



**West Central Airshed Society
Continuous Ambient Air Quality
Monitoring Program
Annual Summary for 2011**

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

February 12th, 2012

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

Dear Sir:

Re: Annual Ambient Air Quality Monitoring Report. January – December 2011.

The West Central Airshed Society (WCAS) presents the 2011 Annual Report containing ambient air quality and meteorological information from the following sites:

Station 901	Tomahawk	SE 02 51 06 W5
Station 902	Violet Grove	SE 17 48 08 W5
Station 903	Carrot Creek	SE 31 53 13 W5
Station 904	Hightower	SE 11 54 02 W6
Station 911	Drayton Valley	Weyerhaeuser
Station 912	Edson	Weyerhaeuser
Station 913	Breton	NW 25 47 04 W5

WCAS data collection and validation began October 1, 2004 for Station 912, Edson. The following is a list of the reported ambient air and meteorological parameters measured at the site locations:

AMS 901 (Tomahawk)

SO₂, O₃, NO/ NO₂/ NO_x, Particulate Matter (2.5 microns), Wind Speed and Direction, Relative Humidity, External Temperature, Photosynthetically Active Radiation, Leaf Wetness (seasonal), and Precipitation (seasonal).

AMS 902 (Violet Grove)

SO₂, O₃, NO/ NO₂/ NO_x, THC, Wind Speed and Direction, Relative Humidity, External Temperature, Delta Temperature, (2m – 10m), Photosynthetically Active Radiation, Global Solar Radiation, Leaf Wetness (seasonal), and Precipitation (seasonal).

AMS 903 (Carrot Creek)

SO₂, O₃, NO/ NO₂/ NO_x, Wind Speed and Direction, Relative Humidity, External Temperature, Photosynthetically Active Radiation, and Precipitation (seasonal).

AMS 904 (Hightower)

SO₂, O₃, NO/ NO₂/ NO_x, Particulate Matter (2.5 microns), Wind Speed and Direction, Relative Humidity, External Temperature.

AMS 905 (Steeper)

SO₂, O₃, NO/ NO₂/ NO_x, Particulate Matter (2.5 microns), Wind Speed and Direction, Relative Humidity, External Temperature, and Precipitation (seasonal).

AMS 911 (Drayton Valley)

Particulate Matter (2.5 microns), Wind Speed and Direction, and External Temperature,

AMS 912 (Edson)

SO₂, O₃, NO/ NO₂/ NO_x, Particulate Matter (2.5 microns), Wind Speed and Direction, and External Temperature.

AMS 913 (Breton)

SO₂, O₃, NO/ NO₂/ NO_x, Wind Speed and Direction, Relative Humidity, and External Temperature.

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



Greg Swain
Senior Technologist



Jeff McClintock
Technologist

**West Central Airshed Society
Frequency Distribution Charts
Wind Speed and Direction
Year 2011**

West Central Airshed Society - Tomahawk (AMS 901)
 Annual Summary for 2011
 Percentage Frequency Distribution of Wind

Speed (kph)							
Direction	>1 to 5	>5 to 11	>11 to 19	>19 to 28	>28 to 38	>38	Totals
North	2.39	5.08	4.69	1.84	0.22	-	14.22
NorthEast	1.50	2.86	1.49	0.10	-	-	5.95
East	1.20	3.82	3.07	1.32	-	-	9.41
SouthEast	1.96	3.96	2.96	1.81	0.13	-	10.82
South	3.03	3.93	1.29	0.12	0.06	-	8.43
SouthWest	4.23	11.56	1.42	0.02	0.01	-	17.24
West	3.42	8.54	2.16	0.40	0.06	0.01	14.59
NorthWest	1.80	4.81	7.12	4.22	0.78	0.09	18.82
Totals	19.53	44.56	24.20	9.83	1.25	0.10	99.47

Percent Calm	0.53
Number of Data Values	8607
Hours in Time Period	8760

West Central Airshed Society - Violet Grove (AMS 902)
 Annual Summary for 2011
 Percentage Frequency Distribution of Wind

Speed (kph)							
Direction	>1 to 5	>5 to 11	>11 to 19	>19 to 28	>28 to 38	>38	Totals
North	1.03	2.63	2.64	0.86	0.08	-	7.24
NorthEast	0.99	2.73	1.35	0.10	-	-	5.17
East	2.16	5.35	2.08	0.03	-	-	9.62
SouthEast	2.69	4.98	3.76	1.02	0.29	0.11	12.85
South	2.03	4.50	2.54	0.32	0.06	0.02	9.47
SouthWest	2.95	7.93	4.84	0.14	-	-	15.86
West	3.44	12.03	5.44	0.53	0.09	0.03	21.56
NorthWest	2.03	4.86	6.38	3.66	0.97	0.05	17.95
Totals	17.32	45.01	29.02	6.65	1.49	0.22	99.71

Percent Calm	0.29
Number of Data Values	8752
Hours in Time Period	8760

West Central Airshed Society - Carrot Creek (AMS 903)
 Annual Summary for 2011
 Percentage Frequency Distribution of Wind

Speed (kph)							
Direction	>1 to 5	>5 to 11	>11 to 19	>19 to 28	>28 to 38	>38	Totals
North	3.43	2.41	0.33	0.01	-	-	6.18
NorthEast	2.72	1.92	0.49	0.01	-	-	5.14
East	4.12	7.11	3.73	0.06	-	-	15.02
SouthEast	2.79	2.04	0.84	0.27	0.13	-	6.07
South	5.02	1.04	0.19	0.03	-	-	6.28
SouthWest	11.81	5.75	0.78	0.07	-	-	18.41
West	5.99	11.27	7.70	2.30	0.45	0.10	27.81
NorthWest	3.54	4.49	4.53	1.15	0.13	-	13.84
Totals	39.42	36.04	18.60	3.91	0.70	0.10	98.77

Percent Calm	1.23
Number of Data Values	8758
Hours in Time Period	8760

West Central Airshed Society - Hightower (AMS 904)
 Annual Summary for 2011
 Percentage Frequency Distribution of Wind

Speed (kph)							
Direction	>1 to 5	>5 to 11	>11 to 19	>19 to 28	>28 to 38	>38	Totals
North	2.63	4.81	1.09	-	-	-	8.53
NorthEast	2.51	3.68	0.67	-	-	-	6.86
East	3.00	2.28	0.23	-	-	-	5.51
SouthEast	3.71	7.04	2.48	0.13	-	-	13.36
South	2.55	3.89	1.75	0.07	-	-	8.26
SouthWest	2.66	3.64	4.66	2.07	0.64	0.16	13.83
West	4.05	7.23	7.80	3.83	0.96	0.05	23.92
NorthWest	2.80	7.41	7.23	1.87	0.10	-	19.41
Totals	23.91	39.99	25.92	7.98	1.69	0.20	99.69

Percent Calm	0.31
Number of Data Values	8323
Hours in Time Period	8760

West Central Airshed Society - Steeper (AMS 905)
 Annual Summary for 2011
 Percentage Frequency Distribution of Wind

Speed (kph)							
Direction	>1 to 5	>5 to 11	>11 to 19	>19 to 28	>28 to 38	>38	Totals
North	3.46	0.07	-	-	-	-	3.53
NorthEast	14.17	0.68	-	-	-	-	14.85
East	7.07	0.78	-	-	-	-	7.85
SouthEast	1.57	0.09	-	-	-	-	1.66
South	4.19	0.05	-	-	-	-	4.24
SouthWest	30.74	15.70	2.31	0.06	-	-	48.81
West	9.42	3.90	0.16	-	-	-	13.48
NorthWest	3.33	-	-	-	-	-	3.33
Totals	73.94	21.27	2.47	0.06	-	-	97.74

Percent Calm	2.26
Number of Data Values	8687
Hours in Time Period	8760

West Central Airshed Society - Drayton Valley (AMS 911)
 Annual Summary for 2011
 Percentage Frequency Distribution of Wind

Speed (kph)							
Direction	>1 to 5	>5 to 11	>11 to 19	>19 to 28	>28 to 38	>38	Totals
North	2.60	4.52	0.83	0.03	-	-	7.98
NorthEast	4.33	3.93	0.23	-	-	-	8.49
East	4.44	3.22	-	-	-	-	7.66
SouthEast	2.71	4.33	2.08	0.58	0.30	-	10.00
South	13.04	11.34	0.89	0.05	0.03	-	25.35
SouthWest	3.93	3.82	0.64	0.06	-	-	8.45
West	3.62	5.09	2.50	0.53	0.06	-	11.80
NorthWest	3.30	7.51	6.16	2.26	0.16	-	19.39
Totals	37.97	43.76	13.32	3.51	0.55	-	99.11

Percent Calm	0.89
Number of Data Values	8722
Hours in Time Period	8760

West Central Airshed Society - Edson (AMS 912)
 Annual Summary for 2011
 Percentage Frequency Distribution of Wind

Speed (kph)							
Direction	>1 to 5	>5 to 11	>11 to 19	>19 to 28	>28 to 38	>38	Totals
North	3.02	4.80	2.34	0.05	0.01	-	10.22
NorthEast	2.56	7.41	6.29	0.94	-	-	17.20
East	1.56	1.25	1.74	0.46	0.01	-	5.02
SouthEast	1.19	0.48	0.26	0.21	0.20	-	2.34
South	1.58	0.37	0.03	0.00	0.00	-	1.98
SouthWest	6.39	6.46	1.19	0.17	0.02	-	14.23
West	16.56	18.32	5.27	1.37	0.11	-	41.63
NorthWest	3.55	2.83	0.40	0.00	0.00	-	6.78
Totals	36.42	41.93	17.54	3.19	0.36	-	99.44

Percent Calm	0.56
Number of Data Values	8713
Hours in Time Period	8760

West Central Airshed Society - Breton (AMS 913)
 Annual Summary for 2011
 Percentage Frequency Distribution of Wind

