



Water and Waste Department • Service des eaux et des déchets

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January 7, 2016

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: DECEMBER 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 December 2015. There are no corrective action reports to be submitted for December 2015.

The December 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 December 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 was offline for maintenance from November 13 to December 16, 2015.

The December 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  
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**

December 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
1/12/2015	0.96	OL	OL	0.11	0.21	0.02	0.11	0.09	0.19	0.09	0.10	0.07	0.12	0.08	0.12	0.03	0.08
2/12/2015	0.96	OL	OL	0.15	0.18	0.02	0.04	0.09	0.16	0.08	0.14	0.05	0.14	0.07	0.14	0.03	0.09
3/12/2015	0.96	0.03	0.14	0.13	0.22	0.04	0.12	0.11	0.13	0.08	0.15	0.08	0.09	0.05	0.18	0.03	0.05
4/12/2015	0.97	0.07	0.11	0.09	0.22	0.04	0.14	0.09	0.21	0.07	0.11	0.06	0.17	0.10	0.14	0.05	0.12
5/12/2015	0.98	0.07	0.17	0.15	0.20	0.04	0.10	0.09	0.20	0.09	0.18	0.06	0.12	0.07	0.20	0.04	0.12
6/12/2015	0.95	0.07	0.16	0.01	0.16	0.04	0.15	0.13	0.20	0.09	0.15	0.08	0.15	0.08	0.15	0.03	0.07
7/12/2015	0.93	0.05	0.13	OL	OL	0.03	0.11	0.10	0.19	0.08	0.14	0.06	0.15	0.08	0.10	0.04	0.09
8/12/2015	0.92	0.07	0.12	OL	OL	0.02	0.11	0.09	0.18	0.08	0.10	0.06	0.13	0.07	0.14	0.03	0.08
9/12/2015	0.90	0.05	0.13	OL	OL	0.02	0.06	0.07	0.12	0.08	0.14	0.07	0.08	0.07	0.15	0.03	0.11
10/12/2015	0.86	0.03	0.05	0.04	0.17	0.01	0.07	0.09	0.16	0.05	0.13	0.07	0.14	0.07	0.10	0.04	0.05
11/12/2015	0.83	0.05	0.10	0.04	0.11	0.00	0.02	0.06	0.16	0.08	0.10	0.05	0.15	0.08	0.16	0.03	0.11
12/12/2015	0.82	0.05	0.12	0.08	0.09	0.03	0.08	0.07	0.12	0.06	0.13	0.06	0.09	0.05	0.14	0.02	0.08
