



**Capital Power
Continuous Ambient Air Quality
Monitoring Program
Annual Summary for 2013**

Prepared by:

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



January 10th, 2014

Capital Power
Mr. Kevin Parry
Box 20, Site 2, RR 1
Warburg, AB
T0C 2T0

Dear Mr. Parry:

**Re: Annual Ambient Air Quality Monitoring Report January – December 2013.
For Capital Power**

The West Central Airshed Society (WCAS) presents the 2013 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)

SO₂, NO/ NO₂/ NO_x, 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.

Exceedences of the Alberta Air Quality Objectives (AAAQO):

There were no exceedences of the AAAQO recorded in 2013.

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

Capital Power / Genesee Station 910													January to December 2013
Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Total	Min	Max	----- P10	----- Q1	Percentile Median	----- Q3	----- P90	24 Hour Average Max (ppm)
SO ₂ (ppb)	425	8328	99.9	0.7	-	0.0	57.5	0.0	0.0	0.0	0.4	1.8	0.007
O ₃ (ppb)	425	8326	99.9	25.5	-	0.0	75.9	11.3	16.7	24.4	32.9	41.5	0.058
NO (ppb)	433	8322	99.9	1.0	-	0.0	48.0	0.0	0.0	0.3	0.9	2.5	-
NO ₂ (ppb)	433	8322	99.9	3.7	-	0.0	44.1	0.0	0.7	2.4	5.5	9.2	0.018
NO _x (ppb)	433	8322	99.9	4.6	-	0.0	71.8	0.0	0.9	2.8	6.4	11.4	-
Particulate Matter 2.5 microns (µm ³)	19	8610	98.5	3.1	-	0.0	77.0	0.0	0.8	2.4	4.4	7.0	13.34 ug/m3
Wind Speed (kph)	0	8759	100.0	11.9	-	0.0	55.7	3.8	6.6	10.7	15.5	21.2	-
Temperature - 2m (°C)	0	8759	100.0	4.0	-	-30.5	32.6	-13.2	-4.7	4.1	13.8	19.4	-
Temperature - 10m (°C)	0	8759	100.0	4.1	-	-29.5	31.3	-13.1	-4.4	4.6	13.8	18.9	-
Delta Temperature (°C)	0	8759	100.0	0.1	-	-3.1	5.7	-1.3	-0.7	-0.1	0.9	1.9	-
Relative Humidity (%)	0	8759	100.0	69.6	-	12.3	95.9	42.9	57.9	73.4	84.2	90.4	-
Global Solar Radiation (W/m ²)	0	8759	100.0	148.7	-	0.0	944.2	0.0	0.0	8.8	229.4	532.2	-
Precipitation (mm)	0	8759	100.0	-	473.2	0.0	55.4	0.0	0.0	0.0	0.0	0.0	-
Std Dev Wind Direction (deg)	0	8759	100.0	18.3	-	1.7	102.5	6.5	8.9	12.6	20.7	38.9	-
Std Dev Wind Speed (kph)	0	8759	100.0	2.8	-	0	14.7	1.2	1.7	2.4	3.6	4.7	-

West Central Airshed Society - Genesee (AMS 910)
 Annual Summary for 2013
 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	708	0.184	1.396	3.421	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
February	640	0.316	0.920	5.803	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
March	707	0.645	2.770	13.869	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
April	680	0.406	2.078	13.004	99.3	0	0	100.00	0.00	0.00	0.00	0.00	0.00
May	709	0.729	4.262	21.278	100.0	0	0	99.86	0.14	0.00	0.00	0.00	0.00
June	686	0.937	4.943	41.679	100.0	0	0	99.27	0.73	0.00	0.00	0.00	0.00
July	704	1.366	7.199	57.547	99.9	0	0	99.29	0.71	0.00	0.00	0.00	0.00
August	709	0.905	4.205	24.184	100.0	0	0	99.44	0.56	0.00	0.00	0.00	0.00
September	684	1.256	6.930	27.586	99.9	0	0	98.98	1.02	0.00	0.00	0.00	0.00
October	707	1.086	5.412	27.369	100.0	0	0	99.86	0.14	0.00	0.00	0.00	0.00
November	685	0.259	1.135	7.287	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
December	709	0.717	2.475	10.052	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
Annual	8328	0.737	7.199	57.547	99.9	0	0	99.72	0.28	0.00	0.00	0.00	0.00

West Central Airshed Society - Genesee (AMS 910)
 Annual Summary for 2013
 O3 (ppb)