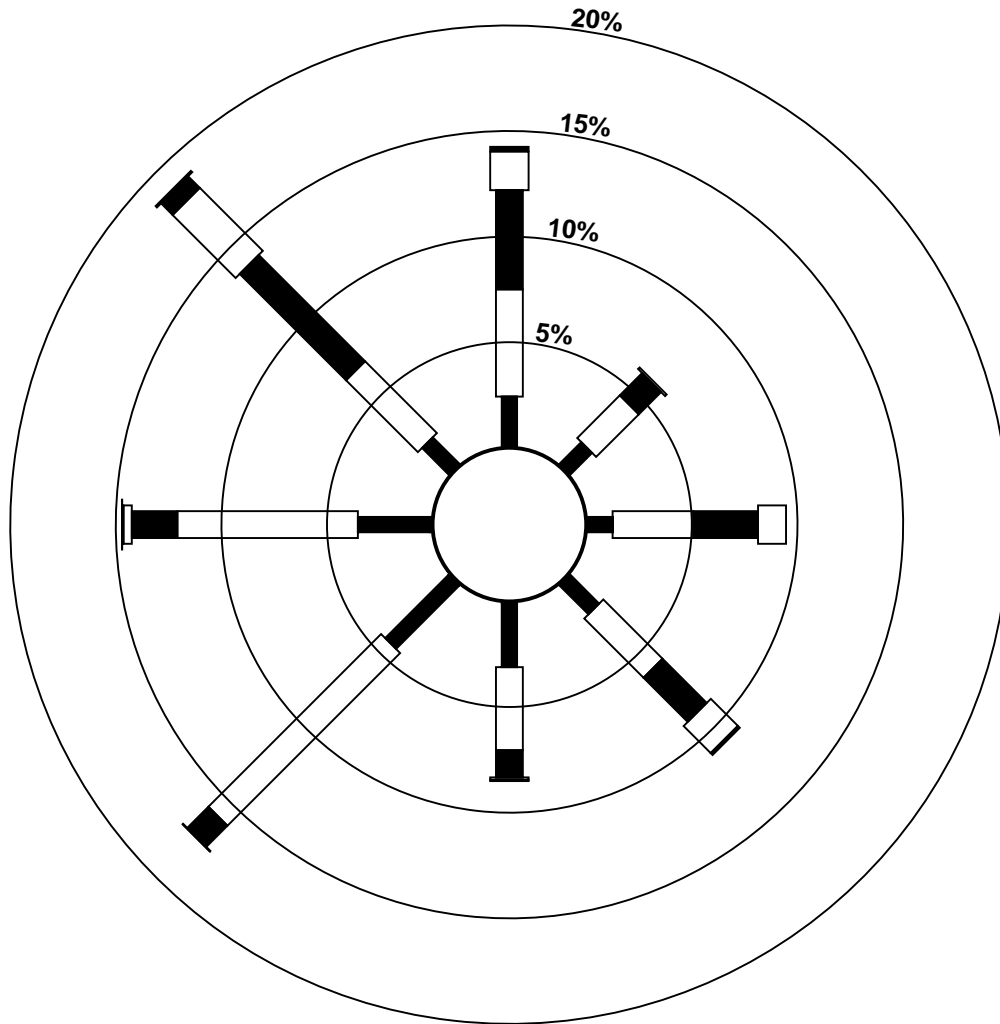
Speed (kph)							
Direction	>1 to 5	>5 to 11	>11 to 19	>19 to 28	>28 to 38	>38	Totals
North	2.40	4.12	4.06	0.93	0.07	0.01	11.59
NorthEast	1.56	2.36	1.71	0.18	-	-	5.81
East	2.28	2.49	1.02	0.08	0.01	-	5.88
SouthEast	17.96	8.48	1.41	0.10	0.00	-	27.95
South	6.56	4.80	3.22	0.80	0.57	0.08	16.03
SouthWest	2.92	1.14	0.21	0.07	0.00	-	4.34
West	3.86	2.47	0.95	0.08	0.02	-	7.38
NorthWest	5.11	7.57	4.77	2.00	0.22	-	19.67
Totals	42.65	33.44	17.34	4.24	0.89	0.09	98.65

Percent Calm	1.35
Number of Data Values	8754
Hours in Time Period	8760

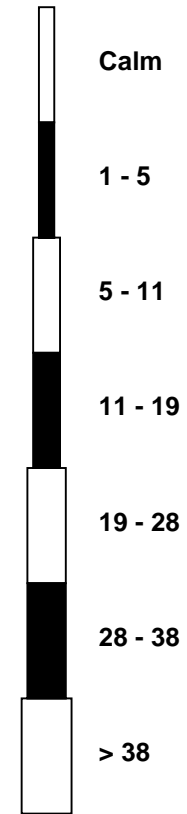
WCAS - Tomahawk
Wind Speed Rose



Wind Speed (WS) - kph
January 2011



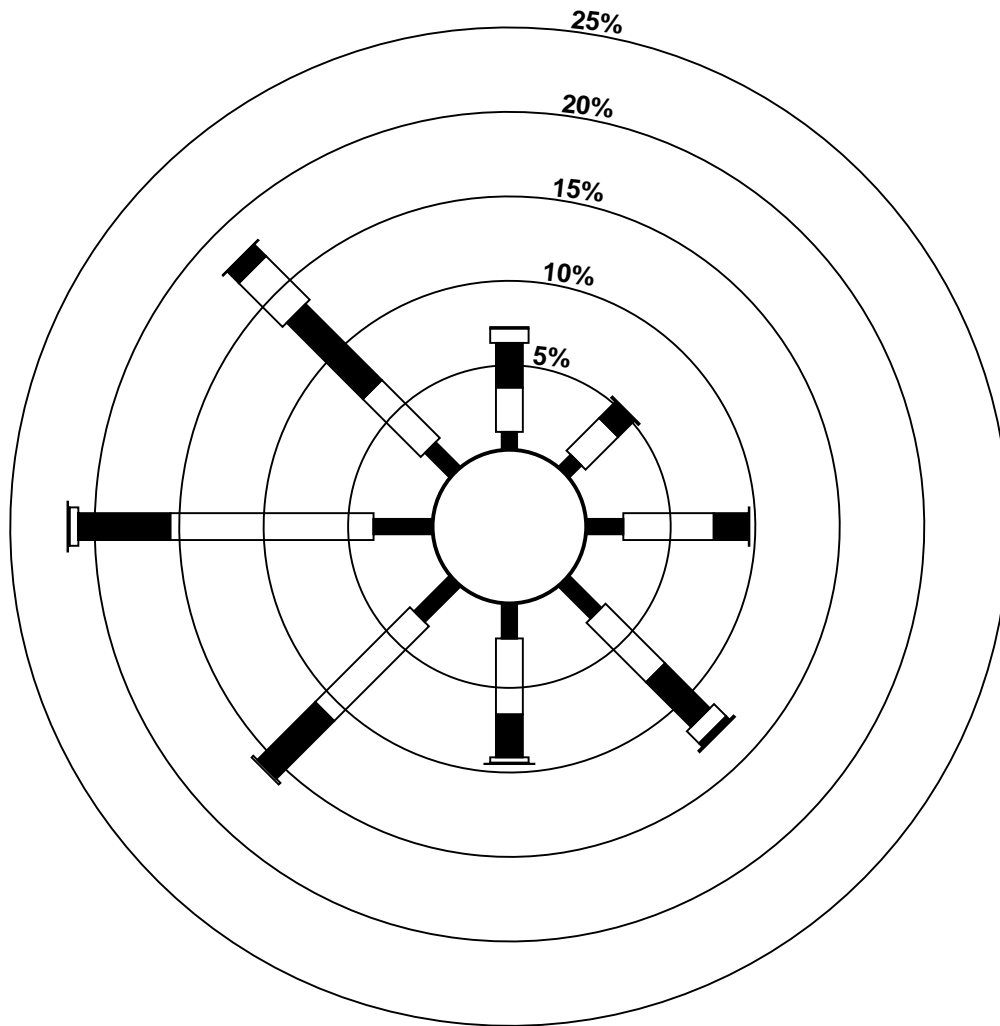
Wind Frequency (kph)



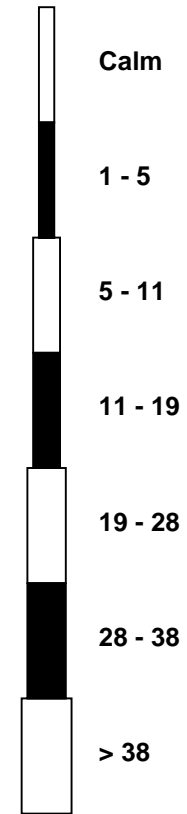
WCAS - Violet Grove
Wind Speed Rose



Wind Speed (WS) - kph
January 2011



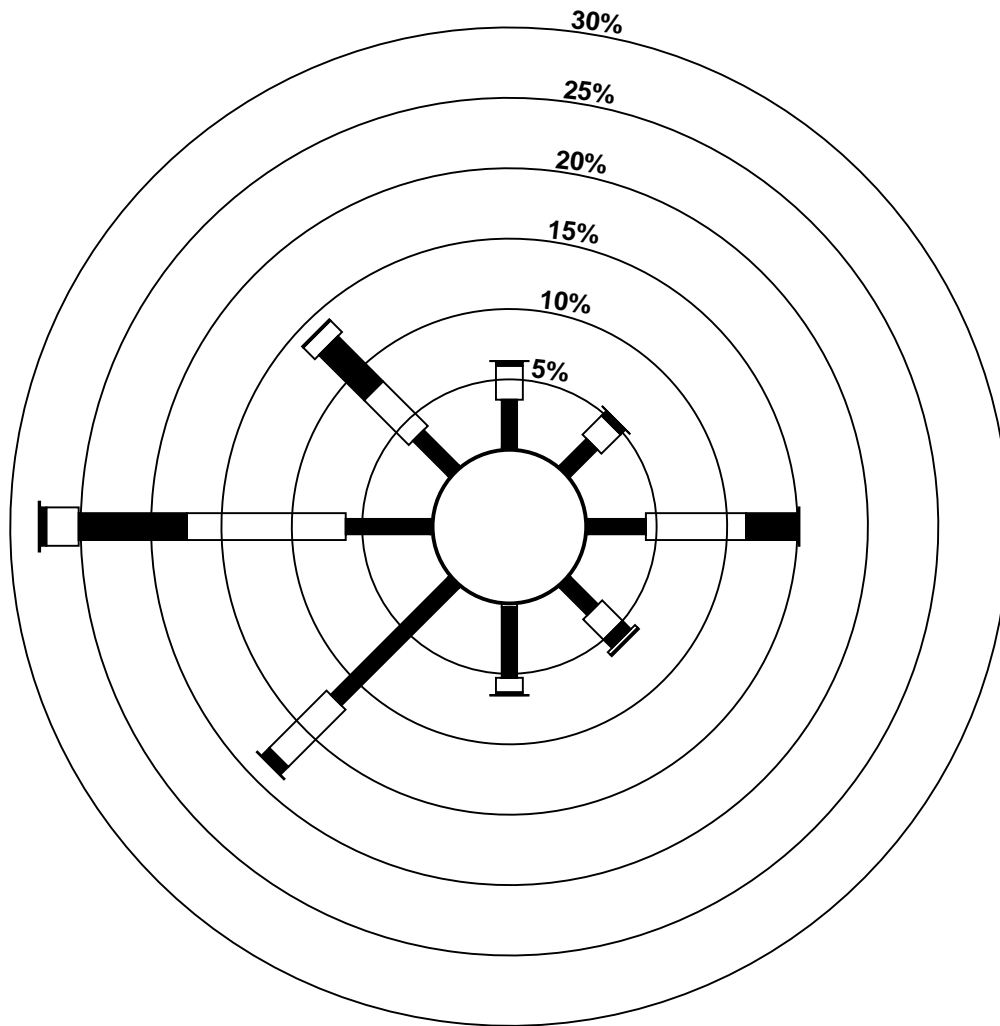
Wind Frequency (kph)



