

Hinton Pulp
A division of West Fraser Mills Limited
Hinton, Alberta

AIR QUALITY MONITORING
December 2016
Monthly Report

Prepared by:

West Central Airshed Society
Drayton Valley, Alberta





January 15, 2017

Hinton Pulp
A Division of West Fraser Mills Ltd.
Mr. Phil Whitney
760 Switzer Drive
Hinton, Alberta
T7V 1V7

Dear Mr. Whitney:

**Monthly Ambient Air Quality Monitoring Report for December 2016
For Hinton Pulp – A Division of West Fraser Mills Ltd.**

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

Network Station is AMS 906 Hinton
Identified as:

The person responsible for this reporting is Patrick Andersen, Interim 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 two readings in December 2016 in excess of the 1-hour average TRS guideline as indicated in Air Monitoring Directive Section III.A.3. (a). There were no readings in December 2016 in excess of the 24-hour average guidelines.

2. Operational times less than 90 percent:

All analyzers and meteorological equipment returned operational times greater than 90% in the month of December.

3. Monitoring Notes:

AMS 906 (Hinton)

The Hinton station began monitoring H₂S on December 7. The SO₂ analyzer returned an uptime of 98.0% due to instrument malfunctioning. The NO_x analyzer returned an uptime of 97.3% due to maintenance. The PM_{2.5} analyzer returned an uptime of 91.3% due to instrument malfunctioning. The wind instrument returned an uptime of 94.2% due to instrument malfunctioning, attributed to cold temperatures and precipitation causing the instrument to freeze up. All other analyzers and meteorological equipment returned uptimes of 100% for the month of December.

If additional information is required please contact Patrick Andersen at (780) 514-3533 or (403) 505-1041.

Sincerely,

A handwritten signature in black ink, appearing to read 'Pat Andersen', with a long horizontal flourish extending to the right.

Patrick Andersen
Environmental Specialist and Interim Executive Director

Forest Products Industry Monthly Report Summary

Hinton
Plant Name/Location

Hinton Pulp - A Division of West Fraser Mills Ltd.
Company

License Number	Report Date	
	Year	Month
	2016	December

TOTAL EMISSIONS FOR MONTH (IN TONNES)

POLLUTANT	INCINERATOR STACK	FLARE	MISCELLANEOUS
SO ₂			

"HOURS" OF EXCEEDED STACK LICENSED LIMITS (CEM)

POLLUTANT	STACK TYPE	1-HR AVG CONCENTRATION	1-HR AVG MASS EMISSION	24-HR AVG MASS EMISSION	STACK TOP TEMP.	% TIME STACK MONITOR OPERATIONAL
SO ₂						

STATIC AMBIENT MONITORING

PARAMETER	NO. OF STATIONS	PEAK READING	AVG. OF NETWORK	NO. OF STATIONS OVER GUIDELINES
T.S.				
H ₂ S				

CONTINUOUS AMBIENT MONITORING

PARAMETER	STATION NUMBER	% TIME OPERATIONAL	1-HR AVERAGE		24-HR AVERAGE	
			MAXIMUM CONCENTRATION (ppm)	NO. READINGS > REGULATIONS	MAXIMUM CONCENTRATION (ppm)	NO. READINGS > REGULATIONS
Wind	906	94.2	n/a	n/a	n/a	n/a
TRS	906	100.0	0.011	2	0.002	0
PM _{2.5}	906	91.3	29.1 µg/m ³	0	17.9 µg/m ³	0
H ₂ S	906	100.0	0.003	0	0.00063	0

SIGNATURE OF COMPANY REPRESENTATIVE

FOR ALBERTA ENVIRONMENT USE ONLY

WEST CENTRAL AIRSHED SOCIETY

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

**AMS 906
HINTON
DECEMBER 2016**

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

Hinton Pulp / Hinton Station 906													December 2016		24 Hour Average Max (ppm)
Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Min	Max	Percentile					Exceedences			
							P10	Q1	Median	Q3	P90	1-hour	24-hour		
TRS (ppb)	37	707	100.0	1.0	0.0	11.0	0.2	0.3	0.6	1.3	2.2	2	0	0.002	
SO ₂ (ppb)	37	692	98.0	0.9	0.0	14.6	0.1	0.1	0.2	0.5	2.9	0	-	0.004	
H ₂ S (ppb)	29	561	100.0	0.2	0.0	3.0	0.0	0.0	0.1	0.3	0.6	0	0	0.001	
O ₃ (ppb)	37	707	100.0	22.0	0.1	43.0	3.1	11.3	25.5	32.5	36.5	0	-	0.035	
NO (ppb)	39	685	97.3	4.6	0.0	111.9	0.1	0.3	0.9	3.3	12.0	-	-	-	
NO ₂ (ppb)	39	685	97.3	9.7	0.3	43.7	2.2	4.3	8.0	13.5	20.2	0	0	0.023	
NO _x (ppb)	39	685	97.3	14.3	0.4	132.8	2.5	4.9	9.2	17.1	32.2	-	-	-	
Particulate Matter 2.5 microns (µm ³)	0	679	91.3	7.5	0.0	29.1	1.1	3.4	6.3	10.7	15.5	0	0	17.9 ug/m3	
Wind Speed (kph)	0	701	94.2	3.8	0.0	17.0	0.5	1.2	2.9	5.5	8.3	-	-	-	
Temperature (°C)	0	744	100.0	-11.6	-31.8	4.5	-25.2	-20.9	-10.5	-1.8	-0.2	-	-	-	
Relative Humidity (%)	0	744	100.0	62.0	23.3	90.0	40.0	47.6	65.0	73.4	83.5	-	-	-	
Std Dev Wind Direction (deg)	0	701	94.2	46.6	15.3	96.9	25.2	33.2	44.0	56.8	73.9	-	-	-	
Std Dev Wind Speed (kph)	0	701	94.2	2.9	0.0	10.2	1.0	1.4	2.2	4.0	5.7	-	-	-	



WCAS - Hinton
Summary of Hourly Averages

Total Reduced Sulphur (TRS) - ppb
December 2016

Maximum Value: 11.18 ppb on Dec 28 12:00		Maximum Daily Average: 2.38 ppb on Dec 28		Hours in Service: 744																																													
Minimum Value: 0 ppb on Dec 3 14:00		Minimum Daily Average: 0.18 ppb on Dec 23		Hours of Data: 707																																													
Maximum Diurnal Average: 1.89 ppb at hour 11		Minimum Diurnal Average: 0.56 ppb at hour 15		Hours of Missing Data: 37																																													
Monthly Average: 1.006 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.2 Q ₁ = 0.3 Median = 0.6 Q ₃ = 1.3 P ₉₀ = 2.2 P ₉₉ = 6.9		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-Dec	5	3	2	Z	2	2	1	3	7	1	6	3	1	1	0	1	0	1	2	2	2	2	3	4	2.34	7.13																							
2-Dec	3	2	2	Z	1	1	1	1	1	1	0	1	1	2	2	2	3	3	3	0	0	6	0	1	1.61	6.21																							
3-Dec	0	1	1	Z	2	1	2	4	3	1	2	0	1	0	1	2	4	2	1	1	1	1	0	0	1.39	4.02																							
4-Dec	1	1	11	Z	3	2	2	2	8	5	2	2	2	0	0	0	0	0	0	0	0	0	0	0	1.77	10.58																							
5-Dec	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.25	0.79																							
6-Dec	1	1	1	Z	4	1	0	1	3	1	3	2	1	1	1	0	0	0	0	0	0	0	0	0	1.02	4.19																							
7-Dec	0	1	1	Z	2	2	5	1	1	C	C	C	C	C	C	3	2	1	1	1	0	0	0	0	--	5.18																							
8-Dec	0	0	0	Z	1	1	0	1	4	3	4	3	2	2	1	0	0	0	1	0	0	2	2	3	1.35	4.03																							
9-Dec	2	4	2	Z	3	2	1	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0.92	3.57																							
10-Dec	0	0	0	Z	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.33	0.52																							
11-Dec	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	1	1	1	2	0.45	1.52																							
12-Dec	1	0	1	Z	1	1	2	2	1	1	0	0	0	0	0	1	1	1	0	1	1	1	0	0	0.76	1.76																							
13-Dec	0	0	0	Z	1	1	1	1	2	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0.55	1.53																							
14-Dec	0	0	0	Z	1	0	0	0	0	0	3	3	1	1	1	1	1	2	1	1	0	1	0	0	0.79	3.12																							
15-Dec	0	0	0	Z	1	1	1	1	2	1	2	3	3	2	1	1	1	1	1	1	1	1	1	0	1.06	3.03																							
16-Dec	0	0	0	Z	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	0	0.78	1.27																							
17-Dec	0	0	0	Z	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.30	0.60																							
18-Dec	0	0	0	Z	1	0	0	0	1	1	1	1	1	0	1	1	1	1	1	2	1	1	1	1	0.86	1.71																							
19-Dec	1	1	2	Z	0	0	0	1	1	0	1	1	1	1	0	1	1	1	0	2	1	2	2	3	0.99	2.60																							
20-Dec	1	2	1	Z	3	0	1	1	0	0	0	0	0	0	0	1	1	2	2	1	1	1	1	1	0.92	2.64																							
21-Dec	1	1	1	Z	1	1	2	2	1	1	1	2	2	1	2	2	1	1	1	0	0	0	0	2	1.12	2.17																							
22-Dec	2	1	2	Z	3	3	3	1	0	1	1	1	0	0	0	1	1	1	0	0	0	0	0	0	0.95	2.77																							
23-Dec	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.18	0.26																							
24-Dec	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.24	0.45																							
25-Dec	0	0	0	Z	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0.53	1.44																							
26-Dec	1	1	1	Z	1	1	1	0	0	0	2	1	1	0	0	1	2	2	2	3	2	2	2	1	1.14	3.15																							
27-Dec	1	2	2	Z	2	2	2	2	1	1	2	0	0	0	0	1	2	3	3	3	3	3	3	4	1.78	4.45																							
28-Dec	4	2	1	Z	3	1	1	1	1	8	10	11	3	1	0	0	1	1	1	1	0	0	2	1	2.38	11.18																							
29-Dec	0	0	0	Z	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0.53	1.35																							
30-Dec	2	1	0	Z	1	2	1	1	2	5	8	5	3	2	1	1	1	3	2	1	2	2	2	1	2.11	8.35																							
31-Dec	1	0	1	Z	2	1	1	0	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.56	2.20																							
																								0.90	0.82	1.07	--	1.36	0.94	0.96	0.98	1.46	1.24	1.89	1.49	0.96	0.65	0.56	0.74	1.00	1.02	0.82	0.82	0.70	0.96	0.84	0.98	Diurnal Average	
																								4.60	3.57	10.58	--	4.19	2.58	5.18	3.97	7.75	7.59	10.25	11.18	3.40	1.95	2.19	3.43	4.02	3.35	2.74	3.15	2.79	6.21	2.96	4.45	Diurnal Maximum	
Z - zerospan C - Calibration																																																	
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb																																																	



WCAS - Hinton
Summary of Hourly Averages

Sulphur Dioxide (SO₂) - ppb
December 2016

Maximum Value: 14.62 ppb on Dec 19 03:00		Maximum Daily Average: 4.34 ppb on Dec 18		Hours in Service: 744																																													
Minimum Value: 0.0 ppb on Dec 7 00:00		Minimum Daily Average: 0.06 ppb on Dec 5		Hours of Data: 692																																													
Maximum Diurnal Average: 1.20 ppb at hour 3		Minimum Diurnal Average: 0.63 ppb at hour 10		Hours of Missing Data: 52																																													
Monthly Average: 0.924 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.1 Q ₁ = 0.1 Median = 0.2 Q ₃ = 0.5 P ₉₀ = 2.9 P ₉₉ = 9.4		Hours of Calibration: 37																																													
				Percent Operational Time: 98.0																																													
Day	Hourly Period Ending At																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Dec	0.1	0.1	0.1	Z	0.1	0.2	0.3	0.1	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.5	0.8	1.0	1.0	0.6	0.3	0.4	0.30	0.98																							
2-Dec	0.3	0.4	0.3	Z	0.3	0.4	0.3	0.4	0.4	0.1	0.1	0.1	1.0	1.6	1.7	1.6	1.0	1.3	0.4	0.2	0.2	0.1	0.1	0.2	0.55	1.74																							
3-Dec	0.1	0.0	0.1	Z	0.2	0.2	0.2	0.1	0.2	0.2	1.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.3	0.3	0.2	0.1	0.21	1.15																							
4-Dec	0.1	0.1	0.1	Z	0.1	0.2	0.2	0.3	0.2	0.2	0.3	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.2	0.1	0.1	0.1	0.16	0.31																							
5-Dec	0.1	0.0	0.0	Z	0.0	0.0	0.1	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.06	0.16																							
6-Dec	0.0	0.1	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.0	0.1	0.0	0.15	0.23																							
7-Dec	0.0	0.0	0.0	Z	0.0	0.1	0.1	0.2	0.1	C	C	C	C	C	C	0.4	0.0	0.0	0.0	AF	AF	AF	AF	AF	--	0.36																							
8-Dec	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	0.0	0.0	0.0	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--	0.08																							
9-Dec	0.1	0.1	0.1	Z	0.1	0.2	0.2	0.1	0.0	0.1	0.1	0.2	0.4	2.6	1.1	0.3	0.3	0.2	0.3	0.1	0.2	0.1	0.1	0.1	0.31	2.62																							
10-Dec	0.1	0.1	0.1	Z	0.1	0.4	0.4	0.3	0.2	0.3	0.3	0.4	0.5	0.5	0.4	0.3	0.4	0.3	0.3	0.2	0.2	0.3	0.3	0.4	0.30	0.50																							
11-Dec	0.3	0.3	0.3	Z	0.3	0.4	0.5	0.3	0.2	0.4	0.2	0.2	0.2	0.6	0.3	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.23	0.57																							
12-Dec	0.3	0.6	0.5	Z	0.1	0.3	0.2	0.1	0.1	0.3	0.2	0.2	0.5	1.1	0.5	0.6	0.2	0.2	0.2	0.1	0.3	0.2	0.1	0.1	0.29	1.09																							
13-Dec	0.1	0.1	0.1	Z	0.1	0.0	0.1	0.1	0.1	0.4	0.7	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0.0	0.0	0.2	0.2	0.1	0.16	0.68																							
14-Dec	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.3	0.2	0.2	0.2	0.2	0.2	0.5	0.2	0.5	0.2	0.1	0.2	0.2	0.18	0.49																							
15-Dec	0.1	0.1	0.1	Z	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.6	0.6	0.5	0.4	0.3	0.4	0.4	0.5	0.3	0.1	0.3	0.2	0.1	0.29	0.60																							
16-Dec	0.2	0.1	0.1	Z	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.3	0.2	0.3	0.2	0.3	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.13	0.31																							
17-Dec	0.1	0.1	0.1	Z	0.1	0.0	0.1	0.0	0.2	0.1	0.1	0.2	0.2	0.1	0.2	0.5	0.1	0.0	0.1	0.2	0.6	0.1	0.1	0.0	0.15	0.63																							
18-Dec	0.0	0.1	0.0	Z	1.1	0.0	0.0	1.2	5.0	3.6	1.8	7.2	2.1	1.8	6.4	5.4	6.8	5.7	7.9	9.4	10.9	8.0	9.5	6.1	4.34	10.92																							
19-Dec	7.1	10.3	14.6	Z	1.4	0.4	2.7	6.4	3.5	1.1	1.8	1.5	1.4	1.9	0.7	0.5	0.3	0.4	0.7	7.9	3.0	6.1	3.9	6.1	3.64	14.62																							
20-Dec	3.2	9.7	6.3	Z	9.8	1.8	1.7	0.6	0.3	0.4	0.4	0.3	0.5	0.4	0.5	0.6	0.6	0.8	0.8	0.5	0.4	0.3	0.4	0.5	1.78	9.81																							
21-Dec	1.6	1.7	1.9	Z	4.1	2.9	8.6	6.3	4.6	2.1	4.4	9.2	7.6	6.8	6.0	6.3	5.8	1.1	1.0	0.3	0.2	0.4	1.0	6.2	3.92	9.22																							
22-Dec	4.7	3.7	5.1	Z	7.3	10.4	6.4	2.0	1.3	1.8	2.9	0.9	0.4	0.3	0.3	0.5	0.8	0.3	0.4	0.4	0.4	0.3	0.2	0.3	2.22	10.44																							
23-Dec	0.2	0.2	0.2	Z	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.2	0.2	0.2	0.15	0.24																							
24-Dec	0.2	0.1	0.1	Z	0.1	0.1	0.0	0.1	0.2	0.1	0.1	0.2	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.1	0.2	0.1	0.1	0.3	0.20	0.38																						
25-Dec	0.3	0.4	0.4	Z	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.5	0.7	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.22	0.66																							
26-Dec	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.2	0.2	0.5	2.1	1.9	0.9	0.3	1.4	3.3	2.8	1.8	2.5	2.2	4.8	4.0	4.6	4.1	1.65	4.81																							
27-Dec	2.0	3.6	3.3	Z	1.7	1.6	3.2	4.1	1.3	1.5	1.6	1.0	0.6	1.7	1.0	0.9	2.8	3.4	0.9	1.6	0.5	0.9	1.1	0.5	1.77	4.15																							
28-Dec	0.2	0.2	0.2	Z	0.2	1.4	2.6	1.3	3.4	3.3	2.0	5.4	5.8	3.2	0.1	0.1	0.3	1.4	3.3	4.4	0.2	1.2	1.4	0.8	1.84	5.75																							
29-Dec	0.2	0.1	0.2	Z	1.4	0.2	0.3	0.3	0.2	0.2	0.3	0.4	0.3	0.2	0.2	0.4	0.9	2.4	0.6	0.4	0.3	0.2	0.1	0.1	0.44	2.36																							
30-Dec	0.2	0.1	0.2	Z	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.3	0.7	2.3	1.3	2.0	4.9	4.5	4.9	5.7	4.1	3.0	1.3	1.57	5.66																							
31-Dec	2.1	0.6	1.1	Z	2.7	1.8	0.8	0.3	0.4	0.4	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.54	2.66																							
																								0.81	1.11	1.20	--	1.07	0.79	0.99	0.86	0.78	0.63	0.74	1.07	0.86	0.93	0.87	0.83	0.90	0.88	0.86	1.20	1.02	0.96	0.93	0.95	Diurnal Average	
																								7.12	10.31	14.62	--	9.81	10.44	8.60	6.41	4.99	3.63	4.36	9.22	7.59	6.83	6.38	6.25	6.76	5.67	7.95	9.38	10.92	8.03	9.48	6.20	Diurnal Maximum	
Z - zerospan																								C - Calibration				AF - Analyzer Failure																					
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb																																																	



WCAS - Hinton
Summary of Hourly Averages

Hydrogen Sulphide (H2S) - ppb
December 2016

Maximum Value: 3.12 ppb on Dec 30 11:00		Maximum Daily Average: 0.63 ppb on Dec 30		Hours in Service: 590																						
Minimum Value: 0 ppb on Dec 7 21:00		Minimum Daily Average: 0.00 ppb on Dec 23		Hours of Data: 561																						
Maximum Diurnal Average: 0.48 ppb at hour 11		Minimum Diurnal Average: 0.12 ppb at hour 15		Hours of Missing Data: 29																						
Monthly Average: 0.233 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.1 Q ₃ = 0.3 P ₉₀ = 0.6 P ₉₉ = 1.6		Hours of Calibration: 29																						
				Percent Operational Time: 100.0																						
Day	Hourly Period Ending At																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--
2-Dec	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--
3-Dec	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--
4-Dec	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--
5-Dec	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--
6-Dec	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--
7-Dec	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	C	C	C	C	C	1	0	0	0	0	0	0	0	0	--	1.37
8-Dec	0	0	0	Z	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	0.38	1.35
9-Dec	1	1	1	Z	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.29	1.11
10-Dec	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.06	0.12
11-Dec	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.12	0.36
12-Dec	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.20	0.45
13-Dec	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.14	0.39
14-Dec	0	0	0	Z	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.23	1.11
15-Dec	0	0	0	Z	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0.28	0.86
16-Dec	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.16	0.43
17-Dec	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.05	0.25
18-Dec	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.21	0.49
19-Dec	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.29	0.70
20-Dec	0	0	0	Z	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.22	0.65
21-Dec	0	0	0	Z	0	0	1	1	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	1	0.33	0.68
22-Dec	1	0	1	Z	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.24	0.80
23-Dec	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00
24-Dec	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.03	0.09
25-Dec	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.15	0.38
26-Dec	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0.35	1.10
27-Dec	0	1	0	Z	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0.48	1.42
28-Dec	1	0	0	Z	1	0	0	0	0	2	2	2	1	0	0	0	0	0	0	0	0	0	1	0	0.56	2.40
29-Dec	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.11	0.40
30-Dec	0	0	0	Z	0	1	0	1	0	2	3	2	1	1	0	0	0	1	0	0	0	0	0	0	0.63	3.12
31-Dec	0	0	0	Z	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.09	0.59
																								Diurnal Average		
																								Diurnal Maximum		
0.20 0.18 0.16 -- 0.36 0.21 0.18 0.17 0.24 0.30 0.48 0.38 0.22 0.15 0.12 0.20 0.25 0.24 0.20 0.23 0.19 0.21 0.22 0.26																										
1.16 1.09 0.68 -- 1.13 0.73 0.80 0.57 1.28 1.90 3.12 2.40 1.08 0.58 0.53 1.37 0.51 0.88 0.67 1.10 0.91 0.96 0.75 1.42																										
Z - zerospan C - Calibration NS - Not in Service																										
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb																										



