



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, 2023

RE: NOVEMBER 2023 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 2023.

The November on-line and grab sampling turbidity reports include results obtained for the Water Treatment Plant raw water and the eight filters. The maximum turbidity was greater than 0.30 NTU on several occasions; the elevated turbidities occurred for less than 12 consecutive hours. On November 10 the turbidity on Filter 3 and on November 30 the turbidity on Filter 5 exceeded 1.00 NTU, additional information for the exceedances are provided separately in Corrective Action Reports. With the exception of these two events, 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.

Yours sincerely,

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. T. Hilderman, Manitoba Health and Seniors Care (email)
T. Shanks, M. Eng., P. Eng. (email)
M. Szmon, P. Eng. (email)
H. Buhler, P. Eng. (email)
L. McCusker, P. Eng. (email)
C. Diduck (email)



CITY OF WINNIPEG
 WATER AND WASTE DEPARTMENT
 WATER SERVICES

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

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

November 2023 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
1/11/2023	1.18	0.06	0.09	0.04	0.07	0.04	0.06	0.01	0.04	0.07	0.11	0.02	0.06	OL	OL	0.03	0.05
2/11/2023	1.10	0.08	0.36	0.06	0.26	0.07	0.31	0.02	0.20	0.07	0.11	0.02	0.05	OL	OL	0.03	0.06
3/11/2023	1.08	0.06	0.09	0.04	0.07	0.04	0.20	0.01	0.06	0.07	0.11	0.02	0.05	OL	OL	0.03	0.06
4/11/2023	1.05	0.06	0.08	0.04	0.07	0.04	0.11	0.01	0.04	0.07	0.11	0.02	0.08	OL	OL	0.02	0.06
5/11/2023	1.02	0.06	0.08	0.04	0.07	0.04	0.08	0.01	0.03	0.07	0.11	0.02	0.05	OL	OL	0.03	0.06
6/11/2023	1.01	0.06	0.08	0.04	0.06	0.03	0.06	0.01	0.05	0.07	0.11	0.02	0.06	OL	OL	0.02	0.06
7/11/2023	0.99	0.05	0.08	0.04	0.07	0.04	0.09	0.01	0.03	0.08	0.10	0.02	0.06	OL	OL	0.03	0.07
8/11/2023	0.98	0.05	0.08	0.04	0.07	0.05	0.23	0.01	0.04	0.07	0.11	0.03	0.06	OL	OL	0.03	0.06
9/11/2023	0.97	0.07	0.16	0.05	0.18	0.07	0.43	0.01	0.05	0.07	0.11	0.02	0.05	OL	OL	0.03	0.06
10/11/2023	0.96	0.05	0.08	0.05	0.09	0.06	2.16	0.00	0.05	0.08	0.11	0.02	0.06	OL	OL	0.03	0.06
11/11/2023	0.94	0.05	0.08	0.05	0.08	0.05	0.14	0.01	0.04	0.08	0.12	0.02	0.06	OL	OL	0.03	0.08
12/11/2023	0.97	0.05	0.08	0.05	0.08	0.05	0.21	0.01	0.05	0.08	0.12	0.03	0.08	OL	OL	0.03	0.07
13/11/2023	0.98	0.06	0.10	0.05	0.09	0.06	0.26	0.01	0.03	0.06	0.11	0.02	0.05	0.01	0.05	0.04	0.09
14/11/2023	0.98	0.05	0.10	0.06	0.11	0.06	0.41	0.00	0.03	0.08	0.13	0.02	0.06	0.02	0.05	0.03	0.08
15/11/2023	0.95	0.06	0.08	0.06	0.10	0.04	0.11	0.01	0.05	0.08	0.12	0.01	0.07	0.03	0.05	0.02	0.05
16/11/2023	0.95	0.05	0.09	0.06	0.11	0.06	0.11	0.01	0.05	0.08	0.14	0.01	0.04	0.03	0.05	0.03	0.06
17/11/2023	0.91	0.05	0.09	0.06	0.12	0.06	0.10	0.01	0.04	0.07	0.14	0.03	0.11	0.03	0.05	0.03	0.07
18/11/2023	0.89	0.06	0.09	0.08	0.12	0.07	0.20	0.01	0.05	0.07	0.12	0.02	0.07	0.02	0.05	0.03	0.08
19/11/2023	0.85	0.06	0.09	0.07	0.11	0.09	0.44	0.01	0.05	0.10	0.13	0.02	0.07	0.02	0.04	0.02	0.08
20/11/2023	0.87	0.06	0.13	0.05	0.11	0.05	0.14	0.01	0.06	0.04	0.44	0.02	0.07	0.02	0.05	0.04	0.08
21/11/2023	0.86	0.08	0.12	0.01	0.05	0.01	0.13	0.00	0.04	0.03	0.08	0.03	0.05	0.01	0.03	0.03	0.11
22/11/2023	0.86	0.11	0.13	0.02	0.04	0.00	0.37	0.01	0.04	0.03	0.08	0.02	0.06	0.01	0.03	0.03	0.08
23/11/2023	0.88	0.08	0.14	0.02	0.10	0.03	0.52	0.00	0.04	0.05	0.09	0.02	0.06	0.01	0.04	0.03	0.08
24/11/2023	0.84	0.07	0.24	0.02	0.06	0.01	0.14	0.01	0.06	0.05	0.08	0.03	0.06	0.01	0.03	0.05	0.09
25/11/2023	0.83	0.04	0.23	0.02	0.05	0.01	0.18	0.00	0.05	0.05	0.08	0.02	0.06	0.01	0.04	0.05	0.09
26/11/2023	0.82	0.05	0.17	0.03	0.12	0.03	0.29	0.02	0.11	0.05	0.09	0.03	0.07	0.01	0.03	0.04	0.08
27/11/2023	0.86	0.05	0.08	0.03	0.08	0.07	0.25	0.04	0.08	0.05	0.08	0.02	0.07	0.01	0.04	0.04	0.10
28/11/2023	0.82	0.07	0.19	0.04	0.08	0.10	0.50	0.09	0.22	0.06	0.11	0.02	0.08	0.01	0.04	0.04	0.10
29/11/2023	0.75	0.08	0.19	0.05	0.10	0.06	0.16	0.16	0.22	0.06	0.10	0.00	0.05	0.01	0.03	0.01	0.06
30/11/2023	0.75	0.07	0.17	0.06	0.55	0.08	0.19	0.11	0.21	0.06	1.34	0.00	0.05	0.01	0.08	0.01	0.04

