

Manitoba Ambient Air Quality Data - 2012 Annual Pollutant Summary - Continuous Monitoring

POLLUTANT Conc. Units	STATION NUMBER & LOCATION	ANNUAL MEAN	MAXIMUM DATA VALUES		# OF SAMPLES ABOVE M.D.L.		# OF SAMPLES ABOVE M.A.L.		# OF SAMPLES ABOVE M.T.L.	
			1-HR	24-HR	1-HR	24-HR	1-HR	24-HR	1-HR	24-HR
CARBON MONOXIDE (CO) ppm	9118 WINNIPEG, SCOTIA & JEFFERSON	0.26	1.6	1.00 <sup>Δ</sup>	0	0 <sup>Δ</sup>	0	0 <sup>Δ</sup>	--	0 <sup>Δ</sup>
	9119 WINNIPEG, 65 ELLEN STREET	0.26	1.6	1.01 <sup>Δ</sup>	0	0 <sup>Δ</sup>	0	0 <sup>Δ</sup>	--	0 <sup>Δ</sup>
NITROGEN DIOXIDE (NO <sub>2</sub> ) ppb	5131 BRANDON, ASSIN. COMM.COLLEGE	5.21	43.8	21.89 <sup>o</sup>	--	--	0	0 <sup>o</sup>	0	--
	9118 WINNIPEG, SCOTIA & JEFFERSON	5.82	70.6	28.07 <sup>o</sup>	--	--	0	0 <sup>o</sup>	0	--
	9119 WINNIPEG, 65 ELLEN STREET	9.95	49.7	30.28 <sup>o</sup>	--	--	0	0 <sup>o</sup>	0	--
NITRIC OXIDE (NO) ppb	5131 BRANDON, ASSIN. COMM.COLLEGE	3.36	165.9	41.73 <sup>o</sup>	--	--	--	--	--	--
	9118 WINNIPEG, SCOTIA & JEFFERSON	2.59	128.2	43.45 <sup>o</sup>	--	--	--	--	--	--
	9119 WINNIPEG, 65 ELLEN STREET	5.12	226.9	79.45 <sup>o</sup>	--	--	--	--	--	--
NITROGEN OXIDES (NO <sub>x</sub> ) ppb	5131 BRANDON, ASSIN. COMM.COLLEGE	8.57	201.7	60.86 <sup>o</sup>	--	--	--	--	--	--
	9118 WINNIPEG, SCOTIA & JEFFERSON	8.65	146.2	66.87 <sup>o</sup>	--	--	--	--	--	--
	9119 WINNIPEG, 65 ELLEN STREET	15.08	262.1	108.8 <sup>o</sup>	--	--	--	--	--	--
SULPHUR DIOXIDE (SO <sub>2</sub> ) ppb <sup>10</sup>	7251 FLIN FLON, 143 MAIN STREET	0.33	22.0	7.1 <sup>o</sup>	0	0 <sup>o</sup>	0	0 <sup>o</sup>	--	0 <sup>o</sup>
	7351 <sup>†</sup> THOMPSON, WATER TREAT. PLANT	0.63	266.0	54.13 <sup>o</sup>	5	0 <sup>o</sup>	0	0 <sup>o</sup>	--	0 <sup>o</sup>
	7361 <sup>†</sup> THOMPSON, EASTWOOD SCHOOL	1.16	357.0	43.54 <sup>o</sup>	9	0 <sup>o</sup>	1	0 <sup>o</sup>	--	0 <sup>o</sup>
	7371 <sup>†</sup> THOMPSON, RIVERSIDE SCHOOL	1.08	308.0	46.58 <sup>o</sup>	11	0 <sup>o</sup>	0	0 <sup>o</sup>	--	0 <sup>o</sup>
	7381 <sup>†</sup> THOMPSON, WESTWOOD	2.33	321.0	67.92 <sup>o</sup>	7	8 <sup>o</sup>	0	0 <sup>o</sup>	--	0 <sup>o</sup>
	9119 WINNIPEG, 65 ELLEN STREET	0.19	18.0	2.29 <sup>o</sup>	0	0 <sup>o</sup>	0	0 <sup>o</sup>	--	0 <sup>o</sup>
OXIDANTS OZONE (O <sub>3</sub> ) ppb <sup>11</sup>	5131 BRANDON, ASSIN. COMM.COLLEGE	25.06	66.9	43.95 <sup>o</sup>	114	--	0	~	0	--
	9118 WINNIPEG, SCOTIA & JEFFERSON	27.27	74.40	49.98 <sup>o</sup>	290	--	0	~	0	--
	9119 WINNIPEG, 65 ELLEN STREET	23.52	65.3	44.73 <sup>o</sup>	132	--	0	~	0	--
AMMONIA (NH <sub>3</sub> ) ppb <sup>12</sup>	5131 BRANDON, ASSIN. COMM.COLLEGE	13.58	1578.0	241.9 <sup>o</sup>	--	--	0	--	--	--

Notes: <sup>Δ</sup> Averaged over 8 hours  
<sup>†</sup> Company supplied data  
<sup>o</sup> Using 24-hour moving average  
~ Numerous exceedences of the 24 hour MAL which is under review  
-- No guideline or objective  
Maximum Desirable Level (MDL), Maximum Acceptable Level (MAL), Maximum Tolerable Level (MTL)  
<sup>10</sup> - SO<sub>2</sub> guidelines (ppm): MDL: 1hr-0.170, 24hr-0.060; MAL: 1hr-0.340, 24hr-0.110; MTL: 24hr-0.310  
<sup>11</sup> - O<sub>3</sub> guidelines (ppb): MDL: 1hr-50; MAL: 1hr-82, 24hr-15; MTL: 1hr-200  
<sup>12</sup> - NH<sub>3</sub> guidelines (ppm): MAL: 1hr-2.0

Manitoba Ambient Air Quality Data - 2012 Annual Pollutant Summary - Particulate Matter Monitoring (PM<sub>10</sub>)

POLLUTANT	STATION NUMBER & LOCATION	ANNUAL ARITH/GEO MEAN	MAXIMUM DATA VALUES 24/1-HR	# OF ABOVE		# OF SAMPLES ABOVE M.A.L.		# OF SAMPLES ABOVE M.T.L.	
				1-HR	24-HR	1-HR	24-HR	1-HR	24-HR
INHALABLE PARTICULATE (PM <sub>10</sub> )	7251 <sup>5</sup> FLIN FLON, 143 MAIN STREET	11.57/5.31	124.10/1124.70	--	--	--	4	--	--
	7251 <sup>3</sup> FLIN FLON, 143 MAIN STREET	11.37/8.33	101.46/-	--	--	--	1	--	--
	7283 <sup>4†</sup> CREIGHTON SK, HIGH SCHOOL	15.09/12.60	105.42/-	--	--	--	4	--	--
	7284 <sup>1†</sup> FLIN FLON, RUTH BETTS	8.55/7.03	26.35/-	--	--	--	0	--	--
	7381 <sup>5</sup> THOMPSON, WESTWOOD	8.98/6.20	85.60/767.10	--	--	--	1	--	--
	9119 <sup>5</sup> WINNIPEG, 65 ELLEN STREET	5.61/4.75	41.60/142.50	--	--	--	0	--	--
	9119 <sup>2</sup> WINNIPEG, 65 ELLEN STREET	14.91/11.61	77.07/-	--	--	--	2	--	--
	5131 <sup>5</sup> BRANDON, ASSIN.COMM.COLLEGE	18.14/8.45	177.60/782.30	--	--	--	23	--	--
LEAD (Pb)	7283 <sup>4,9†</sup> CREIGHTON SK, HIGH SCHOOL	0.17/0.17	0.19/-	--	--	--	0	--	--
	7284 <sup>1†</sup> FLIN FLON, RUTH BETTS	0.01/0.01	0.03/-	--	--	--	0	--	--
SULPHATES (SO <sub>4</sub> <sup>=</sup> )	7284 <sup>1†</sup> FLIN FLON, RUTH BETTS	0.72/0.57	1.59/-	--	--	--	--	--	--
ARSENIC (As)	7283 <sup>4,9†</sup> CREIGHTON SK, HIGH SCHOOL	0.00/0.00	0.11/-	--	--	--	0	--	--
	7284 <sup>1†</sup> FLIN FLON, RUTH BETTS	0.00/0.00	0.03/-	--	--	--	0	--	--
CADMIUM (Cd)	7283 <sup>4,9†</sup> CREIGHTON SK, HIGH SCHOOL	0.01/0.01	0.11/-	--	--	--	0	--	--
	7284 <sup>1†</sup> FLIN FLON, RUTH BETTS	0.00/0.00	0.01/-	--	--	--	0	--	--
COPPER (Cu)	7283 <sup>4,9†</sup> CREIGHTON SK, HIGH SCHOOL	0.02/0.02	0.12/-	--	--	--	0	--	--
	7284 <sup>1†</sup> FLIN FLON, RUTH BETTS	0.03/0.02	0.14/-	--	--	--	0	--	--
ZINC (Zn)	7283 <sup>4,9†</sup> CREIGHTON SK, HIGH SCHOOL	0.06/0.03	1.21/-	--	--	--	0	--	--
	7284 <sup>1†</sup> FLIN FLON, RUTH BETTS	0.62/0.03	4.50/-	--	--	--	0	--	--

## Notes:

 All Concentration units for the above Table 4a are in micrograms per cubic metre (ug/m<sup>3</sup>)

-- No guideline or objective

- No data available

<sup>1</sup> - 24 Hour sample collected every six days (HI-VOL)

<sup>2</sup> - 24 Hour sample collected every six days according to NAPS schedule (Dichotomous)

<sup>3</sup> - 24 Hour sample collected every three days according to NAPS schedule (Dichotomous)

<sup>4</sup> - 24 Hour sample collected daily (Dichotomous)

<sup>5</sup> - Real-time continuous monitoring (TEOM)

<sup>9</sup> - Majority of data at or below detection limit

<sup>†</sup> Company supplied data

Manitoba Ambient Air Quality Data - 2012 Annual Pollutant Summary - Particulate Matter Monitoring (PM<sub>2.5</sub>)

POLLUTANT	STATION NUMBER & LOCATION		ANNUAL	MAXIMUM	# OF SAMPLES		# OF SAMPLES		# OF SAMPLES	
			ARITH/GEO MEAN	DATA VALUES 24/1-HR	ABOVE M.D.L. 1-HR 24-HR	ABOVE M.A.L. 1-HR 24-HR	ABOVE M.T.L. 1-HR 24-HR			
INHALABLE PARTICULATE (PM <sub>2.5</sub> )	9118 <sup>3</sup>	WINNIPEG, SCOTIA & JEFFERSON	7.21/4.74	59.98/97.20	--	--	--	1 <sup>6</sup>	--	--
	9119 <sup>2</sup>	WINNIPEG, 65 ELLEN STREET	6.37/5.11	39.63/-	--	--	--	1 <sup>6</sup>	--	--
	9119 <sup>3</sup>	WINNIPEG, 65 ELLEN STREET	6.58/4.75	50.13/535.40	--	--	--	2 <sup>6</sup>	--	--
	5131 <sup>3</sup>	BRANDON, ASSIN. COMM.COLLEGE	6.64/5.08	752.00/58.46	--	--	--	1 <sup>6</sup>	--	--
	7251 <sup>3</sup>	FLIN FLON, 143 MAIN STREET	5.85/4.03	93.10/128.70	--	--	--	6 <sup>6</sup>	--	--
	7251 <sup>1</sup>	FLIN FLON, 143 MAIN STREET	6.02/3.96	84.40/-	--	--	--	2 <sup>6</sup>	--	--
	7283 <sup>4+</sup>	CREIGHTON SK, HIGH SCHOOL	9.56/7.40	86.57/-	--	--	--	10 <sup>6</sup>	--	--
	7381 <sup>5</sup>	THOMPSON, WESTWOOD	3.59/2.08	31.60/303.20	--	--	--	1 <sup>6</sup>	--	--

Notes:

All Concentration units for the above Table 4b are in micrograms per cubic metre (ug/m<sup>3</sup>)

-- No guideline or objective

- No data available

<sup>1</sup> - 24 Hour sample collected every three days synchronized with the NAPS schedule (Dichotomous)

<sup>2</sup> - 24 Hour sample collected every six days according to NAPS schedule (Dichotomous)

<sup>3</sup> - Real-time continuous monitoring (SHARP)

<sup>4</sup> - 24 Hour sample collected daily (Dichotomous)

<sup>5</sup> - Real-time continuous monitoring (TEOM)

<sup>6</sup> - Based on Canada Wide Standard "level" for PM<sub>2.5</sub> (not the actual metric of the 98<sup>th</sup> percentile annual value averaged over 3 years)

<sup>+</sup> Company supplied data

## Manitoba Ambient Air Quality Data - 2012 Annual Pollutant Summary - Particulate Matter Monitoring (TSP)

POLLUTANT	STATION NUMBER & LOCATION		ANNUAL	MAXIMUM	# OF SAMPLES		# OF SAMPLES		# OF SAMPLES	
			ARITH/GEO MEAN	DATA VALUES 24-HR	ABOVE M.D.L. 1-HR 24-HR	ABOVE M.A.L. 1-HR 24-HR	ABOVE M.T.L. 1-HR 24-HR			
TOTAL SUSPENDED PARTICULATE (TSP)	7251 <sup>1</sup>	FLIN FLON, 143 MAIN STREET	29.30/22.75	137.00	--	--	--	2	--	0
	7283 <sup>3+</sup>	CREIGHTON SK, HIGH SCHOOL	19.89/15.57	127.53	--	--	--	1	--	0
	7284 <sup>2+</sup>	FLIN FLON, RUTH BETTS	21.21/15.01	148.10	--	--	--	1	--	0
LEAD (Pb)	7251 <sup>1</sup>	FLIN FLON, 143 MAIN STREET	0.04/0.03	0.39	--	--	--	0	--	--
	7283 <sup>3+</sup>	CREIGHTON SK, HIGH SCHOOL	0.01/0.01	0.04	--	--	--	0	--	--
	7284 <sup>2+</sup>	FLIN FLON, RUTH BETTS	0.01/0.01	0.06	--	--	--	0	--	--
SULPHATES (SO <sub>4</sub> =)	7251 <sup>1</sup>	FLIN FLON, 143 MAIN STREET	1.13/0.90	4.74	--	--	--	--	--	--
	7283 <sup>3+</sup>	CREIGHTON SK, HIGH SCHOOL	0.82/0.68	2.31	--	--	--	--	--	--
	7284 <sup>2+</sup>	FLIN FLON, RUTH BETTS	0.84/0.67	2.20	--	--	--	--	--	--
NITRATES (NO <sub>3</sub> -)	7251 <sup>1</sup>	FLIN FLON, 143 MAIN STREET	0.19/0.13	0.99	--	--	--	--	--	--
ARSENIC (As) <sup>13</sup>	7251 <sup>1</sup>	FLIN FLON, 143 MAIN STREET	0.01/0.01	0.18	--	--	--	0	--	--
	7283 <sup>3+</sup>	CREIGHTON SK, HIGH SCHOOL	0.00/0.00	0.05	--	--	--	0	--	--
	7284 <sup>2+</sup>	FLIN FLON, RUTH BETTS	0.00/0.00	0.06	--	--	--	0	--	--
CADMIUM (Cd)	7251 <sup>1</sup>	FLIN FLON, 143 MAIN STREET	0.00/0.00	0.05	--	--	--	0	--	--
	7283 <sup>3+</sup>	CREIGHTON SK, HIGH SCHOOL	0.00/0.00	0.00	--	--	--	0	--	--
	7284 <sup>2+</sup>	FLIN FLON, RUTH BETTS	0.00/0.00	0.01	--	--	--	0	--	--
COPPER (Cu)	7251 <sup>1</sup>	FLIN FLON, 143 MAIN STREET	0.33/0.25	2.20	--	--	--	0	--	--
	7283 <sup>3+</sup>	CREIGHTON SK, HIGH SCHOOL	0.02/0.01	0.19	--	--	--	0	--	--
	7284 <sup>2+</sup>	FLIN FLON, RUTH BETTS	0.03/0.04	0.48	--	--	--	0	--	--
ZINC (Zn)	7251 <sup>1</sup>	FLIN FLON, 143 MAIN STREET	2.88/1.71	16.23	--	--	--	0	--	--
	7283 <sup>3+</sup>	CREIGHTON SK, HIGH SCHOOL	0.38/0.02	4.87	--	--	--	0	--	--
	7284 <sup>2+</sup>	FLIN FLON, RUTH BETTS	0.72/0.06	6.20	--	--	--	0	--	--

## Notes:

All Concentration units for the above Table 4c are in micrograms per cubic metre (ug/m<sup>3</sup>)

-- No guideline or objective

+ Company supplied data

<sup>1</sup> - 24 Hour sample collected every two out of three days, synchronized with the NAPS schedule (with numerous exceptions)

<sup>2</sup> - 24 Hour sample collected every three days, synchronized with the NAPS schedule (with numerous exceptions)

<sup>3</sup> - 24 Hour sample collected every second day

<sup>13</sup> - As guidelines (ug/m<sup>3</sup>): MAL: 24hr-0.300