13/12/2015	0.79	0.08	0.20	0.08	0.19	0.02	0.17	0.13	0.21	0.09	0.17	0.06	0.14	0.08	0.10	0.04	0.07
14/12/2015	0.75	0.10	0.21	0.10	0.19	OL	OL	0.10	0.21	0.07	0.16	0.07	0.16	0.07	0.21	0.03	0.12
15/12/2015	0.68	0.07	0.18	0.11	0.16	OL	OL	0.08	0.18	0.07	0.16	0.06	0.10	0.03	0.10	0.02	0.08
16/12/2015	0.68	0.06	0.13	0.10	0.17	OL	OL	0.07	0.11	0.04	0.11	0.07	0.15	0.02	0.08	0.01	0.03
17/12/2015	0.66	0.05	0.08	0.07	0.18	0.03	0.16	0.06	0.13	0.03	0.05	0.06	0.14	0.02	0.04	0.02	0.05
18/12/2015	0.63	0.01	0.12	0.10	0.13	0.05	0.08	0.04	0.07	0.04	0.10	0.05	0.07	0.02	0.10	0.01	0.07
19/12/2015	0.67	0.04	0.06	0.06	0.15	0.03	0.10	0.05	0.12	0.02	0.07	0.05	0.11	0.00	0.01	0.01	0.02
20/12/2015	0.64	0.05	0.11	0.08	0.11	0.03	0.12	0.05	0.13	0.04	0.09	0.04	0.13	0.02	0.06	0.02	0.05
21/12/2015	0.62	0.04	0.11	0.10	0.22	0.09	0.16	0.05	0.09	0.04	0.10	0.07	0.09	0.02	0.10	0.02	0.08
22/12/2015	0.60	0.08	0.15	0.07	0.19	0.06	0.18	0.07	0.18	0.03	0.07	0.06	0.15	0.02	0.04	0.03	0.04
23/12/2015	0.59	0.05	0.15	0.12	0.14	0.07	0.10	0.05	0.18	0.06	0.11	0.05	0.09	0.03	0.11	0.02	0.09
24/12/2015	0.58	0.06	0.09	0.08	0.20	0.07	0.20	0.08	0.11	0.04	0.12	0.09	0.16	0.02	0.11	0.02	0.04
25/12/2015	0.57	0.06	0.15	0.07	0.13	0.05	0.19	0.06	0.17	0.05	0.07	0.06	0.16	0.03	0.06	0.03	0.10
26/12/2015	0.56	0.04	0.14	0.10	0.18	0.07	0.11	0.05	0.09	0.04	0.12	0.07	0.09	0.02	0.11	0.02	0.09
27/12/2015	0.55	0.05	0.06	0.05	0.15	0.04	0.14	0.06	0.18	0.02	0.08	0.05	0.13	0.01	0.02	0.01	0.02
28/12/2015	0.55	0.04	0.11	0.06	0.08	0.03	0.07	0.04	0.13	0.04	0.05	0.04	0.13	0.02	0.08	0.02	0.07
29/12/2015	0.55	0.04	0.10	0.07	0.14	0.06	0.15	0.04	0.07	0.02	0.08	0.07	0.09	0.01	0.07	0.00	0.02
30/12/2015	0.57	0.05	0.07	0.05	0.14	0.04	0.15	0.06	0.13	0.02	0.08	0.06	0.13	0.01	0.02	0.01	0.06
31/12/2015	0.57	0.03	0.10	0.07	0.09	0.03	0.06	0.04	0.13	0.04	0.08	0.04	0.14	0.02	0.08	0.01	0.02

Total Number of Measurements Taken, A:	13204	9214	12582	11530	15549	15306	13662	14804
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:	13204	9214	12582	11530	15549	15306	13662	14804
Compliance with Turbidity Standard, C = B/A X 100%:	100%	100%	100%	100%	100%	100%	100%	100%

OL: Offline

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2015\12-December

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 Licence No. PWS-09-412 AA	Turbidity (NTU)																	
	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-Dec-2015	0.93	0.95	OL	OL	0.11	0.13	0.14	<0.02	0.19	0.12	0.11	0.07	0.15	0.08	0.11	0.07	0.10	0.05
02-Dec-2015	0.77	0.96	OL	OL	0.14	0.15	0.15	0.02	0.12	0.08	0.09	0.07	0.09	0.04	0.12	0.08	0.13	0.06
03-Dec-2015	0.79	0.94	0.17	0.09	0.18	0.19	0.18	0.04	0.14	0.09	0.20	0.13	0.12	0.06	0.09	0.06	0.09	0.04
04-Dec-2015	0.76	0.93	0.16	0.07	0.14	0.13	0.17	0.03	0.20	0.17	0.12	0.08	0.19	0.11	0.15	0.09	0.15	0.07
05-Dec-2015	NS	NS	0.20	0.13	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
06-Dec-2015	NS	NS	NS	NS	0.15	0.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
07-Dec-2015	0.82	0.93	0.12	0.05	OL	OL	0.15	0.02	0.17	0.11	0.11	0.07	0.14	0.08	0.13	0.07	0.12	0.02
08-Dec-2015	1.24	0.89	0.14	0.05	OL	OL	0.13	<0.02	0.12	0.07	0.15	0.07	0.10	0.05	0.12	0.08	0.11	0.05
09-Dec-2015	0.72	0.86	0.19	0.10	OL	OL	0.17	0.03	0.15	0.08	0.17	0.09	0.13	0.06	0.13	0.06	0.10	0.04
10-Dec-2015	0.80	0.85	0.10	0.03	0.09	0.15	0.20	0.06	0.13	0.08	0.11	0.07	0.14	0.08	0.11	0.07	0.12	0.05
11-Dec-2015	0.80	0.83	0.12	0.05	0.09	0.06	0.12	<0.02	0.19	0.12	0.10	0.07	0.11	0.06	0.13	0.09	0.15	0.07
12-Dec-2015	NS	NS	NS	NS	0.13	0.09	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
13-Dec-2015	NS	NS	NS	NS	NS	NS	0.16	0.04	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
14-Dec-2015	0.63	0.76	0.18	0.09	0.18	0.10	OL	OL	0.24	0.10	0.15	0.10	0.13	0.07	0.15	0.09	0.15	0.07
15-Dec-2015	0.87	0.67	0.20	0.09	0.18	0.10	OL	OL	0.19	0.05	0.13	0.05	0.13	0.06	0.16	0.04	0.11	0.02
16-Dec-2015	0.73	0.67	0.16	0.05	0.21	0.12	OL	OL	0.18	0.06	0.21	0.08	0.14	0.07	0.12	<0.02	0.14	0.03
17-Dec-2015	0.65	0.65	0.14	0.04	0.13	0.10	0.22	0.10	0.21	0.08	0.11	0.03	0.19	0.09	0.13	0.02	0.12	0.04
18-Dec-2015	0.53	0.63	0.11	0.04	0.16	0.11	0.18	0.07	0.16	0.05	0.13	0.05	0.12	0.05	0.17	0.05	0.18	0.07
19-Dec-2015	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
20-Dec-2015	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
21-Dec-2015	0.61	0.60	0.16	0.05	0.21	0.13	0.23	0.08	0.14	0.03	0.17	0.06	0.14	0.06	0.16	0.05	0.12	0.03
22-Dec-2015	0.60	0.59	0.17	0.06	0.14	0.10	0.28	0.13	0.19	0.07	0.11	0.03	0.22	0.10	0.13	0.02	0.12	0.04
23-Dec-2015	0.61	0.58	0.25	0.10	0.19	0.12	0.22	0.08	0.17	0.05	0.16	0.04	0.14	0.07	0.18	0.05	0.18	0.07
24-Dec-2015	0.53	0.58	0.16	0.06	0.24	0.17	0.26	0.11	0.19	0.07	0.19	0.09	0.16	0.08	0.13	0.02	0.12	0.04
25-Dec-2015	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
26-Dec-2015	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
27-Dec-2015	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
28-Dec-2015	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
29-Dec-2015	0.57	0.55	0.15	0.03	0.16	0.09	0.18	0.06	0.13	0.02	0.11	0.03	0.13	0.05	0.17	0.04	0.10	0.02
30-Dec-2015	0.61	0.55	0.15	0.04	0.12	0.07	0.24	0.10	0.17	0.05	0.10	0.02	0.14	0.07	0.11	<0.02	0.11	0.03
31-Dec-2015	0.57	0.55	0.14	0.04	0.13	0.08	0.17	0.05	0.20	0.08	0.13	0.04	0.18	0.11	0.13	0.02	0.10	0.03
<b>Total number of measurements taken, A:</b>			20		20		19		21		21		21		21		21	
<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>			20		20		19		21		21		21		21		21	
<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:

Report Compiled By: H.Demchenko

Approved in LIMS By: C.Diduck

Date Approved: 7-Jan-16



**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 January 2016**

Report Period: **December 2015**

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/12/2015	1.13	1.06	OL	OL
02/12/2015	1.06	1.01	OL	OL
03/12/2015	1.04	1.01	OL	OL
04/12/2015	1.04	0.97	OL	OL
05/12/2015	1.04	0.98	OL	OL
06/12/2015	1.01	0.94	OL	OL
07/12/2015	0.98	0.93	OL	OL
08/12/2015	0.97	0.92	OL	OL
09/12/2015	0.99	0.92	OL	OL
10/12/2015	1.07	1.02	OL	OL
11/12/2015	1.03	0.97	OL	OL
12/12/2015	0.97	0.89	OL	OL
13/12/2015	1.00	0.95	OL	OL
14/12/2015	0.99	0.96	OL	OL
15/12/2015	1.03	0.98	OL	OL
16/12/2015	0.99	0.90	1.00	0.90
17/12/2015	1.00	0.96	0.97	0.91
18/12/2015	1.01	0.88	1.00	0.91
19/12/2015	0.99	0.96	1.00	0.96
20/12/2015	0.95	0.90	0.97	0.90
21/12/2015	0.97	0.91	0.99	0.92
22/12/2015	0.94	0.90	0.96	0.91
23/12/2015	0.97	0.93	0.95	0.90
24/12/2015	1.06	0.96	0.96	0.93
25/12/2015	1.13	1.04	0.94	0.86
26/12/2015	1.19	1.12	0.98	0.92
27/12/2015	1.20	1.17	0.96	0.92
28/12/2015	1.10	1.02	0.90	0.86
29/12/2015	1.09	1.04	0.96	0.87
30/12/2015	1.12	1.08	1.07	0.96
31/12/2015	1.11	1.06	1.09	1.03

Total Number of Measurements, A:	21599	10796
Minimum Free Chlorine Standard:	0.50	0.50
Number of Measurements Meeting Standard, B:	21599	10796
COMPLIANCE, C = B/A X 100%:	100	100

OL = Offline

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2015\12-December

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 AA	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-Dec-2015	1.16	1.19	1.33	O/L	O/L	O/L
02-Dec-2015	1.05	1.11	1.24	O/L	O/L	O/L
03-Dec-2015	1.06	1.13	1.25	O/L	O/L	O/L
04-Dec-2015	1.03	1.09	1.27	O/L	O/L	O/L
05-Dec-2015	NS	NS	NS	O/L	O/L	O/L
06-Dec-2015	NS	NS	NS	O/L	O/L	O/L
07-Dec-2015	0.95	1.01	1.19	O/L	O/L	O/L
08-Dec-2015	0.98	1.03	1.22	O/L	O/L	O/L
09-Dec-2015	0.95	1.10	1.33	O/L	O/L	O/L
10-Dec-2015	1.09	1.16	1.31	O/L	O/L	O/L
11-Dec-2015	1.05	1.07	1.28	O/L	O/L	O/L
12-Dec-2015	NS	NS	NS	O/L	O/L	O/L
13-Dec-2015	NS	NS	NS	O/L	O/L	O/L
14-Dec-2015	1.00	1.01	1.22	O/L	O/L	O/L
15-Dec-2015	1.03	1.08	1.28	O/L	O/L	O/L
16-Dec-2015	0.99	1.06	1.22	0.97	1.07	1.26
17-Dec-2015	1.03	1.11	1.27	1.02	1.03	1.24
18-Dec-2015	1.01	1.06	1.21	0.99	1.09	1.22
19-Dec-2015	NS	NS	NS	NS	NS	NS
20-Dec-2015	NS	NS	NS	NS	NS	NS
21-Dec-2015	1.00	1.04	1.19	1.01	1.11	1.24
22-Dec-2015	0.95	1.00	1.15	0.96	1.02	1.18
23-Dec-2015	0.96	1.03	1.20	0.92	1.04	1.19
24-Dec-2015	1.03	1.02	1.19	0.97	1.03	1.19
25-Dec-2015	NS	NS	NS	NS	NS	NS
26-Dec-2015	NS	NS	NS	NS	NS	NS
27-Dec-2015	NS	NS	NS	NS	NS	NS
28-Dec-2015	NS	NS	NS	NS	NS	NS
29-Dec-2015	1.11	1.18	1.30	0.99	0.97	1.15
30-Dec-2015	1.11	1.16	1.34	1.08	1.03	1.27
31-Dec-2015	1.10	1.12	1.35	1.08	1.08	1.30
<b>Total number of measurements taken, A:</b>		21			10	
<b>Chlorine Standard for Monitoring Location (mg/L):</b>		0.50			0.50	
<b>Number of measurements meeting standard, B:</b>		21			10	
<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