WCAS - Hinton
Summary of Hourly Averages

Ozone (O₃) - ppb
December 2016

Maximum Value: 43.04 ppb on Dec 4 15:00																								Maximum Daily Average: 35.21 ppb on Dec 28																								Hours in Service: 744	
Minimum Value: 0.1 ppb on Dec 1 01:00																								Minimum Daily Average: 4.02 ppb on Dec 1																								Hours of Data: 707	
Maximum Diurnal Average: 29.22 ppb at hour 15																								Minimum Diurnal Average: 18.19 ppb at hour 9																								Hours of Missing Data: 37	
Monthly Average: 21.960 ppb																								Percentiles: P ₁ = 0.3 P ₁₀ = 3.1 Q ₁ = 11.3 Median = 25.5 Q ₃ = 32.5 P ₉₀ = 36.5 P ₉₉ = 39.4																								Hours of Calibration: 37	
																								Percent Operational Time: 100.0																									
Day	Hourly Period Ending At																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Dec	0.1	0.2	0.3	Z	0.5	0.3	0.1	0.7	4.4	7.2	8.5	12.9	12.6	13.7	11.9	7.8	5.7	1.4	0.9	1.1	0.8	0.4	0.3	0.7	4.02	13.68																							
2-Dec	0.3	0.3	0.2	Z	0.6	4.1	0.8	2.1	0.6	11.5	19.4	28.4	32.0	33.1	33.0	29.2	27.1	29.1	27.7	22.8	14.8	14.6	31.6	25.7	16.91	33.12																							
3-Dec	28.0	28.9	24.3	Z	26.7	29.0	36.6	34.7	28.5	23.7	25.4	33.7	33.1	38.1	36.5	25.7	30.3	20.3	8.7	5.0	1.1	1.2	3.1	2.7	22.84	38.12																							
4-Dec	1.4	1.6	6.5	Z	5.7	2.4	0.8	1.0	3.0	2.6	6.0	9.7	14.6	39.0	43.0	36.0	28.3	25.7	27.1	27.6	27.5	27.4	27.6	29.0	17.11	43.04																							
5-Dec	29.6	30.2	29.3	Z	29.9	28.1	28.3	27.4	27.4	27.9	30.3	30.6	29.2	31.1	30.0	29.9	29.5	31.4	31.8	30.7	29.9	28.1	27.2	31.8	29.55	31.84																							
6-Dec	31.4	31.9	32.6	Z	25.9	30.8	32.2	26.9	21.1	25.5	28.4	31.9	30.5	30.6	31.8	31.2	32.2	23.1	7.9	4.1	3.4	10.8	10.6	13.0	23.82	32.59																							
7-Dec	11.1	5.9	4.5	Z	16.8	14.6	21.1	10.9	15.1	C	C	C	C	C	C	23.5	15.9	4.0	0.8	0.5	2.5	8.0	12.2	12.8	--	23.48																							
8-Dec	14.6	13.0	13.9	Z	11.4	7.9	7.0	7.3	3.3	4.3	7.0	9.5	11.7	15.7	19.0	18.3	13.1	6.2	2.5	3.2	2.5	2.5	4.2	3.4	8.75	19.04																							
9-Dec	3.0	2.8	2.1	Z	3.1	3.1	2.4	2.5	3.1	5.6	7.4	8.6	12.5	15.9	13.6	9.0	2.5	2.5	2.5	2.1	1.4	1.1	0.8	1.1	4.72	15.94																							
10-Dec	0.9	0.7	0.7	Z	1.2	3.3	4.8	2.9	3.6	2.7	6.2	10.6	12.5	12.6	11.3	8.6	3.9	3.3	7.5	10.3	12.2	13.2	14.9	15.7	7.11	15.66																							
11-Dec	15.7	14.3	13.6	Z	13.8	18.2	22.4	29.7	30.0	26.6	30.4	34.6	37.1	32.0	31.4	22.8	21.5	20.7	21.9	22.5	25.8	21.3	18.0	15.9	23.49	37.13																							
12-Dec	13.9	15.0	16.5	Z	17.5	19.4	17.7	14.7	15.6	18.3	21.4	24.9	27.8	30.1	29.6	24.0	19.8	18.1	20.4	13.9	5.1	4.8	15.1	24.1	18.60	30.09																							
13-Dec	23.7	20.0	23.6	Z	20.4	18.5	18.7	16.8	13.8	20.5	20.0	24.4	28.0	28.5	30.1	29.2	27.3	26.9	24.9	22.0	20.3	20.6	18.7	19.4	22.44	30.12																							
14-Dec	21.2	25.5	24.2	Z	24.1	23.9	10.0	3.7	3.2	21.0	19.1	16.9	29.5	32.3	30.8	30.4	6.8	3.9	6.0	1.2	5.9	14.5	10.4	9.4	16.26	32.33																							
15-Dec	14.3	10.1	10.3	Z	10.1	5.6	4.2	3.8	0.9	2.3	4.5	5.8	7.6	13.4	25.6	22.1	5.3	1.3	0.9	2.1	3.4	1.9	3.8	9.3	7.34	25.63																							
16-Dec	15.9	14.0	12.8	Z	5.8	4.3	4.3	3.1	3.3	9.9	21.4	20.8	23.8	29.8	29.8	28.0	16.1	24.1	23.7	22.2	21.5	23.2	20.0	19.1	17.26	29.84																							
17-Dec	16.8	18.5	25.4	Z	30.1	23.7	14.1	18.5	23.4	34.9	34.1	34.3	36.8	37.3	37.6	37.9	38.3	39.0	39.1	39.1	37.2	39.0	39.2	39.3	31.90	39.31																							
18-Dec	39.4	39.4	39.3	Z	36.0	38.0	37.8	35.6	27.7	31.7	34.4	28.8	36.3	36.5	32.4	32.7	32.6	31.9	30.0	28.3	31.3	35.9	34.6	35.5	34.18	39.42																							
19-Dec	32.9	32.8	31.1	Z	38.1	39.0	36.4	30.1	33.4	35.1	34.3	33.3	32.4	32.6	36.8	35.4	34.5	29.6	36.8	29.2	31.2	30.9	31.4	31.4	33.42	38.97																							
20-Dec	36.8	32.6	36.2	Z	30.7	37.2	35.8	34.2	34.9	37.0	33.9	33.3	24.3	22.7	19.4	13.9	10.3	2.1	0.9	1.3	6.0	34.9	35.6	34.4	25.58	37.25																							
21-Dec	34.9	36.5	36.9	Z	35.2	35.5	31.1	30.5	33.4	37.3	35.3	31.4	30.8	33.3	31.6	32.3	32.1	36.2	36.8	37.4	38.4	38.3	37.7	29.2	34.45	38.42																							
22-Dec	30.5	34.9	34.0	Z	30.0	31.2	29.2	36.8	38.2	37.3	35.5	39.5	39.7	39.8	39.7	38.9	36.4	36.4	32.2	21.4	28.2	34.5	33.1	33.1	34.37	39.84																							
23-Dec	33.0	31.1	32.4	Z	27.6	27.3	31.9	31.4	30.7	28.8	25.8	29.9	31.2	33.6	32.3	31.1	31.6	32.6	32.4	31.6	29.5	28.1	29.0	28.9	30.53	33.59																							
24-Dec	28.5	28.1	26.4	Z	16.6	9.4	14.3	13.9	1.7	7.6	13.9	15.5	17.9	19.8	20.4	19.4	19.5	18.7	19.6	16.5	10.2	11.7	12.7	15.5	16.43	28.52																							
25-Dec	15.4	14.9	14.6	Z	11.4	4.7	10.7	7.3	5.2	7.5	9.8	12.2	15.1	14.7	15.4	13.3	6.2	6.5	8.6	3.6	3.1	2.7	3.6	3.2	9.11	15.40																							
26-Dec	1.8	4.6	3.7	Z	3.0	5.2	24.9	31.0	27.5	29.3	30.4	33.5	35.5	37.4	37.3	34.0	34.9	36.2	34.5	35.9	31.6	32.8	32.8	33.0	26.55	37.45																							
27-Dec	34.6	31.1	31.3	Z	32.1	32.2	29.1	28.7	30.9	29.5	30.1	32.3	33.7	33.5	33.9	33.3	29.4	26.5	32.8	31.7	34.5	34.0	32.6	34.8	31.85	34.75																							
28-Dec	37.0	37.5	37.6	Z	37.2	33.7	31.1	33.6	33.6	33.0	35.3	33.7	35.1	37.8	40.9	41.2	38.3	24.9	28.9	31.1	36.5	37.4	36.8	37.8	35.21	41.18																							
29-Dec	39.5	36.9	35.8	Z	36.6	34.4	37.0	27.1	25.6	24.8	16.7	15.3	12.9	23.1	22.3	26.5	31.5	30.9	33.6	23.2	15.3	14.0	7.2	14.6	25.44	39.52																							
30-Dec	14.6	25.0	21.8	Z	12.9	10.2	20.9	16.6	6.0	11.6	15.7	15.4	23.9	32.7	31.5	32.2	31.0	27.0	30.5	29.3	28.2	28.1	32.8	36.1	23.21	36.05																							
31-Dec	37.2	36.0	34.8	Z	33.9	33.7	33.1	32.3	34.8	33.6	29.0	34.0	36.6	38.3	37.8	38.5	36.9	34.2	32.6	33.1	34.6	34.8	35.5	33.8	34.75	38.46																							
21.22 21.12 21.18 -- 20.16 19.64 20.29 19.22 18.19 20.95 22.32 24.19 26.17 28.97 29.22 26.97 23.51 21.11 20.79 18.84 18.51 20.34 21.06 21.74																								Diurnal Average																									
39.52 39.42 39.27 -- 38.13 38.97 37.82 36.81 38.23 37.35 35.46 39.47 39.72 39.84 43.04 41.18 38.32 38.96 39.14 39.11 38.42 39.05 39.19 39.31																								Diurnal Maximum																									
Z - zerospan C - Calibration																																																	
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 82.5 ppb 24-hr -- ppb																																																	



WCAS - Hinton
Eight Hour Running Averages

Ozone (O₃) - ppb
December 2016

Maximum Value: 38.82 ppb on Dec 18 03:00																								Maximum Daily Average: 34.94 ppb on Dec 18																								Hours in Service: 744	
Minimum Value: 0.3 ppb on Dec 1 07:00																								Minimum Daily Average: 4.06 ppb on Dec 1																								Hours of Data: 734	
Maximum Diurnal Average: 25.33 ppb at hour 18																								Minimum Diurnal Average: 19.48 ppb at hour 1																								Hours of Missing Data: 10	
Monthly Average: 21.693 ppb																								Percentiles: P ₁ = 0.7 P ₁₀ = 4.7 Q ₁ = 11.0 Median = 23.9 O ₃ = 32.0 P ₉₀ = 34.7 P ₉₉ = 38.4																								Hours of Calibration: 10	
																																																Percent Operational Time: 100.0	
Day	Hourly Period Ending At																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Dec	1.7	1.5	1.2	1.1	0.8	0.6	0.3	0.3	0.9	1.9	3.1	4.3	5.8	7.5	9.0	9.9	10.0	9.3	8.4	6.9	5.4	3.7	2.3	1.4	4.06	10.02																							
2-Dec	0.7	0.6	0.5	0.4	0.4	0.9	1.0	1.2	1.3	2.8	5.6	8.4	12.4	16.0	20.0	23.4	26.7	28.9	30.0	29.3	27.1	24.8	24.6	24.2	12.97	29.95																							
3-Dec	24.3	24.3	23.8	24.0	25.7	27.7	28.4	29.7	29.8	29.1	29.2	29.8	30.6	31.7	31.7	30.6	30.8	30.4	28.3	24.7	20.7	16.1	11.9	9.1	25.94	31.73																							
4-Dec	5.4	3.1	2.8	2.5	3.2	3.3	3.0	2.8	3.0	3.2	3.1	3.9	5.0	9.6	14.9	19.2	22.4	25.3	27.9	30.2	31.8	30.3	28.4	27.5	12.99	31.78																							
5-Dec	27.7	28.2	28.5	28.7	29.0	29.1	29.2	29.0	28.7	28.3	28.5	28.7	28.6	29.0	29.2	29.5	29.8	30.2	30.4	30.4	30.5	30.2	29.8	30.1	29.23	30.53																							
6-Dec	30.3	30.4	30.5	30.4	29.9	30.2	30.9	30.2	28.8	27.8	27.2	27.8	28.4	28.4	28.3	28.9	30.3	30.0	27.4	23.9	20.5	18.1	15.4	13.1	26.97	30.95																							
7-Dec	10.5	8.4	8.0	8.5	10.4	11.0	12.5	12.1	12.7	13.8	Z	C	C	C	C	C	C	C	C	C	8.1	8.1	8.6	7.3	--	13.84																							
8-Dec	7.1	8.2	9.8	11.1	12.3	12.3	11.5	10.7	9.1	7.8	6.8	7.2	7.2	8.2	9.7	11.0	12.3	12.5	11.9	11.2	10.0	8.4	6.5	4.7	9.47	12.51																							
9-Dec	3.4	3.0	2.9	2.9	3.0	3.1	2.8	2.7	2.7	3.1	3.9	4.4	5.6	7.2	8.6	9.4	9.3	9.0	8.3	7.5	6.2	4.3	2.7	1.7	4.91	9.40																							
10-Dec	1.5	1.3	1.1	1.0	0.9	1.3	1.8	2.1	2.5	2.7	3.5	4.4	5.8	7.0	7.8	8.5	8.5	8.6	8.7	8.7	8.7	8.7	9.2	10.1	5.18	10.07																							
11-Dec	11.5	12.9	13.7	14.2	14.4	15.1	16.2	18.2	20.2	21.9	24.3	25.6	28.5	30.2	31.3	30.5	29.4	28.7	27.6	26.1	24.7	23.4	21.7	20.9	22.14	31.34																							
12-Dec	19.9	19.2	18.5	18.0	16.8	16.5	16.5	16.3	16.6	17.0	17.7	18.6	19.9	21.2	22.7	23.9	24.4	24.3	24.2	22.9	20.0	16.9	15.1	15.1	19.26	24.38																							
13-Dec	15.6	15.8	16.2	16.5	18.7	20.7	21.2	20.1	18.7	18.8	18.3	19.1	20.0	21.2	22.7	24.2	25.9	26.7	27.3	27.0	26.0	25.0	23.6	22.4	21.32	27.28																							
14-Dec	21.6	21.5	21.4	21.3	21.8	22.3	21.1	18.9	16.3	15.7	14.9	15.2	15.9	16.9	19.5	22.8	23.2	21.1	19.5	17.5	14.6	12.4	9.8	7.2	18.02	23.25																							
15-Dec	8.1	8.9	9.5	10.7	11.3	10.0	9.1	8.3	6.4	5.3	4.5	4.7	4.3	5.3	8.0	10.2	10.8	10.7	10.2	9.7	9.2	7.8	5.1	3.5	7.98	11.26																							
16-Dec	4.8	6.4	7.9	8.7	9.0	9.4	9.5	8.6	6.8	6.2	7.4	9.1	11.3	14.5	17.7	20.8	22.4	24.1	24.4	24.6	24.3	23.5	22.2	21.1	14.35	24.57																							
17-Dec	21.2	20.5	20.7	20.6	21.8	21.8	21.0	20.9	21.9	24.2	25.4	26.5	27.3	29.0	32.0	34.4	36.2	36.7	37.4	38.0	38.0	38.2	38.4	38.6	28.79	38.61																							
18-Dec	38.7	38.8	38.8	38.8	38.6	38.5	38.3	37.8	36.1	35.0	34.3	33.6	33.6	33.4	32.8	32.4	33.0	33.0	32.5	32.4	31.8	31.7	32.0	32.4	34.94	38.82																							
19-Dec	32.4	32.5	32.6	33.3	34.3	34.7	34.9	34.2	34.3	34.6	35.0	34.8	34.1	33.3	33.4	34.0	34.2	33.5	33.8	33.3	33.1	32.9	32.2	31.7	33.63	35.05																							
20-Dec	32.0	32.4	32.3	32.8	32.7	33.6	34.2	34.6	34.4	35.0	34.7	34.5	33.7	31.9	29.8	27.3	24.2	19.9	15.8	11.8	9.5	11.0	13.1	15.6	26.95	34.99																							
21-Dec	18.7	23.0	27.4	31.2	35.3	35.4	34.8	34.2	34.0	34.1	33.9	33.6	33.0	32.7	32.8	33.0	32.9	32.7	32.9	33.7	34.6	35.3	36.0	35.6	32.53	36.01																							
22-Dec	35.4	35.2	34.9	34.6	33.4	32.3	31.1	32.2	33.3	33.7	33.9	34.6	35.8	36.8	38.1	38.4	38.2	38.1	37.7	35.4	34.0	33.3	32.5	31.8	34.78	38.41																							
23-Dec	31.4	30.7	30.7	32.1	32.0	31.0	30.8	30.5	30.2	29.9	28.9	29.1	29.5	30.3	30.3	30.4	30.4	30.9	31.7	31.9	31.7	31.0	30.6	30.3	30.68	32.07																							
24-Dec	30.0	29.4	28.6	28.2	26.4	23.7	21.6	19.5	15.7	12.8	11.0	11.6	11.7	13.0	13.8	14.5	16.7	18.0	18.8	18.9	17.9	16.9	16.0	15.5	18.76	29.96																							
25-Dec	15.0	14.5	13.9	13.5	13.7	12.7	12.4	11.2	9.8	8.7	8.0	8.6	9.0	10.3	10.8	11.6	11.7	11.6	11.5	10.4	8.9	7.4	5.9	4.7	10.65	14.97																							
26-Dec	4.1	3.9	3.3	3.2	3.2	3.6	6.6	10.6	14.2	17.7	21.5	23.0	27.0	31.1	32.6	33.0	33.9	34.7	35.2	35.6	35.1	34.5	33.9	33.8	21.47	35.55																							
27-Dec	33.8	33.1	32.7	32.3	32.4	32.3	31.8	31.2	30.6	30.4	30.2	30.5	30.7	30.8	31.4	32.0	31.8	31.5	31.8	31.7	31.8	31.9	31.7	31.9	31.68	33.75																							
28-Dec	32.8	34.2	34.8	35.2	35.6	35.6	35.4	35.2	34.8	34.1	33.8	33.8	33.5	34.0	35.2	36.2	36.7	35.7	34.9	34.6	34.8	34.7	34.2	33.8	34.74	36.74																							
29-Dec	34.0	35.4	36.3	37.1	37.1	36.7	36.7	35.2	33.2	31.5	28.8	27.1	24.1	22.7	20.9	20.8	21.6	22.3	24.4	25.4	25.7	24.6	22.7	21.2	28.56	37.09																							
30-Dec	19.1	18.4	16.9	16.0	15.6	15.1	17.1	17.3	16.1	14.2	13.4	13.6	15.0	17.8	19.1	21.0	24.1	26.1	27.9	29.6	30.2	29.6	29.8	30.2	20.55	30.23																							
31-Dec	31.0	32.1	32.7	33.2	34.0	34.8	34.8	34.3	34.0	33.6	32.8	32.9	33.2	33.8	34.4	35.2	35.4	35.5	36.0	35.8	35.6	35.2	34.9	34.3	34.14	35.95																							
19.48 19.60 19.78 20.06 20.44 20.49 20.54 20.33 19.90 19.84 20.13 20.62 21.36 22.50 23.62 24.56 25.24 25.33 25.23 24.64 23.24 22.25 21.32 20.67																								Diurnal Average																									
38.75 38.81 38.82 38.81 38.63 38.48 38.29 37.76 36.10 35.00 35.05 34.81 35.76 36.84 38.14 38.41 38.17 38.07 37.66 37.96 38.02 38.23 38.43 38.61																								Diurnal Maximum																									
Z - zerospan C - Calibration																																																	



WCAS - Hinton
Summary of Hourly Averages

Nitrogen Oxide (NO) - ppb
December 2016

Maximum Value: 111.88 ppb on Dec 1 20:00 Maximum Daily Average: 30.04 ppb on Dec 1		Hours in Service: 744 Hours of Data: 685 Hours of Missing Data: 59 Hours of Calibration: 39 Percent Operational Time: 97.3																								
Minimum Value: 0.0 ppb on Dec 5 02:00 Maximum Diurnal Average: 9.02 ppb at hour 20 Monthly Average: 4.587 ppb		Minimum Daily Average: 0.28 ppb on Dec 31 Minimum Diurnal Average: 1.70 ppb at hour 24 Percentiles: P ₁ = 0.0 P ₁₀ = 0.1 Q ₁ = 0.3 Median = 0.9 Q ₃ = 3.3 P ₉₀ = 12.0 P ₉₉ = 52.7																								
Day	Hourly Period Ending At																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	8.6	18.3	20.8	Z	16.6	28.2	41.5	16.5	4.7	12.0	17.2	3.8	10.9	6.8	6.9	9.3	8.4	53.3	89.2	111.9	111.4	52.9	18.6	23.0	30.04	111.88
2-Dec	17.5	19.7	23.0	Z	27.7	39.3	31.3	29.1	45.8	15.4	8.9	1.1	2.1	1.5	1.3	1.7	0.7	0.4	1.1	5.5	12.6	1.4	0.2	0.6	12.54	45.81
3-Dec	0.6	0.2	0.1	Z	0.1	0.6	0.1	0.0	0.3	1.9	2.8	1.1	0.8	0.0	0.9	4.5	0.5	3.4	8.8	13.6	30.5	25.8	4.8	2.4	4.52	30.46
4-Dec	6.7	4.8	3.0	Z	2.6	9.1	16.4	21.4	17.5	31.0	28.2	24.7	21.0	1.6	0.0	0.1	0.8	1.4	0.2	0.5	0.2	0.2	0.1	0.0	8.33	30.98
5-Dec	0.0	0.0	0.3	Z	1.2	1.4	0.2	0.0	0.2	0.7	0.3	0.4	1.6	0.4	1.3	0.9	0.5	0.4	0.3	0.2	0.2	0.1	0.2	0.0	0.46	1.60
6-Dec	0.0	0.0	0.0	Z	1.0	0.2	0.0	0.9	0.8	1.3	1.1	0.6	2.1	1.7	0.7	0.5	0.0	3.4	13.6	9.9	9.8	2.9	0.6	0.4	2.24	13.58
7-Dec	0.5	2.2	1.7	Z	0.3	0.6	0.0	2.1	1.3	C	C	C	C	C	M	M	M	M	M	M	M	M	M	M	--	2.22
8-Dec	M	M	M	M	M	M	M	M	M	M	C	C	C	C	4.1	3.8	4.3	11.3	18.2	10.2	9.7	4.4	4.0	6.8	--	18.22
9-Dec	4.5	6.7	10.4	Z	7.0	9.9	6.7	3.1	2.8	5.6	14.0	24.4	18.2	8.8	8.6	5.6	27.4	12.5	8.0	7.0	9.7	4.8	9.3	5.3	9.58	27.44
10-Dec	7.7	10.4	6.4	Z	5.7	3.0	2.9	3.1	4.3	20.0	18.7	14.4	11.0	7.5	6.3	6.6	8.5	4.4	0.2	0.2	0.4	0.2	0.1	0.2	6.19	19.97
11-Dec	0.1	0.5	0.2	Z	1.4	0.1	0.4	0.0	0.2	3.8	1.5	0.5	0.1	2.3	1.7	6.8	1.5	1.5	0.2	0.1	0.1	0.2	0.5	0.9	1.06	6.77
12-Dec	0.7	0.7	0.5	Z	0.6	0.3	0.4	1.1	1.4	1.3	2.3	2.2	2.6	3.0	1.5	2.0	1.0	0.7	0.9	3.8	13.6	9.7	0.7	0.3	2.22	13.57
13-Dec	0.2	0.8	0.8	Z	0.1	0.3	0.3	0.7	2.0	1.9	5.0	5.1	3.5	3.3	2.6	2.5	1.3	0.9	0.1	0.1	0.2	0.1	0.1	0.1	1.38	5.06
14-Dec	0.1	0.0	0.0	Z	0.0	0.0	3.7	15.1	15.5	0.4	3.1	12.1	2.1	1.5	2.1	0.8	8.0	39.3	10.1	41.1	7.6	0.5	1.9	1.1	7.23	41.09
15-Dec	0.3	1.7	0.9	Z	1.7	3.9	5.0	7.9	26.8	20.5	35.9	55.0	50.8	24.4	3.6	2.8	28.8	34.9	46.2	20.6	5.5	7.3	3.2	1.5	16.92	54.99
16-Dec	0.2	0.7	1.7	Z	1.4	1.9	1.6	1.8	4.6	2.4	2.3	6.9	6.5	1.3	1.3	1.3	2.4	0.5	0.3	0.3	0.4	0.2	0.7	0.1	1.78	6.85
17-Dec	0.4	0.3	0.0	Z	0.0	0.0	1.8	0.1	0.2	0.2	0.7	1.0	1.0	1.8	1.4	0.9	0.3	0.4	0.3	0.2	0.3	0.1	0.1	0.1	0.52	1.84
18-Dec	0.0	0.1	0.0	Z	0.4	0.2	0.1	0.8	2.0	1.1	0.6	2.2	0.6	0.8	1.7	1.3	1.1	1.3	1.8	2.3	1.7	0.7	0.9	0.6	0.98	2.26
19-Dec	0.9	0.8	1.4	Z	0.1	0.0	0.4	1.4	0.5	0.4	0.6	2.0	3.1	3.1	0.8	0.6	0.2	0.3	0.1	0.8	0.4	0.2	0.2	0.4	0.81	3.07
20-Dec	0.1	0.9	0.4	Z	0.9	0.4	0.0	1.1	2.7	0.2	0.7	0.9	3.1	5.1	8.7	10.1	14.0	70.9	64.4	32.6	23.9	0.0	0.0	0.0	10.48	70.92
21-Dec	0.1	0.1	0.1	Z	0.9	0.3	1.9	2.3	1.3	0.5	1.3	3.0	3.8	2.9	2.4	1.6	1.3	0.3	0.2	0.0	0.0	0.1	0.2	1.3	1.13	3.78
22-Dec	0.8	0.3	0.2	Z	0.6	0.7	0.9	0.2	0.1	0.3	1.0	0.3	0.1	0.1	0.1	0.1	0.2	0.0	0.4	2.1	0.1	0.2	0.2	0.2	0.41	2.09
23-Dec	0.1	0.1	0.2	Z	0.5	0.6	0.2	0.7	0.8	0.8	1.4	0.9	1.6	1.0	1.3	1.0	0.8	0.7	0.7	0.2	0.3	0.4	0.1	0.3	0.64	1.61
24-Dec	0.2	0.1	0.1	Z	1.4	2.3	0.1	1.6	15.0	6.6	3.1	2.9	3.1	2.3	1.5	1.8	0.8	1.3	0.7	0.4	0.6	0.4	0.5	0.2	2.03	14.99
25-Dec	0.3	0.2	0.9	Z	1.3	5.9	0.6	0.7	2.0	2.2	4.5	6.4	4.9	7.7	5.0	3.6	11.1	1.9	0.2	2.0	2.9	3.9	2.6	3.3	3.21	11.12
26-Dec	3.3	1.4	3.1	Z	3.0	2.5	0.1	0.1	0.1	0.4	1.5	1.8	1.5	0.6	0.6	1.0	0.6	0.4	0.5	0.6	1.4	0.6	0.9	0.4	1.15	3.30
27-Dec	0.1	0.6	0.3	Z	0.1	0.2	0.4	0.7	0.2	0.5	1.0	1.4	0.9	1.3	1.1	0.8	0.8	0.5	0.1	0.3	0.1	0.2	0.1	0.0	0.51	1.35
28-Dec	0.0	0.0	0.0	Z	0.0	0.2	0.4	0.2	0.3	0.4	0.8	1.2	1.8	1.3	0.1	0.0	0.0	5.4	1.2	0.4	0.5	0.1	0.0	0.0	0.63	5.39
29-Dec	0.0	0.2	0.4	Z	0.4	2.7	0.3	4.8	6.4	3.0	9.8	8.5	10.3	1.9	4.0	1.2	1.1	0.3	0.1	2.8	2.0	4.5	3.7	1.2	3.02	10.27
30-Dec	1.8	0.2	0.6	Z	0.6	3.9	0.1	0.2	13.5	1.6	2.0	18.3	7.9	1.1	2.0	1.0	0.5	1.2	0.9	1.0	1.1	0.9	0.1	0.1	2.63	18.27
31-Dec	0.0	0.0	0.0	Z	0.1	0.1	0.0	0.3	0.0	0.5	0.9	0.6	0.8	0.6	0.6	0.0	0.4	0.4	0.3	0.1	0.1	0.1	0.1	0.0	0.28	0.94
1.87 2.40 2.59 -- 2.59 3.96 3.94 3.94 5.77 4.71 5.91 7.02 6.13 3.31 2.48 2.48 4.25 8.45 8.98 9.02 8.24 4.10 1.82 1.70																								Diurnal Average		
17.51 19.72 22.97 -- 27.73 39.29 41.55 29.13 45.81 30.98 35.86 54.99 50.83 24.40 8.71 10.08 28.75 70.92 89.22 111.88 111.41 52.87 18.64 23.02																								Diurnal Maximum		
Z - zerospan C - Calibration M - Maintenance Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ppb 24-hr --- ppb																										



