



Water and Waste Department • Service des eaux et des déchets

Environmental Standards Division • Division des Normes Environnementales

October 5, 2018

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

Our File: 040-18-18-55-00

Dear Mr. Clarke:

**RE: SEPTEMBER 2018 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 2018. We are submitting one corrective action report for low chlorine residual in the distribution system.

The September on-line and grab sampling turbidity reports include results obtained for the Water Treatment Plant raw water and the eight filters. Please note that the maximum turbidity for Filter 8 was greater than 0.3 NTU on September 4; the elevated turbidity occurred for a short period of time which did not exceed 12 consecutive hours. The turbidity results for the effluent from the filters 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. On September 13, a low free chlorine residual was measured during a water quality investigation. Corrective actions included additional sampling and spot flushing until acceptable free chlorine results were obtained. Please see the attached corrective action report for additional details.

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,

Original signed by C. Diduck for:

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, Seniors and Active Living (email)
M. L. Geer, CPA, CA (email)
G. Patton, P.Eng. (email)
T. Shanks, P.Eng. (email)
M. Szmon, P.Eng. (email)
C. Diduck (email)



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

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

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

September 2018 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
1/09/2018	2.72	0.08	0.09	0.06	0.07	0.08	0.14	0.02	0.06	0.03	0.07	0.04	0.09	0.07	0.09	0.01	0.01
2/09/2018	2.70	0.07	0.11	0.06	0.10	0.10	0.11	0.05	0.08	0.04	0.07	0.04	0.08	0.06	0.10	0.01	0.01
3/09/2018	2.67	0.08	0.13	0.06	0.10	0.10	0.13	0.05	0.09	0.05	0.07	0.05	0.07	0.07	0.11	0.01	0.01
4/09/2018	2.69	0.07	0.10	0.06	0.12	0.08	0.11	0.04	0.09	0.05	0.08	0.05	0.09	0.08	0.09	0.01	0.34
5/09/2018	2.62	0.04	0.07	0.08	0.10	0.05	0.07	0.03	0.07	0.05	0.08	0.04	0.07	0.07	0.10	0.01	0.01
6/09/2018	2.53	0.05	0.08	0.08	0.11	0.07	0.09	0.03	0.05	0.07	0.08	0.04	0.09	0.07	0.12	0.01	0.01
