



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

May 7, 2020

RE: APRIL 2020 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 April 2020.

The April on-line and grab sampling turbidity reports include results obtained for the Water Treatment Plant raw water and the eight filters. The daily maximum turbidities were greater than 0.30 NTU on Filter 6 on April 7 and Filter 4 on April 30 following backwash cycles; the elevated turbidities did not occur for more than 12 consecutive hours. The turbidity results for the filter effluent met the licence requirements.

The April 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 April UV summary report includes results obtained for the six UV reactors at the Water Treatment Plant. The UV disinfection results met the licence requirements.

Please let me know of any concerns or questions respecting this submission. I can be reached by telephone at 204-986-8359 or by e-mail at rgrosselle@winnipeg.ca.

Yours sincerely,

*Original signed by R. Grosselle:
(Signed original available upon request)*

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)
B. Bradford (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

April 2020 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
1/04/2020	0.49	0.03	0.11	0.02	0.07	0.05	0.10	0.05	0.12	0.08	0.19	0.03	0.06	0.05	0.08	0.07	0.16
2/04/2020	0.48	0.02	0.05	0.01	0.04	0.05	0.10	0.03	0.07	0.00	0.02	0.02	0.05	0.02	0.12	0.04	0.08
3/04/2020	0.49	0.02	0.07	0.01	0.03	0.04	0.07	0.02	0.07	0.00	0.03	0.02	0.05	0.03	0.07	0.03	0.08
4/04/2020	0.48	0.02	0.05	0.01	0.04	0.03	0.07	0.02	0.07	0.00	0.03	0.03	0.05	0.05	0.07	0.03	0.06
5/04/2020	0.48	0.01	0.05	0.01	0.04	0.03	0.06	0.02	0.08	0.00	0.01	0.02	0.05	0.03	0.09	0.05	0.08
6/04/2020	0.50	0.02	0.04	0.01	0.03	0.05	0.07	0.02	0.07	0.00	0.05	0.02	0.04	0.03	0.06	0.03	0.07
7/04/2020	0.53	0.02	0.08	0.02	0.06	0.04	0.08	0.02	0.07	0.02	0.07	0.02	0.32	0.03	0.05	0.03	0.07
8/04/2020	0.51	0.01	0.05	0.01	0.03	0.03	0.08	0.02	0.05	0.02	0.07	0.02	0.05	0.04	0.09	0.04	0.06
9/04/2020	0.57	0.02	0.07	0.01	0.05	0.05	0.07	0.03	0.07	0.04	0.07	0.02	0.05	0.04	0.07	0.05	0.08