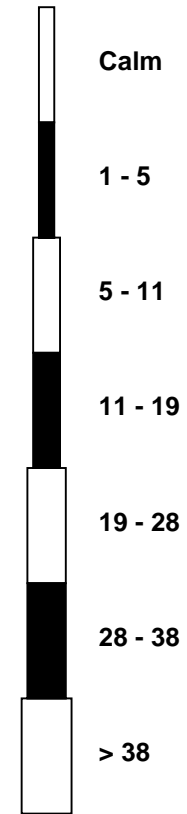
WCAS - Carrot Creek
Wind Speed Rose



Wind Speed (WS) - kph
January 2011



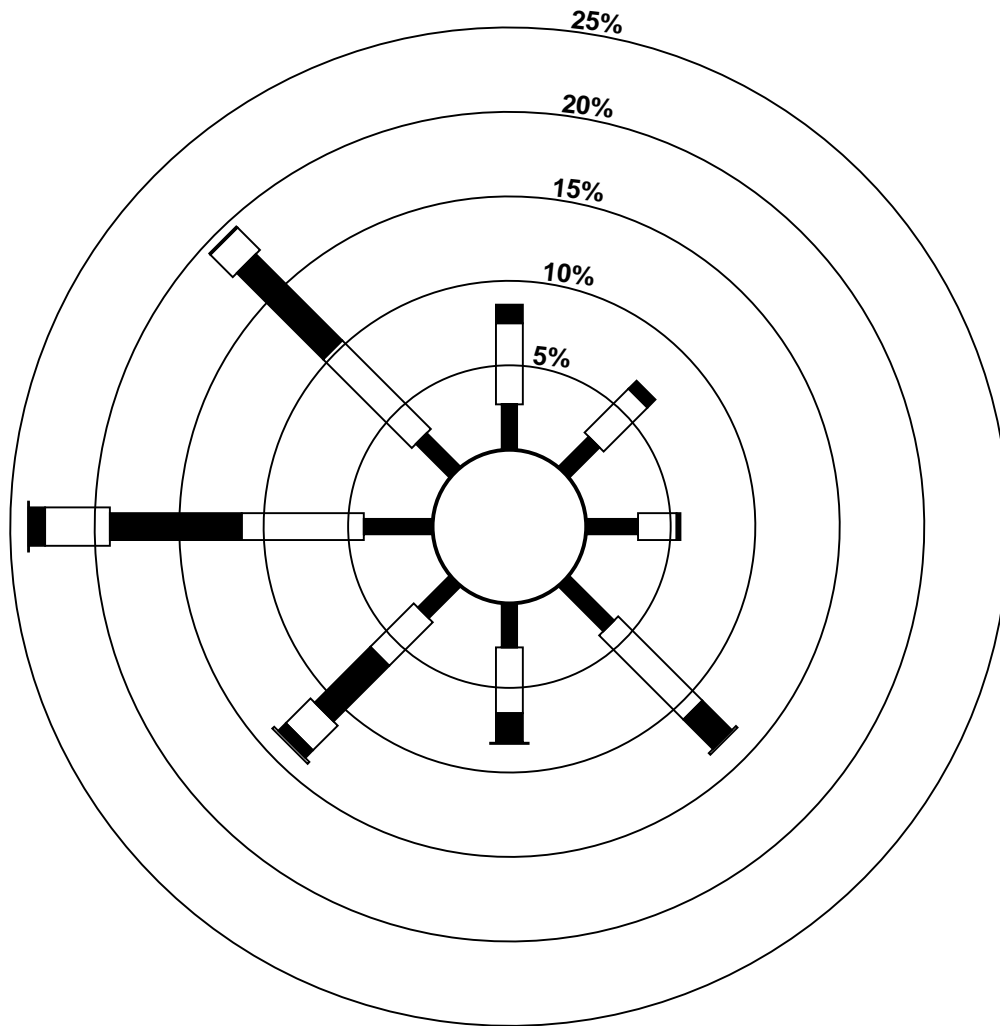
Wind Frequency (kph)



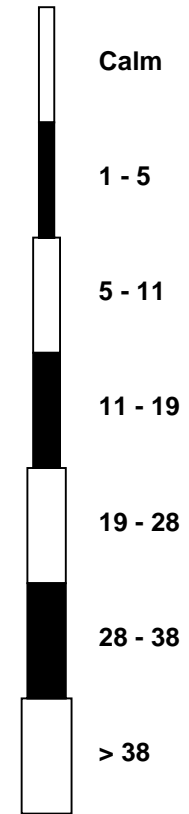
WCAS - High Tower
Wind Speed Rose



Wind Speed (WS) - kph
January 2011



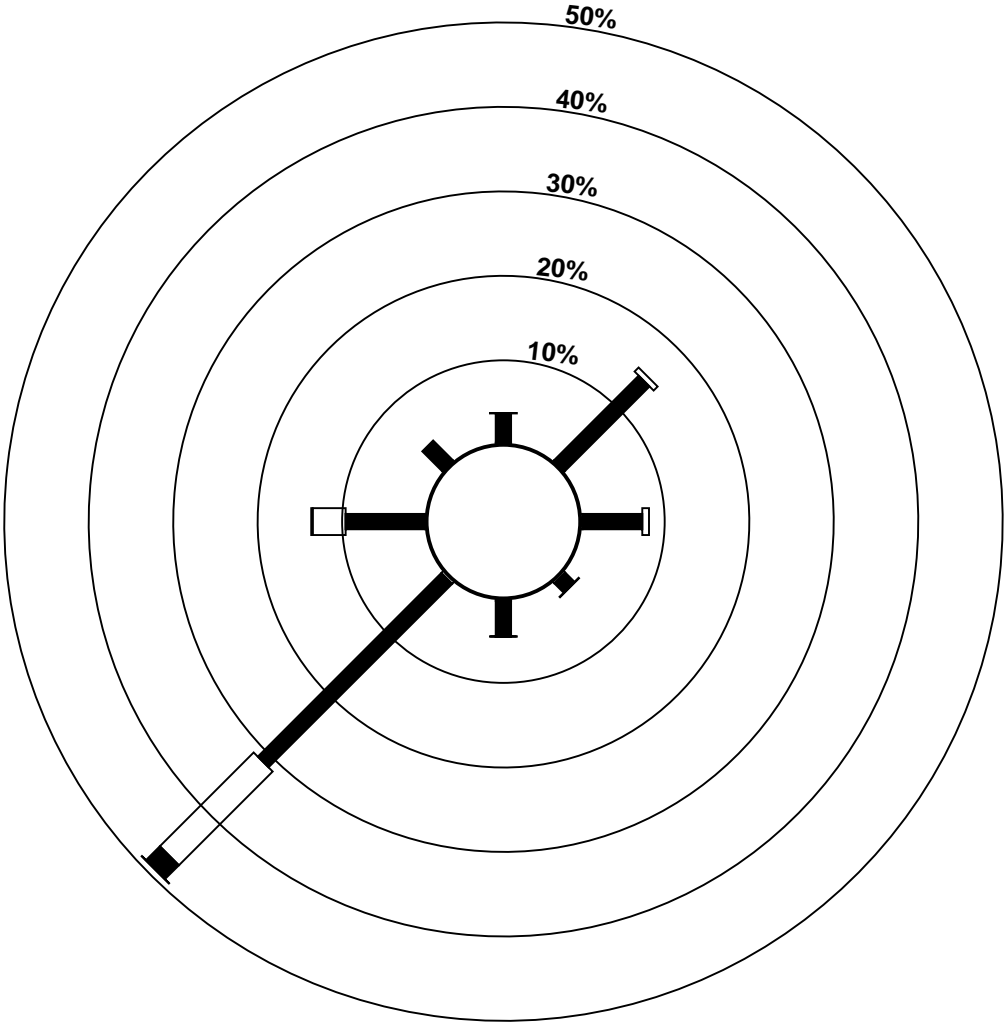
Wind Frequency (kph)