7/09/2018	2.45	0.06	0.18	0.07	0.19	0.05	0.12	0.03	0.12	0.04	0.10	0.05	0.11	0.08	0.15	0.00	0.02
8/09/2018	2.45	0.05	0.08	0.09	0.10	0.05	0.07	0.02	0.05	0.03	0.05	0.05	0.08	0.07	0.11	0.01	0.01
9/09/2018	2.37	0.05	0.07	0.07	0.10	0.06	0.10	0.02	0.05	0.03	0.05	0.05	0.08	0.07	0.11	0.01	0.01
10/09/2018	2.49	0.05	0.06	0.07	0.11	0.05	0.07	0.02	0.05	0.03	0.05	0.06	0.08	0.08	0.10	0.01	0.01
11/09/2018	2.42	0.06	0.07	0.08	0.16	0.05	0.07	0.02	0.06	0.03	0.05	0.06	0.08	0.09	0.10	0.01	0.01
12/09/2018	2.24	0.03	0.11	0.05	0.18	0.04	0.14	0.01	0.13	0.02	0.10	0.03	0.13	0.05	0.15	0.00	0.04
13/09/2018	2.13	0.06	0.07	0.08	0.11	0.05	0.09	0.02	0.05	0.03	0.05	0.07	0.09	0.08	0.11	0.01	0.01
14/09/2018	1.95	0.04	0.07	0.06	0.11	0.04	0.08	0.02	0.04	0.03	0.05	0.06	0.08	0.04	0.07	0.01	0.01
15/09/2018	1.93	0.03	0.04	0.03	0.06	0.04	0.05	0.02	0.07	0.03	0.05	0.06	0.09	0.04	0.06	0.01	0.01
16/09/2018	1.96	0.03	0.04	0.03	0.06	0.03	0.06	0.02	0.12	0.03	0.05	0.08	0.09	0.04	0.06	0.01	0.01
17/09/2018	2.00	0.03	0.04	0.03	0.09	0.03	0.05	0.02	0.04	0.04	0.11	0.07	0.09	0.05	0.06	0.01	0.01
18/09/2018	1.84	0.03	0.04	0.04	0.05	0.03	0.05	0.01	0.04	0.03	0.06	0.06	0.10	0.04	0.06	0.01	0.01
19/09/2018	1.59	0.02	0.04	0.03	0.05	0.03	0.04	0.01	0.04	0.03	0.07	0.07	0.10	0.04	0.06	0.01	0.01
20/09/2018	1.76	0.02	0.04	0.03	0.05	0.02	0.08	0.01	0.03	0.04	0.05	0.09	0.10	0.04	0.06	0.01	0.01
21/09/2018	1.45	0.02	0.04	0.03	0.05	0.02	0.05	0.01	0.04	0.03	0.05	0.08	0.10	0.04	0.06	0.01	0.01
22/09/2018	1.51	0.02	0.03	0.02	0.05	0.02	0.03	0.01	0.05	0.03	0.06	0.08	0.10	0.04	0.07	0.01	0.01
23/09/2018	1.39	0.02	0.03	0.03	0.05	0.01	0.05	0.01	0.11	0.04	0.05	0.10	0.12	0.05	0.05	0.01	0.01
24/09/2018	1.31	0.02	0.03	0.03	0.04	0.01	0.02	0.01	0.05	0.03	0.05	0.08	0.13	0.04	0.07	0.01	0.01
25/09/2018	1.23	0.02	0.04	0.03	0.06	0.01	0.04	0.01	0.16	0.03	0.05	0.12	0.12	0.04	0.07	0.01	0.01
26/09/2018	1.22	0.02	0.03	0.03	0.05	0.01	0.05	0.01	0.06	0.05	0.08	0.11	0.15	0.05	0.06	0.01	0.01
27/09/2018	1.23	0.02	0.05	0.03	0.06	0.01	0.03	0.01	0.28	0.04	0.06	0.10	0.15	0.04	0.07	0.01	0.01
28/09/2018	1.26	0.02	0.04	0.03	0.06	0.01	0.03	0.01	0.17	0.05	0.06	0.08	0.14	0.05	0.06	0.01	0.01
29/09/2018	1.21	0.02	0.03	0.03	0.04	0.00	0.04	0.01	0.03	0.05	0.09	0.04	0.09	0.05	0.08	0.01	0.01
30/09/2018	1.17	0.02	0.04	0.03	0.06	0.01	0.01	0.01	0.03	0.05	0.08	0.04	0.06	0.04	0.08	0.01	0.02

Total Number of Measurements Taken, A:	15873	13826	15867	14763	16428	15174	15124	15675
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:	15873	13826	15867	14763	16428	15174	15124	15674
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\2018\09-September

Submitted By (Print): D. Merredew

Signature: Original Signed by D. Merredew



CITY OF WINNIPEG
 WATER AND WASTE DEPARTMENT
 ENVIRONMENTAL STANDARDS DIVISION

WATER TREATMENT PLANT TURBIDITY GRAB MONITORING REPORT

Water System Code: 252.00		Turbidity (NTU)																		
Licence No. PWS-09-412-01																				
Date	Raw Water		Filter 1		Filter 2		Filter 3		Filter 4		Filter 5		Filter 6		Filter 7		Filter 8			
	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser		
01-Sep-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
02-Sep-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
03-Sep-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
04-Sep-2018	2.22	2.69	0.09	0.08	0.12	0.07	OL	OL	0.10	0.06	0.11	0.06	0.10	0.05	0.08	0.07	0.08	0.08	<0.02	
05-Sep-2018	2.25	2.55	0.10	0.04	0.10	0.09	0.10	0.06	0.09	0.03	0.09	0.06	OL	OL	0.10	0.08	0.08	0.08	<0.02	
06-Sep-2018	2.01	2.47	0.12	0.05	0.10	0.10	0.09	0.06	0.10	0.04	0.09	0.06	0.10	0.06	OL	OL	0.10	0.10	<0.02	
07-Sep-2018	1.76	2.40	0.10	0.05	0.09	0.09	0.11	0.07	0.11	0.04	0.12	0.05	0.12	0.07	0.11	0.08	OL	OL		
08-Sep-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
09-Sep-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
10-Sep-2018	1.76	2.18	0.11	0.04	0.10	0.10	0.10	0.06	0.11	0.03	0.09	0.03	0.08	0.07	0.10	0.09	OL	OL		
11-Sep-2018	2.06	2.14	0.14	0.05	0.12	0.09	0.08	0.05	0.11	0.02	OL	OL	0.08	0.07	0.08	0.08	0.09	0.09	<0.02	
12-Sep-2018	2.15	2.08	0.12	0.05	0.09	0.10	0.10	0.06	0.11	0.03	0.11	0.03	0.08	0.07	OL	OL	0.11	0.11	<0.02	
13-Sep-2018	1.96	2.06	0.11	0.06	0.09	0.10	OL	OL	0.10	0.04	0.07	0.03	0.09	0.08	0.08	0.09	0.08	0.08	<0.02	
14-Sep-2018	2.02	1.99	0.10	0.03	0.11	0.06	0.11	0.04	0.08	0.02	OL	OL	0.08	0.08	0.10	0.05	0.08	0.08	<0.02	
15-Sep-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
16-Sep-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
17-Sep-2018	1.68	1.71	0.14	0.02	0.14	0.04	OL	OL	0.14	0.03	0.12	0.03	0.09	0.09	0.11	0.04	0.10	0.10	<0.02	
18-Sep-2018	1.71	1.62	0.13	0.02	0.13	0.04	0.12	0.04	0.11	0.02	0.07	0.03	OL	OL	0.08	0.04	0.07	0.07	<0.02	
19-Sep-2018	1.60	1.58	0.09	0.02	0.09	0.04	0.09	0.03	0.10	0.02	0.10	0.02	0.09	0.09	OL	OL	0.07	0.07	<0.02	
20-Sep-2018	1.59	1.47	0.11	0.02	0.11	0.04	0.10	0.03	0.12	0.02	0.07	0.03	0.09	0.10	0.10	0.04	OL	OL		
21-Sep-2018	1.47	1.41	0.06	<0.02	0.06	0.03	0.06	0.02	0.06	<0.02	0.07	0.03	OL	OL	0.07	0.04	0.06	0.06	<0.02	
22-Sep-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
23-Sep-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
24-Sep-2018	1.41	1.32	0.08	<0.02	0.09	0.03	0.09	<0.02	0.08	<0.02	0.08	0.04	OL	OL	0.09	0.04	0.07	0.07	<0.02	
25-Sep-2018	1.38	1.21	OL	OL	0.10	0.05	0.09	0.02	0.16	<0.02	0.11	0.04	0.12	0.12	0.20	0.04	0.11	0.11	<0.02	
26-Sep-2018	1.34	1.20	0.13	0.02	0.09	0.04	OL	OL	0.10	0.03	0.11	0.05	0.11	0.14	0.10	0.05	0.12	0.12	<0.02	
27-Sep-2018	1.29	1.15	0.07	<0.02	0.08	0.03	0.07	<0.02	0.07	<0.02	OL	OL	0.06	0.13	0.08	0.05	0.08	0.08	<0.02	
28-Sep-2018	1.28	1.26	0.07	<0.02	OL	OL	0.08	<0.02	0.07	<0.02	0.08	0.05	0.07	0.05	0.07	0.04	0.09	0.09	0.02	
29-Sep-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
30-Sep-2018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Total number of measurements taken, A:			18		18		15		19		16		15		16		16		16	
Turbidity Standard for Monitoring Location (NTU):			0.30		0.30		0.30		0.30		0.30		0.30		0.30		0.30		0.30	
Number of measurements meeting standard, B:			18		18		15		19		16		15		16		16		16	
Compliance with Turbidity Standard, C= B/A X 100%:			100%		100%		100%		100%		100%		100%		100%		100%		100%	

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

Comments:

Report Compiled By: H.Demchenko

Authorized in Sample Manager By: C.Diduck

Date Authorized: 5-Oct-18



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

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

Report Period: September 2018

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/09/2018	1.30	1.20	1.33	1.23
02/09/2018	1.30	1.22	1.30	1.20
03/09/2018	1.28	1.18	1.30	1.21
04/09/2018	1.40	1.20	1.31	1.20
05/09/2018	1.40	1.22	1.38	1.30
06/09/2018	1.32	1.15	1.32	1.20
07/09/2018	1.41	0.75	1.43	0.82
08/09/2018	1.37	1.22	1.42	1.28
09/09/2018	1.43	1.30	1.37	1.31
10/09/2018	1.35	1.19	1.35	1.26
11/09/2018	1.34	1.22	1.37	1.30
12/09/2018	1.80	0.85	1.83	1.15
13/09/2018	1.26	0.88	1.41	1.20
14/09/2018	1.33	1.20	1.39	1.27
15/09/2018	1.36	1.16	1.37	1.24
16/09/2018	1.48	1.41	1.50	1.44
17/09/2018	1.47	1.24	1.43	1.27
18/09/2018	1.43	1.28	1.33	1.22
19/09/2018	1.53	1.40	1.41	1.30
20/09/2018	1.34	1.28	1.40	1.21
21/09/2018	1.31	1.19	1.44	1.29
22/09/2018	1.31	1.06	1.32	1.11
23/09/2018	1.44	1.33	1.30	1.23
24/09/2018	1.33	1.02	1.23	1.00
25/09/2018	1.29	1.06	1.25	1.10
26/09/2018	1.20	1.08	1.17	1.04
27/09/2018	1.23	0.98	1.27	1.00
28/09/2018	1.23	1.03	1.26	1.05
29/09/2018	1.10	1.02	1.09	1.01
30/09/2018	1.29	1.11	1.20	1.10

Total Number of Measurements, A:	20869	20869
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	20869	20869
COMPLIANCE, C = B/A X 100%:	100.00	100.00

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2018\09-September

Submitted By (Print): D. Merredew

Signature: Original Signed by D. Merredew



CITY OF WINNIPEG
 WATER AND WASTE DEPARTMENT
 ENVIRONMENTAL STANDARDS DIVISION

WATER TREATMENT PLANT CHLORINE GRAB MONITORING REPORT

Water System Code: 252.00 Licence No. PWS-09-412-01	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)
Date	Analyser	Grab	Grab	Analyser	Grab	Grab
01-Sep-2018	NA	NA	NA	NA	NA	NA
02-Sep-2018	NA	NA	NA	NA	NA	NA
03-Sep-2018	NA	NA	NA	NA	NA	NA
04-Sep-2018	1.28	1.38	1.60	1.27	1.40	1.52
05-Sep-2018	1.40	1.51	1.69	1.37	1.41	1.60
06-Sep-2018	1.26	1.32	1.52	1.23	1.31	1.48
07-Sep-2018	1.30	1.34	1.54	1.39	1.41	1.61
08-Sep-2018	NA	NA	NA	NA	NA	NA
09-Sep-2018	NA	NA	NA	NA	NA	NA
10-Sep-2018	1.35	1.34	1.55	1.39	1.34	1.59
11-Sep-2018	1.29	1.39	1.57	1.33	1.36	1.56
12-Sep-2018	1.80	1.73	1.96	1.76	1.72	1.90
13-Sep-2018	1.50	1.55	1.75	1.46	1.52	1.67
14-Sep-2018	1.51	1.47	1.70	1.38	1.47	1.70
15-Sep-2018	NA	NA	NA	NA	NA	NA
16-Sep-2018	NA	NA	NA	NA	NA	NA
17-Sep-2018	1.40	1.41	1.63	1.30	1.40	1.58
18-Sep-2018	1.37	1.36	1.57	1.35	1.35	1.52
19-Sep-2018	1.60	1.56	1.82	1.47	1.41	1.64
20-Sep-2018	1.40	1.39	1.59	1.47	1.50	1.68
21-Sep-2018	1.28	1.42	1.53	1.50	1.49	1.64
22-Sep-2018	NA	NA	NA	NA	NA	NA
23-Sep-2018	NA	NA	NA	NA	NA	NA
24-Sep-2018	1.22	1.30	1.50	1.09	1.19	1.42
25-Sep-2018	1.24	1.30	1.53	1.22	1.28	1.43
26-Sep-2018	1.16	1.17	1.39	1.20	1.19	1.33
27-Sep-2018	1.37	1.35	1.54	1.39	1.32	1.48
28-Sep-2018	1.25	1.27	1.45	1.22	1.27	1.48
29-Sep-2018	NA	NA	NA	NA	NA	NA
30-Sep-2018	NA	NA	NA	NA	NA	NA
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%	