Total Number of Measurements Taken, A:	12926	15257	14416	14790	16078	15978	8392	16851
Turbidity Standard for Monitoring Location (NTU):	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Number of Measurements Meeting Standard, B:	12910	15256	14392	14790	16076	15978	8392	16851
Compliance with Turbidity Standard, C = B/A X 100%:	99.876%	99.993%	99.834%	100.000%	99.988%	100.000%	100.000%	100.000%

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2023\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 A																			
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-2023	0.70	1.09	0.08	0.07	0.09	0.05	0.10	0.05	0.09	<0.02	0.10	0.09	0.10	0.05	o/l	o/l	0.09	0.02	
02-Nov-2023	0.69	1.08	0.08	0.06	0.09	0.05	0.10	0.05	0.08	<0.02	0.08	0.09	0.10	0.04	o/l	o/l	0.10	0.03	
03-Nov-2023	0.69	1.08	0.08	0.07	0.09	0.04	0.11	0.05	0.08	<0.02	0.08	0.09	0.09	0.04	o/l	o/l	0.10	0.04	
04-Nov-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
05-Nov-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
06-Nov-2023	0.72	0.99	0.09	0.07	0.10	0.06	0.10	0.05	0.10	0.02	0.08	0.09	0.08	0.03	o/l	o/l	0.08	0.02	
07-Nov-2023	0.64	0.95	0.09	0.08	0.07	0.05	0.09	0.04	0.09	0.02	0.08	0.09	0.10	0.04	o/l	o/l	0.08	0.03	
08-Nov-2023	0.66	0.95	0.09	0.08	0.08	0.05	0.12	0.07	0.09	0.02	0.08	0.10	0.09	0.04	o/l	o/l	0.09	0.04	
09-Nov-2023	0.64	0.95	0.09	0.08	0.08	0.06	0.09	0.04	0.08	<0.02	0.08	0.10	0.09	0.04	o/l	o/l	0.08	0.04	
10-Nov-2023	0.65	0.97	0.07	0.06	0.08	0.05	0.09	0.05	0.08	0.02	0.06	0.09	0.08	0.05	o/l	o/l	0.08	0.03	
11-Nov-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
12-Nov-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
13-Nov-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
14-Nov-2023	0.61	0.92	0.08	0.08	0.09	0.08	0.14	0.11	0.09	0.02	0.08	0.10	0.08	0.05	0.08	0.02	0.08	0.04	
15-Nov-2023	0.64	0.91	0.09	0.08	0.09	0.09	0.08	0.05	0.07	<0.02	0.08	0.11	0.09	0.04	0.09	0.02	0.08	0.02	
16-Nov-2023	0.59	0.90	0.10	0.09	0.08	0.08	0.10	0.07	0.09	<0.02	0.09	0.11	0.08	0.03	0.09	0.03	0.08	0.02	
17-Nov-2023	0.57	0.90	0.08	0.09	0.09	0.08	0.10	0.08	0.08	0.02	ns	ns	0.08	0.04	0.10	0.04	0.10	0.04	
18-Nov-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	0.08	0.09	ns	ns	ns	ns	ns	ns	
19-Nov-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
20-Nov-2023	0.55	0.84	0.11	0.13	0.08	0.10	0.10	0.11	0.08	0.02	0.09	0.05	0.09	0.04	0.09	0.04	0.09	0.03	