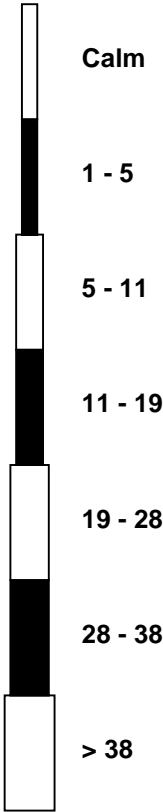
**WCAS - Steeper
Wind Speed Rose**



**Wind Speed (WS) - kph
January 2011**



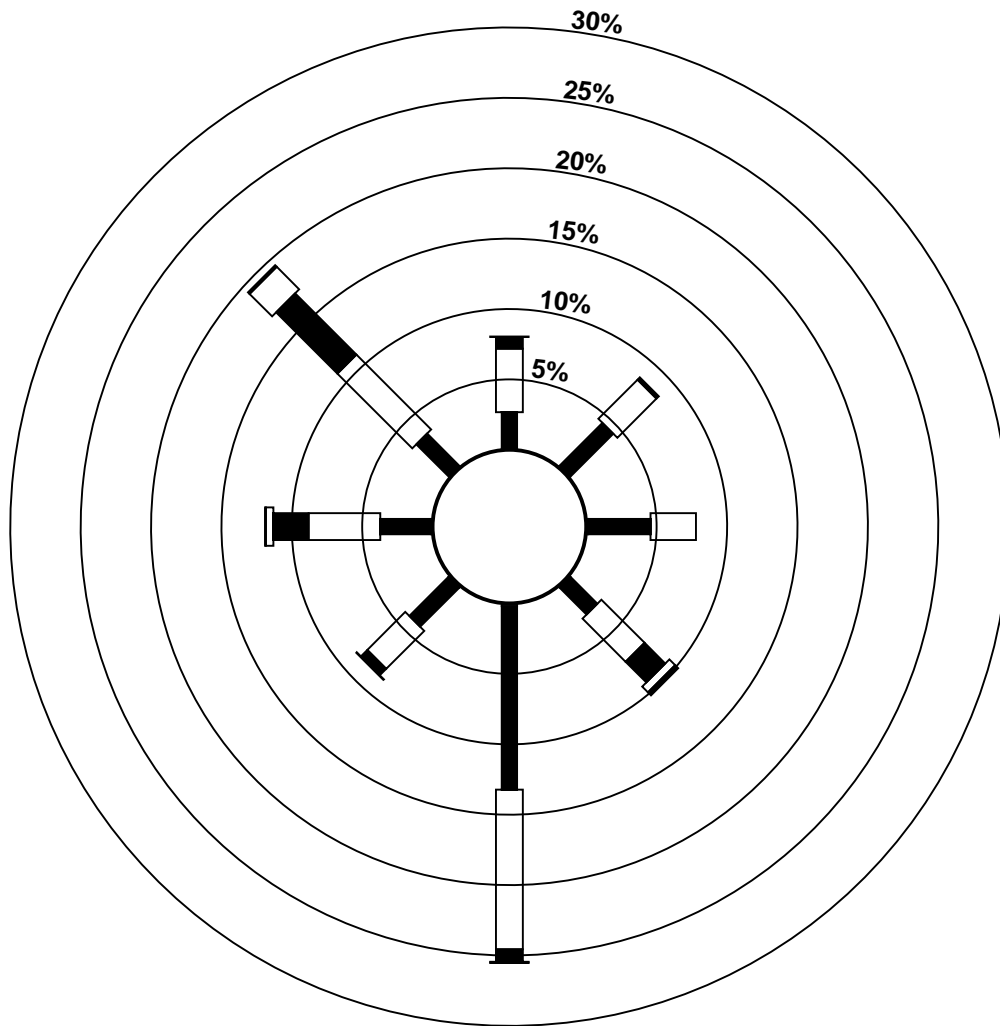
Wind Frequency (kph)



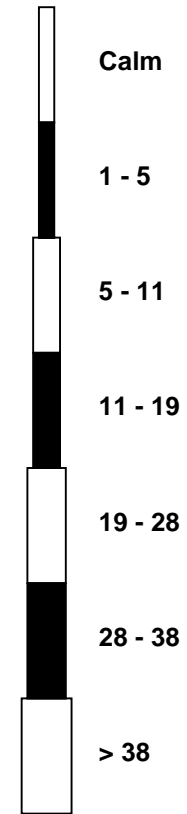
WCAS - Drayton Valley
Wind Speed Rose



Wind Speed (WS) - kph
January 2011



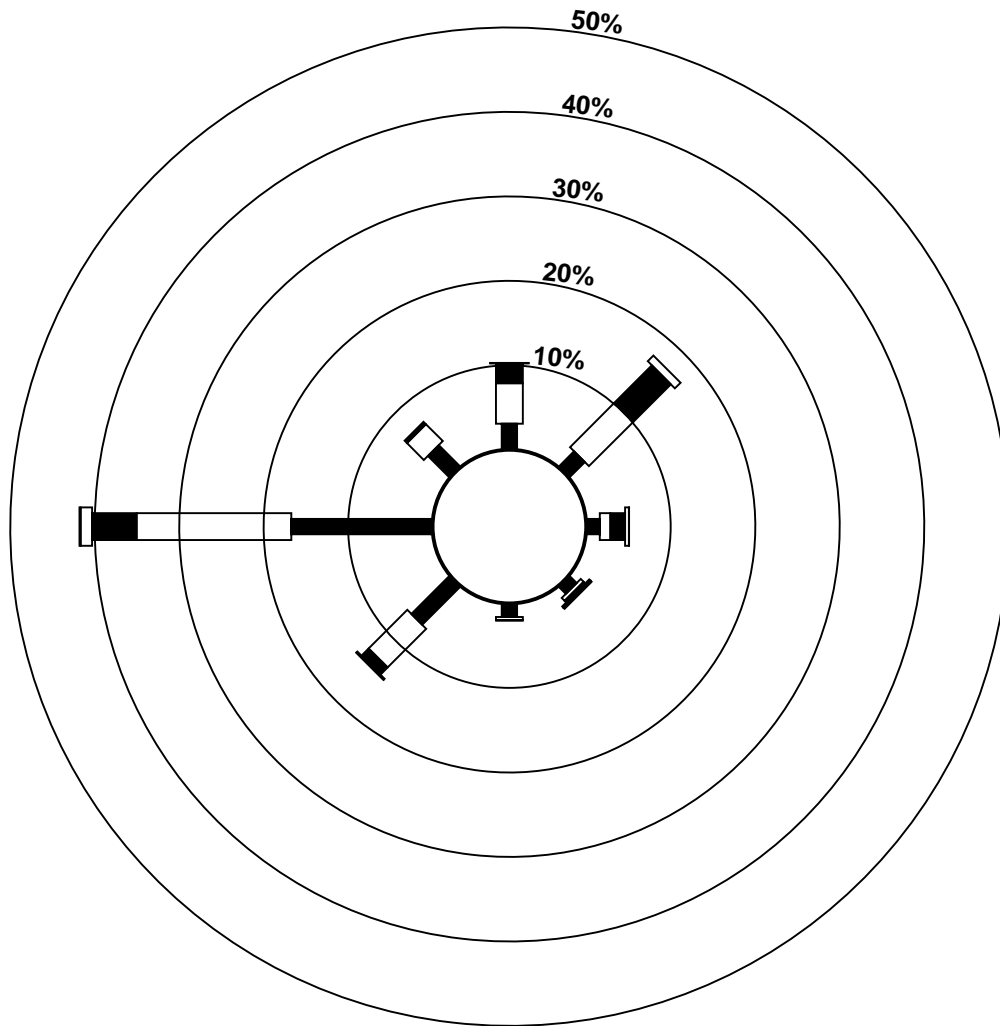
Wind Frequency (kph)



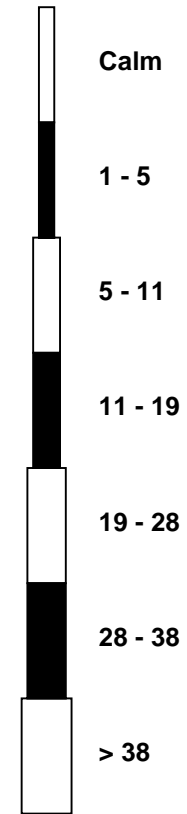
**WCAS - Edson
Wind Speed Rose**



**Wind Speed (WS) - kph
January 2011**



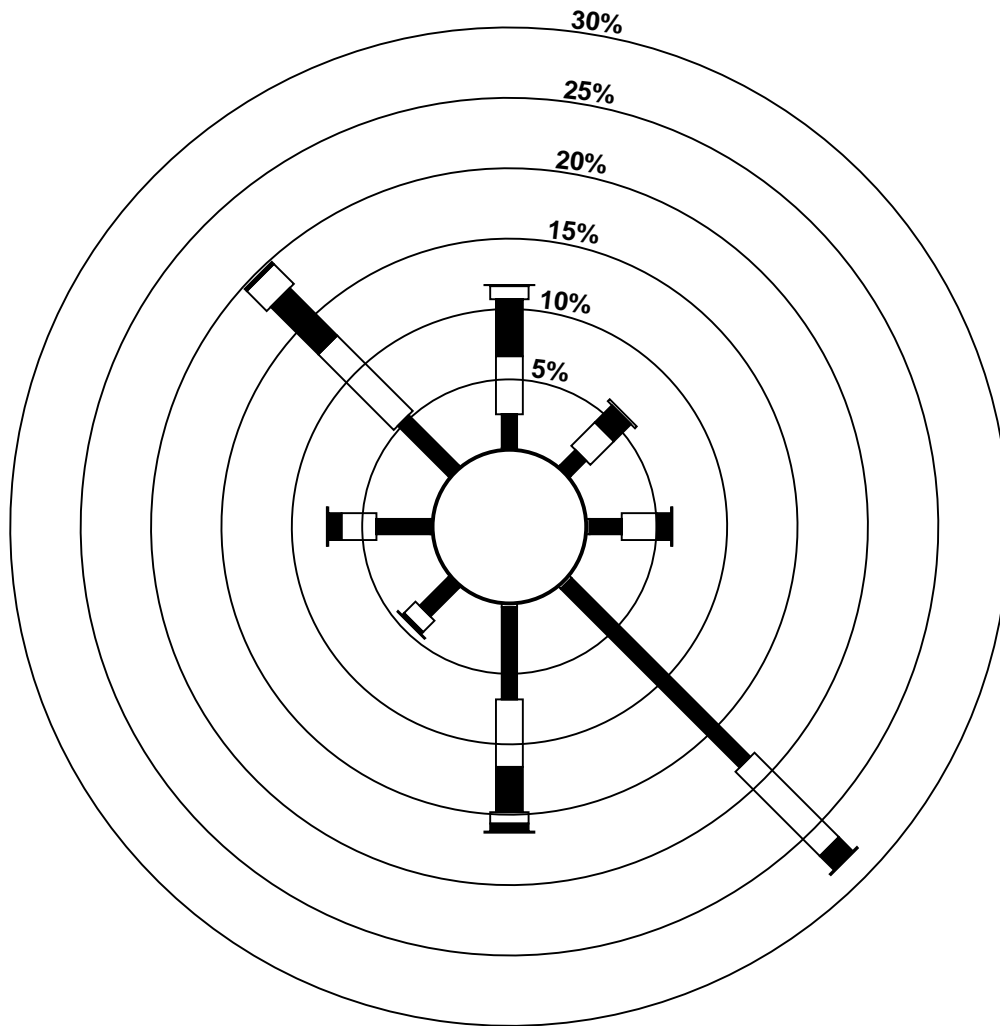
Wind Frequency (kph)



