



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

**December 7, 2021**

**RE: NOVEMBER 2021 WATER QUALITY COMPLIANCE SUBMISSION FOR THE CITY OF WINNIPEG WATER SUPPLY SYSTEM**

Please find attached on-line and grab turbidity summary reports, on-line and grab chlorine summary reports and the UV summary report for the Water Treatment Plant for November 2021.

The November on-line and grab sampling turbidity reports include results obtained for the Water Treatment Plant raw water and the eight filters. The turbidity results for the filter effluent met the licence requirements.

The November on-line and grab sampling chlorine reports include results obtained for the Deacon Booster Pumping Station at the Water Treatment Plant. The free chlorine results at the Water Treatment Plant met the licence requirements.

The November UV summary report includes results obtained for the six UV reactors at the Water Treatment Plant. The UV disinfection results met the licence requirements.

Please let me know of any concerns or questions respecting this submission. I can be reached by telephone at 204-986-8359 or by e-mail at [rgrosselle@winnipeg.ca](mailto:rgrosselle@winnipeg.ca).

Yours sincerely,

*Original signed by,  
(Signed original available upon request)*

R. Grosselle  
Manager of Environmental Standards

Enclosures

cc: Dr. L. Richards, Winnipeg Regional Health Authority (email)  
Dr. H. Chang, Winnipeg Regional Health Authority (email)  
Dr. S. Roberecki, Manitoba Health and Seniors Care (email)  
M. L. Geer, CPA, CA (email)  
T. Shanks, M. Eng., P. Eng. (e-mail)  
C. Wiebe, P. Eng., CAMP (e-mail)  
C. Diduck (email)