10/04/2020	0.62	0.02	0.04	0.01	0.03	0.05	0.07	0.02	0.07	0.05	0.08	0.03	0.09	0.04	0.10	0.05	0.09
11/04/2020	0.58	0.02	0.06	0.01	0.04	0.04	0.07	0.02	0.05	0.04	0.08	0.03	0.07	0.04	0.07	0.04	0.08
12/04/2020	0.62	0.01	0.05	0.00	0.04	0.03	0.06	0.02	0.06	0.04	0.06	0.02	0.05	0.04	0.08	0.05	0.07
13/04/2020	0.61	0.01	0.02	0.00	0.02	0.03	0.05	0.01	0.04	0.05	0.08	0.02	0.05	0.03	0.08	0.04	0.08
14/04/2020	0.66	0.02	0.05	0.02	0.06	0.04	0.08	0.01	0.07	0.04	0.08	0.02	0.04	0.03	0.05	0.04	0.09
15/04/2020	0.67	0.03	0.06	0.02	0.06	0.04	0.08	0.04	0.07	0.04	0.10	0.02	0.04	0.04	0.09	0.04	0.07
16/04/2020	0.60	0.01	0.06	0.01	0.04	0.04	0.07	0.03	0.06	0.06	0.08	0.01	0.04	0.03	0.08	0.05	0.08
17/04/2020	0.63	0.02	0.03	0.01	0.02	0.04	0.07	0.01	0.06	0.05	0.09	0.02	0.05	0.03	0.09	0.04	0.08
18/04/2020	0.56	0.01	0.04	0.00	0.03	0.03	0.06	0.01	0.05	0.05	0.09	0.02	0.04	0.04	0.05	0.04	0.08
19/04/2020	0.63	0.01	0.03	0.01	0.03	0.03	0.07	0.03	0.07	0.06	0.10	0.02	0.05	0.04	0.08	0.06	0.08
20/04/2020	0.62	0.01	0.02	0.00	0.03	0.03	0.05	0.02	0.04	0.09	0.11	0.02	0.05	0.03	0.08	0.05	0.08
21/04/2020	0.62	0.01	0.04	0.01	0.05	0.03	0.06	0.01	0.04	0.06	0.12	0.01	0.03	0.03	0.09	0.04	0.08
22/04/2020	0.63	0.01	0.04	0.01	0.03	0.03	0.08	0.02	0.07	0.07	0.14	0.02	0.04	0.05	0.06	0.04	0.08
23/04/2020	0.70	0.02	0.09	0.02	0.08	0.03	0.09	0.04	0.09	0.08	0.14	0.03	0.05	0.05	0.09	0.08	0.10
24/04/2020	0.74	0.05	0.09	0.03	0.08	0.08	0.10	0.04	0.12	0.03	0.10	0.03	0.08	0.05	0.11	0.06	0.11
25/04/2020	0.74	0.04	0.10	0.04	0.10	0.05	0.10	0.04	0.11	0.03	0.08	0.04	0.08	0.06	0.09	0.06	0.13
26/04/2020	0.72	0.03	0.09	0.02	0.07	0.04	0.09	0.04	0.08	0.02	0.06	0.04	0.08	0.08	0.11	0.07	0.13
27/04/2020	0.70	0.02	0.05	0.01	0.04	0.03	0.05	0.02	0.08	0.01	0.05	0.02	0.06	0.04	0.12	0.07	0.13
28/04/2020	0.67	0.02	0.03	0.01	0.02	0.03	0.05	0.02	0.05	0.00	0.03	0.01	0.04	0.04	0.09	0.05	0.09
29/04/2020	0.70	0.02	0.05	0.01	0.03	0.02	0.05	0.02	0.06	0.00	0.02	0.02	0.04	0.04	0.07	0.05	0.10
30/04/2020	0.73	0.03	0.06	0.02	0.04	0.02	0.06	0.04	0.38	0.00	0.02	0.02	0.04	0.06	0.11	0.07	0.10

Total Number of Measurements Taken, A:	11201	11566	11771	13233	11532	13599	12892	14416
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:	11201	11566	11771	13232	11532	13598	12892	14416
Compliance with Turbidity Standard, C = B/A X 100%:	100.000%	100.000%	100.000%	99.992%	100.000%	99.993%	100.000%	100.000%

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2020\04-April

Submitted By (Print): D. Merredew

Signature: Original signed by D.Merredew

WATER TREATMENT PLANT TURBIDITY GRAB MONITORING REPORT

Water System Code: 252.00 Licence No. PWS-09-412-01	Turbidity (NTU)																	
	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
01-Apr-2020	0.44	0.44	0.11	0.05	0.12	0.04	0.09	0.07	0.13	0.10	0.07	0.19	0.11	0.04	0.08	0.06	0.09	0.13
02-Apr-2020	0.47	0.47	0.08	0.02	0.12	0.02	0.09	0.06	OL	OL	0.10	0.00	0.09	0.03	OL	OL	0.09	0.05
03-Apr-2020	0.53	0.51	0.09	0.04	0.07	0.02	0.13	0.06	0.09	0.03	OL	OL	0.08	0.04	0.09	0.04	OL	OL
04-Apr-2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
05-Apr-2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
06-Apr-2020	0.49	0.48	0.08	0.02	0.09	0.01	0.10	0.05	0.12	0.04	0.11	0.00	0.09	0.03	0.09	0.03	0.10	0.06
07-Apr-2020	0.51	0.55	0.11	0.04	0.09	0.03	0.11	0.07	0.10	0.03	0.09	0.04	0.08	0.03	0.07	0.03	0.10	0.05
08-Apr-2020	0.47	0.51	OL	OL	OL	OL	0.06	0.04	0.09	0.03	0.08	0.04	0.09	0.04	0.07	0.04	0.07	0.04
09-Apr-2020	0.53	0.57	0.09	0.04	0.09	0.03	0.11	0.06	0.10	0.04	0.08	0.05	OL	OL	OL	OL	0.10	0.05
10-Apr-2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11-Apr-2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12-Apr-2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13-Apr-2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14-Apr-2020	0.48	0.66	0.08	0.02	0.08	0.01	0.10	0.08	0.07	0.02	0.10	0.07	0.07	0.04	0.08	0.03	0.06	0.04
15-Apr-2020	0.58	0.71	0.10	0.05	0.09	0.05	0.10	0.06	0.09	0.04	0.08	0.07	0.09	0.04	0.08	0.04	0.07	0.05
16-Apr-2020	0.47	0.60	0.10	0.02	0.07	0.02	0.07	0.05	0.10	0.03	0.07	0.06	OL	OL	OL	OL	0.06	0.05
17-Apr-2020	0.62	0.56	0.08	0.03	0.07	0.02	0.12	0.05	OL	OL	0.09	0.08	0.09	0.02	0.07	0.03	OL	OL
18-Apr-2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
19-Apr-2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
20-Apr-2020	0.51	0.62	0.09	0.01	0.07	0.01	0.06	0.04	0.09	0.04	0.08	0.09	0.08	0.03	0.08	0.04	0.08	0.06
21-Apr-2020	0.50	0.67	0.08	0.02	0.07	0.01	0.08	0.05	0.07	0.02	0.07	0.10	0.08	0.03	0.07	0.03	0.07	0.06
22-Apr-2020	0.54	0.65	0.09	0.02	0.09	0.02	0.08	0.05	0.09	0.03	0.08	0.11	0.08	0.04	0.08	0.04	0.06	0.06
23-Apr-2020	0.47	0.62	OL	OL	OL	OL	0.08	0.06	0.11	0.05	0.08	0.14	0.12	0.06	0.16	0.06	0.07	0.06
24-Apr-2020	0.70	0.68	0.14	0.06	0.12	0.05	0.12	0.08	OL	OL	0.09	0.04	0.08	0.04	OL	OL	0.14	0.09
25-Apr-2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
26-Apr-2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
27-Apr-2020	0.53	0.68	0.09	0.04	0.08	0.02	0.08	0.05	0.10	0.05	0.08	0.02	0.08	0.03	0.07	0.05	0.08	0.08
28-Apr-2020	0.52	0.63	0.08	0.02	0.07	0.02	0.07	0.04	0.07	0.02	0.06	0.01	0.07	0.03	0.07	0.04	0.06	0.07
29-Apr-2020	0.48	0.68	0.07	0.04	0.07	0.02	0.06	0.04	0.06	0.03	0.06	0.00	0.07	0.03	0.07	0.05	0.06	0.07
30-Apr-2020	0.63	0.68	0.09	0.04	OL	OL	0.07	0.04	0.08	0.04	0.06	0.02	OL	OL	0.07	0.06	0.08	0.07
Total number of measurements taken, A:			18		17		20		17		19		17		16		18	
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:			18		17		20		17		19		17		16		18	
Compliance with Turbidity Standard, C= B/A X 100%:			100%		100%		100%		100%		100%		100%		100%		100%	

NS: No Sample NA: Not Analyzed OL: Off-Line NR: No Result IM: Instrument Maintenance

Comments:

Report Compiled By: A. Gordon

Authorized By: B. Bradford

Date Compiled: 7-May-20



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 May 2020

Report Period: April 2020

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/04/2020	1.07	1.01	1.04	0.96
02/04/2020	1.07	1.01	1.07	1.01
03/04/2020	1.12	1.05	1.11	0.99
04/04/2020	1.07	1.01	1.10	1.02
05/04/2020	1.12	1.07	1.16	1.08
06/04/2020	1.11	1.07	1.16	1.06
07/04/2020	1.05	0.96	1.16	1.10
08/04/2020	0.98	0.90	1.14	1.07
09/04/2020	1.09	1.07	1.09	1.10
10/04/2020	1.16	1.05	1.17	1.09
11/04/2020	1.19	1.11	1.18	1.11
12/04/2020	1.17	1.08	1.16	1.09
13/04/2020	1.32	1.21	1.30	1.19
14/04/2020	1.20	1.09	1.16	1.09
15/04/2020	1.14	1.06	1.11	1.05
16/04/2020	1.14	1.04	1.15	1.04
17/04/2020	1.18	1.06	1.21	1.11
18/04/2020	1.26	1.18	1.24	1.16
19/04/2020	1.20	1.14	1.19	1.12
20/04/2020	1.19	1.15	1.17	1.12
21/04/2020	1.24	1.17	1.20	1.12
22/04/2020	1.20	1.14	1.17	1.11
23/04/2020	1.17	1.13	1.15	1.09
24/04/2020	1.15	1.10	1.13	1.07
25/04/2020	1.14	1.10	1.13	1.07
26/04/2020	1.13	1.07	1.09	1.02
27/04/2020	1.17	1.12	1.14	1.08
28/04/2020	1.21	1.17	1.19	1.12
29/04/2020	1.19	1.15	1.17	1.11
30/04/2020	1.23	1.15	1.21	1.10

Total Number of Measurements, A:	20853	20852
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	20853	20852
COMPLIANCE, C = B/A X 100%:	100.00	100.00

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2020\04-April

Submitted By (Print): D. Merredew

Signature: Original signed by D. Merredew



WATER TREATMENT PLANT CHLORINE GRAB MONITORING REPORT

Water System Code: 252.00 Licence No. PWS-09-412-01	Deacon Booster Pumping Station Branch 1			Deacon Booster Pumping Station Branch 2		
	Free Chlorine (mg/L)		Total Chlorine (mg/L)	Free Chlorine (mg/L)		Total Chlorine (mg/L)
	Date	Analyser	Grab	Grab	Analyser	Grab
01-Apr-2020	1.09	1.09	1.23	1.04	1.05	1.23
02-Apr-2020	1.06	1.08	1.28	1.07	1.12	1.27
03-Apr-2020	1.15	1.16	1.34	1.07	1.11	1.29
04-Apr-2020	NA	NA	NA	NA	NA	NA
05-Apr-2020	NA	NA	NA	NA	NA	NA
06-Apr-2020	1.12	1.13	1.32	1.18	1.16	1.33
07-Apr-2020	1.10	1.09	1.29	1.15	1.15	1.32
08-Apr-2020	0.97	1.03	1.17	1.12	1.13	1.32
09-Apr-2020	1.14	1.12	1.29	1.17	1.15	1.27
10-Apr-2020	NA	NA	NA	NA	NA	NA
11-Apr-2020	NA	NA	NA	NA	NA	NA
12-Apr-2020	NA	NA	NA	NA	NA	NA
13-Apr-2020	NA	NA	NA	NA	NA	NA
14-Apr-2020	1.20	1.13	1.33	1.18	1.18	1.32
15-Apr-2020	1.14	1.21	1.34	1.10	1.19	1.38
16-Apr-2020	1.13	1.16	1.32	1.10	1.16	1.32
17-Apr-2020	1.15	1.15	1.33	1.19	1.17	1.33
18-Apr-2020	NA	NA	NA	NA	NA	NA
19-Apr-2020	NA	NA	NA	NA	NA	NA
20-Apr-2020	1.20	1.18	1.33	1.19	1.19	1.38
21-Apr-2020	1.26	1.20	1.42	1.22	1.27	1.41
22-Apr-2020	1.22	1.23	1.37	1.15	1.18	1.40
23-Apr-2020	1.19	1.17	1.37	1.15	1.19	1.36
24-Apr-2020	1.21	1.19	1.35	1.15	1.13	1.31
25-Apr-2020	NA	NA	NA	NA	NA	NA
26-Apr-2020	NA	NA	NA	NA	NA	NA
27-Apr-2020	1.16	1.12	1.28	1.14	1.10	1.33
28-Apr-2020	1.21	1.24	1.34	1.19	1.22	1.31
29-Apr-2020	1.21	1.13	1.31	1.17	1.14	1.28
30-Apr-2020	1.21	1.18	1.33	1.18	1.17	1.31
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 NR: No Result IM: Instrument Maintenance

Comments:

Report Compiled By: A. Gordon

Authorized By: B. Bradford

Date Compiled: 7-May-20



CITY OF WINNIPEG
 WATER AND WASTE DEPARTMENT
 WATER SERVICES

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

WATER TREATMENT PLANT UV REPORT

Report Period: **April 2020**

Report Created: **Friday, May 01, 2020**

Date	Transmittance % UVTavg	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	
		01/04/2020	93.03	0.00	0.61	78.73	79.34	0.00	0.00	0.00	0.00	0.00	0.20	46.51	46.71	0.00	0.00	64.98	64.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	
02/04/2020	93.09	0.00	0.86	76.80	77.67	0.00	0.00	0.00	0.00	0.00	0.10	45.64	45.74	0.00	0.00	63.74	63.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.96	186.19	187.15	99.49	
03/04/2020	92.74	0.00	0.38	12.06	12.44	0.00	0.00	57.30	57.30	0.00	0.03	20.42	20.45	0.00	0.00	63.56	63.56	0.00	0.00	32.29	32.29	0.00	0.00	0.00	0.00	0.00	0.41	185.62	186.03	99.78
04/04/2020	92.45	0.00	0.00	0.00	0.00	0.00	0.00	61.91	61.91	0.00	0.00	0.00	0.00	0.00	0.00	63.61	63.61	0.00	0.00	60.50	60.50	0.00	0.00	0.00	0.00	0.00	0.00	186.02	186.02	100.00
05/04/2020	91.73	0.00	0.00	0.00	0.00	0.00	0.00	61.86	61.86	0.00	0.00	0.00	0.00	0.00	0.00	63.57	63.57	0.00	0.00	60.60	60.60	0.00	0.00	0.00	0.00	0.00	0.00	186.03	186.03	100.00
06/04/2020	91.15	0.00	0.00	0.00	0.00	0.00	0.00	61.77	61.77	0.00	0.00	0.00	0.00	0.00	0.00	63.49	63.49	0.00	0.00	60.46	60.46	0.00	0.00	0.26	0.27	0.00	0.00	185.99	185.99	100.00
07/04/2020	90.51	0.00	0.00	0.00	0.00	0.00	0.00	35.41	35.41	0.00	0.00	21.70	21.70	0.00	0.00	63.09	63.09	0.00	0.00	63.67	63.67	0.00	0.00	0.00	0.00	0.00	0.00	183.88	183.88	100.00
08/04/2020	90.51	0.00	0.00	10.62	10.62	0.00	0.00	0.00	0.00	0.00	0.07	42.81	42.89	0.00	0.00	64.20	64.20	0.00	0.00	67.58	67.58	0.00	0.00	0.00	0.00	0.00	0.07	185.22	185.29	99.96
09/04/2020	90.23	0.00	0.00	56.55	56.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60.49	60.49	0.00	0.00	57.75	57.75	0.00	0.00	0.00	0.00	0.00	0.00	174.79	174.79	100.00
10/04/2020	88.80	0.00	0.00	59.23	59.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	63.27	63.27	0.00	0.00	60.49	60.49	0.00	0.00	0.00	0.00	0.00	0.00	182.99	182.99	100.00
11/04/2020	89.73	0.00	0.00	58.38	58.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	62.42	62.42	0.00	0.00	59.89	59.89	0.00	0.00	0.00	0.00	0.00	0.00	180.69	180.69	100.00
12/04/2020	93.60	0.00	0.00	58.26	58.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	62.24	62.24	0.00	0.00	59.49	59.49	0.00	0.00	0.00	0.00	0.00	0.00	180.00	180.00	100.00
13/04/2020	93.98	0.00	0.05	66.08	66.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	54.97	54.97	0.00	0.00	58.60	58.60	0.00	0.00	0.00	0.00	0.00	0.05	179.66	179.71	99.97
14/04/2020	93.78	0.00	0.00	64.99	64.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.34	53.34	0.00	0.00	59.67	59.67	0.00	0.00	0.00	0.00	0.00	0.00	178.00	178.00	100.00
15/04/2020	93.58	0.00	0.00	65.00	65.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.49	53.49	0.00	0.00	59.52	59.52	0.00	0.00	0.00	0.00	0.00	0.00	178.01	178.01	100.00
16/04/2020	93.66	0.00	0.00	65.00	65.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.72	53.72	0.00	0.00	59.58	59.58	0.00	0.00	0.00	0.00	0.00	0.00	178.29	178.29	100.00
17/04/2020	93.51	0.00	0.00	66.50	66.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.74	53.74	0.00	0.00	59.77	59.77	0.00	0.00	0.00	0.00	0.00	0.00	180.01	180.01	100.00
18/04/2020	93.38	0.00	0.00	71.62	71.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51.37	51.37	0.00	0.00	57.01	57.01	0.00	0.00	0.00	0.00	0.00	0.00	180.01	180.01	100.00
19/04/2020	93.40	0.00	0.00	69.74	69.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.12	44.12	0.00	0.00	66.08	66.08	0.00	0.00	0.00	0.00	0.00	0.00	179.93	179.93	100.00
20/04/2020	93.52	0.00	0.00	69.69	69.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.94	43.94	0.00	0.00	66.36	66.36	0.00	0.00	0.00	0.00	0.00	0.00	179.99	179.99	100.00
21/04/2020	93.46	0.00	0.00	69.68	69.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.92	43.92	0.00	0.00	66.39	66.39	0.00	0.00	0.00	0.00	0.00	0.00	179.99	179.99	100.00
22/04/2020	93.41	0.00	0.00	69.17	69.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.41	43.41	0.00	0.00	65.52	65.52	0.00	0.00	0.00	0.00	0.00	0.00	178.10	178.10	100.00
23/04/2020	93.44	0.00	0.00	69.57	69.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.53	43.53	0.00	0.00	65.78	65.78	0.00	0.00	0.00	0.00	0.00	0.00	178.88	178.88	100.00
24/04/2020	93.23	0.00	0.00	69.92	69.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.73	43.73	0.00	0.00	66.06	66.06	0.00	0.00	0.00	0.00	0.00	0.00	179.71	179.71	100.00
25/04/2020	93.23	0.00	0.00	70.96	70.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.57	44.57	0.00	0.00	67.44	67.44	0.00	0.00	0.00	0.00	0.00	0.00	182.97	182.97	100.00
26/04/2020	93.34	0.00	0.00	70.88	70.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.56	44.56	0.00	0.00	67.58	67.58	0.00	0.00	0.00	0.00	0.00	0.00	183.02	183.02	100.00
27/04/2020	93.90	0.00	0.00	70.82	70.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.59	44.59	0.00	0.00	67.60	67.60	0.00	0.00	0.00	0.00	0.00	0.00	183.01	183.01	100.00
28/04/2020	94.21	0.00	0.00	71.29	71.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.93	44.93	0.00	0.00	68.25	68.25	0.00	0.00	0.00	0.00	0.00	0.00	184.47	184.47	100.00
29/04/2020	94.17	0.00	0.00	71.43	71.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.09	45.09	0.00	0.00	68.50	68.50	0.00	0.00	0.00	0.00	0.00	0.00	185.02	185.02	100.00
30/04/2020	92.95	0.00	0.00	71.42	71.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.02	45.02	0.00	0.00	68.55	68.55	0.00	0.00	0.00	0.00	0.00	0.00	184.99	184.99	100.00
Total [ML]:		0.00	1.90	1654.38	1656.28	0.00	0.00	278.26	278.26	0.00	0.40	177.09	177.49	0.00	0.00	1610.71	1610.71	0.00	0.00	1741.00	1741.00	0.00	0.00	0.26	0.27	0.00	2.31	5461.70	5464.01	

Water Volume [%]:
 Untreated: 0.00 %
 Below Dose 0.04 %
 To Dose 99.96 %
Notes: 1. UV Comparative Dose: 18.1 mJ/cm²

Submitted By (Print): D.Merredew

Signature: Original signed by D. Merredew