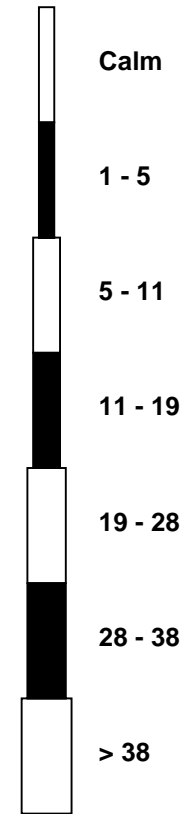
**WCAS - Breton
Wind Speed Rose**



**Wind Speed (WS) - kph
January 2011**



Wind Frequency (kph)



**West Central Airshed Society
Frequency Distribution Charts
SO₂ Monthly Averages
Year 2011**

West Central Airshed Society - Tomahawk (AMS 901)
 Annual Summary for 2011
 SO2 (ppb)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Number 1-Hour Violations	Maximum 24-Hour Value	Number 24-Hour Violations	Percent of Data in each Concentration Range					
								<=0.02	>0.02-0.06	>0.06-0.11	>0.11-0.17	>0.17-0.34	>0.34
January	708	100.0	0.741	4.587	0	2.367	0	100.00	-	-	-	-	-
February	644	100.0	0.830	13.046	0	3.314	0	100.00	-	-	-	-	-
March	703	100.0	1.652	13.206	0	5.708	0	100.00	-	-	-	-	-
April	686	100.0	0.609	13.559	0	3.713	0	100.00	-	-	-	-	-
May	609	85.9	0.874	12.124	0	2.367	0	100.00	-	-	-	-	-
June	686	100.0	0.440	9.430	0	2.066	0	100.00	-	-	-	-	-
July	706	100.0	0.543	16.764	0	2.169	0	100.00	-	-	-	-	-
August	660	93.4	0.382	10.725	0	2.150	0	100.00	-	-	-	-	-
September	686	100.0	0.449	9.885	0	2.555	0	100.00	-	-	-	-	-
October	709	99.9	0.500	15.848	0	2.448	0	100.00	-	-	-	-	-
November	686	100.0	0.595	14.798	0	2.171	0	100.00	-	-	-	-	-
December	708	100.0	0.407	5.648	0	1.475	0	100.00	-	-	-	-	-
Annual	8191	98.2	0.667	16.764	0	5.708	0	100	-	-	-	-	-

West Central Airshed Society - Violet Grove (AMS 902)
 Annual Summary for 2011
 SO2 (ppb)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Number 1-Hour Violations	Maximum 24-Hour Value	Number 24-Hour Violations	Percent of Data in each Concentration Range					
								<=0.02	>0.02-0.06	>0.06-0.11	>0.11-0.17	>0.17-0.34	>0.34
January	709	100.0	0.792	7.387	0	2.890	0	100.00	-	-	-	-	-
February	639	100.0	0.870	23.050	0	2.234	0	99.84	0.16	-	-	-	-
March	709	100.0	0.981	11.300	0	2.735	0	100.00	-	-	-	-	-
April	686	100.0	0.534	7.746	0	1.944	0	100.00	-	-	-	-	-
May	707	100.0	0.302	3.784	0	1.137	0	100.00	-	-	-	-	-
June	686	100.0	0.242	8.443	0	1.239	0	100.00	-	-	-	-	-
July	702	99.6	0.342	6.608	0	0.873	0	100.00	-	-	-	-	-
August	707	100.0	0.344	7.025	0	1.085	0	100.00	-	-	-	-	-
September	682	99.4	0.437	5.613	0	1.266	0	100.00	-	-	-	-	-
October	709	100.0	0.393	5.241	0	1.208	0	100.00	-	-	-	-	-
November	685	100.0	0.455	3.586	0	1.203	0	100.00	-	-	-	-	-
December	709	100.0	0.609	6.944	0	1.543	0	100.00	-	-	-	-	-
Annual	8330	99.9	0.524	23.050	0	2.890	0	99.99	0.01	-	-	-	-

West Central Airshed Society - Carrot Creek (AMS 903)
 Annual Summary for 2011
 SO2 (ppb)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Number 1-Hour Violations	Maximum 24-Hour Value	Number 24-Hour Violations	Percent of Data in each Concentration Range					
								<=0.02	>0.02-0.06	>0.06-0.11	>0.11-0.17	>0.17-0.34	>0.34
January	708	100.0	0.599	5.469	0	1.768	0	100.00	-	-	-	-	-
February	640	100.0	0.598	10.347	0	3.326	0	100.00	-	-	-	-	-
March	708	100.0	1.147	9.011	0	2.757	0	100.00	-	-	-	-	-
April	686	100.0	0.218	2.475	0	0.477	0	100.00	-	-	-	-	-
May	708	100.0	0.233	2.688	0	0.905	0	100.00	-	-	-	-	-
June	686	100.0	0.096	3.715	0	0.492	0	100.00	-	-	-	-	-
July	705	100.0	0.180	4.811	0	1.514	0	100.00	-	-	-	-	-
August	709	100.0	0.142	3.533	0	0.437	0	100.00	-	-	-	-	-
September	685	99.7	0.227	6.934	0	0.999	0	100.00	-	-	-	-	-
October	708	100.0	0.259	3.846	0	0.992	0	100.00	-	-	-	-	-
November	683	99.6	0.271	7.577	0	0.910	0	100.00	-	-	-	-	-
December	709	100.0	0.267	3.016	0	0.717	0	100.00	-	-	-	-	-
Annual	8335	99.9	0.353	10.347	0	3.326	0	100.00	-	-	-	-	-

West Central Airshed Society - Hightower (AMS 904)
 Annual Summary for 2011
 SO2 (ppb)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Number 1-Hour Violations	Maximum 24-Hour Value	Number 24-Hour Violations	Percent of Data in each Concentration Range					
								<=0.02	>0.02-0.06	>0.06-0.11	>0.11-0.17	>0.17-0.34	>0.34
January	709	100.0	0.174	2.367	0	0.770	0	100.00	-	-	-	-	-
February	639	100.0	0.211	2.102	0	1.140	0	100.00	-	-	-	-	-
March	708	100.0	0.528	4.387	0	2.504	0	100.00	-	-	-	-	-
April	687	100.0	0.055	0.979	0	0.273	0	100.00	-	-	-	-	-
May	709	100.0	0.097	1.553	0	0.687	0	100.00	-	-	-	-	-
June	684	100.0	0.025	0.529	0	0.118	0	100.00	-	-	-	-	-
July	705	100.0	0.020	0.928	0	0.261	0	100.00	-	-	-	-	-
August	709	100.0	0.027	1.097	0	0.175	0	100.00	-	-	-	-	-
September	363	53.2	0.048	1.318	0	0.462	0	100.00	-	-	-	-	-
October	614	86.6	0.011	0.876	0	0.113	0	100.00	-	-	-	-	-
November	686	100.0	0.069	1.150	0	0.611	0	100.00	-	-	-	-	-
December	709	100.0	0.031	1.011	0	0.182	0	100.00	-	-	-	-	-
Annual	7922	95.0	0.111	4.387	0	2.504	0	100.00	-	-	-	-	-

West Central Airshed Society - Steeper (AMS 905)
 Annual Summary for 2011
 SO2 (ppb)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Number 1-Hour Violations	Maximum 24-Hour Value	Number 24-Hour Violations	Percent of Data in each Concentration Range					
								<=0.02	>0.02-0.06	>0.06-0.11	>0.11-0.17	>0.17-0.34	>0.34
January	710	100.0	0.126	2.954	0	0.900	0	100.00	-	-	-	-	-
February	640	100.0	0.177	6.723	0	1.588	0	100.00	-	-	-	-	-
March	709	100.0	0.458	7.142	0	1.965	0	100.00	-	-	-	-	-
April	686	100.0	0.029	3.137	0	0.446	0	100.00	-	-	-	-	-
May	703	99.2	0.014	1.141	0	0.115	0	100.00	-	-	-	-	-
June	686	100.0	0.033	3.476	0	0.491	0	100.00	-	-	-	-	-
July	705	100.0	0.046	3.535	0	0.493	0	100.00	-	-	-	-	-
August	709	100.0	0.024	1.153	0	0.194	0	100.00	-	-	-	-	-
September	637	92.6	0.036	2.691	0	0.665	0	100.00	-	-	-	-	-
October	709	100.0	0.044	7.347	0	0.846	0	100.00	-	-	-	-	-
November	673	98.1	0.011	1.146	0	0.142	0	100.00	-	-	-	-	-
December	709	100.0	0.002	0.373	0	0.057	0	100.00	-	-	-	-	-
Annual	8276	99.2	0.084	7.347	0	1.965	0	100	-	-	-	-	-

West Central Airshed Society - Edson (AMS 912)
 Annual Summary for 2011
 SO2 (ppb)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Number 1-Hour Violations	Maximum 24-Hour Value	Number 24-Hour Violations	Percent of Data in each Concentration Range					
								<=0.02	>0.02-0.06	>0.06-0.11	>0.11-0.17	>0.17-0.34	>0.34
January	709	100.0	0.617	26.192	0	3.002	0	99.86	0.14	-	-	-	-
February	640	100.0	0.537	20.801	0	2.456	0	99.84	0.16	-	-	-	-
March	710	100.0	0.820	10.179	0	2.636	0	100.00	-	-	-	-	-
April	686	100.0	0.059	2.943	0	0.367	0	100.00	-	-	-	-	-
May	709	100.0	0.033	1.123	0	0.140	0	100.00	-	-	-	-	-
June	686	100.0	0.099	10.700	0	0.654	0	100.00	-	-	-	-	-
July	707	100.0	0.133	9.345	0	1.632	0	100.00	-	-	-	-	-
August	709	100.0	0.166	7.320	0	0.766	0	100.00	-	-	-	-	-
September	687	100.0	0.279	16.265	0	1.145	0	100.00	-	-	-	-	-
October	710	100.0	0.206	9.891	0	1.173	0	100.00	-	-	-	-	-
November	643	93.1	0.312	9.071	0	1.855	0	100.00	-	-	-	-	-
December	709	100.0	0.552	6.849	0	1.546	0	100.00	-	-	-	-	-
Annual	8305	99.4	0.318	26.192	0	3.002	0	99.98	0.02	-	-	-	-