Approved in LIMS By: C.Diduck

Date Approved: 7-Jan-16



**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: **December 2015**

Report Created: **Friday, January 01, 2016**

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			
01/12/2015	93.44	0.00	0.00	86.14	86.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.64	48.64	0.00	0.00	43.09	43.09	0.00	0.00	0.00	0.00	0.00	0.00	177.87	177.87	100.00		
02/12/2015	93.14	0.00	0.00	85.97	85.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.48	48.48	0.00	0.00	43.44	43.44	0.00	0.00	0.00	0.00	0.00	0.00	177.89	177.89	100.00		
03/12/2015	92.56	0.00	0.00	85.91	85.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.41	48.41	0.00	0.00	43.60	43.60	0.00	0.00	0.00	0.00	0.00	0.00	177.93	177.93	100.00		
04/12/2015	92.65	0.00	0.00	85.93	85.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.84	48.84	0.00	0.00	26.42	26.42	0.00	0.02	17.53	17.55	0.00	0.02	178.72	178.74	99.99		
05/12/2015	93.75	0.00	0.00	85.80	85.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	52.99	52.99	0.00	0.00	0.00	0.00	0.00	0.00	47.16	47.16	0.00	0.00	185.95	185.95	100.00		
06/12/2015	94.36	0.00	0.00	87.06	87.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.81	53.81	0.00	0.00	0.00	0.00	0.00	0.00	48.06	48.06	0.00	0.00	188.94	188.94	100.00		
07/12/2015	94.80	0.00	0.00	87.95	87.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31	39.13	39.44	0.00	0.00	10.29	10.29	0.00	0.00	52.94	52.94	0.00	0.31	190.32	190.62	99.84		
08/12/2015	94.91	0.00	0.00	87.72	87.72	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	38.02	38.02	0.00	0.00	67.32	67.32	0.00	0.00	193.06	193.06	100.00		
09/12/2015	94.22	0.00	0.00	86.73	86.73	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	37.60	37.60	0.00	0.00	66.40	66.40	0.00	0.00	190.73	190.73	100.00		
10/12/2015	94.36	0.00	0.00	84.04	84.04	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.56	36.56	0.00	0.00	64.37	64.37	0.00	0.00	184.97	184.98	100.00		
11/12/2015	94.26	0.00	0.00	83.94	83.94	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	36.54	36.54	0.00	0.00	64.41	64.41	0.00	0.00	184.90	184.90	100.00		
12/12/2015	94.15	0.00	0.00	83.83	83.83	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	36.52	36.52	0.00	0.05	64.24	64.29	0.00	0.05	184.59	184.63	99.98		
13/12/2015	93.81	0.00	0.00	82.84	82.84	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	36.10	36.10	0.00	0.00	63.56	63.56	0.00	0.00	182.50	182.50	100.00		
14/12/2015	93.48	0.00	0.00	81.47	81.47	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	35.63	35.63	0.00	0.26	62.32	62.58	0.00	0.26	179.42	179.68	99.86		
15/12/2015	93.69	0.00	0.00	67.09	67.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.26	48.26	0.00	0.00	0.00	0.00	0.00	0.00	55.01	55.01	0.00	0.09	9.57	9.66	0.00	0.09	179.94	180.03	99.95	
16/12/2015	94.07	0.00	0.00	59.00	59.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	57.46	57.46	0.00	0.00	0.00	0.00	0.00	0.00	63.58	63.58	0.00	0.00	0.00	0.00	0.00	0.00	180.04	180.04	100.00	
