



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

October 6, 2023

RE: SEPTEMBER 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 September 2023.

The September on-line and grab sampling turbidity reports include results obtained for the Water Treatment Plant raw water and the eight filters. There was no analyser reading for the raw water on September 27 due to an instrument malfunction at the time of sampling. The grab sample result for Filter 1 on September 18 was 0.31 NTU (analyzer reading was 0.27 NTU), the filter was resampled and the turbidity was 0.29 NTU (analyzer reading was 0.21 NTU). The maximum turbidity was greater than 0.30 NTU on several occasions; the elevated turbidities occurred for less than 12 consecutive hours. On September 9 and 11 the turbidity on Filter 8 exceeded 1.00 NTU, additional information for the exceedances are provided separately in Corrective Action Reports. With the exception of these events, the turbidity results for the filter effluent met the licence requirements.

The September 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 September 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

September 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
1/09/2023	3.14	0.11	0.16	0.10	0.12	0.08	0.14	0.08	0.14	0.14	0.26	0.06	0.13	0.13	0.53	0.04	0.08
2/09/2023	2.97	0.10	0.13	0.09	0.14	0.07	0.14	0.08	0.11	0.13	0.18	0.04	0.09	0.12	0.21	0.05	0.11
3/09/2023	3.09	0.11	0.16	0.09	0.15	0.07	0.14	0.08	0.15	0.15	0.18	0.04	0.06	0.14	0.24	0.04	0.10
4/09/2023	3.71	0.10	0.16	0.10	0.16	0.16	0.10	0.08	0.16	0.15	0.21	0.05	0.09	0.20	0.29	0.05	0.12
5/09/2023	4.76	0.09	0.17	0.12	0.14	OL	OL	0.07	0.15	0.10	0.20	0.05	0.10	0.09	0.28	0.06	0.08
6/09/2023	4.80	0.10	0.16	0.12	0.19	OL	OL	0.07	0.11	0.09	0.54	0.05	0.10	0.08	0.19	0.08	0.56
7/09/2023	5.00	0.09	0.13	0.13	0.20	OL	OL	0.09	0.15	0.09	0.14	0.05	0.12	0.08	0.16	0.07	0.13
8/09/2023	3.87	0.12	0.18	0.15	0.23	OL	OL	0.09	0.17	0.09	0.15	0.06	0.12	0.09	0.17	0.09	0.16
9/09/2023	2.56	0.10	0.17	0.17	0.25	OL	OL	0.10	0.17	0.10	0.14	0.06	0.12	0.08	0.15	0.09	1.05
10/09/2023	2.52	0.09	0.17	0.18	0.25	OL	OL	0.10	0.17	0.09	0.14	0.05	0.08	0.07	0.12	0.08	0.14
11/09/2023	2.55	0.10	0.15	0.16	0.23	OL	OL	0.08	0.17	0.09	0.13	0.05	0.18	0.06	0.14	0.06	2.20
12/09/2023	2.66	0.12	0.17	0.13	0.18	OL	OL	0.06	0.12	0.09	0.14	0.04	0.08	0.04	0.11	0.03	0.09
13/09/2023	2.97	0.12	0.17	0.13	0.16	OL	OL	0.06	0.14	0.08	0.14	0.03	0.07	0.04	0.08	0.03	0.07
14/09/2023	3.10	0.09	0.23	0.13	0.34	OL	OL	0.08	0.26	0.08	0.19	0.03	0.12	0.03	0.15	0.03	0.14
15/09/2023	3.51	0.17	0.23	0.12	0.19	OL	OL	0.13	0.19	0.11	0.21	0.04	0.07	0.04	0.08	0.03	0.09
16/09/2023	3.77	0.19	0.25	0.13	0.20	OL	OL	0.15	0.23	0.12	0.17	0.05	0.11	0.06	0.13	0.06	0.12
17/09/2023	3.22	0.18	0.27	0.15	0.27	OL	OL	0.16	0.28	0.15	0.22	0.07	0.15	0.07	0.16	0.08	0.13
18/09/2023	2.16	0.14	0.29	0.14	0.23	OL	OL	0.15	0.24	0.13	0.27	0.08	0.11	0.07	0.15	0.09	0.16
19/09/2023	2.28	0.18	0.27	0.15	0.21	0.08	0.33	0.17	0.26	0.11	0.21	0.09	0.14	0.08	0.11	0.08	0.18
20/09/2023	2.06	0.14	0.24	0.16	0.32	0.12	0.26	0.13	0.24	0.07	0.12	0.06	0.13	0.01	0.08	0.08	0.14
21/09/2023	1.65	0.16	0.26	0.15	0.27	0.15	0.21	0.12	0.25	0.06	0.10	0.05	0.11	OL	OL	0.06	0.13
22/09/2023	1.97	0.12	0.22	0.12	0.21	0.12	0.26	0.12	0.24	0.07	0.10	0.05	0.12	OL	OL	0.08	0.15
23/09/2023	2.06	0.16	0.22	0.12	0.21	0.11	0.21	0.11	0.22	0.06	0.09	0.05	0.09	OL	OL	0.07	0.12
24/09/2023	1.80	0.10	0.19	0.10	0.17	0.07	0.14	0.09	0.16	0.07	0.10	0.06	0.09	OL	OL	0.08	0.15
25/09/2023	1.90	0.09	0.16	0.09	0.16	0.06	0.12	0.08	0.14	0.06	0.11	0.06	0.09	OL	OL	0.09	0.14
26/09/2023	1.92	0.09	0.14	0.10	0.13	0.06	0.14	0.07	0.15	0.06	0.10	0.05	0.09	OL	OL	0.08	0.11
27/09/2023	2.11	0.09	0.16	0.08	0.16	0.06	0.10	0.07	0.15	0.06	0.10	0.05	0.09	OL	OL	0.11	0.14
28/09/2023	1.62	0.07	0.13	0.06	0.11	0.03	0.13	0.06	0.15	0.05	0.09	0.05	0.08	OL	OL	0.07	0.17
29/09/2023	1.74	0.06	0.08	0.06	0.11	0.02	0.06	0.04	0.08	0.04	0.06	0.03	0.05	OL	OL	0.08	0.12
30/09/2023	1.97	0.09	0.13	0.08	0.14	0.05	0.22	0.06	0.13	0.05	0.06	0.04	0.06	OL	OL	0.10	0.14

Total Number of Measurements Taken, A:	13657	15156	7317	15680	15919	15631	9613	16103
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:	13657	15142	7271	15680	15918	15631	9612	16101
Compliance with Turbidity Standard, C = B/A X 100%:	100.000%	99.908%	99.371%	100.000%	99.994%	100.000%	99.990%	99.988%

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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-Sep-2023	1.75	3.03	0.13	0.12	0.11	0.11	0.12	0.09	0.11	0.09	0.15	0.19	0.16	0.08	0.16	0.14	0.14	0.05	
02-Sep-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
03-Sep-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
04-Sep-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
05-Sep-2023	1.91	4.84	0.10	0.11	0.11	0.12	o/l	o/l	0.10	0.08	0.12	0.11	0.14	0.07	0.13	0.08	0.11	0.05	
06-Sep-2023	1.77	4.64	0.10	0.12	0.13	0.16	o/l	o/l	0.10	0.08	0.09	0.10	0.17	0.09	0.18	0.12	0.14	0.08	
07-Sep-2023	1.82	6.01	0.11	0.12	0.16	0.20	o/l	o/l	0.11	0.10	0.10	0.09	0.11	0.05	0.17	0.10	0.13	0.07	
08-Sep-2023	1.71	7.89	0.11	0.12	0.15	0.20	o/l	o/l	0.13	0.12	0.11	0.12	0.13	0.08	0.14	0.08	0.18	0.12	
09-Sep-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
10-Sep-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
11-Sep-2023	1.68	2.57	0.11	0.13	0.08	0.21	o/l	o/l	0.11	0.08	0.10	0.13	0.10	0.06	0.10	0.07	0.09	0.08	
12-Sep-2023	1.80	2.69	0.11	0.14	0.11	0.15	o/l	o/l	0.09	0.05	0.10	0.12	0.13	0.06	ns	ns	0.12	0.03	
13-Sep-2023	1.60	2.82	0.12	0.16	0.10	0.16	o/l	o/l	0.09	0.07	0.12	0.14	0.10	0.09	0.11	0.03	0.11	0.02	
14-Sep-2023	1.90	3.26	0.10	0.14	0.12	0.18	o/l	o/l	0.10	0.09	0.10	0.10	0.09	0.05	0.11	0.04	0.10	0.03	
15-Sep-2023	1.69	3.40	0.15	0.19	0.18	0.15	o/l	o/l	0.16	0.15	0.10	0.13	0.09	0.04	0.10	0.02	0.11	0.04	
16-Sep-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
17-Sep-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
18-Sep-2023	1.56	2.06	0.31	0.27	0.22	0.15	o/l	o/l	0.25	0.22	0.24	0.17	0.15	0.09	0.16	0.07	0.14	0.08	
19-Sep-2023	1.43	2.27	0.27	0.21	0.23	0.16	o/l	o/l	0.20	0.14	0.21	0.16	0.16	0.10	0.16	0.08	0.15	0.08	
20-Sep-2023	1.50	1.97	0.20	0.15	0.23	0.16	0.22	0.13	0.14	0.10	0.12	0.09	0.14	0.09	o/l	o/l	0.12	0.07	
21-Sep-2023	1.59	1.90	0.24	0.18	0.27	0.23	0.26	0.17	0.15	0.11	0.10	0.07	0.12	0.08	o/l	o/l	0.12	0.07	
22-Sep-2023	1.46	1.79	0.18	0.14	0.23	0.16	0.21	0.12	0.16	0.12	0.10	0.08	0.11	0.08	o/l	o/l	0.13	0.09	
