



Water and Waste Department • Service des eaux et des déchets

December 5, 2014

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

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

Dear Ms. Betsill:

**RE: NOVEMBER 2014 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 2014. We have also included one corrective action report for a low free 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 are in compliance with the licence requirements.

On November 3, a distribution system free chlorine result of 0.03 mg/L was reported [REDACTED]. As corrective actions to the low free chlorine result, we have sampled various locations around the area, flushed the area and checked the infrastructure for possible closed and broken valves. Please see attached corrective action report. 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 have met the licence requirements.

The UV submission includes the summary report for November 2014 in accordance with Section 4.13, Table 2 of the Operating Licence. The UV licence requirement has been met for November.

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.

Thanks for your ongoing cooperation and understanding in this matter.

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
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
 ENVIRONMENTAL STANDARDS DIVISION

WATER TREATMENT PLANT TURBIDITY GRAB MONITORING REPORT

| Water System Code: 252.00 | Turbidity (NTU) | | | | | | | | |
|---|-----------------|----------|----------|----------|----------|----------|----------|----------|----------|
| Licence No. PWS-09-412 A | | | | | | | | | |
| Date | Raw Water | Filter 1 | Filter 2 | Filter 3 | Filter 4 | Filter 5 | Filter 6 | Filter 7 | Filter 8 |
| 01-Nov-2014 | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| 02-Nov-2014 | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| 03-Nov-2014 | 1.24 | 0.18 | 0.14 | 0.15 | 0.18 | 0.17 | 0.13 | OL | 0.13 |
| 04-Nov-2014 | 1.54 | 0.24 | 0.10 | 0.16 | 0.25 | 0.15 | 0.15 | 0.21 | 0.16 |
| 05-Nov-2014 | 1.34 | 0.10 | 0.15 | 0.18 | 0.18 | 0.14 | 0.14 | 0.16 | 0.17 |
| 06-Nov-2014 | 1.85 | 0.14 | 0.11 | 0.20 | 0.14 | 0.18 | 0.21 | 0.15 | 0.16 |
| 07-Nov-2014 | 1.17 | 0.13 | 0.15 | 0.24 | 0.23 | 0.18 | 0.22 | 0.27 | 0.14 |
| 08-Nov-2014 | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| 09-Nov-2014 | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| 10-Nov-2014 | 1.09 | 0.17 | 0.16 | 0.13 | 0.23 | 0.12 | 0.14 | 0.14 | 0.17 |
| 11-Nov-2014 | 1.02 | 0.11 | 0.10 | 0.16 | 0.12 | 0.15 | 0.19 | 0.12 | 0.11 |
| 12-Nov-2014 | 0.96 | 0.16 | 0.13 | 0.20 | 0.19 | 0.13 | 0.10 | 0.13 | 0.16 |
| 13-Nov-2014 | 0.96 | 0.14 | 0.13 | 0.16 | 0.13 | 0.18 | 0.15 | 0.21 | 0.14 |
| 14-Nov-2014 | 0.84 | 0.18 | 0.09 | 0.18 | 0.14 | 0.16 | 0.08 | 0.07 | 0.09 |
| 15-Nov-2014 | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| 16-Nov-2014 | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| 17-Nov-2014 | 0.72 | 0.24 | 0.15 | 0.16 | 0.21 | 0.11 | 0.11 | 0.15 | 0.17 |
| 18-Nov-2014 | 0.79 | 0.16 | 0.14 | 0.11 | 0.14 | 0.18 | 0.12 | 0.19 | 0.13 |
| 19-Nov-2014 | 0.74 | 0.10 | 0.09 | 0.15 | 0.12 | 0.17 | 0.17 | 0.10 | 0.12 |
| 20-Nov-2014 | 0.72 | 0.21 | 0.18 | 0.12 | 0.10 | 0.11 | 0.12 | 0.11 | 0.15 |
| 21-Nov-2014 | 0.71 | 0.12 | 0.12 | 0.09 | 0.08 | 0.11 | 0.12 | 0.11 | 0.14 |
| 22-Nov-2014 | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| 23-Nov-2014 | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| 24-Nov-2014 | 0.72 | 0.10 | 0.12 | 0.09 | 0.09 | 0.09 | 0.13 | 0.14 | 0.08 |
| 25-Nov-2014 | 0.68 | 0.10 | 0.10 | 0.16 | 0.11 | 0.11 | 0.10 | 0.11 | 0.12 |
| 26-Nov-2014 | 0.75 | 0.10 | 0.17 | 0.15 | 0.13 | 0.08 | 0.09 | 0.10 | 0.14 |
| 27-Nov-2014 | 0.66 | 0.08 | 0.11 | 0.10 | 0.09 | 0.11 | 0.11 | 0.15 | 0.09 |
| 28-Nov-2014 | 0.74 | 0.11 | 0.10 | OL | 0.13 | 0.21 | 0.10 | 0.11 | 0.14 |
| 29-Nov-2014 | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| 30-Nov-2014 | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| Total number of measurements taken, A: | 20 | 20 | 19 | 20 | 20 | 20 | 20 | 19 | 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: | 20 | 20 | 19 | 20 | 20 | 20 | 20 | 19 | 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:

Report Compiled By: H.Demchenko

Approved in LIMS By: C. Diduck

Date Approved: 4-Dec-14



CITY OF WINNIPEG
 WATER AND WASTE DEPARTMENT
 WATER SERVICES

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

WATER TREATMENT PLANT TURBIDITY ON-LINE MONITORING REPORT

November 2014 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 |
| 1/11/2014 | 1.85 | 0.05 | 0.13 | 0.00 | 0.01 | 0.05 | 0.16 | 0.08 | 0.18 | 0.02 | 0.12 | 0.04 | 0.06 | 0.08 | 0.10 | 0.02 | 0.12 |
| 2/11/2014 | 1.69 | 0.03 | 0.11 | 0.00 | 0.05 | 0.05 | 0.08 | 0.07 | 0.18 | 0.03 | 0.05 | 0.06 | 0.14 | 0.08 | 0.18 | 0.01 | 0.11 |
| 3/11/2014 | 1.56 | 0.03 | 0.05 | 0.00 | 0.06 | 0.08 | 0.15 | 0.09 | 0.11 | 0.03 | 0.12 | 0.04 | 0.14 | 0.06 | 0.18 | 0.03 | 0.05 |
| 4/11/2014 | 1.50 | 0.05 | 0.12 | 0.00 | 0.01 | 0.05 | 0.17 | 0.07 | 0.19 | 0.02 | 0.12 | 0.05 | 0.07 | 0.09 | 0.11 | 0.03 | 0.12 |
| 5/11/2014 | 1.44 | 0.04 | 0.14 | 0.01 | 0.07 | 0.09 | 0.11 | 0.05 | 0.18 | 0.05 | 0.08 | 0.07 | 0.16 | 0.07 | 0.19 | 0.03 | 0.05 |
| 6/11/2014 | 1.41 | 0.06 | 0.08 | 0.00 | 0.02 | 0.08 | 0.19 | 0.09 | 0.13 | 0.04 | 0.14 | 0.05 | 0.16 | 0.06 | 0.19 | 0.05 | 0.15 |
| 7/11/2014 | 1.42 | 0.04 | 0.14 | 0.01 | 0.07 | 0.06 | 0.16 | 0.06 | 0.18 | 0.03 | 0.06 | 0.06 | 0.09 | 0.10 | 0.14 | 0.03 | 0.11 |
| 8/11/2014 | 1.47 | 0.03 | 0.13 | 0.00 | 0.05 | 0.07 | 0.10 | 0.06 | 0.09 | 0.04 | 0.12 | 0.05 | 0.15 | 0.06 | 0.18 | 0.02 | 0.04 |
| 9/11/2014 | 1.42 | 0.06 | 0.09 | 0.00 | 0.00 | 0.05 | 0.16 | 0.08 | 0.18 | 0.03 | 0.11 | 0.04 | 0.14 | 0.06 | 0.10 | 0.02 | 0.11 |
| 10/11/2014 | 1.26 | 0.06 | 0.17 | 0.05 | 0.10 | 0.06 | 0.09 | 0.06 | 0.17 | 0.06 | 0.09 | 0.09 | 0.10 | 0.08 | 0.20 | 0.03 | 0.14 |
| 11/11/2014 | 1.18 | 0.06 | 0.10 | 0.04 | 0.14 | 0.09 | 0.18 | 0.07 | 0.10 | 0.06 | 0.16 | 0.08 | 0.18 | 0.06 | 0.16 | 0.06 | 0.08 |
| 12/11/2014 | 1.18 | 0.09 | 0.17 | 0.08 | 0.10 | 0.06 | 0.17 | 0.06 | 0.16 | 0.04 | 0.16 | 0.09 | 0.13 | 0.08 | 0.09 | 0.04 | 0.13 |
| 13/11/2014 | 1.14 | 0.06 | 0.16 | 0.05 | 0.14 | 0.11 | 0.13 | 0.04 | 0.08 | 0.10 | 0.15 | 0.09 | 0.22 | 0.05 | 0.15 | 0.04 | 0.06 |
| 14/11/2014 | 1.07 | 0.07 | 0.09 | 0.04 | 0.09 | 0.08 | 0.15 | 0.07 | 0.16 | 0.06 | 0.13 | 0.04 | 0.12 | 0.04 | 0.07 | 0.04 | 0.09 |
| 15/11/2014 | 1.01 | 0.06 | 0.17 | 0.06 | 0.14 | 0.08 | 0.13 | 0.06 | 0.17 | 0.08 | 0.11 | 0.08 | 0.11 | 0.09 | 0.15 | 0.03 | 0.14 |
| 16/11/2014 | 0.96 | 0.06 | 0.10 | 0.04 | 0.14 | 0.13 | 0.21 | 0.07 | 0.10 | 0.08 | 0.18 | 0.05 | 0.17 | 0.05 | 0.16 | 0.06 | 0.08 |
| 17/11/2014 | 0.92 | 0.09 | 0.17 | 0.07 | 0.10 | 0.08 | 0.22 | 0.06 | 0.17 | 0.06 | 0.18 | 0.06 | 0.10 | 0.08 | 0.10 | 0.04 | 0.16 |
| 18/11/2014 | 0.91 | 0.06 | 0.14 | 0.04 | 0.12 | 0.09 | 0.12 | 0.05 | 0.15 | 0.09 | 0.11 | 0.08 | 0.16 | 0.07 | 0.16 | 0.03 | 0.06 |
| 19/11/2014 | 0.88 | 0.07 | 0.10 | 0.04 | 0.13 | 0.08 | 0.19 | 0.07 | 0.10 | 0.06 | 0.19 | 0.05 | 0.15 | 0.06 | 0.16 | 0.06 | 0.22 |
| 20/11/2014 | 0.87 | 0.07 | 0.16 | 0.05 | 0.09 | 0.05 | 0.13 | 0.05 | 0.17 | 0.05 | 0.16 | 0.05 | 0.08 | 0.07 | 0.10 | 0.03 | 0.15 |
| 21/11/2014 | 0.83 | 0.05 | 0.12 | 0.03 | 0.09 | 0.07 | 0.28 | 0.06 | 0.12 | 0.08 | 0.12 | 0.06 | 0.15 | 0.05 | 0.18 | 0.03 | 0.05 |
| 22/11/2014 | 0.84 | 0.07 | 0.11 | 0.04 | 0.13 | 0.08 | 0.17 | 0.08 | 0.10 | 0.06 | 0.17 | 0.05 | 0.16 | 0.06 | 0.17 | 0.05 | 0.14 |
| 23/11/2014 | 0.83 | 0.08 | 0.17 | 0.06 | 0.11 | 0.05 | 0.17 | 0.05 | 0.18 | 0.05 | 0.14 | 0.05 | 0.08 | 0.07 | 0.10 | 0.03 | 0.15 |
| 24/11/2014 | 0.82 | 0.04 | 0.13 | 0.03 | 0.08 | 0.07 | 0.12 | 0.04 | 0.13 | 0.06 | 0.08 | 0.05 | 0.13 | 0.04 | 0.15 | 0.02 | 0.03 |
| 25/11/2014 | 0.82 | 0.07 | 0.08 | 0.03 | 0.05 | 0.06 | 0.12 | 0.06 | 0.07 | 0.04 | 0.14 | 0.03 | 0.13 | 0.04 | 0.15 | 0.03 | 0.10 |
| 26/11/2014 | 0.82 | 0.06 | 0.12 | 0.04 | 0.09 | 0.05 | 0.13 | 0.05 | 0.13 | 0.04 | 0.07 | 0.05 | 0.07 | 0.07 | 0.08 | 0.02 | 0.13 |
| 27/11/2014 | 0.83 | 0.06 | 0.14 | 0.05 | 0.10 | 0.09 | 0.15 | 0.05 | 0.08 | 0.07 | 0.14 | 0.05 | 0.15 | 0.04 | 0.18 | 0.03 | 0.06 |
| 28/11/2014 | 0.82 | 0.11 | 0.15 | 0.05 | 0.11 | 0.04 | 0.29 | 0.10 | 0.19 | 0.08 | 0.18 | 0.07 | 0.23 | 0.08 | 0.12 | 0.06 | 0.17 |
| 29/11/2014 | 0.81 | 0.08 | 0.21 | 0.08 | 0.16 | 0.11 | 0.14 | 0.07 | 0.20 | 0.06 | 0.11 | 0.07 | 0.10 | 0.07 | 0.20 | 0.04 | 0.19 |
| 30/11/2014 | 0.80 | 0.07 | 0.12 | 0.05 | 0.16 | 0.08 | 0.21 | 0.08 | 0.11 | 0.10 | 0.18 | 0.07 | 0.20 | 0.05 | 0.19 | 0.05 | 0.07 |

| | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|
| Total Number of Measurements Taken, A: | 13705 | 12589 | 12315 | 11228 | 14323 | 14147 | 12639 | 14258 |
| 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: | 13705 | 12589 | 12315 | 11228 | 14323 | 14147 | 12639 | 14258 |
| Compliance with Turbidity Standard, C = B/A X 100%: | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |

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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 | Deacon Booster Pumping Station Branch 1 | | Deacon Booster Pumping Station Branch 2 | |
| Licence No. PWS-09-412 A | Free Chlorine (mg/L) | Total Chlorine (mg/L) | Free Chlorine (mg/L) | Total Chlorine (mg/L) |
| Date | | | | |
| 01-Nov-2014 | NS | NS | NS | NS |
| 02-Nov-2014 | NS | NS | NS | NS |
| 03-Nov-2014 | 1.39 | 1.59 | 1.35 | 1.57 |
| 04-Nov-2014 | 1.33 | 1.48 | 1.28 | 1.50 |
| 05-Nov-2014 | 1.36 | 1.48 | 1.29 | 1.49 |
| 06-Nov-2014 | 1.47 | 1.64 | 1.38 | 1.64 |
| 07-Nov-2014 | 1.40 | 1.57 | 1.43 | 1.55 |
| 08-Nov-2014 | NS | NS | NS | NS |
| 09-Nov-2014 | NS | NS | NS | NS |
| 10-Nov-2014 | 1.19 | 1.56 | 1.42 | 1.58 |
| 11-Nov-2014 | 1.29 | 1.45 | 1.34 | 1.45 |
| 12-Nov-2014 | 1.29 | 1.48 | 1.32 | 1.54 |
| 13-Nov-2014 | 1.36 | 1.51 | 1.39 | 1.57 |
| 14-Nov-2014 | 1.37 | 1.49 | 1.42 | 1.62 |
| 15-Nov-2014 | NS | NS | NS | NS |
| 16-Nov-2014 | NS | NS | NS | NS |
| 17-Nov-2014 | 1.23 | 1.34 | 1.28 | 1.44 |
| 18-Nov-2014 | 1.28 | 1.44 | 1.18 | 1.45 |
| 19-Nov-2014 | 1.29 | 1.47 | 1.30 | 1.41 |
| 20-Nov-2014 | 1.22 | 1.36 | 1.16 | 1.35 |
| 21-Nov-2014 | 1.20 | 1.39 | 1.14 | 1.36 |
| 22-Nov-2014 | NS | NS | NS | NS |
| 23-Nov-2014 | NS | NS | NS | NS |
| 24-Nov-2014 | 1.02 | 1.28 | 1.05 | 1.18 |
| 25-Nov-2014 | 1.14 | 1.27 | 1.14 | 1.34 |
| 26-Nov-2014 | 1.17 | 1.37 | 1.12 | 1.32 |
| 27-Nov-2014 | 1.22 | 1.34 | 1.21 | 1.34 |
| 28-Nov-2014 | 1.20 | 1.43 | 1.18 | 1.35 |
| 29-Nov-2014 | NS | NS | NS | NS |
| 30-Nov-2014 | 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% | |

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

Comments:

Report Compiled By: H.Demchenko

Approved in LIMS By: C. Diduck



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

Water System Code: **252.00**
Licence Number: **PWS-09-412 A**
Report Created: **01 December 2014**

Report Period: **November 2014**

| Date | BRANCH 1 [mg/L] | | BRANCH 2 [mg/L] | |
|------------|--------------------|---------|--------------------|---------|
| | Average | Minimum | Average | Minimum |
| 01/11/2014 | 1.41 | 1.29 | 1.41 | 1.17 |
| 02/11/2014 | 1.44 | 1.34 | 1.39 | 1.23 |
| 03/11/2014 | 1.40 | 1.24 | 1.35 | 1.26 |
| 04/11/2014 | 1.31 | 1.20 | 1.30 | 1.21 |
| 05/11/2014 | 1.33 | 1.24 | 1.33 | 1.20 |
| 06/11/2014 | 1.35 | 1.27 | 1.34 | 1.18 |
| 07/11/2014 | 1.30 | 1.20 | 1.38 | 1.29 |
| 08/11/2014 | 1.28 | 1.18 | 1.36 | 1.29 |
| 09/11/2014 | 1.28 | 1.16 | 1.37 | 1.28 |
| 10/11/2014 | 1.15 | 1.03 | 1.27 | 1.17 |
| 11/11/2014 | 1.14 | 1.02 | 1.24 | 1.15 |
| 12/11/2014 | 1.21 | 1.10 | 1.26 | 1.21 |
| 13/11/2014 | 1.29 | 1.08 | 1.36 | 1.19 |
| 14/11/2014 | 1.28 | 1.12 | 1.33 | 1.19 |
| 15/11/2014 | 1.20 | 0.98 | 1.28 | 1.10 |
| 16/11/2014 | 1.17 | 0.98 | 1.30 | 1.09 |
| 17/11/2014 | 1.24 | 1.06 | 1.32 | 1.22 |
| 18/11/2014 | 1.27 | 1.12 | 1.24 | 1.14 |
| 19/11/2014 | 1.30 | 1.19 | 1.25 | 1.19 |
| 20/11/2014 | 1.26 | 1.11 | 1.19 | 1.10 |
| 21/11/2014 | 1.21 | 1.13 | 1.12 | 1.07 |
| 22/11/2014 | 1.22 | 1.11 | 1.09 | 1.04 |
| 23/11/2014 | 1.15 | 1.01 | 1.01 | 0.93 |
| 24/11/2014 | 1.11 | 1.00 | 1.05 | 0.87 |
| 25/11/2014 | 1.18 | 1.11 | 1.15 | 1.10 |
| 26/11/2014 | 1.16 | 1.07 | 1.13 | 1.07 |
| 27/11/2014 | 1.18 | 1.08 | 1.14 | 1.09 |
| 28/11/2014 | 1.23 | 1.16 | 1.20 | 1.14 |
| 29/11/2014 | 1.20 | 1.13 | 1.14 | 1.07 |
| 30/11/2014 | 1.11 | 0.98 | 1.09 | 1.03 |

| | | |
|---|-------|-------|
| Total Number of Measurements, A: | 20908 | 20908 |
| Minimum Free Chlorine Standard: | 0.50 | 0.50 |
| Number of Measurements Meeting Standard, B: | 20908 | 20908 |

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

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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 A**

WATER TREATMENT PLANT UV REPORT

Report Period: **November 2014**

Report Created: **Monday, December 01, 2014**

| 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 | |
| 1/11/2014 | 96.05 | 0.00 | 0.00 | 64.26 | 64.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 60.59 | 60.59 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 71.46 | 71.46 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 196.32 | 196.32 | 100.00 |
| 2/11/2014 | 96.06 | 0.00 | 0.00 | 63.77 | 63.77 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 60.28 | 60.28 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 70.95 | 70.95 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 195.01 | 195.01 | 100.00 |
| 3/11/2014 | 96.03 | 0.00 | 0.00 | 63.11 | 63.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 59.55 | 59.55 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 70.14 | 70.14 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 192.80 | 192.80 | 100.00 |
| 4/11/2014 | 96.02 | 0.00 | 0.00 | 63.39 | 63.39 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 17.63 | 17.63 | 0.00 | 0.00 | 39.67 | 39.67 | 0.00 | 0.00 | 21.25 | 21.25 | 0.00 | 0.00 | 46.63 | 46.63 | 0.00 | 0.00 | 188.57 | 188.57 | 100.00 |
| 5/11/2014 | 95.67 | 0.00 | 0.00 | 62.59 | 62.59 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 32.22 | 32.23 | 0.00 | 0.00 | 25.79 | 25.79 | 0.00 | 0.00 | 47.12 | 47.12 | 0.00 | 0.00 | 20.24 | 20.24 | 0.00 | 0.00 | 187.96 | 187.97 | 100.00 |
| 6/11/2014 | 95.26 | 0.00 | 0.00 | 62.99 | 62.99 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 17.20 | 17.20 | 0.00 | 0.00 | 40.83 | 40.83 | 0.00 | 0.00 | 21.11 | 21.11 | 0.00 | 0.00 | 45.84 | 45.84 | 0.00 | 0.00 | 187.97 | 187.97 | 100.00 |
| 7/11/2014 | 94.97 | 0.00 | 0.00 | 62.55 | 62.55 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 38.54 | 38.54 | 0.00 | 0.00 | 19.22 | 19.22 | 0.00 | 0.00 | 42.30 | 42.30 | 0.00 | 0.00 | 25.35 | 25.35 | 0.00 | 0.00 | 187.96 | 187.96 | 100.00 |
| 8/11/2014 | 95.01 | 0.00 | 0.00 | 62.36 | 62.36 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 57.23 | 57.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 68.45 | 68.45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 188.03 | 188.03 | 100.00 |
| 9/11/2014 | 94.99 | 0.00 | 0.00 | 62.69 | 62.69 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 56.20 | 56.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 68.42 | 68.42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 187.32 | 187.32 | 100.00 |
| 10/11/2014 | 94.79 | 0.00 | 0.00 | 62.56 | 62.56 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 55.44 | 55.44 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 68.00 | 68.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 186.01 | 186.01 | 100.00 |
| 11/11/2014 | 94.72 | 0.00 | 0.00 | 55.75 | 55.75 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 62.17 | 62.17 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 65.49 | 65.49 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 183.40 | 183.40 | 100.00 |
| 12/11/2014 | 94.75 | 0.00 | 0.00 | 54.01 | 54.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 62.87 | 62.87 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 64.50 | 64.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 181.37 | 181.37 | 100.00 |
| 13/11/2014 | 94.69 | 0.00 | 0.00 | 55.05 | 55.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 62.90 | 62.90 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 65.05 | 65.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 183.00 | 183.00 | 100.00 |
| 14/11/2014 | 93.57 | 0.00 | 0.45 | 49.12 | 49.57 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 65.18 | 65.18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 68.22 | 68.22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.45 | 182.53 | 182.98 | 99.76 |
| 15/11/2014 | 94.48 | 0.00 | 0.10 | 46.05 | 46.15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 66.80 | 66.80 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 70.01 | 70.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.10 | 182.86 | 182.96 | 99.95 |
| 16/11/2014 | 94.40 | 0.00 | 0.00 | 44.11 | 44.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 59.29 | 59.29 | 0.01 | 0.01 | 39.05 | 39.06 | 0.13 | 0.13 | 37.75 | 38.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.14 | 0.14 | 180.21 | 180.49 | 99.84 |
| 17/11/2014 | 94.18 | 0.00 | 0.00 | 39.19 | 39.19 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 32.29 | 32.29 | 0.00 | 0.00 | 73.74 | 73.74 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 44.66 | 44.66 | 0.00 | 0.00 | 189.89 | 189.89 | 100.00 |
| 18/11/2014 | 94.13 | 0.00 | 0.00 | 63.00 | 63.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 69.92 | 69.92 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 70.11 | 70.11 | 0.00 | 0.00 | 203.02 | 203.02 | 100.00 | |
| 19/11/2014 | 93.90 | 0.00 | 0.00 | 63.00 | 63.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 69.95 | 69.95 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 70.03 | 70.03 | 0.00 | 0.00 | 202.98 | 202.98 | 100.00 | |
| 20/11/2014 | 93.25 | 0.00 | 0.00 | 62.22 | 62.22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 45.71 | 45.71 | 0.00 | 0.00 | 24.21 | 24.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 70.82 | 70.82 | 0.00 | 0.00 | 202.96 | 202.96 | 100.00 |
| 21/11/2014 | 92.58 | 0.00 | 0.00 | 62.66 | 62.66 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 23.86 | 23.86 | 0.00 | 0.00 | 48.75 | 48.75 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 67.72 | 67.72 | 0.00 | 0.00 | 203.00 | 203.00 | 100.00 |
| 22/11/2014 | 94.06 | 0.00 | 0.00 | 63.01 | 63.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 47.17 | 47.17 | 0.00 | 0.00 | 25.51 | 25.51 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 67.32 | 67.32 | 0.00 | 0.00 | 203.01 | 203.01 | 100.00 |
| 23/11/2014 | 93.87 | 0.00 | 0.00 | 61.00 | 61.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 69.87 | 69.87 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 66.08 | 66.08 | 0.00 | 0.00 | 196.95 | 196.95 | 100.00 |
| 24/11/2014 | 92.90 | 0.00 | 0.00 | 61.24 | 61.24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 50.69 | 50.69 | 0.00 | 0.00 | 18.32 | 18.32 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 64.74 | 64.74 | 0.00 | 0.00 | 194.99 | 194.99 | 100.00 |
| 25/11/2014 | 92.75 | 0.00 | 0.00 | 60.39 | 60.39 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 69.21 | 69.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 65.38 | 65.38 | 0.00 | 0.00 | 194.99 | 194.99 | 100.00 |
| 26/11/2014 | 92.44 | 0.00 | 0.00 | 60.40 | 60.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 69.23 | 69.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 65.40 | 65.40 | 0.00 | 0.00 | 195.02 | 195.02 | 100.00 |
| 27/11/2014 | 92.43 | 0.00 | 0.04 | 60.33 | 60.37 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 69.23 | 69.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 65.39 | 65.39 | 0.00 | 0.04 | 194.95 | 194.99 | 99.98 |
| 28/11/2014 | 92.58 | 0.00 | 0.00 | 60.38 | 60.38 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 69.26 | 69.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 65.35 | 65.40 | 0.00 | 0.05 | 194.98 | 195.03 | 99.98 |
| 29/11/2014 | 92.89 | 0.00 | 0.00 | 59.29 | 59.29 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 67.99 | 67.99 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 64.47 | 64.47 | 0.00 | 0.00 | 191.75 | 191.75 | 100.00 |
| 30/11/2014 | 93.05 | 0.00 | 0.00 | 57.19 | 57.19 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 65.73 | 65.73 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 62.90 | 62.90 | 0.00 | 0.00 | 185.82 | 185.82 | 100.00 |
| | | 0.00 | 0.59 | 1767.66 | 1768.25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1514.36 | 1514.37 | 0.01 | 0.01 | 494.95 | 494.97 | 0.13 | 0.13 | 920.22 | 920.48 | 0.00 | 0.05 | 1048.44 | 1048.48 | 0.15 | 0.78 | 5745.63 | 5746.55 | |

Water Volume [%]
 Untreated: 0.00 %
 Below Dose: 0.01 %
 To Dose: 99.98 %

Note: UVR-D200A offline, pending flow control valve repair

Submitted By (Print) D.Merredew

Signature Original signed by D.Merredew



Water and Waste Department • Service des eaux et des déchets

Wednesday, December 3, 2014

Our Incident/Report No: 03-2014
LIMS Reference No: **40891**

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 | Winnipeg Public Water System |
| WATER SYSTEM CODE | 252.00 |
| LOCATION OF NON-COMPLIANT INCIDENT | Winnipeg 3-Dist NW03 |
| OPERATOR IN CHARGE | NA |
| INCIDENT REPORTED BY | Courtney Diduck, Analytical Services Branch Head |
| TYPE OF NON-COMPLIANT INCIDENT | Low disinfection residual in the distribution system, 22(1) MR 40/2007 |
| INCIDENT DATE | November 3, 2014 |
| DESCRIPTION OF CORRECTIVE ACTIONS | IMMEDIATELY: Re-sampled original location and tested additional samples upstream and downstream for free/total chlorine, temperature, bacteria and contacted the ODW. Water Services Division was contacted and the area was check for closed valves and spot flushed. Daily monitoring of the location was performed until all closed values were located and opened and chlorine residuals were re-established to 0.29 mg/L. |
| TEST RESULTS | See Attached |

NOTES/COMMENTS:

1. All microbiological tests performed by contract laboratory.
2. 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
3. INITIAL chlorine, turbidity and temperature only tested at the required 39 sample locations.
4. NR-No Result due to laboratory/analyst error.
5. NA-Not Analyzed.

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

DISTRIBUTION

FORWARD THE ORIGINAL TO THE DRINKING WATER OFFICER WITH THE MONTHLY COMPLIANCE SUBMISSIONS.

Contact the Drinking Water Officer for any comments, questions or concerns

REFERENCE: ODW-RF-016

Embrace the spirit • Vivez l'esprit

Environmental Standards Division • Division des normes environnementales
2230 Main Street • 2230, rue Main • Winnipeg • Manitoba R2V 4T8
fax/téléc. (204) 339-2147 • www.winnipeg.ca

| 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 (ntu) | TimeSpied (hrs) | |
|-------------|---------------|--------------|--------------------------------|---------------------------------|--------------------|--------------------------|---------------------------|---------------------|--------------------|--------------------|-------|
| NW03_ | | 414294 | 03-Nov-14 | <1 | <1 | <10 | 0.03 | 0.16 | 13.6 | 0.34 | 14:58 |
| NW03_ | | 414503 | 03-Nov-14 | <1 | <1 | <10 | <0.02 | 0.15 | 12.7 | NA | 16:46 |
| NW03_ | | 414502 | 03-Nov-14 | <1 | <1 | <10 | 0.14 | 0.27 | 13.4 | NA | 16:40 |
| NW03_ | | 414501 | 04-Nov-14 | <1 | <1 | <10 | 0.14 | 0.38 | 13.3 | 0.42 | 10:37 |
| NW03_ | | 414924 | 05-Nov-14 | <1 | <1 | <10 | 0.12 | 0.29 | 13.3 | NA | 8:55 |
| NW03_ | | 414925 | 06-Nov-14 | <1 | <1 | <10 | 0.29 | 0.42 | 13.1 | NA | 10:11 |