Ambient Air Monitoring Elemental, Cation and Gravimetric Summary from Fine Particulate Matter ($PM_{2.5}$) Collected Between August 2004 and June 2005

June 2005

FOCUS

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Background

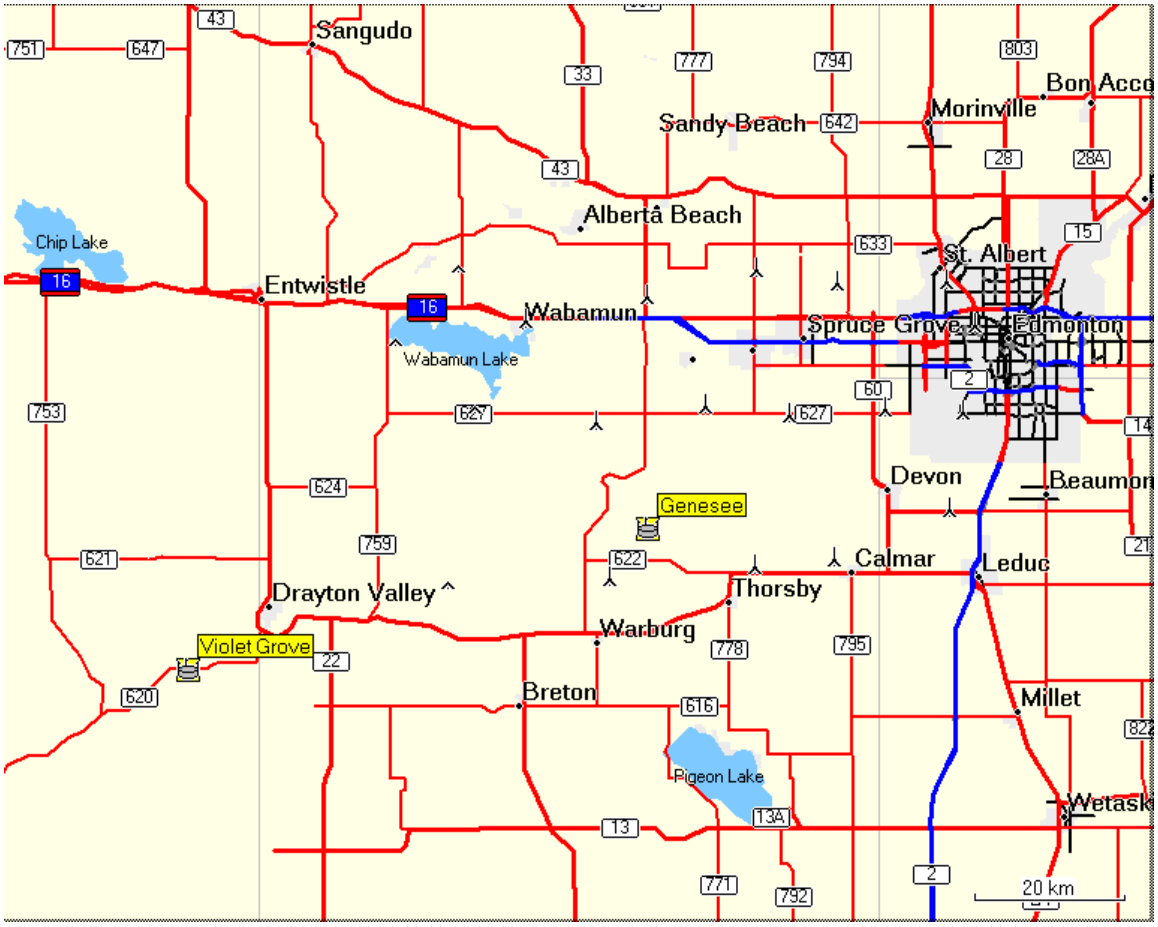
The elemental, cation and gravimetric data included in this report was collected from three different ambient air monitoring sites located within the West Central Airshed Society's (WCAS) monitoring area. The elemental and gravimetric data presented includes metal data collected from the 47mm Teflon partisol filters located at the Genesee and Wabamun ambient air monitoring sites.