Month	Number of Data	Mean	Maximum 24-Hour Value	Maximum 1-Hour Value	Operational Time (%)	Number 1-Hour Violations
January	709	21.9	35.0	46.7	100.0	0
February	640	25.6	35.5	52.6	100.0	0
March	707	36.3	57.7	75.9	100.0	0
April	678	35.7	51.7	62.7	99.0	0
May	709	34.5	45.7	62.2	100.0	0
June	686	25.8	40.9	55.9	100.0	0
July	704	23.6	32.0	62.0	99.9	0
August	708	24.7	31.7	67.8	100.0	0
September	684	23.9	35.5	59.5	99.9	0
October	707	19.9	27.1	41.5	100.0	0
November	685	17.9	30.4	37.7	100.0	0
December	709	16.4	29.3	36.0	100.0	0
Annual	8326	25.5	57.7	75.9	99.9	0

West Central Airshed Society - Genesee (AMS 910)
 Annual Summary for 2013
 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	6.574	15.489	26.264	100.0	0	0	100.00	0	0	0
February	639	7.305	18.353	44.086	100.0	0	0	100.00	0	0	0
March	707	3.679	7.838	16.429	100.0	0	0	100.00	0	0	0
April	682	1.670	3.690	16.947	99.6	0	0	100.00	0	0	0
May	707	2.146	6.872	35.713	100.0	0	0	100.00	0	0	0
June	685	2.388	6.396	19.795	100.0	0	0	100.00	0	0	0
July	703	1.716	4.760	24.497	99.9	0	0	100.00	0	0	0
August	708	1.619	4.148	17.287	100.0	0	0	100.00	0	0	0
September	684	2.759	8.801	28.880	99.9	0	0	100.00	0	0	0
October	707	3.216	7.615	19.607	100.0	0	0	100.00	0	0	0
November	683	5.401	12.656	28.629	100.0	0	0	100.00	0	0	0
December	709	6.361	12.921	25.846	100.0	0	0	100.00	0	0	0
Annual	8322	3.716	18.353	44.086	99.9	0	0	100.00	0	0	0

West Central Airshed Society - Genesee (AMS 910)
 Annual Summary for 2013
 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	716	2.2	4.7	24.3	96.2	0	0
February	671	2.4	9.5	17.9	99.9	0	0
March	734	3.4	7.2	15.8	99.5	0	0
April	717	2.0	4.6	12.8	99.6	0	0
May	738	3.1	7.8	24.5	99.2	0	0
June	711	2.5	5.9	15.5	99.3	0	0
July	705	3.8	9.0	77.0	94.8	0	0
August	705	5.0	13.3	43.6	94.8	0	0
September	711	4.4	8.8	26.8	99.4	0	0
October	744	2.3	5.4	12.1	100.0	0	0
November	718	3.4	8.5	14.7	99.7	0	0
December	740	2.9	7.5	48.4	100.0	0	0
Annual	8610	3.1	13.3	77.0	98.5	0	0

West Central Airshed Society - Genesee (AMS 910)
 Annual Summary for 2013
 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
N	0.73	1.76	1.39	0.69	0.08	0.00	4.65
NNE	0.71	1.52	0.98	0.34	0.07	0.00	3.62
NE	0.95	1.43	0.75	0.25	0.06	0.00	3.44
ENE	1.39	2.12	0.64	0.10	0.00	0.00	4.25
E	1.61	2.79	0.73	0.01	0.00	0.00	5.14
ESE	1.16	3.54	1.90	0.42	0.15	0.00	7.17
SE	1.14	2.40	1.84	0.76	0.13	0.00	6.27
SSE	1.50	1.38	1.00	0.70	0.13	0.00	4.71
S	1.46	0.90	0.40	0.16	0.01	0.00	2.93
SSW	1.58	1.31	0.30	0.07	0.00	0.00	3.26
SW	1.60	3.32	1.43	0.10	0.00	0.00	6.45
WSW	1.27	5.47	5.83	0.21	0.00	0.01	12.79
W	0.72	2.77	3.92	0.40	0.03	0.00	7.84
WNW	0.63	1.99	5.13	2.11	0.35	0.09	10.30
NW	0.65	2.09	3.27	2.82	1.50	0.38	10.71
NNW	0.78	1.86	2.17	0.90	0.21	0.03	5.95
Totals	17.10	34.79	29.51	9.14	2.51	0.48	93.53

Percent Calm	6.47
Number of Data Values	8759
Hours in Time Period	8760