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

Comments: Report Compiled By: H.Demchenko

Authorized in Sample Manager By: C.Diduck



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

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

WATER TREATMENT PLANT UV REPORT

Report Period: **September 2018**

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

Date	Transmittance %	UVR-D100A				UVR-D200A				UVR-D300A				UVR-D400A				UVR-D500A				UVR-D600A				Total				% Volume Treated To Dose						
		Water Volume [ML]				Water Volume [ML]				Water Volume [ML]				Water Volume [ML]				Water Volume [ML]				Water Volume [ML]				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		
01/09/2018	95.62	0.00	0.00	68.31	68.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	73.99	73.99	0.00	0.00	66.73	66.73	0.00	0.00	0.00	0.00	0.00	0.00	209.02	209.02	100.00						
02/09/2018	95.51	0.15	0.15	18.77	19.07	0.00	0.00	0.00	0.00	0.00	0.16	16.15	16.31	0.00	0.00	77.62	77.62	0.00	0.00	58.28	58.28	0.05	0.05	34.75	34.85	0.20	0.36	205.58	206.13	99.73						
03/09/2018	95.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	84.98	84.98	0.00	0.00	40.29	40.29	0.00	0.00	77.53	77.53	0.00	0.00	202.79	202.79	100.00						
04/09/2018	95.58	0.00	0.00	0.00	0.00	0.00	0.11	10.42	10.53	0.01	0.01	31.45	31.47	0.00	0.00	44.23	44.23	0.00	0.00	41.73	41.73	0.00	0.00	78.10	78.10	0.01	0.12	205.94	206.06	99.94						
05/09/2018	95.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	47.65	47.75	0.00	0.00	30.92	30.92	0.00	0.00	50.09	50.09	0.00	0.00	79.90	79.90	0.00	0.10	208.55	208.66	99.95						
06/09/2018	95.09	0.00	0.00	0.00	0.00	0.00	0.00	3.56	3.56	0.00	0.00	0.00	0.00	0.00	0.00	75.76	75.76	0.00	0.00	52.41	52.41	0.00	0.00	78.12	78.12	0.00	0.00	209.85	209.85	100.00						
07/09/2018	93.89	0.00	0.00	0.00	0.00	0.00	0.11	10.31	10.41	0.00	0.25	7.69	7.94	0.00	0.00	51.65	51.65	0.00	0.31	51.13	51.44	0.06	0.06	54.78	54.90	0.06	0.73	175.55	176.35	99.55						
08/09/2018	93.83	0.00	0.00	0.00	0.00	0.00	0.00	16.66	16.66	0.00	0.00	12.87	12.87	0.00	0.00	73.55	73.55	0.00	0.00	51.89	51.89	0.00	0.00	55.03	55.03	0.00	0.00	210.00	210.00	100.00						
09/09/2018	93.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	83.92	83.92	0.00	0.00	46.20	46.20	0.00	0.00	79.68	79.68	0.00	0.00	209.80	209.80	100.00						
10/09/2018	93.78	0.00	0.00	0.00	0.00	0.00	0.18	7.96	8.15	0.00	0.00	0.00	0.00	0.00	0.00	81.35	81.35	0.00	0.00	44.21	44.21	0.00	0.43	73.63	74.05	0.00	0.61	207.16	207.77	99.71						
11/09/2018	93.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	85.01	85.01	0.00	0.00	60.00	60.00	0.00	0.00	64.98	64.98	0.00	0.00	209.99	209.99	100.00						
12/09/2018	93.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.07	48.92	49.06	0.00	0.00	31.16	31.16	0.03	0.03	44.33	44.38	0.09	0.09	124.41	124.59	99.85						
13/09/2018	93.67	0.00	0.00	0.00	0.00	0.00	0.12	27.68	27.81	0.00	0.00	0.00	0.00	0.00	0.00	65.70	65.70	0.00	0.00	33.02	33.02	0.00	0.00	82.47	82.47	0.00	0.12	208.88	209.00	99.94						
14/09/2018	93.81	0.00	0.00	0.00	0.00	0.00	0.05	60.57	60.62	0.00	0.00	0.00	0.00	0.00	0.00	58.47	58.47	0.00	0.00	13.62	13.62	0.00	0.00	81.98	81.98	0.00	0.05	214.64	214.69	99.98						
