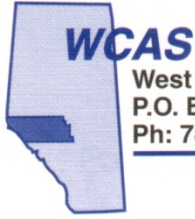




**TransAlta Utilities Corporation
Continuous Ambient Air Quality
Monitoring Program
Annual Summary for 2012**

Prepared by:

**West Central Airshed Society
Drayton Valley, Alberta**



West Central Airshed Society
P.O. Box 7421, Drayton Valley, Alberta T7A 1S6
Ph: 780-514-3533 • Fax: 780-514-3563 • www.wcas.ca

January 14th, 2013

Attention: Mr. Ken Woollard
GBS Building
RR#1, Site 4, Box #2
Duffield Alberta
T0E 0N0

Dear Sir:

**Re: Annual Ambient Air Quality Monitoring Report January – December 2012.
For TransAlta Utilities Corporation**

The West Central Airshed Society (WCAS) presents the 2012 Annual Report containing ambient air quality and meteorological information from the following sites:

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

The Network Stations 907, 908 were commissioned April 23 and April 26 2004, respectively. Station 959 was commissioned January 2009. WCAS data collection and validation began July 1, 2004. The following is a list of the reported ambient air and meteorological parameters measured at each site location:

AMS 907 (Power)

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

AMS 908 (Meadows)

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

AMS 959 (Wagner2)

SO₂, 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.

Sincerely,

Patrick Andersen
Environmental Specialist

Greg Swain
Senior Technologist

A handwritten signature in black ink, appearing to read "J.M. McClintock". The signature is fluid and cursive, with the first name "J.M." and the last name "McClintock" clearly distinguishable.

Jeff McClintock
Intermediate Technologist

**TransAlta Utilities Corporation
Frequency Distribution Charts
Wind Speed and Direction
Year 2012**

West Central Airshed Society - Power (AMS 907)
 Annual Summary for 2012
 Percentage Frequency Distribution of Wind