23-Sep-2023	ns	ns	ns	ns	ns	ns	0.19	0.11	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
24-Sep-2023	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	
25-Sep-2023	1.50	1.86	0.18	0.14	0.15	0.10	0.15	0.06	0.18	0.11	0.10	0.09	0.11	0.07	o/l	o/l	0.10	0.08	
26-Sep-2023	1.33	1.81	0.21	0.13	0.17	0.10	0.15	0.06	0.15	0.09	0.13	0.10	0.11	0.07	o/l	o/l	0.11	0.09	
27-Sep-2023	1.40	nr	0.13	0.10	0.16	0.11	0.15	0.06	0.11	0.07	0.09	0.08	0.14	0.08	o/l	o/l	0.12	0.11	
28-Sep-2023	1.23	1.81	0.14	0.09	0.13	0.08	0.17	0.08	0.13	0.08	0.11	0.08	0.12	0.07	o/l	o/l	0.11	0.08	
29-Sep-2023	0.78	1.55	0.11	0.08	0.11	0.06	0.14	0.05	0.11	0.07	0.08	0.05	0.08	0.05	o/l	o/l	0.09	0.08	
30-Sep-2023	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		10		20		20		20		11		20		
Turbidity Standard for Monitoring Location (NTU):			0.30		0.30		0.30		0.30		0.30		0.30		0.30		0.30		
Number of measurements meeting standard, B:			19		20		10		20		20		20		11		20		
Compliance with Turbidity Standard, C= B/A X 100%:			95%		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: 5-Oct-2023

Filter 3 was offline for scheduled maintenance from September 4 at 20:45 to September 19 at 16:26

Filter 7 was taken offline for scheduled maintenance on September 20 at 01:51

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 October 2023

Report Period: September 2023

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/09/2023	1.23	1.12	1.18	1.10
02/09/2023	1.27	1.16	1.19	1.09
03/09/2023	1.36	1.26	1.24	1.16
04/09/2023	1.35	1.23	1.18	1.08
05/09/2023	1.36	1.26	1.21	1.11
06/09/2023	1.38	1.26	1.25	1.16
07/09/2023	1.43	1.34	1.29	1.20
08/09/2023	1.49	1.40	1.37	1.24
09/09/2023	1.43	1.33	1.36	1.30
10/09/2023	1.46	1.35	1.39	1.26
11/09/2023	1.40	1.22	1.29	1.21
12/09/2023	1.35	1.26	1.27	1.18
13/09/2023	1.40	1.23	1.34	1.23
14/09/2023	1.35	1.08	1.33	1.15
15/09/2023	1.40	1.21	1.35	1.06
16/09/2023	1.43	1.18	1.38	1.16
17/09/2023	1.56	1.38	1.45	1.35
18/09/2023	1.46	1.32	1.41	1.28
19/09/2023	1.45	1.34	1.47	1.37
20/09/2023	1.40	1.30	1.40	1.31
21/09/2023	1.41	1.32	1.49	1.32
22/09/2023	1.29	1.15	1.42	1.28
23/09/2023	1.34	1.26	1.48	1.40
24/09/2023	1.42	1.35	1.50	1.39
25/09/2023	1.37	1.28	1.42	1.31
26/09/2023	1.42	1.35	1.46	1.39
27/09/2023	1.44	1.26	1.49	1.36
28/09/2023	1.50	1.34	1.56	1.47
29/09/2023	1.41	1.19	1.44	1.27
30/09/2023	1.39	1.29	1.39	1.23

