



Water and Waste Department • Service des eaux et des déchets

March 28, 2013

Our File: 040-18-18-55-00

Ms. Kim Philip, P.Eng.
Office of Drinking Water
Manitoba Conservation and Water Stewardship
1007 Century Street
Winnipeg, Manitoba
R3H 0W4

Dear Ms. Philip:

RE: 2012 ANNUAL REPORT - CITY OF WINNIPEG WATER SUPPLY SYSTEM

Please find enclosed the 2012 Annual Report for the City of Winnipeg Water Supply System in accordance with Operating Licence PWS-09-412 A, Section 5.11, and the Drinking Water Safety Act, Manitoba Regulation 40/2007, Section 32.

This annual report covers the following requirements described in Section 32 of the Drinking Water Safety Regulation. The content is noted below:

1. *“Section 32(2)(a) a brief description of the drinking water system, including its water supply source.”*
Provided therein.
2. *“Section 32(2)(b) a description of the disinfection methods used.”*
Provided therein.
3. *“Section 32(2)(c) a list of all bacteriological, chemical, physical and microbial drinking water quality standards that apply to the water system.”*
The test results are provided in Appendix A.
4. *“Section 32(2)(d) a summary of any incidents of failure to meet a drinking water quality standard, and a description of corrective action.”*
Included in this report is a table that summarizes all the occasions where test results did not meet the guideline and a description of the corrective actions taken in 2012.
5. *“Section 32(2)(e) a summary of the information contained in the records made under Section 31.”*
Monthly compliance reports are provided in Appendix B.
6. *“Section 32(2)(f) a description of any drinking water safety orders issued.”*
No drinking water safety orders were issued to the City of Winnipeg in 2012.
7. *“Section 32(2)(g) a description of any boil water advisories issued.”*
No boil water advisories were issued to the City of Winnipeg in 2012.

8. “Section 32(2)(h) a summary of any charges laid, pending or disposed of for an offence.”

No charges were laid, pending or disposed of for any offences against the City of Winnipeg in 2012.

9. “Section 32(2)(i) a description of any major expenses incurred to repair, replace or install equipment.”

Provided therein.

10. “Section 32(2)(j) any other information or description of any other activities.”

The City of Winnipeg does not have any additional information to be submitted.

We will continue to send our customers an annual informational insert in the water bills to inform the public that the annual report has been prepared and how a free copy can be obtained. This will comply with the requirements of Section 5.12 of our Operating Licence and Section 32(3) of the Drinking Water Safety Regulation.

In accordance with Section 5.13 of the Operating Licence and Section 32(4) of the Drinking Water Safety Regulation, a copy of this annual report will be posted on the departmental website within one month.

As per the monitoring requirements set out in Table 2 of the City of Winnipeg’s Operating Licence, turbidity, free and total chlorine, UV and corrective action compliance reports are being submitted on an ongoing monthly basis. Bacteriological reports and chlorine residual results are sent directly to your office by the analytical laboratory that does the bacteriological testing of samples.

Please note that we have found an error in the 2010 and 2011 Annual Reports. In Appendix A, Winnipeg Distribution System Water Quality Summary for 2010 and 2011, the units for soluble phosphate have been corrected to parts per million as phosphate. The summaries have been revised and are attached for your records. The web versions of the 2010 and 2011 Annual Water Reports have also been updated to reflect the corrections.

Please let me know of any concerns or questions respecting this submission. I may be reached by telephone at 204-986-4807 or by e-mail at kkiartanson@winnipeg.ca.

Thanks for your ongoing cooperation in this matter.

Yours sincerely,
Original signed by:

K.J.T. Kjartanson, P.Eng.
Manager of Environmental Standards
KJTK/RG
Enclosures

c: Dr. L. Richards, Winnipeg Regional Health Authority
Dr. S. Roberecki, Manitoba Health
D.P. Sacher, P.Eng.
T. Josephson, P.Eng.
G. Patton, P.Eng

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**City of Winnipeg
Environmental Standards Division
2010 Winnipeg Distribution System Water Quality Summary**

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
Odour*	<i>units</i>	Inoffensive	59	30	100	Normally meets the guideline
Geosmin**	<i>parts per trillion</i>	no guideline	<0.7	<0.5	0.8	Common taste and odour compound
IPMP - 2-isopropyl-3-methoxypyrazine**	<i>parts per trillion</i>	no guideline	<0.5	<0.5	<0.5	Common taste and odour compound
IBMP - 2-isobutyl-3-methoxypyrazine**	<i>parts per trillion</i>	no guideline	<0.5	<0.5	<0.5	Common taste and odour compound
MIB - 2-methylisoborneol**	<i>parts per trillion</i>	no guideline	<0.9	<0.5	<4.0	Common taste and odour compound
246 TCA - 2,4,6-trichloroanisole**	<i>parts per trillion</i>	no guideline	<0.5	<0.5	<2.0	Common taste and odour compound
236 TCA - 2,3,6-trichloroanisole**	<i>parts per trillion</i>	no guideline	<0.5	<0.5	<1.0	Common taste and odour compound
345 TCV - 3,4,5-trichloroveratrole**	<i>parts per trillion</i>	no guideline	<0.5	<0.5	<0.5	Common taste and odour compound
MTBE - methyl tertiary-butyl ether**	<i>parts per million</i>	no more than 0.015	<0.0005	<0.0005	<0.0005	Meets the guideline
NDMA - N-nitrosodimethylamine**	<i>parts per billion</i>	under review	0.0257	0.0012	0.0778	Guideline under review by Health Canada
Chlorophyll-a*	<i>parts per billion</i>	no guideline	<1	<1	2	Chlorophyll is found in algae
Microcystin LR**	<i>parts per billion</i>	no more than 1.5	<0.2	<0.2	<0.2	Meets the guideline
Turbidity (clearness)	<i>NTU</i>	no guideline	0.25	0.09	3.59	-
Colour, Apparent	<i>ACU</i>	no guideline	2.5	2.5	5.0	-
Colour, True*	<i>TCU</i>	no more than 15	6.7	5.0	10.0	Meets the guideline
Total Dissolved Solids*	<i>mg/L</i>	no more than 500	174	146	196	Meets the guideline
Conductivity*	<i>microsiemens per centimetre</i>	no guideline	298	288	308	Another measure of dissolved solids
pH	<i>units</i>	between 6.5 and 8.5	7.57	7.24	8.04	Meets the guideline
Temperature	<i>degrees Celcius</i>	no more than 15	10.3	1.0	23.0	Does not always meet the guideline
Total Alkalinity	<i>parts per million as calcium carbonate</i>	no guideline	66	57	76	-
Total Hardness	<i>parts per million as calcium carbonate</i>	between 80 and 100	78	70	86	Does not always meet the guideline
Total Organic Carbon*	<i>parts per million</i>	no guideline	4.2	3.4	5.1	-
Total Inorganic Carbon*	<i>parts per million</i>	no guideline	12.8	9.2	16.1	-
Fluoride ¹	<i>parts per million</i>	no more than 1.5	0.85	0.81	0.90	Meets the guideline
Ammonia Dissolved*	<i>parts per million</i>	no guideline	0.024	0.021	<0.050	-
Nitrate Nitrogen*	<i>parts per million</i>	no more than 10	<0.050	<0.050	<0.050	Meets the guideline
Soluble Phosphate	<i>parts per million as phosphate</i>	no guideline	1.95	1.86	2.10	Added for Lead Control Program
Chloride	<i>parts per million</i>	no more than 250	21	16	28	Meets the guideline
Sulfate	<i>parts per million</i>	no more than 500	45	29	56	Meets the guideline
Chlorine (free)	<i>parts per million</i>	no guideline	0.50	0.02	1.15	-
Chlorine (total)	<i>parts per million</i>	no guideline	0.70	0.14	1.34	-
Trihalomethanes	<i>parts per billion</i>	no more than 100	59	12	97	Meets the guideline
Bromodichloromethane	<i>parts per billion</i>	no more than 16	8	2	14	Meets the guideline
Haloacetic acids	<i>parts per billion</i>	no more than 80	30	<10	59	Meets the guideline
Aldehydes	<i>parts per billion</i>	no guideline	20	10	54	-

**City of Winnipeg
Environmental Standards Division
2010 Winnipeg Distribution System Water Quality Summary**

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
Calcium	<i>parts per million</i>	no guideline	21.2	19.7	22.8	Contributes to hardness
Magnesium	<i>parts per million</i>	no guideline	5.6	5.2	5.9	Contributes to hardness
Sodium	<i>parts per million</i>	no more than 200	29.1	23.2	33.8	Meets the guideline
Potassium	<i>parts per million</i>	no guideline	1.2	1.1	1.3	-
Iron	<i>parts per million</i>	no more than 0.3	0.06	0.01	0.15	Meets the guideline
Copper	<i>parts per million</i>	no more than 1.0	0.062	0.022	0.134	Meets the guideline
Lead ²	<i>parts per million</i>	no more than 0.01	<0.001	<0.001	<0.001	Meets the guideline
Aluminum	<i>parts per million</i>	no more than 0.1	0.003	<0.001	0.018	Meets the guideline
Arsenic	<i>parts per million</i>	no more than 0.01	<0.001	<0.001	<0.001	Meets the guideline
Chromium	<i>parts per million</i>	no more than 0.05	0.002	<0.001	0.005	Meets the guideline
Nickel	<i>parts per million</i>	no guideline	0.002	0.001	0.003	-
Cadmium	<i>parts per million</i>	no more than 0.005	<0.001	<0.001	<0.001	Meets the guideline
Manganese	<i>parts per million</i>	no more than 0.05	0.022	0.016	0.038	Meets the guideline
Zinc	<i>parts per million</i>	no more than 5.0	<0.003	<0.001	0.005	Meets the guideline
Mercury	<i>parts per million</i>	no more than 0.001	<1.0E-06	<1.0E-06	<1.0E-06	Meets the guideline
Antimony*	<i>parts per million</i>	no more than 0.006	<0.00020***	<0.00020***	0.00036***	Meets the guideline
Barium*	<i>parts per million</i>	no more than 1	0.0153	0.0140	0.0172	Meets the guideline
Beryllium*	<i>parts per million</i>	no guideline	<0.00020	<0.00020	<0.00020	-
Bismuth*	<i>parts per million</i>	no guideline	<0.00020	<0.00020	<0.00020	-
Boron	<i>parts per million</i>	no more than 5	0.010	0.009	0.011	Meets the guideline
Cesium*	<i>parts per million</i>	no guideline	<0.00010	<0.00010	<0.00010	-
Cobalt*	<i>parts per million</i>	no guideline	<0.00020	<0.00020	<0.00020	-
Lithium*	<i>parts per million</i>	no guideline	0.0021	<0.0020	0.0031	-
Molybdenum*	<i>parts per million</i>	no guideline	<0.00020	<0.00020	<0.00020	-
Rubidium*	<i>parts per million</i>	no guideline	0.00179	0.00161	0.00194	-
Selenium*	<i>parts per million</i>	no more than 0.01	<0.0010	<0.0010	<0.0010	Meets the guideline
Silicon*	<i>parts per million</i>	no guideline	0.813	0.399	1.14	-
Silver*	<i>parts per million</i>	no guideline	<0.00010	<0.00010	<0.00010	-
Strontium*	<i>parts per million</i>	no guideline	0.0399	0.0366	0.0436	-
Tellurium*	<i>parts per million</i>	no guideline	<0.00020	<0.00020	<0.00020	-
Thallium*	<i>parts per million</i>	no guideline	<0.00010	<0.00010	<0.00010	-
Thorium*	<i>parts per million</i>	no guideline	<0.00010	<0.00010	<0.00010	-
Tin*	<i>parts per million</i>	no guideline	<0.00020	<0.00020	<0.00060	-
Titanium*	<i>parts per million</i>	no guideline	0.00026	<0.00020	<0.00090	-
Tungsten*	<i>parts per million</i>	no guideline	<0.0010	<0.00020	<0.0010	-
Uranium	<i>parts per million</i>	no more than 0.02	<0.00010	<0.00010	<0.00010	Meets the guideline
Vanadium*	<i>parts per million</i>	no guideline	<0.00020	<0.00020	<0.00020	-
Zirconium	<i>parts per million</i>	no guideline	<0.001	<0.001	<0.001	-

Guidelines from 'Summary of Guidelines for Canadian Drinking Water Quality' by Health Canada, revised February 1, 2011

¹Fluoride was added in accordance with the Provincial Fluoridation Program guideline to reach an optimal concentration of 0.85 parts per million.

² Does not include the results from our monthly [lead monitoring program](#).

*Data reported was collected from Maclean, Hurst, and McPhillips Pumping Station Discharge

**Data reported was collected from McPhillips Pumping Station Discharge

***Provincial Monitoring results were reported instead of our own results because our detection limit is higher than the guideline

City of Winnipeg
Environmental Standards Division
2011 Winnipeg Distribution System Water Quality Summary

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
Odour ¹	<i>units</i>	Inoffensive	32	25	50	Normally meets the guideline
Chlorophyll-a ¹	<i>parts per billion</i>	no guideline	<1	<1	<1	Chlorophyll is found in algae
Turbidity (clearness) ²	<i>NTU</i>	no guideline	0.26	0.13	1.70	-
Colour, True ³	<i>TCU</i>	no more than 15	2.0	0.5	10.0	Meets the guideline
pH ²	<i>units</i>	between 6.5 and 8.5	7.47	7.16	7.83	Meets the guideline
Temperature ²	<i>degrees Celcius</i>	no more than 15	11.1	2.1	25.6	Does not always meet the guideline
Total Alkalinity ³	<i>parts per million as calcium</i>	no guideline	68	57	78	-
Total Hardness ³	<i>parts per million as calcium</i>	between 80 and 100	80	71	87	Does not always meet the guideline
Fluoride ³	<i>parts per million</i>	no more than 1.5	0.72	0.57	0.88	Meets the guideline
Soluble Phosphate ³	<i>parts per million as phosphate</i>	no guideline	1.98	1.87	2.11	Added for Lead Control Program
Chloride ³	<i>parts per million</i>	no more than 250	19	16	23	Meets the guideline
Sulphate ³	<i>parts per million</i>	no more than 500	52	44	60	Meets the guideline
Chlorine (free) ²	<i>parts per million</i>	no guideline	0.56	0.06	1.32	-
Chlorine (total) ²	<i>parts per million</i>	no guideline	0.76	0.13	1.46	-
Trihalomethanes ⁴	<i>parts per billion</i>	no more than 100	33	10	61	Meets the guideline
Bromodichloromethane ⁴	<i>parts per billion</i>	no more than 16	5	2	9	Meets the guideline
Haloacetic acids ⁴	<i>parts per billion</i>	no more than 80	25	7	45	Meets the guideline
Aldehydes ⁴	<i>parts per billion</i>	no guideline	23	9	35	-
Calcium ⁴	<i>parts per million</i>	no guideline	21.1	18.2	23.9	Contributes to hardness
Magnesium ⁴	<i>parts per million</i>	no guideline	6.1	4.9	6.9	Contributes to hardness
Sodium ⁴	<i>parts per million</i>	no more than 200	34.6	27.7	38.7	Meets the guideline
Potassium ⁴	<i>parts per million</i>	no guideline	1.2	0.9	1.4	-
Iron ⁴	<i>parts per million</i>	no more than 0.3	0.08	0.04	0.14	Meets the guideline
Copper ⁴	<i>parts per million</i>	no more than 1.0	0.067	0.018	0.181	Meets the guideline
Lead ⁴	<i>parts per million</i>	no more than 0.01	<0.001	<0.001	<0.001	Meets the guideline
Aluminum ⁴	<i>parts per million</i>	no more than 0.1	0.005	<0.001	0.039	Meets the guideline
Arsenic ⁴	<i>parts per million</i>	no more than 0.01	<0.001	<0.001	<0.001	Meets the guideline
Chromium ⁴	<i>parts per million</i>	no more than 0.05	0.002	<0.001	0.002	Meets the guideline
Nickel ⁴	<i>parts per million</i>	no guideline	0.002	0.002	0.004	-
Cadmium ⁴	<i>parts per million</i>	no more than 0.005	<0.001	<0.001	<0.001	Meets the guideline
Manganese ⁴	<i>parts per million</i>	no more than 0.05	0.025	0.018	0.068	Does not always meet the guideline
Zinc ⁴	<i>parts per million</i>	no more than 5.0	0.001	<0.001	0.012	Meets the guideline
Mercury ⁴	<i>parts per million</i>	no more than 0.001	<0.000001	<0.000001	<0.000001	Meets the guideline
Antimony ⁴	<i>parts per million</i>	no more than 0.006	<0.001	<0.001	<0.001	Meets the guideline
Boron ⁴	<i>parts per million</i>	no more than 5	0.011	0.009	0.016	Meets the guideline
Uranium ⁴	<i>parts per million</i>	no more than 0.02	<0.001	<0.001	<0.001	Meets the guideline
Zirconium ⁴	<i>parts per million</i>	no guideline	<0.001	<0.001	<0.001	-

Guidelines from 'Summary of Guidelines for Canadian Drinking Water Quality' by Health Canada, revised February 1, 2012

*Fluoride was added in accordance with the Provincial Fluoridation Program guideline to reach an optimal concentration of 0.85 parts per million until March 22, 2011 when the setpoint was changed to 0.70 parts per million.

¹Data reported was collected from MacLean, Hurst, and McPhillips Pumping Station Discharges.

²Data reported was collected from 39 distribution system locations.

³Data reported was collected from a composite sample of the 60 distribution system locations and MacLean, Hurst, and McPhillips Pumping Station Discharges.

⁴Data reported was collected from 6 distribution system locations.