**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 2021 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
1/11/2021	1.57	0.08	0.15	0.05	0.12	0.03	0.05	0.02	0.07	0.09	0.17	0.07	0.10	0.02	0.06	0.07	0.12
2/11/2021	1.55	0.07	0.15	0.08	0.10	0.04	0.10	0.01	0.06	0.10	0.13	0.07	0.12	0.02	0.07	0.05	0.12
3/11/2021	1.50	0.07	0.11	0.06	0.13	0.04	0.09	0.03	0.06	0.10	0.18	0.06	0.12	0.03	0.04	0.05	0.11
4/11/2021	1.52	0.06	0.20	0.04	0.17	0.03	0.14	0.00	0.09	0.03	0.19	0.05	0.19	0.02	0.18	0.05	0.18
5/11/2021	1.46	0.07	0.14	0.06	0.13	0.03	0.09	0.03	0.05	0.13	0.16	0.07	0.11	0.03	0.04	0.05	0.10
6/11/2021	1.42	0.10	0.14	0.06	0.12	0.04	0.08	0.03	0.06	0.09	0.17	0.06	0.12	0.04	0.05	0.06	0.09
7/11/2021	1.39	0.08	0.13	0.06	0.11	0.04	0.07	0.02	0.05	0.09	0.17	0.08	0.12	0.03	0.06	0.07	0.13
8/11/2021	1.37	0.07	0.13	0.08	0.11	0.04	0.07	0.02	0.04	0.10	0.15	0.07	0.11	0.03	0.05	0.05	0.10
9/11/2021	1.37	0.07	0.12	0.05	0.12	0.03	0.08	0.03	0.04	0.12	0.16	0.06	0.12	0.03	0.05	0.05	0.11
10/11/2021	1.36	0.09	0.13	0.06	0.12	0.03	0.09	0.02	0.05	0.09	0.17	0.06	0.10	0.03	0.06	0.07	0.09
11/11/2021	1.38	0.07	0.14	0.05	0.09	0.04	0.06	0.02	0.04	0.09	0.17	0.09	0.12	0.03	0.06	0.06	0.11
12/11/2021	1.51	0.06	0.12	0.07	0.11	0.03	0.07	0.01	0.03	0.12	0.15	0.07	0.12	0.02	0.06	0.05	0.11
13/11/2021	1.38	0.07	0.10	0.04	0.11	0.02	0.06	0.01	0.04	0.04	0.18	0.07	0.12	0.03	0.05	0.06	0.11
14/11/2021	1.35	0.09	0.13	0.05	0.10	0.02	0.05	0.01	0.03	0.02	0.08	0.06	0.10	0.03	0.06	0.06	0.09
15/11/2021	1.30	0.06	0.12	0.05	0.07	0.02	0.04	0.01	0.03	0.02	0.04	0.09	0.12	0.02	0.06	0.06	0.10
16/11/2021	1.32	0.06	0.13	0.06	0.10	0.02	0.05	0.01	0.02	0.04	0.07	0.07	0.13	0.02	0.04	0.05	0.10
17/11/2021	1.35	0.10	0.12	0.05	0.12	0.02	0.06	0.01	0.03	0.03	0.06	0.07	0.10	0.02	0.06	0.07	0.08
18/11/2021	1.33	0.07	0.13	0.07	0.09	0.03	0.06	0.01	0.09	0.02	0.08	0.07	0.11	0.02	0.04	0.05	0.10
19/11/2021	1.30	0.07	0.14	0.08	0.11	0.02	0.05	0.01	0.02	0.04	0.05	0.05	0.12	0.04	0.06	0.05	0.11
20/11/2021	1.28	0.11	0.13	0.07	0.14	0.02	0.06	0.01	0.04	0.03	0.09	0.06	0.09	0.03	0.08	0.07	0.09
21/11/2021	1.27	0.08	0.14	0.08	0.11	0.03	0.05	0.01	0.05	0.03	0.09	0.09	0.12	0.03	0.08	0.06	0.11
22/11/2021	1.25	0.07	0.15	0.09	0.14	0.03	0.07	0.01	0.02	0.05	0.07	0.06	0.13	0.04	0.06	0.05	0.12
23/11/2021	1.32	0.12	0.14	0.07	0.14	0.02	0.07	0.02	0.05	0.04	0.09	0.08	0.14	0.02	0.07	0.07	0.09
24/11/2021	1.23	0.10	0.15	0.08	0.13	0.03	0.05	0.01	0.04	0.04	0.09	0.10	0.12	O/L	O/L	0.08	0.13
25/11/2021	1.21	0.10	0.15	0.09	0.11	0.03	0.07	0.01	0.04	0.05	0.07	0.09	0.15	O/L	O/L	0.07	0.13
26/11/2021	1.21	0.10	0.16	0.09	0.14	0.03	0.07	0.01	0.02	0.05	0.10	0.09	0.15	O/L	O/L	0.07	0.13
27/11/2021	1.18	0.10	0.15	0.08	0.14	0.03	0.07	0.01	0.04	0.05	0.10	0.08	0.14	O/L	O/L	0.07	0.13
28/11/2021	1.17	0.10	0.13	0.08	0.13	0.03	0.06	0.01	0.04	0.04	0.08	0.08	0.14	O/L	O/L	0.07	0.12
29/11/2021	1.16	0.11	0.14	0.08	0.14	0.03	0.09	0.01	0.04	0.04	0.09	0.09	0.14	O/L	O/L	0.07	0.12
30/11/2021	1.14	0.03	0.14	0.04	0.10	0.02	0.06	0.01	0.05	0.03	0.10	0.04	0.11	O/L	O/L	0.04	0.11

Total Number of Measurements Taken, A:	10958	10977	10848	11470	12648	13288	9036	14412
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:	10958	10977	10848	11470	12648	13288	9036	14412
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%
O/L - Offline								

