



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

June 4, 2020

**RE: MAY 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 May 2020.

The May 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 filter effluent met the licence requirements.

The May 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 May 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](mailto: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**

May 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
1/05/2020	0.74	0.03	0.05	0.02	0.04	0.03	0.05	0.04	0.08	0.00	0.04	0.02	0.04	0.04	0.11	0.06	0.09
2/05/2020	0.81	0.07	0.22	0.04	0.19	0.04	0.22	0.05	0.18	0.00	0.08	0.02	0.08	0.05	0.16	0.05	0.11
3/05/2020	0.83	0.06	0.11	0.04	0.06	0.03	0.09	0.08	0.12	0.00	0.03	0.04	0.07	0.10	0.12	0.06	0.11
4/05/2020	0.79	0.05	0.10	0.02	0.06	0.03	0.07	0.12	0.17	0.00	0.02	0.04	0.08	0.09	0.16	0.10	0.14
5/05/2020	0.94	0.04	0.06	0.02	0.04	0.05	0.07	0.10	0.19	0.00	0.03	0.04	0.08	0.06	0.15	0.03	0.12
6/05/2020	1.05	0.04	0.10	0.03	0.06	0.04	0.09	0.11	0.20	0.00	0.05	0.05	0.12	0.04	0.07	0.02	0.06
7/05/2020	0.98	0.04	0.11	0.02	0.07	0.04	0.10	0.15	0.19	0.00	0.05	0.04	0.09	0.05	0.10	0.02	0.06
8/05/2020	0.98	0.03	0.10	0.01	0.05	0.04	0.09	0.06	0.18	0.01	0.03	0.04	0.09	0.04	0.09	0.03	0.06
9/05/2020	0.95	0.04	0.06	0.01	0.04	0.04	0.08	0.04	0.10	0.00	0.04	0.04	0.09	0.03	0.10	0.02	0.06
10/05/2020	1.00	0.03	0.08	0.01	0.04	0.03	0.09	0.04	0.08	0.00	0.02	0.05	0.10	0.04	0.07	0.02	0.06
11/05/2020	0.98	0.03	0.09	0.01	0.05	0.03	0.07	0.06	0.10	0.00	0.02	0.04	0.10	0.05	0.11	0.03	0.06
12/05/2020	0.97	0.04	0.06	0.01	0.05	0.04	0.05	0.02	0.10	0.00	0.06	0.04	0.09	0.04	0.15	0.03	0.09
13/05/2020	0.87	0.05	0.10	0.01	0.03	0.03	0.07	0.01	0.05	0.00	0.03	0.04	0.10	0.04	0.12	0.03	0.06
14/05/2020	0.89	0.04	0.09	0.01	0.07	0.03	0.08	0.01	0.04	0.00	0.04	0.05	0.08	0.05	0.08	0.03	0.07
15/05/2020	0.88	0.04	0.09	0.01	0.05	0.03	0.09	0.01	0.07	0.00	0.02	0.04	0.09	0.05	0.12	0.04	0.08
16/05/2020	0.91	0.06	0.09	0.02	0.06	0.06	0.07	0.01	0.07	0.00	0.04	0.04	0.10	0.05	0.11	0.03	0.07
17/05/2020	0.93	0.07	0.11	0.03	0.06	0.04	0.10	0.02	0.07	0.00	0.07	0.06	0.11	0.05	0.09	0.03	0.08
18/05/2020	0.83	0.05	0.12	0.02	0.06	0.04	0.10	0.02	0.07	0.00	0.03	0.05	0.14	0.08	0.10	0.03	0.07
19/05/2020	0.85	0.06	0.12	0.03	0.08	0.05	0.10	0.02	0.22	0.00	0.09	0.05	0.14	0.06	0.12	0.04	0.08
20/05/2020	0.88	0.07	0.10	0.04	0.10	0.07	0.10	0.03	0.12	0.02	0.08	0.05	0.20	0.07	0.14	0.04	0.09
21/05/2020	0.94	0.10	0.14	0.07	0.11	0.07	0.12	0.03	0.10	0.04	0.12	0.06	0.12	0.11	0.16	0.04	0.09
22/05/2020	1.00	0.07	0.16	0.06	0.14	0.05	0.14	0.05	0.13	0.05	0.12	0.08	0.14	0.11	0.19	0.04	0.11
23/05/2020	1.01	0.06	0.13	0.03	0.09	0.04	0.10	0.08	0.15	0.05	0.10	0.03	0.12	0.05	0.07	0.05	0.18
24/05/2020	1.07	0.04	0.10	0.03	0.07	0.04	0.07	0.08	0.21	0.05	0.10	0.03	0.13	0.04	0.08	0.07	0.11
25/05/2020	1.11	OL	OL	0.02	0.07	0.04	0.07	0.06	0.13	0.04	0.14	0.04	0.30	0.05	0.10	0.05	0.12
26/05/2020	1.09	OL	OL	0.00	0.06	0.03	0.06	0.06	0.25	0.01	0.05	0.03	0.11	0.06	0.11	0.02	0.06
27/05/2020	1.78	OL	OL	0.00	0.04	0.03	0.05	0.07	0.23	0.01	0.04	0.03	0.11	0.06	0.11	0.02	0.08
28/05/2020	1.47	OL	OL	0.00	0.03	0.03	0.06	0.07	0.13	0.01	0.04	0.03	0.11	0.06	0.11	0.03	0.10
29/05/2020	1.10	OL	OL	0.00	0.04	0.03	0.05	0.06	0.12	0.00	0.05	0.03	0.14	0.06	0.10	0.02	0.07
30/05/2020	0.97	OL	OL	0.00	0.03	0.03	0.05	0.07	0.12	0.01	0.06	0.04	0.10	0.07	0.11	0.02	0.09
31/05/2020	0.87	OL	OL	0.00	0.02	0.02	0.04	0.07	0.12	0.01	0.07	0.04	0.12	0.08	0.13	0.03	0.08