WCAS - Hinton
Summary of Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
December 2016

Maximum Value: 43.66 ppb on Dec 20 18:00 Maximum Daily Average: 22.53 ppb on Dec 15																						Hours in Service: 744 Hours of Data: 685				
Minimum Value: 0.3 ppb on Dec 28 15:00 Minimum Daily Average: 2.60 ppb on Dec 5 Maximum Diurnal Average: 13.33 ppb at hour 18 Minimum Diurnal Average: 6.26 ppb at hour 14 Monthly Average: 9.733 ppb Percentiles: P ₁ = 0.6 P ₁₀ = 2.2 Q ₁ = 4.3 Median = 8.0 Q ₃ = 13.5 P ₉₀ = 20.2 P ₉₉ = 33.2																						Hours of Missing Data: 59 Hours of Calibration: 39 Percent Operational Time: 97.3				
Day	Hourly Period Ending At																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	14.2	14.5	14.1	Z	12.4	13.6	12.9	11.1	8.9	9.1	11.3	5.6	10.3	8.3	10.5	13.5	15.9	22.9	23.2	21.6	20.0	15.8	10.7	13.0	13.63	23.21
2-Dec	11.0	11.4	12.5	Z	15.8	20.5	19.1	16.5	19.4	13.8	14.6	8.0	7.6	4.5	5.8	9.3	10.4	8.2	8.0	13.6	22.0	13.8	2.5	5.9	11.93	21.98
3-Dec	6.2	3.7	3.9	Z	6.6	5.9	2.5	1.3	8.2	13.5	11.7	4.3	5.0	0.8	2.4	14.3	7.1	18.1	25.3	22.2	26.0	23.8	14.3	14.5	10.51	26.03
4-Dec	15.6	15.7	13.4	Z	11.5	16.4	17.4	18.4	18.1	22.2	18.6	16.8	20.2	3.1	0.5	1.2	2.4	3.7	2.0	2.1	1.7	1.4	1.2	0.9	9.76	22.18
5-Dec	1.1	0.7	2.3	Z	1.3	3.8	2.1	2.5	3.0	4.0	1.8	1.5	3.4	1.4	3.3	3.1	3.4	1.9	2.0	2.6	3.1	3.8	5.5	2.2	2.60	5.50
6-Dec	2.1	1.9	1.5	Z	8.5	4.1	2.2	8.0	13.8	9.8	5.2	2.7	4.7	5.0	3.0	3.2	1.4	10.1	26.8	30.1	28.0	19.2	17.0	12.5	9.60	30.08
7-Dec	14.6	21.0	22.1	Z	9.0	13.5	5.3	18.0	13.0	C	C	C	C	C	M	M	M	M	M	M	M	M	M	M	--	22.13
8-Dec	M	M	M	M	M	M	M	M	M	M	C	C	C	C	7.3	9.0	14.0	22.2	26.3	24.0	23.5	22.1	19.1	20.2	--	26.27
9-Dec	20.2	20.4	22.0	Z	19.8	20.2	19.6	17.4	15.9	12.3	12.0	14.3	12.9	8.8	9.8	13.3	23.3	21.2	20.9	20.7	21.9	20.7	20.5	18.5	17.69	23.26
10-Dec	19.8	20.4	19.4	Z	19.8	18.0	16.5	19.1	17.2	19.3	16.4	11.7	10.0	9.5	9.9	11.9	18.6	18.2	13.1	11.0	9.0	7.9	6.6	6.3	14.33	20.39
11-Dec	5.9	7.5	8.0	Z	7.6	5.1	4.6	2.0	3.2	6.8	5.5	2.8	1.0	7.2	7.0	15.3	13.6	16.1	11.0	8.3	5.1	8.9	10.8	11.7	7.62	16.11
12-Dec	15.0	14.7	13.5	Z	11.7	7.8	9.8	14.2	14.1	10.3	9.4	6.7	6.8	7.1	6.4	12.4	12.5	13.1	9.7	13.3	24.6	25.0	13.6	6.9	12.11	25.00
13-Dec	8.8	12.2	9.0	Z	6.9	10.1	11.0	13.9	17.9	11.2	14.1	11.4	9.2	8.0	6.4	8.2	9.2	9.2	8.8	7.0	7.0	6.7	5.7	5.0	9.43	17.89
14-Dec	5.8	4.7	3.6	Z	4.2	5.7	16.1	24.1	27.1	5.4	8.1	16.5	5.3	4.4	7.3	5.8	32.4	36.4	25.6	33.6	21.2	9.9	13.5	14.5	14.41	36.36
15-Dec	6.8	12.0	11.5	Z	12.6	16.8	19.1	21.7	30.6	27.1	27.9	30.6	32.0	26.2	11.2	13.7	33.5	36.8	38.6	28.9	22.6	24.3	21.6	12.1	22.53	38.63
16-Dec	4.9	8.1	8.3	Z	17.4	19.3	19.3	21.4	22.5	17.9	8.6	13.6	10.9	3.4	4.4	6.4	22.2	11.4	8.6	8.3	8.8	7.1	8.1	7.9	11.68	22.52
17-Dec	9.1	7.0	2.9	Z	3.2	4.7	13.8	11.2	11.9	4.2	5.3	5.9	3.9	4.3	4.5	5.0	4.4	3.6	3.2	3.1	4.7	2.5	2.2	1.9	5.33	13.84
18-Dec	1.5	1.4	1.4	Z	4.2	2.2	2.0	5.1	13.7	9.2	6.3	12.7	4.8	4.9	10.1	10.0	9.9	9.2	11.5	13.5	10.8	5.4	6.5	4.5	6.99	13.72
19-Dec	7.0	8.0	11.2	Z	1.8	0.8	3.8	11.1	6.4	3.8	4.7	6.7	8.4	8.6	3.1	4.3	4.6	9.5	2.0	10.4	8.0	7.9	7.7	8.7	6.45	11.15
20-Dec	4.1	9.4	6.0	Z	11.8	4.9	5.6	7.6	8.0	5.0	7.5	8.1	12.5	17.0	19.3	23.6	26.8	43.7	41.4	34.8	25.1	1.4	2.0	3.1	14.29	43.66
21-Dec	3.8	3.5	3.4	Z	7.3	6.8	11.5	11.3	8.0	3.5	5.9	10.2	10.1	7.8	9.1	7.7	6.9	1.8	1.5	0.7	0.6	0.9	1.7	11.6	5.89	11.62
22-Dec	10.0	6.2	7.3	Z	12.2	11.6	13.1	3.8	2.7	3.8	6.4	2.2	1.0	0.9	0.7	1.4	3.2	1.3	4.1	12.1	5.7	3.0	2.8	2.5	5.13	13.08
23-Dec	2.5	3.4	3.4	Z	5.7	6.5	3.6	4.3	4.4	4.9	5.4	3.8	5.0	4.3	4.7	4.2	4.2	3.5	3.0	1.9	2.7	3.8	2.8	3.0	3.96	6.54
24-Dec	2.7	2.3	3.6	Z	8.2	15.9	9.1	7.0	20.7	14.0	7.7	6.1	5.2	4.4	4.3	5.3	5.1	6.7	5.4	7.0	11.1	10.0	9.6	7.9	7.80	20.70
25-Dec	9.7	8.3	9.1	Z	9.0	16.6	7.6	9.6	12.0	9.1	6.4	6.4	4.5	6.8	6.8	8.6	17.1	12.7	7.2	10.9	10.9	11.5	10.3	10.3	9.63	17.13
26-Dec	12.5	8.4	9.2	Z	12.7	12.4	3.9	2.9	4.6	4.1	7.2	5.4	4.5	2.1	3.5	7.4	5.9	3.1	4.9	3.1	7.9	6.6	6.5	6.3	6.31	12.73
27-Dec	3.6	7.5	7.9	Z	5.1	4.6	8.5	9.2	6.2	7.6	6.6	4.2	3.0	3.6	4.4	5.4	9.4	12.4	3.8	5.4	1.9	3.0	5.2	2.5	5.71	12.45
28-Dec	0.5	1.2	0.6	Z	1.0	5.8	9.0	6.3	6.6	6.8	5.2	7.4	6.4	3.5	0.3	0.4	2.2	17.3	12.0	9.0	4.1	3.4	3.0	3.0	5.00	17.30
29-Dec	1.6	4.3	5.6	Z	4.7	7.4	3.8	16.4	18.7	15.5	24.7	17.6	20.4	9.9	13.8	8.4	6.4	8.9	4.6	14.3	18.9	15.7	25.7	19.0	12.44	25.70
30-Dec	15.1	9.5	8.2	Z	10.8	12.0	11.1	10.1	22.9	9.6	6.9	13.9	9.4	3.8	7.5	7.5	8.9	13.6	9.1	10.7	12.3	12.2	8.0	4.6	10.35	22.94
31-Dec	3.7	3.1	4.1	Z	5.1	5.6	5.0	6.8	3.5	5.8	9.9	5.2	2.4	2.1	2.4	0.5	1.2	3.2	3.1	2.1	1.4	1.3	1.6	2.6	3.54	9.87
																								Diurnal Average		
																								Diurnal Maximum		
Z - zerospan C - Calibration M - Maintenance Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb 24-hr 106 ppb																										



WCAS - Hinton
Summary of Hourly Averages

NOx (NO_x) - ppb
December 2016

Maximum Value: 132.76 ppb on Dec 1 20:00		Maximum Daily Average: 43.47 ppb on Dec 1		Hours in Service: 744																																													
Minimum Value: 0.4 ppb on Dec 28 15:00		Minimum Daily Average: 3.03 ppb on Dec 5		Hours of Data: 685																																													
Maximum Diurnal Average: 21.91 ppb at hour 20		Minimum Diurnal Average: 8.87 ppb at hour 15		Hours of Missing Data: 59																																													
Monthly Average: 14.346 ppb		Percentiles: P ₁ = 0.6 P ₁₀ = 2.5 Q ₁ = 4.9 Median = 9.2 Q ₃ = 17.1 P ₉₀ = 32.2 P ₉₉ = 84.4		Hours of Calibration: 39																																													
				Percent Operational Time: 97.3																																													
Day	Hourly Period Ending At																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Dec	22.6	32.7	34.7	Z	28.9	41.7	54.3	27.5	13.5	21.0	28.3	9.4	21.1	15.0	17.2	22.7	24.2	75.9	111.9	132.8	131.0	68.4	29.2	35.8	43.47	132.76																							
2-Dec	28.4	30.9	35.3	Z	43.4	59.5	50.2	45.4	64.9	29.1	23.4	9.1	9.7	6.0	7.1	11.0	11.0	8.5	9.0	19.0	34.4	15.1	2.7	6.5	24.33	64.90																							
3-Dec	6.8	3.8	4.0	Z	6.7	6.4	2.7	1.3	8.4	15.3	14.4	5.5	5.7	0.8	3.3	18.7	7.6	21.3	33.8	35.6	56.2	49.2	19.0	16.7	14.93	56.18																							
4-Dec	22.2	20.4	16.3	Z	14.0	25.3	33.6	39.6	35.4	52.9	46.7	41.3	41.0	4.7	0.5	1.3	3.1	5.0	2.2	2.6	1.8	1.6	1.2	1.0	17.98	52.88																							
5-Dec	1.1	0.6	2.6	Z	2.5	5.2	2.2	2.5	3.2	4.6	2.1	1.8	5.0	1.8	4.6	3.9	3.8	2.2	2.2	2.7	3.3	3.8	5.7	2.2	3.03	5.67																							
6-Dec	2.1	1.9	1.5	Z	9.4	4.4	2.2	8.8	14.5	11.0	6.3	3.2	6.8	6.6	3.7	3.6	1.4	13.5	40.1	39.7	37.6	21.9	17.4	12.7	11.74	40.13																							
7-Dec	15.0	23.1	23.6	Z	9.2	14.0	5.4	20.0	14.4	C	C	C	C	C	M	M	M	M	M	M	M	M	M	M	M	--	23.60																						
8-Dec	M	M	M	M	M	M	M	M	M	M	C	C	C	C	13.0	14.3	19.6	34.7	45.6	35.2	34.0	27.3	23.8	27.5	--	45.59																							
9-Dec	25.1	27.4	32.6	Z	26.9	30.1	26.4	20.6	18.8	17.9	26.0	38.7	31.2	17.6	18.4	19.0	50.7	33.9	29.1	27.7	31.8	25.7	29.9	24.0	27.37	50.67																							
10-Dec	27.6	30.9	26.0	Z	25.6	21.1	19.5	22.3	21.6	39.3	35.2	26.2	21.0	17.0	16.2	18.6	27.1	22.7	13.4	11.3	9.4	8.2	6.8	6.5	20.59	39.27																							
11-Dec	6.0	8.0	8.2	Z	8.9	5.2	5.0	2.0	3.5	10.6	7.0	3.4	1.1	9.6	8.8	22.1	15.2	17.7	11.3	8.5	5.2	9.2	11.4	12.6	8.72	22.09																							
12-Dec	15.8	15.5	14.1	Z	12.3	8.2	10.2	15.4	15.5	11.6	11.7	9.0	9.4	10.1	7.9	14.5	13.6	13.8	10.6	17.2	38.2	34.7	14.3	7.2	14.38	38.18																							
13-Dec	9.0	13.0	9.8	Z	7.0	10.5	11.3	14.6	20.0	13.1	19.1	16.5	12.7	11.4	9.1	10.7	10.5	10.1	9.0	7.1	7.3	6.8	5.9	5.1	10.86	19.96																							
14-Dec	6.0	4.8	3.7	Z	4.2	5.7	19.9	39.3	42.7	5.9	11.2	28.6	7.4	5.9	9.5	6.7	40.6	75.6	35.8	74.5	28.9	10.5	15.5	15.7	21.68	75.57																							
15-Dec	7.1	13.8	12.5	Z	14.4	20.7	24.2	29.7	57.3	47.6	63.7	85.4	82.7	50.6	14.8	16.6	62.2	71.6	84.6	49.5	28.2	31.7	24.9	13.7	39.45	85.37																							
16-Dec	5.2	8.8	10.1	Z	18.9	21.4	21.0	23.3	27.3	20.4	11.0	20.5	17.4	4.7	5.8	7.7	24.7	11.9	8.9	8.7	9.2	7.4	8.8	8.1	13.53	27.26																							
17-Dec	9.6	7.4	2.9	Z	3.2	4.8	15.7	11.3	12.1	4.4	6.0	7.0	5.0	6.2	5.9	5.9	4.8	4.0	3.5	3.3	5.0	2.6	2.3	2.0	5.88	15.73																							
18-Dec	1.6	1.5	1.5	Z	4.7	2.4	2.2	5.9	15.8	10.3	7.0	15.0	5.5	5.7	11.8	11.3	11.1	10.5	13.3	15.9	12.6	6.2	7.4	5.1	8.01	15.88																							
19-Dec	8.0	8.8	12.6	Z	1.9	0.8	4.3	12.5	7.0	4.2	5.3	8.7	11.5	11.7	3.9	4.9	4.8	9.8	2.0	11.2	8.4	8.1	7.9	9.1	7.29	12.60																							
20-Dec	4.3	10.3	6.4	Z	12.8	5.3	5.6	8.7	10.7	5.2	8.3	9.0	15.7	22.2	28.0	33.7	40.8	114.3	105.5	67.3	48.9	1.4	2.0	3.2	24.76	114.31																							
21-Dec	3.9	3.6	3.5	Z	8.2	7.2	13.4	13.7	9.4	4.0	7.3	13.3	13.9	10.8	11.5	9.3	8.3	2.0	1.7	0.7	0.6	1.0	1.9	13.0	7.06	13.89																							
22-Dec	10.9	6.5	7.5	Z	12.8	12.3	14.1	4.0	2.8	4.2	7.5	2.5	1.2	1.0	0.8	1.6	3.5	1.4	4.5	14.3	5.9	3.2	3.1	2.8	5.59	14.28																							
23-Dec	2.6	3.5	3.6	Z	6.2	7.2	3.9	5.0	5.2	5.8	6.8	4.7	6.7	5.4	6.0	5.2	5.0	4.3	3.7	2.2	3.0	4.3	2.9	3.4	4.64	7.22																							
24-Dec	2.9	2.4	3.7	Z	9.7	18.3	9.3	8.7	35.8	20.8	10.9	9.0	8.4	6.8	5.8	7.1	6.0	8.1	6.2	7.4	11.8	10.4	10.2	8.2	9.89	35.77																							
25-Dec	10.0	8.5	10.0	Z	10.4	22.6	8.3	10.3	14.0	11.3	10.9	12.8	9.4	14.5	11.9	12.2	28.3	14.6	7.4	13.0	13.9	15.4	12.9	13.6	12.88	28.29																							
26-Dec	15.9	9.9	12.3	Z	15.8	15.0	4.0	3.0	4.8	4.6	8.7	7.2	6.0	2.7	4.1	8.5	6.5	3.6	5.4	3.7	9.3	7.3	7.5	6.7	7.51	15.89																							
27-Dec	3.7	8.2	8.3	Z	5.3	4.8	9.0	10.0	6.5	8.2	7.7	5.6	3.9	4.9	5.6	6.2	10.3	13.0	4.0	5.8	2.0	3.2	5.3	2.5	6.26	12.98																							
28-Dec	0.5	1.2	0.6	Z	1.1	6.0	9.5	6.6	6.9	7.3	6.1	8.6	8.3	4.8	0.4	0.4	2.3	22.8	13.2	9.4	4.6	3.5	3.1	3.1	5.66	22.76																							
29-Dec	1.7	4.5	6.1	Z	5.2	10.2	4.1	21.3	25.1	18.5	34.6	26.2	30.7	11.8	17.8	9.7	7.5	9.2	4.7	17.2	21.1	20.3	29.5	20.3	15.53	34.59																							
30-Dec	17.0	9.8	8.9	Z	11.5	16.0	11.3	10.3	36.5	11.2	9.0	32.2	17.3	4.9	9.5	8.6	9.5	14.9	10.1	11.8	13.4	13.2	8.1	4.7	13.03	36.49																							
31-Dec	3.7	3.2	4.2	Z	5.3	5.7	5.1	7.2	3.6	6.3	10.9	5.8	3.2	2.7	3.0	0.5	1.5	3.6	3.4	2.1	1.5	1.4	1.7	2.6	3.84	10.86																							
																								9.87	10.84	10.90	--	11.54	13.93	13.60	15.04	18.57	14.71	15.62	16.07	14.44	9.59	8.87	10.55	15.52	21.82	21.21	21.91	20.62	14.10	10.75	9.86	Diurnal Average	
																								28.41	32.70	35.34	--	43.38	59.47	54.26	45.38	64.90	52.88	63.66	85.37	82.66	50.57	28.04	33.74	62.21	114.31	111.93	132.76	130.98	68.37	29.93	35.82	Diurnal Maximum	
Z - zerospan C - Calibration M - Maintenance																																																	
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ppb 24-hr --- ppb																																																	



