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

AIR QUALITY MONITORING
June 2016
Monthly Report

Prepared by:

West Central Airshed Society
Drayton Valley, Alberta

West Central
Airshed Society

July 8, 2016

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 June 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 Identified as:	AMS 906	Hinton

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

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

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

There was one reading occurring in June 2016 in excess of the one – hour average guideline as indicated in Air Monitoring Directive Section III.A.3. (a) for TRS. The maximum one-hour average reading was 18 ppb, occurring June 12 for the hour ending at 23:00 MST. There were no readings in June 2016 in excess of the twenty–four hour average guidelines as indicated in Air Monitoring Directive Section III.A.3. (a).

2. Operational times less than 90 percent:

There were no operational times less than 90 percent in the month of June.

3. Monitoring Notes:

AMS 906 (Hinton)

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

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

Sincerely,

Robert Scotten
Executive Director

Patrick Andersen
Environmental Specialist

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	June

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_2S				

CONTINUOUS AMBIENT MONITORING

			1-HR AVERAGE		24-HR AVERAGE	
PARAMETER	STATION NUMBER	% TIME OPERATIONAL	MAXIMUM CONCENTRATION (ppm)	NO. READINGS > REGULATIONS	MAXIMUM CONCENTRATION (ppm)	NO. READINGS > REGULATIONS
Wind	906	100.0	n/a	n/a	n/a	n/a
TRS	906	100.0	0.018	1	2.019	0
$PM_{2.5}$	906	100.0	73.2 $\mu g/m^3$	0	19.17 $\mu g/m^3$	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
JUNE 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 **West Central Airshed Society**

Continuous air quality/meteorlogical monitoring measurements

Hinton Pulp / Hinton **Station 906**		**June 2016**											24 Hour Average Max **(ppm)**
												Exceedences	
Parameter	**Calibration Hours**	**Number of Data**	**Percent Uptime**	**Mean**	**Min**	**Max**	**P10**	**Q1**	**Percentile Median**	**Q3**	**P90**	**1-hour**	**24-hour**	
TRS (ppb)	35	685	100.0	0.7	0.0	18.0	0.2	0.3	0.4	0.7	1.6	1	0	0.002
SO_2 (ppb)	35	685	100.0	0.5	0.0	6.4	0.0	0.0	0.1	0.4	1.4	0	-	0.002
O_3 (ppb)	35	685	100.0	27.2	0.8	65.1	8.2	16.2	29.2	37.1	43.9	0	0	0.043
NO (ppb)	36	684	100.0	0.7	0.0	10.6	0.1	0.2	0.4	0.8	1.6	-	-	-
NO_2 (ppb)	36	684	100.0	3.2	0.4	14.1	1.3	1.9	2.7	4.0	5.8	0	0	0.006
NO_x (ppb)	36	684	100.0	4.0	0.5	22.7	1.6	2.3	3.2	4.9	6.9	-	-	-
Particulate Matter 2.5 microns (μ/m^3)	0	720	100.0	7.2	0.0	73.2	3.0	4.3	5.9	8.4	13.0	0	0	19.17 ug/m3
Wind Speed (kph)	0	720	100.0	3.7	0.0	19.3	0.6	1.2	2.5	4.8	8.9	-	-	-
Temperature (^oC)	0	720	100.0	14.4	2.2	30.3	7.9	10.5	13.4	18.1	22.2	-	-	-
Relative Humidity (%)	0	720	100.0	56.5	9.0	90.9	24.2	33.4	59.0	79.3	88.0	-	-	-
Std Dev Wind Direction (deg)	0	720	100.0	56.0	17.8	113.8	31.4	40.3	52.7	69.8	87.1	-	-	-
Std Dev Wind Speed (kph)	0	720	100.0	3.0	0.1	9.6	1.1	1.6	2.4	3.8	5.9	-	-	-

WCAS - Hinton
Summary of Hourly Averages

Total Reduced Sulphur (TRS) - ppb
June 2016

Maximum Value: 17.75 ppb on Jun 12 23:00

Maximum Daily Average: 2.19 ppb on Jun 12

Minimum Value: 0 ppb on Jun 18 08:00

Minimum Daily Average: 0.20 ppb on Jun 10

Maximum Diurnal Average: 1.24 ppb at hour 8

Minimum Diurnal Average: 0.36 ppb at hour 14

Monthly Average: 0.727 ppb

Percentiles: P_1 = 0.1 P_{10} = 0.2 Q_1 = 0.3 Median = 0.4 Q_3 = 0.7 P_{90} = 1.6 P_{99} = 4.6

Hours in Service:	720
Hours of Data:	685
Hours of Missing Data:	35
Hours of Calibration:	35
Percent Operational Time:	100.0

Day	Hourly Period Ending At																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1-Jun	0	0	0	Z	0	1	0	0	0	1	1	0	0	0	0	1	0	1	1	1	1	0	0	0	0.55	1.28
2-Jun	0	0	0	Z	1	0	1	0	0	1	0	0	0	0	1	1	3	1	1	3	2	4	2	1	1.00	3.67
3-Jun	0	0	0	Z	0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	1	0	2	2	6	0.81	5.65
4-Jun	1	0	0	Z	0	0	0	0	0	1	1	0	0	0	0	1	0	1	1	2	0	0	0	0	0.59	1.88
5-Jun	0	0	0	Z	6	4	5	5	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.33	5.61
6-Jun	0	0	0	Z	2	0	0	2	2	2	2	1	1	0	1	1	1	0	0	0	0	0	0	0	0.76	2.32
7-Jun	0	0	0	Z	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.40	2.27
8-Jun	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.27	0.42
9-Jun	0	0	0	Z	0	0	0	0	0	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0.33	0.50
10-Jun	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	0.38
11-Jun	0	0	0	Z	1	1	1	1	0	0	0	0	1	0	0	0	0	1	0	0	1	2	2	2	0.68	2.26
12-Jun	2	2	2	Z	4	3	3	2	0	1	0	0	0	0	0	0	0	1	2	0	0	1	18	6	2.19	17.75
13-Jun	1	1	0	Z	0	0	0	0	1	0	1	1	1	1	1	0	0	1	1	0	0	0	0	0	0.53	1.44
14-Jun	0	0	0	Z	0	1	1	1	1	1	0	0	0	0	0	0	1	1	0	0	1	0	1	0	0.55	1.25
15-Jun	1	1	1	Z	2	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0.67	1.60
16-Jun	1	0	0	Z	2	2	2	1	2	0	0	0	0	0	0	1	0	1	1	1	0	2	1	2	0.85	1.67
17-Jun	0	1	1	Z	1	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	3	3	0.64	2.88
18-Jun	0	1	1	Z	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.41	1.53
19-Jun	0	0	0	Z	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0.42	1.30
20-Jun	0	1	1	Z	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0.30	0.75
21-Jun	1	1	0	Z	0	1	1	0	0	2	1	0	0	0	1	1	0	1	0	0	0	1	2	1	0.65	1.64
22-Jun	0	0	0	Z	0	0	0	0	1	1	1	1	0	0	1	1	1	1	0	0	0	0	0	0	0.50	1.15
23-Jun	0	0	0	Z	1	1	2	4	4	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0.69	3.57
24-Jun	1	1	1	Z	1	1	0	1	2	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0.51	1.56
25-Jun	0	0	0	Z	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	2	1	2	0.55	1.92
26-Jun	1	2	5	Z	2	1	2	2	2	2	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1.04	4.72
27-Jun	3	2	2	Z	2	1	2	1	2	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0.96	2.67
28-Jun	0	2	3	Z	4	3	5	4	3	2	0	0	0	0	0	0	2	1	1	3	3	0	0	3	1.75	4.65
29-Jun	0	0	0	Z	0	1	3	2	4	3	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0.90	4.39
30-Jun	0	0	0	Z	0	0	1	2	1	1	1	1	0	0	0	0	1	2	1	1	0	1	1	1	0.69	2.33
	0.58	0.63	0.76	--	1.08	0.88	1.16	1.24	1.22	0.93	0.59	0.42	0.36	0.36	0.40	0.44	0.50	0.58	0.52	0.58	0.53	0.65	1.22	1.04	Diurnal Average	
	2.67	2.30	4.72	--	5.61	3.53	5.15	5.17	4.74	3.39	2.22	1.31	0.96	0.75	0.83	1.32	2.51	1.81	1.97	3.05	3.45	3.67	17.75	5.85	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 (SO_2) - ppb
June 2016

Maximum Value: 6.41 ppb on Jun 15 09:00

Maximum Daily Average: 1.95 ppb on Jun 15

Minimum Value: 0.0 ppb on Jun 1 01:00

Minimum Daily Average: 0.01 ppb on Jun 8

Maximum Diurnal Average: 1.06 ppb at hour 11

Minimum Diurnal Average: 0.13 ppb at hour 23

Monthly Average: 0.458 ppb

Percentiles: P_1 = 0.0 P_{10} = 0.0 Q_1 = 0.0 Median = 0.1 Q_3 = 0.4 P_{90} = 1.4 P_{99} = 4.2

Hours in Service:	720
Hours of Data:	685
Hours of Missing Data:	35
Hours of Calibration:	35
Percent Operational Time:	100.0

Day	Hourly Period Ending At																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	1.2	1.4	1.6	0.4	1.0	1.0	1.0	1.6	0.9	2.8	0.4	0.0	0.0	0.0	0.59	2.83
2-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	1.1	0.8	1.0	1.1	1.1	0.2	2.0	0.6	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.36	1.97
3-Jun	0.1	0.1	0.0	Z	0.0	0.1	0.0	0.1	2.3	2.1	1.6	1.4	2.6	1.0	0.9	0.5	0.0	0.5	1.1	0.8	0.3	0.1	0.1	0.3	0.69	2.55
4-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.2	1.4	0.8	0.1	0.4	1.0	1.6	0.1	0.9	2.5	0.1	0.0	0.0	0.0	0.0	0.40	2.49
5-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.1	0.3	1.5	1.3	1.2	0.5	3.2	1.3	1.0	0.8	0.4	0.2	0.2	0.4	0.2	0.1	0.2	0.5	0.59	3.23
6-Jun	0.2	0.2	0.2	Z	0.1	0.0	0.1	0.1	0.7	1.1	1.6	1.5	2.1	1.2	2.7	1.5	0.9	0.4	0.1	0.2	0.1	0.2	0.1	0.1	0.67	2.65
7-Jun	0.1	0.1	0.1	Z	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.4	0.7	0.3	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.12	0.65
8-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.10
9-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.2	C	C	C	C	C	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.05	0.58
10-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.02	0.07
11-Jun	0.0	0.0	0.1	Z	0.0	0.2	0.2	0.7	2.2	0.6	0.1	1.7	2.2	1.5	1.0	1.1	0.8	1.3	0.6	0.5	1.4	1.3	1.1	3.6	0.97	3.57
12-Jun	2.8	4.1	1.7	Z	3.4	2.6	4.8	6.2	1.0	1.2	1.1	1.1	0.5	0.9	0.4	0.3	0.2	1.9	1.9	1.0	1.1	1.2	0.6	0.8	1.77	6.16
13-Jun	1.1	0.3	0.2	Z	0.2	0.2	0.2	0.2	0.6	0.6	1.1	2.8	2.0	0.6	2.0	0.2	0.1	0.3	0.2	0.3	0.1	0.1	0.1	0.0	0.59	2.83
14-Jun	0.1	0.0	0.0	Z	0.0	0.0	0.1	0.4	2.0	2.2	0.3	0.1	0.3	0.0	0.0	0.0	0.1	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.28	2.25
15-Jun	0.0	0.0	0.0	Z	3.1	4.9	6.0	3.4	6.4	4.3	2.2	3.5	4.1	3.2	0.8	0.5	0.4	0.4	0.3	0.2	0.1	0.2	0.4	0.3	1.95	6.41
16-Jun	1.2	1.0	1.4	Z	1.2	1.3	1.2	1.1	0.5	0.2	0.2	0.8	0.5	0.2	0.2	0.1	0.0	0.1	0.2	0.1	0.1	0.1	0.0	0.1	0.50	1.38
17-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.3	0.3	0.3	0.4	0.3	0.1	0.5	0.3	0.3	0.4	0.3	0.4	0.3	0.3	0.2	0.21	0.51
18-Jun	0.0	0.1	0.1	Z	0.0	0.1	0.0	0.0	0.0	0.3	3.4	3.6	3.3	0.5	0.9	0.6	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.60	3.56
19-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.1	0.2	0.1	0.3	0.5	0.3	0.2	0.2	0.1	0.4	0.1	0.2	0.1	0.1	0.3	0.1	0.1	0.1	0.15	0.47
20-Jun	0.1	0.1	0.1	Z	0.0	0.1	0.1	0.0	0.2	0.1	2.2	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.20	2.15
21-Jun	0.1	0.2	0.0	Z	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.11	1.39
22-Jun	0.0	0.0	0.1	Z	0.1	0.1	0.1	0.0	0.1	0.6	3.5	1.5	0.5	0.5	1.2	0.7	3.1	2.6	0.2	0.1	0.1	0.1	0.0	0.2	0.66	3.51
23-Jun	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.2	1.8	1.7	0.5	0.3	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.27	1.76
24-Jun	0.1	0.1	0.1	Z	0.0	0.0	0.1	0.1	0.1	0.3	0.2	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.07	0.26
25-Jun	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.1	0.0	0.0	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.06	0.91
26-Jun	0.1	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.2	1.3	0.0	0.1	1.2	0.5	0.7	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.21	1.33
27-Jun	0.1	0.0	0.0	Z	0.0	0.0	0.0	0.2	1.4	1.5	4.9	3.8	1.1	1.7	0.9	1.2	1.3	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.84	4.93
28-Jun	0.0	0.0	0.0	Z	0.1	0.0	0.0	0.5	0.9	1.9	0.5	0.1	0.1	0.0	0.0	0.0	0.7	0.1	0.1	0.4	0.1	0.1	0.0	0.1	0.25	1.94
29-Jun	0.1	0.0	0.0	Z	0.1	0.0	0.1	0.1	0.5	2.6	1.3	0.6	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.30	2.56
30-Jun	0.1	0.1	0.1	Z	0.0	0.0	0.1	0.2	0.3	0.2	0.3	1.0	0.2	0.2	0.4	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.16	0.99
	0.22	0.23	0.14	--	0.28	0.33	0.45	0.47	0.78	0.91	1.06	0.99	0.98	0.62	0.58	0.50	0.36	0.43	0.32	0.27	0.18	0.15	0.13	0.23	Diurnal Average	
	2.83	4.13	1.66	--	3.40	4.92	5.96	6.16	6.41	4.34	4.93	3.84	4.12	3.16	2.65	1.97	3.12	2.61	2.49	2.83	1.39	1.29	1.15	3.57	Diurnal Maximum	

Z - zerospan C - Calibration

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

WCAS - Hinton
Summary of Hourly Averages

Ozone (O_3) - ppb
June 2016

Maximum Value: 65.14 ppb on Jun 5 14:00

Maximum Daily Average: 42.96 ppb on Jun 5

Minimum Value: 0.8 ppb on Jun 22 03:00

Minimum Daily Average: 13.71 ppb on Jun 24

Maximum Diurnal Average: 39.29 ppb at hour 15

Minimum Diurnal Average: 11.62 ppb at hour 5

Monthly Average: 27.208 ppb

Percentiles: P_1 = 1.7 P_{10} = 8.2 Q_1 = 16.2 Median = 29.2 Q_3 = 37.1 P_{90} = 43.9 P_{99} = 55.9

Hours in Service:	720
Hours of Data:	685
Hours of Missing Data:	35
Hours of Calibration:	35
Percent Operational Time:	100.0

Day	Hourly Period Ending At																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1-Jun	8.3	7.1	4.5	Z	3.2	2.7	2.5	4.1	6.6	18.2	39.2	43.5	44.3	45.4	45.7	43.9	44.2	44.1	44.7	41.3	36.9	32.8	28.9	19.9	26.61	45.69
2-Jun	15.3	17.1	35.1	Z	35.1	34.8	29.4	32.2	34.0	39.9	43.1	43.6	44.2	43.7	45.6	43.8	39.5	30.1	29.3	34.0	34.0	28.6	21.6	20.6	33.68	45.57
3-Jun	15.3	10.1	6.5	Z	2.9	4.1	8.3	17.3	31.8	48.0	49.3	48.8	46.6	45.4	42.7	40.0	38.4	37.9	37.2	37.1	36.7	29.9	20.6	28.4	29.70	49.33
4-Jun	22.8	15.0	12.6	Z	5.0	4.9	8.7	12.1	17.5	28.6	34.7	37.1	39.3	40.9	43.1	46.4	53.9	53.9	53.3	52.6	48.8	48.6	30.0	24.7	31.93	53.90
5-Jun	16.3	19.0	14.5	Z	8.6	10.3	16.3	27.2	38.8	50.2	55.5	54.8	57.9	65.1	64.2	61.0	60.3	56.2	56.0	57.0	52.4	51.3	49.1	46.2	42.96	65.14
6-Jun	26.0	28.0	22.8	Z	11.0	9.3	8.6	17.6	28.4	30.1	32.1	39.8	38.3	39.8	43.1	46.4	46.0	40.8	37.5	38.6	37.0	24.0	16.4	15.6	29.44	46.42
7-Jun	13.3	14.4	11.9	Z	6.9	3.2	9.4	13.5	34.3	44.5	47.3	48.2	47.6	46.7	44.1	43.9	42.4	44.1	41.5	42.1	38.0	34.0	31.7	38.4	32.23	48.22
8-Jun	30.9	26.2	19.0	Z	12.9	14.7	13.4	15.8	22.9	29.0	30.8	32.2	33.4	34.0	32.3	33.6	38.4	38.1	37.6	36.2	27.8	21.2	14.5	12.5	26.41	38.39
9-Jun	9.8	11.8	14.1	Z	28.5	23.7	15.2	21.5	26.9	C	C	C	C	C	37.0	34.9	27.4	26.2	22.2	26.6	21.7	17.0	20.6	20.3	22.53	36.98
10-Jun	13.1	8.4	10.3	Z	9.3	16.2	15.5	21.5	30.9	35.5	36.9	39.4	42.6	45.3	44.4	38.9	32.8	30.2	29.1	31.1	30.5	30.8	29.8	29.7	28.36	45.29
11-Jun	26.5	19.0	12.9	Z	15.1	19.1	21.1	23.6	29.3	36.5	40.6	41.6	43.6	43.3	44.5	43.4	36.4	41.4	44.4	43.7	42.2	37.2	39.0	36.1	33.93	44.51
12-Jun	34.1	31.3	32.4	Z	24.7	24.7	20.1	20.1	26.7	26.7	26.9	28.6	30.3	31.7	35.6	38.8	42.3	41.3	41.2	42.5	42.0	38.1	34.5	33.4	32.53	42.46
13-Jun	35.3	17.9	16.1	Z	12.8	9.2	9.5	11.8	21.7	32.8	39.1	40.8	44.6	46.4	47.6	48.4	45.6	42.0	36.6	34.5	27.8	20.3	14.9	8.7	28.89	48.45
14-Jun	7.0	5.0	2.6	Z	2.2	1.7	10.7	25.1	27.8	39.2	39.9	36.3	39.6	33.8	29.7	34.6	33.9	18.9	25.6	32.3	26.4	26.8	18.1	11.9	23.01	39.94
15-Jun	10.5	19.1	15.3	Z	31.6	32.5	32.6	31.4	29.6	31.0	32.1	31.5	30.3	31.4	34.0	35.0	35.3	36.2	36.0	35.5	37.0	38.1	36.9	37.5	31.33	38.14
16-Jun	35.6	38.0	36.8	Z	34.7	32.8	31.1	31.5	33.6	34.3	34.0	34.6	34.7	34.7	32.7	29.7	29.9	29.8	28.7	29.4	23.4	23.9	21.9	22.3	31.23	38.03
17-Jun	19.2	22.9	21.3	Z	15.9	14.7	15.1	14.0	22.0	27.2	26.8	28.7	29.9	30.9	32.1	31.7	32.7	34.6	33.0	30.6	29.2	25.9	23.9	22.9	25.44	34.58
18-Jun	26.0	17.2	17.7	Z	5.0	6.2	19.1	25.0	26.9	30.9	33.9	34.9	37.3	39.1	40.3	41.2	39.6	38.6	39.3	37.0	34.0	30.9	34.2	35.8	30.00	41.21
19-Jun	29.5	21.0	20.3	Z	17.0	17.9	18.9	21.2	25.7	28.8	31.6	33.6	36.1	34.3	31.4	37.5	37.8	38.1	38.2	38.3	36.3	34.2	32.5	29.0	29.95	38.33
20-Jun	23.4	16.5	16.2	Z	8.2	9.3	11.9	16.6	19.8	24.9	34.5	44.5	43.6	43.4	43.7	42.9	43.9	43.2	41.8	41.5	41.1	39.4	35.9	35.0	31.35	44.51
21-Jun	32.2	28.9	17.8	Z	21.5	19.8	18.2	15.6	19.4	19.8	18.4	23.3	24.2	22.1	28.2	29.2	33.8	27.7	19.1	17.3	9.9	10.9	6.9	4.0	20.36	33.79
22-Jun	1.4	0.9	0.8	Z	1.1	2.9	5.8	9.3	15.2	21.8	28.3	31.6	31.7	33.5	37.1	43.1	45.7	43.3	33.6	33.0	35.0	24.6	14.1	9.3	21.86	45.73
23-Jun	7.2	4.1	2.9	Z	1.8	3.9	5.8	14.5	20.8	28.4	30.8	33.5	33.9	34.0	33.8	32.3	26.8	28.6	23.0	19.3	17.8	14.6	5.8	4.9	18.63	33.96
24-Jun	5.5	4.0	5.5	Z	4.7	7.8	14.0	9.3	10.2	10.3	15.1	18.6	17.0	23.2	23.4	19.2	21.8	21.7	19.0	15.9	14.6	12.3	10.4	11.8	13.71	23.40
25-Jun	7.9	9.9	9.0	Z	5.2	6.6	11.4	16.2	21.5	25.0	24.1	24.7	26.6	27.5	27.5	25.5	24.8	25.0	22.6	16.8	14.8	17.1	20.1	14.5	18.45	27.55
26-Jun	10.2	5.7	3.1	Z	2.7	3.7	8.6	12.6	16.0	20.5	34.3	33.0	33.8	35.5	37.1	34.6	33.8	33.6	31.2	26.4	21.2	7.8	8.4	11.2	20.21	37.08
27-Jun	10.4	6.7	4.4	Z	5.1	6.8	11.1	15.7	19.2	24.4	30.2	31.8	33.1	35.5	38.2	40.0	42.2	38.8	38.8	33.2	28.3	16.2	10.9	10.5	23.11	42.21
28-Jun	8.2	4.8	4.8	Z	3.6	5.9	13.0	17.4	23.6	34.3	38.4	40.7	44.6	46.7	45.0	45.6	38.1	38.0	33.5	35.5	30.1	17.8	5.9	4.0	25.20	46.71
29-Jun	3.5	2.3	2.9	Z	1.7	1.9	4.2	11.1	20.3	28.7	37.3	42.9	47.9	45.5	45.2	37.6	34.0	37.4	34.8	40.9	37.0	35.3	31.2	24.7	26.44	47.90
30-Jun	12.7	12.5	13.7	Z	10.8	12.2	11.7	15.2	31.6	23.3	35.4	41.0	49.7	52.0	49.5	44.7	42.4	28.4	30.6	30.4	18.1	11.5	9.2	5.2	25.74	51.99
	17.25	14.82	13.59	--	11.62	12.12	14.04	18.01	24.44	30.10	34.50	36.67	38.16	39.00	39.29	38.93	38.13	36.27	34.64	34.36	30.99	26.71	22.61	20.96	Diurnal Average	
	35.59	38.03	36.83	--	35.12	34.75	32.62	32.19	38.84	50.17	55.46	54.85	57.94	65.14	64.17	60.98	60.26	56.15	55.95	57.02	52.43	51.29	49.12	46.17	Diurnal Maximum	

