

Table 3

Manitoba Ambient Air Quality Data - 1999 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	0.34	6.9	3.1 <sup>A</sup>	0	0 <sup>A</sup>	0	0 <sup>A</sup>	--	0 <sup>A</sup>
	9119 WINNIPEG, 65 ELLEN STREET	0.55	5.5	3.0 <sup>A</sup>	0	0 <sup>A</sup>	0	0 <sup>A</sup>	--	0 <sup>A</sup>
NITROGEN DIOXIDE (NO <sub>2</sub> ) pphm	5131 BRANDON, ASSIN. COMMUN. COLLEGE	0.88	6.6	3.3	--	--	0	0	0	--
	9118 WINNIPEG, SCOTIA & JEFFERSON	1.21	7.7	4.2	--	--	0	0	0	--
	9119 WINNIPEG, 65 ELLEN STREET	1.77	12.9	6.0	--	--	0	0	0	--
NITRIC OXIDE (NO) pphm	5131 BRANDON, ASSIN. COMMUN. COLLEGE	0.54	18.3	6.5	--	--	--	--	--	--
	9118 WINNIPEG, SCOTIA & JEFFERSON	0.61	54.5	12.6	--	--	--	--	--	--
	9119 WINNIPEG, 65 ELLEN STREET	1.11	50.5	10.0	--	--	--	--	--	--
NITROGEN OXIDES (NO <sub>X</sub> ) pphm	5131 BRANDON, ASSIN. COMMUN. COLLEGE	1.33	20.8	9.5	--	--	--	--	--	--
	9118 WINNIPEG, SCOTIA & JEFFERSON	1.75	60.7	15.8	--	--	--	--	--	--
	9119 WINNIPEG, 65 ELLEN STREET	2.86	63.3	12.6	--	--	--	--	--	--
SULPHUR DIOXIDE (SO <sub>2</sub> ) ppm	7251 FLIN FLON, 143 MAIN STREET	0.02	1.85	0.41	174	445	80	216	--	20
	7271 FLIN FLON, AQUA CENTRE	0.00	0.08	0.01	0	0	0	0	--	0
	7281 FLIN FLON, HBM&S STAFFHOUSE	0.01	0.86	0.26	177	468	77	160	--	0
	7291 CREIGHTON, SASK. CITY HALL	0.00	0.45	0.09	39	22	7	0	--	0
	7301 FLIN FLON, HAPNOT COLLEGIATE	0.00	0.59	0.06	25	0	1	0	--	0
7351 THOMPSON, WATER TREATMENT PLANT	0.00	0.68	0.07	29	39	8	0	--	0	
OXIDANTS OZONE (O <sub>3</sub> ) pphm	5131 BRANDON, ASSIN. COMMUN. COLLEGE	2.78	8.9	6.5	279	~	5	~	0	--
	9118 WINNIPEG, SCOTIA & JEFFERSON	2.27	7.1	5.5	233	~	0	~	0	--
	9119 WINNIPEG, 65 ELLEN STREET	1.62	6.5	4.8	64	~	0	~	0	--
AMMONIA (NH <sub>3</sub> ) ppm	5131 BRANDON, ASSIN. COMMUN. COLLEGE	0.02	3.0	0.6	--	--	6	--	--	--
SOILING INDEX (COH) COH Units	9118 WINNIPEG, SCOTIA & JEFFERSON	0.01	0.6	0.1	--	0	--	0	--	--
	9119 WINNIPEG, 65 ELLEN STREET	0.02	0.6	0.1	--	0	--	0	--	--

## Notes:

Δ averaged over 8 hours \* denotes company supplied data -- no guideline or objective  
 ~ numerous exceedences of the 24 hour MDL and MAL which are currently under review

Table 4a

Manitoba Ambient Air Quality Data - 1999 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 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	
INHALABLE PARTICULATE (PM <sub>10</sub> )	7251 <sup>4</sup>	FLIN FLON, 143 MAIN STREET	23.5 / -	157.5 / 500.8	--	--	--	33 <sup>6</sup>	--	--
	7284 <sup>1</sup>	FLIN FLON, RUTH BETTS	14 / 11	44 / -	--	--	--	0 <sup>6</sup>	--	--
	7285 <sup>1</sup>	FLIN FLON, SEWAGE PLANT	11 / 9	41 / -	--	--	--	0 <sup>6</sup>	--	--
	9119 <sup>4</sup>	WINNIPEG, 65 ELLEN STREET	21.4 / -	114.7 / 433.3	--	--	--	10 <sup>6</sup>	--	--
	9119 <sup>4</sup>	WINNIPEG, 65 ELLEN STREET	22.7 / 18.1	111.8 / -	--	--	--	2 <sup>6</sup>	--	--
5131 <sup>4</sup>	BRANDON, ASSIN. COMMUN. COLLEGE	21.2 / -	153.4 / 499.0	--	--	--	21 <sup>6</sup>	--	--	
LEAD (Pb)	7284 <sup>1</sup>	FLIN FLON, RUTH BETTS	0.597 / 0.221	3.516 / -	--	--	--	0	--	--
	7285 <sup>1</sup>	FLIN FLON, SEWAGE PLANT	0.295 / 0.129	1.831 / -	--	--	--	0	--	--
SULPHATES (SO <sub>4</sub> <sup>2-</sup> )	7284 <sup>1</sup>	FLIN FLON, RUTH BETTS	2.308 / 1.464	10.055 / -	--	--	--	--	--	--
	7285 <sup>1</sup>	FLIN FLON, SEWAGE PLANT	1.465 / 1.101	2.922 / -	--	--	--	--	--	--
ARSENIC (As)	7284 <sup>1</sup>	FLIN FLON, RUTH BETTS	0.042 / 0.020	0.099 / -	--	--	--	0 <sup>6</sup>	--	--
	7285 <sup>1</sup>	FLIN FLON, SEWAGE PLANT	0.025 / 0.008	0.117 / -	--	--	--	0 <sup>6</sup>	--	--
CADMIUM (Cd)	7284 <sup>1</sup>	FLIN FLON, RUTH BETTS	0.064 / 0.021	0.331 / -	--	--	--	0 <sup>6</sup>	--	--
	7285 <sup>1</sup>	FLIN FLON, SEWAGE PLANT	0.022 / 0.011	0.090 / -	--	--	--	0 <sup>6</sup>	--	--
COPPER (Cu)	7284 <sup>1</sup>	FLIN FLON, RUTH BETTS	0.232 / 0.147	0.940 / -	--	--	--	0 <sup>6</sup>	--	--
	7285 <sup>1</sup>	FLIN FLON, SEWAGE PLANT	0.110 / 0.083	0.267 / -	--	--	--	0 <sup>6</sup>	--	--
ZINC (Zn)	7284 <sup>1</sup>	FLIN FLON, RUTH BETTS	0.602 / 0.236	3.353 / -	--	--	--	0 <sup>6</sup>	--	--
	7285 <sup>1</sup>	FLIN FLON, SEWAGE PLANT	0.249 / 0.113	0.886 / -	--	--	--	0 <sup>6</sup>	--	--

**Notes:**

All Concentration units for the above Table 4a are in ug/m3.

a - ARITHMETIC MEAN

g - GEOMETRIC MEAN

-- no guideline or objective  
guideline

1 - 24 Hour sample collected every six days according to NAPS schedule

4 - real-time continuous monitoring

6 - Ontario 24-hour

Table 4b

Manitoba Ambient Air Quality Data - 1999 Annual Pollutant Summary –  
Particulate Matter Monitoring (PM<sub>2.5</sub>)

POLLUTANT	STATION NUMBER & LOCATION		ANNUAL ARITH/GEO MEAN	MAXIMUM DATA VALUES 24/1-HR	# 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
INHALABLE PARTICULATE (PM <sub>2.5</sub> )	9118 <sup>a,5</sup>	WINNIPEG, SCOTIA & JEFFERSON	5.5 / -	21.2 / 65.8	--	--	--	--	--	--
	9119 <sup>1</sup>	WINNIPEG, 65 ELLEN STREET	8.2 / 6.9	45.5 / -	--	--	--	--	--	--

**Notes:**

All Concentration units for the above Table 4b are in ug/m3.

a - ARITHMETIC MEAN

g - GEOMETRIC MEAN

-- no guideline or objective

1 - 24 Hour sample collected every six days according to NAPS schedule

4 - real-time continuous monitoring

5- TEOM PM 2.5 data corrected to remove offset and slope factors as per NAPS directive

Table 4c

Manitoba Ambient Air Quality Data - 1999 Annual Pollutant Summary –  
Particulate Matter Monitoring (TSP)

POLLUTANT	STATION NUMBER & LOCATION	ANNUAL ARITH/Geo MEAN	MAXIMUM DATA VALUES 24-HR	# 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	
TOTAL SUSPENDED PARTICULATE (TSP)	7251 <sup>2</sup>	FLIN FLON, 143 MAIN STREET	50 / 35	307	--	--	--	13	--	--
	7283 <sup>1*</sup>	CREIGHTON, FIRE HALL	25 / 21	114	--	--	--	0	--	--
	7284 <sup>1*</sup>	FLIN FLON, RUTH BETTS	28 / 22	135	--	--	--	1	--	--
	7285 <sup>1*</sup>	FLIN FLON, SEWAGE PLANT	21 / 15	235	--	--	--	2	--	--
	9118 <sup>1</sup>	WINNIPEG, 299 SCOTIA STREET	32 / 26	213	--	--	--	1	--	--
	9119 <sup>1,3</sup>	WINNIPEG, 65 ELLEN STREET	50 / 41	199	--	--	--	11	--	--
9201 <sup>1</sup>	BRANDON, 1104 PRINCESS AVENUE	37 / 32	95	--	--	--	0	--	--	
LEAD (Pb)	7251 <sup>2</sup>	FLIN FLON, 143 MAIN STREET	0.48 / 0.11	13.11	--	--	--	5	--	--
	7283 <sup>1*</sup>	CREIGHTON, FIRE HALL	0.10 / 0.05	0.72	--	--	--	0	--	--
	7284 <sup>1*</sup>	FLIN FLON, RUTH BETTS	0.50 / 0.22	2.53	--	--	--	0	--	--
	7285 <sup>1*</sup>	FLIN FLON, SEWAGE PLANT	0.33 / 0.14	1.62	--	--	--	0	--	--
SULPHATES (SO4=)	7251 <sup>2</sup>	FLIN FLON, 143 MAIN STREET	3.27 / 1.91	28.22	--	--	--	--	--	--
	7283 <sup>1*</sup>	CREIGHTON, FIRE HALL	1.795 / 1.532	6.32	--	--	--	--	--	--
	7284 <sup>1*</sup>	FLIN FLON, RUTH BETTS	2.534 / 1.901	7.74	--	--	--	--	--	--
	7285 <sup>1*</sup>	FLIN FLON, SEWAGE PLANT	1.873 / 1.436	4.58	--	--	--	--	--	--
NITRATES (NO3-)	7251 <sup>2</sup>	FLIN FLON, 143 MAIN STREET	0.189 / 0.126	1.31	--	--	--	--	--	--
ARSENIC (As)	7251 <sup>2</sup>	FLIN FLON, 143 MAIN STREET	0.066 / 0.016	1.38	--	--	--	10 <sup>6</sup>	--	--
	7283 <sup>1*</sup>	CREIGHTON, FIRE HALL	0.014 / 0.006	0.081	--	--	--	0 <sup>6</sup>	--	--
	7284 <sup>1*</sup>	FLIN FLON, RUTH BETTS	0.050 / 0.023	0.167	--	--	--	0 <sup>6</sup>	--	--
	7285 <sup>1*</sup>	FLIN FLON, SEWAGE PLANT	0.035 / 0.010	0.256	--	--	--	0 <sup>6</sup>	--	--
CADMIUM (Cd)	7251 <sup>2</sup>	FLIN FLON, 143 MAIN STREET	0.050 / 0.011	0.896	--	--	--	0 <sup>6</sup>	--	--
	7283 <sup>1*</sup>	CREIGHTON, FIRE HALL	0.009 / 0.005	0.085	--	--	--	0 <sup>6</sup>	--	--
	7284 <sup>1*</sup>	FLIN FLON, RUTH BETTS	0.056 / 0.022	0.467	--	--	--	0 <sup>6</sup>	--	--
	7285 <sup>1*</sup>	FLIN FLON, SEWAGE PLANT	0.033 / 0.014	0.160	--	--	--	0 <sup>6</sup>	--	--
COPPER (Cu)	7251 <sup>2</sup>	FLIN FLON, 143 MAIN STREET	0.682 / 0.363	5.726	--	--	--	0 <sup>6</sup>	--	--
	7283 <sup>1*</sup>	CREIGHTON, FIRE HALL	0.365 / 0.297	2.092	--	--	--	0 <sup>6</sup>	--	--
	7284 <sup>1*</sup>	FLIN FLON, RUTH BETTS	0.879 / 0.637	2.804	--	--	--	0 <sup>6</sup>	--	--
	7285 <sup>1*</sup>	FLIN FLON, SEWAGE PLANT	0.655 / 0.558	1.541	--	--	--	0 <sup>6</sup>	--	--
ZINC (Zn)	7251 <sup>2</sup>	FLIN FLON, 143 MAIN STREET	1.467 / 1.623	14.500	--	--	--	0 <sup>6</sup>	--	--
	7283 <sup>1*</sup>	CREIGHTON, FIRE HALL	0.272 / 0.115	2.498	--	--	--	0 <sup>6</sup>	--	--
	7284 <sup>1*</sup>	FLIN FLON, RUTH BETTS	0.997 / 0.556	3.788	--	--	--	0 <sup>6</sup>	--	--
	7285 <sup>1*</sup>	FLIN FLON, SEWAGE PLANT	0.539 / 0.230	2.394	--	--	--	0 <sup>6</sup>	--	--

## Notes:

All Concentration units for the above Table 4b are in ug/m3.  
objective

a - ARITHMETIC MEAN

g- GEOMETRIC MEAN

-- no guideline or

\*- company supplied data  
with the NAPS schedule

1 - 24 Hour sample collected every six days according to NAPS schedule

2 - 24 Hour sample collected every three days, synchronized

3 - 3 additional samples collected every NAPS cycle

4 - real-time continuous monitoring

6 - Ontario 24-hour Guideline