Total Number of Measurements Taken, A:	9603	12662	13791	15119	9530	15724	14861	15890
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:	9603	12662	13791	15119	9530	15724	14861	15890
Compliance with Turbidity Standard, C = B/A X 100%:	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%

OL - Off Line

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2020\05-May

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	
	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser	Grab	Analyser
01-May-2020	0.77	0.71	0.09	0.05	0.08	0.03	0.11	0.05	OL	OL	0.06	0.01	0.14	0.02	OL	OL	0.07	0.07
02-May-2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
03-May-2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
04-May-2020	0.56	0.80	0.08	0.09	0.08	0.05	0.08	0.05	0.09	0.12	0.07	0.00	0.07	0.07	0.07	0.11	0.06	0.10
05-May-2020	0.56	0.89	0.09	0.05	0.07	0.03	0.08	0.05	0.09	0.16	0.07	0.01	0.07	0.06	0.06	0.12	0.06	0.02
06-May-2020	0.62	1.01	0.09	0.06	0.10	0.03	0.10	0.06	0.09	0.16	0.07	0.01	0.07	0.08	0.06	0.05	0.06	0.02
07-May-2020	0.61	0.95	OL	OL	OL	OL	0.09	0.06	0.09	0.17	0.08	0.01	0.09	0.07	0.08	0.05	0.10	0.02
08-May-2020	0.83	0.94	0.08	0.05	0.07	0.02	0.11	0.05	0.10	0.16	0.10	0.02	OL	OL	OL	OL	0.08	0.03
09-May-2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10-May-2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11-May-2020	0.60	0.96	0.08	0.05	0.08	0.03	0.06	0.04	0.10	0.06	0.06	0.00	0.07	0.06	0.07	0.05	0.07	0.03
12-May-2020	0.55	0.93	0.07	0.06	0.07	0.02	0.07	0.05	0.08	0.02	0.07	0.01	0.07	0.05	0.07	0.06	0.07	0.03
13-May-2020	0.59	0.79	0.08	0.06	0.07	0.02	0.07	0.05	0.06	0.01	0.07	0.00	0.07	0.06	0.06	0.05	0.07	0.04
14-May-2020	0.82	0.83	OL	OL	0.08	0.02	OL	OL	0.07	0.02	0.10	0.00	0.09	0.07	0.09	0.05	0.08	0.03
15-May-2020	0.65	0.81	0.09	0.06	OL	OL	0.10	0.05	0.08	0.02	0.08	0.00	OL	OL	0.08	0.06	0.06	0.03
16-May-2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
17-May-2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
18-May-2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
19-May-2020	0.56	0.92	0.07	0.08	0.06	0.04	0.06	0.07	0.08	0.03	0.06	0.00	0.08	0.07	0.07	0.09	0.06	0.04
20-May-2020	0.63	0.82	0.08	0.10	0.07	0.06	0.07	0.08	0.11	0.04	0.07	0.02	0.06	0.08	0.06	0.09	0.07	0.05
21-May-2020	0.67	0.82	0.10	0.12	0.09	0.08	0.11	0.10	0.10	0.04	0.08	0.06	0.08	0.09	0.08	0.13	0.07	0.05
22-May-2020	0.68	0.96	OL	OL	0.12	0.10	OL	OL	0.11	0.07	0.08	0.08	0.10	0.12	0.08	0.17	0.08	0.04