WCAS - Hinton
Summary of Hourly Averages

PM2.5 (PM_{2.5}) - µg/m³
December 2016

Maximum Value: 29.10 µg/m ³ on Dec 15 14:00		Maximum Daily Average: 17.90 µg/m ³ on Dec 15		Hours in Service: 744																									
Minimum Value: 0.0 µg/m ³ on Dec 3 00:00		Minimum Daily Average: 2.69 µg/m ³ on Dec 23		Hours of Data: 679																									
Maximum Diurnal Average: 9.64 µg/m ³ at hour 1		Minimum Diurnal Average: 5.12 µg/m ³ at hour 17		Hours of Missing Data: 65																									
Monthly Average: 7.505 µg/m ³		Percentiles: P ₁ = 0.0 P ₁₀ = 1.1 Q ₁ = 3.4 Median = 6.3 Q ₃ = 10.7 P ₉₀ = 15.5 P ₉₉ = 22.4		Hours of Calibration: 0																									
				Percent Operational Time: 91.3																									
Day	Hourly Period Ending At																								Daily Average	Daily Maximum			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24					
1-Dec	7.4	12.9	17.1	15.3	14.9	18.4	13.2	6.6	4.7	2.7	3.3	3.2	5.5	9.3	9.6	5.1	7.2	9.6	10.0	13.9	17.9	12.5	13.9	16.5	10.44	18.40			
2-Dec	18.3	10.4	6.0	6.5	4.9	13.5	9.3	5.4	4.2	8.3	3.5	2.0	2.2	2.9	1.6	5.8	10.2	5.5	4.3	2.8	0.4	2.6	4.0	0.0	5.60	18.33			
3-Dec	0.0	1.2	0.9	3.3	3.8	4.2	3.9	0.6	0.0	3.6	5.0	6.5	2.7	2.8	0.0	0.0	6.0	4.2	4.3	7.0	16.3	21.5	15.3	11.3	5.18	21.51			
4-Dec	11.0	14.4	9.7	4.8	1.1	2.5	11.8	6.9	4.3	0.9	10.6	10.8	5.0	5.7	0.0	0.0	0.0	0.4	0.0	1.4	3.2	4.4	4.3	8.8	5.09	14.41			
5-Dec	0.0	0.0	5.3	3.0	1.3	3.8	7.4	4.6	1.5	9.6	2.1	3.8	1.1	3.7	2.7	1.3	8.0	0.8	5.2	0.0	10.0	2.3	11.1	18.2	4.45	18.21			
6-Dec	16.8	25.7	16.4	10.7	10.5	5.9	3.7	4.8	5.5	9.4	7.1	6.7	7.4	8.7	10.4	13.3	0.2	2.7	8.9	12.4	5.1	9.6	9.6	6.3	9.07	25.66			
7-Dec	5.3	10.8	16.5	12.6	11.7	7.7	4.9	1.8	0.7	3.1	6.8	6.4	5.7	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	16.45			
8-Dec	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	--			
9-Dec	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	M	M	10.6	11.2	17.7	18.7	--	18.68			
10-Dec	14.8	15.0	19.1	11.5	19.0	8.3	8.4	15.4	13.0	10.5	13.8	15.0	18.6	16.3	16.3	10.5	9.4	11.3	13.6	13.8	13.0	14.3	11.6	10.7	13.47	19.05			
11-Dec	5.5	9.5	18.1	18.6	19.1	14.3	11.8	4.1	3.4	4.2	0.0	0.0	0.0	0.6	3.4	3.8	3.0	3.7	5.5	10.2	3.5	10.7	7.0	10.2	7.08	19.06			
12-Dec	5.0	5.7	16.8	22.1	9.5	9.1	8.7	0.9	3.1	8.9	13.2	8.1	6.9	4.4	3.1	0.0	3.1	5.7	5.2	4.9	3.8	7.9	9.0	8.5	7.23	22.06			
13-Dec	3.8	AF	1.6	3.1	3.6	2.6	6.5	8.0	4.1	6.3	8.0	13.2	16.5	13.0	3.0	1.2	0.0	0.0	1.5	3.6	5.5	12.5	18.8	26.5	7.09	26.48			
14-Dec	17.9	6.9	12.1	8.3	10.4	8.2	5.7	5.7	12.3	8.6	5.1	16.5	21.2	19.3	4.2	3.4	3.0	8.0	9.9	6.3	7.7	3.6	6.1	8.2	9.10	21.17			
15-Dec	16.7	22.5	22.2	17.9	8.6	17.4	24.2	22.1	18.7	14.6	14.2	22.3	27.1	29.1	22.3	12.1	10.0	14.3	22.1	20.6	15.2	13.7	13.9	7.7	17.90	29.10			
16-Dec	3.9	9.0	11.7	10.6	10.7	8.2	11.1	10.8	9.9	11.1	6.2	11.4	16.0	14.8	6.8	0.0	0.0	0.0	0.0	2.1	3.9	4.2	5.7	5.1	7.22	16.00			
17-Dec	8.8	5.2	1.2	9.5	8.3	0.4	0.0	8.7	9.4	11.2	5.7	3.8	10.1	9.3	4.2	9.8	7.1	2.6	1.5	4.8	7.7	4.6	5.6	9.6	6.22	11.21			
18-Dec	6.9	6.5	4.7	5.4	6.3	8.9	7.3	4.9	13.2	15.3	9.4	12.3	12.9	8.2	5.9	12.2	14.6	11.5	12.7	16.1	15.6	16.1	9.4	8.4	10.19	16.11			
19-Dec	16.3	12.3	10.3	9.7	4.4	2.1	0.0	4.0	6.6	4.5	4.4	7.6	9.0	4.0	5.0	0.7	0.0	0.0	5.1	4.6	3.5	6.3	1.7	8.7	5.46	16.30			
20-Dec	11.5	13.0	12.0	3.9	8.8	8.7	6.0	4.5	3.9	1.8	0.4	3.6	2.8	9.2	9.8	14.6	11.9	22.4	22.6	17.9	11.9	7.4	3.5	4.1	9.00	22.64			
21-Dec	0.0	6.3	4.9	6.7	14.9	10.5	15.7	20.8	16.1	11.7	8.0	16.5	19.6	20.8	12.7	13.8	12.8	11.0	5.3	2.7	1.3	3.1	5.5	10.5	10.46	20.78			
22-Dec	16.8	18.5	14.3	16.1	12.8	19.6	18.2	17.4	5.9	10.3	9.3	7.9	6.6	2.8	3.0	4.4	3.7	6.4	3.1	6.2	6.8	3.9	2.5	1.7	9.09	19.61			
23-Dec	3.8	4.3	2.3	1.2	2.3	1.6	5.2	3.2	1.6	2.6	1.9	3.1	0.5	2.4	1.2	0.0	5.1	6.2	AF	AF	AF	AF	AF	AF	2.69	6.18			
24-Dec	AF	0.3	4.6	1.7	4.2	3.3	6.8	3.2	4.7	5.7	5.2	5.7	2.2	3.7	5.0	2.1	2.3	3.1	1.6	5.7	1.8	6.7	6.4	8.4	4.11	8.43			
25-Dec	AF	AF	7.4	6.2	2.8	2.2	5.0	4.5	7.1	6.4	5.7	8.3	7.4	6.1	11.7	12.8	12.6	14.3	9.5	8.2	8.5	9.5	8.5	5.2	7.71	14.26			
26-Dec	10.8	10.6	4.2	7.7	9.6	2.9	0.1	4.5	1.3	0.0	13.3	13.1	6.8	0.7	0.0	8.2	6.8	9.9	9.1	3.6	7.6	9.2	12.3	11.0	6.79	13.32			
27-Dec	16.4	10.0	10.3	9.5	6.7	4.4	7.6	9.3	8.1	5.5	10.9	5.8	1.1	5.2	6.4	1.3	0.8	12.1	12.1	5.4	4.5	0.9	5.7	7.4	6.98	16.45			
28-Dec	3.8	4.4	1.3	3.4	1.2	5.7	1.3	2.7	0.9	5.8	6.4	5.9	8.3	12.6	5.7	0.0	0.0	3.1	3.4	11.0	3.0	5.1	1.1	0.0	4.00	12.57			
29-Dec	5.5	1.4	0.5	4.3	2.5	0.0	6.7	0.0	0.3	3.8	2.6	0.0	7.9	8.1	4.1	5.5	1.5	5.0	2.2	0.0	4.5	1.2	14.6	12.7	3.96	14.62			
30-Dec	20.0	10.3	3.0	9.2	12.0	8.7	0.0	0.0	0.0	2.3	3.5	7.0	13.9	1.5	4.3	4.3	3.8	7.0	16.3	9.2	15.1	10.6	10.0	8.2	7.50	19.95			
31-Dec	13.3	12.0	4.2	11.1	5.9	5.6	8.1	2.0	6.2	4.0	1.2	5.5	1.2	4.2	1.5	0.0	0.0	0.0	4.0	4.2	8.1	7.2	1.3	1.8	4.69	13.28			
		9.64	9.59	8.92	8.75	7.99	7.20	7.55	6.46	5.88	6.64	6.44	7.99	8.49	8.19	5.85	5.21	5.12	6.46	7.37	7.35	7.71	7.96	8.43	9.08	Diurnal Average			
		19.95	25.66	22.20	22.06	19.06	19.61	24.21	22.06	18.69	15.29	14.23	22.34	27.10	29.10	22.32	14.58	14.57	22.38	22.64	20.60	17.86	21.51	18.80	26.48	Diurnal Maximum			
M - Maintenance		AF - Analyzer Failure																											
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr 80 ul/m ³				24-hr 30 ul/m ³																							

Calibration Summary

Parameter H₂S
 Air Monitoring Network West Central Airshed Society

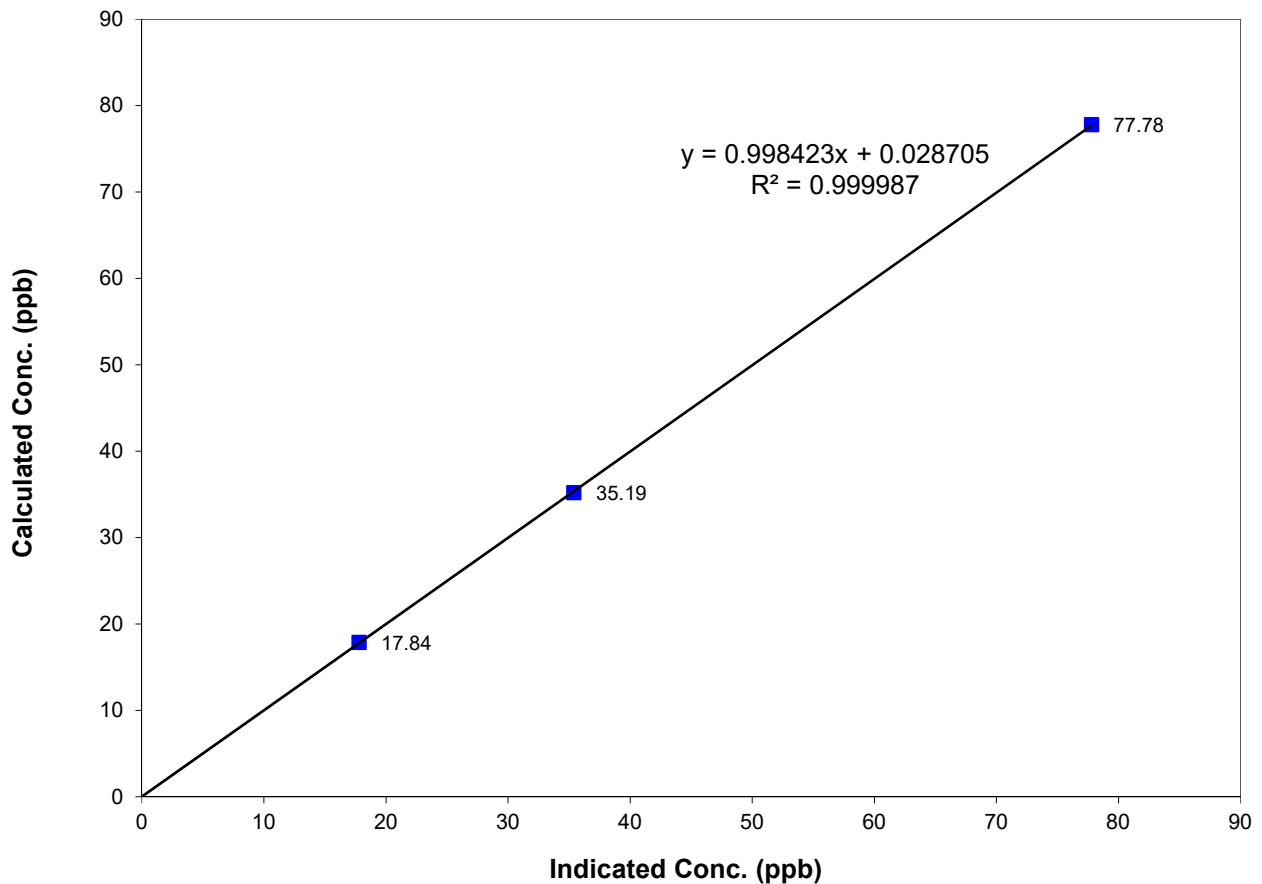
Station Information

Calibration Date	December 7, 2016	Previous Calibration	November 11, 2016
Station Number	906	Station Location	Hinton
Start Time (MST)	9:00	End Time (MST)	0:00
Analyzer make/model	TECO 45C	Analyzer serial #	45c-71671-369

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.00	-0.10	N/A		
77.78	77.80	0.9997	Slope	0.998423
35.19	35.40	0.9941	Intercept	0.028705
17.84	17.80	1.0020	Correlation Coefficient	0.999993
Calibration Compliance		Pass		Pass

H₂S Calibration Curve



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 906, Hinton

Calibration Date: December 7, 2016

Parameter: O₃

Instrument: Teco 49i

Serial Number: 1150790050

Previous Calibration Date: November 10, 2016

Calibration: Routine

Calibration Equipment: 2B Tech Model 306 SN142

Barometric Pressure: 27.10" Hg

Calibration Method: Certified Ozone Generator

Temperature: 20.5° C

Technician: L. Burns

Instrument Settings	Background	Coefficient	Monitoring Range
Previous	-0.3	1.033	500 ppb
Current	-0.2	0.989	500 ppb

Final Zero: -1.1 ppb

Final Span: 360.6 ppb

As Found Correction Factor: 0.952

Calibration System Flow Rate (LPM)	Calculated Concentration C _c (ppb)	Raw Count Output R _c	Indicated Concentration C _i (ppb)	Correction Factor C _c /C _i
3.000	399.0	23971.9	398.3	1.002
3.000	215.0	13024.6	215.8	0.996
3.000	105.0	6451.5	106.2	0.989
3.000	0.0	9.0	-1.2	

Results of Linear Regression

R _c vs C _c	Slope	Intercept	R ²
Previous	60.254330	57.227050	0.999907
Current	59.982150	82.458620	0.999954
C _i vs C _c			
Current	1.000000	-0.000038	0.999954

Average Correction Factor: 0.996

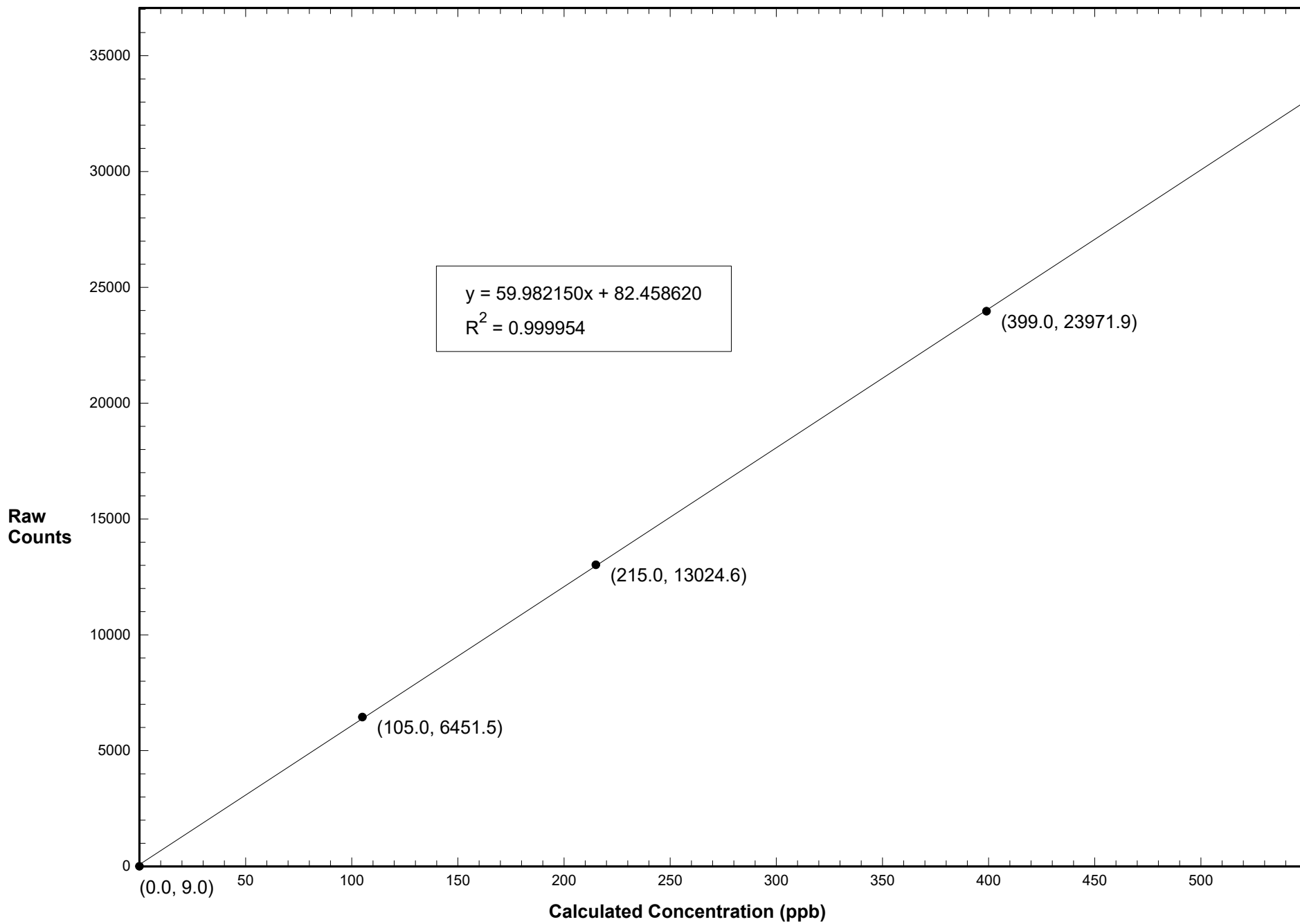
Previous Correction Factor: 1.004

Current Correction Factor: 1.002

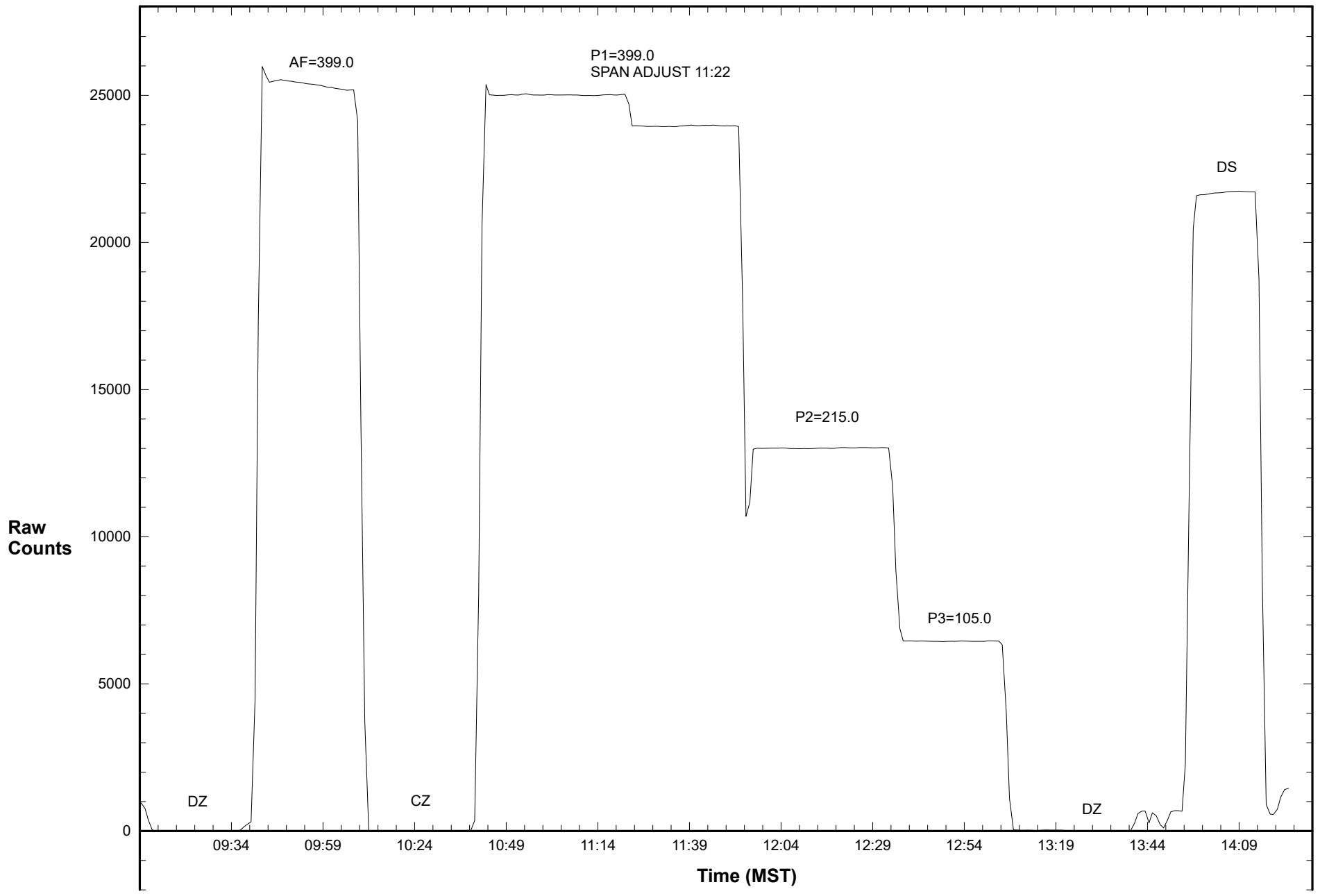
Percent Change of Correction Factor: -0.2

Comments: SAMPLE FLOWS = 0.732 AND 0.712 LPM

Station 906 O3 December 7, 2016: Linear Regression



Station 906 O3 December 7, 2016: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 906, Hinton
 Calibration Date: December 7, 2016
 Parameter: SO₂

Instrument: TECO 43i	Serial Number: CM12499009	Previous Calibration Date: November 10, 2016
Calibration: Routine	Calibration Equipment: Sabio 2010 SN 08600312	Barometric Pressure: 27.10" Hg
Calibration Method: Standard Gas Dilution	Cylinder ID: FF13698	Temperature: 20.5° C
Cylinder Concentration: 6.11 ppm SO ₂	In Service: 10/14/2015 EXP 10/13/2017	Technician: L. Burns

Instrument Settings	SO ₂ bkg ppb	SO ₂ Coefficient	Monitoring Range
Previous	26.1	0.989	100 ppb
Current	25.4	0.992	100 ppb

Final Zero: 0.2 ppm Final Span: 70.0 ppm As Found Correction Factor: 1.026

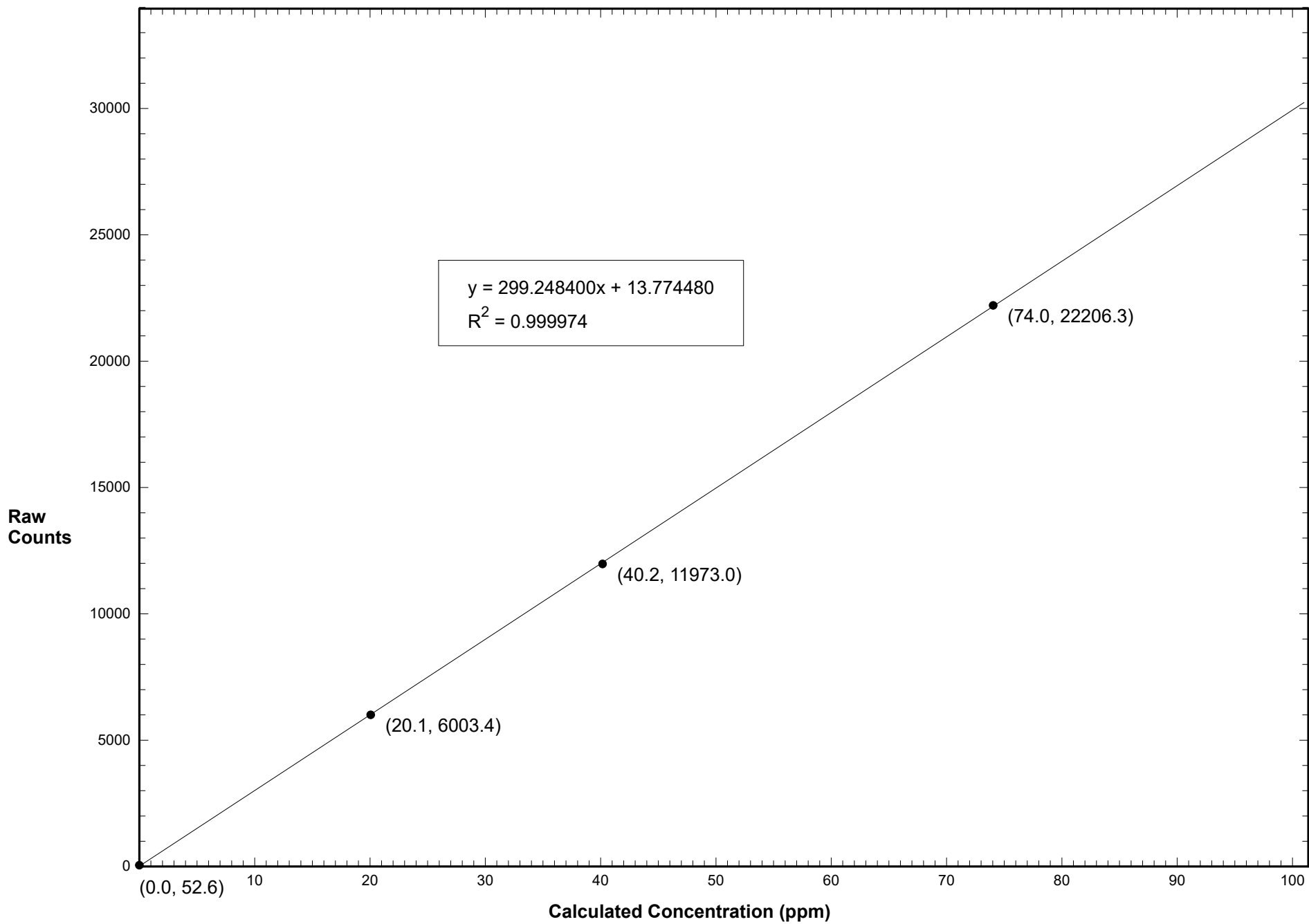
SO ₂ Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration C _c (ppm)	Raw Count Output R _c	Indicated Concentration C _i (ppm)	Correction Factor C _c /C _i
0.0749	6.108	74.0	22206.3	74.2	0.998
0.0402	6.070	40.2	11973.0	40.0	1.005
0.0200	6.055	20.1	6003.4	20.0	1.002
0.0000	6.000	0.0	52.6	0.1	

