



Water and Waste Department • Service des eaux et des déchets

December 7, 2015

Melanie Betsill
Office of Drinking Water
Manitoba Conservation and Water Stewardship
1007 Century Street
Winnipeg, Manitoba
R3H 0W4

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

Dear Ms. Betsill:

**RE: NOVEMBER 2015 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 2015. We have included one corrective action report for a low chlorine residual in the distribution system.

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 effluent from the filters 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. Branch II has been taken offline for maintenance on November 13 and remains offline. On November 2, a distribution system free chlorine result of 0.08 mg/L was reported at the NW03 location. As corrective actions to the low free chlorine result we sampled upstream and downstream of the location, at additional locations in the surrounding area, and looked for possible closed or broken valves. We confirmed through resampling that the chlorine level at the NW03 location and surrounding locations had been reestablished to provide adequate disinfection. Please see the attached corrective action report for additional details.

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 may be reached by telephone at 204-986-8359 or by e-mail at rgrosselle@winnipeg.ca.

Yours sincerely,

Original signed by:

R. Grosselle
Manager of Environmental Standards
Attachments

c:(e-mail)

Dr. L. Richards, Winnipeg Regional Health Authority
Dr. H. Chang, Winnipeg Regional Health Authority
Dr. S. Roberecki, Manitoba Health, Healthy Living and Seniors
D.P. Sacher, P.Eng.
G. Patton, P.Eng.
T. Shanks, P.Eng.
A. J. Weremy, P.Eng.
C. Diduck

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CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