23-May-2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
24-May-2020	0.75	1.02	0.10	0.09	0.08	0.04	0.07	0.05	0.09	0.15	0.08	0.07	0.08	0.05	0.09	0.04	0.10	0.07
25-May-2020	0.62	1.02	OL	OL	0.09	0.05	0.07	0.05	0.12	0.09	0.08	0.07	0.07	0.05	0.08	0.06	0.07	0.09
26-May-2020	NA	NA	OL	OL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
27-May-2020	0.76	1.11	OL	OL	0.08	0.01	0.07	0.03	0.07	0.07	0.08	0.02	0.09	0.04	0.08	0.08	0.09	0.03
28-May-2020	0.87	1.08	OL	OL	0.09	0.00	0.07	0.04	0.10	0.07	0.09	0.02	0.09	0.05	0.09	0.06	OL	OL
29-May-2020	0.69	1.09	OL	OL	0.08	0.00	0.08	0.04	0.12	0.09	0.11	0.02	0.16	0.04	0.10	0.06	OL	OL
30-May-2020	NA	NA	OL	OL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
31-May-2020	0.65	0.90	OL	OL	OL	OL	0.07	0.03	0.08	0.08	0.09	0.01	0.11	0.05	0.08	0.12	0.07	0.02
<b>Total number of measurements taken, A:</b>			13		18		19		20		21		19		19		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>			13		18		19		20		21		19		19		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 NR: No Result IM: Instrument Maintenance

**Comments:**

Filter 1 was offline for maintenance from May 25-31, 2020.

Report Compiled By: H. Demchenko

Authorized in Sample Manager By: B. Bradford

Date Authorized: 4-Jun-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 June 2020

Report Period: May 2020

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/05/2020	1.28	1.19	1.33	1.23
02/05/2020	1.26	0.87	1.28	0.99
03/05/2020	1.21	1.01	1.16	1.07
04/05/2020	1.10	1.03	1.10	1.02
05/05/2020	1.11	1.01	1.10	1.01
06/05/2020	1.11	1.05	1.10	1.03
07/05/2020	1.09	1.05	1.08	1.02
08/05/2020	1.33	0.64	1.12	0.89
09/05/2020	1.10	1.06	1.05	0.98
10/05/2020	1.15	1.10	1.09	1.03
11/05/2020	1.14	1.07	1.15	1.09
12/05/2020	1.14	1.08	1.14	1.02
13/05/2020	1.16	1.07	1.11	1.01
14/05/2020	1.16	1.09	1.14	1.05
15/05/2020	1.13	1.08	1.11	1.03
16/05/2020	1.11	1.09	1.12	1.06
17/05/2020	1.13	1.08	1.11	1.02
18/05/2020	1.24	1.18	1.19	1.13
19/05/2020	1.22	1.11	1.21	1.14
20/05/2020	1.20	1.14	1.23	1.17
21/05/2020	1.16	1.10	1.18	1.08
22/05/2020	1.22	1.12	1.24	1.18
23/05/2020	1.23	1.16	1.25	1.18
24/05/2020	1.22	1.14	1.26	1.19
25/05/2020	1.20	1.10	1.22	1.11
26/05/2020	1.25	1.18	1.24	1.17
27/05/2020	1.23	1.17	1.23	1.16
28/05/2020	1.14	1.05	1.17	0.99
29/05/2020	1.16	1.09	1.14	1.06
30/05/2020	1.18	1.11	1.16	1.11
31/05/2020	1.21	1.15	1.18	1.10

