



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

---

March 7, 2007

EPCOR  
Mr. Ben Borys  
10065 Jasper Avenue  
Edmonton, Alberta  
T5J 3B1

Dear Mr. Borys:

**Re: Annual Ambient Air Quality Monitoring Report. January – December 2006.  
For EPCOR**

The West Central Airshed Society (WCAS) presents the 2006 Annual Report containing ambient air quality and meteorological information from the following site:

Network Station is                      AMS 910                      Genesee  
Identified as:

WCAS data collection and validation began March 1, 2004. The following is a list of the reported ambient air and meteorological parameters measured at the site location:

**AMS 910 (Genesee)**

SO<sub>2</sub>, NO/ NO<sub>2</sub>/ NO<sub>x</sub>, Particulate Matter (2.5 microns), Wind Speed and Direction, Relative Humidity, External Temperature (10m and 2m), Delta Temperature, (2m – 10m), Global Solar Radiation, and Precipitation.

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

Sincerely,

Patrick Andersen  
Environmental Specialist

**Summary Report**

*Continuous air quality/meteorological monitoring measurements*

**West Central Airshed Society**

**EPCOR / Genesee  
Station 910**

**January to December 2006**

Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Total	Min	Max	Percentile				
								P10	Q1	Median	Q3	P90
SO <sub>2</sub> (ppb)	430	8360	100	1	-	0.0	53.0	0	0	0	1	3
O <sub>3</sub> (ppb)	437	8352	100	27	-	0.0	89.0	14	20	26	34	42
NO (ppb)	443	8347	100	1	-	0.0	48.0	0	0	0	1	3
NO <sub>2</sub> (ppb)	443	8347	100	5	-	0.0	34.0	2	3	4	7	10
NO <sub>x</sub> (ppb)	443	8347	100	6	-	0.0	75.0	2	3	5	8	13
Particulate Matter 2.5 microns (μ/m <sup>3</sup> )	19	8723	99	4	-	0.0	108.0	0	1	3	6	10
Wind Speed (kph)	0	8665	98	11	-	0.0	51.0	4	7	10	14	19
Temperature - 2m (°C)	0	8784	99	5	-	-28.0	34.0	-2	1	5	9	13
Temperature - 10m (°C)	0	8784	99	5	-	-29.0	32.0	-2	1	5	9	12
Delta Temperature (°C)	0	8785	99	0	-	-5.0	5.0	-2	-1	0	0	1
Relative Humidity (%)	0	8785	99	72	-	14.0	99.0	45	58	75	88	94
Global Solar Radiation (W/m <sup>2</sup> )	0	8790	100	144	-	0.0	968.0	0	0	38	267	463
Precipitation (mm)	0	8790	100	-	5.4	0.0	15.1	0	0	0	0	0
Std Dev Wind Direction (deg)	0	8665	98	18	-	0.0	103.0	6	9	13	22	39
Std Dev Wind Speed (kph)	0	8789	99	2	-	0.0	20.0	1	1	2	3	4

West Central Airshed Society - Genesee (AMS 910)  
 Annual Summary for 2006  
 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	706	100	0.001	0.011	0	0.003	0	100	-	-	-	-	-
February	640	100	0.002	0.016	0	0.006	0	100	-	-	-	-	-
March	708	100	0.001	0.031	0	0.005	0	99.72	0.28	-	-	-	-
April	686	100	0.002	0.053	0	0.008	0	98.98	1.02	-	-	-	-
May	709	100	0.002	0.043	0	0.007	0	99.01	0.99	-	-	-	-
June	647	94.44	0.002	0.026	0	0.006	0	99.23	0.77	-	-	-	-
July	703	100	0.002	0.035	0	0.004	0	99.29	0.71	-	-	-	-
August	709	100	0.002	0.035	0	0.006	0	98.03	1.97	-	-	-	-
September	686	100	0.001	0.053	0	0.008	0	99.42	0.58	-	-	-	-
October	707	99.73	0.001	0.016	0	0.002	0	100	-	-	-	-	-
November	685	100	0.001	0.024	0	0.005	0	99.85	0.15	-	-	-	-
December	708	100	0.001	0.008	0	0.004	0	100	-	-	-	-	-

Year 2006	Annual Number of Data Hours	Annual Operational Time (%)	Annual Mean (ppm)	Annual Maximum 1-Hour Value (ppm)	Annual Number 1-Hour Violations	Annual Maximum 24-Hour Value (ppm)	Annual Number 24-Hour Violations	Annual 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
	8294	99.52	0.001	0.053	0	0.008	0	99.46	0.54	-	-	-	-

West Central Airshed Society - Genesee (AMS 910)  
 Annual Summary for 2006  
 O3 (ppm)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Number 1-Hour Violations	Maximum 24-Hour Value	Number 24-Hour Violations
January	707	100	16.4	35.3	0	31.5	4
February	640	100	25.6	50	0	37.5	19
March	708	100	35.6	63.2	0	53.1	30
April	685	100	41.3	73.2	0	55.3	29
May	705	100	36.9	72.4	0	53.5	30
June	647	94.31	34.7	66.6	0	48.4	24
July	701	100	33.8	81.2	0	45.9	28
August	709	100	32.4	78.9	0	46.9	28
September	686	100	21.6	89	2	42.2	10
October	703	99.73	19.1	43	0	28.3	6
November	685	100	17	39.4	0	31.4	4
December	709	100	22.8	39	0	32.8	9

Year 2006	Annual Number of Data Hours	Annual Operational Time (%)	Annual Mean (ppm)	Annual Maximum 1-Hour Value (ppm)	Annual Number 1-Hour Violations	Annual Maximum 24-Hour Value (ppm)	Annual Number 24-Hour Violations
	8285	99.52	28.1	89	2	55.3	221

West Central Airshed Society - Genesee (AMS 910)

Annual Summary for 2006

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	100	0.008	0.026	0	0.016	0	100	-	-	-
February	638	100	0.006	0.037	0	0.017	0	100	-	-	-
March	706	100	0.007	0.03	0	0.016	0	100	-	-	-
April	684	100	0.004	0.03	0	0.009	0	100	-	-	-
May	708	100	0.004	0.03	0	0.008	0	100	-	-	-
June	646	94.44	0.004	0.021	0	0.006	0	100	-	-	-
July	701	100	0.004	0.023	0	0.007	0	100	-	-	-
August	708	100	0.004	0.019	0	0.006	0	100	-	-	-
September	684	100	0.003	0.034	0	0.01	0	100	-	-	-
October	705	99.73	0.003	0.02	0	0.009	0	100	-	-	-
November	684	100	0.007	0.031	0	0.016	0	100	-	-	-
December	707	100	0.007	0.022	0	0.012	0	100	-	-	-

Year 2006	Annual Number of Data Hours	Annual Operational Time (%)	Annual Mean (ppm)	Annual Maximum 1-Hour Value (ppm)	Annual Number 1-Hour Violations	Annual Maximum 24-Hour Value (ppm)	Annual Number 24-Hour Violations	Annual Percent of Data in each Concentration Range			
								<=0.05	>0.05-0.11	>0.11-0.21	>0.21
	8278	99.52	0.005	0.037	0	0.017	0	100	-	-	-

West Central Airshed Society - Genesee (AMS 910)  
 Annual Summary for 2006  
 PM2.5 (ppm)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Maximum 24-Hour Value
January	744	100	5.8	29.6	15.3
February	649	96.58	3.8	27.8	8.8
March	735	98.92	5	23.5	15
April	713	99.03	3.4	16.6	9.6
May	741	99.6	4.6	34.3	13.4
June	675	93.75	4.5	30.8	10.3
July	734	99.46	6.9	84.9	46.4
August	738	99.46	4.2	37.9	14.9
September	715	99.58	4.2	41.6	14.1
October	733	99.6	2.4	17.4	8
November	718	99.72	4	108	11.4
December	733	98.52	2.2	15.6	5.7

Year 2006	Annual Number of Data Hours	Annual Operational Time (%)	Annual Mean (ppm)	Annual Maximum 1-Hour Value (ppm)	Annual Maximum 24-Hour Value (ppm)
	8628	98.71	4.3	108	46.4

West Central Airshed Society - Genesee (AMS 910)  
 Annual Summary for 2006  
 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	1.36	3.27	2.61	0.76	0.14	0.08	8.22
NorthEast	1.66	3.03	1.27	0.3	0.01	--	6.27
East	2.41	8.23	2.89	0.45	--	--	13.98
SouthEast	1.92	4.56	3.41	1.41	0.23	--	11.53
South	1.8	2.96	1.35	0.35	0.16	--	6.62
SouthWest	2.49	6.49	4.03	0.22	0.01	--	13.24
West	1.55	7.75	9.59	1.05	0.14	--	20.07
NorthWest	1.14	4.55	8.09	4.42	1.33	0.42	19.95
Totals	14.34	40.84	33.22	8.96	2.02	0.5	99.88

Percent Calm	0.12
Number of Data Values	8593
Hours in Time Period	8760