Z - zerospan C - Calibration

Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 82.5 ppb 24-hr -- ppb

WCAS - Hinton
Summary of Hourly Averages

Nitrogen Oxide (NO) - ppb
June 2016

Maximum Value: 10.65 ppb on Jun 22 05:00

Maximum Daily Average: 1.81 ppb on Jun 22

Minimum Value: 0.0 ppb on Jun 10 23:00

Minimum Daily Average: 0.37 ppb on Jun 19

Maximum Diurnal Average: 1.54 ppb at hour 8

Minimum Diurnal Average: 0.26 ppb at hour 21

Monthly Average: 0.744 ppb

Percentiles: P_1 = 0.0 P_{10} = 0.1 Q_1 = 0.2 Median = 0.4 Q_3 = 0.8 P_{90} = 1.6 P_{99} = 5.2

Hours in Service:	720
Hours of Data:	684
Hours of Missing Data:	36
Hours of Calibration:	36
Percent Operational Time:	100.0

Day	Hourly Period Ending At																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1-Jun	0.1	0.1	0.1	Z	2.7	2.9	4.8	3.6	4.3	4.1	1.2	0.6	0.7	0.5	0.5	0.6	0.6	0.5	0.4	0.5	0.2	0.2	0.1	0.1	1.28	4.83
2-Jun	0.1	0.2	0.1	Z	0.1	0.1	0.4	0.9	0.6	1.0	0.5	0.6	0.7	0.7	0.2	0.7	0.4	0.9	1.3	0.2	0.2	0.3	0.4	0.8	0.50	1.26
3-Jun	0.3	0.3	0.2	Z	3.5	2.5	2.8	2.3	2.3	0.8	0.7	0.6	0.9	0.6	0.5	0.5	0.4	0.5	0.6	0.3	0.1	0.1	0.7	0.1	0.93	3.52
4-Jun	0.1	0.1	0.1	Z	1.7	1.0	1.4	1.2	1.4	0.6	0.4	0.7	0.5	0.5	0.6	0.5	0.1	0.2	0.4	0.1	0.1	0.4	2.8	0.2	0.65	2.84
5-Jun	1.2	0.3	0.1	Z	0.4	0.2	1.0	2.0	1.2	0.6	0.2	0.1	0.5	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.42	2.04
6-Jun	0.4	0.1	0.1	Z	0.2	1.0	2.1	2.6	0.7	0.8	1.2	1.0	0.9	0.5	0.6	0.4	0.4	0.3	0.3	0.4	0.3	1.4	1.1	0.4	0.75	2.58
7-Jun	0.5	0.1	0.1	Z	2.7	5.0	2.3	4.4	3.7	0.3	0.2	0.3	0.2	0.4	0.3	0.2	0.4	0.6	0.3	0.3	0.2	0.2	0.2	0.2	1.01	5.00
8-Jun	0.2	0.1	0.1	Z	0.6	0.9	1.6	1.4	0.7	0.4	0.6	0.4	0.4	0.3	0.6	0.5	0.4	0.1	0.6	0.6	0.1	0.2	0.1	0.2	0.48	1.60
9-Jun	0.1	0.1	0.0	Z	0.0	0.2	0.1	0.6	0.4	C	C	C	C	C	C	0.7	0.2	0.3	0.5	0.3	0.1	0.1	0.1	0.3	--	0.67
10-Jun	0.0	0.2	0.1	Z	0.9	0.4	0.5	0.5	0.7	0.9	0.5	0.7	0.4	0.6	0.6	0.5	0.4	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.37	0.93
11-Jun	0.0	0.0	0.0	Z	0.1	0.4	0.6	1.1	1.0	0.4	0.3	1.0	1.1	0.5	0.5	0.4	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.2	0.38	1.12
12-Jun	0.2	0.4	0.2	Z	0.8	0.9	2.6	4.1	0.6	0.8	1.0	0.6	0.5	0.6	0.3	0.3	0.3	0.8	0.7	0.3	0.2	0.1	0.1	0.1	0.72	4.12
13-Jun	0.1	0.1	0.1	Z	1.0	0.7	1.6	2.2	1.0	0.7	1.0	1.0	0.6	0.4	1.3	1.0	1.0	0.2	0.4	0.9	0.2	0.2	0.1	0.2	0.69	2.19
14-Jun	0.1	0.7	0.6	Z	1.4	5.2	3.1	1.0	2.4	2.2	0.4	0.7	0.5	0.4	0.2	0.1	0.7	0.4	0.4	0.2	0.6	0.1	0.0	0.0	0.92	5.21
15-Jun	0.5	0.0	0.0	Z	0.1	0.4	0.9	1.0	2.1	1.6	1.3	1.7	1.9	1.5	0.9	1.1	0.9	0.8	0.5	0.4	0.4	0.0	0.1	0.1	0.79	2.09
16-Jun	0.2	0.1	0.2	Z	0.2	0.3	0.6	0.6	0.3	0.3	0.7	1.1	1.0	0.6	0.6	0.4	0.2	0.4	0.4	0.1	0.1	0.1	0.1	0.1	0.37	1.08
17-Jun	0.0	0.0	0.0	Z	0.3	0.1	0.3	1.0	0.3	0.9	1.2	0.9	0.8	0.8	0.5	1.4	0.7	0.7	0.9	0.7	0.3	0.1	0.1	0.3	0.54	1.37
18-Jun	0.0	0.1	0.0	Z	3.1	7.0	0.3	0.6	1.3	1.2	0.8	0.8	0.8	0.6	0.2	0.5	0.4	0.4	0.4	0.4	0.2	0.2	0.1	0.1	0.84	6.97
19-Jun	0.2	0.2	0.2	Z	0.3	0.3	0.4	0.7	0.3	0.4	0.8	0.3	0.7	0.4	0.3	0.8	0.6	0.6	0.4	0.1	0.1	0.2	0.0	0.0	0.37	0.83
20-Jun	0.0	0.1	0.1	Z	0.2	0.4	1.2	1.7	1.5	0.9	1.4	0.4	0.3	0.3	0.6	0.5	0.3	1.0	0.6	0.3	0.2	0.1	0.1	0.1	0.55	1.74
21-Jun	0.1	0.1	0.3	Z	0.1	0.1	0.4	0.2	0.2	0.2	0.4	1.1	0.6	0.4	1.9	1.3	0.3	0.7	0.4	1.1	0.5	0.6	0.2	0.3	0.51	1.92
22-Jun	2.7	3.7	5.4	Z	10.6	2.9	2.9	3.1	1.1	1.4	1.9	0.8	0.4	0.5	0.7	0.2	1.0	0.7	0.3	0.3	0.1	0.4	0.1	0.6	1.81	10.65
23-Jun	0.1	0.9	1.0	Z	1.6	1.9	3.9	2.5	3.9	1.8	0.7	0.4	0.3	0.5	1.3	0.4	0.4	0.2	0.5	0.2	0.2	0.1	0.4	0.1	1.03	3.94
24-Jun	0.1	0.3	0.1	Z	0.9	0.7	0.9	1.0	0.8	0.7	1.6	1.3	2.7	1.1	0.7	0.3	0.6	0.4	0.4	0.4	0.7	0.1	0.7	0.1	0.73	2.68
25-Jun	0.3	0.2	0.1	Z	0.1	0.7	0.4	0.8	0.6	0.4	0.7	0.5	0.6	0.8	0.3	0.3	0.2	1.2	0.3	0.3	0.5	0.1	0.0	0.2	0.43	1.19
26-Jun	0.7	0.3	0.2	Z	0.3	1.0	0.7	0.6	1.2	1.7	0.6	0.5	0.6	0.4	0.6	0.3	0.1	0.1	0.1	0.2	0.4	9.6	3.3	8.2	1.38	9.63
27-Jun	1.2	2.4	2.2	Z	0.3	0.6	0.5	0.4	1.5	3.4	2.2	1.6	0.5	0.6	0.6	0.4	0.3	0.2	0.1	0.1	0.1	1.0	0.4	0.3	0.92	3.41
28-Jun	0.8	1.5	0.1	Z	7.8	1.2	0.6	0.5	1.0	1.1	0.4	0.3	0.2	0.2	0.3	0.1	0.3	0.4	0.3	0.4	0.1	0.1	0.1	0.2	0.78	7.83
29-Jun	0.2	0.4	0.1	Z	3.8	2.9	3.0	1.9	1.7	2.3	1.0	0.5	0.3	0.7	0.4	0.3	1.0	1.2	0.4	0.6	0.3	0.4	0.4	0.8	1.06	3.75
30-Jun	0.7	1.5	1.0	Z	0.2	0.5	1.4	1.6	0.5	1.5	1.8	1.2	0.1	0.7	0.3	0.3	0.5	0.7	0.9	0.3	0.8	0.2	0.3	0.3	0.76	1.78
	0.37	0.48	0.43	--	1.53	1.41	1.45	1.54	1.32	1.15	0.88	0.74	0.69	0.56	0.58	0.51	0.45	0.52	0.44	0.35	0.26	0.56	0.42	0.50	Diurnal Average	
	2.67	3.69	5.35	--	10.65	6.97	4.83	4.42	4.31	4.11	2.24	1.74	2.68	1.48	1.92	1.37	1.02	1.24	1.26	1.14	0.78	9.63	3.25	8.24	Diurnal Maximum	

Z - zerospan C - Calibration

Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ppb 24-hr --- ppb

WCAS - Hinton
Summary of Hourly Averages

Nitrogen Dioxide (NO_2) - ppb
June 2016

Maximum Value: 14.06 ppb on Jun 4 23:00

Maximum Daily Average: 5.60 ppb on Jun 6

Minimum Value: 0.4 ppb on Jun 26 18:00

Minimum Daily Average: 2.07 ppb on Jun 10

Maximum Diurnal Average: 4.61 ppb at hour 1

Minimum Diurnal Average: 1.92 ppb at hour 15

Monthly Average: 3.215 ppb

Percentiles: P_1 = 0.7 P_{10} = 1.3 Q_1 = 1.9 Median = 2.7 Q_3 = 4.0 P_{90} = 5.8 P_{99} = 10.9

Hours in Service:	720
Hours of Data:	684
Hours of Missing Data:	36
Hours of Calibration:	36
Percent Operational Time:	100.0

Day	Hourly Period Ending At																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1-Jun	5.1	4.4	4.5	Z	4.4	5.5	4.7	4.4	5.0	7.7	4.0	2.4	2.3	1.7	1.9	2.2	2.1	2.2	2.2	5.1	2.9	2.4	2.2	4.8	3.65	7.75
2-Jun	5.4	4.6	3.0	Z	3.0	3.1	5.1	3.7	2.5	3.1	1.9	1.8	2.2	2.6	1.3	3.2	2.0	3.0	4.8	1.8	1.7	6.6	9.3	7.2	3.60	9.31
3-Jun	5.6	4.4	2.7	Z	3.2	3.4	3.5	4.1	6.1	3.1	2.6	2.3	3.2	2.2	2.0	1.6	1.7	2.0	2.9	2.1	2.1	4.9	10.0	3.8	3.46	9.98
4-Jun	3.0	3.6	2.8	Z	4.7	4.1	3.7	3.5	3.5	2.2	1.6	2.1	1.6	1.4	1.9	2.2	1.0	2.0	3.4	1.0	1.5	4.1	14.1	11.1	3.48	14.06
5-Jun	11.3	6.2	5.3	Z	6.6	3.2	4.3	7.3	5.6	3.3	1.9	1.3	2.8	2.1	1.7	2.2	2.1	2.1	1.9	2.6	2.6	2.5	2.2	3.4	3.67	11.29
6-Jun	12.3	5.4	3.7	Z	4.1	8.4	6.8	8.5	3.6	4.0	5.5	5.7	4.7	2.3	2.8	3.1	4.8	3.6	2.8	3.8	5.1	10.9	10.4	6.5	5.60	12.28
7-Jun	6.3	3.7	4.0	Z	7.7	8.8	6.8	11.0	11.1	2.3	1.8	1.9	2.1	3.0	2.2	2.0	2.7	2.7	2.8	2.9	3.0	3.4	5.0	2.9	4.35	11.13
8-Jun	2.9	2.6	2.8	Z	4.3	4.4	4.8	3.5	2.6	2.2	2.4	2.4	2.4	2.5	3.1	2.5	2.1	1.7	3.0	3.6	2.3	3.6	2.3	2.7	2.91	4.82
9-Jun	2.9	2.1	2.2	Z	1.2	3.1	1.9	3.8	2.4	C	C	C	C	C	C	1.9	0.9	1.4	2.2	3.2	2.8	1.8	2.2	4.9	--	4.92
10-Jun	3.1	3.2	1.6	Z	4.7	3.7	2.8	2.6	2.2	2.0	1.3	1.7	1.4	1.9	2.0	2.1	1.7	1.1	1.5	1.8	1.4	1.2	1.1	1.5	2.07	4.68
11-Jun	1.9	1.9	2.0	Z	3.7	3.8	3.0	2.6	2.5	1.2	1.0	2.6	2.8	1.9	1.7	1.9	1.4	2.9	2.2	2.1	2.8	4.7	2.7	7.9	2.66	7.90
12-Jun	7.4	9.3	4.2	Z	8.5	6.1	10.2	9.5	1.4	1.8	1.6	1.4	1.0	1.3	0.8	0.9	1.0	2.7	3.1	2.2	2.5	4.7	3.0	2.3	3.78	10.24
13-Jun	2.3	2.6	2.6	Z	3.5	3.3	2.8	3.9	3.4	2.5	1.8	2.6	1.9	1.2	3.0	2.0	3.0	1.9	3.2	4.2	3.0	2.7	2.2	3.5	2.75	4.22
14-Jun	1.5	1.9	3.0	Z	3.3	3.4	4.9	3.3	5.8	4.5	2.6	2.4	2.4	2.1	1.4	1.1	3.7	4.9	2.3	2.1	3.6	2.5	2.3	4.1	3.01	5.82
15-Jun	6.1	2.9	4.2	Z	5.0	6.4	5.9	5.2	7.0	5.1	3.7	4.8	6.5	5.1	2.5	3.2	2.2	2.7	2.2	2.4	1.4	1.5	3.2	2.8	4.00	6.95
16-Jun	6.7	4.0	5.2	Z	4.9	5.8	7.0	5.5	2.0	1.6	2.6	3.7	3.2	1.7	2.5	2.5	1.2	2.1	2.5	0.9	0.7	0.5	0.6	0.8	2.96	7.02
17-Jun	0.7	0.5	1.4	Z	3.4	1.7	3.4	2.3	1.6	2.3	1.7	1.9	1.7	1.5	1.2	2.7	2.2	2.5	2.9	2.7	3.6	5.0	5.1	5.2	2.48	5.22
18-Jun	2.3	3.5	2.4	Z	6.0	7.8	1.9	1.2	1.6	1.5	1.8	1.8	1.8	1.3	0.7	0.9	1.2	1.5	1.5	2.9	3.0	3.9	0.8	1.0	2.28	7.81
19-Jun	3.4	1.5	3.2	Z	4.5	2.9	2.5	2.7	1.2	1.4	1.8	1.2	1.8	2.2	1.4	2.8	2.0	2.0	1.4	1.1	3.0	2.3	1.0	1.5	2.12	4.48
20-Jun	1.7	3.5	3.0	Z	1.9	2.6	3.2	2.9	2.2	1.7	3.1	1.3	1.1	1.0	1.3	1.5	1.3	3.0	1.7	1.6	2.1	2.3	2.2	2.1	2.10	3.53
21-Jun	2.8	5.6	6.9	Z	3.2	4.5	4.7	1.6	1.1	1.3	2.4	3.6	3.0	1.3	3.5	3.4	2.2	4.7	2.0	5.3	2.7	4.9	3.9	3.6	3.40	6.93
22-Jun	5.0	3.7	2.8	Z	2.9	2.2	3.2	4.1	2.3	2.9	4.1	2.7	1.2	1.1	2.3	1.2	3.4	3.2	1.5	1.5	1.9	4.7	6.6	5.3	3.03	6.59
23-Jun	3.8	4.5	3.8	Z	3.9	3.1	4.0	4.3	7.4	4.8	2.3	1.8	1.7	2.4	3.9	2.0	2.8	1.2	2.5	1.9	1.6	2.7	3.8	2.4	3.15	7.37
24-Jun	2.9	3.7	2.4	Z	2.5	4.5	6.7	6.8	4.9	3.3	4.5	4.7	6.3	2.9	1.9	1.4	1.5	1.7	1.8	2.6	3.0	2.7	3.8	2.6	3.44	6.75
25-Jun	5.9	4.6	4.6	Z	2.3	4.1	2.0	1.3	1.1	1.1	1.3	1.0	1.2	1.6	1.0	0.9	1.6	2.7	2.1	2.0	3.7	3.1	1.6	6.2	2.47	6.16
26-Jun	5.9	4.6	5.9	Z	3.3	2.7	2.0	1.6	2.4	2.9	1.2	1.1	1.6	1.3	1.5	1.2	0.6	0.4	0.5	2.1	6.3	13.1	7.7	5.9	3.31	13.11
27-Jun	4.0	8.5	9.8	Z	4.1	4.0	2.3	1.5	3.1	4.8	4.7	3.6	1.4	1.6	1.5	1.6	1.7	1.7	1.3	1.3	1.6	4.6	4.9	5.5	3.44	9.82
28-Jun	5.8	7.9	5.5	Z	7.8	4.7	3.4	2.2	4.0	5.8	2.7	1.8	1.3	1.1	1.5	1.3	4.6	2.5	2.2	3.3	2.1	1.1	1.4	2.7	3.34	7.90
29-Jun	2.2	3.3	2.9	Z	2.2	1.8	3.7	2.4	4.3	5.8	4.0	2.5	1.5	1.7	1.8	2.3	3.6	3.1	2.4	2.6	1.6	2.6	4.1	5.2	2.94	5.75
30-Jun	8.4	4.8	5.4	Z	3.7	3.7	6.1	9.3	4.8	8.1	4.1	3.6	0.7	1.7	1.4	1.3	2.7	6.1	4.2	2.5	5.8	3.0	5.9	3.6	4.38	9.29
	4.61	4.09	3.79	--	4.15	4.24	4.24	4.22	3.62	3.25	2.62	2.47	2.31	1.93	1.92	1.97	2.15	2.51	2.37	2.50	2.72	3.81	4.19	4.10	Diurnal Average	
	12.28	9.26	9.82	--	8.50	8.79	10.24	10.97	11.13	8.09	5.47	5.73	6.52	5.06	3.92	3.40	4.81	6.06	4.83	5.33	6.31	13.11	14.06	11.13	Diurnal Maximum	

