



**Water and Waste**  
**Eaux et déchets**

Kale Black, Sr. Drinking Water Officer  
Office of Drinking Water, Manitoba Conservation and Climate  
309 – 25 Tupper Street North  
Portage La Prairie, MB R1N 3K1

**December 7, 2020**

**RE: NOVEMBER 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 November 2020.

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 filter effluent met the licence requirements.

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 met the licence requirements.

The November 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**

November 2020 Turbidity (NTU)

Date	Raw		Filter #1		Filter #2		Filter #3		Filter #4		Filter #5		Filter #6		Filter #7		Filter #8		
	Avg	Max	Avg	Max	Avg	Max	Avg	Max	Avg	Max	O/L	O/L	Avg	Max	Avg	Max	Avg	Max	
1/11/2020	1.33	0.08	0.12	0.10	0.14	0.09	0.14	0.07	0.11	0.05	0.13	0.06	0.10	0.05	0.09	0.06	0.10	0.05	0.09
2/11/2020	1.25	0.07	0.13	0.10	0.16	0.10	0.13	0.07	0.11	0.06	0.10	0.06	0.10	0.05	0.10	0.05	0.10	0.05	0.10
3/11/2020	1.26	0.08	0.13	0.13	0.19	0.10	0.16	0.06	0.12	0.06	0.10	0.06	0.09	0.05	0.10	0.05	0.10	0.05	0.10
4/11/2020	1.34	0.08	0.12	0.09	0.18	0.10	0.17	0.07	0.14	0.07	0.12	0.07	0.11	0.05	0.12	0.05	0.12	0.05	0.12
5/11/2020	1.27	0.07	0.10	0.07	0.13	0.10	0.17	0.06	0.13	0.06	0.13	0.06	0.12	0.05	0.12	0.06	0.12	0.06	0.12
6/11/2020	1.23	0.10	0.15	0.07	0.13	0.11	0.19	0.06	0.10	0.05	0.11	0.05	0.10	0.05	0.10	0.05	0.09	0.05	0.09
7/11/2020	1.18	0.08	0.16	0.07	0.10	0.10	0.18	0.07	0.13	0.06	0.11	0.05	0.11	0.05	0.11	0.05	0.16	0.05	0.16
8/11/2020	1.17	0.07	0.14	0.07	0.11	0.10	0.14	0.06	0.12	0.05	0.11	0.06	0.11	0.05	0.09	0.06	0.11	0.04	0.09
9/11/2020	1.12	0.06	0.11	0.06	0.13	0.11	0.19	0.06	0.13	0.05	0.08	0.04	0.07	0.05	0.09	0.05	0.09	0.05	0.09
10/11/2020	1.02	0.05	0.12	0.04	0.10	0.07	0.12	0.06	0.11	0.05	0.09	0.02	0.04	0.05	0.10	0.05	0.10	0.05	0.10
11/11/2020	0.98	0.06	0.09	0.06	0.11	0.08	0.14	0.07	0.12	0.05	0.10	0.04	0.08	0.06	0.08	0.06	0.08	0.06	0.08
