan	0.0	0.0	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.02	0.13													
11-Jan	0.0	0.0	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.3	1.0	1.3	1.5	2.0	2.0	1.3	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.45	1.98													
12-Jan	0.0	0.0	Z	0.1	0.1	0.0	0.0	0.0	0.1	1.6	3.5	5.8	7.4	6.5	5.9	4.4	2.5	0.4	0.0	0.0	0.0	0.2	0.1	0.0	1.68	7.43													
13-Jan	0.0	0.0	Z	0.1	0.1	0.1	0.1	0.1	0.3	3.8	7.7	8.9	8.6	4.6	1.8	2.0	1.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	1.71	8.91													
14-Jan	0.0	0.0	Z	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	2.3	1.7	0.7	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.32	2.25													
15-Jan	0.0	0.0	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.3	1.4	1.3	0.9	0.7	0.7	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.26	1.45													
16-Jan	0.0	0.0	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.7	3.3	3.5	5.1	7.1	6.3	5.2	2.5	0.2	0.1	4.0	9.7	10.4	2.4	0.0	2.64	10.43													
17-Jan	0.1	0.2	Z	0.1	0.0	0.1	0.0	0.0	0.0	2.4	3.3	3.1	3.4	2.3	1.6	1.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	3.37													
18-Jan	0.0	0.0	Z	0.1	0.3	0.1	0.2	0.1	0.2	1.4	2.2	3.0	4.1	3.9	3.4	1.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.94	4.06													
19-Jan	0.0	0.0	Z	0.1	0.1	0.0	0.0	0.0	0.1	2.3	3.3	4.3	4.3	0.7	0.1	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.69	4.32													
20-Jan	0.0	0.0	Z	0.2	0.1	0.1	0.1	0.0	0.1	0.9	2.1	1.7	3.0	3.3	2.9	2.1	0.9	0.1	0.0	0.0	0.0	0.2	2.3	2.5	0.99	3.34													
21-Jan	1.4	1.2	Z	1.0	1.2	1.6	5.2	11.4	1.4	3.0	2.1	1.9	2.0	2.0	1.9	1.8	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.74	11.43													
22-Jan	0.0	0.0	Z	0.1	0.1	0.1	0.0	0.0	0.0	1.4	6.2	10.2	12.6	10.6	6.0	6.5	1.7	0.3	0.0	0.0	0.0	0.1	0.0	0.1	2.44	12.64													
23-Jan	0.0	0.0	Z	0.1	0.1	0.1	0.0	0.1	0.7	3.1	5.0	5.8	5.2	4.8	3.8	3.1	1.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.48	5.83													
24-Jan	0.0	0.0	Z	0.1	0.1	0.0	0.0	0.0	0.0	0.9	3.9	2.5	2.1	2.2	2.9	2.4	1.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.82	3.91													
25-Jan	0.0	0.0	Z	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.6	1.0	0.7	0.2	0.1	0.1	0.0	0.2	1.8	0.4	0.3	0.7	2.6	0.41	2.62													
26-Jan	0.7	0.9	Z	0.6	0.2	3.2	0.9	0.0	0.0	0.4	1.5	1.1	0.6	0.5	0.3	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.48	3.16													
27-Jan	0.0	0.0	Z	0.1	0.0	0.0	0.0	0.0	0.1	1.2	1.9	1.8	1.2	0.9	1.3	1.3	1.2	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.50	1.90													
28-Jan	0.0	0.0	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.5	1.0	1.6	0.6	0.4	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.22	1.60													
29-Jan	0.0	0.0	Z	0.2	0.1	0.1	0.0	0.0	0.1	1.0	2.8	2.0	2.3	1.9	1.1	0.8	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.57	2.76													
30-Jan	0.0	6.2	Z	7.3	3.0	0.0	0.0	0.0	0.6	3.8	C	C	C	C	C	C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--	7.27													
31-Jan	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	AF	0.7	0.5	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.11	0.68													
																								0.16 0.40		--	0.54 0.36	0.34 0.39	0.56 0.29	1.26 2.45	3.21 3.96	3.13 2.39	1.82 0.87	0.28 0.02	0.20 0.20	0.33 0.37	0.22 0.23	Diurnal Average	
																								1.41 6.22		--	7.27 3.39	3.28 5.23	11.43 4.61	6.37 8.63	10.22 12.64	10.59 7.07	6.47 3.54	2.51 0.21	3.97 9.70	10.43 2.42	2.62	Diurnal Maximum	
Z - zerospan C - Calibration AF - Analyzer Failure																																							
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ppb 24-hr --- ppb																																							



WCAS - Wagner2
Summary of Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
January 2018

Maximum Value: 23.33 ppb on Jan 21 08:00		Maximum Daily Average: 13.40 ppb on Jan 13		Hours in Service:	744																																											
Minimum Value: 0.3 ppb on Jan 10 09:00		Minimum Daily Average: 0.73 ppb on Jan 10		Hours of Data:	706																																											
Maximum Diurnal Average: 8.40 ppb at hour 18		Minimum Diurnal Average: 4.82 ppb at hour 11		Hours of Missing Data:	38																																											
Monthly Average: 6.828 ppb		Percentiles: P ₁ = 0.4 P ₁₀ = 1.4 Q ₁ = 3.6 Median = 5.8 Q ₃ = 9.5 P ₉₀ = 13.3 P ₉₉ = 19.4		Hours of Calibration:	37																																											
				Percent Operational Time:	99.9																																											
Day	Hourly Period Ending At																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Jan	7.0	7.2	Z	7.9	7.3	7.0	7.0	6.5	5.3	5.4	5.1	4.2	4.6	6.0	9.9	9.8	10.7	9.7	9.8	9.2	7.3	6.8	6.4	6.5	7.24	10.72																						
2-Jan	5.8	5.3	Z	4.8	4.6	4.3	4.4	3.9	3.5	3.8	2.6	4.2	9.5	9.8	8.1	11.2	12.6	11.2	11.1	15.9	13.3	10.3	10.0	8.6	7.78	15.95																						
3-Jan	8.5	7.7	Z	7.3	7.1	7.0	8.1	7.9	7.4	5.6	4.3	7.5	7.3	8.6	10.4	11.5	15.4	17.5	11.2	11.1	12.0	9.4	9.2	8.3	9.15	17.55																						
4-Jan	8.1	7.6	Z	6.4	6.3	6.0	6.0	5.2	5.8	5.4	3.4	4.8	10.6	11.4	9.8	9.0	9.6	8.8	8.4	9.5	8.5	8.7	10.6	13.8	7.99	13.78																						
5-Jan	14.9	15.4	Z	17.6	18.2	17.2	14.1	11.7	10.8	9.5	8.2	6.7	6.7	8.2	9.6	11.3	12.1	13.2	12.6	13.0	13.1	12.0	13.1	14.1	12.33	18.24																						
6-Jan	13.1	14.3	Z	12.9	13.2	13.3	12.2	12.3	5.7	2.5	2.7	4.1	9.2	4.3	1.3	1.3	4.6	13.3	9.2	7.1	8.2	14.4	9.0	10.1	8.62	14.35																						
7-Jan	10.7	15.1	Z	5.6	7.8	6.5	5.6	3.0	3.3	3.1	3.2	4.3	5.4	5.9	5.6	5.6	5.7	4.9	4.7	4.9	4.6	4.1	4.6	4.0	5.58	15.10																						
8-Jan	3.8	3.6	Z	3.0	3.3	3.1	2.9	2.7	4.0	4.1	3.4	8.1	10.7	11.9	11.9	12.1	13.4	15.9	15.7	15.3	13.8	6.1	5.2	5.0	7.78	15.93																						
9-Jan	7.7	3.7	Z	2.3	2.2	1.9	1.6	1.6	1.5	1.5	1.5	1.3	1.2	1.0	1.2	1.5	1.8	1.9	1.4	1.5	1.0	1.0	0.9	1.2	1.84	7.69																						
10-Jan	1.2	1.1	Z	0.7	0.3	0.3	0.3	0.4	0.3	0.4	0.5	0.3	0.4	0.5	0.5	0.6	0.7	1.3	1.2	1.1	1.4	0.9	1.0	1.3	0.73	1.38																						
11-Jan	1.3	1.7	Z	1.0	1.2	1.2	1.2	1.6	1.8	2.3	1.7	1.7	1.9	2.8	3.6	4.2	8.7	10.0	9.0	8.9	8.7	8.0	7.5	7.3	4.23	10.05																						
12-Jan	7.3	7.0	Z	7.6	7.7	7.8	7.5	7.4	7.8	6.4	4.2	5.0	5.9	6.1	7.4	9.9	13.7	17.4	18.2	17.7	17.9	18.6	17.4	16.7	10.54	18.62																						
13-Jan	17.9	17.5	Z	18.8	18.7	19.1	19.4	19.0	18.6	16.5	12.5	10.2	9.6	9.8	7.1	10.9	12.6	8.9	13.9	10.9	9.8	8.8	9.6	7.9	13.40	19.45																						
14-Jan	7.9	5.1	Z	1.6	2.0	2.0	1.4	1.5	1.4	1.3	1.3	5.4	3.9	5.8	5.4	4.0	7.1	15.1	9.1	3.8	2.2	1.9	1.8	1.9	4.05	15.05																						
15-Jan	2.1	2.3	Z	3.5	3.7	4.1	4.2	4.7	4.0	3.7	3.9	3.6	2.8	2.5	2.8	3.2	3.8	3.8	4.2	4.1	4.0	3.9	4.2	4.0	3.62	4.67																						
16-Jan	4.2	4.3	Z	4.7	4.1	3.9	3.8	4.4	5.7	4.3	5.4	4.4	5.4	7.2	8.5	10.8	13.0	14.1	15.0	18.9	18.6	18.1	16.4	13.6	9.08	18.87																						
17-Jan	8.2	8.6	Z	2.5	3.6	11.8	3.0	4.5	6.3	12.3	11.0	8.8	7.7	6.6	6.4	6.3	5.4	4.3	4.7	5.0	5.7	7.4	7.9	8.0	6.79	12.33																						
18-Jan	7.6	6.8	Z	7.8	7.4	6.3	11.4	10.8	9.8	6.7	5.1	4.7	5.2	6.8	8.7	8.3	8.9	0.9	1.6	1.4	1.5	3.4	10.3	3.2	6.29	11.38																						
19-Jan	3.2	4.4	Z	4.7	5.3	4.0	6.7	8.6	10.0	19.4	14.2	13.0	12.2	3.5	1.2	2.9	4.3	2.8	2.2	1.5	1.2	3.2	8.1	12.1	6.46	19.41																						
20-Jan	9.6	10.3	Z	7.2	6.9	7.0	7.0	6.6	6.1	4.6	5.2	5.6	7.2	7.5	6.9	6.9	7.9	6.9	6.2	5.7	6.5	11.8	19.4	19.7	8.20	19.70																						
21-Jan	17.5	14.7	Z	18.3	22.0	22.1	22.8	23.3	19.5	12.2	5.5	4.6	4.3	5.0	5.6	6.2	7.2	7.6	6.7	5.5	5.1	4.8	4.4	5.3	10.87	23.33																						
22-Jan	5.2	6.7	Z	9.2	11.3	8.6	5.5	5.9	6.2	7.4	9.5	9.6	11.0	11.8	11.4	17.0	14.3	14.2	14.9	12.8	12.8	13.6	11.9	12.1	10.56	17.01																						
23-Jan	12.9	12.3	Z	10.9	9.9	9.7	10.1	15.2	14.8	10.6	7.1	6.5	6.9	7.5	8.3	9.8	10.1	9.0	6.6	6.6	6.4	8.1	8.2	7.7	9.36	15.19																						
24-Jan	6.7	5.9	Z	5.0	4.1	3.7	3.5	3.3	3.6	4.0	5.2	3.8	3.6	3.7	5.8	6.8	7.8	11.9	9.4	6.0	5.4	5.3	4.7	3.9	5.35	11.90																						
25-Jan	3.7	3.8	Z	3.8	5.4	6.4	7.6	7.4	5.9	4.8	4.3	3.9	4.4	4.1	2.8	2.4	3.9	5.5	10.1	13.3	12.8	11.5	8.5	14.8	6.57	14.84																						
26-Jan	12.2	11.7	Z	6.0	6.2	15.2	9.2	4.2	2.4	3.2	3.9	2.3	1.6	1.5	1.4	1.5	1.8	2.0	2.4	1.9	2.2	2.5	2.4	2.2	4.34	15.22																						
27-Jan	8.8	4.2	Z	3.9	5.0	6.5	6.3	5.9	5.4	4.3	3.0	2.3	1.7	1.6	2.7	3.6	7.1	12.3	12.7	14.1	10.5	7.7	3.3	2.5	5.87	14.09																						
28-Jan	2.2	2.0	Z	2.0	2.1	2.0	1.6	1.5	1.5	1.4	1.3	1.6	1.9	1.1	1.1	1.4	2.2	4.1	4.3	4.9	5.7	5.3	5.2	5.5	2.68	5.73																						
29-Jan	5.4	6.6	Z	8.6	8.2	7.6	7.1	7.3	7.0	5.9	3.9	4.2	4.4	4.4	4.3	4.5	4.8	5.8	5.7	5.6	5.5	5.6	5.6	7.0	5.87	8.61																						
30-Jan	7.9	15.4	Z	16.7	10.6	5.1	5.4	6.4	10.2	8.0	C	C	C	C	C	C	4.4	5.4	4.8	4.8	5.1	3.8	2.6	2.1	--	16.68																						
31-Jan	1.8	1.4	Z	1.1	1.1	1.0	1.0	1.0	0.8	0.9	1.3	1.1	AF	1.0	1.0	1.0	1.0	0.7	0.7	0.8	1.1	1.8	2.9	4.6	1.32	4.55																						
																								7.55	7.54	--	6.88	6.99	7.15	6.71	6.63	6.34	5.86	4.82	4.93	5.76	5.60	5.69	6.53	7.62	8.40	7.99	7.83	7.48	7.38	7.50	7.58	Diurnal Average
																								17.86	17.55	--	18.76	21.98	22.10	22.79	23.33	19.51	19.41	14.22	13.01	12.20	11.86	11.89	17.01	15.36	17.55	18.24	18.87	18.64	18.62	19.38	19.70	Diurnal Maximum
Z - zerospan																								C - Calibration				AF - Analyzer Failure																				
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb 24-hr 106 ppb																																																

Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 959, Wagner

Calibration Date: January 30, 2018

Parameter: NO/NO₂/NO_x

Instrument: Teco 42i

Serial Number: 1004840574

Previous Calibration Date: December 28, 2017

Calibration: Routine

Calibration Equipment: Sabio 2010 SN-08600312

Barometric Pressure: 27.56" Hg

Calibration Method: Standard Gas Dilution/ Gas Phase Titration

Cylinder ID: EX0012529

Temperature: 21.3° C

Cylinder Concentration: 27.4 ppm NO /27.5 ppm NO_x In Service: 12/06/2017 EXP 10/25/2020

Technician: L. Burns

Instrument Settings	NO bkg ppb	NO _x bkg ppb	Pre-reactor bkg ppb	NO Coefficient	NO _x Coefficient	NO ₂ Coefficient	Monitoring Range
Previous	7.7	8.2	NA	1.017	1.005	1.000	500 ppb
Current	8.1	9.5	NA	1.055	1.004	1.000	500 ppb

NO	Final Zero: -0.6 ppb	Final Span: 266.3 ppb	As Found Correction Factor: 1.028
NO ₂	Final Zero: -0.1 ppb	Final Span: 0.8 ppb	As Found Correction Factor: NA
NO _x	Final Zero: -1.2 ppb	Final Span: 267.0 ppb	As Found Correction Factor: 1.024

Results of Linear Regression			Slope	Intercept	R ²
NO	R _c vs C _c	Previous	60.026110	-25.108650	0.999992
		Current	60.193940	61.652640	0.999916
	C _i vs C _c	Current	1.000000	-0.000039	0.999917
NO ₂	R _c vs C _c	Previous	60.590690	-222.836300	0.999992
		Current	59.783890	-25.665390	0.999954
	C _i vs C _c	Current	1.000000	0.000000	0.999954
NO _x	R _c vs C _c	Previous	60.068070	-19.318490	0.999992
		Current	60.169110	65.675490	0.999902
	C _i vs C _c	Current	1.000000	-0.000039	0.999902

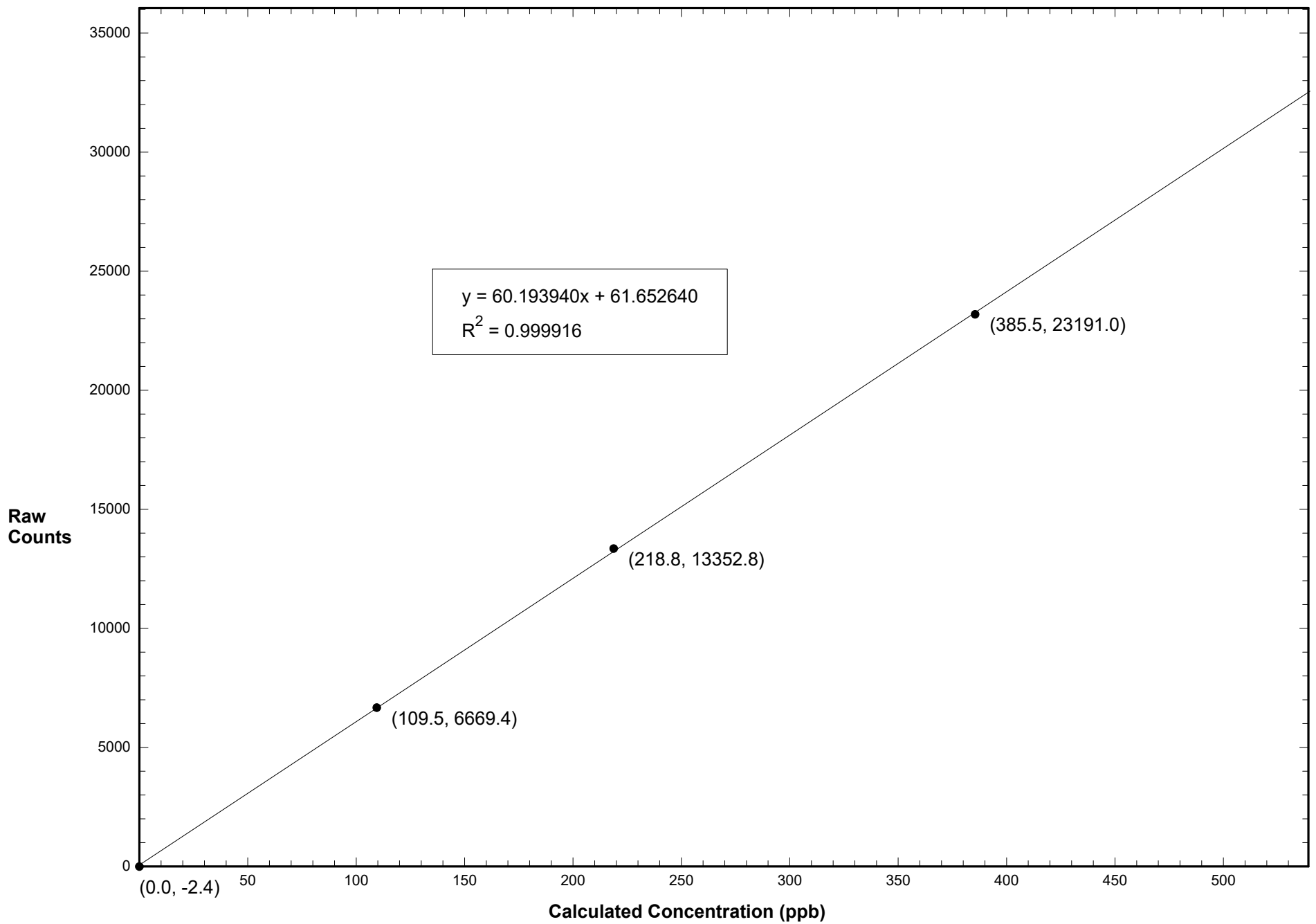
Comments: SAMPLE FLOW = 0.504 LPM

Calibration Data Summary (Page 2)

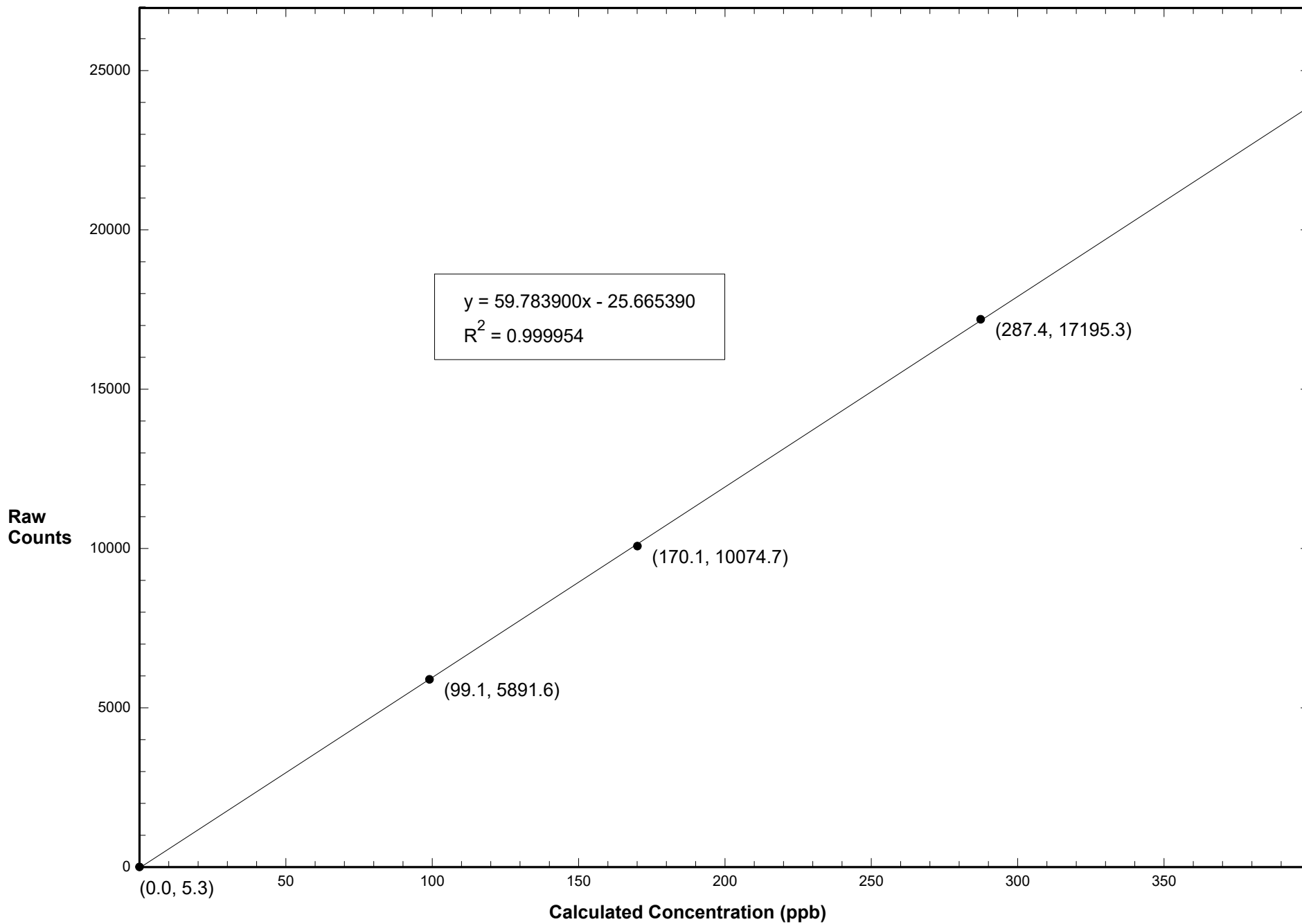
January 30, 2018 - Station 959

NO Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration C_c (ppb)	Raw Count Output R_c	Indicated Concentration C_i (ppb)	Correction Factor C_c/C_i		
0.07076	4.959	385.5	23191.0	384.2	1.003		
0.04039	5.018	218.8	13352.8	220.8	0.991		
0.02014	5.019	109.5	6669.4	109.8	0.998		
0.00000	5.000	0.0	-2.4	-1.1			
NO Calibration					Average Correction Factor: 0.997		
0.07076	4.959	386.9	23264.4	385.6	1.003		
0.04039	5.018	219.6	13412.7	221.8	0.990		
0.02014	5.019	109.9	6688.3	110.1	0.999		
0.00000	5.000	0.0	0.5	-1.1			
NO _x Calibration					Average Correction Factor: 0.997		
Reference Concentration NO (ppb)	Raw Count Output NO	Calculated Concentration NO (ppb)	Calculated Concentration NO ₂ , C _c (ppb)	Raw Count Output R_c	Indicated Concentration C_i (ppb)	Correction Factor C_c/C_i	Converter Efficiency C_i/C_c
385.6	5972.5	98.2	287.4	17195.3	288.1	0.998	1.002
385.6	13031.6	215.5	170.1	10074.7	168.9	1.007	0.993
385.6	17306.5	286.5	99.1	5891.6	99.0	1.001	0.999
			0.0	5.3	0.5		
Average Correction Factor: 1.002							
NO ₂ Gas Phase Titration					Average Converter Efficiency: 0.998		
Parameter	Correction Factor (Previous)	Correction Factor: (Current)	Percent Change of Correction Factor				
NO	0.999	1.003	0.4				
NO ₂	0.991	0.998	0.7				
NO _x	0.999	1.003	0.4				

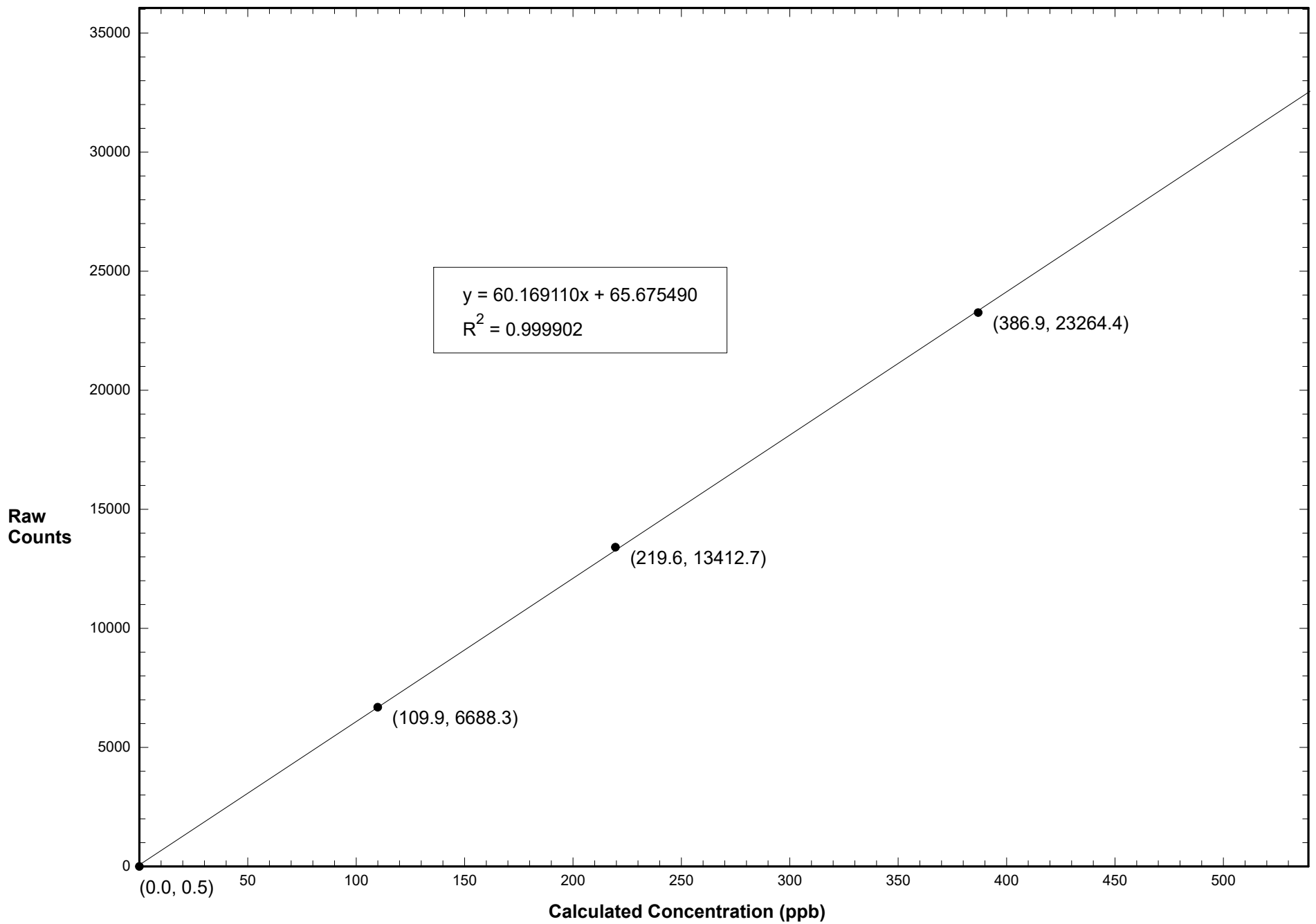
Station 959 NO January 30, 2018: Linear Regression



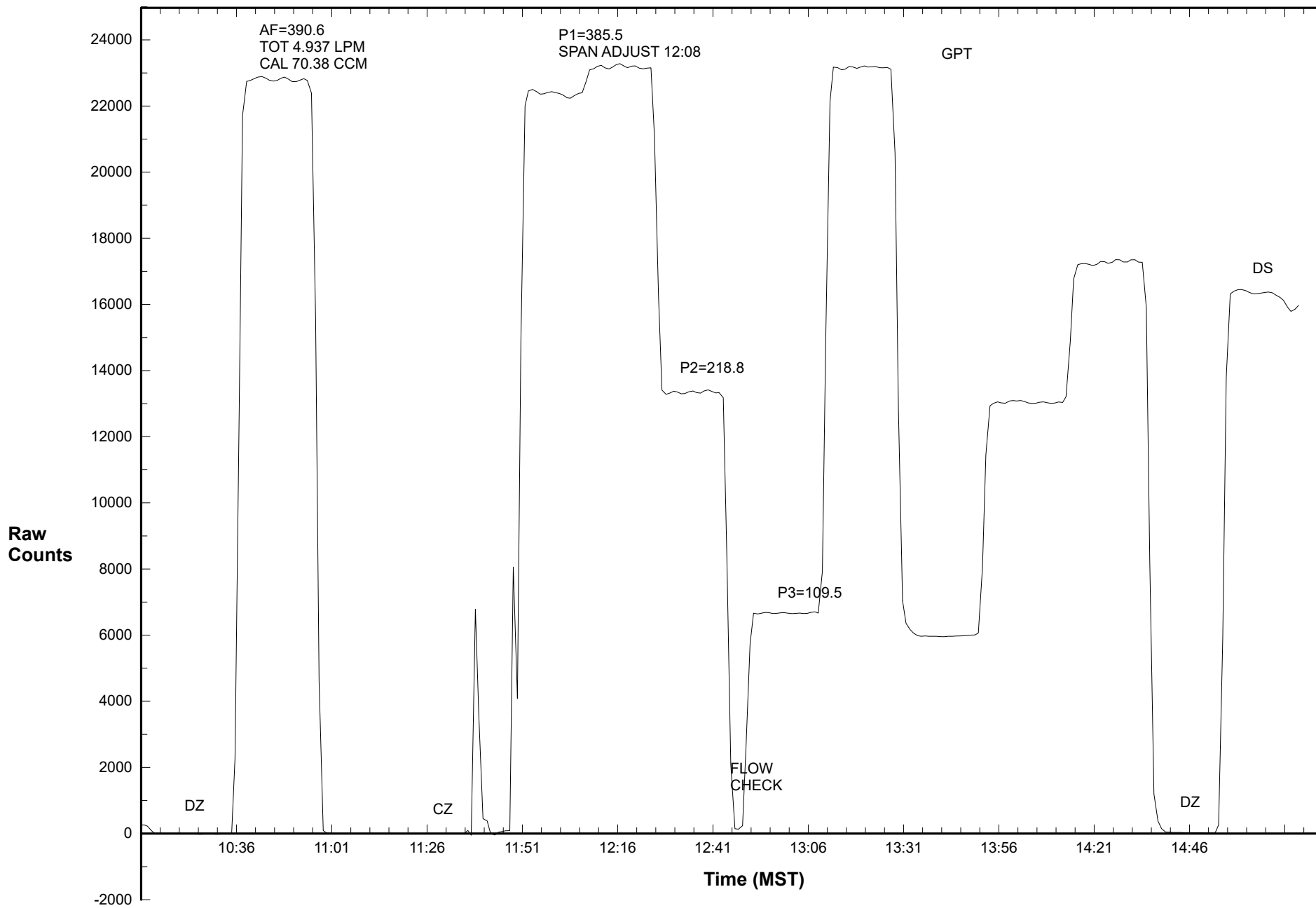
Station 959 NO2 January 30, 2018: Linear Regression



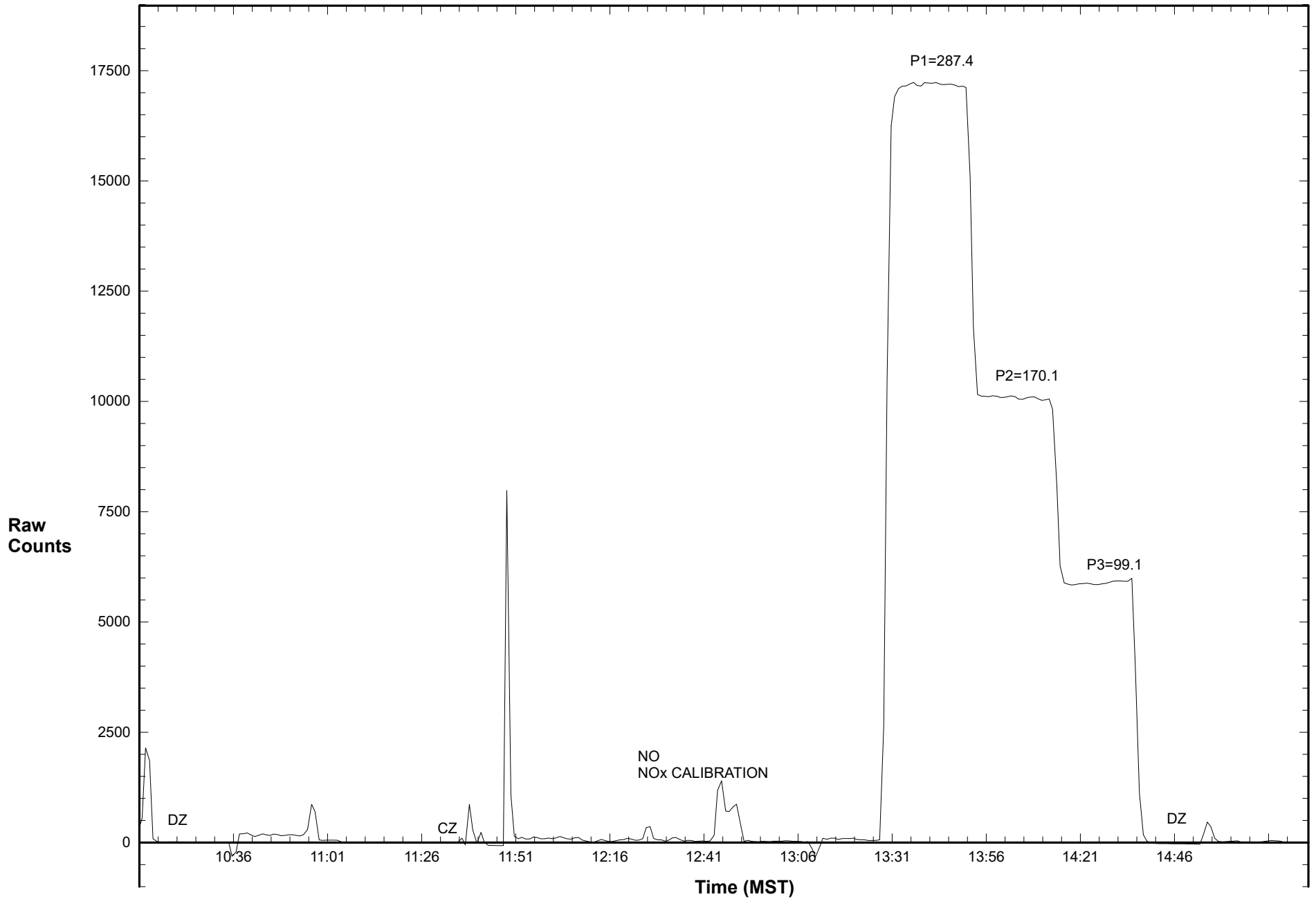
Station 959 NOX January 30, 2018: Linear Regression



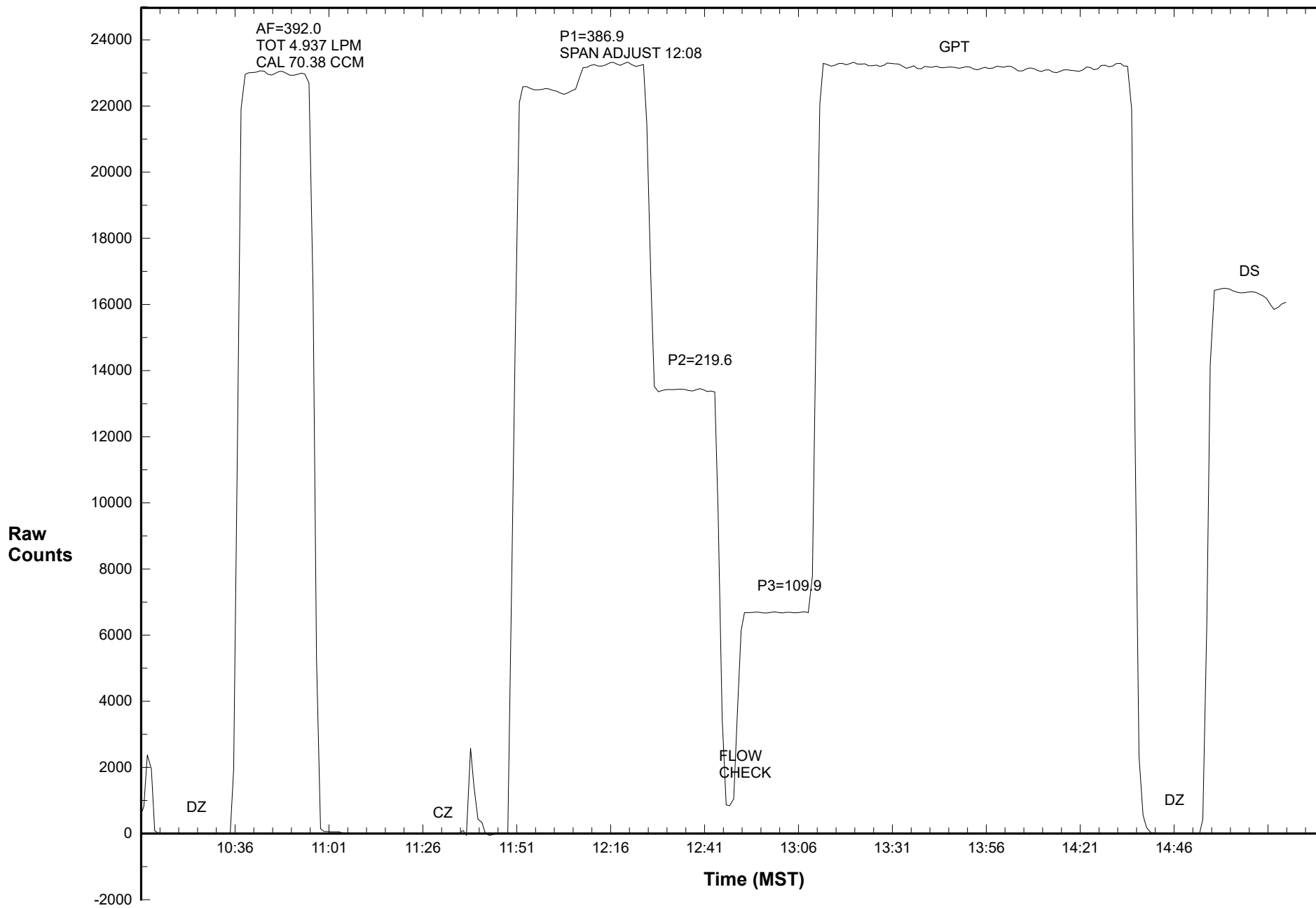
Station 959 NO January 30, 2018: Calibration Graph



Station 959 NO2 January 30, 2018: Calibration Graph



Station 959 NOX January 30, 2018: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 959, Wagner

Calibration Date: January 30, 2018

Parameter: SO₂

Instrument: Thermo 43i

Serial Number: 1170050139

Previous Calibration Date: December 28, 2017

Calibration: Routine

Calibration Equipment: Sabio 2010 SN-08600312

Barometric Pressure: 27.56" Hg

Calibration Method: Standard Gas Dilution

Cylinder ID: EX0012529

Temperature: 21.3° C

Cylinder Concentration: 24.3 ppm SO₂

In Service: 12/06/2017 EXP 10/25/2020

Technician: L. Burns

Instrument Settings	SO ₂ bkg ppb	SO ₂ Coefficient	Monitoring Range
Previous	13.5	0.929	500 ppb
Current	14.5	0.987	500 ppb

Final Zero: -1.0 ppb

Final Span: 126.2 ppb

As Found Correction Factor: 1.064

SO ₂ Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration C _c (ppb)	Raw Count Output R _c	Indicated Concentration C _i (ppb)	Correction Factor C _c /C _i
0.0708	4.959	341.9	20571.9	340.6	1.004
0.0404	5.018	194.0	11868.9	196.2	0.989
0.0201	5.019	97.1	5903.8	97.2	0.999
0.0000	5.000	0.0	-12.9	-1.0	

Results of Linear Regression

R _c vs C _c	Slope	Intercept	R ²
Previous	60.295140	-3.995827	0.999996
Current	60.259830	46.680610	0.999887
C _i vs C _c			
Current	1.000000	0.000000	0.999887

Average Correction Factor: 0.997

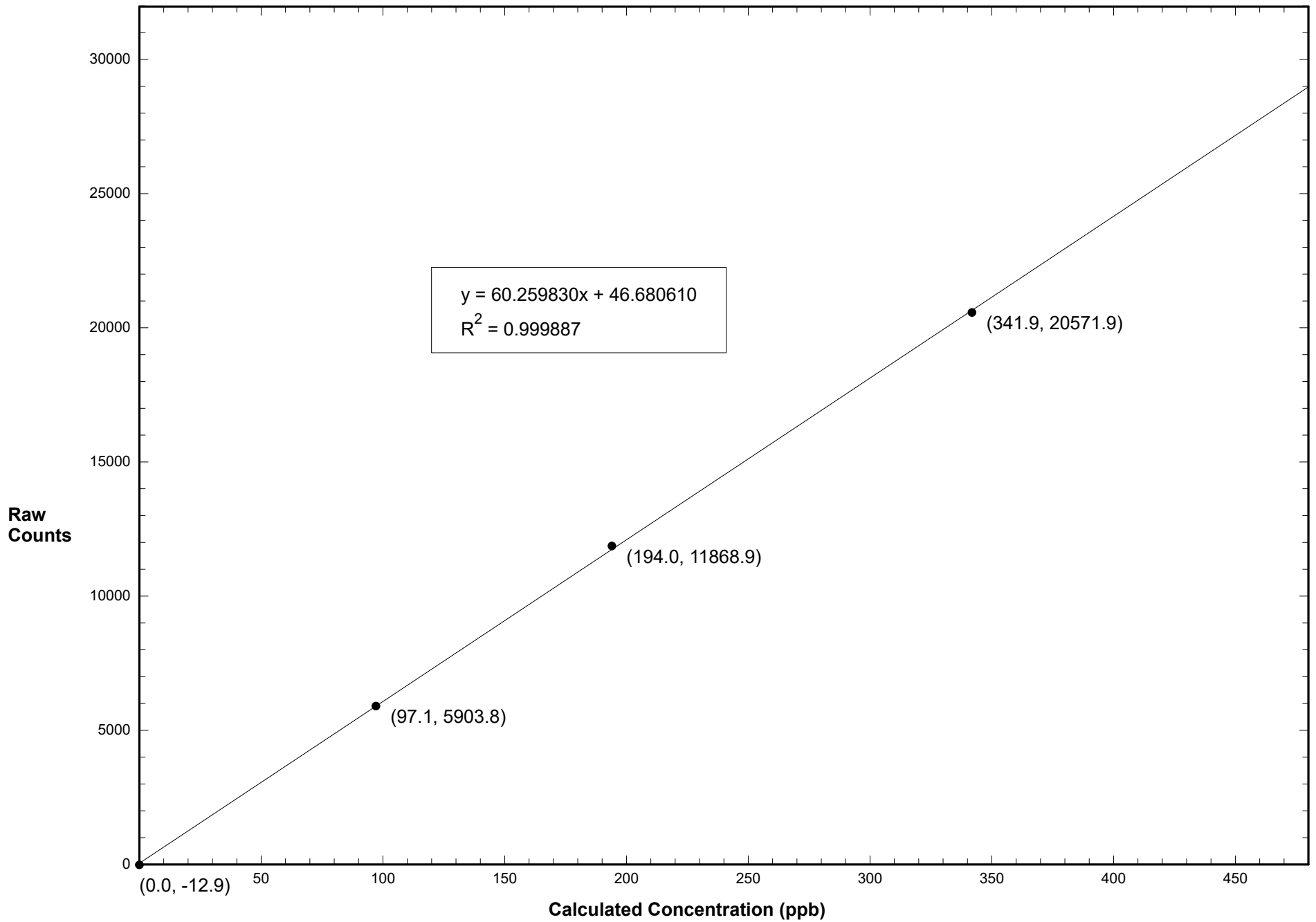
Previous Correction Factor: 1.001

Current Correction Factor: 1.004

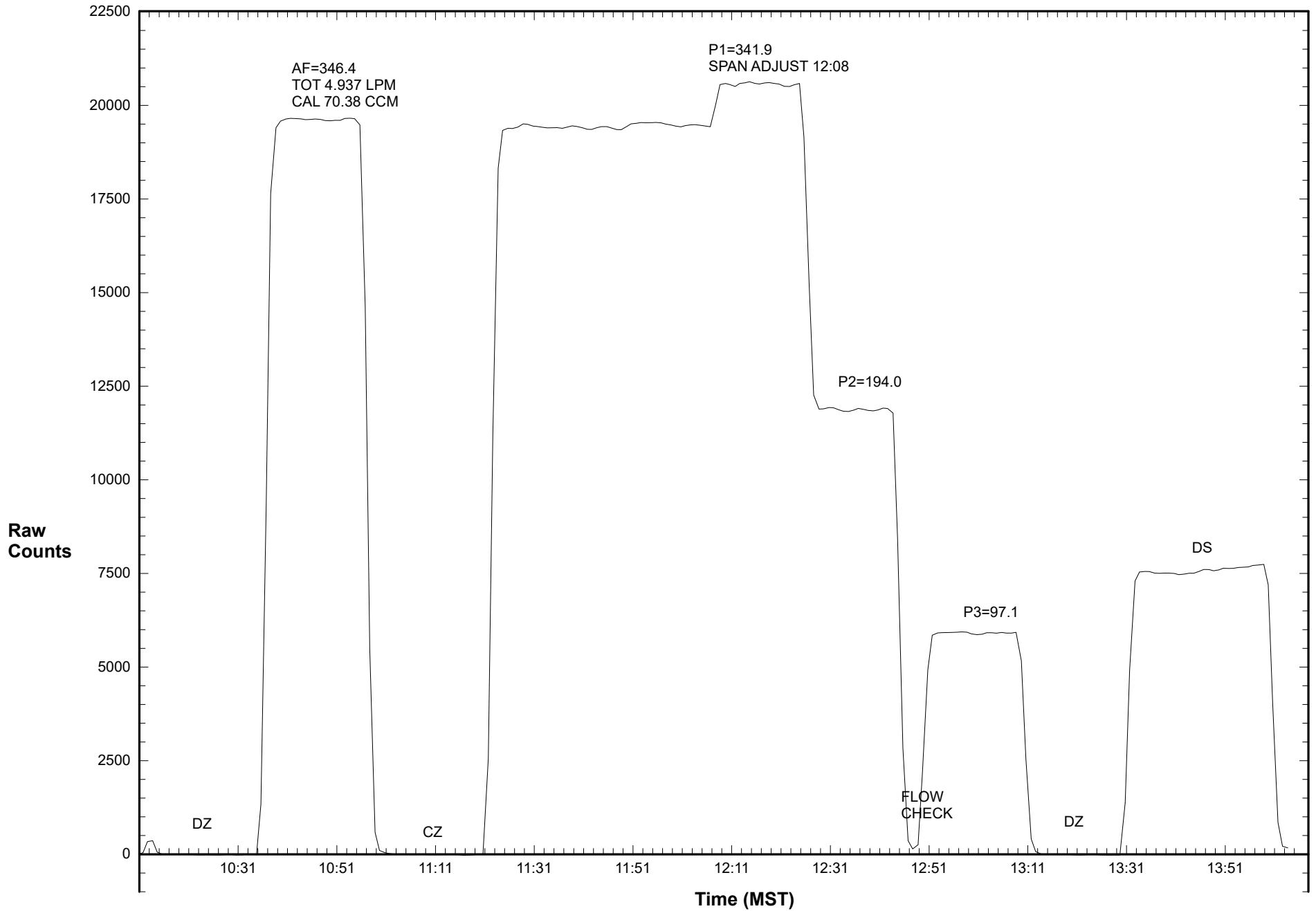
Percent Change of Correction Factor: 0.3

Comments: SAMPLE FLOW = 0.428 LPM

Station 959 SO2 January 30, 2018: Linear Regression



Station 959 SO2 January 30, 2018: Calibration Graph



WEST CENTRAL AIRSHED SOCIETY

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

**AMS 959
WAGNER2
JANUARY 2018**

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

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



WCAS - Wagner2
Summary of Hourly Averages

External Temperature (ET) - C
January 2018

Maximum Value: 8.47 C on Jan 18 15:00		Maximum Daily Average: 0.76 C on Jan 17		Hours in Service: 744																																												
Minimum Value: -33.5 C on Jan 12 09:00		Minimum Daily Average: -28.05 C on Jan 12		Hours of Data: 743																																												
Maximum Diurnal Average: -5.35 C at hour 15		Minimum Diurnal Average: -13.64 C at hour 9		Hours of Missing Data: 1																																												
Monthly Average: -10.196 C		Percentiles: P ₁ = -32.2 P ₁₀ = -21.9 Q ₁ = -15.5 Median = -9.0 Q ₃ = -4.6 P ₉₀ = 0.1 P ₉₉ = 5.7		Hours of Calibration: 0																																												
				Percent Operational Time: 99.9																																												
Day	Hourly Period Ending At																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Jan	-29.3	-29.8	-29.9	-30.0	-30.0	-30.1	-30.2	-30.3	-30.4	-29.0	-25.1	-21.8	-19.1	-15.7	-13.0	-11.3	-11.3	-9.9	-8.8	-9.3	-11.4	-12.1	-12.3	-12.2	-20.52	-8.78																						
2-Jan	-11.8	-10.5	-9.1	-8.9	-9.5	-10.0	-10.3	-10.6	-10.7	-10.2	-6.1	-1.6	1.0	0.1	0.4	0.3	-1.9	-4.5	-5.6	-6.7	-8.1	-9.0	-9.7	-9.9	-6.80	0.96																						
3-Jan	-9.3	-10.0	-10.1	-9.9	-10.1	-10.3	-10.4	-10.7	-10.6	-9.9	-4.9	-0.9	2.3	1.9	1.9	2.0	-1.0	-3.8	-5.5	-6.0	-6.6	-7.7	-8.3	-8.8	-6.11	2.32																						
4-Jan	-9.3	-9.3	-9.6	-9.8	-9.9	-10.0	-10.1	-10.1	-9.6	-8.4	-6.0	-1.5	2.2	2.0	0.9	-0.2	-2.5	-5.0	-6.2	-7.0	-8.0	-8.8	-9.6	-10.2	-6.50	2.24																						
5-Jan	-11.0	-11.6	-11.9	-12.3	-12.9	-13.4	-13.7	-13.7	-13.7	-13.9	-10.9	-7.5	-6.5	-3.9	-4.5	-4.5	-6.8	-8.3	-9.0	-9.6	-10.0	-9.6	-9.4	-9.3	-9.91	-3.94																						
6-Jan	-9.6	-10.3	-9.4	-8.5	-7.6	-7.1	-7.1	-3.4	3.1	4.4	3.9	3.5	3.5	5.4	5.4	3.6	-0.9	-2.8	-4.2	-5.5	AF	-5.4	-3.7	0.4	-2.27	5.45																						
7-Jan	-2.4	-4.6	-1.6	-1.0	-3.7	-6.0	-6.7	-7.0	-8.8	-8.7	-4.6	-0.2	2.9	1.8	0.6	-0.2	-1.0	-2.3	-2.7	-2.7	-2.8	-3.1	-4.0	-5.3	-3.08	2.94																						
8-Jan	-5.3	-4.9	-4.9	-5.7	-5.6	-5.2	-5.3	-5.6	-6.1	-6.2	-4.8	-2.9	-1.2	-0.2	0.6	0.6	-1.1	-2.1	-2.1	-2.5	-2.2	-2.0	-2.2	-3.7	-3.36	0.64																						
9-Jan	-6.8	-9.0	-10.2	-11.4	-12.3	-13.1	-14.2	-14.8	-15.7	-16.3	-16.8	-17.0	-17.3	-17.2	-17.1	-17.6	-17.8	-18.3	-19.1	-19.8	-20.4	-20.8	-20.9	-21.3	-16.05	-6.84																						
10-Jan	-21.2	-21.1	-21.0	-21.3	-21.6	-22.3	-22.5	-22.7	-22.6	-22.3	-21.8	-21.5	-21.3	-20.9	-20.5	-21.1	-21.3	-21.5	-21.9	-22.4	-22.2	-22.4	-22.4	-22.4	-21.76	-20.54																						
11-Jan	-22.4	-22.7	-23.5	-27.0	-28.7	-30.0	-30.8	-31.7	-32.6	-32.2	-27.4	-23.4	-22.2	-20.6	-20.7	-21.1	-21.9	-23.5	-25.0	-26.8	-28.5	-29.2	-29.9	-30.8	-26.36	-20.61																						
12-Jan	-31.4	-31.8	-32.2	-32.3	-32.7	-33.1	-33.3	-33.5	-33.5	-32.2	-27.7	-25.8	-23.4	-22.4	-21.6	-21.7	-23.0	-24.9	-25.7	-26.2	-26.5	-26.7	-25.9	-25.6	-28.05	-21.57																						
13-Jan	-25.1	-24.3	-23.3	-22.2	-20.8	-19.2	-17.6	-16.4	-15.8	-13.4	-11.2	-8.4	-3.7	0.8	3.3	3.2	0.5	-1.6	-2.5	-0.5	1.8	1.3	0.7	0.8	-8.90	3.26																						
14-Jan	0.6	0.5	0.0	0.1	-3.2	-3.7	-3.9	-4.8	-5.6	-5.7	-6.0	-6.0	-5.8	-5.8	-6.5	-8.1	-9.8	-11.5	-12.8	-13.8	-14.7	-15.5	-16.3	-6.83	0.59																							
15-Jan	-17.2	-18.1	-18.7	-19.0	-18.2	-17.3	-16.3	-16.6	-16.3	-14.5	-10.5	-7.0	-3.4	-2.9	-2.8	-2.9	-3.9	-5.2	-7.4	-8.5	-10.2	-11.1	-11.7	-13.1	-11.36	-2.76																						
16-Jan	-14.1	-15.1	-15.7	-15.8	-16.3	-16.7	-17.1	-17.5	-17.7	-15.8	-11.6	-9.1	-6.0	-4.7	-2.2	-1.2	-3.5	-7.2	-8.8	-9.5	-9.9	-9.7	-7.7	-6.0	-10.79	-1.21																						
17-Jan	1.5	6.1	5.7	5.7	2.7	0.9	-2.1	-3.7	-4.8	-3.5	1.9	2.7	4.9	5.6	4.9	4.6	0.7	-1.2	-1.9	-2.3	-2.9	-2.2	-2.2	-2.5	0.76	6.14																						
18-Jan	-3.0	-3.0	-2.7	-2.8	-3.7	-5.2	-5.0	-6.2	-6.7	-6.3	-4.6	0.4	5.0	7.5	8.5	8.3	4.5	6.8	5.5	0.1	-0.3	0.2	-1.6	-2.3	-0.28	8.47																						
19-Jan	-3.3	-3.9	-5.3	-6.4	-5.3	-4.9	-4.3	-2.9	-3.7	-0.9	-0.3	1.5	2.7	4.9	5.8	5.4	4.2	1.7	1.7	2.0	1.3	-1.5	-3.1	-2.6	-0.72	5.77																						
20-Jan	-2.4	-2.5	-2.7	-2.8	-3.7	-6.0	-7.4	-8.0	-8.7	-8.2	-5.8	-4.3	-2.8	-2.0	-1.0	0.4	-0.8	-3.6	-5.9	-5.6	-5.1	-5.0	-5.2	-7.0	-4.43	0.35																						
21-Jan	-8.3	-8.5	-7.9	-6.9	-6.8	-7.0	-7.1	-7.4	-7.4	-8.6	-8.4	-7.3	-5.4	-4.0	-3.9	-3.9	-4.8	-5.2	-5.5	-5.6	-5.6	-5.5	-5.4	-5.6	-6.33	-3.86																						
22-Jan	-5.8	-7.0	-7.0	-7.0	-7.2	-7.3	-7.4	-7.2	-7.5	-7.4	-6.4	-4.8	-1.9	-0.5	2.5	0.9	0.1	-2.2	-3.4	-5.6	-7.3	-8.6	-9.5	-10.6	-5.33	2.45																						
23-Jan	-11.4	-12.4	-12.6	-12.3	-11.6	-10.1	-10.0	-11.5	-12.8	-11.8	-9.3	-3.4	0.3	0.4	1.2	-0.4	-2.2	-3.3	-4.8	-5.1	-5.4	-5.3	-5.4	-4.9	-6.85	1.23																						
24-Jan	-6.0	-6.3	-8.1	-9.4	-11.3	-12.1	-12.7	-12.8	-13.2	-12.5	-8.2	-5.6	-4.2	-4.6	-5.5	-5.6	-6.1	-7.1	-7.6	-7.8	-7.6	-7.4	-7.3	-7.2	-8.18	-4.18																						
25-Jan	-7.0	-7.0	-6.9	-6.9	-6.9	-6.9	-7.0	-7.2	-7.2	-7.0	-6.7	-6.4	-6.3	-5.9	-5.9	-6.2	-6.6	-7.3	-7.8	-8.1	-8.5	-8.6	-8.6	-8.7	-7.15	-5.92																						
26-Jan	-8.9	-9.2	-9.5	-9.7	-10.4	-10.9	-11.5	-12.1	-12.8	-13.1	-12.8	-12.4	-12.6	-12.5	-12.6	-12.4	-13.0	-13.6	-14.2	-14.8	-14.8	-15.3	-17.2	-12.46	-8.87																							
27-Jan	-18.5	-19.1	-20.7	-21.7	-22.9	-23.8	-24.1	-23.1	-22.0	-21.1	-19.5	-16.5	-13.8	-14.5	-14.5	-14.8	-15.0	-15.3	-15.5	-15.4	-15.6	-15.7	-15.7	-15.8	-18.11	-13.83																						
28-Jan	-15.9	-15.9	-16.0	-15.4	-15.5	-15.7	-16.2	-19.4	-19.1	-18.1	-16.5	-14.6	-13.2	-14.4	-14.0	-14.7	-15.7	-16.1	-15.9	-15.9	-15.8	-15.8	-15.6	-15.3	-15.85	-13.20																						
29-Jan	-15.0	-14.7	-14.4	-14.4	-14.4	-14.4	-14.5	-14.2	-14.1	-13.7	-13.2	-12.6	-12.0	-11.5	-11.3	-11.0	-10.8	-10.8	-11.0	-10.8	-10.6	-10.2	-9.9	-9.8	-12.46	-9.76																						
30-Jan	-10.6	-11.2	-9.5	-7.6	-7.3	-8.2	-10.0	-11.9	-14.5	-13.1	-9.8	-8.7	-7.9	-7.5	-6.0	-5.6	-7.5	-9.0	-9.3	-10.0	-10.6	-11.7	-12.6	-14.1	-9.76	-5.57																						
31-Jan	-15.3	-16.5	-17.6	-18.6	-19.5	-20.7	-21.2	-21.7	-21.7	-21.5	-21.2	-20.2	-19.5	-19.2	-18.9	-18.7	-18.1	-19.8	-21.4	-22.3	-22.5	-21.4	-20.9	-20.4	-19.95	-15.32																						
																								-11.47	-11.73	-11.82	-11.97	-12.49	-12.90	-13.23	-13.52	-13.64	-12.94	-10.70	-8.50	-6.61	-5.82	-5.35	-5.56	-6.98	-8.26	-9.11	-9.75	-10.34	-10.46	-10.68	-10.88	Diurnal Average
																								1.49	6.14	5.73	5.66	2.68	0.88	-2.13	-2.94	3.10	4.36	3.88	3.48	4.97	7.51	8.47	8.27	4.50	6.80	5.47	2.01	1.77	1.29	0.71	0.83	Diurnal Maximum
AF - Analyzer Failure																																																



WCAS - Wagner2
Summary of Hourly Averages

Wind Speed (WS) - kph
January 2018

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1 Spd	0.8	0.7	0.8	1.1	0.3	0.7	0.4	0.7	0.8	0.5	1.8	2.3	1.6	1.8	2.2	3.2	1.0	5.3	3.2	0.1	0.8	0.2	0.2	0.2	0.47	5.32	
Dir	W	WSW	WSW	WNW	NNW	NE	N	N	NNW	ESE	SE	SE	SE	ESE	WSW	W	WNW	W	SW	ENE	NNE	NW	NW	N	WSW	W	
2 Spd	0.2	0.3	0.3	0.6	1.3	0.4	0.3	0.6	0.1	0.0	0.1	0.7	2.6	1.1	0.4	0.8	0.7	0.6	0.4	0.2	0.0	0.3	0.1	0.3	0.22	2.63	
Dir	NNW	E	NW	NNW	NNW	E	WNW	NNW	NW	NW	SE	SSE	ESE	ESE	SE	ENE	N	NNW	NE	NW	WNW	ENE	WSW	NNE	NE	ESE	
3 Spd	0.2	0.4	0.1	0.1	0.3	0.5	0.3	0.2	0.5	0.1	0.1	0.7	0.9	4.2	2.2	0.9	0.4	0.5	0.4	0.2	0.1	0.1	0.0	0.0	0.28	4.17	
Dir	N	ENE	NNE	SE	N	NW	W	N	NNW	SW	NW	ESE	S	SW	SW	SSW	NNW	NNW	N	N	WNW	NE	S	E	WSW	SW	
4 Spd	0.1	0.1	0.1	0.1	0.2	0.0	0.1	0.1	0.1	0.4	0.1	1.3	0.3	1.8	0.8	0.1	0.7	0.7	0.4	0.8	AF	AF	AF	AF	0.07	1.76	
Dir	NNE	WNW	NW	WNW	N	SSW	N	NNW	WNW	NE	S	SE	SSW	SE	E	ENE	NW	NW	NNW	NW	AF	AF	AF	AF	ENE	SE	
5 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	--	--	
6 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	--	3.90	
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	--	WNW	
7 Spd	1.6	2.5	5.4	5.5	2.2	1.4	0.6	0.5	0.4	0.1	0.4	0.4	2.1	1.8	1.0	0.9	0.1	0.2	0.1	0.2	0.0	0.3	0.4	0.2	0.50	5.47	
Dir	NNE	NW	WNW	WNW	W	NE	NW	NNW	NNW	N	SE	ESE	E	SE	S	ENE	NE	NE	W	N	ENE	NNE	N	NNE	NW	WNW	
8 Spd	0.1	0.2	0.5	0.2	0.2	0.4	0.2	0.2	0.3	0.3	0.4	1.7	1.4	1.1	1.5	0.7	0.6	0.9	0.3	0.3	3.8	5.6	6.1	6.7	1.23	6.65	
Dir	NNW	SSE	N	NE	SSE	E	E	ENE	NNE	NNE	ENE	E	ESE	ESE	ENE	NE	NNW	N	NNE	ENE	E	E	E	NE	ENE	NE	
9 Spd	9.0	7.9	5.9	5.8	5.4	4.4	4.5	4.3	3.7	5.7	6.1	6.2	6.4	5.7	5.0	5.5	7.2	6.6	7.3	8.1	7.0	3.0	2.8	2.4	5.20	9.03	
Dir	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	N	NNW	NNW	NNW	NNW	NNW	N	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	N	NNE	NNE
10 Spd	4.6	5.3	4.5	3.2	4.1	3.1	3.9	3.7	3.3	2.9	3.9	4.6	4.6	3.0	1.9	3.2	2.2	2.7	1.3	0.8	2.7	4.2	3.9	2.7	2.70	5.30	
Dir	NNW	NNW	NNW	N	N	NNE	NNE	NNE	N	N	N	NNE	NNE	N	NE	NE	E	SE	NNE	NNW	NW	NW	NW	NW	N	NNW	NNW
11 Spd	1.7	1.9	1.3	1.2	0.6	0.4	0.4	0.3	0.3	0.1	1.0	1.4	2.1	5.3	8.1	7.4	3.9	2.3	1.2	0.9	0.9	0.2	0.1	0.1	1.25	8.10	
Dir	N	N	NNW	NNW	N	NW	NNE	NNW	N	NE	SE	SE	ESE	ESE	ESE	E	ENE	ENE	NE	NNW	NNW	N	N	N	ENE	ESE	ESE
12 Spd	0.6	0.3	0.2	0.5	0.8	0.2	0.2	0.2	0.2	0.1	1.8	2.4	1.9	2.7	5.4	3.5	1.4	1.6	0.9	0.6	0.6	0.1	0.4	0.5	0.69	5.39	
Dir	N	NNE	N	NNE	NNW	N	NNE	NNE	N	W	ESE	ESE	SE	ESE	ESE	E	N	NNW	NNW	N	NNW	NW	E	ENE	E	ESE	ESE
13 Spd	1.2	0.7	1.4	1.6	1.0	1.3	0.6	0.6	0.5	0.5	0.5	0.5	0.4	3.0	4.3	4.1	1.7	0.2	0.3	3.1	5.4	4.9	3.4	2.8	1.01	5.44	
Dir	ENE	NNE	E	E	NE	NE	NE	ENE	ENE	ENE	ENE	NE	ESE	W	W	W	N	NE	W	WNW	WNW	W	WNW	WNW	WNW	WNW	WNW
14 Spd	1.9	1.1	1.4	1.5	7.4	2.8	3.3	7.0	6.0	4.4	8.1	9.6	7.2	9.1	9.4	8.2	4.8	3.5	2.9	3.7	4.1	2.7	0.7	1.1	4.29	9.64	
Dir	WNW	N	NW	NE	E	ESE	ENE	E	E	E	E	E	E	E	ESE	ESE	E	ENE	E	E	E	E	E	E	E	E	E
15 Spd	1.7	0.3	0.6	0.4	0.4	0.6	0.3	0.4	0.2	0.2	6.2	10.4	11.0	13.3	12.5	10.7	6.5	4.4	4.8	2.1	1.1	2.0	2.1	0.1	3.51	13.26	
Dir	E	ESE	WNW	NNW	NNW	WNW	WNW	NW	N	SW	ESE	E	ESE	SE	ESE	ESE	ESE	ESE	E	E	E	ENE	ENE	ENE	ESE	SE	SE
16 Spd	0.7	0.7	1.3	0.2	0.6	0.4	0.4	0.4	0.3	0.1	1.6	2.3	1.4	1.9	0.7	1.2	0.8	2.1	1.2	0.4	0.3	0.2	0.9	0.6	0.42	2.35	
Dir	NNW	N	NNW	N	N	N	NNW	NNE	NE	ESE	ESE	ESE	E	ESE	ESE	SE	E	NNW	NNW	NNE	NNE	NNE	ENE	E	ENE	ESE	
17 Spd	5.6	9.1	9.8	4.1	1.8	2.5	1.0	0.8	1.2	1.7	2.4	1.4	2.4	2.6	1.3	2.3	0.3	0.3	0.2	0.7	0.3	0.3	0.1	1.5	1.32	9.81	
Dir	WNW	WNW	WNW	WNW	W	W	NNW	NNW	NNE	NNE	NNW	SW	ESE	E	E	E	N	NW	N	NNW	W	S	E	N	NW	WNW	
18 Spd	1.4	1.1	1.6	2.3	0.6	0.7	0.9	0.8	0.3	0.5	0.2	2.0	2.1	1.5	2.2	3.4	3.5	7.8	4.7	2.5	1.7	0.4	1.3	0.9	1.06	7.80	
Dir	NNW	NNW	NNW	NNW	NNW	NW	N	NNW	NNE	ENE	NNW	ESE	SSE	ESE	ENE	NNW	WNW	W	WNW	NNW	NNW	NNW	NNE	N	WSW	NW	W
19 Spd	0.6	0.7	0.9	0.3	0.9	0.8	0.3	1.9	0.9	4.2	2.3	2.9	3.7	4.4	7.0	7.7	2.4	1.2	1.9	3.1	3.4	0.5	0.5	0.3	1.92	7.72	
Dir	NW	NNW	N	ENE	W	ENE	N	W	W	W	SW	W	W	W	WNW	WNW	NW	WNW	NW	NW	WNW	NW	NNW	NNE	WNW	WNW	
20 Spd	0.2	0.4	0.2	0.3	0.6	1.4	0.7	0.5	0.3	0.3	0.2	1.7	0.9	0.9	1.2	0.9	0.5	0.4	0.6	0.4	0.2	0.7	0.2	0.5	0.08	1.68	
Dir	NW	NNE	NE	NNW	N	NNW	NNW	N	N	WNW	SSE	S	ESE	SE	SSE	SE	S	N	NW	NW	WNW	NE	E	NNW	NNE	S	
21 Spd	0.4	0.4	1.3	0.5	2.5	3.2	5.5	6.7	7.5	5.6	7.5	7.3	7.8	10.8	11.9	13.3	10.1	7.4	9.9	6.3	2.3	0.6	2.3	2.3	5.04	13.28	
Dir	N	NNE	W	ENE	E	E	E	ESE	ESE	ESE	E	ESE	ESE	ESE	ESE	ESE	ESE	E	E	E	E	N	N	NNW	E	ESE	
22 Spd	0.8	1.3	1.6	1.4	0.4	4.6	4.4	3.9	4.1	1.8	1.8	1.9	2.8	1.9	3.9	2.7	0.2	0.5	1.1	1.0	0.5	0.5	0.3	0.2	0.93	4.59	
Dir	WSW	NNW	NW	W	W	W	W	WSW	W	WSW	SW	SSE	E	SE	SSW	S	W	N	NW	NNW	NNW	NNW	NNE	NNE	WSW	W	



WCAS - Wagner2
Summary of Hourly Averages

Wind Speed (WS) - kph
January 2018

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
23 Spd	0.1	0.1	0.2	0.2	0.1	0.1	0.3	0.2	0.3	0.2	1.2	2.5	2.0	1.8	3.8	1.0	0.8	0.2	0.5	0.9	1.6	1.5	3.9	4.2	1.03	4.24	
Dir	NNE	NNE	N	NE	NE	ENE	N	NNW	NNE	NE	ENE	ESE	ESE	E	ESE	E	NNW	NW	NNE	ENE	ENE	ENE	E	E	E	E	
24 Spd	2.9	3.1	0.3	0.4	0.6	1.1	0.9	0.2	0.4	0.3	1.7	1.7	3.2	6.2	7.8	5.7	4.1	2.9	4.1	6.0	8.0	6.1	5.0	7.9	3.05	8.02	
Dir	ESE	E	ENE	N	NNW	NW	NNW	NNE	NW	E	SE	NNE	ESE	ESE	E	E	E	E	E	E	E	E	E	E	E	E	
25 Spd	6.5	5.3	3.6	3.2	4.4	2.9	2.9	3.7	2.7	1.1	2.9	4.9	3.2	3.6	3.8	5.5	4.8	5.6	7.2	7.1	7.1	8.6	9.3	8.4	2.69	9.31	
Dir	E	E	ENE	ENE	E	ENE	NNE	NNE	NNE	NNE	NE	N	NNW	NNW	NNW	NW	NW	NW	NW	NW	WNW	WNW	WNW	WNW	NNW	WNW	
26 Spd	7.6	7.7	8.5	9.5	8.5	10.1	10.3	9.9	9.2	9.5	8.0	8.7	8.9	7.3	9.4	8.0	5.1	4.7	4.9	3.7	3.3	6.2	3.8	1.9	7.20	10.25	
Dir	WNW	WNW	WNW	NW	WNW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	WNW	WNW	NW	NW	NW	NW	NW	NW	
27 Spd	2.9	1.0	0.7	0.4	0.3	0.3	0.4	0.2	0.4	0.7	1.9	2.2	3.7	6.5	6.1	7.6	6.7	5.3	2.2	0.9	1.9	3.2	3.3	3.7	1.61	7.63	
Dir	NNW	NNW	NW	N	N	N	NNE	NW	ESE	SE	SE	ESE	E	E	E	E	E	ENE	NNE	N	NNW	NW	NNW	ENE	E		
28 Spd	3.5	2.4	2.0	3.6	2.6	2.0	2.1	1.4	0.8	0.1	1.0	2.2	6.5	8.1	8.8	10.0	11.2	9.8	10.7	11.9	11.6	11.7	10.5	9.2	4.43	11.89	
Dir	NW	NW	NW	NW	NW	NNW	N	NNW	N	WNW	E	SE	ESE	SE	ESE	ESE	E	ESE	ESE	E	ESE	ESE	ESE	ESE	E	E	
29 Spd	10.8	10.6	9.6	9.2	9.8	10.2	9.1	9.8	9.6	9.4	9.2	10.1	9.8	9.0	9.5	9.6	9.2	7.8	7.4	4.1	3.9	2.8	1.2	4.5	7.74	10.80	
Dir	ESE	ESE	ESE	ESE	ESE	ESE	ESE	SE	ESE	ESE	ESE	ESE	SE	ESE	E	E	E	ESE	ESE	E	ESE	E	ESE	NNW	ESE	ESE	
30 Spd	6.5	8.1	4.7	5.6	5.9	7.3	3.7	5.0	2.6	0.8	3.8	5.5	4.3	5.0	5.9	4.6	2.5	2.2	3.5	5.5	5.1	3.1	4.2	5.4	4.21	8.15	
Dir	NW	NW	NW	NW	NW	NNW	NW	WNW	NW	NNW	WNW	NW	NW	NW	N	NNW	N	NNE	NNW	NNW	NNW	NNE	NNE	NNE	NNW	NW	
31 Spd	4.7	5.4	4.9	4.8	3.7	2.2	2.3	1.5	2.8	3.4	6.2	5.4	4.1	3.3	3.8	3.4	2.8	2.8	0.4	0.4	0.3	1.2	1.3	2.9	1.99	6.16	
Dir	NNE	NNE	NNE	NNE	NNE	NNE	NE	NNE	NE	E	E	ESE	SE	SSE	SE	SSE	SE	SE	SE	NE	N	E	ENE	ENE	E	ENE	E
Spd	1.16	1.31	1.31	1.21	0.95	0.97	0.94	0.68	0.67	0.39	1.15	1.72	1.94	2.14	2.26	1.93	1.56	0.94	0.93	1.03	0.89	0.80	0.84	1.06	Diurnal Average		
Dir	N	N	NNW	NNW	NNE	N	N	NNE	NE	NE	E	E	E	ESE	E	E	ENE	NE	NE	NNE	NNE	NNE	NNE	NNE	Diurnal Maximum		
Spd	10.80	10.58	9.81	9.52	9.81	10.20	10.25	9.90	9.61	9.55	9.22	10.41	11.04	13.26	12.45	13.28	11.23	9.76	10.74	11.89	11.57	11.68	10.48	9.25	Diurnal Maximum		
Dir	106.06	103.85	300.36	307.93	112.39	108.92	307.84	306.51	117.48	304.54	118.18	100.39	113.74	126.04	118.10	104.51	97.86	101.83	102.39	98.33	102.57	106.88	108.64	109.28	Diurnal Maximum		
Maximum Speed Value: 13.3 kph on Jan 21 16:00																		Minimum Speed Value: 0.0 kph on Jan 7 21:00						Hours in Service:		744	
Maximum Daily Speed Average: 7.74 kph on Jan 29																		Minimum Daily Speed Average: 0.07 kph on Jan 4						Hours of Data:		696	
Maximum Diurnal Speed Average: 2.26 kph at hour 15																		Minimum Diurnal Speed Average: 0.39 kph at hour 10						Hours of Missing Data:		48	
Monthly Average Velocity: 0.907 kph 47.473 deg																		Speed Percentiles: P ₁ = 0.1 P ₁₀ = 0.2 Q ₁ = 0.5 Median = 1.8 Q ₃ = 4.4 P ₉₀ = 7.8 P ₉₉ = 11.5						Percent Operational Time:		93.6	
All monthly, daily, and diurnal averages have been calculated using vector methods																											
AF - Analyzer 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	134	8	0	0	0	0	142																				
NorthEast	78	5	0	0	0	0	83																				
East	104	57	6	0	0	0	167																				
SouthEast	42	17	3	0	0	0	62																				
South	13	0	0	0	0	0	13																				
SouthWest	14	0	0	0	0	0	14																				
West	51	13	0	0	0	0	64																				
NorthWest	110	41	0	0	0	0	151																				
Total	546	141	9	0	0	0	696																				



WCAS - Wagner2
Summary of Hourly Averages

Relative Humidity (RH) - %
January 2018

Maximum Value: 97.55 % on Jan 20 13:00 Maximum Daily Average: 90.61 % on Jan 20 Minimum Value: 30.2 % on Jan 18 18:00 Minimum Daily Average: 62.04 % on Jan 17 Maximum Diurnal Average: 78.24 % at hour 7 Minimum Diurnal Average: 58.43 % at hour 15 Monthly Average: 72.084 % Percentiles: P ₁ = 41.9 P ₁₀ = 57.2 Q ₁ = 64.8 Median = 71.9 Q ₃ = 80.7 P ₉₀ = 87.7 P ₉₉ = 94.2																								Hours in Service:	744																								
																								Hours of Data:	743																								
																								Hours of Missing Data:	1																								
																								Hours of Calibration:	0																								
																								Percent Operational Time:	99.9																								
Day	Hourly Period Ending At																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Jan	67.2	66.8	66.7	66.6	66.2	66.5	66.1	66.1	65.9	67.4	64.2	56.5	61.6	62.4	54.7	53.0	57.3	59.1	59.8	64.7	71.7	75.2	77.1	78.6	65.05	78.60																							
2-Jan	80.5	79.8	78.7	79.8	81.8	84.2	86.8	86.2	86.1	84.9	69.3	56.5	50.9	58.5	58.8	60.9	68.0	75.8	79.5	82.7	85.7	87.7	88.9	88.5	76.69	88.89																							
3-Jan	88.0	87.6	87.5	87.9	87.6	87.9	87.2	86.7	86.7	85.5	75.2	64.1	53.7	54.2	55.1	55.9	65.5	71.9	75.8	80.1	81.2	85.0	86.7	87.7	77.69	88.00																							
4-Jan	88.4	88.8	88.9	88.5	88.2	87.9	88.1	87.0	87.9	88.1	79.5	69.0	56.1	58.7	62.3	65.9	71.1	77.7	80.9	84.1	86.6	88.2	88.9	88.7	80.81	88.90																							
5-Jan	87.7	87.0	86.5	85.6	84.5	84.1	83.6	83.4	84.4	83.7	82.2	69.9	68.2	65.3	71.8	72.5	76.7	81.1	83.3	84.5	85.7	86.7	86.6	87.1	81.32	87.73																							
6-Jan	86.1	86.2	87.0	86.1	85.2	83.6	85.4	85.1	68.9	62.1	62.9	64.4	64.3	48.9	41.9	47.8	64.1	69.5	70.0	73.6	AF	78.0	70.7	49.5	70.49	86.98																							
7-Jan	60.7	66.2	53.2	50.6	61.2	69.7	73.0	73.4	80.8	80.5	69.1	53.8	43.7	47.8	52.5	58.5	61.3	66.4	68.6	69.6	73.3	76.7	75.3	76.3	65.08	80.79																							
8-Jan	80.2	79.2	80.1	80.7	82.4	84.7	83.9	83.9	85.6	86.8	83.1	74.3	65.7	62.5	60.6	61.5	69.9	74.3	74.9	76.1	73.3	75.1	72.8	75.1	76.12	86.78																							
9-Jan	76.9	75.0	73.0	72.5	71.7	70.5	69.2	69.6	70.8	71.4	70.4	68.7	66.8	65.9	67.3	69.3	69.4	67.5	64.0	62.9	61.3	63.6	65.4	66.7	68.75	76.94																							
10-Jan	65.6	62.7	62.4	62.6	60.9	64.2	62.3	62.1	60.5	59.0	58.8	58.9	55.9	54.2	55.4	58.8	62.2	68.4	70.8	69.6	64.2	63.1	64.3	63.8	62.12	70.80																							
11-Jan	64.2	66.0	67.5	68.1	68.6	67.2	66.1	65.3	64.4	64.6	65.0	53.2	52.1	52.3	54.4	56.7	59.6	63.1	67.2	67.6	67.7	67.5	66.7	65.8	63.37	68.60																							
12-Jan	65.5	64.9	64.7	64.6	64.0	63.4	63.2	62.9	63.1	63.7	60.9	55.3	55.2	55.5	56.1	57.2	59.1	65.1	67.3	68.8	68.8	69.7	70.7	71.0	63.36	70.96																							
13-Jan	71.3	72.2	72.9	72.8	73.2	73.8	74.0	73.0	75.7	74.2	70.5	65.4	55.2	58.5	52.6	54.7	65.2	73.6	78.1	73.4	63.8	65.6	68.3	68.9	68.62	78.12																							
14-Jan	70.9	71.9	73.4	71.1	71.0	76.1	76.7	77.9	76.8	75.8	71.0	70.6	66.4	63.7	61.9	59.7	63.8	67.2	71.8	78.9	81.5	81.4	81.1	80.3	72.55	81.50																							
15-Jan	80.9	80.7	79.4	78.2	79.4	79.3	80.3	79.5	80.4	81.3	74.8	70.8	67.6	67.6	66.5	65.2	65.9	69.2	74.5	78.9	82.2	85.8	84.6	84.4	76.56	85.76																							
16-Jan	82.6	80.8	80.5	80.1	79.6	79.3	78.9	78.5	78.5	77.1	65.6	59.0	53.9	55.2	49.8	48.9	58.1	68.3	73.5	76.8	79.3	81.3	78.0	75.0	71.60	82.62																							
17-Jan	59.7	59.1	66.4	59.9	73.5	80.3	80.5	87.7	84.4	71.4	47.7	43.0	38.4	35.6	37.7	40.0	54.1	61.6	65.9	67.4	70.5	66.6	67.8	69.6	62.04	87.68																							
18-Jan	71.8	74.7	74.1	73.3	76.5	79.2	84.0	84.7	85.5	85.0	79.6	61.6	48.9	45.0	43.9	43.7	51.6	30.2	39.0	57.6	60.8	61.7	62.1	63.1	64.06	85.46																							
19-Jan	65.6	64.0	69.6	76.3	73.1	74.9	71.4	62.9	64.8	54.2	54.6	49.0	47.0	43.8	43.0	45.5	53.2	67.4	68.5	70.1	74.2	82.6	88.8	89.1	64.72	89.11																							
20-Jan	87.9	87.5	88.8	88.4	88.5	89.1	90.2	90.3	90.2	91.2	95.1	96.6	97.5	95.9	91.2	76.9	81.8	88.1	92.3	94.1	93.5	93.3	94.2	92.3	90.61	97.55																							
21-Jan	91.8	90.9	91.9	93.1	95.0	95.3	94.6	93.9	92.9	89.1	89.0	90.2	86.7	73.5	73.1	71.5	72.8	74.2	76.7	78.5	79.1	79.2	80.9	80.5	84.76	95.27																							
22-Jan	81.8	84.9	87.6	87.8	87.4	88.6	90.4	89.9	90.1	88.7	79.3	69.5	59.0	58.6	53.7	60.0	64.8	71.9	75.9	80.0	83.9	86.4	88.1	88.6	79.05	90.41																							
23-Jan	88.2	86.6	85.9	85.5	85.3	86.2	85.5	83.9	83.9	84.3	84.2	62.5	46.3	43.6	38.8	46.9	58.0	62.1	68.4	70.6	73.3	72.6	72.4	67.6	71.78	88.17																							
24-Jan	71.6	70.3	75.8	78.6	81.6	84.1	83.7	83.9	84.4	83.7	68.7	63.2	59.2	60.3	65.5	67.8	71.8	75.7	79.3	81.0	83.9	85.8	86.5	87.4	76.40	87.37																							
25-Jan	87.8	88.9	89.0	89.4	90.3	93.7	92.2	92.4	91.6	89.2	85.4	82.3	79.2	75.3	75.0	74.1	78.9	83.3	87.3	83.8	80.4	77.5	75.5	75.1	84.06	93.66																							
26-Jan	74.8	73.7	73.4	69.4	69.9	71.0	69.9	70.8	71.2	70.0	68.1	63.7	61.3	60.2	59.6	60.9	61.2	63.5	66.3	67.8	69.7	69.7	71.5	73.2	67.95	74.80																							
27-Jan	75.5	75.7	75.3	75.1	74.0	73.1	73.5	74.4	75.0	74.7	73.1	67.9	59.1	64.1	64.8	66.5	68.6	72.3	74.2	74.7	73.8	74.4	74.1	74.1	72.00	75.71																							
28-Jan	74.4	74.9	75.6	74.8	73.8	73.4	72.3	73.8	76.6	74.7	69.8	63.5	58.9	63.6	62.1	65.2	69.2	72.1	72.6	73.1	73.5	73.5	73.8	75.0	71.26	76.60																							
29-Jan	74.6	74.6	72.8	71.2	70.9	70.8	69.4	69.3	69.5	69.0	68.1	66.8	66.1	66.6	68.6	69.5	70.3	71.7	73.5	74.5	75.4	75.5	75.2	74.8	71.21	75.46																							
30-Jan	73.5	75.8	79.3	76.7	73.6	74.5	75.4	77.3	79.0	71.9	68.3	68.5	64.8	62.2	58.2	56.7	61.4	65.5	67.4	67.9	70.1	74.3	74.5	74.0	70.44	79.26																							
31-Jan	69.1	71.8	68.1	68.5	68.1	67.9	67.5	67.1	65.1	64.3	64.1	58.7	55.6	54.5	54.5	54.6	53.5	57.2	65.2	69.3	71.0	70.1	64.9	64.9	63.98	71.80																							
																								76.29	76.42	76.65	76.26	77.00	78.21	78.24	78.17	78.09	76.37	71.54	65.07	60.18	59.16	58.43	59.56	64.79	68.86	72.01	74.28	75.31	76.57	76.66	76.02	Diurnal Average	
																								91.83	90.89	91.86	93.12	95.00	95.27	94.57	93.91	92.92	91.16	95.08	96.56	97.55	95.88	91.19	76.91	81.78	88.08	92.33	94.06	93.49	93.27	94.16	92.31	Diurnal Maximum	
AF - Analyzer Failure																																																	



WCAS - Wagner2
Summary of Hourly Standard Deviations

Wind Speed (WS) - kph
January 2018

Maximum Value: 5.14 kph on Jan 26 12:00																								Maximum Daily Average: 3.62 kph on Jan 26																								Hours in Service: 744	
Minimum Value: 0.2 kph on Jan 7 21:00																								Minimum Daily Average: 0.71 kph on Jan 4																								Hours of Data: 696	
Maximum Diurnal Average: 2.11 kph at hour 16																								Minimum Diurnal Average: 1.30 kph at hour 9																								Hours of Missing Data: 48	
Monthly Average: 1.613 kph																								Percentiles: P ₁ = 0.3 P ₁₀ = 0.6 Q ₁ = 0.8 Median = 1.3 Q ₃ = 2.2 P ₉₀ = 3.0 P ₉₉ = 4.8																								Hours of Calibration: 0	
																								Percent Operational Time: 93.6																									
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Jan	0.9	0.9	1.1	0.9	0.6	1.0	0.6	0.7	1.0	1.2	1.6	1.1	1.9	1.9	1.8	2.0	1.5	3.1	2.7	1.4	1.3	1.0	0.5	0.8	1.31	3.14																							
2-Jan	0.7	0.9	0.8	0.8	0.9	1.0	0.8	1.2	0.5	0.2	0.5	0.9	1.3	1.2	0.7	1.6	1.3	1.2	1.0	0.7	0.3	0.8	0.8	0.8	0.86	1.55																							
3-Jan	1.0	0.8	0.9	0.7	1.0	1.0	0.8	0.9	0.9	0.6	0.3	0.8	1.8	2.2	2.2	1.1	0.8	0.8	0.8	0.7	0.5	0.6	0.2	0.4	0.90	2.17																							
4-Jan	0.8	0.6	0.5	0.4	0.6	0.4	0.4	0.4	0.4	0.8	0.4	1.2	1.2	1.0	1.1	0.6	0.8	0.8	0.7	1.0	AF	AF	AF	AF	0.71	1.22																							
5-Jan	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	--																							
6-Jan	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	1.56	2.10																							
7-Jan	1.2	2.3	2.1	2.8	1.4	0.9	0.9	1.3	0.6	0.6	0.8	0.7	1.4	1.7	1.2	1.0	0.2	0.5	0.4	0.5	0.2	0.7	0.8	0.4	1.03	2.75																							
8-Jan	0.6	0.9	1.0	0.8	0.8	0.7	0.6	0.5	0.7	0.9	0.8	1.2	0.9	1.0	0.9	0.8	0.8	1.0	0.6	0.7	3.4	2.5	3.1	3.5	1.20	3.48																							
9-Jan	3.8	4.1	3.4	3.1	2.8	2.7	2.8	3.1	3.3	3.8	3.4	3.9	4.2	3.9	3.6	3.2	4.1	4.3	5.0	4.6	5.1	2.2	2.0	2.0	3.51	5.11																							
10-Jan	2.9	2.9	2.6	2.6	2.6	2.0	2.1	1.6	2.2	1.7	2.1	2.3	2.4	1.8	1.6	1.6	1.2	1.0	0.7	1.1	2.1	2.5	2.3	1.9	1.98	2.92																							
11-Jan	1.5	1.1	0.8	0.7	0.7	0.7	0.5	0.6	0.5	0.4	0.7	0.8	0.9	1.7	1.9	2.5	2.2	1.5	1.4	0.9	0.8	0.4	0.3	0.3	1.00	2.49																							
12-Jan	0.6	0.6	0.4	0.7	0.7	0.5	0.4	0.5	0.4	0.5	0.8	0.9	1.0	1.7	1.3	1.4	1.1	0.9	1.1	0.7	0.6	0.5	0.7	1.0	0.78	1.66																							
13-Jan	1.2	0.8	1.7	1.3	1.0	1.1	0.9	0.9	1.0	1.2	0.9	1.0	1.1	2.7	2.3	2.3	1.9	0.4	0.7	3.0	2.4	1.9	1.5	1.3	1.44	2.99																							
14-Jan	1.3	1.1	1.0	3.4	3.8	1.5	2.0	1.6	2.0	1.4	2.9	3.0	2.2	1.9	2.2	2.0	2.2	1.6	2.1	1.2	1.3	2.4	1.3	1.4	1.95	3.85																							
15-Jan	0.9	0.7	0.7	0.6	0.7	0.9	0.7	0.6	0.6	0.8	3.3	1.6	2.8	3.0	2.7	2.6	1.9	2.2	2.1	1.6	1.1	0.8	0.8	0.5	1.42	3.30																							
16-Jan	0.9	0.7	1.1	0.6	0.8	0.7	0.8	0.7	0.6	0.6	0.7	1.1	1.1	1.2	0.9	1.1	1.1	1.0	1.2	1.0	1.2	0.9	1.1	0.9	0.92	1.23																							
17-Jan	5.0	3.9	4.6	2.2	1.4	1.2	1.0	1.0	0.9	1.0	1.9	1.9	1.2	1.6	0.9	1.6	0.5	1.2	0.8	1.0	0.9	0.9	0.8	1.8	1.63	5.05																							
18-Jan	1.6	1.5	2.2	1.8	1.1	1.7	1.2	1.1	0.7	1.0	1.2	1.8	1.7	1.1	2.0	2.3	2.8	3.6	3.2	0.7	1.5	1.0	1.0	1.3	1.64	3.61																							
19-Jan	1.3	0.9	1.2	0.7	1.3	1.0	0.9	1.8	1.5	1.9	1.5	1.8	2.3	2.2	3.2	3.9	1.9	1.1	1.6	2.2	1.8	1.0	0.7	0.7	1.59	3.88																							
20-Jan	0.7	0.7	0.7	0.6	0.9	1.0	0.8	0.9	0.7	1.0	0.9	1.1	1.0	0.8	1.0	1.0	0.8	0.6	1.0	1.0	0.9	0.8	0.7	0.8	0.85	1.11																							
21-Jan	0.6	0.7	1.1	0.7	1.2	2.1	2.0	1.7	1.8	1.6	2.0	1.8	1.9	2.7	2.3	2.6	2.4	2.7	2.3	2.6	1.4	0.7	1.3	1.3	1.72	2.74																							
22-Jan	1.3	1.3	1.6	1.5	1.0	2.9	1.8	1.8	2.1	1.5	1.6	1.3	1.2	1.4	2.0	2.5	1.2	1.0	1.5	1.1	0.8	0.7	0.6	0.5	1.42	2.87																							
23-Jan	0.2	0.4	0.6	0.7	0.2	1.7	0.6	0.6	0.6	0.6	1.0	1.1	0.8	1.2	1.2	1.5	1.0	0.5	0.9	1.0	0.8	1.1	1.3	1.9	0.90	1.92																							
24-Jan	1.3	1.7	0.6	0.7	0.9	1.8	1.2	0.8	0.9	0.7	0.7	1.6	2.3	1.7	2.7	2.6	1.6	1.6	2.3	1.8	2.5	2.3	1.7	1.9	1.58	2.72																							
25-Jan	1.6	2.1	1.9	1.9	2.3	2.1	1.3	1.6	1.8	1.4	1.8	2.7	2.1	2.1	2.4	2.8	3.3	3.2	3.6	3.6	2.9	3.3	3.2	3.0	2.42	3.58																							
26-Jan	3.0	2.8	3.0	4.8	3.8	4.4	4.7	4.6	4.6	4.5	4.0	5.1	4.7	4.2	4.3	4.1	3.4	2.8	2.4	2.3	2.5	3.2	2.3	1.4	3.62	5.14																							
27-Jan	0.9	0.9	1.0	0.6	0.5	0.6	1.3	1.1	0.7	0.7	0.7	1.3	1.6	2.3	2.7	3.0	2.3	2.4	1.6	1.2	1.7	1.6	1.7	2.1	1.44	3.01																							
28-Jan	1.8	1.8	1.8	2.2	1.9	1.8	1.5	0.9	0.8	1.0	1.0	1.5	2.7	2.0	3.0	2.4	2.4	1.9	2.5	2.1	2.4	2.6	2.4	2.1	1.92	2.96																							
29-Jan	2.5	2.4	2.0	1.9	2.1	2.4	2.1	2.6	2.8	3.5	3.1	2.4	2.9	2.1	2.6	3.5	2.2	2.2	3.2	2.3	2.1	1.8	1.3	4.9	2.54	4.94																							
30-Jan	3.5	4.6	4.1	3.8	3.9	4.8	2.9	1.8	1.5	1.0	2.9	2.5	2.2	2.3	2.6	2.3	1.7	1.6	2.7	3.4	3.0	2.0	2.3	2.8	2.75	4.78																							
31-Jan	3.0	2.8	2.7	2.4	1.9	1.5	1.6	1.4	1.5	2.7	1.5	1.5	1.6	1.8	1.5	1.4	1.2	1.2	0.6	0.7	0.5	1.2	0.9	1.1	1.59	3.04																							
																								1.61	1.61	1.62	1.58	1.48	1.58	1.35	1.31	1.30	1.33	1.55	1.72	1.87	1.95	2.03	2.11	1.72	1.66	1.74	1.60	1.63	1.45	1.37	1.54	Diurnal Average	
																								5.05	4.62	4.56	4.81	3.87	4.78	4.74	4.56	4.59	4.46	4.02	5.14	4.72	4.22	4.32	4.10	4.07	4.29	4.96	4.63	5.11	3.31	3.24	4.94	Diurnal Maximum	
AF - Analyzer Failure																																																	



WCAS - Wagner2
Summary of Hourly Standard Deviations

Wind Direction (WD) - deg
January 2018

Maximum Value: 106.10 deg on Jan 4 01:00 Maximum Daily Average: 84.14 deg on Jan 4																								Hours in Service: 744 Hours of Data: 696		
Minimum Value: 9.4 deg on Jan 15 12:00 Minimum Daily Average: 22.76 deg on Jan 29 Maximum Diurnal Average: 66.05 deg at hour 10 Minimum Diurnal Average: 35.48 deg at hour 15 Monthly Average: 51.967 deg Percentiles: P₁ = 10.9 P₁₀ = 17.1 Q₁ = 26.7 Median = 49.2 Q₃ = 79.5 P₉₀ = 89.0 P₉₉ = 97.2																								Hours of Missing Data: 48 Hours of Calibration: 0 Percent Operational Time: 93.6		
Day	Hourly Period Ending At																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Jan	71.8	52.7	71.3	62.8	78.5	74.7	86.9	73.0	85.9	94.9	74.6	39.5	75.6	73.9	62.4	42.2	68.6	27.1	65.8	97.2	85.6	86.4	90.2	102.3	72.66	102.28
2-Jan	89.1	85.0	80.4	65.9	55.2	94.3	92.0	74.7	91.3	90.4	72.2	61.9	27.7	68.1	91.4	91.6	81.1	85.4	86.9	94.7	75.7	83.2	89.0	100.6	80.33	100.55
3-Jan	85.1	91.2	90.7	97.2	87.0	91.2	94.2	96.1	85.7	78.6	59.5	74.9	76.3	32.9	52.3	68.8	91.3	88.7	87.9	84.9	85.2	88.6	62.6	93.1	81.00	97.15
4-Jan	106.1	95.3	69.9	82.4	94.8	93.6	86.8	94.1	94.7	79.7	75.1	66.1	95.7	57.7	78.0	86.1	81.7	74.4	85.3	85.4	AF	AF	AF	AF	84.14	106.10
5-Jan	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	--
6-Jan	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	64.58	91.26
7-Jan	50.1	48.3	25.6	35.8	47.5	59.2	66.3	75.0	69.2	94.5	89.2	82.7	18.6	51.0	64.6	65.0	90.6	86.5	87.2	80.9	90.8	83.2	90.3	81.7	68.09	94.54
8-Jan	95.5	94.6	80.6	92.8	85.0	76.1	89.0	87.0	88.8	88.9	85.1	36.2	30.5	55.6	28.1	66.4	78.8	71.6	87.8	85.7	34.6	21.2	24.7	36.9	67.56	95.48
9-Jan	23.1	28.0	37.1	26.7	29.1	31.7	34.4	37.6	45.2	45.7	30.8	34.3	36.6	38.2	43.3	35.2	28.6	36.9	35.7	31.7	42.1	36.1	43.1	50.9	35.92	50.90
10-Jan	32.7	28.1	27.5	40.5	35.7	33.3	25.0	23.6	35.1	30.0	27.1	25.2	27.0	40.1	47.5	28.6	42.5	30.4	56.3	69.6	38.0	28.1	29.2	38.9	35.00	69.63
11-Jan	42.7	28.9	39.7	26.7	62.8	78.7	83.4	79.2	87.8	89.8	62.2	22.7	22.9	14.1	18.3	19.4	25.7	38.4	55.9	69.7	52.8	86.5	80.0	86.2	53.10	89.82
12-Jan	83.9	88.2	91.7	76.1	65.1	92.7	88.8	73.9	89.3	80.5	20.5	11.8	27.0	38.0	17.8	32.9	39.0	27.1	74.6	81.6	63.8	81.1	82.1	86.7	63.10	92.72
13-Jan	65.2	84.8	79.7	49.2	60.0	43.7	74.9	91.3	91.8	87.0	79.5	87.9	78.7	56.7	32.9	30.6	68.1	88.1	80.2	52.6	22.3	21.3	21.8	24.5	61.37	91.83
14-Jan	50.5	49.6	36.2	59.6	19.3	22.4	31.7	13.2	17.2	16.7	12.6	14.9	16.8	15.1	15.5	13.8	21.2	22.5	32.1	15.6	14.9	57.2	65.9	78.3	29.71	78.28
15-Jan	20.6	83.5	52.2	77.2	79.7	68.4	87.0	74.1	86.9	97.2	14.8	9.4	17.3	14.2	12.1	12.0	15.3	29.5	19.0	53.6	61.9	17.1	12.7	83.9	45.82	97.23
16-Jan	58.1	66.2	39.0	83.1	72.7	83.9	77.1	92.2	89.4	97.9	26.2	25.4	41.0	31.8	62.5	70.8	65.3	27.9	59.7	76.7	94.9	86.6	67.7	65.2	65.06	97.88
17-Jan	66.9	23.3	25.3	31.2	36.5	24.8	57.9	60.6	42.2	24.6	51.8	76.6	25.7	25.1	38.7	49.6	73.0	74.6	87.0	69.2	96.0	90.4	93.7	86.4	55.46	96.02
18-Jan	73.5	80.8	73.5	54.4	82.2	87.5	79.9	75.8	73.6	74.9	86.3	49.3	47.1	39.9	54.6	35.5	36.5	24.2	25.1	15.0	55.7	76.0	32.0	69.8	58.47	87.49
19-Jan	65.6	64.9	59.7	80.8	87.8	71.8	90.8	58.9	75.7	29.8	40.4	30.7	30.3	30.7	22.8	23.3	42.2	34.5	46.8	40.0	40.6	73.6	66.1	87.1	53.95	90.83
20-Jan	85.4	75.7	86.9	81.0	67.4	52.3	77.8	82.9	82.1	88.5	94.5	49.7	55.9	50.0	50.1	66.0	79.2	83.9	75.2	88.6	87.8	68.3	89.4	66.0	74.36	94.48
21-Jan	89.0	86.7	64.4	76.2	28.0	34.4	13.3	13.4	12.3	27.7	13.0	12.1	13.7	12.9	11.8	11.4	13.4	16.0	12.1	18.4	28.5	62.9	28.0	20.8	30.01	89.04
22-Jan	73.2	66.6	48.2	67.1	86.6	49.7	24.3	24.7	27.6	43.4	52.6	45.4	21.7	64.5	33.6	64.0	91.4	80.9	75.4	59.9	68.9	79.1	83.8	90.8	59.30	91.38
23-Jan	89.8	94.5	88.0	92.7	93.1	93.6	84.0	88.9	90.1	94.7	54.5	13.5	19.2	25.8	16.6	85.8	74.1	86.3	62.9	52.4	23.4	40.2	16.6	21.0	62.57	94.74
24-Jan	19.2	21.3	75.9	76.5	68.9	69.7	79.6	96.8	82.7	81.9	21.2	58.3	69.5	19.3	16.0	28.8	22.7	30.3	27.7	15.4	15.0	15.4	18.1	11.7	43.40	96.81
25-Jan	15.5	18.9	29.8	30.4	26.7	27.5	19.7	23.6	33.0	68.4	35.3	30.4	41.9	33.9	32.1	29.0	37.0	32.8	26.7	26.4	21.1	18.1	17.8	19.8	28.99	68.36
26-Jan	21.4	19.0	19.1	25.4	24.0	23.8	25.5	25.8	26.7	26.5	32.5	31.9	32.0	24.7	28.4	32.9	32.2	25.7	35.6	35.0	29.2	30.2	42.4	28.15	42.38	
27-Jan	22.0	54.4	71.5	85.4	82.9	82.1	94.6	102.7	71.0	58.5	22.1	24.2	20.3	18.6	20.9	20.5	17.9	20.3	37.8	74.1	51.2	25.6	26.7	29.9	47.31	102.73
28-Jan	29.7	44.4	45.9	33.6	36.3	52.9	34.3	39.6	65.2	93.8	64.3	25.2	18.7	17.1	17.9	15.0	10.3	11.1	10.7	9.9	11.0	13.4	13.1	13.0	30.26	93.80
29-Jan	12.5	10.7	11.8	12.9	12.5	12.2	13.4	14.5	13.7	16.0	17.5	17.1	15.8	20.4	10.6	12.4	12.2	16.3	25.0	32.2	46.8	38.4	64.8	86.4	22.76	86.43
30-Jan	32.8	29.8	70.1	35.9	35.8	40.7	44.0	19.4	24.2	72.2	45.4	23.7	31.2	25.0	27.4	29.2	37.6	28.5	44.1	33.6	37.7	32.9	30.9	26.9	35.79	72.20
31-Jan	34.1	25.4	28.2	28.3	28.1	32.7	26.4	42.6	33.7	42.6	12.7	17.0	29.1	32.6	24.2	28.9	26.2	24.4	87.2	86.5	69.8	62.8	37.1	19.2	36.66	87.24
55.36 56.58 55.85 58.19 57.57 58.60 61.48 60.52 62.46 66.05 47.15 37.89 36.68 35.70 35.48 41.07 48.43 45.89 54.61 56.45 52.18 54.96 51.19 56.86																								Diurnal Average		
106.10 95.28 91.66 97.15 94.81 94.26 94.64 102.73 94.70 97.88 94.48 87.89 95.66 73.92 91.40 91.57 91.38 88.71 87.87 97.21 96.02 91.26 93.71 102.28																								Diurnal Maximum		
AF - Analyzer Failure																										

WEST CENTRAL AIRSHED SOCIETY

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

**END OF REPORT
JANUARY 2018**