15/09/2018	93.72	0.00	0.00	0.00	0.00	0.00	0.11	21.44	21.55	0.00	0.00	0.00	0.00	0.00	0.00	70.68	70.68	0.00	0.00	43.11	43.11	0.00	0.11	75.22	75.33	0.00	0.22	210.45	210.67	99.89						
16/09/2018	93.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	77.79	77.79	0.00	0.00	65.20	65.20	0.00	0.36	64.65	65.02	0.00	0.36	207.64	208.01	99.82						
17/09/2018	93.77	0.00	0.00	6.18	6.19	0.04	0.15	0.47	0.66	0.00	0.00	0.00	0.00	0.00	0.00	76.98	76.98	0.00	0.00	65.29	65.29	0.00	0.23	62.70	62.92	0.05	0.38	211.62	212.05	99.80						
18/09/2018	93.73	0.00	0.00	0.00	0.00	0.00	0.00	4.30	4.30	0.00	0.00	31.69	31.69	0.00	0.00	75.98	75.98	0.00	0.00	33.87	33.87	0.00	0.31	62.16	62.47	0.00	0.31	208.00	208.31	99.85						
19/09/2018	93.82	0.00	0.00	2.45	2.45	0.00	0.00	0.00	0.00	0.00	0.00	69.76	69.76	0.00	0.00	68.03	68.03	0.00	0.00	0.00	0.00	0.00	0.04	59.97	60.01	0.00	0.04	200.21	200.26	99.98						
20/09/2018	94.50	0.00	0.00	51.89	51.89	0.00	0.00	33.49	33.49	0.00	0.00	20.29	20.29	0.00	0.00	29.64	29.64	0.00	0.00	38.30	38.30	0.00	0.00	22.55	22.55	0.00	0.00	196.15	196.15	100.00						
21/09/2018	95.70	0.00	0.00	39.49	39.49	0.00	0.00	52.89	52.89	0.00	0.00	0.00	0.00	0.00	0.00	35.49	35.49	0.00	0.00	59.26	59.26	0.00	0.00	0.00	0.00	0.00	0.00	187.13	187.13	100.00						
22/09/2018	95.67	0.18	0.18	51.31	51.67	0.00	0.00	20.44	20.44	0.00	0.00	18.22	18.22	0.00	0.03	25.98	26.02	0.00	0.00	64.01	64.01	0.00	0.00	0.00	0.00	0.18	0.21	179.96	180.36	99.78						
23/09/2018	95.62	0.00	0.00	0.11	0.11	0.00	0.00	0.00	0.00	0.00	0.00	49.69	49.69	0.00	0.00	53.73	53.73	0.00	0.00	71.86	71.86	0.00	0.00	0.00	0.00	0.00	0.00	175.38	175.38	100.00						
24/09/2018	95.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.82	50.82	0.00	0.00	55.91	55.91	0.00	0.00	70.02	70.02	0.00	0.00	0.00	0.00	0.00	0.00	176.75	176.75	100.00						
25/09/2018	95.61	0.00	0.00	9.63	9.63	0.00	0.10	9.15	9.25	0.00	0.15	38.46	38.61	0.00	0.00	52.04	52.04	0.00	0.00	59.99	59.99	0.04	1.09	0.95	2.08	0.04	1.34	170.21	171.59	99.20						
26/09/2018	95.58	0.00	0.04	64.54	64.58	0.00	0.00	0.00	0.00	0.00	0.00	5.12	5.12	0.00	0.00	45.82	45.82	0.00	0.00	53.59	53.59	0.00	0.00	0.00	0.01	0.00	0.04	169.07	169.12	99.97						
27/09/2018	95.56	0.00	0.00	55.64	55.64	0.00	0.00	0.00	0.00	0.00	0.00	20.92	20.92	0.00	0.00	44.85	44.85	0.00	0.04	41.08	41.12	0.00	0.00	8.42	8.42	0.00	0.04	170.92	170.96	99.97						
28/09/2018	95.58	0.00	0.00	69.08	69.08	0.00	0.00	0.00	0.00	0.00	0.46	0.02	0.49	0.00	0.00	55.90	55.90	0.00	0.00	58.26	58.26	0.00	0.00	0.00	0.00	0.00	0.46	183.26	183.73	99.75						
29/09/2018	95.58	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	54.61	54.61	0.00	0.00	64.99	64.99	0.00	0.00	0.00	0.00	0.00	0.00	184.60	184.60	100.00						
30/09/2018	95.43	0.00	0.27	35.12	35.39	0.00	0.00	0.00	0.00	0.00	0.00	25.50	25.50	0.00	0.00	58.11	58.11	0.00	0.00	65.01	65.01	0.00	0.00	0.00	0.00	0.00	0.27	183.74	184.01	99.85						
Total [ML]:		0.33	0.64	537.53	538.50	0.05	0.93	279.34	280.33	0.01	1.14	446.30	447.45	0.07	0.10	1817.61	1817.77	0.00	0.36	1494.61	1494.97	0.18	2.71	1241.89	1244.78	0.64	5.88	5817.28	5823.80							

Water Volume [%]:
 Untreated: 0.01 %
 Below Dose: 0.10 %
 To Dose: 99.89 %

Submitted By (Print): D. Merredew

Signature: Original Signed by D. Merredew



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Friday, October 5, 2018

Our Incident/Report No: 06-2018
LIMS Reference No: Sample # **141656**
Incident Date: **September 13, 2018**

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

RE: CORRECTIVE ACTION REPORT

WATER SYSTEM, CODE	Winnipeg Public Water System, 252.00
LOCATION OF NON-COMPLIANT INCIDENT	Winnipeg 3-Dist Investigation
INCIDENT REPORTED BY	Courtney Diduck, Analytical Services Branch Head
TYPE OF NON-COMPLIANT INCIDENT	1. Low disinfection residual in the distribution system, 22(1) MR 40/2007
DESCRIPTION OF CORRECTIVE ACTIONS	<u>Environmental Standards:</u> IMMEDIATELY: Sampled the location for bacteria, free/total chlorine, turbidity and temperature and contacted the ODW. Tested additional samples in the area for free/total chlorine, turbidity and temperature as part of the investigation of the infrastructure and system in the area. <u>Water Services:</u> Checked for closed valves and spot flushed. Spot flushing resolved the issue and free chlorine residuals were re-established to acceptable levels.
TEST RESULTS	See Attached

NOTES/COMMENTS:

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

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

N:\Environmental Standards\Analytical Services\Government Agencies\Office of Drinking Water\Corrective Action Reports



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Sample Name	Sample Number	Date Sampled	E Coli (MPNU/100mL)	Total Coliform (MPNU/100mL)	Free Chlorine (mg/L)	Total Chlorine (mg/L)	Turbidity-field (ntu)	Temperature (°C)	Time Sampled (hrs)
Resident	141656	13-Sep-18	<1	<1	0.07	0.28	0.30	15.4	17:42
Resident_Adjacent	141696	14-Sep-18	NA	NA	0.38	0.53	0.26	17.6	13:37
Resident_Adjacent 2	141697	14-Sep-18	NA	NA	0.33	0.51	0.22	17.5	13:49
Resident_Resample	142198	17-Sep-18	<1	<1	0.19	0.32	0.31	16.9	10:21
Resident_Adjacent Resample	142199	17-Sep-18	<1	<1	0.66	0.85	0.23	17.8	10:37

NOTES/COMMENTS:

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