12/11/2020	0.97	0.07	0.13	0.05	0.12	0.07	0.14	0.04	0.16	0.07	0.10	0.05	0.10	0.03	0.07	0.05	0.10	0.05	0.10
13/11/2020	0.97	0.06	0.13	0.07	0.12	0.08	0.10	0.05	0.10	0.06	0.12	0.04	0.06	0.03	0.09	0.06	0.11	0.05	0.11
14/11/2020	0.97	0.05	0.13	0.05	0.14	0.08	0.15	0.06	0.09	0.07	0.13	0.05	0.10	0.03	0.04	0.05	0.07	0.05	0.07
15/11/2020	0.96	0.05	0.07	0.04	0.11	0.06	0.13	0.05	0.09	0.07	0.09	0.05	0.12	0.04	0.09	0.07	0.12	0.06	0.12
16/11/2020	0.94	0.05	0.12	0.05	0.07	0.07	0.08	0.04	0.10	0.09	0.13	0.04	0.07	0.03	0.08	0.06	0.13	0.05	0.13
17/11/2020	0.92	0.04	0.13	0.05	0.11	0.07	0.13	0.07	0.08	0.05	0.18	0.06	0.11	0.04	0.06	0.05	0.13	0.05	0.13
18/11/2020	0.92	0.06	0.08	0.04	0.12	0.05	0.14	0.05	0.10	0.07	0.11	0.05	0.13	0.04	0.10	0.08	0.13	0.05	0.13
19/11/2020	0.92	0.06	0.13	0.06	0.08	0.06	0.10	0.04	0.10	0.11	0.17	0.04	0.13	0.04	0.10	0.06	0.14	0.05	0.14
20/11/2020	0.91	0.05	0.13	0.06	0.13	0.08	0.14	0.06	0.08	0.09	0.18	0.07	0.10	0.03	0.06	0.05	0.15	0.05	0.15
21/11/2020	0.84	0.05	0.09	0.05	0.18	0.07	0.15	0.06	0.12	0.08	0.20	0.06	0.13	0.06	0.11	0.08	0.11	0.08	0.11
22/11/2020	0.83	0.08	0.15	0.06	0.09	0.06	0.17	0.06	0.12	0.12	0.15	0.05	0.14	0.05	0.12	0.07	0.15	0.06	0.16
23/11/2020	0.83	0.06	0.15	0.07	0.15	0.09	0.14	0.05	0.12	0.11	0.21	0.06	0.09	0.04	0.11	0.06	0.16	0.05	0.16
24/11/2020	0.81	0.05	0.14	0.06	0.15	0.07	0.15	0.15	0.12	0.09	0.23	0.07	0.14	0.05	0.07	0.06	0.15	0.05	0.15
25/11/2020	0.90	0.06	0.11	0.05	0.08	0.05	0.11	0.04	0.13	0.13	0.25	0.03	0.12	0.05	0.20	0.08	0.22	0.05	0.22
26/11/2020	0.80	0.05	0.12	0.05	0.11	0.07	0.13	0.05	0.08	0.12	0.22	0.06	0.12	0.03	0.10	0.05	0.14	0.05	0.14
27/11/2020	0.78	0.04	0.13	0.05	0.11	0.06	0.13	0.07	0.11	0.12	0.23	0.06	0.12	0.04	0.07	0.06	0.10	0.05	0.10
28/11/2020	0.78	0.07	0.09	0.04	0.13	0.06	0.14	0.06	0.11	0.14	0.19	0.05	0.12	0.04	0.10	0.08	0.13	0.05	0.13
29/11/2020	0.77	0.06	0.14	0.07	0.10	0.06	0.10	0.06	0.12	0.15	0.26	0.05	0.15	0.04	0.12	0.06	0.15	0.05	0.15
30/11/2020	0.75	0.06	0.13	0.05	0.12	0.07	0.12	0.07	0.10	0.04	0.12	0.08	0.13	0.03	0.07	0.06	0.15	0.05	0.15