West Central Airshed Society - Breton (AMS 913)
 Annual Summary for 2011
 SO2 (ppb)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Number 1-Hour Violations	Maximum 24-Hour Value	Number 24-Hour Violations	Percent of Data in each Concentration Range					
								<=0.02	>0.02-0.06	>0.06-0.11	>0.11-0.17	>0.17-0.34	>0.34
January	709	100.0	0.397	11.169	0	2.363	0	100.00	-	-	-	-	-
February	639	100.0	0.252	6.188	0	1.096	0	100.00	-	-	-	-	-
March	710	100.0	0.760	29.721	0	5.499	0	99.72	0.28	-	-	-	-
April	686	100.0	0.150	6.645	0	1.349	0	100.00	-	-	-	-	-
May	704	99.3	0.136	8.706	0	0.854	0	100.00	-	-	-	-	-
June	685	100.0	0.307	9.059	0	2.287	0	100.00	-	-	-	-	-
July	707	100.0	0.204	10.716	0	1.420	0	100.00	-	-	-	-	-
August	709	100.0	0.244	15.598	0	1.789	0	100.00	-	-	-	-	-
September	685	99.9	0.133	6.915	0	1.195	0	100.00	-	-	-	-	-
October	708	100.0	0.110	11.969	0	1.518	0	100.00	-	-	-	-	-
November	686	100.0	0.091	4.907	0	1.528	0	100.00	-	-	-	-	-
December	708	100.0	0.042	1.302	0	0.177	0	100.00	-	-	-	-	-
Annual	8336	99.9	0.236	29.721	0	5.499	0	99.98	0.02	-	-	-	-

**West Central Airshed Society
Frequency Distribution Charts
NO₂ Monthly Averages
Year 2011**

West Central Airshed Society - Tomahawk (AMS 901)
 Annual Summary for 2011
 NO2 (ppb)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Number 1-Hour Violations	Maximum 24-Hour Value	Number 24-Hour Violations	Percent of Data in each Concentration Range			
								<=0.05	>0.05-0.11	>0.11-0.21	>0.21
January	708	100.0	4.436	30.716	0	16.701	0	100.00	-	-	-
February	644	100.0	6.386	27.812	0	16.102	0	100.00	-	-	-
March	702	100.0	6.485	33.323	0	16.968	0	100.00	-	-	-
April	685	100.0	2.434	13.518	0	5.191	0	100.00	-	-	-
May	609	86.0	3.484	18.691	0	5.195	0	100.00	-	-	-
June	684	100.0	2.601	10.980	0	5.172	0	100.00	-	-	-
July	703	100.0	2.389	15.219	0	4.903	0	100.00	-	-	-
August	655	93.4	2.986	15.829	0	4.714	0	100.00	-	-	-
September	684	100.0	2.088	17.254	0	5.611	0	100.00	-	-	-
October	709	100.0	4.195	28.527	0	11.362	0	100.00	-	-	-
November	685	100.0	6.706	28.895	0	18.078	0	100.00	-	-	-
December	707	100.0	5.845	30.671	0	13.962	0	100.00	-	-	-
Annual	8175	98.3	4.176	33.323	0	18.078	0	100.00	-	-	-

West Central Airshed Society - Violet Grove (AMS 902)
 Annual Summary for 2011
 NO2 (ppb)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Number 1-Hour Violations	Maximum 24-Hour Value	Number 24-Hour Violations	Percent of Data in each Concentration Range			
								<=0.05	>0.05-0.11	>0.11-0.21	>0.21
January	707	100.0	5.062	31.682	0	16.174	0	100.00	-	-	-
February	639	100.0	6.392	26.853	0	14.251	0	100.00	-	-	-
March	707	100.0	7.922	29.075	0	16.376	0	100.00	-	-	-
April	684	100.0	1.881	34.714	0	9.460	0	100.00	-	-	-
May	707	100.0	3.054	11.632	0	6.768	0	100.00	-	-	-
June	684	100.0	3.816	15.202	0	5.923	0	100.00	-	-	-
July	700	99.6	3.107	10.524	0	4.474	0	100.00	-	-	-
August	707	100.0	3.462	9.285	0	4.600	0	100.00	-	-	-
September	681	99.4	3.912	20.409	0	6.940	0	100.00	-	-	-
October	707	100.0	4.760	15.210	0	8.900	0	100.00	-	-	-
November	685	100.0	5.371	30.258	0	12.657	0	100.00	-	-	-
December	708	100.0	5.028	23.300	0	10.599	0	100.00	-	-	-
Annual	8316	99.92	4.475	34.714	0	16.376	0	100.00	-	-	-

West Central Airshed Society - Carrot Creek (AMS 903)
 Annual Summary for 2011
 NO2 (ppb)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Number 1-Hour Violations	Maximum 24-Hour Value	Number 24-Hour Violations	Percent of Data in each Concentration Range			
								<=0.05	>0.05-0.11	>0.11-0.21	>0.21
January	708	100.0	8.024	39.901	0	19.21001	0	100.00	-	-	-
February	638	100.0	5.432	42.175	0	17.23341	0	100.00	-	-	-
March	708	100.0	8.296	49.392	0	16.72673	0	100.00	-	-	-
April	685	100.0	3.700	23.810	0	6.974401	0	100.00	-	-	-
May	707	100.0	3.213	16.659	0	5.310877	0	100.00	-	-	-
June	684	100.0	2.370	10.481	0	3.588488	0	100.00	-	-	-
July	703	99.9	2.349	13.763	0	4.060667	0	100.00	-	-	-
August	708	100.0	2.907	13.695	0	4.534953	0	100.00	-	-	-
September	684	99.7	4.119	23.821	0	7.027346	0	100.00	-	-	-
October	708	100.0	5.549	27.230	0	12.08621	0	100.00	-	-	-
November	682	99.6	4.325	27.345	0	12.64341	0	100.00	-	-	-
December	708	100.0	5.844	36.203	0	18.76825	0	100.00	-	-	-
Annual	8323	99.9	4.685	49.392	0	19.21001	0	100.00	-	-	-

West Central Airshed Society - Hightower (AMS 904)
 Annual Summary for 2011
 NO2 (ppb)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Number 1-Hour Violations	Maximum 24-Hour Value	Number 24-Hour Violations	Percent of Data in each Concentration Range			
								<=0.05	>0.05-0.11	>0.11-0.21	>0.21
January	707.00	100.0	1.67	10.47	0.00	5.12	0.00	100.00	-	-	-
February	638.00	100.0	1.45	12.61	0.00	4.25	0.00	100.00	-	-	-
March	708.00	100.0	2.71	15.04	0.00	8.58	0.00	100.00	-	-	-
April	685.00	100.0	0.58	18.43	0.00	2.51	0.00	100.00	-	-	-
May	707.00	100.0	2.66	10.59	0.00	4.58	0.00	100.00	-	-	-
June	684.00	100.0	0.34	8.63	0.00	0.80	0.00	100.00	-	-	-
July	703.00	100.0	0.38	6.16	0.00	0.97	0.00	100.00	-	-	-
August	707.00	100.0	0.51	8.06	0.00	1.35	0.00	100.00	-	-	-
September	363.00	53.2	0.80	6.71	0.00	2.21	0.00	100.00	-	-	-
October	613.00	86.6	0.44	7.98	0.00	1.26	0.00	100.00	-	-	-
November	684.00	100.0	0.35	9.61	0.00	2.43	0.00	100.00	-	-	-
December	708.00	100.0	0.36	7.60	0.00	1.51	0.00	100.00	-	-	-
Annual	7907.00	95.0	1.04	18.43	0.00	8.58	0.00	100.00	-	-	-

West Central Airshed Society - Steeper (AMS 905)
 Annual Summary for 2011
 NO2 (ppb)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Number 1-Hour Violations	Maximum 24-Hour Value	Number 24-Hour Violations	Percent of Data in each Concentration Range			
								<=0.05	>0.05-0.11	>0.11-0.21	>0.21
January	709	100.0	2.933	21.10	0.00	11.02	0.00	100.00	-	-	-
February	638	100.0	1.952	11.98	0.00	5.81	0.00	100.00	-	-	-
March	709	100.0	4.058	22.30	0.00	9.90	0.00	100.00	-	-	-
April	685	100.0	1.597	12.04	0.00	3.40	0.00	100.00	-	-	-
May	702	99.2	1.095	7.46	0.00	2.62	0.00	100.00	-	-	-
June	685	100.0	1.030	7.35	0.00	2.18	0.00	100.00	-	-	-
July	704	100.0	0.294	9.98	0.00	1.38	0.00	100.00	-	-	-
August	708	100.0	0.551	7.05	0.00	1.35	0.00	100.00	-	-	-
September	635	92.6	0.571	6.13	0.00	2.47	0.00	100.00	-	-	-
October	709	100.0	0.579	8.53	0.00	2.28	0.00	100.00	-	-	-
November	671	98.1	1.324	10.36	0.00	5.04	0.00	100.00	-	-	-
December	708	100.0	0.662	8.29	0.00	2.25	0.00	100.00	-	-	-
Annual	8263	99.2	1.392	22.30	0.00	11.02	0.00	100.00	-	-	-

West Central Airshed Society - Edson (AMS 912)
 Annual Summary for 2011
 NO2 (ppb)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Number 1-Hour Violations	Maximum 24-Hour Value	Number 24-Hour Violations	Percent of Data in each Concentration Range			
								<=0.05	>0.05-0.11	>0.11-0.21	>0.21
January	-	-	-	-	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-	-	-	-	-
April	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-
June	-	-	-	-	-	-	-	-	-	-	-
July	-	-	-	-	-	-	-	-	-	-	-
August	-	-	-	-	-	-	-	-	-	-	-
September	-	-	-	-	-	-	-	-	-	-	-
October	-	-	-	-	-	-	-	-	-	-	-
November	-	-	-	-	-	-	-	-	-	-	-
December	355	100.0	10.623	38.849	0	20.227	0	100.0	-	-	-
Annual	355	4.5	10.623	38.849	0	20.227	0	100.0	-	-	-

West Central Airshed Society - Breton (AMS 913)
 Annual Summary for 2011
 NO2 (ppb)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Number 1-Hour Violations	Maximum 24-Hour Value	Number 24-Hour Violations	Percent of Data in each Concentration Range			
								<=0.05	>0.05-0.11	>0.11-0.21	>0.21
January	708	100.0	5.345	30.413	0	17.654	0	100.0	-	-	-
February	639	100.0	4.786	22.018	0	11.289	0	100.0	-	-	-
March	709	100.0	6.326	28.201	0	14.786	0	100.0	-	-	-
April	684	100.0	2.037	10.763	0	6.048	0	100.0	-	-	-
May	704	99.3	2.668	15.355	0	4.848	0	100.0	-	-	-
June	684	100.0	2.071	11.158	0	4.572	0	100.0	-	-	-
July	704	100.0	1.555	12.829	0	3.178	0	100.0	-	-	-
August	708	100.0	2.058	13.934	0	4.595	0	100.0	-	-	-
September	684	99.9	2.534	17.816	0	5.423	0	100.0	-	-	-
October	707	100.0	3.384	20.378	0	6.527	0	100.0	-	-	-
November	685	100.0	4.521	34.866	0	15.901	0	100.0	-	-	-
December	708	100.0	4.495	19.574	0	10.360	0	100.0	-	-	-
Annual	8324	99.9	3.481	34.866	0	17.654	0	100.0	-	-	-