Z - zerospan C - Calibration

Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb 24-hr 106 ppb

WCAS - Hinton
Summary of Hourly Averages

NOx (NO_x) - ppb
June 2016

Maximum Value: 22.66 ppb on Jun 26 22:00

Maximum Daily Average: 6.36 ppb on Jun 6

Minimum Value: 0.5 ppb on Jun 26 18:00

Minimum Daily Average: 2.42 ppb on Jun 10

Maximum Diurnal Average: 5.75 ppb at hour 8

Minimum Diurnal Average: 2.47 ppb at hour 16

Monthly Average: 3.951 ppb

Percentiles: P_1 = 0.8 P_{10} = 1.6 Q_1 = 2.3 Median = 3.2 Q_3 = 4.9 P_{90} = 6.9 P_{99} = 13.8

Hours in Service:	720
Hours of Data:	684
Hours of Missing Data:	36
Hours of Calibration:	36
Percent Operational Time:	100.0

Day	Hourly Period Ending At																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1-Jun	5.3	4.4	4.6	Z	7.1	8.5	9.5	8.0	9.3	11.9	5.3	3.0	3.0	2.3	2.4	2.8	2.8	2.7	2.6	5.6	3.1	2.5	2.3	5.0	4.94	11.88
2-Jun	5.6	4.8	3.1	Z	3.0	3.2	5.5	4.6	3.1	4.0	2.5	2.4	2.9	3.2	1.5	3.9	2.4	3.9	6.1	2.0	1.9	6.9	9.7	8.0	4.09	9.74
3-Jun	5.9	4.7	2.9	Z	6.7	5.9	6.3	6.5	8.4	3.9	3.3	3.0	4.2	2.8	2.6	2.1	2.0	2.5	3.5	2.4	2.2	5.0	10.6	3.9	4.40	10.64
4-Jun	3.1	3.6	2.9	Z	6.4	5.1	5.1	4.7	5.0	2.8	2.0	2.8	2.1	1.9	2.4	2.7	1.0	2.2	3.8	1.1	1.6	4.5	16.9	11.3	4.14	16.90
5-Jun	12.4	6.4	5.4	Z	7.0	3.4	5.3	9.4	6.9	3.9	2.1	1.4	3.3	2.4	1.9	2.4	2.3	2.4	2.1	2.8	2.7	2.6	2.3	3.5	4.10	12.44
6-Jun	12.6	5.5	3.7	Z	4.4	9.4	8.9	11.1	4.3	4.8	6.7	6.7	5.7	2.8	3.4	3.5	5.2	4.0	3.1	4.2	5.4	12.3	11.5	6.8	6.36	12.63
7-Jun	6.8	3.9	4.1	Z	10.4	13.8	9.1	15.4	14.9	2.6	2.0	2.2	2.3	3.4	2.5	2.3	3.1	3.3	3.1	3.2	3.3	3.6	5.3	3.1	5.38	15.42
8-Jun	3.0	2.7	3.0	Z	4.9	5.4	6.4	4.9	3.3	2.6	3.0	2.8	2.8	2.8	3.7	3.0	2.6	1.9	3.6	4.2	2.4	3.8	2.4	2.9	3.40	6.44
9-Jun	2.9	2.1	2.2	Z	1.2	3.2	2.0	4.4	2.7	C	C	C	C	C	C	2.5	1.1	1.6	2.7	3.5	2.9	1.8	2.3	5.2	--	5.18
10-Jun	3.1	3.4	1.6	Z	5.6	4.0	3.3	3.2	2.9	2.9	1.7	2.3	1.7	2.5	2.5	2.6	2.1	1.2	1.6	2.0	1.6	1.2	1.1	1.5	2.42	5.60
11-Jun	1.9	1.9	2.0	Z	3.8	4.2	3.6	3.7	3.5	1.6	1.3	3.6	4.0	2.4	2.2	2.2	1.6	3.2	2.3	2.2	2.9	4.8	2.8	8.1	3.02	8.10
12-Jun	7.6	9.6	4.4	Z	9.3	7.1	12.8	13.5	2.1	2.6	2.5	2.0	1.5	1.8	1.1	1.2	1.3	3.5	3.8	2.4	2.7	4.8	3.2	2.5	4.49	13.54
13-Jun	2.4	2.7	2.7	Z	4.5	4.0	4.4	6.0	4.4	3.2	2.7	3.5	2.5	1.6	4.3	3.0	3.9	2.1	3.5	5.1	3.2	2.9	2.3	3.7	3.42	6.04
14-Jun	1.5	2.5	3.6	Z	4.7	8.6	8.0	4.3	8.1	6.7	2.9	3.0	2.9	2.5	1.6	1.2	4.3	5.3	2.6	2.3	4.2	2.5	2.4	4.1	3.91	8.59
15-Jun	6.6	2.9	4.2	Z	5.1	6.8	6.8	6.2	9.0	6.7	5.0	6.6	8.4	6.5	3.4	4.3	3.1	3.5	2.6	2.8	1.8	1.5	3.3	2.9	4.78	9.02
16-Jun	6.9	4.1	5.3	Z	5.0	6.0	7.6	6.0	2.3	1.8	3.3	4.7	4.2	2.3	3.2	2.9	1.4	2.5	2.9	1.0	0.8	0.5	0.7	0.9	3.32	7.60
17-Jun	0.7	0.5	1.4	Z	3.7	1.8	3.6	3.4	1.9	3.1	2.9	2.8	2.5	2.4	1.6	4.1	2.9	3.2	3.8	3.3	3.9	5.1	5.2	5.5	3.01	5.49
18-Jun	2.3	3.7	2.4	Z	9.1	14.7	2.2	1.8	2.9	2.7	2.6	2.5	2.5	1.9	0.9	1.4	1.6	1.9	1.9	3.3	3.2	4.1	0.9	1.2	3.10	14.72
19-Jun	3.6	1.7	3.4	Z	4.8	3.2	2.9	3.4	1.5	1.7	2.6	1.4	2.5	2.6	1.7	3.7	2.5	2.6	1.8	1.2	3.1	2.5	1.0	1.5	2.47	4.79
20-Jun	1.7	3.7	3.1	Z	2.1	3.0	4.4	4.6	3.7	2.7	4.5	1.6	1.4	1.2	1.8	2.0	1.5	4.0	2.3	1.9	2.3	2.5	2.3	2.2	2.63	4.60
21-Jun	2.9	5.7	7.2	Z	3.3	4.7	5.1	1.7	1.2	1.5	2.8	4.7	3.6	1.8	5.4	4.7	2.5	5.4	2.4	6.4	3.3	5.5	4.1	3.9	3.89	7.22
22-Jun	7.6	7.3	8.1	Z	13.5	5.0	6.1	7.2	3.4	4.3	6.0	3.5	1.6	1.5	3.0	1.4	4.3	3.8	1.8	1.7	2.0	5.1	6.6	5.9	4.82	13.45
23-Jun	4.0	5.4	4.7	Z	5.5	5.0	7.9	6.8	11.3	6.6	3.0	2.2	2.0	2.8	5.2	2.4	3.1	1.3	3.0	2.1	1.9	2.8	4.1	2.5	4.16	11.25
24-Jun	3.0	4.1	2.5	Z	3.4	5.2	7.6	7.8	5.6	4.0	6.1	6.0	9.0	4.0	2.6	1.7	2.1	2.0	2.2	2.9	3.7	2.8	4.5	2.7	4.15	8.99
25-Jun	6.2	4.8	4.6	Z	2.4	4.8	2.4	2.2	1.6	1.5	2.0	1.4	1.8	2.4	1.3	1.2	1.8	3.9	2.4	2.2	4.3	3.2	1.6	6.3	2.89	6.33
26-Jun	6.7	4.9	6.1	Z	3.6	3.7	2.8	2.2	3.7	4.6	1.8	1.5	2.2	1.7	2.1	1.5	0.7	0.5	0.6	2.3	6.6	22.7	10.9	14.1	4.67	22.66
27-Jun	5.1	10.8	12.0	Z	4.5	4.6	2.8	1.8	4.7	8.2	6.9	5.3	1.8	2.2	2.2	1.9	2.0	1.9	1.4	1.4	1.6	5.6	5.3	5.8	4.34	11.97
28-Jun	6.5	9.4	5.6	Z	15.6	5.9	3.9	2.7	5.1	6.9	3.2	2.1	1.5	1.3	1.8	1.4	5.0	2.9	2.5	3.7	2.2	1.2	1.5	2.8	4.11	15.58
29-Jun	2.3	3.6	3.0	Z	5.9	4.7	6.7	4.3	6.0	8.0	5.0	3.0	1.8	2.4	2.1	2.5	4.6	4.3	2.7	3.2	1.9	3.0	4.5	6.0	3.99	8.00
30-Jun	9.1	6.3	6.4	Z	3.9	4.3	7.5	10.8	5.2	9.6	5.9	4.9	0.8	2.4	1.7	1.6	3.2	6.8	5.1	2.8	6.6	3.2	6.2	3.8	5.13	10.83
	4.98	4.57	4.21	--	5.67	5.64	5.68	5.75	4.93	4.40	3.50	3.21	2.99	2.48	2.49	2.47	2.59	3.01	2.80	2.85	2.97	4.35	4.60	4.59	Diurnal Average	
	12.63	10.84	11.97	--	15.58	14.72	12.80	15.42	14.87	11.88	6.89	6.72	8.99	6.54	5.45	4.68	5.22	6.77	6.08	6.45	6.63	22.66	16.90	14.07	Diurnal Maximum	

Z - zerospan C - Calibration

Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ppb 24-hr --- ppb

WCAS - Hinton
Summary of Hourly Averages

PM2.5 ($PM_{2.5}$) - $\mu g/m^3$
June 2016

Maximum Value: 73.21 $\mu g/m^3$ on Jun 7 08:00

Maximum Daily Average: 19.17 $\mu g/m^3$ on Jun 7

Minimum Value: 0.0 $\mu g/m^3$ on Jun 9 05:00

Minimum Daily Average: 3.45 $\mu g/m^3$ on Jun 9

Maximum Diurnal Average: 9.92 $\mu g/m^3$ at hour 8

Minimum Diurnal Average: 5.40 $\mu g/m^3$ at hour 13

Monthly Average: 7.245 $\mu g/m^3$

Percentiles: P_1 = 0.7 P_{10} = 3.0 Q_1 = 4.3 Median = 5.9 Q_3 = 8.4 P_{90} = 13.0 P_{99} = 25.9

Hours in Service:	720
Hours of Data:	720
Hours of Missing Data:	0
Hours of Calibration:	0
Percent Operational Time:	100.0

Day	Hourly Period Ending At																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1-Jun	6.3	5.9	6.0	6.6	6.5	8.8	8.9	9.2	10.9	14.0	5.9	1.7	3.0	4.3	4.4	9.4	3.0	3.7	3.7	8.3	11.5	9.6	7.2	7.3	6.92	13.99
2-Jun	8.4	5.4	2.8	2.1	5.1	4.3	6.2	5.5	4.7	4.9	4.3	6.1	7.1	8.3	8.2	8.5	20.4	10.8	4.4	5.1	3.9	9.3	8.4	4.4	6.60	20.38
3-Jun	4.1	5.8	4.9	4.2	5.8	8.2	6.0	8.2	9.5	5.0	6.4	6.0	6.8	7.3	5.9	7.8	6.0	5.8	6.7	5.8	10.7	63.4	24.3	13.2	9.91	63.40
4-Jun	9.7	8.1	7.0	6.5	7.4	9.8	10.7	10.9	10.1	7.8	4.3	3.2	3.0	2.7	3.1	4.4	13.3	35.5	9.4	8.7	14.3	11.1	17.2	16.7	9.79	35.46
5-Jun	24.6	15.9	11.1	11.0	10.2	11.8	13.7	19.5	18.3	12.7	8.8	6.6	6.0	3.2	6.1	7.0	5.7	7.3	7.4	8.1	9.6	9.4	7.5	8.5	10.41	24.58
6-Jun	13.8	9.5	14.2	22.2	16.8	11.4	23.2	27.9	20.1	18.4	17.8	22.2	18.8	14.5	10.5	18.4	16.8	22.7	23.2	16.5	16.5	20.6	15.5	12.2	17.65	27.91
7-Jun	13.9	14.1	16.3	18.2	19.8	23.3	29.4	73.2	45.0	22.5	16.7	16.2	15.6	14.5	14.7	12.4	13.7	11.0	12.2	12.4	13.6	10.0	8.6	13.0	19.17	73.21
8-Jun	7.9	7.2	7.4	7.7	6.7	6.9	8.2	8.1	7.3	8.2	7.8	9.8	13.0	13.8	9.9	9.4	3.4	8.6	8.8	4.6	3.4	6.8	6.6	7.5	7.88	13.83
9-Jun	5.9	4.3	3.0	2.2	0.0	3.0	5.3	1.3	3.6	1.1	2.8	2.2	5.4	0.3	0.1	4.2	5.3	4.9	5.7	3.8	6.0	4.8	2.7	4.8	3.45	6.04
10-Jun	5.0	4.5	2.8	3.1	2.8	3.6	3.4	4.0	3.3	2.9	2.7	2.5	2.6	2.5	3.7	5.5	5.0	4.3	5.6	4.2	5.8	4.6	5.2	6.3	4.00	6.27
11-Jun	5.6	4.7	5.9	4.4	5.1	4.3	4.7	3.5	2.0	0.5	0.8	3.5	2.3	3.9	2.5	5.1	9.1	4.2	4.2	3.5	4.7	7.0	5.2	9.0	4.41	9.15
12-Jun	11.0	11.1	8.8	5.2	10.9	8.9	13.5	15.4	3.5	8.1	3.9	9.2	6.8	10.4	5.8	10.3	8.3	5.9	9.6	6.3	4.6	7.2	5.7	5.6	8.18	15.40
13-Jun	4.6	5.4	5.6	5.5	5.6	5.4	6.0	6.1	8.2	4.7	3.8	2.7	2.4	3.0	4.0	3.9	5.4	9.1	6.0	5.0	6.0	5.2	3.6	3.6	5.03	9.05
14-Jun	2.8	4.9	4.1	5.6	11.1	9.6	7.7	4.8	6.2	5.5	4.0	4.3	5.7	5.0	5.8	1.6	4.0	10.3	5.2	2.0	4.0	3.5	3.0	3.3	5.17	11.09
15-Jun	3.2	1.9	2.9	1.0	4.6	6.6	4.6	5.5	9.7	7.7	6.4	6.4	8.9	8.1	5.7	8.5	6.2	6.1	5.2	4.4	4.2	4.1	4.5	5.0	5.48	9.69
16-Jun	5.0	4.7	4.5	5.2	4.5	5.2	12.7	7.3	5.7	4.6	4.8	5.0	3.3	3.6	6.8	6.6	5.4	3.3	3.7	3.9	6.1	3.6	4.2	3.8	5.14	12.69
17-Jun	4.3	4.5	3.7	5.3	3.9	4.0	5.1	4.9	3.6	2.3	3.3	2.4	4.1	3.5	2.7	5.2	2.7	3.0	4.5	5.0	4.5	4.9	5.5	5.6	4.11	5.63
18-Jun	4.0	5.8	6.7	8.0	10.8	11.7	6.8	2.5	2.8	1.3	2.7	2.7	3.1	1.7	3.7	4.5	5.8	6.8	5.8	9.0	8.7	14.1	7.9	7.5	6.02	14.09
19-Jun	6.1	7.2	4.6	6.1	5.4	5.9	6.1	5.9	5.8	5.9	6.1	6.0	5.9	9.6	6.8	7.5	4.8	5.6	5.5	4.5	7.2	4.9	3.8	4.3	5.89	9.57
20-Jun	4.6	7.0	6.5	4.4	5.0	7.2	8.6	6.2	5.2	4.6	4.9	4.1	5.1	4.7	4.9	7.2	7.0	9.1	9.9	7.9	6.7	5.7	6.1	6.4	6.21	9.92
21-Jun	6.3	6.2	6.8	7.3	6.4	8.0	6.8	6.1	6.0	5.2	5.0	4.9	5.9	5.5	10.6	7.3	6.0	7.3	5.2	7.9	7.0	8.4	11.8	7.0	6.88	11.83
22-Jun	3.6	2.1	2.6	2.4	3.9	9.4	6.4	6.0	3.7	5.2	3.8	5.0	2.9	2.2	2.9	4.6	4.8	8.8	9.9	5.8	4.5	5.9	6.5	6.1	4.96	9.87
23-Jun	5.0	4.9	4.9	5.9	3.6	7.4	6.4	9.1	13.7	12.8	6.6	4.8	5.6	4.3	10.7	7.9	3.6	2.6	5.0	4.8	3.1	3.7	5.8	4.1	6.09	13.72
24-Jun	4.9	6.5	5.1	4.3	4.2	5.1	3.7	4.0	5.4	5.9	3.9	3.6	5.1	3.0	2.9	3.0	1.9	3.2	2.3	6.0	5.4	4.6	4.2	2.7	4.20	6.47
25-Jun	4.8	4.3	3.8	3.8	5.1	5.6	4.5	3.5	2.9	2.9	4.2	4.0	2.5	5.0	3.4	2.7	7.5	10.4	4.0	8.2	7.6	6.2	3.8	7.4	4.92	10.39
26-Jun	9.0	6.4	5.1	4.9	4.5	8.3	7.3	5.7	8.4	7.9	0.0	4.1	4.0	4.6	3.7	7.1	7.8	4.5	4.8	10.2	11.1	16.1	10.0	6.4	6.74	16.06
27-Jun	5.9	6.3	6.8	7.0	6.2	8.8	5.9	4.1	7.9	7.8	8.0	4.6	2.3	2.7	4.7	4.6	3.3	10.9	6.9	9.1	10.6	17.2	15.6	12.8	7.50	17.21
28-Jun	20.3	20.7	11.0	12.9	12.7	12.7	10.1	9.2	13.8	20.3	8.0	6.7	0.7	4.3	7.8	6.0	13.1	6.7	7.8	5.9	10.9	10.7	9.1	5.9	10.31	20.73
29-Jun	3.8	5.7	6.0	4.7	8.5	10.4	11.0	7.9	11.6	14.9	14.1	5.9	4.0	5.4	5.5	26.8	15.5	5.8	4.3	3.5	6.6	4.1	4.4	4.6	8.12	26.76
30-Jun	6.1	5.8	4.8	6.6	5.9	8.5	10.5	12.2	4.0	4.6	3.1	2.9	0.3	2.1	5.7	7.9	8.2	8.0	5.2	5.0	7.3	5.1	13.6	5.5	6.20	13.60
	7.34	6.90	6.20	6.48	6.96	8.13	8.78	9.92	8.78	7.67	5.84	5.65	5.40	5.47	5.78	7.51	7.44	8.20	6.73	6.51	7.53	9.73	7.92	7.02	Diurnal Average	
	24.58	20.73	16.25	22.20	19.76	23.28	29.38	73.21	45.03	22.46	17.78	22.19	18.81	14.50	14.68	26.76	20.38	35.46	23.20	16.52	16.48	63.40	24.33	16.67	Diurnal Maximum	

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

Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 906, Hinton

Calibration Date: June 9, 2016

Parameter: $NO/NO_2/NO_x$

Instrument: Teco 42i

Serial Number: CM13040041

Previous Calibration Date: May 18, 2016

Calibration: Routine

Calibration Equipment: Sabio 2010 SN 08600312

Barometric Pressure: 26.40" Hg

Calibration Method: Standard Gas Dilution/GPT

Cylinder ID: FF13698

Temperature: 20.8° C

Cylinder Concentration: 12.5 ppm NO

In Service: January 14, 2015

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	5.9	7.3	NA	0.913	0.997	1.000	200 ppb
Current	5.8	6.0	NA	0.931	1.004	1.00	200 ppb

NO	Final Zero: -0.3 ppb	Final Span: 155.4 ppb	As Found Correction Factor: 1.016
NO_2	Final Zero: 0.0 ppb	Final Span: 0.6 ppb	As Found Correction Factor: NA
NO_x	Final Zero: -0.2 ppb	Final Span: 155.1 ppb	As Found Correction Factor: 1.014

Results of Linear Regression			Slope	Intercept	R^2
NO	R_c vs C_c	Previous	150.168400	120.851400	0.999768
		Current	149.470600	59.818600	0.999950
	C_i vs C_c	Current	1.000000	0.000023	0.999950
NO_2	R_c vs C_c	Previous	149.720200	101.949400	0.999768
		Current	150.235100	6.510946	0.999993
	C_i vs C_c	Current	1.000000	-0.000011	0.999993
NO_x	R_c vs C_c	Previous	150.017800	196.212400	0.999768
		Current	150.578400	52.297630	0.999973
	C_i vs C_c	Current	1.000000	0.000000	0.999973

Comments:

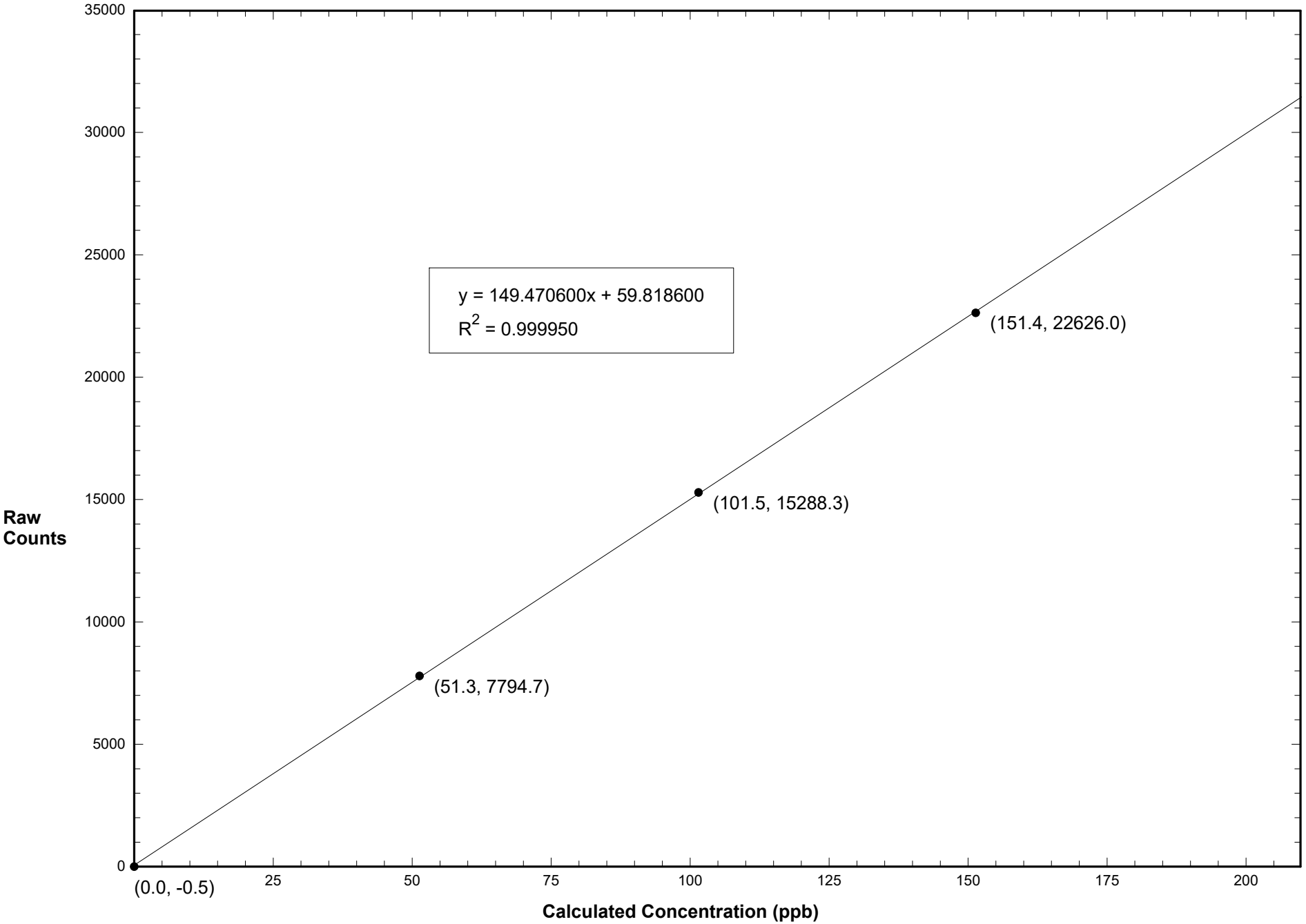
Calibration Data Summary (Page 2)

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
0.07492	6.112	151.4	22626.0	151.0	1.003
0.04982	6.085	101.5	15288.3	101.9	0.996
0.02498	6.059	51.3	7794.7	51.7	0.992
0.00000	6.000	0.0	-0.5	-0.4	
NO Calibration				Average Correction Factor:	0.997
0.07492	6.112	151.4	22805.8	151.1	1.002
0.04982	6.085	101.5	15367.7	101.7	0.998
0.02498	6.059	51.3	7836.6	51.7	0.993
0.00000	6.000	0.0	5.3	-0.3	
NO_x Calibration				Average Correction Factor:	0.998

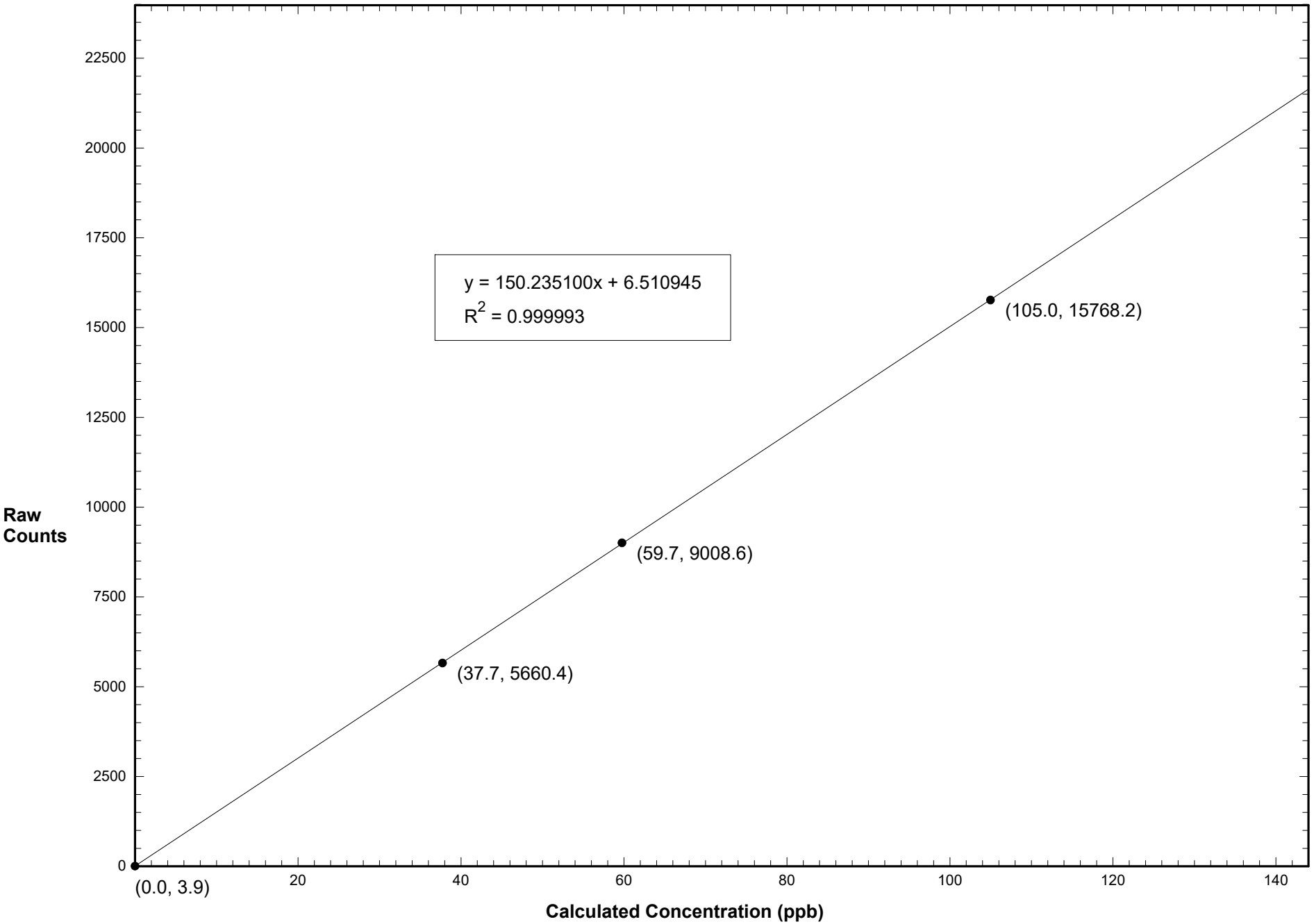
Reference Concentration NO (ppb)	Raw Count Output NO	Calculated Concentration NO (ppb)	Calculated Concentration NO_2, C_c (ppb)	Raw Count Output R_c	Indicated Concentration C_i (ppb)	Correction Factor C_c/C_i	Converter Efficiency C_i/C_c
153.0	7234.1	48.0	105.0	15768.2	104.9	1.001	0.999
153.0	13994.9	93.2	59.7	9008.6	59.9	0.997	1.003
153.0	17287.1	115.3	37.7	5660.4	37.6	1.002	0.998
			0.0	3.9	0.0		
					Average Correction Factor:	1.000	
NO_2 Gas Phase Titration						Average Converter Efficiency:	1.000

Parameter	Correction Factor (Previous)	Correction Factor: (Current)	Percent Change of Correction Factor
NO	1.006	1.003	-0.3
NO_2	1.001	1.001	0.0
NO_x	1.007	1.002	-0.5

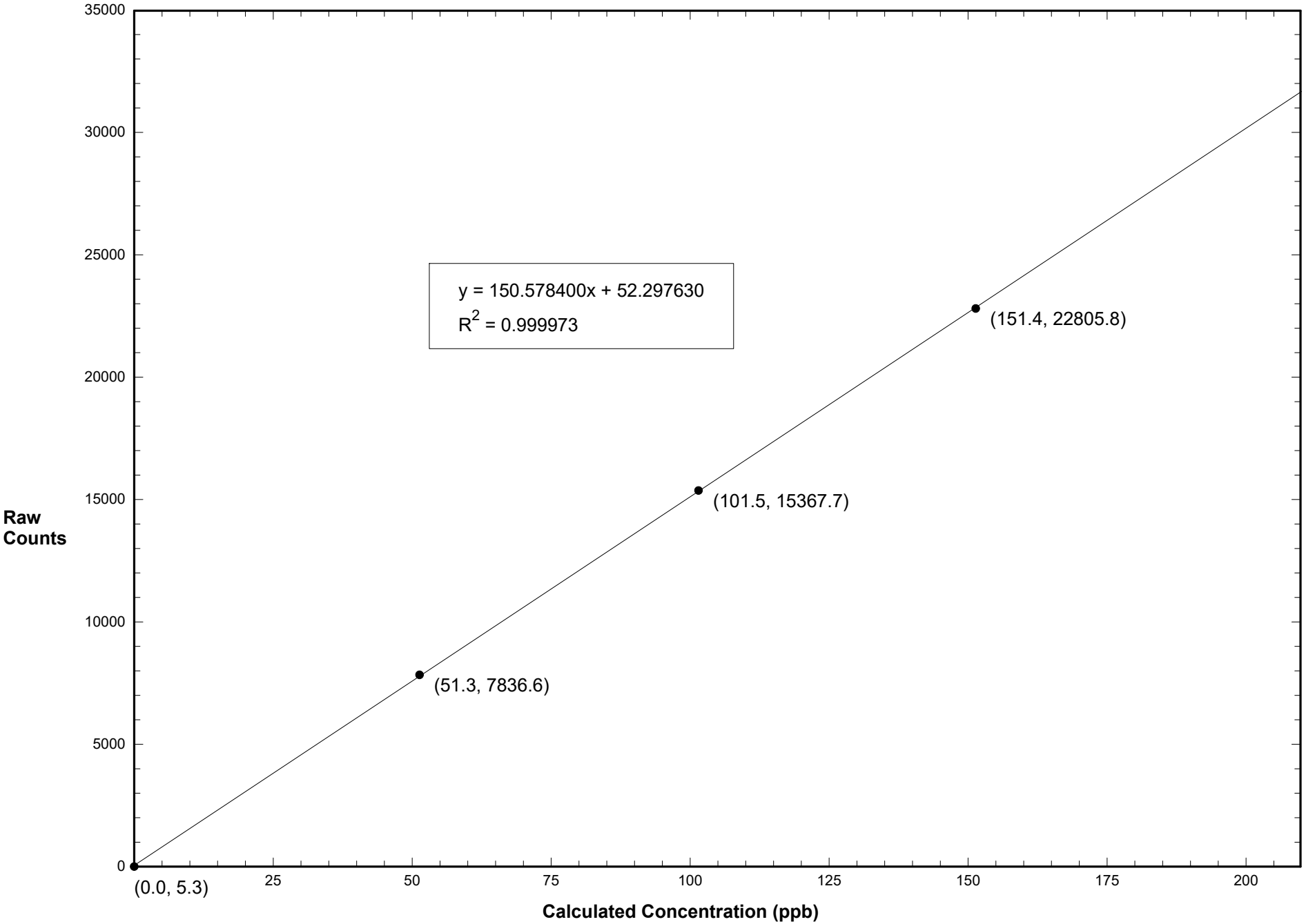
Station 906 NO June 9, 2016: Linear Regression



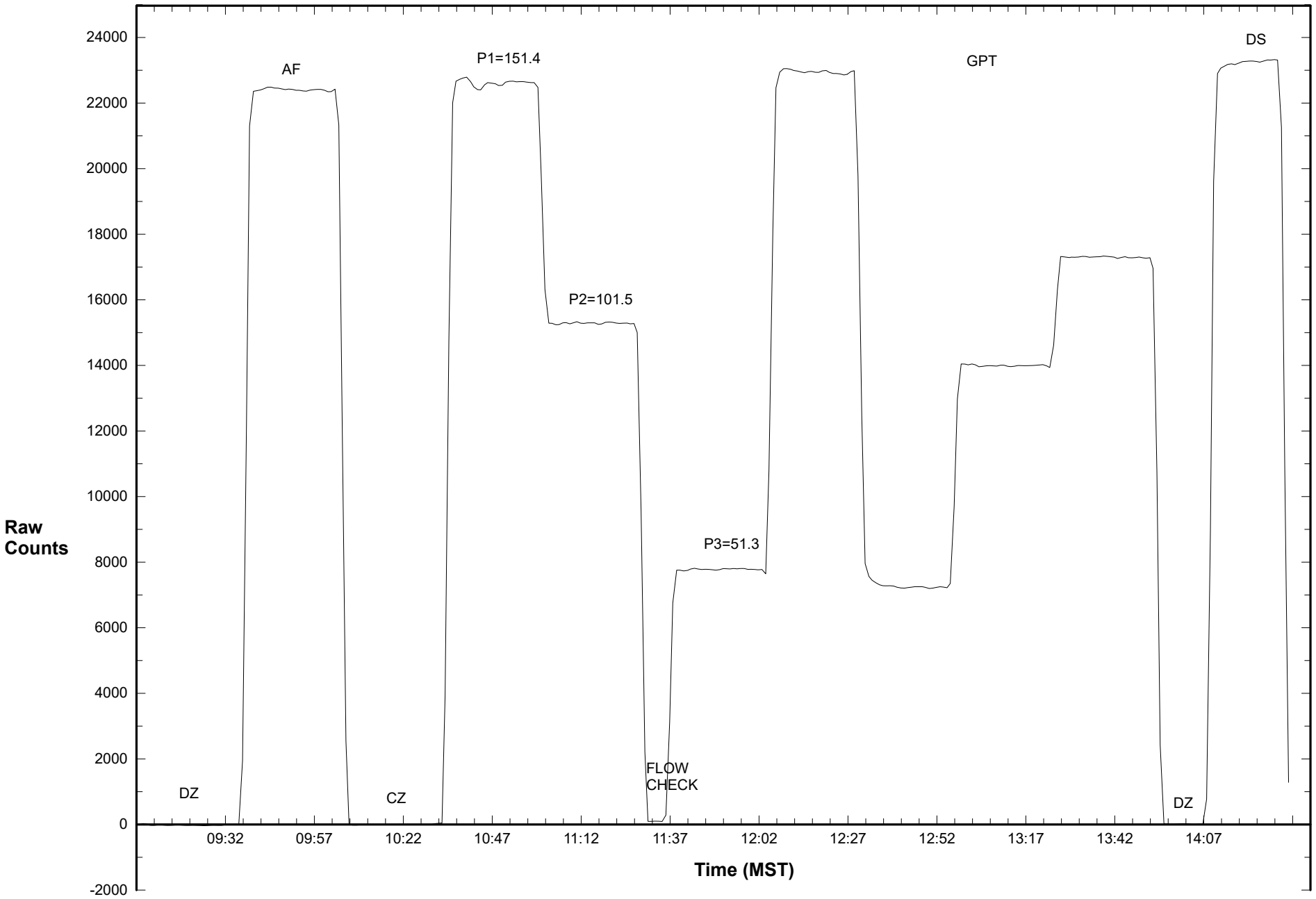
Station 906 NO2 June 9, 2016: Linear Regression



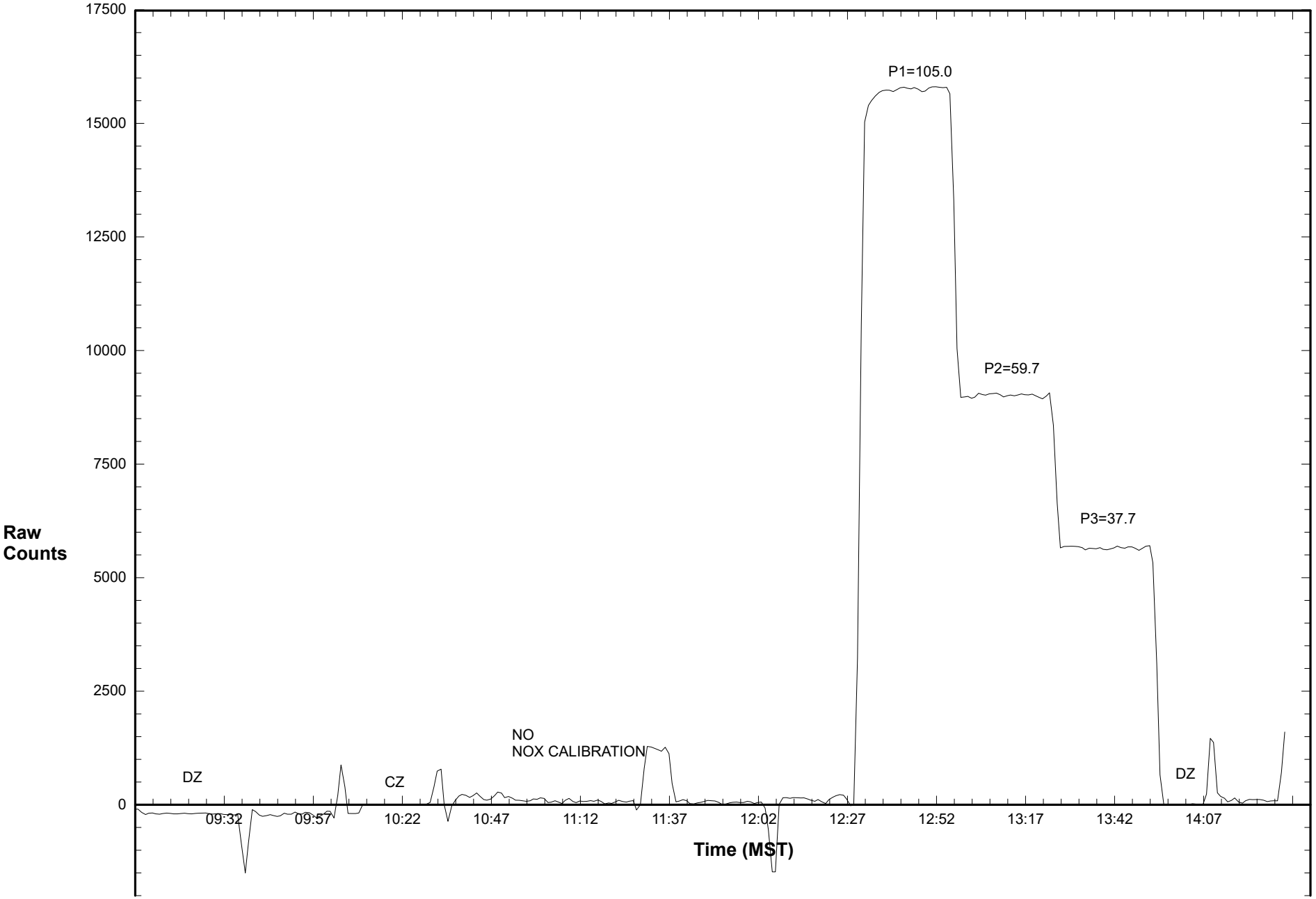
Station 906 NOX June 9, 2016: Linear Regression