21-Nov-2023	0.59	0.83	0.08	0.12	0.08	0.03	0.09	<0.02	0.09	<0.02	0.10	0.05	0.09	0.04	0.09	<0.02	0.09	0.05	
22-Nov-2023	0.65	0.82	0.10	0.12	0.09	0.02	0.09	<0.02	0.10	<0.02	0.09	0.05	0.10	0.05	0.08	<0.02	0.08	0.03	
23-Nov-2023	0.59	0.87	0.10	0.13	0.09	0.03	0.10	0.02	0.10	<0.02	0.09	0.06	0.09	0.05	0.08	<0.02	0.09	0.03	
24-Nov-2023	0.59	0.82	0.11	0.08	0.10	0.03	0.10	<0.02	0.09	<0.02	0.09	0.07	0.09	0.03	0.09	<0.02	0.09	0.04	
25-Nov-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
26-Nov-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
27-Nov-2023	0.59	0.83	0.10	0.06	0.10	0.03	0.14	0.07	0.11	0.05	0.09	0.05	0.09	0.05	0.09	<0.02	0.09	0.04	
28-Nov-2023	0.58	0.85	0.12	0.12	0.11	0.06	0.11	0.06	0.09	0.04	0.10	0.07	0.10	0.04	0.09	<0.02	0.10	0.05	
29-Nov-2023	0.52	0.70	0.09	0.08	0.09	0.06	0.11	0.04	0.09	0.18	0.09	0.11	0.09	0.07	0.10	<0.02	0.09	0.05	
30-Nov-2023	0.53	0.72	0.09	0.08	0.09	0.06	0.11	0.05	0.09	0.19	0.08	0.07	0.09	<0.02	0.08	<0.02	0.09	<0.02	
Total number of measurements taken, A:			21		21		21		21		21		21		13		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		21		13		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:

Filter 7 was offline for scheduled maintenance from September 20 to November 13, 2023.

Report Date: December 6, 2023



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

Water System Code: **252.00**
Licence Number: **PWS-09-412-02 A**
Report Created: 01 December 2023

Report Period: November 2023

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/11/2023	1.53	1.47	1.62	1.50
02/11/2023	1.47	1.34	1.63	1.50
03/11/2023	1.46	1.34	1.66	1.54
04/11/2023	1.72	1.62	1.69	1.58
05/11/2023	1.64	1.46	1.61	1.42
06/11/2023	1.60	1.41	1.55	1.40
07/11/2023	1.49	1.30	1.45	1.31
08/11/2023	1.43	1.36	1.38	1.33
09/11/2023	1.43	1.32	1.42	1.28
10/11/2023	1.53	1.33	1.46	1.36
11/11/2023	1.66	1.56	1.56	1.40
12/11/2023	1.68	1.64	1.70	1.63
13/11/2023	1.68	1.55	1.68	1.59
14/11/2023	1.56	1.49	1.61	1.54
15/11/2023	1.44	1.26	1.45	1.26
16/11/2023	1.49	1.41	1.37	1.22
17/11/2023	1.61	1.48	1.40	1.26
18/11/2023	1.68	1.57	1.48	1.35
19/11/2023	1.71	1.64	1.50	1.43
20/11/2023	1.61	1.49	1.45	1.34
21/11/2023	1.46	1.37	1.53	1.34
22/11/2023	1.46	1.38	1.47	1.35
23/11/2023	1.49	1.38	1.46	1.34
24/11/2023	1.63	1.58	1.57	1.51
25/11/2023	1.60	1.54	1.56	1.50
26/11/2023	1.61	1.53	1.60	1.52
27/11/2023	1.53	1.45	1.55	1.47
28/11/2023	1.54	1.45	1.56	1.45
29/11/2023	1.64	1.54	1.64	1.53
30/11/2023	1.65	1.58	1.60	1.52

Total Number of Measurements, A:	20912	20911
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	20912	20911
COMPLIANCE, C = B/A X 100%:	100.00	100.00

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2023\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	Deacon Booster Pumping Station Branch 1			Deacon Booster Pumping Station Branch 2		
Licence No. PWS-09-412-02 A						
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-2023	1.55	1.48	1.77	1.64	1.73	2.01
02-Nov-2023	1.47	1.45	1.74	1.66	1.64	2.10
03-Nov-2023	1.47	1.50	1.80	1.71	1.68	2.11
04-Nov-2023	ns	ns	ns	ns	ns	ns
05-Nov-2023	ns	ns	ns	ns	ns	ns
06-Nov-2023	1.46	1.55	1.83	1.46	1.56	1.79
07-Nov-2023	1.57	1.50	1.89	1.53	1.50	1.90
08-Nov-2023	1.45	1.39	1.75	1.40	1.37	1.71
09-Nov-2023	1.43	1.41	1.81	1.37	1.36	1.69
10-Nov-2023	1.57	1.52	1.86	1.56	1.57	1.90
11-Nov-2023	ns	ns	ns	ns	ns	ns
12-Nov-2023	ns	ns	ns	ns	ns	ns
13-Nov-2023	ns	ns	ns	ns	ns	ns
14-Nov-2023	1.58	1.48	1.77	1.62	1.53	1.81
15-Nov-2023	1.39	1.41	1.70	1.39	1.44	1.71
16-Nov-2023	1.43	1.46	1.75	1.36	1.37	1.65
17-Nov-2023	1.60	1.58	1.88	1.40	1.44	1.72
18-Nov-2023	ns	ns	ns	ns	ns	ns
19-Nov-2023	ns	ns	ns	ns	ns	ns
20-Nov-2023	1.67	1.62	1.90	1.48	1.49	1.75
21-Nov-2023	1.47	1.57	1.84	1.53	1.44	1.74
22-Nov-2023	1.50	1.40	1.78	1.50	1.51	1.81
23-Nov-2023	1.46	1.46	1.75	1.46	1.41	1.70
24-Nov-2023	1.61	1.58	1.86	1.56	1.50	1.79
25-Nov-2023	ns	ns	ns	ns	ns	ns
26-Nov-2023	ns	ns	ns	ns	ns	ns
27-Nov-2023	1.54	1.55	1.84	1.58	1.68	1.97
28-Nov-2023	1.53	1.58	1.84	1.54	1.62	1.89
29-Nov-2023	1.63	1.68	1.97	1.70	1.68	1.98
30-Nov-2023	1.68	1.69	1.99	1.64	1.60	1.90
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: December 6, 2023



CITY OF WINNIPEG
 WATER AND WASTE DEPARTMENT
 WATER SERVICES

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

WATER TREATMENT PLANT UV REPORT

Report Period: **November 2023**

Report Created: **Friday, December 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		
01/11/2023	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.74	52.13	52.87	0.00	0.00	57.22	57.22	0.00	0.00	0.00	0.00	0.00	1.00	83.94	84.94	0.00	1.74	193.29	195.02	99.11
02/11/2023	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.80	51.65	52.45	0.00	0.00	56.11	56.11	0.00	0.00	35.59	35.59	0.00	0.65	48.83	49.48	0.00	1.45	192.18	193.63	99.25
03/11/2023	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	1.08	46.58	47.66	0.00	0.00	59.03	59.03	0.00	0.00	80.54	80.54	0.00	0.17	8.58	8.75	0.00	1.25	194.74	195.98	99.36
04/11/2023	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00	0.00	0.00	72.52	72.52	0.00	0.00	45.33	45.33	0.00	0.95	79.09	80.04	0.00	0.95	196.94	197.88	99.52
05/11/2023	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00	0.00	0.00	70.46	70.46	0.00	0.00	43.20	43.20	0.00	0.69	75.86	76.55	0.00	0.69	189.53	190.22	99.64
06/11/2023	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	36.44	36.44	0.00	0.00	32.44	32.44	0.00	0.00	42.15	42.15	0.00	1.04	73.92	74.96	0.00	1.04	184.94	185.99	99.44
07/11/2023	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	67.18	67.18	0.00	0.00	0.00	0.00	0.00	0.00	41.87	41.87	0.00	0.68	73.67	74.34	0.00	0.68	182.72	183.40	99.63
08/11/2023	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	66.81	66.81	0.00	0.00	0.00	0.00	0.00	0.00	41.50	41.50	0.00	0.87	72.86	73.73	0.00	0.87	181.17	182.04	99.52
09/11/2023	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	58.60	58.60	0.00	0.00	20.94	20.94	0.00	0.00	59.19	59.19	0.00	0.77	41.69	42.45	0.00	0.77	180.41	181.18	99.58
10/11/2023	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	19.21	19.21	0.00	0.00	60.60	60.60	0.00	0.00	57.74	57.74	0.00	0.55	43.72	44.27	0.00	0.55	181.26	181.81	99.70
11/11/2023	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	22.88	22.88	0.00	0.00	59.10	59.10	0.00	0.00	62.27	62.27	0.00	0.61	37.11	37.71	0.00	0.61	181.36	181.97	99.67
12/11/2023	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	47.42	47.42	0.00	0.05	54.47	54.52	0.00	0.00	79.95	79.95	0.00	0.00	0.00	0.00	0.00	0.05	181.84	181.89	99.97
13/11/2023	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	49.11	49.11	0.00	0.00	67.23	67.23	0.00	0.00	68.50	68.50	0.00	0.00	0.00	0.00	0.00	0.00	184.84	184.84	100.00
14/11/2023	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	49.02	49.02	0.00	0.00	66.79	66.79	0.00	0.00	69.26	69.26	0.00	0.00	0.00	0.00	0.00	0.00	185.07	185.07	100.00
15/11/2023	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	49.17	49.17	0.00	0.00	66.30	66.30	0.00	0.05	69.70	69.75	0.00	0.00	0.00	0.00	0.00	0.05	185.17	185.22	99.97