**West Central Airshed Society
Frequency Distribution Charts
O₃ Monthly Averages
Year 2011**

West Central Airshed Society - Tomahawk (AMS 901)
 Annual Summary for 2011
 O3 (ppb)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Number 1-Hour Violations	Maximum 24-Hour Value
January	708	100.0	27.9	50.2	0	43.3
February	644	100.0	34.0	50.1	0	44.0
March	703	100.0	39.2	62.0	0	56.4
April	686	100.0	45.3	67.0	0	52.9
May	610	86.0	40.1	67.8	0	51.0
June	686	100.0	30.8	59.2	0	41.1
July	704	100.0	24.7	62.8	0	35.8
August	660	93.4	26.1	59.3	0	36.3
September	686	100.0	26.5	65.5	0	39.1
October	708	99.7	25.8	50.3	0	35.9
November	685	100.0	23.8	46.6	0	36.9
December	709	100.0	30.6	47.0	0	41.9
Annual	8189	98.2	31.1	67.8	0	56.4

West Central Airshed Society - Violet Grove (AMS 902)
 Annual Summary for 2011
 O3 (ppb)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Number 1-Hour Violations	Maximum 24-Hour Value
January	709	100.0	30.7	53.8	0	45.4
February	639	100.0	33.9	48.2	0	42.8
March	708	100.0	37.6	56.5	0	50.5
April	686	100.0	48.5	68.7	0	59.4
May	709	100.0	41.2	65.4	0	50.1
June	684	100.0	34.8	67.7	0	49.5
July	702	99.6	27.3	61.3	0	39.9
August	707	100.0	27.1	61.5	0	39.3
September	681	99.4	28.1	55.5	0	40.4
October	708	100.0	30.6	54.5	0	43.4
November	685	100.0	29.2	45.4	0	39.2
December	708	100.0	34.8	49.1	0	44.9
Annual	8326	99.9	33.6	68.7	0	59.4

West Central Airshed Society - Carrot Creek (AMS 903)
 Annual Summary for 2011
 O3 (ppb)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Number 1-Hour Violations	Maximum 24-Hour Value
January	708	100.0	27.4	54.0	0	43.6
February	640	100.0	33.6	50.7	0	43.6
March	708	100.0	32.9	54.2	0	47.3
April	685	100.0	40.3	64.6	0	48.5
May	708	100.0	37.5	63.8	0	49.4
June	686	100.0	26.9	57.8	0	38.6
July	702	100.0	21.5	53.1	0	30.3
August	709	100.0	21.0	53.3	0	31.2
September	685	99.7	20.2	61.2	0	33.9
October	708	100.0	24.4	51.3	0	35.4
November	621	90.7	23.5	44.9	0	34.3
December	699	98.5	30.0	46.5	0	42.3
Annual	8259	99.1	28.3	64.6	0	49.4

West Central Airshed Society - Hightower (AMS 904)
 Annual Summary for 2011
 O3 (ppb)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Number 1-Hour Violations	Maximum 24-Hour Value
January	707	100.0	41.0	60.3	0	52.3
February	640	100.0	48.4	64.4	0	60.8
March	708	100.0	44.2	61.4	0	57.5
April	685	100.0	51.4	71.1	0	65.7
May	709	100.0	51.8	74.7	0	61.2
June	685	100.0	42.7	72.1	0	61.0
July	701	100.0	32.7	54.5	0	44.1
August	709	100.0	35.2	63.5	0	44.3
September	363	53.2	37.4	52.6	0	45.9
October	612	86.6	47.7	63.9	0	56.7
November	684	100.0	45.7	62.3	0	56.7
December	709	100.0	48.4	64.6	0	60.8
Annual	7912	95.01	44.1	74.7	0	65.7

West Central Airshed Society - Edson (AMS 912)
 Annual Summary for 2011
 O3 (ppb)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Number 1-Hour Violations	Maximum 24-Hour Value
January	-	-	-	-	-	-
February	-	-	-	-	-	-
March	-	-	-	-	-	-
April	-	-	-	-	-	-
May	-	-	-	-	-	-
June	-	-	-	-	-	-
July	-	-	-	-	-	-
August	-	-	-	-	-	-
September	-	-	-	-	-	-
October	-	-	-	-	-	-
November	-	-	-	-	-	-
December	356	100.0	26.2	46.0	0	37.9
Annual	356	4.5	26.2	46.0	0	37.9

West Central Airshed Society - Breton (AMS 913)
 Annual Summary for 2011
 O3 (ppb)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Number 1-Hour Violations	Maximum 24-Hour Value
January	709	100.0	30.3	55.9	0	45.6
February	639	100.0	36.1	52.5	0	45.1
March	709	100.0	38.4	57.2	0	51.1
April	687	100.0	45.5	67.0	0	53.8
May	704	99.3	41.5	72.6	0	52.1
June	684	100.0	33.2	66.4	0	46.5
July	706	100.0	25.0	58.2	0	36.6
August	709	100.0	22.7	61.2	0	36.4
September	684	100.0	19.2	59.7	0	31.5
October	709	100.0	27.2	51.1	0	36.8
November	686	100.0	29.7	47.2	0	41.4
December	708	100.0	34.4	47.7	0	43.1
Annual	8334	99.9	31.9	72.6	0	53.8

**West Central Airshed Society
Frequency Distribution Charts
THC Monthly Averages
Year 2011**

West Central Airshed Society - Violet Grove (AMS 902)
 Annual Summary for 2010
 THC (ppb)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Number 1-Hour Violations	Maximum 24-Hour Value	Number 24-Hour Violations
January	676	95.3	2.327	5.748	0	3.348	0
February	639	100.0	2.332	5.080	0	2.748	0
March	706	100.0	2.469	6.517	0	3.366	0
April	686	100.0	2.310	8.188	0	2.584	0
May	709	100.0	2.232	5.829	0	2.483	0
June	683	100.0	2.120	4.635	0	2.477	0
July	672	95.0	2.107	4.452	0	2.342	0
August	707	100.0	2.244	4.733	0	2.815	0
September	659	96.4	2.256	4.711	0	2.474	0
October	709	100.0	2.302	4.771	0	2.636	0
November	641	93.5	2.358	6.587	0	2.933	0
December	707	100.0	2.314	4.413	0	2.688	0
Annual	8194	98.3	2.281	8.188	0	3.366	0

**West Central Airshed Society
Frequency Distribution Charts
PM Monthly Averages
Year 2011**

West Central Airshed Society - Tomahawk (AMS 901)
 Annual Summary for 2011
 PM2.5 ($\mu\text{g}/\text{m}^3$)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Number 1-Hour Violations	Maximum 24-Hour Value	Number 24-Hour Violations
January	743	99.9	2.5	32.2	0	7.6	0
February	672	100.0	2.8	30.2	0	7.7	0
March	718	97.2	5.6	17.7	0	11.4	0
April	720	100.0	2.6	9.5	0	6.7	0
May	639	85.9	5.4	104.8	3	36.4	1
June	709	98.5	3.8	25.7	0	15.4	0
July	736	99.6	2.4	15.4	0	5.8	0
August	687	93.2	3.1	15.3	0	7.6	0
September	711	98.9	3.0	14.8	0	8.6	0
October	744	100.0	2.5	10.1	0	6.1	0
November	716	100.0	3.2	26.5	0	12.8	0
December	738	99.2	2.2	14.7	0	5.8	0
Annual	8533	97.65	3.2	104.8	3	36.4	1

West Central Airshed Society - Hightower (AMS 904)
 Annual Summary for 2011
 PM2.5 ($\mu\text{g}/\text{m}^3$)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Number 1-Hour Violations	Maximum 24-Hour Value	Number 24-Hour Violations
January	738	99.7	1.0	16.6	0	2.9	0
February	665	99.7	1.5	8.8	0	4.7	0
March	743	99.9	3.4	19.2	0	8.5	0
April	716	99.9	1.8	8.2	0	6.0	0
May	744	100.0	3.1	32.4	0	18.5	0
June	718	99.7	2.3	22.3	0	13.0	0
July	739	100.0	1.0	44.4	0	3.1	0
August	740	99.5	1.4	18.4	0	4.1	0
September	382	53.1	1.1	5.9	0	2.4	0
October	636	86.0	0.9	6.8	0	2.7	0
November	717	99.6	1.6	31.5	0	5.3	0
December	743	99.9	0.7	4.9	0	1.4	0
Annual	8281	94.8	1.7	44.4	0	18.5	0

West Central Airshed Society - Steeper (AMS 905)
 Annual Summary for 2011
 PM2.5 ($\mu\text{g}/\text{m}^3$)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Number 1-Hour Violations	Maximum 24-Hour Value	Number 24-Hour Violations
January	713	100.0	1.7	18.2	0	6.5	0
February	642	99.7	2.2	23.9	0	9.4	0
March	712	99.9	4.2	15.3	0	10.4	0
April	690	100.0	2.0	7.4	0	6.0	0
May	701	98.7	3.4	31.3	0	15.2	0
June	688	99.7	3.0	18.2	0	10.7	0
July	712	99.9	1.9	17.2	0	6.3	0
August	710	99.6	1.8	11.3	0	4.9	0
September	665	92.5	1.5	14.0	0	6.4	0
October	744	100.0	1.2	9.0	0	3.0	0
November	673	97.6	1.6	10.0	0	4.8	0
December	713	100.0	0.8	9.0	0	2.5	0
Annual	8363	99.0	2.1	31.3	0	15.2	0

