



**Water and Waste Department • Service des eaux et des déchets**

*Environmental Standards Division • Division des Normes Environnementales*

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February 7, 2019

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: JANUARY 2019 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 January 2019. There are no corrective action reports to be submitted for January 2019.

The January on-line and grab sampling turbidity reports include results obtained for the Water Treatment Plant raw water and the eight filters. Please note that on January 23, the maximum turbidities for Filters 6, 7, and 8 were greater than 0.3 NTU at start-up after a scheduled plant shut-down, the elevated turbidities 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 January 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 January 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](mailto:rgrosselle@winnipeg.ca).

Yours sincerely,

*Original signed by:*

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**

| January 2019 Turbidity (NTU) |         | Filter #1 |      | Filter #2 |      | Filter #3 |      | Filter #4 |      | Filter #5 |      | Filter #6 |      | Filter #7 |      | Filter #8 |      |
|------------------------------|---------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
| Date                         | Raw Avg | Avg       | Max  | Avg       | Max  | Avg       | Max  | Avg       | Max  | Avg       | Max  | Avg       | Max  | Avg       | Max  | Avg       | Max  |
| 1/01/2019                    | 0.47    | 0.02      | 0.06 | 0.08      | 0.10 | 0.04      | 0.11 | 0.05      | 0.11 | 0.07      | 0.11 | 0.05      | 0.13 | 0.02      | 0.08 | 0.00      | 0.01 |
| 2/01/2019                    | 0.47    | 0.02      | 0.05 | 0.06      | 0.11 | 0.04      | 0.06 | 0.04      | 0.08 | 0.04      | 0.10 | 0.04      | 0.10 | 0.03      | 0.07 | 0.01      | 0.04 |
| 3/01/2019                    | 0.47    | 0.03      | 0.04 | 0.06      | 0.11 | 0.05      | 0.10 | 0.04      | 0.11 | 0.05      | 0.09 | 0.04      | 0.08 | OL        | OL   | 0.01      | 0.04 |
| 4/01/2019                    | 0.46    | 0.03      | 0.05 | 0.07      | 0.14 | 0.06      | 0.10 | 0.05      | 0.07 | 0.05      | 0.08 | 0.05      | 0.09 | OL        | OL   | 0.01      | 0.02 |
| 5/01/2019                    | 0.44    | 0.03      | 0.06 | 0.07      | 0.10 | 0.07      | 0.12 | 0.05      | 0.09 | 0.05      | 0.07 | 0.04      | 0.08 | OL        | OL   | 0.01      | 0.01 |
| 6/01/2019                    | 0.43    | 0.03      | 0.08 | 0.09      | 0.13 | 0.06      | 0.12 | 0.04      | 0.09 | 0.05      | 0.08 | 0.04      | 0.08 | OL        | OL   | 0.01      | 0.01 |
| 7/01/2019                    | 0.43    | 0.03      | 0.07 | 0.07      | 0.12 | 0.07      | 0.10 | 0.04      | 0.09 | 0.05      | 0.08 | 0.04      | 0.08 | OL        | OL   | 0.01      | 0.01 |
| 8/01/2019                    | 0.43    | 0.04      | 0.06 | 0.07      | 0.12 | 0.06      | 0.13 | 0.04      | 0.08 | 0.04      | 0.08 | 0.04      | 0.06 | OL        | OL   | 0.01      | 0.02 |
| 9/01/2019                    | 0.42    | 0.04      | 0.06 | 0.08      | 0.13 | 0.06      | 0.11 | 0.05      | 0.08 | 0.05      | 0.09 | 0.05      | 0.12 | OL        | OL   | 0.01      | 0.02 |
| 10/01/2019                   | 0.43    | 0.03      | 0.06 | 0.08      | 0.10 | 0.07      | 0.12 | 0.05      | 0.09 | 0.07      | 0.08 | 0.06      | 0.10 | OL        | OL   | 0.01      | 0.04 |
| 11/01/2019                   | 0.42    | 0.02      | 0.06 | 0.07      | 0.15 | 0.07      | 0.12 | 0.05      | 0.13 | 0.05      | 0.13 | 0.06      | 0.16 | 0.06      | 0.12 | 0.01      | 0.03 |
| 12/01/2019                   | 0.40    | OL        | OL   | 0.08      | 0.12 | 0.07      | 0.09 | 0.05      | 0.11 | 0.06      | 0.11 | 0.06      | 0.12 | 0.04      | 0.09 | 0.01      | 0.04 |
| 13/01/2019                   | 0.40    | OL        | OL   | 0.07      | 0.12 | 0.06      | 0.12 | 0.05      | 0.08 | 0.06      | 0.11 | 0.07      | 0.10 | 0.05      | 0.10 | 0.01      | 0.04 |
| 14/01/2019                   | 0.39    | OL        | OL   | 0.07      | 0.11 | 0.05      | 0.12 | 0.05      | 0.11 | 0.07      | 0.08 | 0.06      | 0.12 | 0.04      | 0.09 | 0.01      | 0.03 |
| 15/01/2019                   | 0.38    | OL        | OL   | 0.08      | 0.11 | 0.05      | 0.10 | 0.04      | 0.09 | 0.06      | 0.10 | 0.06      | 0.12 | 0.05      | 0.07 | 0.01      | 0.03 |
| 16/01/2019                   | 0.38    | 0.05      | 0.11 | 0.06      | 0.11 | 0.05      | 0.07 | 0.04      | 0.09 | 0.05      | 0.10 | 0.05      | 0.13 | 0.05      | 0.09 | 0.01      | 0.03 |
| 17/01/2019                   | 0.38    | 0.04      | 0.10 | 0.06      | 0.11 | 0.06      | 0.12 | 0.05      | 0.08 | 0.05      | 0.08 | 0.08      | 0.11 | 0.04      | 0.09 | 0.01      | 0.04 |
| 18/01/2019                   | 0.38    | 0.04      | 0.07 | 0.08      | 0.10 | 0.05      | 0.11 | 0.05      | 0.10 | 0.07      | 0.12 | 0.05      | 0.13 | 0.04      | 0.07 | 0.01      | 0.03 |
| 19/01/2019                   | 0.38    | 0.07      | 0.11 | 0.07      | 0.14 | 0.04      | 0.12 | 0.05      | 0.11 | 0.05      | 0.11 | 0.04      | 0.11 | 0.04      | 0.06 | 0.01      | 0.01 |
| 20/01/2019                   | 0.39    | 0.05      | 0.11 | 0.06      | 0.14 | 0.07      | 0.11 | 0.05      | 0.08 | 0.04      | 0.11 | 0.06      | 0.10 | 0.03      | 0.07 | 0.01      | 0.02 |
| 21/01/2019                   | 0.38    | 0.04      | 0.12 | 0.08      | 0.10 | 0.06      | 0.13 | 0.08      | 0.12 | 0.07      | 0.08 | 0.05      | 0.12 | 0.03      | 0.07 | 0.00      | 0.02 |
| 22/01/2019                   | 0.40    | 0.07      | 0.12 | 0.08      | 0.15 | 0.07      | 0.19 | 0.06      | 0.12 | 0.04      | 0.11 | 0.04      | 0.11 | 0.04      | 0.05 | 0.01      | 0.01 |
| 23/01/2019                   | 0.42    | 0.04      | 0.29 | 0.03      | 0.15 | 0.05      | 0.25 | 0.05      | 0.23 | 0.02      | 0.10 | 0.05      | 0.44 | 0.04      | 0.49 | 0.02      | 0.38 |
| 24/01/2019                   | 0.40    | 0.05      | 0.08 | 0.08      | 0.10 | 0.05      | 0.14 | 0.07      | 0.12 | 0.06      | 0.11 | 0.05      | 0.11 | 0.03      | 0.07 | 0.00      | 0.01 |
| 25/01/2019                   | 0.40    | 0.06      | 0.10 | 0.07      | 0.13 | 0.04      | 0.12 | 0.06      | 0.14 | 0.05      | 0.10 | 0.04      | 0.11 | 0.04      | 0.05 | 0.01      | 0.01 |
| 26/01/2019                   | 0.38    | 0.04      | 0.10 | 0.06      | 0.12 | 0.06      | 0.08 | 0.07      | 0.15 | 0.05      | 0.10 | 0.05      | 0.09 | 0.03      | 0.07 | 0.01      | 0.02 |
| 27/01/2019                   | 0.37    | 0.04      | 0.09 | 0.06      | 0.09 | 0.04      | 0.10 | 0.13      | 0.15 | 0.06      | 0.08 | 0.06      | 0.11 | 0.03      | 0.06 | 0.00      | 0.01 |
| 28/01/2019                   | 0.37    | 0.06      | 0.12 | 0.08      | 0.11 | 0.04      | 0.10 | 0.10      | 0.18 | 0.05      | 0.10 | 0.05      | 0.11 | 0.03      | 0.05 | 0.00      | 0.01 |
| 29/01/2019                   | 0.37    | 0.04      | 0.10 | 0.07      | 0.13 | 0.05      | 0.20 | 0.08      | 0.16 | 0.05      | 0.11 | 0.05      | 0.09 | 0.04      | 0.07 | 0.01      | 0.01 |
| 30/01/2019                   | 0.36    | 0.04      | 0.09 | 0.06      | 0.11 | 0.04      | 0.08 | 0.01      | 0.03 | 0.06      | 0.09 | 0.08      | 0.12 | 0.03      | 0.07 | 0.00      | 0.02 |
| 31/01/2019                   | 0.36    | 0.04      | 0.06 | 0.08      | 0.10 | 0.03      | 0.09 | 0.01      | 0.05 | 0.07      | 0.12 | 0.05      | 0.11 | 0.02      | 0.05 | 0.00      | 0.01 |

|   |          |          |          |          |          |         |         |         |
|---|----------|----------|----------|----------|----------|---------|---------|---------|
| Total Number of Measurements Taken, A:              | 12666    | 11059    | 15091    | 13320    | 15791    | 14705   | 10156   | 15030   |
| 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:         | 12666    | 11059    | 15091    | 13320    | 15791    | 14684   | 10135   | 15016   |
| Compliance with Turbidity Standard, C = B/A X 100%: | 100.000% | 100.000% | 100.000% | 100.000% | 100.000% | 99.857% | 99.793% | 99.907% |

OL = Offline

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2019\01-January

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-Jan-2019   | NA        | NA              | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA |
| 02-Jan-2019   | 0.44      | 0.44            | 0.06     | <0.02    | 0.08     | 0.08     | 0.07     | 0.05     | OL       | OL       | 0.11     | 0.07     | 0.08     | 0.05     | 0.08     | 0.02     | 0.08     | <0.02    |    |
| 03-Jan-2019   | 0.45      | 0.46            | 0.10     | <0.02    | OL       | OL       | 0.12     | 0.06     | 0.10     | 0.05     | 0.09     | 0.05     | 0.10     | 0.05     | OL       | OL       | 0.12     | 0.02     |    |
| 04-Jan-2019   | 0.46      | 0.45            | 0.09     | 0.02     | 0.08     | 0.08     | OL       | OL       | 0.09     | 0.05     | 0.08     | 0.05     | 0.09     | 0.06     | OL       | OL       | 0.07     | <0.02    |    |
| 05-Jan-2019   | NA        | NA              | NA       | NA       | 0.09     | 0.09     | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | OL       | OL       | NA       | NA       |    |
| 06-Jan-2019   | NA        | NA              | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | OL       | OL       | NA       | NA       |    |
| 07-Jan-2019   | 0.47      | 0.41            | 0.10     | 0.02     | 0.11     | 0.10     | 0.10     | 0.07     | 0.08     | 0.05     | OL       | OL       | 0.08     | 0.05     | OL       | OL       | 0.09     | <0.02    |    |
| 08-Jan-2019   | 0.48      | 0.44            | 0.09     | 0.02     | OL       | OL       | 0.11     | 0.07     | 0.09     | 0.05     | 0.07     | 0.04     | 0.10     | 0.05     | OL       | OL       | 0.09     | <0.02    |    |
| 09-Jan-2019   | 0.48      | 0.42            | 0.15     | 0.04     | 0.11     | 0.10     | OL       | OL       | 0.13     | 0.07     | 0.17     | 0.05     | 0.10     | 0.06     | OL       | OL       | 0.08     | <0.02    |    |
| 10-Jan-2019   | 0.44      | 0.42            | OL       | OL       | 0.16     | 0.09     | 0.10     | 0.06     | 0.12     | 0.06     | 0.10     | 0.06     | 0.14     | 0.09     | OL       | OL       | 0.10     | <0.02    |    |
| 11-Jan-2019   | 0.47      | 0.39            | 0.11     | 0.03     | 0.13     | 0.12     | 0.12     | 0.08     | OL       | OL       | 0.16     | 0.10     | OL       | OL       | 0.17     | 0.07     | 0.15     | 0.04     |    |
| 12-Jan-2019   | NA        | NA              | OL       | OL       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | 0.11     | 0.05     | NA       | NA       |    |
| 13-Jan-2019   | NA        | NA              | OL       | OL       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       |    |
| 14-Jan-2019   | 0.48      | 0.38            | OL       | OL       | 0.09     | 0.09     | 0.16     | 0.10     | 0.12     | 0.06     | 0.10     | 0.06     | 0.14     | 0.08     | 0.12     | 0.04     | OL       | OL       |    |
| 15-Jan-2019   | 0.48      | 0.38            | OL       | OL       | 0.11     | 0.09     | 0.08     | 0.06     | OL       | OL       | 0.09     | 0.06     | 0.14     | 0.07     | 0.10     | 0.04     | 0.11     | <0.02    |    |
| 16-Jan-2019   | 0.46      | 0.37            | 0.11     | 0.06     | OL       | OL       | 0.10     | 0.05     | 0.11     | 0.05     | OL       | OL       | 0.11     | 0.08     | 0.13     | 0.05     | 0.10     | 0.02     |    |
| 17-Jan-2019   | 0.53      | 0.38            | 0.10     | 0.06     | 0.08     | 0.09     | 0.10     | 0.06     | 0.09     | 0.05     | 0.08     | 0.06     | 0.11     | 0.08     | OL       | OL       | 0.10     | 0.03     |    |
| 18-Jan-2019   | 0.44      | 0.38            | 0.09     | 0.04     | 0.10     | 0.09     | OL       | OL       | 0.12     | 0.07     | 0.11     | 0.07     | 0.15     | 0.12     | 0.11     | 0.04     | 0.10     | <0.02    |    |
| 19-Jan-2019   | NA        | NA              | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       |    |
| 20-Jan-2019   | NA        | NA              | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       |    |
| 21-Jan-2019   | 0.43      | 0.37            | 0.10     | 0.06     | 0.09     | 0.10     | OL       | OL       | 0.12     | 0.09     | 0.09     | 0.06     | 0.12     | 0.08     | 0.11     | 0.03     | OL       | OL       |    |
| 22-Jan-2019   | 0.46      | 0.36            | 0.12     | 0.06     | 0.12     | 0.11     | 0.17     | 0.10     | OL       | OL       | 0.12     | 0.08     | OL       | OL       | 0.10     | 0.03     | 0.07     | <0.02    |    |
| 23-Jan-2019   | 0.44      | 0.38            | OL       | OL       | OL       | OL       | 0.10     | 0.07     | 0.10     | 0.09     | 0.08     | 0.05     | 0.09     | 0.07     | 0.13     | 0.07     | 0.09     | 0.02     |    |
| 24-Jan-2019   | 0.44      | 0.37            | 0.09     | 0.05     | 0.08     | 0.09     | OL       | OL       | 0.10     | 0.10     | 0.09     | 0.06     | 0.08     | 0.09     | 0.08     | 0.03     | OL       | OL       |    |
| 25-Jan-2019   | 0.45      | 0.37            | 0.11     | 0.05     | 0.10     | 0.09     | 0.18     | 0.09     | OL       | OL       | 0.11     | 0.07     | OL       | OL       | 0.10     | 0.03     | 0.09     | <0.02    |    |
| 26-Jan-2019   | NA        | NA              | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       |    |
| 27-Jan-2019   | NA        | NA              | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       |    |
| 28-Jan-2019   | 0.43      | 0.35            | 0.08     | 0.04     | 0.08     | 0.09     | OL       | OL       | 0.11     | 0.16     | 0.09     | 0.06     | OL       | OL       | 0.09     | 0.03     | 0.06     | <0.02    |    |
| 29-Jan-2019   | 0.43      | 0.37            | 0.11     | 0.06     | 0.13     | 0.11     | 0.09     | 0.04     | 0.09     | 0.14     | OL       | OL       | 0.08     | 0.08     | 0.09     | 0.04     | 0.08     | <0.02    |    |
| 30-Jan-2019   | 0.43      | 0.35            | OL       | OL       | 0.08     | 0.08     | 0.11     | 0.05     | 0.09     | 0.02     | 0.08     | 0.07     | 0.09     | 0.08     | OL       | OL       | 0.10     | <0.02    |    |
| 31-Jan-2019   | 0.42      | 0.33            | 0.10     | 0.04     | 0.10     | 0.08     | OL       | OL       | 0.10     | 0.03     | 0.09     | 0.07     | OL       | OL       | 0.10     | 0.02     | 0.08     | <0.02    |    |
| <b>Total number of measurements taken, A:</b>             |           |                 | 17       |          | 19       |          | 15       |          | 17       |          | 19       |          | 17       |          | 15       |          | 19       |          |    |
| <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>        |           |                 | 17       |          | 19       |          | 15       |          | 17       |          | 19       |          | 17       |          | 15       |          | 19       |          |    |
| <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

**Comments:**

Filter 7 was offline for scheduled maintenance from January 2 to 11, 2019.

Report Compiled By: H.Demchenko

Authorized in Sample Manager By: C.Diduck

Date Authorized: 7-Feb-19



**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 February 2019

Report Period: January 2019

| Date       | BRANCH 1<br>[mg/L] |         | BRANCH 2<br>[mg/L] |         |
|------------|--------------------|---------|--------------------|---------|
|            | Average            | Minimum | Average            | Minimum |
| 01/01/2019 | 0.99               | 0.90    | 0.99               | 0.92    |
| 02/01/2019 | 1.04               | 0.95    | 1.07               | 1.03    |
| 03/01/2019 | 1.04               | 0.95    | 1.06               | 1.00    |
| 04/01/2019 | 1.07               | 0.99    | 1.05               | 0.99    |
| 05/01/2019 | 1.10               | 1.03    | 1.06               | 0.99    |
| 06/01/2019 | 1.13               | 1.03    | 1.07               | 1.00    |
| 07/01/2019 | 1.11               | 1.01    | 1.06               | 1.00    |
| 08/01/2019 | 1.06               | 0.98    | 1.05               | 1.00    |
| 09/01/2019 | 1.22               | 1.00    | 1.22               | 1.04    |
| 10/01/2019 | 1.17               | 1.08    | 1.21               | 1.15    |
| 11/01/2019 | 1.10               | 1.02    | 1.12               | 1.01    |
| 12/01/2019 | 1.02               | 0.92    | 1.03               | 0.95    |
| 13/01/2019 | 1.07               | 1.00    | 1.11               | 1.02    |
| 14/01/2019 | 1.07               | 1.01    | 1.09               | 1.04    |
| 15/01/2019 | 1.06               | 0.93    | 1.07               | 1.00    |
| 16/01/2019 | 1.09               | 1.02    | 1.09               | 1.05    |
| 17/01/2019 | 1.07               | 1.00    | 1.11               | 1.06    |
| 18/01/2019 | 1.09               | 1.01    | 1.18               | 1.11    |
| 19/01/2019 | 1.04               | 0.95    | 1.18               | 1.12    |
| 20/01/2019 | 1.06               | 0.99    | 1.20               | 1.15    |
| 21/01/2019 | 1.10               | 1.02    | 1.20               | 1.11    |
| 22/01/2019 | 1.08               | 1.02    | 1.21               | 1.13    |
| 23/01/2019 | 1.09               | 0.86    | 1.15               | 0.91    |
| 24/01/2019 | 1.12               | 1.02    | 1.22               | 1.13    |
| 25/01/2019 | 1.14               | 1.08    | 1.22               | 1.13    |
| 26/01/2019 | 1.13               | 1.06    | 1.19               | 1.11    |
| 27/01/2019 | 1.14               | 1.06    | 1.21               | 1.12    |
| 28/01/2019 | 1.10               | 1.03    | 1.18               | 0.95    |
| 29/01/2019 | 1.15               | 1.10    | 1.25               | 1.15    |
| 30/01/2019 | 1.14               | 1.08    | 1.27               | 1.12    |
| 31/01/2019 | 1.08               | 0.95    | 1.16               | 0.99    |

|   |       |       |
|---|-------|-------|
| Total Number of Measurements, A:            | 21607 | 21549 |
| Minimum Free Chlorine Standard:             | 0.5   | 0.5   |
| Number of Measurements Meeting Standard, B: | 21607 | 21549 |

|                             |        |        |
|-----------------------------|--------|--------|
| COMPLIANCE, C = B/A X 100%: | 100.00 | 100.00 |
|-----------------------------|--------|--------|

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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<br>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-Jan-2019  | NA                                      | NA   | NA                    | NA                                      | NA   | NA                    |
| 02-Jan-2019  | 1.03                                    | 1.05 | 1.25                  | 1.06                                    | 1.07 | 1.28                  |
| 03-Jan-2019  | 1.04                                    | 1.07 | 1.23                  | 1.05                                    | 1.10 | 1.25                  |
| 04-Jan-2019  | 1.05                                    | 1.15 | 1.29                  | 1.03                                    | 1.11 | 1.30                  |
| 05-Jan-2019  | NA                                      | NA   | NA                    | NA                                      | NA   | NA                    |
| 06-Jan-2019  | NA                                      | NA   | NA                    | NA                                      | NA   | NA                    |
| 07-Jan-2019  | 1.11                                    | 1.12 | 1.31                  | 1.07                                    | 1.11 | 1.30                  |
| 08-Jan-2019  | 1.10                                    | 1.08 | 1.25                  | 1.05                                    | 1.11 | 1.29                  |
| 09-Jan-2019  | 1.30                                    | 1.25 | 1.48                  | 1.30                                    | 1.34 | 1.49                  |
| 10-Jan-2019  | 1.18                                    | 1.15 | 1.34                  | 1.18                                    | 1.16 | 1.37                  |
| 11-Jan-2019  | 1.11                                    | 1.12 | 1.32                  | 1.11                                    | 1.11 | 1.34                  |
| 12-Jan-2019  | NA                                      | NA   | NA                    | NA                                      | NA   | NA                    |
| 13-Jan-2019  | NA                                      | NA   | NA                    | NA                                      | NA   | NA                    |
| 14-Jan-2019  | 1.07                                    | 1.16 | 1.31                  | 1.10                                    | 1.18 | 1.36                  |
| 15-Jan-2019  | 1.05                                    | 1.12 | 1.30                  | 1.08                                    | 1.13 | 1.33                  |
| 16-Jan-2019  | 1.11                                    | 1.18 | 1.35                  | 1.15                                    | 1.15 | 1.34                  |
| 17-Jan-2019  | 1.03                                    | 1.16 | 1.34                  | 1.10                                    | 1.19 | 1.34                  |
| 18-Jan-2019  | 1.13                                    | 1.19 | 1.39                  | 1.24                                    | 1.32 | 1.52                  |
| 19-Jan-2019  | NA                                      | NA   | NA                    | NA                                      | NA   | NA                    |
| 20-Jan-2019  | NA                                      | NA   | NA                    | NA                                      | NA   | NA                    |
| 21-Jan-2019  | 1.11                                    | 1.19 | 1.37                  | 1.20                                    | 1.24 | 1.50                  |
| 22-Jan-2019  | 1.11                                    | 1.14 | 1.36                  | 1.21                                    | 1.26 | 1.46                  |
| 23-Jan-2019  | 1.06                                    | 1.13 | 1.33                  | 1.21                                    | 1.23 | 1.42                  |
| 24-Jan-2019  | 1.06                                    | 1.14 | 1.29                  | 1.14                                    | 1.21 | 1.44                  |
| 25-Jan-2019  | 1.15                                    | 1.17 | 1.40                  | 1.20                                    | 1.32 | 1.56                  |
| 26-Jan-2019  | NA                                      | NA   | NA                    | NA                                      | NA   | NA                    |
| 27-Jan-2019  | NA                                      | NA   | NA                    | NA                                      | NA   | NA                    |
| 28-Jan-2019  | 1.10                                    | 1.12 | 1.31                  | 1.16                                    | 1.21 | 1.43                  |
| 29-Jan-2019  | 1.16                                    | 1.15 | 1.34                  | 1.24                                    | 1.25 | 1.50                  |
| 30-Jan-2019  | 1.15                                    | 1.07 | 1.28                  | 1.25                                    | 1.26 | 1.44                  |
| 31-Jan-2019  | 1.12                                    | 1.16 | 1.30                  | 1.19                                    | 1.18 | 1.44                  |
| <b>Total number of measurements taken, A:</b>            |   | 22   |                       |   | 22   |                       |
| <b>Chlorine Standard for Monitoring Location (mg/L):</b> |   | 0.50 |                       |   | 0.50 |                       |
| <b>Number of measurements meeting standard, B:</b>       |   | 22   |                       |   | 22   |                       |
| <b>Compliance with Chlorine Standard, C= B/A X 100%:</b> |   | 100% |                       |   | 100% |                       |

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

Comments:

Report Compiled By: H.Demchenko

Authorized By: C.Diduck

Date Authorized: 7-Feb-19