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2021\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 Licence No. PWS-09-412-02	Turbidity (NTU)																	
	Raw Water		Filter 1		Filter 2		Filter 3		Filter 4		Filter 5		Filter 6		Filter 7		Filter 8	
	Date	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab
01-Nov-2021	1.12	1.51	0.12	0.11	0.10	0.08	0.10	0.05	0.10	0.03	0.07	0.12	0.08	0.09	0.08	0.03	0.08	0.07
02-Nov-2021	1.09	1.48	0.15	0.14	0.11	0.08	0.11	0.05	0.08	0.02	0.07	0.12	0.11	0.11	0.08	0.02	0.09	0.07
03-Nov-2021	1.06	1.45	0.10	0.10	0.15	0.11	0.12	0.06	0.10	0.03	0.10	0.14	0.12	0.12	0.08	0.02	0.07	0.06
04-Nov-2021	1.09	1.44	0.10	0.12	0.09	0.08	0.09	0.05	0.09	0.03	0.07	0.13	0.08	0.09	0.08	0.03	0.07	0.07
05-Nov-2021	1.05	1.39	0.10	0.11	0.12	0.10	0.10	0.05	0.10	0.04	0.09	0.14	0.09	0.10	0.08	0.03	0.07	0.07
06-Nov-2021	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
07-Nov-2021	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
08-Nov-2021	1.17	1.34	0.12	0.12	0.09	0.09	0.10	0.06	0.09	0.03	0.08	0.13	0.09	0.10	0.07	0.02	0.09	0.07
09-Nov-2021	1.12	1.33	0.09	0.11	0.12	0.10	0.12	0.06	0.10	0.04	0.09	0.15	0.11	0.11	0.09	0.03	0.08	0.07
10-Nov-2021	1.12	1.32	0.11	0.11	0.10	0.08	0.10	0.04	0.11	0.04	0.13	0.16	0.09	0.09	0.11	0.04	0.09	0.07
11-Nov-2021	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
12-Nov-2021	1.27	1.48	0.08	0.10	0.09	0.08	0.10	0.05	0.07	<0.02	0.07	0.13	0.10	0.10	0.08	0.02	0.10	0.08
13-Nov-2021	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
14-Nov-2021	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
15-Nov-2021	1.14	1.27	0.10	0.11	0.08	0.07	0.08	0.03	0.08	<0.02	0.07	0.04	0.09	0.10	0.09	0.05	0.12	0.08
16-Nov-2021	1.11	1.31	0.08	0.11	0.10	0.08	0.09	0.04	0.08	<0.02	0.08	0.04	0.11	0.11	0.07	0.02	0.07	0.06
17-Nov-2021	1.07	1.34	0.08	0.11	0.07	0.06	0.07	0.03	0.08	0.02	0.07	0.10	0.08	0.10	0.10	0.05	0.08	0.07
18-Nov-2021	1.08	1.31	0.09	0.12	0.08	0.08	0.08	0.03	0.07	<0.02	0.07	0.04	0.10	0.10	0.08	0.02	0.10	0.08
19-Nov-2021	1.05	1.27	0.08	0.12	0.10	0.11	0.10	0.03	0.08	0.02	0.10	0.05	0.13	0.12	0.10	0.03	0.08	0.07
20-Nov-2021	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
21-Nov-2021	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
22-Nov-2021	1.03	1.23	0.08	0.11	0.10	0.11	0.13	0.06	0.10	0.02	0.11	0.06	0.12	0.12	0.12	0.04	0.14	0.11
23-Nov-2021	1.07	1.21	0.09	0.12	0.11	0.14	0.08	0.02	0.09	0.03	0.12	0.08	0.09	0.10	0.12	0.05	0.09	0.07
24-Nov-2021	1.07	1.20	0.11	0.13	0.09	0.03	0.09	0.05	0.09	0.02	0.08	0.10	0.10	0.11	OL	OL	0.10	0.08
25-Nov-2021	1.08	1.18	0.08	0.12	0.09	0.09	0.09	0.04	0.07	<0.02	0.08	0.07	0.12	0.12	OL	OL	0.12	0.10
26-Nov-2021	1.04	1.23	0.09	0.12	0.11	0.11	0.14	0.07	0.09	0.02	0.09	0.06	0.09	0.10	OL	OL	0.08	0.07
27-Nov-2021	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	OL	OL	NS	NS
28-Nov-2021	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	OL	OL	NS	NS
29-Nov-2021	1.01	1.13	0.09	0.12	0.08	0.09	0.08	0.03	0.09	0.02	0.12	0.07	0.09	0.10	OL	OL	0.09	0.07
30-Nov-2021	1.06	1.14	0.08	0.12	0.07	0.09	0.07	0.03	0.09	0.04	0.06	0.05	0.08	0.09	OL	OL	0.07	0.07
<b>Total number of measurements taken, A:</b>			21		21		21		21		21		21		21		21	
<b>Turbidity Standard for Monitoring Location (NTU):</b>			0.30		0.30		0.30		0.30		0.30		0.30		0.30		0.30	
<b>Number of measurements meeting standard, B:</b>			21		21		21		21		21		21		21		21	
<b>Compliance with Turbidity Standard, C= B/A X 100%:</b>			100%		100%		100%		100%		100%		100%		100%		100%	

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

**Comments:**

Note: The raw water analyser is cleaned daily during warm water months because it is susceptible to frequent fouling.  
Filter 7 was taken offline at 8:34 PM on November 23rd due to an issue with the backwash valve.