West Central Airshed Society - Drayton Valley (AMS 911)
 Annual Summary for 2011
 PM2.5 ($\mu\text{g}/\text{m}^3$)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Number 1-Hour Violations	Maximum 24-Hour Value	Number 24-Hour Violations
January	738	99.7	6.1	35.4	0	11.0	0
February	669	99.7	6.0	28.2	0	10.5	0
March	742	99.7	8.5	41.1	0	13.7	0
April	714	99.4	7.3	26.4	0	12.3	0
May	744	100.0	9.1	102.2	4	39.8	1
June	719	99.9	7.7	35.1	0	19.8	0
July	668	89.8	6.6	30.1	0	10.9	0
August	742	100.0	7.6	27.9	0	12.7	0
September	712	98.9	7.7	35.0	0	19.0	0
October	743	99.9	6.9	31.2	0	12.5	0
November	719	99.9	7.0	31.4	0	14.3	0
December	741	99.6	6.2	53.2	0	11.3	0
Annual	8651	98.9	7.2	102.2	4	39.8	1

West Central Airshed Society - Edson (AMS 912)
 Annual Summary for 2011
 PM2.5 ($\mu\text{g}/\text{m}^3$)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Number 1-Hour Violations	Maximum 24-Hour Value	Number 24-Hour Violations
January	740	100.0	3.2	40.4	0	11.8	0
February	666	99.1	3.5	37.3	0	9.7	0
March	743	99.9	6.2	31.8	0	10.6	0
April	716	100.0	3.2	19.9	0	9.1	0
May	740	99.5	5.9	85.3	1	32.7	1
June	713	99.0	3.5	26.4	0	16.0	0
July	737	99.9	2.9	23.9	0	8.6	0
August	740	99.7	3.3	23.0	0	8.6	0
September	717	99.6	2.7	17.2	0	8.0	0
October	741	100.0	3.3	20.9	0	7.6	0
November	669	92.9	4.7	32.3	0	15.1	0
December	741	99.6	3.0	67.3	0	10.9	0
Annual	8663	99.1	3.8	85.3	1	32.7	1

**West Central Airshed Society
Frequency Distribution Charts
Meteorological Measurements
Year 2011**

Summary Report

Continuous air quality/meteorological monitoring measurements

West Central Airshed Society

WCAS / Tomahawk Station 901		January to December 2011						
Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Total	Min	Max	
SO ₂ (ppb)	414	8192	98.3	0.7	-	0	16.8	
O ₃ (ppb)	416	8189	98.3	31.2	-	0.4	67.8	
NO (ppb)	432	8175	98.3	0.7	-	0	28.2	
NO ₂ (ppb)	432	8175	98.3	4.2	-	0	33.3	
NO _x (ppb)	432	8175	98.3	4.9	-	0	51.6	
Particulate Matter 2.5 microns (μ/m ³)	21	8533	97.7	3.3	-	0	104.8	
Wind Speed (kph)	0	8607	98.3	10.7	-	0	42.9	
Temperature (°C)	0	8607	98.3	3.0	-	-35.6	30.2	
Relative Humidity (%)	0	8607	98.3	69.2	-	13.2	98.9	
Photosynthetically Active Radiation (W/m ²)	0	8699	99.3	69.4	-	0	451.4	
Precipitation (mm)	0	4485	98.4	-	340.4	0	18.6	
Leaf Wetness (%)	0	5891	99.1	46.0	-	0	543.3	
Std Dev Wind Direction (deg)	0	8654	98.8	20.0	-	3.2	107.2	
Std Dev Wind Speed (kph)	0	8654	98.8	2.7	-	0	14.1	

Summary Report
Continuous air quality/meteorological monitoring measurements

West Central Airshed Society

WCAS / Violet Grove Station 902		January to December 2011					
Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Total	Min	Max
SO ₂ (ppb)	423	8330	99.9	0.5	-	0	23.1
O ₃ (ppb)	427	8326	99.9	33.6	-	0.5	68.7
NO (ppb)	437	8316	99.9	0.8	-	0	32.6
NO ₂ (ppb)	437	8316	99.9	4.5	-	0	34.7
NO _x (ppb)	437	8316	99.9	4.7	-	0.1	50.8
THC (ppm)	421	8194	98.3	2.3	-	1.2	8.2
Wind Speed (kph)	0	8752	99.9	10.8	-	0.1	45.1
Temperature (°C)	0	8753	99.9	2.8	-	-33.6	28.4
Delta Temperature (°C)	0	8753	99.9	0.0	-	-7	1.8
Relative Humidity (%)	0	8753	99.9	68.4	-	14.2	101.2
Global Solar Radiation (W/m ²)	0	8753	99.9	137.3	-	0	945.5
Precipitation (mm)	0	4409	99.8	-	385.10	0	941
Leaf Wetness (%)	0	4406	99.8	43.2	-	0	103.9
Photosynthetically Active Radiation (W/m ²)	0	8753	99.9	48.7	-	0	355.9
Std Dev Wind Direction (deg)	0	8752	99.9	19.1	-	3.1	106.4
Std Dev Wind Speed (kph)	0	8752	99.9	2.7	-	0.4	13.6

Summary Report
Continuous air quality/meteorological monitoring measurements

West Central Airshed Society

WCAS / Carrot Creek Station 903		January to December 2011					
Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Total	Min	Max
SO ₂ (ppb)	420	8335	99.9	0.4	-	0	10.3
O ₃ (ppb)	421	8259	99.1	28.3	-	0	64.6
NO (ppb)	431	8323	99.9	1.2	-	0	58
NO ₂ (ppb)	431	8323	99.9	4.7	-	0	49.4
NO _x (ppb)	431	8323	99.9	6.5	-	0	99.2
Wind Speed (kph)	0	8758	100.0	8.1	-	0.1	47.4
Temperature (°C)	0	7404	84.0	1.4	-	-34.8	29.2
Relative Humidity (%)	0	7457	84.6	70.7	-	10.5	100.7
Photosynthetically Active Radiation (W/m ²)	0	8758	100.0	82.8	-	11.5	559.2
Precipitation (mm)	0	3670	99.9	-	57.40	0	559.2
Std Dev Wind Direction (deg)	0	8758	100.0	27.2	-	3.6	109.3
Std Dev Wind Speed (kph)	0	8758	100.0	2.6	-	0	13.2

Summary Report

Continuous air quality/meteorological monitoring measurements

West Central Airshed Society

WCAS / Hightower Station 904		January to December 2011				
Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Min	Max
CO (ppm)	413	7885	94.7	0.1	0.0	0.5
SO ₂ (ppb)	401	7922	95.0	0.1	0.0	4.4
O ₃ (ppb)	411	7912	95.0	43.9	8.4	74.7
NO (ppb)	416	7907	95.0	0.2	0.0	35.6
NO ₂ (ppb)	416	7907	95.0	1.0	0.0	18.4
NO _x (ppb)	416	7907	95.0	1.3	0.0	36.1
Particulate Matter 2.5 microns (μ/m ³)	21	8281	94.7	1.6	0.0	44.4
Wind Speed (kph)	0	6859	94.0	10.0	0.0	69.7
Temperature (°C)	0	6858	94.0	2.3	-33.2	23.9
Std Dev Wind Direction (deg)	0	6859	94.0	26.0	0.0	114.1
Std Dev Wind Speed (kph)	0	6859	94.0	3.5	0.0	18.9

Summary Report

Continuous air quality/meteorological monitoring measurements

West Central Airshed Society

WCAS / Steeper Station 905		January to December 2011				
Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Min	Max
SO ₂ (ppb)	345	6926	99.0	0.1	0.0	7.3
O ₃ (ppb)	347	6924	99.0	37.9	2.9	70.9
NO (ppb)	355	6916	99.0	0.1	0.0	10.5
NO ₂ (ppb)	355	6916	99.0	1.2	0.0	22.3
NO _x (ppb)	355	6916	99.0	1.1	0.0	23.2
Particulate Matter 10 microns (μ/m ³)	154	4905	98.5	1.7	0.0	18.2
Wind Speed (kph)	94	7172	98.9	3.8	0.0	31.3
Temperature (°C)	0	7271	99.0	5.1	-28.7	27
Relative Humidity (%)	0	7271	99.0	43.2	-32.7	98.5
Std Dev Wind Direction (deg)	0	7271	99.0	20.1	0.0	98.8
Std Dev Wind Speed (kph)	0	7271	99.0	19.8	0.2	114.3

West Central Airshed Society

**Weyerhaeuser / Drayton Valley
Station 911**

December to January 2011

Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Min	Max
Particulate Matter 2.5 microns (μ/m^3)	5	8655	98.9	7.2	0.0	145.6
Wind Speed (kph)	0	5828	99.9	3.7	-36.6	30.2
Temperature ($^{\circ}C$)	0	5830	100.0	26.0	0.2	107.0
Std Dev Wind Direction (deg)	0	5830	100.0	2.8	0.1	11.4
Std Dev Wind Speed (kph)	0	0.00	0.0	0.0	0.0	0.0

Summary Report

West Central Airshed Society

Continuous air quality/meteorological monitoring measurements

**Weyerhaeuser / Edson
Station 912**

January to December 2011

Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Min	Max
SO ₂ (ppb)	405	8305	99.4	0.3	0.0	26.2
O ₃ (ppb)	18	356	100	26.2	0.6	46.0
NO (ppb)	20	355	100	3.6	0	74.8
NO ₂ (ppb)	20	355	100	10.6	0	38.8
NO _x (ppb)	20	355	100	14.7	0.5	109.1
Particulate Matter 2.5 microns (μ/m ³)	19	8663	99.1	3.8	0.0	85.3
Wind Speed (kph)	0	8713	99.5	8.0	0.1	36.2
Temperature (°C)	0	8516	97.2	3.0	-32.4	29.2
Std Dev Wind Direction (deg)	0	8713	99.5	28.0	0.0	107.1
Std Dev Wind Speed (kph)	0	8713	99.5	2.7	0.0	11.4

Summary Report

West Central Airshed Society

Continuous air quality/meteorological monitoring measurements

**Weyerhaeuser / Breton
Station 913**

January to December 2011

Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Min	Max
SO ₂ (ppb)	416	8314	99.9	0.3	0.0	29.7
O ₃ (ppb)	419	8312	99.9	9.8	0.0	49.0
NO (ppb)	425	8305	99.9	0.5	0.0	32.0
NO ₂ (ppb)	425	8305	99.9	3.6	0.0	31.0
NO _x (ppb)	425	8305	99.9	3.8	0.0	50.3
Wind Speed (kph)	0	8730	99.9	7.8	0.0	42.0
Temperature (°C)	0	8730	99.9	3.1	-37.1	30.8
Relative Humidity (%)	0	8730	99.9	65.3	10.7	96.0
Std Dev Wind Direction (deg)	0	8730	99.9	29.1	5.1	109.2
Std Dev Wind Speed (kph)	0	8010	91.6	2.5	0.2	14.2