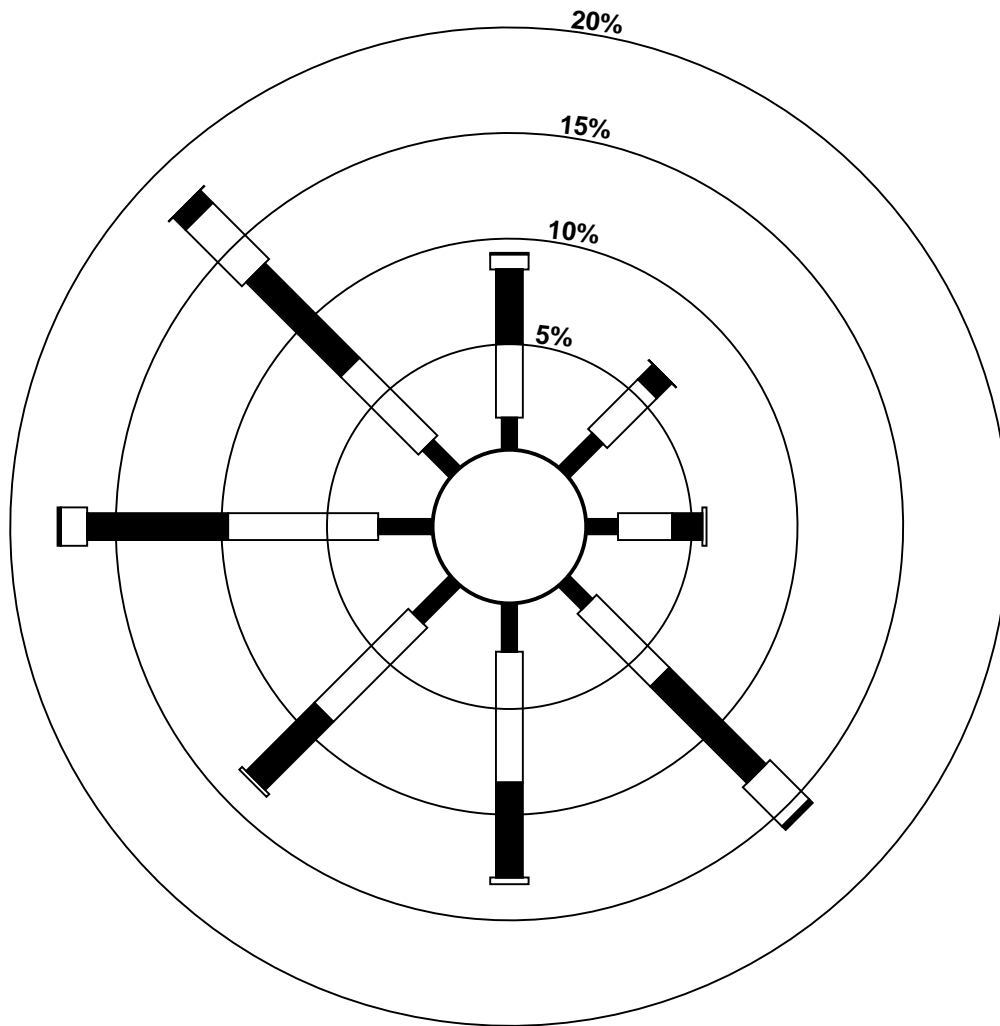
Speed (kph)							
Direction	>1 to 5	>5 to 11	>11 to 19	>19 to 28	>28 to 38	>38	Totals
North	1.52	3.48	3.54	0.71	0.08	0.00	9.01
NorthEast	2.25	3.33	0.99	0.02	0.00	0.00	6.42
East	1.46	2.56	1.44	0.19	0.00	0.00	4.69
SouthEast	1.53	4.87	6.47	2.62	0.24	0.00	14.61
South	2.24	6.19	4.49	0.32	0.00	0.00	13.65
SouthWest	2.48	6.30	4.56	0.18	0.00	0.00	14.17
West	2.50	7.11	6.67	1.24	0.16	0.00	20.49
NorthWest	1.83	5.21	6.33	3.78	0.83	0.02	16.96
Totals	15.81	39.05	34.49	9.06	1.31	0.02	99.74

Percent Calm	0.26
Number of Data Values	8766
Hours in Time Period	8784

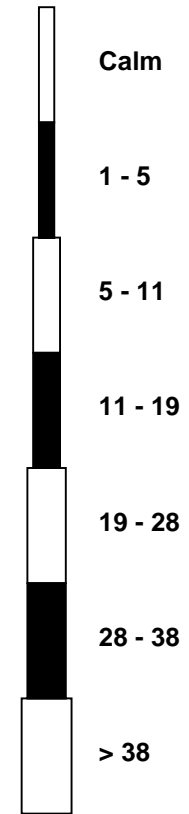
**WCAS - Power
Wind Speed Rose**



**Wind Speed (WS) - kph
2012**



Wind Frequency (kph)



West Central Airshed Society - Meadows (AMS 908)
 Annual Summary for 2012
 Percentage Frequency Distribution of Wind

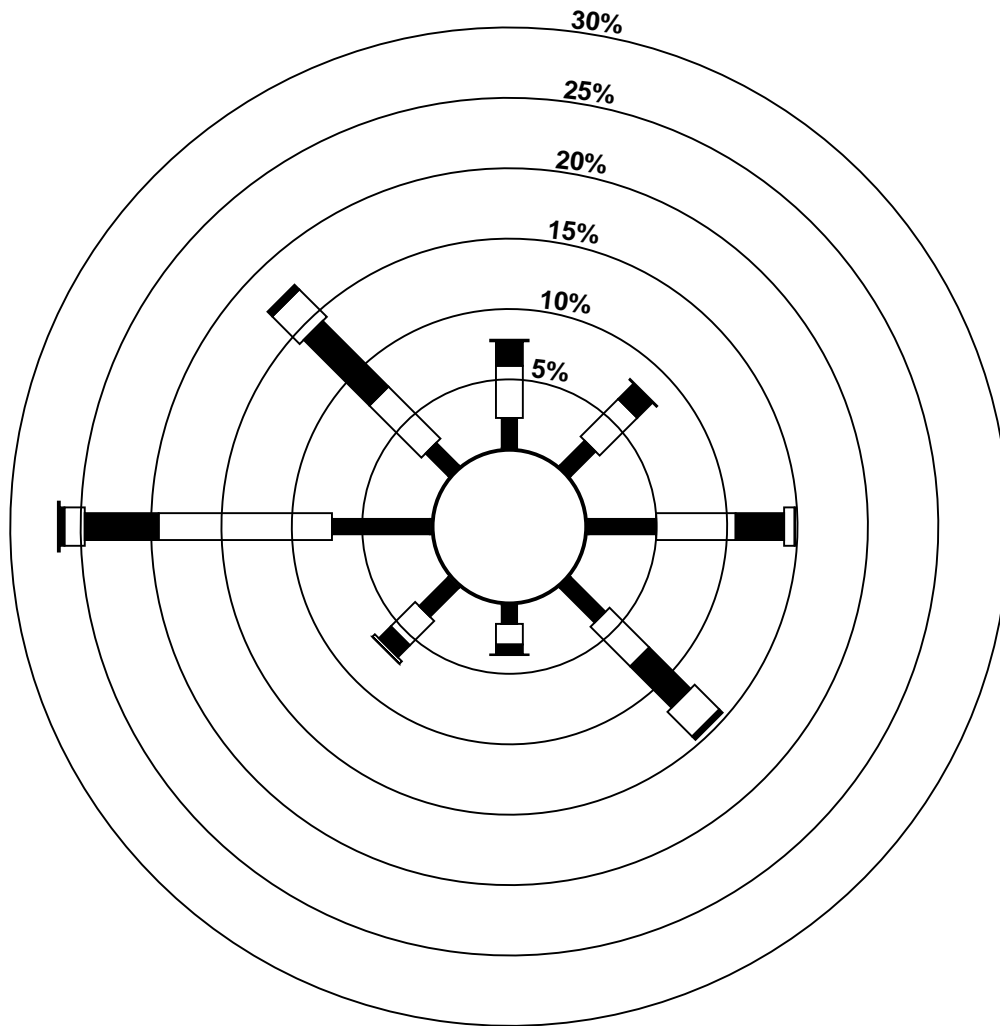
Speed (kph)							
Direction	>1 to 5	>5 to 11	>11 to 19	>19 to 28	>28 to 38	>38	Totals
North	2.14	3.70	1.74	0.11	0.00	0.00	6.57
NorthEast	2.52	3.78	1.52	0.08	0.00	0.00	7.19
East	4.81	5.65	3.44	0.75	0.01	0.00	11.14
SouthEast	3.49	3.99	4.15	2.48	0.33	0.00	14.76
South	1.35	1.46	0.71	0.05	0.00	0.00	4.79
SouthWest	2.89	2.45	1.20	0.24	0.01	0.00	10.07
West	6.96	12.30	5.25	1.44	0.33	0.14	29.58
NorthWest	2.30	5.23	6.60	2.76	0.48	0.00	15.91
Totals	26.46	38.56	24.61	7.91	1.16	0.14	98.84

Percent Calm	1.16
Number of Data Values	8746
Hours in Time Period	8784

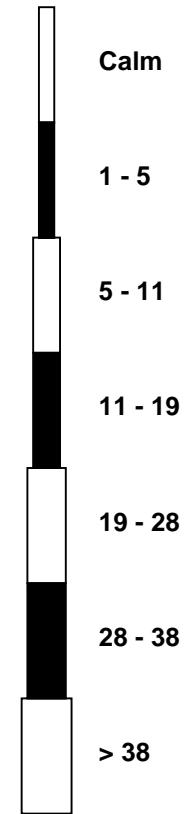
**WCAS - Meadows
Wind Speed Rose**



**Wind Speed (WS) - kph
2012**



Wind Frequency (kph)