[N:\Compliance Reporting\Submittal Letters\WTP Turbidity Data](#)

Compiled By: H. Demchenko

Authorized By: C. Diduck

Report Date: 7-Dec-21

**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 2021

Report Period: November 2021

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/11/2021	1.45	1.32	1.49	1.40
02/11/2021	1.47	1.34	1.46	1.33
03/11/2021	1.46	1.34	1.43	1.35
04/11/2021	1.51	1.33	1.44	1.28
05/11/2021	1.41	1.32	1.36	1.27
06/11/2021	1.34	1.28	1.37	1.28
07/11/2021	1.32	1.24	1.40	1.33
08/11/2021	1.34	1.25	1.41	1.35
09/11/2021	1.34	1.20	1.39	1.33
10/11/2021	1.23	1.18	1.32	1.26
11/11/2021	1.27	1.17	1.35	1.27
12/11/2021	1.31	1.23	1.39	1.33
13/11/2021	1.32	1.25	1.44	1.37
14/11/2021	1.26	1.17	1.36	1.21
15/11/2021	1.36	1.12	1.23	1.17
16/11/2021	1.42	1.25	1.23	1.15
17/11/2021	1.42	1.32	1.30	1.22
18/11/2021	1.45	1.30	1.32	1.24
19/11/2021	1.42	1.29	1.30	1.25
20/11/2021	1.43	1.25	1.29	1.24
21/11/2021	1.51	1.39	1.32	1.27
22/11/2021	1.50	1.39	1.41	1.28
23/11/2021	1.47	1.37	1.42	1.35
24/11/2021	1.42	1.30	1.39	1.30
25/11/2021	1.40	1.28	1.37	1.28
26/11/2021	1.36	1.14	1.44	1.35
27/11/2021	1.32	1.21	1.38	1.24
28/11/2021	1.32	1.21	1.31	1.23
29/11/2021	1.27	1.14	1.29	1.18
30/11/2021	1.26	1.06	1.21	0.88

Total Number of Measurements, A:	20912	20912
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	20912	20912
COMPLIANCE, C = B/A X 100%:	100.00	100.00

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2021\11-November

Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew



**WATER TREATMENT PLANT CHLORINE GRAB MONITORING REPORT**

Water System Code: 252.00 Licence No. PWS-09-412-02	Deacon Booster Pumping Station Branch 1			Deacon Booster Pumping Station Branch 2		
	Free Chlorine (mg/L)		Total Chlorine (mg/L)	Free Chlorine (mg/L)		Total Chlorine (mg/L)
	Analysers	Grab	Grab	Analysers	Grab	Grab
Date						
01-Nov-2021	1.40	1.37	1.61	1.50	1.54	1.74
02-Nov-2021	1.47	1.45	1.67	1.47	1.55	1.72
03-Nov-2021	1.42	1.39	1.59	1.40	1.49	1.71
04-Nov-2021	1.38	1.38	1.59	1.34	1.50	1.69
05-Nov-2021	1.41	1.43	1.62	1.38	1.47	1.68
06-Nov-2021	NS	NS	NS	NS	NS	NS
07-Nov-2021	NS	NS	NS	NS	NS	NS
08-Nov-2021	1.31	1.33	1.55	1.41	1.41	1.64
09-Nov-2021	1.31	1.32	1.54	1.38	1.45	1.63
10-Nov-2021	1.23	1.25	1.49	1.30	1.37	1.54
11-Nov-2021	NS	NS	NS	NS	NS	NS
12-Nov-2021	1.31	1.38	1.51	1.36	1.42	1.63
13-Nov-2021	NS	NS	NS	NS	NS	NS
14-Nov-2021	NS	NS	NS	NS	NS	NS
15-Nov-2021	1.40	1.35	1.53	1.22	1.27	1.47
16-Nov-2021	1.43	1.36	1.52	1.20	1.26	1.41
17-Nov-2021	1.43	1.40	1.66	1.32	1.35	1.56
18-Nov-2021	1.48	1.44	1.73	1.34	1.39	1.59
19-Nov-2021	1.46	1.48	1.74	1.31	1.35	1.55
20-Nov-2021	NS	NS	NS	NS	NS	NS
21-Nov-2021	NS	NS	NS	NS	NS	NS
22-Nov-2021	1.53	1.51	1.71	1.47	1.48	1.64
23-Nov-2021	1.48	1.44	1.66	1.39	1.44	1.67
24-Nov-2021	1.44	1.43	1.64	1.40	1.46	1.64
25-Nov-2021	1.41	1.46	1.65	1.36	1.44	1.61
26-Nov-2021	1.42	1.45	1.65	1.45	1.52	1.68
27-Nov-2021	NS	NS	NS	NS	NS	NS
28-Nov-2021	NS	NS	NS	NS	NS	NS
29-Nov-2021	1.28	1.27	1.51	1.32	1.33	1.53
30-Nov-2021	1.24	1.26	1.45	1.24	1.31	1.42
<b>Total number of measurements taken, A:</b>		21			21	
<b>Chlorine Standard for Monitoring Location (mg/L):</b>		0.50			0.50	
<b>Number of measurements meeting standard, B:</b>		21			21	
<b>Compliance with Chlorine Standard, C= B/A X 100%:</b>		100%			100%	

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

Comments:

Compiled By: H. Demchenko

Authorized By: C. Diduck

Report Date: 7-Dec-21



**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 2021**

Report Created: **Wednesday, December 01, 2021**

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		Untreated	Below
01/11/2021	0.00	0.96	48.58	49.55	0.00	1.12	65.96	67.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	68.41	68.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.08	182.94	185.02	98.87	
02/11/2021	0.00	0.76	48.88	49.64	0.00	0.00	67.19	67.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	68.12	68.17	0.00	0.00	0.00	0.00	0.00	0.00	0.81	184.19	185.00	99.56	
03/11/2021	0.00	0.64	47.52	48.15	0.00	0.00	64.98	64.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	65.97	66.02	0.00	0.00	0.00	0.00	0.00	0.00	0.68	178.47	179.15	99.62	
04/11/2021	0.03	0.72	29.92	30.67	0.00	0.00	16.26	16.26	0.00	0.09	15.22	15.31	0.00	0.00	0.00	0.00	0.00	0.03	35.21	35.24	0.00	0.00	0.00	0.00	0.00	0.03	0.84	96.61	97.48	99.11	
05/11/2021	0.00	0.59	23.24	23.83	0.00	0.02	41.26	41.28	0.00	0.46	55.77	56.23	0.00	0.00	0.00	0.00	0.00	0.00	66.64	66.64	0.00	0.00	0.00	0.00	0.00	0.00	1.07	186.91	187.98	99.43	
06/11/2021	0.00	0.00	0.00	0.00	0.00	0.00	64.98	64.98	0.00	0.16	55.88	56.04	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	0.00	0.16	187.83	187.99	99.92	
07/11/2021	0.00	0.00	0.00	0.00	0.00	0.00	65.05	65.05	0.00	0.62	55.25	55.87	0.00	0.00	0.00	0.00	0.00	0.00	67.22	67.22	0.00	0.00	0.00	0.00	0.00	0.00	0.62	187.51	188.13	99.67	
08/11/2021	0.00	0.00	0.00	0.00	0.00	0.00	65.00	65.00	0.00	0.27	55.46	55.74	0.00	0.00	0.00	0.00	0.00	0.05	67.19	67.24	0.00	0.00	0.00	0.00	0.00	0.00	0.32	187.65	187.97	99.83	
09/11/2021	0.00	0.00	0.00	0.00	0.00	0.00	65.01	65.01	0.00	0.23	55.81	56.05	0.00	0.00	0.00	0.00	0.00	0.05	66.90	66.95	0.00	0.00	0.00	0.00	0.00	0.00	0.28	187.72	188.01	99.85	
10/11/2021	0.00	0.00	0.00	0.00	0.00	0.00	64.99	64.99	0.00	0.31	56.08	56.39	0.00	0.00	0.00	0.00	0.00	0.00	66.63	66.63	0.00	0.00	0.00	0.00	0.00	0.00	0.31	187.70	188.01	99.83	
11/11/2021	0.00	0.00	0.00	0.00	0.00	0.00	64.99	64.99	0.00	0.39	56.07	56.47	0.00	0.00	0.00	0.00	0.00	0.05	66.52	66.56	0.00	0.00	0.00	0.00	0.00	0.00	0.44	187.58	188.02	99.77	
12/11/2021	0.00	0.00	0.00	0.00	0.00	0.00	64.98	64.98	0.00	0.12	56.05	56.16	0.00	0.00	0.00	0.00	0.00	0.05	66.78	66.83	0.00	0.00	0.00	0.00	0.00	0.00	0.16	187.81	187.98	99.91	
13/11/2021	0.00	0.00	0.00	0.00	0.00	0.00	64.99	64.99	0.00	0.35	54.80	55.15	0.00	0.00	0.00	0.00	0.00	0.00	65.72	65.72	0.00	0.00	0.00	0.00	0.00	0.00	0.35	185.51	185.85	99.81	
14/11/2021	0.00	0.00	0.00	0.00	0.00	0.45	63.99	64.44	0.00	0.26	52.63	52.89	0.00	0.00	0.00	0.00	0.00	0.04	62.33	62.37	0.00	0.00	0.00	0.00	0.00	0.00	0.75	178.95	179.71	99.58	
15/11/2021	0.23	0.23	13.91	14.36	0.00	0.00	47.15	47.15	0.00	0.25	52.45	52.71	0.00	0.00	0.65	0.65	0.00	0.00	61.79	61.79	0.00	0.00	0.00	0.00	0.00	0.23	0.48	175.95	176.65	99.60	
16/11/2021	0.00	0.00	0.00	0.00	0.00	0.00	59.99	59.99	0.00	0.34	53.36	53.70	0.00	0.00	0.00	0.00	0.00	0.00	62.27	62.27	0.00	0.00	0.00	0.00	0.00	0.00	0.34	175.63	175.96	99.81	
17/11/2021	0.00	0.00	0.00	0.00	0.00	0.00	59.99	59.99	0.00	0.45	53.84	54.29	0.00	0.00	0.00	0.00	0.00	0.22	62.56	62.78	0.00	0.00	0.00	0.00	0.00	0.00	0.67	176.38	177.06	99.62	
18/11/2021	0.00	0.00	0.00	0.00	0.00	0.00	59.99	59.99	0.00	0.34	53.59	53.93	0.00	0.00	0.00	0.00	0.00	0.22	62.07	62.29	0.00	0.00	0.00	0.00	0.00	0.00	0.55	175.66	176.21	99.69	
19/11/2021	0.00	0.00	0.00	0.00	0.00	0.00	60.00	60.00	0.00	0.19	54.60	54.78	0.00	0.00	0.00	0.00	0.00	0.13	63.20	63.34	0.00	0.00	0.00	0.00	0.00	0.00	0.32	177.80	178.12	99.82	
20/11/2021	0.00	0.00	0.00	0.00	0.00	0.00	60.01	60.01	0.00	0.49	53.35	53.84	0.00	0.00	0.00	0.00	0.00	0.00	62.14	62.14	0.00	0.00	0.00	0.00	0.00	0.00	0.49	175.50	175.99	99.72	
21/11/2021	0.00	0.00	0.00	0.00	0.00	0.00	59.99	59.99	0.00	0.56	53.33	53.89	0.00	0.00	0.00	0.00	0.00	0.04	62.06	62.11	0.00	0.00	0.00	0.00	0.00	0.00	0.61	175.37	175.98	99.66	
22/11/2021	0.00	0.00	0.00	0.00	0.00	0.00	60.23	60.23	0.00	0.39	49.31	49.70	0.00	0.04	43.47	43.51	0.00	0.00	20.05	20.05	0.00	0.00	0.00	0.00	0.00	0.00	0.43	173.07	173.50	99.75	
23/11/2021	0.00	0.00	0.00	0.00	0.00	0.00	59.96	59.96	0.00	0.20	22.46	22.66	0.00	0.00	59.11	59.11	0.00	0.00	31.26	31.26	0.00	0.00	0.00	0.00	0.00	0.00	0.20	172.78	172.98	99.88	
24/11/2021	0.00	0.00	0.00	0.00	0.00	0.00	60.00	60.00	0.00	0.00	0.00	0.00	0.00	0.00	54.11	54.11	0.00	0.00	58.85	58.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	172.97	172.97	100.00	
25/11/2021	0.00	0.00	0.00	0.00	0.00	0.00	59.98	59.98	0.00	0.00	0.00	0.00	0.00	0.00	55.82	55.82	0.00	0.00	61.09	61.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	176.90	176.90	100.00	
26/11/2021	0.00	0.00	0.00	0.00	0.00	0.00	59.99	59.99	0.00	0.00	0.00	0.00	0.00	0.00	65.51	65.51	0.00	0.00	74.31	74.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	199.81	199.81	100.00	
27/11/2021	0.00	0.00	0.00	0.00	0.00	0.00	59.99	59.99	0.00	0.00	0.00	0.00	0.00	0.00	64.34	64.34	0.00	0.00	73.19	73.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	197.52	197.52	100.00	
28/11/2021	0.00	0.00	0.00	0.00	0.00	0.00	60.01	60.01	0.00	0.00	0.00	0.00	0.00	0.00	64.06	64.06	0.00	0.00	72.96	72.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	197.03	197.03	100.00	
29/11/2021	0.00	0.00	0.00	0.00	0.00	0.00	60.00	60.00	0.00	0.00	0.00	0.00	0.00	0.00	64.19	64.19	0.00	0.00	73.22	73.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	197.40	197.40	100.00	
30/11/2021	0.00	0.00	0.00	0.00	0.00	0.00	43.43	43.43	0.00	0.00	0.00	0.00	0.00	0.03	44.24	44.27	0.00	0.00	48.60	48.60	0.00	0.00	0.00	0.00	0.00	0.00	0.03	136.26	136.30	99.98	
<b>Total [ML]:</b>	0.25	3.89	212.05	216.20	0.00	1.59	1770.32	1771.91	0.00	6.48	1015.32	1021.80	0.00	0.07	515.49	515.56	0.00	0.97	1850.23	1851.20	0.00	0.00	0.00	0.00	0.00	0.25	13.01	5363.41	5376.68		