Total Number of Measurements Taken, A: 11327 11785 12159 6948 13638 14040 13670 15017  
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: 11327 11785 12159 6948 13638 14040 13670 15017  
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%

O/L -Offline

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Turbidity\2020\11-November

Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew



Water and Waste  
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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-09-412-01		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	Analyser
01-Nov-2020		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
02-Nov-2020		1.07	1.22	0.12	0.11	0.11	0.12	0.10	0.10	OL	OL	0.10	0.08	0.11	0.08	0.09	0.06	0.12	0.07
03-Nov-2020		1.07	1.21	0.15	0.14	0.11	0.13	0.12	0.12	OL	OL	0.13	0.12	0.09	0.07	0.09	0.06	0.09	0.05
04-Nov-2020		1.17	1.30	0.11	0.10	0.13	0.08	0.14	0.15	OL	OL	0.10	0.08	0.10	0.08	0.09	0.06	0.09	0.04
05-Nov-2020		1.05	1.24	0.12	0.09	0.12	0.07	OL	OL	OL	OL	0.13	0.08	0.15	0.11	0.12	0.08	0.11	0.06
06-Nov-2020		1.06	1.23	0.13	0.11	0.12	0.08	0.11	0.12	OL	OL	0.09	0.07	0.09	0.06	OL	OL	0.10	0.06
07-Nov-2020		NS	NS	NS	NS	NS	NS	NS	OL	OL	NS								
08-Nov-2020		NS	NS	NS	NS	NS	NS	NS	NS	OL	OL	NS							
09-Nov-2020		0.95	1.14	0.11	0.10	0.14	0.10	0.12	0.14	OL	OL	0.12	0.09	0.09	0.06	0.08	0.05	0.08	0.04
10-Nov-2020		0.94	1.00	0.11	0.05	0.13	0.07	0.13	0.10	OL	OL	0.10	0.07	0.11	0.06	0.10	0.02	0.08	0.05
11-Nov-2020		NS	NS	NS	NS	NS	NS	NS	OL	OL	NS								
12-Nov-2020		0.85	0.93	0.13	0.09	0.12	0.06	0.10	0.09	0.12	0.09	0.09	0.08	0.09	0.05	0.10	0.03	0.10	0.06
13-Nov-2020		0.88	0.92	OL	OL	0.15	0.07	0.13	0.09	0.11	0.06	0.11	0.09	0.10	0.05	0.09	0.02	0.09	0.05
14-Nov-2020		NS	NS	NS	NS	NS	NS	NS	0.13	0.08	NS								
15-Nov-2020		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
16-Nov-2020		0.87	0.91	0.17	0.10	0.13	0.06	0.12	0.08	0.10	0.06	0.13	0.10	0.14	0.06	0.11	0.03	OL	OL
17-Nov-2020		0.72	0.88	0.13	0.06	0.15	0.08	0.15	0.10	0.12	0.07	OL	OL	0.13	0.07	0.13	0.03	0.12	0.06
18-Nov-2020		0.79	0.90	0.13	0.07	0.11	0.05	OL	OL	0.14	0.09	0.11	0.10	0.17	0.11	0.13	0.05	0.11	0.07
19-Nov-2020		0.83	0.89	0.16	0.10	0.13	0.07	0.12	0.08	0.09	0.06	0.11	0.11	0.12	0.07	OL	OL	0.13	0.08
20-Nov-2020		0.80	0.90	OL	OL	0.16	0.09	0.14	0.10	0.10	0.06	OL	OL	0.13	0.08	0.11	0.04	0.10	0.06
21-Nov-2020		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
22-Nov-2020		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
23-Nov-2020		0.75	0.80	0.16	0.09	0.16	0.09	0.14	0.10	0.12	0.07	0.14	0.16	0.13	0.08	0.12	0.04	0.16	0.11
24-Nov-2020		0.72	0.81	0.15	0.08	0.15	0.09	0.14	0.13	0.14	0.09	OL	OL	0.15	0.09	0.13	0.05	0.12	0.08
25-Nov-2020		0.69	0.77	0.13	0.08	0.12	0.07	0.11	0.09	OL	OL	0.09	0.15	OL	OL	0.12	0.05	0.11	0.07
26-Nov-2020		0.70	0.80	OL	OL	0.15	0.07	0.12	0.08	0.10	0.07	0.13	0.18	0.12	0.07	0.11	0.02	OL	OL
27-Nov-2020		0.70	0.77	0.12	0.06	OL	OL	OL	0.11	0.08	0.10	0.17	0.15	0.09	0.12	0.04	0.11	0.07	
28-Nov-2020		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
29-Nov-2020		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
30-Nov-2020		0.68	0.72	OL	OL	0.17	0.11	0.13	0.09	0.10	0.09	OL	0.14	0.09	0.12	0.04	0.11	0.07	
Total number of measurements taken, A:				16			19		17		13		16		19		18		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:				16			19		17		13		16		19		18		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

Report Compiled By: H.Demchenko

Filter 4 was offline from September 30th until November 12th for maintenance work. The Filter was brought back online on November 12th at 10:35.