The cation data presented is collected as part of the Acid Deposition Monitoring Program and is collected from the Genesee and Violet Grove ambient air monitoring stations.

Results

The summary results from the various monitored parameters have been included in this report. Based upon the data collected up to June, 2005, no trends have been observed. Additional information was included in the spreadsheets attached to the original email sent to Axys. These spreadsheets have been developed to allow the user to view specific results for user specified date ranges and parameters. Any questions regarding the contents of this summary report of the attached spreadsheet can be directed to the Focus Corporation

Passive Monitoring Program Site Orientation



2004 – 2005 Elemental Summary from the Genesee Ambient Air Monitoring Site

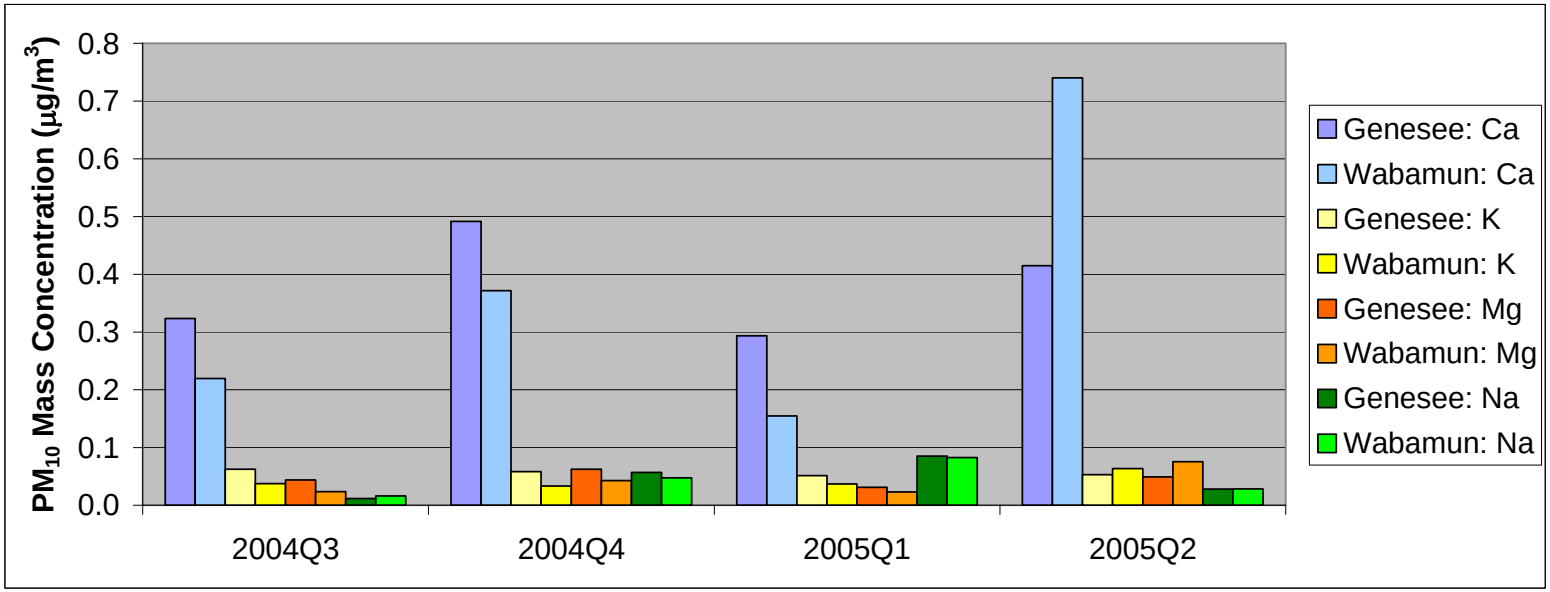
0.5 of the Method Detection Limit used for values below the MDL	**Running Average** Genesee Ambient Station (µg/m³)	Aug 2004 to Sept 2004 Genesee Ambient Station (µg/m³)	Oct 2004 to Dec 2004 Genesee Ambient Station (µg/m³)	Jan 2005 to Mar 2005 Genesee Ambient Station (µg/m³)	Apr 2005 to Jun 2005 Genesee Ambient Station (µg/m³)
PM2.5	5.1	4.7	4.3	6.1	5.2
S	0.2575	0.2240	0.2784	0.2993	0.2100
Si	0.2326	0.2093	0.2101	0.1313	0.3697
Ca	0.1354	0.0720	0.0851	0.2177	0.1387
Cl	0.0621	0.0627	0.0611	0.0625	0.0625
Al	0.0335	0.0269	0.0269	0.0198	0.0576
K	0.0325	0.0179	0.0367	0.0392	0.0285
Fe	0.0245	0.0221	0.0169	0.0129	0.0455
Na	0.0195	0.0103	0.0240	0.0248	0.0140
Mg	0.0090	0.0059	0.0090	0.0057	0.0140
Zn	0.0035	0.0028	0.0049	0.0030	0.0028
P	0.0028	0.0031	0.0020	0.0037	0.0024
B	0.0015	0.0017	0.0015	0.0010	0.0018
Ti	1.4E-03	9.5E-04	1.2E-03	8.9E-04	2.3E-03
Br	1.3E-03	1.0E-03	1.2E-03	1.3E-03	1.4E-03
Ba	1.2E-03	1.3E-03	1.3E-03	7.1E-04	1.6E-03
Mn	8.4E-04	6.5E-04	6.7E-04	5.8E-04	1.4E-03
Pb	6.2E-04	3.5E-04	7.2E-04	5.2E-04	7.6E-04
Sn	5.5E-04	1.0E-04	1.0E-04	1.7E-03	1.0E-04
Cr	5.3E-04	4.7E-04	2.5E-04	1.0E-03	3.7E-04
Cu	4.7E-04	2.2E-04	4.9E-04	4.5E-04	5.8E-04
Sr	3.2E-04	2.0E-04	2.9E-04	3.3E-04	3.9E-04
Ni	2.6E-04	2.1E-04	1.2E-04	4.1E-04	2.7E-04
I	2.3E-04	1.5E-04	3.3E-04	3.3E-04	7.9E-05
Se	1.5E-04	2.0E-04	1.0E-04	1.0E-04	2.1E-04
As	1.4E-04	1.2E-04	1.6E-04	7.0E-05	2.1E-04
V	1.3E-04	1.3E-04	9.0E-05	1.2E-04	1.7E-04
Sc	1.0E-04	1.0E-04	1.0E-04	1.0E-04	1.0E-04
Li	9.3E-05	8.4E-05	9.6E-05	3.3E-05	1.5E-04
Zr	8.8E-05	8.4E-05	6.9E-05	7.1E-05	1.3E-04
Rb	8.3E-05	5.3E-05	8.2E-05	7.2E-05	1.1E-04
Sb	6.9E-05	7.2E-05	6.2E-05	6.8E-05	7.5E-05
Hg	6.2E-05	6.3E-05	6.1E-05	6.3E-05	6.3E-05
Mo	5.0E-05	4.6E-05	2.3E-05	9.2E-05	3.9E-05
Ce	4.4E-05	3.6E-05	3.5E-05	2.8E-05	7.2E-05
W	4.3E-05	5.3E-05	4.1E-05	4.2E-05	4.2E-05
Cd	4.1E-05	2.5E-05	6.0E-05	4.2E-05	2.9E-05
La	3.6E-05	4.2E-05	2.4E-05	2.8E-05	5.3E-05
Co	3.0E-05	2.1E-05	4.1E-05	3.3E-05	2.1E-05
Ga	2.1E-05	1.6E-05	2.0E-05	1.9E-05	2.7E-05
Te	2.1E-05	2.1E-05	2.0E-05	2.1E-05	2.1E-05
Nd	1.9E-05	1.7E-05	1.4E-05	1.2E-05	3.1E-05
Ag	1.5E-05	2.0E-05	2.6E-05	8.3E-06	8.3E-06
Nb	1.3E-05	5.2E-06	1.3E-05	1.4E-05	1.6E-05
Au	1.2E-05	1.3E-05	1.2E-05	1.3E-05	1.3E-05
Y	1.2E-05	9.0E-06	8.8E-06	7.7E-06	2.0E-05
Pd	1.0E-05	1.0E-05	1.0E-05	1.0E-05	1.0E-05
Bi	7.5E-06	3.7E-06	6.6E-06	6.4E-06	1.1E-05
Pr	5.5E-06	5.2E-06	4.1E-06	3.6E-06	8.9E-06
Ge	4.8E-06	2.8E-06	4.8E-06	4.2E-06	6.2E-06
Cs	4.4E-06	2.7E-06	4.3E-06	2.5E-06	7.2E-06
Th	4.3E-06	4.1E-06	3.8E-06	2.8E-06	6.5E-06
Ta	4.2E-06	4.2E-06	4.1E-06	4.2E-06	4.2E-06
Sm	4.0E-06	2.9E-06	3.1E-06	2.8E-06	6.7E-06
Tl	3.9E-06	1.6E-06	3.7E-06	4.2E-06	4.9E-06
Gd	3.5E-06	3.6E-06	2.5E-06	2.3E-06	5.7E-06
U	3.2E-06	2.2E-06	2.7E-06	2.9E-06	4.5E-06
Be	2.4E-06	2.1E-06	2.0E-06	2.1E-06	3.1E-06
Dy	2.2E-06	1.7E-06	1.5E-06	1.6E-06	3.8E-06
Pt	2.1E-06	2.1E-06	2.0E-06	2.1E-06	2.1E-06
Er	1.1E-06	8.8E-07	8.4E-07	6.8E-07	2.0E-06
Yb	1.1E-06	8.5E-07	7.6E-07	7.3E-07	2.0E-06
Eu	7.4E-07	6.3E-07	5.7E-07	3.5E-07	1.4E-06
Ho	6.7E-07	6.3E-07	6.1E-07	6.3E-07	8.1E-07
In	6.6E-07	6.3E-07	6.1E-07	6.3E-07	7.6E-07
Tb	3.8E-07	2.4E-07	2.3E-07	2.6E-07	7.2E-07

2004 – 2005 Elemental Summary from the Wabamun Ambient Air Monitoring Site

0.5 of the Method Detection Limit used for values below the MDL	**Running Average** Wabamun Ambient Station (µg/m³)	Aug 2004 to Sept 2004 Wabamun Ambient Station (µg/m³)	Oct 2004 to Dec 2004 Wabamun Ambient Station (µg/m³)	Jan 2005 to Mar 2005 Wabamun Ambient Station (µg/m³)	Apr 2005 to Jun 2005 Wabamun Ambient Station (µg/m³)
PM2.5	4.6	3.7	4.0	5.6	4.7
S	0.2608	0.2421	0.2325	0.3030	0.2585
Si	0.1965	0.1369	0.2087	0.1257	0.2781
Ca	0.0792	0.0373	0.0628	0.1130	0.0836
Cl	0.0617	0.0625	0.0624	0.0597	0.0624
Al	0.0214	0.0270	0.0200	0.0091	0.0315
K	0.0318	0.0144	0.0417	0.0367	0.0254
Fe	0.0142	0.0193	0.0130	0.0068	0.0199
Na	0.0168	0.0120	0.0229	0.0191	0.0106
Mg	0.0063	0.0044	0.0078	0.0044	0.0076
Zn	0.0042	0.0025	0.0065	0.0039	0.0029
P	0.0029	0.0024	0.0021	0.0020	0.0049
B	0.0012	0.0018	0.0010	0.0007	0.0018
Ti	1.0E-03	9.7E-04	8.7E-04	5.7E-04	1.6E-03
Br	1.4E-03	1.0E-03	1.2E-03	1.9E-03	1.3E-03
Ba	7.8E-04	2.1E-03	5.9E-04	1.4E-04	9.3E-04
Mn	5.5E-04	4.5E-04	5.3E-04	3.8E-04	7.8E-04
Pb	7.1E-04	3.7E-04	7.1E-04	7.3E-04	8.4E-04
Sn	1.0E-04	1.0E-04	1.0E-04	1.0E-04	1.0E-04
Cr	5.8E-04	5.1E-04	4.2E-04	6.2E-04	7.3E-04
Cu	3.9E-04	1.9E-04	1.8E-04	8.6E-04	2.7E-04
Sr	2.2E-04	2.9E-04	2.0E-04	1.9E-04	2.5E-04
Ni	2.2E-04	1.3E-04	1.2E-04	2.0E-04	3.7E-04
I	2.4E-04	1.4E-04	3.3E-04	3.6E-04	8.2E-05
Se	1.7E-04	3.3E-04	1.1E-04	1.1E-04	2.1E-04
As	1.4E-04	1.3E-04	1.2E-04	5.8E-05	2.3E-04
V	1.1E-04	6.7E-05	1.2E-04	8.8E-05	1.5E-04
Sc	1.0E-04	1.0E-04	1.0E-04	1.0E-04	1.0E-04
Li	6.8E-05	7.5E-05	1.2E-04	2.4E-05	5.5E-05
Zr	7.1E-05	1.2E-04	7.5E-05	3.9E-05	7.6E-05
Rb	6.9E-05	3.3E-05	8.3E-05	6.0E-05	8.2E-05
Sb	1.3E-04	7.0E-05	1.1E-04	1.8E-04	1.1E-04
Hg	6.2E-05	6.3E-05	6.2E-05	6.0E-05	6.2E-05
Mo	4.9E-05	3.4E-05	3.5E-05	2.9E-05	8.9E-05
Ce	2.9E-05	3.5E-05	2.9E-05	2.1E-05	3.5E-05
W	4.1E-05	4.2E-05	4.2E-05	4.0E-05	4.2E-05
Cd	5.1E-05	2.8E-05	7.2E-05	5.2E-05	3.8E-05
La	2.2E-05	2.0E-05	2.2E-05	1.4E-05	3.3E-05
Co	3.5E-05	2.1E-05	5.9E-05	2.2E-05	3.0E-05
Ga	1.4E-05	2.2E-05	1.3E-05	9.2E-06	1.8E-05
Te	2.1E-05	2.1E-05	2.1E-05	2.0E-05	2.1E-05
Nd	1.1E-05	1.3E-05	9.0E-06	7.5E-06	1.6E-05
Ag	1.7E-05	8.3E-06	8.3E-06	3.9E-05	1.0E-05
Nb	9.8E-06	5.1E-06	1.0E-05	1.1E-05	1.0E-05
Au	1.2E-05	1.3E-05	1.2E-05	1.2E-05	1.2E-05
Y	6.8E-06	1.0E-05	5.3E-06	2.8E-06	1.0E-05
Pd	1.0E-05	1.0E-05	1.0E-05	1.0E-05	1.0E-05
Bi	7.8E-06	3.3E-06	6.2E-06	6.4E-06	1.3E-05
Pr	3.8E-06	3.7E-06	3.3E-06	3.4E-06	4.7E-06
Ge	3.8E-06	3.8E-06	3.4E-06	2.6E-06	5.2E-06
Cs	3.5E-06	1.4E-06	4.0E-06	2.1E-06	5.5E-06
Th	2.6E-06	4.9E-06	2.5E-06	1.6E-06	2.4E-06
Ta	4.1E-06	4.2E-06	4.2E-06	4.0E-06	4.2E-06
Sm	2.5E-06	2.7E-06	2.2E-06	2.0E-06	3.3E-06
Tl	3.9E-06	1.2E-06	3.6E-06	4.2E-06	5.3E-06
Gd	2.1E-06	2.2E-06	2.0E-06	1.2E-06	3.0E-06
U	1.7E-06	3.2E-06	1.2E-06	1.0E-06	2.0E-06
Be	2.2E-06	2.1E-06	2.3E-06	2.0E-06	2.3E-06
Dy	1.5E-06	2.0E-06	1.3E-06	1.0E-06	1.7E-06
Pt	2.4E-06	2.1E-06	3.4E-06	2.0E-06	2.1E-06
Er	6.4E-07	8.3E-07	4.6E-07	3.0E-07	1.0E-06
Yb	5.9E-07	8.2E-07	4.6E-07	2.8E-07	9.0E-07
Eu	4.8E-07	7.3E-07	3.2E-07	2.2E-07	7.8E-07
Ho	6.2E-07	6.3E-07	6.2E-07	6.0E-07	6.2E-07
In	6.5E-07	6.3E-07	6.2E-07	6.0E-07	7.4E-07
Tb	2.2E-07	2.2E-07	1.4E-07	1.3E-07	3.7E-07

2004 – 2005 Summary of Cation Analysis Performed at the Genesee and Violet Grove Stations

0.5 of the Method Detection Limit used for values below the MDL	**Running Average** Genesee Ambient Station (µg/m³)	Aug 2004 to Sept 2004 Genesee Ambient Station (µg/m³)	Oct 2004 to Dec 2004 Genesee Ambient Station (µg/m³)	Jan 2005 to Mar 2005 Genesee Ambient Station (µg/m³)	Apr 2005 to Jun 2005 Genesee Ambient Station (µg/m³)	**Running Average Violet Grove Ambient Station (µg/m³)**	Aug 2004 to Sept 2004 Violet Grove Ambient Station (µg/m³)	Oct 2004 to Dec 2004 Violet Grove Ambient Station (µg/m³)	Jan 2005 to Mar 2005 Violet Grove Ambient Station (µg/m³)	Apr 2005 to Jun 2005 Violet Grove Ambient Station (µg/m³)
TSP	19.7	15.1	19.8	14.9	24.9	15.5	8.0	16.6	8.3	24.7
Ca	0.40	0.32	0.49	0.29	0.41	0.39	0.22	0.37	0.15	0.74
K	0.06	0.06	0.06	0.05	0.05	0.04	0.04	0.03	0.04	0.06
Mg	0.05	0.04	0.06	0.03	0.05	0.04	0.02	0.04	0.02	0.08
Na	0.05	0.01	0.06	0.09	0.03	0.05	0.02	0.05	0.08	0.03



2004 – 2005 Summary of Gravimetric Analysis Performed at the Genesee and Wabamun Stations

	Running Average Genesee Ambient Station (µg/m³)	Aug 2004 to Sept 2004 Genesee Ambient Station (µg/m³)	Oct 2004 to Dec 2004 Genesee Ambient Station (µg/m³)	Jan 2005 to Mar 2005 Genesee Ambient Station (µg/m³)	Apr 2005 to Jun 2005 Genesee Ambient Station (µg/m³)
PM10	11.9	10.7 2004Q3	6.6 2004Q4	9.4 2005Q1	15.8 2005Q2

Running Average Wabamun Ambient Station (µg/m³)	Aug 2004 to Sept 2004 Wabamun Ambient Station (µg/m³)	Oct 2004 to Dec 2004 Wabamun Ambient Station (µg/m³)	Jan 2005 to Mar 2005 Wabamun Ambient Station (µg/m³)	Apr 2005 to Jun 2005 Wabamun Ambient Station (µg/m³)
13.4	9.8 2004Q3	17.4 2004Q4	7.2 2005Q1	18.7 2005Q2