**Water Volume [%]:**

Untreated: 0.00 %  
 Below Dose: 0.24 %  
 To Dose: 99.75 %

**Notes:** 1. UV Comparative Dose: 18.1 mJ/cm<sup>2</sup>

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 2021**

Report Created: **Wednesday, December 01, 2021**

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.
01/11/2021	94.9	94.8	95.5	95.2	16.9	22.9	21.2	13.9	28.9	21.1	OL	OL	OL	OL	OL	OL	18.4	21.8	21.2	OL	OL	OL
02/11/2021	94.9	94.8	95.6	95.5	16.8	30.0	21.4	18.1	22.0	21.3	OL	OL	OL	OL	OL	OL	17.8	21.8	21.1	OL	OL	OL
03/11/2021	94.9	94.8	95.7	95.5	16.7	23.2	21.6	18.2	22.1	21.4	OL	OL	OL	OL	OL	OL	17.9	21.7	21.1	OL	OL	OL
04/11/2021	94.9	94.8	94.9	90.8	0.0	47.2	21.4	0.0	27.5	21.4	0.0	57.7	21.3	OL	OL	OL	0.0	79.9	21.3	OL	OL	OL
05/11/2021	94.9	94.8	94.6	94.3	0.0	100.8	21.6	15.8	51.3	21.3	16.2	22.8	21.2	OL	OL	OL	17.8	22.8	21.3	OL	OL	OL
06/11/2021	94.9	94.8	94.6	94.4	OL	OL	OL	18.0	22.0	21.3	17.5	22.9	21.2	OL	OL	OL	17.8	22.1	21.3	OL	OL	OL
07/11/2021	94.9	94.8	94.5	94.1	OL	OL	OL	17.8	22.1	21.3	17.4	21.8	21.2	OL	OL	OL	17.9	22.1	21.3	OL	OL	OL
08/11/2021	94.8	0.0	94.6	84.7	OL	OL	OL	18.0	22.1	21.3	17.5	21.8	21.2	OL	OL	OL	17.9	22.0	21.3	OL	OL	OL
09/11/2021	94.3	0.0	94.8	94.2	OL	OL	OL	18.2	22.0	21.3	17.5	22.0	21.2	OL	OL	OL	17.8	22.1	21.3	OL	OL	OL
10/11/2021	95.1	87.6	95.0	94.6	OL	OL	OL	18.2	22.1	21.3	17.5	22.0	21.2	OL	OL	OL	17.9	22.0	21.3	OL	OL	OL
11/11/2021	95.3	92.2	95.2	94.9	OL	OL	OL	18.0	22.1	21.3	17.5	23.1	21.2	OL	OL	OL	18.0	22.2	21.3	OL	OL	OL
12/11/2021	95.7	92.7	95.6	95.2	OL	OL	OL	18.1	22.0	21.3	17.5	22.7	21.2	OL	OL	OL	17.9	22.2	21.3	OL	OL	OL
13/11/2021	96.2	87.1	96.1	95.8	OL	OL	OL	18.1	22.0	21.3	17.4	23.0	21.2	OL	OL	OL	17.9	22.1	21.3	OL	OL	OL
14/11/2021	96.4	91.7	96.2	96.0	OL	OL	OL	17.3	22.0	20.9	17.4	22.4	21.3	OL	OL	OL	18.0	22.1	21.4	OL	OL	OL