Authorized By: B. Bradford

Date Authorized: 7-Dec-20



**City Of Winnipeg**

Water and Waste Department

Water Services

**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 December 2020

Report Period: November 2020

Date	BRANCH 1 [mg/L]		BRANCH 2 [mg/L]	
	Average	Minimum	Average	Minimum
01/11/2020	1.34	1.21	1.14	1.03
02/11/2020	1.31	1.14	1.25	1.12
03/11/2020	1.24	1.04	1.27	1.05
04/11/2020	1.19	1.14	1.22	1.15
05/11/2020	1.24	1.19	1.25	1.21
06/11/2020	1.20	1.17	1.22	1.16
07/11/2020	1.17	1.13	1.27	1.14
08/11/2020	1.19	1.10	1.27	0.98
09/11/2020	1.10	1.00	1.06	0.89
10/11/2020	1.22	1.11	1.17	1.05
11/11/2020	1.15	1.05	1.07	0.95
12/11/2020	1.30	1.18	1.12	1.00
13/11/2020	1.26	1.16	1.10	0.97
14/11/2020	1.23	1.16	1.14	1.05
15/11/2020	1.18	1.10	1.11	1.00
16/11/2020	1.19	1.12	1.08	0.96
17/11/2020	1.21	1.11	1.14	1.00
18/11/2020	1.20	1.15	1.19	1.11
19/11/2020	1.17	1.07	1.16	1.05
20/11/2020	1.14	1.06	1.15	1.06
21/11/2020	1.13	1.06	1.18	1.07
22/11/2020	1.07	1.02	1.24	1.10
23/11/2020	1.08	0.91	1.29	1.13
24/11/2020	1.12	0.88	1.22	1.12
25/11/2020	2.71	1.25	2.66	1.19
26/11/2020	1.27	1.03	1.32	1.17
27/11/2020	1.25	1.02	1.24	1.15
28/11/2020	1.41	1.26	1.34	1.17
29/11/2020	1.30	1.15	1.25	1.12
30/11/2020	1.20	1.07	1.14	1.03

Total Number of Measurements, A: 20583 20568

Minimum Free Chlorine Standard: 0.5 0.5

Number of Measurements Meeting Standard, B: 20583 20568

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

File Path: N:\Water Treatment Branch\Administration\Reports\Regulatory Submissions\Chlorine\2020\11-November

Submitted By (Print): D.Merredew

Signature: Original signed by D.Merredew



**Water and Waste**  
**Eaux et déchets**

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-09-412-01	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-Nov-2020	NS	NS	NS	NS	NS	NS
02-Nov-2020	1.34	1.38	1.63	1.26	1.29	1.51
03-Nov-2020	1.26	1.28	1.53	1.29	1.34	1.52
04-Nov-2020	1.18	1.21	1.40	1.26	1.24	1.36
05-Nov-2020	1.25	1.32	1.52	1.28	1.29	1.49
06-Nov-2020	1.19	1.21	1.39	1.23	1.22	1.44
07-Nov-2020	NS	NS	NS	NS	NS	NS
08-Nov-2020	NS	NS	NS	NS	NS	NS
09-Nov-2020	1.03	1.09	1.27	0.96	0.98	1.15
10-Nov-2020	1.30	1.26	1.52	1.19	1.29	1.51
11-Nov-2020	NS	NS	NS	NS	NS	NS
12-Nov-2020	1.25	1.24	1.49	1.07	1.16	1.41
13-Nov-2020	1.28	1.24	1.44	1.08	1.16	1.32
14-Nov-2020	NS	NS	NS	NS	NS	NS
15-Nov-2020	NS	NS	NS	NS	NS	NS
16-Nov-2020	1.20	1.24	1.43	1.09	1.13	1.32
17-Nov-2020	1.22	1.22	1.43	1.08	1.14	1.32
18-Nov-2020	1.19	1.20	1.37	1.17	1.20	1.41
19-Nov-2020	1.21	1.20	1.40	1.19	1.24	1.43
20-Nov-2020	1.15	1.13	1.30	1.17	1.22	1.39
21-Nov-2020	NS	NS	NS	NS	NS	NS
22-Nov-2020	NS	NS	NS	NS	NS	NS
23-Nov-2020	1.15	1.20	1.37	1.31	1.35	1.55
24-Nov-2020	0.94	0.97	1.17	1.24	1.22	1.46
25-Nov-2020	1.64	1.66	1.84	1.39	1.55	1.75
26-Nov-2020	1.16	1.21	1.39	1.25	1.30	1.49
27-Nov-2020	1.17	1.24	1.42	1.24	1.30	1.47
28-Nov-2020	NS	NS	NS	NS	NS	NS
29-Nov-2020	NS	NS	NS	NS	NS	NS
30-Nov-2020	1.17	1.16	1.34	1.11	1.15	1.36
<b>Total number of measurements taken, A:</b>		20			20	
<b>Chlorine Standard for Monitoring Location (mg/L):</b>		0.50			0.50	
<b>Number of measurements meeting standard, B:</b>		20			20	
<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: 7-Dec-20



**CITY OF WINNIPEG**  
WATER AND WASTE DEPARTMENT  
WATER SERVICES

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

Report Period: November 2020

Report Created: Tuesday, December 01, 2020

Date	Transmittance %	UVR-D100A				UVR-D200A				UVR-D300A				UVR-D400A				UVR-D500A				UVR-D600A				Total				% Volume Treated To Dose			
		Water Volume [ML]				Water Volume [ML]				Water Volume [ML]				Water Volume [ML]				Water Volume [ML]				Water Volume [ML]				Water Volume [ML]							
	Date	UVTavg	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			
01/11/2020	92.67	0.00	0.73	69.84	70.57	0.00	0.00	0.00	0.00	0.00	0.57	44.87	45.45	0.00	0.05	64.99	65.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.35	179.70	181.05	99.25			
02/11/2020	92.70	0.00	0.25	63.93	64.18	0.00	0.00	0.00	0.00	0.00	0.76	53.89	54.65	0.12	0.12	33.71	33.95	0.00	0.00	29.17	29.17	0.00	0.22	0.01	0.23	0.13	1.35	180.70	182.18	99.19			
03/11/2020	93.03	0.00	0.04	56.50	56.54	0.00	0.00	0.00	0.00	0.00	0.85	63.15	64.00	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	0.89	182.14	183.02	99.52			
04/11/2020	94.09	0.00	0.00	56.44	56.44	0.00	0.00	0.00	0.00	0.00	1.16	62.87	64.04	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	62.52	62.52	0.00	1.16	181.83	183.00	99.36
05/11/2020	94.07	0.00	0.08	56.07	56.14	0.00	0.00	0.00	0.00	0.00	0.85	62.96	63.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	62.33	62.33	0.00	0.92	181.36	182.28	99.45
06/11/2020	94.17	0.00	0.27	55.29	55.56	0.00	0.00	0.00	0.00	0.00	0.93	62.04	62.97	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	61.47	61.47	0.00	1.20	178.80	180.00	99.34
07/11/2020	94.25	0.00	0.15	55.09	55.24	0.00	0.00	0.00	0.00	0.00	1.01	62.19	63.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	61.50	61.55	0.00	1.21	178.79	180.00	99.33		
08/11/2020	94.31	0.00	0.69	70.16	70.86	0.00	0.00	0.00	0.00	0.00	0.79	48.63	49.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	59.59	59.84	0.00	1.74	178.38	180.12	99.03		
09/11/2020	94.21	0.00	0.95	71.26	72.21	0.00	0.00	0.00	0.00	0.00	1.02	49.37	50.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68	60.70	61.38	0.00	2.65	181.33	183.98	98.56		
10/11/2020	94.09	0.00	0.75	71.43	72.18	0.00	0.00	0.00	0.00	0.00	1.16	49.16	50.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73	60.78	61.51	0.00	2.64	181.37	184.01	98.51		
11/11/2020	92.76	0.00	0.54	71.01	71.56	0.00	0.00	0.00	0.00	0.00	2.11	47.72	49.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	60.18	60.94	0.00	3.42	178.91	182.33	98.13		
12/11/2020	93.29	0.00	1.59	69.79	71.38	0.00	0.00	0.00	0.00	0.00	2.11	47.71	49.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.72	60.07	60.79	0.00	4.42	177.57	181.99	97.51		
13/11/2020	94.31	0.00	1.18	69.45	70.63	0.00	0.00	0.00	0.00	0.00	1.54	47.68	49.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	59.21	59.71	0.00	3.21	176.34	179.55	98.21		
14/11/2020	94.27	0.00	1.22	69.19	70.41	0.00	0.00	0.00	0.00	0.00	1.40	47.66	49.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.57	57.94	59.51	0.00	4.19	174.79	178.98	97.66		
15/11/2020	94.27	0.00	1.01	68.25	69.26	0.00	0.00	0.00	0.00	0.00	1.57	46.59	48.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	57.44	58.04	0.00	3.18	172.28	175.46	98.15		
16/11/2020	94.11	0.00	1.10	67.92	69.02	0.00	0.00	0.00	0.00	0.00	1.33	46.68	48.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.37	56.59	57.95	0.00	3.80	171.18	174.98	97.83		
17/11/2020	93.98	0.00	0.91	68.87	69.79	0.00	0.00	0.00	0.00	0.00	1.00	25.56	26.57	0.00	0.00	22.98	22.98	0.00	0.00	0.00	0.00	0.00	0.00	0.76	56.88	57.64	0.00	2.68	174.29	176.97	98.49		
18/11/2020	93.71	0.00	1.28	69.64	70.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51.45	51.45	0.00	0.00	0.00	0.00	0.00	0.00	1.36	56.25	57.60	0.00	2.64	177.33	179.97	98.52			
19/11/2020	93.51	0.00	1.73	69.21	70.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51.48	51.48	0.00	0.00	0.00	0.00	0.00	0.00	1.36	56.24	57.61	0.00	3.09	176.94	180.03	98.28			
20/11/2020	93.53	0.00	2.11	68.82	70.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51.41	51.41	0.00	0.00	0.00	0.00	0.00	0.00	0.80	56.84	57.64	0.00	2.91	177.07	179.98	98.38			
21/11/2020	93.20	0.00	1.97	69.00	70.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51.39	51.39	0.00	0.00	0.00	0.00	0.00	0.00	1.00	56.67	57.67	0.00	2.98	177.06	180.03	98.35			
22/11/2020	93.07	0.00	2.43	69.00	71.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51.44	51.44	0.00	0.04	56.09	56.13	0.00	0.00	0.80	0.80	0.00	2.47	177.33	179.79	98.63				
23/11/2020	93.03	0.00	19.70	30.57	50.26	0.00	0.00	0.00	0.00	0.68	13.87	14.55	0.00	0.00	51.70	51.70	0.00	0.00	63.48	63.48	0.00	0.00	0.00	0.00	0.00	20.38	159.61	179.99	88.66				
24/11/2020	92.99	0.00	0.15	29.43	29.59	0.00	0.00	0.00	0.00	1.02	28.49	29.52	0.00	0.00	52.77	52.77	0.00	0.00	71.05	71.05	0.00	0.00	0.00	0.00	0.00	0.00	1.18	181.75	182.93	99.36			
25/11/2020	91.92	0.00	0.26	36.92	37.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	32.81	32.81	0.00	0.00	31.53	31.53	0.00	0.00	0.00	0.00	0.00	0.00	0.26	101.26	101.52	99.75			
26/11/2020	92.93	0.00	0.31	63.03	63.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	65.69	65.83	0.00	0.09	66.47	66.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	195.19	195.73	99.73			
27/11/2020	93.04	0.00	0.71	63.05	63.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	65.56	65.56	0.00	0.00	66.69	66.69	0.00	0.00	0.00	0.00	0.00	0.00	0.71	195.30	196.01	99.64			
28/11/2020	92.81	0.00	0.70	62.90	63.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	65.97	66.11	0.00	0.05	66.24	66.28	0.00	0.00	0.00	0.00	0.00	0.00	0.89	195.11	196.01	99.55		
29/11/2020	92.77	0.00	0.81	60.37	61.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	63.19	63.46	0.00	0.00	63.13	63.13	0.00	0.00	0.00	0.00	0.00	0.00	1.08	186.69	187.77	99.42		
30/11/2020	92.97	0.00	0.84	59.69	60.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	63.09	63.14	0.00	0.00	61.34	61.34	0.00	0.00	0.00	0.00	0.00	0.00	0.88	184.13	185.01	99.52		

**Water Volume [%]:**

Untreated. 0.00 %

Below Dose 1.48 %

10 Dose 96.51 %

Submitted By (Print): D Marrocco

**Signature:** Original signed by D. Marroquín