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

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

November 2015 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
1/11/2015	1.23	0.03	0.07	0.07	0.14	0.04	0.10	0.06	0.10	0.04	0.07	0.03	0.08	0.09	0.14	0.02	0.03
2/11/2015	1.18	0.02	0.06	0.11	0.12	0.06	0.09	0.04	0.10	0.05	0.07	0.03	0.05	0.03	0.08	0.01	0.05
3/11/2015	1.19	0.04	0.05	0.07	0.14	0.05	0.10	0.06	0.07	0.03	0.07	0.04	0.07	0.04	0.06	0.01	0.05
4/11/2015	1.23	0.03	0.06	0.08	0.11	0.05	0.11	0.05	0.10	0.05	0.06	0.03	0.07	0.05	0.08	0.02	0.03
5/11/2015	1.26	0.03	0.05	0.08	0.14	0.07	0.15	0.05	0.08	0.03	0.07	0.04	0.06	0.03	0.07	0.02	0.06
6/11/2015	1.22	0.05	0.11	0.08	0.12	0.05	0.23	0.06	0.08	0.06	0.08	0.03	0.08	0.05	0.06	0.01	0.03
7/11/2015	1.20	0.06	0.13	0.11	0.15	0.06	0.10	0.05	0.11	0.06	0.09	0.04	0.06	0.04	0.08	0.01	0.04
8/11/2015	1.18	0.10	0.13	0.09	0.17	0.03	0.20	0.07	0.10	0.05	0.10	0.06	0.12	0.04	0.07	0.01	0.05
9/11/2015	1.15	0.06	0.11	0.07	0.12	0.01	0.02	0.06	0.12	0.06	0.12	0.04	0.10	0.05	0.10	0.01	0.02
10/11/2015	1.12	0.05	0.11	0.11	0.14	0.01	0.02	0.04	0.10	0.05	0.08	0.05	0.09	0.04	0.08	0.01	0.03
11/11/2015	1.14	0.09	0.11	0.08	0.14	0.01	0.02	0.06	0.08	0.04	0.08	0.07	0.15	0.03	0.05	0.01	0.03
12/11/2015	1.10	0.04	0.11	0.08	0.13	0.01	0.02	0.05	0.10	0.06	0.07	0.05	0.10	0.05	0.08	0.01	0.01
13/11/2015	1.09	0.03	0.05	0.11	0.15	0.02	0.02	0.04	0.10	0.05	0.08	0.07	0.08	0.03	0.08	0.00	0.03
14/11/2015	1.06	0.04	0.06	0.08	0.16	0.01	0.02	0.07	0.08	0.04	0.08	0.06	0.11	0.05	0.06	0.01	0.01
15/11/2015	1.05	0.02	0.06	0.13	0.14	0.01	0.02	0.04	0.10	0.07	0.08	0.05	0.09	0.03	0.08	0.01	0.03
16/11/2015	1.46	0.04	0.05	0.07	0.13	0.01	0.02	0.06	0.08	0.04	0.09	0.10	0.12	0.03	0.06	0.01	0.04
17/11/2015	1.12	0.03	0.07	0.06	0.11	0.01	0.02	0.06	0.11	0.06	0.08	0.07	0.14	0.06	0.09	0.01	0.02
18/11/2015	1.10	0.02	0.07	0.10	0.13	0.02	0.02	0.04	0.11	0.06	0.09	0.09	0.12	0.04	0.10	0.01	0.04
19/11/2015	1.18	0.04	0.06	0.06	0.12	0.01	0.02	0.07	0.08	0.04	0.08	0.11	0.16	0.05	0.07	0.01	0.04
20/11/2015	1.19	0.03	0.06	0.07	0.10	0.01	0.02	0.05	0.11	0.07	0.08	0.08	0.17	0.06	0.11	0.01	0.03
21/11/2015	1.08	0.03	0.05	0.08	0.12	0.01	0.02	0.04	0.08	0.05	0.10	0.15	0.15	0.05	0.13	0.01	0.06
22/11/2015	1.05	0.05	0.08	0.06	0.15	0.01	0.02	0.09	0.13	0.05	0.08	0.08	0.23	0.09	0.10	0.02	0.03
23/11/2015	1.45	0.03	0.08	0.10	0.17	0.01	0.02	0.05	0.14	0.07	0.12	0.08	0.13	0.06	0.16	0.02	0.08
24/11/2015	0.99	0.05	0.07	0.08	0.15	0.01	0.02	0.07	0.10	0.06	0.11	0.11	0.15	0.07	0.15	0.01	0.07
25/11/2015	0.96	0.05	0.10	0.07	0.11	0.01	0.02	0.08	0.16	0.08	0.10	0.08	0.19	0.10	0.12	0.04	0.07
26/11/2015	0.96	0.04	0.08	0.11	0.18	0.01	0.02	0.06	0.13	0.06	0.14	0.11	0.15	0.06	0.17	0.02	0.10
27/11/2015	0.98	0.05	0.07	0.06	0.14	0.01	0.02	0.09	0.10	0.07	0.13	0.08	0.16	0.06	0.10	0.03	0.04
28/11/2015	0.94	0.02	0.06	0.11	0.13	0.01	0.02	0.07	0.17	0.08	0.10	0.09	0.16	0.08	0.16	0.02	0.08
29/11/2015	0.95	OL	OL	0.11	0.18	0.01	0.02	0.09	0.18	0.07	0.12	0.10	0.11	0.07	0.14	0.02	0.07
30/11/2015	0.95	OL	OL	0.11	0.19	0.02	0.06	0.11	0.15	0.07	0.13	0.09	0.16	0.07	0.15	0.03	0.04

Total Number of Measurements Taken, A:	12168	9976	10285	10736	14345	14095	12665	13959
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:	12168	9976	10285	10736	14345	14095	12665	13959
Compliance with Turbidity Standard, C = B/A X 100%:	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

OL = Offline

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2015\11-November

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 AA		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	Analyser	
01-Nov-2015	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
02-Nov-2015	1.01	1.14	0.08	0.03	0.09	0.11	0.11	0.05	0.09	0.04	0.09	0.05	0.06	0.03	0.07	0.06	0.07	0.04	0.04
03-Nov-2015	0.78	1.18	0.08	0.03	0.08	0.12	0.10	0.07	0.07	0.05	0.07	0.05	0.07	0.04	0.08	0.04	0.08	0.02	0.02
04-Nov-2015	1.29	1.23	0.08	0.05	0.06	0.11	0.07	0.05	0.09	0.06	0.05	0.05	0.08	0.05	0.06	0.05	0.05	0.03	0.03
05-Nov-2015	1.22	0.88	0.06	0.03	0.07	0.11	0.07	0.06	0.05	0.04	0.06	0.06	0.07	0.03	0.13	0.05	0.09	0.05	0.05
06-Nov-2015	0.94	1.21	0.07	0.08	0.07	0.11	0.07	0.05	0.06	0.05	0.07	0.05	0.06	0.03	0.07	0.05	0.06	0.03	0.03
07-Nov-2015	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
08-Nov-2015	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
09-Nov-2015	0.83	1.13	0.08	0.09	0.06	0.11	0.07	<0.02	0.11	0.07	0.07	0.06	0.08	0.07	0.08	0.05	0.07	0.02	0.02
10-Nov-2015	0.88	1.10	0.05	0.08	0.06	0.12	0.09	<0.02	0.07	0.04	0.08	0.07	0.07	0.06	0.12	0.06	0.08	0.02	0.02
11-Nov-2015	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
12-Nov-2015	0.88	1.09	0.09	0.09	0.06	0.11	0.07	<0.02	0.08	0.06	0.05	0.06	0.06	0.10	0.07	0.05	0.08	0.02	0.02
13-Nov-2015	1.01	1.06	0.05	0.02	0.06	0.13	0.07	<0.02	0.06	0.04	0.07	0.07	0.06	0.07	0.18	0.06	0.07	0.02	0.02
14-Nov-2015	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
15-Nov-2015	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
16-Nov-2015	2.57	2.59	0.10	0.03	0.09	0.11	0.11	<0.02	0.07	0.05	0.08	0.07	0.08	0.09	0.06	0.04	0.05	<0.02	<0.02
17-Nov-2015	0.92	1.09	0.08	0.04	0.08	0.11	0.07	<0.02	0.09	0.05	0.06	0.06	0.10	0.12	0.08	0.05	0.08	0.02	0.02
18-Nov-2015	0.88	1.06	0.06	0.03	0.07	0.11	0.08	<0.02	0.07	0.05	0.09	0.07	0.08	0.11	0.08	0.07	0.08	0.03	0.03
19-Nov-2015	0.97	1.11	0.08	0.04	0.11	0.11	0.09	<0.02	0.07	0.05	0.11	0.09	0.09	0.13	0.07	0.05	0.07	0.02	0.02
20-Nov-2015	1.17	1.09	0.11	0.05	0.06	0.09	0.07	<0.02	0.13	0.06	0.07	0.06	0.06	0.12	0.08	0.07	0.07	0.03	0.03
21-Nov-2015	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
22-Nov-2015	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
23-Nov-2015	3.76	4.53	0.13	0.04	0.16	0.11	0.19	<0.02	0.13	0.06	0.14	0.09	0.13	0.11	0.11	0.08	0.15	0.06	0.06
24-Nov-2015	1.17	0.97	0.08	0.04	0.11	0.12	0.15	<0.02	0.09	0.07	0.13	0.10	0.12	0.11	0.09	0.08	0.08	0.03	0.03
25-Nov-2015	0.78	0.94	0.12	0.06	0.08	0.10	0.12	<0.02	0.14	0.09	0.09	0.07	0.18	0.16	0.12	0.09	0.12	0.05	0.05
26-Nov-2015	0.77	0.96	0.08	0.04	0.12	0.13	0.13	<0.02	0.10	0.07	0.15	0.12	0.12	0.12	0.13	0.09	0.11	0.04	0.04
27-Nov-2015	0.83	0.95	0.10	0.04	NA	NA	0.16	<0.02	0.10	0.06	0.07	0.06	0.12	0.11	0.09	0.07	0.10	0.04	0.04
28-Nov-2015	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
29-Nov-2015	NS	NS	OL	OL	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
30-Nov-2015	1.04	0.95	OL	OL	0.18	0.16	0.22	<0.02	0.16	0.10	0.10	0.08	0.12	0.10	0.10	0.08	0.10	0.04	0.04
Total number of measurements taken, A:			19		19		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		0.30
Number of measurements meeting standard, B:			19		19		20		20		20		20		20		20		20
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:

There was no turbidity results for filter 2 on November 27th because the filter came back online after lab hours. The sample that was taken after hours by operations could not be analyzed November 30, because the 48 hour retention time had lapsed.

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck

Date Approved: 4-Dec-15



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

Water System Code: **252.00**
Licence Number: **PWS-09-412 AA**
Report Created: 01 December 2015

Report Period: November 2015

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
1/11/2015	1.06	0.99	1.06	0.99
2/11/2015	1.09	0.98	1.00	0.94
3/11/2015	1.07	0.98	1.02	0.96
4/11/2015	1.04	0.94	1.02	0.98
5/11/2015	1.11	1.00	1.09	0.97
6/11/2015	1.10	0.99	1.06	0.94
7/11/2015	1.06	0.95	0.98	0.85
8/11/2015	1.08	0.99	1.00	0.89
9/11/2015	1.04	0.66	1.09	0.69
10/11/2015	1.04	0.97	1.03	0.94
11/11/2015	1.03	0.95	1.00	0.90
12/11/2015	1.06	0.80	1.03	0.94
13/11/2015	1.07	1.03	OL	OL
14/11/2015	1.09	1.04	OL	OL
15/11/2015	1.10	1.05	OL	OL
16/11/2015	1.14	1.06	OL	OL
17/11/2015	1.09	0.98	OL	OL
18/11/2015	1.03	0.97	OL	OL
19/11/2015	1.03	0.98	OL	OL
20/11/2015	1.10	1.02	OL	OL
21/11/2015	1.15	1.10	OL	OL
22/11/2015	1.17	1.12	OL	OL
23/11/2015	1.12	1.05	OL	OL
24/11/2015	1.11	1.03	OL	OL
25/11/2015	1.18	1.10	OL	OL
26/11/2015	1.20	1.15	OL	OL
27/11/2015	1.19	1.14	OL	OL
28/11/2015	1.18	1.13	OL	OL
29/11/2015	1.17	1.13	OL	OL
30/11/2015	1.18	1.12	OL	OL

Total Number of Measurements, A:	20738	8292
Minimum Free Chlorine Standard:	0.50	0.50
Number of Measurements Meeting Standard, B:	20738	8292
COMPLIANCE, C = B/A X 100%:	100	100

OL = Offline

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2015\11-November

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		Deacon Booster Pumping Station Branch 1			Deacon Booster Pumping Station Branch 2		
Licence No. PWS-09-412 AA		Free Chlorine (mg/L)		Total Chlorine (mg/L)	Free Chlorine (mg/L)		Total Chlorine (mg/L)
Date	Analyser	Grab	Grab	Analyser	Grab	Grab	
	01-Nov-2015	NS	NS	NS	NS	NS	NS
02-Nov-2015	1.12	1.24	1.35	1.01	1.01	1.22	
03-Nov-2015	1.10	1.18	1.33	1.05	1.05	1.22	
04-Nov-2015	1.07	1.18	1.37	1.02	1.07	1.21	
05-Nov-2015	1.24	1.41	1.57	1.22	1.31	1.42	
06-Nov-2015	1.10	1.34	1.49	1.06	1.25	1.40	
07-Nov-2015	NS	NS	NS	NS	NS	NS	
08-Nov-2015	NS	NS	NS	NS	NS	NS	
09-Nov-2015	1.07	1.17	1.34	1.15	1.22	1.35	
10-Nov-2015	1.05	1.09	1.23	1.07	1.16	1.27	
11-Nov-2015	NS	NS	NS	NS	NS	NS	
12-Nov-2015	1.09	1.15	1.30	1.05	1.08	1.29	
13-Nov-2015	1.07	1.14	1.30	OL	OL	OL	
14-Nov-2015	NS	NS	NS	OL	OL	OL	
15-Nov-2015	NS	NS	NS	OL	OL	OL	
16-Nov-2015	1.16	1.18	1.32	OL	OL	OL	
17-Nov-2015	1.15	1.15	1.24	OL	OL	OL	
18-Nov-2015	1.02	1.10	1.18	OL	OL	OL	
19-Nov-2015	1.01	1.00	1.13	OL	OL	OL	
20-Nov-2015	1.09	1.18	1.34	OL	OL	OL	
21-Nov-2015	NS	NS	NS	OL	OL	OL	
22-Nov-2015	NS	NS	NS	OL	OL	OL	
23-Nov-2015	1.12	1.21	1.34	OL	OL	OL	
24-Nov-2015	1.13	1.16	1.28	OL	OL	OL	
25-Nov-2015	1.16	1.19	1.29	OL	OL	OL	
26-Nov-2015	1.22	1.23	1.36	OL	OL	OL	
27-Nov-2015	1.19	1.20	1.40	OL	OL	OL	
28-Nov-2015	NS	NS	NS	OL	OL	OL	
29-Nov-2015	NS	NS	NS	OL	OL	OL	
30-Nov-2015	1.19	1.19	1.35	OL	OL	OL	
Total number of measurements taken, A:		20			8		
Chlorine Standard for Monitoring Location (mg/L):		0.50			0.50		
Number of measurements meeting standard, B:		20			8		
Compliance with Chlorine Standard, C= B/A X 100%:		100%			100%		

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

Comments:

Effective November 13, 2015, DBPS Branch II has been put offline for maintenance.

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck

Date Approved: 4-Dec-15



CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
WATER SERVICES

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

WATER TREATMENT PLANT UV REPORT

Report Period: **November 2015**

Report Created: **Tuesday, December 01, 2015**

Date	Transmittance %	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	
01/11/2015	96.30	0.00	0.00	56.24	56.24	0.00	0.00	0.00	0.00	0.00	0.00	62.92	62.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	61.86	61.86	0.00	0.00	181.01	181.01	100.00
02/11/2015	96.34	0.00	0.00	56.17	56.17	0.00	0.00	0.00	0.00	0.00	0.00	63.22	63.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	61.94	61.94	0.00	0.00	181.33	181.33	100.00
03/11/2015	96.19	0.00	0.00	57.41	57.41	0.00	0.00	0.00	0.00	0.00	0.00	63.77	63.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	62.82	62.82	0.00	0.00	184.00	184.00	100.00
04/11/2015	96.13	0.00	0.00	57.46	57.46	0.00	0.00	0.00	0.00	0.00	0.00	63.76	63.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	62.80	62.80	0.00	0.00	184.02	184.02	100.00
05/11/2015	95.56	0.02	0.02	19.59	19.62	0.00	0.00	22.08	22.08	0.23	0.23	31.73	32.18	0.00	1.28	2.08	3.36	0.27	0.31	15.25	15.84	0.53	0.57	22.45	23.55	1.05	2.41	113.18	116.64	97.03
06/11/2015	94.51	0.00	0.00	0.00	0.00	0.00	0.00	81.27	81.27	0.00	0.00	50.19	50.19	0.00	0.00	0.00	0.00	0.00	0.00	63.55	63.55	0.00	0.00	0.00	0.00	0.00	0.00	195.02	195.02	100.00
07/11/2015	95.37	0.00	0.00	0.00	0.00	0.00	0.00	82.21	82.21	0.00	0.00	50.65	50.65	0.00	0.00	0.00	0.00	0.00	0.00	64.19	64.19	0.00	0.00	0.00	0.00	0.00	0.00	197.04	197.04	100.00
08/11/2015	95.26	0.00	0.00	8.32	8.32	0.00	0.00	81.87	81.87	0.00	0.00	31.18	31.18	0.00	0.02	0.31	0.33	0.00	0.00	61.53	61.53	0.00	0.36	17.34	17.71	0.00	0.38	200.54	200.92	99.81
09/11/2015	95.15	0.00	0.00	52.54	52.54	0.02	0.02	67.45	67.48	0.00	0.00	0.00	0.00	0.09	0.09	40.08	40.26	0.00	0.00	35.01	35.01	0.00	0.00	0.00	0.00	0.11	0.11	195.08	195.29	99.89
10/11/2015	95.67	0.00	0.00	26.92	26.92	0.00	0.00	73.49	73.49	0.00	0.00	0.00	0.00	0.00	0.00	64.98	64.98	0.00	0.00	0.00	0.00	0.00	0.00	30.13	30.13	0.00	0.00	195.53	195.53	100.00
11/11/2015	95.22	0.00	0.00	0.00	0.00	0.00	0.00	78.79	78.79	0.00	0.00	0.00	0.00	0.00	0.00	51.26	51.26	0.00	0.00	0.00	0.00	0.00	0.00	59.33	59.33	0.00	0.00	189.37	189.37	100.00
12/11/2015	95.57	0.00	0.00	24.19	24.19	0.00	0.03	75.57	75.61	0.00	0.00	0.00	0.00	0.00	0.00	54.96	54.96	0.00	0.00	0.00	0.00	0.00	0.00	25.61	25.61	0.00	0.03	180.33	180.37	99.98
13/11/2015	95.22	0.00	0.00	43.96	43.96	0.00	0.00	77.34	77.34	0.00	0.00	0.00	0.00	0.00	0.00	59.68	59.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	180.98	180.98	100.00
14/11/2015	95.10	0.00	0.00	43.80	43.80	0.00	0.00	77.04	77.04	0.00	0.00	0.00	0.00	0.00	0.00	60.12	60.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	180.96	180.96	100.00
15/11/2015	95.40	0.00	0.00	43.79	43.79	0.00	0.00	77.01	77.01	0.00	0.00	0.00	0.00	0.00	0.00	60.19	60.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	180.99	180.99	100.00
16/11/2015	94.93	0.00	0.00	43.77	43.77	0.00	0.00	77.01	77.01	0.00	0.00	0.00	0.00	0.00	0.00	60.25	60.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	181.02	181.02	100.00
17/11/2015	95.26	0.00	0.00	43.75	43.75	0.00	0.00	77.05	77.05	0.00	0.00	0.00	0.00	0.00	0.00	60.20	60.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	181.01	181.01	100.00
18/11/2015	95.43	0.00	0.00	44.18	44.18	0.00	0.00	77.73	77.73	0.00	0.00	0.00	0.00	0.00	0.00	60.73	60.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	182.64	182.64	100.00
19/11/2015	95.37	0.00	0.00	44.48	44.48	0.00	0.00	78.02	78.02	0.00	0.00	0.00	0.00	0.00	0.00	61.00	61.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	183.50	183.50	100.00
20/11/2015	95.97	0.00	0.00	43.94	43.94	0.00	0.00	77.12	77.12	0.00	0.00	0.00	0.00	0.00	0.00	60.44	60.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	181.50	181.50	100.00
21/11/2015	95.84	0.00	0.00	43.42	43.42	0.00	0.00	76.08	76.08	0.00	0.00	0.00	0.00	0.00	0.00	59.52	59.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	179.02	179.02	100.00
22/11/2015	95.58	0.00	0.00	43.50	43.50	0.00	0.00	76.07	76.07	0.00	0.00	0.00	0.00	0.00	0.00	59.42	59.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	178.99	178.99	100.00
23/11/2015	94.94	0.00	0.00	43.52	43.52	0.00	0.00	76.05	76.05	0.00	0.03	0.08	0.11	0.00	0.00	59.33	59.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	178.98	179.01	99.98
24/11/2015	94.88	0.00	0.00	43.53	43.53	0.00	0.00	76.13	76.13	0.00	0.00	0.00	0.00	0.00	0.00	59.32	59.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	178.98	178.98	100.00
25/11/2015	94.15	0.00	0.04	57.97	58.02	0.00	0.00	43.30	43.30	0.00	0.00	21.98	21.98	0.00	0.00	33.73	33.73	0.00	0.00	20.00	20.00	0.00	0.01	2.38	2.39	0.00	0.05	179.36	179.42	99.97
26/11/2015	94.25	0.00	0.00	86.94	86.94	0.00	0.00	0.00	0.00	0.00	0.00	18.81	18.81	0.00	0.00	28.98	28.98	0.00	0.00	44.18	44.18	0.00	0.00	0.00	0.00	0.00	0.00	178.91	178.91	100.00
27/11/2015	94.20	0.00	0.00	87.92	87.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.22	47.22	0.00	0.00	42.27	42.27	0.00	0.00	0.00	0.00	0.00	0.00	177.41	177.41	100.00
28/11/2015	93.70	0.00	0.00	87.46	87.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.74	47.74	0.00	0.00	42.64	42.64	0.00	0.00	0.00	0.00	0.00	0.00	177.84	177.84	100.00
29/11/2015	93.79	0.00	0.06	86.51	86.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.88	48.88	0.00	0.00	43.41	43.41	0.00	0.00	0.00	0.00	0.00	0.06	178.80	178.86	99.97
30/11/2015	93.50	0.00	0.00	86.09	86.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.66	48.66	0.00	0.00	43.16	43.16	0.00	0.00	0.00	0.00	0.00	0.00	177.91	177.91	100.00
		0.02	0.12	1377.37	1377.51	0.02	0.05	1528.66	1528.73	0.23	0.26	458.29	458.78	0.09	1.39	1189.08	1190.57	0.27	0.31	475.20	475.78	0.53	0.94	406.67	408.15	1.16	3.08	5435.27	5439.51	

Water Volume [%]:
 Untreated: 0.02 %
 Below Dose 0.06 %
 To Dose 99.92 %

Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew



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Friday, December 4, 2015

Our Incident/Report No: **09-2015**

LIMS Reference No: **44287**

Incident Date: **November 2, 2015**

Ms. Melanie Betsill
Drinking Water Officer
Manitoba Water Stewardship, Office of Drinking Water
1007 Century Street
Winnipeg MB R3H 0W4

RE: CORRECTIVE ACTION REPORT

WATER SYSTEM, CODE	Winnipeg Public Water System, 252.00
LOCATION OF NON-COMPLIANT INCIDENT	Winnipeg 3-Dist NW03
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: Re-sampled original location and tested additional samples upstream and downstream for free/total chlorine, turbidity and temperature, and contacted the ODW. Resampling and investigative sampling continued until free chlorine residuals were re-established to acceptable levels. <u>Water Services:</u> Water Services Division was contacted and the area was checked for closed valves. A closed valve was located; the valve was opened and the issue was resolved.
TEST RESULTS	See Attached

NOTES/COMMENTS:

1. 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	bacColiEsch-QT (MPNU/100mL)	bacColiTotal-QT (MPNU/100mL)	bacHPC (cfu/mL)	Chlorine, Free (mg/L)	Chlorine, Total (mg/L)	Temperature (°C)	Turbidity-field (ntu)	Time Sampled (hrs)
NW03	455438	02-Nov-15	<1	<1	<1	0.08	N/A	14.3	0.40	9:18
NW03_Resample	451971	02-Nov-15	N/A	N/A	N/A	0.11	0.26	14.3	0.40	9:23
NW03_Downstream	452185	02-Nov-15	N/A	N/A	N/A	0.04	0.06	12.9	0.49	10:27
NW03_Upstream	452187	02-Nov-15	N/A	N/A	N/A	0.23	0.37	12.5	0.36	10:43
NW03_Investigation Sample 1	452186	02-Nov-15	N/A	N/A	N/A	0.58	0.70	13.5	0.39	10:36
NW03_Investigation Sample 2	452188	02-Nov-15	N/A	N/A	N/A	0.41	0.59	13.8	0.32	11:00
NW03_Investigation Sample 3	452154	03-Nov-15	N/A	N/A	N/A	1.03	1.22	12.8	0.43	10:21
NW03_Investigation Sample 4	452588	03-Nov-15	N/A	N/A	N/A	0.50	0.68	14.7	0.29	15:20
NW03_Investigation Sample 5	452589	03-Nov-15	N/A	N/A	N/A	0.29	0.50	13.7	0.28	15:40
NW03_Investigation Sample 6	452155	03-Nov-15	N/A	N/A	N/A	0.37	0.53	15.1	0.25	10:07
NW03_Resample 2	452153	03-Nov-15	N/A	N/A	N/A	0.11	0.28	14.6	0.46	9:50
NW03_Investigation Sample 7	452558	04-Nov-15	N/A	N/A	N/A	0.13	0.23	14.3	0.45	14:37
NW03_Resample 3	452557	04-Nov-15	N/A	N/A	N/A	0.11	0.28	14.5	0.71	14:53
NW03_Investigation Sample 7 Resample	452778	06-Nov-15	N/A	N/A	N/A	0.26	0.44	14.0	0.52	15:31
NW03_Downstream Resample	452777	06-Nov-15	N/A	N/A	N/A	0.40	0.57	12.1	0.99	15:04
NW03_Resample 4	452775	06-Nov-15	N/A	N/A	N/A	0.41	0.51	13.3	0.52	14:41

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.