Total Number of Measurements, A:	21583	21600
Minimum Free Chlorine Standard:	0.5	0.5
Number of Measurements Meeting Standard, B:	21583	21600
COMPLIANCE, C = B/A X 100%:	100.00	100.00

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2020\05-May

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)
	Analysed	Grab	Grab	Analysed	Grab	Grab
Date						
01-May-2020	1.33	1.29	1.45	1.30	1.33	1.42
02-May-2020	NA	NA	NA	NA	NA	NA
03-May-2020	NA	NA	NA	NA	NA	NA
04-May-2020	1.11	1.08	1.26	1.16	1.13	1.20
05-May-2020	1.09	1.13	1.33	1.08	1.08	1.30
06-May-2020	1.12	1.17	1.29	1.10	1.13	1.24
07-May-2020	1.10	1.18	1.31	1.10	1.13	1.26
08-May-2020	1.10	1.12	1.28	1.07	1.12	1.25
09-May-2020	NA	NA	NA	NA	NA	NA
10-May-2020	NA	NA	NA	NA	NA	NA
11-May-2020	1.18	1.13	1.34	1.11	1.17	1.29
12-May-2020	1.11	1.06	1.25	1.19	1.13	1.28
13-May-2020	1.16	1.20	1.38	1.09	1.15	1.30
14-May-2020	1.21	1.17	1.37	1.16	1.18	1.37
15-May-2020	1.13	1.16	1.38	1.12	1.18	1.35
16-May-2020	NA	NA	NA	NA	NA	NA
17-May-2020	NA	NA	NA	NA	NA	NA
18-May-2020	NA	NA	NA	NA	NA	NA
19-May-2020	1.25	1.22	1.36	1.22	1.20	1.38
20-May-2020	1.22	1.19	1.38	1.25	1.22	1.33
21-May-2020	1.17	1.12	1.32	1.20	1.20	1.37
22-May-2020	1.20	1.25	1.39	1.22	1.24	1.47
23-May-2020	NA	NA	NA	NA	NA	NA
24-May-2020	1.22	1.23	1.43	1.31	1.31	1.44
25-May-2020	1.17	1.15	1.36	1.18	1.22	1.39
26-May-2020	NA	NA	NA	NA	NA	NA
27-May-2020	1.26	1.20	1.42	1.24	1.27	1.40
28-May-2020	1.14	1.16	1.34	1.19	1.18	1.28
29-May-2020	1.19	1.13	1.33	1.17	1.15	1.33
30-May-2020	NA	NA	NA	NA	NA	NA
31-May-2020	1.20	1.20	1.38	1.16	1.23	1.38
<b>Total number of measurements taken, A:</b>		21			21	
<b>Chlorine Standard for Monitoring Location (mg/L):</b>		0.50			0.50	
<b>Number of measurements meeting standard, B:</b>		21			21	
<b>Compliance with Chlorine Standard, C= B/A X 100%:</b>		100%			100%	

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

Comments:

Report Compiled By: H. Demchenko

Authorized By: B. Bradford

Date Authorized: 4-Jun-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: **May 2020**

Report Created: **Monday, June 01, 2020**

Date	Transmittance %		UVR-D100A			UVR-D200A			UVR-D300A			UVR-D400A			UVR-D500A			UVR-D600A			Total			% Volume Treated To Dose				
	UV Tavg	%	Untreated	Below	To	Untreated	Below	To	Untreated	Below	To	Untreated	Below	To	Untreated	Below	To	Untreated	Below	To	Untreated	Below	To					
01/05/2020	94.28	0.00	0.00	0.00	67.09	67.09	0.00	0.00	0.00	0.00	50.55	50.55	0.00	0.00	67.41	67.41	0.00	0.00	0.00	0.00	0.00	0.00	185.04	185.04	100.00			
02/05/2020	94.08	0.04	0.04	0.04	61.00	61.00	0.00	0.00	0.03	0.06	32.93	33.02	0.01	0.07	23.88	23.96	0.05	0.05	61.67	61.77	0.00	0.00	0.14	0.24	179.47	179.84	99.79	
03/05/2020	94.43	0.00	0.00	0.00	59.75	59.75	0.00	0.00	0.00	0.49	63.15	63.64	0.00	0.00	0.00	0.00	0.00	0.00	60.67	60.67	0.00	0.00	0.00	0.49	183.56	184.05	99.73	
04/05/2020	94.58	0.00	0.00	0.00	57.50	57.50	0.00	0.00	0.00	0.14	63.67	63.80	0.00	0.00	0.00	0.00	0.00	0.00	62.70	62.70	0.00	0.00	0.00	0.00	183.87	184.00	99.93	
05/05/2020	94.62	0.00	0.15	0.00	60.26	60.41	0.00	0.00	0.00	0.16	56.20	56.37	0.00	0.00	0.00	0.00	0.00	0.00	64.00	64.00	0.00	0.00	0.00	0.31	180.47	180.78	99.83	
06/05/2020	94.59	0.00	0.00	0.00	67.77	67.77	0.00	0.00	0.00	0.16	44.41	44.57	0.00	0.00	0.00	0.00	0.00	0.00	67.65	67.65	0.00	0.00	0.00	0.00	179.83	179.99	99.91	
07/05/2020	94.63	0.00	0.00	0.00	75.23	75.23	0.00	0.00	0.00	0.09	44.32	44.41	0.00	0.00	0.00	0.00	0.00	0.00	67.23	67.23	0.00	0.00	0.00	0.09	179.88	179.97	99.95	
08/05/2020	94.52	0.00	0.00	0.00	75.23	75.23	0.00	0.00	0.00	0.06	26.31	26.38	0.00	0.00	0.00	0.00	0.00	0.00	64.70	64.70	0.00	0.00	0.00	0.00	182.07	182.39	99.83	
09/05/2020	94.39	0.00	0.00	0.00	69.81	69.81	0.00	0.00	0.00	0.13	46.03	46.16	0.00	0.00	0.00	0.00	0.00	0.00	69.71	69.71	0.00	0.00	0.00	0.00	185.55	185.69	99.93	
10/05/2020	94.07	0.00	0.00	0.00	70.38	70.38	0.00	0.00	0.00	0.20	46.70	46.90	0.00	0.00	0.00	0.00	0.00	0.00	70.71	70.71	0.00	0.00	0.00	0.00	187.79	187.99	99.89	
11/05/2020	93.89	0.00	0.00	0.00	70.31	70.31	0.00	0.00	0.00	0.07	46.66	46.72	0.00	0.00	0.00	0.00	0.00	0.00	71.00	71.00	0.00	0.00	0.00	0.00	187.97	188.04	99.96	
12/05/2020	93.78	0.00	0.00	0.00	69.73	69.73	0.00	0.00	0.00	0.13	46.57	46.71	0.00	0.00	0.00	0.00	0.00	0.00	71.56	71.56	0.00	0.00	0.00	0.00	187.87	188.00	99.93	
13/05/2020	93.54	0.00	0.00	0.00	69.16	69.16	0.00	0.00	0.00	0.13	46.59	46.72	0.00	0.00	0.00	0.00	0.00	0.00	72.10	72.10	0.00	0.00	0.00	0.00	187.84	187.97	99.93	
14/05/2020	93.08	0.00	0.00	0.00	69.29	69.29	0.00	0.00	0.00	0.13	45.98	46.12	0.00	0.00	0.00	0.00	0.00	0.00	72.12	72.12	0.00	0.00	0.00	0.00	187.85	187.98	99.93	
15/05/2020	92.56	0.00	0.00	0.00	69.47	69.47	0.00	0.00	0.00	0.06	43.34	43.40	0.00	0.00	0.00	0.00	0.00	0.00	69.73	69.73	0.00	0.00	0.00	0.00	182.55	182.61	99.97	
16/05/2020	91.77	0.00	0.00	0.00	66.60	66.60	0.00	0.00	0.00	0.06	42.68	42.74	0.00	0.00	0.00	0.00	0.00	0.00	69.56	69.56	0.00	0.00	0.00	0.00	180.84	180.95	99.94	
17/05/2020	91.64	0.00	0.00	0.00	70.40	70.40	0.00	0.00	0.00	0.22	43.67	43.89	0.00	0.00	0.00	0.00	0.00	0.00	70.94	70.94	0.00	0.00	0.00	0.00	185.01	185.23	99.88	
18/05/2020	91.77	0.00	0.00	0.00	71.87	71.87	0.00	0.00	0.00	0.13	47.19	47.33	0.00	0.00	0.00	0.00	0.00	0.00	74.38	74.38	0.00	0.00	0.00	0.00	193.44	193.57	99.93	
19/05/2020	91.03	0.00	0.39	0.00	76.78	77.17	0.00	0.00	0.00	0.24	49.97	50.21	0.00	0.00	0.00	0.00	0.00	0.00	78.81	78.81	0.00	0.00	0.00	0.00	205.57	206.20	99.69	
20/05/2020	90.21	0.00	0.11	0.00	79.33	79.45	0.00	0.00	0.00	0.14	50.42	50.57	0.00	0.00	0.00	0.00	0.00	0.00	80.47	80.47	0.00	0.00	0.00	0.00	210.23	210.48	99.88	
21/05/2020	92.13	0.00	0.56	0.00	78.96	79.51	0.00	0.00	0.00	0.18	51.14	51.32	0.00	0.00	0.00	0.00	0.00	0.00	81.58	81.58	0.00	0.00	0.00	0.00	211.68	212.42	99.65	
22/05/2020	93.56	0.00	0.33	0.00	78.89	79.23	0.00	0.00	0.00	0.07	53.04	53.11	0.00	0.00	0.00	0.00	0.00	0.00	84.17	84.17	0.00	0.00	0.00	0.00	216.10	216.51	99.81	
23/05/2020	93.04	0.00	0.22	0.00	79.01	79.23	0.00	0.00	0.00	0.07	53.02	53.09	0.00	0.00	0.00	0.00	0.00	0.00	84.20	84.20	0.00	0.00	0.00	0.00	216.23	216.53	99.86	
24/05/2020	92.24	0.00	0.33	0.00	78.24	78.57	0.00	0.00	0.00	0.19	52.62	52.81	0.00	0.00	0.00	0.00	0.00	0.00	83.65	83.65	0.00	0.00	0.00	0.00	214.51	215.03	99.76	
25/05/2020	93.66	0.00	0.16	0.00	74.31	74.48	0.00	0.00	0.00	0.16	34.28	34.75	0.00	0.00	0.00	0.00	0.00	0.00	77.84	77.84	0.00	0.00	0.00	0.16	211.79	212.43	99.70	
26/05/2020	94.10	0.00	0.00	0.00	69.64	69.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	68.52	68.52	0.00	0.00	0.00	0.00	212.34	212.34	100.00	
27/05/2020	94.15	0.00	0.00	0.00	68.00	68.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	67.41	67.41	0.00	0.00	0.00	0.00	208.02	208.02	100.00	
28/05/2020	94.19	0.00	0.00	0.00	66.81	66.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.98	44.98	0.00	0.00	0.00	0.00	204.74	204.93	99.91	
29/05/2020	94.33	0.00	0.00	0.00	62.31	62.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	61.67	61.67	0.00	0.00	0.00	0.00	190.87	190.87	100.00	
30/05/2020	94.45	0.00	0.00	0.00	60.78	60.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60.51	60.51	0.00	0.00	0.00	0.00	186.55	186.55	100.00	
31/05/2020	94.47	0.00	0.00	0.00	61.05	61.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	61.03	61.03	0.00	0.00	0.00	0.00	187.66	187.66	100.00	
<b>Total [ML]:</b>	<b>0.04</b>	<b>2.35</b>	<b>2150.05</b>	<b>2152.44</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.18</b>	<b>3.66</b>	<b>1130.88</b>	<b>1134.73</b>	<b>0.01</b>	<b>0.33</b>	<b>516.49</b>	<b>516.82</b>	<b>0.11</b>	<b>0.11</b>	<b>1969.50</b>	<b>1969.71</b>	<b>0.04</b>	<b>0.04</b>	<b>230.25</b>	<b>230.34</b>	<b>0.39</b>	<b>6.48</b>	<b>5997.17</b>	<b>6004.04</b>

**Water Volume [%]:**  
Untreated: 0.01 %  
Below Dose: 0.11 %  
To Dose: 99.89 %

**Notes:** 1. UV Comparative Dose: 18.1 mJ/cm<sup>2</sup>

Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew