

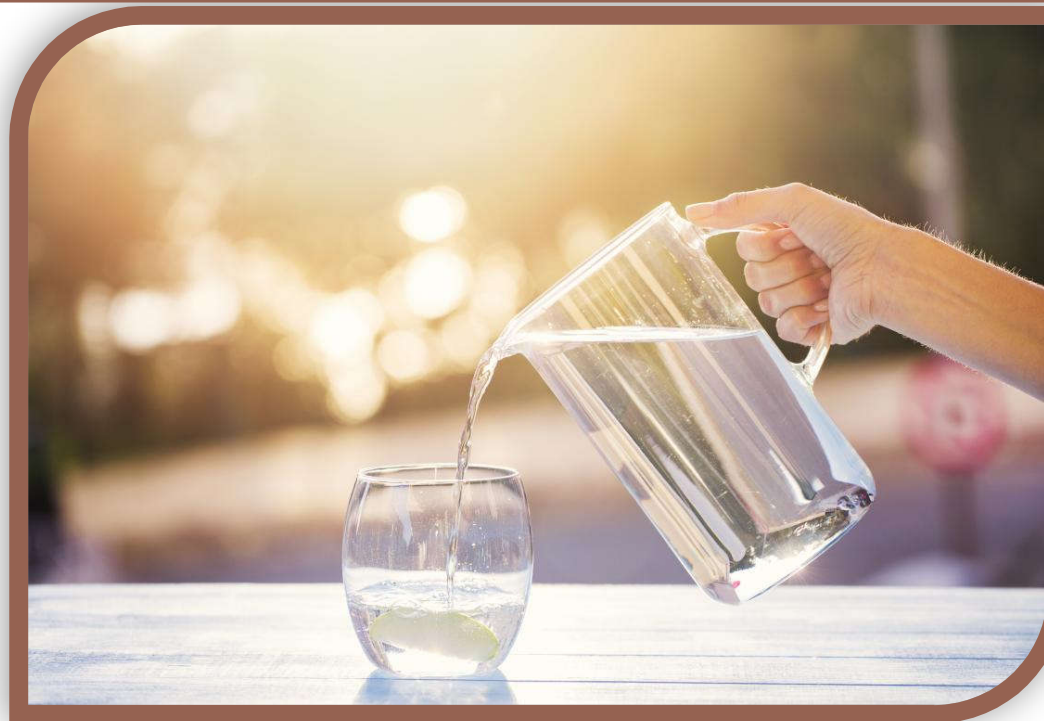


Water and Waste
Eaux et déchets

ENVIRONMENTAL STANDARDS DIVISION

2022 ANNUAL WATER REPORT

CITY OF WINNIPEG WATER SUPPLY SYSTEM



OPERATING LICENCE #PWS-09-412-02

2022



INTRODUCTION

The Mission of the City of Winnipeg's Water and Waste Department is to serve the community by providing and continually improving drinking water, wastewater, land drainage, and solid waste services to the citizens of Winnipeg.

The City of Winnipeg ensures that our drinking 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 Province of Manitoba and the Winnipeg Regional Health Authority regulate the quality of our drinking water using the *Manitoba Drinking Water Safety Act* and the *Guidelines for Canadian Drinking Water Quality*. The City of Winnipeg's Public Water System Operating Licence, PWS-09-412-02, 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 has compiled this report, which summarizes the results of the City's 2022 Water Quality Monitoring Program.

2022 ANNUAL WATER REPORT – CITY OF WINNIPEG WATER SUPPLY SYSTEM

CONTENTS

1.0	Drinking Water Source, Treatment, and Distribution	1
2.0	Drinking Water Quality Standards and Testing	2
3.0	Compliance and Corrective Actions Summary	4
4.0	Licences and Permits	7
5.0	Major Expenses	7
6.0	Zebra Mussels	7
7.0	Backflow Prevention and Cross Connection Control	8
8.0	Corrosion Control and Lead Testing Programs	8
9.0	References	11

TABLES AND FIGURES

Table 1.	Drinking Water Parameters	3
Table 2.	Corrective Action Reports Summary	6
Table 3.	2022 New Lead Testing Program Results Summary	9
Figure 1.	2022 Average Lead Results by Service Line Material	10

APPENDICES

Appendix A.	Water Quality Summary Reports
	2022 Shoal Lake Water Quality Summary
	2022 Water Treatment Plant – Raw Water Quality Summary
	2022 Water Treatment Plant – Finished Water Quality Summary
	2022 Distribution System Water Quality Summary
Appendix B.	Compliance Submission Reports
	2022 Monthly Chlorine Reports
	2022 Monthly Turbidity Reports
	2022 Monthly UV Summary Reports
	2022 Corrective Action Reports
	2022 Quarterly Fluoride Monitoring Reports
	2022 Quarterly Total Trihalomethane Summary Reports
	2022 Quarterly Haloacetic Acid Summary Reports
Appendix C.	2022 Shoal Lake Adult and Veliger Zebra Mussel Monitoring Report (MB)
Appendix D.	2022 Lead Monitoring Program Results

1.0 DRINKING WATER SOURCE, TREATMENT, AND DISTRIBUTION

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 the water system is only accessible by rail or boat. The water flows by gravity from the intake through a 135-kilometer-long aqueduct into four large reservoirs located adjacent to the Winnipeg Drinking Water Treatment Plant (WTP). The reservoirs can hold enough water to supply Winnipeg for approximately one month, depending on demand. The raw water is pumped from the reservoirs into the WTP, where it undergoes several steps of treatment to produce high quality drinking water:

1. Coagulation and flocculation: sulphuric acid and ferric sulphate are added to lower the pH of the water and cause particles of organic material to clump together.
2. Dissolved Air Floatation (DAF): tiny bubbles of air are used to remove the clumped organic material from the water.
3. Ozonation: gaseous ozone is added to kill bacteria, and then sodium bisulphite is added to remove excess ozone.
4. Filtration: the water flows through biologically activated carbon filters to remove any remaining small particles, including parasites.
5. Chlorination: chlorine, the most widely-used drinking water disinfectant in North America, is added to kill viruses and bacteria, and then sodium hydroxide is added to raise the pH back to the original level.
6. Ultraviolet (UV) Light: the water is disinfected by exposing it to UV light.
7. Orthophosphate is added to form a protective coating inside water pipes, which helps to reduce corrosion. Fluoride is added to prevent dental decay, as a part of the Provincial Water Fluoridation Program, which is overseen by Manitoba Health.

2022 ANNUAL WATER REPORT – CITY OF WINNIPEG WATER SUPPLY SYSTEM

In 2022, the WTP produced an average of 190 megalitres (ML) of high-quality drinking water per day. The water is pumped from the WTP to three smaller reservoirs and regional pumping stations in different areas of the City. The Wilkes Reservoir holds 252 ML and feeds water to the Hurst Regional Pumping Station; the McPhillips Reservoir holds 240 ML and feeds water to the McPhillips Regional Pumping Station; the Maclean Reservoir holds 222 ML and feeds water to the Maclean Regional Pumping Station. At the regional pumping stations, chlorine is added again before entering the distribution system, which is comprised of approximately: 2,717 km of water mains; 151 km of feeder mains; 30,319 valves; and 23,295 fire hydrants.

2.0 DRINKING WATER QUALITY STANDARDS AND TESTING

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-09-412-02¹, issued by Environment and Climate, 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.

The required frequency of testing and testing locations are specified in PWS-09-412-02. We are required to test the raw water, treated water leaving the WTP, water leaving the three regional pumping stations, and at a minimum of 39 sites within the distribution system every week. Because water quality is so important, we exceed the minimum requirements by testing at 57 locations within the distribution system and by testing for additional parameters beyond the requirements of PWS-09-412-02.

The parameters tested are listed in Table 1 and summaries of the 2022 Water Quality results are provided in Appendix A.

2022 ANNUAL WATER REPORT – CITY OF WINNIPEG WATER SUPPLY SYSTEM

Table 1. Drinking Water Parameters

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

✓ Additional sampling beyond requirements of PWS-09-412-02

✓✓ Required as per PWS-09-412-02

3.0 COMPLIANCE AND CORRECTIVE ACTIONS SUMMARY

The City of Winnipeg operates a comprehensive Water Quality Monitoring program that exceeds the requirements of PWS-09-412-02. We monitor the quality of our water from source to tap and respond to customer inquiries and complaints about water quality. We submit various compliance reports to our regulators: monthly reports detailing turbidity, chlorine, and UV results at the WTP; quarterly reports detailing fluoride, haloacetic acid (HAA), and trihalomethane (THM) levels in the distribution system; and an annual update on our Lead Testing Program. Weekly bacteriological results are sent directly to the Province of Manitoba's Office of Drinking Water (ODW) by the analytical laboratory that performs the testing.

Occasionally, test results do not meet a drinking water quality standard, or we fail to meet a licence requirement. In these cases, we notify the ODW and take corrective action to ensure our water remains safe. We will inform Winnipeg residents immediately if there is ever a water quality issue that could affect public health.

The presence of bacteria in a water sample could indicate a potential treatment failure or contamination after treatment. If bacteria are detected in a treated water sample from the WTP or in the distribution system we take immediate corrective actions, notify the ODW, and submit a Corrective Action Report (CAR). In 2022, total coliform and *E. coli* bacteria were not detected in any of the 212 samples from the WTP and not detected in 99.95% of the 5,978 samples from the distribution system.

We add chlorine to disinfect the water as it leaves the WTP, and again as it enters the distribution system from the three regional pumping stations, using continuous online analyzers to manage the chlorine dosing levels. Grab samples are used to confirm the accuracy of the analyzers and to confirm that appropriate levels of chlorine are maintained throughout the distribution system. We are required to maintain a free chlorine residual of 0.5 milligrams per litre (mg/L) in the water as it leaves the WTP and 0.1 mg/L at all points within the distribution system. If the free chlorine residual drops below these levels we take immediate corrective actions, notify the ODW, and submit a CAR. In 2022, 99.97% of the 3,109 grab samples collected by laboratory staff met the free chlorine requirements.

2022 ANNUAL WATER REPORT – CITY OF WINNIPEG WATER SUPPLY SYSTEM

Turbidity is a measurement of the cloudiness of water caused by small particles, which can reduce the effectiveness of disinfection. The turbidity of the water leaving the filters at the WTP is never to exceed 1.0 Nephelometric Turbidity Units (NTU) and not to exceed 0.3 NTU for more than 12 consecutive hours and/or more than 5% of readings per month on any operating filter. We continuously monitor the turbidity of the filter effluent using online analyzers, and confirm the accuracy of the analyzers using grab samples. If the turbidity rises above these levels we take immediate corrective actions, notify the ODW, and submit a CAR. In 2022, 100% of the 1,889 grab samples collected by lab staff for turbidity were at or below 0.3 NTU. There is no maximum allowable turbidity in the distribution system, however, we take corrective actions if turbidity greater than 1.0 NTU is measured. In 2022, turbidity measured less than 1.0 NTU in 99.68% of the 3,119 samples from the distribution system.

No drinking water safety orders were issued for the City of Winnipeg in 2022. No boil water advisories were issued by the ODW/WRHA in 2022, however, one self-managed boil water advisory was issued by the City of Winnipeg to residents in a localized area on August 14, 2022 following a 311 concern during a water main renewal in the area. The boil water advisory was subsequently rescinded on August 17, 2022, after two consecutive sets of re-samples taken 24 hours apart tested negative for total coliforms and *E. coli*. A CAR was not required for this incident. No charges were laid, pending, or disposed of for any offences against the City of Winnipeg in 2022.

A summary of the CARs submitted in 2022 is provided in Table 2; Compliance and Corrective action reports are provided in Appendix B.

2022 ANNUAL WATER REPORT – CITY OF WINNIPEG WATER SUPPLY SYSTEM

Table 2. Corrective Action Reports Summary

Report Number	Incident Date(s)	Incident Location	Parameter	Result	Description of Corrective Actions Taken and Comments
CAR-01	21-Jun-22	NE04	Total Coliform	34 MPNU per 100 mL	Re-sampled location as well as upstream and downstream locations; re-samples met bacteriological standards
CAR-02	21-Jun-22	WTP	Free Chlorine	0.34 mg/L	WTP was offline for scheduled maintenance. Water quality and our ability to continue supplying treated water were not impacted.
CAR-03	13-Jul-22	SW15	Total Coliform	1 MPNU per 100 mL	Re-sampled location; re-samples met bacteriological standards
CAR-04	23-Jul-22	Hydrant	Total Coliform	4 MPNU per 100mL	Flushed and re-sampled; re-samples met bacteriological standards.
CAR-05	22-Aug-22	WTP	Turbidity	5.00 NTU	Turbidity spike was due to instrument maintenance, it was not representative of the filter effluent.
CAR-06	Week of 25-Sep-22	WTP	Monitoring Requirement	Missed grab sample from Filter 6	Reviewed requirements with staff and created a procedure to prevent recurrence.
CAR-07	23-Nov-22	SE03	Total Coliform Chlorine	130 MPNU per 100 mL <0.02 mg/L	Flushed and re-sampled location as well as upstream and downstream locations until two consecutive samples taken 24 hours apart met bacteriological standards and chlorine levels were re-established.

4.0 LICENCES AND PERMITS

The City of Winnipeg operates its public water system according to the requirements listed in PWS-09-402-02, which came into effect on December 1, 2020 and expires on November 30, 2025.

Approximately 18.6 km of water mains were added to the distribution system in 2022. All of the extensions conform to the City of Winnipeg's engineering standards and construction specifications, as such, the works were approved by the ODW as a minor alteration and a Permit to Construct or Alter a Public Water System was not required.

5.0 MAJOR EXPENSES

In 2022, the City's major expenses relating to drinking water included:

- Renewal of 13.6 km of water mains at 35 locations in the City's water distribution system
- Rehabilitation of the Redwood/Kildonan Feeder main river crossing
- Gas detection safety upgrades at the Hurst and MacLean Regional Pumping Stations
- Programmable-Logic-Controller (PLC) upgrades at the Taché Booster Pumping Station
- Implementation of a Granular-Activated-Carbon (GAC) filter media capture system at the WTP
- Fire pump upgrades at the Shoal Lake Aqueduct Intake Facility
- HVAC equipment upgrades at the Deacon Chemical Feed Facility

6.0 ZEBRA MUSSELS

Zebra mussels are an invasive mollusk which can negatively impact ecosystems as they compete with fish for food. Zebra mussels can also settle inside water intake pipes and impede water flow.

The City of Winnipeg monitors Shoal Lake and the WTP raw water reservoirs for both adult zebra mussels and zebra mussel larva (veligers) during open water season. In 2022, there was no evidence of adult or veliger zebra mussels observed in any of the samples. The 2022 Shoal Lake Adult and Veliger Zebra Mussel Monitoring Report (MB) is provided in Appendix C.

7.0 BACKFLOW PREVENTION AND CROSS CONNECTION CONTROL

As required under PWS-09-412-02, the City of Winnipeg operates a Backflow Prevention and Cross-Connection Control Program, which is enforced under the Water By-law 2015/107. The program requires all moderate and severe hazard premises to install and maintain a premise isolation backflow prevention device on the incoming water line to prevent the backwards flow of water from the building into the distribution system. Existing and newly installed devices are inspected by Program staff to ensure they have been installed according to the Plumbing Code and that the device offers the required level of protection, which is dependent upon the type of activities that occur within the building.

In 2022, Program staff notified 335 building owners of the requirement to install premises isolation devices, conducted approximately 1,400 inspections, and tracked the testing and maintenance of over 18,000 backflow prevention devices.

8.0 CORROSION CONTROL AND LEAD TESTING PROGRAMS

Although lead is not present in the water produced by the WTP, it can enter the water as it passes through a lead service line (the pipe that connects a building to the water main) and/or household plumbing systems that contain lead. Buildings constructed before 1950 may have a lead service line and those constructed before 1990 may have lead solder or brass plumbing fixtures. There are approximately 22,500 buildings with lead service lines in the City of Winnipeg.

The ODW regulates the City of Winnipeg's Corrosion Control and Lead Testing Programs under PWS-09-412-02. As part of our Corrosion Control Program, we add orthophosphate to the water as it leaves the WTP. Orthophosphate forms a coating inside water pipes which helps reduce corrosion that can allow lead to leach into water as it travels through the pipes. We also replace the City's portion of lead service lines (from the water main to the shut-off valve at the property line) when replacing water mains and notify building owners when this work is being done so they have the option to benefit from cost-savings achieved by replacing their portion of the service line (from the shut-off valve at the property line to the building) at the same time.

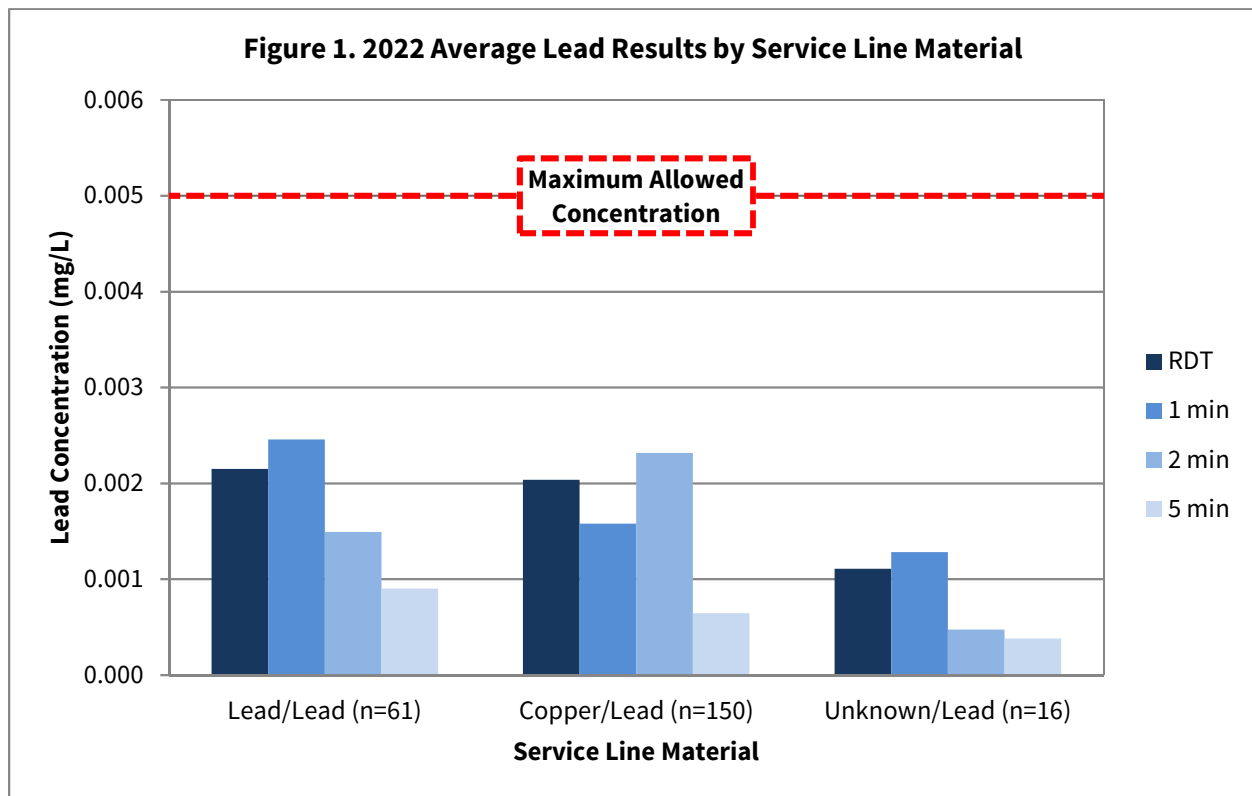
2022 ANNUAL WATER REPORT – CITY OF WINNIPEG WATER SUPPLY SYSTEM

For the 2022 Lead Testing Program we analyzed 228 sets of samples collected from buildings with full lead (both the City and customer portions are lead) or partial lead (either the City or customer portion is lead) service lines. Sample sets consist of a Random Daytime Sample (RDT), and samples collected after 1, 2, and 5 minutes of flushing. The RDT sample is the best estimate of typical lead exposure within the building, while the sample collected after 1 minute of flushing is the water that was in the service line when the RDT sample was collected (depending on the distance of the sample tap from the service line). The samples collected after 2 and 5 minutes of flushing show the effect of flushing on lead levels at the tap.

Although 7% of the RDT and 1-minute flushed samples were over the guideline of 0.005 mg/L, lead levels decreased significantly with increased flushing. After five minutes of flushing, all but one sample were below the guideline. A summary of the results from the 2022 Lead Testing Program is provided in Table 3; results are provided in Appendix D.

Table 3: 2022 Lead Testing Program Summary				
	Average (mg/L)	Minimum (mg/L)	Maximum (mg/L)	% of samples above guideline (0.005 mg/L)
Random Daytime*	0.00199	<0.000065	0.019805	7.02%
1 minute	0.00179	<0.000065	0.022734	7.46%
2 minute	0.00196	<0.000065	0.212160	2.63%
5 minute	0.00069	<0.000065	0.015299	0.44%

As shown in Figure 1, the average lead concentration in buildings with full lead service lines was higher than those with partial lead service lines. The average lead concentration was highest in the RDT and 1-minute flushed samples, but decreased significantly in the 2-minute and 5-minute flushed samples. Please note that one high result reported for a 2-minute flushed sample significantly affected the 2-minute flushed average for partial lead service lines. Overall, the results obtained from the 2022 Lead Monitoring Program were lower than those obtained in previous years, we will continue to monitor this trend.



*one location excluded from chart due to unconfirmed lead connection

Customers are encouraged to remove lead from their plumbing systems whenever feasible. If this is not feasible, customers should flush the water until cold prior to drinking or preparing food or beverages, or use a point-of-use or pitcher-style filter that is certified for lead removal. If filters are used to remove lead it is important that they are properly maintained, as poor maintenance may increase the levels of lead in the water.

More information on lead in drinking water is available at:

<https://winnipeg.ca/waterandwaste/water/lead.stm>

9.0 REFERENCES

1. City of Winnipeg Operating Licence PWS-09-412-02.
<http://www.winnipeg.ca/waterandwaste/pdfs/water/PublicWaterSystemOperatingLicence2016.pdf>
2. Manitoba Drinking Water Safety Act C.C.S.M. c. D101 (2002). Manitoba Water Stewardship.
<https://web2.gov.mb.ca/laws/statutes/ccsm/pdf.php?cap=d101>
3. Manitoba Drinking Water Safety Regulation 40/2007. Manitoba Water Stewardship.
<http://web2.gov.mb.ca/laws/regs/current/pdf-regs.php?reg=40/2007>
4. Manitoba Drinking Water Quality Standards Regulation 41/2007. Manitoba Water Stewardship.
<http://web2.gov.mb.ca/laws/regs/current/pdf-regs.php?reg=41/2007>

APPENDIX A

WATER QUALITY SUMMARY REPORTS

City of Winnipeg
Environmental Standards Division
2022 Shoal Lake Water Quality Summary

PARAMETER	UNITS	AVERAGE	MINIMUM	MAXIMUM
Miscellaneous				
Carbon, Dissolved Organic	<i>parts per million</i>	8.5	6.4	11.9
Carbon, Total Organic	<i>parts per million</i>	8.0	6.0	10.3
Chlorophyll-a	<i>parts per billion</i>	3.9	1.2	6.7
Colour, Apparent	<i>TCU</i>	14.4	10.0	19.0
Colour, True	<i>TCU</i>	8.6	7.0	10.0
Conductivity	<i>microsiemens per centimetre</i>	157	138	181
Odour	<i>units</i>	93	75	150
pH	<i>units</i>	7.93	7.24	8.36
Plankton (algae) count	<i>cells/mL</i>	10,056	774	30,080
Solids, Total	<i>parts per million</i>	101	80	118
Solids, Total Dissolved	<i>parts per million</i>	80	59	102
Temperature	<i>degrees Celcius</i>	10.1	2.6	22.9
Turbidity (clearness)	<i>NTU</i>	0.79	0.19	2.15
Anions and Nutrients				
Alkalinity, Total	<i>parts per million as calcium carbonate</i>	75.9	65.3	88.1
Hardness, Total	<i>parts per million as calcium carbonate</i>	77.1	66.4	91.0
Chloride	<i>parts per million</i>	2.1	1.9	2.4
Fluoride	<i>parts per million</i>	0.09	0.08	0.09
Nitrate Nitrogen	<i>parts per million</i>	0.070	0.011	0.152
Perchlorate	<i>parts per billion</i>	<0.20	<0.20	<0.20
Phosphorus, Total Reactive	<i>parts per million</i>	0.0024	0.0011	0.0047
Phosphorus, Total	<i>parts per million</i>	0.0136	0.0086	0.0212
Sulphate	<i>parts per million</i>	<0.4	<0.4	0.4
Total Kjeldahl Nitrogen (TKN)	<i>parts per million</i>	0.48	0.29	0.67
Bacteria				
Escherichia Coli	<i>MPN per 100 mL</i>	0	0	1
Total Coliforms	<i>MPN per 100 mL</i>	71	0	>200
Disinfection By-Products				
Haloacetic acids	<i>parts per billion</i>	<1.2	<1.2	<1.2
Trihalomethanes	<i>parts per billion</i>	<2.7	<2.7	<2.7
Enteric Protozoa				
Cryptosporidium	<i>oocysts per 100 L</i>	0	0	0
Giardia	<i>cysts per 100 L</i>	0	0	0

City of Winnipeg
Environmental Standards Division
2022 Shoal Lake Water Quality Summary

PARAMETER	UNITS	AVERAGE	MINIMUM	MAXIMUM
Pesticides				
Alachlor	<i>parts per billion</i>	<0.10	<0.10	<0.10
Aldrin	<i>parts per billion</i>	<0.010	<0.010	<0.010
alpha-BHC	<i>parts per billion</i>	<0.010	<0.010	<0.010
alpha-Chlordane	<i>parts per billion</i>	<0.010	<0.010	<0.010
alpha-Endosulfan	<i>parts per billion</i>	<0.010	<0.010	<0.010
Atrazine	<i>parts per billion</i>	<0.10	<0.10	<0.10
Azinphos-methyl	<i>parts per billion</i>	<0.010	<0.010	<0.010
beta-BHC	<i>parts per billion</i>	<0.010	<0.010	<0.010
beta-Endosulfan	<i>parts per billion</i>	<0.010	<0.010	<0.010
Carbaryl	<i>parts per billion</i>	<0.20	<0.20	<0.20
Carbofuran	<i>parts per billion</i>	<0.20	<0.20	<0.20
Chlorpyrifos	<i>parts per billion</i>	<0.0050	<0.0050	<0.0050
delta-BHC	<i>parts per billion</i>	<0.010	<0.010	<0.010
Diazinon	<i>parts per billion</i>	<0.0050	<0.0050	<0.0050
Diclofop-methyl	<i>parts per billion</i>	<0.10	<0.10	<0.10
Dieldrin	<i>parts per billion</i>	<0.010	<0.010	<0.010
Dimethoate	<i>parts per billion</i>	<0.10	<0.10	<0.10
Endrin	<i>parts per billion</i>	<0.010	<0.010	<0.010
Eptam	<i>parts per billion</i>	<0.20	<0.20	<0.20
gamma-Chlordane	<i>parts per billion</i>	<0.010	<0.010	<0.010
Heptachlor	<i>parts per billion</i>	<0.010	<0.010	<0.010
Heptachlor Epoxide	<i>parts per billion</i>	<0.010	<0.010	<0.010
Lindane (gamma-BHC)	<i>parts per billion</i>	<0.010	<0.010	<0.010
Malathion	<i>parts per billion</i>	<0.10	<0.10	<0.10
Methoxychlor	<i>parts per billion</i>	<0.010	<0.010	<0.010
Methyl Parathion	<i>parts per billion</i>	<0.10	<0.10	<0.10
Metribuzin	<i>parts per billion</i>	<0.20	<0.20	<0.20
Mirex	<i>parts per billion</i>	<0.010	<0.010	<0.010
o,p-DDD	<i>parts per billion</i>	<0.010	<0.010	<0.010
o,p-DDE	<i>parts per billion</i>	<0.010	<0.010	<0.010
o,p-DDT	<i>parts per billion</i>	<0.010	<0.010	<0.010
p,p-DDD	<i>parts per billion</i>	<0.010	<0.010	<0.010
p,p-DDE	<i>parts per billion</i>	<0.010	<0.010	<0.010
p,p-DDT	<i>parts per billion</i>	<0.010	<0.010	<0.010
Parathion	<i>parts per billion</i>	<0.0130	<0.0130	<0.0130
Propaclor	<i>parts per billion</i>	<0.20	<0.20	<0.20
Propanil	<i>parts per billion</i>	<0.20	<0.20	<0.20
Propoxur	<i>parts per billion</i>	<0.20	<0.20	<0.20
Simazine	<i>parts per billion</i>	<0.10	<0.10	<0.10
Terbufos	<i>parts per billion</i>	<0.10	<0.10	<0.10
Triallate	<i>parts per billion</i>	<0.10	<0.10	<0.10
Trichlopyr	<i>parts per billion</i>	<0.050	<0.050	<0.250
Trifluralin	<i>parts per billion</i>	<0.030	<0.030	<0.030

City of Winnipeg
Environmental Standards Division
2022 Shoal Lake Water Quality Summary

PARAMETER	UNITS	AVERAGE	MINIMUM	MAXIMUM
Polychlorinated Biphenyls				
Arochlor 1016	<i>parts per billion</i>	<0.020	<0.020	<0.020
Arochlor 1221	<i>parts per billion</i>	<0.020	<0.020	<0.020
Arochlor 1232	<i>parts per billion</i>	<0.020	<0.020	<0.020
Arochlor 1242	<i>parts per billion</i>	<0.020	<0.020	<0.020
Arochlor 1248	<i>parts per billion</i>	<0.020	<0.020	<0.020
Arochlor 1254	<i>parts per billion</i>	<0.020	<0.020	<0.020
Arochlor 1260	<i>parts per billion</i>	<0.020	<0.020	<0.020
Phenoxy Acid Herbicides				
2,4,5-T	<i>parts per billion</i>	<0.50	<0.50	<0.50
2,4,5-TP	<i>parts per billion</i>	<0.50	<0.50	<2.50
2,4-D	<i>parts per billion</i>	<0.50	<0.50	<0.50
2,4-DB	<i>parts per billion</i>	<0.050	<0.050	<0.250
2,4-DP	<i>parts per billion</i>	<0.50	<0.50	<0.50
Bromoxynil	<i>parts per billion</i>	<0.50	<0.50	<2.50
Dicamba	<i>parts per billion</i>	<0.120	<0.009	<0.120
Dinoseb	<i>parts per billion</i>	<0.50	<0.50	<2.50
MCPA	<i>parts per billion</i>	<0.50	<0.50	<0.50
MCPB	<i>parts per billion</i>	<0.050	<0.050	<0.250
Mecoprop	<i>parts per billion</i>	<0.50	<0.50	<2.50
Picloram	<i>parts per billion</i>	<0.50	<0.50	<2.50
Total Metals				
Aluminum	<i>parts per million</i>	0.00497	0.00111	0.01343
Antimony	<i>parts per million</i>	0.000038	<0.000025	0.000081
Arsenic	<i>parts per million</i>	0.000839	0.000617	0.001054
Boron	<i>parts per million</i>	0.00538	<0.00208	0.01100
Cadmium	<i>parts per million</i>	<0.000007	<0.000007	<0.000007
Calcium	<i>parts per million</i>	19.302	16.612	23.025
Chromium	<i>parts per million</i>	<0.00004	<0.00004	0.00008
Chromium VI	<i>parts per million</i>	<0.00050	<0.00050	<0.00050
Copper	<i>parts per million</i>	0.001712	0.001083	0.003335
Iron	<i>parts per million</i>	0.02530	0.00561	0.06383
Lead	<i>parts per million</i>	<0.000065	<0.000065	0.000180
Magnesium	<i>parts per million</i>	5.805	4.920	7.005
Manganese	<i>parts per million</i>	0.00758	0.00203	0.02468
Mercury	<i>parts per billion</i>	<0.0050	<0.0050	<0.0050
Nickel	<i>parts per million</i>	0.000206	<0.000021	0.000567
Potassium	<i>parts per million</i>	1.229	1.056	1.432
Sodium	<i>parts per million</i>	2.199	1.885	2.584
Uranium	<i>parts per million</i>	<0.000032	<0.000032	<0.000032
Zinc	<i>parts per million</i>	0.00153	0.00032	0.00551
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. Guidelines for Canadian Drinking Water Quality do not apply to Shoal Lake.				

City of Winnipeg
Environmental Standards Division
2022 Water Treatment Plant - Raw Water Quality Summary

PARAMETER	UNITS	AVERAGE	MINIMUM	MAXIMUM
Miscellaneous				
Carbon, Dissolved Organic	<i>parts per million</i>	8.2	6.6	10.6
Carbon, Total Organic	<i>parts per million</i>	7.6	6.4	9.8
Chlorine, Free	<i>parts per million</i>	<0.02	<0.02	0.07
Chlorine, Total	<i>parts per million</i>	0.02	<0.02	0.08
Chlorophyll-a	<i>parts per billion</i>	4.8	<1.0	11.2
Colour, Apparent	<i>TCU</i>	15.3	10.0	26.0
Colour, True	<i>TCU</i>	8.2	<5.0	12.0
Conductivity	<i>microsiemens per centimetre</i>	165	149	188
Langelier Index (4 C)	<i>units</i>	-0.43	-0.53	-0.27
Langelier Index (60 C)	<i>units</i>	0.35	0.25	0.51
Microcystin	<i>parts per billion</i>	<0.20	<0.20	0.21
Odour	<i>units</i>	89	75	150
ORP	<i>millivolts</i>	475.1	390.9	520.2
Oxygen, Dissolved	<i>parts per million</i>	11.0	6.2	13.6
pH	<i>units</i>	7.87	7.50	8.39
Plankton (algae) count	<i>cells/mL</i>	13,892	257	48,820
Solids, Total	<i>parts per million</i>	110	88	130
Solids, Total Dissolved	<i>parts per million</i>	89	53	119
Temperature	<i>degrees Celcius</i>	9.2	1.3	22.5
Turbidity (clearness)	<i>NTU</i>	0.91	0.41	2.43
UV Transmittance, Filtered	<i>percent transmissivity</i>	75.1	69.2	79.3
UV Transmittance, Unfiltered	<i>percent transmissivity</i>	73.4	68.1	78.3
Anions and Nutrients				
Alkalinity, Total	<i>parts per million as calcium carbonate</i>	76.3	66.6	89.9
Alkalinity, Bicarbonate	<i>parts per million</i>	92.5	83.3	109.0
Alkalinity, Carbonate	<i>parts per million</i>	<0.60	<0.60	<0.60
Alkalinity, Hydroxide	<i>parts per million</i>	<0.34	<0.34	<0.34
Hardness, Total	<i>parts per million as calcium carbonate</i>	80.0	69.8	92.4
Ammonia	<i>parts per million</i>	0.04	<0.01	0.08
Bromide	<i>parts per million</i>	<0.010	<0.010	0.020
Chloride	<i>parts per million</i>	2.2	1.6	5.3
Fluoride	<i>parts per million</i>	0.058	0.051	0.067
Nitrate Nitrogen	<i>parts per million</i>	0.018	<0.005	0.041
Nitrite	<i>parts per million</i>	<0.001	<0.001	0.001
Perchlorate	<i>parts per billion</i>	<0.20	<0.20	<0.20
Phosphorus, Total	<i>parts per million</i>	<0.030	<0.030	<0.050
Sulphate	<i>parts per million</i>	1.8	<0.4	5.9
Disinfection By-Products				
Haloacetic acids	<i>parts per billion</i>	<1.2	<1.2	1.7
Trihalomethanes	<i>parts per billion</i>	<1.3	<1.3	<2.7

City of Winnipeg
Environmental Standards Division
2022 Water Treatment Plant - Raw Water Quality Summary

PARAMETER	UNITS	AVERAGE	MINIMUM	MAXIMUM
Enteric Protozoa				
Cryptosporidium	<i>oocysts per 100 L</i>	0	0	0
Giardia	<i>cysts per 100 L</i>	0	0	0
Total Metals				
Aluminum	<i>parts per million</i>	0.00217	0.00080	0.00579
Antimony	<i>parts per million</i>	0.000038	<0.000025	0.000219
Arsenic	<i>parts per million</i>	0.000843	0.000597	0.001260
Barium	<i>parts per million</i>	0.0161	0.0148	0.0177
Beryllium	<i>parts per million</i>	<0.00010	<0.00010	<0.00010
Bismuth	<i>parts per million</i>	<0.000050	<0.000050	<0.000050
Boron	<i>parts per million</i>	0.00565	<0.00208	0.01500
Cadmium	<i>parts per million</i>	<0.000005	<0.000005	0.0000110
Calcium	<i>parts per million</i>	20.337	16.554	25.619
Cesium	<i>parts per million</i>	<0.000010	<0.000010	<0.000010
Chromium	<i>parts per million</i>	<0.000040	<0.000040	0.000270
Chromium VI	<i>parts per million</i>	<0.00050	<0.00050	<0.00050
Cobalt	<i>parts per million</i>	<0.00010	<0.00010	<0.00010
Copper	<i>parts per million</i>	0.000261	<0.000022	0.000643
Iron	<i>parts per million</i>	0.05581	0.02117	0.11037
Lead	<i>parts per million</i>	<0.000050	<0.000050	<0.000065
Lithium	<i>parts per million</i>	0.0020	<0.0010	0.0030
Magnesium	<i>parts per million</i>	6.136	4.770	7.680
Manganese	<i>parts per million</i>	0.01126	0.00323	0.04890
Mercury	<i>parts per billion</i>	<0.0050	<0.0050	<0.0050
Molybdenum	<i>parts per million</i>	0.000152	0.000133	0.000181
Nickel	<i>parts per million</i>	0.000243	<0.000021	0.000459
Potassium	<i>parts per million</i>	1.238	0.977	1.556
Rubidium	<i>parts per million</i>	0.0018	0.0015	0.0021
Selenium	<i>parts per million</i>	0.000088	0.000062	0.000114
Silicon	<i>parts per million</i>	2.16	0.62	3.37
Silver	<i>parts per million</i>	<0.000010	<0.000010	<0.000010
Sodium	<i>parts per million</i>	2.361	1.968	2.966
Strontium	<i>parts per million</i>	0.0386	0.0350	0.0459
Tellurium	<i>parts per million</i>	<0.00020	<0.00020	<0.00020
Thallium	<i>parts per million</i>	<0.000010	<0.000010	<0.000010
Thorium	<i>parts per million</i>	<0.00010	<0.00010	<0.00010
Tin	<i>parts per million</i>	<0.00010	<0.00010	<0.00010
Titanium	<i>parts per million</i>	<0.00030	<0.00030	<0.00030
Tungsten	<i>parts per million</i>	<0.00010	<0.00010	<0.00010
Uranium	<i>parts per million</i>	<0.000032	<0.000032	0.000070
Vanadium	<i>parts per million</i>	<0.00050	<0.00050	<0.00050
Zinc	<i>parts per million</i>	0.00066	<0.00011	0.00610
Zirconium	<i>parts per million</i>	<0.00020	<0.00020	<0.00020

City of Winnipeg
Environmental Standards Division
2022 Water Treatment Plant - Raw Water Quality Summary

PARAMETER	UNITS	AVERAGE	MINIMUM	MAXIMUM
Pesticides				
Alachlor	<i>parts per billion</i>	<0.10	<0.10	<0.10
Aldrin	<i>parts per billion</i>	<0.010	<0.010	<0.010
alpha-BHC	<i>parts per billion</i>	<0.010	<0.010	<0.010
alpha-Chlordane	<i>parts per billion</i>	<0.010	<0.010	<0.010
alpha-Endosulfan	<i>parts per billion</i>	<0.010	<0.010	<0.010
Atrazine	<i>parts per billion</i>	<0.10	<0.10	<0.10
Azinphos-methyl	<i>parts per billion</i>	<0.010	<0.010	<0.010
beta-BHC	<i>parts per billion</i>	<0.010	<0.010	<0.010
beta-Endosulfan	<i>parts per billion</i>	<0.010	<0.010	<0.010
Carbaryl	<i>parts per billion</i>	<0.20	<0.20	<0.20
Carbofuran	<i>parts per billion</i>	<0.20	<0.20	<0.20
Chlorpyrifos	<i>parts per billion</i>	<0.0050	<0.0050	<0.0050
delta-BHC	<i>parts per billion</i>	<0.010	<0.010	<0.010
Diazinon	<i>parts per billion</i>	<0.0050	<0.0050	<0.0050
Diclofop-methyl	<i>parts per billion</i>	<0.10	<0.10	<0.10
Dieldrin	<i>parts per billion</i>	<0.010	<0.010	<0.010
Dimethoate	<i>parts per billion</i>	<0.10	<0.10	<0.10
Endrin	<i>parts per billion</i>	<0.010	<0.010	<0.010
Eptam	<i>parts per billion</i>	<0.20	<0.20	<0.20
gamma-Chlordane	<i>parts per billion</i>	<0.010	<0.010	<0.010
Heptachlor	<i>parts per billion</i>	<0.010	<0.010	<0.010
Heptachlor Epoxide	<i>parts per billion</i>	<0.010	<0.010	<0.010
Lindane (gamma-BHC)	<i>parts per billion</i>	<0.010	<0.010	<0.010
Malathion	<i>parts per billion</i>	<0.10	<0.10	<0.10
Methoxychlor	<i>parts per billion</i>	<0.010	<0.010	<0.010
Methyl Parathion	<i>parts per billion</i>	<0.10	<0.10	<0.10
Metribuzin	<i>parts per billion</i>	<0.20	<0.20	<0.20
Mirex	<i>parts per billion</i>	<0.010	<0.010	<0.010
o,p-DDD	<i>parts per billion</i>	<0.010	<0.010	<0.010
o,p-DDE	<i>parts per billion</i>	<0.010	<0.010	<0.010
o,p-DDT	<i>parts per billion</i>	<0.010	<0.010	<0.010
p,p-DDD	<i>parts per billion</i>	<0.010	<0.010	<0.010
p,p-DDE	<i>parts per billion</i>	<0.010	<0.010	<0.010
p,p-DDT	<i>parts per billion</i>	<0.010	<0.010	<0.010
Parathion	<i>parts per billion</i>	<0.0130	<0.0130	<0.0130
Propaclar	<i>parts per billion</i>	<0.20	<0.20	<0.20
Propanil	<i>parts per billion</i>	<0.20	<0.20	<0.20
Propoxur	<i>parts per billion</i>	<0.20	<0.20	<0.20
Simazine	<i>parts per billion</i>	<0.10	<0.10	<0.10
Terbufos	<i>parts per billion</i>	<0.10	<0.10	<0.10
Triallate	<i>parts per billion</i>	<0.10	<0.10	<0.10
Trichlopyr	<i>parts per billion</i>	<0.050	<0.050	<0.050
Trifluralin	<i>parts per billion</i>	<0.030	<0.030	<0.030

City of Winnipeg
Environmental Standards Division
2022 Water Treatment Plant - Raw Water Quality Summary

PARAMETER	UNITS	AVERAGE	MINIMUM	MAXIMUM
Bacteria				
Escherichia Coli	<i>MPN per 100 mL</i>	26	0	>200
Total Coliforms	<i>MPN per 100 mL</i>	80	0	>200
Heterotrophic Plate Count	<i>CFU per mL</i>	111	2	>300
Taste and Odours				
236 TCA - 2,3,6-trichloroanisole	<i>parts per trillion</i>	<0.96	<0.96	<2.04
246 TCA - 2,4,6-trichloroanisole	<i>parts per trillion</i>	<0.51	<0.51	<0.96
345 TCV - 3,4,5-trichloroveratrole	<i>parts per trillion</i>	<0.20	<0.20	<0.38
Geosmin	<i>parts per trillion</i>	2.0	1.2	3.1
IBMP - 2-isobutyl-3-methoxypyrazine	<i>parts per trillion</i>	<0.20	<0.20	<0.38
IPMP - 2-isopropyl-3-methoxypyrazine	<i>parts per trillion</i>	<0.20	<0.20	<0.38
Dichloromethane	<i>parts per million</i>	<0.0050	<0.0050	<0.0050
MIB - 2-methylisoborneol	<i>parts per trillion</i>	<10.1	<10.1	<19.2
MTBE - methyl tertiary-butyl ether	<i>parts per million</i>	<0.0005	<0.0005	<0.0005
NDMA - N-nitrosodimethylamine	<i>parts per trillion</i>	<0.001	<0.001	<0.001
Polychlorinated Biphenyls				
Arochlor 1016	<i>parts per billion</i>	<0.020	<0.020	<0.020
Arochlor 1221	<i>parts per billion</i>	<0.020	<0.020	<0.020
Arochlor 1232	<i>parts per billion</i>	<0.020	<0.020	<0.020
Arochlor 1242	<i>parts per billion</i>	<0.020	<0.020	<0.020
Arochlor 1248	<i>parts per billion</i>	<0.020	<0.020	<0.020
Arochlor 1254	<i>parts per billion</i>	<0.020	<0.020	<0.020
Arochlor 1260	<i>parts per billion</i>	<0.020	<0.020	<0.020
Phenoxy Acid Herbicides				
2,4,5-T	<i>parts per billion</i>	<0.50	<0.50	<0.50
2,4,5-TP	<i>parts per billion</i>	<0.50	<0.50	<0.50
2,4-D	<i>parts per billion</i>	<0.50	<0.50	<0.50
2,4-DB	<i>parts per billion</i>	<0.050	<0.050	<0.050
2,4-DP	<i>parts per billion</i>	<0.50	<0.50	<0.50
Bromoxynil	<i>parts per billion</i>	<0.50	<0.50	<0.50
Dicamba	<i>parts per billion</i>	<0.120	<0.006	<0.120
Dinoseb	<i>parts per billion</i>	<0.50	<0.50	<0.50
MCPA	<i>parts per billion</i>	<0.50	<0.50	<0.50
MCPB	<i>parts per billion</i>	<0.050	<0.050	<0.050
Mecoprop	<i>parts per billion</i>	<0.50	<0.50	<0.50
Picloram	<i>parts per billion</i>	<0.50	<0.50	<0.50

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.
Guidelines for Canadian Drinking Water Quality do not apply to raw water.

City of Winnipeg
Environmental Standards Division
2022 Water Treatment Plant - Finished Water Quality Summary

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM
Miscellaneous					
Carbon, Dissolved Organic	<i>parts per million</i>	no guideline	3.1	1.9	4.5
Carbon, Total Organic	<i>parts per million</i>	no guideline	2.8	1.7	4.1
Chlorine, Free	<i>parts per million</i>	no guideline	1.40	0.96	2.02
Chlorine, Total	<i>parts per million</i>	no guideline	1.62	1.13	2.40
Chlorophyll-a	<i>parts per billion</i>	no guideline	<1.0	<1.0	<1.0
Colour, Apparent	<i>TCU</i>	no guideline	0.4	0.0	1.5
Colour, True	<i>TCU</i>	no more than 15 *	0.0	0.0	0.5
Conductivity	<i>microsiemens per centimetre</i>	no guideline	303	270	356
Microcystin	<i>parts per billion</i>	no more than 1.5	<0.2	<0.2	<0.2
Odour	<i>units</i>	inoffensive*	16	10	25
ORP	<i>millivolts</i>	no guideline	578.3	506.6	684.3
Oxygen, Dissolved	<i>parts per million</i>	no guideline	12.0	8.9	16.1
pH	<i>units</i>	between 7.0 and 10.5	7.78	7.57	8.27
Plankton (algae) count	<i>cells/mL</i>	no guideline	<100	<100	<100
Solids, Total	<i>parts per million</i>	no guideline	190	166	230
Solids, Total Dissolved	<i>parts per million</i>	no more than 500 *	168	127	210
Temperature	<i>degrees Celcius</i>	no more than 15 *	9.6	1.5	22.7
Turbidity (clearness)	<i>NTU</i>	no more than 0.3 in 95% of measurements/month, never to exceed 1.0	0.12	0.08	0.29
UV Transmittance, Filtered	<i>percent transmissivity</i>	no guideline	95.0	92.7	97.4
UV Transmittance, Unfiltered	<i>percent transmissivity</i>	no guideline	94.0	90.9	96.4
Anions and Nutrients					
Alkalinity, Total	<i>parts per million as calcium carbonate</i>	no guideline	71.0	61.7	86.0
Hardness, Total	<i>parts per million as calcium carbonate</i>	no guideline	80.4	71.6	92.7
Chloride	<i>parts per million</i>	no more than 250 *	4.7	3.6	7.2
Perchlorate	<i>parts per billion</i>	no guideline	<0.20	<0.20	<0.20
Sulphate	<i>parts per million</i>	no more than 500 *	71.4	52.3	96.5
Bacteria					
Escherichia Coli	<i>MPN per 100 mL</i>	none detectable per 100 mL	0	0	0
Total Coliforms	<i>MPN per 100 mL</i>	none detectable per 100 mL	0	0	0
Heterotrophic Plate Count	<i>CFU per mL</i>	no guideline	<1	<1	5
Disinfection By-Products					
Haloacetic acids	<i>parts per billion</i>	no more than 80	13.3	5.5	18.0
Trihalomethanes	<i>parts per billion</i>	no more than 100	17.1	7.0	22.3

City of Winnipeg
Environmental Standards Division
2022 Water Treatment Plant - Finished Water Quality Summary

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM
Taste and Odours					
236 TCA - 2,3,6-trichloroanisole	<i>parts per trillion</i>	no guideline	<0.96	<0.96	<2.02
246 TCA - 2,4,6-trichloroanisole	<i>parts per trillion</i>	no guideline	<0.50	<0.50	<0.96
345 TCV - 3,4,5-trichloroveratrole	<i>parts per trillion</i>	no guideline	<0.20	<0.20	<0.38
Geosmin	<i>parts per trillion</i>	no guideline	1.2	<0.99	1.7
IBMP - 2-isobutyl-3-methoxypyrazine	<i>parts per trillion</i>	no guideline	<0.20	<0.20	<0.38
IPMP - 2-isopropyl-3-methoxypyrazine	<i>parts per trillion</i>	no guideline	<0.20	<0.20	<0.38
Dichloromethane	<i>parts per million</i>	no more than 0.05	<0.0050	<0.0050	<0.0050
MIB - 2-methylisoborneol	<i>parts per trillion</i>	no guideline	<9.90	<9.90	<19.23
MTBE - methyl tertiary-butyl ether	<i>parts per million</i>	no more than 0.015 *	<0.0005	<0.0005	<0.0005
NDMA -N-nitrosodimethylamine	<i>parts per trillion</i>	no more than 40	<0.0010	<0.0010	<0.0010
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	<0.50	<0.50	<0.50
2,4,5-TP	<i>parts per billion</i>	no guideline	<0.50	<0.50	<0.50
2,4-D	<i>parts per billion</i>	no more than 100	<0.50	<0.50	<0.50
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	<0.50	<0.50	<0.50
Bromoxynil	<i>parts per billion</i>	no more than 5	<0.50	<0.50	<0.50
Dicamba	<i>parts per billion</i>	no more than 120	<0.120	<0.008	<0.120
Dinoseb	<i>parts per billion</i>	no guideline	<0.50	<0.50	<0.50
MCPA	<i>parts per billion</i>	no more than 100	<0.50	<0.50	<0.50
MCPB	<i>parts per billion</i>	no guideline	<0.050	<0.050	<0.050
Mecoprop	<i>parts per billion</i>	no guideline	<0.50	<0.50	<0.50
Picloram	<i>parts per billion</i>	no more than 190	<0.50	<0.50	<0.50

City of Winnipeg
Environmental Standards Division
2022 Water Treatment Plant - Finished Water Quality Summary

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM
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
Azinphos-methyl	<i>parts per billion</i>	no more than 20	<0.010	<0.010	<0.010
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
Carbaryl	<i>parts per billion</i>	no more than 90	<0.20	<0.20	<0.20
Carbofuran	<i>parts per billion</i>	no more than 90	<0.20	<0.20	<0.20
Chlorpyrifos	<i>parts per billion</i>	no more than 90	<0.0050	<0.0050	<0.0050
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	<0.0050	<0.0050	<0.0050
Diclofop-methyl	<i>parts per billion</i>	no more than 9	<0.10	<0.10	<0.10
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
Endrin	<i>parts per billion</i>	no guideline	<0.010	<0.010	<0.010
Eptam	<i>parts per billion</i>	no guideline	<2.0	<0.20	<2.0
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
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
Metribuzin	<i>parts per billion</i>	no more than 80	<0.20	<0.20	<0.20
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	<0.0130	<0.0130	<0.0130
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
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
Terbufos	<i>parts per billion</i>	no more than 1	<0.10	<0.10	<0.10
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

City of Winnipeg
Environmental Standards Division
2022 Water Treatment Plant - Finished Water Quality Summary

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM
Total Metals					
Aluminum	<i>parts per million</i>	no guideline	0.00732	0.00205	0.03914
Antimony	<i>parts per million</i>	no more than 0.006	0.000028	<0.000025	0.000154
Arsenic	<i>parts per million</i>	no more than 0.010	0.000333	0.000248	0.000442
Boron	<i>parts per million</i>	no more than 5	0.00526	<0.00208	0.01162
Cadmium	<i>parts per million</i>	no more than 0.007	<0.000007	<0.000007	0.000007
Calcium	<i>parts per million</i>	no guideline	20.819	16.970	26.238
Chromium	<i>parts per million</i>	no more than 0.05	0.00005	<0.00004	0.00026
Chromium VI	<i>parts per million</i>	no guideline	<0.00050	<0.00050	<0.00050
Copper	<i>parts per million</i>	no more than 2.0	0.000337	<0.000022	0.003860
Iron	<i>parts per million</i>	no more than 0.3 *	0.05282	0.01795	0.10672
Lead	<i>parts per million</i>	no more than 0.005	<0.000065	<0.000065	<0.000065
Magnesium	<i>parts per million</i>	no guideline	6.192	4.880	7.474
Manganese	<i>parts per million</i>	no more than 0.12	0.00863	0.00390	0.01473
Mercury	<i>parts per billion</i>	no more than 1	<0.0050	<0.0050	<0.0050
Nickel	<i>parts per million</i>	no guideline	0.002576	0.001976	0.003497
Potassium	<i>parts per million</i>	no guideline	1.249	0.970	1.550
Sodium	<i>parts per million</i>	no more than 200 *	30.714	24.497	39.278
Uranium	<i>parts per million</i>	no more than 0.02	<0.000032	<0.000032	0.000048
Zinc	<i>parts per million</i>	no more than 5.0 *	0.00154	0.00020	0.02194

*Aesthetic objective: These guidelines have an objective and not a maximum acceptable concentration. 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, September 2020

Results in red do not meet the guideline

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
2022 Winnipeg Distribution System Water Quality Summary

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM
Miscellaneous					
Carbon, Dissolved Organic	<i>parts per million</i>	no guideline	6.6	2.7	13.7
Carbon, Total Organic	<i>parts per million</i>	no guideline	4.7	2.3	13.5
Chlorine, Free	<i>parts per million</i>	no guideline	0.94	<0.02	2.04
Chlorine, Total	<i>parts per million</i>	no guideline	1.16	0.02	2.90
Colour, Apparent	<i>TCU</i>	no guideline	2.6	0.0	5.0
Colour, True	<i>TCU</i>	no more than 15 *	0.8	0.0	<5.0
Conductivity	<i>microsiemens per centimetre</i>	no guideline	313	271	365
Langelier Index (4 C)	<i>units</i>	no guideline	-0.67	-0.75	-0.57
Langelier Index (60 C)	<i>units</i>	no guideline	0.10	0.02	0.20
Odour	<i>units</i>	inoffensive*	11	5	15
ORP	<i>millivolts</i>	no guideline	520.5	315.4	672.9
Oxygen, Dissolved	<i>parts per million</i>	no guideline	11.8	8.7	15.7
pH	<i>units</i>	between 7.0 and 10.5	7.53	6.84	7.92
Solids, Total Dissolved	<i>parts per million</i>	no more than 500 *	167	112	216
Temperature	<i>degrees Celcius</i>	no more than 15 *	10.6	1.7	25.6
Turbidity (clearness)	<i>NTU</i>	no guideline	0.18	<0.10	3.9
UV Transmittance, Filtered	<i>percent transmissivity</i>	no guideline	94.0	92.0	96.0
Anions and Nutrients					
Alkalinity, Total	<i>parts per million as calcium carbonate</i>	no guideline	68.0	53.9	84.4
Alkalinity, Bicarbonate	<i>parts per million</i>	no guideline	82.8	73.2	99.6
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	83.1	71.5	98.8
Ammonia	<i>parts per million</i>	no guideline	<0.01	<0.01	0.02
Bromate	<i>parts per million</i>	no more than 0.01	<0.30	<0.30	<0.30
Bromide	<i>parts per million</i>	no guideline	<0.01	<0.01	0.01
Chloride	<i>parts per million</i>	no more than 250 *	5.2	4.0	7.8
Fluoride	<i>parts per million</i>	no more than 1.5	0.65	0.08	0.76
Nitrate Nitrogen	<i>parts per million</i>	no more than 10	0.028	0.007	0.059
Nitrite	<i>parts per million</i>	no more than 3	<0.001	<0.001	<0.001
Perchlorate	<i>parts per billion</i>	no guideline	<0.20	<0.20	<0.20
Phosphate, Soluble	<i>parts per million as phosphate</i>	no guideline	1.93	0.05	2.93
Phosphorus, Total	<i>parts per million</i>	no guideline	0.690	0.681	0.701
Sulphate	<i>parts per million</i>	no more than 500 *	70.1	53.3	93.5
Bacteria					
Escherichia Coli	<i>MPN per 100 mL</i>	none detectable per 100 mL	0	0	0
Total Coliforms	<i>MPN per 100 mL</i>	none detectable per 100 mL	0	0	130
Heterotrophic Plate Count	<i>CFU per mL</i>	no guideline	1	<1	231
Disinfection By-Products					
Haloacetic acids	<i>parts per billion</i>	no more than 80	28.9	8.3	54.0
Trihalomethanes	<i>parts per billion</i>	no more than 100	43.0	15.4	69.0

City of Winnipeg
Environmental Standards Division
2022 Winnipeg Distribution System Water Quality Summary

PARAMETER	UNITS	GUIDELINES FOR CANADIAN DRINKING WATER QUALITY	AVERAGE	MINIMUM	MAXIMUM
Total Metals					
Aluminum	parts per million	no guideline	0.00636	<0.00300	0.04603
Antimony	parts per million	no more than 0.006	0.000039	<0.000025	0.000687
Arsenic	parts per million	no more than 0.010	0.000362	0.000275	0.000790
Barium	parts per million	no more than 2	0.0155	0.0143	0.0176
Beryllium	parts per million	no guideline	<0.00010	<0.00010	<0.00010
Bismuth	parts per million	no guideline	<0.000050	<0.000050	<0.000050
Boron	parts per million	no more than 5	0.00606	<0.00208	0.01800
Cadmium	parts per million	no more than 0.007	<0.000005	<0.000005	0.000021
Calcium	parts per million	no guideline	21.210	16.996	27.131
Cesium	parts per million	no guideline	<0.000010	<0.000010	<0.000010
Chromium	parts per million	no more than 0.05	0.00006	<0.00004	0.00031
Chromium VI	parts per million	no guideline	<0.00050	<0.00050	0.00057
Cobalt	parts per million	no guideline	0.00130	0.00111	0.00156
Copper	parts per million	no more than 2.0	0.037486	<0.000022	0.206520
Iron	parts per million	no more than 0.3 *	0.05653	0.01026	0.19811
Lead	parts per million	no more than 0.005	0.000063	<0.000050	0.000850
Lithium	parts per million	no guideline	0.0025	0.0023	0.0026
Magnesium	parts per million	no guideline	6.220	5.153	8.130
Manganese	parts per million	no more than 0.12	0.00825	0.00301	0.02192
Mercury	parts per billion	no more than 1	<0.0050	<0.0050	0.0289
Molybdenum	parts per million	no guideline	<0.000050	<0.000050	<0.000050
Nickel	parts per million	no guideline	0.002395	0.001679	0.005745
Potassium	parts per million	no guideline	1.269	0.950	1.653
Rubidium	parts per million	no guideline	0.0017	0.0015	0.0019
Selenium	parts per million	no more than 0.05	<0.000050	<0.000050	0.00006
Silicon	parts per million	no guideline	2.28	0.78	3.53
Silver	parts per million	no guideline	<0.000010	<0.000010	<0.000010
Sodium	parts per million	no more than 200 *	31.108	23.962	40.435
Strontium	parts per million	no more than 7	0.0404	0.0367	0.0478
Tellurium	parts per million	no guideline	<0.00020	<0.00020	<0.00020
Thallium	parts per million	no guideline	<0.000010	<0.000010	<0.000010
Thorium	parts per million	no guideline	<0.00010	<0.00010	<0.00010
Tin	parts per million	no guideline	0.00010	<0.00010	0.00016
Titanium	parts per million	no guideline	<0.00030	<0.00030	<0.00030
Tungsten	parts per million	no guideline	<0.00010	<0.00010	<0.00010
Uranium	parts per million	no more than 0.02	0.000021	<0.000010	0.000113
Vanadium	parts per million	no guideline	<0.00050	<0.00050	<0.00050
Zinc	parts per million	no more than 5.0 *	0.00369	0.00012	0.03219
Zirconium	parts per million	no guideline	<0.00020	<0.00020	<0.00020

*Aesthetic objective: These guidelines have an objective and not a maximum acceptable concentration. 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, September 2020

Results in red do not meet the guideline

Data reported was collected from a combination of MacLean, Hurst, and McPhillips Pumping Station Discharges,

57 distribution system locations (39 distribution system locations January-March), 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
2021 Winnipeg Distribution System Bacteriological Summary

PARAMETER	REQUIREMENT	OUR TEST RESULTS	COMMENTS
Number of total coliform bacteria tests in year	2028 samples/year	2,989	
Number of times that total coliform bacteria show up in a test	none detectable per 100 mL	0.10% (3 positive tests)	All resamples were negative and met the operating licence requirements.
Number of <i>Escherichia coli</i> bacteria tests in year	2028 samples/year	2,989	
Number of times that <i>Escherichia coli</i> 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	2,197	Heterotrophic plate count testing is not required under the operating licence
Requirements from City of Winnipeg Operating Licence PWS-09-412-02 Data reported was collected from 57 distribution system locations (39 distribution system locations January-March) and MacLean, Hurst, and McPhillips Pumping Station Discharges			

APPENDIX B

COMPLIANCE SUBMISSION REPORTS

2022 MONTHLY CHLORINE REPORTS

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

Water System Code: **252.00**
Licence Number: **PWS-09-412-02**
Report Created: 01 February 2022

Report Period: January 2022

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/01/2022	1.29	1.11	1.40	1.28
02/01/2022	1.21	1.11	1.30	1.22
03/01/2022	1.14	1.08	1.26	1.19
04/01/2022	1.19	1.06	1.26	1.13
05/01/2022	1.17	1.04	1.09	1.02
06/01/2022	1.20	1.06	1.17	1.08
07/01/2022	1.20	1.04	1.15	1.05
08/01/2022	1.21	1.09	1.13	1.04
09/01/2022	1.27	1.13	1.18	1.06
10/01/2022	1.25	1.12	1.23	1.12
11/01/2022	1.23	1.08	1.20	1.09
12/01/2022	1.25	0.94	1.20	1.10
13/01/2022	1.24	1.00	1.13	1.02
14/01/2022	1.22	1.10	1.07	0.99
15/01/2022	1.15	1.06	1.04	0.93
16/01/2022	1.18	1.07	1.06	1.01
17/01/2022	1.22	1.14	1.07	1.01
18/01/2022	1.25	1.13	1.12	1.05
19/01/2022	1.27	1.19	1.21	1.08
20/01/2022	1.29	1.20	1.22	1.16
21/01/2022	1.31	1.25	1.27	1.18
22/01/2022	1.29	1.21	1.23	1.07
23/01/2022	1.24	1.14	1.19	1.09
24/01/2022	1.19	1.11	1.22	1.12
25/01/2022	1.24	1.08	1.32	1.21
26/01/2022	1.26	0.92	1.27	1.06
27/01/2022	1.21	1.08	1.22	1.07
28/01/2022	1.34	1.17	1.30	1.20
29/01/2022	1.40	1.31	1.27	1.17
30/01/2022	1.35	1.22	1.24	1.17
31/01/2022	1.26	1.10	1.21	1.06

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

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2022\01-January

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



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-09-412-02						
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-2022	ns	ns	ns	ns	ns	ns
02-Jan-2022	ns	ns	ns	ns	ns	ns
03-Jan-2022	ns	ns	ns	ns	ns	ns
04-Jan-2022	1.24	1.22	1.43	1.29	1.30	1.49
05-Jan-2022	1.12	1.09	1.25	1.04	1.09	1.25
06-Jan-2022	1.18	1.20	1.41	1.16	1.19	1.40
07-Jan-2022	1.20	1.20	1.41	1.18	1.20	1.38
08-Jan-2022	ns	ns	ns	ns	ns	ns
09-Jan-2022	ns	ns	ns	ns	ns	ns
10-Jan-2022	1.23	1.22	1.46	1.23	1.23	1.44
11-Jan-2022	1.22	1.22	1.45	1.18	1.21	1.42
12-Jan-2022	1.30	1.30	1.53	1.20	1.21	1.41
13-Jan-2022	1.21	1.29	1.49	1.06	1.13	1.34
14-Jan-2022	1.28	1.27	1.50	1.12	1.11	1.31
15-Jan-2022	ns	ns	ns	ns	ns	ns
16-Jan-2022	ns	ns	ns	ns	ns	ns
17-Jan-2022	1.21	1.27	1.45	1.07	1.11	1.30
18-Jan-2022	1.29	1.36	1.59	1.15	1.22	1.41
19-Jan-2022	1.29	1.28	1.50	1.22	1.22	1.44
20-Jan-2022	1.28	1.31	1.56	1.21	1.27	1.49
21-Jan-2022	1.30	1.41	1.62	1.24	1.31	1.52
22-Jan-2022	ns	ns	ns	ns	ns	ns
23-Jan-2022	ns	ns	ns	ns	ns	ns
24-Jan-2022	1.15	1.19	1.39	1.18	1.14	1.34
25-Jan-2022	1.24	1.18	1.41	1.27	1.17	1.37
26-Jan-2022	1.15	1.22	1.45	1.29	1.27	1.50
27-Jan-2022	1.19	1.20	1.39	1.15	1.14	1.36
28-Jan-2022	1.39	1.29	1.60	1.30	1.29	1.53
29-Jan-2022	ns	ns	ns	ns	ns	ns
30-Jan-2022	ns	ns	ns	ns	ns	ns
31-Jan-2022	1.25	1.31	1.50	1.21	1.24	1.43
Total number of measurements taken, A: Chlorine Standard for Monitoring Location (mg/L): Number of measurements meeting standard, B: Compliance with Chlorine Standard, C= B/A X 100%:		20		20		
		0.50		0.50		
		20		20		
		100%		100%		

na: not analyzed nr: no result ns: no sample o/l: offline im: instrument maintenance

Comments:

Report Date: 3-Feb-2022

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

Water System Code: **252.00**
 Licence Number: **PWS-09-412-02**
 Report Created: 01 March 2022

Report Period: February 2022

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/02/2022	1.16	1.07	1.07	0.94
02/02/2022	1.23	1.15	1.08	1.01
03/02/2022	1.26	1.18	1.13	1.06
04/02/2022	1.25	1.18	1.17	1.10
05/02/2022	1.30	1.20	1.21	1.11
06/02/2022	1.24	1.12	1.17	1.02
07/02/2022	1.22	1.14	1.18	1.07
08/02/2022	1.19	1.08	1.18	1.10
09/02/2022	1.23	1.04	1.26	1.11
10/02/2022	1.24	1.17	1.33	1.24
11/02/2022	1.22	1.14	1.36	1.30
12/02/2022	1.27	1.21	1.36	1.28
13/02/2022	1.26	1.21	1.34	1.26
14/02/2022	1.21	1.14	1.30	1.23
15/02/2022	1.22	1.16	1.29	1.22
16/02/2022	1.14	1.02	1.08	0.96
17/02/2022	1.11	1.07	1.10	0.98
18/02/2022	1.10	1.06	1.12	1.05
19/02/2022	1.10	0.78	1.09	0.75
20/02/2022	1.14	1.08	1.14	1.09
21/02/2022	1.18	1.14	1.13	1.01
22/02/2022	1.17	1.12	1.14	1.08
23/02/2022	1.18	1.10	1.15	1.10
24/02/2022	1.16	1.07	1.18	1.10
25/02/2022	1.12	1.06	1.15	1.06
26/02/2022	1.06	0.95	1.14	1.08
27/02/2022	1.01	0.95	1.14	1.06
28/02/2022	1.03	0.95	1.13	1.07

Total Number of Measurements, A:	19440	19440
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	19440	19440
COMPLIANCE, C = B/A X 100%:	100.00	100.00

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Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew



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-09-412-02						
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-2022	1.15	1.14	1.36	1.03	1.09	1.29
02-Feb-2022	1.25	1.21	1.43	1.08	1.14	1.35
03-Feb-2022	1.24	1.25	1.44	1.17	1.18	1.36
04-Feb-2022	1.27	1.26	1.44	1.19	1.16	1.38
05-Feb-2022	ns	ns	ns	ns	ns	ns
06-Feb-2022	ns	ns	ns	ns	ns	ns
07-Feb-2022	1.24	1.17	1.40	1.14	1.16	1.36
08-Feb-2022	1.19	1.18	1.40	1.15	1.19	1.36
09-Feb-2022	1.15	1.15	1.39	1.20	1.29	1.47
10-Feb-2022	1.25	1.26	1.49	1.30	1.37	1.62
11-Feb-2022	1.21	1.18	1.41	1.34	1.34	1.56
12-Feb-2022	ns	ns	ns	ns	ns	ns
13-Feb-2022	ns	ns	ns	ns	ns	ns
14-Feb-2022	1.21	1.18	1.43	1.29	1.34	1.55
15-Feb-2022	1.25	1.22	1.48	1.32	1.40	1.60
16-Feb-2022	1.16	1.11	1.37	1.23	1.27	1.48
17-Feb-2022	1.11	1.07	1.32	1.12	1.14	1.35
18-Feb-2022	1.06	1.08	1.31	1.07	1.06	1.29
19-Feb-2022	ns	ns	ns	ns	ns	ns
20-Feb-2022	ns	ns	ns	ns	ns	ns
21-Feb-2022	ns	ns	ns	ns	ns	ns
22-Feb-2022	1.19	1.19	1.40	1.16	1.20	1.40
23-Feb-2022	1.16	1.18	1.40	1.14	1.18	1.40
24-Feb-2022	1.18	1.21	1.43	1.22	1.22	1.43
25-Feb-2022	1.08	1.10	1.31	1.10	1.11	1.31
26-Feb-2022	ns	ns	ns	ns	ns	ns
27-Feb-2022	ns	ns	ns	ns	ns	ns
28-Feb-2022	1.01	1.03	1.26	1.14	1.17	1.40
Total number of measurements taken, A: Chlorine Standard for Monitoring Location (mg/L): Number of measurements meeting standard, B: Compliance with Chlorine Standard, C= B/A X 100%:		19			19	
		0.50			0.50	
		19			19	
		100%			100%	

na: not analyzed nr: no result ns: no sample o/l: offline im: instrument maintenance

Comments:

Report Date: 3-Mar-2022

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

Water System Code: **252.00**
Licence Number: **PWS-09-412-02**
Report Created: 01 April 2022

Report Period: March 2022

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/03/2022	1.02	0.98	1.11	1.06
02/03/2022	1.01	0.95	1.11	1.04
03/03/2022	0.97	0.94	1.07	1.03
04/03/2022	0.96	0.92	1.08	1.00
05/03/2022	0.97	0.95	1.08	1.04
06/03/2022	1.04	0.96	1.13	1.05
07/03/2022	1.10	1.00	1.16	1.12
08/03/2022	1.30	1.14	1.05	0.95
09/03/2022	1.21	1.15	1.00	0.93
10/03/2022	1.26	1.19	1.07	1.02
11/03/2022	1.27	1.16	1.03	0.91
12/03/2022	1.33	1.24	1.20	0.96
13/03/2022	1.31	1.22	1.39	1.22
14/03/2022	1.26	1.17	1.27	1.19
15/03/2022	1.39	1.21	1.36	1.14
16/03/2022	1.20	1.02	1.22	0.98
17/03/2022	1.29 *	1.07 *	1.34	0.92
18/03/2022	1.34 *	1.28 *	1.31	1.25
19/03/2022	1.35 *	1.26 *	1.34	1.26
20/03/2022	1.39 *	1.28 *	1.41	1.30
21/03/2022	1.49 *	1.36 *	1.50	1.41
22/03/2022	1.49 *	1.33 *	1.53	1.43
23/03/2022	1.39 *	1.31 *	1.40	1.31
24/03/2022	1.38 *	1.07 *	1.33	1.12
25/03/2022	1.13 *	0.96 *	1.15	1.03
26/03/2022	1.21 *	1.13 *	1.20	1.13
27/03/2022	1.16 *	1.08 *	1.15	1.10
28/03/2022	1.15 *	1.07 *	1.15	1.11
29/03/2022	1.19 *	0.72 *	1.22	0.72
30/03/2022	1.31	1.24	1.31	1.24
31/03/2022	1.28	1.21	1.29	1.25

Total Number of Measurements, A:	21572	21570
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	21572	21570
COMPLIANCE, C = B/A X 100%:	100.00	100.00

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* Branch 1 samples are taken at the nearest location to the entry point to Branch 1 while Deacon Booster Pumping Station and UV System were offline for the Gravity Flow Trial testing

Submitted By (Print): M.Szmon

Signature: Original signed by M.Szmon



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-09-412-02						
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-2022	1.01	0.98	1.17	1.11	1.12	1.35
02-Mar-2022	1.02	1.02	1.25	1.13	1.15	1.37
03-Mar-2022	0.97	0.98	1.17	1.07	1.10	1.31
04-Mar-2022	0.98	0.96	1.17	1.09	1.12	1.34
05-Mar-2022	ns	ns	ns	ns	ns	ns
06-Mar-2022	ns	ns	ns	ns	ns	ns
07-Mar-2022	1.04	0.98	1.22	1.18	1.16	1.39
08-Mar-2022	1.28	1.29	1.54	1.17	1.20	1.41
09-Mar-2022	1.19	1.21	1.44	1.04	1.07	1.27
10-Mar-2022	1.25	1.27	1.50	1.05	1.07	1.25
11-Mar-2022	1.27	1.26	1.55	1.02	1.07	1.28
12-Mar-2022	ns	ns	ns	ns	ns	ns
13-Mar-2022	1.33	1.37	1.61	1.56	1.46	1.67
14-Mar-2022	1.22	1.24	1.48	1.23	1.29	1.53
15-Mar-2022	ns	ns	ns	ns	ns	ns
16-Mar-2022	1.12	1.12	1.39	1.32	1.21	1.43
17-Mar-2022	1.28	1.28	1.51	1.37	1.38	1.59
18-Mar-2022	1.31	1.31	1.58	1.29	1.32	1.57
19-Mar-2022	ns	ns	ns	ns	ns	ns
20-Mar-2022	ns	ns	ns	ns	ns	ns
21-Mar-2022	1.39	1.52	1.77	1.43	1.59	1.79
22-Mar-2022	1.54	1.50	1.77	1.53	1.53	1.75
23-Mar-2022	1.40	1.38	1.66	1.48	1.41	1.66
24-Mar-2022	1.44	1.39	1.63	1.38	1.43	1.69
25-Mar-2022	1.08	1.09	1.34	1.10	1.14	1.36
26-Mar-2022	ns	ns	ns	ns	ns	ns
27-Mar-2022	ns	ns	ns	ns	ns	ns
28-Mar-2022	1.09	1.10	1.38	1.12	1.18	1.47
29-Mar-2022	1.08	1.13	1.40	1.11	1.18	1.45
30-Mar-2022	1.34	1.26	1.52	1.34	1.35	1.53
31-Mar-2022	1.30	1.32	1.56	1.32	1.33	1.57
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%	

na: not analyzed nr: no result ns: no sample o/l: offline im: instrument maintenance

Comments:

Report Date: 4-Apr-2022

* Branch 1 samples were taken at the nearest location to the entry point to Branch 1 March 17-29 during the gravity flow trial

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

Water System Code: **252.00**
Licence Number: **PWS-09-412-02**
Report Created: 01 May 2022

Report Period: April 2022

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/04/2022	1.26	1.12	1.28	1.17
02/04/2022	1.33	1.28	1.34	1.27
03/04/2022	1.36	1.30	1.32	1.24
04/04/2022	1.40	1.34	1.35	1.28
05/04/2022	1.36	1.28	1.30	1.21
06/04/2022	1.28	1.19	1.23	1.16
07/04/2022	1.30	1.25	1.27	1.22
08/04/2022	1.31	1.24	1.29	1.22
09/04/2022	1.34	1.28	1.33	1.27
10/04/2022	1.35	1.26	1.37	1.33
11/04/2022	1.29	1.17	1.33	1.23
12/04/2022	1.31	1.21	1.36	1.27
13/04/2022	1.32	1.25	1.39	1.33
14/04/2022	1.33	1.22	1.38	1.28
15/04/2022	1.26	1.20	1.29	1.23
16/04/2022	1.25	1.19	1.27	1.23
17/04/2022	1.24	1.20	1.28	1.24
18/04/2022	1.23	1.18	1.30	1.25
19/04/2022	1.23	1.18	1.28	1.23
20/04/2022	1.22	1.17	1.26	1.21
21/04/2022	1.20	1.15	1.25	1.20
22/04/2022	1.19	1.14	1.20	1.14
23/04/2022	1.24	1.19	1.25	1.20
24/04/2022	1.24	1.18	1.28	1.23
25/04/2022	1.19	1.11	1.24	1.19
26/04/2022	1.13	1.06	1.21	1.14
27/04/2022	1.10	0.92	1.17	1.03
28/04/2022	1.15	1.04	1.20	1.12
29/04/2022	1.16	1.05	1.18	1.13
30/04/2022	1.21	1.16	1.19	1.14

Total Number of Measurements, A:	20881	20881
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	20881	20881
COMPLIANCE, C = B/A X 100%:	100.00	100.00

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



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-09-412-02						
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-2022	1.29	1.31	1.55	1.33	1.35	1.56
02-Apr-2022	ns	ns	ns	ns	ns	ns
03-Apr-2022	ns	ns	ns	ns	ns	ns
04-Apr-2022	1.44	1.35	1.57	1.39	1.39	1.62
05-Apr-2022	1.39	1.26	1.53	1.30	1.39	1.55
06-Apr-2022	1.28	1.23	1.43	1.22	1.35	1.54
07-Apr-2022	1.30	1.30	1.54	1.28	1.34	1.54
08-Apr-2022	1.31	1.34	1.59	1.31	1.33	1.50
09-Apr-2022	ns	ns	ns	ns	ns	ns
10-Apr-2022	ns	ns	ns	ns	ns	ns
11-Apr-2022	1.31	1.31	1.51	1.35	1.34	1.61
12-Apr-2022	1.33	1.33	1.52	1.38	1.37	1.55
13-Apr-2022	1.31	1.32	1.55	1.40	1.28	1.50
14-Apr-2022	1.39	1.31	1.46	1.41	1.40	1.56
15-Apr-2022	ns	ns	ns	ns	ns	ns
16-Apr-2022	ns	ns	ns	ns	ns	ns
17-Apr-2022	ns	ns	ns	ns	ns	ns
18-Apr-2022	ns	ns	ns	ns	ns	ns
19-Apr-2022	1.24	1.23	1.44	1.28	1.31	1.50
20-Apr-2022	1.26	1.28	1.44	1.28	1.30	1.48
21-Apr-2022	1.20	1.20	1.41	1.26	1.29	1.45
22-Apr-2022	1.19	1.17	1.40	1.20	1.30	1.50
23-Apr-2022	ns	ns	ns	ns	ns	ns
24-Apr-2022	ns	ns	ns	ns	ns	ns
25-Apr-2022	1.21	1.21	1.41	1.26	1.28	1.50
26-Apr-2022	1.18	1.18	1.38	1.23	1.23	1.45
27-Apr-2022	1.09	1.12	1.33	1.20	1.24	1.41
28-Apr-2022	1.14	1.12	1.34	1.16	1.21	1.42
29-Apr-2022	1.11	1.13	1.30	1.20	1.23	1.41
30-Apr-2022	ns	ns	ns	ns	ns	ns
Total number of measurements taken, A:		19			19	
Chlorine Standard for Monitoring Location (mg/L):		0.50			0.50	
Number of measurements meeting standard, B:		19			19	
Compliance with Chlorine Standard, C= B/A X 100%:		100%			100%	

na: not analyzed nr: no result ns: no sample o/l: offline im: instrument maintenance

Comments:

Report Date: 2-May-2022

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

Water System Code: **252.00**
Licence Number: **PWS-09-412-02**
Report Created: 01 June 2022

Report Period: May 2022

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/05/2022	1.20	1.12	1.20	1.16
02/05/2022	1.18	1.05	1.21	1.14
03/05/2022	1.15	1.09	1.20	1.13
04/05/2022	1.48	1.07	1.27	1.08
05/05/2022	1.16	1.09	1.18	1.13
06/05/2022	1.14	0.94	1.14	1.05
07/05/2022	1.07	0.95	1.06	1.01
08/05/2022	1.06	0.96	1.07	0.98
09/05/2022	1.13	1.08	1.09	1.01
10/05/2022	1.17	1.00	1.11	1.04
11/05/2022	1.13	1.02	1.10	1.02
12/05/2022	1.01	0.93	1.04	0.98
13/05/2022	1.18	0.99	1.11	1.02
14/05/2022	1.21	1.16	1.18	1.13
15/05/2022	1.16	1.02	1.19	1.14
16/05/2022	1.09	1.04	1.21	1.16
17/05/2022	1.18	1.05	1.23	1.13
18/05/2022	1.15	1.05	1.19	1.13
19/05/2022	1.20	1.09	1.23	1.11
20/05/2022	1.16	1.05	1.20	1.07
21/05/2022	1.25	1.14	1.23	1.11
22/05/2022	1.27	1.03	1.23	0.97
23/05/2022	1.29	1.19	1.29	1.22
24/05/2022	1.34	1.18	1.32	1.23
25/05/2022	1.35	1.19	1.34	1.23
26/05/2022	1.27	1.15	1.27	1.21
27/05/2022	1.30	1.18	1.24	1.16
28/05/2022	1.28	1.14	1.21	1.12
29/05/2022	1.30	1.14	1.25	1.16
30/05/2022	1.23	1.12	1.25	1.17
31/05/2022	1.15	1.02	1.22	1.03

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): D.MerredewSignature: Original signed by D.Merredew



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-09-412-02						
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-2022	ns	ns	ns	ns	ns	ns
02-May-2022	1.27	1.09	1.29	1.18	1.21	1.37
03-May-2022	1.14	1.14	1.31	1.18	1.25	1.43
04-May-2022	1.12	1.10	1.28	1.14	1.19	1.36
05-May-2022	1.16	1.13	1.31	1.19	1.26	1.42
06-May-2022	1.16	1.10	1.29	1.18	1.19	1.35
07-May-2022	ns	ns	ns	ns	ns	ns
08-May-2022	ns	ns	ns	ns	ns	ns
09-May-2022	1.13	1.13	1.30	1.07	1.10	1.28
10-May-2022	1.13	1.11	1.32	1.12	1.10	1.30
11-May-2022	1.17	1.00	1.14	1.10	1.08	1.24
12-May-2022	1.00	0.96	1.13	1.04	1.07	1.23
13-May-2022	1.02	1.01	1.20	1.04	1.09	1.25
14-May-2022	ns	ns	ns	ns	ns	ns
15-May-2022	ns	ns	ns	ns	ns	ns
16-May-2022	1.09	1.16	1.33	1.21	1.22	1.41
17-May-2022	1.25	1.18	1.37	1.24	1.21	1.41
18-May-2022	1.13	1.20	1.43	1.20	1.26	1.46
19-May-2022	1.21	1.25	1.47	1.27	1.30	1.49
20-May-2022	1.12	1.13	1.36	1.17	1.24	1.44
21-May-2022	ns	ns	ns	ns	ns	ns
22-May-2022	ns	ns	ns	ns	ns	ns
23-May-2022	ns	ns	ns	ns	ns	ns
24-May-2022	1.30	1.34	1.53	1.29	1.31	1.53
25-May-2022	1.39	1.40	1.63	1.36	1.41	1.59
26-May-2022	1.30	1.32	1.51	1.28	1.34	1.51
27-May-2022	1.34	1.30	1.52	1.28	1.30	1.47
28-May-2022	ns	ns	ns	ns	ns	ns
29-May-2022	ns	ns	ns	ns	ns	ns
30-May-2022	1.28	1.28	1.49	1.30	1.31	1.51
31-May-2022	1.16	1.17	1.36	1.21	1.20	1.38
Total number of measurements taken, A: Chlorine Standard for Monitoring Location (mg/L): Number of measurements meeting standard, B: Compliance with Chlorine Standard, C= B/A X 100%:		21		21		
		0.50		0.50		
		21		21		
		100%		100%		

na: not analyzed nr: no result ns: no sample o/l: offline im: instrument maintenance

Comments:

Report Date: 1-Jun-2022

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

Water System Code: **252.00**
Licence Number: **PWS-09-412-02**
Report Created: 01 July 2022

Report Period: June 2022

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/06/2022	1.15	1.03	1.16	1.06
02/06/2022	1.26	1.11	1.22	1.08
03/06/2022	1.35	1.19	1.27	1.14
04/06/2022	1.41	1.27	1.31	1.23
05/06/2022	1.39	1.27	1.27	1.15
06/06/2022	1.38	1.22	1.32	1.17
07/06/2022	1.28	1.16	1.37	1.32
08/06/2022	1.27	1.19	1.36	1.30
09/06/2022	1.31	1.23	1.39	1.32
10/06/2022	1.29	1.11	1.40	1.17
11/06/2022	1.46	1.11	1.52	1.27
12/06/2022	1.40	1.20	1.48	1.38
13/06/2022	1.40	1.28	1.55	1.39
14/06/2022	1.35	1.25	1.48	1.33
15/06/2022	1.31	1.23	1.41	1.33
16/06/2022	1.31	1.02	1.37	1.13
17/06/2022	1.32	1.21	1.33	1.21
18/06/2022	1.33	1.13	1.36	1.26
19/06/2022	1.30	1.17	1.37	1.28
20/06/2022	1.23	1.08	1.32	1.20
21/06/2022	1.25	0.37	1.32	0.53
22/06/2022	1.42	1.25	1.45	1.22
23/06/2022	1.39	1.25	1.39	1.25
24/06/2022	1.40	1.23	1.33	1.22
25/06/2022	1.42	1.20	1.33	1.14
26/06/2022	1.30	1.17	1.25	1.16
27/06/2022	1.33	0.81	1.28	0.98
28/06/2022	1.36	1.22	1.33	1.17
29/06/2022	1.25	1.12	1.19	1.07
30/06/2022	1.28	1.16	1.17	1.07

Total Number of Measurements, A:	20884	20884
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	20850	20884
COMPLIANCE, C = B/A X 100%:	99.84	100.00

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



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-09-412-02						
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-2022	1.11	1.14	1.32	1.16	1.17	1.34
02-Jun-2022	1.20	1.24	1.41	1.17	1.23	1.40
03-Jun-2022	1.35	1.33	1.53	1.31	1.33	1.50
04-Jun-2022	ns	ns	ns	ns	ns	ns
05-Jun-2022	ns	ns	ns	ns	ns	ns
06-Jun-2022	1.47	1.40	1.63	1.46	1.41	1.59
07-Jun-2022	1.29	1.20	1.35	1.39	1.41	1.59
08-Jun-2022	1.31	1.29	1.50	1.41	1.41	1.60
09-Jun-2022	1.34	1.32	1.55	1.38	1.46	1.68
10-Jun-2022	1.16	1.16	1.39	1.22	1.31	1.50
11-Jun-2022	ns	ns	ns	ns	ns	ns
12-Jun-2022	ns	ns	ns	ns	ns	ns
13-Jun-2022	1.36	1.42	1.65	1.58	1.57	1.79
14-Jun-2022	1.35	1.40	1.60	1.47	1.51	1.71
15-Jun-2022	1.37	1.35	1.56	1.42	1.42	1.64
16-Jun-2022	1.20	1.23	1.43	1.35	1.40	1.59
17-Jun-2022	1.36	1.35	1.56	1.36	1.40	1.62
18-Jun-2022	ns	ns	ns	ns	ns	ns
19-Jun-2022	ns	ns	ns	ns	ns	ns
20-Jun-2022	1.20	1.27	1.51	1.32	1.34	1.55
21-Jun-2022	1.22	1.28	1.52	1.30	1.37	1.59
22-Jun-2022	1.34	1.34	1.55	1.43	1.43	1.62
23-Jun-2022	1.41	1.36	1.59	1.41	1.37	1.59
24-Jun-2022	1.32	1.31	1.53	1.32	1.35	1.54
25-Jun-2022	ns	ns	ns	ns	ns	ns
26-Jun-2022	ns	ns	ns	ns	ns	ns
27-Jun-2022	1.35	1.33	1.51	1.32	1.30	1.51
28-Jun-2022	1.44	1.36	1.58	1.37	1.33	1.53
29-Jun-2022	1.25	1.23	1.45	1.17	1.23	1.40
30-Jun-2022	1.30	1.25	1.48	1.18	1.16	1.40
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%	

na: not analyzed nr: no result ns: no sample o/l: offline im: instrument maintenance

Comments:

Report Date: 4-Jul-2022

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

Water System Code: **252.00**
Licence Number: **PWS-09-412-02**
Report Created: 01 August 2022

Report Period: July 2022

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/07/2022	1.39	1.23	1.30	1.13
02/07/2022	1.46	1.30	1.43	1.29
03/07/2022	1.44	1.21	1.43	0.97
04/07/2022	1.37	1.19	1.43	1.17
05/07/2022	1.54	1.36	1.29	1.15
06/07/2022	1.41	1.23	1.43	1.23
07/07/2022	1.52	1.23	1.51	1.23
08/07/2022	1.39	1.28	1.36	1.23
09/07/2022	1.44	1.28	1.42	1.27
10/07/2022	1.42	1.26	1.36	1.28
11/07/2022	1.40	1.23	1.39	1.23
12/07/2022	1.25	0.67	1.37	1.09
13/07/2022	1.48	1.17	1.49	1.26
14/07/2022	1.40	1.19	1.44	1.14
15/07/2022	1.41	1.06	1.40	1.18
16/07/2022	1.42	1.28	1.40	1.28
17/07/2022	1.43	1.31	1.48	1.36
18/07/2022	1.46	0.56	1.52	0.92
19/07/2022	1.49	1.35	1.53	1.37
20/07/2022	1.46	1.26	1.52	1.35
21/07/2022	1.55	1.24	1.64	1.31
22/07/2022	1.62	1.50	1.67	1.53
23/07/2022	1.71	1.59	1.81	1.64
24/07/2022	1.98	1.68	2.10	1.76
25/07/2022	1.46	1.30	1.50	1.35
26/07/2022	1.45	1.34	1.46	1.37
27/07/2022	1.38	1.08	1.41	1.04
28/07/2022	1.51	1.37	1.56	1.44
29/07/2022	1.45	1.26	1.53	1.42
30/07/2022	1.41	1.31	1.45	1.32
31/07/2022	1.53	1.37	1.57	1.38

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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Submitted By (Print): M.SzmonSignature: Original signed by M.Szmon



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-09-412-02						
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-2022	ns	ns	ns	ns	ns	ns
02-Jul-2022	ns	ns	ns	ns	ns	ns
03-Jul-2022	ns	ns	ns	ns	ns	ns
04-Jul-2022	1.43	1.34	1.57	1.51	1.53	1.70
05-Jul-2022	1.58	1.53	1.73	1.28	1.34	1.51
06-Jul-2022	1.27	1.26	1.54	1.43	1.45	1.65
07-Jul-2022	1.62	1.62	1.84	1.65	1.64	1.82
08-Jul-2022	1.37	1.40	1.58	1.32	1.39	1.58
09-Jul-2022	ns	ns	ns	ns	ns	ns
10-Jul-2022	ns	ns	ns	ns	ns	ns
11-Jul-2022	1.46	1.46	1.71	1.32	1.47	1.65
12-Jul-2022	1.37	1.38	1.58	1.44	1.38	1.59
13-Jul-2022	1.47	1.48	1.70	1.39	1.44	1.66
14-Jul-2022	1.37	1.37	1.57	1.47	1.52	1.75
15-Jul-2022	1.47	1.46	1.69	1.48	1.49	1.68
16-Jul-2022	ns	ns	ns	ns	ns	ns
17-Jul-2022	ns	ns	ns	ns	ns	ns
18-Jul-2022	1.59	1.42	1.60	1.54	1.49	1.65
19-Jul-2022	1.44	1.47	1.69	1.48	1.47	1.68
20-Jul-2022	1.42	1.38	1.61	1.46	1.41	1.59
21-Jul-2022	1.91	1.83	1.94	1.99	2.00	2.20
22-Jul-2022	1.66	1.74	1.97	1.70	1.75	1.95
23-Jul-2022	ns	ns	ns	ns	ns	ns
24-Jul-2022	ns	ns	ns	ns	ns	ns
25-Jul-2022	1.43	1.46	1.68	1.47	1.56	1.75
26-Jul-2022	1.47	1.43	1.67	1.47	1.47	1.69
27-Jul-2022	1.22	1.24	1.42	1.21	1.26	1.46
28-Jul-2022	1.41	1.49	1.73	1.47	1.51	1.72
29-Jul-2022	1.28	1.50	1.73	1.55	1.55	1.72
30-Jul-2022	ns	ns	ns	ns	ns	ns
31-Jul-2022	ns	ns	ns	ns	ns	ns
Total number of measurements taken, A: Chlorine Standard for Monitoring Location (mg/L): Number of measurements meeting standard, B: Compliance with Chlorine Standard, C= B/A X 100%:		20		20		
		0.50		0.50		
		20		20		
		100%		100%		

na: not analyzed nr: no result ns: no sample o/l: offline im: instrument maintenance

Comments:

Report Date: 2-Aug-2022



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

Water System Code: **252.00**
Licence Number: **PWS-09-412-02**
Report Created: 01 September 2022

Report Period: August 2022

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/08/2022	1.59	1.37	1.65	1.54
02/08/2022	1.42	1.26	1.73	1.50
03/08/2022	1.46	1.29	1.87	1.31
04/08/2022	1.24	0.90	1.40	0.95
05/08/2022	1.45	1.16	1.60	1.41
06/08/2022	1.69	1.38	1.77	1.55
07/08/2022	1.56	1.40	1.63	1.51
08/08/2022	1.47	1.27	1.58	1.42
09/08/2022	1.50	0.97	1.63	1.30
10/08/2022	1.42	1.15	1.51	1.27
11/08/2022	1.37	1.23	1.42	1.24
12/08/2022	1.40	1.24	1.41	1.22
13/08/2022	1.53	1.17	1.54	1.26
14/08/2022	1.52	1.38	1.47	1.32
15/08/2022	1.48	1.30	1.42	1.26
16/08/2022	1.44	1.08	1.43	1.07
17/08/2022	1.61	1.44	1.62	1.48
18/08/2022	1.68	1.45	1.68	1.46
19/08/2022	1.70	1.52	1.66	1.50
20/08/2022	1.90	1.69	1.83	1.71
21/08/2022	1.86	1.67	1.79	1.64
22/08/2022	1.74	1.49	1.67	1.56
23/08/2022	1.66	1.47	1.59	1.46
24/08/2022	1.61	1.46	1.54	1.41
25/08/2022	1.72	1.55	1.65	1.53
26/08/2022	1.72	1.51	1.73	1.45
27/08/2022	1.61	1.40	1.73	1.52
28/08/2022	1.66	1.52	1.69	1.48
29/08/2022	1.66	1.46	1.71	1.36
30/08/2022	1.67	1.52	1.69	1.56
31/08/2022	1.83	1.51	1.73	1.58

Total Number of Measurements, A:	21594	21594
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	21594	21594
COMPLIANCE, C = B/A X 100%:	100.00	100.00

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Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew



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-09-412-02						
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-2022	ns	ns	ns	ns	ns	ns
02-Aug-2022	1.43	1.36	1.60	1.56	1.54	1.81
03-Aug-2022	1.47	1.48	1.71	2.28	1.70	1.91
04-Aug-2022	1.23	1.27	1.47	1.34	1.44	1.63
05-Aug-2022	1.45	1.52	1.73	1.57	1.62	1.83
06-Aug-2022	ns	ns	ns	ns	ns	ns
07-Aug-2022	ns	ns	ns	ns	ns	ns
08-Aug-2022	1.43	1.39	1.64	1.54	1.53	1.74
09-Aug-2022	1.58	1.63	1.88	1.73	1.76	2.00
10-Aug-2022	1.46	1.45	1.67	1.57	1.55	1.80
11-Aug-2022	1.40	1.44	1.65	1.43	1.50	1.71
12-Aug-2022	1.36	1.38	1.58	1.39	1.40	1.61
13-Aug-2022	ns	ns	ns	ns	ns	ns
14-Aug-2022	ns	ns	ns	ns	ns	ns
15-Aug-2022	1.44	1.46	1.72	1.37	1.44	1.64
16-Aug-2022	1.32	1.32	1.53	1.24	1.32	1.55
17-Aug-2022	1.61	1.63	1.84	1.58	1.65	1.85
18-Aug-2022	1.56	1.54	1.79	1.56	1.52	1.80
19-Aug-2022	1.74	1.71	1.94	1.71	1.73	1.97
20-Aug-2022	ns	ns	ns	ns	ns	ns
21-Aug-2022	ns	ns	ns	ns	ns	ns
22-Aug-2022	1.75	1.74	1.94	1.68	1.76	1.95
23-Aug-2022	1.61	1.63	1.85	1.57	1.59	1.84
24-Aug-2022	1.56	1.53	1.75	1.52	1.51	1.76
25-Aug-2022	1.76	1.75	2.02	1.65	1.73	1.99
26-Aug-2022	1.79	1.81	2.04	1.78	1.76	2.01
27-Aug-2022	ns	ns	ns	ns	ns	ns
28-Aug-2022	ns	ns	ns	ns	ns	ns
29-Aug-2022	1.68	1.66	1.86	1.65	1.69	1.93
30-Aug-2022	1.62	1.59	1.81	1.71	1.69	1.93
31-Aug-2022	1.78	1.76	2.01	1.69	1.77	1.99
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%		

na: not analyzed nr: no result ns: no sample o/l: offline im: instrument maintenance

Comments:

Report Date: 1-Sep-2022



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

Water System Code: **252.00**
Licence Number: **PWS-09-412-02**
Report Created: 01 October 2022

Report Period: September 2022

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/09/2022	1.77	1.51	1.67	1.50
02/09/2022	1.80	1.65	1.71	1.52
03/09/2022	1.84	1.51	1.72	1.38
04/09/2022	1.58	1.32	1.50	1.14
05/09/2022	1.61	1.44	1.55	1.44
06/09/2022	1.55	1.41	1.54	1.42
07/09/2022	1.63	1.38	1.61	1.39
08/09/2022	1.62	1.43	1.63	1.41
09/09/2022	1.62	1.48	1.66	1.54
10/09/2022	1.56	1.30	1.60	1.36
11/09/2022	1.64	1.48	1.66	1.58
12/09/2022	1.59	1.42	1.62	1.49
13/09/2022	1.54	1.40	1.59	1.49
14/09/2022	1.67	1.38	1.69	1.49
15/09/2022	1.51	1.24	1.56	1.41
16/09/2022	1.44	1.33	1.51	1.37
17/09/2022	1.58	1.24	1.59	1.28
18/09/2022	1.74	1.60	1.71	1.60
19/09/2022	1.71	1.56	1.68	1.55
20/09/2022	1.69	1.28	1.59	1.16
21/09/2022	1.74	1.18	1.73	1.49
22/09/2022	1.87	1.77	1.78	1.61
23/09/2022	1.85	1.35	1.80	1.60
24/09/2022	1.66	1.51	1.62	1.49
25/09/2022	1.71	1.38	1.60	1.40
26/09/2022	1.81	1.53	1.77	1.65
27/09/2022	1.71	1.60	1.73	1.62
28/09/2022	1.77	1.68	1.72	1.61
29/09/2022	1.70	1.58	1.66	1.57
30/09/2022	1.61	1.45	1.60	1.47

Total Number of Measurements, A:	20880	20879
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	20880	20879
COMPLIANCE, C = B/A X 100%:	100.00	100.00

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Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew



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-09-412-02						
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-2022	1.73	1.72	1.92	1.72	1.78	2.00
02-Sep-2022	1.72	1.72	2.02	1.68	1.77	2.00
03-Sep-2022	ns	ns	ns	ns	ns	ns
04-Sep-2022	ns	ns	ns	ns	ns	ns
05-Sep-2022	ns	ns	ns	ns	ns	ns
06-Sep-2022	1.57	1.60	1.83	1.52	1.58	1.83
07-Sep-2022	1.63	1.73	1.98	1.61	1.69	1.96
08-Sep-2022	1.65	1.71	1.96	1.61	1.69	1.96
09-Sep-2022	1.65	1.62	1.85	1.63	1.65	1.86
10-Sep-2022	ns	ns	ns	ns	ns	ns
11-Sep-2022	ns	ns	ns	ns	ns	ns
12-Sep-2022	1.59	1.61	1.89	1.62	1.60	1.86
13-Sep-2022	1.47	1.51	1.73	1.60	1.61	1.81
14-Sep-2022	1.72	1.66	1.90	1.77	1.87	2.07
15-Sep-2022	1.56	1.59	1.83	1.55	1.65	1.87
16-Sep-2022	1.44	1.55	1.74	1.49	1.52	1.77
17-Sep-2022	ns	ns	ns	ns	ns	ns
18-Sep-2022	ns	ns	ns	ns	ns	ns
19-Sep-2022	1.66	1.67	1.92	1.70	1.75	1.92
20-Sep-2022	1.77	1.74	1.99	1.60	1.66	1.83
21-Sep-2022	1.79	1.81	2.10	1.70	1.79	2.01
22-Sep-2022	1.84	1.81	2.15	1.73	1.77	2.03
23-Sep-2022	1.93	1.93	2.20	1.74	2.02	2.40
24-Sep-2022	ns	ns	ns	ns	ns	ns
25-Sep-2022	ns	ns	ns	ns	ns	ns
26-Sep-2022	1.94	1.85	2.14	1.81	1.84	1.97
27-Sep-2022	1.74	1.74	1.98	1.72	1.73	1.99
28-Sep-2022	1.73	1.75	2.00	1.75	1.73	1.98
29-Sep-2022	1.70	1.69	1.96	1.70	1.72	1.97
30-Sep-2022	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%	

na: not analyzed nr: no result ns: no sample o/l: offline im: instrument maintenance

Comments:

Report Date: 4-Oct-2022

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

Water System Code: **252.00**
Licence Number: **PWS-09-412-02**
Report Created: 01 November 2022

Report Period: October 2022

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/10/2022	1.64	1.50	1.63	1.53
02/10/2022	1.63	1.49	1.62	1.52
03/10/2022	1.57	1.36	1.58	1.41
04/10/2022	1.79	1.57	1.64	1.49
05/10/2022	1.72	1.56	1.60	1.50
06/10/2022	1.62	1.52	1.53	1.46
07/10/2022	1.73	1.63	1.62	1.48
08/10/2022	1.75	1.65	1.66	1.58
09/10/2022	1.75	1.65	1.68	1.58
10/10/2022	1.70	1.57	1.65	1.55
11/10/2022	1.68	1.58	1.64	1.52
12/10/2022	1.74	1.64	1.68	1.55
13/10/2022	1.82	1.57	1.72	1.49
14/10/2022	1.55	1.28	1.49	1.24
15/10/2022	1.57	1.41	1.50	1.33
16/10/2022	1.55	1.41	1.46	1.32
17/10/2022	1.74	1.64	1.63	1.50
18/10/2022	1.81	1.58	1.60	1.22
19/10/2022	1.76	1.05	1.61	1.19
20/10/2022	1.46	1.32	1.55	1.44
21/10/2022	1.56	1.34	1.54	1.27
22/10/2022	1.58	1.44	1.51	1.40
23/10/2022	1.32	1.13	1.26	1.13
24/10/2022	1.56	1.21	1.57	1.21
25/10/2022	1.63	1.49	1.58	1.43
26/10/2022	1.69	1.51	1.59	1.46
27/10/2022	1.75	1.64	1.65	1.53
28/10/2022	1.64	1.54	1.54	1.43
29/10/2022	1.50	1.35	1.41	1.31
30/10/2022	1.57	1.48	1.50	1.39
31/10/2022	1.53	1.45	1.54	1.47

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): D.MerredewSignature: Original signed by D.Merredew



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-09-412-02						
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-2022	ns	ns	ns	ns	ns	ns
02-Oct-2022	ns	ns	ns	ns	ns	ns
03-Oct-2022	1.64	1.60	1.92	1.62	1.70	1.92
04-Oct-2022	1.83	1.90	2.15	1.70	1.77	1.98
05-Oct-2022	1.78	1.73	1.99	1.65	1.64	1.92
06-Oct-2022	1.63	1.60	1.82	1.52	1.53	1.76
07-Oct-2022	1.71	1.68	1.95	1.61	1.64	1.87
08-Oct-2022	ns	ns	ns	ns	ns	ns
09-Oct-2022	ns	ns	ns	ns	ns	ns
10-Oct-2022	ns	ns	ns	ns	ns	ns
11-Oct-2022	1.72	1.71	1.97	1.72	1.72	1.93
12-Oct-2022	1.83	1.78	2.04	1.72	1.70	1.95
13-Oct-2022	1.87	1.83	2.13	1.76	1.79	2.01
14-Oct-2022	1.29	1.29	1.51	1.26	1.28	1.48
15-Oct-2022	ns	ns	ns	ns	ns	ns
16-Oct-2022	ns	ns	ns	ns	ns	ns
17-Oct-2022	1.88	1.85	2.14	1.75	1.77	2.00
18-Oct-2022	1.67	1.63	1.92	1.55	1.60	1.81
19-Oct-2022	1.65	1.67	1.98	1.64	1.65	1.95
20-Oct-2022	1.49	1.53	1.80	1.56	1.59	1.75
21-Oct-2022	1.66	1.61	1.89	1.56	1.51	1.80
22-Oct-2022	ns	ns	ns	ns	ns	ns
23-Oct-2022	ns	ns	ns	ns	ns	ns
24-Oct-2022	1.59	1.55	1.85	1.58	1.58	1.89
25-Oct-2022	1.61	1.58	1.83	1.60	1.59	1.85
26-Oct-2022	1.67	1.59	1.90	1.57	1.62	1.85
27-Oct-2022	1.79	1.81	2.01	1.69	1.70	1.97
28-Oct-2022	1.68	1.67	1.95	1.56	1.56	1.84
29-Oct-2022	ns	ns	ns	ns	ns	ns
30-Oct-2022	ns	ns	ns	ns	ns	ns
31-Oct-2022	1.47	1.53	1.67	1.53	1.56	1.78
Total number of measurements taken, A: Chlorine Standard for Monitoring Location (mg/L): Number of measurements meeting standard, B: Compliance with Chlorine Standard, C= B/A X 100%:		20		20		
		0.50		0.50		
		20		20		
		100%		100%		

na: not analyzed nr: no result ns: no sample o/l: offline im: instrument maintenance

Comments:

Report Date: 2-Nov-2022

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

Water System Code: **252.00**
Licence Number: **PWS-09-412-02**
Report Created: 01 December 2022

Report Period: November 2022

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/11/2022	1.49	1.37	1.56	1.51
02/11/2022	1.51	1.40	1.56	1.46
03/11/2022	1.53	1.46	1.58	1.49
04/11/2022	1.46	1.40	1.49	1.39
05/11/2022	1.45	1.37	1.47	1.38
06/11/2022	1.49	1.38	1.53	1.42
07/11/2022	1.51	1.43	1.51	1.43
08/11/2022	1.55	1.47	1.56	1.47
09/11/2022	1.42	1.37	1.51	1.43
10/11/2022	1.43	1.30	1.51	1.43
11/11/2022	1.41	1.33	1.50	1.41
12/11/2022	1.44	1.36	1.52	1.46
13/11/2022	1.44	1.37	1.53	1.47
14/11/2022	1.45	1.36	1.53	1.40
15/11/2022	1.41	1.30	1.48	1.33
16/11/2022	1.32	1.24	1.41	1.31
17/11/2022	1.39	1.33	1.47	1.39
18/11/2022	1.41	1.35	1.43	1.27
19/11/2022	1.46	1.37	1.51	1.34
20/11/2022	1.48	1.38	1.51	1.43
21/11/2022	1.46	1.40	1.45	1.36
22/11/2022	1.40	1.32	1.38	1.30
23/11/2022	1.32	1.27	1.34	1.30
24/11/2022	1.32	1.25	1.42	1.27
25/11/2022	1.45	1.28	1.51	1.39
26/11/2022	1.49	1.31	1.45	1.26
27/11/2022	1.33	1.26	1.29	1.18
28/11/2022	1.30	1.16	1.25	1.12
29/11/2022	1.49	1.32	1.51	1.29
30/11/2022	1.49	1.49	1.56	1.49

Total Number of Measurements, A:	20910	20910
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	20910	20910
COMPLIANCE, C = B/A X 100%:	100.00	100.00

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



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-09-412-02						
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-2022	1.50	1.51	1.78	1.55	1.56	1.80
02-Nov-2022	1.47	1.54	1.75	1.55	1.60	1.78
03-Nov-2022	1.65	1.64	1.86	1.67	1.69	1.93
04-Nov-2022	1.44	1.48	1.65	1.47	1.51	1.71
05-Nov-2022	ns	ns	ns	ns	ns	ns
06-Nov-2022	ns	ns	ns	ns	ns	ns
07-Nov-2022	1.53	1.52	1.76	1.51	1.58	1.77
08-Nov-2022	1.56	1.54	1.80	1.58	1.67	1.86
09-Nov-2022	1.43	1.45	1.66	1.53	1.52	1.76
10-Nov-2022	1.45	1.44	1.68	1.51	1.56	1.76
11-Nov-2022	ns	ns	ns	ns	ns	ns
12-Nov-2022	ns	ns	ns	ns	ns	ns
13-Nov-2022	ns	ns	ns	ns	ns	ns
14-Nov-2022	1.45	1.54	1.72	1.46	1.44	1.63
15-Nov-2022	1.52	1.54	1.80	1.57	1.58	1.85
16-Nov-2022	1.37	1.35	1.58	1.42	1.40	1.64
17-Nov-2022	1.35	1.41	1.67	1.48	1.46	1.74
18-Nov-2022	1.40	1.45	1.67	1.32	1.42	1.66
19-Nov-2022	ns	ns	ns	ns	ns	ns
20-Nov-2022	ns	ns	ns	ns	ns	ns
21-Nov-2022	1.45	1.45	1.74	1.48	1.51	1.73
22-Nov-2022	1.41	1.47	1.70	1.38	1.42	1.62
23-Nov-2022	1.33	1.38	1.62	1.34	1.39	1.61
24-Nov-2022	1.34	1.38	1.64	1.44	1.43	1.67
25-Nov-2022	1.43	1.45	1.65	1.43	1.50	1.70
26-Nov-2022	ns	ns	ns	ns	ns	ns
27-Nov-2022	ns	ns	ns	ns	ns	ns
28-Nov-2022	1.30	1.27	1.46	1.27	1.30	1.49
29-Nov-2022	1.49	1.48	1.71	1.55	1.63	1.75
30-Nov-2022	1.33	1.32	1.56	1.58	1.64	1.83
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%	

na: not analyzed nr: no result ns: no sample o/l: offline im: instrument maintenance

Comments:

Report Date: 1-Dec-2022

**City Of Winnipeg**

Water and Waste Department

Water Services

WATER TREATMENT PLANT FREE CHLORINE ON-LINE MONITORING REPORT
Deacon Booster Pumping StationWater System Code: **252.00**Licence Number: **PWS-09-412-02**

Report Created: 01 January 2023

Report Period: December 2022

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/12/2022	1.49	1.49	1.48	1.29
02/12/2022	1.49	1.36	1.27	1.21
03/12/2022	1.52	1.21	1.41	1.16
04/12/2022	1.42	1.29	1.37	1.26
05/12/2022	1.54	1.32	1.44	1.35
06/12/2022	1.38	1.23	1.39	1.26
07/12/2022	1.34	1.19	1.33	1.29
08/12/2022	1.37	1.25	1.32	1.28
09/12/2022	1.35	1.26	1.31	1.26
10/12/2022	1.28	1.17	1.26	1.22
11/12/2022	1.21	1.07	1.22	1.11
12/12/2022	1.24	1.04	1.28	1.10
13/12/2022	1.29	1.20	1.32	1.27
14/12/2022	1.51	1.27	1.46	1.24
15/12/2022	1.61	1.17	1.58	1.31
16/12/2022	1.36	1.20	1.33	1.23
17/12/2022	1.32	1.15	1.28	1.18
18/12/2022	1.36	1.17	1.33	1.18
19/12/2022	1.28	1.24	1.29	1.11
20/12/2022	1.39	1.34	1.42	1.31
21/12/2022	1.87	1.51	1.89	1.52
22/12/2022	1.49	0.91	1.43	0.95
23/12/2022	1.34	1.27	1.42	1.35
24/12/2022	1.30	1.17	1.40	1.29
25/12/2022	1.34	1.28	1.50	1.42
26/12/2022	1.41	1.32	1.45	1.35
27/12/2022	1.41	1.30	1.41	1.33
28/12/2022	1.40	1.29	1.40	1.32
29/12/2022	1.32	1.25	1.34	1.25
30/12/2022	1.29	1.11	1.34	1.20
31/12/2022	1.19	1.12	1.27	1.21

Total Number of Measurements, A: 21595 21592

Minimum Free Chlorine Standard: 0.5 0.5

Number of Measurements Meeting Standard, B: 21595 21592

COMPLIANCE, C = B/A X 100%: 100.00 100.00

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



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-09-412-02						
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-2022	1.34	1.32	1.56	1.55	1.64	1.81
02-Dec-2022	1.16	1.17	1.31	1.24	1.34	1.52
03-Dec-2022	ns	ns	ns	ns	ns	ns
04-Dec-2022	ns	ns	ns	ns	ns	ns
05-Dec-2022	1.52	1.48	1.68	1.44	1.51	1.64
06-Dec-2022	1.43	1.50	1.71	1.44	1.48	1.69
07-Dec-2022	1.37	1.46	1.60	1.34	1.40	1.52
08-Dec-2022	1.38	1.37	1.54	1.31	1.30	1.50
09-Dec-2022	1.36	1.33	1.52	1.30	1.33	1.53
10-Dec-2022	ns	ns	ns	ns	ns	ns
11-Dec-2022	ns	ns	ns	ns	ns	ns
12-Dec-2022	1.23	1.31	1.50	1.27	1.29	1.50
13-Dec-2022	1.27	1.30	1.53	1.35	1.36	1.62
14-Dec-2022	1.59	1.66	1.86	1.58	1.67	1.93
15-Dec-2022	1.79	1.80	1.98	1.74	1.82	2.00
16-Dec-2022	1.43	1.40	1.63	1.37	1.41	1.66
17-Dec-2022	ns	ns	ns	ns	ns	ns
18-Dec-2022	ns	ns	ns	ns	ns	ns
19-Dec-2022	1.26	1.32	1.49	1.14	1.16	1.40
20-Dec-2022	1.39	1.37	1.52	1.44	1.38	1.60
21-Dec-2022	1.82	1.86	2.09	1.91	1.97	2.30
22-Dec-2022	1.52	1.46	1.65	1.34	1.43	1.64
23-Dec-2022	1.27	1.34	1.54	1.35	1.42	1.59
24-Dec-2022	ns	ns	ns	ns	ns	ns
25-Dec-2022	ns	ns	ns	ns	ns	ns
26-Dec-2022	ns	ns	ns	ns	ns	ns
27-Dec-2022	ns	ns	ns	ns	ns	ns
28-Dec-2022	1.41	1.41	1.57	1.38	1.44	1.63
29-Dec-2022	1.33	1.34	1.50	1.35	1.31	1.54
30-Dec-2022	1.35	1.44	1.59	1.35	1.44	1.64
31-Dec-2022	ns	ns	ns	ns	ns	ns
Total number of measurements taken, A: Chlorine Standard for Monitoring Location (mg/L): Number of measurements meeting standard, B: Compliance with Chlorine Standard, C= B/A X 100%:		20		20		
		0.50		0.50		
		20		20		
		100%		100%		

na: not analyzed nr: no result ns: no sample o/l: offline im: instrument maintenance

Comments:

Report Date: 3-Jan-2023

2022 MONTHLY TURBIDITY REPORTS



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**
Licence Number: **PWS-09-412-02**

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

January 2022 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
1/01/2022	0.87	0.05	0.08	0.08	0.14	0.05	0.12	0.03	0.06	0.09	0.13	0.03	0.08	0.07	0.14	0.03	0.07
2/01/2022	0.86	0.04	0.08	0.05	0.11	0.05	0.10	0.02	0.06	0.05	0.11	0.04	0.06	0.08	0.16	0.04	0.06
3/01/2022	0.85	0.03	0.07	0.06	0.12	0.07	0.09	0.02	0.06	0.05	0.10	0.04	0.07	0.13	0.14	0.03	0.08
4/01/2022	0.85	0.03	0.08	0.09	0.12	0.08	0.11	0.02	0.07	0.05	0.08	0.03	0.08	0.07	0.17	0.03	0.08
5/01/2022	0.86	0.04	0.06	0.07	0.13	0.06	0.14	0.04	0.07	0.07	0.10	0.03	0.07	0.06	0.12	0.03	0.07
6/01/2022	0.86	0.04	0.07	0.07	0.14	0.06	0.13	0.03	0.05	0.06	0.11	0.04	0.07	0.06	0.09	0.05	0.08
7/01/2022	0.86	0.04	0.07	0.08	0.11	0.09	0.12	0.02	0.06	0.05	0.17	0.04	0.16	0.08	0.12	0.04	0.09
8/01/2022	0.87	0.03	0.08	0.11	0.14	0.09	0.15	0.03	0.06	0.06	0.08	0.03	0.07	0.06	0.12	0.04	0.08
9/01/2022	0.88	0.05	0.07	0.08	0.16	0.08	0.16	0.04	0.07	0.06	0.11	0.03	0.08	0.06	0.11	0.04	0.07
10/01/2022	0.85	0.04	0.09	0.08	0.16	0.09	0.14	0.03	0.07	0.05	0.12	0.05	0.11	0.07	0.09	0.06	0.09
11/01/2022	0.85	0.03	0.07	0.12	0.13	0.12	0.16	0.02	0.07	0.05	0.07	0.03	0.08	0.06	0.12	0.04	0.09
12/01/2022	0.86	0.04	0.05	0.08	0.16	0.08	0.16	0.04	0.06	0.05	0.09	0.03	0.08	0.05	0.13	0.05	0.08
13/01/2022	0.86	0.03	0.06	0.10	0.17	0.10	0.14	0.03	0.07	0.04	0.10	0.05	0.07	0.07	0.09	0.06	0.09
14/01/2022	0.86	0.03	0.09	0.11	0.15	0.11	0.18	0.03	0.06	0.06	0.08	0.04	0.08	0.06	0.11	0.05	0.12
15/01/2022	0.87	0.06	0.08	0.05	0.10	0.07	0.10	0.04	0.07	0.06	0.10	0.04	0.09	0.06	0.11	0.06	0.12
16/01/2022	0.87	0.06	0.10	0.05	0.11	0.05	0.11	0.04	0.07	0.06	0.11	0.05	0.08	0.05	0.09	0.10	0.14
17/01/2022	0.88	0.06	0.11	0.05	0.08	0.07	0.10	0.04	0.08	0.05	0.12	0.05	0.10	0.06	0.12	0.05	0.16
18/01/2022	0.87	0.04	0.11	0.07	0.11	0.07	0.11	0.03	0.05	0.08	0.10	0.04	0.11	0.04	0.09	0.04	0.09
19/01/2022	0.87	0.08	0.09	0.05	0.11	0.06	0.12	0.04	0.08	0.08	0.14	0.04	0.09	0.04	0.10	0.05	0.07
20/01/2022	0.87	0.05	0.11	0.05	0.10	0.06	0.10	0.03	0.08	0.07	0.13	0.07	0.10	0.04	0.06	0.05	0.10
21/01/2022	0.86	0.05	0.09	0.06	0.08	0.09	0.14	0.03	0.07	0.06	0.09	0.04	0.09	0.04	0.08	0.04	0.09
22/01/2022	0.85	0.06	0.08	0.05	0.11	0.07	0.14	0.04	0.06	0.08	0.13	0.05	0.11	0.03	0.10	0.04	0.10
23/01/2022	0.85	0.08	0.11	0.05	0.13	0.08	0.16	0.04	0.08	0.07	0.15	0.06	0.09	0.04	0.11	0.07	0.08
24/01/2022	0.86	0.05	0.10	0.05	0.10	0.10	0.16	0.03	0.07	0.06	0.13	0.06	0.12	0.05	0.10	0.05	0.12
25/01/2022	0.84	0.04	0.08	0.06	0.08	0.12	0.15	0.02	0.05	0.08	0.12	0.04	0.10	0.04	0.08	0.04	0.09
26/01/2022	0.84	0.05	0.07	0.04	0.08	0.07	0.16	0.04	0.05	0.06	0.11	0.04	0.09	0.03	0.09	0.04	0.06
27/01/2022	0.84	0.04	0.08	0.04	0.08	0.07	0.13	0.03	0.07	0.06	0.12	0.06	0.08	0.04	0.06	0.05	0.08
28/01/2022	0.84	0.04	0.08	0.05	0.07	0.10	0.12	0.03	0.06	0.06	0.10	0.04	0.11	0.04	0.08	0.04	0.10
29/01/2022	0.82	0.04	0.07	0.05	0.09	0.07	0.12	0.04	0.05	0.07	0.11	0.05	0.10	0.04	0.09	0.04	0.10
30/01/2022	0.81	0.05	0.08	0.04	0.09	0.07	0.12	0.03	0.06	0.05	0.11	0.05	0.08	0.03	0.08	0.06	0.08
31/01/2022	0.81	0.04	0.08	0.04	0.09	0.08	0.11	0.03	0.06	0.05	0.11	0.06	0.10	0.04	0.07	0.05	0.09

Total Number of Measurements Taken, A:	11199	11278	11624	12268	13558	13640	13193	14688
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:	11199	11278	11624	12268	13558	13640	13193	14688
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\2022\01-January

Submitted By (Print):

D.Merredew

Signature:

Original signed by D.Merredew

Water Treatment Plant Turbidity Grab Monitoring Report																		
Water System Code: 252.00	Turbidity (NTU)																	
Licence No. PWS-09-412-02																		
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-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
02-Jan-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
03-Jan-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
04-Jan-2022	0.73	0.83	0.07	0.04	0.08	0.09	0.08	0.09	0.07	0.07	0.08	0.03	0.09	0.06	0.09	0.09	0.10	0.06
05-Jan-2022	0.73	0.84	0.09	0.06	0.13	0.13	0.11	0.11	0.09	0.05	0.09	0.09	0.08	0.05	0.10	0.10	0.08	0.04
06-Jan-2022	0.75	0.83	0.09	0.06	0.11	0.13	0.08	0.09	0.10	0.05	0.09	0.09	0.08	0.05	0.07	0.07	0.08	0.04
07-Jan-2022	0.74	0.83	0.10	0.07	0.08	0.10	0.08	0.10	0.07	0.03	0.07	0.09	0.10	0.07	0.09	0.08	0.08	0.05
08-Jan-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
09-Jan-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
10-Jan-2022	0.75	0.83	0.13	0.09	0.09	0.13	0.09	0.13	0.10	0.08	0.11	0.09	0.09	0.06	0.08	0.07	0.09	0.08
11-Jan-2022	0.72	0.85	0.07	0.04	0.09	0.12	0.08	0.13	0.07	0.04	0.08	0.07	0.09	0.06	0.10	0.09	0.12	0.07
12-Jan-2022	0.74	0.84	0.08	0.05	0.09	0.14	0.12	0.16	0.07	0.05	0.08	0.08	0.07	0.05	0.07	0.07	0.07	0.05
13-Jan-2022	0.77	0.84	0.08	0.04	0.08	0.13	0.08	0.14	0.09	0.06	0.07	0.06	0.09	0.06	0.08	0.07	0.09	0.07
14-Jan-2022	0.76	0.83	0.07	0.04	0.08	0.15	0.08	0.15	0.07	0.04	0.08	0.08	0.09	0.04	0.09	0.08	0.12	0.10
15-Jan-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
16-Jan-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
17-Jan-2022	0.73	0.84	0.11	0.09	0.09	0.07	0.09	0.09	0.07	0.04	0.08	0.08	0.11	0.09	0.09	0.08	0.10	0.07
18-Jan-2022	0.76	0.84	0.07	0.06	0.09	0.07	0.09	0.09	0.07	0.05	0.08	0.08	0.12	0.09	0.11	0.05	0.08	0.04
19-Jan-2022	0.78	0.87	0.09	0.08	0.11	0.09	0.13	0.12	0.09	0.05	0.11	0.12	0.10	0.06	0.09	0.05	0.09	0.04
20-Jan-2022	0.75	0.82	0.10	0.09	0.10	0.07	0.10	0.09	0.10	0.06	0.08	0.11	0.10	0.07	0.09	0.04	0.10	0.06
21-Jan-2022	0.73	0.85	0.08	0.06	0.09	0.07	0.09	0.11	0.08	0.04	0.09	0.08	0.12	0.08	0.11	0.05	0.12	0.07
22-Jan-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
23-Jan-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
24-Jan-2022	0.78	0.84	0.09	0.08	0.09	0.07	0.09	0.12	0.10	0.06	0.08	0.10	0.10	0.07	0.09	0.04	0.10	0.06
25-Jan-2022	0.75	0.83	0.08	0.08	0.09	0.07	0.09	0.14	0.08	0.04	0.09	0.10	0.08	0.07	0.10	0.05	0.11	0.07
26-Jan-2022	0.76	0.84	0.07	0.06	0.09	0.07	0.09	0.16	0.07	0.04	0.09	0.09	0.08	0.06	0.07	0.03	0.08	0.04
27-Jan-2022	0.73	0.81	0.08	0.07	0.08	0.06	0.07	0.11	0.08	0.05	0.08	0.08	0.10	0.07	0.09	0.04	0.10	0.06
28-Jan-2022	0.72	0.82	0.07	0.06	0.08	0.07	0.08	0.11	0.07	0.09	0.09	0.04	0.11	0.08	0.11	0.06	0.12	0.08
29-Jan-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
30-Jan-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
31-Jan-2022	0.69	0.78	0.08	0.06	0.07	0.06	0.08	0.11	0.09	0.05	0.07	0.08	0.10	0.08	0.09	0.04	0.10	0.06
Total number of measurements taken, A:			20		20		20		20		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:			20		20		20		20		20		20		20		20	
Compliance with Turbidity Standard, C= B/A X 100%:			100%		100%		100%		100%		100%		100%		100%		100%	

na: not analyzed nr: no result ns: no sample o/l: offline im: instrument maintenance

Comments:

Report Date: 3-Feb-2022



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**
Licence Number: **PWS-09-412-02**

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

February 2022 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
1/02/2022	0.80	0.04	0.08	0.06	0.08	0.10	0.13	0.02	0.06	0.06	0.09	0.05	0.09	0.04	0.08	0.04	0.09
2/02/2022	0.80	0.05	0.07	0.05	0.09	0.07	0.13	0.04	0.06	0.09	0.13	0.05	0.11	0.03	0.09	0.04	0.08
3/02/2022	0.79	0.05	0.09	0.04	0.09	0.07	0.14	0.03	0.06	0.07	0.14	0.07	0.12	0.03	0.06	0.07	0.10
4/02/2022	0.79	0.04	0.08	0.05	0.07	0.12	0.13	0.02	0.06	0.06	0.11	0.06	0.11	0.04	0.09	0.04	0.10
5/02/2022	0.78	0.78	0.06	0.05	0.09	0.09	0.19	0.03	0.05	0.10	0.13	0.05	0.11	0.03	0.08	0.04	0.10
6/02/2022	0.78	OL	OL	0.06	0.10	0.12	0.17	0.04	0.06	0.09	0.13	0.07	0.14	0.04	0.08	0.06	0.08
7/02/2022	0.77	OL	OL	0.06	0.11	0.14	0.19	0.04	0.06	0.09	0.14	0.07	0.09	0.03	0.07	0.07	0.10
8/02/2022	0.75	OL	OL	0.07	0.12	0.13	0.21	0.04	0.07	0.09	0.14	0.07	0.11	0.04	0.05	0.06	0.10
9/02/2022	0.88	OL	OL	0.05	0.10	0.04	0.20	0.02	0.05	0.06	0.11	0.04	0.11	0.03	0.07	0.03	0.08
10/02/2022	0.73	OL	OL	0.07	0.12	0.02	0.06	0.03	0.05	0.06	0.11	0.05	0.10	0.03	0.07	0.04	0.06
11/02/2022	0.71	OL	OL	0.08	0.13	0.01	0.04	0.02	0.05	0.08	0.12	0.05	0.07	0.03	0.07	0.05	0.08
12/02/2022	0.70	OL	OL	0.09	0.13	0.02	0.05	0.03	0.06	0.08	0.12	0.06	0.09	0.03	0.05	0.04	0.08
13/02/2022	0.70	0.07	0.12	0.08	0.10	0.01	0.02	0.02	0.05	0.07	0.11	0.05	0.09	0.04	0.06	0.04	0.08
14/02/2022	0.69	0.07	0.12	0.10	0.14	0.01	0.05	0.02	0.04	0.08	0.11	0.05	0.09	0.04	0.07	0.04	0.08
15/02/2022	0.68	0.07	0.15	0.10	0.15	0.02	0.05	0.03	0.05	0.07	0.12	0.05	0.08	0.04	0.07	0.05	0.07
16/02/2022	0.71	0.07	0.14	0.07	0.16	0.02	0.06	0.00	0.05	0.03	0.16	0.04	0.10	0.03	0.06	0.03	0.10
17/02/2022	0.65	0.11	0.18	0.12	0.20	0.05	0.09	OL	OL	0.10	0.15	0.06	0.12	0.05	0.09	0.05	0.11
18/02/2022	0.64	0.10	0.14	0.07	0.19	0.04	0.14	OL	OL	0.12	0.18	0.06	0.10	0.05	0.09	0.05	0.09
19/02/2022	0.63	0.07	0.13	0.04	0.10	0.02	0.06	OL	OL	0.10	0.17	0.05	0.08	0.04	0.24	0.05	0.09
20/02/2022	0.62	0.08	0.10	0.05	0.11	0.01	0.06	OL	OL	0.11	0.17	0.06	0.10	0.04	0.08	0.05	0.09
21/02/2022	0.61	0.09	0.14	0.04	0.06	0.02	0.04	0.01	0.08	0.10	0.17	0.06	0.11	0.04	0.05	0.05	0.09
22/02/2022	0.60	0.06	0.14	0.05	0.10	0.01	0.05	0.03	0.05	0.10	0.15	0.05	0.10	0.04	0.08	0.04	0.09
23/02/2022	0.58	0.06	0.13	0.03	0.09	0.01	0.05	0.03	0.05	0.12	0.17	0.06	0.08	0.03	0.07	0.05	0.07
24/02/2022	0.58	0.09	0.11	0.03	0.11	0.01	0.02	0.02	0.08	0.05	0.17	0.07	0.10	0.03	0.05	0.04	0.09
25/02/2022	0.58	0.05	0.11	0.03	0.06	0.00	0.04	0.02	0.04	0.04	0.08	0.05	0.10	0.04	0.09	0.04	0.08
26/02/2022	0.56	0.04	0.10	0.03	0.06	0.00	0.02	0.03	0.05	0.05	0.07	0.04	0.09	0.03	0.06	0.04	0.06
27/02/2022	0.55	0.06	0.07	0.02	0.07	0.00	0.00	0.02	0.05	0.03	0.08	0.07	0.09	0.02	0.06	0.05	0.08
28/02/2022	0.54	0.05	0.09	0.03	0.04	0.00	0.03	0.02	0.03	0.03	0.07	0.05	0.10	0.04	0.05	0.03	0.08

Total Number of Measurements Taken, A:	7502	10576	9790	9025	12465	12686	12557	13725
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:	7502	10576	9790	9025	12465	12686	12557	13725
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 = Offline

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2022\02-February

Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew

WATER TREATMENT PLANT TURBIDITY GRAB MONITORING REPORT																		
Water System Code: 252.00	Turbidity (NTU)																	
Licence No. PWS-09-412-02																		
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-2022	0.69	0.79	0.07	0.05	0.08	0.07	0.08	0.11	0.07	0.04	0.08	0.09	0.10	0.09	0.11	0.05	0.12	0.08
02-Feb-2022	0.74	0.84	0.08	0.07	0.11	0.09	0.10	0.12	0.08	0.04	0.10	0.12	0.10	0.08	0.13	0.07	0.09	0.06
03-Feb-2022	0.63	0.76	0.08	0.08	0.11	0.10	0.07	0.11	0.10	0.05	0.08	0.09	0.09	0.08	0.09	0.04	0.09	0.06
04-Feb-2022	0.68	0.77	0.10	0.09	0.07	0.06	0.08	0.12	0.07	0.03	0.08	0.11	0.11	0.11	0.09	0.04	0.09	0.07
05-Feb-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
06-Feb-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
07-Feb-2022	0.71	0.74	o/l	o/l	0.07	0.06	0.07	0.15	0.08	0.05	0.09	0.12	0.10	0.09	0.09	0.04	0.09	0.07
08-Feb-2022	0.65	0.74	o/l	o/l	0.09	0.08	0.08	0.17	0.09	0.05	0.07	0.11	0.09	0.08	0.08	0.03	0.09	0.07
09-Feb-2022	0.63	0.73	o/l	o/l	0.09	0.09	0.09	0.03	0.07	0.04	0.08	0.11	0.10	0.10	0.09	0.04	0.07	0.06
10-Feb-2022	0.65	0.78	o/l	o/l	0.11	0.11	0.09	0.02	0.08	0.04	0.10	0.09	0.08	0.05	0.07	0.03	0.08	0.04
11-Feb-2022	0.58	0.69	o/l	o/l	0.08	0.08	0.08	<0.02	0.09	0.04	0.09	0.10	0.08	0.06	0.07	0.03	0.09	0.05
12-Feb-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
13-Feb-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
14-Feb-2022	0.57	0.66	0.13	0.08	0.09	0.12	0.10	0.03	0.07	0.03	0.08	0.10	0.10	0.06	0.08	0.04	0.07	0.04
15-Feb-2022	0.57	0.66	0.08	0.08	0.09	0.11	0.08	0.02	0.09	0.04	0.09	0.09	0.08	0.06	0.07	0.03	0.08	0.05
16-Feb-2022	0.54	0.65	0.13	0.12	0.14	0.15	0.13	0.05	o/l	o/l	0.09	0.09	0.11	0.08	0.09	0.04	0.09	0.05
17-Feb-2022	0.54	0.63	0.11	0.11	0.13	0.16	0.15	0.06	o/l	o/l	0.10	0.12	0.09	0.07	0.10	0.05	0.08	0.05
18-Feb-2022	0.56	0.63	0.14	0.13	0.13	0.15	0.12	0.03	o/l	o/l	0.15	0.16	0.10	0.08	0.09	0.04	0.10	0.06
19-Feb-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
20-Feb-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
21-Feb-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
22-Feb-2022	0.54	0.58	0.15	0.13	0.12	0.07	0.12	0.03	0.10	0.04	0.09	0.15	0.08	0.07	0.10	0.05	0.07	0.05
23-Feb-2022	0.51	0.59	0.09	0.10	0.12	0.07	0.09	<0.02	0.13	0.06	0.09	0.15	0.09	0.08	0.11	0.06	0.08	0.05
24-Feb-2022	0.50	0.58	0.10	0.09	0.09	0.05	0.10	<0.02	0.07	0.02	0.15	0.18	0.10	0.09	0.08	0.03	0.10	0.07
25-Feb-2022	0.52	0.56	0.08	0.08	0.09	0.04	0.10	<0.02	0.08	0.03	0.08	0.07	0.10	0.08	0.09	0.04	0.08	0.05
26-Feb-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
27-Feb-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
28-Feb-2022	0.49	0.54	0.10	0.09	0.09	0.04	0.10	<0.02	0.07	0.02	0.07	0.05	0.09	0.09	0.07	0.03	0.09	0.07
Total number of measurements taken, A:			14		19		19		16		19		19		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:			14		19		19		16		19		19		19		19	
Compliance with Turbidity Standard, C= B/A X 100%:			100%		100%		100%		100%		100%		100%		100%		100%	

na: not analyzed nr: no result ns: no sample o/l: offline im: instrument maintenance

Comments:

Filter 1 – offline for maintenance from February 5 at 5:41pm until February 13, 3:53am
Filter 4 – offline for maintenance from February 16 at 1:15am until February 21 at 12:42pm

Report Date: 3-Mar-2022



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**
Licence Number: **PWS-09-412-02**

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

March 2022 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
1/03/2022	0.54	0.05	0.10	0.03	0.07	0.01	0.02	0.03	0.05	0.05	0.06	0.05	0.10	0.03	0.06	0.04	0.07
2/03/2022	0.54	0.06	0.08	0.02	0.07	0.00	0.01	0.02	0.05	0.03	0.08	0.09	0.11	0.03	0.06	0.05	0.08
3/03/2022	0.53	0.06	0.09	0.03	0.05	0.00	0.05	0.02	0.05	0.04	0.08	0.07	0.12	0.03	0.05	0.04	0.09
4/03/2022	0.53	0.04	0.09	0.03	0.07	0.00	0.02	0.02	0.04	0.04	0.06	0.06	0.13	0.03	0.06	0.04	0.09
5/03/2022	0.52	0.04	0.10	0.02	0.06	0.00	0.02	0.02	0.04	0.04	0.07	0.09	0.12	0.03	0.06	0.06	0.07
6/03/2022	0.51	0.06	0.08	0.02	0.06	0.00	0.01	0.02	0.05	0.03	0.07	0.11	0.15	0.02	0.04	0.05	0.09
7/03/2022	0.51	0.05	0.09	0.03	0.05	0.01	0.02	0.02	0.03	0.03	0.09	0.10	0.19	0.04	0.05	0.05	0.11
8/03/2022	0.50	0.06	0.11	0.04	0.11	0.01	0.05	0.04	0.07	0.05	0.08	0.11	0.17	0.03	0.09	0.06	0.09
9/03/2022	0.53	0.05	0.13	0.01	0.04	0.00	0.03	0.02	0.06	0.03	0.10	0.13	0.22	0.02	0.05	0.04	0.13
10/03/2022	0.57	0.05	0.09	0.02	0.15	0.03	0.06	0.02	0.10	0.04	0.11	0.08	0.14	0.02	0.06	0.03	0.08
11/03/2022	0.57	0.05	0.11	0.08	0.13	0.04	0.09	0.04	0.07	0.03	0.12	0.07	0.18	0.06	0.10	0.03	0.09
12/03/2022	0.57	0.04	0.11	0.07	0.15	0.04	0.11	0.05	0.10	0.07	0.12	0.04	0.07	0.05	0.13	0.05	0.07
13/03/2022	0.56	0.06	0.08	0.08	0.16	0.03	0.06	0.06	0.11	0.05	0.11	0.07	0.11	0.04	0.12	0.05	0.11
14/03/2022	0.55	0.06	0.16	0.06	0.13	0.07	0.14	0.05	0.11	0.05	0.11	0.05	0.13	0.05	0.10	0.04	0.10
15/03/2022	0.85	0.01	0.08	0.04	0.15	0.01	0.25	0.03	0.09	0.02	0.09	0.02	0.11	0.02	0.15	0.02	0.08
16/03/2022	0.56	0.05	0.11	0.05	0.11	0.05	0.08	0.03	0.10	0.03	0.13	0.05	0.13	0.04	0.10	0.03	0.09
17/03/2022	0.58	0.05	0.12	0.10	0.15	0.05	0.09	0.06	0.08	0.04	0.15	0.05	0.13	0.06	0.19	0.04	0.13
18/03/2022	0.55	0.07	0.17	0.11	0.21	0.07	0.16	0.08	0.15	0.07	0.11	0.06	0.10	0.06	0.15	0.06	0.12
19/03/2022	0.55	0.09	0.13	0.10	0.23	0.06	0.11	0.07	0.16	0.06	0.13	0.10	0.16	0.05	0.15	0.06	0.13
20/03/2022	0.54	0.07	0.18	0.07	0.14	0.07	0.18	0.05	0.13	0.06	0.13	0.08	0.16	0.06	0.12	0.05	0.13
21/03/2022	0.53	0.06	0.15	0.11	0.19	0.06	0.13	0.06	0.09	0.04	0.13	0.09	0.19	0.06	0.12	0.04	0.06
22/03/2022	0.53	0.05	0.11	0.07	0.19	0.04	0.10	0.05	0.12	0.05	0.11	0.08	0.17	0.05	0.13	0.05	0.12
23/03/2022	0.53	0.04	0.07	0.06	0.15	0.03	0.09	0.04	0.09	0.05	0.11	0.11	0.15	0.04	0.11	0.04	0.11
24/03/2022	0.53	0.05	0.11	0.07	0.09	0.04	0.07	0.03	0.09	0.04	0.10	0.10	0.17	0.04	0.07	0.04	0.10
25/03/2022	0.53	0.04	0.10	0.07	0.15	0.03	0.10	0.04	0.06	0.03	0.05	0.09	0.19	0.04	0.10	0.04	0.11
26/03/2022	0.52	0.05	0.10	0.07	0.14	0.04	0.14	0.05	0.10	OL	OL	0.13	0.22	0.04	0.13	0.04	0.07
27/03/2022	0.52	0.05	0.11	0.07	0.13	0.04	0.11	0.05	0.09	OL	OL	0.14	0.24	0.05	0.12	0.05	0.11
28/03/2022	0.53	0.05	0.10	0.07	0.14	0.04	0.10	0.05	0.10	OL	OL	0.08	0.21	0.05	0.12	0.05	0.11
29/03/2022	0.54	0.04	0.06	0.05	0.11	0.03	0.08	0.04	0.09	OL	OL	0.01	0.06	0.04	0.09	0.04	0.11
30/03/2022	0.55	0.04	0.07	0.06	0.11	0.03	0.05	0.03	0.07	OL	OL	0.01	0.05	0.04	0.08	0.04	0.07
31/03/2022	0.56	0.04	0.07	0.06	0.10	0.04	0.07	0.04	0.07	OL	OL	0.01	0.04	0.04	0.06	0.04	0.08

Total Number of Measurements Taken, A:	11220	10739	9586	12098	10336	13212	12839	14620
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:	11220	10739	9586	12098	10336	13212	12839	14620
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= Offline

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2022\03-March

Submitted By (Print): M.Szmon

Signature: Original signed by M.Szmon

Water Treatment Plant Turbidity Grab Monitoring Report																		
Water System Code: 252.00	Turbidity (NTU)																	
Licence No. PWS-09-412-02																		
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-2022	0.49	0.53	0.07	0.07	0.11	0.06	0.12	0.03	0.08	0.04	0.07	0.06	0.07	0.08	0.08	0.04	0.07	0.04
02-Mar-2022	0.49	0.53	0.08	0.08	0.08	0.03	0.09	<0.02	0.10	0.05	0.08	0.06	0.08	0.09	0.07	0.03	0.09	0.06
03-Mar-2022	0.49	0.52	0.09	0.09	0.08	0.04	0.09	<0.02	0.07	0.02	0.07	0.07	0.08	0.11	0.07	0.03	0.09	0.07
04-Mar-2022	0.49	0.52	0.11	0.09	0.10	0.05	0.09	0.02	0.08	0.03	0.08	0.06	0.07	0.10	0.08	0.03	0.07	0.05
05-Mar-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
06-Mar-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
07-Mar-2022	0.50	0.50	0.09	0.08	0.08	0.04	0.10	<0.02	0.08	0.03	0.07	0.05	0.13	0.19	0.08	0.03	0.07	0.05
08-Mar-2022	0.50	0.49	0.10	0.08	0.15	0.08	0.15	0.05	0.11	0.05	0.10	0.06	0.10	0.17	0.11	0.06	0.09	0.08
09-Mar-2022	0.48	0.49	0.09	0.08	0.14	<0.02	0.09	<0.02	0.09	0.02	0.13	0.10	0.10	0.20	0.08	0.03	0.10	0.09
10-Mar-2022	0.46	0.53	0.11	0.06	0.10	<0.02	0.11	<0.02	0.07	<0.02	0.11	0.10	0.13	0.10	0.09	<0.02	0.09	0.05
11-Mar-2022	0.43	0.55	0.10	0.07	0.10	0.09	0.12	0.07	0.09	0.06	0.08	0.06	0.13	0.08	0.09	0.06	0.08	0.04
12-Mar-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
13-Mar-2022	0.45	0.54	0.10	0.06	0.10	0.09	0.10	0.06	0.13	0.10	0.14	0.11	0.11	0.08	0.09	0.07	0.12	0.08
14-Mar-2022	0.42	0.53	0.12	0.09	0.11	0.09	0.12	0.07	0.08	0.06	0.08	0.05	0.11	0.07	0.09	0.05	0.09	0.05
15-Mar-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
16-Mar-2022	0.50	0.68	0.10	0.07	0.08	0.08	0.09	0.05	0.12	0.10	0.10	0.07	0.09	0.07	0.07	0.04	0.10	0.06
17-Mar-2022	0.51	0.54	0.16	0.11	0.12	0.10	0.14	0.09	0.09	0.06	0.09	0.06	0.08	0.06	0.10	0.06	0.08	0.04
18-Mar-2022	0.46	0.52	0.14	0.10	0.18	0.16	0.14	0.08	0.17	0.08	0.13	0.13	0.12	0.10	0.18	0.12	0.12	0.08
19-Mar-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
20-Mar-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
21-Mar-2022	0.44	0.52	0.15	0.12	0.14	0.11	0.14	0.09	0.11	0.08	0.10	0.07	0.10	0.10	0.13	0.08	0.10	0.05
22-Mar-2022	0.45	0.51	0.10	0.07	0.11	0.10	0.15	0.10	0.13	0.09	0.10	0.07	0.10	0.11	0.11	0.07	0.10	0.05
23-Mar-2022	0.45	0.53	0.10	0.06	0.15	0.13	0.09	0.05	0.11	0.08	0.11	0.09	0.10	0.12	0.08	0.04	0.11	0.07
24-Mar-2022	0.44	0.51	0.10	0.07	0.09	0.08	0.09	0.05	0.07	0.04	0.09	0.07	0.12	0.16	0.08	0.04	0.12	0.08
25-Mar-2022	0.44	0.52	0.13	0.10	0.10	0.10	0.10	0.06	0.09	0.06	0.09	0.06	0.08	0.13	0.11	0.07	0.08	0.04
26-Mar-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
27-Mar-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
28-Mar-2022	0.44	0.50	0.09	0.06	0.10	0.09	0.10	0.05	0.10	0.07	o/l	o/l	0.10	0.18	0.09	0.04	0.08	0.05
29-Mar-2022	0.44	0.52	0.09	0.05	0.09	0.08	0.08	0.05	0.12	0.08	o/l	o/l	0.09	0.02	0.08	0.04	0.09	0.05
30-Mar-2022	0.44	0.52	0.08	0.05	0.07	0.07	0.08	0.04	0.10	0.07	o/l	o/l	0.09	0.02	0.07	0.04	0.10	0.06
31-Mar-2022	0.45	0.54	0.08	0.06	0.08	0.07	0.08	0.04	0.06	0.04	o/l	o/l	0.08	0.02	0.08	0.04	0.07	0.03
Total number of measurements taken, A:			23		23		23		23		19		23		23		23	
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:			23		23		23		23		19		23		23		23	
Compliance with Turbidity Standard, C= B/A X 100%:			100%		100%		100%		100%		100%		100%		100%		100%	

na: not analyzed nr: no result ns: no sample o/l: offline im: instrument maintenance

Comments:

Report Date: 4-Apr-2022

Filter 5 was taken offline for maintenance on March 25 at 6:36 pm



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**

Licence Number: **PWS-09-412-02**

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

April 2022 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
1/04/2022	0.56	0.03	0.07	0.06	0.08	0.03	0.06	0.03	0.06	OL	OL	0.00	0.04	0.04	0.07	0.03	0.08
2/04/2022	0.58	0.03	0.06	0.06	0.08	0.03	0.05	0.04	0.06	OL	OL	0.00	0.04	0.04	0.07	0.04	0.08
3/04/2022	0.59	0.03	0.06	0.06	0.09	0.03	0.06	0.04	0.07	OL	OL	0.00	0.03	0.04	0.08	0.04	0.07
4/04/2022	0.60	0.03	0.06	0.05	0.09	0.03	0.06	0.04	0.07	OL	OL	0.00	0.03	0.04	0.09	0.04	0.08
5/04/2022	0.59	0.04	0.05	0.06	0.11	0.03	0.08	0.03	0.07	OL	OL	0.01	0.04	0.04	0.09	0.05	0.10
6/04/2022	0.61	0.04	0.09	0.06	0.10	0.04	0.07	0.03	0.07	OL	OL	0.01	0.05	0.05	0.09	0.04	0.11
7/04/2022	0.61	0.04	0.07	0.06	0.08	0.04	0.07	0.04	0.08	OL	OL	0.01	0.03	0.05	0.08	0.05	0.09
8/04/2022	0.62	0.04	0.08	0.07	0.10	0.03	0.07	0.04	0.06	OL	OL	0.01	0.04	0.04	0.08	0.05	0.10
9/04/2022	0.64	0.04	0.08	0.06	0.10	0.03	0.07	0.04	0.07	OL	OL	0.00	0.02	0.04	0.08	0.06	0.08
10/04/2022	0.65	0.04	0.06	0.06	0.10	0.03	0.08	0.04	0.07	OL	OL	0.01	0.04	0.04	0.08	0.06	0.10
11/04/2022	0.67	0.04	0.07	0.06	0.11	0.04	0.05	0.04	0.07	OL	OL	0.01	0.04	0.04	0.06	0.06	0.11
12/04/2022	0.73	0.04	0.07	0.06	0.08	0.03	0.07	0.04	0.07	OL	OL	0.01	0.04	0.05	0.09	0.06	0.11
13/04/2022	0.68	0.04	0.07	0.07	0.10	0.04	0.07	0.04	0.05	OL	OL	0.01	0.04	0.04	0.09	0.06	0.22
14/04/2022	0.68	0.04	0.06	0.06	0.10	0.03	0.07	0.04	0.07	OL	OL	0.00	0.04	0.04	0.08	0.07	0.09
15/04/2022	0.68	0.03	0.08	0.06	0.10	0.04	0.09	0.04	0.07	OL	OL	0.00	0.02	0.04	0.08	0.08	0.12
16/04/2022	0.68	0.04	0.06	0.07	0.12	0.04	0.09	0.04	0.09	OL	OL	0.01	0.03	0.04	0.09	0.08	0.13
17/04/2022	0.66	0.04	0.08	0.07	0.09	0.04	0.09	0.04	0.07	OL	OL	0.01	0.03	0.05	0.06	0.08	0.13
18/04/2022	0.64	0.04	0.07	0.07	0.11	0.04	0.08	0.05	0.06	OL	OL	0.00	0.03	0.04	0.08	0.08	0.11
19/04/2022	0.63	0.04	0.05	0.06	0.11	0.04	0.08	0.04	0.07	OL	OL	0.00	0.02	0.04	0.09	0.10	0.17
20/04/2022	0.64	0.04	0.07	0.07	0.10	0.04	0.07	0.04	0.09	OL	OL	0.01	0.04	0.05	0.09	0.10	0.14
21/04/2022	0.68	0.04	0.08	0.07	0.11	0.04	0.06	0.04	0.07	OL	OL	0.01	0.05	0.05	0.10	0.09	0.15
22/04/2022	0.70	0.04	0.08	0.07	0.09	0.04	0.12	0.04	0.06	OL	OL	0.03	0.09	0.06	0.08	0.07	0.12
23/04/2022	0.70	0.04	0.07	0.07	0.11	0.04	0.08	0.05	0.11	OL	OL	0.04	0.07	0.05	0.09	0.04	0.05
24/04/2022	0.72	0.04	0.06	0.07	0.11	0.04	0.08	0.04	0.07	OL	OL	0.04	0.06	0.05	0.09	0.04	0.07
25/04/2022	0.76	0.04	0.06	0.07	0.11	0.03	0.07	0.04	0.07	OL	OL	0.03	0.07	0.05	0.10	0.04	0.07
26/04/2022	0.78	0.04	0.06	0.07	0.11	0.04	0.10	0.04	0.08	OL	OL	0.03	0.07	0.06	0.07	0.04	0.08
27/04/2022	0.76	0.04	0.06	0.08	0.09	0.04	0.07	0.04	0.10	OL	OL	0.03	0.06	0.07	0.09	0.04	0.07
28/04/2022	0.76	0.05	0.09	0.08	0.12	0.05	0.12	0.05	0.07	OL	OL	0.03	0.07	0.07	0.11	0.04	0.09
29/04/2022	0.76	0.05	0.11	0.09	0.13	0.05	0.18	0.05	0.10	OL	OL	0.03	0.05	0.07	0.11	0.05	0.08
30/04/2022	0.75	0.06	0.09	0.09	0.14	0.05	0.14	0.05	0.11	OL	OL	0.04	0.09	0.07	0.13	0.04	0.09

Total Number of Measurements Taken, A:	12964	13218	13898	14263	0	13523	14656	16215
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:	12964	13218	13898	14263	0	13523	14656	16215
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=Offline

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2022\04-April

Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew

WATER TREATMENT PLANT TURBIDITY GRAB MONITORING REPORT																		
Water System Code: 252.00	Turbidity (NTU)																	
Licence No. PWS-09-412-02																		
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-2022	0.45	0.54	0.07	0.05	0.08	0.06	0.08	0.04	0.07	0.04	o/l	o/l	0.08	<0.02	0.08	0.04	0.07	0.03
02-Apr-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
03-Apr-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
04-Apr-2022	0.48	0.57	0.07	0.04	0.08	0.08	0.07	0.04	0.08	0.05	o/l	o/l	0.08	<0.02	0.07	0.04	0.08	0.04
05-Apr-2022	0.46	0.56	0.07	0.05	0.07	0.07	0.08	0.04	0.09	0.07	o/l	o/l	0.09	<0.02	0.07	0.04	0.09	0.05
06-Apr-2022	0.49	0.57	0.08	0.05	0.08	0.07	0.08	0.04	0.07	0.04	o/l	o/l	0.11	0.02	0.08	0.04	0.09	0.06
07-Apr-2022	0.46	0.58	0.08	0.05	0.08	0.07	0.08	0.04	0.06	0.05	o/l	o/l	0.09	0.02	0.08	0.04	0.07	0.05
08-Apr-2022	0.47	0.58	0.07	0.04	0.09	0.08	0.09	0.05	0.08	0.05	o/l	o/l	0.08	<0.02	0.10	0.05	0.08	0.05
09-Apr-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
10-Apr-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
11-Apr-2022	0.50	0.64	0.07	0.05	0.07	0.07	0.08	0.05	0.06	0.04	o/l	o/l	0.10	0.02	0.08	0.04	0.08	0.07
12-Apr-2022	0.53	0.65	0.10	0.08	0.08	0.08	0.09	0.05	0.07	0.04	o/l	o/l	0.09	0.03	0.09	0.04	0.07	0.06
13-Apr-2022	ns	ns	o/l	o/l	0.24	0.07	0.11	0.06	0.13	0.04	o/l	o/l	0.17	<0.02	0.11	0.05	0.12	0.07
14-Apr-2022	0.52	0.66	0.08	0.05	0.13	0.08	0.08	0.04	0.07	0.04	o/l	o/l	0.07	<0.02	0.10	0.06	<0.05	0.07
15-Apr-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
16-Apr-2022	0.46	0.69	0.07	0.05	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
17-Apr-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
18-Apr-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
19-Apr-2022	0.48	0.62	0.08	0.05	0.09	0.09	0.08	0.04	0.09	0.06	o/l	o/l	0.08	0.02	0.08	0.04	0.09	0.09
20-Apr-2022	0.50	0.63	0.07	0.05	0.07	0.08	0.07	0.05	0.06	0.05	o/l	o/l	0.08	0.02	0.07	0.04	0.10	0.12
21-Apr-2022	0.52	0.65	0.08	0.05	0.08	0.08	0.08	0.05	0.06	0.04	o/l	o/l	0.09	0.02	0.08	0.05	0.09	0.12
22-Apr-2022	0.50	0.67	0.08	0.06	0.08	0.08	0.08	0.05	0.07	0.05	o/l	o/l	0.09	0.02	0.08	0.05	0.07	0.10
23-Apr-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
24-Apr-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
25-Apr-2022	0.53	0.72	0.07	0.05	0.07	0.08	0.08	0.04	0.08	0.06	o/l	o/l	0.09	0.05	0.07	0.05	0.09	0.05
26-Apr-2022	0.53	0.75	0.07	0.05	0.07	0.08	0.08	0.05	0.06	0.04	o/l	o/l	0.10	0.07	0.07	0.05	0.07	0.03
27-Apr-2022	0.51	0.75	0.09	0.06	0.08	0.08	0.09	0.06	0.07	0.05	o/l	o/l	0.07	0.04	0.08	0.06	0.07	0.03
28-Apr-2022	0.52	0.74	0.07	0.05	0.09	0.10	0.09	0.07	0.08	0.06	o/l	o/l	0.07	0.04	0.09	0.09	0.07	0.03
29-Apr-2022	0.52	0.73	0.08	0.05	0.12	0.12	0.08	0.05	0.08	0.06	o/l	o/l	0.08	0.04	0.10	0.09	0.08	0.04
30-Apr-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
Total number of measurements taken, A:			19		19		19		19		0		19		19		19	
Turbidity Standard for Monitoring Location (NTU):			0.30		0.30		0.30		0.30									
Number of measurements meeting standard, B:			19		19		19		19									
Compliance with Turbidity Standard, C= B/A X 100%:			100%		100%		100%		*									

na: not analyzed nr: no result ns: no sample o/l: offline im: instrument maintenance

Comments:

Filter 5 was taken offline for maintenance on March 25 at 6:36 pm.
April 16 grab samples exceeded hold time for turbidity analysis.

Report Date: 2-May-2022



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**
 Licence Number: **PWS-09-412-02**

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

May 2022 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
1/05/2022	0.74	0.05	0.10	0.08	0.14	0.05	0.08	0.04	0.09	OL	OL	0.04	0.09	0.06	0.09	0.04	0.07
2/05/2022	0.74	0.04	0.10	0.07	0.10	0.04	0.11	0.04	0.09	OL	OL	0.03	0.06	0.07	0.12	0.04	0.08
3/05/2022	0.75	0.04	0.09	0.08	0.13	0.04	0.10	0.04	0.06	OL	OL	0.03	0.07	0.06	0.11	0.03	0.08
4/05/2022	0.75	0.04	0.08	0.06	0.13	0.04	0.10	0.04	0.08	OL	OL	0.03	0.07	0.06	0.12	0.04	0.07
5/05/2022	0.77	0.05	0.06	0.05	0.11	0.03	0.07	0.03	0.08	0.00	0.18	0.03	0.06	0.05	0.11	0.04	0.08
6/05/2022	0.80	0.04	0.13	0.07	0.09	0.05	0.10	0.03	0.14	0.00	0.02	0.03	0.07	0.08	0.10	0.03	0.11
7/05/2022	0.83	0.03	0.13	0.06	0.13	0.03	0.13	0.04	0.07	0.01	0.04	0.02	0.07	0.05	0.13	0.04	0.10
8/05/2022	0.95	0.03	0.08	0.02	0.12	0.04	0.09	0.04	0.08	0.01	0.04	0.03	0.05	0.06	0.11	0.10	0.15
9/05/2022	0.91	0.05	0.10	0.09	0.11	0.03	0.05	0.03	0.09	0.01	0.04	0.03	0.07	0.04	0.12	0.08	0.19
10/05/2022	0.96	0.04	0.13	0.06	0.14	0.05	0.11	0.03	0.08	0.01	0.02	0.02	0.06	0.07	0.09	0.07	0.16
11/05/2022	0.98	0.03	0.11	0.09	0.13	0.03	0.11	0.05	0.08	0.02	0.16	0.01	0.06	0.05	0.14	0.08	0.12
12/05/2022	0.98	0.03	0.05	0.05	0.14	0.03	0.12	0.04	0.10	0.01	0.05	0.02	0.04	0.05	0.13	0.10	0.14
13/05/2022	1.05	0.03	0.11	0.06	0.28	0.06	0.08	0.04	0.13	0.01	0.02	0.01	0.05	0.04	0.05	0.07	0.15
14/05/2022	1.10	0.03	0.10	0.09	0.11	0.05	0.19	0.06	0.08	0.02	0.05	0.02	0.10	0.03	0.10	0.08	0.13
15/05/2022	1.11	0.03	0.05	0.07	0.16	0.04	0.11	0.06	0.11	0.02	0.05	0.02	0.05	0.03	0.09	0.12	0.15
16/05/2022	1.11	0.04	0.09	0.07	0.12	0.06	0.09	0.05	0.12	0.01	0.04	0.02	0.07	0.03	0.05	0.09	0.15
17/05/2022	1.36	0.03	0.08	0.06	0.11	0.06	0.11	0.06	0.12	0.02	0.08	0.02	0.05	0.05	0.08	0.10	0.16
18/05/2022	1.31	0.03	0.09	0.09	0.13	0.06	0.13	0.09	0.12	0.02	0.05	0.02	0.07	0.04	0.10	0.11	0.16
19/05/2022	1.26	0.04	0.06	0.04	0.10	0.04	0.10	0.05	0.14	0.01	0.03	0.03	0.10	0.04	0.10	0.06	0.20
20/05/2022	1.14	0.04	0.10	0.03	0.09	0.02	0.06	0.04	0.11	0.00	0.02	0.02	0.05	0.05	0.06	0.05	0.09
21/05/2022	1.02	0.04	0.09	0.06	0.09	0.02	0.06	0.06	0.08	0.00	0.04	0.01	0.10	0.04	0.09	0.05	0.08
22/05/2022	1.03	0.04	0.07	0.04	0.10	0.02	0.06	0.05	0.10	0.00	0.04	0.02	0.09	0.04	0.10	0.07	0.10
23/05/2022	1.04	0.05	0.09	0.04	0.10	0.03	0.04	0.06	0.09	0.00	0.04	0.02	0.07	0.04	0.07	0.04	0.11
24/05/2022	1.21	0.03	0.09	0.05	0.09	0.02	0.07	0.05	0.09	0.02	0.05	0.01	0.08	0.04	0.11	0.05	0.10
25/05/2022	1.07	0.03	0.07	0.05	0.08	0.02	0.06	0.05	0.08	0.03	0.08	0.00	0.05	0.03	0.07	0.07	0.09
26/05/2022	1.10	0.04	0.06	0.04	0.11	0.02	0.03	0.06	0.10	0.02	0.06	0.01	0.04	0.03	0.08	0.05	0.10
27/05/2022	1.24	0.04	0.11	0.04	0.07	0.03	0.09	0.05	0.13	0.02	0.04	0.01	0.04	0.04	0.05	0.05	0.12
28/05/2022	1.26	0.04	0.11	0.07	0.13	0.03	0.11	0.06	0.09	0.03	0.09	0.01	0.07	0.04	0.09	0.08	0.10
29/05/2022	1.31	0.04	0.06	0.05	0.14	0.03	0.11	0.08	0.13	0.02	0.09	0.01	0.03	0.04	0.10	0.08	0.13
30/05/2022	1.37	0.07	0.12	0.06	0.16	0.05	0.07	0.07	0.16	0.03	0.09	0.02	0.08	0.04	0.11	0.07	0.16
31/05/2022	1.49	0.05	0.13	0.05	0.14	0.04	0.14	0.06	0.15	0.03	0.05	0.01	0.07	0.05	0.12	0.07	0.15

Total Number of Measurements Taken, A:	12642	12445	13198	13367	10947	14122	14037	14671
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:	12642	12445	13198	13367	10947	14122	14037	14671
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= Offline								

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2022\05-May

Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew

Water Treatment Plant Turbidity Grab Monitoring Report																		
Water System Code: 252.00	Turbidity (NTU)																	
Licence No. PWS-09-412-02																		
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-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
02-May-2022	0.51	0.71	0.12	0.09	0.08	0.09	0.10	0.06	0.07	0.05	o/l	o/l	0.07	0.03	0.07	0.07	0.07	0.03
03-May-2022	0.53	0.72	0.07	0.05	0.09	0.09	0.09	0.06	0.08	0.05	o/l	o/l	0.07	0.03	0.09	0.08	0.07	0.03
04-May-2022	0.51	0.73	0.07	0.05	0.09	0.09	0.07	0.04	0.08	0.06	o/l	o/l	0.07	0.04	0.06	0.06	0.07	0.04
05-May-2022	0.52	0.76	0.07	0.05	0.07	0.07	0.07	0.04	0.07	0.05	0.10	<0.02	0.08	0.04	0.06	0.06	0.08	0.05
06-May-2022	0.53	0.75	0.10	0.07	0.09	0.08	0.09	0.06	0.07	0.05	0.06	<0.02	0.11	0.08	0.08	0.07	0.07	0.04
07-May-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	0.07	0.03	ns	ns	ns	ns	ns	ns
08-May-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
09-May-2022	0.55	0.87	0.08	0.05	0.07	0.10	0.07	0.05	0.08	0.05	0.10	0.02	0.08	0.04	0.07	0.06	0.10	0.12
10-May-2022	0.53	0.92	0.08	0.06	0.06	0.09	0.08	0.06	0.07	0.04	0.06	<0.02	0.11	0.07	0.07	0.07	0.10	0.13
11-May-2022	0.59	0.95	0.07	0.04	0.08	0.10	0.10	0.08	0.07	0.05	0.07	0.04	0.07	0.02	0.07	0.07	0.07	0.10
12-May-2022	0.65	0.96	0.06	0.04	0.07	0.10	0.07	0.05	0.08	0.07	0.07	0.03	0.07	0.03	0.07	0.06	0.07	0.11
13-May-2022	0.68	0.99	0.07	0.05	0.06	0.09	0.07	0.07	0.06	0.06	0.06	0.02	0.07	0.03	0.07	0.03	0.07	0.12
14-May-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
15-May-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
16-May-2022	0.67	1.02	0.06	0.04	0.07	0.10	0.07	0.07	0.08	0.09	0.06	0.03	0.09	0.03	0.07	0.04	0.07	0.12
17-May-2022	0.68	1.05	0.07	0.05	0.06	0.09	0.07	0.08	0.06	0.08	0.06	0.02	0.09	0.04	0.07	0.04	0.06	0.12
18-May-2022	0.68	1.33	0.06	0.05	0.07	0.10	0.08	0.10	0.07	0.10	0.08	0.04	0.08	0.03	0.08	0.05	0.07	0.13
19-May-2022	0.69	1.24	0.07	0.04	0.09	0.07	0.09	0.09	0.08	0.13	0.09	0.02	0.08	0.04	0.08	0.04	0.09	0.16
20-May-2022	0.65	0.93	0.07	0.06	0.07	0.07	0.10	0.03	0.06	0.07	0.07	<0.02	0.09	0.03	0.08	0.04	0.10	0.07
21-May-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
22-May-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
23-May-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
24-May-2022	0.67	1.06	0.07	0.05	0.08	0.07	0.09	0.04	0.08	0.08	0.08	<0.02	0.09	0.03	0.09	0.05	0.08	0.07
25-May-2022	0.70	1.09	0.06	0.05	0.07	0.08	0.09	0.05	0.07	0.07	0.07	0.06	0.07	0.02	0.09	0.04	0.07	0.07
26-May-2022	0.74	1.04	0.08	0.05	0.10	0.08	0.08	0.03	0.08	0.08	0.06	0.05	0.08	0.02	0.07	0.03	0.08	0.07
27-May-2022	0.75	1.21	0.10	0.07	0.08	0.07	0.09	0.04	0.11	0.13	0.06	0.04	0.10	0.02	0.08	0.03	0.07	0.07
28-May-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
29-May-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
30-May-2022	0.75	1.33	0.11	0.08	0.10	0.09	0.11	0.06	0.12	0.12	0.08	0.04	0.11	0.03	0.09	0.04	0.11	0.12
31-May-2022	0.78	1.53	0.12	0.08	0.09	0.08	0.10	0.06	0.11	0.12	0.07	0.05	0.11	0.04	0.09	0.04	0.08	0.09
Total number of measurements taken, A:			21		21		21		21		19		21		21		21	
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		21		21		21		19		21		21		21	
Compliance with Turbidity Standard, C= B/A X 100%:			100%		100%		100%		100%		100%		100%		100%		100%	

na: not analyzed nr: no result ns: no sample o/l: offline im: instrument maintenance

Comments:

Report Date: 7-Jun-2022

Filter 5 was offline for maintenance from March 25 at 6:36 PM to May 5 at 4:30 PM



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**

Licence Number: **PWS-09-412-02**

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

June 2022 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
1/06/2022	1.56	0.04	0.13	0.07	0.10	0.03	0.13	0.06	0.13	0.03	0.08	0.01	0.06	0.03	0.09	0.08	0.11
2/06/2022	1.68	0.04	0.10	0.06	0.13	0.03	0.12	0.08	0.12	0.02	0.08	0.01	0.03	0.03	0.10	0.10	0.16
3/06/2022	1.51	0.04	0.07	0.06	0.14	0.03	0.12	0.08	0.15	0.02	0.07	0.02	0.07	0.03	0.09	0.09	0.16
4/06/2022	1.27	0.05	0.12	0.04	0.18	0.05	0.08	0.08	0.15	0.02	0.08	0.02	0.06	0.03	0.05	0.11	0.16
5/06/2022	1.28	0.04	0.12	0.05	0.14	0.05	0.13	0.08	0.16	0.03	0.06	0.01	0.08	0.04	0.09	0.09	0.20
6/06/2022	1.25	0.04	0.15	0.06	0.10	0.05	0.13	0.08	0.20	0.03	0.07	0.02	0.09	0.04	0.10	0.09	0.18
7/06/2022	1.32	0.04	0.12	0.06	0.16	0.05	0.13	0.09	0.17	0.02	0.10	0.01	0.03	0.03	0.11	0.13	0.21
8/06/2022	1.28	0.08	0.15	0.06	0.20	0.09	0.22	0.10	0.15	0.04	0.11	0.04	0.10	0.06	0.13	0.09	0.23
9/06/2022	1.27	0.09	0.15	0.08	0.14	0.10	0.14	0.09	0.13	0.05	0.09	0.04	0.10	0.06	0.12	0.09	0.16
10/06/2022	1.29	0.08	0.11	0.07	0.12	0.10	0.16	0.08	0.12	0.04	0.08	0.03	0.08	0.06	0.09	0.09	0.15
11/06/2022	1.23	0.09	0.13	0.06	0.13	0.12	0.14	0.07	0.12	0.04	0.05	0.03	0.08	0.05	0.10	0.08	0.18
12/06/2022	1.26	0.08	0.14	0.08	0.10	0.13	0.19	0.07	0.13	0.04	0.06	0.02	0.08	0.05	0.09	0.09	0.11
13/06/2022	1.27	0.09	0.15	0.07	0.15	0.13	0.21	0.08	0.10	0.04	0.07	0.03	0.06	0.05	0.09	0.09	0.14
14/06/2022	1.24	0.11	0.12	0.07	0.12	0.15	0.18	0.08	0.12	0.04	0.08	0.03	0.09	0.06	0.07	0.08	0.14
15/06/2022	1.10	0.06	0.16	0.07	0.16	0.12	0.23	0.08	0.14	0.04	0.07	0.03	0.06	0.05	0.10	0.08	0.13
16/06/2022	1.20	0.04	0.09	0.10	0.13	0.07	0.13	0.08	0.13	0.04	0.09	0.02	0.08	0.05	0.09	0.07	0.10
17/06/2022	1.19	0.03	0.08	0.07	0.16	0.07	0.16	0.08	0.12	0.04	0.08	0.01	0.04	0.05	0.08	0.08	0.13
18/06/2022	1.77	0.02	0.07	0.07	0.14	0.07	0.14	0.08	0.11	0.03	0.06	0.01	0.04	0.04	0.06	0.06	0.11
19/06/2022	1.50	0.02	0.06	0.06	0.13	0.09	0.10	0.07	0.11	0.02	0.06	0.00	0.03	0.04	0.11	0.06	0.11
20/06/2022	0.99	0.02	0.08	0.07	0.09	0.10	0.16	0.07	0.12	0.02	0.05	0.00	0.05	0.04	0.09	0.05	0.11
21/06/2022	1.12	0.02	0.06	0.04	0.14	0.09	0.17	0.06	0.12	0.02	0.08	0.00	0.04	0.04	0.09	0.07	0.12
22/06/2022	1.16	0.02	0.04	0.07	0.11	0.12	0.21	0.08	0.13	0.02	0.07	0.01	0.04	0.05	0.07	0.07	0.12
23/06/2022	1.26	0.03	0.10	0.07	0.14	0.15	0.18	0.08	0.12	0.02	0.05	0.01	0.04	0.05	0.12	0.07	0.11
24/06/2022	1.40	0.03	0.08	0.08	0.11	0.07	0.21	0.08	0.15	0.02	0.04	0.01	0.04	0.05	0.09	0.07	0.12
25/06/2022	1.83	0.03	0.07	0.07	0.13	0.06	0.11	0.07	0.15	0.02	0.05	0.00	0.01	0.05	0.09	0.08	0.10
26/06/2022	2.66	0.03	0.09	0.07	0.12	0.07	0.13	0.09	0.11	0.02	0.04	0.01	0.05	0.04	0.07	0.07	0.16
27/06/2022	1.69	0.04	0.07	0.06	0.10	0.08	0.11	0.07	0.13	0.02	0.10	0.02	0.08	0.05	0.12	0.07	0.18
28/06/2022	1.69	0.05	0.11	0.08	0.17	0.08	0.14	0.07	0.14	0.05	0.07	0.03	0.11	0.05	0.11	0.08	0.22
29/06/2022	1.65	0.05	0.12	0.07	0.14	0.09	0.18	0.09	0.10	0.04	0.09	0.05	0.07	0.05	0.06	0.08	0.15
30/06/2022	1.62	0.07	0.09	0.06	0.08	0.11	0.13	0.08	0.15	0.04	0.08	0.04	0.13	0.05	0.16	0.08	0.15

Total Number of Measurements Taken, A:	13202	13084	13218	14297	14566	13355	14595	15759
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:	13202	13084	13218	14297	14566	13355	14595	15759
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\2022\06-June

Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew

WATER TREATMENT PLANT TURBIDITY GRAB MONITORING REPORT																		
Water System Code: 252.00	Turbidity (NTU)																	
Licence No. PWS-09-412-02																		
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-2022	0.77	1.49	0.11	0.10	0.09	0.07	0.11	0.08	0.08	0.09	0.08	0.06	0.10	0.02	0.10	0.05	0.10	0.10
02-Jun-2022	0.92	1.59	0.08	0.09	0.10	0.08	0.08	0.04	0.08	0.09	0.08	0.05	0.08	<0.02	0.10	0.05	0.10	0.11
03-Jun-2022	0.85	1.70	0.09	0.05	0.10	0.09	0.08	0.05	0.09	0.10	0.09	0.06	0.09	0.02	0.07	0.03	0.10	0.13
04-Jun-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
05-Jun-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
06-Jun-2022	0.81	1.18	0.11	0.07	0.09	0.07	0.12	0.09	0.16	0.19	0.08	0.04	0.09	0.03	0.09	0.05	0.09	0.13
07-Jun-2022	0.88	1.27	0.08	0.05	0.09	0.08	0.10	0.08	0.07	0.11	0.09	0.04	0.08	0.02	0.10	0.05	0.08	0.13
08-Jun-2022	0.93	1.35	0.11	0.08	0.13	0.10	0.11	0.08	0.10	0.13	0.12	0.09	0.10	0.05	0.09	0.05	0.11	0.09
09-Jun-2022	1.04	1.28	0.11	0.10	0.12	0.09	0.11	0.11	0.11	0.11	0.09	0.06	0.11	0.05	0.10	0.05	0.13	0.12
10-Jun-2022	0.88	1.34	0.10	0.09	0.09	0.07	0.10	0.11	0.10	0.09	0.08	0.05	0.13	0.06	0.10	0.06	0.11	0.11
11-Jun-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
12-Jun-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
13-Jun-2022	0.97	1.23	0.09	0.10	0.12	0.10	0.09	0.15	0.09	0.09	0.10	0.06	0.10	0.04	0.09	0.04	0.09	0.09
14-Jun-2022	0.81	1.24	0.10	0.11	0.09	0.08	0.10	0.17	0.10	0.10	0.08	0.04	0.13	0.07	0.10	0.05	0.09	0.09
15-Jun-2022	0.82	1.07	0.12	0.14	0.10	0.08	0.11	0.19	0.14	0.10	0.08	0.05	0.09	0.03	0.13	0.07	0.09	0.09
16-Jun-2022	0.70	1.13	0.15	0.06	0.13	0.10	0.16	0.11	0.11	0.10	0.12	0.08	0.10	0.02	0.09	0.04	0.10	0.07
17-Jun-2022	0.72	1.09	0.12	0.04	0.19	0.14	0.12	0.07	0.11	0.09	0.12	0.06	0.10	0.03	0.11	0.04	0.11	0.08
18-Jun-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
19-Jun-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
20-Jun-2022	0.78	0.78	0.13	0.04	0.10	0.08	0.11	0.12	0.09	0.07	0.08	0.03	0.08	<0.02	0.11	0.05	0.08	0.05
21-Jun-2022	0.80	1.07	0.10	0.02	0.13	0.10	0.10	0.12	0.10	0.09	0.09	0.04	0.10	<0.02	0.09	0.04	0.10	0.06
22-Jun-2022	0.79	1.13	0.12	0.03	0.12	0.07	0.12	0.14	0.12	0.09	0.09	0.03	0.12	0.03	0.10	0.05	0.11	0.08
23-Jun-2022	0.80	1.18	0.12	0.04	0.11	0.08	0.11	0.16	0.12	0.10	0.08	0.02	0.09	<0.02	0.11	0.06	0.08	0.06
24-Jun-2022	0.81	1.33	0.13	0.06	0.11	0.09	0.12	0.08	0.10	0.08	0.08	0.02	0.09	<0.02	0.13	0.07	0.10	0.07
25-Jun-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
26-Jun-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
27-Jun-2022	1.04	1.67	0.11	0.05	0.10	0.09	0.10	0.09	0.11	0.11	0.08	0.03	0.12	0.02	0.11	0.05	0.09	0.07
28-Jun-2022	1.00	1.71	0.10	0.06	0.11	0.09	0.12	0.11	0.09	0.08	0.09	0.06	0.10	0.05	0.09	0.04	0.10	0.08
29-Jun-2022	1.02	1.61	0.10	0.07	0.13	0.11	0.10	0.10	0.10	0.09	0.11	0.08	0.11	0.05	0.10	0.04	0.12	0.10
30-Jun-2022	1.03	1.53	0.11	0.08	0.10	0.08	0.10	0.11	0.13	0.11	0.09	0.06	0.16	0.10	0.11	0.06	0.09	0.08
Total number of measurements taken, A:			22		22		22		22		22		22		22		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:			22		22		22		22		22		22		22		22	
Compliance with Turbidity Standard, C= B/A X 100%:			100%		100%		100%		100%		100%		100%		100%		100%	

na: not analyzed nr: no result ns: no sample o/l: offline im: instrument maintenance

Comments:

The raw water analyzer is cleaned daily during warm water months because it is susceptible to frequent fouling

Report Date: 4-Jul-2022



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**
 Licence Number: **PWS-09-412-02**

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

July 2022 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
1/07/2022	1.64	0.07	0.14	0.08	0.12	0.11	0.15	0.08	0.14	0.06	0.08	0.04	0.12	0.05	0.13	0.08	0.14
2/07/2022	1.58	0.08	0.14	0.07	0.13	0.11	0.17	0.08	0.13	0.06	0.10	0.05	0.07	0.05	0.11	0.10	0.13
3/07/2022	1.51	0.09	0.13	0.07	0.18	0.12	0.18	0.10	0.12	0.06	0.10	0.05	0.12	0.06	0.07	0.08	0.17
4/07/2022	1.47	0.12	0.13	0.07	0.12	0.14	0.16	0.09	0.14	0.06	0.11	0.05	0.12	0.06	0.11	0.09	0.16
5/07/2022	1.49	0.12	0.16	0.09	0.13	0.14	0.20	0.10	0.14	0.07	0.09	0.04	0.12	0.05	0.12	0.09	0.12
6/07/2022	1.55	0.13	0.19	0.07	0.15	0.14	0.24	0.12	0.14	0.07	0.13	0.06	0.09	0.06	0.11	0.11	0.46
7/07/2022	1.65	0.17	0.19	0.09	0.17	0.15	0.24	0.12	0.16	0.08	0.17	0.07	0.16	0.08	0.10	0.12	0.19
8/07/2022	1.65	0.09	0.21	0.08	0.13	0.13	0.30	0.09	0.16	0.06	0.11	0.05	0.12	0.06	0.15	0.09	0.16
9/07/2022	1.45	0.03	0.08	0.05	0.10	0.05	0.08	0.08	0.12	0.04	0.06	0.03	0.14	0.07	0.12	0.06	0.12
10/07/2022	1.45	0.03	0.08	0.06	0.10	0.05	0.10	0.08	0.12	0.03	0.07	0.04	0.06	0.06	0.16	0.08	0.11
11/07/2022	1.44	0.04	0.07	0.06	0.13	0.06	0.13	0.08	0.11	0.04	0.10	0.06	0.11	0.07	0.12	0.08	0.16
12/07/2022	1.37	0.04	0.07	0.05	0.16	0.05	0.10	0.08	0.12	0.04	0.10	0.05	0.12	0.08	0.11	0.07	0.28
13/07/2022	1.40	0.04	0.10	0.08	0.16	0.09	0.12	0.08	0.14	0.03	0.07	0.04	0.10	0.06	0.14	0.07	0.13
14/07/2022	1.29	0.05	0.09	0.09	0.14	0.08	0.12	0.08	0.15	0.04	0.06	0.04	0.06	0.06	0.14	0.09	0.26
15/07/2022	1.44	0.05	0.09	0.09	0.15	0.09	0.16	0.11	0.13	0.04	0.09	0.06	0.11	0.06	0.08	0.10	0.27
16/07/2022	1.46	0.06	0.08	0.10	0.17	0.11	0.16	0.11	0.16	0.04	0.08	0.06	0.12	0.08	0.14	0.10	0.17
17/07/2022	1.52	0.05	0.10	0.13	0.16	0.14	0.17	0.11	0.15	0.03	0.07	0.06	0.14	0.06	0.13	0.09	0.18
18/07/2022	1.89	0.04	0.15	0.07	0.30	0.09	0.23	0.09	0.24	0.05	0.23	0.06	0.23	0.06	0.20	0.10	0.29
19/07/2022	1.58	0.04	0.05	0.04	0.09	0.06	0.12	0.10	0.13	0.05	0.08	0.04	0.12	0.07	0.16	0.07	0.12
20/07/2022	1.46	0.06	0.09	0.04	0.08	0.07	0.10	0.09	0.14	0.05	0.08	0.04	0.11	0.07	0.14	0.08	0.13
21/07/2022	1.65	0.07	0.11	0.05	0.10	0.07	0.10	0.09	0.16	0.06	0.08	0.04	0.10	0.06	0.14	0.07	0.14
22/07/2022	1.87	0.08	0.13	0.05	0.11	0.07	0.15	0.11	0.16	0.07	0.12	0.05	0.09	0.07	0.24	0.10	0.13
23/07/2022	2.46	0.09	0.15	0.06	0.13	0.08	0.14	0.14	0.17	0.08	0.13	0.07	0.13	0.08	0.11	0.09	0.20
24/07/2022	1.81	0.12	0.15	0.05	0.12	0.09	0.11	0.13	0.21	0.09	0.15	0.07	0.15	0.08	0.16	0.10	0.18
25/07/2022	1.92	0.12	0.19	0.07	0.11	0.09	0.19	0.15	0.21	0.11	0.14	0.07	0.18	0.07	0.17	0.09	0.18
26/07/2022	2.29	0.08	0.14	0.05	0.12	0.08	0.13	0.12	0.20	0.07	0.17	0.06	0.10	0.07	0.16	0.11	0.16
27/07/2022	2.44	0.06	0.09	0.05	0.12	0.07	0.14	0.11	0.14	0.07	0.14	0.06	0.22	0.09	0.11	0.10	0.18
28/07/2022	2.52	0.08	0.12	0.05	0.08	0.09	0.11	0.10	0.16	0.07	0.13	0.06	0.13	0.09	0.18	0.10	0.17
29/07/2022	2.48	0.07	0.12	0.07	0.13	0.08	0.25	0.11	0.18	0.09	0.12	0.05	0.15	0.09	0.18	0.11	0.14
30/07/2022	2.09	0.07	0.13	0.06	0.13	0.08	0.15	0.13	0.15	0.08	0.17	0.07	0.11	0.09	0.12	0.13	0.19
31/07/2022	2.12	0.08	0.10	0.06	0.14	0.09	0.14	0.13	0.20	0.11	0.18	0.07	0.15	0.12	0.18	0.13	0.22

Total Number of Measurements Taken, A:	14552	14875	14293	15638	16237	16401	15808	16991
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:	14552	14875	14293	15638	16237	16401	15808	16990
Compliance with Turbidity Standard, C = B/A X 100%:	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	99.994%

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2022\07-July

Submitted By (Print): M.Szmon

Signature: Original signed by M.Szmon

Water Treatment Plant Turbidity Grab Monitoring Report																		
Water System Code: 252.00	Turbidity (NTU)																	
Licence No. PWS-09-412-02																		
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-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
02-Jul-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
03-Jul-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
04-Jul-2022	1.03	1.49	0.10	0.12	0.09	0.08	0.09	0.14	0.10	0.12	0.08	0.07	0.14	0.08	0.11	0.06	0.09	0.09
05-Jul-2022	1.18	1.45	0.12	0.16	0.10	0.10	0.11	0.17	0.08	0.09	0.09	0.08	0.10	0.06	0.13	0.06	0.10	0.10
06-Jul-2022	1.04	1.51	0.09	0.14	0.13	0.12	0.09	0.16	0.09	0.12	0.10	0.09	0.11	0.06	0.10	0.05	0.11	0.11
07-Jul-2022	1.11	1.61	0.10	0.18	0.10	0.10	0.11	0.18	0.11	0.14	0.09	0.10	0.17	0.11	0.12	0.07	0.19	0.17
08-Jul-2022	1.05	1.69	0.12	0.20	0.11	0.12	0.12	0.20	0.12	0.11	0.11	0.11	0.13	0.07	0.18	0.11	0.12	0.12
09-Jul-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
10-Jul-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
11-Jul-2022	1.02	1.24	0.10	0.05	0.12	0.08	0.09	0.06	0.10	0.09	0.13	0.07	0.14	0.07	0.14	0.07	0.15	0.09
12-Jul-2022	1.04	1.44	0.10	0.05	0.09	0.07	0.09	0.07	0.10	0.09	0.10	0.04	0.18	0.08	0.14	0.08	0.16	0.10
13-Jul-2022	1.05	1.34	0.10	0.07	0.10	0.09	0.10	0.10	0.09	0.09	0.09	0.05	0.10	0.04	0.16	0.13	0.10	0.08
14-Jul-2022	1.04	1.21	0.13	0.08	0.12	0.11	0.13	0.11	0.09	0.10	0.10	0.04	0.12	0.05	0.10	0.05	0.11	0.08
15-Jul-2022	1.03	1.49	0.11	0.05	0.11	0.10	0.11	0.10	0.12	0.11	0.15	0.09	0.14	0.07	0.12	0.06	0.14	0.11
16-Jul-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
17-Jul-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
18-Jul-2022	1.20	1.83	0.16	0.11	0.19	0.24	0.14	0.09	0.20	0.20	0.23	0.15	0.26	0.19	0.24	0.14	0.25	0.21
19-Jul-2022	1.22	1.53	0.10	0.04	0.10	0.04	0.10	0.07	0.10	0.10	0.10	0.05	0.15	0.06	0.13	0.06	0.16	0.10
20-Jul-2022	1.28	1.45	0.11	0.07	0.10	0.05	0.10	0.08	0.13	0.12	0.10	0.06	0.16	0.08	0.16	0.08	0.13	0.07
21-Jul-2022	1.50	1.60	0.13	0.10	0.11	0.07	0.11	0.09	0.09	0.10	0.10	0.07	0.13	0.04	0.10	0.05	0.11	0.07
22-Jul-2022	1.26	1.74	0.11	0.09	0.13	0.08	0.15	0.11	0.11	0.12	0.13	0.10	0.14	0.06	0.13	0.06	0.14	0.09
23-Jul-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
24-Jul-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
25-Jul-2022	1.22	1.84	0.15	0.16	0.12	0.08	0.13	0.11	0.11	0.16	0.13	0.13	0.14	0.07	0.16	0.08	0.14	0.10
26-Jul-2022	1.43	2.02	0.11	0.14	0.15	0.09	0.14	0.10	0.11	0.18	0.13	0.14	0.15	0.09	0.13	0.06	0.15	0.11
27-Jul-2022	1.72	2.39	0.12	0.08	0.11	0.06	0.12	0.09	0.13	0.13	0.17	0.12	0.16	0.08	0.15	0.09	0.20	0.15
28-Jul-2022	1.54	2.47	0.13	0.08	0.12	0.06	0.12	0.09	0.15	0.13	0.11	0.08	0.14	0.05	0.18	0.11	0.13	0.09
29-Jul-2022	1.87	2.48	0.15	0.10	0.14	0.08	0.15	0.11	0.11	0.12	0.12	0.10	0.15	0.06	0.13	0.08	0.14	0.11
30-Jul-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
31-Jul-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
Total number of measurements taken, A:			20		20		20		20		20		20		20		20	
Turbidity Standard for Monitoring Location (NTU):			0.30		0.30		0.30		0.30		0.30							
Number of measurements meeting standard, B:			20		20		20		20		20							
Compliance with Turbidity Standard, C= B/A X 100%:			100%		100%		100%		100%		100%							

na: not analyzed nr: no result ns: no sample o/l: offline im: instrument maintenance

Comments:

The raw water analyzer is cleaned daily during warm water months because it is susceptible to frequent fouling

Report Date: 4-Aug-2022



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**
Licence Number: **PWS-09-412-02**

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

August 2022 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	
1/08/2022	2.26	0.06	0.15	0.09	0.13	0.08	0.15	0.13	0.20	0.10	0.16	0.07	0.15	0.10	0.20	0.11	0.19	
2/08/2022	2.48	0.06	0.13	0.08	0.15	0.07	0.13	0.12	0.16	0.07	0.14	0.08	0.11	0.10	0.19	0.14	0.18	
3/08/2022	3.01	0.07	0.14	0.07	0.14	0.06	0.34	0.14	0.16	0.07	0.15	0.08	0.16	0.10	0.13	0.11	0.20	
4/08/2022	3.39	0.11	0.15	0.09	0.16	0.07	0.13	0.13	0.21	0.08	0.12	0.07	0.17	0.11	0.18	0.11	0.19	
5/08/2022	3.32	0.12	0.16	0.09	0.11	0.09	0.12	0.13	0.22	0.06	0.11	0.06	0.16	0.10	0.18	0.10	0.18	
6/08/2022	2.46	0.13	0.19	0.09	0.15	0.07	0.13	0.12	0.19	0.08	0.10	0.06	0.15	0.09	0.17	0.11	0.18	
7/08/2022	2.77	0.14	0.20	0.08	0.15	0.07	0.28	0.11	0.17	0.08	0.16	0.07	0.12	0.09	0.18	0.13	0.20	
8/08/2022	2.43	0.15	0.19	0.08	0.15	0.07	0.14	0.14	0.17	0.07	0.14	0.08	0.16	0.11	0.13	0.12	0.31	
9/08/2022	2.35	0.12	0.23	0.09	0.14	0.11	0.14	0.12	0.31	0.09	0.20	0.10	0.23	0.15	0.21	0.14	0.29	
10/08/2022	3.21	0.04	0.08	0.07	0.12	0.07	0.11	0.09	0.15	0.07	0.11	0.07	0.14	0.10	0.19	0.12	0.20	
11/08/2022	3.25	0.04	0.09	0.07	0.14	0.07	0.14	0.09	0.14	0.08	0.13	0.07	0.16	0.10	0.19	0.14	0.20	
12/08/2022	2.73	0.04	0.08	0.06	0.14	0.07	0.13	0.08	0.12	0.06	0.12	0.07	0.12	0.09	0.17	0.13	0.21	
13/08/2022	2.55	0.04	0.09	0.06	0.11	0.08	0.14	0.09	0.13	0.05	0.11	0.07	0.16	0.10	0.13	0.12	0.20	
14/08/2022	2.30	0.05	0.07	0.05	0.11	0.11	0.14	0.08	0.12	0.05	0.09	0.06	0.16	0.08	0.16	0.11	0.19	
15/08/2022	2.38	0.05	0.09	0.07	0.11	0.11	0.17	0.08	0.12	0.05	0.07	0.05	0.11	0.08	0.14	0.11	0.18	
16/08/2022	2.60	0.05	0.09	0.07	0.12	0.13	0.23	0.07	0.12	0.04	0.10	0.05	0.10	0.07	0.12	0.14	0.25	
17/08/2022	2.52	0.04	0.09	0.07	0.11	0.15	0.35	0.09	0.11	0.03	0.07	0.04	0.10	0.07	0.09	0.11	0.48	
18/08/2022	2.75	0.07	0.08	0.07	0.14	0.14	0.21	0.09	0.17	0.04	0.10	0.05	0.11	0.07	0.12	0.11	0.17	
19/08/2022	2.14	0.07	0.12	0.10	0.33	0.08	0.13	0.10	0.15	0.05	0.09	0.05	0.14	0.07	0.17	0.12	0.24	
20/08/2022	2.36	0.08	0.14	0.10	0.15	0.08	0.14	0.10	0.17	0.06	0.11	0.06	0.08	0.07	0.13	0.14	0.16	
21/08/2022	1.98	0.08	0.14	0.09	0.16	0.07	0.20	0.12	0.14	0.05	0.10	0.06	0.11	0.07	0.09	0.11	0.18	
22/08/2022	2.07	0.10	0.13	0.09	0.13	0.07	0.15	0.09	0.24	0.11	5.00	0.06	0.13	0.07	0.14	0.12	0.19	
23/08/2022	2.00	0.07	0.13	0.10	0.14	0.05	0.10	0.09	0.16	0.08	0.12	0.05	0.14	0.07	0.13	0.13	0.18	
24/08/2022	2.01	0.07	0.14	0.08	0.17	0.05	0.11	0.12	0.13	0.08	0.15	0.08	0.10	0.07	0.11	0.13	0.20	
25/08/2022	2.32	0.11	0.13	0.10	0.13	0.06	0.08	0.12	0.18	0.09	0.15	0.09	0.19	0.10	0.16	0.13	0.21	
26/08/2022	2.43	0.10	0.17	0.13	0.18	0.07	0.11	0.13	0.21	0.12	0.19	0.11	0.21	0.10	0.17	0.14	0.18	
27/08/2022	2.50	0.11	0.17	0.12	0.19	0.06	0.12	0.14	0.23	0.08	0.19	0.13	0.24	0.09	0.15	0.16	0.23	
28/08/2022	2.40	0.11	0.18	0.12	0.19	0.05	0.11	0.19	0.21	0.06	0.12	0.11	0.18	0.09	0.12	0.12	0.19	
29/08/2022	2.29	0.15	0.17	0.13	0.21	0.05	0.08	0.19	0.25	0.08	0.12	0.11	0.19	0.10	0.16	0.12	0.19	
30/08/2022	2.24	0.08	0.21	0.09	0.19	0.03	0.11	0.13	0.23	0.07	0.11	0.08	0.13	0.07	0.17	0.08	0.14	
31/08/2022	2.09	0.04	0.08	0.04	0.08	0.02	0.05	0.07	0.13	0.06	0.11	0.05	0.07	0.05	0.10	0.05	0.07	
Total Number of Measurements Taken, A:			14681		15161		14540		15801		16267		16458		15958		16855	
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:			14681		15160		14538		15800		16262		16458		15958		16853	
Compliance with Turbidity Standard, C = B/A X 100%:			100.000%		99.993%		99.986%		99.994%		99.969%		100.000%		100.000%		99.988%	

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2022\08-August

Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew

WATER TREATMENT PLANT TURBIDITY GRAB MONITORING REPORT																		
Water System Code: 252.00	Turbidity (NTU)																	
Licence No. PWS-09-412-02																		
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-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
02-Aug-2022	1.59	2.23	0.12	0.06	0.16	0.11	0.17	0.11	0.12	0.14	0.15	0.10	0.17	0.09	0.15	0.09	0.17	0.13
03-Aug-2022	1.81	2.99	0.13	0.08	0.12	0.08	0.12	0.07	0.13	0.14	0.15	0.09	0.18	0.08	0.17	0.10	0.18	0.12
04-Aug-2022	1.71	3.46	0.15	0.12	0.14	0.10	0.14	0.09	0.16	0.13	0.14	0.09	0.24	0.12	0.20	0.12	0.17	0.11
05-Aug-2022	1.88	3.84	0.16	0.14	0.14	0.10	0.15	0.09	0.16	0.17	0.14	0.08	0.16	0.07	0.21	0.12	0.16	0.11
06-Aug-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
07-Aug-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
08-Aug-2022	1.70	2.24	0.14	0.18	0.12	0.10	0.12	0.08	0.13	0.14	0.15	0.10	0.20	0.10	0.18	0.11	0.23	0.18
09-Aug-2022	1.68	1.56	0.15	0.24	0.15	0.14	0.14	0.13	0.17	0.17	0.15	0.11	0.17	0.11	0.22	0.17	0.17	0.17
10-Aug-2022	1.86	3.31	0.15	0.07	0.13	0.08	0.14	0.09	0.11	0.09	0.14	0.09	0.16	0.07	0.19	0.13	0.16	0.13
11-Aug-2022	2.09	3.43	0.11	0.05	0.14	0.09	0.14	0.10	0.11	0.09	0.14	0.11	0.17	0.09	0.15	0.10	0.17	0.13
12-Aug-2022	2.05	2.88	0.10	0.05	0.15	0.10	0.10	0.08	0.10	0.09	0.13	0.09	0.16	0.08	0.14	0.09	0.16	0.13
13-Aug-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
14-Aug-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
15-Aug-2022	2.10	2.31	0.13	0.08	0.11	0.08	0.11	0.13	0.10	0.09	0.11	0.07	0.12	0.06	0.17	0.10	0.12	0.12
16-Aug-2022	1.98	2.62	0.09	0.05	0.13	0.10	0.13	0.17	0.09	0.09	0.12	0.09	0.14	0.08	0.12	0.08	0.14	0.15
17-Aug-2022	1.63	2.36	0.10	0.05	0.09	0.07	0.10	0.17	0.10	0.09	0.11	0.04	0.13	0.06	0.11	0.06	0.13	0.15
18-Aug-2022	1.81	3.36	0.10	0.07	0.09	0.08	0.10	0.20	0.12	0.11	0.10	0.06	0.17	0.09	0.13	0.09	0.11	0.13
19-Aug-2022	1.88	2.12	0.14	0.10	0.12	0.10	0.12	0.09	0.10	0.10	0.11	0.07	0.10	0.05	0.15	0.09	0.10	0.12
20-Aug-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
21-Aug-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
22-Aug-2022	1.73	2.12	0.12	0.12	0.11	0.12	0.12	0.09	0.17	0.18	0.10	0.08	0.10	0.07	0.13	0.08	0.10	0.12
23-Aug-2022	1.71	2.01	0.13	0.10	0.12	0.10	0.13	0.07	0.10	0.11	0.11	0.09	0.12	0.06	0.11	0.06	0.12	0.13
24-Aug-2022	1.99	2.13	0.11	0.10	0.11	0.10	0.11	0.05	0.12	0.12	0.15	0.13	0.15	0.09	0.13	0.07	0.16	0.15
25-Aug-2022	1.54	2.42	0.15	0.13	0.13	0.12	0.14	0.08	0.16	0.17	0.12	0.12	0.13	0.16	0.17	0.10	0.14	0.14
26-Aug-2022	1.80	2.32	0.17	0.16	0.14	0.14	0.15	0.09	0.12	0.14	0.15	0.14	0.16	0.13	0.17	0.13	0.16	0.16
27-Aug-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
28-Aug-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
29-Aug-2022	1.81	2.26	0.12	0.17	0.11	0.15	0.11	0.06	0.13	0.23	0.10	0.09	0.15	0.14	0.14	0.10	0.12	0.12
30-Aug-2022	1.61	2.25	0.13	0.19	0.11	0.17	0.12	0.07	0.09	0.22	0.09	0.10	0.11	0.12	0.14	0.12	0.11	0.13
31-Aug-2022	1.91	2.02	0.10	0.04	0.13	0.05	0.13	0.03	0.10	0.08	0.10	0.09	0.11	0.06	0.10	0.04	0.11	0.04
Total number of measurements taken, A:			22		22		22		22		22		22		22		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:			22		22		22		22		22		22		22		22	
Compliance with Turbidity Standard, C= B/A X 100%:			100%		100%		100%		100%		100%		100%		100%		100%	

na: not analyzed nr: no result ns: no sample o/l: offline im: instrument maintenance

Comments:

The raw water analyzer is cleaned daily during warm water months because it is susceptible to frequent fouling

Report Date: 1-Sep-2022



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**

Licence Number: **PWS-09-412-02**

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

September 2022 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
1/09/2022	2.08	0.04	0.09	0.04	0.09	0.02	0.06	0.09	0.11	0.05	0.10	0.06	0.11	0.05	0.07	0.04	0.09
2/09/2022	2.13	0.07	0.08	0.04	0.11	0.02	0.04	0.08	0.14	0.07	0.11	0.06	0.13	0.07	0.12	0.04	0.11
3/09/2022	2.39	0.08	0.14	0.07	0.09	0.03	0.06	0.09	0.14	0.09	0.12	0.06	0.14	0.06	0.13	0.05	0.10
4/09/2022	2.24	0.09	0.15	0.06	0.12	0.02	0.07	0.09	0.16	0.08	0.13	0.08	0.09	0.06	0.11	0.06	0.08
5/09/2022	2.56	0.10	0.17	0.07	0.14	0.02	0.07	0.12	0.15	0.08	0.13	0.09	0.14	0.07	0.09	0.05	0.10
6/09/2022	2.24	0.14	0.16	0.09	0.14	0.02	0.04	0.12	0.16	0.08	0.13	0.09	0.17	0.08	0.13	0.05	0.11
7/09/2022	2.28	0.11	0.20	0.07	0.14	0.03	0.08	0.10	0.18	0.08	0.13	0.07	0.13	0.07	0.15	0.06	0.08
8/09/2022	2.05	0.13	0.22	0.06	0.14	0.06	0.14	0.13	0.17	0.07	0.12	0.07	0.09	0.08	0.14	0.08	0.12
9/09/2022	1.98	0.09	0.18	0.07	0.16	0.07	0.15	0.12	0.21	0.09	0.14	0.07	0.14	0.10	0.22	0.07	0.13
10/09/2022	1.97	0.10	0.14	0.07	0.10	0.08	0.11	0.09	0.17	0.09	0.18	0.08	0.18	0.10	0.17	0.07	0.12
11/09/2022	2.12	0.08	0.15	0.09	0.16	0.08	0.15	0.10	0.16	0.11	0.16	0.09	0.16	0.10	0.18	0.07	0.12
12/09/2022	2.15	0.08	0.13	0.08	0.16	0.08	0.15	0.09	0.16	0.12	0.19	0.11	0.13	0.10	0.16	0.08	0.12
13/09/2022	2.21	0.08	0.15	0.07	0.14	0.07	0.14	0.10	0.13	0.12	0.19	0.12	0.17	0.10	0.13	0.07	0.11
14/09/2022	2.12	0.09	0.12	0.07	0.14	0.07	0.10	0.10	0.16	0.12	0.20	0.13	0.21	0.12	0.17	0.06	0.12
15/09/2022	2.31	0.09	0.15	0.08	0.11	0.07	0.13	0.08	0.17	0.15	0.19	0.14	0.24	0.10	0.17	0.06	0.11
16/09/2022	2.73	0.07	0.12	0.06	0.14	0.06	0.14	0.08	0.11	0.11	0.21	0.11	0.20	0.07	0.12	0.06	0.10
17/09/2022	2.32	0.07	0.09	0.04	0.11	0.05	0.07	0.07	0.12	0.09	0.15	0.06	0.12	0.06	0.08	0.05	0.09
18/09/2022	1.85	0.08	0.13	0.05	0.07	0.07	0.12	0.06	0.12	0.10	0.14	0.07	0.14	0.06	0.12	0.05	0.11
19/09/2022	1.80	0.08	0.14	0.05	0.11	0.07	0.12	0.05	0.15	0.12	0.16	0.08	0.10	0.07	0.11	0.06	0.08
20/09/2022	1.89	0.07	0.10	0.05	0.11	0.06	0.13	0.07	0.10	0.11	0.17	0.09	0.16	0.07	0.08	0.06	0.10
21/09/2022	2.06	0.08	0.15	0.05	0.12	0.06	0.13	0.05	0.19	0.10	0.18	0.08	0.17	0.06	0.13	0.04	0.09
22/09/2022	2.06	0.09	0.14	0.06	0.12	0.06	0.11	0.05	0.12	0.14	0.18	0.10	0.13	0.07	0.13	0.06	0.07
23/09/2022	2.10	0.09	0.16	0.06	0.12	0.06	0.12	0.06	0.08	0.14	0.20	0.14	0.17	0.07	0.09	0.05	0.10
24/09/2022	1.83	0.11	0.13	0.06	0.14	0.06	0.12	0.06	0.11	0.15	0.23	0.13	0.22	0.09	0.14	0.05	0.09
25/09/2022	1.55	0.10	0.17	0.08	0.10	0.07	0.11	0.05	0.10	0.16	0.21	0.15	0.22	0.09	0.14	0.05	0.09
26/09/2022	1.55	0.10	0.17	0.08	0.14	0.06	0.12	0.05	0.10	0.17	0.23	0.14	0.20	0.09	0.16	0.06	0.08
27/09/2022	1.45	0.11	0.18	0.09	0.15	0.06	0.12	0.06	0.09	0.13	0.21	0.10	0.15	0.10	0.12	0.06	0.11
28/09/2022	1.58	0.14	0.17	0.09	0.17	0.06	0.09	0.05	0.11	0.13	0.20	0.03	0.18	0.12	0.17	0.05	0.13
29/09/2022	1.54	0.13	0.20	0.10	0.14	0.07	0.12	0.05	0.09	0.13	0.20	OL	OL	0.12	0.19	0.06	0.12
30/09/2022	1.54	0.14	0.19	0.12	0.19	0.06	0.13	0.06	0.10	0.15	0.21	OL	OL	0.14	0.20	0.07	0.12

Total Number of Measurements Taken, A:	13531	13719	13492	14347	15383	14205	15067	16148
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:	13531	13719	13492	14347	15383	14205	15067	16148
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: Offline								

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2022\09-September

Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew



WATER TREATMENT PLANT TURBIDITY GRAB MONITORING REPORT																		
Water System Code: 252.00	Turbidity (NTU)																	
Licence No. PWS-09-412-02																		
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-2022	1.82	1.93	0.11	0.05	0.10	0.04	0.11	0.02	0.11	0.09	0.15	0.09	0.13	0.07	0.13	0.04	0.14	0.06
02-Sep-2022	1.74	2.11	0.11	0.07	0.11	0.05	0.11	0.02	0.13	0.11	0.11	0.09	0.18	0.11	0.14	0.09	0.12	0.04
03-Sep-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
04-Sep-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
05-Sep-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
06-Sep-2022	1.81	2.51	0.12	0.15	0.12	0.10	0.12	0.03	0.12	0.14	0.11	0.10	0.16	0.12	0.15	0.08	0.13	0.05
07-Sep-2022	1.78	2.12	0.14	0.18	0.12	0.12	0.13	0.04	0.10	0.13	0.12	0.12	0.12	0.10	0.16	0.10	0.12	0.05
08-Sep-2022	1.84	1.98	0.19	0.16	0.18	0.13	0.17	0.08	0.18	0.16	0.16	0.10	0.14	0.07	0.12	0.08	0.13	0.07
09-Sep-2022	1.73	1.97	0.18	0.16	0.16	0.06	0.17	0.07	0.16	0.15	0.10	0.08	0.15	0.10	0.13	0.09	0.17	0.09
10-Sep-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
11-Sep-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
12-Sep-2022	1.70	2.03	0.17	0.08	0.19	0.13	0.17	0.10	0.18	0.12	0.15	0.15	0.14	0.12	0.13	0.10	0.14	0.08
13-Sep-2022	1.45	1.88	0.16	0.08	0.15	0.06	0.16	0.07	0.15	0.09	0.16	0.08	0.14	0.14	0.13	0.10	0.14	0.08
14-Sep-2022	1.41	2.00	0.18	0.10	0.17	0.08	0.17	0.08	0.17	0.11	0.10	0.13	0.17	0.18	0.13	0.11	0.16	0.08
15-Sep-2022	1.44	2.22	0.19	0.12	0.17	0.08	0.18	0.08	0.14	0.09	0.11	0.15	0.12	0.16	0.15	0.12	0.11	0.06
16-Sep-2022	1.45	2.59	0.15	0.08	0.21	0.11	0.19	0.10	0.16	0.11	0.16	0.19	0.13	0.19	0.12	0.10	0.13	0.07
17-Sep-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
18-Sep-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
19-Sep-2022	1.12	1.76	0.15	0.08	0.19	0.09	0.20	0.10	0.17	0.08	0.15	0.15	0.15	0.08	0.12	0.06	0.13	0.05
20-Sep-2022	1.21	1.80	0.15	0.09	0.14	0.05	0.14	0.06	0.13	0.07	0.17	0.17	0.14	0.12	0.12	0.07	0.16	0.08
21-Sep-2022	1.26	2.05	0.19	0.13	0.17	0.08	0.17	0.10	0.21	0.13	0.13	0.15	0.11	0.11	0.12	0.07	0.11	0.05
22-Sep-2022	1.22	2.07	0.13	0.09	0.17	0.08	0.17	0.08	0.13	0.06	0.10	0.15	0.12	0.13	0.11	0.07	0.12	0.06
23-Sep-2022	1.24	2.06	0.17	0.10	0.15	0.06	0.16	0.06	0.13	0.06	0.13	0.17	0.13	0.14	0.11	0.07	0.12	0.05
24-Sep-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
25-Sep-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	0.09	0.17	ns	ns	ns	ns
26-Sep-2022	1.37	1.88	0.13	0.11	0.17	0.11	0.16	0.08	0.13	0.06	0.12	0.21	0.11	0.19	0.11	0.09	0.12	0.06
27-Sep-2022	1.24	1.51	0.13	0.13	0.13	0.09	0.13	0.06	0.14	0.07	0.12	0.17	0.12	0.11	0.11	0.10	0.12	0.07
28-Sep-2022	1.11	1.41	0.14	0.14	0.13	0.11	0.14	0.07	0.14	0.07	0.09	0.15	o/l	o/l	0.13	0.13	0.13	0.08
29-Sep-2022	1.57	1.52	0.16	0.17	0.14	0.12	0.14	0.08	0.14	0.07	0.09	0.17	o/l	o/l	0.16	0.16	0.11	0.06
30-Sep-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
Total number of measurements taken, A:			20		20		20		20		20		19		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:			20		20		20		20		20		19		20		20	
Compliance with Turbidity Standard, C= B/A X 100%:			100%		100%		100%		100%		100%		100%		100%		100%	

na: not analyzed nr: no result ns: no sample o/l: offline im: instrument maintenance

Comments:

Report Date: 4-Oct-2022

The raw water analyzer is cleaned daily during warm water months because it is susceptible to frequent fouling

Filter 6 was taken offline for scheduled maintenance on September 28, 2022



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**
Licence Number: **PWS-09-412-02**

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

October 2022 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
1/10/2022	1.60	0.13	0.21	0.12	0.18	0.06	0.14	0.06	0.10	0.15	0.21	OL	OL	0.11	0.21	0.07	0.11
2/10/2022	1.65	0.08	0.13	0.13	0.20	0.07	0.13	0.07	0.09	0.08	0.12	OL	OL	0.08	0.15	0.09	0.13
3/10/2022	1.52	0.08	0.11	0.13	0.20	0.07	0.13	0.07	0.13	0.06	0.11	OL	OL	0.08	0.12	0.07	0.12
4/10/2022	1.35	0.07	0.10	0.10	0.18	0.07	0.09	0.06	0.09	0.06	0.10	OL	OL	0.08	0.12	0.06	0.11
5/10/2022	1.33	0.08	0.11	0.04	0.08	0.07	0.11	0.06	0.08	0.05	0.18	OL	OL	0.07	0.11	0.05	0.34
6/10/2022	1.45	0.07	0.11	0.03	0.06	0.08	0.11	0.05	0.10	0.06	0.12	OL	OL	0.07	0.10	0.05	0.11
7/10/2022	1.42	0.07	0.11	0.03	0.05	0.08	0.10	0.04	0.16	0.06	0.09	OL	OL	0.06	0.58	0.06	0.08
8/10/2022	1.41	0.06	0.12	0.02	0.06	0.07	0.11	0.04	0.07	0.08	0.09	OL	OL	0.07	0.10	0.06	0.09
9/10/2022	1.48	0.07	0.11	0.02	0.06	0.08	0.11	0.04	0.08	0.07	0.10	OL	OL	0.07	0.11	0.07	0.10
10/10/2022	1.52	0.07	0.11	0.02	0.05	0.08	0.13	0.05	0.09	0.07	0.10	OL	OL	0.08	0.10	0.07	0.09
11/10/2022	1.62	0.08	0.10	0.02	0.05	0.09	0.13	0.05	0.09	0.07	0.10	OL	OL	0.09	0.11	0.07	0.10
12/10/2022	1.47	0.08	0.10	0.02	0.06	0.10	0.14	0.06	0.09	0.07	0.10	OL	OL	0.08	0.12	0.07	0.11
13/10/2022	1.34	0.07	0.11	0.02	0.04	0.13	0.15	0.05	0.09	0.08	0.10	OL	OL	0.08	0.11	0.07	0.10
14/10/2022	1.29	0.07	0.11	0.02	0.05	0.12	0.15	0.05	0.08	0.08	0.10	OL	OL	0.08	0.12	0.08	0.11
15/10/2022	1.28	0.07	0.10	0.02	0.04	0.11	0.16	0.06	0.09	0.10	0.11	OL	OL	0.08	0.12	0.08	0.10
16/10/2022	1.28	0.07	0.10	0.01	0.04	0.12	0.17	0.06	0.08	0.09	0.11	OL	OL	0.09	0.12	0.10	0.12
17/10/2022	1.28	0.07	0.10	0.01	0.03	0.13	0.17	0.07	0.09	0.09	0.12	OL	OL	0.10	0.12	0.09	0.12
18/10/2022	1.28	0.05	0.12	0.01	0.10	0.05	0.17	0.02	0.08	0.05	0.17	OL	OL	0.04	0.13	0.04	0.11
19/10/2022	1.25	0.05	0.07	0.01	0.03	0.00	0.02	0.02	0.04	0.09	0.11	OL	OL	0.03	0.04	0.03	0.05
20/10/2022	1.04	0.05	0.08	0.01	0.02	0.00	0.01	0.02	0.04	0.08	0.11	OL	OL	0.02	0.04	0.03	0.05
21/10/2022	1.00	0.04	0.08	0.01	0.03	0.00	0.01	0.02	0.04	0.08	0.11	OL	OL	0.02	0.04	0.03	0.05
22/10/2022	0.96	0.05	0.07	0.01	0.03	0.00	0.03	0.03	0.04	0.08	0.12	OL	OL	0.03	0.05	0.03	0.06
23/10/2022	0.93	0.06	0.08	0.01	0.03	0.00	0.03	0.02	0.05	0.09	0.11	OL	OL	0.03	0.04	0.03	0.06
24/10/2022	0.91	0.06	0.08	0.01	0.03	0.00	0.02	0.03	0.05	0.09	0.11	OL	OL	0.03	0.05	0.03	0.06
25/10/2022	0.87	0.05	0.08	0.01	0.04	0.00	0.02	0.03	0.05	0.09	0.12	OL	OL	0.02	0.05	0.03	0.05
26/10/2022	0.85	0.05	0.08	0.01	0.04	0.00	0.02	0.03	0.05	0.09	0.11	OL	OL	0.02	0.04	0.03	0.05
27/10/2022	0.86	0.05	0.08	0.01	0.03	0.01	0.03	0.03	0.05	0.08	0.11	OL	OL	0.02	0.04	0.03	0.06
28/10/2022	0.91	0.05	0.10	0.02	0.05	0.02	0.06	0.04	0.07	0.08	0.12	OL	OL	0.03	0.04	0.04	0.06
29/10/2022	0.90	0.07	0.09	0.02	0.06	0.03	0.05	0.05	0.08	0.09	0.13	OL	OL	0.03	0.05	0.04	0.07
30/10/2022	0.91	0.07	0.09	0.02	0.05	0.04	0.05	0.06	0.09	0.09	0.13	OL	OL	0.03	0.05	0.04	0.06
31/10/2022	0.94	0.07	0.09	0.03	0.06	0.03	0.06	0.06	0.10	0.10	0.13	OL	OL	0.03	0.05	0.04	0.06

Total Number of Measurements Taken, A:	13576	15561	13131	15347	15596	0	14996	16786
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:	13576	15561	13131	15347	15596	0	14995	16785
Compliance with Turbidity Standard, C = B/A X 100%:	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	99.993%	99.994%

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2022\10-October

Submitted By (Print): D.Merredew

Signature: Original D.Merredew

WATER TREATMENT PLANT TURBIDITY GRAB MONITORING REPORT																		
Water System Code: 252.00	Turbidity (NTU)																	
Licence No. PWS-09-412-02																		
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-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
02-Oct-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
03-Oct-2022	1.31	1.33	0.13	0.09	0.13	0.15	0.13	0.08	0.12	0.07	0.13	0.12	o/l	o/l	0.12	0.09	0.13	0.09
04-Oct-2022	1.15	1.33	0.12	0.10	0.11	0.16	0.11	0.09	0.10	0.08	0.08	0.08	o/l	o/l	0.08	0.07	0.09	0.06
05-Oct-2022	1.15	1.26	0.11	0.09	0.10	0.05	0.11	0.08	0.10	0.07	0.08	0.08	o/l	o/l	0.08	0.07	0.08	0.06
06-Oct-2022	1.43	1.38	0.11	0.09	0.11	0.04	0.11	0.08	0.10	0.07	0.08	0.08	o/l	o/l	0.09	0.08	0.08	0.06
07-Oct-2022	1.29	1.38	0.11	0.09	0.10	0.04	0.11	0.09	0.08	0.05	0.07	0.08	o/l	o/l	0.08	0.08	0.08	0.06
08-Oct-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
09-Oct-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
10-Oct-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
11-Oct-2022	1.43	1.44	0.10	0.10	0.10	0.03	0.10	0.11	0.10	0.07	0.07	0.10	o/l	o/l	0.08	0.09	0.08	0.07
12-Oct-2022	1.34	1.45	0.10	0.09	0.09	0.03	0.10	0.12	0.10	0.07	0.08	0.09	o/l	o/l	0.08	0.09	0.09	0.08
13-Oct-2022	1.25	1.32	0.10	0.09	0.10	0.03	0.10	0.13	0.09	0.06	0.08	0.10	o/l	o/l	0.10	0.10	0.08	0.08
14-Oct-2022	1.21	1.28	0.11	0.10	0.09	0.02	0.10	0.14	0.11	0.06	0.08	0.10	o/l	o/l	0.09	0.10	0.08	0.08
15-Oct-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
16-Oct-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
17-Oct-2022	1.10	1.25	0.09	0.09	0.11	0.02	0.09	0.15	0.08	0.07	0.08	0.11	o/l	o/l	0.08	0.10	0.08	0.10
18-Oct-2022	1.28	1.28	0.09	0.09	0.08	0.02	0.09	0.16	0.09	0.04	0.07	0.12	o/l	o/l	0.09	0.11	0.08	0.10
19-Oct-2022	1.02	1.19	0.10	0.07	0.09	0.02	0.09	0.02	0.07	0.02	0.07	0.10	o/l	o/l	0.07	0.02	0.07	0.03
20-Oct-2022	1.19	1.02	0.08	0.06	0.09	0.02	0.08	<0.02	0.08	0.03	0.08	0.11	o/l	o/l	0.08	0.02	0.08	0.03
21-Oct-2022	1.02	0.98	0.08	0.06	0.09	0.02	0.07	<0.02	0.08	0.03	0.08	0.11	o/l	o/l	0.08	0.02	0.08	0.03
22-Oct-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
23-Oct-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
24-Oct-2022	1.02	0.88	0.10	0.08	0.09	0.02	0.09	<0.02	0.08	0.03	0.09	0.11	o/l	o/l	0.09	0.03	0.08	0.03
25-Oct-2022	0.85	0.87	0.09	0.06	0.09	0.02	0.10	<0.02	0.08	0.04	0.07	0.10	o/l	o/l	0.07	0.02	0.08	0.03
26-Oct-2022	0.83	0.84	0.08	0.06	0.10	0.03	0.08	<0.02	0.08	0.03	0.07	0.10	o/l	o/l	0.11	0.02	0.08	0.03
27-Oct-2022	0.83	0.82	0.09	0.06	0.09	0.02	0.08	<0.02	0.08	0.04	0.08	0.11	o/l	o/l	0.07	0.02	0.08	0.03
28-Oct-2022	0.82	0.90	0.08	0.06	0.08	<0.02	0.07	0.03	0.08	0.04	0.08	0.12	o/l	o/l	0.10	0.02	0.08	0.03
29-Oct-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
30-Oct-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
31-Oct-2022	0.92	0.90	0.13	0.10	0.11	0.03	0.12	0.04	0.09	0.07	0.09	0.12	o/l	o/l	0.16	0.03	0.08	0.04
Total number of measurements taken, A:			20		20		20		20		20		0		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:			20		20		20		20		20		0		20		20	
Compliance with Turbidity Standard, C= B/A X 100%:			100%		100%		100%		100%		100%		*		100%		100%	

na: not analyzed nr: no result ns: no sample o/l: offline im: instrument maintenance

Comments:

Report Date: 7-Nov-2022

Filter 6 was taken offline for scheduled maintenance on September 28, 2022



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**

Licence Number: **PWS-09-412-02**

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

November 2022 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
1/11/2022	0.96	0.07	0.11	0.03	0.05	0.04	0.07	0.07	0.11	0.11	0.13	OL	OL	0.03	0.05	0.04	0.07
2/11/2022	0.97	0.07	0.10	0.03	0.06	0.04	0.07	0.10	0.12	0.10	0.15	OL	OL	0.03	0.05	0.05	0.07
3/11/2022	0.97	0.08	0.10	0.03	0.07	0.04	0.07	0.09	0.13	0.10	0.13	OL	OL	0.03	0.05	0.05	0.08
4/11/2022	0.96	0.09	0.11	0.03	0.06	0.05	0.07	0.09	0.14	0.10	0.14	OL	OL	0.03	0.05	0.05	0.08
5/11/2022	1.05	0.08	0.11	0.04	0.08	0.04	0.08	0.10	0.14	0.12	0.14	OL	OL	0.03	0.05	0.05	0.08
6/11/2022	1.03	0.08	0.11	0.04	0.07	0.04	0.07	0.10	0.16	0.12	0.15	OL	OL	0.03	0.05	0.07	0.08
7/11/2022	1.06	0.08	0.11	0.03	0.06	0.04	0.06	0.13	0.16	0.12	0.16	OL	OL	0.03	0.05	0.06	0.09
8/11/2022	1.03	0.09	0.10	0.03	0.06	0.04	0.06	0.11	0.17	0.13	0.17	OL	OL	0.04	0.05	0.06	0.10
9/11/2022	1.04	0.08	0.11	0.03	0.05	0.04	0.06	0.12	0.16	0.13	0.18	OL	OL	0.03	0.05	0.07	0.10
10/11/2022	1.09	0.12	0.19	0.05	0.08	0.04	0.06	0.09	0.16	0.11	0.17	OL	OL	0.04	0.06	0.06	0.10
11/11/2022	1.11	0.11	0.19	0.05	0.09	0.04	0.07	0.06	0.10	0.06	0.09	OL	OL	0.04	0.06	0.05	0.07
12/11/2022	1.04	0.06	0.09	0.05	0.11	0.04	0.07	0.07	0.09	0.06	0.09	OL	OL	0.04	0.05	0.05	0.08
13/11/2022	1.01	0.06	0.08	0.05	0.09	0.03	0.07	0.06	0.09	0.07	0.10	OL	OL	0.05	0.07	0.04	0.07
14/11/2022	0.99	0.07	0.09	0.05	0.09	0.04	0.06	0.05	0.09	0.06	0.09	OL	OL	0.04	0.07	0.05	0.07
15/11/2022	1.00	0.06	0.09	0.06	0.10	0.05	0.07	0.06	0.10	0.06	0.08	OL	OL	0.04	0.06	0.04	0.08
16/11/2022	1.00	0.07	0.10	0.06	0.09	0.05	0.08	0.06	0.12	0.06	0.08	OL	OL	0.04	0.06	0.05	0.07
17/11/2022	1.00	0.06	0.09	0.06	0.10	0.05	0.10	0.07	0.10	0.06	0.08	OL	OL	0.04	0.13	0.05	0.08
18/11/2022	1.01	0.07	0.11	0.06	0.10	0.05	0.08	0.07	0.10	0.06	0.09	OL	OL	0.05	0.10	0.06	0.08
19/11/2022	0.99	0.07	0.09	0.07	0.11	0.05	0.10	0.09	0.11	0.07	0.11	OL	OL	0.05	0.09	0.06	0.10
20/11/2022	0.97	0.08	0.12	0.07	0.11	0.05	0.10	0.07	0.13	0.07	0.11	OL	OL	0.05	0.07	0.07	0.11
21/11/2022	0.96	0.07	0.11	0.07	0.14	0.06	0.08	0.09	0.13	0.07	0.11	OL	OL	0.07	0.10	0.07	0.11
22/11/2022	0.94	0.07	0.11	0.07	0.12	0.07	0.12	0.08	0.12	0.06	0.10	OL	OL	0.06	0.14	0.07	0.12
23/11/2022	0.92	0.07	0.11	0.08	0.13	0.06	0.11	0.08	0.14	0.06	0.09	OL	OL	0.06	0.10	0.07	0.12
24/11/2022	0.91	0.07	0.12	0.08	0.17	0.07	0.15	0.09	0.16	0.07	0.11	OL	OL	0.05	0.13	0.07	0.12
25/11/2022	0.88	0.05	0.07	0.05	0.08	0.04	0.06	0.06	0.11	0.05	0.09	OL	OL	0.04	0.07	0.07	0.10
26/11/2022	0.86	0.04	0.08	0.05	0.08	0.03	0.07	0.07	0.10	0.05	0.08	OL	OL	0.04	0.07	0.06	0.11
27/11/2022	0.85	0.04	0.08	0.04	0.08	0.03	0.07	0.07	0.10	0.05	0.08	OL	OL	0.04	0.06	0.06	0.10
28/11/2022	0.81	0.04	0.07	0.04	0.10	0.02	0.06	0.06	0.12	0.05	0.14	OL	OL	0.04	0.06	0.06	0.09
29/11/2022	0.77	0.07	0.13	0.07	0.83	0.03	0.86	0.08	0.68	0.04	0.08	OL	OL	0.05	0.10	0.05	0.10
30/11/2022	0.74	0.09	0.18	0.05	0.58	0.04	0.58	0.06	0.43	0.04	0.06	OL	OL	0.07	0.09	0.05	0.07

Total Number of Measurements Taken, A:	13483	15676	15700	14941	15133	0	15008	16724
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:	13483	15638	15683	14907	15133	0	15008	16724
Compliance with Turbidity Standard, C = B/A X 100%:	100.000%	99.758%	99.892%	99.772%	100.000%	100.000%	100.000%	100.000%

OL=Offline

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2022\11-November

Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew

WATER TREATMENT PLANT TURBIDITY GRAB MONITORING REPORT																		
Water System Code: 252.00	Turbidity (NTU)																	
Licence No. PWS-09-412-02																		
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-2022	0.91	0.91	0.10	0.08	0.12	0.04	0.11	0.05	0.09	0.08	0.08	0.11	ns	ns	0.08	0.02	0.09	0.04
02-Nov-2022	0.79	0.90	0.11	0.09	0.12	0.05	0.10	0.04	0.10	0.11	0.09	0.12	o/l	o/l	0.09	0.02	0.09	0.05
03-Nov-2022	0.89	0.97	0.10	0.10	0.10	0.03	0.11	0.04	0.09	0.11	0.08	0.13	o/l	o/l	0.09	0.03	0.10	0.06
04-Nov-2022	0.89	0.93	0.11	0.10	0.10	0.05	0.11	0.06	0.11	0.13	0.07	0.12	o/l	o/l	0.09	0.03	0.08	0.05
05-Nov-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
06-Nov-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
07-Nov-2022	0.77	1.12	0.09	0.09	0.10	0.03	0.10	0.04	0.09	0.12	0.08	0.16	o/l	o/l	0.08	0.03	0.09	0.07
08-Nov-2022	0.77	1.05	0.09	0.10	0.11	0.03	0.10	0.05	0.10	0.15	0.07	0.15	o/l	o/l	0.09	0.03	0.09	0.08
09-Nov-2022	0.80	1.02	0.11	0.10	0.10	0.04	0.11	0.04	0.12	0.16	0.07	0.16	o/l	o/l	0.10	0.04	0.09	0.08
10-Nov-2022	0.82	1.04	0.12	0.10	0.10	0.05	0.11	0.05	0.09	0.15	0.08	0.17	o/l	o/l	0.08	0.03	0.09	0.09
11-Nov-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
12-Nov-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
13-Nov-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
14-Nov-2022	0.81	0.96	0.10	0.08	0.11	0.06	0.11	0.05	0.09	0.07	0.07	0.08	o/l	o/l	0.09	0.04	0.08	0.04
15-Nov-2022	0.87	0.96	0.13	0.08	0.12	0.07	0.12	0.06	0.09	0.07	0.08	0.08	o/l	o/l	0.09	0.04	0.09	0.04
16-Nov-2022	0.75	0.98	0.12	0.08	0.12	0.07	0.11	0.05	0.08	0.07	0.07	0.08	o/l	o/l	0.09	0.05	0.08	0.04
17-Nov-2022	0.84	0.97	0.11	0.08	0.14	0.09	0.15	0.08	0.10	0.08	0.08	0.08	o/l	o/l	0.08	0.04	0.10	0.05
18-Nov-2022	0.82	0.99	0.10	0.08	0.12	0.08	0.10	0.05	0.09	0.08	0.08	0.09	o/l	o/l	0.08	0.04	0.09	0.06
19-Nov-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
20-Nov-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
21-Nov-2022	0.82	0.93	0.15	0.10	0.13	0.09	0.13	0.07	0.12	0.10	0.09	0.08	o/l	o/l	0.11	0.06	0.10	0.07
22-Nov-2022	0.78	0.88	0.13	0.09	0.13	0.09	0.14	0.07	0.11	0.09	0.09	0.07	o/l	o/l	0.14	0.07	0.10	0.07
23-Nov-2022	0.77	0.88	0.12	0.08	0.15	0.09	0.15	0.09	0.10	0.10	0.09	0.07	o/l	o/l	0.12	0.06	0.10	0.07
24-Nov-2022	0.77	0.91	0.14	0.09	0.18	0.11	0.12	0.13	0.12	0.10	0.10	0.09	o/l	o/l	0.11	0.06	0.12	0.09
25-Nov-2022	0.73	0.86	0.09	0.05	0.12	0.08	0.09	0.04	0.09	0.08	0.10	0.07	o/l	o/l	0.08	0.03	0.08	0.06
26-Nov-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
27-Nov-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
28-Nov-2022	0.72	0.80	0.08	0.05	0.10	0.06	0.08	0.02	0.09	0.08	0.08	0.08	o/l	o/l	0.08	0.03	0.08	0.07
29-Nov-2022	0.72	0.75	0.07	0.04	0.07	0.04	0.07	0.02	0.07	0.08	0.07	0.05	o/l	o/l	0.07	0.03	0.09	0.07
30-Nov-2022	0.63	0.71	0.08	0.12	0.08	0.05	0.10	0.04	0.08	0.07	0.08	0.06	o/l	o/l	0.08	0.07	0.09	0.05
Total number of measurements taken, A:			21		21		21		21		21		0		21		21	
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		21		21		21		21		0		21		21	
Compliance with Turbidity Standard, C= B/A X 100%:			100%		100%		100%		100%		100%		*		100%		100%	

na: not analyzed nr: no result ns: no sample o/l: offline im: instrument maintenance

Comments:

Report Date: 1-Dec-2022

Filter 6 was taken offline for scheduled maintenance on September 28, 2022



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**

Licence Number: **PWS-09-412-02**

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

December 2022 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
1/12/2022	0.72	0.10	0.12	0.04	0.08	0.03	0.07	0.05	0.10	0.04	0.06	OL	OL	0.06	0.08	0.04	0.08
2/12/2022	0.69	0.09	0.12	0.04	0.12	0.03	0.05	0.05	0.08	0.04	0.07	OL	OL	0.07	0.10	0.05	0.07
3/12/2022	0.68	0.09	0.12	0.05	0.12	0.03	0.06	0.05	0.09	0.04	0.08	OL	OL	0.06	0.10	0.05	0.09
4/12/2022	0.66	0.09	0.12	0.05	0.08	0.03	0.06	0.05	0.08	0.04	0.06	OL	OL	0.06	0.09	0.05	0.08
5/12/2022	0.64	0.08	0.11	0.04	0.07	0.02	0.05	0.05	0.10	0.04	0.05	OL	OL	0.07	0.10	0.05	0.08
6/12/2022	0.62	0.06	0.09	0.04	0.08	0.02	0.06	0.05	0.08	0.05	0.08	OL	OL	0.07	0.10	0.05	0.08
7/12/2022	0.61	0.07	0.09	0.04	0.08	0.02	0.05	0.06	0.08	0.05	0.08	OL	OL	0.07	0.10	0.05	0.08
8/12/2022	0.60	0.07	0.08	0.04	0.07	0.02	0.05	0.05	0.09	0.03	0.06	OL	OL	0.07	0.10	0.05	0.10
9/12/2022	0.58	0.06	0.08	0.04	0.08	0.02	0.05	0.05	0.08	0.04	0.06	OL	OL	0.08	0.10	0.06	0.09
10/12/2022	0.56	0.06	0.08	0.04	0.11	0.03	0.06	0.06	0.09	0.04	0.06	OL	OL	0.08	0.11	0.06	0.10
11/12/2022	0.55	0.06	0.09	0.05	0.11	0.03	0.05	0.06	0.09	0.04	0.07	OL	OL	0.08	0.11	0.06	0.08
12/12/2022	0.53	0.06	0.08	0.05	0.07	0.03	0.06	0.06	0.10	0.04	0.06	OL	OL	0.08	0.11	0.07	0.09
13/12/2022	0.54	0.06	0.09	0.04	0.09	0.02	0.08	0.06	0.10	0.04	0.06	OL	OL	0.09	0.12	0.07	0.11
14/12/2022	0.55	0.07	0.14	0.02	0.07	0.02	0.06	0.04	0.10	0.03	0.09	OL	OL	0.04	0.11	0.04	0.13
15/12/2022	0.51	0.06	0.13	0.01	0.06	0.03	0.05	0.04	0.06	0.04	0.06	OL	OL	0.01	0.02	0.02	0.04
16/12/2022	0.48	0.04	0.06	0.01	0.03	0.03	0.05	0.04	0.07	0.03	0.05	OL	OL	0.01	0.02	0.02	0.05
17/12/2022	0.46	0.04	0.06	0.01	0.05	0.03	0.45	0.04	0.15	0.03	0.06	OL	OL	0.01	0.02	0.02	0.04
18/12/2022	0.45	0.04	0.06	0.01	0.03	0.02	0.07	0.03	0.11	0.04	0.06	OL	OL	0.01	0.01	0.02	0.04
19/12/2022	0.43	0.03	0.06	0.01	0.03	0.02	0.04	0.03	0.05	0.04	0.06	0.02	0.28	0.00	0.01	0.02	0.04
20/12/2022	0.42	0.04	0.06	0.01	0.07	0.02	0.04	0.03	0.06	0.04	0.06	0.03	0.43	0.00	0.01	0.02	0.04
21/12/2022	0.58	0.00	0.00	0.00	0.02	0.01	0.03	0.00	0.04	0.01	0.07	0.01	0.06	0.00	0.01	0.01	0.03
22/12/2022	0.52	0.05	0.07	0.01	0.04	0.02	0.05	0.04	0.06	0.03	0.07	0.02	0.06	0.01	0.02	0.02	0.10
23/12/2022	0.40	0.04	0.07	0.01	0.02	0.02	0.03	0.03	0.05	0.04	0.07	0.03	0.05	0.00	0.01	0.02	0.04
24/12/2022	0.41	0.04	0.07	0.01	0.02	0.02	0.04	0.03	0.06	0.04	0.06	0.03	0.07	0.00	0.01	0.02	0.03
25/12/2022	0.41	0.05	0.08	0.01	0.03	0.03	0.05	0.03	0.07	0.05	0.06	0.03	0.05	0.01	0.02	0.03	0.04
26/12/2022	0.43	0.05	0.07	0.01	0.04	0.03	0.05	0.04	0.06	0.04	0.06	0.03	0.06	0.01	0.03	0.03	0.05
27/12/2022	0.39	0.05	0.08	0.01	0.04	0.03	0.06	0.04	0.07	0.04	0.06	0.04	0.05	0.01	0.02	0.03	0.05
28/12/2022	0.37	0.05	0.08	0.01	0.03	0.03	0.05	0.04	0.07	0.04	0.06	0.03	0.06	0.01	0.02	0.02	0.03
29/12/2022	0.37	0.04	0.06	0.01	0.04	0.03	0.05	0.04	0.05	0.04	0.05	0.03	0.06	0.01	0.03	0.03	0.06
30/12/2022	0.36	0.05	0.08	0.01	0.03	0.02	0.03	0.04	0.06	0.04	0.06	0.04	0.05	0.01	0.01	0.02	0.05
31/12/2022	0.36	0.04	0.08	0.01	0.02	0.03	0.05	0.04	0.07	0.03	0.06	0.03	0.06	0.01	0.03	0.02	0.03

Total Number of Measurements Taken, A:	12606	13592	13211	13974	14851	5732	14135	16044
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:	12606	13592	13209	13974	14851	5731	14135	16044
Compliance with Turbidity Standard, C = B/A X 100%:	100.000%	100.000%	99.985%	100.000%	100.000%	99.983%	100.000%	100.000%
OL = Offline								

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2022\12-December

Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew

Water Treatment Plant Turbidity Grab Monitoring Report																		
Water System Code: 252.00	Turbidity (NTU)																	
Licence No. PWS-09-412-02																		
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-2022	0.70	0.69	0.07	0.10	0.08	0.05	0.07	0.03	0.07	0.06	0.09	0.06	o/l	o/l	0.07	0.06	0.09	0.05
02-Dec-2022	0.65	0.66	0.08	0.11	0.08	0.06	0.08	0.04	0.08	0.07	0.07	0.04	o/l	o/l	0.07	0.07	0.07	0.04
03-Dec-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
04-Dec-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
05-Dec-2022	0.59	0.62	0.07	0.10	0.08	0.06	0.08	0.04	0.07	0.07	0.06	0.05	o/l	o/l	0.07	0.07	0.07	0.05
06-Dec-2022	0.55	0.61	0.07	0.08	0.08	0.05	0.09	0.03	0.07	0.06	0.08	0.06	o/l	o/l	0.08	0.07	0.08	0.06
07-Dec-2022	0.52	0.61	0.07	0.08	0.09	0.08	0.07	0.02	0.07	0.05	0.07	0.08	o/l	o/l	0.07	0.07	0.08	0.07
08-Dec-2022	0.58	0.58	0.07	0.08	0.07	0.05	0.07	0.03	0.07	0.07	0.08	0.06	o/l	o/l	0.07	0.07	0.07	0.05
09-Dec-2022	0.53	0.56	0.08	0.08	0.07	0.06	0.08	0.03	0.08	0.06	0.07	0.06	o/l	o/l	0.08	0.08	0.07	0.06
10-Dec-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
11-Dec-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
12-Dec-2022	0.55	0.50	0.07	0.07	0.09	0.05	0.09	0.04	0.07	0.07	0.08	0.05	o/l	o/l	0.09	0.09	0.08	0.07
13-Dec-2022	0.56	0.49	0.07	0.07	0.09	0.07	0.08	0.03	0.07	0.07	0.08	0.05	o/l	o/l	0.08	0.08	0.09	0.08
14-Dec-2022	0.54	0.51	0.09	0.07	0.08	0.06	0.08	0.03	0.08	0.08	0.09	0.07	o/l	o/l	0.08	0.09	0.07	0.03
15-Dec-2022	0.52	0.52	0.09	0.06	0.08	<0.02	0.10	0.03	0.10	0.05	0.07	0.05	o/l	o/l	0.08	<0.02	0.07	0.02
16-Dec-2022	0.51	0.46	0.08	0.06	0.08	0.02	0.09	0.03	0.07	0.04	0.06	0.05	o/l	o/l	0.08	<0.02	0.07	0.02
17-Dec-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
18-Dec-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
19-Dec-2022	0.43	0.42	0.07	0.05	0.09	0.02	0.08	0.03	0.07	0.05	0.07	0.05	0.07	0.04	0.07	<0.02	0.08	0.02
20-Dec-2022	0.46	0.41	0.08	0.05	0.07	0.02	0.07	0.03	0.07	0.04	0.07	0.06	0.07	0.04	0.08	<0.02	0.08	0.02
21-Dec-2022	0.42	0.40	ns	ns	0.08	0.02	0.07	0.03	ns	ns	0.08	0.07	0.07	0.05	0.08	<0.02	0.07	0.02
22-Dec-2022	0.49	0.45	0.07	0.06	0.08	0.02	0.07	0.03	0.08	0.04	0.08	0.06	0.06	0.04	0.07	<0.02	0.09	0.03
23-Dec-2022	0.45	0.38	0.08	0.06	0.08	<0.02	0.08	0.03	0.09	0.05	0.06	0.06	0.07	0.04	0.08	<0.02	0.07	0.02
24-Dec-2022	ns	ns	0.09	0.07	ns	ns	ns	ns	0.09	0.05	ns	ns	ns	ns	ns	ns	ns	ns
25-Dec-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
26-Dec-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
27-Dec-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
28-Dec-2022	0.41	0.36	0.10	0.06	0.08	<0.02	0.09	0.04	0.08	0.05	0.07	0.05	0.08	0.05	0.10	<0.02	0.08	0.02
29-Dec-2022	0.42	0.36	0.07	0.05	0.09	0.02	0.09	0.04	0.08	0.05	0.07	0.05	0.06	0.04	0.07	<0.02	0.08	0.02
30-Dec-2022	0.41	0.34	0.08	0.06	0.07	<0.02	0.07	0.03	0.08	0.05	0.07	0.05	0.07	0.05	0.07	<0.02	0.07	0.02
31-Dec-2022	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
Total number of measurements taken, A:			20		20		20		20		20		8		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:			20		20		20		20		20		8		20		20	
Compliance with Turbidity Standard, C= B/A X 100%:			100%		100%		100%		100%		100%		100%		100%		100%	

na: not analyzed nr: no result ns: no sample o/l: offline im: instrument maintenance

Comments:

Report Date: 5-Jan-2023

Filter 6 was offline for scheduled maintenance from September 28 to December 18, 2022.

2022 MONTHLY UV SUMMARY REPORTS



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**
Licence Number: **PWS-09-412-02**

WATER TREATMENT PLANT UV REPORT

Report Period: **January 2022**

Report Created: **Tuesday, February 01, 2022**

Date	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	
01/01/2022	0.00	1.31	59.70	61.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	57.80	57.80	0.00	0.00	64.34	64.34	0.00	0.00	0.00	0.00	0.00	0.00	1.31	181.85	183.16	99.28
02/01/2022	0.00	1.38	60.57	61.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	58.58	58.58	0.00	0.00	64.47	64.47	0.00	0.00	0.00	0.00	0.00	0.00	1.38	183.62	184.99	99.26
03/01/2022	0.00	1.51	60.66	62.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	58.44	58.44	0.00	0.00	64.39	64.39	0.00	0.00	0.00	0.00	0.00	0.00	1.51	183.49	185.00	99.18
04/01/2022	0.00	0.43	21.74	22.17	0.00	0.00	32.26	32.26	0.00	0.00	0.00	0.00	0.00	0.94	63.33	64.27	0.00	0.00	66.33	66.33	0.00	0.00	0.00	0.00	0.00	0.00	1.38	183.65	185.02	99.26
05/01/2022	0.00	0.00	0.00	0.00	0.00	0.00	63.89	63.89	0.00	0.00	0.00	0.00	0.00	0.05	57.53	57.58	0.00	0.00	63.49	63.49	0.00	0.00	0.00	0.00	0.00	0.00	0.05	184.91	184.96	99.97
06/01/2022	0.00	0.00	0.00	0.00	0.00	0.00	64.99	64.99	0.00	0.00	0.00	0.00	0.13	0.13	0.91	1.16	0.00	0.00	43.69	43.69	0.00	1.94	72.32	74.26	0.13	2.07	181.90	184.10	98.81	
07/01/2022	0.00	0.00	0.00	0.00	0.00	0.00	65.01	65.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.18	43.18	0.00	1.70	70.14	71.84	0.00	1.70	178.33	180.03	99.06	
08/01/2022	0.00	0.00	0.00	0.00	0.00	0.00	65.00	65.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.51	43.51	0.00	2.25	69.41	71.66	0.00	2.25	177.92	180.17	98.75	
09/01/2022	0.00	0.00	0.00	0.00	0.00	0.00	65.02	65.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.56	43.56	0.00	1.93	69.52	71.45	0.00	1.93	178.10	180.03	98.93	
10/01/2022	0.00	0.00	0.00	0.00	0.00	0.00	64.96	64.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.09	43.09	0.00	2.30	69.47	71.77	0.00	2.30	177.53	179.83	98.72	
11/01/2022	0.00	0.00	0.00	0.00	0.00	0.00	64.88	64.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.74	41.74	0.00	2.14	71.26	73.40	0.00	2.14	177.88	180.02	98.81	
12/01/2022	0.29	0.71	48.31	49.31	0.00	0.00	23.94	23.94	0.00	0.19	3.60	3.79	0.00	0.00	0.00	0.00	0.00	0.00	37.92	37.92	0.00	1.91	64.26	66.18	0.29	2.81	178.03	181.13	98.29	
13/01/2022	0.00	0.94	73.77	74.70	0.00	0.00	0.00	0.00	0.00	0.82	32.39	33.22	0.00	0.00	1.84	1.84	0.00	0.06	12.06	12.12	0.00	1.90	56.19	58.09	0.00	3.73	176.25	179.98	97.93	
14/01/2022	0.00	0.89	70.21	71.09	0.00	0.00	0.00	0.00	0.00	1.49	48.18	49.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.85	57.38	59.23	0.00	4.22	175.77	179.99	97.65	
15/01/2022	0.00	0.64	70.48	71.12	0.00	0.00	0.00	0.00	0.00	1.14	48.55	49.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.69	57.49	59.18	0.00	3.47	176.51	179.98	98.07	
16/01/2022	0.00	0.77	72.43	73.20	0.00	0.00	0.00	0.00	0.00	1.23	49.50	50.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.75	59.42	61.16	0.00	3.75	181.35	185.10	97.98	
17/01/2022	0.00	1.02	72.39	73.41	0.00	0.00	0.00	0.00	0.00	1.55	49.28	50.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.97	59.80	61.77	0.00	4.55	181.47	186.02	97.56	
18/01/2022	0.00	0.50	72.20	72.70	0.00	0.00	0.00	0.00	0.00	1.37	49.00	50.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.56	59.38	60.94	0.00	3.43	180.58	184.02	98.13	
19/01/2022	0.00	0.20	72.87	73.08	0.00	0.00	0.00	0.00	0.00	0.13	0.16	0.77	1.06	0.00	0.00	51.75	51.75	0.00	0.00	0.00	0.00	0.00	1.81	56.39	58.20	0.13	2.18	181.78	184.09	98.75
20/01/2022	0.00	1.02	72.13	73.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	52.58	52.58	0.00	0.00	0.00	0.00	0.00	1.94	56.32	58.26	0.00	2.96	181.03	183.99	98.39	
21/01/2022	0.00	0.81	72.40	73.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	52.54	52.54	0.00	0.00	0.00	0.00	0.00	1.86	56.43	58.29	0.00	2.68	181.37	184.04	98.55	
22/01/2022	0.00	1.27	71.93	73.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	52.52	52.52	0.00	0.00	0.00	0.00	0.00	1.62	56.64	58.26	0.00	2.89	181.08	183.97	98.43	
23/01/2022	0.00	0.97	72.22	73.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	52.44	52.44	0.00	0.00	0.00	0.00	0.00	1.62	56.76	58.39	0.00	2.59	181.43	184.02	98.59	
24/01/2022	0.00	1.86	61.27	63.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	56.29	56.29	0.00	0.00	0.00	0.00	0.00	1.70	62.82	64.52	0.00	3.55	180.38	183.94	98.07	
25/01/2022	0.00	0.75	59.37	60.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	57.80	57.80	0.00	0.00	0.00	0.00	0.00	2.16	63.85	66.01	0.00	2.91	181.03	183.93	98.42	
26/01/2022	0.02	0.52	57.70	58.24	0.02	0.02	0.53	0.57	0.02	0.79	24.64	25.44	0.04	0.05	31.78	31.87	0.00	0.03	0.65	0.68	0.09	2.17	61.58	63.84	0.19	3.58	176.87	180.64	97.91	
27/01/2022	0.00	0.60	57.24	57.85	0.00	0.00	0.00	0.00	0.00	2.46	59.51	61.97	0.00	0.00	0.00	0.00	0.00	0.00	30.35	30.35	0.00	0.95	33.87	34.83	0.00	4.02	180.98	184.99	97.83	
28/01/2022	0.00	1.28	74.38	75.66	0.00	0.00	0.00	0.00	0.00	0.14	0.36	17.31	17.81	0.00	0.00	0.00	0.00	0.00	0.00	47.09	47.09	0.00	1.51	43.01	44.52	0.14	3.15	181.79	185.08	98.22
29/01/2022	0.00	1.15	81.53	82.68	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	39.65	39.65	0.00	2.13	60.39	62.52	0.00	3.28	181.57	184.85	98.23	
30/01/2022	0.00	1.20	80.82	82.02	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	39.43	39.43	0.00	1.55	60.33	61.88	0.00	2.75	180.58	183.32	98.50	
31/01/2022	0.00	0.90	79.51	80.40	0.00	0.00	0.00	0.00	0.00	0.04	0.10	0.14	0.00	0.00	0.00	0.00	0.00	0.00	39.73	39.73	0.00	2.21	57.68	59.88	0.00	3.14	177.02	180.16	98.26	
Total [mL]:	0.31	22.62	1595.83	1618.76	0.02	0.02	510.47	510.51	0.28	11.59	382.84	394.72	0.17	1.17	706.12	707.46	0.00	0.09	828.69	828.78	0.09	48.13	1562.11	1610.33	0.88	83.63	5586.07	5670.57		

Water Volume [%]:

Untreated: 0.02 %
Below Dose 1.47 %
To Dose 98.51 %

Notes: 1. UV Comparative Dose: 18.1 mJ/cm²

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-09-412-02**

WATER TREATMENT PLANT UV REPORT

Report Period: **January 2022**

Report Created: **Tuesday, February 01, 2022**

Date	Transmittance (%)				UVR_D100A			UVR_D200A			UVR_D300A			UVR_D400A			UVR_D500A			UVR_D600A		
	Branch 1		Branch 2		UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²		
	Avg.	Min.	Avg.	Min.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.
01/01/2022	91.3	87.1	94.0	93.5	16.4	22.6	21.4	OL	OL	OL	OL	OL	OL	18.2	22.2	21.2	20.0	22.0	21.2	OL	OL	OL
02/01/2022	91.0	89.1	94.1	93.5	16.2	22.8	21.4	OL	OL	OL	OL	OL	OL	18.0	22.1	21.2	19.9	22.0	21.2	OL	OL	OL
03/01/2022	90.8	89.7	94.1	93.3	16.2	23.6	21.4	OL	OL	OL	OL	OL	OL	18.2	22.2	21.2	19.8	21.9	21.1	OL	OL	OL
04/01/2022	93.8	90.2	94.0	93.2	0.0	30.8	21.4	25.1	71.5	32.4	OL	OL	OL	12.3	22.3	19.8	19.8	22.0	21.2	OL	OL	OL
05/01/2022	94.5	80.3	93.9	93.5	OL	OL	OL	22.9	33.2	27.0	OL	OL	OL	16.3	22.4	21.3	20.5	21.9	21.3	OL	OL	OL
06/01/2022	93.8	93.1	93.8	93.3	OL	OL	OL	22.1	30.3	25.4	OL	OL	OL	0.0	22.3	21.3	19.4	24.1	21.4	15.6	91.3	21.3
07/01/2022	93.6	93.2	93.8	93.1	OL	OL	OL	20.8	25.7	24.5	OL	OL	OL	OL	OL	OL	19.3	23.5	21.4	15.7	22.7	21.3
08/01/2022	93.6	93.1	93.7	93.2	OL	OL	OL	20.1	24.9	23.7	OL	OL	OL	OL	OL	OL	19.6	23.8	21.4	15.2	22.7	21.3
09/01/2022	93.5	93.0	93.7	93.2	OL	OL	OL	19.7	23.8	22.8	OL	OL	OL	OL	OL	OL	19.5	23.6	21.4	15.4	22.8	21.2
10/01/2022	93.5	93.0	93.6	92.8	OL	OL	OL	19.0	42.0	22.1	OL	OL	OL	OL	OL	OL	18.9	30.5	21.4	15.6	44.3	21.3
11/01/2022	93.7	93.1	93.8	93.2	OL	OL	OL	18.9	22.8	21.7	OL	OL	OL	OL	OL	OL	19.5	22.7	21.4	15.4	22.2	21.2
12/01/2022	93.7	93.0	93.9	93.1	0.0	104.0	21.3	0.0	44.0	21.4	0.0	46.7	21.3	OL	OL	OL	19.4	26.3	21.5	15.9	27.2	21.3
13/01/2022	93.6	92.7	93.9	93.0	0.0	94.8	21.2	OL	OL	OL	15.1	55.4	21.5	0.0	94.9	25.8	0.0	31.4	21.4	0.0	74.0	21.4
14/01/2022	93.5	92.9	93.9	93.2	17.1	23.1	21.1	OL	OL	OL	16.6	22.4	21.5	OL	OL	OL	OL	OL	OL	16.1	22.2	21.3
15/01/2022	93.4	92.7	93.9	93.2	17.2	21.6	21.1	OL	OL	OL	16.6	22.4	21.5	OL	OL	OL	OL	OL	OL	16.0	22.2	21.4
16/01/2022	93.1	92.5	93.6	93.1	17.2	21.7	21.1	OL	OL	OL	16.7	22.4	21.5	OL	OL	OL	OL	OL	OL	15.9	22.3	21.3
17/01/2022	92.9	74.8	93.5	92.6	17.3	21.6	21.1	OL	OL	OL	16.6	22.4	21.5	OL	OL	OL	OL	OL	OL	15.8	22.3	21.3
18/01/2022	92.9	83.4	93.7	93.0	17.2	21.9	21.1	OL	OL	OL	16.6	22.6	21.5	OL	OL	OL	OL	OL	OL	15.9	22.2	21.3
19/01/2022	92.7	92.0	93.5	92.9	17.1	21.8	21.1	OL	OL	OL	0.0	22.2	21.4	19.4	94.5	22.5	OL	OL	OL	16.0	22.6	21.4
20/01/2022	92.6	90.7	93.5	92.6	17.2	22.9	21.1	OL	OL	OL	OL	OL	OL	18.8	23.4	21.4	OL	OL	OL	15.9	22.4	21.4
21/01/2022	92.4	90.1	93.6	92.9	17.2	21.7	21.1	OL	OL	OL	OL	OL	OL	18.8	23.0	21.3	OL	OL	OL	15.8	22.4	21.4
22/01/2022	92.0	91.3	93.4	92.9	17.3	21.6	21.1	OL	OL	OL	OL	OL	OL	18.8	22.3	21.3	OL	OL	OL	15.9	22.3	21.4
23/01/2022	91.4	90.3	93.1	92.3	17.2	21.7	21.1	OL	OL	OL	OL	OL	OL	18.8	22.8	21.3	OL	OL	OL	15.8	22.4	21.4
24/01/2022	91.5	82.4	93.6	92.8	17.2	35.9	21.1	OL	OL	OL	OL	OL	OL	18.7	33.7	21.2	OL	OL	OL	13.9	39.3	21.3
25/01/2022	91.5	59.9	94.1	93.5	16.9	23.0	21.1	OL	OL	OL	OL	OL	OL	18.6	22.7	21.2	OL	OL	OL	15.5	22.7	21.3
26/01/2022	92.9	88.3	94.4	93.8	0.0	79.2	21.2	0.0	68.9	35.6	0.0	46.7	21.4	0.0	88.9	21.4	0.0	26.2	19.9	0.0	77.4	21.3
27/01/2022	93.8	75.9	93.9	93.4	17.0	22.3	21.2	OL	OL	OL	16.4	22.3	21.3	OL	OL	OL	18.6	102.4	22.5	0.0	35.6	21.3
28/01/2022	93.7	92.6	93.9	93.3	16.9	23.0	21.1	OL	OL	OL	0.0	51.4	21.4	OL	OL	OL	19.9	36.1	29.2	13.3	71.1	21.4
29/01/2022	93.7	91.0	93.9	93.5	17.2	21.5	21.1	OL	OL	OL	OL	OL	OL	OL	OL	OL	25.6	34.7	30.7	15.4	22.8	21.3
30/01/2022	93.6	89.8	93.8	93.3	17.2	21.5	21.1	OL	OL	OL	OL	OL	OL	OL	OL	OL	25.1	33.3	29.8	15.3	22.9	21.3
31/01/2022	93.5	92.1	93.8	93.1	17.2	22.7	21.1	OL	OL	OL	0.0	50.2	23.5	OL	OL	OL	24.3	36.6	29.0	15.6	24.3	21.4

Notes:
1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

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-09-412-02**

WATER TREATMENT PLANT UV REPORT

Report Period: **February 2022**

Report Created: **Tuesday, March 01, 2022**

Date	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	
01/02/2022	0.00	1.31	80.65	81.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.38	40.38	0.00	1.71	59.35	61.05	0.00	3.01	180.38	183.39			98.36	
02/02/2022	0.00	1.27	81.47	82.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.04	40.04	0.00	1.99	60.21	62.20	0.00	3.25	181.73	184.98			98.24	
03/02/2022	0.00	1.03	81.70	82.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.70	39.70	0.00	1.92	60.61	62.52	0.00	2.95	182.01	184.96			98.40	
04/02/2022	0.00	1.46	82.78	84.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.00	40.00	0.00	1.91	63.60	65.51	0.00	3.38	186.39	189.76			98.22	
05/02/2022	0.00	1.36	83.65	85.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	40.38	40.38	0.00	2.14	64.48	66.62	0.00	3.49	188.51	192.00			98.18	
06/02/2022	0.00	1.42	83.51	84.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.79	39.79	0.00	2.14	64.98	67.12	0.00	3.56	188.28	191.84			98.14	
07/02/2022	0.00	1.18	81.78	82.95	0.00	0.00	2.57	2.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.58	39.58	0.00	2.26	67.01	69.28	0.00	3.44	190.94	194.37			98.23	
08/02/2022	0.00	0.41	78.51	78.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.68	46.68	0.00	2.01	70.34	72.35	0.00	2.42	195.53	197.95			98.78	
09/02/2022	0.00	0.30	44.11	44.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.79	15.79	0.00	0.00	37.89	37.89	0.00	0.61	18.63	19.24	0.00	0.91	116.42	117.33	99.22
10/02/2022	0.00	0.94	69.94	70.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	54.40	54.40	0.00	0.00	69.48	69.48	0.00	0.00	0.00	0.00	0.00	0.94	193.82	194.76	99.52
11/02/2022	0.00	1.26	68.74	70.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60.00	60.00	0.00	0.00	70.00	70.00	0.00	0.00	0.00	0.00	0.00	1.26	198.74	200.00	99.37
12/02/2022	0.00	1.36	68.63	69.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60.00	60.00	0.00	0.00	70.02	70.02	0.00	0.00	0.00	0.00	0.00	1.36	198.65	200.01	99.32
13/02/2022	0.00	1.41	68.57	69.99	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	70.01	70.01	0.00	0.00	0.00	0.00	0.00	1.41	198.56	199.97	99.29
14/02/2022	0.00	1.21	68.80	70.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.99	59.99	0.00	0.00	69.99	69.99	0.00	0.00	0.00	0.00	0.00	1.21	198.78	199.99	99.39
15/02/2022	0.00	1.36	68.63	69.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	58.04	58.04	0.00	0.00	69.99	69.99	0.00	0.00	0.00	0.00	0.00	1.36	196.66	198.02	99.31
16/02/2022	0.00	0.86	40.62	41.48	0.00	0.00	0.00	0.00	0.00	0.53	14.15	14.68	0.00	0.00	15.25	15.25	0.00	0.00	40.73	40.73	0.00	0.00	0.00	0.00	0.00	1.39	110.74	112.13	98.76
17/02/2022	0.00	1.44	70.26	71.70	0.00	0.00	0.00	0.00	0.00	1.46	46.77	48.23	0.00	0.00	0.00	0.00	0.00	0.00	71.55	71.55	0.00	0.00	0.00	0.00	0.00	2.90	188.58	191.48	98.48
18/02/2022	0.00	1.43	69.40	70.83	0.00	0.00	0.00	0.00	0.00	1.41	47.84	49.25	0.00	0.00	0.00	0.00	0.00	0.00	70.82	70.82	0.00	0.00	0.00	0.00	0.00	2.84	188.07	190.90	98.51
19/02/2022	0.02	1.14	63.32	64.49	0.00	0.00	0.00	0.00	0.00	1.14	43.15	44.29	0.00	0.00	0.00	0.00	0.00	0.00	63.58	63.58	0.00	0.00	0.00	0.00	0.02	2.29	170.05	172.36	98.66
20/02/2022	0.00	1.12	68.89	70.01	0.00	0.00	0.00	0.00	0.00	1.33	46.69	48.02	0.00	0.00	0.00	0.00	0.00	0.00	70.00	70.00	0.00	0.00	0.00	0.00	0.00	2.46	185.58	188.04	98.69
21/02/2022	0.00	1.03	68.56	69.59	0.00	0.00	0.00	0.00	0.00	1.88	47.61	49.50	0.00	0.00	0.00	0.00	0.00	0.00	65.02	65.02	0.00	0.00	0.00	0.00	0.00	2.91	181.20	184.11	98.42
22/02/2022	0.00	1.36	68.69	70.05	0.00	0.00	0.00	0.00	0.00	1.47	49.93	51.40	0.00	0.00	0.00	0.00	0.00	0.00	61.57	61.57	0.00	0.00	0.00	0.00	0.00	2.83	180.19	183.02	98.45
23/02/2022	0.00	1.46	68.53	69.99	0.00	0.00	0.00	0.00	0.00	1.47	51.25	52.72	0.00	0.00	0.00	0.00	0.00	0.00	63.01	63.01	0.00	0.00	0.00	0.00	0.00	2.93	182.79	185.72	98.42
24/02/2022	0.00	1.27	68.74	70.01	0.00	0.00	0.00	0.00	0.00	1.68	51.91	53.59	0.00	0.00	0.00	0.00	0.00	0.00	64.09	64.09	0.00	0.00	0.00	0.00	0.00	2.95	184.74	187.69	98.43
25/02/2022	0.00	1.07	68.94	70.01	0.00	0.00	0.00	0.00	0.00	2.04	51.31	53.35	0.00	0.00	0.00	0.00	0.00	0.00	63.67	63.67	0.00	0.00	0.00	0.00	0.00	3.11	183.91	187.02	98.34
26/02/2022	0.00	0.93	44.57	45.50	0.00	0.00	0.00	0.00	0.00	2.52	56.97	59.49	0.00	0.00	0.00	0.00	0.00	0.00	56.31	56.31	0.00	0.80	24.88	25.68	0.00	4.24	182.73	186.97	97.73
27/02/2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.32	68.60	70.91	0.00	0.00	0.00	0.00	0.00	0.00	42.79	42.79	0.00	1.93	71.43	73.36	0.00	4.25	182.82	187.06	97.73
28/02/2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.17	67.36	69.53	0.00	0.00	0.00	0.00	0.00	0.00	41.97	41.97	0.00	2.19	69.45	71.65	0.00	4.37	178.78	183.15	97.62
Total [ML]:	0.02	30.40	1812.00	1842.42	0.00	0.00	2.57	2.57	0.00	21.42	643.54	664.96	0.00	0.00	383.44	383.44	0.00	0.00	1559.03	1559.03	0.00	21.61	694.99	716.60	0.02	73.42	5095.57	5169.02	