15/11/2021	96.3	87.5	96.1	95.8	0.0	98.9	24.3	0.0	70.9	26.0	17.6	25.8	21.3	0.0	55.8	22.5	17.8	23.5	21.4	OL	OL	OL
16/11/2021	96.2	94.0	96.0	95.6	OL	OL	OL	25.7	34.7	29.7	17.5	21.9	21.2	OL	OL	OL	17.9	22.0	21.4	OL	OL	OL
17/11/2021	96.2	95.3	95.8	95.6	OL	OL	OL	25.3	33.8	29.2	17.5	22.5	21.2	OL	OL	OL	17.2	22.0	21.3	OL	OL	OL
18/11/2021	96.2	95.3	95.6	95.3	OL	OL	OL	24.9	33.2	28.6	17.5	21.9	21.2	OL	OL	OL	17.5	22.1	21.3	OL	OL	OL
19/11/2021	96.1	94.1	95.3	95.0	OL	OL	OL	24.1	32.5	27.9	17.4	21.8	21.2	OL	OL	OL	17.4	22.0	21.2	OL	OL	OL
20/11/2021	96.1	94.8	94.9	94.6	OL	OL	OL	23.3	31.6	27.2	17.4	21.9	21.2	OL	OL	OL	17.2	22.1	21.3	OL	OL	OL
21/11/2021	96.0	94.5	92.3	0.0	OL	OL	OL	22.7	30.5	26.3	17.5	21.9	21.2	OL	OL	OL	17.5	22.1	21.3	OL	OL	OL
22/11/2021	95.9	10.7	95.9	88.1	OL	OL	OL	21.8	29.6	25.4	17.2	22.7	21.3	14.3	54.2	21.5	0.0	33.2	21.3	OL	OL	OL
23/11/2021	96.0	95.6	96.6	95.0	OL	OL	OL	21.2	28.9	24.8	0.0	26.3	21.3	18.5	32.8	21.7	23.1	98.2	27.9	OL	OL	OL
24/11/2021	95.9	95.4	95.7	95.0	OL	OL	OL	20.7	27.5	23.8	OL	OL	OL	18.6	31.3	21.7	21.2	33.3	25.7	OL	OL	OL
25/11/2021	95.7	89.9	95.6	94.9	OL	OL	OL	19.9	26.7	22.9	OL	OL	OL	18.5	27.7	21.7	18.5	30.6	23.4	OL	OL	OL
26/11/2021	95.5	93.5	95.4	94.8	OL	OL	OL	18.7	26.0	21.9	OL	OL	OL	18.4	23.8	21.6	18.0	26.7	21.2	OL	OL	OL
27/11/2021	95.4	94.5	95.3	94.7	OL	OL	OL	18.7	23.5	21.3	OL	OL	OL	18.4	23.0	21.5	18.2	25.5	21.2	OL	OL	OL
28/11/2021	95.5	93.5	95.5	95.0	OL	OL	OL	18.6	22.9	21.3	OL	OL	OL	18.4	22.8	21.5	18.2	24.3	21.1	OL	OL	OL
29/11/2021	95.4	93.3	95.4	94.8	OL	OL	OL	18.6	23.8	21.2	OL	OL	OL	18.2	22.1	21.4	18.0	23.0	21.1	OL	OL	OL
30/11/2021	94.7	11.7	94.7	94.0	OL	OL	OL	0.0	90.8	21.4	OL	OL	OL	0.0	44.1	21.4	0.0	85.3	21.1	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