16/11/2023	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.18	66.79	66.97	0.00	0.00	29.99	29.99	0.00	0.05	49.33	49.39	0.00	0.94	39.72	40.66	0.00	1.17	185.83	187.01	99.37
17/11/2023	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.41	84.48	84.89	0.00	0.00	0.00	0.00	0.00	0.11	37.53	37.64	0.00	1.08	63.40	64.48	0.00	1.61	185.41	187.02	99.14
18/11/2023	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.59	84.35	84.94	0.00	0.00	0.00	0.00	0.00	0.03	37.81	37.84	0.00	1.16	63.09	64.25	0.00	1.78	185.25	187.03	99.05
19/11/2023	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.47	84.42	84.89	0.00	0.00	0.00	0.00	0.00	0.03	37.96	37.98	0.00	0.80	63.35	64.15	0.00	1.30	185.72	187.02	99.31
20/11/2023	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.47	77.85	78.32	0.00	0.00	0.00	0.00	0.00	0.00	40.16	40.16	0.00	1.62	66.67	68.28	0.00	2.08	184.68	186.76	98.88
21/11/2023	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.30	55.23	55.53	0.00	0.07	35.32	35.39	0.00	0.03	61.68	61.71	0.00	1.20	72.45	73.65	0.00	1.60	224.68	226.28	99.29
22/11/2023	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.04	50.92	50.95	0.00	0.00	53.98	53.98	0.00	0.18	76.88	77.06	0.16	0.38	35.07	35.60	0.16	0.60	216.84	217.59	99.65
23/11/2023	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.04	49.76	49.80	0.00	0.03	52.32	52.34	0.00	0.06	84.59	84.65	0.00	0.00	0.00	0.00	0.00	0.12	186.66	186.78	99.94
24/11/2023	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.14	50.83	50.97	0.00	0.00	54.03	54.03	0.00	0.00	84.96	84.96	0.00	0.00	0.00	0.00	0.00	0.14	189.82	189.97	99.92
25/11/2023	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.32	50.65	50.97	0.00	0.00	54.04	54.04	0.00	0.00	85.01	85.01	0.00	0.00	0.00	0.00	0.00	0.32	189.70	190.02	99.83
26/11/2023	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.61	50.36	50.97	0.00	0.00	54.05	54.05	0.00	0.18	84.81	84.99	0.00	0.00	0.00	0.00	0.00	0.78	189.23	190.01	99.59
27/11/2023	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.27	48.39	48.66	0.00	0.10	51.96	52.06	0.00	0.30	82.93	83.23	0.00	0.00	0.00	0.00	0.00	0.67	183.28	183.95	99.64
28/11/2023	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.45	49.23	49.67	0.00	0.56	65.76	66.32	0.00	0.05	71.86	71.92	0.00	0.00	0.00	0.00	0.00	1.06	186.85	187.91	99.43
29/11/2023	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.13	55.46	55.60	0.00	0.04	67.49	67.53	0.00	0.01	49.17	49.17	0.00	0.14	46.05	46.19	0.00	0.32	218.17	218.49	99.85
30/11/2023	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	0.00	0.00	0.00	0.00	0.00	84.95	84.95	0.00	0.00	37.20	37.2	0.00	0.42	65.97	66.39	0.00	0.42	209.65	210.06	99.79
Total [ML]:	OL	OL	OL	OL	OL	OL	OL	OL	OL	0.00	7.03	1474.92	1481.95	0.00	0.85	1347.09	1347.95	0.00	1.08	1718.67	1719.75	0.16	15.71	1155.01	1170.88	0.16	24.68	5717.22	5742.06	