Water Volume [%]:

Untreated: 0.00 %
Below Dose 1.42 %
To Dose 98.58 %

Notes: 1. UV Comparative Dose: 18.1 mJ/cm²

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-09-412-02**

WATER TREATMENT PLANT UV REPORT

Report Period: **February 2022**

Report Created: **Tuesday, March 01, 2022**

Date	Transmittance (%)				UVR_D100A			UVR_D200A			UVR_D300A			UVR_D400A			UVR_D500A			UVR_D600A		
	Branch 1		Branch 2		UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²		
	Avg.	Min.	Avg.	Min.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.
01/02/2022	93.5	86.5	93.7	93.0	17.3	22.7	21.1	OL	OL	OL	OL	OL	OL	OL	OL	OL	23.4	32.8	28.5	15.5	22.9	21.4
02/02/2022	93.5	89.0	93.7	93.1	17.2	23.0	21.1	OL	OL	OL	OL	OL	OL	OL	OL	OL	23.5	31.9	28.3	15.4	22.8	21.3
03/02/2022	93.3	89.2	93.6	93.0	17.3	23.0	21.1	OL	OL	OL	OL	OL	OL	OL	OL	OL	23.1	32.0	28.0	15.4	22.9	21.3
04/02/2022	93.7	92.1	93.9	93.2	17.2	21.5	21.1	OL	OL	OL	OL	OL	OL	OL	OL	OL	22.9	31.4	28.0	15.1	22.8	21.3
05/02/2022	93.7	91.3	94.0	93.0	17.0	21.5	21.1	OL	OL	OL	OL	OL	OL	OL	OL	OL	22.8	31.4	27.5	15.4	22.8	21.3
06/02/2022	93.4	87.9	93.7	93.3	15.6	31.1	21.0	OL	OL	OL	OL	OL	OL	OL	OL	OL	22.0	39.2	27.1	15.6	46.5	21.3
07/02/2022	93.4	80.7	93.7	89.6	15.3	27.6	21.3	0.0	93.5	28.2	OL	OL	OL	OL	OL	OL	17.9	34.7	27.1	10.6	27.6	21.3
08/02/2022	93.3	87.7	93.5	92.7	16.6	25.3	21.3	OL	OL	OL	OL	OL	OL	OL	OL	OL	18.6	27.8	24.5	15.6	23.1	21.2
09/02/2022	93.3	92.4	93.6	93.0	0.0	81.9	21.5	OL	OL	OL	OL	OL	OL	0.0	91.8	21.6	0.0	102.3	22.0	0.0	26.7	21.3
10/02/2022	93.2	91.1	93.4	92.6	16.6	23.4	21.4	OL	OL	OL	OL	OL	OL	18.6	22.2	21.3	18.0	24.3	21.2	OL	OL	OL
11/02/2022	92.9	0.0	92.7	0.5	16.6	22.8	21.3	OL	OL	OL	OL	OL	OL	18.5	22.5	21.2	18.1	23.2	21.2	OL	OL	OL
12/02/2022	93.1	92.2	92.2	91.8	16.5	22.5	21.3	OL	OL	OL	OL	OL	OL	18.5	22.1	21.2	18.1	22.3	21.2	OL	OL	OL
13/02/2022	93.4	90.8	92.5	91.8	16.6	23.0	21.3	OL	OL	OL	OL	OL	OL	18.4	22.5	21.2	18.2	22.8	21.2	OL	OL	OL
14/02/2022	93.5	93.0	92.7	92.3	16.4	23.3	21.3	OL	OL	OL	OL	OL	OL	18.5	22.7	21.2	18.0	23.7	21.2	OL	OL	OL
15/02/2022	93.4	89.6	92.6	91.9	16.5	23.5	21.3	OL	OL	OL	OL	OL	OL	18.3	22.0	21.2	18.2	23.0	21.2	OL	OL	OL
16/02/2022	92.9	90.8	92.1	91.6	0.0	77.2	21.5	OL	OL	OL	15.4	50.0	21.6	0.0	30.8	21.3	0.0	101.4	21.4	OL	OL	OL
17/02/2022	92.6	92.0	91.9	91.2	16.7	22.1	21.3	OL	OL	OL	16.4	23.4	21.5	OL	OL	OL	18.4	23.1	21.2	OL	OL	OL
18/02/2022	92.4	90.6	91.8	91.1	16.6	22.2	21.3	OL	OL	OL	16.5	23.3	21.5	OL	OL	OL	18.4	23.0	21.2	OL	OL	OL
19/02/2022	92.7	91.2	92.1	91.3	0.0	77.0	21.4	OL	OL	OL	0.0	57.0	21.6	OL	OL	OL	0.0	101.8	21.3	OL	OL	OL
20/02/2022	92.9	2.7	91.8	91.3	16.4	22.5	21.3	OL	OL	OL	16.2	23.4	21.5	OL	OL	OL	18.3	22.8	21.2	OL	OL	OL
21/02/2022	93.0	2.4	91.8	91.1	16.5	36.8	21.4	OL	OL	OL	15.8	35.7	21.5	OL	OL	OL	18.4	36.5	21.2	OL	OL	OL
22/02/2022	93.1	2.4	91.9	91.5	16.5	23.3	21.3	OL	OL	OL	16.4	22.7	21.5	OL	OL	OL	18.3	21.8	21.2	OL	OL	OL
23/02/2022	93.3	3.0	92.0	90.9	16.5	22.6	21.3	OL	OL	OL	16.2	22.6	21.5	OL	OL	OL	18.5	23.0	21.2	OL	OL	OL
24/02/2022	93.4	92.0	92.1	91.6	16.3	22.9	21.3	OL	OL	OL	16.3	22.4	21.4	OL	OL	OL	18.5	22.6	21.2	OL	OL	OL
25/02/2022	93.8	92.6	92.5	91.9	16.5	22.4	21.3	OL	OL	OL	16.4	22.5	21.5	OL	OL	OL	18.4	21.7	21.2	OL	OL	OL
26/02/2022	93.5	92.6	92.2	91.5	0.0	30.8	21.3	OL	OL	OL	15.8	23.6	21.4	OL	OL	OL	18.2	23.2	21.3	13.1	61.3	21.2
27/02/2022	93.6	93.0	92.2	91.8	OL	OL	OL	OL	OL	OL	16.3	22.3	21.3	OL	OL	OL	17.9	23.0	21.4	15.7	22.3	21.2
28/02/2022	93.4	92.8	92.1	91.5	OL	OL	OL	OL	OL	OL	16.5	22.4	21.3	OL	OL	OL	18.1	23.0	21.4	15.3	22.3	21.2

Notes:
1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

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-09-412-02**

WATER TREATMENT PLANT UV REPORT

Report Period: **March 2022**

Report Created: **Friday, April 01, 2022**

Date	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			
01/03/2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.90	66.53	68.43	0.00	0.00	0.00	0.00	0.00	0.00	41.91	41.91	0.00	1.89	67.42	69.30	0.00	3.79	175.85	179.64	97.89		
02/03/2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.77	65.04	66.80	0.00	0.00	0.00	0.00	0.00	0.00	41.07	41.07	0.00	1.98	65.93	67.90	0.00	3.74	172.03	175.78	97.87		
03/03/2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.27	67.23	69.50	0.00	0.00	0.00	0.00	0.00	0.00	41.75	41.75	0.00	1.86	68.66	70.51	0.00	4.13	177.64	181.77	97.73		
04/03/2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.28	67.35	69.63	0.00	0.00	0.00	0.00	0.00	0.00	41.98	41.98	0.00	2.10	68.14	70.24	0.00	4.38	177.47	181.85	97.59		
05/03/2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.08	67.42	69.50	0.00	0.00	0.00	0.00	0.00	0.00	42.68	42.68	0.00	1.94	67.84	69.78	0.00	4.01	177.94	181.95	97.79		
06/03/2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.49	66.07	68.56	0.00	0.00	0.00	0.00	0.00	0.00	43.04	43.04	0.00	1.95	68.51	70.46	0.00	4.44	177.61	182.05	97.56		
07/03/2022	0.00	0.00	0.00	0.01	0.00	0.06	0.47	0.53	0.15	1.96	48.62	50.74	0.00	0.00	15.74	15.74	0.00	0.00	43.48	43.48	0.00	2.14	69.29	71.42	0.16	4.16	177.61	181.93	97.62		
08/03/2022	0.00	0.00	40.92	40.92	0.00	0.00	12.68	12.68	0.00	0.97	28.78	29.74	0.00	0.00	27.94	27.94	0.00	0.00	11.60	11.60	0.00	2.01	60.57	62.57	0.00	2.97	182.48	185.46	98.40		
09/03/2022	0.00	0.05	74.91	74.96	0.00	0.00	0.00	0.00	0.00	1.50	51.09	52.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89	61.45	63.34	0.00	3.45	187.45	190.89	98.20		
10/03/2022	0.00	0.21	75.03	75.24	0.00	0.00	0.00	0.00	0.00	2.24	50.63	52.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.82	62.07	63.89	0.00	4.27	187.72	191.99	97.78		
11/03/2022	0.00	0.56	73.59	74.15	0.00	0.00	0.00	0.00	0.00	2.33	49.80	52.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.06	60.86	62.92	0.00	4.95	184.25	189.20	97.38		
12/03/2022	0.00	0.21	71.95	72.15	0.00	0.00	6.63	6.63	0.00	15.57	4.82	20.39	0.00	0.00	35.16	35.16	0.00	0.00	0.00	0.00	0.00	1.94	53.83	55.77	0.00	17.72	172.38	190.10	90.68		
13/03/2022	0.00	0.03	48.50	48.53	0.00	0.00	68.65	68.65	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	0.00	0.00	0.00	0.00	0.03	193.64	193.67	99.98	
14/03/2022	0.00	0.30	48.28	48.59	0.00	0.00	68.80	68.80	0.00	0.00	0.00	0.00	0.00	0.00	76.60	76.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	193.68	193.99	99.84	
15/03/2022	0.00	0.00	22.39	22.39	0.00	0.04	26.98	27.02	0.00	0.00	0.00	0.00	0.14	0.14	8.43	8.71	0.00	0.00	0.00	0.00	0.00	0.72	21.29	22.01	0.14	0.90	79.09	80.13	98.70		
16/03/2022	0.00	0.61	54.43	55.04	0.00	0.05	30.08	30.13	0.00	0.08	22.63	22.71	0.00	0.00	0.00	0.00	0.00	0.00	33.23	33.23	0.00	0.95	24.75	25.70	0.00	1.68	165.12	166.80	98.99		
17/03/2022	0.00	0.39	30.91	31.29	0.00	0.00	0.00	0.00	0.00	0.04	22.69	22.73	0.00	0.00	0.00	0.00	0.00	0.00	27.45	27.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	81.05	81.48	99.48
18/03/2022	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	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	0.00	OL	
19/03/2022	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	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	0.00	OL	
20/03/2022	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	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	0.00	OL	
21/03/2022	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	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	0.00	OL	
22/03/2022	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	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	0.00	OL	
23/03/2022	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	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	0.00	OL	
24/03/2022	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	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	0.00	OL	
25/03/2022	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	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	0.00	OL	
26/03/2022	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	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	0.00	OL	
27/03/2022	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	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	0.00	OL	
28/03/2022	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	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	0.00	OL	
29/03/2022	0.00	0.56	2.41	2.97	0.00	0.00	6.32	6.32	0.00	0.00	26.99	26.99	0.00	0.00	24.72	24.72	0.00	0.00	37.84	37.84	0.00	0.00	0.00	0.00	0.00	0.00	0.56	98.29	98.85	99.43	
30/03/2022	0.01	0.01	0.15	0.16	0.00	0.00	56.36	56.36	0.00	0.00	54.41	54.41	0.00	0.00	23.62	23.62	0.00	0.00	80.45	80.45	0.00	0.00	0.00	0.00	0.01	0.01	214.99	215.00	99.99		
31/03/2022	0.00	0.00	0.00	0.00	0.00	0.00	84.99	84.99	0.00	0.00	51.41	51.41	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	215.01	215.01	100.00		
Total [ML]:	0.01	2.94	543.46	546.40	0.00	0.15	361.94	362.09	0.15	37.48	811.49	849.12	0.14	0.14	288.71	288.99	0.00	0.00	565.12	565.12	0.00	25.23	820.59	845.83	0.30	65.94	3391.30	3457.54			

Water Volume [%]:

Untreated: 0.01 %
Below Dose 1.91 %
To Dose 98.08 %

- Notes:**
1. UV Comparative Dose: 18.1 mJ/cm²
 2. OL - Offline

Submitted By (Print): M.Szmon

Signature: Original signed by M.Szmon



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**
Licence Number: **PWS-09-412-02**

WATER TREATMENT PLANT UV REPORT

Report Period: **March 2022**

Report Created: **Friday, April 01, 2022**

Date	Transmittance (%)				UVR_D100A			UVR_D200A			UVR_D300A			UVR_D400A			UVR_D500A			UVR_D600A		
	Branch 1		Branch 2		UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²		
	Avg.	Min.	Avg.	Min.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.
01/03/2022	93.4	92.7	92.1	91.6	OL	OL	OL	OL	OL	OL	16.5	32.0	21.3	OL	OL	OL	18.0	30.0	21.4	15.8	29.1	21.3
02/03/2022	93.5	91.5	92.2	91.8	OL	OL	OL	OL	OL	OL	16.6	22.3	21.3	OL	OL	OL	18.2	23.0	21.4	15.7	22.3	21.3
03/03/2022	93.4	91.6	92.1	91.4	OL	OL	OL	OL	OL	OL	16.7	22.2	21.3	OL	OL	OL	18.0	24.1	21.4	15.7	22.3	21.2
04/03/2022	93.3	92.6	92.1	91.5	OL	OL	OL	OL	OL	OL	15.2	41.1	21.3	OL	OL	OL	18.0	29.6	21.4	15.7	33.2	21.3
05/03/2022	93.5	3.3	92.1	91.5	OL	OL	OL	OL	OL	OL	15.8	22.3	20.9	OL	OL	OL	18.1	22.9	21.4	15.5	22.4	21.3
06/03/2022	93.7	92.8	92.3	91.6	OL	OL	OL	OL	OL	OL	15.5	21.6	20.3	OL	OL	OL	18.2	22.9	21.4	15.7	22.3	21.3
07/03/2022	94.0	3.4	92.7	91.8	0.0	0.0	0.0	0.0	72.7	23.1	0.0	22.2	19.7	14.3	63.7	21.4	18.2	26.5	21.5	15.7	22.6	21.2
08/03/2022	95.0	92.7	94.0	93.4	0.0	63.6	22.8	0.0	88.4	24.5	15.1	45.4	21.5	0.0	35.9	21.3	0.0	32.8	21.7	15.8	23.3	21.3
09/03/2022	95.2	93.8	94.3	93.4	17.6	29.3	21.9	OL	OL	OL	16.3	22.4	21.3	OL	OL	OL	OL	OL	OL	15.8	22.5	21.3
10/03/2022	95.2	93.9	94.4	93.8	17.5	28.4	21.2	OL	OL	OL	14.9	21.9	20.2	OL	OL	OL	OL	OL	OL	15.7	22.5	21.3
11/03/2022	95.4	93.8	94.6	94.0	17.5	28.0	21.2	OL	OL	OL	14.1	20.1	18.8	OL	OL	OL	OL	OL	OL	15.7	22.5	21.3
12/03/2022	95.2	2.9	94.3	93.7	17.5	25.1	21.4	22.6	93.1	27.3	0.0	27.5	17.7	16.0	87.0	21.3	OL	OL	OL	0.0	33.0	21.3
13/03/2022	95.1	88.6	93.9	93.4	17.3	31.2	21.8	21.1	28.6	25.8	OL	OL	OL	18.6	21.6	21.1	OL	OL	OL	OL	OL	OL
14/03/2022	93.9	92.4	92.7	91.8	17.4	27.5	21.4	18.6	25.3	21.8	OL	OL	OL	18.4	21.6	21.1	OL	OL	OL	OL	OL	OL
15/03/2022	93.4	89.9	92.4	91.7	0.0	93.5	22.1	0.0	56.4	21.5	OL	OL	OL	0.0	87.5	21.9	OL	OL	OL	0.0	50.4	21.2
16/03/2022	93.1	90.2	91.9	88.6	0.0	92.2	21.5	0.0	56.8	21.6	16.1	90.9	21.4	OL	OL	OL	19.4	105.2	23.4	0.0	48.4	21.1
17/03/2022	93.4	90.2	92.1	90.5	0.0	32.4	21.4	OL	OL	OL	0.0	34.4	21.4	OL	OL	OL	0.0	47.4	23.2	OL	OL	OL
18/03/2022	94.3	93.8	93.1	92.6	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
19/03/2022	94.2	92.7	93.0	92.6	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
20/03/2022	94.4	92.8	93.4	92.7	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
21/03/2022	94.6	93.9	93.6	92.9	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
22/03/2022	94.9	94.3	93.9	93.2	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
23/03/2022	95.2	94.1	94.3	93.9	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
24/03/2022	95.3	94.7	94.3	93.9	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
25/03/2022	95.4	94.9	94.5	94.1	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
26/03/2022	95.4	2.5	94.5	94.1	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
27/03/2022	95.4	94.6	95.0	0.0	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
28/03/2022	95.3	92.9	95.6	95.4	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL	OL
29/03/2022	95.0	92.1	95.2	92.0	0.0	83.9	25.3	0.0	98.5	23.0	22.4	94.0	30.2	16.3	98.8	21.4	18.2	95.7	23.3	OL	OL	OL
30/03/2022	93.9	92.0	94.0	93.4	0.0	88.4	43.8	18.8	93.4	21.3	21.6	39.8	27.7	0.0	37.1	21.2	17.9	24.2	21.1	OL	OL	OL
31/03/2022	93.7	91.5	93.9	93.4	OL	OL	OL	18.5	23.5	21.1	21.9	29.3	27.3	OL	OL	OL	17.7	23.2	21.1	OL	OL	OL

Notes:
1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

Submitted By (Print): __M.Szmon

Signature: __Original signed by M.Szmon



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**
Licence Number: **PWS-09-412-02**

WATER TREATMENT PLANT UV REPORT

Report Period: **April 2022**

Report Created: **Sunday, May 01, 2022**

Date	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	
01/04/2022	0.00	0.00	0.00	0.00	0.00	0.00	85.00	85.00	0.00	0.00	51.29	51.29	0.00	0.00	0.00	0.00	0.00	0.00	78.67	78.67	0.00	0.00	0.00	0.00	0.00	0.00	214.96	214.96	100.00
02/04/2022	0.00	0.00	0.00	0.00	0.00	0.00	81.61	81.61	0.00	0.00	48.61	48.61	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	204.98	204.98	100.00
03/04/2022	0.00	0.00	0.00	0.00	0.00	0.00	79.73	79.73	0.00	0.00	47.40	47.40	0.00	0.00	0.00	0.00	0.00	0.00	72.86	72.86	0.00	0.00	0.00	0.00	0.00	0.00	199.99	199.99	100.00
04/04/2022	0.00	0.00	0.00	0.00	0.00	0.00	79.81	79.81	0.00	0.00	47.36	47.36	0.00	0.00	0.00	0.00	0.00	0.00	72.76	72.76	0.00	0.00	0.00	0.00	0.00	0.00	199.93	199.93	100.00
05/04/2022	0.00	0.00	0.00	0.00	0.00	0.00	79.54	79.54	0.00	0.00	47.00	47.00	0.00	0.00	0.00	0.00	0.00	0.00	72.32	72.32	0.00	0.00	0.00	0.00	0.00	0.00	198.87	198.87	100.00
06/04/2022	0.00	0.00	0.00	0.00	0.00	0.00	77.64	77.64	0.00	0.00	45.41	45.41	0.00	0.00	0.00	0.00	0.00	0.00	70.37	70.37	0.00	0.00	0.00	0.00	0.00	0.00	193.42	193.42	100.00
07/04/2022	0.00	0.00	0.00	0.00	0.00	0.00	75.11	75.11	0.00	0.00	42.77	42.77	0.00	0.00	0.00	0.00	0.00	0.00	67.12	67.12	0.00	0.00	0.00	0.00	0.00	0.00	185.00	185.00	100.00
08/04/2022	0.00	0.00	0.00	0.00	0.00	0.00	75.18	75.18	0.00	0.00	42.79	42.79	0.00	0.00	0.00	0.00	0.00	0.00	67.04	67.04	0.00	0.00	0.00	0.00	0.00	0.00	185.00	185.00	100.00
09/04/2022	0.00	0.00	0.00	0.00	0.00	0.00	75.25	75.25	0.00	0.00	42.82	42.82	0.00	0.00	0.00	0.00	0.00	0.05	66.91	66.96	0.00	0.00	0.00	0.00	0.00	0.05	184.98	185.03	99.97
10/04/2022	0.00	0.05	35.60	35.65	0.00	0.00	36.87	36.87	0.00	0.00	44.29	44.29	0.00	0.00	0.00	0.00	0.00	0.00	68.18	68.18	0.00	0.00	0.00	0.00	0.00	0.05	184.94	184.99	99.97
11/04/2022	0.00	0.10	69.65	69.75	0.00	0.00	0.00	0.00	0.00	0.00	45.95	45.95	0.00	0.00	0.00	0.00	0.00	0.05	69.24	69.29	0.00	0.00	0.00	0.00	0.00	0.15	184.84	184.99	99.92
12/04/2022	0.00	0.40	63.95	64.35	0.00	0.00	0.00	0.00	0.00	0.00	52.65	52.65	0.00	0.00	0.00	0.00	0.00	0.00	67.98	67.98	0.00	0.00	0.00	0.00	0.00	0.40	184.58	184.98	99.78
13/04/2022	0.00	0.20	58.32	58.52	0.00	0.00	0.00	0.00	0.00	0.04	59.98	60.02	0.00	0.00	0.00	0.00	0.00	0.00	66.47	66.47	0.00	0.00	0.00	0.00	0.00	0.25	184.77	185.02	99.87
14/04/2022	0.00	0.32	58.15	58.47	0.00	0.00	0.00	0.00	0.00	0.17	59.93	60.10	0.00	0.00	0.00	0.00	0.00	0.00	66.44	66.44	0.00	0.00	0.00	0.00	0.00	0.49	184.52	185.01	99.73
15/04/2022	0.00	0.12	57.01	57.13	0.00	0.00	0.00	0.00	0.00	0.04	59.20	59.24	0.00	0.00	0.00	0.00	0.00	0.14	64.88	65.02	0.00	0.00	0.00	0.00	0.00	0.30	181.10	181.40	99.84
16/04/2022	0.00	0.29	53.11	53.40	0.00	0.00	0.00	0.00	0.00	0.20	56.25	56.45	0.00	0.00	0.00	0.00	0.00	0.04	61.12	61.16	0.00	0.00	0.00	0.00	0.00	0.54	170.48	171.02	99.69
17/04/2022	0.00	0.15	52.17	52.32	0.00	0.00	0.00	0.00	0.00	0.23	55.44	55.68	0.00	0.00	0.00	0.00	0.00	0.00	60.02	60.02	0.00	0.00	0.00	0.00	0.00	0.38	167.64	168.01	99.77
18/04/2022	0.00	0.18	52.59	52.77	0.00	0.00	0.00	0.00	0.00	0.28	55.81	56.09	0.00	0.00	0.00	0.00	0.00	0.00	60.56	60.56	0.00	0.00	0.00	0.00	0.00	0.46	168.96	169.43	99.73
19/04/2022	0.00	0.23	55.91	56.14	0.00	0.00	0.00	0.00	0.00	0.12	58.26	58.39	0.00	0.00	0.00	0.00	0.00	0.05	63.99	64.04	0.00	0.00	0.00	0.00	0.00	0.40	178.17	178.57	99.78
20/04/2022	0.00	0.12	57.35	57.47	0.00	0.00	0.00	0.00	0.00	0.57	58.61	59.18	0.00	0.00	0.00	0.00	0.00	0.05	65.32	65.37	0.00	0.00	0.00	0.00	0.00	0.74	181.28	182.02	99.59
21/04/2022	0.00	0.20	57.34	57.54	0.00	0.00	0.00	0.00	0.00	0.25	58.85	59.10	0.00	0.00	0.00	0.00	0.00	0.05	65.29	65.34	0.00	0.00	0.00	0.00	0.00	0.49	181.48	181.97	99.73
22/04/2022	0.00	0.04	57.50	57.54	0.00	0.00	0.00	0.00	0.00	0.58	58.53	59.11	0.00	0.00	0.00	0.00	0.00	0.00	65.35	65.35	0.00	0.00	0.00	0.00	0.00	0.62	181.38	182.00	99.66
23/04/2022	0.00	0.04	57.57	57.61	0.00	0.00	0.00	0.00	0.00	0.21	58.86	59.06	0.00	0.00	0.00	0.00	0.00	0.05	65.29	65.34	0.00	0.00	0.00	0.00	0.00	0.29	181.72	182.01	99.84
24/04/2022	0.00	0.00	57.50	57.50	0.00	0.00	0.00	0.00	0.00	0.53	58.63	59.17	0.00	0.00	0.00	0.00	0.00	0.05	65.29	65.33	0.00	0.00	0.00	0.00	0.00	0.58	181.43	182.01	99.68
25/04/2022	0.00	0.16	57.23	57.39	0.00	0.00	0.00	0.00	0.00	0.12	59.20	59.32	0.00	0.00	0.00	0.00	0.00	0.09	65.17	65.26	0.00	0.00	0.00	0.00	0.00	0.38	181.60	181.98	99.79
26/04/2022	0.00	0.00	24.35	24.35	0.00	0.00	36.80	36.80	0.00	0.33	56.81	57.13	0.00	0.00	0.00	0.00	0.00	0.09	65.62	65.71	0.00	0.00	0.00	0.00	0.00	0.42	183.58	184.00	99.77
27/04/2022	0.00	0.00	0.00	0.00	0.00	0.00	64.91	64.91	0.00	0.36	53.96	54.32	0.00	0.00	0.00	0.00	0.00	0.09	66.67	66.76	0.00	0.00	0.00	0.00	0.00	0.45	185.54	185.99	99.76
28/04/2022	0.00	0.00	0.00	0.00	0.00	0.00	64.16	64.16	0.00	0.08	54.09	54.17	0.00	0.00	0.00	0.00	0.00	0.14	66.01	66.15	0.00	0.00	0.00	0.00	0.00	0.22	184.25	184.47	99.88
29/04/2022	0.00	0.00	0.00	0.00	0.00	0.00	63.21	63.21	0.00	0.23	52.70	52.93	0.00	0.00	0.00	0.00	0.00	0.00	64.95	64.95	0.00	0.00	0.00	0.00	0.00	0.23	180.86	181.09	99.87
30/04/2022	0.00	0.00	0.00	0.00	0.00	0.00	61.43	61.43	0.00	0.07	50.84	50.92	0.00	0.00	0.00	0.00	0.00	0.04	62.90	62.94	0.00	0.00	0.00	0.00	0.00	0.12	175.17	175.28	99.93
Total [ML]:	0.00	2.60	925.30	927.91	0.00	0.00	1036.26	1036.26	0.00	4.42	1584.29	1588.71	0.00	0.00	0.00	0.00	0.00	0.97	2009.55	2010.52	0.00	0.00	0.00	0.00	0.00	7.99	5555.41	5563.40	

Water Volume [%]:

Untreated: 0.00 %
Below Dose 0.14 %
To Dose 99.86 %

Notes: 1. UV Comparative Dose: 18.1 mJ/cm²

Submitted By (Print): D.Merredew

Signature: Original signed D.Merredew



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**
Licence Number: **PWS-09-412-02**

WATER TREATMENT PLANT UV REPORT

Report Period: **April 2022**

Report Created: **Sunday, May 01, 2022**

Date	Transmittance (%)				UVR_D100A			UVR_D200A			UVR_D300A			UVR_D400A			UVR_D500A			UVR_D600A		
	Branch 1		Branch 2		UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²		
	Avg.	Min.	Avg.	Min.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.
01/04/2022	93.9	88.1	94.1	93.5	OL	OL	OL	18.5	21.9	21.1	21.7	29.0	26.8	OL	OL	OL	17.9	21.8	21.1	OL	OL	OL
02/04/2022	94.0	93.1	94.2	93.8	OL	OL	OL	18.3	22.8	21.1	21.6	30.0	27.0	OL	OL	OL	17.8	21.8	21.1	OL	OL	OL
03/04/2022	94.0	92.7	94.0	93.4	OL	OL	OL	18.6	21.6	21.1	21.8	29.3	26.7	OL	OL	OL	17.8	22.8	21.1	OL	OL	OL
04/04/2022	94.0	91.8	93.9	93.5	OL	OL	OL	18.7	21.6	21.1	21.0	29.0	26.1	OL	OL	OL	18.0	21.8	21.1	OL	OL	OL
05/04/2022	94.0	84.5	93.8	93.3	OL	OL	OL	18.5	22.6	21.1	20.8	28.2	25.7	OL	OL	OL	17.7	23.4	21.1	OL	OL	OL
06/04/2022	94.1	93.3	93.8	93.4	OL	OL	OL	18.6	22.3	21.1	20.8	28.2	25.8	OL	OL	OL	17.8	22.8	21.1	OL	OL	OL
07/04/2022	94.2	93.3	93.9	92.8	OL	OL	OL	18.5	22.5	21.1	20.8	29.3	26.2	OL	OL	OL	17.9	21.8	21.2	OL	OL	OL
08/04/2022	94.3	92.5	93.8	93.4	OL	OL	OL	18.6	22.3	21.1	20.5	29.0	25.4	OL	OL	OL	17.8	23.2	21.2	OL	OL	OL
09/04/2022	94.2	93.0	93.8	92.9	OL	OL	OL	18.4	22.6	21.1	20.1	27.1	24.8	OL	OL	OL	17.8	22.6	21.2	OL	OL	OL
10/04/2022	94.3	92.5	93.9	92.9	15.1	89.3	26.5	0.0	26.8	21.1	19.0	25.9	23.9	OL	OL	OL	17.8	22.8	21.2	OL	OL	OL
11/04/2022	94.2	84.4	93.9	93.2	15.7	31.8	26.2	OL	OL	OL	18.7	24.9	23.1	OL	OL	OL	17.6	22.8	21.1	OL	OL	OL
12/04/2022	94.1	93.0	93.9	93.1	15.5	45.9	25.6	OL	OL	OL	17.2	35.2	22.2	OL	OL	OL	17.8	25.7	21.1	OL	OL	OL
13/04/2022	94.0	92.0	93.8	93.3	16.4	32.7	26.2	OL	OL	OL	17.5	24.0	21.3	OL	OL	OL	17.5	22.6	21.1	OL	OL	OL
14/04/2022	93.9	92.5	93.9	92.8	16.3	29.5	26.7	OL	OL	OL	17.5	23.7	21.3	OL	OL	OL	17.5	21.8	21.2	OL	OL	OL
15/04/2022	93.6	77.4	93.8	92.9	16.3	32.0	26.5	OL	OL	OL	17.4	23.5	21.3	OL	OL	OL	17.8	22.5	21.2	OL	OL	OL
16/04/2022	93.2	53.2	93.5	92.4	16.2	31.8	25.9	OL	OL	OL	17.6	23.5	21.3	OL	OL	OL	17.7	22.7	21.2	OL	OL	OL
17/04/2022	93.0	88.0	93.4	92.9	16.4	31.9	25.7	OL	OL	OL	17.5	23.6	21.3	OL	OL	OL	17.8	21.8	21.2	OL	OL	OL
18/04/2022	93.0	89.2	93.3	92.7	16.5	31.1	26.2	OL	OL	OL	17.4	23.1	21.3	OL	OL	OL	17.6	21.9	21.2	OL	OL	OL
19/04/2022	92.8	91.0	93.1	92.3	15.6	29.5	26.0	OL	OL	OL	17.3	22.7	21.2	OL	OL	OL	17.7	22.6	21.2	OL	OL	OL
20/04/2022	92.8	89.0	93.2	92.4	15.5	29.1	25.7	OL	OL	OL	17.3	23.4	21.2	OL	OL	OL	17.7	21.8	21.2	OL	OL	OL
21/04/2022	92.7	89.1	93.2	92.8	15.3	27.9	25.5	OL	OL	OL	17.1	22.4	21.2	OL	OL	OL	17.7	22.5	21.2	OL	OL	OL
22/04/2022	92.8	89.6	93.0	92.4	15.3	28.2	25.4	OL	OL	OL	17.2	22.9	21.2	OL	OL	OL	17.8	21.8	21.2	OL	OL	OL
23/04/2022	92.5	83.9	92.4	91.6	15.3	27.1	25.2	OL	OL	OL	17.3	22.4	21.2	OL	OL	OL	17.9	21.8	21.2	OL	OL	OL
24/04/2022	92.7	90.6	92.6	91.8	17.7	27.2	25.2	OL	OL	OL	17.0	22.5	21.2	OL	OL	OL	17.5	22.5	21.2	OL	OL	OL
25/04/2022	92.9	85.8	92.8	92.1	15.3	27.1	25.2	OL	OL	OL	17.2	23.5	21.2	OL	OL	OL	17.7	21.8	21.2	OL	OL	OL
26/04/2022	93.2	91.3	92.9	92.0	0.0	53.7	25.2	18.4	85.9	21.6	17.4	23.4	21.2	OL	OL	OL	17.6	22.3	21.2	OL	OL	OL
27/04/2022	93.1	87.9	92.9	92.1	OL	OL	OL	18.4	26.2	21.6	17.3	23.0	21.3	OL	OL	OL	17.7	22.3	21.1	OL	OL	OL
28/04/2022	93.2	88.0	93.0	92.0	OL	OL	OL	18.4	25.6	21.6	16.9	23.4	21.3	OL	OL	OL	17.6	22.1	21.2	OL	OL	OL
29/04/2022	94.3	91.2	94.7	93.5	OL	OL	OL	18.3	26.2	21.6	17.4	24.9	21.3	OL	OL	OL	17.7	23.0	21.2	OL	OL	OL
30/04/2022	94.6	82.8	95.7	95.2	OL	OL	OL	18.3	27.8	21.6	17.2	24.3	21.4	OL	OL	OL	17.7	21.9	21.2	OL	OL	OL

- Notes:**
1. UV Comparative Dose: 18.1 mJ/cm²
 2. OL - Off Line

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-09-412-02**

WATER TREATMENT PLANT UV REPORT

Report Period: **May 2022**

Report Created: **Wednesday, June 01, 2022**

Date	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	
01/05/2022	0.00	0.00	0.00	0.00	0.00	0.00	61.53	61.53	0.00	0.26	50.94	51.19	0.00	0.00	0.00	0.00	0.00	0.00	63.12	63.12	0.00	0.00	0.00	0.00	0.00	0.00	0.26	175.58	175.84	99.85
02/05/2022	0.00	0.00	0.00	0.00	0.00	0.00	62.46	62.46	0.00	0.04	52.29	52.32	0.00	0.00	0.00	0.00	0.00	0.04	64.18	64.22	0.00	0.00	0.00	0.00	0.00	0.00	0.08	178.93	179.01	99.95
03/05/2022	0.00	0.00	0.00	0.00	0.00	0.00	62.29	62.29	0.00	0.11	52.45	52.57	0.00	0.00	0.00	0.00	0.00	0.05	64.09	64.13	0.00	0.00	0.00	0.00	0.00	0.00	0.16	178.83	178.99	99.91
04/05/2022	0.00	0.00	0.00	0.00	0.00	0.00	62.75	62.75	0.00	0.38	51.81	52.18	0.00	0.00	0.00	0.00	0.00	0.00	64.10	64.10	0.00	0.00	0.00	0.00	0.00	0.00	0.38	178.65	179.03	99.79
05/05/2022	0.00	0.00	0.00	0.00	0.00	0.00	62.78	62.78	0.00	0.53	51.44	51.97	0.00	0.00	0.00	0.00	0.00	0.05	64.17	64.22	0.00	0.00	0.00	0.00	0.00	0.00	0.57	178.40	178.97	99.68
06/05/2022	0.00	0.00	0.00	0.00	0.00	0.00	62.37	62.37	0.00	0.26	52.18	52.44	0.00	0.00	0.00	0.00	0.00	0.18	64.04	64.21	0.00	0.00	0.00	0.00	0.00	0.00	0.44	178.58	179.02	99.76
07/05/2022	0.00	0.00	0.00	0.00	0.17	0.17	18.52	18.85	0.00	0.50	50.31	50.82	0.00	0.00	38.36	38.36	0.00	0.40	76.31	76.70	0.00	0.00	0.00	0.00	0.17	1.07	183.50	184.73	99.33	
08/05/2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70	49.96	50.67	0.00	0.00	55.38	55.38	0.00	0.35	82.63	82.98	0.00	0.00	0.00	0.00	0.00	1.05	187.98	189.03	99.45	
09/05/2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	49.85	50.31	0.00	0.00	55.70	55.70	0.00	0.23	82.74	82.97	0.00	0.00	0.00	0.00	0.00	0.69	188.29	188.97	99.64	
10/05/2022	0.03	0.93	0.14	1.11	0.04	0.04	0.04	0.12	0.00	0.56	49.45	50.01	0.00	0.00	56.19	56.19	0.23	0.52	81.04	81.79	0.00	0.00	0.01	0.01	0.31	2.05	186.87	189.23	98.75	
11/05/2022	0.01	0.04	0.00	0.05	0.00	0.00	42.47	42.47	0.00	0.07	55.10	55.17	0.00	0.00	18.88	18.88	0.00	0.17	72.25	72.42	0.00	0.00	0.00	0.00	0.01	0.29	188.70	188.99	99.85	
12/05/2022	0.00	0.22	16.85	17.07	0.00	0.00	47.09	47.09	0.00	0.97	57.63	58.61	0.00	0.00	0.00	0.00	0.00	0.05	68.19	68.24	0.00	0.00	0.00	0.00	0.00	1.24	189.77	191.01	99.35	
13/05/2022	0.00	0.26	57.20	57.47	0.00	0.00	0.55	0.55	0.00	1.17	58.63	59.79	0.00	0.00	5.17	5.17	0.00	0.31	71.71	72.02	0.00	0.00	0.00	0.00	0.00	1.74	193.27	195.00	99.11	
14/05/2022	0.00	0.00	63.56	63.56	0.00	0.00	0.00	0.00	0.00	1.01	59.55	60.57	0.00	0.00	0.00	0.00	0.00	0.15	70.74	70.89	0.00	0.00	0.00	0.00	0.00	1.16	193.85	195.01	99.41	
15/05/2022	0.00	0.00	57.34	57.34	0.00	0.00	23.62	23.62	0.14	0.73	37.60	38.47	0.00	0.00	0.00	0.00	0.00	0.35	72.29	72.65	0.00	0.00	0.00	0.00	0.14	1.08	190.86	192.08	99.36	
16/05/2022	0.00	0.00	47.52	47.52	0.00	0.00	65.60	65.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	76.44	76.87	0.00	0.00	0.00	0.00	0.00	0.43	189.57	190.00	99.78	
17/05/2022	0.00	0.00	47.48	47.48	0.00	0.00	65.62	65.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	76.47	76.90	0.00	0.00	0.00	0.00	0.00	0.43	189.58	190.00	99.78	
18/05/2022	0.00	0.00	47.41	47.41	0.00	0.00	65.61	65.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32	76.69	77.01	0.00	0.00	0.00	0.00	0.00	0.32	189.70	190.03	99.83	
19/05/2022	0.00	0.20	55.02	55.22	0.00	0.00	19.36	19.36	0.00	0.15	35.23	35.38	0.00	0.00	3.75	3.75	0.00	0.11	23.22	23.33	0.00	0.00	44.39	44.39	0.00	0.46	180.96	181.42	99.74	
20/05/2022	0.00	0.21	59.30	59.51	0.00	0.00	0.00	0.00	0.00	0.23	56.04	56.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	64.84	64.97	0.00	0.58	180.17	180.75	99.68	
21/05/2022	0.00	0.46	60.01	60.48	0.00	0.00	0.00	0.00	0.00	0.15	54.40	54.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.39	62.50	62.89	0.00	1.01	176.92	177.93	99.43	
22/05/2022	0.09	0.74	48.32	49.15	0.00	0.04	19.72	19.76	0.07	0.58	34.08	34.73	0.00	0.00	15.71	15.71	0.00	0.00	16.43	16.43	0.09	0.60	41.24	41.93	0.25	1.97	175.48	177.70	98.75	
23/05/2022	0.00	0.00	0.00	0.00	0.00	0.00	70.61	70.61	0.00	0.00	0.00	0.00	0.00	0.00	54.83	54.83	0.00	0.00	57.24	57.24	0.00	0.00	0.00	0.00	0.00	0.00	182.68	182.68	100.00	
24/05/2022	0.00	0.00	0.00	0.00	0.00	0.00	76.52	76.52	0.00	0.00	0.00	0.00	0.00	0.00	51.34	51.34	0.00	0.00	57.03	57.03	0.00	0.00	0.00	0.00	0.00	0.00	184.90	184.90	100.00	
25/05/2022	0.00	0.00	0.00	0.00	0.00	0.00	80.10	80.10	0.00	0.00	0.00	0.00	0.00	0.00	51.61	51.61	0.00	0.04	58.43	58.47	0.00	0.00	0.00	0.00	0.00	0.04	190.14	190.18	99.98	
26/05/2022	0.00	0.00	0.00	0.00	0.00	0.00	80.87	80.87	0.00	0.00	0.00	0.00	0.00	0.00	51.94	51.94	0.00	0.00	59.17	59.17	0.00	0.00	0.00	0.00	0.00	0.00	191.98	191.98	100.00	
27/05/2022	0.00	0.00	0.00	0.00	0.00	0.00	81.08	81.08	0.00	0.00	0.00	0.00	0.00	0.00	51.96	51.96	0.00	0.00	58.98	58.98	0.00	0.00	0.00	0.00	0.00	0.00	192.02	192.02	100.00	
28/05/2022	0.00	0.00	0.00	0.00	0.00	0.00	81.02	81.02	0.00	0.00	0.00	0.00	0.00	0.00	52.20	52.20	0.00	0.00	58.79	58.79	0.00	0.00	0.00	0.00	0.00	0.00	192.01	192.01	100.00	
29/05/2022	0.00	0.00	0.00	0.00	0.00	0.00	80.32	80.32	0.00	0.00	0.00	0.00	0.00	0.00	52.69	52.69	0.00	0.04	58.95	58.99	0.00	0.00	0.00	0.00	0.00	0.04	191.96	192.00	99.98	
30/05/2022	0.00	0.00	0.00	0.00	0.00	0.00	71.24	71.24	0.00	0.00	0.00	0.00	0.00	0.00	57.59	57.59	0.00	0.00	63.14	63.14	0.00	0.00	0.00	0.00	0.00	0.00	191.97	191.97	100.00	
31/05/2022	0.00	0.00	0.00	0.00	0.00	0.00	68.97	68.97	0.00	0.00	0.00	0.00	0.00	0.00	58.89	58.89	0.00	0.00	66.60	66.60	0.00	0.00	0.00	0.00	0.00	0.00	194.47	194.47	100.00	
Total [ML]:	0.13	3.07	560.16	563.36	0.21	0.25	1433.10	1433.56	0.22	8.86	958.95	968.03	0.00	0.00	732.19	732.19	0.23	4.20	1869.18	1873.61	0.09	1.13	212.97	214.19	0.88	17.50	5766.57	5784.95		

Water Volume [%]:

Untreated: 0.02 %
Below Dose 0.30 %
To Dose 99.68 %

Notes: 1. UV Comparative Dose: 18.1 mJ/cm²

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-09-412-02**

WATER TREATMENT PLANT UV REPORT

Report Period: **May 2022**

Report Created: **Wednesday, June 01, 2022**

Date	Transmittance (%)				UVR_D100A			UVR_D200A			UVR_D300A			UVR_D400A			UVR_D500A			UVR_D600A		
	Branch 1		Branch 2		UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²		
	Avg.	Min.	Avg.	Min.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.
01/05/2022	95.2	84.8	96.2	95.7	OL	OL	OL	15.7	30.4	21.5	17.6	24.8	21.4	OL	OL	OL	17.8	21.9	21.2	OL	OL	OL
02/05/2022	95.6	82.8	96.3	95.1	OL	OL	OL	18.1	27.6	21.6	17.4	23.7	21.3	OL	OL	OL	17.7	21.8	21.2	OL	OL	OL
03/05/2022	95.8	91.8	96.4	96.0	OL	OL	OL	18.3	27.6	21.6	17.5	23.6	21.3	OL	OL	OL	17.6	22.6	21.2	OL	OL	OL
04/05/2022	96.2	85.6	96.6	96.2	OL	OL	OL	18.3	26.7	21.6	16.9	22.8	21.3	OL	OL	OL	17.5	22.4	21.2	OL	OL	OL
05/05/2022	96.6	90.1	96.7	96.1	OL	OL	OL	18.5	26.5	21.6	16.8	23.3	21.2	OL	OL	OL	17.7	21.9	21.2	OL	OL	OL
06/05/2022	96.8	94.4	96.7	96.1	OL	OL	OL	18.4	26.3	21.6	16.8	22.8	21.2	OL	OL	OL	17.4	22.3	21.1	OL	OL	OL
07/05/2022	97.1	92.0	96.9	95.8	OL	OL	OL	0.0	26.1	21.6	16.9	22.9	21.2	17.6	89.9	23.0	17.2	29.6	21.2	OL	OL	OL
08/05/2022	97.6	83.0	97.2	96.5	OL	OL	OL	OL	OL	OL	17.1	23.1	21.3	19.4	24.0	22.2	17.4	21.8	21.2	OL	OL	OL
09/05/2022	97.8	91.6	97.1	96.7	OL	OL	OL	OL	OL	OL	17.1	22.1	21.3	18.8	23.7	21.5	17.3	21.8	21.2	OL	OL	OL
10/05/2022	98.0	88.5	97.2	96.8	0.0	62.2	11.8	0.0	68.6	27.7	16.9	24.0	21.3	18.7	26.7	21.3	0.0	94.7	21.3	0.0	84.6	65.3
11/05/2022	98.1	88.2	97.1	96.6	0.0	22.3	10.8	18.5	75.6	21.6	16.3	23.9	21.2	0.0	36.9	21.3	16.4	22.5	21.2	OL	OL	OL
12/05/2022	97.8	78.3	96.8	95.7	0.0	81.6	24.4	0.0	30.2	21.6	16.5	29.4	21.3	OL	OL	OL	17.3	29.6	21.2	OL	OL	OL
13/05/2022	97.3	83.7	96.3	95.5	0.0	94.5	31.7	0.0	71.3	22.9	16.4	30.4	21.5	0.0	86.7	21.7	17.2	22.8	21.3	OL	OL	OL
14/05/2022	96.6	85.8	95.7	95.1	19.0	37.7	24.1	OL	OL	OL	16.5	22.5	21.5	OL	OL	OL	17.3	22.2	21.3	OL	OL	OL
15/05/2022	96.4	93.3	95.4	95.1	18.7	35.8	25.1	18.2	65.4	21.5	0.0	23.2	21.5	OL	OL	OL	16.8	22.3	21.3	OL	OL	OL
16/05/2022	96.3	90.2	95.4	95.1	20.9	43.8	26.7	18.5	24.3	21.5	OL	OL	OL	OL	OL	OL	17.4	21.9	21.3	OL	OL	OL
17/05/2022	96.0	92.1	95.2	92.2	20.1	43.4	25.8	16.5	29.7	21.2	OL	OL	OL	OL	OL	OL	17.3	21.9	21.3	OL	OL	OL
18/05/2022	95.7	92.9	95.0	94.3	19.6	43.6	25.1	18.6	24.0	21.1	OL	OL	OL	OL	OL	OL	17.3	21.9	21.3	OL	OL	OL
19/05/2022	96.0	94.6	95.3	95.0	17.4	37.9	23.1	0.0	25.4	21.1	16.5	79.7	21.3	0.0	85.7	22.1	0.0	28.3	21.2	19.4	84.6	26.5
20/05/2022	95.8	94.3	95.0	94.3	17.3	36.4	21.4	OL	OL	OL	17.3	24.3	21.3	OL	OL	OL	OL	OL	OL	17.4	24.8	23.2
21/05/2022	94.7	91.2	94.9	94.6	17.0	37.1	21.3	OL	OL	OL	17.2	30.5	21.3	OL	OL	OL	OL	OL	OL	16.5	29.6	21.8
22/05/2022	94.6	88.3	94.8	94.5	0.0	33.4	21.1	16.3	80.8	21.2	0.0	26.6	21.3	15.8	82.3	21.4	15.7	92.5	21.4	0.0	23.0	21.4
23/05/2022	94.7	84.2	94.9	94.3	OL	OL	OL	18.6	23.2	21.1	OL	OL	OL	18.6	22.6	21.2	18.0	22.6	21.2	OL	OL	OL
24/05/2022	94.8	77.6	95.1	93.8	OL	OL	OL	15.9	29.3	21.1	OL	OL	OL	18.7	25.4	21.3	17.9	24.7	21.2	OL	OL	OL
25/05/2022	95.6	87.8	96.0	95.0	OL	OL	OL	18.5	21.5	21.1	OL	OL	OL	18.6	23.1	21.3	17.9	21.8	21.2	OL	OL	OL
26/05/2022	96.3	93.3	96.8	96.3	OL	OL	OL	18.6	21.5	21.1	OL	OL	OL	18.8	23.6	21.4	18.1	22.0	21.2	OL	OL	OL
27/05/2022	96.3	76.0	96.7	96.4	OL	OL	OL	18.5	21.6	21.1	OL	OL	OL	18.7	23.7	21.4	18.0	22.0	21.2	OL	OL	OL
28/05/2022	96.1	83.4	96.6	96.1	OL	OL	OL	18.5	21.7	21.1	OL	OL	OL	18.6	23.6	21.3	17.8	22.0	21.2	OL	OL	OL
29/05/2022	96.1	88.0	96.5	96.1	OL	OL	OL	18.5	22.4	21.1	OL	OL	OL	18.6	23.7	21.3	17.8	23.0	21.2	OL	OL	OL
30/05/2022	95.7	81.6	96.0	94.9	OL	OL	OL	18.4	23.8	21.2	OL	OL	OL	18.7	22.6	21.3	18.0	23.0	21.2	OL	OL	OL
31/05/2022	96.2	76.2	96.6	96.0	OL	OL	OL	18.6	27.0	21.5	OL	OL	OL	18.4	30.8	21.3	18.2	28.1	21.2	OL	OL	OL

Notes:
1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

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-09-412-02**

WATER TREATMENT PLANT UV REPORT

Report Period: **June 2022**

Report Created: **Friday, July 01, 2022**

Date	UVR-D100A				UVR-D200A				UVR-D300A				UVR-D400A				UVR-D500A				UVR-D600A				Total				% 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	
01/06/2022	0.00	0.00	0.00	0.00	0.00	0.00	76.11	76.11	0.00	0.00	0.00	0.00	0.00	0.00	55.82	55.82	0.00	0.00	64.23	64.23	0.00	0.00	0.00	0.00	0.00	0.00	196.16	196.16	100.00
02/06/2022	0.00	0.00	0.00	0.00	0.00	0.00	83.14	83.14	0.00	0.00	0.00	0.00	0.00	0.00	53.05	53.05	0.00	0.00	61.82	61.82	0.00	0.00	0.00	0.00	0.00	0.00	198.00	198.00	100.00
03/06/2022	0.00	0.00	0.00	0.00	0.00	0.00	83.15	83.15	0.00	0.00	0.00	0.00	0.00	0.00	53.04	53.04	0.00	0.00	61.75	61.75	0.00	0.00	0.00	0.00	0.00	0.00	197.94	197.94	100.00
04/06/2022	0.00	0.00	0.00	0.00	0.00	0.00	83.13	83.13	0.00	0.00	0.00	0.00	0.00	0.00	53.09	53.09	0.00	0.00	61.95	61.95	0.00	0.00	0.00	0.00	0.00	0.00	198.17	198.17	100.00
05/06/2022	0.00	0.00	0.00	0.00	0.00	0.00	83.94	83.94	0.00	0.00	0.00	0.00	0.00	0.00	53.79	53.79	0.00	0.00	62.54	62.54	0.00	0.00	0.00	0.00	0.00	0.00	200.26	200.26	100.00
06/06/2022	0.00	0.00	0.00	0.00	0.00	0.00	84.93	84.93	0.00	0.00	0.00	0.00	0.00	0.00	54.60	54.60	0.00	0.00	63.36	63.36	0.00	0.00	0.00	0.00	0.00	0.00	202.90	202.90	100.00
07/06/2022	0.00	0.00	0.00	0.00	0.00	0.00	76.59	76.59	0.00	0.00	0.00	0.00	0.00	0.00	60.54	60.54	0.00	0.00	69.60	69.60	0.00	0.00	0.00	0.00	0.00	0.00	206.73	206.73	100.00
08/06/2022	0.00	0.04	0.31	0.35	0.00	0.00	75.00	75.00	0.00	0.00	0.00	0.00	0.00	0.00	63.25	63.25	0.00	0.00	72.23	72.23	0.00	0.00	0.00	0.00	0.00	0.04	210.79	210.83	99.98
09/06/2022	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	64.90	64.90	0.00	0.00	73.56	73.56	0.00	0.00	0.00	0.00	0.00	0.00	213.46	213.46	100.00
10/06/2022	0.00	0.00	0.00	0.00	0.00	0.00	74.98	74.98	0.00	0.00	33.43	33.43	0.00	0.00	28.62	28.62	0.00	0.00	34.12	34.12	0.00	0.37	39.43	39.79	0.00	0.37	210.58	210.94	99.83
11/06/2022	0.00	0.00	0.00	0.00	0.00	0.00	74.99	74.99	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	0.59	77.43	78.02	0.00	0.59	215.35	215.95	99.72
12/06/2022	0.00	0.00	0.00	0.00	0.00	0.00	75.00	75.00	0.00	0.00	63.10	63.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.11	75.77	77.87	0.00	2.11	213.87	215.97	99.02
13/06/2022	0.00	0.00	0.00	0.00	0.00	0.00	74.99	74.99	0.00	0.00	61.83	61.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	75.22	76.01	0.00	0.79	212.04	212.82	99.63
14/06/2022	0.00	0.00	0.00	0.00	0.00	0.00	74.95	75.01	0.00	0.00	59.25	59.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.02	72.87	73.89	0.00	1.08	207.07	208.15	99.48
15/06/2022	0.00	0.00	0.00	0.00	0.00	0.00	74.99	74.99	0.00	0.00	58.33	58.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66	73.00	73.66	0.00	0.66	206.33	206.99	99.68
16/06/2022	0.00	0.30	42.47	42.77	0.00	0.00	30.11	30.11	0.00	0.00	61.21	61.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	75.97	76.73	0.00	1.06	209.77	210.82	99.50
17/06/2022	0.00	0.24	69.68	69.92	0.00	0.00	0.00	0.00	0.00	0.00	62.11	62.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.68	76.33	78.01	0.00	1.93	208.11	210.04	99.08
18/06/2022	0.00	0.38	67.85	68.22	0.00	0.00	0.00	0.00	0.00	0.00	62.46	62.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59	76.58	77.17	0.00	0.97	206.88	207.85	99.53
19/06/2022	0.00	0.33	68.67	69.01	0.00	0.00	0.00	0.00	0.00	0.00	63.23	63.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	77.31	78.17	0.00	1.20	209.21	210.41	99.43
20/06/2022	0.00	0.34	70.09	70.44	0.00	0.00	0.00	0.00	0.00	0.00	62.53	62.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.26	77.77	79.03	0.00	1.61	210.39	212.00	99.24
21/06/2022	0.02	0.56	62.12	62.70	0.00	0.00	0.00	0.00	0.00	0.89	26.92	27.81	0.00	0.00	32.44	32.44	0.00	0.59	43.31	43.90	0.00	0.58	25.55	26.13	0.02	2.61	190.34	192.97	98.63
22/06/2022	0.00	0.38	41.05	41.42	0.00	0.06	18.64	18.70	0.00	0.03	29.39	29.42	0.00	0.00	71.02	71.02	0.03	0.03	26.75	26.81	0.00	0.17	32.00	32.17	0.03	0.67	218.84	219.54	99.68
23/06/2022	0.00	0.60	78.39	78.99	0.00	0.00	0.00	0.00	0.00	0.00	14.18	14.18	0.00	0.00	48.48	48.48	0.00	0.00	0.00	0.00	0.00	0.34	78.01	78.35	0.00	0.94	219.07	220.01	99.57
24/06/2022	0.00	0.41	73.93	74.34	0.00	0.00	0.00	0.00	0.00	0.00	38.20	38.20	0.00	0.00	30.81	30.81	0.00	0.00	0.00	0.00	0.00	0.74	75.12	75.86	0.00	1.15	218.06	219.21	99.47
25/06/2022	0.00	0.37	74.81	75.17	0.00	0.00	0.00	0.00	0.00	0.00	69.53	69.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	69.85	70.60	0.00	1.12	214.19	215.30	99.48
26/06/2022	0.00	0.32	77.37	77.69	0.00	0.00	0.00	0.00	0.00	0.00	67.71	67.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	66.43	67.23	0.00	1.12	211.52	212.64	99.47
27/06/2022	0.01	0.50	71.37	71.89	0.00	0.00	0.00	0.00	0.02	0.02	47.21	47.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.67	64.89	65.58	0.05	1.19	183.47	184.71	99.33
28/06/2022	0.00	0.48	75.74	76.21	0.00	0.00	0.00	0.00	0.00	0.00	52.22	52.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.90	63.69	64.59	0.00	1.38	191.65	193.02	99.29
29/06/2022	0.00	0.71	77.84	78.56	0.00	0.00	0.00	0.00	0.00	0.00	49.93	49.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.49	63.05	63.54	0.00	1.20	190.82	192.03	99.37
30/06/2022	0.00	0.39	77.61	78.00	0.00	0.00	0.00	0.00	0.00	0.00	50.66	50.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.54	64.41	64.94	0.00	0.92	192.68	193.60	99.52
Total [ML]:	0.04	6.35	1029.29	1035.68	0.00	0.11	1219.64	1219.76	0.02	0.93	1096.36	1097.31	0.00	0.00	723.46	723.46	0.03	0.62	695.20	695.85	0.02	16.68	1400.67	1417.37	0.11	24.69	6164.63	6189.43	

Water Volume [%]:

Untreated: 0.00 %
Below Dose 0.40 %
To Dose 99.60 %

Notes: 1. UV Comparative Dose: 18.1 mJ/cm²

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-09-412-02**

WATER TREATMENT PLANT UV REPORT

Report Period: **June 2022**

Report Created: **Friday, July 01, 2022**

Date	Transmittance (%)				UVR_D100A			UVR_D200A			UVR_D300A			UVR_D400A			UVR_D500A			UVR_D600A		
	Branch 1		Branch 2		UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²		
	Avg.	Min.	Avg.	Min.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.
01/06/2022	96.3	49.8	96.8	96.1	OL	OL	OL	18.4	22.7	21.1	OL	OL	OL	18.0	23.3	21.3	17.9	23.2	21.2	OL	OL	OL
02/06/2022	96.3	77.9	96.8	96.1	OL	OL	OL	18.5	22.1	21.1	OL	OL	OL	18.5	24.5	21.4	18.1	21.8	21.2	OL	OL	OL
03/06/2022	96.3	89.2	96.8	96.1	OL	OL	OL	18.6	22.7	21.1	OL	OL	OL	18.8	24.4	21.4	18.1	21.9	21.2	OL	OL	OL
04/06/2022	96.3	89.8	96.7	94.9	OL	OL	OL	18.5	23.0	21.1	OL	OL	OL	18.7	24.1	21.4	17.8	21.9	21.2	OL	OL	OL
05/06/2022	96.3	89.9	96.8	96.1	OL	OL	OL	18.5	21.7	21.1	OL	OL	OL	18.7	24.4	21.3	17.9	22.1	21.2	OL	OL	OL
06/06/2022	96.2	84.5	96.7	96.0	OL	OL	OL	18.5	29.4	21.1	OL	OL	OL	18.7	28.2	21.3	17.9	27.0	21.2	OL	OL	OL
07/06/2022	96.3	89.0	96.8	96.3	OL	OL	OL	18.4	29.0	21.4	OL	OL	OL	18.8	22.6	21.3	18.0	22.9	21.1	OL	OL	OL
08/06/2022	95.8	86.0	96.1	93.1	0.0	67.5	24.7	18.4	26.2	21.5	OL	OL	OL	18.6	22.8	21.2	18.1	22.3	21.1	OL	OL	OL
09/06/2022	95.7	84.0	96.0	95.3	OL	OL	OL	18.5	25.6	21.5	OL	OL	OL	18.5	21.8	21.2	17.8	21.7	21.1	OL	OL	OL
10/06/2022	96.0	90.9	96.4	95.3	OL	OL	OL	18.4	30.5	21.5	26.8	62.6	29.0	0.0	29.7	21.2	0.0	26.0	21.1	16.2	84.6	21.3
11/06/2022	96.1	85.4	96.5	96.0	OL	OL	OL	18.4	23.6	21.4	23.6	27.7	25.1	OL	OL	OL	OL	OL	OL	16.4	21.7	21.1
12/06/2022	96.1	82.5	96.5	95.6	OL	OL	OL	18.6	23.3	21.4	22.0	24.4	23.3	OL	OL	OL	OL	OL	OL	16.7	23.5	21.1
13/06/2022	96.0	87.9	96.4	94.8	OL	OL	OL	18.2	24.0	21.4	20.9	22.9	21.8	OL	OL	OL	OL	OL	OL	16.6	24.3	21.1
14/06/2022	96.0	86.1	96.5	96.1	OL	OL	OL	15.8	29.5	21.1	20.9	22.4	21.6	OL	OL	OL	OL	OL	OL	16.2	25.0	21.1
15/06/2022	95.8	85.3	96.2	95.6	OL	OL	OL	18.6	23.6	21.1	21.3	23.3	22.0	OL	OL	OL	OL	OL	OL	16.3	21.7	21.1
16/06/2022	95.5	84.9	95.8	95.3	16.2	75.9	21.3	0.0	32.8	21.4	20.7	37.8	21.4	OL	OL	OL	OL	OL	OL	16.5	31.8	21.1
17/06/2022	95.4	85.8	95.8	95.3	17.4	32.3	21.2	OL	OL	OL	20.5	22.0	21.3	OL	OL	OL	OL	OL	OL	16.5	21.7	21.1
18/06/2022	96.0	78.7	96.3	95.2	17.3	31.9	21.2	OL	OL	OL	20.4	22.2	21.3	OL	OL	OL	OL	OL	OL	16.4	21.8	21.1
19/06/2022	96.1	90.1	96.3	95.3	17.4	31.9	21.2	OL	OL	OL	20.5	22.4	21.3	OL	OL	OL	OL	OL	OL	16.3	21.7	21.1
20/06/2022	96.1	91.7	96.3	95.6	17.5	33.1	21.2	OL	OL	OL	20.4	22.2	21.3	OL	OL	OL	OL	OL	OL	15.7	21.7	21.1
21/06/2022	95.8	70.0	96.0	94.6	0.0	72.2	21.5	OL	OL	OL	0.0	37.1	20.9	0.0	64.9	21.3	0.0	40.8	21.1	0.0	44.4	21.3
22/06/2022	96.1	88.0	96.3	95.7	15.7	73.4	21.3	0.0	63.2	21.3	0.0	38.9	21.7	18.5	28.3	21.4	0.0	30.8	21.2	17.5	84.6	22.2
23/06/2022	96.1	92.7	96.3	95.6	17.3	31.4	21.2	OL	OL	OL	0.0	66.4	28.0	0.0	103.5	21.4	OL	OL	OL	16.9	23.1	21.4
24/06/2022	96.1	91.5	96.4	95.3	17.2	31.4	21.3	OL	OL	OL	21.5	102.0	26.5	0.0	38.6	21.2	OL	OL	OL	16.2	22.6	21.3
25/06/2022	96.2	82.0	96.5	96.0	17.3	39.2	21.3	OL	OL	OL	19.8	51.1	24.8	OL	OL	OL	OL	OL	OL	16.0	40.6	21.1
26/06/2022	96.3	55.0	96.5	95.8	17.1	28.6	21.2	OL	OL	OL	20.0	28.5	24.6	OL	OL	OL	OL	OL	OL	16.1	22.6	21.2
27/06/2022	96.2	0.0	96.5	0.0	0.0	105.2	21.5	OL	OL	OL	0.0	105.9	29.5	OL	OL	OL	OL	OL	OL	0.0	76.3	21.2
28/06/2022	95.9	2.4	96.3	95.3	17.5	28.1	21.2	OL	OL	OL	23.9	31.0	29.6	OL	OL	OL	OL	OL	OL	16.4	23.4	21.2
29/06/2022	96.1	2.7	96.5	95.5	17.3	27.5	21.2	OL	OL	OL	25.2	33.1	31.1	OL	OL	OL	OL	OL	OL	16.0	30.7	21.3
30/06/2022	96.1	2.8	96.6	96.0	17.3	28.3	21.2	OL	OL	OL	25.5	32.5	31.1	OL	OL	OL	OL	OL	OL	15.8	27.7	21.6