Results of Linear Regression			
R _c vs C _c	Slope	Intercept	R ²
Previous	300.240600	-36.021570	0.999992
Current	299.248400	13.774480	0.999974
C _i vs C _c			
Current	1.000000	0.000005	0.999974

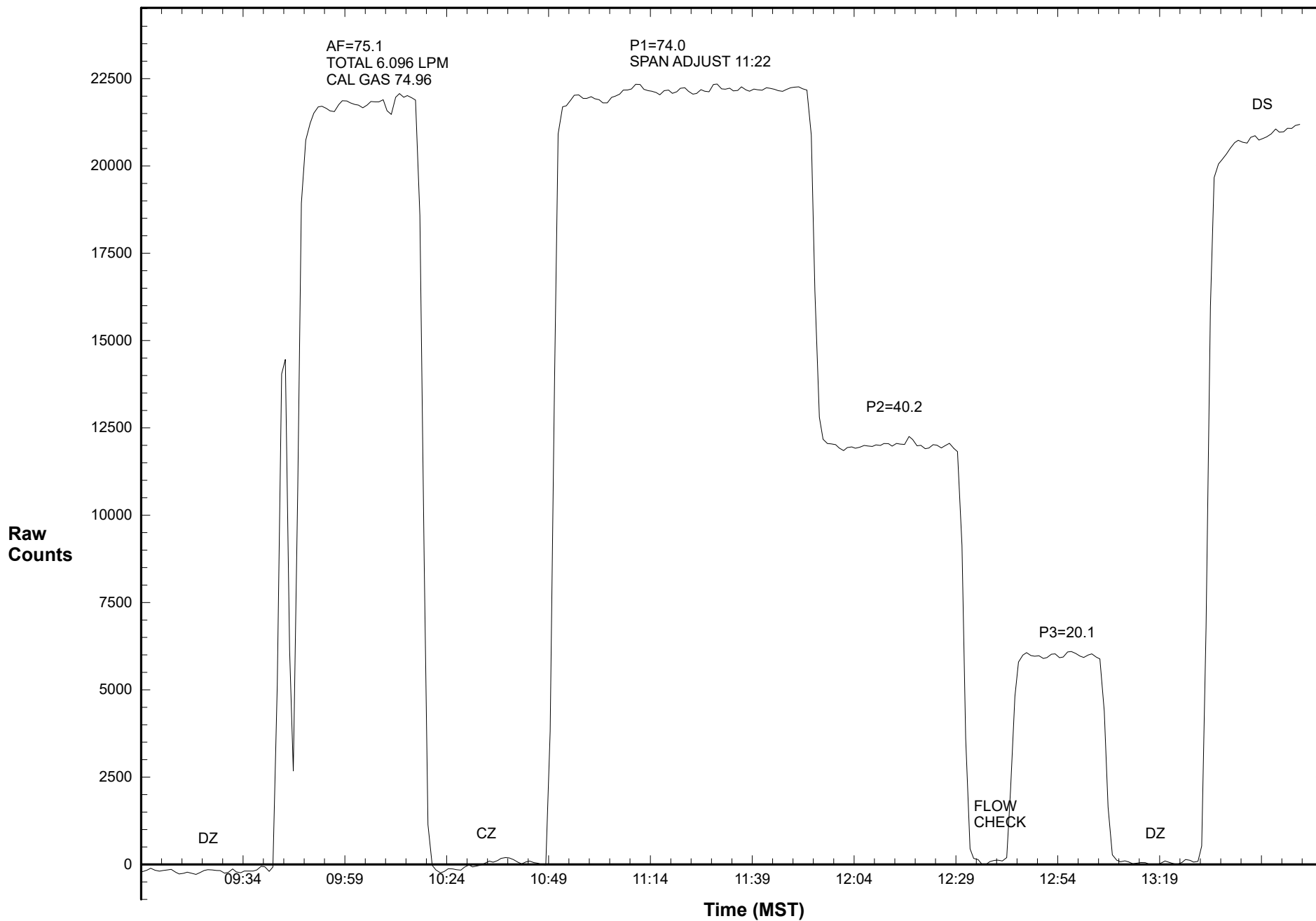
Average Correction Factor: 1.002
 Previous Correction Factor: 0.999
 Current Correction Factor: 0.998
 Percent Change of Correction Factor: -0.1

Comments:

Station 906 SO2 December 7, 2016: Linear Regression



Station 906 SO2 December 7, 2016: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 906, Hinton

Calibration Date: December 7, 2016

Parameter: TRS

Instrument: Teco 43C

Serial Number: 43CTL-60324-326

Previous Calibration Date: November 10, 2016

Calibration: Routine

Calibration Equipment: Sabio 2010 SN 08600312

Barometric Pressure: 27.10" Hg

Calibration Method: Standard Gas Dilution

Permeation Device ID: SV14360, 4.89 ppm H₂S

Temperature: 20.5° C

Permeation Rate: 0 ng/min

In Service: 10/21/2016 EXP 10/04/2019

Technician: L. Burns

Instrument Settings

H₂S bkg ppb

H₂S Coefficient

Monitoring Range

Previous

1.90

0.800

100 ppb

Current

1.84

0.776

100 ppb

Final Zero: 0.0 ppb

Final Span: 60.9 ppb

As Found Correction Factor: 0.982

Calibration
System Flow
Rate (LPM)

Calculated
Concentration
C_c (ppb)

Raw Count
Output
R_c

Indicated
Concentration
C_i (ppb)

Correction
Factor
C_c/C_i

0.046

77.8

23433.5

77.8

1.000

0.020

35.2

10576.2

35.2

0.999

0.010

17.8

5274.6

17.6

1.011

0.000

0.0

-7.0

0.1

Results of Linear Regression

R_c vs C_c

Slope

Intercept

R²

Previous

300.774500

-31.043290

0.999958

Current

301.769400

-49.166810

0.999982

C_i vs C_c

Current

1.000000

-0.000005

0.999982

Average Correction Factor:

1.003

Previous Correction Factor:

1.001

Current Correction Factor:

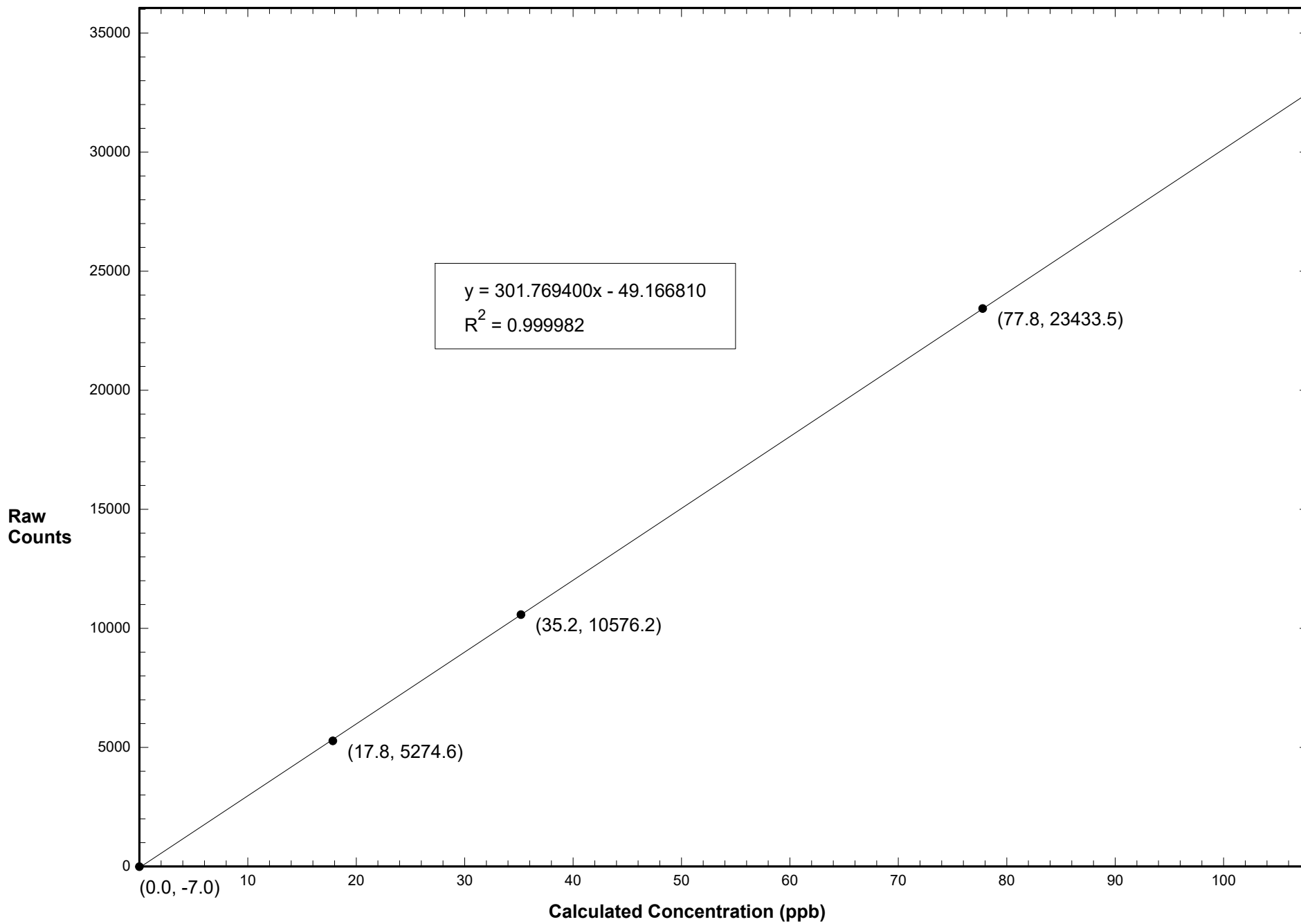
1.000

Percent Change of
Correction Factor:

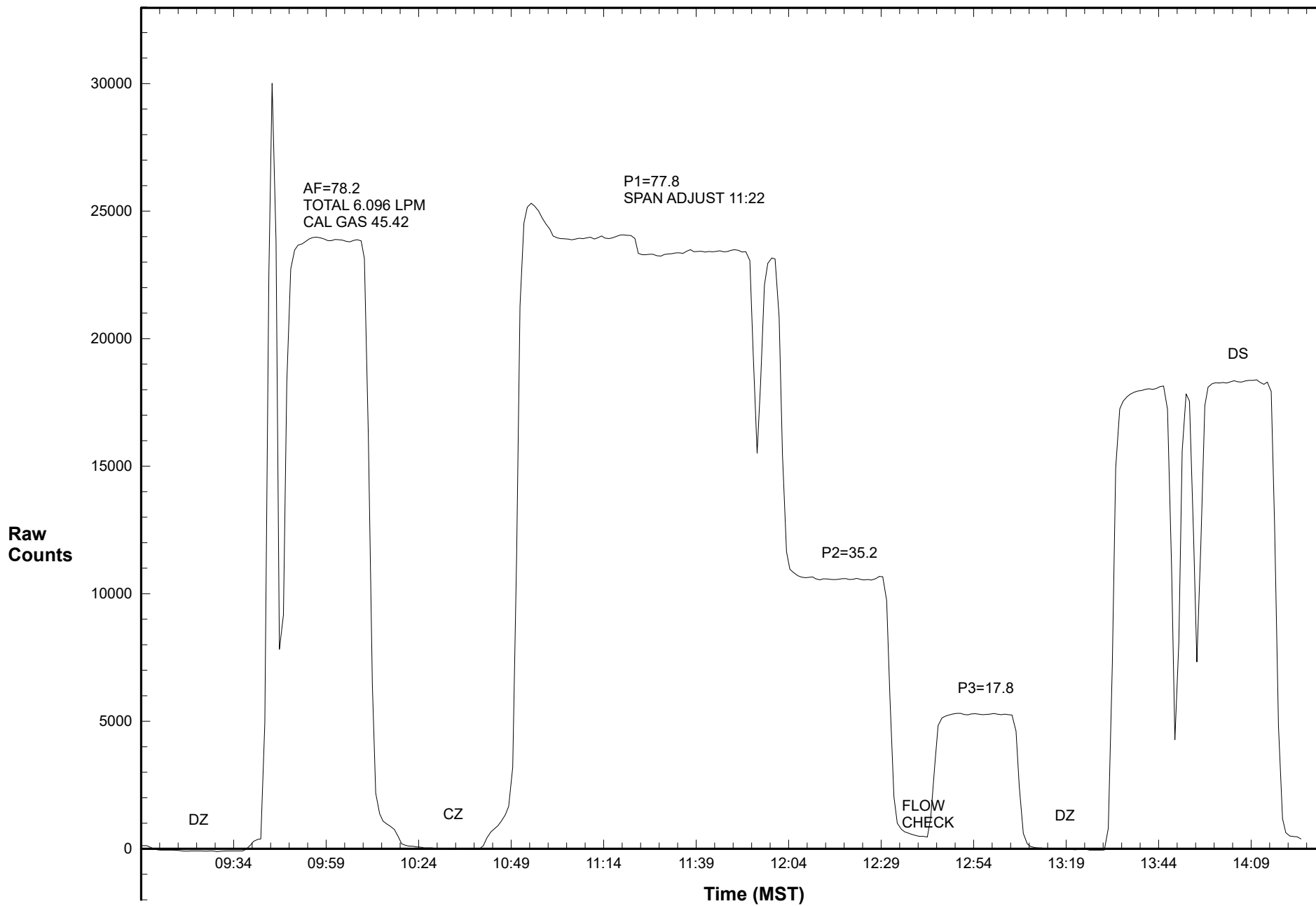
-0.1

Comments: SAMPLE FLOW = 0.475

Station 906 TRS December 7, 2016: Linear Regression



Station 906 TRS December 7, 2016: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 906, Hinton

Calibration Date: December 8, 2016

Parameter: NO/NO₂/NO_x

Instrument: Teco 42i

Serial Number: 0905034788

Previous Calibration Date: NA

Calibration: Install

Calibration Equipment: Sabio 2010 SN 08600312

Barometric Pressure: 27.20" Hg

Calibration Method: Standard Gas Dilution/GPT

Cylinder ID: FF13698

Temperature: 20.4° C

Cylinder Concentration: 12.5 ppm NO

In Service: 10/14/2015 EXP 10/13/2017

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	NA	NA	NA	NA	NA	NA	
Current	13.4	13.8	NA	1.274	1.003	0.995	

NO	Final Zero: 0.5 ppb		Final Span: 156.4 ppb		As Found Correction Factor: NA
NO ₂	Final Zero: 0.3 ppb		Final Span: 2.2 ppb		As Found Correction Factor: NA
NO _x	Final Zero: 0.4 ppb		Final Span: 157.6 ppb		As Found Correction Factor: NA

Results of Linear Regression			Slope	Intercept	R ²
NO	R _c vs C _c	Previous	NA	NA	NA
		Current	149.895600	-34.545580	0.999986
	C _i vs C _c	Current	1.000000	0.000000	0.999986
NO ₂	R _c vs C _c	Previous	NA	NA	NA
		Current	151.132300	-44.731780	0.999933
	C _i vs C _c	Current	1.000000	-0.000011	0.999933
NO _x	R _c vs C _c	Previous	NA	NA	NA
		Current	150.676600	-33.088950	0.999971
	C _i vs C _c	Current	1.000000	0.000000	0.999971

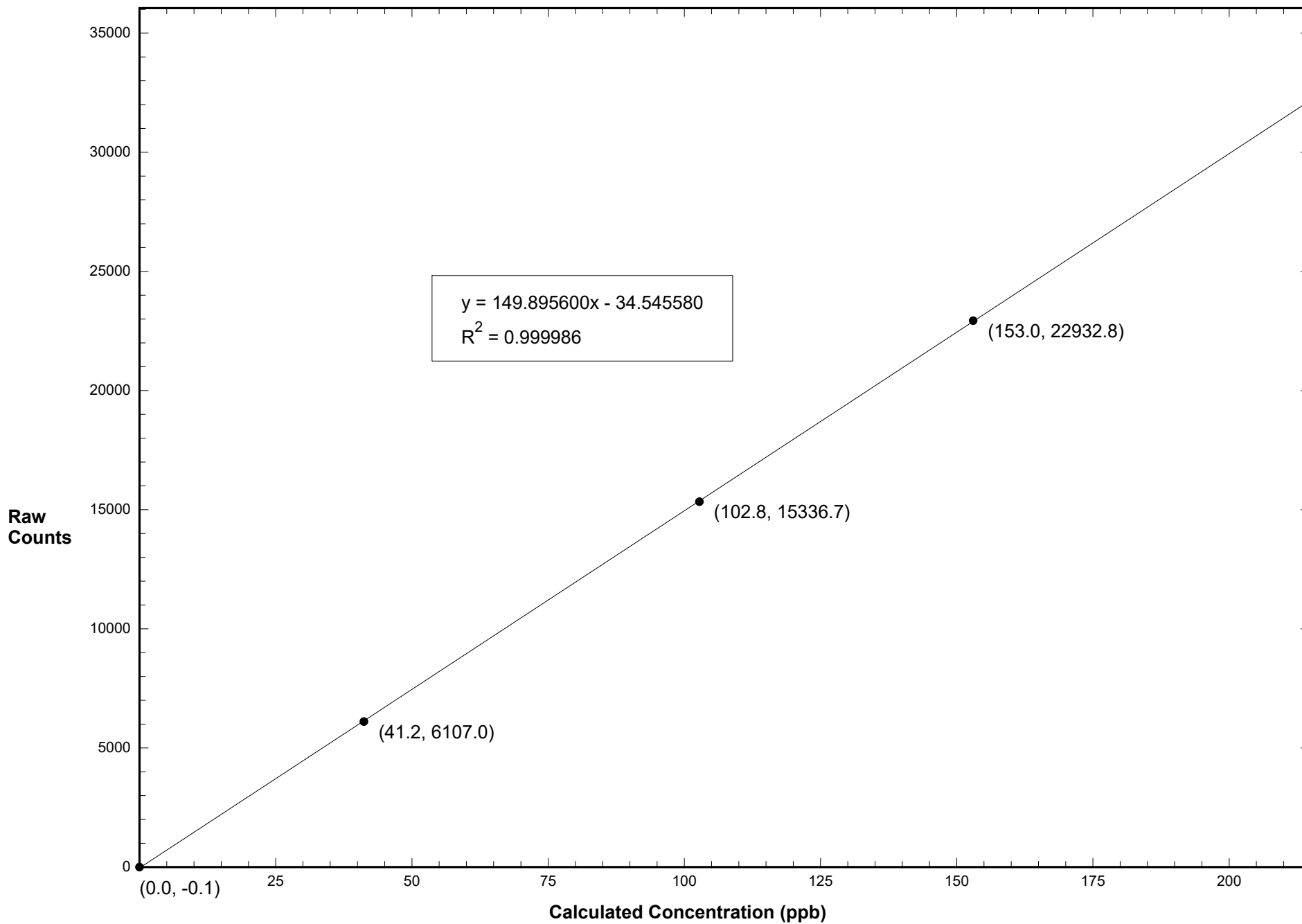
Comments: SAMPLE FLOW = 0.475 LPM

Calibration Data Summary (Page 2)

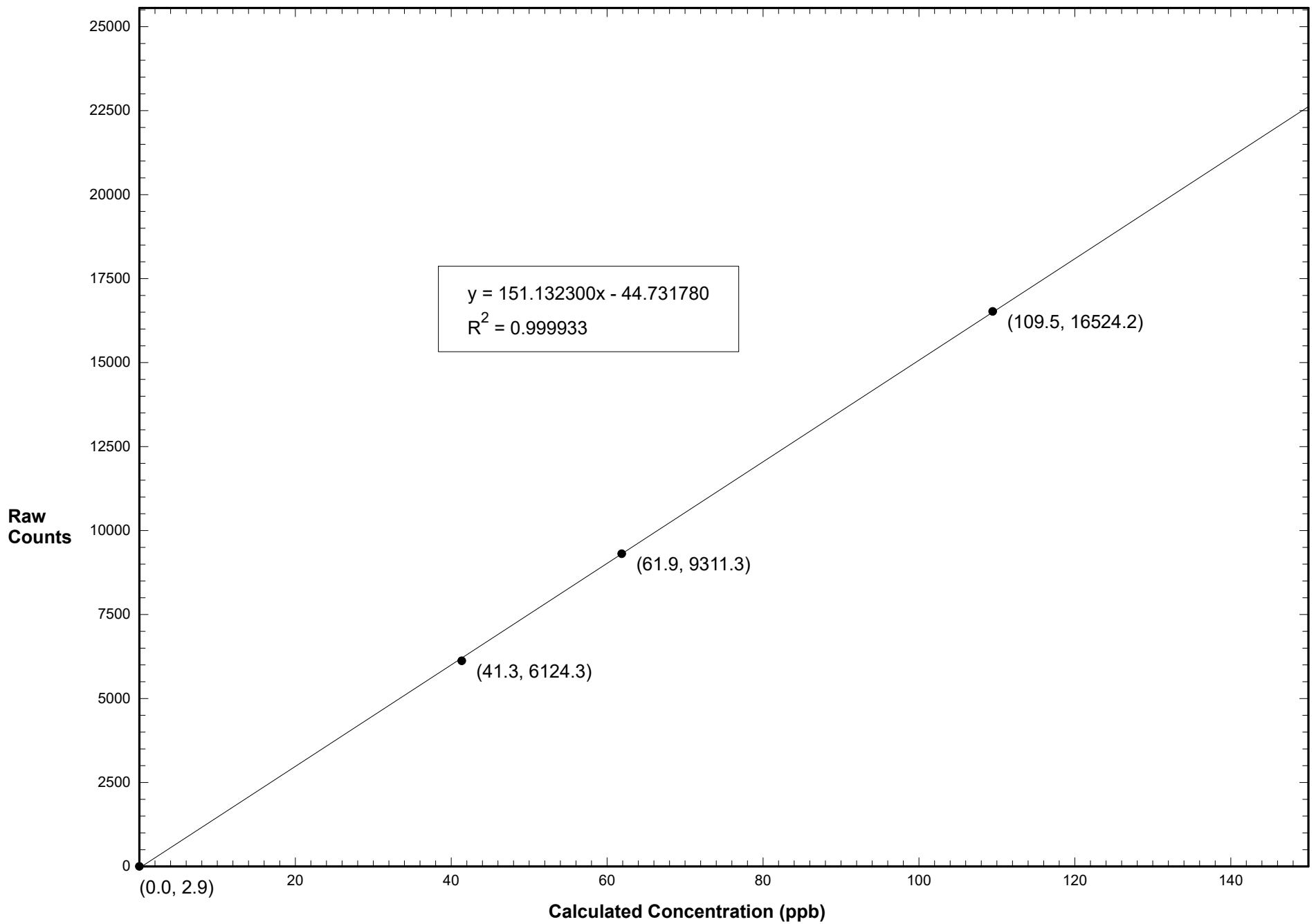
December 8, 2016 - Station 906

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		
0.07462	6.021	153.0	22932.8	153.2	0.999		
0.04985	6.014	102.8	15336.7	102.5	1.002		
0.01984	6.001	41.2	6107.0	41.0	1.005		
0.00000	6.000	0.0	-0.1	0.2			
NO Calibration					Average Correction Factor:	1.002	
0.07462	6.021	153.0	23073.5	153.4	0.998		
0.04985	6.014	102.8	15373.3	102.2	1.005		
0.01981	6.001	41.1	6170.5	41.2	0.999		
0.00000	6.000	0.0	-12.5	0.1			
NO _x Calibration					Average Correction Factor:	1.001	
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
152.3	6382.5	42.8	109.5	16524.2	109.6	0.998	1.002
152.3	13514.5	90.4	61.9	9311.3	61.9	0.999	1.001
152.3	16590.6	110.9	41.3	6124.3	40.8	1.013	0.987
			0.0	2.9	0.3		
					Average Correction Factor:	1.004	
NO ₂ Gas Phase Titration					Average Converter Efficiency: 0.996		
Parameter	Correction Factor (Previous)	Correction Factor: (Current)	Percent Change of Correction Factor				
NO	0.000	0.999	0.0				
NO ₂	0.000	0.998	0.0				
NO _x	0.000	0.998	0.0				