Total Number of Measurements, A:	20845	20839
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	20845	20839
COMPLIANCE, C = B/A X 100%:	100.00	100.00

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2023\09-September

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-Sep-2023	1.22	1.32	1.62	1.16	1.24	1.54
02-Sep-2023	ns	ns	ns	ns	ns	ns
03-Sep-2023	ns	ns	ns	ns	ns	ns
04-Sep-2023	ns	ns	ns	ns	ns	ns
05-Sep-2023	1.32	1.42	1.71	1.20	1.30	1.59
06-Sep-2023	1.38	1.36	1.65	1.26	1.27	1.59
07-Sep-2023	1.42	1.40	1.67	1.31	1.27	1.56
08-Sep-2023	1.50	1.45	1.73	1.34	1.39	1.66
09-Sep-2023	ns	ns	ns	ns	ns	ns
10-Sep-2023	ns	ns	ns	ns	ns	ns
11-Sep-2023	1.40	1.46	1.71	1.26	1.35	1.65
12-Sep-2023	1.30	1.51	1.71	1.25	1.33	1.62
13-Sep-2023	1.37	1.37	1.63	1.26	1.32	1.56
14-Sep-2023	1.56	1.56	2.01	1.54	1.50	1.93
15-Sep-2023	1.45	1.36	1.70	1.34	1.40	1.76
16-Sep-2023	ns	ns	ns	ns	ns	ns
17-Sep-2023	ns	ns	ns	ns	ns	ns
18-Sep-2023	1.47	1.40	1.72	1.40	1.40	1.71
19-Sep-2023	1.45	1.44	1.80	1.47	1.48	1.87
20-Sep-2023	1.39	1.41	1.79	1.39	1.47	1.81
21-Sep-2023	1.43	1.44	1.80	1.51	1.49	1.84
22-Sep-2023	1.30	1.36	1.73	1.43	1.46	1.76
23-Sep-2023	ns	ns	ns	ns	ns	ns
24-Sep-2023	ns	ns	ns	ns	ns	ns
25-Sep-2023	1.40	1.41	1.65	1.40	1.40	1.69
26-Sep-2023	1.39	1.41	1.70	1.44	1.52	1.77
27-Sep-2023	1.41	1.42	1.71	1.45	1.44	1.73
28-Sep-2023	1.43	1.42	1.71	1.49	1.54	1.82
29-Sep-2023	1.41	1.42	1.68	1.46	1.47	1.74
30-Sep-2023	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-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: **September 2023**

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

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	To	Total
01/09/2023	0.00	0.91	80.98	81.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.41	53.41	0.00	0.00	0.00	0.00	0.00	1.80	79.58	81.38	0.00	2.71	213.97	216.68	98.75			
02/09/2023	0.00	1.25	80.65	81.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.71	53.71	0.00	0.00	0.00	0.00	0.00	1.48	80.77	82.25	0.00	2.73	215.13	217.86	98.75			
03/09/2023	0.00	0.90	80.13	81.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.22	53.22	0.00	0.00	0.00	0.00	0.00	1.47	80.04	81.51	0.00	2.38	213.39	215.76	98.90			
04/09/2023	0.00	0.97	77.05	78.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.96	50.96	0.00	0.00	0.00	0.00	0.00	1.62	75.57	77.20	0.00	2.60	203.58	206.18	98.74			
05/09/2023	0.00	0.65	77.21	77.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.81	50.81	0.00	0.00	0.00	0.00	0.00	1.87	74.87	76.74	0.00	2.52	202.89	205.41	98.77			
06/09/2023	0.00	0.76	77.29	78.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.89	50.89	0.00	0.00	0.00	0.00	0.00	1.55	75.49	77.04	0.00	2.31	203.67	205.98	98.88			
07/09/2023	0.00	1.19	76.83	78.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51.20	51.20	0.00	0.00	0.00	0.00	0.00	1.02	75.78	76.79	0.00	2.21	203.80	206.01	98.93			
08/09/2023	0.00	0.92	77.14	78.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51.69	51.69	0.00	0.00	0.00	0.00	0.00	0.53	75.71	76.24	0.00	1.45	204.54	206.00	99.29			
09/09/2023	0.00	1.09	77.02	78.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51.68	51.68	0.00	0.00	0.00	0.00	0.00	3.50	72.71	76.21	0.00	4.58	201.41	205.99	97.78			
10/09/2023	0.00	1.12	80.00	81.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.93	42.93	0.00	0.00	0.00	0.00	0.00	0.84	78.95	79.79	0.00	1.96	211.67	213.63	99.08			
11/09/2023	0.00	1.25	80.82	82.07	0.00	0.00	0.00	0.00	0.00	0.03	36.95	36.98	0.00	0.00	16.45	16.45	0.00	0.00	0.00	0.00	0.00	1.15	81.46	82.61	0.00	2.43	215.69	218.11	98.89			
12/09/2023	0.00	0.91	80.63	81.54	0.00	0.00	0.00	0.00	0.00	0.00	21.24	21.24	0.00	0.00	32.34	32.34	0.00	0.00	0.00	0.00	0.00	1.63	79.39	81.02	0.00	2.54	213.60	216.14	98.83			
13/09/2023	0.00	0.83	78.89	79.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	52.62	52.62	0.00	0.00	0.00	0.00	0.00	1.56	75.95	77.51	0.00	2.39	207.46	209.84	98.86			
14/09/2023	0.00	0.66	52.12	52.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	34.84	34.91	0.00	0.00	0.00	0.00	0.00	0.74	51.16	51.91	0.00	1.47	138.13	139.60	98.95			
15/09/2023	0.00	0.61	79.65	80.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	52.23	52.23	0.00	0.00	0.00	0.00	0.00	0.59	76.93	77.52	0.00	1.21	208.80	210.00	99.43			
16/09/2023	0.00	0.47	74.28	74.75	0.00	0.05	34.14	34.19	0.00	0.00	0.00	0.00	0.00	0.00	28.43	28.43	0.00	0.00	0.00	0.00	0.00	1.37	72.39	73.76	0.00	1.89	209.25	211.14	99.11			
17/09/2023	0.00	0.53	75.38	75.91	0.00	0.05	74.95	75.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.36	47.72	64.09	0.00	16.94	198.06	215.00	92.12			
18/09/2023	0.00	0.50	65.28	65.78	0.00	0.21	74.33	74.54	0.00	0.46	0.03	0.48	0.00	0.00	0.00	0.00	0.00	0.09	46.67	46.76	0.00	24.54	0.69	25.23	0.00	25.79	187.00	212.79	87.88			
19/09/2023	0.00	0.26	54.13	54.40	0.00	0.10	72.13	72.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.60	43.60	0.00	0.33	34.44	34.77	0.00	0.69	204.31	205.00	99.66			
20/09/2023	0.00	1.02	53.26	54.28	0.00	0.00	72.08	72.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.09	77.53	78.62	0.00	2.11	202.87	204.98	98.97			
21/09/2023	0.00	0.44	21.86	22.30	0.00	0.10	69.99	70.09	0.00	0.04	29.55	29.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.97	76.93	77.90	0.00	1.55	198.33	199.88	99.22			
22/09/2023	0.00	0.00	0.00	0.00	0.00	0.10	69.40	69.49	0.00	0.00	51.47	51.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.10	77.92	79.02	0.00	1.19	198.79	199.98	99.40			
23/09/2023	0.00	0.00	0.00	0.00	0.00	0.10	69.89	69.99	0.00	0.00	51.15	51.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.48	77.41	78.89	0.00	1.57	198.45	200.03	99.21			
24/09/2023	0.00	0.00	0.00	0.00	0.00	0.00	70.01	70.01	0.00	0.00	50.54	50.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.41	77.07	78.48	0.00	1.41	197.62	199.03	99.29			
25/09/2023	0.00	0.00	0.00	0.00	0.00	0.00	70.02	70.02	0.00	0.00	48.79	48.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.31	74.37	75.68	0.00	1.31	193.18	194.50	99.32			
26/09/2023	0.00	0.00	0.00	0.00	0.00	0.05	69.95	69.99	0.00	0.00	48.92	48.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.15	73.93	75.08	0.00	1.20	192.80	194.00	99.38			
27/09/2023	0.00	0.04	1.64	1.69	0.16	0.19	65.32	65.68	0.00	0.09	56.83	56.92	0.00	0.00	0.00	0.00	0.00	0.01	26.43	26.44	0.00	1.05	45.52	46.57	0.16	1.39	195.75	197.30	99.21			
28/09/2023	0.00	0.00	33.69	33.69	0.00	0.00	27.09	27.09	0.00	0.27	64.74	65.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.67	36.67	0.00	0.18	28.08	28.26	0.00	0.46	190.26	190.72	99.76		
29/09/2023	0.00	0.20	58.68	58.88	0.00	0.00	0.00	0.00	0.00	0.37	65.24	65.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68	64.79	65.47	0.00	1.26	188.71	189.96	99.34			
30/09/2023	0.00	0.21	59.63	59.83	0.00	0.00	0.00	0.00	0.00	0.28	67.04	67.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.42	65.97	67.39	0.00	1.91	192.64	194.55	99.02			
Total [ML]:	0.00	17.71	1654.24	1671.95	0.16	0.95	839.29	840.40	0.00	1.54	602.29	603.83	0.00	0.06	727.40	727.47	0.00	0.10	153.38	153.48	0.00	75.80	2029.13	2104.93	0.16	96.16	6005.73	6102.06				

Water Volume [%]:

Untreated: 0.00 %
 Below Dose: 1.58 %
 To Dose: 98.42 %

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: **September 2023**

Report Created: **Sunday, October 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.
01/09/2023	95.3	92.7	93.9	91.3	16.4	28.9	21.0	OL	OL	OL	OL	OL	OL	18.6	30.4	21.4	OL	OL	OL	16.2	26.8	21.2
02/09/2023	95.9	94.1	94.8	92.9	15.4	21.7	21.1	OL	OL	OL	OL	OL	OL	18.6	24.9	21.3	OL	OL	OL	16.2	21.9	21.2
03/09/2023	95.9	95.0	94.9	93.5	16.2	21.7	21.1	OL	OL	OL	OL	OL	OL	18.4	25.5	21.3	OL	OL	OL	16.1	22.0	21.3
04/09/2023	95.9	95.0	94.8	93.7	16.6	23.5	21.1	OL	OL	OL	OL	OL	OL	18.6	27.1	21.3	OL	OL	OL	16.2	22.1	21.3
05/09/2023	95.9	94.6	94.7	93.3	16.8	21.9	21.1	OL	OL	OL	0.0	0.0	0.0	18.2	27.4	21.3	OL	OL	OL	15.9	22.1	21.3
06/09/2023	96.0	94.7	94.8	93.4	16.5	21.9	21.1	OL	OL	OL	OL	OL	OL	18.7	27.4	21.3	OL	OL	OL	15.8	22.0	21.3
07/09/2023	96.2	94.2	94.8	93.9	16.3	22.9	21.1	OL	OL	OL	OL	OL	OL	18.5	27.0	21.3	OL	OL	OL	16.2	23.1	21.3
08/09/2023	96.0	94.5	94.6	93.4	16.4	23.2	21.1	OL	OL	OL	OL	OL	OL	18.6	26.4	21.3	OL	OL	OL	16.3	23.7	21.3
09/09/2023	96.1	94.3	94.8	93.7	15.5	21.9	21.0	OL	OL	OL	OL	OL	OL	18.5	26.6	21.3	OL	OL	OL	16.2	22.3	21.3
10/09/2023	96.3	94.6	95.0	93.3	15.3	21.6	21.0	OL	OL	OL	16.2	68.5	21.5	0.0	26.1	21.3	OL	OL	OL	16.2	22.5	21.3
11/09/2023	96.4	93.2	95.4	93.6	14.6	22.7	21.0	OL	OL	OL	0.0	50.5	21.3	0.0	93.2	27.9	OL	OL	OL	16.3	22.1	21.3
12/09/2023	96.4	94.9	95.7	92.7	15.3	23.4	21.0	OL	OL	OL	0.0	28.1	21.6	20.3	93.3	22.5	OL	OL	OL	16.3	22.0	21.3
13/09/2023	96.5	95.3	95.7	94.6	15.9	21.7	21.0	OL	OL	OL	OL	OL	OL	20.6	28.7	21.4	OL	OL	OL	16.3	22.1	21.3
14/09/2023	94.2	93.2	92.7	88.2	0.0	104.8	22.4	OL	OL	OL	OL	OL	OL	0.0	53.8	21.7	OL	OL	OL	0.0	54.5	21.3
15/09/2023	96.1	94.5	94.6	93.1	15.8	26.0	21.7	OL	OL	OL	OL	OL	OL	20.4	22.6	21.7	OL	OL	OL	15.3	22.1	21.2
16/09/2023	95.7	94.6	94.2	93.4	15.7	33.1	21.6	17.5	85.2	21.3	OL	OL	OL	0.0	22.5	21.3	OL	OL	OL	14.5	23.0	20.3
17/09/2023	94.9	93.1	93.3	91.2	16.7	23.2	21.2	17.6	21.9	21.3	OL	OL	OL	OL	OL	OL	OL	OL	OL	12.3	21.4	18.8
18/09/2023	94.4	93.1	92.7	91.6	0.0	84.8	21.3	17.5	22.3	21.3	0.0	27.9	15.4	OL	OL	OL	6.2	28.5	21.1	0.0	32.7	17.3
19/09/2023	94.2	91.8	92.5	90.5	16.2	30.3	21.3	17.7	21.9	21.3	OL	OL	OL	OL	OL	OL	0.0	31.6	21.1	17.0	84.6	21.4
20/09/2023	93.0	91.8	91.2	90.0	15.1	22.5	21.5	17.7	22.0	21.3	OL	OL	OL	OL	OL	OL	OL	OL	OL	16.8	23.4	21.1
21/09/2023	93.0	92.2	91.2	90.7	0.0	31.5	21.5	17.7	22.2	21.3	17.6	62.4	27.2	OL	OL	OL	OL	OL	OL	16.7	24.5	21.1
22/09/2023	93.2	92.0	91.5	90.8	OL	OL	OL	17.8	21.9	21.3	21.9	28.8	26.9	OL	OL	OL	OL	OL	OL	16.5	24.6	21.1
23/09/2023	93.3	92.5	91.6	91.1	OL	OL	OL	17.6	21.9	21.3	21.0	27.8	25.8	OL	OL	OL	OL	OL	OL	16.6	24.6	21.1
24/09/2023	93.6	92.6	92.0	90.5	OL	OL	OL	17.7	22.0	21.3	20.6	27.1	25.4	OL	OL	OL	OL	OL	OL	16.4	21.8	21.1
25/09/2023	93.8	92.9	92.2	91.4	OL	OL	OL	17.9	21.9	21.3	20.8	27.5	25.9	OL	OL	OL	OL	OL	OL	16.6	21.8	21.1
26/09/2023	93.8	92.8	92.2	90.7	OL	OL	OL	17.5	21.9	21.3	20.8	27.9	25.6	OL	OL	OL	OL	OL	OL	16.5	23.9	21.1
27/09/2023	93.9	92.9	91.2	0.0	0.0	48.8	21.5	0.0	64.6	21.3	17.7	31.0	23.6	OL	OL	OL	0.0	29.4	21.2	0.0	28.3	21.0
28/09/2023	94.3	93.2	92.9	91.6	17.9	103.6	22.7	0.0	31.6	21.3	17.5	22.5	21.3	OL	OL	OL	0.0	29.5	21.2	17.1	84.6	21.3
29/09/2023	94.8	94.1	93.2	92.6	16.7	36.1	21.3	OL	OL	OL	17.5	22.2	21.2	OL	OL	OL	OL	OL	OL	16.3	29.0	21.3
30/09/2023	94.5	93.5	92.8	91.8	16.5	29.5	21.3	OL	OL	OL	17.0	22.3	21.2	OL	OL	OL	OL	OL	OL	14.0	22.8	20.7

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

Submitted By (Print): D. Merredew

Signature: Original signed by D. Merredew