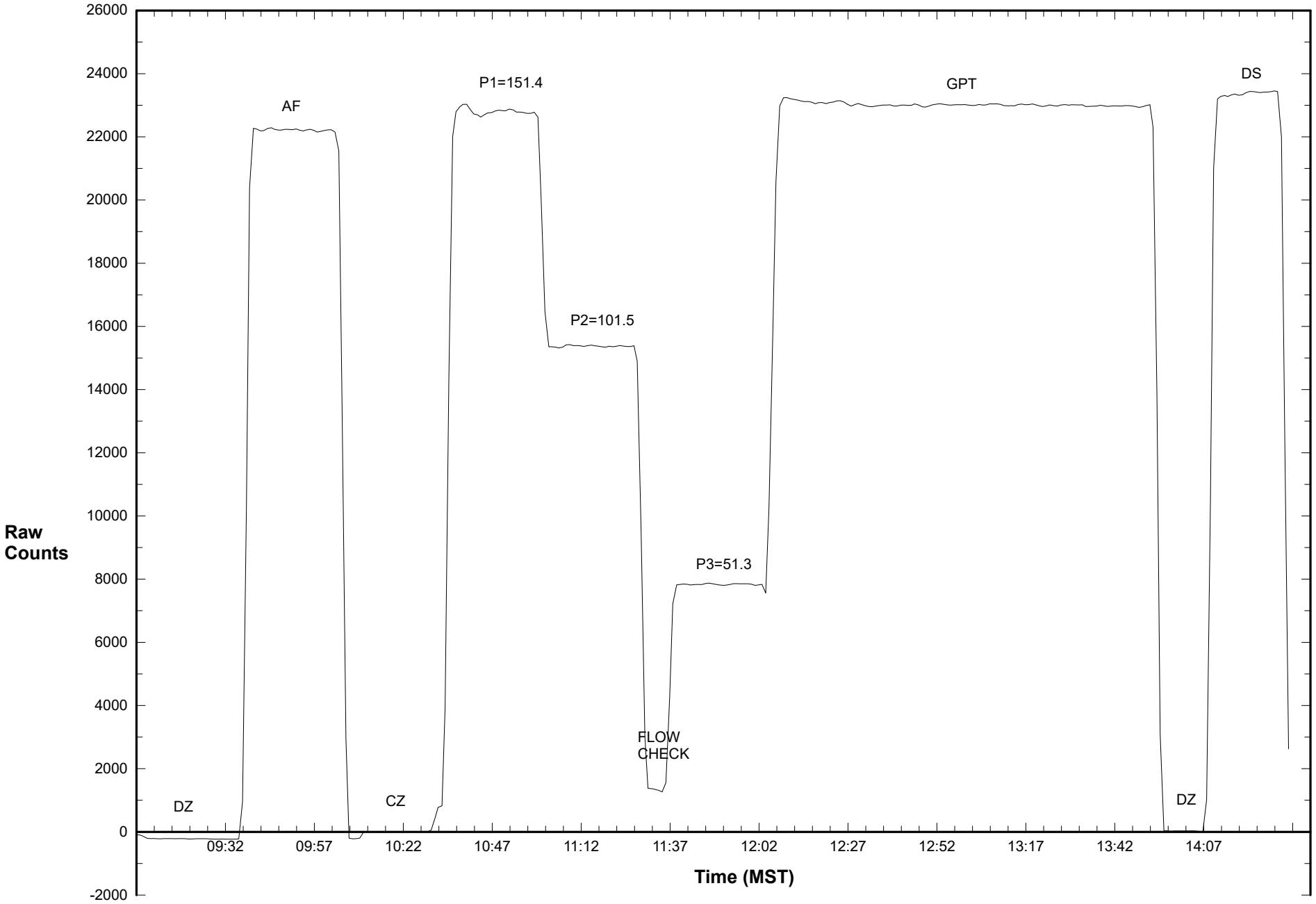
Station 906 NO June 9, 2016: Calibration Graph



Station 906 NO2 June 9, 2016: Calibration Graph



Station 906 NOX June 9, 2016: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 906, Hinton

Calibration Date: June 9, 2016

Parameter: O_3

Instrument: Teco 49i

Serial Number: 1150790050

Previous Calibration Date: May 18, 2016

Calibration: Routine

Calibration Equipment: 2B Tech Model 306 SN142

Barometric Pressure: 26.40" Hg

Calibration Method: Certified Ozone Generator

Temperature: 20.8° C

Technician: L. Burns

Instrument Settings	Background	Coefficient	Monitoring Range
Previous	-0.7	1.011	500 ppb
Current	-0.8	1.041	500 ppb

Final Zero: -1.6 ppb

Final Span: 363.4 ppb

As Found Correction Factor: 0.999

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	23968.9	398.0	1.003
3.000	214.0	13013.2	215.4	0.994
3.000	105.0	6462.0	106.2	0.989
3.000	0.0	4.1	-1.5	

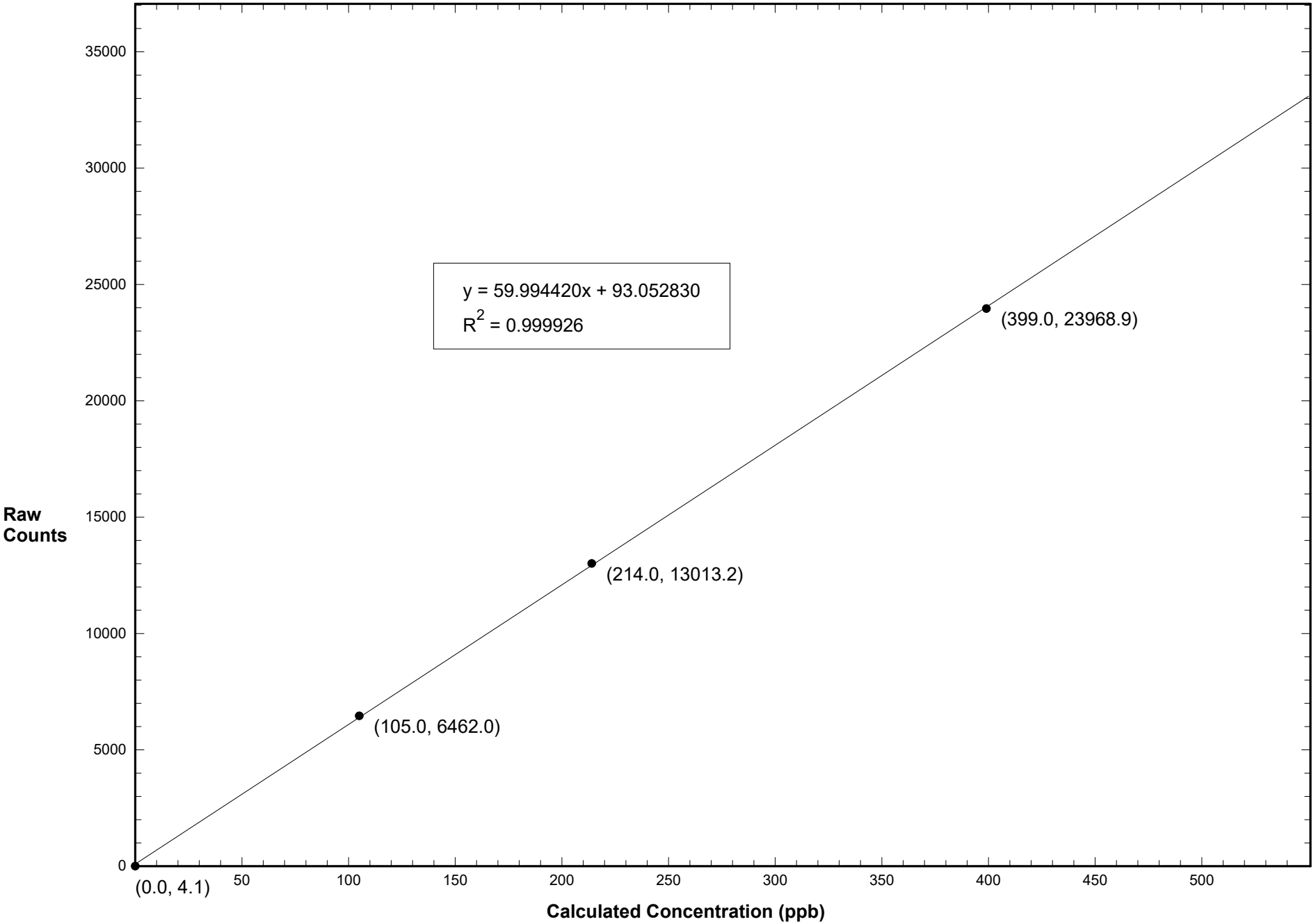
Results of Linear Regression

R_c vs C_c	Slope	Intercept	R^2
Previous	59.966500	20.593620	0.999994
Current	59.994420	93.052830	0.999926
C_i vs C_c			
Current	1.000000	-0.000006	0.999926

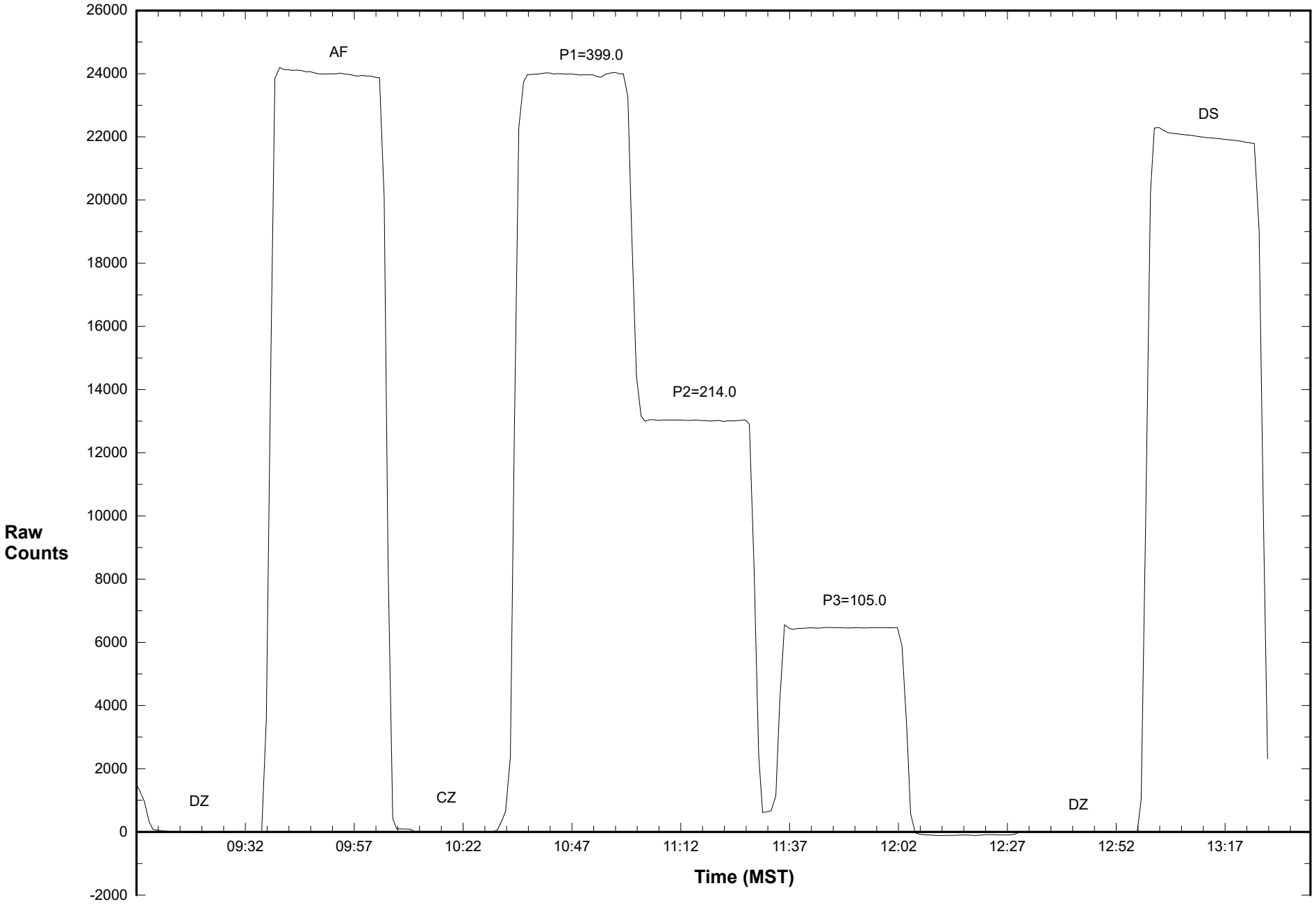
Average Correction Factor:	0.995
Previous Correction Factor:	1.001
Current Correction Factor:	1.003
Percent Change of Correction Factor:	0.2

Comments:

Station 906 O3 June 9, 2016: Linear Regression



Station 906 O3 June 9, 2016: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 906, Hinton

Calibration Date: June 9, 2016

Parameter: SO_2

Instrument: TECO 43i

Serial Number: CM12499009

Previous Calibration Date: May 18, 2016

Calibration: Routine

Calibration Equipment: Sabio 2010 SN 08600312

Barometric Pressure: 26.40" Hg

Calibration Method: Standard Gas Dilution

Cylinder ID: FF13698

Temperature: 20.8° C

Cylinder Concentration: 6.11 ppm SO2

In Service: January 14, 2015

Technician: L. Burns

Instrument Settings	SO_2 bkg ppb	SO_2 Coefficient	Monitoring Range
Previous	25.3	1.006	100 ppb
Current	25.6	1.006	100 ppb

Final Zero: -0.3 ppm

Final Span: 68.9 ppm

As Found Correction Factor: 0.994

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	6.112	74.0	22369.1	73.9	1.001
0.0498	6.085	49.6	15082.4	49.8	0.997
0.0250	6.059	25.1	7619.0	25.1	1.001
0.0000	6.000	0.0	37.6	0.0	

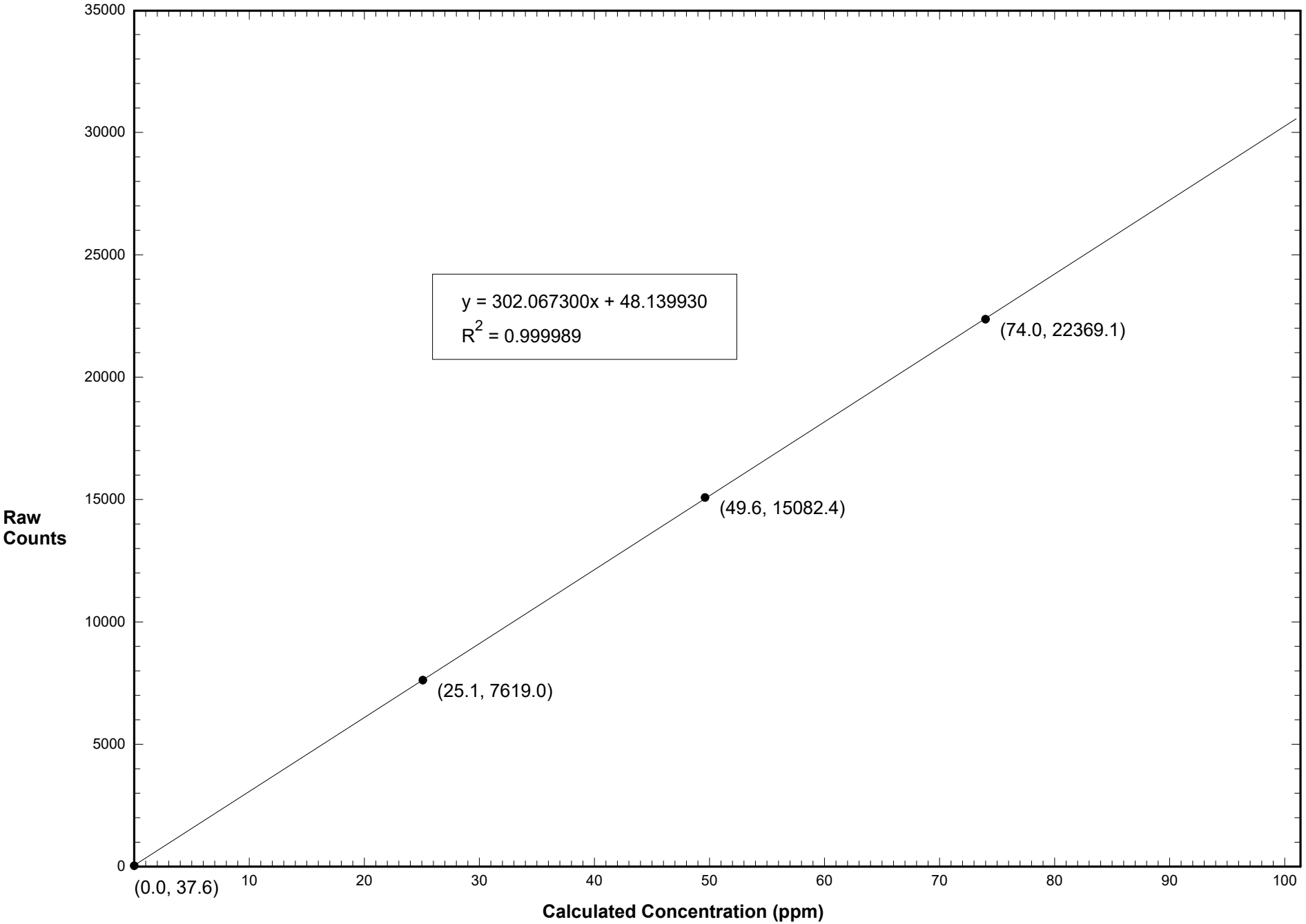
Results of Linear Regression

R_c vs C_c	Slope	Intercept	R^2
Previous	301.135500	19.038360	0.999861
Current	302.067300	48.139930	0.999989
C_i vs C_c			
Current	1.000000	-0.000011	0.999989

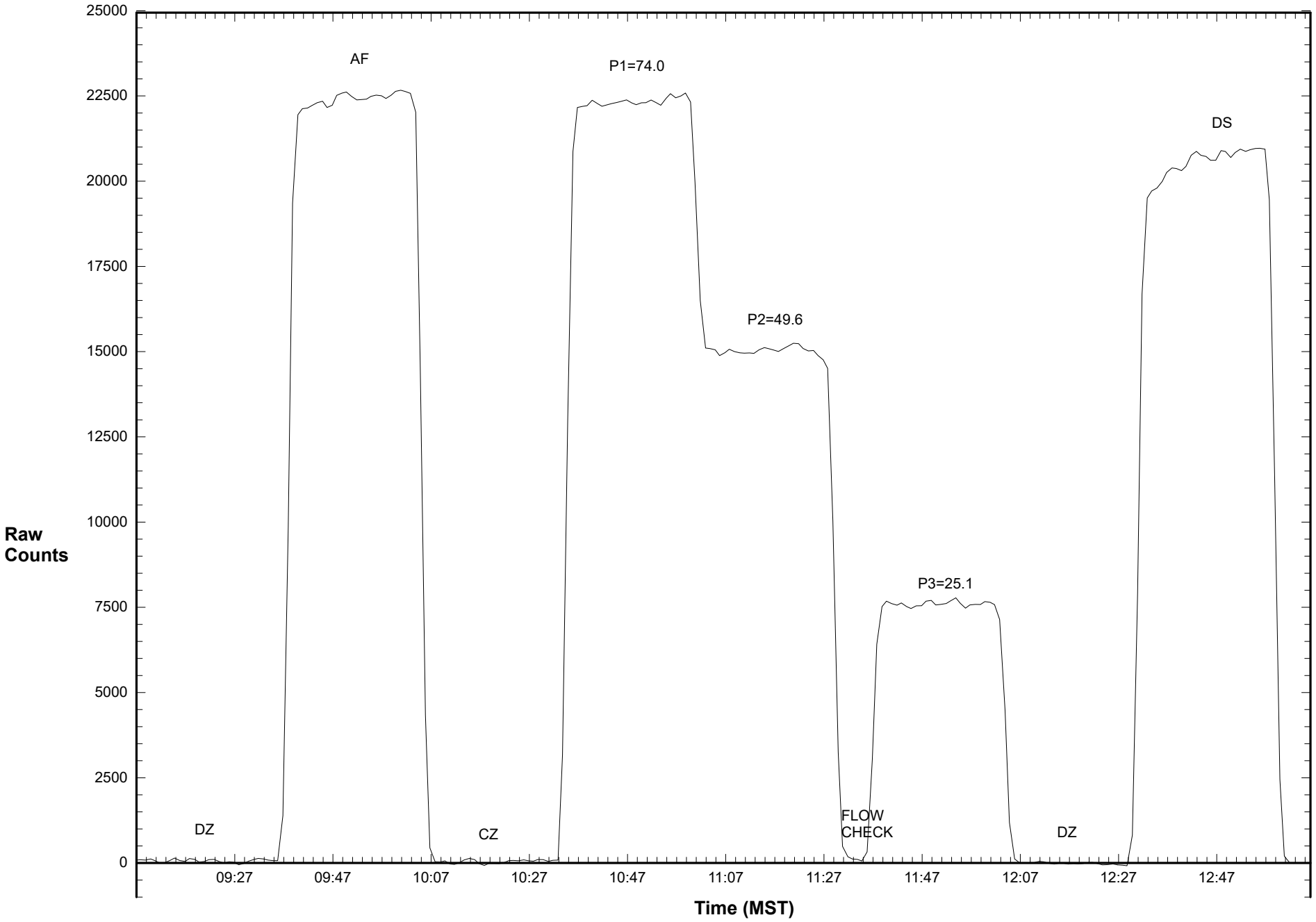
Average Correction Factor:	1.000
Previous Correction Factor:	1.004
Current Correction Factor:	1.001
Percent Change of Correction Factor:	-0.3

Comments:

Station 906 SO2 June 9, 2016: Linear Regression



Station 906 SO2 June 9, 2016: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 906, Hinton

Calibration Date: June 9, 2016

Parameter: TRS

Instrument: Teco 43C

Serial Number: 43CTL-60324-326

Previous Calibration Date: May 18, 2016

Calibration: Routine

Calibration Equipment: Sabio 2010 SN 08600312

Barometric Pressure: 26.40" Hg

Calibration Method: Standard Gas Dilution

Permeation Device ID: SV14360, 4.89 ppm H2S

Temperature: 20.8° C

Permeation Rate: 0 ng/min

In Service: February 5, 2013

Technician: L. Burns

Instrument Settings	H_2S bkg ppb	H_2S Coefficient	Monitoring Range
Previous	1.82	0.807	100 ppb
Current	1.82	0.775	100 ppb

Final Zero: 0.0 ppb

Final Span: 67.0 ppb

As Found Correction Factor: 0.963

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
0.091	71.7	21632.9	71.6	1.001
0.061	48.3	14647.1	48.6	0.995
0.031	24.6	7288.0	24.3	1.013
0.000	0.0	-15.2	0.1	

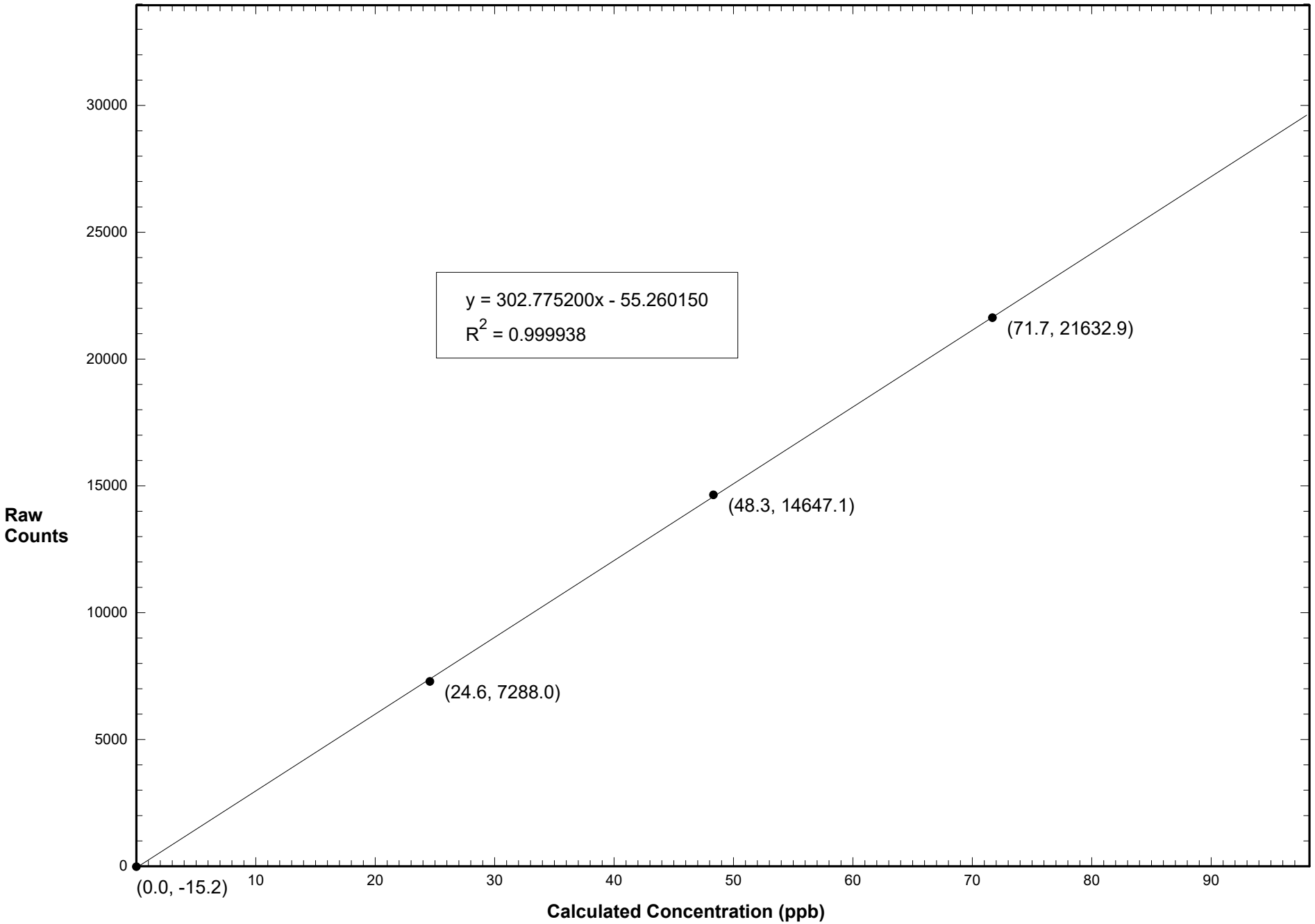
Results of Linear Regression

R_c vs C_c	Slope	Intercept	R^2
Previous	300.200400	-0.249286	0.999991
Current	302.775200	-55.260150	0.999938
C_i vs C_c			
Current	1.000000	-0.000011	0.999938

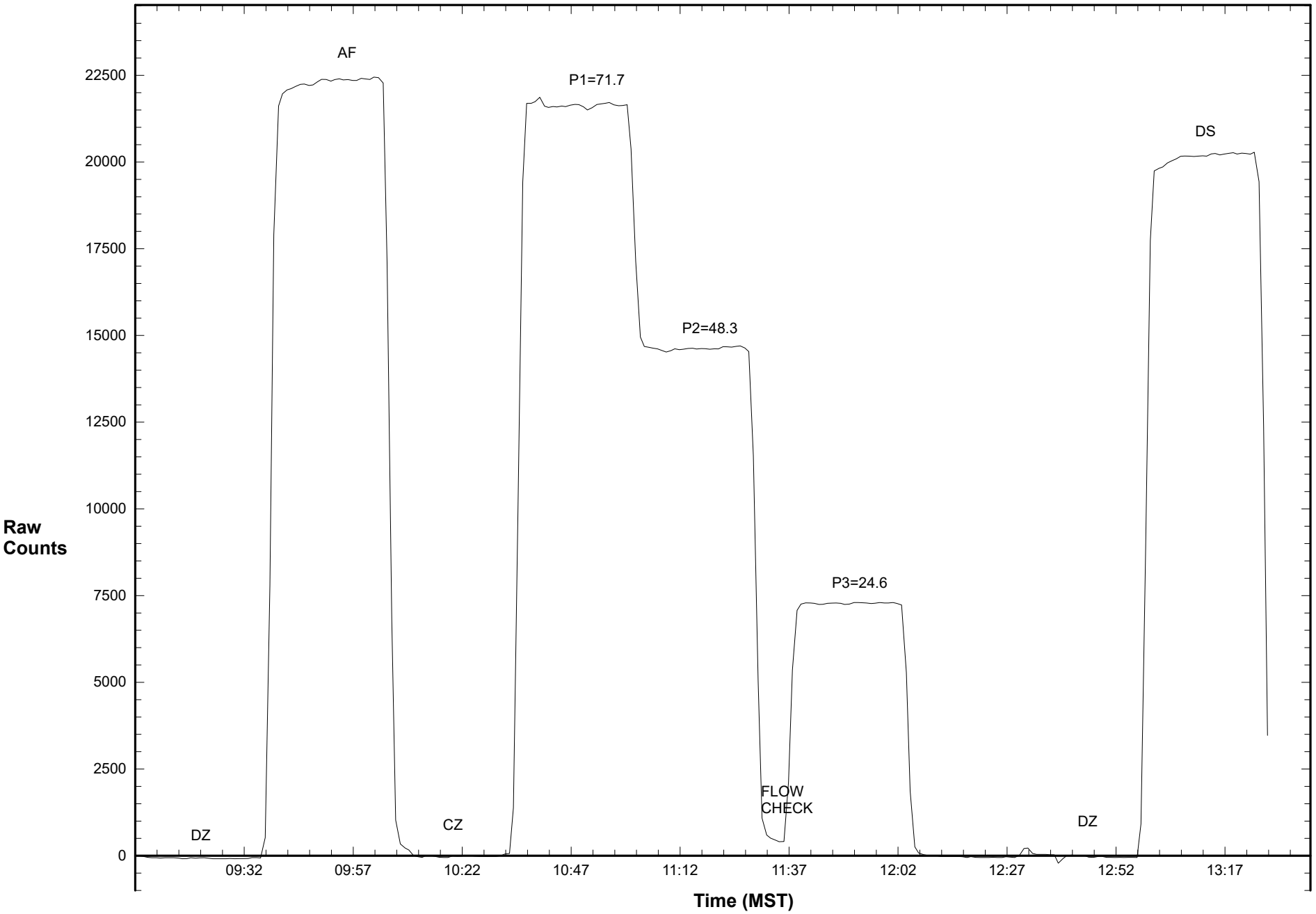
Average Correction Factor:	1.003
Previous Correction Factor:	0.999
Current Correction Factor:	1.001
Percent Change of Correction Factor:	0.2

Comments:

Station 906 TRS June 9, 2016: Linear Regression



Station 906 TRS June 9, 2016: Calibration Graph



WEST CENTRAL AIRSHED SOCIETY

CONTINUOUS AMBIENT AIR QUALITY MONITORING PROGRAM MONTHLY REPORT METEOROLOGICAL DATA

AMS 906
HINTON
JUNE 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
June 2016

Maximum Value: 30.28 C on Jun 6 15:00

Maximum Daily Average: 20.33 C on Jun 6

Minimum Value: 2.2 C on Jun 3 05:00

Minimum Daily Average: 8.42 C on Jun 14

Maximum Diurnal Average: 19.62 C at hour 15

Minimum Diurnal Average: 8.38 C at hour 5

Monthly Average: 14.390 C

Percentiles: P_1 = 4.7 P_{10} = 7.9 Q_1 = 10.5 Median = 13.4 Q_3 = 18.1 P_{90} = 22.2 P_{99} = 27.5

Hours in Service:	720
Hours of Data:	720
Hours of Missing Data:	0
Hours of Calibration:	0
Percent Operational Time:	100.0

Day	Hourly Period Ending At																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1-Jun	8.8	8.6	8.1	7.7	7.6	7.8	7.8	8.1	9.6	13.3	16.2	17.0	18.6	19.6	20.6	19.8	20.3	20.8	20.0	19.1	16.7	14.7	13.0	11.4	13.98	20.83
2-Jun	11.1	10.7	12.4	12.7	12.0	11.6	11.5	13.0	14.6	17.8	18.6	19.3	20.1	18.3	18.0	19.0	15.6	13.3	14.2	13.5	12.2	11.5	10.0	8.3	14.13	20.12
3-Jun	6.5	5.1	4.0	3.0	2.2	2.7	6.3	10.2	14.1	16.0	17.2	18.3	19.1	19.2	19.3	20.3	20.4	20.5	19.9	19.3	18.4	16.2	14.4	15.0	13.65	20.45
4-Jun	12.1	10.1	8.5	7.5	7.0	7.6	9.4	11.8	14.9	19.6	22.1	22.2	23.0	23.9	25.4	26.1	26.9	26.9	25.4	23.8	21.5	19.0	15.7	12.7	17.63	26.91
5-Jun	10.4	8.6	7.0	6.0	4.8	4.9	7.6	12.1	15.6	18.9	21.2	22.6	24.6	25.4	26.0	26.8	27.5	27.1	25.8	24.2	21.8	20.4	18.9	18.3	17.78	27.49
6-Jun	16.2	14.2	12.9	12.1	11.3	10.9	11.6	14.6	18.5	21.5	22.8	25.1	27.8	28.8	30.3	29.5	28.6	26.6	25.0	24.3	22.6	20.1	17.3	15.2	20.33	30.28
7-Jun	14.5	14.3	14.1	13.8	13.2	13.2	15.0	16.9	20.6	22.4	23.4	24.2	25.0	26.8	27.5	27.4	27.1	25.5	23.7	21.8	19.5	18.1	17.2	14.8	20.00	27.51
8-Jun	12.9	12.3	12.2	12.4	12.4	12.3	12.4	13.2	15.2	16.6	17.4	18.1	19.2	19.6	19.6	21.3	20.7	20.6	16.0	12.7	12.8	12.5	12.4	12.6	15.32	21.31
9-Jun	12.5	12.2	11.6	11.5	11.0	10.9	10.8	11.1	11.9	12.9	14.1	13.9	14.2	13.9	14.4	16.3	14.8	14.4	11.8	10.8	10.7	10.5	10.0	9.8	12.33	16.31
10-Jun	9.5	9.5	9.3	9.1	9.0	8.9	9.1	10.0	12.1	12.6	13.7	15.5	14.8	15.0	14.9	13.2	12.1	11.4	11.0	10.8	10.8	10.5	10.4	10.3	11.39	15.47
11-Jun	10.3	9.5	9.1	8.5	8.1	8.4	9.2	11.0	13.4	14.6	13.8	15.3	15.9	16.0	16.9	16.8	15.7	16.2	15.4	14.8	14.0	12.5	12.1	12.9	12.94	16.90
12-Jun	12.7	12.7	12.3	11.7	12.0	11.8	12.1	13.1	14.7	15.6	16.4	17.1	17.8	18.0	17.7	17.5	16.8	17.4	17.0	15.8	14.9	13.2	10.9	10.9	14.59	17.98
13-Jun	11.8	7.9	7.1	6.3	5.7	5.7	7.3	9.5	12.3	14.9	16.5	18.2	19.0	19.1	18.0	17.7	16.5	13.4	11.1	10.7	9.9	9.1	8.2	7.1	11.78	19.09
14-Jun	5.7	4.7	4.7	4.8	4.8	5.6	7.6	10.7	11.6	14.2	14.4	11.6	13.5	9.9	8.8	8.0	8.5	8.5	8.3	7.8	7.5	7.3	6.8	6.6	8.42	14.40
15-Jun	6.6	6.8	6.6	5.8	7.9	9.0	9.5	9.9	10.5	10.5	11.0	11.3	11.5	12.0	12.3	12.9	13.7	13.3	12.6	11.7	11.2	11.0	10.7	10.7	10.37	13.66
16-Jun	10.6	10.5	10.5	10.1	9.7	9.8	10.1	10.3	10.1	8.7	9.1	10.7	11.6	12.6	11.8	10.5	9.8	10.9	10.8	10.4	9.0	8.8	8.5	8.2	10.13	12.59
17-Jun	7.7	8.0	7.7	7.6	7.2	7.1	7.5	7.9	10.2	11.9	14.3	15.5	16.2	18.1	18.1	18.6	17.7	17.2	17.4	16.4	15.4	13.1	12.0	10.8	12.66	18.59
18-Jun	10.2	7.5	6.3	4.4	3.1	4.7	8.5	11.7	13.7	15.9	18.2	19.0	20.3	20.4	21.4	21.9	22.0	21.0	20.8	19.3	17.6	15.9	14.0	13.1	14.64	22.04
19-Jun	10.9	9.9	10.2	9.8	9.4	9.4	10.1	10.7	13.2	15.7	17.6	19.1	18.1	16.2	14.5	16.0	16.0	17.3	17.4	16.0	15.2	13.8	12.9	12.4	13.82	19.14
20-Jun	11.1	9.9	9.5	8.6	6.6	7.2	10.8	13.5	15.1	17.2	19.6	21.8	22.8	23.8	24.1	24.3	24.7	23.4	21.9	19.5	18.4	16.8	15.9	15.5	16.76	24.68
21-Jun	14.7	13.9	11.9	11.4	12.6	12.1	10.5	10.1	10.5	11.2	11.3	11.0	11.8	13.7	16.4	17.7	12.6	12.1	12.6	12.7	12.3	12.0	11.5	10.6	12.38	17.69
22-Jun	9.4	8.0	6.9	6.0	5.3	5.9	8.9	12.0	15.6	18.1	17.7	17.9	19.6	21.0	21.2	19.8	21.2	20.5	18.0	16.2	15.0	13.6	11.6	9.7	14.14	21.20
23-Jun	8.3	7.0	6.1	5.2	5.0	4.9	7.5	10.9	13.7	15.8	17.5	18.1	19.1	18.9	13.4	13.5	12.7	13.7	13.5	13.4	12.5	11.6	11.1	10.7	11.83	19.06
24-Jun	10.6	10.4	10.0	9.6	9.5	9.7	9.8	9.4	9.4	9.7	9.8	10.2	10.8	11.8	12.2	12.6	12.9	13.7	13.1	12.1	11.8	11.4	11.3	11.1	10.95	13.68
25-Jun	10.8	10.9	10.9	10.9	10.5	10.7	11.5	13.7	15.4	16.2	15.7	17.3	18.8	19.8	20.2	20.1	15.8	17.5	19.0	17.1	16.6	15.4	14.0	12.9	15.07	20.18
26-Jun	11.4	9.5	7.8	6.8	5.9	6.3	9.0	13.3	15.9	18.8	20.0	20.6	22.3	22.8	23.3	23.1	23.6	24.1	22.8	20.1	19.9	18.4	17.0	15.8	16.60	24.15
27-Jun	13.3	12.0	10.8	9.2	7.9	8.3	11.7	14.6	17.3	19.6	21.9	23.2	24.4	25.3	26.1	27.4	27.5	25.4	26.2	23.6	20.6	17.8	16.4	15.4	18.59	27.54
28-Jun	13.8	12.6	11.6	10.7	10.4	10.3	14.0	16.8	19.5	21.3	23.2	24.6	25.8	26.2	25.9	20.7	19.1	17.3	17.6	18.4	18.0	15.5	13.6	12.2	17.46	26.18
29-Jun	10.6	9.7	8.8	8.0	7.5	8.1	9.1	13.2	17.1	19.5	22.5	25.5	27.2	27.6	27.1	22.4	17.7	20.2	18.9	19.1	17.9	16.2	15.7	14.9	16.86	27.56
30-Jun	13.8	13.2	12.7	12.2	11.9	12.3	13.7	14.0	14.1	13.9	16.6	18.4	21.1	21.9	23.1	19.6	15.9	13.9	14.2	15.4	14.9	14.0	12.7	11.3	15.21	23.13
	10.96	10.01	9.39	8.77	8.38	8.60	10.00	11.92	14.02	15.83	17.12	18.09	19.13	19.53	19.62	19.37	18.49	18.14	17.38	16.36	15.32	14.04	12.88	12.04	Diurnal Average	
	16.24	14.34	14.06	13.77	13.25	13.19	14.98	16.87	20.57	22.42	23.38	25.54	27.78	28.83	30.28	29.48	28.57	27.09	26.23	24.34	22.62	20.39	18.94	18.31	Diurnal Maximum	

West Central Airshed Society

WCAS - Hinton

Summary of Hourly Averages

Wind Speed (WS) - kph

June 2016

Day	Hourly Period Ending At (MST)																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1 Spd	0.8	0.8	0.3	1.0	0.2	0.5	1.4	1.3	1.6	0.6	6.4	6.0	6.7	8.8	6.7	0.8	4.6	6.2	7.1	5.8	2.1	1.5	0.4	1.1	1.93	8.78
Dir	NE	E	E	ENE	S	SW	ENE	ENE	E	NNE	SW	SW	SW	SW	SW	NE	SW	SW	SW	WSW	NNE	ENE	NE	E	SW	SW
2 Spd	0.9	2.0	4.5	6.2	3.5	4.0	2.0	4.6	2.3	1.6	9.2	11.9	12.8	13.2	6.0	5.0	2.2	2.8	1.4	2.0	1.3	3.2	2.5	1.6	3.84	13.19
Dir	ENE	E	SSW	SSW	SW	SW	WSW	SW	SW	SSW	SW	SW	SW	SW	W	WSW	W	ESE	SSW	WSW	WSW	SSW	SW	S	SW	SW
3 Spd	1.0	0.5	0.1	0.4	1.0	0.4	2.7	2.3	3.0	11.7	11.5	12.0	13.1	14.0	14.0	14.8	14.0	13.8	11.4	11.3	8.3	1.2	2.7	1.5	6.37	14.78
Dir	S	SW	NNW	W	ENE	ENE	ENE	ENE	WSW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	WSW	SSW	SW	SW	SW
4 Spd	1.7	1.1	0.7	0.4	0.7	0.5	0.5	0.6	0.1	0.5	4.1	9.6	12.5	9.9	7.8	3.8	3.5	3.6	4.6	2.1	2.0	3.3	1.2	0.0	1.84	12.48
Dir	E	ENE	E	E	ENE	NE	ENE	NE	NNW	SSE	W	SW	SSW	SSW	SW	WSW	W	WNW	WSW	WNW	NNE	ENE	E	ESE	SW	SSW
5 Spd	0.7	0.6	0.3	1.0	0.1	0.7	1.1	0.5	1.1	2.3	2.9	2.1	2.0	2.9	2.2	3.1	3.9	6.7	8.3	6.3	3.7	3.8	2.7	1.6	1.84	8.30
Dir	ESE	SE	W	W	NE	WNW	NW	W	WNW	ESE	NNE	NNW	NE	ESE	NE	ENE	ENE	ESE	ESE	E	NE	ENE	NE	E	ENE	ESE
6 Spd	1.2	0.4	0.2	0.3	0.3	0.3	0.2	0.3	2.5	2.4	2.0	1.4	2.1	1.2	2.6	7.0	5.9	2.1	2.4	5.8	1.2	1.5	1.1	0.8	0.30	6.96
Dir	ESE	NE	NW	NW	NE	NNW	NW	NNW	W	WNW	WSW	NE	W	SW	WSW	SW	SW	ENE	ENE	ENE	E	ESE	ENE	E	SW	SW
7 Spd	0.4	0.7	0.3	0.5	0.2	0.1	0.2	1.1	0.5	1.9	1.7	0.8	1.0	1.4	1.4	3.1	3.4	6.2	2.7	5.0	5.4	3.9	3.6	2.7	1.39	6.17
Dir	E	ENE	E	SSE	E	ENE	NNE	WNW	S	E	E	SSE	W	NNW	NW	NNE	ENE	SE	E	NE	ENE	ENE	ENE	E	ENE	SE
8 Spd	2.0	1.1	0.4	0.9	2.0	3.6	2.5	2.8	3.3	4.3	4.8	4.9	4.7	4.9	5.3	4.0	4.6	3.6	2.7	0.8	0.7	2.2	0.5	0.8	2.67	5.29
Dir	NE	ENE	N	NE	ENE	ENE	E	ENE	ENE	NE	NE	NE	NE	NE	NE	ENE	ENE	NNE	ENE	SE	NE	ENE	NNE	ESE	ENE	NE
9 Spd	0.7	0.7	1.7	3.1	1.2	2.5	0.4	2.0	3.3	3.5	2.5	4.4	8.0	6.9	7.2	3.8	1.2	1.9	0.3	1.2	1.5	0.5	1.1	2.4	2.01	7.99
Dir	NNE	ESE	SW	SSW	WSW	SW	WSW	SW	SW	SW	NW	SW	SSW	SW	SSW	SW	NNW	NE	ENE	S	SW	W	SSE	S	SW	SSW
10 Spd	0.3	0.6	0.6	2.5	1.9	2.2	2.6	2.6	6.0	7.9	7.2	8.1	9.1	8.7	8.7	6.3	4.1	3.1	3.1	4.2	3.1	3.0	1.9	0.8	3.67	9.06
Dir	SSW	ENE	NE	ENE	ENE	NE	NNE	ENE	E	ESE	E	E	E	E	ESE	E	NE	NNE	NE	NE	NE	NE	NNE	NE	ENE	E
11 Spd	1.0	1.0	0.9	1.3	1.8	5.0	3.6	5.0	3.4	5.6	13.1	8.6	11.2	9.0	11.5	8.1	1.9	5.4	8.6	9.8	7.8	3.1	2.0	5.8	5.32	13.10
Dir	E	E	WSW	SW	WSW	SW	SW	SW	WSW	SW	SW	SW	SW	SW	SW	SW	NW	SW	SW	SW	SW	WSW	W	WSW	SW	SW
12 Spd	3.6	5.5	2.5	2.2	4.2	3.1	4.4	7.7	13.2	12.0	13.6	13.5	16.9	15.0	17.3	19.3	14.2	12.8	7.3	9.7	8.3	3.6	1.8	1.8	8.70	19.25
Dir	WSW	WSW	W	W	WSW	W	WSW	WSW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	WSW	SW	SW	SW	W	W	SW	SW
13 Spd	2.5	1.7	2.4	3.2	2.8	1.4	2.0	2.7	2.8	0.5	6.8	3.3	3.5	4.7	4.5	7.3	7.5	4.4	1.1	2.0	0.7	0.8	0.6	0.2	0.65	7.54
Dir	WSW	NNE	NE	NE	ENE	NE	NE	NE	NE	S	SW	W	WSW	WSW	SE	SE	SE	WSW	E	ENE	N	ENE	SSW	SE	SSE	SE
14 Spd	0.3	0.4	0.8	0.6	0.3	0.5	0.9	1.4	2.6	5.2	2.1	1.0	3.1	3.9	1.3	1.3	1.2	0.9	0.9	3.5	4.2	3.7	1.7	1.0	0.60	5.21
Dir	WNW	NW	NE	NNW	SSW	NE	NW	NW	SSW	SSW	W	N	ENE	ENE	NW	NW	S	N	SSE	SW	SSW	SW	SW	SSW	SW	SSW
15 Spd	3.2	2.6	2.0	1.5	4.2	7.1	10.1	10.6	10.7	12.8	14.0	12.3	10.9	10.9	14.2	12.4	12.4	13.4	11.7	11.6	11.9	11.2	9.3	9.9	9.58	14.24
Dir	SSW	SW	SW	W	WSW	WSW	SW	SW	SW	SW	SW	WSW	WSW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW
16 Spd	8.8	9.1	9.7	6.1	4.4	4.1	4.1	3.6	3.7	4.4	6.7	8.8	8.3	10.8	10.1	3.0	3.7	3.6	3.0	1.8	1.8	1.7	1.4	1.2	4.86	10.84
Dir	WSW	WSW	SW	WSW	WSW	WSW	WSW	WSW	W	WSW	SW	SW	SW	SW	SW	W	WNW	W	W	WNW	NW	WNW	WNW	WNW	WSW	SW
17 Spd	1.0	0.8	1.2	0.9	1.1	0.6	0.6	0.3	1.9	7.2	3.3	5.4	4.5	4.1	5.1	3.9	3.5	9.1	9.2	10.9	7.3	2.8	3.8	3.3	3.67	10.86
Dir	NW	WNW	SW	SW	SSW	WNW	WNW	W	W	SW	W	SW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	SW	WSW	SW	SW	WSW	SW
18 Spd	3.8	1.0	1.6	0.7	0.3	0.3	1.7	5.6	7.5	7.1	0.8	1.5	1.0	5.1	1.5	2.3	4.7	4.4	4.6	3.6	1.3	2.2	3.3	1.4	0.79	7.49
Dir	SW	SW	WSW	NW	ENE	NE	WSW	SW	SSW	SSW	N	SW	SE	SSE	NNE	ESE	ENE	ENE	E	ENE	E	NNW	NW	SSE	S	SSW
19 Spd	5.0	0.2	6.4	2.0	4.8	3.1	4.5	4.0	7.4	7.7	6.4	1.9	11.8	7.7	3.6	5.8	8.9	7.5	10.2	8.2	4.7	9.4	7.1	5.9	5.93	11.83
Dir	SW	SE	SSW	SW	SW	WSW	SW	SW	SW	SW	SW	WSW	SSW	SW	WSW	SW	SW	SW	SW	SW	SW	SSW	SW	SW	SW	SSW
20 Spd	3.1	2.7	3.3	2.0	2.2	2.3	1.8	5.3	7.3	6.6	2.8	1.7	2.6	2.7	2.7	4.5	3.4	4.2	7.6	6.3	4.0	0.6	1.4	0.6	1.34	7.57
Dir	WSW	W	W	WNW	WNW	WNW	W	SW	SSW	SSW	SSW	E	N	ENE	ESE	ENE	NE	ESE	SSW	SW	SW	WNW	NNE	SW	SW	SSW
21 Spd	1.8	1.6	0.7	0.5	1.7	2.6	3.6	2.5	1.7	2.8	3.2	8.6	3.8	2.4	7.3	6.4	2.4	2.6	0.6	1.7	1.6	1.2	0.8	1.7	2.12	8.64
Dir	WSW	SW	ENE	SSW	WSW	WSW	WSW	WNW	WNW	WSW	SW	SW	WSW	W	SW	SW	NW	SW	NE	SSE	E	SSW	WSW	SSW	SW	SW
22 Spd	1.5	0.1	0.2	0.2	0.1	0.5	1.0	0.7	1.2	2.4	7.6	5.4	2.6	2.3	3.3	4.1	6.0	4.0	3.6	3.2	1.2	0.1	0.3	0.1	1.29	7.58
Dir	SSW	ESE	NE	N	WNW	WSW	WNW	WNW	NW	WNW	SW	WSW	WNW	W	WSW	WNW	WSW	WSW	NE	NE	ENE	NNE	ESE	SE	W	SW

WCAS - Hinton
Summary of Hourly Averages

Wind Speed (WS) - kph
June 2016

Day	Hourly Period Ending At (MST)																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
23 Spd	0.9	0.2	0.5	0.4	1.2	0.6	0.7	1.4	1.8	2.3	2.8	3.5	2.8	2.1	5.9	3.3	2.3	2.6	1.9	1.1	2.0	0.9	1.3	1.1	0.60	5.93
Dir	SW	NNW	W	WNW	WSW	NW	NW	NW	SSE	ENE	NE	NE	NNE	ENE	SSW	NE	NNE	NE	NE	ENE	E	SSW	SW	WSW	NE	SSW
24 Spd	1.5	0.3	1.6	1.0	0.6	3.8	4.0	2.1	1.5	0.6	3.0	5.6	5.0	7.1	6.4	3.3	8.9	6.7	6.6	3.1	2.9	2.4	3.7	5.2	3.53	8.86
Dir	SW	NNW	WSW	WSW	W	SW	SW	WSW	W	NW	SW	SW	SW	SW	SW	WSW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW
25 Spd	3.5	3.3	3.0	3.9	0.7	2.9	3.7	5.7	10.1	11.1	10.8	9.8	10.6	9.8	9.6	10.8	2.5	3.0	0.6	0.9	1.2	1.8	1.4	2.9	4.97	11.14
Dir	SW	SW	WSW	SW	WSW	SW	WSW	SW	SW	SW	SW	SW	SW	SW	SW	SW	W	SW	NE	E	SSW	SW	SW	SSW	SW	SW
26 Spd	4.2	2.3	0.9	1.0	0.8	0.3	1.0	2.0	2.5	2.2	8.1	4.3	2.6	3.4	6.4	1.5	2.2	2.2	1.0	0.8	0.6	0.5	1.8	2.6	1.61	8.12
Dir	SW	SW	W	SW	W	WSW	W	WNW	WNW	WNW	SSW	SSW	SW	WSW	SSW	WNW	NNE	WNW	WNW	ENE	ESE	SSE	S	SSW	SW	SSW
27 Spd	2.2	3.1	2.6	1.0	0.8	0.5	1.4	2.3	2.2	2.2	0.6	4.6	2.7	2.1	3.2	1.5	1.5	1.4	2.4	1.8	0.8	0.8	1.4	0.6	0.84	4.61
Dir	SW	SSW	SSW	SW	WSW	W	WNW	WNW	WNW	W	WSW	SSW	SW	SSW	SSW	WNW	SW	NNE	NNE	NNE	ENE	NE	NNE	ENE	WSW	SSW
28 Spd	0.8	0.8	1.3	1.2	0.8	0.7	1.4	1.7	1.6	1.2	3.2	4.7	4.9	3.5	3.4	3.5	3.6	2.8	1.4	2.2	0.8	0.3	1.3	0.8	0.22	4.87
Dir	SSW	W	SW	SSW	WSW	W	WNW	W	W	NE	NE	ENE	ENE	E	ENE	NW	WSW	WSW	WNW	SW	WSW	NNW	W	W	WNW	ENE
29 Spd	0.4	0.1	0.4	0.3	0.2	0.7	0.8	0.8	1.6	1.0	2.0	4.4	6.0	5.7	5.5	2.1	2.3	6.9	0.5	6.1	2.4	2.9	2.0	2.0	1.52	6.88
Dir	WSW	NE	WNW	NE	SW	W	WNW	WNW	WNW	WSW	ENE	NE	ENE	E	E	NNW	SE	ESE	NNW	ESE	NE	NE	E	ESE	E	ESE
30 Spd	0.7	2.8	1.3	2.7	2.4	0.7	1.0	2.4	3.6	4.0	2.8	4.6	1.8	3.5	1.5	4.6	5.6	0.6	5.1	1.5	1.9	1.1	2.2	0.8	0.96	5.60
Dir	E	ENE	E	ENE	ENE	E	W	WSW	SW	SW	SSW	SSW	NNW	SE	NE	ENE	SSW	SE	S	WSW	SSW	SW	SW	WSW	S	SSW
Spd	1.28	0.68	1.13	0.72	0.70	1.10	1.28	1.76	2.52	3.14	3.69	3.74	3.79	3.91	4.05	2.69	2.30	2.43	2.15	1.85	1.30	0.79	0.96	1.37	Diurnal Average	
Dir	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SSW	SW	SSW	SW	SW	SW	SW		
Spd	8.84	9.07	9.71	6.19	4.77	7.12	10.08	10.64	13.23	12.76	13.95	13.46	16.85	15.03	17.29	19.25	14.16	13.84	11.74	11.62	11.90	11.24	9.31	9.93	Diurnal Maximum	
Dir	237.29	236.68	236.46	213.18	224.98	241.44	235.26	234.60	225.26	234.93	232.71	224.59	221.34	225.71	226.07	220.41	222.33	223.25	231.00	229.10	228.06	228.69	234.23	232.78		

Maximum Speed Value: 19.3 kph on Jun 12 16:00
Maximum Daily Speed Average: 9.58 kph on Jun 15
Maximum Diurnal Speed Average: 4.05 kph at hour 15

Minimum Speed Value: 0.0 kph on Jun 5 00:00
Minimum Daily Speed Average: 0.22 kph on Jun 14
Minimum Diurnal Speed Average: 0.68 kph at hour 2

Monthly Average Velocity: 2.027 kph 224.21 deg

Speed Percentiles: P_1 = 0.1 P_{10} = 0.6 Q_1 = 1.2 Median = 2.5 Q_3 = 4.8 P_{90} = 8.9 P_{99} = 14.1

All monthly, daily, and diurnal averages have been calculated using vector methods

Hours in Service:	720
Hours of Data:	720
Hours of Missing Data:	0
Percent Operational Time:	100.0

Frequency Distribution

Direction	Speed Range (kph) 0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total
North	22	0	0	0	0	0	22
NorthEast	109	3	0	0	0	0	112
East	74	16	0	0	0	0	90
SouthEast	18	5	0	0	0	0	23
South	28	7	0	0	0	0	35
SouthWest	135	102	40	1	0	0	278
West	109	1	0	0	0	0	110
NorthWest	50	0	0	0	0	0	50
Total	545	134	40	1	0	0	720

WCAS - Hinton
Summary of Hourly Averages

Relative Humidity (RH) - %
June 2016

Maximum Value: 90.89 % on Jun 22 07:00

Maximum Daily Average: 85.69 % on Jun 24

Minimum Value: 9.0 % on Jun 4 18:00

Minimum Daily Average: 35.08 % on Jun 12

Maximum Diurnal Average: 77.62 % at hour 6

Minimum Diurnal Average: 36.00 % at hour 14

Monthly Average: 56.525 %

Percentiles: P_1 = 11.5 P_{10} = 24.2 Q_1 = 33.4 Median = 59.0 Q_3 = 79.3 P_{90} = 88.0 P_{99} = 90.3

Hours in Service:	720
Hours of Data:	720
Hours of Missing Data:	0
Hours of Calibration:	0
Percent Operational Time:	100.0

Day	Hourly Period Ending At																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1-Jun	71.7	73.2	76.3	79.0	79.9	78.6	79.8	76.9	72.8	58.3	41.1	35.9	30.9	27.1	25.2	29.9	25.9	22.8	23.1	24.9	41.1	52.3	59.6	67.3	52.23	79.86
2-Jun	69.9	69.1	54.7	53.5	57.1	60.2	62.5	57.4	52.7	39.1	32.1	27.4	25.4	30.3	33.5	31.9	48.0	72.2	64.6	61.7	61.5	60.7	63.3	68.7	52.38	72.24
3-Jun	75.8	81.6	85.1	87.2	88.3	88.9	80.1	62.8	46.6	30.4	27.1	25.5	24.2	24.7	25.4	24.9	25.1	25.0	25.8	26.9	29.0	38.3	46.3	44.7	47.49	88.90
4-Jun	57.2	66.4	72.3	76.4	79.3	78.3	72.3	66.1	56.2	38.1	26.4	23.8	21.2	19.4	16.5	13.7	9.5	9.0	9.5	12.5	18.7	24.2	35.0	47.3	39.56	79.34
5-Jun	57.5	62.8	69.4	74.7	78.1	78.2	68.0	51.5	39.3	28.0	24.9	22.0	16.2	10.9	10.9	11.8	11.6	13.8	16.0	18.8	24.7	27.1	31.8	35.5	36.82	78.24
6-Jun	46.1	54.3	60.7	65.6	69.5	71.9	72.3	59.9	42.9	36.5	32.7	27.9	22.6	17.1	13.0	9.6	10.0	19.8	26.1	26.0	30.7	40.4	52.0	59.3	40.30	72.34
7-Jun	62.8	62.2	63.7	65.3	68.1	71.5	64.2	61.1	35.3	25.0	22.2	22.1	21.6	20.3	19.9	19.6	21.2	23.1	29.8	36.9	48.9	55.0	58.4	77.2	43.96	77.18
8-Jun	88.0	88.8	89.3	90.0	89.9	89.1	88.1	86.5	77.6	71.0	67.9	66.6	64.9	65.0	65.8	60.2	52.6	54.1	73.6	85.4	88.2	88.7	89.6	90.1	77.95	90.07
9-Jun	90.0	90.2	90.0	87.9	82.9	84.4	88.0	84.8	76.5	69.6	69.4	65.9	65.1	71.9	63.5	55.9	72.2	71.6	85.7	87.1	88.7	89.4	89.5	88.2	79.52	90.21
10-Jun	88.2	89.2	89.7	90.1	90.3	90.3	89.8	87.4	70.6	60.9	56.8	49.9	47.3	44.2	45.2	60.5	73.2	79.5	83.8	81.7	79.9	79.7	80.3	80.2	74.52	90.34
11-Jun	81.2	87.5	89.2	89.5	89.5	85.8	82.1	73.2	60.5	47.6	39.9	34.8	29.8	28.9	25.3	26.5	41.0	28.7	24.4	25.6	28.1	35.4	37.0	33.0	51.01	89.49
12-Jun	36.7	37.4	41.3	45.8	44.9	46.5	46.5	42.7	37.2	35.0	32.1	29.7	27.5	26.9	26.1	25.2	25.9	25.0	26.1	27.2	29.0	35.3	44.9	46.8	35.08	46.84
13-Jun	41.5	63.2	67.0	70.8	72.5	75.3	71.2	66.7	56.7	42.8	33.2	29.8	26.8	26.2	27.4	28.0	32.6	54.9	72.0	73.0	77.5	82.5	85.7	85.8	56.79	85.75
14-Jun	87.4	88.3	88.7	88.9	88.9	89.1	81.9	64.7	58.2	40.1	39.4	57.0	48.4	71.8	85.8	86.1	78.9	83.5	84.0	74.5	75.3	74.0	80.8	82.6	74.92	89.06
15-Jun	82.2	74.7	75.0	77.3	51.9	41.3	37.8	36.0	33.5	31.5	29.9	28.3	28.0	27.5	26.2	24.7	23.1	22.5	24.4	26.7	26.5	27.3	28.5	29.1	38.08	82.23
16-Jun	30.4	30.5	30.7	34.9	37.5	38.5	38.8	40.2	45.5	56.7	55.7	44.5	39.4	33.9	39.0	52.6	57.9	49.6	50.4	52.0	63.8	59.0	61.3	61.1	46.00	63.78
17-Jun	65.9	63.0	65.3	66.5	71.3	73.5	71.5	76.2	61.7	45.4	42.0	35.6	33.5	28.8	27.1	25.7	25.5	22.0	21.7	24.2	26.2	33.2	37.4	42.4	45.23	76.24
18-Jun	43.1	56.3	61.2	70.5	76.9	72.5	57.7	44.4	37.7	28.3	23.9	21.0	19.3	16.7	16.7	15.5	18.3	20.6	20.8	25.7	31.6	40.3	54.5	59.9	38.89	76.92
19-Jun	80.1	87.8	86.7	86.6	87.2	86.7	85.2	81.8	71.6	59.7	50.7	42.6	42.5	55.1	68.5	54.1	53.5	48.2	46.9	49.7	50.5	59.9	63.1	65.6	65.18	87.77
20-Jun	70.4	76.5	77.4	78.2	84.9	84.0	73.9	61.3	54.2	46.8	34.7	22.6	22.6	21.0	19.1	19.8	19.0	19.6	25.9	33.0	36.9	41.9	46.6	47.7	46.58	84.92
21-Jun	52.5	54.9	63.9	68.0	63.5	68.0	83.8	88.4	89.6	87.6	86.6	85.8	85.2	82.6	67.9	56.0	78.1	85.2	85.4	82.6	87.6	88.1	89.3	89.7	77.92	89.67
22-Jun	89.7	89.8	90.1	90.3	90.5	90.9	90.9	87.5	69.9	57.4	47.3	44.9	40.9	33.8	29.1	31.3	24.4	28.2	46.7	54.3	55.0	63.8	73.0	79.5	62.47	90.89
23-Jun	83.0	85.2	87.3	88.2	88.9	89.2	86.3	69.8	58.1	54.0	50.8	48.3	46.9	44.2	72.6	82.5	85.2	81.6	81.2	82.9	86.0	86.4	88.5	89.1	75.67	89.24
24-Jun	89.6	89.6	89.8	89.6	88.9	88.8	88.1	89.2	90.0	90.3	89.7	87.9	87.4	82.4	80.3	83.7	76.3	72.6	74.8	81.5	85.2	86.7	87.4	86.8	85.69	90.30
25-Jun	88.3	88.1	87.1	86.3	86.7	87.7	85.2	74.6	65.7	59.1	60.7	56.9	50.0	45.9	43.2	41.5	65.9	63.2	53.8	62.9	63.2	57.4	57.5	60.4	66.31	88.29
26-Jun	66.6	77.3	83.1	86.3	87.5	88.0	80.0	62.9	55.8	46.5	28.8	29.3	26.2	24.2	21.6	25.2	24.4	23.5	27.3	35.2	37.7	49.2	53.8	52.3	49.70	88.04
27-Jun	59.7	62.9	67.0	73.6	78.3	77.5	64.0	53.2	45.8	38.5	29.9	24.2	20.9	17.7	16.2	15.0	12.9	18.9	18.5	25.2	35.4	50.8	58.7	60.9	42.74	78.34
28-Jun	68.0	73.1	75.8	78.3	77.4	79.0	65.4	53.8	46.2	40.5	35.7	31.1	22.9	19.9	23.0	36.9	47.8	57.6	60.8	57.3	60.1	72.9	83.3	86.4	56.38	86.39
29-Jun	87.4	88.0	88.4	88.8	89.3	89.8	89.3	74.8	56.6	47.8	40.0	31.1	22.3	21.5	21.3	40.4	72.9	63.0	63.2	54.6	62.5	70.2	70.4	73.9	62.80	89.75
30-Jun	79.3	81.7	81.4	84.0	85.0	85.2	81.7	78.6	76.2	82.7	67.8	57.8	45.8	39.8	38.3	53.1	69.6	82.1	80.7	75.0	80.8	85.2	86.6	87.5	73.58	87.53
	69.66	73.13	74.92	77.06	77.49	77.62	74.21	67.14	58.04	49.84	43.97	40.34	36.86	36.00	36.45	38.05	42.75	44.71	47.57	49.49	53.67	58.51	63.14	65.97	Diurnal Average	
	89.97	90.21	90.07	90.29	90.51	90.87	90.89	89.17	90.01	90.30	89.66	87.88	87.44	82.60	85.83	86.10	85.22	85.15	85.68	87.07	88.74	89.35	89.57	90.07	Diurnal Maximum	

WCAS - Hinton
Summary of Hourly Standard Deviations

Wind Speed (WS) - kph
June 2016

Maximum Value: 9.60 kph on Jun 12 15:00

Maximum Daily Average: 6.48 kph on Jun 15

Minimum Value: 0.1 kph on Jun 5 00:00

Minimum Daily Average: 1.80 kph on Jun 23

Maximum Diurnal Average: 4.73 kph at hour 15

Minimum Diurnal Average: 1.61 kph at hour 3

Monthly Average: 2.957 kph

Percentiles: P_1 = 0.4 P_{10} = 1.1 Q_1 = 1.6 Median = 2.4 Q_3 = 3.8 P_{90} = 5.9 P_{99} = 8.6

Hours in Service:	720
Hours of Data:	720
Hours of Missing Data:	0
Hours of Calibration:	0
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1-Jun	1.2	1.1	1.2	1.5	1.2	1.8	1.5	1.6	1.4	1.5	5.1	4.6	5.4	6.1	5.5	4.0	5.2	5.7	4.9	4.9	2.4	1.8	2.0	1.8	3.05	6.07
2-Jun	1.5	2.5	2.2	3.5	3.1	3.2	2.3	2.9	2.5	3.8	5.9	7.8	7.7	7.0	5.8	4.7	3.2	3.2	2.7	2.7	1.6	1.2	2.1	1.9	3.54	7.76
3-Jun	1.6	1.3	1.3	0.9	1.2	1.4	2.3	1.8	5.4	6.8	7.1	7.3	7.5	8.3	7.3	8.0	8.4	7.4	6.8	6.4	4.8	2.4	2.6	2.7	4.63	8.37
4-Jun	1.3	1.4	1.4	0.9	1.1	1.3	1.9	1.2	1.5	2.4	3.7	5.3	5.5	5.4	5.8	4.4	2.9	3.0	5.1	2.4	2.2	2.6	1.3	0.1	2.67	5.76
5-Jun	1.1	1.2	0.9	1.2	0.5	1.0	1.2	1.2	1.4	2.0	2.4	2.1	2.0	2.6	2.5	2.2	2.9	3.7	4.5	3.6	3.0	2.6	2.6	2.0	2.11	4.47
6-Jun	1.3	0.6	0.6	0.6	0.7	0.6	0.4	0.8	2.1	2.0	2.3	1.5	2.6	2.4	3.9	4.9	4.5	3.0	2.8	2.7	1.8	1.4	1.2	1.2	1.92	4.93
7-Jun	0.8	1.1	1.0	0.9	0.7	0.4	0.9	1.3	1.6	2.2	2.5	3.1	2.9	2.1	3.6	3.0	2.8	4.7	3.2	3.7	3.2	2.2	2.4	4.1	2.27	4.72
8-Jun	1.9	1.6	0.9	1.5	1.8	1.8	1.7	1.9	2.5	3.2	3.2	3.3	3.1	3.4	4.0	3.8	4.5	3.2	4.3	2.7	1.1	1.3	1.1	1.4	2.46	4.50
9-Jun	1.3	1.3	1.9	2.8	1.9	2.5	1.1	1.7	2.7	2.8	2.1	4.4	4.7	4.2	2.8	3.6	1.5	2.1	1.4	2.0	1.6	0.9	2.0	2.1	2.31	4.69
10-Jun	1.4	1.1	1.1	1.5	1.6	2.0	2.1	2.0	3.4	3.8	3.3	4.6	4.8	4.7	4.8	3.7	3.0	2.4	2.9	3.1	2.4	2.4	2.1	1.5	2.74	4.80
11-Jun	1.5	1.6	1.2	1.8	2.2	4.0	2.8	3.0	3.4	5.7	6.5	5.9	6.8	6.4	7.2	6.2	2.5	5.3	5.9	5.2	5.0	3.8	3.1	4.9	4.24	7.19
12-Jun	3.9	5.0	2.9	2.9	4.3	3.6	4.7	6.7	7.2	7.1	7.5	7.5	8.9	8.8	9.6	9.4	8.2	7.3	6.8	5.9	5.0	2.7	1.9	2.5	5.85	9.60
13-Jun	2.6	1.9	2.0	1.8	2.1	1.5	1.8	1.9	1.9	3.2	5.1	3.2	3.2	5.3	6.1	4.4	5.1	3.9	2.1	1.6	1.1	1.2	1.3	1.5	2.74	6.08
14-Jun	0.9	1.1	0.9	0.9	0.9	1.2	1.5	1.6	2.8	3.9	2.6	2.0	3.2	2.7	1.6	1.8	1.8	1.1	2.1	1.8	2.7	2.1	1.7	1.7	1.86	3.89
15-Jun	1.6	1.9	1.7	2.1	4.2	5.5	6.8	7.4	7.5	8.9	8.7	8.5	8.5	7.7	8.4	8.4	8.6	9.0	7.2	7.6	6.5	6.3	6.4	6.3	6.48	8.98
16-Jun	6.1	6.3	6.3	5.5	4.4	4.4	4.0	3.8	4.2	4.7	5.3	6.7	6.2	6.6	6.4	4.4	3.2	4.2	3.2	2.2	1.3	1.6	1.5	1.5	4.32	6.68
17-Jun	1.4	1.5	1.4	2.1	1.9	0.8	1.5	1.0	3.1	4.6	3.0	5.2	4.5	3.9	5.0	4.3	4.5	6.0	6.6	6.5	5.1	2.6	2.4	2.8	3.39	6.56
18-Jun	2.2	1.3	1.3	1.0	0.6	0.9	2.1	3.1	3.7	3.8	2.3	2.5	2.7	3.1	2.3	2.6	4.0	2.9	2.4	2.1	1.6	2.9	2.8	3.1	2.39	4.02
19-Jun	3.4	1.5	3.5	3.7	2.6	2.4	3.2	3.6	5.2	5.1	4.1	3.2	5.5	5.7	3.9	4.5	4.4	3.4	5.1	4.7	3.8	4.2	3.7	2.9	3.89	5.72
20-Jun	2.3	1.8	2.3	1.7	1.2	1.4	1.9	3.9	3.2	3.3	2.9	2.0	2.4	3.0	3.6	3.2	2.6	2.6	5.9	6.0	3.1	2.6	1.6	2.8	2.80	5.98
21-Jun	2.0	2.2	1.3	1.3	2.2	2.8	2.9	2.3	1.8	2.4	3.9	4.0	3.2	2.3	3.9	4.6	2.9	3.0	1.1	1.8	2.1	2.3	1.5	1.5	2.46	4.56
22-Jun	1.6	0.3	0.4	0.3	0.4	0.8	1.1	1.1	1.4	2.7	5.1	5.1	2.5	3.1	3.6	3.7	5.5	4.8	2.9	3.0	1.8	0.7	1.1	1.3	2.26	5.50
23-Jun	1.2	0.6	0.8	0.6	1.2	0.8	1.1	1.4	1.8	2.1	2.4	2.5	2.5	2.6	6.5	2.4	1.9	2.0	1.8	1.2	1.7	1.4	1.5	1.3	1.80	6.48
24-Jun	1.8	1.2	2.2	1.8	1.1	2.8	1.7	2.3	1.9	1.2	1.9	3.0	2.6	3.9	3.4	3.6	4.2	4.3	3.7	3.3	2.0	1.5	2.4	2.8	2.52	4.25
25-Jun	2.2	2.1	2.0	2.3	1.3	2.2	2.5	3.4	4.3	5.0	4.4	5.2	5.8	6.2	6.2	5.4	2.9	3.5	1.8	1.8	1.7	1.9	1.4	1.6	3.21	6.24
26-Jun	2.5	1.8	1.0	1.0	1.0	0.6	1.2	1.8	1.7	1.8	4.4	4.1	3.5	3.8	4.9	2.6	2.2	2.0	1.4	1.2	1.3	1.2	1.8	1.9	2.12	4.94
27-Jun	1.4	1.9	1.5	1.1	1.1	0.7	1.2	1.7	2.0	2.0	1.8	3.6	3.0	3.7	3.5	2.3	2.7	1.7	2.2	2.0	1.0	1.1	1.8	1.4	1.93	3.66
28-Jun	1.3	1.2	1.1	1.6	1.6	1.0	1.5	2.0	1.9	1.8	2.7	2.6	3.3	2.9	3.1	3.0	3.8	3.2	1.5	2.0	1.4	0.4	1.2	1.1	1.97	3.85
29-Jun	1.1	1.1	0.8	0.6	0.7	1.1	0.9	1.2	1.8	1.8	2.3	2.9	3.4	3.8	3.5	2.7	2.8	6.1	1.4	4.3	3.1	2.5	2.2	2.1	2.26	6.11
30-Jun	1.4	2.1	1.3	1.9	2.0	1.7	1.3	3.2	4.5	3.0	2.3	3.2	2.2	3.1	3.1	3.7	6.7	2.4	3.1	1.8	2.1	1.4	1.4	1.2	2.50	6.72
	1.86	1.71	1.61	1.71	1.69	1.86	2.04	2.43	2.99	3.49	3.89	4.23	4.35	4.49	4.73	4.18	3.99	3.90	3.56	3.34	2.57	2.10	2.08	2.17	Diurnal Average	
	6.05	6.27	6.26	5.48	4.38	5.49	6.83	7.44	7.52	8.89	8.65	8.47	8.94	8.75	9.60	9.38	8.63	8.98	7.20	7.60	6.47	6.34	6.36	6.30	Diurnal Maximum	

,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
June 2016

Maximum Value: 113.82 deg on Jun 4 07:00

Maximum Daily Average: 70.54 deg on Jun 7

Minimum Value: 17.8 deg on Jun 8 06:00

Minimum Daily Average: 39.90 deg on Jun 25

Maximum Diurnal Average: 67.03 deg at hour 2

Minimum Diurnal Average: 50.59 deg at hour 13

Monthly Average: 55.976 deg

Percentiles: P_1 = 22.5 P_{10} = 31.4 Q_1 = 40.3 Median = 52.7 Q_3 = 69.8 P_{90} = 87.1 P_{99} = 102.4

Hours in Service:	720
Hours of Data:	720
Hours of Missing Data:	0
Hours of Calibration:	0
Percent Operational Time:	100.0

Day	Hourly Period Ending At																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1-Jun	67.4	76.5	97.8	73.7	102.8	89.0	63.4	56.3	45.9	94.0	48.7	50.3	53.8	48.1	50.4	98.8	73.4	58.4	41.1	55.0	60.7	67.0	99.1	88.6	69.17	102.83
2-Jun	97.4	72.6	27.9	21.0	47.7	39.2	50.6	31.2	61.7	102.6	38.5	40.4	33.5	28.6	52.5	56.2	68.4	60.4	89.3	54.8	52.9	24.1	58.8	68.9	53.29	102.57
3-Jun	95.2	86.3	88.6	80.9	57.3	91.3	47.3	40.1	94.2	32.6	40.3	36.5	34.9	33.6	27.2	30.8	32.2	28.7	34.5	31.1	29.2	75.7	60.1	93.9	54.28	95.25
4-Jun	49.7	70.5	74.1	65.9	66.5	100.7	113.8	81.7	102.6	100.9	56.1	35.1	28.9	39.2	51.7	68.4	51.2	51.1	59.3	60.3	51.4	44.7	41.6	95.9	65.06	113.82
5-Jun	74.4	88.9	95.6	40.1	92.4	38.3	62.2	86.1	67.3	55.6	57.7	65.1	64.7	70.5	68.4	47.0	47.1	37.6	32.4	32.7	46.7	46.4	64.2	73.0	60.60	95.56
6-Jun	57.7	41.8	79.7	51.5	77.0	49.1	68.3	66.0	45.0	51.2	62.4	61.6	63.6	103.1	67.2	45.6	40.5	88.4	77.7	25.4	75.5	58.9	40.2	83.2	61.69	103.12
7-Jun	76.3	72.7	76.6	87.2	72.2	86.8	80.9	50.0	104.9	72.4	82.4	97.8	95.6	95.4	82.0	62.1	48.0	56.5	56.2	44.8	34.5	36.3	38.5	82.8	70.54	104.90
8-Jun	49.0	66.5	56.7	75.2	48.8	17.8	28.1	30.0	36.1	43.2	41.5	41.9	42.6	43.8	49.0	59.1	52.1	48.6	93.2	102.5	55.2	52.7	90.0	84.3	54.50	102.50
9-Jun	54.3	90.4	45.6	67.5	85.5	46.5	75.1	58.6	56.4	40.3	40.9	64.3	31.1	42.5	20.9	72.3	67.6	69.3	87.5	97.6	68.2	53.4	90.4	75.3	62.57	97.61
10-Jun	96.5	64.3	70.0	24.0	44.1	57.5	44.4	42.1	34.0	29.8	33.3	36.8	30.0	35.0	32.6	28.2	44.0	47.5	49.4	44.6	55.0	46.9	60.4	67.9	46.58	96.46
11-Jun	70.3	91.0	61.9	54.9	53.3	44.2	45.4	38.8	58.3	51.4	27.0	42.2	36.6	46.9	35.9	52.8	66.2	52.3	39.4	31.9	36.3	63.2	60.3	50.0	50.44	90.95
12-Jun	57.1	52.3	58.3	65.6	56.8	63.3	58.1	51.1	31.9	32.3	33.3	32.9	29.6	33.9	31.6	28.5	33.0	35.4	55.1	35.4	33.0	36.9	52.5	61.0	44.13	65.61
13-Jun	63.6	60.8	55.8	40.4	46.3	48.0	55.9	41.1	35.4	100.7	50.9	59.2	60.1	55.1	83.9	38.4	53.4	46.4	86.4	44.7	57.5	56.1	90.7	89.7	59.18	100.67
14-Jun	69.8	81.1	40.1	57.3	88.1	61.6	75.0	66.4	67.7	53.4	70.5	99.6	59.9	45.3	50.5	72.3	85.0	70.2	99.3	33.8	38.0	29.8	53.9	93.7	65.08	99.58
15-Jun	42.8	33.8	48.7	59.8	51.5	45.9	39.7	40.6	40.3	40.8	35.6	41.6	47.0	42.0	33.9	40.3	41.3	39.8	35.9	38.3	30.9	32.9	41.4	37.2	40.90	59.76
16-Jun	40.4	38.4	39.7	48.7	56.1	62.0	53.9	58.3	61.3	57.7	47.8	46.2	46.0	35.0	36.5	69.8	50.2	60.4	58.0	52.7	40.4	41.9	43.9	51.3	49.85	69.76
17-Jun	89.9	66.8	59.7	72.7	78.8	41.9	79.9	102.3	63.5	37.5	53.8	56.7	55.4	58.1	56.0	61.9	65.1	39.3	43.3	34.2	34.7	46.7	34.8	45.1	57.42	102.30
18-Jun	31.6	55.8	36.5	82.2	66.0	75.6	58.8	36.8	30.6	31.4	96.4	81.3	93.0	50.7	83.3	72.6	49.0	35.7	33.8	30.0	48.2	71.5	51.7	111.6	58.90	111.56
19-Jun	38.3	99.6	28.7	89.2	28.6	38.1	38.1	82.1	34.0	41.8	42.1	89.5	26.8	42.6	54.9	49.0	29.3	25.2	26.4	30.7	45.9	21.0	28.1	28.5	44.10	99.58
20-Jun	37.9	33.8	38.8	35.6	22.0	27.0	43.8	39.2	24.2	33.3	69.8	73.8	62.6	70.2	83.6	44.8	50.9	50.5	49.7	51.4	40.3	94.3	71.8	88.4	51.58	94.27
21-Jun	43.5	69.6	60.4	88.2	54.6	49.1	43.9	40.5	56.6	39.5	54.7	25.4	46.3	50.7	35.4	46.0	79.2	50.9	85.2	88.6	81.7	84.9	69.6	31.2	57.32	88.60
22-Jun	75.3	80.4	58.9	52.9	95.5	40.8	35.2	43.1	53.8	51.9	43.3	52.4	58.4	63.0	60.0	51.6	55.3	65.4	45.7	50.2	65.0	92.7	91.5	99.3	61.74	99.33
23-Jun	74.7	83.2	56.7	66.1	33.1	28.1	77.9	61.1	84.6	61.0	48.6	44.0	52.9	68.8	84.2	46.2	45.5	43.6	43.6	56.5	50.9	64.8	59.8	55.2	57.96	84.63
24-Jun	78.4	99.5	71.4	74.9	73.1	54.9	23.2	43.4	52.7	62.4	30.2	29.2	25.2	26.6	28.5	48.5	26.5	28.2	26.5	80.4	30.9	28.0	35.3	27.1	46.04	99.46
25-Jun	33.0	31.4	33.2	29.0	44.6	28.0	37.5	31.1	22.7	22.6	23.3	31.4	32.8	37.5	38.0	30.8	55.6	61.0	81.5	70.6	68.5	45.2	45.3	22.8	39.90	81.50
26-Jun	42.3	49.5	38.8	29.2	32.8	60.6	51.1	43.2	42.7	52.4	34.2	74.6	77.7	61.2	51.0	72.9	63.6	44.5	47.6	71.1	77.1	99.3	87.5	38.4	55.98	99.33
27-Jun	31.2	29.7	19.0	49.1	43.5	45.8	35.1	39.0	52.2	57.1	104.1	58.2	75.4	84.3	71.6	85.5	96.8	55.8	49.0	50.4	32.7	53.0	84.6	95.4	58.27	104.05
28-Jun	76.0	82.8	48.4	73.1	71.6	48.7	50.7	56.5	63.8	75.8	47.3	40.2	45.8	75.0	63.2	60.2	55.5	55.0	59.5	40.6	73.8	47.4	24.2	53.9	57.87	82.79
29-Jun	85.1	84.5	64.6	62.0	70.0	57.9	32.6	64.0	55.6	88.7	69.6	41.9	37.7	50.0	38.8	68.4	77.7	57.5	82.7	41.9	74.6	63.8	73.4	61.0	62.67	88.74
30-Jun	87.2	56.6	73.9	34.4	38.5	96.2	68.1	50.6	52.2	49.6	55.5	50.3	69.8	56.5	100.6	55.8	81.0	95.4	33.4	51.9	72.2	79.3	21.9	49.7	61.70	100.57
	62.87	67.03	56.86	58.41	59.98	54.47	54.60	52.38	54.41	55.47	51.32	53.35	50.59	53.11	54.11	55.49	56.15	51.97	56.75	51.13	52.06	55.28	58.85	66.80	Diurnal Average	
	97.38	99.58	97.79	89.22	102.83	100.72	113.82	102.30	104.90	102.57	104.05	99.58	95.56	103.12	100.57	98.80	96.80	95.36	99.26	102.50	81.73	99.33	99.09	111.56	Diurnal Maximum	

,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3 24-hr 100 ul/m^3

WEST CENTRAL AIRSHED SOCIETY

CONTINUOUS AMBIENT AIR QUALITY MONITORING PROGRAM MONTHLY REPORT

END OF REPORT
JUNE 2016