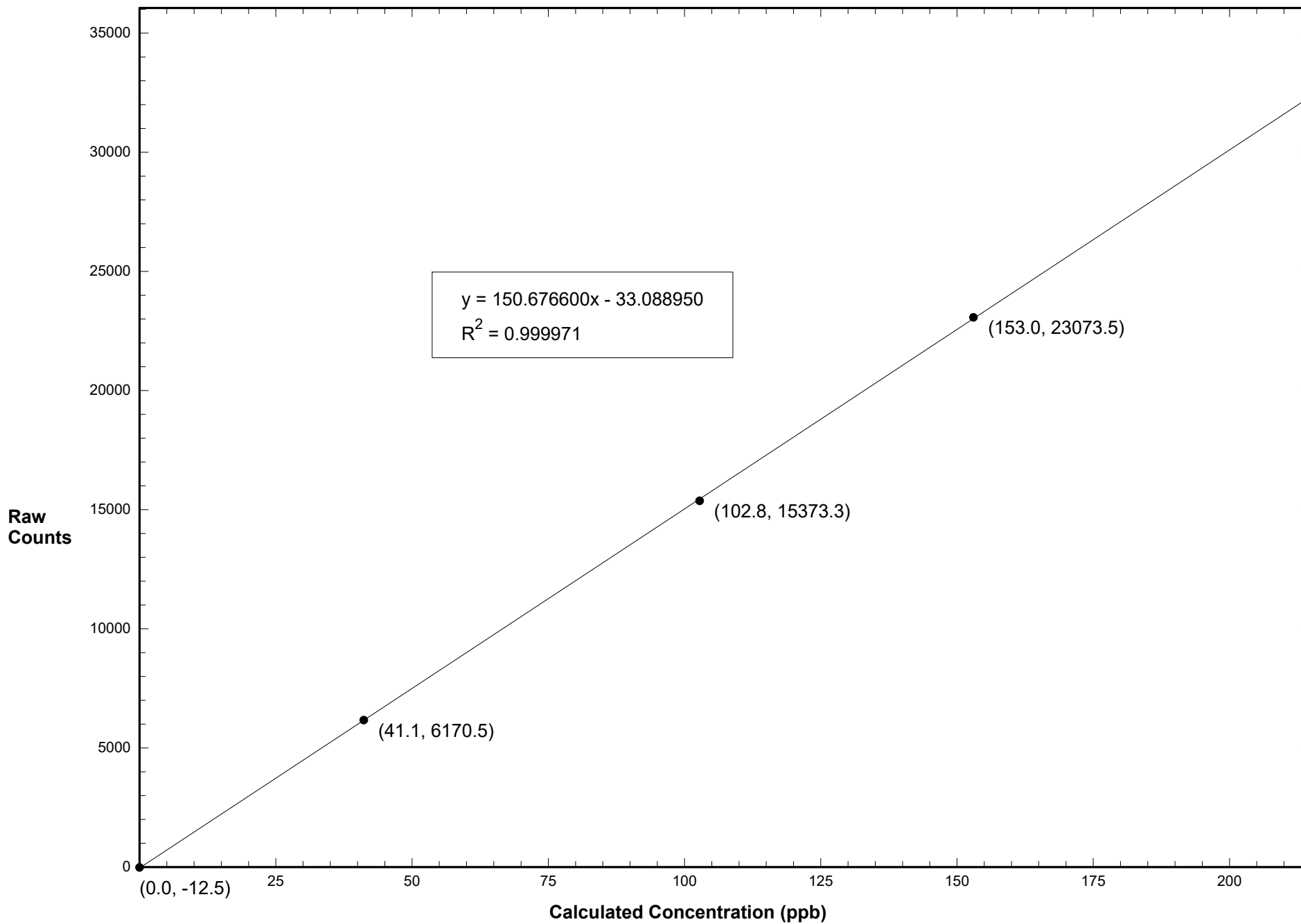
Station 906 NO December 8, 2016: Linear Regression



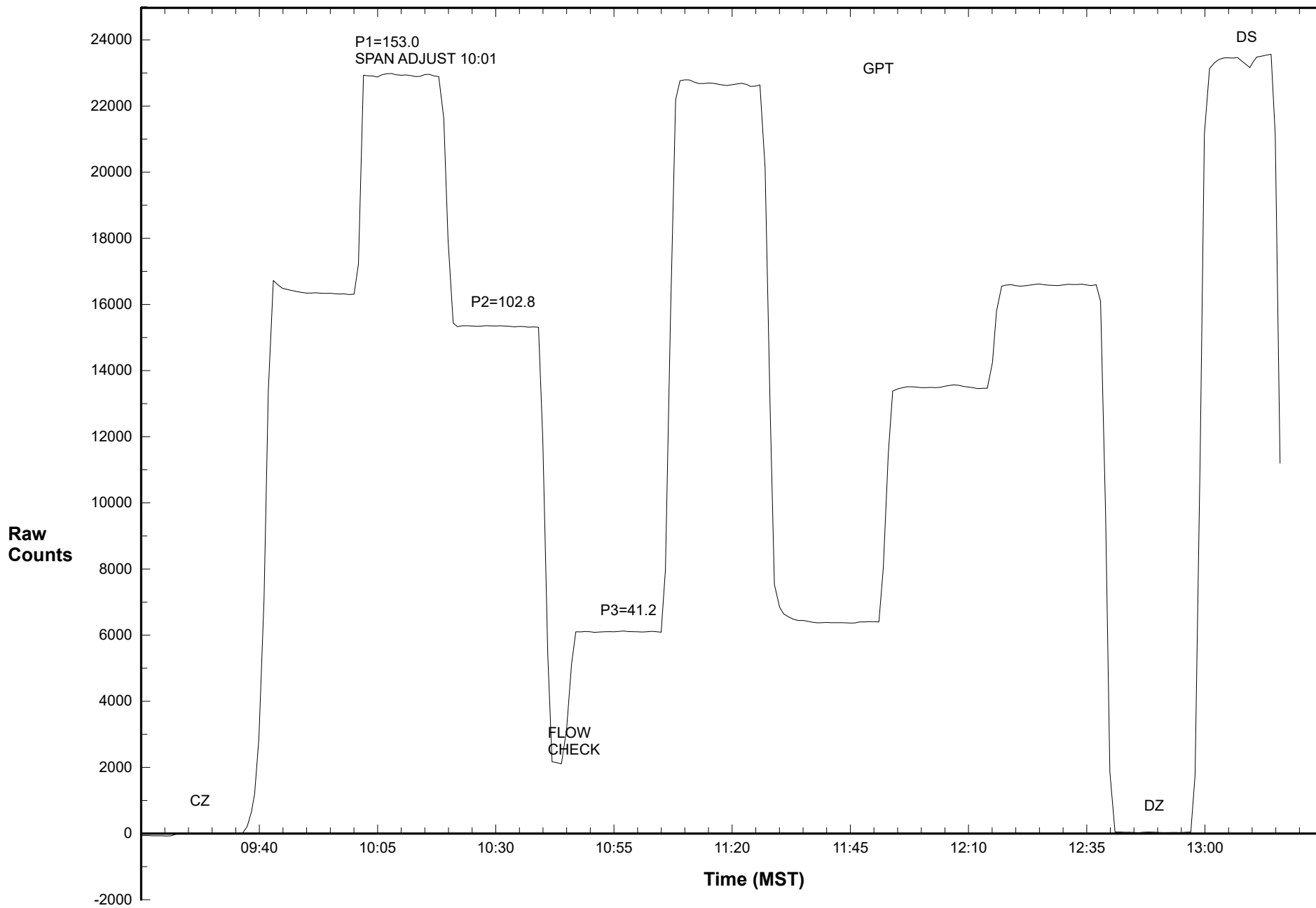
Station 906 NO2 December 8, 2016: Linear Regression



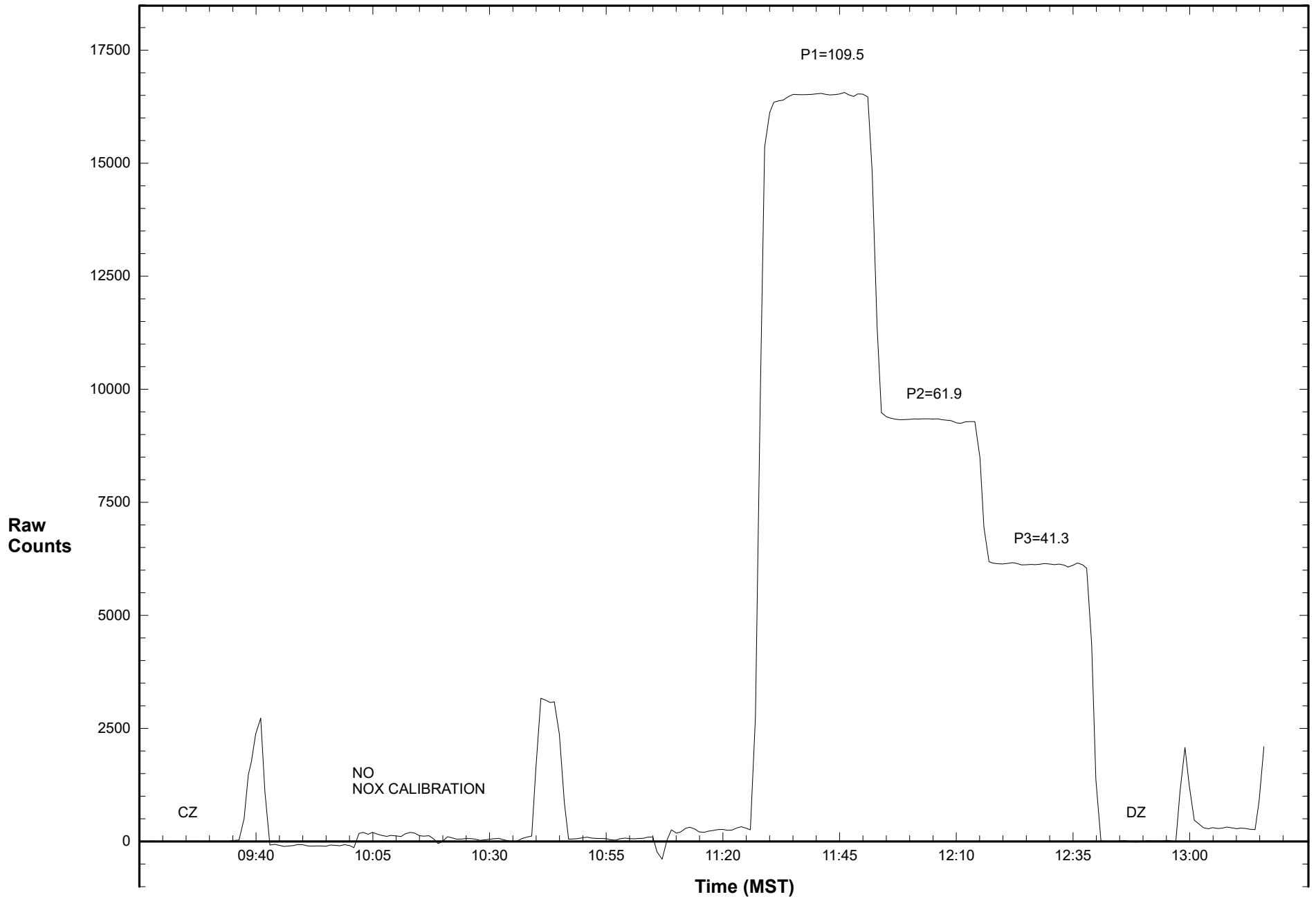
Station 906 NOX December 8, 2016: Linear Regression



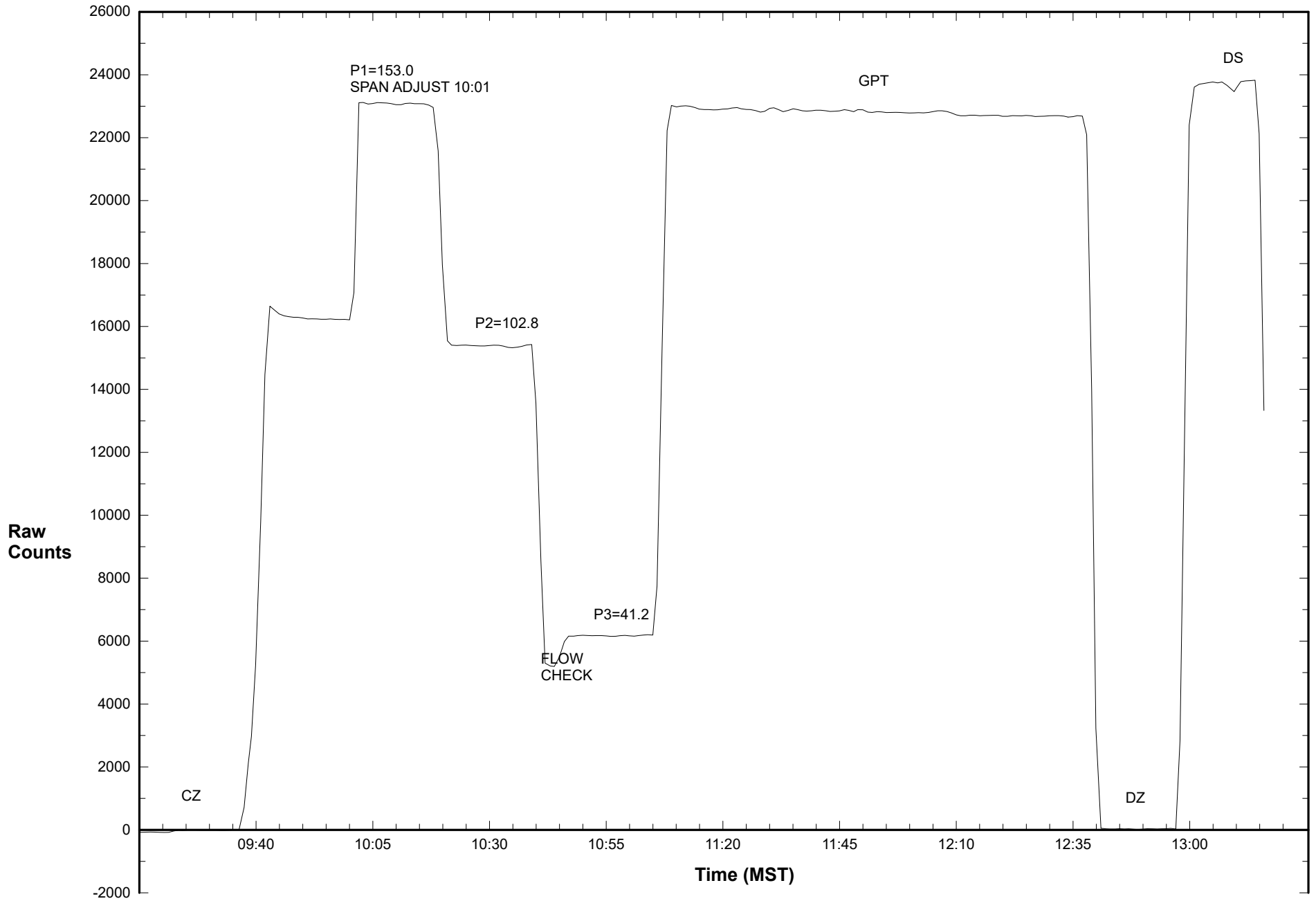
Station 906 NO December 8, 2016: Calibration Graph



Station 906 NO2 December 8, 2016: Calibration Graph



Station 906 NOX December 8, 2016: Calibration Graph



WEST CENTRAL AIRSHED SOCIETY

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

**AMS 906
HINTON
DECEMBER 2016**

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 - Hinton
Summary of Hourly Averages

External Temperature (ET) - C
December 2016

Maximum Value: 4.50 C on Dec 2 15:00 Maximum Daily Average: 1.98 C on Dec 21																							Hours in Service: 744 Hours of Data: 744			
Minimum Value: -31.8 C on Dec 9 10:00 Minimum Daily Average: -27.52 C on Dec 9 Maximum Diurnal Average: -8.04 C at hour 15 Minimum Diurnal Average: -13.20 C at hour 5 Monthly Average: -11.623 C Percentiles: P₁ = -30.5 P₁₀ = -25.2 Q₁ = -20.9 Median = -10.5 Q₃ = -1.8 P₉₀ = -0.2 P₉₉ = 2.4																							Hours of Missing Data: 0 Hours of Calibration: 0 Percent Operational Time: 100.0			
Day	Hourly Period Ending At																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1-Dec	-6.2	-5.7	-5.4	-5.3	-5.0	-4.6	-4.8	-4.6	-4.2	-3.2	-2.3	-0.8	1.0	1.0	0.2	-0.8	-2.0	-3.7	-5.5	-7.1	-8.6	-8.6	-9.0	-10.2	-4.40	0.96
2-Dec	-12.1	-13.3	-14.1	-14.6	-14.7	-12.4	-13.0	-12.1	-12.4	-8.0	-2.1	0.0	2.2	4.1	4.5	3.7	2.4	1.9	0.5	0.6	-0.9	-1.7	0.6	0.0	-4.62	4.50
3-Dec	0.2	-0.2	-1.2	-0.2	-1.1	-1.1	-1.4	-2.9	-2.5	-1.8	-0.7	1.2	1.2	-0.3	-1.0	-1.6	-2.2	-2.8	-4.7	-6.5	-8.0	-8.7	-9.6	-9.8	-2.74	1.18
4-Dec	-10.0	-10.2	-9.5	-8.2	-9.7	-10.5	-11.7	-12.1	-12.5	-13.0	-11.8	-10.4	-7.3	-4.0	-3.6	-5.2	-7.3	-8.6	-9.4	-10.2	-10.9	-12.3	-12.8	-13.9	-9.80	-3.64
5-Dec	-14.5	-14.5	-14.5	-14.7	-15.0	-15.4	-16.3	-17.2	-17.9	-18.3	-17.9	-17.5	-16.9	-16.8	-17.4	-18.1	-18.7	-19.2	-19.7	-20.2	-20.7	-20.9	-21.0	-17.57	-14.45	
6-Dec	-21.5	-21.6	-21.7	-22.1	-22.0	-21.9	-22.2	-22.4	-23.1	-22.0	-21.4	-20.6	-19.9	-19.4	-19.0	-18.7	-19.0	-20.5	-22.1	-22.9	-24.0	-24.6	-24.4	-24.0	-21.72	-18.74
7-Dec	-23.5	-22.8	-22.3	-21.7	-20.9	-20.5	-20.8	-21.0	-20.9	-20.9	-20.7	-20.0	-18.4	-17.6	-16.9	-17.5	-18.7	-20.3	-22.7	-24.0	-24.9	-25.5	-26.0	-26.5	-21.46	-16.86
8-Dec	-27.6	-28.0	-28.1	-28.3	-29.0	-29.2	-29.7	-29.4	-28.5	-28.5	-27.6	-25.3	-23.6	-22.0	-20.8	-20.5	-21.7	-23.1	-24.4	-25.7	-26.2	-26.0	-26.7	-27.0	-26.13	-20.54
9-Dec	-27.7	-28.5	-28.8	-29.0	-29.4	-29.8	-30.1	-31.1	-31.7	-31.8	-30.3	-27.7	-26.1	-24.4	-22.9	-24.2	-25.4	-25.3	-25.1	-25.5	-26.0	-26.7	-26.7	-26.2	-27.52	-22.90
10-Dec	-25.6	-26.0	-26.4	-26.2	-25.8	-25.5	-25.4	-25.1	-25.8	-25.9	-24.2	-23.3	-22.2	-21.0	-20.7	-20.7	-21.2	-21.3	-21.3	-21.6	-21.7	-21.8	-21.9	-21.9	-23.44	-20.66
11-Dec	-21.6	-21.5	-21.3	-21.0	-20.8	-20.5	-20.4	-20.4	-20.2	-19.8	-19.2	-18.6	-17.9	-17.5	-17.4	-18.3	-19.7	-20.0	-21.9	-23.0	-23.4	-23.1	-23.0	-22.8	-20.56	-17.35
12-Dec	-21.9	-20.7	-20.2	-20.5	-20.0	-19.8	-19.2	-18.3	-17.9	-17.3	-15.9	-14.9	-12.8	-11.2	-11.5	-11.6	-13.3	-14.7	-15.2	-17.3	-18.3	-19.0	-18.4	-17.2	-16.97	-11.15
13-Dec	-16.7	-17.2	-17.4	-18.4	-21.1	-21.0	-20.6	-20.8	-20.6	-20.1	-18.8	-16.6	-15.0	-13.8	-13.1	-13.5	-14.7	-15.4	-16.7	-19.4	-20.7	-21.4	-22.2	-22.6	-18.25	-13.07
14-Dec	-21.9	-20.4	-21.1	-21.6	-21.6	-21.4	-23.1	-24.2	-24.7	-25.0	-22.0	-17.5	-15.4	-13.0	-12.2	-12.8	-14.4	-17.0	-19.3	-20.9	-22.3	-23.1	-24.0	-24.7	-20.15	-12.16
15-Dec	-25.2	-25.7	-26.4	-27.0	-27.3	-27.8	-27.5	-25.7	-24.5	-23.6	-22.6	-21.4	-18.9	-17.2	-16.2	-16.3	-18.3	-20.6	-22.6	-24.1	-24.9	-25.6	-26.8	-28.0	-23.50	-16.24
16-Dec	-28.7	-29.0	-29.8	-30.2	-30.5	-30.8	-31.3	-31.5	-31.2	-30.0	-26.4	-23.4	-21.4	-19.5	-18.9	-19.2	-19.7	-21.3	-22.9	-23.3	-23.7	-23.6	-24.8	-25.7	-25.70	-18.89
17-Dec	-26.8	-27.4	-26.5	-24.7	-23.4	-24.0	-22.8	-20.6	-17.7	-15.6	-14.6	-13.3	-12.1	-10.8	-9.6	-9.4	-9.3	-9.0	-8.6	-8.3	-8.5	-8.3	-7.9	-7.3	-15.27	-7.31
18-Dec	-6.8	-6.4	-6.1	-5.7	-6.0	-6.1	-5.8	-4.4	-2.7	-2.3	-2.3	-1.9	-1.6	-1.1	-0.5	0.0	-0.2	-0.5	-0.2	-0.3	-0.3	-0.3	-0.6	-1.3	-2.65	-0.01
19-Dec	-1.4	-1.0	-0.3	-0.7	-1.2	-1.3	-1.5	-1.3	-1.9	-2.2	-1.6	-0.5	0.3	0.8	1.1	0.6	-0.5	-1.3	-0.9	-1.0	-1.8	-2.2	-1.7	-1.1	-0.94	1.10
20-Dec	-0.8	-0.9	-0.9	-1.2	-1.4	-1.4	-2.0	-1.9	-1.3	-1.8	-1.9	-1.6	-1.5	-1.5	-1.3	-1.5	-2.4	-3.2	-3.9	-4.4	-5.0	-2.3	-1.3	-0.8	-1.92	-0.75
21-Dec	-0.5	1.3	1.6	1.8	1.8	2.1	2.3	2.3	2.2	2.0	2.3	2.7	3.3	3.9	3.3	2.8	2.3	1.6	1.5	1.2	1.5	1.3	1.2	1.6	1.98	3.88
22-Dec	1.5	1.6	1.2	0.5	0.7	1.3	1.2	0.4	0.3	0.5	1.6	1.7	1.7	1.8	2.0	1.4	0.9	0.3	-0.4	-1.4	-1.7	-2.5	-2.9	-3.2	0.35	1.96
23-Dec	-3.7	-4.1	-4.7	-5.0	-5.2	-5.3	-5.5	-5.8	-5.9	-6.1	-5.9	-5.7	-5.8	-5.9	-6.4	-6.9	-7.3	-7.7	-8.1	-8.5	-8.7	-9.4	-10.0	-10.1	-6.56	-3.67
24-Dec	-10.2	-10.1	-10.1	-10.2	-10.7	-10.9	-11.1	-11.4	-12.2	-12.3	-11.9	-11.4	-11.1	-10.9	-11.0	-11.3	-11.6	-12.1	-12.6	-13.7	-15.1	-14.7	-14.8	-14.9	-11.93	-10.14
25-Dec	-14.9	-15.2	-15.4	-16.5	-18.5	-19.1	-20.1	-21.6	-23.1	-23.7	-21.6	-20.4	-18.9	-16.6	-14.5	-13.9	-15.6	-18.0	-20.0	-21.4	-22.5	-22.8	-22.3	-22.1	-19.12	-13.95
26-Dec	-21.8	-21.2	-20.3	-19.2	-19.5	-18.6	-12.2	-9.7	-11.0	-9.8	-6.9	-5.5	-4.2	-3.7	-3.3	-2.6	-2.4	-2.9	-1.8	-1.1	-0.7	-0.7	-0.7	-0.7	-8.36	-0.66
27-Dec	-1.4	-1.4	-1.2	-1.5	-1.7	-1.7	-1.5	-1.6	-1.9	-2.1	-1.4	-0.2	0.1	1.0	1.3	0.5	-0.6	-1.3	-2.2	-2.0	-3.1	-2.8	-2.3	-3.1	-1.33	1.29
28-Dec	-3.4	-2.2	-2.1	-2.0	-2.2	-1.6	-1.3	-1.2	-1.6	-1.7	-0.5	0.0	1.0	1.7	1.2	0.7	-0.9	-1.5	-1.8	-2.1	-2.1	-2.0	-2.8	-2.4	-1.29	1.70
29-Dec	-2.3	-2.5	-2.3	-1.7	-1.7	-1.9	-1.8	-2.1	-2.1	-2.5	-2.7	-3.0	-3.4	-3.8	-3.5	-3.2	-1.6	-0.8	-1.3	-2.1	-2.8	-4.3	-5.1	-4.3	-2.61	-0.76
30-Dec	-4.4	-3.9	-4.0	-5.1	-5.1	-5.1	-4.8	-5.8	-7.3	-8.8	-7.6	-5.5	-3.0	-1.2	-0.4	-0.4	-0.2	-0.2	-0.4	-0.4	-0.4	-0.8	-0.6	-0.7	-3.17	-0.17
31-Dec	-0.4	-0.7	-0.9	-0.9	-1.2	-1.4	-1.6	-1.7	-1.8	-1.8	-1.9	-1.6	-1.4	-1.8	-1.4	-1.8	-2.5	-3.7	-4.7	-5.9	-7.2	-7.9	-8.6	-8.9	-2.99	-0.41
-12.96 -12.88 -12.91 -12.94 -13.20 -13.14 -13.11 -13.08 -13.12 -12.82 -11.64 -10.44 -9.31 -8.42 -8.04 -8.38 -9.21 -10.05 -10.90 -11.69 -12.35 -12.65 -12.81 -12.92																								Diurnal Average		
1.46 1.60 1.61 1.79 1.78 2.09 2.28 2.34 2.18 2.02 2.29 2.73 3.29 4.13 4.50 3.71 2.40 1.87 1.54 1.24 1.46 1.27 1.16 1.58																								Diurnal Maximum		



WCAS - Hinton
Summary of Hourly Averages

Wind Speed (WS) - kph
December 2016

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1 Spd	0.2	0.2	0.1	0.2	1.8	0.1	0.0	0.8	1.5	AF	AF	AF	AF	2.4	2.4	2.7	AF	AF	AF	AF	AF	AF	AF	AF	--	2.70	
Dir	NNW	NNE	NE	NE	ENE	NE	W	WNW	WNW	AF	AF	AF	AF	ENE	ENE	ENE	AF	AF	AF	AF	AF	AF	AF	AF	--	ENE	
2 Spd	AF	AF	AF	AF	AF	1.4	1.3	1.7	2.4	0.7	5.0	5.9	4.3	5.0	6.3	6.0	3.5	4.4	4.3	4.3	3.0	0.7	5.5	2.4	2.94	6.35	
Dir	AF	AF	AF	AF	AF	SSW	ENE	W	ENE	SSW	SSW	SW	SW	W	WSW	WSW	WSW	WSW	SW	S	SW	W	SW	S	SW	WSW	
3 Spd	5.8	5.4	2.4	4.3	5.6	4.4	3.7	2.2	3.5	3.6	2.8	6.4	3.8	5.5	2.2	4.1	1.0	3.0	1.0	1.1	0.2	1.0	0.2	0.1	2.53	6.38	
Dir	SSW	SW	SSW	SW	SW	WSW	W	W	SW	SW	SW	SW	WSW	NW	SW	SSW	WSW	SW	ESE	E	SE	S	ENE	W	SW	SW	
4 Spd	0.1	0.7	1.6	1.7	0.3	0.8	0.6	0.7	1.2	0.5	0.1	0.5	0.7	6.9	7.8	6.4	4.2	3.0	1.9	3.4	2.4	4.0	1.6	3.9	1.05	7.77	
Dir	ENE	S	WSW	SW	SSW	SSW	SSW	SSW	WSW	SSW	NE	SSE	SSW	NW	NW	N	NE	NE	NE	E	NNE	NE	NNE	NNE	N	NW	
5 Spd	1.2	2.2	2.2	2.5	2.2	1.4	2.9	1.0	1.3	2.9	3.5	0.8	1.4	2.4	2.3	2.9	1.8	1.8	1.8	0.9	1.0	0.4	0.6	1.6	0.77	3.51	
Dir	NNW	WNW	S	SW	SW	NNE	NNE	NNW	N	NE	N	NW	ENE	WNW	ENE	NNE	NNE	NNE	NNE	SW	SW	WSW	WSW	W	N	N	
6 Spd	0.5	0.4	0.5	2.1	3.7	2.1	1.5	2.6	2.0	2.7	1.2	1.0	1.2	1.2	0.1	0.3	0.5	1.7	1.4	0.6	0.1	0.3	0.2	0.2	0.74	3.72	
Dir	WNW	W	W	WSW	SW	W	WNW	SW	WSW	SW	WSW	WSW	SSW	SSW	ENE	N	NW	NE	E	SSW	ENE	ENE	ENE	NE	WSW	SW	
7 Spd	0.1	0.3	0.2	0.0	1.0	1.4	0.4	3.1	1.6	4.0	0.4	1.1	1.2	3.2	1.0	0.2	0.2	AF	AF	AF	AF	AF	AF	AF	--	3.95	
Dir	N	ENE	NNE	NNW	WSW	WSW	W	WSW	WSW	SW	WSW	W	SW	SSW	W	WNW	SW	AF	AF	AF	AF	AF	AF	AF	--	SW	
8 Spd	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	0.5	1.5	3.4	3.8	3.2	2.0	1.8	0.6	0.9	1.9	1.4	2.0	--	3.85
Dir	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	NW	NE	ENE	ENE	ENE	E	E	NE	WNW	WNW	WNW	W	--	ENE
9 Spd	1.2	1.3	1.7	1.3	1.0	1.5	2.0	1.5	1.4	1.3	1.2	0.3	0.8	1.1	1.6	0.3	0.8	4.7	1.6	1.3	0.5	0.6	0.7	1.3	0.51	4.74	
Dir	WNW	WSW	WNW	WNW	WNW	WNW	WNW	WNW	W	NW	NW	NNW	N	E	ENE	NNW	ENE	ENE	ENE	ENE	NE	W	NE	N	NNW	ENE	
10 Spd	1.8	3.0	2.3	1.7	1.8	2.5	2.3	0.7	0.6	0.2	1.4	1.6	2.2	2.0	4.0	4.0	3.5	2.6	3.3	2.7	2.6	2.3	1.7	1.1	2.00	4.01	
Dir	NE	ENE	ENE	ENE	NE	NE	ENE	N	NE	N	NE	ENE	ENE	NE	ENE	NE	ENE	NE	N	N	NNE	NE	NNE	NNE	NE	ENE	
11 Spd	0.7	2.2	1.5	1.4	4.2	0.8	0.8	0.6	0.6	3.7	2.3	1.9	2.4	4.2	3.3	1.7	0.3	3.3	2.2	2.9	2.0	2.2	2.8	1.9	1.48	4.24	
Dir	N	NE	ENE	WSW	SW	W	WNW	WNW	W	SSW	SW	WNW	NW	SSW	SW	WSW	WSW	SW	WSW	W	WSW	W	W	W	WSW	SW	
12 Spd	5.3	5.4	4.6	2.5	3.3	2.0	2.7	3.3	4.6	4.1	4.4	4.5	5.1	8.8	7.9	4.1	2.9	3.3	4.9	1.0	0.6	1.2	3.6	5.8	3.74	8.82	
Dir	WSW	WSW	WSW	WSW	WSW	W	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	WSW	WSW	WSW	SW	NW	NNE	E	WSW	SW	WSW	SW	
13 Spd	7.4	5.6	6.2	3.6	2.7	3.0	3.7	3.2	2.9	3.0	8.2	6.8	2.8	4.3	6.8	8.3	6.7	5.9	3.0	1.4	1.1	2.0	1.4	1.4	3.89	8.34	
Dir	SW	SW	SSW	WSW	WNW	W	W	W	W	W	SW	WSW	WSW	WSW	SW	SW	SW	SW	W	NW	WNW	WNW	WNW	W	WSW	SW	
14 Spd	2.9	3.0	2.4	2.1	2.7	2.2	1.0	0.4	1.0	1.9	0.9	1.5	2.5	1.6	1.7	0.7	0.8	1.0	1.0	0.2	0.9	0.9	0.8	0.8	1.30	2.98	
Dir	WNW	WNW	WNW	WNW	WNW	WNW	NW	NE	W	W	NW	WNW	WNW	WNW	W	WSW	WSW	SSW	WSW	NW	WNW	WNW	WNW	NE	WNW	WNW	
15 Spd	0.3	0.3	0.3	0.8	0.5	0.5	0.9	1.0	1.6	0.3	0.6	1.2	0.5	0.4	0.8	0.3	1.1	0.9	0.3	0.6	0.7	0.5	0.7	0.3	0.34	1.55	
Dir	N	NE	NNW	NW	NNE	NNE	NW	WNW	WNW	NNE	NNE	ENE	NE	NNE	WNW	NNE	E	E	E	ENE	WNW	NNE	NE	NNE	N	WNW	
16 Spd	0.5	0.3	1.0	1.6	2.1	0.5	1.7	1.5	0.4	1.1	1.0	1.7	1.9	1.4	0.9	0.7	2.9	1.3	1.5	2.6	3.0	3.2	3.0	2.3	1.48	3.22	
Dir	NNW	N	NW	W	W	NW	WNW	WNW	WNW	WNW	W	WSW	W	WNW	W	W	WSW	W	WNW	WNW	WNW	WNW	WNW	WNW	W	WNW	
17 Spd	1.3	0.7	1.6	2.3	2.2	1.6	0.7	1.3	2.7	4.5	5.6	4.8	8.8	10.9	11.3	10.0	9.9	10.4	10.6	11.4	12.3	10.8	12.1	12.2	6.21	12.26	
Dir	NW	NNW	WNW	NW	NW	NW	WNW	WNW	W	WSW	WSW	SW	SW	SSW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW
18 Spd	12.4	16.8	15.3	14.7	14.2	17.0	15.2	14.8	7.7	7.7	9.6	7.5	10.8	11.8	12.1	11.1	7.0	6.6	10.7	10.2	12.6	15.8	9.6	7.3	11.45	16.95	
Dir	SW	SW	SW	SW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	WSW	WSW	SW	SW	SW
19 Spd	5.5	5.0	9.6	6.1	5.5	7.7	5.0	7.8	5.0	4.8	4.4	5.0	10.8	9.5	4.2	4.8	3.6	3.3	3.3	6.4	7.7	3.5	5.1	8.3	5.66	10.77	
Dir	WSW	WSW	WSW	W	W	WNW	W	WSW	WSW	W	WSW	WSW	SW	WSW	W	WSW	SW	SW	W	WSW	SW	WSW	WSW	WSW	WSW	WSW	SW
20 Spd	12.6	10.4	11.8	9.8	7.2	7.7	4.8	8.4	9.7	4.9	4.0	2.9	0.5	2.4	0.8	1.3	1.5	1.4	0.3	0.8	0.5	2.2	2.7	3.2	4.13	12.56	
Dir	SW	WSW	SW	SW	WSW	SW	SW	SW	SSW	SW	SW	SW	NNW	NE	SE	E	SW	SSW	W	E	NW	W	WSW	WSW	SW	SW	SW
21 Spd	4.8	11.1	12.3	11.4	12.2	7.5	9.0	9.0	7.1	6.6	7.9	12.3	11.2	14.4	11.0	8.4	8.3	5.5	5.9	5.3	6.5	5.1	4.5	4.4	8.18	14.36	
Dir	WSW	SW	SW	WSW	SW	SW	WSW	WSW	WSW	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	W	W	W	WNW	W	WSW	WSW	WSW	WSW
22 Spd	5.1	7.8	5.5	2.5	4.5	6.1	4.7	4.2	4.2	3.1	3.9	4.7	4.3	4.5	4.0	3.6	3.1	1.4	2.1	1.7	4.0	7.7	4.6	5.4	2.09	7.83	
Dir	WSW	SW	SW	WSW	SW	WSW	WSW	WNW	WNW	W	W	W	WNW	WNW	WNW	W	W	WNW	NNE	NE	NE	ENE	ENE	ENE	W	SW	SW



WCAS - Hinton
Summary of Hourly Averages

Wind Speed (WS) - kph
December 2016

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
23 Spd	4.0	4.3	5.2	2.9	1.4	2.2	3.2	5.2	5.4	5.0	4.7	5.9	5.3	5.7	6.2	7.2	6.1	5.8	7.4	7.7	7.3	7.4	6.5	4.3	5.25	7.72	
Dir	ENE	ENE	ENE	ENE	ENE	ENE	NE	ENE	ENE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	ENE	ENE	NE	ENE	NE	NE	ENE	ENE
24 Spd	3.1	2.4	1.9	AF	AF	AF	AF	AF	AF	AF	0.9	2.3	3.1	3.7	3.6	4.6	3.9	3.6	3.7	1.7	1.2	1.8	3.0	3.4	--	4.57	
Dir	NE	ENE	ENE	AF	AF	AF	AF	AF	AF	AF	NE	NE	ENE	NE	NE	ENE	NE	NE	ENE	ENE	ENE	ENE	ENE	ENE	--	ENE	
25 Spd	3.3	3.6	2.8	1.4	0.4	0.8	1.4	0.5	0.6	0.5	0.5	2.1	2.8	2.2	2.4	0.5	0.6	0.9	0.4	0.7	0.4	0.6	0.7	0.8	1.19	3.62	
Dir	ENE	ENE	ENE	ENE	NNE	ENE	ENE	E	ENE	ENE	NNE	ENE	ENE	ENE	ENE	N	ENE	NW	NW	ENE	NE	ENE	NNE	NE	ENE	ENE	
26 Spd	0.0	1.0	0.4	0.4	0.4	1.1	5.9	6.3	2.4	6.7	6.3	7.5	9.0	9.9	12.7	9.4	6.0	6.2	6.7	7.0	9.2	7.7	9.7	5.47	12.71		
Dir	N	NW	SSE	NW	NE	NW	WSW	SW	SW	SW	SW	SW	SW	SW	SW	SW	WSW	W	WSW	WNW	WSW	SW	WSW	WSW	WSW	SW	
27 Spd	6.4	4.7	7.9	9.3	6.3	6.7	9.0	9.1	7.3	5.1	4.6	7.1	9.9	8.2	9.2	9.0	7.4	5.5	3.2	3.4	2.3	3.2	5.0	2.5	6.23	9.92	
Dir	WSW	W	SW	SW	SW	WSW	SW	SW	SW	SW	WSW	SW	SW	SW	SW	WSW	WSW	W	WSW	W	WSW	SW	WSW	WSW	SW	SW	
28 Spd	2.5	3.6	3.2	2.7	2.8	4.7	6.4	6.7	5.2	5.7	5.8	5.7	5.2	5.5	7.9	7.6	3.6	7.0	5.3	6.9	9.0	9.1	3.4	6.3	4.95	9.08	
Dir	W	W	WNW	W	W	WSW	WSW	SW	WSW	WSW	SW	SW	WSW	W	WNW	WNW	SW	SSW	SSW	SW	SW	SW	WSW	SW	WSW	SW	
29 Spd	5.2	6.0	7.6	8.7	8.0	7.2	5.7	3.5	5.9	1.2	2.2	0.8	1.5	3.5	2.7	2.1	4.4	6.7	4.1	1.3	1.2	0.3	1.1	2.4	2.78	8.71	
Dir	SW	SSW	SW	SW	SW	SSW	SW	S	SSW	S	SSE	NNE	NE	ENE	NE	NE	SW	SW	WSW	SSW	W	WSW	ESE	SSW	SW	SW	
30 Spd	2.1	3.2	1.3	0.5	0.9	1.1	1.7	0.8	1.2	0.6	1.7	1.4	1.6	2.1	4.3	8.3	8.8	6.9	5.4	6.2	7.6	5.5	8.3	8.3	3.61	8.84	
Dir	SSW	SSW	SSW	ENE	SW	SW	WSW	W	SW	WNW	W	SSW	WSW	W	WSW	SW	SW	SW	WSW	WSW	WSW	WSW	SW	WSW	WSW	SW	SW
31 Spd	8.9	3.8	3.3	5.5	3.9	3.4	1.3	3.8	2.2	4.8	3.2	2.5	2.6	0.3	0.7	2.9	2.5	2.9	6.1	4.9	4.4	4.4	4.5	1.3	1.00	8.89	
Dir	SW	WSW	SW	SW	WSW	SW	W	SW	WSW	SW	SW	WSW	N	SW	NW	NW	NW	N	NE	NNE	N	NE	E	E	W	SW	
Spd	2.50	2.55	2.79	3.03	2.95	2.54	2.47	2.87	2.29	2.40	2.49	2.60	2.47	2.59	2.45	2.02	1.95	1.80	1.39	1.37	1.86	1.52	1.74	1.96	Diurnal Average		
Dir	WSW	WSW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	Diurnal Maximum		
Spd	12.56	16.76	15.26	14.72	14.22	16.95	15.18	14.83	9.71	7.73	9.63	12.29	11.22	14.36	12.71	11.13	9.91	10.42	10.67	11.43	12.58	15.80	12.12	12.21	Diurnal Maximum		
Dir	232.23	230.50	227.80	229.31	224.18	219.38	225.87	222.98	208.52	240.54	240.93	243.88	242.60	236.96	230.16	239.79	233.88	231.94	238.87	231.44	239.10	235.11	232.06	233.99	Diurnal Maximum		
Maximum Speed Value: 17.0 kph on Dec 18 06:00																		Minimum Speed Value: 0.0 kph on Dec 26 01:00						Hours in Service:		744	
Maximum Daily Speed Average: 11.45 kph on Dec 18																		Minimum Daily Speed Average: 0.34 kph on Dec 15						Hours of Data:		701	
Maximum Diurnal Speed Average: 3.03 kph at hour 4																		Minimum Diurnal Speed Average: 1.37 kph at hour 20						Hours of Missing Data:		43	
Monthly Average Velocity: 2.264 kph 244.71 deg																		Speed Percentiles: P ₁ = 0.1 P ₁₀ = 0.5 Q ₁ = 1.2 Median = 2.9 Q ₃ = 5.5 P ₉₀ = 8.3 P ₉₉ = 14.7						Percent Operational Time:		94.2	
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	37	1	0	0	0	0	38																				
NorthEast	114	19	0	0	0	0	133																				
East	36	0	0	0	0	0	36																				
SouthEast	5	0	0	0	0	0	5																				
South	15	0	0	0	0	0	15																				
SouthWest	101	113	29	0	0	0	243																				
West	140	33	0	0	0	0	173																				
NorthWest	53	5	0	0	0	0	58																				
Total	501	171	29	0	0	0	701																				



WCAS - Hinton
Summary of Hourly Averages

Relative Humidity (RH) - %
December 2016

Maximum Value: 89.96 % on Dec 30 09:00																						Maximum Daily Average: 84.39 % on Dec 23										Hours in Service: 744																	
Minimum Value: 23.3 % on Dec 28 15:00																						Minimum Daily Average: 35.32 % on Dec 28										Hours of Data: 744																	
Maximum Diurnal Average: 65.66 % at hour 21																						Minimum Diurnal Average: 52.72 % at hour 15										Hours of Missing Data: 0																	
Monthly Average: 61.995 %																						Percentiles: P₁ = 29.6 P₁₀ = 40.0 Q₁ = 47.6 Median = 65.0 Q₃ = 73.4 P₉₀ = 83.5 P₉₉ = 88.7										Hours of Calibration: 0																	
																						Percent Operational Time: 100.0																											
Day	Hourly Period Ending At																								Daily Average	Daily Maximum																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																									
1-Dec	84.8	85.6	86.8	87.5	88.0	87.9	88.2	88.8	89.2	88.6	85.7	77.1	67.0	67.0	70.8	75.3	80.3	84.9	86.3	86.8	87.4	88.2	87.7	86.6	83.61	89.24																							
2-Dec	84.6	83.7	83.1	82.6	82.8	82.8	83.0	83.0	83.7	78.4	59.9	53.7	47.6	48.8	45.2	48.6	52.6	54.8	62.1	61.8	67.6	71.9	66.9	70.3	68.31	84.64																							
3-Dec	69.6	70.9	74.0	67.2	69.2	62.5	75.5	79.0	72.8	66.0	55.0	42.7	48.7	70.4	79.6	75.2	67.7	67.3	75.7	81.8	84.5	85.8	86.6	86.9	71.46	86.93																							
4-Dec	86.8	87.0	87.3	86.4	86.0	86.1	85.6	85.6	85.4	84.5	83.9	82.0	74.9	46.1	37.3	54.7	62.3	62.6	62.1	61.4	63.1	62.5	65.5	63.6	72.62	87.29																							
5-Dec	65.4	63.1	58.8	59.1	59.3	56.3	57.4	58.8	59.7	57.8	55.2	53.0	52.5	49.7	49.8	52.3	56.3	56.6	56.4	57.5	60.2	64.1	64.7	57.2	57.56	65.42																							
6-Dec	58.7	58.4	57.6	59.4	58.9	55.8	56.1	58.8	61.8	58.4	60.8	56.0	53.4	52.9	51.5	52.1	55.5	61.7	66.9	69.9	71.3	72.7	73.8	73.7	60.67	73.77																							
7-Dec	73.7	74.3	75.1	75.3	75.6	73.3	74.5	73.5	72.7	72.6	72.6	70.2	60.1	55.8	51.8	52.2	55.0	62.0	69.3	72.3	72.6	71.9	71.6	70.9	68.70	75.57																							
8-Dec	69.9	69.5	69.2	68.6	68.0	67.9	67.5	68.0	68.4	68.2	68.1	68.4	68.1	66.0	64.7	64.8	67.6	71.4	72.0	71.7	71.5	71.1	70.0	69.7	68.77	72.02																							
9-Dec	69.1	68.4	68.3	68.1	67.6	67.2	66.8	65.8	65.3	65.0	64.9	64.1	63.6	62.1	60.8	63.4	68.9	70.4	69.4	70.4	70.7	69.9	70.3	70.6	67.13	70.71																							
10-Dec	71.7	71.5	70.8	70.9	70.9	70.7	70.4	70.0	69.9	70.1	68.4	64.3	60.3	59.4	62.7	65.1	66.2	66.0	65.2	63.9	63.7	63.0	62.7	60.3	66.58	71.74																							
11-Dec	60.4	62.2	63.5	66.4	63.5	63.4	61.6	62.1	62.5	60.8	60.8	59.1	61.0	60.3	60.8	64.2	70.2	68.2	72.8	73.9	74.3	74.0	74.2	74.2	65.60	74.28																							
12-Dec	75.1	74.0	73.8	74.4	72.3	73.3	72.5	71.3	66.0	70.8	66.0	62.4	56.2	50.7	49.9	54.5	62.1	63.4	61.9	69.7	73.8	75.7	73.3	67.8	67.12	75.70																							
13-Dec	63.8	66.5	64.4	65.6	73.2	75.9	72.3	72.5	73.9	74.1	67.9	60.2	56.1	49.4	45.6	47.3	52.5	56.2	59.8	70.4	74.1	75.0	75.1	75.7	65.31	75.93																							
14-Dec	75.6	73.6	73.1	72.9	73.9	72.2	72.5	73.1	72.7	72.5	72.6	70.5	61.1	52.0	46.5	47.8	54.7	63.1	70.6	74.1	74.9	74.7	73.6	73.0	68.39	75.61																							
15-Dec	72.6	71.6	71.3	70.9	70.8	70.0	70.3	71.9	72.3	73.0	73.0	72.8	71.9	71.7	68.5	67.5	74.5	76.0	75.1	73.9	73.0	71.9	70.8	69.7	71.88	75.96																							
16-Dec	68.8	68.5	67.9	67.5	67.2	66.7	66.1	66.3	66.3	67.8	69.7	70.2	68.8	64.5	60.7	61.1	63.1	64.3	69.2	71.5	71.4	71.3	70.7	70.8	67.52	71.53																							
17-Dec	70.7	70.3	71.3	71.7	70.6	70.4	73.0	73.8	65.7	53.0	50.1	49.6	45.7	42.4	40.5	42.3	45.2	44.7	44.4	43.7	45.7	46.9	47.4	46.5	55.24	73.85																							
18-Dec	46.6	45.0	44.6	43.3	45.8	45.2	45.3	44.1	44.4	44.2	42.5	44.3	41.5	40.6	40.6	40.0	44.1	43.8	39.9	39.9	40.8	40.5	44.3	49.9	43.38	49.91																							
19-Dec	50.8	48.4	44.6	48.4	50.1	48.6	51.5	51.2	54.6	51.9	48.0	43.6	40.0	37.6	36.1	38.0	41.7	43.3	46.8	52.1	60.0	56.6	50.4	44.4	47.44	59.99																							
20-Dec	38.3	36.5	32.5	32.9	36.5	33.7	38.3	38.8	44.1	52.5	52.5	50.9	53.2	53.7	55.1	56.4	60.3	66.0	68.2	70.4	70.7	56.5	52.1	49.2	49.98	70.66																							
21-Dec	46.1	36.2	32.5	32.4	33.0	31.8	34.2	34.0	35.9	37.9	37.8	37.0	36.0	31.8	33.9	36.2	39.1	43.7	44.2	46.0	44.2	44.9	45.1	42.5	38.18	46.10																							
22-Dec	42.2	40.4	43.6	47.6	46.5	41.0	40.1	42.9	43.5	42.5	39.6	39.9	41.8	41.8	42.3	44.5	47.1	49.9	51.1	58.7	65.7	76.4	80.5	80.4	49.59	80.53																							
23-Dec	82.0	84.7	84.1	84.2	85.0	86.0	85.3	83.2	82.7	84.1	84.8	81.5	81.9	80.0	84.4	86.3	86.1	86.3	86.5	86.1	86.0	84.7	84.7	84.7	84.39	86.45																							
24-Dec	84.7	84.9	85.0	85.0	84.6	84.5	84.2	83.8	83.6	83.1	82.7	82.4	81.9	81.2	80.4	80.5	80.1	80.5	80.3	80.8	81.3	81.5	80.2	79.8	82.37	85.01																							
25-Dec	78.9	79.3	79.4	79.3	78.9	78.6	77.4	76.0	74.6	74.3	73.3	72.7	72.5	72.3	70.1	70.9	76.1	78.1	77.6	76.7	75.6	75.3	75.2	75.2	75.77	79.44																							
26-Dec	75.3	75.9	77.1	77.4	77.4	78.3	74.1	61.2	65.8	62.6	54.6	49.7	45.0	43.0	42.7	43.3	44.6	49.0	44.7	47.2	45.7	43.4	46.2	43.3	56.98	78.29																							
27-Dec	47.8	49.4	45.2	44.1	44.3	45.1	42.9	43.1	43.4	40.6	35.4	33.6	29.7	28.3	30.5	35.3	38.9	43.7	43.9	46.4	45.4	43.4	45.7	41.21	49.44																								
28-Dec	47.4	44.0	45.7	45.2	45.5	39.5	37.3	36.7	37.7	38.0	30.5	29.5	27.7	24.1	23.3	23.5	27.7	32.4	36.0	36.5	35.0	33.9	36.7	34.0	35.32	47.44																							
29-Dec	31.3	32.7	32.4	31.7	34.9	36.0	37.2	41.0	41.6	46.0	49.2	53.8	55.7	54.5	52.4	52.6	53.6	51.4	55.2	57.6	61.4	67.1	71.8	67.6	48.70	71.83																							
30-Dec	72.2	86.3	87.9	88.8	88.7	89.6	88.0	89.7	90.0	89.5	84.5	76.7	63.0	45.4	35.9	33.9	36.9	43.0	47.0	49.9	48.2	46.7	42.8	38.8	65.14	89.96																							
31-Dec	36.8	37.5	39.0	38.8	41.7	41.0	43.0	44.6	49.3	47.7	50.9	48.5	55.4	65.4	62.2	60.6	66.0	84.8	82.7	79.0	74.8	71.1	70.9	74.1	56.91	84.82																							
																								64.58	64.53	64.19	64.31	64.86	63.92	64.27	64.28	64.50	63.85	61.49	58.78	56.33	53.88	52.72	54.37	57.85	60.80	62.69	64.50	65.66	65.64	65.46	64.42	Diurnal Average	
																								86.82	86.95	87.94	88.85	88.66	89.57	88.24	89.65	89.96	89.52	85.68	82.37	81.93	81.20	84.45	86.32	86.11	86.35	86.45	86.85	87.40	88.25	87.73	86.93	Diurnal Maximum	



WCAS - Hinton
Summary of Hourly Standard Deviations

Wind Speed (WS) - kph
December 2016

Maximum Value: 10.20 kph on Dec 18 22:00		Maximum Daily Average: 7.41 kph on Dec 18		Hours in Service: 744																																												
Minimum Value: 0.0 kph on Dec 1 01:00		Minimum Daily Average: 0.85 kph on Dec 15		Hours of Data: 701																																												
Maximum Diurnal Average: 3.32 kph at hour 15		Minimum Diurnal Average: 2.53 kph at hour 1		Hours of Missing Data: 43																																												
Monthly Average: 2.865 kph		Percentiles: P ₁ = 0.0 P ₁₀ = 1.0 Q ₁ = 1.4 Median = 2.2 Q ₃ = 4.0 P ₉₀ = 5.7 P ₉₉ = 8.8		Hours of Calibration: 0																																												
				Percent Operational Time: 94.2																																												
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Dec	0.0	0.2	0.0	0.6	1.6	0.0	0.0	1.5	1.7	AF	AF	AF	AF	1.6	2.1	2.1	AF	AF	AF	AF	AF	AF	AF	AF	--	2.14																						
2-Dec	AF	AF	AF	AF	AF	2.8	1.5	2.3	1.8	4.2	4.5	4.7	4.8	5.1	6.2	5.8	4.0	4.2	4.3	3.5	2.6	1.5	5.0	3.2	3.78	6.18																						
3-Dec	3.4	4.9	3.6	3.9	3.0	4.3	3.7	1.8	2.6	2.5	2.7	3.1	3.6	3.1	3.9	2.8	1.7	2.9	2.0	1.5	1.4	2.0	0.9	0.0	2.72	4.91																						
4-Dec	0.0	1.8	2.1	2.7	1.2	1.9	1.7	1.5	2.1	1.7	0.6	1.4	2.0	4.6	3.8	4.1	3.0	2.6	2.9	2.7	2.5	2.5	2.1	2.9	2.26	4.63																						
5-Dec	1.9	2.5	2.6	2.5	2.4	2.1	2.8	1.8	2.0	2.2	2.7	1.6	2.5	2.3	2.7	2.4	2.0	2.1	2.9	1.5	1.7	0.8	1.4	2.3	2.16	2.80																						
6-Dec	1.1	0.9	1.2	2.7	2.7	2.8	2.1	2.9	2.7	2.9	1.8	1.6	1.8	1.8	0.4	0.8	0.9	2.1	1.4	1.6	0.0	0.8	0.7	0.5	1.59	2.92																						
7-Dec	0.0	0.7	0.6	0.0	2.2	2.4	1.0	2.8	2.1	3.0	1.2	1.5	2.2	2.6	1.5	0.2	0.1	AF	AF	AF	AF	AF	AF	AF	--	2.95																						
8-Dec	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	0.8	1.7	2.0	2.1	2.1	1.2	1.1	0.7	1.0	1.4	1.3	1.6	--	2.12																						
9-Dec	1.4	1.3	1.4	1.2	1.0	1.2	1.0	1.2	1.4	1.2	1.0	0.8	1.2	1.3	1.4	0.4	1.1	2.6	1.7	1.1	0.9	0.8	0.8	1.2	1.19	2.58																						
10-Dec	1.1	1.3	1.5	1.5	1.6	1.6	1.5	0.9	0.7	0.3	1.1	1.4	1.4	1.5	1.9	2.0	1.9	2.0	2.3	2.0	1.8	1.8	1.4	1.3	1.50	2.34																						
11-Dec	0.9	1.4	1.2	1.6	2.4	1.2	1.5	1.3	1.5	2.6	1.9	1.7	1.6	2.6	2.5	1.7	1.6	2.4	1.6	1.6	2.3	2.1	2.2	2.0	1.80	2.57																						
12-Dec	3.7	3.7	3.2	2.3	3.0	1.8	2.6	2.8	3.6	3.5	3.4	3.6	4.3	4.6	4.3	3.5	2.7	2.9	3.2	1.5	1.7	1.9	3.0	4.2	3.13	4.62																						
13-Dec	3.9	3.6	4.2	2.1	1.8	2.0	1.9	1.9	2.2	2.6	4.3	4.7	3.2	3.4	3.8	3.8	3.3	3.1	2.5	1.0	1.0	1.1	1.1	1.3	2.66	4.70																						
14-Dec	1.6	1.6	1.4	1.4	1.7	1.5	0.9	0.8	1.6	1.3	1.0	1.3	1.1	1.2	1.7	1.2	1.0	1.0	1.0	0.6	1.1	1.0	1.1	1.2	1.22	1.72																						
15-Dec	0.5	0.9	0.8	1.2	0.9	0.8	1.3	1.0	1.2	0.6	0.7	1.1	1.0	1.0	0.9	0.6	1.0	1.0	0.6	0.7	0.7	0.9	0.4	0.4	0.85	1.27																						
16-Dec	0.6	0.6	1.3	1.2	1.3	0.7	1.2	1.4	1.1	1.2	1.2	1.8	1.9	1.2	1.4	1.2	2.2	1.4	1.0	1.4	1.5	1.6	1.8	1.1	1.30	2.22																						
17-Dec	1.1	0.9	1.3	1.3	1.3	1.1	0.9	1.6	2.5	3.1	3.5	3.4	5.7	4.9	5.0	4.9	5.7	5.3	6.1	6.1	6.5	6.0	6.7	6.7	3.82	6.71																						
18-Dec	6.8	8.2	6.9	6.9	7.6	6.6	6.2	7.3	5.8	5.6	6.8	7.0	8.1	7.6	7.8	7.6	7.0	6.7	7.6	7.8	8.7	10.2	8.8	7.9	7.41	10.20																						
19-Dec	6.3	5.7	8.3	6.0	5.6	4.1	5.4	6.7	5.0	3.9	4.3	5.9	7.3	7.1	4.5	4.5	3.1	2.6	3.4	5.7	5.0	3.5	4.6	5.7	5.18	8.26																						
20-Dec	7.3	7.1	7.1	6.1	5.7	4.5	3.8	4.0	3.8	3.4	3.1	2.3	0.7	2.2	1.7	1.3	1.8	1.6	1.1	1.3	1.5	2.3	2.4	2.8	3.29	7.32																						
21-Dec	4.8	6.7	7.0	9.0	8.1	5.5	8.2	7.5	7.3	6.3	7.2	9.9	8.9	9.7	8.9	8.1	7.6	5.4	5.7	4.3	4.3	4.6	4.4	4.8	6.83	9.91																						
22-Dec	4.8	5.0	4.9	3.0	4.6	5.7	5.0	4.0	3.6	3.9	3.8	4.6	3.6	3.1	3.6	3.6	3.2	1.9	2.0	1.5	3.2	2.7	2.0	2.0	3.55	5.67																						
23-Dec	1.4	1.8	2.0	1.3	1.0	1.6	2.0	2.2	2.4	2.7	2.8	3.4	2.7	3.0	3.0	3.8	3.3	3.1	3.9	3.4	3.1	3.5	2.8	2.1	2.60	3.93																						
24-Dec	1.7	1.6	1.2	AF	AF	AF	AF	AF	AF	AF	1.1	1.8	1.6	1.9	2.0	2.0	2.3	2.0	2.0	1.5	1.2	1.6	1.6	1.5	--	2.28																						
25-Dec	1.6	1.5	1.5	1.5	0.6	1.1	1.4	0.7	0.8	1.1	0.8	1.3	1.4	1.2	1.7	1.3	1.1	1.0	0.6	0.9	1.0	1.2	1.0	1.0	1.13	1.68																						
26-Dec	0.9	1.2	1.0	0.9	1.1	1.4	4.3	3.5	3.5	4.7	4.9	5.2	5.8	5.2	7.0	6.3	6.9	5.0	6.2	6.2	7.6	7.3	7.6	6.8	4.61	7.62																						
27-Dec	4.4	4.7	5.1	4.4	4.3	4.9	5.0	6.1	4.8	3.6	4.3	4.2	5.3	4.8	4.8	5.1	5.7	4.7	3.4	3.6	2.4	3.0	3.8	1.9	4.35	6.11																						
28-Dec	1.6	3.1	2.5	2.3	2.6	3.9	4.9	5.1	4.9	4.7	4.4	4.7	4.4	4.8	4.7	3.8	3.0	2.5	2.6	3.3	3.7	4.3	2.8	4.8	3.73	5.07																						
29-Dec	3.5	3.3	4.2	4.7	4.0	3.7	3.4	2.1	2.6	2.9	2.2	1.1	1.4	1.6	2.1	2.6	3.9	3.9	3.8	1.7	1.4	1.0	1.1	1.4	2.65	4.74																						
30-Dec	1.7	2.0	1.4	1.2	1.3	1.6	1.5	0.9	1.3	0.7	1.3	1.7	1.8	2.8	4.1	4.8	5.2	4.8	4.8	5.1	5.8	4.3	5.2	5.4	2.94	5.80																						
31-Dec	5.4	3.6	2.6	5.0	4.5	2.8	2.1	2.6	2.5	3.7	2.3	2.5	2.0	1.7	1.7	1.7	1.5	2.9	3.3	3.7	3.4	2.9	2.5	1.7	2.86	5.39																						
																								2.53	2.82	2.82	2.80	2.82	2.61	2.72	2.77	2.73	2.86	2.78	3.08	3.13	3.27	3.32	3.10	3.00	2.93	2.93	2.67	2.72	2.71	2.79	2.76	Diurnal Average
																								7.32	8.16	8.26	8.99	8.07	6.61	8.23	7.49	7.31	6.25	7.16	9.91	8.88	9.74	8.86	8.10	7.61	6.73	7.62	7.83	8.74	10.20	8.84	7.92	Diurnal Maximum
AF - Analyzer Failure																																																
,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3 24-hr 100 ul/m^3																																																



WCAS - Hinton
Summary of Hourly Standard Deviations

Wind Direction (WD) - deg
December 2016

Maximum Value: 96.93 deg on Dec 4 11:00 Maximum Daily Average: 65.32 deg on Dec 4																								Hours in Service: 744 Hours of Data: 701 Hours of Missing Data: 43 Hours of Calibration: 0 Percent Operational Time: 94.2			
Minimum Value: 15.3 deg on Dec 24 03:00 Minimum Daily Average: 26.10 deg on Dec 23 Maximum Diurnal Average: 50.94 deg at hour 21 Minimum Diurnal Average: 41.02 deg at hour 2 Monthly Average: 46.583 deg Percentiles: P ₁ = 19.0 P ₁₀ = 25.2 Q ₁ = 33.2 Median = 44.0 Q ₃ = 56.8 P ₉₀ = 73.9 P ₉₉ = 91.3																											
Day	Hourly Period Ending At																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Dec	33.3	20.9	75.8	59.6	51.5	71.3	88.0	47.0	38.1	AF	AF	AF	AF	18.0	38.7	24.2	AF	AF	AF	AF	AF	AF	AF	AF	--	87.98	
2-Dec	AF	AF	AF	AF	AF	89.1	61.8	63.1	37.7	93.4	66.4	47.2	68.5	52.0	60.2	48.3	62.9	60.5	57.0	54.1	48.1	65.9	64.3	89.8	62.65	93.45	
3-Dec	24.3	50.6	75.3	41.4	27.9	56.9	47.5	35.2	27.9	32.9	47.1	25.4	47.4	31.5	66.1	35.5	50.7	72.2	50.9	69.2	89.2	88.3	63.1	46.2	50.11	89.17	
4-Dec	67.2	91.1	44.8	84.0	87.5	83.5	74.4	70.9	87.1	87.7	96.9	82.8	75.4	38.8	21.8	42.2	50.6	51.6	80.1	48.3	67.3	33.2	58.8	41.8	65.32	96.93	
5-Dec	76.9	46.8	65.3	63.8	54.8	72.5	46.4	46.2	53.9	37.9	43.1	77.1	73.1	48.4	75.4	43.0	41.3	44.9	51.6	54.5	80.2	56.4	91.5	59.4	58.51	91.53	
6-Dec	52.5	52.0	60.7	49.0	37.2	60.0	46.5	43.9	42.4	53.5	60.6	59.9	65.7	79.3	93.9	67.9	31.2	52.9	37.0	81.0	68.3	29.6	65.8	72.1	56.79	93.93	
7-Dec	57.7	22.5	63.1	90.6	67.1	42.9	53.4	41.9	49.9	28.9	76.9	39.4	55.4	43.8	46.7	45.5	29.1	AF	AF	AF	AF	AF	AF	AF	--	90.56	
8-Dec	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	75.9	81.2	32.8	24.9	28.5	20.7	31.0	24.7	44.1	38.6	53.3	33.0	--	81.18
9-Dec	56.0	42.0	49.0	45.2	38.7	44.0	23.5	25.6	19.3	57.1	19.3	78.5	78.2	85.0	41.3	41.7	46.9	23.9	40.7	38.0	64.7	29.7	25.9	25.6	43.33	85.03	
10-Dec	27.3	17.1	20.2	34.7	43.3	36.8	36.5	66.7	33.6	38.1	34.9	72.9	45.3	37.7	26.0	30.7	27.2	36.9	36.0	42.5	36.6	39.2	35.5	60.4	38.18	72.91	
11-Dec	50.8	25.6	39.9	62.9	30.5	75.2	71.3	84.6	78.2	51.4	55.2	50.5	47.4	37.9	37.8	64.6	90.6	48.4	48.5	40.4	54.3	44.2	35.5	45.2	52.96	90.61	
12-Dec	35.7	39.1	38.9	46.3	42.2	42.4	45.1	35.7	40.5	40.5	44.5	47.9	52.3	29.1	35.7	52.8	48.4	49.5	33.8	78.4	86.8	91.7	47.0	36.9	47.54	91.71	
13-Dec	29.0	46.8	50.7	37.2	48.8	39.1	34.9	31.1	41.3	49.0	27.1	39.2	58.4	50.5	30.2	23.1	24.2	25.4	43.4	33.5	27.2	18.6	17.5	34.7	35.88	58.39	
14-Dec	22.8	24.5	23.2	24.2	28.1	28.8	57.7	64.8	88.3	29.8	48.6	39.1	23.0	29.6	39.3	57.7	37.1	42.7	73.2	94.3	64.6	58.6	57.7	69.3	46.95	94.35	
15-Dec	60.6	63.1	81.1	80.8	66.3	53.4	79.6	50.6	28.6	63.8	35.5	37.4	77.5	88.2	62.7	79.5	32.0	61.3	86.0	45.3	64.1	55.1	41.9	74.1	61.18	88.17	
16-Dec	23.7	69.5	64.5	23.9	23.8	46.2	35.5	40.0	74.6	30.8	36.8	44.1	47.0	35.9	59.7	65.1	34.2	38.9	23.7	24.9	26.1	27.7	27.8	21.2	39.40	74.62	
17-Dec	28.7	41.0	26.8	26.7	21.2	20.0	47.7	37.5	47.3	40.9	34.6	39.2	31.4	22.9	23.7	26.0	33.0	28.8	32.5	29.3	28.6	30.5	30.0	28.6	31.54	47.67	
18-Dec	32.1	25.8	23.9	26.3	30.5	19.4	22.4	24.5	46.2	43.1	41.2	53.0	45.8	38.7	37.5	39.8	50.9	56.7	41.2	45.9	40.9	36.0	52.7	59.6	38.92	59.60	
19-Dec	61.4	62.6	50.4	56.8	53.8	29.7	61.8	50.2	54.5	47.5	51.7	59.4	37.1	42.2	54.9	53.4	51.8	36.5	52.4	48.1	34.8	50.9	49.4	35.8	49.46	62.61	
20-Dec	30.9	39.7	33.3	38.2	47.5	32.7	38.1	27.3	22.1	34.3	46.6	37.5	46.1	69.6	90.2	46.4	52.7	57.9	69.7	69.4	81.8	47.8	47.9	41.7	47.89	90.18	
21-Dec	48.3	34.8	30.1	45.5	39.8	44.6	49.5	49.3	54.2	50.0	51.5	45.8	46.8	39.8	44.5	51.5	52.0	53.6	51.0	46.1	37.5	51.6	54.0	62.3	47.26	62.31	
22-Dec	54.9	37.1	50.0	62.3	56.9	55.1	59.4	53.9	51.3	66.7	60.8	53.6	43.4	38.0	48.1	54.6	53.6	53.2	51.0	42.1	35.7	19.6	20.1	19.4	47.52	66.66	
23-Dec	19.0	19.7	17.7	19.1	20.2	28.7	27.2	20.0	23.8	31.8	36.0	33.2	31.5	29.4	27.3	30.5	32.5	32.3	29.6	21.9	21.7	26.2	20.6	26.3	26.10	36.04	
24-Dec	24.9	23.8	15.3	AF	AF	AF	AF	AF	AF	AF	44.6	36.1	24.7	25.3	32.6	23.9	29.8	34.1	22.4	24.4	30.1	37.5	21.9	21.4	--	44.56	
25-Dec	23.0	19.6	20.8	43.4	33.7	56.6	35.7	45.4	31.3	63.9	52.9	36.2	33.7	35.0	28.1	86.7	85.8	56.5	72.1	46.2	77.5	64.3	68.0	58.9	48.97	86.67	
26-Dec	93.1	67.5	86.2	83.8	75.3	72.3	37.1	30.4	88.0	38.1	43.1	42.1	34.4	28.4	28.5	39.8	48.1	46.9	53.0	51.7	59.1	45.6	56.3	38.8	53.65	93.06	
27-Dec	35.4	56.7	38.2	24.4	36.1	42.5	30.3	36.2	37.6	43.7	53.8	35.7	28.8	33.8	29.2	30.9	42.4	46.6	54.1	59.7	43.9	47.5	34.1	32.8	39.77	59.67	
28-Dec	31.4	42.0	42.9	46.4	46.8	44.7	40.8	35.9	48.0	37.5	39.7	48.9	51.0	51.8	35.5	28.0	38.6	17.9	27.2	23.6	20.8	25.6	46.5	42.9	38.10	51.76	
29-Dec	43.9	27.5	33.8	30.9	26.6	24.8	38.5	31.2	21.0	88.9	80.8	43.6	56.9	30.7	62.8	58.4	68.4	32.2	43.9	75.6	55.0	74.0	49.3	43.2	47.58	88.93	
30-Dec	59.4	31.6	82.4	74.3	65.8	71.2	38.5	41.3	35.4	40.9	32.9	55.9	54.0	64.5	51.1	29.8	32.1	38.4	53.4	47.1	40.0	47.1	35.1	37.0	48.30	82.37	
31-Dec	33.5	48.3	35.8	47.3	58.0	60.7	73.4	45.2	61.3	60.4	36.8	55.4	42.7	92.5	75.5	30.7	29.4	66.1	32.8	43.9	48.3	38.2	33.9	63.5	50.57	92.45	
42.67 41.02 46.21 48.90 45.00 49.83 48.36 43.98 47.02 49.37 48.27 48.86 49.96 46.11 46.37 44.42 44.54 44.39 47.56 48.41 50.94 45.49 45.01 45.58																								Diurnal Average			
93.06 91.13 86.17 90.56 87.52 89.11 87.98 84.63 88.31 93.45 96.93 82.76 78.20 92.45 93.93 86.67 90.61 72.22 85.98 94.35 89.17 91.71 91.53 89.76																								Diurnal Maximum			
AF - Analyzer Failure																											
,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3 24-hr 100 ul/m^3																											

WEST CENTRAL AIRSHED SOCIETY

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

**END OF REPORT
DECEMBER 2016**