Water Volume [%]:

Untreated: 0.00 %
 Below Dose: 0.43 %
 To Dose: 99.57 %

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 A**

WATER TREATMENT PLANT UV REPORT

Report Period: **November 2023**

Report Created: **Friday, December 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.
01/11/2023	93.5	92.6	95.8	0.0	OL	OL	OL	OL	OL	OL	16.7	22.6	21.6	18.8	22.3	21.2	OL	OL	OL	17.2	29.6	21.1
02/11/2023	93.7	91.7	91.1	90.1	OL	OL	OL	OL	OL	OL	14.9	22.9	21.0	18.7	22.8	21.2	0.0	95.7	21.6	0.0	40.3	21.1
03/11/2023	93.7	91.6	91.4	90.5	OL	OL	OL	OL	OL	OL	0.0	30.7	19.7	18.6	23.1	21.2	18.4	27.1	21.3	0.0	84.6	21.5
04/11/2023	91.8	88.8	91.8	91.4	OL	OL	OL	OL	OL	OL	OL	OL	OL	18.7	22.6	21.2	18.3	32.1	21.5	17.0	23.6	21.1
05/11/2023	92.6	87.4	92.3	91.4	OL	OL	OL	OL	OL	OL	OL	OL	OL	18.5	22.4	21.2	18.4	30.7	21.5	16.9	23.7	21.1
06/11/2023	94.5	93.3	92.7	92.4	OL	OL	OL	OL	OL	OL	20.4	91.1	25.3	0.0	31.3	21.2	18.4	31.1	21.5	16.8	21.8	21.1
07/11/2023	94.6	93.3	93.1	92.3	OL	OL	OL	OL	OL	OL	20.4	26.8	24.7	OL	OL	OL	18.2	30.0	21.5	16.4	29.7	21.1
08/11/2023	94.6	93.2	93.4	93.0	OL	OL	OL	OL	OL	OL	19.6	25.8	24.0	OL	OL	OL	18.1	22.7	21.4	16.9	21.8	21.2
09/11/2023	94.5	93.0	93.4	92.6	OL	OL	OL	OL	OL	OL	19.4	30.4	25.5	0.0	88.6	21.4	17.5	22.9	21.3	0.0	39.0	21.3
10/11/2023	94.6	93.5	93.8	92.7	OL	OL	OL	OL	OL	OL	0.0	44.4	28.0	16.8	30.0	21.2	18.3	27.7	21.3	15.2	71.4	21.4
11/11/2023	94.6	92.9	94.5	93.3	OL	OL	OL	OL	OL	OL	21.4	90.4	26.7	18.5	23.2	21.2	16.9	22.8	21.3	0.0	36.7	21.3
12/11/2023	94.7	93.1	94.8	94.2	OL	OL	OL	OL	OL	OL	18.8	41.3	26.1	16.2	32.8	21.3	16.1	32.9	21.1	OL	OL	OL
13/11/2023	94.6	93.1	95.7	94.8	OL	OL	OL	OL	OL	OL	19.9	27.4	24.8	18.4	22.1	21.2	18.3	22.7	21.1	0.0	0.0	0.0
14/11/2023	94.9	93.4	96.8	88.5	OL	OL	OL	OL	OL	OL	19.4	26.2	23.9	18.4	22.3	21.2	18.2	22.2	21.1	OL	OL	OL
15/11/2023	94.9	67.5	96.6	58.6	OL	OL	OL	OL	OL	OL	18.5	25.3	22.9	18.4	22.1	21.2	17.9	30.2	21.4	OL	OL	OL
16/11/2023	94.7	93.7	94.5	94.2	OL	OL	OL	OL	OL	OL	0.0	105.1	21.5	0.0	31.6	21.2	15.9	27.5	21.4	13.4	70.8	21.5
17/11/2023	94.5	90.6	94.3	94.0	OL	OL	OL	OL	OL	OL	17.5	23.2	21.1	OL	OL	OL	17.6	23.6	21.4	16.0	24.0	21.4
18/11/2023	94.4	93.5	94.2	93.9	OL	OL	OL	OL	OL	OL	17.2	22.0	21.1	OL	OL	OL	17.4	23.6	21.4	16.1	23.0	21.4
19/11/2023	94.4	92.9	93.7	93.3	OL	OL	OL	OL	OL	OL	17.3	23.0	21.1	OL	OL	OL	17.4	23.5	21.4	15.7	23.2	21.4
20/11/2023	94.4	92.7	93.5	93.2	OL	OL	OL	OL	OL	OL	17.4	41.0	21.2	OL	OL	OL	17.5	29.7	21.5	14.6	41.7	20.9
21/11/2023	94.6	93.3	93.5	93.1	OL	OL	OL	OL	OL	OL	0.0	100.2	21.4	15.9	68.6	21.3	0.0	40.6	21.6	0.0	84.6	21.2
22/11/2023	94.6	92.6	93.6	93.2	OL	OL	OL	OL	OL	OL	17.6	26.1	21.3	17.6	22.5	21.2	0.0	21.9	21.2	0.0	21.7	21.1
23/11/2023	94.5	93.8	93.6	93.2	OL	OL	OL	OL	OL	OL	16.6	30.2	21.3	16.6	33.4	21.3	17.7	26.8	21.2	0.0	0.0	0.0
24/11/2023	94.4	93.6	93.8	93.3	OL	OL	OL	OL	OL	OL	17.5	22.9	21.3	18.6	22.4	21.2	17.7	21.8	21.2	OL	OL	OL
25/11/2023	94.3	92.8	94.2	93.6	OL	OL	OL	OL	OL	OL	17.4	22.8	21.2	18.7	22.3	21.2	17.8	21.8	21.2	0.0	0.0	0.0
26/11/2023	94.2	92.7	94.5	94.1	OL	OL	OL	OL	OL	OL	17.3	22.9	21.2	18.6	22.0	21.2	17.7	21.8	21.2	0.0	0.0	0.0
27/11/2023	94.1	93.3	94.4	94.1	OL	OL	OL	OL	OL	OL	16.2	33.4	21.2	16.6	33.1	21.2	17.4	39.6	21.2	0.0	0.0	0.0
28/11/2023	93.9	92.9	94.2	93.5	OL	OL	OL	OL	OL	OL	17.0	23.1	21.2	15.5	22.4	20.0	17.8	23.1	21.3	OL	OL	OL
29/11/2023	93.8	92.4	94.3	94.0	OL	OL	OL	OL	OL	OL	0.0	49.6	21.3	0.0	103.8	21.3	0.0	27.1	21.5	16.9	84.2	21.7
30/11/2023	93.6	92.6	94.1	93.4	OL	OL	OL	OL	OL	OL	OL	OL	OL	18.7	21.6	21.1	17.6	26.9	21.5	0.0	24.5	21.3

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

Submitted By (Print): D. Merredew

Signature: Original signed by D. Merredew