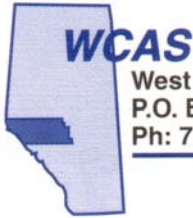




**TransAlta Utilities Corporation
Continuous Ambient Air Quality
Monitoring Program
Annual Summary for 2008**

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

February 20th, 2009

TransAlta Utilities Corporation
Mr. Ken Woollard
Box 120
Wabamun, Alberta
T0E 2K0

Dear Sir:

**Re: Annual Ambient Air Quality Monitoring Report. January – December 2008.
For TransAlta Utilities Corporation**

The West Central Airshed Society (WCAS) presents the 2008 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 909	Wagner

The Network Stations 907, 908, 909 were commissioned April 23, April 26, and April 20 of 2004, respectively. 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 909 (Wagner)

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

Jeff McClintock
Intermediate Technologist

**TransAlta Utilities Corporation
Frequency Distribution Charts
Wind Speed and Direction
Year 2008**

West Central Airshed Society - Power (AMS 907)
 Annual Summary for 2008
 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	1.62	3.17	3.17	1.67	0.11	-	9.77
NorthEast	1.96	2.88	0.92	0.24	-	-	6.00
East	1.25	2.23	0.50	0.10	-	-	4.11
SouthEast	1.31	4.38	5.28	0.98	0.07	-	12.08
South	1.74	6.05	6.22	1.01	0.10	0.06	15.19
SouthWest	2.33	5.55	4.17	0.30	-	-	12.38
West	2.56	9.10	6.06	0.88	0.09	-	18.70
NorthWest	1.87	5.98	7.05	4.77	1.74	0.31	21.75
Totals	14.65	39.34	33.37	9.95	2.12	0.36	99.79

Percent Calm	0.21
Number of Data Values	8780
Hours in Time Period	8784

West Central Airshed Society - Meadows (AMS 908)
 Annual Summary for 2008
 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	1.48	3.05	1.99	0.13	-	-	6.74
NorthEast	1.85	2.81	1.42	0.35	-	-	6.52
East	4.30	4.90	3.28	0.25	0.05	-	12.85
SouthEast	3.23	4.67	4.02	1.40	0.14	-	13.55
South	1.62	1.54	1.09	0.10	0.00	-	4.40
SouthWest	2.50	2.44	1.41	0.23	-	-	6.69
West	6.30	14.72	6.42	1.47	0.13	0.03	29.16
NorthWest	2.06	5.05	7.02	4.66	1.19	0.03	20.08
Totals	23.35	39.18	26.65	8.59	1.51	0.07	99.34

Percent Calm	0.66
Number of Data Values	8635
Hours in Time Period	8784

West Central Airshed Society - Wagner (AMS 909)
 Annual Summary for 2008
 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	3.32	4.86	2.19	0.58	0.12	-	11.16
NorthEast	6.31	3.46	1.28	0.19	0.01	-	11.33
East	5.13	4.08	0.70	0.05	-	-	10.10
SouthEast	2.31	2.63	1.15	0.05	-	-	6.19
South	2.91	2.48	1.52	0.28	0.01	-	7.27
SouthWest	5.97	5.73	0.68	0.07	0.00	-	12.56
West	3.72	8.17	8.41	0.80	0.01	-	21.17
NorthWest	2.25	5.81	7.80	3.48	0.81	0.01	20.20
Totals	31.93	37.23	23.72	5.49	0.96	0.01	99.34

Percent Calm	0.66
Number of Data Values	8620
Hours in Time Period	8784

**TransAlta Utilities Corporation
Frequency Distribution Charts
SO₂ Monthly Averages
Year 2008**

West Central Airshed Society - Power (AMS 907)
 Annual Summary for 2008
 SO2 (ppm)

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	1.2	0.025	0	0.003	0	99.7	0.3	--	--	--	--
February	662	100.0	1.3	0.022	0	0.007	0	99.9	0.2	--	--	--	--
March	709	100.0	0.9	0.022	0	0.007	0	99.6	0.4	--	--	--	--
April	687	100.0	0.6	0.020	0	0.004	0	100.0	--	--	--	--	--
May	708	100.0	0.7	0.032	0	0.004	0	99.6	0.4	--	--	--	--
June	686	100.0	0.5	0.021	0	0.003	0	99.9	0.2	--	--	--	--
July	709	100.0	0.5	0.037	0	0.007	0	99.4	0.6	--	--	--	--
August	706	99.9	0.3	0.023	0	0.002	0	99.9	0.1	--	--	--	--
September	686	100.0	0.6	0.030	0	0.005	0	99.7	0.3	--	--	--	--
October	710	100.0	0.2	0.016	0	0.003	0	100.0	--	--	--	--	--
November	687	100.0	0.8	0.013	0	0.003	0	100.0	--	--	--	--	--
December	710	100.0	0.5	0.017	0	0.003	0	100.0	--	--	--	--	--
Annual	8358	100.0	0.7	0.037	0	0.007	0	99.8	0.2	--	--	--	--

West Central Airshed Society - Meadows (AMS 908)
 Annual Summary for 2008
 SO2 (ppm)

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	707	99.7	1.3	0.010	0	0.003	0	100.0	-	-	-	-	-
February	663	99.9	1.7	0.012	0	0.005	0	100.0	-	-	-	-	-
March	709	100.0	1.8	0.048	0	0.015	0	98.7	1.3	-	-	-	-
April	685	99.7	0.7	0.042	0	0.008	0	99.4	0.6	-	-	-	-
May	710	100.0	0.8	0.038	0	0.005	0	99.3	0.7	-	-	-	-
June	687	100.0	0.5	0.018	0	0.003	0	100.0	-	-	-	-	-
July	704	99.2	0.3	0.016	0	0.002	0	100.0	-	-	-	-	-
August	691	97.9	0.3	0.015	0	0.002	0	100.0	-	-	-	-	-
September	575	84.1	0.6	0.023	0	0.003	0	99.8	0.2	-	-	-	-
October	710	100.0	0.2	0.012	0	0.002	0	100.0	-	-	-	-	-
November	686	100.0	0.7	0.016	0	0.004	0	100.0	-	-	-	-	-
December	700	99.3	2.4	0.009	0	0.006	0	100.0	-	-	-	-	-
Annual	8216	98.3	0.9	0.048	0	0.015	0	99.8	0.2	-	-	-	-

West Central Airshed Society - Wagner (AMS 909)
 Annual Summary for 2008
 SO2 (ppm)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Number 1-Hour Violation	Maximum 24-Hour Value	Number 24-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	709	100.0	1.3	0.018	0	0.004	0	100.0	-	-	-	-	-
February	664	100.0	1.8	0.027	0	0.007	0	99.7	0.3	-	-	-	-
March	710	100.0	1.7	0.029	0	0.007	0	99.3	0.7	-	-	-	-
April	686	100.0	1.6	0.045	0	0.007	0	99.1	0.9	-	-	-	-
May	710	100.0	1.3	0.035	0	0.004	0	99.6	0.4	-	-	-	-
June	687	100.0	1.7	0.027	0	0.005	0	99.6	0.4	-	-	-	-
July	567	96.8	0.7	0.023	0	0.003	0	99.8	0.2	-	-	-	-
August	707	100.0	1.1	0.022	0	0.003	0	99.9	0.1	-	-	-	-
September	689	99.7	0.9	0.052	0	0.003	0	99.9	0.2	-	-	-	-
October	710	100.0	0.7	0.022	0	0.005	0	99.9	0.1	-	-	-	-
November	680	99.2	0.6	0.018	0	0.004	0	100.0	-	-	-	-	-
December	709	100.0	0.6	0.011	0	0.002	0	100.0	-	-	-	-	-
Annual	8217	99.7	1.2	0.052	0	0.007	0	99.7	0.3	-	-	-	-

**TransAlta Utilities Corporation
Frequency Distribution Charts
NO₂ Monthly Averages
Year 2008**

West Central Airshed Society - Power (AMS 907)
 Annual Summary for 2008
 NO2 (ppm)

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	8.06	0.031	0	0.023	0	100.00	-	-	-
February	662	100.0	8.15	0.037	0	0.024	0	100.00	-	-	-
March	707	100.0	3.37	0.071	0	0.011	0	99.72	0.28	-	-
April	686	100.0	2.18	0.022	0	0.008	0	100.00	-	-	-
May	703	99.5	2.36	0.029	0	0.006	0	100.00	-	-	-
June	686	100.0	2.25	0.015	0	0.005	0	100.00	-	-	-
July	708	100.0	1.79	0.024	0	0.007	0	100.00	-	-	-
August	705	99.9	1.91	0.074	0	0.004	0	99.86	0.14	-	-
September	685	100.0	2.43	0.018	0	0.007	0	100.00	-	-	-
October	709	100.0	2.97	0.016	0	0.007	0	100.00	-	-	-
November	687	100.0	5.28	0.050	0	0.012	0	99.85	0.15	-	-
December	708	100.0	5.12	0.028	0	0.014	0	100.00	-	-	-
Annual	8343	99.9	3.81	0.074	0	0.024	0	99.95	0.05	-	-

West Central Airshed Society - Meadows (AMS 908)
 Annual Summary for 2008
 NO2 (ppm)

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	99.7	11.1	0.039	0	0.020	0	100.0	-	-	-
February	661	99.9	12.3	0.045	0	0.034	0	100.0	-	-	-
March	709	100.0	5.2	0.033	0	0.014	0	100.0	-	-	-
April	683	99.7	4.1	0.031	0	0.010	0	100.0	-	-	-
May	709	100.0	4.2	0.032	0	0.010	0	100.0	-	-	-
June	685	100.0	4.4	0.030	0	0.009	0	100.0	-	-	-
July	703	99.2	3.2	0.026	0	0.007	0	100.0	-	-	-
August	689	97.9	3.2	0.027	0	0.009	0	100.0	-	-	-
September	575	84.1	4.8	0.027	0	0.013	0	100.0	-	-	-
October	709	100.0	7.9	0.032	0	0.019	0	100.0	-	-	-
November	686	100.0	9.1	0.032	0	0.020	0	100.0	-	-	-
December	703	99.3	7.9	0.031	0	0.019	0	100.0	-	-	-
Annual	8208	98.3	6.5	0.045	0	0.034	0	100.0	-	-	-

West Central Airshed Society - Wagner (AMS 909)
 Annual Summary for 2008
 NO2 (ppm)

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	8.7	0.029	0	0.024	0	100.0	-	-	-
February	662	100.0	8.7	0.034	0	0.025	0	100.0	-	-	-
March	709	100.0	3.6	0.022	0	0.009	0	100.0	-	-	-
April	685	100.0	3.3	0.033	0	0.012	0	100.0	-	-	-
May	709	100.0	3.3	0.028	0	0.007	0	100.0	-	-	-
June	685	100.0	2.8	0.019	0	0.006	0	100.0	-	-	-
July	565	96.8	3.3	0.020	0	0.006	0	100.0	-	-	-
August	704	100.0	3.9	0.019	0	0.007	0	100.0	-	-	-
September	689	99.7	3.6	0.019	0	0.006	0	100.0	-	-	-
October	709	100.0	4.9	0.036	0	0.014	0	100.0	-	-	-
November	680	99.2	6.0	0.031	0	0.015	0	100.0	-	-	-
December	708	100.0	6.1	0.032	0	0.015	0	100.0	-	-	-
Annual	8203	99.7	4.9	0.036	0	0.025	0	100.0	-	-	-

**TransAlta Utilities Corporation
Frequency Distribution Charts
PM Monthly Averages
Year 2008**

West Central Airshed Society - Power (AMS 907)
 Annual Summary for 2008
 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	741	99.5	4.6	35.0	0	17.1	0
February	691	100.0	5.3	25.0	0	19.4	0
March	741	99.5	3.6	60.0	0	13.2	0
April	716	100.0	4.0	28.1	0	8.1	0
May	738	99.2	5.7	179.8	0	13.9	0
June	715	99.9	4.0	24.1	0	11.0	0
July	739	99.2	3.7	42.0	0	12.8	0
August	737	99.9	4.1	62.4	0	12.4	0
September	716	99.3	2.9	23.3	0	7.1	0
October	738	99.1	3.6	18.2	0	11.4	0
November	717	100.0	3.0	19.7	0	7.0	0
December	741	99.5	2.2	12.4	0	4.7	0
Annual	8719	99.6	3.9	179.8	0	19.4	0

**TransAlta Utilities Corporation
Frequency Distribution Charts
Meteorological Measurements
Year 2008**

Summary Report

Continuous air quality/meteorological monitoring measurements

West Central Airshed Society

**TransAlta / Power
Station 907**

January to December 2008

Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Total	Min	Max	-----	-----	Percentile Median	-----	-----
								P10	Q1		Q3	P90
SO ₂ (ppb)	426	8357	100.0	0.7	-	0.0	37.5	0.1	0.1	0.2	0.5	1.4
NO (ppb)	437	8342	100.0	0.6	-	0.0	49.3	0.0	0.0	0.1	0.4	1.6
NO ₂ (ppb)	437	8342	100.0	3.9	-	0.0	73.6	0.6	1.3	2.9	5.2	8.6
NO _x (ppb)	437	8342	100.0	4.1	-	0.0	119.6	0.4	1.0	2.6	5.3	9.5
Particulate Matter 2.5 microns (μ/m ³)	28	8698	99.4	3.9	-	0.0	179.8	0.3	1.3	2.9	5.3	8.6
Wind Speed (kph)	0	8780	100.0	11.9	-	0.0	52.6	4.6	7.2	11.0	15.4	20.6
Temperature (°C)	0	8780	100.0	4.0	-	-37.0	32.8	-4.5	-0.5	3.9	8.5	12.3
Relative Humidity (%)	0	8780	100.0	66.4	-	15.0	99.3	41.6	52.9	66.8	81.3	90.4
Precipitation (mm)	0	8780	100.0	-	34.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0
Std Dev Wind Direction (deg)	0	8780	100.0	18.2	-	2.0	106.1	8.2	10.2	13.5	19.9	33.6
Std Dev Wind Speed (kph)	0	8757	100.0	2.8	-	0.0	14.0	1.3	1.8	2.5	3.6	4.8

Summary Report

Continuous air quality/meteorological monitoring measurements

West Central Airshed Society

**TransAlta / Meadows
Station 908**

January to December 2008

Parameter	Calibration		Percent Uptime	Mean	Total	Min	Max	----- Percentile -----				
	Hours	Number of Data						P10	Q1	Median	Q3	P90
SO ₂ (ppb)	424	8216	98.3	0.9	-	0.0	47.7	0.1	0.2	0.5	0.8	1.7
NO (ppb)	432	8208	98.3	3.7	-	0.0	160.0	0.1	0.3	0.7	3.1	10.9
NO ₂ (ppb)	432	8208	98.3	6.5	-	0.0	45.0	0.2	1.5	4.5	9.8	15.8
NO _x (ppb)	432	8208	98.3	10.6	-	0.0	195.0	0.5	2.3	5.9	13.7	26.8
Wind Speed (kph)	0	8638	98.3	10.4	-	0.0	48.1	3.2	5.8	9.3	13.8	19.4
Temperature (°C)	0	8638	98.3	3.8	-	-42.0	32.6	-4.7	-0.8	3.8	8.3	12.1
Relative Humidity (%)	0	8639	98.3	68.2	-	12.8	98.4	43.3	54.9	70.0	82.8	89.9
Precipitation (mm)	4	8634	98.3	-	15.1	0.0	0.8	0.0	0.0	0.0	0.0	0.0
Std Dev Wind Direction (deg)	0	8638	98.3	22.6	-	2.1	103.8	7.4	10.3	15.4	26.8	51.9
Std Dev Wind Speed (kph)	0	8638	98.3	2.7	-	0.0	19.6	1.2	1.7	2.4	3.5	4.7

Summary Report*Continuous air quality/meteorological monitoring measurements***West Central Airshed Society****TransAlta / Wagner
Station 909****January to December 2008**

Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Min	Max	Percentile				
							P10	Q1	Median	Q3	P90
SO ₂ (ppb)	421	8210	99.6	1.2	0.0	51.8	0.1	0.1	0.3	0.9	3.3
NO (ppb)	437	8194	99.6	1.4	0.0	62.9	0.1	0.1	0.2	0.8	3.9
NO ₂ (ppb)	437	8194	99.6	4.9	0.0	35.8	0.8	1.9	3.7	6.5	10.5
NO _x (ppb)	437	8194	99.6	6.1	0.0	80.8	0.7	2.0	4.1	7.8	13.6
Wind Speed (kph)	0	8624	99.6	9.1	0.0	44.6	2.5	4.7	8.0	12.6	17.3
Temperature (°C)	0	8626	99.6	4.5	-42.0	34.3	-4.2	-0.3	4.4	9.1	13.1
Relative Humidity (%)	0	8626	99.6	64.6	14.1	97.0	39.2	50.6	65.6	79.3	87.7
Std Dev Wind Direction (deg)	0	8624	99.6	25.9	3.2	108.1	9.6	13.4	19.5	31.0	54.8
Std Dev Wind Speed (kph)	0	8626	99.6	2.9	0.0	13.4	1.3	1.7	2.6	3.7	5.1