West Central Airshed Society - Wagner2 (AMS 959)
 Annual Summary for 2012
 Percentage Frequency Distribution of Wind

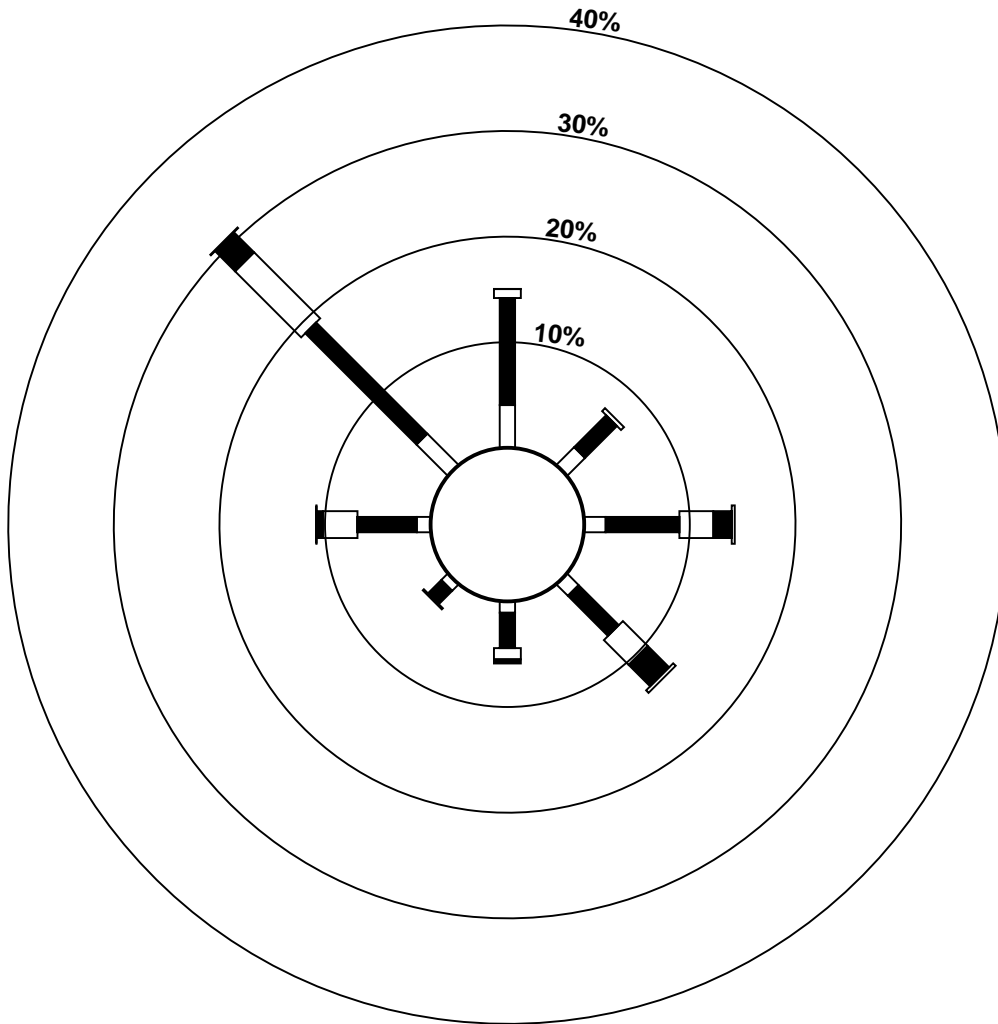
Speed (kph)							
Direction	>1 to 5	>5 to 11	>11 to 19	>19 to 28	>28 to 38	>38	Totals
North	10.14	0.85	0.01	0.00	0.00	0.00	11.00
NorthEast	4.29	0.39	0.00	0.00	0.00	0.00	4.68
East	6.99	3.22	1.73	0.29	0.00	0.00	12.23
SouthEast	5.37	3.33	2.86	0.33	0.00	0.00	11.89
South	3.34	1.06	0.39	0.00	0.00	0.00	4.79
SouthWest	1.79	0.16	0.00	0.00	0.00	0.00	1.95
West	5.62	3.28	0.60	0.02	0.00	0.00	9.52
NorthWest	14.90	8.84	2.70	0.08	0.00	0.00	26.52
Totals	52.44	21.13	8.29	0.72	0.00	0.00	82.58