17/12/2015	94.25	0.00	0.00	64.10	64.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	42.17	42.26	0.00	0.05	37.95	38.00	0.09	0.09	35.40	35.57	0.00	0.00	0.00	0.00	0.13	0.18	179.61	179.93	99.82
18/12/2015	94.38	0.00	0.00	63.49	63.49	0.00	0.17	0.07	0.23	0.00	0.00	55.74	55.74	0.00	0.00	44.17	44.17	0.00	0.00	16.41	16.41	0.00	0.00	0.00	0.00	0.00	0.17	179.88	180.05	99.91		
19/12/2015	94.71	0.00	0.00	54.50	54.50	0.00	0.00	0.00	0.00	0.00	0.00	63.30	63.30	0.00	0.00	0.00	0.00	0.00	0.00	62.30	62.30	0.00	0.00	0.00	0.00	0.00	0.00	180.09	180.09	100.00		
20/12/2015	94.39	0.00	0.00	54.89	54.89	0.00	0.00	0.00	0.00	0.00	0.00	63.67	63.67	0.00	0.00	0.00	0.00	0.00	0.00	61.47	61.47	0.00	0.00	0.00	0.00	0.00	0.00	180.03	180.03	100.00		
21/12/2015	93.89	0.00	0.00	54.72	54.72	0.00	0.00	0.00	0.00	0.00	0.00	63.47	63.47	0.00	0.00	0.00	0.00	0.00	0.00	61.22	61.22	0.00	0.00	0.00	0.00	0.00	0.00	179.41	179.41	100.00		
22/12/2015	93.82	0.00	0.00	55.49	55.49	0.02	0.09	0.00	0.11	0.00	0.04	39.54	39.58	0.00	0.03	23.03	23.06	0.00	0.00	24.80	24.80	0.00	0.00	34.72	34.72	0.02	0.16	177.58	177.76	99.90		
23/12/2015	93.63	0.00	0.00	19.88	19.88	0.00	0.04	38.83	38.87	0.00	0.00	4.26	4.26	0.00	0.04	56.48	56.52	0.00	0.00	0.00	0.00	0.00	0.00	58.16	58.16	0.00	0.09	177.61	177.70	99.95		
24/12/2015	93.67	0.00	0.00	27.76	27.76	0.00	0.04	30.88	30.92	0.00	0.00	0.00	0.00	0.00	0.00	60.00	60.00	0.00	0.00	0.00	0.00	0.00	0.00	59.92	59.92	0.00	0.04	178.55	178.59	99.98		
25/12/2015	93.90	0.00	0.00	58.64	58.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	59.99	59.99	0.00	0.00	0.00	0.00	0.00	0.00	61.35	61.35	0.00	0.00	179.99	179.99	100.00		
26/12/2015	93.93	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	58.61	58.61	0.00	0.00	0.00	0.00	0.00	0.00	61.97	61.97	0.00	0.00	180.00	180.00	100.00		
27/12/2015	94.65	0.00	0.00	58.41	58.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	55.00	55.00	0.00	0.00	0.00	0.00	0.00	0.00	61.71	61.71	0.00	0.00	175.12	175.12	100.00		
28/12/2015	94.49	0.00	0.00	59.48	59.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	55.00	55.00	0.00	0.00	0.00	0.00	0.00	0.00	63.26	63.26	0.00	0.00	177.74	177.74	100.00		
29/12/2015	94.47	0.00	0.00	57.62	57.62	0.00	0.00	0.00	0.00	0.00	0.00	23.86	23.86	0.00	0.00	37.10	37.10	0.00	0.00	0.00	0.00	0.00	0.04	60.40	60.45	0.00	0.04	178.98	179.03	99.97		
30/12/2015	94.42	0.00	0.00	60.38	60.38	0.00	0.00	0.00	0.00	0.00	0.00	19.88	19.88	0.17	0.17	31.78	32.11	0.00	0.00	28.28	28.28	0.00	0.09	38.41	38.51	0.17	0.26	178.74	179.17	99.76		
31/12/2015	94.51	0.00	0.00	56.94	56.94	0.00	0.00	0.00	0.00	0.00	0.00	25.99	25.99	0.10	0.10	36.80	36.99	0.00	0.00	1.10	1.10	0.00	0.00	58.02	58.02	0.10	0.10	178.85	179.05	99.89		
		0.00	0.00	2127.16	2127.16	0.02	0.34	69.78	70.14	0.05	0.09	507.59	507.73	0.26	0.69	896.21	897.17	0.09	0.09	833.39	833.57	0.00	0.55	1185.82	1186.37	0.43	1.76	5619.95	5622.14			

Water Volume [%]:  
 Untreated: 0.01 %  
 Below Dose: 0.03 %  
 To Dose: 99.96 %

Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew