



Water and Waste Department
Environmental Standards Division

2017 Annual Water Report

City of Winnipeg Water Supply System



SUMMARY

The Province of Manitoba and the Winnipeg Regional Health Authority regulate the quality of our drinking water using the Manitoba Drinking Water Safety Act and Guidelines for Canadian Drinking Water Quality.

The City of Winnipeg ensures that the water is safe by using watershed protection measures, design and construction standards, multi-step water treatment, operator certification programs, standardized operating procedures, and a comprehensive source-to-tap monitoring program.

The City of Winnipeg's Public Water System Operating Licence, PWS-09-412-01, requires that we regularly monitor the quality of our drinking water and submit an annual report to the regulating authority on or before the 31st of March of each year as set out in subsection 32(2) of *MR 40/2007, Drinking Water Safety Regulation*.

In keeping with this requirement, the City of Winnipeg hereby submits this report which summarizes the results of the City's 2017 Water Quality Monitoring Program.

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1.0 DRINKING WATER SYSTEM AND SOURCE

“Section 32(2) (a) a brief description of the drinking water system, including its water supply source.”

The City of Winnipeg gets its water from Shoal Lake, which is on the border between Manitoba and Ontario, and covers 277 square kilometers. The intake for Winnipeg’s water system is on Indian Bay on the western end of Shoal Lake, and is only accessible by rail or boat. Water flows from Shoal Lake to Winnipeg by gravity through a 135 kilometer long aqueduct. The water is stored in Deacon Reservoirs, four large reservoirs that can hold 8.8 billion liters, enough water to supply Winnipeg for about one month, depending on consumption demand. Water passes from the Deacon Reservoirs to a Drinking Water Treatment Plant, and then on to three smaller reservoirs and pumping stations in different areas of the city. Each day, an average of 165 million liters of water is billed to approximately 207,000 accounts in Winnipeg.

2.0 DISINFECTION METHODS

“Section 32(2) (b) a description of the disinfection methods used.”

The water passes through several disinfection treatment steps at the Water Treatment Plant including ozonation, chlorination, and UV light disinfection. The water is chlorinated again at the pumping stations before being distributed to homes and businesses.

3.0 DRINKING WATER QUALITY STANDARDS

“Section 32(2) (c) a list of all bacteriological, chemical, physical and microbial drinking water quality standards that apply to the water system.”

The bacteriological, chemical, physical, and microbial drinking water quality standards that apply to the City of Winnipeg’s Public Water System are listed in Operating Licence PWS-09-412-01¹, issued by Manitoba Sustainable Development, under the authority of the *Manitoba Drinking Water Safety Act*² and its associated Regulations: *MR 40/2007, Drinking Water Safety Regulation*³ and *MR 41/2007, Drinking Water Quality Standards Regulation*⁴. Table 1 provides a list of the parameters we analyze and analytical results are provided in Appendix A.

Table 1. Drinking Water Parameters

Parameter	Shoal Lake	Water Treatment Plant – Raw Water	Water Treatment Plant – Treated Water	Distribution System
Alkalinity	✓	✓	✓	✓
Bacteria	✓	✓	✓	✓
Bromate				✓
Bromide		✓		✓
Chloride	✓	✓	✓	✓
Chlorine		✓	✓	✓
Chlorophyll-a	✓	✓	✓	
Conductivity	✓	✓	✓	✓
Disinfection By-Products	✓	✓	✓	✓
Dissolved Oxygen		✓	✓	✓
Enteric Protozoa	✓	✓		
Fluoride	✓	✓		✓
Hardness	✓	✓	✓	✓
Langelier Index		✓		✓
Microcystin LR		✓	✓	
Nitrogen	✓	✓	✓	✓
Odour	✓	✓	✓	✓
Organic Carbon	✓	✓	✓	✓
Perchlorate	✓	✓	✓	✓
Pesticides	✓	✓	✓	
Phenoxy Acid Herbicides	✓	✓	✓	
pH	✓	✓	✓	✓
Phosphorous	✓	✓		✓
Plankton (algae) count	✓	✓	✓	✓
Polychlorinated Biphenyls	✓	✓	✓	
Solids	✓	✓	✓	✓
Sulphate	✓	✓	✓	✓
Taste and Odour Compounds		✓	✓	
Temperature	✓	✓	✓	✓
Total Metals	✓	✓	✓	✓
True Colour	✓	✓	✓	✓
Turbidity	✓	✓	✓	✓
UV – Transmittance and Absorbance		✓	✓	✓

4.0 OCCASIONS OF A RESULT NOT MEETING A DRINKING WATER QUALITY STANDARD AND CORRECTIVE ACTION TAKEN

“Section 32(2) (d) a summary of any incidents of failure to meet a drinking water quality standard, and a description of corrective action.”

Because water quality is so important, the City of Winnipeg operates a comprehensive Water Quality Monitoring program that exceeds the requirements of PWS-09-412-01. We monitor the quality of our water from source to tap and respond to customer inquiries and complaints about water quality. Occasionally, test results for some locations do not meet a drinking water quality standard. In these cases, we take corrective action immediately to ensure our water remains safe. Corrective action reports are submitted monthly to the Office of Drinking Water for deviations from the bacteriological and turbidity standards and the minimum required chlorine residuals at the Water Treatment Plant and 39 distribution system Location stipulated in our operating licence. Table 2 lists occasions of a result not meeting a water quality standard and corrective action taken in 2017.

Table 2. Occasions of a Result not Meeting a Water Quality Standard and Corrective Action Taken

Date	Location	Type of water quality standard not being met	Initial test result	Final test result	Description of corrective actions taken	Corrective Action Report Required
Apr 4, 2017	WC05	Total coliform < 1 MPNU/100mL	14	<1	Re-sampled original location and tested additional samples upstream/downstream until two consecutive negative results were reported. All samples indicated that the chlorine levels at the location were normal and provided adequate disinfection.	Yes
May 31, 2017	NE05	Total coliform < 1 MPNU/100mL	4	<1	Re-sampled original locations until two consecutive negative results were reported.	Yes
Dec 5, 2017	SW04	Total coliform < 1 MPNU/100mL	1	<1	All samples indicated that the chlorine levels at both locations were normal and provided adequate disinfection.	Yes
Sep 17, 2017	Watermain Repair	Total coliform < 1 MPNU/100mL <i>E. Coli</i> < 1 MPNU/100mL	1 1	<1 <1	Re-sampled original location and tested additional samples upstream/downstream until two consecutive negative results were reported. The area was under restricted flow and immediately re-flushed and a precautionary boil water advisory was issued to affected residents.	Yes
Aug 23, 2017	NW02	Free chlorine > 0.10 mg/L	<0.02	0.23	All locations were resampled and/or alternate locations were sampled, and/or other actions were taken (checked for closed valves and spot flushed) until chlorine was re-established.	No
Sep 19, 2017	Watermain Repair	Free chlorine > 0.10 mg/L	0.07	0.16		No
Oct 18, 2017	NW02	Free chlorine > 0.10 mg/L	0.04	0.42		No
Oct 23, 2017	NW02	Free chlorine > 0.10 mg/L	0.05	0.46		No
Oct 30, 2017	NW02	Free chlorine > 0.10 mg/L	0.02	0.46		No
Nov 1, 2017	SW16	Free chlorine > 0.10 mg/L	0.08	0.43		Yes

5.0 MONTHLY COMPLIANCE REPORTING

“Section 32(2) (e) a summary of the information contained in the records made under Section 31.”

As per the monitoring requirements set out in Table 2 of the City of Winnipeg’s Operating Licence, PWS-09-412-01, turbidity, free and total chlorine, UV, and corrective action reports are submitted on a monthly basis. Bacteriological reports and chlorine residual results are sent directly to the Office of Drinking Water by the analytical laboratory that does the bacteriological testing of samples. Monthly compliance reports are provided in Appendix B.

6.0 DRINKING WATER SAFETY ORDERS

“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 2017.

7.0 BOIL WATER ADVISORIES

“Section 32(2) (g) a description of any boil water advisories issued.”

A precautionary boil water advisory was issued by the City of Winnipeg to residents in a localized area on September 19, 2017 when a sample taken after a water main repair tested positive for *E.Coli*. The affected water main was immediately re-flushed and re-sampled, the area was under restricted flow and customers were immediately notified. The boil water advisory was subsequently rescinded on September 21, 2017, after two consecutive sets of re-samples, taken 24 hours apart, tested negative for *E.Coli*.

8.0 SUMMARY OF OFFENCES

“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 2017.

9.0 MAJOR EXPENSES

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

In 2017, the City’s major expenses incurred were as follows:

1. A 3 km long 300 mm diameter PVC water main was installed on Dugald Avenue as a reliability upgrade for the area.
2. Water main renewals were completed at 40 locations in the City’s water distribution system.
3. The north-east cell of the Wilkes Reservoir was rehabilitated including replacement of hollow core roof slabs, building envelope and roof beam bearing pads, as well as gel injection to repair a leak in the floor slab.
4. The 48” gate valve “HRV1” located in Wilkes Reservoir Valve Pit B was replaced with a 48” butterfly valve. Structural repairs to the valve pit superstructure were also undertaken.
5. The 36” gate valve “HSVC” located within the Wilkes Reservoir compound was replaced with a 36” butterfly valve.
6. A 36” butterfly valve on the Hurst Pumping Station Discharge (feeder main) was replaced.
7. The north rotating screen at the Shoal Lake Aqueduct Intake Facility was rehabilitated.
8. The gatehouse cranes at the Shoal Lake Aqueduct Intake Facility were rehabilitated.
9. Twenty-eight bollards were installed on the west side of the MacLean Pumping Station.

10.0 ADDITIONAL INFORMATION

“Section 32(2) (j) any other information or description of any other activities that the supplier believes should be communicated.”

In 2017, ferric sulphate was selected to replace ferric chloride as the coagulant used at the Water Treatment Plant, after the completion of bench-scale testing conducted in 2016. Throughout 2017, pilot-scale testing of ferric sulphate was conducted to determine the optimal dose and pH under various raw water temperature conditions; testing will continue into 2018. A coagulant-aid was also evaluated to optimize DAF operation with ferric sulphate.

11.0 REFERENCES

1. City of Winnipeg Operating Licence PWS-09-412-01.
<http://www.winnipeg.ca/waterandwaste/pdfs/water/PublicWaterSystemOperatingLicence2016.pdf>
2. Manitoba Drinking Water Safety Act (2002). Manitoba Water Stewardship.
<http://web2.gov.mb.ca/laws/statutes/2002/c03602e.php>
3. Manitoba Drinking Water Safety Regulation (2007). Manitoba Water Stewardship.
<http://www.gov.mb.ca/sd/waterstewardship/odw/reg-info/acts-regs/040-d101.07.pdf>
4. Manitoba Drinking Water Quality Standards Regulation (2007). Manitoba Water Stewardship.
<http://www.gov.mb.ca/sd/waterstewardship/odw/reg-info/acts-regs/041-d101.07.pdf>

APPENDIX A

WATER QUALITY SUMMARY REPORTS

City of Winnipeg
Environmental Standards Division
2017 Shoal Lake Water Quality Summary

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
Miscellaneous						
Carbon, Dissolved Organic	<i>parts per million</i>	no guideline	nr	nr	nr	-
Carbon, Total Organic	<i>parts per million</i>	no guideline	nr	nr	nr	-
Chlorophyll-a	<i>parts per billion</i>	no guideline	6	3	11	Chlorophyll is found in algae
Colour, True	<i>TCU</i>	no more than 15 *	12	6	18	Raw water - guideline does not apply
Conductivity	<i>microsiemens per centimetre</i>	no guideline	154	140	170	Another measure of dissolved solids
Odour	<i>units</i>	inoffensive*	86	75	150	Raw water - guideline does not apply
pH	<i>units</i>	between 7.0 and 10.5	8.13	7.42	8.64	Raw water - guideline does not apply
Plankton (algae) count	<i>cells/mL</i>	no guideline	19,681	<100	79,300	Algae contribute to odours and may cause filter clogging
Solids, Total	<i>parts per million</i>	no guideline	99	82	124	-
Solids, Total Dissolved	<i>parts per million</i>	no more than 500 *	89	67	108	Raw water - guideline does not apply
Temperature	<i>degrees Celcius</i>	no more than 15 *	11.3	1.7	23.8	Raw water - guideline does not apply
Turbidity (clearness)	<i>NTU</i>	no more than 0.3 in 95% of measurements/month, never to exceed 1.0	1.16	0.28	2.63	Raw water - guideline does not apply
Anions and Nutrients						
Alkalinity, Total	<i>parts per million as calcium carbonate</i>	no guideline	73	65	79	-
Hardness, Total	<i>parts per million as calcium carbonate</i>	no guideline	75	68	85	-
Chloride	<i>parts per million</i>	no more than 250 *	1.6	0.7	1.9	Raw water - guideline does not apply
Fluoride	<i>parts per million</i>	no more than 1.5	0.10	0.09	0.12	Raw water - guideline does not apply
Nitrate Nitrogen	<i>parts per million</i>	no more than 10	0.014	<0.003	0.058	Raw water - guideline does not apply
Perchlorate	<i>parts per billion</i>	no guideline	<0.2	<0.2	<0.2	-
Phosphorus, Dissolved Reactive	<i>parts per billion</i>	no guideline	2	<1	7	-
Phosphorus, Total	<i>parts per billion</i>	no guideline	18.5	<1	39.0	Phosphorus can contribute to algae growth
Sulphate	<i>parts per million</i>	no more than 500 *	<2	<2	<2	Raw water - guideline does not apply
Total Kjeldahl Nitrogen (TKN)	<i>parts per million</i>	no guideline	0.5	<0.2	0.7	TKN is a combination of ammonia and organic nitrogen
Bacteria						
Escherichia Coli	<i>MPN per 100 mL</i>	none detectable per 100 mL	13	<1	165	Raw water - guideline does not apply
Total Coliforms	<i>MPN per 100 mL</i>	none detectable per 100 mL	83	<1	>200	Raw water - guideline does not apply
Heterotrophic Plate Count	<i>CFU per mL</i>	no guideline	145	2	>300	-
Disinfection By-Products						
Aldehydes	<i>parts per billion</i>	no guideline	4.1	<0.5	10.8	-
Bromodichloromethane	<i>parts per billion</i>	no guideline	<0.4	<0.4	<0.4	-
Haloacetic acids	<i>parts per billion</i>	no more than 80	<3	<3	6	Raw water - guideline does not apply
Trihalomethanes	<i>parts per billion</i>	no more than 100	<3	<3	<3	Raw water - guideline does not apply
Enteric Protozoa						
Cryptosporidium	<i>oocysts per 100 L</i>	no guideline	<1	<1	<1	13 samples taken in 2017
Giardia	<i>cysts per 100 L</i>	no guideline	<1	<1	1	13 samples taken in 2017
Total Metals						
Aluminum	<i>parts per million</i>	no guideline	0.006	0.002	0.021	-
Antimony	<i>parts per million</i>	no more than 0.006	<0.0005	<0.0005	0.0010	Raw water - guideline does not apply

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PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
Arsenic	<i>parts per million</i>	no more than 0.010	0.0007	<0.0007	0.0010	Raw water - guideline does not apply
Boron	<i>parts per million</i>	no more than 5	0.005	0.004	<0.009	Raw water - guideline does not apply
Cadmium	<i>parts per million</i>	no more than 0.005	<0.0006	<0.0001	<0.0006	Raw water - guideline does not apply
Calcium	<i>parts per million</i>	no guideline	20.2	18.1	22.3	Contributes to hardness
Chromium	<i>parts per million</i>	no more than 0.05	<0.0006	<0.0006	0.0010	Raw water - guideline does not apply
Chromium VI	<i>parts per billion</i>	no guideline	1.9	<1.0	<10	-
Copper	<i>parts per million</i>	no more than 1.0 *	0.0016	0.0003	<0.0050	Raw water - guideline does not apply
Iron	<i>parts per million</i>	no more than 0.3 *	0.029	<0.008	0.090	Raw water - guideline does not apply
Lead	<i>parts per million</i>	no more than 0.010	<0.0006	<0.0004	<0.0006	Raw water - guideline does not apply
Magnesium	<i>parts per million</i>	no guideline	5.82	5.45	6.25	Contributes to hardness
Manganese	<i>parts per million</i>	no more than 0.05 *	0.0128	0.0024	0.0306	Raw water - guideline does not apply
Mercury	<i>parts per trillion</i>	no more than 1000	0.7	0.6	1.1	Raw water - guideline does not apply
Nickel	<i>parts per million</i>	no guideline	0.0005	<0.0003	0.0034	-
Potassium	<i>parts per million</i>	no guideline	1.18	1.08	1.36	-
Sodium	<i>parts per million</i>	no more than 200 *	2.19	1.94	2.48	Raw water - guideline does not apply
Uranium	<i>parts per million</i>	no more than 0.02	<0.0006	<0.0004	<0.0006	Raw water - guideline does not apply
Zinc	<i>parts per million</i>	no more than 5.0 *	<0.0050	<0.0009	<0.0050	Raw water - guideline does not apply
Zirconium	<i>parts per million</i>	no guideline	<0.0005	<0.0001	<0.0005	-
Pesticides						
Alachlor	<i>parts per billion</i>	no guideline	<0.10	<0.10	<0.10	-
Aldrin	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
alpha-BHC	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
alpha-Chlordane	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
alpha-Endosulfan	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Atrazine	<i>parts per billion</i>	no more than 5	<0.10	<0.10	<0.10	Raw water - guideline does not apply
Azinphosmethyl	<i>parts per billion</i>	no more than 20	<0.10	<0.010	<0.10	Raw water - guideline does not apply
beta-BHC	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
beta-Endosulfan	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Carbofuran	<i>parts per billion</i>	no more than 90	<0.20	<0.20	<0.20	Raw water - guideline does not apply
Chlorpyrifos	<i>parts per billion</i>	no more than 90	<0.10	<0.005	<0.10	Raw water - guideline does not apply
delta-BHC	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Diazinon	<i>parts per billion</i>	no more than 20	<0.10	<0.005	<0.10	Raw water - guideline does not apply
Diclofop-methyl	<i>parts per billion</i>	no more than 9	<0.10	<0.10	<0.10	Raw water - guideline does not apply
Dieldrin	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Dimethoate	<i>parts per billion</i>	no more than 20	<0.10	<0.10	<0.10	Raw water - guideline does not apply
Endrin	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.040	-
Eptam	<i>parts per billion</i>	no guideline	<0.20	<0.20	<0.20	-
gamma-Chlordane	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Heptachlor	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Heptachlor Epoxide	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Lindane (gamma-BHC)	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Malathion	<i>parts per billion</i>	no more than 190	<0.10	<0.10	<0.10	Raw water - guideline does not apply
Methoxychlor	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Methyl Parathion	<i>parts per billion</i>	no guideline	<0.10	<0.10	<0.10	-

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Metribuzin	<i>parts per billion</i>	no more than 80	<0.20	<0.20	<0.20	Raw water - guideline does not apply
Mirex	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
o,p-DDD	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
o,p-DDE	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
o,p-DDT	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
p,p-DDD	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
p,p-DDE	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
p,p-DDT	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Parathion	<i>parts per billion</i>	no guideline	<0.10	<0.013	<0.10	-
Propaclor	<i>parts per billion</i>	no guideline	<0.20	<0.20	<0.20	-
Propanil	<i>parts per billion</i>	no guideline	<0.20	<0.20	<0.20	-
Propoxur	<i>parts per billion</i>	no guideline	<0.20	<0.20	<0.20	-
Simazine	<i>parts per billion</i>	no more than 10	<0.10	<0.10	<0.10	Raw water - guideline does not apply
Terbufos	<i>parts per billion</i>	no more than 1	<0.10	<0.10	<0.10	Raw water - guideline does not apply
Triallate	<i>parts per billion</i>	no guideline	<0.10	<0.10	<0.10	-
Trichlopyr	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
Trifluralin	<i>parts per billion</i>	no more than 45	<0.030	<0.030	<0.030	Raw water - guideline does not apply
Polychlorinated Biphenyls						
Arochlor 1016	<i>parts per billion</i>	no guideline	<0.020	<0.020	<0.020	-
Arochlor 1221	<i>parts per billion</i>	no guideline	<0.020	<0.020	<0.020	-
Arochlor 1232	<i>parts per billion</i>	no guideline	<0.020	<0.020	<0.020	-
Arochlor 1242	<i>parts per billion</i>	no guideline	<0.020	<0.020	<0.020	-
Arochlor 1248	<i>parts per billion</i>	no guideline	<0.020	<0.020	<0.020	-
Arochlor 1254	<i>parts per billion</i>	no guideline	<0.020	<0.020	<0.020	-
Arochlor 1260	<i>parts per billion</i>	no guideline	<0.020	<0.020	<0.020	-
Phenoxy Acid Herbicides						
2,4,5-T	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
2,4,5-TP	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
2,4-D	<i>parts per billion</i>	no more than 100	<0.050	<0.050	<0.050	Raw water - guideline does not apply
2,4-DB	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
2,4-DP	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
Bromoxynil	<i>parts per billion</i>	no more than 5	<0.020	<0.020	<0.020	Raw water - guideline does not apply
Dicamba	<i>parts per billion</i>	no more than 120	<0.0060	<0.0060	<0.0060	Raw water - guideline does not apply
Dinoseb	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
MCPA	<i>parts per billion</i>	no more than 100	<0.025	<0.025	<0.025	Raw water - guideline does not apply
MCPB	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
Mecoprop	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
Picloram	<i>parts per billion</i>	no more than 190	<0.20	<0.20	<0.80	Raw water - guideline does not apply

*Aesthetic objective: These guidelines have an objective and not a maximum acceptable limit. These parameters should not impact the safety of the water to drink and there is no anticipated health risk for short-term exposures.

Guidelines from 'Summary of Guidelines for Canadian Drinking Water Quality' by Health Canada, February 2017

Note: Where value is expressed as less than (<), the value is halved and used in the calculations, where value is expressed as (>), the value is used in the calculations.

nr - no result

City of Winnipeg
Environmental Standards Division
2017 Water Treatment Plant - Raw Water
Drinking Water Quality Summary

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
Miscellaneous						
Carbon, Dissolved Organic	<i>parts per million</i>	no guideline	7.7	7.0	8.3	-
Carbon, Total Organic	<i>parts per million</i>	no guideline	8.2	7.8	8.4	-
Chlorine, Free	<i>parts per million</i>	no guideline	0.03	<0.02	0.12	-
Chlorine, Total	<i>parts per million</i>	no guideline	0.04	<0.02	0.12	-
Chlorophyll-a	<i>parts per billion</i>	no guideline	6	2	10	Chlorophyll is found in algae
Colour, True	<i>TCU</i>	no more than 15 *	12.6	6.1	18.0	Raw water - guideline does not apply
Conductivity	<i>microsiemens per centimetre</i>	no guideline	166	155	187	Another measure of dissolved solids
Langelier Index (4 C)	<i>units</i>	no guideline	-0.38	-0.46	-0.34	-
Langelier Index (60 C)	<i>units</i>	no guideline	0.40	0.31	0.44	-
Microcystin LR	<i>parts per billion</i>	no more than 1.5	<0.2	<0.2	<0.2	Raw water - guideline does not apply
Odour	<i>units</i>	inoffensive*	83	75	150	Raw water - guideline does not apply
Oxygen, Dissolved	<i>parts per million</i>	no guideline	10.4	6.5	13.3	-
pH	<i>units</i>	between 7.0 and 10.5	7.98	7.44	8.63	Raw water - guideline does not apply
Plankton (algae) count	<i>cells/mL</i>	no guideline	16,100	600	76,000	Algae contribute to odours and may cause filter clogging
Solids, Total	<i>parts per million</i>	no guideline	109	75	175	-
Solids, Total Dissolved	<i>parts per million</i>	no more than 500 *	96	40	124	Raw water - guideline does not apply
Temperature	<i>degrees Celcius</i>	no more than 15 *	10.2	1.5	22.9	Raw water - guideline does not apply
Turbidity (clearness)	<i>NTU</i>	no more than 0.3 in 95% of measurements/month, never to exceed 1.0	0.99	0.47	2.78	Raw water - guideline does not apply
UV Absorbance, Unfiltered	<i>units per centimeter</i>	no guideline	0.143	0.122	0.168	-
UV Transmittance, Filtered	<i>percent transmissivity</i>	no guideline	73.6	69.0	77.3	-
UV Transmittance, Unfiltered	<i>percent transmissivity</i>	no guideline	71.9	67.9	75.6	-
Anions and Nutrients						
Alkalinity, Total	<i>parts per million as calcium carbonate</i>	no guideline	78	72	93	-
Alkalinity, Bicarbonate	<i>parts per million</i>	no guideline	97	91	105	-
Alkalinity, Carbonate	<i>parts per million</i>	no guideline	<0.60	<0.60	<0.60	-
Alkalinity, Hydroxide	<i>parts per million</i>	no guideline	<0.34	<0.34	<0.34	-
Hardness, Total	<i>parts per million as calcium carbonate</i>	no guideline	80	72	90	-
Ammonia	<i>parts per million</i>	no guideline	0.017	<0.010	0.052	-
Bromide	<i>parts per million</i>	no guideline	<0.10	<0.010	<0.10	-
Chloride	<i>parts per million</i>	no more than 250 *	2.5	1.5	4.3	Raw water - guideline does not apply
Fluoride	<i>parts per million</i>	no more than 1.5	0.059	0.051	0.068	Raw water - guideline does not apply
Nitrate Nitrogen	<i>parts per million</i>	no more than 10	0.0151	<0.0050	0.0402	Raw water - guideline does not apply
Nitrite	<i>parts per million</i>	no more than 3	0.0011	<0.0010	0.0028	Raw water - guideline does not apply
Perchlorate	<i>parts per billion</i>	no guideline	<0.2	<0.2	<0.2	-
Phosphorus, Total	<i>parts per million</i>	no guideline	<0.05	<0.05	<0.10	Phosphorus can contribute to algae growth
Sulphate	<i>parts per million</i>	no more than 500 *	<2.0	<2.0	5.8	Raw water - guideline does not apply
Bacteria						
Escherichia Coli	<i>MPN per 100 mL</i>	none detectable per 100 mL	30	<1	>200	Raw water - guideline does not apply
Total Coliforms	<i>MPN per 100 mL</i>	none detectable per 100 mL	99	<1	>200	Raw water - guideline does not apply
Heterotrophic Plate Count	<i>CFU per mL</i>	no guideline	143	<1	>300	-
Disinfection By-Products						
Aldehydes	<i>parts per billion</i>	no guideline	4.5	<0.5	9.4	-

City of Winnipeg
Environmental Standards Division
2017 Water Treatment Plant - Raw Water
Drinking Water Quality Summary

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
Bromodichloromethane	<i>parts per billion</i>	no guideline	<0.4	<0.4	<0.4	-
Haloacetic acids	<i>parts per billion</i>	no more than 80	<3	<3	4	Raw water - guideline does not apply
Trihalomethanes	<i>parts per billion</i>	no more than 100	<3	<3	<3	Raw water - guideline does not apply
Enteric Protozoa						
Cryptosporidium	<i>oocysts per 100 L</i>	no guideline	<1	<1	<1	12 samples taken in 2017
Giardia	<i>cysts per 100 L</i>	no guideline	<1	<1	<1	12 samples taken in 2017
Taste and Odours						
236 TCA - 2,3,6-trichloroanisole	<i>parts per trillion</i>	no guideline	<0.5	<0.5	<1.0	-
246 TCA - 2,4,6-trichloroanisole	<i>parts per trillion</i>	no guideline	<0.5	<0.5	<1.0	-
345 TCV - 3,4,5-trichloroveratrole	<i>parts per trillion</i>	no guideline	<0.2	<0.2	<0.5	-
Geosmin	<i>parts per trillion</i>	no guideline	7.5	2.0	19.0	-
IBMP - 2-isobutyl-3-methoxypyrazine	<i>parts per trillion</i>	no guideline	<0.2	<0.2	<0.5	-
IPMP - 2-isopropyl-3-methoxypyrazine	<i>parts per trillion</i>	no guideline	<0.2	<0.2	<0.5	-
Methylene Chloride (Dichloromethane)	<i>parts per billion</i>	no more than 50	<0.5	<0.5	<0.5	Raw water - guideline does not apply
MIB - 2-methylisoborneol	<i>parts per trillion</i>	no guideline	<10	<10	<30	-
MTBE - methyl tertiary-butyl ether	<i>parts per billion</i>	no more than 15 *	<0.5	<0.5	<0.5	Raw water - guideline does not apply
NDMA - N-nitrosodimethylamine	<i>parts per billion</i>	no more than 0.04	0.0011	<0.0005	<0.0050	Raw water - guideline does not apply
Total Metals						
Aluminum	<i>parts per million</i>	no guideline	0.004	0.0006	<0.010	-
Antimony	<i>parts per million</i>	no more than 0.006	0.0003	<0.0001	0.0006	Raw water - guideline does not apply
Arsenic	<i>parts per million</i>	no more than 0.010	0.0008	0.0007	0.0016	Raw water - guideline does not apply
Barium	<i>parts per million</i>	no more than 1	0.0164	0.0157	0.0168	Raw water - guideline does not apply
Beryllium	<i>parts per million</i>	no guideline	<0.00010	<0.00010	<0.00020	-
Bismuth	<i>parts per million</i>	no guideline	<0.00020	<0.00005	<0.00020	-
Boron	<i>parts per million</i>	no more than 5	0.0081	0.0044	0.0168	Raw water - guideline does not apply
Cadmium	<i>parts per million</i>	no more than 0.005	<0.00060	<0.000005	<0.00060	Raw water - guideline does not apply
Calcium	<i>parts per million</i>	no guideline	21.3	17.0	23.4	Contributes to hardness
Cesium	<i>parts per million</i>	no guideline	<0.00010	<0.00001	<0.00010	-
Chromium	<i>parts per million</i>	no more than 0.05	0.0004	<0.0001	0.0010	Raw water - guideline does not apply
Chromium VI	<i>parts per billion</i>	no guideline	<1.0	<1.0	1.1	-
Cobalt	<i>parts per million</i>	no guideline	<0.00010	<0.00010	<0.00020	-
Copper	<i>parts per million</i>	no more than 1.0 *	0.0015	0.0005	<0.0050	Raw water - guideline does not apply
Iron	<i>parts per million</i>	no more than 0.3 *	0.057	0.027	0.108	Raw water - guideline does not apply
Lead	<i>parts per million</i>	no more than 0.010	<0.00060	<0.00005	<0.00060	Raw water - guideline does not apply
Lithium	<i>parts per million</i>	no guideline	0.0024	0.0021	0.0026	-
Magnesium	<i>parts per million</i>	no guideline	6.24	5.20	6.93	Contributes to hardness
Manganese	<i>parts per million</i>	no more than 0.05 *	0.0161	0.0051	0.0567	Raw water - guideline does not apply
Mercury	<i>parts per trillion</i>	no more than 1000	0.6	0.6	<1.0	Raw water - guideline does not apply
Molybdenum	<i>parts per million</i>	no guideline	<0.00020	0.00016	<0.00020	-
Nickel	<i>parts per million</i>	no guideline	0.0004	0.0004	<0.0020	-
Potassium	<i>parts per million</i>	no guideline	1.20	0.99	1.37	-

City of Winnipeg
Environmental Standards Division
2017 Water Treatment Plant - Raw Water
Drinking Water Quality Summary

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
Rubidium	<i>parts per million</i>	no guideline	0.00176	0.00147	0.00192	-
Selenium	<i>parts per million</i>	no more than 0.05	0.0003	0.0001	<0.0010	Raw water - guideline does not apply
Silicon	<i>parts per million</i>	no guideline	1.77	1.14	2.91	-
Silver	<i>parts per million</i>	no guideline	<0.00010	<0.00001	<0.00010	-
Sodium	<i>parts per million</i>	no more than 200 *	2.30	1.93	2.72	Raw water - guideline does not apply
Strontium	<i>parts per million</i>	no guideline	0.0396	0.0371	0.0417	-
Tellurium	<i>parts per million</i>	no guideline	<0.00020	<0.00020	<0.00020	-
Thallium	<i>parts per million</i>	no guideline	<0.00010	<0.00001	<0.00010	-
Thorium	<i>parts per million</i>	no guideline	<0.00010	<0.00010	<0.00010	-
Tin	<i>parts per million</i>	no guideline	<0.00010	<0.00010	<0.00020	-
Titanium	<i>parts per million</i>	no guideline	<0.00030	<0.00030	<0.00050	-
Tungsten	<i>parts per million</i>	no guideline	<0.00010	<0.00010	<0.00010	-
Uranium	<i>parts per million</i>	no more than 0.02	0.00022	0.000026	<0.00060	Raw water - guideline does not apply
Vanadium	<i>parts per million</i>	no guideline	<0.00020	<0.00020	<0.00050	-
Zinc	<i>parts per million</i>	no more than 5.0 *	0.0023	0.0007	0.0200	Raw water - guideline does not apply
Zirconium	<i>parts per million</i>	no guideline	<0.00050	<0.00006	<0.00050	-
Pesticides						
Alachlor	<i>parts per billion</i>	no guideline	<1.0	<0.10	<1.0	-
Aldrin	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
alpha-BHC	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
alpha-Chlordane	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
alpha-Endosulfan	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Atrazine	<i>parts per billion</i>	no more than 5	<1.0	<0.10	<1.0	Raw water - guideline does not apply
Azinphosmethyl	<i>parts per billion</i>	no more than 20	<0.10	<0.01	<0.10	Raw water - guideline does not apply
beta-BHC	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
beta-Endosulfan	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Carbofuran	<i>parts per billion</i>	no more than 90	<2.0	<0.20	<2.0	Raw water - guideline does not apply
Chlorpyrifos	<i>parts per billion</i>	no more than 90	<0.10	<0.005	<0.10	Raw water - guideline does not apply
delta-BHC	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Diazinon	<i>parts per billion</i>	no more than 20	<0.10	<0.005	<0.10	Raw water - guideline does not apply
Diclofop-methyl	<i>parts per billion</i>	no more than 9	<1.0	<0.10	<1.0	Raw water - guideline does not apply
Dieldrin	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Dimethoate	<i>parts per billion</i>	no more than 20	<1.0	<0.10	<1.0	Raw water - guideline does not apply
Endrin	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Eptam	<i>parts per billion</i>	no guideline	<0.20	<0.20	<0.20	-
gamma-Chlordane	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Heptachlor	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Heptachlor Epoxide	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Lindane (gamma-BHC)	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Malathion	<i>parts per billion</i>	no more than 190	<1.0	<0.10	<1.0	Raw water - guideline does not apply
Methoxychlor	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Methyl Parathion	<i>parts per billion</i>	no guideline	<1.0	<0.10	<1.0	-
Metribuzin	<i>parts per billion</i>	no more than 80	<2.0	<0.10	<2.0	Raw water - guideline does not apply
Mirex	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
o,p-DDD	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
o,p-DDE	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
o,p-DDT	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
p,p-DDD	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
p,p-DDE	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
p,p-DDT	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010	-
Parathion	<i>parts per billion</i>	no guideline	<0.20	<0.013	<0.20	-
Propaclar	<i>parts per billion</i>	no guideline	<0.20	<0.20	<0.20	-
Propanil	<i>parts per billion</i>	no guideline	<0.20	<0.20	<0.20	-

City of Winnipeg
Environmental Standards Division
2017 Water Treatment Plant - Raw Water
Drinking Water Quality Summary

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
Propoxur	<i>parts per billion</i>	no guideline	<0.20	<0.20	<0.20	-
Simazine	<i>parts per billion</i>	no more than 10	<1.0	<0.10	<1.0	Raw water - guideline does not apply
Terbufos	<i>parts per billion</i>	no more than 1	<1.0	<0.10	<1.0	Raw water - guideline does not apply
Triallate	<i>parts per billion</i>	no guideline	<1.0	<0.10	<1.0	-
Trichlopyr	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
Trifluralin	<i>parts per billion</i>	no more than 45	<0.30	<0.03	<0.30	Raw water - guideline does not apply
Polychlorinated Biphenyls						
Arochlor 1016	<i>parts per billion</i>	no guideline	<0.02	<0.02	<0.02	-
Arochlor 1221	<i>parts per billion</i>	no guideline	<0.02	<0.02	<0.02	-
Arochlor 1232	<i>parts per billion</i>	no guideline	<0.02	<0.02	<0.02	-
Arochlor 1242	<i>parts per billion</i>	no guideline	<0.02	<0.02	<0.02	-
Arochlor 1248	<i>parts per billion</i>	no guideline	<0.02	<0.02	<0.02	-
Arochlor 1254	<i>parts per billion</i>	no guideline	<0.02	<0.02	<0.02	-
Arochlor 1260	<i>parts per billion</i>	no guideline	<0.02	<0.02	<0.02	-
Phenoxy Acid Herbicides						
2,4,5-T	<i>parts per billion</i>	no guideline	<0.05	<0.05	<0.25	-
2,4,5-TP	<i>parts per billion</i>	no guideline	<0.05	<0.05	<0.25	-
2,4-D	<i>parts per billion</i>	no more than 100	<0.05	<0.05	<0.25	Raw water - guideline does not apply
2,4-DB	<i>parts per billion</i>	no guideline	<0.05	<0.05	<0.25	-
2,4-DP	<i>parts per billion</i>	no guideline	<0.05	<0.05	<0.25	-
Bromoxynil	<i>parts per billion</i>	no more than 5	<0.02	<0.02	<0.10	Raw water - guideline does not apply
Dicamba	<i>parts per billion</i>	no more than 120	<0.006	<0.006	<0.03	Raw water - guideline does not apply
Dinoseb	<i>parts per billion</i>	no guideline	<0.05	<0.05	<0.13	-
MCPA	<i>parts per billion</i>	no more than 100	<0.025	<0.025	<0.13	Raw water - guideline does not apply
MCPB	<i>parts per billion</i>	no guideline	<0.05	<0.05	<0.25	-
Mecoprop	<i>parts per billion</i>	no guideline	<0.05	<0.05	<0.25	-
Picloram	<i>parts per billion</i>	no more than 190	<0.20	<0.20	<1.0	Raw water - guideline does not apply

*Aesthetic objective: These guidelines have an objective and not a maximum acceptable limit. These parameters should not impact the safety of the water to drink and there is no anticipated health risk for short-term exposures.

Guidelines from 'Summary of Guidelines for Canadian Drinking Water Quality' by Health Canada, February 2017

Note: Where value is expressed as less than (<), the value is halved and used in the calculations, where value is expressed as (>), the value is used in the calculations.

City of Winnipeg
Environmental Standards Division
2017 Water Treatment Plant
Finished Water - Deacon Booster Pumping Station 1 and 2
Drinking Water Quality Summary

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
Miscellaneous						
Carbon, Dissolved Organic	<i>parts per million</i>	no guideline	nr	nr	nr	-
Carbon, Total Organic	<i>parts per million</i>	no guideline	nr	nr	nr	-
Chlorine, Free	<i>parts per million</i>	no guideline	1.18	0.82	1.71	-
Chlorine, Total	<i>parts per million</i>	no guideline	1.37	0.97	1.96	-
Chlorophyll-a	<i>parts per billion</i>	no guideline	<1	<1	<1	Chlorophyll is found in algae
Colour, True	<i>TCU</i>	no more than 15 *	1.9	0.5	7.5	Meets the guideline
Conductivity	<i>microsiemens per centimetre</i>	no guideline	322	300	367	Another measure of dissolved solids
Microcystin LR	<i>parts per billion</i>	no more than 1.5	<0.2	<0.2	<0.2	Meets the guideline
Odour	<i>units</i>	inoffensive*	14	8	25	Meets the guideline
Oxygen, Dissolved	<i>parts per million</i>	no guideline	12.0	9.1	14.9	-
pH	<i>units</i>	between 7.0 and 10.5	7.78	7.42	8.02	Meets the guideline
Plankton (algae) count	<i>cells/mL</i>	no guideline	<100	<100	300	Algae contribute to odours and may cause filter clogging
Solids, Total	<i>parts per million</i>	no guideline	185	152	222	-
Solids, Total Dissolved	<i>parts per million</i>	no more than 500 *	173	135	207	Meets the guideline
Temperature	<i>degrees Celcius</i>	no more than 15 *	10.5	1.5	22.9	Does not always meet the guideline.
Turbidity (clearness)	<i>NTU</i>	no more than 0.3 in 95% of measurements/month, never to exceed 1.0	0.16	0.09	0.30	Meets the guideline
UV Transmittance, Filtered	<i>percent transmissivity</i>	no guideline	95.1	92.4	97.6	-
UV Transmittance, Unfiltered	<i>percent transmissivity</i>	no guideline	94.1	90.8	96.5	-
Anions and Nutrients						
Alkalinity, Total	<i>parts per million as calcium carbonate</i>	no guideline	72	63	109	-
Hardness, Total	<i>parts per million as calcium carbonate</i>	no guideline	80	71	91	-
Chloride	<i>parts per million</i>	no more than 250 *	24	13	30	Meets the guideline
Perchlorate	<i>parts per billion</i>	no guideline	<0.2	<0.2	<0.2	-
Sulphate	<i>parts per million</i>	no more than 500 *	47	40	55	Meets the guideline
Bacteria						
Escherichia Coli	<i>MPN per 100 mL</i>	none detectable per 100 mL	<1	<1	<1	Meets the guideline
Total Coliforms	<i>MPN per 100 mL</i>	none detectable per 100 mL	<1	<1	<1	Meets the guideline
Heterotrophic Plate Count	<i>CFU per mL</i>	no guideline	1	<1	75	-
Disinfection By-Products						
Aldehydes	<i>parts per billion</i>	no guideline	16.8	7.3	28.9	-
Bromodichloromethane	<i>parts per billion</i>	no guideline	1.4	0.5	2.1	-
Haloacetic acids	<i>parts per billion</i>	no more than 80	13	5	26	Meets the guideline
Trihalomethanes	<i>parts per billion</i>	no more than 100	12	5	21	Meets the guideline
Taste and Odours						
236 TCA - 2,3,6-trichloroanisole	<i>parts per trillion</i>	no guideline	<0.5	<0.5	<1.0	-
246 TCA - 2,4,6-trichloroanisole	<i>parts per trillion</i>	no guideline	<0.5	<0.5	<1.0	-
345 TCV - 3,4,5-trichloroveratrole	<i>parts per trillion</i>	no guideline	<0.2	<0.2	<0.5	-
Geosmin	<i>parts per trillion</i>	no guideline	2.1	<1.0	5.0	-
IBMP - 2-isobutyl-3-methoxypyrazine	<i>parts per trillion</i>	no guideline	<0.2	<0.2	<0.5	-
IPMP - 2-isopropyl-3-methoxypyrazine	<i>parts per trillion</i>	no guideline	<0.2	<0.2	<0.5	-
Methylene Chloride (Dichloromethane)	<i>parts per billion</i>	no more than 50	<0.5	<0.5	<1	Meets the guideline
MIB - 2-methylisoborneol	<i>parts per trillion</i>	no guideline	<10	<10	<30	-
MTBE - methyl tertiary-butyl ether	<i>parts per billion</i>	no more than 15 *	<0.5	<0.5	<0.5	Meets the guideline
NDMA - N-nitrosodimethylamine	<i>parts per billion</i>	no more than 0.04	<0.0070	<0.0005	<0.0070	Meets the guideline

City of Winnipeg
Environmental Standards Division
2017 Water Treatment Plant
Finished Water - Deacon Booster Pumping Station 1 and 2
Drinking Water Quality Summary

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
Total Metals						
Aluminium	parts per million	no guideline	0.015	0.006	0.050	-
Antimony	parts per million	no more than 0.006	<0.0005	<0.0005	0.0005	Meets the guideline
Arsenic	parts per million	no more than 0.010	0.0004	0.0003	0.0007	Meets the guideline
Boron	parts per million	no more than 5	0.0066	0.0041	0.0130	Meets the guideline
Cadmium	parts per million	no more than 0.005	<0.0006	<0.0001	<0.0006	Meets the guideline
Calcium	parts per million	no guideline	20.9	16.2	25.6	Contributes to hardness
Chromium	parts per million	no more than 0.05	<0.0006	<0.0006	0.0020	Meets the guideline
Chromium VI	parts per billion	no guideline	<1	<1	<1	-
Copper	parts per million	no more than 1.0 *	0.0025	0.0020	0.0052	Meets the guideline
Iron	parts per million	no more than 0.3 *	0.040	<0.008	0.110	Meets the guideline
Lead	parts per million	no more than 0.010	<0.0004	<0.0004	<0.0006	Meets the guideline
Magnesium	parts per million	no guideline	6.05	5.15	7.17	Contributes to hardness
Manganese	parts per million	no more than 0.05 *	0.032	0.020	0.048	Meets the guideline
Mercury	parts per trillion	no more than 1000	<0.5	<0.5	<1.0	Meets the guideline
Nickel	parts per million	no guideline	0.0024	0.0014	0.0040	-
Potassium	parts per million	no guideline	1.17	0.99	1.34	-
Sodium	parts per million	no more than 200 *	31.9	26.3	38.4	Meets the guideline
Uranium	parts per million	no more than 0.02	<0.0004	<0.0004	<0.0006	Meets the guideline
Zinc	parts per million	no more than 5.0 *	0.0027	<0.0009	0.0175	Meets the guideline
Zirconium	parts per million	no guideline	<0.0005	<0.0001	<0.0005	-
Pesticides						
Alachlor	parts per billion	no guideline	<0.10	<0.10	<0.10	-
Aldrin	parts per billion	no guideline	<0.010	<0.010	<0.010	-
alpha-BHC	parts per billion	no guideline	<0.010	<0.010	<0.010	-
alpha-Chlordane	parts per billion	no guideline	<0.010	<0.010	<0.010	-
alpha-Endosulfan	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Atrazine	parts per billion	no more than 5	<0.10	<0.10	<0.10	Meets the guideline
Azinphosmethyl	parts per billion	no more than 20	<0.10	<0.01	<0.10	Meets the guideline
beta-BHC	parts per billion	no guideline	<0.010	<0.010	<0.010	-
beta-Endosulfan	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Carbofuran	parts per billion	no more than 90	<0.20	<0.20	<0.20	Meets the guideline
Chlorpyrifos	parts per billion	no more than 90	<0.10	<0.005	<0.10	Meets the guideline
delta-BHC	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Diazinon	parts per billion	no more than 20	<0.10	<0.005	<0.10	Meets the guideline
Diclofop-methyl	parts per billion	no more than 9	<0.10	<0.10	<0.10	Meets the guideline
Dieldrin	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Dimethoate	parts per billion	no more than 20	<0.10	<0.10	<0.10	Meets the guideline
Endrin	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Eptam	parts per billion	no guideline	<0.20	<0.20	<0.20	-
gamma-Chlordane	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Heptachlor	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Heptachlor Epoxide	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Lindane (gamma-BHC)	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Malathion	parts per billion	no more than 190	<0.10	<0.10	<0.10	Meets the guideline
Methoxychlor	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Methyl Parathion	parts per billion	no guideline	<0.10	<0.10	<0.10	-
Metribuzin	parts per billion	no more than 80	<0.10	<0.10	<0.20	Meets the guideline
Mirex	parts per billion	no guideline	<0.010	<0.010	<0.010	-
o,p-DDD	parts per billion	no guideline	<0.010	<0.010	<0.010	-
o,p-DDE	parts per billion	no guideline	<0.010	<0.010	<0.010	-
o,p-DDT	parts per billion	no guideline	<0.010	<0.010	<0.010	-
p,p-DDD	parts per billion	no guideline	<0.010	<0.010	<0.010	-
p,p-DDE	parts per billion	no guideline	<0.010	<0.010	<0.010	-
p,p-DDT	parts per billion	no guideline	<0.010	<0.010	<0.010	-
Parathion	parts per billion	no guideline	<0.20	<0.013	<0.20	-
Propaclor	parts per billion	no guideline	<0.20	<0.20	<0.20	-
Propanil	parts per billion	no guideline	<0.20	<0.20	<0.20	-
Propoxur	parts per billion	no guideline	<0.20	<0.20	<0.20	-
Simazine	parts per billion	no more than 10	<0.10	<0.10	<0.10	Meets the guideline
Terbufos	parts per billion	no more than 1	<0.10	<0.10	<0.10	Meets the guideline
Triallate	parts per billion	no guideline	<0.10	<0.10	<0.10	-

City of Winnipeg
Environmental Standards Division
2017 Water Treatment Plant
Finished Water - Deacon Booster Pumping Station 1 and 2
Drinking Water Quality Summary

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
Trichlopyr	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
Trifluralin	<i>parts per billion</i>	no more than 45	<0.030	<0.030	<0.030	Meets the guideline
Polychlorinated Biphenyls						
Arochlor 1016	<i>parts per billion</i>	no guideline	<0.020	<0.020	<0.020	-
Arochlor 1221	<i>parts per billion</i>	no guideline	<0.020	<0.020	<0.020	-
Arochlor 1232	<i>parts per billion</i>	no guideline	<0.020	<0.020	<0.020	-
Arochlor 1242	<i>parts per billion</i>	no guideline	<0.020	<0.020	<0.020	-
Arochlor 1248	<i>parts per billion</i>	no guideline	<0.020	<0.020	<0.020	-
Arochlor 1254	<i>parts per billion</i>	no guideline	<0.020	<0.020	<0.020	-
Arochlor 1260	<i>parts per billion</i>	no guideline	<0.020	<0.020	<0.020	-
Phenoxy Acid Herbicides						
2,4,5-T	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
2,4,5-TP	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
2,4-D	<i>parts per billion</i>	no more than 100	<0.050	<0.050	<0.050	Meets the guideline
2,4-DB	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
2,4-DP	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
Bromoxynil	<i>parts per billion</i>	no more than 5	<0.020	<0.020	<0.020	Meets the guideline
Dicamba	<i>parts per billion</i>	no more than 120	<0.006	<0.006	<0.008	Meets the guideline
Dinoseb	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
MCPA	<i>parts per billion</i>	no more than 100	<0.025	<0.025	<0.025	Meets the guideline
MCPB	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
Mecoprop	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050	-
Picloram	<i>parts per billion</i>	no more than 190	<0.20	<0.20	<0.20	Meets the guideline

*Aesthetic objective: These guidelines have an objective and not a maximum acceptable limit. These parameters should not impact the safety of the water to drink and there is no anticipated health risk for short-term exposures.

Guidelines from 'Summary of Guidelines for Canadian Drinking Water Quality' by Health Canada, February 2017

Note: Where value is expressed as less than (<), the value is halved and used in the calculations, where value is expressed as (>), the value is used in the calculations.

nr - no result

City of Winnipeg
Environmental Standards Division
2017 Winnipeg Distribution System Water Quality Summary

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM	COMMENTS
Miscellaneous						
Carbon, Dissolved Organic	<i>parts per million</i>	no guideline	3.0	2.8	3.1	-
Carbon, Total Organic	<i>parts per million</i>	no guideline	2.8	2.6	3.0	-
Chlorine, Free	<i>parts per million</i>	no guideline	0.80	<0.02	1.47	-
Chlorine, Total	<i>parts per million</i>	no guideline	1.02	0.10	1.74	-
Colour, True	TCU	no more than 15 *	1.1	0.5	<5.0	Meets the guideline
Conductivity	<i>microsiemens per centimetre</i>	no guideline	297	261	335	Another measure of dissolved solids
Langelier Index (4 C)	<i>units</i>	no guideline	-1.01	-1.50	-0.76	-
Langelier Index (60 C)	<i>units</i>	no guideline	-0.23	-0.70	0.02	-
Odour	<i>units</i>	inoffensive*	10	8	15	Meets the guideline
Oxygen, Dissolved	<i>parts per million</i>	no guideline	12.4	9.1	15.6	-
pH	<i>units</i>	between 7.0 and 10.5	7.49	7.09	7.75	Meets the guideline
Solids, Total Dissolved	<i>parts per million</i>	no more than 500 *	174	80	208	Meets the guideline
Temperature	<i>degrees Celcius</i>	no more than 15 *	11.1	1.3	22.7	Does not always meet the guideline
Turbidity (clearness)	NTU	no guideline	0.29	0.10	12.3	-
UV Transmittance, Unfiltered	<i>percent transmissivity</i>	no guideline	95.3	93.8	97.1	-
Anions and Nutrients						
Alkalinity, Total	<i>parts per million as calcium carbonate</i>	no guideline	67	51	78	-
Alkalinity, Bicarbonate	<i>parts per million</i>	no guideline	80	63	95	-
Alkalinity, Carbonate	<i>parts per million</i>	no guideline	<0.60	<0.60	<0.60	-
Alkalinity, Hydroxide	<i>parts per million</i>	no guideline	<0.34	<0.34	<0.34	-
Hardness, Total	<i>parts per million as calcium carbonate</i>	no guideline	81	74	90	-
Ammonia	<i>parts per million</i>	no guideline	<0.010	<0.010	<0.010	-
Bromate	<i>parts per million</i>	no more than 0.01	<0.0050	<0.0050	<0.0050	Meets the guideline
Bromide	<i>parts per million</i>	no guideline	<0.10	<0.01	<0.10	-
Chloride	<i>parts per million</i>	no more than 250 *	25	16	31	Meets the guideline
Fluoride	<i>parts per million</i>	no more than 1.5	0.69	0.11	0.81	Meets the guideline
Nitrate Nitrogen	<i>parts per million</i>	no more than 10	0.0229	0.0106	0.0437	Meets the guideline
Nitrite	<i>parts per million</i>	no more than 3	<0.0010	<0.0010	<0.0010	-
Perchlorate	<i>parts per billion</i>	no guideline	<0.2	<0.2	<0.2	-
Phosphate, Soluble	<i>parts per million as phosphate</i>	no guideline	1.93	1.41	2.09	Added for Lead Control Program
Phosphorus, Total	<i>parts per million</i>	no guideline	0.65	0.59	0.72	Phosphorus can contribute to algae growth
Sulphate	<i>parts per million</i>	no more than 500 *	47	40	53	Meets the guideline
Bacteria						
Escherichia Coli	<i>MPN per 100 mL</i>	none detectable per 100 mL	<1	<1	<1	Meets the guideline
Total Coliforms	<i>MPN per 100 mL</i>	none detectable per 100 mL	<1	<1	14	Does not always meet the guideline
Heterotrophic Plate Count	<i>CFU per mL</i>	no guideline	2	<1	>300	-
Disinfection By-Products						
Aldehydes	<i>parts per billion</i>	no guideline	17.1	8.0	33.4	-
Bromodichloromethane	<i>parts per billion</i>	no guideline	2.8	0.9	4.5	-
Haloacetic acids	<i>parts per billion</i>	no more than 80	25	9	44	Meets the guideline
Trihalomethanes	<i>parts per billion</i>	no more than 100	29	8	51	Meets the guideline
Total Metals						
Aluminum	<i>parts per million</i>	no guideline	0.014	0.006	0.040	-
Antimony	<i>parts per million</i>	no more than 0.006	0.0003	<0.0001	0.0013	Meets the guideline
Arsenic	<i>parts per million</i>	no more than 0.010	0.0004	0.0004	<0.0010	Meets the guideline
Barium	<i>parts per million</i>	no more than 1	0.0162	0.0141	0.0179	Meets the guideline
Beryllium	<i>parts per million</i>	no guideline	<0.00010	<0.00010	<0.00020	-
Bismuth	<i>parts per million</i>	no guideline	<0.00020	<0.00005	<0.00020	-
Boron	<i>parts per million</i>	no more than 5	0.0058	0.0042	0.0180	Meets the guideline
Cadmium	<i>parts per million</i>	no more than 0.005	<0.0006	<0.000005	<0.0006	Meets the guideline
Calcium	<i>parts per million</i>	no guideline	21.4	15.8	26.9	Contributes to hardness
Cesium	<i>parts per million</i>	no guideline	<0.00010	<0.00001	<0.00010	-
Chromium	<i>parts per million</i>	no more than 0.05	0.0004	0.0001	0.0020	Meets the guideline

City of Winnipeg
Environmental Standards Division
2017 Winnipeg Distribution System Water Quality Summary

Chromium VI	<i>parts per billion</i>	no guideline	<1	<1	2	-
Cobalt	<i>parts per million</i>	no guideline	<0.00020	<0.00020	0.00024	-
Copper	<i>parts per million</i>	no more than 1.0 *	0.031	0.002	0.213	Meets the guideline
Iron	<i>parts per million</i>	no more than 0.3 *	0.040	<0.008	0.140	Meets the guideline
Lead	<i>parts per million</i>	no more than 0.010	0.00024	<0.00005	0.00140	Meets the guideline
Lithium	<i>parts per million</i>	no guideline	0.0025	0.0024	0.0026	-
Magnesium	<i>parts per million</i>	no guideline	5.99	4.98	7.15	Contributes to hardness
Manganese	<i>parts per million</i>	no more than 0.05 *	0.0286	0.0073	0.0741	Does not always meet the guideline
Mercury	<i>parts per trillion</i>	no more than 1000	0.5	<0.5	4.9	Meets the guideline
Molybdenum	<i>parts per million</i>	no guideline	<0.00020	<0.00005	<0.00020	-
Nickel	<i>parts per million</i>	no guideline	0.002	<0.001	0.018	-
Potassium	<i>parts per million</i>	no guideline	1.18	0.98	1.36	-
Rubidium	<i>parts per million</i>	no guideline	0.00174	0.00159	0.00190	-
Selenium	<i>parts per million</i>	no more than 0.05	<0.0010	<0.00005	<0.0010	Meets the guideline
Silicon	<i>parts per million</i>	no guideline	1.90	1.29	3.14	-
Silver	<i>parts per million</i>	no guideline	<0.00010	<0.00001	<0.00010	-
Sodium	<i>parts per million</i>	no more than 200 *	32.1	23.4	41.0	Meets the guideline
Strontium	<i>parts per million</i>	no guideline	0.0420	0.0381	0.0479	-
Tellurium	<i>parts per million</i>	no guideline	<0.0002	<0.0002	<0.0002	-
Thallium	<i>parts per million</i>	no guideline	<0.00010	<0.00001	<0.00010	-
Thorium	<i>parts per million</i>	no guideline	<0.0001	<0.0001	<0.0001	-
Tin	<i>parts per million</i>	no guideline	<0.0001	<0.0001	<0.0002	-
Titanium	<i>parts per million</i>	no guideline	<0.0003	<0.0003	<0.0005	-
Tungsten	<i>parts per million</i>	no guideline	<0.0001	<0.0001	<0.0001	-
Uranium	<i>parts per million</i>	no more than 0.02	<0.00060	<0.00001	<0.00060	Meets the guideline
Vanadium	<i>parts per million</i>	no guideline	<0.0002	<0.0002	<0.0005	-
Zinc	<i>parts per million</i>	no more than 5.0 *	0.0046	<0.0009	0.0441	Meets the guideline
Zirconium	<i>parts per million</i>	no guideline	0.00018	<0.00006	<0.00050	-

*Aesthetic objective: These guidelines have an objective and not a maximum acceptable limit. These parameters should not impact the safety of the water to drink and there is no anticipated health risk for short-term exposures.

Guidelines from 'Summary of Guidelines for Canadian Drinking Water Quality' by Health Canada, February 2017

Data reported was collected from a combination of MacLean, Hurst, and McPhillips Pumping Station Discharges, 57 distribution system locations, and/or Branch I at McPhillips and Branch II at Hurst.

Note: Where value is expressed as less than (<), the value is halved and used in the calculations, where value is expressed as (>), the value is used in the calculations.

City of Winnipeg
Environmental Standards Division
2017 Winnipeg Distribution System Bacteriological Summary

PARAMETER	REQUIREMENT	OUR TEST RESULTS	COMMENTS
Number of total coliform bacteria tests in year	2028 samples/year	3,177	More testing than required by the operating licence
Number of times that total coliform bacteria show up in a test	none detectable per 100 mL	0.09% (3 positive tests)	All resamples were negative and met the operating licence requirements
Number of Escherichia coli bacteria tests in year	2028 samples/year	3,177	More testing than required by the operating licence
Number of times that Escherichia coli bacteria show up in a test	none detectable per 100 mL	0.00% (0 positive tests)	
Number of heterotrophic (bacteria) plate count (HPC) tests done	no requirement	2,543	Heterotrophic plate count testing is not required under the operating licence

Requirements from City of Winnipeg Operating Licence PWS-09-412-01

Data reported was collected from 57 distribution system locations and MacLean, Hurst, and McPhillips Pumping Station Discharges

APPENDIX B

COMPLIANCE SUBMISSION REPORTS

2017 Monthly Chlorine Reports



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION

WATER TREATMENT PLANT CHLORINE GRAB MONITORING REPORT

Water System Code: 252.00	Deacon Booster Pumping Station Branch 1			Deacon Booster Pumping Station Branch 2		
Licence No. PWS-09-412-01						
Date	Free Chlorine (mg/L)		Total Chlorine (mg/L)	Free Chlorine (mg/L)		Total Chlorine (mg/L)
	Analyser	Grab	Grab	Analyser	Grab	Grab
01-Jan-2017	NS	NS	NS	NS	NS	NS
02-Jan-2017	NS	NS	NS	NS	NS	NS
03-Jan-2017	1.14	1.16	1.32	1.02	1.05	1.23
04-Jan-2017	1.13	1.28	1.45	1.17	1.22	1.43
05-Jan-2017	1.13	1.28	1.42	1.36	1.38	1.56
06-Jan-2017	1.25	1.35	1.47	1.25	1.22	1.46
07-Jan-2017	NS	NS	NS	NS	NS	NS
08-Jan-2017	NS	NS	NS	NS	NS	NS
09-Jan-2017	1.31	1.30	1.54	1.22	1.21	1.42
10-Jan-2017	1.30	1.37	1.54	1.22	1.23	1.38
11-Jan-2017	1.25	1.24	1.42	1.28	1.22	1.44
12-Jan-2017	1.24	1.20	1.50	1.20	1.23	1.40
13-Jan-2017	1.11	1.18	1.31	1.35	1.35	1.49
14-Jan-2017	NS	NS	NS	NS	NS	NS
15-Jan-2017	NS	NS	NS	NS	NS	NS
16-Jan-2017	1.12	1.22	1.35	1.23	1.29	1.48
17-Jan-2017	1.10	1.18	1.36	1.20	1.26	1.38
18-Jan-2017	1.15	1.22	1.35	1.19	1.27	1.45
19-Jan-2017	1.13	1.20	1.33	1.19	1.29	1.45
20-Jan-2017	1.14	1.17	1.33	1.18	1.27	1.43
21-Jan-2017	NS	NS	NS	NS	NS	NS
22-Jan-2017	NS	NS	NS	NS	NS	NS
23-Jan-2017	1.19	1.23	1.42	1.23	1.32	1.54
24-Jan-2017	1.13	1.23	1.39	1.16	1.30	1.46
25-Jan-2017	1.18	1.26	1.48	1.35	1.38	1.60
26-Jan-2017	1.51	1.58	1.80	1.59	1.61	1.96
27-Jan-2017	1.22	1.23	1.39	1.26	1.30	1.50
28-Jan-2017	NS	NS	NS	NS	NS	NS
29-Jan-2017	NS	NS	NS	NS	NS	NS
30-Jan-2017	1.23	1.34	1.49	1.33	1.41	1.63
31-Jan-2017	1.14	1.21	1.40	1.24	1.33	1.49
Total number of measurements taken, A:		21		21		
Chlorine Standard for Monitoring Location (mg/L):		0.50		0.50		
Number of measurements meeting standard, B:		21		21		
Compliance with Chlorine Standard, C= B/A X 100%:		100%		100%		

NS: No Sample NA: Not Analyzed OL: Off-Line

Comments:

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck

Printed From : N:\WQ Data\Routine Water Quality\2016\Chlorine.xls

File: WQR3

Date Approved: 6-Feb-17

**WATER TREATMENT PLANT FREE CHLORINE ON-LINE MONITORING REPORT**
Deacon Booster Pumping Station

Water System Code: **252.00**
Licence Number: **PWS-09-412-01**
Report Created: 01 February 2017

Report Period: January 2017

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/01/2017	1.12	1.04	1.03	0.97
02/01/2017	1.12	1.08	1.01	0.95
03/01/2017	1.14	1.07	1.02	0.97
04/01/2017	1.15	1.09	1.19	1.01
05/01/2017	1.22	1.10	1.30	1.17
06/01/2017	1.29	1.23	1.26	1.21
07/01/2017	1.28	1.21	1.20	1.11
08/01/2017	1.31	1.26	1.22	1.17
09/01/2017	1.31	1.29	1.23	1.20
10/01/2017	1.28	1.23	1.19	1.15
11/01/2017	1.24	1.20	1.21	1.14
12/01/2017	1.23	1.08	1.24	1.15
13/01/2017	1.11	1.08	1.34	1.29
14/01/2017	1.12	1.08	1.30	1.25
15/01/2017	1.14	1.11	1.26	1.22
16/01/2017	1.12	1.06	1.23	1.16
17/01/2017	1.10	1.07	1.20	1.17
18/01/2017	1.13	1.09	1.19	1.14
19/01/2017	1.14	1.11	1.18	1.14
20/01/2017	1.14	1.11	1.18	1.15
21/01/2017	1.16	1.12	1.20	1.15
22/01/2017	1.18	1.14	1.23	1.19
23/01/2017	1.19	1.15	1.22	1.17
24/01/2017	1.21	1.13	1.20	1.14
25/01/2017	1.37	1.20	1.42	1.12
26/01/2017	1.44	1.14	1.55	1.25
27/01/2017	1.22	1.14	1.25	1.18
28/01/2017	1.20	1.13	1.24	1.04
29/01/2017	1.21	1.13	1.28	1.20
30/01/2017	1.19	1.09	1.29	1.14
31/01/2017	1.16	1.09	1.30	1.20

Total Number of Measurements, A:	21599	21600
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	21599	21600

COMPLIANCE, C = B/A X 100%:	100.00	100.00
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File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2017\01-January

Submitted By (Print): D.CarrSignature: Original signed by D. Merredew



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION

WATER TREATMENT PLANT CHLORINE GRAB MONITORING REPORT

Water System Code: 252.00	Deacon Booster Pumping Station Branch 1			Deacon Booster Pumping Station Branch 2		
Licence No. PWS-09-412-01						
Date	Free Chlorine (mg/L)		Total Chlorine (mg/L)	Free Chlorine (mg/L)		Total Chlorine (mg/L)
	Analyser	Grab	Grab	Analyser	Grab	Grab
01-Feb-2017	1.15	1.18	1.42	1.24	1.29	1.54
02-Feb-2017	1.16	1.27	1.41	1.23	1.28	1.53
03-Feb-2017	1.19	1.31	1.46	1.27	1.33	1.56
04-Feb-2017	NS	NS	NS	NS	NS	NS
05-Feb-2017	NS	NS	NS	NS	NS	NS
06-Feb-2017	1.28	1.33	1.54	1.41	1.42	1.65
07-Feb-2017	1.25	1.17	1.40	1.23	1.21	1.43
08-Feb-2017	1.23	1.32	1.43	1.21	1.24	1.43
09-Feb-2017	1.33	1.32	1.48	1.28	1.30	1.48
10-Feb-2017	1.22	1.26	1.50	1.22	1.27	1.49
11-Feb-2017	NS	NS	NS	NS	NS	NS
12-Feb-2017	NS	NS	NS	NS	NS	NS
13-Feb-2017	1.06	1.12	1.36	1.09	1.16	1.37
14-Feb-2017	1.20	1.17	1.32	1.20	1.21	1.38
15-Feb-2017	1.23	1.31	1.47	1.07	1.15	1.31
16-Feb-2017	OL	OL	OL	1.24	1.34	1.50
17-Feb-2017	1.27	1.33	1.51	1.11	1.19	1.47
18-Feb-2017	NS	NS	NS	NS	NS	NS
19-Feb-2017	NS	NS	NS	NS	NS	NS
20-Feb-2017	NS	NS	NS	NS	NS	NS
21-Feb-2017	1.15	1.30	1.50	1.09	1.23	1.41
22-Feb-2017	1.20	1.35	1.50	1.12	1.24	1.43
23-Feb-2017	1.21	1.37	1.50	1.12	1.26	1.44
24-Feb-2017	1.14	1.27	1.43	1.04	1.11	1.32
25-Feb-2017	NS	NS	NS	NS	NS	NS
26-Feb-2017	NS	NS	NS	NS	NS	NS
27-Feb-2017	1.17	1.33	1.49	1.10	1.24	1.43
28-Feb-2017	1.20	1.37	1.51	1.18	1.25	1.44
Total number of measurements taken, A:		18			19	
Chlorine Standard for Monitoring Location (mg/L):		0.50			0.50	
Number of measurements meeting standard, B:		18			19	
Compliance with Chlorine Standard, C= B/A X 100%:		100%			100%	

NS: No Sample NA: Not Analyzed OL: Off-Line

Comments:

On February 16th, DBPS 1 was offline at the time of sampling.

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck

Date Approved: 6-Mar-17

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File: WQR3

**WATER TREATMENT PLANT FREE CHLORINE ON-LINE MONITORING REPORT**
Deacon Booster Pumping Station

Water System Code: **252.00**
Licence Number: **PWS-09-412-01**
Report Created: **01 March 2017**

Report Period: February 2017

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/02/2017	1.17	1.08	1.25	1.07
02/02/2017	1.17	1.08	1.24	1.10
03/02/2017	1.20	1.15	1.26	1.12
04/02/2017	1.21	1.12	1.26	1.11
05/02/2017	1.22	1.14	1.26	1.12
06/02/2017	1.25	1.17	1.34	1.20
07/02/2017	1.23	1.11	1.28	1.10
08/02/2017	1.26	1.15	1.23	1.13
09/02/2017	1.28	1.19	1.25	1.13
10/02/2017	1.20	1.11	1.19	1.04
11/02/2017	1.19	1.13	1.16	1.04
12/02/2017	1.14	1.09	1.15	1.05
13/02/2017	1.07	0.99	1.11	0.94
14/02/2017	1.13	0.95	1.18	0.99
15/02/2017	1.22	1.17	1.18	1.00
16/02/2017	1.22	1.22	1.17	1.12
17/02/2017	1.27	1.22	1.14	1.04
18/02/2017	1.35	1.24	1.20	1.09
19/02/2017	1.25	1.15	1.18	1.12
20/02/2017	1.14	1.10	1.10	1.05
21/02/2017	1.15	1.07	1.11	1.06
22/02/2017	1.19	1.08	1.15	1.10
23/02/2017	1.21	1.15	1.13	1.05
24/02/2017	1.14	1.10	1.04	1.00
25/02/2017	1.21	1.12	1.09	1.04
26/02/2017	1.23	1.13	1.11	1.04
27/02/2017	1.18	1.09	1.12	1.02
28/02/2017	1.19	1.16	1.18	1.13

Total Number of Measurements, A:	19443	19441
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	19443	19441
COMPLIANCE, C = B/A X 100%:	100.00	100.00

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Submitted By (Print): D. MerredewSignature: Original signed by D. Merredew



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION

WATER TREATMENT PLANT CHLORINE GRAB MONITORING REPORT

Water System Code: 252.00	Deacon Booster Pumping Station Branch 1			Deacon Booster Pumping Station Branch 2		
Licence No. PWS-09-412-01						
Date	Free Chlorine (mg/L)		Total Chlorine (mg/L)	Free Chlorine (mg/L)		Total Chlorine (mg/L)
	Analyser	Grab	Grab	Analyser	Grab	Grab
01-Mar-2017	1.25	1.46	1.61	1.22	1.33	1.50
02-Mar-2017	1.11	1.21	1.48	1.22	1.28	1.52
03-Mar-2017	1.00	1.10	1.25	1.05	1.07	1.29
04-Mar-2017	NS	NS	NS	NS	NS	NS
05-Mar-2017	NS	NS	NS	NS	NS	NS
06-Mar-2017	1.21	1.25	1.46	1.29	1.32	1.61
07-Mar-2017	1.22	1.29	1.46	1.29	1.31	1.53
08-Mar-2017	1.33	1.41	1.60	1.39	1.33	1.66
09-Mar-2017	1.26	1.25	1.43	1.32	1.32	1.51
10-Mar-2017	1.03	1.05	1.22	1.10	0.98	1.27
11-Mar-2017	NS	NS	NS	NS	NS	NS
12-Mar-2017	NS	NS	NS	NS	NS	NS
13-Mar-2017	1.19	1.29	1.43	1.24	1.12	1.46
14-Mar-2017	1.08	1.11	1.25	1.10	1.16	1.31
15-Mar-2017	1.21	1.06	1.25	1.14	1.14	1.30
16-Mar-2017	0.99	1.10	1.28	1.06	1.16	1.30
17-Mar-2017	1.10	1.13	1.28	1.11	1.15	1.33
18-Mar-2017	NS	NS	NS	NS	NS	NS
19-Mar-2017	NS	NS	NS	NS	NS	NS
20-Mar-2017	0.99	1.11	1.31	1.03	1.08	1.26
21-Mar-2017	1.02	1.06	1.25	1.03	1.03	1.27
22-Mar-2017	0.98	1.01	1.23	0.98	1.05	1.22
23-Mar-2017	1.10	1.15	1.30	1.11	1.18	1.34
24-Mar-2017	0.72	0.82	0.97	0.81	0.95	1.14
25-Mar-2017	NS	NS	NS	NS	NS	NS
26-Mar-2017	NS	NS	NS	NS	NS	NS
27-Mar-2017	0.96	1.05	1.24	0.98	0.97	1.25
28-Mar-2017	0.97	1.08	1.22	0.99	1.12	1.27
29-Mar-2017	1.02	1.11	1.31	1.03	1.16	1.31
30-Mar-2017	1.01	1.12	1.27	1.03	1.10	1.29
31-Mar-2017	1.07	1.17	1.37	1.11	1.20	1.35
Total number of measurements taken, A:		23		23		
Chlorine Standard for Monitoring Location (mg/L):		0.50		0.50		
Number of measurements meeting standard, B:		23		23		
Compliance with Chlorine Standard, C= B/A X 100%:		100%		100%		

NS: No Sample NA: Not Analyzed OL: Off-Line

Comments:

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck

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File: WQR3

Date Approved: 6-Apr-17

**WATER TREATMENT PLANT FREE CHLORINE ON-LINE MONITORING REPORT**
Deacon Booster Pumping Station

Water System Code: **252.00**
Licence Number: **PWS-09-412-01**
Report Created: 01 April 2017

Report Period: March 2017

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
1/03/2017	1.23	1.17	1.21	1.16
2/03/2017	1.12	1.02	1.13	1.03
3/03/2017	0.99	0.96	1.03	1.01
4/03/2017	1.05	0.96	1.11	1.01
5/03/2017	1.13	1.08	1.19	1.15
6/03/2017	1.22	1.16	1.29	1.26
7/03/2017	1.26	1.18	1.34	1.27
8/03/2017	1.31	1.26	1.39	1.36
9/03/2017	1.19	0.99	1.24	1.05
10/03/2017	1.02	0.97	1.09	1.01
11/03/2017	1.01	0.98	1.07	1.04
12/03/2017	1.04	0.94	1.07	0.98
13/03/2017	1.13	1.08	1.15	1.10
14/03/2017	1.07	0.99	1.09	0.87
15/03/2017	1.03	0.81	1.12	1.02
16/03/2017	1.00	0.94	1.07	1.02
17/03/2017	1.04	0.92	1.03	0.81
18/03/2017	1.00	0.91	1.00	0.89
19/03/2017	0.98	0.90	0.99	0.96
20/03/2017	0.95	0.84	0.99	0.94
21/03/2017	0.97	0.87	1.00	0.95
22/03/2017	0.97	0.90	0.98	0.92
23/03/2017	1.07	0.95	1.09	1.03
24/03/2017	1.02	0.70	1.01	0.71
25/03/2017	1.04	0.91	0.98	0.94
26/03/2017	0.98	0.84	0.97	0.91
27/03/2017	0.95	0.86	0.98	0.92
28/03/2017	0.96	0.88	0.99	0.96
29/03/2017	1.00	0.91	1.01	0.92
30/03/2017	1.02	0.91	1.04	0.99
31/03/2017	1.06	1.01	1.12	1.08

Total Number of Measurements, A:	21566	21568
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	21566	21568
COMPLIANCE, C = B/A X 100%:	100.00	100.00

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Submitted By (Print): D. MerredewSignature: Original Signed by D.Merredew



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION

WATER TREATMENT PLANT CHLORINE GRAB MONITORING REPORT

Water System Code: 252.00		Deacon Booster Pumping Station Branch 1			Deacon Booster Pumping Station Branch 2		
Licence No. PWS-09-412-01							
Date	Free Chlorine (mg/L)		Total Chlorine (mg/L)	Free Chlorine (mg/L)		Total Chlorine (mg/L)	
	Analyser	Grab	Grab	Analyser	Grab	Grab	
01-Apr-2017	NS	NS	NS	NS	NS	NS	
02-Apr-2017	NS	NS	NS	NS	NS	NS	
03-Apr-2017	0.94	1.05	1.21	0.92	1.05	1.19	
04-Apr-2017	0.90	0.94	1.15	0.91	0.99	1.13	
05-Apr-2017	0.92	1.02	1.07	0.91	0.98	1.16	
06-Apr-2017	0.98	1.05	1.22	1.05	1.12	1.31	
07-Apr-2017	1.07	1.14	1.35	1.20	1.26	1.46	
08-Apr-2017	NS	NS	NS	NS	NS	NS	
09-Apr-2017	NS	NS	NS	NS	NS	NS	
10-Apr-2017	0.98	1.08	1.20	1.10	1.19	1.29	
11-Apr-2017	0.96	1.01	1.16	0.94	0.95	1.17	
12-Apr-2017	1.04	1.09	1.26	1.07	1.11	1.27	
13-Apr-2017	0.92	1.02	1.15	1.01	1.11	1.22	
14-Apr-2017	NS	NS	NS	NS	NS	NS	
15-Apr-2017	NS	NS	NS	NS	NS	NS	
16-Apr-2017	NS	NS	NS	NS	NS	NS	
17-Apr-2017	NS	NS	NS	NS	NS	NS	
18-Apr-2017	1.03	1.05	1.18	1.07	1.10	1.29	
19-Apr-2017	1.69	1.61	1.89	1.66	1.71	1.95	
20-Apr-2017	1.12	1.09	1.27	0.95	1.03	1.19	
21-Apr-2017	1.09	1.10	1.28	0.96	1.02	1.17	
22-Apr-2017	NS	NS	NS	NS	NS	NS	
23-Apr-2017	NS	NS	NS	NS	NS	NS	
24-Apr-2017	0.97	1.09	1.23	0.93	1.05	1.19	
25-Apr-2017	0.95	1.02	1.21	0.98	0.99	1.17	
26-Apr-2017	1.10	1.15	1.33	1.07	1.10	1.28	
27-Apr-2017	1.09	1.16	1.33	1.00	1.14	1.27	
28-Apr-2017	1.09	1.10	1.25	0.99	1.05	1.23	
29-Apr-2017	NS	NS	NS	NS	NS	NS	
30-Apr-2017	NS	NS	NS	NS	NS	NS	
Total number of measurements taken, A:		18		18			
Chlorine Standard for Monitoring Location (mg/L):		0.50		0.50			
Number of measurements meeting standard, B:		18		18			
Compliance with Chlorine Standard, C= B/A X 100%:		100%		100%			

NS: No Sample NA: Not Analyzed OL: Off-Line

Comments:

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck

Date Approved: 5-May-17

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WATER TREATMENT PLANT FREE CHLORINE ON-LINE MONITORING REPORT
Deacon Booster Pumping Station

Water System Code: **252.00**
Licence Number: **PWS-09-412-01**
Report Created: **01 May 2017**

Report Period: April 2017

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
1/04/2017	1.05	1.00	1.07	0.99
2/04/2017	0.99	0.93	0.97	0.91
3/04/2017	0.95	0.89	0.91	0.85
4/04/2017	0.90	0.86	0.89	0.81
5/04/2017	0.99	0.88	0.94	0.84
6/04/2017	1.01	0.91	1.02	0.87
7/04/2017	1.07	0.99	1.21	1.13
8/04/2017	1.03	0.92	1.15	1.04
9/04/2017	0.95	0.89	1.08	1.03
10/04/2017	0.94	0.90	1.02	0.94
11/04/2017	0.96	0.85	0.99	0.87
12/04/2017	0.98	0.90	1.04	0.98
13/04/2017	1.01	0.86	1.02	0.69
14/04/2017	1.00	0.94	0.98	0.93
15/04/2017	1.01	0.94	1.01	0.89
16/04/2017	1.04	0.97	1.06	1.00
17/04/2017	1.03	0.94	1.05	0.99
18/04/2017	1.02	0.97	1.07	1.02
19/04/2017	1.26	0.83	1.33	1.09
20/04/2017	1.07	0.96	1.00	0.86
21/04/2017	1.08	0.94	0.97	0.85
22/04/2017	1.14	1.08	1.00	0.95
23/04/2017	1.05	0.95	0.92	0.85
24/04/2017	0.96	0.86	0.92	0.80
25/04/2017	0.98	0.93	1.03	0.93
26/04/2017	1.07	0.94	1.12	1.00
27/04/2017	1.09	0.99	1.05	0.95
28/04/2017	1.06	1.00	0.98	0.91
29/04/2017	1.01	0.91	0.99	0.92
30/04/2017	1.01	0.95	1.01	0.96

Total Number of Measurements, A:	20876	20826
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	20876	20826
COMPLIANCE, C = B/A X 100%:	100.00	100.00

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Submitted By (Print): D.Minor

Signature: Original Signed by D.Minor



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION

WATER TREATMENT PLANT CHLORINE GRAB MONITORING REPORT

Water System Code: 252.00	Deacon Booster Pumping Station Branch 1			Deacon Booster Pumping Station Branch 2		
Licence No. PWS-09-412-01						
Date	Free Chlorine (mg/L)		Total Chlorine (mg/L)	Free Chlorine (mg/L)		Total Chlorine (mg/L)
	Analyser	Grab	Grab	Analyser	Grab	Grab
01-May-2017	0.99	1.07	1.22	1.00	1.07	1.19
02-May-2017	0.97	1.05	1.21	0.97	1.06	1.20
03-May-2017	0.94	0.94	1.18	0.92	1.01	1.15
04-May-2017	0.94	0.99	1.16	0.91	0.87	1.11
05-May-2017	NS	NS	NS	NS	NS	NS
06-May-2017	NS	NS	NS	NS	NS	NS
07-May-2017	1.15	1.23	1.39	1.26	1.26	1.45
08-May-2017	1.10	1.18	1.40	1.14	1.23	1.38
09-May-2017	1.05	1.15	1.38	1.26	1.33	1.52
10-May-2017	1.28	1.22	1.37	1.15	1.24	1.36
11-May-2017	1.02	1.12	1.32	1.06	1.12	1.29
12-May-2017	NS	NS	NS	NS	NS	NS
13-May-2017	NS	NS	NS	NS	NS	NS
14-May-2017	1.14	1.18	1.39	1.07	1.16	1.32
15-May-2017	0.98	1.12	1.29	0.93	1.04	1.24
16-May-2017	1.03	1.14	1.31	1.01	1.04	1.27
17-May-2017	1.13	1.06	1.41	1.08	1.14	1.39
18-May-2017	1.09	1.17	1.29	1.10	1.19	1.40
19-May-2017	NS	NS	NS	NS	NS	NS
20-May-2017	NS	NS	NS	NS	NS	NS
21-May-2017	NR	1.25	1.46	NR	1.08	1.35
22-May-2017	1.21	1.26	1.45	1.14	1.15	1.36
23-May-2017	1.22	1.26	1.46	1.23	1.28	1.47
24-May-2017	1.17	1.20	1.38	1.13	1.21	1.40
25-May-2017	1.20	1.28	1.47	1.11	1.24	1.43
26-May-2017	NS	NS	NS	NS	NS	NS
27-May-2017	NS	NS	NS	NS	NS	NS
28-May-2017	1.17	1.25	1.39	1.18	1.28	1.41
29-May-2017	1.12	1.22	1.37	1.09	1.21	1.33
30-May-2017	1.22	1.25	1.48	1.18	1.23	1.39
31-May-2017	1.16	1.23	1.39	1.11	1.21	1.38
Total number of measurements taken, A:		23		23		
Chlorine Standard for Monitoring Location (mg/L):		0.50		0.50		
Number of measurements meeting standard, B:		23		23		
Compliance with Chlorine Standard, C= B/A X 100%:		100%		100%		

NS: No Sample NA: Not Analyzed NR: No Result OL: Off-Line

Comments:

There were no results for DBPS Branch I and II analyzers on May 21 due to maintenance requirements.

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck

Date Approved: 7-Jun-17

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File: WQR3

**WATER TREATMENT PLANT FREE CHLORINE ON-LINE MONITORING REPORT**
Deacon Booster Pumping Station

Water System Code: **252.00**
Licence Number: **PWS-09-412-01**
Report Created: **01 June 2017**

Report Period: May 2017

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/05/2017	1.00	0.93	1.00	0.93
02/05/2017	0.96	0.90	0.97	0.90
03/05/2017	0.94	0.86	0.93	0.85
04/05/2017	0.97	0.86	1.00	0.81
05/05/2017	1.12	1.06	1.22	1.07
06/05/2017	1.14	1.06	1.24	1.09
07/05/2017	1.13	1.06	1.24	1.12
08/05/2017	1.09	1.01	1.20	1.04
09/05/2017	1.13	1.00	1.17	0.96
10/05/2017	1.19	1.02	1.15	1.07
11/05/2017	1.08	1.00	1.11	1.02
12/05/2017	1.17	1.06	1.16	1.06
13/05/2017	1.24	1.12	1.15	1.06
14/05/2017	1.13	1.07	1.06	0.99
15/05/2017	1.07	0.97	0.99	0.90
16/05/2017	1.03	0.98	0.98	0.92
17/05/2017	1.08	0.97	1.10	1.06
18/05/2017	1.07	0.98	1.10	1.05
19/05/2017	1.11	0.74	1.09	0.74
20/05/2017	1.34	1.22	1.42	1.24
21/05/2017	1.33	1.16	1.32	1.07
22/05/2017	1.19	1.12	1.13	1.06
23/05/2017	1.20	1.09	1.19	1.10
24/05/2017	1.17	1.03	1.12	1.02
25/05/2017	1.18	1.12	1.13	1.08
26/05/2017	1.23	1.17	1.19	1.09
27/05/2017	1.35	1.25	1.31	1.25
28/05/2017	1.20	1.03	1.21	1.02
29/05/2017	1.14	1.06	1.11	1.04
30/05/2017	1.20	1.09	1.14	1.07
31/05/2017	1.13	1.05	1.11	1.04

Total Number of Measurements, A:	21603	21600
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	21603	21600

COMPLIANCE, C = B/A X 100%:	100.00	100.00
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File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2017\05-May

Submitted By (Print): D.MerredewSignature: Original Signed by D.Merredew



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION

WATER TREATMENT PLANT CHLORINE GRAB MONITORING REPORT

Water System Code: 252.00		Deacon Booster Pumping Station Branch 1		Deacon Booster Pumping Station Branch 2		
Licence No. PWS-09-412-01						
Date	Free Chlorine (mg/L)		Total Chlorine (mg/L)	Free Chlorine (mg/L)		Total Chlorine (mg/L)
	Analyser	Grab	Grab	Analyser	Grab	Grab
01-Jun-2017	1.12	1.23	1.35	1.14	1.15	1.36
02-Jun-2017	NS	NS	NS	NS	NS	NS
03-Jun-2017	NS	NS	NS	NS	NS	NS
04-Jun-2017	1.06	1.11	1.29	1.00	1.09	1.28
05-Jun-2017	1.26	1.23	1.48	1.21	1.24	1.44
06-Jun-2017	1.14	1.22	1.37	1.22	1.27	1.44
07-Jun-2017	1.23	1.28	1.42	1.17	1.19	1.41
08-Jun-2017	1.08	1.14	1.41	1.12	1.18	1.40
09-Jun-2017	NS	NS	NS	NS	NS	NS
10-Jun-2017	NS	NS	NS	NS	NS	NS
11-Jun-2017	1.14	1.18	1.34	1.18	1.25	1.46
12-Jun-2017	0.98	1.07	1.32	1.08	1.16	1.35
13-Jun-2017	1.21	1.22	1.41	1.26	1.24	1.42
14-Jun-2017	1.06	1.10	1.29	1.10	1.17	1.34
15-Jun-2017	1.05	1.09	1.22	1.08	1.13	1.31
16-Jun-2017	NS	NS	NS	NS	NS	NS
17-Jun-2017	NS	NS	NS	NS	NS	NS
18-Jun-2017	1.19	1.21	1.41	1.17	1.22	1.36
19-Jun-2017	1.14	1.20	1.37	1.12	1.13	1.36
20-Jun-2017	1.29	1.36	1.43	1.23	1.22	1.39
21-Jun-2017	NR	1.22	1.42	NR	1.27	1.44
22-Jun-2017	1.10	1.13	1.31	1.22	1.25	1.44
23-Jun-2017	NS	NS	NS	NS	NS	NS
24-Jun-2017	NS	NS	NS	NS	NS	NS
25-Jun-2017	1.03	1.08	1.19	1.19	1.16	1.36
26-Jun-2017	1.06	1.05	1.19	1.12	1.21	1.44
27-Jun-2017	1.03	1.07	1.23	1.14	1.18	1.36
28-Jun-2017	1.05	1.12	1.25	1.18	1.24	1.37
29-Jun-2017	1.04	1.13	1.26	1.10	1.16	1.26
30-Jun-2017	NS	NS	NS	NS	NS	NS
Total number of measurements taken, A:		21		21		
Chlorine Standard for Monitoring Location (mg/L):		0.50		0.50		
Number of measurements meeting standard, B:		21		21		
Compliance with Chlorine Standard, C= B/A X 100%:		100%		100%		

NS: No Sample NA: Not Analyzed NR: No Result OL: Off-Line

Comments:

There were no results for DBPS Branch I and II analyzers on June 21 due to maintenance requirements.

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck

Date Approved: 7-Jul-17

Printed From : N:\WQ Data\Routine Water Quality\2016\Chlorine.xls

File: WQR3

**WATER TREATMENT PLANT FREE CHLORINE ON-LINE MONITORING REPORT**
Deacon Booster Pumping Station

Water System Code: **252.00**
Licence Number: **PWS-09-412-01**
Report Created: 01 July 2017

Report Period: June 2017

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/06/2017	1.10	1.01	1.08	1.05
02/06/2017	1.16	1.02	1.15	1.04
03/06/2017	1.09	0.97	1.10	1.01
04/06/2017	0.98	0.86	1.04	0.90
05/06/2017	1.18	1.00	1.15	1.00
06/06/2017	1.10	1.01	1.11	1.05
07/06/2017	1.17	1.11	1.12	1.05
08/06/2017	1.14	1.05	1.13	1.04
09/06/2017	1.06	0.91	1.10	0.93
10/06/2017	0.94	0.82	1.05	0.97
11/06/2017	1.11	1.02	1.17	1.10
12/06/2017	1.05	0.98	1.11	1.04
13/06/2017	1.08	0.98	1.13	1.05
14/06/2017	1.01	0.94	1.06	0.99
15/06/2017	1.02	0.94	1.07	0.99
16/06/2017	1.10	1.02	1.12	1.06
17/06/2017	1.18	1.11	1.17	1.13
18/06/2017	1.17	1.09	1.15	1.10
19/06/2017	1.13	0.69	1.11	0.71
20/06/2017	1.65	0.69	1.33	0.72
21/06/2017	1.22	1.08	1.27	1.11
22/06/2017	1.07	0.88	1.17	1.05
23/06/2017	1.02	0.95	1.15	1.02
24/06/2017	1.00	0.93	1.08	1.00
25/06/2017	1.04	1.01	1.14	1.08
26/06/2017	1.06	1.01	1.13	1.09
27/06/2017	1.06	0.99	1.15	1.09
28/06/2017	1.04	0.98	1.13	1.06
29/06/2017	1.04	0.95	1.08	1.02
30/06/2017	1.09	1.02	1.14	1.09

Total Number of Measurements, A:	20838	20880
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	20838	20880
COMPLIANCE, C = B/A X 100%:	100.00	100.00

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2017\06-June

Submitted By (Print): D.MerredewSignature: Original Signed by D.Merredew



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION

WATER TREATMENT PLANT CHLORINE GRAB MONITORING REPORT

Water System Code: 252.00	Deacon Booster Pumping Station Branch 1			Deacon Booster Pumping Station Branch 2		
Licence No. PWS-09-412-01						
Date	Free Chlorine (mg/L)		Total Chlorine (mg/L)	Free Chlorine (mg/L)		Total Chlorine (mg/L)
	Analyser	Grab	Grab	Analyser	Grab	Grab
01-Jul-2017	NS	NS	NS	NS	NS	NS
02-Jul-2017	1.07	1.17	1.35	1.12	1.18	1.38
03-Jul-2017	1.16	1.21	1.37	1.23	1.24	1.45
04-Jul-2017	1.15	1.19	1.42	1.17	1.21	1.42
05-Jul-2017	1.14	1.14	1.30	1.12	1.20	1.38
06-Jul-2017	0.93	1.03	1.22	0.92	1.11	1.28
07-Jul-2017	NS	NS	NS	NS	NS	NS
08-Jul-2017	NS	NS	NS	NS	NS	NS
09-Jul-2017	1.05	1.08	1.23	1.10	1.08	1.30
10-Jul-2017	1.06	1.12	1.28	1.12	1.14	1.36
11-Jul-2017	1.25	1.26	1.43	1.13	1.19	1.36
12-Jul-2017	1.26	1.24	1.47	1.20	1.20	1.33
13-Jul-2017	1.28	1.31	1.48	1.27	1.19	1.36
14-Jul-2017	NS	NS	NS	NS	NS	NS
15-Jul-2017	NS	NS	NS	NS	NS	NS
16-Jul-2017	1.19	1.25	1.39	1.26	1.23	1.46
17-Jul-2017	1.12	1.17	1.38	1.14	1.18	1.31
18-Jul-2017	1.18	1.11	1.33	1.14	1.18	1.39
19-Jul-2017	1.29	1.24	1.42	1.34	1.37	1.52
20-Jul-2017	1.05	1.03	1.27	1.15	1.18	1.36
21-Jul-2017	NS	NS	NS	NS	NS	NS
22-Jul-2017	NS	NS	NS	NS	NS	NS
23-Jul-2017	1.08	1.06	1.29	1.11	1.09	1.31
24-Jul-2017	1.05	1.07	1.27	1.09	1.19	1.35
25-Jul-2017	1.09	1.12	1.31	1.15	1.15	1.36
26-Jul-2017	1.04	1.12	1.28	1.13	1.17	1.37
27-Jul-2017	1.19	1.26	1.46	1.17	1.23	1.43
28-Jul-2017	NS	NS	NS	NS	NS	NS
29-Jul-2017	NS	NS	NS	NS	NS	NS
30-Jul-2017	1.27	1.32	1.50	1.26	1.32	1.50
31-Jul-2017	1.08	1.14	1.36	1.04	1.15	1.31
Total number of measurements taken, A:		22		22		
Chlorine Standard for Monitoring Location (mg/L):		0.50		0.50		
Number of measurements meeting standard, B:		22		22		
Compliance with Chlorine Standard, C= B/A X 100%:		100%		100%		

NS: No Sample NA: Not Analyzed NR: No Result OL: Off-Line

Comments:

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck

Printed From : N:\WQ Data\Routine Water Quality\2017\Chlorine.xls

Date Approved: 4-Aug-17

File: WQR3

**WATER TREATMENT PLANT FREE CHLORINE ON-LINE MONITORING REPORT**
Deacon Booster Pumping Station

Water System Code: **252.00**
Licence Number: **PWS-09-412-01**
Report Created: 01 August 2017

Report Period: July 2017

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/07/2017	1.08	1.02	1.12	1.09
02/07/2017	1.08	1.02	1.13	1.09
03/07/2017	1.15	1.06	1.22	1.12
04/07/2017	1.15	1.08	1.18	1.08
05/07/2017	1.09	0.99	1.07	0.94
06/07/2017	1.00	0.91	0.95	0.91
07/07/2017	1.03	0.96	0.97	0.90
08/07/2017	1.06	0.94	1.11	0.98
09/07/2017	1.05	0.94	1.10	1.02
10/07/2017	1.19	1.03	1.19	1.06
11/07/2017	1.24	1.09	1.14	0.94
12/07/2017	1.24	1.07	1.15	0.91
13/07/2017	1.43	0.90	1.40	0.88
14/07/2017	1.27	1.15	1.27	1.21
15/07/2017	1.14	1.05	1.22	1.16
16/07/2017	1.16	1.09	1.24	1.17
17/07/2017	1.09	0.98	1.17	1.06
18/07/2017	1.14	0.82	1.19	1.01
19/07/2017	1.23	1.05	1.31	1.15
20/07/2017	1.07	1.02	1.17	1.13
21/07/2017	1.12	1.08	1.23	1.17
22/07/2017	1.12	1.01	1.18	1.02
23/07/2017	1.09	1.04	1.10	1.01
24/07/2017	1.08	1.01	1.13	1.07
25/07/2017	1.06	0.99	1.13	1.05
26/07/2017	1.12	0.95	1.19	0.95
27/07/2017	1.18	1.13	1.17	1.11
28/07/2017	1.18	1.11	1.21	1.07
29/07/2017	1.24	1.16	1.28	1.20
30/07/2017	1.26	1.16	1.26	1.18
31/07/2017	1.13	1.01	1.10	0.99

Total Number of Measurements, A:	21600	21600
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	21600	21600
COMPLIANCE, C = B/A X 100%:	100.00	100.00

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Submitted By (Print): David MinorSignature: Original signed by David Minor



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION

WATER TREATMENT PLANT CHLORINE GRAB MONITORING REPORT

Water System Code: 252.00	Deacon Booster Pumping Station Branch 1			Deacon Booster Pumping Station Branch 2		
Licence No. PWS-09-412-01						
Date	Free Chlorine (mg/L)		Total Chlorine (mg/L)	Free Chlorine (mg/L)		Total Chlorine (mg/L)
	Analyser	Grab	Grab	Analyser	Grab	Grab
01-Aug-2017	0.99	1.13	1.30	0.99	1.10	1.26
02-Aug-2017	1.19	1.21	1.39	1.20	1.21	1.40
03-Aug-2017	1.24	1.21	1.49	OL	1.30	1.46
04-Aug-2017	NS	NS	NS	NS	NS	NS
05-Aug-2017	NS	NS	NS	NS	NS	NS
06-Aug-2017	NS	NS	NS	NS	NS	NS
07-Aug-2017	NS	NS	NS	NS	NS	NS
08-Aug-2017	1.10	1.06	1.28	1.08	1.08	1.32
09-Aug-2017	1.17	1.19	1.37	1.08	1.10	1.29
10-Aug-2017	1.13	1.15	1.35	1.03	1.07	1.21
11-Aug-2017	1.08	1.18	1.33	1.00	1.06	1.22
12-Aug-2017	NS	NS	NS	NS	NS	NS
13-Aug-2017	1.16	1.26	1.42	1.05	1.12	1.26
14-Aug-2017	1.39	1.28	1.48	1.28	1.17	1.36
15-Aug-2017	1.04	1.27	1.52	0.95	1.20	1.36
16-Aug-2017	1.28	1.26	1.45	1.17	1.19	1.41
17-Aug-2017	1.24	1.30	1.50	1.14	1.27	1.41
18-Aug-2017	NS	NS	NS	NS	NS	NS
19-Aug-2017	NS	NS	NS	NS	NS	NS
20-Aug-2017	1.34	1.40	1.58	1.33	1.36	1.56
21-Aug-2017	1.22	1.37	1.62	1.23	1.35	1.56
22-Aug-2017	1.15	1.27	1.41	1.21	1.23	1.46
23-Aug-2017	1.09	1.14	1.37	1.21	1.15	1.31
24-Aug-2017	1.25	1.26	1.45	1.36	1.36	1.57
25-Aug-2017	NS	NS	NS	NS	NS	NS
26-Aug-2017	NS	NS	NS	NS	NS	NS
27-Aug-2017	1.18	1.27	1.43	1.24	1.31	1.49
28-Aug-2017	1.18	1.22	1.39	1.22	1.28	1.44
29-Aug-2017	1.22	1.32	1.45	1.17	1.34	1.49
30-Aug-2017	1.27	1.33	1.56	1.31	1.36	1.54
31-Aug-2017	1.25	1.35	1.54	1.21	1.38	1.54
Total number of measurements taken, A:		22		22		
Chlorine Standard for Monitoring Location (mg/L):		0.50		0.50		
Number of measurements meeting standard, B:		22		22		
Compliance with Chlorine Standard, C= B/A X 100%:		100%		100%		

NS: No Sample NA: Not Analyzed NR: No Result OL: Off-Line

Comments:

August 15: WTP operators were notified that analyzers required maintenance.

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck

Date Approved: 7-Sep-17

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File: WQR3

**WATER TREATMENT PLANT FREE CHLORINE ON-LINE MONITORING REPORT**
Deacon Booster Pumping Station

Water System Code: **252.00**
Licence Number: **PWS-09-412-01**
Report Created: 01 September 2017

Report Period: August 2017

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/08/2017	1.08	0.96	1.08	0.95
02/08/2017	1.18	1.12	1.18	1.10
03/08/2017	1.18	1.09	1.16	1.10
04/08/2017	1.13	1.05	1.17	1.10
05/08/2017	1.04	0.98	1.16	1.12
06/08/2017	1.06	0.95	1.15	1.10
07/08/2017	1.08	1.02	1.10	1.04
08/08/2017	1.17	1.06	1.09	1.01
09/08/2017	1.26	1.14	1.13	0.96
10/08/2017	1.19	1.02	1.12	0.98
11/08/2017	1.12	0.98	1.04	0.91
12/08/2017	1.19	1.12	1.11	1.03
13/08/2017	1.19	1.13	1.09	1.04
14/08/2017	1.31	1.16	1.21	1.06
15/08/2017	1.19	0.84	1.10	0.76
16/08/2017	1.34	1.25	1.24	1.14
17/08/2017	1.21	0.98	1.23	1.02
18/08/2017	1.19	1.09	1.37	1.19
19/08/2017	1.34	1.11	1.43	1.25
20/08/2017	1.31	1.18	1.37	1.25
21/08/2017	1.24	1.18	1.28	1.18
22/08/2017	1.16	1.07	1.26	1.11
23/08/2017	1.28	0.69	1.42	0.94
24/08/2017	1.36	1.17	1.45	1.11
25/08/2017	1.35	1.20	1.45	1.19
26/08/2017	1.27	1.09	1.30	1.06
27/08/2017	1.20	1.05	1.20	1.10
28/08/2017	1.23	1.10	1.21	1.06
29/08/2017	1.24	1.10	1.21	1.07
30/08/2017	1.24	1.12	1.27	1.11
31/08/2017	1.25	1.17	1.34	1.30

Total Number of Measurements, A:	21599	21596
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	21599	21596
COMPLIANCE, C = B/A X 100%:	100.00	100.00

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Submitted By (Print): D.MerredewSignature: Original signed by D.Merredew



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION

WATER TREATMENT PLANT CHLORINE GRAB MONITORING REPORT

Water System Code: 252.00		Deacon Booster Pumping Station Branch 1		Deacon Booster Pumping Station Branch 2		
Licence No. PWS-09-412-01						
Date	Free Chlorine (mg/L)		Total Chlorine (mg/L)	Free Chlorine (mg/L)		Total Chlorine (mg/L)
	Analyser	Grab	Grab	Analyser	Grab	Grab
01-Sep-2017	NS	NS	NS	NS	NS	NS
02-Sep-2017	NS	NS	NS	NS	NS	NS
03-Sep-2017	0.97	1.19	1.41	1.20	1.27	1.41
04-Sep-2017	1.25	1.25	1.48	1.20	1.34	1.44
05-Sep-2017	1.23	1.26	1.57	1.11	1.21	1.37
06-Sep-2017	1.12	1.16	1.36	1.05	1.19	1.33
07-Sep-2017	1.02	1.08	1.27	0.99	1.12	1.29
08-Sep-2017	NS	NS	NS	NS	NS	NS
09-Sep-2017	NS	NS	NS	NS	NS	NS
10-Sep-2017	NS	NS	NS	NS	NS	NS
11-Sep-2017	1.16	1.20	1.33	1.12	1.13	1.27
12-Sep-2017	1.10	1.09	1.31	1.04	1.11	1.21
13-Sep-2017	OL	1.18	1.32	1.08	1.11	1.30
14-Sep-2017	1.05	1.12	1.29	1.07	1.12	1.30
15-Sep-2017	1.14	1.19	1.37	1.20	1.25	1.39
16-Sep-2017	NS	NS	NS	NS	NS	NS
17-Sep-2017	NS	NS	NS	NS	NS	NS
18-Sep-2017	1.08	1.18	1.35	1.15	1.16	1.36
19-Sep-2017	1.27	1.31	1.51	1.24	1.25	1.45
20-Sep-2017	1.13	1.27	1.43	1.21	1.27	1.46
21-Sep-2017	1.29	1.21	1.52	1.17	1.16	1.43
22-Sep-2017	1.22	1.30	1.49	1.15	1.21	1.44
23-Sep-2017	NS	NS	NS	NS	NS	NS
24-Sep-2017	NS	NS	NS	NS	NS	NS
25-Sep-2017	1.05	1.15	1.27	1.25	1.23	1.34
26-Sep-2017	1.05	1.17	1.30	1.15	1.24	1.40
27-Sep-2017	0.99	1.10	1.27	1.12	1.18	1.37
28-Sep-2017	1.09	1.14	1.40	1.19	1.22	1.43
29-Sep-2017	1.01	1.09	1.22	1.07	1.20	1.35
30-Sep-2017	NS	NS	NS	NS	NS	NS
Total number of measurements taken, A:		20		20		
Chlorine Standard for Monitoring Location (mg/L):		0.50		0.50		
Number of measurements meeting standard, B:		20		20		
Compliance with Chlorine Standard, C= B/A X 100%:		100%		100%		

NS: No Sample NA: Not Analyzed NR: No Result OL: Off-Line

Comments:

DBPS Branch I analyzer was offline on September 13 due to maintenance requirements.

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck

Date Approved: 6-Oct-17

Printed From : N:\WQ Data\Routine Water Quality\2017\Chlorine.xls

File: WQR3

**WATER TREATMENT PLANT FREE CHLORINE ON-LINE MONITORING REPORT**
Deacon Booster Pumping Station

Water System Code: **252.00**
Licence Number: **PWS-09-412-01**
Report Created: **01 October 2017**

Report Period: September 2017

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/09/2017	1.19	1.04	1.31	1.20
02/09/2017	1.23	1.11	1.28	1.16
03/09/2017	1.14	0.88	1.18	1.12
04/09/2017	1.26	1.13	1.19	1.12
05/09/2017	1.21	1.08	1.13	1.03
06/09/2017	0.97	0.85	0.89	0.64
07/09/2017	1.07	0.93	1.09	0.96
08/09/2017	1.24	1.13	1.19	1.09
09/09/2017	1.19	1.07	1.16	1.07
10/09/2017	1.16	1.08	1.13	1.05
11/09/2017	1.12	1.01	1.10	1.05
12/09/2017	1.07	1.01	1.06	0.96
13/09/2017	1.09	0.97	1.06	0.97
14/09/2017	1.07	0.97	1.07	0.97
15/09/2017	1.10	0.92	1.19	1.00
16/09/2017	1.10	0.99	1.19	1.09
17/09/2017	1.14	1.02	1.22	1.10
18/09/2017	1.10	0.92	1.14	1.00
19/09/2017	1.18	1.03	1.18	1.07
20/09/2017	1.21	1.11	1.22	1.15
21/09/2017	1.21	1.05	1.15	1.05
22/09/2017	1.23	1.17	1.16	1.11
23/09/2017	1.14	1.07	1.11	1.04
24/09/2017	1.12	1.04	1.10	1.03
25/09/2017	1.06	0.85	1.10	1.03
26/09/2017	1.07	1.00	1.13	1.07
27/09/2017	1.57	0.94	1.65	1.06
28/09/2017	1.13	0.95	1.19	1.08
29/09/2017	1.10	0.90	1.13	0.98
30/09/2017	1.31	1.16	1.20	1.12

Total Number of Measurements, A:	20849	20846
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	20849	20846
COMPLIANCE, C = B/A X 100%:	100.00	100.00

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2017\09-September

Submitted By (Print): D.MerredewSignature: Original signed by D.Merredew



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION

WATER TREATMENT PLANT CHLORINE GRAB MONITORING REPORT

Water System Code: 252.00		Deacon Booster Pumping Station Branch 1		Deacon Booster Pumping Station Branch 2		
Licence No. PWS-09-412-01						
Date	Free Chlorine (mg/L)		Total Chlorine (mg/L)	Free Chlorine (mg/L)		Total Chlorine (mg/L)
	Analyser	Grab	Grab	Analyser	Grab	Grab
01-Oct-2017	1.18	1.32	1.54	1.14	1.32	1.52
02-Oct-2017	1.10	1.22	1.44	1.18	1.21	1.41
03-Oct-2017	1.17	1.25	1.49	1.13	1.22	1.45
04-Oct-2017	1.20	1.29	1.49	1.16	1.28	1.47
05-Oct-2017	1.23	1.28	1.51	1.15	1.26	1.43
06-Oct-2017	NS	NS	NS	NS	NS	NS
07-Oct-2017	NS	NS	NS	NS	NS	NS
08-Oct-2017	1.16	1.19	1.41	1.03	1.20	1.33
09-Oct-2017	1.15	1.27	1.49	1.29	1.22	1.39
10-Oct-2017	1.16	1.24	1.41	1.06	1.17	1.36
11-Oct-2017	1.17	1.22	1.44	1.14	1.25	1.45
12-Oct-2017	1.17	1.26	1.44	1.15	1.09	1.33
13-Oct-2017	NS	NS	NS	NS	NS	NS
14-Oct-2017	NS	NS	NS	NS	NS	NS
15-Oct-2017	1.05	1.11	1.27	1.13	1.21	1.39
16-Oct-2017	1.05	1.08	1.22	1.05	1.15	1.32
17-Oct-2017	1.08	1.13	1.25	1.16	1.22	1.37
18-Oct-2017	1.09	1.07	1.24	1.01	1.10	1.23
19-Oct-2017	1.16	1.16	1.40	1.14	1.22	1.40
20-Oct-2017	NS	NS	NS	NS	NS	NS
21-Oct-2017	NS	NS	NS	NS	NS	NS
22-Oct-2017	1.11	1.13	1.30	1.05	1.11	1.29
23-Oct-2017	1.08	1.13	1.28	1.00	1.03	1.21
24-Oct-2017	1.06	1.08	1.32	1.02	1.05	1.24
25-Oct-2017	1.06	1.12	1.31	1.02	1.02	1.21
26-Oct-2017	1.10	1.11	1.32	1.03	1.01	1.19
27-Oct-2017	NS	NS	NS	NS	NS	NS
28-Oct-2017	NS	NS	NS	NS	NS	NS
29-Oct-2017	1.15	1.17	1.39	1.06	1.12	1.28
30-Oct-2017	1.11	1.18	1.38	1.07	1.12	1.31
31-Oct-2017	1.09	1.16	1.38	1.08	1.13	1.30
Total number of measurements taken, A:		23		23		
Chlorine Standard for Monitoring Location (mg/L):		0.50		0.50		
Number of measurements meeting standard, B:		23		23		
Compliance with Chlorine Standard, C= B/A X 100%:		100%		100%		

NS: No Sample NA: Not Analyzed NR: No Result OL: Off-Line

Comments:

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck

Printed From : N:\WQ Data\Routine Water Quality\2017\Chlorine.xls

Date Approved: 7-Nov-17

File: WQR3

**WATER TREATMENT PLANT FREE CHLORINE ON-LINE MONITORING REPORT**
Deacon Booster Pumping Station

Water System Code: **252.00**
Licence Number: **PWS-09-412-01**
Report Created: 01 November 2017

Report Period: October 2017

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/10/2017	1.16	1.08	1.15	1.04
02/10/2017	1.11	1.03	1.15	1.05
03/10/2017	1.16	1.10	1.11	1.06
04/10/2017	1.21	1.13	1.16	1.08
05/10/2017	1.17	1.06	1.20	1.07
06/10/2017	1.15	1.01	1.27	1.18
07/10/2017	1.13	0.97	1.19	1.06
08/10/2017	1.17	1.07	1.15	1.02
09/10/2017	1.17	1.04	1.24	1.18
10/10/2017	1.17	1.03	1.15	1.02
11/10/2017	1.16	1.10	1.16	1.07
12/10/2017	1.16	1.07	1.19	0.97
13/10/2017	1.17	0.96	1.28	1.17
14/10/2017	1.14	1.08	1.24	1.16
15/10/2017	1.03	0.96	1.14	1.06
16/10/2017	0.98	0.93	1.08	1.01
17/10/2017	1.05	0.96	1.10	1.02
18/10/2017	1.02	0.97	0.94	0.86
19/10/2017	1.12	1.04	1.12	1.04
20/10/2017	1.11	1.06	1.08	0.94
21/10/2017	1.06	0.93	1.01	0.91
22/10/2017	1.11	1.00	1.03	0.98
23/10/2017	1.06	0.95	1.00	0.88
24/10/2017	1.08	0.98	1.03	0.94
25/10/2017	1.07	1.02	1.02	0.95
26/10/2017	1.10	0.97	1.05	0.98
27/10/2017	1.08	0.99	1.06	1.01
28/10/2017	1.07	0.95	1.06	0.91
29/10/2017	1.10	0.99	1.06	0.98
30/10/2017	1.12	1.02	1.06	1.01
31/10/2017	1.10	1.01	1.09	0.97

Total Number of Measurements, A:	21148	21019
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	21148	21019
COMPLIANCE, C = B/A X 100%:	100.00	100.00

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Submitted By (Print): D.MerredewSignature: Original signed by D.Merredew



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION

WATER TREATMENT PLANT CHLORINE GRAB MONITORING REPORT

Water System Code: 252.00		Deacon Booster Pumping Station Branch 1		Deacon Booster Pumping Station Branch 2		
Licence No. PWS-09-412-01						
Date	Free Chlorine (mg/L)		Total Chlorine (mg/L)	Free Chlorine (mg/L)		Total Chlorine (mg/L)
	Analyser	Grab	Grab	Analyser	Grab	Grab
01-Nov-2017	1.16	1.21	1.41	1.13	1.23	1.39
02-Nov-2017	1.17	1.21	1.38	1.18	1.19	1.40
03-Nov-2017	NS	NS	NS	NS	NS	NS
04-Nov-2017	NS	NS	NS	NS	NS	NS
05-Nov-2017	1.16	1.26	1.43	1.25	1.31	1.49
06-Nov-2017	1.10	1.18	1.36	1.09	1.27	1.43
07-Nov-2017	1.04	1.12	1.33	1.14	1.22	1.39
08-Nov-2017	1.10	1.24	1.34	1.22	1.31	1.52
09-Nov-2017	1.09	1.23	1.38	1.26	1.30	1.52
10-Nov-2017	NS	NS	NS	NS	NS	NS
11-Nov-2017	NS	NS	NS	NS	NS	NS
12-Nov-2017	1.02	1.15	1.30	1.21	1.26	1.48
13-Nov-2017	1.03	1.13	1.29	1.16	1.28	1.48
14-Nov-2017	1.13	1.17	1.37	1.31	1.39	1.56
15-Nov-2017	1.02	1.08	1.27	1.19	1.28	1.42
16-Nov-2017	1.11	1.17	1.35	1.28	1.34	1.53
17-Nov-2017	NS	NS	NS	NS	NS	NS
18-Nov-2017	NS	NS	NS	NS	NS	NS
19-Nov-2017	1.01	1.09	1.25	1.19	1.30	1.49
20-Nov-2017	1.04	1.10	1.25	1.09	1.18	1.32
21-Nov-2017	1.27	1.21	1.45	1.08	1.19	1.35
22-Nov-2017	1.10	1.16	1.35	1.04	1.09	1.32
23-Nov-2017	1.16	1.22	1.42	1.10	1.16	1.37
24-Nov-2017	NS	NS	NS	NS	NS	NS
25-Nov-2017	NS	NS	NS	NS	NS	NS
26-Nov-2017	1.16	1.22	1.42	1.07	1.13	1.36
27-Nov-2017	1.17	1.16	1.38	1.01	1.07	1.25
28-Nov-2017	1.15	1.20	1.39	1.13	1.09	1.30
29-Nov-2017	1.13	1.18	1.39	1.12	1.10	1.30
30-Nov-2017	1.04	1.10	1.34	1.05	1.08	1.24
Total number of measurements taken, A:		22		22		
Chlorine Standard for Monitoring Location (mg/L):		0.50		0.50		
Number of measurements meeting standard, B:		22		22		
Compliance with Chlorine Standard, C= B/A X 100%:		100%		100%		

NS: No Sample NA: Not Analyzed NR: No Result OL: Off-Line

Comments:

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck

Date Approved: 7-Dec-17

Printed From : N:\WQ Data\Routine Water Quality\2017\Chlorine.xls

File: WQR3

**WATER TREATMENT PLANT FREE CHLORINE ON-LINE MONITORING REPORT**
Deacon Booster Pumping StationWater System Code: **252.00**Licence Number: **PWS-09-412-01**

Report Created: 01 December 2017

Report Period: November 2017

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/11/2017	1.12	1.06	1.14	1.03
02/11/2017	1.15	1.09	1.21	1.08
03/11/2017	1.18	1.08	1.35	1.25
04/11/2017	1.18	1.07	1.35	1.18
05/11/2017	1.11	0.96	1.22	1.02
06/11/2017	1.06	0.99	1.17	1.00
07/11/2017	1.09	1.01	1.19	1.03
08/11/2017	1.02	0.81	1.14	0.92
09/11/2017	1.12	1.00	1.28	1.17
10/11/2017	1.25	1.14	1.40	1.22
11/11/2017	1.12	0.98	1.29	1.12
12/11/2017	1.03	0.96	1.18	1.07
13/11/2017	1.05	0.97	1.17	1.08
14/11/2017	1.04	0.97	1.18	1.09
15/11/2017	1.06	0.97	1.23	1.16
16/11/2017	1.09	0.98	1.26	1.13
17/11/2017	1.06	0.96	1.24	1.12
18/11/2017	1.01	0.91	1.19	1.10
19/11/2017	1.03	0.95	1.19	1.11
20/11/2017	1.12	0.99	1.14	1.04
21/11/2017	1.18	1.01	1.07	0.99
22/11/2017	1.11	1.03	1.05	0.99
23/11/2017	1.14	1.06	1.06	1.03
24/11/2017	1.11	1.00	1.02	0.98
25/11/2017	1.15	1.08	1.07	1.01
26/11/2017	1.16	1.07	1.04	0.97
27/11/2017	1.16	1.10	1.00	0.97
28/11/2017	1.15	1.06	1.07	0.97
29/11/2017	1.12	1.05	1.10	1.05
30/11/2017	1.04	0.68	0.95	0.67

Total Number of Measurements, A:	20907	20904
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	20907	20904
COMPLIANCE, C = B/A X 100%:	100	100

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Submitted By (Print): D.MerredewSignature: Original signed by D.Merredew



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION

WATER TREATMENT PLANT CHLORINE GRAB MONITORING REPORT

Water System Code: 252.00		Deacon Booster Pumping Station Branch 1			Deacon Booster Pumping Station Branch 2		
Licence No. PWS-09-412-01							
Date	Free Chlorine (mg/L)		Total Chlorine (mg/L)	Free Chlorine (mg/L)		Total Chlorine (mg/L)	
	Analyser	Grab	Grab	Analyser	Grab	Grab	
01-Dec-2017	NA	NA	NA	NA	NA	NA	
02-Dec-2017	NA	NA	NA	NA	NA	NA	
03-Dec-2017	1.01	1.03	1.17	1.10	1.09	1.27	
04-Dec-2017	0.95	1.01	1.18	1.05	1.07	1.28	
05-Dec-2017	0.91	0.96	1.11	0.95	1.02	1.25	
06-Dec-2017	0.89	0.94	1.05	0.95	0.96	1.14	
07-Dec-2017	0.90	0.92	1.07	0.96	0.99	1.16	
08-Dec-2017	NA	NA	NA	NA	NA	NA	
09-Dec-2017	NA	NA	NA	NA	NA	NA	
10-Dec-2017	0.90	0.93	1.12	0.97	0.99	1.18	
11-Dec-2017	0.98	0.97	1.23	1.03	1.12	1.28	
12-Dec-2017	0.89	0.95	1.13	0.93	0.98	1.20	
13-Dec-2017	OL	OL	OL	OL	OL	OL	
14-Dec-2017	1.03	1.07	1.29	1.09	1.15	1.31	
15-Dec-2017	1.16	1.16	1.38	1.21	1.19	1.40	
16-Dec-2017	NA	NA	NA	NA	NA	NA	
17-Dec-2017	0.91	0.95	1.08	1.04	1.06	1.20	
18-Dec-2017	0.94	1.05	1.18	1.11	1.11	1.22	
19-Dec-2017	0.91	1.00	1.21	1.08	1.14	1.31	
20-Dec-2017	1.10	1.04	1.23	1.03	1.07	1.26	
21-Dec-2017	1.20	1.18	1.43	1.09	1.15	1.32	
22-Dec-2017	NA	NA	NA	NA	NA	NA	
23-Dec-2017	NA	NA	NA	NA	NA	NA	
24-Dec-2017	1.00	1.09	1.27	0.95	1.01	1.24	
25-Dec-2017	NA	NA	NA	NA	NA	NA	
26-Dec-2017	NA	NA	NA	NA	NA	NA	
27-Dec-2017	1.08	1.14	1.32	1.03	1.06	1.27	
28-Dec-2017	1.07	1.17	1.34	1.20	1.19	1.43	
29-Dec-2017	1.11	1.12	1.30	1.17	1.21	1.45	
30-Dec-2017	NA	NA	NA	NA	NA	NA	
31-Dec-2017	0.97	1.11	1.28	1.10	1.15	1.39	
Total number of measurements taken, A:		20		20			
Chlorine Standard for Monitoring Location (mg/L):		0.50		0.50			
Number of measurements meeting standard, B:		20		20			
Compliance with Chlorine Standard, C= B/A X 100%:		100%		100%			

NS: No Sample NA: Not Analyzed OL: Off-Line

Comments:

Branch I and II were offline on December 13, 2017, due to a scheduled WTP shutdown. Branch I was offline on December 20, 2017 for maintenance.

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck

Date Approved: 5-Jan-18

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File: WQR3

**WATER TREATMENT PLANT FREE CHLORINE ON-LINE MONITORING REPORT**
Deacon Booster Pumping Station

Water System Code: **252.00**
Licence Number: **PWS-09-412-01**
Report Created: 01 January 2018

Report Period: December 2017

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/12/2017	1.11	0.94	1.00	0.91
02/12/2017	1.00	0.93	1.06	0.99
03/12/2017	1.01	0.97	1.09	1.01
04/12/2017	0.96	0.88	1.05	0.98
05/12/2017	0.90	0.84	0.99	0.94
06/12/2017	0.88	0.81	0.94	0.74
07/12/2017	0.90	0.82	0.98	0.86
08/12/2017	0.92	0.84	1.01	0.93
09/12/2017	0.96	0.87	1.05	0.90
10/12/2017	0.90	0.78	0.97	0.85
11/12/2017	0.96	0.87	1.02	0.94
12/12/2017	0.89	0.82	0.92	0.85
13/12/2017	0.84	0.67	0.88	0.66
14/12/2017	1.03	0.88	1.13	1.02
15/12/2017	1.05	0.92	1.11	0.97
16/12/2017	0.96	0.88	1.07	0.99
17/12/2017	0.92	0.84	1.05	0.97
18/12/2017	0.94	0.82	1.09	1.02
19/12/2017	0.94	0.86	1.10	0.98
20/12/2017	1.08	1.00	1.09	1.00
21/12/2017	1.19	1.10	1.08	1.04
22/12/2017	1.17	1.06	1.08	1.01
23/12/2017	1.06	0.95	1.03	0.96
24/12/2017	1.02	0.93	1.04	0.95
25/12/2017	1.05	0.96	1.00	0.85
26/12/2017	1.08	0.99	1.05	0.99
27/12/2017	1.06	0.94	1.06	0.95
28/12/2017	1.03	0.93	1.17	1.09
29/12/2017	1.08	1.00	1.19	1.13
30/12/2017	1.04	0.95	1.13	1.07
31/12/2017	1.01	0.95	1.10	1.07

Total Number of Measurements, A:	21601	21601
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	21601	21601

COMPLIANCE, C = B/A X 100%:	100.00	100.00
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Submitted By (Print): D.MerredewSignature: Original signed by D.Merredew

2017 Monthly Turbidity Reports



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION

WATER TREATMENT PLANT TURBIDITY GRAB MONITORING REPORT																		
Water System Code: 252.00	Turbidity (NTU)																	
Licence No. PWS-09-412-01																		
Date	Raw Water		Filter 1		Filter 2		Filter 3		Filter 4		Filter 5		Filter 6		Filter 7		Filter 8	
	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser
01-Jan-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
02-Jan-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
03-Jan-2017	0.57	0.63	0.10	0.03	0.10	0.08	0.10	<0.02	0.08	<0.02	0.09	0.02	0.10	<0.02	0.12	0.04	0.14	0.03
04-Jan-2017	0.51	0.61	0.06	<0.02	0.06	0.06	0.09	<0.02	0.06	<0.02	0.09	0.02	0.07	<0.02	0.06	<0.02	0.05	<0.02
05-Jan-2017	0.53	0.59	0.07	<0.02	0.06	0.06	0.07	<0.02	0.06	<0.02	0.07	<0.02	0.09	0.02	0.08	<0.02	0.07	<0.02
06-Jan-2017	0.52	0.63	0.07	<0.02	0.06	0.06	0.07	<0.02	0.06	<0.02	0.08	<0.02	0.08	<0.02	0.07	<0.02	0.08	<0.02
07-Jan-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
08-Jan-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
09-Jan-2017	0.55	0.59	0.09	<0.02	0.06	0.06	0.06	<0.02	0.06	<0.02	0.06	<0.02	0.07	<0.02	0.07	<0.02	0.06	<0.02
10-Jan-2017	0.47	0.59	0.08	<0.02	0.09	0.08	0.09	<0.02	0.08	<0.02	O/L	O/L	0.09	<0.02	0.06	<0.02	0.06	<0.02
11-Jan-2017	0.52	0.56	0.06	<0.02	O/L	O/L	0.06	<0.02	0.10	<0.02	0.06	<0.02	O/L	O/L	0.07	<0.02	0.07	<0.02
12-Jan-2017	0.70	1.01	0.06	<0.02	0.06	0.06	0.07	<0.02	0.07	<0.02	0.07	<0.02	0.07	<0.02	O/L	O/L	0.06	<0.02
13-Jan-2017	0.59	0.57	0.06	<0.02	0.07	0.07	O/L	O/L	0.06	<0.02	0.06	<0.02	0.10	<0.02	0.06	<0.02	0.07	<0.02
14-Jan-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
15-Jan-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
16-Jan-2017	0.54	0.53	0.06	<0.02	O/L	O/L	0.06	<0.02	0.10	<0.02	0.06	<0.02	0.08	<0.02	0.07	0.02	0.08	<0.02
17-Jan-2017	0.50	0.54	0.08	<0.02	0.06	0.06	0.07	<0.02	0.06	<0.02	0.07	<0.02	0.09	<0.02	0.07	0.03	O/L	O/L
18-Jan-2017	0.50	0.54	0.06	<0.02	0.07	0.06	0.09	<0.02	0.08	<0.02	0.09	0.03	0.08	<0.02	0.07	0.02	0.06	<0.02
19-Jan-2017	0.49	0.56	0.06	<0.02	O/L	O/L	0.06	<0.02	0.09	<0.02	0.08	<0.02	0.10	<0.02	0.07	0.03	0.08	<0.02
20-Jan-2017	0.53	0.54	0.08	0.02	0.06	<0.02	0.07	<0.02	0.06	<0.02	0.08	<0.02	0.08	<0.02	O/L	O/L	O/L	O/L
21-Jan-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
22-Jan-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
23-Jan-2017	0.49	0.55	0.08	0.02	0.08	<0.02	0.07	<0.02	0.06	<0.02	0.08	<0.02	0.07	<0.02	0.07	<0.02	0.09	<0.02
24-Jan-2017	0.51	0.55	0.07	<0.02	0.09	0.02	0.11	<0.02	0.08	<0.02	0.08	<0.02	0.11	<0.02	0.07	<0.02	0.09	<0.02
25-Jan-2017	0.53	0.54	0.07	<0.02	0.07	<0.02	0.07	<0.02	0.11	<0.02	0.08	<0.02	0.07	<0.02	0.08	<0.02	0.09	<0.02
26-Jan-2017	0.52	0.54	0.08	0.02	0.06	0.02	0.08	<0.02	0.07	<0.02	0.07	<0.02	0.08	<0.02	0.07	<0.02	0.08	<0.02
27-Jan-2017	0.51	0.55	0.06	<0.02	0.07	0.02	O/L	O/L	0.07	<0.02	0.07	<0.02	0.08	<0.02	0.07	<0.02	0.06	<0.02
28-Jan-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
29-Jan-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
30-Jan-2017	0.54	0.53	0.07	0.02	0.11	0.04	0.09	<0.02	0.08	<0.02	0.07	<0.02	0.11	0.03	0.07	<0.02	0.07	<0.02
31-Jan-2017	0.47	0.53	0.10	0.02	0.07	0.02	0.08	<0.02	0.07	<0.02	0.08	<0.02	0.08	<0.02	0.08	<0.02	0.09	<0.02
Total number of measurements taken, A:			21		18		19		21		20		20		19		19	
Turbidity Standard for Monitoring Location (NTU):			0.30		0.30		0.30		0.30		0.30		0.30		0.30		0.30	
Number of measurements meeting standard, B:			21		18		19		21		20		20		19		19	
Compliance with Turbidity Standard, C= B/A X 100%:			100%		100%		100%		100%		100%		100%		100%		100%	

NS: No Sample NA: Not Analyzed OL: Off-Line

Comments:

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck

Date Approved: 6-Feb-17



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**
 Licence Number: **PWS-09-412-01**

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

January 2017 Turbidity (NTU)

Date	Raw	Filter #1		Filter #2		Filter #3		Filter #4		Filter #5		Filter #6		Filter #7		Filter #8	
	Avg	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max
1/01/2017	0.66	0.02	0.06	0.06	0.11	0.00	0.03	0.02	0.02	0.01	0.05	0.01	0.06	0.01	0.06	0.00	0.01
2/01/2017	0.65	0.02	0.03	0.05	0.13	0.00	0.05	0.01	0.05	0.01	0.03	0.01	0.08	0.02	0.05	0.01	0.03
3/01/2017	0.64	0.03	0.09	0.07	0.09	0.00	0.00	0.01	0.08	0.03	0.07	0.01	0.03	0.02	0.08	0.00	0.04
4/01/2017	0.62	0.01	0.04	0.05	0.13	0.00	0.00	0.02	0.02	0.01	0.03	0.01	0.09	0.00	0.03	0.01	0.01
5/01/2017	0.62	0.01	0.02	0.04	0.09	0.00	0.00	0.01	0.03	0.00	0.02	0.00	0.03	0.01	0.03	0.00	0.01
6/01/2017	0.61	0.01	0.03	0.06	0.07	0.00	0.00	0.01	0.02	0.01	0.04	0.01	0.01	0.01	0.03	0.00	0.01
7/01/2017	0.61	0.01	0.02	0.04	0.09	0.00	0.00	0.02	0.03	0.00	0.03	0.01	0.03	0.01	0.01	0.01	0.01
8/01/2017	0.61	0.01	0.03	0.04	0.09	0.00	0.00	0.01	0.03	0.01	0.03	0.00	0.03	0.01	0.05	0.00	0.01
9/01/2017	0.61	0.01	0.05	0.06	0.08	0.00	0.00	0.01	0.02	0.00	0.02	0.01	0.01	0.01	0.03	0.00	0.01
10/01/2017	0.59	0.01	0.04	0.04	0.10	0.00	0.02	0.02	0.02	0.01	0.05	0.01	0.02	0.01	0.02	0.01	0.01
11/01/2017	0.58	0.02	0.03	0.04	0.09	0.00	0.00	0.01	0.04	0.01	0.02	0.01	0.03	0.02	0.04	0.00	0.01
12/01/2017	0.68	0.01	0.04	0.06	0.09	0.00	0.01	0.01	0.02	0.01	0.03	0.01	0.01	0.01	0.06	0.00	0.01
13/01/2017	0.59	0.01	0.02	0.04	0.09	0.00	0.02	0.01	0.03	0.01	0.04	0.01	0.04	0.02	0.04	0.01	0.01
14/01/2017	0.57	0.01	0.02	0.05	0.07	0.00	0.00	0.01	0.04	0.01	0.03	0.01	0.05	0.02	0.06	0.00	0.01
15/01/2017	0.56	0.01	0.02	0.05	0.09	0.00	0.04	0.02	0.02	0.01	0.05	0.01	0.02	0.02	0.06	0.00	0.01
16/01/2017	0.55	0.01	0.01	0.04	0.08	0.00	0.04	0.01	0.04	0.01	0.03	0.01	0.05	0.03	0.05	0.01	0.01
17/01/2017	0.56	0.01	0.02	0.05	0.06	0.00	0.01	0.01	0.04	0.01	0.03	0.01	0.01	0.02	0.05	0.00	0.01
18/01/2017	0.59	0.01	0.02	0.05	0.09	0.01	0.06	0.02	0.02	0.01	0.05	0.01	0.05	0.02	0.07	0.01	0.01
19/01/2017	0.57	0.01	0.01	0.04	0.09	0.00	0.06	0.01	0.05	0.01	0.03	0.01	0.05	0.03	0.05	0.01	0.01
20/01/2017	0.56	0.02	0.07	0.03	0.07	0.01	0.04	0.01	0.03	0.01	0.04	0.01	0.03	0.01	0.03	0.00	0.01
21/01/2017	0.57	0.01	0.02	0.01	0.04	0.00	0.00	0.02	0.02	0.00	0.03	0.01	0.05	0.01	0.01	0.01	0.01
22/01/2017	0.57	0.02	0.05	0.01	0.02	0.00	0.00	0.01	0.03	0.01	0.02	0.01	0.05	0.01	0.02	0.00	0.01
23/01/2017	0.57	0.01	0.04	0.01	0.04	0.00	0.00	0.01	0.02	0.00	0.05	0.01	0.02	0.00	0.02	0.00	0.01
24/01/2017	0.57	0.01	0.03	0.01	0.04	0.00	0.00	0.01	0.03	0.00	0.02	0.01	0.04	0.01	0.01	0.01	0.01
25/01/2017	0.57	0.02	0.04	0.01	0.02	0.00	0.00	0.01	0.02	0.00	0.02	0.01	0.04	0.00	0.02	0.00	0.01
26/01/2017	0.56	0.02	0.06	0.02	0.16	0.00	0.00	0.01	0.02	0.00	0.02	0.01	0.02	0.00	0.01	0.00	0.01
27/01/2017	0.56	0.01	0.03	0.01	0.04	0.00	0.00	0.01	0.03	0.00	0.01	0.01	0.03	0.01	0.01	0.01	0.01
28/01/2017	0.55	0.02	0.05	0.01	0.03	0.00	0.00	0.01	0.02	0.00	0.01	0.01	0.03	0.00	0.02	0.00	0.01
29/01/2017	0.56	0.02	0.05	0.02	0.05	0.00	0.01	0.01	0.02	0.01	0.03	0.01	0.02	0.00	0.03	0.00	0.01
30/01/2017	0.55	0.02	0.04	0.02	0.06	0.00	0.02	0.01	0.04	0.00	0.01	0.01	0.05	0.01	0.01	0.01	0.01
31/01/2017	0.56	0.03	0.06	0.02	0.04	0.00	0.00	0.01	0.04	0.01	0.03	0.01	0.05	0.00	0.03	0.00	0.08

Total Number of Measurements Taken, A:	14084	10951	6647	10291	14601	14415	12955	14308
Turbidity Standard for Monitoring Location (NTU):	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Number of Measurements Meeting Standard, B:	14084	10951	6647	10291	14601	14415	12955	14308
Compliance with Turbidity Standard, C = B/A X 100%:	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2017\01-January

Signature:

Original signed by D. Merredew



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION

WATER TREATMENT PLANT TURBIDITY GRAB MONITORING REPORT																		
Water System Code: 252.00	Turbidity (NTU)																	
Licence No. PWS-09-412-01																		
Date	Raw Water		Filter 1		Filter 2		Filter 3		Filter 4		Filter 5		Filter 6		Filter 7		Filter 8	
	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser
01-Feb-2017	0.49	0.55	OL	OL	0.08	0.04	0.11	<0.02	0.07	<0.02	0.10	<0.02	0.08	<0.02	0.07	<0.02	0.07	<0.02
02-Feb-2017	0.51	0.52	0.06	<0.02	OL	OL	0.07	<0.02	0.08	<0.02	0.06	<0.02	0.08	<0.02	0.06	<0.02	0.06	<0.02
03-Feb-2017	0.53	0.52	0.06	<0.02	0.07	0.02	0.06	<0.02	0.06	<0.02	0.06	<0.02	0.06	<0.02	OL	OL	OL	OL
04-Feb-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
05-Feb-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
06-Feb-2017	0.50	0.50	0.07	0.02	0.08	0.02	0.07	<0.02	OL	OL	0.07	<0.02	0.07	<0.02	0.07	<0.02	OL	OL
07-Feb-2017	0.47	0.50	OL	OL	0.06	0.03	0.07	<0.02	OL	OL	0.08	<0.02	0.07	<0.02	0.06	<0.02	0.08	<0.02
08-Feb-2017	0.50	0.49	0.06	<0.02	OL	OL	0.06	<0.02	0.09	0.02	0.06	<0.02	0.08	<0.02	0.06	<0.02	0.06	<0.02
09-Feb-2017	0.50	0.50	0.06	<0.02	0.05	0.02	0.06	<0.02	0.05	<0.02	0.06	<0.02	0.06	<0.02	0.07	<0.02	OL	OL
10-Feb-2017	0.49	0.51	0.05	<0.02	0.06	0.02	0.06	<0.02	0.07	<0.02	0.07	<0.02	0.06	<0.02	0.06	<0.02	<0.05	<0.02
11-Feb-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
12-Feb-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
13-Feb-2017	0.48	0.52	0.08	<0.02	0.08	0.03	0.10	<0.02	0.09	<0.02	OL	OL	0.11	<0.02	0.09	<0.02	0.08	<0.02
14-Feb-2017	0.47	0.51	0.09	0.02	OL	OL	0.09	<0.02	0.08	<0.02	0.08	<0.02	0.11	0.03	0.10	<0.02	0.12	0.02
15-Feb-2017	0.48	0.50	0.09	0.03	0.08	0.03	0.10	<0.02	0.12	<0.02	0.11	0.02	0.09	<0.02	0.07	<0.02	0.07	<0.02
16-Feb-2017	0.56	0.52	0.12	0.03	0.18	0.08	0.14	<0.02	OL	OL	0.12	<0.02	0.06	<0.02	0.11	<0.02	0.10	<0.02
17-Feb-2017	0.48	0.50	0.09	0.03	0.08	0.02	0.09	<0.02	OL	OL	0.10	<0.02	0.09	<0.02	0.16	<0.02	0.15	0.04
18-Feb-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
19-Feb-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
20-Feb-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
21-Feb-2017	0.50	0.56	0.11	0.03	0.09	0.03	0.08	0.03	0.10	<0.02	0.09	<0.02	0.07	<0.02	OL	OL	0.06	<0.02
22-Feb-2017	0.54	0.55	0.09	0.03	0.12	0.06	0.10	<0.02	OL	OL	0.09	<0.02	0.11	0.02	0.09	<0.02	0.08	<0.02
23-Feb-2017	0.48	0.56	0.06	<0.02	0.06	<0.02	0.06	<0.02	0.06	<0.02	0.06	<0.02	OL	OL	0.07	<0.02	0.07	<0.02
24-Feb-2017	0.50	0.53	0.12	0.02	0.08	<0.02	0.09	<0.02	0.09	<0.02	0.11	0.04	0.08	<0.02	0.07	<0.02	0.07	<0.02
25-Feb-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
26-Feb-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
27-Feb-2017	0.52	0.55	0.12	0.02	0.10	<0.02	0.10	0.02	0.10	<0.02	0.10	0.04	0.11	<0.02	OL	OL	0.08	<0.02
28-Feb-2017	0.50	0.56	0.08	<0.02	0.11	<0.02	0.16	0.10	OL	OL	0.09	0.02	0.09	0.02	0.09	<0.02	0.08	<0.02
Total number of measurements taken, A:			17			16			13			18			18			15
Turbidity Standard for Monitoring Location (NTU):			0.30			0.30			0.30			0.30			0.30			0.30
Number of measurements meeting standard, B:			17			16			13			18			18			15
Compliance with Turbidity Standard, C= B/A X 100%:			100%			100%			100%			100%			100%			100%

NS: No Sample NA: Not Analyzed OL: Off-Line

Comments:

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck

Date Approved: 6-Mar-17



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**
Licence Number: **PWS-09-412-01**

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

February 2017 Turbidity (NTU)

Date	Raw	Filter #1		Filter #2		Filter #3		Filter #4		Filter #5		Filter #6		Filter #7		Filter #8	
	Avg	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max
1/02/2017	0.56	0.02	0.06	0.03	0.07	0.00	0.02	0.02	0.02	0.01	0.04	0.01	0.03	0.01	0.03	0.00	0.01
2/02/2017	0.55	0.02	0.04	0.01	0.06	0.00	0.01	0.01	0.05	0.00	0.01	0.01	0.05	0.01	0.01	0.01	0.01
3/02/2017	0.54	0.02	0.04	0.02	0.03	0.00	0.00	0.01	0.02	0.01	0.02	0.01	0.01	0.00	0.02	0.00	0.01
4/02/2017	0.54	0.01	0.05	0.02	0.05	0.00	0.00	0.02	0.02	0.00	0.02	0.01	0.03	0.00	0.01	0.01	0.01
5/02/2017	0.54	0.03	0.04	0.02	0.06	0.00	0.01	0.00	0.03	0.00	0.01	0.01	0.04	0.01	0.02	0.00	0.01
6/02/2017	0.53	0.03	0.05	0.02	0.03	0.00	0.00	0.00	0.00	0.01	0.03	0.01	0.04	0.01	0.03	0.01	0.01
7/02/2017	0.53	0.02	0.05	0.03	0.06	0.00	0.01	0.00	0.00	0.01	0.03	0.01	0.02	0.01	0.03	0.01	0.01
8/02/2017	0.52	0.02	0.03	0.02	0.06	0.00	0.00	0.00	0.04	0.00	0.03	0.01	0.02	0.01	0.01	0.01	0.01
9/02/2017	0.53	0.01	0.03	0.01	0.03	0.00	0.00	0.01	0.02	0.00	0.01	0.00	0.03	0.00	0.01	0.00	0.01
10/02/2017	0.53	0.01	0.04	0.02	0.03	0.00	0.00	0.01	0.02	0.00	0.02	0.01	0.01	0.00	0.02	0.01	0.01
11/02/2017	0.53	0.02	0.03	0.01	0.05	0.00	0.00	0.01	0.04	0.00	0.01	0.01	0.03	0.01	0.01	0.01	0.01
12/02/2017	0.52	0.02	0.05	0.01	0.03	0.00	0.00	0.02	0.02	0.01	0.03	0.01	0.07	0.01	0.04	0.00	0.01
13/02/2017	0.53	0.02	0.06	0.03	0.07	0.00	0.03	0.01	0.05	0.01	0.04	0.02	0.04	0.00	0.01	0.01	0.01
14/02/2017	0.52	0.03	0.05	0.02	0.08	0.00	0.00	0.01	0.02	0.01	0.02	0.01	0.08	0.01	0.05	0.00	0.02
15/02/2017	0.52	0.03	0.06	0.03	0.06	0.00	0.03	0.00	0.07	0.01	0.04	0.01	0.02	0.01	0.05	0.01	0.01
16/02/2017	0.53	0.02	0.05	0.02	0.08	0.00	0.03	0.00	0.00	0.01	0.04	0.02	0.06	0.01	0.07	0.01	0.01
17/02/2017	0.53	0.04	0.08	0.03	0.10	0.00	0.00	0.00	0.00	0.01	0.04	0.02	0.06	0.02	0.08	0.01	0.04
18/02/2017	0.54	0.04	0.08	0.04	0.07	0.00	0.07	0.02	0.12	0.01	0.06	0.02	0.04	0.01	0.06	0.00	0.03
19/02/2017	0.55	0.02	0.06	0.02	0.08	0.00	0.03	0.01	0.05	0.00	0.03	0.01	0.10	0.01	0.03	0.01	0.01
20/02/2017	0.55	0.04	0.11	0.02	0.08	0.00	0.07	0.01	0.05	0.01	0.05	0.01	0.07	0.01	0.04	0.01	0.07
21/02/2017	0.56	0.03	0.07	0.03	0.08	0.00	0.02	0.02	0.06	0.01	0.03	0.01	0.02	0.01	0.05	0.00	0.02
22/02/2017	0.56	0.03	0.05	0.03	0.09	0.00	0.07	0.01	0.08	0.01	0.04	0.02	0.09	0.01	0.02	0.01	0.01
23/02/2017	0.56	0.02	0.05	0.01	0.03	0.00	0.06	0.01	0.04	0.01	0.04	0.01	0.04	0.01	0.04	0.00	0.01
24/02/2017	0.55	0.01	0.04	0.00	0.01	0.02	0.09	0.01	0.02	0.02	0.08	0.01	0.03	0.02	0.08	0.00	0.01
25/02/2017	0.55	0.01	0.02	0.00	0.04	0.02	0.11	0.01	0.05	0.02	0.09	0.02	0.10	0.03	0.05	0.01	0.01
26/02/2017	0.57	0.01	0.05	0.00	0.05	0.01	0.03	0.01	0.02	0.04	0.08	0.02	0.10	0.03	0.09	0.00	0.01
27/02/2017	0.58	0.01	0.05	0.00	0.01	0.03	0.14	0.01	0.06	0.03	0.08	0.02	0.03	0.03	0.09	0.01	0.01
28/02/2017	0.58	0.01	0.01	0.00	0.06	0.02	0.12	0.01	0.05	0.02	0.08	0.02	0.10	0.03	0.04	0.01	0.01

Total Number of Measurements Taken, A:	12910	8316	8333	6762	13501	13736	12137	13403
Turbidity Standard for Monitoring Location (NTU):	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Number of Measurements Meeting Standard, B:	12910	8316	8333	6762	13501	13736	12137	13403
Compliance with Turbidity Standard, C = B/A X 100%:	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2017\02-February

Submitted By (Print): D. Merredew

Signature: Original signed by D. Merredew



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION

WATER TREATMENT PLANT TURBIDITY GRAB MONITORING REPORT																		
Water System Code: 252.00	Turbidity (NTU)																	
Licence No. PWS-09-412-01																		
Date	Raw Water		Filter 1		Filter 2		Filter 3		Filter 4		Filter 5		Filter 6		Filter 7		Filter 8	
	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser
01-Mar-2017	0.53	0.57	0.11	<0.02	0.08	<0.02	0.10	0.02	0.10	<0.02	0.11	0.03	OL	OL	0.14	0.04	0.17	0.04
02-Mar-2017	0.55	0.56	OL	OL	0.10	<0.02	0.10	0.02	0.11	<0.02	0.12	0.04	0.10	<0.02	0.09	0.02	0.09	<0.02
03-Mar-2017	0.52	0.55	0.09	<0.02	OL	OL	OL	OL	0.08	<0.02	0.07	<0.02	0.12	0.03	0.10	0.02	0.10	<0.02
04-Mar-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
05-Mar-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
06-Mar-2017	0.57	0.60	0.09	<0.02	OL	OL	OL	OL	0.08	<0.02	0.08	<0.02	0.17	0.06	0.12	0.02	0.12	<0.02
07-Mar-2017	0.59	0.64	0.11	<0.02	0.07	<0.02	0.08	0.02	0.08	<0.02	0.10	0.03	0.10	<0.02	OL	OL	OL	OL
08-Mar-2017	0.62	0.66	0.07	<0.02	0.08	<0.02	0.10	0.03	OL	OL	OL	OL	0.11	<0.02	0.09	0.02	0.09	<0.02
09-Mar-2017	0.65	0.66	0.12	<0.02	OL	OL	0.10	<0.02	0.09	<0.02	0.10	0.02	OL	OL	0.16	0.03	0.16	<0.02
10-Mar-2017	0.55	0.67	OL	OL	0.09	<0.02	0.10	<0.02	0.12	<0.02	0.12	0.03	0.11	<0.02	OL	OL	0.12	<0.02
11-Mar-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
12-Mar-2017	NS	NS	OL	OL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
13-Mar-2017	0.61	0.70	OL	OL	0.13	<0.02	0.14	<0.02	0.19	<0.02	0.19	0.03	0.18	<0.02	OL	OL	0.17	<0.02
14-Mar-2017	0.62	0.71	OL	OL	0.18	<0.02	0.14	0.02	0.17	0.04	0.09	<0.02	0.13	<0.02	0.13	0.02	0.11	<0.02
15-Mar-2017	0.60	0.69	OL	OL	OL	OL	0.11	0.03	0.10	<0.02	0.11	0.02	0.15	0.04	0.11	0.02	0.12	<0.02
16-Mar-2017	0.62	0.72	OL	OL	0.13	<0.02	0.12	0.05	0.11	<0.02	0.11	0.03	0.10	0.02	0.14	0.04	OL	OL
17-Mar-2017	0.65	0.79	OL	OL	0.10	<0.02	0.11	0.05	0.12	<0.02	0.14	0.06	0.09	<0.02	0.09	<0.02	0.07	<0.02
18-Mar-2017	NS	NS	0.09	<0.02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
19-Mar-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
20-Mar-2017	0.62	0.74	0.10	<0.02	0.11	<0.02	0.13	0.06	0.13	<0.02	OL	OL	0.11	0.02	OL	OL	0.08	<0.02
21-Mar-2017	0.64	0.71	0.21	<0.02	OL	OL	0.14	0.05	0.13	<0.02	0.11	0.03	0.22	0.11	0.13	0.04	0.13	<0.02
22-Mar-2017	0.65	0.73	0.14	<0.02	0.13	0.02	0.15	0.08	0.14	<0.02	0.14	0.06	0.13	0.04	OL	OL	OL	OL
23-Mar-2017	0.60	0.73	0.11	<0.02	0.14	0.02	OL	OL	OL	OL	0.11	0.03	0.12	<0.02	0.14	0.02	0.11	<0.02
24-Mar-2017	0.66	0.69	OL	OL	0.07	<0.02	0.07	0.02	0.07	<0.02	0.07	<0.02	OL	OL	0.08	<0.02	0.06	<0.02
25-Mar-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
26-Mar-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
27-Mar-2017	0.61	0.74	OL	OL	0.07	<0.02	0.08	0.02	0.08	<0.02	0.09	<0.02	0.08	<0.02	0.10	0.02	OL	OL
28-Mar-2017	0.59	0.72	0.08	<0.02	0.08	<0.02	0.11	0.04	OL	OL	OL	OL	0.09	<0.02	0.08	<0.02	0.07	<0.02
29-Mar-2017	0.61	0.73	0.09	<0.02	OL	OL	OL	OL	0.07	<0.02	0.07	<0.02	0.10	0.02	0.08	<0.02	0.07	<0.02
30-Mar-2017	0.59	0.73	OL	OL	0.07	<0.02	0.08	0.03	0.09	<0.02	0.08	<0.02	0.07	<0.02	0.09	0.02	0.12	<0.02
31-Mar-2017	0.60	0.79	0.08	<0.02	0.08	<0.02	0.10	0.04	0.10	<0.02	OL	OL	0.09	<0.02	OL	OL	0.07	<0.02
Total number of measurements taken, A:			14		17		19		20		19		20		17		19	
Turbidity Standard for Monitoring Location (NTU):			0.30		0.30		0.30		0.30		0.30		0.30		0.30		0.30	
Number of measurements meeting standard, B:			14		17		19		20		19		20		17		19	
Compliance with Turbidity Standard, C= B/A X 100%:			100%		100%		100%		100%		100%		100%		100%		100%	

NS: No Sample NA: Not Analyzed OL: Off-Line

Comments:

Filter 1 was offline for maintenance March 12-17, 2017.

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck

Date Approved: 6-Apr-17



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**
Licence Number: **PWS-09-412-01**

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

March 2017 Turbidity (NTU)		Filter #1		Filter #2		Filter #3		Filter #4		Filter #5		Filter #6		Filter #7		Filter #8	
Date	Raw Avg	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max
1/03/2017	0.60	0.01	0.05	0.00	0.05	0.01	0.08	0.02	0.02	0.03	0.07	0.02	0.11	0.03	0.10	0.00	0.04
2/03/2017	0.60	0.01	0.04	0.00	0.01	0.01	0.10	0.01	0.04	0.02	0.07	0.02	0.04	0.02	0.10	0.01	0.01
3/03/2017	0.60	0.01	0.02	0.00	0.08	0.01	0.10	0.01	0.04	0.02	0.04	0.02	0.11	0.04	0.08	0.01	0.02
4/03/2017	0.61	0.01	0.05	0.00	0.00	0.02	0.04	0.02	0.02	0.03	0.06	0.02	0.11	0.03	0.10	0.01	0.25
5/03/2017	0.62	0.01	0.05	0.00	0.04	0.02	0.11	0.01	0.05	0.02	0.06	0.03	0.06	0.02	0.04	0.01	0.01
6/03/2017	0.63	0.01	0.04	0.00	0.03	0.02	0.06	0.01	0.02	0.02	0.04	0.02	0.12	0.03	0.11	0.00	0.03
7/03/2017	0.66	0.01	0.04	0.00	0.00	0.02	0.04	0.01	0.04	0.02	0.07	0.01	0.03	0.02	0.09	0.00	0.02
8/03/2017	0.67	0.01	0.01	0.00	0.03	0.02	0.08	0.01	0.04	0.01	0.06	0.02	0.11	0.03	0.04	0.01	0.01
9/03/2017	0.68	0.01	0.04	0.00	0.03	0.01	0.02	0.01	0.02	0.02	0.05	0.02	0.10	0.03	0.09	0.00	0.01
10/03/2017	0.68	0.01	0.03	0.00	0.01	0.02	0.07	0.01	0.04	0.02	0.06	0.01	0.04	0.02	0.10	0.00	0.01
11/03/2017	0.69	0.01	0.02	0.00	0.04	0.01	0.09	0.01	0.04	0.01	0.03	0.02	0.10	0.03	0.05	0.01	0.01
12/03/2017	0.70	O/L	O/L	0.01	0.09	0.02	0.04	0.02	0.02	0.04	0.07	0.04	0.19	0.05	0.10	0.01	0.05
13/03/2017	0.72	O/L	O/L	0.00	0.01	0.02	0.11	0.01	0.02	0.02	0.06	0.01	0.09	0.03	0.09	0.01	0.01
14/03/2017	0.73	O/L	O/L	0.00	0.06	0.04	0.09	0.01	0.05	0.02	0.08	0.02	0.06	0.02	0.10	0.01	0.01
15/03/2017	0.74	O/L	O/L	0.01	0.07	0.04	0.15	0.02	0.08	0.02	0.04	0.03	0.09	0.03	0.06	0.01	0.01
16/03/2017	0.75	O/L	O/L	0.00	0.07	0.04	0.06	0.02	0.02	0.03	0.07	0.02	0.06	0.03	0.11	0.01	0.01
17/03/2017	0.77	O/L	O/L	0.00	0.04	0.05	0.24	0.02	0.09	0.03	0.07	0.02	0.03	0.03	0.11	0.01	0.01
18/03/2017	0.75	0.01	0.05	0.01	0.07	0.03	0.11	0.01	0.09	0.02	0.04	0.03	0.11	0.03	0.04	0.01	0.01
19/03/2017	0.75	0.01	0.04	0.00	0.00	0.04	0.06	0.02	0.02	0.03	0.08	0.02	0.10	0.03	0.10	0.00	0.02
20/03/2017	0.73	0.01	0.01	0.01	0.06	0.05	0.12	0.01	0.09	0.02	0.08	0.03	0.04	0.02	0.10	0.00	0.01
21/03/2017	0.74	0.02	0.08	0.02	0.10	0.04	0.15	0.01	0.02	0.04	0.06	0.04	0.13	0.05	0.07	0.01	0.03
22/03/2017	0.75	0.01	0.09	0.02	0.04	0.08	0.10	0.03	0.12	0.04	0.12	0.03	0.05	0.04	0.14	0.01	0.06
23/03/2017	0.74	0.01	0.05	0.01	0.10	0.05	0.16	0.01	0.11	0.02	0.22	0.04	0.15	0.02	0.05	0.01	0.01
24/03/2017	0.76	0.00	0.01	0.00	0.00	0.01	0.06	0.01	0.02	0.01	0.06	0.02	0.07	0.02	0.11	0.00	0.03
25/03/2017	0.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.09	0.03	0.05	0.02	0.11	0.00	0.03
26/03/2017	0.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.02	0.09	0.02	0.04	0.01	0.01
27/03/2017	0.75	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.01	0.05	0.01	0.08	0.02	0.07	0.00	0.01
28/03/2017	0.76	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.01	0.05	0.01	0.03	0.01	0.07	0.00	0.01
29/03/2017	0.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.01	0.07	0.01	0.03	0.01	0.01
30/03/2017	0.75	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.01	0.05	0.01	0.08	0.02	0.07	0.00	0.01
31/03/2017	0.77	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.01	0.06	0.02	0.04	0.02	0.08	0.00	0.01

Total Number of Measurements Taken, A:	7779	2719	11184	7569	15053	14958	13374	14542
Turbidity Standard for Monitoring Location (NTU):	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Number of Measurements Meeting Standard, B:	7779	2719	11184	7569	15053	14958	13374	14542
Compliance with Turbidity Standard, C = B/A X 100%:	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%

Note: OL - Offline

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2017\03-March

Submitted By (Print): D.Merredew

Signature: Original Signed by D.Merredew



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION

WATER TREATMENT PLANT TURBIDITY GRAB MONITORING REPORT																		
Water System Code: 252.00	Turbidity (NTU)																	
Licence No. PWS-09-412-01																		
Date	Raw Water		Filter 1		Filter 2		Filter 3		Filter 4		Filter 5		Filter 6		Filter 7		Filter 8	
	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser
01-Apr-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
02-Apr-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
03-Apr-2017	0.62	0.76	0.08	<0.02	0.08	<0.02	0.09	0.04	0.10	<0.02	OL	OL	0.07	<0.02	OL	OL	0.06	<0.02
04-Apr-2017	0.69	0.74	0.08	<0.02	OL	OL	OL	OL	0.09	<0.02	0.08	<0.02	0.11	<0.02	0.07	<0.02	0.07	<0.02
05-Apr-2017	0.59	0.78	0.07	<0.02	0.08	<0.02	0.09	0.05	0.09	<0.02	0.09	0.02	0.08	<0.02	OL	OL	OL	OL
06-Apr-2017	0.56	0.79	0.08	<0.02	0.09	<0.02	OL	OL	OL	OL	0.07	<0.02	0.08	<0.02	0.06	<0.02	0.06	<0.02
07-Apr-2017	0.60	0.72	0.08	<0.02	OL	OL	0.06	0.03	0.06	<0.02	0.07	<0.02	OL	OL	0.09	<0.02	0.06	<0.02
08-Apr-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
09-Apr-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
10-Apr-2017	0.59	0.76	0.05	<0.02	0.07	<0.02	OL	OL	OL	OL	<0.05	<0.02	0.07	<0.02	0.05	<0.02	0.05	<0.02
11-Apr-2017	0.55	0.70	OL	OL	<0.05	<0.02	<0.05	0.03	<0.05	<0.02	<0.05	<0.02	OL	OL	0.05	<0.02	0.06	<0.02
12-Apr-2017	0.58	0.70	<0.05	<0.02	<0.05	<0.02	0.05	0.03	0.06	<0.02	OL	OL	<0.05	<0.02	OL	OL	<0.05	<0.02
13-Apr-2017	0.55	0.76	0.06	<0.02	OL	OL	OL	OL	<0.05	<0.02	<0.05	<0.02	0.06	<0.02	0.05	<0.02	<0.05	<0.02
14-Apr-2017	NS	NS	NS	NS	NS	NS	0.05	0.04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
15-Apr-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
16-Apr-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
17-Apr-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.08	0.01	NS	NS
18-Apr-2017	0.72	0.88	0.09	<0.02	0.06	<0.02	0.09	0.07	0.08	<0.02	OL	OL	0.08	<0.02	OL	OL	0.05	<0.02
19-Apr-2017	0.87	1.07	0.06	<0.02	0.06	0.02	<0.05	0.06	0.06	0.06	<0.05	0.05	OL	OL	0.05	0.02	0.05	<0.02
20-Apr-2017	0.68	0.97	OL	OL	<0.05	<0.02	0.05	0.07	0.05	0.06	0.06	0.06	0.05	<0.02	0.06	0.03	OL	OL
21-Apr-2017	0.66	1.00	0.05	<0.02	<0.05	<0.02	0.06	0.08	0.07	0.08	OL	OL	0.05	0.02	OL	OL	<0.05	<0.02
22-Apr-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.05	0.07	NS	NS	NS	NS	NS	NS
23-Apr-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.10	0.07	NS	NS	NS	NS	NS	NS
24-Apr-2017	1.03	1.13	0.13	0.10	OL	OL	0.12	0.09	0.12	0.07	0.11	0.06	0.10	0.07	0.13	0.07	OL	OL
25-Apr-2017	0.72	1.24	OL	OL	0.12	0.07	0.13	0.09	0.14	0.08	0.11	0.07	0.11	0.07	OL	OL	0.09	<0.02
26-Apr-2017	0.74	1.28	OL	OL	0.07	0.04	0.08	0.06	0.10	0.06	OL	OL	0.08	0.05	0.07	0.02	0.07	<0.02
27-Apr-2017	0.68	1.20	0.09	0.06	0.10	0.05	0.13	0.09	0.08	0.04	OL	OL	OL	OL	0.08	0.02	0.07	<0.02
28-Apr-2017	0.78	1.25	0.10	0.07	OL	OL	0.09	0.07	0.09	0.06	OL	OL	0.07	0.05	0.08	0.03	0.09	0.02
29-Apr-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	OL	OL	NS	NS	NS	NS	NS	NS
30-Apr-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total number of measurements taken, A:			13		9		13		14		8		13		13		12	
Turbidity Standard for Monitoring Location (NTU):			0.30		0.30		0.30		0.30		0.30		0.30		0.30		0.30	
Number of measurements meeting standard, B:			13		9		13		14		8		13		13		12	
Compliance with Turbidity Standard, C= B/A X 100%:			100%		100%		100%		100%		100%		100%		100%		100%	

NS: No Sample NA: Not Analyzed OL: Off-Line

Comments:

There was an increased requirement for filter maintenance due to thermal turnover at Shoal Lake.
Filter 5 was offline for maintenance April 26-29/17.

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck

Date Approved: 5-May-17



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**
Licence Number: **PWS-09-412-01**

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

April 2017	Turbidity (NTU)																
	Raw	Filter #1		Filter #2		Filter #3		Filter #4		Filter #5		Filter #6		Filter #7		Filter #8	
Date	Avg	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max
1/4/2017	0.78	0.01	0.03	0.00	0.09	0.03	0.12	0.01	0.10	0.01	0.03	0.01	0.10	0.01	0.03	0.01	0.01
2/04/2017	0.78	0.01	0.03	0.00	0.04	0.03	0.05	0.02	0.04	0.01	0.05	0.01	0.06	0.01	0.04	0.00	0.01
3/04/2017	0.79	0.01	0.01	0.00	0.03	0.04	0.11	0.01	0.06	0.01	0.05	0.01	0.02	0.01	0.06	0.00	0.01
4/04/2017	0.78	0.01	0.02	0.00	0.12	0.02	0.11	0.01	0.02	0.01	0.03	0.01	0.08	0.02	0.06	0.01	0.01
5/04/2017	0.79	0.01	0.01	0.00	0.00	0.04	0.06	0.02	0.08	0.01	0.06	0.01	0.02	0.01	0.07	0.00	0.01
6/04/2017	0.79	0.01	0.02	0.00	0.09	0.03	0.10	0.01	0.06	0.01	0.04	0.01	0.07	0.01	0.06	0.01	0.01
7/04/2017	0.76	0.01	0.01	0.00	0.03	0.02	0.09	0.01	0.08	0.00	0.02	0.01	0.06	0.01	0.04	0.01	0.01
8/04/2017	0.73	0.01	0.02	0.00	0.00	0.02	0.05	0.02	0.05	0.00	0.03	0.01	0.05	0.01	0.04	0.00	0.01
9/04/2017	0.73	0.01	0.01	0.00	0.02	0.02	0.07	0.01	0.03	0.00	0.03	0.01	0.02	0.01	0.03	0.00	0.01
10/04/2017	0.77	0.01	0.01	0.00	0.02	0.02	0.09	0.01	0.03	0.00	0.01	0.01	0.06	0.01	0.01	0.01	0.01
11/04/2017	0.73	0.01	0.01	0.00	0.01	0.02	0.28	0.02	0.02	0.00	0.03	0.00	0.02	0.01	0.03	0.00	0.01
12/04/2017	0.74	0.01	0.01	0.00	0.00	0.03	0.08	0.01	0.02	0.00	0.01	0.01	0.01	0.00	0.02	0.00	0.01
13/04/2017	0.73	0.01	0.02	0.00	0.01	0.02	0.08	0.01	0.02	0.00	0.01	0.01	0.02	0.01	0.02	0.01	0.01
14/04/2017	0.77	0.01	0.02	0.00	0.00	0.04	0.05	0.02	0.02	0.00	0.01	0.00	0.01	0.01	0.02	0.00	0.01
15/04/2017	0.88	0.01	0.01	0.00	0.00	0.04	0.10	0.01	0.02	0.00	0.01	0.01	0.04	0.00	0.02	0.00	0.01
16/04/2017	0.86	0.01	0.01	0.00	0.09	0.03	0.10	0.01	0.02	0.00	0.01	0.01	0.04	0.01	0.01	0.01	0.01
17/04/2017	0.90	0.01	0.01	0.00	0.00	0.05	0.06	0.02	0.02	0.00	0.01	0.01	0.02	0.01	0.02	0.00	0.01
18/04/2017	0.92	0.01	0.02	0.00	0.00	0.05	0.10	0.01	0.02	0.00	0.02	0.01	0.04	0.00	0.02	0.00	0.01
19/04/2017	0.99	0.01	0.05	0.01	0.07	0.03	0.10	0.01	0.09	0.02	0.08	0.01	0.04	0.01	0.04	0.00	0.01
20/04/2017	1.06	0.01	0.03	0.01	0.04	0.07	0.09	0.05	0.09	0.04	0.08	0.01	0.02	0.02	0.05	0.00	0.01
21/04/2017	1.04	0.01	0.04	0.01	0.04	0.06	0.12	0.04	0.13	0.04	0.08	0.01	0.04	0.02	0.05	0.01	0.01
22/04/2017	1.12	0.01	0.04	0.02	0.07	0.07	0.13	0.05	0.14	0.05	0.10	0.01	0.05	0.03	0.04	0.01	0.01
23/04/2017	1.11	0.04	0.05	0.03	0.09	0.10	0.20	0.06	0.18	0.06	0.10	0.02	0.10	0.05	0.07	0.00	0.02
24/04/2017	1.17	0.08	0.13	0.05	0.14	0.11	0.19	0.10	0.21	0.08	0.19	0.04	0.09	0.05	0.13	0.01	0.06
25/04/2017	1.26	0.05	0.16	0.05	0.10	0.08	0.15	0.04	0.13	0.04	0.11	0.05	0.14	0.03	0.10	0.00	0.02
26/04/2017	1.28	0.05	0.10	0.04	0.07	0.05	0.11	0.02	0.07	0.02	0.05	0.03	0.08	0.02	0.07	0.01	0.01
27/04/2017	1.23	0.06	0.08	0.05	0.10	0.07	0.13	0.04	0.10	O/L	O/L	0.04	0.09	0.04	0.06	0.01	0.02
28/04/2017	1.24	0.08	0.13	0.05	0.11	0.07	0.16	0.05	0.08	O/L	O/L	0.04	0.11	0.04	0.09	0.01	0.03
29/04/2017	1.18	0.07	0.14	0.05	0.13	0.08	0.10	0.05	0.11	O/L	O/L	0.05	0.15	0.04	0.10	0.01	0.03
30/04/2017	1.15	0.09	0.17	0.08	0.11	0.12	0.20	0.06	0.14	O/L	O/L	0.06	0.15	0.05	0.11	0.01	0.05

Total Number of Measurements Taken, A:	224987	69577	236442	187895	218615	257048	243508	256307
Turbidity Standard for Monitoring Location (NTU):	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Number of Measurements Meeting Standard, B:	224987	69577	236442	187895	218615	257048	243508	256307
Compliance with Turbidity Standard, C = B/A X 100%:	100%	100%	100.00%	100%	100%	100%	100%	100%

Note: OL-Offline

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2017\04-April

Submitted By (Print): D.Merredew

Signature: Original Signed by D.Merredew



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION

WATER TREATMENT PLANT TURBIDITY GRAB MONITORING REPORT																		
Water System Code: 252.00	Turbidity (NTU)																	
Licence No. PWS-09-412-01																		
Date	Raw Water		Filter 1		Filter 2		Filter 3		Filter 4		Filter 5		Filter 6		Filter 7		Filter 8	
	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser
01-May-2017	0.88	1.22	0.11	0.04	0.13	0.09	0.15	0.10	OL	OL	OL	OL	0.14	0.09	0.10	0.04	0.10	<0.02
02-May-2017	0.67	1.19	0.09	0.02	0.12	0.07	OL	OL	0.09	0.04	OL	OL	0.07	0.04	0.08	0.03	0.09	<0.02
03-May-2017	0.89	1.19	0.10	0.03	0.09	0.05	0.10	0.05	0.08	0.04	OL	OL	0.08	0.04	0.10	0.04	0.15	0.03
04-May-2017	0.91	1.25	OL	OL	0.11	0.05	0.11	0.06	0.13	0.06	OL	OL	0.09	0.05	OL	OL	0.07	<0.02
05-May-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	OL	OL	NS	NS	NS	NS	NS	NS
06-May-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
07-May-2017	0.80	1.13	0.15	0.06	0.18	0.11	OL	OL	0.16	0.09	0.17	0.08	OL	OL	0.14	0.05	0.14	0.03
08-May-2017	0.86	1.22	0.10	0.03	OL	OL	OL	OL	0.11	0.05	0.08	0.03	0.08	0.05	0.10	0.03	0.11	0.02
09-May-2017	0.87	1.32	0.12	0.05	0.09	0.05	0.11	0.08	OL	OL	0.07	0.03	0.07	0.05	OL	OL	0.07	<0.02
10-May-2017	0.85	1.31	OL	OL	0.10	0.06	0.13	0.09	0.09	0.05	0.09	0.04	OL	OL	0.08	0.02	0.07	<0.02
11-May-2017	1.09	1.24	0.12	0.06	0.13	0.07	0.18	0.15	0.12	0.10	OL	OL	0.08	0.04	0.10	0.03	0.08	<0.02
12-May-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
13-May-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
14-May-2017	0.91	1.24	0.12	0.05	0.15	0.08	0.21	0.15	0.13	0.09	OL	OL	0.12	0.07	0.13	0.07	0.13	0.04
15-May-2017	1.12	1.25	0.11	0.04	0.10	0.04	0.11	0.07	0.12	0.08	0.11	0.04	0.14	0.06	0.14	0.07	0.19	0.10
16-May-2017	0.86	1.20	OL	OL	0.11	0.04	0.12	0.08	0.10	0.07	0.11	0.06	0.15	0.09	0.11	0.05	0.13	0.05
17-May-2017	0.88	1.17	0.09	0.03	0.11	0.05	OL	OL	0.09	0.07	0.08	0.03	0.09	0.05	0.10	0.04	0.10	0.05
18-May-2017	0.93	1.21	0.10	0.04	0.09	0.03	0.10	0.07	0.12	0.08	0.09	0.04	0.11	0.06	OL	OL	0.08	0.04
19-May-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
20-May-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
21-May-2017	0.78	0.95	OL	OL	0.11	0.04	0.15	0.08	0.09	0.06	0.09	0.03	0.12	0.08	0.08	0.03	0.08	0.04
22-May-2017	0.83	1.04	0.10	0.02	OL	OL	0.09	0.06	0.10	0.07	0.08	0.03	0.10	0.04	0.11	0.04	0.11	0.06
23-May-2017	0.80	1.02	0.12	0.04	0.09	0.02	0.09	0.07	OL	OL	0.08	0.03	0.10	0.06	0.08	0.03	0.08	0.05
24-May-2017	0.75	1.04	0.09	0.02	0.10	0.04	0.12	0.09	0.08	0.06	OL	OL	0.11	0.04	0.09	0.03	0.09	0.05
25-May-2017	0.88	1.12	0.08	0.02	0.08	0.02	0.08	0.06	0.09	0.07	0.07	0.02	0.08	0.05	0.11	0.04	OL	OL
26-May-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
27-May-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
28-May-2017	0.90	1.33	0.07	<0.02	OL	OL	0.07	0.05	0.08	0.05	0.06	<0.02	0.07	0.03	0.07	0.02	0.08	0.07
29-May-2017	1.01	1.33	0.09	<0.02	0.07	<0.02	0.07	0.05	0.10	0.06	0.06	<0.02	0.07	0.04	OL	OL	0.08	0.07
30-May-2017	1.41	2.10	0.07	<0.02	0.07	<0.02	0.08	0.06	0.07	0.05	0.09	0.03	OL	OL	0.07	0.02	0.07	0.07
31-May-2017	1.22	1.41	0.07	<0.02	OL	OL	0.08	0.04	0.08	0.05	0.06	<0.02	0.06	0.03	0.08	0.02	0.08	0.09
Total number of measurements taken, A:			19		19		19		20		16		20		19		22	
Turbidity Standard for Monitoring Location (NTU):			0.30		0.30		0.30		0.30		0.30		0.30		0.30		0.30	
Number of measurements meeting standard, B:			19		19		19		20		16		20		19		22	
Compliance with Turbidity Standard, C= B/A X 100%:			100%		100%		100%		100%		100%		100%		100%		100%	

NS: No Sample NA: Not Analyzed OL: Off-Line

Comments:

There was an increased requirement for filter maintenance due to thermal turnover at Shoal Lake.
Filter 5 was offline for maintenance May 1-5/17.

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck

Date Approved: 7-Jun-17



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**
 Licence Number: **PWS-09-412-01**

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

May 2017 Turbidity (NTU)

Date	Raw	Filter #1		Filter #2		Filter #3		Filter #4		Filter #5		Filter #6		Filter #7		Filter #8	
	Avg	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max
1/05/2017	1.17	0.00	0.04	0.00	0.09	0.00	0.10	OL	OL	OL	OL	0.05	0.11	0.04	0.08	0.01	0.04
2/05/2017	1.22	0.00	0.02	0.00	0.07	OL	OL	0.00	0.04	OL	OL	0.03	0.07	0.04	0.07	0.01	0.01
3/05/2017	1.23	0.02	0.05	0.02	0.10	0.02	0.11	0.02	0.04	OL	OL	0.04	0.05	0.03	0.07	0.01	0.02
4/05/2017	1.25	0.03	0.09	0.04	0.10	0.06	0.09	0.04	0.09	OL	OL	0.04	0.09	0.03	0.07	0.01	0.02
5/05/2017	1.35	0.05	0.13	0.07	0.10	0.08	0.13	0.05	0.14	OL	OL	0.05	0.09	0.04	0.13	0.01	0.01
6/05/2017	1.26	0.07	0.15	0.09	0.18	0.11	0.20	0.07	0.15	OL	OL	0.06	0.13	0.06	0.09	0.02	0.08
7/05/2017	1.18	0.05	0.12	0.08	0.17	0.08	0.23	0.06	0.10	0.03	0.13	0.05	0.16	0.06	0.12	0.01	0.07
8/05/2017	1.27	0.04	0.07	0.04	0.12	0.06	0.16	0.04	0.13	0.03	0.08	0.04	0.07	0.03	0.10	0.01	0.08
9/05/2017	1.30	0.02	0.16	0.03	0.11	0.06	0.16	0.02	0.11	0.03	0.09	0.04	0.12	0.01	0.14	0.00	0.02
10/05/2017	1.39	0.03	0.27	0.05	0.11	0.06	0.19	0.03	0.12	0.03	0.07	0.04	0.21	0.02	0.04	0.01	0.05
11/05/2017	1.33	0.05	0.09	0.05	0.10	0.09	0.18	0.07	0.13	0.04	0.08	0.04	0.13	0.04	0.11	0.01	0.05
12/05/2017	1.55	0.08	0.14	0.05	0.12	0.08	0.18	0.08	0.16	0.04	0.06	0.05	0.07	0.05	0.09	0.01	0.05
13/05/2017	1.67	0.07	0.16	0.06	0.07	0.10	0.12	0.08	0.17	0.07	0.12	0.08	0.13	0.07	0.14	0.03	0.11
14/05/2017	1.30	0.05	0.13	0.06	0.14	0.09	0.19	0.09	0.11	0.06	0.12	0.06	0.16	0.08	0.10	0.04	0.09
15/05/2017	1.27	0.07	0.13	0.04	0.11	0.07	0.17	0.07	0.16	0.05	0.08	0.06	0.09	0.06	0.12	0.03	0.10
16/05/2017	1.25	0.04	0.12	0.04	0.06	0.08	0.11	0.06	0.13	0.05	0.10	0.05	0.14	0.05	0.12	0.02	0.04
17/05/2017	1.21	0.03	0.08	0.03	0.09	0.06	0.15	0.06	0.09	0.04	0.09	0.04	0.10	0.05	0.07	0.02	0.08
18/05/2017	1.25	0.05	0.10	0.03	0.08	0.06	0.08	0.06	0.14	0.04	0.06	0.05	0.08	0.04	0.12	0.02	0.10
19/05/2017	1.07	0.02	0.13	0.03	0.11	0.06	0.18	0.04	0.16	0.03	0.18	0.02	0.14	0.03	0.15	0.01	0.12
20/05/2017	1.07	0.05	0.07	0.03	0.08	0.06	0.14	0.06	0.12	0.03	0.06	0.04	0.06	0.04	0.09	0.02	0.07
21/05/2017	1.04	0.04	0.12	0.03	0.05	0.08	0.11	0.05	0.14	0.03	0.07	0.04	0.10	0.03	0.05	0.02	0.03
22/05/2017	1.06	0.03	0.05	0.03	0.09	0.06	0.15	0.06	0.08	0.03	0.08	0.04	0.05	0.05	0.10	0.03	0.09
23/05/2017	1.07	0.03	0.10	0.02	0.04	0.07	0.08	0.05	0.12	0.04	0.06	0.04	0.09	0.04	0.10	0.03	0.07
24/05/2017	1.05	0.03	0.10	0.03	0.07	0.06	0.14	0.05	0.07	0.03	0.09	0.04	0.09	0.04	0.06	0.04	0.05
25/05/2017	1.16	0.03	0.05	0.02	0.08	0.06	0.13	0.06	0.13	0.03	0.07	0.04	0.05	0.04	0.09	0.03	0.10
26/05/2017	1.20	0.02	0.09	0.02	0.04	0.06	0.08	0.04	0.15	0.03	0.06	0.04	0.09	0.03	0.08	0.03	0.07
27/05/2017	1.19	0.02	0.09	0.02	0.07	0.06	0.12	0.04	0.10	0.02	0.08	0.03	0.09	0.03	0.05	0.04	0.05
28/05/2017	1.32	0.02	0.03	0.01	0.05	0.05	0.12	0.05	0.06	0.02	0.06	0.02	0.04	0.03	0.07	0.04	0.08
29/05/2017	1.35	0.02	0.08	0.01	0.05	0.05	0.07	0.04	0.10	0.02	0.08	0.03	0.07	0.03	0.07	0.04	0.07
30/05/2017	1.80	0.01	0.06	0.01	0.03	0.05	0.12	0.03	0.07	0.02	0.06	0.03	0.08	0.03	0.04	0.05	0.06
31/05/2017	1.60	0.01	0.02	0.01	0.03	0.05	0.10	0.04	0.06	0.02	0.05	0.02	0.04	0.03	0.07	0.05	0.10

Total Number of Measurements Taken, A:	14581	11797	14585	12710	12878	15107	14827	16265
Turbidity Standard for Monitoring Location (NTU):	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Number of Measurements Meeting Standard, B:	14581	11797	14585	12710	12878	15107	14827	16265
Compliance with Turbidity Standard, C = B/A X 100%:	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%

OL - Off Line

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2017\05-May

Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION

WATER TREATMENT PLANT TURBIDITY GRAB MONITORING REPORT																		
Water System Code: 252.00	Turbidity (NTU)																	
Licence No. PWS-09-412-01																		
Date	Raw Water		Filter 1		Filter 2		Filter 3		Filter 4		Filter 5		Filter 6		Filter 7		Filter 8	
	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser
01-Jun-2017	1.58	1.63	0.08	<0.02	0.07	<0.02	0.07	0.05	0.09	0.06	0.07	0.02	0.08	0.04	OL	OL	0.06	0.08
02-Jun-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
03-Jun-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
04-Jun-2017	1.11	1.46	0.08	<0.02	OL	OL	0.08	0.06	0.08	0.05	0.09	<0.02	0.08	0.04	0.09	0.03	0.10	0.11
05-Jun-2017	0.88	0.90	0.09	<0.02	0.08	<0.02	0.09	0.07	0.09	0.05	0.06	<0.02	0.07	0.04	0.10	0.03	OL	OL
06-Jun-2017	0.83	0.86	0.10	0.03	0.08	<0.02	0.09	0.08	OL	OL	0.07	<0.02	0.09	0.05	0.07	<0.02	0.09	0.11
07-Jun-2017	0.88	0.92	OL	OL	0.09	<0.02	0.10	0.09	0.08	0.05	0.09	0.03	0.07	0.04	0.08	0.02	0.08	0.11
08-Jun-2017	0.82	0.82	0.08	<0.02	OL	OL	0.08	0.07	0.08	0.06	0.06	<0.02	0.07	0.04	0.08	0.02	0.07	0.14
09-Jun-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
10-Jun-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11-Jun-2017	0.89	1.11	OL	OL	0.10	<0.02	0.09	0.08	0.09	0.05	0.09	0.02	0.06	0.03	0.07	<0.02	0.08	<0.02
12-Jun-2017	0.88	1.23	0.08	<0.02	0.10	0.04	OL	OL	0.09	0.04	0.10	<0.02	0.07	0.04	0.09	<0.02	0.08	<0.02
13-Jun-2017	1.18	1.19	0.11	<0.02	0.10	<0.02	0.11	0.08	0.09	0.04	0.06	<0.02	0.08	0.03	0.11	<0.02	OL	OL
14-Jun-2017	0.92	1.26	0.11	0.03	0.09	0.02	0.09	0.09	0.07	0.03	0.07	<0.02	OL	OL	0.07	<0.02	0.07	NR
15-Jun-2017	0.89	1.26	0.08	<0.02	0.10	0.03	OL	OL	0.10	0.04	0.07	<0.02	0.06	0.03	0.07	<0.02	0.07	<0.02
16-Jun-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
17-Jun-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
18-Jun-2017	0.83	1.17	0.07	<0.02	0.10	0.03	OL	OL	0.08	0.04	0.06	<0.02	0.06	0.03	0.07	<0.02	0.07	0.03
19-Jun-2017	0.80	1.03	0.08	<0.02	0.07	<0.02	0.07	0.07	0.09	0.04	0.07	<0.02	0.10	0.04	OL	OL	0.08	0.03
20-Jun-2017	0.75	NR	0.06	<0.02	OL	OL	0.07	0.07	0.06	0.03	0.05	<0.02	0.07	0.03	0.06	<0.02	0.06	0.03
21-Jun-2017	0.76	0.96	0.07	<0.02	0.07	<0.02	0.07	0.07	0.08	0.03	0.05	<0.02	0.06	0.03	OL	OL	0.05	0.03
22-Jun-2017	0.65	0.94	0.08	<0.02	0.06	<0.02	0.07	0.07	0.06	0.02	0.06	<0.02	OL	OL	0.06	<0.02	0.06	0.04
23-Jun-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
24-Jun-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
25-Jun-2017	0.79	1.10	0.09	<0.02	0.06	<0.02	0.07	0.07	0.06	0.02	0.06	<0.02	OL	OL	0.06	<0.02	0.06	0.06
26-Jun-2017	0.72	1.02	0.06	<0.02	0.08	0.02	OL	OL	0.06	0.02	0.06	<0.02	0.07	0.02	0.08	<0.02	0.06	0.06
27-Jun-2017	0.81	1.29	0.07	<0.02	0.06	<0.02	0.06	0.06	0.08	0.03	0.07	<0.02	0.08	0.03	OL	OL	0.05	0.06
28-Jun-2017	0.73	1.70	OL	OL	0.07	<0.02	0.07	0.07	0.06	0.02	0.06	<0.02	0.06	0.02	0.06	<0.02	0.06	0.06
29-Jun-2017	0.81	2.46	0.06	<0.02	OL	OL	0.07	0.06	0.08	0.03	0.06	<0.02	0.06	0.03	0.08	<0.02	0.07	0.04
30-Jun-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total number of measurements taken, A:			18		17		17		20		21		18		17		19	
Turbidity Standard for Monitoring Location (NTU):			0.30		0.30		0.30		0.30		0.30		0.30		0.30		0.30	
Number of measurements meeting standard, B:			18		17		17		20		21		18		17		19	
Compliance with Turbidity Standard, C= B/A X 100%:			100%		100%		100%		100%		100%		100%		100%		100%	

NS: No Sample NA: Not Analyzed OL: Off-Line

Comments:

There were no results for the online analyzer for Filter 8 on June 14 and Raw on June 20 due to maintenance requirements.

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck

Date Approved: 7-Jul-17



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**
Licence Number: **PWS-09-412-01**

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

June 2017 Turbidity (NTU)

Date	Raw	Filter #1		Filter #2		Filter #3		Filter #4		Filter #5		Filter #6		Filter #7		Filter #8	
	Avg	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max
1/06/2017	1.67	0.02	0.05	0.01	0.04	0.05	0.07	0.03	0.08	0.02	0.05	0.03	0.07	0.03	0.08	0.05	0.10
2/06/2017	1.50	0.02	0.06	0.01	0.02	0.06	0.10	0.03	0.07	0.02	0.05	0.03	0.05	0.02	0.08	0.05	0.07
3/06/2017	1.44	0.01	0.06	0.01	0.20	0.05	0.12	0.04	0.06	0.02	0.07	0.03	0.09	0.03	0.05	0.07	0.11
4/06/2017	1.37	0.02	0.05	0.01	0.04	0.06	0.11	0.04	0.09	0.02	0.08	0.03	0.09	0.03	0.07	0.07	0.10
5/06/2017	1.07	0.02	0.09	0.01	0.15	0.06	0.10	0.04	0.13	0.02	0.04	0.04	0.06	0.03	0.09	0.07	0.12
6/06/2017	0.95	0.02	0.08	0.01	0.03	0.08	0.14	0.04	0.10	0.02	0.05	0.03	0.10	0.02	0.06	0.07	0.11
7/06/2017	1.00	0.02	0.10	0.01	0.06	0.07	0.15	0.04	0.09	0.02	0.06	0.03	0.09	0.02	0.04	0.09	0.13
8/06/2017	0.88	0.02	0.04	0.01	0.05	0.07	0.15	0.05	0.08	0.01	0.06	0.04	0.06	0.02	0.06	0.09	0.14
9/06/2017	0.71	0.03	0.07	0.00	0.07	0.08	0.11	0.04	0.12	0.02	0.04	0.03	0.08	0.02	0.08	0.10	0.15
10/06/2017	0.85	0.02	0.08	0.01	0.03	0.07	0.14	0.04	0.09	0.01	0.05	0.03	0.07	0.02	0.05	0.11	0.13
11/06/2017	1.23	0.02	0.07	0.01	0.06	0.07	0.14	0.04	0.05	0.01	0.05	0.03	0.06	0.02	0.03	0.05	0.16
12/06/2017	1.32	0.02	0.04	0.02	0.08	0.07	0.28	0.04	0.10	0.01	0.05	0.03	0.05	0.01	0.05	0.01	0.01
13/06/2017	1.33	0.02	0.06	0.01	0.07	0.08	0.10	0.03	0.09	0.01	0.03	0.03	0.08	0.01	0.05	0.01	0.03
14/06/2017	1.37	0.02	0.08	0.02	0.05	0.09	0.16	0.02	0.07	0.01	0.04	0.02	0.05	0.01	0.02	0.01	0.01
15/06/2017	1.36	0.01	0.07	0.02	0.06	0.08	0.16	0.03	0.04	0.01	0.06	0.02	0.03	0.01	0.06	0.01	0.02
16/06/2017	1.30	0.02	0.04	0.01	0.02	0.09	0.11	0.02	0.08	0.01	0.02	0.02	0.07	0.01	0.07	0.01	0.03
17/06/2017	1.23	0.02	0.08	0.02	0.06	0.08	0.16	0.02	0.07	0.01	0.03	0.02	0.08	0.01	0.02	0.01	0.01
18/06/2017	1.25	0.01	0.02	0.01	0.06	0.06	0.15	0.03	0.05	0.01	0.04	0.03	0.04	0.01	0.07	0.01	0.04
19/06/2017	1.19	0.01	0.07	0.00	0.02	0.06	0.09	0.02	0.11	0.01	0.07	0.03	0.09	0.02	0.10	0.01	0.03
20/06/2017	1.25	0.01	0.08	0.01	0.18	0.04	0.12	0.02	0.09	0.01	0.05	0.02	0.16	0.01	0.12	0.01	0.07
21/06/2017	1.03	0.01	0.05	0.00	0.04	0.07	0.09	0.02	0.14	0.01	0.04	0.02	0.06	0.01	0.05	0.01	0.05
22/06/2017	1.09	0.01	0.05	0.01	0.03	0.07	0.13	0.02	0.06	0.01	0.03	0.02	0.08	0.01	0.02	0.02	0.04
23/06/2017	1.21	0.01	0.06	0.01	0.06	0.07	0.15	0.02	0.03	0.01	0.04	0.02	0.04	0.02	0.06	0.02	0.07
24/06/2017	1.13	0.01	0.03	0.01	0.25	0.06	0.08	0.02	0.07	0.01	0.03	0.02	0.07	0.02	0.07	0.02	0.07
25/06/2017	1.14	0.01	0.06	0.01	0.20	0.07	0.14	0.02	0.07	0.01	0.04	0.02	0.08	0.01	0.02	0.03	0.04
26/06/2017	1.13	0.01	0.02	0.01	0.06	0.05	0.14	0.02	0.04	0.01	0.03	0.02	0.04	0.01	0.06	0.03	0.06
27/06/2017	1.36	0.01	0.05	0.01	0.19	0.06	0.08	0.02	0.06	0.01	0.03	0.02	0.06	0.01	0.05	0.03	0.07
28/06/2017	1.86	0.01	0.07	0.01	0.06	0.06	0.12	0.02	0.03	0.01	0.03	0.02	0.05	0.01	0.02	0.04	0.05
29/06/2017	2.68	0.01	0.02	0.01	0.05	0.05	0.13	0.02	0.11	0.01	0.02	0.03	0.04	0.01	0.05	0.04	0.08
30/06/2017	3.49	0.01	0.06	0.01	0.02	0.07	0.08	0.02	0.05	0.01	0.05	0.03	0.07	0.01	0.05	0.04	0.06

Total Number of Measurements Taken, A:	15284	11947	15803	13932	16527	15371	14547	15995
Turbidity Standard for Monitoring Location (NTU):	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Number of Measurements Meeting Standard, B:	15284	11947	15803	13932	16527	15371	14547	15995
Compliance with Turbidity Standard, C = B/A X 100%:	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2017\06-June

Submitted By (Print): D.Merredew

Signature: Original Signed by D.Merredew



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION

WATER TREATMENT PLANT TURBIDITY GRAB MONITORING REPORT																		
Water System Code: 252.00	Turbidity (NTU)																	
Licence No. PWS-09-412-01																		
Date	Raw Water		Filter 1		Filter 2		Filter 3		Filter 4		Filter 5		Filter 6		Filter 7		Filter 8	
	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser
01-Jul-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
02-Jul-2017	0.88	NR	0.09	<0.02	0.07	<0.02	0.09	0.08	0.10	0.04	0.07	<0.02	0.08	0.05	OL	OL	0.06	0.09
03-Jul-2017	0.86	NR	0.10	0.03	0.07	0.02	0.09	0.08	0.07	0.03	0.08	0.02	OL	OL	0.07	0.02	0.07	0.10
04-Jul-2017	1.06	1.26	0.06	<0.02	0.10	0.03	OL	OL	0.09	0.04	0.07	<0.02	0.09	0.06	0.09	0.03	0.09	0.13
05-Jul-2017	1.03	1.37	0.07	<0.02	0.06	0.02	0.07	0.08	0.08	0.05	0.07	<0.02	0.08	0.06	0.10	0.04	OL	OL
06-Jul-2017	1.09	1.55	0.09	0.02	0.08	0.02	0.08	0.09	0.07	0.04	0.08	0.02	OL	OL	0.08	0.03	0.08	0.15
07-Jul-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
08-Jul-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
09-Jul-2017	1.51	1.74	0.09	0.03	0.08	<0.02	0.09	0.10	OL	OL	0.08	0.03	0.10	0.10	0.07	0.04	0.08	<0.02
10-Jul-2017	1.75	1.67	0.06	<0.02	0.07	<0.02	0.08	0.10	0.06	0.06	OL	OL	0.06	0.06	0.07	0.02	0.06	<0.02
11-Jul-2017	1.73	1.79	0.06	<0.02	0.07	<0.02	0.06	0.08	0.08	0.07	0.07	<0.02	0.08	0.07	0.09	0.03	0.11	0.03
12-Jul-2017	1.05	NR	0.07	<0.02	0.07	<0.02	0.07	0.09	0.08	0.07	0.07	<0.02	0.07	0.08	0.09	0.04	OL	OL
13-Jul-2017	1.36	1.75	0.07	0.02	0.06	<0.02	0.07	0.09	0.06	0.06	0.07	0.02	OL	OL	0.07	0.03	0.07	<0.02
14-Jul-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
15-Jul-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
16-Jul-2017	1.54	1.86	0.08	<0.02	0.07	0.02	0.08	0.09	OL	OL	0.07	0.03	0.10	0.12	0.08	0.04	0.07	<0.02
17-Jul-2017	1.54	1.80	0.07	0.02	0.08	<0.02	0.08	0.11	0.06	0.12	OL	OL	0.06	0.08	0.07	0.02	0.07	<0.02
18-Jul-2017	1.66	1.92	0.09	<0.02	0.09	0.03	0.10	0.09	0.10	0.10	0.08	0.07	0.11	0.10	0.13	0.08	OL	OL
19-Jul-2017	1.55	1.76	0.09	<0.02	0.07	0.02	0.09	0.09	0.07	0.08	0.07	0.04	OL	OL	0.06	<0.02	0.07	<0.02
20-Jul-2017	1.47	1.84	0.08	<0.02	0.09	0.04	0.14	0.17	0.08	0.10	0.06	0.04	0.06	0.05	0.07	<0.02	0.07	<0.02
21-Jul-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
22-Jul-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
23-Jul-2017	1.45	1.72	0.07	<0.02	0.10	0.04	0.17	0.18	0.09	0.10	0.07	0.06	0.08	0.05	0.09	0.03	0.09	<0.02
24-Jul-2017	1.59	1.88	0.09	<0.02	0.07	0.02	0.07	0.08	0.08	0.09	0.06	0.06	0.08	0.05	0.09	0.03	OL	OL
25-Jul-2017	1.62	1.90	0.10	<0.02	0.08	0.02	0.08	0.10	0.06	0.09	0.06	0.06	OL	OL	0.06	<0.02	0.06	<0.02
26-Jul-2017	1.71	1.88	0.07	<0.02	OL	OL	0.07	0.09	0.07	0.10	0.06	0.06	0.07	0.04	0.07	0.02	0.07	<0.02
27-Jul-2017	1.66	2.18	0.08	0.02	0.07	0.09	0.08	0.03	0.09	0.11	0.07	0.08	0.08	0.05	OL	OL	0.06	<0.02
28-Jul-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
29-Jul-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
30-Jul-2017	1.63	2.31	0.11	0.05	0.09	0.12	0.11	0.06	0.11	0.15	0.07	0.11	0.09	0.09	0.10	0.08	OL	OL
31-Jul-2017	2.02	2.50	0.11	0.04	0.09	0.11	0.10	0.06	0.14	0.18	0.07	0.10	0.09	0.07	OL	OL	0.07	<0.02
Total number of measurements taken, A:			22		21		21		20		20		17		19		17	
Turbidity Standard for Monitoring Location (NTU):			0.30		0.30		0.30		0.30		0.30		0.30		0.30		0.30	
Number of measurements meeting standard, B:			22		21		21		20		20		17		19		17	
Compliance with Turbidity Standard, C= B/A X 100%:			100%		100%		100%		100%		100%		100%		100%		100%	

NS: No Sample NA: Not Analyzed OL: Off-Line NR: No Result

Comments:

There were no results for the raw online analyzer on July 2, 3, and 12 due to maintenance requirements.

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck

Date Approved: 4-Aug-17



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**
Licence Number: **PWS-09-412-01**

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

July 2017 Turbidity (NTU)

Date	Raw	Filter #1		Filter #2		Filter #3		Filter #4		Filter #5		Filter #6		Filter #7		Filter #8	
	Avg	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max
1/07/2017	3.61	0.01	0.06	0.01	0.05	0.06	0.12	0.02	0.07	0.01	0.04	0.03	0.05	0.02	0.03	0.06	0.09
2/07/2017	4.60	0.02	0.06	0.02	0.06	0.07	0.09	0.03	0.09	0.02	0.03	0.04	0.08	0.03	0.08	0.06	0.10
3/07/2017	4.56	0.02	0.08	0.03	0.05	0.08	0.14	0.03	0.07	0.02	0.05	0.04	0.09	0.03	0.05	0.09	0.10
4/07/2017	1.34	0.01	0.07	0.02	0.07	0.07	0.15	0.04	0.10	0.02	0.05	0.05	0.07	0.03	0.08	0.09	0.13
5/07/2017	1.41	0.02	0.07	0.02	0.07	0.08	0.09	0.03	0.09	0.02	0.03	0.05	0.09	0.03	0.09	0.09	0.15
6/07/2017	1.63	0.02	0.08	0.02	0.04	0.08	0.15	0.03	0.07	0.02	0.04	0.04	0.10	0.03	0.07	0.12	0.13
7/07/2017	1.73	0.01	0.13	0.02	0.06	0.07	0.15	0.03	0.04	0.01	0.04	0.04	0.06	0.03	0.05	0.12	0.16
8/07/2017	2.61	0.02	0.03	0.00	0.05	0.07	0.10	0.05	0.17	0.02	0.04	0.06	0.11	0.03	0.11	0.07	0.16
9/07/2017	2.80	0.02	0.07	0.00	0.02	0.09	0.15	0.06	0.14	0.02	0.04	0.06	0.13	0.03	0.08	0.01	0.01
10/07/2017	2.72	0.01	0.08	0.00	0.03	0.08	0.13	0.06	0.08	0.01	0.07	0.05	0.11	0.03	0.06	0.01	0.03
11/07/2017	3.02	0.02	0.08	0.01	0.08	0.08	0.23	0.07	0.14	0.02	0.05	0.08	0.14	0.04	0.12	0.01	0.07
12/07/2017	3.85	0.02	0.07	0.00	0.03	0.08	0.14	0.05	0.10	0.02	0.04	0.06	0.11	0.03	0.09	0.01	0.02
13/07/2017	1.97	0.02	0.07	0.00	0.02	0.09	0.14	0.05	0.10	0.02	0.04	0.06	0.13	0.03	0.09	0.01	0.01
14/07/2017	1.89	0.02	0.06	0.00	0.03	0.08	0.14	0.05	0.07	0.02	0.05	0.06	0.13	0.04	0.05	0.01	0.03
15/07/2017	2.04	0.02	0.04	0.00	0.03	0.07	0.14	0.06	0.09	0.02	0.05	0.09	0.10	0.04	0.10	0.01	0.04
16/07/2017	2.30	0.03	0.08	0.00	0.01	0.09	0.11	0.05	0.11	0.03	0.05	0.09	0.17	0.04	0.12	0.01	0.05
17/07/2017	2.01	0.02	0.05	0.02	0.28	0.08	0.15	0.08	0.18	0.04	0.08	0.07	0.13	0.04	0.20	0.01	0.01
18/07/2017	2.65	0.01	0.03	0.02	0.08	0.08	0.16	0.07	0.12	0.05	0.10	0.06	0.17	0.03	0.16	0.01	0.10
19/07/2017	2.01	0.01	0.07	0.03	0.21	0.09	0.11	0.07	0.14	0.05	0.07	0.04	0.10	0.02	0.12	0.01	0.01
20/07/2017	2.12	0.01	0.07	0.03	0.09	0.09	0.18	0.08	0.12	0.05	0.08	0.03	0.13	0.02	0.04	0.01	0.03
21/07/2017	1.84	0.01	0.03	0.03	0.08	0.09	0.18	0.08	0.17	0.05	0.07	0.05	0.06	0.03	0.11	0.01	0.04
22/07/2017	3.56	0.02	0.12	0.04	0.07	0.11	0.13	0.08	0.18	0.07	0.10	0.04	0.12	0.02	0.15	0.01	0.01
23/07/2017	1.82	0.01	0.08	0.03	0.09	0.09	0.18	0.09	0.11	0.06	0.10	0.04	0.06	0.04	0.05	0.01	0.04
24/07/2017	1.85	0.01	0.02	0.02	0.08	0.08	0.15	0.08	0.15	0.06	0.08	0.05	0.11	0.02	0.10	0.01	0.03
25/07/2017	2.18	0.01	0.07	0.02	0.04	0.10	0.12	0.08	0.15	0.06	0.14	0.04	0.10	0.02	0.10	0.01	0.01
26/07/2017	2.00	0.01	0.07	0.03	0.09	0.09	0.19	0.10	0.12	0.05	0.09	0.04	0.05	0.02	0.04	0.01	0.03
27/07/2017	2.19	0.02	0.04	0.05	0.18	0.05	0.12	0.08	0.17	0.07	0.10	0.04	0.08	0.03	0.12	0.01	0.03
28/07/2017	2.19	0.02	0.09	0.09	0.11	0.04	0.06	0.09	0.16	0.07	0.13	0.04	0.13	0.04	0.12	0.01	0.01
29/07/2017	2.42	0.04	0.09	0.09	0.16	0.05	0.16	0.11	0.16	0.07	0.13	0.05	0.11	0.05	0.11	0.01	0.03
30/07/2017	2.43	0.05	0.07	0.10	0.17	0.06	0.19	0.14	0.19	0.09	0.15	0.07	0.13	0.06	0.14	0.01	0.07
31/07/2017	2.61	0.06	0.15	0.11	0.21	0.07	0.10	0.13	0.21	0.11	0.16	0.06	0.11	0.05	0.12	0.01	0.06

Total Number of Measurements Taken, A:	16352	11269	16683	15080	17042	16286	15803	16524
Turbidity Standard for Monitoring Location (NTU):	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Number of Measurements Meeting Standard, B:	16352	11269	16683	15080	17042	16286	15803	16524
Compliance with Turbidity Standard, C = B/A X 100%:	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2017\07-July

Submitted By (Print): David Minor

Signature: Original signed by David Minor



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION

WATER TREATMENT PLANT TURBIDITY GRAB MONITORING REPORT																		
Water System Code: 252.00	Turbidity (NTU)																	
Licence No. PWS-09-412-01																		
Date	Raw Water		Filter 1		Filter 2		Filter 3		Filter 4		Filter 5		Filter 6		Filter 7		Filter 8	
	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser
01-Aug-2017	1.94	2.73	OL	OL	0.13	0.14	0.14	0.10	0.11	0.16	0.12	0.16	0.09	0.07	0.10	0.05	0.09	0.12
02-Aug-2017	1.97	2.66	0.10	0.04	0.14	0.15	OL	OL	0.11	0.08	0.07	0.04	0.08	0.10	0.08	0.04	0.09	0.12
03-Aug-2017	1.49	2.04	0.11	0.05	0.11	0.12	0.11	0.07	0.12	0.08	0.07	0.04	0.11	0.11	0.11	0.06	OL	OL
04-Aug-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
05-Aug-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
06-Aug-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
07-Aug-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
08-Aug-2017	1.71	2.24	0.17	0.10	0.14	0.10	0.16	0.10	0.12	0.12	0.07	0.07	0.09	0.09	0.07	0.02	0.09	0.10
09-Aug-2017	1.79	2.43	0.10	0.04	0.13	0.10	0.16	0.11	0.13	0.12	OL	OL	0.09	0.08	0.07	0.03	0.07	0.10
10-Aug-2017	2.33	2.89	0.10	0.05	0.09	0.07	0.11	0.06	0.09	0.12	0.05	0.09	0.06	0.08	0.06	0.03	0.09	0.12
11-Aug-2017	2.34	2.45	0.11	0.06	0.10	0.08	0.11	0.07	0.16	0.19	0.08	0.15	0.10	0.10	0.08	0.04	0.08	0.10
12-Aug-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
13-Aug-2017	1.53	NR	0.16	0.10	0.24	0.21	0.18	0.11	0.19	0.13	0.13	0.08	0.10	0.11	0.10	0.07	0.10	0.13
14-Aug-2017	1.93	2.58	0.16	0.08	0.14	0.10	0.15	0.10	0.17	0.11	0.08	0.03	0.11	0.10	OL	OL	0.09	0.11
15-Aug-2017	2.08	2.53	0.22	0.13	0.16	0.15	0.19	0.13	0.14	0.10	0.08	0.05	OL	OL	0.09	0.06	0.08	0.02
16-Aug-2017	1.97	2.54	0.16	0.07	0.19	0.16	0.25	0.18	0.15	0.10	OL	OL	0.10	0.08	0.11	0.04	0.11	0.02
17-Aug-2017	1.97	2.85	0.17	0.09	0.14	0.14	0.16	0.11	0.17	0.12	0.08	0.03	0.09	0.09	0.11	0.06	OL	OL
18-Aug-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
19-Aug-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
20-Aug-2017	1.75	2.83	0.20	0.12	OL	OL	0.20	0.14	0.24	0.17	0.12	0.07	0.10	0.09	0.11	0.05	0.12	0.05
21-Aug-2017	1.60	2.74	0.20	0.16	0.18	0.14	0.20	0.14	0.22	0.17	0.08	0.03	0.10	0.09	OL	OL	0.09	<0.02
22-Aug-2017	1.91	2.72	OL	OL	0.14	0.10	0.16	0.09	0.16	0.08	0.13	0.06	0.07	0.05	0.08	<0.02	0.09	<0.02
23-Aug-2017	1.69	2.42	0.11	0.11	OL	OL	0.12	0.09	0.16	0.09	0.07	0.02	0.06	0.05	0.06	<0.02	0.07	<0.02
24-Aug-2017	1.71	2.65	0.12	0.08	0.10	0.08	0.11	0.05	OL	OL	0.07	0.03	0.09	0.07	0.06	<0.02	0.06	<0.02
25-Aug-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
26-Aug-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
27-Aug-2017	1.93	2.73	0.11	0.08	0.09	0.08	0.10	0.04	0.08	0.05	0.08	0.04	OL	OL	0.08	0.02	0.08	0.11
28-Aug-2017	1.98	2.72	0.10	0.07	0.13	0.10	OL	OL	0.11	0.07	0.08	0.04	0.09	0.07	0.10	0.03	0.09	0.02
29-Aug-2017	1.50	2.30	0.09	0.06	0.08	0.07	0.09	0.03	0.12	0.11	0.07	0.03	0.09	0.07	0.07	0.02	0.07	<0.02
30-Aug-2017	1.81	2.66	OL	OL	0.10	0.07	0.10	0.04	0.09	0.05	0.10	0.05	0.07	0.06	0.08	0.02	0.08	<0.02
31-Aug-2017	1.63	2.62	0.09	0.07	0.12	0.11	OL	OL	0.09	0.07	0.08	0.04	0.08	0.07	0.08	0.03	0.09	<0.02
Total number of measurements taken, A:			19		20		19		21		20		20		20		20	
Turbidity Standard for Monitoring Location (NTU):			0.30		0.30		0.30		0.30		0.30		0.30		0.30		0.30	
Number of measurements meeting standard, B:			19		20		19		21		20		20		20		20	
Compliance with Turbidity Standard, C= B/A X 100%:			100%		100%		100%		100%		100%		100%		100%		100%	

NS: No Sample NA: Not Analyzed OL: Off-Line

Comments:

There was no result for the raw online analyzer on August 13 due to maintenance requirements.

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck

Date Approved: 7-Sep-17



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**
 Licence Number: **PWS-09-412-01**

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

August 2017 Turbidity (NTU)

Date	Raw	Filter #1		Filter #2		Filter #3		Filter #4		Filter #5		Filter #6		Filter #7		Filter #8	
	Avg	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max
1/08/2017	2.80	0.06	0.15	0.13	0.19	0.08	0.19	0.13	0.26	0.12	0.22	0.09	0.27	0.05	0.11	0.01	0.08
2/08/2017	2.69	0.06	0.15	0.13	0.20	0.08	0.19	0.09	0.16	0.06	0.12	0.09	0.21	0.08	0.27	0.01	0.10
3/08/2017	2.19	0.06	0.09	0.12	0.20	0.07	0.19	0.08	0.16	0.05	0.11	0.10	0.11	0.05	0.13	0.01	0.03
4/08/2017	2.92	0.06	0.15	0.10	0.18	0.07	0.10	0.08	0.15	0.06	0.11	0.08	0.16	0.05	0.15	0.01	0.06
5/08/2017	2.38	0.05	0.13	0.13	0.20	0.07	0.19	0.08	0.14	0.06	0.11	0.08	0.15	0.04	0.06	0.01	0.01
6/08/2017	3.50	0.07	0.18	0.10	0.22	0.09	0.22	0.12	0.14	0.06	0.12	0.07	0.09	0.04	0.10	0.01	0.01
7/08/2017	4.02	0.07	0.10	0.08	0.18	0.06	0.20	0.10	0.19	0.07	0.09	0.07	0.13	0.03	0.10	0.01	0.02
8/08/2017	2.88	0.07	0.16	0.09	0.12	0.09	0.13	0.10	0.22	0.07	0.12	0.07	0.10	0.03	0.10	0.01	0.01
9/08/2017	3.61	0.06	0.16	0.08	0.18	0.08	0.19	0.10	0.15	0.09	0.14	0.06	0.13	0.03	0.04	0.01	0.03
10/08/2017	2.88	0.05	0.08	0.07	0.14	0.06	0.15	0.12	0.21	0.09	0.15	0.07	0.10	0.03	0.10	0.01	0.01
11/08/2017	3.03	0.07	0.13	0.07	0.15	0.07	0.09	0.12	0.21	0.13	0.16	0.08	0.13	0.04	0.13	0.01	0.03
12/08/2017	2.75	0.07	0.18	0.10	0.16	0.08	0.18	0.12	0.24	0.13	0.20	0.08	0.18	0.04	0.06	0.01	0.01
13/08/2017	4.51	0.10	0.22	0.12	0.20	0.11	0.25	0.11	0.16	0.06	0.14	0.10	0.12	0.07	0.12	0.01	0.06
14/08/2017	3.31	0.10	0.15	0.11	0.21	0.09	0.24	0.09	0.20	0.05	0.08	0.09	0.17	0.05	0.17	0.01	0.07
15/08/2017	2.85	0.09	0.21	0.14	0.18	0.13	0.21	0.09	0.21	0.06	0.12	0.08	0.19	0.05	0.16	0.01	0.01
16/08/2017	2.71	0.09	0.22	0.14	0.24	0.11	0.26	0.11	0.14	0.06	0.15	0.07	0.16	0.05	0.09	0.01	0.05
17/08/2017	4.07	0.10	0.13	0.12	0.23	0.10	0.26	0.11	0.21	0.05	0.09	0.09	0.11	0.05	0.19	0.01	0.09
18/08/2017	3.35	0.10	0.23	0.14	0.19	0.13	0.18	0.11	0.22	0.06	0.16	0.07	0.18	0.04	0.14	0.01	0.07
19/08/2017	2.96	0.12	0.26	0.18	0.28	0.15	0.27	0.11	0.26	0.08	0.15	0.07	0.18	0.05	0.08	0.01	0.03
20/08/2017	2.73	0.12	0.15	0.15	0.27	0.13	0.26	0.15	0.22	0.05	0.15	0.08	0.10	0.04	0.18	0.01	0.09
21/08/2017	2.29	0.15	0.26	0.13	0.19	0.15	0.19	0.12	0.26	0.06	0.15	0.07	0.15	0.04	0.17	0.01	0.08
22/08/2017	3.22	0.11	0.22	0.13	0.28	0.09	0.29	0.08	0.16	0.04	0.15	0.05	0.12	0.02	0.05	0.01	0.01
23/08/2017	3.86	0.10	0.25	0.07	0.19	0.06	0.23	0.08	0.26	0.03	0.07	0.05	0.06	0.02	0.09	0.01	0.04
24/08/2017	3.42	0.08	0.18	0.08	0.12	0.06	0.09	0.05	0.13	0.04	0.08	0.05	0.09	0.02	0.10	0.01	0.01
25/08/2017	3.75	0.07	0.15	0.07	0.17	0.05	0.15	0.05	0.07	0.03	0.10	0.05	0.07	0.03	0.05	0.01	0.02
26/08/2017	3.05	0.08	0.11	0.07	0.15	0.04	0.06	0.05	0.12	0.04	0.06	0.06	0.12	0.03	0.10	0.01	0.04
27/08/2017	2.56	0.07	0.15	0.08	0.11	0.05	0.15	0.04	0.12	0.04	0.07	0.05	0.13	0.03	0.04	0.01	0.01
28/08/2017	3.54	0.07	0.09	0.07	0.14	0.04	0.14	0.06	0.08	0.03	0.08	0.07	0.13	0.04	0.12	0.01	0.04
29/08/2017	2.85	0.06	0.14	0.07	0.08	0.04	0.05	0.04	0.11	0.04	0.07	0.05	0.12	0.03	0.08	0.01	0.03
30/08/2017	3.55	0.07	0.15	0.07	0.13	0.04	0.13	0.04	0.07	0.04	0.07	0.05	0.12	0.04	0.05	0.01	0.01
31/08/2017	3.24	0.07	0.10	0.07	0.15	0.04	0.14	0.06	0.12	0.04	0.09	0.06	0.08	0.03	0.11	0.01	0.05

Total Number of Measurements Taken, A:	16475	14954	16593	15777	17073	16091	15841	16429
Turbidity Standard for Monitoring Location (NTU):	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Number of Measurements Meeting Standard, B:	16475	14954	16593	15777	17073	16091	15841	16429
Compliance with Turbidity Standard, C = B/A X 100%:	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2017\08-August

Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION

WATER TREATMENT PLANT TURBIDITY GRAB MONITORING REPORT																		
Water System Code: 252.00	Turbidity (NTU)																	
Licence No. PWS-09-412-01																		
Date	Raw Water		Filter 1		Filter 2		Filter 3		Filter 4		Filter 5		Filter 6		Filter 7		Filter 8	
	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser
01-Sep-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
02-Sep-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
03-Sep-2017	1.85	2.35	0.08	0.05	0.10	0.08	OL	OL	0.09	0.06	0.07	0.04	0.08	0.07	0.09	0.03	0.08	<0.02
04-Sep-2017	1.92	2.40	0.08	0.06	0.08	0.07	0.08	0.03	0.10	0.06	0.09	0.04	0.09	0.08	OL	OL	0.07	<0.02
05-Sep-2017	1.83	2.60	0.13	0.08	0.10	0.08	0.11	0.04	0.10	0.05	0.09	0.04	OL	OL	0.09	0.03	0.09	<0.02
06-Sep-2017	1.62	2.65	0.10	0.08	OL	OL	0.11	0.05	0.12	0.09	0.09	0.06	0.08	0.08	0.08	0.04	0.09	0.02
07-Sep-2017	1.96	2.48	0.12	0.08	0.11	0.09	0.12	0.04	OL	OL	0.09	0.04	0.10	0.08	0.08	0.02	0.08	<0.02
08-Sep-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
09-Sep-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
10-Sep-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11-Sep-2017	1.52	3.04	OL	OL	0.14	0.09	0.12	0.04	0.09	0.06	0.09	0.03	OL	OL	0.11	0.03	0.09	<0.02
12-Sep-2017	1.63	2.20	OL	OL	0.12	0.10	0.14	0.06	0.11	0.08	0.08	0.04	OL	OL	0.08	0.03	0.09	<0.02
13-Sep-2017	1.39	2.40	0.09	0.03	0.11	0.09	0.13	0.05	0.08	0.05	OL	OL	OL	OL	0.08	0.03	0.08	<0.02
14-Sep-2017	1.58	2.34	0.19	0.04	0.13	0.08	0.12	0.03	0.10	0.06	0.07	0.04	OL	OL	0.08	0.03	OL	OL
15-Sep-2017	1.44	2.26	0.16	0.07	OL	OL	0.14	0.06	0.14	0.10	0.10	0.04	OL	OL	0.11	0.03	0.09	<0.02
16-Sep-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	OL	OL	NS	NS	NS	NS
17-Sep-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	OL	OL	NS	NS	NS	NS
18-Sep-2017	1.33	2.13	0.09	<0.02	0.09	0.08	0.11	<0.02	0.07	0.08	0.08	0.05	OL	OL	0.07	0.04	0.08	<0.02
19-Sep-2017	1.37	1.96	0.09	0.02	0.12	0.08	0.13	0.02	0.07	0.04	OL	OL	OL	OL	0.07	0.04	0.09	<0.02
20-Sep-2017	1.46	2.15	0.10	0.02	OL	OL	0.08	<0.02	0.09	0.06	0.07	0.04	0.08	0.06	0.07	0.04	OL	OL
21-Sep-2017	1.25	1.98	0.08	0.02	0.07	0.09	0.08	<0.02	OL	OL	0.07	0.03	0.11	0.11	0.07	0.04	0.07	<0.02
22-Sep-2017	1.49	1.99	OL	OL	0.10	0.10	0.10	<0.02	OL	OL	0.12	0.06	0.12	0.09	0.09	0.04	0.09	<0.02
23-Sep-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
24-Sep-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
25-Sep-2017	1.45	2.29	OL	OL	0.20	0.09	0.21	0.09	OL	OL	0.17	0.11	0.09	0.11	0.08	0.05	0.09	<0.02
26-Sep-2017	1.15	NR	0.19	0.07	OL	OL	OL	OL	0.21	0.09	0.10	0.06	0.09	0.11	0.15	0.06	0.09	0.12
27-Sep-2017	1.18	2.12	0.18	0.09	0.14	0.07	0.17	0.06	0.11	0.05	0.09	0.03	OL	OL	OL	OL	0.07	0.10
28-Sep-2017	1.19	1.72	0.12	0.03	0.13	0.06	0.16	0.05	OL	OL	OL	OL	0.08	0.10	0.07	0.03	0.07	0.10
29-Sep-2017	1.06	NR	0.16	<0.02	OL	OL	OL	OL	0.17	0.07	0.12	0.04	0.09	0.11	0.11	0.04	0.10	0.11
30-Sep-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total number of measurements taken, A:			16		15		17		15		17		11		18		18	
Turbidity Standard for Monitoring Location (NTU):			0.30		0.30		0.30		0.30		0.30		0.30		0.30		0.30	
Number of measurements meeting standard, B:			16		15		17		15		17		11		18		18	
Compliance with Turbidity Standard, C= B/A X 100%:			100%		100%		100%		100%		100%		100%		100%		100%	

NS: No Sample NA: Not Analyzed OL: Off-Line

Comments:

There was no result for the raw online analyzer on September 26 and 29 due to maintenance requirements. Filter 6 was offline for maintenance from September 11th to 20th.

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck

Date Approved: 6-Oct-17



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**
 Licence Number: **PWS-09-412-01**

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

September 2017 Turbidity (NTU)

Date	Raw	Filter #1		Filter #2		Filter #3		Filter #4		Filter #5		Filter #6		Filter #7		Filter #8	
	Avg	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max
1/09/2017	3.79	0.08	0.16	0.06	0.15	0.04	0.06	0.05	0.13	0.04	0.07	0.06	0.13	0.03	0.11	0.01	0.04
2/09/2017	2.99	0.07	0.15	0.08	0.14	0.04	0.15	0.05	0.13	0.04	0.09	0.05	0.13	0.03	0.04	0.01	0.01
3/09/2017	2.94	0.06	0.14	0.07	0.15	0.04	0.14	0.05	0.07	0.04	0.10	0.06	0.08	0.04	0.12	0.01	0.05
4/09/2017	4.24	0.08	0.10	0.07	0.14	0.04	0.05	0.05	0.14	0.05	0.06	0.06	0.14	0.03	0.12	0.01	0.05
5/09/2017	3.33	0.07	0.16	0.08	0.11	0.04	0.12	0.05	0.14	0.05	0.10	0.06	0.15	0.03	0.05	0.01	0.01
6/09/2017	2.33	0.06	0.26	0.06	0.32	0.03	0.18	0.05	0.23	0.03	0.13	0.05	0.23	0.03	0.31	0.00	0.15
7/09/2017	2.73	0.07	0.17	0.09	0.13	0.04	0.10	0.05	0.13	0.05	0.09	0.06	0.14	0.03	0.07	0.01	0.03
8/09/2017	2.70	0.06	0.13	0.08	0.16	0.04	0.15	0.05	0.09	0.04	0.08	0.05	0.12	0.03	0.04	0.01	0.01
9/09/2017	3.94	0.04	0.06	0.08	0.14	0.04	0.14	0.06	0.15	0.04	0.08	0.06	0.07	0.03	0.10	0.01	0.02
10/09/2017	2.33	0.05	0.14	0.07	0.15	0.03	0.06	0.06	0.11	0.04	0.07	0.05	0.12	0.03	0.08	0.01	0.02
11/09/2017	2.33	0.05	0.12	0.09	0.13	0.05	0.13	0.05	0.12	0.04	0.08	0.01	0.06	0.03	0.10	0.01	0.01
12/09/2017	2.80	0.04	0.11	0.08	0.17	0.04	0.15	0.06	0.12	0.04	0.09	O/L	O/L	0.03	0.07	0.01	0.04
13/09/2017	2.34	0.04	0.14	0.08	0.16	0.04	0.14	0.06	0.08	0.03	0.09	O/L	O/L	0.04	0.10	0.01	0.04
14/09/2017	2.33	0.05	0.07	0.08	0.16	0.04	0.15	0.06	0.13	0.04	0.08	O/L	O/L	0.04	0.11	0.01	0.04
15/09/2017	2.32	0.06	0.14	0.09	0.17	0.04	0.12	0.06	0.12	0.04	0.06	O/L	O/L	0.03	0.09	0.01	0.02
16/09/2017	2.31	0.04	0.13	0.08	0.16	0.02	0.06	0.04	0.11	0.04	0.07	O/L	O/L	0.03	0.09	0.01	0.03
17/09/2017	2.23	0.03	0.10	0.08	0.11	0.02	0.08	0.04	0.09	0.04	0.07	O/L	O/L	0.04	0.10	0.01	0.01
18/09/2017	2.18	0.03	0.08	0.07	0.13	0.01	0.09	0.04	0.10	0.04	0.06	O/L	O/L	0.04	0.06	0.01	0.01
19/09/2017	2.20	0.02	0.09	0.07	0.12	0.01	0.03	0.04	0.06	0.04	0.07	O/L	O/L	0.05	0.08	0.01	0.01
20/09/2017	2.23	0.03	0.05	0.05	0.16	0.00	0.14	0.04	0.09	0.04	0.06	0.05	0.18	0.03	0.13	0.00	0.04
21/09/2017	2.09	0.02	0.14	0.07	0.10	0.01	0.04	0.02	0.12	0.04	0.08	0.05	0.12	0.03	0.12	0.00	0.02
22/09/2017	2.20	0.02	0.13	0.09	0.20	0.01	0.13	0.02	0.12	0.03	0.08	0.06	0.10	0.04	0.06	0.01	0.01
23/09/2017	2.47	0.04	0.07	0.09	0.21	0.03	0.17	0.05	0.09	0.03	0.14	0.10	0.12	0.05	0.15	0.00	0.06
24/09/2017	2.18	0.09	0.16	0.11	0.18	0.06	0.09	0.06	0.20	0.06	0.13	0.07	0.17	0.04	0.16	0.00	0.06
25/09/2017	3.06	0.06	0.22	0.12	0.28	0.07	0.21	0.05	0.20	0.05	0.15	0.07	0.11	0.05	0.07	0.01	0.01
26/09/2017	2.43	0.07	0.10	0.06	0.18	0.05	0.19	0.08	0.11	0.04	0.10	0.10	0.18	0.05	0.10	0.00	0.04
27/09/2017	2.07	0.05	0.20	0.06	0.10	0.06	0.10	0.06	0.19	0.06	0.14	0.06	0.16	0.03	0.14	0.00	0.01
28/09/2017	1.93	0.04	0.14	0.05	0.14	0.03	0.14	0.04	0.13	0.03	0.09	0.08	0.11	0.04	0.06	0.01	0.02
29/09/2017	2.82	0.07	0.09	0.05	0.17	0.03	0.16	0.05	0.09	0.03	0.09	0.10	0.14	0.04	0.10	0.00	0.02
30/09/2017	1.71	0.07	0.21	0.06	0.10	0.06	0.10	0.07	0.17	0.06	0.14	0.08	0.19	0.04	0.17	0.00	0.05

Total Number of Measurements Taken, A:	14898	13321	14831	13967	15631	9877	14139	14779
Turbidity Standard for Monitoring Location (NTU):	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Number of Measurements Meeting Standard, B:	14898	13320	14831	13967	15631	9877	14138	14779
Compliance with Turbidity Standard, C = B/A X 100%:	100.000%	99.992%	100.000%	100.000%	100.000%	100.000%	99.999%	100.000%

O/L = Off Line

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2017\09-September

Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION

WATER TREATMENT PLANT TURBIDITY GRAB MONITORING REPORT																		
Water System Code: 252.00	Turbidity (NTU)																	
Licence No. PWS-09-412-01																		
Date	Raw Water		Filter 1		Filter 2		Filter 3		Filter 4		Filter 5		Filter 6		Filter 7		Filter 8	
	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser
01-Oct-2017	1.06	1.64	OL	OL	0.19	0.12	0.22	0.10	OL	OL	0.17	0.11	0.08	0.13	0.08	0.06	0.09	0.18
02-Oct-2017	1.06	1.55	0.19	0.09	OL	OL	OL	OL	0.20	0.11	0.16	0.10	0.10	0.14	0.10	0.07	0.12	0.04
03-Oct-2017	1.05	1.49	0.17	0.08	0.14	0.08	0.16	0.05	0.14	0.07	0.07	0.03	0.10	0.14	OL	OL	OL	OL
04-Oct-2017	1.20	1.43	OL	OL	0.15	0.08	0.19	0.06	0.22	0.14	0.11	0.07	OL	OL	0.07	0.04	0.07	<0.02
05-Oct-2017	1.11	1.47	0.11	0.03	OL	OL	OL	OL	0.10	0.05	0.09	0.05	0.07	0.07	0.08	0.04	0.08	0.11
06-Oct-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
07-Oct-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
08-Oct-2017	1.04	1.37	0.10	0.02	0.13	0.07	OL	OL	0.09	0.04	OL	OL	0.10	0.10	0.11	0.07	0.13	0.04
09-Oct-2017	1.09	NR	0.11	0.03	0.09	0.04	0.11	<0.02	0.10	0.05	0.10	0.07	0.18	0.18	OL	OL	OL	OL
10-Oct-2017	1.10	1.30	OL	OL	0.12	0.05	0.13	<0.02	OL	OL	0.12	0.07	0.10	0.11	0.11	0.07	0.10	0.04
11-Oct-2017	1.07	1.23	0.09	0.02	OL	OL	OL	OL	0.11	0.05	0.09	0.06	0.10	0.11	0.14	0.08	0.12	0.04
12-Oct-2017	1.12	1.33	0.11	0.04	0.10	0.03	0.09	<0.02	0.10	0.05	0.10	0.06	OL	OL	OL	OL	0.09	0.04
13-Oct-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
14-Oct-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
15-Oct-2017	1.04	1.24	0.10	0.02	0.08	0.02	0.08	<0.02	0.08	0.04	0.09	0.05	OL	OL	OL	OL	0.08	<0.02
16-Oct-2017	1.06	1.22	0.07	<0.02	0.09	0.03	0.11	<0.02	OL	OL	OL	OL	0.10	0.10	0.09	0.06	0.09	<0.02
17-Oct-2017	1.07	1.19	0.10	<0.02	OL	OL	0.10	<0.02	0.09	0.03	0.09	0.05	0.10	0.11	0.12	0.08	OL	OL
18-Oct-2017	1.00	1.16	OL	OL	0.07	0.02	0.07	<0.02	0.09	0.05	0.07	0.07	OL	OL	0.07	0.07	0.07	<0.02
19-Oct-2017	0.92	1.35	0.08	0.02	OL	OL	OL	OL	0.08	0.04	0.06	0.05	0.09	0.10	0.10	0.05	0.08	0.04
20-Oct-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
21-Oct-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
22-Oct-2017	0.94	1.24	0.12	0.05	0.15	0.09	OL	OL	0.13	0.08	OL	OL	0.09	0.12	0.10	0.07	0.10	0.03
23-Oct-2017	1.10	1.32	0.11	0.04	OL	OL	0.11	<0.02	0.12	0.06	0.07	0.04	0.09	0.12	0.12	0.07	OL	OL
24-Oct-2017	1.09	1.24	OL	OL	0.13	0.07	0.15	0.03	0.17	0.11	0.11	0.07	OL	OL	0.10	0.07	0.10	0.03
25-Oct-2017	1.21	1.24	0.11	0.04	0.14	0.10	OL	OL	0.12	0.08	OL	OL	0.10	0.13	0.10	0.07	0.11	0.04
26-Oct-2017	1.22	1.31	0.13	0.04	0.11	0.06	0.12	<0.02	0.10	0.06	0.10	0.06	0.13	0.16	OL	OL	OL	OL
27-Oct-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
28-Oct-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
29-Oct-2017	0.86	1.18	0.14	0.05	0.11	0.06	0.12	<0.02	0.12	0.06	0.09	0.06	0.15	0.17	OL	OL	OL	OL
30-Oct-2017	0.98	1.19	OL	OL	0.10	0.06	0.12	<0.02	0.16	0.08	0.11	0.07	0.11	0.14	OL	OL	0.09	0.04
31-Oct-2017	0.88	1.15	0.11	0.04	0.11	0.08	0.14	0.08	0.09	0.06	OL	OL	0.12	0.12	OL	OL	0.10	0.04
Total number of measurements taken, A:			17		17		16		20		18		18		15		17	
Turbidity Standard for Monitoring Location (NTU):			0.30		0.30		0.30		0.30		0.30		0.30		0.30		0.30	
Number of measurements meeting standard, B:			17		17		16		20		18		18		15		17	
Compliance with Turbidity Standard, C= B/A X 100%:			100%		100%		100%		100%		100%		100%		100%		100%	

NS: No Sample NA: Not Analyzed OL: Off-Line

Comments:

There was no result for the raw online analyzer on October 9 due to maintenance requirements.

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck

Date Approved: 7-Nov-17



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**

Licence Number: **PWS-09-412-01**

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

October 2017 Turbidity (NTU)

Date	Raw	Filter #1		Filter #2		Filter #3		Filter #4		Filter #5		Filter #6		Filter #7		Filter #8	
	Avg	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max
1/10/2017	2.04	0.07	0.23	0.11	0.21	0.08	0.22	0.08	0.20	0.06	0.18	0.08	0.16	0.06	0.08	0.01	0.02
2/10/2017	1.92	0.10	0.14	0.07	0.23	0.06	0.22	0.07	0.12	0.05	0.16	0.13	0.22	0.05	0.19	0.01	0.09
3/10/2017	2.20	0.07	0.21	0.06	0.10	0.05	0.10	0.07	0.18	0.06	0.15	0.09	0.20	0.04	0.16	0.00	0.07
4/10/2017	1.69	0.05	0.19	0.08	0.19	0.05	0.19	0.05	0.18	0.04	0.15	0.08	0.20	0.04	0.07	0.01	0.01
5/10/2017	1.77	0.06	0.14	0.06	0.24	0.04	0.17	0.04	0.13	0.04	0.13	0.10	0.15	0.05	0.17	0.01	0.07
6/10/2017	1.69	0.03	0.20	0.02	0.09	0.01	0.07	0.03	0.18	0.04	0.12	0.06	0.14	0.04	0.16	0.00	0.05
7/10/2017	2.17	0.01	0.08	0.02	0.11	0.00	0.11	0.02	0.07	0.03	0.08	0.06	0.16	0.05	0.07	0.01	0.01
8/10/2017	1.58	0.03	0.04	0.03	0.12	0.01	0.13	0.02	0.04	0.04	0.11	0.11	0.13	0.07	0.20	0.01	0.11
9/10/2017	2.21	0.03	0.12	0.02	0.04	0.00	0.01	0.04	0.13	0.07	0.09	0.08	0.21	0.06	0.25	0.01	0.15
10/10/2017	1.34	0.03	0.13	0.05	0.14	0.01	0.15	0.03	0.14	0.05	0.13	0.07	0.12	0.07	0.10	0.01	0.04
11/10/2017	1.61	0.04	0.06	0.03	0.15	0.01	0.14	0.04	0.06	0.04	0.12	0.11	0.21	0.07	0.27	0.01	0.16
12/10/2017	1.32	0.02	0.12	0.03	0.05	0.00	0.02	0.04	0.21	0.07	0.13	0.06	0.21	0.05	0.27	0.01	0.02
13/10/2017	1.32	0.01	0.08	0.02	0.11	0.00	0.15	0.02	0.11	0.04	0.10	0.07	0.11	0.07	0.08	0.01	0.26
14/10/2017	1.49	0.02	0.05	0.02	0.10	0.00	0.09	0.03	0.05	0.04	0.07	0.09	0.19	0.05	0.21	0.01	0.11
15/10/2017	1.29	0.01	0.08	0.02	0.03	0.00	0.00	0.03	0.11	0.05	0.09	0.06	0.18	0.05	0.20	0.00	0.01
16/10/2017	1.27	0.01	0.07	0.02	0.09	0.00	0.09	0.02	0.11	0.04	0.09	0.07	0.11	0.07	0.09	0.01	0.10
17/10/2017	1.28	0.02	0.03	0.01	0.09	0.00	0.07	0.03	0.04	0.04	0.07	0.09	0.18	0.05	0.19	0.01	0.10
18/10/2017	1.20	0.01	0.02	0.02	0.02	0.00	0.00	0.04	0.11	0.06	0.08	0.08	0.10	0.06	0.07	0.01	0.01
19/10/2017	1.41	0.02	0.04	0.03	0.11	0.00	0.10	0.02	0.05	0.03	0.11	0.09	0.11	0.06	0.17	0.01	0.06
20/10/2017	1.58	0.02	0.10	0.02	0.11	0.00	0.00	0.03	0.11	0.04	0.06	0.06	0.14	0.04	0.20	0.00	0.04
21/10/2017	1.62	0.04	0.13	0.06	0.07	0.02	0.10	0.05	0.13	0.05	0.11	0.07	0.19	0.04	0.07	0.01	0.01
22/10/2017	1.70	0.04	0.07	0.05	0.15	0.02	0.17	0.05	0.16	0.05	0.12	0.11	0.14	0.08	0.17	0.01	0.09
23/10/2017	1.36	0.06	0.16	0.04	0.16	0.01	0.18	0.07	0.10	0.06	0.09	0.09	0.24	0.06	0.24	0.01	0.13
24/10/2017	1.34	0.05	0.17	0.06	0.08	0.02	0.13	0.05	0.18	0.07	0.17	0.08	0.25	0.06	0.22	0.01	0.02
25/10/2017	1.28	0.04	0.07	0.06	0.18	0.02	0.20	0.05	0.18	0.05	0.15	0.11	0.14	0.08	0.11	0.02	0.13
26/10/2017	1.56	0.06	0.16	0.04	0.17	0.00	0.02	0.06	0.10	0.06	0.08	0.11	0.25	0.06	0.22	0.01	0.14
27/10/2017	1.54	0.05	0.19	0.07	0.13	0.02	0.19	0.05	0.17	0.06	0.13	0.09	0.25	0.05	0.20	0.01	0.02
28/10/2017	1.28	0.04	0.06	0.05	0.16	0.01	0.18	0.04	0.17	0.05	0.13	0.13	0.16	0.09	0.16	0.02	0.12
29/10/2017	1.32	0.05	0.14	0.05	0.15	0.00	0.14	0.06	0.12	0.06	0.09	0.10	0.26	0.01	0.08	0.01	0.11
30/10/2017	1.28	0.05	0.15	0.05	0.08	0.02	0.06	0.05	0.15	0.06	0.11	0.11	0.21	OL	OL	0.01	0.11
31/10/2017	1.24	0.05	0.16	0.07	0.16	0.06	0.22	0.06	0.17	0.06	0.13	0.10	0.12	OL	OL	0.02	0.05

Total Number of Measurements Taken, A:	13935	11750	11460	12289	14532	13536	12091	14328
Turbidity Standard for Monitoring Location (NTU):	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Number of Measurements Meeting Standard, B:	13935	11750	11460	12289	14532	13536	12091	14328
Compliance with Turbidity Standard, C = B/A X 100%:	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%

Note: OL - Offline

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2017\10-October

Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION

WATER TREATMENT PLANT TURBIDITY GRAB MONITORING REPORT																		
Water System Code: 252.00	Turbidity (NTU)																	
Licence No. PWS-09-412-01																		
Date	Raw Water		Filter 1		Filter 2		Filter 3		Filter 4		Filter 5		Filter 6		Filter 7		Filter 8	
	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser
01-Nov-2017	0.68	1.18	0.11	0.04	OL	OL	0.11	0.04	0.14	0.07	0.12	0.06	0.16	0.13	OL	OL	0.16	0.02
02-Nov-2017	0.80	1.15	0.11	0.03	0.08	0.05	0.09	0.03	0.10	0.06	0.09	0.05	OL	OL	OL	OL	0.08	0.02
03-Nov-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	OL	OL	NS	NS
04-Nov-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	OL	OL	NS	NS
05-Nov-2017	0.76	1.15	0.09	0.02	OL	OL	0.09	0.02	0.09	0.05	0.08	0.05	0.11	0.15	OL	OL	0.10	0.04
06-Nov-2017	0.77	1.21	0.11	0.03	0.09	0.06	0.11	0.02	0.10	0.05	0.09	0.06	0.14	0.18	OL	OL	OL	OL
07-Nov-2017	0.77	1.20	OL	OL	0.10	0.06	0.11	0.02	0.14	0.08	0.11	0.07	0.10	0.09	OL	OL	0.09	0.03
08-Nov-2017	0.77	1.16	0.09	0.02	0.09	0.06	0.14	0.06	0.09	0.05	OL	OL	0.09	0.08	OL	OL	0.09	0.04
09-Nov-2017	0.81	1.15	0.07	<0.02	0.06	0.04	0.07	<0.02	0.07	0.03	0.07	0.05	0.11	0.10	OL	OL	OL	OL
10-Nov-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	OL	OL	NS	NS
11-Nov-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	OL	OL	NS	NS
12-Nov-2017	0.66	1.13	0.11	0.03	0.12	0.13	0.19	0.11	0.10	0.05	0.07	0.04	0.09	0.08	OL	OL	0.09	0.02
13-Nov-2017	0.63	1.10	0.10	0.03	OL	OL	0.09	<0.02	0.09	0.05	0.08	0.05	0.10	0.09	OL	OL	0.10	0.03
14-Nov-2017	0.77	1.11	0.11	0.02	0.08	0.11	0.09	0.02	0.10	0.05	0.08	0.05	0.11	0.10	OL	OL	OL	OL
15-Nov-2017	0.78	1.11	0.07	<0.02	0.09	0.11	0.10	0.03	OL	OL	OL	OL	0.10	0.07	0.10	0.05	0.09	<0.02
16-Nov-2017	0.68	1.11	0.07	<0.02	0.10	0.11	OL	OL	0.08	0.04	0.07	0.04	0.10	0.08	0.11	0.06	0.09	0.02
17-Nov-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.08	0.04	NS	NS
18-Nov-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
19-Nov-2017	0.85	1.11	0.08	<0.02	0.09	0.12	OL	OL	0.08	0.04	0.08	0.05	0.10	0.09	OL	OL	0.10	0.02
20-Nov-2017	1.02	1.13	0.08	0.02	OL	OL	0.08	0.02	0.08	0.05	0.08	0.05	0.11	0.10	0.08	0.04	OL	OL
21-Nov-2017	0.81	1.12	OL	OL	0.08	0.10	0.09	0.02	0.11	0.06	0.09	0.06	0.10	0.08	0.09	0.04	OL	OL
22-Nov-2017	0.77	1.14	0.09	<0.02	0.09	0.11	0.11	0.03	0.08	0.04	OL	OL	0.09	0.08	0.10	0.05	OL	OL
23-Nov-2017	0.74	1.14	0.09	0.02	0.10	0.12	0.08	<0.02	0.08	0.04	0.08	0.05	0.11	0.09	OL	OL	OL	OL
24-Nov-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	OL	OL
25-Nov-2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	OL	OL
26-Nov-2017	0.85	1.12	0.07	<0.02	0.08	0.10	0.09	0.02	OL	OL	0.09	0.06	0.08	0.08	0.08	0.04	OL	OL
27-Nov-2017	0.83	1.12	0.08	<0.02	0.08	0.11	0.11	0.05	0.08	0.04	OL	OL	0.09	0.08	0.09	0.04	OL	OL
28-Nov-2017	0.86	1.14	0.08	<0.02	0.09	0.12	OL	OL	0.08	0.05	0.06	0.04	0.08	0.08	0.10	0.05	OL	OL
29-Nov-2017	0.79	1.16	0.11	0.02	0.08	0.10	0.09	0.02	0.09	0.05	0.08	0.04	OL	OL	0.09	0.03	OL	OL
30-Nov-2017	0.83	1.13	0.06	<0.02	0.07	0.10	0.09	0.03	OL	OL	0.08	0.05	0.07	0.07	0.08	0.03	OL	OL
Total number of measurements taken, A:			20		18		19		19		18		20		11		10	
Turbidity Standard for Monitoring Location (NTU):			0.30		0.30		0.30		0.30		0.30		0.30		0.30		0.30	
Number of measurements meeting standard, B:			20		18		19		19		18		20		11		10	
Compliance with Turbidity Standard, C= B/A X 100%:			100%		100%		100%		100%		100%		100%		100%		100%	

NS: No Sample NA: Not Analyzed OL: Off-Line

Comments:

Filter 7 was taken offline for maintenance October 30th and put back into service November 15th.
Filter 8 was taken offline for maintenance November 20th.

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck

Date Approved: 7-Dec-17



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**
 Licence Number: **PWS-09-412-01**

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

November 2017 Turbidity (NTU)

Date	Raw	Filter #1		Filter #2		Filter #3		Filter #4		Filter #5		Filter #6		Filter #7		Filter #8	
	Avg	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max
1/11/2017	1.74	0.04	0.07	0.05	0.15	0.04	0.17	0.05	0.07	0.05	0.10	0.11	0.24	OL	OL	0.02	0.12
2/11/2017	1.20	0.03	0.11	0.05	0.12	0.03	0.05	0.05	0.14	0.06	0.07	0.10	0.20	OL	OL	0.01	0.08
3/11/2017	1.30	0.03	0.11	0.05	0.07	0.04	0.15	0.04	0.13	0.05	0.09	0.10	0.20	OL	OL	0.01	0.07
4/11/2017	1.19	0.03	0.09	0.05	0.12	0.03	0.13	0.04	0.13	0.05	0.10	0.11	0.13	OL	OL	0.01	0.02
5/11/2017	1.23	0.03	0.05	0.05	0.11	0.03	0.15	0.04	0.13	0.06	0.12	0.13	0.22	OL	OL	0.01	0.08
6/11/2017	1.20	0.04	0.12	0.05	0.13	0.02	0.15	0.06	0.11	0.07	0.08	0.13	0.25	OL	OL	0.01	0.11
7/11/2017	1.22	0.03	0.12	0.05	0.07	0.02	0.06	0.05	0.12	0.06	0.11	0.10	0.19	OL	OL	0.01	0.10
8/11/2017	1.19	0.02	0.11	0.05	0.16	0.03	0.16	0.03	0.14	0.03	0.09	0.06	0.23	OL	OL	0.01	0.14
9/11/2017	1.18	0.02	0.12	0.03	0.07	0.01	0.07	0.03	0.10	0.04	0.10	0.06	0.17	OL	OL	0.01	0.10
10/11/2017	1.16	0.01	0.05	0.03	0.13	0.00	0.00	0.03	0.08	0.05	0.07	0.05	0.12	OL	OL	0.01	0.03
11/11/2017	1.16	0.03	0.10	0.11	0.12	0.02	0.10	0.04	0.12	0.05	0.09	0.06	0.16	OL	OL	0.01	0.07
12/11/2017	1.16	0.03	0.12	0.11	0.18	0.03	0.16	0.04	0.14	0.05	0.10	0.07	0.09	OL	OL	0.01	0.02
13/11/2017	1.15	0.04	0.06	0.10	0.18	0.02	0.15	0.04	0.05	0.05	0.10	0.08	0.17	OL	OL	0.01	0.08
14/11/2017	1.14	0.03	0.11	0.09	0.18	0.02	0.03	0.05	0.13	0.06	0.08	0.07	0.11	OL	OL	0.01	0.08
15/11/2017	1.14	0.02	0.07	0.10	0.11	0.02	0.14	0.03	0.13	0.04	0.10	0.05	0.17	0.06	0.19	0.00	0.01
16/11/2017	1.20	0.02	0.04	0.07	0.17	0.01	0.12	0.03	0.05	0.04	0.09	0.08	0.11	0.04	0.12	0.01	0.08
17/11/2017	1.13	0.02	0.06	0.07	0.14	0.01	0.02	0.04	0.11	0.05	0.07	0.06	0.16	0.03	0.12	0.01	0.07
18/11/2017	1.15	0.02	0.06	0.08	0.11	0.01	0.11	0.03	0.11	0.04	0.09	0.05	0.16	0.05	0.07	0.00	0.01
19/11/2017	1.15	0.02	0.03	0.09	0.15	0.01	0.11	0.03	0.12	0.04	0.10	0.08	0.10	0.04	0.12	0.01	0.06
20/11/2017	1.17	0.03	0.06	0.09	0.16	0.02	0.14	0.05	0.07	0.05	0.07	0.06	0.16	0.05	0.12	0.00	0.01
21/11/2017	1.18	0.02	0.09	0.08	0.16	0.02	0.04	0.04	0.12	0.06	0.11	0.07	0.17	0.05	0.07	OL	OL
22/11/2017	1.18	0.02	0.08	0.10	0.12	0.02	0.12	0.04	0.12	0.05	0.11	0.07	0.09	0.05	0.12	OL	OL
23/11/2017	1.17	0.03	0.05	0.09	0.16	0.02	0.14	0.04	0.12	0.05	0.09	0.08	0.18	0.04	0.13	OL	OL
24/11/2017	1.17	0.03	0.11	0.09	0.16	0.02	0.08	0.05	0.09	0.05	0.07	0.06	0.16	0.04	0.12	OL	OL
25/11/2017	1.18	0.02	0.09	0.08	0.14	0.01	0.04	0.04	0.10	0.05	0.10	0.06	0.14	0.04	0.10	OL	OL
26/11/2017	1.16	0.02	0.08	0.08	0.15	0.02	0.08	0.04	0.10	0.05	0.08	0.06	0.14	0.04	0.06	OL	OL
27/11/2017	1.16	0.03	0.08	0.11	0.14	0.03	0.13	0.04	0.11	0.05	0.10	0.06	0.09	0.04	0.09	OL	OL
28/11/2017	1.16	0.03	0.05	0.09	0.15	0.02	0.12	0.04	0.05	0.04	0.09	0.07	0.14	0.04	0.09	OL	OL
29/11/2017	1.16	0.03	0.07	0.09	0.15	0.02	0.03	0.05	0.11	0.05	0.07	0.06	0.14	0.04	0.09	OL	OL
30/11/2017	1.19	0.02	0.15	0.08	0.38	0.04	0.39	0.05	0.37	0.03	0.08	0.05	0.14	0.04	0.06	OL	OL

Total Number of Measurements Taken, A:	15106	11373	14669	12093	15638	13912	7386	9699
Turbidity Standard for Monitoring Location (NTU):	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Number of Measurements Meeting Standard, B:	15106	11356	14652	12079	15638	13912	7386	9699
Compliance with Turbidity Standard, C = B/A X 100%:	100.000%	99.851%	99.884%	99.884%	100.000%	100.000%	100.000%	100.000%

Note: OL - Offline

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2017\11-November

Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION

WATER TREATMENT PLANT TURBIDITY GRAB MONITORING REPORT																		
Water System Code: 252.00	Turbidity (NTU)																	
Licence No. PWS-09-412-01																		
Date	Raw Water		Filter 1		Filter 2		Filter 3		Filter 4		Filter 5		Filter 6		Filter 7		Filter 8	
	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser
01-Dec-2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	OL	OL
02-Dec-2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	OL	OL
03-Dec-2017	0.84	1.11	0.11	0.03	0.08	0.11	0.10	0.04	0.09	0.06	0.09	0.05	OL	OL	0.08	0.04	OL	OL
04-Dec-2017	0.73	1.11	OL	OL	0.08	0.11	0.10	0.04	OL	OL	0.09	0.07	0.07	0.07	0.08	0.04	0.08	<0.02
05-Dec-2017	0.73	1.09	0.09	0.02	0.10	0.13	OL	OL	0.10	0.06	0.08	0.05	0.10	0.09	0.12	0.06	OL	OL
06-Dec-2017	0.92	1.11	0.10	0.04	OL	OL	0.08	0.02	0.09	0.06	0.08	0.05	OL	OL	0.08	0.04	0.08	<0.02
07-Dec-2017	0.82	1.10	0.08	0.02	0.10	0.12	0.10	0.04	OL	OL	OL	OL	0.09	0.08	0.08	0.04	0.09	0.02
08-Dec-2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
09-Dec-2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10-Dec-2017	0.74	0.94	0.09	0.02	0.09	0.13	0.11	0.05	OL	OL	OL	OL	0.10	0.08	0.10	0.05	0.13	0.03
11-Dec-2017	0.79	0.94	0.08	0.02	0.09	0.12	OL	OL	0.08	0.07	0.07	0.04	0.09	0.08	0.10	0.05	OL	OL
12-Dec-2017	0.73	0.94	0.12	0.04	OL	OL	0.11	0.05	0.11	0.10	0.09	0.06	0.13	0.12	OL	OL	0.09	0.02
13-Dec-2017	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
14-Dec-2017	0.73	0.91	0.08	<0.02	0.10	0.13	OL	OL	0.08	0.05	0.06	0.05	0.09	0.08	OL	OL	0.07	<0.02
15-Dec-2017	0.76	0.88	OL	OL	0.07	0.10	0.08	0.02	0.12	0.08	0.08	0.06	OL	OL	0.08	0.04	0.09	<0.02
16-Dec-2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
17-Dec-2017	0.74	0.89	0.09	0.02	OL	OL	0.07	<0.02	0.09	0.06	0.07	0.06	0.13	0.11	0.09	0.04	0.07	<0.02
18-Dec-2017	0.76	0.84	OL	OL	0.09	0.10	0.11	0.03	OL	OL	0.14	0.08	0.10	0.07	0.12	0.04	0.11	<0.02
19-Dec-2017	0.65	0.85	0.10	0.10	0.11	0.12	0.19	0.10	0.11	0.07	0.10	0.08	0.12	0.11	0.13	0.08	OL	OL
20-Dec-2017	0.79	0.86	0.50	0.41	OL	OL	0.46	0.31	0.52	0.39	0.16	0.13	0.19	0.16	OL	OL	0.11	0.04
21-Dec-2017	0.65	0.87	OL	OL	0.10	0.10	0.12	0.03	0.16	0.11	0.11	0.10	0.11	0.10	0.11	0.06	0.11	0.04
22-Dec-2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
23-Dec-2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
24-Dec-2017	0.74	0.81	0.11	0.10	0.12	0.13	OL	OL	0.10	0.07	0.09	0.08	0.12	0.12	0.15	0.10	OL	OL
25-Dec-2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
26-Dec-2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
27-Dec-2017	0.61	0.76	0.10	0.02	0.12	0.14	OL	OL	0.10	0.06	0.10	0.07	0.13	0.10	OL	OL	0.11	0.04
28-Dec-2017	0.62	0.77	OL	OL	0.08	0.11	0.09	<0.02	0.13	0.09	0.13	0.09	OL	OL	0.13	0.08	0.14	0.05
29-Dec-2017	0.63	0.76	0.10	<0.02	0.10	0.13	0.13	0.03	0.12	0.07	OL	OL	0.13	0.09	0.13	0.09	0.14	0.06
30-Dec-2017	NA	NA	NA	NA	NA	NA	0.09	<0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
31-Dec-2017	0.62	0.80	OL	OL	0.10	0.12	0.11	0.02	0.16	0.11	0.13	0.10	OL	OL	0.13	0.08	0.13	0.05
Total number of measurements taken, A:			14		16		16		16		17		15		16		15	
Turbidity Standard for Monitoring Location (NTU):			0.30		0.30		0.30		0.30		0.30		0.30		0.30		0.30	
Number of measurements meeting standard, B:			13		16		15		15		17		15		16		15	
Compliance with Turbidity Standard, C= B/A X 100%:			93%		100%		94%		94%		100%		100%		100%		100%	

NS: No Sample NA: Not Analyzed OL: Off-Line

Comments:

The raw water and filter effluent analyzers were offline on December 13, 2017 due to a scheduled WTP shutdown.

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck

Date Approved: 5-Jan-18



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**
 Licence Number: **PWS-09-412-01**

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

December 2017 Turbidity (NTU)

Date	Raw	Filter #1		Filter #2		Filter #3		Filter #4		Filter #5		Filter #6		Filter #7		Filter #8	
	Avg	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max
1/12/2017	1.15	0.02	0.04	0.10	0.16	0.03	0.13	0.04	0.10	0.04	0.08	0.07	0.09	0.04	0.09	OL	OL
2/12/2017	1.16	0.03	0.05	0.09	0.16	0.03	0.10	0.04	0.07	0.05	0.09	0.07	0.14	0.04	0.08	OL	OL
3/12/2017	1.15	0.03	0.08	0.08	0.17	0.03	0.05	0.06	0.11	0.05	0.07	0.07	0.15	0.04	0.10	OL	OL
4/12/2017	1.13	0.02	0.07	0.09	0.11	0.03	0.08	0.04	0.11	0.04	0.10	0.05	0.14	0.04	0.06	0.01	0.07
5/12/2017	1.12	0.03	0.05	0.10	0.16	0.03	0.10	0.04	0.07	0.04	0.10	0.08	0.11	0.04	0.09	0.00	0.05
6/12/2017	1.12	0.03	0.08	0.08	0.17	0.02	0.04	0.06	0.13	0.06	0.08	0.06	0.16	0.04	0.11	0.01	0.01
7/12/2017	1.13	0.02	0.08	0.10	0.13	0.04	0.11	0.04	0.13	0.04	0.11	0.05	0.08	0.05	0.07	0.01	0.06
8/12/2017	1.13	0.04	0.09	0.10	0.20	0.03	0.18	0.05	0.10	0.03	0.08	0.07	0.16	0.03	0.10	0.00	0.04
9/12/2017	1.03	0.02	0.07	0.07	0.16	0.02	0.04	0.06	0.13	0.06	0.08	0.05	0.13	0.03	0.08	0.01	0.01
10/12/2017	0.96	0.03	0.10	0.10	0.13	0.05	0.10	0.05	0.14	0.04	0.11	0.05	0.09	0.05	0.07	0.01	0.04
11/12/2017	0.97	0.03	0.05	0.10	0.19	0.03	0.10	0.05	0.08	0.04	0.11	0.08	0.17	0.04	0.08	0.00	0.05
12/12/2017	1.00	0.04	0.09	0.09	0.20	0.03	0.06	0.09	0.14	0.07	0.11	0.07	0.18	0.04	0.13	0.01	0.01
13/12/2017	1.05	0.01	0.05	0.07	0.13	0.03	0.13	0.02	0.09	0.02	0.38	0.04	0.09	0.03	0.07	0.00	0.07
14/12/2017	0.93	0.02	0.07	0.07	0.17	0.02	0.08	0.06	0.10	0.06	0.08	0.05	0.16	0.04	0.11	0.00	0.01
15/12/2017	0.92	0.01	0.04	0.07	0.10	0.02	0.05	0.03	0.10	0.04	0.10	0.04	0.13	0.04	0.06	0.01	0.04
16/12/2017	0.91	0.02	0.03	0.09	0.15	0.02	0.08	0.03	0.05	0.04	0.07	0.07	0.09	0.03	0.09	0.00	0.04
17/12/2017	0.89	0.02	0.06	0.07	0.16	0.02	0.03	0.04	0.10	0.07	0.10	0.05	0.13	0.03	0.10	0.01	0.01
18/12/2017	0.88	0.02	0.06	0.09	0.12	0.03	0.10	0.03	0.11	0.04	0.10	0.04	0.07	0.05	0.08	0.00	0.05
19/12/2017	0.87	0.08	0.11	0.10	0.17	0.03	0.11	0.05	0.09	0.05	0.14	0.10	0.14	0.05	0.13	0.01	0.09
20/12/2017	0.87	0.11	0.42	0.09	0.21	0.05	0.31	0.09	0.38	0.11	0.15	0.08	0.23	0.08	0.17	0.02	0.05
21/12/2017	0.88	0.09	0.16	0.10	0.14	0.04	0.09	0.06	0.18	0.08	0.15	0.08	0.22	0.08	0.09	0.02	0.10
22/12/2017	0.86	0.11	0.13	0.09	0.16	0.03	0.11	0.06	0.08	0.07	0.10	0.11	0.15	0.07	0.15	0.01	0.11
23/12/2017	0.85	0.08	0.17	0.07	0.11	0.03	0.05	0.05	0.16	0.10	0.14	0.06	0.21	0.07	0.08	0.02	0.04
24/12/2017	0.83	0.10	0.12	0.11	0.19	0.03	0.11	0.05	0.08	0.06	0.16	0.11	0.14	0.07	0.16	0.02	0.11
25/12/2017	0.81	0.08	0.17	0.07	0.19	0.02	0.04	0.08	0.16	0.11	0.13	0.08	0.22	0.05	0.17	0.02	0.04
26/12/2017	0.80	0.06	0.12	0.10	0.16	0.03	0.12	0.04	0.16	0.06	0.16	0.09	0.21	0.10	0.14	0.02	0.12
27/12/2017	0.80	0.02	0.07	0.08	0.19	0.01	0.09	0.06	0.07	0.06	0.09	0.10	0.14	0.07	0.17	0.01	0.11
28/12/2017	0.79	0.02	0.06	0.07	0.18	0.01	0.03	0.05	0.15	0.08	0.14	0.07	0.20	0.06	0.10	0.03	0.06
29/12/2017	0.78	0.02	0.03	0.12	0.14	0.02	0.10	0.04	0.15	0.06	0.14	0.06	0.10	0.09	0.16	0.02	0.11
30/12/2017	0.81	0.02	0.07	0.08	0.19	0.01	0.08	0.06	0.08	0.07	0.10	0.10	0.20	0.06	0.16	0.01	0.11
31/12/2017	0.81	0.02	0.08	0.07	0.19	0.02	0.02	0.05	0.15	0.08	0.14	0.07	0.20	0.07	0.12	0.03	0.12

Total Number of Measurements Taken, A:	14160	10805	14508	11360	14985	13591	13373	13342
Turbidity Standard for Monitoring Location (NTU):	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Number of Measurements Meeting Standard, B:	14128	10805	14502	11334	14984	13591	13373	13342
Compliance with Turbidity Standard, C = B/A X 100%:	99.774%	100.000%	99.959%	99.771%	99.993%	100.000%	100.000%	100.000%

Note: OL - Offline

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2017\12-December

Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew

2017 Monthly UV Monitoring Reports



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**
Licence Number: **PWS-09-412-01**

WATER TREATMENT PLANT UV REPORT

Report Period: **January 2017**

Report Created: **Wednesday, February 01, 2017**

Date	Transmittance %	UVR-D100A Water Volume [ML]				UVR-D200A Water Volume [ML]				UVR-D300A Water Volume [ML]				UVR-D400A Water Volume [ML]				UVR-D500A Water Volume [ML]				UVR-D600A Water Volume [ML]				Total Water Volume [ML]				% Volume Treated To Dose
		Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	
01/01/2017	92.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	55.90	55.90	0.00	0.00	57.23	57.23	0.00	0.00	0.00	0.00	0.00	0.00	59.88	59.88	0.00	0.00	173.00	173.00	100.00
02/01/2017	92.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	55.90	55.90	0.00	0.00	57.19	57.19	0.00	0.00	0.00	0.00	0.00	0.00	59.90	59.90	0.00	0.00	172.99	172.99	100.00
03/01/2017	92.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	56.40	56.40	0.00	0.00	57.80	57.80	0.00	0.00	0.00	0.00	0.00	0.00	60.46	60.46	0.00	0.00	174.66	174.66	100.00
04/01/2017	91.84	0.00	0.20	2.56	2.76	0.00	0.00	49.58	49.58	0.00	0.00	55.77	55.77	0.00	0.00	18.86	18.86	0.00	0.00	18.65	18.65	0.00	0.00	30.56	30.56	0.00	0.20	175.99	176.19	99.88
05/01/2017	91.56	0.00	0.00	25.25	25.25	0.00	0.00	40.18	40.18	0.00	0.00	49.73	49.73	0.00	0.00	0.00	0.00	0.00	0.00	45.18	45.18	0.00	0.00	14.96	14.96	0.00	0.00	175.30	175.30	100.00
06/01/2017	91.36	0.00	0.00	69.79	69.79	0.00	0.00	0.00	0.00	0.00	0.00	47.16	47.16	0.00	0.00	0.00	0.00	0.00	0.00	58.05	58.05	0.00	0.00	0.00	0.00	0.00	0.00	175.01	175.01	100.00
07/01/2017	91.57	0.00	0.00	69.47	69.47	0.00	0.00	0.00	0.00	0.00	0.00	46.88	46.88	0.00	0.00	0.00	0.00	0.00	0.00	14.68	14.68	0.00	0.00	43.96	43.96	0.00	0.00	174.99	174.99	100.00
08/01/2017	91.66	0.00	0.00	69.55	69.55	0.00	0.00	0.00	0.00	0.00	0.00	46.85	46.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	58.56	58.56	0.00	0.00	174.97	174.97	100.00
09/01/2017	91.77	0.00	0.00	69.66	69.66	0.00	0.00	0.00	0.00	0.00	0.00	46.86	46.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	58.46	58.46	0.00	0.00	174.99	174.99	100.00
10/01/2017	91.62	0.00	0.00	69.70	69.70	0.00	0.00	0.00	0.00	0.00	0.00	46.81	46.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	58.48	58.48	0.00	0.00	175.00	175.00	100.00
11/01/2017	92.50	0.00	0.00	69.90	69.90	0.00	0.00	0.00	0.00	0.00	0.00	46.88	46.88	0.00	0.00	0.00	0.00	0.00	0.00	26.36	26.36	0.00	0.00	31.88	31.88	0.00	0.00	175.02	175.02	100.00
12/01/2017	93.17	0.00	0.00	68.62	68.62	0.00	0.00	3.89	3.89	0.00	0.00	16.22	16.22	0.21	0.24	29.16	29.62	0.04	0.04	56.65	56.74	0.00	0.00	0.00	0.00	0.26	0.29	174.54	175.09	99.69
13/01/2017	93.28	0.00	0.00	47.66	47.66	0.00	0.00	60.52	60.52	0.00	0.00	30.49	30.49	0.00	0.00	0.00	0.00	0.00	0.28	36.06	36.33	0.00	0.00	0.00	0.00	0.00	0.28	174.73	175.01	99.84
14/01/2017	93.17	0.00	0.00	47.17	47.17	0.00	0.00	60.55	60.55	0.00	0.00	67.27	67.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	174.98	174.98	100.00
15/01/2017	93.12	0.00	0.00	46.98	46.98	0.00	0.00	60.79	60.79	0.00	0.00	67.20	67.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	174.97	174.97	100.00
16/01/2017	93.16	0.00	0.00	46.82	46.82	0.00	0.00	61.08	61.08	0.00	0.00	67.12	67.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	175.03	175.03	100.00
17/01/2017	93.28	0.00	0.00	47.82	47.82	0.00	0.00	62.04	62.04	0.00	0.00	68.14	68.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	178.00	178.00	100.00
18/01/2017	93.18	0.00	0.00	48.02	48.02	0.00	0.00	61.71	61.71	0.00	0.00	68.14	68.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	177.86	177.86	100.00
19/01/2017	93.16	0.00	0.00	46.58	46.58	0.00	0.00	62.76	62.76	0.00	0.00	68.68	68.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	178.01	178.01	100.00
20/01/2017	93.20	0.00	0.00	46.66	46.66	0.00	0.00	62.68	62.68	0.00	0.00	68.67	68.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	178.01	178.01	100.00
21/01/2017	93.20	0.00	0.00	46.79	46.79	0.00	0.00	62.57	62.57	0.00	0.00	68.61	68.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	177.97	177.97	100.00
22/01/2017	93.20	0.00	0.00	46.85	46.85	0.00	0.00	62.56	62.56	0.00	0.00	68.61	68.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	178.02	178.02	100.00
23/01/2017	93.27	0.00	0.00	47.55	47.55	0.00	0.00	63.39	63.39	0.00	0.00	69.55	69.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	180.49	180.49	100.00
24/01/2017	93.27	0.00	0.00	48.36	48.36	0.00	0.00	64.25	64.25	0.00	0.00	70.41	70.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	183.02	183.02	100.00
25/01/2017	93.32	0.00	0.00	48.37	48.37	0.00	0.00	64.14	64.14	0.00	0.00	31.90	31.90	0.00	0.00	0.00	0.00	0.00	0.00	37.23	37.23	0.00	0.00	1.39	1.39	0.00	0.00	183.02	183.02	100.00
26/01/2017	93.28	0.00	0.00	49.75	49.75	0.00	0.00	65.91	65.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	72.12	72.12	0.00	0.00	0.47	0.47	0.00	0.00	188.25	188.25	100.00
27/01/2017	93.28	0.00	0.00	50.96	50.96	0.00	0.00	67.48	67.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32	73.87	74.19	0.00	0.00	0.00	0.00	0.00	0.32	192.32	192.64	99.83
28/01/2017	93.27	0.00	0.00	47.80	47.80	0.00	0.00	63.71	63.71	0.00	0.00	0.00	0.00	0.00	0.04	1.96	2.00	0.00	0.29	67.57	67.86	0.00	0.00	0.00	0.00	0.00	0.33	181.04	181.37	99.82
29/01/2017	93.08	0.00	0.00	47.38	47.38	0.00	0.00	63.33	63.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	69.28	69.28	0.00	0.00	0.00	0.00	0.00	0.00	179.99	179.99	100.00
30/01/2017	92.96	0.00	0.00	47.40	47.40	0.00	0.00	63.29	63.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	69.32	69.32	0.00	0.00	0.00	0.00	0.00	0.00	180.01	180.01	100.00
31/01/2017	92.90	0.00	0.00	46.81	46.81	0.00	0.00	62.94	62.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	68.77	68.77	0.00	0.00	0.00	0.00	0.00	0.00	178.52	178.52	100.00
Total [ML]:		0.00	0.20	1420.27	1420.47	0.00	0.00	1289.36	1289.36	0.00	0.00	1386.13	1386.13	0.21	0.28	222.20	222.69	0.04	0.93	713.79	714.76	0.00	0.00	478.96	478.96	0.26	1.42	5510.70	5512.38	

Water Volume [%]:

Untreated: 0.00 %
Below Dose 0.03 %
To Dose 99.97 %

Submitted By (Print): ___ D. Carr

Signature: _ D. Merredew



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**
Licence Number: **PWS-09-412-01**

WATER TREATMENT PLANT UV REPORT

Report Period: **February 2017**

Report Created: **Wednesday, March 01, 2017**

Date	Transmittance	UVR-D100A				UVR-D200A				UVR-D300A				UVR-D400A				UVR-D500A				UVR-D600A				Total				% Volume
	%	Water Volume [mL]				Water Volume [mL]				Water Volume [mL]				Water Volume [mL]				Water Volume [mL]				Water Volume [mL]				Water Volume [mL]				Treated To
		Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	
01/02/2017	92.88	0.00	0.00	46.53	46.53	0.00	0.00	62.91	62.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	68.58	68.58	0.00	0.00	0.00	0.00	0.00	0.00	178.02	178.02	100.00
02/02/2017	93.09	0.00	0.00	46.51	46.51	0.00	0.00	62.93	62.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	68.56	68.56	0.00	0.00	0.00	0.00	0.00	0.00	178.00	178.00	100.00
03/02/2017	93.39	0.00	0.00	46.53	46.53	0.00	0.00	62.89	62.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	68.59	68.59	0.00	0.00	0.00	0.00	0.00	0.00	178.01	178.01	100.00
04/02/2017	93.12	0.00	0.00	46.76	46.76	0.00	0.00	62.60	62.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	68.64	68.64	0.00	0.00	0.00	0.00	0.00	0.00	177.99	177.99	100.00
05/02/2017	92.87	0.00	0.00	46.77	46.77	0.00	0.00	62.55	62.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	68.68	68.68	0.00	0.00	0.00	0.00	0.00	0.00	178.00	178.00	100.00
06/02/2017	92.76	0.00	0.00	46.75	46.75	0.00	0.00	62.43	62.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	68.82	68.82	0.00	0.00	0.00	0.00	0.00	0.00	178.00	178.00	100.00
07/02/2017	92.67	0.00	0.00	50.10	50.10	0.00	0.00	30.99	30.99	0.00	0.04	31.63	31.67	0.00	0.00	0.00	0.00	0.00	0.00	65.12	65.12	0.00	0.00	0.00	0.00	0.00	0.04	177.83	177.88	99.98
08/02/2017	92.61	0.00	0.00	54.11	54.11	0.00	0.00	0.00	0.00	0.00	0.00	62.80	62.80	0.00	0.00	0.00	0.00	0.00	0.00	61.08	61.08	0.00	0.00	0.00	0.00	0.00	0.00	178.00	178.00	100.00
09/02/2017	93.22	0.00	0.00	54.57	54.57	0.00	0.00	0.00	0.00	0.00	0.00	62.65	62.65	0.00	0.00	0.00	0.00	0.00	0.00	60.80	60.80	0.00	0.00	0.00	0.00	0.00	0.00	178.02	178.02	100.00
10/02/2017	93.08	0.00	0.00	53.87	53.87	0.00	0.00	0.00	0.00	0.00	0.00	61.97	61.97	0.00	0.00	0.00	0.00	0.00	0.00	60.22	60.22	0.00	0.00	0.00	0.00	0.00	0.00	176.06	176.06	100.00
11/02/2017	92.94	0.00	0.00	53.83	53.83	0.00	0.00	0.00	0.00	0.00	0.00	62.07	62.07	0.00	0.00	0.00	0.00	0.00	0.00	60.10	60.10	0.00	0.00	0.00	0.00	0.00	0.00	176.00	176.00	100.00
12/02/2017	92.88	0.00	0.00	53.87	53.87	0.00	0.00	0.00	0.00	0.00	0.00	61.95	61.95	0.00	0.00	0.00	0.00	0.00	0.00	60.18	60.18	0.00	0.00	0.00	0.00	0.00	0.00	176.00	176.00	100.00
13/02/2017	92.78	0.00	0.00	31.67	31.67	0.00	0.00	21.68	21.68	0.00	0.00	62.60	62.60	0.00	0.28	0.00	0.29	0.00	0.00	37.29	37.29	0.00	0.00	20.44	20.44	0.00	0.28	173.68	173.96	99.84
14/02/2017	92.65	0.00	0.00	0.00	0.00	0.00	0.00	56.13	56.13	0.00	0.00	56.75	56.75	0.00	0.00	0.00	0.00	0.00	0.04	36.34	36.38	0.00	0.00	17.20	17.20	0.00	0.04	166.41	166.44	99.98
15/02/2017	92.53	0.00	0.00	0.00	0.00	0.00	0.00	17.81	17.81	0.00	0.00	66.28	66.28	0.00	0.00	0.00	0.00	0.00	0.00	39.16	39.16	0.00	0.00	41.20	41.20	0.00	0.00	164.45	164.45	100.00
16/02/2017	92.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	73.69	73.69	0.00	0.00	0.00	0.00	0.00	0.00	36.95	36.95	0.00	0.00	64.54	64.54	0.00	0.00	175.19	175.19	100.00
17/02/2017	91.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	79.39	79.39	0.00	0.00	0.00	0.00	0.00	0.00	38.09	38.09	0.00	0.00	63.00	63.00	0.00	0.00	180.48	180.48	100.00
18/02/2017	91.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	85.03	85.03	0.00	0.00	0.00	0.00	0.00	0.00	39.86	39.86	0.00	0.00	63.15	63.15	0.00	0.00	188.04	188.04	100.00
19/02/2017	92.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	85.01	85.01	0.00	0.00	0.00	0.00	0.00	0.00	39.51	39.51	0.00	0.00	63.48	63.48	0.00	0.00	188.00	188.00	100.00
20/02/2017	91.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	83.79	83.79	0.00	0.00	0.00	0.00	0.00	0.00	37.94	37.94	0.00	0.00	62.81	62.81	0.00	0.00	184.53	184.53	100.00
21/02/2017	92.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	81.18	81.18	0.00	0.00	0.00	0.00	0.00	0.00	35.94	35.94	0.00	0.00	61.53	61.53	0.00	0.00	178.65	178.65	100.00
22/02/2017	92.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	80.07	80.07	0.00	0.00	0.00	0.00	0.00	0.00	34.82	34.82	0.00	0.00	61.42	61.42	0.00	0.00	176.32	176.32	100.00
23/02/2017	93.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	79.65	79.65	0.00	0.00	0.00	0.00	0.00	0.00	34.16	34.16	0.00	0.00	62.17	62.17	0.00	0.00	175.98	175.98	100.00
24/02/2017	93.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	79.56	79.56	0.00	0.00	0.00	0.00	0.00	0.00	34.17	34.17	0.00	0.00	62.29	62.29	0.00	0.00	176.02	176.02	100.00
25/02/2017	94.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	81.30	81.30	0.00	0.00	0.00	0.00	0.00	0.00	35.46	35.46	0.00	0.00	62.50	62.50	0.00	0.00	179.26	179.26	100.00
26/02/2017	93.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	80.16	80.16	0.00	0.00	0.00	0.00	0.00	0.00	35.24	35.24	0.00	0.00	61.15	61.15	0.00	0.00	176.55	176.55	100.00
27/02/2017	93.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	77.83	77.83	0.00	0.00	0.00	0.00	0.00	0.00	33.65	33.65	0.00	0.00	60.49	60.49	0.00	0.00	171.97	171.97	100.00
28/02/2017	93.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	77.70	77.70	0.00	0.00	0.00	0.00	0.00	0.00	33.41	33.41	0.00	0.00	60.89	60.89	0.00	0.00	171.99	171.99	100.00
Total [mL]:		0.00	0.00	631.87	631.87	0.00	0.00	502.91	502.91	0.00	0.04	1573.05	1573.10	0.00	0.28	0.00	0.29	0.00	0.04	1361.37	1361.41	0.00	0.00	888.26	888.26	0.00	0.36	4957.47	4957.83	

Water Volume [%]:

Untreated: 0.00 %
Below Dose 0.01 %
To Dose 99.99 %

Submitted By (Print): D. Merredew

Signature: Original Signed by D. Merredew



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**
Licence Number: **PWS-09-412-01**

WATER TREATMENT PLANT UV REPORT

Report Period: **March 2017**

Report Created: **Saturday, April 01, 2017**

Date	Transmittance	UVR-D100A				UVR-D200A				UVR-D300A				UVR-D400A				UVR-D500A				UVR-D600A				Total				% Volume Treated To Dose
	%	Water Volume [ML]				Water Volume [ML]				Water Volume [ML]				Water Volume [ML]				Water Volume [ML]				Water Volume [ML]				Water Volume [ML]				
		Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	
01/03/2017	93.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	77.62	77.62	0.00	0.00	0.00	0.00	0.00	0.00	33.36	33.36	0.00	0.00	61.04	61.04	0.00	0.00	172.02	172.02	100.00
02/03/2017	93.63	0.00	0.00	0.00	0.00	0.00	0.00	39.09	39.09	0.01	0.21	33.92	34.14	0.00	0.04	29.00	29.04	0.00	0.00	11.14	11.14	0.00	0.00	58.62	58.62	0.01	0.24	171.76	172.02	99.85
03/03/2017	93.71	0.00	0.00	0.00	0.00	0.00	0.00	59.74	59.74	0.00	0.00	0.00	0.00	0.00	0.00	55.25	55.25	0.00	0.00	0.00	0.00	0.00	0.00	57.02	57.02	0.00	0.00	172.01	172.01	100.00
04/03/2017	93.57	0.00	0.00	0.00	0.00	0.00	0.00	56.41	56.41	0.00	0.00	40.02	40.02	0.00	0.00	17.87	17.87	0.00	0.00	0.00	0.00	0.00	0.00	57.72	57.72	0.00	0.00	172.02	172.02	100.00
05/03/2017	93.52	0.00	0.00	0.00	0.00	0.00	0.00	54.99	54.99	0.00	0.00	58.80	58.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	58.20	58.20	0.00	0.00	171.99	171.99	100.00
06/03/2017	93.57	0.00	0.00	0.00	0.00	0.00	0.00	56.43	56.43	0.00	0.00	59.90	59.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.27	59.27	0.00	0.00	175.60	175.60	100.00
07/03/2017	93.65	0.00	0.00	0.00	0.00	0.00	0.00	56.98	56.98	0.00	0.00	60.35	60.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.68	59.68	0.00	0.00	177.02	177.02	100.00
08/03/2017	93.69	0.00	0.00	0.00	0.00	0.00	0.00	57.00	57.00	0.00	0.00	60.30	60.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.69	59.69	0.00	0.00	176.99	176.99	100.00
09/03/2017	93.69	0.00	0.00	0.00	0.00	0.00	0.00	51.10	51.10	0.00	0.00	63.69	63.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	62.21	62.21	0.00	0.00	177.00	177.00	100.00
10/03/2017	93.69	0.00	0.00	0.00	0.00	0.00	0.04	50.09	50.13	0.00	0.00	64.12	64.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	62.68	62.68	0.00	0.04	176.89	176.93	99.98
11/03/2017	93.71	0.00	0.00	0.00	0.00	0.00	0.00	56.70	56.70	0.00	0.00	60.54	60.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.78	59.78	0.00	0.00	177.02	177.02	100.00
12/03/2017	92.11	0.00	0.00	0.00	0.00	0.00	0.00	56.78	56.78	0.00	0.00	60.48	60.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.74	59.74	0.00	0.00	177.01	177.01	100.00
13/03/2017	92.85	0.00	0.00	0.00	0.00	0.00	0.00	57.06	57.06	0.00	0.00	60.30	60.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.62	59.62	0.00	0.00	176.98	176.98	100.00
14/03/2017	93.46	0.00	0.00	0.00	0.00	0.00	0.00	58.01	58.01	0.00	0.00	59.40	59.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	58.48	58.48	0.00	0.00	175.89	175.89	100.00
15/03/2017	93.76	0.00	0.00	0.17	0.17	0.00	0.00	59.04	59.04	0.00	0.00	59.80	59.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.01	59.01	0.00	0.00	178.02	178.02	100.00
16/03/2017	93.26	0.00	0.00	0.00	0.00	0.00	0.00	59.69	59.69	0.00	0.00	61.19	61.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60.66	60.66	0.00	0.00	181.54	181.54	100.00
17/03/2017	93.85	0.06	0.06	2.41	2.53	0.01	0.01	66.28	66.31	0.01	0.01	28.48	28.49	0.08	0.08	26.00	26.15	0.00	0.00	0.00	0.00	0.00	0.03	58.97	59.01	0.16	0.19	182.14	182.49	99.81
18/03/2017	87.91	0.00	0.00	0.00	0.00	0.00	0.00	31.59	31.59	0.00	0.00	27.91	27.91	0.00	0.00	51.23	51.23	0.00	0.00	0.00	0.00	0.00	0.00	72.23	72.23	0.00	0.00	182.96	182.96	100.00
19/03/2017	95.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.35	47.35	0.00	0.00	52.92	52.92	0.00	0.00	0.00	0.00	0.00	0.00	82.70	82.70	0.00	0.00	182.97	182.97	100.00
20/03/2017	94.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.64	44.64	0.00	0.00	49.54	49.54	0.00	0.00	0.00	0.00	0.00	0.00	77.90	77.90	0.00	0.00	172.07	172.07	100.00
21/03/2017	93.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.04	42.04	0.00	0.00	46.30	46.30	0.00	0.00	0.00	0.00	0.00	0.00	73.43	73.43	0.00	0.00	161.77	161.77	100.00
22/03/2017	93.48	0.00	0.00	12.48	12.48	0.00	0.00	0.00	0.00	0.00	0.00	43.06	43.06	0.00	0.00	38.79	38.79	0.00	0.00	0.00	0.00	0.00	0.00	70.59	70.59	0.00	0.00	164.92	164.92	100.00
23/03/2017	94.01	0.00	0.00	71.95	71.95	0.00	0.00	0.00	0.00	0.00	0.00	47.30	47.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.98	59.98	0.00	0.00	179.24	179.24	100.00
24/03/2017	93.50	0.00	0.00	64.31	64.31	0.00	0.00	0.00	0.00	0.00	0.00	40.07	40.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	54.94	54.94	0.00	0.00	159.32	159.32	100.00
25/03/2017	94.10	0.00	0.00	71.33	71.33	0.00	0.00	0.00	0.00	0.00	0.00	48.32	48.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60.36	60.36	0.00	0.00	180.01	180.01	100.00
26/03/2017	94.71	0.00	0.00	71.61	71.61	0.00	0.00	0.00	0.00	0.00	0.00	48.45	48.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.92	59.92	0.00	0.00	179.98	179.98	100.00
27/03/2017	94.78	0.00	0.00	71.59	71.59	0.00	0.00	0.00	0.00	0.00	0.00	48.39	48.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60.01	60.01	0.00	0.00	180.00	180.00	100.00
28/03/2017	94.82	0.00	0.00	71.59	71.59	0.00	0.00	0.00	0.00	0.00	0.00	48.35	48.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60.07	60.07	0.00	0.00	180.01	180.01	100.00
29/03/2017	94.94	0.00	0.00	71.54	71.54	0.00	0.00	0.00	0.00	0.00	0.00	48.44	48.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.15	59.15	0.00	0.00	179.13	179.13	100.00
30/03/2017	94.97	0.00	0.00	71.82	71.82	0.00	0.00	0.00	0.00	0.00	0.00	48.59	48.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.62	59.62	0.00	0.00	180.02	180.02	100.00
31/03/2017	95.11	0.00	0.00	71.82	71.82	0.00	0.00	0.00	0.00	0.00	0.00	48.30	48.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.87	59.87	0.00	0.00	179.99	179.99	100.00
Total [ML]:		0.06	0.06	652.62	652.74	0.01	0.05	926.99	927.05	0.02	0.21	1540.12	1540.35	0.08	0.11	366.89	367.08	0.00	0.00	44.49	44.49	0.00	0.03	1923.18	1923.22	0.17	0.47	5454.29	5454.93	

Water Volume [%]:
Untreated: 0.00 %
Below Dose 0.01 %
To Dose 99.99 %

Submitted By (Print):D.Merredew _____

Signature: Original Signed by D.Merredew _____



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: 252.00
Licence Number: PWS-09-412-01

WATER TREATMENT PLANT UV REPORT

Report Period: April 2017

Report Created: Monday, May 01, 2017

Date	Transmittance	UVR-D100A				UVR-D200A				UVR-D300A				UVR-D400A				UVR-D500A				UVR-D600A				Total				% Volume
	%	Water Volume [mL]				Water Volume [mL]				Water Volume [mL]				Water Volume [mL]				Water Volume [mL]				Water Volume [mL]				Water Volume [mL]				Treated To
		Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	
01/04/2017	94.90	0.00	0.00	71.75	71.75	0.00	0.00	0.00	0.00	0.00	0.00	48.11	48.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60.14	60.14	0.00	0.00	180.00	180.00	100.00
02/04/2017	94.61	0.00	0.00	71.61	71.61	0.00	0.00	0.00	0.00	0.00	0.00	48.03	48.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60.38	60.38	0.00	0.00	180.02	180.02	100.00
03/04/2017	95.12	0.00	0.00	69.17	69.17	0.00	0.00	0.00	0.00	0.00	0.00	46.25	46.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	54.84	54.84	0.00	0.00	170.26	170.26	100.00
04/04/2017	95.32	0.00	0.00	26.47	26.47	0.00	0.00	43.21	43.21	0.00	0.00	44.38	44.38	0.00	0.00	0.00	0.00	0.32	0.32	0.26	0.90	0.04	0.04	51.07	51.15	0.36	0.36	165.39	166.12	99.57
05/04/2017	95.14	0.00	0.00	26.72	26.72	0.00	0.00	43.83	43.83	0.00	0.00	44.81	44.81	0.00	0.00	0.00	0.00	0.00	0.00	39.62	39.62	0.00	0.00	16.67	16.67	0.00	0.00	171.66	171.66	100.00
06/04/2017	95.42	0.00	0.00	52.41	52.41	0.00	0.00	41.56	41.56	0.00	0.00	57.74	57.74	0.00	0.00	0.00	0.00	1.86	1.86	20.13	23.86	0.00	0.00	0.00	0.00	1.86	1.86	171.84	175.57	97.88
07/04/2017	95.52	0.00	0.00	49.94	49.94	0.00	0.00	70.70	70.70	0.00	0.00	72.96	72.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	193.60	193.60	100.00
08/04/2017	96.10	0.00	0.00	51.21	51.21	0.00	0.00	72.41	72.41	0.00	0.00	74.40	74.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	198.02	198.02	100.00
09/04/2017	96.54	0.00	0.00	51.08	51.08	0.00	0.00	72.58	72.58	0.00	0.00	74.38	74.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	198.04	198.04	100.00
10/04/2017	96.54	0.00	0.00	51.61	51.61	0.00	0.00	72.75	72.75	0.00	0.00	38.70	38.70	0.00	0.00	0.00	0.00	0.00	0.00	34.72	34.72	0.00	0.00	0.00	0.00	0.00	0.00	197.78	197.78	100.00
11/04/2017	96.68	0.00	0.00	49.70	49.70	0.00	0.00	68.61	68.61	0.09	0.09	3.85	4.03	0.00	0.00	0.00	0.00	0.16	0.16	36.54	36.86	0.00	0.00	29.03	29.03	0.25	0.25	187.74	188.24	99.73
12/04/2017	96.63	0.00	0.19	13.68	13.87	0.00	0.00	47.61	47.61	0.00	0.00	39.53	39.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	72.91	72.91	0.00	0.19	173.74	173.92	99.89
13/04/2017	96.79	0.00	0.00	0.00	0.00	0.00	0.00	39.83	39.83	0.13	0.13	3.62	3.87	0.00	0.00	0.00	0.00	0.00	0.00	46.28	46.28	0.00	0.00	83.72	83.72	0.13	0.13	173.45	173.70	99.86
14/04/2017	96.74	0.00	0.00	0.00	0.00	0.00	0.00	50.40	50.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.10	44.10	0.00	0.00	76.17	76.17	0.00	0.00	170.67	170.67	100.00
15/04/2017	96.78	0.00	0.00	23.15	23.15	0.00	0.00	45.35	45.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.90	28.90	0.00	0.00	74.32	74.32	0.00	0.00	171.72	171.72	100.00
16/04/2017	96.81	0.00	0.00	68.41	68.41	0.00	0.00	31.64	31.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	73.80	73.80	0.00	0.00	173.85	173.85	100.00
17/04/2017	96.94	0.00	0.00	59.46	59.46	0.00	0.00	44.17	44.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	73.34	73.34	0.00	0.00	176.98	176.98	100.00
18/04/2017	96.93	0.00	0.00	61.76	61.76	0.00	0.00	53.78	53.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	79.44	79.44	0.00	0.00	194.98	194.98	100.00
19/04/2017	96.02	0.00	0.00	43.73	43.73	0.00	0.00	39.40	39.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	54.61	54.61	0.00	0.00	137.74	137.74	100.00
20/04/2017	96.90	0.00	0.00	42.91	42.91	0.00	0.00	54.82	54.83	0.00	0.00	0.00	0.00	0.00	0.15	19.78	19.93	0.00	0.03	13.14	13.17	0.00	0.00	72.15	72.15	0.00	0.19	202.80	202.98	99.91
21/04/2017	96.75	0.00	0.00	57.71	57.71	0.00	0.00	24.84	24.84	0.00	0.00	0.00	0.00	0.00	0.00	55.20	55.20	0.01	0.05	0.79	0.86	0.00	0.00	64.43	64.43	0.01	0.05	202.97	203.03	99.97
22/04/2017	96.79	0.00	0.00	81.72	81.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	55.44	55.44	0.00	0.00	0.00	0.00	0.00	0.00	65.81	65.81	0.00	0.00	202.97	202.97	100.00
23/04/2017	96.02	0.00	0.00	77.68	77.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	52.74	52.74	0.00	0.00	0.00	0.00	0.00	0.00	62.06	62.06	0.00	0.00	192.48	192.48	100.00
24/04/2017	95.40	0.00	0.00	18.90	18.90	0.00	0.00	59.43	59.43	0.00	0.00	0.00	0.00	0.00	0.00	50.58	50.58	0.00	0.00	0.00	0.00	0.00	0.00	59.22	59.22	0.00	0.00	188.12	188.12	100.00
25/04/2017	95.77	0.00	0.00	0.00	0.00	0.00	0.00	77.26	77.26	0.00	0.00	0.00	0.00	0.00	0.00	48.66	48.66	0.00	0.00	0.00	0.00	0.00	0.00	57.12	57.12	0.00	0.00	183.03	183.03	100.00
26/04/2017	96.06	0.00	0.00	0.00	0.00	0.00	0.00	77.19	77.19	0.00	0.00	0.00	0.00	0.00	0.00	48.56	48.56	0.00	0.00	0.00	0.00	0.00	0.00	57.22	57.22	0.00	0.00	182.97	182.97	100.00
27/04/2017	95.95	0.00	0.00	0.00	0.00	0.00	0.00	77.25	77.25	0.00	0.00	0.00	0.00	0.00	0.00	48.64	48.64	0.00	0.00	0.00	0.00	0.00	0.00	57.11	57.11	0.00	0.00	183.00	183.00	100.00
28/04/2017	95.92	0.00	0.00	0.00	0.00	0.00	0.00	77.67	77.67	0.00	0.00	0.00	0.00	0.00	0.00	48.87	48.87	0.00	0.00	0.00	0.00	0.00	0.00	56.50	56.50	0.00	0.00	183.04	183.04	100.00
29/04/2017	95.90	0.00	0.00	0.00	0.00	0.00	0.00	76.07	76.07	0.00	0.00	0.00	0.00	0.00	0.00	48.02	48.02	0.00	0.00	0.00	0.00	0.00	0.00	55.02	55.02	0.00	0.00	179.11	179.11	100.00
30/04/2017	95.48	0.00	0.00	0.00	0.00	0.00	0.05	74.17	74.22	0.00	0.00	0.00	0.00	0.00	0.00	47.82	47.82	0.00	0.00	0.00	0.00	0.00	0.00	52.88	52.88	0.00	0.05	174.88	174.93	99.97
Total [mL]:		0.00	0.19	1120.80	1120.98	0.00	0.05	1436.52	1436.57	0.22	0.22	596.77	597.20	0.00	0.15	524.31	524.46	2.35	2.43	264.48	269.27	0.04	0.04	1519.97	1520.04	2.61	3.08	5462.83	5468.52	

Water Volume [%]:
Untreated: 0.05 %
Below Dose 0.06 %
To Dose 99.90 %

Submitted By (Print): _D.Merredew_____

Signature: __Original signed by D.Merredew_____



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: 252.00
Licence Number: PWS-09-412-01

WATER TREATMENT PLANT UV REPORT

Report Period: May 2017

Report Created: Thursday, June 01, 2017

Date	Transmittance	UVR-D100A				UVR-D200A				UVR-D300A				UVR-D400A				UVR-D500A				UVR-D600A				Total				% Volume	
	%	Water Volume [mL]				Water Volume [mL]				Water Volume [mL]				Water Volume [mL]				Water Volume [mL]				Water Volume [mL]				Water Volume [mL]				Treated To	Dose
		Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total		
01/05/2017	95.46	0.00	0.00	0.00	0.00	0.00	0.00	74.86	74.86	0.00	0.00	0.00	0.00	0.00	0.00	47.53	47.53	0.00	0.00	0.00	0.00	0.00	0.00	52.63	52.63	0.00	0.00	175.02	175.02	100.00	
02/05/2017	95.62	0.00	0.00	0.00	0.00	0.00	0.00	74.76	74.76	0.00	0.00	0.00	0.00	0.00	0.00	47.65	47.65	0.00	0.00	0.00	0.00	0.00	0.00	52.60	52.60	0.00	0.00	175.00	175.00	100.00	
03/05/2017	95.58	0.00	0.00	0.00	0.00	0.00	0.00	76.48	76.48	0.00	0.00	0.00	0.00	0.00	0.00	48.36	48.36	0.00	0.00	0.00	0.00	0.00	0.00	53.85	53.85	0.00	0.00	178.69	178.69	100.00	
04/05/2017	95.59	0.00	0.00	0.00	0.00	0.00	0.00	77.01	77.01	0.00	0.00	0.00	0.00	0.00	0.00	48.44	48.44	0.00	0.00	28.18	28.18	0.00	0.00	26.35	26.35	0.00	0.00	179.98	179.98	100.00	
05/05/2017	95.31	0.00	0.00	0.00	0.00	0.00	0.00	82.33	82.33	0.00	0.00	21.30	21.30	0.00	0.00	57.73	57.73	0.00	0.00	32.55	32.55	0.00	0.00	0.00	0.00	0.00	0.00	193.91	193.91	100.00	
06/05/2017	94.82	0.00	0.00	0.00	0.00	0.00	0.00	85.02	85.02	0.00	0.00	52.88	52.88	0.00	0.00	69.25	69.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	207.15	207.15	100.00	
07/05/2017	94.93	0.00	0.00	0.00	0.00	0.00	0.00	85.00	85.00	0.00	0.00	54.98	54.98	0.00	0.00	69.99	69.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	209.97	209.97	100.00	
08/05/2017	95.38	0.00	0.00	22.74	22.74	0.00	0.00	80.44	80.44	0.00	0.00	33.73	33.73	0.00	0.00	41.56	41.56	0.00	0.00	32.47	32.47	0.00	0.00	0.00	0.00	0.00	0.00	210.95	210.95	100.00	
09/05/2017	94.08	0.00	0.00	42.63	42.63	0.01	0.01	52.85	52.87	0.00	0.00	0.00	0.00	0.00	0.00	8.87	8.87	0.00	0.34	46.25	46.59	0.00	0.00	0.00	0.00	0.01	0.35	150.59	150.95	99.76	
10/05/2017	93.79	0.00	0.00	63.33	63.33	0.00	0.00	86.28	86.28	0.00	0.00	0.00	0.00	0.00	0.00	61.91	61.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	211.52	211.52	100.00	
11/05/2017	94.15	0.00	0.00	61.12	61.12	0.00	0.00	83.74	83.74	0.00	0.00	0.00	0.00	0.00	0.00	61.51	61.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	206.36	206.36	100.00	
12/05/2017	94.88	0.00	0.00	61.56	61.56	0.00	0.00	30.12	30.12	0.00	0.10	5.76	5.85	0.15	0.31	58.53	58.99	0.00	0.00	0.00	0.00	0.00	0.00	47.07	47.07	0.15	0.40	203.04	203.60	99.73	
13/05/2017	94.24	0.00	0.00	62.34	62.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	64.45	64.45	0.00	0.00	0.00	0.00	0.00	0.00	64.14	64.14	0.00	0.00	190.93	190.93	100.00	
14/05/2017	94.24	0.00	0.00	62.09	62.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	64.27	64.27	0.00	0.00	0.00	0.00	0.00	0.00	62.72	62.72	0.00	0.00	189.08	189.08	100.00	
15/05/2017	94.54	0.00	0.00	62.99	62.99	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00	65.17	65.17	0.00	0.00	0.00	0.00	0.00	0.00	65.32	65.32	0.01	0.01	193.48	193.50	99.99	
16/05/2017	94.81	0.00	0.00	64.95	64.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	67.92	67.92	0.00	0.00	0.00	0.00	0.00	0.00	68.40	68.40	0.00	0.00	201.27	201.27	100.00	
17/05/2017	95.09	0.00	0.00	30.50	30.50	0.00	0.00	39.62	39.62	0.00	0.00	0.00	0.00	0.00	0.00	67.74	67.74	0.00	0.00	0.00	0.00	0.00	0.00	69.72	69.72	0.00	0.00	207.58	207.58	100.00	
18/05/2017	95.10	0.00	0.00	0.00	0.00	0.00	0.00	72.33	72.33	0.00	0.00	0.00	0.00	0.00	0.00	65.65	65.65	0.00	0.00	0.00	0.00	0.00	0.00	68.61	68.61	0.00	0.00	206.60	206.60	100.00	
19/05/2017	94.53	0.00	0.00	0.00	0.00	0.00	0.00	53.78	53.78	0.00	0.00	0.00	0.00	0.00	0.44	22.03	22.47	0.00	0.00	14.59	14.59	0.00	0.00	45.31	45.31	0.00	0.44	135.70	136.14	99.68	
20/05/2017	95.25	0.00	0.00	0.00	0.00	0.00	0.00	70.16	70.16	0.00	0.00	14.83	14.83	0.00	0.00	0.00	0.00	0.00	0.00	40.89	40.89	0.00	0.00	64.04	64.04	0.00	0.00	189.93	189.93	100.00	
21/05/2017	95.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	83.08	83.08	0.00	0.00	0.00	0.00	0.00	0.00	37.59	37.59	0.00	0.00	61.95	61.95	0.00	0.00	182.62	182.62	100.00	
22/05/2017	95.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	82.44	82.44	0.00	0.00	0.00	0.00	0.00	0.00	37.17	37.17	0.00	0.00	60.43	60.43	0.00	0.00	180.04	180.04	100.00	
23/05/2017	95.35	0.00	0.11	41.08	41.19	0.00	0.00	0.00	0.00	0.00	0.00	47.92	47.92	0.00	0.00	21.15	21.15	0.00	0.04	56.01	56.05	0.00	0.00	17.32	17.32	0.00	0.15	183.48	183.63	99.92	
24/05/2017	95.37	0.00	0.00	61.15	61.15	0.00	0.00	0.70	0.70	0.00	0.00	0.00	0.00	0.00	0.00	62.53	62.53	0.00	0.04	62.80	62.84	0.00	0.00	0.00	0.00	0.00	0.04	187.17	187.21	99.98	
25/05/2017	95.33	0.00	0.00	64.58	64.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66.18	66.18	0.00	0.14	67.11	67.25	0.00	0.00	0.00	0.00	0.00	0.14	197.87	198.01	99.93	
26/05/2017	95.49	0.00	0.00	66.41	66.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	68.89	68.89	0.00	0.28	68.20	68.48	0.00	0.00	0.00	0.00	0.00	0.28	203.49	203.77	99.86	
27/05/2017	95.56	0.00	0.00	66.91	66.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	69.36	69.36	0.00	0.29	68.43	68.72	0.00	0.00	0.00	0.00	0.00	0.29	204.71	204.99	99.86	
28/05/2017	95.62	0.00	0.00	63.78	63.78	0.00	0.00	0.00	0.00	0.04	0.09	22.91	23.04	0.00	0.00	45.47	45.47	0.00	0.18	44.76	44.95	0.00	0.00	22.83	22.83	0.04	0.27	199.75	200.06	99.84	
29/05/2017	95.66	0.00	0.00	60.43	60.43	0.00	0.00	0.00	0.00	0.00	0.00	68.00	68.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	68.26	68.26	0.00	0.00	196.68	196.68	100.00	
30/05/2017	95.73	0.22	0.22	65.65	66.10	0.00	0.00	0.00	0.00	0.00	0.00	47.91	47.91	0.00	0.00	5.95	5.95	0.00	0.00	0.00	0.00	0.00	0.00	77.41	77.41	0.22	0.22	196.92	197.36	99.77	
31/05/2017	95.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	55.15	55.15	0.00	0.00	59.83	59.83	0.00	0.00	0.00	0.00	0.00	0.00	85.00	85.00	0.00	0.00	199.99	199.99	100.00	
Total [mL]:		0.22	0.33	1024.24	1024.80	0.01	0.01	1125.48	1125.50	0.05	0.19	590.89	591.13	0.15	0.75	1437.93	1438.83	0.00	1.32	637.01	638.33	0.00	0.00	1133.94	1133.94	0.44	2.60	5949.48	5952.52		

Water Volume [%]:
Untreated: 0.01 %
Below Dose 0.04 %
To Dose 99.95 %

Submitted By (Print): _D.Merredew_____

Signature: _Original Signed by D.Merredew_____



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: 252.00
Licence Number: PWS-09-412-01

WATER TREATMENT PLANT UV REPORT

Report Period: June 2017

Report Created: Saturday, July 01, 2017

Date	Transmittance	UVR-D100A				UVR-D200A				UVR-D300A				UVR-D400A				UVR-D500A				UVR-D600A				Total				% Volume
	%	Water Volume [ML]				Water Volume [ML]				Water Volume [ML]				Water Volume [ML]				Water Volume [ML]				Water Volume [ML]				Water Volume [ML]				Treated To
		Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Dose
01/06/2017	95.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	55.21	55.21	0.00	0.00	59.64	59.64	0.00	0.00	0.00	0.00	0.00	0.00	85.14	85.14	0.00	0.00	200.00	200.00	100.00
02/06/2017	95.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	70.88	70.88	0.00	0.00	18.36	18.36	0.00	0.00	39.77	39.77	0.00	0.00	79.10	79.10	0.00	0.00	208.12	208.12	100.00
03/06/2017	95.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	78.62	78.62	0.00	0.00	0.00	0.00	0.00	0.00	58.36	58.36	0.00	0.00	77.62	77.62	0.00	0.00	214.60	214.60	100.00
04/06/2017	95.55	0.00	0.00	0.00	0.00	0.00	0.00	25.72	25.72	0.00	0.00	64.78	64.78	0.00	0.00	9.67	9.67	0.00	0.00	68.38	68.38	0.17	0.49	43.34	44.01	0.17	0.49	211.90	212.56	99.69
05/06/2017	95.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	58.28	58.28	0.00	0.00	66.68	66.68	0.00	0.00	0.00	0.00	0.00	0.00	84.62	84.62	0.00	0.00	209.58	209.58	100.00
06/06/2017	95.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.94	59.94	0.00	0.00	75.80	75.80	0.00	0.00	0.00	0.00	0.00	0.00	82.68	82.68	0.00	0.00	218.43	218.43	100.00
07/06/2017	95.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	62.67	62.67	0.00	0.00	78.94	78.94	0.00	0.00	0.00	0.00	0.00	0.00	84.59	84.59	0.00	0.00	226.20	226.20	100.00
08/06/2017	95.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	64.17	64.17	0.00	0.00	80.84	80.84	0.00	0.00	0.00	0.00	0.00	0.00	84.97	84.97	0.00	0.00	229.98	229.98	100.00
09/06/2017	95.30	0.00	0.00	0.00	0.00	0.00	0.00	17.18	17.18	0.00	0.00	44.50	44.50	0.00	0.00	80.25	80.25	0.00	0.00	23.17	23.17	0.00	0.00	64.88	64.88	0.00	0.00	229.97	229.97	100.00
10/06/2017	95.47	0.00	0.00	0.00	0.00	0.00	0.00	76.05	76.05	0.00	0.00	0.00	0.00	0.00	0.00	79.75	79.75	0.00	0.00	0.00	0.00	0.00	0.00	74.21	74.21	0.00	0.00	230.00	230.00	100.00
11/06/2017	95.64	0.00	0.00	0.00	0.00	0.00	0.00	76.49	76.49	0.00	0.00	0.00	0.00	0.00	0.00	79.88	79.88	0.00	0.00	0.00	0.00	0.00	0.00	73.60	73.60	0.00	0.00	229.97	229.97	100.00
12/06/2017	95.59	0.00	0.00	0.00	0.00	0.00	0.00	75.36	75.36	0.00	0.00	0.00	0.00	0.00	0.00	78.60	78.60	0.00	0.00	0.00	0.00	0.00	0.00	71.52	71.52	0.00	0.00	225.48	225.48	100.00
13/06/2017	95.58	0.00	0.00	0.00	0.00	0.00	0.00	70.46	70.46	0.00	0.00	0.00	0.00	0.00	0.00	71.70	71.70	0.00	0.00	0.00	0.00	0.00	0.00	64.26	64.26	0.00	0.00	206.41	206.41	100.00
14/06/2017	95.63	0.00	0.00	0.00	0.00	0.00	0.00	67.94	67.94	0.00	0.00	0.00	0.00	0.00	0.00	68.75	68.75	0.00	0.00	0.00	0.00	0.00	0.00	61.80	61.80	0.00	0.00	198.49	198.49	100.00
15/06/2017	95.69	0.00	0.00	0.00	0.00	0.00	0.00	65.80	65.80	0.00	0.00	0.00	0.00	0.00	0.00	67.88	67.88	0.00	0.00	0.00	0.00	0.00	0.00	61.33	61.33	0.00	0.00	195.01	195.01	100.00
16/06/2017	95.73	0.20	0.20	0.56	0.96	0.00	0.00	39.69	39.69	0.05	0.05	21.78	21.89	0.00	0.00	68.91	68.91	0.00	0.00	0.00	0.00	0.00	0.00	66.10	66.10	0.25	0.25	197.04	197.54	99.74
17/06/2017	95.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	56.45	56.45	0.00	0.00	70.70	70.70	0.00	0.00	0.00	0.00	0.00	0.00	73.74	73.74	0.00	0.00	200.89	200.89	100.00
18/06/2017	95.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	52.57	52.57	0.00	0.00	66.06	66.06	0.00	0.00	0.00	0.00	0.00	0.00	69.15	69.15	0.00	0.00	187.78	187.78	100.00
19/06/2017	95.43	0.00	0.00	1.57	1.57	0.00	0.00	0.00	0.00	0.03	0.03	44.69	44.75	0.03	0.05	54.96	55.04	0.00	0.00	0.00	0.00	0.02	0.02	58.19	58.23	0.08	0.10	159.41	159.59	99.89
20/06/2017	95.24	0.00	0.00	26.87	26.87	0.00	0.00	0.00	0.00	0.10	0.10	48.38	48.59	0.05	0.05	22.36	22.45	0.00	0.00	0.00	0.00	0.00	0.00	54.17	54.17	0.15	0.15	151.78	152.08	99.80
21/06/2017	95.78	0.00	0.00	23.11	23.11	0.00	0.00	47.26	47.26	0.00	0.00	74.06	74.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	81.29	81.29	0.00	0.00	225.72	225.72	100.00
22/06/2017	95.80	0.00	0.00	0.00	0.00	0.00	0.00	72.94	72.94	0.00	0.00	74.40	74.40	0.00	0.00	0.00	0.00	0.00	0.00	60.37	60.37	0.00	0.00	21.42	21.42	0.00	0.00	229.13	229.13	100.00
23/06/2017	95.86	0.00	0.00	28.98	28.98	0.00	0.00	73.39	73.39	0.00	0.00	71.91	71.91	0.00	0.00	0.00	0.00	0.14	0.49	37.81	38.44	0.00	0.00	0.00	0.00	0.15	0.49	212.08	212.71	99.70
24/06/2017	95.98	0.00	0.00	53.22	53.22	0.00	0.00	66.46	66.46	0.00	0.00	74.93	74.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	194.61	194.61	100.00
25/06/2017	96.04	0.00	0.00	52.64	52.64	0.00	0.00	65.24	65.24	0.00	0.00	74.10	74.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	191.97	191.97	100.00
26/06/2017	96.10	0.00	0.00	52.63	52.63	0.00	0.00	65.34	65.34	0.00	0.00	74.04	74.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	192.01	192.01	100.00
27/06/2017	96.26	0.00	0.00	52.72	52.72	0.00	0.00	65.77	65.77	0.00	0.00	74.10	74.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	192.60	192.60	100.00
28/06/2017	96.23	0.00	0.00	29.25	29.25	0.00	0.00	71.21	71.21	0.00	0.00	60.53	60.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.01	31.01	0.00	0.00	192.01	192.01	100.00
29/06/2017	96.22	0.00	0.00	0.00	0.00	0.00	0.00	73.89	73.89	0.00	0.00	49.97	49.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	69.87	69.87	0.00	0.00	193.74	193.74	100.00
30/06/2017	96.20	0.00	0.00	0.00	0.00	0.00	0.00	66.60	66.60	0.00	0.00	58.54	58.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	68.86	68.86	0.00	0.00	193.99	193.99	100.00
Total [ML]:		0.20	0.20	321.55	321.95	0.00	0.00	1182.78	1182.78	0.19	0.19	1469.49	1469.86	0.07	0.10	1199.73	1199.90	0.14	0.49	287.86	288.49	0.19	0.51	1687.49	1688.19	0.80	1.49	6148.89	6151.17	

Water Volume [%]:

Untreated: 0.01 %
Below Dose 0.02 %
To Dose 99.96 %

Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew _____



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: 252.00
Licence Number: PWS-09-412-01

WATER TREATMENT PLANT UV REPORT

Report Period: July 2017

Report Created: Tuesday, August 01, 2017

Date	Transmittance	UVR-D100A				UVR-D200A				UVR-D300A				UVR-D400A				UVR-D500A				UVR-D600A				Total				% Volume Treated To
	%	Water Volume [mL]				Water Volume [mL]				Water Volume [mL]				Water Volume [mL]				Water Volume [mL]				Water Volume [mL]				Water Volume [mL]				
		Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	
1/07/2017	96.22	0.00	0.00	0.00	0.00	0.00	0.00	65.88	65.88	0.00	0.00	58.79	58.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	68.56	68.56	0.00	0.00	193.23	193.23	100.00
2/07/2017	95.96	0.00	0.00	0.00	0.00	0.00	0.00	65.63	65.63	0.00	0.00	58.78	58.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	68.61	68.61	0.00	0.00	193.02	193.02	100.00
3/07/2017	95.97	0.00	0.00	0.00	0.00	0.00	0.00	66.57	66.57	0.00	0.00	59.22	59.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	69.58	69.58	0.00	0.00	195.37	195.37	100.00
4/07/2017	95.97	0.00	0.00	0.00	0.00	0.00	0.00	72.12	72.12	0.00	0.00	61.08	61.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	74.80	74.80	0.00	0.00	208.00	208.00	100.00
5/07/2017	95.95	0.00	0.00	0.00	0.00	0.00	0.00	72.42	72.42	0.00	0.00	61.62	61.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	75.06	75.06	0.00	0.00	209.11	209.11	100.00
6/07/2017	95.96	0.00	0.00	0.00	0.00	0.00	0.00	77.10	77.10	0.00	0.00	61.93	61.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	78.98	78.98	0.00	0.00	218.01	218.01	100.00
7/07/2017	96.00	0.00	0.00	0.00	0.00	0.00	0.00	77.09	77.09	0.00	0.00	62.04	62.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	78.85	78.85	0.00	0.00	217.98	217.98	100.00
8/07/2017	95.90	0.00	0.00	0.00	0.00	0.00	0.00	81.11	81.11	0.00	0.00	19.74	19.74	0.00	0.00	43.93	43.93	0.00	0.00	0.00	0.00	0.00	0.00	76.40	76.40	0.00	0.00	221.18	221.18	100.00
9/07/2017	95.88	0.00	0.00	0.00	0.00	0.00	0.00	85.00	85.00	0.00	0.00	0.00	0.00	0.00	0.00	66.11	66.11	0.00	0.00	0.00	0.00	0.00	0.00	73.65	73.65	0.00	0.00	224.76	224.76	100.00
10/07/2017	95.95	0.06	0.37	42.16	42.59	0.00	0.05	40.69	40.74	0.50	1.04	31.78	33.31	0.00	0.00	31.17	31.17	0.45	0.45	0.72	1.61	0.00	0.00	72.67	72.67	1.00	1.91	219.19	222.10	98.69
11/07/2017	95.73	0.00	0.00	85.00	85.00	0.00	0.00	0.00	0.00	0.00	0.00	64.98	64.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	78.03	78.03	0.00	0.00	228.00	228.00	100.00
12/07/2017	95.73	0.00	0.00	85.02	85.02	0.00	0.00	0.00	0.00	0.00	0.00	64.63	64.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	78.34	78.34	0.00	0.00	227.99	227.99	100.00
13/07/2017	95.80	0.00	0.00	84.98	84.98	0.00	0.00	0.00	0.00	0.00	0.00	64.60	64.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	78.42	78.42	0.00	0.00	228.00	228.00	100.00
14/07/2017	95.60	0.00	0.00	75.11	75.11	0.00	0.00	34.09	34.09	0.15	0.15	37.47	37.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	80.88	80.88	0.15	0.15	227.55	227.86	99.86
15/07/2017	95.96	0.00	0.00	56.72	56.72	0.00	0.00	71.63	71.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	77.06	77.06	0.00	0.00	205.41	205.41	100.00
16/07/2017	95.80	0.00	0.00	55.59	55.59	0.00	0.00	69.38	69.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	75.01	75.01	0.00	0.00	199.98	199.98	100.00
17/07/2017	95.81	0.00	0.00	21.70	21.70	0.00	0.00	73.56	73.56	0.00	0.00	0.00	0.00	0.00	0.00	34.74	34.74	0.00	0.00	0.00	0.00	0.00	0.00	69.94	69.94	0.00	0.00	199.94	199.94	100.00
18/07/2017	95.59	0.00	0.00	0.00	0.00	0.00	0.00	74.36	74.36	0.00	0.00	0.00	0.00	0.00	0.00	50.99	50.99	0.00	0.00	0.00	0.00	0.00	0.00	71.07	71.07	0.00	0.00	196.42	196.42	100.00
19/07/2017	95.81	0.00	0.00	0.00	0.00	0.00	0.00	85.00	85.00	0.00	0.00	0.00	0.00	0.00	0.00	52.39	52.39	0.00	0.00	0.00	0.00	0.00	0.00	82.62	82.62	0.00	0.00	220.01	220.01	100.00
20/07/2017	95.74	0.00	0.00	0.00	0.00	0.00	0.00	85.00	85.00	0.00	0.00	0.00	0.00	0.00	0.00	53.64	53.64	0.00	0.00	0.00	0.00	0.00	0.00	83.98	83.98	0.00	0.00	222.62	222.62	100.00
21/07/2017	95.68	0.00	0.00	0.00	0.00	0.00	0.00	85.02	85.02	0.00	0.00	0.00	0.00	0.00	0.00	54.23	54.23	0.00	0.00	0.00	0.00	0.00	0.00	84.73	84.73	0.00	0.00	223.98	223.98	100.00
22/07/2017	95.60	0.00	0.00	0.00	0.00	0.00	0.00	84.98	84.98	0.00	0.00	0.00	0.00	0.00	0.00	51.71	51.71	0.00	0.00	0.00	0.00	0.00	0.00	81.65	81.65	0.00	0.00	218.34	218.34	100.00
23/07/2017	95.76	0.00	0.00	0.00	0.00	0.00	0.00	81.80	81.80	0.00	0.00	0.00	0.00	0.00	0.00	46.19	46.19	0.00	0.00	0.00	0.00	0.00	0.00	73.53	73.53	0.00	0.00	201.52	201.52	100.00
24/07/2017	95.86	0.00	0.00	0.00	0.00	0.00	0.00	82.81	82.81	0.00	0.00	0.00	0.00	0.00	0.00	46.78	46.78	0.00	0.00	0.00	0.00	0.00	0.00	74.75	74.75	0.00	0.00	204.34	204.34	100.00
25/07/2017	95.95	0.00	0.00	0.00	0.00	0.00	0.00	85.01	85.01	0.00	0.00	0.00	0.00	0.00	0.00	47.37	47.37	0.00	0.00	0.00	0.00	0.00	0.00	76.21	76.21	0.00	0.00	208.59	208.59	100.00
26/07/2017	95.82	0.00	0.00	47.87	47.87	0.01	0.01	36.30	36.31	0.00	0.00	24.76	24.76	0.00	0.26	51.05	51.31	0.00	0.00	0.00	0.00	0.00	0.00	38.15	38.15	0.01	0.27	198.13	198.41	99.86
27/07/2017	95.72	0.00	0.00	81.09	81.09	0.00	0.00	0.00	0.00	0.00	0.00	46.17	46.17	0.00	0.00	83.74	83.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	211.00	211.00	100.00
28/07/2017	95.71	0.00	0.00	81.61	81.61	0.00	0.00	0.00	0.00	0.00	0.00	46.69	46.69	0.00	0.00	84.80	84.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	213.10	213.10	100.00
29/07/2017	95.60	0.00	0.00	81.93	81.93	0.00	0.00	0.00	0.00	0.00	0.00	46.83	46.83	0.00	0.00	85.19	85.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	213.96	213.96	100.00
30/07/2017	95.41	0.00	0.00	81.81	81.81	0.00	0.00	0.00	0.00	0.00	0.00	46.96	46.96	0.00	0.00	85.27	85.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	214.03	214.03	100.00
31/07/2017	95.60	0.00	0.00	81.90	81.90	0.00	0.00	0.00	0.00	0.00	0.00	47.12	47.12	0.00	0.00	85.00	85.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	214.02	214.02	100.00
		0.06	0.37	962.50	962.93	0.01	0.06	1652.54	1652.60	0.65	1.19	965.17	967.01	0.00	0.26	1054.31	1054.57	0.45	0.45	0.72	1.61	0.00	0.00	1941.53	1941.53	1.16	2.33	6576.76	6580.25	

Untreated: 0.02 %
Below Dose 0.04 %
To Dose 99.95 %

Submitted By (Print): David Minor

Signature: Original signed by David Minor



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: 252.00
Licence Number: PWS-09-412-01

WATER TREATMENT PLANT UV REPORT

Report Period: August 2017

Report Created: Friday, September 01, 2017

Date	Transmittance	UVR-D100A				UVR-D200A				UVR-D300A				UVR-D400A				UVR-D500A				UVR-D600A				Total				% Volume	
	%	Water Volume [mL]				Water Volume [mL]				Water Volume [mL]				Water Volume [mL]				Water Volume [mL]				Water Volume [mL]				Water Volume [mL]				Treated To	
		Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total		Dose
1/08/2017	95.48	0.00	0.00	82.67	82.67	0.00	0.00	0.00	0.00	0.00	0.00	48.35	48.35	0.00	0.00	85.00	85.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	216.02	216.02	100.00
2/08/2017	95.40	0.00	0.00	84.47	84.47	0.00	0.00	0.00	0.00	0.00	0.00	51.14	51.14	0.00	0.00	84.88	84.88	0.00	0.00	0.00	0.00	0.00	0.10	0.16	0.27	0.00	0.10	220.66	220.77	99.95	
3/08/2017	95.15	0.00	0.00	78.01	78.01	0.00	0.00	0.00	0.00	0.00	0.00	62.41	62.41	0.00	0.00	48.43	48.43	0.00	0.00	0.00	0.00	0.00	0.05	33.10	33.15	0.00	0.05	221.95	222.01	99.98	
4/08/2017	95.14	0.00	10.07	53.83	63.90	0.00	0.00	7.63	7.63	0.00	0.00	72.83	72.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	79.97	79.97	0.00	10.07	214.26	224.33	95.51	
5/08/2017	95.37	0.00	0.00	0.00	0.00	0.00	0.00	70.82	70.82	0.00	0.00	62.84	62.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	90.05	90.05	0.00	0.00	223.70	223.70	100.00	
6/08/2017	95.22	0.00	0.00	0.00	0.00	0.00	0.00	71.18	71.18	0.00	0.00	67.05	67.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	78.90	78.90	0.00	0.00	217.13	217.13	100.00	
7/08/2017	95.52	0.00	0.00	0.00	0.00	0.00	0.00	72.92	72.92	0.00	0.00	61.62	61.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	76.86	76.86	0.00	0.00	211.41	211.41	100.00	
8/08/2017	95.37	0.00	0.00	27.46	27.46	0.00	0.00	53.58	53.58	0.00	0.00	49.83	49.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	79.09	79.09	0.00	0.00	209.96	209.96	100.00	
9/08/2017	95.31	0.00	0.00	77.89	77.89	0.00	0.00	0.00	0.00	0.00	0.00	51.62	51.62	0.00	0.00	80.53	80.53	0.00	0.00	0.00	0.00	0.00	0.00	80.53	80.53	0.00	0.00	210.04	210.04	100.00	
10/08/2017	95.39	0.00	0.00	77.98	77.98	0.00	0.00	0.00	0.00	0.00	0.00	51.37	51.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	80.45	80.45	0.00	0.00	209.81	209.81	100.00	
11/08/2017	94.96	0.00	0.00	76.68	76.68	0.00	0.00	0.00	0.00	0.00	0.00	49.78	49.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	77.96	77.96	0.00	0.00	204.41	204.41	100.00	
12/08/2017	94.64	0.00	0.00	76.43	76.43	0.00	0.00	0.00	0.00	0.00	0.00	49.30	49.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	77.22	77.22	0.00	0.00	202.94	202.94	100.00	
13/08/2017	93.83	0.00	0.00	76.44	76.44	0.00	0.00	0.00	0.00	0.00	0.00	49.37	49.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	77.17	77.17	0.00	0.00	202.98	202.98	100.00	
14/08/2017	93.90	0.00	0.00	78.73	78.73	0.00	0.00	0.00	0.00	0.00	0.00	51.59	51.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	80.32	80.32	0.00	0.00	210.64	210.64	100.00	
15/08/2017	93.90	0.00	0.00	81.39	81.39	0.00	0.00	0.00	0.00	0.00	0.00	52.57	52.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	81.69	81.69	0.00	0.00	215.66	215.66	100.00	
16/08/2017	93.63	0.00	0.00	84.81	84.81	0.00	0.00	0.00	0.00	0.00	0.00	54.18	54.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	79.98	79.98	0.00	0.00	218.97	218.97	100.00	
17/08/2017	93.71	0.00	0.00	68.03	68.03	0.00	0.00	17.14	17.14	0.00	0.00	32.00	32.00	0.00	0.00	10.14	10.14	0.00	0.00	26.46	26.46	0.00	0.00	64.75	64.75	0.00	0.00	218.53	218.53	100.00	
18/08/2017	93.51	0.00	0.00	84.92	84.92	0.00	0.00	0.00	0.00	0.00	0.00	16.99	16.99	0.00	0.00	0.00	0.00	0.00	0.00	61.44	61.44	0.00	0.00	55.66	55.66	0.00	0.00	219.01	219.01	100.00	
19/08/2017	93.14	0.00	0.00	85.00	85.00	0.00	0.00	0.00	0.00	0.00	0.00	52.57	52.57	0.00	0.00	51.56	51.56	0.00	0.34	29.05	29.39	0.00	0.00	0.00	0.00	0.00	0.34	218.18	218.53	99.84	
20/08/2017	92.98	0.00	0.00	82.90	82.90	0.00	0.00	0.00	0.00	0.00	0.00	52.09	52.09	0.00	0.00	46.38	46.38	0.00	0.00	33.23	33.23	0.00	0.00	0.00	0.00	0.00	0.00	214.59	214.59	100.00	
21/08/2017	93.14	0.00	0.00	78.81	78.81	0.00	0.00	0.00	0.00	0.00	0.00	50.92	50.92	0.00	0.00	0.00	0.00	0.00	0.00	32.47	32.47	0.00	0.00	48.81	48.81	0.00	0.00	211.01	211.01	100.00	
22/08/2017	94.08	0.00	0.00	71.00	71.00	0.00	0.00	0.00	0.00	0.00	0.00	59.62	59.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	76.42	76.42	0.00	0.00	207.04	207.04	100.00	
23/08/2017	94.60	0.01	0.01	57.87	57.89	0.00	0.00	0.00	0.00	0.00	0.00	64.79	64.79	0.00	0.00	0.00	0.00	0.00	0.00	23.75	23.75	0.30	0.34	38.44	39.08	0.31	0.35	184.85	185.51	99.64	
24/08/2017	95.04	0.00	0.04	60.13	60.17	0.00	0.00	0.00	0.00	0.00	0.00	69.34	69.34	0.00	0.00	0.00	0.00	0.00	0.00	67.67	67.67	0.00	0.00	0.00	0.00	0.00	0.04	197.14	197.18	99.98	
25/08/2017	95.24	0.00	0.00	58.80	58.80	0.00	0.00	0.00	0.00	0.00	0.00	68.25	68.25	0.00	0.00	0.00	0.00	0.00	0.00	66.60	66.60	0.00	0.00	0.00	0.00	0.00	0.00	193.65	193.65	100.00	
26/08/2017	95.21	0.00	0.00	60.27	60.27	0.00	0.00	0.00	0.00	0.00	0.00	66.13	66.13	0.00	0.00	0.00	0.00	0.00	0.00	30.88	30.88	0.00	0.00	36.43	36.43	0.00	0.00	193.71	193.71	100.00	
27/08/2017	95.28	0.00	0.00	74.00	74.00	0.00	0.00	0.00	0.00	0.00	0.00	47.97	47.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	77.05	77.05	0.00	0.00	199.02	199.02	100.00	
28/08/2017	95.22	0.00	0.00	74.03	74.03	0.00	0.00	0.00	0.00	0.00	0.00	47.72	47.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	77.23	77.23	0.00	0.00	198.98	198.98	100.00	
29/08/2017	95.38	0.00	0.00	77.10	77.10	0.00	0.00	0.00	0.00	0.00	0.00	49.48	49.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	79.61	79.61	0.00	0.00	206.18	206.18	100.00	
30/08/2017	95.09	0.00	0.00	83.03	83.03	0.00	0.00	0.00	0.00	0.00	0.00	54.31	54.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	83.78	83.78	0.00	0.00	221.12	221.12	100.00	
31/08/2017	95.01	0.00	0.00	84.99	84.99	0.00	0.00	0.00	0.00	0.00	0.00	60.11	60.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	84.97	84.97	0.00	0.00	230.07	230.07	100.00	
		0.01	10.12	2057.69	2067.81	0.00	0.00	293.27	293.27	0.00	0.00	1678.13	1678.13	0.00	0.00	326.39	326.39	0.00	0.34	371.55	371.89	0.30	0.50	1796.60	1797.40	0.31	10.96	6523.64	6534.91		

Water Volume [%]:

Untreated: 0.00 %
Below Dose 0.17 %
To Dose 99.83 %

Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**
Licence Number: **PWS-09-412-01**

WATER TREATMENT PLANT UV REPORT

Report Period: **September 2017**

Report Created: **Wednesday, October 04, 2017**

Date	Transmittance	UVR-D100A				UVR-D200A				UVR-D300A				UVR-D400A				UVR-D500A				UVR-D600A				Total				% Volume
	%	Water Volume [ML]				Water Volume [ML]				Water Volume [ML]				Water Volume [ML]				Water Volume [ML]				Water Volume [ML]				Water Volume [ML]				Treated To
		Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	
01/09/2017	95.17	0.00	0.00	85.05	85.05	0.00	0.00	0.00	0.00	0.00	0.00	57.15	57.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	82.89	82.89	0.00	0.00	225.08	225.08	100.00
02/09/2017	95.25	0.00	0.00	84.99	84.99	0.00	0.00	0.00	0.00	0.00	0.00	53.96	53.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	80.00	80.00	0.00	0.00	218.96	218.96	100.00
03/09/2017	95.32	0.00	0.00	78.86	78.86	0.00	0.00	0.00	0.00	0.00	0.00	50.34	50.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	79.04	79.04	0.00	0.00	208.23	208.23	100.00
04/09/2017	95.27	0.00	0.00	73.42	73.42	0.00	0.00	0.00	0.00	0.00	0.00	47.05	47.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	76.07	76.07	0.00	0.00	196.54	196.54	100.00
05/09/2017	95.40	0.00	0.00	72.00	72.00	0.00	0.00	0.00	0.00	0.00	0.00	46.14	46.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	74.61	74.61	0.00	0.00	192.76	192.76	100.00
06/09/2017	94.40	0.00	0.00	47.34	47.34	0.00	0.00	0.00	0.00	0.00	0.80	15.31	16.11	0.01	0.01	14.24	14.26	0.00	0.00	0.00	0.00	0.02	0.02	43.67	43.70	0.02	0.82	120.56	121.41	99.30
07/09/2017	94.97	0.00	0.00	81.10	81.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	54.45	54.45	0.00	0.00	0.00	0.00	0.00	0.00	73.07	73.07	0.00	0.00	208.62	208.62	100.00
08/09/2017	95.38	0.00	0.00	83.19	83.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	54.94	54.94	0.00	0.00	0.00	0.00	0.00	0.00	76.23	76.23	0.00	0.00	214.37	214.37	100.00
09/09/2017	95.43	0.00	0.00	82.08	82.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	52.92	52.92	0.00	0.00	0.00	0.00	0.00	0.00	79.97	79.97	0.00	0.00	214.97	214.97	100.00
10/09/2017	95.32	0.00	0.00	81.99	81.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	52.98	52.98	0.00	0.00	0.00	0.00	0.00	0.00	79.99	79.99	0.00	0.00	214.96	214.96	100.00
11/09/2017	95.11	0.00	0.00	82.11	82.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	52.89	52.89	0.00	0.00	0.00	0.00	0.00	0.00	79.97	79.97	0.00	0.00	214.97	214.97	100.00
12/09/2017	95.27	0.00	0.00	77.38	77.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	61.77	61.77	0.00	0.00	0.00	0.00	0.00	0.00	77.66	77.66	0.00	0.00	216.81	216.81	100.00
13/09/2017	94.75	0.00	0.34	43.93	44.28	0.00	0.00	4.83	4.83	0.00	0.00	0.00	0.00	0.00	0.23	72.81	73.04	0.00	0.00	16.93	16.93	0.00	0.00	77.44	77.44	0.00	0.57	215.94	216.51	99.74
14/09/2017	94.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	82.40	82.40	0.00	0.00	53.43	53.43	0.00	0.00	80.89	80.89	0.00	0.00	216.71	216.71	100.00
15/09/2017	94.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	81.03	81.03	0.00	0.00	53.82	53.82	0.00	0.00	81.55	81.55	0.00	0.00	216.41	216.41	100.00
16/09/2017	94.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	77.40	77.40	0.00	0.00	50.55	50.55	0.00	0.00	78.85	78.85	0.00	0.00	206.80	206.80	100.00
17/09/2017	94.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	68.36	68.36	0.00	0.11	41.81	41.92	0.00	0.00	77.16	77.16	0.00	0.11	187.33	187.44	99.94
18/09/2017	95.02	0.00	0.00	30.06	30.06	0.00	0.00	10.53	10.53	0.00	0.57	0.00	0.57	0.00	0.00	52.99	52.99	0.25	0.25	22.65	23.15	0.00	0.00	71.27	71.27	0.25	0.82	187.50	188.58	99.43
19/09/2017	95.35	0.00	0.00	72.77	72.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.50	45.50	0.00	0.00	0.00	0.00	0.00	0.00	71.71	71.71	0.00	0.00	189.98	189.98	100.00
20/09/2017	95.33	0.00	0.00	72.73	72.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.50	45.50	0.00	0.00	0.00	0.00	0.00	0.00	71.75	71.75	0.00	0.00	189.99	189.99	100.00
21/09/2017	95.36	0.00	0.00	72.77	72.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.64	45.64	0.00	0.00	0.00	0.00	0.00	0.00	71.61	71.61	0.00	0.00	190.03	190.03	100.00
22/09/2017	95.16	0.00	0.00	72.78	72.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.65	45.65	0.00	0.00	0.00	0.00	0.00	0.00	71.56	71.56	0.00	0.00	189.99	189.99	100.00
23/09/2017	94.74	0.00	0.00	71.66	71.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.97	44.97	0.00	0.00	0.00	0.00	0.00	0.00	69.75	69.75	0.00	0.00	186.38	186.38	100.00
24/09/2017	94.13	0.00	0.00	70.92	70.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.54	44.54	0.00	0.00	0.00	0.00	0.00	0.00	69.52	69.52	0.00	0.00	184.98	184.98	100.00
25/09/2017	94.21	0.00	0.64	23.66	24.29	0.00	0.00	47.01	47.01	0.00	0.00	0.00	0.00	0.00	0.00	44.03	44.03	0.00	0.00	1.26	1.26	0.00	0.00	68.39	68.39	0.00	0.64	184.35	184.99	99.65
26/09/2017	94.29	0.00	0.00	0.00	0.00	0.00	0.00	75.17	75.17	0.00	0.00	0.00	0.00	0.00	0.00	42.64	42.64	0.00	0.00	0.00	0.00	0.00	0.00	67.22	67.22	0.00	0.00	185.03	185.03	100.00
27/09/2017	94.17	0.00	0.00	23.82	23.82	0.00	0.00	50.12	50.12	0.00	0.00	0.00	0.00	0.00	0.00	43.47	43.47	0.00	0.00	45.11	45.11	0.00	0.00	23.25	23.25	0.00	0.00	185.76	185.77	100.00
28/09/2017	94.66	0.00	0.00	59.23	59.23	0.00	0.00	39.72	39.72	0.00	0.00	0.00	0.00	0.00	0.00	62.97	62.97	0.00	0.00	27.62	27.62	0.00	0.00	0.00	0.00	0.00	0.00	189.54	189.54	100.00
29/09/2017	94.40	0.00	0.00	57.69	57.69	0.00	0.00	45.49	45.49	0.00	0.00	0.00	0.00	0.00	0.00	65.96	65.96	0.00	0.00	21.81	21.81	0.00	0.00	0.00	0.00	0.00	0.00	190.95	190.95	100.00
30/09/2017	93.66	0.00	0.00	73.33	73.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.77	45.77	0.00	0.00	71.89	71.89	0.00	0.00	0.00	0.00	0.00	0.00	190.98	190.98	100.00
Total [ML]:		0.00	0.98	1674.85	1675.83	0.00	0.00	272.87	272.87	0.00	1.37	269.96	271.33	0.01	0.24	1355.82	1356.06	0.25	0.36	406.88	407.49	0.02	0.02	1955.09	1955.13	0.27	2.97	5935.46	5938.71	

Water Volume [%]:

Untreated: 0.00 %
Below Dose 0.05 %
To Dose 99.95 %

Submitted By (Print): D. Minor

Signature: Original signed by D. Minor



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: 252.00
Licence Number: PWS-09-412-01

WATER TREATMENT PLANT UV REPORT

Report Period: October 2017

Report Created: Wednesday, November 01, 2017

Date	Transmittance %	UVR-D100A				UVR-D200A				UVR-D300A				UVR-D400A				UVR-D500A				UVR-D600A				Total				% Volume Treated To Dose
		Water Volume [mL]				Water Volume [mL]				Water Volume [mL]				Water Volume [mL]				Water Volume [mL]				Water Volume [mL]				Water Volume [mL]				
		Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	
01/10/2017	93.20	0.00	0.00	73.25	73.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.85	45.85	0.00	0.00	71.90	71.90	0.00	0.00	0.00	0.00	0.00	0.00	191.01	191.01	100.00
02/10/2017	93.30	0.00	0.59	63.32	63.91	0.00	0.00	0.50	0.50	0.00	0.00	0.00	0.00	0.00	0.00	48.67	48.67	0.00	0.00	68.46	68.46	0.00	0.00	9.45	9.45	0.00	0.59	190.40	190.99	99.69
03/10/2017	93.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	70.13	70.13	0.00	0.00	42.81	42.81	0.00	0.00	78.03	78.03	0.00	0.00	190.97	190.97	100.00
04/10/2017	94.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.64	16.64	0.00	0.00	52.95	52.95	0.00	0.00	42.96	42.96	0.00	0.00	78.47	78.47	0.00	0.00	191.02	191.02	100.00
05/10/2017	94.22	0.00	0.00	0.00	0.00	0.00	0.00	33.51	33.51	0.00	0.00	57.36	57.36	0.00	0.00	0.00	0.00	0.00	0.00	24.13	24.13	0.00	0.00	76.00	76.00	0.00	0.00	191.00	191.00	100.00
06/10/2017	94.80	0.00	0.00	0.00	0.00	0.00	0.00	51.34	51.34	0.00	0.00	45.11	45.11	0.00	0.00	14.25	14.25	0.00	0.00	0.00	0.00	0.00	0.00	73.16	73.16	0.00	0.00	183.86	183.86	100.00
07/10/2017	94.88	0.00	0.00	0.00	0.00	0.00	0.03	26.35	26.38	0.00	0.00	46.21	46.21	0.00	0.00	30.42	30.42	0.00	0.00	0.00	0.00	0.00	0.00	77.99	77.99	0.00	0.03	180.97	181.00	99.98
08/10/2017	94.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.90	47.90	0.00	0.00	48.07	48.07	0.00	0.00	0.00	0.00	0.00	0.00	85.00	85.00	0.00	0.00	180.98	180.98	100.00
09/10/2017	94.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.78	47.78	0.00	0.00	48.21	48.21	0.00	0.00	0.00	0.00	0.00	0.00	85.00	85.00	0.00	0.00	181.00	181.00	100.00
10/10/2017	94.52	0.00	0.03	27.37	27.40	0.00	0.00	0.00	0.00	0.00	0.00	50.10	50.10	0.00	0.00	16.32	16.32	0.00	0.00	36.47	36.47	0.00	0.00	47.22	47.22	0.00	0.03	177.48	177.51	99.98
11/10/2017	94.47	0.00	0.00	67.03	67.03	0.00	0.00	0.00	0.00	0.00	0.00	43.80	43.80	0.00	0.00	0.00	0.00	0.00	0.00	65.18	65.18	0.00	0.00	0.00	0.00	0.00	0.00	176.00	176.00	100.00
12/10/2017	94.63	0.00	0.31	23.77	24.08	0.00	0.00	0.00	0.00	0.00	0.00	59.22	59.22	0.00	0.00	0.00	0.00	0.00	0.00	48.70	48.70	0.00	0.00	43.79	43.79	0.00	0.31	175.49	175.80	99.82
13/10/2017	94.88	0.00	0.00	0.00	0.00	0.00	0.00	52.31	52.31	0.00	0.00	54.32	54.32	0.00	0.00	0.00	0.00	0.00	0.00	52.15	52.15	0.00	0.00	21.41	21.41	0.00	0.00	180.18	180.18	100.00
14/10/2017	94.89	0.00	0.00	0.00	0.00	0.00	0.00	76.47	76.47	0.00	0.00	47.79	47.79	0.00	0.00	0.00	0.00	0.00	0.00	57.72	57.72	0.00	0.00	0.00	0.00	0.00	0.00	181.98	181.98	100.00
15/10/2017	95.02	0.00	0.00	0.00	0.00	0.00	0.00	76.40	76.40	0.00	0.00	47.75	47.75	0.00	0.00	0.00	0.00	0.00	0.00	57.88	57.88	0.00	0.00	0.00	0.00	0.00	0.00	182.03	182.03	100.00
16/10/2017	95.01	0.00	0.00	0.00	0.00	0.00	0.00	77.78	77.78	0.00	0.00	48.70	48.70	0.00	0.00	0.00	0.00	0.00	0.00	59.63	59.63	0.00	0.00	0.00	0.00	0.00	0.00	186.11	186.11	100.00
17/10/2017	94.99	0.00	0.00	0.00	0.00	0.00	0.00	69.49	69.49	0.00	0.00	48.80	48.80	0.00	0.00	0.00	0.00	0.00	0.00	58.24	58.24	0.00	0.04	17.76	17.80	0.00	0.04	194.29	194.33	99.98
18/10/2017	94.88	0.00	0.00	0.00	0.00	0.00	0.00	85.53	85.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.00	42.00	0.00	0.00	67.98	67.98	0.00	0.00	195.51	195.51	100.00
19/10/2017	93.97	0.00	0.00	62.81	62.81	0.00	0.00	22.14	22.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	61.73	61.73	0.00	0.00	48.10	48.10	0.00	0.00	194.77	194.77	100.00
20/10/2017	94.66	0.00	0.06	79.80	79.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22.82	22.82	0.00	0.00	63.76	63.76	0.00	0.00	28.61	28.61	0.00	0.06	194.99	195.05	99.97
21/10/2017	94.81	0.00	0.00	73.88	73.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.82	47.82	0.00	0.00	18.65	18.65	0.00	0.05	54.65	54.70	0.00	0.05	195.01	195.06	99.97
22/10/2017	94.60	0.00	0.00	73.67	73.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.27	48.27	0.00	0.00	0.00	0.00	0.00	0.00	73.27	73.27	0.00	0.00	195.21	195.21	100.00
23/10/2017	94.30	0.00	0.00	67.94	67.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60.03	60.03	0.00	0.00	0.00	0.00	0.00	0.00	67.46	67.46	0.00	0.00	195.43	195.43	100.00
24/10/2017	94.51	0.00	0.00	63.78	63.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	67.16	67.16	0.00	0.00	0.00	0.00	0.00	0.00	63.04	63.04	0.00	0.00	193.99	193.99	100.00
25/10/2017	94.43	0.00	0.00	61.19	61.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	64.92	64.92	0.00	0.00	0.00	0.00	0.00	0.00	60.67	60.67	0.00	0.00	186.78	186.78	100.00
26/10/2017	94.63	0.00	0.00	60.11	60.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	63.81	63.81	0.00	0.00	0.00	0.00	0.00	0.00	59.54	59.54	0.00	0.00	183.46	183.46	100.00
27/10/2017	94.61	0.00	0.00	59.47	59.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	63.24	63.24	0.00	0.00	0.00	0.00	0.00	0.00	59.20	59.20	0.00	0.00	181.91	181.91	100.00
28/10/2017	94.75	0.00	0.05	59.20	59.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.32	59.32	0.00	0.00	0.00	0.00	0.00	0.00	58.73	58.73	0.00	0.05	177.25	177.31	99.97
29/10/2017	94.64	0.00	0.00	68.94	68.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.78	43.78	0.00	0.00	0.00	0.00	0.00	0.00	63.28	63.28	0.00	0.00	176.00	176.00	100.00
30/10/2017	94.64	0.00	0.00	68.93	68.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.82	43.82	0.00	0.00	0.00	0.00	0.00	0.00	63.30	63.30	0.00	0.00	176.05	176.05	100.00
31/10/2017	94.80	0.00	0.00	68.96	68.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.75	43.75	0.00	0.00	42.29	42.29	0.00	0.00	20.99	20.99	0.00	0.00	175.98	175.98	100.00
Total [mL]:		0.00	1.04	1123.44	1124.48	0.00	0.03	571.81	571.84	0.00	0.00	661.46	661.46	0.00	0.00	1003.62	1003.62	0.00	0.00	914.67	914.67	0.00	0.09	1482.10	1482.19	0.00	1.16	5757.11	5758.27	
Water Volume [%]:																														
Untreated:		0.00 %																												
Below Dose		0.02 %																												
To Dose		99.98 %																												

Submitted By (Print): D. Merredew

Signature: Original signed by D. Merredew



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: 252.00
Licence Number: PWS-09-412-01

WATER TREATMENT PLANT UV REPORT

Report Period: November 2017

Report Created: Friday, December 01, 2017

Date	Transmittance %	UVR-D100A Water Volume [ML]				UVR-D200A Water Volume [ML]				UVR-D300A Water Volume [ML]				UVR-D400A Water Volume [ML]				UVR-D500A Water Volume [ML]				UVR-D600A Water Volume [ML]				Total Water Volume [ML]				% Volume Treated To Dose
		Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	
01/11/2017	94.79	0.00	0.00	69.15	69.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.71	43.71	0.00	0.00	63.17	63.17	0.00	0.00	0.00	0.00	0.00	0.00	176.03	176.03	100.00
02/11/2017	95.28	0.00	0.00	70.04	70.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.90	47.90	0.00	0.00	61.11	61.11	0.00	0.00	0.00	0.00	0.00	0.00	179.05	179.05	100.00
03/11/2017	95.11	0.00	0.00	71.24	71.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	52.99	52.99	0.00	0.00	58.71	58.71	0.00	0.00	0.00	0.00	0.00	0.00	182.95	182.95	100.00
04/11/2017	94.99	0.00	0.00	71.14	71.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	52.89	52.89	0.00	0.00	58.95	58.95	0.00	0.00	0.00	0.00	0.00	0.00	182.98	182.98	100.00
05/11/2017	94.93	0.00	0.29	37.33	37.63	0.00	0.00	36.85	36.85	0.00	0.00	0.00	0.00	0.00	0.00	51.25	51.25	0.00	0.00	57.25	57.25	0.00	0.00	0.00	0.00	0.00	0.29	182.67	182.97	99.84
06/11/2017	94.81	0.00	0.00	0.00	0.00	0.00	0.00	69.83	69.83	0.00	0.00	0.00	0.00	0.00	0.00	56.14	56.14	0.00	0.00	56.92	56.92	0.00	0.00	0.00	0.00	0.00	0.00	182.89	182.89	100.00
07/11/2017	94.90	0.00	0.00	5.33	5.33	0.00	0.00	56.63	56.63	0.00	0.03	23.56	23.60	0.00	0.00	37.96	37.96	0.00	0.00	59.47	59.47	0.00	0.00	0.00	0.00	0.00	0.03	182.96	182.99	99.98
08/11/2017	94.21	0.00	0.00	0.00	0.00	0.00	0.00	48.64	48.64	0.00	0.00	36.85	36.85	0.00	0.00	0.00	0.00	0.00	0.00	42.56	42.56	0.00	0.00	0.00	0.00	0.00	0.00	128.04	128.04	100.00
09/11/2017	95.22	0.00	0.00	0.00	0.00	0.00	0.00	73.97	73.97	0.00	0.00	42.03	42.03	0.00	0.00	0.00	0.00	0.00	0.00	64.80	64.80	0.00	0.00	0.00	0.00	0.00	0.00	180.80	180.80	100.00
10/11/2017	95.48	0.00	0.00	0.00	0.00	0.00	0.00	74.76	74.76	0.00	0.00	42.85	42.85	0.00	0.00	0.00	0.00	0.00	0.00	65.94	65.94	0.00	0.00	0.35	0.35	0.00	0.00	183.91	183.91	100.00
11/11/2017	94.98	0.00	0.00	0.00	0.00	0.00	0.00	74.51	74.51	0.00	0.00	42.90	42.90	0.00	0.00	0.00	0.00	0.00	0.00	66.58	66.58	0.00	0.00	0.00	0.00	0.00	0.00	183.99	183.99	100.00
12/11/2017	94.87	0.00	0.00	0.00	0.00	0.00	0.00	74.66	74.66	0.00	0.00	42.92	42.92	0.00	0.00	0.00	0.00	0.00	0.00	66.39	66.39	0.00	0.00	0.00	0.00	0.00	0.00	183.97	183.97	100.00
13/11/2017	94.84	0.00	0.00	0.00	0.00	0.00	0.00	74.84	74.84	0.00	0.00	42.95	42.95	0.00	0.00	0.00	0.00	0.00	0.00	66.22	66.22	0.00	0.00	0.00	0.00	0.00	0.00	184.01	184.01	100.00
14/11/2017	94.86	0.00	0.00	0.00	0.00	0.00	0.00	74.91	74.91	0.00	0.00	42.93	42.93	0.00	0.00	0.00	0.00	0.00	0.00	66.14	66.14	0.00	0.00	0.00	0.00	0.00	0.00	183.98	183.98	100.00
15/11/2017	94.90	0.00	0.00	0.00	0.00	0.00	0.00	74.94	74.94	0.00	0.00	42.94	42.94	0.00	0.00	0.00	0.00	0.00	0.00	66.12	66.12	0.00	0.00	0.00	0.00	0.00	0.00	184.00	184.00	100.00
16/11/2017	94.88	0.00	0.00	0.00	0.00	0.00	0.00	75.08	75.08	0.00	0.00	42.93	42.93	0.00	0.00	0.00	0.00	0.00	0.00	66.05	66.05	0.00	0.00	0.00	0.00	0.00	0.00	184.06	184.06	100.00
17/11/2017	94.92	0.00	0.00	0.00	0.00	0.00	0.00	75.61	75.61	0.00	0.00	43.37	43.37	0.00	0.00	0.00	0.00	0.00	0.00	66.98	66.98	0.00	0.00	0.00	0.00	0.00	0.00	185.97	185.97	100.00
18/11/2017	94.82	0.00	0.00	0.00	0.00	0.00	0.00	75.23	75.23	0.00	0.00	43.32	43.32	0.00	0.00	0.00	0.00	0.00	0.00	67.11	67.11	0.00	0.00	0.00	0.00	0.00	0.00	185.66	185.66	100.00
19/11/2017	94.71	0.00	0.00	0.00	0.00	0.00	0.00	74.74	74.74	0.00	0.00	42.93	42.93	0.00	0.00	0.00	0.00	0.00	0.00	66.37	66.37	0.00	0.00	0.00	0.00	0.00	0.00	184.04	184.04	100.00
20/11/2017	94.40	0.00	0.00	24.36	24.36	0.00	0.00	49.20	49.20	0.00	0.12	16.47	16.59	0.00	0.00	27.60	27.60	0.00	0.00	41.29	41.29	0.00	0.00	24.98	24.98	0.00	0.12	183.90	184.02	99.93
21/11/2017	94.20	0.00	0.00	71.03	71.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.75	45.75	0.00	0.00	0.00	0.00	0.00	0.00	67.22	67.22	0.00	0.00	184.00	184.00	100.00
22/11/2017	94.17	0.00	0.00	71.04	71.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.80	45.80	0.00	0.00	0.00	0.00	0.00	0.00	67.12	67.12	0.00	0.00	183.96	183.96	100.00
23/11/2017	94.20	0.00	0.00	71.10	71.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.89	45.89	0.00	0.00	0.00	0.00	0.00	0.00	67.08	67.08	0.00	0.00	184.07	184.07	100.00
24/11/2017	94.21	0.00	0.00	71.09	71.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.88	45.88	0.00	0.00	0.00	0.00	0.00	0.00	67.03	67.03	0.00	0.00	184.00	184.00	100.00
25/11/2017	94.22	0.00	0.00	71.00	71.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.82	45.82	0.00	0.00	0.00	0.00	0.00	0.00	67.15	67.15	0.00	0.00	183.97	183.97	100.00
26/11/2017	94.16	0.00	0.00	70.97	70.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.82	45.82	0.00	0.00	0.00	0.00	0.00	0.00	67.20	67.20	0.00	0.00	183.99	183.99	100.00
27/11/2017	94.04	0.00	0.00	71.00	71.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.81	45.81	0.00	0.00	0.00	0.00	0.00	0.00	67.19	67.19	0.00	0.00	184.00	184.00	100.00
28/11/2017	94.05	0.00	0.00	70.91	70.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.51	50.51	0.00	0.00	0.00	0.00	0.00	0.04	62.42	62.46	0.00	0.04	183.84	183.88	99.98
29/11/2017	93.97	0.00	0.00	71.20	71.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.42	53.42	0.00	0.00	0.00	0.00	0.00	0.00	59.38	59.38	0.00	0.00	184.00	184.00	100.00
30/11/2017	93.62	0.00	0.00	20.83	20.83	0.00	0.00	41.82	41.82	0.00	0.00	0.00	0.00	0.00	0.00	41.00	41.00	0.00	0.00	0.00	0.00	0.00	0.00	54.56	54.56	0.00	0.00	158.22	158.22	100.00
Total [ML]:		0.00	0.29	1008.77	1009.06	0.00	0.00	1126.21	1126.21	0.00	0.15	548.95	549.10	0.00	0.00	836.15	836.15	0.00	0.00	1228.13	1228.13	0.00	0.05	671.68	671.73	0.01	0.49	5419.89	5420.38	

Water Volume [%]:

Untreated: 0.00 %

Below Dose 0.01 %

To Dose 99.99 %

Submitted By (Print): D.Merredew

Signature: Original signed by D. Merredew



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: 252.00
Licence Number: PWS-09-412-01

WATER TREATMENT PLANT UV REPORT

Report Period: **December 2017**

Report Created: **Monday, January 01, 2018**

Date	Transmittance	UVR-D100A					UVR-D200A				UVR-D300A				UVR-D400A				UVR-D500A				UVR-D600A				Total				% Volume Treated To Dose
	%	Water Volume [mL]					Water Volume [mL]				Water Volume [mL]				Water Volume [mL]				Water Volume [mL]				Water Volume [mL]								
	Untreated	Below	To	Total		Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total	Untreated	Below	To	Total		
01/12/2017	93.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	76.32	76.32	0.00	0.00	0.00	0.00	0.00	0.00	45.76	45.76	0.00	0.00	0.00	0.00	0.00	0.00	69.93	69.93	0.00	0.00	192.01	192.01	100.00
02/12/2017	93.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	76.36	76.36	0.00	0.00	0.00	0.00	0.00	0.00	45.68	45.68	0.00	0.00	0.00	0.00	0.00	0.00	69.94	69.94	0.00	0.00	191.99	191.99	100.00
03/12/2017	93.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	76.43	76.43	0.00	0.00	0.00	0.00	0.00	0.00	45.72	45.72	0.00	0.00	0.00	0.00	0.00	0.00	69.93	69.93	0.00	0.00	192.08	192.08	100.00
04/12/2017	93.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	75.85	75.85	0.00	0.00	0.00	0.00	0.00	0.00	45.99	45.99	0.00	0.00	0.00	0.00	0.00	0.00	70.17	70.17	0.00	0.00	192.01	192.01	100.00
05/12/2017	93.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	75.78	75.78	0.00	0.00	0.00	0.00	0.00	0.00	46.11	46.11	0.00	0.00	0.00	0.00	0.00	0.00	70.15	70.15	0.00	0.00	192.05	192.05	100.00
06/12/2017	93.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	74.44	74.44	0.00	0.00	0.00	0.00	0.00	0.00	47.07	47.07	0.00	0.00	0.00	0.00	0.00	0.00	63.41	63.41	0.00	0.00	184.92	184.92	100.00
07/12/2017	94.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	68.06	68.06	0.00	0.00	0.00	0.00	0.00	0.00	56.75	56.75	0.00	0.00	0.00	0.00	0.00	0.00	57.07	57.07	0.00	0.00	181.88	181.88	100.00
08/12/2017	94.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	75.00	75.00	0.00	0.00	0.00	0.00	0.00	0.00	50.83	50.83	0.00	0.00	0.00	0.00	0.00	0.04	56.19	56.23	0.00	0.04	182.01	182.05	99.98
09/12/2017	94.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	74.87	74.87	0.00	0.00	0.00	0.00	0.00	0.00	50.73	50.73	0.00	0.00	0.00	0.00	0.00	0.00	56.40	56.40	0.00	0.00	182.00	182.00	100.00
10/12/2017	94.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	74.79	74.79	0.00	0.00	0.00	0.00	0.00	0.00	50.65	50.65	0.00	0.00	0.00	0.00	0.00	0.00	56.57	56.57	0.00	0.00	182.02	182.02	100.00
11/12/2017	94.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	74.90	74.90	0.00	0.00	0.00	0.00	0.00	0.00	50.73	50.73	0.00	0.00	0.00	0.00	0.00	0.00	56.38	56.38	0.00	0.00	182.01	182.01	100.00
12/12/2017	94.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	74.83	74.83	0.00	0.00	0.00	0.00	0.00	0.00	50.64	50.64	0.00	0.00	0.00	0.00	0.00	0.00	56.51	56.51	0.00	0.00	181.98	181.98	100.00
13/12/2017	93.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.34	45.34	0.00	0.00	0.00	0.00	0.00	0.00	38.87	38.87	0.00	0.00	0.00	0.00	0.00	0.00	32.40	32.40	0.00	0.00	116.62	116.62	100.00
14/12/2017	94.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	75.10	75.10	0.00	0.00	0.00	0.00	0.00	0.00	50.76	50.76	0.00	0.00	0.00	0.00	0.00	0.00	57.13	57.13	0.00	0.00	182.99	182.99	100.00
15/12/2017	94.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	74.97	74.97	0.00	0.00	0.00	0.00	0.00	0.00	50.75	50.75	0.00	0.00	0.00	0.00	0.00	0.00	57.21	57.21	0.00	0.00	182.92	182.92	100.00
16/12/2017	94.69	0.00	0.00	32.39	32.39	0.00	0.00	65.37	65.37	0.00	0.53	0.00	0.53	0.00	0.00	65.18	65.18	0.11	0.29	0.38	0.78	0.03	0.03	17.64	17.71	0.14	0.86	180.96	181.96	99.45	
17/12/2017	94.64	0.00	0.00	48.05	48.05	0.00	0.00	60.68	60.68	0.00	0.00	0.00	0.00	0.00	0.00	72.26	72.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	181.00	181.00	100.00	
18/12/2017	95.32	0.00	0.00	49.16	49.16	0.00	0.00	62.68	62.68	0.00	0.00	0.12	0.12	0.00	0.00	73.34	73.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	185.31	185.31	100.00	
19/12/2017	95.40	0.00	0.00	29.81	29.81	0.00	0.00	38.96	38.96	0.00	0.00	17.98	17.98	0.00	0.00	65.67	65.67	0.00	0.04	0.08	0.12	0.00	0.00	31.90	31.90	0.00	0.04	184.39	184.43	99.98	
20/12/2017	94.65	0.00	0.00	32.37	32.37	0.00	0.00	0.73	0.73	0.00	0.00	43.25	43.25	0.00	0.00	59.69	59.69	0.00	0.00	0.00	0.00	0.00	0.00	46.57	46.57	0.00	0.00	182.60	182.60	100.00	
21/12/2017	94.97	0.00	0.00	74.41	74.41	0.00	0.00	0.00	0.00	0.00	0.00	43.81	43.81	0.00	0.00	66.80	66.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	185.02	185.02	100.00	
22/12/2017	95.05	0.00	0.00	72.77	72.77	0.00	0.00	0.00	0.00	0.00	0.00	42.72	42.72	0.00	0.00	65.20	65.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	180.69	180.69	100.00	
23/12/2017	95.05	0.00	0.05	68.62	68.67	0.00	0.00	0.00	0.00	0.00	0.00	0.11	39.87	39.98	0.00	0.00	61.16	61.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	169.65	169.81	99.91
24/12/2017	95.01	0.00	0.00	66.57	66.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.54	39.54	0.00	0.03	39.43	39.45	0.00	0.04	21.10	21.15	0.00	0.00	0.00	0.00	0.00	0.07	166.65	166.72	99.96
25/12/2017	94.91	0.00	0.00	67.95	67.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.05	38.05	0.00	0.00	56.91	56.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	162.91	162.91	100.00	
26/12/2017	94.89	0.00	0.00	71.81	71.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.16	41.16	0.00	0.00	58.52	58.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	171.50	171.50	100.00	
27/12/2017	95.09	0.00	0.00	70.88	70.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.69	44.69	0.00	0.00	37.66	37.66	0.00	0.00	21.74	21.74	0.00	0.00	0.00	0.00	0.00	0.00	174.97	174.97	100.00
28/12/2017	95.17	0.00	0.00	60.89	60.89	0.00	0.00	23.00	23.00	0.00	0.00	57.17	57.17	0.00	0.00	0.00	0.00	0.00	0.00	37.48	37.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	178.54	178.54	100.00
29/12/2017	95.03	0.00	0.00	49.87	49.87	0.00	0.00	62.22	62.22	0.00	0.00	70.73	70.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	182.82	182.82	100.00	
30/12/2017	95.06	0.00	0.00	50.15	50.15	0.00	0.00	62.70	62.70	0.00	0.00	71.18	71.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	184.03	184.03	100.00	
31/12/2017	94.94	0.00	0.00	50.10	50.10	0.00	0.00	62.75	62.75	0.00	0.00	71.17	71.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	184.02	184.02	100.00	
Total [mL]:		0.00	0.05	895.83	895.88	0.00	0.00	1532.14	1532.14	0.00	0.64	621.44	622.08	0.00	0.03	1448.85	1448.87	0.11	0.38	80.79	81.27	0.03	0.07	995.50	995.61	0.15	1.16	5574.54	5575.85		
Water Volume [%]:																															
Untreated:		0.00 %																													
Below Dose		0.02 %																													
To Dose		99.98 %																													

Submitted By (Print): D.Merredew

Signature: Original signed by D. Merredew

2017 Corrective Action Reports



Water and Waste Department • Service des eaux et des déchets

Thursday, April 20, 2017

Our Incident/Report No: 01-2017

LIMS Reference No: **49139**

Incident Date: **April 4, 2017**

Mr. Marc Balcaen
Drinking Water Officer
Manitoba Sustainable Development, Office of Drinking Water
1007 Century Street
Winnipeg MB R3H 0W4

RE: CORRECTIVE ACTION REPORT

WATER SYSTEM, CODE	Winnipeg Public Water System, 252.00
LOCATION OF NON-COMPLIANT INCIDENT	Winnipeg 3-Dist WC05
INCIDENT REPORTED BY	Courtney Diduck, Analytical Services Branch Head
TYPE OF NON-COMPLIANT INCIDENT	High Positive Total Coliform (>10 per100mL), 3 MR 41/2007
DESCRIPTION OF CORRECTIVE ACTIONS	<u>Environmental Standards:</u> IMMEDIATELY: Re-sampled original locations, tested additional samples upstream/downstream until two consecutive negative results were reported. Also tested for turbidity, free/total chlorine, temperature and contacted the ODW.
TEST RESULTS	See Attached

NOTES/COMMENTS:

1. UP/DOWN STREAM testing performed when EC is >0 /100mL, TC is >10 /100mL or when resample/consecutive sample is positive for EC or TC or as directed by the Manager of Environmental Standards Division and/or the Office of Drinking Water

EMERGENCY REPORTING IS REQUIRED WHERE A POTENTIAL HEALTH RISK IS INVOLVED. FOLLOW THE INSTRUCTIONS OF YOUR DRINKING WATER OFFICER ON SITUATIONS REQUIRING IMMEDIATE REPORTING

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Sample Name	Sample Number	Date Sampled	bacColiEsch-QT (MPNU/100mL)	bacColiTotal-QT (MPNU/100mL)	bacHPC (cfu/mL)	Chlorine, Free (mg/L)	Chlorine, Total (mg/L)	Temperature (°C)	Turbidity-field (ntu)	Time Sampled (hrs)
WC05	504826	4-Apr-17	<1	14	<1	0.91	1.12	6.0	0.33	10:16
WC05_Resample	505371	5-Apr-17	<1	<1	2	0.83	1.10	7.3	0.26	15:14
WC05_Resample Duplicate	505372	5-Apr-17	<1	<1	2	NA	NA	NA	NA	NA
WC05_Upstream	505373	5-Apr-17	<1	<1	1	0.82	1.04	7.7	0.25	15:43
WC05_Downstream	505376	5-Apr-17	<1	<1	<1	0.37	0.57	9.1	0.27	16:04
WC05_Resample 2	505377	6-Apr-17	<1	<1	<1	0.90	1.13	6.8	0.41	15:13
WC05_Resample 2 Duplicate	505378	6-Apr-17	<1	<1	<1	NA	NA	NA	NA	NA
WC05_Upstream 2	505379	6-Apr-17	<1	<1	<1	0.88	1.10	7.1	0.41	15:35
WC05_Downstream 2	505380	6-Apr-17	<1	<1	<1	0.66	0.86	6.7	0.29	15:56

NOTES/COMMENTS:

1. All microbiological tests performed by contract laboratory.
2. N/R-No Result due to laboratory/analyst error.
3. N/A-Not Analyzed.



Water and Waste Department • Service des eaux et des déchets

Monday, June 5, 2017

Our Incident/Report No: 02-2017

LIMS Reference No: **49651**

Incident Date: **May 31, 2017**

Mr. Marc Balcaen
Drinking Water Officer
Manitoba Sustainable Development, Office of Drinking Water
1007 Century Street
Winnipeg MB R3H 0W4

RE: CORRECTIVE ACTION REPORT

WATER SYSTEM, CODE	Winnipeg Public Water System, 252.00
LOCATION OF NON-COMPLIANT INCIDENT	Winnipeg 3-Dist NE05
INCIDENT REPORTED BY	Courtney Diduck, Analytical Services Branch Head
TYPE OF NON-COMPLIANT INCIDENT	Low positive Total Coliform (<10 per100mL), 3 MR 41/2007
DESCRIPTION OF CORRECTIVE ACTIONS	<u>Environmental Standards:</u> AS SOON AS POSSIBLE: Re-sampled original location until two consecutive negative results were reported. Also tested for turbidity, free/total chlorine, temperature and contacted the ODW.
TEST RESULTS	See Attached

NOTES/COMMENTS:

1. UP/DOWN STREAM testing performed when EC is >0 /100mL, TC is >10 /100mL or when resample/consecutive sample is positive for EC or TC or as directed by the Manager of Environmental Standards Division and/or the Office of Drinking Water

EMERGENCY REPORTING IS REQUIRED WHERE A POTENTIAL HEALTH RISK IS INVOLVED. FOLLOW THE INSTRUCTIONS OF YOUR DRINKING WATER OFFICER ON SITUATIONS REQUIRING IMMEDIATE REPORTING

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Sample Name	Sample Number	Date Sampled	bacColiEsch-QT (MPNU/100mL)	bacColiTotal-QT (MPNU/100mL)	bacHPC (cfu/mL)	Chlorine, Free (mg/L)	Chlorine, Total (mg/L)	Temperature (°C)	Turbidity-field (ntu)	Time Sampled (hrs)
NE05	511048	31-May-17	0	4	4	0.86	1.12	11.6	0.17	10:00
NE05_Resample	511851	01-Jun-17	0	0	<1	0.96	1.18	11.7	0.30	15:46
NE05_Resample Duplicate	511852	01-Jun-17	0	0	<1					
NE05_Resample 2	512051	02-Jun-17	0	0	1	0.89	1.15	12.4	0.52	15:28
NE05_Resample 2 Duplicate	512052	02-Jun-17	0	0	<1					

NOTES/COMMENTS:

1. All microbiological tests performed by contract laboratory.
2. N/R-No Result due to laboratory/analyst error.
3. N/A-Not Analyzed.



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Thursday, September 28, 2017

Mr. Derek Clarke
Drinking Water Officer
Manitoba Sustainable Development, Office of Drinking Water
Box 6000
Gimli, MB R0C 1B0

Our Incident/Report No: 03-2017
LIMS Reference No: **50818**
Incident Date: **September 17, 2017**

RE: CORRECTIVE ACTION REPORT

WATER SYSTEM, CODE	Winnipeg Public Water System, 252.00
LOCATION OF NON-COMPLIANT INCIDENT	Winnipeg 3-Dist WS_REPAIR
INCIDENT REPORTED BY	Louis Rivard, Superintendent of Water Distribution Operations
TYPE OF NON-COMPLIANT INCIDENT	1. Treated (or distribution system) water sample contains E. coliform >0 per100mL, 3 MR 41/2007 2. Low positive Total Coliform (<10 per100mL), 3 MR 41/2007
DESCRIPTION OF CORRECTIVE ACTIONS	<u>Water Services:</u> IMMEDIATELY: Contacted the ODW and Environmental Standards, flushed the isolated area and set up hydrant to run water to waste. <u>Environmental Standards:</u> IMMEDIATELY: Re-sampled original locations and tested additional samples upstream/downstream of original locations for; bacteria, turbidity, free/total chlorine, and temperature. A localized precautionary notice to residents in the impacted area to boil water was issued on September 19, 2017, by the City of Winnipeg. The boil water advisory was subsequently rescinded on September 21, 2017, after two consecutive sets of re-samples taken 24 hours apart tested negative for bacteria. A complete summary of follow-up activities will be provided in a separate submission.
TEST RESULTS	See Attached

NOTES/COMMENTS:

1. UP/DOWN STREAM testing performed when EC is >0 /100mL, TC is >10 /100mL or when resample/consecutive sample is positive for EC or TC or as directed by the Manager of Environmental Standards Division and/or the Office of Drinking Water

EMERGENCY REPORTING IS REQUIRED WHERE A POTENTIAL HEALTH RISK IS INVOLVED. FOLLOW THE INSTRUCTIONS OF YOUR DRINKING WATER OFFICER ON SITUATIONS REQUIRING IMMEDIATE REPORTING

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Environmental Standards Division • Division des normes environnementales
2230 Main Street. • 2230, rue Main • Winnipeg • Manitoba R2V 4T8
fax/téléc. (204) 339-2147 • www.winnipeg.ca



Water and Waste Department • Service des eaux et des déchets

Sample Name	Sample Number	Date Sampled	bacColiEsch-QT (MPNU/100mL)	bacColiTotal-QT (MPNU/100mL)	bacHPC (cfu/mL)	Chlorine, Free (mg/L)	Chlorine, Total (mg/L)	Temperature (°C)	Turbidity-field (ntu)	Time Sampled (hrs)
WS Repair	NA	17-Sep-17	1	1	NA	0.10	NA	NA	1.55	16:00
WS Repair Resample	524739	19-Sep-17	<1	<1	10	0.12	0.32	17.2	3.68	14:40
WS Repair Resample Duplicate	524740	19-Sep-17	<1	<1	3	NA	NA	NA	NA	NA
WS Repair Upstream	524742	19-Sep-17	<1	<1	<1	0.40	0.61	15.3	2.08	15:53
WS Repair Downstream	524741	19-Sep-17	<1	<1	11	0.29	0.46	17.0	2.08	15:11
WS Repair Resample 2	524753	19-Sep-17	<1	<1	3	0.33	0.50	17.1	2.98	16:04
WS Repair Resample 3	524757	20-Sep-17	<1	<1	3	0.30	0.50	17.6	0.29	14:48
WS Repair Resample 3 Duplicate	524762	20-Sep-17	<1	<1	<1	NA	NA	NA	NA	NA
WS Repair Upstream Resample	524764	20-Sep-17	<1	<1	<1	0.45	0.61	16.6	0.28	15:06
WS Repair Downstream Resample	524763	20-Sep-17	<1	<1	8	0.27	0.50	16.9	0.35	15:24

NOTES/COMMENTS:

1. All microbiological tests performed by contract laboratory.
2. N/R-No Result due to laboratory/analyst error.
3. N/A-Not Analyzed.



Water and Waste Department • Service des eaux et des déchets

Thursday, December 7, 2017

Our Incident/Report No: 04-2017

LIMS Reference No: **51153**

Incident Date: **November 1, 2017**

Mr. Derek Clarke
Drinking Water Officer
Manitoba Sustainable Development, Office of Drinking Water
Box 6000
Gimli, MB R0C 1B0

RE: CORRECTIVE ACTION REPORT

WATER SYSTEM, CODE	Winnipeg Public Water System, 252.00
LOCATION OF NON-COMPLIANT INCIDENT	Winnipeg 3-Dist SW16
INCIDENT REPORTED BY	Courtney Diduck, Analytical Services Branch Head
TYPE OF NON-COMPLIANT INCIDENT	Low disinfection residual in the distribution system, 22(1) MR 40/2007
DESCRIPTION OF CORRECTIVE ACTIONS	<u>Environmental Standards:</u> IMMEDIATELY: Re-sampled original location and tested an additional location at an adjacent building for free/total chlorine, turbidity and temperature. At the time of sampling the original location was experiencing discoloured water, the adjacent building was not. Monitoring continued until free chlorine residuals were re-established to acceptable levels. The ODW was advised of the incident. <u>Water Services:</u> Water Services Division was contacted to confirm if any work in the area contributed to the discoloured water event. No operational activities were found to contribute to the event.
TEST RESULTS	See Attached

NOTES/COMMENTS:

1. UP/DOWN STREAM testing performed when EC is >0 /100mL, TC is >10 /100mL or when resample/consecutive sample is positive for EC or TC or as directed by the Manager of Environmental Standards Division and/or the Office of Drinking Water

EMERGENCY REPORTING IS REQUIRED WHERE A POTENTIAL HEALTH RISK IS INVOLVED. FOLLOW THE INSTRUCTIONS OF YOUR DRINKING WATER OFFICER ON SITUATIONS REQUIRING IMMEDIATE REPORTING

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Sample Name	Sample Number	Date Sampled	bacColiEsch-QT (MPNU/100mL)	bacColiTotal-QT (MPNU/100mL)	bacHPC (cfu/mL)	Chlorine, Free (mg/L)	Chlorine, Total (mg/L)	Temperature (°C)	Turbidity-field (ntu)	Time Sampled (hrs)
SW16	528874	01-Nov-17	<1	<1	5	0.08	0.29	12.8	1.94	11:27
SW16_Adjacent	530974	01-Nov-17	<1	<1	NA	0.71	1.04	12.1	0.70	11:40
SW16_Resample	529575	02-Nov-17	NA	NA	NA	0.43	0.47	13.3	0.93	12:08

NOTES/COMMENTS:

1. All microbiological tests performed by contract laboratory.
2. N/R-No Result due to laboratory/analyst error.
3. N/A-Not Analyzed.



Water and Waste Department • Service des eaux et des déchets

Monday, December 18, 2017

Our Incident/Report No: 05-2017

LIMS Reference No: **51471**

Incident Date: **December 5, 2017**

Mr. Derek Clarke
Drinking Water Officer
Manitoba Sustainable Development, Office of Drinking Water
Box 6000
Gimli, MB R0C 1B0

RE: CORRECTIVE ACTION REPORT

WATER SYSTEM, CODE	Winnipeg Public Water System, 252.00
LOCATION OF NON-COMPLIANT INCIDENT	Winnipeg 3-Dist SW04
INCIDENT REPORTED BY	Courtney Diduck, Analytical Services Branch Head
TYPE OF NON-COMPLIANT INCIDENT	Low positive Total Coliform (<10 per100mL), 3 MR 41/2007
DESCRIPTION OF CORRECTIVE ACTIONS	<u>Environmental Standards:</u> AS SOON AS POSSIBLE: Re-sampled original location until two consecutive negative results were reported. Also tested for turbidity, free/total chlorine, temperature and contacted the ODW.
TEST RESULTS	See Attached

NOTES/COMMENTS:

1. UP/DOWN STREAM testing performed when EC is >0 /100mL, TC is >10 /100mL or when resample/consecutive sample is positive for EC or TC or as directed by the Manager of Environmental Standards Division and/or the Office of Drinking Water

EMERGENCY REPORTING IS REQUIRED WHERE A POTENTIAL HEALTH RISK IS INVOLVED. FOLLOW THE INSTRUCTIONS OF YOUR DRINKING WATER OFFICER ON SITUATIONS REQUIRING IMMEDIATE REPORTING

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Sample Name	Sample Number	Date Sampled	bacColiEsch-QT (MPNU/100mL)	bacColiTotal-QT (MPNU/100mL)	bacHPC (cfu/mL)	Chlorine, Free (mg/L)	Chlorine, Total (mg/L)	Temperature (°C)	Turbidity-field (ntu)	Time Sampled (hrs)
SW04	532472	05-Dec-17	<1	1	<1	1.06	1.25	10.8	0.15	10:35
SW04_Resample	533080	06-Dec-17	<1	<1	<1	1.07	1.32	6.7	0.24	15:04
SW04_Resample 2	533082	07-Dec-17	<1	<1	<1	1.02	1.26	6.3	0.13	15:09
SW04_Resample 2 Duplicate	533104	07-Dec-17	<1	<1	<1	NA	NA	NA	NA	15:09

NOTES/COMMENTS:

1. All microbiological tests performed by contract laboratory.
2. N/R-No Result due to laboratory/analyst error.
3. N/A-Not Analyzed.

2017 Monthly Fluoride Monitoring Reports



Water and Waste Department • Service des eaux et des déchets
Environmental Standards Division • Division des Normes Environnementales

March 16, 2017

Our File: 040-18-18-14-00

Dr. Khalida Hai-Santiago c/o Helen Browne
300 Carlton Street (Room 4068)
Winnipeg, Manitoba
R3B 3M9

Dear Dr. Hai-Santiago:

RE: CITY OF WINNIPEG FLUORIDE MONITORING DATA

As a participant in the Provincial Water Fluoridation Program, the City of Winnipeg Water and Waste Department hereby submits the following fluoride monitoring data on analyses conducted by the Environmental Standards Division.

<u>LOCATION</u>	<u>SAMPLE NUMBER</u>	<u>DATE</u>	<u>RESULT(mg/L F)</u>
Distribution System (Composite – 39 Locations)	495790	03-Jan-17	0.70
	496400	09-Jan-17	0.69
	496980	16-Jan-17	0.68
	497661	23-Jan-17	0.71
	498303	30-Jan-17	0.73

If you have any questions on the foregoing, please call Ms. Nancy Crawford, Compliance Reporting Branch Head, at 204-986-4807.

Yours truly,

Original signed by:

Renée Grosselle
Manager of Environmental Standards

NC/HD

cc: Tim Shanks, P.Eng. Manager of Water Services (e-mail)





Water and Waste Department • Service des eaux et des déchets
Environmental Standards Division • Division des Normes Environnementales

April 11, 2017

Our File: 040-18-18-14-00

Dr. Khalida Hai-Santiago c/o Helen Browne
300 Carlton Street (Room 4068)
Winnipeg, Manitoba
R3B 3M9

Dear Dr. Hai-Santiago:

RE: CITY OF WINNIPEG FLUORIDE MONITORING DATA

As a participant in the Provincial Water Fluoridation Program, the City of Winnipeg Water and Waste Department hereby submits the following fluoride monitoring data on analyses conducted by the Environmental Standards Division.

<u>LOCATION</u>	<u>SAMPLE NUMBER</u>	<u>DATE</u>	<u>RESULT(mg/L F)</u>
Distribution System (Composite – 39 Locations)	498956	06-Feb-17	0.67
	499655	13-Feb-17	0.65
	500235	21-Feb-17	0.66
	500916	27-Feb-17	0.68

If you have any questions on the foregoing, please call Ms. Nancy Crawford, Compliance Reporting Branch Head, at 204-986-4807.

Yours truly,

Original signed by:

Renée Grosselle
Manager of Environmental Standards

NC/HD

cc: Tim Shanks, P.Eng. Manager of Water Services (e-mail)





Water and Waste Department • Service des eaux et des déchets
Environmental Standards Division • Division des Normes Environnementales

June 5, 2017

Our File: 040-18-18-14-00

Dr. Khalida Hai-Santiago c/o Helen Browne
300 Carlton Street (Room 4068)
Winnipeg, Manitoba
R3B 3M9

Dear Dr. Hai-Santiago:

RE: CITY OF WINNIPEG FLUORIDE MONITORING DATA

As a participant in the Provincial Water Fluoridation Program, the City of Winnipeg Water and Waste Department hereby submits the following fluoride monitoring data on analyses conducted by the Environmental Standards Division.

<u>LOCATION</u>	<u>SAMPLE NUMBER</u>	<u>DATE</u>	<u>RESULT(mg/L F)</u>
Distribution System (Composite – 39 Locations)	501762	06-Mar-17	0.63
	502456	13-Mar-17	0.60
	503357	20-Mar-17	0.68
	504055	27-Mar-17	0.64

If you have any questions on the foregoing, please call Ms. Nancy Crawford, Compliance Reporting Branch Head, at 204-986-4807.

Yours truly,

Original signed by:

Renée Grosselle
Manager of Environmental Standards

NC/HD

cc: Tim Shanks, P.Eng. Manager of Water Services (e-mail)





Water and Waste Department • Service des eaux et des déchets

Environmental Standards Division • Division des Normes Environnementales

July 6, 2017

Our File: 040-18-18-14-00

Dr. Khalida Hai-Santiago c/o Helen Browne
300 Carlton Street (Room 4068)
Winnipeg, Manitoba
R3B 3M9

Dear Dr. Hai-Santiago:

RE: CITY OF WINNIPEG FLUORIDE MONITORING DATA

As a participant in the Provincial Water Fluoridation Program, the City of Winnipeg Water and Waste Department hereby submits the following fluoride monitoring data on analyses conducted by the Environmental Standards Division.

<u>LOCATION</u>	<u>SAMPLE NUMBER</u>	<u>DATE</u>	<u>RESULT (mg/L F)</u>
Distribution System (Composite – 39 Locations)	504769	3-Apr-17	0.65
	505459	10-Apr-17	0.70
	506198	18-Apr-17	0.66
	506948	24-Apr-17	0.53

The fluoridation system was shut down for maintenance from April 19 to April 21, 2017; the low fluoride result on April 24, 2017 was as a result of the shut-down.

If you have any questions on the foregoing, please call Ms. Nancy Crawford, Compliance Reporting Branch Head, at 204-986-4807.

Yours truly,

Original signed by:

Renée Grosselle
Manager of Environmental Standards

NC/HD

cc: Tim Shanks, P.Eng. Manager of Water Services (e-mail)





Water and Waste Department • Service des eaux et des déchets

Environmental Standards Division • Division des Normes Environnementales

September 7, 2017

Our File: 040-18-18-14-00

Dr. Khalida Hai-Santiago c/o Helen Browne
300 Carlton Street (Room 4068)
Winnipeg, Manitoba
R3B 3M9

Dear Dr. Hai-Santiago:

RE: CITY OF WINNIPEG FLUORIDE MONITORING DATA

As a participant in the Provincial Water Fluoridation Program, the City of Winnipeg Water and Waste Department hereby submits the following fluoride monitoring data on analyses conducted by the Environmental Standards Division.

<u>LOCATION</u>	<u>SAMPLE NUMBER</u>	<u>DATE</u>	<u>RESULT (mg/L F)</u>
Distribution System (Composite – 39 Locations)	508000	1-May-17	0.64
	508729	8-May-17	0.74
	509566	15-May-17	0.71
	510343	23-May-17	0.69

If you have any questions on the foregoing, please call Ms. Nancy Crawford, Compliance Reporting Branch Head, at 204-986-4807.

Yours truly,

Original signed by:

Renée Grosselle
Manager of Environmental Standards

NC/HD

cc: Tim Shanks, P.Eng. Manager of Water Services (e-mail)



Water and Waste Department • Service des eaux et des déchets

Environmental Standards Division • Division des Normes Environnementales

October 3, 2017

Our File: 040-18-18-14-00

Dr. Khalida Hai-Santiago c/o Helen Browne
300 Carlton Street (Room 4068)
Winnipeg, Manitoba
R3B 3M9

Dear Dr. Hai-Santiago:

RE: CITY OF WINNIPEG FLUORIDE MONITORING DATA

As a participant in the Provincial Water Fluoridation Program, the City of Winnipeg Water and Waste Department hereby submits the following fluoride monitoring data on analyses conducted by the Environmental Standards Division.

<u>LOCATION</u>	<u>SAMPLE NUMBER</u>	<u>DATE</u>	<u>RESULT (mg/L F)</u>
Distribution System (Composite – 39 Locations)	511897	05-Jun-17	0.69
	512746	12-Jun-17	0.70
	513675	19-Jun-17	0.68
	514505	26-Jun-17	0.70

If you have any questions on the foregoing, please call Ms. Nancy Crawford, Compliance Reporting Branch Head, at 204-986-4807.

Yours truly,

Original signed by:

Renée Grosselle
Manager of Environmental Standards

NC/HD

cc: Tim Shanks, P.Eng. Manager of Water Services (e-mail)



Water and Waste Department • Service des eaux et des déchets

Environmental Standards Division • Division des Normes Environnementales

October 4, 2017

Our File: 040-18-18-14-00

Dr. Khalida Hai-Santiago c/o Helen Browne
300 Carlton Street (Room 4068)
Winnipeg, Manitoba
R3B 3M9

Dear Dr. Hai-Santiago:

RE: CITY OF WINNIPEG FLUORIDE MONITORING DATA

As a participant in the Provincial Water Fluoridation Program, the City of Winnipeg Water and Waste Department hereby submits the following fluoride monitoring data on analyses conducted by the Environmental Standards Division.

<u>LOCATION</u>	<u>SAMPLE NUMBER</u>	<u>DATE</u>	<u>RESULT (mg/L F)</u>
Distribution System (Composite – 39 Locations)	515411	04-Jul-17	0.48
	516218	10-Jul-17	0.53
	517025	17-Jul-17	0.71
	518005	24-Jul-17	0.73
	518762	31-Jul-17	0.75

Branch II fluoride was offline July 4 to 7 and Branch I fluoride was offline on July 7; this caused decreased fluoride levels in the distribution system.

If you have any questions on the foregoing, please call Ms. Nancy Crawford, Compliance Reporting Branch Head, at 204-986-4807.

Yours truly,

Original signed by:

Renée Grosselle
Manager of Environmental Standards

NC/HD

cc: Tim Shanks, P.Eng. Manager of Water Services (e-mail)



Water and Waste Department • Service des eaux et des déchets

Environmental Standards Division • Division des Normes Environnementales

January 2, 2018

Our File: 040-18-18-14-00

Dr. Khalida Hai-Santiago c/o Helen Browne
300 Carlton Street (Room 4068)
Winnipeg, Manitoba
R3B 3M9

Dear Dr. Hai-Santiago:

RE: CITY OF WINNIPEG FLUORIDE MONITORING DATA

As a participant in the Provincial Water Fluoridation Program, the City of Winnipeg Water and Waste Department hereby submits the following fluoride monitoring data on analyses conducted by the Environmental Standards Division.

<u>LOCATION</u>	<u>SAMPLE NUMBER</u>	<u>DATE</u>	<u>RESULT (mg/L F)</u>
Distribution System (Composite – 39 Locations)	519617	08-Aug-17	0.71
	520341	14-Aug-17	0.75
	521108	21-Aug-17	0.73
	521959	28-Aug-17	0.73
	522638	05-Sep-17	0.70
	523459	11-Sep-17	0.73
	524137	18-Sep-17	0.73
	524831	25-Sep-17	0.71

If you have any questions on the foregoing, please call Ms. Nancy Crawford, Compliance Reporting Branch Head, at 204-986-4807.

Yours truly,

Original signed by:

Renée Grosselle
Manager of Environmental Standards

NC/HD

cc: Tim Shanks, P.Eng. Manager of Water Services (e-mail)



Water and Waste Department • Service des eaux et des déchets

Environmental Standards Division • Division des Normes Environnementales

March 9, 2018

Our File: 040-18-18-14-00

Dr. Khalida Hai-Santiago c/o Helen Browne
300 Carlton Street (Room 4068)
Winnipeg, Manitoba
R3B 3M9

Dear Dr. Hai-Santiago:

RE: CITY OF WINNIPEG FLUORIDE MONITORING DATA

As a participant in the Provincial Water Fluoridation Program, the City of Winnipeg Water and Waste Department hereby submits the following fluoride monitoring data on analyses conducted by the Environmental Standards Division.

<u>LOCATION</u>	<u>SAMPLE NUMBER</u>	<u>DATE</u>	<u>RESULT (mg/L F)</u>
Distribution System (Composite – 39 Locations)	525689	02-Oct-17	0.72
	526440	10-Oct-17	0.77
	527218	16-Oct-17	0.67
	528071	23-Oct-17	0.67
	528826	30-Oct-17	0.69
	529631	06-Nov-17	0.71
	530410	14-Nov-17	0.73
	531049	20-Nov-17	0.71
	531679	27-Nov-17	0.71
	532434	04-Dec-17	0.70
	533105	11-Dec-17	0.73
	533876	18-Dec-17	0.73
	534461	27-Dec-17	0.70

If you have any questions on the foregoing, please call Ms. Nancy Crawford, Compliance Reporting Branch Head, at 204-986-4807.

Yours truly,

Original signed by:

Renée Grosselle
Manager of Environmental Standards

NC/HD

cc: Tim Shanks, P.Eng. Manager of Water Services (e-mail)

**2017 Quarterly Total Trihalomethane
And Total Haloacetic Acid Summary Reports**

**CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION**

Total Trihalomethane Summary Report

Reporting Period: Quarter 1 2017

License: PWS-09-412-01

SAMPLE DATE	DISTRIBUTION SYSTEM THM RESULTS (ug/L)					
	WC-12	WC-06	NW-05	NE-09	SE-07	SW-08
Monday, May 24, 2016	21	22	24	23	23	21
Monday, August 22, 2016	40	49	45	43	43	41
Monday, November 7, 2016	17	19	24	21	21	23
Monday, February 13, 2017	35	35	35	36	36	33
RUNNING AVERAGE THM	28	31	32	31	31	30

COMMENTS: May 24, 2016 and August 22, 2016 samples were analyzed by contract lab.

NS - NO SAMPLE

NR - NO RESULT

Methodology

Analysis of Volatile Organic Compounds is by Headspace GC-MS, EPA Methods 5021A and 8260C.

Report Compiled by: H.Demchenko

Approved in LIMS by: C.Diduck

File: WQR4

Date Approved: March 15, 2017

N:\Environmental Standards\Analytical Services\WQ Data\Routine Water Quality\2017\Quarterly THM\[Quarterly THM 2017.xlsx]THM Q1

**CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION**

Total Trihalomethane Summary Report

Reporting Period: Quarter 2 2017

License: PWS-09-412-01

SAMPLE DATE	DISTRIBUTION SYSTEM THM RESULTS (ug/L)					
	WC-12	WC-06	NW-05	NE-09	SE-07	SW-08
Monday, August 22, 2016	40	49	45	43	43	41
Monday, November 7, 2016	17	19	24	21	21	23
Monday, February 13, 2017	35	35	35	36	36	33
Monday, May 8, 2017	27	27	29	29	30	29
RUNNING AVERAGE THM	30	33	33	32	33	32

COMMENTS: August 22, 2016 samples were analyzed by contract lab.

NS - NO SAMPLE

NR - NO RESULT

Methodology

Analysis of Volatile Organic Compounds is by Headspace GC-MS, EPA Methods 5021A and 8260C.

Report Compiled by: H.Demchenko

Approved in LIMS by: C.Diduck

File: WQR4

Date Approved: July 8, 2017

N:\Environmental Standards\Analytical Services\WQ Data\Routine Water Quality\2017\Quarterly THM\[Quarterly THM 2017.xlsx]THM Q2

**CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION**

Total Trihalomethane Summary Report

Reporting Period: Quarter 3 2017

License: PWS-09-412-01

SAMPLE DATE	DISTRIBUTION SYSTEM THM RESULTS (ug/L)					
	WC-12	WC-06	NW-05	NE-09	SE-07	SW-08
Monday, November 7, 2016	17	19	24	21	21	23
Monday, February 13, 2017	35	35	35	36	36	33
Monday, May 8, 2017	27	27	29	29	30	29
Monday, August 8, 2017	47	49	47	48	51	45
RUNNING AVERAGE THM	32	33	34	34	35	33

COMMENTS:

NS - NO SAMPLE
NR - NO RESULT

Methodology

Analysis of Volatile Organic Compounds is by Headspace GC-MS, EPA Methods 5021A and 8260C.

Report Compiled by: H.Demchenko

Approved in LIMS by: C.Diduck

File: WQR4

Date Approved: October 3, 2017

N:\Environmental Standards\Analytical Services\WQ Data\Routine Water Quality\2017\Quarterly THM\Quarterly THM 2017.xlsx]THM Q3

**CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION**

Total Trihalomethane Summary Report

Reporting Period: Quarter 4 2017

License: PWS-09-412-01

SAMPLE DATE	DISTRIBUTION SYSTEM THM RESULTS (ug/L)					
	WC-12	WC-06	NW-05	NE-09	SE-07	SW-08
Monday, February 13, 2017	35	35	35	36	36	33
Monday, May 8, 2017	27	27	29	29	30	29
Monday, August 8, 2017	47	49	47	48	51	45
Monday, November 6, 2017	25	19	25	27	20	21
RUNNING AVERAGE THM	34	33	34	35	34	32

COMMENTS:

NS - NO SAMPLE
NR - NO RESULT

Methodology

Analysis of Volatile Organic Compounds is by Headspace GC-MS, EPA Methods 5021A and 8260C.

Report Compiled by: H.Demchenko

Approved in LIMS by: C.Diduck

File: WQR4

Date Approved: January 19, 2018

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**CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION**

Haloacetic Acids Summary Report

Reporting Period: Quarter 1 2017

License: PWS-09-412-01

SAMPLE DATE	DISTRIBUTION SYSTEM HAA RESULTS (ug/L)					
	WC-12	WC-06	NW-05	NE-09	SE-07	SW-08
Monday, May 09, 2016	27	28	27	29	28	28
Monday, August 8, 2016	31	37	23	29	38	38
Monday, November 7, 2016	25	27	29	28	29	28
Monday, February 13, 2017	28	26	28	27	29	28
RUNNING AVERAGE HAA	28	30	27	28	31	31

COMMENTS:

NS - NO SAMPLE

NR - NO RESULT

Methodology

Haloacetic Acids analyzed by GC-ECD, Standard Methods for the Examination of Water and Waste Water, 21'st Edition, Method 6232

Report Compiled by: H.Demchenko

Approved in LIMS by: C.Diduck

File: WQR4

Date Approved: March 15, 2017

N:\Environmental Standards\Analytical Services\WQ Data\Routine Water Quality\2017\Quarterly HAA\Quarterly HAA 2017.xlsx]HAA Q1

**CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION**

Haloacetic Acids Summary Report

Reporting Period: Quarter 2 2017

License: PWS-09-412-01

SAMPLE DATE	DISTRIBUTION SYSTEM HAA RESULTS (ug/L)					
	WC-12	WC-06	NW-05	NE-09	SE-07	SW-08
Monday, August 8, 2016	31	37	23	29	38	38
Monday, November 7, 2016	25	27	29	28	29	28
Monday, February 13, 2017	28	26	28	27	29	28
Monday, May 8, 2017	27	28	27	27	27	27
RUNNING AVERAGE HAA	28	30	27	28	31	30

COMMENTS:

NS - NO SAMPLE

NR - NO RESULT

Methodology

Haloacetic Acids analyzed by GC-ECD, Standard Methods for the Examination of Water and Waste Water, 21'st Edition, Method 6232

Report Compiled by: H.Demchenko

Approved in LIMS by: C.Diduck

File: WQR4

Date Approved: July 8, 2017

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**CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION**

Haloacetic Acids Summary Report

Reporting Period: Quarter 3 2017

License: PWS-09-412-01

SAMPLE DATE	DISTRIBUTION SYSTEM HAA RESULTS (ug/L)					
	WC-12	WC-06	NW-05	NE-09	SE-07	SW-08
Monday, November 7, 2016	25	27	29	28	29	28
Monday, February 13, 2017	28	26	28	27	29	28
Monday, May 8, 2017	27	28	27	27	27	27
Monday, August 8, 2017	33	39	33	34	39	38
RUNNING AVERAGE HAA	28	30	29	29	31	30

COMMENTS:

NS - NO SAMPLE
NR - NO RESULT

Methodology

Haloacetic Acids analyzed by GC-ECD, Standard Methods for the Examination of Water and Waste Water, 21st Edition, Method 6232

Report Compiled by: H.Demchenko

Approved in LIMS by: C.Diduck

File: WQR4

Date Approved: October 3, 2017

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**CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION**

Haloacetic Acids Summary Report

Reporting Period: Quarter 4 2017

License: PWS-09-412-01

SAMPLE DATE	DISTRIBUTION SYSTEM HAA RESULTS (ug/L)					
	WC-12	WC-06	NW-05	NE-09	SE-07	SW-08
Monday, February 13, 2017	28	26	28	27	29	28
Monday, May 8, 2017	27	28	27	27	27	27
Monday, August 8, 2017	33	39	33	34	39	38
Monday, November 6, 2017	19	17	19	19	17	18
RUNNING AVERAGE HAA	27	28	27	27	28	28

COMMENTS:

NS - NO SAMPLE
NR - NO RESULT

Methodology

Haloacetic Acids analyzed by GC-ECD, Standard Methods for the Examination of Water and Waste Water, 21st Edition, Method 6232

Report Compiled by: H.Demchenko

Approved in LIMS by: C.Diduck

File: WQR4

Date Approved: January 19, 2018

N:\Environmental Standards\Analytical Services\WQ Data\Routine Water Quality\2017\Quarterly HAA\Quarterly HAA 2017.xlsx]HAA Q4

2017 Lead Loop Monitoring Report



**CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENVIRONMENTAL STANDARDS DIVISION**

Water System Code: 252.00

Licence Number: PWS-09-412-01

2017 Lead Loop System Summary Report

SAMPLE DATE	Five minute flushed Lead Concentration (mg/L)				
	Lead Loop Cu	Lead Loop Pb	Lead Loop Pb1	Lead Loop Pb2	Lead Loop Pb3
January 26, 2017	<0.0004	0.0015	0.0016	0.0016	0.0016
February 17, 2017	<0.0004	0.0007	0.0009	0.0015	0.0005
March 17, 2017	0.0007	0.0013	0.0008	0.0005	<0.0004
April 7, 2017	<0.0004	<0.0004	<0.0004	0.0024	0.0004
May 12, 2017	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
June 2, 2017	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
July 21, 2017	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
August 4, 2017	<0.0004	0.0007	<0.0004	0.0017	<0.0004
September 29, 2017	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
October 20, 2017	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
November 10, 2017	<0.0006	<0.0006	<0.0006	0.0028	0.0009
December 1, 2017	<0.0006	<0.0006	<0.0006	0.0006	<0.0006
2017 AVERAGE LEAD CONCENTRATION	<0.0006	<0.0006	<0.0006	0.0016	<0.0006

COMMENTS: Effective September 2017, the lead detection limit increased from 0.0004 mg/L to 0.0006 mg/L.

Report Compiled By: H.Demchenko

NS - NO SAMPLE
NR - NO RESULT

Approved in LIMS By: C.Diduck

Date Approved: 27-Feb-18

Methodology

Lead was analyzed by ICP-MS according to Standard Methods for the Examination of Water and Wastewater, 21st Edition, Method 3125