Percent Calm	17.42
Number of Data Values	8670
Hours in Time Period	8784

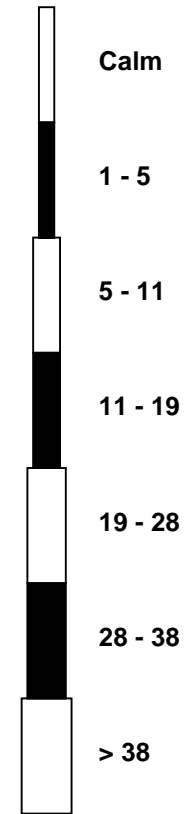
WCAS - Wagner2
Wind Speed Rose



Wind Speed (WS) - kph
2012



Wind Frequency (kph)



**TransAlta Utilities Corporation
Frequency Distribution Charts
SO₂ Monthly Averages
Year 2012**

West Central Airshed Society - Power (AMS 907)
 Annual Summary for 2012
 SO2 (ppb)

Month	Number of Data	Mean	Maximum 24-Hour Value	Maximum 1-Hour Value	Operational Time (%)	Number 24-Hour Violations	Number 1-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	0.058	0.464	2.837	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
February	662	0.181	0.907	6.914	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
March	708	0.156	0.805	9.877	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
April	686	0.121	1.032	8.255	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
May	708	0.137	1.161	6.761	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
June	684	0.200	1.257	6.935	99.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00
July	707	0.656	3.314	16.597	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
August	692	0.418	1.809	11.373	97.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00
September	686	0.387	4.298	23.990	100.0	0	0	99.85	0.15	0.00	0.00	0.00	0.00
October	709	0.053	0.699	9.528	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
November	684	0.140	1.044	5.721	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
December	709	0.139	0.966	4.903	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
Annual	8344	0.220	4.298	23.990	99.8	0	0	99.99	0.01	0.00	0.00	0.00	0.00

West Central Airshed Society - Meadows (AMS 908)
 Annual Summary for 2012
 SO2 (ppb)

Month	Number of Data	Mean	Maximum 24-Hour Value	Maximum 1-Hour Value	Operational Time (%)	Number 24-Hour Violations	Number 1-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	675	0.156	1.482	4.547	95.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
February	663	0.468	3.383	26.272	100.0	0	0	99.70	0.30	0.00	0.00	0.00	0.00
March	709	0.421	2.677	25.169	100.0	0	0	99.86	0.14	0.00	0.00	0.00	0.00
April	687	0.813	4.704	17.006	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
May	709	0.663	5.435	22.380	100.0	0	0	99.86	0.14	0.00	0.00	0.00	0.00
June	684	0.544	2.994	19.747	99.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00
July	703	0.549	3.449	13.899	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
August	708	0.454	4.504	24.903	100.0	0	0	99.72	0.28	0.00	0.00	0.00	0.00
September	686	0.379	4.166	30.643	100.0	0	0	99.71	0.29	0.00	0.00	0.00	0.00
October	710	0.497	7.459	18.596	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
November	685	0.426	3.758	15.620	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
December	710	0.550	3.007	37.130	100.0	0	0	99.86	0.14	0.00	0.00	0.00	0.00
Annual	8329	0.494	7.459	37.130	99.6	0	0	99.89	0.11	0.00	0.00	0.00	0.00

West Central Airshed Society - Wagner2 (AMS 959)
 Annual Summary for 2012
 SO2 (ppb)

Month	Number of Data	Mean	Maximum 24-Hour Value	Maximum 1-Hour Value	Operation Time (%)	Number 24-Hour Violations	Number 1-Hour Violation	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	0.263	2.303	15.342	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
February	663	0.526	2.785	16.708	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
March	709	0.461	2.014	18.509	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
April	690	0.845	6.006	61.954	100.0	0	0	99.57	0.29	0.14	0.00	0.00	0.00
May	706	0.803	3.261	14.207	99.7	0	0	100.00	0.00	0.00	0.00	0.00	0.00
June	684	1.114	3.572	18.100	99.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00
July	704	1.149	5.466	39.428	100.0	0	0	99.57	0.43	0.00	0.00	0.00	0.00
August	630	1.003	3.829	22.417	89.3	0	0	99.84	0.16	0.00	0.00	0.00	0.00
September	660	1.213	4.161	38.950	96.3	0	0	98.94	1.06	0.00	0.00	0.00	0.00
October	708	0.578	3.874	17.185	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
November	686	0.291	2.618	16.395	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
December	710	0.362	4.324	21.901	100.0	0	0	99.86	0.14	0.00	0.00	0.00	0.00
Annual	8260	0.712	6.006	61.954	98.8	0	0	99.82	0.17	0.01	0.00	0.00	0.00

**TransAlta Utilities Corporation
Frequency Distribution Charts
NO₂ Monthly Averages
Year 2012**

West Central Airshed Society - Power (AMS 907)
 Annual Summary for 2012
 NO2 (ppb)

Month	Number of Data	Mean	Maximum 24-Hour Value	Maximum 1-Hour Value	Operational Time (%)	Number 24-Hour Violations	Number 1-Hour Violations	Percent of Data in each Concentration Range			
								<=0.05	>0.05-0.11	>0.11-0.21	>0.21
January	708	4.361	8.366	16.608	100.0	0	0	100.00	0	0	0
February	662	5.087	12.655	26.068	100.0	0	0	100.00	0	0	0
March	707	3.356	5.970	13.759	100.0	0	0	100.00	0	0	0
April	685	2.132	3.770	9.156	100.0	0	0	100.00	0	0	0
May	708	1.875	3.669	9.678	100.0	0	0	100.00	0	0	0
June	683	2.019	4.139	11.630	99.9	0	0	100.00	0	0	0
July	705	2.475	5.828	20.146	100.0	0	0	100.00	0	0	0
August	692	2.112	5.493	15.069	97.9	0	0	100.00	0	0	0
September	685	1.329	6.261	28.436	100.0	0	0	100.00	0	0	0
October	709	2.457	8.124	14.831	100.0	0	0	100.00	0	0	0
November	684	6.660	17.807	43.917	100.0	0	0	100.00	0	0	0
December	709	7.748	18.024	38.238	100.0	0	0	100.00	0	0	0
Annual	8337	3.467	18.024	43.917	99.8	0	0	100.00	0	0	0

West Central Airshed Society - Meadows (AMS 908)
 Annual Summary for 2012
 NO2 (ppb)

Month	Number of Data	Mean	Maximum 24-Hour Value	Maximum 1-Hour Value	Operational Time (%)	Number 24-Hour Violations	Number 1-Hour Violations	Percent of Data in each Concentration Range			
								<=0.05	>0.05-0.11	>0.11-0.21	>0.21
January	674	10.624	21.075	36.233	95.0	0	0	100.00	0	0	0
February	662	12.327	27.916	40.682	100.0	0	0	100.00	0	0	0
March	707	6.948	13.909	34.669	100.0	0	0	100.00	0	0	0
April	686	5.172	10.908	37.197	100.0	0	0	100.00	0	0	0
May	709	4.955	11.915	35.518	100.0	0	0	100.00	0	0	0
June	683	4.227	8.665	26.981	99.9	0	0	100.00	0	0	0
July	703	3.468	6.268	22.957	100.0	0	0	100.00	0	0	0
August	708	3.831	9.238	22.846	100.0	0	0	100.00	0	0	0
September	685	6.308	14.710	32.545	100.0	0	0	100.00	0	0	0
October	709	4.559	11.211	28.656	100.0	0	0	100.00	0	0	0
November	685	8.678	22.469	36.955	100.0	0	0	100.00	0	0	0
December	709	13.785	25.244	39.999	100.0	0	0	100.00	0	0	0
Annual	8320	7.044	27.916	40.682	99.6	0	0	100.00	0	0	0

West Central Airshed Society - Wagner2 (AMS 959)
 Annual Summary for 2012
 NO2 (ppb)

Month	Number of Data	Mean	Maximum 24-Hour Value	Maximum 1-Hour Value	Operational Time (%)	Number 24-Hour Violations	Number 1-Hour Violations	Percent of Data in each Concentration Range			
								<=0.05	>0.05-0.11	>0.11-0.21	>0.21
January	709	6.309	13.813	25.781	100.0	0	0	100.00	0	0	0
February	662	6.497	15.919	30.951	100.0	0	0	100.00	0	0	0
March	708	4.608	8.597	23.212	100.0	0	0	100.00	0	0	0
April	690	3.073	8.790	107.944	100.0	0	0	99.86	0.14	0	0
May	706	3.111	7.452	20.141	99.7	0	0	100.00	0	0	0
June	683	3.958	7.499	19.228	99.9	0	0	100.00	0	0	0
July	703	3.181	6.121	35.182	100.0	0	0	100.00	0	0	0
August	629	3.581	7.561	21.581	89.3	0	0	100.00	0	0	0
September	659	3.663	6.251	57.843	96.3	0	0	99.70	0.3	0	0
October	708	3.886	7.037	22.493	100.0	0	0	100.00	0	0	0
November	686	7.361	18.350	40.860	100.0	0	0	100.00	0	0	0
December	710	10.250	20.601	56.162	100.0	0	0	99.86	0.14	0	0
Annual	8253	4.972	20.601	107.944	98.8	0	0	99.95	0.05	0	0

**TransAlta Utilities Corporation
Frequency Distribution Charts
PM Monthly Averages
Year 2012**

West Central Airshed Society - Power (AMS 907)
 Annual Summary for 2012
 PM_{2.5} (µg/m³)

Month	Number of Data	Mean	Maximum 24-Hour Value	Maximum 1-Hour Value	Operational Time (%)	Number 24-Hour Violations	Number 1-Hour Violations
January	743	2.1	3.4	11.3	99.9	0	0
February	691	3.1	10.2	26.6	100.0	0	0
March	738	2.6	6.5	11.8	99.2	0	0
April	720	2.8	7.3	15.1	100.0	0	0
May	739	4.0	8.6	18.5	100.0	0	0
June	707	4.2	11.0	61.5	98.2	0	0
July	731	12.4	76.5	159.3	98.8	2	21
August	716	6.2	14.5	87.5	97.0	0	1
September	711	5.2	15.1	50.1	98.8	0	0
October	744	2.8	14.7	31.8	100.0	0	0
November	714	4.6	11.6	26.4	100.0	0	0
December	741	4.5	15.7	30.0	99.6	0	0
Annual	8695	4.5	76.5	159.3	99.28	2	22

**TransAlta Utilities Corporation
Frequency Distribution Charts
Meteorological Measurements
Year 2012**

Summary Report

Continuous air quality/meteorological monitoring measurements

West Central Airshed Society

**TransAlta / Power
Station 907**

January to December 2012

Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Total	Min	Max	Percentile				
								P10	Q1	Median	Q3	P90
SO ₂ (ppb)	423	8345	99.8	0.2	-	0.0	24.0	0.0	0.0	0.0	0.0	0.3
NO (ppb)	430	8338	99.8	0.2	-	0.0	39.4	0.0	0.0	0.0	0.0	0.5
NO ₂ (ppb)	430	8338	99.8	3.5	-	0.0	43.9	0.7	1.4	2.8	4.6	7.1
NO _x (ppb)	430	8338	99.8	2.7	-	0.0	59.3	0.1	0.5	1.6	3.8	6.8
Particulate Matter 2.5 microns (μ/m ³)	26	8696	99.3	4.5	-	0.0	159.3	0.3	1.5	3.3	6.0	9.3
Wind Speed (kph)	1	8767	99.8	11.5	-	0.0	40.6	4.5	7.2	10.9	14.9	19.5
Temperature (°C)	1	8764	99.8	4.1	-	-32.5	33.3	-3.7	-0.2	4.0	8.2	11.9
Relative Humidity (%)	1	8767	99.8	68.0	-	14.8	98.5	44.7	55.1	69.3	81.8	89.5
Precipitation (mm)	1	8767	99.8	-	363.4	0.0	36.9	0.0	0.0	0.0	0.0	0.0
Std Dev Wind Direction (deg)	1	8767	99.8	18.1	-	3.1	104.5	8.5	10.6	14.0	19.8	32.5
Std Dev Wind Speed (kph)	1	8757	99.8	2.7	-	0.2	21.7	1.2	1.7	2.5	3.5	4.5

Summary Report

Continuous air quality/meteorological monitoring measurements

West Central Airshed Society

TransAlta / Meadows Station 908		January to December 2012										
Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Total	Min	Max	----- Percentile -----				
								P10	Q1	Median	Q3	P90
SO ₂ (ppb)	417	8330	99.6	0.5	-	0.0	37.1	0.0	0.0	0.0	0.1	1.1
NO (ppb)	426	8321	99.6	3.7	-	0.0	140.9	0.0	0.0	0.3	2.7	11.4
NO ₂ (ppb)	426	8321	99.6	7.1	-	0.0	40.7	0.7	1.9	5.1	10.4	16.7
NO _x (ppb)	426	8321	99.6	10.0	-	0.0	171.0	0.1	1.0	4.9	12.8	27.0
Wind Speed (kph)	0	8747	99.6	9.9	-	0.0	46.9	2.8	5.2	8.8	13.5	18.8
Temperature (°C)	0	8747	99.6	3.8	-	-33.6	32.0	-3.8	-0.5	3.7	7.9	11.5
Relative Humidity (%)	0	8747	99.6	70.1	-	15.3	98.5	47.7	58.5	71.9	83.4	89.9
Precipitation (mm)	0	8747	99.6	-	236.9	0.0	27.2	0.0	0.0	0.0	0.0	0.0
Std Dev Wind Direction (deg)	0	8747	99.6	23.0	-	2.7	105.0	7.5	10.1	15.1	27.3	53.8
Std Dev Wind Speed (kph)	0	8747	99.6	2.6	-	0.0	14.9	1.2	1.6	2.3	3.3	4.4

Summary Report

Continuous air quality/meteorological monitoring measurements

West Central Airshed Society

**TransAlta / Wagner2
Station 959**

January to December 2012

Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Min	Max	Percentile				
							P10	Q1	Median	Q3	P90
SO ₂ (ppb)	414	8261	98.8	0.7	0.0	62.0	0.0	0.0	0.0	0.1	2.2
NO (ppb)	421	8254	98.8	0.9	0.0	131.5	0.0	0.0	0.0	0.3	2.6
NO ₂ (ppb)	421	8254	98.8	5.0	0.0	107.9	1.3	2.3	4.0	6.4	9.6
NO _x (ppb)	421	8254	98.8	5.0	0.0	223.8	0.4	1.2	3.3	6.6	11.2
Wind Speed (kph)	3	8671	98.8	4.3	0.0	24.4	0.4	0.9	3.0	6.5	10.6
Temperature (°C)	3	8671	98.8	4.2	-34.5	33.9	-3.9	-0.4	3.9	8.6	12.6
Relative Humidity (%)	3	8671	98.8	69.4	12.8	96.8	43.4	56.0	72.1	84.4	90.5
Std Dev Wind Direction (deg)	3	8671	98.8	45.8	5.4	119.7	18.6	25.2	38.8	65.0	85.1
Std Dev Wind Speed (kph)	3	8671	98.8	2.3	0.1	9.9	0.7	1.1	2.0	3.2	4.3