Notes:
1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

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-09-412-02**

WATER TREATMENT PLANT UV REPORT

Report Period: **July 2022**

Report Created: **Monday, August 01, 2022**

Date	UVR-D100A				UVR-D200A				UVR-D300A				UVR-D400A				UVR-D500A				UVR-D600A				Total				% 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	
01/07/2022	0.00	0.41	73.80	74.21	0.00	0.00	0.00	0.00	0.00	0.00	50.39	50.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	62.88	63.41	0.00	0.94	187.07	188.01	99.50
02/07/2022	0.00	0.58	75.78	76.37	0.00	0.00	0.00	0.00	0.00	0.00	51.97	51.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	65.44	65.90	0.00	1.04	193.19	194.23	99.46
03/07/2022	0.00	0.37	77.07	77.44	0.00	0.00	0.47	0.47	0.00	0.00	51.45	51.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	1.52	63.63	65.22	0.07	1.89	192.62	194.58	98.99
04/07/2022	0.00	0.76	57.82	58.58	0.18	0.18	56.38	56.74	0.00	0.00	72.50	72.50	0.00	0.00	0.00	0.00	0.00	1.54	10.81	12.34	0.00	0.00	0.00	0.00	0.18	2.47	197.52	200.17	98.68
05/07/2022	0.00	1.06	84.05	85.11	0.00	0.00	0.00	0.00	0.00	0.00	69.66	69.66	0.00	0.00	0.00	0.00	0.00	24.05	26.18	50.23	0.00	0.00	0.00	0.00	0.00	25.11	179.89	205.00	87.75
06/07/2022	0.00	0.93	78.22	79.15	0.01	0.42	13.30	13.73	0.00	0.00	46.61	46.61	0.00	0.00	49.42	49.42	0.00	12.40	3.40	15.80	0.00	0.00	0.00	0.00	0.01	13.75	190.96	204.72	93.28
07/07/2022	0.00	1.24	82.40	83.64	0.00	0.35	2.83	3.18	0.00	0.00	50.82	50.82	0.00	0.00	67.37	67.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.59	203.42	205.01	99.22
08/07/2022	0.00	1.01	84.00	85.01	0.00	0.00	0.00	0.00	0.00	0.00	51.43	51.43	0.00	0.00	72.07	72.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01	207.50	208.51	99.52
09/07/2022	0.00	1.24	83.87	85.11	0.00	0.00	0.00	0.00	0.00	0.00	51.97	51.97	0.00	0.00	72.90	72.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.24	208.74	209.99	99.41
10/07/2022	0.00	1.30	83.77	85.06	0.00	0.00	0.00	0.00	0.00	0.00	52.04	52.04	0.00	0.00	72.89	72.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.30	208.69	209.99	99.38
11/07/2022	0.00	1.18	83.90	85.09	0.00	0.00	0.00	0.00	0.00	0.00	51.89	51.89	0.00	0.00	72.99	72.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.18	208.79	209.98	99.44
12/07/2022	0.02	0.57	69.26	69.85	0.01	0.08	27.69	27.78	0.00	0.00	29.71	29.71	0.00	0.00	40.28	40.29	0.03	0.03	3.27	3.33	0.00	0.27	27.18	27.45	0.07	0.95	197.39	198.40	99.49
13/07/2022	0.00	0.39	82.57	82.96	0.00	0.54	4.59	5.13	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	41.45	41.45	0.00	1.01	79.41	80.41	0.00	1.94	208.02	209.96	99.08
14/07/2022	0.00	0.12	31.16	31.28	0.02	0.32	54.80	55.14	0.00	0.00	28.95	28.95	0.00	0.00	0.00	0.00	0.00	0.00	15.49	15.49	0.00	0.71	78.45	79.16	0.02	1.15	208.85	210.02	99.44
15/07/2022	0.00	0.06	52.49	52.55	0.00	0.00	26.44	26.44	0.00	0.00	49.57	49.57	0.00	0.00	0.99	0.99	0.00	0.00	55.20	55.20	0.00	0.27	24.49	24.76	0.00	0.33	209.18	209.51	99.84
16/07/2022	0.00	0.60	77.86	78.46	0.00	0.00	0.00	0.00	0.00	0.00	51.04	51.04	0.00	0.00	0.00	0.00	0.00	0.00	80.51	80.51	0.00	0.00	0.00	0.00	0.00	0.60	209.41	210.01	99.71
17/07/2022	0.00	0.44	78.01	78.45	0.00	0.00	0.00	0.00	0.00	0.00	51.05	51.05	0.00	0.00	0.00	0.00	0.00	0.06	80.46	80.52	0.00	0.00	0.00	0.00	0.00	0.49	209.53	210.02	99.77
18/07/2022	0.01	0.25	72.27	72.53	0.00	0.00	0.00	0.00	0.01	0.01	45.83	45.84	0.00	0.00	0.51	0.51	0.00	0.00	69.47	69.47	0.00	0.00	0.00	0.00	0.01	0.26	188.08	188.35	99.85
19/07/2022	0.00	0.77	78.97	79.74	0.00	0.00	0.00	0.00	0.00	0.00	51.61	51.61	0.00	0.00	0.00	0.00	0.00	0.00	82.25	82.25	0.00	0.00	0.00	0.00	0.00	0.77	212.84	213.61	99.64
20/07/2022	0.00	0.49	77.48	77.97	0.00	0.00	0.00	0.00	0.00	0.00	51.12	51.12	0.00	0.00	0.00	0.00	0.00	0.00	80.46	80.46	0.00	0.00	0.00	0.00	0.00	0.49	209.06	209.54	99.77
21/07/2022	0.00	0.38	77.60	77.98	0.00	0.00	0.00	0.00	0.00	0.00	50.94	50.94	0.00	0.00	0.00	0.00	0.00	0.00	80.05	80.05	0.00	0.00	0.00	0.00	0.00	0.38	208.59	208.97	99.82
22/07/2022	0.00	0.38	77.69	78.07	0.00	0.00	0.00	0.00	0.00	0.00	50.95	50.95	0.00	0.00	0.00	0.00	0.00	0.00	80.01	80.01	0.00	0.00	0.00	0.00	0.00	0.38	208.64	209.02	99.82
23/07/2022	0.00	0.65	77.17	77.82	0.00	0.00	0.00	0.00	0.00	0.00	51.00	51.00	0.00	0.00	0.00	0.00	0.00	0.00	80.19	80.19	0.00	0.00	0.00	0.00	0.00	0.65	208.35	209.01	99.69
24/07/2022	0.00	0.53	76.23	76.76	0.00	0.00	0.00	0.00	0.00	0.00	50.20	50.20	0.00	0.00	0.00	0.00	0.00	0.00	79.06	79.06	0.00	0.00	0.00	0.00	0.00	0.53	205.49	206.02	99.74
25/07/2022	0.00	0.62	74.09	74.71	0.00	0.00	0.00	0.00	0.00	0.00	48.37	48.37	0.01	0.01	0.15	0.17	0.00	0.00	59.73	59.73	0.00	0.21	16.26	16.47	0.01	0.85	198.59	199.44	99.57
26/07/2022	0.00	0.51	73.20	73.71	0.00	0.00	0.00	0.00	0.00	0.00	47.83	47.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99	73.85	74.83	0.00	1.50	194.88	196.37	99.24
27/07/2022	0.00	0.35	71.94	72.29	0.00	0.00	0.00	0.00	0.00	0.00	46.71	46.71	0.00	0.00	0.00	0.00	0.00	0.05	29.39	29.44	0.00	0.51	43.25	43.76	0.00	0.91	191.28	192.20	99.52
28/07/2022	0.00	0.35	70.84	71.19	0.00	0.00	0.00	0.00	0.00	0.00	45.85	45.85	0.00	0.00	0.00	0.00	0.00	0.00	71.87	71.87	0.00	0.00	0.00	0.00	0.00	0.35	188.56	188.91	99.82
29/07/2022	0.00	0.67	67.98	68.65	0.00	0.00	0.00	0.00	0.00	0.00	43.73	43.73	0.00	0.00	0.00	0.00	0.00	0.00	68.08	68.08	0.00	0.00	0.00	0.00	0.00	0.67	179.78	180.45	99.63
30/07/2022	0.00	0.47	67.14	67.61	0.00	0.00	0.00	0.00	0.00	0.00	43.03	43.03	0.00	0.00	0.00	0.00	0.00	0.00	66.35	66.35	0.00	0.00	0.00	0.00	0.00	0.47	176.52	176.99	99.73
31/07/2022	0.00	0.54	69.86	70.40	0.00	0.00	0.00	0.00	0.00	0.00	45.27	45.27	0.00	0.00	0.00	0.00	0.00	0.00	70.54	70.54	0.00	0.00	0.00	0.00	0.00	0.54	185.67	186.21	99.71
Total [ML]:	0.03	19.24	2288.48	2307.74	0.22	1.88	186.50	188.61	0.01	0.01	1483.50	1483.52	0.01	0.01	449.57	449.60	0.03	38.12	1234.21	1272.36	0.07	6.48	534.82	541.38	0.38	65.74	6177.08	6243.20	

Water Volume [%]:

Untreated: 0.01 %
Below Dose 1.05 %
To Dose 98.94 %

Notes: 1. UV Comparative Dose: 18.1 mJ/cm²

Submitted By (Print): M.Szmon

Signature: Original signed by M.Szmon



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**
Licence Number: **PWS-09-412-02**

WATER TREATMENT PLANT UV REPORT

Report Period: **July 2022**

Report Created: **Monday, August 01, 2022**

Date	Transmittance (%)				UVR_D100A			UVR_D200A			UVR_D300A			UVR_D400A			UVR_D500A			UVR_D600A		
	Branch 1		Branch 2		UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²		
	Avg.	Min.	Avg.	Min.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.
01/07/2022	96.1	2.4	96.7	96.2	17.3	26.6	21.2	OL	OL	OL	24.8	32.0	30.5	OL	OL	OL	OL	OL	OL	15.7	25.1	21.6
02/07/2022	96.1	3.3	96.6	96.0	17.3	24.7	21.2	OL	OL	OL	24.2	31.4	29.4	OL	OL	OL	OL	OL	OL	15.2	23.3	21.4
03/07/2022	96.1	3.6	96.6	95.5	15.9	29.9	21.2	17.3	71.9	22.5	19.6	49.6	29.1	OL	OL	OL	OL	OL	OL	0.0	30.7	19.5
04/07/2022	96.2	71.4	96.5	95.6	16.4	28.8	21.3	0.0	29.6	21.3	18.1	28.2	22.8	OL	OL	OL	13.7	40.9	19.7	OL	OL	OL
05/07/2022	96.1	80.6	96.6	95.4	15.7	29.5	21.2	OL	OL	OL	18.4	24.8	22.6	OL	OL	OL	13.9	20.9	18.3	OL	OL	OL
06/07/2022	96.0	70.6	96.4	95.3	16.2	28.4	21.2	0.0	80.6	21.5	0.0	98.3	25.8	0.0	96.5	21.3	0.0	36.3	18.1	OL	OL	OL
07/07/2022	95.7	83.2	96.1	95.0	17.0	23.5	21.1	0.0	67.9	20.7	18.1	36.9	27.9	0.0	101.5	21.3	OL	OL	OL	OL	OL	OL
08/07/2022	95.8	0.0	96.3	95.6	16.9	21.6	21.1	OL	OL	OL	22.8	30.0	27.9	18.6	23.0	21.2	OL	OL	OL	OL	OL	OL
09/07/2022	95.9	77.3	96.3	94.8	17.0	23.4	21.1	OL	OL	OL	22.2	29.5	27.5	18.5	21.8	21.2	OL	OL	OL	OL	OL	OL
10/07/2022	95.7	0.5	96.2	95.1	16.9	22.0	21.1	OL	OL	OL	22.5	29.2	27.5	18.4	22.7	21.2	OL	OL	OL	OL	OL	OL
11/07/2022	95.3	0.0	95.9	93.9	17.1	23.4	21.1	OL	OL	OL	22.1	28.8	27.1	18.3	21.8	21.1	OL	OL	OL	OL	OL	OL
12/07/2022	95.4	0.0	95.5	0.0	0.0	101.1	22.2	0.0	74.3	21.5	0.0	105.0	27.8	0.0	41.8	21.3	0.0	95.7	29.7	0.0	84.6	21.8
13/07/2022	94.8	91.2	95.0	93.0	17.0	24.4	21.2	0.0	32.1	20.8	0.0	0.0	0.0	OL	OL	OL	29.6	95.7	32.3	16.5	24.3	21.1
14/07/2022	95.9	93.8	96.3	95.6	0.0	99.5	21.6	0.0	76.7	21.3	0.0	104.2	29.3	OL	OL	OL	0.0	43.1	29.9	16.5	22.0	21.1
15/07/2022	95.8	92.5	96.1	94.8	16.1	104.1	21.4	0.0	31.6	21.3	20.4	42.5	27.4	0.0	104.4	33.9	18.4	95.7	21.8	0.0	64.7	21.2
16/07/2022	95.7	93.7	96.1	94.9	17.2	25.6	21.2	OL	OL	OL	22.1	28.7	27.0	OL	OL	OL	18.1	24.1	21.2	OL	OL	OL
17/07/2022	95.8	93.7	96.1	95.2	17.2	25.9	21.2	OL	OL	OL	21.8	28.4	26.8	OL	OL	OL	18.0	23.5	21.2	OL	OL	OL
18/07/2022	95.5	84.8	95.8	92.4	0.0	101.0	21.9	OL	OL	OL	0.0	105.0	26.6	0.0	101.7	39.6	0.0	95.7	21.7	OL	OL	OL
19/07/2022	95.9	89.4	96.2	95.3	17.4	25.6	21.2	OL	OL	OL	21.3	27.8	26.1	OL	OL	OL	18.4	23.4	21.2	OL	OL	OL
20/07/2022	95.8	92.8	96.1	95.0	17.4	25.8	21.2	OL	OL	OL	21.2	27.4	26.0	OL	OL	OL	19.2	23.2	21.2	OL	OL	OL
21/07/2022	95.8	93.5	96.1	95.3	17.4	25.7	21.2	OL	OL	OL	20.9	27.4	25.7	OL	OL	OL	19.4	22.6	21.2	OL	OL	OL
22/07/2022	95.6	83.5	95.9	94.8	17.4	24.1	21.2	OL	OL	OL	20.5	26.5	25.0	OL	OL	OL	18.7	23.4	21.2	OL	OL	OL
23/07/2022	95.4	89.7	95.7	94.7	17.3	23.6	21.2	OL	OL	OL	19.7	25.8	24.1	OL	OL	OL	18.1	21.7	21.2	OL	OL	OL
24/07/2022	95.5	90.8	95.7	94.5	17.4	23.4	21.2	OL	OL	OL	19.0	25.1	23.4	OL	OL	OL	18.3	23.1	21.2	OL	OL	OL
25/07/2022	95.6	89.8	95.9	94.7	17.2	24.5	21.2	OL	OL	OL	19.5	38.9	24.4	0.0	59.7	37.0	0.0	36.8	21.2	15.3	80.9	21.4
26/07/2022	95.7	92.3	96.1	95.0	17.2	25.0	21.2	OL	OL	OL	19.5	26.2	23.9	OL	OL	OL	OL	OL	OL	16.6	24.1	21.1
27/07/2022	95.6	86.0	96.0	93.2	17.3	25.0	21.2	OL	OL	OL	19.3	28.9	24.0	OL	OL	OL	0.0	86.0	21.7	0.0	38.6	21.2
28/07/2022	95.7	91.7	96.1	95.2	17.4	25.0	21.2	OL	OL	OL	19.7	27.0	25.1	OL	OL	OL	18.2	25.2	21.3	OL	OL	OL
29/07/2022	95.7	87.8	96.1	95.5	17.4	25.3	21.2	OL	OL	OL	20.8	28.1	26.0	OL	OL	OL	18.1	24.9	21.3	OL	OL	OL
30/07/2022	95.7	91.7	96.1	95.2	17.4	25.1	21.2	OL	OL	OL	21.1	28.0	26.1	OL	OL	OL	18.1	26.1	21.3	OL	OL	OL
31/07/2022	95.5	88.4	95.8	94.8	17.2	24.6	21.2	OL	OL	OL	19.4	27.5	24.5	OL	OL	OL	18.1	26.8	21.3	OL	OL	OL

Notes:
1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

Submitted By (Print): M.Szmon

Signature: Original signed by M.Szmon



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**
Licence Number: **PWS-09-412-02**

WATER TREATMENT PLANT UV REPORT

Report Period: **August 2022**

Report Created: **Thursday, September 01, 2022**

Date	UVR-D100A				UVR-D200A				UVR-D300A				UVR-D400A				UVR-D500A				UVR-D600A				Total				% 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	
01/08/2022	0.00	0.90	70.31	71.21	0.00	0.00	0.00	0.00	0.00	0.00	46.27	46.27	0.00	0.00	0.00	0.00	0.00	0.00	72.40	72.40	0.00	0.00	0.00	0.00	0.00	0.00	188.98	189.87	99.53
02/08/2022	0.00	1.26	68.92	70.18	0.00	0.00	0.00	0.00	0.00	0.05	49.63	49.68	0.00	0.00	0.00	0.00	0.00	0.00	71.16	71.16	0.00	0.00	0.00	0.00	0.00	1.31	189.71	191.01	99.32
03/08/2022	0.00	1.09	62.93	64.02	0.00	0.60	8.92	9.51	0.05	0.23	38.25	38.54	0.00	0.00	20.29	20.29	0.19	0.23	38.68	39.11	0.00	0.57	24.52	25.08	0.25	2.72	193.59	196.56	98.49
04/08/2022	0.00	2.95	50.21	53.16	0.00	0.00	0.00	0.00	0.00	0.17	14.68	14.85	0.00	0.00	67.06	67.06	0.00	0.00	0.00	0.00	0.00	1.51	75.46	76.97	0.00	4.63	207.41	212.04	97.82
05/08/2022	0.00	0.09	0.69	0.78	0.00	0.00	0.00	0.00	0.00	0.63	59.99	60.63	0.00	0.00	68.80	68.80	0.00	0.00	0.00	0.00	0.00	1.18	83.60	84.78	0.00	1.91	213.08	214.99	99.11
06/08/2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.51	60.66	61.17	0.00	0.00	68.80	68.80	0.00	0.00	0.00	0.00	0.00	1.84	83.17	85.00	0.00	2.35	212.62	214.97	98.91
07/08/2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	60.27	60.91	0.00	0.00	68.82	68.82	0.00	0.00	0.00	0.00	0.00	2.06	82.92	84.98	0.00	2.70	212.02	214.72	98.74
08/08/2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.51	55.86	56.37	0.00	0.00	63.67	63.67	0.00	0.00	0.00	0.00	0.00	2.54	82.47	85.01	0.00	3.05	202.00	205.05	98.51
09/08/2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47	55.40	55.87	0.00	0.00	68.32	68.32	0.00	0.00	0.00	0.00	0.00	1.66	80.76	82.42	0.00	2.12	204.48	206.60	98.97
10/08/2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.39	56.06	56.46	0.00	0.00	74.05	74.05	0.00	0.00	0.00	0.00	0.00	2.15	79.02	81.18	0.00	2.55	209.14	211.69	98.80
11/08/2022	0.00	0.18	6.77	6.94	0.00	0.00	0.00	0.00	0.00	0.69	67.13	67.82	0.00	0.00	45.61	45.61	0.00	0.00	15.13	15.13	0.00	2.07	80.86	82.93	0.00	2.94	215.50	218.44	98.65
12/08/2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.07	83.89	84.95	0.00	0.00	0.00	0.00	0.00	0.00	49.69	49.69	0.00	1.95	83.03	84.98	0.00	3.01	216.61	219.62	98.63
13/08/2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.36	83.63	84.99	0.00	0.00	0.00	0.00	0.00	0.00	46.06	46.06	0.00	2.48	82.48	84.95	0.00	3.84	212.16	216.00	98.22
14/08/2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66	84.34	85.00	0.00	0.00	0.00	0.00	0.00	0.00	46.03	46.03	0.00	2.84	82.12	84.96	0.00	3.49	212.49	215.99	98.38
15/08/2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	84.67	84.97	0.00	0.00	0.00	0.00	0.00	0.00	45.97	45.97	0.00	1.95	83.05	84.99	0.00	2.24	213.68	215.93	98.96
16/08/2022	0.00	0.00	0.00	0.00	0.00	0.28	43.90	44.17	0.00	0.18	31.37	31.55	0.00	0.00	39.87	39.87	0.00	0.00	22.16	22.16	0.00	1.24	77.01	78.25	0.00	1.69	214.31	216.00	99.22
17/08/2022	0.00	0.00	0.00	0.00	0.00	0.16	72.84	73.00	0.00	0.00	0.00	0.00	0.00	0.00	68.44	68.44	0.00	0.00	0.00	0.00	0.00	0.75	65.93	66.67	0.00	0.90	207.21	208.12	99.57
18/08/2022	0.00	0.00	0.00	0.00	0.00	0.00	72.36	72.36	0.00	0.00	0.00	0.00	0.00	0.00	67.68	67.68	0.00	0.00	0.00	0.00	0.00	0.51	65.44	65.95	0.00	0.51	205.48	205.99	99.75
19/08/2022	0.00	0.00	0.00	0.00	0.00	0.00	70.07	70.07	0.00	0.00	0.00	0.00	0.00	0.00	65.52	65.52	0.00	0.00	0.00	0.00	0.00	0.80	63.66	64.46	0.00	0.80	199.25	200.04	99.60
20/08/2022	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	64.75	64.75	0.00	0.00	0.00	0.00	0.00	0.71	63.23	63.94	0.00	0.71	197.33	198.04	99.64
21/08/2022	0.00	0.00	0.00	0.00	0.00	0.00	68.90	68.90	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	0.66	62.30	62.96	0.00	0.66	195.46	196.12	99.66
22/08/2022	0.00	0.00	0.00	0.00	0.00	0.00	68.42	68.42	0.00	0.00	0.00	0.00	0.00	0.00	62.37	62.37	0.00	0.00	0.00	0.00	0.00	1.29	59.36	60.65	0.00	1.29	190.15	191.44	99.32
23/08/2022	0.00	0.00	0.00	0.00	0.00	0.00	67.71	67.71	0.00	0.00	0.00	0.00	0.00	0.00	62.15	62.15	0.00	0.00	0.00	0.00	0.00	1.17	59.00	60.17	0.00	1.17	188.86	190.03	99.38
24/08/2022	0.00	0.00	0.00	0.00	0.00	0.00	67.33	67.33	0.00	0.00	0.00	0.00	0.00	0.00	62.36	62.36	0.00	0.00	0.00	0.00	0.00	0.00	60.28	60.28	0.00	0.00	189.97	189.97	100.00
25/08/2022	0.00	0.00	0.00	0.00	0.00	0.00	67.31	67.31	0.00	0.00	0.00	0.00	0.00	0.00	62.42	62.42	0.00	0.00	0.00	0.00	0.00	1.04	59.22	60.27	0.00	1.04	188.95	190.00	99.45
26/08/2022	0.00	0.00	3.50	3.50	0.00	0.00	69.49	69.49	0.00	0.00	0.00	0.00	0.14	0.14	60.49	60.77	0.00	0.05	28.89	28.93	0.00	0.89	34.78	35.67	0.14	1.08	197.14	198.37	99.38
27/08/2022	0.00	0.00	0.00	0.00	0.00	0.00	73.49	73.49	0.00	0.00	0.00	0.00	0.00	0.00	68.46	68.46	0.00	0.05	66.32	66.37	0.00	0.00	0.00	0.00	0.00	0.05	208.28	208.32	99.98
28/08/2022	0.00	0.00	0.00	0.00	0.00	0.00	71.99	71.99	0.00	0.00	0.00	0.00	0.00	0.00	66.78	66.78	0.00	0.00	65.15	65.15	0.00	0.00	0.00	0.00	0.00	0.00	203.92	203.92	100.00
29/08/2022	0.00	0.00	0.00	0.00	0.00	0.00	70.58	70.58	0.00	0.00	0.00	0.00	0.00	0.00	65.59	65.59	0.00	0.00	64.23	64.23	0.00	0.00	0.47	0.47	0.00	0.00	200.87	200.87	100.00
30/08/2022	0.00	0.00	0.00	0.00	0.17	0.17	60.31	60.64	0.00	0.00	6.45	6.45	0.00	0.00	64.87	64.87	0.00	0.00	64.25	64.25	0.00	0.00	0.00	0.00	0.17	0.17	195.87	196.20	99.83
31/08/2022	0.00	0.00	40.40	40.40	0.00	0.00	0.00	0.00	0.00	0.00	18.83	18.83	0.00	0.00	68.02	68.02	0.00	0.00	67.73	67.73	0.00	0.00	0.00	0.00	0.00	0.00	194.97	194.97	100.00
Total [ML]:	0.00	6.47	303.72	310.20	0.17	1.20	1022.96	1024.32	0.05	7.85	957.38	965.28	0.14	0.14	1559.47	1559.76	0.19	0.32	763.83	764.35	0.00	33.84	1674.12	1707.96	0.55	49.83	6281.49	6331.87	

Water Volume [%]:

Untreated: 0.01 %
Below Dose 0.79 %
To Dose 99.20 %

Notes: 1. UV Comparative Dose: 18.1 mJ/cm²

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-09-412-02

WATER TREATMENT PLANT UV REPORT

Report Period: **August 2022**

Report Created: **Thursday, September 01, 2022**

Date	Transmittance (%)				UVR_D100A			UVR_D200A			UVR_D300A			UVR_D400A			UVR_D500A			UVR_D600A		
	Branch 1		Branch 2		UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²		
	Avg.	Min.	Avg.	Min.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.
01/08/2022	95.4	88.7	95.7	94.7	15.1	23.5	21.0	OL	OL	OL	19.0	25.4	23.2	OL	OL	OL	18.1	23.5	21.2	OL	OL	OL
02/08/2022	95.3	2.9	95.4	92.1	15.3	22.4	20.9	OL	OL	OL	17.7	24.6	22.4	OL	OL	OL	18.1	23.3	21.2	OL	OL	OL
03/08/2022	95.5	88.7	95.8	93.8	14.4	30.4	21.4	0.0	61.1	21.0	0.0	33.6	21.3	0.0	96.9	24.0	0.0	40.6	21.3	16.5	79.8	21.4
04/08/2022	95.1	87.3	95.4	93.8	0.0	39.9	19.6	OL	OL	OL	15.9	52.9	21.5	18.5	47.9	22.9	OL	OL	OL	16.1	39.9	21.1
05/08/2022	95.4	84.5	95.7	94.0	0.0	46.4	19.4	OL	OL	OL	13.8	29.5	21.6	18.8	29.9	21.5	OL	OL	OL	15.9	29.6	21.1
06/08/2022	95.5	83.7	96.0	93.4	OL	OL	OL	OL	OL	OL	16.4	27.1	21.6	18.8	21.9	21.2	OL	OL	OL	15.5	22.1	21.2
07/08/2022	95.6	87.6	96.2	94.1	OL	OL	OL	OL	OL	OL	16.0	25.5	21.6	18.7	22.4	21.2	OL	OL	OL	15.4	22.0	21.2
08/08/2022	95.6	81.6	96.2	94.7	OL	OL	OL	OL	OL	OL	16.5	28.2	21.7	19.0	23.1	21.6	OL	OL	OL	15.5	22.0	21.2
09/08/2022	94.4	84.7	94.8	92.9	OL	OL	OL	OL	OL	OL	15.3	28.6	21.7	18.6	34.9	21.3	OL	OL	OL	15.3	24.1	21.2
10/08/2022	95.6	86.5	96.2	94.1	OL	OL	OL	OL	OL	OL	15.9	29.8	21.6	18.5	22.1	21.2	OL	OL	OL	15.7	22.6	21.2
11/08/2022	95.7	82.0	96.3	95.0	0.0	46.1	19.8	OL	OL	OL	15.7	30.2	21.4	0.0	42.2	21.2	18.6	95.7	22.0	14.9	22.9	21.2
12/08/2022	95.9	92.5	96.6	95.2	OL	OL	OL	OL	OL	OL	16.3	22.3	21.2	OL	OL	OL	18.2	30.6	21.7	14.9	22.3	21.2
13/08/2022	95.8	89.8	96.6	95.7	OL	OL	OL	OL	OL	OL	16.9	22.3	21.3	OL	OL	OL	18.2	31.7	22.1	15.1	22.3	21.2
14/08/2022	95.9	75.4	96.6	95.8	OL	OL	OL	OL	OL	OL	16.1	22.2	21.1	OL	OL	OL	18.1	31.7	21.7	15.1	22.3	21.2
15/08/2022	95.9	89.0	96.6	95.2	OL	OL	OL	OL	OL	OL	17.0	22.1	21.1	OL	OL	OL	18.4	32.3	22.5	15.2	22.4	21.2
16/08/2022	96.1	92.4	96.8	95.5	OL	OL	OL	14.6	86.9	21.4	0.0	96.1	21.1	19.2	105.7	22.6	0.0	37.9	23.5	15.4	22.8	21.2
17/08/2022	96.1	89.9	96.8	96.1	OL	OL	OL	14.7	30.5	21.2	OL	OL	OL	19.9	24.4	22.7	OL	OL	OL	16.4	22.2	21.1
18/08/2022	96.0	84.1	96.7	95.7	OL	OL	OL	18.6	23.6	21.2	OL	OL	OL	19.1	23.5	21.9	OL	OL	OL	16.2	22.2	21.1
19/08/2022	95.9	90.2	96.6	95.3	OL	OL	OL	18.6	23.2	21.2	OL	OL	OL	18.8	23.4	21.6	OL	OL	OL	16.0	22.2	21.2
20/08/2022	95.9	89.3	96.5	95.5	OL	OL	OL	18.7	22.9	21.2	OL	OL	OL	18.8	22.7	21.3	OL	OL	OL	16.5	22.2	21.2
21/08/2022	96.0	86.9	96.7	95.4	OL	OL	OL	18.7	22.6	21.2	OL	OL	OL	18.7	22.8	21.2	OL	OL	OL	16.1	22.2	21.2
22/08/2022	96.0	70.2	96.7	94.5	OL	OL	OL	18.8	22.2	21.2	OL	OL	OL	18.8	22.4	21.3	OL	OL	OL	16.8	22.2	21.2
23/08/2022	96.0	71.4	96.7	95.3	OL	OL	OL	18.8	22.5	21.2	OL	OL	OL	18.8	22.9	21.3	OL	OL	OL	16.4	22.1	21.2
24/08/2022	95.9	80.0	96.6	95.8	OL	OL	OL	18.7	22.4	21.2	OL	OL	OL	18.7	23.4	21.3	OL	OL	OL	16.4	22.1	21.2
25/08/2022	95.8	80.3	96.5	95.5	OL	OL	OL	18.6	21.8	21.2	OL	OL	OL	18.7	22.9	21.3	OL	OL	OL	16.4	21.9	21.2
26/08/2022	95.6	3.2	96.3	95.1	0.0	101.1	33.1	18.6	21.9	21.2	OL	OL	OL	0.0	80.8	21.2	15.8	85.0	21.3	0.0	33.8	21.1
27/08/2022	95.6	2.5	96.0	94.4	OL	OL	OL	18.5	21.5	21.2	OL	OL	OL	18.8	21.8	21.2	18.0	23.0	21.2	OL	OL	OL
28/08/2022	96.0	85.6	96.4	95.5	OL	OL	OL	18.6	21.6	21.2	OL	OL	OL	18.8	22.4	21.2	18.0	23.4	21.2	OL	OL	OL
29/08/2022	96.2	87.1	96.5	95.4	OL	OL	OL	18.5	21.8	21.2	OL	OL	OL	18.7	22.7	21.2	18.1	35.2	21.4	0.0	84.6	34.7
30/08/2022	96.3	88.2	96.7	96.1	OL	OL	OL	0.0	29.2	21.4	26.4	100.5	33.3	18.5	23.7	21.3	18.2	23.5	21.2	OL	OL	OL
31/08/2022	96.3	85.7	96.7	96.3	18.3	96.9	25.7	OL	OL	OL	0.0	53.6	32.0	18.5	23.2	21.2	17.9	22.5	21.2	OL	OL	OL

Notes:
1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

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-09-412-02**

WATER TREATMENT PLANT UV REPORT

Report Period: **September 2022**

Report Created: **Saturday, October 01, 2022**

Date	UVR-D100A				UVR-D200A				UVR-D300A				UVR-D400A				UVR-D500A				UVR-D600A				Total				% 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	
01/09/2022	0.00	0.00	61.34	61.34	0.00	0.00	0.00	0.00	0.00	0.00	42.92	42.92	0.00	0.00	25.11	25.11	0.00	0.00	65.66	65.66	0.00	0.00	0.00	0.00	0.00	0.00	195.03	195.03	100.00
02/09/2022	0.00	0.05	58.64	58.69	0.00	0.00	0.00	0.00	0.00	0.00	66.34	66.34	0.00	0.00	0.00	0.00	0.00	0.00	65.02	65.02	0.00	0.00	0.00	0.00	0.00	0.05	190.01	190.05	99.98
03/09/2022	0.00	0.63	69.81	70.44	0.00	0.00	0.00	0.00	0.00	0.00	58.28	58.28	0.00	0.00	0.00	0.00	0.00	0.00	65.30	65.30	0.00	0.00	0.00	0.00	0.00	0.63	193.39	194.02	99.68
04/09/2022	0.00	0.54	75.20	75.74	0.00	0.00	0.00	0.00	0.00	0.00	55.57	55.57	0.00	0.00	0.00	0.00	0.00	0.00	66.19	66.19	0.00	0.00	0.00	0.00	0.00	0.54	196.96	197.50	99.72
05/09/2022	0.00	0.30	60.13	60.42	0.00	0.00	0.00	0.00	0.00	0.10	68.53	68.63	0.00	0.00	0.00	0.00	0.00	0.00	66.97	66.97	0.00	0.00	0.00	0.00	0.00	0.39	195.62	196.02	99.80
06/09/2022	0.00	0.48	61.42	61.90	0.00	0.00	0.00	0.00	0.00	0.10	69.68	69.79	0.00	0.00	0.00	0.00	0.00	0.00	68.28	68.28	0.00	0.00	0.00	0.00	0.00	0.58	199.39	199.96	99.71
07/09/2022	0.00	0.58	63.47	64.05	0.00	0.00	0.00	0.00	0.00	0.25	71.37	71.63	0.00	0.00	0.00	0.00	0.00	0.00	70.33	70.33	0.00	0.00	0.00	0.00	0.00	0.83	205.18	206.01	99.60
08/09/2022	0.00	0.72	63.74	64.45	0.00	0.00	0.00	0.00	0.00	0.25	71.17	71.42	0.00	0.00	0.00	0.00	0.00	0.00	70.11	70.11	0.00	0.00	0.00	0.00	0.00	0.97	205.02	205.99	99.53
09/09/2022	0.00	0.72	63.25	63.98	0.00	0.00	0.00	0.00	0.00	0.30	70.84	71.14	0.00	0.00	0.00	0.00	0.00	0.00	69.85	69.85	0.00	0.00	0.00	0.00	0.00	1.02	203.94	204.96	99.50
10/09/2022	0.00	0.39	62.36	62.75	0.00	0.00	0.00	0.00	0.00	0.35	71.10	71.45	0.00	0.00	0.00	0.00	0.00	0.00	69.85	69.85	0.00	0.00	0.00	0.00	0.00	0.74	203.30	204.04	99.64
11/09/2022	0.00	0.58	61.80	62.38	0.00	0.00	0.00	0.00	0.00	0.35	71.17	71.52	0.00	0.00	0.00	0.00	0.00	0.05	70.02	70.07	0.00	0.00	0.00	0.00	0.00	0.98	202.99	203.96	99.52
12/09/2022	0.00	0.61	61.51	62.12	0.00	0.00	0.00	0.00	0.00	0.45	71.31	71.77	0.00	0.00	0.00	0.00	0.00	0.00	70.15	70.15	0.00	0.00	0.00	0.00	0.00	1.06	202.97	204.03	99.48
13/09/2022	0.00	0.69	61.81	62.50	0.00	0.00	0.00	0.00	0.00	0.50	71.08	71.58	0.00	0.00	0.00	0.00	0.00	0.05	69.90	69.95	0.00	0.00	0.00	0.00	0.00	1.24	202.79	204.03	99.39
14/09/2022	0.00	0.21	29.81	30.02	0.00	0.00	33.45	33.45	0.00	0.48	68.16	68.64	0.00	0.00	0.00	0.00	0.00	0.29	23.93	24.22	0.00	0.09	43.05	43.14	0.00	1.07	198.39	199.47	99.46
15/09/2022	0.00	0.00	0.00	0.00	0.19	0.19	33.53	33.92	0.00	0.19	52.96	53.15	0.00	0.00	27.83	27.83	0.00	0.00	50.67	50.67	0.00	0.09	25.24	25.33	0.19	0.47	190.24	190.91	99.65
16/09/2022	0.00	0.00	0.00	0.00	0.00	0.25	48.75	49.00	0.00	0.03	42.18	42.21	0.00	0.00	17.06	17.06	0.00	0.00	70.31	70.31	0.00	0.00	0.00	0.00	0.00	0.29	178.30	178.58	99.84
17/09/2022	0.00	0.00	0.00	0.00	0.20	0.20	23.83	24.23	0.00	0.16	54.84	55.00	0.00	0.00	0.00	0.00	0.00	0.00	46.95	46.95	0.00	0.30	47.24	47.54	0.20	0.65	172.87	173.71	99.51
18/09/2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	63.15	63.54	0.00	0.00	0.00	0.00	0.00	0.00	39.18	39.18	0.00	0.84	70.40	71.24	0.00	1.24	172.73	173.97	99.29
19/09/2022	0.00	0.00	33.95	33.95	0.00	0.00	0.00	0.00	0.00	0.42	38.97	39.39	0.00	0.00	0.00	0.00	0.00	0.00	39.34	39.34	0.00	0.88	69.44	70.32	0.00	1.30	181.70	183.01	99.29
20/09/2022	0.00	0.00	83.44	83.44	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	35.08	35.08	0.00	0.70	61.73	62.43	0.00	0.70	180.25	180.96	99.61
21/09/2022	0.01	0.01	69.34	69.36	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	34.71	34.71	0.00	0.76	60.33	61.09	0.01	0.77	164.38	165.16	99.53
22/09/2022	0.00	0.00	84.99	84.99	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	44.40	44.40	0.00	1.77	80.73	82.50	0.00	1.77	210.13	211.89	99.17
23/09/2022	0.00	0.00	64.00	64.00	0.00	0.27	44.44	44.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.28	17.28	0.00	1.97	79.33	81.30	0.00	2.24	205.05	207.29	98.92
24/09/2022	0.00	0.00	59.33	59.33	0.16	0.16	28.16	28.48	0.00	0.00	0.00	0.00	0.00	0.36	37.82	38.18	0.00	0.00	0.00	0.00	0.00	1.41	69.25	70.65	0.16	1.92	194.56	196.64	98.94
25/09/2022	0.00	0.57	32.27	32.84	0.00	0.00	42.63	42.63	0.00	0.00	0.00	0.00	0.00	0.60	28.92	29.52	0.00	0.03	19.96	19.99	0.00	1.12	68.79	69.91	0.00	2.31	192.57	194.89	98.81
26/09/2022	0.00	0.00	0.00	0.00	0.00	0.17	76.97	77.14	0.00	0.00	0.00	0.00	0.00	0.00	23.35	23.35	0.00	0.00	25.65	25.65	0.00	1.66	65.87	67.53	0.00	1.83	191.84	193.68	99.05
27/09/2022	0.00	0.00	0.00	0.00	0.00	0.00	63.42	63.42	0.00	0.00	0.00	0.00	0.00	0.00	65.10	65.10	0.00	0.00	0.00	0.00	0.00	0.99	61.03	62.02	0.00	0.99	189.55	190.55	99.48
28/09/2022	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	67.07	67.07	0.00	0.00	0.00	0.00	0.00	1.30	61.08	62.39	0.00	1.30	194.74	196.04	99.34
29/09/2022	0.00	0.00	0.00	0.00	0.00	0.00	66.24	66.24	0.00	0.00	0.00	0.00	0.00	0.00	67.12	67.12	0.00	0.00	0.00	0.00	0.00	1.13	61.52	62.65	0.00	1.13	194.89	196.02	99.42
30/09/2022	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	66.89	66.89	0.00	0.00	0.00	0.00	0.00	1.13	61.33	62.46	0.00	1.13	194.33	195.46	99.42
Total [ML]:	0.01	7.07	1281.61	1288.69	0.55	1.25	594.11	595.91	0.00	4.33	1179.64	1183.97	0.00	0.95	426.29	427.24	0.00	0.41	1335.09	1335.50	0.00	16.14	986.38	1002.52	0.56	30.14	5803.12	5833.82	

Water Volume [%]:

Untreated: 0.01 %
Below Dose 0.52 %
To Dose 99.47 %

Notes: 1. UV Comparative Dose: 18.1 mJ/cm²

Submitted By (Print): D.Meredew

Signature: Original signed by D.Meredew



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

Water System Code: **252.00**
Licence Number: **PWS-09-412-02**

WATER TREATMENT PLANT UV REPORT

Report Period: **September 2022**

Report Created: **Saturday, October 01, 2022**

Date	Transmittance (%)				UVR_D100A			UVR_D200A			UVR_D300A			UVR_D400A			UVR_D500A			UVR_D600A		
	Branch 1		Branch 2		UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²		
	Avg.	Min.	Avg.	Min.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.
01/09/2022	96.2	75.5	96.6	95.8	18.5	27.1	23.9	OL	OL	OL	20.6	103.9	26.5	0.0	39.0	21.2	18.2	23.2	21.2	OL	OL	OL
02/09/2022	96.0	75.8	96.3	95.6	17.7	25.5	23.3	OL	OL	OL	19.5	26.8	24.7	OL	OL	OL	18.1	22.5	21.2	OL	OL	OL
03/09/2022	95.9	79.9	96.3	95.7	17.1	39.8	21.5	OL	OL	OL	18.8	46.2	25.3	OL	OL	OL	16.6	40.5	21.2	OL	OL	OL
04/09/2022	96.0	76.3	96.4	95.3	17.2	39.0	21.2	OL	OL	OL	18.6	42.4	25.0	OL	OL	OL	18.2	36.3	21.2	OL	OL	OL
05/09/2022	96.0	84.5	96.4	96.0	17.4	23.5	21.2	OL	OL	OL	17.7	24.7	21.3	OL	OL	OL	18.0	22.7	21.2	OL	OL	OL
06/09/2022	95.9	75.6	96.3	95.6	17.4	23.3	21.2	OL	OL	OL	17.4	23.0	21.2	OL	OL	OL	17.9	22.2	21.2	OL	OL	OL
07/09/2022	95.9	72.3	96.3	95.6	17.2	22.5	21.2	OL	OL	OL	17.2	23.9	21.1	OL	OL	OL	18.0	21.8	21.1	OL	OL	OL
08/09/2022	95.6	86.5	96.0	94.9	17.1	22.3	21.2	OL	OL	OL	17.2	22.2	21.1	OL	OL	OL	18.0	22.5	21.1	OL	OL	OL
09/09/2022	95.4	67.6	95.8	95.1	17.0	23.0	21.2	OL	OL	OL	17.3	22.3	21.1	OL	OL	OL	17.9	21.8	21.1	OL	OL	OL
10/09/2022	95.2	77.2	95.6	95.1	17.1	23.6	21.2	OL	OL	OL	17.2	23.3	21.1	OL	OL	OL	17.9	22.4	21.1	OL	OL	OL
11/09/2022	95.2	77.3	95.6	95.0	17.0	22.2	21.2	OL	OL	OL	17.2	22.2	21.1	OL	OL	OL	17.5	23.1	21.1	OL	OL	OL
12/09/2022	95.3	82.4	95.7	94.8	16.0	29.7	21.2	OL	OL	OL	17.2	22.1	21.1	OL	OL	OL	17.5	21.9	21.1	OL	OL	OL
13/09/2022	95.6	86.8	96.0	95.0	16.1	30.1	21.5	OL	OL	OL	17.2	22.3	21.1	OL	OL	OL	17.9	22.7	21.1	OL	OL	OL
14/09/2022	95.5	2.8	96.0	94.9	0.0	28.6	21.6	16.3	92.8	21.4	17.2	23.5	21.1	OL	OL	OL	0.0	36.3	21.1	16.7	84.6	21.9
15/09/2022	95.7	84.8	96.1	95.1	OL	OL	OL	0.0	43.4	21.4	17.3	37.5	21.3	18.4	61.1	21.7	18.1	95.7	22.0	0.0	40.1	21.3
16/09/2022	95.9	90.0	96.4	95.0	OL	OL	OL	15.8	94.8	21.1	17.0	34.0	21.4	0.0	31.5	21.7	17.9	24.7	21.8	OL	OL	OL
17/09/2022	96.0	85.6	96.6	96.0	OL	OL	OL	0.0	21.9	21.5	17.2	24.2	21.3	OL	OL	OL	19.0	34.0	26.3	16.3	84.5	21.2
18/09/2022	95.8	66.4	96.4	96.0	OL	OL	OL	OL	OL	OL	17.2	23.7	21.2	OL	OL	OL	19.7	31.5	24.9	16.1	22.1	21.1
19/09/2022	95.7	64.0	96.3	95.5	19.1	86.6	23.5	OL	OL	OL	0.0	26.7	21.2	OL	OL	OL	19.2	29.9	23.6	16.1	23.5	21.1
20/09/2022	95.6	3.2	96.3	95.5	19.6	43.7	21.5	OL	OL	OL	OL	OL	OL	OL	OL	OL	19.0	34.1	23.4	15.3	32.2	21.2
21/09/2022	95.2	2.9	95.6	80.1	0.0	95.0	21.9	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.0	65.8	21.7	0.0	82.6	21.4
22/09/2022	95.6	2.8	96.2	95.1	20.9	29.5	21.2	OL	OL	OL	OL	OL	OL	OL	OL	OL	17.7	28.5	21.4	15.5	22.5	21.3
23/09/2022	95.8	3.1	96.2	95.3	20.9	40.0	21.7	14.0	93.6	21.4	OL	OL	OL	OL	OL	OL	0.0	28.3	21.4	14.9	23.0	21.3
24/09/2022	95.7	90.4	96.2	95.7	18.9	34.1	21.3	0.0	21.9	21.5	OL	OL	OL	13.1	40.3	20.2	OL	OL	OL	15.9	24.1	21.2
25/09/2022	95.8	76.2	96.3	95.1	0.0	39.7	21.2	18.0	87.5	20.5	OL	OL	OL	0.0	65.0	19.9	15.9	57.3	21.4	15.7	30.3	21.2
26/09/2022	95.8	75.2	96.3	95.7	OL	OL	OL	15.0	29.5	20.6	OL	OL	OL	19.6	105.5	23.2	0.0	26.3	21.4	15.1	23.4	21.3
27/09/2022	95.8	83.9	96.3	95.2	OL	OL	OL	16.5	21.9	21.2	OL	OL	OL	18.8	23.0	21.6	OL	OL	OL	15.4	23.2	21.4
28/09/2022	95.8	75.5	96.3	95.3	OL	OL	OL	18.6	21.7	21.2	OL	OL	OL	18.7	21.7	21.2	OL	OL	OL	15.5	23.7	21.4
29/09/2022	95.8	89.0	96.4	95.5	OL	OL	OL	18.7	21.6	21.2	OL	OL	OL	18.7	21.7	21.2	OL	OL	OL	15.4	23.7	21.4
30/09/2022	95.9	86.9	96.4	94.4	OL	OL	OL	18.8	21.6	21.2	OL	OL	OL	18.7	21.8	21.2	OL	OL	OL	15.1	22.2	21.4

Notes:
1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

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-09-412-02**

WATER TREATMENT PLANT UV REPORT

Report Period: **October 2022**

Report Created: **Tuesday, November 01, 2022**

Date	UVR-D100A				UVR-D200A				UVR-D300A				UVR-D400A				UVR-D500A				UVR-D600A				Total				% 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	
01/10/2022	0.00	0.00	0.00	0.00	0.00	0.00	64.52	64.52	0.00	0.00	0.00	0.00	0.00	0.00	65.39	65.39	0.00	0.00	0.00	0.00	0.00	1.44	59.63	61.07	0.00	1.44	189.54	190.98	99.24
02/10/2022	0.00	0.00	0.00	0.00	0.00	0.00	61.90	61.90	0.00	0.00	0.00	0.00	0.00	0.00	62.86	62.86	0.00	0.00	0.00	0.00	0.00	1.23	57.72	58.95	0.00	1.23	182.48	183.71	99.33
03/10/2022	0.00	0.00	9.03	9.03	0.00	0.57	59.00	59.57	0.00	0.00	0.00	0.00	0.00	0.00	58.52	58.52	0.00	0.00	0.00	0.00	0.00	1.00	59.27	60.27	0.00	1.57	185.82	187.39	99.16
04/10/2022	0.00	0.00	71.19	71.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	58.67	58.67	0.00	0.00	0.00	0.00	0.00	1.71	60.90	62.61	0.00	1.71	190.77	192.47	99.11
05/10/2022	0.00	0.00	68.26	68.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	64.87	64.87	0.00	0.00	0.00	0.00	0.00	0.70	62.38	63.08	0.00	0.70	195.51	196.21	99.64
06/10/2022	0.00	0.00	65.44	65.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	68.44	68.44	0.00	0.00	0.00	0.00	0.00	1.30	65.27	66.57	0.00	1.30	199.15	200.45	99.35
07/10/2022	0.00	0.23	65.90	66.13	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	0.58	59.53	60.12	0.00	0.81	187.19	188.01	99.57
08/10/2022	0.00	0.23	65.84	66.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	61.82	61.82	0.00	0.00	0.00	0.00	0.00	0.54	59.58	60.13	0.00	0.77	187.25	188.02	99.59
09/10/2022	0.00	0.45	63.95	64.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	58.04	58.04	0.00	0.00	0.00	0.00	0.00	0.77	57.97	58.74	0.00	1.22	179.96	181.18	99.32
10/10/2022	0.00	0.35	62.90	63.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	56.80	56.80	0.00	0.00	0.00	0.00	0.00	0.64	57.44	58.09	0.00	1.00	177.13	178.13	99.44
11/10/2022	0.00	0.22	60.58	60.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	61.07	61.07	0.00	0.00	0.00	0.00	0.00	0.67	59.26	59.93	0.00	0.89	180.92	181.81	99.51
12/10/2022	0.00	0.41	68.35	68.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.92	48.92	0.00	0.00	0.00	0.00	0.00	1.40	65.41	66.81	0.00	1.81	182.67	184.48	99.02
13/10/2022	0.00	0.31	72.99	73.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.47	44.47	0.00	0.00	0.00	0.00	0.00	1.82	66.90	68.71	0.00	2.12	184.36	186.48	98.86
14/10/2022	0.00	0.45	71.39	71.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.09	45.09	0.00	0.00	0.00	0.00	0.00	1.30	67.77	69.07	0.00	1.74	184.25	185.99	99.06
15/10/2022	0.00	0.35	72.87	73.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.40	44.40	0.00	0.00	0.00	0.00	0.00	1.42	67.00	68.42	0.00	1.78	184.27	186.04	99.04
16/10/2022	0.00	0.40	71.77	72.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.44	43.44	0.00	0.00	0.00	0.00	0.00	0.97	65.83	66.80	0.00	1.37	181.03	182.41	99.25
17/10/2022	0.00	0.45	71.44	71.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.38	43.38	0.00	0.00	0.00	0.00	0.00	1.85	64.86	66.72	0.00	2.30	179.68	181.99	98.73
18/10/2022	0.00	0.07	20.43	20.50	0.00	0.00	33.69	33.69	0.00	0.00	0.00	0.00	0.00	0.02	12.66	12.66	0.00	0.03	13.59	13.62	0.00	0.85	40.91	41.76	0.00	0.96	121.28	122.25	99.21
19/10/2022	0.00	0.00	0.00	0.00	0.01	0.01	82.14	82.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.04	39.41	39.45	0.00	1.18	65.95	67.13	0.02	1.22	187.50	188.73	99.34
20/10/2022	0.00	0.12	29.93	30.06	0.20	0.24	71.10	71.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	57.68	57.82	0.00	0.58	34.13	34.72	0.20	1.08	192.85	194.13	99.34
21/10/2022	0.00	0.09	60.07	60.16	0.18	0.28	24.10	24.56	0.00	0.00	0.00	0.00	0.00	0.00	40.69	40.69	0.00	0.17	64.39	64.56	0.00	0.00	0.14	0.14	0.18	0.55	189.38	190.11	99.62
22/10/2022	0.00	0.21	61.29	61.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	65.61	65.61	0.00	0.00	62.89	62.89	0.00	0.00	0.00	0.00	0.00	0.21	189.79	190.01	99.89
23/10/2022	0.00	0.38	60.80	61.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	65.55	65.55	0.00	0.00	63.28	63.28	0.00	0.00	0.00	0.00	0.00	0.38	189.62	190.01	99.80
24/10/2022	0.00	0.44	62.22	62.66	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	64.41	64.41	0.00	0.00	0.00	0.00	0.00	0.44	193.80	194.23	99.78
25/10/2022	0.00	0.27	58.15	58.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	58.09	58.13	0.00	0.14	65.10	65.24	0.00	0.24	7.08	7.32	0.00	0.69	188.43	189.12	99.63
26/10/2022	0.00	0.35	70.51	70.85	0.00	0.00	0.00	0.00	0.00	0.00	19.28	19.28	0.00	0.00	25.76	25.76	0.00	0.05	69.06	69.11	0.00	0.00	0.00	0.00	0.00	0.39	184.61	185.01	99.79
27/10/2022	0.00	0.24	69.70	69.94	0.00	0.00	0.00	0.00	0.00	0.00	45.38	45.38	0.00	0.00	0.00	0.00	0.00	0.10	69.57	69.67	0.00	0.00	0.00	0.00	0.00	0.34	184.65	184.99	99.82
28/10/2022	0.00	0.43	68.56	68.99	0.00	0.00	0.00	0.00	0.00	0.00	18.76	18.76	0.00	0.00	25.49	25.49	0.00	0.14	66.65	66.78	0.00	0.00	0.00	0.00	0.00	0.57	179.46	180.03	99.68
29/10/2022	0.00	0.13	64.12	64.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	50.00	0.00	0.09	64.27	64.36	0.00	0.00	0.00	0.00	0.00	0.22	178.40	178.62	99.88
30/10/2022	0.00	0.26	61.97	62.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.37	53.37	0.00	0.04	64.38	64.42	0.00	0.00	0.00	0.00	0.00	0.31	179.71	180.02	99.83
31/10/2022	0.00	0.30	62.17	62.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	54.12	54.12	0.00	0.23	64.65	64.88	0.00	0.00	0.00	0.00	0.00	0.53	180.94	181.47	99.71
Total [ML]:	0.00	7.15	1711.84	1718.99	0.39	1.09	396.45	397.93	0.00	0.00	83.42	83.42	0.00	0.06	1466.43	1466.50	0.01	1.16	829.33	830.49	0.00	22.21	1204.93	1227.15	0.40	31.67	5692.40	5724.47	

Water Volume [%]:

Untreated: 0.01 %
Below Dose 0.55 %
To Dose 99.44 %

Notes: 1. UV Comparative Dose: 18.1 mJ/cm²

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-09-412-02**

WATER TREATMENT PLANT UV REPORT

Report Period: **October 2022**

Report Created: **Tuesday, November 01, 2022**

Date	Transmittance (%)				UVR_D100A			UVR_D200A			UVR_D300A			UVR_D400A			UVR_D500A			UVR_D600A		
	Branch 1		Branch 2		UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²		
	Avg.	Min.	Avg.	Min.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.
01/10/2022	95.9	81.7	96.4	95.9	OL	OL	OL	18.8	21.6	21.2	OL	OL	OL	18.5	22.6	21.2	OL	OL	OL	15.0	23.7	21.4
02/10/2022	95.9	75.3	96.4	95.9	OL	OL	OL	18.7	21.7	21.2	OL	OL	OL	18.7	21.8	21.2	OL	OL	OL	15.2	24.2	21.4
03/10/2022	95.5	75.3	96.1	94.9	18.0	85.0	23.2	0.0	37.2	21.0	OL	OL	OL	18.6	22.1	21.2	OL	OL	OL	15.6	23.1	21.4
04/10/2022	94.4	85.4	95.0	94.5	17.6	49.8	23.3	OL	OL	OL	OL	OL	OL	18.6	29.9	21.2	OL	OL	OL	15.7	30.5	21.4
05/10/2022	94.3	82.6	94.9	94.5	18.0	31.5	22.9	OL	OL	OL	OL	OL	OL	18.7	22.7	21.2	OL	OL	OL	15.8	23.2	21.4
06/10/2022	94.3	80.5	94.9	94.2	17.2	31.3	22.7	OL	OL	OL	OL	OL	OL	18.5	21.9	21.2	OL	OL	OL	15.4	23.5	21.4
07/10/2022	94.4	85.7	95.0	94.0	17.4	29.7	21.8	OL	OL	OL	OL	OL	OL	18.6	21.8	21.2	OL	OL	OL	16.1	25.5	21.5
08/10/2022	94.4	3.5	95.1	94.6	17.2	28.4	21.4	OL	OL	OL	OL	OL	OL	18.6	22.1	21.2	OL	OL	OL	15.3	24.8	21.5
09/10/2022	94.4	83.6	95.1	94.6	16.8	28.6	21.4	OL	OL	OL	OL	OL	OL	18.6	21.9	21.2	OL	OL	OL	16.1	24.7	21.5
10/10/2022	94.4	72.4	95.0	94.5	17.0	28.2	21.4	OL	OL	OL	OL	OL	OL	18.6	22.9	21.2	OL	OL	OL	16.1	25.9	21.5
11/10/2022	94.4	90.0	95.0	94.0	17.2	30.0	21.8	OL	OL	OL	OL	OL	OL	18.6	21.8	21.2	OL	OL	OL	15.2	26.2	21.5
12/10/2022	94.3	72.2	94.9	94.2	16.8	39.0	21.5	OL	OL	OL	OL	OL	OL	14.7	35.1	21.4	OL	OL	OL	12.3	42.7	21.4
13/10/2022	94.3	80.6	95.0	94.2	16.9	24.8	21.2	OL	OL	OL	OL	OL	OL	18.5	25.3	21.4	OL	OL	OL	15.8	22.6	21.3
14/10/2022	94.4	87.4	95.0	94.4	16.8	25.6	21.2	OL	OL	OL	OL	OL	OL	18.5	25.6	21.4	OL	OL	OL	15.9	23.3	21.3
15/10/2022	94.4	91.3	95.1	94.6	17.1	24.5	21.2	OL	OL	OL	OL	OL	OL	18.4	25.9	21.4	OL	OL	OL	16.0	23.2	21.4
16/10/2022	94.4	91.6	95.1	94.0	16.7	24.2	21.2	OL	OL	OL	OL	OL	OL	18.5	26.5	21.4	OL	OL	OL	15.9	23.5	21.4
17/10/2022	94.4	93.1	95.2	94.7	17.0	24.0	21.2	OL	OL	OL	OL	OL	OL	18.5	26.0	21.4	OL	OL	OL	15.6	22.9	21.3
18/10/2022	94.0	11.4	94.7	32.3	0.0	38.2	21.4	0.0	57.0	21.3	OL	OL	OL	0.0	26.3	21.4	0.0	40.1	22.0	0.0	56.2	21.4
19/10/2022	94.4	92.1	95.2	93.6	OL	OL	OL	0.0	63.0	21.3	OL	OL	OL	OL	OL	OL	0.0	62.0	21.5	0.0	54.0	21.3
20/10/2022	94.4	93.4	95.2	94.7	0.0	96.4	30.2	0.0	45.6	21.3	OL	OL	OL	OL	OL	OL	16.0	29.6	21.4	0.0	33.8	21.2
21/10/2022	94.3	90.5	95.2	94.8	17.0	36.7	24.5	0.0	63.9	21.4	OL	OL	OL	19.0	100.4	22.5	17.4	28.4	21.5	0.0	52.8	23.0
22/10/2022	94.1	93.0	94.9	94.7	16.7	23.7	21.5	OL	OL	OL	OL	OL	OL	18.7	22.4	21.2	17.9	23.0	21.5	OL	OL	OL
23/10/2022	94.1	93.0	94.8	94.6	17.1	23.1	21.2	OL	OL	OL	OL	OL	OL	18.5	21.8	21.2	16.1	29.1	21.4	OL	OL	OL
24/10/2022	94.0	93.3	94.7	93.8	17.2	22.2	21.2	OL	OL	OL	OL	OL	OL	18.6	22.7	21.2	18.0	21.9	21.2	OL	OL	OL
25/10/2022	94.2	91.7	95.0	94.7	0.0	81.9	21.3	OL	OL	OL	OL	OL	OL	15.9	28.9	22.1	16.0	29.8	21.3	0.0	53.2	21.6
26/10/2022	94.2	91.0	95.1	94.9	17.6	27.2	21.2	OL	OL	OL	24.5	105.7	31.4	0.0	37.9	23.1	17.5	22.2	21.4	OL	OL	OL
27/10/2022	94.2	92.3	95.4	95.0	17.6	28.2	21.2	OL	OL	OL	22.8	33.0	28.6	OL	OL	OL	17.3	22.2	21.4	OL	OL	OL
28/10/2022	94.0	90.6	95.3	94.8	16.0	29.4	21.2	OL	OL	OL	0.0	41.5	27.3	16.4	89.0	23.0	17.6	22.3	21.4	OL	OL	OL
29/10/2022	93.8	93.0	94.9	94.7	16.1	31.2	21.3	OL	OL	OL	OL	OL	OL	18.4	32.1	21.7	17.4	26.8	21.4	OL	OL	OL
30/10/2022	93.8	92.2	95.0	94.6	17.5	28.2	21.3	OL	OL	OL	OL	OL	OL	18.2	23.1	21.3	17.7	22.9	21.4	OL	OL	OL
31/10/2022	93.8	91.4	94.9	94.6	17.5	27.3	21.3	OL	OL	OL	OL	OL	OL	18.2	22.8	21.3	14.5	29.5	21.3	OL	OL	OL

Notes:
1. UV Comparative Dose: 18.1 mJ/cm²
2. OL - Off Line

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-09-412-02**

WATER TREATMENT PLANT UV REPORT

Report Period: **November 2022**

Report Created: **Thursday, December 01, 2022**

Date	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		
01/11/2022	0.00	0.22	61.23	61.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.93	53.93	0.00	0.00	63.93	63.93	0.00	0.00	0.00	0.00	0.00	0.22	179.09	179.31	99.88	
02/11/2022	0.00	0.28	63.68	63.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.81	49.81	0.00	0.09	64.11	64.20	0.00	0.00	0.00	0.00	0.00	0.37	177.60	177.97	99.79	
03/11/2022	0.00	0.69	65.38	66.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.86	42.86	0.00	0.18	22.08	22.26	0.00	0.00	41.34	41.34	0.00	0.87	171.66	172.52	99.50	
04/11/2022	0.00	0.99	63.76	64.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.23	42.23	0.00	0.00	0.00	0.00	0.00	0.22	62.83	63.05	0.00	1.21	168.82	170.03	99.29	
05/11/2022	0.00	0.89	63.73	64.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.24	42.24	0.00	0.00	0.00	0.00	0.00	0.48	62.66	63.14	0.00	1.38	168.63	170.00	99.19	
06/11/2022	0.00	0.87	64.75	65.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.01	43.01	0.00	0.00	0.00	0.00	0.00	0.49	63.73	64.22	0.00	1.36	171.49	172.85	99.21	
07/11/2022	0.00	0.92	65.66	66.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.24	42.24	0.00	0.00	0.00	0.00	0.00	0.53	62.66	63.18	0.00	1.45	170.56	172.01	99.16	
08/11/2022	0.00	1.31	66.02	67.33	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	0.00	0.00	0.00	0.49	63.94	64.43	0.00	1.80	173.71	175.51	98.97	
09/11/2022	0.00	0.91	68.02	68.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.55	45.55	0.00	0.00	0.00	0.00	0.00	0.55	65.22	65.77	0.00	1.46	178.79	180.24	99.19	
10/11/2022	0.00	1.31	68.18	69.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.31	46.31	0.00	0.00	0.00	0.00	0.00	0.59	65.29	65.88	0.00	1.90	179.78	181.68	98.95	
11/11/2022	0.00	0.97	68.64	69.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.48	46.48	0.00	0.00	0.00	0.00	0.00	0.55	65.36	65.91	0.00	1.52	180.49	182.01	99.16	
12/11/2022	0.00	0.73	68.86	69.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.53	46.53	0.00	0.00	0.00	0.00	0.00	0.55	65.31	65.86	0.00	1.28	180.71	181.98	99.30	
13/11/2022	0.00	0.68	68.95	69.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.54	46.54	0.00	0.00	0.00	0.00	0.00	0.50	65.31	65.81	0.00	1.18	180.79	181.97	99.35	
14/11/2022	0.00	0.59	69.57	70.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	52.66	52.66	0.00	0.00	0.00	0.00	0.00	0.49	58.42	58.91	0.00	1.08	180.66	181.74	99.41	
15/11/2022	0.00	0.59	70.05	70.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.20	53.20	0.00	0.00	0.00	0.00	0.00	0.45	58.39	58.85	0.00	1.04	181.64	182.68	99.43	
16/11/2022	0.00	0.80	71.10	71.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	54.00	54.00	0.00	0.00	0.00	0.00	0.00	0.46	59.62	60.07	0.00	1.26	184.72	185.97	99.32	
17/11/2022	0.00	0.55	71.28	71.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.87	53.87	0.00	0.00	0.00	0.00	0.00	0.46	59.84	60.30	0.00	1.01	184.99	186.00	99.46	
18/11/2022	0.00	0.30	61.90	62.20	0.00	0.00	0.00	0.00	0.00	0.00	6.76	6.76	0.00	0.00	53.55	53.55	0.00	0.00	0.00	0.00	0.00	0.80	62.68	63.48	0.00	1.10	184.88	185.99	99.41	
19/11/2022	0.01	0.07	9.63	9.70	0.00	0.23	0.34	0.57	0.00	0.11	49.77	49.88	0.00	0.15	53.16	53.30	0.03	0.07	0.92	1.02	0.00	0.98	70.59	71.57	0.04	1.60	184.40	186.04	99.12	
20/11/2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	50.69	50.72	0.00	0.04	51.93	51.96	0.00	0.00	0.00	0.00	0.00	1.27	82.02	83.29	0.00	1.34	184.64	185.98	99.28	
21/11/2022	0.00	0.00	0.00	0.00	0.00	0.00	41.70	41.70	0.00	0.00	46.08	46.08	0.00	0.11	55.65	55.76	0.00	0.00	0.00	0.00	0.00	0.69	41.80	42.49	0.00	0.80	185.23	186.03	99.57	
22/11/2022	0.00	0.00	0.00	0.00	0.00	0.00	84.99	84.99	0.00	0.00	41.71	41.71	0.00	0.00	60.22	60.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	186.93	186.93	100.00	
23/11/2022	0.00	0.00	0.00	0.00	0.00	0.00	85.00	85.00	0.00	0.00	43.51	43.51	0.00	0.00	61.72	61.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	190.22	190.22	100.00	
24/11/2022	0.00	0.00	0.00	0.00	0.00	0.00	77.66	77.66	0.00	0.00	44.57	44.57	0.00	0.00	69.57	69.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	191.81	191.81	100.00	
25/11/2022	0.00	0.00	0.00	0.00	0.00	0.05	71.97	72.02	0.00	0.00	44.77	44.77	0.00	0.00	78.22	78.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	194.96	195.01	99.98
26/11/2022	0.00	0.00	0.00	0.00	0.00	0.00	79.68	79.68	0.00	0.00	43.00	43.00	0.00	0.00	77.27	77.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	199.96	199.96	100.00
27/11/2022	0.00	0.00	0.00	0.00	0.00	0.00	80.78	80.78	0.00	0.10	52.25	52.35	0.00	0.00	65.83	65.83	0.00	0.10	11.88	11.98	0.00	0.00	0.00	0.00	0.00	0.20	210.74	210.93	99.91	
28/11/2022	0.00	0.03	1.57	1.60	0.00	0.00	42.08	42.08	0.00	0.05	26.40	26.45	0.00	0.05	49.81	49.86	0.00	0.00	59.99	59.99	0.00	0.22	30.03	30.24	0.00	0.34	209.87	210.22	99.84	
29/11/2022	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	79.97	79.97	0.00	0.06	39.01	39.06	0.00	0.23	66.33	66.57	0.00	0.29	185.31	185.60	99.84	
30/11/2022	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	79.92	79.92	0.00	0.08	38.61	38.69	0.00	0.32	64.86	65.18	0.00	0.40	183.38	183.78	99.78	
Total [mL]:	0.01	13.67	1211.96	1225.64	0.00	0.28	564.21	564.49	0.00	0.29	449.51	449.80	0.00	0.34	1642.03	1642.37	0.03	0.58	300.53	301.13	0.00	11.33	1338.21	1349.53	0.04	26.49	5506.45	5532.97		

Water Volume [%]:

Untreated: 0.00 %
Below Dose 0.48 %
To Dose 99.52 %

Notes: 1. UV Comparative Dose: 18.1 mJ/cm²

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-09-412-02**

WATER TREATMENT PLANT UV REPORT

Report Period: **November 2022**

Report Created: **Thursday, December 01, 2022**

Date	Transmittance (%)				UVR_D100A			UVR_D200A			UVR_D300A			UVR_D400A			UVR_D500A			UVR_D600A		
	Branch 1		Branch 2		UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²		
	Avg.	Min.	Avg.	Min.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.
01/11/2022	93.8	93.0	95.0	94.6	17.4	25.9	21.3	OL	OL	OL	OL	OL	OL	18.3	23.3	21.3	17.9	22.1	21.2	OL	OL	OL
02/11/2022	93.8	85.1	95.0	94.6	17.5	26.0	21.3	OL	OL	OL	OL	OL	OL	18.4	25.5	21.4	15.8	29.9	21.3	OL	OL	OL
03/11/2022	93.8	92.8	94.9	94.6	15.9	28.0	21.2	OL	OL	OL	OL	OL	OL	16.3	30.2	21.5	0.0	29.8	21.4	18.8	84.6	24.4
04/11/2022	93.8	85.6	94.9	94.5	16.7	22.7	21.1	OL	OL	OL	OL	OL	OL	18.6	27.9	21.5	OL	OL	OL	17.4	26.3	21.8
05/11/2022	93.8	84.0	95.6	95.0	16.6	22.0	21.1	OL	OL	OL	OL	OL	OL	18.7	28.0	21.5	OL	OL	OL	16.1	25.1	21.2
06/11/2022	93.7	79.2	96.5	96.1	16.4	22.7	21.1	OL	OL	OL	OL	OL	OL	18.7	27.2	21.5	OL	OL	OL	16.2	24.2	21.2
07/11/2022	93.8	86.6	96.6	96.1	16.6	21.9	21.1	OL	OL	OL	OL	OL	OL	18.7	28.2	21.5	OL	OL	OL	16.5	24.4	21.2
08/11/2022	93.8	75.8	96.9	96.5	16.4	22.7	21.1	OL	OL	OL	OL	OL	OL	18.6	27.5	21.4	OL	OL	OL	16.5	23.4	21.2
09/11/2022	93.8	72.4	97.0	96.5	16.2	29.3	21.4	OL	OL	OL	OL	OL	OL	18.5	26.3	21.4	OL	OL	OL	16.5	23.0	21.2
10/11/2022	93.7	90.3	97.0	96.6	16.0	23.2	21.4	OL	OL	OL	OL	OL	OL	18.7	26.4	21.4	OL	OL	OL	16.5	23.0	21.2
11/11/2022	93.6	89.9	97.5	97.1	16.0	22.0	21.4	OL	OL	OL	OL	OL	OL	18.5	25.8	21.4	OL	OL	OL	16.5	23.1	21.2
12/11/2022	93.6	82.2	96.7	0.0	16.1	23.4	21.4	OL	OL	OL	OL	OL	OL	18.4	25.7	21.4	OL	OL	OL	16.6	22.9	21.2
13/11/2022	93.5	79.6	96.2	92.7	16.2	27.8	21.5	OL	OL	OL	OL	OL	OL	18.7	25.7	21.4	OL	OL	OL	16.5	24.4	21.2
14/11/2022	93.3	80.0	96.1	93.4	16.1	40.7	21.5	OL	OL	OL	OL	OL	OL	16.3	32.6	21.6	OL	OL	OL	15.0	37.9	21.3
15/11/2022	93.1	86.5	96.1	93.8	16.1	28.5	21.5	OL	OL	OL	OL	OL	OL	18.7	23.2	21.3	OL	OL	OL	16.6	23.6	21.3
16/11/2022	93.1	86.5	96.2	94.7	16.1	28.5	21.5	OL	OL	OL	OL	OL	OL	18.6	22.7	21.3	OL	OL	OL	16.7	23.6	21.2
17/11/2022	92.9	78.1	95.9	94.1	16.2	27.3	21.5	OL	OL	OL	OL	OL	OL	18.6	22.0	21.3	OL	OL	OL	16.8	23.4	21.2
18/11/2022	92.7	2.8	95.1	94.0	0.0	41.0	21.5	OL	OL	OL	16.7	65.9	21.5	18.3	24.9	21.5	OL	OL	OL	4.0	29.7	21.2
19/11/2022	92.3	89.2	94.9	94.3	0.0	39.7	21.5	0.0	39.1	20.2	17.7	31.0	21.5	15.0	27.0	21.6	0.0	63.5	21.6	0.0	83.5	21.5
20/11/2022	92.1	87.3	94.8	94.4	OL	OL	OL	OL	OL	OL	17.8	27.6	21.4	16.0	30.3	21.3	OL	OL	OL	16.2	29.5	21.2
21/11/2022	92.0	90.4	94.8	94.1	OL	OL	OL	18.1	87.6	21.4	17.7	32.0	22.6	15.7	31.0	21.4	OL	OL	OL	0.0	28.8	21.1
22/11/2022	91.9	77.8	95.0	94.6	OL	OL	OL	18.3	21.8	21.3	19.2	31.4	23.4	18.7	21.9	21.2	OL	OL	OL	OL	OL	OL
23/11/2022	92.0	71.8	95.1	94.7	OL	OL	OL	18.3	21.7	21.3	18.9	31.3	23.1	18.7	22.8	21.2	OL	OL	OL	OL	OL	OL
24/11/2022	91.8	83.9	94.9	94.0	OL	OL	OL	18.4	22.5	21.4	18.2	29.8	22.8	18.7	22.1	21.2	OL	OL	OL	OL	OL	OL
25/11/2022	93.2	2.4	96.0	95.5	OL	OL	OL	15.9	27.1	21.3	19.3	31.0	23.6	18.6	21.7	21.1	OL	OL	OL	OL	OL	OL
26/11/2022	93.5	3.5	96.1	95.7	OL	OL	OL	18.8	25.6	21.1	19.1	35.6	24.3	18.6	31.4	21.1	OL	OL	OL	OL	OL	OL
27/11/2022	93.7	2.4	96.1	9.7	OL	OL	OL	18.7	21.7	21.1	17.9	31.2	23.2	0.0	36.9	21.1	16.1	65.8	21.4	OL	OL	OL
28/11/2022	93.8	2.9	96.2	95.3	0.0	64.7	22.2	0.0	28.3	21.2	0.0	39.4	21.5	16.4	80.0	21.2	15.9	31.5	21.3	16.6	52.6	21.4
29/11/2022	94.0	2.6	96.0	95.1	OL	OL	OL	OL	OL	OL	OL	OL	OL	18.7	22.7	21.1	17.1	32.1	21.5	16.8	24.3	21.2
30/11/2022	93.9	2.6	95.2	91.8	OL	OL	OL	OL	OL	OL	OL	OL	OL	18.7	21.6	21.1	17.4	31.2	21.5	16.6	24.6	21.2

- Notes:**
1. UV Comparative Dose: 18.1 mJ/cm²
 2. OL - Off Line

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-09-412-02**

WATER TREATMENT PLANT UV REPORT

Report Period: **December 2022**

Report Created: **Sunday, January 01, 2023**

Date	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	
01/12/2022	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	78.57	78.57	0.00	0.06	36.97	37.02	0.00	0.31	62.29	62.60	0.00	0.36	177.82	178.19	99.80
02/12/2022	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	77.84	77.84	0.00	0.00	35.77	35.77	0.00	0.26	61.17	61.43	0.00	0.26	174.78	175.04	99.85
03/12/2022	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	80.02	80.02	0.00	0.03	36.74	36.77	0.00	0.45	61.48	61.93	0.00	0.48	178.25	178.72	99.73
04/12/2022	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	79.98	79.98	0.00	0.03	41.91	41.94	0.00	1.00	71.63	72.64	0.00	1.03	193.52	194.56	99.47
05/12/2022	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	79.99	79.99	0.00	0.06	39.40	39.46	0.00	0.93	66.47	67.40	0.00	0.99	185.86	186.85	99.47
06/12/2022	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	80.03	80.03	0.00	0.08	38.19	38.27	0.00	0.68	64.11	64.79	0.00	0.76	182.33	183.09	99.58
07/12/2022	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	79.90	79.90	0.00	0.02	33.68	33.70	0.00	0.57	58.14	58.72	0.00	0.60	171.72	172.32	99.65
08/12/2022	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	79.69	79.69	0.00	0.02	34.31	34.33	0.00	0.46	57.10	57.57	0.00	0.49	171.10	171.59	99.72
09/12/2022	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	79.98	79.98	0.00	0.00	36.72	36.72	0.00	0.68	64.62	65.30	0.00	0.68	181.31	181.99	99.63
10/12/2022	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	80.01	80.01	0.00	0.08	36.58	36.66	0.00	0.77	64.56	65.33	0.00	0.85	181.15	182.00	99.53
11/12/2022	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	77.71	77.71	0.00	0.03	38.30	38.33	0.00	0.87	65.03	65.90	0.00	0.90	181.05	181.95	99.50
12/12/2022	0.00	0.00	33.83	33.83	0.00	0.00	13.41	13.41	0.00	0.11	32.14	32.24	0.00	0.97	26.08	27.05	0.00	0.03	39.83	39.86	0.00	0.53	38.30	38.83	0.00	1.64	183.58	185.22	99.11
13/12/2022	0.00	0.00	72.57	72.57	0.00	0.00	3.74	3.74	0.00	0.11	52.71	52.82	0.00	0.00	0.00	0.00	0.00	0.00	64.49	64.49	0.00	0.00	0.00	0.00	0.00	0.11	193.51	193.62	99.94
14/12/2022	0.00	0.00	47.99	47.99	0.00	0.00	0.00	0.00	0.00	0.04	31.67	31.71	0.00	0.00	0.00	0.00	0.00	0.00	43.68	43.68	0.00	0.00	0.00	0.00	0.00	0.04	123.35	123.39	99.97
15/12/2022	0.00	0.00	71.95	71.95	0.00	0.00	0.00	0.00	0.00	0.00	47.88	47.88	0.00	0.00	0.00	0.00	0.00	0.00	73.19	73.19	0.00	0.00	0.00	0.00	0.00	0.00	193.02	193.02	100.00
16/12/2022	0.00	0.00	72.07	72.07	0.00	0.00	0.00	0.00	0.00	0.00	47.98	47.98	0.00	0.00	0.00	0.00	0.00	0.00	72.93	72.93	0.00	0.00	0.00	0.00	0.00	0.00	192.98	192.98	100.00
17/12/2022	0.00	0.00	72.45	72.45	0.00	0.00	0.00	0.00	0.00	0.00	47.89	47.89	0.00	0.00	0.00	0.00	0.00	0.00	72.68	72.68	0.00	0.00	0.00	0.00	0.00	0.00	193.01	193.01	100.00
18/12/2022	0.00	0.00	73.10	73.10	0.00	0.00	0.00	0.00	0.00	0.00	47.95	47.95	0.00	0.00	0.00	0.00	0.00	0.00	72.88	72.88	0.00	0.00	0.00	0.00	0.00	0.00	193.93	193.93	100.00
19/12/2022	0.00	0.00	72.59	72.59	0.00	0.00	0.00	0.00	0.00	0.00	48.44	48.44	0.00	0.00	0.00	0.00	0.22	0.22	60.49	60.92	0.00	0.15	13.04	13.19	0.22	0.37	194.56	195.15	99.70
20/12/2022	0.00	0.00	72.60	72.60	0.00	0.00	0.00	0.00	0.00	0.00	48.33	48.33	0.00	0.00	0.00	0.00	0.00	0.00	74.04	74.04	0.00	0.00	0.00	0.00	0.00	0.00	194.97	194.97	100.00
21/12/2022	0.00	0.00	19.15	19.15	0.00	0.00	0.00	0.00	0.00	0.00	12.40	12.40	0.00	0.00	0.00	0.00	0.00	0.00	18.79	18.79	0.00	0.00	0.00	0.00	0.00	0.00	50.33	50.33	100.00
22/12/2022	0.00	0.21	50.80	51.01	0.00	0.07	29.54	29.61	0.00	0.17	0.03	0.19	0.00	0.00	0.00	0.00	0.00	0.00	42.42	42.42	0.00	1.01	72.15	73.16	0.00	1.45	194.95	196.40	99.26
23/12/2022	0.00	0.00	0.00	0.00	0.00	0.00	79.96	79.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.10	45.10	0.00	1.10	77.87	78.96	0.00	1.10	202.93	204.02	99.46
24/12/2022	0.00	0.00	0.00	0.00	0.00	0.00	77.58	77.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.30	48.30	0.00	0.91	77.22	78.14	0.00	0.91	203.10	204.01	99.55
25/12/2022	0.00	0.00	0.00	0.00	0.00	0.00	75.02	75.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.99	53.99	0.00	0.83	74.20	75.03	0.00	0.83	203.21	204.04	99.59
26/12/2022	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	0.00	0.00	0.00	0.00	49.78	49.78	0.00	1.00	73.92	74.92	0.00	1.00	198.69	199.69	99.50
27/12/2022	0.00	0.00	0.00	0.00	0.00	0.00	75.01	75.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.03	42.03	0.00	1.12	72.66	73.79	0.00	1.12	189.71	190.83	99.41
28/12/2022	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	0.00	0.00	0.00	0.00	39.04	39.04	0.00	1.11	67.65	68.77	0.00	1.11	181.70	182.81	99.39
29/12/2022	0.00	0.00	0.00	0.00	0.00	0.00	75.01	75.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37.49	37.49	0.00	0.78	65.08	65.86	0.00	0.78	177.59	178.36	99.56
30/12/2022	0.00	0.00	0.00	0.00	0.00	0.00	74.99	74.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	35.79	35.79	0.00	0.74	62.02	62.76	0.00	0.74	172.80	173.54	99.57
31/12/2022	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	0.00	0.00	0.00	0.00	34.29	34.29	0.00	1.00	58.85	59.85	0.00	1.00	168.15	169.15	99.41
Total [ML]:	0.00	0.21	659.11	659.32	0.00	0.07	729.25	729.32	0.00	0.42	417.42	417.84	0.00	0.97	899.79	900.77	0.22	0.66	1429.80	1430.68	0.00	17.29	1449.58	1466.86	0.22	19.61	5584.95	5604.78	

Water Volume [%]:

Untreated: 0.00 %
Below Dose 0.35 %
To Dose 99.65 %

Notes: 1. UV Comparative Dose: 18.1 mJ/cm²

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-09-412-02

WATER TREATMENT PLANT UV REPORT

Report Period: December 2022

Report Created: Sunday, January 01, 2023

Date	Transmittance (%)				UVR_D100A			UVR_D200A			UVR_D300A			UVR_D400A			UVR_D500A			UVR_D600A		
	Branch 1		Branch 2		UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²			UV Dose [mJ/cm]²		
	Avg.	Min.	Avg.	Min.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.
01/12/2022	94.0	2.4	95.8	94.7	OL	OL	OL	OL	OL	OL	OL	OL	OL	18.8	21.6	21.1	17.4	33.6	21.6	16.8	24.3	21.3
02/12/2022	93.9	1.5	95.5	95.0	OL	OL	OL	OL	OL	OL	OL	OL	OL	18.7	22.7	21.1	17.6	33.2	21.6	16.8	23.7	21.3
03/12/2022	93.7	93.1	95.3	94.9	OL	OL	OL	OL	OL	OL	OL	OL	OL	18.6	22.6	21.1	17.5	30.4	21.5	16.9	23.9	21.2
04/12/2022	93.5	93.0	95.2	94.9	OL	OL	OL	OL	OL	OL	OL	OL	OL	18.6	21.7	21.1	17.1	29.9	21.5	16.9	22.3	21.1
05/12/2022	93.7	93.1	95.3	94.8	OL	OL	OL	OL	OL	OL	OL	OL	OL	18.6	22.7	21.1	17.0	30.4	21.5	16.7	23.5	21.2
06/12/2022	93.8	18.4	95.1	94.7	OL	OL	OL	OL	OL	OL	OL	OL	OL	18.7	22.4	21.1	17.2	30.5	21.5	16.6	23.8	21.2
07/12/2022	93.9	93.4	95.0	94.5	OL	OL	OL	OL	OL	OL	OL	OL	OL	18.6	21.7	21.1	17.7	32.9	21.6	16.6	23.0	21.2
08/12/2022	94.1	93.7	95.3	94.9	OL	OL	OL	OL	OL	OL	OL	OL	OL	18.7	21.8	21.1	17.2	31.8	21.6	16.9	24.1	21.3
09/12/2022	93.7	93.3	95.2	94.6	OL	OL	OL	OL	OL	OL	OL	OL	OL	18.6	22.6	21.1	17.3	30.2	21.6	16.9	23.7	21.2
10/12/2022	93.5	93.3	95.3	94.9	OL	OL	OL	OL	OL	OL	OL	OL	OL	18.6	21.7	21.1	17.5	30.3	21.6	16.6	22.2	21.2
11/12/2022	93.5	93.0	95.3	94.9	OL	OL	OL	OL	OL	OL	OL	OL	OL	18.6	38.6	21.1	17.3	27.9	21.5	16.9	34.4	21.2
12/12/2022	93.5	93.2	95.4	94.9	20.3	97.3	25.8	0.0	84.6	21.5	16.7	85.6	21.5	0.0	33.5	21.0	0.0	95.7	22.2	0.0	29.4	21.2
13/12/2022	93.5	93.2	95.3	94.8	0.0	92.5	24.3	0.0	87.3	21.8	17.6	29.0	21.4	OL	OL	OL	17.9	23.7	21.3	OL	OL	OL
14/12/2022	91.1	0.0	92.4	0.0	0.0	98.7	25.4	OL	OL	OL	0.0	88.2	22.6	OL	OL	OL	0.0	95.7	21.6	OL	OL	OL
15/12/2022	93.4	93.0	95.3	93.5	18.9	34.3	23.5	OL	OL	OL	18.3	27.0	22.7	OL	OL	OL	18.1	23.2	21.2	OL	OL	OL
16/12/2022	93.4	92.9	95.1	93.7	18.6	34.9	23.7	OL	OL	OL	18.9	27.3	23.3	OL	OL	OL	17.8	23.5	21.2	OL	OL	OL
17/12/2022	93.5	93.1	94.9	93.8	18.8	33.5	23.9	OL	OL	OL	19.1	27.2	23.8	OL	OL	OL	18.1	23.9	21.2	OL	OL	OL
18/12/2022	93.4	93.0	94.9	93.9	18.6	33.8	23.8	OL	OL	OL	19.7	27.2	24.1	OL	OL	OL	18.1	23.9	21.2	OL	OL	OL
19/12/2022	93.6	92.9	95.1	94.3	19.6	34.1	24.3	OL	OL	OL	19.7	29.6	24.6	OL	OL	OL	0.0	95.7	21.6	0.0	80.9	21.8
20/12/2022	93.8	93.1	95.2	94.5	19.6	33.6	24.4	OL	OL	OL	19.8	26.8	24.8	OL	OL	OL	18.1	21.8	21.1	OL	OL	OL
21/12/2022	93.8	93.4	94.9	94.4	0.0	50.8	25.3	OL	OL	OL	0.0	39.9	24.6	OL	OL	OL	0.0	38.0	21.2	OL	OL	OL
22/12/2022	93.4	75.8	94.7	80.5	0.0	88.8	21.6	17.3	85.8	21.4	0.0	52.1	16.3	0.0	0.0	0.0	15.1	95.7	26.1	15.9	84.6	21.4
23/12/2022	93.7	93.3	94.6	94.0	OL	OL	OL	18.3	21.9	21.3	OL	OL	OL	OL	OL	OL	19.7	27.9	24.3	16.1	23.0	21.1
24/12/2022	93.6	93.2	94.5	93.9	OL	OL	OL	18.3	22.1	21.3	OL	OL	OL	OL	OL	OL	18.5	25.9	23.1	16.7	21.8	21.1
25/12/2022	93.5	92.9	94.6	93.7	OL	OL	OL	18.3	22.0	21.4	OL	OL	OL	OL	OL	OL	18.0	23.5	21.4	16.8	22.9	21.1
26/12/2022	93.4	93.1	94.8	93.5	OL	OL	OL	18.3	22.0	21.4	OL	OL	OL	OL	OL	OL	18.4	27.0	22.0	16.8	21.8	21.1
27/12/2022	93.4	93.1	95.1	94.6	OL	OL	OL	18.2	22.0	21.4	OL	OL	OL	OL	OL	OL	18.8	28.7	23.5	16.8	21.7	21.1
28/12/2022	93.3	93.0	95.2	94.7	OL	OL	OL	18.1	22.0	21.4	OL	OL	OL	OL	OL	OL	19.8	30.1	25.2	16.7	23.7	21.1
29/12/2022	93.4	93.1	95.3	94.8	OL	OL	OL	18.3	22.0	21.4	OL	OL	OL	OL	OL	OL	21.6	30.8	26.6	16.8	24.1	21.2
30/12/2022	93.4	93.1	95.4	94.5	OL	OL	OL	18.3	22.0	21.4	OL	OL	OL	OL	OL	OL	22.3	32.4	27.6	16.6	21.9	21.2
31/12/2022	93.4	93.1	95.5	95.2	OL	OL	OL	18.4	22.0	21.4	OL	OL	OL	OL	OL	OL	23.8	33.2	28.5	15.9	23.9	21.2

- Notes:
1. UV Comparative Dose: 18.1 mJ/cm²
 2. OL - Off Line

Submitted By (Print): _D.Merredew_____

Signature: _Original signed by D.Merredew_____

2022 CORRECTIVE ACTION REPORTS

Kale Black, Sr. Drinking Water Officer
Office of Drinking Water, Manitoba Sustainable Development
309 – 25 Tupper Street North
Portage La Prairie, MB R1N 3K1

June 30, 2022

RE: CORRECTIVE ACTION REPORT FOR WINNIPEG PUBLIC WATER SYSTEM, 252.00

Incident No: CAR-01-2022-ESD

Reported to ODW: June 22, 2022

Reported by: Courtney Diduck, Analytical Services Branch Head

Approved by: Courtney Diduck, Analytical Services Branch Head

Incident Date: June 21, 2022

Incident Location: Winnipeg 3-Dist (NE04)

Incident Type:

1. High Positive Total Coliform (>10 per100mL), 3 MR 41/2007

Description and Corrective Actions:

Environmental Standards:

IMMEDIATELY: Contacted the ODW and re-sampled original location as well as upstream and downstream for bacteria, turbidity, free/total chlorine, and temperature. Monitoring was terminated after two consecutive sets of re-samples taken 24 hours apart tested negative for bacteria.

Test Results: See attached

Reference No: Job_1111

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

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Sample Name	Sample Number	Date Sampled	E Coli (MPNU/100mL)	Total Coliform (MPNU/100mL)	Heterotrophic Plate Count (CFU/mL)	Free Chlorine (mg/L)	Total Chlorine (mg/L)	Turbidity-field (ntu)	Temperature (°C)	Time Sampled (hrs)
NE04	489757	21-Jun-22	0	34	NA	0.84	1.09	0.19	10.3	13:28
NE04_Resample 1	490834	22-Jun-22	0	0	<1	0.86	1.09	0.26	10.4	15:30
NE04_Resample 1 (Duplicate)	490835	22-Jun-22	0	0	<1	0.89	1.10	0.26	10.4	15:32
NE04_Upstream 1	490836	22-Jun-22	0	0	NA	1.08	1.28	0.21	17.1	16:06
NE04_Downstream 1	490837	22-Jun-22	0	0	NA	1.09	1.28	0.21	16.4	16:30
NE04_Resample 2	491102	23-Jun-22	0	0	<1	0.86	1.10	0.12	11.1	14:15
NE04_Resample 2 (Duplicate)	491103	23-Jun-22	0	0	<1	0.88	1.11	0.14	11.1	14:16
NE04_Upstream 2	491104	23-Jun-22	0	0	11	1.08	1.33	0.17	13.2	14:30
NE04_Downstream 2	491105	23-Jun-22	0	0	<1	1.07	1.28	0.18	16.4	14:50

NOTES/COMMENTS:

1. All microbiological tests performed by contract laboratory.
2. OL - Autosampler or Process Offline
3. NA - Not Applicable

Kale Black, Sr. Drinking Water Officer
Office of Drinking Water, Manitoba Sustainable Development
309 – 25 Tupper Street North
Portage La Prairie, MB R1N 3K1

July 6, 2022

RE: CORRECTIVE ACTION REPORT FOR WINNIPEG PUBLIC WATER SYSTEM, 252.00

Incident No: CAR-02-2022

Reported to ODW: July 4, 2022

Reported by: Dan Merredew

Approved by: Dan Merredew, Water Treatment Plant Operations Supervisor

Incident Date: June 21, 2022 @ 8:57 am

Incident Location: Winnipeg 2-Treated (WTP)

Incident Type:

Low Disinfectant Residual Entering Distribution System (<0.5 mg/L free chlorine), 22(1) MR 40/2007

Description of Incident and Corrective Actions:

Water Treatment Plant Operator: on June 21, 2022 there was a scheduled Water Treatment Plant (WTP) shut down for maintenance work from 8:22 am until 10:35 am. The Branch 1 free chlorine analyzer read below 0.5mg/L from 8:57 am until 10:08 am, reaching a minimum of 0.37mg/L. From 8:57 am until 9:05 am (8 minutes), there was slight flow recorded through both the Branch 1 & 2 flow meters, as the Operators were charging the surge towers at the WTP to ensure adequate water was available for the service water pumps in the WTP building. It is estimated that approximately 0.056ML of water was sent to the Branch 1 surge tower during the 8-minute period when the free chlorine residual was below 0.5mg/L. This issue was not noted by Operators at the time because the WTP was offline. As a result, no additional testing was conducted at the time of the incident.

Due to the relatively small volume of water and the fact that the water is further boosted with chlorine at the In-town pumping stations, this event will not have impacted water quality.

Test Results: n/a

LIMS Reference No: n/a

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

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Kale Black, Sr. Drinking Water Officer
Office of Drinking Water, Manitoba Sustainable Development
309 – 25 Tupper Street North
Portage La Prairie, MB R1N 3K1

August 3, 2022

RE: CORRECTIVE ACTION REPORT FOR WINNIPEG PUBLIC WATER SYSTEM, 252.00

Incident No: CAR-03-2022-ESD

Reported to ODW: July 14, 2022

Reported by: Courtney Diduck, Analytical Services Branch Head

Approved by: Courtney Diduck, Analytical Services Branch Head

Incident Date: July 13, 2022

Incident Location: Winnipeg 3-Dist (SW15)

Incident Type: Low Positive Total Coliform (<10 per100mL), 3 MR 41/2007

Description and Corrective Actions:

Environmental Standards:

Contacted the ODW and re-sampled original location for bacteria, turbidity, free/total chlorine, and temperature. Monitoring was terminated after two consecutive sets of re-samples taken 24 hours apart tested negative for bacteria.

Test Results: See attached

Reference No: Job_1194

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

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Sample Name	Sample Number	Date Sampled	E Coli (MPNU/100mL)	Total Coliform (MPNU/100mL)	Heterotrophic Plate Count (CFU/mL)	Free Chlorine (mg/L)	Total Chlorine (mg/L)	Turbidity-field (ntu)	Temperature (°C)	Time Sampled (hrs)
SW15	495985	13-Jul-22	0	1	NA	0.75	1.01	0.30	11.9	12:26
SW15_Resample 1	496890	14-Jul-22	0	0	<1	0.88	1.08	0.26	12.6	15:03
SW15_Resample 1 (Duplicate)	496891	14-Jul-22	0	0	<1	0.88	1.09	0.27	12.6	15:03
SW15_Resample 2	496897	15-Jul-22	0	0	NA	0.89	1.12	0.27	10.6	14:28
SW15_Resample 2 (Duplicate)	496898	15-Jul-22	0	0	NA	0.90	1.12	0.28	10.6	14:28

NOTES/COMMENTS:

1. All microbiological tests performed by contract laboratory.
2. OL - Autosampler or Process Offline
3. NA - Not Applicable



Kale Black, Sr. Drinking Water Officer
Office of Drinking Water, Manitoba Sustainable Development
309 – 25 Tupper Street North
Portage La Prairie, MB R1N 3K1

August 3, 2022

RE: CORRECTIVE ACTION REPORT FOR WINNIPEG PUBLIC WATER SYSTEM, 252.00

Incident No: CAR-04-2022-WMR

Reported to ODW: July 25, 2022

Reported by: Louis Rivard, Superintendent of Water Distribution

Approved by: Louis Rivard, Superintendent of Water Distribution

Incident Date: July 23, 2022

Incident Location: Winnipeg 3-Dist (WM Repair)

Incident Type:

1. Low Positive Total Coliform (<10 per100mL), 3 MR 41/2007

Description of Corrective Actions:

Water Services:

IMMEDIATELY: Contacted the ODW and Environmental Standards, and flushed the isolated area. Re-sampled original location, set the isolated area to run water to waste, and tested for; bacteria, turbidity, and free chlorine until two consecutive negative bacteria results were obtained at least 24 hours apart.

Test Results: See attached

LIMS Reference No: N/A

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

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Sample Name	Work Order Number	Date Sampled	E Coli (MPNU/100mL)	Total Coliform (MPNU/100mL)	Free Chlorine (mg/L)	Turbidity-field (ntu)	Time Sampled (hrs)
Hydrant - Buffalo Place	2204104	23-Jul-22	0	4	0.20	4.89	15:25
Hydrant - Buffalo Place_Resample 1	2204104	25-Jul-22	0	0	1.04	0.8	14:48
Hydrant - Buffalo Place_Resample 2	2204104	26-Jul-22	0	0	0.88	0.39	15:45

NOTES/COMMENTS:

1. All microbiological tests performed by contract laboratory.
2. OL - Autosampler or Process Offline
3. NA - Not Applicable

Kale Black, Sr. Drinking Water Officer
Office of Drinking Water, Manitoba Sustainable Development
309 – 25 Tupper Street North
Portage La Prairie, MB R1N 3K1

September 7, 2022

RE: CORRECTIVE ACTION REPORT FOR WINNIPEG PUBLIC WATER SYSTEM, 252.00

Incident No: CAR-05-2022

Reported to ODW: August 22, 2022

Reported by: Dan Merredew, Water Treatment Operations Supervisor

Approved by: Dan Merredew, Water Treatment Operations Supervisor

Incident Date: August 22, 2022

Incident Location: Winnipeg 2-Treated (WTP)

Incident Type:

Water Entering Distribution System Exceeds Turbidity Standard, 6(1) MR 41/2007

Description of Corrective Actions:

On August 22, 2022, our instrument group performed maintenance on the Filter 5 analyzer, but they did not confirm that the instrument had been placed in calibration mode prior to flushing the sample line. While the sample line was being flushed, the turbidity reading spiked above 1.0 NTU, reaching a maximum of 5.0 NTU at 10:49. The recorded value was not a true indication of the water going through the filter. The ODW was immediately notified and the instrument group was reminded of the need to place the analyzer in calibration mode prior to maintenance.

Water Treatment Plant Operator:

Test Results:

Pre-Test: 10:48 – Grab 0.10 NTU /Analyzer 0.07 NTU

Post-Test: 11:23 – Grab 0.10 NTU/Analyzer 0.07 NTU

Reference No: n/a

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

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Kale Black, Sr. Drinking Water Officer
Office of Drinking Water, Manitoba Sustainable Development
309 – 25 Tupper Street North
Portage La Prairie, MB R1N 3K1

October 7, 2022

RE: CORRECTIVE ACTION REPORT FOR WINNIPEG PUBLIC WATER SYSTEM, 252.00

Incident No: CAR-06-2022-ESD

Reported to ODW: October 7, 2022

Reported by: Nancy Crawford, Compliance Reporting Branch Head

Approved by: Courtney Diduck, Analytical Services Branch Head

Incident Date: September 25 – October 1, 2022

Incident Location: Winnipeg 2-Treated (WTP)

Incident Type: Water Quality Monitoring (PWS-09-412-02 Clause 5.1)

Description of Event:

Did not obtain four confirmatory grab samples of effluent from Filter 6 on a week containing a statutory holiday. The filter was taken offline for planned maintenance on September 28 at 7:00am, grab samples were obtained on September 25, 26, and 27, but not on September 28.

Corrective Actions:

Environmental Standards and Water Services: Reviewed monitoring requirements and maintenance procedures with staff to ensure that a grab sample is taken prior to and immediately following filter maintenance activities.

Test Results: See monthly reports

LIMS Reference No: N/A

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

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Kale Black, Sr. Drinking Water Officer
Office of Drinking Water, Manitoba Sustainable Development
309 – 25 Tupper Street North
Portage La Prairie, MB R1N 3K1

December 7, 2022

RE: CORRECTIVE ACTION REPORT FOR WINNIPEG PUBLIC WATER SYSTEM, 252.00

Incident No: CAR-07-2022-ESD

Reported to ODW: November 24, 2022

Reported by: Courtney Diduck, Analytical Services Branch Head

Approved by: Courtney Diduck, Analytical Services Branch Head

Incident Date: November 23, 2022

Incident Location: Winnipeg 3-Dist (SE03)

Incident Type:

1. High Positive Total Coliform (>10 per100mL), 3 MR 41/2007
2. Low Disinfectant Residual in Distribution System, 22(1) MR 40/2007

Description of Event:

During routine monitoring, a high positive total coliform was reported at SE03. During the additional sampling conducted as part of the corrective actions to the high positive, a low chlorine residual was found at the downstream location, which is the last service connection before a dead end in the system.

Corrective Actions:

Environmental Standards:

IMMEDIATELY: Contacted the ODW and re-sampled original location as well as upstream and downstream for bacteria, turbidity, free/total chlorine, and temperature. Low chlorine residual was found at the downstream location; Water Services operators were dispatched to flush the affected area and ESD staff collected additional samples. Monitoring was terminated after two consecutive sets of re-samples taken 24 hours apart tested negative for bacteria, and chlorine levels were re-established in the area.

Water Services & Engineering:

Responded to the low chlorine residuals found by ESD by spot flushing, running water to waste, and modelling the water quality data in the area.

Additional actions are being investigated and monitoring will continue until a long-term solution can be implemented.

Test Results: See attached

LIMS Reference No: Job_1381

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

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Sample Name	Sample Number	Date Sampled	E Coli (MPNU/100mL)	Total Coliform (MPNU/100mL)	Heterotrophic Plate Count (CFU/mL)	Free Chlorine (mg/L)	Total Chlorine (mg/L)	Turbidity-field (ntu)	Temperature (°C)	Time Sampled (hrs)
SE03	531630	23-Nov-22	0	130	22	0.97	1.19	0.16	9.4	15:10
SE03_Resample	532227	24-Nov-22	0	0	<1	0.89	1.14	0.15	8.6	15:35
SE03_Upstream	532228	24-Nov-22	0	0	<1	0.89	1.11	0.18	11.2	16:38
SE03_Downstream	532226	24-Nov-22	0	0	1	<0.02	0.02	0.30	9.8	16:22
WS_Hydrant	NA	24-Nov-22	NA	NA	NA	0.87	NA	1.02	NA	22:00
SE03_Resample 2	532424	25-Nov-22	0	0	<1	1.08	1.31	0.14	8.5	15:46
SE03_Resample 2 Dup	532431	25-Nov-22	0	0	1	n/a	n/a	n/a	n/a	15:46
SE03_Upstream 2	532425	25-Nov-22	0	0	<1	1.04	1.25	0.16	12.6	16:05
SE03_Downstream 2	532423	25-Nov-22	0	0	1	0.70	0.96	0.18	10.1	15:28
SE03	533358	30-Nov-22	0	0	1	0.93	1.18	0.14	9.1	15:03
SE03_Downstream 3	533345	30-Nov-22	0	0	14	0.03	0.26	0.47	10.4	11:30
SE03_Downstream 4a	533932	2-Dec-22	NA	NA	NA	0.55	0.70	0.19	10.9	11:56
SE03_Downstream 4b	533933	2-Dec-22	NA	NA	NA	0.57	0.82	0.28	10.6	12:05
SE03_Downstream 4c	533934	2-Dec-22	NA	NA	NA	0.29	0.59	0.49	9.9	11:33
SE03_Downstream 5a	534571	5-Dec-22	NA	NA	NA	0.41	0.31	0.31	10.7	16:00
SE03_Downstream 5b	534572	5-Dec-22	NA	NA	NA	0.41	0.26	0.26	10.5	15:59
SE03_Downstream 5c	534573	5-Dec-22	0	0	n/a	0.19	0.37	0.99	9.8	16:23

NOTES/COMMENTS:

1. All microbiological tests performed by contract laboratory.
2. OL - Autosampler or Process Offline
3. NA - Not Applicable

2022 QUARTERLY FLUORIDE MONITORING REPORTS



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

April 4, 2022

RE: FIRST QUARTER 2022 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.

LOCATION	SAMPLE NUMBER	DATE	FLUORIDE (mg/L)
Distribution System (Composite – 39 Locations)	449861	4-Jan-22	0.67
	450875	10-Jan-22	0.65
	452432	17-Jan-22	0.69
	454038	24-Jan-22	0.68
	455636	31-Jan-22	0.62
	457129	7-Feb-22	0.61
	458845	14-Feb-22	0.63
	460437	22-Feb-22	0.65
	461900	28-Feb-22	0.62
	463583	7-Mar-22	0.61
	465154	14-Mar-22	0.65
	466823	21-Mar-22	0.22
	468658	28-Mar-22	0.11

nr: no result ns: no sample na: not analyzed

Comments:

From March 17 at 10:00 am until March 29 at 12:50 pm pumps in the Deacon Booster Pumping Station were turned off and water flowed into the Branch aqueducts via gravity as part of a trial shut-down in preparation for planned system upgrades; fluoride dosing was suspended during the shut-down because there was insufficient pressure to maintain effective dosing.

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

Yours sincerely,

Original signed by R. Grosselle:

(Signed original available upon request)

Manager of Environmental Standards

cc: T. Shanks, P.Eng. (email)

ENVIRONMENTAL STANDARDS DIVISION

2230 Main Street, Winnipeg, Manitoba R2V 4T8

DIVISION DES NORMES ENVIRONNEMENTALES

2230, rue Main, Winnipeg (Manitoba) R2V 4T8

T. | Tél. : 204-986-4684

F. | Fax : 204-339-2147

winnipeg.ca/waterandwaste



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

July 12, 2022

RE: SECOND QUARTER 2022 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.

LOCATION	SAMPLE NUMBER	DATE	FLUORIDE (mg/L)
Distribution System (Composite – 39 Locations)	470383	4-Apr-22	0.55
	472126	11-Apr-22	0.65
	473674	19-Apr-22	0.65
	475049	25-Apr-22	0.65
	476685	2-May-22	0.64
	478354	9-May-22	0.64
	480030	16-May-22	0.63
	481812	24-May-22	0.65
	483405	30-May-22	0.60
	485214	6-Jun-22	0.68
	487098	13-Jun-22	0.69
	488868	20-Jun-22	0.74
	490900	27-Jun-22	0.71

nr: no result ns: no sample na: not analyzed

Comments:

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

Yours sincerely,

*Original signed by R. Grosselle:
(Signed original available upon request)*

Manager of Environmental Standards

cc: T. Shanks, P.Eng. (email)

ENVIRONMENTAL STANDARDS DIVISION

2230 Main Street, Winnipeg, Manitoba R2V 4T8

DIVISION DES NORMES ENVIRONNEMENTALES

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winnipeg.ca/waterandwaste



Water and Waste
Eaux et déchets

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

October 4, 2022

RE: THIRD QUARTER 2022 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.

LOCATION	SAMPLE NUMBER	DATE	FLUORIDE (mg/L)
Distribution System (Composite – 39 Locations)	493122	4-Jul-22	0.73
	494811	11-Jul-22	0.70
	496644	18-Jul-22	0.72
	498481	25-Jul-22	0.71
	500393	2-Aug-22	0.71
	502260	8-Aug-22	0.76
	504242	15-Aug-22	0.68
	506213	22-Aug-22	0.70
	508178	29-Aug-22	0.72
	510448	6-Sep-22	0.71
	512126	12-Sep-22	0.70
	513898	19-Sep-22	0.69
	515677	26-Sep-22	0.69

nr: no result ns: no sample na: not analyzed

Comments:

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

Yours sincerely,

Original signed by R. Grosselle:

(Signed original available upon request)

Manager of Environmental Standards

cc: Manager of Water Services (email)

ENVIRONMENTAL STANDARDS DIVISION

2230 Main Street, Winnipeg, Manitoba R2V 4T8

DIVISION DES NORMES ENVIRONNEMENTALES

2230, rue Main, Winnipeg (Manitoba) R2V 4T8

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winnipeg.ca/waterandwaste



Water and Waste
Eaux et déchets

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

January 9, 2023

RE: FOURTH QUARTER 2022 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.

LOCATION	SAMPLE NUMBER	DATE	FLUORIDE (mg/L)
Distribution System (Composite – 39 Locations)	517602	3-Oct-22	0.68
	519315	11-Oct-22	0.67
	522088	17-Oct-22	0.66
	525123	24-Oct-22	0.65
	526177	31-Oct-22	0.61
	528056	7-Nov-22	0.64
	529045	14-Nov-22	0.70
	531358	21-Nov-22	0.69
	532965	28-Nov-22	0.68
	534675	5-Dec-22	0.68
	536355	12-Dec-22	0.70
	537875	19-Dec-22	0.67
	538921	28-Dec-22	0.64

nr: no result ns: no sample na: not analyzed

Comments:

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

Yours sincerely,

Original signed by R. Grosselle:

(Signed original available upon request)

Manager of Environmental Standards

cc: Manager of Water Services (email)

ENVIRONMENTAL STANDARDS DIVISION

2230 Main Street, Winnipeg, Manitoba R2V 4T8

DIVISION DES NORMES ENVIRONNEMENTALES

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**2022 QUARTERLY TOTAL TRIHALOMETHANE
AND TOTAL HALOACETIC ACID SUMMARY
REPORTS**



Water and Waste
Eaux et déchets

Environmental Standards Division

Total Trihalomethanes Summary Report

Reporting Period: Quarter 1 2022

License: PWS-09-412-02

SAMPLE DATE	DISTRIBUTION SYSTEM THM RESULTS (ug/L)					
	WC-12	WC-06	NW-05	NE-09	SE-07	SW-08
Monday, May 10, 2021	41.8	37.5	31.0	34.1	36.0	35.7
Monday, August 16, 2021	66.6	63.0	64.5	63.1	59.1	61.1
Monday, November 8, 2021	41.5	39.2	40.0	41.3	39.4	40.8
Monday, February 14, 2022	44.9	42.7	42.7	42.4	37.2	42.0
RUNNING AVERAGE THM	48.7	45.6	44.6	45.2	42.9	44.9

COMMENTS:

February 14, 2022 samples analyzed past hold time.

Methodology

Modified from EPA Method 5021A, "Volatile Organic Compounds in Various Sample Matrices Using Equilibrium Headspace Analysis", Revision 2, July 2014 and EPA Method 8260B, "Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)", Revision 3, August 2006.

Report Date: May 13, 2022



Water and Waste
Eaux et déchets

Environmental Standards Division

Total Trihalomethanes Summary Report

Reporting Period: Quarter 2 2022

License: PWS-09-412-02

SAMPLE DATE	DISTRIBUTION SYSTEM THM RESULTS (ug/L)					
	WC-12	WC-06	NW-05	NE-09	SE-07	SW-08
Monday, August 16, 2021	66.6	63.0	64.5	63.1	59.1	61.1
Monday, November 8, 2021	41.5	39.2	40.0	41.3	39.4	40.8
Monday, February 14, 2022	44.9	42.7	42.7	42.4	37.2	42.0
Monday, May 2, 2022	37.6	29.5	34.8	34.4	27.9	29.8
RUNNING AVERAGE THM	47.7	43.6	45.5	45.3	40.9	43.4

COMMENTS:

February 14, 2022 samples analyzed past hold time.

Methodology

Modified from EPA Method 5021A, "Volatile Organic Compounds in Various Sample Matrices Using Equilibrium Headspace Analysis", Revision 2, July 2014 and EPA Method 8260B, "Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)", Revision 3, August 2006.

Report Date: June 6, 2022



Water and Waste
Eaux et déchets

Environmental Standards Division

Total Trihalomethanes Summary Report

Reporting Period: Quarter 3 2022

License: PWS-09-412-02

SAMPLE DATE	DISTRIBUTION SYSTEM THM RESULTS (ug/L)					
	WC-12	WC-06	NW-05	NE-09	SE-07	SW-08
Monday, November 8, 2021	41.5	39.2	40.0	41.3	39.4	40.8
Monday, February 14, 2022	44.9	42.7	42.7	42.4	37.2	42.0
Monday, May 2, 2022	37.6	29.5	34.8	34.4	27.9	29.8
Monday, August 8, 2022	68.5	68.9	69.0	65.3	64.4	66.0
RUNNING AVERAGE THM	48.1	45.1	46.6	45.9	42.2	44.7

COMMENTS:

February 14, 2022 samples analyzed past hold time.
SE-07 was sampled on August 9, 2022

Methodology

Modified from EPA Method 5021A, "Volatile Organic Compounds in Various Sample Matrices Using Equilibrium Headspace Analysis", Revision 2, July 2014 and EPA Method 8260B, "Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)", Revision 3, August 2006.

Report Date: September 6, 2022



Water and Waste
Eaux et déchets

Environmental Standards Division

Total Trihalomethanes Summary Report

Reporting Period: Quarter 4 2022

License: PWS-09-412-02

SAMPLE DATE	DISTRIBUTION SYSTEM THM RESULTS (ug/L)					
	WC-12	WC-06	NW-05	NE-09	SE-07	SW-08
Monday, February 14, 2022	44.9	42.7	42.7	42.4	37.2	42.0
Monday, May 2, 2022	37.6	29.5	34.8	34.4	27.9	29.8
Monday, August 8, 2022	68.5	68.9	69.0	65.3	64.4	66.0
Monday, November 7, 2022	52.9	51.6	48.9	51.0	52.5	53.0
RUNNING AVERAGE THM	51.0	48.2	48.9	48.3	45.5	47.7

COMMENTS:

February 14, 2022 samples analyzed past hold time.
SE-07 was sampled on August 9, 2022

Methodology

Modified from EPA Method 5021A, "Volatile Organic Compounds in Various Sample Matrices Using Equilibrium Headspace Analysis", Revision 2, July 2014 and EPA Method 8260B, "Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)", Revision 3, August 2006.

Report Date: December 22, 2022



Water and Waste
Eaux et déchets

Environmental Standards Division

Total Haloacetic Acids Summary Report

Reporting Period: Quarter 1 2022

License: PWS-09-412-02

SAMPLE DATE	DISTRIBUTION SYSTEM HAA RESULTS (ug/L)					
	WC-12	WC-06	NW-05	NE-09	SE-07	SW-08
Monday, May 10, 2021	28.0	25.6	28.7	27.2	16.5	26.6
Monday, August 16, 2021	28.6	33.9	30.4	34.2	32.4	36.0
Monday, November 29, 2021	22.1	35.8	22.5	20.0	19.7	21.5
Monday, February 14, 2022	27.3	25.0	27.5	25.5	24.3	27.4
RUNNING AVERAGE HAA	26.5	30.1	27.3	26.7	23.2	27.9

COMMENTS:

Methodology

Modified from EPA Method 552.3, "Determination of Haloacetic Acids and Dalapon in Drinking Water by Liquid-Liquid Micro extraction, Derivatization, and Gas Chromatography with Electron Capture Detection".

Report Date: May 13, 2022



Water and Waste
Eaux et déchets

Environmental Standards Division

Total Haloacetic Acids Summary Report

Reporting Period: Quarter 2 2022

License: PWS-09-412-02

SAMPLE DATE	DISTRIBUTION SYSTEM HAA RESULTS (ug/L)					
	WC-12	WC-06	NW-05	NE-09	SE-07	SW-08
Monday, August 16, 2021	28.6	33.9	30.4	34.2	32.4	36.0
Monday, November 29, 2021	22.1	35.8	22.5	20.0	19.7	21.5
Monday, February 14, 2022	27.3	25.0	27.5	25.5	24.3	27.4
Monday, May 2, 2022	31.9	28.7	31.6	30.6	25.1	28.4
RUNNING AVERAGE HAA	27.5	30.9	28.0	27.6	25.4	28.3

COMMENTS:

WC-06 was sampled on May 30, 2022.

Methodology

Modified from EPA Method 552.3, "Determination of Haloacetic Acids and Dalapon in Drinking Water by Liquid-Liquid Micro extraction, Derivatization, and Gas Chromatography with Electron Capture Detection".

Report Date: June 14, 2022



Water and Waste
Eaux et déchets

Environmental Standards Division

Total Haloacetic Acids Summary Report

Reporting Period: Quarter 3 2022

License: PWS-09-412-02

SAMPLE DATE	DISTRIBUTION SYSTEM HAA RESULTS (ug/L)					
	WC-12	WC-06	NW-05	NE-09	SE-07	SW-08
Monday, November 29, 2021	22.1	35.8	22.5	20.0	19.7	21.5
Monday, February 14, 2022	27.3	25.0	27.5	25.5	24.3	27.4
Monday, May 2, 2022	31.9	28.7	31.6	30.6	25.1	28.4
Tuesday, August 2, 2022	36.6	47.4	40.0	43.7	51.0	46.4
RUNNING AVERAGE HAA	29.5	34.2	30.4	30.0	30.0	30.9

COMMENTS:

Methodology

Modified from EPA Method 552.3, "Determination of Haloacetic Acids and Dalapon in Drinking Water by Liquid-Liquid Micro extraction, Derivatization, and Gas Chromatography with Electron Capture Detection".

Report Date: September 6, 2022



Water and Waste
Eaux et déchets

Environmental Standards Division

Total Haloacetic Acids Summary Report

Reporting Period: Quarter 4 2022

License: PWS-09-412-02

SAMPLE DATE	DISTRIBUTION SYSTEM HAA RESULTS (ug/L)					
	WC-12	WC-06	NW-05	NE-09	SE-07	SW-08
Monday, February 14, 2022	27.3	25.0	27.5	25.5	24.3	27.4
Monday, May 2, 2022	31.9	28.7	31.6	30.6	25.1	28.4
Tuesday, August 2, 2022	36.6	47.4	40.0	43.7	51.0	46.4
Monday, November 14, 2022	36.9	35.6	37.9	33.6	37.1	38.5
RUNNING AVERAGE HAA	33.2	34.2	34.3	33.4	34.4	35.2

COMMENTS:

Methodology

Modified from EPA Method 552.3, "Determination of Haloacetic Acids and Dalapon in Drinking Water by Liquid-Liquid Micro extraction, Derivatization, and Gas Chromatography with Electron Capture Detection".

Report Date: December 22, 2022

APPENDIX C

**2022 SHOAL LAKE ADULT AND VELIGER
ZEBRA MUSSEL MONITORING REPORT (MB)**

Objective:

To detect/monitor the presence of Zebra Mussels (adult and veliger) in the City of Winnipeg's source water, Shoal Lake

Methods:

Supporting Work Instructions - SWI 111-06: Zebra Mussel Sampling Program

Wildco Plankton net using vertical or horizontal sweeps compiled into a composite sample, for the capture of veliger stage zebra mussels

Soap-free green kitchen scrubbers tied to plexiglass acrylic sheets, suspended several feet below an inflatable buoy, anchored to the lake bottom with a concrete block, for the capture of adult stage zebra mussels

Permits/Licences:

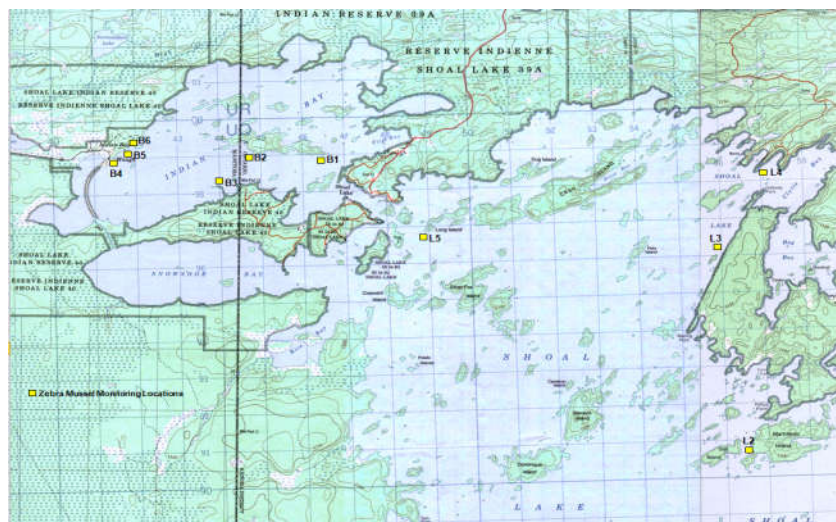
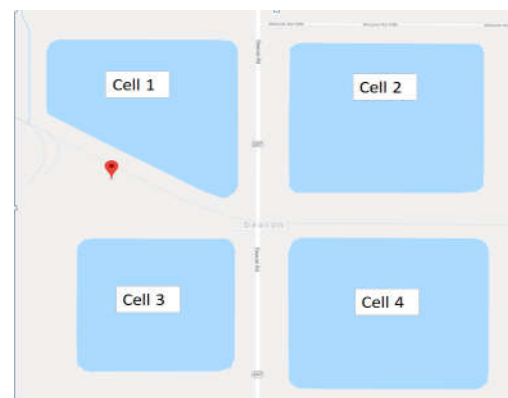
Manitoba Agriculture and Resource Development Scientific Collection Permit: 42486560 (SCP 16-2022)

Manitoba Agriculture and Resource Development Aquatic Invasive Species Permit: 13-2022

Ontario Ministry of Natural Resources Licence to Collect Fish for Scientific Purposes: 1101119

Sampling Locations:

Code	Location	Coordinates	
B1	Indian Bay	N 49° 37' 21.3"	W 95° 07' 36.6"
B2	Indian Bay at MB-ON Boundary	N 49° 37' 23.9"	W 95° 08' 56.8"
B3	Indian Bay	N 49° 37' 06.4"	W 95° 09' 23.5"
B4	Indian Bay	N 49° 37' 13.4"	W 95° 11' 42.9"
B5	Indian Bay between Island & Intake	N 49° 37' 13.5"	W 95° 11' 30.6"
B6	Indian Bay	N 49° 37' 27.6"	W 95° 11' 20.3"
L1	Shoal lake	N 49° 36' 33.1"	W 94° 47' 40.7"
L2	Shoal lake	N 49° 32' 56.5"	W 94° 59' 14.9"
L3	Shoal lake	N 49° 35' 59.3"	W 94° 59' 38.7"
L4	Clytie Bay	N 49° 37' 04.4"	W 94° 58' 49.6"
L5	Shoal lake	N 49° 36' 18.4"	W 95° 05' 23.7"
Deacon Cell 1	Deacon Cell 1 at WTP	N 49° 51' 02.9"	W 96° 56' 32.2"
Deacon Cell 2	Deacon Cell 2 at WTP	N 49° 51' 02.9"	W 96° 56' 32.2"
Deacon Cell 3	Deacon Cell 3 at WTP	N 49° 51' 02.9"	W 96° 56' 32.2"
Deacon Cell 4	Deacon Cell 4 at WTP	N 49° 51' 02.9"	W 96° 56' 32.2"





2022 Shoal Lake Adult and Veliger Zebra Mussel Monitoring Report

Sampling Point	ID Numeric	Analysis	Result	Units	Species	Stage	Sampled Date	Disposition
Deacon Cell 1 - middle	480560	Temperature, surface water	9.7	degrees celcius			5/17/2022 9:52 AM	
Deacon Cell 1 - middle	480560	Transparency in water	3.0	m			5/17/2022 9:52 AM	
Deacon Cell 1-100m from NE corner	480561	Temperature, surface water	9.7	degrees celcius			5/17/2022 10:00 AM	
Deacon Cell 1-100m from NE corner	480561	Transparency in water	2.5	m			5/17/2022 10:00 AM	
Deacon Cell 1 net composite	480562	Zebra Mussel, horizontal net sample	0	count/sample	Dreissena polymorpha	veliger	5/17/2022	Discarded
Deacon Cell 2 - middle	480564	Temperature, surface water	9.9	degrees celcius			5/17/2022 9:22 AM	
Deacon Cell 2 - middle	480564	Transparency in water	3.0	m			5/17/2022 9:22 AM	
Deacon Cell 2-100m from NE corner	480565	Temperature, surface water	9.9	degrees celcius			5/17/2022 9:16 AM	
Deacon Cell 2-100m from NE corner	480565	Transparency in water	2.5	m			5/17/2022 9:16 AM	
Deacon Cell 2 net composite	480566	Zebra Mussel, horizontal net sample	0	count/sample	Dreissena polymorpha	veliger	5/17/2022	Discarded
Deacon Cell 3 - middle	480568	Temperature, surface water	9.7	degrees celcius			5/17/2022 10:36 AM	
Deacon Cell 3 - middle	480568	Transparency in water	2.5	m			5/17/2022 10:36 AM	
Deacon Cell 3-100m from NE corner	480569	Temperature, surface water	9.6	degrees celcius			5/17/2022 10:29 AM	
Deacon Cell 3-100m from NE corner	480569	Transparency in water	3.0	m			5/17/2022 10:29 AM	
Deacon Cell 3 net composite	480570	Zebra Mussel, horizontal net sample	0	count/sample	Dreissena polymorpha	veliger	5/17/2022	Discarded
Deacon Cell 4 - middle	480572	Temperature, surface water	10.0	degrees celcius			5/17/2022 8:34 AM	
Deacon Cell 4 - middle	480572	Transparency in water	3.0	m			5/17/2022 8:34 AM	
Deacon Cell 4-100m from NE corner	480573	Temperature, surface water	9.9	degrees celcius			5/17/2022 8:44 AM	
Deacon Cell 4-100m from NE corner	480573	Transparency in water	2.5	m			5/17/2022 8:44 AM	
Deacon Cell 4 net composite	480574	Zebra Mussel, horizontal net sample	0	count/sample	Dreissena polymorpha	veliger	5/17/2022	Discarded
Weather Conditions - Deacon	480571	Air Temperature	9.0	degrees celcius			5/17/2022	
NOTE: Microscopic examination only performed on composite net samples because traps were set for the season on May 17, 2022								



2022 Shoal Lake Adult and Veliger Zebra Mussel Monitoring Report

Sampling Point	ID Numeric	Analysis	Result	Units	Species	Stage	Sampled Date	Disposition
Indian Bay - B1_B6 Water Composite	481950	Zebra Mussel, vertical net sample	0	count/sample	Dreissena polymorpha	veliger	5/26/2022	Discarded
Indian Bay - B1	481953	Temperature, surface water	12.3	degrees celcius			5/26/2022 1:24 PM	
Indian Bay - B1	481953	Transparency in water	3.0	m			5/26/2022 1:24 PM	
Indian Bay - B2	481954	Temperature, surface water	12.2	degrees celcius			5/26/2022 1:33 PM	
Indian Bay - B2	481954	Transparency in water	3.3	m			5/26/2022 1:33 PM	
Indian Bay - B3	481955	Temperature, surface water	12.0	degrees celcius			5/26/2022 1:38 PM	
Indian Bay - B3	481955	Transparency in water	3.5	m			5/26/2022 1:38 PM	
Indian Bay - B4	481956	Temperature, surface water	12.2	degrees celcius			5/26/2022 1:46 PM	
Indian Bay - B4	481956	Transparency in water	3.0	m			5/26/2022 1:46 PM	
Indian Bay - B5	481957	Temperature, surface water	12.6	degrees celcius			5/26/2022 1:54 PM	
Indian Bay - B5	481957	Transparency in water	3.0	m			5/26/2022 1:54 PM	
Indian Bay - B6	481958	Temperature, surface water	12.7	degrees celcius			5/26/2022 1:58 PM	
Indian Bay - B6	481958	Transparency in water	3.0	m			5/26/2022 1:58 PM	
Shoal Lake - L1_L5 Water Composite	481960	Zebra Mussel, vertical net sample	0	count/sample	Dreissena polymorpha	veliger	5/26/2022	Discarded
Shoal Lake - L1	481961	Temperature, surface water	8.7	degrees celcius			5/26/2022 10:24 AM	
Shoal Lake - L1	481961	Transparency in water	2.5	m			5/26/2022 10:24 AM	
Shoal Lake - L2	481962	Temperature, surface water	10.0	degrees celcius			5/26/2022 10:54 AM	
Shoal Lake - L2	481962	Transparency in water	2.5	m			5/26/2022 10:54 AM	
Shoal Lake - L3	481963	Temperature, surface water	9.0	degrees celcius			5/26/2022 11:15 AM	
Shoal Lake - L3	481963	Transparency in water	3.5	m			5/26/2022 11:15 AM	
Shoal Lake - L4	481964	Temperature, surface water	10.2	degrees celcius			5/26/2022 11:27 AM	
Shoal Lake - L4	481964	Transparency in water	3.0	m			5/26/2022 11:27 AM	
Shoal Lake - L5	481965	Temperature, surface water	9.9	degrees celcius			5/26/2022 11:50 AM	
Shoal Lake - L5	481965	Transparency in water	3.5	m			5/26/2022 11:50 AM	
Shoal Lake - Horizontal Net Comp L1 B1 B4	481966	Zebra Mussel, horizontal net sample	0	count/sample	Dreissena polymorpha	veliger	5/26/2022	Discarded
Weather Conditions - Indian Bay	481967	Air Temperature	17.0	degrees celcius			5/26/2022	

NOTE: Microscopic examination only performed on composite net samples because traps were set for the season on May 26, 2022



2022 Shoal Lake Adult and Veliger Zebra Mussel Monitoring Report

Sampling Point	ID Numeric	Analysis	Result	Units	Species	Stage	Sampled Date	Disposition
Deacon Cell 1 - middle	484709	Temperature, surface water	14.7	degrees celcius			6/7/2022 10:06 AM	
Deacon Cell 1 - middle	484709	Transparency in water	4.0	m			6/7/2022 10:06 AM	
Deacon Cell 1 - middle	484709	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	6/7/2022 10:06 AM	Discarded
Deacon Cell 1-100m from NE corner	484710	Temperature, surface water	15.0	degrees celcius			6/7/2022 9:53 AM	
Deacon Cell 1-100m from NE corner	484710	Transparency in water	4.5	m			6/7/2022 9:53 AM	
Deacon Cell 1 net composite	484711	Zebra Mussel, horizontal net sample	0	count/sample	Dreissena polymorpha	veliger	6/7/2022	Discarded
Deacon Cell 2 - middle	484713	Temperature, surface water	14.4	degrees celcius			6/7/2022 9:19 AM	
Deacon Cell 2 - middle	484713	Transparency in water	3.5	m			6/7/2022 9:19 AM	
Deacon Cell 2 - middle	484713	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	6/7/2022 9:19 AM	Discarded
Deacon Cell 2-100m from NE corner	484714	Temperature, surface water	14.3	degrees celcius			6/7/2022 9:12 AM	
Deacon Cell 2-100m from NE corner	484714	Transparency in water	3.5	m			6/7/2022 9:12 AM	
Deacon Cell 2 net composite	484715	Zebra Mussel, horizontal net sample	0	count/sample	Dreissena polymorpha	veliger	6/7/2022	Discarded
Deacon Cell 3 - middle	484717	Temperature, surface water	14.7	degrees celcius			6/7/2022 10:51 AM	
Deacon Cell 3 - middle	484717	Transparency in water	3.5	m			6/7/2022 10:51 AM	
Deacon Cell 3 - middle	484717	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	6/7/2022 10:51 AM	Discarded
Deacon Cell 3-100m from NE corner	484718	Temperature, surface water	14.8	degrees celcius			6/7/2022 10:46 AM	
Deacon Cell 3-100m from NE corner	484718	Transparency in water	3.0	m			6/7/2022 10:46 AM	
Deacon Cell 3 net composite	484719	Zebra Mussel, horizontal net sample	0	count/sample	Dreissena polymorpha	veliger	6/7/2022	Discarded
Deacon Cell 4 - middle	484721	Temperature, surface water	14.5	degrees celcius			6/7/2022 8:28 AM	
Deacon Cell 4 - middle	484721	Transparency in water	3.5	m			6/7/2022 8:28 AM	
Deacon Cell 4 - middle	484721	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	6/7/2022 8:28 AM	Discarded
Deacon Cell 4-100m from NE corner	484722	Temperature, surface water	14.4	degrees celcius			6/7/2022 8:23 AM	
Deacon Cell 4-100m from NE corner	484722	Transparency in water	2.5	m			6/7/2022 8:23 AM	
Deacon Cell 4 net composite	484723	Zebra Mussel, horizontal net sample	0	count/sample	Dreissena polymorpha	veliger	6/7/2022	Discarded
Weather Conditions - Deacon	484729	Air Temperature	18.0	degrees celcius			6/7/2022	



2022 Shoal Lake Adult and Veliger Zebra Mussel Monitoring Report

Sampling Point	ID Numeric	Analysis	Result	Units	Species	Stage	Sampled Date	Disposition
Indian Bay - B1_B6 Water Composite	484909	Zebra Mussel, vertical net sample	0	count/sample	Dreissena polymorpha	veliger	6/22/2022	Discarded
Indian Bay - B1	484912	Temperature, surface water	19.9	degrees celcius			6/22/2022 12:53 PM	
Indian Bay - B1	484912	Transparency in water	2.8	m			6/22/2022 12:53 PM	
Indian Bay - B1	484912	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	6/22/2022 12:53 PM	Discarded
Indian Bay - B2	484913	Temperature, surface water	19.6	degrees celcius			6/22/2022 1:01 PM	
Indian Bay - B2	484913	Transparency in water	3.0	m			6/22/2022 1:01 PM	
Indian Bay - B2	484913	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	6/22/2022 1:01 PM	Discarded
Indian Bay - B3	484914	Temperature, surface water	19.4	degrees celcius			6/22/2022 1:08 PM	
Indian Bay - B3	484914	Transparency in water	3.0	m			6/22/2022 1:08 PM	
Indian Bay - B3	484914	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	6/22/2022 1:08 PM	Discarded
Indian Bay - B4	484915	Temperature, surface water	19.4	degrees celcius			6/22/2022 1:16 PM	
Indian Bay - B4	484915	Transparency in water	2.5	m			6/22/2022 1:16 PM	
Indian Bay - B4	484915	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	6/22/2022 1:16 PM	Discarded
Indian Bay - B5	484916	Temperature, surface water	19.4	degrees celcius			6/22/2022 1:27 PM	
Indian Bay - B5	484916	Transparency in water	2.8	m			6/22/2022 1:27 PM	
Indian Bay - B5	484916	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	6/22/2022 1:27 PM	Discarded
Indian Bay - B6	484917	Temperature, surface water	19.3	degrees celcius			6/22/2022 1:22 PM	
Indian Bay - B6	484917	Transparency in water	3.0	m			6/22/2022 1:22 PM	
Indian Bay - B6	484917	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	6/22/2022 1:22 PM	Discarded
Shoal Lake - L1_L5 Water Composite	484919	Zebra Mussel, vertical net sample	0	count/sample	Dreissena polymorpha	veliger	6/22/2022	Discarded
Shoal Lake - L1	484920	Temperature, surface water	16.6	degrees celcius			6/22/2022 9:52 AM	
Shoal Lake - L1	484920	Transparency in water	2.5	m			6/22/2022 9:52 AM	
Shoal Lake - L1	484920	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	6/22/2022 9:52 AM	Discarded
Shoal Lake - L2	484921	Temperature, surface water	18.0	degrees celcius			6/22/2022 10:31 AM	
Shoal Lake - L2	484921	Transparency in water	3.0	m			6/22/2022 10:31 AM	
Shoal Lake - L2	484921	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	6/22/2022 10:31 AM	Discarded
Shoal Lake - L3	484922	Temperature, surface water	18.6	degrees celcius			6/22/2022 11:52 AM	
Shoal Lake - L3	484922	Transparency in water	2.5	m			6/22/2022 11:52 AM	
Shoal Lake - L3	484922	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	6/22/2022 11:52 AM	Discarded
Shoal Lake - L4	484923	Temperature, surface water	19.5	degrees celcius			6/22/2022 12:09 PM	
Shoal Lake - L4	484923	Transparency in water	3.0	m			6/22/2022 12:09 PM	
Shoal Lake - L4	484923	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	6/22/2022 12:09 PM	Discarded
Shoal Lake - L5	484924	Temperature, surface water	17.7	degrees celcius			6/22/2022 12:33 PM	
Shoal Lake - L5	484924	Transparency in water	2.5	m			6/22/2022 12:33 PM	
Shoal Lake - L5	484924	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	6/22/2022 12:33 PM	Discarded
Shoal Lake - Horizontal Net Comp L1 B1 B4	484925	Zebra Mussel, horizontal net sample	0	count/sample	Dreissena polymorpha	veliger	6/22/2022	Discarded
Weather Conditions - Indian Bay	484926	Air Temperature	23.0	degrees celcius			6/22/2022	



2022 Shoal Lake Adult and Veliger Zebra Mussel Monitoring Report

Sampling Point	ID Numeric	Analysis	Result	Units	Species	Stage	Sampled Date	Disposition
Deacon Cell 1 - middle	492839	Temperature, surface water	22.9	degrees celcius			7/13/2022 9:58 AM	
Deacon Cell 1 - middle	492839	Transparency in water	3.5	m			7/13/2022 9:58 AM	
Deacon Cell 1 - middle	492839	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	7/13/2022 9:58 AM	Discarded
Deacon Cell 1-100m from NE corner	492840	Temperature, surface water	22.8	degrees celcius			7/13/2022 9:51 AM	
Deacon Cell 1-100m from NE corner	492840	Transparency in water	3.3	m			7/13/2022 9:51 AM	
Deacon Cell 1 net composite	492841	Zebra Mussel, horizontal net sample	0	count/sample	Dreissena polymorpha	veliger	7/13/2022	Discarded
Deacon Cell 2 - middle	492843	Temperature, surface water	22.2	degrees celcius			7/13/2022 9:11 AM	
Deacon Cell 2 - middle	492843	Transparency in water	3.5	m			7/13/2022 9:11 AM	
Deacon Cell 2 - middle	492843	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	7/13/2022 9:11 AM	Discarded
Deacon Cell 2-100m from NE corner	492844	Temperature, surface water	21.9	degrees celcius			7/13/2022 9:03 AM	
Deacon Cell 2-100m from NE corner	492844	Transparency in water	3.5	m			7/13/2022 9:03 AM	
Deacon Cell 2 net composite	492845	Zebra Mussel, horizontal net sample	0	count/sample	Dreissena polymorpha	veliger	7/13/2022	Discarded
Deacon Cell 3 - middle	492847	Temperature, surface water	23.0	degrees celcius			7/13/2022 10:41 AM	
Deacon Cell 3 - middle	492847	Transparency in water	3.3	m			7/13/2022 10:41 AM	
Deacon Cell 3 - middle	492847	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	7/13/2022 10:41 AM	Discarded
Deacon Cell 3-100m from NE corner	492848	Temperature, surface water	22.9	degrees celcius			7/13/2022 10:32 AM	
Deacon Cell 3-100m from NE corner	492848	Transparency in water	3.5	m			7/13/2022 10:32 AM	
Deacon Cell 3 net composite	492849	Zebra Mussel, horizontal net sample	0	count/sample	Dreissena polymorpha	veliger	7/13/2022	Discarded
Deacon Cell 4 - middle	492851	Temperature, surface water	22.2	degrees celcius			7/13/2022 8:23 AM	
Deacon Cell 4 - middle	492851	Transparency in water	3.0	m			7/13/2022 8:23 AM	
Deacon Cell 4 - middle	492851	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	7/13/2022 8:23 AM	Discarded
Deacon Cell 4-100m from NE corner	492852	Temperature, surface water	22.2	degrees celcius			7/13/2022 8:15 AM	
Deacon Cell 4-100m from NE corner	492852	Transparency in water	3.5	m			7/13/2022 8:15 AM	
Deacon Cell 4 net composite	492853	Zebra Mussel, horizontal net sample	0	count/sample	Dreissena polymorpha	veliger	7/13/2022	Discarded
Weather Conditions - Deacon	492855	Air Temperature	23.0	degrees celcius			7/13/2022	



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2022 Shoal Lake Adult and Veliger Zebra Mussel Monitoring Report

Sampling Point	ID Numeric	Analysis	Result	Units	Species	Stage	Sampled Date	Disposition
Indian Bay - B1_B6 Water Composite	492856	Zebra Mussel, vertical net sample	0	count/sample	Dreissena polymorpha	veliger	7/14/2022	Discarded
Indian Bay - B1	492859	Temperature, surface water	22.9	degrees celcius			7/14/2022 12:30 PM	
Indian Bay - B1	492859	Transparency in water	2.3	m			7/14/2022 12:30 PM	
Indian Bay - B1	492859	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	7/14/2022 12:30 PM	Discarded
Indian Bay - B2	492860	Temperature, surface water	23.0	degrees celcius			7/14/2022 12:39 PM	
Indian Bay - B2	492860	Transparency in water	2.0	m			7/14/2022 12:39 PM	
Indian Bay - B2	492860	Zebra Mussel, trap 1	nr	count/sample	Dreissena polymorpha	adult	7/14/2022 12:39 PM	n/a
Indian Bay - B3	492861	Temperature, surface water	22.6	degrees celcius			7/14/2022 12:45 PM	
Indian Bay - B3	492861	Transparency in water	2.3	m			7/14/2022 12:45 PM	
Indian Bay - B3	492861	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	7/14/2022 12:45 PM	Discarded
Indian Bay - B4	492862	Temperature, surface water	22.7	degrees celcius			7/14/2022 12:53 PM	
Indian Bay - B4	492862	Transparency in water	2.3	m			7/14/2022 12:53 PM	
Indian Bay - B4	492862	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	7/14/2022 12:53 PM	Discarded
Indian Bay - B5	492863	Temperature, surface water	22.6	degrees celcius			7/14/2022 1:05 PM	
Indian Bay - B5	492863	Transparency in water	2.3	m			7/14/2022 1:05 PM	
Indian Bay - B5	492863	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	7/14/2022 1:05 PM	Discarded
Indian Bay - B6	492864	Temperature, surface water	23.0	degrees celcius			7/14/2022 1:00 PM	
Indian Bay - B6	492864	Transparency in water	1.5	m			7/14/2022 1:00 PM	
Indian Bay - B6	492864	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	7/14/2022 1:00 PM	Discarded
Shoal Lake - L1_L5 Water Composite	492865	Zebra Mussel, vertical net sample	0	count/sample	Dreissena polymorpha	veliger	7/14/2022	Discarded
Shoal Lake - L1	492866	Temperature, surface water	22.8	degrees celcius			7/14/2022 9:59 AM	
Shoal Lake - L1	492866	Transparency in water	2.0	m			7/14/2022 9:59 AM	
Shoal Lake - L1	492866	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	7/14/2022 9:59 AM	Discarded
Shoal Lake - L2	492867	Temperature, surface water	22.5	degrees celcius			7/14/2022 10:42 PM	
Shoal Lake - L2	492867	Transparency in water	2.0	m			7/14/2022 10:42 PM	
Shoal Lake - L2	492867	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	7/14/2022 10:42 PM	Discarded
Shoal Lake - L3	492868	Temperature, surface water	22.1	degrees celcius			7/14/2022 11:04 AM	
Shoal Lake - L3	492868	Transparency in water	2.5	m			7/14/2022 11:04 AM	
Shoal Lake - L3	492868	Zebra Mussel, trap 1	nr	count/sample	Dreissena polymorpha	adult	7/14/2022 11:04 AM	n/a
Shoal Lake - L4	492869	Temperature, surface water	22.7	degrees celcius			7/14/2022 11:12 AM	
Shoal Lake - L4	492869	Transparency in water	2.5	m			7/14/2022 11:12 AM	
Shoal Lake - L4	492869	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	7/14/2022 11:12 AM	Discarded
Shoal Lake - L5	492870	Temperature, surface water	22.5	degrees celcius			7/14/2022 11:28 AM	
Shoal Lake - L5	492870	Transparency in water	2.3	m			7/14/2022 11:28 AM	
Shoal Lake - L5	492870	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	7/14/2022 11:28 AM	Discarded
Shoal Lake - Horizontal Net Comp L1 B1 B4	492871	Zebra Mussel, horizontal net sample	0	count/sample	Dreissena polymorpha	veliger	7/14/2022	Discarded
Weather Conditions - Indian Bay	492884	Air Temperature	22.9	degrees celcius			7/14/2022	

NOTE: nr- no result, trap missing; n/a - not applicable



2022 Shoal Lake Adult and Veliger Zebra Mussel Monitoring Report

Sampling Point	ID Numeric	Analysis	Result	Units	Species	Stage	Sampled Date	Disposition
Deacon Cell 1 - middle	500702	Temperature, surface water	22.3	degrees celcius			8/16/2022 9:21 AM	
Deacon Cell 1 - middle	500702	Transparency in water	2.0	m			8/16/2022 9:21 AM	
Deacon Cell 1 - middle	500702	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	8/16/2022 9:21 AM	Discarded
Deacon Cell 1-100m from NE corner	500703	Temperature, surface water	22.3	degrees celcius			8/16/2022 9:09 AM	
Deacon Cell 1-100m from NE corner	500703	Transparency in water	1.5	m			8/16/2022 9:09 AM	
Deacon Cell 1 net composite	500704	Zebra Mussel, horizontal net sample	0	count/sample	Dreissena polymorpha	veliger	8/16/2022	Discarded
Deacon Cell 2 - middle	500706	Temperature, surface water	22.0	degrees celcius			8/16/2022 8:33 AM	
Deacon Cell 2 - middle	500706	Transparency in water	2.5	m			8/16/2022 8:33 AM	
Deacon Cell 2 - middle	500706	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	8/16/2022 8:33 AM	Discarded
Deacon Cell 2-100m from NE corner	500707	Temperature, surface water	22.0	degrees celcius			8/16/2022 8:26 AM	
Deacon Cell 2-100m from NE corner	500707	Transparency in water	2.5	m			8/16/2022 8:26 AM	
Deacon Cell 2 net composite	500708	Zebra Mussel, horizontal net sample	0	count/sample	Dreissena polymorpha	veliger	8/16/2022	Discarded
Deacon Cell 3 - middle	500710	Temperature, surface water	22.3	degrees celcius			8/16/2022 9:58 AM	
Deacon Cell 3 - middle	500710	Transparency in water	1.5	m			8/16/2022 9:58 AM	
Deacon Cell 3 - middle	500710	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	8/16/2022 9:58 AM	Discarded
Deacon Cell 3-100m from NE corner	500711	Temperature, surface water	22.2	degrees celcius			8/16/2022 9:52 AM	
Deacon Cell 3-100m from NE corner	500711	Transparency in water	1.5	m			8/16/2022 9:52 AM	
Deacon Cell 3 net composite	500712	Zebra Mussel, horizontal net sample	0	count/sample	Dreissena polymorpha	veliger	8/16/2022	Discarded
Deacon Cell 4 - middle	500714	Temperature, surface water	22.1	degrees celcius			8/16/2022 7:46 AM	
Deacon Cell 4 - middle	500714	Transparency in water	2.0	m			8/16/2022 7:46 AM	
Deacon Cell 4 - middle	500714	Zebra Mussel, trap 1	nr	count/sample	Dreissena polymorpha	adult	8/16/2022 7:46 AM	n/a
Deacon Cell 4-100m from NE corner	500715	Temperature, surface water	22.0	degrees celcius			8/16/2022 7:39 AM	
Deacon Cell 4-100m from NE corner	500715	Transparency in water	1.5	m			8/16/2022 7:39 AM	
Deacon Cell 4 net composite	500716	Zebra Mussel, horizontal net sample	0	count/sample	Dreissena polymorpha	veliger	8/16/2022	Discarded
Weather Conditions - Deacon	500718	Air Temperature	18.0	degrees celcius			8/16/2022	

NOTE: nr- no result, trap missing; n/a - not applicable



2022 Shoal Lake Adult and Veliger Zebra Mussel Monitoring Report

Sampling Point	ID Numeric	Analysis	Result	Units	Species	Stage	Sampled Date	Disposition
Indian Bay - B1_B6 Water Composite	500719	Zebra Mussel, vertical net sample	0	count/sample	Dreissena polymorpha	veliger	8/10/2022	Discarded
Indian Bay - B1	500722	Temperature, surface water	21.7	degrees celcius			8/10/2022 11:56 AM	
Indian Bay - B1	500722	Transparency in water	2.5	m			8/10/2022 11:56 AM	
Indian Bay - B1	500722	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	8/10/2022 11:56 AM	Discarded
Indian Bay - B2	500723	Temperature, surface water	21.6	degrees celcius			8/10/2022 12:05 PM	
Indian Bay - B2	500723	Transparency in water	2.8	m			8/10/2022 12:05 PM	
Indian Bay - B2	500723	Zebra Mussel, trap 1	nr	count/sample	Dreissena polymorpha	adult	8/10/2022 12:05 PM	n/a
Indian Bay - B3	500724	Temperature, surface water	21.4	degrees celcius			8/10/2022 12:15 PM	
Indian Bay - B3	500724	Transparency in water	2.0	m			8/10/2022 12:15 PM	
Indian Bay - B3	500724	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	8/10/2022 12:15 PM	Discarded
Indian Bay - B4	500725	Temperature, surface water	21.3	degrees celcius			8/10/2022 12:24 PM	
Indian Bay - B4	500725	Transparency in water	2.5	m			8/10/2022 12:24 PM	
Indian Bay - B4	500725	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	8/10/2022 12:24 PM	Discarded
Indian Bay - B5	500726	Temperature, surface water	21.4	degrees celcius			8/10/2022 12:32 PM	
Indian Bay - B5	500726	Transparency in water	2.5	m			8/10/2022 12:32 PM	
Indian Bay - B5	500726	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	8/10/2022 12:32 PM	Discarded
Indian Bay - B6	500727	Temperature, surface water	21.4	degrees celcius			8/10/2022 12:37 PM	
Indian Bay - B6	500727	Transparency in water	2.5	m			8/10/2022 12:37 PM	
Indian Bay - B6	500727	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	8/10/2022 12:37 PM	Discarded
Weather Conditions - Indian Bay	500747	Air Temperature	19.0	degrees celcius			8/10/2022	
Shoal Lake - L1_L5 Water Composite	500728	Zebra Mussel, vertical net sample	0	count/sample	Dreissena polymorpha	veliger	8/17/2022	Discarded
Shoal Lake - L1	500729	Temperature, surface water	23.1	degrees celcius			8/17/2022 11:00 AM	
Shoal Lake - L1	500729	Transparency in water	2.5	m			8/17/2022 11:00 AM	
Shoal Lake - L1	500729	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	8/17/2022 11:00 AM	Discarded
Shoal Lake - L2	500730	Temperature, surface water	22.8	degrees celcius			8/17/2022 11:26 AM	
Shoal Lake - L2	500730	Transparency in water	3.0	m			8/17/2022 11:26 AM	
Shoal Lake - L2	500730	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	8/17/2022 11:26 AM	Discarded
Shoal Lake - L3	500731	Temperature, surface water	23.6	degrees celcius			8/17/2022 11:43 AM	
Shoal Lake - L3	500731	Transparency in water	3.5	m			8/17/2022 11:43 AM	
Shoal Lake - L3	500731	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	8/17/2022 11:43 AM	Discarded
Shoal Lake - L4	500732	Temperature, surface water	23.9	degrees celcius			8/17/2022 11:50 AM	
Shoal Lake - L4	500732	Transparency in water	2.5	m			8/17/2022 11:50 AM	
Shoal Lake - L4	500732	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	8/17/2022 11:50 AM	Discarded
Shoal Lake - L5	500733	Temperature, surface water	23.7	degrees celcius			8/17/2022 12:06 PM	
Shoal Lake - L5	500733	Transparency in water	3.0	m			8/17/2022 12:06 PM	
Shoal Lake - L5	500733	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	8/17/2022 12:06 PM	Discarded
Shoal Lake - Horizontal Net Comp L1 B1 B4	500734	Zebra Mussel, horizontal net sample	0	count/sample	Dreissena polymorpha	veliger	8/17/2022	Discarded
Weather Conditions - Indian Bay	545295	Air Temperature	24.8	degrees celcius			8/17/2022	

NOTE: nr- no result, trap missing; n/a - not applicable



2022 Shoal Lake Adult and Veliger Zebra Mussel Monitoring Report

Sampling Point	ID Numeric	Analysis	Result	Units	Species	Stage	Sampled Date	Disposition
Deacon Cell 1 - middle	510322	Temperature, surface water	14.6	degrees celcius			9/27/2022 11:16 AM	
Deacon Cell 1 - middle	510322	Transparency in water	3.0	m			9/27/2022 11:16 AM	
Deacon Cell 1 - middle	510322	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	9/27/2022 11:16 AM	Discarded
Deacon Cell 1-100m from NE corner	510323	Temperature, surface water	14.8	degrees celcius			9/27/2022 11:30 AM	
Deacon Cell 1-100m from NE corner	510323	Transparency in water	3.8	m			9/27/2022 11:30 AM	
Deacon Cell 1 net composite	510324	Zebra Mussel, horizontal net sample	0	count/sample	Dreissena polymorpha	veliger	9/27/2022	Discarded
Deacon Cell 2 - middle	510326	Temperature, surface water	14.3	degrees celcius			9/27/2022 10:20 AM	
Deacon Cell 2 - middle	510326	Transparency in water	3.8	m			9/27/2022 10:20 AM	
Deacon Cell 2 - middle	510326	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	9/27/2022 10:20 AM	Discarded
Deacon Cell 2-100m from NE corner	510327	Temperature, surface water	14.0	degrees celcius			9/27/2022 10:55 AM	
Deacon Cell 2-100m from NE corner	510327	Transparency in water	3.8	m			9/27/2022 10:55 AM	
Deacon Cell 2 net composite	510328	Zebra Mussel, horizontal net sample	0	count/sample	Dreissena polymorpha	veliger	9/27/2022	Discarded
Deacon Cell 3 - middle	510330	Temperature, surface water	15.0	degrees celcius			9/27/2022 12:28 PM	
Deacon Cell 3 - middle	510330	Transparency in water	2.8	m			9/27/2022 12:28 PM	
Deacon Cell 3 - middle	510330	Zebra Mussel, trap 1	nr	count/sample	Dreissena polymorpha	adult	9/27/2022 12:28 PM	n/a
Deacon Cell 3-100m from NE corner	510331	Temperature, surface water	14.8	degrees celcius			9/27/2022 12:45 PM	
Deacon Cell 3-100m from NE corner	510331	Transparency in water	2.8	m			9/27/2022 12:45 PM	
Deacon Cell 3 net composite	510332	Zebra Mussel, horizontal net sample	0	count/sample	Dreissena polymorpha	veliger	9/27/2022	Discarded
Deacon Cell 4 - middle	510334	Temperature, surface water	14.1	degrees celcius			9/27/2022 9:45 AM	
Deacon Cell 4 - middle	510334	Transparency in water	2.7	m			9/27/2022 9:45 AM	
Deacon Cell 4 - middle	510334	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	9/27/2022 9:45 AM	Discarded
Deacon Cell 4-100m from NE corner	510335	Temperature, surface water	14.1	degrees celcius			9/27/2022 9:10 AM	
Deacon Cell 4-100m from NE corner	510335	Transparency in water	2.5	m			9/27/2022 9:10 AM	
Deacon Cell 4 net composite	510336	Zebra Mussel, horizontal net sample	0	count/sample	Dreissena polymorpha	veliger	9/27/2022	Discarded
Weather Conditions - Deacon	510338	Air Temperature	12.0	degrees celcius			9/27/2022	

NOTE: nr- no result, trap missing; n/a - not applicable



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2022 Shoal Lake Adult and Veliger Zebra Mussel Monitoring Report

Sampling Point	ID Numeric	Analysis	Result	Units	Species	Stage	Sampled Date	Disposition
Indian Bay - B1_B6 Water Composite	510339	Zebra Mussel, vertical net sample	0	count/sample	Dreissena polymorpha	veliger	9/13/2022	Discarded
Indian Bay - B1	510342	Temperature, surface water	19.2	degrees celcius			9/13/2022 12:07 PM	
Indian Bay - B1	510342	Transparency in water	2.5	m			9/13/2022 12:07 PM	
Indian Bay - B1	510342	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	9/13/2022 12:07 PM	Discarded
Indian Bay - B2	510343	Temperature, surface water	19.2	degrees celcius			9/13/2022 12:15 PM	
Indian Bay - B2	510343	Transparency in water	2.5	m			9/13/2022 12:15 PM	
Indian Bay - B2	510343	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	9/13/2022 12:15 PM	Discarded
Indian Bay - B3	510344	Temperature, surface water	19.2	degrees celcius			9/13/2022 12:21 PM	
Indian Bay - B3	510344	Transparency in water	2.5	m			9/13/2022 12:21 PM	
Indian Bay - B3	510344	Zebra Mussel, trap 1	nr	count/sample	Dreissena polymorpha	adult	9/13/2022 12:21 PM	n/a
Indian Bay - B4	510345	Temperature, surface water	18.9	degrees celcius			9/13/2022 12:30 PM	
Indian Bay - B4	510345	Transparency in water	2.5	m			9/13/2022 12:30 PM	
Indian Bay - B4	510345	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	9/13/2022 12:30 PM	Discarded
Indian Bay - B5	510346	Temperature, surface water	19.0	degrees celcius			9/13/2022 12:39 PM	
Indian Bay - B5	510346	Transparency in water	2.5	m			9/13/2022 12:39 PM	
Indian Bay - B5	510346	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	9/13/2022 12:39 PM	Discarded
Indian Bay - B6	510347	Temperature, surface water	19.1	degrees celcius			9/13/2022 12:44 PM	
Indian Bay - B6	510347	Transparency in water	2.5	m			9/13/2022 12:44 PM	
Indian Bay - B6	510347	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	9/13/2022 12:44 PM	Discarded
Shoal Lake - L1_L5 Water Composite	510348	Zebra Mussel, vertical net sample	0	count/sample	Dreissena polymorpha	veliger	9/13/2022	Discarded
Shoal Lake - L1	510349	Temperature, surface water	19.9	degrees celcius			9/13/2022 9:56 AM	
Shoal Lake - L1	510349	Transparency in water	3.5	m			9/13/2022 9:56 AM	
Shoal Lake - L1	510349	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	9/13/2022 9:56 AM	Discarded
Shoal Lake - L2	510350	Temperature, surface water	19.2	degrees celcius			9/13/2022 10:24 AM	
Shoal Lake - L2	510350	Transparency in water	2.5	m			9/13/2022 10:24 AM	
Shoal Lake - L2	510350	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	9/13/2022 10:24 AM	Discarded
Shoal Lake - L3	510351	Temperature, surface water	19.7	degrees celcius			9/13/2022 10:47 AM	
Shoal Lake - L3	510351	Transparency in water	3.0	m			9/13/2022 10:47 AM	
Shoal Lake - L3	510351	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	9/13/2022 10:47 AM	Discarded
Shoal Lake - L4	510352	Temperature, surface water	20.0	degrees celcius			9/13/2022 10:58 AM	
Shoal Lake - L4	510352	Transparency in water	3.5	m			9/13/2022 10:58 AM	
Shoal Lake - L4	510352	Zebra Mussel, trap 1	nr	count/sample	Dreissena polymorpha	adult	9/13/2022 10:58 AM	n/a
Shoal Lake - L5	510353	Temperature, surface water	19.5	degrees celcius			9/13/2022 11:45 AM	
Shoal Lake - L5	510353	Transparency in water	4.5	m			9/13/2022 11:45 AM	
Shoal Lake - L5	510353	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	9/13/2022 11:45 AM	Discarded
Shoal Lake - Horizontal Net Comp L1 B1 B4	510354	Zebra Mussel, horizontal net sample	0	count/sample	Dreissena polymorpha	veliger	9/13/2022	Discarded
Weather Conditions - Indian Bay	510370	Air Temperature	18.0	degrees celcius			9/13/2022	

NOTE: nr- no result, trap missing; n/a - not applicable



2022 Shoal Lake Adult and Veliger Zebra Mussel Monitoring Report

Sampling Point	ID Numeric	Analysis	Result	Units	Species	Stage	Sampled Date	Disposition
Deacon Cell 1 - middle	517509	Temperature, surface water	7.3	degrees celcius			10/20/2022 11:08 AM	
Deacon Cell 1 - middle	517509	Transparency in water	2.8	m			10/20/2022 11:08 AM	
Deacon Cell 1 - middle	517509	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	10/20/2022 11:08 AM	Discarded
Deacon Cell 1-100m from NE corner	517510	Temperature, surface water	7.2	degrees celcius			10/20/2022 11:23 AM	
Deacon Cell 1-100m from NE corner	517510	Transparency in water	2.5	m			10/20/2022 11:23 AM	
Deacon Cell 1 net composite	517511	Zebra Mussel, horizontal net sample	0	count/sample	Dreissena polymorpha	veliger	10/20/2022	Discarded
Deacon Cell 2 - middle	517513	Temperature, surface water	7.3	degrees celcius			10/20/2022 10:17 AM	
Deacon Cell 2 - middle	517513	Transparency in water	3.0	m			10/20/2022 10:17 AM	
Deacon Cell 2 - middle	517513	Zebra Mussel, trap 1	nr	count/sample	Dreissena polymorpha	adult	10/20/2022 10:17 AM	n/a
Deacon Cell 2-100m from NE corner	517514	Temperature, surface water	7.3	degrees celcius			10/20/2022 10:12 AM	
Deacon Cell 2-100m from NE corner	517514	Transparency in water	2.8	m			10/20/2022 10:12 AM	
Deacon Cell 2 net composite	517515	Zebra Mussel, horizontal net sample	0	count/sample	Dreissena polymorpha	veliger	10/20/2022	Discarded
Deacon Cell 3 - middle	517517	Temperature, surface water	7.3	degrees celcius			10/20/2022 12:10 PM	
Deacon Cell 3 - middle	517517	Transparency in water	2.5	m			10/20/2022 12:10 PM	
Deacon Cell 3 - middle	517517	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	10/20/2022 12:10 PM	Discarded
Deacon Cell 3-100m from NE corner	517518	Temperature, surface water	7.4	degrees celcius			10/20/2022 12:01 PM	
Deacon Cell 3-100m from NE corner	517518	Transparency in water	2.0	m			10/20/2022 12:01 PM	
Deacon Cell 3 net composite	517519	Zebra Mussel, horizontal net sample	0	count/sample	Dreissena polymorpha	veliger	10/20/2022	Discarded
Deacon Cell 4 - middle	517521	Temperature, surface water	7.0	degrees celcius			10/20/2022 9:20 AM	
Deacon Cell 4 - middle	517521	Transparency in water	2.8	m			10/20/2022 9:20 AM	
Deacon Cell 4 - middle	517521	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	10/20/2022 9:20 AM	Discarded
Deacon Cell 4-100m from NE corner	517522	Temperature, surface water	7.1	degrees celcius			10/20/2022 9:10 AM	
Deacon Cell 4-100m from NE corner	517522	Transparency in water	2.5	m			10/20/2022 9:10 AM	
Deacon Cell 4 net composite	517523	Zebra Mussel, horizontal net sample	0	count/sample	Dreissena polymorpha	veliger	10/20/2022	Discarded
Weather Conditions - Deacon	517525	Air Temperature	6.0	degrees celcius			10/20/2022	

NOTE: nr- no result, trap missing; n/a - not applicable



2022 Shoal Lake Adult and Veliger Zebra Mussel Monitoring Report

Sampling Point	ID Numeric	Analysis	Result	Units	Species	Stage	Sampled Date	Disposition
Indian Bay - B1_B6 Water Composite	517480	Zebra Mussel, vertical net sample	0	count/sample	Dreissena polymorpha	veliger	10/6/2022	Discarded
Indian Bay - B1	517483	Temperature, surface water	13.4	degrees celcius			10/6/2022 11:59 AM	
Indian Bay - B1	517483	Transparency in water	2.5	m			10/6/2022 11:59 AM	
Indian Bay - B1	517483	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	10/6/2022 11:59 AM	Discarded
Indian Bay - B2	517484	Temperature, surface water	13.5	degrees celcius			10/6/2022 12:06 PM	
Indian Bay - B2	517484	Transparency in water	3.0	m			10/6/2022 12:06 PM	
Indian Bay - B2	517484	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	10/6/2022 12:06 PM	Discarded
Indian Bay - B3	517485	Temperature, surface water	13.2	degrees celcius			10/6/2022 12:21 PM	
Indian Bay - B3	517485	Transparency in water	3.0	m			10/6/2022 12:21 PM	
Indian Bay - B3	517485	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	10/6/2022 12:21 PM	Discarded
Indian Bay - B4	517486	Temperature, surface water	13.1	degrees celcius			10/6/2022 12:29 PM	
Indian Bay - B4	517486	Transparency in water	3.0	m			10/6/2022 12:29 PM	
Indian Bay - B4	517486	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	10/6/2022 12:29 PM	Discarded
Indian Bay - B5	517487	Temperature, surface water	13.4	degrees celcius			10/6/2022 12:38 PM	
Indian Bay - B5	517487	Transparency in water	3.0	m			10/6/2022 12:38 PM	
Indian Bay - B5	517487	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	10/6/2022 12:38 PM	Discarded
Indian Bay - B6	517488	Temperature, surface water	13.3	degrees celcius			10/6/2022 12:43 PM	
Indian Bay - B6	517488	Transparency in water	3.5	m			10/6/2022 12:43 PM	
Indian Bay - B6	517488	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	10/6/2022 12:43 PM	Discarded
Shoal Lake - L1_L5 Water Composite	517489	Zebra Mussel, vertical net sample	0	count/sample	Dreissena polymorpha	veliger	10/6/2022	Discarded
Shoal Lake - L1	517490	Temperature, surface water	14.3	degrees celcius			10/6/2022 10:07 AM	
Shoal Lake - L1	517490	Transparency in water	2.5	m			10/6/2022 10:07 AM	
Shoal Lake - L1	517490	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	10/6/2022 10:07 AM	Discarded
Shoal Lake - L2	517491	Temperature, surface water	14.2	degrees celcius			10/6/2022 10:47 AM	
Shoal Lake - L2	517491	Transparency in water	2.5	m			10/6/2022 10:47 AM	
Shoal Lake - L2	517491	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	10/6/2022 10:47 AM	Discarded
Shoal Lake - L3	517492	Temperature, surface water	14.4	degrees celcius			10/6/2022 11:05 AM	
Shoal Lake - L3	517492	Transparency in water	3.0	m			10/6/2022 11:05 AM	
Shoal Lake - L3	517492	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	10/6/2022 11:05 AM	Discarded
Shoal Lake - L4	517493	Temperature, surface water	14.3	degrees celcius			10/6/2022 11:17 AM	
Shoal Lake - L4	517493	Transparency in water	3.0	m			10/6/2022 11:17 AM	
Shoal Lake - L4	517493	Zebra Mussel, trap 1	nr	count/sample	Dreissena polymorpha	adult	10/6/2022 11:17 AM	n/a
Shoal Lake - L5	517494	Temperature, surface water	14.3	degrees celcius			10/6/2022 11:38 AM	
Shoal Lake - L5	517494	Transparency in water	3.0	m			10/6/2022 11:38 AM	
Shoal Lake - L5	517494	Zebra Mussel, trap 1	0	count/sample	Dreissena polymorpha	adult	10/6/2022 11:38 AM	Discarded
Shoal Lake - Horizontal Net Comp L1 B1 B4	517495	Zebra Mussel, horizontal net sample	0	count/sample	Dreissena polymorpha	veliger	10/6/2022	Discarded
Weather Conditions - Indian Bay	517508	Air Temperature	6.3	degrees celcius			10/6/2022	

NOTE: nr- no result, trap missing; n/a - not applicable

APPENDIX D
2022 LEAD MONITORING PROGRAM RESULTS

City of Winnipeg
Environmental Standards Division
2022 Lead Testing Program Summary

DATE	JOB	WARD	CITY SERVICE LINE MATERIAL	PRIVATE SERVICE LINE MATERIAL	SAMPLED BY	RDT	1 MIN	2 MIN	5 MIN
10-Jun-22	1079	North Kildonan	Lead	Lead	Participant	0.000663	0.000474	0.000454	0.000473
10-Jun-22	1080	North Kildonan	Lead	Lead	Participant	0.000466	0.000526	0.000089	0.000080
10-Jun-22	1081	St. Vital	Copper	Lead	Participant	0.000303	<0.000065	<0.000065	<0.000065
10-Jun-22	1082	St. Vital	Copper	Lead	Participant	0.001712	0.000471	0.000341	0.000323
10-Jun-22	1083	St. Boniface	Copper	Lead	Participant	0.000748	0.002586	0.000730	0.000694
15-Jun-22	1084	St. Vital	Copper	Lead	Participant	0.001857	0.000716	0.000707	0.000704
16-Jun-22	1086	St. Vital	Unknown	Lead	Participant	0.002436	0.009064	0.001119	0.001036
15-Jun-22	1087	St. Boniface	Unknown	Lead	Participant	0.003022	0.000342	0.000303	0.000297
15-Jun-22	1088	St. Boniface	Copper	Lead	Participant	0.002690	0.002673	0.000350	0.000354
16-Jun-22	1089	St. Boniface	Unknown	Lead	Participant	0.000465	<0.000065	<0.000065	<0.000065
16-Jun-22	1090	St. Vital	Copper	Lead	Participant	0.001971	0.000590	0.000542	0.000578
15-Jun-22	1091	St. Boniface	Copper	Lead	Participant	0.002462	0.000417	0.000338	0.000363
16-Jun-22	1092	St. James	Copper	Lead	Participant	0.004153	0.000488	0.000460	0.000455
17-Jun-22	1093	Transcona	Unknown	Lead	Participant	0.000354	0.000286	0.000255	0.000213
17-Jun-22	1094	St. Vital	Unknown	Lead	Participant	<0.000065	<0.000065	<0.000065	<0.000065
17-Jun-22	1095	Transcona	Unknown	Lead	Participant	<0.000065	<0.000065	<0.000065	<0.000065
16-Jun-22	1096	St. Vital	Unknown	Lead	Participant	0.001287	0.001527	0.000314	0.000340
17-Jun-22	1097	Transcona	Unknown	Lead	Participant	0.000097	<0.000065	<0.000065	<0.000065
17-Jun-22	1098	Transcona	Copper	Lead	Participant	0.001950	0.000861	0.000804	0.000778
17-Jun-22	1099	Transcona	Unknown	Lead	Participant	<0.000065	<0.000065	<0.000065	<0.000065
20-Jun-22	1102	St. James	Copper	Lead	Participant	0.000769	0.000403	0.000340	0.000309
20-Jun-22	1103	St. James	Copper	Lead	Participant	0.000121	<0.000065	<0.000065	<0.000065
20-Jun-22	1104	St. James	Copper	Lead	Participant	0.001134	0.000949	0.001133	0.002554
20-Jun-22	1105	St. James	Lead	Lead	Participant	0.001013	0.000582	0.000214	0.000207
20-Jun-22	1106	St. Boniface	Copper	Lead	Participant	0.000662	0.000318	0.000311	0.000278
20-Jun-22	1107	St. Vital	Copper	Lead	Participant	0.000553	0.001051	0.001594	0.000367
20-Jun-22	1108	St. James	Lead	Lead	Participant	0.001070	0.001521	0.002809	0.001651
23-Jun-22	1112	Elmwood - East Kildonan	Lead	Lead	Participant	0.000919	0.000606	0.000300	0.000162
23-Jun-22	1113	Elmwood - East Kildonan	Copper	Lead	Participant	0.002019	0.001628	0.000634	0.000644
23-Jun-22	1114	Elmwood - East Kildonan	Copper	Lead	Participant	0.001763	0.000548	0.000458	0.000462
23-Jun-22	1115	Elmwood - East Kildonan	Lead	Lead	Participant	0.002416	0.001019	0.000950	0.000791

City of Winnipeg
Environmental Standards Division
2022 Lead Testing Program Summary

DATE	JOB	WARD	CITY SERVICE LINE MATERIAL	PRIVATE SERVICE LINE MATERIAL	SAMPLED BY	RDT	1 MIN	2 MIN	5 MIN
23-Jun-22	1116	Elmwood - East Kildonan	Copper	Lead	Participant	0.001094	0.000517	0.000488	0.000528
23-Jun-22	1118	Elmwood - East Kildonan	Lead	Lead	Participant	0.000360	0.000404	0.000360	0.000390
23-Jun-22	1119	Elmwood - East Kildonan	Lead	Lead	Participant	0.001435	0.006172	0.000957	0.000503
23-Jun-22	1120	Elmwood - East Kildonan	Copper	Lead	Participant	0.000707	0.000413	0.000194	0.000192
24-Jun-22	1123	Elmwood - East Kildonan	Lead	Lead	Participant	0.003061	0.000691	0.000626	0.000674
24-Jun-22	1124	Elmwood - East Kildonan	Lead	Lead	Participant	0.001109	0.000516	0.000512	0.000506
24-Jun-22	1125	Elmwood - East Kildonan	Unknown	Lead	Participant	0.001108	0.000503	0.001673	0.000437
24-Jun-22	1126	Elmwood - East Kildonan	Copper	Lead	Participant	0.000748	0.000284	0.000286	0.000296
24-Jun-22	1127	Elmwood - East Kildonan	Copper	Lead	Participant	0.000074	<0.000065	<0.000065	<0.000065
24-Jun-22	1128	Elmwood - East Kildonan	Copper	Lead	Participant	0.000172	0.000313	0.000212	0.000194
24-Jun-22	1129	Elmwood - East Kildonan	Copper	Lead	Participant	<0.000065	<0.000065	<0.000065	<0.000065
24-Jun-22	1130	Elmwood - East Kildonan	Copper	Lead	Participant	0.000281	<0.000065	<0.000065	<0.000065
24-Jun-22	1131	Elmwood - East Kildonan	Copper	Lead	Participant	0.000358	0.000132	0.000130	0.000118
24-Jun-22	1132	Elmwood - East Kildonan	Copper	Lead	Participant	0.001256	0.000848	0.000827	0.000785
24-Jun-22	1133	Elmwood - East Kildonan	Copper	Lead	Participant	0.000722	0.001935	0.000244	0.000304
24-Jun-22	1134	Elmwood - East Kildonan	Copper	Lead	Participant	0.009036	0.001106	0.001049	0.001032
24-Jun-22	1135	Elmwood - East Kildonan	Lead	Lead	Participant	0.001960	0.002774	0.000799	0.000807
29-Jun-22	1138	River Heights - Fort Garry	Lead	Lead	Participant	0.000630	0.001816	0.001865	0.001427
29-Jun-22	1139	River Heights - Fort Garry	Lead	Lead	Participant	0.000669	0.000909	0.000377	0.000401
29-Jun-22	1140	River Heights - Fort Garry	Copper	Lead	Participant	0.000475	0.000082	<0.000065	<0.000065
29-Jun-22	1141	River Heights - Fort Garry	Lead	Lead	Participant	0.001308	0.001963	0.003386	0.000385
29-Jun-22	1142	River Heights - Fort Garry	Copper	Lead	Participant	0.002301	0.001797	0.000716	0.000703
29-Jun-22	1143	River Heights - Fort Garry	Copper	Lead	Participant	0.000697	0.000350	0.000348	0.000350
29-Jun-22	1144	River Heights - Fort Garry	Copper	Lead	Participant	0.000557	0.006627	0.037734	0.000382
29-Jun-22	1145	River Heights - Fort Garry	Copper	Lead	Participant	0.000652	0.000823	0.000295	0.000275
29-Jun-22	1146	River Heights - Fort Garry	Copper	Lead	Participant	0.000837	0.002137	0.000237	0.000245
29-Jun-22	1147	River Heights - Fort Garry	Lead	Lead	Participant	0.000313	0.000328	0.000265	0.000164
29-Jun-22	1148	River Heights - Fort Garry	Copper	Lead	Participant	0.000520	0.000539	0.000527	0.000531
29-Jun-22	1149	River Heights - Fort Garry	Lead	Lead	Participant	0.000552	0.000803	0.001931	0.000629
29-Jun-22	1150	River Heights - Fort Garry	Unknown	Copper	Participant	0.000336	0.000113	<0.000065	<0.000065
30-Jun-22	1151	River Heights - Fort Garry	Copper	Lead	Participant	0.000416	0.002011	0.000303	0.000216

City of Winnipeg
Environmental Standards Division
2022 Lead Testing Program Summary

DATE	JOB	WARD	CITY SERVICE LINE MATERIAL	PRIVATE SERVICE LINE MATERIAL	SAMPLED BY	RDT	1 MIN	2 MIN	5 MIN
30-Jun-22	1152	River Heights - Fort Garry	Copper	Lead	Participant	0.000210	0.000321	0.000185	0.000380
30-Jun-22	1153	River Heights - Fort Garry	Lead	Lead	Participant	0.000592	0.002060	0.000123	0.000110
30-Jun-22	1154	Elmwood - East Kildonan	Lead	Lead	Participant	0.001126	0.000632	0.000604	0.000762
30-Jun-22	1155	River Heights - Fort Garry	Copper	Lead	Participant	0.000262	0.000318	0.000263	0.000267
30-Jun-22	1156	River Heights - Fort Garry	Copper	Lead	Participant	<0.000065	<0.000065	<0.000065	<0.000065
30-Jun-22	1157	River Heights - Fort Garry	Lead	Lead	Participant	0.000928	0.001501	0.001487	0.000348
30-Jun-22	1158	River Heights - Fort Garry	Copper	Lead	Participant	<0.000065	<0.000065	<0.000065	<0.000065
30-Jun-22	1159	River Heights - Fort Garry	Copper	Lead	Participant	0.001554	0.000929	0.000963	0.000940
30-Jun-22	1160	River Heights - Fort Garry	Lead	Lead	Participant	0.000602	0.000434	0.000444	0.000422
30-Jun-22	1161	Elmwood - East Kildonan	Copper	Lead	Participant	0.002803	0.001677	0.003676	0.002620
6-Jul-22	1164	Fort Rouge - East Fort Garry	Copper	Lead	Participant	0.002077	0.011620	0.001231	0.001286
6-Jul-22	1165	Fort Rouge - East Fort Garry	Lead	Lead	Participant	0.002148	0.007954	0.001034	0.000971
6-Jul-22	1166	Fort Rouge - East Fort Garry	Copper	Lead	Participant	0.004927	0.000837	0.000267	0.000318
6-Jul-22	1167	Fort Rouge - East Fort Garry	Lead	Lead	Participant	0.002648	0.003804	0.001066	0.000514
6-Jul-22	1168	Fort Rouge - East Fort Garry	Lead	Lead	Participant	0.001566	0.000868	0.000704	0.000748
6-Jul-22	1169	Fort Rouge - East Fort Garry	Copper	Lead	Participant	0.003642	0.000863	0.000864	0.000796
6-Jul-22	1170	Fort Rouge - East Fort Garry	Copper	Lead	City Staff	0.003067	0.003075	0.003091	0.003054
6-Jul-22	1171	Fort Rouge - East Fort Garry	Copper	Lead	Participant	0.000119	<0.000065	0.000068	<0.000065
7-Jul-22	1175	Fort Rouge - East Fort Garry	Copper	Lead	City Staff	0.000126	0.000102	0.000070	0.000079
7-Jul-22	1176	Fort Rouge - East Fort Garry	Unknown	Lead	Participant	0.002413	0.003967	0.000310	0.000312
7-Jul-22	1177	Fort Rouge - East Fort Garry	Copper	Lead	Participant	0.001276	0.003735	0.000588	0.000594
7-Jul-22	1178	Fort Rouge - East Fort Garry	Unknown	Lead	Participant	0.000099	<0.000065	<0.000065	<0.000065
7-Jul-22	1179	Fort Rouge - East Fort Garry	Copper	Lead	Participant	0.000456	0.000430	0.000209	0.000185
7-Jul-22	1180	Fort Rouge - East Fort Garry	Copper	Lead	Participant	0.002211	0.003403	0.000610	0.000543
7-Jul-22	1181	Fort Rouge - East Fort Garry	Lead	Lead	Participant	0.007195	0.007415	0.001296	0.001171
7-Jul-22	1182	Fort Rouge - East Fort Garry	Copper	Lead	Participant	0.000082	<0.000065	<0.000065	<0.000065
7-Jul-22	1183	Fort Rouge - East Fort Garry	Copper	Lead	Participant	0.000391	0.000132	0.000117	0.000113
7-Jul-22	1184	Fort Rouge - East Fort Garry	Copper	Lead	Participant	0.001164	0.001285	0.000695	0.000637
7-Jul-22	1185	Fort Rouge - East Fort Garry	Copper	Lead	Participant	0.001408	0.001444	0.000739	0.000429
6-Jul-22	1186	Fort Rouge - East Fort Garry	Copper	Lead	Participant	0.001339	0.000768	0.000832	0.000900
8-Jul-22	1188	Fort Rouge - East Fort Garry	Copper	Lead	Participant	0.001365	0.001814	0.000446	0.000607

City of Winnipeg
Environmental Standards Division
2022 Lead Testing Program Summary

DATE	JOB	WARD	CITY SERVICE LINE MATERIAL	PRIVATE SERVICE LINE MATERIAL	SAMPLED BY	RDT	1 MIN	2 MIN	5 MIN
8-Jul-22	1189	Fort Rouge - East Fort Garry	Copper	Lead	Participant	0.001795	0.013128	0.001171	0.001153
27-Jul-22	1200	Point Douglas	Copper	Lead	Participant	0.005071	0.001391	0.001422	0.001352
27-Jul-22	1201	Point Douglas	Lead	Lead	Participant	0.001988	0.009327	0.000602	0.000543
27-Jul-22	1202	Point Douglas	Lead	Lead	Participant	0.004541	0.000752	0.000779	0.000807
27-Jul-22	1204	Point Douglas	Copper	Lead	Participant	0.000602	0.003172	0.000335	0.000324
27-Jul-22	1205	Point Douglas	Lead	Lead	City Staff	0.000449	0.000446	0.000348	0.000476
27-Jul-22	1206	Point Douglas	Copper	Lead	Participant	0.004629	0.000793	0.000835	0.003906
27-Jul-22	1207	Point Douglas	Lead	Lead	Participant	<0.000065	<0.000065	0.000252	0.000231
27-Jul-22	1208	Point Douglas	Copper	Lead	Participant	0.000831	0.000730	0.000682	0.000616
28-Jul-22	1209	Point Douglas	Copper	Lead	Participant	0.003240	0.000380	0.000373	0.000348
28-Jul-22	1210	Point Douglas	Copper	Lead	Participant	0.007571	0.000459	0.000413	0.000446
28-Jul-22	1211	Point Douglas	Copper	Lead	Participant	0.000530	0.000260	0.000251	0.000365
28-Jul-22	1212	Point Douglas	Copper	Lead	Participant	0.000525	0.000377	0.000386	0.000375
28-Jul-22	1213	Point Douglas	Copper	Lead	Participant	0.000193	0.000187	0.000199	0.000198
28-Jul-22	1214	Point Douglas	Lead	Lead	Participant	0.003619	0.001985	0.000352	0.000337
28-Jul-22	1215	Point Douglas	Copper	Lead	City Staff	0.005896	0.000560	0.000470	0.000450
28-Jul-22	1216	Point Douglas	Copper	Lead	Participant	<0.000065	<0.000065	<0.000065	<0.000065
28-Jul-22	1217	Point Douglas	Lead	Lead	Participant	0.000457	0.000528	0.000577	0.000457
29-Jul-22	1218	Point Douglas	Lead	Lead	Participant	0.001617	0.001499	0.001306	0.001237
29-Jul-22	1219	Point Douglas	Copper	Lead	Participant	0.001933	0.004567	0.000636	0.000674
29-Jul-22	1220	Point Douglas	Copper	Lead	Participant	0.000979	0.000444	0.000400	0.000408
29-Jul-22	1221	Point Douglas	Lead	Lead	City Staff	0.003440	0.000868	0.000920	0.000918
29-Jul-22	1222	Point Douglas	Copper	Lead	Participant	0.000438	0.000236	0.000081	0.000099
29-Jul-22	1223	Point Douglas	Copper	Lead	Participant	0.005888	0.000090	0.000085	0.000072
29-Jul-22	1224	Point Douglas	Copper	Lead	Participant	0.003753	0.000391	0.000388	0.000405
3-Aug-22	1226	Point Douglas	Copper	Lead	Participant	0.002562	0.000771	0.000830	0.000845
3-Aug-22	1227	Mynarski	Copper	Lead	Participant	0.002561	0.003274	0.001767	0.001741
3-Aug-22	1228	Mynarski	Copper	Lead	Participant	0.002262	0.002197	0.001129	0.001042
3-Aug-22	1229	Point Douglas	Copper	Lead	Participant	0.002884	0.001726	0.000988	0.001039
3-Aug-22	1230	Mynarski	Lead	Lead	Participant	0.000472	0.002555	0.000447	0.000434
3-Aug-22	1231	Mynarski	Copper	Lead	Participant	0.000523	0.000538	0.000490	0.000321

City of Winnipeg
Environmental Standards Division
2022 Lead Testing Program Summary

DATE	JOB	WARD	CITY SERVICE LINE MATERIAL	PRIVATE SERVICE LINE MATERIAL	SAMPLED BY	RDT	1 MIN	2 MIN	5 MIN
3-Aug-22	1232	Mynarski	Copper	Lead	Participant	0.000450	0.000317	0.000182	0.000203
3-Aug-22	1233	Mynarski	Copper	Lead	Participant	0.000813	0.000715	0.000724	0.000802
4-Aug-22	1234	Mynarski	Copper	Lead	Participant	0.001040	0.000850	0.000892	0.000996
4-Aug-22	1235	Mynarski	Lead	Lead	Participant	0.000883	0.000305	0.000178	0.000173
4-Aug-22	1236	Mynarski	Copper	Lead	Participant	0.003067	0.001777	0.001873	0.001905
4-Aug-22	1237	Mynarski	Lead	Lead	Participant	0.003411	0.008045	0.006772	0.003354
4-Aug-22	1238	Mynarski	Copper	Lead	Participant	0.002195	0.000938	0.000811	0.000843
4-Aug-22	1239	Mynarski	Copper	Lead	Participant	0.001735	0.002177	0.000741	0.000688
4-Aug-22	1240	Mynarski	Copper	Lead	Participant	0.005687	0.002986	0.002026	0.002087
4-Aug-22	1241	Mynarski	Lead	Lead	Participant	0.000592	0.000328	0.000295	0.000268
5-Aug-22	1242	Mynarski	Copper	Lead	Participant	0.000953	0.001988	0.001435	0.000459
5-Aug-22	1243	Mynarski	Copper	Lead	Participant	0.000239	0.000192	0.000152	0.000180
5-Aug-22	1244	Mynarski	Copper	Lead	City Staff	0.001979	0.000337	0.000326	0.000353
5-Aug-22	1245	Mynarski	Copper	Lead	Participant	0.000066	<0.000065	0.000170	<0.000065
5-Aug-22	1246	Mynarski	Copper	Lead	City Staff	0.001074	0.000476	0.000474	0.000472
5-Aug-22	1247	Mynarski	Copper	Lead	Participant	0.000666	0.000570	0.000576	0.000641
10-Aug-22	1250	Mynarski	Lead	Lead	Participant	0.006896	0.001153	0.001174	0.001194
10-Aug-22	1251	Mynarski	Lead	Lead	City Staff	0.003977	0.002510	0.000794	0.000746
10-Aug-22	1252	Mynarski	Lead	Lead	Participant	0.002061	0.002139	0.001652	0.001639
10-Aug-22	1254	Mynarski	Lead	Lead	Participant	0.006673	0.012725	0.008712	0.001649
10-Aug-22	1255	Mynarski	Copper	Lead	Participant	0.001477	0.000675	0.000662	0.000675
10-Aug-22	1256	Mynarski	Copper	Lead	Participant	0.004377	0.022419	0.001546	0.001289
11-Aug-22	1259	Mynarski	Lead	Lead	Participant	0.000541	0.000484	0.000274	0.000314
11-Aug-22	1260	Mynarski	Copper	Lead	Participant	0.002610	0.000828	0.000742	0.000703
11-Aug-22	1261	Mynarski	Copper	Lead	Participant	0.000776	0.003272	0.000970	0.000577
11-Aug-22	1262	Mynarski	Lead	Lead	Participant	0.014176	0.017108	0.016309	0.015299
11-Aug-22	1263	Mynarski	Copper	Lead	Participant	0.002718	0.001734	0.001223	0.001000
11-Aug-22	1264	Mynarski	Copper	Lead	Participant	0.003025	0.000737	0.000760	0.000762
11-Aug-22	1265	Mynarski	Lead	Lead	Participant	0.000760	0.000338	0.001126	0.000288
12-Aug-22	1267	Mynarski	Copper	Lead	Participant	0.000288	0.000188	0.000173	0.000839
12-Aug-22	1268	Mynarski	Lead	Lead	Participant	0.001724	0.003295	0.001145	0.001109

City of Winnipeg
Environmental Standards Division
2022 Lead Testing Program Summary

DATE	JOB	WARD	CITY SERVICE LINE MATERIAL	PRIVATE SERVICE LINE MATERIAL	SAMPLED BY	RDT	1 MIN	2 MIN	5 MIN
12-Aug-22	1269	Mynarski	Lead	Unknown	Participant	0.001751	0.001520	0.000301	0.000227
12-Aug-22	1270	Mynarski	Copper	Lead	Participant	0.001053	0.000266	0.000251	0.000246
12-Aug-22	1271	Mynarski	Copper	Lead	Participant	0.000795	0.008879	0.000403	0.000376
12-Aug-22	1272	Mynarski	Copper	Lead	Participant	0.001997	0.000585	0.000588	0.000778
12-Aug-22	1273	Mynarski	Lead	Lead	Participant	0.000677	0.000420	0.000413	0.000395
12-Aug-22	1274	Mynarski	Copper	Lead	Participant	0.001285	0.001376	0.000536	0.000529
17-Aug-22	1275	Daniel McIntyre	Copper	Lead	Participant	0.000313	0.000151	0.000125	0.000138
17-Aug-22	1276	Mynarski	Copper	Lead	Participant	0.003834	0.002619	0.000992	0.000911
17-Aug-22	1277	Daniel McIntyre	Copper	Lead	Participant	0.001706	0.001011	0.000883	0.001234
17-Aug-22	1278	Daniel McIntyre	Lead	Lead	City Staff	0.002174	0.000331	0.000337	0.000824
17-Aug-22	1279	Fort Rouge - East Fort Garry	Copper	Lead	Participant	0.000319	0.000230	0.000192	0.000180
17-Aug-22	1280	Daniel McIntyre	Lead	Lead	Participant	0.002379	0.000922	0.000574	0.000551
17-Aug-22	1281	Daniel McIntyre	Copper	Lead	Participant	0.001925	0.001485	0.000941	0.000920
18-Aug-22	1282	Daniel McIntyre	Copper	Lead	Participant	0.003804	0.001023	0.000901	0.000882
18-Aug-22	1283	Daniel McIntyre	Copper	Lead	Participant	0.000854	0.000526	0.000603	0.000516
18-Aug-22	1284	Daniel McIntyre	Copper	Lead	Participant	0.000952	0.001672	0.000356	0.000363
18-Aug-22	1285	Daniel McIntyre	Copper	Lead	Participant	0.000237	0.000326	0.000218	0.000197
18-Aug-22	1286	Daniel McIntyre	Copper	Lead	Participant	0.012431	0.001097	0.000753	0.000760
18-Aug-22	1287	Mynarski	Copper	Lead	Participant	0.000098	<0.000065	<0.000065	<0.000065
18-Aug-22	1288	Daniel McIntyre	Copper	Lead	Participant	0.002939	0.002192	0.001051	0.001008
18-Aug-22	1289	Daniel McIntyre	Copper	Lead	Participant	0.003545	0.000538	0.000510	0.000528
18-Aug-22	1290	Daniel McIntyre	Lead	Lead	Participant	0.000365	0.000218	0.000173	0.000158
18-Aug-22	1291	Daniel McIntyre	Copper	Lead	Participant	0.000115	0.000125	0.000067	<0.000065
19-Aug-22	1293	Daniel McIntyre	Copper	Lead	Participant	0.000251	0.000305	0.001147	0.000258
19-Aug-22	1294	Daniel McIntyre	Copper	Lead	Participant	0.004676	0.004511	0.000713	0.000371
19-Aug-22	1295	Daniel McIntyre	Copper	Lead	City Staff	0.002154	0.004236	0.001036	0.001113
19-Aug-22	1297	Daniel McIntyre	Unknown	Lead	Participant	0.000482	0.000459	0.000459	0.000453
19-Aug-22	1298	Daniel McIntyre	Lead	Lead	Participant	0.000230	0.000268	0.000460	0.000467
19-Aug-22	1299	Daniel McIntyre	Copper	Lead	Participant	0.000725	0.005054	0.000836	0.000525
19-Aug-22	1300	Daniel McIntyre	Lead	Lead	Participant	0.002727	0.000894	0.000486	0.000476
19-Aug-22	1301	Daniel McIntyre	Copper	Lead	City Staff	0.001256	0.000317	0.000298	0.000310

City of Winnipeg
Environmental Standards Division
2022 Lead Testing Program Summary

DATE	JOB	WARD	CITY SERVICE LINE MATERIAL	PRIVATE SERVICE LINE MATERIAL	SAMPLED BY	RDT	1 MIN	2 MIN	5 MIN
24-Aug-22	1303	Daniel McIntyre	Copper	Lead	Participant	0.000482	0.000519	0.000846	0.000611
24-Aug-22	1304	Daniel McIntyre	Unknown	Lead	Participant	0.002178	0.000880	0.000991	0.000955
24-Aug-22	1305	Daniel McIntyre	Copper	Lead	Participant	0.001022	0.000957	0.000637	0.000596
24-Aug-22	1306	Daniel McIntyre	Copper	Lead	Participant	0.008141	0.003367	0.003855	0.001602
24-Aug-22	1307	Daniel McIntyre	Copper	Lead	Participant	<0.000065	0.000202	<0.000065	<0.000065
24-Aug-22	1308	Daniel McIntyre	Copper	Lead	Participant	0.000510	0.001251	0.000818	0.001738
24-Aug-22	1309	Daniel McIntyre	Copper	Lead	Participant	0.019098	0.001340	0.001402	0.001361
25-Aug-22	1311	Daniel McIntyre	Copper	Lead	Participant	0.000626	0.000718	0.000502	0.000472
25-Aug-22	1312	Daniel McIntyre	Lead	Lead	Participant	0.000377	0.000316	0.000329	0.000349
25-Aug-22	1313	Daniel McIntyre	Copper	Lead	Participant	0.001122	0.000427	0.000425	0.000391
25-Aug-22	1314	Daniel McIntyre	Lead	Lead	Participant	0.003070	0.002217	0.000804	0.000477
25-Aug-22	1315	Daniel McIntyre	Copper	Lead	Participant	0.003894	0.000560	0.000937	0.000541
25-Aug-22	1316	Daniel McIntyre	Lead	Lead	Participant	0.002413	0.000505	0.000568	0.000506
25-Aug-22	1317	Daniel McIntyre	Copper	Lead	Participant	0.001666	0.000822	0.000386	0.000381
25-Aug-22	1318	Daniel McIntyre	Copper	Lead	Participant	0.000809	0.000806	0.000786	0.000793
26-Aug-22	1319	Daniel McIntyre	Copper	Lead	Participant	0.002385	0.000324	0.000322	0.000323
26-Aug-22	1320	Daniel McIntyre	Copper	Lead	Participant	0.000594	0.000396	0.000375	0.000421
26-Aug-22	1321	Daniel McIntyre	Copper	Lead	Participant	0.002775	0.000838	0.000762	0.000712
26-Aug-22	1322	Daniel McIntyre	Lead	Lead	Participant	0.000862	0.001866	0.000319	0.000325
26-Aug-22	1323	Daniel McIntyre	Copper	Lead	Participant	0.001185	0.000678	0.000450	0.000197
26-Aug-22	1324	Daniel McIntyre	Copper	Lead	Participant	0.001803	0.007309	0.000355	0.000274
26-Aug-22	1325	Daniel McIntyre	Copper	Lead	Participant	0.002310	0.017477	0.000607	0.000655
26-Aug-22	1326	Daniel McIntyre	Copper	Lead	Participant	0.000461	0.000375	0.000411	0.000415
26-Aug-22	1327	Daniel McIntyre	Lead	Lead	Participant	0.000524	0.001950	0.000418	0.000453
26-Aug-22	1328	Daniel McIntyre	Copper	Lead	Participant	0.003877	0.001731	0.001873	0.000976
26-Aug-22	1329	Daniel McIntyre	Copper	Lead	Participant	0.001439	0.001405	0.001448	0.001396
26-Aug-22	1330	Daniel McIntyre	Copper	Lead	Participant	0.001939	0.002458	0.001216	0.001187
26-Aug-22	1331	Daniel McIntyre	Lead	Lead	Participant	0.001278	0.001107	0.001063	0.001053
26-Aug-22	1332	Elmwood - East Kildonan	Copper	Lead	Participant	<0.000065	<0.000065	<0.000065	<0.000065
31-Aug-22	1335	Fort Rouge - East Fort Garry	Lead	Lead	Participant	0.000279	0.000203	0.000136	0.000122
2-Sep-22	1336	St. Vital	Unknown	Lead	Participant	0.001835	0.001547	0.001461	0.001405

City of Winnipeg
Environmental Standards Division
2022 Lead Testing Program Summary

DATE	JOB	WARD	CITY SERVICE LINE MATERIAL	PRIVATE SERVICE LINE MATERIAL	SAMPLED BY	RDT	1 MIN	2 MIN	5 MIN
1-Sep-22	1337	Charleswood - Tuxedo - Westwood	Copper	Lead	City Staff	0.019805	0.002423	0.002418	0.002363
2-Sep-22	1339	Point Douglas	Lead	Copper	Participant	0.003306	0.002538	0.212160	0.001789
31-Aug-22	1340	Fort Rouge - East Fort Garry	Copper	Lead	City Staff	0.012500	0.002722	0.002650	0.003218
31-Aug-22	1341	Daniel McIntyre	Copper	Lead	Participant	0.000121	0.000065	<0.000065	0.000081
31-Aug-22	1342	Daniel McIntyre	Lead	Lead	Participant	0.001734	0.001954	0.002125	0.000469
31-Aug-22	1343	Fort Rouge - East Fort Garry	Copper	Lead	Participant	<0.000065	<0.000065	<0.000065	<0.000065
1-Sep-22	1344	Daniel McIntyre	Lead	Lead	Participant	0.011276	0.022734	0.015131	0.001687
1-Sep-22	1345	Daniel McIntyre	Lead	Lead	Participant	0.002936	0.001136	0.000448	0.000455
2-Nov-22	1372	Daniel McIntyre	Copper	Lead	City Staff	0.001788	0.000179	0.000210	0.000197
17-Nov-22	1378	Mynarski	Lead	Lead	City Staff	0.004708	0.000566	0.000535	0.000525
9-Dec-22	1390	Daniel McIntyre	Copper	Lead	City Staff	<0.000065	<0.000065	<0.000065	<0.000065